## 2020 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

## FLY ASH IMPOUNDMENT SIBLEY GENERATING STATION SIBLEY, MISSOURI

Presented To: Evergy Missouri West, Inc.



27213169.20 | January 2021 Revision 1, April 2021 Revision 2, December 20, 2022

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

## CERTIFICATIONS

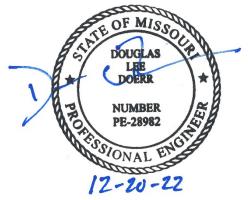
I, John R. Rockhold, being a qualified groundwater scientist and Registered Geologist in the State of Missouri, do hereby certify that the 2020 Annual Groundwater Monitoring and Corrective Action Report for the Fly Ash Impoundment at the Sibley Generating Station was prepared by me or under my direct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



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 20, 2022	Addendum 1	Added Addendum 1

## Table of Contents

Sect	-			Page
CERT	IFICA	ΓΙΟNS		i
1	INTR	ODUCTIC	DN	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	§ 25	7.90(e) /	ANNUAL REPORT REQUIREMENTS	2
	2.1	§ 257.9	90(e)(1) Site Map	3
	2.2	§ 257.9	90(e)(2) Monitoring System Changes	3
	2.3	§ 257.9	90(e)(3) Summary of Sampling Events	3
	2.4	§ 257.9	90(e)(4) Monitoring Transition Narrative	4
	2.5	§ 257.9	90(e)(5) Other Requirements	4
		2.5.1	§ 257.90(e) Program Status	4
		2.5.2	§ 257.94(d)(3) Demonstration for Alternative Detection Monitoring Frequence	ncy5
		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 Frequ	-
		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	
	2.6	§ 257.	90(e)(6) OVERVIEW SUMMARY	7
3	GENE	ERAL CO	MMENTS	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 ResultsTable 2: Detection Monitoring Field Measurements

- Appendix C Alternative Source Demonstrations
  - C.1 CCR Groundwater Monitoring Alternative Source Demonstration Report November 2019 Groundwater Monitoring Event, Fly Ash Impoundment, Sibley Generating Station (June 2020).
  - C.2 CCR Groundwater Monitoring Alternative Source Demonstration Report May 2020 Groundwater Monitoring Event, Fly Ash Impoundment, 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 Fly Ash Impoundment 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 Impoundment 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 Impoundment was operating under a detection monitoring program in compliance with  $\S$  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-804	Fluoride	Successful
Spring 2020	MW-804	Chloride	Successful

1

(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 § 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, 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 Fly Ash Impoundment and all background (or upgradient) and downgradient monitoring wells with identification numbers for the Fly Ash Impoundment 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 Fly Ash Impoundment 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 as Appendix C:

- C.1 CCR Groundwater Monitoring Alternative Source Demonstration Report November 2019 Groundwater Monitoring Event, Fly Ash Impoundment, Sibley Generating Station (June 2020).
- C.2 CCR Groundwater Monitoring Alternative Source Demonstration Report May 2020 Groundwater Monitoring Event, Fly Ash Impoundment, 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 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 Fly Ash Impoundment. No warranties, express or implied, are intended or made.

## APPENDIX A

## FIGURES

Figure 1: Site Map

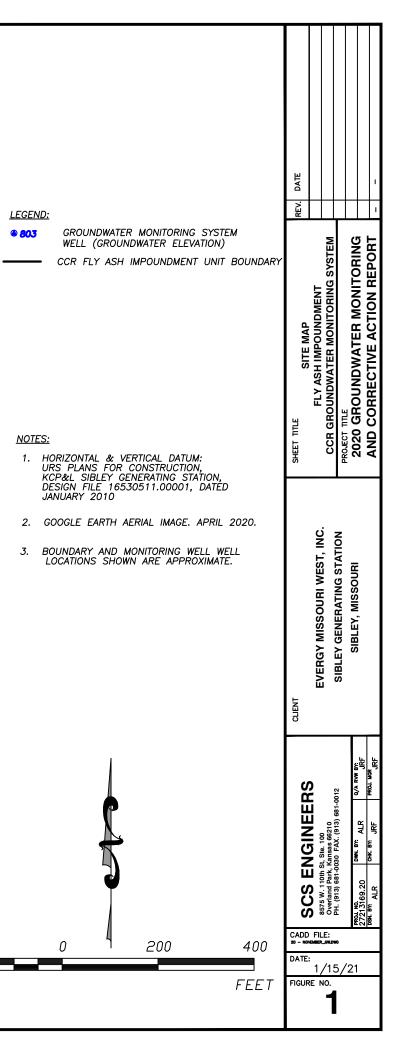
Figure 2: Potentiometric Surface Map (May 2020)

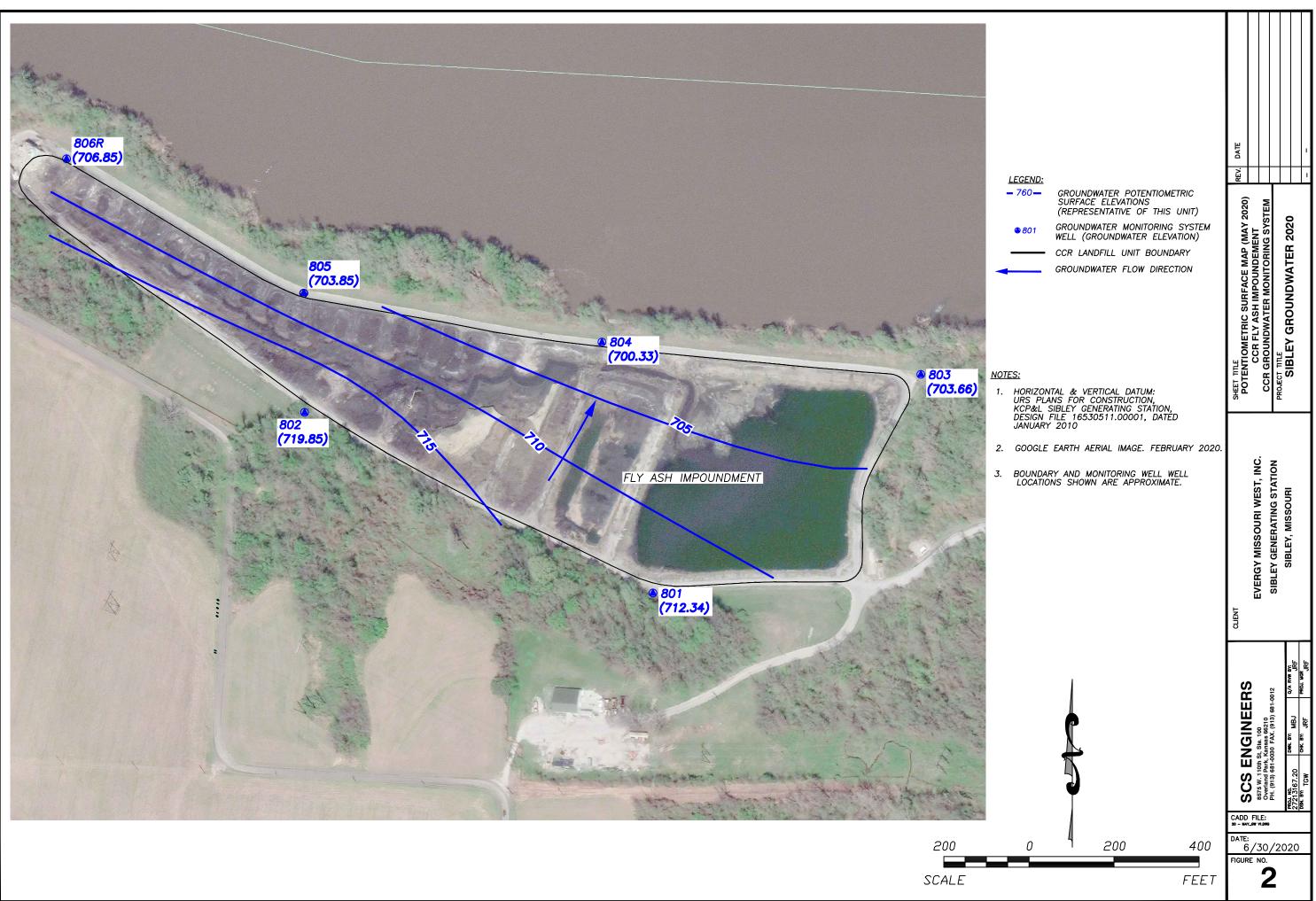
Figure 3: Potentiometric Surface Map (November 2020)

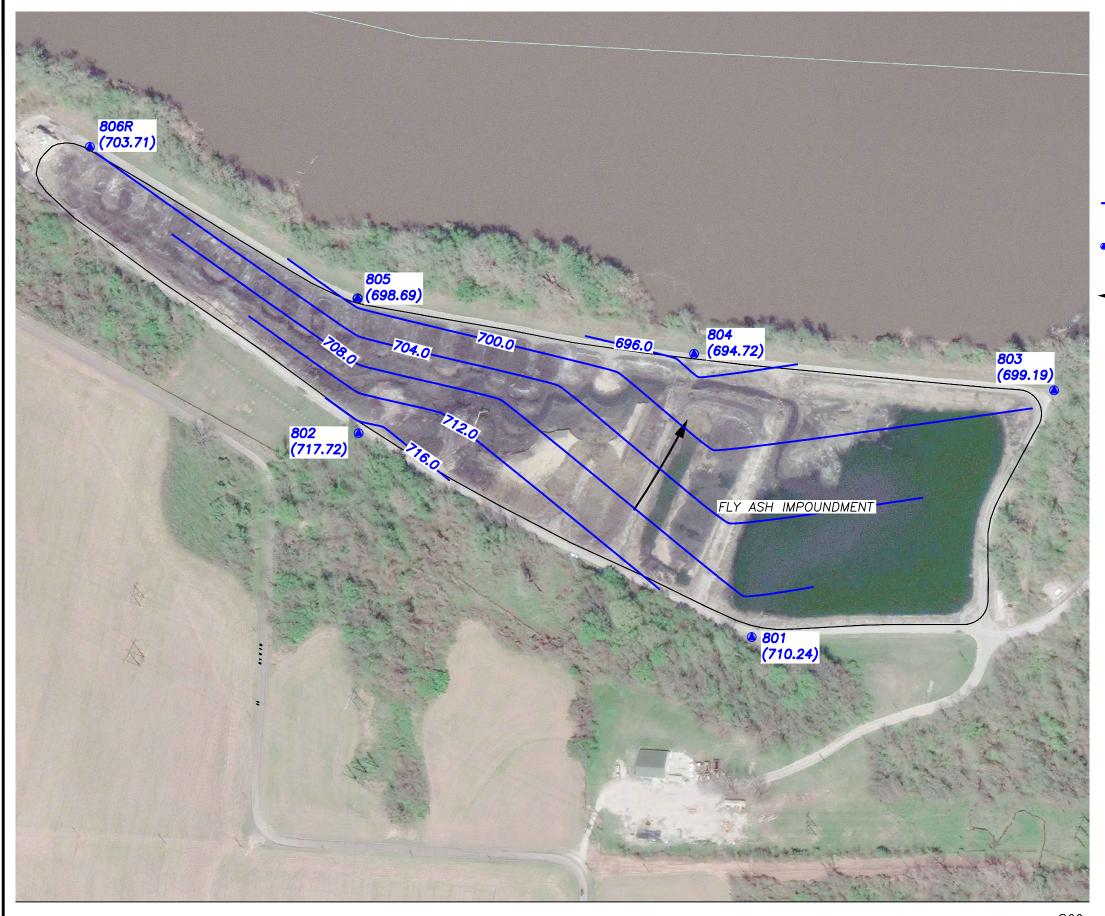


200

SCALE

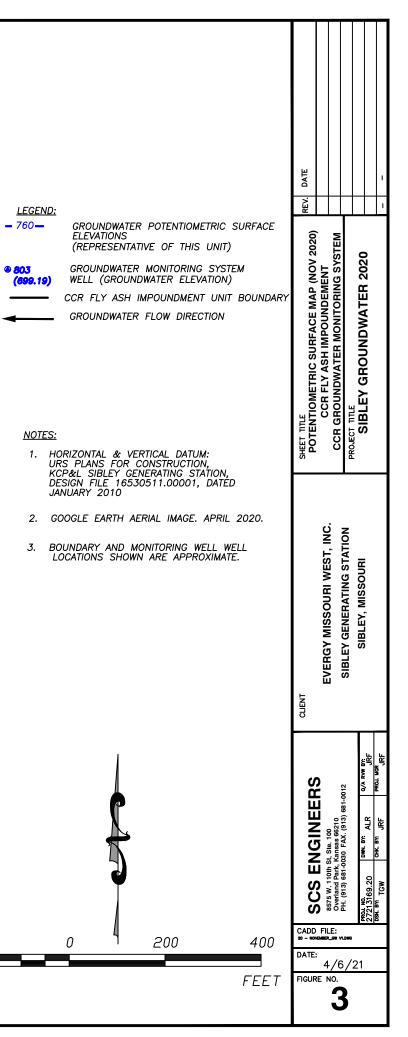






200

SCALE



## APPENDIX B

## TABLES

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

Table 2: Detection Monitoring Field Measurements

#### Table 1 Fly Ash Impoundment Appendix III with Supplemental Appendix IV Detection Monitoring Results Evergy Sibley Generating Station

		Appendix III Constituents Appendix IV Constituents													Арр	endix IV Cons	tituents						
								Dissolved															Radium
Well	Sample	Boron	Calcium	Chloride	Fluoride	рН	Sulfate	Solids	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Combined
Number	Date	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(S.U.)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(pCi/L)
MW-801	5/18/2020	0.234	128	92.0	0.162	6.59	64.7	591	< 0.00400	< 0.00200	0.112	< 0.00200	<0.00100	< 0.0100	< 0.0100	0.162	< 0.00500	<0.0150	< 0.000200	< 0.00500	< 0.00200	<0.00200	0.27
MW-801	11/11/2020	0.243	127	65.4	0.164	7.00	54.6	505															
MW-802	5/18/2020	<0.200	79.2	43.9	0.176	6.62	41.6	366	< 0.00400	0.00218	0.163	< 0.00200	< 0.00100	< 0.0100	< 0.0100	0.176	< 0.00500	<0.0150	< 0.000200	< 0.00500	< 0.00200	< 0.00200	1.02
MW-802	11/11/2020	<0.200	29.5	7.0	0.179	6.69	19.5	190															
MW-803	1/13/2020			*16.7		**7.17																	
MW-803	5/18/2020	2.59	115	16.5	0.265	7.09	121	524	< 0.00400	0.00246	0.119	<0.00200	<0.00100	< 0.0100	< 0.0100	0.265	< 0.00500	<0.0150	< 0.000200	< 0.00500	< 0.00200	<0.00200	2.26
MW-803	11/11/2020	2.93	118	17.4	0.254	7.43	110	512															
MW-804	1/13/2020				*0.281	**6.89																	
MW-804	2/3/2020				*0.337	**6.87																	
MW-804	5/18/2020	8.63	151	20.4	0.219	7.01	<5.00	627	< 0.00400	0.00322	0.477	<0.00200	<0.00100	< 0.0100	< 0.0100	0.219	< 0.00500	0.0210	< 0.000200	< 0.00500	< 0.00200	<0.00200	1.03
MW-804	7/14/2020			*20.9		**6.96																	
MW-804	8/26/2020			*20.8		**7.11																	
MW-804	11/11/2020	10.30	172	20.8	0.192	7.08	<5.00	706															
MW-805	5/18/2020	<0.200	93.3	7.79	0.186	6.82	46.8	341	< 0.00400	< 0.00200	0.143	<0.00200	<0.00100	< 0.0100	< 0.0100	0.186	< 0.00500	< 0.0150	< 0.000200	< 0.00500	< 0.00200	<0.00200	2.74
MW-805	7/14/2020					*6.93																	
MW-805	11/11/2020	<0.200	95.3	7.58	0.191	7.31	48.3	338															
MW-806R	5/18/2020	5.11	148	26.4	0.206	6.95	186	659	< 0.00400	0.00555	0.0714	<0.00200	<0.00100	< 0.0100	< 0.0100	0.206	< 0.00500	0.0163	<0.000200	2.16	<0.00200	<0.00200	0.078
MW-806R	11/11/2020	5.39	156	27.1	0.200	7.21	206	673															

\* 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 2 Fly Ash Impoundment Detection Monitoring Field Measurements Evergy 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-801	5/18/2020	6.59	972	12.81	0.5	150	3.47	18.02	712.34
MW-801	11/11/2020	7.00	823	13.38	0.0	175	2.63	20.12	710.24
MW-802	5/18/2020	6.62	606	11.85	13.6	173	2.72	11.32	719.85
MW-802	11/11/2020	6.69	260	12.97	3.5	177	5.33	13.45	717.72
MW-803	1/13/2020	**7.17	789	14.93	0.0	-118	0.00	24.28	702.61
MW-803	5/18/2020	7.09	791	14.33	5.1	-117	1.30	23.23	703.66
MW-803	11/11/2020	7.43	753	14.93	0.7	-106	1.29	27.70	699.19
MW-804	1/13/2020	**6.89	1070	12.85	29.0	-126	0.00	29.51	698.95
MW-804	2/3/2020	**6.87	1140	15.57	9.4	-108	1.04	29.45	699.01
MW-804	5/18/2020	7.01	1030	14.83	20.9	-136	1.87	28.13	700.33
MW-804	7/14/2020	**6.96	405	19.00	18.2	-96	0.30	30.00	698.46
MW-804	8/26/2020	**7.11	934	26.79	26.1	-113	1.80	33.08	695.38
MW-804	11/11/2020	7.08	1110	16.70	0.0	-50	1.58	33.74	694.72
MW-805	5/18/2020	6.82	552	14.72	0.1	-62	1.32	24.94	703.85
MW-805	7/14/2020	*6.93	528	19.50	12.5	130	1.28	26.59	702.20
MW-805	11/11/2020	7.31	546	16.22	0.0	-28	2.22	30.10	698.69
MW-806R	5/18/2020	6.95	930	14.86	24.4	-19	0.00	22.31	706.85
MW-806R	11/11/2020	7.21	903	15.78	0.0	-17	1.87	25.45	703.71

\* 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

## APPENDIX C

## ALTERNATIVE SOURCE DEMONSTRATIONS

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

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

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

## FLY ASH IMPOUNDMENT 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

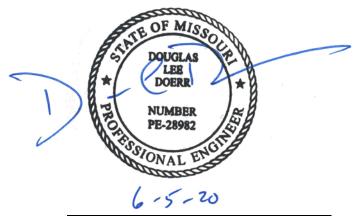
## CERTIFICATIONS

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 Fly Ash Impoundment 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 Fly Ash Impoundment 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	FICAT	7IONS	i					
1	Regu	latory Framework	1					
2	Statistical Results							
3	3 Alternative Source Demonstration							
	3.1	Box and Whiskers Plots	2					
	3.2	Piper Diagram Plots	2					
	3.3	Time Series Plots	3					
4	Conc	lusion	3					
5	Gene	ral Comments	3					

#### Appendices

Appendix A	Box and Whiskers Plots
Appendix B	Figure 1
Appendix C	Piper Diagram Plots and Analytical Results
Appendix D	Time Series 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 Fly Ash Impoundment 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-804.

November 6, 2019 January 13, 2020 Febr	2nd Verification February 3, 2020	
Fluoride		
MW-804 0.2574 0.269 0.281	0.337	

\*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 fluoride in monitoring well MW-804.

1

## 3 ALTERNATIVE SOURCE DEMONSTRATION

An Alternative Source Demonstration 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 Fly Ash Impoundment 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 Fly Ash Impoundment. 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, 25<sup>th</sup> and 75<sup>th</sup> 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 fluoride in monitoring well MW-804 was compared to the concentration of fluoride in the other impoundment wells and the river. The box and whiskers plots for fluoride from many of the locations including upgradient locations overlap significantly. Additionally, the naturally occurring fluoride concentrations in the river are greater than the concentrations in the monitoring wells with only a small overlap. The higher concentration of fluoride in the river and the overlap of upgradient and downgradient wells demonstrates that a source other than the Fly Ash Impoundment caused the SSI over background levels for fluoride, or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Box and whisker plots for fluoride are provided in **Appendix A**.

#### 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 was prepared to compare plots for MW-804 to plots for three ash pore water samples (ASD-1, ASD-2, and ASD-3) collected in the Fly Ash Impoundment with a Geoprobe<sup>®</sup> screen-point 15 groundwater sampler. Sample locations are shown on **Figure 1** in **Appendix B**. Samples were collected on November 8, 2018 for the ash pore water and well MW-804. The analytical results are provided in **Appendix C** along with the piper diagram. The piper diagram plots indicate the groundwater from the wells does not exhibit the same geochemical characteristics as the ash pore water. The groundwater and the ash pore water plot in different areas indicating there are two types of water (groundwater and ash pore water) and that the waters are not mixing. This helps demonstrate that a source other than the Fly Ash Impoundment could easily have caused the SSIs over background levels for fluoride or that the SSIs 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 fluoride in monitoring well MW-804 was compared to the time series plot for fluoride in the river. The fluoride concentration in well MW-804 was similar to that of the river during the last river sampling event and lower than the river concentrations for all other river sampling events. Monitoring well MW-804 is the closest well to the river and would be anticipated to be the well most influenced by the river. These time series plots demonstrate that a source other than the Fly Ash Impoundment caused the SSI over the background level for fluoride 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**.

#### 4 CONCLUSION

Our opinion is that a sufficient body of evidence is available and presented above to demonstrate that a source other than the Fly Ash Impoundment caused the SSI over background levels, 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 Fly Ash Impoundment may continue with the detection monitoring program under § 257.94.

#### 5 GENERAL COMMENTS

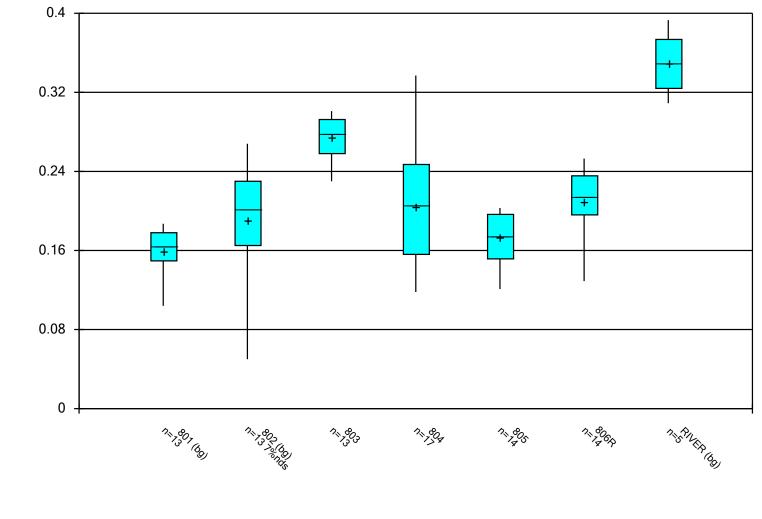
This report has been prepared and reviewed under the direction of a qualified groundwater scientist and qualified professional engineer. Please note that SCS Engineers does not warrant the work of regulatory agencies or other third parties supplying information used in the assimilation of this report. 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 Metro, Inc.

and 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 represent 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 opinion 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

**Box and Whiskers Plots** 

mg/L



Box & Whiskers Plot

Constituent: Fluoride Analysis Run 3/16/2020 11:19 AM View: Ash Pond III Sibley Client: SCS Engineers Data: Sibley

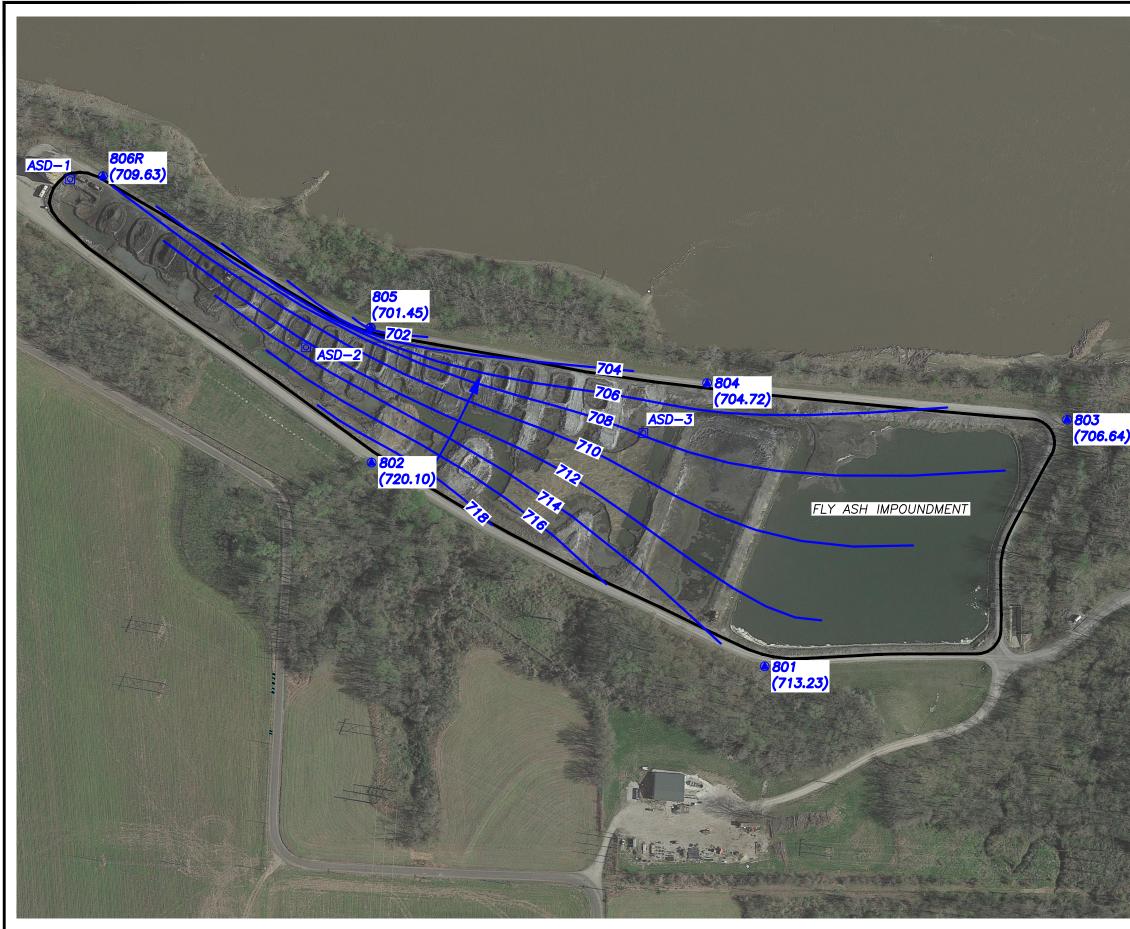
## Box & Whiskers Plot

Sibley	Client: SCS Engineers	Data: Sibley	Printed 3/16/2020, 11:19 AM
0	onorm ooo Enginooro	Data: O.D.OJ	

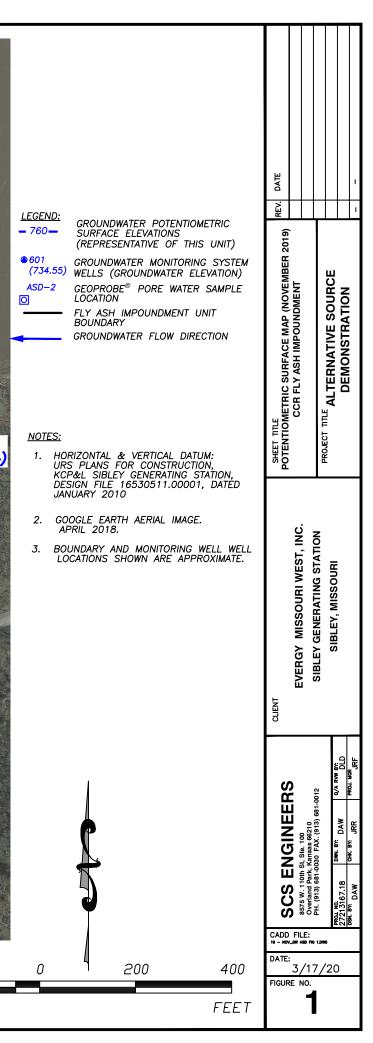
Constituent	Well	<u>N</u>	Mean	Std. Dev.	Std. Err.	<u>Median</u>	<u>Min.</u>	<u>Max.</u>	<u>%NDs</u>
Fluoride (mg/L)	801 (bg)	13	0.1588	0.02496	0.006922	0.165	0.104	0.187	0
Fluoride (mg/L)	802 (bg)	13	0.1902	0.05929	0.01644	0.202	0.05	0.268	7.692
Fluoride (mg/L)	803	13	0.2749	0.02187	0.006066	0.278	0.23	0.301	0
Fluoride (mg/L)	804	17	0.2048	0.06076	0.01474	0.206	0.118	0.337	0
Fluoride (mg/L)	805	14	0.1731	0.02584	0.006907	0.175	0.121	0.203	0
Fluoride (mg/L)	806R	14	0.2092	0.03512	0.009386	0.214	0.129	0.253	0
Fluoride (mg/L)	RIVER (bg)	5	0.349	0.03026	0.01353	0.35	0.309	0.393	0

### Appendix B

Figure 1

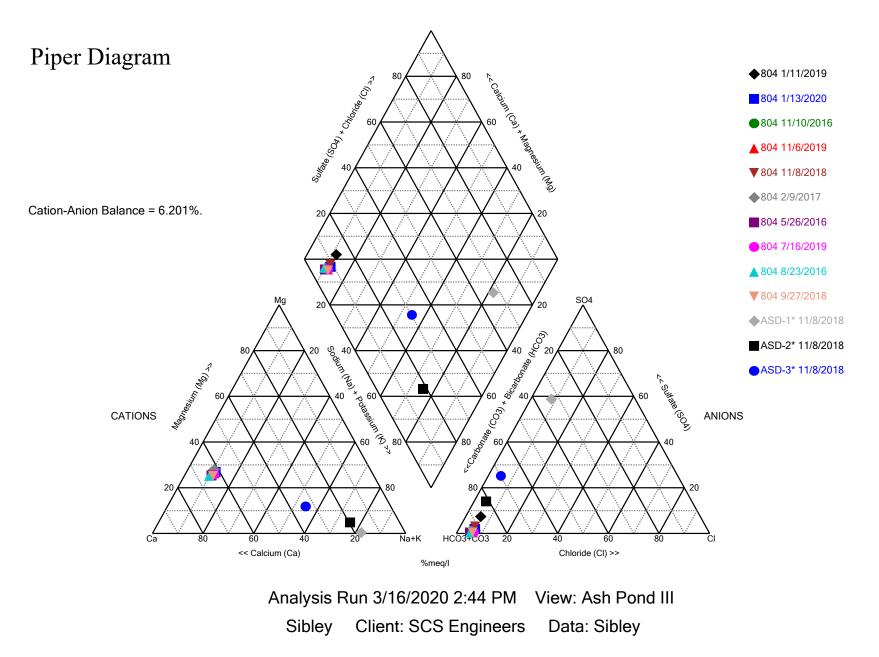


:\KCPL\Projects\Groundwater\DWG\Sibley\2019\GW\19 - NOV\_GW ASD Fig 1.dwg Mar 17, 2020 - 8:55am Layout Name: 1 By: 4



Appendix C

Piper Diagram Plots and Laboratory Results



### Piper Diagram

Analysis Run 3/16/2020 2:46 PM View: Ash Pond III

Sibley Client: SCS Engineers Data: Sibley

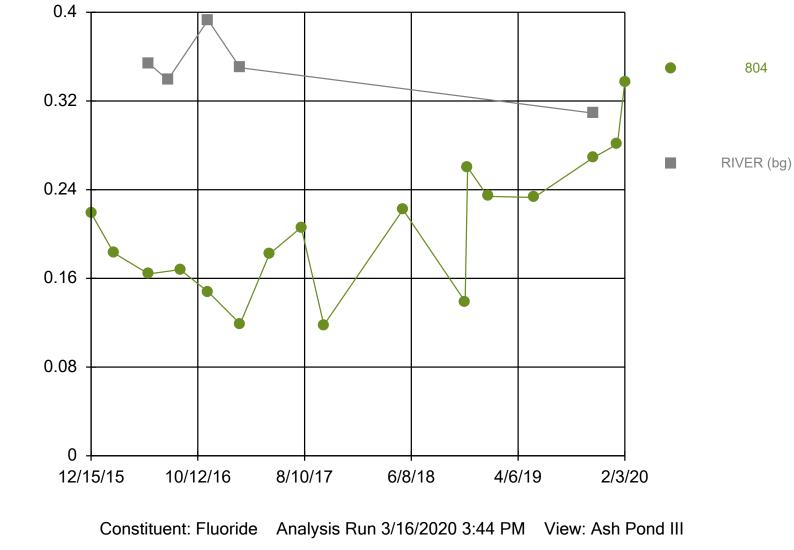
Totals (ppm)	Na	K	Ca	Mg	Cl	SO4	HCO3	CO3
804 5/26/2016	27.8	5.99	167	39.8	15.5	2.5	596	10
804 8/23/2016	24.9	4.62	157	37	14.4	2.5	551	10
804 11/10/2016	26.2	4.71	155	39	14.2	2.5	525	10
804 2/9/2017	23.4	4.62	132	36.1	15.2	2.5	504	10
804 9/27/2018	29.3	5.67	158	37.8	18.9	2.5	591	10
804 11/8/2018	30.1	5.76	158	39.8	18.3	14.1	561	10
804 1/11/2019	26.8	5.58	145	35.7	17.6	31.8	479	10
804 7/16/2019	28.6	6.68	158	39.3	18.6	2.5	545	10
804 11/6/2019	28.3	5.71	151	38.6	19.2	2.5	580	10
804 1/13/2020	28	6.02	145	37.9	20	9.37	571	10
ASD-1* 11/8/2018	178	38.6	37.1	0.5	29.3	303	10	104
ASD-2* 11/8/2018	497	82.4	124	17	43.8	211	10	795
ASD-3* 11/8/2018	365	42.2	208	43.8	41.5	336	10	592

Appendix D

**Time Series Plots** 

mg/L





Sibley Client: SCS Engineers Data: Sibley

C.2 Groundwater Monitoring Alternative Source Demonstration Report May 2020 Groundwater Monitoring Event, Fly Ash Impoundment, Sibley Generating Station (December 2020)

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

# FLY ASH IMPOUNDMENT 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 Fly Ash Impoundment 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 Fly Ash Impoundment 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	IFICAT	'IONS	i
1	Regu	latory Framework	1
2	Statis	stical Results	1
3	Alter	native Source Demonstration	2
	3.1	Box and Whiskers Plots	2
	3.2	Piper Diagram Plots	2
	3.3	Time Series Plots	3
4	Conc	lusion	3
5	Gene	ral Comments	3

## Appendices

Appendix A	Box and Whiskers Plots
Appendix B	Figure 1
Appendix C	Piper Diagram Plots and Analytical Results
Appendix D	Time Series 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 Fly Ash Impoundment 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.

