

REPORT

2023 Annual Groundwater Monitoring and Corrective Action Report

SCPB Surface Impoundment, Sioux Energy Center, St. Charles County, Missouri, USA

January 31, 2024

Project Number: 23009

Submitted to:



Ameren Missouri
1901 Chouteau Avenue
St. Louis, Missouri 63103

Submitted by:



Rocksmith Geoengineering, LLC
2320 Creve Coeur Mill Rd
Maryland Heights, MO 63043



EXECUTIVE SUMMARY AND STATUS OF THE SCPB GROUNDWATER MONITORING PROGRAM

This annual report was developed to meet the requirements of United States Environmental Protection Agency (USEPA) 40 CFR Part 257 “Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals From Electric Utilities; Final Rule” (the CCR Rule). The CCR Rule requires owners or operators of existing CCR units to produce an Annual Groundwater Monitoring and Corrective Action Report (Annual Report) each year (§ 257.90(e)). Ameren Missouri (Ameren) has determined that the SCPB Coal Combustion Residuals (CCR) Surface Impoundment at the Sioux Energy Center (SEC) is subject to the requirements of the CCR Rule. This Annual Report for the SCPB describes CCR Rule groundwater monitoring activities from January 1, 2023 through December 31, 2023 including verification results related to late 2022 sampling.

Throughout 2023, the SCPB CCR unit has been operating under the Detection Monitoring Program (§257.94), which began October 17, 2017. As a part of Detection Monitoring, statistical evaluations are completed after each sampling event to determine if there are any values that represent a Statistically Significant Increase (SSI) over background concentrations. SSIs have been determined during each sampling event and a summary of the SSIs for the past year is provided in **Table 1**.

Table 1 - Summary of 2023 SCPB Sampling Events, Previous Year Verification, and Statistical Evaluations

Event Name	Type of Event and Sampling Dates	Laboratory Analytical Data Receipt	Parameters Collected	Verified SSIs	SSI Determination Date	ASD Completion Date
October 2022 Sampling Event	Detection Monitoring, October 18-20, 2022	November 22, 2022	Appendix III, Major Cations and Anions	Boron: LMW-1S, LMW-2S, LMW-3S, LMW-4S, LMW-5S, LMW-6S, LMW-7S, LMW-8S, LMW-9S Calcium: LMW-2S, LMW-3S, LMW-4S, LMW-5S, LMW-6S, LMW-7S, LMW-8S, LMW-9S Chloride: LMW-1S, LMW-2S, LMW-3S, LMW-5S, LMW-7S, LMW-8S, LMW-9S Sulfate: LMW-1S, LMW-2S, LMW-3S, LMW-4S, LMW-5S, LMW-6S, LMW-7S, LMW-8S, LMW-9S TDS: LMW-2S, LMW-3S, LMW-4S, LMW-5S, LMW-6S, LMW-7S, LMW-8S, LMW-9S	February 20, 2023	May 19, 2023
	Verification Sampling, January 3-4, 2023	January 18, 2023	Detected Appendix III parameters (See Note 1)			
May 2023 Sampling Event	Detection Monitoring, May 2-9, 2023	June 21, 2023	Appendix III, Major Cations and Anions	Boron: LMW-1S, LMW-2S, LMW-3S, LMW-4S, LMW-5S, LMW-6S, LMW-7S, LMW-8S, LMW-9S Calcium: LMW-3S, LMW-4S, LMW-5S, LMW-6S, LMW-7S, LMW-8S Chloride: LMW-1S, LMW-2S, LMW-3S, LMW-5S, LMW-7S, LMW-8S, LMW-9S Sulfate: LMW-1S, LMW-2S, LMW-5S, LMW-6S, LMW-7S, LMW-8S, LMW-9S TDS: LMW-2S, LMW-3S, LMW-4S, LMW-5S, LMW-7S, LMW-8S, LMW-9S	September 19, 2023	December 18, 2023
	No Verification Sampling was required. No new SSIs were observed in the May 2023 sampling event.					
November 2023 Sampling Event	Detection Monitoring, November 10-14, 2023	December 27, 2023	Appendix III, Major Cations and Anions	To be determined after statistical analysis and Verification Sampling are completed in 2024.		

Notes:

- 1) Only analytes/wells that were detected above the prediction limit and that had not already been verified were tested during Verification Sampling.
- 2) SSI – Statistically Significant Increase.
- 3) ASD – Alternative Source Demonstration.
- 4) TDS – Total Dissolved Solids.

As outlined in section 257.94(e)(2) of the CCR Rule, the owner or operator may demonstrate that a source other than the CCR Unit has caused an SSI and that the apparent SSI was the result of an alternative source or resulted from errors in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Alternative Source Demonstrations (ASDs) were prepared for each of these sampling events and are discussed further in this Annual Report.

There were no changes made to the monitoring system in 2023 with no new wells being installed or decommissioned. Capping and closure of the SCPB was fully completed in 2022 with closure certification on October 14, 2022. As outlined in §257.104 (Post-closure Care Requirements) of the CCR Rule, now that the SCPB CCR unit has been successfully closed, the monitoring system and programs must be maintained for at least 30 years after the completion of closure.

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Appendix B - Alternative Source Demonstration – October 2022 Sampling Event

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Appendix D - 2023 Potentiometric Surface Maps

1.0 INSTALLATION OR DECOMMISSIONING OF MONITORING WELLS

In accordance with the CCR Rule, a groundwater monitoring system has been installed to monitor the SCPB. The groundwater monitoring system consists of eleven groundwater monitoring wells screened in the uppermost aquifer and is displayed in **Figure 1** and is listed on **Table 2**, below. No new monitoring wells were installed or decommissioned in 2023 as a part of the CCR Rule monitoring program for the SCPB. For more information on the groundwater monitoring network, details are provided in the previous Annual Groundwater Monitoring Reports for the SCPB.

2.0 GROUNDWATER SAMPLING RESULTS AND DISCUSSION

The following sections discuss the sampling events completed for the SCPB CCR Unit in 2023. **Table 2** below provides a summary of the groundwater samples collected in 2023 including the number of samples, the date of sample collection, and the monitoring program for which the samples were collected.

Table 2 – Summary of Groundwater Sampling Dates

Sampling Event	Groundwater Monitoring Wells											Monitoring Program
	BMW-1S	BMW-3S	LMW-1S	LMW-2S	LMW-3S	LMW-4S	LMW-5S	LMW-6S	LMW-7S	LMW-8S	LMW-9S	
	Date of Sample Collection											
January 2023 Verification Sampling	-	-	1/3/2023	-	1/4/2023	-	1/4/2023	-	1/4/2023	-	-	Detection
May 2023 Sampling	5/2/2023	5/2/2023	5/8/2023	5/8/2023	5/5/2023	5/5/2023	5/9/2023	5/9/2023	5/8/2023	5/8/2023	5/8/2023	Detection
November 2023 Sampling	11/10/2023	11/10/2023	11/14/2023	11/14/2023	11/13/2023	11/14/2023	11/14/2023	11/14/2023	11/14/2023	11/14/2023	11/14/2023	Detection
Total Number of Samples Collected	2	2	3	2	3	2	3	2	3	2	2	NA

Notes:

- 1) Detection Monitoring events tested for Appendix III Parameters.
- 2) Verification Sampling events tested for Appendix III Parameters with initial exceedances that have not already been verified.
- 3) "-" No sample collected.
- 4) NA – Not applicable.

2.1 Detection Monitoring Program

A Detection Monitoring sampling event was completed October 18-20, 2022. Verification sampling and the statistical analyses to evaluate for SSIs for the October 2022 event were not completed until 2023 and are included in this report. New initial exceedances of some Appendix III analytes triggered a verification sampling event, which was completed January 3-4, 2023 and verified three SSIs. One initial exceedance was not confirmed. **Table 3** summarizes the results and statistical analysis of the October 2022 Detection Monitoring event. Laboratory analytical data from the January 2023 verification sampling event through the November 2023 sampling event are provided in **Appendix A**. Laboratory analytical data for the October 2022 Detection Monitoring event are provided in the 2022 Groundwater Monitoring and Corrective Action Annual Report for the SCPB.

As outlined in section 257.94(e)(2) of the CCR Rule, the owner or operator may demonstrate that a source other than the CCR unit has caused an SSI and that the apparent SSI was the result of an alternative source or resulted from errors in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. An

ASD was completed for these SSIs and is provided in **Appendix B**. This ASD demonstrates that SSIs at the monitoring wells around the SCPB are not caused by the SCPB CCR Unit, and therefore, the SCPB CCR Unit remains in Detection Monitoring.

Detection Monitoring samples were collected May 2-9, 2023, and testing was completed for all Appendix III analytes, as well as major cations and anions. As outlined in the Statistical Analysis plan for the site, updates to the statistical limits should be completed once four to eight new sample results are available. During the statistical analysis of the May 2023 sampling event, the statistical limits used to determine an SSI were updated according to the Statistical Analysis Plan. There were no new initial exceedances of any Appendix III analytes, therefore no verification sampling was conducted. **Table 4** summarizes the results and statistical analysis of the May 2023 Detection Monitoring event. Laboratory analytical data from this sampling event is included in **Appendix A**. Similar to previous results, SSIs in the monitoring well network are not caused by the SCPB CCR unit, as demonstrated by the ASD provided in **Appendix C**.

A Detection Monitoring sampling event was completed November 10-14, 2023, and testing was completed for all Appendix III analytes, as well as major cations and anions. Statistical analyses to evaluate for SSIs in the November 2023 data were not completed in 2023 and the results will be provided in the 2024 Annual Report. **Table 5** summarizes the results of the November 2023 Detection Monitoring event and laboratory analytical data are provided in **Appendix A**.

2.2 Groundwater Elevation, Flow Rate and Direction

To meet the requirements of §257.93(c), water level measurements were taken at all monitoring wells prior to the start of groundwater purging and sampling. Static water levels were measured within a 24-hour period in each monitoring well using an electronic water level indicator.

Groundwater elevations were used to generate potentiometric surface maps included in **Appendix D**. As shown on the potentiometric surface maps, groundwater flow direction within the uppermost aquifer is dynamic and influenced by seasonal changes in the water level in the adjacent Mississippi and Missouri Rivers, which affect water levels, gradients and flow directions in these water bodies. Groundwater in the alluvial aquifer will generally flow from the higher of the two rivers toward the lower elevation river. Water flows into and out of the alluvial aquifer as a result of fluctuating river water levels that produce “bank recharge” and “bank discharge” conditions. At this facility, groundwater can flow north and south toward the Mississippi and Missouri Rivers, depending on river levels.

Groundwater flow direction and hydraulic gradient at the SEC were estimated for the alluvial aquifer wells using commercially available software to evaluate data since 2016. Results indicate that groundwater flow direction at the SEC is variable due to fluctuating river levels but has most often flowed from north to south. The overall net groundwater flow direction in the alluvial aquifer at the SEC was south-southeast in 2023 as a result of river levels in the Missouri and Mississippi Rivers. From 2016 through 2022, horizontal gradients have ranged from 0.00006 to 0.001 feet/foot with an estimated net annual groundwater movement of approximately four feet per year in the prevailing downgradient direction. Since July 2022, due to low Missouri River levels, there has been a more prevalent southward flow direction at a rate of approximately 35 feet per year.

2.3 Sampling Issues

No notable sampling issues were encountered at the SCPB in 2023.

3.0 ACTIVITIES PLANNED FOR 2024

Detection Monitoring is scheduled to continue on a semi-annual basis in the second and fourth quarters of 2024. Statistical analysis of the November 2023 Detection Monitoring data will be completed in 2024 and will be included in the 2024 Annual Report.

Tables

Table 3
October 2022 Detection Monitoring Results
SCPB Surface Impoundment
Sioux Energy Center, St. Charles County, MO

ANALYTE	UNITS	PREDICTION LIMITS	BACKGROUND		GROUNDWATER MONITORING WELLS								
			BMW-1S	BMW-3S	LMW-1S	LMW-2S	LMW-3S	LMW-4S	LMW-5S	LMW-6S	LMW-7S	LMW-8S	LMW-9S
October 2022 Detection Monitoring Event													
DATE	NA	NA	10/18/2022	10/18/2022	10/19/2022	10/19/2022	10/20/2022	10/20/2022	10/18/2022	10/20/2022	10/18/2022	10/18/2022	10/19/2022
pH	SU	6.472-7.531	6.84	7.01	7.26	6.80	6.54	6.55	6.90	6.55	6.73	6.71	6.56
BORON, TOTAL	µg/L	120.5	73.0 J	84.2 J	339	8,550	205	375	12,700	21,600	2,440	3,290	1,330
CALCIUM, TOTAL	µg/L	166,512	168,000	131,000	85,100	205,000	169,000	185,000	238,000	278,000	206,000	176,000	216,000
CHLORIDE, TOTAL	mg/L	13.12	9.2	11.7	36.2	149	20.0	3.1	22.7	2.7	62.9 J	60.5	86.4
FLUORIDE, TOTAL	mg/L	0.4159	0.20 J	0.22	0.28	ND	ND	ND	0.51	ND	0.18 J	0.19 J	0.41
SULFATE, TOTAL	mg/L	36.69	61.1	27.8	83.5	243	75.7	37.0	868	605	323 J	315	285
TOTAL DISSOLVED SOLIDS	mg/L	579	711	467	383	977	626	724	1,400	936	1,230	1,150	1,160
January 2023 Verification Sampling Event													
DATE	NA	NA			1/3/2023		1/4/2023		1/4/2023		1/4/2023		
pH	SU	6.472-7.531											
BORON, TOTAL	µg/L	120.5											
CALCIUM, TOTAL	µg/L	166,512					172,000				207,000		
CHLORIDE, TOTAL	mg/L	13.12											
FLUORIDE, TOTAL	mg/L	0.4159							0.36				
SULFATE, TOTAL	mg/L	36.69			97.8								
TOTAL DISSOLVED SOLIDS	mg/L	579											

NOTES:

1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units.
2. J - Result is an estimated value.
3. ND - Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.
4. NA - Not applicable.
5. Prediction Limits calculated using Sanitas Software.
6. Values highlighted in yellow indicate a Statistically Significant Increase (SSI).
7. Values highlighted in green indicate an initial exceedance above the prediction limit that was not confirmed by Verification Sampling (not an SSI).
8. Only analytes/wells that were detected above the prediction limit and that had not already been verified were tested during Verification Sampling.

Table 4
May 2023 Detection Monitoring Results
SCPB Surface Impoundment
Sioux Energy Center, St. Charles County, MO

ANALYTE	UNITS	PREDICTION LIMITS	BACKGROUND		GROUNDWATER MONITORING WELLS								
			BMW-1S	BMW-3S	LMW-1S	LMW-2S	LMW-3S	LMW-4S	LMW-5S	LMW-6S	LMW-7S	LMW-8S	LMW-9S
May 2023 Detection Monitoring Event													
DATE	NA	NA	5/2/2023	5/2/2023	5/8/2023	5/8/2023	5/5/2023	5/5/2023	5/9/2023	5/9/2023	5/8/2023	5/8/2023	5/8/2023
pH	SU	6.515-7.42	6.80	6.95	7.40	7.00	6.71	6.82	6.81	6.73	6.88	6.77	6.73
BORON, TOTAL	µg/L	118	64.8 J	67.1 J	659	9,800	215	758	16,200	18,000	3,010	4,300	1,180
CALCIUM, TOTAL	µg/L	174,465	184,000	137,000	90,500	169,000	185,000	186,000	238,000	263,000	204,000	222,000	156,000
CHLORIDE, TOTAL	mg/L	13.65	13.1	12.6	45.0	119	52.4	7.2	16.5	2.7	31.0	80.5	70.1
FLUORIDE, TOTAL	mg/L	0.46	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SULFATE, TOTAL	mg/L	61.1	37.7	32.4	99.4	281	43.7	60.7	757	512	382	458	171
TOTAL DISSOLVED SOLIDS	mg/L	608.2	610	495	559	908	692	656	2,490	418	1,080	1,220	853

NOTES:

1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units.
2. J - Result is an estimated value.
3. ND - Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.
4. NA - Not applicable.
5. Prediction Limits calculated using Sanitas Software.
6. Values highlighted in yellow indicate a Statistically Significant Increase (SSI).
7. There were no new initial exceedances for the May 2023 sampling event; therefore, no Verification Sampling was necessary.

Prepared By: GTM
Checked By: JSI
Reviewed By: MNH

Table 5
November 2023 Detection Monitoring Results
SCPB Surface Impoundment
Sioux Energy Center, St. Charles County, MO

ANALYTE	UNITS	BACKGROUND		GROUNDWATER MONITORING WELLS								
		BMW-1S	BMW-3S	LMW-1S	LMW-2S	LMW-3S	LMW-4S	LMW-5S	LMW-6S	LMW-7S	LMW-8S	LMW-9S
November 2023 Detection Monitoring Event												
DATE	NA	11/10/2023	11/10/2023	11/14/2023	11/14/2023	11/13/2023	11/14/2023	11/14/2023	11/14/2023	11/14/2023	11/14/2023	11/14/2023
pH	SU	7.04	7.14	7.30	6.91	6.63	6.72	6.89	6.82	6.82	6.70	6.59
BORON, TOTAL	µg/L	57.9 J	58.9 J	1,100	9,270	214	7,590	12,100	14,700	3,690	4,970	1,080
CALCIUM, TOTAL	µg/L	136,000	114,000	116,000	180,000	207,000	139,000	214,000	235,000	204,000	233,000	203,000 J
CHLORIDE, TOTAL	mg/L	7.2	13.4	68.8 J	159 J	62.6 J	5.3 J	23.8 J	9.8 J	24.4 J	77.8 J	103 J
FLUORIDE, TOTAL	mg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SULFATE, TOTAL	mg/L	46.9	12.3	103 J	221 J	37.0 J	51.8 J	644 J	586 J	416 J	459 J	205 J
TOTAL DISSOLVED SOLIDS	mg/L	475	398	566	962	751	689	1,290	1,290	980	1,210	1,050

NOTES:

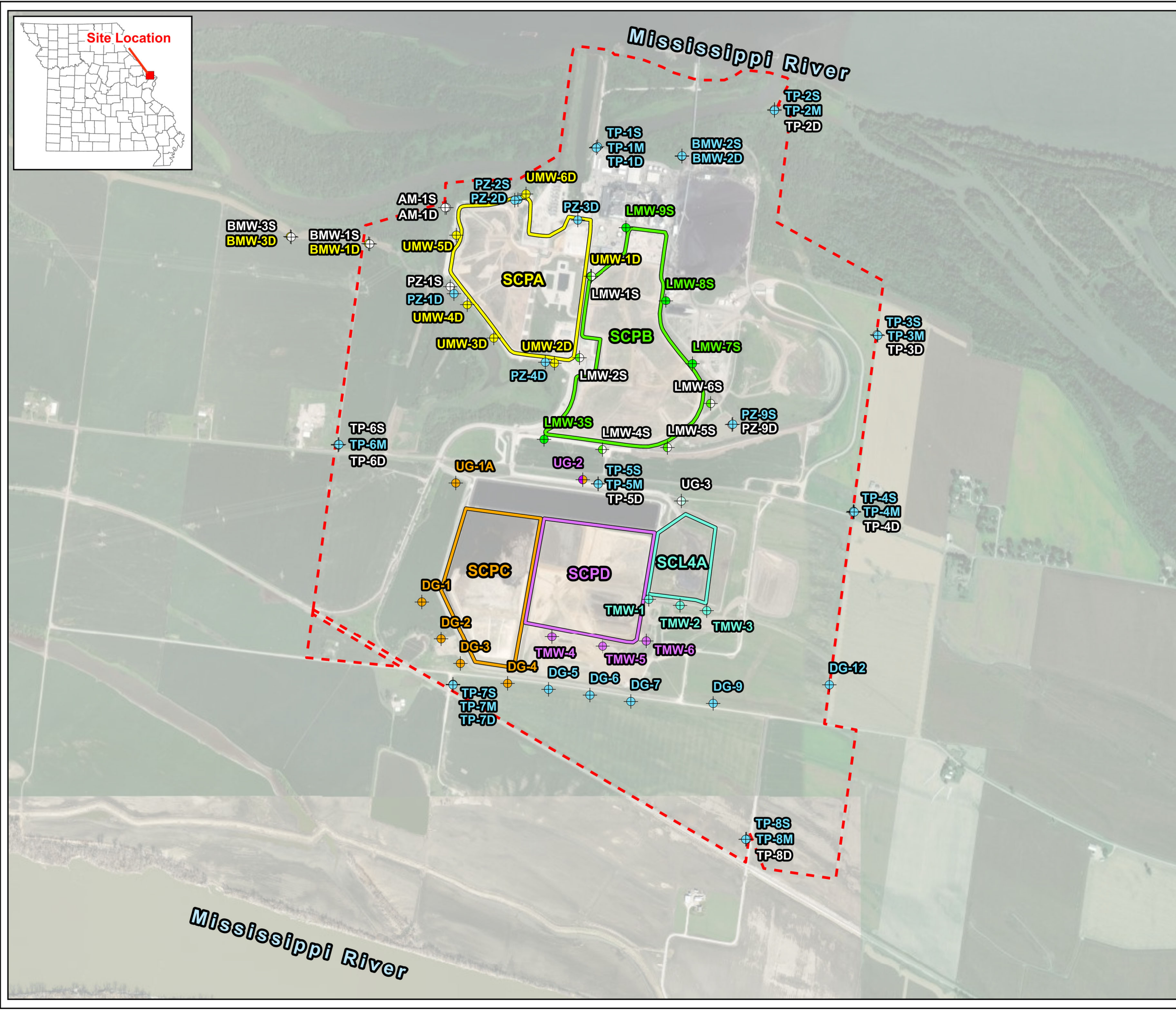
1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units.
2. J - Result is an estimated value.
3. NA - Not applicable.
4. ND - Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.

Prepared By: GTM
Checked By: JSI
Reviewed By: MNH

Figures



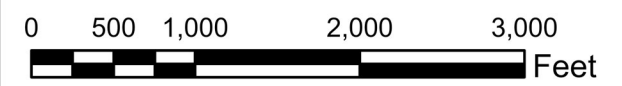
TITLE
SIoux ENERGY CENTER GROUNDWATER MONITORING PROGRAMS AND SAMPLE LOCATION MAP



- Legend**
- Sioux Energy Center Property Boundary
 - CCR Units**
 - SCPA - Bottom Ash Surface Impoundment (Closed)
 - SCPB - Fly Ash Surface Impoundment (Closed)
 - Utility Waste Landfill Cells**
 - SCL4A - Dry CCR Disposal Area
 - SCPC - Inactive FGD Surface Impoundment (Closure in Progress)
 - SCPD - FGD Surface Impoundment
 - Monitoring Well Networks**
 - + Corrective Action Monitoring Well
 - + SCPA Detection and Assessment Monitoring Well
 - + SCPB and Corrective Action Monitoring Well
 - + SCPB Detection Monitoring Well
 - + SCPC Detection Monitoring Well
 - + SCPD and SCPC Detection Monitoring Well
 - + SCPD Detection Monitoring Well
 - + SCL4A and Corrective Action Monitoring Well
 - + SCL4A Detection Monitoring Well
 - + Monitoring Well Used for Water Level Elevation Measurements Only

- NOTES**
1. All boundaries and locations are approximate.
 2. FGD - Flue Gas Desulfurization.
 3. CCR - Coal Combustion Residuals.

- REFERENCES**
1. Ameren Missouri Sioux Energy Center, Sioux Property Control Map, February 2011.



PROJECT
 CCR RULE GROUNDWATER MONITORING PROGRAM

CLIENT
 AMEREN MISSOURI
 SIOUX ENERGY CENTER

	DESIGN	JSI	YYYY-MM-DD	2023-03-29
	PREPARED	JSI	PROJECT No.	23009
	REVIEW	GTM	FIGURE 1	
	APPROVED	MNH		

Path: C:\Users\Graham\OneDrive\Rocksmith Geoenvironmenting\LLC\202307 - Ameren GW - Documents\400 - Drawings - Figures\4.3-SEC\4.3.2 - Production\Other Maps\Figure 1 - SEC Well Locations.aprx

1 in. IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:

Appendix A

Laboratory Analytical Data

January 18, 2023

Jeffrey Ingram
WSP Golder
701 Emerson Road
Suite 250
Saint Louis, MO 63141

RE: Project: AMEREN SEC SCPB
Pace Project No.: 60419218

Dear Jeffrey Ingram:

Enclosed are the analytical results for sample(s) received by the laboratory on January 05, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Kansas City

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jamie Church
jamie.church@pacelabs.com
314-838-7223
Project Manager

Enclosures

cc: Mark Haddock, Golder Associates
Lisa Meyer, Ameren
Grant Morey, WSP Golder
Ann Muehlfarth, WSP Golder
Eric Schneider, WSP Golder



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: AMEREN SEC SCPB

Pace Project No.: 60419218

Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219

Missouri Inorganic Drinking Water Certification #: 10090

Arkansas Drinking Water

Arkansas Certification #: 22-031-0

Illinois Certification #: 2000302021-3

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212023-1

Oklahoma Certification #: 2022-057

Florida: Cert E871149 SEKS WET

Texas Certification #: T104704407-21-15

Utah Certification #: KS000212022-12

Illinois Certification #: 004592

Kansas Field Laboratory Accreditation: # E-92587

Missouri SEKS Micro Certification: 10070

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: AMEREN SEC SCPB

Pace Project No.: 60419218

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60419218001	S-LMW-1S	Water	01/03/23 16:51	01/05/23 03:55
60419218002	S-SCPB-FB-1	Water	01/03/23 16:51	01/05/23 03:55
60419218003	S-LMW-3S	Water	01/04/23 08:45	01/05/23 03:55
60419218004	S-LMW-5S	Water	01/04/23 09:40	01/05/23 03:55
60419218005	S-SCPB-DUP-1	Water	01/04/23 00:00	01/05/23 03:55
60419218006	S-LMW-7S	Water	01/04/23 10:28	01/05/23 03:55

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN SEC SCPB

Pace Project No.: 60419218

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60419218001	S-LMW-1S	EPA 200.7	ALH	1	PASI-K
		EPA 300.0	RKA	2	PASI-K
60419218002	S-SCPB-FB-1	EPA 200.7	ALH	1	PASI-K
		EPA 300.0	RKA	2	PASI-K
60419218003	S-LMW-3S	EPA 200.7	ALH	1	PASI-K
60419218004	S-LMW-5S	EPA 200.7	ALH	1	PASI-K
		EPA 300.0	RKA	2	PASI-K
60419218005	S-SCPB-DUP-1	EPA 200.7	ALH	1	PASI-K
		EPA 300.0	RKA	2	PASI-K
60419218006	S-LMW-7S	EPA 200.7	ALH	1	PASI-K
		EPA 300.0	RKA	2	PASI-K

PASI-K = Pace Analytical Services - Kansas City

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN SEC SCPB

Pace Project No.: 60419218

Sample: S-LMW-1S **Lab ID: 60419218001** Collected: 01/03/23 16:51 Received: 01/05/23 03:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Calcium	96400	ug/L	200	26.5	1	01/06/23 07:40	01/13/23 10:50	7440-70-2	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Fluoride	<0.12	mg/L	0.20	0.12	1		01/06/23 17:10	16984-48-8	
Sulfate	97.8	mg/L	10.0	5.5	10		01/09/23 20:12	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN SEC SCPB

Pace Project No.: 60419218

Sample: S-SCPB-FB-1 **Lab ID: 60419218002** Collected: 01/03/23 16:51 Received: 01/05/23 03:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Calcium	<26.5	ug/L	200	26.5	1	01/06/23 07:40	01/13/23 10:52	7440-70-2	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Fluoride	<0.12	mg/L	0.20	0.12	1		01/06/23 17:37	16984-48-8	
Sulfate	<0.55	mg/L	1.0	0.55	1		01/06/23 17:37	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN SEC SCPB

Pace Project No.: 60419218

Sample: S-LMW-3S **Lab ID: 60419218003** Collected: 01/04/23 08:45 Received: 01/05/23 03:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Calcium	172000	ug/L	200	26.5	1	01/06/23 07:40	01/13/23 10:54	7440-70-2	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN SEC SCPB

Pace Project No.: 60419218

Sample: S-LMW-5S **Lab ID: 60419218004** Collected: 01/04/23 09:40 Received: 01/05/23 03:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Calcium	253000	ug/L	200	26.5	1	01/09/23 10:58	01/10/23 13:25	7440-70-2	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Fluoride	0.36	mg/L	0.20	0.12	1		01/06/23 17:51	16984-48-8	
Sulfate	815	mg/L	100	55.0	100		01/09/23 20:52	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SEC SCPB

Pace Project No.: 60419218

Sample: S-SCPB-DUP-1 **Lab ID: 60419218005** Collected: 01/04/23 00:00 Received: 01/05/23 03:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Calcium	232000	ug/L	200	26.5	1	01/06/23 07:40	01/13/23 10:56	7440-70-2	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Fluoride	0.36	mg/L	0.20	0.12	1		01/06/23 18:04	16984-48-8	
Sulfate	872	mg/L	100	55.0	100		01/09/23 21:06	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SEC SCPB

Pace Project No.: 60419218

Sample: S-LMW-7S **Lab ID: 60419218006** Collected: 01/04/23 10:28 Received: 01/05/23 03:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Calcium	207000	ug/L	200	26.5	1	01/06/23 07:40	01/13/23 10:58	7440-70-2	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Fluoride	<0.12	mg/L	0.20	0.12	1		01/06/23 18:17	16984-48-8	M1
Sulfate	419	mg/L	100	55.0	100		01/09/23 21:19	14808-79-8	D6

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN SEC SCPB

Pace Project No.: 60419218

QC Batch: 826149

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 Metals, Total

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60419218001, 60419218002, 60419218003, 60419218005, 60419218006

METHOD BLANK: 3281998

Matrix: Water

Associated Lab Samples: 60419218001, 60419218002, 60419218003, 60419218005, 60419218006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	ug/L	<26.5	200	26.5	01/13/23 10:45	

LABORATORY CONTROL SAMPLE: 3281999

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	ug/L	10000	10000	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3282000 3282001

Parameter	Units	60419218006		3282001		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Calcium	ug/L	207000	10000	10000	220000	219000	128	121	70-130	0	20

MATRIX SPIKE SAMPLE: 3282002

Parameter	Units	60419094005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Calcium	ug/L	44100	10000	50800	67	70-130	M1

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN SEC SCPB

Pace Project No.: 60419218

QC Batch: 826357

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 Metals, Total

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60419218004

METHOD BLANK: 3282766

Matrix: Water

Associated Lab Samples: 60419218004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	ug/L	<26.5	200	26.5	01/10/23 13:17	

LABORATORY CONTROL SAMPLE: 3282767

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	ug/L	10000	9750	98	85-115	

MATRIX SPIKE SAMPLE: 3282768

Parameter	Units	60419277002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Calcium	ug/L	76600	10000	84700	81	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3282769 3282770

Parameter	Units	60419332002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	ug/L	288000	10000	10000	293000	299000	45	110	70-130	2	20	M1

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN SEC SCPB

Pace Project No.: 60419218

QC Batch: 826128 Analysis Method: EPA 300.0
 QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
 Laboratory: Pace Analytical Services - Kansas City
 Associated Lab Samples: 60419218001, 60419218002, 60419218004, 60419218005, 60419218006

METHOD BLANK: 3281888 Matrix: Water
 Associated Lab Samples: 60419218001, 60419218002, 60419218004, 60419218005, 60419218006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	<0.12	0.20	0.12	01/06/23 16:44	
Sulfate	mg/L	<0.55	1.0	0.55	01/06/23 16:44	

METHOD BLANK: 3283714 Matrix: Water
 Associated Lab Samples: 60419218001, 60419218002, 60419218004, 60419218005, 60419218006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	<0.12	0.20	0.12	01/09/23 19:45	
Sulfate	mg/L	<0.55	1.0	0.55	01/09/23 19:45	

LABORATORY CONTROL SAMPLE: 3281889

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.5	102	90-110	
Sulfate	mg/L	5	4.7	95	90-110	

LABORATORY CONTROL SAMPLE: 3283715

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.4	97	90-110	
Sulfate	mg/L	5	4.7	94	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3281890 3281891

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60419218006 Result	Spike Conc.	Spike Conc.	Result						
Fluoride	mg/L	<0.12	2.5	2.5	1.9	1.9	76	74	80-120	2	15 M1
Sulfate	mg/L	419	500	500	929	881	102	92	80-120	5	15

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QUALITY CONTROL DATA

Project: AMEREN SEC SCPB

Pace Project No.: 60419218

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3281893												3281894	
Parameter	Units	60419220001 Result	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual		
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD		RPD	
Fluoride	mg/L	<0.12	2.5	2.5	2.5	2.5	97	100	80-120	3	15		
Sulfate	mg/L	33.7	5	5	39.3	39.5	113	116	80-120	0	15 E		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3281896												3281897	
Parameter	Units	60419222001 Result	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual		
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD		RPD	
Fluoride	mg/L	<1.2	25	25	28.0	28.3	112	113	80-120	1	15		
Sulfate	mg/L	40.3	50	50	92.6	93.2	105	106	80-120	1	15		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3281899												3281900	
Parameter	Units	60419223002 Result	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual		
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD		RPD	
Fluoride	mg/L	<0.62	12.5	12.5	14.9	14.3	119	113	80-120	5	15		
Sulfate	mg/L	38.0	25	25	66.3	65.1	113	108	80-120	2	15		

SAMPLE DUPLICATE: 3281892							
Parameter	Units	60419218006 Result	Dup Result	RPD	Max RPD	Qualifiers	
Fluoride	mg/L	<0.12	<0.12		15		
Sulfate	mg/L	419	319	27	15 D6		

SAMPLE DUPLICATE: 3281895							
Parameter	Units	60419220001 Result	Dup Result	RPD	Max RPD	Qualifiers	
Fluoride	mg/L	<0.12	<0.12		15		
Sulfate	mg/L	33.7	33.7	0	15 E		

SAMPLE DUPLICATE: 3281898							
Parameter	Units	60419222001 Result	Dup Result	RPD	Max RPD	Qualifiers	
Fluoride	mg/L	<1.2	<1.2		15		
Sulfate	mg/L	40.3	39.0	3	15		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN SEC SCPB

Pace Project No.: 60419218

SAMPLE DUPLICATE: 3281901

Parameter	Units	60419223002 Result	Dup Result	RPD	Max RPD	Qualifiers
Fluoride	mg/L	<0.62	<0.62		15	
Sulfate	mg/L	38.0	37.4	1	15	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: AMEREN SEC SCPB

Pace Project No.: 60419218

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

E Analyte concentration exceeded the calibration range. The reported result is estimated.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SEC SCPB

Pace Project No.: 60419218

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60419218001	S-LMW-1S	EPA 200.7	826149	EPA 200.7	826170
60419218002	S-SCPFB-FB-1	EPA 200.7	826149	EPA 200.7	826170
60419218003	S-LMW-3S	EPA 200.7	826149	EPA 200.7	826170
60419218004	S-LMW-5S	EPA 200.7	826357	EPA 200.7	826466
60419218005	S-SCPFB-DUP-1	EPA 200.7	826149	EPA 200.7	826170
60419218006	S-LMW-7S	EPA 200.7	826149	EPA 200.7	826170
60419218001	S-LMW-1S	EPA 300.0	826128		
60419218002	S-SCPFB-FB-1	EPA 300.0	826128		
60419218004	S-LMW-5S	EPA 300.0	826128		
60419218005	S-SCPFB-DUP-1	EPA 300.0	826128		
60419218006	S-LMW-7S	EPA 300.0	826128		

REPORT OF LABORATORY ANALYSIS

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WO#: 60419218



60419218



DC#_Title: ENV-FRM-LENE-0009_Sample

Revision: 2

Effective Date: 01/12/2022

Client Name: Golden Associates

Courier: FedEx UPS VIA Clay PEX ECI Pace Xroads Client Other

Tracking #: _____ Pace Shipping Label Used? Yes No

Custody Seal on Cooler/Box Present: Yes No Seals intact: Yes No

Packing Material: Bubble Wrap Bubble Bags Foam None Other

Thermometer Used: T296 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 1.5 Corr. Factor -0.1 Corrected 1.4

Date and initials of person examining contents:

PV 1/5/22

Temperature should be above freezing to 6°C

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Samples contain multiple phases? Matrix: <u>WT</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
Containers requiring pH preservation in compliance? (HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT#: <u>67187</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Cyanide water sample checks:	
Lead acetate strip turns dark? (Record only)	<input type="checkbox"/> Yes <input type="checkbox"/> No
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

List sample IDs, volumes, lot #'s of preservative and the date/time added.

Client Notification/ Resolution: Copy COC to Client? Y N Field Data Required? Y N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____



CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 1

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company: Golder Associates USA Inc.		Report To: Jeffrey Ingram		Attention:	
Address: 701 Emerson Rd, Ste 250		Copy To: Eric Schneider, Grant Morey		Company Name: Golder Associates USA, Inc.	
Creve Coeur, MO 63141		Purchase Order No.:		Address:	
Email To: jeffrey_ingram@golder.com		Project Name: Ameren		Pace Quote Reference:	
Phone: 636-724-9191		Project Number: GL153140604 - SCRB		Pace Project Manager: Jamie Church	
Requested Due Date/TAT: Standard				Pace Profile #: 9285	
				REGULATORY AGENCY	
				<input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER	
				Site Location	
				STATE: MO	

ITEM #	Valid Matrix Codes MATRIX CODE DW DRINKING WATER WW WASTE WATER P PRODUCT SL SOILSOLID OL OIL WP AR OT TS	SAMPLE ID (A-Z, 0-9 / .)	Sample IDs MUST BE UNIQUE	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Requested Analysis Filtered (Y/N)										Residual Chlorine (Y/N)	Pace Project No. / Lab I.D.								
				COMPOSITE START	COMPOSITE END/GRAB			DATE	TIME	Analysis Test	Preservatives	Unpreserved	H ₂ O ₂	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃			Methanol	Other	Calcium	Chloride	Fluoride	Sulfate	TDS	
1		S-LMW-1S		13123	11051		2	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N		60419218	BP2U
2		S-SCRB-FB-1		14123	1651		2	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			
3		S-LMW-3S		14123	845		1	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			
4		S-LMW-5S		14123	940		2	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			
5		S-SCRB-D40-1		14123	1028		2	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			
6		S-LMW-7S		14123	828		2	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			
7		S-SCRB-MS-1		14123	828		2	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			
8		S-SCRB-MS0-1		14123	828		2	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			
9																											
10																											
11																											
12																											

RELIQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS				
						Temp in °C	Received on	Custody	Sealed Cooler	Samples Intact
Eric Clark	1/4/23	1230	Jeff Clark	1/4/23	1230	1.4	Y	Y	Y	Y
Eric Clark	1/4/23	1235	Jeff Clark	1/5/23	0355	1.4	Y	Y	Y	Y

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: Sand Brakes
 SIGNATURE of SAMPLER: [Signature]

DATE SIGNED (MM/DD/YYYY): 1/4/23



MEMORANDUM

DATE January 20, 2023

Project No. 153140604.0003

TO Project File
WSP USA Inc.

CC Amanda Derhake, Jeff Ingram

FROM Rahel Pommerenke

EMAIL rahel.pommerenke@wsp.com

DATA VALIDATION SUMMARY, SIOUX ENERGY CENTER – SCPB – VERIFICATION SAMPLING - DATA PACKAGE 60419218

The following is a summary of instances where quality control criteria in the functional guidelines were not met and data qualification was required:

- When a compound was detected in a sample result between the MDL and the PQL the results were recorded at the detection value and qualified as estimates (J).
- When duplicate criterion was not met, the associated sample result was qualified as an estimate (J for detects, UJ for non-detects).
- When matrix spike/matrix spike duplicate (MS/MSD) criterion was not met, the associated sample result was qualified as an estimate (J, J+ for estimates biased high, and J- for estimates biased low).

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: WSP USA Inc.
 Project Name: Ameren SEC - SCPB VS
 Reviewer: R.Pommerenke

Project Manager: J. Ingram
 Project Number: 153140604
 Validation Date: 1/20/2023

Laboratory: Pace Analytical Services SDG #: 60419218
 Analytical Method (type and no.): EPA 200.7 (Total Metals); EPA 300.0 (Anions)
 Matrix: Air Soil/Sed. Water Waste
 Sample Names S-LMW-1S, S-SCPB-FB-1, S-LMW-3S, S-LMW-5S, S-SCPB-DUP-1, S-LMW-7S

NOTE: Please provide calculation in Comment areas or on the back (if on the back please indicate in comment areas).

