

2020 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

SLAG SETTLING IMPOUNDMENT SIBLEY GENERATING STATION SIBLEY, MISSOURI

Presented To:
Energys Missouri West, Inc.

SCS ENGINEERS

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Revision 1: April 7, 2021
Revision 2: December 20, 2022

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CERTIFICATIONS

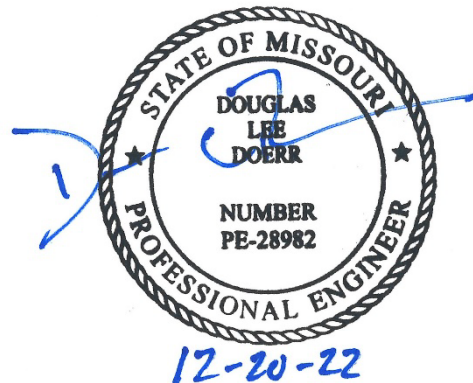
I, John R. Rockhold, being a qualified groundwater scientist and Registered Geologist in the State of Missouri, do hereby certify that the 2020 Annual Groundwater Monitoring and Corrective Action Report for the Slag Settling Impoundment at the Sibley Generating Station was prepared by me or under my 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 Slag Settling 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

2020 Groundwater Monitoring and Corrective Action Report

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

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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 Slag Settling 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 not operating under a detection monitoring program or an assessment monitoring program. Following the CCR removal, post-CCR removal groundwater sampling events took place on May 12, 2020 and July 28, 2020. The CCR Impoundment was certified closed August 28, 2020, in accordance with 40 CFR 257.102 (c) Closure by Removal of CCR.

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

Not applicable because statistically significant increases over background were not identified.

(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 report must contain the following information, to the extent available:

2.1 § 257.90(E)(1) SITE MAP

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

A site map with an aerial image showing the Slag Settling Impoundment and all background (or upgradient) and downgradient monitoring wells with identification numbers for the Slag Settling 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 Slag Settling 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;

Detection monitoring was conducted during the reporting period (2020) for the Spring 2020 semiannual event only. Samples collected during the Spring 2020 event were collected and analyzed for Appendix III detection monitoring constituents as indicated in **Appendix B, Table 1** (Appendix III Detection with Post-CCR Removal Appendix IV Monitoring Results), and **Table 2** (Detection Monitoring Field Measurements). Additionally, in preparation for Slag Settling Impoundment certification of closure by removal, post-CCR removal monitoring was conducted with the Spring 2020 event. This event required the sampling of Appendix IV constituents as indicated in **Appendix B, Table 1**. An additional post-CCR removal event was completed on July 28, 2020 for select Appendix IV constituents. These tables include Fall 2019 semiannual detection monitoring event verification sample data collected and analyzed in 2020; Spring 2020 semiannual detection monitoring data, verification sample data, and post-CCR removal Appendix IV data; and, additional July 2020 post-CCR removal 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. However, post-CCR removal monitoring events were conducted in May and July 2020 following CCR removal in preparation for certification of closure by removal.

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 was in detection monitoring until CCR removal from the Impoundment at which time post CCR removal sampling was performed.

Summary of Key Actions Completed.

- a. completion of the statistical evaluation of the Fall 2019 semiannual detection monitoring sampling and analysis event per the certified statistical method,
- b. completion of the 2019 Annual Groundwater Monitoring and Corrective Action Report,
- c. completion of the Spring 2020 semiannual detection monitoring sampling and analysis event, and subsequent verification sampling per the certified statistical method,
- d. completion of the statistical evaluation of the Spring 2020 semiannual detection monitoring sampling and analysis event per the certified statistical method, and
- e. post-CCR removal sampling and analysis events in May and July 2020 in preparation for certification of closure by removal.
- f. CCR Impoundment certification of closure by CCR removal.

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).

Not applicable because the Slag Settling Impoundment has been certified closed, and no further groundwater monitoring is required.

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 § 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.

Not applicable because no such demonstration was conducted.

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

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

Not applicable because there was no assessment monitoring conducted.

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

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

Not applicable because there was no assessment monitoring conducted.

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

Demonstrate that a source other than the CCR unit caused the contamination, or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Any such demonstration must be supported by a report that includes the factual or evidentiary basis for any conclusions and must be certified to be accurate by a qualified professional engineer. If a successful demonstration is made, the owner or operator must continue monitoring in accordance with the assessment monitoring program pursuant to this section, and may return to detection monitoring if the constituents in appendices III and IV to this part are at or below background as specified in paragraph (e) of this section. The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by § 257.90(e), in addition to the certification by a qualified professional engineer or the approval from the Participating State Director or approval from EPA where EPA is the permitting authority.

Not applicable because there was no assessment monitoring conducted.

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

Within 90 days of finding that any constituent listed in appendix IV to this part has been detected at a statistically significant level exceeding the groundwater protection standard defined under § 257.95(h), or immediately upon detection of a release from a CCR unit, the owner or operator must initiate an assessment of corrective measures to prevent further releases, to remediate any releases and to restore affected area to original conditions. The assessment of corrective measures must be completed within 90 days, unless the owner or operator demonstrates the need for additional time to complete the assessment of corrective measures due to site-specific conditions or circumstances. The owner or operator must obtain a certification from a qualified professional engineer attesting that the demonstration is accurate. The 90-day deadline to complete the assessment of corrective measures may be extended for no longer than 60 days. The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by § 257.90(e), in addition to the certification by a qualified professional engineer 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.

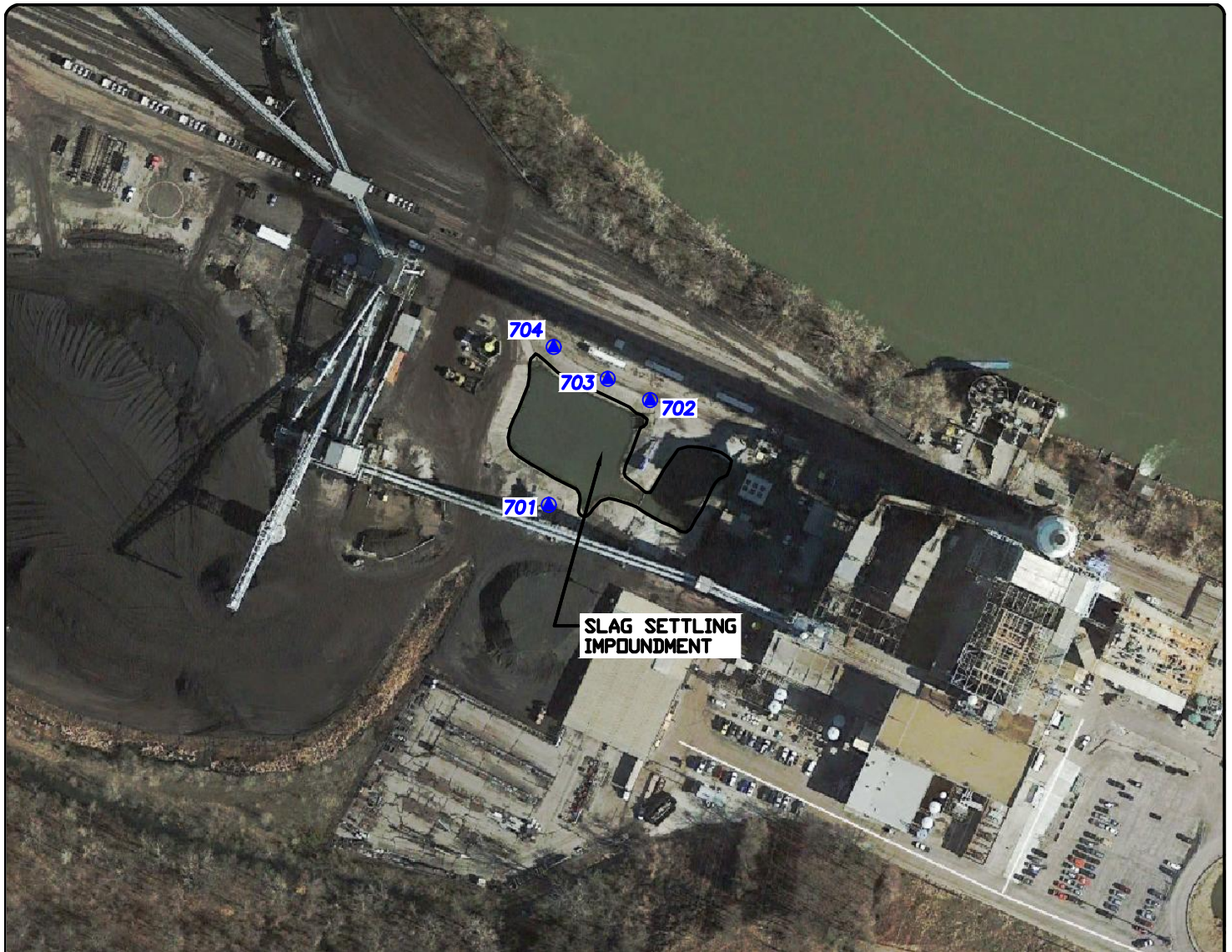
Conclusions drawn by others from the result of this work should recognize the limitation of the methods used. Please note that SCS Engineers does not warrant the work of regulatory agencies or other third parties supplying information used in the assimilation of this report. This report is prepared in 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 Slag Settling Impoundment. No warranties, express or implied, are intended or made.

APPENDIX A

FIGURES

Figure 1: Site Map

Figure 2: Potentiometric Surface Map (May 2020)



LEGEND:

- 701 CCR GROUNDWATER MONITORING SYSTEM WELLS
- CCR UNIT BOUNDARY



NOTES:

1. HORIZONTAL & VERTICAL DATUM: URS PLANS FOR CONSTRUCTION, KCP&L SIBLEY GENERATING STATION, DESIGN FILE 16530511.00001, DATED JANUARY 2010
2. GOOGLE EARTH AERIAL IMAGE, MARCH 2015. MONITOR WELL LOCATIONS ARE APPROXIMATE.
3. BOUNDARY AND MONITORING WELL WELL LOCATIONS SHOWN ARE APPROXIMATE.

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**EVERGY MISSOURI WEST, INC
SIBLEY SLAG SETTLING IMPOUNDMENT
SIBLEY GENERATING STATION**

2020 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

CHK. BY: JRR	DWN. BY: TGW	DSN. BY: TGW	PROJ. NO. 27213169.19
PROJ. MGR: JRR	DATE: 1/07/20	CADD FILE: FIG 1 - SIBLEY SLAG IMP2019.DWG	FIG. NO. 1



LEGEND:

- 760 — GROUNDWATER POTENTIOMETRIC SURFACE ELEVATIONS (REPRESENTATIVE OF THIS UNIT)
- 701 GROUNDWATER MONITORING SYSTEM WELL (GROUNDWATER ELEVATION)
- CCR LANDFILL UNIT BOUNDARY
- ← GROUNDWATER FLOW DIRECTION



NOTES:

1. HORIZONTAL & VERTICAL DATUM:
URS PLANS FOR CONSTRUCTION,
KCP&L SIBLEY GENERATING STATION,
DESIGN FILE 16530511.00001, DATED
JANUARY 2010
2. GOOGLE EARTH AERIAL IMAGE. FEBRUARY 2020.
3. BOUNDARY AND MONITORING WELL WELL
LOCATIONS SHOWN ARE APPROXIMATE.



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EVERGY MISSOURI WEST, INC.
POTENTIOMETRIC SURFACE MAP (MAY 2020)
SIBLEY SLAG SETTLING IMPOUNDMENT
SIBLEY GENERATING STATION
CCR GROUNDWATER MONITORING SYSTEM

CHK. BY: JRR	DWN. BY: MBJ	DSN. BY: TGW	PROJ. NO. 27213169.20
PROJ. MGR: JRR	DATE: 6/29/20	CADD FILE: 20 - MAY_GW V1.DWG	FIG. NO. 2

APPENDIX B

TABLES

Table 1: Appendix III Detection and Post-CCR Removal Appendix IV
Monitoring Results

Table 2: Detection Monitoring Field Measurements

Table 1
Slag Settling Impoundment
Appendix III Detection with Post-CCR Removal Appendix IV Monitoring Results
Evergy Sibley Generating Station

Well Number	Sample Date	Appendix III Constituents							Appendix IV Constituents														
		Boron (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	pH (S.U.)	Sulfate (mg/L)	Dissolved Solids (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cobalt (mg/L)	Fluoride (mg/L)	Lead (mg/L)	Lithium (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Selenium (mg/L)	Thallium (mg/L)	Radium Combined (pCi/L)
MW-701	5/12/2020	<0.200	85.7	8.53	<0.150	7.11	12.8	294	<0.00400	0.00273	0.184	<0.00200	<0.00100	<0.0100	<0.0100	<0.150	<0.00500	<0.0150	<0.000200	<0.00500	<0.00200	<0.00200	0.164
MW-701	7/28/2020	---	---	---	---	**7.13	---	---	---	---	---	---	---	<0.00200	---	---	---	---	---	---	---	---	---
MW-702	5/12/2020	<0.200	88.1	8.29	<0.150	7.15	17.5	250	<0.00400	0.00604	0.282	<0.00200	<0.00100	<0.0100	<0.0100	<0.150	<0.00500	0.0152	<0.000200	<0.00500	<0.00200	<0.00200	0.202
MW-702	7/28/2020	---	---	---	---	**7.56	---	---	---	---	---	---	---	<0.00200	---	---	---	---	---	---	---	---	---
MW-703	5/12/2020	0.724	135	19.8	0.263	7.07	<5.00	480	<0.00400	0.177	0.269	<0.00200	<0.00100	<0.0100	<0.0100	0.263	<0.00500	0.0172	<0.000200	<0.00500	<0.00200	<0.00200	0.308
MW-703	7/28/2020	---	---	---	---	**7.30	---	---	---	---	---	---	---	<0.00200	---	---	---	---	---	---	---	---	---
MW-704	5/12/2020	<0.200	87.5	11.1	0.191	7.08	15.4	283	<0.00400	0.00203	0.154	<0.00200	<0.00100	<0.0100	<0.0100	0.191	<0.00500	<0.0150	<0.000200	0.00801	<0.00200	<0.00200	1.04
MW-704	6/10/2020	---	---	---	*0.182	**7.06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-704	7/14/2020	---	---	---	*0.162	**7.26	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-704	7/28/2020	---	---	---	---	**7.18	---	---	---	---	---	---	---	<0.00200	---	---	---	---	---	---	---	---	---

* 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 - milligrams per liter

pCi/L - picocuries per liter

S.U. - Standard Units

--- Not Sampled

Table 2
Slag Settling Impoundment
Detection Monitoring Field Measurements
Evergy Sibley Generating Station

Well Number	Sample Date	pH (S.U.)	Specific Conductivity (µS)	Temperature (°C)	Turbidity (NTU)	ORP (mV)	DO (mg/L)	Water Level (ft btoc)	Groundwater Elevation (ft NGVD)
MW-701	5/12/2020	7.11	528	15.76	0.0	35	1.39	16.81	710.45
MW-701	7/28/2020	**7.13	508	20.31	5.8	120	2.53	17.28	709.98
MW-702	5/12/2020	7.15	553	15.26	0.0	-94	0.00	21.44	705.85
MW-702	7/28/2020	**7.56	530	17.98	9.9	-173	0.00	22.05	705.24
MW-703	5/12/2020	7.07	1110	15.20	0.0	-158	0.00	21.14	706.17
MW-703	7/28/2020	**7.30	1040	18.51	9.3	-227	0.00	21.67	705.64
MW-704	5/12/2020	7.08	547	14.93	3.1	79	0.00	21.13	706.52
MW-704	6/10/2020	**7.06	519	18.61	0.0	182	0.00	21.36	706.29
MW-704	7/14/2020	**7.26	495	18.22	0.0	40	2.09	22.90	704.75
MW-704	7/28/2020	**7.18	556	19.21	0.5	-29	0.00	21.64	706.01

* 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

Addendum 1

2020 Groundwater Monitoring and Corrective Action Report Addendum 1

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.
Slag Settling Impoundment
Sibley Generating Station – Sibley, Missouri



The Slag Settling 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 Slag Settling 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 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:



- May 2020 – Spring 2020 semiannual detection monitoring sampling event and Appendix IV closure sampling event.
 - June 2020 – First verification sampling for the Spring 2020 detection monitoring sampling event.
 - July 2020 – Second verification sampling for the Spring 2020 detection monitoring sampling event.
 - July 2020 - First verification sampling for May 2020 closure 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.
 - July 2020 – Closure sampling event.

Jared Morrison
December 20, 2022

ATTACHMENT 1
Laboratory Analytical Reports

Jared Morrison
December 20, 2022

ATTACHMENT 1-1
May 2020 Sampling Event Laboratory Report

SCS Engineers - KS

Sample Delivery Group: L1218776
Samples Received: 05/14/2020
Project Number: 27213169.20
Description: Evergy - Sibley Generating Station

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

Entire Report Reviewed By:



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.



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SAMPLE SUMMARY



MW-701 L1218776-01 GW

Collected by Jason Franks
Collected date/time 05/12/20 17:15
Received date/time 05/14/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1477322	1	05/16/20 15:38	05/16/20 16:11	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1476613	1	05/15/20 18:54	05/15/20 18:54	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1476854	1	05/15/20 18:10	05/16/20 10:05	EL	Mt. Juliet, TN

1
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Cn

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Qc

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Al

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Sc

MW-702 L1218776-02 GW

Collected by Jason Franks
Collected date/time 05/12/20 15:30
Received date/time 05/14/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1477322	1	05/16/20 15:38	05/16/20 16:11	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1476613	1	05/15/20 19:09	05/15/20 19:09	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1476854	1	05/15/20 18:10	05/16/20 10:08	EL	Mt. Juliet, TN

MW-703 L1218776-03 GW

Collected by Jason Franks
Collected date/time 05/12/20 16:20
Received date/time 05/14/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1477322	1	05/16/20 15:38	05/16/20 16:11	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1476613	1	05/15/20 19:24	05/15/20 19:24	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1476854	1	05/15/20 18:10	05/16/20 10:11	EL	Mt. Juliet, TN

MW-704 L1218776-04 GW

Collected by Jason Franks
Collected date/time 05/12/20 17:15
Received date/time 05/14/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1477322	1	05/16/20 15:38	05/16/20 16:11	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1476613	1	05/15/20 19:53	05/15/20 19:53	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1476854	1	05/15/20 18:10	05/16/20 08:59	EL	Mt. Juliet, TN

DUPLICATE L1218776-05 GW

Collected by Jason Franks
Collected date/time 05/12/20 14:05
Received date/time 05/14/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1477411	1	05/17/20 06:31	05/17/20 11:47	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1476613	1	05/15/20 20:38	05/15/20 20:38	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1476856	1	05/19/20 10:00	05/19/20 14:00	EL	Mt. Juliet, TN



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.

Jeff Carr
Project Manager

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



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	294000		10000	1	05/16/2020 16:11	WG1477322

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	8530		1000	1	05/15/2020 18:54	WG1476613
Fluoride	ND		150	1	05/15/2020 18:54	WG1476613
Sulfate	12800		5000	1	05/15/2020 18:54	WG1476613

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Boron	ND		200	1	05/16/2020 10:05	WG1476854
Calcium	85700		1000	1	05/16/2020 10:05	WG1476854

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	250000		10000	1	05/16/2020 16:11	WG1477322

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	8290		1000	1	05/15/2020 19:09	WG1476613
Fluoride	ND		150	1	05/15/2020 19:09	WG1476613
Sulfate	17500		5000	1	05/15/2020 19:09	WG1476613

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Boron	ND		200	1	05/16/2020 10:08	WG1476854
Calcium	88100		1000	1	05/16/2020 10:08	WG1476854

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	480000		10000	1	05/16/2020 16:11	WG1477322

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	19800		1000	1	05/15/2020 19:24	WG1476613
Fluoride	263		150	1	05/15/2020 19:24	WG1476613
Sulfate	ND		5000	1	05/15/2020 19:24	WG1476613

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Boron	724		200	1	05/16/2020 10:11	WG1476854
Calcium	135000		1000	1	05/16/2020 10:11	WG1476854

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	283000		10000	1	05/16/2020 16:11	WG1477322

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	11100		1000	1	05/15/2020 19:53	WG1476613
Fluoride	191		150	1	05/15/2020 19:53	WG1476613
Sulfate	15400		5000	1	05/15/2020 19:53	WG1476613

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Boron	ND		200	1	05/16/2020 08:59	WG1476854
Calcium	87500	<u>O1</u>	1000	1	05/16/2020 08:59	WG1476854

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	292000		10000	1	05/17/2020 11:47	WG1477411

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	11200		1000	1	05/15/2020 20:38	WG1476613
Fluoride	194		150	1	05/15/2020 20:38	WG1476613
Sulfate	15500		5000	1	05/15/2020 20:38	WG1476613

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Boron	ND		200	1	05/19/2020 14:00	WG1476856
Calcium	86700		1000	1	05/19/2020 14:00	WG1476856

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3528792-1 05/16/20 16:11

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Dissolved Solids	U		2820	10000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS)

(LCS) R3528792-2 05/16/20 16:11

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800000	8380000	95.2	85.0-115	



Method Blank (MB)

(MB) R3529147-1 05/17/20 11:47

Analyte	MB Result ug/l	<u>MB Qualifier</u>	MB MDL ug/l	MB RDL ug/l
Dissolved Solids	3000	↓	2820	10000

Laboratory Control Sample (LCS)

(LCS) R3529147-2 05/17/20 11:47

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Dissolved Solids	8800000	8760000	99.5	85.0-115	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3529450-1 05/15/20 09:55

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Chloride	U		379	1000
Fluoride	U		64.0	150
Sulfate	U		594	5000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1218506-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1218506-01 05/15/20 13:24 • (DUP) R3529450-3 05/15/20 13:38

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	2220	2210	1	0.505		15
Fluoride	ND	ND	1	0.000		15
Sulfate	5600	5710	1	1.92		15

L1218776-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1218776-03 05/15/20 19:24 • (DUP) R3529450-5 05/15/20 19:39

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	19800	19800	1	0.196		15
Fluoride	263	259	1	1.30		15
Sulfate	ND	ND	1	0.000		15

Laboratory Control Sample (LCS)

(LCS) R3529450-2 05/15/20 10:10

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Chloride	40000	39400	98.4	80.0-120	
Fluoride	8000	8100	101	80.0-120	
Sulfate	40000	40300	101	80.0-120	



L1218506-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1218506-02 05/15/20 13:53 • (MS) R3529450-4 05/15/20 14:08

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>
Chloride	50000	5610	55600	100	1	80.0-120	
Fluoride	5000	ND	5100	100	1	80.0-120	
Sulfate	50000	ND	54400	102	1	80.0-120	

L1218776-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1218776-04 05/15/20 19:53 • (MS) R3529450-6 05/15/20 20:08 • (MSD) R3529450-7 05/15/20 20:23

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Chloride	50000	11100	61000	61200	99.7	100	1	80.0-120			0.372	15
Fluoride	5000	191	5180	5210	99.9	100	1	80.0-120			0.462	15
Sulfate	50000	15400	66600	66600	102	102	1	80.0-120			0.0242	15

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3528841-1 05/16/20 08:54

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Boron	U		25.4	200
Calcium	U		389	1000

1 Cp

2 Tc

3 Ss

Laboratory Control Sample (LCS)

(LCS) R3528841-2 05/16/20 08:56

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Boron	1000	1000	100	80.0-120	
Calcium	10000	10200	102	80.0-120	

4 Cn

5 Sr

6 Qc

L1218776-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1218776-04 05/16/20 08:59 • (MS) R3528841-4 05/16/20 09:05 • (MSD) R3528841-5 05/16/20 09:07

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Boron	1000	ND	1030	1050	99.4	101	1	75.0-125			1.47	20
Calcium	10000	87500	96200	96000	86.8	84.6	1	75.0-125			0.234	20

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3529709-1 05/19/20 13:45

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Boron	U		25.4	200
Calcium	U		389	1000

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS)

(LCS) R3529709-2 05/19/20 13:47

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Boron	1000	1010	101	80.0-120	
Calcium	10000	10200	102	80.0-120	

5 Sr

6 Qc

L1218804-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1218804-04 05/19/20 13:50 • (MS) R3529709-4 05/19/20 13:55 • (MSD) R3529709-5 05/19/20 13:58

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Boron	1000	ND	1040	1040	101	102	1	75.0-125			0.443	20
Calcium	10000	66900	76000	76300	91.4	94.0	1	75.0-125			0.335	20

7 Gl

8 Al

9 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
J	The identification of the analyte is acceptable; the reported value is an estimate.
O1	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.