Constituent/Monitoring Well\*UPLObservation<br/>May 18, 20201st Verification<br/>July 14, 20202nd Verification<br/>August 26, 2020ChlorideMW-80419.520.420.920.8

The completed statistical evaluation identified one Appendix III constituent above the prediction limit established for monitoring well MW-804.

\*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 chloride in monitoring well MW-804.

# 3 ALTERNATIVE SOURCE DEMONSTRATION

An Alternative Source Demonstration 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 Fly Ash Impoundment 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 Fly Ash Impoundment. 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, 25<sup>th</sup> and 75<sup>th</sup> 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 chloride in monitoring well MW-804 was compared to the concentration of chloride in the other impoundment wells. The box and whiskers plots for chloride from upgradient wells is significantly greater than the concentration in MW-804. The higher concentration of chloride in the upgradient wells demonstrates that a source other than the Fly Ash Impoundment caused the SSI over background levels for chloride, or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Box and whisker plots for chloride are provided in **Appendix A**.

## 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 was prepared to compare plots for MW-804 to plots for three ash pore water samples (ASD-1, ASD-2, and ASD-3) collected in the Fly Ash Impoundment with a Geoprobe<sup>®</sup> screen-point 15

groundwater sampler. Sample locations are shown on **Figure 1** in **Appendix B**. Samples were collected on November 8, 2018 for the ash pore water and well MW-804. The analytical results are provided in **Appendix C** along with the piper diagram. The piper diagram plots indicate the groundwater from the wells does not exhibit the same geochemical characteristics as the ash pore water. The groundwater and the ash pore water plot in different areas indicating there are two types of water (groundwater and ash pore water) and that the waters are not mixing. This helps demonstrate that a source other than the Fly Ash Impoundment could easily have caused the SSIs over background levels for chloride or that the SSIs 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 chloride in monitoring well MW-804 was compared to the time series plot for upgradient and downgradient wells. The chloride concentration in well MW-804 was similar to that of the other downgradient wells and lower than the upgradient wells. These time series plots demonstrate that a source other than the Fly Ash Impoundment caused the SSI over the background level for chloride 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**.

# 4 CONCLUSION

Our opinion is that a sufficient body of evidence is available and presented above to demonstrate that a source other than the Fly Ash Impoundment caused the SSI over background levels, 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 Fly Ash Impoundment may continue with the detection monitoring program under § 257.94.

# 5 GENERAL COMMENTS

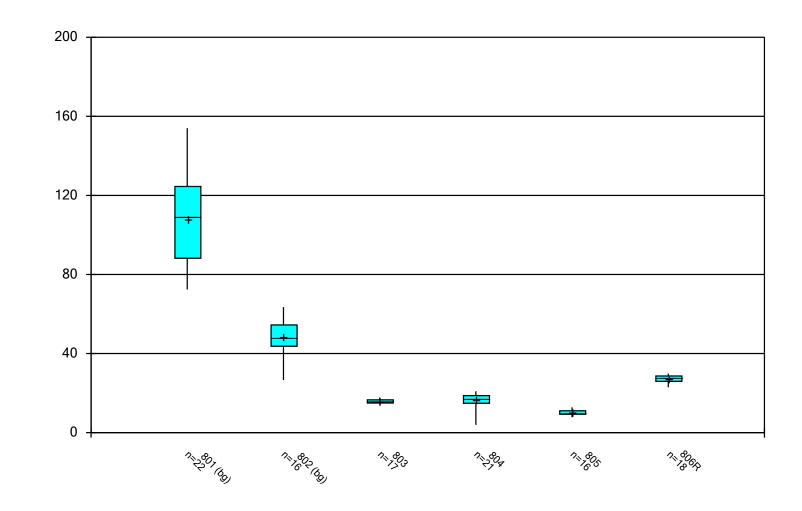
This report has been prepared and reviewed under the direction of a qualified groundwater scientist and qualified professional engineer. Please note that SCS Engineers does not warrant the work of regulatory agencies or other third parties supplying information used in the assimilation of this report. 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 Metro, Inc. and 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 represent 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 opinion 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

**Box and Whiskers Plots** 



Box & Whiskers Plot

Constituent: Chloride Analysis Run 10/6/2020 1:13 PM View: Ash Pond III Sibley Client: SCS Engineers Data: Sibley

mg/L

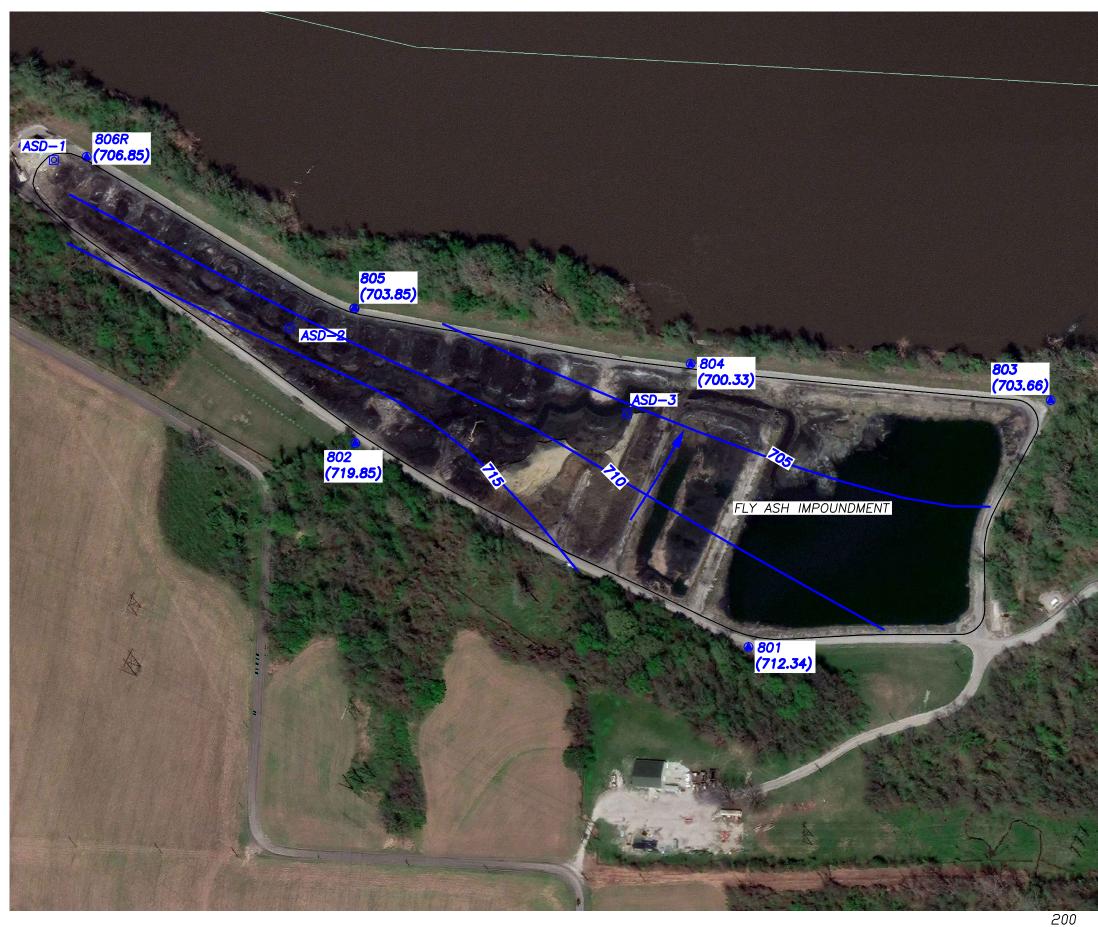
## Box & Whiskers Plot

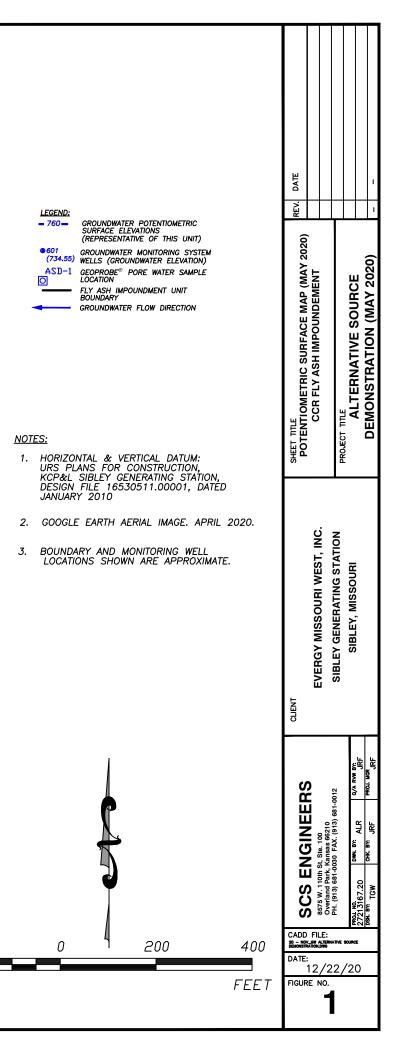
Sibley Client: SCS Engineers Data: Sibley Printed 10/6/2020, 1:14 PM

Constituent	Well	N	<u>Mean</u>	Std. Dev.	Std. Err.	Median	<u>Min.</u>	<u>Max.</u>	<u>%NDs</u>
Chloride (mg/L)	801 (bg)	22	107.7	23.35	4.978	109	72.4	154	0
Chloride (mg/L)	802 (bg)	16	48.21	9.839	2.46	48	26.6	63.5	0
Chloride (mg/L)	803	17	15.93	0.9873	0.2394	15.9	14.4	17.7	0
Chloride (mg/L)	804	21	16.56	3.602	0.7859	17.5	3.9	20.9	0
Chloride (mg/L)	805	16	10.14	1.293	0.3233	9.87	7.79	12.8	0
Chloride (mg/L)	806R	18	27.19	2.05	0.4832	27.9	22.9	29.9	0

## Appendix B

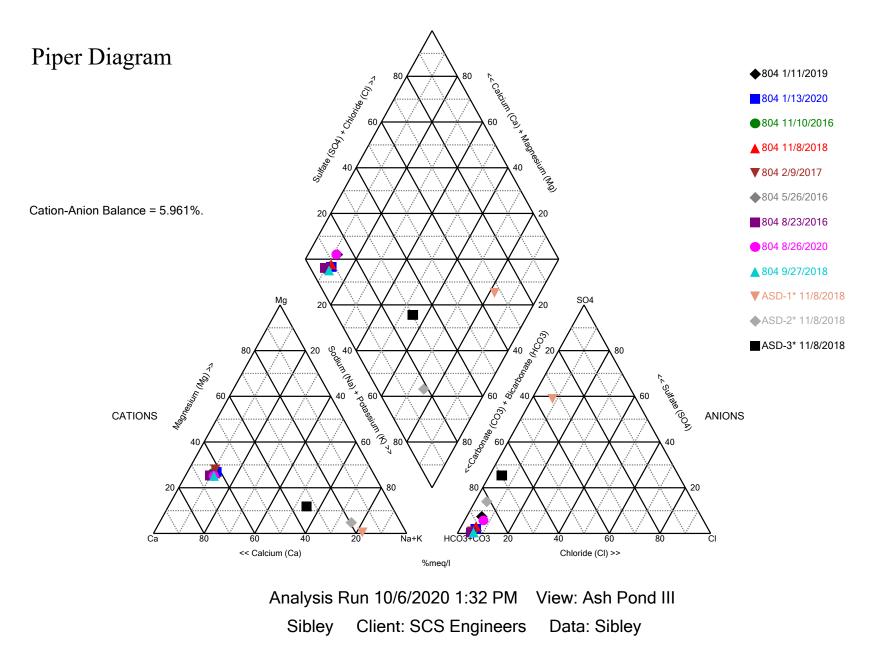
Figure 1





Appendix C

Piper Diagram Plots and Laboratory Results



## **Piper Diagram**

Analysis Run 10/6/2020 1:33 PM View: Ash Pond III

Sibley Client: SCS Engineers Data: Sibley

Totals (ppm)	Na	K	Ca	Mg	Cl	SO4	HCO3	CO3
804 5/26/2016	27.8	5.99	167	39.8	15.5	2.5	596	10
804 8/23/2016	24.9	4.62	157	37	14.4	2.5	551	10
804 11/10/2016	26.2	4.71	155	39	14.2	2.5	525	10
804 2/9/2017	23.4	4.62	132	36.1	15.2	2.5	504	10
804 9/27/2018	29.3	5.67	158	37.8	18.9	2.5	591	10
804 11/8/2018	30.1	5.76	158	39.8	18.3	14.1	561	10
804 1/11/2019	26.8	5.58	145	35.7	17.6	31.8	479	10
804 1/13/2020	28	6.02	145	37.9	20	9.37	571	10
804 8/26/2020	26.9	5.41	148	35.1	20.8	27.1	491	10
ASD-1* 11/8/2018	178	38.6	37.1	0.5	29.3	303	10	104
ASD-2* 11/8/2018	497	82.4	124	17	43.8	211	10	795
ASD-3* 11/8/2018	365	42.2	208	43.8	41.5	336	10	592

Appendix D

**Time Series Plots** 

200 801 (bg) 160 802 (bg) 803 120 804 80 806R 40 0 12/15/15 11/22/16 10/31/17 10/9/18 9/17/19 8/26/20

# Constituent: Chloride Analysis Run 10/6/2020 1:14 PM View: Ash Pond III Sibley Client: SCS Engineers Data: Sibley

**Time Series** 

mg/L

# Addendum 1

# 2020 Groundwater Monitoring and Corrective Action Report Addendum 1

# SCS ENGINEERS

December 20, 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. Fly Ash Impoundment Sibley Generating Station – Sibley, Missouri

The Fly Ash Impoundment 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 Fly Ash Impoundment 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:

- 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 20, 2022

## ATTACHMENT 1

Laboratory Analytical Reports

Jared Morrison December 20, 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

*	
<sup>1</sup> Cp	
<sup>2</sup> Tc	
<sup>³</sup> Ss	
<sup>4</sup> Cn	
⁵Sr	
<sup>6</sup> Qc	
<sup>7</sup> Gl	

Â

Sc

Cp: Cover Page	1
Tc: Table of Contents	2
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	13
Al: Accreditations & Locations	14
Sc: Sample Chain of Custody	15

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

<sup>3</sup> Ss
⁴Cn
⁵Sr
<sup>6</sup> Qc
<sup>7</sup> Gl
<sup>8</sup> 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	

<sup>3</sup> Ss
<sup>4</sup> Cn
<sup>5</sup> Sr
<sup>6</sup> Qc
<sup>7</sup> Gl
<sup>8</sup> Al
0
Sc

SDG: L1178996

#### SAMPLE RESULTS - 04 L1178996

¥

Ss

Cn

Qc

GI

Â

Sc

#### Wet Chemistry by Method 9056A

	, ,						Cn l
	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 Metho	00 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>	<sup>-</sup> Tc

<sup>3</sup> Ss
<sup>4</sup> Cn
<sup>5</sup> Sr
<sup>6</sup> Qc
<sup>7</sup> Gl
<sup>8</sup> Al
<sup>9</sup> 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
<sup>4</sup> Cn
⁵Sr
<sup>6</sup> Qc
<sup>7</sup> Gl
<sup>8</sup> 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		<sup>3</sup> 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 Rec. Limits

1

1

Dilution

1

1

%

80.0-120

80.0-120

80.0-120

Rec. Limits

80.0-120

80.0-120

%

MS Qualifier

MS Qualifier

Ε

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

**RPD** Limits

**RPD** Limits

%

15

15

%

15

15

15

Tc

<sup>4</sup>Cn <sup>5</sup>Sr

ΆI

Sc

<sup>°</sup>Qc

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

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

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

101000

MSD Result

ug/l

53300

5000

101000

MSD Result

ug/l

63300

5020

MS Rec.

%

94.4

93.1

87.6

MS Rec.

%

94.0

94.4

(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) L11/8996-07 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
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 <sup>1</sup>
Colorado	TN00003	New York
Connecticut	PH-0197	North Carolina
Florida	E87487	North Carolina
Georgia	NELAP	North Carolina
Georgia <sup>1</sup>	923	North Dakota
Idaho	TN00003	Ohio–VAP
Illinois	200008	Oklahoma
Indiana	C-TN-01	Oregon
lowa	364	Pennsylvania
Kansas	E-10277	Rhode Island
Kentucky <sup>16</sup>	90010	South Carolina
Kentucky <sup>2</sup>	16	South Dakota
Louisiana	AI30792	Tennessee <sup>1 4</sup>
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 <sup>1</sup>	n/a
New York	11742
North Carolina	Env375
North Carolina <sup>1</sup>	DW21704
North Carolina <sup>3</sup>	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 <sup>14</sup>	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		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>6</sup> 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 <sup>®</sup> 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):	<b>Rush?</b> ( Same D	Lab MUST Be	Day	Quote #			9056 12	056 12	56						Template: <b>T</b> Prelogin: <b>P</b>	750308
Immediately Packed on Ice N Y	Two Da	ay5 Da 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	-		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 Samples retur		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.	N.	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

₩	
<sup>1</sup> Cp	
<sup>2</sup> Tc	
<sup>3</sup> Ss	
<sup>4</sup> Cn	
⁵Sr	
<sup>6</sup> Qc	
<sup>7</sup> 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	Ť
Alkalinity,Carbonate	ND		20000	1	01/14/2020 18:49	WG1410718	
							<sup>3</sup> 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	<u>WG1410910</u>

### 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	
							<sup>3</sup> 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	OS) 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

<sup>°</sup>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	DS) 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

<sup>°</sup>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) R3490820-6 01/14/20 22:24 • (MSD) R3490820-7 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	0 04:39 • (MS) F	83490820-9 0	1/15/20 04:53 •	(MSD) R34908	320-10 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
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

(IVID) K3490902-1 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	(LCS) R3490962-2 01/15/20 10:48 • (LCSD) R3490962-3 01/15/20 10:50										
	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	(OS) L1178964-31 01/15/20 10:53 • (MS) R3490962-5 01/15/20 10:58 • (MSD) R3490962-6 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

<sup>°</sup>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 0
Georgia	NELAP	North C
Georgia <sup>1</sup>	923	North [
Idaho	TN00003	Ohio-\
Illinois	200008	Oklaho
Indiana	C-TN-01	Oregor
lowa	364	Pennsy
Kansas	E-10277	Rhode
Kentucky <sup>16</sup>	90010	South (
Kentucky <sup>2</sup>	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 <sup>1</sup>	n/a
New York	11742
North Carolina	Env375
North Carolina <sup>1</sup>	DW21704
North Carolina <sup>3</sup>	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 <sup>1 4</sup>	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		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>6</sup> 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						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		52						Pace/	Analytical® Interfor Testing & Innovation
eport to: ason Franks			jay.martin	franks@scsengi @kcpl.com;				03		Pres				12065 Lebanon Rd Mount Juliet, TN 371 Phone: 615-758-585	
roject Description: Evergy Sibley Gene	rating Statio	City/State Collected:	SEBLEN		Please Cin PT MT CT	cle:	sa	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		125mlHDPE-NoPres	250mlHDPE-HNO3	Chloride - 9056 125mlHDPE-NoPres	125mlHDPE-NoPres	SmiHDPE-NoPres			SDG # [1]	8993 F081
JASON R. FORM	Site/Facility ID	#		P.O. #			HIHDE	6010 250	25miHI	- 9056 12	HDPE-			Acctnum: AQL	
Collected by (signature):	Rush? (L	5 Day	Day (Rad Only)	Quote #	sults Needed	<u></u>	ALKCA 125	- eN	9056 1	SO4 - 9(	6 125m			Template: <b>T152</b> Prelogin: <b>P750</b> PM: 206 - Jeff C	0311
mmediately Packed on Ice N Y	Two Day Three Da		ay (Rad Only)	T		No. of		K, Mg,	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	and the second second										
		1.171 1.171 - 1.171 - 1.171 1.171 - 1.171 - 1.171		1		1		7 2 - A							
		-				1									
Matrix: SS - Soil AIR - Air F - Filter SW - Groundwater B - Bioassay NW - WasteWater	Remarks:	L			urgen and an and an					₽ pH Flow		Temp	Bottle	Sample Receipt Ch al Present/Intact pned/Accurate: s arrive intact: t bottles used:	XNP Y N Y N
DW - Drinking Water DT - Other	Samples retur UPS Fe		rier		Tracking #	1							VOA Zer	ient volume sent: If Applicab co Headspace:	YN
Relinquished by: (Signature)	1	Date:	120	700 (	Begeived b): (Signi	_				Trip Bla		ved: Yes No HCL/MeoH TBR	RAD Sci	vation Correct/Ch reen <0.5 mR/hr:	Zr _n
Religioushed by : (Signature)	3977	Date:		ime: 1860	Received by: (Signa 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 20, 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

*	
<sup>1</sup> Cp	
<sup>2</sup> Tc	
<sup>3</sup> Ss	
<sup>4</sup> 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

<sup>3</sup> Ss
<sup>4</sup> Cn
⁵Sr
<sup>6</sup> Qc
<sup>7</sup> Gl
<sup>8</sup> 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

<sup>3</sup> Ss <sup>4</sup> Cn <sup>5</sup> Sr <sup>6</sup> Qc <sup>7</sup> Gl <sup>8</sup> Al	
<sup>5</sup> Sr <sup>6</sup> Qc <sup>7</sup> Gl <sup>8</sup> Al	<sup>3</sup> Ss
<sup>5</sup> Sr <sup>6</sup> Qc <sup>7</sup> Gl <sup>8</sup> Al	
<sup>6</sup> Qc <sup>7</sup> Gl <sup>8</sup> Al	<sup>4</sup> Cn
<sup>6</sup> Qc <sup>7</sup> Gl <sup>8</sup> Al	
<sup>7</sup> Gl <sup>8</sup> Al	⁵Sr
<sup>7</sup> Gl <sup>8</sup> Al	
<sup>8</sup> Al	<sup>6</sup> Qc
<sup>8</sup> Al	
Al	<sup>7</sup> Gl
Al	
<sup>9</sup> Sc	<sup>8</sup> Al
°Sc	
	°Sc

ACCOUNT: SCS Engineers - KS PROJECT: 27213168.19

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

PAGE: 8 of 14

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	(OS) L1186330-01 02/06/20 09:24 • (DUP) R349/541-18 02/06/20 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/	CS) 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 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

	<sup>3</sup> Ss
1	

Τс

Cn

Sc

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

(OS) L1186188-03 02/06/2	(OS) L1186188-03 02/06/20 01:00 • (MS) R3497541-6 02/06/20 01:14 • (MSD) R3497541-7 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	OS) L1186193-01 02/06/20 02:26 • (MS) R3497541-8 02/06/20 02:41 • (MSD) R3497541-9 02/06/20 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	(OS) L1186202-01 02/06/20 03:24 • (MS) R3497541-10 02/06/20 03:38 • (MSD) R3497541-11 02/06/20 03:53												
	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 02/06/2	DS) 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	OS) L1186248-06 02/06/20 07:00 • (MS) R3497541-16 02/06/20 07:43 • (MSD) R3497541-17 02/06/20 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 <sup>1</sup> 923North DIdahoTN00003Ohio-VIllinois200008OklahoiIndianaC-TN-01OregonIowa364PennsyiKansasE-10277Rhode IKentucky <sup>16</sup> 90010South DLouisianaAl30792TennesLouisiana <sup>1</sup> LA180010Texas 5Maryland324UtahMinnesota047-999-395WashinMississippiTN00003Werk ViscontMissouri340Wiscont	Alabama	40660	Nebrask
Arkansas88-0469New JeCalifornia2932New MaColoradoTN00003New YoConnecticutPH-0197North CFloridaE87487North CGeorgiaNELAPNorth CGeorgia <sup>1</sup> 923North DIdahoTN00003Ohio-VIllinois20008OklahoiIndianaC-TN-01OregonIowa364PennsyKentucky <sup>16</sup> 90010South CLouisianaAl30792TennesLouisianaAl30792TennesMaineTN0002Texas 5Marland324UtahMinnesota047-999-395WashimMississippiTN0003West ViMissouri340Wiscont	Alaska	17-026	Nevada
California2932New MaColoradoTN00003New YoConnecticutPH-0197North CFloridaE87487North CGeorgiaNELAPNorth DIdahoTN00003Ohio-VIllinois200008OklahooIndianaC-TN-01OregonIowa364PennsyKansasE-10277Rhode IKentucky <sup>16</sup> 90010South DLouisianaAl30792TennesLouisianaAl30792Texas <sup>5</sup> MaineTN0002Texas <sup>5</sup> Maryland324UtahMinnesota047-999-395WashinMississippiTN0003West ViMissouri340Wiscont	Arizona	AZ0612	New Ha
ColoradoTN00003New YoConnecticutPH-0197North CFloridaE87487North CGeorgiaNELAPNorth DGeorgia 1923North DIdahoTN00003Ohio-VIllinois200008OklahoiIndianaC-TN-01OregonIowa364PennsyiKansasE-10277Rhode IKentucky 1690010South DLouisianaAl30792TennesLouisiana 1LA180010Texas 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 <sup>16</sup> 90010South CKentucky 216South CLouisianaAl30792TennesLouisiana 1LA180010TexasMaineTN0002TexasMaryland324UtahMinnesota047-999-395WashinMississippiTN0003West ViMissouri340Wiscont	Georgia	NELAP	North Ca
Illinois20008OklahoiIndianaC-TN-01OregonIowa364PennsyiKansasE-10277Rhode IKentucky <sup>16</sup> 90010South CKentucky 216South CLouisianaAl30792TennesLouisiana 1LA180010TexasMaineTN0002Texas 5Maryland324UtahMichigan9958VirginiaMinnesota047-999-395WashinMississippiTN0003West ViMissouri340Wiscont	Georgia <sup>1</sup>	923	North D
IndianaC-TN-01OregonIowa364PennsyKansasE-10277Rhode IKentucky <sup>16</sup> 90010South CKentucky <sup>2</sup> 16South CLouisianaAl30792TennesLouisiana <sup>1</sup> LA180010TexasMaineTN0002Texas <sup>5</sup> Maryland324UtahMichigan9958VirginiaMinnesota047-999-395WashinMississippiTN0003West ViMissouri340Wiscont	Idaho	TN00003	Ohio–V
Iowa364PennsyKansasE-10277Rhode IKentucky <sup>16</sup> 90010South CKentucky <sup>2</sup> 16South CLouisianaAl30792TennesLouisiana <sup>1</sup> LA180010TexasMaineTN0002Texas <sup>5</sup> Maryland324UtahMinesota047-999-395WashimMississippiTN0003West ViMissouri340Wiscont	Illinois	200008	Oklahor
KansasE-10277Rhode IKansasE-10277Rhode IKentucky <sup>16</sup> 90010South DLouisianaAl30792TennesLouisiana <sup>1</sup> 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 <sup>16</sup>	90010	South C
Louisiana 1LA180010TexasMaineTN0002Texas 5Maryland324UtahMassachusettsM-TN003VermonMichigan9958VirginiaMinnesota047-999-395WashimMississippiTN0003West VirMissouri340Wiscons	Kentucky <sup>2</sup>	16	South D
MaineTN0002Texas 5Maryland324UtahMassachusettsM-TN003VermonMichigan9958VirginiaMinnesota047-999-395WashinMississippiTN0003West VirMissouri340Wiscons	Louisiana	AI30792	Tenness
Maryland324MassachusettsM-TN003WermonMichigan9958Minnesota047-999-395MississippiTN0003Missouri340	Louisiana <sup>1</sup>	LA180010	Texas
MassachusettsM-TN003VermonMichigan9958VirginiaMinnesota047-999-395WashimMississippiTN0003West VirginiaMissouri340Wiscons	Maine	TN0002	Texas <sup>5</sup>
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 <sup>1</sup>	n/a
New York	11742
North Carolina	Env375
North Carolina <sup>1</sup>	DW21704
North Carolina <sup>3</sup>	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		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>6</sup> 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
		8575 W	ccounts Payable 575 W. 110th Street Iverland Park, KS 66210											Pace Analytical* Netronal Center for Fluiding & Increase			
eport to: ason Franks				jay.martir	franks@scsengine @kcpl.com;											12065 Lebanon Rd Mount Juliet, TN 371 Phone: 615-758-585	
Description: Evergy - Sibley Generating Stati Collected:		Saley MO Please Circle PT MT CT I				Pres	res							Phone: 800-767-585 Fax: 615-758-5859			
hone: 913-681-0030 ax: 913-681-0012	Clien	t Project 13168.1	#		Lab Project # AQUAOPKS-	SIBLEY		125mHDPE-NoPres	125mIHDPE-NoPres							SDG # CI	186188
Offected by (print): DASON R. MANKS	Site/I	Facility ID	)#	P.O. #				25mlH	SmIHD							Acctnum: AQU	
Immediately Packed on Ice N Y		Rush? (L _ Same Da _ Next Day _ Two Day Three Da	y5 Day y5 Day		Quote #	ults Needed	No.	- 9056	9056							Template: T129 Prelogin: P753 PM: 206 - Jeff C PB:	041
Sample ID	Com	np/Grab	Matrix *	Depth	Date	Time	Cntrs	Fluoride	Sulfate -							Shipped Via: Remarks	Sample # (lab only)
MW-512	60	AG	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
	1		and the second second				17										
* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater	Rema	arks:		•	1 					pi Fic	H	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	000000000000000000000000000000000000000	<u>Mrei</u>	racking #								VOA 2	lero H	volume sent: <u>If Applicab</u> eadspace: on Correct/Che	
Relipquished by : (Signature)	1		Date:	/	1238 6	eeeived by: (Signa		<u>r</u>		Itip B	ank Rece	Ţ	ICL / MeoH BR	RAD S	Screen	<0.5 mR/hr:	4 _
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)		140	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: L1220408 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: L1220408 DATE/TIME: 05/28/20 15:23 PAGE: 1 of 17

### TABLE OF CONTENTS

*	
<sup>1</sup> Cp	
<sup>2</sup> Tc	
<sup>3</sup> Ss	
<sup>4</sup> Cn	
<sup>5</sup> Sr	
<sup>6</sup> Qc	

GI

A

Sc

Cp: Cover Page	1		
Tc: Table of Contents	2		
Ss: Sample Summary	3		
Cn: Case Narrative	4		
Sr: Sample Results	5		
MW-801 L1220408-01	5		
MW-802 L1220408-02	6		
MW-803 L1220408-03	7		
MW-804 L1220408-04	8		
MW-805 L1220408-05	9		
MW-806R L1220408-06	10		
Qc: Quality Control Summary	11		
Gravimetric Analysis by Method 2540 C-2011	11		
Wet Chemistry by Method 9056A			
Metals (ICP) by Method 6010B	14		
GI: Glossary of Terms	15		
Al: Accreditations & Locations	16		
Sc: Sample Chain of Custody	17		

SDG: L1220408 DATE/TIME: 05/28/20 15:23 PAGE: 2 of 17

### SAMPLE SUMMARY

ONE LAB. NATIONWIDE.