Field Information	YES	NO	NA	COMMENTS
a) Sampling dates noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>1/3/2023 - 1/4/2023</u>
b) Sampling team indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>JAB/PCS</u>
c) Sample location noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
d) Sample depth indicated (Soils)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u></u>
e) Sample type indicated (grab/composite)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Grab</u>
f) Field QC noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See notes.</u>
g) Field parameters collected (note types)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>pH, Sp.Cond, ORP, Temp, DO, Turb</u>
h) Field Calibration within control limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
i) Notations of unacceptable field conditions/performances from field logs or field notes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u></u>
j) Does the laboratory narrative indicate deficiencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u></u>
Note Deficiencies: <u></u>				

Chain-of-Custody (COC)	YES	NO	NA	COMMENTS
a) Was the COC properly completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
b) Was the COC signed by both field and laboratory personnel?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
c) Were samples received in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>

General (reference QAPP or Method)	YES	NO	NA	COMMENTS
a) Were hold times met for sample pretreatment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
b) Were hold times met for sample analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
c) Were the correct preservatives used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
d) Was the correct method used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
e) Were appropriate reporting limits achieved?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
f) Were any sample dilutions noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See notes.</u>
g) Were any matrix problems noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See notes.</u>

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Blanks	YES	NO	NA	COMMENTS
a) Were analytes detected in the method blank(s)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
b) Were analytes detected in the field blank(s)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	S-SCPFB-FB-1 @ S-LMW-1S
c) Were analytes detected in the equipment blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
d) Were analytes detected in the trip blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Laboratory Control Sample (LCS)	YES	NO	NA	COMMENTS
a) Was a LCS analyzed once per SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b) Were the proper analytes included in the LCS?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c) Was the LCS accuracy criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Duplicates	YES	NO	NA	COMMENTS
a) Were field duplicates collected (note original and duplicate sample names)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	S-SCPFB-DUP-1 @ S-LMW-5S
b) Were field dup. precision criteria met (note RPD)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Max RPD (8.66%) < 20%
c) Were lab duplicates analyzed (note original and duplicate samples)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
d) Were lab dup. precision criteria met (note RPD)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See notes.

Blind Standards	YES	NO	NA	COMMENTS
a) Was a blind standard used (indicate name, analytes included and concentrations)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b) Was the %D within control limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Matrix Spike/Matrix Spike Duplicate (MS/MSD)	YES	NO	NA	COMMENTS
a) Was MS accuracy criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See notes.
Recovery could not be calculated since sample contained high concentration of analyte?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b) Was MSD accuracy criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Recovery could not be calculated since sample contained high concentration of analyte?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	See notes.
c) Were MS/MSD precision criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Comments/Notes:

Dilutions:

Sulfate analyzed at a dilution. No qualification necessary.

Duplicates:

Laboratory Duplicate 3281892: RPD (27%) exceeds max RPD (15%) for sulfate: qualified as estimate. Associated with 60419218006.

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Comments/Notes:

MS/MSD:

3282002: MS % recovery low for Calcium. Performed on unrelated sample: no qualification necessary.

3282769/3282770: MS % recovery low for Calcium. Performed on unrelated sample: no qualification necessary.

3281890/3281891: MS/MSD % recovery low for Fluoride. Associated with S-LMW-7S.

June 21, 2023

Mark Haddock
Rocksmith Geoengineering, LLC.
5233 Roanoke Drive
Saint Charles, MO 63304

RE: Project: AMEREN SCPB
Pace Project No.: 60428109

Dear Mark Haddock:

Enclosed are the analytical results for sample(s) received by the laboratory between May 03, 2023 and May 10, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Kansas City

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jamie Church
jamie.church@pacelabs.com
314-838-7223
Project Manager

Enclosures

cc: Jeffrey Ingram, Rocksmith Geoengineering, LLC.
Grant Morey, Rocksmith Geoengineering, LLC.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: AMEREN SCPB

Pace Project No.: 60428109

Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219

Missouri Inorganic Drinking Water Certification #: 10090

Arkansas Drinking Water

Arkansas Certification #: 88-00679

Illinois Certification #: 2000302023-5

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212023-1

Oklahoma Certification #: 2022-057

Florida: Cert E871149 SEKS WET

Texas Certification #: T104704407-22-16

Utah Certification #: KS000212022-12

Illinois Certification #: 004592

Kansas Field Laboratory Accreditation: # E-92587

Missouri SEKS Micro Certification: 10070

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: AMEREN SCPB

Pace Project No.: 60428109

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60428109001	S-LMW-3S	Water	05/05/23 12:28	05/08/23 04:42
60428109002	S-LMW-FB-1	Water	05/05/23 12:38	05/08/23 04:42
60428109003	S-LMW-7S	Water	05/08/23 16:49	05/10/23 05:00
60428109004	S-LMW-8S	Water	05/08/23 17:34	05/10/23 05:00
60428109005	S-LMW-9S	Water	05/08/23 14:45	05/10/23 05:00
60428109006	S-LMW-DUP-1	Water	05/08/23 00:00	05/10/23 05:00
60428109007	S-LMW-DUP-2	Water	05/08/23 00:00	05/10/23 05:00
60428109008	S-LMW-FB-2	Water	05/08/23 17:44	05/10/23 05:00
60427703017	S-LMW-1S	Water	05/08/23 12:28	05/10/23 05:00
60427703018	S-LMW-2S	Water	05/08/23 15:49	05/10/23 05:00
60427703012	S-LMW-4S	Water	05/05/23 13:35	05/08/23 04:42
60427703019	S-LMW-5S	Water	05/09/23 09:27	05/10/23 05:00
60427703020	S-LMW-6S	Water	05/09/23 10:15	05/10/23 05:00
60427703001	S-BMW-1S	Water	05/02/23 09:51	05/03/23 05:05
60427703002	S-BMW-3S	Water	05/02/23 11:32	05/03/23 05:05

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN SCPB

Pace Project No.: 60428109

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60428109001	S-LMW-3S	EPA 200.7	JXD	7	PASI-K
		SM 2320B	JS2	1	PASI-K
		SM 2540C	MLD	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60428109002	S-LMW-FB-1	EPA 200.7	JXD	7	PASI-K
		SM 2320B	JS2	1	PASI-K
		SM 2540C	MLD	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60428109003	S-LMW-7S	EPA 200.7	JXD	7	PASI-K
		SM 2320B	JS2	1	PASI-K
		SM 2540C	MLD	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60428109004	S-LMW-8S	EPA 200.7	JXD	7	PASI-K
		SM 2320B	JS2	1	PASI-K
		SM 2540C	MLD	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60428109005	S-LMW-9S	EPA 200.7	JXD	7	PASI-K
		SM 2320B	JS2	1	PASI-K
		SM 2540C	MLD	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60428109006	S-LMW-DUP-1	EPA 200.7	JXD	7	PASI-K
		SM 2320B	JS2	1	PASI-K
		SM 2540C	MLD	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60428109007	S-LMW-DUP-2	EPA 200.7	JXD	7	PASI-K
		SM 2320B	JS2	1	PASI-K
		SM 2540C	MLD	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60428109008	S-LMW-FB-2	EPA 200.7	JXD	7	PASI-K
		SM 2320B	JS2	1	PASI-K
		SM 2540C	MLD	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60427703017	S-LMW-1S	EPA 200.7	JXD	7	PASI-K
		SM 2320B	JS2	1	PASI-K
		SM 2540C	MLD	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60427703018	S-LMW-2S	EPA 200.7	JXD	7	PASI-K

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN SCPB

Pace Project No.: 60428109

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60427703012	S-LMW-4S	SM 2320B	JS2	1	PASI-K
		SM 2540C	MLD	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
		EPA 200.7	JXD	7	PASI-K
		SM 2320B	JS2	1	PASI-K
		SM 2540C	MLD	1	PASI-K
60427703019	S-LMW-5S	EPA 300.0	CRN2	3	PASI-K
		EPA 200.7	JXD	7	PASI-K
		SM 2320B	JS2	1	PASI-K
		SM 2540C	MLD	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
		EPA 200.7	JXD	7	PASI-K
60427703020	S-LMW-6S	SM 2320B	JS2	1	PASI-K
		SM 2540C	MLD	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
		EPA 200.7	JXD	7	PASI-K
		SM 2320B	JS2	1	PASI-K
		SM 2540C	MLD	1	PASI-K
60427703001	S-BMW-1S	EPA 300.0	CRN2	3	PASI-K
		EPA 200.7	JXD	7	PASI-K
		SM 2320B	JS2	1	PASI-K
		SM 2540C	CRN2	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
		EPA 200.7	JXD	7	PASI-K
60427703002	S-BMW-3S	SM 2320B	JS2	1	PASI-K
		SM 2540C	CRN2	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K

PASI-K = Pace Analytical Services - Kansas City

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN SCPB

Pace Project No.: 60428109

Sample: S-LMW-3S **Lab ID: 60428109001** Collected: 05/05/23 12:28 Received: 05/08/23 04:42 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Boron	215	ug/L	100	6.4	1	05/11/23 12:31	05/17/23 07:46	7440-42-8	
Calcium	185000	ug/L	200	26.9	1	05/11/23 12:31	05/17/23 07:46	7440-70-2	
Iron	51.5	ug/L	50.0	9.1	1	05/11/23 12:31	05/17/23 07:46	7439-89-6	
Magnesium	40000	ug/L	50.0	20.1	1	05/11/23 12:31	05/17/23 07:46	7439-95-4	
Manganese	18.3	ug/L	5.0	0.39	1	05/11/23 12:31	05/17/23 07:46	7439-96-5	
Potassium	4690	ug/L	500	69.7	1	05/11/23 12:31	05/17/23 07:46	7440-09-7	
Sodium	19200	ug/L	500	115	1	05/11/23 12:31	05/17/23 07:46	7440-23-5	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	559	mg/L	20.0	10.5	1		05/09/23 13:52		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	692	mg/L	13.3	13.3	1		05/12/23 08:27		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	52.4	mg/L	20.0	10.5	20		05/18/23 17:34	16887-00-6	B
Fluoride	<0.12	mg/L	0.20	0.12	1		05/18/23 17:22	16984-48-8	
Sulfate	43.7	mg/L	20.0	11.0	20		05/18/23 17:34	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN SCPB

Pace Project No.: 60428109

Sample: S-LMW-FB-1 **Lab ID: 60428109002** Collected: 05/05/23 12:38 Received: 05/08/23 04:42 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Boron	<6.4	ug/L	100	6.4	1	05/11/23 12:31	05/17/23 07:48	7440-42-8	
Calcium	57.4J	ug/L	200	26.9	1	05/11/23 12:31	05/17/23 07:48	7440-70-2	
Iron	<9.1	ug/L	50.0	9.1	1	05/11/23 12:31	05/17/23 07:48	7439-89-6	
Magnesium	<20.1	ug/L	50.0	20.1	1	05/11/23 12:31	05/17/23 07:48	7439-95-4	
Manganese	<0.39	ug/L	5.0	0.39	1	05/11/23 12:31	05/17/23 07:48	7439-96-5	
Potassium	<69.7	ug/L	500	69.7	1	05/11/23 12:31	05/17/23 07:48	7440-09-7	
Sodium	<115	ug/L	500	115	1	05/11/23 12:31	05/17/23 07:48	7440-23-5	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	<10.5	mg/L	20.0	10.5	1		05/09/23 14:08		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	<5.0	mg/L	5.0	5.0	1		05/12/23 08:27		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	<0.53	mg/L	1.0	0.53	1		05/18/23 17:47	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		05/18/23 17:47	16984-48-8	
Sulfate	<0.55	mg/L	1.0	0.55	1		05/18/23 17:47	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPB

Pace Project No.: 60428109

Sample: S-LMW-7S **Lab ID: 60428109003** Collected: 05/08/23 16:49 Received: 05/10/23 05:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Boron	3010	ug/L	100	6.4	1	05/11/23 12:31	05/17/23 07:50	7440-42-8	
Calcium	204000	ug/L	200	26.9	1	05/11/23 12:31	05/17/23 07:50	7440-70-2	
Iron	<9.1	ug/L	50.0	9.1	1	05/11/23 12:31	05/17/23 07:50	7439-89-6	
Magnesium	58200	ug/L	50.0	20.1	1	05/11/23 12:31	05/17/23 07:50	7439-95-4	
Manganese	566	ug/L	5.0	0.39	1	05/11/23 12:31	05/17/23 07:50	7439-96-5	
Potassium	4050	ug/L	500	69.7	1	05/11/23 12:31	05/17/23 07:50	7440-09-7	
Sodium	16500	ug/L	500	115	1	05/11/23 12:31	05/17/23 07:50	7440-23-5	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	394	mg/L	20.0	10.5	1		05/11/23 13:24		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	1080	mg/L	13.3	13.3	1		05/15/23 08:27		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	31.0	mg/L	20.0	10.5	20		05/19/23 17:53	16887-00-6	B
Fluoride	<0.12	mg/L	0.20	0.12	1		05/19/23 17:41	16984-48-8	
Sulfate	382	mg/L	50.0	27.5	50		05/20/23 10:16	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPB

Pace Project No.: 60428109

Sample: S-LMW-8S **Lab ID: 60428109004** Collected: 05/08/23 17:34 Received: 05/10/23 05:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Boron	4300	ug/L	100	6.4	1	05/11/23 12:31	05/17/23 07:52	7440-42-8	
Calcium	222000	ug/L	200	26.9	1	05/11/23 12:31	05/17/23 07:52	7440-70-2	
Iron	36.8J	ug/L	50.0	9.1	1	05/11/23 12:31	05/17/23 07:52	7439-89-6	
Magnesium	58300	ug/L	50.0	20.1	1	05/11/23 12:31	05/17/23 07:52	7439-95-4	
Manganese	1060	ug/L	5.0	0.39	1	05/11/23 12:31	05/17/23 07:52	7439-96-5	
Potassium	4570	ug/L	500	69.7	1	05/11/23 12:31	05/17/23 07:52	7440-09-7	
Sodium	48900	ug/L	500	115	1	05/11/23 12:31	05/17/23 07:52	7440-23-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	376	mg/L	20.0	10.5	1		05/11/23 13:42		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1220	mg/L	13.3	13.3	1		05/15/23 08:28		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	80.5	mg/L	20.0	10.5	20		05/19/23 18:18	16887-00-6	B
Fluoride	<0.12	mg/L	0.20	0.12	1		05/19/23 18:06	16984-48-8	
Sulfate	458	mg/L	50.0	27.5	50		05/20/23 10:28	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPB

Pace Project No.: 60428109

Sample: S-LMW-9S **Lab ID: 60428109005** Collected: 05/08/23 14:45 Received: 05/10/23 05:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Boron	1180	ug/L	100	6.4	1	05/11/23 12:31	05/17/23 07:54	7440-42-8	
Calcium	156000	ug/L	200	26.9	1	05/11/23 12:31	05/17/23 07:54	7440-70-2	M1
Iron	18.7J	ug/L	50.0	9.1	1	05/11/23 12:31	05/17/23 07:54	7439-89-6	
Magnesium	50000	ug/L	50.0	20.1	1	05/11/23 12:31	05/17/23 07:54	7439-95-4	
Manganese	379	ug/L	5.0	0.39	1	05/11/23 12:31	05/17/23 07:54	7439-96-5	
Potassium	4960	ug/L	500	69.7	1	05/11/23 12:31	05/17/23 07:54	7440-09-7	
Sodium	43000	ug/L	500	115	1	05/11/23 12:31	05/17/23 07:54	7440-23-5	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	422	mg/L	20.0	10.5	1		05/11/23 13:49		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	853	mg/L	13.3	13.3	1		05/15/23 08:28		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	70.1	mg/L	20.0	10.5	20		05/19/23 16:58	16887-00-6	B
Fluoride	<0.12	mg/L	0.20	0.12	1		05/19/23 16:05	16984-48-8	
Sulfate	171	mg/L	20.0	11.0	20		05/19/23 16:58	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPB

Pace Project No.: 60428109

Sample: S-LMW-DUP-1 **Lab ID: 60428109006** Collected: 05/08/23 00:00 Received: 05/10/23 05:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Boron	3000	ug/L	100	6.4	1	05/11/23 12:31	05/17/23 08:07	7440-42-8	
Calcium	206000	ug/L	200	26.9	1	05/11/23 12:31	05/17/23 08:07	7440-70-2	
Iron	<9.1	ug/L	50.0	9.1	1	05/11/23 12:31	05/17/23 08:07	7439-89-6	
Magnesium	58600	ug/L	50.0	20.1	1	05/11/23 12:31	05/17/23 08:07	7439-95-4	
Manganese	558	ug/L	5.0	0.39	1	05/11/23 12:31	05/17/23 08:07	7439-96-5	
Potassium	4060	ug/L	500	69.7	1	05/11/23 12:31	05/17/23 08:07	7440-09-7	
Sodium	16600	ug/L	500	115	1	05/11/23 12:31	05/17/23 08:07	7440-23-5	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	404	mg/L	20.0	10.5	1		05/11/23 14:03		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	1060	mg/L	13.3	13.3	1		05/15/23 08:28		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	30.1	mg/L	20.0	10.5	20		05/19/23 18:44	16887-00-6	B
Fluoride	<0.12	mg/L	0.20	0.12	1		05/19/23 18:31	16984-48-8	
Sulfate	362	mg/L	20.0	11.0	20		05/19/23 18:44	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPB

Pace Project No.: 60428109

Sample: S-LMW-DUP-2 **Lab ID: 60428109007** Collected: 05/08/23 00:00 Received: 05/10/23 05:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Boron	4090	ug/L	100	6.4	1	05/11/23 12:31	05/17/23 08:09	7440-42-8	
Calcium	215000	ug/L	200	26.9	1	05/11/23 12:31	05/17/23 08:09	7440-70-2	
Iron	<9.1	ug/L	50.0	9.1	1	05/11/23 12:31	05/17/23 08:09	7439-89-6	
Magnesium	57000	ug/L	50.0	20.1	1	05/11/23 12:31	05/17/23 08:09	7439-95-4	
Manganese	1070	ug/L	5.0	0.39	1	05/11/23 12:31	05/17/23 08:09	7439-96-5	
Potassium	4340	ug/L	500	69.7	1	05/11/23 12:31	05/17/23 08:09	7440-09-7	
Sodium	46700	ug/L	500	115	1	05/11/23 12:31	05/17/23 08:09	7440-23-5	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	370	mg/L	20.0	10.5	1		05/11/23 14:09		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	1200	mg/L	13.3	13.3	1		05/15/23 08:28		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	69.6	mg/L	20.0	10.5	20		05/19/23 19:09	16887-00-6	B
Fluoride	<0.12	mg/L	0.20	0.12	1		05/19/23 18:56	16984-48-8	
Sulfate	455	mg/L	50.0	27.5	50		05/20/23 10:41	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPB

Pace Project No.: 60428109

Sample: S-LMW-FB-2 **Lab ID: 60428109008** Collected: 05/08/23 17:44 Received: 05/10/23 05:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Boron	<6.4	ug/L	100	6.4	1	05/11/23 12:31	05/17/23 08:11	7440-42-8	
Calcium	40.1J	ug/L	200	26.9	1	05/11/23 12:31	05/17/23 08:11	7440-70-2	
Iron	<9.1	ug/L	50.0	9.1	1	05/11/23 12:31	05/17/23 08:11	7439-89-6	
Magnesium	<20.1	ug/L	50.0	20.1	1	05/11/23 12:31	05/17/23 08:11	7439-95-4	
Manganese	0.40J	ug/L	5.0	0.39	1	05/11/23 12:31	05/17/23 08:11	7439-96-5	
Potassium	<69.7	ug/L	500	69.7	1	05/11/23 12:31	05/17/23 08:11	7440-09-7	
Sodium	<115	ug/L	500	115	1	05/11/23 12:31	05/17/23 08:11	7440-23-5	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	<10.5	mg/L	20.0	10.5	1		05/11/23 14:16		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	80.0	mg/L	5.0	5.0	1		05/15/23 08:29		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	<0.53	mg/L	1.0	0.53	1		05/19/23 19:47	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		05/19/23 19:47	16984-48-8	
Sulfate	<0.55	mg/L	1.0	0.55	1		05/19/23 19:47	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPB

Pace Project No.: 60428109

Sample: S-LMW-1S **Lab ID: 60427703017** Collected: 05/08/23 12:28 Received: 05/10/23 05:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Boron	659	ug/L	100	6.4	1	05/11/23 13:50	05/26/23 16:09	7440-42-8	
Calcium	90500	ug/L	200	26.9	1	05/11/23 13:50	05/26/23 16:09	7440-70-2	
Iron	15.6J	ug/L	50.0	9.1	1	05/11/23 13:50	05/26/23 16:09	7439-89-6	
Magnesium	22500	ug/L	50.0	20.1	1	05/11/23 13:50	05/26/23 16:09	7439-95-4	
Manganese	48.9	ug/L	5.0	0.39	1	05/11/23 13:50	05/26/23 16:09	7439-96-5	
Potassium	5970	ug/L	500	69.7	1	05/11/23 13:50	05/26/23 16:09	7440-09-7	
Sodium	19000	ug/L	500	115	1	05/11/23 13:50	05/26/23 16:09	7440-23-5	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	226	mg/L	20.0	10.5	1		05/11/23 12:43		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	559	mg/L	10.0	10.0	1		05/15/23 08:26		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	45.0	mg/L	20.0	10.5	20		05/25/23 17:07	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		05/25/23 16:54	16984-48-8	
Sulfate	99.4	mg/L	20.0	11.0	20		05/25/23 17:07	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPB

Pace Project No.: 60428109

Sample: S-LMW-2S **Lab ID: 60427703018** Collected: 05/08/23 15:49 Received: 05/10/23 05:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Boron	9800	ug/L	100	6.4	1	05/11/23 13:50	05/26/23 16:11	7440-42-8	
Calcium	169000	ug/L	200	26.9	1	05/11/23 13:50	05/26/23 16:11	7440-70-2	
Iron	73.4	ug/L	50.0	9.1	1	05/11/23 13:50	05/26/23 16:11	7439-89-6	
Magnesium	29900	ug/L	50.0	20.1	1	05/11/23 13:50	05/26/23 16:11	7439-95-4	
Manganese	389	ug/L	5.0	0.39	1	05/11/23 13:50	05/26/23 16:11	7439-96-5	
Potassium	8750	ug/L	500	69.7	1	05/11/23 13:50	05/26/23 16:11	7440-09-7	
Sodium	70300	ug/L	500	115	1	05/11/23 13:50	05/26/23 16:11	7440-23-5	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	296	mg/L	20.0	10.5	1		05/11/23 12:50		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	908	mg/L	13.3	13.3	1		05/15/23 08:26		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	119	mg/L	20.0	10.5	20		05/25/23 17:32	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		05/25/23 17:19	16984-48-8	
Sulfate	281	mg/L	20.0	11.0	20		05/25/23 17:32	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPB

Pace Project No.: 60428109

Sample: S-LMW-4S **Lab ID: 60427703012** Collected: 05/05/23 13:35 Received: 05/08/23 04:42 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Boron	758	ug/L	100	6.4	1	05/11/23 13:50	05/26/23 16:07	7440-42-8	
Calcium	186000	ug/L	200	26.9	1	05/11/23 13:50	05/26/23 16:07	7440-70-2	
Iron	18.6J	ug/L	50.0	9.1	1	05/11/23 13:50	05/26/23 16:07	7439-89-6	
Magnesium	43100	ug/L	50.0	20.1	1	05/11/23 13:50	05/26/23 16:07	7439-95-4	
Manganese	51.1	ug/L	5.0	0.39	1	05/11/23 13:50	05/26/23 16:07	7439-96-5	
Potassium	4950	ug/L	500	69.7	1	05/11/23 13:50	05/26/23 16:07	7440-09-7	
Sodium	11500	ug/L	500	115	1	05/11/23 13:50	05/26/23 16:07	7440-23-5	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	592	mg/L	20.0	10.5	1		05/09/23 14:24		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	656	mg/L	13.3	13.3	1		05/12/23 08:27		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	7.2	mg/L	1.0	0.53	1		05/25/23 14:23	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		05/25/23 14:23	16984-48-8	
Sulfate	60.7	mg/L	20.0	11.0	20		05/25/23 14:36	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPB

Pace Project No.: 60428109

Sample: S-LMW-5S **Lab ID: 60427703019** Collected: 05/09/23 09:27 Received: 05/10/23 05:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Boron	16200	ug/L	100	6.4	1	05/11/23 13:50	05/26/23 16:13	7440-42-8	
Calcium	238000	ug/L	200	26.9	1	05/11/23 13:50	05/26/23 16:13	7440-70-2	
Iron	77.2	ug/L	50.0	9.1	1	05/11/23 13:50	05/26/23 16:13	7439-89-6	1e
Magnesium	45000	ug/L	50.0	20.1	1	05/11/23 13:50	05/26/23 16:13	7439-95-4	
Manganese	1520	ug/L	5.0	0.39	1	05/11/23 13:50	05/26/23 16:13	7439-96-5	
Potassium	4620	ug/L	500	69.7	1	05/11/23 13:50	05/26/23 16:13	7440-09-7	
Sodium	174000	ug/L	500	115	1	05/11/23 13:50	05/26/23 16:13	7440-23-5	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	328	mg/L	20.0	10.5	1		05/11/23 15:17		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	2490	mg/L	20.0	20.0	1		05/16/23 13:57		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	16.5	mg/L	1.0	0.53	1		05/26/23 13:05	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		05/26/23 13:05	16984-48-8	
Sulfate	757	mg/L	100	55.0	100		05/30/23 20:58	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPB

Pace Project No.: 60428109

Sample: S-LMW-6S **Lab ID: 60427703020** Collected: 05/09/23 10:15 Received: 05/10/23 05:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Boron	18000	ug/L	100	6.4	1	05/11/23 13:50	05/26/23 16:15	7440-42-8	
Calcium	263000	ug/L	200	26.9	1	05/11/23 13:50	05/26/23 16:15	7440-70-2	
Iron	25.6J	ug/L	50.0	9.1	1	05/11/23 13:50	05/26/23 16:15	7439-89-6	
Magnesium	58900	ug/L	50.0	20.1	1	05/11/23 13:50	05/26/23 16:15	7439-95-4	
Manganese	427	ug/L	5.0	0.39	1	05/11/23 13:50	05/26/23 16:15	7439-96-5	
Potassium	4590	ug/L	500	69.7	1	05/11/23 13:50	05/26/23 16:15	7440-09-7	
Sodium	79300	ug/L	500	115	1	05/11/23 13:50	05/26/23 16:15	7440-23-5	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	570	mg/L	20.0	10.5	1		05/15/23 09:48		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	418	mg/L	20.0	20.0	1		05/16/23 13:57		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	2.7	mg/L	1.0	0.53	1		05/26/23 13:30	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		05/26/23 13:30	16984-48-8	
Sulfate	512	mg/L	50.0	27.5	50		05/30/23 21:11	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPB

Pace Project No.: 60428109

Sample: S-BMW-1S **Lab ID: 60427703001** Collected: 05/02/23 09:51 Received: 05/03/23 05:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Boron	64.8J	ug/L	100	6.4	1	05/04/23 12:37	05/23/23 09:21	7440-42-8	
Calcium	184000	ug/L	200	26.9	1	05/04/23 12:37	05/23/23 09:21	7440-70-2	
Iron	<9.1	ug/L	50.0	9.1	1	05/04/23 12:37	05/23/23 09:21	7439-89-6	
Magnesium	37100	ug/L	50.0	20.1	1	05/04/23 12:37	05/23/23 09:21	7439-95-4	
Manganese	849	ug/L	5.0	0.39	1	05/04/23 12:37	05/23/23 09:21	7439-96-5	
Potassium	427J	ug/L	500	69.7	1	05/04/23 12:37	05/23/23 09:21	7440-09-7	
Sodium	5130	ug/L	500	115	1	05/04/23 12:37	05/23/23 09:21	7440-23-5	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	576	mg/L	20.0	10.5	1		05/04/23 13:12		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	610	mg/L	10.0	10.0	1		05/08/23 12:51		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	13.1	mg/L	1.0	0.53	1		05/24/23 18:29	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		05/24/23 18:29	16984-48-8	
Sulfate	37.7	mg/L	20.0	11.0	20		05/24/23 18:42	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPB

Pace Project No.: 60428109

Sample: S-BMW-3S **Lab ID: 60427703002** Collected: 05/02/23 11:32 Received: 05/03/23 05:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Boron	67.1J	ug/L	100	6.4	1	05/04/23 12:37	05/23/23 09:27	7440-42-8	
Calcium	137000	ug/L	200	26.9	1	05/04/23 12:37	05/23/23 09:27	7440-70-2	
Iron	<9.1	ug/L	50.0	9.1	1	05/04/23 12:37	05/23/23 09:27	7439-89-6	
Magnesium	24400	ug/L	50.0	20.1	1	05/04/23 12:37	05/23/23 09:27	7439-95-4	
Manganese	30.2	ug/L	5.0	0.39	1	05/04/23 12:37	05/23/23 09:27	7439-96-5	
Potassium	426J	ug/L	500	69.7	1	05/04/23 12:37	05/23/23 09:27	7440-09-7	
Sodium	5360	ug/L	500	115	1	05/04/23 12:37	05/23/23 09:27	7440-23-5	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	419	mg/L	20.0	10.5	1		05/04/23 13:20		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	495	mg/L	10.0	10.0	1		05/09/23 10:54		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	12.6	mg/L	1.0	0.53	1		05/24/23 18:54	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		05/24/23 18:54	16984-48-8	
Sulfate	32.4	mg/L	20.0	11.0	20		05/24/23 19:07	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN SCPB

Pace Project No.: 60428109

QC Batch: 845219

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 Metals, Total

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60427703001, 60427703002

METHOD BLANK: 3349216

Matrix: Water

Associated Lab Samples: 60427703001, 60427703002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	<6.4	100	6.4	05/23/23 09:16	
Calcium	ug/L	28.7J	200	26.9	05/23/23 09:16	
Iron	ug/L	9.3J	50.0	9.1	05/23/23 09:16	
Magnesium	ug/L	<20.1	50.0	20.1	05/23/23 09:16	
Manganese	ug/L	1.1J	5.0	0.39	05/23/23 09:16	
Potassium	ug/L	<69.7	500	69.7	05/23/23 09:16	
Sodium	ug/L	<115	500	115	05/23/23 09:16	

LABORATORY CONTROL SAMPLE: 3349217

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	994	99	85-115	
Calcium	ug/L	10000	10500	105	85-115	
Iron	ug/L	10000	10500	105	85-115	
Magnesium	ug/L	10000	10200	102	85-115	
Manganese	ug/L	1000	1030	103	85-115	
Potassium	ug/L	10000	10200	102	85-115	
Sodium	ug/L	10000	10300	103	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3349218 3349219

Parameter	Units	60427703001		60427703007		3349218		3349219		% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec						
Boron	ug/L	64.8J	1000	1000	1050	1050	98	98	70-130	0	20		
Calcium	ug/L	184000	10000	10000	191000	195000	73	109	70-130	2	20		
Iron	ug/L	<9.1	10000	10000	10400	10400	104	104	70-130	0	20		
Magnesium	ug/L	37100	10000	10000	47000	47300	99	102	70-130	1	20		
Manganese	ug/L	849	1000	1000	1860	1890	102	104	70-130	1	20		
Potassium	ug/L	427J	10000	10000	10900	10800	104	104	70-130	0	20		
Sodium	ug/L	5130	10000	10000	15600	15700	104	106	70-130	1	20		

MATRIX SPIKE SAMPLE: 3349220

Parameter	Units	60427703007 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	101	1000	1070	97	70-130	
Calcium	ug/L	132000	10000	139000	75	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN SCPB

Pace Project No.: 60428109

MATRIX SPIKE SAMPLE:		3349220					
Parameter	Units	60427703007 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Iron	ug/L	143	10000	10200	100	70-130	
Magnesium	ug/L	28500	10000	37900	94	70-130	
Manganese	ug/L	216	1000	1200	99	70-130	
Potassium	ug/L	2250	10000	12500	102	70-130	
Sodium	ug/L	5580	10000	15800	102	70-130	

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QUALITY CONTROL DATA

Project: AMEREN SCPB

Pace Project No.: 60428109

QC Batch:	846646	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Total
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60428109001, 60428109002, 60428109003, 60428109004, 60428109005, 60428109006, 60428109007, 60428109008

METHOD BLANK:	3354588	Matrix:	Water
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Associated Lab Samples: 60428109001, 60428109002, 60428109003, 60428109004, 60428109005, 60428109006, 60428109007, 60428109008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	<6.4	100	6.4	05/17/23 07:42	
Calcium	ug/L	<26.9	200	26.9	05/17/23 07:42	
Iron	ug/L	<9.1	50.0	9.1	05/17/23 07:42	
Magnesium	ug/L	<20.1	50.0	20.1	05/17/23 07:42	
Manganese	ug/L	<0.39	5.0	0.39	05/17/23 07:42	
Potassium	ug/L	<69.7	500	69.7	05/17/23 07:42	
Sodium	ug/L	<115	500	115	05/17/23 07:42	

LABORATORY CONTROL SAMPLE: 3354589

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	982	98	85-115	
Calcium	ug/L	10000	10300	103	85-115	
Iron	ug/L	10000	10700	107	85-115	
Magnesium	ug/L	10000	10100	101	85-115	
Manganese	ug/L	1000	1050	105	85-115	
Potassium	ug/L	10000	10100	101	85-115	
Sodium	ug/L	10000	10300	103	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3354590 3354591

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Spike Conc.	Result	Spike Conc.	Result						
Boron	ug/L	1180	1000	1000	2140	2220	96	103	70-130	3	20
Calcium	ug/L	156000	10000	10000	165000	170000	87	143	70-130	3	20 M1
Iron	ug/L	18.7J	10000	10000	10400	11100	104	111	70-130	6	20
Magnesium	ug/L	50000	10000	10000	60200	61800	102	118	70-130	3	20
Manganese	ug/L	379	1000	1000	1410	1450	103	107	70-130	3	20
Potassium	ug/L	4960	10000	10000	15000	15700	101	107	70-130	4	20
Sodium	ug/L	43000	10000	10000	52100	54800	91	118	70-130	5	20

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QUALITY CONTROL DATA

Project: AMEREN SCPB

Pace Project No.: 60428109

QC Batch: 846649

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 Metals, Total

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60427703012, 60427703017, 60427703018, 60427703019, 60427703020

METHOD BLANK: 3354610

Matrix: Water

Associated Lab Samples: 60427703012, 60427703017, 60427703018, 60427703019, 60427703020

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	7.1J	100	6.4	05/26/23 15:39	
Calcium	ug/L	<26.9	200	26.9	05/26/23 15:39	
Iron	ug/L	<9.1	50.0	9.1	05/26/23 15:39	
Magnesium	ug/L	<20.1	50.0	20.1	05/26/23 15:39	
Manganese	ug/L	<0.39	5.0	0.39	05/26/23 15:39	
Potassium	ug/L	<69.7	500	69.7	05/26/23 15:39	
Sodium	ug/L	<115	500	115	05/26/23 15:39	

LABORATORY CONTROL SAMPLE: 3354611

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	1010	101	85-115	
Calcium	ug/L	10000	10700	107	85-115	
Iron	ug/L	10000	10600	106	85-115	
Magnesium	ug/L	10000	10600	106	85-115	
Manganese	ug/L	1000	1020	102	85-115	
Potassium	ug/L	10000	10500	105	85-115	
Sodium	ug/L	10000	10600	106	85-115	

MATRIX SPIKE SAMPLE: 3354612

Parameter	Units	60427703014 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	62.9J	1000	1060	100	70-130	
Calcium	ug/L	116000	10000	125000	93	70-130	
Iron	ug/L	7380	10000	18400	110	70-130	
Magnesium	ug/L	29300	10000	39300	100	70-130	
Manganese	ug/L	468	1000	1460	99	70-130	
Potassium	ug/L	3700	10000	14400	107	70-130	
Sodium	ug/L	7280	10000	17800	105	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3354613 3354614

Parameter	Units	60427703022 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	7900	1000	1000	8860	8640	96	74	70-130	3	20	
Calcium	ug/L	138000	10000	10000	148000	144000	102	62	70-130	3	20 M1	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN SCPB

Pace Project No.: 60428109

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3354613 3354614											
Parameter	Units	60427703022	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD	
Iron	ug/L	9780	10000	10000	20300	19900	105	101	70-130	2	20
Magnesium	ug/L	33900	10000	10000	44200	43000	102	91	70-130	3	20
Manganese	ug/L	1050	1000	1000	2060	2000	101	95	70-130	3	20
Potassium	ug/L	5330	10000	10000	15800	15500	105	102	70-130	2	20
Sodium	ug/L	38100	10000	10000	48400	47000	103	89	70-130	3	20

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QUALITY CONTROL DATA

Project: AMEREN SCPB

Pace Project No.: 60428109

QC Batch: 845171

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60427703001, 60427703002

METHOD BLANK: 3349039

Matrix: Water

Associated Lab Samples: 60427703001, 60427703002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	<10.5	20.0	10.5	05/04/23 11:49	

LABORATORY CONTROL SAMPLE: 3349040

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	500	503	101	90-110	

SAMPLE DUPLICATE: 3349041

Parameter	Units	60427704003 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	198	195	2	10	

SAMPLE DUPLICATE: 3349299

Parameter	Units	60427707001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	160	163	2	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPB

Pace Project No.: 60428109

QC Batch: 846050

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory:

Pace Analytical Services - Kansas City

Associated Lab Samples: 60427703012, 60428109001, 60428109002

METHOD BLANK: 3352397

Matrix: Water

Associated Lab Samples: 60427703012, 60428109001, 60428109002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	<10.5	20.0	10.5	05/09/23 12:18	

LABORATORY CONTROL SAMPLE: 3352398

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	500	500	100	90-110	

SAMPLE DUPLICATE: 3352399

Parameter	Units	60428019003 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	411	411	0	10	

SAMPLE DUPLICATE: 3352400

Parameter	Units	60428109001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	559	568	2	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPB

Pace Project No.: 60428109

QC Batch: 846614

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60427703017, 60427703018, 60427703019, 60428109003, 60428109004, 60428109005, 60428109006, 60428109007, 60428109008

METHOD BLANK: 3354443

Matrix: Water

Associated Lab Samples: 60427703017, 60427703018, 60427703019, 60428109003, 60428109004, 60428109005, 60428109006, 60428109007, 60428109008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	05/11/23 12:33	

LABORATORY CONTROL SAMPLE: 3354444

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	506	101	90-110	

SAMPLE DUPLICATE: 3354445

Parameter	Units	60427704008 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	295	295	0	10	

SAMPLE DUPLICATE: 3354446

Parameter	Units	60428109005 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	422	424	0	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPB

Pace Project No.: 60428109

QC Batch: 847027

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60427703020

METHOD BLANK: 3356266

Matrix: Water

Associated Lab Samples: 60427703020

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	05/15/23 09:32	

LABORATORY CONTROL SAMPLE: 3356267

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	496	99	90-110	

SAMPLE DUPLICATE: 3356268

Parameter	Units	60427703022 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	258	258	0	10	

SAMPLE DUPLICATE: 3356269

Parameter	Units	60428449001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	110	107	2	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPB

Pace Project No.: 60428109

QC Batch: 845831

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60427703001

METHOD BLANK: 3351717

Matrix: Water

Associated Lab Samples: 60427703001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/08/23 12:49	

LABORATORY CONTROL SAMPLE: 3351718

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1020	102	80-120	

SAMPLE DUPLICATE: 3351719

Parameter	Units	60427607001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	3540	3470	2	10	

SAMPLE DUPLICATE: 3351720

Parameter	Units	60427705002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	ND	<5.0		10	

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QUALITY CONTROL DATA

Project: AMEREN SCPB

Pace Project No.: 60428109

QC Batch: 846023

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60427703002

METHOD BLANK: 3352331

Matrix: Water

Associated Lab Samples: 60427703002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/09/23 10:54	

LABORATORY CONTROL SAMPLE: 3352332

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1030	103	80-120	

SAMPLE DUPLICATE: 3352333

Parameter	Units	60427707001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	957	916	4	10	

SAMPLE DUPLICATE: 3352334

Parameter	Units	60427777001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	972	913	6	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPB

Pace Project No.: 60428109

QC Batch:	846772	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60427703012, 60428109001, 60428109002

METHOD BLANK: 3355017 Matrix: Water

Associated Lab Samples: 60427703012, 60428109001, 60428109002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/12/23 08:26	

LABORATORY CONTROL SAMPLE: 3355018

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	993	99	80-120	

SAMPLE DUPLICATE: 3355019

Parameter	Units	60427374001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	2820	2980	6	10	H1

SAMPLE DUPLICATE: 3355020

Parameter	Units	60428270003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	4600	4610	0	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPB

Pace Project No.: 60428109

QC Batch: 846949

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60427703017, 60427703018, 60428109003, 60428109004, 60428109005, 60428109006, 60428109007, 60428109008

METHOD BLANK: 3355827

Matrix: Water

Associated Lab Samples: 60427703017, 60427703018, 60428109003, 60428109004, 60428109005, 60428109006, 60428109007, 60428109008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/15/23 08:24	

LABORATORY CONTROL SAMPLE: 3355828

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1110	111	80-120	

SAMPLE DUPLICATE: 3355829

Parameter	Units	60427704008 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	372	373	0	10	

SAMPLE DUPLICATE: 3355830

Parameter	Units	60428109005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	853	849	0	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN SCPB

Pace Project No.: 60428109

QC Batch: 847232

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60427703019, 60427703020

METHOD BLANK: 3356877

Matrix: Water

Associated Lab Samples: 60427703019, 60427703020

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/16/23 13:56	

LABORATORY CONTROL SAMPLE: 3356878

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1020	102	80-120	

SAMPLE DUPLICATE: 3356879

Parameter	Units	60427703022 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	715	709	1	10	

SAMPLE DUPLICATE: 3356880

Parameter	Units	60428656011 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	136	649	131	10	D6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN SCPB

Pace Project No.: 60428109

QC Batch: 847674

Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60428109001, 60428109002

METHOD BLANK: 3358656

Matrix: Water

Associated Lab Samples: 60428109001, 60428109002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.54J	1.0	0.53	05/18/23 08:38	
Fluoride	mg/L	<0.12	0.20	0.12	05/18/23 08:38	
Sulfate	mg/L	<0.55	1.0	0.55	05/18/23 08:38	

LABORATORY CONTROL SAMPLE: 3358657

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	95	90-110	
Fluoride	mg/L	2.5	2.5	101	90-110	
Sulfate	mg/L	5	5.1	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3358658 3358659

Parameter	Units	60427707001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	147	250	50	384	199	95	104	80-120	63	15	R1
Fluoride	mg/L	ND	2.5	2.5	2.5	2.7	96	103	80-120	7	15	
Sulfate	mg/L	363	250	250	602	609	96	99	80-120	1	15	

SAMPLE DUPLICATE: 3358660

Parameter	Units	60427707001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	147	146	1	15	
Fluoride	mg/L	ND	<0.12		15	
Sulfate	mg/L	363	364	0	15	

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QUALITY CONTROL DATA

Project: AMEREN SCPB

Pace Project No.: 60428109

QC Batch: 847887 Analysis Method: EPA 300.0
 QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
 Laboratory: Pace Analytical Services - Kansas City
 Associated Lab Samples: 60428109003, 60428109004, 60428109006, 60428109007, 60428109008

METHOD BLANK: 3359343 Matrix: Water
 Associated Lab Samples: 60428109003, 60428109004, 60428109006, 60428109007, 60428109008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.55J	1.0	0.53	05/19/23 12:17	
Fluoride	mg/L	<0.12	0.20	0.12	05/19/23 12:17	
Sulfate	mg/L	<0.55	1.0	0.55	05/19/23 12:17	

LABORATORY CONTROL SAMPLE: 3359344

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	94	90-110	
Fluoride	mg/L	2.5	2.5	98	90-110	
Sulfate	mg/L	5	5.0	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3359346 3359347

Parameter	Units	60428237003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	181	100	100	375	343	194	162	80-120	9	15	M1
Fluoride	mg/L	ND	2.5	2.5	2.1	2.1	82	82	80-120	0	15	
Sulfate	mg/L	76.4	100	100	277	249	201	172	80-120	11	15	M1

SAMPLE DUPLICATE: 3359345

Parameter	Units	60428237003 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	181	173	5	15	
Fluoride	mg/L	ND	<0.12		15	
Sulfate	mg/L	76.4	72.9	5	15	

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QUALITY CONTROL DATA

Project: AMEREN SCPB

Pace Project No.: 60428109

QC Batch: 847890

Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60428109005

METHOD BLANK: 3359355

Matrix: Water

Associated Lab Samples: 60428109005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.53J	1.0	0.53	05/19/23 15:38	
Fluoride	mg/L	<0.12	0.20	0.12	05/19/23 15:38	
Sulfate	mg/L	<0.55	1.0	0.55	05/19/23 15:38	

LABORATORY CONTROL SAMPLE: 3359356

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	96	90-110	
Fluoride	mg/L	2.5	2.5	99	90-110	
Sulfate	mg/L	5	5.1	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3359358 3359359

Parameter	Units	60428109005		3359359		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Chloride	mg/L	70.1	100	167	166	97	96	80-120	1	15	
Fluoride	mg/L	<0.12	2.5	2.4	2.2	94	87	80-120	7	15	
Sulfate	mg/L	171	100	279	275	108	104	80-120	1	15	

SAMPLE DUPLICATE: 3359357

Parameter	Units	60428109005 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	70.1	81.1	14	15	
Fluoride	mg/L	<0.12	<0.12		15	
Sulfate	mg/L	171	172	1	15	

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QUALITY CONTROL DATA

Project: AMEREN SCPB

Pace Project No.: 60428109

QC Batch: 848462

Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60427703001, 60427703002

METHOD BLANK: 3361725

Matrix: Water

Associated Lab Samples: 60427703001, 60427703002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	05/24/23 09:13	
Fluoride	mg/L	<0.12	0.20	0.12	05/24/23 09:13	
Sulfate	mg/L	<0.55	1.0	0.55	05/24/23 09:13	

LABORATORY CONTROL SAMPLE: 3361726

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	95	90-110	
Fluoride	mg/L	2.5	2.5	101	90-110	
Sulfate	mg/L	5	5.0	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3361727 3361728

Parameter	Units	60428838004		MS		MSD		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result							
Chloride	mg/L	1.6	5	5	5	6.0	6.2	88	91	80-120	3	15		
Fluoride	mg/L	0.21	2.5	2.5	2.5	2.7	2.7	98	101	80-120	3	15		
Sulfate	mg/L	193	250	250	250	450	427	103	94	80-120	5	15		

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QUALITY CONTROL DATA

Project: AMEREN SCPB
Pace Project No.: 60428109

QC Batch: 849094 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60427703012, 60427703017, 60427703018

METHOD BLANK: 3363879 Matrix: Water
Associated Lab Samples: 60427703012, 60427703017, 60427703018

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	05/25/23 09:21	
Fluoride	mg/L	<0.12	0.20	0.12	05/25/23 09:21	
Sulfate	mg/L	<0.55	1.0	0.55	05/25/23 09:21	

LABORATORY CONTROL SAMPLE: 3363880

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	97	90-110	
Fluoride	mg/L	2.5	2.6	103	90-110	
Sulfate	mg/L	5	5.0	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3363881 3363882

Parameter	Units	60429025007		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	Result	MSD Result	% Rec	% Rec					
Chloride	mg/L	19.0	10	10	28.5	28.8	95	98	80-120	1	15		
Fluoride	mg/L	ND	5	5	4.4	4.5	87	90	80-120	3	15		
Sulfate	mg/L	67.5	10	10	78.6	79.3	112	118	80-120	1	15		

SAMPLE DUPLICATE: 3363883

Parameter	Units	60429025007 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	19.0	19.5	3	15	
Fluoride	mg/L	ND	<0.25		15	
Sulfate	mg/L	67.5	69.2	2	15	

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QUALITY CONTROL DATA

Project: AMEREN SCPB

Pace Project No.: 60428109

QC Batch: 849095

Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60427703019, 60427703020

METHOD BLANK: 3363884

Matrix: Water

Associated Lab Samples: 60427703019, 60427703020

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	05/26/23 06:42	
Fluoride	mg/L	<0.12	0.20	0.12	05/26/23 06:42	
Sulfate	mg/L	<0.55	1.0	0.55	05/26/23 06:42	

LABORATORY CONTROL SAMPLE: 3363885

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	96	90-110	
Fluoride	mg/L	2.5	2.5	101	90-110	
Sulfate	mg/L	5	5.0	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3363887 3363888

Parameter	Units	60429159005		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	Result	MSD Result	% Rec	MSD % Rec					
Chloride	mg/L	1.5	5	5	5.4	5.1	79	73	80-120	6	15	M1	
Fluoride	mg/L	2.0	2.5	2.5	4.3	4.1	89	85	80-120	2	15		
Sulfate	mg/L	648	500	500	1380	1250	146	120	80-120	10	15	M1	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3363889 3363890

Parameter	Units	60427703022		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	Result	MSD Result	% Rec	MSD % Rec					
Chloride	mg/L	43.1	100	100	127	166	84	123	80-120	26	15	M1, R1	
Fluoride	mg/L	<0.12	2.5	2.5	1.7	1.7	68	67	80-120	1	15	M1	
Sulfate	mg/L	249	100	100	349	397	100	149	80-120	13	15	M1	

SAMPLE DUPLICATE: 3363886

Parameter	Units	60429159005 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	1.5	1.5	0	15	
Fluoride	mg/L	2.0	2.1	3	15	
Sulfate	mg/L	648	636	2	15	

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QUALITY CONTROL DATA

Project: AMEREN SCPB

Pace Project No.: 60428109

SAMPLE DUPLICATE: 3363891

Parameter	Units	60427703022 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	43.1	41.8	3	15	
Fluoride	mg/L	<0.12	<0.12		15	
Sulfate	mg/L	249	246	1	15	

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QUALIFIERS

Project: AMEREN SCPB

Pace Project No.: 60428109

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

1e Ferrous Iron result is greater than the total Iron. Data is within laboratory control limits.

B Analyte was detected in the associated method blank.

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

H1 Analysis conducted outside the EPA method holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

R1 RPD value was outside control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SCPB

Pace Project No.: 60428109

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60427703001	S-BMW-1S	EPA 200.7	845219	EPA 200.7	845416
60427703002	S-BMW-3S	EPA 200.7	845219	EPA 200.7	845416
60427703012	S-LMW-4S	EPA 200.7	846649	EPA 200.7	846727
60428109001	S-LMW-3S	EPA 200.7	846646	EPA 200.7	846686
60428109002	S-LMW-FB-1	EPA 200.7	846646	EPA 200.7	846686
60427703017	S-LMW-1S	EPA 200.7	846649	EPA 200.7	846727
60427703018	S-LMW-2S	EPA 200.7	846649	EPA 200.7	846727
60427703019	S-LMW-5S	EPA 200.7	846649	EPA 200.7	846727
60427703020	S-LMW-6S	EPA 200.7	846649	EPA 200.7	846727
60428109003	S-LMW-7S	EPA 200.7	846646	EPA 200.7	846686
60428109004	S-LMW-8S	EPA 200.7	846646	EPA 200.7	846686
60428109005	S-LMW-9S	EPA 200.7	846646	EPA 200.7	846686
60428109006	S-LMW-DUP-1	EPA 200.7	846646	EPA 200.7	846686
60428109007	S-LMW-DUP-2	EPA 200.7	846646	EPA 200.7	846686
60428109008	S-LMW-FB-2	EPA 200.7	846646	EPA 200.7	846686
60427703001	S-BMW-1S	SM 2320B	845171		
60427703002	S-BMW-3S	SM 2320B	845171		
60427703012	S-LMW-4S	SM 2320B	846050		
60428109001	S-LMW-3S	SM 2320B	846050		
60428109002	S-LMW-FB-1	SM 2320B	846050		
60427703017	S-LMW-1S	SM 2320B	846614		
60427703018	S-LMW-2S	SM 2320B	846614		
60427703019	S-LMW-5S	SM 2320B	846614		
60427703020	S-LMW-6S	SM 2320B	847027		
60428109003	S-LMW-7S	SM 2320B	846614		
60428109004	S-LMW-8S	SM 2320B	846614		
60428109005	S-LMW-9S	SM 2320B	846614		
60428109006	S-LMW-DUP-1	SM 2320B	846614		
60428109007	S-LMW-DUP-2	SM 2320B	846614		
60428109008	S-LMW-FB-2	SM 2320B	846614		
60427703001	S-BMW-1S	SM 2540C	845831		
60427703002	S-BMW-3S	SM 2540C	846023		
60427703012	S-LMW-4S	SM 2540C	846772		
60428109001	S-LMW-3S	SM 2540C	846772		
60428109002	S-LMW-FB-1	SM 2540C	846772		
60427703017	S-LMW-1S	SM 2540C	846949		
60427703018	S-LMW-2S	SM 2540C	846949		
60427703019	S-LMW-5S	SM 2540C	847232		
60427703020	S-LMW-6S	SM 2540C	847232		
60428109003	S-LMW-7S	SM 2540C	846949		
60428109004	S-LMW-8S	SM 2540C	846949		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SCPB

Pace Project No.: 60428109

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60428109005	S-LMW-9S	SM 2540C	846949		
60428109006	S-LMW-DUP-1	SM 2540C	846949		
60428109007	S-LMW-DUP-2	SM 2540C	846949		
60428109008	S-LMW-FB-2	SM 2540C	846949		
60427703001	S-BMW-1S	EPA 300.0	848462		
60427703002	S-BMW-3S	EPA 300.0	848462		
60427703012	S-LMW-4S	EPA 300.0	849094		
60428109001	S-LMW-3S	EPA 300.0	847674		
60428109002	S-LMW-FB-1	EPA 300.0	847674		
60427703017	S-LMW-1S	EPA 300.0	849094		
60427703018	S-LMW-2S	EPA 300.0	849094		
60427703019	S-LMW-5S	EPA 300.0	849095		
60427703020	S-LMW-6S	EPA 300.0	849095		
60428109003	S-LMW-7S	EPA 300.0	847887		
60428109004	S-LMW-8S	EPA 300.0	847887		
60428109005	S-LMW-9S	EPA 300.0	847890		
60428109006	S-LMW-DUP-1	EPA 300.0	847887		
60428109007	S-LMW-DUP-2	EPA 300.0	847887		
60428109008	S-LMW-FB-2	EPA 300.0	847887		

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WO#: 60428109



DC#_Title: ENV-FRM-LENE-0009_Sample Co

Revision: 2

Effective Date: 01/12/2022

Issued By: Lenexa

Client Name: Rocksmitz Geoeng

Courier: FedEx UPS VIA Clay PEX ECI Pace Xroads Client Other

Tracking #: _____ Pace Shipping Label Used? Yes No

Custody Seal on Cooler/Box Present: Yes No Seals intact: Yes No

Packing Material: Bubble Wrap Bubble Bags Foam None Other

Thermometer Used: T299 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 0.0 Corr. Factor 10.2 Corrected 0.2

Date and initials of person examining contents:

pv 5/18/23

Temperature should be above freezing to 6°C

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>WT</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT#: <u>67187</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks:		
Lead acetate strip turns dark? (Record only)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____



CHAIN-OF-CUSTODY / Analytical Request Document

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

Section B
 Required Client Information:
 Company: Rocksouth Geoenvironmental Engineers, LLC.
 Address: 5233 Roanoke Drive
 St. Charles, MO 63304
 Email To: mark.haddock@rocksouthgeo.com
 Phone: 314-974-6578
 Requested Due Date/TAT: Standard

Section C
 Invoice Information:
 Attention: _____
 Company Name: Rocksouth
 Address: _____

Section D
 Required Project Information:
 Report To: Mark Haddock
 Copy To: Jeffrey Ingram
 Purchase Order No.: _____
 Project Name: AMEREN SCPB
 Project Number: COC #9

Page: 2 of 2

REGULATORY AGENCY

NPDES	GROUND WATER	DRINKING WATER
UST	RCRA	OTHER _____

Site Location _____ STATE: MO

Section D
 Required Client Information
SAMPLE ID
 (A-Z, 0-9 / -)
 Sample IDs MUST BE UNIQUE

ITEM #	Valid Matrix Codes	Matrix Code	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Analysis Test	Requested Analysis Filtered (Y/N)												Temp in °C	Received on	Sealed Cooler (Y/N)	Samples In tact (Y/N)													
			COMPOSITE START	COMPOSITE END/GRAB					Y/N	↓	↑	Chloride/Fluoride/Sulfate	App III and Cat/An Metals	Alkalinity	TDS	Appendix IV Metals **	Mercury	Radium 226	Radium 228	Ferrous/Ferric Iron					SM4500-S2D Sulfide	Residual Chlorine (Y/N)											
1	DRINKING WATER	DW																																			
2	WASTE WATER	WW																																			
3	WASTE WATER PRODUCT	WP																																			
4	SOIL/SOLID	SL																																			
5		OL																																			
6		WP																																			
7		AR																																			
8		OT																																			
9		TS																																			
10																																					
11																																					
12																																					

5-5-23 1239
Grant Morey/WSR
5-5-23 1600
Grant Morey/WSR
5/6 0442 P. 2
60428109
 Pace Project No. / Lab I.D.

RELINQUISHED BY / AFFILIATION Grant Morey/WSR **DATE** 5-5-23 **TIME** 1600

ACCEPTED BY / AFFILIATION [Signature] **DATE** 5/6 **TIME** 0442 P. 2

ADDITIONAL COMMENTS
 *App III and Cat/An Metals - EPA 2007.1; B, Ca, Fe, Mg, Mn, K, Na
 ** App IV Metals - EPA 200.7 - Ba, Be, Co, Pb, Li, Mo
 200.8 Metals - Sb, As, Cd, Cr, Se, Tl
 Radium 226/228 to Pace PA

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: Grant Morey
 SIGNATURE OF SAMPLER: [Signature] **DATE Signed (MM/DD/YYYY)** 05/05/23

1/2

Client: Rocksmitz Geo-eng

Profile #

15856-2

Site:

Amren SCRB COC #9

Notes

Do not log S-LMW-45

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other				
1																																		
2																																		
3																																		
4	WT																																	
5																																		
6																																		
7																																		
8																																		
9																																		
10																																		
11																																		
12																																		

Container Codes

Glass	Plastic	Misc.
DG9B 40mL bisulfate clear vial	BP1C 1L NaOH plastic	Wipe/Swab
DG9H 40mL HCl amber vial	BP1N 1L HNO3 plastic	SP5T 120mL Coliform Na Thiosulfate
DG9M 40mL MeOH clear vial	BP1S 1L H2SO4 plastic	ZPLC Ziploc Bag
DG9Q 40mL TSP amber vial	BP1U 1L unreserved plastic	AF Air Filter
DG9S 40mL H2SO4 amber vial	BP1Z 1L NaOH, Zn Acetate	C Air Cassettes
DG9T 40mL Na Thio amber vial	BP2C 500mL NaOH plastic	R Terracore Kit
DG9U 40mL amber unreserved	BP2N 500mL HNO3 plastic	U Summa Can
VG9H 40mL HCl clear vial	BP2S 500mL H2SO4 plastic	
VG9T 40mL Na Thio clear vial	BP2U 500mL unreserved plastic	
VG9U 40mL unreserved clear vial	BP2Z 500mL NaOH, Zn Acetate	
BG1S 1liter H2SO4 clear glass	BP3C 250mL NaOH plastic	
BG1U 1liter unres glass	BP3F 250mL HNO3 plastic - field filtered	WT Water
BG3H 250mL HCL Clear glass	BP3N 250mL HNO3 plastic	SL Solid
BG3U 250mL Unpres Clear glass	BP3U 250mL unreserved plastic	NAL Non-aqueous Liquid
WGDU 16oz clear soil jar	BP3S 250mL H2SO4 plastic	OL OIL
	BP3Z 250mL NaOH, Zn Acetate	WP Wipe
	BP4U 125mL unreserved plastic	DW Drinking Water
	BP4N 125mL HNO3 plastic	
	BP4S 125mL H2SO4 plastic	
	WPDU 16oz unreserved plastic	

Work Order Number:

60428109

2/2

Client: Rocksmith Geoeng

Profile # 15856-2

Site: _____

Notes

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other
1																														
2	WT																		1											
3																														
4																														
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														

Container Codes

	Glass	Plastic	Misc.
DG9B	40mL bisulfate clear vial	BP1C 1L NaOH plastic	Wipe/Swab
DG9H	40mL HCl amber vial	BP1N 1L HNO3 plastic	120mL Coliform Na Thiosulfate
DG9M	40mL MeOH clear vial	BP1S 1L H2SO4 plastic	ZPLC
DG9Q	40mL TSP amber vial	BP1U 1L unpreserved plastic	AF Air Filter
DG9S	40mL H2SO4 amber vial	BP1Z 1L NaOH, Zn Acetate	C Air Cassettes
DG9T	40mL Na Thio amber vial	BP2C 500mL NaOH plastic	R Terracore Kit
DG9U	40mL amber unpreserved	BP2N 500mL HNO3 plastic	U Summa Can
VG9H	40mL HCl clear vial	BP2S 500mL H2SO4 plastic	
VG9T	40mL Na Thio. clear vial	BP2U 500mL unpreserved plastic	
VG9U	40mL unpreserved clear vial	BP2Z 500mL NaOH, Zn Acetate	
BG1S	1liter H2SO4 clear glass	BP3C 250mL NaOH plastic	
BG1U	1liter unpres glass	BP3F 250mL HNO3 plastic - field filtered	WT Water
BG3H	250mL HCL Clear glass	BP3N 250mL HNO3 plastic	SL Solid
BG3U	250mL Unpres Clear glass	BP3U 250mL unpreserved plastic	NAL Non-aqueous Liquid
WGDU	16oz clear soil jar	BP3S 250mL H2SO4 plastic	OL OIL
		BP3Z 250mL NaOH, Zn Acetate	WIP Wipe
		BP4U 125mL unpreserved plastic	DW Drinking Water
		BP4N 125mL HNO3 plastic	
		BP4S 125mL H2SO4 plastic	
		WPDU 16oz unpreserved plastic	

Work Order Number:

60428109



CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: **1** of **1**

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Rocksmith Geoenigneers, LLC.	Report To:	Mark Haddock	Attention:	
Address:	5233 Roanoke Drive	Copy To:	Jeffrey Ingram	Company Name:	Rocksmith
City:	St. Charles, MO 63304	Purchase Order No.:		Address:	
Email To:	mark.haddock@rocksmithgeo.com	Project Name:	AMEREN SCPB	Pace Quote Reference:	
Phone:	314-974-6578	Fax:		Pace Project Manager:	Jamie Church
Requested Due Date/TAT:	Standard	Project Number:	COC #9	Pace Profile #:	15856, line 2

REGULATORY AGENCY		
NPDES	GROUND WATER	DRINKING WATER
UST	RCRA	OTHER
State:	MO	

SAMPLE ID (A-Z, 0-9 / -)	Valid Matrix Codes	MATRIX CODE	COLLECTED		# OF CONTAINERS	Preservatives	Requested Analysis Filtered (Y/N)												Temp in °C	Received on	Custody Sealed Cooler	Samples Intact							
			COMPOSITE START	COMPOSITE ENDIGRAB			Analysis Test	Y	N	Alkalinity	TDS	Appendix IV Metals **	Mercury	Radium 226	Radium 228	Ferrous/Ferric Iron	SM4500-S2D Sulfide	Residual Chlorine (Y/N)											
1	S-LMW-1S	WT G	DATE	TIME	DATE	TIME	Unpreserved	H ₂ O ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other															
2	S-LMW-2S	WT G																											
3	S-LMW-3S	WT G																											
4	S-LMW-4S	WT G																											
5	S-LMW-5S	WT G																											
6	S-LMW-6S	WT G																											
7	S-LMW-7S	WT G																											
8	S-LMW-8S	WT G																											
9	S-LMW-9S	WT G																											
10	S-BMW-1S	WT G	5-23-09	11:51	21	1																							
11	S-BMW-3S	WT G	5-23-09	11:52	21	1																							
12	S-LMW-DUP-1	WT G																											

ADDITIONAL COMMENTS		RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
*App III and Cat/An Metals - EPA 200.7; B, Ca, Fe, Mg, Mn, K, Na		Grant Morey / JWSR	5-23-09	16:00				
** App IV Metals - EPA 200.7; Ba, Be, Co, Pb, Li, Mo								
200.8 Metals - Sr, As, Cd, Cr, Se, Ti								
Radium 226/228 to Pace PA								

SAMPLER NAME AND SIGNATURE		DATE Signed (MM/DD/YYYY): 05/02/23	
PRINT Name of SAMPLER: Grant Morey			
SIGNATURE of SAMPLER: <i>Grant Morey</i>			

60028109
60027703
Pace Project No. / Lab I.D.



DC#_Title: ENV-FRM-LENE-0009_Sample Co

WO#: 60428109
80428109

Revision: 2

Effective Date: 01/12/2022

Issued By: Lenexa

Client Name: Rocksmith Geos

Courier: FedEx UPS VIA Clay PEX ECI Pace Xroads Client Other

Tracking #: _____ Pace Shipping Label Used? Yes No

Custody Seal on Cooler/Box Present: Yes No Seals intact: Yes No

Packing Material: Bubble Wrap Bubble Bags Foam None Other

Thermometer Used: T299 Type of Ice: Ice Blue None

Cooler Temperature (°C): As-read 1.5/0.9/0.9 Corr. Factor +0.2 Corrected 1.7/1.1/0.9

Date and initials of person examining contents:

PV 5/10/23

Temperature should be above freezing to 6°C

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>WT</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT#: <u>67187</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks:		
Lead acetate strip turns dark? (Record only)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

Client Notification/ Resolution: Copy COC to Client? Y N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

1/2

Client: Rocksmitth Geoenig

Profile #

Do not log S-LMW-15/25/55/65

Site:

Notes: Append to 60428109

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other
1																														
2																														
3																														
4																														
5																														
6																														
7	WT																		1				1							
8	WT																		1				1							
9	WT																		3				3							
10																														
11																														
12	WT																		1				1							

Container Codes

	Glass		Plastic	Misc.
DG9B	40mL bisulfate clear vial	WGKU	1L NaOH plastic	I Wipe/Swab
DG9H	40mL HCl amber vial	WGFU	1L HNO3 plastic	SP5T 120mL Collform Na Thiosulfate
DG9M	40mL MeOH clear vial	WG2U	1L H2SO4 plastic	ZPLC Ziploc Bag
DG9Q	40mL TSP amber vial	JGFU	1L unpreserved plastic	AF Air Filter
DG9S	40mL H2SO4 amber vial	AG0U	1L NaOH, Zn Acetate	C Air Cassettes
DG9T	40mL Na Thio amber vial	AG1H	500mL NaOH plastic	R Terracore Kit
DG9U	40mL amber unpreserved	AG1S	500mL HNO3 plastic	U Summa Can
VG9H	40mL HCl clear vial	AG1T	500mL H2SO4 plastic	
VG9T	40mL Na Thio. clear vial	AG1U	500mL unpreserved plastic	
VG9U	40mL unpreserved clear vial	AG2N	500mL NaOH, Zn Acetate	
BG1S	1liter H2SO4 clear glass	AG2S	250mL NaOH plastic	
BG1U	1liter unpres glass	AG3S	250mL HNO3 plastic - field filtered	
BG3H	250mL HCL Clear glass	AG2U	250mL HNO3 plastic	WT Water
BG3U	250mL Unpres Clear glass	AG3U	250mL unpreserved plastic	SL Solid
WGDU	16oz clear soil jar	AG4U	250mL H2SO4 plastic	NAL Non-aqueous Liquid
		AG5U	250mL NaOH, Zn Acetate	OL OIL
			125mL unpreserved plastic	WP Wipe
			125mL HNO3 plastic	DW Drinking Water
			125mL H2SO4 plastic	
			16oz unpreserved plastic	

Work Order Number: 60428109

2/2

Client: Recksmith Green

Profile #

Notes: Append to 60428109

Site:

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other
1	WT																													
2																														
3	WT																													
4																														
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														

Container Codes

	Glass	Plastic	Misc.
DG9B	40mL bisulfate clear vial	BP1C 1L NaOH plastic	I Wipe/Swab
DG9H	40mL HCl amber vial	BP1N 1L HNO3 plastic	SP5T 120mL Coliform Na Thiosulfate
DG9M	40mL MeOH clear vial	BP1S 1L H2SO4 plastic	ZPLC Ziploc Bag
DG9Q	40mL TSP amber vial	BP1U 1L unpreserved plastic	AF Air Filter
DG9S	40mL H2SO4 amber vial	BP1Z 1L NaOH, Zn Acetate	C Air Cassettes
DG9T	40mL Na Thio amber vial	BP2C 500mL NaOH plastic	R Terracore Kit
DG9U	40mL amber unpreserved	BP2N 500mL HNO3 plastic	U Summa Can
VG9H	40mL HCl clear vial	BP2S 500mL H2SO4 plastic	
VG9T	40mL Na Thio clear vial	BP2U 500mL unpreserved plastic	
VG9U	40mL unpreserved clear vial	BP2Z 500mL NaOH, Zn Acetate	
BG1S	1liter H2SO4 clear glass	BP3C 250mL NaOH plastic	
BG1U	1liter unpres glass	BP3F 250mL HNO3 plastic - field filtered	
BG3H	250mL HCl Clear glass	BP3N 250mL HNO3 plastic	WT Water
BG3U	250mL Unpres Clear glass	BP3U 250mL unpreserved plastic	SL Solid
WGDU	16oz clear soil jar	BP3S 250mL H2SO4 plastic	NAL Non-aqueous Liquid
		BP3Z 250mL NaOH, Zn Acetate	OL Oil
		BP4U 125mL unpreserved plastic	WP Wipe
		BP4N 125mL HNO3 plastic	DW Drinking Water
		BP4S 125mL H2SO4 plastic	
		WPDU 16oz unpreserved plastic	

Work Order Number:

60428109



Memorandum

June 27, 2023

To: Project File
Rocksmith Geoengineering, LLC

Project Number: 23009

CC: Mark Haddock, Jeffrey Ingram

From: Grant Morey

Email: Grant.Morey@Rocksmithgeo.com

RE: **Data Validation Summary, Sioux Energy Center – SCPB – Data Package 60428109**

The following is a summary of instances where quality control criteria in the functional guidelines were not met and data qualification was required:

- When a compound was detected in a sample result between the Method Detection Limit (MDL) and Practical Quantification Limit (PQL), the results were recorded at the detection value and qualified as estimates (J).
- When a duplicate criterion was not met, the associated sample result was qualified as an estimate (J for detects, UJ for non-detects).

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Rocksmith Geoengineering
 Project Name: Ameren SCPB
 Reviewer: G. Morey

Project Manager: J. Ingram
 Project Number: 23009
 Validation Date: 6/27/2023

Laboratory: Pace Analytical SDG #: 60428109

Analytical Method (type and no.): EPA 200.7 (Total Metals); SM 2320B (Alkalinity); SM 2540C (TDS); EPA 300.0 (Anions);

Matrix: Air Soil/Sed. Water Waste

Sample Names S-LMW-3S, S-LMW-FB-1, S-LMW-7S, S-LMW-8S, S-LMW-9S, S-LMW-DUP-1, S-LMW-DUP-2, S-LMW-FB-2, S-LMW-1S, S-LMW-2S, S-LMW-4S, S-LMW-5S, S-LMW-6S, S-BMW-1S, S-BMW-3S

NOTE: Please provide calculation in Comment areas or on the back (if on the back please indicate in comment areas).

Field Information	YES	NO	NA	COMMENTS
a) Sampling dates noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>5/2/2023 - 5/9/2023</u>
b) Sampling team indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>GTM</u>
c) Sample location noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
d) Sample depth indicated (Soils)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u></u>
e) Sample type indicated (grab/composite)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Grab</u>
f) Field QC noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</u>
g) Field parameters collected (note types)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>pH, Spec Cond, Turb, Temp, DO, ORP</u>
h) Field Calibration within control limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
i) Notations of unacceptable field conditions/performances from field logs or field notes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u></u>
j) Does the laboratory narrative indicate deficiencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>No lab narrative.</u>

Note Deficiencies: _____

Chain-of-Custody (COC)	YES	NO	NA	COMMENTS
a) Was the COC properly completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
b) Was the COC signed by both field and laboratory personnel?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
c) Were samples received in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>

General (reference QAPP or Method)	YES	NO	NA	COMMENTS
a) Were hold times met for sample pretreatment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
b) Were hold times met for sample analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
c) Were the correct preservatives used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
d) Was the correct method used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
e) Were appropriate reporting limits achieved?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
f) Were any sample dilutions noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</u>
g) Were any matrix problems noted?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u></u>

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Blanks	YES	NO	NA	COMMENTS
a) Were analytes detected in the method blank(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
b) Were analytes detected in the field blank(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
c) Were analytes detected in the equipment blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
d) Were analytes detected in the trip blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Laboratory Control Sample (LCS)	YES	NO	NA	COMMENTS
a) Was a LCS analyzed once per SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b) Were the proper analytes included in the LCS?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c) Was the LCS accuracy criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Duplicates	YES	NO	NA	COMMENTS
a) Were field duplicates collected (note original and duplicate sample names)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
b) Were field dup. precision criteria met (note RPD)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes
c) Were lab duplicates analyzed (note original and duplicate samples)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
d) Were lab dup. precision criteria met (note RPD)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes

Blind Standards	YES	NO	NA	COMMENTS
a) Was a blind standard used (indicate name, analytes included and concentrations)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b) Was the %D within control limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Matrix Spike/Matrix Spike Duplicate (MS/MSD)	YES	NO	NA	COMMENTS
a) Was MS accuracy criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes
Recovery could not be calculated since sample contained high concentration of analyte?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b) Was MSD accuracy criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes
Recovery could not be calculated since sample contained high concentration of analyte?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
c) Were MS/MSD precision criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes

Comments/Notes:

General:

Chloride and/or Sulfate were diluted in several samples; no qualification necessary.

Method Blanks:

3349216: Calcium (28.7J), Iron (9.3J), and Manganese (1.1J). Associated with samples -001 and -002.

Calcium and Manganese results > RL and 10x blank, no qualification necessary. Iron results non-detect, no qualification.

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Comments/Notes:

Method Blanks:

3354610: Boron (7.1J). Associated with samples -012 through -020. Results > RL and 10x blank, no qualification necessary.

3358656: Chloride (0.54J). Associated with samples -001 and -002. Results > RL and 10x blank, no qualification necessary.

3359343: Chloride (0.55J). Associated with samples -003 through -008. Results non-detect or > RL and 10x blank, no qualification necessary.

3359355: Chloride (0.53J). Associated with sample -005. Result > RL and 10x blank, no qualification necessary.

Field Blanks:

S-LMW-FB-1 @ S-LMW-3S: Calcium (57.4J). Result > RL and 10x blank, no qualification necessary.

S-LMW-FB-2 @ S-LMW-8S: Calcium (40.1J), Manganese (0.40J), TDS (80.0). Results > RL and 10x blank, no qualification necessary.

Duplicates:

S-LMW-DUP-1 @ S-LMW-7S: all RPD's within control limits (20%).

S-LMW-DUP-2 @ S-LMW-8S: Iron detected in sample and not detected in duplicate, results qualified as estimates.

3356880: Lab duplicate RPD (131%) exceeds limits, associated with unrelated sample. No qualification necessary.

Lab duplicate Max RPD: 10%: Alkalinity, TDS; 15%: Chloride, Fluoride, Sulfate

MS/MSD:

3354590/3354591: MSD recovery high for Calcium, only one QC indicator out, no qualification necessary.

3354613/3354614: MSD recovery low for Calcium, only one QC indicator out, no qualification necessary.

3358658/3358659: MS/MSD recoveries within limits, RPD exceeds max control limit; only one QC indicator out, no qualification necessary.

3359346/3359347: MS/MSD recoveries for Chloride and Sulfate both high, associated unrelated sample, no qualification necessary.

3363887/3363888: MS/MSD recoveries low for Chloride and high for Sulfate, associated with unrelated sample, no qualification necessary.

3363889/3363890: MSD recovery high and RPD exceeds max limit for Chloride; MS/MSD recovery low for Fluoride; MSD recovery high for Sulfate; associated with unrelated sample, no qualification necessary.