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



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	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

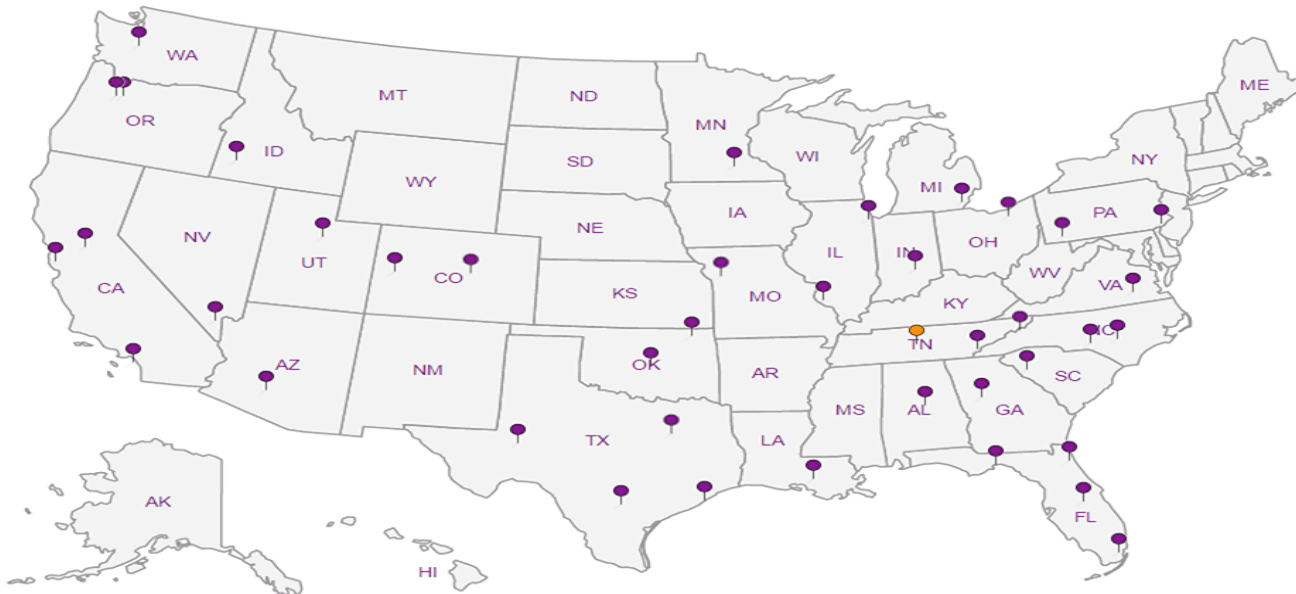
Third Party Federal Accreditations

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

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

Our Locations

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.



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

SCS Engineers - KS
8575 W 110th Street
Overland Park, Kansas 66210

Billing Information:
Accounts Payable
8575 W. 110th Street
Overland Park, Kansas 66210

Report to:
Jason Franks

Project Description:
Evergy - Sibley Generating Station

City/State Collected: **Sibley, Missouri**

Please Circle: PT MT CT ET

Chain of Custody Page 1 of 1

Email To: **jfranks@scsengineers.com;**

Lab Project #: **AQUAOPKS-SIBLEY**

Client Project #: **27213169.20**

Site/Facility ID #

P.O. #

Quote #

Rush? (Lab MUST Be Notified)
 Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day

Date Results Needed

No. of Cntrs

Phone: **913-749-0716**

Collected by (print): **Jason R. Franks**

Collected by (signature): *Jason R. Franks*

Immediately Packed on Ice N Y

SDG # **21218776**

J249

Acctnum: **AQUAOPKS**

Template:

Prelogin:

PM: **206 - Jeff Carr**

PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	B, Ca - 250ml HDPE-HNO3	TDS 250 ml HDPE-NoPres	Anions(Cl,F,SO4) 125ml HDPE-NoPres	Analysis / Container / Preservative	Chain of Custody
MW-701	Grab	GW		05/12/20	1405	3	X	X	X		
MW-702	Grab	GW		05/12/20	1530	3	X	X	X		
MW-703	Grab	GW		05/12/20	1620	3	X	X	X		
MW-704	Grab	GW		05/12/20	1715	3	X	X	X		
Duplicate	Grab	GW		05/12/20	1405	3	X	X	X		
MW-704 MS/MSD	Grab	GW		05/12/20	1405	3	X	X	X		

* Matrix: SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other

Remarks:

Samples returned via: UPS FedEx Courier

Tracking # **127586061905**

Relinquished by: (Signature) *Jason R. Franks* Date: **05/13/20** Time: **1700**

Received by: (Signature) *[Signature]* Trip Blank Received: Yes / No
 HCL / MeOH TBR

Temp: **1.5-3=1.2** °C Bottles Received: **5/14/20 0845**

Relinquished by: (Signature) Date: Time: Received for lab by: (Signature) Date: Time: Hold: Condition: NCF **OK**

Sample Receipt Checklist
 COC Seal Present/Intact: Y N
 COC Signed/Accurate: Y N
 Bottles arrive intact: Y N
 Correct bottles used: Y N
 Sufficient volume sent: Y N
 If Applicable
 VOA Zero Headspace: Y N
 Preservation Correct/Checked: Y N
 RAD Screen <0.5 mR/hr: Y N

SCS Engineers - KS
8575 W 110th Street
Overland Park, Kansas 66210

Billing Information:
Accounts Payable
8575 W. 110th Street
Overland Park, Kansas 66210

Pres Chk *LR*

Report to:
Jason Franks

Email To:
jfranks@scsengineers.com;

Project Description:
Evergry - Sibley Generating Station

City/State Collected: **Sibley, Missouri**

Please Circle:
 PT MT CT ET

Phone: **913-749-0716**

Client Project #
27213169.20

Lab Project #
AQUAOPKS-SIBLEY

Collected by (print):
Jason R. Franks

Site/Facility ID #

P.O. #

Collected by (signature):
Jason R. Franks

Rush? (Lab MUST Be Notified)
 Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day

Quote #
 Date Results Needed

Immediately Racked on Ice N Y X

No. of Cntrs

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	B, Ca - 250ml HDPE-HNO3	TDS 250 ml HDPE-NoPres	Anions(Cl,Id,SO4) 125ml HDPE-NoPres	Analysis / Container / Preservative						Chain of Custody		
MW-701	Grab	GW		05/12/20	1715	3	X	X	X									
MW-702	Grab	GW		05/12/20	1620	3	X	X	X									
MW-703	Grab	GW		05/12/20	1530	3	X	X	X									
MW-704	Grab	GW		05/12/20	1405	3	X	X	X									
Duplicate	Grab	GW		05/12/20	1405	3	X	X	X									
MW-704 MS/MSD	Grab	GW		05/12/20	1405	3	X	X	X									

Page 1 of 1
Pace Analytical
 National Center for Testing & Innovation

12065 Lebanon Rd
 Mount Juliet, TN 37122
 Phone: 615-758-5858
 Phone: 800-767-5859
 Fax: 615-758-5859



SDG # *L1218774*
 Table # *J249*
 Acctnum: **AQUAOPKS**
 Template:
 Prelogin:
 PM: **206 - Jeff Carr**
 PB:
 Shipped Via:
 Remarks Sample # (lab only)

* Matrix:
 SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other

Remarks:
 Samples returned via:
 UPS FedEx Courier

Tracking # *12758641905*
 pH _____ Temp _____
 Flow _____ Other _____

Sample Receipt Checklist
 COC Seal Present/Intact: NP Y N
 COC Signed/Accurate: Y N
 Bottles arrive intact: Y N
 Correct bottles used: Y N
 Sufficient volume sent: Y N
 If Applicable
 VOA Zero Headspace: Y N
 Preservation Correct/Checked: Y N
 RAD Screen <0.5 mR/hr: Y N

Relinquished by: (Signature)
Jason R. Franks

Date: *5/13/20* Time: *1700*

Received by: (Signature)

Trip Blank Received: Yes / No
 HCL / MeOH
 TBR

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date: Time:

Received by: (Signature)

Temp: *1.5-3.7*
 Bottles Received:

Date/Time

Relinquished by: (Signature)

Date: Time:

Received for lab by: (Signature)
[Signature]

Date: *5/19/20* Time: *0845*

Hold: Condition: NCF / OK

Cole Medley



Login #: 11218776	Client: AQUAOPKS	Date: 05/14/20	Evaluated by: Cole Medley
-------------------	------------------	----------------	---------------------------

Non-Conformance (check applicable items)

Sample Integrity	Chain of Custody Clarification	If Broken Container:
Parameter(s) past holding time	Login Clarification Needed	Insufficient packing material around container
Temperature not in range	Chain of custody is incomplete	Insufficient packing material inside cooler
Improper container type	Please specify Metals requested.	Improper handling by carrier (FedEx / UPS / Cour
pH not in range.	Please specify TCLP requested.	Sample was frozen
Insufficient sample volume.	Received additional samples not listed on coc.	Container lid not intact
Sample is biphasic.	Sample ids on containers do not match ids on coc	If no Chain of Custody:
Vials received with headspace.	Trip Blank not received.	Received by:
Broken container	Client did not "X" analysis.	Date/Time:
Broken container:	Chain of Custody is missing	Temp./Cont. Rec./pH:
Sufficient sample remains		Carrier:
		Tracking#

**Log in Comments: For ID: MW-701 container time is listed as 1715, but is 1405 on COC
For ID: MW-704 container time is listed as 1405, but is 1715 on COC**

Client informed by:	Call	Email	X	Voice Mail	Date: 5/15/20	Time: 1038
TSR Initials: JC	Client Contact: J. Franks					

Log in Instructions: **Replacement COC attached.**

SCS Engineers - KS

Sample Delivery Group: L1219185
Samples Received: 05/14/2020
Project Number: 27213169.20
Description: Evergy - Sibley Generating Station

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

Entire Report Reviewed By:



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.



Cp: Cover Page	1	¹Cp
Tc: Table of Contents	2	²Tc
Ss: Sample Summary	3	³Ss
Cn: Case Narrative	4	⁴Cn
Sr: Sample Results	5	⁵Sr
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Qc: Quality Control Summary	10	⁶Qc
Mercury by Method 7470A	10	
Metals (ICP) by Method 6010B	11	
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Al: Accreditations & Locations	14	⁸Al
Sc: Sample Chain of Custody	15	⁹Sc

SAMPLE SUMMARY



MW-701 L1219185-01 GW

Collected by Jason Franks
Collected date/time 05/12/20 17:15
Received date/time 05/14/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1477050	1	05/17/20 21:00	05/18/20 08:00	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1477180	1	05/16/20 11:28	05/16/20 17:39	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1477997	1	05/19/20 08:22	05/20/20 14:58	LD	Mt. Juliet, TN

1
Cp

2
Tc

3
Ss

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Cn

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Sr

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Qc

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Gl

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Al

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Sc

MW-702 L1219185-02 GW

Collected by Jason Franks
Collected date/time 05/12/20 16:20
Received date/time 05/14/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1477050	1	05/17/20 21:00	05/18/20 08:02	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1477180	1	05/16/20 11:28	05/16/20 17:42	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1477997	1	05/19/20 08:22	05/20/20 15:02	LD	Mt. Juliet, TN

MW-703 L1219185-03 GW

Collected by Jason Franks
Collected date/time 05/12/20 15:30
Received date/time 05/14/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1477050	1	05/17/20 21:00	05/18/20 08:04	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1477180	1	05/16/20 11:28	05/16/20 17:45	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1477997	1	05/19/20 08:22	05/20/20 15:05	LD	Mt. Juliet, TN

MW-704 L1219185-04 GW

Collected by Jason Franks
Collected date/time 05/12/20 14:05
Received date/time 05/14/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1477050	1	05/17/20 21:00	05/18/20 07:26	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1477180	1	05/16/20 11:28	05/16/20 16:34	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1477997	1	05/19/20 08:22	05/20/20 14:44	LD	Mt. Juliet, TN

DUPLICATE L1219185-05 GW

Collected by Jason Franks
Collected date/time 05/12/20 14:05
Received date/time 05/14/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1477050	1	05/17/20 21:00	05/18/20 08:10	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1477180	1	05/16/20 11:28	05/16/20 17:48	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1477997	1	05/19/20 08:22	05/20/20 15:08	LD	Mt. Juliet, TN



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.

Jeff Carr
Project Manager

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



Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Mercury	ND		0.200	1	05/18/2020 08:00	WG1477050

¹ Cp

² Tc

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Barium	184		5.00	1	05/16/2020 17:39	WG1477180
Chromium	ND		10.0	1	05/16/2020 17:39	WG1477180
Cobalt	ND		10.0	1	05/16/2020 17:39	WG1477180
Lithium	ND		15.0	1	05/16/2020 17:39	WG1477180
Molybdenum	ND		5.00	1	05/16/2020 17:39	WG1477180

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Antimony	ND		4.00	1	05/20/2020 14:58	WG1477997
Arsenic	2.73		2.00	1	05/20/2020 14:58	WG1477997
Beryllium	ND		2.00	1	05/20/2020 14:58	WG1477997
Cadmium	ND		1.00	1	05/20/2020 14:58	WG1477997
Lead	ND		5.00	1	05/20/2020 14:58	WG1477997
Selenium	ND		2.00	1	05/20/2020 14:58	WG1477997
Thallium	ND		2.00	1	05/20/2020 14:58	WG1477997

⁷ Gl

⁸ Al

⁹ Sc



Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Mercury	ND		0.200	1	05/18/2020 08:02	WG1477050

¹ Cp

² Tc

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Barium	282		5.00	1	05/16/2020 17:42	WG1477180
Chromium	ND		10.0	1	05/16/2020 17:42	WG1477180
Cobalt	ND		10.0	1	05/16/2020 17:42	WG1477180
Lithium	15.2		15.0	1	05/16/2020 17:42	WG1477180
Molybdenum	ND		5.00	1	05/16/2020 17:42	WG1477180

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Antimony	ND		4.00	1	05/20/2020 15:02	WG1477997
Arsenic	6.04		2.00	1	05/20/2020 15:02	WG1477997
Beryllium	ND		2.00	1	05/20/2020 15:02	WG1477997
Cadmium	ND		1.00	1	05/20/2020 15:02	WG1477997
Lead	ND		5.00	1	05/20/2020 15:02	WG1477997
Selenium	ND		2.00	1	05/20/2020 15:02	WG1477997
Thallium	ND		2.00	1	05/20/2020 15:02	WG1477997

⁷ Gl

⁸ Al

⁹ Sc



Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Mercury	ND		0.200	1	05/18/2020 08:04	WG1477050

1 Cp

2 Tc

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Barium	269		5.00	1	05/16/2020 17:45	WG1477180
Chromium	ND		10.0	1	05/16/2020 17:45	WG1477180
Cobalt	ND		10.0	1	05/16/2020 17:45	WG1477180
Lithium	17.2		15.0	1	05/16/2020 17:45	WG1477180
Molybdenum	ND		5.00	1	05/16/2020 17:45	WG1477180

3 Ss

4 Cn

5 Sr

6 Qc

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Antimony	ND		4.00	1	05/20/2020 15:05	WG1477997
Arsenic	177		2.00	1	05/20/2020 15:05	WG1477997
Beryllium	ND		2.00	1	05/20/2020 15:05	WG1477997
Cadmium	ND		1.00	1	05/20/2020 15:05	WG1477997
Lead	ND		5.00	1	05/20/2020 15:05	WG1477997
Selenium	ND		2.00	1	05/20/2020 15:05	WG1477997
Thallium	ND		2.00	1	05/20/2020 15:05	WG1477997

7 Gl

8 Al

9 Sc



Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Mercury	ND		0.200	1	05/18/2020 07:26	WG1477050

1 Cp

2 Tc

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Barium	154		5.00	1	05/16/2020 16:34	WG1477180
Chromium	ND		10.0	1	05/16/2020 16:34	WG1477180
Cobalt	ND		10.0	1	05/16/2020 16:34	WG1477180
Lithium	ND		15.0	1	05/16/2020 16:34	WG1477180
Molybdenum	8.01		5.00	1	05/16/2020 16:34	WG1477180

3 Ss

4 Cn

5 Sr

6 Qc

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Antimony	ND		4.00	1	05/20/2020 14:44	WG1477997
Arsenic	2.03		2.00	1	05/20/2020 14:44	WG1477997
Beryllium	ND		2.00	1	05/20/2020 14:44	WG1477997
Cadmium	ND		1.00	1	05/20/2020 14:44	WG1477997
Lead	ND		5.00	1	05/20/2020 14:44	WG1477997
Selenium	ND		2.00	1	05/20/2020 14:44	WG1477997
Thallium	ND		2.00	1	05/20/2020 14:44	WG1477997

7 Gl

8 Al

9 Sc



Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Mercury	ND		0.200	1	05/18/2020 08:10	WG1477050

1 Cp

2 Tc

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Barium	154		5.00	1	05/16/2020 17:48	WG1477180
Chromium	ND		10.0	1	05/16/2020 17:48	WG1477180
Cobalt	ND		10.0	1	05/16/2020 17:48	WG1477180
Lithium	ND		15.0	1	05/16/2020 17:48	WG1477180
Molybdenum	7.77		5.00	1	05/16/2020 17:48	WG1477180

3 Ss

4 Cn

5 Sr

6 Qc

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Antimony	ND		4.00	1	05/20/2020 15:08	WG1477997
Arsenic	2.01		2.00	1	05/20/2020 15:08	WG1477997
Beryllium	ND		2.00	1	05/20/2020 15:08	WG1477997
Cadmium	ND		1.00	1	05/20/2020 15:08	WG1477997
Lead	ND		5.00	1	05/20/2020 15:08	WG1477997
Selenium	ND		2.00	1	05/20/2020 15:08	WG1477997
Thallium	ND		2.00	1	05/20/2020 15:08	WG1477997

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3528961-1 05/18/20 07:23

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Mercury	U		0.100	0.200

¹ Cp

² Tc

³ Ss

Laboratory Control Sample (LCS)

(LCS) R3528961-2 05/18/20 07:24

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Mercury	3.00	3.16	105	80.0-120	

⁴ Cn

⁵ Sr

L1219185-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1219185-04 05/18/20 07:26 • (MS) R3528961-3 05/18/20 07:28 • (MSD) R3528961-4 05/18/20 07:30

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Mercury	3.00	ND	3.08	2.97	103	98.9	1	75.0-125			3.80	20

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3528845-1 05/16/20 16:28

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	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

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

Laboratory Control Sample (LCS)

(LCS) R3528845-2 05/16/20 16:31

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Barium	1000	1010	101	80.0-120	
Chromium	1000	961	96.1	80.0-120	
Cobalt	1000	1020	102	80.0-120	
Lithium	1000	964	96.4	80.0-120	
Molybdenum	1000	1000	100	80.0-120	

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1219185-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1219185-04 05/16/20 16:34 • (MS) R3528845-4 05/16/20 16:39 • (MSD) R3528845-5 05/16/20 16:42

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Barium	1000	154	1140	1140	98.9	98.8	1	75.0-125			0.0652	20
Chromium	1000	ND	955	960	95.5	96.0	1	75.0-125			0.497	20
Cobalt	1000	ND	1020	1010	102	101	1	75.0-125			0.163	20
Lithium	1000	ND	978	980	96.6	96.8	1	75.0-125			0.183	20
Molybdenum	1000	8.01	1010	1010	99.9	101	1	75.0-125			0.708	20



Method Blank (MB)

(MB) R3530138-1 05/20/20 14:37

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	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

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

Laboratory Control Sample (LCS)

(LCS) R3530138-2 05/20/20 14:41

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Antimony	50.0	52.3	105	80.0-120	
Arsenic	50.0	49.7	99.4	80.0-120	
Beryllium	50.0	46.1	92.2	80.0-120	
Cadmium	50.0	51.9	104	80.0-120	
Lead	50.0	51.1	102	80.0-120	
Selenium	50.0	53.9	108	80.0-120	
Thallium	50.0	49.7	99.4	80.0-120	

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1219185-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1219185-04 05/20/20 14:44 • (MS) R3530138-4 05/20/20 14:51 • (MSD) R3530138-5 05/20/20 14:55

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Antimony	50.0	ND	51.3	51.9	103	104	1	75.0-125			1.27	20
Arsenic	50.0	2.03	49.5	50.9	94.9	97.8	1	75.0-125			2.92	20
Beryllium	50.0	ND	48.2	47.8	96.5	95.7	1	75.0-125			0.829	20
Cadmium	50.0	ND	52.8	52.1	106	104	1	75.0-125			1.24	20
Lead	50.0	ND	51.6	50.4	103	101	1	75.0-125			2.32	20
Selenium	50.0	ND	57.4	56.3	112	110	1	75.0-125			2.02	20
Thallium	50.0	ND	49.4	49.2	98.7	98.3	1	75.0-125			0.395	20



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.

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

Qualifier Description

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



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	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

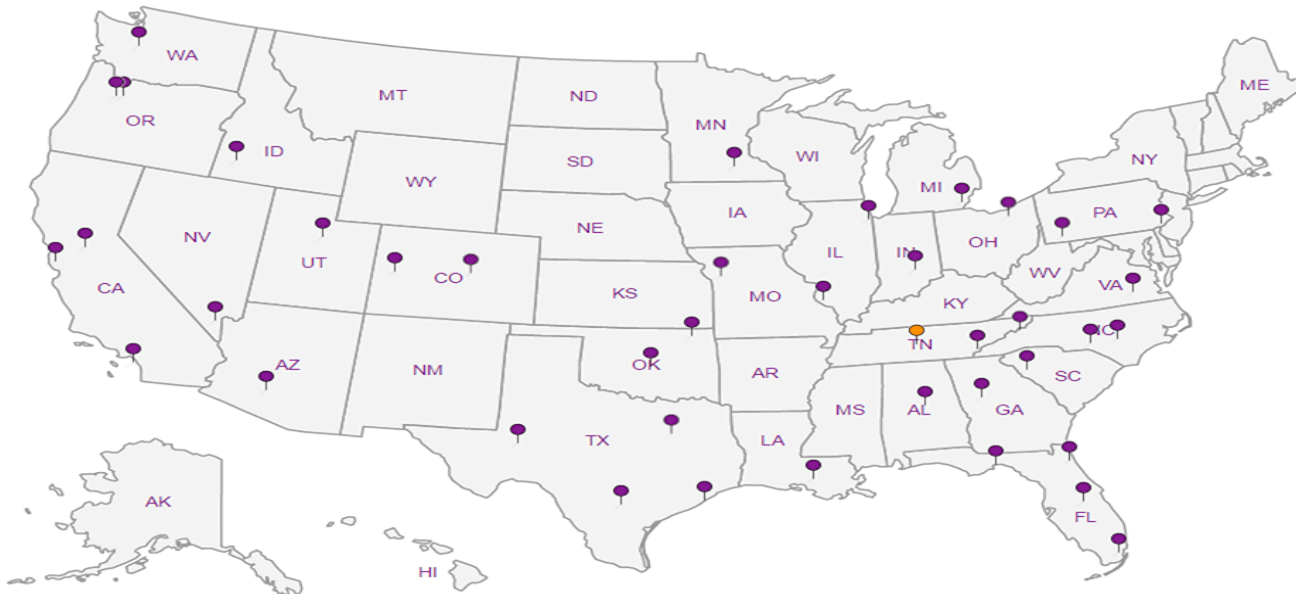
Third Party Federal Accreditations

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

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

Our Locations

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.



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Cole Medley



Login #: L1219185	Client: AQUAOPKS	Date: 05/14/20	Evaluated by: Cole Medley
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Non-Conformance (check applicable items)

Sample Integrity	Chain of Custody Clarification	If Broken Container:
Parameter(s) past holding time	Login Clarification Needed	
Temperature not in range	Chain of custody is incomplete	Insufficient packing material around container
Improper container type	Please specify Metals requested.	Insufficient packing material inside cooler
pH not in range.	Please specify TCLP requested.	Improper handling by carrier (FedEx / UPS / Cour
Insufficient sample volume.	Received additional samples not listed on coc.	Sample was frozen
Sample is biphasic.	Sample ids on containers do not match ids on coc	Container lid not intact
Vials received with headspace.	Trip Blank not received.	If no Chain of Custody:
Broken container	Client did not "X" analysis.	Received by:
Broken container:	Chain of Custody is missing	Date/Time:
Sufficient sample remains		Temp./Cont. Rec./pH:
		Carrier:
		Tracking#

Login Comments: For ID: MW-701 container time is listed as 1715, but is 1405 on COC For ID: MW-704 container time is listed as 1405, but is 1715 on COC

Client informed by:	Call	Email	X	Voice Mail	Date: 5/15/20	Time: 1038
TSR Initials: JC	Client Contact: J. Franks					

Login Instructions: **Replacement COC attached.**

SCS Engineers - KS

Sample Delivery Group: L1218557
Samples Received: 05/14/2020
Project Number: 27213169.20
Description: Evergy - Sibley Generating Station

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

Entire Report Reviewed By:



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.