\*

Ср

Tc

Ss

Cn

Sr

Qc

GI

ΆI

Sc

data         data         data         data           Gissimmentic Analysis by Method 90664         1         05/22/0         05/22/0         05/22/0         1         M. Juliet, M. Maluki, CPI by Method 90664         M. Juliet, M. Maluki, CPI by Method 90664         N. M. Juliet, M. Maluki, CPI by Method 90664         Recht         Dillation         Recht	MW-801 L1220408-01 GW			Collected by G. Penaflor	Collected date/time 05/18/20 13:15	Received da 05/20/20 08	
Meil Chemistry by Meihod 9066A         W6I480672         1         052220 0.298         65220 0.298         E.N         M. Lubel, M. Lubel, M. Lubel, M. Lubel, M. Lubel, M. Lubel, M. Lubel, M. Lubel, Scaleborg P. Scaleborg P. S	Method	Batch	Dilution	•	•	Analyst	Location
Means (CP) by Method 60108         WG1480572         1         05/26/20 09:47         05/27/20 12:55         EL         M. Lullet,           MW-B02 L1220408-02 GW         Collected by E. Penaltor         Collected by 05/18/20 12:10         Collected databiline 05/18/20 12:10         Received da	Gravimetric Analysis by Method 2540 C-2011	WG1480146	1	05/22/20 18:18	05/23/20 03:10	TH	Mt. Juliet, TN
Collected by C. Pendify         Collected date/time (518/2012-0)         Reserved date/time (528/2010)         Reserved date/time (528/2010)         Reserved date/time (528/2010)         Reserved date/time (528/2010)         Reserved date/time (528/2010)         Reserved date/time (528/2010)         Analysis (528/2010)         Analysis (528/2010)         Analysis (528/2010)         Analysis (528/2010)         Collected (528/2010)         Analysis (528/2010)         Collected (528/2010)         Collected (588/2010)         Collected (588/2010)         Collected (588/2010)<	Wet Chemistry by Method 9056A	WG1480031	1	05/22/20 02:09	05/22/20 02:09	ELN	Mt. Juliet, TN
NW-802 L1220408-02 GW         6. Pendlar         05/18/20 12:10         05/22/20 08:45           detbod         Batch         Dilution         Proparation date/time         Analyst date/time         Location date/time           Gravinetic Analysis by Method 5540 C-2011         WG1800/6         1         05/22/20 02/26         05/22/20 02/26         EL         ML         Lulet, 1           WG1800/6         1         05/22/20 02/26         05/22/20 02/26         EL         ML         Lulet, 1           WG1800/72         1         05/22/20 02/26         05/22/20 02/26         EL         ML         Lulet, 1           WW-803 L1220408-03 GW         Collected by Gravinetic Analysis by Method 2540 C-2011         WG1800/14         05/22/20 02/40         Analyst Aralyst         Location date/time         Collected by Gravinetic Analysis by Method 2540 C-2011         WG1800/31         05/22/20 02/40         G5/22/20 03/10         TH         ML Julet, 1           Gravinetic Analysis by Method 505A         WG1800/31         05/22/20 02/40         G5/22/20 03/10         TH         ML Julet, 1           WC+Chemistry by Method 505A         WG1800/31         05/22/20 02/40         G5/22/20 03/10         TH         ML Julet, 1           WC+Chemistry by Method 505A         WG1800/31         05/22/20 03/10         G5/22/20 03/10         TH	Metals (ICP) by Method 6010B	WG1480572	1	05/26/20 09:47	05/27/20 12:55	EL	Mt. Juliet, TN
Method         Batch         Dilution         Preparation date/time         Analysis         Colcated         Of 5/2/2/20 02:26         EL         Mt. Juliet.           We Chemistry by Method 5056A         WG1880572         1         05/2/2/20 18:78         05/2/2/20 03:00         TH         Mt. Juliet.	MW-802   1220408-02 GW			-			
Gravimetric Analysis by Method 2540 C-2011         WG1480M6         1         05/23/20         05/23/20         02/23/20		Batch	Dilution			Analyst	Location
Weithed 9055A Weining (CP) by Method 9056A Weining (CP) by Method 9056A         WG1480031 WG14800372         1         05/22/20 02.26 05/26/20 09.47         05/22/20 02.26 05/27/20 12:58         ELN         ML Juliet, ML Juliet, ML Juliet, ML Juliet, ML Juliet, ML Juliet, Collected by Collected by datatime         Collected datatime datatime         Received datatime datatime           MW-803 L1220408-03 GW         Batch         Dilution         Preparation datatime         Analysis         Analysis         Analysis         Analysis           Method 9056A         WG1480031         1         05/22/20 02:43         65/22/20 02:43         ELN         ML Juliet, ML Juliet, ML Juliet, ML Juliet, ME Chemistry by Method 9056A         Analysis         Analysis         ELN         ML Juliet, ML Juliet, ML Juliet, ML Juliet, ML Juliet, ME Chemistry by Method 9056A         EL         ML Juliet, ML Juliet, ML Juliet, ML Juliet, ML Juliet, ML Juliet, ML Juliet, ME Chemistry by Method 9056A         EL         ML Juliet, ML Juliet, ML Juliet, ML Juliet, ML Juliet, ML Juliet, ML Juliet, ME Chemistry by Method 5006A         Analysis         Analysis         Analysis           MW-804 L1220408-04 GW         Batch         Dilution         Preparation datatime         Analysis Analysis         Analysis         Analysis           MW-805 L1220408-05 GW         WG14800572         0         05/22/20 0307         EL         ML Juliet, ML Juliet, ML Juliet, ML Luliet, ML Luliet, ME Chemistry by Method 9056A         Analysis	Gravimatric Analycis by Mathad 2540 C 2011	WC1480146	1			тц	Mt Juliot TN
Metals (ICP) by Method 60108         WG480572         1         05/26/20 09:47         05/27/20 12:58         E.L         M.t. Juliet,           MW-803 L1220408-03 GW         Collected by G. Penaflor         Collected date/time 05/78/20 15:05         Collected date/time 05/78/20 05:05         Received data/time 05/78/20 05:05         Received data/time 05/78/20 02:43         Analysis Analysis         Analysis Analysis         Analysis Analysis         Analysis Analysis         EL         Mt. Juliet,           Wic Chemistry by Method 9056A         WG480031         1         05/22/20 02:43         EI.N         Mt. Juliet,           Wic Chemistry by Method 9056A         WG480031         5         05/22/20 09:48         EI.N         Mt. Juliet,           MW-804 L1220408-04 GW         WG480031         5         05/22/20 09:48         EI.N         Mt. Juliet,           MW-804 L1220408-04 GW         WG480031         1         05/22/20 09:48         EI.N         Mt. Juliet,           MWW-804 L1220408-04 GW         WG480046         1         05/22/20 03:10         TH         Mt. Juliet,           MWW-804 L1220408-04 GW         WG480046         1         05/22/20 03:10         TH         Mt. Juliet,           MWW-805 L1220408-05 GW         WG480041         05/22/20 08:47         05/22/20 08:47         05/22/20 08:47         05/22/20 08							
MW-803 L1220408-03 GW         G. Penalfor         95/8/2015/05         95/20/20 08:45           Method         Batch         Dilution         Preparation date/time         Analysis determine         TH         Mit. Juliet, Mit. Juliet, Gilected dater/time         TH         Mit. Juliet, Mit. Juliet, Gilected dater/time         ELN         Mit. Juliet, Gilected dater/time         Received dater/time dater/time         Gilected date							Mt. Juliet, TM
Withod         Batch         Dilution         Preparation date/time         Analysis         Analysis         Location date/time           Griventetic Analysis by Method 2540 C-2011         WG14800146         1         05/22/20 18:18         05/22/20 02:43         ELN         Mt. Juliet, Mt. Juliet, WG1480031         1         05/22/20 02:43         05/22/20 02:43         ELN         Mt. Juliet, Mt. Juliet, Mt. Juliet, Mt. Juliet, WG14800572         1         05/22/20 02:43         05/22/20 03:46         ELN         Mt. Juliet, Mt. Social         Collected Juliet O5/18/20 16:35         Received date/time 05/20/20 08:45           MW-SO4         L1220408-04         GW         Batch         Dilution         Preparation date/time         Analysis         Location date/time           Golected by Golected date/time         Golected date/time date/time         Golected date/time date/time         Analysis         Location date/time           Griderbard         Batch         Dilution         Preparation date/time         Analysis         Location date/time           Griderbard         Batch         Dilution         Preparation date/time         Analysis         Location date/time           Griderbard         Batch         Dilution         Preparation date/time         Analysis         Location da				Collected by	Collected date/time	Received da	te/time
date/time         date/time           Gravimetric Analysis by Method 2540 C-2011         WGH80031         1         05/22/20         02:43         05/22/20         22:43         ELN         ML Juliet, 1           Wet Chemistry by Method 9056A         WGH80031         1         05/22/20         02:43         05/22/20         02:43         05/22/20         02:43         05/22/20         02:43         ELN         ML Juliet, 1           Wet Chemistry by Method 9056A         WGH80037         1         05/26/20         09:47         05/27/20         03:48         ELN         ML Juliet, 1           MW-804         L1220408-04         GW         Collected by         Collected date/time         Received date/time         05/20/20         08:45         Location           MW-804         L1220408-04         GW         WGH80131         05/22/20         08:45         Location         date/time         date/time         date/time         ML Juliet, 1	MW-803 L1220408-03 GW			G. Penaflor	05/18/20 15:05	05/20/20 08	3:45
Weit Chemistry by Method 9056A         WG1480031         1         05/22/20         02:43         ELN         Mt. Juliet,           Weit Chemistry by Method 9056A         WG1480031         5         05/22/20         09:48         ELN         Mt. Juliet,           Metals (ICP) by Method 6010B         WG1480572         1         05/22/20         09:48         ELN         Mt. Juliet,           MW-804         L1220408-04         GW         Collected by         Collected date/time         05/27/20         08:45         05/20/20 <t< td=""><td>Method</td><td>Batch</td><td>Dilution</td><td>•</td><td>-</td><td>Analyst</td><td>Location</td></t<>	Method	Batch	Dilution	•	-	Analyst	Location
Wet Chemistry by Method 9056A Metals (ICP) by Method 6010B         WG1480031 WG1480572         5 1         05/22/20 09:48 05/26/20 09:47         ELN         Mt. Juliet, Mt. Julie	Gravimetric Analysis by Method 2540 C-2011	WG1480146	1	05/22/20 18:18	05/23/20 03:10	TH	Mt. Juliet, TN
Metals (ICP) by Method 6010B         WG1480572         1         05/26/20 09:47         05/27/20 13:06         EL         Mt: Juliet, i           MW-804         L1220408-04 GW         Collected by G. Penaflor         Collected date/time o5/18/20 16:35         Received date/time o5/20/20 08:45           Method         Batch         Dilution         Preparation date/time         Analysis o5/22/20 03:00         TH         Mt: Juliet, i           Gravimetric Analysis by Method 2540 C-2011         WG148016         1         05/22/20 03:00         EL         Mt: Juliet, i           Wethod         05/82/20 03:00         FL         Mt: Juliet, i         Mt: Juliet, i         Mt: Juliet, i           MW-805         L1220408-05 GW         WG1480572         1         05/22/20 03:00         EL         Mt: Juliet, i           MW-805         L1220408-05 GW         Collected by G. Penaflor         Collected date/time date/time date/time         Received date/time date/time date/time         Received date/time date/time         Nt: Juliet, i           MW-806         L1220408-05 GW         WG148031         05/22/20 13:10         TH         Mt: Juliet, i           MW-806         L1220408-06 GW         WG1480572         1         05/22/20 03:17         EL         Mt: Juliet, i           MW-806R         L1220408-06 GW         WG1	Wet Chemistry by Method 9056A	WG1480031	1	05/22/20 02:43	05/22/20 02:43	ELN	Mt. Juliet, TN
MW-804 L1220408-04 GW       Collected by G. Penaflor       Collected date/time 05/18/20 16:35       Received date/time 05/20/20 08:45         Wethod       Batch       Dilution       Preparation date/time       Analysis Analysis       Analysis Analysis       Analysis Location date/time         Gravimetric Analysis by Method 2540 C-2011       WG1480146       1       05/22/20 03:00       TH       Mt. Juliet, i         Wet Chemistry by Method 505A       WG1480031       1       05/22/20 03:00       ELN       Mt. Juliet, i         MW-805 L1220408-05 GW       Collected by G. Penaflor       Collected date/time date/time       Received date/time 05/20/20 08:45         Method       Batch       Dilution       Preparation date/time       Analysis Analysis       Analysis Analysis       Location date/time         Gravimetric Analysis by Method 2540 C-2011       WG1480031       1       05/22/20 03:01       TH       Mt. Juliet, i         Wethod       Batch       Dilution       Preparation date/time       Analysis       Analysis       Location date/time         Gravimetric Analysis by Method 2540 C-2011       WG14800572       1       05/22/20 03:17       TH       Mt. Juliet, i         Wethod       05/80       Collected by G. Penaflor       Collected date/time date/time       Analysis       Analysis       Analysis <t< td=""><td>Wet Chemistry by Method 9056A</td><td>WG1480031</td><td>5</td><td>05/22/20 09:48</td><td>05/22/20 09:48</td><td>ELN</td><td>Mt. Juliet, TN</td></t<>	Wet Chemistry by Method 9056A	WG1480031	5	05/22/20 09:48	05/22/20 09:48	ELN	Mt. Juliet, TN
MW-804 L1220408-04 GW         G. Penaflor         05/18/20 16:35         05/20/20 08:45           Wethod         Batch         Dilution         Preparation date/time         Analysis         Analysis         Analysis           Gravimetric Analysis by Method 2540 C-2011         WG1480146         1         05/22/20 03:00         TH         Mt. Juliet, '           Wet Chemistry by Method 9056A         WG14800572         1         05/26/20 09:47         05/27/20 13:08         EL         Mt. Juliet, '           MW-805 L1220408-05 GW         Collected by G. Penaflor         Collected date/time date/time         Received date/time date/time         Analysis         Analysis         Analysis         Location date/time           Gravimetric Analysis by Method 2540 C-2011         WG1480146         1         05/22/20 03:17         05/20/20 08:45         Collected by Collected by G. Penaflor         Collected by date/time         Collected by date/time         Collected by date/time         Collected by date/time         Collected by date/time         Location date/time           Gravimetric Analysis by Method 2540 C-2011         WG1480031         1         05/22/20 03:17         TH         Mt. Juliet, '           Wet Chemistry by Method 60108         WG1480057         1         05/22/20 03:17         05/22/20 03:17         EL         Mt. Juliet, '           MW-80	Metals (ICP) by Method 6010B	WG1480572	1	05/26/20 09:47	05/27/20 13:06	EL	Mt. Juliet, TN
date/time         date/time           Gravimetric Analysis by Method 2540 C-2011         WG1480146         1         05/22/20 03:00         TH         Mt. Juliet, '           Wet Chemistry by Method 9056A         WG1480031         1         05/22/20 03:00         ELN         Mt. Juliet, '           Metals (ICP) by Method 6010B         WG1480572         1         05/22/20 03:00         ELN         Mt. Juliet, '           MW-805 L1220408-05 GW         Collected by         Collected date/time         Received date/time         05/20/20 08:45           Method         Batch         Dilution         Preparation         Analysis         Analysis         Analysis         Analysis         Location           Gravimetric Analysis by Method 2540 C-2011         WG1480572         1         05/22/20 03:10         TH         Mt. Juliet, '           Wet Chemistry by Method 9056A         WG1480031         1         05/22/20 03:17         ELN         Mt. Juliet, '           Wet Athore Chemistry by Method 6010B         WG1480572         1         05/22/20 03:17         ELN         Mt. Juliet, '           MW-806R L1220408-06 GW         WG1480572         1         05/22/20 03:17         ELN         Mt. Juliet, '           MW-806R L1220408-06 GW         Batch         Dilution         Preparation date/time<	MW-804 L1220408-04 GW			-			
Wet Chemistry by Method 9056A Metals (ICP) by Method 6010B         WG1480031 WG1480572         1         05/22/20 03:00 05/27/20 13:08         ELN         Mt. Juliet, i           MW-805 L1220408-05 GW         Collected by G. Penaffor         Collected date/time 05/8/20 17:40         Received date/time 05/20/20 08:45           Method         Batch         Dilution         Preparation date/time         Analysis         Analysi         Location date/time           Gravimetric Analysis by Method 2540 C-2011         WG1480146         1         05/22/20 03:10         TH         Mt. Juliet, i           MW-806R L1220408-06 GW         WG1480572         1         05/22/20 09:47         05/27/20 13:11         EL         Mt. Juliet, i           MW-806R L1220408-06 GW         WG1480146         1         05/22/20 03:17         05/27/20 03:17         ELN         Mt. Juliet, i           MW-806R L1220408-06 GW         Batch         Dilution         Preparation date/time         Analysis         Analysi         Location 05/20/20 08:45           Method         Batch         Dilution         Preparation date/time         Analysis         Analysi         Location 05/20/20 08:45           Method         Batch         Dilution         Preparation date/time         Analysis         Analysi         Location 05/20/20 08:45           Method	Method	Batch	Dilution	•	•	Analyst	Location
Metals (ICP) by Method 6010B       WG1480572       1       05/26/20 09:47       05/27/20 13:08       EL       Mt. Juliet, 1         MW-805 L1220408-05 GW       Collected by G. Penaflor       Collected date/time 05/8/20 17:40       Received date/time 05/20/20 08:45         Method       Batch       Dilution date/time       Analysis       Analysis       Analysis       Location date/time         Gravimetric Analysis by Method 2540 C-2011       WG1480146       1       05/22/20 03:17       05/22/20 03:10       TH       Mt. Juliet, 1         Wet Chemistry by Method 9056A       WG1480031       1       05/22/20 03:17       05/22/20 03:17       EL       Mt. Juliet, 1         MW-806R L1220408-06 GW       WG1480572       1       05/22/20 03:17       EL       Mt. Juliet, 1         Method       Batch       Dilution       Preparation date/time       O5/28/20 03:17       EL       Mt. Juliet, 1         MW-806R L1220408-06 GW       WG1480572       1       05/26/20 09:47       05/28/20 18:00       05/28/20 08:45         Method       Batch       Dilution       Preparation date/time       Analysis       Analysis       Location date/time         Gravimetric Analysis by Method 2540 C-2011       WG1480146       1       05/22/20 18:18       05/23/20 03:10       TH       Mt. Juliet, 1	Gravimetric Analysis by Method 2540 C-2011	WG1480146	1			TH	Mt. Juliet, TN
MW-805 L1220408-05 GW       Collected by G. Penaflor       Collected date/time 05/18/20 17:40       Received date/time 05/20/20 08:45         Method       Batch       Dilution       Preparation date/time       Analysis       Analysis       Analysis       Location         Gravimetric Analysis by Method 2540 C-2011       WG1480146       1       05/22/20 03:10       TH       Mt. Juliet, 1         Wet Chemistry by Method 9056A       WG1480572       1       05/22/20 03:17       05/22/20 03:17       ELN       Mt. Juliet, 1         MW-806R L1220408-06 GW       Collected by Gravimetric Analysis by Method 2540 C-2011       Collected by G. Penaflor       Collected date/time 05/20/20 08:45       Analysis       Analysis       Analysis         Method       Batch       Dilution       Preparation date/time       Analysis       Analysis       Analysis         MW-806R L1220408-06 GW       WG1480572       1       05/22/20 03:47       05/20/20 08:45       Collected date/time       05/20/20 08:45         Method       Batch       Dilution       Preparation date/time       Analysis       Analysis       Analysis       Analysis       Location date/time         Method       Batch       Dilution       Preparation date/time       Analysis       Analysis       Location date/time       Analysis       Analysis		WG1480031	1	05/22/20 03:00	05/22/20 03:00	ELN	Mt. Juliet, TN
MW-805 L1220408-05 GW       G. Penaflor       05/18/20 17:40       05/20/20 08:45         Method       Batch       Dilution       Preparation date/time       Analysis       Analysis       Analysis       Location date/time         Gravimetric Analysis by Method 2540 C-2011       WG1480146       1       05/22/20 03:17       ELN       Mt. Juliet, T         Wetals (ICP) by Method 6010B       WG1480572       1       05/26/20 09:47       05/27/20 13:11       EL       Mt. Juliet, T         MW-806R L1220408-06 GW       Collected by date/time       Collected by 05/18/20 18:00       Collected date/time 05/20/20 08:45       Collected date/time 05/20/20 08:45       Location date/time         Method       Batch       Dilution       Preparation date/time       Analysis       Analysis       Analysis         MW-806R L1220408-06 GW       Batch       Dilution       Preparation date/time       Analysis       Analysis       Analysis       Location date/time         Gravimetric Analysis by Method 2540 C-2011       WG1480146       1       05/22/20 18:18       05/23/20 03:10       TH       Mt. Juliet, T         Wet Chemistry by Method 9056A       WG1480031       1       05/22/20 03:51       G. Penaflor       Dilution date/time       Dilution date/time       TH       Mt. Juliet, T	Metals (ICP) by Method 6010B	WG1480572	1	05/26/20 09:47	05/27/20 13:08	EL	Mt. Juliet, TN
Method       Batch       Dilution       Preparation date/time       Analysis       Analysis       Location date/time         Gravimetric Analysis by Method 2540 C-2011       WG1480146       1       05/22/20 03:17       05/22/20 03:10       TH       Mt. Juliet, i         Wet Chemistry by Method 9056A       WG1480031       1       05/22/20 03:17       05/22/20 03:17       ELN       Mt. Juliet, i         Metals (ICP) by Method 6010B       WG1480572       1       05/26/20 09:47       05/27/20 13:11       EL       Mt. Juliet, i         MW-806R L1220408-06 GW       Ketod       Batch       Dilution       Preparation date/time       Analysis       Analysis       Analysis       Location 05/20/20 08:45         Method       Batch       Dilution       Preparation date/time       05/23/20 03:10       TH       Mt. Juliet, i         Method       WG1480146       1       05/22/20 18:00       05/2/20/08:45       Collected by 05/18/20 18:00       05/2/2/20 08:45         Method       Batch       Dilution       Preparation date/time       Analysis       Analysis       Analysis       Location 04te/time         Gravimetric Analysis by Method 2540 C-2011       WG1480146       1       05/22/20 03:51       05/22/20 03:10       TH       Mt. Juliet, i         Wet Chemistry by							
date/time         date/time           Gravimetric Analysis by Method 2540 C-2011         WG1480146         1         05/22/20 18:18         05/23/20 03:10         TH         Mt. Juliet, T           Wet Chemistry by Method 9056A         WG1480031         1         05/22/20 03:17         05/22/20 03:17         ELN         Mt. Juliet, T           Metals (ICP) by Method 6010B         WG1480572         1         05/26/20 09:47         05/27/20 13:11         EL         Mt. Juliet, T           MW-806R L1220408-06 GW         Collected by         Collected date/time         Received date/time         6. Penaflor         05/28/20 18:00         05/20/20 08:45           Method         Batch         Dilution         Preparation         Analysis         Analysis         Location           Gravimetric Analysis by Method 2540 C-2011         WG1480146         1         05/22/20 18:18         05/23/20 03:10         TH         Mt. Juliet, T           Wet Chemistry by Method 9056A         WG1480031         1         05/22/20 18:18         05/23/20 03:10         TH         Mt. Juliet, T		<b>D</b>	<b>D</b>				
Wet Chemistry by Method 9056A       WG1480031       1       05/22/20 03:17       05/22/20 03:17       ELN       Mt. Juliet, T         Wetals (ICP) by Method 6010B       WG1480572       1       05/26/20 09:47       05/27/20 13:11       EL       Mt. Juliet, T         MW-806R L1220408-06 GW       Collected by       Collected date/time       05/20/20 08:45       05/20/20 08:45         Method       Batch       Dilution       Preparation       Analysis       Analysis       Location         Gravimetric Analysis by Method 2540 C-2011       WG1480146       1       05/22/20 03:51       05/23/20 03:10       TH       Mt. Juliet, T         Wet Chemistry by Method 9056A       WG1480031       1       05/22/20 03:51       05/23/20 03:10       TH       Mt. Juliet, T	νιεποα	Batch	Dilution		-	Analyst	Location
Metals (ICP) by Method 6010B       WG1480572       1       05/26/20 09:47       05/27/20 13:11       EL       Mt. Juliet, 1         MW-806R L1220408-06 GW       Collected by       Collected date/time       05/20/20 08:45         Method       Batch       Dilution       Preparation       Analysis       Analysis       Analysis         Gravimetric Analysis by Method 2540 C-2011       WG1480146       1       05/22/20 18:18       05/23/20 03:10       TH       Mt. Juliet, 1         Wet Chemistry by Method 9056A       WG148031       1       05/22/20 03:51       05/22/20 03:51       ELN       Mt. Juliet, 1	Gravimetric Analysis by Method 2540 C-2011	WG1480146	1	05/22/20 18:18	05/23/20 03:10	TH	Mt. Juliet, TN
MW-806R L1220408-06 GW       Collected by G. Penaflor       Collected date/time 05/18/20 18:00       Received date/time 05/20/20 08:45         Method       Batch       Dilution       Preparation date/time       Analysis       Analysis       Analysis         Gravimetric Analysis by Method 2540 C-2011       WG1480146       1       05/22/20 18:18       05/23/20 03:10       TH       Mt. Juliet, T         Wet Chemistry by Method 9056A       WG1480031       1       05/22/20 03:51       05/22/20 03:51       ELN       Mt. Juliet, T		WG1480031	1	05/22/20 03:17	05/22/20 03:17		Mt. Juliet, TN
WW-806R L1220408-06 GW       G. Penaflor       05/18/20 18:00       05/20/20 08:45         Method       Batch       Dilution       Preparation date/time       Analysis       Analysis       Location date/time         Gravimetric Analysis by Method 2540 C-2011       WG1480146       1       05/22/20 18:18       05/23/20 03:10       TH       Mt. Juliet, WG1480031       1       05/22/20 03:51       05/22/20 03:51       ELN       Mt. Juliet, WG1480031	Metals (ICP) by Method 6010B	WG1480572	1	05/26/20 09:47	05/27/20 13:11	EL	Mt. Juliet, TN
date/time         date/time           Gravimetric Analysis by Method 2540 C-2011         WG1480146         1         05/22/20 18:18         05/23/20 03:10         TH         Mt. Juliet, "           Wet Chemistry by Method 9056A         WG1480031         1         05/22/20 03:51         05/22/20 03:51         ELN         Mt. Juliet, "	MW-806R L1220408-06 GW			-			
Wet Chemistry by Method 9056A         WG1480031         1         05/22/20 03:51         05/22/20 03:51         ELN         Mt. Juliet,	Method	Batch	Dilution	•	-	Analyst	Location
	Gravimetric Analysis by Method 2540 C-2011	WG1480146	1	05/22/20 18:18	05/23/20 03:10	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A         WG1480031         5         05/22/20 04:08         ELN         Mt. Juliet,	Wet Chemistry by Method 9056A	WG1480031	1	05/22/20 03:51	05/22/20 03:51		Mt. Juliet, TN
Metals (ICP) by Method 6010B WG1480572 1 05/26/20 09:47 05/27/20 13:14 EL Mt. Juliet,							Mt. Juliet, TN Mt. Juliet, TN

PROJECT: 27213169.20

SDG: L1220408 DATE/TIME: 05/28/20 15:23 PAGE: 3 of 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: 27213169.20

SDG: L1220408 DATE/TIME: 05/28/20 15:23

PAGE: 4 of 17

#### SAMPLE RESULTS - 01 L1220408

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	591000		10000	1	05/23/2020 03:10	WG1480146	Tc

#### Wet Chemistry by Method 9056A

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

Wet Chemistry by Method 9056A								
	Result	Qualifier	RDL	Dilution	Analysis	Batch		
Analyte	ug/l		ug/l		date / time			$^{4}$ Cn
Chloride	92000		1000	1	05/22/2020 02:09	WG1480031		
Fluoride	162		150	1	05/22/2020 02:09	WG1480031		5
Sulfate	64700		5000	1	05/22/2020 02:09	WG1480031		ँSr

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Boron	234		200	1	05/27/2020 12:55	WG1480572
Calcium	128000		1000	1	05/27/2020 12:55	WG1480572

#### SAMPLE RESULTS - 02 L1220408

Qc

Gl

Â

Sc

#### Gravimetric Analysis by Method 2540 C-2011

	Result	Qualifier	RDL	Dilution	Analysis	Batch	C	Ĵр
Analyte	ug/l		ug/l		date / time		2	
Dissolved Solids	366000		10000	1	05/23/2020 03:10	WG1480146	Ť	С

#### Wet Chemistry by Method 9056A

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

Wet Chemistry	by Method 9056A	A					3
	Result	Qualifier	RDL	Dilution	Analysis	Batch	L
Analyte	ug/l		ug/l		date / time		4
Chloride	43900		1000	1	05/22/2020 02:26	<u>WG1480031</u>	
Fluoride	176		150	1	05/22/2020 02:26	<u>WG1480031</u>	5
Sulfate	41600		5000	1	05/22/2020 02:26	WG1480031	Ĭ

	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l		date / time		
Boron	ND		200	1	05/27/2020 12:58	WG1480572	
Calcium	79200		1000	1	05/27/2020 12:58	WG1480572	

#### SAMPLE RESULTS - 03 L1220408

Qc

Gl

Â

Sc

#### Gravimetric Analysis by Method 2540 C-2011

	Result	Qualifier R	DL Dilutio	on Analysis	Batch	Ср
Analyte	ug/l	ц	g/l	date / time		2
Dissolved Solids	524000	10	0000 1	05/23/2020 03:10	<u>WG1480146</u>	Tc

#### Wet Chemistry by Method 9056A

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

bissoned solids	32 1000		10000		00/20/2020 00:10		
Wet Chemistry by	/ Method 9056/	Д					<sup>3</sup> Ss
	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l		date / time		<sup>4</sup> Cn
Chloride	16500		1000	1	05/22/2020 02:43	<u>WG1480031</u>	
Fluoride	265		150	1	05/22/2020 02:43	WG1480031	5
Sulfate	121000		25000	5	05/22/2020 09:48	WG1480031	Sr

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Boron	2590		200	1	05/27/2020 13:06	WG1480572
Calcium	115000		1000	1	05/27/2020 13:06	WG1480572

#### SAMPLE RESULTS - 04 L1220408

Qc

Gl

Â

Sc

#### Gravimetric Analysis by Method 2540 C-2011

							 l'Cn	L
	Result	Qualifier	RDL	Dilution	Analysis	Batch	Cp	l
Analyte	ug/l		ug/l		date / time		2	i
Dissolved Solids	627000		13300	1	05/23/2020 03:10	WG1480146	Tc	

#### Wet Chemistry by Method 9056A

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

Wet Chemistry b	by Method 9056A	A					3
	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l		date / time		2
Chloride	20400		1000	1	05/22/2020 03:00	<u>WG1480031</u>	
Fluoride	219		150	1	05/22/2020 03:00	<u>WG1480031</u>	•
Sulfate	ND		5000	1	05/22/2020 03:00	WG1480031	

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Boron	8630		200	1	05/27/2020 13:08	WG1480572
Calcium	151000		1000	1	05/27/2020 13:08	WG1480572

#### SAMPLE RESULTS - 05 L1220408

Qc

Gl

Â

Sc

#### Gravimetric Analysis by Method 2540 C-2011

							Cn	L
	Result	Qualifier F	RDL	Dilution	Analysis	Batch	Ср	
Analyte	ug/l	ι	ug/l		date / time		2	1
Dissolved Solids	341000	1	10000	1	05/23/2020 03:10	<u>WG1480146</u>	Tc	