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
S-LMW-8S	Iron	36.8	J	Detected in parent sample, not detected in field duplicate
S-LMW-DUP-2	"	9.1	UJ	"



December 27, 2023

Mark Haddock
Rocksmith Geoengineering, LLC.
2320 Creve Coeur Mill Road
Maryland Heights, MO 63043

RE: Project: AMEREN SCPB
Pace Project No.: 60442101

Dear Mark Haddock:

Enclosed are the analytical results for sample(s) received by the laboratory between November 11, 2023 and November 15, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Kansas City

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jamie Church
jamie.church@pacelabs.com
314-838-7223
Project Manager

Enclosures

cc: Jeffrey Ingram, Rocksmith Geoengineering, LLC.
Grant Morey, Rocksmith Geoengineering, LLC.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: AMEREN SCPB

Pace Project No.: 60442101

Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219

Missouri Inorganic Drinking Water Certification #: 10090

Arkansas Drinking Water

Arkansas Certification #: 88-00679

Illinois Certification #: 2000302023-5

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212023-1

Oklahoma Certification #: 2022-057

Florida: Cert E871149 SEKS WET

Texas Certification #: T104704407-23-17

Utah Certification #: KS000212022-12

Illinois Certification #: 004592

Kansas Field Laboratory Accreditation: # E-92587

Missouri SEKS Micro Certification: 10070

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SAMPLE SUMMARY

Project: AMEREN SCPB

Pace Project No.: 60442101

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60442101001	S-LMW-3S	Water	11/13/23 15:52	11/15/23 05:11
60442101002	S-LMW-7S	Water	11/14/23 11:10	11/15/23 05:11
60442101003	S-LMW-8S	Water	11/14/23 10:30	11/15/23 05:11
60442101004	S-LMW-9S	Water	11/14/23 09:50	11/15/23 05:11
60442101005	S-LMW-DUP-1	Water	11/14/23 08:00	11/15/23 05:11
60442101006	S-LMW-DUP-2	Water	11/14/23 08:00	11/15/23 05:11
60442101007	S-LMW-FB-1	Water	11/14/23 11:07	11/15/23 05:11
60442101008	S-LMW-FB-2	Water	11/14/23 10:27	11/15/23 05:11
60441897009	S-LMW-1S	Water	11/14/23 11:53	11/15/23 05:11
60441897010	S-LMW-2S	Water	11/14/23 09:06	11/15/23 05:11
60441897011	S-LMW-4S	Water	11/14/23 08:30	11/15/23 05:11
60441897012	S-LMW-5S	Water	11/14/23 11:29	11/15/23 05:11
60441897013	S-LMW-6S	Water	11/14/23 12:18	11/15/23 05:11
60441897001	S-BMW-1S	Water	11/10/23 09:57	11/11/23 04:50
60441897002	S-BMW-3S	Water	11/10/23 09:18	11/11/23 04:50

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SAMPLE ANALYTE COUNT

Project: AMEREN SCPB

Pace Project No.: 60442101

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60442101001	S-LMW-3S	EPA 200.7	JXD	7	PASI-K
		SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60442101002	S-LMW-7S	EPA 200.7	JXD	7	PASI-K
		SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60442101003	S-LMW-8S	EPA 200.7	JXD	7	PASI-K
		SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60442101004	S-LMW-9S	EPA 200.7	JXD	7	PASI-K
		SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60442101005	S-LMW-DUP-1	EPA 200.7	JXD	7	PASI-K
		SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60442101006	S-LMW-DUP-2	EPA 200.7	JXD	7	PASI-K
		SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60442101007	S-LMW-FB-1	EPA 200.7	JXD	7	PASI-K
		SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60442101008	S-LMW-FB-2	EPA 200.7	JXD	7	PASI-K
		SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60441897009	S-LMW-1S	EPA 200.7	JXD	7	PASI-K
		SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60441897010	S-LMW-2S	EPA 200.7	JXD	7	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN SCPB

Pace Project No.: 60442101

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60441897011	S-LMW-4S	SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	7	PASI-K
		SM 2320B	BMT	1	PASI-K
60441897012	S-LMW-5S	SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	7	PASI-K
		SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
60441897013	S-LMW-6S	EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	7	PASI-K
		SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60441897001	S-BMW-1S	EPA 200.7	JXD	7	PASI-K
		SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JXD	7	PASI-K
60441897002	S-BMW-3S	SM 2320B	BMT	1	PASI-K
		SM 2540C	ZVF	1	PASI-K
		EPA 300.0	RKA	3	PASI-K

PASI-K = Pace Analytical Services - Kansas City

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ANALYTICAL RESULTS

Project: AMEREN SCPB

Pace Project No.: 60442101

Sample: S-LMW-3S Lab ID: 60442101001 Collected: 11/13/23 15:52 Received: 11/15/23 05:11 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Boron	214	ug/L	100	6.4	1	11/30/23 10:05	12/04/23 10:58	7440-42-8	M1,R1
Calcium	207000	ug/L	200	26.9	1	11/30/23 10:05	12/04/23 10:58	7440-70-2	M1
Iron	77.2	ug/L	50.0	9.1	1	11/30/23 10:05	12/04/23 10:58	7439-89-6	M1,R1
Magnesium	43300	ug/L	50.0	20.1	1	11/30/23 10:05	12/04/23 10:58	7439-95-4	M1,R1
Manganese	124	ug/L	5.0	0.39	1	11/30/23 10:05	12/04/23 10:58	7439-96-5	M1,R1
Potassium	5190	ug/L	500	69.7	1	11/30/23 10:05	12/04/23 10:58	7440-09-7	M1,R1
Sodium	20900	ug/L	500	115	1	11/30/23 10:05	12/04/23 10:58	7440-23-5	M1,R1
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	576	mg/L	20.0	10.5	1		11/22/23 20:02		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	751	mg/L	13.3	13.3	1		11/20/23 13:13		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	62.6	mg/L	20.0	10.5	20		12/12/23 21:24	16887-00-6	H1
Fluoride	<0.12	mg/L	0.20	0.12	1		12/12/23 20:38	16984-48-8	H1,L1
Sulfate	37.0	mg/L	5.0	2.8	5		12/13/23 15:39	14808-79-8	D6,H1

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ANALYTICAL RESULTS

Project: AMEREN SCPB

Pace Project No.: 60442101

Sample: S-LMW-7S **Lab ID: 60442101002** Collected: 11/14/23 11:10 Received: 11/15/23 05:11 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Boron	3690	ug/L	100	6.4	1	11/30/23 10:05	12/04/23 11:04	7440-42-8	
Calcium	204000	ug/L	200	26.9	1	11/30/23 10:05	12/04/23 11:04	7440-70-2	
Iron	<9.1	ug/L	50.0	9.1	1	11/30/23 10:05	12/04/23 11:04	7439-89-6	
Magnesium	56500	ug/L	50.0	20.1	1	11/30/23 10:05	12/04/23 11:04	7439-95-4	
Manganese	581	ug/L	5.0	0.39	1	11/30/23 10:05	12/04/23 11:04	7439-96-5	
Potassium	4070	ug/L	500	69.7	1	11/30/23 10:05	12/04/23 11:04	7440-09-7	
Sodium	17200	ug/L	500	115	1	11/30/23 10:05	12/04/23 11:04	7440-23-5	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	365	mg/L	20.0	10.5	1		11/23/23 13:05		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	980	mg/L	13.3	13.3	1		11/21/23 15:02		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	24.4	mg/L	10.0	5.3	10		12/15/23 10:26	16887-00-6	H1
Fluoride	<0.12	mg/L	0.20	0.12	1		12/14/23 16:01	16984-48-8	H1,L1
Sulfate	416	mg/L	50.0	27.5	50		12/14/23 17:11	14808-79-8	H1

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ANALYTICAL RESULTS

Project: AMEREN SCPB

Pace Project No.: 60442101

Sample: S-LMW-8S **Lab ID: 60442101003** Collected: 11/14/23 10:30 Received: 11/15/23 05:11 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Boron	4970	ug/L	100	6.4	1	11/30/23 10:05	12/04/23 11:06	7440-42-8	
Calcium	233000	ug/L	200	26.9	1	11/30/23 10:05	12/04/23 11:06	7440-70-2	
Iron	29.8J	ug/L	50.0	9.1	1	11/30/23 10:05	12/04/23 11:06	7439-89-6	
Magnesium	57800	ug/L	50.0	20.1	1	11/30/23 10:05	12/04/23 11:06	7439-95-4	
Manganese	1210	ug/L	5.0	0.39	1	11/30/23 10:05	12/04/23 11:06	7439-96-5	
Potassium	4800	ug/L	500	69.7	1	11/30/23 10:05	12/04/23 11:06	7440-09-7	
Sodium	54100	ug/L	500	115	1	11/30/23 10:05	12/04/23 11:06	7440-23-5	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	358	mg/L	20.0	10.5	1		11/23/23 13:11		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	1210	mg/L	20.0	20.0	1		11/21/23 15:02		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	77.8	mg/L	20.0	10.5	20		12/14/23 18:20	16887-00-6	H1
Fluoride	<0.12	mg/L	0.20	0.12	1		12/14/23 17:45	16984-48-8	H1,L1
Sulfate	459	mg/L	50.0	27.5	50		12/14/23 18:32	14808-79-8	H1

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ANALYTICAL RESULTS

Project: AMEREN SCPB

Pace Project No.: 60442101

Sample: S-LMW-9S Lab ID: 60442101004 Collected: 11/14/23 09:50 Received: 11/15/23 05:11 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Boron	1080	ug/L	100	6.4	1	11/30/23 10:05	12/04/23 11:08	7440-42-8	
Calcium	203000	ug/L	200	26.9	1	11/30/23 10:05	12/04/23 11:08	7440-70-2	M1
Iron	11.2J	ug/L	50.0	9.1	1	11/30/23 10:05	12/04/23 11:08	7439-89-6	
Magnesium	67200	ug/L	50.0	20.1	1	11/30/23 10:05	12/04/23 11:08	7439-95-4	M1
Manganese	154	ug/L	5.0	0.39	1	11/30/23 10:05	12/04/23 11:08	7439-96-5	
Potassium	4910	ug/L	500	69.7	1	11/30/23 10:05	12/04/23 11:08	7440-09-7	
Sodium	38600	ug/L	500	115	1	11/30/23 10:05	12/04/23 11:08	7440-23-5	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	537	mg/L	20.0	10.5	1		11/23/23 13:18		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	1050	mg/L	20.0	20.0	1		11/21/23 15:02		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	103	mg/L	20.0	10.5	20		12/14/23 18:55	16887-00-6	H1
Fluoride	<0.12	mg/L	0.20	0.12	1		12/14/23 18:44	16984-48-8	H1,L1
Sulfate	205	mg/L	20.0	11.0	20		12/14/23 18:55	14808-79-8	H1

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ANALYTICAL RESULTS

Project: AMEREN SCPB

Pace Project No.: 60442101

Sample: S-LMW-DUP-1 Lab ID: 60442101005 Collected: 11/14/23 08:00 Received: 11/15/23 05:11 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Boron	1130	ug/L	100	6.4	1	11/30/23 10:05	12/04/23 11:12	7440-42-8	
Calcium	214000	ug/L	200	26.9	1	11/30/23 10:05	12/04/23 11:12	7440-70-2	
Iron	13.1J	ug/L	50.0	9.1	1	11/30/23 10:05	12/04/23 11:12	7439-89-6	
Magnesium	70200	ug/L	50.0	20.1	1	11/30/23 10:05	12/04/23 11:12	7439-95-4	
Manganese	158	ug/L	5.0	0.39	1	11/30/23 10:05	12/04/23 11:12	7439-96-5	
Potassium	5210	ug/L	500	69.7	1	11/30/23 10:05	12/04/23 11:12	7440-09-7	
Sodium	40700	ug/L	500	115	1	11/30/23 10:05	12/04/23 11:12	7440-23-5	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	542	mg/L	20.0	10.5	1		11/27/23 12:31		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	1010	mg/L	20.0	20.0	1		11/21/23 15:02		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	105	mg/L	20.0	10.5	20		12/14/23 19:18	16887-00-6	H1
Fluoride	<0.12	mg/L	0.20	0.12	1		12/14/23 19:07	16984-48-8	H1,L1
Sulfate	208	mg/L	20.0	11.0	20		12/14/23 19:18	14808-79-8	H1

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ANALYTICAL RESULTS

Project: AMEREN SCPB

Pace Project No.: 60442101

Sample: S-LMW-DUP-2 **Lab ID: 60442101006** Collected: 11/14/23 08:00 Received: 11/15/23 05:11 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Boron	3730	ug/L	100	6.4	1	11/30/23 10:05	12/04/23 10:20	7440-42-8	
Calcium	207000	ug/L	200	26.9	1	11/30/23 10:05	12/04/23 10:20	7440-70-2	
Iron	<9.1	ug/L	50.0	9.1	1	11/30/23 10:05	12/04/23 10:20	7439-89-6	
Magnesium	57300	ug/L	50.0	20.1	1	11/30/23 10:05	12/04/23 10:20	7439-95-4	
Manganese	580	ug/L	5.0	0.39	1	11/30/23 10:05	12/04/23 10:20	7439-96-5	
Potassium	4150	ug/L	500	69.7	1	11/30/23 10:05	12/04/23 10:20	7440-09-7	
Sodium	17300	ug/L	500	115	1	11/30/23 10:05	12/04/23 10:20	7440-23-5	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	364	mg/L	20.0	10.5	1		11/24/23 11:02		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	973	mg/L	13.3	13.3	1		11/21/23 15:02		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	26.0	mg/L	10.0	5.3	10		12/15/23 10:59	16887-00-6	H1
Fluoride	<0.12	mg/L	0.20	0.12	1		12/14/23 19:30	16984-48-8	H1,L1
Sulfate	390	mg/L	50.0	27.5	50		12/14/23 19:53	14808-79-8	H1

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ANALYTICAL RESULTS

Project: AMEREN SCPB

Pace Project No.: 60442101

Sample: S-LMW-FB-1 Lab ID: 60442101007 Collected: 11/14/23 11:07 Received: 11/15/23 05:11 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Boron	10.7J	ug/L	100	6.4	1	11/30/23 10:05	12/04/23 10:22	7440-42-8	
Calcium	30.0J	ug/L	200	26.9	1	11/30/23 10:05	12/04/23 10:22	7440-70-2	
Iron	<9.1	ug/L	50.0	9.1	1	11/30/23 10:05	12/04/23 10:22	7439-89-6	
Magnesium	<20.1	ug/L	50.0	20.1	1	11/30/23 10:05	12/04/23 10:22	7439-95-4	
Manganese	<0.39	ug/L	5.0	0.39	1	11/30/23 10:05	12/04/23 10:22	7439-96-5	
Potassium	<69.7	ug/L	500	69.7	1	11/30/23 10:05	12/04/23 10:22	7440-09-7	
Sodium	<115	ug/L	500	115	1	11/30/23 10:05	12/04/23 10:22	7440-23-5	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	<10.5	mg/L	20.0	10.5	1		11/24/23 11:15		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	<5.0	mg/L	5.0	5.0	1		11/21/23 15:02		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	<0.53	mg/L	1.0	0.53	1		12/14/23 20:05	16887-00-6	H1
Fluoride	<0.12	mg/L	0.20	0.12	1		12/14/23 20:05	16984-48-8	H1,L1
Sulfate	<0.55	mg/L	1.0	0.55	1		12/14/23 20:05	14808-79-8	H1

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ANALYTICAL RESULTS

Project: AMEREN SCPB

Pace Project No.: 60442101

Sample: S-LMW-FB-2 Lab ID: 60442101008 Collected: 11/14/23 10:27 Received: 11/15/23 05:11 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Boron	<6.4	ug/L	100	6.4	1	11/30/23 10:05	12/06/23 09:57	7440-42-8	
Calcium	<26.9	ug/L	200	26.9	1	11/30/23 10:05	12/06/23 09:57	7440-70-2	
Iron	<9.1	ug/L	50.0	9.1	1	11/30/23 10:05	12/06/23 09:57	7439-89-6	
Magnesium	<20.1	ug/L	50.0	20.1	1	11/30/23 10:05	12/06/23 09:57	7439-95-4	
Manganese	<0.39	ug/L	5.0	0.39	1	11/30/23 10:05	12/06/23 09:57	7439-96-5	
Potassium	<69.7	ug/L	500	69.7	1	11/30/23 10:05	12/06/23 09:57	7440-09-7	
Sodium	<115	ug/L	500	115	1	11/30/23 10:05	12/06/23 09:57	7440-23-5	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	<10.5	mg/L	20.0	10.5	1		11/24/23 11:18		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	<5.0	mg/L	5.0	5.0	1		11/21/23 15:03		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	<0.53	mg/L	1.0	0.53	1		12/14/23 20:40	16887-00-6	H1
Fluoride	<0.12	mg/L	0.20	0.12	1		12/14/23 20:40	16984-48-8	H1,L1
Sulfate	<0.55	mg/L	1.0	0.55	1		12/14/23 20:40	14808-79-8	H1

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ANALYTICAL RESULTS

Project: AMEREN SCPB

Pace Project No.: 60442101

Sample: S-LMW-1S Lab ID: 60441897009 Collected: 11/14/23 11:53 Received: 11/15/23 05:11 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Boron	1100	ug/L	100	6.4	1	12/04/23 11:18	12/06/23 09:43	7440-42-8	
Calcium	116000	ug/L	200	26.9	1	12/04/23 11:18	12/06/23 09:43	7440-70-2	
Iron	60.8	ug/L	50.0	9.1	1	12/04/23 11:18	12/06/23 09:43	7439-89-6	
Magnesium	28100	ug/L	50.0	20.1	1	12/04/23 11:18	12/06/23 09:43	7439-95-4	
Manganese	80.1	ug/L	5.0	0.39	1	12/04/23 11:18	12/06/23 09:43	7439-96-5	
Potassium	7680	ug/L	500	69.7	1	12/04/23 11:18	12/06/23 09:43	7440-09-7	
Sodium	30200	ug/L	500	115	1	12/04/23 11:18	12/06/23 09:43	7440-23-5	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	283	mg/L	20.0	10.5	1		11/24/23 11:21		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	566	mg/L	10.0	10.0	1		11/21/23 09:50		1e
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	68.8	mg/L	20.0	10.5	20		12/14/23 21:03	16887-00-6	H1
Fluoride	<0.12	mg/L	0.20	0.12	1		12/14/23 20:51	16984-48-8	H1,L1
Sulfate	103	mg/L	20.0	11.0	20		12/14/23 21:03	14808-79-8	H1

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ANALYTICAL RESULTS

Project: AMEREN SCPB

Pace Project No.: 60442101

Sample: S-LMW-2S **Lab ID: 60441897010** Collected: 11/14/23 09:06 Received: 11/15/23 05:11 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Boron	9270	ug/L	100	6.4	1	12/04/23 11:18	12/06/23 09:44	7440-42-8	
Calcium	180000	ug/L	200	26.9	1	12/04/23 11:18	12/06/23 09:44	7440-70-2	
Iron	44.3J	ug/L	50.0	9.1	1	12/04/23 11:18	12/06/23 09:44	7439-89-6	
Magnesium	38800	ug/L	50.0	20.1	1	12/04/23 11:18	12/06/23 09:44	7439-95-4	
Manganese	530	ug/L	5.0	0.39	1	12/04/23 11:18	12/06/23 09:44	7439-96-5	
Potassium	5850	ug/L	500	69.7	1	12/04/23 11:18	12/06/23 09:44	7440-09-7	
Sodium	73900	ug/L	500	115	1	12/04/23 11:18	12/06/23 09:44	7440-23-5	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	341	mg/L	20.0	10.5	1		11/24/23 11:27		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	962	mg/L	5.0	5.0	1		11/21/23 09:50		1e
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	159	mg/L	20.0	10.5	20		12/14/23 21:26	16887-00-6	H1
Fluoride	<0.12	mg/L	0.20	0.12	1		12/14/23 21:14	16984-48-8	H1,L1
Sulfate	221	mg/L	20.0	11.0	20		12/14/23 21:26	14808-79-8	H1

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ANALYTICAL RESULTS

Project: AMEREN SCPB

Pace Project No.: 60442101

Sample: S-LMW-4S Lab ID: 60441897011 Collected: 11/14/23 08:30 Received: 11/15/23 05:11 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Boron	7590	ug/L	100	6.4	1	12/04/23 12:31	12/05/23 09:51	7440-42-8	
Calcium	139000	ug/L	200	26.9	1	12/04/23 12:31	12/05/23 09:51	7440-70-2	
Iron	9420	ug/L	50.0	9.1	1	12/04/23 12:31	12/05/23 09:51	7439-89-6	
Magnesium	35000	ug/L	50.0	20.1	1	12/04/23 12:31	12/05/23 09:51	7439-95-4	
Manganese	1120	ug/L	5.0	0.39	1	12/04/23 12:31	12/05/23 09:51	7439-96-5	
Potassium	5200	ug/L	500	69.7	1	12/04/23 12:31	12/05/23 09:51	7440-09-7	
Sodium	36600	ug/L	500	115	1	12/04/23 12:31	12/05/23 09:51	7440-23-5	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	627	mg/L	20.0	10.5	1		11/24/23 11:33		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	689	mg/L	13.3	13.3	1		11/21/23 09:50		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	5.3	mg/L	1.0	0.53	1		12/14/23 21:38	16887-00-6	H1
Fluoride	<0.12	mg/L	0.20	0.12	1		12/14/23 21:38	16984-48-8	H1,L1
Sulfate	51.8	mg/L	10.0	5.5	10		12/15/23 11:11	14808-79-8	H1

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ANALYTICAL RESULTS

Project: AMEREN SCPB

Pace Project No.: 60442101

Sample: S-LMW-5S **Lab ID: 60441897012** Collected: 11/14/23 11:29 Received: 11/15/23 05:11 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Boron	12100	ug/L	100	6.4	1	12/04/23 12:31	12/05/23 09:53	7440-42-8	
Calcium	214000	ug/L	200	26.9	1	12/04/23 12:31	12/05/23 09:53	7440-70-2	
Iron	132	ug/L	50.0	9.1	1	12/04/23 12:31	12/05/23 09:53	7439-89-6	
Magnesium	44300	ug/L	50.0	20.1	1	12/04/23 12:31	12/05/23 09:53	7439-95-4	
Manganese	1170	ug/L	5.0	0.39	1	12/04/23 12:31	12/05/23 09:53	7439-96-5	
Potassium	6020	ug/L	500	69.7	1	12/04/23 12:31	12/05/23 09:53	7440-09-7	
Sodium	132000	ug/L	500	115	1	12/04/23 12:31	12/05/23 09:53	7440-23-5	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	350	mg/L	20.0	10.5	1		11/24/23 11:40		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	1290	mg/L	20.0	20.0	1		11/21/23 09:50		2e
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	23.8	mg/L	10.0	5.3	10		12/15/23 11:33	16887-00-6	H1
Fluoride	<0.12	mg/L	0.20	0.12	1		12/14/23 22:27	16984-48-8	H1,L1
Sulfate	644	mg/L	100	55.0	100		12/14/23 23:05	14808-79-8	H1

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ANALYTICAL RESULTS

Project: AMEREN SCPB

Pace Project No.: 60442101

Sample: S-LMW-6S **Lab ID: 60441897013** Collected: 11/14/23 12:18 Received: 11/15/23 05:11 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Boron	14700	ug/L	100	6.4	1	12/04/23 12:31	12/05/23 09:55	7440-42-8	
Calcium	235000	ug/L	200	26.9	1	12/04/23 12:31	12/05/23 09:55	7440-70-2	
Iron	98.6	ug/L	50.0	9.1	1	12/04/23 12:31	12/05/23 09:55	7439-89-6	
Magnesium	56900	ug/L	50.0	20.1	1	12/04/23 12:31	12/05/23 09:55	7439-95-4	
Manganese	414	ug/L	5.0	0.39	1	12/04/23 12:31	12/05/23 09:55	7439-96-5	
Potassium	4180	ug/L	500	69.7	1	12/04/23 12:31	12/05/23 09:55	7440-09-7	
Sodium	64300	ug/L	500	115	1	12/04/23 12:31	12/05/23 09:55	7440-23-5	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	410	mg/L	20.0	10.5	1		11/24/23 11:58		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	1290	mg/L	20.0	20.0	1		11/21/23 09:50		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	9.8	mg/L	1.0	0.53	1		12/14/23 23:16	16887-00-6	H1
Fluoride	<0.12	mg/L	0.20	0.12	1		12/14/23 23:16	16984-48-8	H1,L1
Sulfate	586	mg/L	50.0	27.5	50		12/14/23 23:28	14808-79-8	H1

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ANALYTICAL RESULTS

Project: AMEREN SCPB

Pace Project No.: 60442101

Sample: S-BMW-1S **Lab ID: 60441897001** Collected: 11/10/23 09:57 Received: 11/11/23 04:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Boron	57.9J	ug/L	100	6.4	1	11/28/23 12:31	11/29/23 10:15	7440-42-8	
Calcium	136000	ug/L	200	26.9	1	11/28/23 12:31	11/29/23 10:15	7440-70-2	
Iron	57.0	ug/L	50.0	9.1	1	11/28/23 12:31	11/29/23 10:15	7439-89-6	
Magnesium	26600	ug/L	50.0	20.1	1	11/28/23 12:31	11/29/23 10:15	7439-95-4	
Manganese	489	ug/L	5.0	0.39	1	11/28/23 12:31	11/29/23 10:15	7439-96-5	
Potassium	633	ug/L	500	69.7	1	11/28/23 12:31	11/29/23 10:15	7440-09-7	
Sodium	5970	ug/L	500	115	1	11/28/23 12:31	11/29/23 10:15	7440-23-5	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	427	mg/L	20.0	10.5	1		11/21/23 20:50		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	475	mg/L	10.0	10.0	1		11/17/23 14:43		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	7.2	mg/L	1.0	0.53	1		12/07/23 13:26	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/07/23 13:26	16984-48-8	L1
Sulfate	46.9	mg/L	5.0	2.8	5		12/08/23 21:55	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPB

Pace Project No.: 60442101

Sample: S-BMW-3S Lab ID: 60441897002 Collected: 11/10/23 09:18 Received: 11/11/23 04:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Boron	58.9J	ug/L	100	6.4	1	11/28/23 12:31	11/29/23 10:17	7440-42-8	
Calcium	114000	ug/L	200	26.9	1	11/28/23 12:31	11/29/23 10:17	7440-70-2	
Iron	58.0	ug/L	50.0	9.1	1	11/28/23 12:31	11/29/23 10:17	7439-89-6	
Magnesium	20700	ug/L	50.0	20.1	1	11/28/23 12:31	11/29/23 10:17	7439-95-4	
Manganese	211	ug/L	5.0	0.39	1	11/28/23 12:31	11/29/23 10:17	7439-96-5	
Potassium	717	ug/L	500	69.7	1	11/28/23 12:31	11/29/23 10:17	7440-09-7	
Sodium	5960	ug/L	500	115	1	11/28/23 12:31	11/29/23 10:17	7440-23-5	
2320B Alkalinity		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	357	mg/L	20.0	10.5	1		11/21/23 20:55		
2540C Total Dissolved Solids		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	398	mg/L	10.0	10.0	1		11/17/23 14:43		1e
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	13.4	mg/L	1.0	0.53	1		12/07/23 13:49	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		12/07/23 13:49	16984-48-8	L1
Sulfate	12.3	mg/L	1.0	0.55	1		12/07/23 13:49	14808-79-8	

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QUALITY CONTROL DATA

Project: AMEREN SCPB

Pace Project No.: 60442101

QC Batch:	874935	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Total
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60441897001, 60441897002

METHOD BLANK: 3465241 Matrix: Water

Associated Lab Samples: 60441897001, 60441897002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	<6.4	100	6.4	11/29/23 10:04	
Calcium	ug/L	<26.9	200	26.9	11/29/23 10:04	
Iron	ug/L	<9.1	50.0	9.1	11/29/23 10:04	
Magnesium	ug/L	<20.1	50.0	20.1	11/29/23 10:04	
Manganese	ug/L	<0.39	5.0	0.39	11/29/23 10:04	
Potassium	ug/L	<69.7	500	69.7	11/29/23 10:04	
Sodium	ug/L	<115	500	115	11/29/23 10:04	

LABORATORY CONTROL SAMPLE: 3465242

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	935	94	85-115	
Calcium	ug/L	10000	9590	96	85-115	
Iron	ug/L	10000	9850	98	85-115	
Magnesium	ug/L	10000	9550	95	85-115	
Manganese	ug/L	1000	1000	100	85-115	
Potassium	ug/L	10000	9440	94	85-115	
Sodium	ug/L	10000	9780	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3465243 3465244

Parameter	Units	60442540001		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	% Rec	% Rec					
Boron	ug/L	420	1000	1000	1370	1320	95	90	70-130	4	20		
Calcium	ug/L	33500	10000	10000	43100	41500	96	79	70-130	4	20		
Iron	ug/L	992	10000	10000	10800	10400	98	94	70-130	4	20		
Magnesium	ug/L	10500	10000	10000	20000	19300	95	88	70-130	4	20		
Manganese	ug/L	395	1000	1000	1360	1310	96	92	70-130	3	20		
Potassium	ug/L	18900	10000	10000	30300	29400	115	105	70-130	3	20		
Sodium	ug/L	1780000	10000	10000	1810000	1730000	259	-572	70-130	5	20	E,M1	

MATRIX SPIKE SAMPLE: 3465245

Parameter	Units	60442296002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	290	1000	1240	95	70-130	
Calcium	ug/L	104000	10000	112000	83	70-130	

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QUALITY CONTROL DATA

Project: AMEREN SCPB

Pace Project No.: 60442101

MATRIX SPIKE SAMPLE:		3465245					
Parameter	Units	60442296002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Iron	ug/L	270	10000	10100	98	70-130	
Magnesium	ug/L	52900	10000	62400	95	70-130	
Manganese	ug/L	73.5	1000	1070	100	70-130	
Potassium	ug/L	86000	10000	94800	88	70-130	
Sodium	ug/L	212000	10000	219000	67	70-130	M1

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QUALITY CONTROL DATA

Project: AMEREN SCPB

Pace Project No.: 60442101

QC Batch: 875214 Analysis Method: EPA 200.7
 QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
 Laboratory: Pace Analytical Services - Kansas City
 Associated Lab Samples: 60442101001, 60442101002, 60442101003, 60442101004, 60442101005, 60442101006, 60442101007

METHOD BLANK: 3466202 Matrix: Water
 Associated Lab Samples: 60442101001, 60442101002, 60442101003, 60442101004, 60442101005, 60442101006, 60442101007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	<6.4	100	6.4	12/04/23 10:31	
Calcium	ug/L	<26.9	200	26.9	12/04/23 10:31	
Iron	ug/L	<9.1	50.0	9.1	12/04/23 10:31	
Magnesium	ug/L	<20.1	50.0	20.1	12/04/23 10:31	
Manganese	ug/L	<0.39	5.0	0.39	12/04/23 10:31	
Potassium	ug/L	<69.7	500	69.7	12/04/23 10:31	
Sodium	ug/L	<115	500	115	12/04/23 10:31	

LABORATORY CONTROL SAMPLE: 3466203

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	959	96	85-115	
Calcium	ug/L	10000	10200	102	85-115	
Iron	ug/L	10000	9970	100	85-115	
Magnesium	ug/L	10000	9910	99	85-115	
Manganese	ug/L	1000	1010	101	85-115	
Potassium	ug/L	10000	10000	100	85-115	
Sodium	ug/L	10000	10000	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3466205 3466206

Parameter	Units	60442093002		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	Result	MSD Result	% Rec	% Rec					
Boron	ug/L	85.9J	1000	1000	1090	1040	100	95	70-130	5	20		
Calcium	ug/L	123000	10000	10000	136000	132000	130	89	70-130	3	20		
Iron	ug/L	2250	10000	10000	12500	12100	103	99	70-130	3	20		
Magnesium	ug/L	21700	10000	10000	32600	31400	109	97	70-130	4	20		
Manganese	ug/L	431	1000	1000	1470	1420	104	99	70-130	4	20		
Potassium	ug/L	5290	10000	10000	15700	15000	104	97	70-130	5	20		
Sodium	ug/L	4450	10000	10000	14400	13800	99	94	70-130	4	20		

MATRIX SPIKE SAMPLE: 3466207

Parameter	Units	60442101001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	214	1000	1190	98	70-130	
Calcium	ug/L	207000	10000	218000	111	70-130	

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QUALITY CONTROL DATA

Project: AMEREN SCPB

Pace Project No.: 60442101

MATRIX SPIKE SAMPLE: 3466207		60442101001	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Iron	ug/L	77.2	10000	10200	101	70-130	
Magnesium	ug/L	43300	10000	53100	98	70-130	
Manganese	ug/L	124	1000	1150	103	70-130	
Potassium	ug/L	5190	10000	15400	102	70-130	
Sodium	ug/L	20900	10000	31000	102	70-130	

MATRIX SPIKE SAMPLE: 3466209		60442101004	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Boron	ug/L	1080	1000	2130	106	70-130	
Calcium	ug/L	203000	10000	226000	232	70-130	M1
Iron	ug/L	11.2J	10000	10300	103	70-130	
Magnesium	ug/L	67200	10000	80700	136	70-130	M1
Manganese	ug/L	154	1000	1200	104	70-130	
Potassium	ug/L	4910	10000	15700	108	70-130	
Sodium	ug/L	38600	10000	51200	126	70-130	

SAMPLE DUPLICATE: 3467972		60442101001	Dup		Max	
Parameter	Units	Result	Result	RPD	RPD	Qualifiers
Boron	ug/L	214	215	0	20	
Calcium	ug/L	207000	206000	0	20	
Iron	ug/L	77.2	81.2	5	19	
Magnesium	ug/L	43300	43100	1	20	
Manganese	ug/L	124	125	1	12	
Potassium	ug/L	5190	5160	1	20	
Sodium	ug/L	20900	20700	1	20	

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QUALITY CONTROL DATA

Project: AMEREN SCPB

Pace Project No.: 60442101

QC Batch: 875218

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 Metals, Total

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60442101008

METHOD BLANK: 3466217

Matrix: Water

Associated Lab Samples: 60442101008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	<6.4	100	6.4	12/06/23 09:53	
Calcium	ug/L	<26.9	200	26.9	12/06/23 09:53	
Iron	ug/L	<9.1	50.0	9.1	12/06/23 09:53	
Magnesium	ug/L	<20.1	50.0	20.1	12/06/23 09:53	
Manganese	ug/L	<0.39	5.0	0.39	12/06/23 09:53	
Potassium	ug/L	<69.7	500	69.7	12/06/23 09:53	
Sodium	ug/L	<115	500	115	12/06/23 09:53	

LABORATORY CONTROL SAMPLE: 3466218

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	945	94	85-115	
Calcium	ug/L	10000	9670	97	85-115	
Iron	ug/L	10000	9780	98	85-115	
Magnesium	ug/L	10000	9480	95	85-115	
Manganese	ug/L	1000	1020	102	85-115	
Potassium	ug/L	10000	9300	93	85-115	
Sodium	ug/L	10000	9990	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3466219 3466220

Parameter	Units	60442105001		3466220		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Boron	ug/L	93.7J	1000	1000	1040	1040	95	94	70-130	0	20
Calcium	ug/L	117000	10000	10000	120000	122000	30	45	70-130	1	20 M1
Iron	ug/L	<9.1	10000	10000	9720	9850	97	98	70-130	1	20
Magnesium	ug/L	30400	10000	10000	38400	38700	80	83	70-130	1	20
Manganese	ug/L	695	1000	1000	1660	1690	96	99	70-130	2	20
Potassium	ug/L	5880	10000	10000	15300	15400	95	95	70-130	0	20
Sodium	ug/L	4970	10000	10000	14900	15000	99	100	70-130	1	20

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3466221 3466222

Parameter	Units	60442112001		3466222		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Boron	ug/L	165	1000	1000	1160	1110	99	94	70-130	5	20

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QUALITY CONTROL DATA

Project: AMEREN SCPB

Pace Project No.: 60442101

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3466221 3466222												
Parameter	Units	60442112001		MS	MSD	MS		MSD		% Rec Limits	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec				
Calcium	ug/L	157000	10000	10000	165000	155000	81	-24	70-130	7	20	M1
Iron	ug/L	11.0J	10000	10000	10200	9820	102	98	70-130	4	20	
Magnesium	ug/L	36400	10000	10000	46200	43200	99	68	70-130	7	20	M1
Manganese	ug/L	355	1000	1000	1400	1340	104	98	70-130	5	20	
Potassium	ug/L	10700	10000	10000	20900	19900	103	93	70-130	5	20	
Sodium	ug/L	43300	10000	10000	53600	50600	103	72	70-130	6	20	

MATRIX SPIKE SAMPLE: 3466223							
Parameter	Units	60442112004	Spike	MS	MS	% Rec	Qualifiers
		Result	Conc.	Result	% Rec	Limits	
Boron	ug/L	82.0J	1000	1050	97	70-130	
Calcium	ug/L	133000	10000	137000	47	70-130	M1
Iron	ug/L	278	10000	10400	101	70-130	
Magnesium	ug/L	27800	10000	36500	87	70-130	
Manganese	ug/L	484	1000	1510	102	70-130	
Potassium	ug/L	6670	10000	16500	98	70-130	
Sodium	ug/L	4300	10000	14600	103	70-130	

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QUALITY CONTROL DATA

Project: AMEREN SCPB

Pace Project No.: 60442101

QC Batch:	875578	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Total
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60441897009, 60441897010

METHOD BLANK: 3467639 Matrix: Water

Associated Lab Samples: 60441897009, 60441897010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	<6.4	100	6.4	12/06/23 09:29	
Calcium	ug/L	<26.9	200	26.9	12/06/23 09:29	
Iron	ug/L	<9.1	50.0	9.1	12/06/23 09:29	
Magnesium	ug/L	<20.1	50.0	20.1	12/06/23 09:29	
Manganese	ug/L	<0.39	5.0	0.39	12/06/23 09:29	
Potassium	ug/L	<69.7	500	69.7	12/06/23 09:29	
Sodium	ug/L	<115	500	115	12/06/23 09:29	

LABORATORY CONTROL SAMPLE: 3467640

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	971	97	85-115	
Calcium	ug/L	10000	9990	100	85-115	
Iron	ug/L	10000	10300	103	85-115	
Magnesium	ug/L	10000	9890	99	85-115	
Manganese	ug/L	1000	1050	105	85-115	
Potassium	ug/L	10000	9470	95	85-115	
Sodium	ug/L	10000	10200	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3467641 3467642

Parameter	Units	60442112007		3467641		3467642		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Result						
Boron	ug/L	75.9J	1000	1000	1060	1030	99	96	70-130	3	20		
Calcium	ug/L	120000	10000	10000	163000	155000	431	353	70-130	5	20	M1	
Iron	ug/L	243	10000	10000	9930	9640	97	94	70-130	3	20		
Magnesium	ug/L	25100	10000	10000	57800	55200	327	302	70-130	5	20	M1	
Manganese	ug/L	433	1000	1000	2070	2000	163	157	70-130	3	20	M1	
Potassium	ug/L	6150	10000	10000	16500	16000	103	99	70-130	3	20		
Sodium	ug/L	3840	10000	10000	19000	18400	151	146	70-130	3	20	M1	

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QUALITY CONTROL DATA

Project: AMEREN SCPB

Pace Project No.: 60442101

QC Batch: 875648 Analysis Method: EPA 200.7
 QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
 Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60441897011, 60441897012, 60441897013

METHOD BLANK: 3467866 Matrix: Water

Associated Lab Samples: 60441897011, 60441897012, 60441897013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	<6.4	100	6.4	12/05/23 09:47	
Calcium	ug/L	<26.9	200	26.9	12/05/23 09:47	
Iron	ug/L	<9.1	50.0	9.1	12/05/23 09:47	
Magnesium	ug/L	<20.1	50.0	20.1	12/05/23 09:47	
Manganese	ug/L	<0.39	5.0	0.39	12/05/23 09:47	
Potassium	ug/L	<69.7	500	69.7	12/05/23 09:47	
Sodium	ug/L	<115	500	115	12/05/23 09:47	

LABORATORY CONTROL SAMPLE: 3467867

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	975	97	85-115	
Calcium	ug/L	10000	10200	102	85-115	
Iron	ug/L	10000	10100	101	85-115	
Magnesium	ug/L	10000	9940	99	85-115	
Manganese	ug/L	1000	1050	105	85-115	
Potassium	ug/L	10000	9710	97	85-115	
Sodium	ug/L	10000	10200	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3467868 3467869

Parameter	Units	60441897015		60441897020		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec						
Boron	ug/L	92.3J	1000	1000	1080	1080	98	99	70-130	1	20		
Calcium	ug/L	270000	10000	10000	280000	284000	105	139	70-130	1	20	M1	
Iron	ug/L	16700	10000	10000	26700	27000	100	103	70-130	1	20		
Magnesium	ug/L	74000	10000	10000	84500	85700	105	117	70-130	1	20		
Manganese	ug/L	1290	1000	1000	2310	2330	102	104	70-130	1	20		
Potassium	ug/L	6010	10000	10000	16300	16600	103	106	70-130	2	20		
Sodium	ug/L	21800	10000	10000	32600	33100	108	113	70-130	2	20		

MATRIX SPIKE SAMPLE: 3467870

Parameter	Units	60441897020 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	58.8J	1000	1040	98	70-130	
Calcium	ug/L	115000	10000	125000	100	70-130	

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QUALITY CONTROL DATA

Project: AMEREN SCPB

Pace Project No.: 60442101

MATRIX SPIKE SAMPLE:		3467870					
Parameter	Units	60441897020 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Iron	ug/L	6050	10000	16400	104	70-130	
Magnesium	ug/L	28400	10000	38800	103	70-130	
Manganese	ug/L	394	1000	1440	104	70-130	
Potassium	ug/L	3250	10000	13400	101	70-130	
Sodium	ug/L	7600	10000	18200	106	70-130	

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QUALITY CONTROL DATA

Project: AMEREN SCPB

Pace Project No.: 60442101

QC Batch: 874278	Analysis Method: SM 2320B
QC Batch Method: SM 2320B	Analysis Description: 2320B Alkalinity
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60441897001, 60441897002

METHOD BLANK: 3462786 Matrix: Water

Associated Lab Samples: 60441897001, 60441897002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	11/21/23 19:16	

LABORATORY CONTROL SAMPLE: 3462787

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	481	96	90-110	

SAMPLE DUPLICATE: 3462788

Parameter	Units	60441589019 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	475	483	2	10	

SAMPLE DUPLICATE: 3462789

Parameter	Units	60441862007 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	232	240	3	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPB

Pace Project No.: 60442101

QC Batch: 874537

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60442101001

METHOD BLANK: 3463835

Matrix: Water

Associated Lab Samples: 60442101001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	11/22/23 19:52	

LABORATORY CONTROL SAMPLE: 3463836

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	487	97	90-110	

SAMPLE DUPLICATE: 3463837

Parameter	Units	60442101001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	576	573	0	10	

SAMPLE DUPLICATE: 3463838

Parameter	Units	60442105001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	363	363	0	10	

SAMPLE DUPLICATE: 3463839

Parameter	Units	60442112001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	428	432	1	10	

SAMPLE DUPLICATE: 3463840

Parameter	Units	60441897015 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	470	471	0	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPB

Pace Project No.: 60442101

QC Batch: 874578

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60442101002, 60442101003, 60442101004

METHOD BLANK: 3464006

Matrix: Water

Associated Lab Samples: 60442101002, 60442101003, 60442101004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	11/23/23 10:53	

LABORATORY CONTROL SAMPLE: 3464007

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	480	96	90-110	

SAMPLE DUPLICATE: 3464008

Parameter	Units	60441897019 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	333	340	2	10	

SAMPLE DUPLICATE: 3464009

Parameter	Units	60442041008 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	183	186	2	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPB

Pace Project No.: 60442101

QC Batch:	874655	Analysis Method:	SM 2320B
QC Batch Method:	SM 2320B	Analysis Description:	2320B Alkalinity
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60441897009, 60441897010, 60441897011, 60441897012, 60441897013, 60442101006, 60442101007, 60442101008

METHOD BLANK: 3464241 Matrix: Water

Associated Lab Samples: 60441897009, 60441897010, 60441897011, 60441897012, 60441897013, 60442101006, 60442101007, 60442101008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	11/24/23 10:52	

LABORATORY CONTROL SAMPLE: 3464242

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	480	96	90-110	

SAMPLE DUPLICATE: 3464243

Parameter	Units	60442101006 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	364	365	0	10	