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SAMPLE SUMMARY



MW-701 L1218557-01 Non-Potable Water

Collected by Jason R Franks
Collected date/time 05/12/20 17:15
Received date/time 05/14/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1478122	1	05/19/20 12:05	05/27/20 10:15	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1477856	1	05/20/20 14:52	05/27/20 10:15	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1477856	1	05/20/20 14:52	05/21/20 15:50	RGT	Mt. Juliet, TN

1
Cp

2
Tc

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Ss

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Cn

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Sr

6
Qc

7
Gl

8
Al

9
Sc

MW-702 L1218557-02 Non-Potable Water

Collected by Jason R Franks
Collected date/time 05/12/20 16:20
Received date/time 05/14/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1478122	1	05/19/20 12:05	05/27/20 10:15	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1477856	1	05/20/20 14:52	05/27/20 10:15	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1477856	1	05/20/20 14:52	05/21/20 15:50	RGT	Mt. Juliet, TN

MW-703 L1218557-03 Non-Potable Water

Collected by Jason R Franks
Collected date/time 05/12/20 15:30
Received date/time 05/14/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1478122	1	05/19/20 12:05	05/27/20 10:15	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1477856	1	05/20/20 14:52	05/27/20 10:15	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1477856	1	05/20/20 14:52	05/21/20 15:50	RGT	Mt. Juliet, TN

MW-704 L1218557-04 Non-Potable Water

Collected by Jason R Franks
Collected date/time 05/12/20 14:05
Received date/time 05/14/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1478122	1	05/19/20 12:05	05/27/20 10:15	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1477856	1	05/20/20 14:52	05/27/20 10:15	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1477856	1	05/20/20 14:52	05/21/20 15:50	RGT	Mt. Juliet, TN

DUPLICATE L1218557-05 Non-Potable Water

Collected by Jason R Franks
Collected date/time 05/12/20 14:05
Received date/time 05/14/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1478122	1	05/19/20 12:05	05/27/20 10:15	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1477856	1	05/20/20 14:52	05/27/20 10:15	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1477856	1	05/20/20 14:52	05/21/20 15:50	RGT	Mt. Juliet, TN



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

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	-0.573		0.574	0.913	05/27/2020 10:15	WG1478122
(T) Barium	104			62.0-143	05/27/2020 10:15	WG1478122
(T) Yttrium	104			79.0-136	05/27/2020 10:15	WG1478122

¹Cp

²Tc

³Ss

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.164		0.759	1.16	05/27/2020 10:15	WG1477856

⁴Cn

⁵Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.164		0.185	0.243	05/21/2020 15:50	WG1477856
(T) Barium-133	104			30.0-143	05/21/2020 15:50	WG1477856

⁶Qc

⁷Gl

⁸Al

⁹Sc



Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.0777		0.619	1.01	05/27/2020 10:15	WG1478122
(T) Barium	124			62.0-143	05/27/2020 10:15	WG1478122
(T) Yttrium	111			79.0-136	05/27/2020 10:15	WG1478122

¹ Cp

² Tc

³ Ss

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.202		0.785	1.25	05/27/2020 10:15	WG1477856

⁴ Cn

⁵ Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.124		0.166	0.241	05/21/2020 15:50	WG1477856
(T) Barium-133	108			30.0-143	05/21/2020 15:50	WG1477856

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	-0.161		0.502	0.862	05/27/2020 10:15	WG1478122
(T) Barium	109			62.0-143	05/27/2020 10:15	WG1478122
(T) Yttrium	103			79.0-136	05/27/2020 10:15	WG1478122

¹ Cp

² Tc

³ Ss

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.308		0.717	1.05	05/27/2020 10:15	WG1477856

⁴ Cn

⁵ Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.308		0.215	0.189	05/21/2020 15:50	WG1477856
(T) Barium-133	97.8			30.0-143	05/21/2020 15:50	WG1477856

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.958		0.542	0.815	05/27/2020 10:15	WG1478122
(T) Barium	111			62.0-143	05/27/2020 10:15	WG1478122
(T) Yttrium	103			79.0-136	05/27/2020 10:15	WG1478122

¹ Cp

² Tc

³ Ss

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.04		0.673	1.02	05/27/2020 10:15	WG1477856

⁴ Cn

⁵ Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.0812		0.131	0.208	05/21/2020 15:50	WG1477856
(T) Barium-133	91.0			30.0-143	05/21/2020 15:50	WG1477856

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	-1.16		0.566	0.87	05/27/2020 10:15	WG1478122
(T) Barium	126			62.0-143	05/27/2020 10:15	WG1478122
(T) Yttrium	101			79.0-136	05/27/2020 10:15	WG1478122

1 Cp

2 Tc

3 Ss

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.164		0.763	1.14	05/27/2020 10:15	WG1477856

4 Cn

5 Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.164		0.197	0.271	05/21/2020 15:50	WG1477856
(T) Barium-133	107			30.0-143	05/21/2020 15:50	WG1477856

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3532575-1 05/27/20 10:15

Analyte	MB Result pCi/l	MB Qualifier	MB MDA pCi/l
Radium-228	-0.0177		0.386
(T) Barium	99.9		
(T) Yttrium	114		

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1218557-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1218557-04 05/27/20 10:15 • (DUP) R3532575-5 05/27/20 10:15

Analyte	Original Result pCi/l	DUP Result pCi/l	Dilution	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Radium-228	0.958	1.33	1	32.4	0.463		20	3
(T) Barium	111	106						
(T) Yttrium	103	104						

Laboratory Control Sample (LCS)

(LCS) R3532575-2 05/27/20 10:15

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	5.43	109	80.0-120	
(T) Barium			105		
(T) Yttrium			104		

L1218557-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1218557-04 05/27/20 10:15 • (MS) R3532575-3 05/27/20 10:15 • (MSD) R3532575-4 05/27/20 10:15

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-228	10.0	0.958	11.8	12.3	109	113	1	70.0-130			3.90		20
(T) Barium		111			115	104							
(T) Yttrium		103			102	110							



Method Blank (MB)

(MB) R3530800-1 05/21/20 15:50

Analyte	MB Result pCi/l	MB Qualifier	MB MDA pCi/l
Radium-226	-0.00843		0.0656
(T) Barium-133	84.1		

1 Cp

2 Tc

3 Ss

4 Cn

L1218991-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1218991-01 05/21/20 19:37 • (DUP) R3530800-5 05/21/20 15:50

Analyte	Original Result pCi/l	DUP Result pCi/l	Dilution	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
Radium-226	0.200	0.172	1	15.3	0.0900		20	3
(T) Barium-133	95.4	84.5						

5 Sr

6 Qc

Laboratory Control Sample (LCS)

(LCS) R3530800-2 05/21/20 15:50

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.02	4.83	96.3	80.0-120	
(T) Barium-133			88.3		

7 Gl

8 Al

9 Sc

L1218557-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1218557-04 05/21/20 15:50 • (MS) R3530800-3 05/21/20 15:50 • (MSD) R3530800-4 05/21/20 15:50

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-226	20.1	0.0812	20.2	19.6	100	97.1	1	75.0-125			3.12		20
(T) Barium-133		91.0			83.6	92.9							



Guide to Reading and Understanding Your Laboratory Report

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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.

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

Qualifier	Description
-----------	-------------

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



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	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

Third Party Federal Accreditations

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

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

Our Locations

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.



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

SCS Engineers - KS

**8575 W 110th Street
Overland Park, Kansas 66210**

Billing Information:
**Accounts Payable
8575 W. 110th Street
Overland Park, Kansas 66210**

Pres
Chk

ll

Analysis / Container / Preservative

Chain of Custody Page 1 of 1



12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



SDG # 1218557
G243

Acctnum: **AQUAOPKS**

Template:

Prelogin:

PM: **206 - Jeff Carr**

PB:

Shipped Via:

Remarks Sample # (lab only)

Report to:
Jason Franks

Email To:
jfranks@scsengineers.com;

Project Description:
Every - Sibley Generating Station

City/State Collected: **Sibley, Missouri**

Please Circle:
PT MT CT ET

Phone: **913-749-0716**

Client Project #
27213169.20

Lab Project #
AQUAOPKS-SIBLEY

Collected by (print):

Jason R. Franks

Site/Facility ID #

P.O. #

Collected by (signature):

Jason R. Franks

Rush? (Lab MUST Be Notified)

- Same Day Five Day
- Next Day 5 Day (Rad Only)
- Two Day 10 Day (Rad Only)
- Three Day

Quote #

Date Results Needed

Immediately

Packed on Ice N Y

No.
of
Cnts

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cnts															
MW-701	Grab	GW		05/12/20	1405	2	X														
MW-702	Grab	GW		05/12/20	1530	2	X														
MW-703	Grab	GW		05/12/20	1620	2	X														
MW-704	Grab	GW		05/12/20	1715	2	X														
Duplicate	Grab	GW		05/12/20	1405	2	X														
MW-704 MS/MSD	Grab	GW		05/12/20	1405	2	X														

- * Matrix:
- SS - Soil AIR - Air F - Filter
 - GW - Groundwater B - Bioassay
 - WW - WasteWater
 - DW - Drinking Water
 - OT - Other

Remarks:

Samples returned via:

UPS FedEx Courier

Tracking #

pH _____ Temp _____

Flow _____ Other _____

Sample Receipt Checklist

- COC Seal Present/Intact: Y N
- COC Signed/Accurate: Y N
- Bottles arrive intact: Y N
- Correct bottles used: Y N
- Sufficient volume sent: Y N
- If Applicable
- VOA Zero Headspace: Y N
- Preservation Correct/Checked: Y N
- RAD Screen <0.5 mR/hr: Y N

Relinquished by: (Signature)

Jason R. Franks

Date:

05/13/20

Time:

1700

Received by: (Signature)

Jason R. Franks

Trip Blank Received: Yes (No)

HCL/MeOH
TBR

Temp: *14.7* °C

16-32.3

Bottles Received:

12

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Received for lab by: (Signature)

Jason R. Franks

Date:

5/14/20

Time:

8:45

Hold:

Condition:
NCF / OK

SCS Engineers - KS
8575 W 110th Street
Overland Park, Kansas 66210

Billing Information:
Accounts Payable
8575 W. 110th Street
Overland Park, Kansas 66210

Report to: **Jason Franks**
 Email To: **jfranks@scsengineers.com;**

Project Description: **Evergry - Sibley Generating Station**
 City/State Collected: **Sibley, Missouri**
 Please Circle: **PT MT CT ET**

Phone: **913-749-0716**
 Client Project #: **27213169.20**
 Lab Project #: **AQUAOPKS-SIBLEY**

Collected by (print): **Jason R. Franks**
 Site/Facility ID #: _____
 P.O. #: _____

Collected by (signature): *Jason R. Franks*
 Rush? (Lab MUST Be Notified)
 Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Immediately
 Packed on Ice N Y

Date Results Needed: _____
 Quote #: _____
 No. of Cntrs: _____

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	Pres Chk	Analysis / Container / Preservative
MW-701	Grab	GW		05/12/20	1715	2	X	
MW-702	Grab	GW		05/12/20	1620	2	X	
MW-703	Grab	GW		05/12/20	1530	2	X	
MW-704	Grab	GW		05/12/20	1405	2	X	
Duplicate	Grab	GW		05/12/20	1405	2	X	
MW-704 MS/MSD	Grab	GW		05/12/20	1405	2	X	

RA226, RA228, Combined 1LHDPE-HN03

Chain of Custody Page 1 of 1

Pace Analytical
 National Center for Testing & Innovation

12065 Lebanon Rd
 Mount Juliet, TN 37122
 Phone: 615-758-5858
 Phone: 800-767-5859
 Fax: 615-758-5859

SDG # **1210557**

Table # _____

Acctnum: **AQUAOPKS**

Template: _____

Prelogin: _____

PM: **206 - Jeff Carr**

PB: _____

Shipped Via: _____

Remarks | Sample # (lab only)

_____ | .01

_____ | .02

_____ | .03

_____ | .04

_____ | .05

_____ | .09

* Matrix:
 SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other

Remarks:
 Samples returned via: _____
 UPS FedEx Courier

Tracking # _____

pH _____ Temp _____
 Flow _____ Other _____

Sample Receipt Checklist
 COC Seal Present/Intact: NP Y N
 COC Signed/Accurate: Y N
 Bottles arrive intact: Y N
 Correct bottles used: Y N
 Sufficient volume sent: Y N
 If Applicable
 VOA Zero Headpace: Y N
 Preservation Correct/Checked: Y N
 RAD Screen <0.5 mR/hr: Y N

Relinquished by: (Signature) *Jason R. Franks* Date: **5/13/20** Time: **1700**
 Received by: (Signature) _____ Trip Blank Received: Yes / No
 HCL / MeOH
 TBR

Relinquished by: (Signature) _____ Date: _____ Time: _____
 Received by: (Signature) _____ Temp: **0.3** °C Bottles Received: **12**
 If preservation required by Login: Date/Time

Relinquished by: (Signature) _____ Date: _____ Time: _____
 Received for lab by: (Signature) *Carol Kern* Date: **5/14/20** Time: **845**
 Hold: _____ Condition: **NCF / OK**

Jared Morrison
December 20, 2022

ATTACHMENT 1-2
June 2020 Sampling Event Laboratory Report

SCS Engineers - KS

Sample Delivery Group: L1228828
Samples Received: 06/12/2020
Project Number: 27213169.20
Description: Evergy - Sibley Generating Station

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

Entire Report Reviewed By:



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.



Cp: Cover Page	1	1 Cp
Tc: Table of Contents	2	2 Tc
Ss: Sample Summary	3	3 Ss
Cn: Case Narrative	4	4 Cn
Sr: Sample Results	5	5 Sr
MW-704 L1228828-01	5	
DUPLICATE L1228828-02	6	
Qc: Quality Control Summary	7	6 Qc
Wet Chemistry by Method 9056A	7	
Gl: Glossary of Terms	8	7 Gl
Al: Accreditations & Locations	9	8 Al
Sc: Sample Chain of Custody	10	9 Sc

SAMPLE SUMMARY



MW-704 L1228828-01 GW

Collected by B. Ross
 Collected date/time 06/10/20 14:50
 Received date/time 06/12/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1494142	1	06/17/20 18:14	06/17/20 18:14	ELN	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

DUPLICATE L1228828-02 GW

Collected by B. Ross
 Collected date/time 06/10/20 14:55
 Received date/time 06/12/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1494142	1	06/17/20 18:32	06/17/20 18:32	ELN	Mt. Juliet, TN

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



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.

Jeff Carr
Project Manager

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



Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Fluoride	182		150	1	06/17/2020 18:14	WG1494142

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Fluoride	181		150	1	06/17/2020 18:32	WG1494142

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3539998-1 06/17/20 10:14

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Fluoride	U		64.0	150

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1229867-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1229867-01 06/17/20 12:30 • (DUP) R3539998-3 06/17/20 15:20

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Fluoride	644	644	1	0.109		15

L1229914-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1229914-01 06/17/20 21:12 • (DUP) R3539998-6 06/17/20 22:05

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Fluoride	641	647	1	0.839		15

Laboratory Control Sample (LCS)

(LCS) R3539998-2 06/17/20 10:31

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Fluoride	8000	7850	98.1	80.0-120	

L1228828-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1228828-01 06/17/20 18:14 • (MS) R3539998-8 06/18/20 06:46 • (MSD) R3539998-9 06/18/20 07:04

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Fluoride	5000	182	5210	5250	101	101	1	80.0-120			0.757	15

L1229917-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1229917-02 06/18/20 07:23 • (MS) R3539998-7 06/17/20 23:17

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Fluoride	5000	6210	10700	90.5	1	80.0-120	E



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.
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.
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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.

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

Qualifier Description

E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
---	---



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State Accreditations

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Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

Third Party Federal Accreditations

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

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

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1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

SCS Engineers - KS

8575 W. 110th Street
Overland Park, KS 66210

Billing Information:
Accounts Payable
8575 W. 110th Street
Overland Park, KS 66210

Pres
Chk

Analysis / Container / Preservative

Chain of Custody Page of



12065 Lebanon Rd.
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



Report to:
Jason Franks

Email To:
jfranks@scsengineers.com;jay.martin@evergy.c

Project Description:
Evergy - Sibley Generating Station

City/State
Collected:

Please Circle:
PT MT CT ET

Phone: **913-681-0030**

Client Project #
27213169.20

Lab Project #
AQUAOPKS-SIBLEY

Collected by (print):
B. Carr

Site/Facility ID #

P.O. #

Collected by (signature):
B. Carr

Rush? (Lab MUST Be Notified)

Quote #

___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Date Results Needed

Immediately Packed on Ice N Y *2*

Fluoride - 9056 125mIHDP-E-NoPres

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs
MW-704		GW		6/10/20	1450	1 X
DUPLICATE		GW		6/10/20	1455	1 X
MW-704 MS/MSD		GW		6/10/20	1500	1 X

SDG # **L1228828**
I191

Acctnum: **AQUAOPKS**
Template: **T129789**
Prelogin: **P779110**
PM: 206 - Jeff Carr
PB:

Shipped Via:
Remarks Sample # (lab only)

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other _____

Remarks:
pH _____ Temp _____
Flow _____ Other _____

Sample Receipt Checklist
COC Seal Present/Intact: Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N
RAD Screen <0.5 mR/hr: Y N

Samples returned via: _____ Tracking # **1790 30363892**

Relinquished by: (Signature)
Buy Joe
Date: **6/10/20**
Time: **1515**

Date: **6/11/20**
Time: **1800**

Received by: (Signature) *Alan Heban* Date: **6/10/20** Time: **1518**
Trip Blank Received: Yes No
HCL / MeOH
TBR
Bottles Received: **3**
Temp **14.7°C**
1.8 ± 0.1 - 1.8

If preservation required by Login: Date/Time
Hold: _____ Condition: NCF OK

Jared Morrison
December 20, 2022

ATTACHMENT 1-3
July 14, 2020 Sampling Event Laboratory Report

July 23, 2020

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

SCS Engineers - KS

Sample Delivery Group: L1240489
Samples Received: 07/16/2020
Project Number: 27213169.20
Description: Evergy - Sibley Generating Station

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

Entire Report Reviewed By:



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.



Cp: Cover Page	1	¹Cp
Tc: Table of Contents	2	²Tc
Ss: Sample Summary	3	³Ss
Cn: Case Narrative	4	⁴Cn
Sr: Sample Results	5	⁵Sr
MW-704 L1240489-01	5	
DUPLICATE L1240489-02	6	
Qc: Quality Control Summary	7	⁶Qc
Wet Chemistry by Method 9056A	7	
Gl: Glossary of Terms	8	⁷Gl
Al: Accreditations & Locations	9	⁸Al
Sc: Sample Chain of Custody	10	⁹Sc

SAMPLE SUMMARY



MW-704 L1240489-01 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1511210	1	07/18/20 10:08	07/18/20 10:08	ELN	Mt. Juliet, TN

Collected by
Collected date/time
Received date/time

¹ Cp

² Tc

³ Ss

DUPLICATE L1240489-02 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1511210	1	07/18/20 10:52	07/18/20 10:52	ELN	Mt. Juliet, TN

Collected by
Collected date/time
Received date/time

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



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.

Jeff Carr
Project Manager

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



Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Fluoride	162		150	1	07/18/2020 10:08	WG1511210

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Fluoride	165		150	1	07/18/2020 10:52	WG1511210

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3550868-1 07/18/20 08:58

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Fluoride	U		64.0	150

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

L1240863-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1240863-01 07/18/20 13:49 • (DUP) R3550868-5 07/18/20 14:04

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Fluoride	ND	ND	1	0.531		15

⁶ Qc

L1240863-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1240863-08 07/18/20 17:18 • (DUP) R3550868-7 07/18/20 17:33

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Fluoride	ND	ND	1	6.67		15

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS)

(LCS) R3550868-2 07/18/20 09:13

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Fluoride	8000	8280	103	80.0-120	

L1240489-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1240489-01 07/18/20 10:08 • (MS) R3550868-3 07/18/20 10:22 • (MSD) R3550868-4 07/18/20 10:37

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Fluoride	5000	162	5380	5400	104	105	1	80.0-120			0.456	15

L1240863-06 Original Sample (OS) • Matrix Spike (MS)

(OS) L1240863-06 07/18/20 16:18 • (MS) R3550868-6 07/18/20 16:33

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Fluoride	5000	266	5520	105	1	80.0-120	



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.

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

Qualifier Description

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



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	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

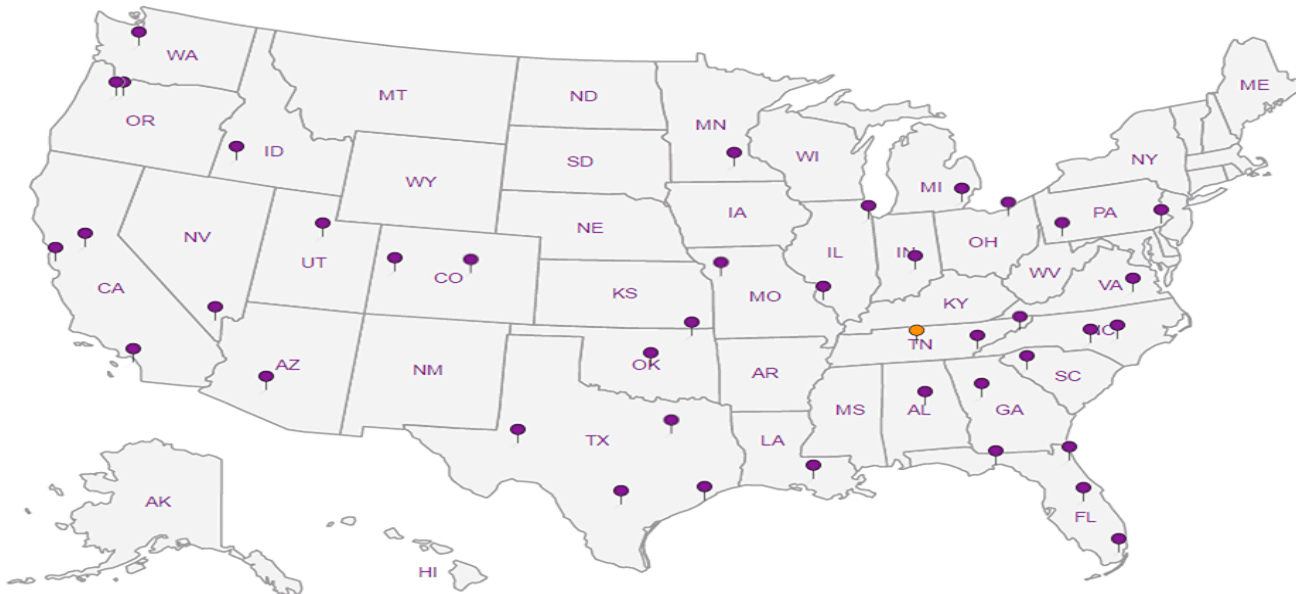
Third Party Federal Accreditations

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

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

Our Locations

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.