#### Wet Chemistry by Method 9056A

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

Wet Chemistry I	by Method 9056A	4					<sup>3</sup> S
	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l		date / time		4C
Chloride	7790		1000	1	05/22/2020 03:17	WG1480031	
Fluoride	186		150	1	05/22/2020 03:17	<u>WG1480031</u>	5
Sulfate	46800		5000	1	05/22/2020 03:17	WG1480031	ٌS

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Boron	ND		200	1	05/27/2020 13:11	WG1480572
Calcium	93300		1000	1	05/27/2020 13:11	WG1480572

#### SAMPLE RESULTS - 06 L1220408

Qc

Gl

Â

Sc

#### Gravimetric Analysis by Method 2540 C-2011

	, ,						l'Cn	
	Result	Qualifier	RDL	Dilution	Analysis	Batch	CP	
Analyte	ug/l		ug/l		date / time		2	ī
Dissolved Solids	659000		10000	1	05/23/2020 03:10	WG1480146	Tc	

#### Wet Chemistry by Method 9056A

Wet Chemistry	by Method 9056A	A					<sup>3</sup> Ss
	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l		date / time		<sup>4</sup>
Chloride	26400		1000	1	05/22/2020 03:51	WG1480031	
Fluoride	206		150	1	05/22/2020 03:51	WG1480031	5
Sulfate	186000		25000	5	05/22/2020 04:08	WG1480031	Š١

	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l		date / time		
Boron	5110		200	1	05/27/2020 13:14	WG1480572	
Calcium	148000		1000	1	05/27/2020 13:14	WG1480572	

# WG1480146

Gravimetric Analysis by Method 2540 C-2011

# QUALITY CONTROL SUMMARY

Тс

Ss

Cn

Sr

ິQc

GI

Â

Sc

#### Method Blank (MB)

(MB) R3531326-1 05/23	3/20 03:10			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Dissolved Solids	U		2820	10000

#### Laboratory Control Sample (LCS)

(LCS) R3531326-2 05/	(LCS) R3531326-2 05/23/20 03:10					
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier	
Analyte	ug/l	ug/l	%	%		
Dissolved Solids	8800000	8630000	98.1	85.0-115		

**PROJECT:** 27213169.20

SDG: L1220408 DATE/TIME: 05/28/20 15:23

PAGE: 11 of 17 Wet Chemistry by Method 9056A

#### QUALITY CONTROL SUMMARY L1220408-01,02,03,04,05,06

Ср

<sup>4</sup>Cn

Sr

Qc

GI

Â

Sc

#### Method Blank (MB)

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

MB Result	MB Qualifier	MB MDL	MB RDL	
ug/l		ug/l	ug/l	
U		379	1000	
U		64.0	150	
U		594	5000	
			ug/l ug/l U 379 U 64.0	ug/l         ug/l         ug/l           U         379         1000           U         64.0         150

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

(OS) L1220387-01 05/21/2	20 22:46 • (DUP	) R3530803-3	8 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 • (DUI	P) R3530803-	6 05/22/2	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 05/21/20 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: L1220408

DATE/TIME: 05/28/20 15:23 Wet Chemistry by Method 9056A

# QUALITY CONTROL SUMMARY

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

(OS) L1220387-06 05/22	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	5:32			
	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	

DATE/TIME: 05/28/20 15:23

Sc

#### Metals (ICP) by Method 6010B

#### QUALITY CONTROL SUMMARY L1220408-01,02,03,04,05,06

Cn

Sr

Qc

GI

Â

Sc

Method Blank (MB)

Method Blat	ik (ivib)				$^{1}$
(MB) R3532351-1	05/27/20 12:03				
	MB Result	MB Qualifier	MB MDL	MB RDL	2
Analyte	ug/l		ug/l	ug/l	T
Boron	U		25.4	200	
Calcium	U		389	1000	<sup>3</sup> S
					Ĭ

### Laboratory Control Sample (LCS)

(LCS) R3532351-2 05/27	/20 12:06				
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Boron	1000	928	92.8	80.0-120	
Calcium	10000	9720	97.2	80.0-120	

ACCOUNT: SCS Engineers - KS

PROJECT: 27213169.20

SDG: L1220408

DATE/TIME: 05/28/20 15:23

PAGE: 14 of 17

# 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: L1220408 DATE/TIME: 05/28/20 15:23

PAGE: 15 of 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	Nebra
Alaska	17-026	Nevad
Arizona	AZ0612	New H
Arkansas	88-0469	New .
California	2932	New
Colorado	TN00003	New
Connecticut	PH-0197	North
Florida	E87487	North
Georgia	NELAP	North
Georgia <sup>1</sup>	923	North
ldaho	TN00003	Ohio-
Illinois	200008	Oklah
Indiana	C-TN-01	Orego
lowa	364	Penns
Kansas	E-10277	Rhode
Kentucky 16	90010	South
Kentucky <sup>2</sup>	16	South
Louisiana	AI30792	Tenne
Louisiana <sup>1</sup>	LA180010	Texas
Maine	TN0002	Texas
Maryland	324	Utah
Massachusetts	M-TN003	Vermo
Michigan	9958	Virgin
Minnesota	047-999-395	Washi
Mississippi	TN00003	West
Missouri	340	Wisco
Montana	CERT0086	Wyom

Nebraska	NE-OS-15-05
Nevada	TN-03-2002-34
New Hampshire	2975
New Jersey-NELAP	TN002
New Mexico <sup>1</sup>	n/a
New York	11742
North Carolina	Env375
North Carolina <sup>1</sup>	DW21704
North Carolina <sup>3</sup>	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		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>6</sup> 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

L1220408

PAGE: 16 of 17

05/28/20 15:23



	5 YE 19 8 5		Billing Infor	mation:						1	Analysis / Co	ontainer /	Preservativ	e	ere (weitige	Cha	ain of Custody	Page of
SCS Engineers - KS		Accounts 8575 W.	Accounts Payable 8575 W. 110th Street Overland Park, KS 66210			res hk		С							-/	Pace A Netional Can	nalytical <sup>®</sup> ter tor Testing 8 inn	
eport to:			Email To: ifranks@so	Email To: ifranks@scsengineers.com;jay.martin@ever				res							12065 Lebanon Rd Mount Juliet, TN 37122 Phone: 615-758-5858 Phone: 800-767-5859 Fax: 615-758-5859			
Project Description: Evergy - Sibley Generating Station				Sibley, MO Please C PT MT (				125mlHDPE-NoPres										
Phone: 913-681-0030	Client Projec 27213169	ct #		Lab Projec		,		INDPI	HN03		oPres					SDG # 12:		
Collected by (print): G. Pena Flor	Site/Facility	ID #		P.O. #					HDPE-1	oPres						Act	G202	
Collected by (signature):		)ay 10 C	Day y (Rad Only) Date		te Results Needed			Anions (Cld, F, SO4)	- 6010 250mIHDPE-HNO3	250miHDPE-NoPres				Template: <b>T136</b> Prelogin: <b>P769</b> PM: 206 - Jeff Ca PB:		421		
Sample ID	Comp/Grat	Matrix *	Depth	Dat	e Ti	me Cr	ntrs	nion	B, Ca	TDS 2						Shi	ipped Via: Remarks	Sample # (la
W-703 MW-704		GW GW					3	x x	X X	X								
ИW-801	GRAB	GW		5/18	120 131		3	X	X	X					5.5			-
MW-802	Sec. ultra	GW			12	10	3	X	X	X		and the second						
MW-803		GW	the second second		15	05	3	X	X	X		100						
MW-804		GW	e de la companya de La companya de la comp		16	35	3	X	X	X	12-547						in the state	0
MW-805	4 14 16	GW			17	40	3	X	X	X						15	and the second	0
MW-806R	V	GW	A The seal	V	18	300	3	X	X	X								0
* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater DW - Drinking Water OT - Other									pH Temp Flow Other				- 1	Sample Receipt COC Seal Present/Ints COC Signed/Accurate: Bottles arrive intact Correct bottles used			Cklist NP Y YY	
					Tracking.#									Sufficie VOA Zero		If Heads	Applicable	_Y
Relinquished by : (Signature)	la la	Date: 5/19/2		357	Received by:	her			9-20	-	Trip Blank I		HCL / Mer TBR	oH []	RAD Scre	en <0.	5 mR/hr:	<u></u> Y
Relinquished by : (Signature)		Date:	Time		Received by:				201 201		7.6-1	=2.5	ottles Receiv			ition req	quired by Logi	
Relinquished by : (Signature)		Date:	Time	2	Received for	lab by: (Si	ignati	dre) M	,		Date: 5/W/		ime: 8:45		Hold:			Conditie NCF /

1.55 July 1.5 - 1.5 - 1.5 - 1.5

1



# 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.	*
	<sup>1</sup> Cp
	<sup>2</sup> Tc
	<sup>3</sup> Ss
	<sup>4</sup> Cn
	<sup>5</sup> Sr
	<sup>6</sup> Qc
	<sup>7</sup> Gl
	<sup>8</sup> Al
	<sup>9</sup> 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

# SAMPLE SUMMARY

ONE LAB. NATIONWIDE.

	SAMPLE S	SUMN	IARY		ONE L	AB. NATIONW
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 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 07:59	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

<sup>5</sup>Sr <sup>6</sup>Qc <sup>7</sup>Gl <sup>8</sup>Al <sup>9</sup>Sc

\*

Ср

Тс

Ss

Cn

DATE/TIME:

05/28/20 08:55

SDG:

L1220404

# SAMPLE SUMMARY

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 date/time 05/20/20 08:45	
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) 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

								$^{1}$ 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							<sup>3</sup> Ss
	Result	Qualifier	RDL	Dilution	Analysis	Batch		

	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l		date / time		<sup>₄</sup> 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>	<sup>6</sup> Qc
Metals (ICPMS) by Metho	od 6020						- <sup>7</sup> 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		<sup>4</sup> 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	<sup>6</sup> Q

### Metals (ICPMS) by Method 6020

SDG: L1220404

#### OUD 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		<sup>4</sup> 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>	<sup>6</sup> 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	

<sup>3</sup> Ss
<sup>4</sup> Cn
⁵Sr
<sup>6</sup> Qc
<sup>7</sup> Gl
<sup>8</sup> Al
<sup>9</sup> 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

							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

	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	

<sup>3</sup> Ss
<sup>4</sup> Cn
⁵Sr
<sup>6</sup> Qc
<sup>7</sup> Gl
<sup>8</sup> AI
<sup>9</sup> 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

							 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 05/2	(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	_CS) 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

<sup>°</sup>Qc

GI

A

Sc

Metals (ICPMS) by Method 6020

# QUALITY CONTROL SUMMARY

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

	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									
	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

# ₩

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: 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 <sup>1</sup>	923	North I
Idaho	TN00003	Ohio-V
Illinois	200008	Oklaho
Indiana	C-TN-01	Oregor
lowa	364	Pennsy
Kansas	E-10277	Rhode
Kentucky <sup>16</sup>	90010	South
Kentucky <sup>2</sup>	16	South
Louisiana	AI30792	Tennes
Louisiana <sup>1</sup>	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 <sup>1</sup>	n/a
New York	11742
North Carolina	Env375
North Carolina <sup>1</sup>	DW21704
North Carolina <sup>3</sup>	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 <sup>14</sup>	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		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>6</sup> 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

CS Engineers - KS 575 W. 110th Street verland Park, KS 66210		PRACE.	Billing Infor	mation:							Analysis / Container / Preservative				Chain of Cus			ustody	ody Page of	
			Accounts Payable 8575 W. 110th Street Overland Park, KS 66210			Pres Chk		h		4A								Pre	2 ace A	Nalytical <sup>*</sup> er for Testing 8 innovel
Report to: Jason Franks			Email To: jfranks@scsengineers.com;jay.martin@ev			vergy.c		03	8							12065 Lebanon Rd Mount Juliet, TN 37122 Phone: 615-758-5858 Phone: 800-767-5859		- 38 AR A		
Project Description: Evergy - Sibley Generating Station		1			ibley, MO Please Circ			33	E-HNC								Fax: 615-758	8-5859		
Phone: 913-681-0030				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		Sec. in	Shipped V Remar		Sample # (lab only	
01 02 03		GW GW GW					10.00	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 <b>3</b> 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 QW IV 6010 M	etals-Ba,Cr			16 <b>3</b> 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 UPSFedEx	GW GW GW GW QW IV 6010 M	Time	,Co,Li,M	lo 6020 I	16 <b>3</b> 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 used 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	75 W. 110th Street erland Park, KS 66210			Accounts Payable 8575 W. 110th Street Overland Park, KS 66210			Pres Chk	K								Pace	Analytical* inner for Testing 3 innovat
Report to: Jason Franks	- 20			Email To: jfranks@scsengineers.com;jay.martin@everg					3							12065 Lebanon Rd Mount Juliet, TN 3 Phone: 615-758-58	7122
Project Description: Evergy - Sibley Generating Station	vergy - Sibley Generating Station Collected:		City/State Collected:	Sibley, MO Please Ci				8	DNH-							Phone: 800-767-58 Fax: 615-758-5859	Contract Street and
Phone: 913-681-0030	251	Project 1 3168.2			Lab Project			E-HNO	250mlHDPE-HNO3							SDG # 1220404 Table #	
Collected by (print): G. Pengflor	Site/Fi	Site/Facility ID # P.O. #						nHDF								Acctnum: AQ	UAOPKS
Collected by (signature):	RI		wo Day 10 Day (Rad Only)			e # ate Results Needed 5 + A		Li, Mo - 6010 250mlHDPE-HNO3	s - CCR AP IV							Template: <b>T16</b> Prelogin: <b>P77</b> PM: <b>206</b> - 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	
			ser i												1		
* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater				etals-Ba,Cr	,Co,Li,Mo 6	020 metals-Sb,	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:		
DW - Drinking Water San		mples returned via: UPSFedExCourierTracking#					riow Corr						Suffi	cient	ct bottles used:YN cient volume sent:YN <u>if Applicable</u> ero Headspace: YN		
Relinquished by: (Signature) Date: Jig/20 Time: 1357				ceived by: (Signa	ture)	51	920	Trìp Blan	Trip Blank Received: Yes No HCL / MeoH TBR			Prese	rvatio	n Correct/Ch <0.5 mR/hr:	ecked: $\boxed{\frac{Y}{Y}}_{1}$		
Relinquished by : (Signature)						ceived by: (Signa				11000pf 2.6-					ervation	required by Log	gin: Date/Time
Relinquished by : (Signature)		Dat	te:	Time	RI RI	ceived for lab by	: (Signat	ure)		Date:	Date: Time: $5/10/10$ 8:45						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 <sup>2</sup>Tc <sup>3</sup>Ss <sup>4</sup>Cn <sup>5</sup>Sr <sup>6</sup>Qc <sup>7</sup>Gl <sup>8</sup>Al <sup>9</sup>Sc

# TABLE OF CONTENTS

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

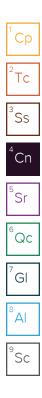
DATE/TIME: 06/18/20 15:34

### 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	<sup>3</sup> Ss

### Radiochemistry by Method Calculation

Radiochemistry by	/ Method Calcu	Ilation					4
	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					<sup>6</sup> Q
	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch	
Analyte	pCi/l		+/-	pCi/l	date / time		<sup>7</sup> 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	<sup>3</sup> Ss

### Radiochemistry by Method Calculation

Radiochemistry by Method Calculation									
	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch		Cn	
Analyte	pCi/l		+/-	pCi/l	date / time		<b>_</b>	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

	· <b>,</b>						
	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 Calculation										
	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		<sup>ĭ</sup> 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	<sup>3</sup> 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	1.03		0.914	1.42	06/15/2020 09:30	WG1486283		<sup>ĭ</sup> Sr	

Radiochemistry by Method SM7500Ra B M										
Result Qualifier Uncertainty MDA Analysis Date Batch										
Analyte	pCi/l		+/-	pCi/l	date / time		<sup>7</sup> Gl			
RADIUM-226	0.309		0.283	0.357	06/05/2020 15:28	WG1486283	01			
(T) Barium-133	105			30.0-143	06/05/2020 15:28	WG1486283	8			

# 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	Ľ
Analyte	pCi/l		+/-	pCi/l	date / time		[
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	

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	DOORa B M	Uncertainty	MDA	Analysis Date	Batch	
	- C://		+/-	pCi/l	date / time		
Analyte	pCi/l		,				
Analyte RADIUM-226	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	<sup>3</sup> 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		<del>.</del>
Combined Radium	0.324		0.764	1.03	06/15/2020 09:30	WG1486283	ଁSr

Radiochemistry by	y Method SM75	500Ra B M					<sup>6</sup> Qc
	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch	
Analyte	pCi/l		+/-	pCi/l	date / time		<sup>7</sup> 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

۵C

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	<sup>ĭ</sup> 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	<sup>3</sup> Ss

### Radiochemistry by Method Calculation

Radiochemistry by	Method Calcu	ulation					<sup>4</sup> 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	<sup>°</sup> 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	<sup>3</sup> Ss

### Radiochemistry by Method Calculation

4								<sup>4</sup> 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 Calculation								
	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 Calculation									
	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



۵C

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 Calculation									
	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 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 C	6/05/20 15:28	8 • (MSD) R353	7637-4 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 <sup>1</sup>	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 <sup>2</sup>	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 <sup>1</sup>	n/a
New York	11742
North Carolina	Env375
North Carolina <sup>1</sup>	DW21704
North Carolina <sup>3</sup>	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 <sup>14</sup>	2006
Texas	T104704245-18-15
Texas <sup>5</sup>	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		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>6</sup> 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:					I I	Analysis /	Contain	er / Preservative	1	Chain of Custod	y Page of
SCS Engineers - KS 1575 W. 110th Street Overland Park, KS 66210			8575 W.	ccounts Payable 575 W. 110th Street verland Park, KS 66210				U						- Pace	Analytical* anter for festing 8 arrowst
eport to: ason Franks	Email To: jfranks@scsengine			sengineers.	com;jay.m	nartin@eve	ergy.c							12065 Lebanon Ro Mount Juliet, TN 3	7122
roject Description:		City/State		ibley, MO		Please Cir	cle							Phone: 615-758-54 Phone: 800-767-54 Fax: 615-758-5859	359
vergy - Sibley Generating Station	Client Project		siewy	Lab Projec		PT MT CT	<u>y</u> n	HNO3						SDG # 12-3	20442
one: 913-681-0030	27213167			AQUAOPKS-SIBLEY			-Add						G2		
S. Peyaflor	Site/Facility	ID #		P.O. #			4	11-HDPE						Acctnum: AQ	UAOPKS
ollected by (signature):	Rush?	(Lab MUST Be	Notified)	Quote #				Annal of You and		an and				Template:T11	
Haller Tenfl	Same Next D	Day Five Day 5 Da	Day y (Rad Only)	Date	Results Ne	eeded	<u> </u>	RA228						Prelogin: P76 PM: 206 - Jeff	
nme diately acked on Ice N Y X	Two D Three	ay 10 D	ay (Rad Only)		tol	anger by	No. of	and share a second of an and second						PB;	
Sample ID	Comp/Grab	and the second second	Depth	Date		Time	Cntrs	RA226,						Shipped Via: Remarks	Sample # (lab only
		1	1	1.0								1.00		Kemarks	
01	GRAB	NPW		5/18/	120 1	315	2	X		and Marsh			1		
02		NPW		1		1210	2	X							02
03		NPW				1505	2	X							03
04		NPW		C. E.		1635	+	X							04
05		NPW				1740	1.1	X							05
OGR		NPW	California Maria		1	1800	2	X					<u>- 21</u>		00
UPLICATE Z		NPW	and the second			520		X							07
601 MS/MSD	W	NPW		V	/	1525	2	X						The second second second	13
MSD		NPW					12			and and and					
1000				 	mhinad									imple Receipt C	wakiist
	Remarks: RA 2						LOR	NON	- ARES	pH		Temp	COC Seal	Present/Intact ed/Accurate: arrive intact:	NP Y N
WW - WasteWater DW - Drinking Water	Samples returne	ud with:					DI	DHA	103 11	S HOW				ottles used: nt volume sent:	
OT - Other	UPSFedI				Tracking #	ŧ								If Applicab Headspace:	le Y M
Relinguished by : (Signature)	/	Date: Shalz	D 13	57	Received	by: (Signat	µre)		9-20 357	Trip Blar	nk Receiv	ed: Yes / No HCL / MeoF TBR	RAD Scree	tion Correct/Ch en <0.5 mR/hr:	ecked:
Relinquished by : (Signature)		Date:	Time		Received	by: (Signat	ure)			Tellapp 2.6-	A DESCRIPTION OF THE OWNER OWNER OF THE OWNER OWNER OF THE OWNER	Bottles Received	: If preserval	tion required by Lo	gin: Date/Time
/ Relinquished by : (Signature)	( 1969 a 4	Date:	Time	:	Received	for lab by:	(Signat	ture)		Date:	1/10	Time: P245	Hold:		Condition: NCF / OK

「「「「「「」」

- 110th Street d Park, KS 66210		8	Accounts F 8575 W. 13 Overland F	10th Stre		42. <b>(</b> 1)	Pres Chk	n	<b></b>				tainer / I					hain of Cu	stody P <b>Ce Analy</b> wear Clainteer for "1
to: Eranks		J	Email To: franks@scse	1 manunt		martin@e											MO	965 Lebanon unt Juliet, Ti	1 271 22
T Low Generating Station		Collected:	and the second second second			PT MT		HNO3									I Pho	ne: 615-758 ne: 800-767 615-758-58	EREA AND
Sibley Generating Station	Client Project 27213167.2			Lab Project		BLEY		4 pp									SDC		2 2090
	Site/Facility II	)#		P.O. #				1L-HDPE-Add									Tab		22071
ected by (print): Penaflor	A	1. Sec. 1.		Quote #				EHE									Acct	num: AQ	UAOPKS
Hectoday (signature): Per	Same D	ab MUST Be I	Day	and the second s	-												Tem	late:T11	5110
11 - C	Next Da Two Da Three D		(Rad Only) y (Rad Only)		Results	Needed	No. cf	6, RA228									PM: 2	gin: <b>P76</b> 06 - Jeff	9516 <sup>Carr</sup>
packed on Ice N Y X Sample ID	Comp/Grab	Matrix *	Depth	Date	2	Time	Cntrs	RA22									PB; Shippe	ed Via:	
	GRAG	NPW		5/18/	120	1240	2 2	X									Re	marks	Sample # (
504		NPW		1		1150	2	x											
505		NPW	1.0.0 m 1.0.0 m			1410	2	X											
510		NPW				1630	2	X											
512		NPW				1655	2	X											
601	V	NPW		V		1515	2	X				2							
AT DE	_	NPW						XZ									1 10 14 14 19 19 19 19		
		NPW			-		2	X											
103		NPW			-	Marca Marca	2	-											
1101	Remarks: RA 2	26/228 - Rep	port separat	tely and co	mbined	d.												-	
* Maurice and Ale E Eiltor										ŀ	рН	Te	emp		coc	Seal Pr	le Receipt esent/Int: Accurate:	Check1	ist
GW Weste Water		1. Alt 197-2					1		Flow Other				Bott	Signed/	Accurate:	ict: _N			
W - Wastewater W - Drinking Water OT - Other	Samples returne				Tracking	#										icient a	Cles used: Volume ser	<b>F</b> 1	1 1
Relinquished by : (Signature)		000000000000000000000000000000000000000	20 1357 Received by: (Signature)			re)	5-19-20 1357							sufficient volume sent: <u>If Applicable</u> VOA Zero Headspace: Preservation Correct/Checked: $V_{r}$ _N RAD Screen <0.5 mR/hr:					
Reliquished by : (Signature)		Date:	Time:		Received	by: (Signatu	re)		2	- Announcements			TBR ottles Rece		Land		equired by L		
Delinquished by : (Signature)	Sec. 1	Date:	Time:		Received	for lab by: (S	Signature	2)		2.6 Date:	:1=;		2	5				ann Date	a lime
Relinquisited by ( (S.B. acc)					PA	why h	lem.			54	1DH	71)	ne: 814		Hold:			Con	dition

# 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

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

ACCOUNT: SCS Engineers - KS PROJECT: 27213169.20

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

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
let 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 date/time 07/16/20 08:45	
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 date/time	Analysis date/time	Analyst	Location

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

<sup>3</sup> Ss
<sup>4</sup> Cn
⁵Sr
<sup>6</sup> Qc
<sup>7</sup> Gl
<sup>8</sup> Al
<sup>9</sup> 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

\*

°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	WG1512349	Tc
Wet Chemistry by	/ Method 9056A						<sup>3</sup> 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					<sup>3</sup> Ss
	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l		date / time		<sup>4</sup> 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

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)			<sup>7</sup> 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	<sup>8</sup> 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

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	3551061-4 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

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	(OS) L1240487-01 07/19/20 23:28 • (MS) R3550989-4 07/19/20 23:33 • (MSD) R3550989-5 07/19/20 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

Alaska17-026NevadiArizonaAZ0612New 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 <sup>1</sup> 923North GIdahoTN00003OhioIIllinois20008OklahoIndianaC-TN-01OregorIowa364PennsyKansasE-10277RhodeKentucky <sup>16</sup> 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 <sup>1</sup> 923IdahoTN00003Illinois200008IndianaC-TN-01Iowa364Kentucky <sup>16</sup> 90010Kentucky <sup>2</sup> 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 VMissouri340Wiscort			North C
Georgia 1923North IIdahoTN00003Ohio-VIllinois200008OklahoIndianaC-TN-01OregorIowa364PennsyKansasE-10277RhodeKentucky 1690010South ILouisianaAl30792TennesLouisiana 1LA180010TexasMaineTN0002TexasMaryland324UtahMinnesota047-999-395WashirMississippiTN0003West VMissouri340Wiscont	Georgia	NELAP	North C
IdahoTN00003Ohio-VIllinois200008OklahoIndianaC-TN-01OregorIowa364PennsyKansasE-10277RhodeKentucky <sup>16</sup> 90010South ILouisianaAl30792TennesLouisiana <sup>1</sup> LA180010TexasMaineTN0002TexasMaryland324UtahMinesota047-999-395WashirMississippiTN0003West VMissouri340Wiscort	•	923	North D
IndianaC-TN-01OregorIowa364PennsyKansasE-10277RhodeKentucky <sup>16</sup> 90010South IKentucky <sup>2</sup> 16South ILouisianaAl30792TennesLouisiana <sup>1</sup> LA180010TexasMaineTN0002TexasMaryland324UtahMinnesota047-999-395WashirMississippiTN0003West VMissouri340Wiscont		TN00003	Ohio–V
Iowa364PensyKansasE-10277RhodeKentucky <sup>16</sup> 90010South 0Kentucky <sup>2</sup> 16South 0LouisianaAl30792TennesLouisiana <sup>1</sup> LA180010TexasMaineTN0002TexasMaryland324UtahMinesota047-999-395WashirMississippiTN0003West VMissouri340Wiscont	Illinois	200008	Oklaho
KansasE-10277RhodeKansasE-10277South JKentucky <sup>16</sup> 90010South JLouisianaAl30792TennesLouisiana <sup>1</sup> 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 <sup>16</sup>	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 <sup>1</sup>	LA180010	Texas
MassachusettsM-TN003VermoMichigan9958VirginiaMinnesota047-999-395WashirMississippiTN00003West VMissouri340Wiscont	Maine	TN0002	Texas <sup>5</sup>
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 <sup>1</sup>	n/a
New York	11742
North Carolina	Env375
North Carolina <sup>1</sup>	DW21704
North Carolina <sup>3</sup>	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 <sup>5</sup>	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		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>6</sup> 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

	NE AND ME AND DESCRIPTION		Billing Info	ormation.		talen al	T	T			- Inda	10.00	10				1	
SCS Engineers - KS			Account	ts Payable			Pres Chk	22			Analysis	Conta	ner / Pre	servative		- 1	Chain of Custod	
8575 W. 110th Street Ove Fland Park, KS 66210			L Commenter :	8575 W. 110th Street													- Pace	Analytical* Canter for Testing & Innovatile
Report to: Jason Franks			Email To: jfranks@scsengineers.com;jay.martin@evergy.c														12065 Lebanon Rd Mount Juliet, TN 3	
Project Description:		City/State	Laurature al.A.			Please C	multime				44.5-		读				Phone: 615-758-58 Phone: 800-767-58	858
Evergy - Sibley Generating Station Collected:						PT MT (		03		es							Fax: 615-758-5859	
Phone: 913-681-0030	Client Projec 27213169		Lab Proje		BIBLEY		250mIHDPE-HNO3	Pres	125mHDPE-NoPres	res	Sulfate 125mlHDPE-NoPres TDS 250mlHDPE-NoPres				SDG #		1246487	
Collected by (print):	Site/Facility I		P.O. #			1	HIMC	PE-NO	NHDP	-NoP					I038 Acctnum: AQUAOPKS			
Collected by (signature): Rush? (Lab MUST BeSame DayFive f		Day	Quote #				6010 250	125mlHDPE-NoPres	04 125r	MIHDPE	250miHDPE-NoPres				Template: <b>T166706</b> Prelogin: <b>P784778</b>			
		y (Rad Only) ay (Rad Only)		Date Results Needed		No. of	1	Chloride 12	Chloride, SO4	te 125	SomiH					PM: 206 - Jeff PB:	Carr	
Sample ID	Comp/Grab	Matrix *	Depth	Date		Time	Cntrs	Calcium	ori	ori	fat	52					Shipped Via:	
		1	1			L	-	Ca	5	5	Sul	TDS					Remarks	Sample # (lab only)
MW-505		GW		7/14	120	1,00 5	1	X									-	-01
MW-505 MS/MSD		GW		1-1-	120	1015	1	x	- 44									07
DUPLICATE 1		GW	1.100 Sec. 19 W A	7/1	F/2C	1016	1	X					1			145		0203
MW-506		GW			helennen	and a start and a start and a start a st	1				X					-		27.7
MW-512		GW		1714	60	100					~							0305
MW-512 MS/MSD				1-114/	20	955	2			X	19 100	X				77		0405
DUPLICATE 2		GW		17/14	no	485	FAS			X								04
		GW	1.11	7/14	ho	955	2			X		X						05
MW-804		GW		Fá	420	lios	1		х							20		06
			and the second								5798. 		1				- Aleran	
* Matrix: ss - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater											pH Ten Flow Oth				Bott1	Sample Receipt Checklist Seal Present/Intact: NP _Y _N Signed/Accurate:N cles arrive intact:N rect bottles used:N		
pW - Drinking Water oT - Other	Samples returned UPSFedEx				Tracking	3.# [	84	T	43	30		205	8		Suffi	cient	tles used: volume sent: <u>If Applicab</u> adspace:	CY_N
Relinquished by: (Signature) Date: 7/15/		1/15/2	5 13	325		d by: (Signat		7-15	326		rip Blan	k Receiv		CL / MeoH	Prese	rvatic	<pre>correct/Ch &lt;0.5 mR/hr:</pre>	
Relinquished by : (Signature) Date:		te:	Time:	F		d by: (Signatu				1	Temp: °C Bottles Received:				If pres	If preservation required by Login: Date/Time		
Relinquished by : (Signature) Date:		te:	Time: Received for lab by: (Signatur					re)			Date: Time: Misha 8:45				Hold:			Condition: NCF / OK

Jared Morrison December 20, 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 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	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

Metals (ICP) by Method 6010B

	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	

<sup>3</sup> Ss
<sup>4</sup> Cn
⁵Sr
<sup>6</sup> Qc
<sup>7</sup> Gl
<sup>8</sup> Al
<sup>9</sup> 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	sis by method 2	010020	2 I I				
	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>	<sup>2</sup> Tc
Wet Chemistry by	Method 9056A	X.					<sup>3</sup> 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		<sup>4</sup> 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	

<sup>3</sup> Ss
4
<sup>≁</sup> Cn
5
⁵Sr
6
<sup>°</sup> Qc
7
<sup>′</sup> 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	3/29/20 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	20 12:53 • (DUP	) R3565358-3	08/29/2	0 12:53		
	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 Oriç	ginal Sample	• (OS) • Du	plicate	(DUP)				<sup>7</sup> Gl					
(OS) L1255660-03 08/2	OS) L1255660-03 08/29/20 12:53 • (DUP) R3565358-4 08/29/20 12:53												
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits		<sup>8</sup> Al					
Analyte	ug/l	ug/l		%		%							
Dissolved Solids	325000	332000	1	2.13		5		°Sc					

#### Laboratory Control Sample (LCS)

(LCS) R3565358-2 08	(LCS) 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)			<sup>7</sup> 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	<sup>8</sup> Al
Analyte	ug/l	ug/l		%		%	
Dissolved Solids	8190000	9500000	1	14.9	<u>J3</u>	5	<sup>9</sup> Sc

#### Laboratory Control Sample (LCS)

(LCS) R3565362-2 0	(LCS) 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 08/2	(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.