SAMPLE DUPLICATE: 3464244

Parameter	Units	60442270017 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	305	308	1	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPB

Pace Project No.: 60442101

QC Batch: 874727

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60442101005

METHOD BLANK: 3464569

Matrix: Water

Associated Lab Samples: 60442101005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	11/27/23 12:21	

LABORATORY CONTROL SAMPLE: 3464570

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	483	97	90-110	

SAMPLE DUPLICATE: 3464571

Parameter	Units	60442420001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	383	385	1	10	

SAMPLE DUPLICATE: 3464572

Parameter	Units	60442425001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	447	450	1	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPB

Pace Project No.: 60442101

QC Batch: 873904

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60441897001, 60441897002

METHOD BLANK: 3461231

Matrix: Water

Associated Lab Samples: 60441897001, 60441897002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/17/23 14:43	

LABORATORY CONTROL SAMPLE: 3461232

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	998	100	80-120	

SAMPLE DUPLICATE: 3461233

Parameter	Units	60441897001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	475	462	3	10	

SAMPLE DUPLICATE: 3461753

Parameter	Units	60441898004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	345	366	6	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPB

Pace Project No.: 60442101

QC Batch: 874090

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60442101001

METHOD BLANK: 3462073

Matrix: Water

Associated Lab Samples: 60442101001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/20/23 13:12	

LABORATORY CONTROL SAMPLE: 3462074

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	986	99	80-120	

SAMPLE DUPLICATE: 3462244

Parameter	Units	60442101001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	751	727	3	10	

SAMPLE DUPLICATE: 3462245

Parameter	Units	60442105001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	451	471	4	10	

SAMPLE DUPLICATE: 3462246

Parameter	Units	60442112001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	672	643	4	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPB

Pace Project No.: 60442101

QC Batch:	874253	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60442101002, 60442101003, 60442101004, 60442101005, 60442101006, 60442101007, 60442101008		

METHOD BLANK:	3462669	Matrix:	Water
Associated Lab Samples:	60442101002, 60442101003, 60442101004, 60442101005, 60442101006, 60442101007, 60442101008		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/21/23 15:00	

LABORATORY CONTROL SAMPLE: 3462670						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1010	101	80-120	

SAMPLE DUPLICATE: 3462671						
Parameter	Units	60442041008 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1520	1500	1	10	

SAMPLE DUPLICATE: 3462672						
Parameter	Units	60442041011 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	29.0	38.0	27	10	D6

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QUALITY CONTROL DATA

Project: AMEREN SCPB

Pace Project No.: 60442101

QC Batch:	874254	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60441897009, 60441897010, 60441897011, 60441897012, 60441897013

METHOD BLANK: 3462673 Matrix: Water
 Associated Lab Samples: 60441897009, 60441897010, 60441897011, 60441897012, 60441897013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/21/23 09:49	1e

LABORATORY CONTROL SAMPLE: 3462674

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	997	100	80-120	1e

SAMPLE DUPLICATE: 3462675

Parameter	Units	60441897009 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	566	552	3	10	1e

SAMPLE DUPLICATE: 3462676

Parameter	Units	60442430001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	486	473	3	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPB

Pace Project No.: 60442101

QC Batch:	875885	Analysis Method:	EPA 300.0
QC Batch Method:	EPA 300.0	Analysis Description:	300.0 IC Anions
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60441897001, 60441897002

METHOD BLANK: 3469019 Matrix: Water

Associated Lab Samples: 60441897001, 60441897002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	12/07/23 13:03	
Fluoride	mg/L	<0.12	0.20	0.12	12/07/23 13:03	
Sulfate	mg/L	<0.55	1.0	0.55	12/07/23 13:03	

METHOD BLANK: 3471852 Matrix: Water

Associated Lab Samples: 60441897001, 60441897002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	12/08/23 21:31	
Fluoride	mg/L	<0.12	0.20	0.12	12/08/23 21:31	
Sulfate	mg/L	<0.55	1.0	0.55	12/08/23 21:31	

LABORATORY CONTROL SAMPLE: 3469020

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.5	90	90-110	
Fluoride	mg/L	2.5	2.6	103	90-110	
Sulfate	mg/L	5	4.5	91	90-110	

LABORATORY CONTROL SAMPLE: 3471853

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.9	97	90-110	
Fluoride	mg/L	2.5	2.8	113	90-110 L1	
Sulfate	mg/L	5	4.8	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3469021 3469022

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60441898004	Result	Spike Conc.	Spike Conc.								
Chloride	mg/L	23.8	25	25	25	48.4	48.2	99	98	80-120	0	15	H1
Fluoride	mg/L	0.15J	2.5	2.5	2.5	3.1	3.2	119	122	80-120	2	15	M1
Sulfate	mg/L	1.9	5	5	5	6.9	7.2	100	106	80-120	4	15	

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QUALITY CONTROL DATA

Project: AMEREN SCPB

Pace Project No.: 60442101

SAMPLE DUPLICATE: 3469023

Parameter	Units	60441898004 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	23.8	23.0	3	15	H1
Fluoride	mg/L	0.15J	0.15J		15	
Sulfate	mg/L	1.9	1.7	9	15	

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QUALITY CONTROL DATA

Project: AMEREN SCPB

Pace Project No.: 60442101

QC Batch:	876640	Analysis Method:	EPA 300.0
QC Batch Method:	EPA 300.0	Analysis Description:	300.0 IC Anions
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60442101001

METHOD BLANK: 3472119 Matrix: Water

Associated Lab Samples: 60442101001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	12/12/23 20:15	
Fluoride	mg/L	<0.12	0.20	0.12	12/12/23 20:15	
Sulfate	mg/L	<0.55	1.0	0.55	12/12/23 20:15	

METHOD BLANK: 3474158 Matrix: Water

Associated Lab Samples: 60442101001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	12/13/23 15:16	
Fluoride	mg/L	<0.12	0.20	0.12	12/13/23 15:16	
Sulfate	mg/L	<0.55	1.0	0.55	12/13/23 15:16	

METHOD BLANK: 3475195 Matrix: Water

Associated Lab Samples: 60442101001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	12/14/23 15:37	
Fluoride	mg/L	<0.12	0.20	0.12	12/14/23 15:37	
Sulfate	mg/L	<0.55	1.0	0.55	12/14/23 15:37	

LABORATORY CONTROL SAMPLE: 3472120

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	3.0	122	90-110	L1
Sulfate	mg/L	5	4.8	96	90-110	

LABORATORY CONTROL SAMPLE: 3474159

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	96	90-110	
Fluoride	mg/L	2.5	2.8	113	90-110	L1
Sulfate	mg/L	5	4.9	97	90-110	

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QUALITY CONTROL DATA

Project: AMEREN SCPB

Pace Project No.: 60442101

LABORATORY CONTROL SAMPLE: 3475196

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.4	107	90-110	
Fluoride	mg/L	2.5	3.5	138	90-110 L1	
Sulfate	mg/L	5	4.9	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3472121 3472122

Parameter	Units	60442101001		MS	MSD	MS	MSD	MS	MSD	% Rec	Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec						
Chloride	mg/L	62.6	100	100	149	147	86	84	80-120	1	15	H1		
Fluoride	mg/L	<0.12	2.5	2.5	2.6	2.6	102	103	80-120	1	15	H1		
Sulfate	mg/L	37.0	25	25	63.3	64.2	105	109	80-120	1	15	H1		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3472124 3472125

Parameter	Units	60441897015		MS	MSD	MS	MSD	MS	MSD	% Rec	Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec						
Chloride	mg/L	61.2	50	50	117	116	112	109	80-120	1	15	H1		
Fluoride	mg/L	<0.12	2.5	2.5	2.7	2.8	109	112	80-120	3	15	H1		
Sulfate	mg/L	459	250	250	733	732	110	109	80-120	0	15	H1		

SAMPLE DUPLICATE: 3472123

Parameter	Units	60442101001		Dup Result	RPD	Max RPD	Qualifiers
		Result	Result				
Chloride	mg/L	62.6	60.2	60.2	4	15	H1
Fluoride	mg/L	<0.12	<0.12	<0.12		15	H1
Sulfate	mg/L	37.0	43.9	43.9	17	15	D6,H1

SAMPLE DUPLICATE: 3472126

Parameter	Units	60441897015		Dup Result	RPD	Max RPD	Qualifiers
		Result	Result				
Chloride	mg/L	61.2	60.7	60.7	1	15	H1
Fluoride	mg/L	<0.12	<0.12	<0.12		15	H1
Sulfate	mg/L	459	453	453	1	15	H1

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QUALITY CONTROL DATA

Project: AMEREN SCPB

Pace Project No.: 60442101

QC Batch:	877073	Analysis Method:	EPA 300.0
QC Batch Method:	EPA 300.0	Analysis Description:	300.0 IC Anions
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60441897009, 60441897010, 60441897011, 60441897012, 60441897013, 60442101002, 60442101003, 60442101004, 60442101005, 60442101006, 60442101007, 60442101008		

METHOD BLANK:	3473823	Matrix:	Water
Associated Lab Samples:	60441897009, 60441897010, 60441897011, 60441897012, 60441897013, 60442101002, 60442101003, 60442101004, 60442101005, 60442101006, 60442101007, 60442101008		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	12/14/23 15:15	
Fluoride	mg/L	<0.12	0.20	0.12	12/14/23 15:15	
Sulfate	mg/L	<0.55	1.0	0.55	12/14/23 15:15	

METHOD BLANK:	3475663	Matrix:	Water
Associated Lab Samples:	60441897009, 60441897010, 60441897011, 60441897012, 60441897013, 60442101002, 60442101003, 60442101004, 60442101005, 60442101006, 60442101007, 60442101008		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	12/15/23 10:03	
Fluoride	mg/L	<0.12	0.20	0.12	12/15/23 10:03	
Sulfate	mg/L	<0.55	1.0	0.55	12/15/23 10:03	

LABORATORY CONTROL SAMPLE:	3473824					
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	96	90-110	
Fluoride	mg/L	2.5	2.9	115	90-110 L1	
Sulfate	mg/L	5	4.8	96	90-110	

LABORATORY CONTROL SAMPLE:	3475664					
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.6	92	90-110	
Fluoride	mg/L	2.5	2.3	93	90-110	
Sulfate	mg/L	5	4.7	94	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:	3473825			3473826									
Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Spike Conc.	Result	Spike Conc.	Result								
Chloride	mg/L	24.4	50	50	76.5	74.2	104	100	80-120	3	15	H1	
Fluoride	mg/L	<0.12	2.5	2.5	2.3	2.3	93	93	80-120	0	15	H1	

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QUALITY CONTROL DATA

Project: AMEREN SCPB

Pace Project No.: 60442101

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3473825												3473826	
Parameter	Units	60442101002 Result	MS	MSD	MS	MSD	MS	MSD	% Rec	Limits	RPD	Max RPD	Qual
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Sulfate	mg/L	416	250	250	686	681	108	106	80-120	1	15	H1	

MATRIX SPIKE SAMPLE: 3473827		60441897011	Spike	MS	MS	% Rec	Qualifiers
Parameter	Units	Result	Conc.	Result	% Rec	Limits	
Chloride	mg/L	5.3	5	10.1	96	80-120	H1
Fluoride	mg/L	<0.12	2.5	2.3	92	80-120	H1
Sulfate	mg/L	51.8	50	96.7	90	80-120	H1

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QUALIFIERS

Project: AMEREN SCPB

Pace Project No.: 60442101

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

- 1e Achieving a constant weight was not met for this sample.
- 2e Achieving a constant weight was not met for this sample..
- D6 The precision between the sample and sample duplicate exceeded laboratory control limits.
- E Analyte concentration exceeded the calibration range. The reported result is estimated.
- H1 Analysis conducted outside the EPA method holding time.
- L1 Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.
- M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- R1 RPD value was outside control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SCPB

Pace Project No.: 60442101

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60441897001	S-BMW-1S	EPA 200.7	874935	EPA 200.7	874954
60441897002	S-BMW-3S	EPA 200.7	874935	EPA 200.7	874954
60442101001	S-LMW-3S	EPA 200.7	875214	EPA 200.7	875324
60442101002	S-LMW-7S	EPA 200.7	875214	EPA 200.7	875324
60442101003	S-LMW-8S	EPA 200.7	875214	EPA 200.7	875324
60442101004	S-LMW-9S	EPA 200.7	875214	EPA 200.7	875324
60442101005	S-LMW-DUP-1	EPA 200.7	875214	EPA 200.7	875324
60442101006	S-LMW-DUP-2	EPA 200.7	875214	EPA 200.7	875324
60442101007	S-LMW-FB-1	EPA 200.7	875214	EPA 200.7	875324
60442101008	S-LMW-FB-2	EPA 200.7	875218	EPA 200.7	875320
60441897009	S-LMW-1S	EPA 200.7	875578	EPA 200.7	875643
60441897010	S-LMW-2S	EPA 200.7	875578	EPA 200.7	875643
60441897011	S-LMW-4S	EPA 200.7	875648	EPA 200.7	875705
60441897012	S-LMW-5S	EPA 200.7	875648	EPA 200.7	875705
60441897013	S-LMW-6S	EPA 200.7	875648	EPA 200.7	875705
60441897001	S-BMW-1S	SM 2320B	874278		
60441897002	S-BMW-3S	SM 2320B	874278		
60442101001	S-LMW-3S	SM 2320B	874537		
60442101002	S-LMW-7S	SM 2320B	874578		
60442101003	S-LMW-8S	SM 2320B	874578		
60442101004	S-LMW-9S	SM 2320B	874578		
60442101005	S-LMW-DUP-1	SM 2320B	874727		
60442101006	S-LMW-DUP-2	SM 2320B	874655		
60442101007	S-LMW-FB-1	SM 2320B	874655		
60442101008	S-LMW-FB-2	SM 2320B	874655		
60441897009	S-LMW-1S	SM 2320B	874655		
60441897010	S-LMW-2S	SM 2320B	874655		
60441897011	S-LMW-4S	SM 2320B	874655		
60441897012	S-LMW-5S	SM 2320B	874655		
60441897013	S-LMW-6S	SM 2320B	874655		
60441897001	S-BMW-1S	SM 2540C	873904		
60441897002	S-BMW-3S	SM 2540C	873904		
60442101001	S-LMW-3S	SM 2540C	874090		
60442101002	S-LMW-7S	SM 2540C	874253		
60442101003	S-LMW-8S	SM 2540C	874253		
60442101004	S-LMW-9S	SM 2540C	874253		
60442101005	S-LMW-DUP-1	SM 2540C	874253		
60442101006	S-LMW-DUP-2	SM 2540C	874253		
60442101007	S-LMW-FB-1	SM 2540C	874253		
60442101008	S-LMW-FB-2	SM 2540C	874253		
60441897009	S-LMW-1S	SM 2540C	874254		
60441897010	S-LMW-2S	SM 2540C	874254		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SCPB

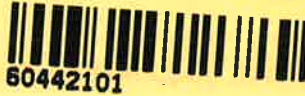
Pace Project No.: 60442101

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60441897011	S-LMW-4S	SM 2540C	874254		
60441897012	S-LMW-5S	SM 2540C	874254		
60441897013	S-LMW-6S	SM 2540C	874254		
60441897001	S-BMW-1S	EPA 300.0	875885		
60441897002	S-BMW-3S	EPA 300.0	875885		
60442101001	S-LMW-3S	EPA 300.0	876640		
60442101002	S-LMW-7S	EPA 300.0	877073		
60442101003	S-LMW-8S	EPA 300.0	877073		
60442101004	S-LMW-9S	EPA 300.0	877073		
60442101005	S-LMW-DUP-1	EPA 300.0	877073		
60442101006	S-LMW-DUP-2	EPA 300.0	877073		
60442101007	S-LMW-FB-1	EPA 300.0	877073		
60442101008	S-LMW-FB-2	EPA 300.0	877073		
60441897009	S-LMW-1S	EPA 300.0	877073		
60441897010	S-LMW-2S	EPA 300.0	877073		
60441897011	S-LMW-4S	EPA 300.0	877073		
60441897012	S-LMW-5S	EPA 300.0	877073		
60441897013	S-LMW-6S	EPA 300.0	877073		

REPORT OF LABORATORY ANALYSIS

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WO#: 60442101



DC# Title: ENV-FRM-LENE-0009_Sam

Revision: 2

Effective Date: 01/12/2022

Issued By: Lenexa

Client Name: ROCKSMITH GEORGE

Courier: FedEx UPS VIA Clay PEX ECI Pace Xroads Client Other

Tracking #: _____ Pace Shipping Label Used? Yes No

Custody Seal on Cooler/Box Present: Yes No Seals intact: Yes No

Packing Material: Bubble Wrap Bubble Bags Foam None Other

Thermometer Used: T298 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 2.0/2.2 Corr. Factor -0.3 Corrected 1.7/1.9

Date and initials of person examining contents:

4/15/23

Temperature should be above freezing to 6°C

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>WT</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks:		
Lead acetate strip turns dark? (Record only)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Samples from USDA Regulated Area: State: _____	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

Scan QR Code for Instructions 

Specify Container Size: **
 Identify Container Preservative Type ***
 Analysis Requested

Proj. Mgr: **Jamie Church**
 AcctNum / Client ID:
 Table #:
 Profile / Template:
15856, Line 2
 Prelog / Bottle Ord. ID:
EZ 3011902

Preservation non-conformance identified for sample:
 log under SCPA-CA
 log under SCPA-CA
 log under SCPA-CA
 log under SCPA-CA
 log under SCPA-CA
 log under SCPA-CA

Additional Instructions from Pace*:
 # Coolers: **2** Thermometer ID: **5298** Correction Factor (°C): **-0.3** Obs. Temp. (°C) **20/2.2** Corrected Temp. (°C) **1.7/1.9**
 Tracking Number: **0511**

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

Contact/Report To: **Mark Haddock**
 Phone #: **314-974-6578**
 E-Mail: **mark.haddock@rocksmithgeo.com**
 Cc E-Mail: **Jeff Ingram, jeff.ingram@rocksmithgeo.com**
 Invoice To: **Mark Haddock**
 Invoice E-Mail: **mark.haddock@rocksmithgeo.com**

Purchase Order # (if applicable):
 Quote #:
 County / State origin of sample(s): **Missouri**

Regulatory Program (DW, RCRA, etc.) as applicable:
Rush (Pre-approval required):
 DW PWSID # or WW Permit # as applicable:
 Field Filtered (if applicable): [] Yes [] No
 Analysis:

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start)		Composite End		Res. CL2	Number & Type of Containers		Chloride/Fluoride/Sulfate	Alkalinity	TDS	App III and Cat/An Metals (200.7)*
			Date	Time	Date	Time		Plastic	Glass				
S-LMW-1S	WT	G	11-14-23	1153				2	2	✓	✓	✓	✓
S-LMW-2S	WT	G	11-14-23	0906				2	2	✓	✓	✓	✓
S-LMW-3S	WT	G	11-13-23	1552				2	2	✓	✓	✓	✓
S-LMW-4S	WT	G	11-14-23	0836				2	2	✓	✓	✓	✓
S-LMW-5S	WT	G	11-14-23	1129				2	2	✓	✓	✓	✓
S-LMW-6S	WT	G	11-14-23	1218				2	2	✓	✓	✓	✓
S-LMW-7S	WT	G	11-14-23	1110				2	2	✓	✓	✓	✓
S-LMW-8S	WT	G	11-14-23	1030				2	2	✓	✓	✓	✓
S-LMW-9S	WT	G	11-14-23	0950				2	2	✓	✓	✓	✓
S-BMW-1S	WT												

Customer Remarks / Special Conditions / Possible Hazards:
 * - App III and Cat/An Metals* - EPA 200.7: Fe, Mg, Mn, K, Na, Ca, B

Collected By: _____
 Printed Name: _____
 Signature: _____

Received by/Company: **Rocksmith**
 Signature: **[Signature]**
 Date/Time: **11-14-23/1430**

Received by/Company: _____
 Signature: _____
 Date/Time: _____

Received by/Company: _____
 Signature: _____
 Date/Time: _____

Received by/Company: _____
 Signature: _____
 Date/Time: _____

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY - Affix Worker's Login Label Here

Scan QR Code for instructions

60442101

Pace® Location Requested (City/State):
Pace Analytical Kansas
9608 Loiret Blvd., Lenexa, KS 66219

Company Name:
Rocksmithe Geoenengineering, LLC.
Street Address:
2320 Creve Coeur Mill Road, Maryland Heights, MO 63043

Customer Project #: AMEREN SCPB
Project Name:

Contact/Report To: Mark Haddock
Phone #: 314-974-6578
E-Mail: mark.haddock@rocksmithgeo.com
Cc E-Mail: Jeff Ingram, jeff.ingram@rocksmithgeo.com
Invoice To: Mark Haddock
Invoice E-Mail: mark.haddock@rocksmithgeo.com

Site Collection Info/Facility ID (as applicable):
Purchase Order # (if applicable):
Quote #:

Time Zone Collected: [] AK [] MT [] CT [] ET
Regulatory Program (DW, RCRA, etc.) as applicable: Missouri

Date Results Requested:
[] 2 Day [] 3 day [] 5 day [] Other
Field Filtered (if applicable): [] Yes [] No
Analysis:

* Matrix Codes (insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (O), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Other (OT), Surface Water (SW), Sediment (SED), Sludge (SL), Gauk

Customer Sample ID	Matrix *	Comp / Grab	Collected		Res. CLZ	Number & Type of Containers	Composite End			Chloride/Fluoride/Sulfate	Alkalinity	TDS	App III and Cat/An Metals (200.7*)	Lab Use Only	Preservation non-conformance identified for sample
			Date	Time			Date	Time	Plastic						
S-BMW-3S	WT														
S-LMW-DUP-1	WT	G	11-14-23			2					✓				
S-LMW-DUP-2	WT	G	11-14-23			2					✓				
S-LMW-FB-1	WT	G	11-14-23	1107		2					✓				
S-LMW-FB-2	WT	G	11-14-23	1027		2					✓				
S-LMW-MS-1	WT	G	11-13-23	1552		2					✓				
S-LMW-MSD-2	WT	G	11-13-23	1552		2					✓				

Sample time: 1027
Collected @ S-LMW-3S
I

Additional Instructions from Pace®:

Collected By: _____
Printed Name: _____
Signature: _____

Coolers: 2 Thermometer ID: R298 Correction Factor (°C): -0.3 Obs. Temp. (°C): 20.42 Corrected Temp. (°C): 19.19

Tracking Number: _____
Date/Time: 11/15/23 05:11
Signature: _____
Received by/Company (Signature): _____
Date/Time: 11/15/23
Signature: _____
Received by/Company (Signature): _____
Date/Time: _____
Signature: _____
Received by/Company (Signature): _____
Date/Time: _____
Signature: _____

Delivered by: [] In-Person [] Courier
[] FedEx [] UPS [] Other
Page: 2 of 2

1/2

Client: Rocksmith Geoveng

Profile #

Site: Ameron s.s.p

Notes

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other
1																														
2																														
3	WT																		3				3							
4																														
5																														
6																														
7	WT																		1				1							
8																			1				1							
9																			1				1							
10																														
11																														
12																														

Container Codes

	Glass	Plastic	Misc.
DG9B	40mL bisulfate clear vial	BP1C 1L NaOH plastic	I Wipe/Swab
DG9H	40mL HCl amber vial	BP1N 1L HNO3 plastic	SP5T 120mL Coliform Na Thiosulfate
DG9M	40mL MeOH clear vial	BP1S 1L H2SO4 plastic	ZPLC Ziploc Bag
DG9Q	40mL TSP amber vial	BP1U 1L unpreserved plastic	AF Air Filter
DG9S	40mL H2SO4 amber vial	BP1Z 1L NaOH, Zn Acetate	C Air Cassettes
DG9T	40mL Na Thio amber vial	BP2C 500mL NaOH plastic	R Terracore Kit
DG9U	40mL amber unpreserved	BP2N 500mL HNO3 plastic	U Summa Can
VG9H	40mL HCl clear vial	BP2S 500mL H2SO4 plastic	
VG9T	40mL Na Thio. clear vial	BP2U 500mL unpreserved plastic	
VG9U	40mL unpreserved clear vial	BP2Z 500mL NaOH, Zn Acetate	
BG1S	1liter H2SO4 clear glass	BP3C 250mL NaOH plastic	
BG1U	1liter unpres glass	BP3F 250mL HNO3 plastic - field filtered	
BG3H	250mL HCL Clear glass	BP3N 250mL HNO3 plastic	WT Water
BG3U	250mL Unpres Clear glass	BP3U 250mL unpreserved plastic	SL Solid
WGDU	16oz clear soil jar	BP3S 250mL H2SO4 plastic	NAL Non-aqueous Liquid
		BP3Z 250mL NaOH, Zn Acetate	OL OIL
		BP4U 125mL unpreserved plastic	WP Wipe
		BP4N 125mL HNO3 plastic	DW Drinking Water
		BP4S 125mL H2SO4 plastic	
		WPDU 16oz unpreserved plastic	

Work Order Number:

60442101

2/2

Client: RocksSmith Geovis

Profile #

Site: Ameron SC PB

Notes

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other
1																														
2	WT																													
3																														
4																														
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														

Container Codes

	Glass	Plastic	Misc.
DG9B	40mL bisulfate clear vial	BP1C 1L NaOH plastic	I Wipe/Swab
DG9H	40mL HCl amber vial	BP1N 1L HNO3 plastic	SP5T 120mL Colliform Na Thiosulfate
DG9M	40mL MeOH clear vial	BP1S 1L H2SO4 plastic	ZPLC Ziploc Bag
DG9Q	40mL TSP amber vial	BP1U 1L unpreserved plastic	AF Air Filter
DG9S	40mL H2SO4 amber vial	BP1Z 1L NaOH, Zn Acetate	C Air Cassettes
DG9T	40mL Na Thio amber vial	BP2C 500mL NaOH plastic	R Terracore Kit
DG9U	40mL amber unpreserved	BP2N 500mL HNO3 plastic	U Summa Can
VG9H	40mL HCl clear vial	BP2S 500mL H2SO4 plastic	
VG9T	40mL Na Thio. clear vial	BP2U 500mL unpreserved plastic	
VG9U	40mL unpreserved clear vial	BP2Z 500mL NaOH, Zn Acetate	
BG1S	1liter H2SO4 clear glass	BP3C 250mL NaOH plastic	
BG1U	1liter unpres glass	BP3F 250mL HNO3 plastic - field filtered	WT Water
BG3H	250mL HCl Clear glass	BP3N 250mL HNO3 plastic	SL Solid
BG3U	250mL Unpres Clear glass	BP3U 250mL unpreserved plastic	NAL Non-aqueous Liquid
WGDU	16oz clear soil jar	BP3S 250mL H2SO4 plastic	OL OIL
		BP3Z 250mL NaOH, Zn Acetate	WP Wipe
		BP4U 125mL unpreserved plastic	DW Drinking Water
		BP4N 125mL HNO3 plastic	
		BP4S 125mL H2SO4 plastic	
		WPDU 16oz unpreserved plastic	

Work Order Number: 6044210



Scan QR Code for Instructions

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

Company Name: Rocksmith Geoenigneering, LLC
Street Address: 2320 Creve Coeur Mill Road, Maryland Heights, MO 63043
Customer Project #: AMEREN SCPB
Project Name: AMEREN SCPB
Site Collection Info/Facility ID (as applicable):

Contact/Report To: Mark Haddock
Phone #: 314-974-6578
E-Mail: mark.haddock@rocksmithgeo.com
Cc E-Mail: Jeff Ingram, jeff.ingram@rocksmithgeo.com
Invoice To: Mark Haddock
Invoice E-Mail: mark.haddock@rocksmithgeo.com
Purchase Order # (if applicable):
Quote #:

Country / State origin of sample(s): Missouri
Regulatory Program (DW, RCRA, etc.) as applicable:
Rush (Pre-approval required): DW PWSID # or WW Permit # as applicable:
 2 Day 3 day 5 day Other: _____
Date Results Requested: Field Filtered (if applicable): Yes No
Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Biossasy (B), Vapor (V), Other (OT), Surface Water (SW), Sediment (SED), Sludge (SL), Caulk

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start)		Composite End		Res. CL	Number & Type of Containers		Lab Use Only
			Date	Time	Date	Time		Plastic	Glass	
S-LMW-1S	WT									log under SCPA-CA
S-LMW-2S	WT									log under SCPA-CA
S-LMW-3S	WT									log under SCPA-CA
S-LMW-4S	WT									log under SCPA-CA
S-LMW-5S	WT									log under SCPA-CA
S-LMW-6S	WT									log under SCPA-CA
S-LMW-7S	WT									log under SCPA-CA
S-LMW-8S	WT									log under SCPA-CA
S-BMW-1S	WT	G	11/10/23	0918				4	-	✓
S-BMW-1S	WT	G	11/10/23	0957				4	-	✓

Additional Instructions from Pace*:
 App III and Cat/An Metals (200.7)*
 TDS
 Alkalinity
 Chloride/Fluoride/Sulfate

Collected By: Grant May
Printed Name: Grant May
Signature: *Grant May*

Received by/Company: (Signature)
 Received by/Company: (Signature)
 Received by/Company: (Signature)
 Received by/Company: (Signature)

Date/Time: 11-10-23 / 1550
 Date/Time:
 Date/Time:
 Date/Time:

Tracking Number:
 Delivered by: In-Person Courier
 FedEx UPS Other

Coolers: Thermometer ID: Correction Factor (°C): Obs. Temp. (°C) Corrected Temp. (°C)

Page: 1 of 1



Memorandum

January 22, 2024

To: Project File
Rocksmith Geoengineering, LLC

Project Number: 23009

CC: Mark Haddock, Jeffrey Ingram

From: Grant Morey

Email: Grant.Morey@Rocksmithgeo.com

RE: **Data Validation Summary, Sioux Energy Center – SCPB – Data Package 60442101**

The following is a summary of instances where quality control criteria in the functional guidelines were not met and data qualification was required:

- When a compound was analyzed outside of hold time, the sample result was qualified as an estimate (J for detects, UJ for non-detects).
- When a compound was detected in a sample result between the Method Detection Limit (MDL) and Practical Quantification Limit (PQL), the results were recorded at the detection value and qualified as estimates (J).
- When a duplicate criterion was not met, the associated sample result was qualified as an estimate (J for detects, UJ for non-detects).
- When a matrix spike/matrix spike duplicate (MS/MSD) criterion was not met, the associated sample result was qualified as an estimate (J, J+ for estimates based high, and J- for estimates based low).

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Rocksmith Geoengineering
 Project Name: Ameren SCPB
 Reviewer: G. Morey

Project Manager: J. Ingram
 Project Number: 23009
 Validation Date: 1/22/2024

Laboratory: Pace Analytical SDG #: 60442101

Analytical Method (type and no.): EPA 200.7 (Total Metals); SM 2320B (Alkalinity); SM 2540C (TDS); EPA 300.0 (Anions);

Matrix: Air Soil/Sed. Water Waste

Sample Names S-LMW-3S, S-LMW-7S, S-LMW-8S, S-LMW-9S, S-LMW-DUP-1, S-LMW-DUP-2, S-LMW-FB-1, S-LMW-FB-2, S-LMW-1S, S-LMW-2S, S-LMW-4S, S-LMW-5S, S-LMW-6S, S-BMW-1S, S-BMW-3S

NOTE: Please provide calculation in Comment areas or on the back (if on the back please indicate in comment areas).

Field Information	YES	NO	NA	COMMENTS
a) Sampling dates noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>11/10/2023 - 11/14/2023</u>
b) Sampling team indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>GTM/JSI</u>
c) Sample location noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
d) Sample depth indicated (Soils)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u></u>
e) Sample type indicated (grab/composite)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Grab</u>
f) Field QC noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</u>
g) Field parameters collected (note types)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>pH, Spec Cond, Turb, Temp, DO, ORP</u>
h) Field Calibration within control limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
i) Notations of unacceptable field conditions/performances from field logs or field notes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u></u>
j) Does the laboratory narrative indicate deficiencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>No lab narrative.</u>

Note Deficiencies: _____

Chain-of-Custody (COC)	YES	NO	NA	COMMENTS
a) Was the COC properly completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
b) Was the COC signed by both field and laboratory personnel?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
c) Were samples received in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>

General (reference QAPP or Method)	YES	NO	NA	COMMENTS
a) Were hold times met for sample pretreatment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
b) Were hold times met for sample analysis?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</u>
c) Were the correct preservatives used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
d) Was the correct method used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
e) Were appropriate reporting limits achieved?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
f) Were any sample dilutions noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</u>
g) Were any matrix problems noted?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u></u>

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Blanks	YES	NO	NA	COMMENTS
a) Were analytes detected in the method blank(s)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes
b) Were analytes detected in the field blank(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
c) Were analytes detected in the equipment blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
d) Were analytes detected in the trip blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Laboratory Control Sample (LCS)	YES	NO	NA	COMMENTS
a) Was a LCS analyzed once per SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b) Were the proper analytes included in the LCS?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c) Was the LCS accuracy criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes

Duplicates	YES	NO	NA	COMMENTS
a) Were field duplicates collected (note original and duplicate sample names)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
b) Were field dup. precision criteria met (note RPD)?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
c) Were lab duplicates analyzed (note original and duplicate samples)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
d) Were lab dup. precision criteria met (note RPD)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes

Blind Standards	YES	NO	NA	COMMENTS
a) Was a blind standard used (indicate name, analytes included and concentrations)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b) Was the %D within control limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Matrix Spike/Matrix Spike Duplicate (MS/MSD)	YES	NO	NA	COMMENTS
a) Was MS accuracy criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes
Recovery could not be calculated since sample contained high concentration of analyte?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b) Was MSD accuracy criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes
Recovery could not be calculated since sample contained high concentration of analyte?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
c) Were MS/MSD precision criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes

Comments/Notes:

General:

Chloride, fluoride, and sulfate analyzed outside of hold time controls for several samples, results qualified as estimates.

Chloride and sulfate diluted in several samples, no qualifications necessary.

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Comments/Notes:

Field Blanks:

S-LMW-FB-1 @ S-LMW-7S: Boron (10.7J) and Calcium (30.0J). Results > RL and 10x blank, no qualification necessary.

S-LMW-FB-2 @ S-LMW-8S: No detections in field blank.

Laboratory Control Samples:

3471853/3472120/3474159/3475196/3473824: LCS recovery high for fluoride. All results are non-detects, no qualification necessary.

Duplicates:

S-LMW-DUP-1 @ S-LMW-9S: All RPD's within control limits.

S-LMW-DUP-2 @ S-LMW-7S: All RPD's within control limits.

3462672: TDS RPD (27%) exceeds control limit, associated with unrelated sample, no qualification necessary.

3472123: Sulfate RPD (17%) exceeds control limit, associated with sample -001, result qualified as estimate.

Lab duplicate Max RPD: 10%: Alkalinity, TDS; 15%: Chloride, Fluoride, Sulfate

MS/MSD:

3465243/3465244: MS recovery high, MSD recovery low for sodium, associated with unrelated sample, no qualification necessary.

3465245: MS recovery low for sodium, associated with unrelated sample, no qualification necessary.

3466209: MS recoveries high for calcium and magnesium, associated with sample -004. Results qualified as estimates.

3466219/3466220: MS/MSD recoveries low for calcium, associated with unrelated sample, no qualification necessary.

3466221/3466222: MSD recoveries low for calcium and magnesium, MS recoveries and RPD's within control limits, no qualifications necessary.

3466223: MS recovery low for calcium, associated with unrelated sample, no qualification necessary.

3467641/3467642: MS/MSD recoveries high for calcium, magnesium, manganese, and sodium. Associated with unrelated sample, no qualification necessary.

3467868/3467869: MSD recovery high for calcium, MS recovery and RPD within control limits, no qualification necessary.

3469021/3469022: MSD recovery high for fluoride, MS recovery and RPD within control limits, no qualification necessary.

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
S-LMW-3S	Chloride	62.6	J	Analyzed outside of hold time controls
"	Fluoride	0.12	UJ	"
"	Sulfate	37.0	J	"
S-LMW-7S	Chloride	24.4	J	"
"	Fluoride	0.12	UJ	"
"	Sulfate	416	J	"
S-LMW-8S	Chloride	77.8	J	"
"	Fluoride	0.12	UJ	"
"	Sulfate	459	J	"
S-LMW-9S	Chloride	103	J	"
"	Fluoride	0.12	UJ	"
"	Sulfate	205	J	"
S-LMW-DUP-1	Chloride	105	J	"
"	Fluoride	0.12	UJ	"
"	Sulfate	208	J	"
S-LMW-DUP-2	Chloride	26.0	J	"
"	Fluoride	0.12	UJ	"
"	Sulfate	390	J	"
S-LMW-FB-1	Chloride	0.53	UJ	"
"	Fluoride	0.12	UJ	"
"	Sulfate	0.55	UJ	"
S-LMW-FB-2	Chloride	0.53	UJ	"
"	Fluoride	0.12	UJ	"
"	Sulfate	0.55	UJ	"
S-LMW-1S	Chloride	68.8	J	"
"	Fluoride	0.12	UJ	"
"	Sulfate	103	J	"
S-LMW-2S	Chloride	159	J	"
"	Fluoride	0.12	UJ	"
"	Sulfate	221	J	"
S-LMW-4S	Chloride	5.3	J	"
"	Fluoride	0.12	UJ	"
"	Sulfate	51.8	J	"
S-LMW-5S	Chloride	23.8	J	"

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
S-LMW-5S	Fluoride	0.12	UJ	Analyzed outside of hold time controls
"	Sulfate	644	J	"
S-LMW-6S	Chloride	9.8	J	"
"	Fluoride	0.12	UJ	"
"	Sulfate	586	J	"
S-LMW-3S	Sulfate	37.0	J	Lab duplicate RPD exceeds control limit
S-LMW-9S	Calcium	203,000	J+	MS recovery high
"	Magnesium	67,200	J+	"

Signature: Grant Morey

Date: 01/22/2024

Appendix B

Alternative Source Demonstration – October 2022 Sampling Event



To: Ameren Missouri
1901 Chouteau Ave, St. Louis, MO 63103

Project Number: 23009

From: Mark Haddock, Jeff Ingram

Email: Jeff.Ingram@Rocksmithgeo.com

RE: SCPB – ALTERNATIVE SOURCE DEMONSTRATION – OCTOBER 2022 SAMPLING EVENT

1.0 INTRODUCTION

In accordance with the United States Environmental Protection Agency (EPA) coal combustion residual (CCR) rule (CCR Rule or The Rule), Rocksmith Geoengineering, LLC ("Rocksmith") has prepared this Technical Memorandum to show that Statistically Significant Increases (SSIs) identified at Ameren Missouri's (Ameren) Sioux Energy Center (SEC) fly ash surface impoundment (SCPB) are the result from an alternative source and are not related to impacts from SCPB. This SCPB Alternative Source Demonstration (ASD) satisfies the requirements of §257.94(e)(2), which allows the owner or operator to demonstrate that a source other than the CCR Unit has caused an SSI and that the apparent SSI was the result of an alternative source or resulted from errors in sampling, analysis, statistical evaluation, or natural variation in groundwater quality.

2.0 BACKGROUND

The first round of Detection Monitoring was completed during November 2017 at the SEC's SCPB CCR Unit in St. Charles County, Missouri. This sampling was completed in accordance with the CCR Rule, and SSIs were identified and verified. In February/March 2018, additional drilling and detailed analysis of results were completed, and it was determined that the SSIs in the CCR Rule groundwater monitoring wells at the SCPB were not caused by impacts from the SCPB. Based on the previous ASDs prepared for the SCPB, the SSIs observed in the SCPB wells were caused by the adjacent SCPA bottom ash surface impoundment. This conclusion was supported by lines of evidence (LOEs) as follows.

- **Geochemical Signatures** – As reflected on the piper diagrams of the November 2017 ASD, SCPA pore-water has a distinctly different signature than the pore-water from the SCPB. CCR groundwater samples in monitoring wells with SSIs plot on the piper diagrams in a location between the SCPA pore-water zone and the background groundwater zone, indicating that well water chemistry is a mixture of unaffected groundwater and groundwater impacted by the SCPA. None of the downgradient monitoring wells reflect a geochemical signature in the SCPB pore-water zone, or in the area that is strictly the SCPB mixing zone.
- **USEPA FALCON Analysis** – The USEPA FALCON method compared constituent fingerprints of the downgradient monitoring wells with those of the background groundwater, SCPB pore-water, and SCPA pore-water. The results indicate that there is strong correlation between downgradient monitoring wells, SCPA pore-

water, and background groundwater, as compared with SCPB pore-water. These same correlations were found at depth within the alluvial aquifer in the temporary ASD piezometers.