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

SCS Engineers - KS

8575 W. 110th Street
Overland Park, KS 66210

Billing Information:

Accounts Payable
8575 W. 110th Street
Overland Park, KS 66210

Pres
Chk

Analysis / Container / Preservative

Chain of Custody Page ___ of ___



12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



Report to:
Jason Franks

Email To:
jfranks@scsengineers.com;jay.martin@evergy.com

Project Description:
Energy - Sibley Generating Station

City/State
Collected:

Please Circle:
PT MT CT ET

Phone: 913-681-0030

Client Project #
27213169.20

Lab Project #
AQUAOPKS-SIBLEY

Collected by (print):

Site/Facility ID #

P.O. #

Collected by (signature):

Rush? (Lab MUST Be Notified)

- Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day

Quote #

Date Results Needed

Immediately
Packed on Ice N ___ Y ___

No.
of
Cntrs

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Fluoride - 9056 125mIHDPE-NoPres
MW-704		GW		7/14/20	1140	1	X
DUPLICATE		GW		7/14/20	1156	1	X
MW-704 MS/MSD		GW		7/14/20	145	1	X

SDG # **L1240489**

I037

Acctnum: **AQUAOPKS**
 Template: **T129789**
 Prelogin: **P784782**
 PM: **206 - Jeff Carr**
 PB:
 Shipped Via:
 Remarks | Sample # (lab only)

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks:
 pH _____ Temp _____
 Flow _____ Other _____
 Samples returned via:
 ___ UPS ___ FedEx ___ Courier
 Tracking # **1845 4330 2058**

Sample Receipt Checklist	
COC Seal Present/Intact:	<input checked="" type="checkbox"/> NP Y N
COC Signed/Accurate:	<input checked="" type="checkbox"/> Y N
Bottles arrive intact:	<input checked="" type="checkbox"/> Y N
Correct bottles used:	<input checked="" type="checkbox"/> Y N
Sufficient volume sent:	<input checked="" type="checkbox"/> Y N
If Applicable	
VOA Zero HeadSpace:	<input type="checkbox"/> Y N
Preservation Correct/Checked:	<input type="checkbox"/> Y N
RAD Screen <0.5 mR/hr:	<input checked="" type="checkbox"/> Y N

Relinquished by: (Signature) <i>[Signature]</i>	Date: 7/16/20	Time: 1325	Received by: (Signature) <i>[Signature]</i>	Date: 7-16-20	Time: 1326	Trip Blank Received: <input checked="" type="checkbox"/> Yes/No	HCL / MeOH TBR
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:	Temp: 0.4-1.0-3.6°C	Bottles Received: 3
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) <i>[Signature]</i>	Date: 7/16/20	Time: 8:45	Hold:	Condition: NCF 1 OK

July 23, 2020

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

SCS Engineers - KS

Sample Delivery Group: L1240464
Samples Received: 07/16/2020
Project Number: 27213169.20
Description: Evergy - Sibley Generating Station

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

Entire Report Reviewed By:



Jeff Carr
Project Manager

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Tc: Table of Contents	2	²Tc
Ss: Sample Summary	3	³Ss
Cn: Case Narrative	4	⁴Cn
Sr: Sample Results	5	⁵Sr
MW-704 L1240464-01	5	⁶Qc
Qc: Quality Control Summary	6	⁷Gl
Wet Chemistry by Method 2320 B-2011	6	⁸Al
Wet Chemistry by Method 9056A	7	⁹Sc
Metals (ICP) by Method 6010B	9	
Gl: Glossary of Terms	10	
Al: Accreditations & Locations	11	
Sc: Sample Chain of Custody	12	

SAMPLE SUMMARY



MW-704 L1240464-01 GW

Collected by: _____ Collected date/time: 07/14/20 11:40 Received date/time: 07/16/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1511472	1	07/22/20 03:17	07/22/20 03:17	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1510683	1	07/18/20 16:19	07/18/20 16:19	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1511296	1	07/21/20 10:43	07/21/20 20:58	EL	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



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.

Jeff Carr
Project Manager

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



Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Alkalinity,Bicarbonate	230000		20000	1	07/22/2020 03:17	WG1511472
Alkalinity,Carbonate	ND		20000	1	07/22/2020 03:17	WG1511472

Sample Narrative:

L1240464-01 WG1511472: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	12100		1000	1	07/18/2020 16:19	WG1510683
Sulfate	15200		5000	1	07/18/2020 16:19	WG1510683

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Calcium	85900		1000	1	07/21/2020 20:58	WG1511296
Magnesium	8550		1000	1	07/21/2020 20:58	WG1511296
Potassium	ND		2000	1	07/21/2020 20:58	WG1511296
Sodium	13200		3000	1	07/21/2020 20:58	WG1511296

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



Method Blank (MB)

(MB) R3551766-1 07/22/20 00:50

Analyte	MB Result ug/l	<u>MB Qualifier</u>	MB MDL ug/l	MB RDL ug/l
Alkalinity,Bicarbonate	U		8450	20000
Alkalinity,Carbonate	U		8450	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) R3551061-1 07/18/20 09:04

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Chloride	U		379	1000
Sulfate	U		594	5000

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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

(OS) L1240151-01 07/18/20 12:40 • (DUP) R3551061-4 07/18/20 12:57

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Sulfate	14300	14200	1	0.400		15

Original Sample (OS) • Duplicate (DUP)

(OS) • (DUP) R3551061-5 07/18/20 15:46

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride		157000	5	0.0626		15

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

(OS) L1240510-02 07/18/20 19:59 • (DUP) R3551061-6 07/18/20 20:16

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	1990	1990	1	0.0853		15
Sulfate	ND	ND	1	1.19		15

Laboratory Control Sample (LCS)

(LCS) R3551061-2 07/18/20 09:21

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Chloride	40000	39900	99.8	80.0-120	
Sulfate	40000	38200	95.5	80.0-120	



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

(OS) L1240100-01 07/18/20 12:06 • (MS) R3551061-3 07/18/20 12:23

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>
Chloride	50000	42400	91000	97.1	1	80.0-120	
Sulfate	50000	ND	51100	97.1	1	80.0-120	

Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) • (MS) R3551061-7 07/18/20 18:35 • (MSD) R3551061-8 07/18/20 18:52

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Chloride	50000		56100	56900	94.5	96.1	1	80.0-120			1.43	15
Sulfate	50000		120000	121000	85.1	86.8	1	80.0-120	<u>E</u>	<u>E</u>	0.692	15

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



Method Blank (MB)

(MB) R3551755-1 07/21/20 19:45

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Calcium	U		389	1000
Magnesium	U		111	1000
Potassium	U		510	2000
Sodium	U		1400	3000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

Laboratory Control Sample (LCS)

(LCS) R3551755-2 07/21/20 19:48

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Calcium	10000	9980	99.8	80.0-120	
Magnesium	10000	9840	98.4	80.0-120	
Potassium	10000	9470	94.7	80.0-120	
Sodium	10000	9860	98.6	80.0-120	

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



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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).
---	---

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



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.

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 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

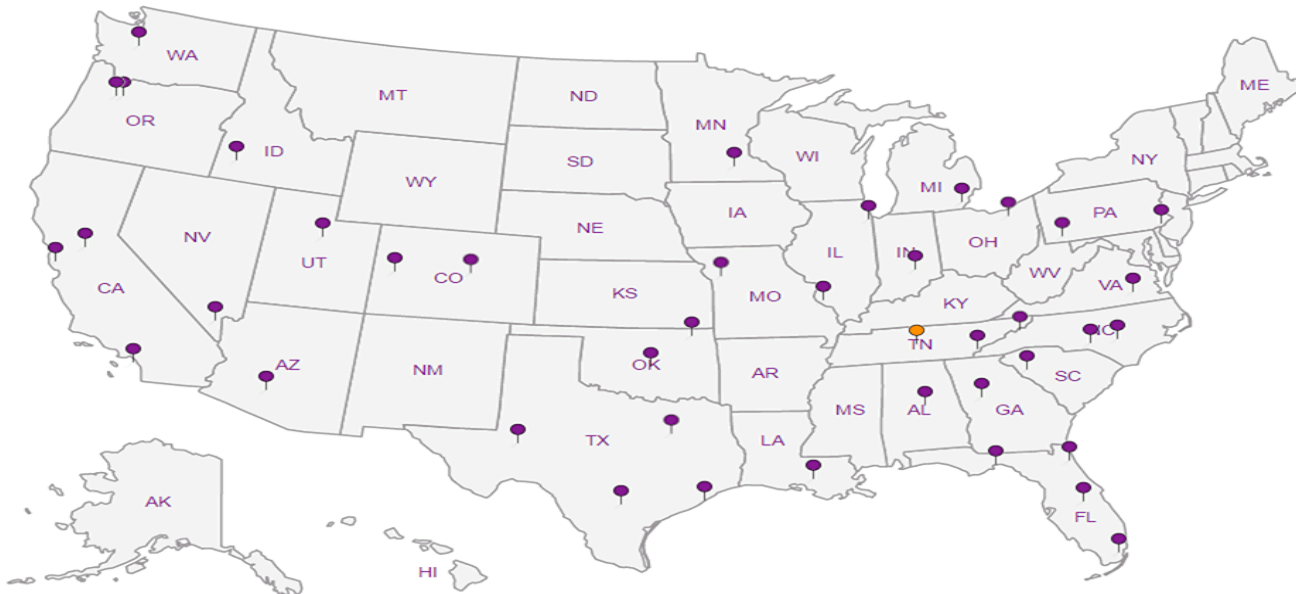
Third Party Federal Accreditations

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

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

Our Locations

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1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

SCS Engineers - KS

8575 W. 110th Street
Overland Park, KS 66210

Billing Information:
Accounts Payable
8575 W. 110th Street
Overland Park, KS 66210

Report to:
Jason Franks

Email To:
jfranks@scsengineers.com;jay.martin@evergy.c

Project Description:
Energy - Sibley Generating Station

City/State Collected: Please Circle:
PT MT CT ET

Phone: **913-681-0030**

Client Project #
27213169.20

Lab Project #
AQUAOPKS-SIBLEY

Collected by (print):

Site/Facility ID #

P.O. #

Collected by (signature):

Rush? (Lab MUST Be Notified)
 ___ Same Day ___ Five Day
 ___ Next Day ___ 5 Day (Rad Only)
 ___ Two Day ___ 10 Day (Rad Only)
 ___ Three Day

Quote #

Date Results Needed

Immediately Packed on Ice N ___ Y ___

No. of Cntrs

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	ALKBI, ALKCA	125mlHDPE-NoPres	Ca, K, Mg, Na	6010 250mlHDPE-HNO3	Chloride	SO4	125mlHDPE-NoPres
MW-704		GW		7/14/20	1140	3	X	X	X				
MW-704 MS/MSD		GW				3	*	*	*				
DUPLICATE		GW				3	*	*	*				

* Matrix:
 SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other

Remarks:

pH _____ Temp _____
 Flow _____ Other _____

Sample Receipt Checklist
 COC Seal Present/Intact: Y N
 COC signed/Accurate: Y N
 Bottles arrive intact: Y N
 Correct bottles used: Y N
 Sufficient volume sent: Y N
If Applicable
 VOA Zero Headspace: Y N
 Preservation Correct/Checked: Y N
 RAD Screen <0.5 mR/hr: Y N

Samples returned via:
 ___ UPS ___ FedEx ___ Courier

Tracking # **1845 4330 2058**

Relinquished by: (Signature)

Date: **7/15/20**

Time: **1325**

Received by: (Signature) **7-15-20 1326**

Trip Blank Received: Yes/No
 HCL / MeOH
 TBR

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Temp: **0.4-1=0.328** °C
 Bottles Received: **3**

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date:

Time:

Received for lab by: (Signature)

Date: **7/15/20** Time: **8:45**

Hold: Condition: **NCF 1/OK**

Analysis / Container / Preservative

Chain of Custody Page ___ of ___



12065 Lebanon Rd
 Mount Juliet, TN 37122
 Phone: 615-758-5858
 Phone: 800-767-5859
 Fax: 615-758-5859



SDG # **L1240464**

1035

Acctnum: **AQUAOPKS**

Template: **T140722**

Prelogin: **P784785**

PM: **206 - Jeff Carr**

PB:

Shipped Via: **FedEX Ground**

Remarks | Sample # (lab only)

-01

Jared Morrison
December 20, 2022

ATTACHMENT 1-4
July 28, 2020 Sampling Event Laboratory Report

SCS Engineers - KS

Sample Delivery Group: L1244445
Samples Received: 07/29/2020
Project Number: 27213169.20
Description: Evergy - Sibley Generating Station

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

Entire Report Reviewed By:



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.



Cp: Cover Page	1	¹Cp
Tc: Table of Contents	2	²Tc
Ss: Sample Summary	3	³Ss
Cn: Case Narrative	4	⁴Cn
Sr: Sample Results	5	⁵Sr
MW-701 L1244445-01	5	⁶Qc
MW-702 L1244445-02	6	⁷Gl
MW-703 L1244445-03	7	⁸Al
MW-704 L1244445-04	8	⁹Sc
DUPLICATE L1244445-05	9	
Qc: Quality Control Summary	10	
Metals (ICPMS) by Method 6020	10	
Gl: Glossary of Terms	11	
Al: Accreditations & Locations	12	
Sc: Sample Chain of Custody	13	

SAMPLE SUMMARY



MW-701 L1244445-01 GW

Collected by Whit Martin Collected date/time 07/28/20 10:05 Received date/time 07/29/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020	WG1517393	1	07/29/20 21:11	07/30/20 14:37	JPD	Mt. Juliet, TN

1 Cp

2 Tc

3 Ss

MW-702 L1244445-02 GW

Collected by Whit Martin Collected date/time 07/28/20 10:55 Received date/time 07/29/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020	WG1517393	1	07/29/20 21:11	07/30/20 14:40	JPD	Mt. Juliet, TN

4 Cn

5 Sr

MW-703 L1244445-03 GW

Collected by Whit Martin Collected date/time 07/28/20 11:30 Received date/time 07/29/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020	WG1517393	1	07/29/20 21:11	07/30/20 14:43	JPD	Mt. Juliet, TN

6 Qc

7 Gl

MW-704 L1244445-04 GW

Collected by Whit Martin Collected date/time 07/28/20 12:10 Received date/time 07/29/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020	WG1517393	1	07/29/20 21:11	07/30/20 12:51	JPD	Mt. Juliet, TN

8 Al

9 Sc

DUPLICATE L1244445-05 GW

Collected by Whit Martin Collected date/time 07/28/20 12:10 Received date/time 07/29/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020	WG1517393	1	07/29/20 21:11	07/30/20 14:47	JPD	Mt. Juliet, TN



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.

Jeff Carr
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Cobalt	ND		2.00	1	07/30/2020 14:37	WG1517393

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Cobalt	ND		2.00	1	07/30/2020 14:40	WG1517393

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Cobalt	ND		2.00	1	07/30/2020 14:43	WG1517393

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Cobalt	ND		2.00	1	07/30/2020 12:51	WG1517393

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Cobalt	ND		2.00	1	07/30/2020 14:47	WG1517393

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3554837-1 07/30/20 12:45

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Cobalt	U		0.477	2.00

¹Cp

²Tc

³Ss

Laboratory Control Sample (LCS)

(LCS) R3554837-2 07/30/20 12:48

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Cobalt	50.0	51.0	102	80.0-120	

⁴Cn

⁵Sr

L1244445-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1244445-04 07/30/20 12:51 • (MS) R3554837-4 07/30/20 12:58 • (MSD) R3554837-5 07/30/20 13:01

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cobalt	50.0	ND	51.0	51.2	102	102	1	75.0-125			0.407	20

⁶Qc

⁷Gl

⁸Al

⁹Sc



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.
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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.

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

Qualifier Description

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



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Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

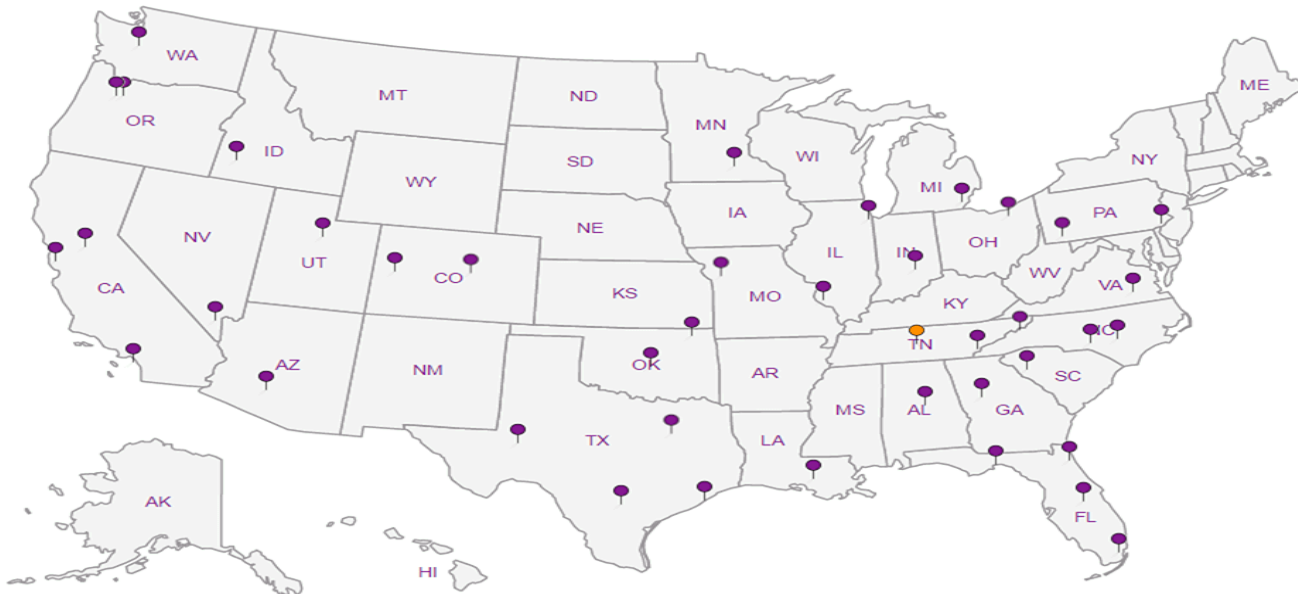
Third Party Federal Accreditations

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A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

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

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1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

SCS Engineers - KS
 8575 W. 110th Street
 Overland Park, KS 66210

Billing Information:
Accounts Payable
 8575 W. 110th Street
 Overland Park, KS 66210

Report to:
Jason Franks

Project Description:
Evergy - Sibley Generating Station

City/State Collected: **Sibley, MO**

Please Circle:
 PT MT **CT** ET

Pres Chk **L2**

Analysis / Container / Preservative

Chain of Custody Page **1** of **1**



Email To: **jfranks@scsengineers.com;jay.martin@evergy.c**

Client Project # **27213169.20**

Lab Project # **AQUAOPKS-SIBLEY**

Phone: **913-681-0030**

Collected by (print): **Whit Martin**

Site/Facility ID #

P.O. #

Collected by (signature): *Whit Martin*

Rush? (Lab MUST Be Notified)
 ___ Same Day ___ Five Day
 ___ Next Day ___ 5 Day (Rad Only)
X Two Day ___ 10 Day (Rad Only)
 ___ Three Day

Date Results Needed **2day**

No. of Cntrs

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Remarks	Sample # (lab only)
MW-701	Grab	GW		7/28/20	1005	1	X	01
MW-702	Grab	GW		7/28/20	1055	1	X	02
MW-703	Grab	GW		7/28/20	1130	1	X	03
MW-704	Grab	GW		7/28/20	1210	1	X	04
MW-704 MS/MSD	Grab	GW		7/28/20	1215	1	X	04
DUPLICATE	Grab	GW		7/28/20	1210	1	X	05

* Matrix:
 SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other

Remarks:

Flow _____ Other _____

Samples returned via:
 ___ UPS ___ FedEx ___ Courier

Tracking # **1845 4330 0813**

Sample Receipt Checklist
 COC Seal Present/Intact: NP Y N
 COC Signed/Accurate: Y N
 Bottles arrive intact: Y N
 Correct bottles used: Y N
 Sufficient volume sent: Y N
 If Applicable
 VOA Zero Headspace: Y N
 Preservation Correct/Checked: Y N
 RAD Screen <0.5 mR/hr: Y N

Relinquished by: (Signature) *Whit Martin* Date: **7/28/20** Time: **1610**

Received by: (Signature) *Alan Johnson* Date: **7-28-20** Time: **1611**

Temp: **4.9** Bottles Received: **6**

Relinquished by: (Signature) _____ Date: _____ Time: _____

Received for lab by: (Signature) *Jane Husselm* Date: **7-29-20** Time: **0900**

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
Slag Settling Impoundment
Fall 2019 Semiannual Detection Monitoring 40 CFR 257.94**

Statistical analysis of monitoring data from the groundwater monitoring system for the Slag Settling 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.

Determination: A statistical evaluation was completed for all Appendix III detection monitoring constituents in accordance with the certified statistical method. The statistical evaluation did not identify any SSIs above background.

Attached to this memorandum are the following backup information:

Attachment 1: Sanitas™ Output:

Statistical evaluation output from Sanitas™ for the prediction limit analysis. This includes prediction limit plots, prediction limit background data, detection sample results, and a Prediction Limit summary table. Output documentation includes the analytical data used for the statistical analyses.

Attachment 2: Sanitas™ Configuration Settings:

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

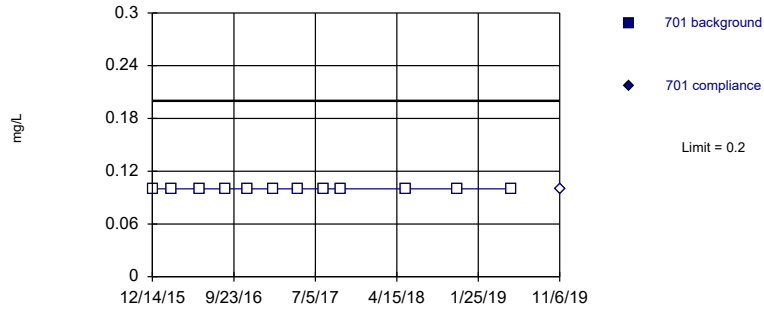
Sibley Generating Station
Determination of Statistically Significant Increases
Slag Settling Impoundment
March 10, 2020

ATTACHMENT 1

Sanitas™ Output

Within Limit

Prediction Limit
Intrawell Non-parametric

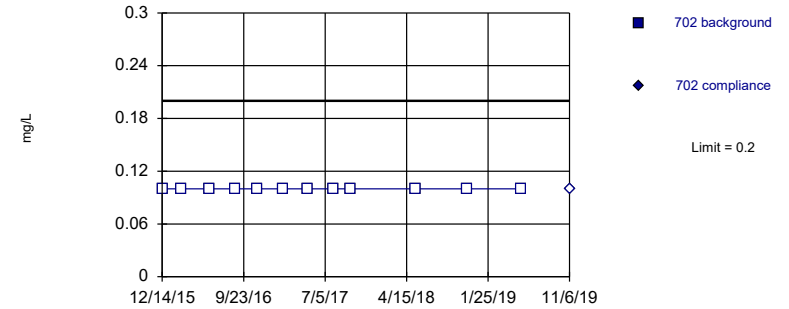


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 12) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3). Insufficient data to test for seasonality; data were not deseasonalized.

Constituent: Boron Analysis Run 2/17/2020 5:21 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

Within Limit

Prediction Limit
Intrawell Non-parametric

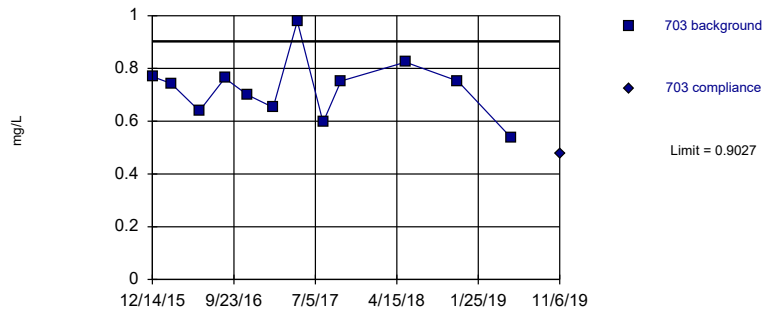


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 12) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3). Insufficient data to test for seasonality; data were not deseasonalized.

Constituent: Boron Analysis Run 2/17/2020 5:21 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

Within Limit

Prediction Limit
Intrawell Parametric

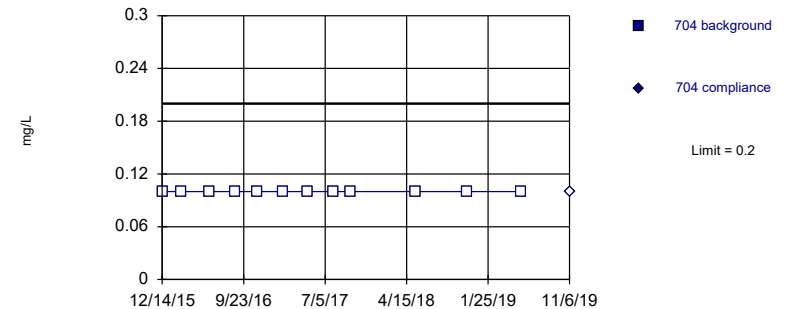


Background Data Summary: Mean=0.7253, Std. Dev.=0.115, n=12. Insufficient data to test for seasonality; data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9511, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Boron Analysis Run 2/17/2020 5:21 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

Within Limit

Prediction Limit
Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 12) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3). Insufficient data to test for seasonality; data were not deseasonalized.