<sup>1</sup>Cp

⁺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	20 08:23 • (MS	) R3565005-6	08/28/20 08:	34 • (MSD) R35	65005-7 08/2	8/20 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 08/28/20 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 09/01/20 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 09/01/20 17:34 • (MS) R3566317-4 09/01/20 17:39 • (MSD) R3566317-5 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 09/01/20 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 09/01/20 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	20 14:16 • (MS) F	R3566286-4 0	9/01/20 14:22 •	(MSD) R35662	286-5 09/01/2	0 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

## \*

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).

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 <sup>1</sup> 923North GIdahoTN00003OhioIIllinois20008OklahoIndianaC-TN-01OregorIowa364PennsyKansasE-10277RhodeKentucky <sup>16</sup> 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 <sup>1</sup> 923IdahoTN00003Illinois200008IndianaC-TN-01Iowa364Kentucky <sup>16</sup> 90010Kentucky <sup>2</sup> 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 <sup>16</sup> 90010South ILouisianaAl30792TennesLouisiana <sup>1</sup> LA180010TexasMaineTN0002TexasMaryland324UtahMinesota047-999-395WashirMississippiTN0003West VMissouri340Wiscort	•	923	North D
IndianaC-TN-01OregorIowa364PennsyKansasE-10277RhodeKentucky <sup>16</sup> 90010South IKentucky <sup>2</sup> 16South ILouisianaAl30792TennesLouisiana <sup>1</sup> LA180010TexasMaineTN0002TexasMaryland324UtahMinnesota047-999-395WashirMississippiTN0003West VMissouri340Wiscont		TN00003	Ohio–V
Iowa364PensyKansasE-10277RhodeKentucky <sup>16</sup> 90010South 0Kentucky <sup>2</sup> 16South 0LouisianaAl30792TennesLouisiana <sup>1</sup> LA180010TexasMaineTN0002TexasMaryland324UtahMinesota047-999-395WashirMississippiTN0003West VMissouri340Wiscont	Illinois	200008	Oklaho
KansasE-10277RhodeKansasE-10277South JKentucky <sup>16</sup> 90010South JLouisianaAl30792TennesLouisiana <sup>1</sup> 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 <sup>16</sup>	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 <sup>1</sup>	LA180010	Texas
MassachusettsM-TN003VermoMichigan9958VirginiaMinnesota047-999-395WashirMississippiTN00003West VMissouri340Wiscont	Maine	TN0002	Texas <sup>5</sup>
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 <sup>1</sup>	DW21704
North Carolina <sup>3</sup>	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		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>6</sup> 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

			Billing Infor	mation:						A	nalvsis /	/ Contair	ner / Prese	ervative			hain of Custody	Page of
SCS Engineers - KS 8575 W. 110th Street Overland Park, KS 66210			8575 W.	Accounts Payable 8575 W. 110th Street Overland Park, KS 66210			Pres Chk	77									Pace A Netional Can	Analytical * iter for Testing & Ionava
Report to: Jason Franks			Email To: jfranks@scsengineers.com;jay.martin@e		y.martin@ev	/ergy.c									I I	12065 Lebanon Rd Mount Juliet, TN 371 Phone: 615-758-5858	422441-1	
Project Description: Evergy - Sibley Generating Station		City/State Collected:	Sibler	MO		Please Ci PT MT C	TET	EO		res							Phone: 800-767-5859 Fax: 615-758-5859	
Phone: 913-681-0030	Client Project	t #	Lab P		opks-s	IBLEY		250mIHDPE-HNO3	Pres	PE-NoP	res						MO4	<b>25348</b> <b>4</b> 9
Collected by (print): Whit Martin	Site/Facility I			P.O. #				Omihi	DPE-No	IdHims	PE-NoP	NoPres					Acctnum: AQU	
Collected by (signature): Manufacture Immediately Packed on Ice N Y X		ay 10 D		Quote #		Needed	No. of	- 6010	de 125mlHDPE-NoPres	de, SO4 125mlHDPE-NoPres	Sulfate 125mlHDPE-NoPres	250mlHDPE-NoPres					Femplate: <b>T166</b> Prelogin: <b>P789</b> PM: 206 - Jeff Ci PB:	904
Sample ID	Comp/Grab	Matrix *	Depth	Da	te	Time	Cntrs	Calcium	Chloride	Chloride,	sulfat	TDS 2					Remarks	Sample # (lab o
MW-505	Grab	GW	1	18/21	6/20	1555	1	X									pilling in the second s	-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	Terra 147	8/20	5/20	1455	1.				X		-3					
MW-512	Grab	GW		8/20	5/20	1410	2			X		X						
MW-512 MS/MSD	Grab	GW		8/20	5/20	1410	1.			X								1
DUPLICATE 2 ·	Grab	GW		8/2	6/20	11410	2			X		X						(
MW-804	Grab	GW		8/2	6/20	1325	1		X									6
* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater	Remarks:		2-2								pH Flow		_ Temp _ Other		COC S: Bottle Correc	eal Pres igned/Ad es arriv et bott:	Receipt Che sent/Intact: courate: ve intact: les used:	NP Y
DW - Drinking Water OT - Other	Samples returne UPSFedE				Trackir			179	10:			32:			VOA Z	ero Head	olume sent: If Applicabl dspace: Correct/Che	eY
Relinquished by : (Signature)	C	8/26/	20	700	Receiv	ed by: Signa	ture)		-		Trip Bla	nk Recei	TE	CL / MeoH SR	RAD S	creen <	0.5 mR/hr:	Ξ <sub>Y</sub> .
Relinquished by (Signature)	· · · · · · · · · · · · · · · · · · ·	Date: 26	20 [S	60	1	ed by: (Signa	ture)	H. F			Telate 3.9	13:	C Bottle	s Received:	If prese	ervation r	equired by Logi	In: Date/Time
Refinquished by : (Signature)	1	Date:	Time	CONTRACTOR OF CONT		ed for lab by	1	7	1		Date:	12/2	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

*	
<sup>1</sup> Cp	
<sup>2</sup> Tc	
<sup>3</sup> Ss	
<sup>4</sup> Cn	
⁵Sr	
<sup>6</sup> Qc	
<sup>7</sup> Gl	

<sup>°</sup>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			Will Martin	00/20/20 15.55		
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
letals (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
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	
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	
							<sup>3</sup> 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

#### Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Dilution	Analysis	Batch	GI
Analyte	ug/l		ug/l		date / time		8
Calcium	93900		1000	1	09/01/2020 15:20	<u>WG1535077</u>	ĬAĬ
Magnesium	38200		1000	1	09/01/2020 15:20	<u>WG1535077</u>	
Potassium	ND		2000	1	09/01/2020 15:20	WG1535077	<sup>9</sup> 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							<sup>3</sup> 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							<sup>3</sup> 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	ID)				$^{1}Cr$
(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	<sup>3</sup> Ss

#### Sample Narrative:

BLANK: Endpoint pH 4.5

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

(OS) L1255315-01 09/02/2	20 22:52 • (DUF	P) R3566888-2	2 09/02/2	0 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

<sup>2</sup> Tc
<sup>3</sup> Ss
<sup>4</sup> Cn
<sup>5</sup> Sr
<sup>6</sup> Qc
 <sup>7</sup> 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	8/20 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 <sup>1</sup>	923	North D
Idaho	TN00003	Ohio–V
Illinois	200008	Oklaho
Indiana	C-TN-01	Oregon
lowa	364	Pennsy
Kansas	E-10277	Rhode
Kentucky <sup>16</sup>	90010	South C
Kentucky <sup>2</sup>	16	South D
Louisiana	Al30792	Tennes
Louisiana <sup>1</sup>	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 <sup>1</sup>	n/a
New York	11742
North Carolina	Env375
North Carolina <sup>1</sup>	DW21704
North Carolina <sup>3</sup>	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 <sup>14</sup>	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		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>6</sup> 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 Info	rmation:					, A	nalvsis	/ Contai	ner / Pre	servative	1	Chain of Custor	y Page of 1
SCS Engineers - KS 8575 W. 110th Street Overland Park, KS 66210			8575 W.	s Payable 110th Street d Park, KS 662	210	Pres Chk		27			22				- Pack	Analytical * Canter for Testing & Innovation
Report to: Jason Franks			Email To: jfranks@so	csengineers.com	jay.martin@	evergy.c		03		Pres					12065 Lebanon R Mount Juliet, TN	7122
Project Description:		City/State	c.11	110	Please	Circle:	1 5	NH	GS	-No	03				Phone: 615-758-5 Phone: 800-767-5 Fax: 615-758-585	859
Evergy Sibley Generating Station		Collected:	Zibley	hagh and a second and a second s	PT MT	ETET	Pre	PE.	IOPI	DPE	NH	S				C CUD
Phone: 913-681-0030	Client Project 27213169		1	Lab Project # AQUAOPKS	-SIBLEY		E-No	250mIHDPE-HNO3	DPE-N	SmIHE	HDPE-	NoPre			SDG # L MO4	1255481
Collected by (print): Whit Martin	Site/Facility	ID #		P.O. #		T	125mlHDPE-NoPres	0 250	125mlHDPE-NoPres	9056 125miHDPE-NoPres	6010 250miHDPE-HNO3	5mlHDPE-NoPres			Acctnum: AC	
Collected by (signature):	Rush?	(Lab MUST Be	Notified)	Quote #			125n	- 6010	6 12	1	10 2	Smlt			Template:T1	
Immediately	Same Next [ Two D	Day5 Day	Day (Rad Only) ay (Rad Only)		Its Needed	No.	ALKCA	Na	- 9056	Chloride, SO4	1	56 12			Prelogin: P73 PM: 206 - Jeff	
Packed on Ice N Y X	Three			51	g	of	1, A	, Mg,	ide	ide	S, Na	905			PB: Shipped Via:	
Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	Cntrs	ALKBI,	Ca, K,	Chloride	Chlor	K, Mg,	504 -			Remarks	Sample # (lab only)
MW-505	Grab	GW	Τ	18/26/2	d 1555	3	X			x	X	~~				-01
/IW-506	Grab	GW		8/26/2	01455	3 .	X	X	x							02
ИW-512	Grab	GW		8/26/2	0 1410	2	X	X			-				-	03
MW-804	Grab		1	8/26/2	01320	2 3	X	X				x				. 04
				1 212010						-						
						1										
						1-						-				
* Matrix: 55 - Soil AIR - Air F - Filter 5W - Groundwater B - Bioassay NW - WasteWater	Remarks:									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 DT - Other	Samples returne UPSFedE			Track	ing.#		1	190	3	036	032	130		Sufficie VOA Zero	ent volume sent: <u>If Applicat</u> Headspace:	
Relinguished by : (Signature)	C C	B/26/2	0 17	00 A	ved by: (Sign	ature)	<b>ec</b> , 12,5		1	Frip Blan	nk Receiv	The second state of the se	s / NØ ICL / MeoH BR		ation Correct/Ch aen <0.5 mR/hr:	ecked: $4^{\text{Y}}_{\text{Y}} = N^{\text{N}}_{\text{N}}$
Relinquished by (Signature)		Al201	20 KG	0 7	odEx					3.4.	3 .	C Bottle	is Received:	If preserve	ation required by Lo	gin: Date/Time
Relinquished by : (Signature)	ľ	Date:	Time		ved for lab b	: (Signat	ure	it	5	Date:	12/1	1 Time	7:30	Hold:		Condition: NCF / OK

5

Jared Morrison December 20, 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: L1285495 11/13/2020 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: L1285495 DATE/TIME: 11/25/20 07:31 PAGE: 1 of 19

## TABLE OF CONTENTS

titib E.	
	<sup>1</sup> Cp
	<sup>2</sup> Tc
	<sup>3</sup> Ss
	<sup>4</sup> Cn
	<sup>5</sup> Sr
	<sup>6</sup> Qc
	<sup>7</sup> Gl
	<sup>8</sup> Al
	<sup>9</sup> Sc

Cp: Cover Page	1
Tc: Table of Contents	2
Ss: Sample Summary	3
Cn: Case Narrative	5
Sr: Sample Results	6
MW-801 L1285495-01	6
MW-802 L1285495-02	7
MW-803 L1285495-03	8
MW-804 L1285495-04	9
MW-805 L1285495-05	10
MW-806R L1285495-06	11
DUPLICATE L1285495-07	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: L1285495

DATE/TIME: 11/25/20 07:31

## SAMPLE SUMMARY

ONE LAB. NATIONWIDE.

\*

Ср

Tc

Ss

Cn

Sr

Qc

GI

ΆI

Sc

MW-801 L1285495-01 GW			Collected by Jason R. Franks	Collected date/time 11/11/20 13:45	Received dat 11/13/20 12:30	
Method	Batch	Dilution	Preparation	Analysis	Analyst	Location
Vietitou	Daten	Dilution	date/time	date/time	Analyst	LUCALION
Gravimetric Analysis by Method 2540 C-2011	WG1578113	1	11/18/20 02:39	11/18/20 08:30	CAT	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1580299	1	11/23/20 20:42	11/23/20 20:42	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1577838	1	11/19/20 03:28	11/20/20 06:40	CCE	Mt. Juliet, TN
MW-802 L1285495-02 GW			Collected by Jason R. Franks	Collected date/time 11/11/20 15:00	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	WG1578113	1	11/18/20 02:39	11/18/20 08:30	CAT	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1580299	1	11/23/20 20:55	11/23/20 20:55	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1577838	1	11/19/20 03:28	11/20/20 06:42	CCE	Mt. Juliet, TN
			Collected by	Collected date/time	Received dat	e/time
MW-803 L1285495-03 GW			Jason R. Franks	11/11/20 14:20	11/13/20 12:30	)
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1578113	1	11/18/20 02:39	11/18/20 08:30	CAT	Mt. Juliet, TI
Wet Chemistry by Method 9056A	WG1580299	1	11/23/20 21:08	11/23/20 21:08	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1580299	5	11/24/20 14:02	11/24/20 14:02	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1577838	1	11/19/20 03:28	11/20/20 06:45	CCE	Mt. Juliet, T
MW-804 L1285495-04 GW			Collected by Jason R. Franks	Collected date/time 11/11/20 15:05	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	WG1578113	1	11/18/20 02:39	11/18/20 08:30	CAT	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1580299	1	11/23/20 21:21	11/23/20 21:21	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1577838	1	11/19/20 03:28	11/20/20 06:48	CCE	Mt. Juliet, TI
MW-805 L1285495-05 GW			Collected by Jason R. Franks	Collected date/time 11/11/20 14:20	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	WG1578113	1	11/18/20 02:39	11/18/20 08:30	CAT	Mt. Juliet, TI
Wet Chemistry by Method 9056A	WG1580299	1	11/23/20 21:34	11/23/20 21:34	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1577838	1	11/19/20 03:28	11/20/20 06:56	CCE	Mt. Juliet, Ti
MW-806R L1285495-06 GW			Collected by Jason R. Franks	Collected date/time 11/11/20 13:35	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	WG1578113	1	11/18/20 02:39	11/18/20 08:30	CAT	Mt. Juliet, Ti
Wet Chemistry by Method 9056A	WG1580299	1	11/23/20 21:47	11/23/20 21:47	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1580299	5	11/23/20 22:52	11/23/20 22:52	ELN	Mt. Juliet, TI
Metals (ICP) by Method 6010B	WG1577838	1	11/19/20 03:28	11/20/20 06:29	CCE	Mt. Juliet, TN

PROJECT: 27213169.20

SDG: L1285495 DATE/TIME: 11/25/20 07:31 PAGE: 3 of 19

## SAMPLE SUMMARY

ONE LAB. NATIONWIDE.

				Collected date/time	Received date/time	
DUPLICATE L1285495-07 GW	Jason R. Franks	11/11/20 13:35	11/13/20 12:3	0		
Method	Batch	Dilution	Preparation	Analysis	Analyst	Location
			date/time	date/time		
Gravimetric Analysis by Method 2540 C-2011	WG1578113	1	11/18/20 02:39	11/18/20 08:30	CAT	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1580299	1	11/23/20 23:05	11/23/20 23:05	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1580299	5	11/24/20 12:09	11/24/20 12:09	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1577838	1	11/19/20 03:28	11/20/20 06:58	CCE	Mt. Juliet, TN



\*

Ср

SDG: L1285495

## 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: L1285495 DATE/TIME: 11/25/20 07:31 PAGE:

5 of 19

#### SAMPLE RESULTS - 01 L1285495

Qc

Gl

Â

Sc

#### Gravimetric Analysis by Method 2540 C-2011

	Result	Qualifier RDL	Dilution	Analysis	Batch	 Ct
Analyte	ug/l	ug/l		date / time		 2
Dissolved Solids	505000	10000	1	11/18/2020 08:30	WG1578113	Tc

#### Wet Chemistry by Method 9056A

era vinne tine vinary sie		.0.10.0.20					
	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l		date / time		
Dissolved Solids	505000		10000	1	11/18/2020 08:30	WG1578113	
Wet Chemistry by M	lethod 9056A	N Contraction of the second se					
	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l		date / time		
Chloride	65400		1000	1	11/23/2020 20:42	WG1580299	
Chloride Fluoride	65400 164		1000 150	1 1	11/23/2020 20:42 11/23/2020 20:42	WG1580299 WG1580299	

	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l		date / time		
Boron	243		200	1	11/20/2020 06:40	WG1577838	
Calcium	127000		1000	1	11/20/2020 06:40	WG1577838	

#### SAMPLE RESULTS - 02 L1285495

Qc

Gl

Â

Sc

#### Gravimetric Analysis by Method 2540 C-2011

	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l		date / time		
Dissolved Solids	190000		10000	1	11/18/2020 08:30	WG1578113	
Wet Chemistry by	Method 9056A	<b>\</b>					
	Result		RDL	Dilution	Analysis	Batch	
Analyte		Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch	
Analyte Chloride	Result			Dilution 1		Batch WG1580299	
	Result ug/l		ug/l	Dilution 1 1	date / time		

#### Wet Chemistry by Method 9056A

Collected date/time: 11/11/20 15:00

	*					1 33
	Result	Qualifier RDL	Dilution	Analysis	Batch	
Analyte	ug/l	ug/l		date / time		<sup>4</sup> Cn
Chloride	7000	1000	1	11/23/2020 20:55	WG1580299	
Fluoride	179	150	1	11/23/2020 20:55	WG1580299	5
Sulfate	19500	5000	1	11/23/2020 20:55	WG1580299	<sup>°</sup> Sr

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Boron	ND		200	1	11/20/2020 06:42	WG1577838
Calcium	29500		1000	1	11/20/2020 06:42	WG1577838

#### SAMPLE RESULTS - 03 L1285495

Qc

Gl

Â

Sc

#### Gravimetric Analysis by Method 2540 C-2011

	Result	Qualifier RD	L Dilution	Analysis	Batch	— [ Cp
Analyte	ug/l	ug/	l	date / time		2
Dissolved Solids	512000	100	000 1	11/18/2020 08:30	WG1578113	Tc

#### Wet Chemistry by Method 9056A

Collected date/time: 11/11/20 14:20

	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l		date / time		L T
Dissolved Solids	512000		10000	1	11/18/2020 08:30	WG1578113	
Mot Chamistry by							Г
wet Chemistry by	Method 9056A	A					
wet Chemistry by	Result	A Qualifier	RDL	Dilution	Analysis	Batch	
Analyte			RDL ug/l	Dilution	Analysis date / time	Batch	
Analyte	Result			Dilution 1		Batch WG1580299	[
	Result ug/l		ug/l	Dilution 1 1	date / time		[ [

	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l		date / time		
Boron	2930		200	1	11/20/2020 06:45	WG1577838	
Calcium	118000		1000	1	11/20/2020 06:45	WG1577838	

#### SAMPLE RESULTS - 04 L1285495

Qc

Gl

Â

Sc

#### Gravimetric Analysis by Method 2540 C-2011

	· · ·						Cn	Т
	Result	Qualifier	RDL	Dilution	Analysis	Batch	Ср	
Analyte	ug/l		ug/l		date / time		2	ì
Dissolved Solids	706000		10000	1	11/18/2020 08:30	WG1578113	Tc	

#### Wet Chemistry by Method 9056A

Collected date/time: 11/11/20 15:05

Result     Qualifier     RDL     Dilution     Analysis     Batch       Analyte     uo/l     date / time     4		Result	Qualifier	RDL	Dilution	Analysis	Datch	
Met Chemistry by Method 9056A         Result       Qualifier       RDL       Dilution       Analysis       Batch         Analyte       ug/l       ug/l       date / time       4         Chloride       20800       1000       1       11/23/2020 21:21       WG1580299         Fluoride       192       150       1       11/23/2020 21:21       WG1580299	Analyte	ug/l		ug/l		date / time		2
Result         Qualifier         RDL         Dilution         Analysis         Batch           Analyte         ug/l         ug/l         date / time         4           Chloride         20800         1000         1         11/23/2020 21:21         WG1580299           Fluoride         192         150         1         11/23/2020 21:21         WG1580299         5	Dissolved Solids	706000		10000	1	11/18/2020 08:30	WG1578113	
Analyte         ug/l         date / time         4           Chloride         20800         1000         1         11/23/2020 21:21         WG1580299           Fluoride         192         150         1         11/23/2020 21:21         WG1580299         Is	Wet Chemistry by	/ Method 9056A	L.					3
Chloride         20800         1000         1         11/23/2020 21:21         WG1580299           Fluoride         192         150         1         11/23/2020 21:21         WG1580299		Result	Qualifier	RDL	Dilution	Analysis	Batch	
Chloride         20800         1000         1         11/23/2020 21:21         WG1580299           Fluoride         192         150         1         11/23/2020 21:21         WG1580299         5	Analyte	ug/l		ug/l		date / time		4
	Chloride	20800		1000	1	11/23/2020 21:21	WG1580299	
Sulfate         ND         5000         1         11/23/2020 21:21         WG1580299	Fluoride	192		150	1	11/23/2020 21:21	WG1580299	5
	Sulfate	ND		5000	1	11/23/2020 21:21	WG1580299	Š

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Boron	10300		200	1	11/20/2020 06:48	WG1577838
Calcium	172000		1000	1	11/20/2020 06:48	WG1577838



#### SAMPLE RESULTS - 05 L1285495

Qc

Gl

Â

Sc

#### Gravimetric Analysis by Method 2540 C-2011

	Result	Qualifier RDL	Dilution	Analysis	Batch	C
Analyte	ug/l	ug/l		date / time		2
Dissolved Solids	338000	1000	) 1	11/18/2020 08:30	WG1578113	Tc

#### Wet Chemistry by Method 9056A

	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l		date / time	—	L. F
Dissolved Solids	338000		10000	1	11/18/2020 08:30	WG1578113	
Wet Chemistry by	Method 90564	7					[
, , ,		1					
	Result	Qualifier	RDL	Dilution	Analysis	Batch	[
			RDL ug/l	Dilution	Analysis date / time	Batch	[ 
Analyte	Result			Dilution 1		Batch WG1580299	[
Analyte Chloride Fluoride	Result ug/l		ug/l	Dilution 1 1	date / time		4

	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l		date / time		
Boron	ND		200	1	11/20/2020 06:56	WG1577838	
Calcium	95300		1000	1	11/20/2020 06:56	WG1577838	

#### SAMPLE RESULTS - 06 L1285495

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	673000		10000	1	11/18/2020 08:30	WG1578113	Tc

#### Wet Chemistry by Method 9056A

	Result	Quanner	RDL	Dilution	Analysis	Daten	
Analyte	ug/l		ug/l		date / time		2
Dissolved Solids	673000		10000	1	11/18/2020 08:30	WG1578113	Tc
Wet Chemistry by Meth	od 9056A						<sup>3</sup> Ss
	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l		date / time		
Chloride	27100		1000	1	11/23/2020 21:47	WG1580299	
Fluoride	200		150	1	11/23/2020 21:47	WG1580299	⁵Sr

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Boron	5390	01	200	1	11/20/2020 06:29	WG1577838
Calcium	156000	<u>01 V</u>	1000	1	11/20/2020 06:29	WG1577838

#### SAMPLE RESULTS - 07 L1285495



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	673000		10000	1	11/18/2020 08:30	<u>WG1578113</u>	Tc

#### Wet Chemistry by Method 9056A

	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l	quanter	ug/l	Dilation	date / time	Bateri	
Chloride	27000		1000	1	11/23/2020 23:05	WG1580299	
Fluoride	199		150	1	11/23/2020 23:05	WG1580299	
Sulfate	211000		25000	5	11/24/2020 12:09	WG1580299	

	Result	Qualifier	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l		date / time		
Boron	5380		200	1	11/20/2020 06:58	WG1577838	
Calcium	155000		1000	1	11/20/2020 06:58	WG1577838	

## WG1578113

Gravimetric Analysis by Method 2540 C-2011

#### QUALITY CONTROL SUMMARY L1285495-01,02,03,04,05,06,07

Тс

Ss

Cn

Sr

ິQc

#### Method Blank (MB)

(MB) R3595278-1 11/18/20 08:30						
	MB Result	MB Qualifier	MB MDL	MB RDL		
Analyte	ug/l		ug/l	ug/l		
Dissolved Solids	U		2820	10000		

#### L1285495-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1285495-06 11/18	8/20 08:30 • (DUF	P) R3595278-3	3 11/18/20 (	08:30		
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Dissolved Solids	673000	677000	1	0.593		5

#### L1285695-01 Original Sample (OS) • Duplicate (DUP)

L1285695-01 Ori	<sup>7</sup> L1285695-01 Original Sample (OS) • Duplicate (DUP)									
(OS) L1285695-01 11/18/20 08:30 • (DUP) R3595278-4 11/18/20 08:30										
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits		<sup>8</sup> Al		
Analyte	ug/l	ug/l		%		%				
Dissolved Solids	49000	49000	1	0.000		5		<sup>9</sup> Sc		

#### Laboratory Control Sample (LCS)

(LCS) R3595278-2 11/1	LCS) R3595278-2 11/18/20 08:30							
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier			
Analyte	ug/l	ug/l	%	%				
Dissolved Solids	8800000	8780000	99.8	77.4-123				

DATE/TIME: 11/25/20 07:31

#### Wet Chemistry by Method 9056A

#### QUALITY CONTROL SUMMARY L1285495-01,02,03,04,05,06,07

Ср

⁴Cn

Sr

Qc

GI

Â

Sc

#### Method Blank (MB)

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

(MB) R3596818-1 11					
	MB Result	MB Qualifier	MB MDL	MB RDL	
Analyte	ug/l		ug/l	ug/l	
Chloride	U		379	1000	
Fluoride	U		64.0	150	
Sulfate	U		594	5000	

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

(OS) L1285493-01 11/23/20	) 18:07 • (DUP)	R3596818-3 1				
	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

DATE/TIME: 11/25/20 07:31

PAGE: 14 of 19 Wet Chemistry by Method 9056A

#### QUALITY CONTROL SUMMARY <u>11285495-01,02,03,04,05,06,07</u>

#### L1285493-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1285493-06 11/23/2	S) L1285493-06 11/23/20 19:24 • (MS) R3596818-4 11/23/20 19:37 • (MSD) R3596818-5 11/23/20 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 07:31 Sc

## WG1577838

Metals (ICP) by Method 6010B

#### QUALITY CONTROL SUMMARY <u>L1285495-01,02,03,04,05,06,07</u>

<sup>1</sup>Cp

⁺Cn

GI

#### Method Blank (MB)

(MB) R3595559-1	11/20/20 06:24				
	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 ug/l ug/l % %		(LCS) R3595559-2 11/2	0/20 06:26					
ug/l ug/l % %			Spike Amour	t LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier	
	1000 971 97.1 80.0-120	Analyte	ug/l	ug/l	%	%		

#### L1285495-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1285495-06 11/20/2	20 06:29 • (MS)	R3595559-4	11/20/20 06:34	4 • (MSD) R359	5559-5 11/20/2	20 06:37							<sup>8</sup> Al
	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	%	%		%			%	%	9
Boron	1000	5390	6260	6210	86.6	81.7	1	75.0-125			0.787	20	SC
Calcium	10000	156000	162000	161000	65.1	52.7	1	75.0-125	V	$\underline{\vee}$	0.766	20	

ACCOUNT:
SCS Engineers - KS

PROJECT: 27213169.20

SDG: L1285495 DATE/TIME: 11/25/20 07:31

PAGE: 16 of 19

## 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
	The applyte conceptration exceeds the upper limit of the calibration range of the instrument established by the initial

E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
O1	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.

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

V

PROJECT: 27213169.20

SDG: L1285495

## **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	Nebrask
Alaska	17-026	Nevada
Arizona	AZ0612	New Ha
Arkansas	88-0469	New Jer
California	2932	New Me
Colorado	TN00003	New Yor
Connecticut	PH-0197	North Ca
Florida	E87487	North Ca
Georgia	NELAP	North Ca
Georgia <sup>1</sup>	923	North Da
ldaho	TN00003	Ohio–VA
Illinois	200008	Oklahon
Indiana	C-TN-01	Oregon
lowa	364	Pennsylv
Kansas	E-10277	Rhode Is
Kentucky <sup>16</sup>	90010	South Ca
Kentucky <sup>2</sup>	16	South Da
Louisiana	Al30792	Tenness
Louisiana <sup>1</sup>	LA180010	Texas
Maine	TN0002	Texas ⁵
Maryland	324	Utah
Massachusetts	M-TN003	Vermont
Michigan	9958	Virginia
Minnesota	047-999-395	Washing
Mississippi	TN00003	West Vir
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 <sup>1</sup>	n/a
New York	11742
North Carolina	Env375
North Carolina <sup>1</sup>	DW21704
North Carolina <sup>3</sup>	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 <sup>14</sup>	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		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>6</sup> 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

L1285495

11/25/20 07:31

	2	1	Billing Info	rmation:					1	nalvsis / Co	ntainer / Prese	ervative			Chain of Custody	Pageof
SCS Engineers - KS 8575 W. 110th Street Overland Park, KS 66210			8575 W.	Accounts Payable 8575 W. 110th Street Overland Park, KS 66210				n							- Pace Analytical" Nettonal Carter for Treating & Imount	
Report to: Jason Franks			Email To; jfranks@scsengineers.com;jay.martin@eve				res							12065 Lebanon Rd Mount Juliet, TN 371		7122
Project Description:		City/State		Ma h	Please C	ircle:	NoP								Phone: 615-758-58 Phone: 800-767-58 Fax: 615-758-5859	59
Evergy - Sibley Generating Station	Client Proj	Collected:	JIGL	EY. MO	PT MT	<b>ग</b> त	-E-	33								Loui d'a 1 Yullar
one: 913-681-0030	2721316				KS-SIBLEY		125mlHDPE-NoPres	UNH-							SDG #	6/285 49
Ollected by (print):	Site/Facilit	y ID #		P.O. #				HDPE	oPres					ана 1917 — П	Acctnum: AQ	B. hangemindering
Illected by (signature):	Rush? (Lab MUST Be No Same DayFive Day Next Day5 Day (R		Day Five Day lay 5 Day (Rad Only) ay 10 Day (Rad Only)		Quote #		, SO4)	Som	DE-N						Template: <b>T13</b> Prelogin: <b>P80</b>	
nmediately acked on Ice N Y					esults Needed	No.	(Cld,	(Cld, F, SO4) 125mlHDP 6010 250mlHDPE-HNO3	50miHDPE-NoPres						PM: 206 - Jeff	
Sample ID	Comp/Gra	b Matrix *	Depth	Date	Time	Cotrs	Anions	B, Ca -	TDS 25				-		Shipped Via: Remarks	Sample # (lab only
W-801	GRAD	GW	-	Lula	10 1345	3	X	X	X						1	-91
V-802	Olim	GW	-	4 14	1500		X	X	X		and the second s				1000	- 9-
V-803	1	GW	-	+	420	3	X	X	x					Constant Constant	475	- 02
V-804		GW	1-		1808	3	x	x	X						100	- 91
V-805		GW			1420	-	X	X	X				-			- 0
V-806R		GW	-	+	1335	3	X	X	X						+	-0(
OLOR MS/MSD		GW	-	+	1335	3	X	X	X							- 0
IPLICATE 2		GW	-		1335	-	x	x	X					1 <u>2</u> 1		-9
	V			V		1.00										
1829 est at le de la constante			1	1												
Matrix: S - Soil AIR - Air F - Filter W - Groundwater B - Bioassay VW - WasteWater					pH Temp Flow Other					COC S Bottl Corre	Sample Receipt Checklist COC Seal Present/Intact: NP Y P COC Signed/Accurate: Y N Bottles arrive intact: Y N Correct bottles used: Y N Sufficient volume sent: Y N					
W - Drinking Water T - Other	Samples returned via: _UPSFedExCourierSWA				1.3/1.9/1.6/1.2/1.7					Sufficient volume sent: <u>If Applicable</u> VOA Zero Headspace:						
elinquished by : (Signature)	_	Date: 11/12/-	Time: Received by: (Signatur			Time: Received by: (Signature) 11-72-20 Trip Blank Received: Yes / No HCL/ Medi										
elinquished by : (Signature)		Date: Time: Received by: (Signa			ceived by: (Signat	ure)	Tempor ACC Bottles Received:			Received:	If preservation required by Login: Date/Time			in: Date/Time		
elinquished by : (Signature)		Date:	Tíme	; Re	ceived for lab by:	(Signatu 1	ire)		I	Date:		1230 800	Hold:			Condition: NCF / OK

Jared Morrison December 20, 2022

## ATTACHMENT 2 Statistical Analyses

Jared Morrison December 20, 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 - Fly Ash Impoundment Fall 2019 Semiannual Detection Monitoring 40 CFR 257.94

Statistical analysis of monitoring data from the groundwater monitoring system for the Fly Ash Impoundment 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-804.

Constituent/Monitoring Well	*UPL	Observation November 6, 2019	1st Verification January 13, 2020	2nd Verification February 3, 2020	
Fluoride					
MW-804	0.2574	0.269	0.281	0.337	

\*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 fluoride in monitoring well MW-804.

Attached to this memorandum are the following backup information:

Attachment 1: Sanitas<sup>™</sup> Output:

Statistical evaluation output from Sanitas<sup>™</sup> for the prediction limit analysis. This includes prediction limit plots, prediction limit background data, detection sample result, 1<sup>st</sup> verification re-sample result (when applicable), 2<sup>nd</sup> verification re-sample result (when

Sibley Generating Station Determination of Statistically Significant Increases Fly Ash Impoundment March 10, 2020 Page 2 of 2

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<sup>™</sup> Configuration Settings:

Screen shots of the applicable Sanitas<sup>™</sup> configuration settings for the statistical prediction limit analysis. This includes data configuration, output configuration, prediction limit configuration and other tests configuration.

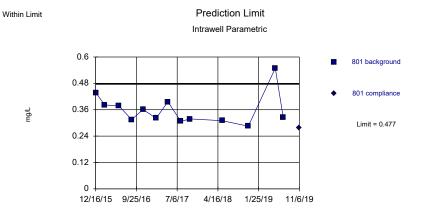
Revision Number	Revision Date	Attachment Revised	Summary of Revisions

Sibley Generating Station Determination of Statistically Significant Increases Fly Ash Impoundment March 10, 2020

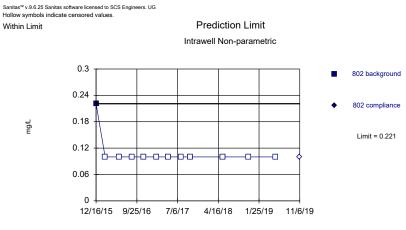
## ATTACHMENT 1

Sanitas<sup>™</sup> Output

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

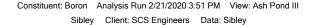


Background Data Summary: Mean=0.3604, Std. Dev.=0.07146, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8325, critical = 0.814. Kappa = 1.632 (c=7, w=6, 1 of 3, event alpha = 0.05123). Report alpha = 0.001254.



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 91.67% NDs. 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.

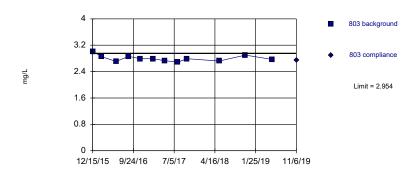
Constituent: Boron Analysis Run 2/21/2020 3:51 PM View: Ash Pond III Sibley Client: SCS Engineers Data: Sibley



Sanitas<sup>™</sup> v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit Intrawell Parametric

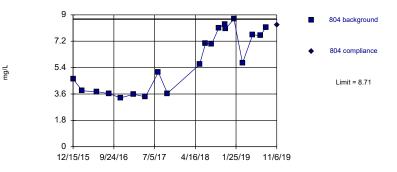


Background Data Summary: Mean=2.801, Std. Dev.=0.0919, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9186, critical = 0.805. Kappa = 1.664 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

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 20 background values. Well-constituent pair annual alpha = 0.001125. Individual comparison alpha = 0.0005627 (1 of 3). Seasonality was not detected with 95% confidence.

Constituent: Boron Analysis Run 2/21/2020 3:51 PM View: Ash Pond III Sibley Client: SCS Engineers Data: Sibley

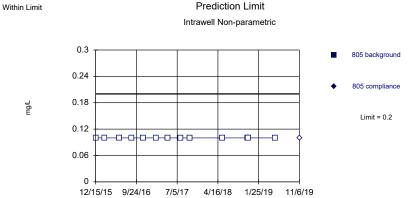
## **Prediction Limit**

Constituent: Boron Analysis Run 2/21/2020 3:54 PM View: Ash Pond III

#### Sibley Client: SCS Engineers Data: Sibley

				Sibley Cl	ient: SCS Engineers	Data: Sibley			
	801	801	802	802	803	803	804	804	 
12/15/2015					3.01		4.63		
12/16/2015	0.438		0.221						
2/17/2016	0.382		<0.2		2.85		3.81		
5/26/2016	0.377		<0.2		2.71		3.76		
8/23/2016	0.315		<0.2		2.86		3.62		
11/10/2016	0.361		<0.2		2.79		3.33		
2/9/2017	0.321		<0.2		2.79		3.58		
5/3/2017	0.396		<0.2		2.73		3.4		
8/1/2017	0.307		<0.2		2.69		5.08		
10/4/2017	0.318		<0.2		2.79		3.64		
5/16/2018	0.31		<0.2		2.72		5.61		
6/27/2018							7.06		
8/8/2018							7		
9/27/2018							8.11		
11/8/2018							8.37		
11/15/2018	0.285		<0.2		2.9		8.07		
1/11/2019							8.71		
3/12/2019							5.71		
5/22/2019	0.549		<0.2		2.77		7.64		
7/16/2019	0.326						7.59		
8/21/2019							8.14		
11/6/2019		0.278		<0.2		2.74		8.31	

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 = 13) were censored; limit is most recent reporting limit. 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: Boron Analysis Run 2/21/2020 3:51 PM View: Ash Pond III Sibley Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG



Prediction Limit Intrawell Parametric



Background Data Summary: Mean=5.148, Std. Dev.=0.4319, n=17. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8769, critical = 0.851. Kappa = 1.517 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

> Constituent: Boron Analysis Run 2/21/2020 3:51 PM View: Ash Pond III Sibley Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

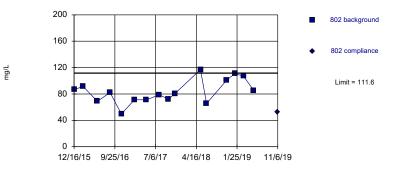
Prediction Limit Intrawell Parametric



Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG



Prediction Limit Intrawell Parametric



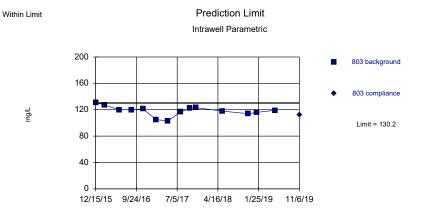
Background Data Summary: Mean=83.71, Std. Dev.=18.2, n=16. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9658, critical = 0.844. Kappa = 1.535 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

Background Data Summary: Mean=145.7, Std. Dev.=14.23, n=15. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9479, critical = 0.835. Kappa = 1.568 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Boron, Calcium Analysis Run 2/21/2020 3:54 PM View: Ash Pond III

				Sibley Client: SC	S Engineers Data	a: Sibley		
	805	805	806R	806R	801	801	802	802
12/15/2015	<0.2							
12/16/2015					159		86.6	
2/17/2016	<0.2				150		91.4	
5/26/2016	<0.2				147		68.9	
6/2/2016			5.1					
7/19/2016			4.81					
8/23/2016	<0.2		5.25		137		82.2	
11/10/2016	<0.2				143		49.6	
11/11/2016			4.77					
2/9/2017	<0.2		4.64		115		71.4	
3/22/2017			5.02					
5/3/2017	<0.2		4.76		127		71	
8/1/2017	<0.2		4.61		138		78.9	
10/4/2017	<0.2		4.77		148		72	
11/16/2017					156			
11/17/2017							80.3	
5/16/2018	<0.2		4.64		146		117	
6/27/2018							65.5	
11/8/2018	<0.2		5.19					
11/15/2018	<0.2		5.56		143		101	
1/11/2019			5.76		146		111	
3/12/2019			5.75				107	
5/22/2019	<0.2		5.58		178		85.5	
7/16/2019			5.64		152			
8/21/2019			5.66					
11/6/2019		<0.2		5.62		144		52.2

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

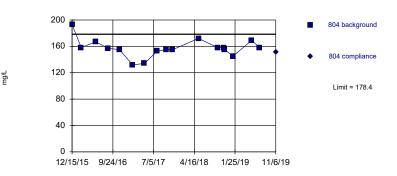


Background Data Summary: Mean=118.3, Std. Dev.=7.457, n=14. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9325, critical = 0.825. Kappa = 1.6 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

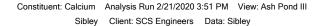


Prediction Limit



Background Data Summary: Mean=157.3, Std. Dev.=13.91, n=17. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8979, critical = 0.851. Kappa = 1.517 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

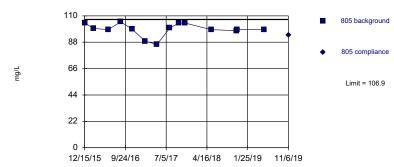
Constituent: Calcium Analysis Run 2/21/2020 3:51 PM View: Ash Pond III Sibley Client: SCS Engineers Data: Sibley



Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

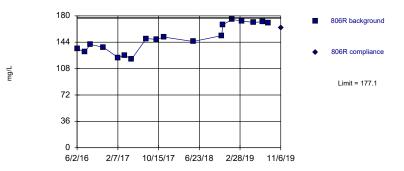


Background Data Summary (based on square transformation): Mean=9775, Std. Dev.=1039, n=14. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk@alpha = 0.01, calculated = 0.8389, critical = 0.825. Kappa = 1.6 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG



Prediction Limit



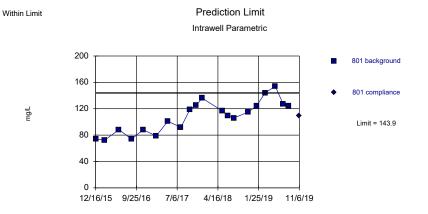
Background Data Summary: Mean=149.4, Std. Dev.=18.5, n=18. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.918, critical = 0.858. Kappa = 1.499 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Calcium Analysis Run 2/21/2020 3:51 PM View: Ash Pond III Sibley Client: SCS Engineers Data: Sibley

Constituent: Calcium Analysis Run 2/21/2020 3:54 PM View: Ash Pond III

Sibley Client: SCS Engineers Data: Sibley											
	803	803	804	804	805	805	806R	806R			
12/15/2015	131		193		104						
2/17/2016	127		158		99.5						
5/26/2016	120		167		98.5						
6/2/2016							135				
7/19/2016							131				
8/23/2016	120		157		105		141				
11/10/2016	121		155		98.9						
11/11/2016							137				
2/9/2017	105		132		88.8		123				
3/22/2017							126				
5/3/2017	103		134		86.2		121				
8/1/2017	117		153		100		149				
10/4/2017	122		155		104		148				
11/16/2017	123		155		104						
11/17/2017							151				
5/16/2018	118		172		98.5		145				
9/27/2018			158								
11/8/2018			158		97.6		153				
11/15/2018	114		155		98.5		168				
1/11/2019	116		145				175				
3/12/2019							173				
5/22/2019	119		169		98.7		171				
7/16/2019			158				172				
8/21/2019							170				
11/6/2019		112		151		94		164			

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG



Background Data Summary: Mean=108.4, Std. Dev.=24.27, n=20. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9544, critical = 0.868. Kappa = 1.462 (c=7, w=6, 1 of 3, event alpha = 0.051254.

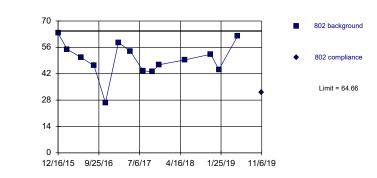
Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG



mg/L

Prediction Limit

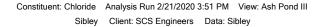




Intrawell Parametric

Background Data Summary: Mean=49.68, Std. Dev.=9.367, n=14. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9367, critical = 0.825. Kappa = 1.6 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Chloride Analysis Run 2/21/2020 3:51 PM View: Ash Pond III Sibley Client: SCS Engineers Data: Sibley



Sanitas<sup>™</sup> v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit Intrawell Parametric

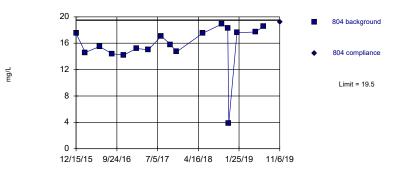


Background Data Summary: Mean=15.71, Std. Dev.=0.9135, n=14. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9244, critical = 0.825. Kappa = 1.6 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG



Prediction Limit

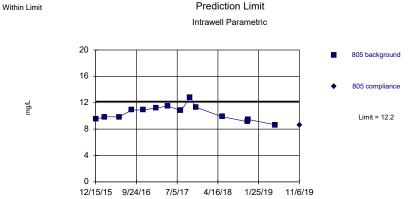


Background Data Summary (based on square transformation): Mean=256.8, Std. Dev.=81.28, n=17. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8518, critical = 0.851. Kappa = 1.517 (c=7, weef, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

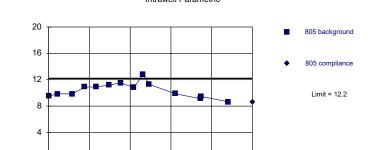
Constituent: Chloride Analysis Run 2/21/2020 3:54 PM View: Ash Pond III

Sibley Client: SCS Engineers Data: Sibley											
	801	801	802	802	803	803	804	804			
12/15/2015					14.9		17.5				
12/16/2015	73.6		63.5								
2/17/2016	72.4		55		14.8		14.6				
5/26/2016	88.2		50.5		14.4		15.5				
8/23/2016	73.8		46.3		14.9		14.4				
11/10/2016	88.2		26.6		15		14.2				
2/9/2017	78.6		58.6		15.1		15.2				
5/3/2017	101		53.9		15.9		15				
8/1/2017	91.8		43.5		16.3		17.1				
10/4/2017	119		43.1		17.5		15.8				
11/16/2017	125				16.1		14.7				
11/17/2017			46.7								
12/28/2017	136										
5/16/2018	117		49.3		15.9		17.5				
6/27/2018	109										
8/8/2018	106										
9/27/2018							18.9				
11/8/2018							18.3				
11/15/2018	115		52.3		17.2		3.9				
1/11/2019	124		44.2		16		17.6				
3/12/2019	144										
5/22/2019	154		62		15.9		17.7				
7/16/2019	127						18.6				
8/21/2019	124										
11/6/2019		109		32		17.7		19.2			
1/13/2020						16.7 1st Ve	erification				

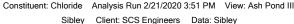
Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG



Background Data Summary: Mean=10.41, Std. Dev.=1.121, 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 = 1.6 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.



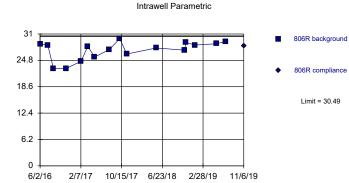








ng/L



Prediction Limit

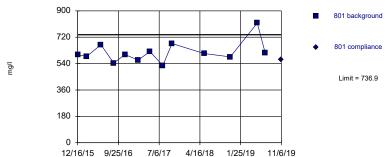
Background Data Summary: Mean=27.18, Std. Dev.=2.157, n=16. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8827, critical = 0.844. Kappa = 1.535 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

> Constituent: Chloride Analysis Run 2/21/2020 3:51 PM View: Ash Pond 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

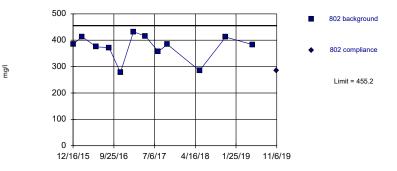




Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG



Prediction Limit Intrawell Parametric



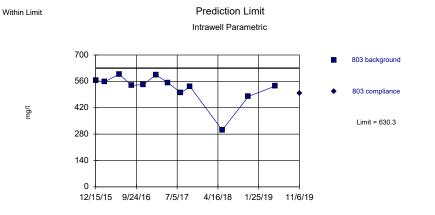
Background Data Summary: Mean=374.3, Std. Dev.=48.63, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8517, critical = 0.805. Kappa = 1.664 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

Background Data Summary: Mean=616.9, Std. Dev.=73.53, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8453, critical = 0.814. Kappa = 1.632 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Chloride, Dissolved Solids Analysis Run 2/21/2020 3:54 PM View: Ash Pond III

Sibley Client: SCS Engineers Data. Sibley										
	805	805	806R	806R	801	801	802	802		
12/15/2015	9.51									
12/16/2015					601		385			
2/17/2016	9.86				589		413			
5/26/2016	9.85				669		375			
6/2/2016			28.6							
7/19/2016			28.4							
8/23/2016	10.9		22.9		544		372			
11/10/2016	10.9				602		277			
11/11/2016			22.9							
2/9/2017	11.2		24.6		564		432			
3/22/2017			28.1							
5/3/2017	11.5		25.6		622		416			
8/1/2017	10.8		27.3		527		357			
10/4/2017	12.8		29.9		677		384			
11/16/2017	11.3									
11/17/2017			26.3							
5/16/2018	9.88		27.7		609		285			
11/8/2018	9.12		27.2							
11/15/2018	9.45		29		586		412			
1/11/2019			28.4							
5/22/2019	8.65		28.7		817		383			
7/16/2019			29.2		613					
11/6/2019		8.65		28.2		567		285		

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

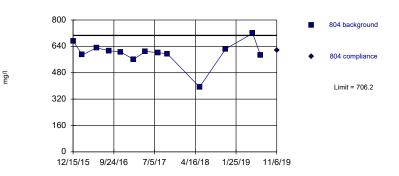


Background Data Summary (based on square transformation): Mean=280762, Std. Dev.=70036, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8114, critical = 0.805. Kappa = 1.664 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Dissolved Solids Analysis Run 2/21/2020 3:51 PM View: Ash Pond III Sibley Client: SCS Engineers Data: Sibley Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit



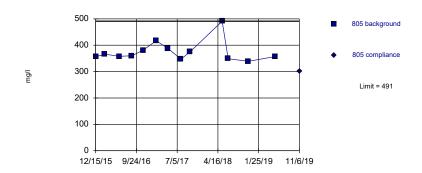
Background Data Summary (based on square transformation): Mean=364995, Std. Dev.=81975, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8666, critical = 0.814. Kappa = 1.632 (c=7), w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Dissolved Solids Analysis Run 2/21/2020 3:51 PM View: Ash Pond III Sibley Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

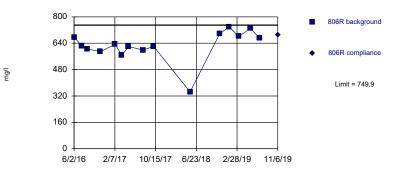


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 13 background values. Well-constituent pair annual alpha = 0.003769. Individual comparison alpha = 0.001886 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG



Prediction Limit

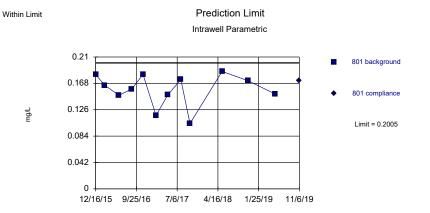


Background Data Summary (based on square transformation): Mean=400994, Std. Dev.=102955, n=15. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8926, critical = 0.835. Kappa = 1.568 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

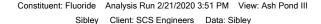
Constituent: Dissolved Solids Analysis Run 2/21/2020 3:54 PM View: Ash Pond III

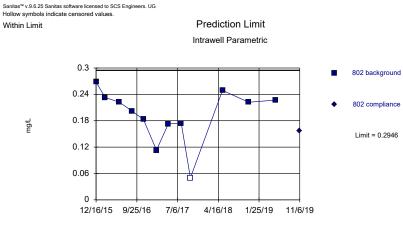
	803	803	804	804	805	805	806R	806R	
12/15/2015	564		673		356				
2/17/2016	558		588		366				
5/26/2016	598		631		358				
6/2/2016							677		
7/19/2016							624		
8/23/2016	538		613		360		605		
11/10/2016	543		606		381				
11/11/2016							589		
2/9/2017	594		561		417		633		
3/22/2017							568		
5/3/2017	552		609		388		620		
8/1/2017	500		602		347		599		
10/4/2017	532		594		375		621		
5/16/2018	301		393		491		345		
6/27/2018					349				
11/15/2018	480		625		339		699		
1/11/2019							739		
3/12/2019							681		
5/22/2019	535		719		357		731		
7/16/2019			585				671		
11/6/2019		495		615		302		691	

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG



Background Data Summary: Mean=0.1577, Std. Dev.=0.02573, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8945, critical = 0.805. Kappa = 1.664 (c=7, w=6, 1 of 3, event alpha = 0.001254.

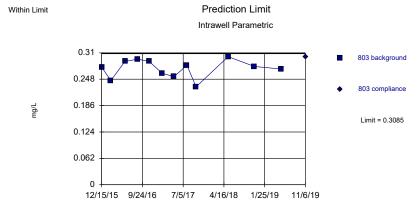




Background Data Summary: Mean=0.193, Std. Dev.=0.06104, n=12, 8.333% NDs. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8925, critical = 0.805. Kappa = 1.664 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Fluoride Analysis Run 2/21/2020 3:51 PM View: Ash Pond III Sibley Client: SCS Engineers Data: Sibley

Sanitas<sup>™</sup> v.9.6.25 Sanitas software licensed to SCS Engineers. UG

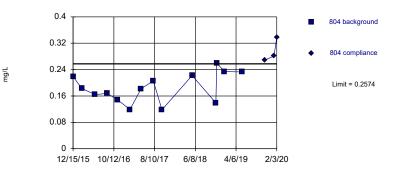


Background Data Summary: Mean=0.2728, Std. Dev.=0.02145, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9486, critical = 0.805. Kappa = 1.664 (=7, w=61, 163, eeent alpha = 0.05123). Report alpha = 0.001254.

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG



Prediction Limit Intrawell Parametric

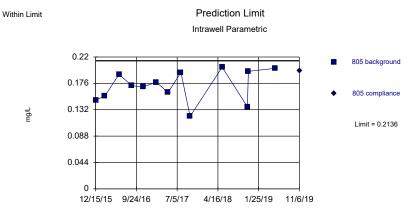


Background Data Summary: Mean=0.1854, Std. Dev.=0.04504, n=14. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9562, critical = 0.825. Kappa = 1.6 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

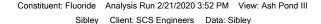
Constituent: Fluoride Analysis Run 2/21/2020 3:54 PM View: Ash Pond III

				Sibley Client. St	SS Eligineers Dau	a. Sibley		
	801	801	802	802	803	803	804	804
12/15/2015					0.276		0.219	
12/16/2015	0.182		0.268					
2/17/2016	0.165		0.233		0.245		0.183	
5/26/2016	0.149		0.222		0.29		0.164	
8/23/2016	0.159		0.202		0.295		0.168	
11/10/2016	0.182		0.183		0.29		0.148	
2/9/2017	0.117		0.113		0.262		0.119	
5/3/2017	0.15		0.173		0.254		0.182	
8/1/2017	0.174		0.174		0.281		0.206	
10/4/2017	0.104		<0.1		0.23		0.118	
5/16/2018	0.187		0.249		0.301		0.222	
11/8/2018							0.139	
11/15/2018	0.172		0.222		0.278		0.26	
1/11/2019							0.234	
5/22/2019	0.151		0.227		0.272		0.233	
11/6/2019		0.172		0.157		0.3		0.269
1/13/2020								0.281 1st Verification
2/3/2020								0.337 2nd Verification

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG



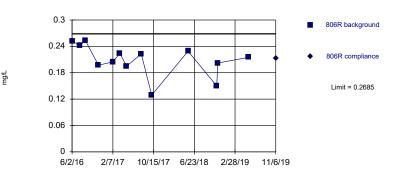
Background Data Summary: Mean=0.1713, Std. Dev.=0.02593, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9421, critical = 0.814. Kappa = 1.632 (c=7, w=6, 1 of 3, event alpha = 0.001254.





Within Limit

Prediction Limit



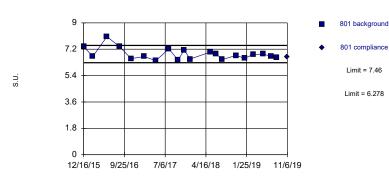
Background Data Summary: Mean=0.2089, Std. Dev.=0.03653, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9074, critical = 0.814. Kappa = 1.632 (c=7, w=6, 1 of 3, event alpha = 0.0071254.

Constituent: Fluoride Analysis Run 2/21/2020 3:52 PM View: Ash Pond III Sibley Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limits

Prediction Limit

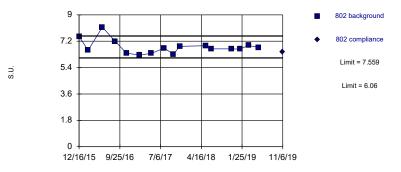


Background Data Summary: Mean=6.869, Std. Dev.=0.4045, n=20. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8703, critical = 0.868. Kappa = 1.462 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG



Prediction Limit Intrawell Parametric

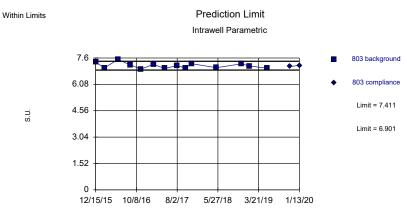


Background Data Summary: Mean=6.809, Std. Dev.=0.488, n=16. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8581, critical = 0.844. Kappa = 1.535 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Fluoride, pH Analysis Run 2/21/2020 3:54 PM View: Ash Pond III

Sibley Client: SCS Engineers Data: Sibley											
	805	805	806R	806R	801	801	802	802			
12/15/2015	0.148										
12/16/2015					7.39		7.53				
2/17/2016	0.155				6.7		6.58				
5/26/2016	0.191				8.06		8.16				
6/2/2016			0.252								
7/19/2016			0.242								
8/23/2016	0.172		0.253		7.37		7.2				
11/10/2016	0.17				6.56		6.39				
11/11/2016			0.197								
2/9/2017	0.178		0.205		6.7		6.25				
3/22/2017			0.224								
5/3/2017	0.161		0.195		6.42		6.37				
8/1/2017	0.194		0.223		7.23		6.73				
10/4/2017	0.121		0.129		6.46		6.3				
11/16/2017					7.14						
11/17/2017							6.85				
12/28/2017					6.53						
5/16/2018	0.203		0.229		7		6.89				
6/27/2018					6.9		6.68				
8/8/2018					6.49						
11/8/2018	0.137		0.15								
11/15/2018	0.196		0.202		6.78		6.68				
1/11/2019					6.58		6.66				
3/12/2019					6.84		6.91				
5/22/2019	0.201		0.215		6.87		6.77				
7/16/2019					6.71						
8/21/2019					6.65						
11/6/2019		0.197		0.213		6.69		6.46			

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

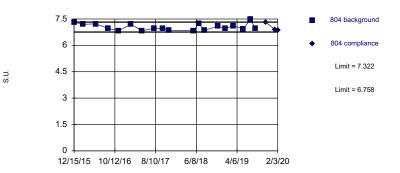


Background Data Summary: Mean=7.156, Std. Dev.=0.1594, n=14. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9228, critical = 0.825. Kappa = 1.6 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limits

Prediction Limit



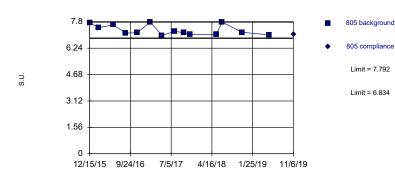
Background Data Summary: Mean=7.04, Std. Dev.=0.1903, n=19. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9025, critical = 0.863. Kappa = 1.48 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: pH Analysis Run 2/21/2020 3:52 PM View: Ash Pond III Sibley Client: SCS Engineers Data: Sibley Constituent: pH Analysis Run 2/21/2020 3:52 PM View: Ash Pond 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

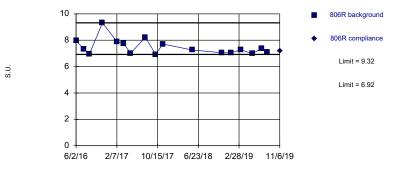


Background Data Summary: Mean=7.313, Std. Dev.=0.2995, n=14. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8296, critical = 0.825. Kappa = 1.6 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limits

Prediction Limit Intrawell Non-parametric

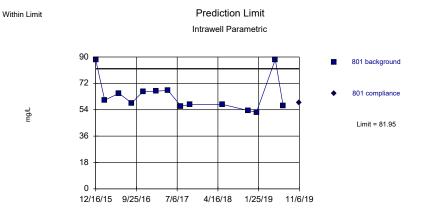


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 17 background values. Well-constituent pair annual alpha = 0.003639. Individual comparison alpha = 0.00182 (1 of 3). Seasonality was not detected with 95% confidence.

Constituent: pH Analysis Run 2/21/2020 3:54 PM View: Ash Pond III

Sibley Client: SCS Engineers Data: Sibley											
	803	803 804	804	805	805	806R	806R				
12/15/2015	7.36	7.32		7.74							
2/17/2016	7.03	7.2		7.46							
5/26/2016	7.51	7.22		7.62							
6/2/2016						7.98					
7/19/2016						7.33					
8/23/2016	7.2	6.96		7.14		6.95					
11/10/2016	6.96	6.83		7.15							
11/11/2016						9.32					
2/9/2017	7.23	7.2		7.79		7.88					
3/22/2017						7.75					
5/3/2017	7	6.83		7		7					
8/1/2017	7.15	6.97		7.24		8.23					
10/4/2017	7.02	6.95		7.15		6.92					
11/16/2017	7.27	6.84		7.04							
11/17/2017						7.71					
5/16/2018	7.04	6.83		7.06		7.26					
6/27/2018		7.23		7.78							
8/8/2018		6.85									
11/15/2018	7.26	7.09		7.18		7.05					
1/11/2019	7.14	6.97				7.05					
3/12/2019		7.11				7.27					
5/22/2019	7.01	6.93		7.03		6.99					
7/16/2019		7.48				7.37					
8/21/2019		6.95				7.08					
11/6/2019		7.11	7.32		7.05		7.17				
1/13/2020		7.17 Extra Sample	6.89 Extra	Sample							
2/3/2020			6.87 Extra	Sample							

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG



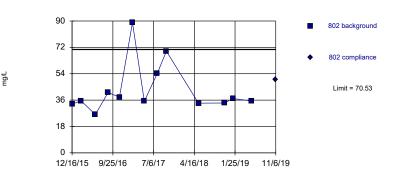
Background Data Summary (based on cube root transformation): Mean=3.987, Std. Dev.=0.2231, n=14. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8293, critical = 0.825. Kappa = 1.6 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG



Prediction Limit

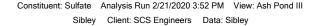




Intrawell Parametric

Background Data Summary (based on natural log transformation): Mean=3.708, Std. Dev.=0.3358, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8269, critical = 0.814. Kappa = 1.632 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

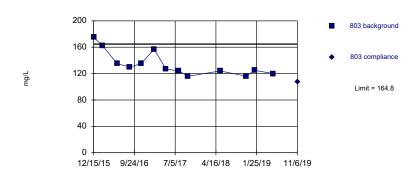
Constituent: Sulfate Analysis Run 2/21/2020 3:52 PM View: Ash Pond III Sibley Client: SCS Engineers Data: Sibley



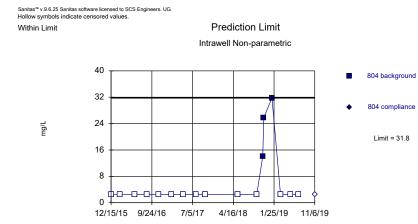
Sanitas™ v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit



Background Data Summary: Mean=134.3, Std. Dev.=18.67, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Bapiro Wilk @alpha = 0.01, calculated = 0.8373, critical = 0.814. Kappa = 1.632 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 17 background values. 82.35% NDs. Well-constituent pair annual alpha = 0.00182. Individual comparison alpha = 0.0009102 (1 of 3). Seasonality was not detected with 95% confidence.

Constituent: Sulfate Analysis Run 2/21/2020 3:54 PM View: Ash Pond III

	801	801	802	802	803	803	804	804			
12/15/2015					175		<5				
12/16/2015	88.1		33.3								
2/17/2016	60.5		35.5		162		<5				
5/26/2016	65.2		26.1		135		<5				
8/23/2016	58.6		41.2		130		<5				
11/10/2016	66.5		38		135		<5				
2/9/2017	66.6		88.9		157		<5				
5/3/2017	67.2		35.2		127		<5				
8/1/2017	56.5		54.2		124		<5				
10/4/2017	57.5		69.4		116		<5				
5/16/2018	57.7		33.9		124		<5				
9/27/2018							<5				
11/8/2018							14.1				
11/15/2018	53.4		34		116		25.8				
1/11/2019	52.3		37.1		125		31.8				
3/12/2019							<5				
5/22/2019	88.3		35.4		120		<5				
7/16/2019	56.6						<5				
11/6/2019		59		49.9		107		<5			

Sanitas<sup>™</sup> v.9.6.25 Sanitas software licensed to SCS Engineers. UG Hollow symbols indicate censored values.

Prediction Limit Within Limit Intrawell Parametric 70 805 background 56 4 805 compliance 42 ng/L Limit = 61.84 28 14 r 0 12/15/15 9/24/16 7/5/17 4/16/18 1/25/19 11/6/19

Background Data Summary (based on cube transformation): Mean=148642, Std. Dev.=53825, n=13, 7.692% NDs. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8253, critical = 0.814. Kappa = 1.632 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

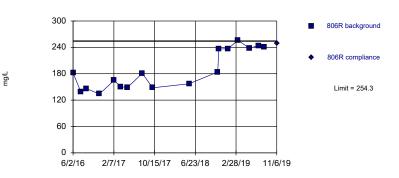
Constituent: Sulfate Analysis Run 2/21/2020 3:52 PM View: Ash Pond III

Sibley Client: SCS Engineers Data: Sibley

Sanitas<sup>™</sup> v.9.6.25 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit Intrawell Parametric



Background Data Summary: Mean=187.5, Std. Dev.=44.02, n=17. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8518, critical = 0.851. Kappa = 1.517 (c=7, w=6, 1 of 3, event alpha = 0.05123. Report alpha = 0.001254.

Constituent: Sulfate Analysis Run 2/21/2020 3:52 PM View: Ash Pond III Sibley Client: SCS Engineers Data: Sibley

Constituent: Sulfate Analysis Run 2/21/2020 3:54 PM View: Ash Pond III

	805	805	806R	806R
12/15/2015	5 60.9			
2/17/2016	50.7			
5/26/2016	<5			
6/2/2016			182	
7/19/2016			139	
8/23/2016	51.7		146	
11/10/2016	6 54.7			
11/11/2016	6		134	
2/9/2017	59.8		165	
3/22/2017			150	
5/3/2017	54.4		149	
8/1/2017	54.2		181	
10/4/2017	56		148	
5/16/2018	53.7		157	
11/8/2018	50.1		184	
11/15/2018			236	
1/11/2019			237	
3/12/2019			256	
5/22/2019			238	
7/16/2019			244	
8/21/2019			241	
11/6/2019		50.5		249
				-

Sibley Client: SCS Engineers Data: Sibley Printed 2/21/2020, 3:54 PM

			Cibicy	_	,			0, 0.041 1			
Constituent	Well	Upper Lim.	Lower Lim.	<u>Date</u>	Observ.	<u>Sig.</u>	<u>Bg N</u>		Transform	<u>Alpha</u>	Method
Boron (mg/L)	801	0.477	n/a	11/6/2019	0.278	No	13	0	No	0.001254	Param Intra 1 of 3
Boron (mg/L)	802	0.221	n/a	11/6/2019	0.1ND	No	12	91.67	n/a	0.002173	
Boron (mg/L)	803	2.954	n/a	11/6/2019	2.74	No	12	0	No	0.001254	Param Intra 1 of 3
Boron (mg/L)	804	8.71	n/a	11/6/2019	8.31	No	20	0	n/a	0.000	NP Intra (normality)
Boron (mg/L)	805	0.2	n/a	11/6/2019	0.1ND	No	13	100	n/a	0.001886	( )
Boron (mg/L)	806R	5.803	n/a	11/6/2019	5.62	No	17	0	No	0.001254	
Calcium (mg/L)	801	168	n/a	11/6/2019	144	No	15	0	No	0.001254	Param Intra 1 of 3
Calcium (mg/L)	802	111.6	n/a	11/6/2019	52.2	No	16	0	No	0.001254	Param Intra 1 of 3
Calcium (mg/L)	803	130.2	n/a	11/6/2019	112	No	14	0	No	0.001254	
Calcium (mg/L)	804	178.4	n/a	11/6/2019	151	No	17	0	No	0.001254	Param Intra 1 of 3
Calcium (mg/L)	805	106.9	n/a	11/6/2019	94	No	14	0	x^2	0.001254	Param Intra 1 of 3
Calcium (mg/L)	806R	177.1	n/a	11/6/2019	164	No	18	0	No	0.001254	Param Intra 1 of 3
Chloride (mg/L)	801	143.9	n/a	11/6/2019	109	No	20	0	No	0.001254	Param Intra 1 of 3
Chloride (mg/L)	802	64.66	n/a	11/6/2019	32	No	14	0	No	0.001254	Param Intra 1 of 3
Chloride (mg/L)	803	17.17	n/a	1/13/2020	16.7	No	14	0	No	0.001254	Param Intra 1 of 3
Chloride (mg/L)	804	19.5	n/a	11/6/2019	19.2	No	17	0	x^2	0.001254	Param Intra 1 of 3
Chloride (mg/L)	805	12.2	n/a	11/6/2019	8.65	No	14	0	No	0.001254	Param Intra 1 of 3
Chloride (mg/L)	806R	30.49	n/a	11/6/2019	28.2	No	16	0	No	0.001254	Param Intra 1 of 3
Dissolved Solids (mg/l)	801	736.9	n/a	11/6/2019	567	No	13	0	No	0.001254	Param Intra 1 of 3
Dissolved Solids (mg/l)	802	455.2	n/a	11/6/2019	285	No	12	0	No	0.001254	Param Intra 1 of 3
Dissolved Solids (mg/l)	803	630.3	n/a	11/6/2019	495	No	12	0	x^2	0.001254	Param Intra 1 of 3
Dissolved Solids (mg/l)	804	706.2	n/a	11/6/2019	615	No	13	0	x^2	0.001254	Param Intra 1 of 3
Dissolved Solids (mg/l)	805	491	n/a	11/6/2019	302	No	13	0	n/a	0.001886	NP Intra (normality)
Dissolved Solids (mg/l)	806R	749.9	n/a	11/6/2019	691	No	15	0	x^2	0.001254	Param Intra 1 of 3
Fluoride (mg/L)	801	0.2005	n/a	11/6/2019	0.172	No	12	0	No	0.001254	Param Intra 1 of 3
Fluoride (mg/L)	802	0.2946	n/a	11/6/2019	0.157	No	12	8.333	No	0.001254	Param Intra 1 of 3
Fluoride (mg/L)	803	0.3085	n/a	11/6/2019	0.3	No	12	0	No	0.001254	Param Intra 1 of 3
Fluoride (mg/L)	804	0.2574	n/a	2/3/2020	0.337	Yes	14	0	No	0.001254	Param Intra 1 of 3
Fluoride (mg/L)	805	0.2136	n/a	11/6/2019	0.197	No	13	0	No	0.001254	Param Intra 1 of 3
Fluoride (mg/L)	806R	0.2685	n/a	11/6/2019	0.213	No	13	0	No	0.001254	Param Intra 1 of 3
pH (S.U.)	801	7.46	6.278	11/6/2019	6.69	No	20	0	No	0.000	Param Intra 1 of 3
pH (S.U.)	802	7.559	6.06	11/6/2019	6.46	No	16	0	No	0.000	Param Intra 1 of 3
pH (S.U.)	803	7.411	6.901	1/13/2020	7.17	No	14	0	No	0.000	Param Intra 1 of 3
pH (S.U.)	804	7.322	6.758	2/3/2020	6.87	No	19	0	No	0.000	Param Intra 1 of 3
pH (S.U.)	805	7.792	6.834	11/6/2019	7.05	No	14	0	No	0.000	Param Intra 1 of 3
pH (S.U.)	806R	9.32	6.92	11/6/2019	7.17	No	17	0	n/a	0.00182	NP Intra (normality)
Sulfate (mg/L)	801	81.95	n/a	11/6/2019	59	No	14	0	x^(1/3)	0.001254	Param Intra 1 of 3
Sulfate (mg/L)	802	70.53	n/a	11/6/2019	49.9	No	13	0	ln(x)	0.001254	Param Intra 1 of 3
Sulfate (mg/L)	803	164.8	n/a	11/6/2019	107	No	13	0	No	0.001254	
Sulfate (mg/L)	804	31.8	n/a	11/6/2019	2.5ND	No	17	82.35	n/a	0.000	NP Intra (NDs) 1 of 3
Sulfate (mg/L)	805	61.84	n/a	11/6/2019	50.5	No	13	7.692	x^3	0.001254	Param Intra 1 of 3
Sulfate (mg/L)	806R	254.3	n/a	11/6/2019	249	No	17	0	No	0.001254	
					-						-

Sibley Generating Station Determination of Statistically Significant Increases Fly Ash Impoundment March 10, 2020

# ATTACHMENT 2

Sanitas<sup>™</sup> 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:	<ul> <li>Month</li> </ul>						
$\bigcirc$ 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
Fou Fou Dra Dra Enl Enl Vice Use Use Tru Sho	Include Tick Use Constit aw Border A arge/Reduc arge/Reduc de Margins ( e CAS# (No incate File N lude Limit Li ow Deselect	Page bine Data Pa Marks on D uent Name for round Text R ce Fonts (Grap ce Fonts (Data (on reports with t Const. Name lames to 20 nes when fou ted Data on 1 ted Data on a	ata Page or Graph Title eports and Da phs): a/Text Report thout explicit s e)	ighter v	□ Rou □ Use □ Indi □ Sho □ Thie Zou Output ○ Les ● No	Decimal Precisi ss Precision mal Precision re Precision	2 Sig. Digits and Data s	(when not	
Printer:	Adobe PD	F							<ul> <li>Printers</li> </ul>

Data Output Trend Test Control Cht Prediction Lim Tole	rrance Lim Conf/Tol Int ANOVA Welchs Other Tests								
Use Modified Alpha 0.02									
Test Residuals For Normality (Parametric test only) using Shapiro-Wilk/Francia									
Continue Parametric if Unable to Normalize									
Transformation (Parametric test only) <ul> <li>Use Ladder of Powers</li> <li>Natural Log or No Transformation</li> <li>Never Transform</li> <li>Use Specific Transformation:</li> </ul> Use Best W Statistic									
	Plot Transformed Values								
Use Non-Parametric Test (Sen's Slope/Mann-Kendall) when Non-D	Detects Percent > 75								
Include 95. % Confidence Interval around Trend Line									
Automatically Remove Outliers (Parametric test only)									
Note: there is no "Always Use Non-Parametric" checkbox on this tab because, for consistency with prior versions, Sen's Slope / Mann-Kendall (the non-parametric alternative) is available as a report in its own right, under Analysis->Intrawell->Trend.									

Data Output Trend Test Control Cht	Prediction Lim	Tolerance Lim	Conf/Tol Int	ANOVA	Welchs	Other Tests		
<ul> <li>✓ Test for Normality using Shapiro-Wilk/Fra</li> <li>✓ Use Non-Parametric Test when Non-Determine</li> </ul>		at Alpha = 0.01						
Use Aitchison's Adjustment $ \smallsetminus $ when Non-De	etects Percent >	15	0	ose opeoin	Natura			
Optional Further Refinement: Use Aitchise	on's 🗸 w	hen NDs % > 🤅						
Use Poisson Prediction Limit when Non-De	etects 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) ○ I □ Always Use Non-Parametric Facility α Statistical Evaluations per Year: Constituents Analyzed: Downgradient (Compliance) Wells: Sampling Plan Comparing Individual Observations ○ 1 of 1 ○ 1 of 2 ● 1 of 3 ○ 2 of 4 ("Modified California")	t to Test Never 2 7 6	Plot Bar Override St Override DI Automa 2-Tailed Show D Non-Parame Non-Parame O Highest Most R	Background Tr ckground Data andard Deviati F:	on: Dverride Kap Backgroun a Lighter Highest Bac 100% Non est Backgro vailable, or	ppa: d Outliers kground Va -Detects: bund Value MDL	lue V		

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										
C 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	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 - Fly Ash Impoundment Spring Semiannual Detection Monitoring 40 CFR 257.94

Statistical analysis of monitoring data from the groundwater monitoring system for the Fly Ash Impoundment 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 limit established for monitoring well MW-804.

Constituent/Monitoring Well	*UPL	Observation May 18, 2020	1st Verification July 14, 2020	2nd Verification August 28, 2020	
Chloride					
MW-804	19.5	20.4	20.9	20.8	

\*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 chloride in monitoring well MW-804.

Attached to this memorandum are the following backup information:

Attachment 1: Sanitas<sup>™</sup> Output:

Statistical evaluation output from Sanitas<sup>™</sup> for the prediction limit analysis. This includes prediction limit plots, prediction limit background data, detection sample results, 1<sup>st</sup> verification re-sample results (when applicable), 2<sup>nd</sup> verification re-sample results

Sibley Generating Station Determination of Statistically Significant Increases Fly Ash Impoundment September 23, 2020 Page 2 of 2

(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<sup>™</sup> Configuration Settings:

Screen shots of the applicable Sanitas<sup>™</sup> configuration settings for the statistical prediction limit analysis. This includes data configuration, output configuration, prediction limit configuration and other tests configuration.

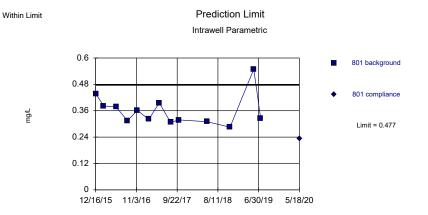
Revision Number	Revision Date	Attachment Revised	Summary of Revisions

Sibley Generating Station Determination of Statistically Significant Increases Fly Ash Impoundment September 23, 2020

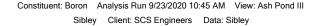
# ATTACHMENT 1

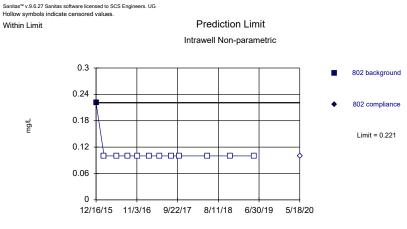
Sanitas<sup>™</sup> Output

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG



Background Data Summary: Mean=0.3604, Std. Dev.=0.07146, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8325, critical = 0.814. Kappa = 1.632 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.





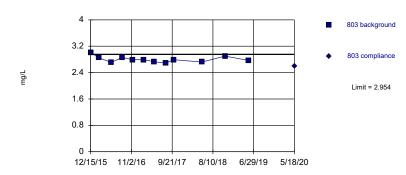
Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 91.67% NDs. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3).

Constituent: Boron Analysis Run 9/23/2020 10:45 AM View: Ash Pond III Sibley Client: SCS Engineers Data: Sibley

Sanitas<sup>™</sup> v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit Intrawell Parametric

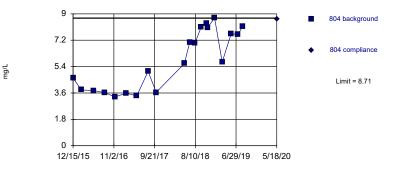


Background Data Summary: Mean=2.801, Std. Dev.=0.0919, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9186, critical = 0.805. Kappa = 1.664 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit Intrawell Non-parametric



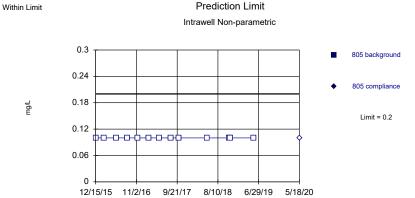
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 20 background values. Well-constituent pair annual alpha = 0.001125. Individual comparison alpha = 0.0005627 (1 of 3).

Constituent: Boron Analysis Run 9/23/2020 10:45 AM View: Ash Pond III Sibley Client: SCS Engineers Data: Sibley

Constituent: Boron Analysis Run 9/23/2020 10:53 AM View: Ash Pond III

	Sibley Client: SCS Engineers Data: Sibley										
	801	801	802	802	803	803	804	804			
12/15/2015					3.01		4.63				
12/16/2015	0.438		0.221								
2/17/2016	0.382		<0.2		2.85		3.81				
5/26/2016	0.377		<0.2		2.71		3.76				
8/23/2016	0.315		<0.2		2.86		3.62				
11/10/2016	0.361		<0.2		2.79		3.33				
2/9/2017	0.321		<0.2		2.79		3.58				
5/3/2017	0.396		<0.2		2.73		3.4				
8/1/2017	0.307		<0.2		2.69		5.08				
10/4/2017	0.318		<0.2		2.79		3.64				
5/16/2018	0.31		<0.2		2.72		5.61				
6/27/2018							7.06				
8/8/2018							7				
9/27/2018							8.11				
11/8/2018							8.37				
11/15/2018	0.285		<0.2		2.9		8.07				
1/11/2019							8.71				
3/12/2019							5.71				
5/22/2019	0.549		<0.2		2.77		7.64				
7/16/2019	0.326						7.59				
8/21/2019							8.14				
5/18/2020		0.234		<0.2		2.59		8.63			

Sanitas  $^{\mbox{\tiny W}}$  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 = 13) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.003769. Individual comparison alpha = 0.001886 (1 of 3).

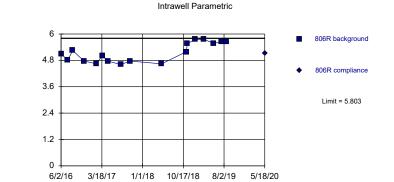
> Constituent: Boron Analysis Run 9/23/2020 10:45 AM View: Ash Pond III Sibley Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limit

mg/L

Prediction Limit



Background Data Summary: Mean=5.148, Std. Dev.=0.4319, n=17. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8769, critical = 0.851. Kappa = 1.517 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Boron Analysis Run 9/23/2020 10:45 AM View: Ash Pond III Sibley Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

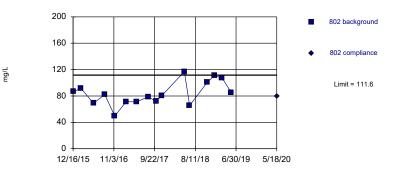


Background Data Summary: Mean=145.7, Std. Dev.=14.23, n=15. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9479, critical = 0.835. Kappa = 1.568 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG



Prediction Limit

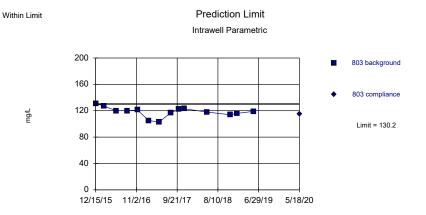


Background Data Summary: Mean=83.71, Std. Dev.=18.2, n=16. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9658, critical = 0.844. Kappa = 1.535 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Boron, Calcium Analysis Run 9/23/2020 10:53 AM View: Ash Pond III

	Sibley Client: SCS Engineers Data: Sibley										
	805	805	806R	806R	801	801	802	802			
12/15/2015	<0.2										
12/16/2015					159		86.6				
2/17/2016	<0.2				150		91.4				
5/26/2016	<0.2				147		68.9				
6/2/2016			5.1								
7/19/2016			4.81								
8/23/2016	<0.2		5.25		137		82.2				
11/10/2016	<0.2				143		49.6				
11/11/2016			4.77								
2/9/2017	<0.2		4.64		115		71.4				
3/22/2017			5.02								
5/3/2017	<0.2		4.76		127		71				
8/1/2017	<0.2		4.61		138		78.9				
10/4/2017	<0.2		4.77		148		72				
11/16/2017					156						
11/17/2017							80.3				
5/16/2018	<0.2		4.64		146		117				
6/27/2018							65.5				
11/8/2018	<0.2		5.19								
11/15/2018	<0.2		5.56		143		101				
1/11/2019			5.76		146		111				
3/12/2019			5.75				107				
5/22/2019	<0.2		5.58		178		85.5				
7/16/2019			5.64		152						
8/21/2019			5.66								
5/18/2020		<0.2		5.11		128		79.2			

Sanitas<sup>™</sup> v.9.6.27 Sanitas software licensed to SCS Engineers. UG



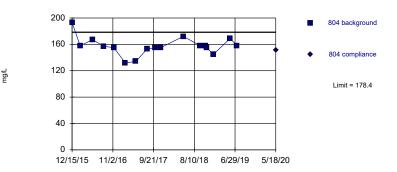
Background Data Summary: Mean=118.3, Std. Dev.=7.457, n=14. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9325, critical = 0.825. Kappa = 1.6 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

#### Constituent: Calcium Analysis Run 9/23/2020 10:45 AM View: Ash Pond III Sibley Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG



Prediction Limit



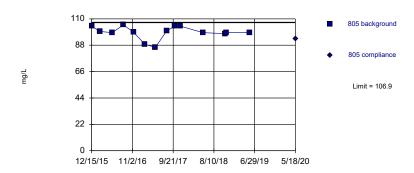
Background Data Summary: Mean=157.3, Std. Dev.=13.91, n=17. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8979, critical = 0.851. Kappa = 1.517 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Calcium Analysis Run 9/23/2020 10:45 AM View: Ash Pond III Sibley Client: SCS Engineers Data: Sibley

Sanitas<sup>™</sup> v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit Intrawell Parametric

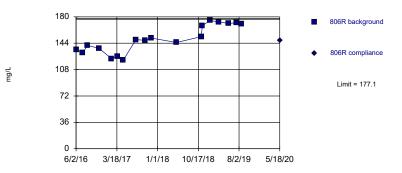


Background Data Summary (based on square transformation): Mean=9775, Std. Dev.=1039, n=14. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8389, critical = 0.825. Kappa = 1.6 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG



Prediction Limit Intrawell Parametric

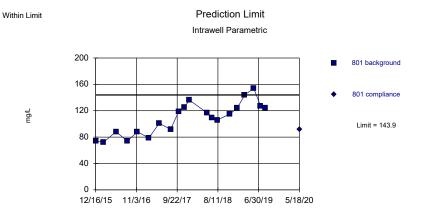


Background Data Summary: Mean=149.4, Std. Dev.=18.5, n=18. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.918, critical = 0.858. Kappa = 1.499 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Calcium Analysis Run 9/23/2020 10:53 AM View: Ash Pond III

Sibley Client: SCS Engineers Data: Sibley									
	803	803	804	804	805	805	806R	806R	
12/15/2015	131		193		104				
2/17/2016	127		158		99.5				
5/26/2016	120		167		98.5				
6/2/2016							135		
7/19/2016							131		
8/23/2016	120		157		105		141		
11/10/2016	121		155		98.9				
11/11/2016							137		
2/9/2017	105		132		88.8		123		
3/22/2017							126		
5/3/2017	103		134		86.2		121		
8/1/2017	117		153		100		149		
10/4/2017	122		155		104		148		
11/16/2017	123		155		104				
11/17/2017							151		
5/16/2018	118		172		98.5		145		
9/27/2018			158						
11/8/2018			158		97.6		153		
11/15/2018	114		155		98.5		168		
1/11/2019	116		145				175		
3/12/2019							173		
5/22/2019	119		169		98.7		171		
7/16/2019			158				172		
8/21/2019							170		
5/18/2020		115		151		93.3		148	

Sanitas<sup>™</sup> v.9.6.27 Sanitas software licensed to SCS Engineers. UG

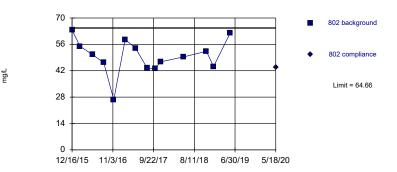


Background Data Summary: Mean=108.4, Std. Dev.=24.27, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9544, critical = 0.868. Kappa = 1.462 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Chloride Analysis Run 9/23/2020 10:45 AM View: Ash Pond III Sibley Client: SCS Engineers Data: Sibley Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit



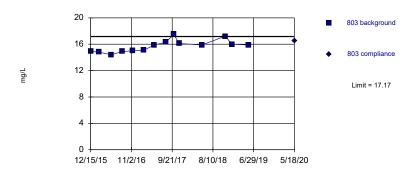
Background Data Summary: Mean=49.68, Std. Dev.=9.367, n=14. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9367, critical = 0.825. Kappa = 1.6 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Chloride Analysis Run 9/23/2020 10:45 AM View: Ash Pond 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

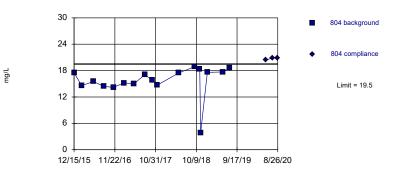


Background Data Summary: Mean=15.71, Std. Dev.=0.9135, n=14. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9244, critical = 0.825. Kappa = 1.6 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

Sanitas<sup>™</sup> v.9.6.27 Sanitas software licensed to SCS Engineers. UG



Prediction Limit

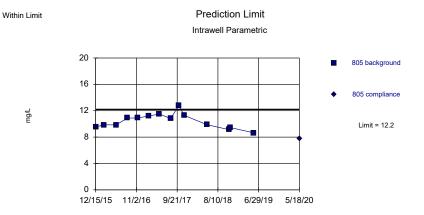


Background Data Summary (based on square transformation): Mean=256.8, Std. Dev.=81.28, n=17. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8518, critical = 0.851. Kappa = 1.517 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Chloride Analysis Run 9/23/2020 10:53 AM View: Ash Pond III

Sibley Client: SCS Engineers Data: Sibley										
	801	801	802	802	803	803	804	804		
12/15/2015					14.9		17.5			
12/16/2015	73.6		63.5							
2/17/2016	72.4		55		14.8		14.6			
5/26/2016	88.2		50.5		14.4		15.5			
8/23/2016	73.8		46.3		14.9		14.4			
11/10/2016	88.2		26.6		15		14.2			
2/9/2017	78.6		58.6		15.1		15.2			
5/3/2017	101		53.9		15.9		15			
8/1/2017	91.8		43.5		16.3		17.1			
10/4/2017	119		43.1		17.5		15.8			
11/16/2017	125				16.1		14.7			
11/17/2017			46.7							
12/28/2017	136									
5/16/2018	117		49.3		15.9		17.5			
6/27/2018	109									
8/8/2018	106									
9/27/2018							18.9			
11/8/2018							18.3			
11/15/2018	115		52.3		17.2		3.9			
1/11/2019	124		44.2		16		17.6			
3/12/2019	144									
5/22/2019	154		62		15.9		17.7			
7/16/2019	127						18.6			
8/21/2019	124									
5/18/2020		92		43.9		16.5		20.4		
7/14/2020								20.9		
8/26/2020								20.8		

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG



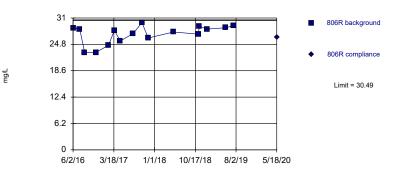
Background Data Summary: Mean=10.41, Std. Dev.=1.121, n=14. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.958, critical = 0.825. Kappa = 1.6 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

> Constituent: Chloride Analysis Run 9/23/2020 10:45 AM View: Ash Pond III Sibley Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG



Prediction Limit Intrawell Parametric



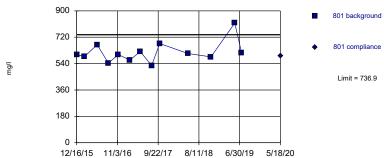
Background Data Summary: Mean=27.18, Std. Dev.=2.157, n=16. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8827, critical = 0.844. Kappa = 1.535 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

> Constituent: Chloride Analysis Run 9/23/2020 10:46 AM View: Ash Pond 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



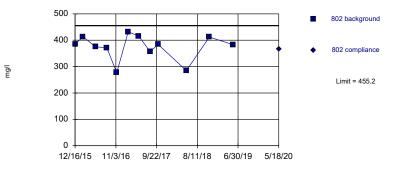
801 compliance

Limit = 736.9

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG



Prediction Limit Intrawell Parametric



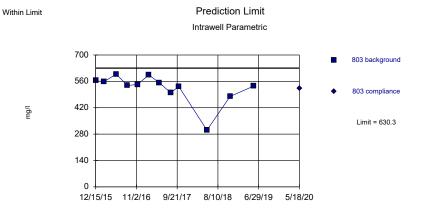
Background Data Summary: Mean=374.3, Std. Dev.=48.63, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8517, critical = 0.805. Kappa = 1.664 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

Background Data Summary: Mean=616.9, Std. Dev.=73.53, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8453, critical = 0.814. Kappa = 1.632 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Chloride, Dissolved Solids Analysis Run 9/23/2020 10:53 AM View: Ash Pond III

				olbicy of	ent. 000 Engineer	5 Data: Obloy			
	805	805	806R	806R	801	801	802	802	
12/15/2015	9.51								
12/16/2015					601		385		
2/17/2016	9.86				589		413		
5/26/2016	9.85				669		375		
6/2/2016			28.6						
7/19/2016			28.4						
8/23/2016	10.9		22.9		544		372		
11/10/2016	10.9				602		277		
11/11/2016			22.9						
2/9/2017	11.2		24.6		564		432		
3/22/2017			28.1						
5/3/2017	11.5		25.6		622		416		
8/1/2017	10.8		27.3		527		357		
10/4/2017	12.8		29.9		677		384		
11/16/2017	11.3								
11/17/2017			26.3						
5/16/2018	9.88		27.7		609		285		
11/8/2018	9.12		27.2						
11/15/2018	9.45		29		586		412		
1/11/2019			28.4						
5/22/2019	8.65		28.7		817		383		
7/16/2019			29.2		613				
5/18/2020		7.79		26.4		591		366	

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG



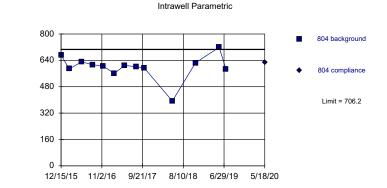
Background Data Summary (based on square transformation): Mean=280762, Std. Dev.=70036, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8114, critical = 0.805. Kappa = 1.664 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

Sanitas<sup>™</sup> v.9.6.27 Sanitas software licensed to SCS Engineers. UG



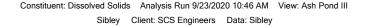
l/gm

Prediction Limit



Background Data Summary (based on square transformation): Mean=364995, Std. Dev.=81975, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8666, critical = 0.814. Kappa = 1.632 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

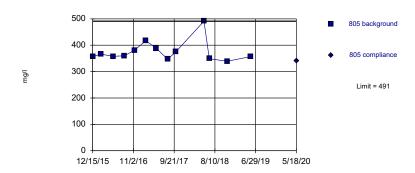
Constituent: Dissolved Solids Analysis Run 9/23/2020 10:46 AM View: Ash Pond III Sibley Client: SCS Engineers Data: Sibley



Sanitas<sup>™</sup> v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limit

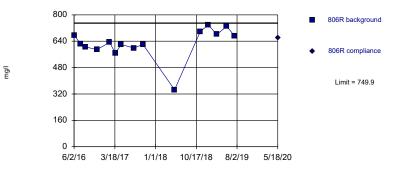
Prediction Limit Intrawell Non-parametric



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 13 background values. Well-constituent pair annual alpha = 0.003769. Individual comparison alpha = 0.001886 (1 of 3). Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG



Prediction Limit

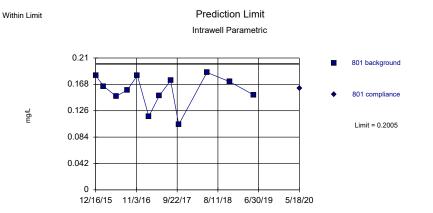


Background Data Summary (based on square transformation): Mean=400994, Std. Dev.=102955, n=15. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8926, critical = 0.835. Kappa = 1.568 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.051254.

Constituent: Dissolved Solids Analysis Run 9/23/2020 10:53 AM View: Ash Pond III

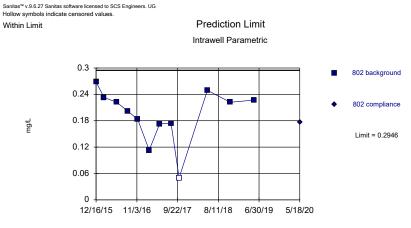
	Sibley Client: SCS Engineers Data: Sibley									
	803	803	804	804	805	805	806R	806R		
12/15/2015	564		673		356					
2/17/2016	558		588		366					
5/26/2016	598		631		358					
6/2/2016							677			
7/19/2016							624			
8/23/2016	538		613		360		605			
11/10/2016	543		606		381					
11/11/2016							589			
2/9/2017	594		561		417		633			
3/22/2017							568			
5/3/2017	552		609		388		620			
8/1/2017	500		602		347		599			
10/4/2017	532		594		375		621			
5/16/2018	301		393		491		345			
6/27/2018					349					
11/15/2018	480		625		339		699			
1/11/2019							739			
3/12/2019							681			
5/22/2019	535		719		357		731			
7/16/2019			585				671			
5/18/2020		524		627		341		659		

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG



Background Data Summary: Mean=0.1577, Std. Dev.=0.02573, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8945, critical = 0.805. Kappa = 1.664 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

> Constituent: Fluoride Analysis Run 9/23/2020 10:46 AM View: Ash Pond III Sibley Client: SCS Engineers Data: Sibley



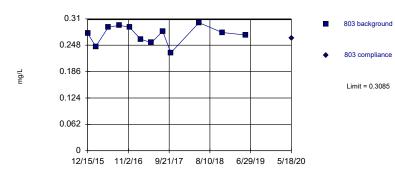
Background Data Summary: Mean=0.193, Std. Dev.=0.06104, n=12, 8.333% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8925, critical = 0.805. Kappa = 1.664 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Fluoride Analysis Run 9/23/2020 10:46 AM View: Ash Pond III Sibley Client: SCS Engineers Data: Sibley

Sanitas<sup>™</sup> v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

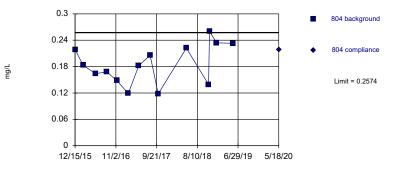


Background Data Summary: Mean=0.2728, Std. Dev.=0.02145, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9486, critical = 0.805. Kappa = 1.664 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG



Prediction Limit

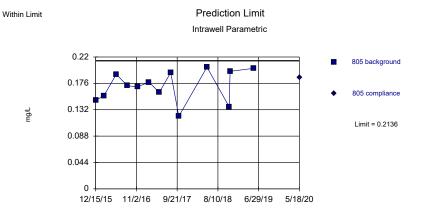


Background Data Summary: Mean=0.1854, Std. Dev.=0.04504, n=14. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9562, critical = 0.825. Kappa = 1.6 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Fluoride Analysis Run 9/23/2020 10:53 AM View: Ash Pond III

				olbicy oliciti. oc	Do Engineero Dat	a. Obley		
	801	801	802	802	803	803	804	804
12/15/2015					0.276		0.219	
12/16/2015	0.182		0.268					
2/17/2016	0.165		0.233		0.245		0.183	
5/26/2016	0.149		0.222		0.29		0.164	
8/23/2016	0.159		0.202		0.295		0.168	
11/10/2016	0.182		0.183		0.29		0.148	
2/9/2017	0.117		0.113		0.262		0.119	
5/3/2017	0.15		0.173		0.254		0.182	
8/1/2017	0.174		0.174		0.281		0.206	
10/4/2017	0.104		<0.1		0.23		0.118	
5/16/2018	0.187		0.249		0.301		0.222	
11/8/2018							0.139	
11/15/2018	0.172		0.222		0.278		0.26	
1/11/2019							0.234	
5/22/2019	0.151		0.227		0.272		0.233	
5/18/2020		0.162		0.176		0.265		0.219

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

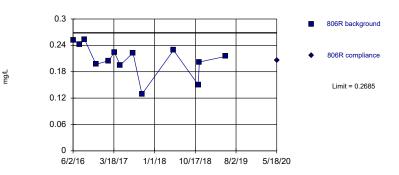


Background Data Summary: Mean=0.1713, Std. Dev.=0.02593, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9421, critical = 0.814. Kappa = 1.632 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Fluoride Analysis Run 9/23/2020 10:46 AM View: Ash Pond III Sibley Client: SCS Engineers Data: Sibley Sanitas<sup>™</sup> v.9.6.27 Sanitas software licensed to SCS Engineers. UG



Prediction Limit



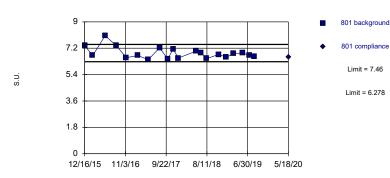
Background Data Summary: Mean=0.2089, Std. Dev.=0.03653, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9074, critical = 0.814. Kappa = 1.632 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Fluoride Analysis Run 9/23/2020 10:46 AM View: Ash Pond III Sibley Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limits

Prediction Limit

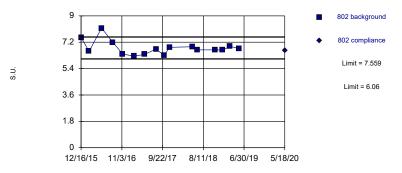


Background Data Summary: Mean=6.869, Std. Dev.=0.4045, n=20. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8703, critical = 0.868. Kappa = 1.462 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

Sanitas<sup>™</sup> v.9.6.27 Sanitas software licensed to SCS Engineers. UG



Prediction Limit

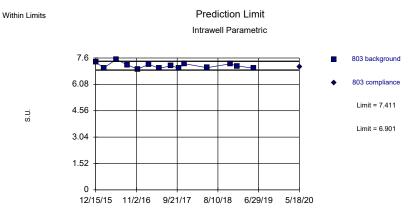


Background Data Summary: Mean=6.809, Std. Dev.=0.488, n=16. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8581, critical = 0.844. Kappa = 1.535 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Fluoride, pH Analysis Run 9/23/2020 10:53 AM View: Ash Pond III

				Sibley Client: SC	CS Engineers Dat	a: Sibley		
	805	805	806R	806R	801	801	802	802
12/15/2015	0.148							
12/16/2015					7.39		7.53	
2/17/2016	0.155				6.7		6.58	
5/26/2016	0.191				8.06		8.16	
6/2/2016			0.252					
7/19/2016			0.242					
8/23/2016	0.172		0.253		7.37		7.2	
11/10/2016	0.17				6.56		6.39	
11/11/2016			0.197					
2/9/2017	0.178		0.205		6.7		6.25	
3/22/2017			0.224					
5/3/2017	0.161		0.195		6.42		6.37	
8/1/2017	0.194		0.223		7.23		6.73	
10/4/2017	0.121		0.129		6.46		6.3	
11/16/2017					7.14			
11/17/2017							6.85	
12/28/2017					6.53			
5/16/2018	0.203		0.229		7		6.89	
6/27/2018					6.9		6.68	
8/8/2018					6.49			
11/8/2018	0.137		0.15					
11/15/2018	0.196		0.202		6.78		6.68	
1/11/2019					6.58		6.66	
3/12/2019					6.84		6.91	
5/22/2019	0.201		0.215		6.87		6.77	
7/16/2019					6.71			
8/21/2019					6.65			
5/18/2020		0.186		0.206		6.59		6.62

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG



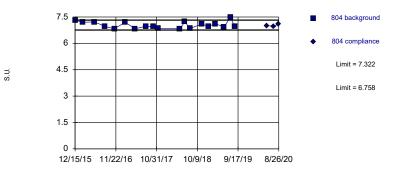
Background Data Summary: Mean=7.156, Std. Dev.=0.1594, n=14. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9228, critical = 0.825. Kappa = 1.6 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

#### Constituent: pH Analysis Run 9/23/2020 10:46 AM View: Ash Pond III Sibley Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limits

Prediction Limit



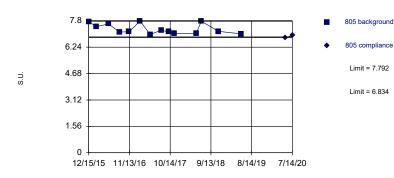
Background Data Summary: Mean=7.04, Std. Dev.=0.1903, n=19. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9025, critical = 0.863. Kappa = 1.48 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: pH Analysis Run 9/23/2020 10:46 AM View: Ash Pond III Sibley Client: SCS Engineers Data: Sibley

Sanitas<sup>™</sup> v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limits

Prediction Limit Intrawell Parametric

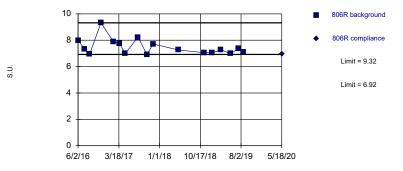


Background Data Summary: Mean=7.313, Std. Dev.=0.2995, n=14. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8296, critical = 0.825. Kappa = 1.6 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG



Prediction Limit Intrawell Non-parametric

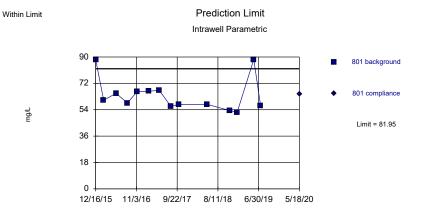


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 17 background values. Well-constituent pair annual alpha = 0.003639. Individual comparison alpha = 0.00182 (1 of 3).

Constituent: pH Analysis Run 9/23/2020 10:53 AM View: Ash Pond III

				Sibley Cl	lient: SCS Engineers	Data: Sibley			
	803	803	804	804	805	805	806R	806R	
12/15/2015	7.36		7.32		7.74				
2/17/2016	7.03		7.2		7.46				
5/26/2016	7.51		7.22		7.62				
6/2/2016							7.98		
7/19/2016							7.33		
8/23/2016	7.2		6.96		7.14		6.95		
11/10/2016	6.96		6.83		7.15				
11/11/2016							9.32		
2/9/2017	7.23		7.2		7.79		7.88		
3/22/2017							7.75		
5/3/2017	7		6.83		7		7		
8/1/2017	7.15		6.97		7.24		8.23		
10/4/2017	7.02		6.95		7.15		6.92		
11/16/2017	7.27		6.84		7.04				
11/17/2017							7.71		
5/16/2018	7.04		6.83		7.06		7.26		
6/27/2018			7.23		7.78				
8/8/2018			6.85						
11/15/2018	7.26		7.09		7.18		7.05		
1/11/2019	7.14		6.97				7.05		
3/12/2019			7.11				7.27		
5/22/2019	7.01		6.93		7.03		6.99		
7/16/2019			7.48				7.37		
8/21/2019			6.95				7.08		
5/18/2020		7.09		7.01		6.82		6.95	
7/14/2020				6.96		6.93			
8/26/2020				7.11					

Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

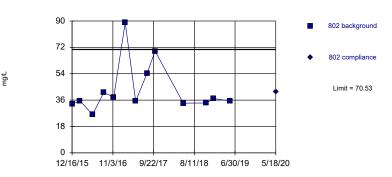


Background Data Summary (based on cube root transformation): Mean=3.987, Std. Dev.=0.2231, n=14. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8293, critical = 0.825. Kappa = 1.6 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.





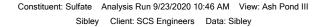




Intrawell Parametric

Background Data Summary (based on natural log transformation): Mean=3.708, Std. Dev.=0.3358, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8269, critical = 0.814. Kappa = 1.632 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

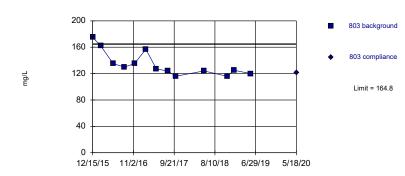
Constituent: Sulfate Analysis Run 9/23/2020 10:46 AM View: Ash Pond III Sibley Client: SCS Engineers Data: Sibley



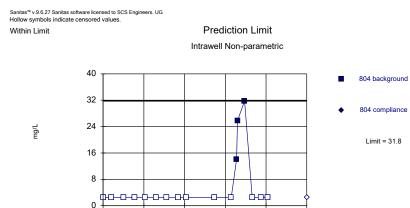
Sanitas™ v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit



Background Data Summary: Mean=134.3, Std. Dev.=18.67, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8373, critical = 0.814. Kappa = 1.632 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.



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%. Limit is highest of 17 background values. 82.35% NDs. Well-constituent pair annual alpha = 0.00182. Individual comparison alpha = 0.0009102 (1 of 3).

Constituent: Sulfate Analysis Run 9/23/2020 10:53 AM View: Ash Pond III

	801	801	802	802	803	803	804	804	
12/15/2015					175		<5		
12/16/2015	88.1		33.3						
2/17/2016	60.5		35.5		162		<5		
5/26/2016	65.2		26.1		135		<5		
8/23/2016	58.6		41.2		130		<5		
11/10/2016	66.5		38		135		<5		
2/9/2017	66.6		88.9		157		<5		
5/3/2017	67.2		35.2		127		<5		
8/1/2017	56.5		54.2		124		<5		
10/4/2017	57.5		69.4		116		<5		
5/16/2018	57.7		33.9		124		<5		
9/27/2018							<5		
11/8/2018							14.1		
11/15/2018	53.4		34		116		25.8		
1/11/2019	52.3		37.1		125		31.8		
3/12/2019							<5		
5/22/2019	88.3		35.4		120		<5		
7/16/2019	56.6						<5		
5/18/2020		64.7		41.6		121		<5	

Sanitas<sup>™</sup> v.9.6.27 Sanitas software licensed to SCS Engineers. UG Hollow symbols indicate censored values.

Prediction Limit Within Limit Intrawell Parametric 70 805 background 56 ▝**╶**╻ ì 805 compliance 42 ng/L Limit = 61.84 28 14 r, 0 12/15/15 11/2/16 9/21/17 8/10/18 6/29/19 5/18/20

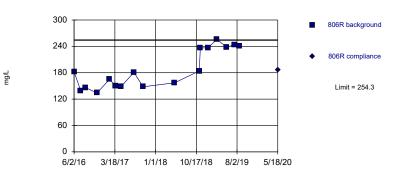
Background Data Summary (based on cube transformation): Mean=148642, Std. Dev.=53825, n=13, 7.692% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8253, critical = 0.814. Kappa = 1.632 (c=7, w=6, 1 of 3, event alpha = 0.05122). Report alpha = 0.0012254.

Sanitas<sup>™</sup> v.9.6.27 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit





Background Data Summary: Mean=187.5, Std. Dev.=44.02, n=17. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8518, critical = 0.851. Kappa = 1.517 (c=7, w=6, 1 of 3, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Sulfate Analysis Run 9/23/2020 10:46 AM View: Ash Pond III

Sibley Client: SCS Engineers Data: Sibley

Constituent: Sulfate Analysis Run 9/23/2020 10:46 AM View: Ash Pond III Sibley Client: SCS Engineers Data: Sibley

Constituent: Sulfate Analysis Run 9/23/2020 10:53 AM View: Ash Pond III

Sibley Client: SCS Engineers Data: Sibley

	805	805	806R	806R
12/15/2015	60.9			
2/17/2016	50.7			
5/26/2016	<5			
6/2/2016			182	
7/19/2016			139	
8/23/2016	51.7		146	
11/10/2016	54.7			
11/11/2016			134	
2/9/2017	59.8		165	
3/22/2017			150	
5/3/2017	54.4		149	
8/1/2017	54.2		181	
10/4/2017	56		148	
5/16/2018	53.7		157	
11/8/2018	50.1		184	
11/15/2018	53.2		236	
1/11/2019			237	
3/12/2019			256	
5/22/2019	51.1		238	
7/16/2019			244	
8/21/2019			241	
5/18/2020		46.8		186

Sibley Client: SCS Engineers Data: Sibley Printed 9/23/2020, 10:53 AM

			Sibley C	Lient. 505 Engineers	Jala. Sibley F	inteu 9/2	23/2020	, 10.33 AM			
<u>Constituent</u>	Well	<u>Upper Lim.</u>	Lower Lim.	Date	Observ.	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	Method
Boron (mg/L)	801	0.477	n/a	5/18/2020	0.234	No	13	0	No	0.001254	Param Intra 1 of 3
Boron (mg/L)	802	0.221	n/a	5/18/2020	0.1ND	No	12	91.67	n/a	0.002173	NP Intra (NDs) 1 of 3
Boron (mg/L)	803	2.954	n/a	5/18/2020	2.59	No	12	0	No	0.001254	Param Intra 1 of 3
Boron (mg/L)	804	8.71	n/a	5/18/2020	8.63	No	20	0	n/a	0.000	NP Intra (normality)
Boron (mg/L)	805	0.2	n/a	5/18/2020	0.1ND	No	13	100	n/a	0.001886	NP Intra (NDs) 1 of 3
Boron (mg/L)	806R	5.803	n/a	5/18/2020	5.11	No	17	0	No	0.001254	Param Intra 1 of 3
Calcium (mg/L)	801	168	n/a	5/18/2020	128	No	15	0	No	0.001254	Param Intra 1 of 3
Calcium (mg/L)	802	111.6	n/a	5/18/2020	79.2	No	16	0	No	0.001254	Param Intra 1 of 3
Calcium (mg/L)	803	130.2	n/a	5/18/2020	115	No	14	0	No	0.001254	Param Intra 1 of 3
Calcium (mg/L)	804	178.4	n/a	5/18/2020	151	No	17	0	No	0.001254	Param Intra 1 of 3
Calcium (mg/L)	805	106.9	n/a	5/18/2020	93.3	No	14	0	x^2	0.001254	Param Intra 1 of 3
Calcium (mg/L)	806R	177.1	n/a	5/18/2020	148	No	18	0	No	0.001254	Param Intra 1 of 3
Chloride (mg/L)	801	143.9	n/a	5/18/2020	92	No	20	0	No	0.001254	Param Intra 1 of 3
Chloride (mg/L)	802	64.66	n/a	5/18/2020	43.9	No	14	0	No	0.001254	Param Intra 1 of 3
Chloride (mg/L)	803	17.17	n/a	5/18/2020	16.5	No	14	0	No	0.001254	Param Intra 1 of 3
Chloride (mg/L)	804	19.5	n/a	8/26/2020	20.8	Yes	17	0	x^2	0.001254	Param Intra 1 of 3
Chloride (mg/L)	805	12.2	n/a	5/18/2020	7.79	No	14	0	No	0.001254	Param Intra 1 of 3
Chloride (mg/L)	806R	30.49	n/a	5/18/2020	26.4	No	16	0	No	0.001254	Param Intra 1 of 3
Dissolved Solids (mg/l)	801	736.9	n/a	5/18/2020	591	No	13	0	No	0.001254	Param Intra 1 of 3
Dissolved Solids (mg/l)	802	455.2	n/a	5/18/2020	366	No	12	0	No	0.001254	Param Intra 1 of 3
Dissolved Solids (mg/l)	803	630.3	n/a	5/18/2020	524	No	12	0	x^2	0.001254	Param Intra 1 of 3
Dissolved Solids (mg/l)	804	706.2	n/a	5/18/2020	627	No	13	0	x^2	0.001254	Param Intra 1 of 3
Dissolved Solids (mg/l)	805	491	n/a	5/18/2020	341	No	13	0	n/a	0.001886	NP Intra (normality)
Dissolved Solids (mg/l)	806R	749.9	n/a	5/18/2020	659	No	15	0	x^2	0.001254	Param Intra 1 of 3
Fluoride (mg/L)	801	0.2005	n/a	5/18/2020	0.162	No	12	0	No	0.001254	Param Intra 1 of 3
Fluoride (mg/L)	802	0.2946	n/a	5/18/2020	0.176	No	12	8.333	No	0.001254	Param Intra 1 of 3
Fluoride (mg/L)	803	0.3085	n/a	5/18/2020	0.265	No	12	0	No	0.001254	Param Intra 1 of 3
Fluoride (mg/L)	804	0.2574	n/a	5/18/2020	0.219	No	14	0	No	0.001254	Param Intra 1 of 3
Fluoride (mg/L)	805	0.2136	n/a	5/18/2020	0.186	No	13	0	No	0.001254	Param Intra 1 of 3
Fluoride (mg/L)	806R	0.2685	n/a	5/18/2020	0.206	No	13	0	No	0.001254	Param Intra 1 of 3
pH (S.U.)	801	7.46	6.278	5/18/2020	6.59	No	20	0	No	0.000	Param Intra 1 of 3
pH (S.U.)	802	7.559	6.06	5/18/2020	6.62	No	16	0	No	0.000	Param Intra 1 of 3
pH (S.U.)	803	7.411	6.901	5/18/2020	7.09	No	14	0	No	0.000	Param Intra 1 of 3
pH (S.U.)	804	7.322	6.758	8/26/2020	7.11	No	19	0	No	0.000	Param Intra 1 of 3
pH (S.U.)	805	7.792	6.834	7/14/2020	6.93	No	14	0	No	0.000	Param Intra 1 of 3
pH (S.U.)	806R	9.32	6.92	5/18/2020	6.95	No	17	0	n/a	0.00182	NP Intra (normality)
Sulfate (mg/L)	801	81.95	n/a	5/18/2020	64.7	No	14	0	x^(1/3)	0.001254	Param Intra 1 of 3
Sulfate (mg/L)	802	70.53	n/a	5/18/2020	41.6	No	13	0	ln(x)	0.001254	Param Intra 1 of 3
Sulfate (mg/L)	803	164.8	n/a	5/18/2020	121	No	13	0	No	0.001254	Param Intra 1 of 3
Sulfate (mg/L)	804	31.8	n/a	5/18/2020	2.5ND	No	17	82.35	n/a	0.000	NP Intra (NDs) 1 of 3
Sulfate (mg/L)	805	61.84	n/a	5/18/2020	46.8	No	13	7.692	x^3	0.001254	Param Intra 1 of 3
Sulfate (mg/L)	806R	254.3	n/a	5/18/2020	186	No	17	0	No	0.001254	Param Intra 1 of 3

Sibley Generating Station Determination of Statistically Significant Increases Fly Ash Impoundment September 23, 2020

# ATTACHMENT 2

Sanitas<sup>™</sup> 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:	O 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
Fou Fou Dra Dra Enl Enl Vice Use Use Tru Sho	Include Tick Use Constit aw Border A arge/Reduc arge/Reduc de Margins ( e CAS# (No incate File N lude Limit Li ow Deselect	Page abine Data Pa k Marks on D uent Name for round Text R ce Fonts (Gra ce Fonts (Dat (on reports wir t Const. Nam Names to 20 nes when fou ted Data on 1 ted Data on a	ata Page r Graph Title eports and Da ohs): a/Text Report thout explicit s e)	ighter V	□ Rou □ Use □ Indi □ Sho □ Thie Zou Output ○ Les ● No	Decimal Precisi ss Precision mal Precision re Precision	2 Sig. Digits	(when not	
Printer:	Adobe PD	F							<ul> <li>Printers</li> </ul>

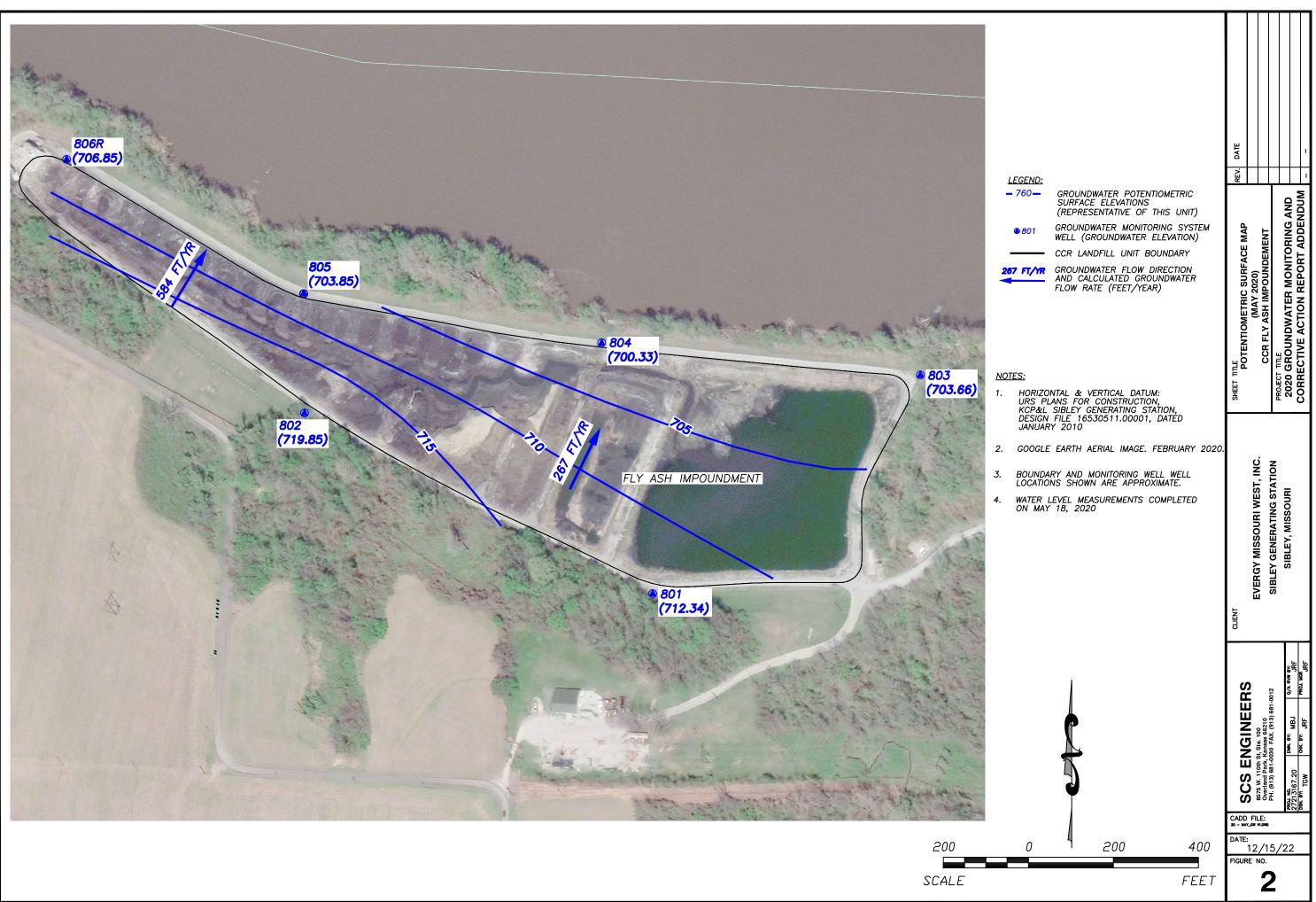
Data Output Trend Test Control Cht Prediction Lim Tolera	ance Lim Conf/Tol Int ANOVA Welchs Other Tests								
Use Modified Alpha 0.02									
✓ Test Residuals For Normality (Parametric test only) using Shapir	ro-Wilk/Francia $\checkmark$ at Alpha = 0.01 $\checkmark$								
Continue Parametric if Unable to Normalize									
Transformation (Parametric test only) <ul> <li>Use Ladder of Powers</li> <li>Natural Log or No Transformation</li> <li>Never Transform</li> <li>Use Specific Transformation:</li> </ul> Use Best W Statistic       Vise Best W Statistic         Plot Transformed Values									
Use Non-Parametric Test (Sen's Slope/Mann-Kendall) when Non-De	tects Percent > 75								
Include 95. % Confidence Interval around Trend Line	Include 95. % Confidence Interval around Trend Line								
Automatically Remove Outliers (Parametric test only)									
Note: there is no "Always Use Non-Parametric" checkbox on this tab because, for consistency with prior versions, Sen's Slope / Mann-Kendall (the non-parametric alternative) is available as a report in its own right, under Analysis->Intrawell->Trend.									

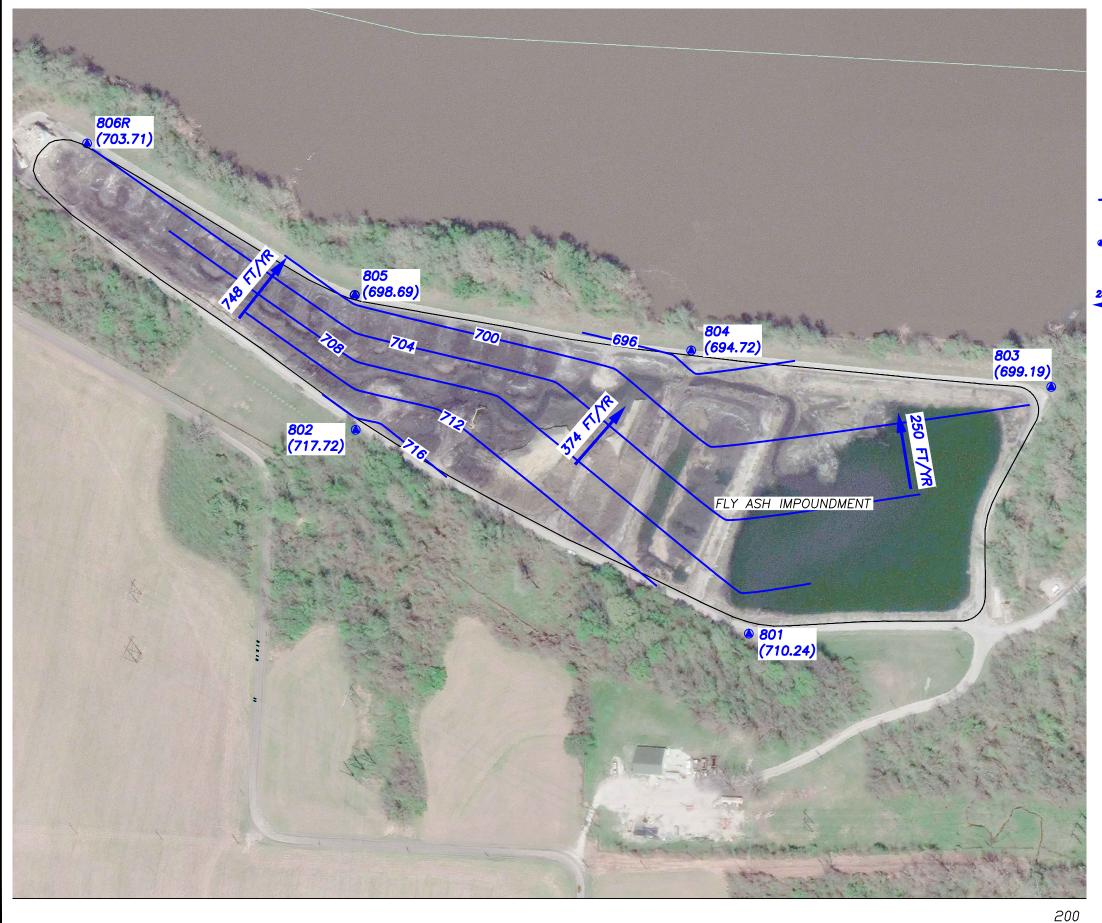
Data	Output	Trend Test	Control Cht	Prediction Lim	Tolerance Lim	Conf/Tol Int	ANOVA	Welchs	Other Tests	
✓ Test	for Norma	lity using Sha	apiro-Wilk/Fra	at Alpha = 0.01						
✓ Use Non-Parametric Test when Non-Detects Percent > 50       ○ Never Transform         Use Aitchison's Adjustment ∨ when Non-Detects Percent > 15       ○ Use Specific Transformation:         ○ Optional Further Refinement: Use Aitchison's when NDs % > 50       ○ Use Best W Statistic         ○ Use Poisson Prediction Limit when Non-Detects Percent > 90       ○ Plot Transformed Values										
Deseasonalize (Intra- and InterWell)         ○       If Seasonality Is Detected         ○       If Seasonality Is Detected Or Insufficient to Test         ○       Always (When Sufficient Data)         ●       Never         □       Always Use Non-Parametric         Facility       α         Statistical Evaluations per Year:       2         Constituents Analyzed:       7         Downgradient (Compliance) Wells:       6         Sampling Plan       ✓         Comparing       Individual Observations         ○       1 of 1       ○         ○       1 of 3       ○         ○       2 of 4 ("Modified California")					☐ Stop if ☑ Plot Ba	IntraWell Other         Stop if Background Trend Detected       at Alpha = 0.05          Plot Background Data         Override Standard Deviation:         Override DF:       Override Kappa:         Automatically Remove Background Outliers         2-Tailed Test Mode         Show Deselected Data         Lighter         Non-Parametric Limit =         Highest Background Value         Most Recent PQL if available, or MDL         Most Recent Background Value (subst. method)				
					Automa 2-Taileo Show D					
					Non-Param O Highes O Most R					

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 $\checkmark$ at Alpha = 0.1 $\checkmark$								
Stop 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 20, 2022

# ATTACHMENT 3 Groundwater Potentiometric Surface Maps





SCALE