- **Groundwater Flow Direction** – Potentiometric surface mapping demonstrates that groundwater flow directions onsite are variable and can temporarily flow in multiple directions, but generally groundwater flow is toward the east-southeast, depending on the river level in the adjacent Mississippi and Missouri Rivers. This supports the conclusion that the unlined SCPA is the source of impacts at the downgradient monitoring wells relative to both the SCPA and SCPB, because impacted monitoring wells around the SCPB are generally located downgradient from the SCPA.
- **SCPB Construction** - The SCPB was constructed with an engineered liner system consisting of a 60-mil High Density Polyethylene (HDPE) geomembrane liner with a minimum bottom elevation of approximately 419 feet above mean sea level (FT MSL). This, along with the presence of key CCR indicators in the shallow, intermediate (middle), and deep zones of the alluvial aquifer, indicate that impacts present onsite are from the SCPA and not the shallow, lined SCPB.

Previous ASD reports may be found in the SCPB Annual Groundwater Monitoring and Corrective Action Reports.

3.0 OCTOBER 2022 SAMPLING EVENT

A summary of the October 2022 sampling results is provided in **Table 1**. As discussed in **Section 2.0**, there are several LOEs presented in the previous ASDs that demonstrate impacts around the SCPB are caused by the SCPA and not the SCPB. Both CCR units are now capped and closed with a geomembrane cover system and the same LOEs are still present at the site. The following summarizes the LOEs that indicate exceedances in the October 2022 sampling event around the SCPB are from the SCPA and not the SCPB using current monitoring data through the October 2022 sampling event.

- **Geochemical Signatures** – **Figure 1** of this Technical Memorandum is a Piper Diagram which displays a comparison of October 2022 SCPB CCR Rule groundwater monitoring well data to cation and anion data for the SCPA pore-water, SCPB pore-water, and background groundwater zones. As shown in **Figure 1**, and as expected, if the SSIs were a result of the SCPA, the October 2022 SCPB monitoring results would be expected to plot in and between the background groundwater quality (yellow section) and the SCPA pore-water (green hexagon) on the piper diagram. As described in the previous ASDs, current results displayed in **Figure 1** continue to demonstrate that groundwater quality in the monitoring wells around the SCPB are impacted by the SCPA and not the SCPB.
- **USEPA FALCON Analysis** – The USEPA FALCON method compared constituent fingerprints from the downgradient monitoring wells with those of background groundwater, SCPB pore-water, and SCPA pore-water. A Technical Memorandum summarizing the calculations and results is provided in **Appendix A**. An updated calculation using data from the October 2022 sampling event was completed and a summary of the results is provided in **Table 5 of Appendix A**. The results indicate that there is strong correlation between the downgradient monitoring wells and both the SCPA pore-water and background groundwater, while there is low correlation between downgradient monitoring well data and SCPB pore-water.
- **Groundwater Flow Direction** - Potentiometric surface mapping from 2018 to 2022 continue to show that while groundwater conditions are variable due to the site's location between the Mississippi and Missouri rivers, net groundwater flow is toward the east-southeast, which supports the conclusion that the unlined SCPA is the source of impacts at the SCPB downgradient monitoring wells because the impacted monitoring wells around the SCPB are generally located downgradient of the SCPA.

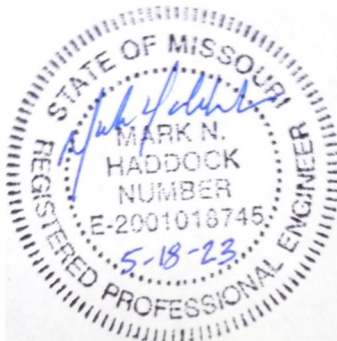
▪ **SCPB Construction** - The SCPB was constructed in 1993 with an engineered liner system consisting of a 60-mil High Density Polyethylene (HDPE) geomembrane liner with a minimum bottom elevation of approximately 419 feet above mean sea level (FT MSL). The low permeability HDPE liner system in the SCPB is a barrier to the migration of CCR influenced liquids and provides containment for CCR. The SCPA began operation in 1967 and has a bottom elevation estimated to be 370 FT MSL, which is much deeper than the SCPB. In addition to the distinct pore-water fingerprint for SCPA relative to SCPB, there are elevated concentrations of CCR indicators in the shallow, intermediate (middle), and deep alluvial zones. Thus, elevated concentrations are not isolated to the shallow zone, which would be the most likely zone influenced if leakage from the SCPB had occurred. The impacts to the intermediate and deep alluvial zones are most likely from the SCPA, where the base elevation extends into deeper groundwater zones in the aquifer.

In summary, groundwater chemistry, pore-water chemistry fingerprints, cell construction, and hydrogeological evidence all demonstrate that SSIs reported for the October 2022 Sampling Event for the SCPB CCR Unit were not caused by impacts from the SCPB surface impoundment. The SCPA surface impoundment, located immediately adjacent and upgradient to the SCPB, is the source of the SSIs for groundwater in the SCPB monitoring well network.

CERTIFICATION STATEMENT

This *SCPB – Alternative Source Demonstration – October 2022 Sampling Event* has been prepared to comply with the United States Environmental Protection Agency (EPA) coal combustion residual (CCR) rule under the direction of a licensed professional engineer with Golder Associates Inc.

I hereby certify that this *SCPB – Alternative Source Demonstration – October 2022 Sampling Event* located at 8501 Missouri 94, West Alton, Missouri 63386 has been prepared to meet the requirements of 40 CFR §257.94(e)(2).



Rocksmith Geoengineering, LLC

Mark Haddock, PE, RG

Principal Engineer, Senior Partner

Attachments: Table 1 – October 2022 Detection Monitoring Results
Figure 1 – SCPB Piper Diagram for October 2022
Appendix A – FALCON Analysis Calculation Package

Tables

Table 1
October 2022 Detection Monitoring Results
SCPB Surface Impoundment
Sioux Energy Center, St. Charles County, MO

ANALYTE	UNITS	PREDICTION LIMITS	BACKGROUND		GROUNDWATER MONITORING WELLS								
			BMW-1S	BMW-3S	LMW-1S	LMW-2S	LMW-3S	LMW-4S	LMW-5S	LMW-6S	LMW-7S	LMW-8S	LMW-9S
October 2022 Detection Monitoring Event													
DATE	NA	NA	10/18/2022	10/18/2022	10/19/2022	10/19/2022	10/20/2022	10/20/2022	10/18/2022	10/20/2022	10/18/2022	10/18/2022	10/19/2022
pH	SU	6.472-7.531	6.84	7.01	7.26	6.80	6.54	6.55	6.90	6.55	6.73	6.71	6.56
BORON, TOTAL	µg/L	120.5	73.0 J	84.2 J	339	8,550	205	375	12,700	21,600	2,440	3,290	1,330
CALCIUM, TOTAL	µg/L	166,512	168,000	131,000	85,100	205,000	169,000	185,000	238,000	278,000	206,000	176,000	216,000
CHLORIDE, TOTAL	mg/L	13.12	9.2	11.7	36.2	149	20.0	3.1	22.7	2.7	62.9 J	60.5	86.4
FLUORIDE, TOTAL	mg/L	0.416	0.20 J	0.22	0.28	ND	ND	ND	0.51	ND	0.18 J	0.19 J	0.41
SULFATE, TOTAL	mg/L	36.69	61.1	27.8	83.5	243	75.7	37.0	868	605	323 J	315	285
TOTAL DISSOLVED SOLIDS	mg/L	579	711	467	383	977	626	724	1,400	936	1,230	1,150	1,160
January 2023 Verification Sampling Event													
DATE	NA	NA			1/4/2023		1/4/2023		1/4/2023		1/4/2023		
pH	SU	6.472-7.531											
BORON, TOTAL	µg/L	120.5											
CALCIUM, TOTAL	µg/L	166,512					172,000				207,000		
CHLORIDE, TOTAL	mg/L	13.12											
FLUORIDE, TOTAL	mg/L	0.416							0.36				
SULFATE, TOTAL	mg/L	36.69			97.8								
TOTAL DISSOLVED SOLIDS	mg/L	579											

NOTES:

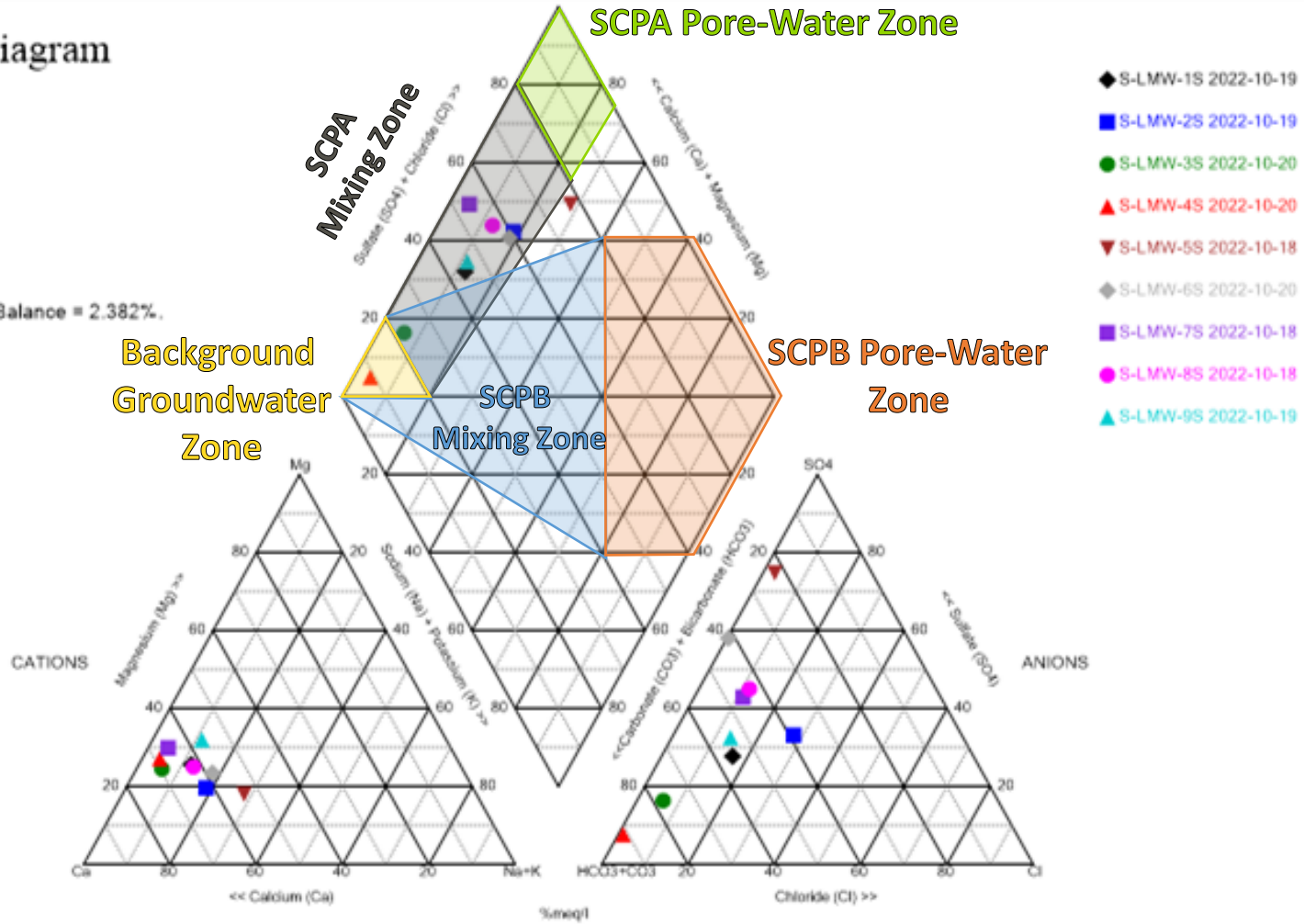
1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units.
2. J - Result is an estimated value.
3. ND - Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.
4. NA - Not applicable.
5. Prediction Limits calculated using Sanitas Software.
6. Values highlighted in yellow indicate a Statistically Significant Increase (SSI).
7. Values highlighted in green indicate an initial exceedance above the prediction limit that was not confirmed by Verification Sampling (not an SSI).
8. Only analytes/wells that were detected above the prediction limit and that had not already been verified were tested during Verification Sampling.

Prepared By: JSI
Checked By: JSI
Reviewed By: MNH

Figures

Piper Diagram

Cation-Anion Balance = 2.382%.



Notes

- 1) Piper diagram generated using Sanitas Software.
- 2) %mEq/l – milliequivalents per liter

CLIENT/PROJECT AMEREN MISSOURI SIOUX ENERGY CENTER				 		TITLE SCPB Piper Diagram for October 2022		
DRAWN JSI	CHECKED JSI	REVIEWED MNH	DATE 2023-03-16			Rev No. NA	JOB NO. 23009	FIGURE 1

Appendix A

FALCON Analysis Calculation Package



To: Ameren Missouri
1901 Chouteau Ave, St. Louis, MO 63103

Project Number: 23009

From: Mark Haddock, Jeff Ingram

Email: Jeff.Ingram@Rocksmithgeo.com

RE: Appendix A – SCPB Falcon Analysis Calculation Package

1.0 OBJECTIVE

The objective of this calculation is to determine if there is a correlation between the ion ratio fingerprints in the SCPA pore-water, SCPB pore-water, or background groundwater with the compliance monitoring wells samples in the alluvial aquifer at the Sioux Energy Center (SEC).

2.0 FINGERPRINT ANALYSIS OF LEACHATE CONTAMINANTS (FALCON) METHOD

The Fingerprint Analysis of Leachate Contaminants (FALCON) method was developed in 2004 by the United States Environmental Protection Agency (USEPA) as a tool to identify the source of impacts within groundwater. The FALCON method compiles ion ratios for multiple constituents in order to develop a distinctive chemical fingerprint for each possible contaminant source and un-impacted background groundwater. These fingerprints are then correlated to well sample data downgradient of the sources and are used to characterize the source of the contaminant plume. For this calculation, background groundwater quality is derived from samples collected from background wells located approximately 0.50 to 0.75 miles west of the SCPB. Source data is from pore-water collected from piezometers within the SCPA and SCPB. Fingerprints from these three sources (background groundwater, SCPA pore-water, and SCPB pore-water) are compared to data from alluvial aquifer monitoring well sampling locations at the SEC. Data from the SCPA and SCPB pore-water are from the November 2017 ASD for the SCPB, which is available in the 2018 Annual Report for the SCPB. Data from the background and compliance monitoring wells are from the October 2022 sampling event.

3.0 SELECTION OF CONSTITUENTS TO USE

The first step in completing the FALCON analysis is to select a subset of constituents that are representative of the potential source areas. When selecting these constituents, it is important to include constituents that are mobile in the hydrogeological environment and that can uniquely characterize each water type. Constituents selected included major cation and anion constituents that represent groundwater chemistry as well as key indicators of CCR impacts. Values of the three different sources were compared to see which constituents fit the criteria. A summary table of the values used for the three sources is provided in **Table 1**. The following constituents were selected to complete the FALCON analysis:

- Alkalinity
- Total Calcium
- Total Fluoride
- Total Boron
- Total Chloride
- Total Iron

- Total Magnesium
 - Total Manganese
- Total Potassium
 - Total Sodium
- Total Sulfate

4.0 DATA TABULATION AND NORMALIZATION

Once the constituents were selected, the data were tabulated, normalized and a graphical presentation of the fingerprints was produced. These steps are provided in **Table 1** for the three different sources (background groundwater, SCPA pore-water, and SCPB pore-water), as well as each monitoring well evaluated. Correlations were then completed between the different sources to determine each source’s reproducibility. Tables displaying these correlations are provided below in **Tables 2-4**.

Table 2 – Background Groundwater Correlations

Table 2 - Background Groundwater Correlations				
Well ID	S-BMW-1D	S-BMW-1S	S-BMW-3D	S-BMW-3S
S-BMW-1D				
S-BMW-1S	99.9%			
S-BMW-3D	100.0%	99.9%		
S-BMW-3S	99.9%	100.0%	99.8%	
Average Fingerprint Reproducibility			99.9%	

Table 3 – SCPB Pore-water Correlations

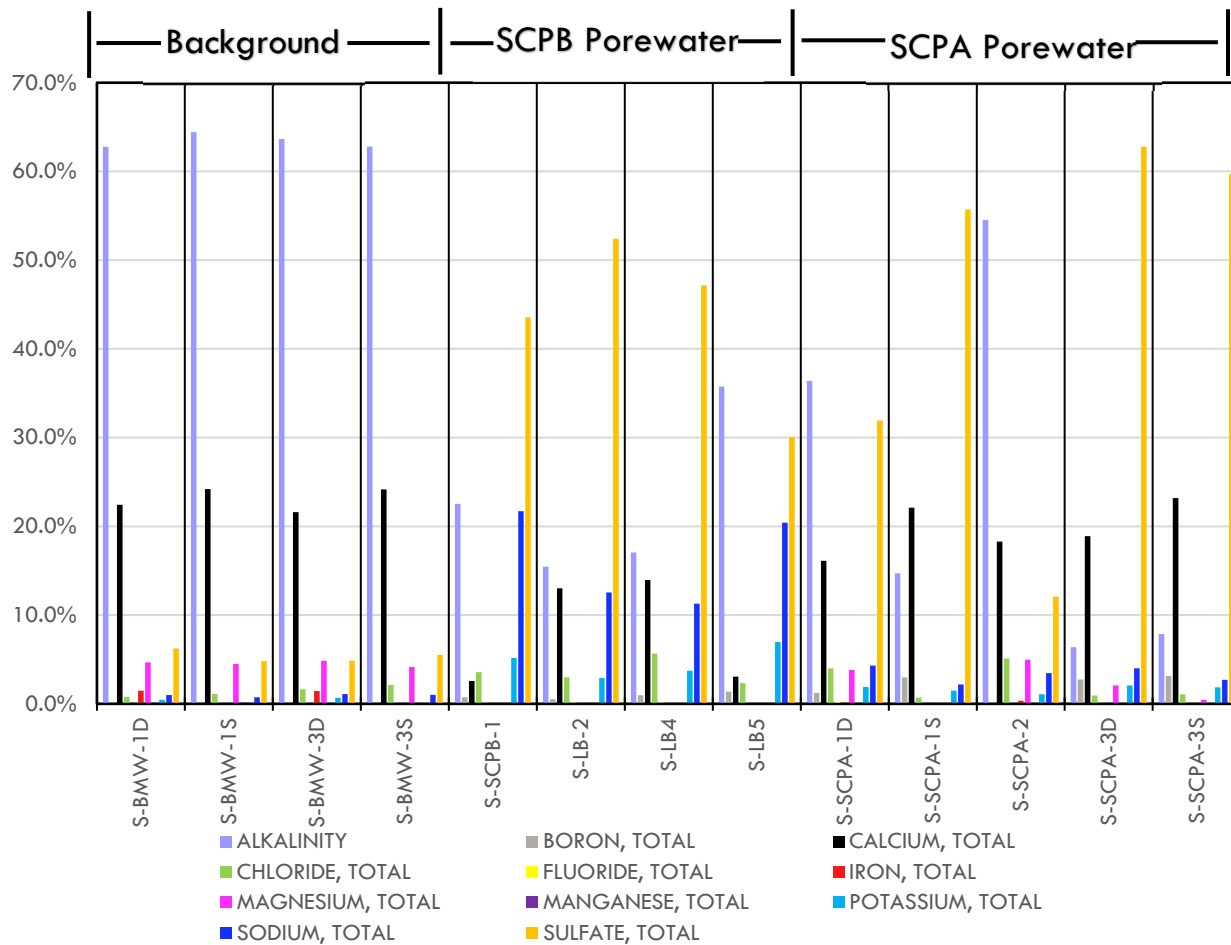
Table 3 – SCPB Pore-water Correlations				
Well ID	S-LB-2	S-LB-4	S-LB-5	S-SCPB-1
S-LB-2				
S-LB-4	99.6%			
S-LB-5	74.8%	76.9%		
S-SCPB-1	93.0%	92.8%	90.5%	
Average Fingerprint Reproducibility			87.9%	

Table 4 – SCPA Pore-water Correlations

Table 4 – SCPA Pore-water Correlations					
Well ID	S-SCPA-1D	S-SCPA-1S	S-SCPA-2	S-SCPA-3D	S-SCPA-3S
S-SCPA-1D					
S-SCPA-1S	78.8%				
S-SCPA-2	84.8%	35.6%			
S-SCPA-3D	67.8%	98.2%	19.1%		
S-SCPA-3S	70.3%	99.1%	23.4%	99.5%	
Average Fingerprint Reproducibility				67.7%	
Average Fingerprint Reproducibility (without SCPA-2)				85.6%	

Additionally, **Figure 1** below displays a histogram of the different source water normalizations.

Figure 1 – Histogram of Source Water Normalizations at the SEC



After reviewing the correlations for the SCPA pore-water, it is evident that there are different sources present within the SCPA which can be seen in the relatively poor correlation between water sampling points. This is likely caused by the historical placement of ash in the CCR unit and pore-water flow within the SCPA. SCPA-1 and SCPA-3 locations have a strong correlation and are both located in areas where more fly ash has been managed. SCPA-2 is located in the northern portion of the pond where mostly bottom ash has been managed.

Due to different relatively different pore-water chemistries within the SCPA, the SCPA is divided into two separate sources for comparison which include (1) an average of the southern locations (SCPA-1S, SCPA-1D, SCPA-3S, and SCPA-3D), and (2) SCPA-2. Separating the SCPA into two potential sources more accurately reflects the conditions within the SCPA, due to its spatial variation.

5.0 CORRELATING ALLUVIAL AQUIFER SAMPLES WITH SOURCES

A correlation between the average groundwater concentration and the different source waters was completed to demonstrate which source better correlates with each alluvial aquifer groundwater sample. Results from this correlation are provided in **Table 5** and the values used for this correlation are provided in **Table 1**. The results demonstrate that groundwater in the alluvial aquifer either correlates with the SCPA pore-water or background groundwater but shows a lower degree of correlation with the SCPB pore-water. As shown in the table below, in no case did a downgradient alluvial aquifer sample correlate better with the SCPB pore-water than with the SCPA pore-water or background groundwater.

Table 5 – Summary of October 2022 USEPA FALCON Evaluation

Piezometer or Well ID	Percent Correlation				Highest (Best) Correlation
	Background Average	SCPB Average	SCPA Average (no SCPA-2)	SCPA-2 Average	
S-AM-1D	99%	46%	35%	100%	SCPA-2
S-AM-1S	100%	43%	32%	100%	SCPA-2
S-DG-1	100%	40%	30%	99%	Background
S-DG-2	100%	40%	31%	99%	Background
S-DG-3	100%	42%	34%	99%	Background
S-DG-4	100%	42%	32%	99%	Background
S-LMW-1S	99%	37%	26%	99%	Background
S-LMW-2S	82%	72%	68%	89%	SCPA-2
S-LMW-3S	100%	42%	32%	100%	Background
S-LMW-4S	100%	40%	30%	99%	Background
S-LMW-5S	30%	96%	98%	41%	SCPA
S-LMW-6S	46%	94%	97%	57%	SCPA
S-LMW-7S	69%	87%	88%	77%	SCPA
S-LMW-8S	78%	84%	82%	85%	SCPA-2
S-LMW-9S	91%	69%	63%	96%	SCPA-2
S-PZ-1S	77%	26%	16%	80%	SCPA-2
S-PZ-9D	74%	84%	85%	81%	SCPA
S-TMW-1	99%	49%	42%	100%	SCPA-2
S-TMW-2	99%	50%	43%	99%	SCPA-2
S-TMW-3	100%	41%	32%	99%	Background
S-TP-2D	1%	74%	93%	12%	SCPA
S-TP-3D	99%	52%	43%	100%	SCPA-2
S-TP-4D	96%	61%	54%	98%	SCPA-2
S-TP-5D	53%	94%	95%	63%	SCPA
S-TP-6D	100%	41%	32%	99%	Background
S-TP-6S	100%	38%	29%	99%	Background
S-TP-8D	100%	41%	31%	99%	Background
S-UG-1A	97%	58%	50%	99%	SCPA-2
S-UG-2	98%	50%	37%	100%	SCPA-2
S-UG-3	98%	35%	21%	97%	Background
S-UMW-1D	99%	48%	39%	100%	SCPA-2
S-UMW-2D	24%	91%	100%	35%	SCPA
S-UMW-3D	10%	88%	98%	21%	SCPA
S-UMW-4D	28%	93%	100%	39%	SCPA
S-UMW-5D	99%	39%	26%	99%	Background
S-UMW-6D	99%	49%	41%	100%	SCPA-2

Notes:

- 1) Values display percent correlation between each sampling point and the SCPA Average (SCPA-1 and SCPA-3), SCPA-2 Average, SCPB Average, or Background Average fingerprints.
- 2) The higher values are shaded darker and indicate better correlation.
- 3) More information on the calculation of these numbers is provided in Table 1.

Tables

Table 1
Summary of Concentrations Used for FALCON Correlation
SCPB Anterative Source Demonstration
Sioux Energy Center, St. Charles County, MO

Analyte	Units	S-AM-1D	S-AM-1S	S-BMW-1D	S-BMW-1S	S-BMW-3D	S-BMW-3S	S-DG-1
ALKALINITY	mg/L	219	241	421	479	360	390	426
BORON, TOTAL	mg/L	7.15	1.67	0.11	0.073	0.05	0.0842	0.0948
CALCIUM, TOTAL	mg/L	73.5	72.9	128	168	106	131	131
CHLORIDE, TOTAL	mg/L	32.8	27.7	5.3	9.2	10.2	11.7	3.4
FLUORIDE, TOTAL	mg/L	0.48	0.48	0.13	0.20	0.17	0.22	0.06
IRON, TOTAL	mg/L	2.64	0.899	9.24	0.0329	7.48	0.02	0.236
MAGNESIUM, TOTAL	mg/L	15.6	15.5	27.6	33.4	24.3	23.9	30.7
MANGANESE, TOTAL	mg/L	0.34	1.08	0.917	1.55	0.543	0.21	0.0459
POTASSIUM, TOTAL	mg/L	6.74	7.92	2.48	0.431	3.22	0.525	4.21
SODIUM, TOTAL	mg/L	22.6	17.0	6.08	5.02	5.87	5.49	4.09
SULFATE, TOTAL	mg/L	40.6	24.6	34.2	61.1	23.2	27.8	28.1
Sum		421.5	410.7	635.1	758.0	541.0	590.9	627.9
Analyte		S-AM-1D	S-AM-1S	S-BMW-1D	S-BMW-1S	S-BMW-3D	S-BMW-3S	S-DG-1
ALKALINITY		52%	59%	66%	63%	67%	66%	68%
BORON, TOTAL		1.7%	0.41%	0.017%	0.0096%	0.0097%	0.014%	0.015%
CALCIUM, TOTAL		17%	18%	20%	22%	20%	22%	21%
CHLORIDE, TOTAL		7.8%	6.7%	0.83%	1.2%	1.9%	2%	0.54%
FLUORIDE, TOTAL		0.11%	0.12%	0.02%	0.026%	0.031%	0.037%	0.0096%
IRON, TOTAL		0.63%	0.22%	1.5%	0.0043%	1.4%	0.0034%	0.038%
MAGNESIUM, TOTAL		3.7%	3.8%	4.3%	4.4%	4.5%	4%	4.9%
MANGANESE, TOTAL		0.081%	0.26%	0.14%	0.2%	0.1%	0.036%	0.0073%
POTASSIUM, TOTAL		1.6%	1.9%	0.39%	0.057%	0.6%	0.089%	0.67%
SODIUM, TOTAL		5.4%	4.1%	0.96%	0.66%	1.1%	0.93%	0.65%
SULFATE, TOTAL		9.6%	6%	5.4%	8.1%	4.3%	4.7%	4.5%
Sum		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Notes

- 1) Values for CCR Rule monitoring wells from October 2022 samples collected for the CCR Rule.
- 2) Unit abbreviations - mg/L - milligrams per liter.
- 3) One-half the value of the Method Detection Limit (MDL) is used for non -detect values.

Table 1
Summary of Concentrations Used for FALCON Correlation
SCPB Anterative Source Demonstration
Sioux Energy Center, St. Charles County, MO

Analyte	Units	S-DG-2	S-DG-3	S-DG-4	S-LMW-1S	S-LMW-2S	S-LMW-3S	S-LMW-4S
ALKALINITY	mg/L	399	455	456	216	372	471	592
BORON, TOTAL	mg/L	0.0802	0.0837	0.0729	0.339	8.55	0.205	0.375
CALCIUM, TOTAL	mg/L	130	162	136	85.1	205	169	185
CHLORIDE, TOTAL	mg/L	2.8	3.3	54.0	36.2	149	20.0	3.1
FLUORIDE, TOTAL	mg/L	0.10	0.06	0.06	0.28	0.06	0.06	0.06
IRON, TOTAL	mg/L	0.201	0.313	0.0242	0.0989	0.150	0.0126	0.017
MAGNESIUM, TOTAL	mg/L	27.3	36.8	39.3	20.9	38.1	35.7	43.6
MANGANESE, TOTAL	mg/L	0.402	0.849	0.487	0.150	0.625	0.0077	0.203
POTASSIUM, TOTAL	mg/L	6.18	6.05	7.26	6.06	8.16	4.57	5.07
SODIUM, TOTAL	mg/L	4.02	5.29	35.0	16.6	67.6	15.7	10.8
SULFATE, TOTAL	mg/L	32.3	63.8	52.0	83.5	243	75.7	37.0
Sum		602.4	733.5	780.2	465.2	1092.2	792.0	877.2
Analyte		S-DG-2	S-DG-3	S-DG-4	S-LMW-1S	S-LMW-2S	S-LMW-3S	S-LMW-4S
ALKALINITY		66%	62%	58%	46%	34%	59%	67%
BORON, TOTAL		0.013%	0.011%	0.0093%	0.073%	0.78%	0.026%	0.043%
CALCIUM, TOTAL		22%	22%	17%	18%	19%	21%	21%
CHLORIDE, TOTAL		0.46%	0.45%	6.9%	7.8%	14%	2.5%	0.35%
FLUORIDE, TOTAL		0.017%	0.0082%	0.0077%	0.06%	0.0055%	0.0076%	0.0068%
IRON, TOTAL		0.033%	0.043%	0.0031%	0.021%	0.014%	0.0016%	0.0019%
MAGNESIUM, TOTAL		4.5%	5%	5%	4.5%	3.5%	4.5%	5%
MANGANESE, TOTAL		0.067%	0.12%	0.062%	0.032%	0.057%	0.00097%	0.023%
POTASSIUM, TOTAL		1%	0.82%	0.93%	1.3%	0.75%	0.58%	0.58%
SODIUM, TOTAL		0.67%	0.72%	4.5%	3.6%	6.2%	2%	1.2%
SULFATE, TOTAL		5.4%	8.7%	6.7%	18%	22%	9.6%	4.2%
Sum		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Notes

- 1) Values for CCR Rule monitoring wells from October 2022 samples collected for the CCR Rule.
- 2) Unit abbreviations - mg/L - milligrams per liter.
- 3) One-half the value of the Method Detection Limit (MDL) is used for non -detect values.

Table 1
Summary of Concentrations Used for FALCON Correlation
SCPB Anterative Source Demonstration
Sioux Energy Center, St. Charles County, MO

Analyte	Units	S-LMW-5S	S-LMW-6S	S-LMW-7S	S-LMW-8S	S-LMW-9S	S-PZ-1S	S-PZ-9D
ALKALINITY	mg/L	338	337	451	393	610	251	342
BORON, TOTAL	mg/L	12.7	21.6	2.44	3.29	1.33	3.23	3.86
CALCIUM, TOTAL	mg/L	238	278	206	176	216	90.6	198
CHLORIDE, TOTAL	mg/L	22.7	2.70	62.9	60.5	86.4	24.4	11.6
FLUORIDE, TOTAL	mg/L	0.51	0.06	0.18	0.19	0.41	0.59	0.06
IRON, TOTAL	mg/L	0.0581	0.0238	0.0106	0.0218	0.0633	4.96	11.7
MAGNESIUM, TOTAL	mg/L	47.5	66.4	56.9	42.8	73.9	16.8	48.4
MANGANESE, TOTAL	mg/L	1.33	0.509	0.438	0.784	0.424	0.739	1.24
POTASSIUM, TOTAL	mg/L	5.73	4.97	3.80	4.05	4.76	3.21	5.17
SODIUM, TOTAL	mg/L	142	99.6	16.9	41.7	49.1	20.8	19.3
SULFATE, TOTAL	mg/L	868	605	323	315	285	58.5	346
Sum		1676.5	1415.9	1123.6	1037.3	1327.4	474.8	987.3
Analyte		S-LMW-5S	S-LMW-6S	S-LMW-7S	S-LMW-8S	S-LMW-9S	S-PZ-1S	S-PZ-9D
ALKALINITY		20%	24%	40%	38%	46%	53%	35%
BORON, TOTAL		0.76%	1.5%	0.22%	0.32%	0.1%	0.68%	0.39%
CALCIUM, TOTAL		14%	20%	18%	17%	16%	19%	20%
CHLORIDE, TOTAL		1.4%	0.19%	5.6%	5.8%	6.5%	5.1%	1.2%
FLUORIDE, TOTAL		0.03%	0.0042%	0.016%	0.018%	0.031%	0.12%	0.0061%
IRON, TOTAL		0.0035%	0.0017%	0.00094%	0.0021%	0.0048%	1%	1.2%
MAGNESIUM, TOTAL		2.8%	4.7%	5.1%	4.1%	5.6%	3.5%	4.9%
MANGANESE, TOTAL		0.079%	0.036%	0.039%	0.076%	0.032%	0.16%	0.13%
POTASSIUM, TOTAL		0.34%	0.35%	0.34%	0.39%	0.36%	0.68%	0.52%
SODIUM, TOTAL		8.5%	7%	1.5%	4%	3.7%	4.4%	2%
SULFATE, TOTAL		52%	43%	29%	30%	21%	12%	35%
Sum		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Notes

- 1) Values for CCR Rule monitoring wells from October 2022 samples collected for the CCR Rule.
- 2) Unit abbreviations - mg/L - milligrams per liter.
- 3) One-half the value of the Method Detection Limit (MDL) is used for non -detect values.
- 4) The calcium value represented for LMW-6S is an average of all available alkalinity data at the well prior to the October 2022 sampling event. The October 2022 result is a high outlier which does not accurately represent observed calcium concentrations at LMW-6S.

Table 1
Summary of Concentrations Used for FALCON Correlation
SCPB Anternative Source Demonstration
Sioux Energy Center, St. Charles County, MO

Analyte	Units	S-TMW-1	S-TMW-2	S-TMW-3	S-TP-2D	S-TP-3D	S-TP-4D	S-TP-5D
ALKALINITY	mg/L	270	365	415	462	340	288	178
BORON, TOTAL	mg/L	0.05	0.0837	0.0905	0.0765	0.0595	0.0601	8.25
CALCIUM, TOTAL	mg/L	95.0	118	136	273	121	120	116
CHLORIDE, TOTAL	mg/L	2.7	3.3	2.6	80.3	9.8	10.1	37.9
FLUORIDE, TOTAL	mg/L	0.42	0.06	0.1	0.06	0.28	0.30	0.13
IRON, TOTAL	mg/L	0.025	1.92	1.64	16.0	7.63	6.2	7.61
MAGNESIUM, TOTAL	mg/L	16.6	21.4	25.2	72.7	30.3	28.8	28.6
MANGANESE, TOTAL	mg/L	0.395	0.446	0.663	1.28	0.657	0.411	0.895
POTASSIUM, TOTAL	mg/L	4.40	4.76	6.23	6.00	4.00	3.40	4.87
SODIUM, TOTAL	mg/L	2.82	3.54	4.49	25.3	6.77	9.15	40.8
SULFATE, TOTAL	mg/L	53.5	35.8	44.9	501	86.5	123	256
Sum		445.9	554.3	636.9	1437.7	607.0	589.4	679.1
Analyte		S-TMW-1	S-TMW-2	S-TMW-3	S-TP-2D	S-TP-3D	S-TP-4D	S-TP-5D
ALKALINITY		61%	66%	65%	32%	56%	49%	26%
BORON, TOTAL		0.011%	0.015%	0.014%	0.0053%	0.0098%	0.01%	1.2%
CALCIUM, TOTAL		21%	21%	21%	19%	20%	20%	17%
CHLORIDE, TOTAL		0.61%	0.6%	0.41%	5.6%	1.6%	1.7%	5.6%
FLUORIDE, TOTAL		0.094%	0.011%	0.016%	0.0042%	0.046%	0.051%	0.019%
IRON, TOTAL		0.0056%	0.35%	0.26%	1.1%	1.3%	1.1%	1.1%
MAGNESIUM, TOTAL		3.7%	3.9%	4%	5.1%	5%	4.9%	4.2%
MANGANESE, TOTAL		0.089%	0.08%	0.1%	0.089%	0.11%	0.07%	0.13%
POTASSIUM, TOTAL		0.99%	0.86%	0.98%	0.42%	0.66%	0.58%	0.72%
SODIUM, TOTAL		0.63%	0.64%	0.7%	1.8%	1.1%	1.6%	6%
SULFATE, TOTAL		12%	6.5%	7%	35%	14%	21%	38%
Sum		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Notes

- 1) Values for CCR Rule monitoring wells from October 2022 samples collected for the CCR Rule.
- 2) Unit abbreviations - mg/L - milligrams per liter.
- 3) One-half the value of the Method Detection Limit (MDL) is used for non -detect values.

Table 1
Summary of Concentrations Used for FALCON Correlation
SCPB Anterative Source Demonstration
Sioux Energy Center, St. Charles County, MO

Analyte	Units	S-TP-6D	S-TP-6S	S-TP-8D	S-UG-1A	S-UG-2	S-UG-3	S-UMW-1D
ALKALINITY	mg/L	351	405	330	297	360	353	198
BORON, TOTAL	mg/L	0.0657	0.119	0.074	0.072	0.184	0.302	0.139
CALCIUM, TOTAL	mg/L	124	136	118	109	122	126	58.2
CHLORIDE, TOTAL	mg/L	23.1	7.20	26.5	6.40	59.2	39.5	18.3
FLUORIDE, TOTAL	mg/L	0.06	0.06	0.06	0.47	0.06	0.06	0.32
IRON, TOTAL	mg/L	7.82	0.178	6.21	0.0028	0.0199	0.0109	0.375
MAGNESIUM, TOTAL	mg/L	31.5	29.2	26.1	25.1	25.3	24.0	15.7
MANGANESE, TOTAL	mg/L	0.523	0.256	0.444	0.368	0.150	0.744	0.116
POTASSIUM, TOTAL	mg/L	3.91	2.59	3.96	8.19	5.29	5.33	3.73
SODIUM, TOTAL	mg/L	5.6	5.75	6.56	9.26	62.2	27.6	11.5
SULFATE, TOTAL	mg/L	57.4	38.7	32.5	72.2	47.3	44.1	38.8
Sum		605.0	625.1	550.4	528.1	681.7	620.6	345.2
Analyte		S-TP-6D	S-TP-6S	S-TP-8D	S-UG-1A	S-UG-2	S-UG-3	S-UMW-1D
ALKALINITY		58%	65%	60%	56%	53%	57%	57%
BORON, TOTAL		0.011%	0.019%	0.013%	0.014%	0.027%	0.049%	0.04%
CALCIUM, TOTAL		20%	22%	21%	21%	18%	20%	17%
CHLORIDE, TOTAL		3.8%	1.2%	4.8%	1.2%	8.7%	6.4%	5.3%
FLUORIDE, TOTAL		0.0099%	0.0096%	0.011%	0.089%	0.0088%	0.0097%	0.093%
IRON, TOTAL		1.3%	0.028%	1.1%	0.00053%	0.0029%	0.0018%	0.11%
MAGNESIUM, TOTAL		5.2%	4.7%	4.7%	4.8%	3.7%	3.9%	4.5%
MANGANESE, TOTAL		0.086%	0.041%	0.081%	0.07%	0.022%	0.12%	0.034%
POTASSIUM, TOTAL		0.65%	0.41%	0.72%	1.6%	0.78%	0.86%	1.1%
SODIUM, TOTAL		0.93%	0.92%	1.2%	1.8%	9.1%	4.4%	3.3%
SULFATE, TOTAL		9.5%	6.2%	5.9%	14%	6.9%	7.1%	11%
Sum		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Notes

- 1) Values for CCR Rule monitoring wells from October 2022 samples collected for the CCR Rule.
- 2) Unit abbreviations - mg/L - milligrams per liter.
- 3) One-half the value of the Method Detection Limit (MDL) is used for non -detect values.