Constituent: Boron Analysis Run 2/17/2020 5:21 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

Prediction Limit

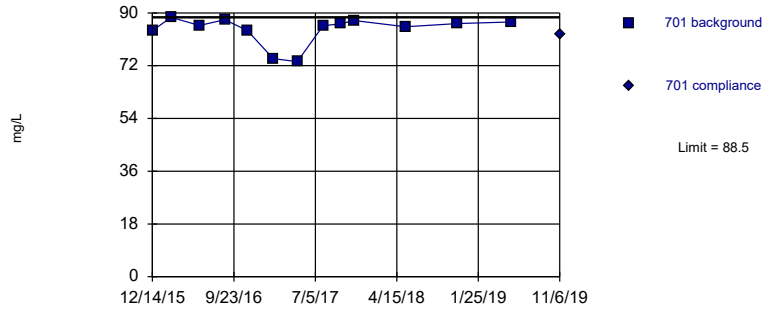
Constituent: Boron Analysis Run 2/17/2020 5:23 PM View: Slag Pond III

Sibley Client: SCS Engineers Data: Sibley

	701	701	702	702	703	703	704	704
12/14/2015	<0.2		<0.2		0.769		<0.2	
2/17/2016	<0.2		<0.2		0.743		<0.2	
5/26/2016	<0.2		<0.2		0.639		<0.2	
8/23/2016	<0.2		<0.2		0.763		<0.2	
11/10/2016	<0.2		<0.2		0.7		<0.2	
2/8/2017	<0.2		<0.2		0.652		<0.2	
5/3/2017	<0.2		<0.2		0.979		<0.2	
8/1/2017	<0.2		<0.2		0.596		<0.2	
10/3/2017	<0.2		<0.2		0.752		<0.2	
5/16/2018	<0.2		<0.2		0.824		<0.2	
11/15/2018	<0.2		<0.2		0.752		<0.2	
5/22/2019	<0.2		<0.2		0.535		<0.2	
11/6/2019		<0.2		<0.2		0.476		<0.2

Within Limit

Prediction Limit
Intrawell Non-parametric

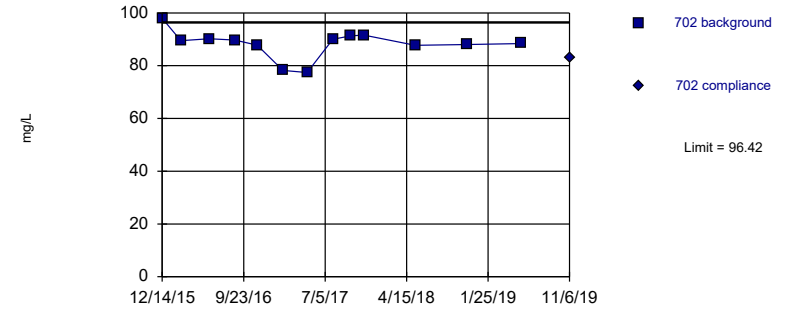


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 13 background values. Well-constituent pair annual alpha = 0.003769. Individual comparison alpha = 0.001886 (1 of 3). Insufficient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

Constituent: Calcium Analysis Run 2/17/2020 5:21 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

Within Limit

Prediction Limit
Intrawell Parametric

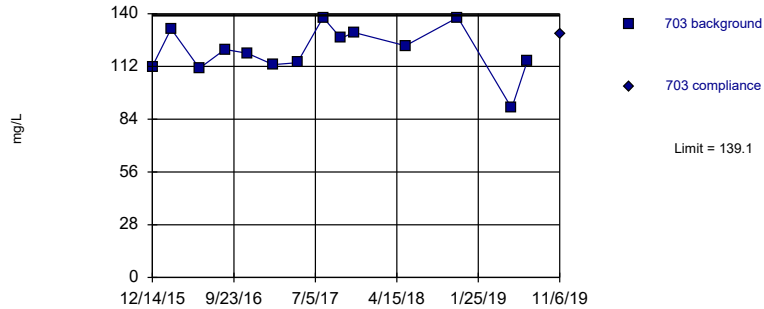


Background Data Summary: Mean=88.29, Std. Dev.=5.365, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8429, critical = 0.814. Kappa = 1.514 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Calcium Analysis Run 2/17/2020 5:21 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

Within Limit

Prediction Limit
Intrawell Parametric

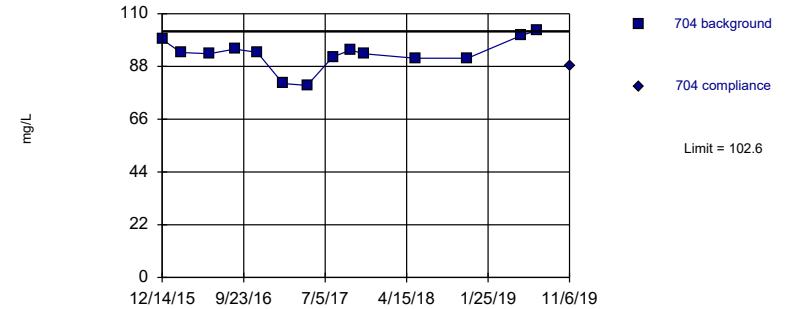


Background Data Summary: Mean=120.2, Std. Dev.=12.75, n=14. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9349, critical = 0.825. Kappa = 1.486 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Calcium Analysis Run 2/17/2020 5:21 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

Within Limit

Prediction Limit
Intrawell Parametric



Background Data Summary: Mean=93.1, Std. Dev.=6.398, n=14. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8868, critical = 0.825. Kappa = 1.486 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Calcium Analysis Run 2/17/2020 5:21 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

Prediction Limit

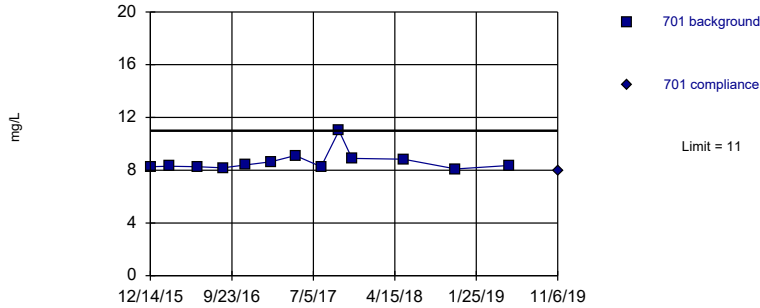
Constituent: Calcium Analysis Run 2/17/2020 5:23 PM View: Slag Pond III

Sibley Client: SCS Engineers Data: Sibley

	701	701	702	702	703	703	704	704
12/14/2015	83.9		98		112		99.3	
2/17/2016	88.5		89.5		132		93.8	
5/26/2016	85.7		90.2		111		93.3	
8/23/2016	87.7		89.7		121		95.2	
11/10/2016	84		87.8		119		93.9	
2/8/2017	74.4		78.2		113		80.9	
5/3/2017	73.4		77.4		114		80.1	
8/1/2017	85.6		90		138		92	
10/3/2017	86.3		91.3		127		94.8	
11/17/2017	87.4		91.6		130		93.3	
5/16/2018	85.3		87.7		123		91.4	
11/15/2018	86.4		88		138		91.4	
5/22/2019	86.9		88.4		89.9		101	
7/16/2019					115		103	
11/6/2019		82.8		82.8		129		88.5

Within Limit

Prediction Limit
Intrawell Non-parametric

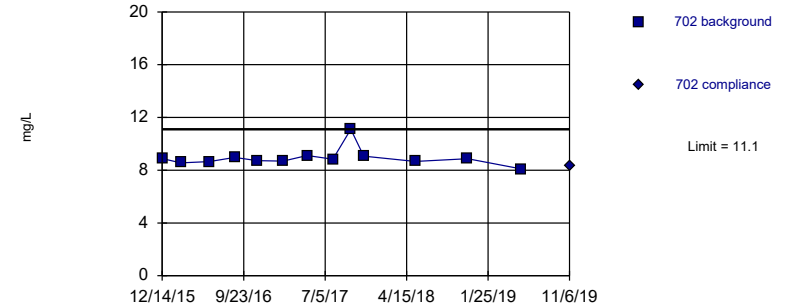


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 13 background values. Well-constituent pair annual alpha = 0.003769. Individual comparison alpha = 0.001886 (1 of 3). Insufficient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

Constituent: Chloride Analysis Run 2/17/2020 5:21 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

Within Limit

Prediction Limit
Intrawell Non-parametric

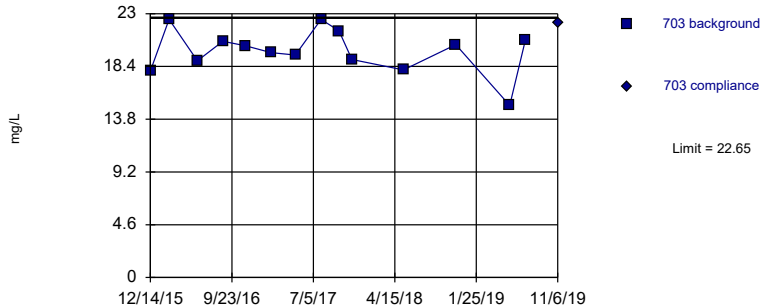


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 13 background values. Well-constituent pair annual alpha = 0.003769. Individual comparison alpha = 0.001886 (1 of 3). Insufficient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

Constituent: Chloride Analysis Run 2/17/2020 5:21 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

Within Limit

Prediction Limit
Intrawell Parametric

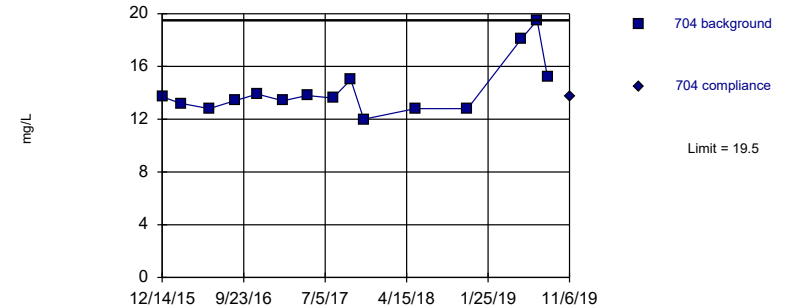


Background Data Summary: Mean=19.74, Std. Dev.=1.963, n=14. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9423, critical = 0.825. Kappa = 1.486 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Chloride Analysis Run 2/17/2020 5:21 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

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 15 background values. Well-constituent pair annual alpha = 0.002624. Individual comparison alpha = 0.001313 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Chloride Analysis Run 2/17/2020 5:21 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

Prediction Limit

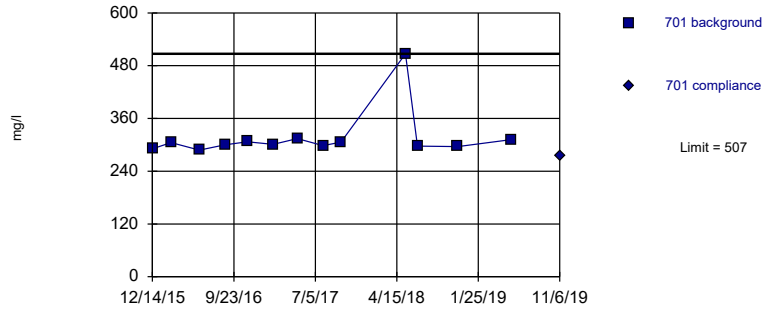
Constituent: Chloride Analysis Run 2/17/2020 5:23 PM View: Slag Pond III

Sibley Client: SCS Engineers Data: Sibley

	701	701	702	702	703	703	704	704
12/14/2015	8.27		8.88		18		13.7	
2/17/2016	8.3		8.56		22.5		13.2	
5/26/2016	8.27		8.65		18.9		12.8	
8/23/2016	8.18		8.97		20.6		13.4	
11/10/2016	8.4		8.73		20.2		13.9	
2/8/2017	8.64		8.69		19.6		13.4	
5/3/2017	9.11		9.11		19.4		13.8	
8/1/2017	8.26		8.83		22.5		13.6	
10/3/2017	11		11.1		21.5		15	
11/17/2017	8.89		9.06		19		12	
5/16/2018	8.83		8.66		18.1		12.8	
11/15/2018	8.09		8.87		20.3		12.8	
5/22/2019	8.36		8.09		15		18.1	
7/16/2019					20.7		19.5	
8/21/2019							15.2	
11/6/2019		7.91		8.3		22.2		13.7

Within Limit

Prediction Limit
Intrawell Non-parametric

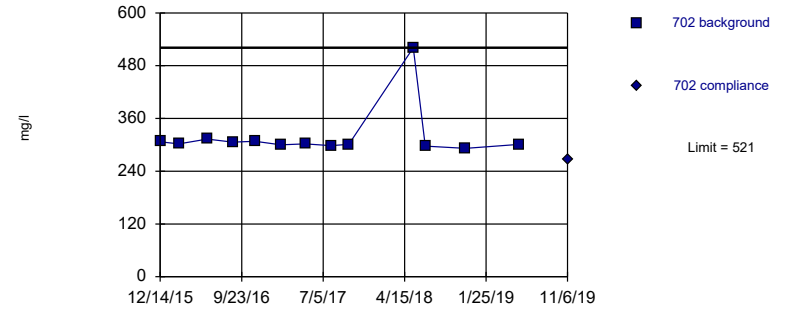


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 13 background values. Well-constituent pair annual alpha = 0.003769. Individual comparison alpha = 0.001886 (1 of 3). Insufficient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

Constituent: Dissolved Solids Analysis Run 2/17/2020 5:21 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

Within Limit

Prediction Limit
Intrawell Non-parametric

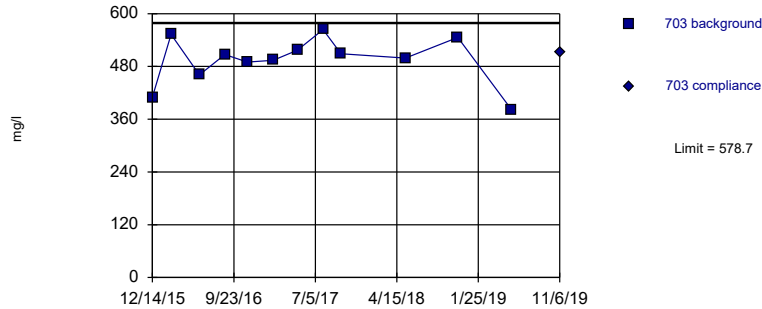


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 13 background values. Well-constituent pair annual alpha = 0.003769. Individual comparison alpha = 0.001886 (1 of 3). Insufficient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

Constituent: Dissolved Solids Analysis Run 2/17/2020 5:21 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

Within Limit

Prediction Limit
Intrawell Parametric

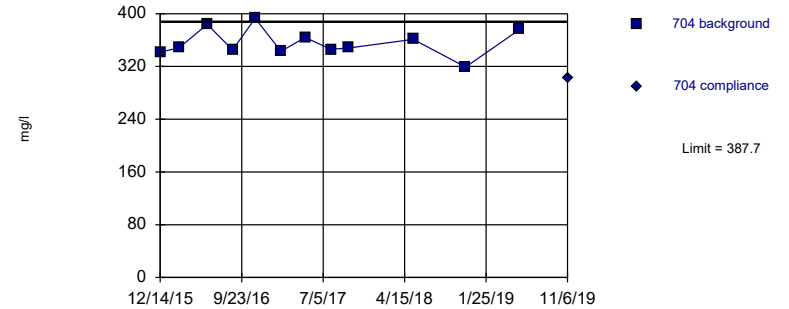


Background Data Summary: Mean=494.3, Std. Dev.=54.74, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9143, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Dissolved Solids Analysis Run 2/17/2020 5:21 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

Within Limit

Prediction Limit
Intrawell Parametric



Background Data Summary: Mean=355.8, Std. Dev.=20.72, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9395, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Dissolved Solids Analysis Run 2/17/2020 5:21 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

Prediction Limit

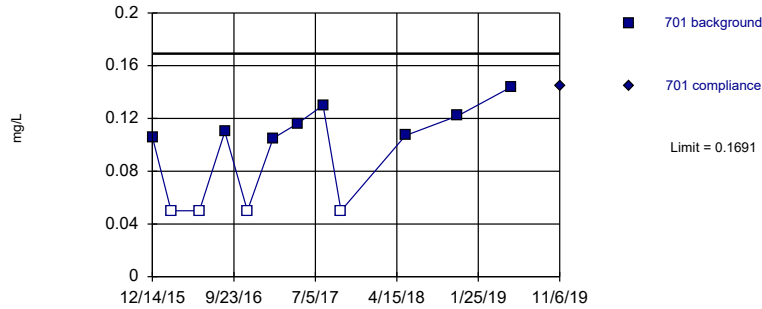
Constituent: Dissolved Solids Analysis Run 2/17/2020 5:23 PM View: Slag Pond III

Sibley Client: SCS Engineers Data: Sibley

	701	701	702	702	703	703	704	704
12/14/2015	291		307		410		342	
2/17/2016	305		302		553		348	
5/26/2016	288		313		461		384	
8/23/2016	300		306		507		345	
11/10/2016	307		308		490		393	
2/8/2017	301		300		494		343	
5/3/2017	314		302		517		364	
8/1/2017	298		298		564		346	
10/3/2017	306		301		509		348	
5/16/2018	507		521		499		361	
6/27/2018	297		297					
11/15/2018	296		292		546		319	
5/22/2019	312		301		381		376	
11/6/2019		275		266		512		303

Within Limit

Prediction Limit
 Intrawell Parametric

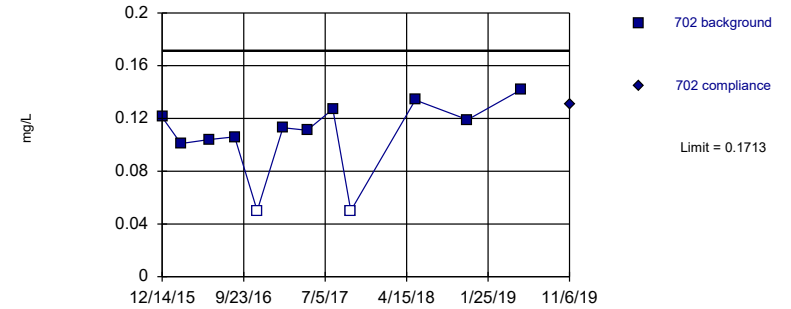


Background Data Summary (after Aitchison's Adjustment): Mean=0.07833, Std. Dev.=0.05889, n=12, 33.33% NDs. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8319, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Fluoride Analysis Run 2/17/2020 5:21 PM View: Slag Pond III
 Sibley Client: SCS Engineers Data: Sibley

Within Limit

Prediction Limit
 Intrawell Parametric

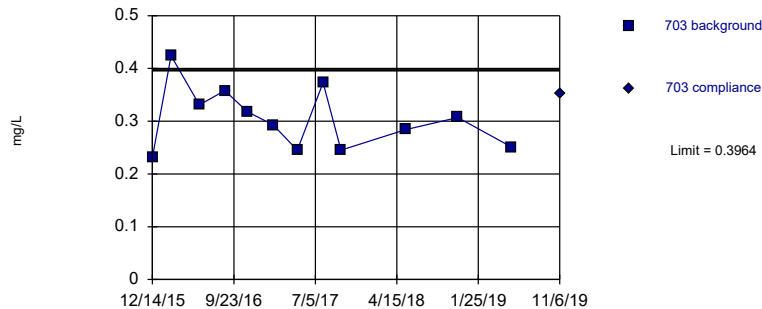


Background Data Summary (after Aitchison's Adjustment): Mean=0.09817, Std. Dev.=0.04744, n=12, 16.67% NDs. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8406, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Fluoride Analysis Run 2/17/2020 5:21 PM View: Slag Pond III
 Sibley Client: SCS Engineers Data: Sibley

Within Limit

Prediction Limit
 Intrawell Parametric

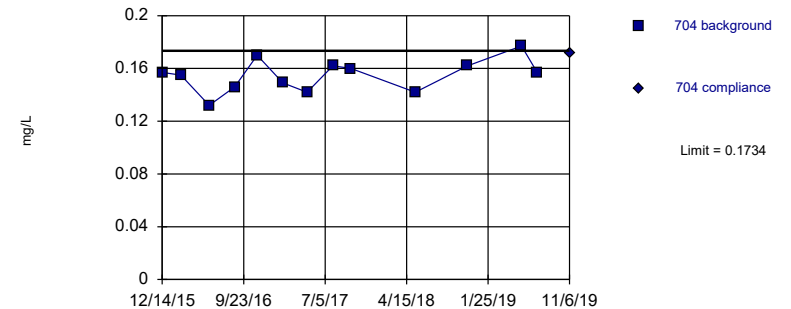


Background Data Summary: Mean=0.305, Std. Dev.=0.05925, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9446, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Fluoride Analysis Run 2/17/2020 5:21 PM View: Slag Pond III
 Sibley Client: SCS Engineers Data: Sibley

Within Limit

Prediction Limit
 Intrawell Parametric



Background Data Summary: Mean=0.1547, Std. Dev.=0.01232, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9815, critical = 0.814. Kappa = 1.514 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Fluoride Analysis Run 2/17/2020 5:21 PM View: Slag Pond III
 Sibley Client: SCS Engineers Data: Sibley

Prediction Limit

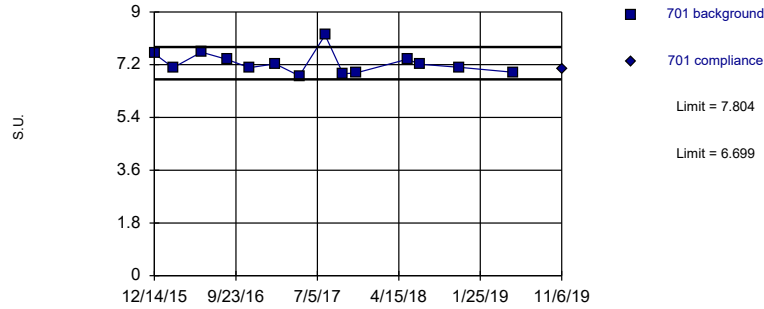
Constituent: Fluoride Analysis Run 2/17/2020 5:23 PM View: Slag Pond III

Sibley Client: SCS Engineers Data: Sibley

	701	701	702	702	703	703	704	704
12/14/2015	0.106		0.121		0.231		0.157	
2/17/2016	<0.1		0.101		0.424		0.155	
5/26/2016	<0.1		0.104		0.331		0.132	
8/23/2016	0.11		0.106		0.358		0.146	
11/10/2016	<0.1		<0.1		0.318		0.17	
2/8/2017	0.105		0.113		0.293		0.149	
5/3/2017	0.116		0.111		0.245		0.142	
8/1/2017	0.13		0.127		0.373		0.162	
10/3/2017	<0.1		<0.1		0.245		0.16	
5/16/2018	0.107		0.134		0.284		0.142	
11/15/2018	0.122		0.119		0.307		0.162	
5/22/2019	0.144		0.142		0.251		0.177	
7/16/2019							0.157	
11/6/2019		0.145		0.131		0.353		0.172

Within Limits

Prediction Limit
Intrawell Parametric

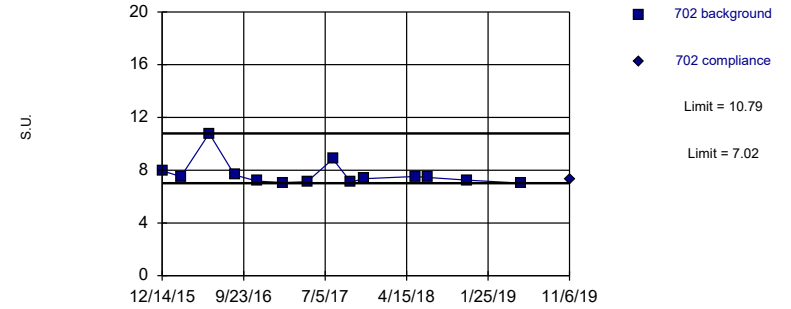


Background Data Summary: Mean=7.251, Std. Dev.=0.3718, n=14. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8916, critical = 0.825. Kappa = 1.486 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: pH Analysis Run 2/17/2020 5:21 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

Within Limits

Prediction Limit
Intrawell Non-parametric

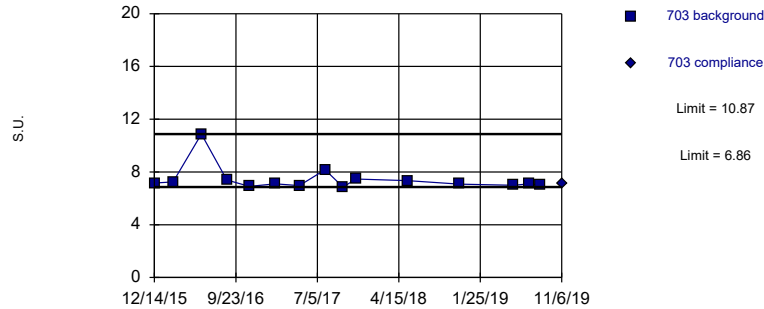


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 14 background values. Well-constituent pair annual alpha = 0.006393. Individual comparison alpha = 0.003199 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: pH Analysis Run 2/17/2020 5:21 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

Within Limits

Prediction Limit
Intrawell Non-parametric

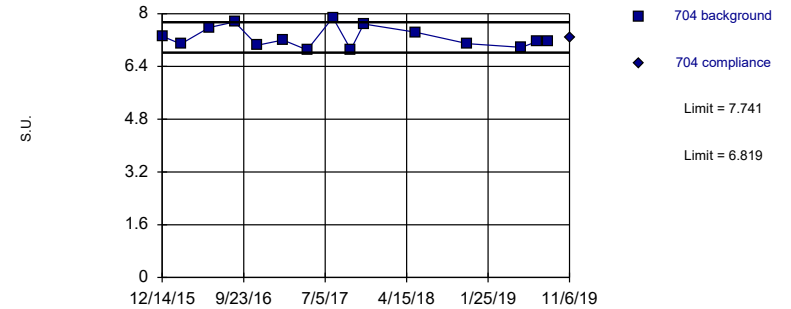


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 15 background values. Well-constituent pair annual alpha = 0.005248. Individual comparison alpha = 0.002625 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: pH Analysis Run 2/17/2020 5:21 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

Within Limits

Prediction Limit
Intrawell Parametric



Background Data Summary: Mean=7.28, Std. Dev.=0.3165, n=15. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9134, critical = 0.835. Kappa = 1.458 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: pH Analysis Run 2/17/2020 5:21 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

Prediction Limit

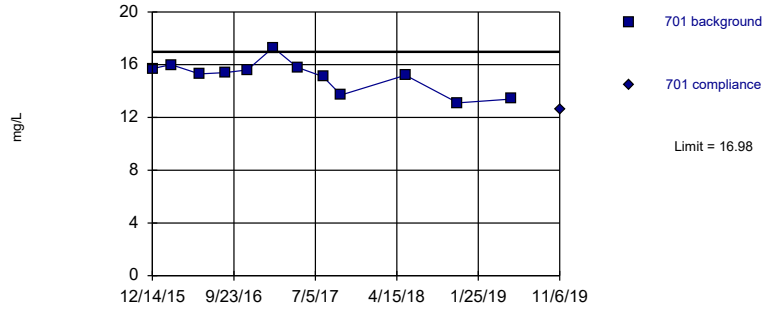
Constituent: pH Analysis Run 2/17/2020 5:23 PM View: Slag Pond III

Sibley Client: SCS Engineers Data: Sibley

	701	701	702	702	703	703	704	704
12/14/2015	7.58		7.96		7.16		7.32	
2/17/2016	7.1		7.51		7.24		7.08	
5/26/2016	7.63		10.79		10.87		7.58	
8/23/2016	7.38		7.63		7.39		7.75	
11/10/2016	7.1		7.17		6.9		7.04	
2/8/2017	7.23		7.06		7.1		7.2	
5/3/2017	6.82		7.12		6.97		6.9	
8/1/2017	8.21		8.85		8.17		7.88	
10/3/2017	6.89		7.1		6.86		6.91	
11/17/2017	6.92		7.35		7.46		7.69	
5/16/2018	7.39		7.53		7.34		7.44	
6/27/2018	7.22		7.45					
11/15/2018	7.11		7.24		7.07		7.09	
5/22/2019	6.94		7.02		6.99		6.98	
7/16/2019					7.1		7.16	
8/21/2019					7.02		7.18	
11/6/2019		7.07		7.28		7.15		7.26

Within Limit

Prediction Limit
Intrawell Parametric

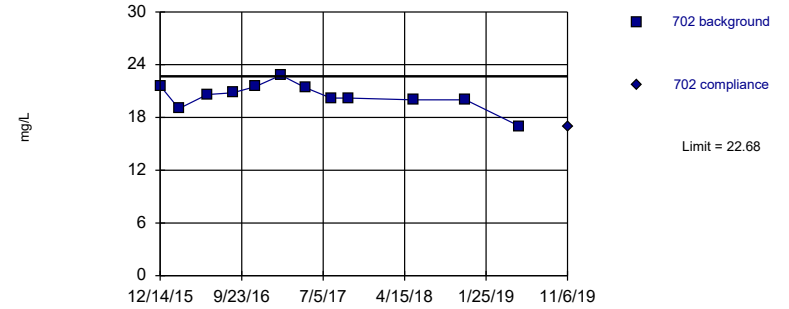


Background Data Summary: Mean=15.13, Std. Dev.=1.196, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9143, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Sulfate Analysis Run 2/17/2020 5:21 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

Within Limit

Prediction Limit
Intrawell Parametric

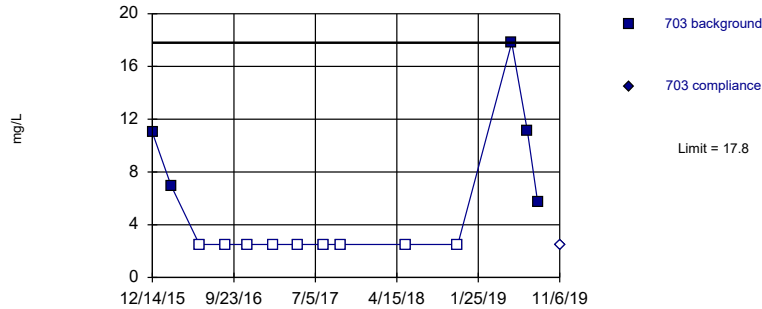


Background Data Summary: Mean=20.43, Std. Dev.=1.462, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9317, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Sulfate Analysis Run 2/17/2020 5:21 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

Within Limit

Prediction Limit
Intrawell Non-parametric

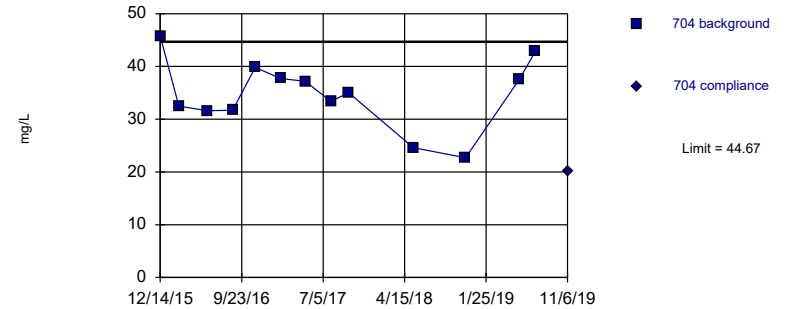


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 14 background values. 64.29% NDs. Well-constituent pair annual alpha = 0.003197. Individual comparison alpha = 0.0016 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Sulfate Analysis Run 2/17/2020 5:21 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

Within Limit

Prediction Limit
Intrawell Parametric



Background Data Summary: Mean=34.8, Std. Dev.=6.517, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9669, critical = 0.814. Kappa = 1.514 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Sulfate Analysis Run 2/17/2020 5:21 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

Prediction Limit

Constituent: Sulfate Analysis Run 2/17/2020 5:23 PM View: Slag Pond III

Sibley Client: SCS Engineers Data: Sibley

	701	701	702	702	703	703	704	704
12/14/2015	15.7		21.6		11		45.8	
2/17/2016	16		19		6.97		32.5	
5/26/2016	15.3		20.6		<5		31.6	
8/23/2016	15.4		20.8		<5		31.7	
11/10/2016	15.6		21.5		<5		39.8	
2/8/2017	17.3		22.8		<5		37.7	
5/3/2017	15.8		21.4		<5		37.2	
8/1/2017	15.1		20.2		<5		33.4	
10/3/2017	13.7		20.2		<5		35	
5/16/2018	15.2		20		<5		24.6	
11/15/2018	13.1		20		<5		22.7	
5/22/2019	13.4		17		17.8		37.6	
7/16/2019					11.1		42.8	
8/21/2019					5.73			
11/6/2019		12.6		17		<5		20.1

Prediction Limit

Sibley Client: SCS Engineers Data: Sibley Printed 2/17/2020, 5:23 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Boron (mg/L)	701	0.2	n/a	11/6/2019	0.1ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
Boron (mg/L)	702	0.2	n/a	11/6/2019	0.1ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
Boron (mg/L)	703	0.9027	n/a	11/6/2019	0.476	No	12	0	No	0.00188	Param Intra 1 of 3
Boron (mg/L)	704	0.2	n/a	11/6/2019	0.1ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
Calcium (mg/L)	701	88.5	n/a	11/6/2019	82.8	No	13	0	n/a	0.001886	NP Intra (normality) ...
Calcium (mg/L)	702	96.42	n/a	11/6/2019	82.8	No	13	0	No	0.00188	Param Intra 1 of 3
Calcium (mg/L)	703	139.1	n/a	11/6/2019	129	No	14	0	No	0.00188	Param Intra 1 of 3
Calcium (mg/L)	704	102.6	n/a	11/6/2019	88.5	No	14	0	No	0.00188	Param Intra 1 of 3
Chloride (mg/L)	701	11	n/a	11/6/2019	7.91	No	13	0	n/a	0.001886	NP Intra (normality) ...
Chloride (mg/L)	702	11.1	n/a	11/6/2019	8.3	No	13	0	n/a	0.001886	NP Intra (normality) ...
Chloride (mg/L)	703	22.65	n/a	11/6/2019	22.2	No	14	0	No	0.00188	Param Intra 1 of 3
Chloride (mg/L)	704	19.5	n/a	11/6/2019	13.7	No	15	0	n/a	0.001313	NP Intra (normality) ...
Dissolved Solids (mg/l)	701	507	n/a	11/6/2019	275	No	13	0	n/a	0.001886	NP Intra (normality) ...
Dissolved Solids (mg/l)	702	521	n/a	11/6/2019	266	No	13	0	n/a	0.001886	NP Intra (normality) ...
Dissolved Solids (mg/l)	703	578.7	n/a	11/6/2019	512	No	12	0	No	0.00188	Param Intra 1 of 3
Dissolved Solids (mg/l)	704	387.7	n/a	11/6/2019	303	No	12	0	No	0.00188	Param Intra 1 of 3
Fluoride (mg/L)	701	0.1691	n/a	11/6/2019	0.145	No	12	33.33	No	0.00188	Param Intra 1 of 3
Fluoride (mg/L)	702	0.1713	n/a	11/6/2019	0.131	No	12	16.67	No	0.00188	Param Intra 1 of 3
Fluoride (mg/L)	703	0.3964	n/a	11/6/2019	0.353	No	12	0	No	0.00188	Param Intra 1 of 3
Fluoride (mg/L)	704	0.1734	n/a	11/6/2019	0.172	No	13	0	No	0.00188	Param Intra 1 of 3
pH (S.U.)	701	7.804	6.699	11/6/2019	7.07	No	14	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	702	10.79	7.02	11/6/2019	7.28	No	14	0	n/a	0.003199	NP Intra (normality) ...
pH (S.U.)	703	10.87	6.86	11/6/2019	7.15	No	15	0	n/a	0.002625	NP Intra (normality) ...
pH (S.U.)	704	7.741	6.819	11/6/2019	7.26	No	15	0	No	0.000...	Param Intra 1 of 3
Sulfate (mg/L)	701	16.98	n/a	11/6/2019	12.6	No	12	0	No	0.00188	Param Intra 1 of 3
Sulfate (mg/L)	702	22.68	n/a	11/6/2019	17	No	12	0	No	0.00188	Param Intra 1 of 3
Sulfate (mg/L)	703	17.8	n/a	11/6/2019	2.5ND	No	14	64.29	n/a	0.0016	NP Intra (NDs) 1 of 3
Sulfate (mg/L)	704	44.67	n/a	11/6/2019	20.1	No	13	0	No	0.00188	Param Intra 1 of 3

Sibley Generating Station
Determination of Statistically Significant Increases
Slag Settling Impoundment
March 10, 2020

ATTACHMENT 2

Sanitas™ Configuration Settings

Exclude data flags:

Data Reading Options

- Individual Observations
- Mean of Each: Month
- Median of Each: Season

Automatically Process Resamples...

- Black and White Output
- Four Plots Per Page
 - Always Combine Data Pages...
 - Include Tick Marks on Data Page
 - Use Constituent Name for Graph Title
- Draw Border Around Text Reports and Data Pages
- Enlarge/Reduce Fonts (Graphs):
- Enlarge/Reduce Fonts (Data/Text Reports):
- Wide Margins (on reports without explicit setting)
- Use CAS# (Not Const. Name)
- Truncate File Names to Characters
- Include Limit Lines when found in Database...
- Show Deselected Data on Time Series ▾
- Show Deselected Data on all Data Pages ▾

- Prompt to Overwrite/Append Summary Tables
- Round Limits to Sig. Digits (when not set in data file)
- User-Set Scale
- Indicate Background Data
- Show Exact Dates
- Thick Plot Lines

Zoom Factor: ▾

- Output Decimal Precision
- Less Precision
 - Normal Precision
 - More Precision

Store Print Jobs in Multiple Constituent Mode

Printer: ▾

Use Modified Alpha... 0.02

Test Residuals For Normality (Parametric test only) using Shapiro-Wilk/Francia at Alpha = 0.01

Continue Parametric if Unable to Normalize

Transformation (Parametric test only)

- Use Ladder of Powers
- Natural Log or No Transformation
- Never Transform
- Use Specific Transformation:
[Dropdown]
- Use Best W Statistic
- Plot Transformed Values

Use Non-Parametric Test (Sen's Slope/Mann-Kendall) when Non-Detects Percent > 75

Include 95. % Confidence Interval around Trend Line

Automatically Remove Outliers (Parametric test only)

Note: there is no "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.

Test for Normality using Shapiro-Wilk/Francia at Alpha = 0.01

Use Non-Parametric Test when Non-Detects Percent > 50

Use Aitchison's Adjustment when Non-Detects Percent > 15

Optional Further Refinement: Use Aitchison's when NDs % > 50

Use Poisson Prediction Limit when Non-Detects Percent > 90

Transformation

Use Ladder of Powers

Natural Log or No Transformation

Never Transform

Use Specific Transformation: Natural Log

Use Best W Statistic

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

Statistical Evaluations per Year:

Constituents Analyzed:

Downgradient (Compliance) Wells:

Sampling Plan

Comparing Individual Observations

1 of 1 1 of 2 1 of 3 1 of 4

2 of 4 ("Modified California")

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

Non-Parametric Limit when 100% Non-Detects:

Highest/Second Highest Background Value

Most Recent PQL if available, or MDL

Most Recent Background Value (subst. method)

Rank Von Neumann, Wilcoxon Rank Sum / Mann-Whitney

- Use Modified Alpha...
- 2-Tailed Test Mode...
- Combine Background Wells on Mann-Whitney...

Outlier Tests

- EPA 1989 Outlier Screening (fixed alpha of 0.05)
- Dixon's at $\alpha=$ or if n > Rosner's at $\alpha=$ Use EPA Screening to establish Suspected Outliers
- Tukey's Outlier Screening, with IQR Multiplier = Use Ladder of Powers to achieve Best W Stat
- Test For Normality at Alpha =
 - Stop if Non-Normal
 - Continue with Parametric Test if Non-Normal
 - Tukey's if Non-Normal, with IQR Multiplier = Use Ladder of Powers to achieve Best W Stat
- No Outlier If Less Than 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)
- Use Constituent Definition File

Jared Morrison
December 20, 2022

ATTACHMENT 2-2
Spring 2020 Semiannual Detection Monitoring Statistical Analyses

MEMORANDUM

September 16, 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
Slag Settling Impoundment
Spring 2020 Semiannual Detection Monitoring 40 CFR 257.94**

Statistical analysis of monitoring data from the groundwater monitoring system for the Slag Settling 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 12, 2020. Review and validation of the results from the May 2020 Detection Monitoring Event was completed on June 19, 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 June 10, 2020 and July 14, 2020.

Determination: A statistical evaluation was completed for all Appendix III detection monitoring constituents in accordance with the certified statistical method. The statistical evaluation did not identify any SSIs above background.

Attached to this memorandum are the following backup information:

Attachment 1: Sanitas™ Output:

Statistical evaluation output from Sanitas™ for the prediction limit analysis. This includes prediction limit plots, prediction limit background data, detection sample results, 1st verification re-sample results (when applicable), 2nd verification re-sample results (when applicable), extra sample results for pH because pH is collected as part of the sampling procedure, and a Prediction Limit summary table. Output documentation includes the analytical data used for the statistical analyses.

Attachment 2: Sanitas™ Configuration Settings:

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

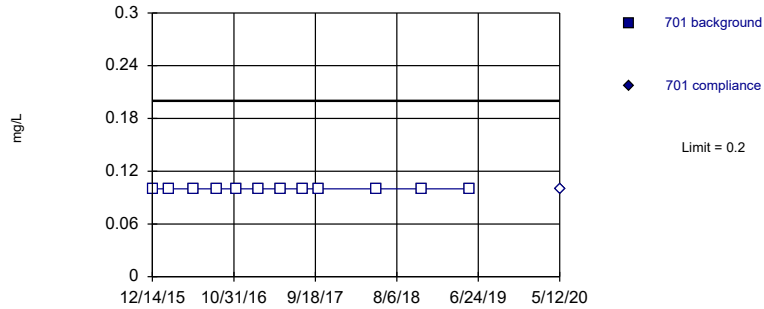
Sibley Generating Station
Determination of Statistically Significant Increases
Slag Settling Impoundment
September 16, 2020

ATTACHMENT 1

Sanitas™ Output

Within Limit

Prediction Limit
Intrawell Non-parametric

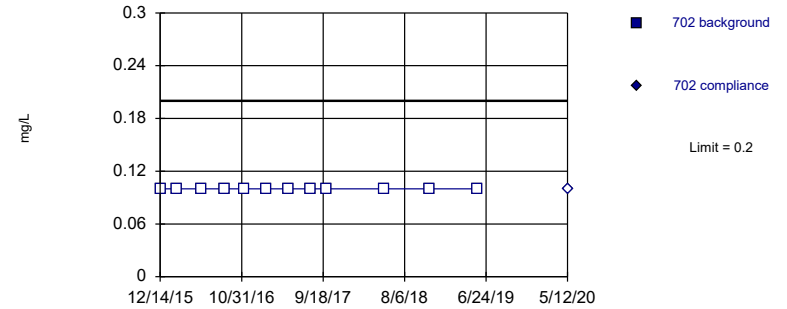


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 12) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3). Insufficient data to test for seasonality; data were not deseasonalized.

Constituent: Boron Analysis Run 9/9/2020 1:11 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

Within Limit

Prediction Limit
Intrawell Non-parametric

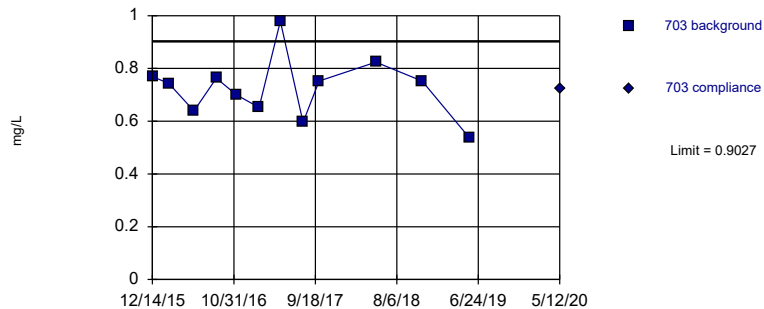


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 12) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3). Insufficient data to test for seasonality; data were not deseasonalized.

Constituent: Boron Analysis Run 9/9/2020 1:11 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

Within Limit

Prediction Limit
Intrawell Parametric

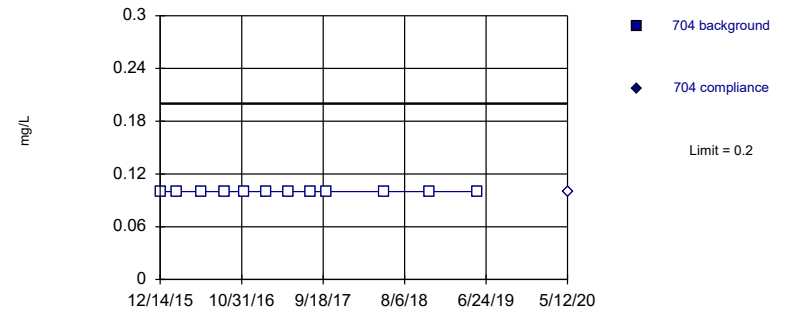


Background Data Summary: Mean=0.7253, Std. Dev.=0.115, n=12. Insufficient data to test for seasonality; data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9511, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Boron Analysis Run 9/9/2020 1:11 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

Within Limit

Prediction Limit
Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 12) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3). Insufficient data to test for seasonality; data were not deseasonalized.

Constituent: Boron Analysis Run 9/9/2020 1:11 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

Prediction Limit

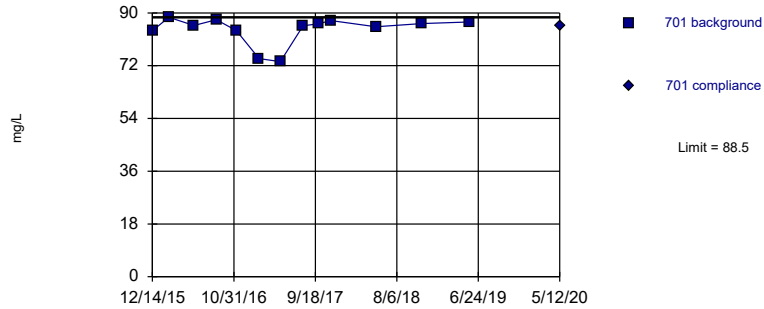
Constituent: Boron Analysis Run 9/9/2020 1:16 PM View: Slag Pond III

Sibley Client: SCS Engineers Data: Sibley

	701	701	702	702	703	703	704	704
12/14/2015	<0.2		<0.2		0.769		<0.2	
2/17/2016	<0.2		<0.2		0.743		<0.2	
5/26/2016	<0.2		<0.2		0.639		<0.2	
8/23/2016	<0.2		<0.2		0.763		<0.2	
11/10/2016	<0.2		<0.2		0.7		<0.2	
2/8/2017	<0.2		<0.2		0.652		<0.2	
5/3/2017	<0.2		<0.2		0.979		<0.2	
8/1/2017	<0.2		<0.2		0.596		<0.2	
10/3/2017	<0.2		<0.2		0.752		<0.2	
5/16/2018	<0.2		<0.2		0.824		<0.2	
11/15/2018	<0.2		<0.2		0.752		<0.2	
5/22/2019	<0.2		<0.2		0.535		<0.2	
5/12/2020		<0.2		<0.2		0.724		<0.2

Within Limit

Prediction Limit Intrawell Non-parametric

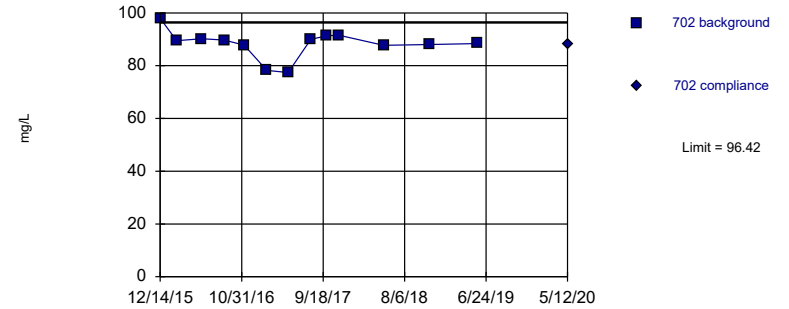


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 13 background values. Well-constituent pair annual alpha = 0.003769. Individual comparison alpha = 0.001886 (1 of 3). Insufficient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

Constituent: Calcium Analysis Run 9/9/2020 1:11 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

Within Limit

Prediction Limit Intrawell Parametric

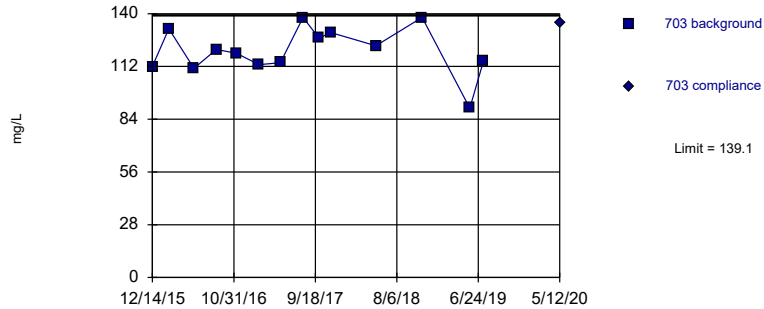


Background Data Summary: Mean=88.29, Std. Dev.=5.365, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8429, critical = 0.814. Kappa = 1.514 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Calcium Analysis Run 9/9/2020 1:11 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

Within Limit

Prediction Limit Intrawell Parametric

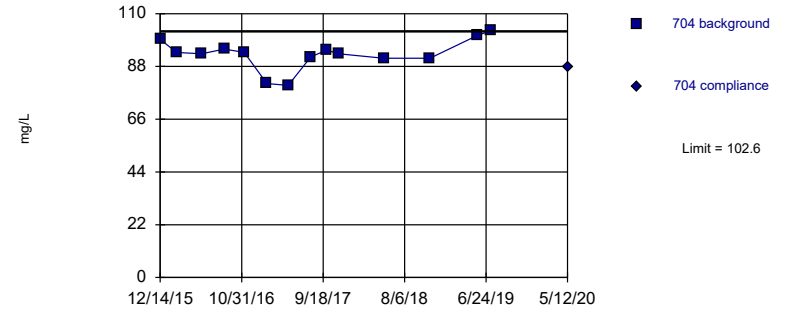


Background Data Summary: Mean=120.2, Std. Dev.=12.75, n=14. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9349, critical = 0.825. Kappa = 1.486 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Calcium Analysis Run 9/9/2020 1:11 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

Within Limit

Prediction Limit Intrawell Parametric



Background Data Summary: Mean=93.1, Std. Dev.=6.398, n=14. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8868, critical = 0.825. Kappa = 1.486 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Calcium Analysis Run 9/9/2020 1:11 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

Prediction Limit

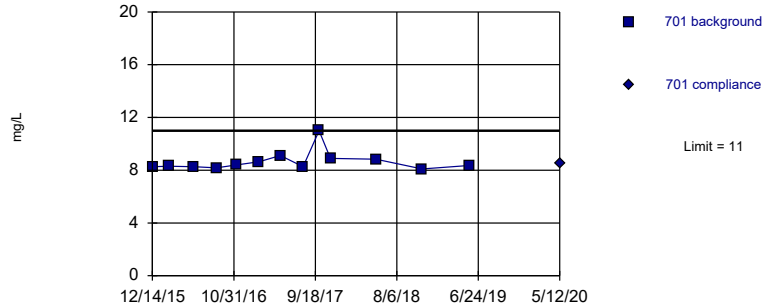
Constituent: Calcium Analysis Run 9/9/2020 1:16 PM View: Slag Pond III

Sibley Client: SCS Engineers Data: Sibley

	701	701	702	702	703	703	704	704
12/14/2015	83.9		98		112		99.3	
2/17/2016	88.5		89.5		132		93.8	
5/26/2016	85.7		90.2		111		93.3	
8/23/2016	87.7		89.7		121		95.2	
11/10/2016	84		87.8		119		93.9	
2/8/2017	74.4		78.2		113		80.9	
5/3/2017	73.4		77.4		114		80.1	
8/1/2017	85.6		90		138		92	
10/3/2017	86.3		91.3		127		94.8	
11/17/2017	87.4		91.6		130		93.3	
5/16/2018	85.3		87.7		123		91.4	
11/15/2018	86.4		88		138		91.4	
5/22/2019	86.9		88.4		89.9		101	
7/16/2019					115		103	
5/12/2020		85.7		88.1		135		87.5

Within Limit

Prediction Limit
Intrawell Non-parametric

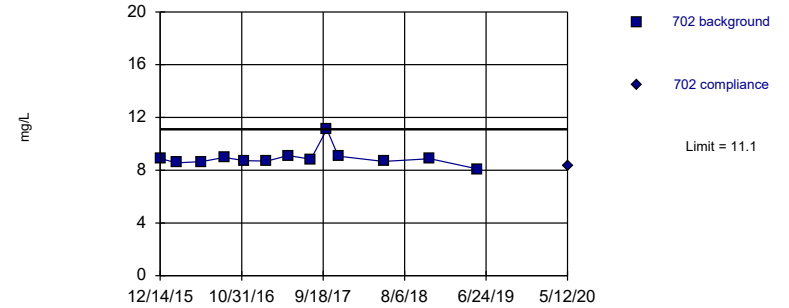


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 13 background values. Well-constituent pair annual alpha = 0.003769. Individual comparison alpha = 0.001886 (1 of 3). Insufficient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

Constituent: Chloride Analysis Run 9/9/2020 1:11 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

Within Limit

Prediction Limit
Intrawell Non-parametric

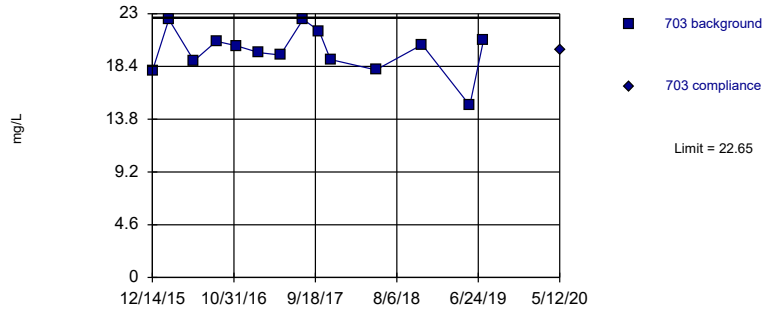


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 13 background values. Well-constituent pair annual alpha = 0.003769. Individual comparison alpha = 0.001886 (1 of 3). Insufficient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

Constituent: Chloride Analysis Run 9/9/2020 1:11 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

Within Limit

Prediction Limit
Intrawell Parametric

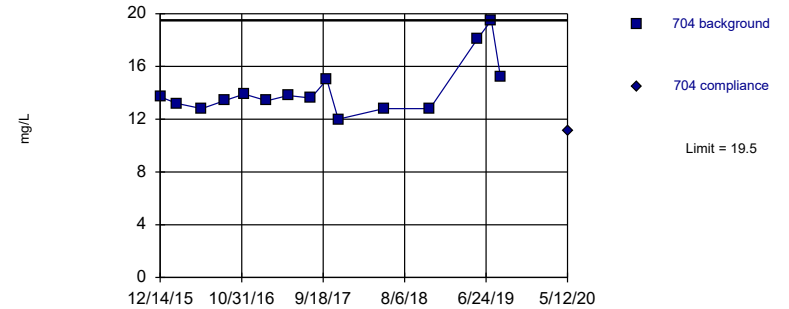


Background Data Summary: Mean=19.74, Std. Dev.=1.963, n=14. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9423, critical = 0.825. Kappa = 1.486 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Chloride Analysis Run 9/9/2020 1:11 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

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 15 background values. Well-constituent pair annual alpha = 0.002624. Individual comparison alpha = 0.001313 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Chloride Analysis Run 9/9/2020 1:11 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

Prediction Limit

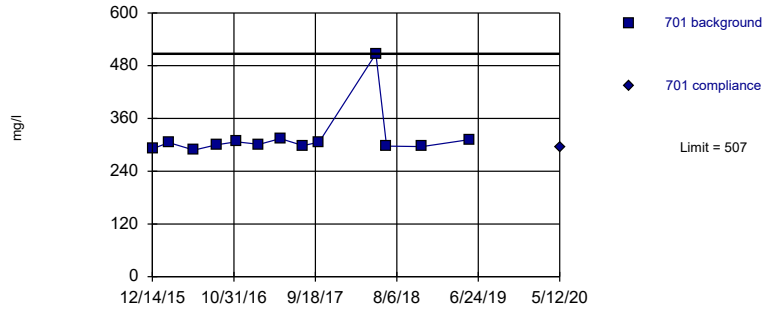
Constituent: Chloride Analysis Run 9/9/2020 1:16 PM View: Slag Pond III

Sibley Client: SCS Engineers Data: Sibley

	701	701	702	702	703	703	704	704
12/14/2015	8.27		8.88		18		13.7	
2/17/2016	8.3		8.56		22.5		13.2	
5/26/2016	8.27		8.65		18.9		12.8	
8/23/2016	8.18		8.97		20.6		13.4	
11/10/2016	8.4		8.73		20.2		13.9	
2/8/2017	8.64		8.69		19.6		13.4	
5/3/2017	9.11		9.11		19.4		13.8	
8/1/2017	8.26		8.83		22.5		13.6	
10/3/2017	11		11.1		21.5		15	
11/17/2017	8.89		9.06		19		12	
5/16/2018	8.83		8.66		18.1		12.8	
11/15/2018	8.09		8.87		20.3		12.8	
5/22/2019	8.36		8.09		15		18.1	
7/16/2019					20.7		19.5	
8/21/2019							15.2	
5/12/2020		8.53		8.29		19.8		11.1

Within Limit

Prediction Limit
Intrawell Non-parametric

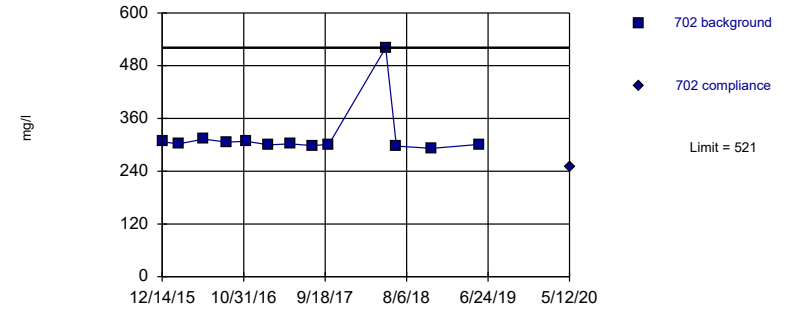


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 13 background values. Well-constituent pair annual alpha = 0.003769. Individual comparison alpha = 0.001886 (1 of 3). Insufficient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

Constituent: Dissolved Solids Analysis Run 9/9/2020 1:11 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

Within Limit

Prediction Limit
Intrawell Non-parametric

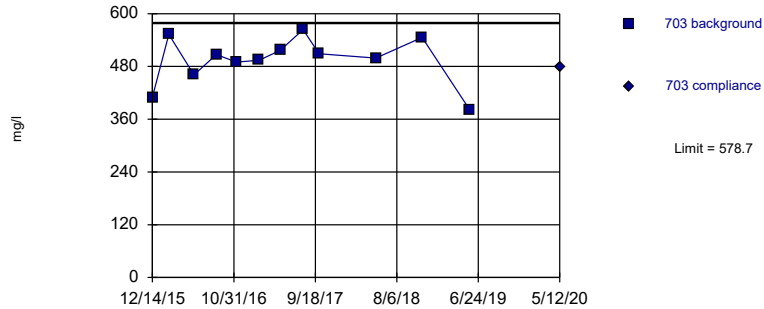


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 13 background values. Well-constituent pair annual alpha = 0.003769. Individual comparison alpha = 0.001886 (1 of 3). Insufficient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

Constituent: Dissolved Solids Analysis Run 9/9/2020 1:11 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

Within Limit

Prediction Limit
Intrawell Parametric

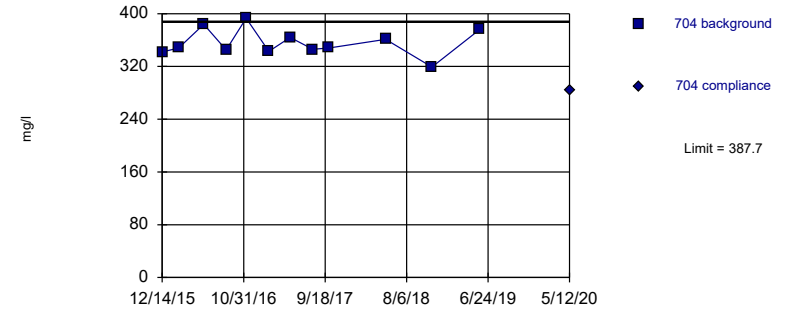


Background Data Summary: Mean=494.3, Std. Dev.=54.74, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9143, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Dissolved Solids Analysis Run 9/9/2020 1:11 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

Within Limit

Prediction Limit
Intrawell Parametric



Background Data Summary: Mean=355.8, Std. Dev.=20.72, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9395, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Dissolved Solids Analysis Run 9/9/2020 1:11 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

Prediction Limit

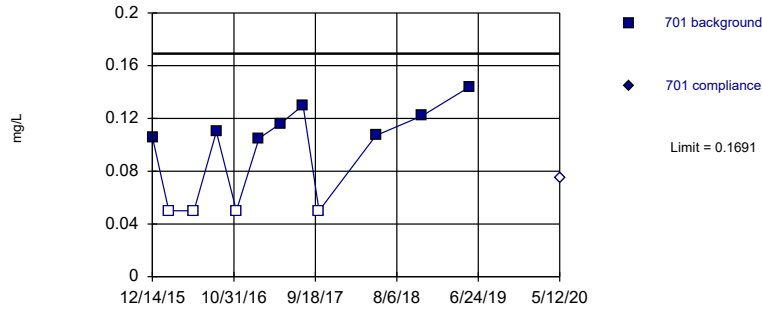
Constituent: Dissolved Solids Analysis Run 9/9/2020 1:16 PM View: Slag Pond III

Sibley Client: SCS Engineers Data: Sibley

	701	701	702	702	703	703	704	704
12/14/2015	291		307		410		342	
2/17/2016	305		302		553		348	
5/26/2016	288		313		461		384	
8/23/2016	300		306		507		345	
11/10/2016	307		308		490		393	
2/8/2017	301		300		494		343	
5/3/2017	314		302		517		364	
8/1/2017	298		298		564		346	
10/3/2017	306		301		509		348	
5/16/2018	507		521		499		361	
6/27/2018	297		297					
11/15/2018	296		292		546		319	
5/22/2019	312		301		381		376	
5/12/2020		294		250		480		283

Within Limit

Prediction Limit
 Intrawell Parametric

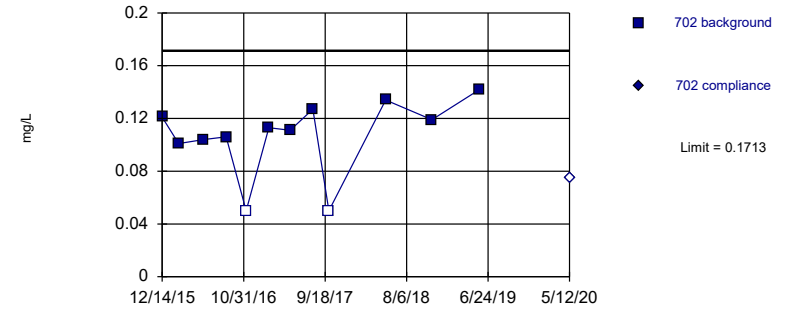


Background Data Summary (after Aitchison's Adjustment): Mean=0.07833, Std. Dev.=0.05889, n=12, 33.33% NDs. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8319, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Fluoride Analysis Run 9/9/2020 1:11 PM View: Slag Pond III
 Sibley Client: SCS Engineers Data: Sibley

Within Limit

Prediction Limit
 Intrawell Parametric

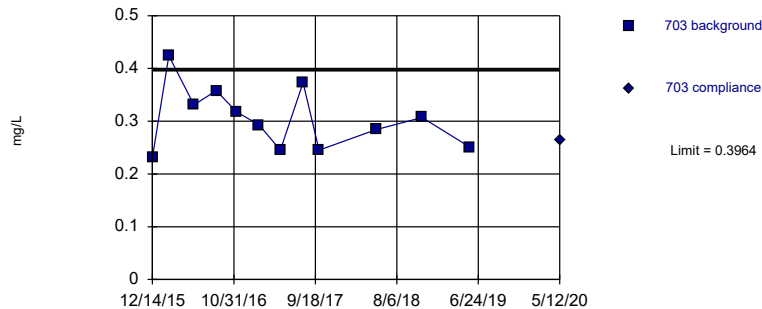


Background Data Summary (after Aitchison's Adjustment): Mean=0.09817, Std. Dev.=0.04744, n=12, 16.67% NDs. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8406, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Fluoride Analysis Run 9/9/2020 1:11 PM View: Slag Pond III
 Sibley Client: SCS Engineers Data: Sibley

Within Limit

Prediction Limit
 Intrawell Parametric

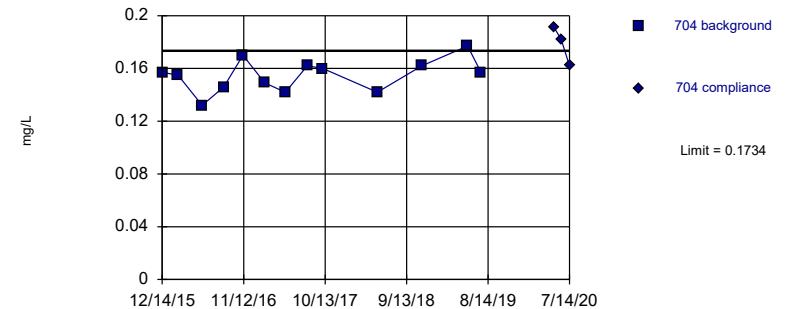


Background Data Summary: Mean=0.305, Std. Dev.=0.05925, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9446, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Fluoride Analysis Run 9/9/2020 1:11 PM View: Slag Pond III
 Sibley Client: SCS Engineers Data: Sibley

Within Limit

Prediction Limit
 Intrawell Parametric



Background Data Summary: Mean=0.1547, Std. Dev.=0.01232, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9815, critical = 0.814. Kappa = 1.514 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Fluoride Analysis Run 9/9/2020 1:11 PM View: Slag Pond III
 Sibley Client: SCS Engineers Data: Sibley

Prediction Limit

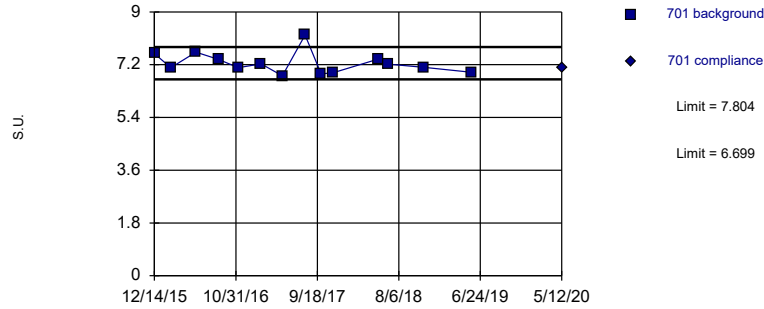
Constituent: Fluoride Analysis Run 9/9/2020 1:16 PM View: Slag Pond III

Sibley Client: SCS Engineers Data: Sibley

	701	701	702	702	703	703	704	704
12/14/2015	0.106		0.121		0.231		0.157	
2/17/2016	<0.1		0.101		0.424		0.155	
5/26/2016	<0.1		0.104		0.331		0.132	
8/23/2016	0.11		0.106		0.358		0.146	
11/10/2016	<0.1		<0.1		0.318		0.17	
2/8/2017	0.105		0.113		0.293		0.149	
5/3/2017	0.116		0.111		0.245		0.142	
8/1/2017	0.13		0.127		0.373		0.162	
10/3/2017	<0.1		<0.1		0.245		0.16	
5/16/2018	0.107		0.134		0.284		0.142	
11/15/2018	0.122		0.119		0.307		0.162	
5/22/2019	0.144		0.142		0.251		0.177	
7/16/2019							0.157	
5/12/2020		<0.15		<0.15		0.263		0.191
6/10/2020								0.182 1st Verification Sample
7/14/2020								0.162 2nd Verification Sample

Within Limits

Prediction Limit
Intrawell Parametric

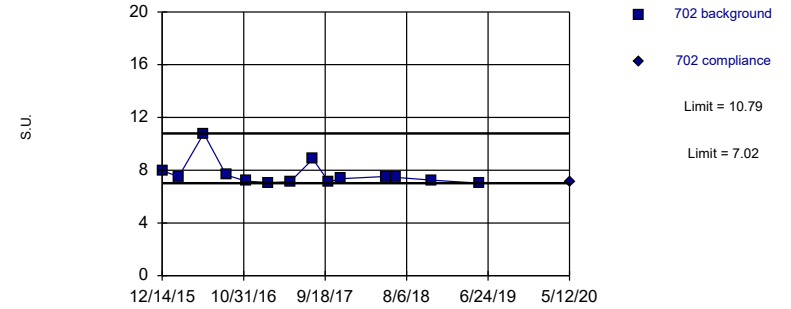


Background Data Summary: Mean=7.251, Std. Dev.=0.3718, n=14. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8916, critical = 0.825. Kappa = 1.486 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: pH Analysis Run 9/9/2020 1:11 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

Within Limits

Prediction Limit
Intrawell Non-parametric

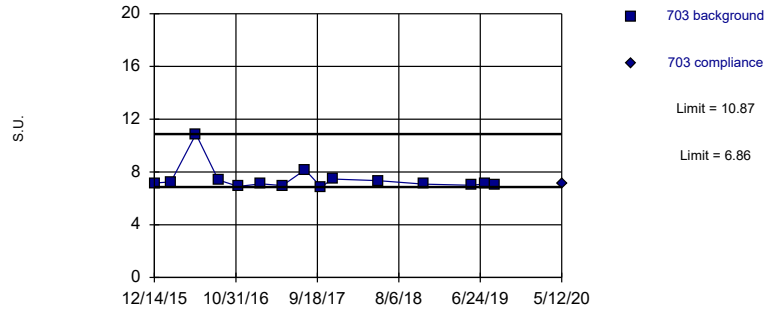


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 14 background values. Well-constituent pair annual alpha = 0.006393. Individual comparison alpha = 0.003199 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: pH Analysis Run 9/9/2020 1:11 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

Within Limits

Prediction Limit
Intrawell Non-parametric

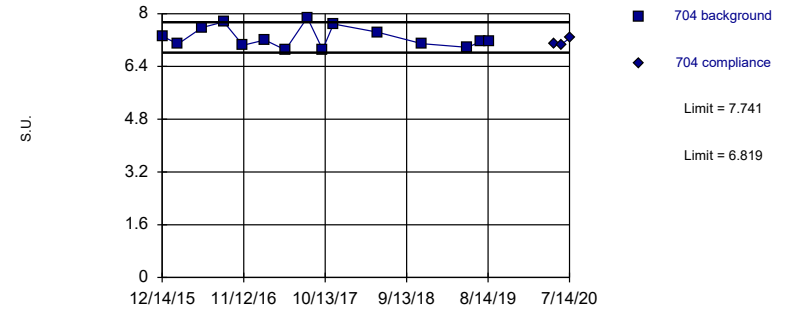


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 15 background values. Well-constituent pair annual alpha = 0.005248. Individual comparison alpha = 0.002625 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: pH Analysis Run 9/9/2020 1:11 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

Within Limits

Prediction Limit
Intrawell Parametric



Background Data Summary: Mean=7.28, Std. Dev.=0.3165, n=15. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9134, critical = 0.835. Kappa = 1.458 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: pH Analysis Run 9/9/2020 1:11 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

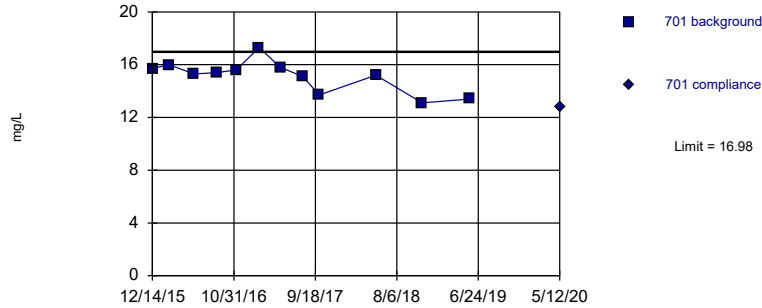
Prediction Limit

Constituent: pH Analysis Run 9/9/2020 1:16 PM View: Slag Pond III

Sibley Client: SCS Engineers Data: Sibley

	701	701	702	702	703	703	704	704
12/14/2015	7.58		7.96		7.16		7.32	
2/17/2016	7.1		7.51		7.24		7.08	
5/26/2016	7.63		10.79		10.87		7.58	
8/23/2016	7.38		7.63		7.39		7.75	
11/10/2016	7.1		7.17		6.9		7.04	
2/8/2017	7.23		7.06		7.1		7.2	
5/3/2017	6.82		7.12		6.97		6.9	
8/1/2017	8.21		8.85		8.17		7.88	
10/3/2017	6.89		7.1		6.86		6.91	
11/17/2017	6.92		7.35		7.46		7.69	
5/16/2018	7.39		7.53		7.34		7.44	
6/27/2018	7.22		7.45					
11/15/2018	7.11		7.24		7.07		7.09	
5/22/2019	6.94		7.02		6.99		6.98	
7/16/2019					7.1		7.16	
8/21/2019					7.02		7.18	
5/12/2020		7.11		7.15		7.07		7.08
6/10/2020								7.06 Extra Sample
7/14/2020								7.26 Extra Sample

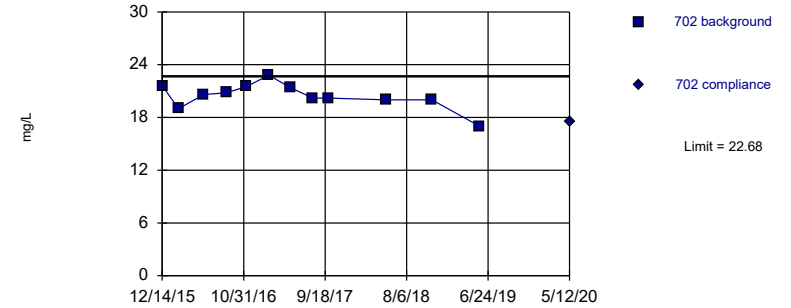
Within Limit Prediction Limit
Intrawell Parametric



Background Data Summary: Mean=15.13, Std. Dev.=1.196, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9143, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Sulfate Analysis Run 9/9/2020 1:11 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

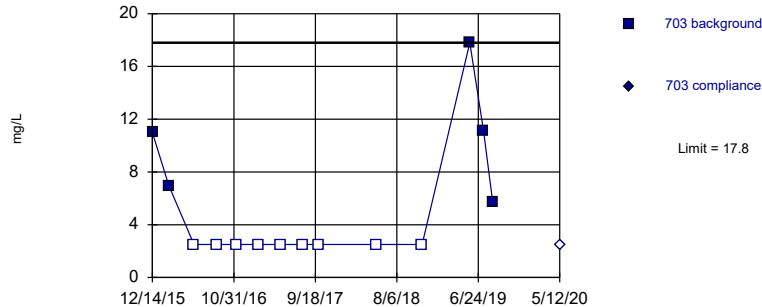
Within Limit Prediction Limit
Intrawell Parametric



Background Data Summary: Mean=20.43, Std. Dev.=1.462, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9317, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Sulfate Analysis Run 9/9/2020 1:11 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

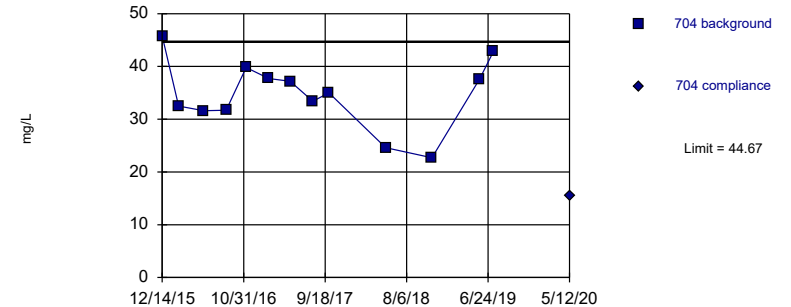
Within Limit Prediction Limit
Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 14 background values. 64.29% NDs. Well-constituent pair annual alpha = 0.003197. Individual comparison alpha = 0.0016 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Sulfate Analysis Run 9/9/2020 1:11 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

Within Limit Prediction Limit
Intrawell Parametric



Background Data Summary: Mean=34.8, Std. Dev.=6.517, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9669, critical = 0.814. Kappa = 1.514 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Sulfate Analysis Run 9/9/2020 1:11 PM View: Slag Pond III
Sibley Client: SCS Engineers Data: Sibley

Prediction Limit

Constituent: Sulfate Analysis Run 9/9/2020 1:16 PM View: Slag Pond III

Sibley Client: SCS Engineers Data: Sibley

	701	701	702	702	703	703	704	704
12/14/2015	15.7		21.6		11		45.8	
2/17/2016	16		19		6.97		32.5	
5/26/2016	15.3		20.6		<5		31.6	
8/23/2016	15.4		20.8		<5		31.7	
11/10/2016	15.6		21.5		<5		39.8	
2/8/2017	17.3		22.8		<5		37.7	
5/3/2017	15.8		21.4		<5		37.2	
8/1/2017	15.1		20.2		<5		33.4	
10/3/2017	13.7		20.2		<5		35	
5/16/2018	15.2		20		<5		24.6	
11/15/2018	13.1		20		<5		22.7	
5/22/2019	13.4		17		17.8		37.6	
7/16/2019					11.1		42.8	
8/21/2019					5.73			
5/12/2020		12.8		17.5		<5		15.4

Prediction Limit

Sibley Client: SCS Engineers Data: Sibley Printed 9/9/2020, 1:16 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Boron (mg/L)	701	0.2	n/a	5/12/2020	0.1ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
Boron (mg/L)	702	0.2	n/a	5/12/2020	0.1ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
Boron (mg/L)	703	0.9027	n/a	5/12/2020	0.724	No	12	0	No	0.00188	Param Intra 1 of 3
Boron (mg/L)	704	0.2	n/a	5/12/2020	0.1ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
Calcium (mg/L)	701	88.5	n/a	5/12/2020	85.7	No	13	0	n/a	0.001886	NP Intra (normality) ...
Calcium (mg/L)	702	96.42	n/a	5/12/2020	88.1	No	13	0	No	0.00188	Param Intra 1 of 3
Calcium (mg/L)	703	139.1	n/a	5/12/2020	135	No	14	0	No	0.00188	Param Intra 1 of 3
Calcium (mg/L)	704	102.6	n/a	5/12/2020	87.5	No	14	0	No	0.00188	Param Intra 1 of 3
Chloride (mg/L)	701	11	n/a	5/12/2020	8.53	No	13	0	n/a	0.001886	NP Intra (normality) ...
Chloride (mg/L)	702	11.1	n/a	5/12/2020	8.29	No	13	0	n/a	0.001886	NP Intra (normality) ...
Chloride (mg/L)	703	22.65	n/a	5/12/2020	19.8	No	14	0	No	0.00188	Param Intra 1 of 3
Chloride (mg/L)	704	19.5	n/a	5/12/2020	11.1	No	15	0	n/a	0.001313	NP Intra (normality) ...
Dissolved Solids (mg/l)	701	507	n/a	5/12/2020	294	No	13	0	n/a	0.001886	NP Intra (normality) ...
Dissolved Solids (mg/l)	702	521	n/a	5/12/2020	250	No	13	0	n/a	0.001886	NP Intra (normality) ...
Dissolved Solids (mg/l)	703	578.7	n/a	5/12/2020	480	No	12	0	No	0.00188	Param Intra 1 of 3
Dissolved Solids (mg/l)	704	387.7	n/a	5/12/2020	283	No	12	0	No	0.00188	Param Intra 1 of 3
Fluoride (mg/L)	701	0.1691	n/a	5/12/2020	0.075ND	No	12	33.33	No	0.00188	Param Intra 1 of 3
Fluoride (mg/L)	702	0.1713	n/a	5/12/2020	0.075ND	No	12	16.67	No	0.00188	Param Intra 1 of 3
Fluoride (mg/L)	703	0.3964	n/a	5/12/2020	0.263	No	12	0	No	0.00188	Param Intra 1 of 3
Fluoride (mg/L)	704	0.1734	n/a	7/14/2020	0.162	No	13	0	No	0.00188	Param Intra 1 of 3
pH (S.U.)	701	7.804	6.699	5/12/2020	7.11	No	14	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	702	10.79	7.02	5/12/2020	7.15	No	14	0	n/a	0.003199	NP Intra (normality) ...
pH (S.U.)	703	10.87	6.86	5/12/2020	7.07	No	15	0	n/a	0.002625	NP Intra (normality) ...
pH (S.U.)	704	7.741	6.819	7/14/2020	7.26	No	15	0	No	0.000...	Param Intra 1 of 3
Sulfate (mg/L)	701	16.98	n/a	5/12/2020	12.8	No	12	0	No	0.00188	Param Intra 1 of 3
Sulfate (mg/L)	702	22.68	n/a	5/12/2020	17.5	No	12	0	No	0.00188	Param Intra 1 of 3
Sulfate (mg/L)	703	17.8	n/a	5/12/2020	2.5ND	No	14	64.29	n/a	0.0016	NP Intra (NDs) 1 of 3
Sulfate (mg/L)	704	44.67	n/a	5/12/2020	15.4	No	13	0	No	0.00188	Param Intra 1 of 3

Sibley Generating Station
Determination of Statistically Significant Increases
Slag Settling Impoundment
September 16, 2020

ATTACHMENT 2

Sanitas™ Configuration Settings

Exclude data flags:

Data Reading Options

- Individual Observations
- Mean of Each: Month
- Median of Each: Season

Automatically Process Resamples...

- Black and White Output
- Four Plots Per Page
 - Always Combine Data Pages...
 - Include Tick Marks on Data Page
 - Use Constituent Name for Graph Title
- Draw Border Around Text Reports and Data Pages
- Enlarge/Reduce Fonts (Graphs):
- Enlarge/Reduce Fonts (Data/Text Reports):
- Wide Margins (on reports without explicit setting)
- Use CAS# (Not Const. Name)
- Truncate File Names to Characters
- Include Limit Lines when found in Database...
- Show Deselected Data on Time Series ▾
- Show Deselected Data on all Data Pages ▾

- Prompt to Overwrite/Append Summary Tables
- Round Limits to Sig. Digits (when not set in data file)
- User-Set Scale
- Indicate Background Data
- Show Exact Dates
- Thick Plot Lines

Zoom Factor: ▾

- Output Decimal Precision
- Less Precision
 - Normal Precision
 - More Precision

Store Print Jobs in Multiple Constituent Mode

Printer: ▾

Use Modified Alpha... 0.02

Test Residuals For Normality (Parametric test only) using Shapiro-Wilk/Francia at Alpha = 0.01

Continue Parametric if Unable to Normalize

Transformation (Parametric test only)

- Use Ladder of Powers
- Natural Log or No Transformation
- Never Transform
- Use Specific Transformation:

- Use Best W Statistic
- Plot Transformed Values

Use Non-Parametric Test (Sen's Slope/Mann-Kendall) when Non-Detects Percent > 75

Include 95. % Confidence Interval around Trend Line

Automatically Remove Outliers (Parametric test only)

Note: there is no "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.

Test for Normality using Shapiro-Wilk/Francia at Alpha = 0.01

Use Non-Parametric Test when Non-Detects Percent > 50

Use Aitchison's Adjustment when Non-Detects Percent > 15

Optional Further Refinement: Use Aitchison's when NDs % > 50

Use Poisson Prediction Limit when Non-Detects Percent > 90

Transformation

Use Ladder of Powers

Natural Log or No Transformation

Never Transform

Use Specific Transformation: Natural Log

Use Best W Statistic

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

Statistical Evaluations per Year:

Constituents Analyzed:

Downgradient (Compliance) Wells:

Sampling Plan

Comparing Individual Observations

1 of 1 1 of 2 1 of 3 1 of 4

2 of 4 ("Modified California")

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

Non-Parametric Limit when 100% Non-Detects:

Highest/Second Highest Background Value

Most Recent PQL if available, or MDL

Most Recent Background Value (subst. method)

Rank Von Neumann, Wilcoxon Rank Sum / Mann-Whitney

- Use Modified Alpha...
- 2-Tailed Test Mode...
- Combine Background Wells on Mann-Whitney...

Outlier Tests

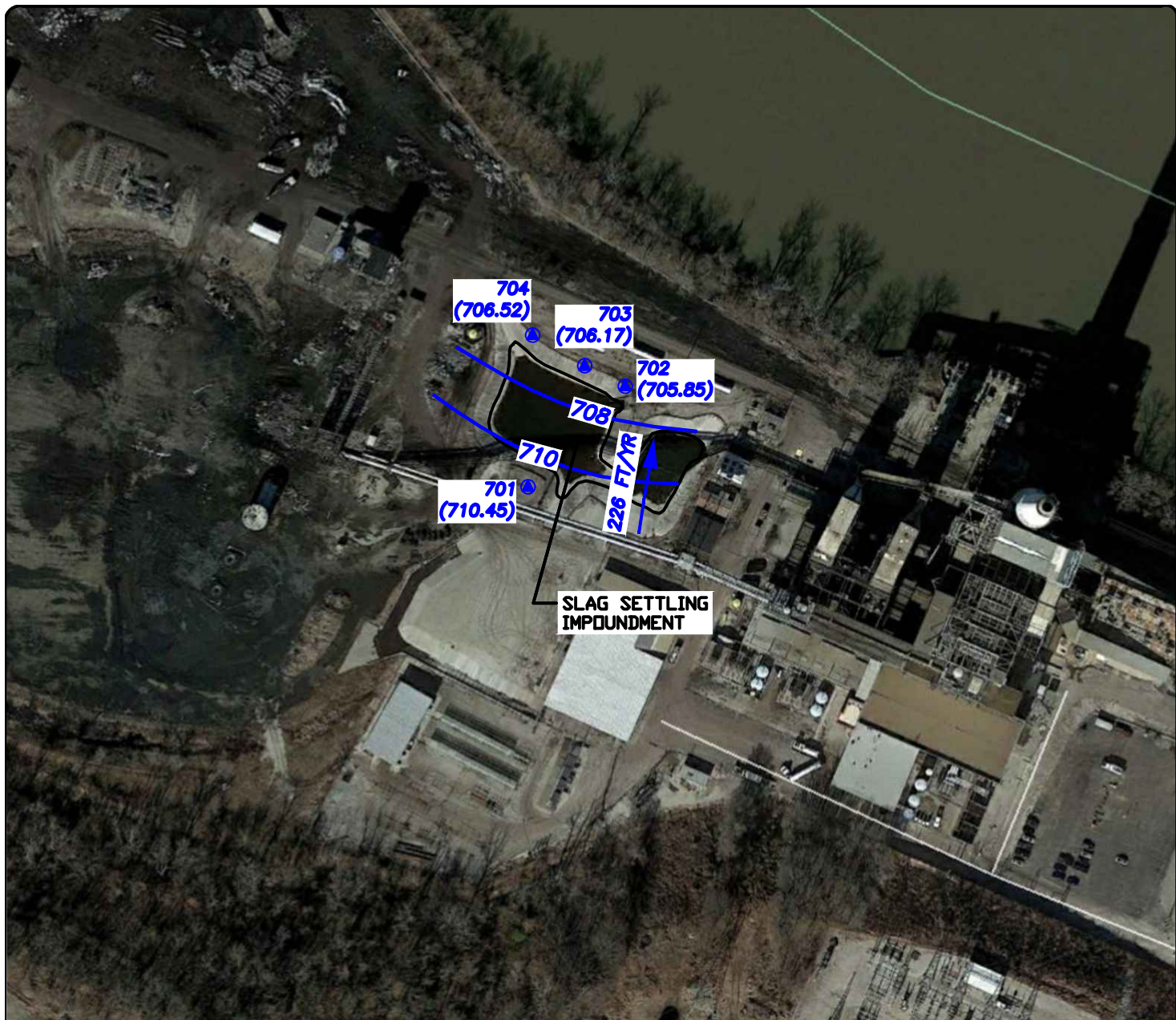
- EPA 1989 Outlier Screening (fixed alpha of 0.05)
- Dixon's at $\alpha=$ or if n > Rosner's at $\alpha=$ Use EPA Screening to establish Suspected Outliers
- Tukey's Outlier Screening, with IQR Multiplier = Use Ladder of Powers to achieve Best W Stat
- Test For Normality at Alpha =
 - Stop if Non-Normal
 - Continue with Parametric Test if Non-Normal
 - Tukey's if Non-Normal, with IQR Multiplier = Use Ladder of Powers to achieve Best W Stat
- No Outlier If Less Than 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)
- Use Constituent Definition File

Jared Morrison
December 20, 2022

ATTACHMENT 3
Groundwater Potentiometric Surface Maps



LEGEND:

- 760 — GROUNDWATER POTENTIOMETRIC SURFACE ELEVATIONS (REPRESENTATIVE OF THIS UNIT)
- 701 GROUNDWATER MONITORING SYSTEM WELL (GROUNDWATER ELEVATION)
- CCR LANDFILL UNIT BOUNDARY
- ← 226 FT/YR GROUNDWATER FLOW DIRECTION AND CALCULATED GROUNDWATER FLOW RATE (FEET/YEAR)



NOTES:

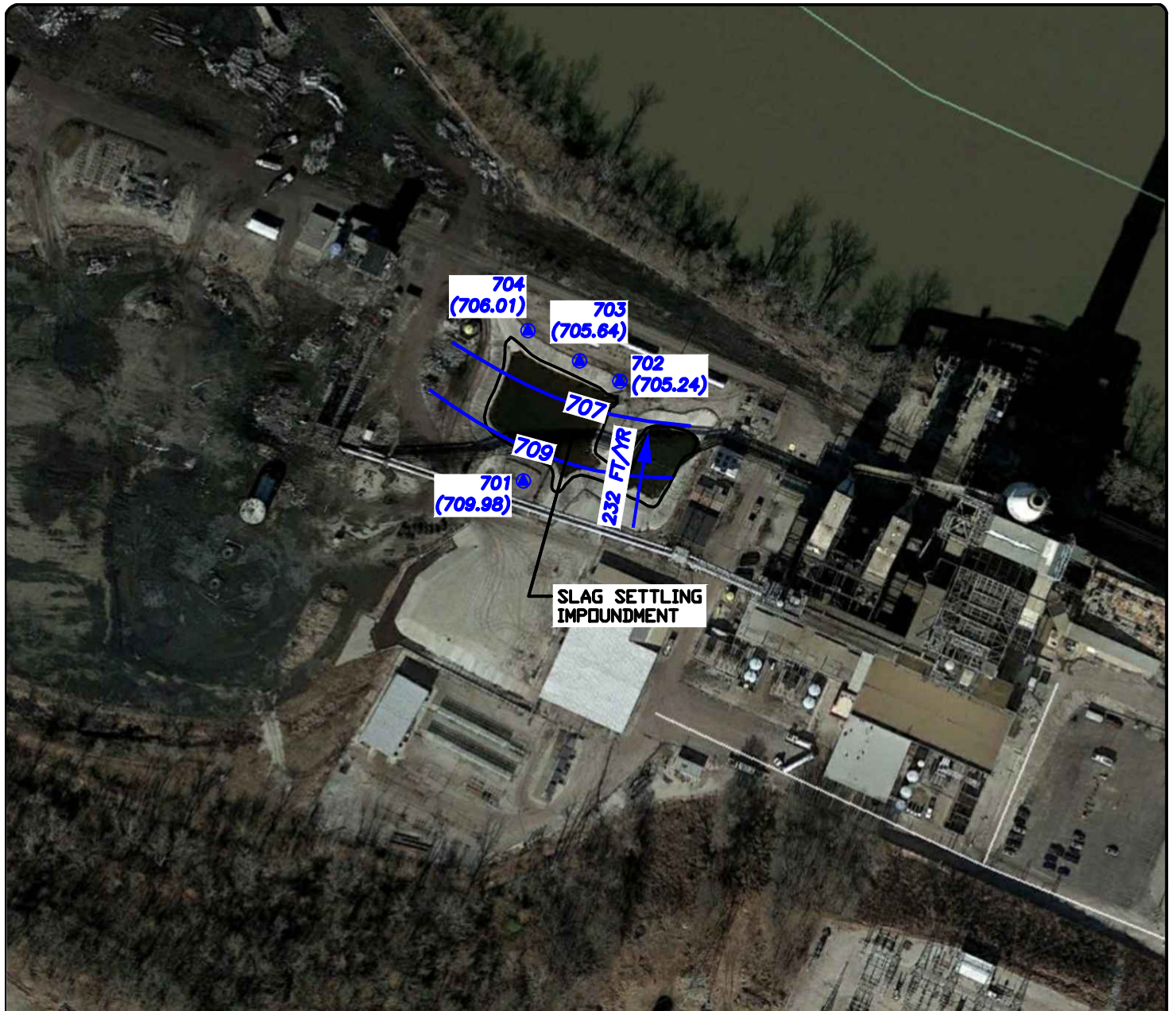
1. HORIZONTAL & VERTICAL DATUM: URS PLANS FOR CONSTRUCTION, KCP&L SIBLEY GENERATING STATION, DESIGN FILE 16530511.00001, DATED JANUARY 2010
2. GOOGLE EARTH AERIAL IMAGE. FEBRUARY 2020.
3. BOUNDARY AND MONITORING WELL WELL LOCATIONS SHOWN ARE APPROXIMATE.
4. WATER LEVEL MEASUREMENTS COMPLETED ON MAY 12, 2020

SCS ENGINEERS

8575 W. 110th St, Ste. 100
 Overland Park, Kansas 66210
 PH. (913) 681-0030 FAX. (913) 681-0012

EVERGY MISSOURI WEST, INC.
 POTENTIOMETRIC SURFACE MAP (MAY 2020)
 SIBLEY SLAG SETTLING IMPOUNDMENT
 SIBLEY GENERATING STATION
 CCR GROUNDWATER MONITORING SYSTEM

CHK. BY: JRR	DWN. BY: MBJ	DSN. BY: TGW	PROJ. NO. 27213169.20
PROJ. MGR: JRR	DATE: 12/15/22	CADD FILE: 20 - MAY_GW V1.DWG	FIG. NO. 2



LEGEND:

- 760 — GROUNDWATER POTENTIOMETRIC SURFACE ELEVATIONS (REPRESENTATIVE OF THIS UNIT)
- 701 GROUNDWATER MONITORING SYSTEM WELL (GROUNDWATER ELEVATION)
- CCR LANDFILL UNIT BOUNDARY
- ← 232 FT/YR GROUNDWATER FLOW DIRECTION AND CALCULATED GROUNDWATER FLOW RATE (FEET/YEAR)



NOTES:

1. HORIZONTAL & VERTICAL DATUM: URS PLANS FOR CONSTRUCTION, KCP&L SIBLEY GENERATING STATION, DESIGN FILE 16530511.00001, DATED JANUARY 2010
2. GOOGLE EARTH AERIAL IMAGE. FEBRUARY 2020.
3. BOUNDARY AND MONITORING WELL WELL LOCATIONS SHOWN ARE APPROXIMATE.
4. WATER LEVEL MEASUREMENTS COMPLETED ON JULY 28, 2020

SCS ENGINEERS

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EVERGY MISSOURI WEST, INC.
 POTENTIOMETRIC SURFACE MAP (JULY 2020)
 SIBLEY SLAG SETTLING IMPOUNDMENT
 SIBLEY GENERATING STATION
 CCR GROUNDWATER MONITORING SYSTEM

CHK. BY: JRR	DWN. BY: MBJ	DSN. BY: TGW	PROJ. NO. 27213169.20
PROJ. MGR: JRR	DATE: 12/15/22	CADD FILE: 20 - JULY_GW V1.DWG	FIG. NO. 3