**Table 1
Summary of Concentrations Used for FALCON Correlation
SCPB Anterative Source Demonstration
Sioux Energy Center, St. Charles County, MO**

Analyte	Units	S-UMW-2D	S-UMW-3D	S-UMW-4D	S-UMW-5D	S-UMW-6D	S-TMW-4	S-TMW-5
ALKALINITY	mg/L	96	78.8	180	352	258	400	453
BORON, TOTAL	mg/L	21.1	27.2	24.1	7.77	0.577	0.108	0.101
CALCIUM, TOTAL	mg/L	157	239	176	90.1	78.2	126	144
CHLORIDE, TOTAL	mg/L	22.0	15.2	55.6	26.7	10.5	3.1	1.8
FLUORIDE, TOTAL	mg/L	0.41	0.06	0.35	0.47	0.31	0.3	0.22
IRON, TOTAL	mg/L	0.118	0.912	7.44	3.82	4.72	0.0028	0.016
MAGNESIUM, TOTAL	mg/L	3.82	9.89	22.7	20.4	18.3	34.7	31.4
MANGANESE, TOTAL	mg/L	0.149	0.547	1.57	0.519	0.561	0.643	0.393
POTASSIUM, TOTAL	mg/L	23.5	18.9	14.9	10.4	3.94	6.88	5.81
SODIUM, TOTAL	mg/L	51.6	85.3	68.4	26.9	9.57	5.90	4.62
SULFATE, TOTAL	mg/L	420	952	526	22.3	53.4	47.7	36.8
Sum		795.7	1427.8	1077.1	561.4	438.1	625.3	678.2
Analyte		S-UMW-2D	S-UMW-3D	S-UMW-4D	S-UMW-5D	S-UMW-6D	S-TMW-4	S-TMW-5
ALKALINITY		12%	5.5%	17%	63%	59%	64%	67%
BORON, TOTAL		2.7%	1.9%	2.2%	1.4%	0.13%	0.017%	0.015%
CALCIUM, TOTAL		20%	17%	16%	16%	18%	20%	21%
CHLORIDE, TOTAL		2.8%	1.1%	5.2%	4.8%	2.4%	0.5%	0.27%
FLUORIDE, TOTAL		0.052%	0.0042%	0.032%	0.084%	0.071%	0.048%	0.032%
IRON, TOTAL		0.015%	0.064%	0.69%	0.68%	1.1%	0.00045%	0.0024%
MAGNESIUM, TOTAL		0.48%	0.69%	2.1%	3.6%	4.2%	5.5%	4.6%
MANGANESE, TOTAL		0.019%	0.038%	0.15%	0.092%	0.13%	0.1%	0.058%
POTASSIUM, TOTAL		3%	1.3%	1.4%	1.9%	0.9%	1.1%	0.86%
SODIUM, TOTAL		6.5%	6%	6.4%	4.8%	2.2%	0.94%	0.68%
SULFATE, TOTAL		53%	67%	49%	4%	12%	7.6%	5.4%
Sum		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Notes

- 1) Values for CCR Rule monitoring wells from October 2022 samples collected for the CCR Rule.
- 2) Unit abbreviations - mg/L - milligrams per liter.
- 3) One-half the value of the Method Detection Limit (MDL) is used for non -detect values.

Table 1
Summary of Concentrations Used for FALCON Correlation
SCPB Anterative Source Demonstration
Sioux Energy Center, St. Charles County, MO

Analyte	Units	S-TMW-6	S-LB-2	S-LB4	S-LB5	S-SCPA-1D	S-SCPA-1S	S-SCPA-2
ALKALINITY	mg/L	401	133	115	468	228	549	219
BORON, TOTAL	mg/L	0.115	4.51	6.5	17.9	7.68	111	0.348
CALCIUM, TOTAL	mg/L	120	112	94.1	40.1	101	825	73.4
CHLORIDE, TOTAL	mg/L	1.3	25.7	38.2	30.5	25.0	26.0	20.5
FLUORIDE, TOTAL	mg/L	0.21	1.30	1.10	1.20	1.20	0.79	0.22
IRON, TOTAL	mg/L	0.025	0.0062	0.057	0.0219	0.779	0.0062	1.35
MAGNESIUM, TOTAL	mg/L	26.4	0.122	0.108	0.0284	23.9	4.88	20.0
MANGANESE, TOTAL	mg/L	0.253	0.0009	0.0009	0.0009	0.0979	0.0009	0.113
POTASSIUM, TOTAL	mg/L	35.4	24.9	25.2	91.0	11.8	55.2	4.35
SODIUM, TOTAL	mg/L	6.31	108	76.1	267	27.0	81.4	13.9
SULFATE, TOTAL	mg/L	38.1	451	318	393	200	2080	48.5
Sum		629.1	860.5	674.4	1308.8	626.5	3733.3	401.7
Analyte		S-TMW-6	S-LB-2	S-LB4	S-LB5	S-SCPA-1D	S-SCPA-1S	S-SCPA-2
ALKALINITY		64%	15%	17%	36%	36%	15%	55%
BORON, TOTAL		0.018%	0.52%	0.96%	1.4%	1.2%	3%	0.087%
CALCIUM, TOTAL		19%	13%	14%	3.1%	16%	22%	18%
CHLORIDE, TOTAL		0.21%	3%	5.7%	2.3%	4%	0.7%	5.1%
FLUORIDE, TOTAL		0.033%	0.15%	0.16%	0.092%	0.19%	0.021%	0.055%
IRON, TOTAL		0.004%	0.00072%	0.0085%	0.0017%	0.12%	0.00017%	0.34%
MAGNESIUM, TOTAL		4.2%	0.014%	0.016%	0.0022%	3.8%	0.13%	5%
MANGANESE, TOTAL		0.04%	0.0001%	0.00013%	0.000069%	0.016%	0.000024%	0.028%
POTASSIUM, TOTAL		5.6%	2.9%	3.7%	7%	1.9%	1.5%	1.1%
SODIUM, TOTAL		1%	13%	11%	20%	4.3%	2.2%	3.5%
SULFATE, TOTAL		6.1%	52%	47%	30%	32%	56%	12%
Sum		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Notes

- 1) Values for CCR Rule monitoring wells from October 2022; Values for pore-water samples from SCPB ASD Investigation collected in February-March 2018.
- 2) Unit abbreviations - mg/L - milligrams per liter.
- 3) One-half the value of the Method Detection Limit (MDL) is used for non -detect values.

**Table 1
Summary of Concentrations Used for FALCON Correlation
SCPB Anternative Source Demonstration
Sioux Energy Center, St. Charles County, MO**

Analyte	Units	S-SCPA-3D	S-SCPA-3S	S-SCPB-1
ALKALINITY	mg/L	185	170	326
BORON, TOTAL	mg/L	79.5	67.8	10.7
CALCIUM, TOTAL	mg/L	548	501	37.2
CHLORIDE, TOTAL	mg/L	27.1	23.1	51.7
FLUORIDE, TOTAL	mg/L	2.9	0.60	1.8
IRON, TOTAL	mg/L	0.138	0.0343	0.0697
MAGNESIUM, TOTAL	mg/L	60.2	9.60	0.0387
MANGANESE, TOTAL	mg/L	0.202	0.0179	0.0009
POTASSIUM, TOTAL	mg/L	60.3	40.1	74.9
SODIUM, TOTAL	mg/L	116	58.5	314
SULFATE, TOTAL	mg/L	1820	1290	630
Sum		2899.3	2160.8	1446.4
Analyte		S-SCPA-3D	S-SCPA-3S	S-SCPB-1
ALKALINITY		6.4%	7.9%	23%
BORON, TOTAL		2.7%	3.1%	0.74%
CALCIUM, TOTAL		19%	23%	2.6%
CHLORIDE, TOTAL		0.93%	1.1%	3.6%
FLUORIDE, TOTAL		0.1%	0.028%	0.12%
IRON, TOTAL		0.0048%	0.0016%	0.0048%
MAGNESIUM, TOTAL		2.1%	0.44%	0.0027%
MANGANESE, TOTAL		0.007%	0.00083%	0.000062%
POTASSIUM, TOTAL		2.1%	1.9%	5.2%
SODIUM, TOTAL		4%	2.7%	22%
SULFATE, TOTAL		63%	60%	44%
Sum		100.0%	100.0%	100.0%

Notes

- 1) Values for CCR Rule monitoring wells from October 2022; Values for pore-water samples from SCPB ASD Investigation collected in February-March 2018.
- 2) Unit abbreviations - mg/L - milligrams per liter.
- 3) One-half the value of the Method Detection Limit (MDL) is used for non -detect values.

Appendix C

Alternative Source Demonstration – May 2023 Sampling Event



Technical Memorandum

December 18, 2023

To: Ameren Missouri
1901 Chouteau Ave, St. Louis, MO 63103

Project Number: 23009

From: Rocksmith Geoengineering - Mark Haddock, P.E.,
R.G., Jeff Ingram, R.G.

Email: jeff.ingram@rocksmithgeo.com

RE: SCPB – ALTERNATIVE SOURCE DEMONSTRATION – MAY 2023 SAMPLING EVENT

1.0 INTRODUCTION

In accordance with the United States Environmental Protection Agency (EPA) coal combustion residual (CCR) rule (CCR Rule or The Rule), Rocksmith Geoengineering, LLC (Rocksmith) has prepared this Technical Memorandum to show that Statistically Significant Increases (SSIs) identified at Ameren Missouri's (Ameren) Sioux Energy Center (SEC) fly ash surface impoundment (SCPB) are the result from an alternative source and are not related to impacts from SCPB. This SCPB Alternative Source Demonstration (ASD) satisfies the requirements of §257.94(e)(2), which allows the owner or operator to demonstrate that a source other than the CCR Unit has caused an SSI and that the apparent SSI was the result of an alternative source or resulted from errors in sampling, analysis, statistical evaluation, or natural variation in groundwater quality.

2.0 BACKGROUND

The first round of Detection Monitoring was completed during November 2017 at the SEC's SCPB CCR Unit in St. Charles County, Missouri. This sampling was completed in accordance with the CCR Rule, and SSIs were identified and verified. In February/March 2018, additional drilling and detailed analysis of results were completed, and it was determined that the SSIs in the CCR Rule groundwater monitoring wells at the SCPB were not caused by impacts from the SCPB. Based on the previous ASDs prepared for the SCPB, the SSIs observed in the SCPB wells were caused by the adjacent SCPA bottom ash surface impoundment. This conclusion was supported by lines of evidence (LOEs) as follows.

- Geochemical Signatures
- USEPA FALCON Analysis
- Groundwater Flow Directions
- Construction of the SCPB

Previous ASD reports may be found in the SCPB Annual Groundwater Monitoring and Corrective Action Reports available on Ameren's Publicly available website (<https://www.ameren.com/company/environment-and-sustainability/managing-coal-combustion/ccr-compliance-reports>).

3.0 MAY 2023 SAMPLING EVENT

A summary of the May 2023 sampling results is provided in **Table 1**. As discussed in **Section 2.0**, there are several LOEs presented in the previous ASDs that demonstrate impacts around the SCPB are caused by the SCPA and not the SCPB. Both CCR units are now capped and closed with a geomembrane cover system and the same LOEs are still present at the site. The following summarizes the LOEs that indicate exceedances in the May 2023 sampling event around the SCPB are from the SCPA and not the SCPB using current monitoring data through the May 2023 sampling event.

- **Geochemical Signatures** – As reflected on the piper diagram provided in **Figure 1**, SCPA pore-water has a distinctly different signature than the pore-water from the SCPB. CCR groundwater samples in monitoring wells with SSIs plot on the piper diagrams in a location between the SCPA pore-water zone and the background groundwater zone, indicating that well water chemistry is a mixture of unaffected groundwater and groundwater impacted by the SCPA. None of the downgradient monitoring wells reflect a geochemical signature in the SCPB pore-water zone, or in the area that is strictly the SCPB mixing zone.
- **USEPA FALCON ANALYSIS** – The USEPA FALCON method compared constituent fingerprints from the downgradient monitoring wells with those of background groundwater, SCPB pore-water, and SCPA pore-water. A Technical Memorandum summarizing the calculations and results is provided in **Appendix A**. An updated calculation using data from the May 2023 sampling event was completed and a summary of the results is provided in Table 5 of **Appendix A**. The results indicate that there is strong correlation between the downgradient monitoring wells and both the SCPA pore-water and background groundwater, while there is low correlation between downgradient monitoring well data and SCPB pore-water. These same correlations were found at depth within the alluvial aquifer.
- **Groundwater Flow Direction** – Potentiometric surface mapping demonstrates that groundwater flow direction is variable and can temporarily flow in multiple directions. Generally, groundwater flows to the east-southeast, depending on the river level in the adjacent Mississippi and Missouri Rivers, however, lower than average Missouri River levels in 2022 and 2023 have displayed a more southward component of flow. This supports the conclusion that the unlined SCPA is the source of impacts at the downgradient monitoring wells relative to both the SCPA and SCPB.
- **SCPB Construction** - The SCPB was constructed in 1993 with an engineered liner system consisting of a 60-mil High Density Polyethylene (HDPE) geomembrane liner with a minimum bottom elevation of approximately 419 feet above mean sea level (FT MSL). The low permeability HDPE liner system in the SCPB is a barrier to the migration of CCR influenced liquids and provides containment for CCR. The SCPA began operation in 1967 and has a bottom elevation estimated to be 370 FT MSL, which is much deeper than the SCPB. In addition to the distinct pore-water fingerprint for SCPA relative to SCPB, there are elevated concentrations of CCR indicators in the shallow, intermediate (middle), and deep alluvial zones. Thus, elevated concentrations are not isolated to the shallow zone, which would be the most likely zone influenced if leakage from the SCPB had occurred. The impacts to the intermediate and deep alluvial zones are most likely from the SCPA, where the base elevation extends into deeper groundwater zones in the aquifer.

In summary, groundwater chemistry, pore-water chemistry fingerprints, cell construction, and hydrogeological evidence all demonstrate that SSIs reported for the May 2023 Sampling Event for the SCPB CCR Unit were not caused by impacts from the SCPB surface impoundment. The SCPA surface impoundment, located immediately adjacent and upgradient to the SCPB, is the source of the SSIs for groundwater in the SCPB monitoring well network.

CERTIFICATION STATEMENT

This *SCPБ – Alternative Source Demonstration – May 2023 Sampling Event* has been prepared to comply with the United States Environmental Protection Agency (EPA) coal combustion residual (CCR) rule under the direction of a licensed professional engineer with Golder Associates Inc.

I hereby certify that this *SCPБ – Alternative Source Demonstration – May 2023 Sampling Event* located at 8501 Missouri 94, West Alton, Missouri 63386 has been prepared to meet the requirements of 40 CFR §257.94(e)(2).



Rocksmith Geoengineering, LLC

Mark Haddock, PE, RG

Principal Engineer, Senior Partner

Attachments: Table 1 – May 2023 Detection Monitoring Results
Figure 1 – SCPБ Piper Diagram for May 2023
Appendix A – FALCON Analysis Calculation Package

Tables

Table 1
May 2023 Detection Monitoring Results
SCPB Surface Impoundment
Sioux Energy Center, St. Charles County, MO

ANALYTE	UNITS	PREDICTION LIMITS	BACKGROUND		GROUNDWATER MONITORING WELLS									
			BMW-1S	BMW-3S	LMW-1S	LMW-2S	LMW-3S	LMW-4S	LMW-5S	LMW-6S	LMW-7S	LMW-8S	LMW-9S	
May 2023 Detection Monitoring Event														
DATE	NA	NA	5/2/2023	5/2/2023	5/8/2023	5/8/2023	5/5/2023	5/5/2023	5/9/2023	5/9/2023	5/8/2023	5/8/2023	5/8/2023	
pH	SU	6.515-7.42	6.80	6.95	7.40	7.00	6.71	6.82	6.81	6.73	6.88	6.77	6.73	
BORON, TOTAL	µg/L	118	64.8 J	67.1 J	659	9,800	215	758	16,200	18,000	3,010	4,300	1,180	
CALCIUM, TOTAL	µg/L	174,465	184,000	137,000	90,500	169,000	185,000	186,000	238,000	263,000	204,000	222,000	156,000	
CHLORIDE, TOTAL	mg/L	13.65	13.1	12.6	45.0	119	52.4	7.2	16.5	2.7	31.0	80.5	70.1	
FLUORIDE, TOTAL	mg/L	0.46	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
SULFATE, TOTAL	mg/L	61.1	37.7	32.4	99.4	281	43.7	60.7	757	512	382	458	171	
TOTAL DISSOLVED SOLIDS	mg/L	608.2	610	495	559	908	692	656	2,490	418	1,080	1,220	853	

NOTES:

1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units.
2. J - Result is an estimated value.
3. ND - Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.
4. NA - Not applicable.
5. Prediction Limits calculated using Sanitas Software.
6. Values highlighted in yellow indicate a Statistically Significant Increase (SSI).
7. There were no new initial exceedances for the May 2023 sampling event; therefore, no Verification Sampling was necessary.

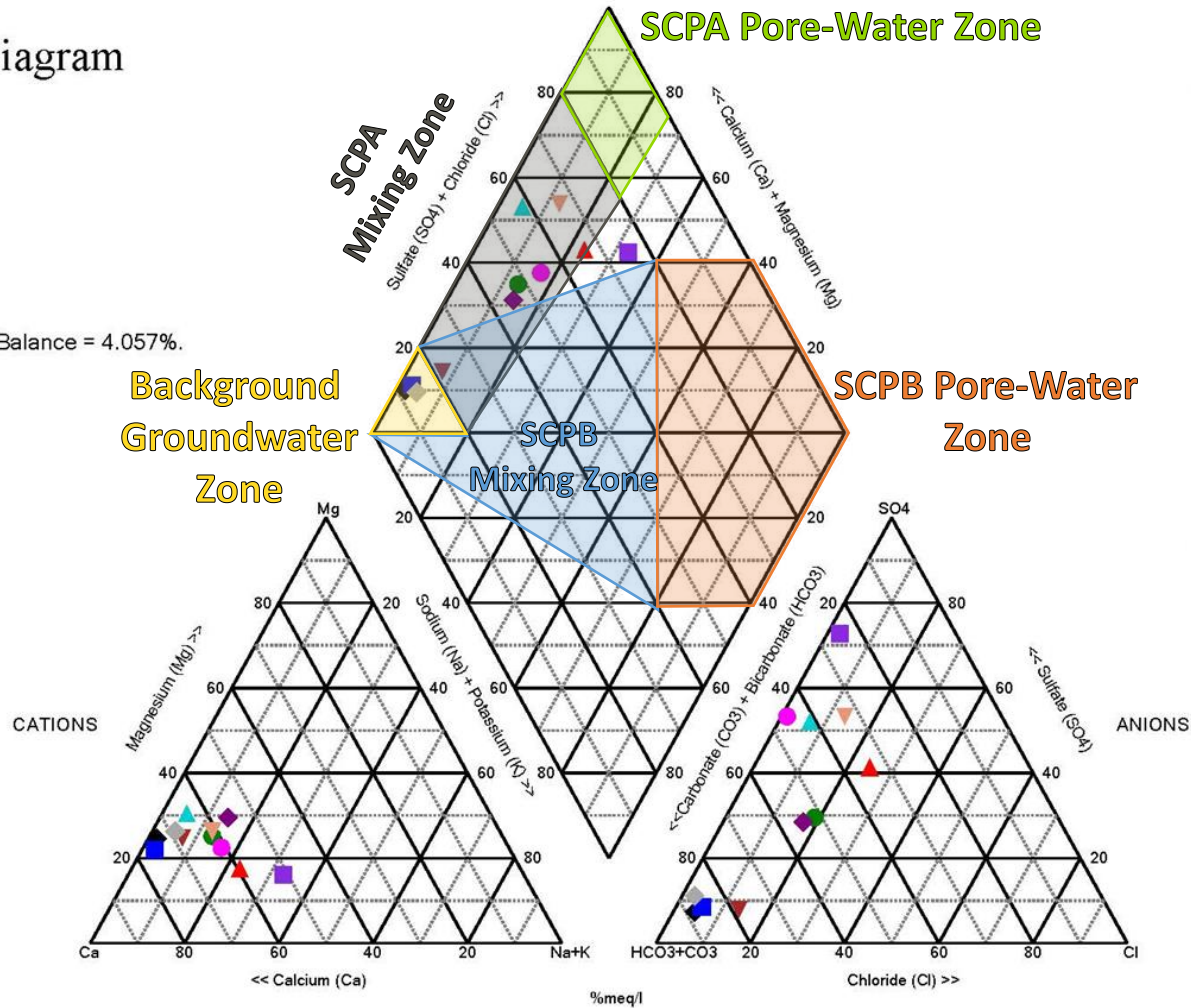
Prepared By: GTM
Checked By: JSI
Reviewed By: MNH

Figures

Piper Diagram

SCPA Pore-Water Zone

Cation-Anion Balance = 4.057%.



- ◆ S-BMW-1S* 2023-05-02
- S-BMW-3S* 2023-05-02
- S-LMW-1S 2023-05-08
- ▲ S-LMW-2S 2023-05-08
- ▼ S-LMW-3S 2023-05-05
- ◆ S-LMW-4S 2023-05-05
- S-LMW-5S 2023-05-09
- S-LMW-6S 2023-05-09
- ▲ S-LMW-7S 2023-05-08
- ▼ S-LMW-8S 2023-05-08
- ◆ S-LMW-9S 2023-05-08

Notes

- 1) Piper diagram generated using Sanitas Software.
- 2) %mEq/l – milliequivalents per liter

CLIENT/PROJECT AMEREN MISSOURI SIOUX ENERGY CENTER				 		TITLE SCPB Piper Diagram for May 2023		
DRAWN JSI	CHECKED GTM	REVIEWED MNH	DATE 2023-12-06			Rev No. NA	JOB NO. 23009	FIGURE 1

Appendix A

FALCON Analysis Calculation Package



To: Ameren Missouri
1901 Chouteau Ave, St. Louis, MO 63103

Project Number: 23009

From: Rocksmith Geoengineering - Mark Haddock, P.E.,
R.G., Jeff Ingram R.G.

Email: jeff.ingram@rocksmithgeo.com

RE: Appendix A – SCPB Falcon Analysis Calculation Package

1.0 OBJECTIVE

The objective of this analysis is to determine if there is a correlation between the ion ratio fingerprints in the SCPA pore-water, SCPB pore-water, or background groundwater with the compliance monitoring wells samples in the alluvial aquifer at the Sioux Energy Center (SEC).

2.0 FINGERPRINT ANALYSIS OF LEACHATE CONTAMINANTS (FALCON) METHOD

The Fingerprint Analysis of Leachate Contaminants (FALCON) method was developed in 2004 by the United States Environmental Protection Agency (USEPA) as a tool to identify the source of impacts within groundwater. The FALCON method compiles ion ratios for multiple constituents in order to develop a distinctive chemical fingerprint for each possible contaminant source and un-impacted background groundwater. These fingerprints are then correlated to well sample data downgradient of the sources and are used to characterize the source of the contaminant plume. For this analysis, background groundwater quality is derived from background well samples located approximately 0.50 to 0.75 miles west of the SCPB. Source data is from pore-water collected from piezometers within the SCPA and SCPB. Fingerprints from these three sources (background groundwater, SCPA pore-water, and SCPB pore-water) are compared to data from alluvial aquifer monitoring well sampling locations at the SEC. Data from the SCPA and SCPB pore-water are from the November 2017 ASD for the SCPB, which is available in the 2018 Annual Report for the SCPB. Data from the background and compliance monitoring wells are from the May 2023 sampling event.

3.0 SELECTION OF CONSTITUENTS TO USE

The first step in completing the FALCON analysis is to select a subset of constituents that are representative of the potential source areas. When selecting these constituents, it is important to include constituents that are mobile in the hydrogeological environment and that can uniquely characterize each water type. Constituents selected included major cation and anion constituents that represent groundwater chemistry as well as key indicators of CCR impacts. Values of the three different sources were compared to see which constituents fit the criteria. A summary table of the values used for the three sources is provided in **Table 1**. The following constituents were selected to complete the FALCON analysis:

- Alkalinity
- Total Calcium
- Total Fluoride
- Total Boron
- Total Chloride
- Total Iron

- Total Magnesium
 - Total Manganese
- Total Potassium
 - Total Sodium
- Total Sulfate

4.0 DATA TABULATION AND NORMALIZATION

Once the constituents were selected, the data were tabulated, normalized and a graphical presentation of the fingerprints was produced. These steps are provided in **Table 1** for the three different sources (background groundwater, SCPA pore-water, and SCPB pore-water), as well as each monitoring well evaluated. Correlations were then completed between the different sources to determine each source’s reproducibility. Tables displaying these correlations are provided below in **Tables 2-4**.

Table 2 – Background Groundwater Correlations

Table 2 - Background Groundwater Correlations				
Well ID	S-BMW-1D	S-BMW-1S	S-BMW-3D	S-BMW-3S
S-BMW-1D				
S-BMW-1S	99.9%			
S-BMW-3D	100.0%	99.9%		
S-BMW-3S	99.9%	100.0%	99.8%	
Average Fingerprint Reproducibility			99.9%	

Table 3 – SCPB Pore-water Correlations

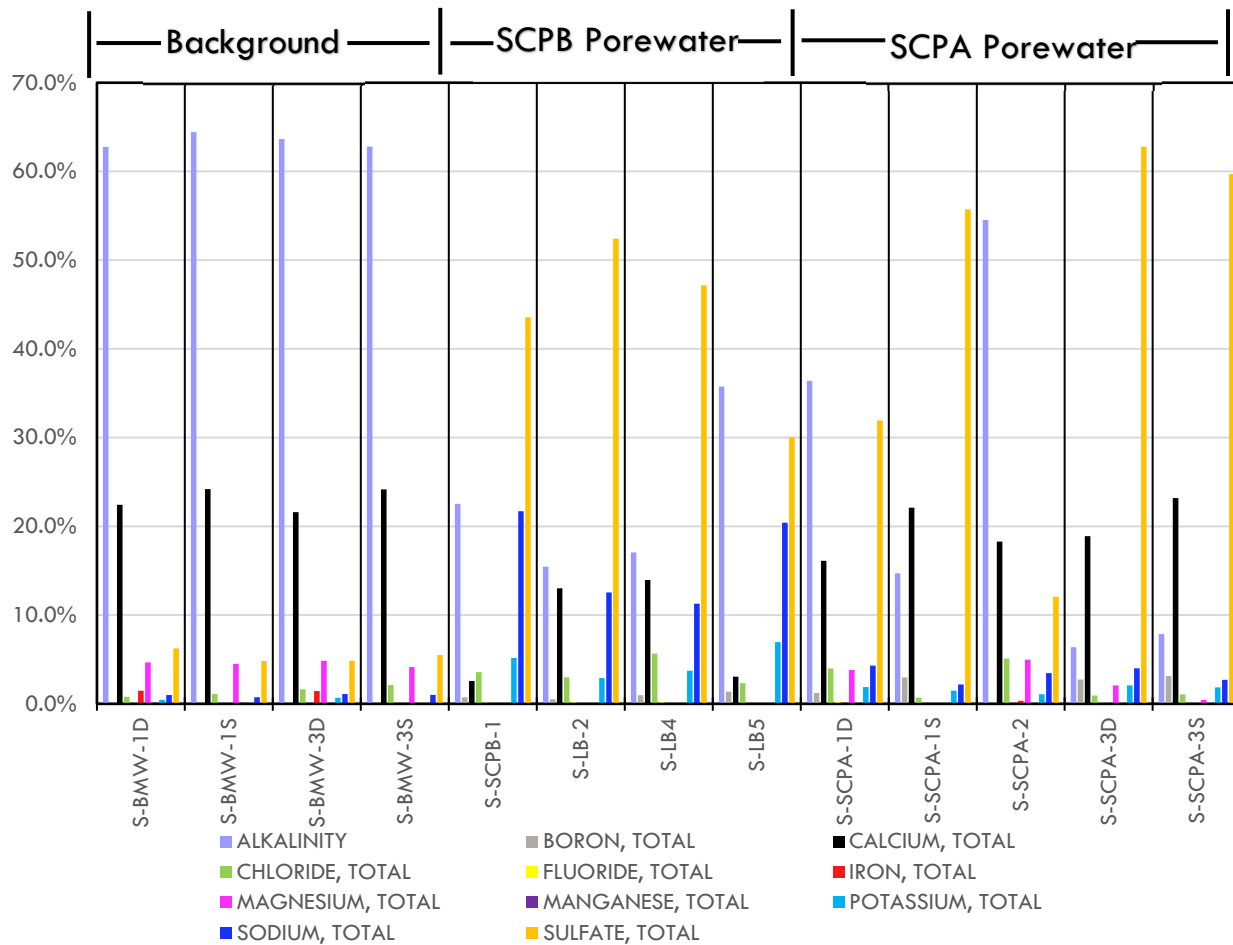
Table 3 – SCPB Pore-water Correlations				
Well ID	S-LB-2	S-LB-4	S-LB-5	S-SCPB-1
S-LB-2				
S-LB-4	99.6%			
S-LB-5	74.8%	76.9%		
S-SCPB-1	93.0%	92.8%	90.5%	
Average Fingerprint Reproducibility			87.9%	

Table 4 – SCPA Pore-water Correlations

Table 4 – SCPA Pore-water Correlations					
Well ID	S-SCPA-1D	S-SCPA-1S	S-SCPA-2	S-SCPA-3D	S-SCPA-3S
S-SCPA-1D					
S-SCPA-1S	78.8%				
S-SCPA-2	84.8%	35.6%			
S-SCPA-3D	67.8%	98.2%	19.1%		
S-SCPA-3S	70.3%	99.1%	23.4%	99.5%	
Average Fingerprint Reproducibility				67.7%	
Average Fingerprint Reproducibility (without SCPA-2)				85.6%	

Additionally, **Figure 1** below displays a histogram of the different source water normalizations.

Figure 1 – Histogram of Source Water Normalizations at the SEC



After reviewing the correlations for the SCPA pore-water, it is evident that there are different sources present within the SCPA which can be seen in the relatively poor correlation between water sampling points. This is likely caused by the historical placement of different types of ash in the CCR unit. SCPA-1 and SCPA-3 locations have a strong correlation and are both located in areas where more fly ash has been managed. SCPA-2 is located in the northern portion of the pond where mostly bottom ash has been managed.

Due to differing pore-water chemistries within the SCPA, the SCPA is divided into two separate sources for comparison which include (1) an average of the southern locations (SCPA-1S, SCPA-1D, SCPA-3S, and SCPA-3D), and (2) SCPA-2. Separating the SCPA into two potential sources more accurately reflects the conditions within the SCPA, due to its spatial variation.

5.0 CORRELATING ALLUVIAL AQUIFER SAMPLES WITH SOURCES

A correlation between the average groundwater concentration and the different source waters was completed to demonstrate which source better correlates with each alluvial aquifer groundwater sample. Results from this correlation are provided in **Table 5** and the values used for this correlation are provided in **Table 1**. The results demonstrate that groundwater in the alluvial aquifer either correlates with the SCPA pore-water or background groundwater but shows a lower degree of correlation with the SCPB pore-water.

Table 5 – Summary of USEPA FALCON Evaluation

Piezometer or Well ID	Percent Correlation				Highest (Best) Correlation
	Background Average	SCPB Average	SCPA Average (no SCPA-2)	SCPA-2 Average	
S-AM-1D	99%	44%	32%	99%	SCPA-2
S-AM-1S	99%	43%	33%	100%	SCPA-2
S-DG-1	100%	37%	26%	99%	Background
S-DG-2	100%	37%	26%	99%	Background
S-DG-3	100%	44%	35%	100%	Background
S-DG-4	100%	40%	29%	99%	Background
S-LMW-1S	93%	64%	57%	97%	SCPA-2
S-LMW-2S	71%	84%	81%	81%	SCPB
S-LMW-3S	100%	37%	27%	99%	Background
S-LMW-4S	100%	40%	30%	99%	Background
S-LMW-5S	35%	97%	98%	48%	SCPA
S-LMW-6S	76%	85%	82%	84%	SCPB
S-LMW-7S	73%	84%	85%	82%	SCPA
S-LMW-8S	63%	89%	90%	74%	SCPA
S-LMW-9S	94%	62%	54%	98%	SCPA-2
S-PZ-1S	97%	55%	45%	100%	SCPA-2
S-PZ-9D	79%	81%	80%	86%	SCPA-2
S-TMW-1	99%	46%	37%	100%	SCPA-2
S-TMW-2	100%	38%	28%	99%	Background
S-TMW-3	100%	39%	30%	99%	Background
S-TP-2D	51%	92%	95%	62%	SCPA
S-TP-3D	99%	50%	42%	100%	SCPA-2
S-TP-4D	97%	56%	49%	99%	SCPA-2
S-TP-5D	73%	86%	84%	82%	SCPB
S-TP-6D	100%	43%	33%	100%	Background
S-TP-6S	100%	39%	29%	99%	Background
S-TP-8D	100%	39%	29%	99%	Background
S-UG-1A	98%	40%	29%	99%	SCPA-2
S-UG-2	99%	44%	33%	100%	SCPA-2
S-UG-3	99%	43%	30%	99%	SCPA-2
S-UMW-1D	99%	45%	35%	100%	SCPA-2
S-UMW-2D	22%	92%	100%	35%	SCPA
S-UMW-3D	12%	89%	99%	25%	SCPA
S-UMW-4D	42%	95%	98%	54%	SCPA
S-UMW-5D	99%	32%	19%	98%	Background
S-UMW-6D	100%	44%	34%	100%	Background

Notes:

- 1) Values display percent correlation between each sampling point and the SCPA Average (SCPA-1 and SCPA-3), SCPA-2 Average, SCPB Average, or Background Average fingerprints.
- 2) The higher values are shaded darker and indicate better correlation.
- 3) More information on the calculation of these numbers is provided in Table 1.

Tables

Table 1
Summary of Concentrations Used for FALCON Correlation
SCPB Anterative Source Demonstration
Sioux Energy Center, St. Charles County, MO

Analyte	Units	S-AM-1D	S-AM-1S	S-BMW-1D	S-BMW-1S	S-BMW-3D	S-BMW-3S	S-DG-1
ALKALINITY	mg/L	232	286	427	576	383	419	450
BORON, TOTAL	mg/L	6.34	0.708	0.132	0.0648	0.06	0.0671	0.0969
CALCIUM, TOTAL	mg/L	71.9	93.4	133	184	115	137	129
CHLORIDE, TOTAL	mg/L	34.6	37.1	5.9	13.1	9.2	12.6	3.6
FLUORIDE, TOTAL	mg/L	0.6	0.15	0.06	0.06	0.06	0.06	0.06
IRON, TOTAL	mg/L	1.80	1.19	9.89	0.00455	8.07	0.00	0.296
MAGNESIUM, TOTAL	mg/L	15.3	19.7	29	37.1	26.9	24.4	31
MANGANESE, TOTAL	mg/L	0.35	1.92	1	0.849	0.534	0.0302	0.0443
POTASSIUM, TOTAL	mg/L	6.19	8.31	2.51	0.427	3.42	0.426	3.77
SODIUM, TOTAL	mg/L	22.7	17.5	6.41	5.13	6.21	5.36	4.11
SULFATE, TOTAL	mg/L	36.7	43.8	32	37.7	24	32.4	29.5
Sum		428.5	509.8	646.9	854.4	576.5	631.3	651.5
Analyte		S-AM-1D	S-AM-1S	S-BMW-1D	S-BMW-1S	S-BMW-3D	S-BMW-3S	S-DG-1
ALKALINITY		54%	56%	66%	67%	66%	66%	69%
BORON, TOTAL		1.5%	0.14%	0.02%	0.0076%	0.011%	0.011%	0.015%
CALCIUM, TOTAL		17%	18%	21%	22%	20%	22%	20%
CHLORIDE, TOTAL		8.1%	7.3%	0.91%	1.5%	1.6%	2%	0.55%
FLUORIDE, TOTAL		0.14%	0.029%	0.0093%	0.007%	0.01%	0.0095%	0.0092%
IRON, TOTAL		0.42%	0.23%	1.5%	0.00053%	1.4%	0.00072%	0.045%
MAGNESIUM, TOTAL		3.6%	3.9%	4.5%	4.3%	4.7%	3.9%	4.8%
MANGANESE, TOTAL		0.082%	0.38%	0.15%	0.099%	0.093%	0.0048%	0.0068%
POTASSIUM, TOTAL		1.4%	1.6%	0.39%	0.05%	0.59%	0.067%	0.58%
SODIUM, TOTAL		5.3%	3.4%	0.99%	0.6%	1.1%	0.85%	0.63%
SULFATE, TOTAL		8.6%	8.6%	4.9%	4.4%	4.2%	5.1%	4.5%
Sum		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Notes

- 1) Values for CCR Rule monitoring wells from May 2023 samples collected for the CCR Rule.
- 2) Unit abbreviations - mg/L - milligrams per liter.
- 3) One-half the value of the Method Detection Limit (MDL) is used for non-detect values.

Table 1
Summary of Concentrations Used for FALCON Correlation
SCPB Anterative Source Demonstration
Sioux Energy Center, St. Charles County, MO

Analyte	Units	S-DG-2	S-DG-3	S-DG-4	S-LMW-1S	S-LMW-2S	S-LMW-3S	S-LMW-4S
ALKALINITY	mg/L	428	480	501	226	296	559	592
BORON, TOTAL	mg/L	0.0755	0.0836	0.0914	0.659	9.8	0.215	0.758
CALCIUM, TOTAL	mg/L	126	159	139	90.5	169	185	186
CHLORIDE, TOTAL	mg/L	2.8	6.9	25.4	45	119	52.4	7.2
FLUORIDE, TOTAL	mg/L	0.06	0.06	0.06	0.06	0.06	0.06	0.06
IRON, TOTAL	mg/L	0.156	0.238	0.017	0.0156	0.073	0.0515	0.0186
MAGNESIUM, TOTAL	mg/L	25.6	35.6	43.5	22.5	29.9	40	43.1
MANGANESE, TOTAL	mg/L	0.216	0.526	0.367	0.049	0.389	0.0183	0.0511
POTASSIUM, TOTAL	mg/L	6.36	5.63	6.64	5.97	8.75	4.69	4.95
SODIUM, TOTAL	mg/L	3.92	4.83	15.1	19	70.3	19.2	11.5
SULFATE, TOTAL	mg/L	28.4	76.3	56.9	99.4	281	43.7	60.7
Sum		621.6	769.2	788.1	509.2	984.3	904.3	906.3
Analyte		S-DG-2	S-DG-3	S-DG-4	S-LMW-1S	S-LMW-2S	S-LMW-3S	S-LMW-4S
ALKALINITY		69%	62%	64%	44%	30%	62%	65%
BORON, TOTAL		0.012%	0.011%	0.012%	0.13%	1%	0.024%	0.084%
CALCIUM, TOTAL		20%	21%	18%	18%	17%	20%	21%
CHLORIDE, TOTAL		0.45%	0.9%	3.2%	8.8%	12%	5.8%	0.79%
FLUORIDE, TOTAL		0.0097%	0.0078%	0.0076%	0.012%	0.0061%	0.0066%	0.0066%
IRON, TOTAL		0.025%	0.031%	0.0022%	0.0031%	0.0075%	0.0057%	0.0021%
MAGNESIUM, TOTAL		4.1%	4.6%	5.5%	4.4%	3%	4.4%	4.8%
MANGANESE, TOTAL		0.035%	0.068%	0.047%	0.0096%	0.04%	0.002%	0.0056%
POTASSIUM, TOTAL		1%	0.73%	0.84%	1.2%	0.89%	0.52%	0.55%
SODIUM, TOTAL		0.63%	0.63%	1.9%	3.7%	7.1%	2.1%	1.3%
SULFATE, TOTAL		4.6%	9.9%	7.2%	20%	29%	4.8%	6.7%
Sum		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Notes

- 1) Values for CCR Rule monitoring wells from May 2023 samples collected for the CCR Rule.
- 2) Unit abbreviations - mg/L - milligrams per liter.
- 3) One-half the value of the Method Detection Limit (MDL) is used for non-detect values.

Table 1
Summary of Concentrations Used for FALCON Correlation
SCPB Anterative Source Demonstration
Sioux Energy Center, St. Charles County, MO

Analyte	Units	S-LMW-5S	S-LMW-6S	S-LMW-7S	S-LMW-8S	S-LMW-9S	S-PZ-1S	S-PZ-9D
ALKALINITY	mg/L	328	570	394	376	422	237	333
BORON, TOTAL	mg/L	16.2	18	3.01	4.3	1.18	3.46	3.55
CALCIUM, TOTAL	mg/L	238	263	204	222	156	86.2	167
CHLORIDE, TOTAL	mg/L	16.5	2.70	31	80.5	70.1	36.7	10.8
FLUORIDE, TOTAL	mg/L	0.06	0.06	0.06	0.06	0.06	0.06	0.06
IRON, TOTAL	mg/L	0.0772	0.0256	0.00455	0.0368	0.0187	4.94	10.9
MAGNESIUM, TOTAL	mg/L	45	58.9	58.2	58.3	50	17	40.7
MANGANESE, TOTAL	mg/L	1.52	0.427	0.566	1.06	0.379	0.612	1.1
POTASSIUM, TOTAL	mg/L	4.62	4.59	4.05	4.57	4.96	2.33	4.71
SODIUM, TOTAL	mg/L	174	79.3	16.5	48.9	43	20.4	18
SULFATE, TOTAL	mg/L	757	512	382	458	171	69.7	279
Sum		1581.0	1509.0	1093.4	1253.7	918.7	478.4	868.8
Analyte		S-LMW-5S	S-LMW-6S	S-LMW-7S	S-LMW-8S	S-LMW-9S	S-PZ-1S	S-PZ-9D
ALKALINITY		21%	38%	36%	30%	46%	50%	38%
BORON, TOTAL		1%	1.2%	0.28%	0.34%	0.13%	0.72%	0.41%
CALCIUM, TOTAL		15%	17%	19%	18%	17%	18%	19%
CHLORIDE, TOTAL		1%	0.18%	2.8%	6.4%	7.6%	7.7%	1.2%
FLUORIDE, TOTAL		0.0038%	0.004%	0.0055%	0.0048%	0.0065%	0.013%	0.0069%
IRON, TOTAL		0.0049%	0.0017%	0.00042%	0.0029%	0.002%	1%	1.3%
MAGNESIUM, TOTAL		2.8%	3.9%	5.3%	4.7%	5.4%	3.6%	4.7%
MANGANESE, TOTAL		0.096%	0.028%	0.052%	0.085%	0.041%	0.13%	0.13%
POTASSIUM, TOTAL		0.29%	0.3%	0.37%	0.36%	0.54%	0.49%	0.54%
SODIUM, TOTAL		11%	5.3%	1.5%	3.9%	4.7%	4.3%	2.1%
SULFATE, TOTAL		48%	34%	35%	37%	19%	15%	32%
Sum		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Notes

- 1) Values for CCR Rule monitoring wells from May 2023 samples collected for the CCR Rule.
- 2) Unit abbreviations - mg/L - milligrams per liter.
- 3) One-half the value of the Method Detection Limit (MDL) is used for non-detect values.

Table 1
Summary of Concentrations Used for FALCON Correlation
SCPB Anterative Source Demonstration
Sioux Energy Center, St. Charles County, MO

Analyte	Units	S-TMW-1	S-TMW-2	S-TMW-3	S-TP-2D	S-TP-3D	S-TP-4D	S-TP-5D
ALKALINITY	mg/L	323	402	411	474	351	316	258
BORON, TOTAL	mg/L	0.0769	0.0849	0.0891	0.0878	0.06	0.0987	7.9
CALCIUM, TOTAL	mg/L	106.0	123	128	255	117	118	138
CHLORIDE, TOTAL	mg/L	4.6	3.1	3.6	70.6	10.7	8.9	43.1
FLUORIDE, TOTAL	mg/L	0.33	0.27	0.06	0.06	0.06	0.06	0.06
IRON, TOTAL	mg/L	0.0107	1.34	0.689	15.5	7.95	6.47	9.78
MAGNESIUM, TOTAL	mg/L	18.9	22.6	23.4	70.8	28.7	28.8	33.9
MANGANESE, TOTAL	mg/L	0.373	0.346	0.353	1.18	0.629	0.367	1.05
POTASSIUM, TOTAL	mg/L	4.67	5.04	5.98	5.72	3.83	3.44	5.33
SODIUM, TOTAL	mg/L	3.44	3.69	4.45	21.5	6.56	8.03	38.1
SULFATE, TOTAL	mg/L	56.6	32.8	40.9	767	86.1	102	249
Sum		518.0	594.3	618.5	1681.4	612.6	592.2	784.2
Analyte		S-TMW-1	S-TMW-2	S-TMW-3	S-TP-2D	S-TP-3D	S-TP-4D	S-TP-5D
ALKALINITY		62%	68%	66%	28%	57%	53%	33%
BORON, TOTAL		0.015%	0.014%	0.014%	0.0052%	0.0098%	0.017%	1%
CALCIUM, TOTAL		20%	21%	21%	15%	19%	20%	18%
CHLORIDE, TOTAL		0.89%	0.52%	0.58%	4.2%	1.7%	1.5%	5.5%
FLUORIDE, TOTAL		0.064%	0.045%	0.0097%	0.0036%	0.0098%	0.01%	0.0077%
IRON, TOTAL		0.0021%	0.23%	0.11%	0.92%	1.3%	1.1%	1.2%
MAGNESIUM, TOTAL		3.6%	3.8%	3.8%	4.2%	4.7%	4.9%	4.3%
MANGANESE, TOTAL		0.072%	0.058%	0.057%	0.07%	0.1%	0.062%	0.13%
POTASSIUM, TOTAL		0.9%	0.85%	0.97%	0.34%	0.63%	0.58%	0.68%
SODIUM, TOTAL		0.66%	0.62%	0.72%	1.3%	1.1%	1.4%	4.9%
SULFATE, TOTAL		11%	5.5%	6.6%	46%	14%	17%	32%
Sum		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Notes

- 1) Values for CCR Rule monitoring wells from May 2023 samples collected for the CCR Rule.
- 2) Unit abbreviations - mg/L - milligrams per liter.
- 3) One-half the value of the Method Detection Limit (MDL) is used for non-detect values.

Table 1
Summary of Concentrations Used for FALCON Correlation
SCPB Anterative Source Demonstration
Sioux Energy Center, St. Charles County, MO

Analyte	Units	S-TP-6D	S-TP-6S	S-TP-8D	S-UG-1A	S-UG-2	S-UG-3	S-UMW-1D
ALKALINITY	mg/L	369	416	341	406	355	376	221
BORON, TOTAL	mg/L	0.0629	0.101	0.0855	0.0899	0.458	0.258	0.34
CALCIUM, TOTAL	mg/L	116	132	114	138	115	119	79.9
CHLORIDE, TOTAL	mg/L	14.6	7.00	34.5	79.90	37.2	41.9	5.5
FLUORIDE, TOTAL	mg/L	0.06	0.06	0.06	0.06	0.06	0.06	0.06
IRON, TOTAL	mg/L	7.38	0.143	6.51	0.00455	0.00455	0.00455	0.738
MAGNESIUM, TOTAL	mg/L	29.3	28.5	25	32.3	23.2	22.9	22.1
MANGANESE, TOTAL	mg/L	0.468	0.216	0.435	0.292	0.035	0.597	0.143
POTASSIUM, TOTAL	mg/L	3.7	2.25	3.71	9.06	4.18	4.96	4.8
SODIUM, TOTAL	mg/L	7.28	5.58	6.3	22.10	26	39	17.4
SULFATE, TOTAL	mg/L	53.9	38	36.4	49.4	51.8	48	36.7
Sum		601.8	629.9	568.0	737.2	612.9	652.7	388.7
Analyte		S-TP-6D	S-TP-6S	S-TP-8D	S-UG-1A	S-UG-2	S-UG-3	S-UMW-1D
ALKALINITY		61%	66%	60%	55%	58%	58%	57%
BORON, TOTAL		0.01%	0.016%	0.015%	0.012%	0.075%	0.04%	0.087%
CALCIUM, TOTAL		19%	21%	20%	19%	19%	18%	21%
CHLORIDE, TOTAL		2.4%	1.1%	6.1%	11%	6.1%	6.4%	1.4%
FLUORIDE, TOTAL		0.01%	0.0095%	0.011%	0.0081%	0.0098%	0.0092%	0.015%
IRON, TOTAL		1.2%	0.023%	1.1%	0.00062%	0.00074%	0.0007%	0.19%
MAGNESIUM, TOTAL		4.9%	4.5%	4.4%	4.4%	3.8%	3.5%	5.7%
MANGANESE, TOTAL		0.078%	0.034%	0.077%	0.04%	0.0058%	0.091%	0.037%
POTASSIUM, TOTAL		0.61%	0.36%	0.65%	1.2%	0.68%	0.76%	1.2%
SODIUM, TOTAL		1.2%	0.89%	1.1%	3%	4.2%	6%	4.5%
SULFATE, TOTAL		9%	6%	6.4%	6.7%	8.5%	7.4%	9.4%
Sum		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Notes

- 1) Values for CCR Rule monitoring wells from May 2023 samples collected for the CCR Rule.
- 2) Unit abbreviations - mg/L - milligrams per liter.
- 3) One-half the value of the Method Detection Limit (MDL) is used for non-detect values.

Table 1
Summary of Concentrations Used for FALCON Correlation
SCPB Anterative Source Demonstration
Sioux Energy Center, St. Charles County, MO

Analyte	Units	S-UMW-2D	S-UMW-3D	S-UMW-4D	S-UMW-5D	S-UMW-6D	S-TMW-4	S-TMW-5
ALKALINITY	mg/L	113	128	198	295	323	422	451
BORON, TOTAL	mg/L	18.5	30.3	21.8	6.15	0.48	0.0995	0.0957
CALCIUM, TOTAL	mg/L	161	273	148	77.2	102	130	140
CHLORIDE, TOTAL	mg/L	32.9	14.7	37.2	30.9	5.4	3.1	1.9
FLUORIDE, TOTAL	mg/L	0.4	0.06	0.06	0.27	0.06	0.06	0.06
IRON, TOTAL	mg/L	0.196	0.946	6.16	3.27	6.68	0.0151	0.0133
MAGNESIUM, TOTAL	mg/L	3.85	8.98	21.1	17.5	23.4	32	29.5
MANGANESE, TOTAL	mg/L	0.144	0.535	1.39	0.441	0.696	0.253	0.274
POTASSIUM, TOTAL	mg/L	24.1	20	13	9.68	4.55	6.11	5.59
SODIUM, TOTAL	mg/L	52.4	99.2	59.1	20.1	9.44	4.94	4.64
SULFATE, TOTAL	mg/L	415	799	388	5.5	50.5	38.3	39.7
Sum		821.5	1374.7	893.8	466.0	526.2	636.9	672.8
Analyte		S-UMW-2D	S-UMW-3D	S-UMW-4D	S-UMW-5D	S-UMW-6D	S-TMW-4	S-TMW-5
ALKALINITY		14%	9.3%	22%	63%	61%	66%	67%
BORON, TOTAL		2.3%	2.2%	2.4%	1.3%	0.091%	0.016%	0.014%
CALCIUM, TOTAL		20%	20%	17%	17%	19%	20%	21%
CHLORIDE, TOTAL		4%	1.1%	4.2%	6.6%	1%	0.49%	0.28%
FLUORIDE, TOTAL		0.049%	0.0044%	0.0067%	0.058%	0.011%	0.0094%	0.0089%
IRON, TOTAL		0.024%	0.069%	0.69%	0.7%	1.3%	0.0024%	0.002%
MAGNESIUM, TOTAL		0.47%	0.65%	2.4%	3.8%	4.4%	5%	4.4%
MANGANESE, TOTAL		0.018%	0.039%	0.16%	0.095%	0.13%	0.04%	0.041%
POTASSIUM, TOTAL		2.9%	1.5%	1.5%	2.1%	0.86%	0.96%	0.83%
SODIUM, TOTAL		6.4%	7.2%	6.6%	4.3%	1.8%	0.78%	0.69%
SULFATE, TOTAL		51%	58%	43%	1.2%	9.6%	6%	5.9%
Sum		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Notes

- 1) Values for CCR Rule monitoring wells from May 2023 samples collected for the CCR Rule.
- 2) Unit abbreviations - mg/L - milligrams per liter.
- 3) One-half the value of the Method Detection Limit (MDL) is used for non-detect values.

Table 1
Summary of Concentrations Used for FALCON Correlation
SCPB Anterative Source Demonstration
Sioux Energy Center, St. Charles County, MO

Analyte	Units	S-TMW-6	S-LB-2	S-LB4	S-LB5	S-SCPA-1D	S-SCPA-1S	S-SCPA-2
ALKALINITY	mg/L	503	133	115	468	228	549	219
BORON, TOTAL	mg/L	0.12	4.51	6.5	17.9	7.68	111	0.348
CALCIUM, TOTAL	mg/L	141	112	94.1	40.1	101	825	73.4
CHLORIDE, TOTAL	mg/L	2.7	25.7	38.2	30.5	25.0	26.0	20.5
FLUORIDE, TOTAL	mg/L	0.06	1.30	1.10	1.20	1.20	0.79	0.22
IRON, TOTAL	mg/L	0.00455	0.0062	0.057	0.0219	0.779	0.0062	1.35
MAGNESIUM, TOTAL	mg/L	29.6	0.122	0.108	0.0284	23.9	4.88	20.0
MANGANESE, TOTAL	mg/L	0.195	0.0009	0.0009	0.0009	0.0979	0.0009	0.113
POTASSIUM, TOTAL	mg/L	39.1	24.9	25.2	91.0	11.8	55.2	4.35
SODIUM, TOTAL	mg/L	5.49	108	76.1	267	27.0	81.4	13.9
SULFATE, TOTAL	mg/L	30.7	451	318	393	200	2080	48.5
Sum		752.0	860.5	674.4	1308.8	626.5	3733.3	401.7
Analyte		S-TMW-6	S-LB-2	S-LB4	S-LB5	S-SCPA-1D	S-SCPA-1S	S-SCPA-2
ALKALINITY		67%	15%	17%	36%	36%	15%	55%
BORON, TOTAL		0.016%	0.52%	0.96%	1.4%	1.2%	3%	0.087%
CALCIUM, TOTAL		19%	13%	14%	3.1%	16%	22%	18%
CHLORIDE, TOTAL		0.36%	3%	5.7%	2.3%	4%	0.7%	5.1%
FLUORIDE, TOTAL		0.008%	0.15%	0.16%	0.092%	0.19%	0.021%	0.055%
IRON, TOTAL		0.00061%	0.00072%	0.0085%	0.0017%	0.12%	0.00017%	0.34%
MAGNESIUM, TOTAL		3.9%	0.014%	0.016%	0.0022%	3.8%	0.13%	5%
MANGANESE, TOTAL		0.026%	0.0001%	0.00013%	0.000069%	0.016%	0.000024%	0.028%
POTASSIUM, TOTAL		5.2%	2.9%	3.7%	7%	1.9%	1.5%	1.1%
SODIUM, TOTAL		0.73%	13%	11%	20%	4.3%	2.2%	3.5%
SULFATE, TOTAL		4.1%	52%	47%	30%	32%	56%	12%
Sum		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Notes

- 1) Values for CCR Rule monitoring wells from May 2023; Values for pore-water samples from SCPB ASD Investigation collected in February-March 2018.
- 2) Unit abbreviations - mg/L - milligrams per liter.
- 3) One-half the value of the Method Detection Limit (MDL) is used for non-detect values.

Table 1
Summary of Concentrations Used for FALCON Correlation
SCPB Anternative Source Demonstration
Sioux Energy Center, St. Charles County, MO

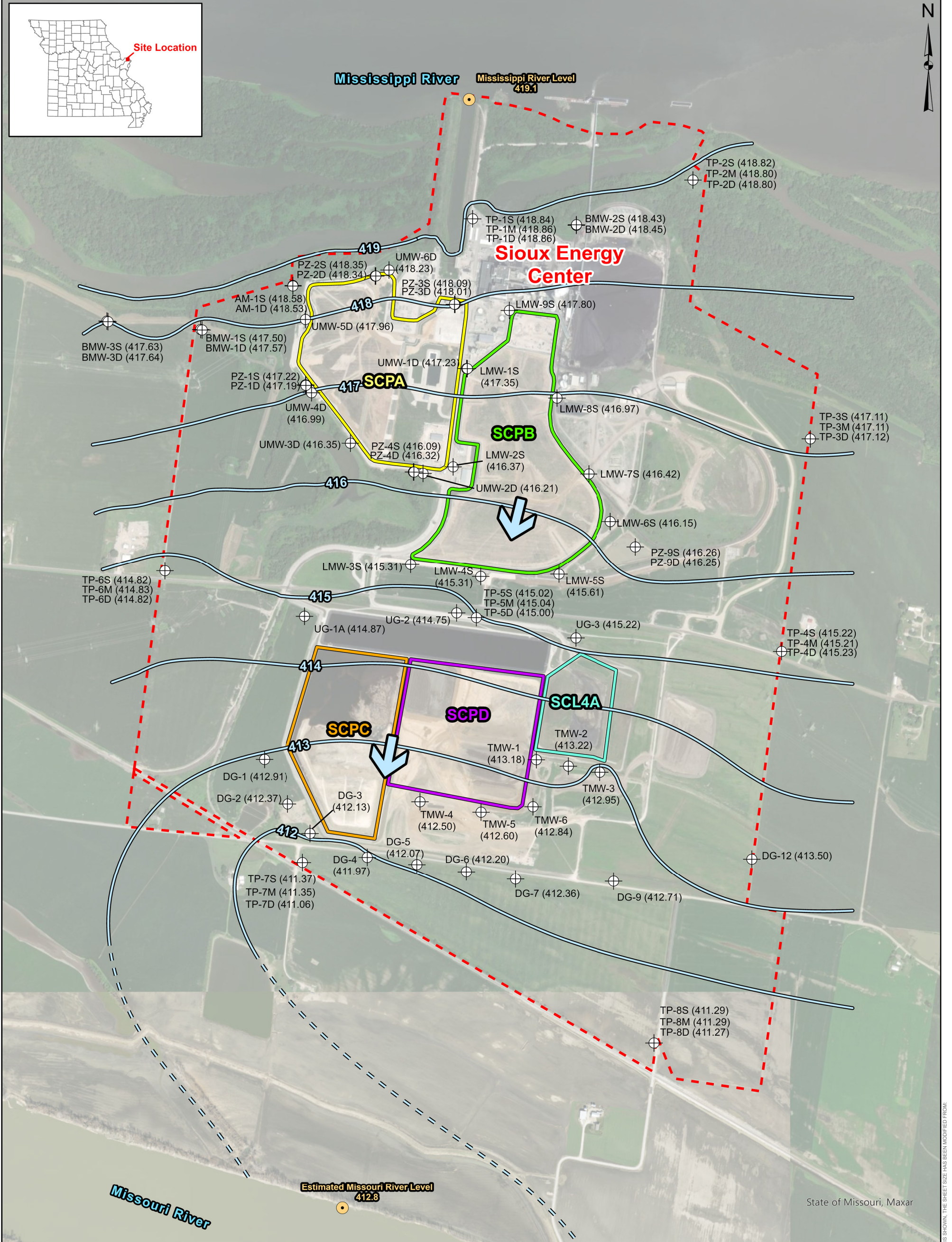
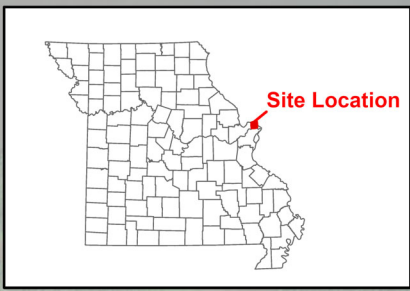
Analyte	Units	S-SCPA-3D	S-SCPA-3S	S-SCPB-1
ALKALINITY	mg/L	185	170	326
BORON, TOTAL	mg/L	79.5	67.8	10.7
CALCIUM, TOTAL	mg/L	548	501	37.2
CHLORIDE, TOTAL	mg/L	27.1	23.1	51.7
FLUORIDE, TOTAL	mg/L	2.9	0.60	1.8
IRON, TOTAL	mg/L	0.138	0.0343	0.0697
MAGNESIUM, TOTAL	mg/L	60.2	9.60	0.0387
MANGANESE, TOTAL	mg/L	0.202	0.0179	0.0009
POTASSIUM, TOTAL	mg/L	60.3	40.1	74.9
SODIUM, TOTAL	mg/L	116	58.5	314
SULFATE, TOTAL	mg/L	1820	1290	630
Sum		2899.3	2160.8	1446.4
Analyte		S-SCPA-3D	S-SCPA-3S	S-SCPB-1
ALKALINITY		6.4%	7.9%	23%
BORON, TOTAL		2.7%	3.1%	0.74%
CALCIUM, TOTAL		19%	23%	2.6%
CHLORIDE, TOTAL		0.93%	1.1%	3.6%
FLUORIDE, TOTAL		0.1%	0.028%	0.12%
IRON, TOTAL		0.0048%	0.0016%	0.0048%
MAGNESIUM, TOTAL		2.1%	0.44%	0.0027%
MANGANESE, TOTAL		0.007%	0.00083%	0.000062%
POTASSIUM, TOTAL		2.1%	1.9%	5.2%
SODIUM, TOTAL		4%	2.7%	22%
SULFATE, TOTAL		63%	60%	44%
Sum		100.0%	100.0%	100.0%

Notes

- 1) Values for CCR Rule monitoring wells from May 2023; Values for pore-water samples from SCPB ASD Investigation collected in February-March 2018.
- 2) Unit abbreviations - mg/L - milligrams per liter.
- 3) One-half the value of the Method Detection Limit (MDL) is used for non-detect values.

Appendix D

2023 Potentiometric Surface Maps



LEGEND

CCR Units

- Sioux Energy Center Property Boundary
- SCPA - Bottom Ash Surface Impoundment (Closed)
- SCPB - Fly Ash Surface Impoundment (Closed)
- SCPC - WFGD Surface Impoundment (Closure in Progress)
- SCL4A - Dry CCR Disposal Area
- SCPD - FGD Surface Impoundment

Groundwater Elevation Contour (FT MSL)

- Groundwater Elevation Contour (FT MSL)
- Inferred Groundwater Elevation Contour (FT MSL)

Ground/Surface Water Measurement Locations

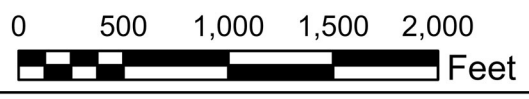
- River Gauge Location
- ⊕ Monitoring Well or Piezometer
- ➔ Groundwater Flow Direction

NOTES

- 1.) ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
- 2.) GROUNDWATER AND SURFACE WATER ELEVATIONS DISPLAYED IN FEET ABOVE MEAN SEA LEVEL (FT MSL).
- 3.) GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY WSP.
- 4.) MISSOURI RIVER ELEVATION ESTIMATED BASED ON NEARBY UNITED STATES GEOLOGICAL SURVEY (USGS) RIVER GAUGING LOCATIONS.
- 5.) MISSISSIPPI RIVER ELEVATION PROVIDED BY AMEREN MISSOURI.
- 6.) FGD - FLUE GAS DESULFURIZATION.

REFERENCES

- 1.) AMEREN MISSOURI SIOUX ENERGY CENTER, SIOUX PROPERTY CONTROL MAP, FEBRUARY 2011.
- 2.) COORDINATE SYSTEM: NAD 1983 STATE PLANE MISSOURI EAST FIPS 2,401 FEET.
- 3.) USGS NATIONAL WATER INFORMATION SYSTEM, USGS GAUGES 06935965 (ST. CHARLES), 07010000 (ST. LOUIS), 05587498 (ALTON), GRAFTON (05587450).



TITLE

JANUARY 3, 2023 POTENTIOMETRIC SURFACE MAP

PROJECT

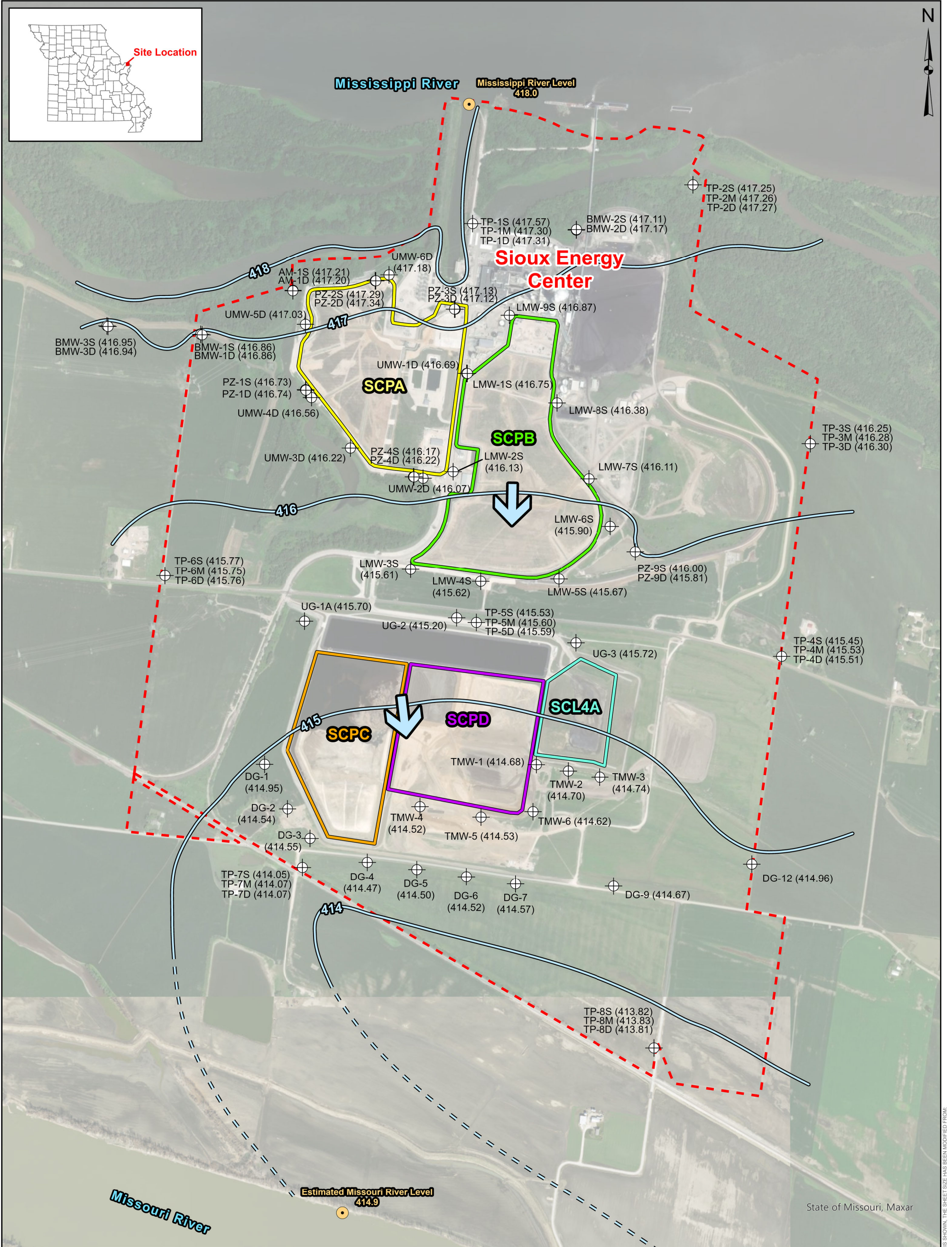
CCR GROUNDWATER MONITORING PROGRAM

CLIENT

AMEREN MISSOURI
SIOUX ENERGY CENTER

	DESIGN	GTM	YYYY-MM-DD	2023-08-21
	PREPARED	GTM	PROJECT No.	23009
	REVIEW	JSI	FIGURE D1	
	APPROVED	MNH		

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 11in



LEGEND

- Sioux Energy Center Property Boundary
- CCR Units**
 - SCPA - Bottom Ash Surface Impoundment (Closed)
 - SCPB - Fly Ash Surface Impoundment (Closed)
 - SCPC - WFGD Surface Impoundment (Closure in Progress)
 - SCL4A - Dry CCR Disposal Area
 - SCPD - FGD Surface Impoundment

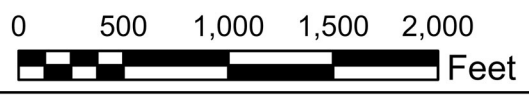
- Groundwater Elevation Contour (FT MSL)**
 - Groundwater Elevation Contour (FT MSL)
 - Inferred Groundwater Elevation Contour (FT MSL)
- Ground/Surface Water Measurement Locations**
 - River Gauge Location
 - Monitoring Well or Piezometer
 - Groundwater Flow Direction

NOTES

- 1.) ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
- 2.) GROUNDWATER AND SURFACE WATER ELEVATIONS DISPLAYED IN FEET ABOVE MEAN SEA LEVEL (FT MSL).
- 3.) GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY ROCKSMITH.
- 4.) MISSOURI RIVER ELEVATION ESTIMATED BASED ON NEARBY UNITED STATES GEOLOGICAL SURVEY (USGS) RIVER GAUGING LOCATIONS.
- 5.) MISSISSIPPI RIVER ELEVATION PROVIDED BY AMEREN MISSOURI.
- 6.) FGD - FLUE GAS DESULFURIZATION.

REFERENCES

- 1.) AMEREN MISSOURI SIOUX ENERGY CENTER, SIOUX PROPERTY CONTROL MAP, FEBRUARY 2011.
- 2.) COORDINATE SYSTEM: NAD 1983 STATE PLANE MISSOURI EAST FIPS 2,401 FEET.
- 3.) USGS NATIONAL WATER INFORMATION SYSTEM, USGS GAUGES 06935965 (ST. CHARLES), 07010000 (ST. LOUIS), 05587498 (ALTON), GRAFTON (05587450).



TITLE
APRIL 28, 2023 POTENTIOMETRIC SURFACE MAP

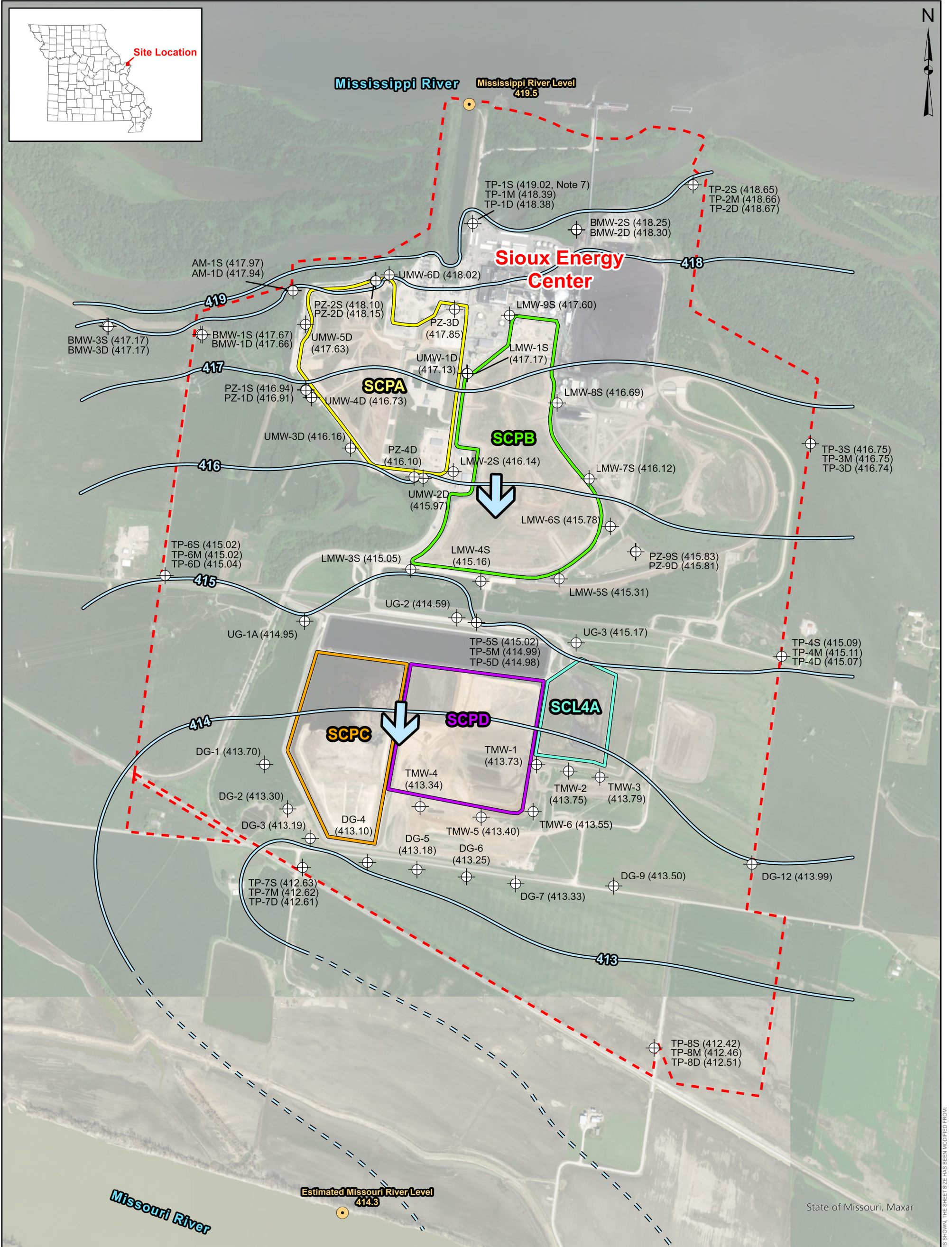
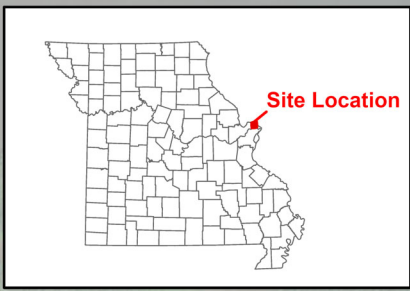
PROJECT
 CCR GROUNDWATER MONITORING PROGRAM

CLIENT
 AMEREN MISSOURI
 SIOUX ENERGY CENTER

DESIGN	GTM	YYYY-MM-DD	2023-08-23
PREPARED	GTM	PROJECT No.	23009
REVIEW	JSI	FIGURE D2	
APPROVED	MNH		



IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 11in



- LEGEND**
- - - Sioux Energy Center Property Boundary
 - CCR Units**
 - SCPA - Bottom Ash Surface Impoundment (Closed)
 - SCPB - Fly Ash Surface Impoundment (Closed)
 - SCPC - WFGD Surface Impoundment (Closure in Progress)
 - SCL4A - Dry CCR Disposal Area
 - SCPD - FGD Surface Impoundment - Groundwater Elevation Contour (FT MSL)**
 - Groundwater Elevation Contour (FT MSL)
 - Inferred Groundwater Elevation Contour (FT MSL) - Ground/Surface Water Measurement Locations**
 - River Gauge Location
 - ⊕ Monitoring Well or Piezometer
 - ➔ Groundwater Flow Direction

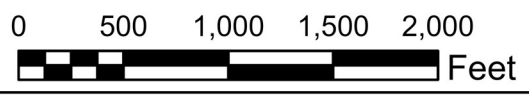
- NOTES**
- 1.) ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
 - 2.) GROUNDWATER AND SURFACE WATER ELEVATIONS DISPLAYED IN FEET ABOVE MEAN SEA LEVEL (FT MSL).
 - 3.) GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY ROCKSMITH.
 - 4.) MISSOURI RIVER ELEVATION ESTIMATED BASED ON NEARBY UNITED STATES GEOLOGICAL SURVEY (USGS) RIVER GAUGING LOCATIONS.
 - 5.) MISSISSIPPI RIVER ELEVATION PROVIDED BY AMEREN MISSOURI.
 - 6.) FGD - FLUE GAS DESULFURIZATION.
 - 7.) TP-1S NOT USED FOR POTENTIOMETRIC SURFACE CONTOURING.

- REFERENCES**
- 1.) AMEREN MISSOURI SIOUX ENERGY CENTER, SIOUX PROPERTY CONTROL MAP, FEBRUARY 2011.
 - 2.) COORDINATE SYSTEM: NAD 1983 STATE PLANE MISSOURI EAST FIPS 2,401 FEET.
 - 3.) USGS NATIONAL WATER INFORMATION SYSTEM, USGS GAUGES 06935965 (ST. CHARLES), 07010000 (ST. LOUIS), 05587498 (ALTON), GRAFTON (05587450).

TITLE
JULY 10, 2023 POTENTIOMETRIC SURFACE MAP

PROJECT
 CCR GROUNDWATER MONITORING PROGRAM

CLIENT
 AMEREN MISSOURI
 SIOUX ENERGY CENTER



DESIGN	GTM	YYYY-MM-DD	2023-08-23
PREPARED	GTM	PROJECT No.	23009
REVIEW	JSI	FIGURE D3	
APPROVED	MNH		

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 11in



- LEGEND**
- - - Sioux Energy Center Property Boundary
 - CCR Units**
 - SCPA - Bottom Ash Surface Impoundment (Closed)
 - SCPB - Fly Ash Surface Impoundment (Closed)
 - SCPC - WFGD Surface Impoundment (Closure in Progress)
 - SCL4A - Dry CCR Disposal Area
 - SCPD - FGD Surface Impoundment
 - Groundwater Elevation Contour (FT MSL)
 - Inferred Groundwater Elevation Contour (FT MSL)
 - Ground/Surface Water Measurement Locations**
 - River Gauge Location
 - ⊕ Monitoring Well or Piezometer
 - ➔ Groundwater Flow Direction

- NOTES**
- 1.) ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
 - 2.) GROUNDWATER AND SURFACE WATER ELEVATIONS DISPLAYED IN FEET ABOVE MEAN SEA LEVEL (FT MSL).
 - 3.) GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY ROCKSMITH.
 - 4.) MISSOURI RIVER ELEVATION ESTIMATED BASED ON NEARBY UNITED STATES GEOLOGICAL SURVEY (USGS) RIVER GAUGING LOCATIONS.
 - 5.) MISSISSIPPI RIVER ELEVATION PROVIDED BY AMEREN MISSOURI.
 - 6.) FGD - FLUE GAS DESULFURIZATION.
 - 7.) TP-1S NOT USED FOR POTENTIOMETRIC SURFACE CONTOURING.
- REFERENCES**
- 1.) AMEREN MISSOURI SIOUX ENERGY CENTER, SIOUX PROPERTY CONTROL MAP, FEBRUARY 2011.
 - 2.) COORDINATE SYSTEM: NAD 1983 STATE PLANE MISSOURI EAST FIPS 2,401 FEET.
 - 3.) USGS NATIONAL WATER INFORMATION SYSTEM, USGS GAUGES 06935965 (ST. CHARLES), 07010000 (ST. LOUIS), 05587498 (ALTON), GRAFTON (05587450).

REFERENCES

1.) AMEREN MISSOURI SIOUX ENERGY CENTER, SIOUX PROPERTY CONTROL MAP, FEBRUARY 2011.
 2.) COORDINATE SYSTEM: NAD 1983 STATE PLANE MISSOURI EAST FIPS 2,401 FEET.
 3.) USGS NATIONAL WATER INFORMATION SYSTEM, USGS GAUGES 06935965 (ST. CHARLES), 07010000 (ST. LOUIS), 05587498 (ALTON), GRAFTON (05587450).

TITLE

NOVEMBER 9, 2023 POTENTIOMETRIC SURFACE MAP

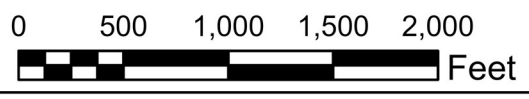
PROJECT

CCR GROUNDWATER MONITORING PROGRAM

CLIENT

AMEREN MISSOURI
SIOUX ENERGY CENTER

DESIGN	GTM	YYYY-MM-DD	2023-12-29
PREPARED	GTM	PROJECT No.	23009
REVIEW	JSI	FIGURE D4	
APPROVED	MNH		



IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: