2021 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT BOTTOM ASH POND CROSS GENERATING STATION

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1. Annual Groundwater Monitoring Report Summary

The South Carolina Public Service Authority (Santee Cooper) has prepared this 2021 Annual Groundwater Monitoring Corrective Action Report for Bottom Ash Pond at the Cross Generating Station (CGS). This 2021 Annual Report was prepared to comply with the United States Environmental Protection Agency (EPA) Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals (CCR) from Electric Utilities, Title 40 Code of Federal Regulations (CFR) Part 257, Subpart D dated April 17, 2015 (CCR Rule), specifically subsection § 257.90(e)(1) through (6).

In accordance with § 257.90(e)(6), an overview of the current status of groundwater monitoring and corrective action programs for the CCR unit is provided below:

At the start of the current annual reporting period (January 1, 2021), the Bottom Ash Pond continued to operate under a corrective action monitoring program in accordance with § 257.98. Statistically significant levels (SSLs) of beryllium in monitoring wells CAP-5 and CAP-9; cobalt in monitoring wells CAP-1, CAP-3, CAP-5, CAP-7, and CAP-9; lithium in monitoring wells CAP-1 and CAP-9; and radium 226/228 in monitoring well CAP-5 were identified during the February 2021 sampling event. For the June 2021 sampling event, SSLs above the groundwater protection standard (GWPS) were identified for beryllium in monitoring wells CAP-1, CAP-5, and CAP-9; cobalt in monitoring wells CAP-1, CAP-3, CAP-5, CAP-7, and CAP-9; lithium in monitoring wells CAP-1 and CAP-9; and radium 226/228 in monitoring well CAP-5.

An assessment of corrective measures was initiated on April 15, 2019, due to the presence of Appendix IV SSLs. The assessment of corrective measures report was completed on September 11, 2019. A public meeting was held on December 3, 2019 to discuss six remedial alternatives per § 257.96(e). An addendum to the assessment corrective measures report was completed on September 30, 2020 to address radium which became an additional SSL in 2020. A remedy has been selected pursuant to § 257.97 and the remedy selection report was completed on September 30, 2020. Remedial activities were initiated in 2020 and are ongoing. At the end of the current annual reporting period (December 31, 2021), the Bottom Ash Pond remained in the corrective action groundwater monitoring program.

To report on the activities conducted during the prior calendar year and document progress complying with the CCR Rule, the specific requirements listed in § 257.90(e)(1) through (5) are provided in the next section in bold/italic type followed by a short narrative stating how that specific requirement was met.

2. 40 CFR § 257.90 Applicability

2.1 40 CFR § 257.90(a)

All CCR landfills, CCR surface impoundments, and lateral expansions of CCR units are subject to the groundwater monitoring and corrective action requirements under § 257.90 through § 257.98.

The Bottom Ash Pond at CGS is an existing surface impoundment and is subject to the groundwater monitoring and corrective action requirements set forth by the EPA in 40 CFR § 257.90 through § 257.98. This document satisfies the requirement under § 257.90(e) which requires the CCR Unit Owner/Operator to prepare an Annual Groundwater Monitoring and Corrective Action Report.

2.2 40 CFR § 257.90(e) - SUMMARY

Annual groundwater monitoring and corrective action report. For existing CCR landfills and existing CCR surface impoundments, no later than January 31, 2018, and annually thereafter, the owner or operator must prepare an annual groundwater monitoring and corrective action report. [...] For the preceding calendar year, the annual report must document the status of the groundwater monitoring and corrective action program for the CCR unit, summarize key actions completed, describe any problems encountered, discuss actions to resolve the problems, and project key activities for the upcoming year. For purposes of this section, the owner or operator has prepared the annual report when the report is placed in the facility's operating record as required by § 257.105(h)(1).

This Annual Report documents the activities completed in 2021 for the Bottom Ash Pond at CGS as required by the Groundwater Monitoring and Corrective Action regulations. Groundwater sampling and analysis was conducted per the requirements of § 257.93, and the status of the groundwater monitoring program, set forth in § 257.98, is provided in this report.

2.2.1 Status of the Groundwater Monitoring and Corrective Action Program

In 2021, the corrective action groundwater monitoring program, initiated in 2020, continued, in accordance with § 257.98. Consistent with previous results, beryllium, cobalt, lithium, and radium continue to be the only Appendix IV constituents present in groundwater at SSLs above the GWPS. Radium, which was initially identified as an SSL above GWPS in February 2020, was also present in both semiannual sampling events for 2021 in CAP-5. In March 2021, a new well, CCMAP-4, was installed to continue the nature & extent investigation of radium for CAP-5. This well was installed in the uppermost aquifer adjacent to CAP-5 to assess the horizontal extent. Radium was not identified above the GWPS in the nature & extent well, CCMAP-4, thereby indicating that the extent of radium in groundwater may be limited to the vicinity of CAP-5.

The selected remedial alternative is closure by removal (CBR) with beneficial use plus monitored natural attenuation (MNA). This remedy eliminates the source through removal thereby meeting the source control requirement stated in the CCR Rule. Over time, removing the source material will allow the concentrations of these constituents in downgradient groundwater to attenuate. Through the on-going beneficial use of reclaimed ponded bottom ash and gypsum, the amount of material that will need to be removed from the Pond has been greatly reduced prior to selecting the final groundwater remedy. This beneficial use program's success makes the option of CBR viable. The other component of the selected remedy will be to address the presence of beryllium, cobalt, lithium, and possibly radium-226/228 in the groundwater above the GWPSs. Groundwater is being addressed through MNA, which is a viable remedial technology recognized by state and federal regulators that is applicable to inorganic compounds in groundwater. MNA, in combination with source removal, is intended to reduce concentrations of beryllium, cobalt, lithium, and radium-226/228 in groundwater at the Bottom Ash Pond boundary, thereby attaining the groundwater protection standard.

The development of the corrective action groundwater monitoring program for MNA was completed by reevaluating the current groundwater sampling plan. This evaluation concluded that the assessment monitoring protocol currently being implemented was sufficient to meet the needs of the corrective action groundwater monitoring program, which is consistent with § 257.98(a)(1)(i) and thus will continue to be implemented during the regularly scheduled semi-annual groundwater monitoring events.

2.2.2 Key Actions Completed

The following key actions were completed in 2021:

- Prepared 2020 Annual Report including:
    - The Annual Report was placed in the facility's operating record pursuant to § 257.105(h)(1);
    - Pursuant to § 257.106(h)(1), the notification was sent to the relevant State Director within 30 days of the Annual Report being placed in the facility's operating record [§ 257.106(d)];
    - Pursuant to § 257.107(h)(1), the Annual Report was posted to the CCR Website within 30 days of the Annual Report being placed in the facility's operating record [§ 257.107(d)];
- Collected and analyzed two rounds of groundwater monitoring (February and June) in accordance with § 257.95(b) and § 257.95(d)(1) and recorded the concentrations in the facility's operating record as required by § 257.95(d)(1) (which is also consistent with § 257.98 (a)(1)). Groundwater monitoring results are summarized in Table 1 and laboratory analytical results are provided in Appendix B.
- Completed statistical evaluations to determine statistically significant exceedance of GWPS for Appendix IV in accordance with § 257.93(h)(2) (Appendix A).
- Installed additional groundwater monitoring well CCMAP-4 by a South Carolina Certified Well Driller in March 2021, as part of the Corrective Measures Assessment and Nature and Extent investigation to address the new SSL identified for radium § 257.95(g)(1)(i). The well installation records are provided in Appendix C.
- Installed additional groundwater monitoring wells (CCMAP-5, CCMAP-6, and CCMAP-7) by a South Carolina Certified Well Driller in December 2021, as part of the Corrective Measures Assessment and to further characterize the nature and extent of Appendix IV constituents in groundwater. These supplemental downgradient wells will also be used to validate and/or refine the groundwater flow and solute transport model prepared by Haley & Aldrich (refer to Appendix C of the Corrective Measures Assessment Report on the public website) to predict the downgradient extent of the plume. Preliminary modeling results indicate the plume is not anticipated to extend to the property boundary, at any time in the future. The well installation records are provided in Appendix C.
- Continued implementing the semiannual Corrective Action Groundwater Monitoring Program (MNA Sampling Protocol) consistent with § 257.98 (a)(1).
- Part of the corrective action measures includes reducing the head on the Bottom Ash Pond to prepare for CBR. Further dewatering was implemented in August 2021 with additional pumping and reestablishing internal ditch connectivity.
- Slug testing was performed on the two background (PM-1 and CBW-1) and two CMA/NE (CCMAP-1 and CCMAP-2) groundwater monitoring wells for the Bottom Ash Pond in November 2021. This data provided additional information on the hydraulic conductivity of the uppermost aquifer for the unit. The findings are summarized in Appendix D.

2.2.3 Problems Encountered

The nature and extent monitoring wells for the Bottom Ash Pond (CCMAP-1, CCMAP-2, CCMAP-3, and CCMAP-4) were not sampled to comply with § 257.95(g)(iv) as the CCR unit had already moved out of

the CMA/NE monitoring program. Only the most widely detected Appendix IV constituents identified at SSLs above GWPS (beryllium, cobalt, lithium, and radium 226/228) were sampled instead of Appendix III and Appendix IV constituents as required by § 257.95(g)(iv).

2.2.4 Actions to Resolve Problems

Actions to resolve the problem include sampling Appendix III and Appendix IV constituents for the nature and extent monitoring wells consistent with § 257.95(b) and § 257.95(d)(1) for all future sampling events.

2.2.5 Project Key Activities for Upcoming Year

Key activities to be completed in 2022 include the following:

- Conduct semi-annual groundwater monitoring consistent with § 257.98 (a)(1) and § 257.95(d)(1)
- Update the existing groundwater model to calibrate the model to existing conditions and examine the fate and transport characteristics of beryllium, cobalt, lithium, and radium in groundwater.
- Conduct additional nature and extent activities, as necessary, including possible installation of additional monitoring well(s), in accordance with § 257.95(g)(1).
- Continue reducing the head on the Bottom Ash Pond to prepare for CBR.
- Prepare the 2022 annual report; place it in the record as required by § 257.105(h)(1), notify the state [§ 257.106(d)]; and post to website [§ 257.107(d)].

2.3 40 CFR § 257.90(e) - INFORMATION

At a minimum, the annual groundwater monitoring and corrective action report must contain the following information, to the extent available:

2.3.1 40 CFR § 257.90(e)(1)

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

As required by § 257.90(e)(1), a map showing the locations of the CCR unit and associated upgradient and downgradient monitoring wells for the Bottom Ash Pond is presented as Figure 1.

2.3.2 40 CFR § 257.90(e)(2)

Identification of any monitoring wells that were installed or decommissioned during the preceding year, along with a narrative description of why those actions were taken;

Groundwater monitoring well CCMAP-4 was installed by a South Carolina Certified Well Driller in March 2021, as part of the Corrective Measures Assessment and Nature and Extent for the new SSL, radium. It was installed downgradient of CAP-5, outside the Bottom Ash Pond, and was relied upon to evaluate the horizontal extent of radium impacts at the Ash Pond.

Groundwater monitoring wells CCMAP-5, CCMAP-6, and CCMAP-7 were installed by a South Carolina certified well driller in December 2021 as part of the on-going nature & extent investigation. These wells were installed downgradient of the Bottom Ash Pond to further characterize the nature and extent of Appendix IV constituents in groundwater. These supplemental downgradient wells will also be used to

validate and/or refine the groundwater flow and solute transport model prepared by Haley & Aldrich to predict the downgradient extent of the plume. The outer extent of the plume was initially demarcated at the facility property boundary with the installation of CCMAP-1 and CCMAP-2 in 2019.

2.3.3 40 CFR § 257.90(e)(3)

In addition to all the monitoring data obtained under § 257.90 through § 257.98, a summary including the number of groundwater samples that were collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was required by the detection monitoring or assessment monitoring programs;

In accordance with § 257.95(b) and § 257.95(d)(1), at least two independent samples from each background and downgradient monitoring well were collected and analyzed in 2021. A summary table including the sample names, dates of sample collection, reason for sample collection, and monitoring data obtained for the groundwater monitoring program for the Bottom Ash Pond is presented in Table 1 of this report. In addition, as required by § 257.95(d)(3), Table 1 includes the groundwater protection standards established under § 257.95(d)(2). Laboratory analytical data reports, along with field sampling forms, are provided in Appendix B to this report.

2.3.4 40 CFR § 257.90(e)(4)

A narrative discussion of any transition between monitoring programs (e.g., the date and circumstances for transitioning from detection monitoring to assessment monitoring in addition to identifying the constituent(s) detected at a statistically significant increase over background levels); and

The groundwater monitoring program remained in corrective action monitoring for the duration of 2021. A summary of the evolution of the monitoring programs is provided in this section.

As required by § 257.93(h) a statistical analysis of the Appendix III constituents was completed on January 15, 2018. Baseline analytical data collected from background monitoring wells CBW-1 and PM-1 were combined to develop Upper Tolerance Limits (UTLs). The UTLs for each Appendix III constituent were compared to the analytical results for the downgradient monitoring wells CAP-1, CAP-3, CAP-5, CAP-7, and CAP-9. Constituents with analytical results exceeding the UTLs were identified as SSIs over background for the respective Appendix III constituent. An evaluation of alternate sources was initiated and completed on April 13, 2018, as provided in § 257.94(e)(2). A source causing the SSI over background levels other than the CCR unit was not identified at that time and an Assessment Monitoring program was initiated on July 16, 2018.

As required by § 257.93(h)(2), the statistical evaluation of the detected Appendix IV constituents identified SSLs of Appendix IV constituents above GWPS. Therefore, per §257.95(g)(3), an assessment of corrective measures and nature and extent evaluation was initiated on April 15, 2019, to evaluate the horizontal and vertical nature and extent of the SSLs downgradient of the Bottom Ash Pond. The Corrective Measures Assessment (CMA) report, considering the presence and distribution of beryllium, cobalt, and lithium in the uppermost aquifer, the configuration of the Cross Bottom Ash Pond, operational history, hydrogeologic setting, and the results of the evaluation of the nature and extent available at the time of the CMA, was created.

During the February 2020 sampling event radium was detected above the GWPS in monitoring well CAP-5. An addendum to the initial CMA report was prepared and placed in the operating record on September 30, 2020. This addendum reevaluated the proposed corrective measures alternatives to address the presence of radium. Radium will continue to be evaluated during subsequent semiannual

sampling events. The Remedy Selection Report was prepared and placed in the operating record on September 30, 2020 which initiated the transition to a corrective action monitoring program. The sample concentrations from the downgradient wells for each of the detected Appendix IV constituents from the monitoring events of 2021 were compared to their respective background UTLs and GWPS (Appendix A). A sample concentration greater than the GWPS was considered to represent an SSL. Based on previous compliance sampling events and statistical evaluations, interwell comparisons were utilized for all downgradient wells and constituents. Based on the statistical evaluation of the 2021 groundwater sampling events, SSLs above GWPS were identified at the Ash Pond (beryllium, cobalt, lithium, and radium), consistent with previous findings.

The development of the corrective action groundwater monitoring program was completed by reevaluating the current groundwater sampling plan. This evaluation concluded that the assessment monitoring protocol currently being implemented was sufficient to meet the needs of the corrective action groundwater monitoring program and evaluate the performance of the selected remedy. Thus, it will continue to be implemented during the regularly scheduled semi-annual groundwater monitoring events. This is consistent with § 257.98(a)(1)(i).

2.3.5 40 CFR § 257.90(e)(5)

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

Other information including development of groundwater protection standards, recording groundwater monitoring results in the operating record, an evaluation of alternate sources, and the remedy selection process is discussed in preceding sections. Groundwater flow rate and direction are provided as Figures 2 and 3 for each sampling event as specified in § 257.93(c).

Slug testing was performed on the two background (PM-1 and CBW-1) and two CMA/NE property boundary (CCMAP-1 and CCMAP-2) groundwater monitoring wells for the Bottom Ash Pond in November 2021. This data provided additional information on the hydraulic conductivity of the uppermost aquifer in the immediate vicinity of the selected wells. The range of hydraulic conductivities from the monitoring wells that were tested were 1.387E-04 (cm/sec) to 4.800E-03 (cm/sec). These results are comparable to the Site Hydrogeologic Characterization Report completed in 2011 which reported a range of hydraulic conductivities of 3.357E-04 (cm/sec) to 8.93E-03 (cm/sec) for the shallow aquifer. This range of hydraulic conductivities is typical for the soil types identified and for this depositional setting. This information, combined with the calculated horizontal hydraulic gradients, and an assumed effective porosity of 25 percent will be used to report on groundwater flow direction and rate following each semiannual sampling event as required by § 257.93(c). These findings are provided in Appendix D.

TABLES

TABLE 1 - Summary of Analytical Results
Cross Generating Station Bottom Ash Pond Corrective Action Monitoring 2021

					Appendix III Constituents							Appendix IV Constituents																	Field Parameters							
Well ID	Purpose	Date of Sample Event	Laboratory Sample ID Number		Boron	Calcium	Chloride	Fluoride	Sulfate	Total Dissolved Solids	pH	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Fluoride	Lead	Lithium	Mercury	Molybdenum	Radium 226	Radium 228	Radium 226/228 Combined Calculation	Selenium	Thallium	Depth	Elevation	pH	Specific Conductivity	Temp	Oxidation Reduction Potential	Turbidity	Dissolved Oxygen
				Unit	ug/L	mg/L	mg/L	mg/L	mg/L	mg/L	SU	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	ug/L	ug/L	ug/L	ug/L	pCi/L	pCi/L	pCi/L	ug/L	ug/L	Feet	Feet	SU	uS	C	mv	NTU	ppm
				Method	EPA 6010D	EPA 6020B	EPA 300.0	EPA 300.0	EPA 300.0	SM 2540C		EPA 6020B	EPA 6020B	EPA 6020B	EPA 6020B	EPA 6020B	EPA 6020B	EPA 6020B	EPA 300.0	EPA 6020B	EPA 6010D	EPA 7470	EPA 6010D	EPA 903.1 Mod	EPA 904.0	EPA 903.1 Mod	EPA 6020B	EPA 6020B						SM2580		
				GWPS/US EPA MCL/RSL	—	—	—	4	—	—	—	6	10	2000	4	5	100	6	4	15	40	2	100	—	—	5	50	2	—	—	—	—	—	—	—	—
Site Background Wells																																				
PM-1	Background	1/26/2021	AE94872		<15	14.3	11.8	<0.10	9.98	110	5.03	<5.0	<5.80	85.7	<0.50	<0.50	<5.0	1	<0.10	<1.0	<10	<0.28	<10	0.559	2.88	3.44	<10.0	<1.0	8.27	74.97	5.03	143	19.47	1	4.4	6.12
PM-1	Background	6/21/2021	AF07281		<15	17	12	<0.10	11.9	155	5.21	<5.0	<5.8	87.3	<0.50	<0.50	<5.0	0.94	<0.18	<1.0	<18	<0.2	<10	0.369	1.73	2.1	<10.0	<1.0	7.91	75.33	5.21	169	26.49	45	4.3	3.96
PM-1	total samples				2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
CBW-1	Background	1/26/2021	AE94854		18	29.2	3.22	0.15	80.7	138.8	4.31	<5.0	<5.8	46.6	<0.50	<0.50	<5.0	0.66	0.15	2.5	<10	<0.28	<10	0.436	1.29	1.73	<10.0	<1.0	10.12	75.68	4.31	192	20.25	338	8	0.71
CBW-1	Background	6/21/2021	AF07259		<40	29.9	3.85	0.19	86.6	178.8	4.25	<5.0	<5.8	42.3	<0.50	<0.50	<5.0	0.7	0.19	2.6	<28	<0.2	<20	0.433	8.12	0.552	<10.0	<1.0	10.87	75.73	4.25	194	24.16	75	0.2	0.66
CBW-1	total samples				2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
CAP-1	Corrective Action	2/2/2021	AE94839			172	92.9	1.09	394	907.5	5.74	<5.0	<5.8	63.8	3.2	<0.50	<5.0	9.7	1.09	1.7	50	<0.28	<10	1.1	0.243	1.34	<10.0	<1.0	5.6	77.1	5.74	1000	13.89	34	8	1.93
CAP-1	Corrective Action	6/24/2021	AF07244		480	258	193	2.42	645	1385	5.18		<5.8	45.1	8.1	<0.50	<5.0	22.1	2.42	2.2	96	<0.2		0.13	8.659	0.789			8.01	74.69	5.18	1550	24.03	74	58.7	0.4
CAP-1	total samples				1	2	2	2	2	2	2	1	2	2	2	2	2	2	2	2	2	2	1	2	2	2	1	1	2	2	2	2	2	2	2	2
CAP-3	Corrective Action	2/3/2021	AE94841			677	700	<8.10	999	3391	6.34	<5.0	<5.8	64.2	<0.50	<0.50	<5.0	32.8	<0.18	<1.0	15	<0.28	<10	0.714	1.58	2.29	<10.0	<1.0	14.93	76.56	6.34	4180	18.22	49	0	0.68
CAP-3	Corrective Action	6/29/2021	AF07246		6300	612	608	<8.10	804	3121	6.31		<5.8	85	<0.50	<0.50	<5.0	28.9	<0.18	<1.0	11	<0.2		0.413	1.38	1.79			16.28	75.21	6.31	3290	24.59	86	2.6	0.48
CAP-3	total samples				1	2	2	2	2	2	2	1	2	2	2	2	2	2	2	2	2	2	1	2	2	2	1	1	2	2	2	2	2	2	2	2
CAP-4	CMA/NE	2/4/2021	AE94842			678	885		798	3512	6.57		<5.8	148	<0.50	<0.50	<5.0	<0.50			28								16.48	75.29	6.57	4240	19.56	95	0	0.76
CAP-4	CMA/NE	6/28/2021	AF07247			731	1004		914	3900	6.45		<5.8	118	<0.50	<0.50	<5.0	<0.50			27								16.87	74.9	6.45	4530	22.86	-13	0	0.52
CAP-4	total samples				0	2	2	0	2	2	2	0	2	2	2	2	2	2	0	0	2	0	0	0	0	0	0	0	2	2	2	2	2	2	2	2
CAP-5	Corrective Action	2/3/2021	AE94843			153	609	0.75	<2.0	1179	3.68	<5.0	<5.8	1480	5	<0.50	<5.0	14.7	0.75	6.1	16	<0.28	<10	6.31	15	21.3	<10.0	<1.0	14.67	77.11	3.68	2680	18.56	312	8	0.59
CAP-5	Corrective Action	6/29/2021	AF07248		<40	154	696	0.52	<2.0	1475	3.86		<5.8	1660	4.3	<0.50	<5.0	14.8	0.52	7.3	13	<0.2		5.16	11.6	16.8			17.78	74	3.86	2810	24.02	116	8	0.41
CAP-5	total samples				1	2	2	2	2	2	2	1	2	2	2	2	2	2	2	2	2	2	1	2	2	2	1	1	2	2	2	2	2	2	2	2
CAP-6	CMA/NE	2/4/2021	AE94844			436	524		328	2050	6.62		<5.8	292	<0.50	<0.50	<5.0	<0.50			<18								15.89	76.73	6.62	2470	18.1	-71	0	0.67
CAP-6	CMA/NE	6/28/2021	AF07249			454	600		335	2279	6.72		<5.8	317	<0.50	<0.50	<5.0	<0.50			<18								17.55	74.27	6.72	2430	23.92	-82	2.4	0.41
CAP-6	total samples				0	2	2	0	2	2	2	0	2	2	2	2	2	2	0	0	2	0	0	0	0	0	0	0	2	2	2	2	2	2	2	2
CAP-7	Corrective Action	2/3/2021	AE94845			1068	2210	<8.10	1628	6105	5.46	<5.0	<5.8	36	<0.50	<0.58	<5.0	10.2	<0.18	<1.0	<18	<0.28	<10	1.27	2.59	3.86	<10.0	<1.0	14.44	77.2	5.46	8580	18.96	78	1	0.87
CAP-7	Corrective Action	6/30/2021	AF07250		29000	1150	2905	<0.10	1851	7198	5.51		<5.8	41.3	<0.50	<0.50	<5.0	9.6	<0.18	<1.0	<10	<0.2		0.509	1.14	1.65			16.6	75.04	5.51	8740	25.66	73	8	0.36
CAP-7	total samples				1	2	2	2	2	2	2	1	2	2	2	2	2	2	2	2	2	2	1	2	2	2	1	1	2	2	2	2	2	2	2	2
CAP-8	CMA/NE	2/4/2021	AE94846			873	1230		1390	4749	6.43		<5.8	57.2	<0.50	0.59	<5.0	32.7			70								15.89	75.72	6.43	5930	18.07	-2	0	0.8
CAP-8	CMA/NE	6/28/2021	AF07251			1888	1288		1347	5032	6.75		<5.8	48.5	<0.50	2.7	<5.0	21.6			63								17.67	73.94	6.75	5690	24.17	75	0	4.99
CAP-8	total samples				0	2	2	0	2	2	2	0	2	2	2	2	2	2	0	0	2	0	0	0	0	0	0	0	2	2	2	2	2	2	2	2
CAP-9	Corrective Action	2/2/2021	AE94847			485	1040	3.91	565	2944	3.33	<5.0	5.7	41.2	16	<0.50	<5.0	36	3.91	15.4	71	<0.28	<10	0.402	1.92	2.33	<10.0	<1.0	14.02	77.57	3.33	4440	17.49	333	8	2.05
CAP-9	Duplicate	2/2/2021	AE94848			490	1050	3.84	562	2814		<5.0	5.5	40.3	15.1	<0.50	<5.0	36.1	3.84	14.8	70	<0.28	<10	1.16	2.72	3.88	<10.0	<1.0								
CAP-9	Corrective Action	6/29/2021	AF07252		7300	496	1125	3.56	625	3132	3.81		6.7	40.4	13.7	<0.50	<5.0	39	3.56	11.9	63	<0.2		0.752	2.56	3.32			15.54	76.05	3.81	4230	24.46	259	2.6	0.46
CAP-9	Duplicate	6/29/2021	AF07253		6800	511	1437	4.09	761	3284			6.7	43.7	13.6	<0.50	<5.0	39.3	4.89	12.2	67	<0.2		0.572	2.78	3.35										
CAP-9	total samples				2	4	4	4	4	4	2	2	4	4	4	4	4	4	4	4	4	4	2	4	4	4	2	2	2	2	2	2	2	2	2	2
CAP-10	CMA/NE	2/3/2021	AE94849			84.5	23.8		7.3	400	7.07		<5.8	88.2	<0.50	<0.50	<5.0	<0.50			<18								20.22	75.46	7.07	417	18.05	-90	0	1.05
CAP-10	CMA/NE	6/30/2021	AF07254			83.6	18.4		4.06	476.2	7.04		<5.8	83.9	<0.50	<0.50	<5.0	<0.50			<18								21.71	73.97	7.04	373	27.03	-121	0	0.34
CAP-10	total samples				0	2	2	0	2	2	2	0	2	2	2	2	2	2	0	0	2	0	0	0	0	0	0	0	2	2	2	2	2	2	2	2
CCMAP-1	CMA/NE	2/11/2021	AE94855								7.11				<0.50			<0.50			<18								4.34	75.87	7.11	280	18.6	115	0	1.17
CCMAP-1	CMA/NE	7/1/2021	AF07262								7.18				<0.50			0.82			<18			0.31	-0.0249	0.31			6.89	73.32	7.18	307	27.84	-134	0.9	0.51
CCMAP-1	total samples				0	0	0	0	0	0	2	0	0	0	2	0	0	2	0	0	2	0	0	1	1	1	0	0	2	2	2	2	2	2	2	2
CCMAP-2	CMA/NE	2/11/2021	AE94856								5.17				<0.50			<0.50			<18								6.5	74.74	5.17	42	17.93	148	0	1.66
CCMAP-2	CMA/NE	7/1/2021	AF07263								5.66				<0.50			1.5			<18			0.391	0.238	0.628			7.72	73.52	5.66	49	23.97	87	0.9	0.51
CCMAP-2	total samples				0	0	0	0	0	0	2	0	0	0	2	0	0	2	0	0	2	0	0	1	1	1	0	0	2	2	2	2	2	2	2	2
CCMAP-3	CMA/NE	2/18/2021	AE94857								6.58				<0.50			<0.50			15								5.89	76.02	6.58	4240	19.33	-9	0	0.66
CCMAP-3	Duplicate	2/18/2021	AE94858												<0.50			<0.50			16															
CCMAP-3	CMA/NE	7/1/2021	AF07264								6.42				<0.50			<0.50			25			1.57	0.509	2.08			8.82	73.89	6.42	5660	26.72	-8	2.7	0.39
CCMAP-3	Duplicate	7/1/2021	AF07265												<0.50			<0.50			26			0.939	0.954	1.89										
CCMAP-3	total samples				0	0	0	0	0	0	2	0	0	0	4	0	0	4	0	0	4	0	0	2	2	2	0	0	2	2	2	2	2	2	2	2
CCMAP-4	CMA/NE	4/8/2021	AF00697								6.19				<0.50			10			<18								5.31	76.52	6.19	541	21.39	-13	0	0.57
CCMAP-4	Duplicate	4/8/2021	AF00698												<0.50			9.9			<18															
CCMAP-4	CMA/NE	7/1/2021	AF07266								6.48				<0.50			5.44			<18			0.521	-0.82	0.521			7.87	73.96	6.48	581	22.01	-44	4.1	0.54
CCMAP-4	total samples				0	0	0	0	0	0	2	0	0	0	3	0	0	3	0	0	3	0	0	1	1	1	0	0	2	2	2	2	2	2	2	2

All groundwater samples collected from the monitoring wells for Corrective Action Monitoring in 2021 for the constituents listed in Appendix III and Appendix IV of the EPA CCR Rule (40 CFR) were analyzed by South Carolina Certified laboratories: Santee Cooper Analytical Services (Certification # 08552), GEL Laboratories, LLC (Certification # 18128), and Rogers & Callcot, Inc. (Certification # 23105001).

Notes:
1. Some groundwater monitoring wells are sampled for both Federal CCR and State Permit program compliance. Applicable analytical results from the State Permit program have been included in this summary table. All Background & Corrective Action compliance wells have been sampled to meet § 257.98(a)(1).
2. The Corrective Measures Assessment/Nature & Extent (CMA/NE) wells were not sampled to comply with § 257.95(g)(iv) as the CCR Unit had already moved out of the CMA/NE monitoring program. These wells continue to provide additional insight to the nature & extent of the plume during corrective action. Moving forward, all CMA/NE wells will be sampled to comply with § 257.95(g)(iv) or § 257.98(a)(1).
3. The sample results for background well, CBW-1 and CAP-5, in June (Lab ID# AF07259) indicated higher reporting limits than usual for boron, lithium, and molybdenum (40 ug/L vs 15 ug/L, 20 ug/L vs 10 ug/L, and 20 ug/L vs 10 ug/L, respectively). The results for these three constituents were all non-detect at the reported limit. This particular sample was subject to sample matrix interference resulting in a higher reporting limit. Even though the reporting limits were higher than typical, they were s less than the GWPS by more than half (except for boron which does not have a GWPS). The analytical reports are being carefully reviewed for this occurrence in the future

FIGURES

LEGEND

- BACKGROUND WELL
- ASH POND MONITORING WELL
- ASH POND NATURE & EXTENT WELL
- ASH POND PROPERTY BOUNDARY WELL
- CCR UNIT BOUNDARY
- CROSS GENERATING STATION PROPERTY BOUNDARY
- SANTEE COOPER PROPERTY BOUNDARY

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. AERIAL IMAGERY SOURCE: ESRI

N

0 840 1,680
SCALE IN FEET

SANTEE COOPER
CROSS GENERATING STATION
PINEVILLE, SOUTH CAROLINA

JANUARY 2022

LOCATION OF BOTTOM ASH POND GROUNDWATER MONITORING WELLS FOR CCR COMPLIANCE

FIGURE 1

GIS FILE PATH: I:\97130\Groundwater\GIS Groundwater\mxd map files\CGS_CCR_WELL_LOCATIONS.mxd — USER: ALDECOTE — LAST SAVED: 2/27/2022 12:08:05 PM

LEGEND

- ASH POND WELL
- NATURE & EXTENT WELL
- GROUNDWATER ELEVATION CONTOUR, 0.5-FT INTERVAL
- GROUNDWATER FLOW DIRECTION
- CCR UNIT BOUNDARY
- CROSS GENERTAING STATION PROPERTY BOUNDARY
- SANTEE COOPER PROPERTY BOUNDARY

NOTES

1. ALL LOCATIONS ARE APPROXIMATE.

2. AVERAGE LINEAR VELOCITY WAS CALCULATED USING:

$$v = -\frac{K}{n_e}\frac{\Delta h}{\Delta L}$$

3. ABREVIATIONS:
ft/day = FEET PER DAY
V = AVERAGE LINEAR VELOCITY (ft/day)
K = HORIZONTAL HYDRAULIC CONDUCTIVITY (ft/day)
Δh/ΔL = HORIZONTAL GRADIENT (CHANGE IN HYDRAULIC HEAD / LENGTH OF HORIZONTAL HYDRAULIC FLOW PATH)
ne = EFFECTIVE POROSITY

4. K = 25 FEET PER DAY (ft/day)

5. n_e = 0.25

6. WATER LEVELS WERE MEASURED BY SANTEE COOPER FROM JANUARY 26, 2021 THROUGH FEBRUARY 4, 2021

7. AERIAL IMAGERY SOURCE: ESRI

N

0 500 1,000
SCALE IN FEET

HALEY ALDRICH

SANTEE COOPER
CROSS GENERATING STATION
PINEVILLE, SOUTH CAROLINA

POTENTIOMETRIC MAP
BOTTOM ASH POND
JANUARY-FEBRUARY 2021

FEBRUARY 2022

FIGURE 2

GIS FILE PATH: C:\Users\hwachholz\Documents\working\superseded\131539_SANTEE_COOPER\Maps\2022_02\132892_008_00MB_CROSS_POTENTIOMETRIC_MAP.mxd — USER: hwachholz — LAST SAVED: 2/25/2022 12:29:27 PM

LEGEND

- ASH POND WELL
- NATURE & EXTENT WELL
- GROUNDWATER ELEVATION CONTOUR, 0.5-FT INTERVAL
- GROUNDWATER FLOW DIRECTION
- CCR UNIT BOUNDARY
- CROSS GENERTAING STATION PROPERTY BOUNDARY
- SANTEE COOPER PROPERTY BOUNDARY

NOTES

1. ALL LOCATIONS ARE APPROXIMATE.

2. AVERAGE LINEAR VELOCITY WAS CALCULATED USING:

$$v = -\frac{K}{n_e}\frac{\Delta h}{\Delta L}$$

3. ABREVIATIONS:
ft/day = FEET PER DAY
V = AVERAGE LINEAR VELOCITY (ft/day)
K = HORIZONTAL HYDRAULIC CONDUCTIVITY (ft/day)
Δh/ΔL = HORIZONTAL GRADIENT (CHANGE IN HYDRAULIC HEAD / LENGTH OF HORIZONTAL HYDRAULIC FLOW PATH)
ne = EFFECTIVE POROSITY

4. K = 25 FEET PER DAY (ft/day)

5. n_e = 0.25

6. WATER LEVELS WERE MEASURED BY SANTEE COOPER FROM JUNE 21, 2021 THROUGH JULY 1, 2021

7. MONITORING WELL CCMAP-4 WAS INSTALLED IN MARCH 2021.

8. AERIAL IMAGERY SOURCE: ESRI

N

0 500 1,000
SCALE IN FEET

HALEY ALDRICH

SANTEE COOPER
CROSS GENERATING STATION
PINEVILLE, SOUTH CAROLINA

POTENTIOMETRIC MAP
BOTTOM ASH POND
JUNE-JULY

FEBRUARY 2022

FIGURE 3

GIS FILE PATH: C:\Users\hwachholz\Documents\working\superseded\1131539_SANTEE_COOPER\Maps\2022_02\132892_008_00MB_CROSS_POTENTIOMETRIC_MAP.mxd — USER: hwachholz — LAST SAVED: 2/25/2022 12:29:27 PM

Appendix A – Statistical Analysis

HALEY & ALDRICH, INC.
400 Augusta Street
Suite 100
Greenville, SC 29601
864.214.8750

TECHNICAL MEMORANDUM

June 11, 2021
File No. 132892-010

SUBJECT: 2021 Semi-annual Groundwater Assessment Monitoring Data
Statistical Evaluation
Cross Generating Station
Bottom Ash Pond

Pursuant to Title 40 Code of Federal Regulations (40 CFR) § 257.93 and 257.95 (Rule), this memorandum summarizes the statistical evaluation of the analytical results for the February 2021 semi-annual assessment monitoring groundwater sampling event for the Cross Generating Station (CGS) Bottom Ash Pond. The statistical evaluation discussed in this memorandum was conducted to determine if Appendix IV groundwater monitoring constituents continue to be detected in downgradient wells at concentrations that represent a statistically significant level (SSL) above the Groundwater Protection Standard (GWPS) consistent with the requirements in 40 CFR § 257.95.

Utilizing interwell statistical evaluations, data from the groundwater sampling event for the downgradient monitoring wells were compared to the GWPS established from the background dataset for the upgradient monitoring wells (PM-1 and CBW-1). GWPS for each of the Appendix IV constituents have been set equal to the highest value of the maximum contaminant level (MCL), regional screening level (RSL), or background concentration. The results of the assessment monitoring statistical evaluation are discussed below and provided in Table I.

Statistical Evaluation of Appendix IV Constituents

The Rule provides four specific options for statistical evaluation of groundwater quality data collected at a coal combustion residual (CCR) unit (40 CFR §257.93(f) (1-4)). The statistical method used for these evaluations is tolerance limit (TL), which was certified by Haley & Aldrich, Inc. on October 14, 2017. The TL method, determined applicable for this sampling event, was used to evaluate potential SSLs above GWPS. GWPS for each constituent listed in Appendix IV were computed as upper tolerance limits (UTL), and a minimum 95 percent confidence coefficient and 95 percent coverage. The most recent groundwater sampling result from each compliance well was compared to the corresponding GWPS UTL to determine if an SSL existed.

STATISTICAL EVALUATION

An interwell statistical evaluation was used to identify SSLs. An interwell evaluation compares the most recent values from downgradient compliance wells to a background dataset composed of upgradient

well data. Because the CCR unit has transitioned into assessment monitoring, no statistical evaluations were conducted on Appendix III (detection monitoring) semi-annual assessment monitoring data.

The parametric TL method was used to complete statistical evaluations of the referenced dataset. The TL procedure is one in which a concentration limit for each constituent is established from the distribution of the background data, with a minimum 95 percent confidence level. The upper endpoint of a tolerance limit is called the UTL. Depending on the data distribution, parametric or non-parametric TL procedures are used to evaluate groundwater monitoring data using this method. Parametric TLs utilize normally distributed data or data normalized via a transformation of the sample background data used to construct the limit. If the data are non-normal and a transformation is not indicated, non-parametric procedures (order statistics or bootstrap methods) are used to calculate the TL. If all the background data are non-detect, a maximum reporting limit may serve as an appropriate UTL.

These statistical evaluations were conducted using the background dataset for all detected Appendix IV constituents using parametric TLs. If an Appendix IV constituent concentration from the February 2021 semi-annual sampling event was above the GWPS, the lower confidence limit (LCL) for the downgradient well constituent was used to evaluate if an SSL was present. The LCL is the lower end of the confidence interval range, which is an estimated concentration range intended to contain the true mean or median of the population from which the sample is drawn. The confidence interval range is designed to locate the true population mean or median with a high degree of statistical confidence, or conversely, with a low probability of error.

The UTLs were calculated from the background well dataset using Chemstat software after testing for outlier sample results that would warrant removal from the dataset based on likely error in sampling or measurement. Both visual and statistical outlier tests for the background data were performed using Chemstat and U.S. Environmental Protection Agency's ProUCL 5.1 software, and a visual inspection of the data was performed using box plots and distribution plots for the downgradient sample data. No sample data were identified as outliers that warranted removal from the dataset.

BACKGROUND DISTRIBUTIONS

The groundwater analytical results for each sampling event from the background sample locations (PM-1 and CBW-1) were combined to calculate the UTL for each detected Appendix IV constituent. The variability and distribution of the pooled dataset was evaluated to determine the method for UTL calculation. Per the document *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance, March 2009* (Unified Guidance), background concentrations were updated for the March 2020 semi-annual sampling event based on statistical evaluation of analytical results collected through March 2020. The background dataset will be updated again in March 2022 per the Unified Guidance.

RESULTS OF APPENDIX IV DOWNGRADIENT STATISTICAL COMPARISONS

The sample concentrations from the downgradient wells for each of the detected Appendix IV constituents from the February 2021 semi-annual assessment monitoring event were compared to their

respective GWPS (Table I). A sample concentration greater than the GWPS is considered to represent an SSL. Based on previous assessment monitoring sampling events and statistical evaluations, interwell comparisons were utilized for all downgradient wells and constituents. Consistent with previous results, the assessment of corrective measures, and the preferred remedy presented to the public in December 2019, beryllium, cobalt, lithium, and radium continue to be the only Appendix IV constituents present in groundwater at SSLs above GWPS.

The selected remedy (Closure by removal with beneficial reuse) has begun at the Bottom Ash Pond and is anticipated to be completed in 2025. As outlined in the Corrective Measures Assessment, groundwater modeling predicts that the concentrations of beryllium, cobalt, lithium, and radium will decline, or attenuate rapidly after the source removal is complete. During closure activities, a short term increase in the concentrations of Appendix IV SSLs is possible but these spikes in concentration will rapidly decrease once the closure is complete. Performance of the selected remedy will continue to be monitored in subsequent semiannual sampling events.

Tables:

Table I – Summary of Assessment Monitoring Statistical Evaluation – February 2021

TABLES

Cross Ash Pond

Assessment Monitoring Statistical Analysis Summary

Prepared: June 11, 2021

																			Inter-well Analysis						
Location Id	Frequency of Detection	Percent Non-Detects	Range of Non-Detect	Mean	50th Percentile (Median)	95th Percentile	Maximum Detect	Variance	Standard Deviation	Coefficient of Variance	CCR MCL/RSL	Report Result Unit	Detection Exceedances (Y/N)	Number of Detection Exceedances	Number of Non-Detection Exceedances	Outlier Presence	Outlier Removed	Trend	Distribution Well*	February 2021 Concentrations	Detect?	Lower Confidence Limit (LCL)	Upper Tolerance Limit (mg/L)	SSI	GWPS (Higher of MCL/RSL or Upper Tolerance Limit) (mg/L)	SSL
CCR Appendix-IV: Antimony, Total (mg/L)																										
CBW-1	0/14	100%	0.005-0.025	0.00643	0.005	0.012		0.00002857	0.005345	0.8315	0.006	mg/L	N	0	1	NA	NA	NA	Non-parametric				0.0250		0.0250	
PM-1	0/14	100%	0.005-0.025	0.00643	0.005	0.012		0.00002857	0.005345	0.8315	0.006	mg/L	N	0	1	NA	NA	NA								
CAP-1	0/12	100%	0.005-0.025	0.00667	0.005	0.014		0.00003333	0.005774	0.866	0.006	mg/L	N	0	1	NA	NA	NA	NA	0.005	N			N		FALSE
CAP-3	0/12	100%	0.005-0.025	0.00667	0.005	0.014		0.00003333	0.005774	0.866	0.006	mg/L	N	0	1	NA	NA	NA	NA	0.005	N			N		FALSE
CAP-5	0/12	100%	0.005-0.025	0.00667	0.005	0.014		0.00003333	0.005774	0.866	0.006	mg/L	N	0	1	NA	NA	NA	NA	0.005	N			N		FALSE
CAP-7	0/12	100%	0.005-0.025	0.00667	0.005	0.014		0.00003333	0.005774	0.866	0.006	mg/L	N	0	1	NA	NA	NA	NA	0.005	N			N		FALSE
CAP-9	0/12	100%	0.0005-0.025	0.00629	0.005	0.014		0.00003638	0.006032	0.9587	0.006	mg/L	N	0	1	NA	NA	NA	NA	0.005	N			N		FALSE
CCR Appendix-IV: Arsenic, Total (mg/L)																										
CBW-1	3/16	81%	0.005-0.005	0.00582	0.005	0.009025	0.016	0.000007557	0.002749	0.4726	0.01	mg/L	Y	1	0	Yes	No	Stable	Non-parametric				0.0160		0.0160	
PM-1	2/16	88%	0.005-0.005	0.00486	0.005	0.005	0.0042	1.706E-07	0.0004131	0.08506	0.01	mg/L	N	0	0	No	No	Stable								
CAP-1	0/16	100%	0.003-0.005	0.00475	0.005	0.005		4.667E-07	0.0006831	0.1438	0.01	mg/L	N	0	0	NA	NA	NA	NA	0.005	N			N		FALSE
CAP-3	0/16	100%	0.003-0.005	0.00475	0.005	0.005		4.667E-07	0.0006831	0.1438	0.01	mg/L	N	0	0	NA	NA	NA	NA	0.005	N			N		FALSE
CAP-5	0/16	100%	0.003-0.005	0.00475	0.005	0.005		4.667E-07	0.0006831	0.1438	0.01	mg/L	N	0	0	NA	NA	NA	NA	0.005	N			N		FALSE
CAP-7	6/16	62%	0.005-0.005	0.0053	0.005	0.006528	0.0073	4.314E-07	0.0006568	0.1238	0.01	mg/L	N	0	0	Yes	No	Stable	Non-parametric	0.005	N			N		FALSE
CAP-9	15/16	6%	0.005-0.005	0.00692	0.0068	0.009325	0.0103	0.000002064	0.001437	0.2075	0.01	mg/L	Y	1	0	No	No	Stable	Normal	0.0057	Y			N		FALSE
CCR Appendix-IV: Barium, Total (mg/L)																										
CBW-1	16/16	0%	-	0.0442	0.04315	0.05073	0.061	0.00002457	0.004957	0.1122	2	mg/L	N	0	0	No	No	Stable	Non-parametric				0.1030		2.0000	
PM-1	16/16	0%	-	0.0823	0.08025	0.1007	0.103	0.00008368	0.009147	0.1112	2	mg/L	N	0	0	No	No	Stable								
CAP-1	16/16	0%	-	0.0472	0.0458	0.0651	0.069	0.0001255	0.0112	0.2373	2	mg/L	N	0	0	No	No	Stable	Normal	0.064	Y			N		FALSE
CAP-3	16/16	0%	-	0.091	0.07855	0.156	0.237	0.001793	0.04235	0.4651	2	mg/L	N	0	0	Yes	No	Stable	Non-parametric	0.064	Y			N		FALSE
CAP-5	16/16	0%	-	1.37	1.425	1.53	1.56	0.03589	0.1894	0.1379	2	mg/L	N	0	0	Yes	No	Increasing	Non-parametric	1.480	Y			Y		FALSE
CAP-7	16/16	0%	-	0.0325	0.03165	0.03862	0.0405	0.00001383	0.003719	0.1143	2	mg/L	N	0	0	No	No	Increasing	Normal	0.038	Y			N		FALSE
CAP-9	16/16	0%	-	0.0572	0.0609	0.07925	0.095	0.0003295	0.01815	0.3174	2	mg/L	N	0	0	No	No	Decreasing	Normal	0.041	Y			N		FALSE
CCR Appendix-IV: Beryllium, Total (mg/L)																										
CBW-1	1/15	93%	0.0005-0.0005	0.000509	0.0005	0.000539	0.00063	1.127E-09	0.00003357	0.06599	0.004	mg/L	N	0	0	No	No	NA	Non-parametric				0.0006		0.0040	
PM-1	0/16	100%	0.0005-0.0005	0.0005	0.0005	0.0005		0	0	0	0.004	mg/L	N	0	0	No	No	NA								
CAP-1	15/15	0%	-	0.00516	0.0043	0.01033	0.0111	0.000007788	0.002791	0.5412	0.004	mg/L	Y	8	0	Yes	No	Stable	Normal	0.003	Y			Y		FALSE
CAP-3	0/15	100%	0.0005-0.0005	0.0005	0.0005	0.0005		0	0	0	0.004	mg/L	N	0	0	No	No	NA	NA	0.001	N			N		FALSE
CAP-5	15/15	0%	-	0.00413	0.0042	0.005	0.005	6.237E-07	0.0007897	0.1913	0.004	mg/L	Y	11	0	Yes	No	Increasing	Non-parametric	0.005	Y			Y		TRUE
CAP-7	0/15	100%	0.0005-0.0005	0.0005	0.0005	0.0005		0	0	0	0.004	mg/L	N	0	0	No	No	NA	NA	0.001	N			N		FALSE
CAP-9	16/16	0%	-	0.0157	0.01585	0.01792	0.018	0.000002909	0.001706	0.1087	0.004	mg/L	Y	16	0	No	No	Stable	Normal	0.016	Y			Y		TRUE
CCR Appendix-IV: Cadmium, Total (mg/L)																										
CBW-1	0/15	100%	0.0005-0.0005	0.0005	0.0005	0.0005		0	0	0	0.005	mg/L	N	0	0	NA	NA	NA	NA				0.0005		0.0050	
PM-1	0/15	100%	0.0005-0.0005	0.0005	0.0005	0.0005		0	0	0	0.005	mg/L	N	0	0	NA	NA	NA								
CAP-1	0/15	100%	0.0005-0.0005	0.0005	0.0005	0.0005		0	0	0	0.005	mg/L	N	0	0	NA	NA	NA	NA	0.0005	N			N		FALSE
CAP-3	0/15	100%	0.0005-0.0005	0.0005	0.0005	0.0005		0	0	0	0.005	mg/L	N	0	0	NA	NA	NA	NA	0.0005	N			N		FALSE
CAP-5	0/15	100%	0.0005-0.0005	0.0005	0.0005	0.0005		0	0	0	0.005	mg/L	N	0	0	NA	NA	NA	NA	0.0005	N			N		FALSE
CAP-7	0/15	100%	0.0005-0.0005	0.0005	0.0005	0.0005		0	0	0	0.005	mg/L	N	0	0	NA	NA	NA	NA	0.0005	N			N		FALSE
CAP-9	0/15	100%	0.0005-0.0005	0.0005	0.0005	0.0005		0	0	0	0.005	mg/L	N	0	0	NA	NA	NA	NA	0.0005	N			N		FALSE
CCR Appendix-IV: Chromium, Total (mg/L)																										
CBW-1	1/15	93%	0.005-0.005	0.0056	0.005	0.0077	0.014	0.0000054	0.002324	0.415	0.1	mg/L	N	0	0	NA	NA	NA	Non-parametric				0.0140		0.1000	
PM-1	0/15	100%	0.005-0.005	0.005	0.005	0.005		7.74E-21	8.8E-11	1.76E-08	0.1	mg/L	N	0	0	NA	NA	NA								
CAP-1	0/15	100%	0.005-0.005	0.005	0.005	0.005		7.74E-21	8.8E-11	1.76E-08	0.1	mg/L	N	0	0	NA	NA	NA	NA	0.0050	N			N		FALSE
CAP-3	0/15	100%	0.005-0.005	0.005	0.005	0.005		7.74E-21	8.8E-11	1.76E-08	0.1	mg/L	N	0	0	NA	NA	NA	NA	0.0050	N			N		FALSE
CAP-5	1/15	93%	0.005-0.005	0.00634	0.005	0.01103	0.0251	0.00002693	0.00519	0.8186	0.1	mg/L	N	0	0	NA	NA	NA	Non-parametric	0.0050	N			N		FALSE
CAP-7	0/15	100%	0.005-0.005	0.005	0.005	0.005		7.74E-21	8.8E-11	1.76E-08	0.1	mg/L	N	0	0	NA	NA	NA	NA	0.0050	N			N		FALSE
CAP-9	0/15	100%	0.005-0.005	0.005	0.005	0.005		7.74E-21	8.8E-11	1.76E-08	0.1	mg/L	N	0	0	NA	NA	NA	NA	0.0050	N			N		FALSE
CCR Appendix-IV: Cobalt, Total (mg/L)																										
CBW-1	16/16	0%	-	0.0011	0.00094	0.001825	0.0034	4.069E-07	0.0006379	0.5796	0.006	mg/L	N	0	0	Yes	No	Decreasing	Non-parametric				0.0034		0.0060	
PM-1	16/16	0%	-	0.000923	0.00091	0.001	0.001	4.677E-09	0.00006839	0.07413	0.006	mg/L	N	0	0	No	No	Stable								
CAP-1	15/15	0%	-	0.0156	0.0167	0.024	0.024	0.0000334	0.00578	0.3699	0.006	mg/L	Y	14	0	No	No	Stable	Normal	0.010	Y			Y		TRUE
CAP-3	15/15	0%	-	0.0263	0.0265	0.03084	0.0328	0.0000166	0.004075	0.155	0.006	mg/L	Y	15	0	Yes	No	Stable	Non-parametric	0.033	Y			Y		TRUE
CAP-5	15/15	0%	-	0.0126	0.013	0.01494	0.0155	0.000004961	0.002227	0.1771	0.006	mg/L	Y	15	0	Yes	No	Increasing	Normal	0.015	Y			Y		TRUE
CAP-7	15/15	0%	-	0.0107	0.0102	0.01332	0.015	0.000002735	0.001654	0.1543	0.006	mg/L	Y	15	0	No	No	Decreasing	Normal	0.010	Y			Y		TRUE
CAP-9	16/16	0%	-	0.0329	0.0331	0.0384	0.0384	0.00003228	0.005681	0.1729	0.006	mg/L	Y	16	0	Yes	No	Increasing	Normal	0.036	Y			Y		TRUE
CCR Appendix-IV: Fluoride (mg/L)																										
CBW-1	16/16	0%	-	0.226	0.22	0.2925	0.3	0.00192	0.04381	0.1942	4	mg/L	N	0	0	No	No	Decreasing	Non-parametric				0.3000		4.0000	
PM-1	0/16	100%	0.1-0.1	0.1	0.1	0.1		1.85E-18	1.36E-09	1.36E-08	4	mg/L	N	0	0	NA	NA	NA								
CAP-1	14/15	7%	0.1-0.1	0.881	0.79	1.809	1.97	0.3028	0.5503	0.6249	4	mg/L	N	0	0	No	No	Increasing	Normal	1.090	Y			Y		FALSE
CAP-3	5/15	67%	0.1-0.1	0.106	0.1	0.13	0.13	0.0001257	0.01121	0.1058	4	mg/L	N	0	0	No	No	Stable	Non-parametric	0.100	N			N		FALSE
CAP-5	15/15	0%	-	0.483	0.54	0.666	0.75	0.02764	0.1662	0.3444	4	mg/L	N	0	0	No	No	Stable	Normal	0.750	Y			Y		FALSE
CAP-7	5/15	67%	0.1-0.1	0.113	0.1	0.153	0.16	0.0004781	0.02187	0.1941	4	mg/L	N	0	0	No	No	Stable	Non-parametric	0.100	N			N		FALSE
CAP-9	15/15	0%	-	2.51	2.21	4.064	4.4	1.181	1.087	0.4336	4	mg/L	Y	1	0	No	No	Stable	Normal	3.910	Y			Y		FALSE

Cross Ash Pond

Assessment Monitoring Statistical Analysis Summary

Prepared: June 11, 2021

CCR Appendix-IV: Lead, Total (mg/L)																									
CBW-1	16/16	0%	-	0.00348	0.00305	0.005563	0.011	0.000004149	0.002037	0.5848	0.015	mg/L	N	0	0	Yes	No	Decreasing	Non-parametric				0.0110		0.0150	
PM-1	0/16	100%	0.001-0.0025	0.00119	0.001	0.0025		2.625E-07	0.0005123	0.4315	0.015	mg/L	N	0	0	NA	NA	NA								
CAP-1	4/14	71%	0.001-0.0025	0.00137	0.001	0.0025	0.0018	3.037E-07	0.0005511	0.4019	0.015	mg/L	N	0	0	No	No	NA	Non-parametric	0.002	Y			N		FALSE
CAP-3	0/14	100%	0.001-0.0025	0.00121	0.001	0.0025		2.967E-07	0.0005447	0.4486	0.015	mg/L	N	0	0	NA	NA	NA	NA	0.001	N			N		FALSE
CAP-5	13/14	7%	0.0025-0.0025	0.00553	0.00525	0.00735	0.008	0.000001753	0.001324	0.2393	0.015	mg/L	N	0	0	Yes	No	Stable	Normal	0.006	Y			N		FALSE
CAP-7	0/14	100%	0.001-0.01	0.00186	0.001	0.005125		0.000005786	0.002405	1.295	0.015	mg/L	N	0	0	NA	NA	NA	NA	0.001	N			N		FALSE
CAP-9	14/14	0%	-	0.0109	0.01095	0.01481	0.0154	0.000009333	0.003055	0.281	0.015	mg/L	Y	1	0	Yes	No	Stable	Normal	0.015	Y	0.00106		N		FALSE
CCR Appendix-IV: Lithium, Total (mg/L)																									
CBW-1	0/16	100%	0.005-0.01	0.00969	0.01	0.01		0.000001562	0.00125	0.129	0.04	mg/L	N	0	0	NA	NA	NA	NA				0.0100		0.0400	
PM-1	0/16	100%	0.005-0.01	0.00969	0.01	0.01		0.000001562	0.00125	0.129	0.04	mg/L	N	0	0	NA	NA	NA								
CAP-1	15/15	0%	-	0.091	0.0994	0.123	0.13	0.0008409	0.029	0.3187	0.04	mg/L	Y	14	0	No	No	Stable	Normal	0.050	Y			Y		TRUE
CAP-3	11/15	27%	0.01-0.05	0.0138	0.011	0.0255	0.015	0.0001018	0.01009	0.7309	0.04	mg/L	N	0	1	Yes	No	Stable	Non-parametric	0.015	Y			Y		FALSE
CAP-5	14/15	7%	0.01-0.01	0.0126	0.012	0.01509	0.016	0.000002166	0.001472	0.1166	0.04	mg/L	N	0	0	No	No	Stable	Normal	0.016	Y			Y		FALSE
CAP-7	0/15	100%	0.01-0.05	0.0127	0.01	0.022		0.0001067	0.01033	0.8154	0.04	mg/L	N	0	1	NA	NA	NA	NA	0.010	N			N		FALSE
CAP-9	16/16	0%	-	0.0624	0.062	0.0713	0.0722	0.00002037	0.004514	0.07231	0.04	mg/L	Y	16	0	Yes	No	Stable	Normal	0.071	Y			Y		TRUE
CCR Appendix-IV: Mercury, Total (mg/L)																									
CBW-1	0/16	100%	0.0002-0.001	0.00025	0.0002	0.0004		0.00000004	0.0002	0.8	0.002	mg/L	N	0	0	NA	NA	NA	Non-parametric				0.0010		0.0020	
PM-1	0/16	100%	0.0002-0.001	0.00025	0.0002	0.0004		0.00000004	0.0002	0.8	0.002	mg/L	N	0	0	NA	NA	NA								
CAP-1	0/13	100%	0.0002-0.001	0.000262	0.0002	0.00052		4.923E-08	0.0002219	0.8484	0.002	mg/L	N	0	0	NA	NA	NA	NA	0.0002	N			N		FALSE
CAP-3	0/14	100%	0.0002-0.001	0.000257	0.0002	0.00048		4.571E-08	0.0002138	0.8315	0.002	mg/L	N	0	0	NA	NA	NA	NA	0.0002	N			N		FALSE
CAP-5	0/14	100%	0.0002-0.001	0.000257	0.0002	0.00048		4.571E-08	0.0002138	0.8315	0.002	mg/L	N	0	0	NA	NA	NA	NA	0.0002	N			N		FALSE
CAP-7	2/14	86%	0.0002-0.001	0.000263	0.0002	0.000506	0.00024	4.522E-08	0.0002127	0.809	0.002	mg/L	N	0	0	Yes	No	NA	NA	0.0002	N			N		FALSE
CAP-9	2/14	86%	0.0002-0.001	0.000274	0.0002	0.0005645	0.00033	4.547E-08	0.0002132	0.7795	0.002	mg/L	N	0	0	NA	NA	NA	NA	0.0002	N			N		FALSE
CCR Appendix-IV: Molybdenum, Total (mg/L)																									
CBW-1	0/14	100%	0.01-0.01	0.01	0.01	0.01		5.004E-20	2.237E-10	2.237E-08	0.1	mg/L	N	0	0	NA	NA	NA	Non-parametric				0.0100		0.1000	
PM-1	0/14	100%	0.01-0.01	0.01	0.01	0.01		5.004E-20	2.237E-10	2.237E-08	0.1	mg/L	N	0	0	NA	NA	NA								
CAP-1	0/12	100%	0.01-0.01	0.01	0.01	0.01		5.914E-20	2.432E-10	2.432E-08	0.1	mg/L	N	0	0	NA	NA	NA	NA	0.010	N			N		FALSE
CAP-3	0/12	100%	0.01-0.01	0.01	0.01	0.01		5.914E-20	2.432E-10	2.432E-08	0.1	mg/L	N	0	0	NA	NA	NA	NA	0.010	N			N		FALSE
CAP-5	0/12	100%	0.01-0.01	0.01	0.01	0.01		5.914E-20	2.432E-10	2.432E-08	0.1	mg/L	N	0	0	NA	NA	NA	NA	0.010	N			N		FALSE
CAP-7	0/12	100%	0.01-0.05	0.0133	0.01	0.028		0.0001333	0.01155	0.866	0.1	mg/L	N	0	0	NA	NA	NA	NA	0.010	N			N		FALSE
CAP-9	0/12	100%	0.01-0.04	0.0125	0.01	0.0235		0.000075	0.00866	0.6928	0.1	mg/L	N	0	0	NA	NA	NA	NA	0.010	N			N		FALSE
CCR Appendix-IV: Radium-226 & 228 (pCi/L)																									
CBW-1	8/15	47%	4-4	3.63	4	5.619	6.34	2.644	1.626	0.4478	5	pCi/L	Y	3	0	Yes	No	Decreasing	Non-parametric				16.30		16.3000	
PM-1	9/15	40%	4-4	4.45	4	9.853	16.3	13.52	3.677	0.8267	5	pCi/L	Y	2	0	Yes	No	Stable								
CAP-1	6/14	57%	4-4	3.57	4	5.175	5.24	1.407	1.186	0.3322	5	pCi/L	Y	2	0	No	No	Stable	Normal	1.340	Y			N		FALSE
CAP-3	7/14	50%	4-4	3.38	4	4.298	4.48	1.432	1.197	0.3546	5	pCi/L	N	0	0	No	No	Stable	Non-parametric	2.290	Y			N		FALSE
CAP-5	15/15	0%	-	16.9	18.1	20.18	21.3	12.28	3.505	0.2076	5	pCi/L	Y	15	0	Yes	No	Stable	Normal	21.300	Y			Y		TRUE
CAP-7	10/14	29%	4-4	4.28	4	6.189	6.56	1.98	1.407	0.3285	5	pCi/L	Y	5	0	No	No	Stable	Normal	3.860	Y			N		FALSE
CAP-9	9/14	36%	4-4	4.11	4	6.186	7.31	1.983	1.408	0.3425	5	pCi/L	Y	2	0	Yes	No	Stable	Non-parametric	2.330	Y			N		FALSE
CCR Appendix-IV: Selenium, Total (mg/L)																									
CBW-1	0/16	100%	0.01-0.02	0.0112	0.01	0.02		0.00001167	0.003416	0.3036	0.05	mg/L	N	0	0	NA	NA	NA	Non-parametric				0.0200		0.0500	
PM-1	0/16	100%	0.01-0.02	0.0112	0.01	0.02		0.00001167	0.003416	0.3036	0.05	mg/L	N	0	0	NA	NA	NA								
CAP-1	0/13	100%	0.01-0.02	0.0115	0.01	0.02		0.0000141	0.003755	0.3255	0.05	mg/L	N	0	0	NA	NA	NA	NA	0.010	N			N		FALSE
CAP-3	0/13	100%	0.01-0.02	0.0115	0.01	0.02		0.0000141	0.003755	0.3255	0.05	mg/L	N	0	0	NA	NA	NA	NA	0.010	N			N		FALSE
CAP-5	0/13	100%	0.01-0.02	0.0115	0.01	0.02		0.0000141	0.003755	0.3255	0.05	mg/L	N	0	0	NA	NA	NA	NA	0.010	N			N		FALSE
CAP-7	0/13	100%	0.01-0.02	0.0115	0.01	0.02		0.0000141	0.003755	0.3255	0.05	mg/L	N	0	0	NA	NA	NA	NA	0.010	N			N		FALSE
CAP-9	1/13	92%	0.01-0.02	0.0132	0.01	0.0244	0.031	0.00004264	0.00653	0.4964	0.05	mg/L	N	0	0	Yes	No	NA	Non-parametric	0.010	N			N		FALSE
CCR Appendix-IV: Thallium, Total (mg/L)																									
CBW-1	0/14	100%	0.001-0.001	0.001	0.001	0.001		0	0	0	0.002	mg/L	N	0	0	NA	NA	NA	Non-parametric				0.0010		0.0020	
PM-1	0/14	100%	0.001-0.001	0.001	0.001	0.001		0	0	0	0.002	mg/L	N	0	0	NA	NA	NA								
CAP-1	0/12	100%	0.001-0.001	0.001	0.001	0.001		0	0	0	0.002	mg/L	N	0	0	NA	NA	NA	NA	0.001	N			N		FALSE
CAP-3	0/12	100%	0.001-0.001	0.001	0.001	0.001		0	0	0	0.002	mg/L	N	0	0	NA	NA	NA	NA	0.001	N			N		FALSE
CAP-5	0/12	100%	0.001-0.001	0.001	0.001	0.001		0	0	0	0.002	mg/L	N	0	0	NA	NA	NA	NA	0.001	N			N		FALSE
CAP-7	0/12	100%	0.001-0.001	0.001	0.001	0.001		0	0	0	0.002	mg/L	N	0	0	NA	NA	NA	NA	0.001	N			N		FALSE
CAP-9	0/12	100%	0.001-0.001	0.001	0.001	0.001		0	0	0	0.002	mg/L	N	0	0	NA	NA	NA	NA	0.001	N			N		FALSE

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TECHNICAL MEMORANDUM

October 15, 2021
File No. 132892-010

SUBJECT: Statistical Evaluation of the June 2021 Semi-annual Groundwater Assessment Monitoring Data

Cross Generating Station
Bottom Ash Pond

Pursuant to Title 40 Code of Federal Regulations (40 CFR) § 257.93 and 257.95 (Rule), this memorandum summarizes the statistical evaluation of the analytical results for the June 2021 semi-annual groundwater assessment monitoring sampling event for the Cross Generating Station (CGS) Bottom Ash Pond. The statistical evaluation discussed in this memorandum was conducted to determine if Appendix IV groundwater monitoring constituents continue to be detected in downgradient wells at concentrations that represent a statistically significant level (SSL) above the Groundwater Protection Standard (GWPS) consistent with the requirements in 40 CFR § 257.95.

Data from the June groundwater sampling event for the downgradient monitoring wells were compared to their respective GWPS established from the background dataset for the upgradient monitoring wells (PM-1 and CBW-1). GWPS for each of the Appendix IV constituents have been set equal to the highest value of the maximum contaminant level (MCL), regional screening level (RSL), or background concentration. The results of the assessment monitoring statistical evaluation are discussed below and provided in Table I.

Statistical Evaluation of Appendix IV Constituents

The Rule provides four specific options for statistical evaluation of groundwater quality data collected at a coal combustion residual (CCR) unit (40 CFR §257.93(f) (1-4)). The statistical method used for these evaluations is tolerance limit (TL), which was certified by Haley & Aldrich, Inc. on October 14, 2017. The TL method, determined applicable for this sampling event, was used to evaluate potential SSLs above GWPS. GWPS for each constituent listed in Appendix IV were computed as upper tolerance limits (UTL), and a minimum 95 percent confidence coefficient and 95 percent coverage. The most recent groundwater sampling result from each compliance well was compared to the corresponding GWPS UTL to determine if an SSL existed.

STATISTICAL EVALUATION

An interwell statistical evaluation was used to identify SSLs. An interwell evaluation compares the most recent values from downgradient compliance wells to a background dataset composed of upgradient

well data. Because the CCR unit is in assessment monitoring, no statistical evaluations were conducted on Appendix III (detection monitoring) constituents.

The parametric TL method was used to complete statistical evaluations of the referenced dataset. The TL procedure is one in which a concentration limit for each constituent is established from the distribution of the background data, with a minimum 95 percent confidence level. The upper endpoint of a tolerance limit is called the UTL. Depending on the data distribution, parametric or non-parametric TL procedures are used to evaluate groundwater monitoring data using this method. Parametric TLs utilize normally distributed data or data normalized via a transformation of the sample background data used to construct the limit. If the data are non-normal and a transformation is not indicated, non-parametric procedures (order statistics or bootstrap methods) are used to calculate the TL. If all the background data are non-detect, a maximum reporting limit may serve as an appropriate UTL.

These statistical evaluations were conducted using the background dataset for all detected Appendix IV constituents using parametric TLs. If an Appendix IV constituent concentration from the June 2021 semi-annual sampling event was above the GWPS, the lower confidence limit (LCL) for the downgradient well constituent was used to evaluate if an SSL was present. The LCL is the lower end of the confidence interval range, which is an estimated concentration range intended to contain the true mean or median of the population from which the sample is drawn. The confidence interval range is designed to locate the true population mean or median with a high degree of statistical confidence, or conversely, with a low probability of error.

The UTLs were calculated from the background well dataset using Chemstat software after testing for outlier sample results that would warrant removal from the dataset based on likely error in sampling or measurement. Both visual and statistical outlier tests for the background data were performed using Chemstat and U.S. Environmental Protection Agency's ProUCL 5.1 software, and a visual inspection of the data was performed using box plots and distribution plots for the downgradient sample data. No sample data were identified as outliers that warranted removal from the dataset.

BACKGROUND DISTRIBUTIONS

The groundwater analytical results for each sampling event from the background sample locations (PM-1 and CBW-1) were combined to calculate the UTL for each detected Appendix IV constituent. The variability and distribution of the pooled dataset was evaluated to determine the method for UTL calculation. Per the document *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance, March 2009* (Unified Guidance), background concentrations were updated for the March 2020 semi-annual sampling event based on statistical evaluation of analytical results collected through March 2020. The background dataset will be updated again in March 2022 per the Unified Guidance.

RESULTS OF APPENDIX IV DOWNGRADIENT STATISTICAL COMPARISONS

The sample concentrations from the downgradient wells for each of the detected Appendix IV constituents from the June 2021 semi-annual assessment monitoring event were compared to their

respective GWPS (Table I). A sample concentration greater than the GWPS is considered to represent an SSL. Consistent with previous results, beryllium, cobalt, lithium, and radium continue to be the only Appendix IV constituents present in groundwater at SSLs above GWPS.

The selected remedy (Closure by removal with beneficial reuse with MNA) has begun at the Bottom Ash Pond and is anticipated to be completed in 2025. As outlined in the Corrective Measures Assessment, groundwater modeling predicts that the concentrations of beryllium, cobalt, lithium, and radium will decline, or attenuate rapidly after the source removal is complete. During closure activities, a short term increase in the concentrations of Appendix IV SSLs is possible but these spikes in concentration are predicted to rapidly decrease once the closure is complete. Performance of the selected remedy will continue to be monitored in subsequent semiannual sampling events.

Tables:

Table I – Summary of Assessment Monitoring Statistical Evaluation – June 2021

TABLES

Cross Ash Pond

Assessment Monitoring Statistical Analysis Summary

Prepared: October 5, 2021

																		Inter-well Analysis						
Location Id	Frequency of Detection	Percent Non-Detects	Range of Non-Detect	Mean	50th Percentile (Median)	95th Percentile	Maximum Detect	Variance	Standard Deviation	Coefficient of Variance	CCR MCL/RSL	Report Result Unit	Detection Exceedances (Y/N)	Number of Detection Exceedances	Number of Non-Detection Exceedances	Outlier Presence	Outlier Removed	Trend	Distribution Well*	Detect?	June 2021 Concentrations	Detect?	95% LCL	Upper Tolerance Limit (mg/L)	SSI	GWPS (Higher of MCL/RSL or Upper Tolerance Limit) (mg/L)	SSL
CCR Appendix-IV: Antimony, Total (mg/L)																											
CBW-1	0/15	100%	0.005-0.025	0.00633	0.005	0.011		0.00002667	0.005164	0.8154	0.006	mg/L	N	0	1	NA	NA	NA	Non-parametric					0.025		0.025	
PM-1	0/15	100%	0.005-0.025	0.00633	0.005	0.011		0.00002667	0.005164	0.8154	0.006	mg/L	N	0	1	NA	NA	NA									
CAP-1	0/12	100%	0.005-0.025	0.00667	0.005	0.014		0.00003333	0.005774	0.866	0.006	mg/L	N	0	1	NA	NA	NA	NA	N					N		FALSE
CAP-3	0/12	100%	0.005-0.025	0.00667	0.005	0.014		0.00003333	0.005774	0.866	0.006	mg/L	N	0	1	NA	NA	NA	NA	N					N		FALSE
CAP-5	0/12	100%	0.005-0.025	0.00667	0.005	0.014		0.00003333	0.005774	0.866	0.006	mg/L	N	0	1	NA	NA	NA	NA	N					N		FALSE
CAP-7	0/12	100%	0.005-0.025	0.00667	0.005	0.014		0.00003333	0.005774	0.866	0.006	mg/L	N	0	1	NA	NA	NA	NA	N					N		FALSE
CAP-9	0/12	100%	0.0005-0.025	0.00629	0.005	0.014		0.00003638	0.006032	0.9587	0.006	mg/L	N	0	1	NA	NA	NA	NA	N					N		FALSE
CCR Appendix-IV: Arsenic, Total (mg/L)																											
CBW-1	3/17	82%	0.005-0.005	0.00577	0.005	0.00856	0.016	0.000007124	0.002669	0.4627	0.01	mg/L	Y	1	0	Yes	No	NA	Non-parametric					0.016		0.016	
PM-1	2/17	88%	0.005-0.005	0.00486	0.005	0.005	0.0042	1.612E-07	0.0004015	0.08253	0.01	mg/L	N	0	0	No	No	NA									
CAP-1	0/17	100%	0.003-0.005	0.00476	0.005	0.005		4.412E-07	0.0006642	0.1394	0.01	mg/L	N	0	0	NA	NA	NA	NA	N	0.005	0.000			N		FALSE
CAP-3	0/17	100%	0.003-0.005	0.00476	0.005	0.005		4.412E-07	0.0006642	0.1394	0.01	mg/L	N	0	0	NA	NA	NA	NA	N	0.005	0.000			N		FALSE
CAP-5	0/17	100%	0.003-0.005	0.00476	0.005	0.005		4.412E-07	0.0006642	0.1394	0.01	mg/L	N	0	0	NA	NA	NA	NA	N	0.005	0.000			N		FALSE
CAP-7	6/17	65%	0.005-0.005	0.00529	0.005	0.006476	0.0073	4.099E-07	0.0006402	0.1211	0.01	mg/L	N	0	0	Yes	No	Stable	Non-parametric	N	0.005	0.000			N		FALSE
CAP-9	16/17	6%	0.005-0.005	0.00691	0.0068	0.00926	0.0103	0.000001938	0.001392	0.2014	0.01	mg/L	Y	1	0	No	No	Stable	Non-parametric	Y	0.0067	1.000			N		FALSE
CCR Appendix-IV: Barium, Total (mg/L)																											
CBW-1	17/17	0%	-	0.0441	0.043	0.05004	0.061	0.00002325	0.004822	0.1094	2	mg/L	N	0	0	Yes	No	Stable	Non-parametric					0.1030		2.0	
PM-1	17/17	0%	-	0.0826	0.0803	0.1006	0.103	0.00007993	0.00894	0.1083	2	mg/L	N	0	0	Yes	No	Stable									
CAP-1	17/17	0%	-	0.0471	0.0451	0.06484	0.069	0.0001179	0.01086	0.2306	2	mg/L	N	0	0	No	No	Stable	Normal	Y	0.045	1.000			N		FALSE
CAP-3	17/17	0%	-	0.0907	0.081	0.1506	0.237	0.001683	0.04103	0.4524	2	mg/L	N	0	0	Yes	No	Stable	Non-parametric	Y	0.085	1.000			N		FALSE
CAP-5	17/17	0%	-	1.39	1.43	1.58	1.66	0.03845	0.1961	0.141	2	mg/L	N	0	0	Yes	No	Increasing	Non-parametric	Y	1.660	1.000			Y		FALSE
CAP-7	17/17	0%	-	0.033	0.0318	0.04066	0.0413	0.0000175	0.004183	0.1266	2	mg/L	N	0	0	No	No	Increasing	Normal	Y	0.041	1.000			N		FALSE
CAP-9	17/17	0%	-	0.0562	0.0608	0.0782	0.095	0.0003255	0.01804	0.321	2	mg/L	N	0	0	No	No	Decreasing	Normal	Y	0.040	1.000			N		FALSE
CCR Appendix-IV: Beryllium, Total (mg/L)																											
CBW-1	1/16	94%	0.0005-0.0005	0.000508	0.0005	0.0005325	0.00063	1.056E-09	0.0000325	0.06396	0.004	mg/L	N	0	0	No	No	NA	Non-parametric					0.0006		0.004	
PM-1	0/17	100%	0.0005-0.0005	0.0005	0.0005	0.0005		0	0	0	0.004	mg/L	N	0	0	No	No	NA									
CAP-1	16/16	0%	-	0.00534	0.00495	0.01027	0.0111	0.000007811	0.002795	0.5233	0.004	mg/L	Y	9	0	No	No	Stable	Normal	Y	0.008	1.000			Y		FALSE
CAP-3	0/16	100%	0.0005-0.0005	0.0005	0.0005	0.0005		0	0	0	0.004	mg/L	N	0	0	No	No	NA	NA	N	0.001	0.000			N		FALSE
CAP-5	16/16	0%	-	0.00414	0.00425	0.005	0.005	5.839E-07	0.0007642	0.1846	0.004	mg/L	Y	12	0	Yes	No	Stable	Normal	Y	0.004	1.000			Y		TRUE
CAP-7	0/16	100%	0.0005-0.0005	0.0005	0.0005	0.0005		0	0	0	0.004	mg/L	N	0	0	No	No	NA	NA	N	0.001	0.000			N		FALSE
CAP-9	17/17	0%	-	0.0156	0.0157	0.01792	0.018	0.00000296	0.00172	0.1105	0.004	mg/L	Y	17	0	No	No	Stable	Normal	Y	0.014	1.000			Y		TRUE
CCR Appendix-IV: Cadmium, Total (mg/L)																											
CBW-1	0/16	100%	0.0005-0.0005	0.0005	0.0005	0.0005		0	0	0	0.005	mg/L	N	0	0	NA	NA	NA	NA					0.0005		0.005	
PM-1	0/16	100%	0.0005-0.0005	0.0005	0.0005	0.0005		0	0	0	0.005	mg/L	N	0	0	NA	NA	NA									
CAP-1	0/16	100%	0.0005-0.0005	0.0005	0.0005	0.0005		0	0	0	0.005	mg/L	N	0	0	NA	NA	NA	NA	N	0.0005	0.0000			N		FALSE
CAP-3	0/16	100%	0.0005-0.0005	0.0005	0.0005	0.0005		0	0	0	0.005	mg/L	N	0	0	NA	NA	NA	NA	N	0.0005	0.0000			N		FALSE
CAP-5	0/16	100%	0.0005-0.0005	0.0005	0.0005	0.0005		0	0	0	0.005	mg/L	N	0	0	NA	NA	NA	NA	N	0.0005	0.0000			N		FALSE
CAP-7	0/16	100%	0.0005-0.0005	0.0005	0.0005	0.0005		0	0	0	0.005	mg/L	N	0	0	NA	NA	NA	NA	N	0.0005	0.0000			N		FALSE
CAP-9	0/16	100%	0.0005-0.0005	0.0005	0.0005	0.0005		0	0	0	0.005	mg/L	N	0	0	NA	NA	NA	NA	N	0.0005	0.0000			N		FALSE
CCR Appendix-IV: Chromium, Total (mg/L)																											
CBW-1	1/16	94%	0.005-0.005	0.00556	0.005	0.00725	0.014	0.000005062	0.00225	0.4045	0.1	mg/L	N	0	0	NA	NA	NA	Non-parametric					0.014		0.10	
PM-1	0/16	100%	0.005-0.005	0.005	0.005	0.005		7.228E-21	8.502E-11	0.000000017	0.1	mg/L	N	0	0	NA	NA	NA									
CAP-1	0/16	100%	0.005-0.005	0.005	0.005	0.005		7.228E-21	8.502E-11	0.000000017	0.1	mg/L	N	0	0	NA	NA	NA	NA	N	0.0050	0.0000			N		FALSE
CAP-3	0/16	100%	0.005-0.005	0.005	0.005	0.005		7.228E-21	8.502E-11	0.000000017	0.1	mg/L	N	0	0	NA	NA	NA	NA	N	0.0050	0.0000			N		FALSE
CAP-5	1/16	94%	0.005-0.005	0.00626	0.005	0.01003	0.0251	0.00002525	0.005025	0.8032	0.1	mg/L	N	0	0	NA	NA	NA	Non-parametric	N	0.0050	0.0000			N		FALSE
CAP-7	0/16	100%	0.005-0.005	0.005	0.005	0.005		7.228E-21	8.502E-11	0.000000017	0.1	mg/L	N	0	0	NA	NA	NA	NA	N	0.0050	0.0000			N		FALSE
CAP-9	0/16	100%	0.005-0.005	0.005	0.005	0.005		7.228E-21	8.502E-11	0.000000017	0.1	mg/L	N	0	0	NA	NA	NA	NA	N	0.0050	0.0000			N		FALSE
CCR Appendix-IV: Cobalt, Total (mg/L)																											
CBW-1	17/17	0%	-	0.00108	0.00088	0.00172	0.0034	3.909E-07	0.0006252	0.5805	0.006	mg/L	N	0	0	Yes	No	Decreasing	Non-parametric					0.0034		0.006	
PM-1	17/17	0%	-	0.000924	0.00091	0.001	0.001	4.403E-09	0.00006635	0.07184	0.006	mg/L	N	0	0	No	No	Stable									
CAP-1	16/16	0%	-	0.016	0.01675	0.024	0.024	0.0000338	0.005814	0.3626	0.006	mg/L	Y	15	0	No	No	Stable	Normal	Y	0.022	1.000			Y		TRUE
CAP-3	16/16	0%	-	0.0264	0.0266	0.0307	0.0328	0.00001592	0.00399	0.1509	0.006	mg/L	Y	16	0	Yes	No	Stable	Non-parametric	Y	0.029	1.000			Y		TRUE
CAP-5	16/16	0%	-	0.0127	0.01305	0.01498	0.0155	0.00000494	0.002223	0.1748	0.006	mg/L	Y	16	0	Yes	No	Stable	Normal	Y	0.015	1.000			Y		TRUE
CAP-7	16/16	0%	-	0.0107	0.0102	0.0132	0.015	0.000002631	0.001622	0.1523	0.006	mg/L	Y	16	0	Yes	No	Stable	Normal	Y	0.010	1.000			Y		TRUE
CAP-9	17/17	0%	-	0.0332	0.0335	0.03852	0.039	0.00003248	0.005699	0.1716	0.006	mg/L	Y	17	0	Yes	No	Increasing	Normal	Y	0.039	1.000			Y		TRUE
CCR Appendix-IV: Fluoride (mg/L)																											
CBW-1	17/17	0%	-	0.224	0.22	0.292	0.3	0.001874	0.04329	0.1937	4	mg/L	N	0	0	No	No	Decreasing	Non-parametric					0.30		4.0	
PM-1	0/17	100%	0.1-0.1	0.1	0.1	0.1		0	0	0	4	mg/L	N	0	0	NA	NA	NA									
CAP-1	15/16	6%	0.1-0.1	0.977	0.805	2.082	2.42	0.4307	0.6563	0.6718	4	mg/L	N	0	0	No	No	Increasing	Normal	Y	2.420	1.000			Y		FALSE
CAP-3	5/16	69%	0.1-0.1	0.106	0.1	0.13	0.13	0.0001196	0.01094	0.1035	4	mg/L	N	0	0	No	No	Stable	Non-parametric	N	0.100	0.000			N		FALSE
CAP-5	16/16	0%	-	0.485	0.53	0.66	0.75	0.02588	0.1609	0.3317	4	mg/L	N	0	0	No	No	Stable	Normal	Y	0.520	1.000			Y		FALSE
CAP-7	5/16	69%	0.1-0.1	0.112	0.1	0.1525	0.16	0.0004563	0.02136	0.1909	4	mg/L	N	0	0	No	No	Stable	Non-parametric	N	0.100	0.000			N		FALSE
CAP-9	16/16	0%	-	2.57	2.23	4.04	4.4	1.171	1.082	0.4208	4	mg/L	Y	1	0	No	No	Increasing	Normal	Y	3.560	1.000			Y		FALSE
CCR Appendix-IV: Lead, Total (mg/L)																											
CBW-1	17/17	0%	-	0.00343	0.003	0.0052	0.011	0.000003936	0.001984	0.5782	0.015	mg/L	N	0	0	Yes	No	Decreasing	Non-parametric					0.011		0.015	
PM-1	0/17	100%	0.001-0.0025	0.00118	0.001	0.0025		2.482E-07	0.0004982	0.4234	0.015	mg/L	N	0	0	NA	NA	NA									
CAP-1	5/15	67%	0.001-0.0025	0.00143	0.001	0.0025	0.0022	3.278E-07	0.0005725	0.4013	0.015	mg/L	N	0	0	NA	NA	NA	Non-parametric	Y	0.002	1.000			N		FALSE
CAP-3	0/15	100%	0.001-0.0025	0.0012	0.001	0.0025		2.786E-07	0.0005278	0.4398	0.015	mg/L	N	0	0	NA	NA	NA	NA	N	0.001	0.000			N		FALSE
CAP-5	14/15	7%	0.0025-0.0025	0.00565	0.0053	0.00751	0.008	0.000001836	0.001355	0.2397	0.015	mg/L	N	0	0	No	No	Increasing	Normal	Y	0.007	1.000			N		FALSE
CAP-7	0/15	100%	0.001-0.01	0.0018	0.001	0.00475		0.000005421	0.002328	1.294	0.015	mg/L	N	0	0	NA	NA	NA	NA	N	0.001	0.000			N		FALSE
CAP-9	15/15	0%	-	0.0109	0.0113	0.01477	0.0154	0.000008737	0.002956	0.2701	0.015	mg/L	Y	1	0	Yes	No	Stable	Normal	Y	0.012	1.000	0.010		N		FALSE

Cross Ash Pond

Assessment Monitoring Statistical Analysis Summary

Prepared: October 5, 2021

CCR Appendix-IV: Lithium, Total (mg/L)																									
CBW-1	0/17	100%	0.005-0.02	0.0103	0.01	0.012		0.000007721	0.002779	0.2699	0.04	mg/L	N	0	0	NA	NA	NA	NA				0.01		0.04	
PM-1	0/17	100%	0.005-0.01	0.00971	0.01	0.01		0.000001471	0.001213	0.1249	0.04	mg/L	N	0	0	NA	NA	NA								
CAP-1	16/16	0%	-	0.0913	0.098	0.1225	0.13	0.0007864	0.02804	0.3071	0.04	mg/L	Y	15	0	No	No	Stable	Normal	Y	0.096	1.000			Y		TRUE
CAP-3	12/16	25%	0.01-0.05	0.0136	0.011	0.02375	0.015	0.00009553	0.009774	0.717	0.04	mg/L	N	0	1	Yes	No	Stable	Non-parametric	Y	0.011	1.000			Y		FALSE
CAP-5	15/16	6%	0.01-0.01	0.0127	0.012	0.01503	0.016	0.000002031	0.001425	0.1126	0.04	mg/L	N	0	0	No	No	Stable	Normal	Y	0.013	1.000			Y		FALSE
CAP-7	0/16	100%	0.01-0.05	0.0125	0.01	0.02		0.0001	0.01	0.8	0.04	mg/L	N	0	1	NA	NA	NA	NA	N	0.010	0.000			N		FALSE
CAP-9	17/17	0%	-	0.0625	0.062	0.07124	0.0722	0.00001912	0.004373	0.07001	0.04	mg/L	Y	17	0	Yes	No	Stable	Normal	Y	0.063	1.000			Y		TRUE
CCR Appendix-IV: Mercury, Total (mg/L)																									
CBW-1	0/17	100%	0.0002-0.001	0.000247	0.0002	0.00036		3.765E-08	0.000194	0.7854	0.002	mg/L	N	0	0	NA	NA	NA	Non-parametric				0.001		0.002	
PM-1	0/17	100%	0.0002-0.001	0.000247	0.0002	0.00036		3.765E-08	0.000194	0.7854	0.002	mg/L	N	0	0	NA	NA	NA								
CAP-1	0/14	100%	0.0002-0.001	0.000257	0.0002	0.00048		4.571E-08	0.0002138	0.8315	0.002	mg/L	N	0	0	NA	NA	NA	NA	N	0.0002	0.0000			N		FALSE
CAP-3	0/15	100%	0.0002-0.001	0.000253	0.0002	0.00044		4.267E-08	0.0002066	0.8154	0.002	mg/L	N	0	0	NA	NA	NA	NA	N	0.0002	0.0000			N		FALSE
CAP-5	0/15	100%	0.0002-0.001	0.000253	0.0002	0.00044		4.267E-08	0.0002066	0.8154	0.002	mg/L	N	0	0	NA	NA	NA	NA	N	0.0002	0.0000			N		FALSE
CAP-7	2/15	87%	0.0002-0.001	0.000259	0.0002	0.000468	0.00024	4.226E-08	0.0002056	0.7947	0.002	mg/L	N	0	0	NA	NA	NA	NA	N	0.0002	0.0000			N		FALSE
CAP-9	2/15	87%	0.0002-0.001	0.000269	0.0002	0.000531	0.00033	4.258E-08	0.0002064	0.7681	0.002	mg/L	N	0	0	NA	NA	NA	NA	N	0.0002	0.0000			N		FALSE
CCR Appendix-IV: Molybdenum, Total (mg/L)																									
CBW-1	0/15	100%	0.01-0.02	0.0107	0.01	0.013		0.000006667	0.002582	0.2421	0.1	mg/L	N	0	0	NA	NA	NA	Non-parametric				0.01		0.10	
PM-1	0/15	100%	0.01-0.01	0.01	0.01	0.01		3.098E-20	1.76E-10	1.76E-08	0.1	mg/L	N	0	0	NA	NA	NA								
CAP-1	0/12	100%	0.01-0.01	0.01	0.01	0.01		5.914E-20	2.432E-10	2.432E-08	0.1	mg/L	N	0	0	NA	NA	NA	NA	N					N		FALSE
CAP-3	0/12	100%	0.01-0.01	0.01	0.01	0.01		5.914E-20	2.432E-10	2.432E-08	0.1	mg/L	N	0	0	NA	NA	NA	NA	N					N		FALSE
CAP-5	0/12	100%	0.01-0.01	0.01	0.01	0.01		5.914E-20	2.432E-10	2.432E-08	0.1	mg/L	N	0	0	NA	NA	NA	NA	N					N		FALSE
CAP-7	0/12	100%	0.01-0.05	0.0133	0.01	0.028		0.0001333	0.01155	0.866	0.1	mg/L	N	0	0	NA	NA	NA	NA	N					N		FALSE
CAP-9	0/12	100%	0.01-0.04	0.0125	0.01	0.0235		0.000075	0.00866	0.6928	0.1	mg/L	N	0	0	NA	NA	NA	NA	N					N		FALSE
CCR Appendix-IV: Radium-226 & 228 (pCi/L)																									
CBW-1	9/16	44%	4-4	3.44	4	5.568	6.34	3.06	1.749	0.5087	5	pCi/L	Y	3	0	Yes	No	Stable	Non-parametric				16.3		16.3	
PM-1	10/16	38%	4-4	4.3	4	9.392	16.3	12.97	3.601	0.8372	5	pCi/L	Y	2	0	Yes	No	Stable								
CAP-1	7/15	53%	4-4	3.39	4	5.17	5.24	1.822	1.35	0.3988	5	pCi/L	Y	2	0	No	No	Stable	Non-parametric	Y	0.789	1.000			N		FALSE
CAP-3	8/15	47%	4-4	3.27	4	4.284	4.48	1.498	1.224	0.3743	5	pCi/L	N	0	0	Yes	No	Stable	Non-parametric	Y	1.790	1.000			N		FALSE
CAP-5	16/16	0%	-	16.9	17.81	20.1	21.3	11.47	3.386	0.2006	5	pCi/L	Y	16	0	Yes	No	Stable	Normal	Y	16.800	1.000			Y		TRUE
CAP-7	11/15	27%	4-4	4.11	4	6.161	6.56	2.301	1.517	0.3693	5	pCi/L	Y	5	0	No	No	Stable	Normal	Y	1.650	1.000			N		FALSE
CAP-9	10/15	33%	4-4	4.06	4	6.099	7.31	1.883	1.372	0.3381	5	pCi/L	Y	2	0	Yes	No	Stable	Non-parametric	Y	3.320	1.000			N		FALSE
CCR Appendix-IV: Selenium, Total (mg/L)																									
CBW-1	0/17	100%	0.01-0.02	0.0112	0.01	0.02		0.00001103	0.003321	0.2971	0.05	mg/L	N	0	0	NA	NA	NA	Non-parametric				0.02		0.05	
PM-1	0/17	100%	0.01-0.02	0.0112	0.01	0.02		0.00001103	0.003321	0.2971	0.05	mg/L	N	0	0	NA	NA	NA								
CAP-1	0/13	100%	0.01-0.02	0.0115	0.01	0.02		0.0000141	0.003755	0.3255	0.05	mg/L	N	0	0	NA	NA	NA	NA	N					N		FALSE
CAP-3	0/13	100%	0.01-0.02	0.0115	0.01	0.02		0.0000141	0.003755	0.3255	0.05	mg/L	N	0	0	NA	NA	NA	NA	N					N		FALSE
CAP-5	0/13	100%	0.01-0.02	0.0115	0.01	0.02		0.0000141	0.003755	0.3255	0.05	mg/L	N	0	0	NA	NA	NA	NA	N					N		FALSE
CAP-7	0/13	100%	0.01-0.02	0.0115	0.01	0.02		0.0000141	0.003755	0.3255	0.05	mg/L	N	0	0	NA	NA	NA	NA	N					N		FALSE
CAP-9	1/13	92%	0.01-0.02	0.0132	0.01	0.0244	0.031	0.00004264	0.00653	0.4964	0.05	mg/L	N	0	0	NA	NA	NA	Non-parametric	N					N		FALSE
CCR Appendix-IV: Thallium, Total (mg/L)																									
CBW-1	0/15	100%	0.001-0.001	0.001	0.001	0.001		0	0	0	0.002	mg/L	N	0	0	NA	NA	NA	Non-parametric				0.001		0.002	
PM-1	0/15	100%	0.001-0.001	0.001	0.001	0.001		0	0	0	0.002	mg/L	N	0	0	NA	NA	NA								
CAP-1	0/12	100%	0.001-0.001	0.001	0.001	0.001		0	0	0	0.002	mg/L	N	0	0	NA	NA	NA	NA	N					N		FALSE
CAP-3	0/12	100%	0.001-0.001	0.001	0.001	0.001		0	0	0	0.002	mg/L	N	0	0	NA	NA	NA	NA	N					N		FALSE
CAP-5	0/12	100%	0.001-0.001	0.001	0.001	0.001		0	0	0	0.002	mg/L	N	0	0	NA	NA	NA	NA	N					N		FALSE
CAP-7	0/12	100%	0.001-0.001	0.001	0.001	0.001		0	0	0	0.002	mg/L	N	0	0	NA	NA	NA	NA	N					N		FALSE
CAP-9	0/12	100%	0.001-0.001	0.001	0.001	0.001		0	0	0	0.002	mg/L	N	0	0	NA	NA	NA	NA	N					N		FALSE

Appendix B – Laboratory Analytical Reports

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SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AE94854 **Location:** GW Well CBW-1 **Date:** 01/26/2021 **Sample Collector:** ATH/DEW

Loc. Code CBW-1 **Time:** 10:39

Analysis	Result	Units	Test Date	Analyst	Method
Arsenic	<5.0	ug/L	02/19/2021	SJHATCHE	EPA 6020B
Arsenic Dissolved	<5.0	ug/L	02/12/2021	SJHATCHE	EPA 6020B
Barium	46.6	ug/L	02/19/2021	SJHATCHE	EPA 6020B
Beryllium	<0.50	ug/L	02/19/2021	SJHATCHE	EPA 6020B
Boron	18	ug/L	02/10/2021	ROGERSNCALLC	EPA 6010D
Calcium	29.2	mg/L	02/19/2021	SJHATCHE	EPA 6020B
Cadmium	<0.50	ug/L	02/19/2021	SJHATCHE	EPA 6020B
Cobalt	0.66	ug/L	02/19/2021	SJHATCHE	EPA 6020B
Chromium	<5.0	ug/L	02/19/2021	SJHATCHE	EPA 6020B
Iron	64.6	ug/L	02/19/2021	SJHATCHE	EPA 6020B
Mercury	<0.20	ug/L	02/09/2021	ROGERSNCALLC	EPA 7470
Lithium	<10	ug/L	02/05/2021	ROGERSNCALLC	EPA 6010D
Molybdenum	<10	ug/L	02/05/2021	ROGERSNCALLC	EPA 6010D
Lead	2.5	ug/L	02/19/2021	SJHATCHE	EPA 6020B
Antimony	<5.0	ug/L	02/19/2021	SJHATCHE	EPA 6020B
Selenium	<10.0	ug/L	02/19/2021	SJHATCHE	EPA 6020B
Thallium	<1.0	ug/L	02/19/2021	SJHATCHE	EPA 6020B
Radium 226	0.436	pCi/L	02/25/2021	GEL	EPA 903.1 Mod
Radium 228	1.29	pCi/L	02/23/2021	GEL	EPA 904.0
Radium 226/228 Combined Calculation	1.73	pCi/L	02/25/2021	GEL	EPA 903.1 Mod
Chloride	3.22	mg/L	01/27/2021	KCWELLS	EPA 300.0
Fluoride	0.15	mg/L	01/27/2021	KCWELLS	EPA 300.0
Sulfate	80.7	mg/L	01/27/2021	KCWELLS	EPA 300.0
Total Dissolved Solids	138.8	mg/L	01/28/2021	KCWELLS	SM 2540C
pH	4.31	SU	01/26/2021	DEW/ATH	
Spec. Cond.	192	uS	01/26/2021	DEW/ATH	
Dissolved Oxygen	0.710	ppm	01/26/2021	DEW/ATH	
Oxidation Reduction Potential	338	mv	01/26/2021	DEW/ATH	SM2580
Temp	20.25	C	01/26/2021	DEW/ATH	
Turbidity	0	NTU	01/26/2021	DEW/ATH	
Depth	10.12	Feet	01/26/2021	DEW/ATH	
Elevation	75.68	Feet	02/12/2021	DEWEST	
Aluminum	0.90	mg/L	02/19/2021	SJHATCHE	EPA 6020B
Potassium	0.67	mg/L	02/19/2021	SJHATCHE	EPA 6020B
Magnesium	2.2	mg/L	02/19/2021	SJHATCHE	EPA 6020B
Sodium	2.1	mg/L	02/19/2021	SJHATCHE	EPA 6020B
Nitrate	<0.10	mg/L	01/27/2021	KCWELLS	EPA 300.0
Total Organic Carbon	2.43	mg/L	02/04/2021	GEL	SM 5310B
Zinc	<10.0	ug/L	02/19/2021	SJHATCHE	EPA 6020B

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SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Comments:

Independent Laboratory Results: "GEL" - GEL Laboratories LLC - Lab ID # 10120; "Test America" - TestAmerica Laboratories, Inc. - Lab ID# 98001; "DavisBrown"- Davis & Brown Lab ID # 21117; "Shealy"- Shealy Environmental Services, Inc.- Lab ID# 32010 "ROGERSCALLCO"- Rogers & Callcot, Inc.- Lab ID # 23105001

Analysis Validated: Linda Williams

Linda Williams - Supervisor Analytical Services

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SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AF03823 **Location:** GW Well CBW-1 **Date:** 05/13/2021 **Sample Collector:** MDG/BWM

Loc. Code CBW-1 **Time:** 14:39

Analysis	Result	Units	Test Date	Analyst	Method
Depth	9.87	Feet	05/14/2021	MDG/BWM	
Elevation	75.93	Feet	05/17/2021	MDGOINGS	

Comments:

Independent Laboratory Results: "GEL" - GEL Laboratories LLC - Lab ID # 10120; "Test America" - TestAmerica Laboratories, Inc. - Lab ID# 98001; "DavisBrown"- Davis & Brown Lab ID # 21117; "Shealy"- Shealy Environmental Services, Inc.- Lab ID# 32010 "ROGERSCALLCO"- Rogers & Callcot, Inc.- Lab ID # 23105001

Analysis Validated: Linda Williams

Linda Williams - Supervisor Analytical Services

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SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AF07259 **Location:** GW Well CBW-1 **Date:** 06/21/2021 **Sample Collector:** MDG/BRT

Loc. Code CBW-1 **Time:** 14:13

Analysis	Result	Units	Test Date	Analyst	Method
Arsenic	<5.0	ug/L	07/29/2021	SJHATCHE	EPA 6020B
Arsenic Dissolved	<5.0	ug/L	07/28/2021	SJHATCHE	EPA 6020B
Barium	42.3	ug/L	07/29/2021	SJHATCHE	EPA 6020B
Beryllium	<0.50	ug/L	07/29/2021	SJHATCHE	EPA 6020B
Boron	<40	ug/L	07/05/2021	R&C	EPA 6010D
Calcium	29.9	mg/L	07/29/2021	SJHATCHE	EPA 6020B
Cadmium	<0.50	ug/L	07/29/2021	SJHATCHE	EPA 6020B
Cobalt	0.70	ug/L	07/29/2021	SJHATCHE	EPA 6020B
Chromium	<5.0	ug/L	07/29/2021	SJHATCHE	EPA 6020B
Iron	135	ug/L	07/29/2021	SJHATCHE	EPA 6020B
Mercury	<0.2	ug/L	07/05/2021	R&C	EPA 7470
Lithium	<20	ug/L	07/05/2021	R&C	EPA 6010D
Molybdenum	<20	ug/L	07/05/2021	R&C	EPA 6010D
Lead	2.6	ug/L	07/29/2021	SJHATCHE	EPA 6020B
Antimony	<5.0	ug/L	07/29/2021	SJHATCHE	EPA 6020B
Selenium	<10.0	ug/L	07/29/2021	SJHATCHE	EPA 6020B
Thallium	<1.0	ug/L	07/29/2021	SJHATCHE	EPA 6020B
Radium 226	0.433	pCi/L	07/13/2021	GEL	EPA 903.1 Mod
Radium 228	0.120	pCi/L	07/06/2021	GEL	EPA 904.0
Radium 226/228 Combined Calculation	0.552	pCi/L	07/20/2021	GEL	EPA 903.1 Mod
Chloride	3.05	mg/L	06/28/2021	KCWELLS	EPA 300.0
Fluoride	0.19	mg/L	06/28/2021	KCWELLS	EPA 300.0
Sulfate	86.6	mg/L	06/28/2021	KCWELLS	EPA 300.0
Total Dissolved Solids	178.8	mg/L	06/29/2021	SJBROWN	SM 2540C
pH	4.25	SU	06/21/2021	MDG/BRT	
Spec. Cond.	194	uS	06/21/2021	MDG/BRT	
Dissolved Oxygen	0.660	ppm	06/21/2021	MDG/BRT	
Oxidation Reduction Potential	75.0	mv	06/21/2021	MDG/BRT	SM2580
Temp	24.16	C	06/21/2021	MDG/BRT	
Turbidity	0.200	NTU	06/21/2021	MDG/BRT	
Depth	10.07	Feet	06/21/2021	MDG/BRT	
Elevation	75.73	Feet	07/14/2021	BRTAYLOR	
Aluminum	1.0	mg/L	07/29/2021	SJHATCHE	EPA 6020B
Potassium	0.63	mg/L	07/29/2021	SJHATCHE	EPA 6020B
Magnesium	2.2	mg/L	07/29/2021	SJHATCHE	EPA 6020B
Sodium	2.2	mg/L	07/29/2021	SJHATCHE	EPA 6020B
Nitrate	0.35	mg/L	06/28/2021	KCWELLS	EPA 300.0
Total Organic Carbon	2.11	mg/L	06/28/2021	GEL	SM 5310B
Zinc	<10.0	ug/L	07/29/2021	SJHATCHE	EPA 6020B

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SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Comments:

Independent Laboratory Results: "GEL" - GEL Laboratories LLC - Lab ID # 10120; "Test America" - TestAmerica Laboratories, Inc. - Lab ID# 98001; "DavisBrown"- Davis & Brown Lab ID # 21117; "Shealy"- Shealy Environmental Services, Inc.- Lab ID# 32010 "ROGERSCALLCO"- Rogers & Callcot, Inc.- Lab ID # 23105001

Analysis Validated: Linda Williams

Linda Williams - Supervisor Analytical Services

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SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AE94872 **Location:** GW Well PM-1 **Date:** 01/26/2021 **Sample Collector:** ATH/DEW

Loc. Code PM-1 **Time:** 09:27

Analysis	Result	Units	Test Date	Analyst	Method
Arsenic	<5.00	ug/L	02/09/2021	SJHATCHE	EPA 6020B
Arsenic Dissolved	<5.0	ug/L	02/04/2021	SJHATCHE	EPA 6020B
Barium	85.7	ug/L	02/09/2021	SJHATCHE	EPA 6020B
Beryllium	<0.50	ug/L	02/09/2021	SJHATCHE	EPA 6020B
Boron	<15	ug/L	02/09/2021	ROGERSNCALLC	EPA 6010D
Calcium	14.3	mg/L	02/09/2021	SJHATCHE	EPA 6020B
Cadmium	<0.50	ug/L	02/09/2021	SJHATCHE	EPA 6020B
Cobalt	1.0	ug/L	02/09/2021	SJHATCHE	EPA 6020B
Chromium	<5.0	ug/L	02/09/2021	SJHATCHE	EPA 6020B
Iron	13300	ug/L	02/09/2021	SJHATCHE	EPA 6020B
Mercury	<0.20	ug/L	02/09/2021	ROGERSNCALLC	EPA 7470
Lithium	<10	ug/L	02/05/2021	ROGERSNCALLC	EPA 6010D
Molybdenum	<10	ug/L	02/05/2021	ROGERSNCALLC	EPA 6010D
Lead	<1.0	ug/L	02/09/2021	SJHATCHE	EPA 6020B
Antimony	<5.0	ug/L	02/09/2021	SJHATCHE	EPA 6020B
Selenium	<10.0	ug/L	02/09/2021	SJHATCHE	EPA 6020B
Thallium	<1.0	ug/L	02/10/2021	SJHATCHE	EPA 6020B
Radium 226	0.559	pCi/L	02/25/2021	GEL	EPA 903.1 Mod
Radium 228	2.88	pCi/L	02/23/2021	GEL	EPA 904.0
Radium 226/228 Combined Calculation	3.44	pCi/L	02/25/2021	GEL	EPA 903.1 Mod
Chloride	11.8	mg/L	01/27/2021	KCWELLS	EPA 300.0
Fluoride	<0.10	mg/L	01/27/2021	KCWELLS	EPA 300.0
Sulfate	9.98	mg/L	01/27/2021	KCWELLS	EPA 300.0
Total Dissolved Solids	110.0	mg/L	01/28/2021	KCWELLS	SM 2540C
pH	5.03	SU	01/26/2021	DEW/ATH	
Spec. Cond.	143	uS	01/26/2021	DEW/ATH	
Dissolved Oxygen	6.12	ppm	01/26/2021	DEW/ATH	
Oxidation Reduction Potential	1.00	mv	01/26/2021	DEW/ATH	SM2580
Temp	19.47	C	01/26/2021	DEW/ATH	
Turbidity	4.40	NTU	01/26/2021	DEW/ATH	
Depth	8.27	Feet	01/26/2021	DEW/ATH	
Elevation	74.97	Feet	02/12/2021	DEWEST	
Aluminum	<0.10	mg/L	02/09/2021	SJHATCHE	EPA 6020B
Potassium	0.57	mg/L	02/09/2021	SJHATCHE	EPA 6020B
Magnesium	0.77	mg/L	02/09/2021	SJHATCHE	EPA 6020B
Sodium	5.4	mg/L	02/09/2021	SJHATCHE	EPA 6020B
Nitrate	<0.10	mg/L	01/27/2021	KCWELLS	EPA 300.0
Total Organic Carbon	6.25	mg/L	02/04/2021	GEL	SM 5310B
Zinc	<10.0	ug/L	02/10/2021	SJHATCHE	EPA 6020B

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SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Comments:

Independent Laboratory Results: "GEL" - GEL Laboratories LLC - Lab ID # 10120; "Test America" - TestAmerica Laboratories, Inc. - Lab ID# 98001; "DavisBrown"- Davis & Brown Lab ID # 21117; "Shealy"- Shealy Environmental Services, Inc.- Lab ID# 32010 "ROGERSCALLCO"- Rogers & Callcot, Inc.- Lab ID # 23105001

Analysis Validated: Linda Williams

Linda Williams - Supervisor Analytical Services

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SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AF03824 **Location:** GW Well PM-1 **Date:** 05/13/2021 **Sample Collector:** MDG/BWM

Loc. Code PM-1 **Time:** 14:39

Analysis	Result	Units	Test Date	Analyst	Method
Depth	7.77	Feet	05/14/2021	MDG/BWM	
Elevation	75.47	Feet	05/17/2021	MDGOINGS	

Comments:

Independent Laboratory Results: "GEL" - GEL Laboratories LLC - Lab ID # 10120; "Test America" - TestAmerica Laboratories, Inc. - Lab ID# 98001; "DavisBrown"- Davis & Brown Lab ID # 21117; "Shealy"- Shealy Environmental Services, Inc.- Lab ID# 32010 "ROGERSCALLCO"- Rogers & Callcot, Inc.- Lab ID # 23105001

Analysis Validated: Linda Williams

Linda Williams - Supervisor Analytical Services

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CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AF07281 **Location:** GW Well PM-1 **Date:** 06/21/2021 **Sample Collector:** MDG/BRT

Loc. Code PM-1 **Time:** 13:08

Analysis	Result	Units	Test Date	Analyst	Method
Arsenic	<5.0	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Arsenic Dissolved	<5.0	ug/L	07/06/2021	SJHATCHE	EPA 6020B
Barium	87.3	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Beryllium	<0.50	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Boron	<15	ug/L	07/05/2021	R&C	EPA 6010D
Calcium	17.0	mg/L	07/09/2021	SJHATCHE	EPA 6020B
Cadmium	<0.50	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Cobalt	0.94	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Chromium	<5.0	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Iron	14800	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Mercury	<0.2	ug/L	07/05/2021	R&C	EPA 7470
Lithium	<10	ug/L	07/05/2021	R&C	EPA 6010D
Molybdenum	<10	ug/L	07/05/2021	R&C	EPA 6010D
Lead	<1.0	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Antimony	<5.0	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Selenium	<10.0	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Thallium	<1.0	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Radium 226	0.369	pCi/L	07/13/2021	GEL	EPA 903.1 Mod
Radium 228	1.73	pCi/L	07/06/2021	GEL	EPA 904.0
Radium 226/228 Combined Calculation	2.10	pCi/L	07/20/2021	GEL	EPA 903.1 Mod
Chloride	12.0	mg/L	06/28/2021	KCWELLS	EPA 300.0
Fluoride	<0.10	mg/L	06/28/2021	KCWELLS	EPA 300.0
Sulfate	11.9	mg/L	06/28/2021	KCWELLS	EPA 300.0
Total Dissolved Solids	155.0	mg/L	06/29/2021	SJBROWN	SM 2540C
pH	5.21	SU	06/21/2021	MDG/BRT	
Spec. Cond.	169	uS	06/21/2021	MDG/BRT	
Dissolved Oxygen	3.96	ppm	06/21/2021	MDG/BRT	
Oxidation Reduction Potential	45.0	mv	06/21/2021	MDG/BRT	SM2580
Temp	26.49	C	06/21/2021	MDG/BRT	
Turbidity	4.30	NTU	06/21/2021	MDG/BRT	
Depth	7.91	Feet	06/21/2021	MDG/BRT	
Elevation	75.33	Feet	07/14/2021	BRTAYLOR	
Aluminum	<0.10	mg/L	07/09/2021	SJHATCHE	EPA 6020B
Potassium	0.60	mg/L	07/09/2021	SJHATCHE	EPA 6020B
Magnesium	0.79	mg/L	07/09/2021	SJHATCHE	EPA 6020B
Sodium	5.1	mg/L	07/09/2021	SJHATCHE	EPA 6020B
Nitrate	0.18	mg/L	06/28/2021	KCWELLS	EPA 300.0
Total Organic Carbon	6.57	mg/L	06/28/2021	GEL	SM 5310B
Zinc	10.8	ug/L	07/09/2021	SJHATCHE	EPA 6020B

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SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Comments:

Independent Laboratory Results: "GEL" - GEL Laboratories LLC - Lab ID # 10120; "Test America" - TestAmerica Laboratories, Inc. - Lab ID# 98001; "DavisBrown"- Davis & Brown Lab ID # 21117; "Shealy"- Shealy Environmental Services, Inc.- Lab ID# 32010 "ROGERSCALLCO"- Rogers & Callcot, Inc.- Lab ID # 23105001

Analysis Validated: Linda Williams

Linda Williams - Supervisor Analytical Services

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SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AE94839 **Location:** GW Well CAP- 1 **Date:** 02/02/2021 **Sample Collector:** MDG/DEW

Loc. Code CAP-1 **Time:** 12:06

Analysis	Result	Units	Test Date	Analyst	Method
Arsenic	<5.0	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Arsenic Dissolved	<5.0	ug/L	02/12/2021	SJHATCHE	EPA 6020B
Barium	63.8	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Beryllium	3.2	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Calcium	172	mg/L	02/15/2021	SJHATCHE	EPA 6020B
Cadmium	<0.50	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Cobalt	9.7	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Chromium	<5.0	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Iron	87300	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Mercury	<0.20	ug/L	02/12/2021	ROGERSNCALLC	EPA 7470
Lithium	50	ug/L	02/09/2021	ROGERSNCALLC	EPA 6010D
Molybdenum	<10	ug/L	02/09/2021	ROGERSNCALLC	EPA 6010D
Lead	1.7	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Antimony	<5.0	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Selenium	<10.0	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Thallium	<1.0	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Radium 226	1.10	pCi/L	03/05/2021	GEL	EPA 903.1 Mod
Radium 228	0.243	pCi/L	03/01/2021	GEL	EPA 904.0
Radium 226/228 Combined Calculation	1.34	pCi/L	03/08/2021	GEL	EPA 903.1 Mod
Chloride	92.9	mg/L	02/05/2021	KCWELLS	EPA 300.0
Fluoride	1.09	mg/L	02/05/2021	KCWELLS	EPA 300.0
Sulfate	394	mg/L	02/05/2021	KCWELLS	EPA 300.0
Total Dissolved Solids	907.5	mg/L	02/08/2021	KCWELLS	SM 2540C
pH	5.74	SU	02/02/2021	DEW/MDG	
Spec. Cond.	1000	uS	02/02/2021	DEW/MDG	
Dissolved Oxygen	1.93	ppm	02/02/2021	DEW/MDG	
Oxidation Reduction Potential	34.0	mv	02/02/2021	DEW/MDG	SM2580
Temp	13.89	C	02/02/2021	DEW/MDG	
Turbidity	0	NTU	02/02/2021	DEW/MDG	
Depth	5.60	Feet	02/02/2021	DEW/MDG	
Elevation	77.10	Feet	02/12/2021	DEWEST	
Aluminum	1.6	mg/L	02/15/2021	SJHATCHE	EPA 6020B
Potassium	0.63	mg/L	02/15/2021	SJHATCHE	EPA 6020B
Magnesium	5.9	mg/L	02/15/2021	SJHATCHE	EPA 6020B
Sodium	31.9	mg/L	02/15/2021	SJHATCHE	EPA 6020B

Comments:

Independent Laboratory Results: "GEL" - GEL Laboratories LLC - Lab ID # 10120; "Test America" - TestAmerica Laboratories, Inc. - Lab ID# 98001; "DavisBrown"- Davis & Brown Lab ID # 21117; "Shealy"- Shealy Environmental Services, Inc.- Lab ID# 32010 "ROGERSCALLCO"- Rogers & Callcot, Inc.- Lab ID # 23105001

Analysis Validated: Linda Williams

Linda Williams - Supervisor Analytical Services

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SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AF07244 **Location:** GW Well CAP- 1 **Date:** 06/24/2021 **Sample Collector:** BRT/ML

Loc. Code CAP-1 **Time:** 12:19

Analysis	Result	Units	Test Date	Analyst	Method
Arsenic	<5.0	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Arsenic Dissolved	<5.0	ug/L	07/06/2021	SJHATCHE	EPA 6020B
Barium	45.1	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Beryllium	8.1	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Boron	480.0	ug/L	07/05/2021	R&C	EPA 6010D
Calcium	258	mg/L	07/09/2021	SJHATCHE	EPA 6020B
Cadmium	<0.50	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Cobalt	22.1	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Chromium	<5.0	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Iron	58300	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Mercury	<0.2	ug/L	07/05/2021	R&C	EPA 7470
Lithium	96.0	ug/L	07/05/2021	R&C	EPA 6010D
Lead	2.2	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Radium 226	0.130	pCi/L	07/13/2021	GEL	EPA 903.1 Mod
Radium 228	0.659	pCi/L	07/06/2021	GEL	EPA 904.0
Radium 226/228 Combined	0.789	pCi/L	07/20/2021	GEL	EPA 903.1 Mod
Calculation					
Chloride	193	mg/L	06/30/2021	KCWELLS	EPA 300.0
Fluoride	2.42	mg/L	06/30/2021	KCWELLS	EPA 300.0
Sulfate	645	mg/L	06/30/2021	KCWELLS	EPA 300.0
Total Dissolved Solids	1385	mg/L	07/02/2021	SJBROWN	SM 2540C
pH	5.18	SU	06/24/2021	BRT/ML	
Spec. Cond.	1550	uS	06/24/2021	BRT/ML	
Dissolved Oxygen	0.400	ppm	06/24/2021	BRT/ML	
Oxidation Reduction Potential	74.0	mv	06/24/2021	BRT/ML	SM2580
Temp	24.03	C	06/24/2021	BRT/ML	
Turbidity	58.7	NTU	06/24/2021	BRT/ML	
Depth	8.01	Feet	07/21/2021	BRTAYLOR	
Elevation	74.69	Feet	07/21/2021	BRTAYLOR	
Aluminum	7.9	mg/L	07/09/2021	SJHATCHE	EPA 6020B
Potassium	0.65	mg/L	07/09/2021	SJHATCHE	EPA 6020B
Magnesium	7.6	mg/L	07/09/2021	SJHATCHE	EPA 6020B
Sodium	60.8	mg/L	07/09/2021	SJHATCHE	EPA 6020B

Comments:

Independent Laboratory Results: "GEL" - GEL Laboratories LLC - Lab ID # 10120; "Test America" - TestAmerica Laboratories, Inc. - Lab ID# 98001; "DavisBrown"- Davis & Brown Lab ID # 21117; "Shealy"- Shealy Environmental Services, Inc.- Lab ID# 32010 "ROGERSCALLCO"- Rogers & Callcot, Inc.- Lab ID # 23105001

Analysis Validated: Linda Williams

Linda Williams - Supervisor Analytical Services

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SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AE94847 **Location:** GW Well CAP-9 **Date:** 02/02/2021 **Sample Collector:** MDG/DEW

Loc. Code CAP-9 **Time:** 13:39

Analysis	Result	Units	Test Date	Analyst	Method
Arsenic	5.7	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Arsenic Dissolved	6.2	ug/L	02/12/2021	SJHATCHE	EPA 6020B
Barium	41.2	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Beryllium	16.0	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Calcium	485	mg/L	02/18/2021	SJHATCHE	EPA 6020B
Cadmium	<0.50	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Cobalt	36.0	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Chromium	<5.0	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Iron	85400	ug/L	02/18/2021	SJHATCHE	EPA 6020B
Mercury	<0.20	ug/L	02/12/2021	ROGERSNCALLC	EPA 7470
Lithium	71	ug/L	02/09/2021	ROGERSNCALLC	EPA 6010D
Molybdenum	<10	ug/L	02/09/2021	ROGERSNCALLC	EPA 6010D
Lead	15.4	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Antimony	<5.0	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Selenium	<10.0	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Thallium	<1.0	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Radium 226	0.402	pCi/L	03/05/2021	GEL	EPA 903.1 Mod
Radium 228	1.92	pCi/L	03/01/2021	GEL	EPA 904.0
Radium 226/228 Combined Calculation	2.33	pCi/L	03/08/2021	GEL	EPA 903.1 Mod
Chloride	1040	mg/L	02/05/2021	KCWELLS	EPA 300.0
Fluoride	3.91	mg/L	02/05/2021	KCWELLS	EPA 300.0
Sulfate	565	mg/L	02/05/2021	KCWELLS	EPA 300.0
Total Dissolved Solids	2944	mg/L	02/08/2021	KCWELLS	SM 2540C
pH	3.33	SU	02/02/2021	DEW/MDG	
Spec. Cond.	4440	uS	02/02/2021	DEW/MDG	
Dissolved Oxygen	2.05	ppm	02/02/2021	DEW/MDG	
Oxidation Reduction Potential	333	mv	02/02/2021	DEW/MDG	SM2580
Temp	17.49	C	02/02/2021	DEW/MDG	
Turbidity	0	NTU	02/02/2021	DEW/MDG	
Depth	14.02	Feet	02/02/2021	DEW/MDG	
Elevation	77.57	Feet	02/12/2021	DEWEST	
Aluminum	20.0	mg/L	02/15/2021	SJHATCHE	EPA 6020B
Potassium	6.8	mg/L	02/15/2021	SJHATCHE	EPA 6020B
Magnesium	53.6	mg/L	02/18/2021	SJHATCHE	EPA 6020B
Sodium	135	mg/L	02/15/2021	SJHATCHE	EPA 6020B

Comments:

Independent Laboratory Results: "GEL" - GEL Laboratories LLC - Lab ID # 10120; "Test America" - TestAmerica Laboratories, Inc. - Lab ID# 98001; "DavisBrown"- Davis & Brown Lab ID # 21117; "Shealy"- Shealy Environmental Services, Inc.- Lab ID# 32010 "ROGERSCALLCO"- Rogers & Callcot, Inc.- Lab ID # 23105001

Analysis Validated: Linda Williams

Linda Williams - Supervisor Analytical Services

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SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AE94848 **Location:** GW Well CAP-9 **Date:** 02/02/2021 **Sample Collector:** MDG/DEW

Loc. Code CAP-9 DUP **Time:** 13:44

Analysis	Result	Units	Test Date	Analyst	Method
Arsenic	5.5	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Arsenic Dissolved	6.1	ug/L	02/12/2021	SJHATCHE	EPA 6020B
Barium	48.3	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Beryllium	15.1	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Calcium	498	mg/L	02/18/2021	SJHATCHE	EPA 6020B
Cadmium	<0.50	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Cobalt	36.1	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Chromium	<5.0	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Iron	80700	ug/L	02/18/2021	SJHATCHE	EPA 6020B
Mercury	<0.20	ug/L	02/12/2021	ROGERSNCALLC	EPA 7470
Lithium	70	ug/L	02/09/2021	ROGERSNCALLC	EPA 6010D
Molybdenum	<10	ug/L	02/09/2021	ROGERSNCALLC	EPA 6010D
Lead	14.8	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Antimony	<5.0	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Selenium	<10.0	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Thallium	<1.0	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Radium 226	1.16	pCi/L	03/05/2021	GEL	EPA 903.1 Mod
Radium 228	2.72	pCi/L	03/01/2021	GEL	EPA 904.0
Radium 226/228 Combined Calculation	3.88	pCi/L	03/08/2021	GEL	EPA 903.1 Mod
Chloride	1050	mg/L	02/05/2021	KCWELLS	EPA 300.0
Fluoride	3.84	mg/L	02/05/2021	KCWELLS	EPA 300.0
Sulfate	562	mg/L	02/05/2021	KCWELLS	EPA 300.0
Total Dissolved Solids	2814	mg/L	02/08/2021	KCWELLS	SM 2540C
Aluminum	19.7	mg/L	02/15/2021	SJHATCHE	EPA 6020B
Potassium	7.0	mg/L	02/15/2021	SJHATCHE	EPA 6020B
Magnesium	53.0	mg/L	02/18/2021	SJHATCHE	EPA 6020B
Sodium	134	mg/L	02/15/2021	SJHATCHE	EPA 6020B

Comments:

Independent Laboratory Results: "GEL" - GEL Laboratories LLC - Lab ID # 10120; "Test America" - TestAmerica Laboratories, Inc. - Lab ID# 98001; "DavisBrown"- Davis & Brown Lab ID # 21117; "Shealy"- Shealy Environmental Services, Inc.- Lab ID# 32010 "ROGERSCALLCO"- Rogers & Callcot, Inc.- Lab ID # 23105001

Analysis Validated: Linda Williams

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CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AF07252 **Location:** GW Well CAP-9 **Date:** 06/29/2021 **Sample Collector:** BRT/CWS

Loc. Code CAP-9 **Time:** 14:00

Analysis	Result	Units	Test Date	Analyst	Method
Arsenic	6.7	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Arsenic Dissolved	6.1	ug/L	07/06/2021	SJHATCHE	EPA 6020B
Barium	40.4	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Beryllium	13.7	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Boron	7300	ug/L	07/14/2021	R&C	EPA 6010D
Calcium	496	mg/L	07/09/2021	SJHATCHE	EPA 6020B
Cadmium	<0.50	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Cobalt	39.0	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Chromium	<5.0	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Iron	92300	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Mercury	<0.2	ug/L	07/16/2021	R&C	EPA 7470
Lithium	63.0	ug/L	07/14/2021	R&C	EPA 6010D
Lead	11.9	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Radium 226	0.752	pCi/L	07/22/2021	GEL	EPA 903.1 Mod
Radium 228	2.56	pCi/L	07/20/2021	GEL	EPA 904.0
Radium 226/228 Combined	3.32	pCi/L	07/26/2021	GEL	EPA 903.1 Mod
Calculation					
Chloride	1125	mg/L	07/08/2021	KCWELLS	EPA 300.0
Fluoride	3.56	mg/L	07/08/2021	KCWELLS	EPA 300.0
Sulfate	625	mg/L	07/08/2021	KCWELLS	EPA 300.0
Total Dissolved Solids	3132	mg/L	07/07/2021	SJBROWN	SM 2540C
pH	3.81	SU	06/29/2021	BRT/CWS	
Spec. Cond.	4230	uS	06/29/2021	BRT/CWS	
Dissolved Oxygen	0.460	ppm	06/29/2021	BRT/CWS	
Oxidation Reduction Potential	259	mv	06/29/2021	BRT/CWS	SM2580
Temp	24.46	C	06/29/2021	BRT/CWS	
Turbidity	2.60	NTU	06/29/2021	BRT/CWS	
Depth	15.54	Feet	06/29/2021	BRT/CWS	
Elevation	76.05	Feet	07/14/2021	BRTAYLOR	
Aluminum	21.2	mg/L	07/09/2021	SJHATCHE	EPA 6020B
Potassium	6.6	mg/L	07/09/2021	SJHATCHE	EPA 6020B
Magnesium	53.0	mg/L	07/09/2021	SJHATCHE	EPA 6020B
Sodium	141	mg/L	07/09/2021	SJHATCHE	EPA 6020B

Comments:

Independent Laboratory Results: "GEL" - GEL Laboratories LLC - Lab ID # 10120; "Test America" - TestAmerica Laboratories, Inc. - Lab ID# 98001; "DavisBrown"- Davis & Brown Lab ID # 21117; "Shealy"- Shealy Environmental Services, Inc.- Lab ID# 32010 "ROGERSCALLCO"- Rogers & Callcot, Inc.- Lab ID # 23105001

Analysis Validated: Linda Williams

Linda Williams - Supervisor Analytical Services

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SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AF07253 **Location:** GW Well CAP-9 **Date:** 06/29/2021 **Sample Collector:** BRT/CWS

Loc. Code CAP-9 DUP **Time:** 14:05

Analysis	Result	Units	Test Date	Analyst	Method
Arsenic	6.7	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Arsenic Dissolved	6.5	ug/L	07/06/2021	SJHATCHE	EPA 6020B
Barium	43.7	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Beryllium	13.6	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Boron	6800	ug/L	07/14/2021	R&C	EPA 6010D
Calcium	511	mg/L	07/09/2021	SJHATCHE	EPA 6020B
Cadmium	<0.50	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Cobalt	39.3	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Chromium	<5.0	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Iron	91000	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Mercury	<0.2	ug/L	07/16/2021	R&C	EPA 7470
Lithium	67.0	ug/L	07/14/2021	R&C	EPA 6010D
Lead	12.2	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Radium 226	0.572	pCi/L	07/22/2021	GEL	EPA 903.1 Mod
Radium 228	2.78	pCi/L	07/20/2021	GEL	EPA 904.0
Radium 226/228 Combined	3.35	pCi/L	07/26/2021	GEL	EPA 903.1 Mod
Calculation					
Chloride	1437	mg/L	07/08/2021	KCWELLS	EPA 300.0
Fluoride	4.09	mg/L	07/12/2021	KCWELLS	EPA 300.0
Sulfate	761	mg/L	07/08/2021	KCWELLS	EPA 300.0
Total Dissolved Solids	3284	mg/L	07/07/2021	SJBROWN	SM 2540C
Aluminum	20.9	mg/L	07/09/2021	SJHATCHE	EPA 6020B
Potassium	6.6	mg/L	07/09/2021	SJHATCHE	EPA 6020B
Magnesium	53.6	mg/L	07/09/2021	SJHATCHE	EPA 6020B
Sodium	139	mg/L	07/09/2021	SJHATCHE	EPA 6020B

Comments:

Independent Laboratory Results: "GEL" - GEL Laboratories LLC - Lab ID # 10120; "Test America" - TestAmerica Laboratories, Inc. - Lab ID# 98001; "DavisBrown"- Davis & Brown Lab ID # 21117; "Shealy"- Shealy Environmental Services, Inc.- Lab ID# 32010 "ROGERSCALLCO"- Rogers & Callcot, Inc.- Lab ID # 23105001

Analysis Validated: Linda Williams

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SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AE94841 **Location:** GW Well CAP- 3 **Date:** 02/03/2021 **Sample Collector:** MDG/DEW

Loc. Code CAP-3 **Time:** 13:49

Analysis	Result	Units	Test Date	Analyst	Method
Arsenic	<5.0	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Arsenic Dissolved	<5.0	ug/L	02/12/2021	SJHATCHE	EPA 6020B
Barium	64.2	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Beryllium	<0.50	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Calcium	677	mg/L	02/15/2021	SJHATCHE	EPA 6020B
Cadmium	<0.50	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Cobalt	32.8	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Chromium	<5.0	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Iron	1640	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Mercury	<0.20	ug/L	02/12/2021	ROGERSNCALLC	EPA 7470
Lithium	15	ug/L	02/09/2021	ROGERSNCALLC	EPA 6010D
Molybdenum	<10	ug/L	02/09/2021	ROGERSNCALLC	EPA 6010D
Lead	<1.0	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Antimony	<5.0	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Selenium	<10.0	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Thallium	<1.0	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Radium 226	0.714	pCi/L	03/05/2021	GEL	EPA 903.1 Mod
Radium 228	1.58	pCi/L	03/01/2021	GEL	EPA 904.0
Radium 226/228 Combined Calculation	2.29	pCi/L	03/08/2021	GEL	EPA 903.1 Mod
Chloride	700	mg/L	02/05/2021	KCWELLS	EPA 300.0
Fluoride	<0.10	mg/L	02/10/2021	KCWELLS	EPA 300.0
Sulfate	999	mg/L	02/05/2021	KCWELLS	EPA 300.0
Total Dissolved Solids	3391	mg/L	02/09/2021	COAMESWA	SM 2540C
pH	6.34	SU	02/03/2021	DEW/MDG	
Spec. Cond.	4180	uS	02/03/2021	DEW/MDG	
Dissolved Oxygen	0.680	ppm	02/03/2021	DEW/MDG	
Oxidation Reduction Potential	49.0	mv	02/03/2021	DEW/MDG	SM2580
Temp	18.22	C	02/03/2021	DEW/MDG	
Turbidity	0	NTU	02/03/2021	DEW/MDG	
Depth	14.93	Feet	02/03/2021	DEW/MDG	
Elevation	76.56	Feet	02/12/2021	DEWEST	
Aluminum	<0.50	mg/L	02/15/2021	SJHATCHE	EPA 6020B
Potassium	4.7	mg/L	02/15/2021	SJHATCHE	EPA 6020B
Magnesium	70.7	mg/L	02/15/2021	SJHATCHE	EPA 6020B
Sodium	105	mg/L	02/15/2021	SJHATCHE	EPA 6020B

Comments:

Independent Laboratory Results: "GEL" - GEL Laboratories LLC - Lab ID # 10120; "Test America" - TestAmerica Laboratories, Inc. - Lab ID# 98001; "DavisBrown"- Davis & Brown Lab ID # 21117; "Shealy"- Shealy Environmental Services, Inc.- Lab ID# 32010 "ROGERSCALLCO"- Rogers & Callcot, Inc.- Lab ID # 23105001

Analysis Validated: Linda Williams

Linda Williams - Supervisor Analytical Services

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CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AF07246 **Location:** GW Well CAP- 3 **Date:** 06/29/2021 **Sample Collector:** BRT/CWS

Loc. Code CAP-3 **Time:** 10:44

Analysis	Result	Units	Test Date	Analyst	Method
Arsenic	<5.0	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Arsenic Dissolved	<5.0	ug/L	07/06/2021	SJHATCHE	EPA 6020B
Barium	85.0	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Beryllium	<0.50	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Boron	6300.0	ug/L	07/14/2021	R&C	EPA 6010D
Calcium	612	mg/L	07/09/2021	SJHATCHE	EPA 6020B
Cadmium	<0.50	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Cobalt	28.9	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Chromium	<5.0	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Iron	1660	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Mercury	<0.2	ug/L	07/16/2021	R&C	EPA 7470
Lithium	11.0	ug/L	07/14/2021	R&C	EPA 6010D
Lead	<1.0	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Radium 226	0.413	pCi/L	07/22/2021	GEL	EPA 903.1 Mod
Radium 228	1.38	pCi/L	07/20/2021	GEL	EPA 904.0
Radium 226/228 Combined	1.79	pCi/L	07/26/2021	GEL	EPA 903.1 Mod
Calculation					
Chloride	608	mg/L	07/08/2021	KCWELLS	EPA 300.0
Fluoride	<0.10	mg/L	07/08/2021	KCWELLS	EPA 300.0
Sulfate	804	mg/L	07/08/2021	KCWELLS	EPA 300.0
Total Dissolved Solids	3121	mg/L	07/07/2021	SJBROWN	SM 2540C
pH	6.31	SU	06/29/2021	BRT/CWS	
Spec. Cond.	3290	uS	06/29/2021	BRT/CWS	
Dissolved Oxygen	0.480	ppm	06/29/2021	BRT/CWS	
Oxidation Reduction Potential	86.0	mv	06/29/2021	BRT/CWS	SM2580
Temp	24.59	C	06/29/2021	BRT/CWS	
Turbidity	2.60	NTU	06/29/2021	BRT/CWS	
Depth	16.28	Feet	06/29/2021	BRT/CWS	
Elevation	75.21	Feet	07/14/2021	BRTAYLOR	
Aluminum	<0.10	mg/L	07/09/2021	SJHATCHE	EPA 6020B
Potassium	3.8	mg/L	07/09/2021	SJHATCHE	EPA 6020B
Magnesium	57.9	mg/L	07/09/2021	SJHATCHE	EPA 6020B
Sodium	87.4	mg/L	07/09/2021	SJHATCHE	EPA 6020B

Comments:

Independent Laboratory Results: "GEL" - GEL Laboratories LLC - Lab ID # 10120; "Test America" - TestAmerica Laboratories, Inc. - Lab ID# 98001; "DavisBrown"- Davis & Brown Lab ID # 21117; "Shealy"- Shealy Environmental Services, Inc.- Lab ID# 32010 "ROGERSCALLCO"- Rogers & Callcot, Inc.- Lab ID # 23105001

Analysis Validated: Linda Williams

Linda Williams - Supervisor Analytical Services

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SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AE94843 **Location:** GW Well CAP-5 **Date:** 02/03/2021 **Sample Collector:** MDG/DEW

Loc. Code CAP-5 **Time:** 12:48

Analysis	Result	Units	Test Date	Analyst	Method
Arsenic	<5.0	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Arsenic Dissolved	<5.0	ug/L	02/12/2021	SJHATCHE	EPA 6020B
Barium	1480	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Beryllium	5.0	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Calcium	153	mg/L	02/15/2021	SJHATCHE	EPA 6020B
Cadmium	<0.50	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Cobalt	14.7	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Chromium	<5.0	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Iron	118000	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Mercury	<0.20	ug/L	02/12/2021	ROGERSNCALLC	EPA 7470
Lithium	16	ug/L	02/09/2021	ROGERSNCALLC	EPA 6010D
Molybdenum	<10	ug/L	02/09/2021	ROGERSNCALLC	EPA 6010D
Lead	6.1	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Antimony	<5.0	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Selenium	<10.0	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Thallium	<1.0	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Radium 226	6.31	pCi/L	03/05/2021	GEL	EPA 903.1 Mod
Radium 228	15.0	pCi/L	03/03/2021	GEL	EPA 904.0
Radium 226/228 Combined Calculation	21.3	pCi/L	03/08/2021	GEL	EPA 903.1 Mod
Chloride	609	mg/L	02/05/2021	KCWELLS	EPA 300.0
Fluoride	0.75	mg/L	02/05/2021	KCWELLS	EPA 300.0
Sulfate	<2.0	mg/L	02/05/2021	KCWELLS	EPA 300.0
Total Dissolved Solids	1179	mg/L	02/08/2021	KCWELLS	SM 2540C
pH	3.68	SU	02/03/2021	DEW/MDG	
Spec. Cond.	2080	uS	02/03/2021	DEW/MDG	
Dissolved Oxygen	0.590	ppm	02/03/2021	DEW/MDG	
Oxidation Reduction Potential	312	mv	02/03/2021	DEW/MDG	SM2580
Temp	18.56	C	02/03/2021	DEW/MDG	
Turbidity	0	NTU	02/03/2021	DEW/MDG	
Depth	14.67	Feet	02/03/2021	DEW/MDG	
Elevation	77.11	Feet	02/12/2021	DEWEST	
Aluminum	6.2	mg/L	02/15/2021	SJHATCHE	EPA 6020B
Potassium	0.85	mg/L	02/15/2021	SJHATCHE	EPA 6020B
Magnesium	3.9	mg/L	02/15/2021	SJHATCHE	EPA 6020B
Sodium	82.7	mg/L	02/17/2021	SJHATCHE	EPA 6020B

Comments:

Independent Laboratory Results: "GEL" - GEL Laboratories LLC - Lab ID # 10120; "Test America" - TestAmerica Laboratories, Inc. - Lab ID# 98001; "DavisBrown"- Davis & Brown Lab ID # 21117; "Shealy"- Shealy Environmental Services, Inc.- Lab ID# 32010 "ROGERSCALLCO"- Rogers & Callcot, Inc.- Lab ID # 23105001

Analysis Validated: Linda Williams

Linda Williams - Supervisor Analytical Services

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SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AF07248 **Location:** GW Well CAP-5 **Date:** 06/29/2021 **Sample Collector:** BRT/CWS

Loc. Code CAP-5 **Time:** 11:50

Analysis	Result	Units	Test Date	Analyst	Method
Arsenic	<5.0	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Arsenic Dissolved	<5.0	ug/L	07/06/2021	SJHATCHE	EPA 6020B
Barium	1660	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Beryllium	4.3	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Boron	<40	ug/L	07/14/2021	R&C	EPA 6010D
Calcium	154	mg/L	07/09/2021	SJHATCHE	EPA 6020B
Cadmium	<0.50	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Cobalt	14.8	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Chromium	<5.0	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Iron	129000	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Mercury	<0.2	ug/L	07/16/2021	R&C	EPA 7470
Lithium	13.0	ug/L	07/14/2021	R&C	EPA 6010D
Lead	7.3	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Radium 226	5.16	pCi/L	07/22/2021	GEL	EPA 903.1 Mod
Radium 228	11.6	pCi/L	07/23/2021	GEL	EPA 904.0
Radium 226/228 Combined	16.8	pCi/L	07/26/2021	GEL	EPA 903.1 Mod
Calculation					
Chloride	696	mg/L	07/08/2021	KCWELLS	EPA 300.0
Fluoride	0.52	mg/L	07/08/2021	KCWELLS	EPA 300.0
Sulfate	<2.0	mg/L	07/08/2021	KCWELLS	EPA 300.0
Total Dissolved Solids	1475	mg/L	07/07/2021	SJBROWN	SM 2540C
pH	3.86	SU	06/29/2021	BRT/CWS	
Spec. Cond.	2010	uS	06/29/2021	BRT/CWS	
Dissolved Oxygen	0.410	ppm	06/29/2021	BRT/CWS	
Oxidation Reduction Potential	116	mv	06/29/2021	BRT/CWS	SM2580
Temp	24.02	C	06/29/2021	BRT/CWS	
Turbidity	0	NTU	06/29/2021	BRT/CWS	
Depth	17.78	Feet	06/29/2021	BRT/CWS	
Elevation	74.00	Feet	07/14/2021	BRTAYLOR	
Aluminum	6.1	mg/L	07/09/2021	SJHATCHE	EPA 6020B
Potassium	0.76	mg/L	07/09/2021	SJHATCHE	EPA 6020B
Magnesium	3.9	mg/L	07/09/2021	SJHATCHE	EPA 6020B
Sodium	88.5	mg/L	07/09/2021	SJHATCHE	EPA 6020B

Comments:

Independent Laboratory Results: "GEL" - GEL Laboratories LLC - Lab ID # 10120; "Test America" - TestAmerica Laboratories, Inc. - Lab ID# 98001; "DavisBrown"- Davis & Brown Lab ID # 21117; "Shealy"- Shealy Environmental Services, Inc.- Lab ID# 32010 "ROGERSCALLCO"- Rogers & Callcot, Inc.- Lab ID # 23105001

Analysis Validated: Linda Williams

Linda Williams - Supervisor Analytical Services

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SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AE94845 **Location:** GW Well CAP-7 **Date:** 02/03/2021 **Sample Collector:** MDG/DEW

Loc. Code CAP-7 **Time:** 11:15

Analysis	Result	Units	Test Date	Analyst	Method
Arsenic	<5.0	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Arsenic Dissolved	<5.0	ug/L	02/12/2021	SJHATCHE	EPA 6020B
Barium	38.0	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Beryllium	<0.50	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Calcium	1060	mg/L	02/15/2021	SJHATCHE	EPA 6020B
Cadmium	<0.50	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Cobalt	10.2	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Chromium	<5.0	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Iron	230000	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Mercury	<0.20	ug/L	02/12/2021	ROGERSNCALLC	EPA 7470
Lithium	<10	ug/L	02/09/2021	ROGERSNCALLC	EPA 6010D
Molybdenum	<10	ug/L	02/09/2021	ROGERSNCALLC	EPA 6010D
Lead	<1.0	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Antimony	<5.0	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Selenium	<10.0	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Thallium	<1.0	ug/L	02/15/2021	SJHATCHE	EPA 6020B
Radium 226	1.27	pCi/L	03/05/2021	GEL	EPA 903.1 Mod
Radium 228	2.59	pCi/L	03/01/2021	GEL	EPA 904.0
Radium 226/228 Combined Calculation	3.86	pCi/L	03/08/2021	GEL	EPA 903.1 Mod
Chloride	2210	mg/L	02/05/2021	KCWELLS	EPA 300.0
Fluoride	<0.10	mg/L	02/05/2021	KCWELLS	EPA 300.0
Sulfate	1620	mg/L	02/05/2021	KCWELLS	EPA 300.0
Total Dissolved Solids	6105	mg/L	02/08/2021	KCWELLS	SM 2540C
pH	5.46	SU	02/03/2021	DEW/MDG	
Spec. Cond.	8580	uS	02/03/2021	DEW/MDG	
Dissolved Oxygen	0.870	ppm	02/03/2021	DEW/MDG	
Oxidation Reduction Potential	78.0	mv	02/03/2021	DEW/MDG	SM2580
Temp	18.96	C	02/03/2021	DEW/MDG	
Turbidity	1.00	NTU	02/03/2021	DEW/MDG	
Depth	14.44	Feet	02/03/2021	DEW/MDG	
Elevation	77.20	Feet	02/12/2021	DEWEST	
Aluminum	0.21	mg/L	02/15/2021	SJHATCHE	EPA 6020B
Potassium	17.2	mg/L	02/15/2021	SJHATCHE	EPA 6020B
Magnesium	306	mg/L	02/15/2021	SJHATCHE	EPA 6020B
Sodium	172	mg/L	02/15/2021	SJHATCHE	EPA 6020B

Comments:

Independent Laboratory Results: "GEL" - GEL Laboratories LLC - Lab ID # 10120; "Test America" - TestAmerica Laboratories, Inc. - Lab ID# 98001; "DavisBrown"- Davis & Brown Lab ID # 21117; "Shealy"- Shealy Environmental Services, Inc.- Lab ID# 32010 "ROGERSCALLCO"- Rogers & Callcot, Inc.- Lab ID # 23105001

Analysis Validated: Linda Williams

Linda Williams - Supervisor Analytical Services

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SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AF07250 **Location:** GW Well CAP-7 **Date:** 06/30/2021 **Sample Collector:** BRT/MDG

Loc. Code CAP-7 **Time:** 10:23

Analysis	Result	Units	Test Date	Analyst	Method
Arsenic	<5.0	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Arsenic Dissolved	<5.0	ug/L	07/06/2021	SJHATCHE	EPA 6020B
Barium	41.3	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Beryllium	<0.50	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Boron	29000	ug/L	07/16/2021	R&C	EPA 6010D
Calcium	1150	mg/L	07/09/2021	SJHATCHE	EPA 6020B
Cadmium	<0.50	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Cobalt	9.6	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Chromium	<5.0	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Iron	210000	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Mercury	<0.2	ug/L	07/16/2021	R&C	EPA 7470
Lithium	<10	ug/L	07/14/2021	R&C	EPA 6010D
Lead	<1.0	ug/L	07/09/2021	SJHATCHE	EPA 6020B
Radium 226	0.509	pCi/L	07/22/2021	GEL	EPA 903.1 Mod
Radium 228	1.14	pCi/L	07/20/2021	GEL	EPA 904.0
Radium 226/228 Combined	1.65	pCi/L	07/26/2021	GEL	EPA 903.1 Mod
Calculation					
Chloride	2905	mg/L	07/08/2021	KCWELLS	EPA 300.0
Fluoride	<0.10	mg/L	07/08/2021	KCWELLS	EPA 300.0
Sulfate	1851	mg/L	07/08/2021	KCWELLS	EPA 300.0
Total Dissolved Solids	7198	mg/L	07/12/2021	SJBROWN	SM 2540C
pH	5.51	SU	06/30/2021	MDG/BRT	
Spec. Cond.	8740	uS	06/30/2021	MDG/BRT	
Dissolved Oxygen	0.360	ppm	06/30/2021	MDG/BRT	
Oxidation Reduction Potential	73.0	mv	06/30/2021	MDG/BRT	SM2580
Temp	25.66	C	06/30/2021	MDG/BRT	
Turbidity	0	NTU	06/30/2021	MDG/BRT	
Depth	16.60	Feet	06/30/2021	MDG/BRT	
Elevation	75.04	Feet	07/14/2021	BRTAYLOR	
Aluminum	<0.10	mg/L	07/09/2021	SJHATCHE	EPA 6020B
Potassium	17.6	mg/L	07/09/2021	SJHATCHE	EPA 6020B
Magnesium	332	mg/L	07/09/2021	SJHATCHE	EPA 6020B
Sodium	184	mg/L	07/09/2021	SJHATCHE	EPA 6020B

Comments:

Independent Laboratory Results: "GEL" - GEL Laboratories LLC - Lab ID # 10120; "Test America" - TestAmerica Laboratories, Inc. - Lab ID# 98001; "DavisBrown"- Davis & Brown Lab ID # 21117; "Shealy"- Shealy Environmental Services, Inc.- Lab ID# 32010 "ROGERSCALLCO"- Rogers & Callcot, Inc.- Lab ID # 23105001

Analysis Validated: Linda Williams

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CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AE94857 **Location:** GW Well CCMAP-3 **Date:** 02/10/2021 **Sample Collector:** MDG/DEW

Loc. Code CCMAP-3 **Time:** 16:09

Analysis	Result	Units	Test Date	Analyst	Method
Beryllium	<0.50	ug/L	02/19/2021	SJHATCHE	EPA 6020B
Cobalt	<0.50	ug/L	02/19/2021	SJHATCHE	EPA 6020B
Lithium	15.0	ug/L	12/30/1999	R&C	EPA 6010D
pH	6.58	SU	02/11/2021	DEW/MDG	
Spec. Cond.	4240	uS	02/11/2021	DEW/MDG	
Dissolved Oxygen	0.660	ppm	02/11/2021	DEW/MDG	
Oxidation Reduction Potential	-9.00	mv	02/11/2021	DEW/MDG	SM2580
Temp	19.33	C	02/11/2021	DEW/MDG	
Turbidity	0	NTU	02/11/2021	DEW/MDG	
Depth	5.89	Feet	02/11/2021	DEW/MDG	
Elevation	76.02	Feet	02/12/2021	DEWEST	

Comments:

Independent Laboratory Results: "GEL" - GEL Laboratories LLC - Lab ID # 10120; "Test America" - TestAmerica Laboratories, Inc. - Lab ID# 98001; "DavisBrown"- Davis & Brown Lab ID # 21117; "Shealy"- Shealy Environmental Services, Inc.- Lab ID# 32010 "ROGERSCALLCO"- Rogers & Callcot, Inc.- Lab ID # 23105001

Analysis Validated: Linda Williams

Linda Williams - Supervisor Analytical Services

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SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AE94858 **Location:** GW Well CCMAP-3 **Date:** 02/10/2021 **Sample Collector:** MDG/DEW

Loc. Code CCMAP-3 DUP **Time:** 16:14

Analysis	Result	Units	Test Date	Analyst	Method
Beryllium	<0.50	ug/L	02/19/2021	SJHATCHE	EPA 6020B
Cobalt	<0.50	ug/L	02/19/2021	SJHATCHE	EPA 6020B
Lithium	16.0	ug/L	12/30/1999	R&C	EPA 6010D

Comments:

Independent Laboratory Results: "GEL" - GEL Laboratories LLC - Lab ID # 10120; "Test America" - TestAmerica Laboratories, Inc. - Lab ID# 98001; "DavisBrown"- Davis & Brown Lab ID # 21117; "Shealy"- Shealy Environmental Services, Inc.- Lab ID# 32010 "ROGERSCALLCO"- Rogers & Callcot, Inc.- Lab ID # 23105001

Analysis Validated: Linda Williams

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CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AF07264 **Location:** GW Well CCMAP-3 **Date:** 07/01/2021 **Sample Collector:** BRT/ATH

Loc. Code CCMAP-3 **Time:** 11:37

Analysis	Result	Units	Test Date	Analyst	Method
Beryllium	<0.50	ug/L	07/29/2021	SJHATCHE	EPA 6020B
Cobalt	<0.50	ug/L	07/29/2021	SJHATCHE	EPA 6020B
Lithium	25.0	ug/L	07/14/2021	R&C	EPA 6010D
Radium 226	1.57	pCi/L	07/22/2021	GEL	EPA 903.1 Mod
Radium 228	0.509	pCi/L	07/20/2021	GEL	EPA 904.0
Radium 226/228 Combined Calculation	2.08	pCi/L	07/26/2021	GEL	EPA 903.1 Mod
pH	6.42	SU	07/01/2021	BRT/ATH	
Spec. Cond.	5660	uS	07/01/2021	BRT/ATH	
Dissolved Oxygen	0.390	ppm	07/01/2021	BRT/ATH	
Oxidation Reduction Potential	-8.00	mv	07/01/2021	BRT/ATH	SM2580
Temp	26.72	C	07/01/2021	BRT/ATH	
Turbidity	2.70	NTU	07/01/2021	BRT/ATH	
Depth	8.02	Feet	07/01/2021	BRT/ATH	
Elevation	73.89	Feet	07/14/2021	BRTAYLOR	

Comments:

Independent Laboratory Results: "GEL" - GEL Laboratories LLC - Lab ID # 10120; "Test America" - TestAmerica Laboratories, Inc. - Lab ID# 98001; "DavisBrown"- Davis & Brown Lab ID # 21117; "Shealy"- Shealy Environmental Services, Inc.- Lab ID# 32010 "ROGERSCALLCO"- Rogers & Callcot, Inc.- Lab ID # 23105001

Analysis Validated: Linda Williams

Linda Williams - Supervisor Analytical Services

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CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AF07265 **Location:** GW Well CCMAP-3 **Date:** 07/01/2021 **Sample Collector:** BRT/ATH

Loc. Code CCMAP-3 DUP **Time:** 11:42

Analysis	Result	Units	Test Date	Analyst	Method
Beryllium	<0.50	ug/L	07/29/2021	SJHATCHE	EPA 6020B
Cobalt	<0.50	ug/L	07/29/2021	SJHATCHE	EPA 6020B
Lithium	26.0	ug/L	07/14/2021	R&C	EPA 6010D
Radium 226	0.939	pCi/L	07/22/2021	GEL	EPA 903.1 Mod
Radium 228	0.954	pCi/L	07/20/2021	GEL	EPA 904.0
Radium 226/228 Combined Calculation	1.89	pCi/L	07/26/2021	GEL	EPA 903.1 Mod

Comments:

Independent Laboratory Results: "GEL" - GEL Laboratories LLC - Lab ID # 10120; "Test America" - TestAmerica Laboratories, Inc. - Lab ID# 98001; "DavisBrown"- Davis & Brown Lab ID # 21117; "Shealy"- Shealy Environmental Services, Inc.- Lab ID# 32010 "ROGERSCALLCO"- Rogers & Callcot, Inc.- Lab ID # 23105001

Analysis Validated: Linda Williams

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CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AE94855 **Location:** GW Well CCMAP-1 **Date:** 02/11/2021 **Sample Collector:** MDG/DEW

Loc. Code CCMAP-1 **Time:** 12:28

Analysis	Result	Units	Test Date	Analyst	Method
Beryllium	<0.50	ug/L	02/19/2021	SJHATCHE	EPA 6020B
Cobalt	<0.50	ug/L	02/19/2021	SJHATCHE	EPA 6020B
Lithium	<10	ug/L	12/30/1999	R&C	EPA 6010D
pH	7.11	SU	02/11/2021	DEW/MDG	
Spec. Cond.	280	uS	02/11/2021	DEW/MDG	
Dissolved Oxygen	1.17	ppm	02/11/2021	DEW/MDG	
Oxidation Reduction Potential	115	mv	02/11/2021	DEW/MDG	SM2580
Temp	18.80	C	02/11/2021	DEW/MDG	
Turbidity	0	NTU	02/11/2021	DEW/MDG	
Depth	4.34	Feet	02/11/2021	DEW/MDG	
Elevation	75.87	Feet	02/12/2021	DEWEST	

Comments:

Independent Laboratory Results: "GEL" - GEL Laboratories LLC - Lab ID # 10120; "Test America" - TestAmerica Laboratories, Inc. - Lab ID# 98001; "DavisBrown"- Davis & Brown Lab ID # 21117; "Shealy"- Shealy Environmental Services, Inc.- Lab ID# 32010 "ROGERSCALLCO"- Rogers & Callcot, Inc.- Lab ID # 23105001

Analysis Validated: Linda Williams

Linda Williams - Supervisor Analytical Services

santee cooper

One Riverwood Drive
P.O. Box 2946101
Moncks Corner, SC 29461-2901
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SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AF07262 **Location:** GW Well CCMAP-1 **Date:** 07/01/2021 **Sample Collector:** BRT/ATH

Loc. Code CCMAP-1 **Time:** 13:47

Analysis	Result	Units	Test Date	Analyst	Method
Beryllium	<0.50	ug/L	07/29/2021	SJHATCHE	EPA 6020B
Cobalt	0.82	ug/L	07/29/2021	SJHATCHE	EPA 6020B
Lithium	<10	ug/L	07/14/2021	R&C	EPA 6010D
Radium 226	0.310	pCi/L	07/22/2021	GEL	EPA 903.1 Mod
Radium 228	-0.0249	pCi/L	07/20/2021	GEL	EPA 904.0
Radium 226/228 Combined Calculation	0.310	pCi/L	07/26/2021	GEL	EPA 903.1 Mod
pH	7.18	SU	07/01/2021	BRT/ATH	
Spec. Cond.	307	uS	07/01/2021	BRT/ATH	
Dissolved Oxygen	0.510	ppm	07/01/2021	BRT/ATH	
Oxidation Reduction Potential	-134	mv	07/01/2021	BRT/ATH	SM2580
Temp	27.84	C	07/01/2021	BRT/ATH	
Turbidity	0.900	NTU	07/01/2021	BRT/ATH	
Depth	6.89	Feet	07/01/2021	BRT/ATH	
Elevation	73.32	Feet	07/14/2021	BRTAYLOR	

Comments:

Independent Laboratory Results: "GEL" - GEL Laboratories LLC - Lab ID # 10120; "Test America" - TestAmerica Laboratories, Inc. - Lab ID# 98001; "DavisBrown"- Davis & Brown Lab ID # 21117; "Shealy"- Shealy Environmental Services, Inc.- Lab ID# 32010 "ROGERSCALLCO"- Rogers & Callcot, Inc.- Lab ID # 23105001

Analysis Validated: Linda Williams

Linda Williams - Supervisor Analytical Services

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SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AE94856 **Location:** GW Well CCMAP-2 **Date:** 02/11/2021 **Sample Collector:** MDG/DEW

Loc. Code CCMAP-2 **Time:** 13:14

Analysis	Result	Units	Test Date	Analyst	Method
Beryllium	<0.50	ug/L	02/19/2021	SJHATCHE	EPA 6020B
Cobalt	<0.50	ug/L	02/19/2021	SJHATCHE	EPA 6020B
Lithium	<10	ug/L	12/30/1999	R&C	EPA 6010D
pH	5.17	SU	02/11/2021	DEW/MDG	
Spec. Cond.	42.0	uS	02/11/2021	DEW/MDG	
Dissolved Oxygen	1.66	ppm	02/11/2021	DEW/MDG	
Oxidation Reduction Potential	140	mv	02/11/2021	DEW/MDG	SM2580
Temp	17.93	C	02/11/2021	DEW/MDG	
Turbidity	0	NTU	02/11/2021	DEW/MDG	
Depth	6.50	Feet	02/11/2021	DEW/MDG	
Elevation	74.74	Feet	02/12/2021	DEWEST	

Comments:

Independent Laboratory Results: "GEL" - GEL Laboratories LLC - Lab ID # 10120; "Test America" - TestAmerica Laboratories, Inc. - Lab ID# 98001; "DavisBrown"- Davis & Brown Lab ID # 21117; "Shealy"- Shealy Environmental Services, Inc.- Lab ID# 32010 "ROGERSCALLCO"- Rogers & Callcot, Inc.- Lab ID # 23105001

Analysis Validated: Linda Williams

Linda Williams - Supervisor Analytical Services

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SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AF07263 **Location:** GW Well CCMAP-2 **Date:** 07/01/2021 **Sample Collector:** BRT/ATH

Loc. Code CCMAP-2 **Time:** 12:46

Analysis	Result	Units	Test Date	Analyst	Method
Beryllium	<0.50	ug/L	07/29/2021	SJHATCHE	EPA 6020B
Cobalt	1.5	ug/L	07/29/2021	SJHATCHE	EPA 6020B
Lithium	<10	ug/L	07/14/2021	R&C	EPA 6010D
Radium 226	0.391	pCi/L	07/22/2021	GEL	EPA 903.1 Mod
Radium 228	0.238	pCi/L	07/20/2021	GEL	EPA 904.0
Radium 226/228 Combined Calculation	0.628	pCi/L	07/26/2021	GEL	EPA 903.1 Mod
pH	5.66	SU	07/01/2021	BRT/ATH	
Spec. Cond.	49.0	uS	07/01/2021	BRT/ATH	
Dissolved Oxygen	0.510	ppm	07/01/2021	BRT/ATH	
Oxidation Reduction Potential	87.0	mv	07/01/2021	BRT/ATH	SM2580
Temp	23.97	C	07/01/2021	BRT/ATH	
Turbidity	0.900	NTU	07/01/2021	BRT/ATH	
Depth	7.72	Feet	07/01/2021	BRT/ATH	
Elevation	73.52	Feet	07/14/2021	BRTAYLOR	

Comments:

Independent Laboratory Results: "GEL" - GEL Laboratories LLC - Lab ID # 10120; "Test America" - TestAmerica Laboratories, Inc. - Lab ID# 98001; "DavisBrown"- Davis & Brown Lab ID # 21117; "Shealy"- Shealy Environmental Services, Inc.- Lab ID# 32010 "ROGERSCALLCO"- Rogers & Callcot, Inc.- Lab ID # 23105001

Analysis Validated: Linda Williams

Linda Williams - Supervisor Analytical Services

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SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AF00697 **Location:** GW Well CCMAP-4 **Date:** 04/08/2021 **Sample Collector:** DEW/MDG

Loc. Code CCMAP-4 **Time:** 10:32

Analysis	Result	Units	Test Date	Analyst	Method
Beryllium	<0.50	ug/L	04/26/2021	SJHATCHE	EPA 6020B
Cobalt	10.0	ug/L	04/26/2021	SJHATCHE	EPA 6020B
Lithium	<10	ug/L	04/16/2021	ROGERSNCALLC	EPA 6010D
pH	6.19	SU	04/08/2021	DEW/MDG	
Spec. Cond.	541	uS	04/08/2021	DEW/MDG	
Dissolved Oxygen	0.570	ppm	04/08/2021	DEW/MDG	
Oxidation Reduction Potential	-13.0	mv	04/08/2021	DEW/MDG	SM2580
Temp	21.39	C	04/08/2021	DEW/MDG	
Turbidity	0	NTU	04/08/2021	DEW/MDG	
Depth	5.31	Feet	04/08/2021	DEW/MDG	
Elevation	76.52	Feet	04/22/2021	DEWEST	

Comments:

Independent Laboratory Results: "GEL" - GEL Laboratories LLC - Lab ID # 10120; "Test America" - TestAmerica Laboratories, Inc. - Lab ID# 98001; "DavisBrown"- Davis & Brown Lab ID # 21117; "Shealy"- Shealy Environmental Services, Inc.- Lab ID# 32010 "ROGERSCALLCO"- Rogers & Callcot, Inc.- Lab ID # 23105001

Analysis Validated: Linda Williams

Linda Williams - Supervisor Analytical Services

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SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AF00698 **Location:** GW Well CCMAP-4 **Date:** 04/08/2021 **Sample Collector:** DEW/MDG

Loc. Code CCMAP-4 DUP **Time:** 10:37

Analysis	Result	Units	Test Date	Analyst	Method
Beryllium	<0.50	ug/L	04/26/2021	SJHATCHE	EPA 6020B
Cobalt	9.9	ug/L	04/26/2021	SJHATCHE	EPA 6020B
Lithium	<10	ug/L	04/16/2021	ROGERSNCALLC	EPA 6010D

Comments:

Independent Laboratory Results: "GEL" - GEL Laboratories LLC - Lab ID # 10120; "Test America" - TestAmerica Laboratories, Inc. - Lab ID# 98001; "DavisBrown"- Davis & Brown Lab ID # 21117; "Shealy"- Shealy Environmental Services, Inc.- Lab ID# 32010 "ROGERSCALLCO"- Rogers & Callcot, Inc.- Lab ID # 23105001

Analysis Validated: Linda Williams

Linda Williams - Supervisor Analytical Services

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SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AF07266 **Location:** GW Well CCMAP-4 **Date:** 07/01/2021 **Sample Collector:** BRT/ATH

Loc. Code CCMAP-4 **Time:** 10:24

Analysis	Result	Units	Test Date	Analyst	Method
Beryllium	<0.50	ug/L	07/29/2021	SJHATCHE	EPA 6020B
Cobalt	5.44	ug/L	07/29/2021	SJHATCHE	EPA 6020B
Lithium	<10	ug/L	07/14/2021	R&C	EPA 6010D
Radium 226	0.521	pCi/L	07/22/2021	GEL	EPA 903.1 Mod
Radium 228	-0.820	pCi/L	07/20/2021	GEL	EPA 904.0
Radium 226/228 Combined Calculation	0.521	pCi/L	07/26/2021	GEL	EPA 903.1 Mod
pH	6.48	SU	07/01/2021	BRT/ATH	
Spec. Cond.	581	uS	07/01/2021	BRT/ATH	
Dissolved Oxygen	0.540	ppm	07/01/2021	BRT/ATH	
Oxidation Reduction Potential	-44.0	mv	07/01/2021	BRT/ATH	SM2580
Temp	22.01	C	07/01/2021	BRT/ATH	
Turbidity	4.10	NTU	07/01/2021	BRT/ATH	
Depth	7.87	Feet	07/01/2021	BRT/ATH	
Elevation	73.96	Feet	07/14/2021	BRTAYLOR	

Comments:

Independent Laboratory Results: "GEL" - GEL Laboratories LLC - Lab ID # 10120; "Test America" - TestAmerica Laboratories, Inc. - Lab ID# 98001; "DavisBrown"- Davis & Brown Lab ID # 21117; "Shealy"- Shealy Environmental Services, Inc.- Lab ID# 32010 "ROGERSCALLCO"- Rogers & Callcot, Inc.- Lab ID # 23105001

Analysis Validated: Linda Williams

Linda Williams - Supervisor Analytical Services

Rogers & Callcott ENVIRONMENTAL

Laboratory Services

Laboratory Report

Client	Santee Cooper Linda Williams 1 Riverwood Dr. Moncks Corner, SC 29461	**Project:** **Work Order:** **Received:**	Ground Water 1020352 02/04/2021 10:45

Dear Client:

Rogers and Callcott appreciates the opportunity to be of service to you. The attached laboratory services report includes analytical results and chain of custody for samples that were received on February 04, 2021. Rogers and Callcott maintains a formal QA/QC program. Unless otherwise noted, all analyses performed under NELAP certification have complied with all the requirements for the TNI standard. The analyses met the QA/QC confidence interval for each test method unless otherwise qualified. Estimated uncertainty is available upon request.

Privileged / Confidential information may be contained in this report and is intended only for the use of the addressee. If you are not the addressee, or the person responsible for delivering to the person addressed, you may not copy or deliver this message to anyone else. If you receive this message by mistake, please notify Rogers and Callcott immediately.

We strive to provide excellent service to our clients. Please contact Lauren Hollister, your Project Manager, at lhollister@rcenviro.com, (864)-232-1556 if you have any questions about this report.

CC: Jeanette Gilmetti, Sherri Brown, Courtney Ames Watkins

Report Approved By:

Lauren Hollister
Project Manager

PO Box 5655 | Greenville, SC 29606 | 426 Fairforest Way | Greenville, SC 29607 | main 864.232.1556 | fax 864.232.6140 rogersandcallcott.com
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Rogers & Callcott ENVIRONMENTAL

South Carolina Greenville Laboratory Identification 23105
South Carolina Columbia Laboratory Identification 40572
North Carolina Laboratory Certification Number 27
North Carolina Drinking Water Lab Number 45710
NELAP Utah Certificate Number SC000042014-1
Georgia Drinking Water Lab ID 880

Certificate of Analysis

Client Santee Cooper
Linda Williams
1 Riverwood Dr.
Moncks Corner, SC 29461

Project: Ground Water
Work Order: 1020352
Received: 02/04/2021 10:45

Sample Number	Sample Description	Matrix	Sampled	Type
1020352-01	AE94877 POZ-7	Ground Water	01/28/21 09:15	Grab
1020352-02	AE94878 POZ-7 Dup	Ground Water	01/28/21 09:20	Grab
1020352-03	AE94876 POZ-6	Ground Water	01/28/21 14:34	Grab
1020352-04	AE94874 POZ-4	Ground Water	01/28/21 11:43	Grab
1020352-05	AE94869 CLFIB-4	Ground Water	01/27/21 09:18	Grab
1020352-06	AE94870 CLFIB-5	Ground Water	01/27/21 10:21	Grab
1020352-07	AE94871 CLFIB-5D	Ground Water	01/27/21 11:17	Grab
1020352-08	AE94875 POZ-5D	Ground Water	01/27/21 12:23	Grab
1020352-09	AE94873 POZ-3	Ground Water	01/27/21 13:21	Grab
1020352-10	AE94872 PM-1	Ground Water	01/26/21 09:27	Grab
1020352-11	AE94854 CBW-1	Ground Water	01/26/21 10:39	Grab
1020352-12	AE94865 CLFIB-1	Ground Water	01/26/21 12:01	Grab
1020352-13	AE94866 CLFIB-1 Dup	Ground Water	01/26/21 12:06	Grab
1020352-14	AE94867 CLFIB-2	Ground Water	01/26/21 13:06	Grab
1020352-15	AE94868 CLFIB-3	Ground Water	01/26/21 13:58	Grab

Santee Cooper		Project:	Ground Water
1 Riverwood Dr.		Work Order:	1020352
Moncks Corner, SC 29461		Reported:	02/11/21 16:21

Sample Data

Sample Number 1020352-01
Sample Description AE94877 POZ-7 collected on 01/28/21 09:15

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Mercury	ND	0.20	ug/L	1.00	02/09/21 10:28	EPA 7470A		MLR	B1B0412
Boron	ND	15	ug/L	1.00	02/09/21 18:02	EPA 6010D		MLR	B1B0278
Lithium	ND	10	ug/L	1.00	02/05/21 17:09	EPA 6010D		MLR	B1B0278
Molybdenum	ND	10	ug/L	1.00	02/05/21 17:09	EPA 6010D		MLR	B1B0278

Sample Number 1020352-02
Sample Description AE94878 POZ-7 Dup collected on 01/28/21 09:20

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Mercury	ND	0.20	ug/L	1.00	02/09/21 10:40	EPA 7470A		MLR	B1B0412
Boron	ND	15	ug/L	1.00	02/09/21 18:06	EPA 6010D		MLR	B1B0278
Lithium	ND	10	ug/L	1.00	02/05/21 17:12	EPA 6010D		MLR	B1B0278
Molybdenum	ND	10	ug/L	1.00	02/05/21 17:12	EPA 6010D		MLR	B1B0278

Sample Number 1020352-03
Sample Description AE94876 POZ-6 collected on 01/28/21 14:34

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Mercury	ND	0.20	ug/L	1.00	02/09/21 10:42	EPA 7470A		MLR	B1B0412
Boron	**44**	15	ug/L	1.00	02/09/21 18:10	EPA 6010D		MLR	B1B0278
Lithium	ND	10	ug/L	1.00	02/05/21 17:16	EPA 6010D		MLR	B1B0278
Molybdenum	ND	10	ug/L	1.00	02/05/21 17:16	EPA 6010D		MLR	B1B0278

Sample Number 1020352-04
Sample Description AE94874 POZ-4 collected on 01/28/21 11:43

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Mercury	ND	0.20	ug/L	1.00	02/09/21 10:45	EPA 7470A		MLR	B1B0412
Boron	ND	15	ug/L	1.00	02/10/21 13:59	EPA 6010D		MLR	B1B0474
Lithium	ND	10	ug/L	1.00	02/05/21 16:30	EPA 6010D		MLR	B1B0278
Molybdenum	ND	10	ug/L	1.00	02/05/21 16:30	EPA 6010D		MLR	B1B0278

Santee Cooper		Project:	Ground Water
1 Riverwood Dr.		Work Order:	1020352
Moncks Corner, SC 29461		Reported:	02/11/21 16:21

Sample Number 1020352-05
Sample Description AE94869 CLFIB-4 collected on 01/27/21 09:18

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Boron	**17**	15	ug/L	1.00	02/09/21 18:14	EPA 6010D		MLR	B1B0278

Sample Number 1020352-06
Sample Description AE94870 CLFIB-5 collected on 01/27/21 10:21

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Boron	**19**	15	ug/L	1.00	02/09/21 18:18	EPA 6010D		MLR	B1B0278

Sample Number 1020352-07
Sample Description AE94871 CLFIB-5D collected on 01/27/21 11:17

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Boron	ND	15	ug/L	1.00	02/09/21 18:21	EPA 6010D		MLR	B1B0278

Sample Number 1020352-08
Sample Description AE94875 POZ-5D collected on 01/27/21 12:23

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Boron	**260**	15	ug/L	1.00	02/09/21 18:25	EPA 6010D		MLR	B1B0278

Sample Number 1020352-09
Sample Description AE94873 POZ-3 collected on 01/27/21 13:21

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Boron	ND	15	ug/L	1.00	02/09/21 18:29	EPA 6010D		MLR	B1B0278

Santee Cooper		Project:	Ground Water
1 Riverwood Dr.		Work Order:	1020352
Moncks Corner, SC 29461		Reported:	02/11/21 16:21

Sample Number 1020352-10
Sample Description AE94872 PM-1 collected on 01/26/21 09:27

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Mercury	ND	0.20	ug/L	1.00	02/09/21 10:54	EPA 7470A		MLR	B1B0412
Boron	ND	15	ug/L	1.00	02/09/21 18:33	EPA 6010D		MLR	B1B0278
Lithium	ND	10	ug/L	1.00	02/05/21 17:51	EPA 6010D		MLR	B1B0278
Molybdenum	ND	10	ug/L	1.00	02/05/21 17:51	EPA 6010D		MLR	B1B0278

Sample Number 1020352-11
Sample Description AE94854 CBW-1 collected on 01/26/21 10:39

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Mercury	ND	0.20	ug/L	1.00	02/09/21 10:56	EPA 7470A		MLR	B1B0412
Boron	**18**	15	ug/L	1.00	02/10/21 13:36	EPA 6010D		MLR	B1B0474
Lithium	ND	10	ug/L	1.00	02/05/21 16:49	EPA 6010D		MLR	B1B0278
Molybdenum	ND	10	ug/L	1.00	02/05/21 16:49	EPA 6010D		MLR	B1B0278

Sample Number 1020352-12
Sample Description AE94865 CLFIB-1 collected on 01/26/21 12:01

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Boron	ND	15	ug/L	1.00	02/09/21 18:48	EPA 6010D		MLR	B1B0278

Sample Number 1020352-13
Sample Description AE94866 CLFIB-1 Dup collected on 01/26/21 12:06

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Boron	ND	15	ug/L	1.00	02/09/21 18:52	EPA 6010D		MLR	B1B0278

Sample Number 1020352-14
Sample Description AE94867 CLFIB-2 collected on 01/26/21 13:06

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Boron	**17**	15	ug/L	1.00	02/09/21 18:56	EPA 6010D		MLR	B1B0278

Rogers & Callcott ENVIRONMENTAL

Santee Cooper		Project:	Ground Water
1 Riverwood Dr.		Work Order:	1020352
Moncks Corner, SC 29461		Reported:	02/11/21 16:21

Sample Number 1020352-15
Sample Description AE94868 CLFIB-3 collected on 01/26/21 13:58

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Boron	**34**	15	ug/L	1.00	02/09/21 19:00	EPA 6010D		MLR	B1B0278

Santee Cooper		Project:	Ground Water
1 Riverwood Dr.		Work Order:	1020352
Moncks Corner, SC 29461		Reported:	02/11/21 16:21

Total Metals
Quality Control Summary

Parameter	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flags
Batch B1B0278 - EPA 3005A										
Blank (B1B0278-BLK1)										
Boron	ND	15	ug/L							
Lithium	ND	10	ug/L							
Molybdenum	ND	10	ug/L							
LCS (B1B0278-BS1)										
Boron	260	15	ug/L	250		103	80-120			
Lithium	261	10	ug/L	250		104	80-120			
Molybdenum	250	10	ug/L	250		102	80-120			
LCS Dup (B1B0278-BSD1)										
Boron	260	15	ug/L	250		102	80-120	0.2	20	
Lithium	262	10	ug/L	250		105	80-120	0.3	20	
Molybdenum	250	10	ug/L	250		102	80-120	0.001	20	
Matrix Spike (B1B0278-MS1)	**Source: 1020352-04**									
Lithium	278	10	ug/L	250	ND	108	75-125			
Molybdenum	250	10	ug/L	250	ND	100	75-125			
Matrix Spike (B1B0278-MS2)	**Source: 1020352-11**									
Lithium	255	10	ug/L	250	ND	102	75-125			
Molybdenum	250	10	ug/L	250	ND	100	75-125			
Matrix Spike (B1B0278-MS3)	**Source: 1020352-04RE1**									
Boron	270	30	ug/L	250	ND	107	75-125			
Matrix Spike (B1B0278-MS4)	**Source: 1020352-11RE1**									
Boron	270	30	ug/L	250	ND	110	75-125			
Matrix Spike Dup (B1B0278-MSD1)	**Source: 1020352-04**									
Lithium	271	10	ug/L	250	ND	105	75-125	2	20	
Molybdenum	250	10	ug/L	250	ND	99	75-125	0.7	20	
Matrix Spike Dup (B1B0278-MSD2)	**Source: 1020352-11**									
Lithium	253	10	ug/L	250	ND	101	75-125	0.6	20	
Molybdenum	250	10	ug/L	250	ND	99	75-125	1	20	

Rogers & Callcott ENVIRONMENTAL

Santee Cooper		Project:	Ground Water
1 Riverwood Dr.		Work Order:	1020352
Moncks Corner, SC 29461		Reported:	02/11/21 16:21

Total Metals
Quality Control Summary

Parameter	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flags
Batch B1B0278 - EPA 3005A										
Matrix Spike Dup (B1B0278-MSD3)	**Source: 1020352-04RE1**									
Boron	270	30	ug/L	250	ND	106	75-125	0.9	20	
Matrix Spike Dup (B1B0278-MSD4)	**Source: 1020352-11RE1**									
Boron	280	30	ug/L	250	ND	111	75-125	0.9	20	
Post Spike (B1B0278-PS1)	**Source: 1020352-04**									
Lithium	0.521		mg/L	0.500	ND	103	75-125			
Molybdenum	0.51		mg/L	0.500	ND	102	75-125			
Post Spike (B1B0278-PS2)	**Source: 1020352-11**									
Lithium	0.475		mg/L	0.500	ND	95	75-125			
Molybdenum	0.51		mg/L	0.500	ND	101	75-125			
Post Spike (B1B0278-PS3)	**Source: 1020352-04RE1**									
Boron	1000	30	ug/L	1000	ND	103	75-125			
Post Spike (B1B0278-PS4)	**Source: 1020352-11RE1**									
Boron	1000	30	ug/L	1000	ND	102	75-125			
Batch B1B0412 - EPA 7470A										
Blank (B1B0412-BLK1)										
Mercury	ND	0.20	ug/L							
LCS (B1B0412-BS1)										
Mercury	4.8	0.20	ug/L	5.00		96	80-120			
LCS Dup (B1B0412-BSD1)										
Mercury	4.8	0.20	ug/L	5.00		95	80-120	0.9	20	
Matrix Spike (B1B0412-MS1)	**Source: 1020352-01**									
Mercury	5.2	0.20	ug/L	5.00	ND	105	75-125			

Santee Cooper		Project:	Ground Water
1 Riverwood Dr.		Work Order:	1020352
Moncks Corner, SC 29461		Reported:	02/11/21 16:21

Total Metals
Quality Control Summary

Parameter	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flags
Batch B1B0412 - EPA 7470A										
Matrix Spike Dup (B1B0412-MSD1)	**Source: 1020352-01**									
Mercury	5.3	0.20	ug/L	5.00	ND	105	75-125	0.3	20	
Post Spike (B1B0412-PS1)	**Source: 1020352-01**									
Mercury	4.3		ug/L	4.00	ND	106	80-120			
Batch B1B0474 - EPA 3005A										
Blank (B1B0474-BLK1)										
Boron	ND	15	ug/L							
LCS (B1B0474-BS1)										
Boron	270	15	ug/L	250		107	80-120			
LCS Dup (B1B0474-BSD1)										
Boron	270	15	ug/L	250		107	80-120	0.2	20	
Matrix Spike (B1B0474-MS1)	**Source: 1020352-11**									
Boron	270	15	ug/L	250	18	101	75-125			
Matrix Spike Dup (B1B0474-MSD1)	**Source: 1020352-11**									
Boron	270	15	ug/L	250	18	99	75-125	2	20	
Post Spike (B1B0474-PS1)	**Source: 1020352-11**									
Boron	0.52		mg/L	0.500	ND	101	75-125			

Santee Cooper		Project:	Ground Water
1 Riverwood Dr.		Work Order:	1020352
Moncks Corner, SC 29461		Reported:	02/11/21 16:21

Sample Preparation Data

Parameter	Batch	Sample ID	Prepared	Analyst
EPA 3005A ICP Digestion				
EPA 3005A	B1B0278	1020352-01	02/05/2021 09:16	MTH
EPA 3005A	B1B0278	1020352-02	02/05/2021 09:16	MTH
EPA 3005A	B1B0278	1020352-03	02/05/2021 09:16	MTH
EPA 3005A	B1B0278	1020352-04	02/05/2021 09:16	MTH
EPA 3005A	B1B0474	1020352-04	02/09/2021 14:39	MTH
EPA 3005A	B1B0278	1020352-05	02/05/2021 09:16	MTH
EPA 3005A	B1B0278	1020352-06	02/05/2021 09:16	MTH
EPA 3005A	B1B0278	1020352-07	02/05/2021 09:16	MTH
EPA 3005A	B1B0278	1020352-08	02/05/2021 09:16	MTH
EPA 3005A	B1B0278	1020352-09	02/05/2021 09:16	MTH
EPA 3005A	B1B0278	1020352-10	02/05/2021 09:16	MTH
EPA 3005A	B1B0278	1020352-11	02/05/2021 09:16	MTH
EPA 3005A	B1B0474	1020352-11	02/09/2021 14:39	MTH
EPA 3005A	B1B0278	1020352-12	02/05/2021 09:16	MTH
EPA 3005A	B1B0278	1020352-13	02/05/2021 09:16	MTH
EPA 3005A	B1B0278	1020352-14	02/05/2021 09:16	MTH
EPA 3005A	B1B0278	1020352-15	02/05/2021 09:16	MTH
EPA 7470A Mercury Digestion				
EPA 7470A	B1B0412	1020352-01	02/08/2021 15:10	MLR
EPA 7470A	B1B0412	1020352-02	02/08/2021 15:10	MLR
EPA 7470A	B1B0412	1020352-03	02/08/2021 15:10	MLR
EPA 7470A	B1B0412	1020352-04	02/08/2021 15:10	MLR
EPA 7470A	B1B0412	1020352-10	02/08/2021 15:10	MLR
EPA 7470A	B1B0412	1020352-11	02/08/2021 15:10	MLR

Santee Cooper		Project:	Ground Water
1 Riverwood Dr.		Work Order:	1020352
Moncks Corner, SC 29461		Reported:	02/11/21 16:21

Data Qualifiers and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not reported
RPD	Relative Percent Difference

Contract Lab Info: R/C Contract Lab Due Date (Lab Only): 2 / 11 / 21 Send report to lcwillia@santeecooper.com & sjbrown@santeecooper.com

Chain of Custody

1020352

santee cooper
Santee Cooper
One Riverwood Drive
Moncks Corner, SC 29461
Phone: (843)761-8000 Ext. 5148
Fax: (843)761-4175

Customer Email/Report Recipient: LCWILLIA @santeecooper.com

Date Results Needed by: ___/___/___

Project/Task/Unit #: 121567 / JM02.09.G01 / 36500

Rerun request for any flagged QC Yes No

Labworks ID # (Internal use only)	Sample Location/ Description	Collection Date	Collection Time	Sample Collector	Total # of containers	Bottle type: (Glass-G/Plastic-P)	Grab (G) or Composite (C)	Matrix(see below)	Preservative (see below)	Comments • Method # • Reporting limit • Misc. sample info • Any other notes	Analysis Group: B	Li	Mo	Hg
AE94877	POZ-7 -01	1/28/21	0915	ATH/DEW	1	P	G	GW	2	B-6010 RL< 15.0 ug/L	X	X	X	X
AE94878	POZ-7 DUP -02	"	0920	"	"	"	"	"	"	Li-6010 RL< 10.0 ug/L	X	X	X	X
AE94876	POZ-6 -03	"	1434	"	"	"	"	"	"	Mo 6010 RL< 15.0 ug/L	X	X	X	X
AE94874	POZ-4 -04	"	1143	"	"	"	"	"	"	Hg 7470 RL< 0.200 ug/L	X	X	X	X
AE94869	CLFIB-4 -05	1/27/21	0918	"	"	"	"	"	"		X			
AE94870	CLFIB-5 -06	"	1021	"	"	"	"	"	"		X			
AE94871	CLFIB-5D -07	1/27/21	1117	"	"	"	"	"	"		X			
AE94875	POZ-5D -08	"	1223	"	"	"	"	"	"		X			
AE94873	POZ-3 -09	"	1321	"	"	"	"	"	"		X			

Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time
Signature	35594	2/3/21	1300	FedEx			
Relinquished by:	**Employee#**	**Date**	**Time**	**Received by:**	**Employee #**	**Date**	**Time**
FedEx		2-4-21	1045	[signature]		2-4-21	1045
Relinquished by:	**Employee#**	**Date**	**Time**	**Received by:**	**Employee #**	**Date**	**Time**

Sample Receiving (Internal Use Only)
TEMP (°C): 10.5 Initial: [initials]
Correct pH: (Yes) No
Preservative Lot#:
Date/Time/Init for preservative:

☐ **METALS (all)**

☐ Ag	☐ Cu	☐ Sb
☐ Al	☐ Fe	☐ Se
☐ As	☐ K	☐ Sn
☒ B	☒ Li	☐ Sr
☐ Ba	☐ Mg	☐ Ti
☐ Be	☐ Mn	☐ Tl
☐ Ca	☒ Mo	☐ V
☐ Cd	☐ Na	☐ Zn
☐ Co	☐ Ni	☒ Hg
☐ Cr	☐ Pb	☐ CrVI

Nutrients
- TOC
- DOC
- TP/TPO4
- NH3-N
- F
- Cl
- NO3
- Br
- NO3
- SO4

MISC.
- ☐ BTEX
- ☐ Napthalene
- ☐ THM/HAA
- ☐ VOC
- ☐ Oil & Grease
- ☐ E. Coli
- ☐ Total Coliform
- ☐ pH
- ☐ Dissolved As
- ☐ Dissolved Fe
- ☐ Rad 226
- ☐ Rad 228
- ☐ PCB

Gypsum
- ☐ Wallboard Gypsum(*all below*)
- AIM
- TOC
- Total metals
- Soluble Metals
- Purity (CaSO4)
- % Moisture
- Sulfites
- pH
- Chlorides
- Particle Size
- Sulfur

Coal
- ☐ Ultimate
- ☐ % Moisture
- ☐ Ash
- ☐ Sulfur
- ☐ BTUs
- ☐ Volatile Matter
- ☐ CHN

Other Tests:
- ☐ XRF Scan
- ☐ HGI
- ☐ Fineness
- ☐ Particulate Matter

Flyash
- Ammonia
- LOI
- % Carbon
- Mineral Analysis
- Sieve
- % Moisture

NPDES
- Oil & Grease
- As
- TSS

Oil

Matrix codes: GW-groundwater, DW-drinking water, SW-surface water, WW-waste water, BW-boiler water, L-limestone, Oil-oil, S-Soil, SL-solid, C-coal, G-gypsum, FA-flyash, BA-bottom ash, M-misc (describe in comment section)
Preservative code- 1=<4°C 2=HNO_3 3=H_2SO_4 4-HCl 5=$Na_2S_2O_3$ 6-Other (Specify)

Contract Lab Info: R/C Contract Lab Due Date (Lab Only): 2 / 11 / 21 Send report to lcwillia@santeecooper.com & sjbrown@santeecooper.com

Chain of Custody

1020352

santee cooper
Santee Cooper
One Riverwood Drive
Moncks Corner, SC 29461
Phone: (843)761-8000 Ext. 5148
Fax: (843)761-4175

Customer Email/Report Recipient: LCWILLIA @santeecooper.com

Date Results Needed by: ___/___/___

Project/Task/Unit #: 121567 / JM02.09.G01 / 36500

Rerun request for any flagged QC Yes No

Analysis Group

Labworks ID # (Internal use only)	Sample Location/ Description	Collection Date	Collection Time	Sample Collector	Total # of containers	Bottle type: (Glass-G/Plastic-P)	Grab (G) or Composite (C)	Matrix(see below)	Preservative (see below)	Comments • Method # • Reporting limit • Misc. sample info • Any other notes	B	Li	Mo	Hg
AE94872	PM-1 -10	1/26/21	0927	ATH/DEW	1	P	G	GW	2	B-6010 RL< 15.0 ug/L	X	X	X	X
AE94854	CBW-1 -11	〃	1039	〃	〃	〃	〃	〃	〃	Li-6010 RL< 10.0 ug/L	X	X	X	X
AE94865	CLFIB-1 -12	〃	1201	〃	〃	〃	〃	〃	〃	Mo 6010 RL < 15.0 ug/L	X			
AE94866	CLFIB-1 DUP -13	〃	1206	〃	〃	〃	〃	〃	〃	Hg 7470 RL< 0.200 ug/L	X			
AE94867	CLFIB-2 -14	〃	1306	〃	〃	〃	〃	〃	〃		X			
AE94868	CLFIB-3 -15	〃	1358	〃	〃	〃	〃	〃	〃		X			

Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time
[signature]	35594	2/3/21	1300	FedEx			
Relinquished by:	**Employee#**	**Date**	**Time**	**Received by:**	**Employee #**	**Date**	**Time**
FedEx		2.4.21	1045	[signature]		2.4.21	1045
Relinquished by:	**Employee#**	**Date**	**Time**	**Received by:**	**Employee #**	**Date**	**Time**

Sample Receiving (Internal Use Only)
TEMP (°C): 10.5 Initial: MWS
Correct pH: (Yes) No
Preservative Lot#:
Date/Time/Init for preservative:

☐ **METALS (all)**

☐ Ag	☐ Cu	☐ Sb
☐ Al	☐ Fe	☐ Se
☐ As	☐ K	☐ Sn
☒ B	☒ Li	☐ Sr
☐ Ba	☐ Mg	☐ Ti
☐ Be	☐ Mn	☐ Tl
☐ Ca	☒ Mo	☐ V
☐ Cd	☐ Na	☐ Zn
☐ Co	☐ Ni	☒ Hg
☐ Cr	☐ Pb	☐ CrVI

Nutrients
- ☐ TOC
- ☐ DOC
- ☐ TP TPO4
- ☐ NH3-N
- ☐ F
- ☐ Cl
- ☐ NO2
- ☐ Br
- ☐ NO3
- ☐ SO4

MISC.
- ☐ BTEX
- ☐ Napthalene
- ☐ THM/HAA
- ☐ VOC
- ☐ Oil & Grease
- ☐ E. Coli
- ☐ Total Coliform
- ☐ pH
- ☐ Dissolved As
- ☐ Dissolved Fe
- ☐ Rad 226
- ☐ Rad 228
- ☐ PCB

Gypsum
- ☐ Wallboard Gypsum(*all below*)
- ☐ AIM
- ☐ TOC
- ☐ Total metals
- ☐ Soluble Metals
- ☐ Purity (CaSO4)
- ☐ % Moisture
- ☐ Sulfites
- ☐ pH
- ☐ Chlorides
- ☐ Particle Size
- ☐ Sulfur

Coal
- ☐ Ultimate
- ☐ % Moisture
- ☐ Ash
- ☐ Sulfur
- ☐ BTUs
- ☐ Volatile Matter
- ☐ CHN

Other Tests:
- ☐ XRF Scan
- ☐ HGI
- ☐ Fineness
- ☐ Particulate Matter

Flyash
- ☐ Ammonia
- ☐ LOI
- ☐ % Carbon
- ☐ Mineral Analysis
- ☐ Sieve
- ☐ % Moisture

NPDES
- ☐ Oil & Grease
- ☐ As
- ☐ TSS

Oil
- ☐ Used Oil

Matrix codes: GW-groundwater, DW-drinking water, SW-surface water, WW-waste water, BW-boiler water, L-limestone, Oil-oil, S-Soil, SL-solid, C-coal, G-gypsum, FA-flyash, BA-bottom ash, M-misc (describe in comment section)
Preservative code- 1=<4°C 2=HNO_3 3=H_2SO_4 4-HCl 5=$Na_2S_2O_3$ 6-Other (Specify)

Rogers & Callcott ENVIRONMENTAL

Sample Receipt Verification

Client: Santee Cooper | Date Received: 2-4-21 | Work Order: 1020352

Carrier Name: Client (FedEx) UPS US Mail Courier Field Services Other: _____

Tracking Number: 816240672602

Receipt Criteria	Yes	No	NA	Comments
Shipping container / cooler intact?	X			Damaged Leaking Other:
Custody seals intact?			X	
COC included with samples?	X			
COC signed when relinquished and received?	X			
Sample bottles intact?	X			Damaged Leaking Other:
Sample ID on COC agree with label on bottle(s)?	X			
Date / time on COC agree with label on bottle(s)?	X			
Number of bottles on COC agrees with number of bottles received?	X			
Samples received within holding time?	X			
Sample volume sufficient for analysis?	X			
VOA vials free of headspace (<6mm bubble)?			X	
Samples cooled? Temp at receipt recorded on COC; Temp measured with IR thermometer - SN: 97050067			X	Ice Cold Packs Dry Ice (None)
Samples requiring pH preservation at proper pH? Note: Samples for metals analysis may be preserved upon receipt in the lab. Note: Samples for O&G and VOA analysis – preservation checked at bench.	X			
Samples dechlorinated for parameters requiring chlorine removal at the time of sample collection? Note: Chlorine checked at bench for samples requiring Bacterial, VOA, and HAA analysis.			X	

If in-house preservation used – record Lot #			
HCL		H_3PO_4	
H_2SO_4		NaOH	
HNO_3		Other	

Comments:

Were non-conformance issues noted at sample receipt? Yes or (No)

Non-Conformance issue other than noted above:

Rogers & Callcott ENVIRONMENTAL

Laboratory Services

Laboratory Report

Client	Santee Cooper Linda Williams 1 Riverwood Dr. Moncks Corner, SC 29461	**Project:** **Work Order:** **Received:**	Ground Water 1020543 02/09/2021 12:30

Dear Client:

Rogers and Callcott appreciates the opportunity to be of service to you. The attached laboratory services report includes analytical results and chain of custody for samples that were received on February 09, 2021. Rogers and Callcott maintains a formal QA/QC program. Unless otherwise noted, all analyses performed under NELAP certification have complied with all the requirements for the TNI standard. The analyses met the QA/QC confidence interval for each test method unless otherwise qualified. Estimated uncertainty is available upon request.

Privileged / Confidential information may be contained in this report and is intended only for the use of the addressee. If you are not the addressee, or the person responsible for delivering to the person addressed, you may not copy or deliver this message to anyone else. If you receive this message by mistake, please notify Rogers and Callcott immediately.

We strive to provide excellent service to our clients. Please contact Lauren Hollister, your Project Manager, at lhollister@rcenviro.com, (864)-232-1556 if you have any questions about this report.

CC: Jeanette Gilmetti, Sherri Brown, Courtney Ames Watkins

Report Approved By:

Lauren Hollister
Project Manager

PO Box 5655 | Greenville, SC 29606 | 426 Fairforest Way | Greenville, SC 29607 | main 864.232.1556 | fax 864.232.6140 rogersandcallcott.com
an employee-owned company

Rogers & Callcott ENVIRONMENTAL

South Carolina Greenville Laboratory Identification 23105
South Carolina Columbia Laboratory Identification 40572
North Carolina Laboratory Certification Number 27
North Carolina Drinking Water Lab Number 45710
NELAP Utah Certificate Number SC000042014-1
Georgia Drinking Water Lab ID 880

Certificate of Analysis

Client Santee Cooper
Linda Williams
1 Riverwood Dr.
Moncks Corner, SC 29461

Project: Ground Water
Work Order: 1020543
Received: 02/09/2021 12:30

Sample Number	Sample Description	Matrix	Sampled	Type
1020543-01	AE94839 CAP-1	Ground Water	02/02/21 12:06	Grab
1020543-02	AE94847 CAP-9	Ground Water	02/02/21 13:39	Grab
1020543-03	AE94848 CAP-9 DUP	Ground Water	02/02/21 13:44	Grab
1020543-04	AE94845 CAP-7	Ground Water	02/03/21 11:15	Grab
1020543-05	AE94843 CAP-5	Ground Water	02/03/21 12:48	Grab
1020543-06	AE94841 CAP-3	Ground Water	02/03/21 13:49	Grab
1020543-07	AE94849 CAP-10	Ground Water	02/03/21 15:12	Grab
1020543-08	AE94846 CAP-8	Ground Water	02/04/21 10:38	Grab
1020543-09	AE94844 CAP-6	Ground Water	02/04/21 12:03	Grab
1020543-10	AE94842 CAP-4	Ground Water	02/04/21 13:20	Grab

Santee Cooper		Project:	Ground Water
1 Riverwood Dr.		Work Order:	1020543
Moncks Corner, SC 29461		Reported:	02/16/21 16:35

Sample Data

Sample Number 1020543-01
Sample Description AE94839 CAP-1 collected on 02/02/21 12:06

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Mercury	ND	0.20	ug/L	1.00	02/12/21 10:53	EPA 7470A		MLR	B1B0593
Lithium	**50**	10	ug/L	1.00	02/09/21 19:46	EPA 6010D		MLR	B1B0482
Molybdenum	ND	10	ug/L	1.00	02/09/21 19:46	EPA 6010D		MLR	B1B0482

Sample Number 1020543-02
Sample Description AE94847 CAP-9 collected on 02/02/21 13:39

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Mercury	ND	0.20	ug/L	1.00	02/12/21 11:04	EPA 7470A		MLR	B1B0593
Lithium	**71**	10	ug/L	1.00	02/09/21 21:25	EPA 6010D		MLR	B1B0482
Molybdenum	ND	10	ug/L	1.00	02/09/21 21:25	EPA 6010D		MLR	B1B0482

Sample Number 1020543-03
Sample Description AE94848 CAP-9 DUP collected on 02/02/21 13:44

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Mercury	ND	0.20	ug/L	1.00	02/12/21 11:07	EPA 7470A		MLR	B1B0593
Lithium	**70**	10	ug/L	1.00	02/09/21 21:29	EPA 6010D		MLR	B1B0482
Molybdenum	ND	10	ug/L	1.00	02/09/21 21:29	EPA 6010D		MLR	B1B0482

Sample Number 1020543-04
Sample Description AE94845 CAP-7 collected on 02/03/21 11:15

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Mercury	ND	0.20	ug/L	1.00	02/12/21 11:09	EPA 7470A		MLR	B1B0593
Lithium	ND	10	ug/L	1.00	02/09/21 21:18	EPA 6010D		MLR	B1B0482
Molybdenum	ND	10	ug/L	1.00	02/09/21 21:18	EPA 6010D		MLR	B1B0482

Santee Cooper		Project:	Ground Water
1 Riverwood Dr.		Work Order:	1020543
Moncks Corner, SC 29461		Reported:	02/16/21 16:35

Sample Number 1020543-05
Sample Description AE94843 CAP-5 collected on 02/03/21 12:48

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Mercury	ND	0.20	ug/L	1.00	02/12/21 11:12	EPA 7470A		MLR	B1B0593
Lithium	**16**	10	ug/L	1.00	02/09/21 21:10	EPA 6010D		MLR	B1B0482
Molybdenum	ND	10	ug/L	1.00	02/09/21 21:10	EPA 6010D		MLR	B1B0482

Sample Number 1020543-06
Sample Description AE94841 CAP-3 collected on 02/03/21 13:49

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Mercury	ND	0.20	ug/L	1.00	02/12/21 11:15	EPA 7470A		MLR	B1B0593
Lithium	**15**	10	ug/L	1.00	02/09/21 21:02	EPA 6010D		MLR	B1B0482
Molybdenum	ND	10	ug/L	1.00	02/09/21 21:02	EPA 6010D		MLR	B1B0482

Sample Number 1020543-07
Sample Description AE94849 CAP-10 collected on 02/03/21 15:12

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Lithium	ND	10	ug/L	1.00	02/09/21 21:33	EPA 6010D		MLR	B1B0482

Sample Number 1020543-08
Sample Description AE94846 CAP-8 collected on 02/04/21 10:38

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Lithium	**70**	10	ug/L	1.00	02/09/21 21:21	EPA 6010D		MLR	B1B0482

Sample Number 1020543-09
Sample Description AE94844 CAP-6 collected on 02/04/21 12:03

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Lithium	ND	10	ug/L	1.00	02/09/21 21:14	EPA 6010D		MLR	B1B0482

Rogers & Callcott ENVIRONMENTAL

Santee Cooper		Project:	Ground Water
1 Riverwood Dr.		Work Order:	1020543
Moncks Corner, SC 29461		Reported:	02/16/21 16:35

Sample Number 1020543-10
Sample Description AE94842 CAP-4 collected on 02/04/21 13:20

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Lithium	**28**	10	ug/L	1.00	02/09/21 21:06	EPA 6010D		MLR	B1B0482

Santee Cooper		Project:	Ground Water
1 Riverwood Dr.		Work Order:	1020543
Moncks Corner, SC 29461		Reported:	02/16/21 16:35

Total Metals
Quality Control Summary

Parameter	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flags
Batch B1B0482 - EPA 3005A										
Blank (B1B0482-BLK1)										
Lithium	ND	10	ug/L							
Molybdenum	ND	10	ug/L							
LCS (B1B0482-BS1)										
Lithium	277	10	ug/L	250		111	80-120			
Molybdenum	250	10	ug/L	250		99	80-120			
LCS Dup (B1B0482-BSD1)										
Lithium	275	10	ug/L	250		110	80-120	0.9	20	
Molybdenum	240	10	ug/L	250		98	80-120	0.7	20	
Matrix Spike (B1B0482-MS1)	**Source: 1020543-01**									
Lithium	336	10	ug/L	250	50	115	75-125			
Molybdenum	240	10	ug/L	250	ND	96	75-125			
Matrix Spike Dup (B1B0482-MSD1)	**Source: 1020543-01**									
Lithium	340	10	ug/L	250	50	116	75-125	1	20	
Molybdenum	250	10	ug/L	250	ND	98	75-125	2	20	
Post Spike (B1B0482-PS1)	**Source: 1020543-01**									
Lithium	0.585		mg/L	0.500	ND	107	75-125			
Molybdenum	0.49		mg/L	0.500	ND	97	75-125			
Batch B1B0593 - EPA 7470A										
Blank (B1B0593-BLK1)										
Mercury	ND	0.20	ug/L							
LCS (B1B0593-BS1)										
Mercury	6.0	0.20	ug/L	6.25		97	80-120			
LCS Dup (B1B0593-BSD1)										
Mercury	6.1	0.20	ug/L	6.25		97	80-120	0.3	20	

Santee Cooper		Project:	Ground Water
1 Riverwood Dr.		Work Order:	1020543
Moncks Corner, SC 29461		Reported:	02/16/21 16:35

Total Metals
Quality Control Summary

Parameter	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flags
Batch B1B0593 - EPA 7470A										
Matrix Spike (B1B0593-MS1)	**Source: 1020543-01**									
Mercury	4.0	0.20	ug/L	5.00	ND	80	75-125			
Matrix Spike Dup (B1B0593-MSD1)	**Source: 1020543-01**									
Mercury	4.0	0.20	ug/L	5.00	ND	80	75-125	0.2	20	
Post Spike (B1B0593-PS1)	**Source: 1020543-01**									
Mercury	3.2		ug/L	4.00	ND	80	80-120			

Sample Preparation Data

Parameter	Batch	Sample ID	Prepared	Analyst
EPA 3005A ICP Digestion				
EPA 3005A	B1B0482	1020543-01	02/09/2021 14:39	MTH
EPA 3005A	B1B0482	1020543-02	02/09/2021 14:39	MTH
EPA 3005A	B1B0482	1020543-03	02/09/2021 14:39	MTH
EPA 3005A	B1B0482	1020543-04	02/09/2021 14:39	MTH
EPA 3005A	B1B0482	1020543-05	02/09/2021 14:39	MTH
EPA 3005A	B1B0482	1020543-06	02/09/2021 14:39	MTH
EPA 3005A	B1B0482	1020543-07	02/09/2021 14:39	MTH
EPA 3005A	B1B0482	1020543-08	02/09/2021 14:39	MTH
EPA 3005A	B1B0482	1020543-09	02/09/2021 14:39	MTH
EPA 3005A	B1B0482	1020543-10	02/09/2021 14:39	MTH
EPA 7470A Mercury Digestion				
EPA 7470A	B1B0593	1020543-01	02/11/2021 17:08	MLR
EPA 7470A	B1B0593	1020543-02	02/11/2021 17:08	MLR
EPA 7470A	B1B0593	1020543-03	02/11/2021 17:08	MLR
EPA 7470A	B1B0593	1020543-04	02/11/2021 17:08	MLR
EPA 7470A	B1B0593	1020543-05	02/11/2021 17:08	MLR
EPA 7470A	B1B0593	1020543-06	02/11/2021 17:08	MLR

Rogers & Callcott ENVIRONMENTAL

Santee Cooper		Project:	Ground Water
1 Riverwood Dr.		Work Order:	1020543
Moncks Corner, SC 29461		Reported:	02/16/21 16:35

Data Qualifiers and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not reported
RPD	Relative Percent Difference

ntract Lab Info: R/C Contract Lab Due Date (Lab Only): 2 / 16 / 21 Send report to lcwillia@santeecooper.com & sjbrown@santeecooper.com

Chain of Custody 1020543

santee cooper
Santee Cooper
One Riverwood Drive
Moncks Corner, SC 29461
Phone: (843)761-8000 Ext. 5148
Fax: (843)761-4175

stomer Email/Report Recipient: | Date Results Needed by: | Project/Task/Unit #: | Rerun request for any flagged QC

LCWILLIA @santeecooper.com __/__/__ 121567 / JM02.08.G01 / 36500 Yes No

Analysis Group

bworks ID # (internal use only)	Sample Location/ Description	Collection Date	Collection Time	Sample Collector	Total # of containers	Bottle type: (Glass-G/Plastic-P)	Grab (G) or Composite (C)	Matrix(see below)	Preservative (see below)	Comments • Method # • Reporting limit • Misc. sample info • Any other notes	B	Li	Mo	Hg
94839	CAP-1	2/2/21	1206	MDG/DEN	1	P	G	GW	2	-01		X	X	X
94847	CAP-9	"	1339	"	"	"	"	"	"	-02		X	X	X
94848	CAP-9 DUP	"	1344	"	"	"	"	"	"	-03		X	X	X
94845	CAP-7	2/3/21	1115	"	"	"	"	"	"	-04		X	X	X
94843	CAP-5	"	1248	"	"	"	"	"	"	-05		X	X	X
94841	CAP-3	"	1349	"	"	"	"	"	"	-06		X	X	X
94849	CAP-10	2/3/21	1512	"	"	"	"	"	"	-07		X		
94846	CAP-8	2/4/21	1038	"	"	"	"	"	"	-08		X		
94844	CAP-6	"	1208	"	"	"	"	"	"	-09		X		
94842	CAP-4	"	1320	"	"	"	"	"	"	-10		X		

Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time
Brown	35594	2/8/21	1300	FEDEX			
Relinquished by:	**Employee#**	**Date**	**Time**	**Received by:**	**Employee #**	**Date**	**Time**
FEDEX				CSC		2/9/21	1230
Relinquished by:	**Employee#**	**Date**	**Time**	**Received by:**	**Employee #**	**Date**	**Time**

Sample Receiving (Internal Use Only)
TEMP (°C): 13.8 Initial:
Correct pH: Yes No
Preservative Lot#:
Date/Time/Init for preservative:

METALS (all)
- Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr
- Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, Pb
- Sb, Se, Sn, Sr, Ti, Tl, V, Zn, Hg, CrVI

Nutrients
- TOC
- DOC
- TP/TPO4
- NH3-N
- F
- Cl
- NO2
- Br
- NO3
- SO4

MISC.
- BTEX
- Napthalene
- THM/HAA
- VOC
- Oil & Grease
- E. Coli
- Total Coliform
- pH
- Dissolved As
- Dissolved Fe
- Rad 226
- Rad 228
- PCB

Gypsum
- Wallboard
- Gypsum(all below)
- AlM
- TOC
- Total metals
- Soluble Metals
- Purity (CaSO4)
- % Moisture
- Sulfites
- pH
- Chlorides
- Particle Size
- Sulfur

Coal
- Ultimate
- % Moisture
- Ash
- Sulfur
- BTUs
- Volatile Matter
- CHN

Other Tests:
- XRF Scan
- HGI
- Fineness
- Particulate Matter

Flyash
- Ammonia
- LOI
- % Carbon
- Mineral Analysis
- Sieve
- % Moisture

NPDES
- Oil & Grease
- As
- TSS

Oil

Matrix codes: GW-groundwater, DW-drinking water, SW-surface water, WW-waste water, BW-boiler water, L-limestone, Oil-oil, S-Soil, SL-solid, C-coal, G-gypsum, FA-flyash, BA-bottom ash, M-misc (describe in comment section)
Preservative code- 1=<4°C 2=HNO_3 3=H_2SO_4 4-HCl 5=$Na_2S_2O_3$ 6-Other (Specify)

Rogers & Callcott ENVIRONMENTAL

Sample Receipt Verification

Client: Santee Cooper | Date Received: 2/9/21 | Work Order: 1020543

Carrier Name: Client (FedEx) UPS US Mail Courier Field Services Other: _____

Tracking Number: 816240672613

Receipt Criteria	Yes	No	NA	Comments
Shipping container / cooler intact?	X			Damaged Leaking Other:
Custody seals intact?			X	
COC included with samples?	X			
COC signed when relinquished and received?	X			
Sample bottles intact?	X			Damaged Leaking Other:
Sample ID on COC agree with label on bottle(s)?	X			
Date / time on COC agree with label on bottle(s)?	X			
Number of bottles on COC agrees with number of bottles received?	X			
Samples received within holding time?	X			
Sample volume sufficient for analysis?	X			
VOA vials free of headspace (<6mm bubble)?			X	
Samples cooled? Temp at receipt recorded on COC; Temp measured with IR thermometer - SN: 97050067			X	Ice Cold Packs Dry Ice (None)
Samples requiring pH preservation at proper pH? Note: Samples for metals analysis may be preserved upon receipt in the lab. Note: Samples for O&G and VOA analysis – preservation checked at bench.	X			
Samples dechlorinated for parameters requiring chlorine removal at the time of sample collection? Note: Chlorine checked at bench for samples requiring Bacterial, VOA, and HAA analysis.			X	

If in-house preservation used – record Lot #			
HCL		H_3PO_4	
H_2SO_4		NaOH	
HNO_3		Other	

Comments:

Were non-conformance issues noted at sample receipt? Yes or (No)

Non-Conformance issue other than noted above:

Rogers & Callcott ENVIRONMENTAL

Laboratory Services

Laboratory Report

Client	Santee Cooper Linda Williams 1 Riverwood Dr. Moncks Corner, SC 29461	**Project:** **Work Order:** **Received:**	Ground Water 1020859 02/16/2021 10:20

Dear Client:

Rogers and Callcott appreciates the opportunity to be of service to you. The attached laboratory services report includes analytical results and chain of custody for samples that were received on February 16, 2021. Rogers and Callcott maintains a formal QA/QC program. Unless otherwise noted, all analyses performed under NELAP certification have complied with all the requirements for the TNI standard. The analyses met the QA/QC confidence interval for each test method unless otherwise qualified. Estimated uncertainty is available upon request.

Privileged / Confidential information may be contained in this report and is intended only for the use of the addressee. If you are not the addressee, or the person responsible for delivering to the person addressed, you may not copy or deliver this message to anyone else. If you receive this message by mistake, please notify Rogers and Callcott immediately.

We strive to provide excellent service to our clients. Please contact Lauren Hollister, your Project Manager, at lhollister@rcenviro.com, (864)-232-1556 if you have any questions about this report.

CC: Jeanette Gilmetti, Sherri Brown, Courtney Ames Watkins

Report Approved By:

Lauren Hollister
Project Manager

PO Box 5655 | Greenville, SC 29606 | 426 Fairforest Way | Greenville, SC 29607 | main 864.232.1556 | fax 864.232.6140 rogersandcallcott.com
an employee-owned company

Rogers & Callcott ENVIRONMENTAL

South Carolina Greenville Laboratory Identification 23105
South Carolina Columbia Laboratory Identification 40572
North Carolina Laboratory Certification Number 27
North Carolina Drinking Water Lab Number 45710
NELAP Utah Certificate Number SC000042014-1
Georgia Drinking Water Lab ID 880

Certificate of Analysis

Client Santee Cooper
Linda Williams
1 Riverwood Dr.
Moncks Corner, SC 29461

Project: Ground Water
Work Order: 1020859
Received: 02/16/2021 10:20

Sample Number	Sample Description	Matrix	Sampled	Type
1020859-01	AE94857 CCMAP-3	Ground Water	02/10/21 16:09	Grab
1020859-02	AE94858 CCMAP-3 DUP	Ground Water	02/10/21 16:14	Grab
1020859-03	AE94861 CGYP-1	Ground Water	02/10/21 11:16	Grab
1020859-04	AE94862 CGYP-2	Ground Water	02/10/21 12:23	Grab
1020859-05	AE94863 CGYP-2 DUP	Ground Water	02/10/21 12:28	Grab
1020859-06	AE94864 CGYP-3	Ground Water	02/10/21 13:38	Grab
1020859-07	AE94855 CCMAP-1	Ground Water	02/11/21 12:28	Grab
1020859-08	AE94856 CCMAP-2	Ground Water	02/11/21 13:14	Grab

Santee Cooper		Project:	Ground Water
1 Riverwood Dr.		Work Order:	1020859
Moncks Corner, SC 29461		Reported:	02/24/21 17:04

Sample Data

Sample Number 1020859-01
Sample Description AE94857 CCMAP-3 collected on 02/10/21 16:09

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Lithium	**15**	10	ug/L	1.00	02/18/21 17:54	EPA 6010D		MLR	B1B0817

Sample Number 1020859-02
Sample Description AE94858 CCMAP-3 DUP collected on 02/10/21 16:14

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Lithium	**16**	10	ug/L	1.00	02/18/21 19:04	EPA 6010D		MLR	B1B0817

Sample Number 1020859-03
Sample Description AE94861 CGYP-1 collected on 02/10/21 11:16

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Mercury	ND	0.20	ug/L	1.00	02/23/21 11:06	EPA 7470A	S7	MLR	B1B1040
Boron	**14000**	150	ug/L	10.0	02/24/21 15:46	EPA 6010D		MLR	B1B0817
Lithium	ND	100	ug/L	10.0	02/24/21 15:46	EPA 6010D	Z	MLR	B1B0817
Molybdenum	ND	500	ug/L	10.0	02/24/21 15:46	EPA 6010D	Z	MLR	B1B0817

Sample Number 1020859-04
Sample Description AE94862 CGYP-2 collected on 02/10/21 12:23

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Mercury	ND	0.20	ug/L	1.00	02/23/21 11:34	EPA 7470A	S7	MLR	B1B1040
Boron	**960**	150	ug/L	10.0	02/23/21 18:37	EPA 6010D		MLR	B1B0817
Lithium	**13**	10	ug/L	1.00	02/18/21 19:12	EPA 6010D		MLR	B1B0817
Molybdenum	ND	10	ug/L	1.00	02/18/21 19:12	EPA 6010D		MLR	B1B0817

Santee Cooper		Project:	Ground Water
1 Riverwood Dr.		Work Order:	1020859
Moncks Corner, SC 29461		Reported:	02/24/21 17:04

Sample Number 1020859-05
Sample Description AE94863 CGYP-2 DUP collected on 02/10/21 12:28

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Mercury	ND	0.20	ug/L	1.00	02/23/21 11:37	EPA 7470A	S7	MLR	B1B1040
Boron	**980**	150	ug/L	10.0	02/23/21 18:41	EPA 6010D		MLR	B1B0817
Lithium	**13**	10	ug/L	1.00	02/18/21 19:16	EPA 6010D		MLR	B1B0817
Molybdenum	ND	10	ug/L	1.00	02/18/21 19:16	EPA 6010D		MLR	B1B0817

Sample Number 1020859-06
Sample Description AE94864 CGYP-3 collected on 02/10/21 13:38

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Mercury	ND	0.20	ug/L	1.00	02/23/21 11:40	EPA 7470A	S7	MLR	B1B1040
Boron	**25000**	150	ug/L	10.0	02/24/21 15:58	EPA 6010D		MLR	B1B0817
Lithium	**110**	20	ug/L	2.00	02/18/21 18:41	EPA 6010D		MLR	B1B0817
Molybdenum	ND	20	ug/L	2.00	02/18/21 18:41	EPA 6010D		MLR	B1B0817

Sample Number 1020859-07
Sample Description AE94855 CCMAP-1 collected on 02/11/21 12:28

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Lithium	ND	10	ug/L	1.00	02/18/21 19:24	EPA 6010D		MLR	B1B0817

Sample Number 1020859-08
Sample Description AE94856 CCMAP-2 collected on 02/11/21 13:14

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Lithium	ND	10	ug/L	1.00	02/18/21 19:28	EPA 6010D		MLR	B1B0817

Santee Cooper		Project:	Ground Water
1 Riverwood Dr.		Work Order:	1020859
Moncks Corner, SC 29461		Reported:	02/24/21 17:04

Total Metals
Quality Control Summary

Parameter	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flags
Batch B1B0817 - EPA 3005A										
Blank (B1B0817-BLK1)										
Boron	ND	15	ug/L							
Lithium	ND	10	ug/L							
Molybdenum	ND	10	ug/L							
LCS (B1B0817-BS1)										
Boron	230	15	ug/L	250		93	80-120			
Lithium	249	10	ug/L	250		100	80-120			
Molybdenum	230	10	ug/L	250		92	80-120			
LCS Dup (B1B0817-BSD1)										
Boron	240	15	ug/L	250		96	80-120	3	20	
Lithium	260	10	ug/L	250		104	80-120	4	20	
Molybdenum	240	10	ug/L	250		96	80-120	4	20	
Matrix Spike (B1B0817-MS1)	**Source: 1020859-01**									
Boron	14000	75	ug/L	250	14000	209	75-125			S5
Lithium	326	10	ug/L	250	15	124	75-125			
Molybdenum	250	10	ug/L	250	ND	98	75-125			
Matrix Spike Dup (B1B0817-MSD1)	**Source: 1020859-01**									
Boron	14000	75	ug/L	250	14000	120	75-125	2	20	
Lithium	312	10	ug/L	250	15	119	75-125	4	20	
Molybdenum	240	10	ug/L	250	ND	95	75-125	4	20	
Batch B1B1040 - EPA 7470A										
Blank (B1B1040-BLK1)										
Mercury	ND	0.20	ug/L							
LCS (B1B1040-BS1)										
Mercury	5.0	0.20	ug/L	5.00		101	80-120			
LCS Dup (B1B1040-BSD1)										
Mercury	4.9	0.20	ug/L	5.00		98	80-120	2	20	

Rogers & Callcott ENVIRONMENTAL

Santee Cooper		Project:	Ground Water
1 Riverwood Dr.		Work Order:	1020859
Moncks Corner, SC 29461		Reported:	02/24/21 17:04

Total Metals
Quality Control Summary

Parameter	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flags
Batch B1B1040 - EPA 7470A										
Matrix Spike (B1B1040-MS1)	**Source: 1020859-03**									
Mercury	4.1	0.20	ug/L	5.00	ND	80	75-125			S7
Matrix Spike Dup (B1B1040-MSD1)	**Source: 1020859-03**									
Mercury	4.0	0.20	ug/L	5.00	ND	78	75-125	3	20	S7

Sample Preparation Data

Parameter	Batch	Sample ID	Prepared	Analyst
EPA 3005A ICP Digestion				
EPA 3005A	B1B0817	1020859-01	02/17/2021 08:59	MLR
EPA 3005A	B1B0817	1020859-02	02/17/2021 08:59	MLR
EPA 3005A	B1B0817	1020859-03	02/17/2021 08:59	MLR
EPA 3005A	B1B0817	1020859-04	02/17/2021 08:59	MLR
EPA 3005A	B1B0817	1020859-05	02/17/2021 08:59	MLR
EPA 3005A	B1B0817	1020859-06	02/17/2021 08:59	MLR
EPA 3005A	B1B0817	1020859-07	02/17/2021 08:59	MLR
EPA 3005A	B1B0817	1020859-08	02/17/2021 08:59	MLR
EPA 7470A Mercury Digestion				
EPA 7470A	B1B1040	1020859-03	02/22/2021 16:38	MLR
EPA 7470A	B1B1040	1020859-04	02/22/2021 16:38	MLR
EPA 7470A	B1B1040	1020859-05	02/22/2021 16:38	MLR
EPA 7470A	B1B1040	1020859-06	02/22/2021 16:38	MLR

Rogers & Callcott ENVIRONMENTAL

Santee Cooper		Project:	Ground Water
1 Riverwood Dr.		Work Order:	1020859
Moncks Corner, SC 29461		Reported:	02/24/21 17:04

Data Qualifiers and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not reported
RPD	Relative Percent Difference
S5	The raw sample concentration was greater than four times the spike concentration. The spike recovery was not evaluated against the control limits.
S7	Result calculated by Method of Standard Addition due to sample matrix interference and initial spike failures.
Z	Unable to meet the client requested RL for this analyte. Internal Standard (ISTD) was not within QC limits due to sample matrix interference. Therefore, the sample was diluted to reduce matrix & to meet the ISTD requirements for reporting per the method.

Contract Lab Info: RIC   Contract Lab Due Date (Lab Only): 2 / 23 / 21   Send report to lcwillia@santeecooper.com & sjbrown@santeecooper.com

Chain of Custody

santee cooper
Santee Cooper
One Riverwood Drive
Moncks Corner, SC 29461
Phone: (843)761-8000 Ext. 5148
Fax: (843)761-4175

Customer Email/Report Recipient: LCWILLIA @santeecooper.com

Date Results Needed by: ___/___/___

Project/Task/Unit #: 121567 / JM02.09.G01 / 36500

Rerun request for any flagged QC Yes No

1020859

Analysis Group

Labworks ID # (Internal use only)	Sample Location/ Description	Collection Date	Collection Time	Sample Collector	Total # of containers	Bottle type: (Glass-G/Plastic-P)	Grab (G) or Composite (C)	Matrix(see below)	Preservative (see below)	Comments • Method # • Reporting limit • Misc. sample info • Any other notes	B	Li	Mo	Hg
AE94857	CCMAP-3	2/10/21	1609	NDG TPW	1	P	G	GW	2	-01		X		
AE94858	CCMAP-3 DUP	ǀ	1614	ǀ	ǀ	ǀ	ǀ	ǀ	ǀ	-02		X		
AE94861	CGYP-1	ǀ	1116	ǀ	ǀ	ǀ	ǀ	ǀ	ǀ	-03	X	X	X	X
AE94862	GGYP-2	ǀ	1223	ǀ	ǀ	ǀ	ǀ	ǀ	ǀ	-04	X	X	X	X
AE94863	CGYP-2 DUP	ǀ	1228	ǀ	ǀ	ǀ	ǀ	ǀ	ǀ	-05	X	X	X	X
AE94864	CGYP-3	ǀ	1338	ǀ	ǀ	ǀ	ǀ	ǀ	ǀ	-06	X	X	X	X
AE94855	CCMAP-1	2/11/21	1228	ǀ	ǀ	ǀ	ǀ	ǀ	ǀ	-07		X		
AE94856	CCMAP-2	ǀ	1314	ǀ	ǀ	ǀ	ǀ	ǀ	ǀ	-08		X		

Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time
[signature]	35594	2/15/21	1300	FGD EX			
Relinquished by:	**Employee#**	**Date**	**Time**	**Received by:**	**Employee #**	**Date**	**Time**
FGD EX				[signature]		2/16/21	1020
Relinquished by:	**Employee#**	**Date**	**Time**	**Received by:**	**Employee #**	**Date**	**Time**

Sample Receiving (Internal Use Only)
TEMP (°C): 11.8 **Initial:** ______

Correct pH: Yes No

Preservative Lot#:

Date/Time/Init for preservative:

☐ **METALS (all)**

☐ Ag	☐ Cu	☐ Sb
☐ Al	☐ Fe	☐ Se
☐ As	☐ K	☐ Sn
☐ B	☐ Li	☐ Sr
☐ Ba	☐ Mg	☐ Ti
☐ Be	☐ Mn	☐ Tl
☐ Ca	☐ Mo	☐ V
☐ Cd	☐ Na	☐ Zn
☐ Co	☐ Ni	☐ Hg
☐ Cr	☐ Pb	☐ CrVI

Nutrients
☐ TOC
☐ DOC
☐ TP/TPO4
☐ NH3-N
☐ F
☐ Cl
☐ NO2
☐ Br
☐ NO3
☐ SO4

MISC.
☐ BTEX
☐ Napthalene
☐ THM/HAA
☐ VOC
☐ Oil & Grease
☐ E. Coli
☐ Total Coliform
☐ pH
☐ Dissolved As
☐ Dissolved Fe
☐ Rad 226
☐ Rad 228
☐ PCB

Gypsum
☐ Wallboard Gypsum(*all below*)
☐ AIM
☐ TOC
☐ Total metals
☐ Soluble Metals
☐ Purity (CaSO4)
☐ % Moisture
☐ Sulfites
☐ pH
☐ Chlorides
☐ Particle Size
☐ Sulfur

Coal
☐ Ultimate
☐ % Moisture
☐ Ash
☐ Sulfur
☐ BTUs
☐ Volatile Matter
☐ CHN
Other Tests:
☐ XRF Scan
☐ HGI
☐ Fineness
☐ Particulate Matter

Flyash
☐ Ammonia
☐ LOI
☐ % Carbon
☐ Mineral Analysis
☐ Sieve
☐ % Moisture

NPDES
☐ Oil & Grease
☐ As
☐ TSS

Oil
☐ Trans. Oil Qual.
[illegible]
☐ Used Oil
[illegible]

Matrix codes: GW-groundwater, DW-drinking water, SW-surface water, WW-waste water, BW-boiler water, L-limestone, Oil-oil, S-Soil, SL-solid, C-coal, G-gypsum, FA-flyash, BA-bottom ash, M-misc (describe in comment section)
Preservative code- 1=<4°C 2=HNO_3 3=H_2SO_4 4-HCl 5=$Na_2S_2O_3$ 6-Other (Specify)

Rogers & Callcott ENVIRONMENTAL

Sample Receipt Verification

Client: Santee Cooper | Date Received: 2/16/21 | Work Order: 1020859

Carrier Name: Client (FedEx) UPS US Mail Courier Field Services Other: _____

Tracking Number: 816240672624

Receipt Criteria	Yes	No	NA	Comments
Shipping container / cooler intact?	X			Damaged Leaking Other:
Custody seals intact?			X	
COC included with samples?	X			
COC signed when relinquished and received?	X			
Sample bottles intact?	X			Damaged Leaking Other:
Sample ID on COC agree with label on bottle(s)?	X			
Date / time on COC agree with label on bottle(s)?	X			
Number of bottles on COC agrees with number of bottles received?	X			
Samples received within holding time?	X			
Sample volume sufficient for analysis?	X			
VOA vials free of headspace (<6mm bubble)?			X	
Samples cooled? Temp at receipt recorded on COC; Temp measured with IR thermometer - SN: 97050067			X	Ice Cold Packs Dry Ice (None)
Samples requiring pH preservation at proper pH? Note: Samples for metals analysis may be preserved upon receipt in the lab. Note: Samples for O&G and VOA analysis – preservation checked at bench.	X			
Samples dechlorinated for parameters requiring chlorine removal at the time of sample collection? Note: Chlorine checked at bench for samples requiring Bacterial, VOA, and HAA analysis.			X	

If in-house preservation used – record Lot #			
HCL		H_3PO_4	
H_2SO_4		NaOH	
HNO_3		Other	

Comments:

Were non-conformance issues noted at sample receipt? Yes or (No)

Non-Conformance issue other than noted above:

Rogers & Callcott ENVIRONMENTAL

Laboratory Services

Laboratory Report

Client	Santee Cooper Linda Williams 1 Riverwood Dr. Moncks Corner, SC 29461	**Project:** **Work Order:** **Received:**	Ground Water 1040743 04/14/2021 09:20

Dear Client:

Rogers and Callcott appreciates the opportunity to be of service to you. The attached laboratory services report includes analytical results and chain of custody for samples that were received on April 14, 2021. Rogers and Callcott maintains a formal QA/QC program. Unless otherwise noted, all analyses performed under NELAP certification have complied with all the requirements for the TNI standard. The analyses met the QA/QC confidence interval for each test method unless otherwise qualified. Estimated uncertainty is available upon request.

Privileged / Confidential information may be contained in this report and is intended only for the use of the addressee. If you are not the addressee, or the person responsible for delivering to the person addressed, you may not copy or deliver this message to anyone else. If you receive this message by mistake, please notify Rogers and Callcott immediately.

We strive to provide excellent service to our clients. Please contact Lauren Hollister, your Project Manager, at lhollister@rcenviro.com, (864)-232-1556 if you have any questions about this report.

CC: Jeanette Gilmetti, Sherri Brown, Courtney Ames Watkins

Report Approved By:

Lauren Hollister

Lauren Hollister
Project Manager

Rogers & Callcott ENVIRONMENTAL

Certificate of Analysis

South Carolina Greenville Laboratory Identification 23105
South Carolina Columbia Laboratory Identification 40572
North Carolina Laboratory Certification Number 27
North Carolina Drinking Water Lab Number 45710
NELAP Utah Certificate Number SC000042014-1
Georgia Drinking Water Lab ID 880

Client Santee Cooper
Linda Williams
1 Riverwood Dr.
Moncks Corner, SC 29461

Project: Ground Water
Work Order: 1040743
Received: 04/14/2021 09:20

Sample Number	Sample Description	Matrix	Sampled	Type
1040743-01	AF00633 CGYP-4	Ground Water	04/07/21 11:06	Grab
1040743-02	AF00629 CGYP-1	Ground Water	04/07/21 12:16	Grab
1040743-03	AF00630 CGYP-2	Ground Water	04/07/21 13:16	Grab
1040743-04	AF00631 CGYP-2 DUP	Ground Water	04/07/21 13:21	Grab
1040743-05	AF00632 CGYP-3	Ground Water	04/07/21 14:20	Grab
1040743-06	AF00634 CGYP-5	Ground Water	04/07/21 15:09	Grab
1040743-07	AF00635 CGYP-6	Ground Water	04/07/21 16:02	Grab
1040743-08	AF00697 CCMAP-4	Ground Water	04/08/21 10:32	Grab
1040743-09	AF00698 CCMAP-4 DUP	Ground Water	04/08/21 10:37	Grab
1040743-10	AF00693 WLF-A2-6	Ground Water	04/08/21 15:27	Grab
1040743-11	AF00694 WLF-A2-6 DUP	Ground Water	04/08/21 15:32	Grab
1040743-12	AF00695 WAP-17	Ground Water	04/08/21 13:31	Grab
1040743-13	AF00696 WAP-17 DUP	Ground Water	04/08/21 13:36	Grab

Rogers & Callcott ENVIRONMENTAL

Santee Cooper		Project:	Ground Water
1 Riverwood Dr.		Work Order:	1040743
Moncks Corner, SC 29461		Reported:	04/22/21 14:29

Sample Data

Sample Number 1040743-01
Sample Description AF00633 CGYP-4 collected on 04/07/21 11:06

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Mercury	ND	0.20	ug/L	1.00	04/16/21 10:12	EPA 7470A		MLR	B1D0679
Boron	**7600**	75	ug/L	5.00	04/16/21 14:48	EPA 6010D		MLR	B1D0837
Lithium	**58**	10	ug/L	1.00	04/16/21 15:58	EPA 6010D		MLR	B1D0590
Molybdenum	ND	10	ug/L	1.00	04/16/21 15:58	EPA 6010D		MLR	B1D0590

Sample Number 1040743-02
Sample Description AF00629 CGYP-1 collected on 04/07/21 12:16

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Mercury	ND	0.20	ug/L	1.00	04/16/21 10:24	EPA 7470A		MLR	B1D0679
Boron	**11000**	75	ug/L	5.00	04/16/21 14:52	EPA 6010D		MLR	B1D0837
Lithium	**20**	20	ug/L	2.00	04/21/21 16:28	EPA 6010D	X	MLR	B1D0590
Molybdenum	ND	20	ug/L	2.00	04/21/21 16:28	EPA 6010D	X	MLR	B1D0590

Sample Number 1040743-03
Sample Description AF00630 CGYP-2 collected on 04/07/21 13:16

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Mercury	ND	0.20	ug/L	1.00	04/16/21 10:35	EPA 7470A		MLR	B1D0679
Boron	**850**	75	ug/L	5.00	04/16/21 12:53	EPA 6010D		MLR	B1D0837
Lithium	**14**	10	ug/L	1.00	04/16/21 13:12	EPA 6010D		MLR	B1D0590
Molybdenum	ND	10	ug/L	1.00	04/16/21 13:12	EPA 6010D		MLR	B1D0590

Sample Number 1040743-04
Sample Description AF00631 CGYP-2 DUP collected on 04/07/21 13:21

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Mercury	ND	0.20	ug/L	1.00	04/16/21 10:38	EPA 7470A		MLR	B1D0679
Boron	**890**	75	ug/L	5.00	04/16/21 14:56	EPA 6010D		MLR	B1D0837
Lithium	**15**	10	ug/L	1.00	04/16/21 16:29	EPA 6010D		MLR	B1D0590
Molybdenum	ND	10	ug/L	1.00	04/16/21 16:29	EPA 6010D		MLR	B1D0590

Rogers & Callcott ENVIRONMENTAL

Santee Cooper		Project:	Ground Water
1 Riverwood Dr.		Work Order:	1040743
Moncks Corner, SC 29461		Reported:	04/22/21 14:29

Sample Number 1040743-05
Sample Description AF00632 CGYP-3 collected on 04/07/21 14:20

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Mercury	**0.21**	0.20	ug/L	1.00	04/16/21 10:46	EPA 7470A		MLR	B1D0679
Boron	**23000**	75	ug/L	5.00	04/16/21 15:00	EPA 6010D		MLR	B1D0837
Lithium	**94**	10	ug/L	1.00	04/16/21 16:33	EPA 6010D		MLR	B1D0590
Molybdenum	ND	10	ug/L	1.00	04/16/21 16:33	EPA 6010D		MLR	B1D0590

Sample Number 1040743-06
Sample Description AF00634 CGYP-5 collected on 04/07/21 15:09

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Mercury	ND	0.20	ug/L	1.00	04/16/21 10:49	EPA 7470A		MLR	B1D0679
Boron	**3100**	75	ug/L	5.00	04/16/21 15:03	EPA 6010D		MLR	B1D0837
Lithium	**60**	10	ug/L	1.00	04/16/21 16:36	EPA 6010D		MLR	B1D0590
Molybdenum	ND	10	ug/L	1.00	04/16/21 16:36	EPA 6010D		MLR	B1D0590

Sample Number 1040743-07
Sample Description AF00635 CGYP-6 collected on 04/07/21 16:02

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Mercury	ND	0.20	ug/L	1.00	04/16/21 10:52	EPA 7470A		MLR	B1D0679
Boron	**7000**	75	ug/L	5.00	04/16/21 15:07	EPA 6010D		MLR	B1D0837
Lithium	**140**	10	ug/L	1.00	04/16/21 16:40	EPA 6010D		MLR	B1D0590
Molybdenum	ND	10	ug/L	1.00	04/16/21 16:40	EPA 6010D		MLR	B1D0590

Sample Number 1040743-08
Sample Description AF00697 CCMAP-4 collected on 04/08/21 10:32

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Lithium	ND	10	ug/L	1.00	04/16/21 15:49	EPA 6010D		MLR	B1D0590

Rogers & Callcott ENVIRONMENTAL

Santee Cooper		Project:	Ground Water
1 Riverwood Dr.		Work Order:	1040743
Moncks Corner, SC 29461		Reported:	04/22/21 14:29

Sample Number 1040743-09
Sample Description AF00698 CCMAP-4 DUP collected on 04/08/21 10:37

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Lithium	ND	10	ug/L	1.00	04/16/21 15:54	EPA 6010D		MLR	B1D0590

Sample Number 1040743-10
Sample Description AF00693 WLF-A2-6 collected on 04/08/21 15:27

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Mercury	ND	0.20	ug/L	1.00	04/16/21 10:54	EPA 7470A		MLR	B1D0679
Boron	**310**	75	ug/L	5.00	04/16/21 15:11	EPA 6010D		MLR	B1D0837
Lithium	**24**	10	ug/L	1.00	04/16/21 16:44	EPA 6010D		MLR	B1D0590
Molybdenum	ND	10	ug/L	1.00	04/16/21 16:44	EPA 6010D		MLR	B1D0590

Sample Number 1040743-11
Sample Description AF00694 WLF-A2-6 DUP collected on 04/08/21 15:32

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Mercury	ND	0.20	ug/L	1.00	04/16/21 10:57	EPA 7470A		MLR	B1D0679
Boron	**280**	75	ug/L	5.00	04/16/21 15:38	EPA 6010D		MLR	B1D0837
Lithium	**32**	10	ug/L	1.00	04/16/21 16:48	EPA 6010D		MLR	B1D0590
Molybdenum	ND	10	ug/L	1.00	04/16/21 16:48	EPA 6010D		MLR	B1D0590

Sample Number 1040743-12
Sample Description AF00695 WAP-17 collected on 04/08/21 13:31

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Mercury	ND	0.20	ug/L	1.00	04/16/21 11:00	EPA 7470A		MLR	B1D0679
Boron	**3300**	75	ug/L	5.00	04/16/21 13:35	EPA 6010D		MLR	B1D0837
Lithium	**130**	10	ug/L	1.00	04/16/21 14:01	EPA 6010D		MLR	B1D0590
Molybdenum	**59**	10	ug/L	1.00	04/16/21 14:01	EPA 6010D		MLR	B1D0590

Rogers & Callcott ENVIRONMENTAL

Santee Cooper		Project:	Ground Water
1 Riverwood Dr.		Work Order:	1040743
Moncks Corner, SC 29461		Reported:	04/22/21 14:29

Sample Number 1040743-13
Sample Description AF00696 WAP-17 DUP collected on 04/08/21 13:36

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Mercury	ND	0.20	ug/L	1.00	04/16/21 11:03	EPA 7470A		MLR	B1D0679
Boron	**3300**	75	ug/L	5.00	04/16/21 15:42	EPA 6010D		MLR	B1D0837
Lithium	**120**	10	ug/L	1.00	04/16/21 16:52	EPA 6010D		MLR	B1D0590
Molybdenum	**57**	10	ug/L	1.00	04/16/21 16:52	EPA 6010D		MLR	B1D0590

Rogers & Callcott ENVIRONMENTAL

Santee Cooper		Project:	Ground Water
1 Riverwood Dr.		Work Order:	1040743
Moncks Corner, SC 29461		Reported:	04/22/21 14:29

Total Metals
Quality Control Summary

Parameter	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flags
Batch B1D0590 - EPA 3005A										
Blank (B1D0590-BLK1)										
Lithium	ND	10	ug/L							
Molybdenum	ND	10	ug/L							
LCS (B1D0590-BS1)										
Lithium	256	10	ug/L	250		102	80-120			
Molybdenum	300	10	ug/L	250		120	80-120			
LCS Dup (B1D0590-BSD1)										
Lithium	266	10	ug/L	250		107	80-120	4	20	
Molybdenum	260	10	ug/L	250		105	80-120	14	20	
Matrix Spike (B1D0590-MS1)	**Source: 1040743-03**									
Lithium	260	10	ug/L	250	14	98	75-125			
Molybdenum	200	10	ug/L	250	ND	81	75-125			
Matrix Spike (B1D0590-MS2)	**Source: 1040743-12**									
Lithium	421	10	ug/L	250	126	118	75-125			
Molybdenum	310	10	ug/L	250	59	100	75-125			
Matrix Spike Dup (B1D0590-MSD1)	**Source: 1040743-03**									
Lithium	263	10	ug/L	250	14	100	75-125	1	20	
Molybdenum	210	10	ug/L	250	ND	83	75-125	2	20	
Matrix Spike Dup (B1D0590-MSD2)	**Source: 1040743-12**									
Lithium	412	10	ug/L	250	126	114	75-125	2	20	
Molybdenum	310	10	ug/L	250	59	98	75-125	0.9	20	
Post Spike (B1D0590-PS1)	**Source: 1040743-03**									
Lithium	501	10	ug/L	500	14	97	75-125			
Molybdenum	430	10	ug/L	500	ND	86	75-125			
Post Spike (B1D0590-PS2)	**Source: 1040743-12**									
Lithium	691	10	ug/L	500	126	113	75-125			
Molybdenum	570	10	ug/L	500	59	102	75-125			

Rogers & Callcott ENVIRONMENTAL

Santee Cooper		Project:	Ground Water
1 Riverwood Dr.		Work Order:	1040743
Moncks Corner, SC 29461		Reported:	04/22/21 14:29

Total Metals
Quality Control Summary

Parameter	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flags
Batch B1D0679 - EPA 7470A										
Blank (B1D0679-BLK1)										
Mercury	ND	0.20	ug/L							
LCS (B1D0679-BS1)										
Mercury	5.0	0.20	ug/L	5.00		101	80-120			
LCS Dup (B1D0679-BSD1)										
Mercury	5.0	0.20	ug/L	5.00		100	80-120	1	20	
Matrix Spike (B1D0679-MS1)	**Source: 1040743-01**									
Mercury	4.3	0.20	ug/L	5.00	ND	84	75-125			
Matrix Spike (B1D0679-MS2)	**Source: 1040743-02**									
Mercury	4.7	0.20	ug/L	5.00	ND	92	75-125			
Matrix Spike Dup (B1D0679-MSD1)	**Source: 1040743-01**									
Mercury	4.3	0.20	ug/L	5.00	ND	83	75-125	0.9	20	
Matrix Spike Dup (B1D0679-MSD2)	**Source: 1040743-02**									
Mercury	4.7	0.20	ug/L	5.00	ND	93	75-125	0.7	20	
Post Spike (B1D0679-PS1)	**Source: 1040743-01**									
Mercury	3.4		ug/L	4.00	ND	82	80-120			
Post Spike (B1D0679-PS2)	**Source: 1040743-02**									
Mercury	3.6		ug/L	4.00	ND	88	80-120			
Post Spike (B1D0679-PS3)	**Source: 1040743-03**									
Mercury	3.2		ug/L	4.00	ND	81	80-120			
Post Spike (B1D0679-PS4)	**Source: 1040743-04**									
Mercury	3.2		ug/L	4.00	ND	80	80-120			
Post Spike (B1D0679-PS5)	**Source: 1040743-05**									
Mercury	3.8		ug/L	4.00	0.21	89	80-120			

Rogers & Callcott ENVIRONMENTAL

Santee Cooper		Project:	Ground Water
1 Riverwood Dr.		Work Order:	1040743
Moncks Corner, SC 29461		Reported:	04/22/21 14:29

Total Metals
Quality Control Summary

Parameter	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flags
Batch B1D0679 - EPA 7470A										
Post Spike (B1D0679-PS6)	**Source: 1040743-06**									
Mercury	3.5		ug/L	4.00	ND	86	80-120			
Post Spike (B1D0679-PS7)	**Source: 1040743-07**									
Mercury	3.6		ug/L	4.00	ND	89	80-120			
Post Spike (B1D0679-PS8)	**Source: 1040743-10**									
Mercury	3.9		ug/L	4.00	ND	98	80-120			
Post Spike (B1D0679-PS9)	**Source: 1040743-11**									
Mercury	3.8		ug/L	4.00	ND	96	80-120			
Post Spike (B1D0679-PSA)	**Source: 1040743-12**									
Mercury	3.7		ug/L	4.00	ND	91	80-120			
Post Spike (B1D0679-PSB)	**Source: 1040743-13**									
Mercury	3.8		ug/L	4.00	ND	93	80-120			
Batch B1D0837 - EPA 3005A										
Blank (B1D0837-BLK1)										
Boron	ND	15	ug/L							
LCS (B1D0837-BS1)										
Boron	210	15	ug/L	250		82	80-120			
LCS Dup (B1D0837-BSD1)										
Boron	240	15	ug/L	250		95	80-120	14	20	
Matrix Spike (B1D0837-MS1)	**Source: 1040743-03**									
Boron	1800	75	ug/L	1250	850	80	75-125			
Matrix Spike (B1D0837-MS2)	**Source: 1040743-12**									
Boron	4600	75	ug/L	1250	3300	105	75-125			

Rogers & Callcott ENVIRONMENTAL

Santee Cooper		Project:	Ground Water
1 Riverwood Dr.		Work Order:	1040743
Moncks Corner, SC 29461		Reported:	04/22/21 14:29

Total Metals
Quality Control Summary

Parameter	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flags
Batch B1D0837 - EPA 3005A										
Matrix Spike Dup (B1D0837-MSD1)	**Source: 1040743-03**									
Boron	2000	75	ug/L	1250	850	93	75-125	8	20	
Matrix Spike Dup (B1D0837-MSD2)	**Source: 1040743-12**									
Boron	4600	75	ug/L	1250	3300	102	75-125	0.9	20	
Post Spike (B1D0837-PS1)	**Source: 1040743-03**									
Boron	3200	75	ug/L	2500	850	95	75-125			
Post Spike (B1D0837-PS2)	**Source: 1040743-12**									
Boron	5900	75	ug/L	2500	3300	105	75-125			

Rogers & Callcott ENVIRONMENTAL

Santee Cooper		Project:	Ground Water
1 Riverwood Dr.		Work Order:	1040743
Moncks Corner, SC 29461		Reported:	04/22/21 14:29

Sample Preparation Data

Parameter	Batch	Sample ID	Prepared	Analyst
EPA 3005A ICP Digestion				
EPA 3005A	B1D0590	1040743-01	04/14/2021 13:25	MTH
EPA 3005A	B1D0837	1040743-01	04/14/2021 13:25	MTH
EPA 3005A	B1D0590	1040743-02	04/14/2021 13:25	MTH
EPA 3005A	B1D0837	1040743-02	04/14/2021 13:25	MTH
EPA 3005A	B1D0590	1040743-03	04/14/2021 13:25	MTH
EPA 3005A	B1D0837	1040743-03	04/14/2021 13:25	MTH
EPA 3005A	B1D0590	1040743-04	04/14/2021 13:25	MTH
EPA 3005A	B1D0837	1040743-04	04/14/2021 13:25	MTH
EPA 3005A	B1D0590	1040743-05	04/14/2021 13:25	MTH
EPA 3005A	B1D0837	1040743-05	04/14/2021 13:25	MTH
EPA 3005A	B1D0590	1040743-06	04/14/2021 13:25	MTH
EPA 3005A	B1D0837	1040743-06	04/14/2021 13:25	MTH
EPA 3005A	B1D0590	1040743-07	04/14/2021 13:25	MTH
EPA 3005A	B1D0837	1040743-07	04/14/2021 13:25	MTH
EPA 3005A	B1D0590	1040743-08	04/14/2021 13:25	MTH
EPA 3005A	B1D0590	1040743-09	04/14/2021 13:25	MTH
EPA 3005A	B1D0590	1040743-10	04/14/2021 13:25	MTH
EPA 3005A	B1D0837	1040743-10	04/14/2021 13:25	MTH
EPA 3005A	B1D0590	1040743-11	04/14/2021 13:25	MTH
EPA 3005A	B1D0837	1040743-11	04/14/2021 13:25	MTH
EPA 3005A	B1D0590	1040743-12	04/14/2021 13:25	MTH
EPA 3005A	B1D0837	1040743-12	04/14/2021 13:25	MTH
EPA 3005A	B1D0590	1040743-13	04/14/2021 13:25	MTH
EPA 3005A	B1D0837	1040743-13	04/14/2021 13:25	MTH
EPA 7470A Mercury Digestion				
EPA 7470A	B1D0679	1040743-01	04/15/2021 13:11	ELN
EPA 7470A	B1D0679	1040743-02	04/15/2021 13:11	ELN
EPA 7470A	B1D0679	1040743-03	04/15/2021 13:11	ELN
EPA 7470A	B1D0679	1040743-04	04/15/2021 13:11	ELN
EPA 7470A	B1D0679	1040743-05	04/15/2021 13:11	ELN
EPA 7470A	B1D0679	1040743-06	04/15/2021 13:11	ELN
EPA 7470A	B1D0679	1040743-07	04/15/2021 13:11	ELN
EPA 7470A	B1D0679	1040743-10	04/15/2021 13:11	ELN
EPA 7470A	B1D0679	1040743-11	04/15/2021 13:11	ELN
EPA 7470A	B1D0679	1040743-12	04/15/2021 13:11	ELN
EPA 7470A	B1D0679	1040743-13	04/15/2021 13:11	ELN

Rogers & Callcott ENVIRONMENTAL

Santee Cooper		Project:	Ground Water
1 Riverwood Dr.		Work Order:	1040743
Moncks Corner, SC 29461		Reported:	04/22/21 14:29

Data Qualifiers and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not reported
RPD	Relative Percent Difference
X	Result subject to sample matrix interference. Reporting limit has been adjusted where applicable.

Contract Lab Info: R/C Contract Lab Due Date (Lab Only): 4 / 20 / 21 Send report to lcwillia@santeecooper.com & sibrown@santeecooper.com

Chain of Custody

1040743

santee cooper
Santee Cooper
One Riverwood Drive
Moncks Corner, SC 29461
Phone: (843)761-8000 Ext. 5148
Fax: (843)761-4175

Customer Email/Report Recipient: LCWILLIA @santeecooper.com

Date Results Needed by: ___/___/___

Project/Task/Unit #: 121567 / JM02.09.G01 / 36500

Rerun request for any flagged QC Yes No

1040743

Analysis Group

Labworks ID # (Internal use only)	Sample Location/ Description	Collection Date	Collection Time	Sample Collector	Total # of containers	Bottle type: (Glass-G/Plastic-P)	Grab (G) or Composite (C)	Matrix(see below)	Preservative (see below)	Comments • Method # • Reporting limit • Misc. sample info • Any other notes	B	Li	Mo	Hg
1 AF00633	CGYP-4	4/7/21	1106	DEW/MG	1	P	G	GW	2	B, Li, Mo - 6010 -01	X	X	X	X
2 AF00629	CGYP-1	"	1216	"	"	"	"	"	"	Hg 7470A -02	"	"	"	"
3 AF00630	CGYP-2	"	1316	"	"	"	"	"	"	-03	"	"	"	"
4 AF00631	CGYP-2 DUP	"	1321	"	"	"	"	"	"	-04	"	"	"	"
5 AF00632	CGYP-3	"	1420	"	"	"	"	"	"	-05	"	"	"	"
6 AF00634	CGYP-5	"	1609	"	"	"	"	"	"	-06	"	"	"	"
7 AF00635	CGYP-6	"	1602	"	"	"	"	"	"	-07	"	"	"	"
08 AF00697	CCMAP-4	4/8/21	1032	"	"	"	"	"	"	-08		X		
09 AF00698	CCMAP-4 DUP	"	1037	"	"	"	"	"	"	-09		X		

Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time
[illegible]	35594	4/12/21	1200	FedEx		4/12/21	1200
Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time
FedEx		4/14/21	0920	Nelson Rose		4/14/21	0920
Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time

Sample Receiving (Internal Use Only)
TEMP (°C): 19.2 Initial: ___
Correct pH: Yes No
Preservative Lot#:
Date/Time/Init for preservative:

☐ **METALS (all)**

☐ Ag	☐ Cu	☐ Sb
☐ Al	☐ Fe	☐ Se
☐ As	☐ K	☐ Sn
☐ B	☐ Li	☐ Sr
☐ Ba	☐ Mg	☐ Ti
☐ Be	☐ Mn	☐ Tl
☐ Ca	☐ Mo	☐ V
☐ Cd	☐ Na	☐ Zn
☐ Co	☐ Ni	☐ Hg
☐ Cr	☐ Pb	☐ CrVI

Nutrients
TOC
DOC
TP/TPO4
NH3-N
F
Cl
NO2
Br
NO3
SO4

MISC.
☐ BTEX
☐ Napthalene
☐ THM/HAA
☐ VOC
☐ Oil & Grease
☐ E Coli
☐ Total Coliform
☐ pH
☐ Dissolved As
☐ Dissolved Fe
☐ Rad 226
☐ Rad 228
☐ PCB

Gypsum
☐ Wallboard Gypsum(*all below*)
☐ AIM
☐ TOC
☐ Total metals
☐ Soluble Metals
☐ Purity (CaSO4)
☐ % Moisture
☐ Sulfites
☐ pH
☐ Chlorides
☐ Particle Size
☐ Sulfur

Coal
☐ Ultimate
☐ % Moisture
☐ Ash
☐ Sulfur
☐ BTUs
☐ Volatile Matter
☐ CHN
Other Tests:
☐ XRF Scan
☐ HGI
☐ Fineness
☐ Particulate Matter

Flyash
☐ Ammonia
LOI
☐ % Carbon
☐ Mineral Analysis
☐ Sieve
☐ % Moisture

NPDES
☐ Oil & Grease
☐ As
☐ TSS

Oil
Trans. Oil Qual
Fuel Oil

Matrix codes: GW-groundwater, DW-drinking water, SW-surface water, WW-waste water, BW-boiler water, L-limestone, Oil-oil, S-Soil, SL-solid, C-coal, G-gypsum, FA-flyash, BA-bottom ash, M-misc (describe in comment section)
Preservative code- 1=<4°C 2=HNO_3 3=H_2SO_4 4-HCl 5=$Na_2S_2O_3$ 6-Other (Specify)

Contract Lab Info: R/C Contract Lab Due Date (Lab Only): 4 / 20 / 21 Send report to lcwillia@santeecooper.com & sibrown@santeecooper.com

Chain of Custody

1040743

santee cooper
Santee Cooper
One Riverwood Drive
Moncks Corner, SC 29461
Phone: (843)761-8000 Ext. 5148
Fax: (843)761-4175

Customer Email/Report Recipient: LCWILLIA @santeecooper.com

Date Results Needed by: ___/___/___

Project/Task/Unit #: 121567 / JM02.09.901 / 36500

Rerun request for any flagged QC Yes No

Analysis Group

Labworks ID # (Internal use only)	Sample Location/ Description	Collection Date	Collection Time	Sample Collector	Total # of containers	Bottle type: (Glass-G/Plastic-P)	Grab (G) or Composite (C)	Matrix(see below)	Preservative (see below)	Comments • Method # • Reporting limit • Misc. sample info • Any other notes	B	Li	Mo	Hg
AF00693	WLF-A2-6	4/8/21	1527	DEW/MG	1	P	G	GW	2	B, Li, Mo 6010 -10	X	X	X	X
AF00694	WLF-A2-6 DUP	"	1532	"	"	"	"	"	"	Hg 7470A -11	"	"	"	"
AF00695	WAP-17	"	1331	"	"	"	"	"	"	-12	"	"	"	"
AF00696	WAP-17 DUP	"	1336	"	"	"	"	"	"	-13	"	"	"	"

Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time
SBrown	35594	4/12/21	1200	Fedex		4/12/21	1200
Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time
Fedex		4/14/21	0920	Nicholas Rose		4/14/21	0920
Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time

Sample Receiving (Internal Use Only)
TEMP (°C): 19.2 Initial: ___
Correct pH: Yes No
Preservative Lot#:
Date/Time/Init for preservative:

☐ METALS (all)

☐ Ag	☐ Cu	☐ Sb
☐ Al	☐ Fe	☐ Se
☐ As	☐ K	☐ Sn
☐ B	☐ Li	☐ Sr
☐ Ba	☐ Mg	☐ Ti
☐ Be	☐ Mn	☐ Tl
☐ Ca	☐ Mo	☐ V
☐ Cd	☐ Na	☐ Zn
☐ Co	☐ Ni	☐ Hg
☐ Cr	☐ Pb	☐ CrVI

Nutrients
TOC
DOC
TP TPO4
NH3-N
F
Cl
NO2
Br
NO3
SO4

MISC.
☐ BTEX
☐ Napthalene
☐ THM/HAA
☐ VOC
☐ Oil & Grease
☐ E. Coli
☐ Total Coliform
☐ pH
☐ Dissolved As
☐ Dissolved Fe
☐ Rad 226
☐ Rad 228
☐ PCB

Gypsum
☐ Wallboard Gypsum(*all below*)
☐ AIM
☐ TOC
☐ Total metals
☐ Soluble Metals
☐ Purity (CaSO4)
☐ % Moisture
☐ Sulfites
☐ pH
☐ Chlorides
☐ Particle Size
☐ Sulfur

Coal
☐ Ultimate
☐ % Moisture
☐ Ash
☐ Sulfur
☐ BTUs
☐ Volatile Matter
☐ CHN
Other Tests:
☐ XRF Scan
☐ HGI
☐ Fineness
☐ Particulate Matter

Flyash
☐ Ammonia
☐ LOI
% Carbon
☐ Mineral Analysis
☐ Sieve
% Moisture

NPDES
☐ Oil & Grease
☐ As
☐ TSS

Oil

Matrix codes: GW-groundwater, DW-drinking water, SW-surface water, WW-waste water, BW-boiler water, L-limestone, Oil-oil, S-Soil, SL-solid, C-coal, G-gypsum, FA-flyash, BA-bottom ash, M-misc (describe in comment section)
Preservative code- 1=<4°C 2=HNO_3 3=H_2SO_4 4-HCl 5=$Na_2S_2O_3$ 6-Other (Specify)

Rogers & Callcott ENVIRONMENTAL

Sample Receipt Verification

Client: Santee Cooper | Date Received: 4/14/21 | Work Order: 1040743

Carrier Name: Client (FedEx) UPS US Mail Courier Field Services Other: _____

Tracking Number: 804037735696

Receipt Criteria	Yes	No	NA	Comments
Shipping container / cooler intact?	X			Damaged Leaking Other:
Custody seals intact?			X	
COC included with samples?	X			
COC signed when relinquished and received?	X			
Sample bottles intact?	X			Damaged Leaking Other:
Sample ID on COC agree with label on bottle(s)?	X			
Date / time on COC agree with label on bottle(s)?	X			
Number of bottles on COC agrees with number of bottles received?	X			
Samples received within holding time?	X			
Sample volume sufficient for analysis?	X			
VOA vials free of headspace (<6mm bubble)?			X	
Samples cooled? Temp at receipt recorded on COC; Temp measured with IR thermometer - SN: 97050067			X	Ice Cold Packs Dry Ice (None)
Samples requiring pH preservation at proper pH? Note: Samples for metals analysis may be preserved upon receipt in the lab. Note: Samples for O&G and VOA analysis – preservation checked at bench.	X			
Samples dechlorinated for parameters requiring chlorine removal at the time of sample collection? Note: Chlorine checked at bench for samples requiring Bacterial, VOA, and HAA analysis.			X	

If in-house preservation used – record Lot #			
HCL		H_3PO_4	
H_2SO_4		NaOH	
HNO_3		Other	

Comments:

Were non-conformance issues noted at sample receipt? Yes or (No)

Non-Conformance issue other than noted above:

Completed by: KRU

Rogers & Callcott ENVIRONMENTAL

Laboratory Services

Laboratory Report

Client	Santee Cooper Linda Williams 1 Riverwood Dr. Moncks Corner, SC 29461	**Project:** **Work Order:** **Received:**	Ground Water 1061329 06/30/2021 09:30

Dear Client:

Rogers and Callcott appreciates the opportunity to be of service to you. The attached laboratory services report includes analytical results and chain of custody for samples that were received on June 30, 2021. Rogers and Callcott maintains a formal QA/QC program. Unless otherwise noted, all analyses performed under NELAP certification have complied with all the requirements for the TNI standard. The analyses met the QA/QC confidence interval for each test method unless otherwise qualified. Estimated uncertainty is available upon request.

Privileged / Confidential information may be contained in this report and is intended only for the use of the addressee. If you are not the addressee, or the person responsible for delivering to the person addressed, you may not copy or deliver this message to anyone else. If you receive this message by mistake, please notify Rogers and Callcott immediately.

We strive to provide excellent service to our clients. Please contact Lauren Hollister, your Project Manager, at lhollister@rcenviro.com, (864)-232-1556 if you have any questions about this report.

CC: Jeanette Gilmetti, Sherri Brown, Courtney Ames Watkins

Report Approved By:

Lauren Hollister
Project Manager

PO Box 5655 | Greenville, SC 29606 | 426 Fairforest Way | Greenville, SC 29607 | main 864.232.1556 | fax 864.232.6140 rogersandcallcott.com
an employee-owned company

Rogers & Callcott ENVIRONMENTAL

South Carolina Greenville Laboratory Identification 23105
South Carolina Columbia Laboratory Identification 40572
North Carolina Laboratory Certification Number 27
North Carolina Drinking Water Lab Number 45710
NELAP Utah Certificate Number SC000042014-1
Georgia Drinking Water Lab ID 880

Certificate of Analysis

Client Santee Cooper
Linda Williams
1 Riverwood Dr.
Moncks Corner, SC 29461

Project: Ground Water
Work Order: 1061329
Received: 06/30/2021 09:30

Sample Number	Sample Description	Matrix	Sampled	Type
1061329-01	AF07281 PM-1	Ground Water	06/21/21 13:08	Grab
1061329-02	AF07259 CBW-1	Ground Water	06/21/21 14:13	Grab
1061329-03	AF07274 CLFIB-1	Ground Water	06/22/21 10:07	Grab
1061329-04	AF07275 CLFIB-1 DUP	Ground Water	06/22/21 10:12	Grab
1061329-05	AF07276 CLFIB-2	Ground Water	06/22/21 12:13	Grab
1061329-06	AF07277 CLFIB-3	Ground Water	06/22/21 13:58	Grab
1061329-07	AF07278 CLFIB-4	Ground Water	06/22/21 14:54	Grab
1061329-08	AF07283 POZ-4	Ground Water	06/23/21 13:55	Grab
1061329-09	AF07285 POZ-6	Ground Water	06/23/21 15:04	Grab
1061329-10	AF07280 CLFIB-5D	Ground Water	06/23/21 10:29	Grab
1061329-11	AF07284 POZ-5D	Ground Water	06/23/21 12:49	Grab
1061329-12	AF07279 CLFIB-5	Ground Water	06/23/21 09:15	Grab
1061329-13	AF07286 POZ-7	Ground Water	06/24/21 10:40	Grab
1061329-14	AF07287 POZ-7-DUP	Ground Water	06/24/21 10:45	Grab
1061329-15	AF07282 POZ-3	Ground Water	06/24/21 09:18	Grab
1061329-16	AF07244 CAP-1	Ground Water	06/24/21 12:19	Grab

Santee Cooper		Project:	Ground Water
1 Riverwood Dr.		Work Order:	1061329
Moncks Corner, SC 29461		Reported:	07/07/21 14:46

Sample Data

Sample Number 1061329-01
Sample Description AF07281 PM-1 collected on 06/21/21 13:08

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Mercury	ND	0.20	ug/L	1.00	07/05/21 12:07	EPA 7470A		NAR	B1G0086
Boron	ND	15	ug/L	1.00	07/05/21 14:38	EPA 6010D		MLR	B1F1295
Lithium	ND	10	ug/L	1.00	07/05/21 14:38	EPA 6010D		MLR	B1F1295
Molybdenum	ND	10	ug/L	1.00	07/05/21 14:38	EPA 6010D		MLR	B1F1295

Sample Number 1061329-02
Sample Description AF07259 CBW-1 collected on 06/21/21 14:13

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Mercury	ND	0.20	ug/L	1.00	07/05/21 12:18	EPA 7470A		NAR	B1G0086
Boron	ND	40	ug/L	2.00	07/05/21 16:38	EPA 6010D	X	MLR	B1F1295
Lithium	ND	20	ug/L	2.00	07/05/21 16:38	EPA 6010D	X	MLR	B1F1295
Molybdenum	ND	20	ug/L	2.00	07/05/21 16:38	EPA 6010D	X	MLR	B1F1295

Sample Number 1061329-03
Sample Description AF07274 CLFIB-1 collected on 06/22/21 10:07

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Boron	ND	15	ug/L	1.00	07/05/21 14:59	EPA 6010D		MLR	B1F1295

Sample Number 1061329-04
Sample Description AF07275 CLFIB-1 DUP collected on 06/22/21 10:12

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Boron	ND	15	ug/L	1.00	07/05/21 15:24	EPA 6010D		MLR	B1F1295

Santee Cooper		Project:	Ground Water
1 Riverwood Dr.		Work Order:	1061329
Moncks Corner, SC 29461		Reported:	07/07/21 14:46

Sample Number 1061329-05
Sample Description AF07276 CLFIB-2 collected on 06/22/21 12:13

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Boron	**16**	15	ug/L	1.00	07/05/21 15:28	EPA 6010D		MLR	B1F1295

Sample Number 1061329-06
Sample Description AF07277 CLFIB-3 collected on 06/22/21 13:58

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Boron	**80**	15	ug/L	1.00	07/05/21 15:32	EPA 6010D		MLR	B1F1295

Sample Number 1061329-07
Sample Description AF07278 CLFIB-4 collected on 06/22/21 14:54

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Boron	**16**	15	ug/L	1.00	07/05/21 15:36	EPA 6010D		MLR	B1F1295

Sample Number 1061329-08
Sample Description AF07283 POZ-4 collected on 06/23/21 13:55

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Boron	ND	15	ug/L	1.00	07/05/21 16:04	EPA 6010D		MLR	B1F1295

Sample Number 1061329-09
Sample Description AF07285 POZ-6 collected on 06/23/21 15:04

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Boron	**41**	15	ug/L	1.00	07/05/21 16:09	EPA 6010D		MLR	B1F1295

Santee Cooper		Project:	Ground Water
1 Riverwood Dr.		Work Order:	1061329
Moncks Corner, SC 29461		Reported:	07/07/21 14:46

Sample Number 1061329-10
Sample Description AF07280 CLFIB-5D collected on 06/23/21 10:29

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Boron	ND	15	ug/L	1.00	07/05/21 16:13	EPA 6010D		MLR	B1F1295

Sample Number 1061329-11
Sample Description AF07284 POZ-5D collected on 06/23/21 12:49

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Boron	**230**	15	ug/L	1.00	07/05/21 16:17	EPA 6010D		MLR	B1F1295

Sample Number 1061329-12
Sample Description AF07279 CLFIB-5 collected on 06/23/21 09:15

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Boron	**19**	15	ug/L	1.00	07/05/21 16:21	EPA 6010D		MLR	B1F1295

Sample Number 1061329-13
Sample Description AF07286 POZ-7 collected on 06/24/21 10:40

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Boron	ND	15	ug/L	1.00	07/05/21 16:26	EPA 6010D		MLR	B1F1295

Sample Number 1061329-14
Sample Description AF07287 POZ-7-DUP collected on 06/24/21 10:45

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Boron	**15**	15	ug/L	1.00	07/05/21 16:30	EPA 6010D		MLR	B1F1295

Santee Cooper		Project:	Ground Water
1 Riverwood Dr.		Work Order:	1061329
Moncks Corner, SC 29461		Reported:	07/07/21 14:46

Sample Number 1061329-15
Sample Description AF07282 POZ-3 collected on 06/24/21 09:18

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Boron	ND	15	ug/L	1.00	07/05/21 16:34	EPA 6010D		MLR	B1F1295

Sample Number 1061329-16
Sample Description AF07244 CAP-1 collected on 06/24/21 12:19

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Mercury	ND	0.20	ug/L	1.00	07/05/21 12:21	EPA 7470A		NAR	B1G0086
Boron	**480**	15	ug/L	1.00	07/05/21 17:06	EPA 6010D		MLR	B1F1295
Lithium	**96**	10	ug/L	1.00	07/05/21 17:06	EPA 6010D		MLR	B1F1295

Santee Cooper		Project:	Ground Water
1 Riverwood Dr.		Work Order:	1061329
Moncks Corner, SC 29461		Reported:	07/07/21 14:46

Total Metals
Quality Control Summary

Parameter	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flags
Batch B1F1295 - EPA 3005A										
Blank (B1F1295-BLK1)										
Boron	ND	15	ug/L							
Lithium	ND	10	ug/L							
Molybdenum	ND	10	ug/L							
LCS (B1F1295-BS1)										
Boron	230	15	ug/L	250		93	80-120			
Lithium	235	10	ug/L	250		94	80-120			
Molybdenum	230	10	ug/L	250		91	80-120			
Matrix Spike (B1F1295-MS1)	**Source: 1061329-01**									
Boron	250	15	ug/L	250	ND	101	75-125			
Lithium	257	10	ug/L	250	ND	102	75-125			
Molybdenum	240	10	ug/L	250	ND	94	75-125			
Matrix Spike (B1F1295-MS2)	**Source: 1061329-03**									
Boron	260	15	ug/L	250	ND	102	75-125			
Lithium	290	10	ug/L	250	ND	113	75-125			
Molybdenum	240	10	ug/L	250	ND	96	75-125			
Matrix Spike Dup (B1F1295-MSD1)	**Source: 1061329-01**									
Boron	250	15	ug/L	250	ND	99	75-125	2	20	
Lithium	254	10	ug/L	250	ND	100	75-125	1	20	
Molybdenum	230	10	ug/L	250	ND	93	75-125	2	20	
Matrix Spike Dup (B1F1295-MSD2)	**Source: 1061329-03**									
Boron	250	15	ug/L	250	ND	101	75-125	2	20	
Lithium	282	10	ug/L	250	ND	109	75-125	3	20	
Molybdenum	230	10	ug/L	250	ND	94	75-125	2	20	
Post Spike (B1F1295-PS1)	**Source: 1061329-01**									
Boron	0.48		mg/L	0.500	ND	95	75-125			
Lithium	0.507		mg/L	0.500	ND	101	75-125			
Molybdenum	0.47		mg/L	0.500	ND	93	75-125			

Santee Cooper		Project:	Ground Water
1 Riverwood Dr.		Work Order:	1061329
Moncks Corner, SC 29461		Reported:	07/07/21 14:46

Total Metals
Quality Control Summary

Parameter	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flags
Batch B1F1295 - EPA 3005A										
Post Spike (B1F1295-PS2)	**Source: 1061329-03**									
Boron	0.49		mg/L	0.500	ND	96	75-125			
Lithium	0.552		mg/L	0.500	ND	109	75-125			
Molybdenum	0.47		mg/L	0.500	ND	94	75-125			
Batch B1G0086 - EPA 7470A										
Blank (B1G0086-BLK1)										
Mercury	ND	0.20	ug/L							
LCS (B1G0086-BS1)										
Mercury	5.0	0.20	ug/L	5.00		100	80-120			
Matrix Spike (B1G0086-MS1)	**Source: 1061329-01**									
Mercury	5.0	0.20	ug/L	5.00	ND	100	75-125			
Matrix Spike Dup (B1G0086-MSD1)	**Source: 1061329-01**									
Mercury	4.9	0.20	ug/L	5.00	ND	99	75-125	0.7	20	
Post Spike (B1G0086-PS1)	**Source: 1061329-01**									
Mercury	3.9		ug/L	4.00	ND	98	80-120			

Santee Cooper		Project:	Ground Water
1 Riverwood Dr.		Work Order:	1061329
Moncks Corner, SC 29461		Reported:	07/07/21 14:46

Sample Preparation Data

Parameter	Batch	Sample ID	Prepared	Analyst
EPA 3005A ICP Digestion				
EPA 3005A	B1F1295	1061329-01	06/30/2021 15:35	MTH
EPA 3005A	B1F1295	1061329-02	06/30/2021 15:35	MTH
EPA 3005A	B1F1295	1061329-03	06/30/2021 15:35	MTH
EPA 3005A	B1F1295	1061329-04	06/30/2021 15:35	MTH
EPA 3005A	B1F1295	1061329-05	06/30/2021 15:35	MTH
EPA 3005A	B1F1295	1061329-06	06/30/2021 15:35	MTH
EPA 3005A	B1F1295	1061329-07	06/30/2021 15:35	MTH
EPA 3005A	B1F1295	1061329-08	06/30/2021 15:35	MTH
EPA 3005A	B1F1295	1061329-09	06/30/2021 15:35	MTH
EPA 3005A	B1F1295	1061329-10	06/30/2021 15:35	MTH
EPA 3005A	B1F1295	1061329-11	06/30/2021 15:35	MTH
EPA 3005A	B1F1295	1061329-12	06/30/2021 15:35	MTH
EPA 3005A	B1F1295	1061329-13	06/30/2021 15:35	MTH
EPA 3005A	B1F1295	1061329-14	06/30/2021 15:35	MTH
EPA 3005A	B1F1295	1061329-15	06/30/2021 15:35	MTH
EPA 3005A	B1F1295	1061329-16	06/30/2021 15:35	MTH
EPA 7470A Mercury Digestion				
EPA 7470A	B1G0086	1061329-01	07/05/2021 09:25	NAR
EPA 7470A	B1G0086	1061329-02	07/05/2021 09:25	NAR
EPA 7470A	B1G0086	1061329-16	07/05/2021 09:25	NAR

Santee Cooper		Project:	Ground Water
1 Riverwood Dr.		Work Order:	1061329
Moncks Corner, SC 29461		Reported:	07/07/21 14:46

Data Qualifiers and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not reported
RPD	Relative Percent Difference
X	Result subject to sample matrix interference. Reporting limit has been adjusted where applicable.

Contract Lab Info: R/C Contract Lab Due Date (Lab Only): 7 / 9 / 21 Send report to lcwillia@santeecooper.com & slbrown@santeecooper.com

Chain of Custody

1061329

santee cooper
Santee Cooper
One Riverwood Drive
Moncks Corner, SC 29461
Phone: (843)761-8000 Ext. 5148
Fax: (843)761-4175

Customer Email/Report Recipient: LCWILLIA @santeecooper.com **Date Results Needed by:** / / **Project/Task/Unit #:** 121567 / JM02.07.G01 / 36500 **Rerun request for any flagged QC** Yes No

Analysis Group

Labworks ID # (Internal use only)	Sample Location/ Description	Collection Date	Collection Time	Sample Collector	Total # of containers	Bottle type: (Glass-G/Plastic-P)	Grab (G) or Composite (C)	Matrix(see below)	Preservative (see below)	Comments • Method # • Reporting limit • Misc. sample info • Any other notes	B	Li	Mo	Hg
AF07281	PM-1 -01	6/21/21	1308	MDG/BRT	1	P	G	GW	2		X	X	X	X
AF07259	CBW-1 -02	〃	1443	〃	1	〃	〃	〃	〃		X	X	X	X
AF07274	CLF1B-1 -03	6/22/21	1007	BRT/ML	〃	〃	〃	〃	〃		X			
AF07275	CLF1B-1 DUP -04	〃	1012	〃	〃	〃	〃	〃	〃		X			
AF07276	CLF1B-2 -05	〃	1213	〃	〃	〃	〃	〃	〃		X			
AF07277	CLF1B-3 -06	〃	1358	〃	〃	〃	〃	〃	〃		X			
AF07278	CLF1B-4 -07	〃	1454	〃	〃	〃	〃	〃	〃		X			
AF07283	POZ-4 -08	6/23/21	1355	〃	〃	〃	〃	〃	〃		X			
AF07285	POZ-6 -09	〃	1504	〃	〃	〃	〃	〃	〃		X			

Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time
SLBrown	35594	6/29/21	1500	FEDEX			
Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time
FEDEX				Coe		10/30/21	5930
Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time:

Sample Receiving (Internal Use Only)
TEMP (°C): 23.8 Initial: Coe
Correct pH: Yes No
Preservative Lot#:
Date/Time/Init for preservative:

METALS (all)		
☐ Ag	☐ Cu	☐ Sb
☐ Al	☐ Fe	☐ Se
☐ As	☐ K	☐ Sn
☐ B	☐ Li	☐ Sr
☐ Ba	☐ Mg	☐ Ti
☐ Be	☐ Mn	☐ Tl
☐ Ca	☐ Mo	☐ V
☐ Cd	☐ Na	☐ Zn
☐ Co	☐ Ni	☐ Hg
☐ Cr	☐ Pb	☐ CrVI

Nutrients
☐ TOC
☐ DOC
☐ TP TPO4
☐ NH3-N
☐ F
☐ Cl
☐ NO2
☐ Br
☐ NO3
☐ SO4

MISC.
☐ BTEX
☐ Napthalene
☐ THM/HAA
☐ VOC
☐ Oil & Grease
☐ E-Coli
☐ Total Coliform
☐ pH
☐ Dissolved As
☐ Dissolved Fe
☐ Rad 226
☐ Rad 228
☐ PCB

Gypsum
☐ Wallboard
☐ Gypsum(all below)
☐ AM
☐ TOC
☐ Total metals
☐ Soluble Metals
☐ Purity (CaSO4)
☐ % Moisture
☐ Sulfites
☐ pH
☐ Chlorides
☐ Particle Size
☐ Sulfites

Coal
☐ Ultimate
☐ % Moisture
☐ Ash
☐ Sulfur
☐ BTUs
☐ Volatile Matter
☐ CHN
Other Tests:
☐ XRF Scan
☐ HGI
☐ Fineness
☐ Particulate Matter

Flyash
☐ Ammonia
☐ LOI
☐ % Carbon
☐ Mineral Analysis
☐ Sieve
☐ % Moisture

NPDES
☐ Oil & Grease
☐ As
☐ TSS

Oil
Trace Oil Quals
Used Oil

Matrix codes: GW-groundwater, DW-drinking water, SW-surface water, WW-waste water, BW-boiler water, L-limestone, Oil-oil, S-Soil, SL-solid, C-coal, G-gypsum, FA-flyash, BA-bottom ash, M-misc (describe in comment section)
Preservative code- 1=<4°C 2=HNO_3 3=H_2SO_4 4-HCl 5=$Na_2S_2O_3$ 6-Other (Specify)

Contract Lab Info: R/C Contract Lab Due Date (Lab Only): 7 / 9 / 21 Send report to lcwillia@santeecooper.com & sjbrown@santeecooper.com

Chain of Custody

10621329

santee cooper
Santee Cooper
One Riverwood Drive
Moncks Corner, SC 29461
Phone: (843)761-8000 Ext. 5148
Fax: (843)761-4175

Customer Email/Report Recipient: LCWILLIA @santeecooper.com **Date Results Needed by:** / / **Project/Task/Unit #:** 121567 / JM02.09.601 / 36500 **Rerun request for any flagged QC** Yes No

Analysis Group

Labworks ID # (Internal use only)	Sample Location/ Description	Collection Date	Collection Time	Sample Collector	Total # of containers	Bottle type: (Glass-G/Plastic-P)	Grab (G) or Composite (C)	Matrix(see below)	Preservative (see below)	Comments: Method # / Reporting limit / Misc. sample info / Any other notes				
AF07280	CLF1B-SD -10	6/23/21	1029	BRT/ML	1	P	G	GW	2		X			
AF07284	POZ-5D -11	〃	1249	〃	1	〃	〃	〃	〃		X			
AF07279	CLF1B-5 -12	〃	0915	〃	〃	〃	〃	〃	〃		X			
AF07286	POZ-7 -13	6/24/21	1040	〃	〃	〃	〃	〃	〃		X			
AF07287	POZ-7DUP -14	〃	1045	〃	〃	〃	〃	〃	〃		X			
AF07282	POZ-3 -15	〃	0918	〃	〃	〃	〃	〃	〃		X			
AF07244	CAP-1 -16	〃	1219	〃	〃	〃	〃	〃	〃		X	X	X	
~~AF07265~~	~~CAP-11~~	〃	1340	〃	〃	〃	〃	〃	〃		~~X~~	~~X~~	~~X~~	
	SJB 6/25													

Relinquished by:	Employee#:	Date	Time	Received by:	Employee #	Date	Time
SJBrown	35594	6/29/21	1500	FEDEX			
Relinquished by:	Employee#:	Date	Time	Received by:	Employee #:	Date:	Time:
FEDEX				CEL		6/30/21	0930
Relinquished by:	Employee#:	Date	Time	Received by:	Employee #	Date	Time

Sample Receiving (Internal Use Only)
TEMP (°C): 23.8 Initial: cre
Correct pH: Yes No
Preservative Lot#:
Date/Time/Init for preservative:

METALS (all)		
Ag	Cu	Sb
Al	Fe	Se
As	K	Sn
B	Li	Sr
Ba	Mg	Ti
Be	Mn	Tl
Ca	Mo	V
Cd	Na	Zn
Co	Ni	Hg
Cr	Pb	CrVI

Nutrients
- TOC
- DOC
- TP/TPO4
- NH3-N
- F
- Cl
- NO2
- Br
- NO3
- SO4

MISC.
- BTEX
- Napthalene
- THM/HAA
- VOC
- Oil & Grease
- E. Coli
- Total Coliform
- pH
- Dissolved As
- Dissolved Fe
- Rad 226
- Rad 228
- PCB

Gypsum
- Wallboard
- Gypsum (all [calc...])
- AIM
- TOC
- Moisture
- Soluble Metals
- Purity (CaSO4)
- % Moisture
- Sulfite
- pH
- Chlorides
- Particle Size
- Sulfur

Coal
- Ultimate
- % Moisture
- Ash
- Sulfur
- BTUs
- Volatile Matter
- CHN

Other Tests:
- XRF Scan
- HGI
- Fineness
- Particulate Matter

Flyash
- Ammonia
- LOI
- % Carbon
- Mineral Analysis
- Sieve
- % Moisture

NPDES
- Oil & Grease
- As
- TSS

Oil
- Trans. Oil Qual.
- [illegible] Moisture
- [illegible]
- [illegible]
- Used Oil
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Matrix codes: GW-groundwater, DW-drinking water, SW-surface water, WW-waste water, BW-boiler water, L-limestone, Oil-oil, S-Soil, SL-solid, C-coal, G-gypsum, FA-flyash, BA-bottom ash, M-misc (describe in comment section)
Preservative code- 1=<4°C 2=HNO_3 3=H_2SO_4 4-HCl 5=$Na_2S_2O_3$ 6-Other (Specify)

Rogers & Callcott ENVIRONMENTAL

Sample Receipt Verification

Client: Santee Cooper | Date Received: 06/30/21 | Work Order: 1061329

Carrier Name: Client (FedEx) UPS US Mail Courier Field Services Other: _____

Tracking Number: 815367915239

Receipt Criteria	Yes	No	NA	Comments
Shipping container / cooler intact?	X			Damaged Leaking Other:
Custody seals intact?			X	
COC included with samples?	X			
COC signed when relinquished and received?	X			
Sample bottles intact?	X			Damaged Leaking Other:
Sample ID on COC agree with label on bottle(s)?	X			
Date / time on COC agree with label on bottle(s)?	X			
Number of bottles on COC agrees with number of bottles received?	X			
Samples received within holding time?	X			
Sample volume sufficient for analysis?	X			
VOA vials free of headspace (<6mm bubble)?			X	
Samples cooled? Temp at receipt recorded on COC; Temp measured with IR thermometer - SN: 97050067	X			(Ice) Cold Packs Dry Ice None
Samples requiring pH preservation at proper pH? Note: Samples for metals analysis may be preserved upon receipt in the lab. Note: Samples for O&G and VOA analysis – preservation checked at bench.	X			
Samples dechlorinated for parameters requiring chlorine removal at the time of sample collection? Note: Chlorine checked at bench for samples requiring Bacterial, VOA, and HAA analysis.			X	

If in-house preservation used – record Lot #			
HCL		H_3PO_4	
H_2SO_4		NaOH	
HNO_3		Other	

Comments:

Were non-conformance issues noted at sample receipt? Yes or (No)

Non-Conformance issue other than noted above:

Rogers & Callcott ENVIRONMENTAL

Laboratory Services

Laboratory Report

Client	Santee Cooper Linda Williams 1 Riverwood Dr. Moncks Corner, SC 29461	**Project:** **Work Order:** **Received:**	Ground Water 1070517 07/08/2021 09:25

Dear Client:

Rogers and Callcott appreciates the opportunity to be of service to you. The attached laboratory services report includes analytical results and chain of custody for samples that were received on July 08, 2021. Rogers and Callcott maintains a formal QA/QC program. Unless otherwise noted, all analyses performed under NELAP certification have complied with all the requirements for the TNI standard. The analyses met the QA/QC confidence interval for each test method unless otherwise qualified. Estimated uncertainty is available upon request.

Privileged / Confidential information may be contained in this report and is intended only for the use of the addressee. If you are not the addressee, or the person responsible for delivering to the person addressed, you may not copy or deliver this message to anyone else. If you receive this message by mistake, please notify Rogers and Callcott immediately.

We strive to provide excellent service to our clients. Please contact Michael Woodrum, your Project Manager, at mwoodrum@rcenviro.com, 864-232-1556 if you have any questions about this report.

CC: Jeanette Gilmetti, Sherri Brown, Courtney Ames Watkins

Report Approved By:

Michael Woodrum
Project Manager

PO Box 5655 | Greenville, SC 29606 | 426 Fairforest Way | Greenville, SC 29607 | main 864.232.1556 | fax 864.232.6140 rogersandcallcott.com
an employee-owned company

Rogers & Callcott ENVIRONMENTAL

South Carolina Greenville Laboratory Identification 23105
South Carolina Columbia Laboratory Identification 40572
North Carolina Laboratory Certification Number 27
North Carolina Drinking Water Lab Number 45710
NELAP Utah Certificate Number SC000042014-1
Georgia Drinking Water Lab ID 880

Certificate of Analysis

Client Santee Cooper
Linda Williams
1 Riverwood Dr.
Moncks Corner, SC 29461

Project: Ground Water
Work Order: 1070517
Received: 07/08/2021 09:25

Sample Number	Sample Description	Matrix	Sampled	Type
1070517-01	AF07247 CAP-4	Ground Water	06/28/21 11:55	Grab
1070517-02	AF07249 CAP-6	Ground Water	06/28/21 12:55	Grab
1070517-03	AF07251 CAP-8	Ground Water	06/28/21 14:23	Grab
1070517-04	AF07246 CAP-3	Ground Water	06/29/21 10:44	Grab
1070517-05	AF07248 CAP-5	Ground Water	06/29/21 11:50	Grab
1070517-06	AF07252 CAP-9	Ground Water	06/29/21 14:00	Grab
1070517-07	AF07253 CAP-9 DUP	Ground Water	06/29/21 14:05	Grab
1070517-08	AF07254 CAP-10	Ground Water	06/30/21 11:52	Grab
1070517-09	AF07250 CAP-7	Ground Water	06/30/21 10:23	Grab
1070517-10	AF07266 CCMAP-4	Ground Water	07/01/21 10:24	Grab
1070517-11	AF07264 CCMAP-3	Ground Water	07/01/21 11:37	Grab
1070517-12	AF07265 CCMAP-3 DUP	Ground Water	07/01/21 11:42	Grab
1070517-13	AF07263 CCMAP-2	Ground Water	07/01/21 12:46	Grab
1070517-14	AF07262 CCMAP-1	Ground Water	07/01/21 13:47	Grab

Santee Cooper		Project:	Ground Water
1 Riverwood Dr.		Work Order:	1070517
Moncks Corner, SC 29461		Reported:	07/16/21 18:02

Sample Data

Sample Number 1070517-01
Sample Description AF07247 CAP-4 collected on 06/28/21 11:55

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Lithium	**27**	10	ug/L	1.00	07/14/21 18:36	EPA 6010D		MLR	B1G0299

Sample Number 1070517-02
Sample Description AF07249 CAP-6 collected on 06/28/21 12:55

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Lithium	ND	10	ug/L	1.00	07/14/21 18:40	EPA 6010D		MLR	B1G0299

Sample Number 1070517-03
Sample Description AF07251 CAP-8 collected on 06/28/21 14:23

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Lithium	**63**	10	ug/L	1.00	07/14/21 19:19	EPA 6010D		MLR	B1G0299

Sample Number 1070517-04
Sample Description AF07246 CAP-3 collected on 06/29/21 10:44

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Mercury	ND	0.20	ug/L	1.00	07/16/21 14:52	EPA 7470A	S7	ELN	B1G0636
Boron	**6300**	75	ug/L	5.00	07/14/21 16:07	EPA 6010D		MLR	B1G0484
Lithium	**11**	10	ug/L	1.00	07/14/21 18:44	EPA 6010D		MLR	B1G0299

Sample Number 1070517-05
Sample Description AF07248 CAP-5 collected on 06/29/21 11:50

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Mercury	ND	0.20	ug/L	1.00	07/16/21 14:55	EPA 7470A	S7	ELN	B1G0636
Boron	ND	40	ug/L	1.00	07/14/21 17:58	EPA 6010D		MLR	B1G0484
Lithium	**13**	10	ug/L	1.00	07/14/21 17:58	EPA 6010D		MLR	B1G0299

Santee Cooper		Project:	Ground Water
1 Riverwood Dr.		Work Order:	1070517
Moncks Corner, SC 29461		Reported:	07/16/21 18:02

Sample Number 1070517-06
Sample Description AF07252 CAP-9 collected on 06/29/21 14:00

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Mercury	ND	0.20	ug/L	1.00	07/16/21 14:58	EPA 7470A	S7	ELN	B1G0636
Boron	**7300**	75	ug/L	5.00	07/14/21 16:11	EPA 6010D		MLR	B1G0484
Lithium	**63**	10	ug/L	1.00	07/14/21 18:17	EPA 6010D		MLR	B1G0299

Sample Number 1070517-07
Sample Description AF07253 CAP-9 DUP collected on 06/29/21 14:05

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Mercury	ND	0.20	ug/L	1.00	07/16/21 15:01	EPA 7470A	S7	ELN	B1G0636
Boron	**6800**	75	ug/L	5.00	07/14/21 16:14	EPA 6010D		MLR	B1G0484
Lithium	**67**	10	ug/L	1.00	07/14/21 18:48	EPA 6010D		MLR	B1G0299

Sample Number 1070517-08
Sample Description AF07254 CAP-10 collected on 06/30/21 11:52

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Lithium	ND	10	ug/L	1.00	07/14/21 19:23	EPA 6010D		MLR	B1G0299

Sample Number 1070517-09
Sample Description AF07250 CAP-7 collected on 06/30/21 10:23

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Mercury	ND	0.20	ug/L	1.00	07/16/21 14:44	EPA 7470A	S7	ELN	B1G0636
Boron	**29000**	150	ug/L	10.0	07/16/21 13:30	EPA 6010D		MLR	B1G0484
Lithium	ND	10	ug/L	1.00	07/14/21 18:52	EPA 6010D		MLR	B1G0299

Sample Number 1070517-10
Sample Description AF07266 CCMAP-4 collected on 07/01/21 10:24

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Lithium	ND	10	ug/L	1.00	07/14/21 19:27	EPA 6010D		MLR	B1G0299

Santee Cooper		Project:	Ground Water
1 Riverwood Dr.		Work Order:	1070517
Moncks Corner, SC 29461		Reported:	07/16/21 18:02

Sample Number 1070517-11
Sample Description AF07264 CCMAP-3 collected on 07/01/21 11:37

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Lithium	**25**	10	ug/L	1.00	07/14/21 19:30	EPA 6010D		MLR	B1G0299

Sample Number 1070517-12
Sample Description AF07265 CCMAP-3 DUP collected on 07/01/21 11:42

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Lithium	**26**	10	ug/L	1.00	07/14/21 19:34	EPA 6010D		MLR	B1G0299

Sample Number 1070517-13
Sample Description AF07263 CCMAP-2 collected on 07/01/21 12:46

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Lithium	ND	10	ug/L	1.00	07/14/21 19:38	EPA 6010D		MLR	B1G0299

Sample Number 1070517-14
Sample Description AF07262 CCMAP-1 collected on 07/01/21 13:47

Parameter	Result	Reporting Limit	Units	DF	Analyzed	Method	Flag	Analyst	Batch
Total Metals									
Lithium	ND	10	ug/L	1.00	07/14/21 19:42	EPA 6010D		MLR	B1G0299

Santee Cooper		Project:	Ground Water
1 Riverwood Dr.		Work Order:	1070517
Moncks Corner, SC 29461		Reported:	07/16/21 18:02

Total Metals
Quality Control Summary

Parameter	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flags
Batch B1G0299 - EPA 200.7 Mod										
Blank (B1G0299-BLK1)										
Lithium	ND	10	ug/L							
LCS (B1G0299-BS1)										
Lithium	265	10	ug/L	250		106	80-120			
LCS Dup (B1G0299-BSD1)										
Lithium	269	10	ug/L	250		108	80-120	1	20	
Matrix Spike (B1G0299-MS1)	**Source: 1070517-05**									
Lithium	292	10	ug/L	250	13	112	75-125			
Matrix Spike (B1G0299-MS2)	**Source: 1070517-06**									
Lithium	336	10	ug/L	250	63	109	75-125			
Matrix Spike Dup (B1G0299-MSD1)	**Source: 1070517-05**									
Lithium	295	10	ug/L	250	13	113	75-125	1	20	
Matrix Spike Dup (B1G0299-MSD2)	**Source: 1070517-06**									
Lithium	332	10	ug/L	250	63	107	75-125	1	20	
Post Spike (B1G0299-PS1)	**Source: 1070517-05**									
Lithium	0.540		mg/L	0.500	ND	105	75-125			
Post Spike (B1G0299-PS2)	**Source: 1070517-06**									
Lithium	0.570		mg/L	0.500	ND	101	75-125			
Batch B1G0484 - EPA 200.7 Mod										
Blank (B1G0484-BLK1)										
Boron	ND	15	ug/L							
LCS (B1G0484-BS1)										
Boron	250	15	ug/L	250		99	80-120			

Santee Cooper		Project:	Ground Water
1 Riverwood Dr.		Work Order:	1070517
Moncks Corner, SC 29461		Reported:	07/16/21 18:02

Total Metals
Quality Control Summary

Parameter	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flags
Batch B1G0484 - EPA 200.7 Mod										
LCS Dup (B1G0484-BSD1)										
Boron	260	15	ug/L	250		102	80-120	3	20	
Matrix Spike (B1G0484-MS1)	**Source: 1070517-05**									
Boron	270	15	ug/L	250	ND	97	75-125			
Matrix Spike Dup (B1G0484-MSD1)	**Source: 1070517-05**									
Boron	270	15	ug/L	250	ND	98	75-125	0.5	20	
Post Spike (B1G0484-PS1)	**Source: 1070517-05**									
Boron	510	15	ug/L	500	ND	96	75-125			
Batch B1G0636 - EPA 7470A										
Blank (B1G0636-BLK1)										
Mercury	ND	0.20	ug/L							
LCS (B1G0636-BS1)										
Mercury	4.8	0.20	ug/L	5.00		96	80-120			
LCS Dup (B1G0636-BSD1)										
Mercury	4.9	0.20	ug/L	5.00		97	80-120	1	20	
Matrix Spike (B1G0636-MS1)	**Source: 1070517-09**									
Mercury	4.7	0.20	ug/L	5.00	ND	93	75-125			
Post Spike (B1G0636-PS1)	**Source: 1070517-09**									
Mercury	3.3		ug/L	4.00	ND	82	80-120			
Post Spike (B1G0636-PS2)	**Source: 1070517-04**									
Mercury	2.9		ug/L	4.00	ND	74	80-120			S7
Post Spike (B1G0636-PS3)	**Source: 1070517-05**									
Mercury	3.0		ug/L	4.00	ND	74	80-120			S7

Santee Cooper		Project:	Ground Water
1 Riverwood Dr.		Work Order:	1070517
Moncks Corner, SC 29461		Reported:	07/16/21 18:02

Total Metals
Quality Control Summary

Parameter	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flags
Batch B1G0636 - EPA 7470A										
Post Spike (B1G0636-PS4)	**Source: 1070517-06**									
Mercury	2.9		ug/L	4.00	ND	72	80-120			S7
Post Spike (B1G0636-PS5)	**Source: 1070517-07**									
Mercury	2.8		ug/L	4.00	ND	69	80-120			S7

Santee Cooper		Project:	Ground Water
1 Riverwood Dr.		Work Order:	1070517
Moncks Corner, SC 29461		Reported:	07/16/21 18:02

Sample Preparation Data

Parameter	Batch	Sample ID	Prepared	Analyst
EPA 200.7 M Digestion				
EPA 200.7 Mod	B1G0299	1070517-01	07/08/2021 12:10	CGH
EPA 200.7 Mod	B1G0299	1070517-02	07/08/2021 12:10	CGH
EPA 200.7 Mod	B1G0299	1070517-03	07/08/2021 12:10	CGH
EPA 200.7 Mod	B1G0299	1070517-04	07/08/2021 12:10	CGH
EPA 200.7 Mod	B1G0484	1070517-04	07/12/2021 12:10	CGH
EPA 200.7 Mod	B1G0299	1070517-05	07/08/2021 12:10	CGH
EPA 200.7 Mod	B1G0484	1070517-05	07/12/2021 12:10	CGH
EPA 200.7 Mod	B1G0299	1070517-06	07/08/2021 12:10	CGH
EPA 200.7 Mod	B1G0484	1070517-06	07/12/2021 12:10	CGH
EPA 200.7 Mod	B1G0299	1070517-07	07/08/2021 12:10	CGH
EPA 200.7 Mod	B1G0484	1070517-07	07/12/2021 12:10	CGH
EPA 200.7 Mod	B1G0299	1070517-08	07/08/2021 12:10	CGH
EPA 200.7 Mod	B1G0299	1070517-09	07/08/2021 12:10	CGH
EPA 200.7 Mod	B1G0484	1070517-09	07/12/2021 12:10	CGH
EPA 200.7 Mod	B1G0299	1070517-10	07/08/2021 12:10	CGH
EPA 200.7 Mod	B1G0299	1070517-11	07/08/2021 12:10	CGH
EPA 200.7 Mod	B1G0299	1070517-12	07/08/2021 12:10	CGH
EPA 200.7 Mod	B1G0299	1070517-13	07/08/2021 12:10	CGH
EPA 200.7 Mod	B1G0299	1070517-14	07/08/2021 12:10	CGH
EPA 7470A Mercury Digestion				
EPA 7470A	B1G0636	1070517-04	07/15/2021 12:40	CAL
EPA 7470A	B1G0636	1070517-05	07/15/2021 12:40	CAL
EPA 7470A	B1G0636	1070517-06	07/15/2021 12:40	CAL
EPA 7470A	B1G0636	1070517-07	07/15/2021 12:40	CAL
EPA 7470A	B1G0636	1070517-09	07/15/2021 12:40	CAL

Santee Cooper		Project:	Ground Water
1 Riverwood Dr.		Work Order:	1070517
Moncks Corner, SC 29461		Reported:	07/16/21 18:02

Data Qualifiers and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not reported
RPD	Relative Percent Difference
S7	Result calculated by Method of Standard Addition due to sample matrix interference and initial spike failures.

Contract Lab Info: R/C   Contract Lab Due Date (Lab Only): 7 / 16 / 21   Send report to lcwillia@santeecooper.com & sjbrown@santeecooper.com

Chain of Custody

1070517

santee cooper
Santee Cooper
One Riverwood Drive
Moncks Corner, SC 29461
Phone: (843)761-8000 Ext. 5148
Fax: (843)761-4175

Customer Email/Report Recipient:	Date Results Needed by:	Project/Task/Unit #:	Rerun request for any flagged QC
LCWILLIA @santeecooper.com	___/___/___	121567 / JM02.09.G01 / 36500	Yes No

Analysis Group

Labworks ID # (In-house only)	Sample Location/ Description	Collection Date	Collection Time	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Comments [illegible]	B	Li	Mo	Hg
AF07247	CAP-4	6/28/21	1155	MDG/BRT	1	P	G	GW	2	-01		X		
AF07249	CAP-6	|	1255	|	|	|	|	|	|	-02		X		
AF07251	CAP-8	|	1423	|	|	|	|	|	|	-03		X		
AF07246	CAP-3	6/29/21	1044	BRT/CWS	1	|	|	|	|	-04	X	X		X
AF07248	CAP-5	|	1150	|	|	|	|	|	|	-05	X	X		X
AF07252	CAP-9	|	1400	|	|	|	|	|	|	-06	X	X		X
AF07253	CAP-9 DUP	|	1405	|	|	|	|	|	|	-07	X	X		X
AF07254	CAP-10	6/30/21	1152	MDG/BRT	|	|	|	|	|	-08		X		
AF07250	CAP-7	6/30/21	1023	|	|	|	|	|	|	-09	X	X		X

Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time
SJBrown	35594	7/7/21	1500	FEDEX			
Relinquished by:	**Employee#**	**Date**	**Time**	**Received by:**	**Employee #**	**Date**	**Time**
FEDEX				[signature]		7/8/21	0925
Relinquished by:	**Employee#**	**Date**	**Time**	**Received by:**	**Employee #**	**Date**	**Time**

Sample Receiving (Internal Use Only)
TEMP (°C): 2.6   Initial:______
Correct pH: Yes No
Preservative Lot#:
Date/Time/Init for preservative:

☐ METALS (all)		
☐ Ag	☐ Cu	☐ Sb
☐ Al	☐ Fe	☐ Se
☐ As	☐ K	☐ Sn
☐ B	☐ Li	☐ Sr
☐ Ba	☐ Mg	☐ Ti
☐ Be	☐ Mn	☐ Tl
☐ Ca	☐ Mo	☐ V
☐ Cd	☐ Na	☐ Zn
☐ Co	☐ Ni	☐ Hg
☐ Cr	☐ Pb	☐ Cr VI

[redacted]

MISC.
- ☐ BTEX
- ☐ Napthalene
- ☐ THM/HAA
- ☐ VOC
- ☐ Oil & Grease
- ☐ E. Coli
- ☐ Total Coliform
- ☐ pH
- ☐ Dissolved As
- ☐ Dissolved Fe
- ☐ Rad 226
- ☐ Rad 228
- ☐ PCB

[redacted]

Matrix codes: GW-groundwater, DW-drinking water, SW-surface water, WW-waste water, BW-boiler water, L-limestone, Oil-oil, S-Soil, SL-solid, C-coal, G-gypsum, FA-flyash, BA-bottom ash, M-misc (describe in comment section)
Preservative code- 1=<4°C 2=HNO_3 3=H_2SO_4 4-HCl 5=$Na_2S_2O_3$ 6-Other (Specify)

Contract Lab Info: R/C *Contract Lab Due Date (Lab Only):* 7 / 16 / 21 *Send report to* lcwillia@santeecooper.com & sjbrown@santeecooper.com

Chain of Custody

107 0517

santee cooper
Santee Cooper
One Riverwood Drive
Moncks Corner, SC 29461
Phone: (843)761-8000 Ext. 5148
Fax: (843)761-4175

Customer Email/Report Recipient: LCWILLIA @santeecooper.com

Date Results Needed by: ____/____/____

Project/Task/Unit #: 121567 / JM02.09.G01 / 36500

Rerun request for any flagged QC Yes No

Analysis Group

Labworks ID # (Internal use only)	Sample Location/ Description	Collection Date	Collection Time	Sample Collector	# of Containers	Bottle type	Grab/Composite	Matrix	Preservative	Comments: • Method • Reporting Limit • Misc. Sample info • Any other notes	J			
AF07266	CCMAP-4	7/1/21	1024	BRT/ATH	1	P	G	GW	2	-10	X			
AF07264	CCMAP-3	|	1137	|	|	|	|	|	|	-11	X			
AF07265	CCMAP-3 DUP	|	1142	|	|	|	|	|	|	-12	X			
AF07263	CCMAP-2	|	1246	|	|	|	|	|	|	-13	X			
AF07262	CCMAP-1	|	1347	|	|	|	|	|	|	-14	X			

Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time
SJBrown	35594	7/7/21	1500	[signature]			
Relinquished by:	**Employee#**	**Date**	**Time**	**Received by:**	**Employee #**	**Date**	**Time**
SEDGI				[signature]		7/8/21	0925
Relinquished by:	**Employee#**	**Date**	**Time**	**Received by:**	**Employee #**	**Date**	**Time**

Sample Receiving (Internal Use Only)
TEMP (°C): 23.0 **Initial:**______
Correct pH: Yes No
Preservative Lot#:
Date/Time/Init for preservative:

☐ METALS (all)

☐ Ag	☐ Cu	☐ Sb
☐ Al	☐ Fe	☐ Se
☐ As	☐ K	☐ Sn
☐ B	☐ Li	☐ Sr
☐ Ba	☐ Mg	☐ Ti
☐ Be	☐ Mn	☐ Tl
☐ Ca	☐ Mo	☐ V
☐ Cd	☐ Na	☐ Zn
☐ Co	☐ Ni	☐ Hg
☐ Cr	☐ Pb	☐ CrVI

MISC.
- ☐ BTEX
- ☐ Napthalene
- ☐ THM/HAA
- ☐ VOC
- ☐ Oil & Grease
- ☐ E. Coli
- ☐ Total Coliform
- ☐ pH
- ☐ Dissolved As
- ☐ Dissolved Fe
- ☐ Rad 226
- ☐ Rad 228
- ☐ PCB

Matrix codes: GW-groundwater, DW-drinking water, SW-surface water, WW-waste water, BW-boiler water, L-limestone, Oil-oil, S-Soil, SL-solid, C-coal, G-gypsum, FA-flyash, BA-bottom ash, M-misc (describe in comment section)
Preservative code- 1=<4°C 2=HNO_3 3=H_2SO_4 4-HCl 5=$Na_2S_2O_3$ 6-Other (Specify)

Rogers & Callcott ENVIRONMENTAL

Sample Receipt Verification

Client: Santee Cooper | Date Received: 07/08/21 | Work Order: 1070517

Carrier Name: Client (FedEx) UPS US Mail Courier Field Services Other: _____

Tracking Number: 815367915250

Receipt Criteria	Yes	No	NA	Comments
Shipping container / cooler intact?	X			Damaged Leaking Other:
Custody seals intact?			X	
COC included with samples?	X			
COC signed when relinquished and received?	X			
Sample bottles intact?	X			Damaged Leaking Other:
Sample ID on COC agree with label on bottle(s)?	X			
Date / time on COC agree with label on bottle(s)?	X			
Number of bottles on COC agrees with number of bottles received?	X			
Samples received within holding time?	X			
Sample volume sufficient for analysis?	X			
VOA vials free of headspace (<6mm bubble)?			X	
Samples cooled? Temp at receipt recorded on COC; Temp measured with IR thermometer - SN: 97050067		X		Ice Cold Packs Dry Ice (None)
Samples requiring pH preservation at proper pH? Note: Samples for metals analysis may be preserved upon receipt in the lab. Note: Samples for O&G and VOA analysis – preservation checked at bench.	X			
Samples dechlorinated for parameters requiring chlorine removal at the time of sample collection? Note: Chlorine checked at bench for samples requiring Bacterial, VOA, and HAA analysis.			X	

If in-house preservation used – record Lot #			
HCL		H_3PO_4	
H_2SO_4		NaOH	
HNO_3		Other	

Comments:

Were non-conformance issues noted at sample receipt? Yes or (No)

Non-Conformance issue other than noted above:

GEL Laboratories LLC
a member of The GEL Group INC

PO Box 30712 Charleston, SC 29417
2040 Savage Road Charleston, SC 29407
P 843.556.8171
F 843.766.1178

gel.com

February 26, 2021

Ms. Jeanette Gilmetti
Santee Cooper
P.O. Box 2946101
OCO3
Moncks Corner, South Carolina 29461

Re: ABS Lab Analytical
Work Order: 533780

Dear Ms. Gilmetti:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on February 02, 2021. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Test results for NELAP or ISO 17025 accredited tests are verified to meet the requirements of those standards, with any exceptions noted. The results reported relate only to the items tested and to the sample as received by the laboratory. These results may not be reproduced except as full reports without approval by the laboratory. Copies of GEL's accreditations and certifications can be found on our website at www.gel.com.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4289.

Sincerely,

Julie Robinson

Julie Robinson
Project Manager

Purchase Order: 367074
Enclosures

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis Report
for

SOOP001 Santee Cooper

Client SDG: 533780 GEL Work Order: 533780

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a Tracer compound

** Analyte is a surrogate compound

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Julie Robinson.

Reviewed by Julie Robinson

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: February 26, 2021

Company :	Santee Cooper
Address :	P.O. Box 2946101 OCO3 Moncks Corner, South Carolina 29461
Contact:	Ms. Jeanette Gilmetti
Project:	ABS Lab Analytical
Client Sample ID:	AE94877
Sample ID:	533780001
Matrix:	Ground Water
Collect Date:	28-JAN-21 09:15
Receive Date:	02-FEB-21
Collector:	Client
Project:	SOOP00119
Client ID:	SOOP001

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC, Ra228, Liquid "As Received"													
Radium-228	U	0.175	+/-0.753	1.40	3.00	pCi/L			LXB3	02/23/21	0657	2090245	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		1.45	+/-0.912			pCi/L		1	AEA	02/25/21	1158	2090294	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		1.28	+/-0.515	0.524	1.00	pCi/L			MXH8	02/25/21	0914	2089473	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			89	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: February 26, 2021

Company :	Santee Cooper
Address :	P.O. Box 2946101 OCO3 Moncks Corner, South Carolina 29461
Contact:	Ms. Jeanette Gilmetti
Project:	ABS Lab Analytical
Client Sample ID:	AE94878
Sample ID:	533780002
Matrix:	Ground Water
Collect Date:	28-JAN-21 09:20
Receive Date:	02-FEB-21
Collector:	Client
Project:	SOOP00119
Client ID:	SOOP001

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC, Ra228, Liquid "As Received"													
Radium-228	U	-0.568	+/-0.908	1.85	3.00	pCi/L			LXB3	02/23/21	0657	2090245	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		2.27	+/-1.10			pCi/L		1	AEA	02/25/21	1158	2090294	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		2.27	+/-0.627	0.403	1.00	pCi/L			MXH8	02/25/21	0914	2089473	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			87.6	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: February 26, 2021

Company :	Santee Cooper
Address :	P.O. Box 2946101 OCO3 Moncks Corner, South Carolina 29461
Contact:	Ms. Jeanette Gilmetti
Project:	ABS Lab Analytical
Client Sample ID:	AE94876
Sample ID:	533780003
Matrix:	Ground Water
Collect Date:	28-JAN-21 14:34
Receive Date:	02-FEB-21
Collector:	Client
Project:	SOOP00119
Client ID:	SOOP001

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC, Ra228, Liquid "As Received"													
Radium-228	U	0.718	+/-0.820	1.38	3.00	pCi/L			LXB3	02/23/21	0657	2090245	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		1.23	+/-0.888			pCi/L		1	AEA	02/25/21	1158	2090294	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		0.517	+/-0.340	0.440	1.00	pCi/L			MXH8	02/25/21	0914	2089473	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			86.5	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: February 26, 2021

Company :	Santee Cooper
Address :	P.O. Box 2946101 OCO3 Moncks Corner, South Carolina 29461
Contact:	Ms. Jeanette Gilmetti
Project:	ABS Lab Analytical
Client Sample ID:	AE94874
Sample ID:	533780004
Matrix:	Ground Water
Collect Date:	28-JAN-21 11:43
Receive Date:	02-FEB-21
Collector:	Client
Project:	SOOP00119
Client ID:	SOOP001

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC, Ra228, Liquid "As Received"													
Radium-228	U	1.43	+/-1.37	2.26	3.00	pCi/L			LXB3	02/23/21	0705	2090245	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		2.22	+/-1.42			pCi/L		1	AEA	02/25/21	1158	2090294	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		0.792	+/-0.364	0.303	1.00	pCi/L			MXH8	02/25/21	0914	2089473	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			84	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: February 26, 2021

Company :	Santee Cooper
Address :	P.O. Box 2946101 OCO3 Moncks Corner, South Carolina 29461
Contact:	Ms. Jeanette Gilmetti
Project:	ABS Lab Analytical

Client Sample ID:	AE94872	Project:	SOOP00119
Sample ID:	533780005	Client ID:	SOOP001
Matrix:	Ground Water		
Collect Date:	26-JAN-21 09:27		
Receive Date:	02-FEB-21		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC, Ra228, Liquid "As Received"													
Radium-228		2.88	+/-1.39	2.06	3.00	pCi/L			LXB3	02/23/21	0705	2090245	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		3.44	+/-1.46			pCi/L		1	AEA	02/25/21	1158	2090294	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	0.559	+/-0.438	0.659	1.00	pCi/L			MXH8	02/25/21	0914	2089473	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			90.6	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: February 26, 2021

Company :	Santee Cooper
Address :	P.O. Box 2946101 OCO3 Moncks Corner, South Carolina 29461
Contact:	Ms. Jeanette Gilmetti
Project:	ABS Lab Analytical

Client Sample ID:	AE94854	Project:	SOOP00119
Sample ID:	533780006	Client ID:	SOOP001
Matrix:	Ground Water		
Collect Date:	26-JAN-21 10:39		
Receive Date:	02-FEB-21		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC, Ra228, Liquid "As Received"													
Radium-228	U	1.29	+/-1.12	1.83	3.00	pCi/L			LXB3	02/23/21	0705	2090245	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		1.73	+/-1.22			pCi/L		1	AEA	02/25/21	1158	2090294	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	0.436	+/-0.477	0.784	1.00	pCi/L			MXH8	02/25/21	0914	2089473	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			90.2	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

QC Summary

Report Date: February 26, 2021

Santee Cooper
P.O. Box 2946101
OCO3
Moncks Corner, South Carolina

Contact: **Ms. Jeanette Gilmetti**

Workorder: **533780**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gas Flow										
Batch 2090245										
QC1204749130 533780006 DUP										
Radium-228	U	1.29	U	0.286	pCi/L	N/A			N/A LXB3	02/23/21 07:05
	Uncertainty	+/-1.12		+/-0.659						
QC1204749131 LCS										
Radium-228	54.8			55.9	pCi/L		102	(75%-125%)		02/23/21 07:05
	Uncertainty			+/-3.76						
QC1204749129 MB										
Radium-228			U	-0.160	pCi/L					02/23/21 07:05
	Uncertainty			+/-0.717						
Rad Ra-226										
Batch 2089473										
QC1204747700 533780004 DUP										
Radium-226		0.792		0.729	pCi/L	8.25		(0% - 100%)	MXH8	02/25/21 09:55
	Uncertainty	+/-0.364		+/-0.366						
QC1204747702 LCS										
Radium-226	54.1			45.0	pCi/L		83.3	(75%-125%)		02/25/21 09:55
	Uncertainty			+/-2.92						
QC1204747699 MB										
Radium-226			U	-0.118	pCi/L					02/25/21 09:55
	Uncertainty			+/-0.277						
QC1204747701 533780004 MS										
Radium-226	135	0.792		168	pCi/L		124	(75%-125%)		02/25/21 09:55
	Uncertainty	+/-0.364		+/-12.1						

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

The Qualifiers in this report are defined as follows:

- ** Analyte is a Tracer compound
- < Result is less than value reported
- > Result is greater than value reported
- BD Results are either below the MDC or tracer recovery is low
- FA Failed analysis.

QC Summary

Workorder: 533780

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time

H	Analytical holding time was exceeded
J	See case narrative for an explanation
J	Value is estimated
K	Analyte present. Reported value may be biased high. Actual value is expected to be lower.
L	Analyte present. Reported value may be biased low. Actual value is expected to be higher.
M	M if above MDC and less than LLD
M	REMP Result > MDC/CL and < RDL
N/A	RPD or %Recovery limits do not apply.
N1	See case narrative
ND	Analyte concentration is not detected above the detection limit
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
R	Sample results are rejected
U	Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
UI	Gamma Spectroscopy--Uncertain identification
UJ	Gamma Spectroscopy--Uncertain identification
UL	Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y	Other specific qualifiers were required to properly define the results. Consult case narrative.
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
h	Preparation or preservation holding time was exceeded

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Radiochemistry
Technical Case Narrative
Santee Cooper
SDG #: 533780

Product: **GFPC, Ra228, Liquid**
Analytical Method: EPA 904.0/SW846 9320 Modified
Analytical Procedure: GL-RAD-A-063 REV# 5
Analytical Batch: 2090245

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
533780001	AE94877
533780002	AE94878
533780003	AE94876
533780004	AE94874
533780005	AE94872
533780006	AE94854
1204749129	Method Blank (MB)
1204749130	533780006(AE94854) Sample Duplicate (DUP)
1204749131	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

There are no exceptions, anomalies or deviations from the specified methods. All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable.

Product: **Lucas Cell, Ra226, Liquid**
Analytical Method: EPA 903.1 Modified
Analytical Procedure: GL-RAD-A-008 REV# 15
Analytical Batch: 2089473

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
533780001	AE94877
533780002	AE94878
533780003	AE94876
533780004	AE94874
533780005	AE94872
533780006	AE94854
1204747699	Method Blank (MB)
1204747700	533780004(AE94874) Sample Duplicate (DUP)
1204747701	533780004(AE94874) Matrix Spike (MS)
1204747702	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Miscellaneous Information

Additional Comments
The matrix spike, 1204747701 (AE94874MS), aliquot was reduced to conserve sample volume.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

3/3/21 – RAD

533780 / 533779

Contract Lab Info: GEL Contract Lab Due Date (Lab Only): 2 / 9 / 21 Send report to lcwillia@santeecooper.com & sjbrown@santeecooper.com

Chain of Custody

santee cooper
Santee Cooper
One Riverwood Drive
Moncks Corner, SC 29461
Phone: (843)761-8000 Ext. 5148
Fax: (843)761-4175

Customer Email/Report Recipient: LCWILLIA @santeecooper.com

Date Results Needed by: ___/___/___

Project/Task/Unit #: 121567 / JM02.09.G01 / 36500

Rerun request for any flagged QC Yes No

Analysis Group

Labworks ID # (Internal use only)	Sample Location/ Description	Collection Date	Collection Time	Sample Collector	Total # of containers	Bottle type: (Glass-G/Plastic-P)	Grab (G) or Composite (C)	Matrix(see below)	Preservative (see below)	Comments • Method # • Reporting limit • Misc. sample info • Any other notes	RAD 226	RAD 228	TOTAL RAD (CALC)	TOC
AE94877	POZ-7	1/28/21	0915	ATH/DEW	3	P/G	G	GW	1/3/2		1	1	X	1
AE94878	POZ-7 DUP	"	0920	"	"	"	"	"	"		"	"	"	"
AE94876	POZ-6	"	1434	"	"	"	"	"	"		"	"	"	"
AE94874	POZ-4	"	1148	"	"	"	"	"	"		"	"	"	"
AE94869	CLFIB-4	1/27/21	0918	ATH/DEW	1	G	G	GW	1/3					X
AE94870	CLFIB-5	"	1021	"	"	"	"	"	"					X
AE94871	CLFIB-5D	1/27/21	1117	ATH/DEW	1	G	G	GW	1/3					X
AE94875	POZ-5D	"	1223	"	"	"	"	"	"					X
AE94873	POZ-3	"	1321	"	"	"	"	"	"					X

Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time
SJBrown	35594	2/2/21	0915	[illegible]	GEL	2/2/21	0915
Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time
[illegible]	GEL	2/2/21	1615	[illegible]	GEL	2/2/21	1615
Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time

Sample Receiving (Internal Use Only)
TEMP (°C):_____ Initial:_____
Correct pH: Yes No
Preservative Lot#:
Date/Time/Init for preservative:

☐ METALS (all)

☐ Ag	☐ Cu	☐ Sb
☐ Al	☐ Fe	☐ Se
☐ As	☐ K	☐ Sn
☐ B	☐ Li	☐ Sr
☐ Ba	☐ Mg	☐ Ti
☐ Be	☐ Mn	☐ Tl
☐ Ca	☐ Mo	☐ V
☐ Cd	☐ Na	☐ Zn
☐ Co	☐ Ni	☐ Hg
☐ Cr	☐ Pb	☐ CrVI

Nutrients
☐ TOC
☐ DOC
☐ TP/TPO4
☐ NH3-N
☐ F
☐ Cl
☐ NO2
☐ Br
☐ NO3
☐ SO4

MISC.
☐ BTEX
☐ Napthalene
☐ THM/HAA
☐ VOC
☐ Oil & Grease
☐ E. Coli
☐ Total Coliform
☐ pH
☐ Dissolved As
☐ Dissolved Fe
☐ Rad 226
☐ Rad 228
☐ PCB

Gypsum
☐ Wallboard Gypsum(*all below*)
☐ AIM
☐ TOC
☐ Total metals
☐ Soluble Metals
☐ Purity ($CaSO_4$)
☐ % Moisture
☐ Sulfites
☐ pH
☐ Chlorides
☐ Particle Size
☐ Sulfur

Coal
☐ Ultimate
☐ % Moisture
☐ Ash
☐ Sulfur
☐ BTUs
☐ Volatile Matter
☐ CHN
Other Tests:
☐ XRF Scan
☐ HGI
☐ Fineness
☐ Particulate Matter

Flyash
☐ Ammonia
☐ LOI
☐ % Carbon
☐ Mineral Analysis
☐ Sieve
☐ % Moisture

NPDES
☐ Oil & Grease
☐ As
☐ TSS

Oil
Trans. Oil Qual.
%Moisture
Color
Acidity
Dielectric Strength
IFT
Dissolved Gases
Used Oil
Flashpoint
Metals in oil
(As, Cd, Cr, Ni, Pb, Hg)
TN
TX
GOFER

Matrix codes: GW-groundwater, DW-drinking water, SW-surface water, WW-waste water, BW-boiler water, L-limestone, Oil-oil, S-Soil, SL-solid, C-coal, G-gypsum, FA-flyash, BA-bottom ash, M-misc (describe in comment section)
Preservative code: 1=4°C 2=HNO_3 3=H_2SO_4 4-HCl 5=$Na_2S_2O_3$ 6-Other (Specify)

3/3/21 - RAD

Contract Lab Info: GEL Contract Lab Due Date (Lab Only): 2 / 9 / 21 Send report to lcwillia@santeecooper.com & slbrown@santeecooper.com

Chain of Custody

santee cooper
Santee Cooper
One Riverwood Drive
Moncks Corner, SC 29461
Phone: (843)761-8000 Ext. 5148
Fax: (843)761-4175

Customer Email/Report Recipient: LCWILLIA @santeecooper.com

Date Results Needed by: ___/___/___

Project/Task/Unit #: 121567 / JM02.09.G01 / 36500

Rerun request for any flagged QC Yes No

Analysis Group

Labworks ID # (Internal use only)	Sample Location/ Description	Collection Date	Collection Time	Sample Collector	Total # of containers	Bottle type: (Glass-G/Plastic-P)	Grab (G) or Composite (C)	Matrix(see below)	Preservative (see below)	Comments • Method # • Reporting limit • Misc. sample info • Any other notes	RAD 226	RAD 228	TOTAL RAD CALC	TOC
AE94872	PM-1	1/26/21	0927	ATH/DEW	3	P/G	G	GW	1/3/2		1	1	X	1
AE94854	CBW-1	〃	1039	〃	〃	〃	〃	〃	〃		〃	〃	X	〃
AE94865	CLFIB-1	1/26/21	1201	〃	1	G	G	GW	1/3					X
AE94866	CLFIB-1 DUP	〃	1206	〃	〃	〃	〃	〃	〃					〃
AE94867	CLFIB-2	〃	1306	〃	〃	〃	〃	〃	〃					〃
AE94868	CLFIB-3	〃	1358	〃	〃	〃	〃	〃	〃					〃

Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time
SBrown	35594	2/2/21	0915	[signature]	GEL	2/2/21	0915
Relinquished by:	**Employee#**	**Date**	**Time**	**Received by:**	**Employee #**	**Date**	**Time**
[signature]	GEL	2-2-21	1615	[signature]	GEL	2/2/21	1615
Relinquished by:	**Employee#**	**Date**	**Time**	**Received by:**	**Employee #**	**Date**	**Time**

Sample Receiving (Internal Use Only)
TEMP (°C): _____ Initial: _____
Correct pH: Yes No
Preservative Lot#:
Date/Time/Init for preservative:

☐ METALS (all)

☐ Ag	☐ Cu	☐ Sb
☐ Al	☐ Fe	☐ Se
☐ As	☐ K	☐ Sn
☐ B	☐ Li	☐ Sr
☐ Ba	☐ Mg	☐ Ti
☐ Be	☐ Mn	☐ Tl
☐ Ca	☐ Mo	☐ V
☐ Cd	☐ Na	☐ Zn
☐ Co	☐ Ni	☐ Hg
☐ Cr	☐ Pb	☐ CrVI

Nutrients
☐ TOC
☐ DOC
☐ TP/TPO4
☐ NH3-N
☐ F
☐ Cl
☐ NO2
☐ Br
☐ NO3
☐ SO4

MISC.
☐ BTEX
☐ Napthalene
☐ THM/HAA
☐ VOC
☐ Oil & Grease
☐ E. Coli
☐ Total Coliform
☐ pH
☐ Dissolved As
☐ Dissolved Fe
☐ Rad 226
☐ Rad 228
☐ PCB

Gypsum
☐ Wallboard Gypsum(*all below*)
☐ AIM
☐ TOC
☐ Total metals
☐ Soluble Metals
☐ Purity (CaSO4)
☐ % Moisture
☐ Sulfites
☐ pH
☐ Chlorides
☐ Particle Size
☐ Sulfur

Coal
☐ Ultimate
☐ % Moisture
☐ Ash
☐ Sulfur
☐ BTUs
☐ Volatile Matter
☐ CHN
Other Tests:
☐ XRF Scan
☐ HGI
☐ Fineness
☐ Particulate Matter

Flyash
☐ Ammonia
☐ LOI
☐ % Carbon
☐ Mineral Analysis
☐ Sieve
☐ % Moisture

NPDES
☐ Oil & Grease
☐ As
☐ TSS

Oil
Trans. Oil Qual.
%Moisture
Color
Acidity
Dielectric Strength
IFT
Dissolved Gases
Used Oil
Flashpoint
Metals in oil (As,Cd,Cr,Ni,Pb Hg)
TAN
COLOR

Matrix codes: GW-groundwater, DW-drinking water, SW-surface water, WW-waste water, BW-boiler water, L-limestone, Oil-oil, S-Soil, SL-solid, C-coal, G-gypsum, FA-flyash, BA-bottom ash, M-misc (describe in comment section)
Preservative Code: 1=HNO_3 2=HNO_3 3=H_2SO_4 4-HCl 5=$Na_2S_2O_3$ 6-Other (Specify)

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: SCOP	SDG/AR/COC/Work Order: 533780/533779 S.R.
Received By: Tye	Date Received: 2/2/21
Carrier and Tracking Number	Circle Applicable: FedEx Express FedEx Ground UPS Field Services Courier Other

Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
A)Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#: If UN2910, Is the Radioactive Shipment Survey Compliant? Yes___ No___
B) Did the client designate the samples are to be received as radioactive?		✓	COC notation or radioactive stickers on containers equal client designation.
C) Did the RSO classify the samples as radioactive?		✓	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0 CPM / mR/Hr Classified as: Rad 1 Rad 2 Rad 3
D) Did the client designate samples are hazardous?		✓	COC notation or hazard labels on containers equal client designation.
E) Did the RSO identify possible hazards?		✓	If D or E is yes, select Hazards below. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other:

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Chain of custody documents included with shipment?	✓			Circle Applicable: Client contacted and provided COC COC created upon receipt
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	✓			Preservation Method: (Wet Ice) Ice Packs Dry ice None Other: *all temperatures are recorded in Celsius TEMP: 2C
4	Daily check performed and passed on IR temperature gun?	✓			Temperature Device Serial #: IR3-19 Secondary Temperature Device Serial # (If Applicable):
5	Sample containers intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6	Samples requiring chemical preservation at proper pH?	✓			Sample ID's and Containers Affected: If Preservation added, Lot#:
7	Do any samples require Volatile Analysis?			✓	If Yes, are Encores or Soil Kits present for solids? Yes___ No___ NA___(If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes___ No___ NA___(If unknown, select No) Are liquid VOA vials free of headspace? Yes___ No___ NA___ Sample ID's and containers affected:
8	Samples received within holding time?	✓			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	✓			ID's and containers affected:
10	Date & time on COC match date & time on bottles?	✓			Circle Applicable: No dates on containers No times on containers COC missing info Other (describe)
11	Number of containers received match number indicated on COC?	✓			Circle Applicable: No container count on COC Other (describe)
12	Are sample containers identifiable as GEL provided by use of GEL labels?	✓			
13	COC form is properly signed in relinquished/received sections?	✓			Circle Applicable: Not relinquished Other (describe)

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials CAD Date 2/2/21 Page 1 of 1

GL-CHL-SR-001 Rev 7

List of current GEL Certifications as of 26 February 2021

State	Certification
Alabama	42200
Alaska	17-018
Alaska Drinking Water	SC00012
Arkansas	88-0651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2019020
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122021-1
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	2019-165
Pennsylvania NELAP	68-00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-21-19
Utah NELAP	SC000122020-34
Vermont	VT87156
Virginia NELAP	460202
Washington	C780

GEL Laboratories LLC
a member of The GEL Group INC

PO Box 30712 Charleston, SC 29417
2040 Savage Road Charleston, SC 29407
P 843.556.8171
F 843.766.1178

gel.com

March 08, 2021

Ms. Jeanette Gilmetti
Santee Cooper
P.O. Box 2946101
OCO3
Moncks Corner, South Carolina 29461

Re: ABS Lab Analytical
Work Order: 534607

Dear Ms. Gilmetti:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on February 09, 2021. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Test results for NELAP or ISO 17025 accredited tests are verified to meet the requirements of those standards, with any exceptions noted. The results reported relate only to the items tested and to the sample as received by the laboratory. These results may not be reproduced except as full reports without approval by the laboratory. Copies of GEL's accreditations and certifications can be found on our website at www.gel.com.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4289.

Sincerely,

Julie Robinson

Julie Robinson
Project Manager

Purchase Order: 367074
Enclosures

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis Report
for

SOOP001 Santee Cooper

Client SDG: 534607 GEL Work Order: 534607

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a Tracer compound

** Analyte is a surrogate compound

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Julie Robinson.

Reviewed by Julie Robinson

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: March 8, 2021

Company :	Santee Cooper
Address :	P.O. Box 2946101 OCO3 Moncks Corner, South Carolina 29461
Contact:	Ms. Jeanette Gilmetti
Project:	ABS Lab Analytical
Client Sample ID:	AE94839
Sample ID:	534607001
Matrix:	Ground Water
Collect Date:	02-FEB-21 12:06
Receive Date:	09-FEB-21
Collector:	Client
Project:	SOOP00119
Client ID:	SOOP001

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC, Ra228, Liquid "As Received"													
Radium-228	U	0.243	+/-0.966	1.77	3.00	pCi/L			LXB3	03/01/21	0949	2092726	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		1.34	+/-1.10			pCi/L		1	AEA	03/08/21	0809	2098438	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		1.10	+/-0.524	0.632	1.00	pCi/L			MXH8	03/05/21	0956	2091173	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			79.3	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: March 8, 2021

Company :	Santee Cooper
Address :	P.O. Box 2946101 OCO3 Moncks Corner, South Carolina 29461
Contact:	Ms. Jeanette Gilmetti
Project:	ABS Lab Analytical
Client Sample ID:	AE94847
Sample ID:	534607002
Matrix:	Ground Water
Collect Date:	02-FEB-21 13:39
Receive Date:	09-FEB-21
Collector:	Client
Project:	SOOP00119
Client ID:	SOOP001

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC, Ra228, Liquid "As Received"													
Radium-228		1.92	+/-0.973	1.30	3.00	pCi/L			LXB3	03/01/21	0949	2092726	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		2.33	+/-1.03			pCi/L		1	AEA	03/08/21	0809	2098438	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	0.402	+/-0.353	0.539	1.00	pCi/L			MXH8	03/05/21	0956	2091173	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			75.5	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: March 8, 2021

Company :	Santee Cooper
Address :	P.O. Box 2946101 OCO3 Moncks Corner, South Carolina 29461
Contact:	Ms. Jeanette Gilmetti
Project:	ABS Lab Analytical
Client Sample ID:	AE94848
Sample ID:	534607003
Matrix:	Ground Water
Collect Date:	02-FEB-21 13:44
Receive Date:	09-FEB-21
Collector:	Client
Project:	SOOP00119
Client ID:	SOOP001

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC, Ra228, Liquid "As Received"													
Radium-228		2.72	+/-1.20	1.62	3.00	pCi/L			LXB3	03/01/21	0949	2092726	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		3.88	+/-1.33			pCi/L		1	AEA	03/08/21	0809	2098438	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		1.16	+/-0.585	0.727	1.00	pCi/L			MXH8	03/05/21	0956	2091173	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			77.7	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: March 8, 2021

Company :	Santee Cooper
Address :	P.O. Box 2946101 OCO3 Moncks Corner, South Carolina 29461
Contact:	Ms. Jeanette Gilmetti
Project:	ABS Lab Analytical
Client Sample ID:	AE94845
Sample ID:	534607004
Matrix:	Ground Water
Collect Date:	03-FEB-21 11:15
Receive Date:	09-FEB-21
Collector:	Client
Project:	SOOP00119
Client ID:	SOOP001

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC, Ra228, Liquid "As Received"													
Radium-228		2.59	+/-1.11	1.48	3.00	pCi/L			LXB3	03/01/21	0949	2092726	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		3.86	+/-1.20			pCi/L		1	AEA	03/08/21	0809	2098438	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		1.27	+/-0.466	0.380	1.00	pCi/L			MXH8	03/05/21	0956	2091173	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			83.9	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: March 8, 2021

Company :	Santee Cooper
Address :	P.O. Box 2946101 OCO3 Moncks Corner, South Carolina 29461
Contact:	Ms. Jeanette Gilmetti
Project:	ABS Lab Analytical
Client Sample ID:	AE94843
Sample ID:	534607005
Matrix:	Ground Water
Collect Date:	03-FEB-21 12:48
Receive Date:	09-FEB-21
Collector:	Client
Project:	SOOP00119
Client ID:	SOOP001

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC, Ra228, Liquid "As Received"													
Radium-228		15.0	+/-2.32	2.29	3.00	pCi/L			LXB3	03/03/21	0621	2092726	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		21.3	+/-2.54			pCi/L		1	AEA	03/08/21	0809	2098438	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		6.31	+/-1.05	0.481	1.00	pCi/L			MXH8	03/05/21	0956	2091173	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			80.8	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: March 8, 2021

Company :	Santee Cooper
Address :	P.O. Box 2946101 OCO3 Moncks Corner, South Carolina 29461
Contact:	Ms. Jeanette Gilmetti
Project:	ABS Lab Analytical
Client Sample ID:	AE94841
Sample ID:	534607006
Matrix:	Ground Water
Collect Date:	03-FEB-21 13:49
Receive Date:	09-FEB-21
Collector:	Client
Project:	SOOP00119
Client ID:	SOOP001

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC, Ra228, Liquid "As Received"													
Radium-228	U	1.58	+/-1.33	2.16	3.00	pCi/L			LXB3	03/01/21	0949	2092726	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		2.29	+/-1.38			pCi/L		1	AEA	03/08/21	0809	2098438	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		0.714	+/-0.359	0.321	1.00	pCi/L			MXH8	03/05/21	0956	2091173	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			75.1	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

GEL LABORATORIES LLC
2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: March 8, 2021

Santee Cooper
P.O. Box 2946101
OCO3
Moncks Corner, South Carolina

Contact: **Ms. Jeanette Gilmetti**

Workorder: **534607**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gas Flow										
Batch 2092726										
QC1204754313 534962004 DUP										
Radium-228		3.63		4.58	pCi/L	23.1		(0% - 100%)	LXB3	03/01/21 09:49
	Uncertainty	+/-1.20		+/-1.47						
QC1204754314 LCS										
Radium-228	54.7			53.3	pCi/L		97.4	(75%-125%)		03/01/21 09:48
	Uncertainty			+/-3.59						
QC1204754312 MB										
Radium-228			U	-0.104	pCi/L					03/01/21 09:49
	Uncertainty			+/-0.780						
Rad Ra-226										
Batch 2091173										
QC1204751180 534607001 DUP										
Radium-226		1.10		1.01	pCi/L	7.99		(0% - 100%)	MXH8	03/05/21 10:32
	Uncertainty	+/-0.524		+/-0.470						
QC1204751182 LCS										
Radium-226	27.0			26.5	pCi/L		97.8	(75%-125%)		03/05/21 10:32
	Uncertainty			+/-2.08						
QC1204751179 MB										
Radium-226			U	0.267	pCi/L					03/05/21 10:32
	Uncertainty			+/-0.289						
QC1204751181 534607001 MS										
Radium-226	27.0	1.10		23.2	pCi/L		81.6	(75%-125%)		03/05/21 12:15
	Uncertainty	+/-0.524		+/-2.08						

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

The Qualifiers in this report are defined as follows:

- ** Analyte is a Tracer compound
- < Result is less than value reported
- > Result is greater than value reported
- BD Results are either below the MDC or tracer recovery is low
- FA Failed analysis.

QC Summary

Workorder: 534607

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time

H	Analytical holding time was exceeded
J	See case narrative for an explanation
J	Value is estimated
K	Analyte present. Reported value may be biased high. Actual value is expected to be lower.
L	Analyte present. Reported value may be biased low. Actual value is expected to be higher.
M	M if above MDC and less than LLD
M	REMP Result > MDC/CL and < RDL
N/A	RPD or %Recovery limits do not apply.
N1	See case narrative
ND	Analyte concentration is not detected above the detection limit
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
R	Sample results are rejected
U	Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
UI	Gamma Spectroscopy--Uncertain identification
UJ	Gamma Spectroscopy--Uncertain identification
UL	Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y	Other specific qualifiers were required to properly define the results. Consult case narrative.
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
h	Preparation or preservation holding time was exceeded

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Radiochemistry
Technical Case Narrative
Santee Cooper
SDG #: 534607

Product: **GFPC, Ra228, Liquid**
Analytical Method: EPA 904.0/SW846 9320 Modified
Analytical Procedure: GL-RAD-A-063 REV# 5
Analytical Batch: 2092726

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
534607001	AE94839
534607002	AE94847
534607003	AE94848
534607004	AE94845
534607005	AE94843
534607006	AE94841
1204754312	Method Blank (MB)
1204754313	534962004(AE94864) Sample Duplicate (DUP)
1204754314	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information

Recounts
Sample 534607005 (AE94843) was re-eluted and recounted to verify sample result. The recount is reported.

Product: **Lucas Cell, Ra226, Liquid**
Analytical Method: EPA 903.1 Modified
Analytical Procedure: GL-RAD-A-008 REV# 15
Analytical Batch: 2091173

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
534607001	AE94839
534607002	AE94847
534607003	AE94848
534607004	AE94845
534607005	AE94843

534607006	AE94841
1204751179	Method Blank (MB)
1204751180	534607001(AE94839) Sample Duplicate (DUP)
1204751181	534607001(AE94839) Matrix Spike (MS)
1204751182	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information

Recounts
Sample 1204751181 (AE94839MS) was recounted due to low recovery. The recount is reported.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

Contract Lab Info: GEL Contract Lab Due Date (Lab Only): 3 / 9 / 21 Send report to lcwillia@santeecooper.com & sjbrown@santeecooper.com

5346607

Chain of Custody

santee cooper
Santee Cooper
One Riverwood Drive
Moncks Corner, SC 29461
Phone: (843)761-8000 Ext. 5148
Fax: (843)761-4175

Customer Email/Report Recipient: LCWILLIA@santeecooper.com

Date Results Needed by: ___/___/___

Project/Task/Unit #: 121567 / JM02.09.G01 / 36500

Rerun request for any flagged QC Yes No

Analysis Group

Labworks ID # (Internal use only)	Sample Location/ Description	Collection Date	Collection Time	Sample Collector	Total # of containers	Bottle type: (Glass-G/Plastic-P)	Grab (G) or Composite (C)	Matrix(see below)	Preservative (see below)	Comments • Method # • Reporting limit • Misc. sample info • Any other notes	RAD 226	RAD 228	TOTAL RAD CALC.	
AE94839	CAP-1	2/2/21	1206	MDG/DEW	2	P	G	GW	2		X	X	X	
AE94847	CAP-9	"	1339	"	"	"	"	"	"		"	"	"	
AE94848	CAP-9 DUP	"	1344	"	"	"	"	"	"		"	"	"	
AE94845	CAP-7	2/3/21	1115	"	"	"	"	"	"		"	"	"	
AE94843	CAP-5	"	1248	"	"	"	"	"	"		"	"	"	
AE94841	CAP-3	"	1349	"	"	"	"	"	"		"	"	"	

Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time
SJBrown	35594	2/9/21	0945	[signature]	GEL	2/9/21	0945
Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time
[signature]	GE	2.9.21	1535	[signature]	GEL	2/9/21	15:35
Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time

Sample Receiving (Internal Use Only)
TEMP (°C):_____ Initial:_____
Correct pH: Yes No
Preservative Lot#:
Date/Time/Init for preservative:

☐ **METALS (all)**

☐ Ag	☐ Cu	☐ Sb
☐ Al	☐ Fe	☐ Se
☐ As	☐ K	☐ Sn
☐ B	☐ Li	☐ Sr
☐ Ba	☐ Mg	☐ Ti
☐ Be	☐ Mn	☐ Tl
☐ Ca	☐ Mo	☐ V
☐ Cd	☐ Na	☐ Zn
☐ Co	☐ Ni	☐ Hg
☐ Cr	☐ Pb	☐ CrVI

Nutrients
☐ TOC
☐ DOC
☐ TP/TPO4
☐ NH3-N
☐ F
☐ Cl
☐ NO2
☐ Br
☐ NO3
☐ SO4

MISC.
☐ BTEX
☐ Napthalene
☐ THM/HAA
☐ VOC
☐ Oil & Grease
☐ E. Coli
☐ Total Coliform
☐ pH
☐ Dissolved As
☐ Dissolved Fe
☐ Rad 226
☐ Rad 228
☐ PCB

Gypsum
☐ Wallboard Gypsum(*all below*)
☐ AIM
☐ TOC
☐ Total metals
☐ Soluble Metals
☐ Purity (CaSO4)
☐ % Moisture
☐ Sulfites
☐ pH
☐ Chlorides
☐ Particle Size
☐ Sulfur

Coal
☐ Ultimate
☐ % Moisture
☐ Ash
☐ Sulfur
☐ BTUs
☐ Volatile Matter
☐ CHN
Other Tests:
☐ XRF Scan
☐ HGI
☐ Fineness
☐ Particulate Matter

Flyash
☐ Ammonia
☐ LOI
☐ % Carbon
☐ Mineral Analysis
☐ Sieve
☐ % Moisture

NPDES
☐ Oil & Grease
☐ As
☐ TSS

Oil
Trans. Oil Qual.
% Moisture
Color
Acidity
Dielectric Strength
IFT
Dissolved Gases
Used Oil
Flashpoint
Metals in oil (As,Cd,Cr,Ni,Pb Hg)
TX
GOFER

Matrix codes: GW-groundwater, DW-drinking water, SW-surface water, WW-waste water, BW-boiler water, L-limestone, Oil-oil, S-Soil, SL-solid, C-coal, G-gypsum, FA-flyash, BA-bottom ash, M-misc (describe in comment section)
Preservative code-1=4°C 2=HNO_3 3=H_2SO_4 4-HCl 5=$Na_2S_2O_3$ 6-Other (Specify)

GEL Laboratories LLC

JH

SAMPLE RECEIPT & REVIEW FORM

Client: SOOP	**SDG/AR/COC/Work Order:** 534607
Received By: AJA	**Date Received:** 2/9/21
Carrier and Tracking Number	Circle Applicable: FedEx Express FedEx Ground UPS Field Services (Courier) Other

Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
A)Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#: If UN2910, Is the Radioactive Shipment Survey Compliant? Yes___ No___
B) Did the client designate the samples are to be received as radioactive?		✓	COC notation or radioactive stickers on containers equal client designation.
C) Did the RSO classify the samples as radioactive?		✓	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0 CPM / mR/Hr **Classified as: Rad 1 Rad 2 Rad 3**
D) Did the client designate samples are hazardous?		✓	COC notation or hazard labels on containers equal client designation.
E) Did the RSO identify possible hazards?		✓	If D or E is yes, select Hazards below. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other:

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Chain of custody documents included with shipment?	✓			Circle Applicable: Client contacted and provided COC COC created upon receipt
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*			✓	Preservation Method: Wet Ice Ice Packs Dry ice (None) Other: *all temperatures are recorded in Celsius TEMP: 21°
4	Daily check performed and passed on IR temperature gun?	✓			Temperature Device Serial #: IR1-21 Secondary Temperature Device Serial # (If Applicable):
5	Sample containers intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6	Samples requiring chemical preservation at proper pH?	✓			Sample ID's and Containers Affected: If Preservation added, Lot#:
7	Do any samples require Volatile Analysis?			✓	If Yes, are Encores or Soil Kits present for solids? Yes___ No___ NA___(If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes___ No___ NA___(If unknown, select No) Are liquid VOA vials free of headspace? Yes___ No___ NA___ Sample ID's and containers affected:
8	Samples received within holding time?	✓			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	✓			ID's and containers affected:
10	Date & time on COC match date & time on bottles?	✓			Circle Applicable: No dates on containers No times on containers COC missing info Other (describe)
11	Number of containers received match number indicated on COC?	✓			Circle Applicable: No container count on COC Other (describe)
12	Are sample containers identifiable as GEL provided by use of GEL labels?	✓			
13	COC form is properly signed in relinquished/received sections?	✓			Circle Applicable: Not relinquished Other (describe)

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials NRG Date 2/10/21 Page 1 of 1

GL-CHL-SR-001 Rev 7

List of current GEL Certifications as of 08 March 2021

State	Certification
Alabama	42200
Alaska	17-018
Alaska Drinking Water	SC00012
Arkansas	88-0651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2019020
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122021-1
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	2019-165
Pennsylvania NELAP	68-00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-21-19
Utah NELAP	SC000122020-34
Vermont	VT87156
Virginia NELAP	460202
Washington	C780

GEL Laboratories LLC
a member of The GEL Group INC

PO Box 30712 Charleston, SC 29417
2040 Savage Road Charleston, SC 29407
P 843.556.8171
F 843.766.1178

gel.com

July 26, 2021

Ms. Jeanette Gilmetti
Santee Cooper
P.O. Box 2946101
OCO3
Moncks Corner, South Carolina 29461

Re: ABS Lab Analytical
Work Order: 548337

Dear Ms. Gilmetti:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on June 25, 2021. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Test results for NELAP or ISO 17025 accredited tests are verified to meet the requirements of those standards, with any exceptions noted. The results reported relate only to the items tested and to the sample as received by the laboratory. These results may not be reproduced except as full reports without approval by the laboratory. Copies of GEL's accreditations and certifications can be found on our website at www.gel.com.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4289.

Sincerely,

Julie Robinson
Project Manager

Purchase Order: 367074
Enclosures

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis Report
for

SOOP001 Santee Cooper

Client SDG: 548337 GEL Work Order: 548337

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a Tracer compound

** Analyte is a surrogate compound

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Julie Robinson.

Reviewed by Julie Robinson

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: July 26, 2021

Company :	Santee Cooper
Address :	P.O. Box 2946101 OCO3 Moncks Corner, South Carolina 29461
Contact:	Ms. Jeanette Gilmetti
Project:	ABS Lab Analytical
Client Sample ID:	AF07244
Sample ID:	548337001
Matrix:	Ground Water
Collect Date:	24-JUN-21 12:19
Receive Date:	25-JUN-21
Collector:	Client
Project:	SOOP00119
Client ID:	SOOP001

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC, Ra228, Liquid "As Received"													
Radium-228	U	0.659	+/-1.18	2.07	3.00	pCi/L			JXC9	07/06/21	1315	2144300	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		0.789	+/-1.19			pCi/L		1	AEA	07/20/21	0551	2144335	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	0.130	+/-0.190	0.332	1.00	pCi/L			LXP1	07/13/21	0828	2144215	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			79.4	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: July 26, 2021

Company :	Santee Cooper
Address :	P.O. Box 2946101 OCO3 Moncks Corner, South Carolina 29461
Contact:	Ms. Jeanette Gilmetti
Project:	ABS Lab Analytical
Client Sample ID:	AF07286
Sample ID:	548337003
Matrix:	Ground Water
Collect Date:	24-JUN-21 10:40
Receive Date:	25-JUN-21
Collector:	Client
Project:	SOOP00119
Client ID:	SOOP001

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC, Ra228, Liquid "As Received"													
Radium-228	U	1.50	+/-1.16	1.81	3.00	pCi/L			JXC9	07/06/21	1315	2144300	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		1.63	+/-1.17			pCi/L		1	AEA	07/20/21	0551	2144335	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	0.124	+/-0.151	0.254	1.00	pCi/L			LXP1	07/13/21	0828	2144215	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			78.8	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: July 26, 2021

Company :	Santee Cooper
Address :	P.O. Box 2946101 OCO3 Moncks Corner, South Carolina 29461
Contact:	Ms. Jeanette Gilmetti
Project:	ABS Lab Analytical
Client Sample ID:	AF07287
Sample ID:	548337004
Matrix:	Ground Water
Collect Date:	24-JUN-21 10:45
Receive Date:	25-JUN-21
Collector:	Client
Project:	SOOP00119
Client ID:	SOOP001

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC, Ra228, Liquid "As Received"													
Radium-228	U	0.116	+/-0.995	1.87	3.00	pCi/L			JXC9	07/06/21	1315	2144300	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		0.977	+/-1.03			pCi/L		1	AEA	07/20/21	0551	2144335	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		0.862	+/-0.270	0.230	1.00	pCi/L			LXP1	07/13/21	0828	2144215	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			84.5	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: July 26, 2021

Company :	Santee Cooper
Address :	P.O. Box 2946101 OCO3 Moncks Corner, South Carolina 29461
Contact:	Ms. Jeanette Gilmetti
Project:	ABS Lab Analytical
Client Sample ID:	AF07281
Sample ID:	548337005
Matrix:	Ground Water
Collect Date:	21-JUN-21 13:08
Receive Date:	25-JUN-21
Collector:	Client
Project:	SOOP00119
Client ID:	SOOP001

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC, Ra228, Liquid "As Received"													
Radium-228	U	1.73	+/-1.22	1.89	3.00	pCi/L			JXC9	07/06/21	1315	2144300	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		2.10	+/-1.23			pCi/L		1	AEA	07/20/21	0551	2144335	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		0.369	+/-0.179	0.194	1.00	pCi/L			LXP1	07/13/21	0828	2144215	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			89.3	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: July 26, 2021

Company :	Santee Cooper
Address :	P.O. Box 2946101 OCO3 Moncks Corner, South Carolina 29461
Contact:	Ms. Jeanette Gilmetti
Project:	ABS Lab Analytical
Client Sample ID:	AF07259
Sample ID:	548337006
Matrix:	Ground Water
Collect Date:	21-JUN-21 14:13
Receive Date:	25-JUN-21
Collector:	Client
Project:	SOOP00119
Client ID:	SOOP001

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC, Ra228, Liquid "As Received"													
Radium-228	U	0.120	+/-1.04	1.96	3.00	pCi/L			JXC9	07/06/21	1315	2144300	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		0.552	+/-1.06			pCi/L		1	AEA	07/20/21	0551	2144335	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		0.433	+/-0.218	0.254	1.00	pCi/L			LXP1	07/13/21	0828	2144215	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			83	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: July 26, 2021

Company :	Santee Cooper
Address :	P.O. Box 2946101 OCO3 Moncks Corner, South Carolina 29461
Contact:	Ms. Jeanette Gilmetti
Project:	ABS Lab Analytical
Client Sample ID:	AF07283
Sample ID:	548337007
Matrix:	Ground Water
Collect Date:	23-JUN-21 13:55
Receive Date:	25-JUN-21
Collector:	Client
Project:	SOOP00119
Client ID:	SOOP001

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC, Ra228, Liquid "As Received"													
Radium-228	U	-0.898	+/-0.740	1.73	3.00	pCi/L			JXC9	07/06/21	1315	2144300	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		0.244	+/-0.757			pCi/L		1	AEA	07/20/21	0551	2144335	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		0.244	+/-0.160	0.195	1.00	pCi/L			LXP1	07/13/21	0828	2144215	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			88.4	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: July 26, 2021

Company :	Santee Cooper
Address :	P.O. Box 2946101 OCO3 Moncks Corner, South Carolina 29461
Contact:	Ms. Jeanette Gilmetti
Project:	ABS Lab Analytical
Client Sample ID:	AF07285
Sample ID:	548337008
Matrix:	Ground Water
Collect Date:	23-JUN-21 15:04
Receive Date:	25-JUN-21
Collector:	Client
Project:	SOOP00119
Client ID:	SOOP001

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC, Ra228, Liquid "As Received"													
Radium-228	U	0.801	+/-1.20	2.07	3.00	pCi/L			JXC9	07/06/21	1315	2144300	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		0.971	+/-1.20			pCi/L		1	AEA	07/20/21	0551	2144335	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	0.170	+/-0.144	0.203	1.00	pCi/L			LXP1	07/13/21	0900	2144215	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			80	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

QC Summary

Report Date: July 26, 2021

Santee Cooper
P.O. Box 2946101
OCO3
Moncks Corner, South Carolina

Contact: **Ms. Jeanette Gilmetti**

Workorder: **548337**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gas Flow											
Batch 2144300											
QC1204852392 548337008 DUP											
Radium-228	U	0.801	U	-0.509	pCi/L	N/A			N/A JXC9	07/06/21	13:15
	Uncertainty	+/-1.20		+/-0.937							
QC1204852393 LCS											
Radium-228	51.1			51.6	pCi/L		101	(75%-125%)		07/06/21	13:15
	Uncertainty			+/-4.05							
QC1204852391 MB											
Radium-228			U	-1.27	pCi/L					07/06/21	13:15
	Uncertainty			+/-0.862							
Rad Ra-226											
Batch 2144215											
QC1204852184 548337001 DUP											
Radium-226	U	0.130	U	0.270	pCi/L	N/A			N/A LXP1	07/13/21	09:00
	Uncertainty	+/-0.190		+/-0.196							
QC1204852186 LCS											
Radium-226	26.8			23.6	pCi/L		87.9	(75%-125%)		07/13/21	09:00
	Uncertainty			+/-1.30							
QC1204852183 MB											
Radium-226			U	0.107	pCi/L					07/13/21	09:00
	Uncertainty			+/-0.111							
QC1204852185 548337001 MS											
Radium-226	134 U	0.130		115	pCi/L		85.6	(75%-125%)		07/13/21	09:00
	Uncertainty	+/-0.190		+/-6.66							

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

The Qualifiers in this report are defined as follows:

- ** Analyte is a Tracer compound
- < Result is less than value reported
- > Result is greater than value reported
- BD Results are either below the MDC or tracer recovery is low
- FA Failed analysis.

QC Summary

Workorder: 548337

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time

H	Analytical holding time was exceeded
J	See case narrative for an explanation
J	Value is estimated
K	Analyte present. Reported value may be biased high. Actual value is expected to be lower.
L	Analyte present. Reported value may be biased low. Actual value is expected to be higher.
M	M if above MDC and less than LLD
M	REMP Result > MDC/CL and < RDL
N/A	RPD or %Recovery limits do not apply.
N1	See case narrative
ND	Analyte concentration is not detected above the detection limit
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
R	Sample results are rejected
U	Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
UI	Gamma Spectroscopy--Uncertain identification
UJ	Gamma Spectroscopy--Uncertain identification
UL	Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y	Other specific qualifiers were required to properly define the results. Consult case narrative.
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
h	Preparation or preservation holding time was exceeded

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Radiochemistry
Technical Case Narrative
Santee Cooper
SDG #: 548337

Product: **GFPC, Ra228, Liquid**
Analytical Method: EPA 904.0/SW846 9320 Modified
Analytical Procedure: GL-RAD-A-063 REV# 5
Analytical Batch: 2144300

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
548337001	AF07244
548337003	AF07286
548337004	AF07287
548337005	AF07281
548337006	AF07259
548337007	AF07283
548337008	AF07285
1204852391	Method Blank (MB)
1204852392	548337008(AF07285) Sample Duplicate (DUP)
1204852393	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

There are no exceptions, anomalies or deviations from the specified methods. All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable.

Product: **Lucas Cell, Ra226, Liquid**
Analytical Method: EPA 903.1 Modified
Analytical Procedure: GL-RAD-A-008 REV# 15
Analytical Batch: 2144215

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
548337001	AF07244
548337003	AF07286
548337004	AF07287
548337005	AF07281
548337006	AF07259
548337007	AF07283
548337008	AF07285
1204852183	Method Blank (MB)
1204852184	548337001(AF07244) Sample Duplicate (DUP)

1204852185	548337001(AF07244) Matrix Spike (MS)
1204852186	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Miscellaneous Information

Additional Comments
The matrix spike, 1204852185 (AF07244MS), aliquot was reduced to conserve sample volume.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

7/26/21 - RAD

Contract Lab Info: GEL Contract Lab Due Date (Lab Only): 7 / 2 / 21 Send report to lcwillia@santeecooper.com & sjbrown@santeecooper.com

Chain of Custody

548333
548337

santee cooper
Santee Cooper
One Riverwood Drive
Moncks Corner, SC 29461
Phone: (843)761-8000 Ext. 5148
Fax: (843)761-4175

Customer Email/Report Recipient: LCWILLIA@santeecooper.com

Date Results Needed by: ___/___/___

Project/Task/Unit #: 121567 / JM02.09.G01 / 36500

Rerun request for any flagged QC Yes No

Labworks ID # (Internal use only)	Sample Location/ Description	Collection Date	Collection Time	Sample Collector	Total # of containers	Bottle type: (Glass-G/Plastic-P)	Grab (G) or Composite (C)	Matrix(see below)	Preservative (see below)	Comments • Method # • Reporting limit • Misc. sample info • Any other notes	Analysis Group: TOC	RAD 226	RAD 228	TOTAL RAD CALC.
AF07280	CLF1B-5D	6/23/21	1029	BRT/ML	1	G	G	GW	1/3		X			
AF07284	POZ-5D	"	1249	"	1	G	G	GW	"		X			
AF07279	CLF1B-5	"	0915	"	1	G	G	GW	"		X			
AF07244	CAP-1	6/24/21	1219	BRT/ML	2	P	G	GW	2			X	X	X
AF07246	CAP-3	"	1340	"	2	P	G	GW	2			X	X	X
AF07286	POZ-7	"	1040	"	3	P/G	G	GW	2/1,3		X	X	X	X
AF07287	POZ-7 DUP	"	1045	"	3	P/G	G	GW	2/1,3		X	X	X	X
AF07282	POZ-3	6/24/21	0918	"	1	G	G	GW	1,3		X			

Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time
SJBrown	35594	6/25/21	1310		GEL	6/25/21	1310
Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time
	GEL	6/25/21	1446		GEL	6/25/21	1446
Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time

Sample Receiving (Internal Use Only)
TEMP (°C): _____ Initial: _____
Correct pH: Yes No
Preservative Lot#:
Date/Time/Init for preservative:

☐ METALS (all)

☐ Ag	☐ Cu	☐ Sb
☐ Al	☐ Fe	☐ Se
☐ As	☐ K	☐ Sn
☐ B	☐ Li	☐ Sr
☐ Ba	☐ Mg	☐ Ti
☐ Be	☐ Mn	☐ Tl
☐ Ca	☐ Mo	☐ V
☐ Cd	☐ Na	☐ Zn
☐ Co	☐ Ni	☐ Hg
☐ Cr	☐ Pb	☐ CrVI

Nutrients
☐ TOC
☐ DOC
☐ TP/TPO4
☐ NH3-N
☐ F
☐ Cl
☐ NO2
☐ Br
☐ NO3
☐ SO4

MISC.
☐ BTEX
☐ Napthalene
☐ THM/HAA
☐ VOC
☐ Oil & Grease
☐ E. Coli
☐ Total Coliform
☐ pH
☐ Dissolved As
☐ Dissolved Fe
☐ Rad 226
☐ Rad 228
☐ PCB

Gypsum
☐ Wallboard Gypsum *(all below)*
☐ AIM
☐ TOC
☐ Total metals
☐ Soluble Metals
☐ Purity ($CaSO_4$)
☐ % Moisture
☐ Sulfites
☐ pH
☐ Chlorides
☐ Particle Size
☐ Sulfur

Coal
☐ Ultimate
☐ % Moisture
☐ Ash
☐ Sulfur
☐ BTUs
☐ Volatile Matter
☐ CHN
Other Tests:
☐ XRF Scan
☐ HGI
☐ Fineness
☐ Particulate Matter

Flyash
☐ Ammonia
☐ LOI
☐ % Carbon
☐ Mineral Analysis
☐ Sieve
☐ % Moisture

NPDES
☐ Oil & Grease
☐ As
☐ TSS

Oil
Trans. Oil Qual.
☐ %Moisture
☐ Color
☐ Acidity
☐ Dielectric Strength
☐ IFT
☐ Dissolved Gases
Used Oil
☐ Flashpoint
☐ Metals in oil (As, Cd, Cr, Ni, Pb, Hg)
☐ TX
☐ GOFER

Matrix codes: GW-groundwater, DW-drinking water, SW-surface water, WW-waste water, BW-boiler water, L-limestone, Oil-oil, S-Soil, SL-solid, C-coal, G-gypsum, FA-flyash, BA-bottom ash, M-misc (describe in comment section)
Preservative Code: 1=4°C 2=HNO_3 3=H_2SO_4 4-HCl 5=$Na_2S_2O_3$ 6-Other (Specify)

7/26/21 - RAD

Contract Lab Info: _____ Contract Lab Due Date (Lab Only): 7 / 2 / 21 Send report to lcwillia@santeecooper.com & sjbrown@santeecooper.com

Chain of Custody

santee cooper
Santee Cooper
One Riverwood Drive
Moncks Corner, SC 29461
Phone: (843)761-8000 Ext. 5148
Fax: (843)761-4175

Customer Email/Report Recipient: LCWILLIA @santeecooper.com

Date Results Needed by: ___/___/___

Project/Task/Unit #: 121567 / JM02.09.G01 / 36500

Rerun request for any flagged QC Yes No

Analysis Group

Labworks ID # (Internal use only)	Sample Location/ Description	Collection Date	Collection Time	Sample Collector	Total # of containers	Bottle type: (Glass-G/Plastic-P)	Grab (G) or Composite (C)	Matrix(see below)	Preservative (see below)	Comments • Method # • Reporting limit • Misc. sample info • Any other notes	RAD 226	RAD 228	TOTAL RAD CALC	TOC
AF07281	PM-1	6/21/21	1308	MDG/BRT	3	P/G	G	GW	2/1,3		X	X	X	X
AF07259	CBW-1	〃	1413	〃	3	P/G	G	GW	2/1,3		X	X	X	X
AF07274	CLF1B-1	6/22/21	1007	BRT/ML	1	G	G		1,3					X
AF07275	CLF1B-1 DUP	〃	1012	〃	〃	〃	〃	〃	〃					X
AF07276	CLF1B-2	〃	1213	〃	〃	〃	〃	〃	〃					X
AF07277	CLF1B-3	〃	1358	〃	〃	〃	〃	〃	〃					X
AF07278	CLF1B-4	〃	1454	〃	〃	〃	〃	〃	〃					X
AF07283	POZ-4	6/23/21	1355	BRT/ML	3	P/G	G	GW	2/1,3		X	X	X	X
AF07285	POZ-6	〃	1504	〃	〃	〃	〃	〃	〃		X	X	X	X

Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time
SJBrown	35594	6/25/21	1310	GEL	GEL	6/25/21	1310
Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time
[illegible]	[illegible]	6/25/21	1440	[illegible]	GEL	6/25/21	1440
Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time

Sample Receiving (Internal Use Only)
TEMP (°C): _____ Initial: _____
Correct pH: Yes No
Preservative Lot#:
Date/Time/Init for preservative:

☐ METALS (all)

☐ Ag	☐ Cu	☐ Sb
☐ Al	☐ Fe	☐ Se
☐ As	☐ K	☐ Sn
☐ B	☐ Li	☐ Sr
☐ Ba	☐ Mg	☐ Ti
☐ Be	☐ Mn	☐ Tl
☐ Ca	☐ Mo	☐ V
☐ Cd	☐ Na	☐ Zn
☐ Co	☐ Ni	☐ Hg
☐ Cr	☐ Pb	☐ CrVI

Nutrients
☐ TOC
☐ DOC
☐ TP/TPO4
☐ NH3-N
☐ F
☐ Cl
☐ NO2
☐ Br
☐ NO3
☐ SO4

MISC.
☐ BTEX
☐ Napthalene
☐ THM/HAA
☐ VOC
☐ Oil & Grease
☐ E. Coli
☐ Total Coliform
☐ pH
☐ Dissolved As
☐ Dissolved Fe
☐ Rad 226
☐ Rad 228
☐ PCB

Gypsum
☐ Wallboard Gypsum(*all below*)
☐ AIM
☐ TOC
☐ Total metals
☐ Soluble Metals
☐ Purity (CaSO4)
☐ % Moisture
☐ Sulfites
☐ pH
☐ Chlorides
☐ Particle Size
☐ Sulfur

Coal
☐ Ultimate
☐ % Moisture
☐ Ash
☐ Sulfur
☐ BTUs
☐ Volatile Matter
☐ CHN
Other Tests:
☐ XRF Scan
☐ HGI
☐ Fineness
☐ Particulate Matter

Flyash
☐ Ammonia
☐ LOI
☐ % Carbon
☐ Mineral Analysis
☐ Sieve
☐ % Moisture

NPDES
☐ Oil & Grease
☐ As
☐ TSS

Oil
Trans. Oil Qual.
☐ %Moisture
☐ Color
☐ Acidity
☐ Dielectric Strength
☐ IFT
☐ Dissolved Gases
Used Oil
☐ Flashpoint
☐ Metals in oil (As,Cd,Cr,Ni,Pb, Hg)
☐ TX
☐ GOFER

Matrix codes: GW-groundwater, DW-drinking water, SW-surface water, WW-waste water, BW-boiler water, L-limestone, Oil-oil, S-Soil, SL-solid, C-coal, G-gypsum, FA-flyash, BA-bottom ash, M-misc (describe in comment section)
Preservative code- 1=<4°C 2=HNO_3 3=H_2SO_4 4-HCl 5=$Na_2S_2O_3$ 6-Other (Specify)

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: SOOP	SDG/AR/COC/Work Order: 548333
Received By: TYE	Date Received: 6/25/21
Carrier and Tracking Number	Circle Applicable: FedEx Express FedEx Ground UPS Field Services (Courier) Other

Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
A) Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#: If UN2910, Is the Radioactive Shipment Survey Compliant? Yes___ No___
B) Did the client designate the samples are to be received as radioactive?		✓	COC notation or radioactive stickers on containers equal client designation.
C) Did the RSO classify the samples as radioactive?		✓	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): Ø CPM / mR/Hr Classified as: Rad 1 Rad 2 Rad 3
D) Did the client designate samples are hazardous?		✓	COC notation or hazard labels on containers equal client designation.
E) Did the RSO identify possible hazards?		✓	If D or E is yes, select Hazards below. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other:

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Chain of custody documents included with shipment?	✓			Circle Applicable: Client contacted and provided COC COC created upon receipt
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	✓	✓		Preservation Method: (Wet Ice) Ice Packs Dry ice (None) Other: *all temperatures are recorded in Celsius TEMP: Chem-1C Rchem-16C
4	Daily check performed and passed on IR temperature gun?	✓			Temperature Device Serial #: IR2-20 Secondary Temperature Device Serial # (If Applicable):
5	Sample containers intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6	Samples requiring chemical preservation at proper pH?	✓	✓		Sample ID's and Containers Affected: If Preservation added, Lot#:
7	Do any samples require Volatile Analysis?			✓	If Yes, are Encores or Soil Kits present for solids? Yes___ No___ NA___(If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes___ No___ NA___(If unknown, select No) Are liquid VOA vials free of headspace? Yes___ No___ NA___ Sample ID's and containers affected:
8	Samples received within holding time?	✓			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	✓			ID's and containers affected:
10	Date & time on COC match date & time on bottles?	✓			Circle Applicable: No dates on containers No times on containers COC missing info Other (describe)
11	Number of containers received match number indicated on COC?	✓			Circle Applicable: No container count on COC Other (describe)
12	Are sample containers identifiable as GEL provided by use of GEL labels?		✓		
13	COC form is properly signed in relinquished/received sections?	✓			Circle Applicable: Not relinquished Other (describe)

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials GB Date 6/28/21 Page 1 of 1

GL-CHL-SR-001 Rev 7

List of current GEL Certifications as of 26 July 2021

State	Certification
Alabama	42200
Alaska	17-018
Alaska Drinking Water	SC00012
Arkansas	88-0651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2019020
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122021-1
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	2019-165
Pennsylvania NELAP	68-00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-21-19
Utah NELAP	SC000122021-35
Vermont	VT87156
Virginia NELAP	460202
Washington	C780

GEL Laboratories LLC
a member of The GEL Group INC

PO Box 30712 Charleston, SC 29417
2040 Savage Road Charleston, SC 29407
P 843.556.8171
F 843.766.1178

gel.com

August 02, 2021

Ms. Jeanette Gilmetti
Santee Cooper
P.O. Box 2946101
OCO3
Moncks Corner, South Carolina 29461

Re: ABS Lab Analytical
Work Order: 548894

Dear Ms. Gilmetti:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on July 02, 2021. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Test results for NELAP or ISO 17025 accredited tests are verified to meet the requirements of those standards, with any exceptions noted. The results reported relate only to the items tested and to the sample as received by the laboratory. These results may not be reproduced except as full reports without approval by the laboratory. Copies of GEL's accreditations and certifications can be found on our website at www.gel.com.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4289.

Sincerely,

Julie Robinson

Julie Robinson
Project Manager

Purchase Order: 367074
Enclosures

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis Report
for

SOOP001 Santee Cooper

Client SDG: 548894 GEL Work Order: 548894

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a Tracer compound

** Analyte is a surrogate compound

U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Julie Robinson.

Reviewed by Julie Robinson

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: July 26, 2021

Company :	Santee Cooper
Address :	P.O. Box 2946101 OCO3 Moncks Corner, South Carolina 29461
Contact:	Ms. Jeanette Gilmetti
Project:	ABS Lab Analytical
Client Sample ID:	AF07246
Sample ID:	548894001
Matrix:	Ground Water
Collect Date:	29-JUN-21 10:44
Receive Date:	02-JUL-21
Collector:	Client
Project:	SOOP00119
Client ID:	SOOP001

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC, Ra228, Liquid "As Received"													
Radium-228	U	1.38	+/-1.37	2.27	3.00	pCi/L			JXC9	07/20/21	0845	2147055	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		1.79	+/-1.39			pCi/L		1	AEA	07/26/21	0417	2147065	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		0.413	+/-0.226	0.247	1.00	pCi/L			LXP1	07/22/21	0945	2149561	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			74.6	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: July 26, 2021

Company :	Santee Cooper
Address :	P.O. Box 2946101 OCO3 Moncks Corner, South Carolina 29461
Contact:	Ms. Jeanette Gilmetti
Project:	ABS Lab Analytical
Client Sample ID:	AF07248
Sample ID:	548894002
Matrix:	Ground Water
Collect Date:	29-JUN-21 11:50
Receive Date:	02-JUL-21
Collector:	Client
Project:	SOOP00119
Client ID:	SOOP001

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC, Ra228, Liquid "As Received"													
Radium-228		11.6	+/-1.82	1.41	3.00	pCi/L			JXC9	07/23/21	0836	2147055	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		16.8	+/-1.95			pCi/L		1	AEA	07/26/21	0417	2147065	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		5.16	+/-0.692	0.287	1.00	pCi/L			LXP1	07/22/21	0945	2149561	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			79.1	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: July 26, 2021

Company :	Santee Cooper
Address :	P.O. Box 2946101 OCO3 Moncks Corner, South Carolina 29461
Contact:	Ms. Jeanette Gilmetti
Project:	ABS Lab Analytical
Client Sample ID:	AF07252
Sample ID:	548894003
Matrix:	Ground Water
Collect Date:	29-JUN-21 14:00
Receive Date:	02-JUL-21
Collector:	Client
Project:	SOOP00119
Client ID:	SOOP001

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC, Ra228, Liquid "As Received"													
Radium-228		2.56	+/-1.23	1.75	3.00	pCi/L			JXC9	07/20/21	0846	2147055	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		3.32	+/-1.26			pCi/L		1	AEA	07/26/21	0417	2147065	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		0.752	+/-0.284	0.260	1.00	pCi/L			LXP1	07/22/21	0945	2149561	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			73.6	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: July 26, 2021

Company :	Santee Cooper
Address :	P.O. Box 2946101 OCO3 Moncks Corner, South Carolina 29461
Contact:	Ms. Jeanette Gilmetti
Project:	ABS Lab Analytical
Client Sample ID:	AF07253
Sample ID:	548894004
Matrix:	Ground Water
Collect Date:	29-JUN-21 14:05
Receive Date:	02-JUL-21
Collector:	Client
Project:	SOOP00119
Client ID:	SOOP001

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC, Ra228, Liquid "As Received"													
Radium-228		2.78	+/-1.02	1.23	3.00	pCi/L			JXC9	07/20/21	0846	2147055	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		3.35	+/-1.05			pCi/L		1	AEA	07/26/21	0417	2147065	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		0.572	+/-0.233	0.175	1.00	pCi/L			LXP1	07/22/21	0945	2149561	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			81	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

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2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: July 26, 2021

Company :	Santee Cooper
Address :	P.O. Box 2946101 OCO3 Moncks Corner, South Carolina 29461
Contact:	Ms. Jeanette Gilmetti
Project:	ABS Lab Analytical
Client Sample ID:	AF07250
Sample ID:	548894005
Matrix:	Ground Water
Collect Date:	30-JUN-21 10:23
Receive Date:	02-JUL-21
Collector:	Client
Project:	SOOP00119
Client ID:	SOOP001

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC, Ra228, Liquid "As Received"													
Radium-228	U	1.14	+/-1.05	1.71	3.00	pCi/L			JXC9	07/20/21	0846	2147055	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		1.65	+/-1.07			pCi/L		1	AEA	07/26/21	0417	2147065	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		0.509	+/-0.217	0.169	1.00	pCi/L			LXP1	07/22/21	0945	2149561	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			82.7	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: July 26, 2021

Company :	Santee Cooper
Address :	P.O. Box 2946101 OCO3 Moncks Corner, South Carolina 29461
Contact:	Ms. Jeanette Gilmetti
Project:	ABS Lab Analytical

Client Sample ID:	AF07266	Project:	SOOP00119
Sample ID:	548894006	Client ID:	SOOP001
Matrix:	Ground Water		
Collect Date:	01-JUL-21 10:24		
Receive Date:	02-JUL-21		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC, Ra228, Liquid "As Received"													
Radium-228	U	-0.820	+/-0.756	1.67	3.00	pCi/L			JXC9	07/20/21	0846	2147055	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		0.521	+/-0.796			pCi/L		1	AEA	07/26/21	0417	2147065	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		0.521	+/-0.250	0.250	1.00	pCi/L			LXP1	07/22/21	0945	2149561	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			77.4	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: July 26, 2021

Company :	Santee Cooper
Address :	P.O. Box 2946101 OCO3 Moncks Corner, South Carolina 29461
Contact:	Ms. Jeanette Gilmetti
Project:	ABS Lab Analytical
Client Sample ID:	AF07264
Sample ID:	548894007
Matrix:	Ground Water
Collect Date:	01-JUL-21 11:37
Receive Date:	02-JUL-21
Collector:	Client
Project:	SOOP00119
Client ID:	SOOP001

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC, Ra228, Liquid "As Received"													
Radium-228	U	0.509	+/-0.890	1.56	3.00	pCi/L			JXC9	07/20/21	0846	2147055	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		2.08	+/-0.993			pCi/L		1	AEA	07/26/21	0417	2147065	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		1.57	+/-0.440	0.384	1.00	pCi/L			LXP1	07/22/21	0945	2149561	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			82.5	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: July 26, 2021

Company :	Santee Cooper
Address :	P.O. Box 2946101 OCO3 Moncks Corner, South Carolina 29461
Contact:	Ms. Jeanette Gilmetti
Project:	ABS Lab Analytical
Client Sample ID:	AF07265
Sample ID:	548894008
Matrix:	Ground Water
Collect Date:	01-JUL-21 11:42
Receive Date:	02-JUL-21
Collector:	Client
Project:	SOOP00119
Client ID:	SOOP001

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC, Ra228, Liquid "As Received"													
Radium-228	U	0.954	+/-0.931	1.53	3.00	pCi/L			JXC9	07/20/21	0846	2147055	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		1.89	+/-0.987			pCi/L		1	AEA	07/26/21	0417	2147065	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		0.939	+/-0.328	0.257	1.00	pCi/L			LXP1	07/22/21	0945	2149561	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			84	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: July 26, 2021

Company :	Santee Cooper
Address :	P.O. Box 2946101 OCO3 Moncks Corner, South Carolina 29461
Contact:	Ms. Jeanette Gilmetti
Project:	ABS Lab Analytical
Client Sample ID:	AF07263
Sample ID:	548894009
Matrix:	Ground Water
Collect Date:	01-JUL-21 12:46
Receive Date:	02-JUL-21
Collector:	Client
Project:	SOOP00119
Client ID:	SOOP001

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC, Ra228, Liquid "As Received"													
Radium-228	U	0.238	+/-0.799	1.47	3.00	pCi/L			JXC9	07/20/21	0846	2147055	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		0.628	+/-0.840			pCi/L		1	AEA	07/26/21	0417	2147065	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		0.391	+/-0.257	0.332	1.00	pCi/L			LXP1	07/22/21	1020	2149561	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			82.6	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: July 26, 2021

Company :	Santee Cooper
Address :	P.O. Box 2946101 OCO3 Moncks Corner, South Carolina 29461
Contact:	Ms. Jeanette Gilmetti
Project:	ABS Lab Analytical

Client Sample ID:	AF07262	Project:	SOOP00119
Sample ID:	548894010	Client ID:	SOOP001
Matrix:	Ground Water		
Collect Date:	01-JUL-21 13:47		
Receive Date:	02-JUL-21		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting													
GFPC, Ra228, Liquid "As Received"													
Radium-228	U	-0.0249	+/-0.893	1.67	3.00	pCi/L			JXC9	07/20/21	0846	2147055	1
Radium-226+Radium-228 Calculation "See Parent Products"													
Radium-226+228 Sum		0.310	+/-0.911			pCi/L		1	AEA	07/26/21	0417	2147065	2
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		0.310	+/-0.181	0.183	1.00	pCi/L			LXP1	07/22/21	1020	2149561	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	Calculation	
3	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			86.4	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

QC Summary

Report Date: August 2, 2021

Santee Cooper
P.O. Box 2946101
OCO3
Moncks Corner, South Carolina

Contact: **Ms. Jeanette Gilmetti**

Workorder: **548894**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gas Flow											
Batch 2147055											
QC1204857738 548894008 DUP											
Radium-228	U	0.954	U	0.860	pCi/L	N/A		N/A	JXC9	07/20/21	10:30
	Uncertainty	+/-0.931		+/-1.04							
QC1204857739 LCS											
Radium-228	52.0			41.6	pCi/L		80	(75%-125%)		07/20/21	08:44
	Uncertainty			+/-3.15							
QC1204857737 MB											
Radium-228			U	0.117	pCi/L					07/20/21	10:30
	Uncertainty			+/-0.889							
Rad Ra-226											
Batch 2149561											
QC1204862383 548894001 DUP											
Radium-226		0.413	U	0.344	pCi/L	18.2		(0% - 100%)	LXP1	07/22/21	11:02
	Uncertainty	+/-0.226		+/-0.250							
QC1204862385 LCS											
Radium-226	26.8			24.2	pCi/L		90.5	(75%-125%)		07/22/21	11:02
	Uncertainty			+/-1.49							
QC1204862382 MB											
Radium-226			U	0.176	pCi/L					07/22/21	11:02
	Uncertainty			+/-0.182							
QC1204862384 548894001 MS											
Radium-226	134	0.413		101	pCi/L		75.5	(75%-125%)		07/22/21	13:10
	Uncertainty	+/-0.226		+/-6.78							

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

The Qualifiers in this report are defined as follows:

- ** Analyte is a Tracer compound
- < Result is less than value reported
- > Result is greater than value reported
- BD Results are either below the MDC or tracer recovery is low
- FA Failed analysis.

QC Summary

Workorder: 548894

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time

H	Analytical holding time was exceeded
J	See case narrative for an explanation
J	Value is estimated
K	Analyte present. Reported value may be biased high. Actual value is expected to be lower.
L	Analyte present. Reported value may be biased low. Actual value is expected to be higher.
M	M if above MDC and less than LLD
M	REMP Result > MDC/CL and < RDL
N/A	RPD or %Recovery limits do not apply.
N1	See case narrative
ND	Analyte concentration is not detected above the detection limit
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
R	Sample results are rejected
U	Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
UI	Gamma Spectroscopy--Uncertain identification
UJ	Gamma Spectroscopy--Uncertain identification
UL	Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y	Other specific qualifiers were required to properly define the results. Consult case narrative.
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
h	Preparation or preservation holding time was exceeded

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Radiochemistry
Technical Case Narrative
Santee Cooper
SDG #: 548894

Product: **GFPC, Ra228, Liquid**
Analytical Method: EPA 904.0/SW846 9320 Modified
Analytical Procedure: GL-RAD-A-063 REV# 5
Analytical Batch: 2147055

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
548894001	AF07246
548894002	AF07248
548894003	AF07252
548894004	AF07253
548894005	AF07250
548894006	AF07266
548894007	AF07264
548894008	AF07265
548894009	AF07263
548894010	AF07262
1204857737	Method Blank (MB)
1204857738	548894008(AF07265) Sample Duplicate (DUP)
1204857739	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information

Recounts
Sample 1204857737 (MB) was recounted due to a suspected blank false positive. The recount is reported.
Sample 1204857738 (AF07265DUP) was recounted due to a suspected false positive. The recount is reported.
Sample 548894002 (AF07248) was re-eluted and recounted to verify sample result. The recount is reported.

Product: **Lucas Cell, Ra226, Liquid**
Analytical Method: EPA 903.1 Modified
Analytical Procedure: GL-RAD-A-008 REV# 15
Analytical Batch: 2149561

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
548894001	AF07246
548894002	AF07248
548894003	AF07252
548894004	AF07253
548894005	AF07250
548894006	AF07266
548894007	AF07264
548894008	AF07265
548894009	AF07263
548894010	AF07262
1204862382	Method Blank (MB)
1204862383	548894001(AF07246) Sample Duplicate (DUP)
1204862384	548894001(AF07246) Matrix Spike (MS)
1204862385	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information

Recounts
Sample 1204862384 (AF07246MS) was recounted due to low recovery. The recount is reported.

Miscellaneous Information

Additional Comments
The matrix spike, 1204862384 (AF07246MS), aliquot was reduced to conserve sample volume.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

Contract Lab Info: GEL Contract Lab Due Date (Lab Only): 7/30/21 Send report to lcwillia@santeecooper.com & sjbrown@santeecooper.com

548894

Chain of Custody

santee cooper
Santee Cooper
One Riverwood Drive
Moncks Corner, SC 29461
Phone: (843)761-8000 Ext. 5148
Fax: (843)761-4175

Customer Email/Report Recipient: LCWILLIA @santeecooper.com

Date Results Needed by: ___/___/___

Project/Task/Unit #: 121567 / JM02.09.G01 / 36500

Rerun request for any flagged QC Yes No

Analysis Group

Labworks ID # (Internal use only)	Sample Location/ Description	Collection Date	Collection Time	Sample Collector	Total # of containers	Bottle type: (Glass-G/Plastic-P)	Grab (G) or Composite (C)	Matrix(see below)	Preservative (see below)	Comments • Method # • Reporting limit • Misc. sample info • Any other notes	RAD 226	RAD 228	TOTAL RAD GALS	
AF07246	CAP-3	6/29/21	1044	BRT/CWS	2	P	G	GW	2		X	X	X	
AF07248	CAP-5		1150											
AF07252	CAP-9		1400											
AF07253	CAP-9 DUP		1405											
AF07250	CAP-7	6/30/21	1023	BRT/MDG										
AF07266	CCMAP-4	7/1/21	1024	BRT/ATH										
AF07264	CCMAP-3		1137											
AF07265	CCMAP-3 DUP		1142											
AF07263	CCMAP-2		1246											
AF07262	CCMAP-1		1347											

Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time
[signature]	35594	7/2/21	1004	[signature]	GEL	7/2/21	1004
Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time
[signature]	666	7/2/21	1057	[signature]	GEL	7/2/21	1004
Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time

Sample Receiving (Internal Use Only)
TEMP (°C):_____ Initial:_____
Correct pH: Yes No
Preservative Lot#:
Date/Time/Init for preservative:

☐ METALS (all)

☐ Ag	☐ Cu	☐ Sb
☐ Al	☐ Fe	☐ Se
☐ As	☐ K	☐ Sn
☐ B	☐ Li	☐ Sr
☐ Ba	☐ Mg	☐ Ti
☐ Be	☐ Mn	☐ Tl
☐ Ca	☐ Mo	☐ V
☐ Cd	☐ Na	☐ Zn
☐ Co	☐ Ni	☐ Hg
☐ Cr	☐ Pb	☐ CrVI

Nutrients
☐ TOC
☐ DOC
☐ TP/TPO4
☐ NH3-N
☐ F
☐ Cl
☐ NO2
☐ Br
☐ NO3
☐ SO4

MISC.
☐ BTEX
☐ Napthalene
☐ THM/HAA
☐ VOC
☐ Oil & Grease
☐ E. Coli
☐ Total Coliform
☐ pH
☐ Dissolved As
☐ Dissolved Fe
☐ Rad 226
☐ Rad 228
☐ PCB

Gypsum
☐ Wallboard Gypsum(*all below*)
☐ AIM
☐ TOC
☐ Total metals
☐ Soluble Metals
☐ Purity (CaSO4)
☐ % Moisture
☐ Sulfites
☐ pH
☐ Chlorides
☐ Particle Size
☐ Sulfur

Coal
☐ Ultimate
☐ % Moisture
☐ Ash
☐ Sulfur
☐ BTUs
☐ Volatile Matter
☐ CHN
Other Tests:
☐ XRF Scan
☐ HGI
☐ Fineness
☐ Particulate Matter

Flyash
☐ Ammonia
☐ LOI
☐ % Carbon
☐ Mineral Analysis
☐ Sieve
☐ % Moisture

NPDES
☐ Oil & Grease
☐ As
☐ TSS

Oil
☐ Trans. Oil Qual.
%Moisture
Color
Acidity
Dielectric Strength
IFT
Dissolved Gases
☐ Used Oil
Flashpoint
Metals to oil (As,Cd,Cr,Ni,Pb Hg)
☐ TX
GOFER

Matrix codes: GW-groundwater, DW-drinking water, SW-surface water, WW-waste water, BW-boiler water, L-limestone, Oil-oil, S-Soil, SL-solid, C-coal, G-gypsum, FA-flyash, BA-bottom ash, M-misc (describe in comment section)
Preservative code- 1=<4°C 2=HNO_3 3=H_2SO_4 4-HCl 5=$Na_2S_2O_3$ 6-Other (Specify)

JR

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: SOOI	SDG/AR/COC/Work Order: 548894/548893
Received By:	Date Received: 7/2/21
Carrier and Tracking Number	Circle Applicable: FedEx Express FedEx Ground UPS Field Services Courier Other

Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
A) Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#: If UN2910, Is the Radioactive Shipment Survey Compliant? Yes___ No___
B) Did the client designate the samples are to be received as radioactive?		✓	COC notation or radioactive stickers on containers equal client designation.
C) Did the RSO classify the samples as radioactive?		✓	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0 CPM / mR/Hr Classified as: Rad 1 Rad 2 Rad 3
D) Did the client designate samples are hazardous?		✓	COC notation or hazard labels on containers equal client designation.
E) Did the RSO identify possible hazards?		✓	If D or E is yes, select Hazards below. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other:

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Chain of custody documents included with shipment?	✓			Circle Applicable: Client contacted and provided COC COC created upon receipt
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*			✓	Preservation Method: Wet Ice Ice Packs Dry ice None Other: *all temperatures are recorded in Celsius TEMP: 23
4	Daily check performed and passed on IR temperature gun?	✓			Temperature Device Serial #: IR21 Secondary Temperature Device Serial # (If Applicable):
5	Sample containers intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6	Samples requiring chemical preservation at proper pH?	✓			Sample ID's and Containers Affected: If Preservation added, Lot#:
7	Do any samples require Volatile Analysis?			✓	If Yes, are Encores or Soil Kits present for solids? Yes___ No___ NA___(If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes___ No___ NA___(If unknown, select No) Are liquid VOA vials free of headspace? Yes___ No___ NA___ Sample ID's and containers affected:
8	Samples received within holding time?	✓			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	✓			ID's and containers affected:
10	Date & time on COC match date & time on bottles?	✓			Circle Applicable: No dates on containers No times on containers COC missing info Other (describe)
11	Number of containers received match number indicated on COC?	✓			Circle Applicable: No container count on COC Other (describe)
12	Are sample containers identifiable as GEL provided by use of GEL labels?	✓			
13	COC form is properly signed in relinquished/received sections?	✓			Circle Applicable: Not relinquished Other (describe)

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials NRG Date 7/16/21 Page 1 of 1

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List of current GEL Certifications as of 02 August 2021

State	Certification
Alabama	42200
Alaska	17-018
Alaska Drinking Water	SC00012
Arkansas	88-0651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2019020
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122021-1
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	2019-165
Pennsylvania NELAP	68-00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-21-19
Utah NELAP	SC000122021-35
Vermont	VT87156
Virginia NELAP	460202
Washington	C780

Field Data Sheets

(Note: the color coding is to assist field personnel in determining when the well has stabilized enough to begin sample collection.)

Cross Generating Station
Bottom Ash Pond Background Groundwater Monitoring Wells

Well ID	TOC Elevation (feet)	GW Depth (feet)	Screen Intervals (ft, bgs)	Sample Date	Sample Time	Total Well Depth
PM-1	83.24	8.27	4-24	1/26/2021	927	26.31
Drawdown:	8.82		depth to GW (ft)			

Time	Temp round 1 (celcius)	pH round 1 (units)	Eh ORP (mV)	Spec Cond round 1 (uS/cm)	Turbidity (NTU)	Dissolved Oxygen (ppm)
907	19.45	5.07	57	146	0	7.86
912	19.37	4.86	30	143	11.8	6.69
917	19.43	4.92	18	142	13.3	6.44
922	19.51	4.95	8	142	2.6	6.16
927	19.47	5.03	1	143	4.4	6.12

Comments/Conditions:

Samples were collected by Aaron Hill and Trey West

Cross Generating Station
Bottom Ash Pond Background Groundwater Monitoring Wells

Well ID	TOC Elevation (feet)	GW Depth (feet)	Screen Intervals (ft, bgs)	Sample Date	Sample Time	Total Well Depth
PM-1	83.24	7.91	4-24	6/21/2021	1308	26.33
Drawdown:	8.34		depth to GW (ft)			

Time	Temp round 1 (celcius)	pH round 1 (units)	Eh ORP (mV)	Spec Cond round 1 (uS/cm)	Turbidity (NTU)	Dissolved Oxygen (ppm)
1240	25.76	4.9	63	183	14.6	3.07
1245	26.43	4.87	67	184	14.4	5.7
1250	26.24	5.29	40	182	10.5	5.17
1255	26.41	5.21	43	178	6.4	4.65
1300	26.34	5.23	41	172	4.5	4.32
1305	26.47	5.17	45	170	5.2	4.09
1308	26.49	5.21	45	169	4.3	3.96

Comments/Conditions:

Samples were collected by Melanie Goings and Ben Taylor

Cross Generating Station
Bottom Ash Pond Background Groundwater Monitoring Wells

Well ID	TOC Elevation (feet)	GW Depth (feet)	Screen Intervals (ft, bgs)	Sample Date	Sample Time	Total Well Depth
CBW-1	85.80	10.12	14-24	1/26/2021	1039	26.94
Drawdown:	10.15	depth to GW (ft)				

Time	Temp round 1 (celcius)	pH round 1 (units)	Eh ORP (mV)	Spec Cond round 1 (uS/cm)	Turbidity (NTU)	Dissolved Oxygen (ppm)
1005	20.71	4.33	160	187	3.2	2.82
1010	20.31	4.27	221	187	0.6	1.48
1015	20.2	4.2	268	191	0	1.15
1020	20.25	4.22	288	191	0	1.05
1025	20.3	4.29	303	192	0	0.84
1030	20.32	4.29	318	192	0	0.78
1033	20.34	4.29	326	192	0	0.76
1036	20.31	4.28	334	192	0	0.74
1039	20.25	4.31	338	192	0	0.71

Comments/Conditions:

Samples were collected by Aaron Hill and Trey West

Cross Generating Station
Bottom Ash Pond Background Groundwater Monitoring Wells

Well ID	TOC Elevation (feet)	GW Depth (feet)	Screen Intervals (ft, bgs)	Sample Date	Sample Time	Total Well Depth
CBW-1	85.80	10.07	14-24	6/21/2021	1413	26.76
Drawdown:	10.11	depth to GW (ft)				

Time	Temp round 1 (celcius)	pH round 1 (units)	Eh ORP (mV)	Spec Cond round 1 (uS/cm)	Turbidity (NTU)	Dissolved Oxygen (ppm)
1345	26.18	4.24	96	167	0	1.66
1350	25.53	4.18	98	182	0	0.92
1355	24.62	3.9	104	187	0	0.78
1400	24.48	3.94	98	190	0	0.73
1405	23.9	4.28	76	193	0	0.7
1410	23.89	4.27	74	194	0.4	0.67
1413	24.16	4.25	75	194	0.2	0.66

Comments/Conditions:

Samples were collected by Melanie Goings and Ben Taylor

Cross Generating Station
Bottom Ash Pond CCR Groundwater Monitoring Wells

Well ID	TOC Elevation (feet)	GW Depth (feet)	Screen Intervals (ft, bgs)	Sample Date	Sample Time	Total Well Depth
CAP-1*	82.7	5.6	5'-19'	2/2/2021	1206	20.32
Drawdown:	5.96		depth to GW (ft)			

Time	Temp round 1 (celcius)	pH round 1 (units)	Eh ORP (mV)	Spec Cond round 1 (uS/cm)	Turbidity (NTU)	Dissolved Oxygen (ppm)
1135	18.22	5.89	9	855	64.9	5.46
1140	16.6	5.86	19	872	5.2	4.47
1145	15.01	5.83	24	918	1.8	4.17
1150	14.55	5.85	24	935	0.3	3.58
1155	14.27	5.79	29	960	0	2.72
1200	14.1	5.76	31	979	0	2.14
1203	14	5.75	33	985	0	2.04
1206	13.89	5.74	34	1000	0	1.93

* Original well, PM-3, was renamed CAP-1

Comments/Conditions:

Samples were collected by Melanie Goings and Trey West

Cross Generating Station
Bottom Ash Pond CCR Groundwater Monitoring Wells

Well ID	TOC Elevation (feet)	GW Depth (feet)	Screen Intervals (ft, bgs)	Sample Date	Sample Time	Total Well Depth
CAP-1*	82.7	8.01	5'-19'	6/24/2021	1219	21.63
Drawdown:	8.23		depth to GW (ft)			

Time	Temp round 1 (celcius)	pH round 1 (units)	Eh ORP (mV)	Spec Cond round 1 (uS/cm)	Turbidity (NTU)	Dissolved Oxygen (ppm)
1148	25.07	5.58	56	1100	123	1.84
1153	24.82	5.44	60	1200	108	0.8
1158	24.45	5.37	65	1290	99.7	0.55
1203	24.32	5.33	68	1330	95.7	0.48
1208	24.14	5.28	70	1410	82.2	0.44
1213	24.12	5.24	72	1480	72	0.42
1216	24.05	5.22	73	1510	64.9	0.41
1219	24.03	5.18	74	1550	58.7	0.4

* Original well, PM-3, was renamed CAP-1

Comments/Conditions:

Samples were collected by Marvin Lewis and Ben Taylor

Cross Generating Station
Bottom Ash Pond CCR Groundwater Monitoring Wells

Well ID	TOC Elevation (feet)	GW Depth (feet)	Screen Intervals (ft, bgs)	Sample Date	Sample Time	Total Well Depth
CAP-3	91.49	14.93	15.5-30.5	2/3/2021	1349	30.9
Drawdown:	14.92		depth to GW (ft)			

Time	Temp round 1 (celcius)	pH round 1 (units)	Eh ORP (mV)	Spec Cond round 1 (uS/cm)	Turbidity (NTU)	Dissolved Oxygen (ppm)
1321	17.37	6.27	78	4350	7.7	2.46
1326	17.7	6.35	56	4170	1.4	1.24
1331	17.75	6.35	56	4180	0	0.95
1336	17.87	6.35	53	4190	0	0.84
1341	18.01	6.34	52	4190	0	0.74
1346	18.13	6.34	50	4190	0	0.7
1349	18.22	6.34	49	4180	0	0.68

Comments/Conditions:

Samples were collected by Melanie Goings and Trey West

Cross Generating Station
Bottom Ash Pond CCR Groundwater Monitoring Wells

Well ID	TOC Elevation (feet)	GW Depth (feet)	Screen Intervals (ft, bgs)	Sample Date	Sample Time	Total Well Depth
CAP-3	91.49	16.28	15.5-30.5	6/29/2021	1044	32.74
Drawdown:	16.26	depth to GW (ft)				

Time	Temp round 1 (celcius)	pH round 1 (units)	Eh ORP (mV)	Spec Cond round 1 (uS/cm)	Turbidity (NTU)	Dissolved Oxygen (ppm)
1013	22.03	6.07	102	1050	5	2.38
1018	23.26	6.09	90	1120	17.7	0.93
1023	23.62	6.14	100	1200	40.1	0.79
1028	23.92	6.22	103	2750	28.5	0.62
1033	24.2	6.28	95	3130	43.1	0.58
1038	24.3	6.3	90	3230	4.5	0.52
1041	24.45	6.32	87	3260	6.3	0.5
1044	24.59	6.31	86	3290	2.6	0.48

Comments/Conditions:

Samples were collected by Connor Smalling and Ben Taylor

Cross Generating Station
Bottom Ash Pond CMA/NE Groundwater Monitoring Wells

Well ID	TOC Elevation (feet)	GW Depth (feet)	Screen Intervals (ft, bgs)	Sample Date	Sample Time	Total Well Depth
CAP-4	91.77	16.48	40.5-60.5	2/4/2021	1320	62.5
Drawdown:	15.46		depth to GW (ft)			

Time	Temp round 1 (celcius)	pH round 1 (units)	Eh ORP (mV)	Spec Cond round 1 (uS/cm)	Turbidity (NTU)	Dissolved Oxygen (ppm)
1255	19.36	6.6	89	4320	4.1	2.62
1300	19.29	6.59	88	4250	5.8	1.29
1305	19.34	6.58	90	4260	0	1.03
1310	19.45	6.57	92	4260	0	0.89
1315	19.59	6.57	93	4250	0	0.81
1320	19.56	6.57	95	4240	0	0.76

Comments/Conditions:

Samples were collected by Melanie Goings and Trey West

Cross Generating Station
Bottom Ash Pond CMA/NE Groundwater Monitoring Wells

Well ID	TOC Elevation (feet)	GW Depth (feet)	Screen Intervals (ft, bgs)	Sample Date	Sample Time	Total Well Depth
CAP-4	91.77	16.87	40.5-60.5	6/28/2021	1155	62.42
Drawdown:	16.87		depth to GW (ft)			

Time	Temp round 1 (celcius)	pH round 1 (units)	Eh ORP (mV)	Spec Cond round 1 (uS/cm)	Turbidity (NTU)	Dissolved Oxygen (ppm)
1135	23.63	6.42	18	4480	0	1.65
1140	22.98	6.44	-3	4550	0	0.68
1145	22.84	6.44	-7	4540	0	0.6
1150	22.83	6.45	-10	4530	0	0.56
1155	22.86	6.45	-13	4530	0	0.52

Comments/Conditions:

Samples were collected by Melanie Goings and Ben Taylor

Cross Generating Station
Bottom Ash Pond CCR Groundwater Monitoring Wells

Well ID	TOC Elevation (feet)	GW Depth (feet)	Screen Intervals (ft, bgs)	Sample Date	Sample Time	Total Well Depth
CAP-5	91.78	14.67	15.5-30.5	2/3/2021	1248	32.73

Drawdown: 15.96 depth to GW (ft)

Time	Temp round 1 (celcius)	pH round 1 (units)	Eh ORP (mV)	Spec Cond round 1 (uS/cm)	Turbidity (NTU)	Dissolved Oxygen (ppm)
1220	17.66	3.76	307	2100	13	2.48
1225	17.9	3.73	308	2080	7.5	1.01
1230	18.11	3.7	311	2080	3.1	0.76
1235	18.18	3.69	311	2080	1.8	0.73
1240	18.35	3.68	312	2070	0	0.65
1245	18.4	3.68	312	2080	0	0.6
1248	18.56	3.68	312	2080	0	0.59

Comments/Conditions:

Samples were collected by Melanie Goings and Trey West

Cross Generating Station
Bottom Ash Pond CCR Groundwater Monitoring Wells

Well ID	TOC Elevation (feet)	GW Depth (feet)	Screen Intervals (ft, bgs)	Sample Date	Sample Time	Total Well Depth
CAP-5	91.78	17.78	15.5-30.5	6/29/2021	1150	32.67

Drawdown: 18.07 depth to GW (ft)

Time	Temp round 1 (celcius)	pH round 1 (units)	Eh ORP (mV)	Spec Cond round 1 (uS/cm)	Turbidity (NTU)	Dissolved Oxygen (ppm)
1122	24.36	3.99	100	2010	0	1.39
1127	24.36	4	100	2010	0	0.75
1132	24.19	3.86	106	2010	0	0.59
1137	24.36	3.88	108	2000	0	0.48
1142	23.97	3.87	110	2010	0	0.43
1147	24.03	3.86	114	2010	0	0.41
1150	24.02	3.86	116	2010	0	0.41

Comments/Conditions:

Samples were collected by Connor Smalling and Ben Taylor

Cross Generating Station
Bottom Ash Pond CMA/NE Groundwater Monitoring Wells

Well ID	TOC Elevation (feet)	GW Depth (feet)	Screen Intervals (ft, bgs)	Sample Date	Sample Time	Total Well Depth
CAP-6	91.82	15.09	40.5-60.5	2/4/2021	1203	62,95
Drawdown:	15.09		depth to GW (ft)			

Time	Temp round 1 (celcius)	pH round 1 (units)	Eh ORP (mV)	Spec Cond round 1 (uS/cm)	Turbidity (NTU)	Dissolved Oxygen (ppm)
1123	19.96	7.01	9	2090	17.2	7.03
1128	17.21	6.99	23	2060	0	2.49
1133	17.24	6.9	23	2080	0	1.97
1138	17.43	6.83	28	2130	0	1.47
1143	17.58	6.74	29	2190	0	1.07
1148	17.97	6.67	-15	2280	0	0.86
1151	17.97	6.65	-35	2330	0	0.81
1154	18.06	6.65	-53	2370	0	0.75
1157	18.07	6.64	-63	2410	0	0.72
1200	18.02	6.63	-68	2440	0	0.69
1203	18.1	6.62	-71	2470	0	0.67

Comments/Conditions: Had trouble getting the tubing down to the screen zone even with the weight on

Samples were collected by Melanie Goings and Trey West

Cross Generating Station
Bottom Ash Pond CMA/NE Groundwater Monitoring Wells

Well ID	TOC Elevation (feet)	GW Depth (feet)	Screen Intervals (ft, bgs)	Sample Date	Sample Time	Total Well Depth
CAP-6	91.82	17.55	40.5-60.5	6/28/2021	1255	63.35
Drawdown:	17.65		depth to GW (ft)			

Time	Temp round 1 (celcius)	pH round 1 (units)	Eh ORP (mV)	Spec Cond round 1 (uS/cm)	Turbidity (NTU)	Dissolved Oxygen (ppm)
1224	25.5	7.08	-14	2040	0	2.16
1229	25.06	7.02	-21	2040	0	0.95
1234	24.61	7.03	-25	2030	2	0.83
1239	24.42	7.02	-26	2030	3	0.77
1244	24.32	6.88	-38	2100	3.2	0.67
1249	24.12	6.75	-79	2360	3	0.45
1252	24.09	6.72	-81	2400	2.8	0.44
1255	23.92	6.72	-82	2430	2.4	0.41

Comments/Conditions:

Samples were collected by Melanie Goings and Ben Taylor

Cross Generating Station
Bottom Ash Pond CCR Groundwater Monitoring Wells

Well ID	TOC Elevation (feet)	GW Depth (feet)	Screen Intervals (ft, bgs)	Sample Date	Sample Time	Total Well Depth
CAP-7	91.64	14.44	15.5-30.5	2/3/2021	1115	32.98
Drawdown:	14.61		depth to GW (ft)			

Time	Temp round 1 (celcius)	pH round 1 (units)	Eh ORP (mV)	Spec Cond round 1 (uS/cm)	Turbidity (NTU)	Dissolved Oxygen (ppm)
1050	19.64	5.45	81	8660	7.2	1.97
1055	19.56	5.43	77	8630	6.1	1.33
1100	19.42	5.43	78	8620	2.9	1.15
1105	19.28	5.45	78	8610	1	1.02
1110	19.12	5.46	77	8590	0.4	0.95
1115	18.96	5.46	78	8580	1	0.87

Comments/Conditions:

Samples were collected by Melanie Goings and Trey West

Cross Generating Station
Bottom Ash Pond CCR Groundwater Monitoring Wells

Well ID	TOC Elevation (feet)	GW Depth (feet)	Screen Intervals (ft, bgs)	Sample Date	Sample Time	Total Well Depth
CAP-7	91.64	16.6	15.5-30.5	6/30/2021	1023	33.05
Drawdown:	16.78		depth to GW (ft)			

Time	Temp round 1 (celcius)	pH round 1 (units)	Eh ORP (mV)	Spec Cond round 1 (uS/cm)	Turbidity (NTU)	Dissolved Oxygen (ppm)
955	23.15	5.37	110	9100	3.5	2.02
1000	23.53	5.43	92	9100	1.8	0.69
1005	23.89	5.44	89	9060	0.6	0.65
1010	24.43	5.47	85	8980	0.8	0.53
1015	24.93	5.49	80	8880	0	0.41
1020	25.47	5.51	75	8770	0	0.37
1023	25.66	5.51	73	8740	0	0.36

Comments/Conditions:

Samples were collected by Melanie Goings and Ben Taylor

Cross Generating Station
Bottom Ash Pond CMA/NE Groundwater Monitoring Wells

Well ID	TOC Elevation (feet)	GW Depth (feet)	Screen Intervals (ft, bgs)	Sample Date	Sample Time	Total Well Depth
CAP-8	91.61	15.89	40.5-60.5	2/4/2021	1038	63.44

Drawdown: 15.88 depth to GW (ft)

Time	Temp round 1 (celcius)	pH round 1 (units)	Eh ORP (mV)	Spec Cond round 1 (uS/cm)	Turbidity (NTU)	Dissolved Oxygen (ppm)
1010	18.66	6.44	30	5940	3.6	2.57
1015	17.09	6.44	10	5930	0	1.45
1020	17.32	6.44	5	5930	0	1.19
1025	17.56	6.43	2	5940	0	1.05
1030	17.81	6.43	0	5930	0	0.92
1035	17.79	6.43	-1	5930	0	0.85
1038	18.07	6.43	-2	5930	0	0.8

Comments/Conditions:

Samples were collected by Melanie Goings and Trey West

Cross Generating Station
Bottom Ash Pond CMA/NE Groundwater Monitoring Wells

Well ID	TOC Elevation (feet)	GW Depth (feet)	Screen Intervals (ft, bgs)	Sample Date	Sample Time	Total Well Depth
CAP-8	91.61	17.67	40.5-60.5	6/28/2021	1423	63.53

Drawdown: 17.72 depth to GW (ft)

Time	Temp round 1 (celcius)	pH round 1 (units)	Eh ORP (mV)	Spec Cond round 1 (uS/cm)	Turbidity (NTU)	Dissolved Oxygen (ppm)
1403	25.39	6.77	54	5480	0	6.14
1408	24.05	6.76	58	5680	0	5.81
1413	24.39	6.76	65	5600	0	5.39
1418	24.26	6.75	71	5580	0	5.13
1423	24.17	6.75	75	5590	0	4.99

Comments/Conditions:

Samples were collected by Melanie Goings and Ben Taylor

Cross Generating Station
Bottom Ash Pond CCR Groundwater Monitoring Wells

Well ID	TOC Elevation (feet)	GW Depth (feet)	Screen Intervals (ft, bgs)	Sample Date	Sample Time	Total Well Depth
CAP-9	91.59	14.02	15.5-30.5	2/2/2021	1339	32.44
Drawdown:	16.01		depth to GW (ft)			

Time	Temp round 1 (celcius)	pH round 1 (units)	Eh ORP (mV)	Spec Cond round 1 (uS/cm)	Turbidity (NTU)	Dissolved Oxygen (ppm)
1308	15.78	3.37	332	4560	29	5.38
1313	16.3	3.34	335	4510	25.8	3.11
1318	16.69	3.32	335	4490	18.9	2.58
1323	17.02	3.32	335	4480	10.3	2.57
1328	17.15	3.32	334	4470	6.5	2.48
1333	17.32	3.33	333	4460	2.5	2.1
1336	17.41	3.33	333	4450	1.3	2.02
1339	17.49	3.33	333	4440	0	2.05

Comments/Conditions:
Duplicate at 1344

Samples were collected by Melanie Goings and Trey West

Cross Generating Station
Bottom Ash Pond CCR Groundwater Monitoring Wells

Well ID	TOC Elevation (feet)	GW Depth (feet)	Screen Intervals (ft, bgs)	Sample Date	Sample Time	Total Well Depth
CAP-9	91.59	15.54	15.5-30.5	6/29/2021	1400	32.46
Drawdown:	18.62		depth to GW (ft)			

Time	Temp round 1 (celcius)	pH round 1 (units)	Eh ORP (mV)	Spec Cond round 1 (uS/cm)	Turbidity (NTU)	Dissolved Oxygen (ppm)
1332	25.38	3.87	253	4190	0	4.69
1337	25.01	3.82	258	4260	0	0.99
1342	24.56	3.8	259	4270	0	0.64
1347	24.49	3.8	259	4260	0	0.58
1352	24.42	3.8	258	4250	1.5	0.51
1357	24.47	3.8	259	4230	2.9	0.47
1400	24.46	3.81	259	4230	2.6	0.46

Comments/Conditions:
Duplicate taken at 1405

Samples were collected by Connor Smalling and Ben Taylor

Cross Generating Station
Bottom Ash Pond CMA/NE Groundwater Monitoring Wells

Well ID	TOC Elevation (feet)	GW Depth (feet)	Screen Intervals (ft, bgs)	Sample Date	Sample Time	Total Well Depth
CAP-10	95.68	20.22	43-63	2/3/2021	1512	66.08
Drawdown:	20.24		depth to GW (ft)			

Time	Temp round 1 (celcius)	pH round 1 (units)	Eh ORP (mV)	Spec Cond round 1 (uS/cm)	Turbidity (NTU)	Dissolved Oxygen (ppm)
1452	18.08	7.17	60	406	0	1.69
1457	17.67	7.06	-48	407	0	1.37
1502	17.71	7.07	-81	415	0	1.2
1507	17.85	7.07	-86	416	0	1.12
1512	18.05	7.07	-90	417	0	1.05

Comments/Conditions:

Samples were collected by Melanie Goings and Trey West

Cross Generating Station
Bottom Ash Pond CMA/NE Groundwater Monitoring Wells

Well ID	TOC Elevation (feet)	GW Depth (feet)	Screen Intervals (ft, bgs)	Sample Date	Sample Time	Total Well Depth
CAP-10	95.68	21.71	43-63	6/30/2021	1152	65.35
Drawdown:	21.72		depth to GW (ft)			

Time	Temp round 1 (celcius)	pH round 1 (units)	Eh ORP (mV)	Spec Cond round 1 (uS/cm)	Turbidity (NTU)	Dissolved Oxygen (ppm)
1115	30.52	6.7	8	636	0	4.38
1120	28.7	7.12	-64	451	0	1
1125	27.7	7.14	-57	396	0	0.52
1130	27.47	7.11	-55	384	0	0.43
1135	27.16	7.06	-63	379	0	0.39
1140	27.14	7.01	-97	373	0	0.36
1143	27.07	7.01	-107	373	0	0.36
1146	27.08	7.02	-115	373	0	0.35
1149	27.09	7.03	-119	373	0	0.35
1152	27.03	7.04	-121	373	0	0.34

Comments/Conditions:

Samples were collected by Melanie Goings and Ben Taylor

Cross Generating Station
Bottom Ash Pond CMA/NE Groundwater Monitoring Wells

Well ID	TOC Elevation (feet)	GW Depth (feet)	Depth of Screened Interval (ft, bgs)	Sample Date	Sample Time	Total Well Depth
CCMAP-1	80.21	4.34	13-23	2/11/2021	1228	26.36
Drawdown:	5.47		depth to GW (ft)			

Time	Temp round 1 (celcius)	pH round 1 (units)	Eh ORP (mV)	Spec Cond round 1 (uS/cm)	Turbidity (NTU)	Dissolved Oxygen (ppm)
1200	19.89	7.24	123	276	0	3.1
1205	19.65	7.15	124	283	0	1.41
1210	19.6	7.13	123	279	0	1.75
1215	19.36	7.13	119	276	0	1.51
1220	19.1	7.11	119	278	0	1.27
1225	18.9	7.11	116	280	0	1.21
1228	18.8	7.11	115	280	0	1.17

Comments/Conditions:

Samples were collected by Melanie Goings and Trey West

Cross Generating Station
Bottom Ash Pond CMA/NE Groundwater Monitoring Wells

Well ID	TOC Elevation (feet)	GW Depth (feet)	Depth of Screened Interval (ft, bgs)	Sample Date	Sample Time	Total Well Depth
CCMAP-1	80.21	6.89	13-23	7/1/2021	1347	26.39
Drawdown:	7.17		depth to GW (ft)			

Time	Temp round 1 (celcius)	pH round 1 (units)	Eh ORP (mV)	Spec Cond round 1 (uS/cm)	Turbidity (NTU)	Dissolved Oxygen (ppm)
1319	29.08	6.82	-39	304	1	1.28
1324	28.85	6.88	-76	311	4	0.76
1329	28.59	7.02	-109	309	1.8	0.63
1334	28.13	7.07	-120	308	1.3	0.57
1339	28.09	7.13	-129	308	1.6	0.55
1344	27.92	7.15	-133	308	0.9	0.53
1347	27.84	7.18	-134	307	0.9	0.51

Comments/Conditions:

Samples were collected by Aaron Hill and Ben Taylor

Cross Generating Station
Bottom Ash Pond CMA/NE Groundwater Monitoring Wells

Well ID	TOC Elevation (feet)	GW Depth (feet)	Screen Intervals (ft, bgs)	Sample Date	Sample Time	Total Well Depth
CCMAP-2	81.24	6.5	13-23	2/11/2021	1314	26.71
Drawdown:	6.54		depth to GW (ft)			

Time	Temp round 1 (celcius)	pH round 1 (units)	Eh ORP (mV)	Spec Cond round 1 (uS/cm)	Turbidity (NTU)	Dissolved Oxygen (ppm)
1254	18.67	5.45	131	44	0	3.31
1259	17.9	5.22	138	43	0	2.2
1304	17.92	5.21	135	42	0	1.93
1309	17.89	5.2	137	42	0	1.77
1314	17.93	5.17	140	42	0	1.66

Comments/Conditions:

Samples were collected by Melanie Goings and Trey West

Cross Generating Station
Bottom Ash Pond CMA/NE Groundwater Monitoring Wells

Well ID	TOC Elevation (feet)	GW Depth (feet)	Screen Intervals (ft, bgs)	Sample Date	Sample Time	Total Well Depth
CCMAP-2	81.24	7.72	13-23	7/1/2021	1246	26.71

Drawdown: 7.8 depth to GW (ft)

Time	Temp round 1 (celcius)	pH round 1 (units)	Eh ORP (mV)	Spec Cond round 1 (uS/cm)	Turbidity (NTU)	Dissolved Oxygen (ppm)
1215	23.93	6.74	-11	105	4.4	2.14
1220	23.41	5.99	45	59	38.8	0.71
1225	24.29	5.77	67	55	3.2	0.59
1230	24.21	5.73	74	53	2.1	0.55
1235	24.16	5.69	80	52	1.2	0.52
1240	24.04	5.67	84	50	1	0.51
1243	24.05	5.66	86	50	1	0.51
1246	23.97	5.66	87	49	0.9	0.51

Comments/Conditions:

Samples were collected by Aaron Hill and Ben Taylor

Cross Generating Station
Bottom Ash Pond CMA/NE Groundwater Monitoring Wells

Well ID	TOC Elevation (feet)	GW Depth (feet)	Screen Intervals (ft, bgs)	Sample Date	Sample Time	Total Well Depth
CCMAP-3	81.91	5.89	24'-34'	2/10/2021	1609	36.73
Drawdown:	5.9		depth to GW (ft)			

Time	Temp round 1 (celcius)	pH round 1 (units)	Eh ORP (mV)	Spec Cond round 1 (uS/cm)	Turbidity (NTU)	Dissolved Oxygen (ppm)
1538	20.91	6.89	237	1700	0	5.64
1543	20.54	7.21	212	1670	0	5.25
1548	20.27	7.24	207	1680	0	5.24
1553	19.96	7.26	202	3330	0	3.23
1558	19.75	6.52	27	4180	0	0.93
1603	19.56	6.56	2	4220	0	0.73
1606	19.42	6.58	-5	4240	0	0.68
1609	19.33	6.58	-9	4240	0	0.66

Comments/Conditions: **Duplicate was collected at 1614**

Samples were collected by Melanie Goings and Trey West

Cross Generating Station
Bottom Ash Pond CMA/NE Groundwater Monitoring Wells

Well ID	TOC Elevation (feet)	GW Depth (feet)	Screen Intervals (ft, bgs)	Sample Date	Sample Time	Total Well Depth
CCMAP-3	81.91	8.02	24'-34'	7/1/2021	1137	36.87
Drawdown:	8.07		depth to GW (ft)			

Time	Temp round 1 (celcius)	pH round 1 (units)	Eh ORP (mV)	Spec Cond round 1 (uS/cm)	Turbidity (NTU)	Dissolved Oxygen (ppm)
1109	26.11	6.4	6	5620	29.5	2.18
1114	26.16	6.4	-1	5820	33	0.77
1119	26.1	6.4	-5	5790	24.6	0.57
1124	26.27	6.41	-6	5750	11.7	0.48
1129	26.57	6.41	-7	5700	5.6	0.43
1134	26.75	6.42	-8	5670	4.3	0.41
1137	26.72	6.42	-8	5660	2.7	0.39

Comments/Conditions:
Duplicate at 1142
Samples were collected by Aaron Hill and Ben Taylor

Cross Generating Station
Bottom Ash Pond CMA/NE Groundwater Monitoring Wells

Well ID	TOC Elevation (feet)	GW Depth (feet)	Screen Intervals (ft, bgs)	Sample Date	Sample Time	Total Well Depth
CCMAP-4	81.83	5.31	8-18	4/8/2021	1032	21.15
Drawdown:	5.4		depth to GW (ft)			

Time	Temp round 1 (celcius)	pH round 1 (units)	Eh ORP (mV)	Spec Cond round 1 (uS/cm)	Turbidity (NTU)	Dissolved Oxygen (ppm)
1001	19.98	6.17	91	621	5.5	2.69
1006	20.19	6.19	34	614	2.3	1.21
1011	20.62	6.2	15	610	2.9	0.84
1016	20.93	6.2	1	587	1.8	0.7
1021	21.05	6.19	-5	577	0.7	0.63
1026	21.31	6.19	-10	559	0.4	0.6
1029	21.34	6.19	-12	547	0	0.58
1032	21.39	6.19	-13	541	0	0.57

Comments/Conditions: Duplicate taken at 1037

Samples were collected by Melanie Goings and Trey West

Cross Generating Station
Bottom Ash Pond CMA/NE Groundwater Monitoring Wells

Well ID	TOC Elevation (feet)	GW Depth (feet)	Screen Intervals (ft, bgs)	Sample Date	Sample Time	Total Well Depth
CCMAP-4	81.83	7.87	8'-18'	7/1/2021	1024	21.16

Drawdown: 8 depth to GW (ft)

Time	Temp round 1 (celcius)	pH round 1 (units)	Eh ORP (mV)	Spec Cond round 1 (uS/cm)	Turbidity (NTU)	Dissolved Oxygen (ppm)
953	22.63	6.48	-14	610	6.2	7.25
958	22.3	6.53	-20	610	5.2	1.12
1003	22.01	6.59	-33	612	3.8	0.78
1008	22.16	6.57	-41	608	4.1	0.68
1013	22.05	6.55	-41	602	3.3	0.65
1018	22.04	6.51	-44	590	3	0.58
1021	21.86	6.49	-44	584	1.7	0.56
1024	22.01	6.48	-44	581	4.1	0.54

Comments/Conditions:

Samples were collected by Aaron Hill and Ben Taylor

Appendix C – Well Installation Records

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: SANTEE COOPER (last) (first)
Address: ONE RIVERWOOD DRIVE
City: MONCKS CORNER State: SC Zip: 29461
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** BERKELEY
Name: CROSS GENERATING STATION
Street Address: 553 CROSS STATION ROAD
City: PINEVILLE Zip: 29468
Latitude: 33° 23' 10.94" Longitude: 80° 06' 56.66"

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:** CC-MAP-4

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from ____ ft. to ____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
SANDY CLAY	18.0	18.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
BENTONITE SEAL 3.0 - 6.0 FEET

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER: SC0037401

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 03/01/21
18.0 ft. Date Completed: 03/01/21

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 8.0 ft. depth
____ in. to ____ ft. depth
Height: Above ☑ Below ☐
Surface 2.5 ft.
Weight ____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 10.0 FEET
Set Between: 8.0 ft. and 18.0 ft.
____ ft. and ____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 6.0 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
____ ft. after ____ hrs. Pumping ____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: ____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 6.0 ft. to 18.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other ____
Depth: From 0.0 ft. to 3.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ____ ft. ____ direction
Type ____
Well Disinfected ☐ Yes ☐ No Type: ____ Amount: ____

18. PUMP: Date installed: ____ Not installed ☐
Mfr. Name: ____ Model No.: ____
H.P.____ Volts____ Length of drop pipe ___ ft. Capacity ____ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: JEREMY RINGLER **CERT. NO.:** 02294
Address: (Print) Level: A ☐ B ☑ C ☐ D ☐ (circle one)
176 COMMERCE BLVD
STATESVILLE, NC 28625
Telephone No.: 704-872-7686 Fax No.: 704-872-0248

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: ____ Date: 03/05/21
Well Driller

If D Level Driller, provide supervising driller's name:

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

Note: Personal information provided on this document is subject to public scrutiny or release.

1. WELL OWNER INFORMATION:
Name: Santee Cooper (last) (first)
Address: One Riverwood Drive
City: Moncks Corner State: SC Zip: 29461-2998
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** Berkeley
Name: Cross Generating Station
Street Address: 553 Cross Station Road
City: Pineville, SC Zip:
Latitude: 33.3705 Longitude: -80.1121

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Give Details Below
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
Orange Yellow Gray Clay	0	5
Orange Yellow Gray Clay w/Sand	5	9.5
Orange White Fi-Med Sand w/Cl	9.5	11.5
Yellow White Coarse Sand w/Cl	11.5	18
Dark Green Clay w/Coarse Sand	18	18.5
Greenish Gray Fine Sand w/Silt	18.5	20
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other

7. PERMIT NUMBER: CCMAP-5

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 12.13.21
20 ft. Date Completed: 12.13.21

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
0 in. to 10 ft. depth
_____ in. to _____ ft. depth
Height: Above/Below Surface _____ ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: PVC Diam.: 2
Slot/Gauge: 0.010 Length: 10
Set Between: 10 ft. and 20 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL _____ ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 8 ft. to 21 ft.
Effective size #2 Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☑ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0 ft. to 8 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: _____ ft. _____ direction
Type _____
Well Disinfected ☐ Yes ☐ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☐
Mfr. Name: _____ Model No.: _____
H.P._____ Volts_____ Length of drop pipe_____ ft. Capacity ____ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: Robert Felder **CERT. NO.:** 1864
Address: (Print) Level: A B C D ✓ (circle one)
PO Box 8446 Columbia, SC 29202
Telephone No.: Fax No.:

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: _____ Date: _____
Well Driller

If D Level Driller, provide supervising driller's name:
William Walker 2042

COPY 1 MAIL TO SCDHEC, COPY 2 TO WELL OWNER, COPY 3 TO WELL DRILLER

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

Note: Personal information provided on this document is subject to public scrutiny or release.

1. WELL OWNER INFORMATION:
Name: Santee Cooper (last) (first)
Address: One Riverwood Drive
City: Moncks Corner State: SC Zip: 29461-2998
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** Berkeley
Name: Cross Generating Station
Street Address: 553 Cross Station Road
City: Pineville, SC Zip:
Latitude: 33.3705 Longitude: -80.1121

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Give Details Below
Grouted Depth: from ____ ft. to ____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
Orange Yellow Gray Clay	0	5
Orange Yellow Gray Clay w/Sand	5	11
Yellow Orange Med-Coarse Sand	11	12
Yellow Orange Fine Sand w/Clay	12	15
Light Gray Medium Sand	15	20
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		
5. REMARKS:		

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other

7. PERMIT NUMBER: CCMAP-6

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 12.13.21
20 ft. Date Completed: 12.13.21

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
0 in. to 10 ft. depth
____ in. to ____ ft. depth
Height: Above/Below Surface ____ ft.
Weight ____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: PVC Diam.: 2
Slot/Gauge: 0.010 Length: 10
Set Between: 10 ft. and 20 ft.
____ ft. and ____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL ____ ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
____ ft. after ____ hrs. Pumping ____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: ____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 8 ft. to 21 ft.
Effective size #2 Uniformity Coefficient ____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☑ Bentonite ☐ Bentonite/Cement ☐ Other ____
Depth: From 0 ft. to 8 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ____ ft. ____ direction
Type ____
Well Disinfected ☐ Yes ☐ No Type: ____ Amount: ____

18. PUMP: Date installed: ____ Not installed ☐
Mfr. Name: ____ Model No.: ____
H.P. ____ Volts ____ Length of drop pipe ____ ft. Capacity ____ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: Robert Felder **CERT. NO.:** 1864
Address: (Print) Level: A B C D ✓ (circle one)
PO Box 8446 Columbia, SC 29202
Telephone No.: Fax No.:

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: ____ Date: ____
Well Driller

If D Level Driller, provide supervising driller's name:
William Walker 2042

DHEC 1903 (08/2017) **COPY 1 MAIL TO SCDHEC, COPY 2 TO WELL OWNER, COPY 3 TO WELL DRILLER**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

Note: Personal information provided on this document is subject to public scrutiny or release.

1. WELL OWNER INFORMATION:
Name: Santee Cooper (last) (first)
Address: One Riverwood Drive
City: Moncks Corner State: SC Zip: 29461-2998
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** Berkeley
Name: Cross Generating Station
Street Address: 553 Cross Station Road
City: Pineville, SC Zip:
Latitude: 33.3705 Longitude: -80.1121

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Give Details Below
Grouted Depth: from ____ ft. to ____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
Orange Yellow Gray Clay	0	5
Orange Yellow Gray Clay w/Sand	5	12
Orange White Fine-Med Sand w/Cl	12	13
Orange White Med-Co Sand w/Cl	13	15
Lt Gray Fi-Coarse Sand w/Cl	15	20
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other

7. PERMIT NUMBER: CCMAP-7

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 12.13.21
20 ft. Date Completed: 12.13.21

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
0 in. to 10 ft. depth
____ in. to ____ ft. depth
Height: Above/Below Surface ____ ft.
Weight ____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: PVC Diam.: 2
Slot/Gauge: 0.010 Length: 10
Set Between: 10 ft. and 20 ft.
____ ft. and ____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL ____ ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
____ ft. after ____ hrs. Pumping ____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: ____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 8 ft. to 21 ft.
Effective size #2 Uniformity Coefficient ____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☑ Bentonite ☐ Bentonite/Cement ☐ Other ____
Depth: From 0 ft. to 8 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ____ ft. ____ direction
Type ____
Well Disinfected ☐ Yes ☐ No Type: ____ Amount: ____

18. PUMP: Date installed: ____ Not installed ☐
Mfr. Name: ____ Model No.: ____
H.P. ____ Volts ____ Length of drop pipe ____ ft. Capacity ____ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: Robert Felder **CERT. NO.:** 1864
Address: (Print) Level: A B C D ✓ (circle one)
PO Box 8446 Columbia, SC 29202
Telephone No.: Fax No.:

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: ____ Date: ____
Well Driller

If D Level Driller, provide supervising driller's name:
William Walker 2042

COPY 1 MAIL TO SCDHEC, COPY 2 TO WELL OWNER, COPY 3 TO WELL DRILLER

Appendix D – Slug Testing Results

HALEY & ALDRICH, INC.
400 Augusta Street
Suite 100
Greenville, SC 29601
864.214.8750

MEMORANDUM

January 27, 2022
File No. 132892-013

SUBJECT: Slug Testing Results
Cross Generating Station

Rising-head and falling-head permeability ("slug") tests were conducted for the newly installed monitoring wells in the vicinity of the Closed Gypsum Pond, site-wide background wells and nature and extent monitoring wells for the Bottom Ash Pond and Class 2 Landfill. These slug tests were conducted to measure the hydraulic conductivity of the uppermost aquifer for the newly installed/existing monitoring wells, compare them to historical results documented in the "Site Hydrogeologic Characterization Report" by Garrett & Moore in 2011, and if necessary and appropriate, refine the hydraulic properties in the groundwater flow and solute transport model.

SLUG TESTING AND DATA ANALYSIS PROCEDURES

To conduct the slug tests at the well locations, the following steps were completed at each location.

- Static water level measurements were collected at the well prior to the test.
- To measure the displacement of the water column over time in the well, a pressure transducer was lowered to the bottom of the well (In-Situ Level Troll™).
- A solid PVC rod was constructed cut to length and attached to a rope to be used as a slug of known volume to displace water within the well.
- The slug was lowered into the well instantaneously and completely below the static water level without splashing the water column. The water level was then allowed to recover to within 90 percent of the static water level. This portion of the test constituted the "slug in" test.
- Once the water level recovered the slug was removed instantaneously and completely from the water column and the water level was allowed to recover to within 90 percent of the static water level. This portion of the test constituted the "slug out" test.
- This pair of slug in and slug out tests were repeated at each well up to three times to compare results and obtain a geometric mean for hydraulic conductivity.
- The measured rate of recovery of the water level is a function of the horizontal hydraulic conductivity of the aquifer material in the vicinity of the monitoring well.

The slug test data were analyzed using the HydroSOLVE, Inc. AQTESOLV for Windows™ program according to the Bouwer-Rice solution method. This method estimates hydraulic conductivity through graphical straight line slope matching. The data output and graphs generated by AQTESOLV™ are provided in Attachment A. Calculated values of K based on the slug test data are presented in Table 1.

SLUG TESTING RESULTS

The range of hydraulic conductivities from the monitoring wells that were tested were 1.387E-04 (cm/sec) to 4.800E-03 (cm/sec). These results are comparable to the Site Hydrogeologic Characterization Report which reported a range of hydraulic conductivities of 3.357E-04 (cm/sec) to 8.93E-03 (cm/sec) for the shallow aquifer. This range of hydraulic conductivities is typical for the soil types identified and for this depositional setting. This information, combined with the calculated horizontal hydraulic gradients, and an assumed effective porosity of 25 percent will be used to report on groundwater flow direction and rate following each semiannual sampling event as required by § 257.93(c) of the Federal CCR Rule.

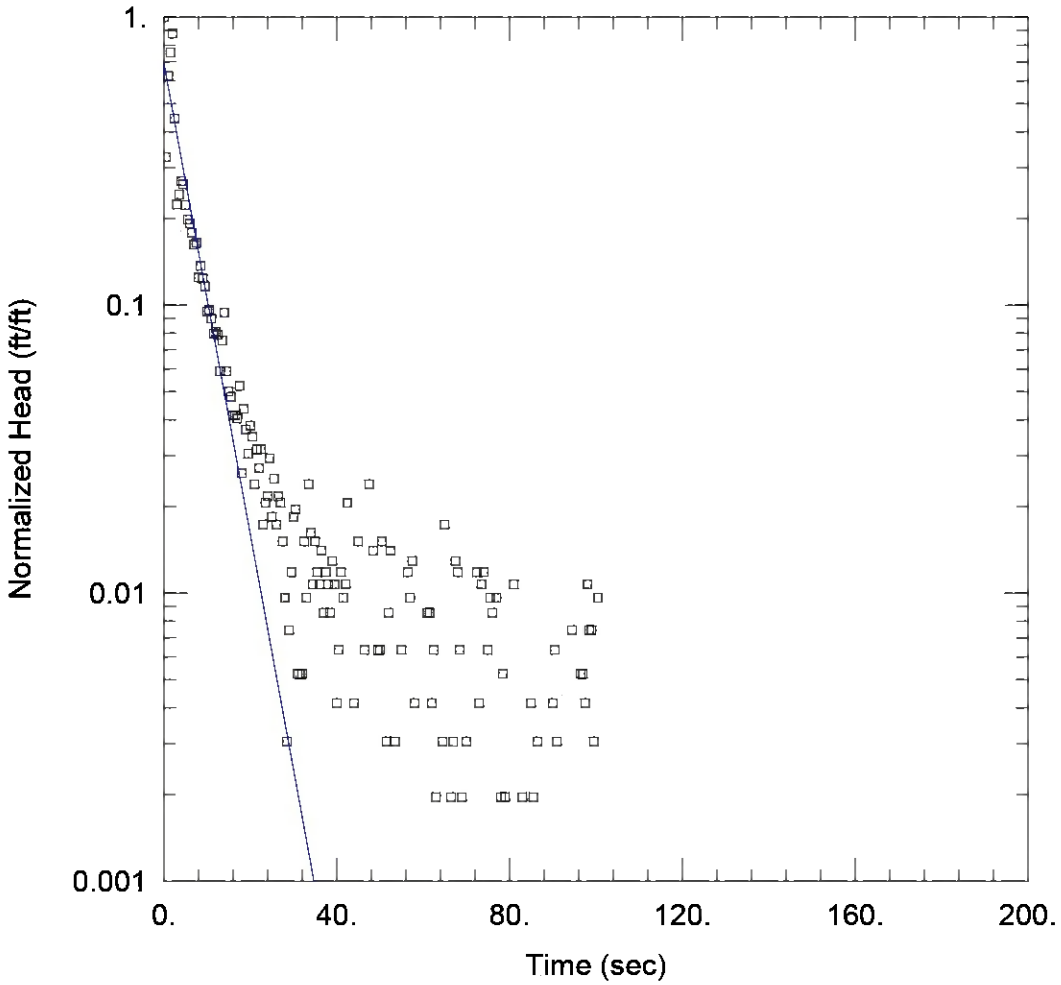
TABLES

TABLE 1
SUMMARY OF SLUG TEST DATA
CROSS GENERATING STATION
SANTEE COOPER
CROSS, SOUTH CAROLINA

Well ID	Slug In 1 (cm/sec)	Slug Out 1 (cm/sec)	Slug In 2 (cm/sec)	Slug Out 2 (cm/sec)	Slug In 3 (cm/sec)	Slug Out 3 (cm/sec)	Geom. Mean (cm/sec)	Formatted Geom. (cm/sec)
CGYP-5	0.0001439	0.0001419	0.0001481	0.0001225			0.000138734	1.387E-04
CGYP-2	0.0003882	0.000484	0.0004948	0.0004822			0.000460139	4.601E-04
CGYP-6	0.0005347	0.0004815	0.0005616	0.0005252			0.000524946	5.249E-04
CGYP-3	0.0005141	0.0005617	0.0005961	0.0005746			0.000560802	5.608E-04
POZ-4	0.0006012	0.0006036	0.000628	0.0006124			0.00061121	6.112E-04
CGYP-4	0.0007695	0.0007741	0.0007724	0.0007743			0.000772573	7.726E-04
CCMAP-1	0.001106	0.001122	0.001127	0.001169			0.001130763	1.131E-03
PM-1	0.002385	0.001913	0.003361	0.00166	0.006277	0.00214	0.002644383	2.644E-03
CCMAP-2	0.002834	0.002656	0.002835	0.002556			0.0027176	2.718E-03
CGYP-1	0.001177	0.004646	0.00266	0.004105	0.002869	0.004905	0.003071874	3.072E-03
CBW-1	0.005518	0.004379	0.004712	0.004799	0.004725	0.00474	0.004800452	4.800E-03

Notes:
Geom. = Geometric Mean

ATTACHMENTS



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\CBW1 Slug In 1.aqt
Date: 11/08/21 Time: 10:58:16

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: CBW-1

AQUIFER DATA

Saturated Thickness: 15.01 ft Anisotropy Ratio (Kz/Kr): 1.

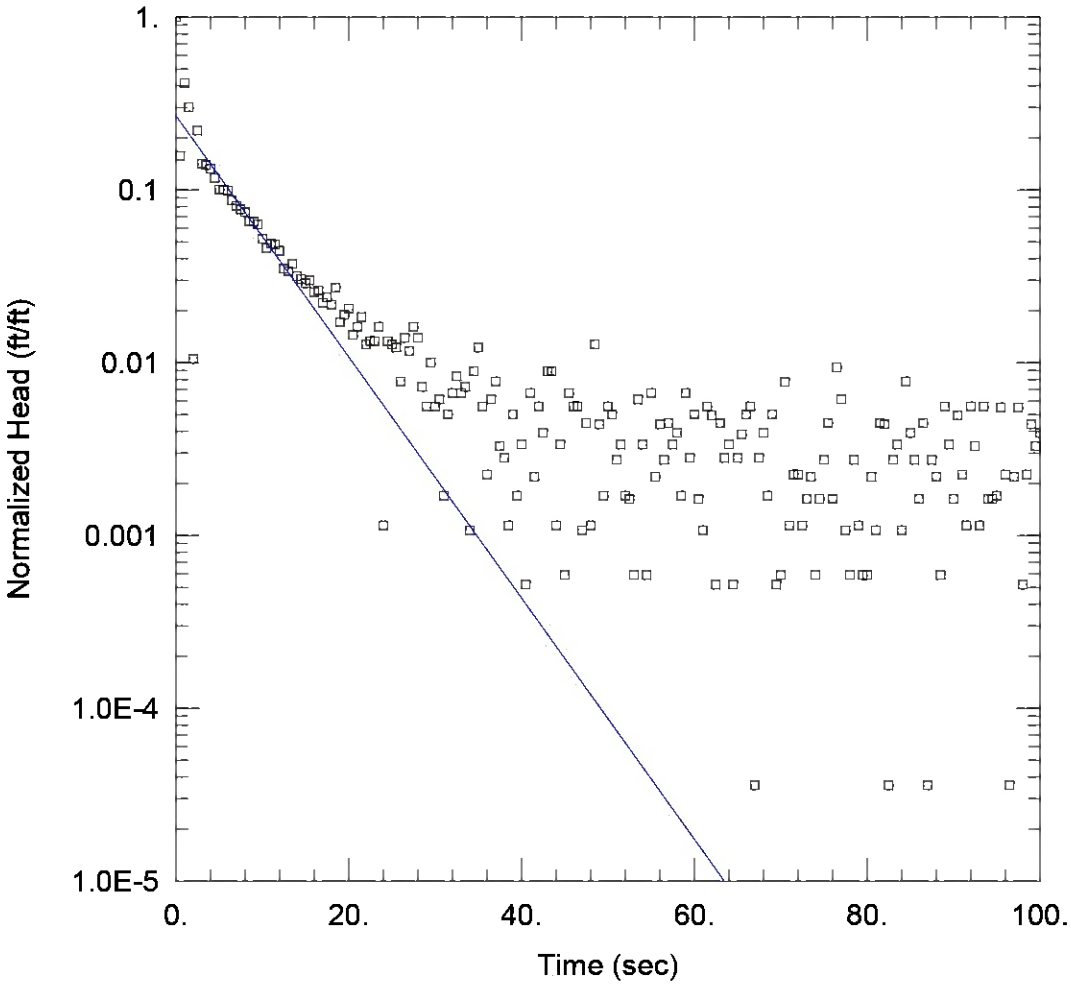
WELL DATA (CBW-1)

Initial Displacement: 0.9118 ft
Total Well Penetration Depth: 15.01 ft
Casing Radius: 0.083 ft
Static Water Column Height: 15.01 ft
Screen Length: 10. ft
Well Radius: 0.3438 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.005518 cm/sec y0 = 0.6261 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\CBW1 Slug In 2.aqt
Date: 11/08/21 Time: 11:06:54

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: CBW-1

AQUIFER DATA

Saturated Thickness: 15.01 ft Anisotropy Ratio (Kz/Kr): 1.

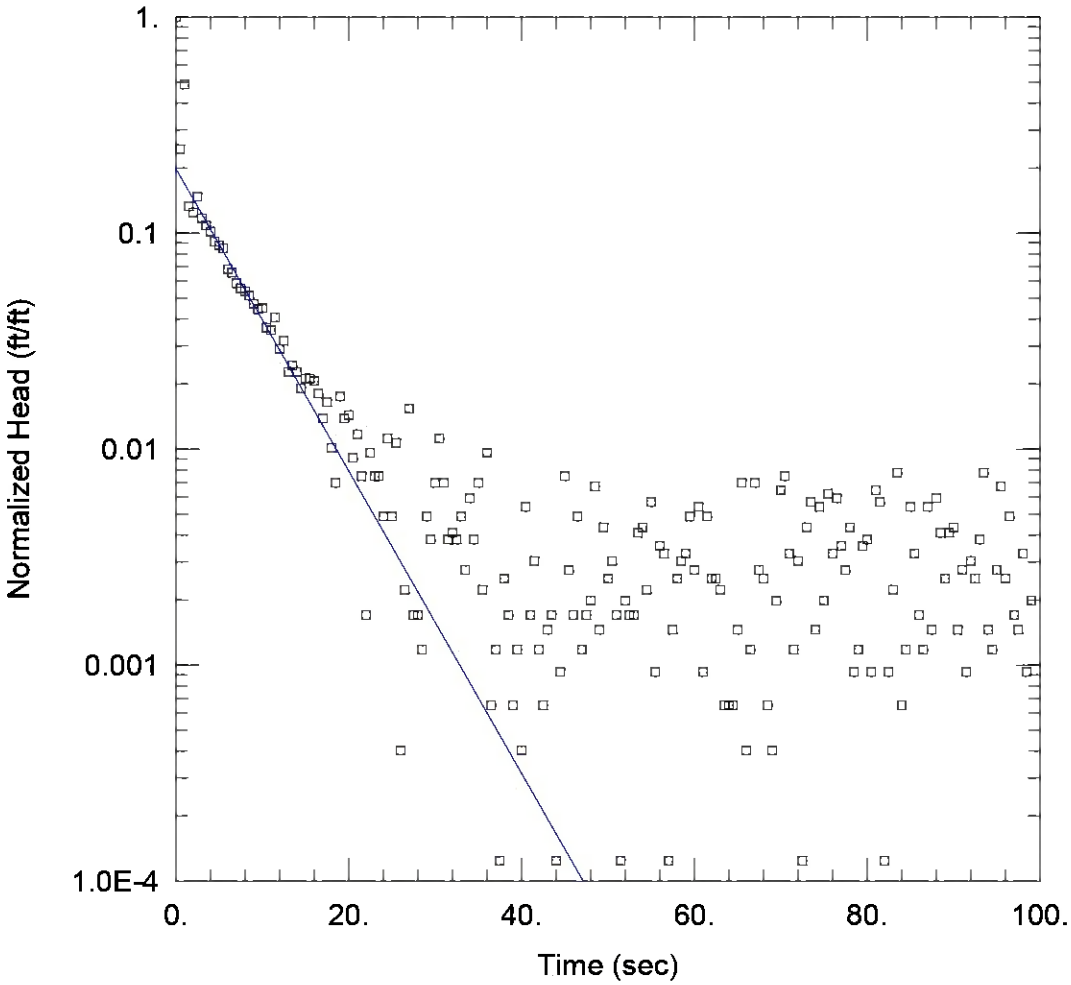
WELL DATA (CBW-1)

Initial Displacement: 1.802 ft
Total Well Penetration Depth: 15.01 ft
Casing Radius: 0.083 ft
Static Water Column Height: 15.01 ft
Screen Length: 10. ft
Well Radius: 0.3438 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.004712 cm/sec y0 = 0.4834 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\CBW1 Slug in 3.aqt
Date: 11/08/21 Time: 11:44:47

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: CBW-1

AQUIFER DATA

Saturated Thickness: 15.01 ft Anisotropy Ratio (Kz/Kr): 1.

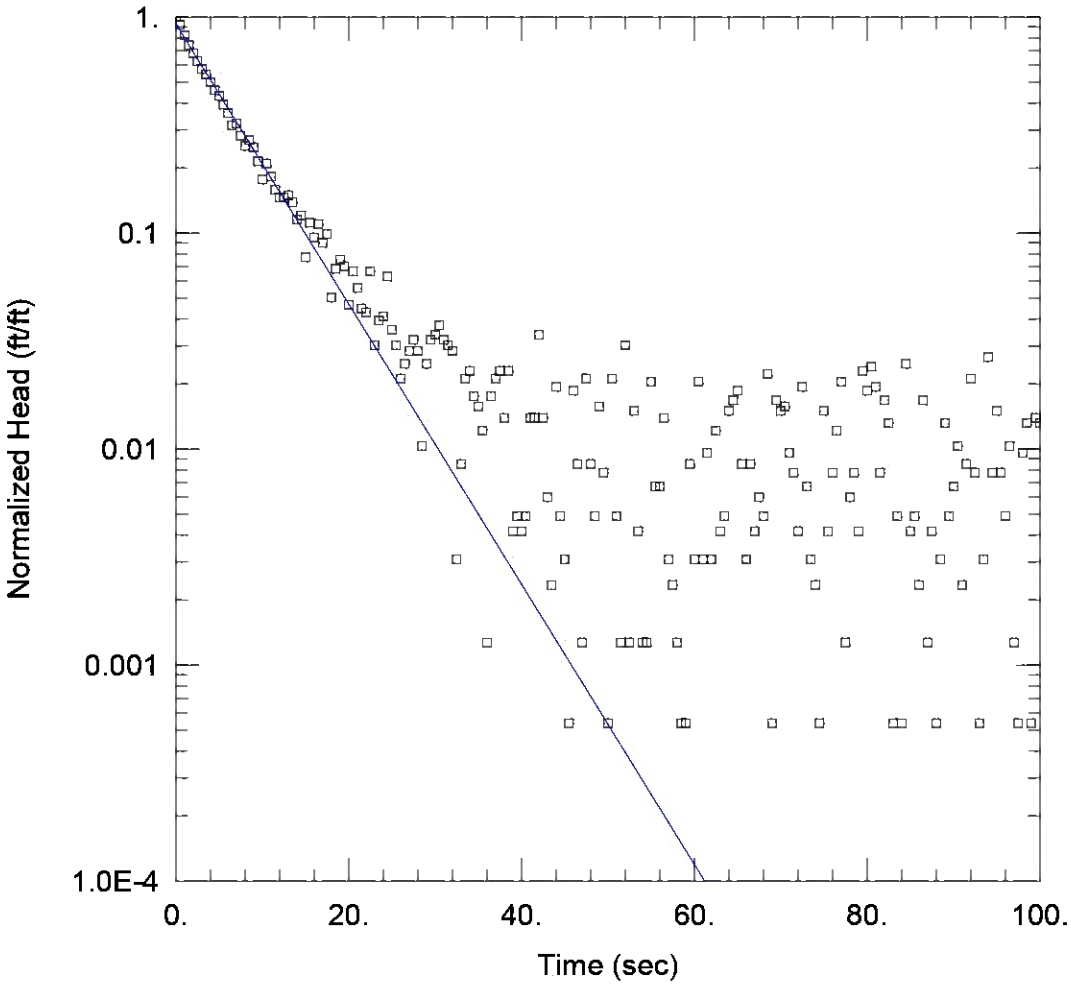
WELL DATA (CBW-1)

Initial Displacement: 1.896 ft
Total Well Penetration Depth: 15.01 ft
Casing Radius: 0.083 ft
Static Water Column Height: 15.01 ft
Screen Length: 10. ft
Well Radius: 0.3438 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.004725 cm/sec y0 = 0.3762 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\CBW1 Slug out 1.aqt
Date: 11/08/21 Time: 10:59:18

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: CBW-1

AQUIFER DATA

Saturated Thickness: 15.01 ft Anisotropy Ratio (Kz/Kr): 1.

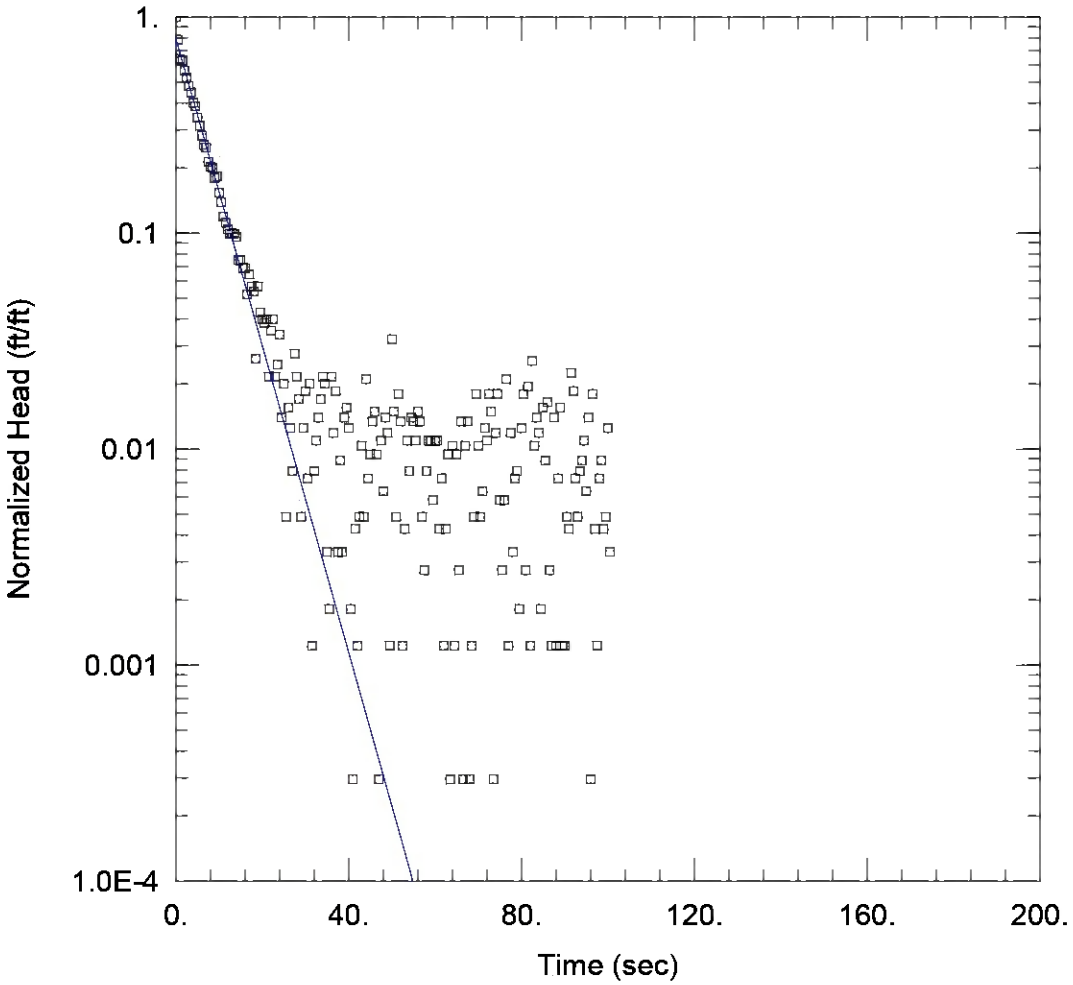
WELL DATA (CBW-1)

Initial Displacement: 0.5517 ft
Total Well Penetration Depth: 15.01 ft
Casing Radius: 0.083 ft
Static Water Column Height: 15.01 ft
Screen Length: 10. ft
Well Radius: 0.3438 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.004379 cm/sec y0 = 0.5124 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\CBW1 Slug out 2.aqt
Date: 11/08/21 Time: 11:39:00

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: CBW-1

AQUIFER DATA

Saturated Thickness: 15.01 ft Anisotropy Ratio (Kz/Kr): 1.

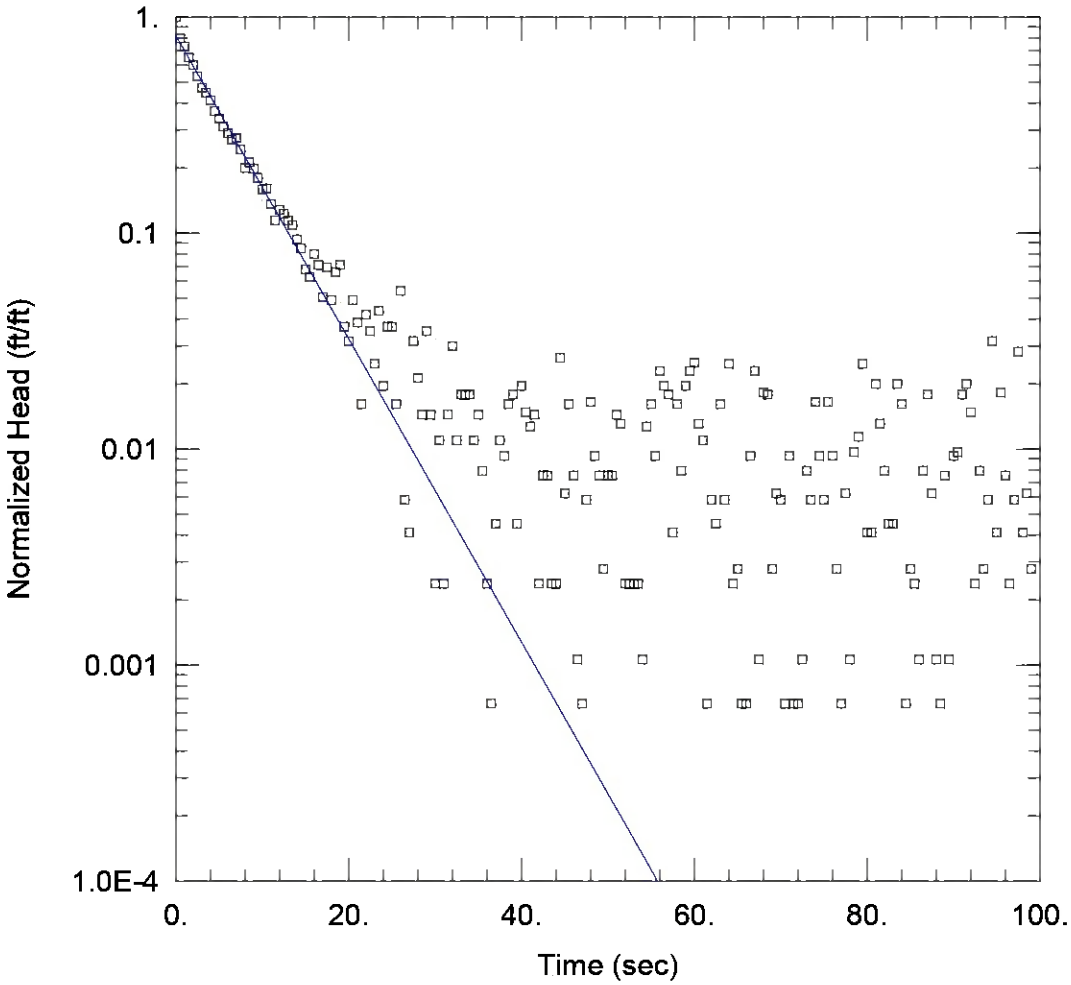
WELL DATA (CBW-1)

Initial Displacement: 0.6562 ft
Total Well Penetration Depth: 15.01 ft
Casing Radius: 0.083 ft
Static Water Column Height: 15.01 ft
Screen Length: 10. ft
Well Radius: 0.3438 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.004799 cm/sec y0 = 0.5205 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\CBW1 Slug out 3.aqt
Date: 11/08/21 Time: 11:51:27

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: CBW-1

AQUIFER DATA

Saturated Thickness: 15.01 ft Anisotropy Ratio (Kz/Kr): 1.

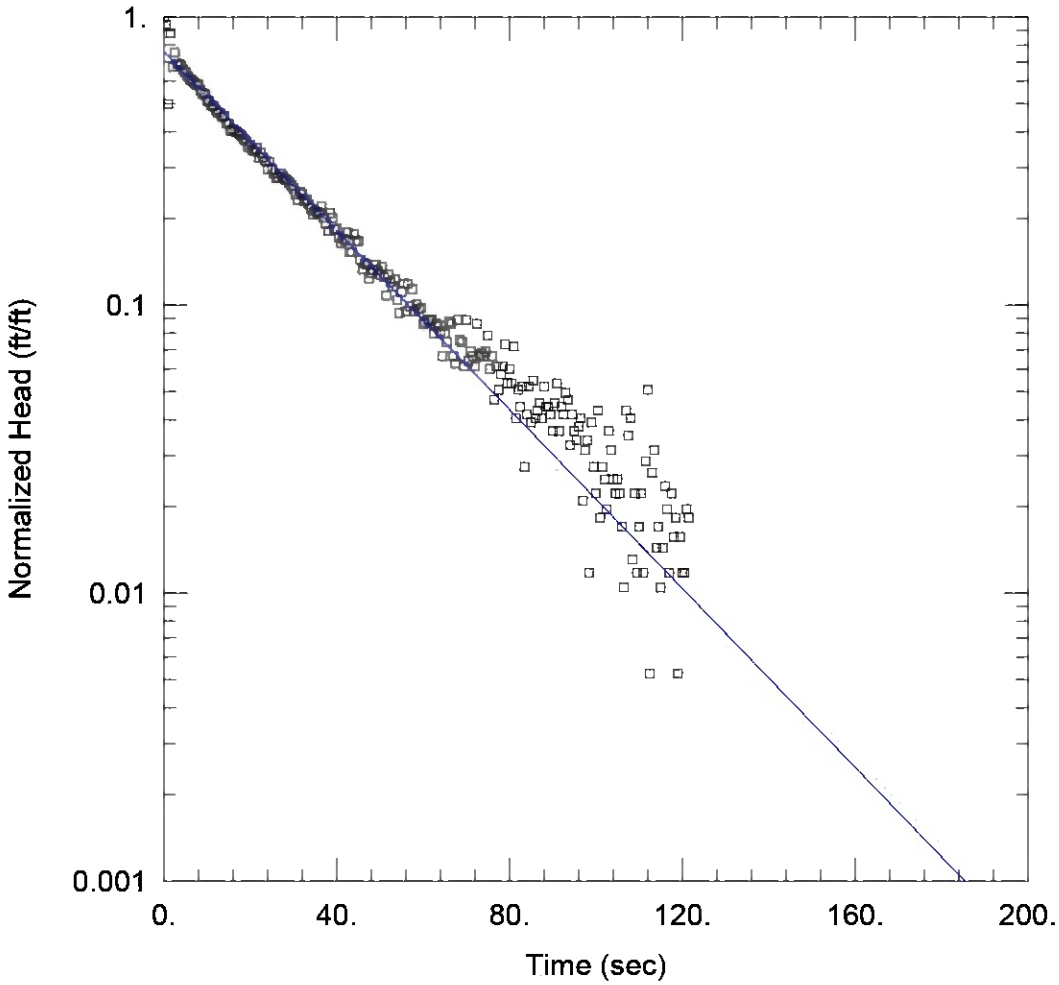
WELL DATA (CBW-1)

Initial Displacement: 0.5804 ft
Total Well Penetration Depth: 15.01 ft
Casing Radius: 0.083 ft
Static Water Column Height: 15.01 ft
Screen Length: 10. ft
Well Radius: 0.3438 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.00474 cm/sec y0 = 0.4754 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\CCMAP1 Slug in 1.aqt
Date: 11/08/21 Time: 16:24:09

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: CCMAP-1

AQUIFER DATA

Saturated Thickness: 18.75 ft Anisotropy Ratio (Kz/Kr): 1.

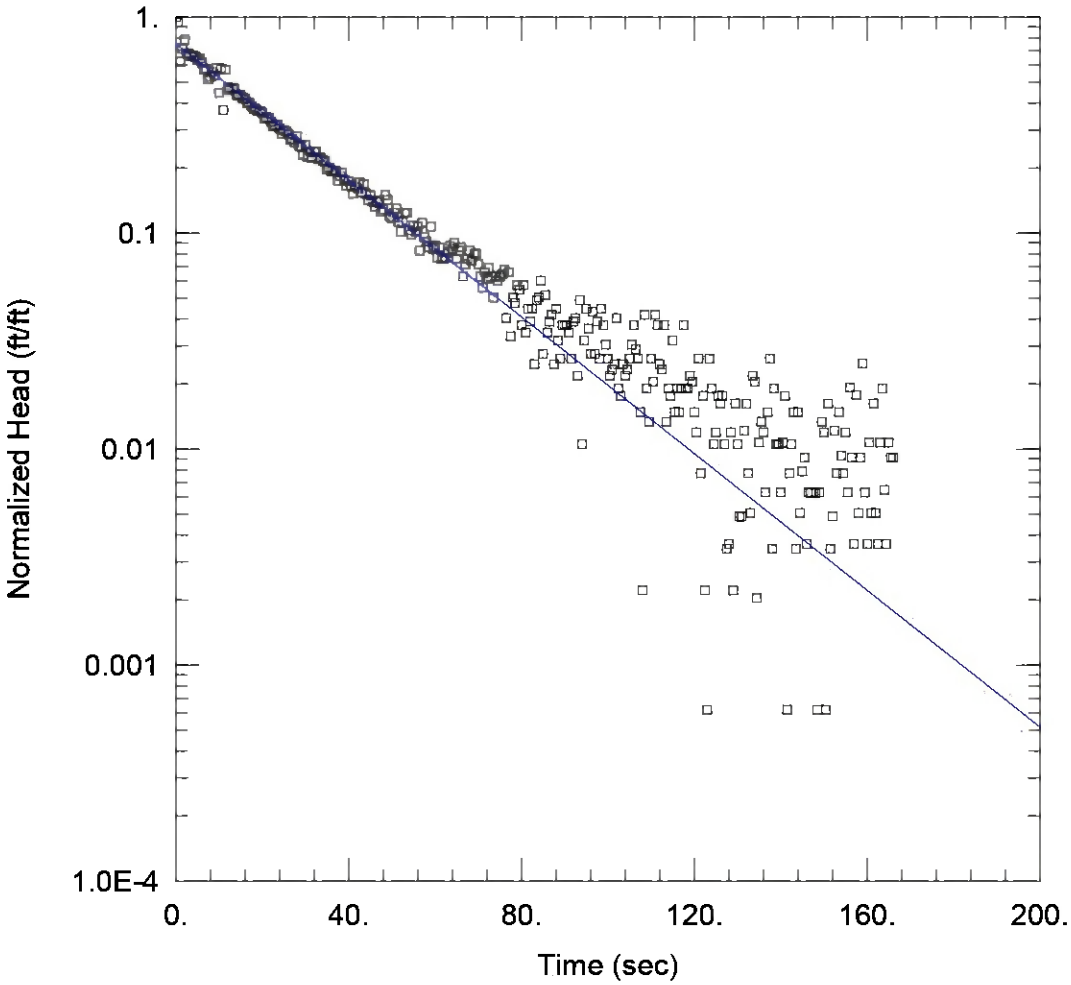
WELL DATA (CCMAP-1)

Initial Displacement: 0.767 ft
Total Well Penetration Depth: 18.75 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 18.75 ft
Screen Length: 10. ft
Well Radius: 0.3438 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.001106 cm/sec y0 = 0.5808 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\CCMAP1 Slug in 2.aqt
Date: 11/08/21 Time: 16:23:51

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: CCMAP-1

AQUIFER DATA

Saturated Thickness: 18.75 ft Anisotropy Ratio (Kz/Kr): 1.

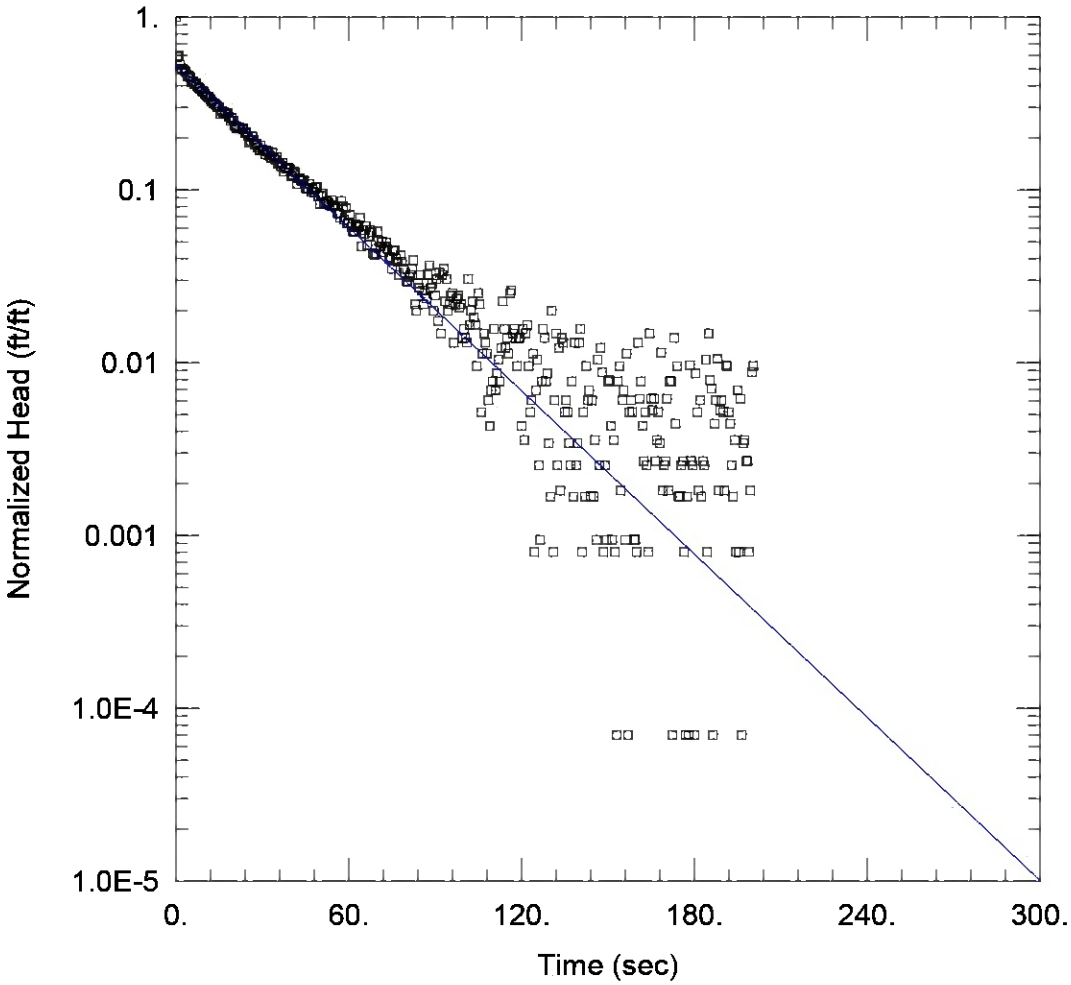
WELL DATA (CCMAP-1)

Initial Displacement: 0.7044 ft
Total Well Penetration Depth: 18.75 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 18.75 ft
Screen Length: 10. ft
Well Radius: 0.3438 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.001127 cm/sec y0 = 0.5305 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\CCMAP1 Slug out 1.aqt
Date: 11/08/21 Time: 16:23:35

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: CCMAP-1

AQUIFER DATA

Saturated Thickness: 18.75 ft Anisotropy Ratio (Kz/Kr): 1.

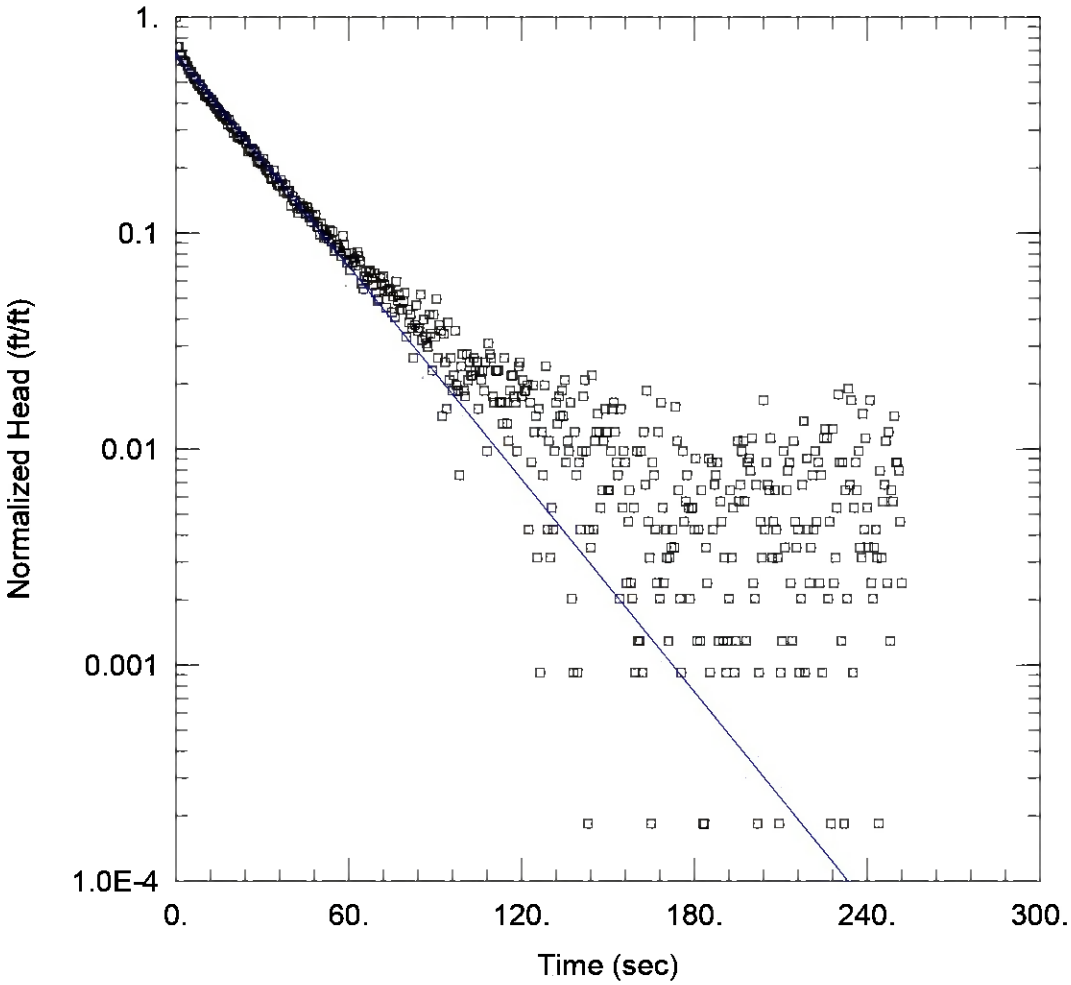
WELL DATA (CCMAP-1)

Initial Displacement: 1.144 ft
Total Well Penetration Depth: 18.75 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 18.75 ft
Screen Length: 10. ft
Well Radius: 0.3438 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.001122 cm/sec y0 = 0.6091 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\CCMAP1 Slug out 2.aqt
Date: 11/08/21 Time: 16:20:26

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: CCMAP-1

AQUIFER DATA

Saturated Thickness: 18.75 ft Anisotropy Ratio (Kz/Kr): 1.

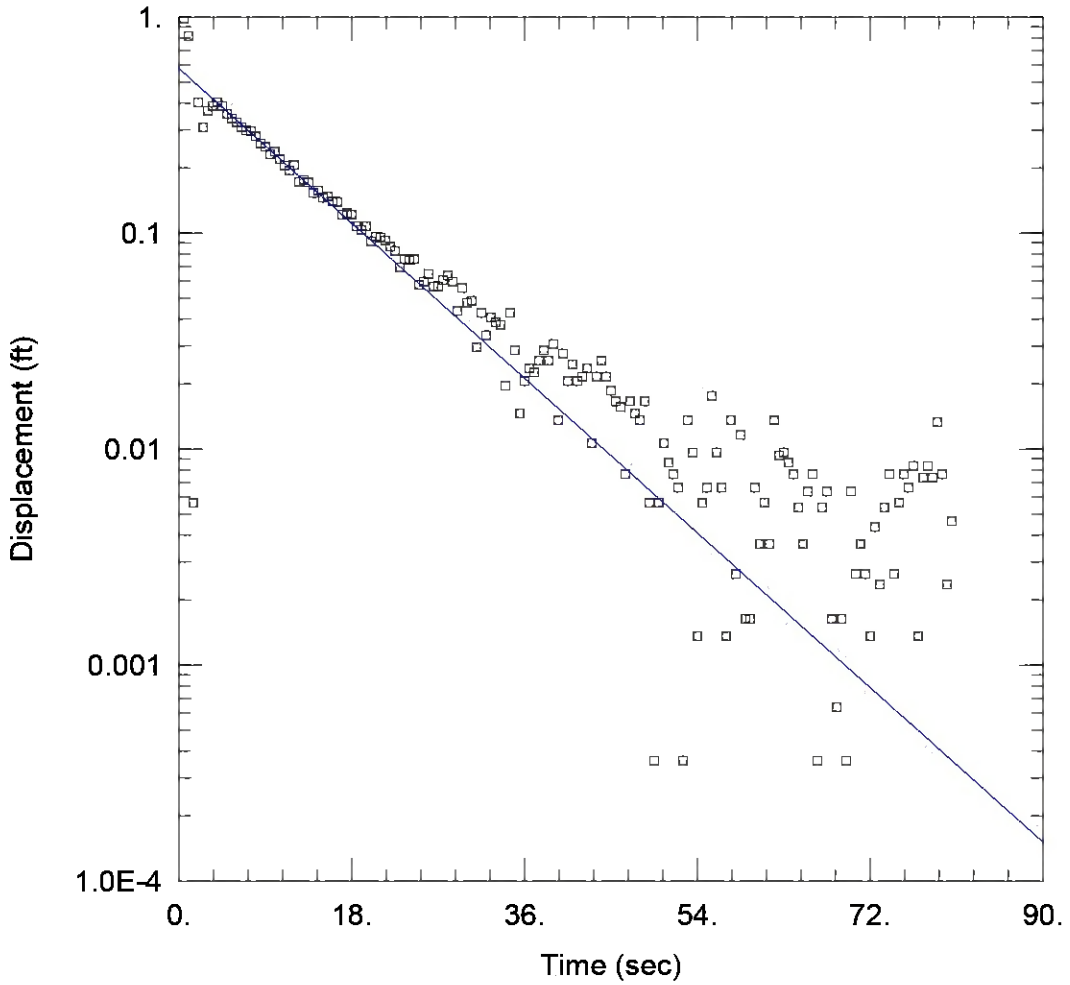
WELL DATA (CCMAP-1)

Initial Displacement: 0.9028 ft
Total Well Penetration Depth: 18.75 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 18.75 ft
Screen Length: 10. ft
Well Radius: 0.3438 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.001169 cm/sec y0 = 0.6094 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\CCMAP-2 Slug In 1.aqt
Date: 11/08/21 Time: 16:39:53

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: CCMAP-2

AQUIFER DATA

Saturated Thickness: 18.65 ft Anisotropy Ratio (Kz/Kr): 1.

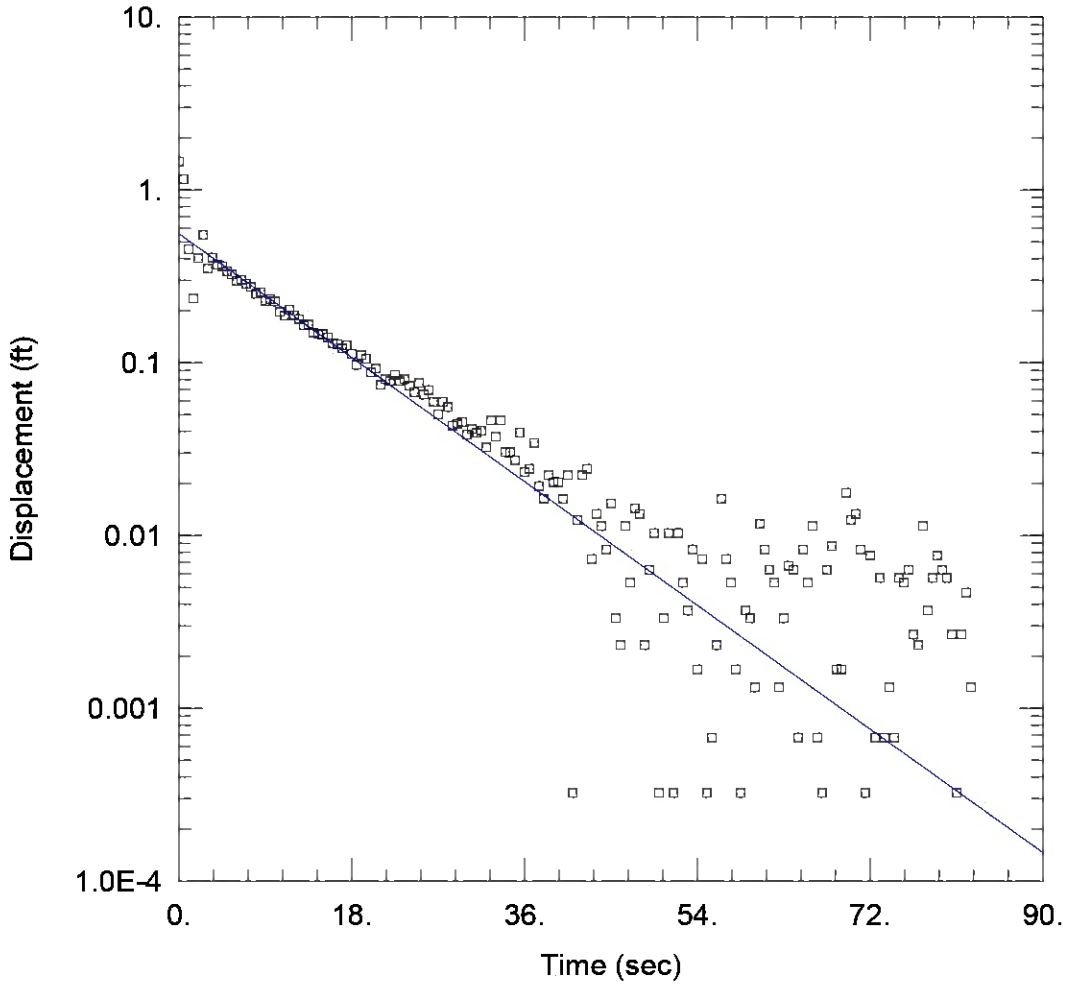
WELL DATA (CCMAP-2)

Initial Displacement: 1.109 ft
Total Well Penetration Depth: 18.65 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 18.65 ft
Screen Length: 10. ft
Well Radius: 0.3438 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.002834 cm/sec y0 = 0.5778 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\CCMAP-2 Slug in 2.aqt
Date: 11/08/21 Time: 16:59:53

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: CCMAP-2

AQUIFER DATA

Saturated Thickness: 18.65 ft Anisotropy Ratio (Kz/Kr): 1.

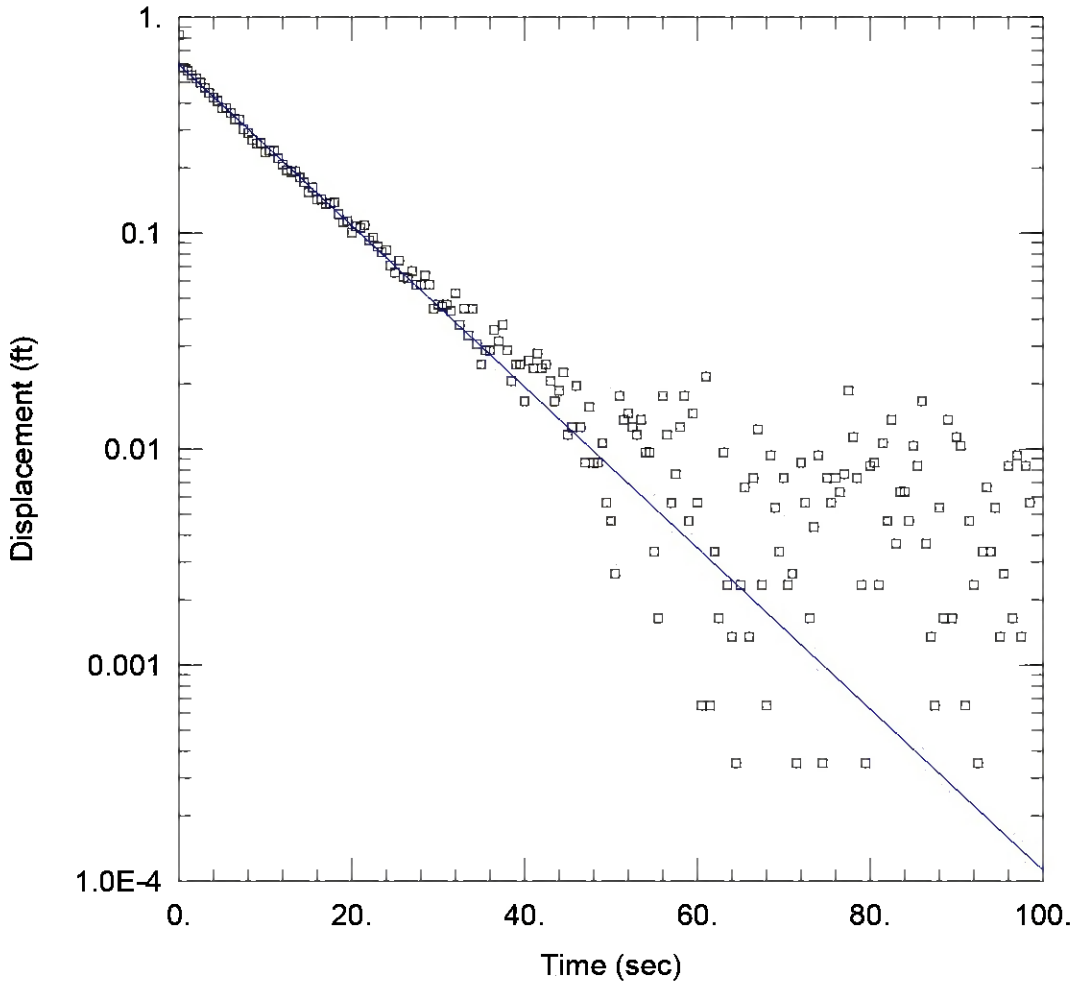
WELL DATA (CCMAP-2)

Initial Displacement: 1.46 ft
Total Well Penetration Depth: 18.65 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 18.65 ft
Screen Length: 10. ft
Well Radius: 0.3438 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.002835 cm/sec y0 = 0.5577 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\CCMAP-2 Slug out 1.aqt
Date: 11/08/21 Time: 16:55:05

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: CCMAP-2

AQUIFER DATA

Saturated Thickness: 18.65 ft Anisotropy Ratio (Kz/Kr): 1.

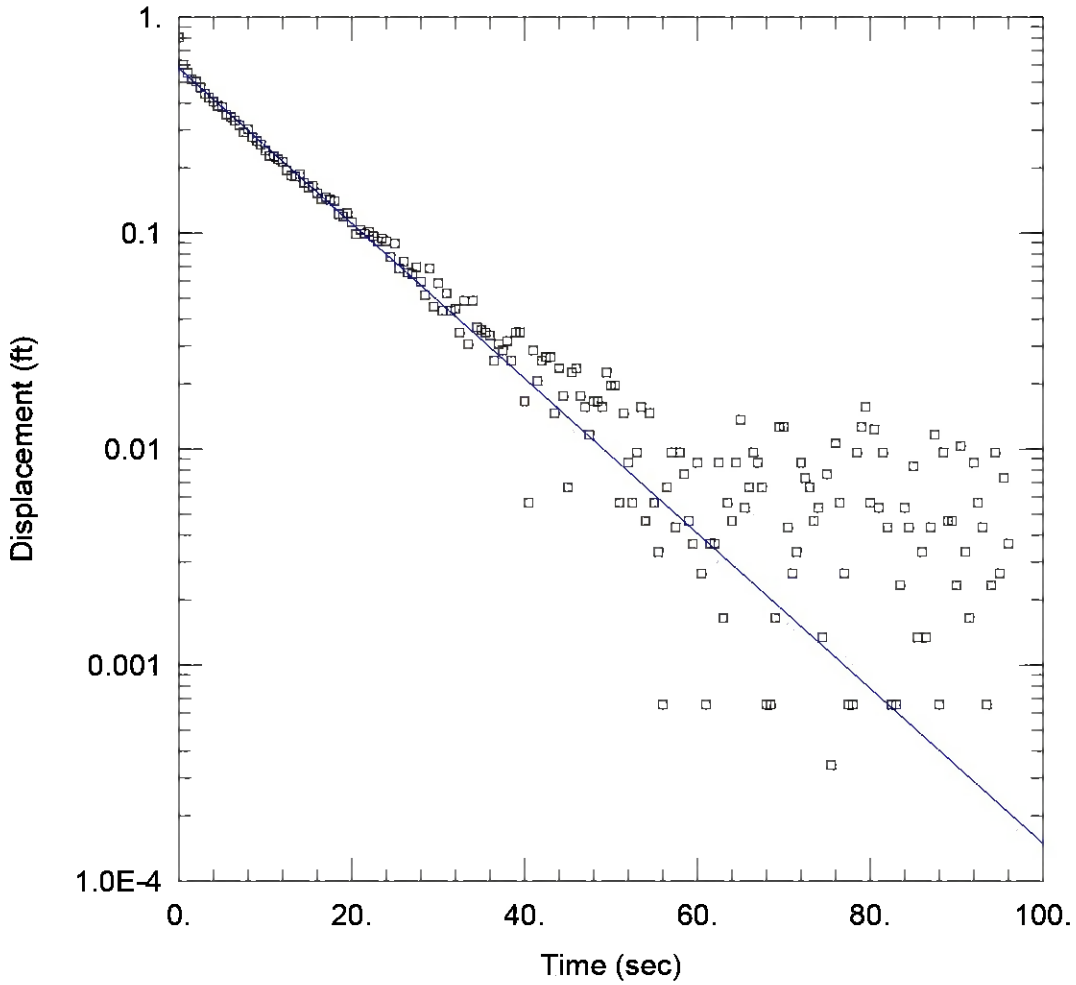
WELL DATA (CCMAP-2)

Initial Displacement: 0.8286 ft
Total Well Penetration Depth: 18.65 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 18.65 ft
Screen Length: 10. ft
Well Radius: 0.3438 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.002656 cm/sec y0 = 0.6026 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\CCMAP-2 Slug out 2.aqt
Date: 11/08/21 Time: 17:19:40

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: CCMAP-2

AQUIFER DATA

Saturated Thickness: 18.65 ft Anisotropy Ratio (Kz/Kr): 1.

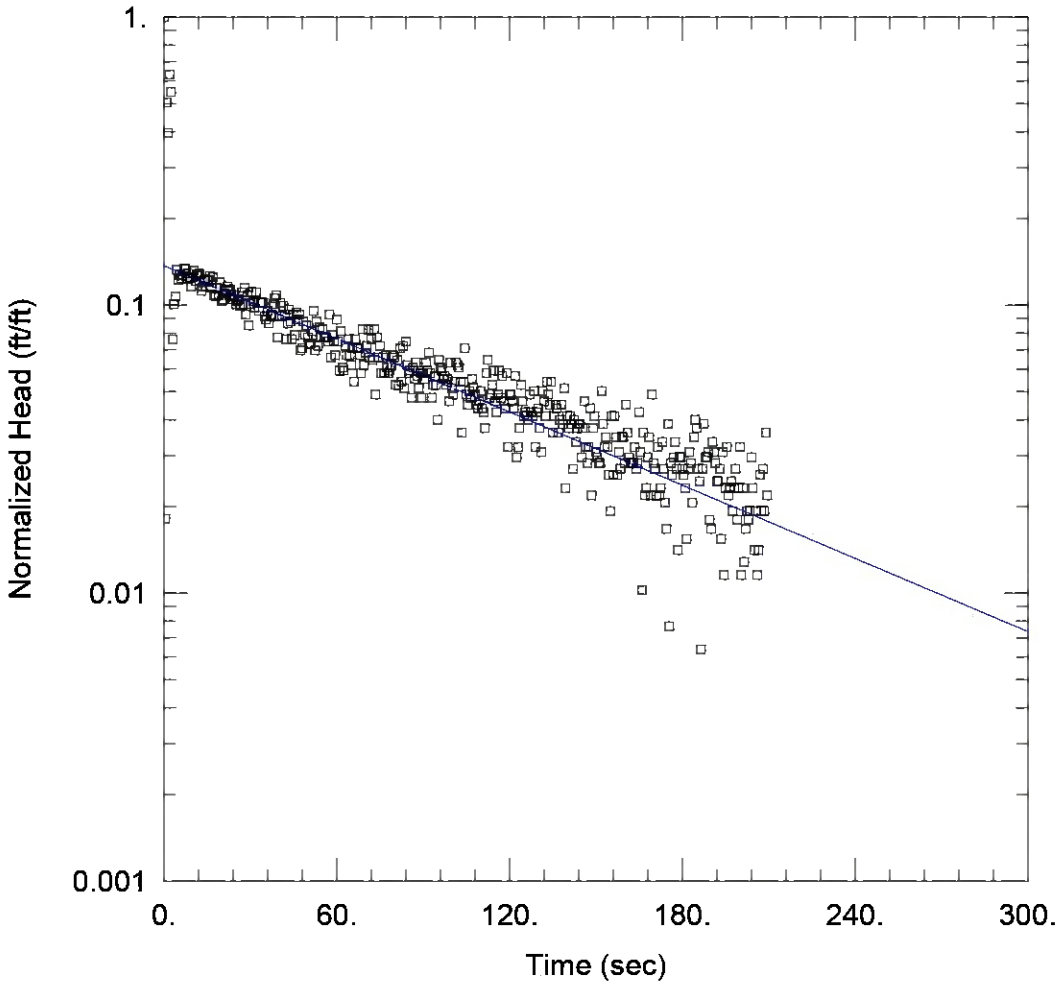
WELL DATA (CCMAP-2)

Initial Displacement: 0.8047 ft
Total Well Penetration Depth: 18.65 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 18.65 ft
Screen Length: 10. ft
Well Radius: 0.3438 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.002556 cm/sec y0 = 0.5789 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\CGYP-1 Slug in 1.aqt
Date: 11/09/21 Time: 09:06:02

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: CGYP-1

AQUIFER DATA

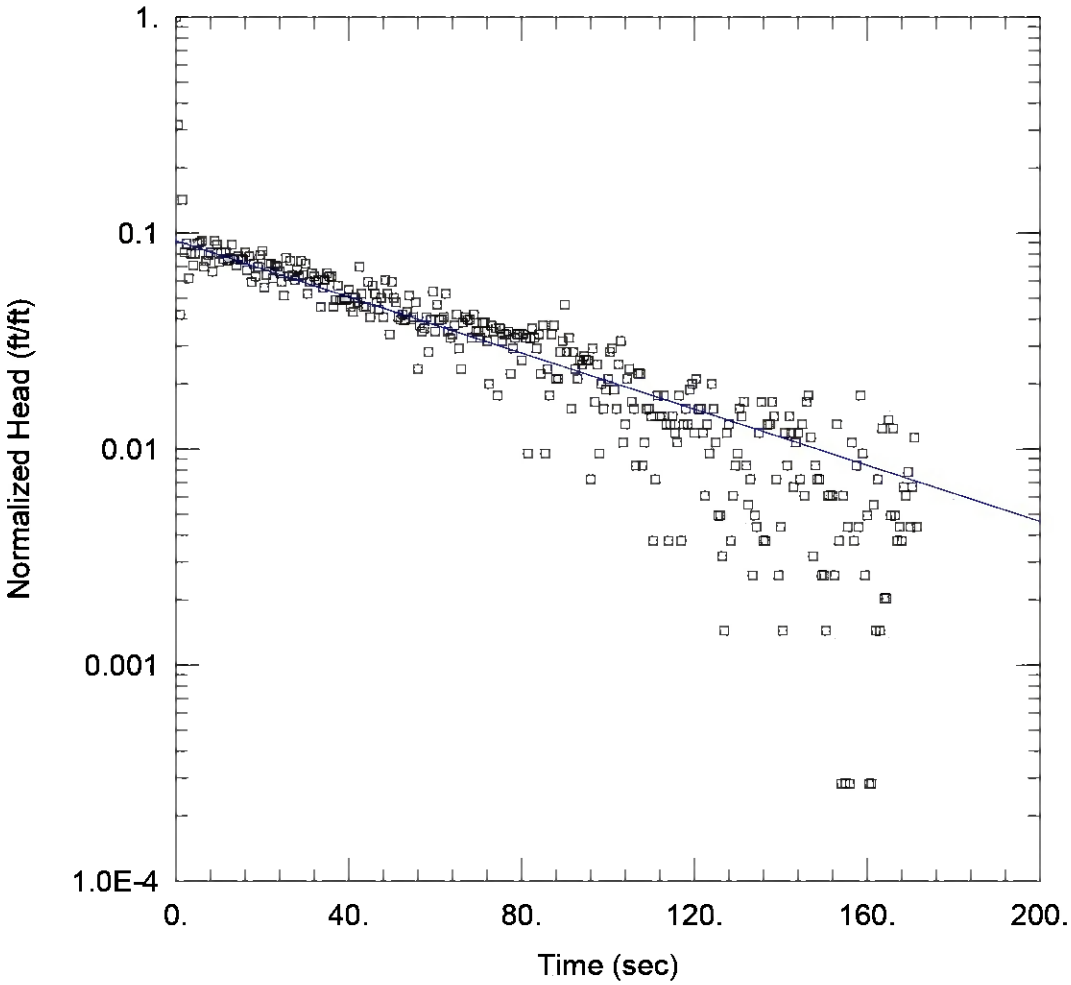
Saturated Thickness: 9.32 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (CGYP-1)

Initial Displacement: 0.7749 ft
Total Well Penetration Depth: 10. ft
Casing Radius: 0.08333 ft
Static Water Column Height: 9.32 ft
Screen Length: 10. ft
Well Radius: 0.3438 ft
Gravel Pack Porosity: 0.2

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.001177 cm/sec
y0 = 0.1063 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\CGYP-1 Slug in 2.aqt
Date: 11/09/21 Time: 12:22:13

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: CGYP-1

AQUIFER DATA

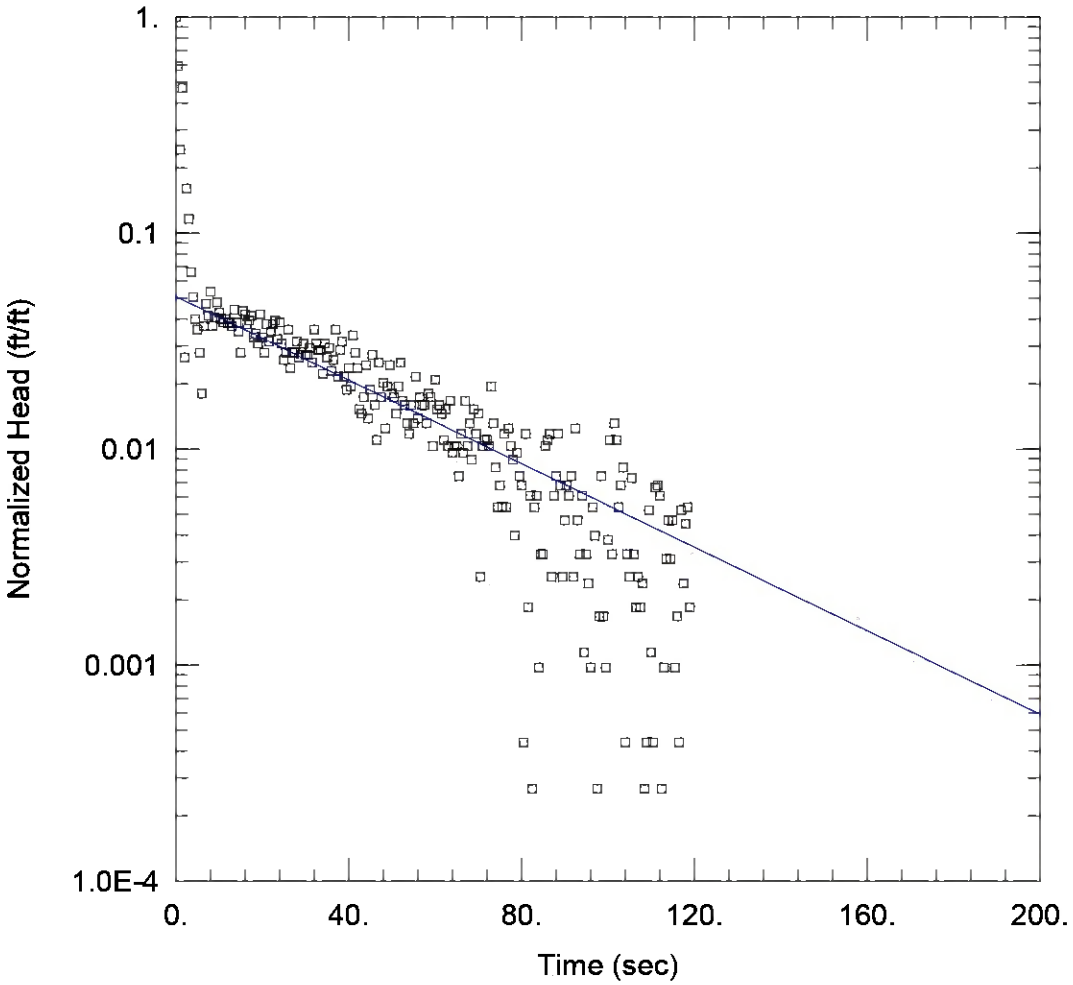
Saturated Thickness: 9.33 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (CGYP-1)

Initial Displacement: 0.8622 ft
Total Well Penetration Depth: 9.32 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 9.32 ft
Screen Length: 9.32 ft
Well Radius: 0.3438 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.00266 cm/sec
y0 = 0.07938 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\CGYP-1 Slug in 3.aqt
Date: 11/09/21 Time: 12:19:23

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: CGYP-1

AQUIFER DATA

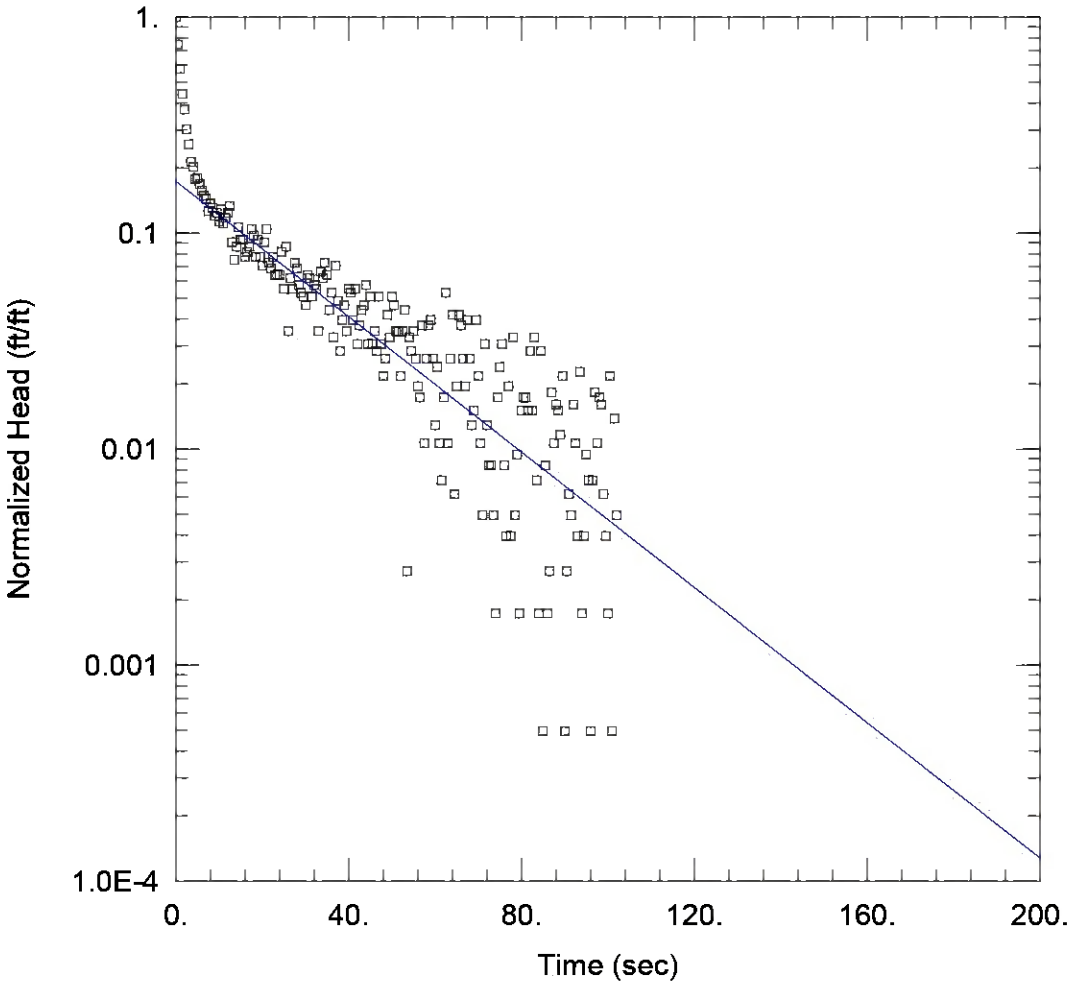
Saturated Thickness: 9.33 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (CGYP-1)

Initial Displacement: 1.416 ft
Total Well Penetration Depth: 9.32 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 9.32 ft
Screen Length: 9.32 ft
Well Radius: 0.3438 ft
Gravel Pack Porosity: 0.2

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.002869 cm/sec
y0 = 0.07198 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\CGYP-1 Slug out 1.aqt
Date: 11/09/21 Time: 12:21:09

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: CGYP-1

AQUIFER DATA

Saturated Thickness: 9.33 ft Anisotropy Ratio (Kz/Kr): 1.

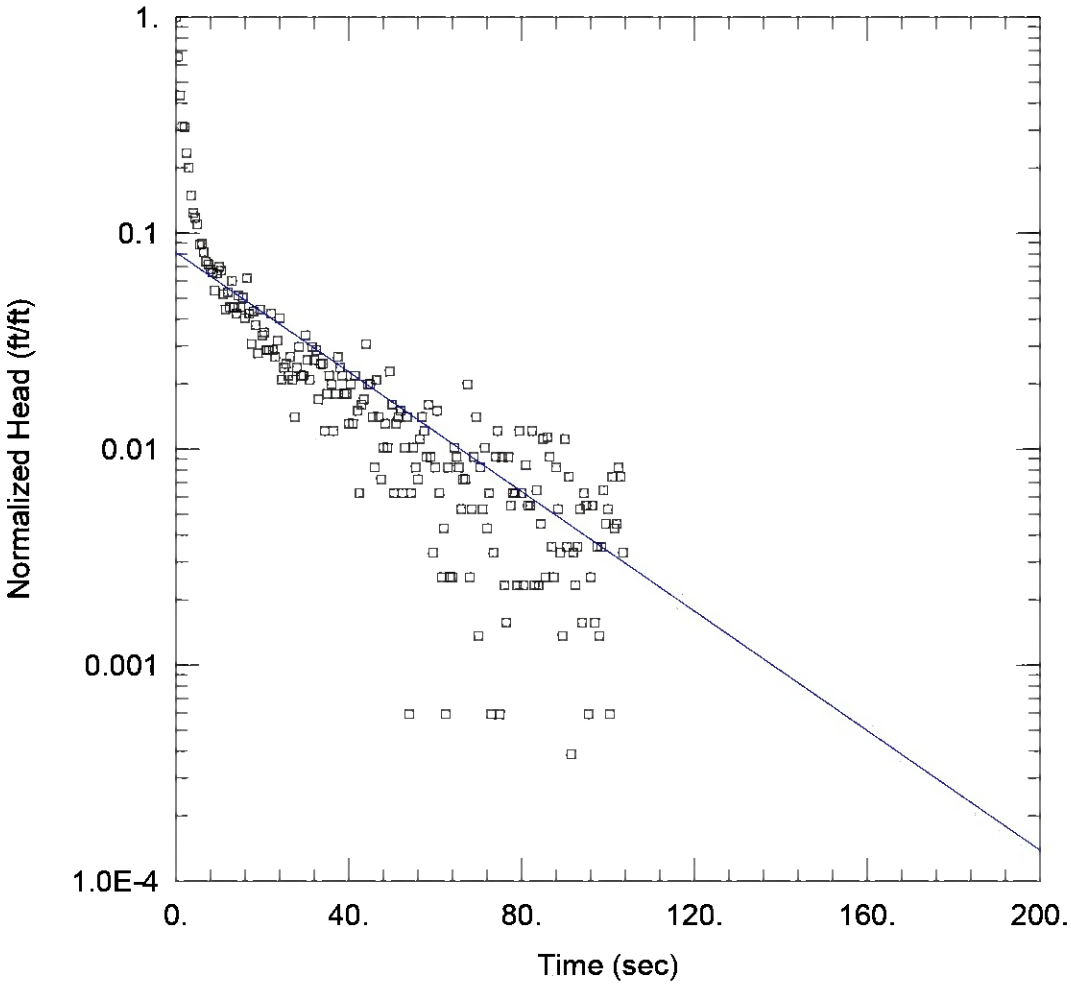
WELL DATA (CGYP-1)

Initial Displacement: 0.4488 ft
Total Well Penetration Depth: 9.32 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 9.32 ft
Screen Length: 9.32 ft
Well Radius: 0.3438 ft
Gravel Pack Porosity: 0.2

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.004646 cm/sec y0 = 0.07784 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\CGYP-1 Slug out 2.aqt
Date: 11/09/21 Time: 12:23:26

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: CGYP-1

AQUIFER DATA

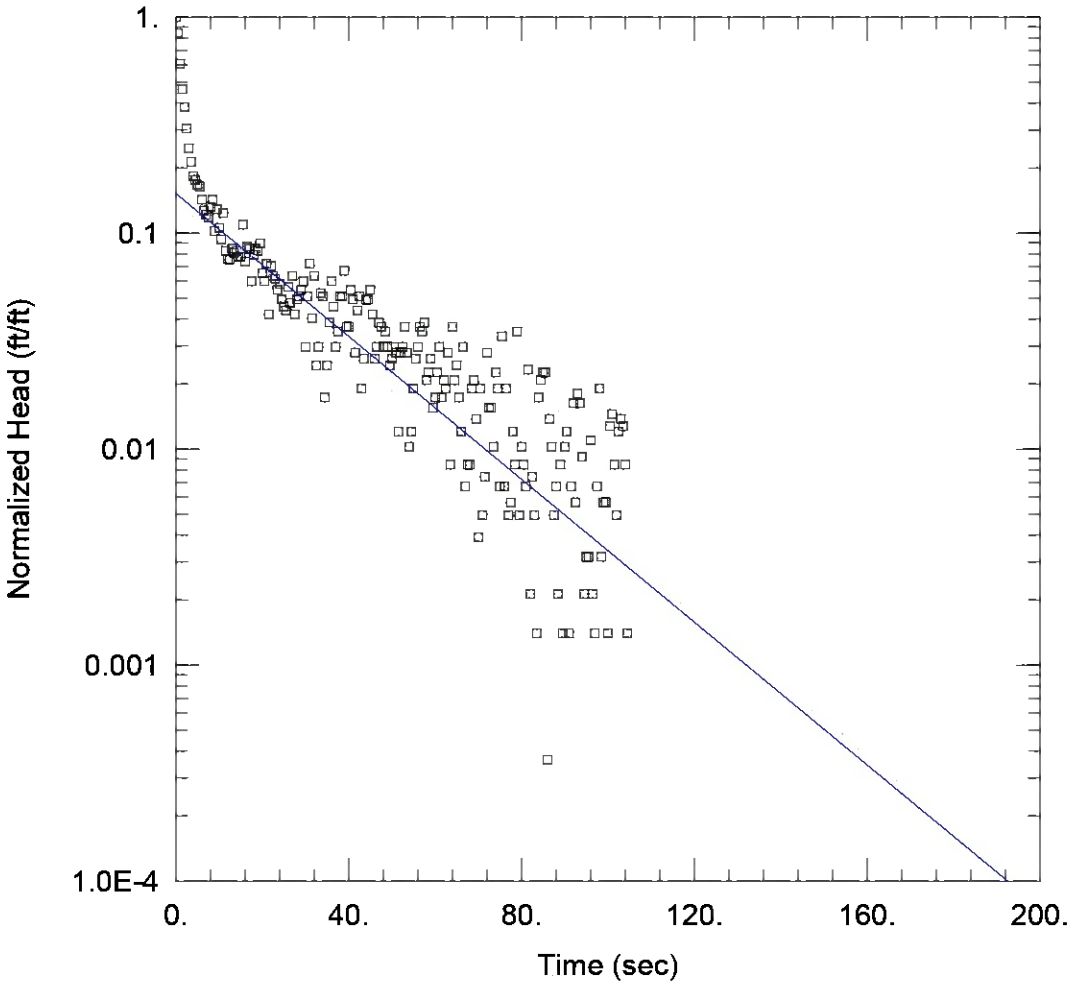
Saturated Thickness: 9.33 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (CGYP-1)

Initial Displacement: 1.022 ft
Total Well Penetration Depth: 9.32 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 9.32 ft
Screen Length: 9.32 ft
Well Radius: 0.3438 ft
Gravel Pack Porosity: 0.2

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.004105 cm/sec
y0 = 0.08324 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\CGYP-1 Slug out 3.aqt
Date: 11/09/21 Time: 12:27:39

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: CGYP-1

AQUIFER DATA

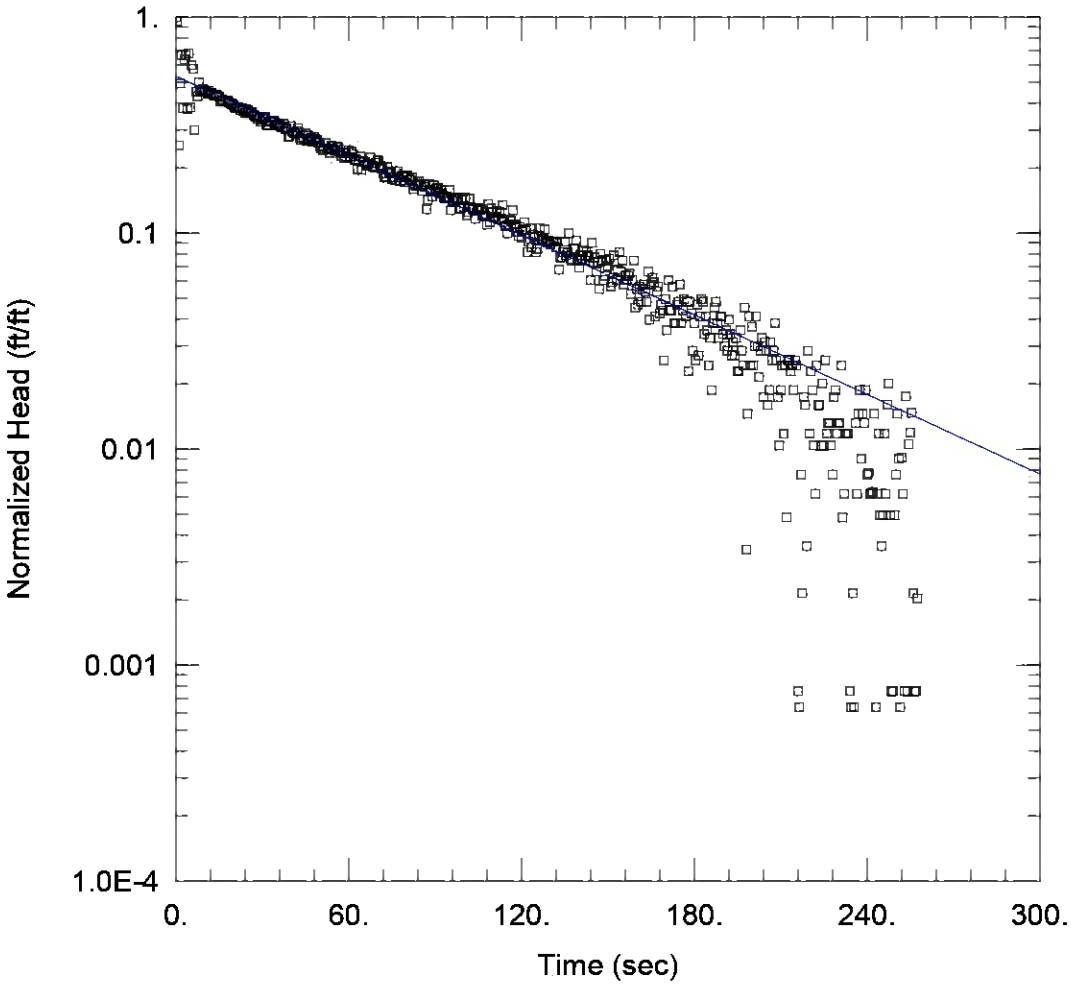
Saturated Thickness: 9.33 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (CGYP-1)

Initial Displacement: 0.5648 ft
Total Well Penetration Depth: 9.32 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 9.32 ft
Screen Length: 9.32 ft
Well Radius: 0.3438 ft
Gravel Pack Porosity: 0.2

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.004904 cm/sec
y0 = 0.08604 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\CGYP-2 slug in 1.aqt
Date: 11/09/21 Time: 12:40:30

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: CGYP-2

AQUIFER DATA

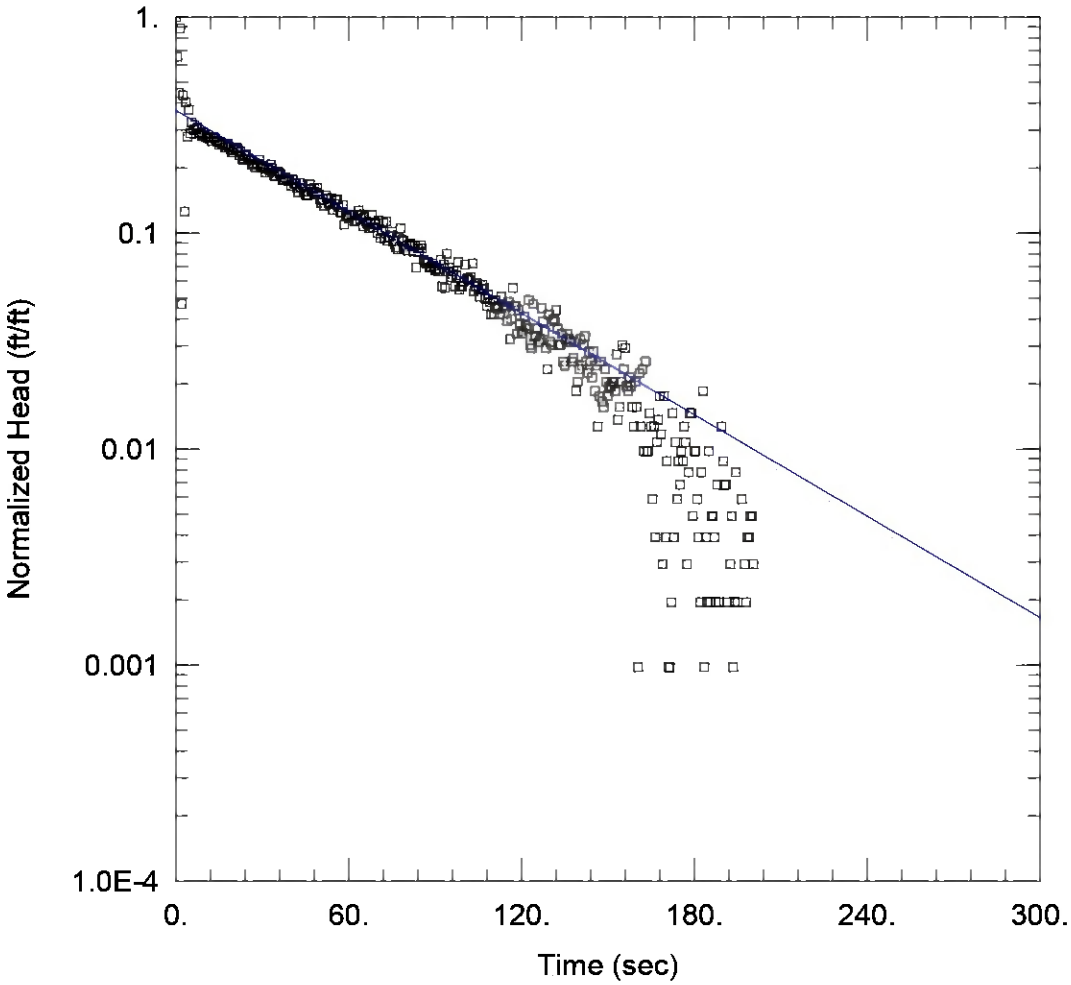
Saturated Thickness: 10.83 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (CGYP-2)

Initial Displacement: 0.7165 ft Static Water Column Height: 10.83 ft
Total Well Penetration Depth: 10.83 ft Screen Length: 10. ft
Casing Radius: 0.08333 ft Well Radius: 0.3438 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.0003882 cm/sec y0 = 0.382 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\CGYP-2 slug in 2.aqt
Date: 11/09/21 Time: 12:52:59

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: CGYP-2

AQUIFER DATA

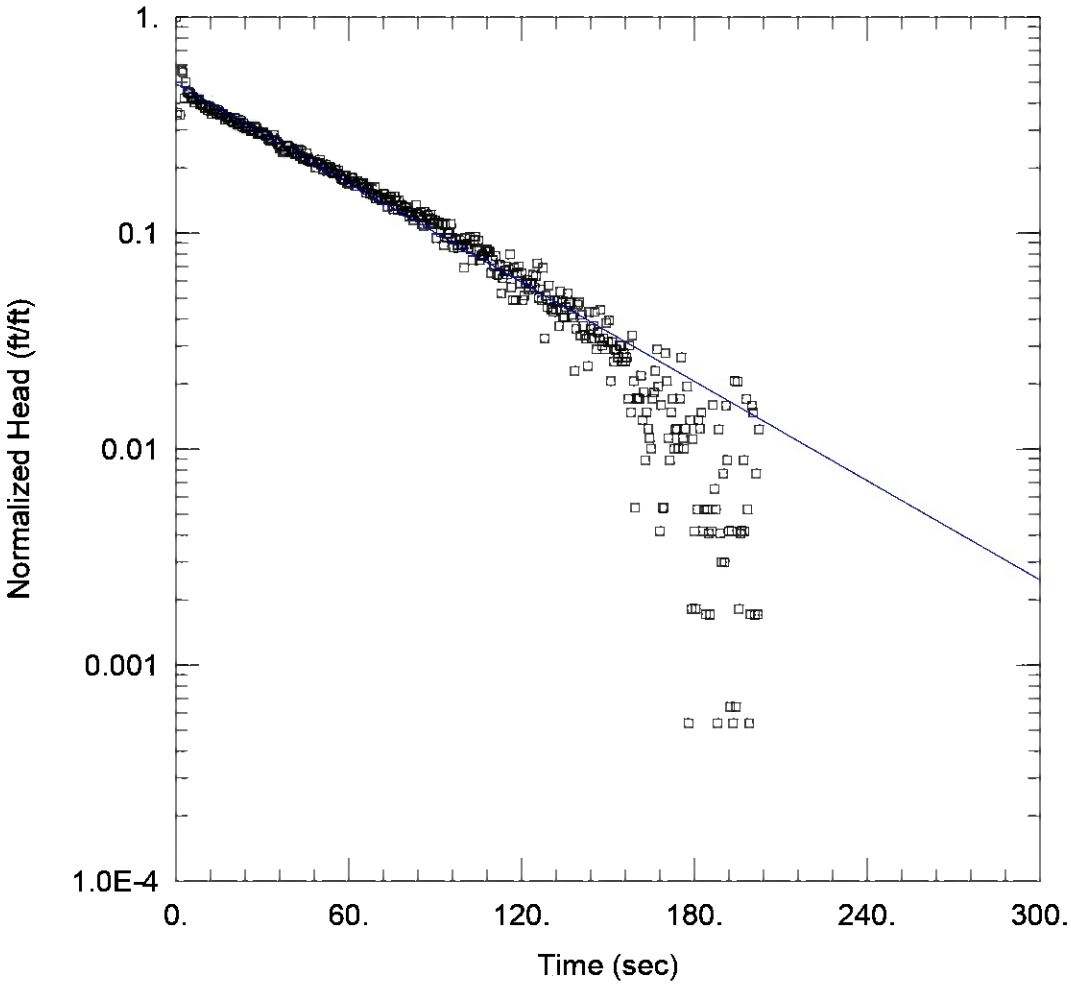
Saturated Thickness: 10.83 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (CGYP-2)

Initial Displacement: 1.023 ft Static Water Column Height: 10.83 ft
Total Well Penetration Depth: 10.83 ft Screen Length: 10. ft
Casing Radius: 0.08333 ft Well Radius: 0.3438 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.0004948 cm/sec y0 = 0.3788 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\CGYP-2 slug out 1.aqt
Date: 11/09/21 Time: 12:48:20

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: CGYP-2

AQUIFER DATA

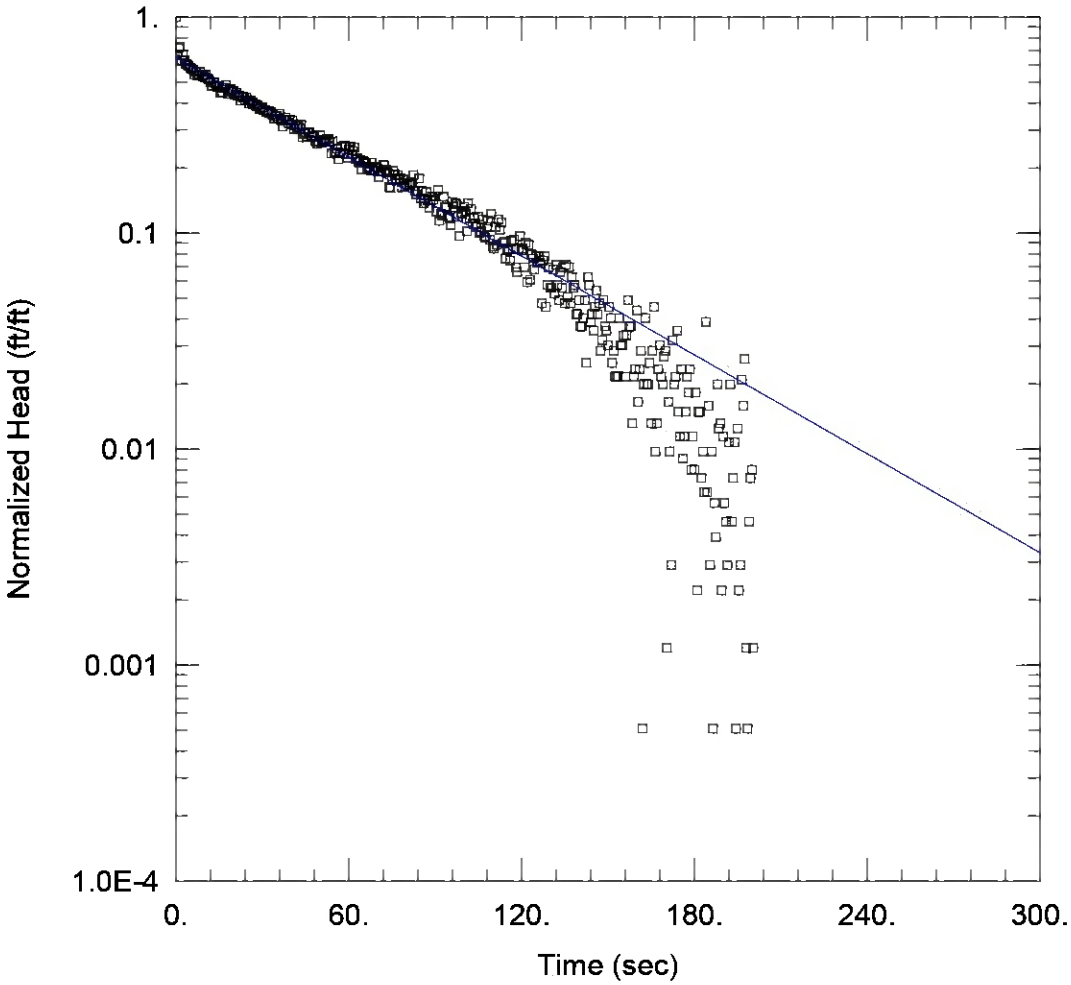
Saturated Thickness: 10.83 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (CGYP-2)

Initial Displacement: 0.8485 ft Static Water Column Height: 10.83 ft
Total Well Penetration Depth: 10.83 ft Screen Length: 10. ft
Casing Radius: 0.08333 ft Well Radius: 0.3438 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.000484 cm/sec y0 = 0.4172 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\CGYP-2 slug out 2.aqt
Date: 11/09/21 Time: 13:16:15

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: CGYP-2

AQUIFER DATA

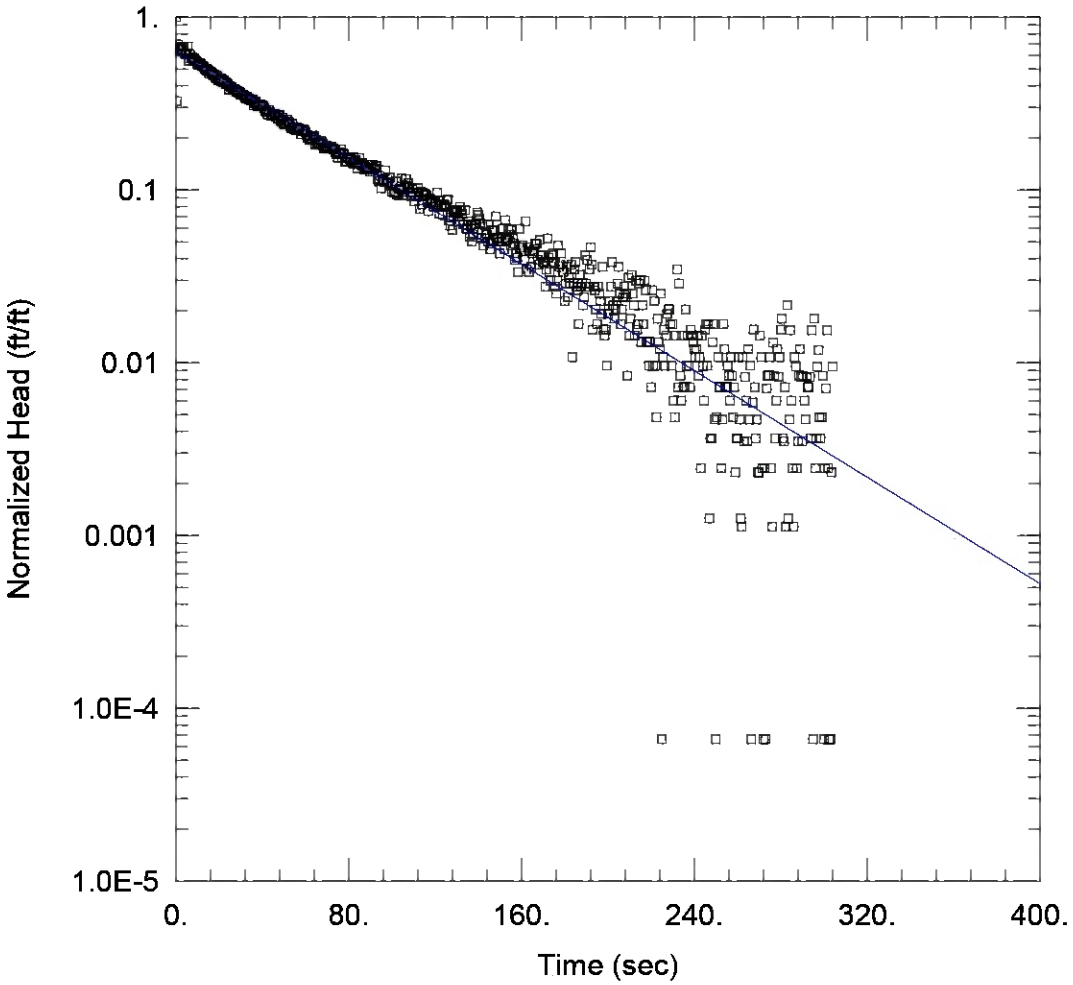
Saturated Thickness: 10.83 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (CGYP-2)

Initial Displacement: 0.5857 ft Static Water Column Height: 10.83 ft
Total Well Penetration Depth: 10.83 ft Screen Length: 10. ft
Casing Radius: 0.08333 ft Well Radius: 0.3438 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.0004822 cm/sec y0 = 0.3778 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\CGYP-3 slug in 1.aqt
Date: 11/09/21 Time: 16:18:17

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: CGYP-3

AQUIFER DATA

Saturated Thickness: 13.71 ft Anisotropy Ratio (Kz/Kr): 1.

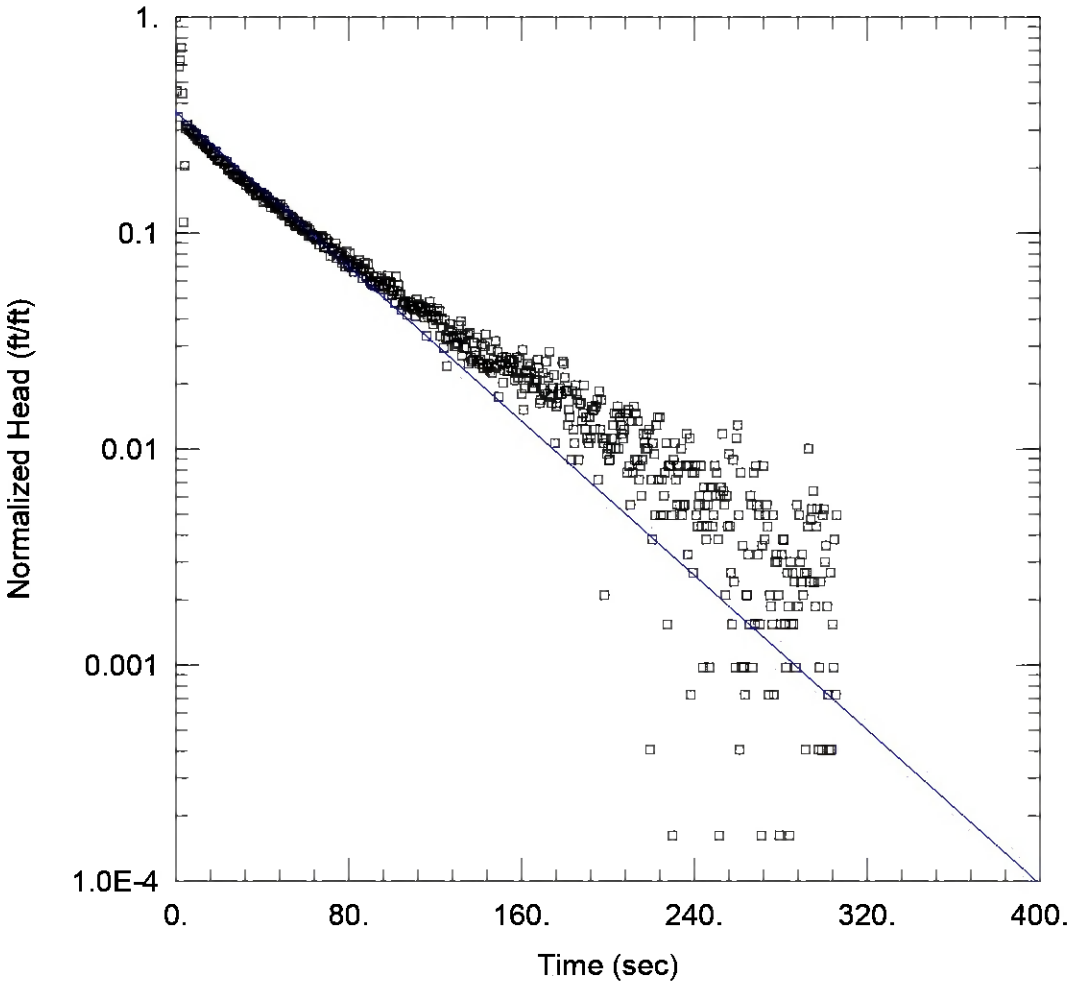
WELL DATA (CGYP-3)

Initial Displacement: 0.8391 ft
Total Well Penetration Depth: 13.71 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 13.71 ft
Screen Length: 10. ft
Well Radius: 0.3438 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.0005141 cm/sec y0 = 0.5324 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\CGYP-3 slug in 2.aqt
Date: 11/09/21 Time: 16:36:50

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: CGYP-3

AQUIFER DATA

Saturated Thickness: 13.71 ft Anisotropy Ratio (Kz/Kr): 1.

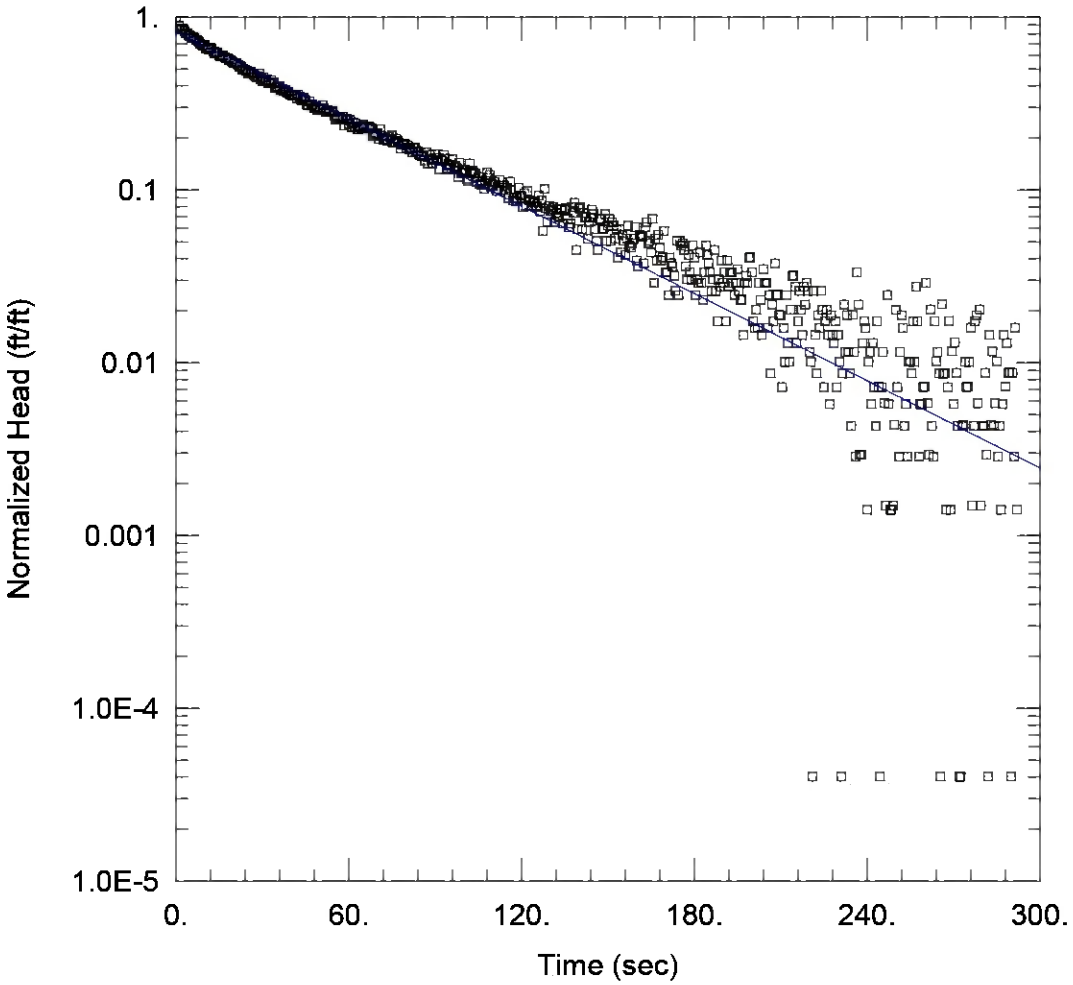
WELL DATA (CGYP-3)

Initial Displacement: 1.76 ft
Total Well Penetration Depth: 13.71 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 13.71 ft
Screen Length: 10. ft
Well Radius: 0.3438 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.0005961 cm/sec y0 = 0.6374 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\CGYP-3 slug out 1.aqt
Date: 11/09/21 Time: 16:32:26

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: CGYP-3

AQUIFER DATA

Saturated Thickness: 13.71 ft Anisotropy Ratio (Kz/Kr): 1.

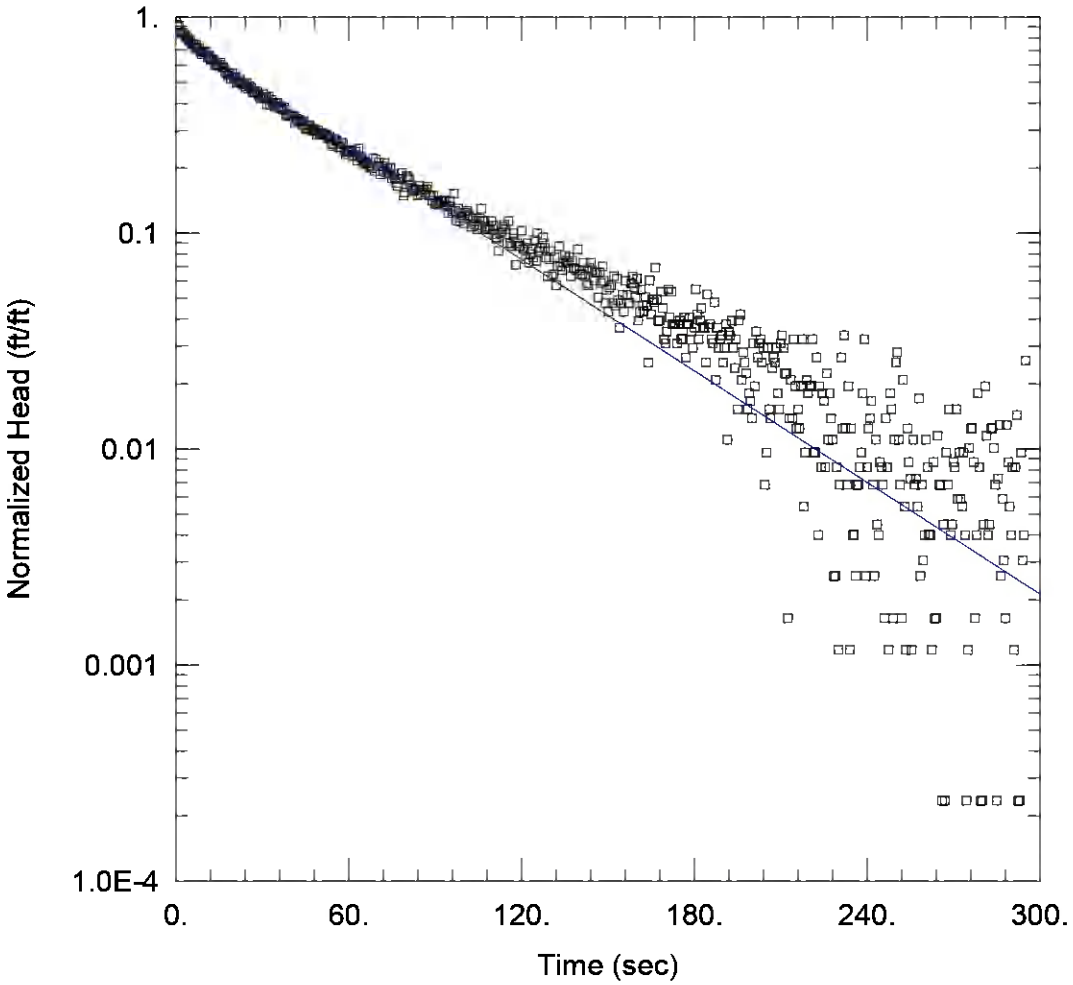
WELL DATA (CGYP-3)

Initial Displacement: 0.69 ft
Total Well Penetration Depth: 13.71 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 13.71 ft
Screen Length: 10. ft
Well Radius: 0.3438 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.0005617 cm/sec y0 = 0.5682 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\CGYP-3 slug out 2.aqt
Date: 11/09/21 Time: 16:45:48

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: CGYP-3

AQUIFER DATA

Saturated Thickness: 13.71 ft Anisotropy Ratio (Kz/Kr): 1.

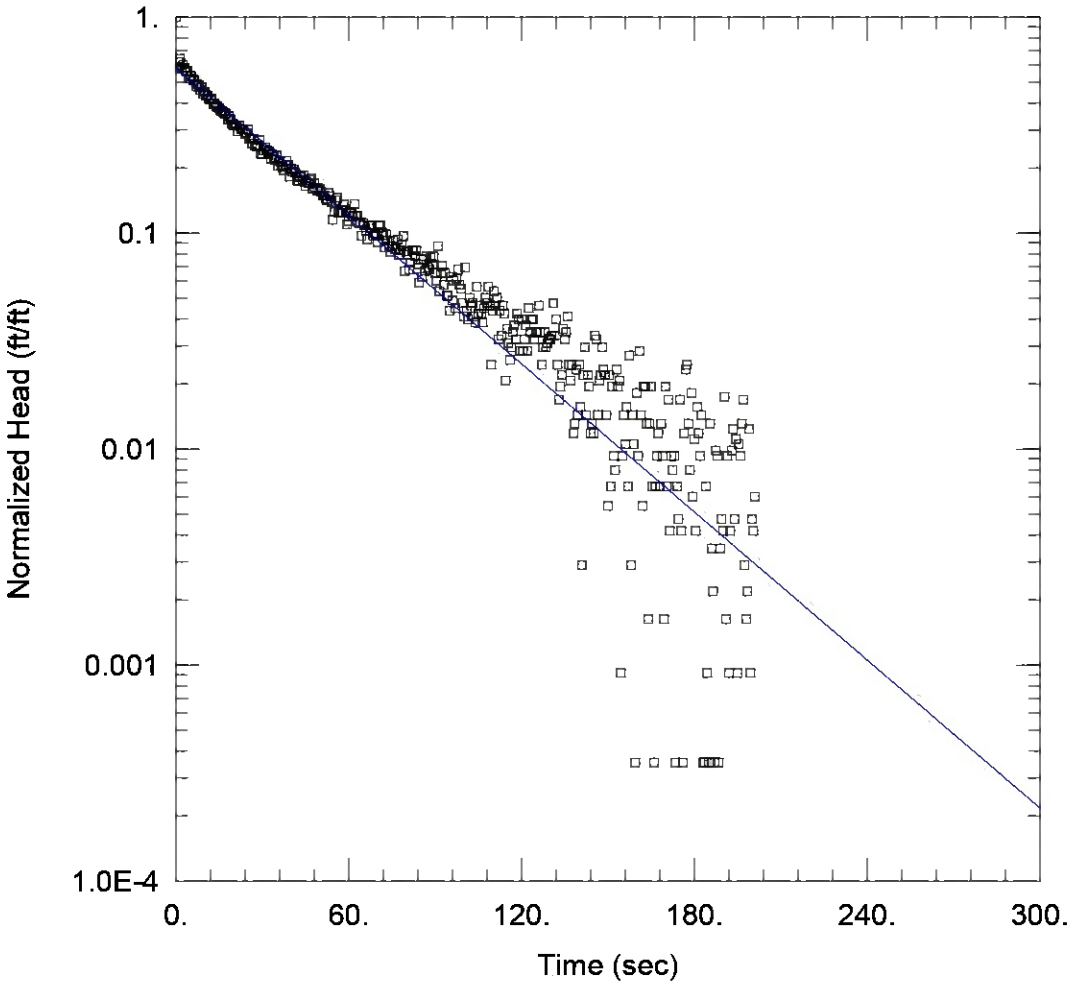
WELL DATA (CGYP-3)

Initial Displacement: 0.7078 ft
Total Well Penetration Depth: 13.71 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 13.71 ft
Screen Length: 10. ft
Well Radius: 0.3438 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.0005746 cm/sec y0 = 0.578 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\CGYP4 Slug Out 1.aqt
Date: 11/08/21 Time: 10:52:34

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: CGYP-4

AQUIFER DATA

Saturated Thickness: 14.7 ft Anisotropy Ratio (Kz/Kr): 1.

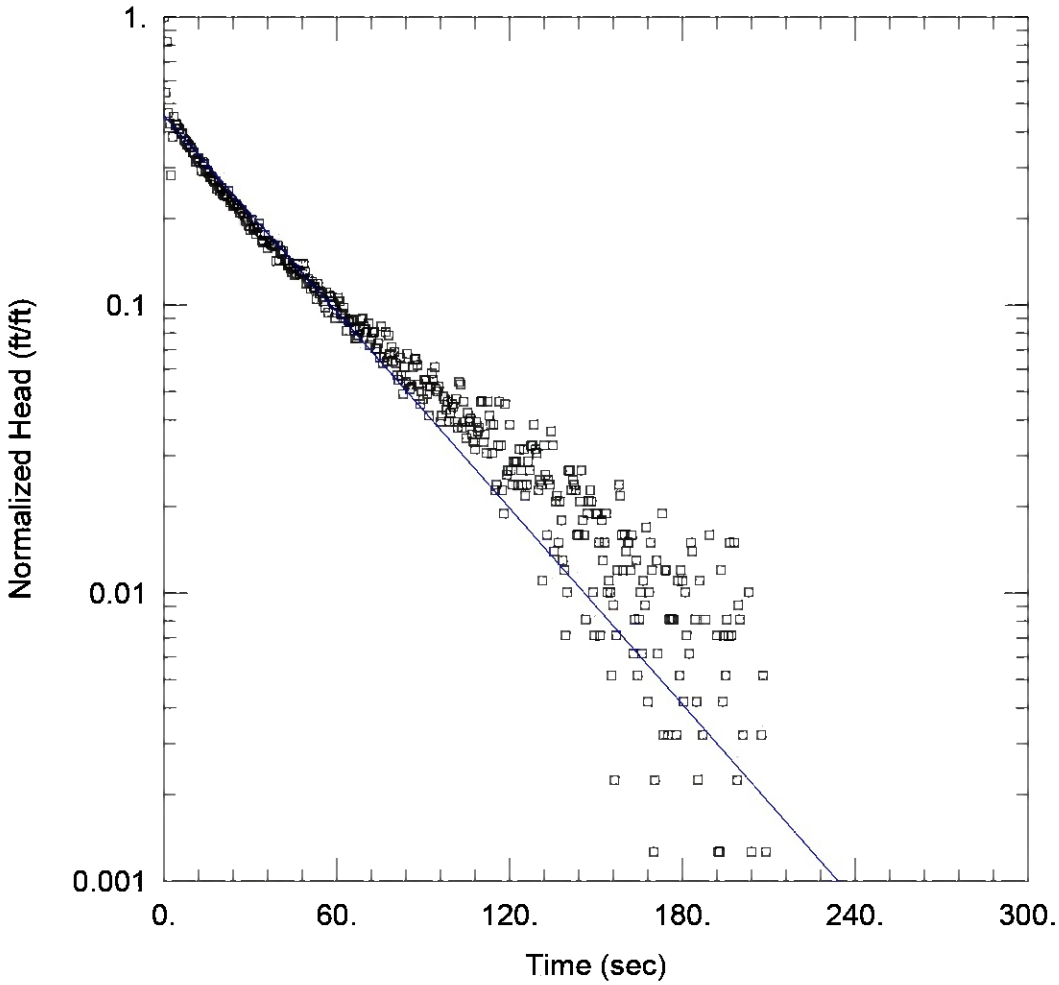
WELL DATA (CGYP-4)

Initial Displacement: 0.7843 ft
Total Well Penetration Depth: 14.7 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 14.7 ft
Screen Length: 10. ft
Well Radius: 0.3438 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.0007741 cm/sec y0 = 0.4567 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\CGYP4 Slug In 1.aqt
Date: 11/08/21 Time: 10:52:03

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: CGYP-4

AQUIFER DATA

Saturated Thickness: 14.7 ft Anisotropy Ratio (Kz/Kr): 1.

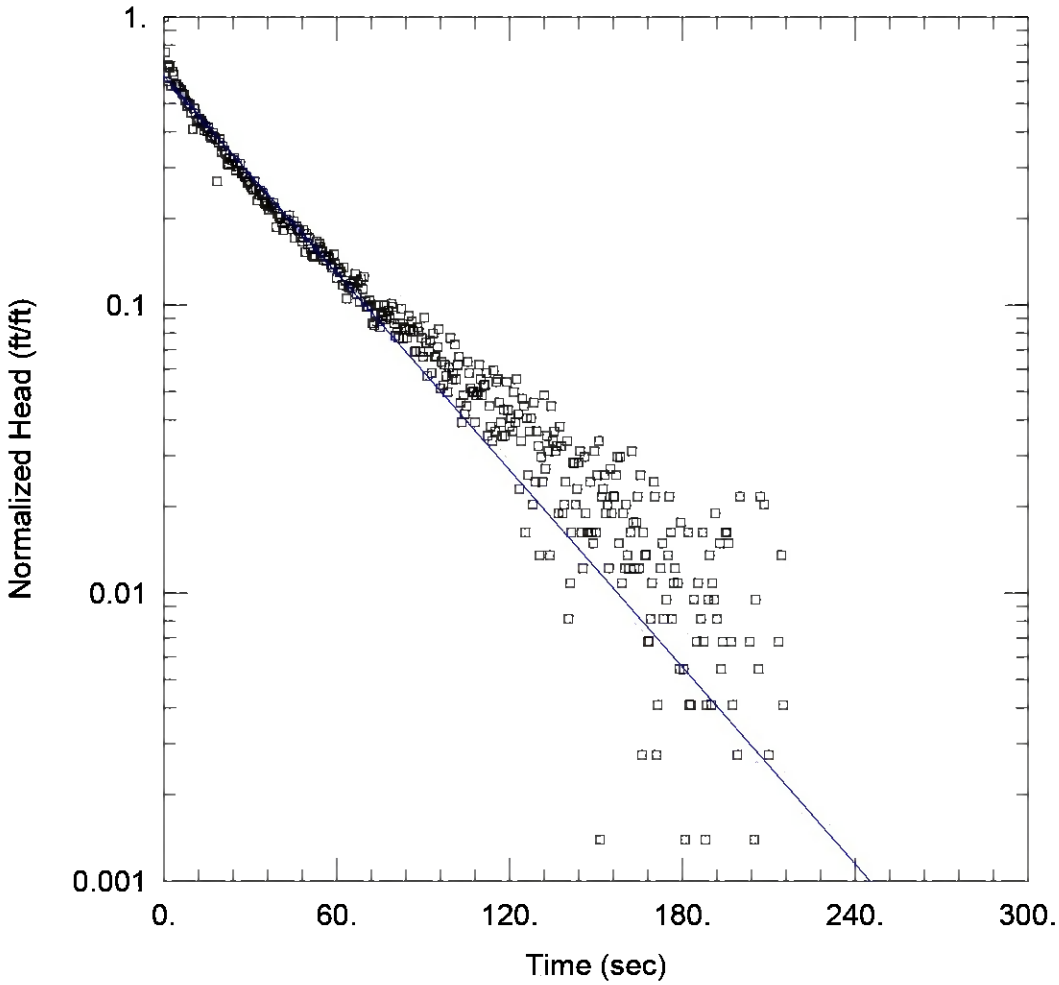
WELL DATA (CGYP-4)

Initial Displacement: 1.023 ft
Total Well Penetration Depth: 14.7 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 14.7 ft
Screen Length: 10. ft
Well Radius: 0.3438 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.0007695 cm/sec y0 = 0.4651 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\CGYP4 Slug In 2.aqt
Date: 11/08/21 Time: 10:53:20

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: CGYP-4

AQUIFER DATA

Saturated Thickness: 14.7 ft Anisotropy Ratio (Kz/Kr): 1.

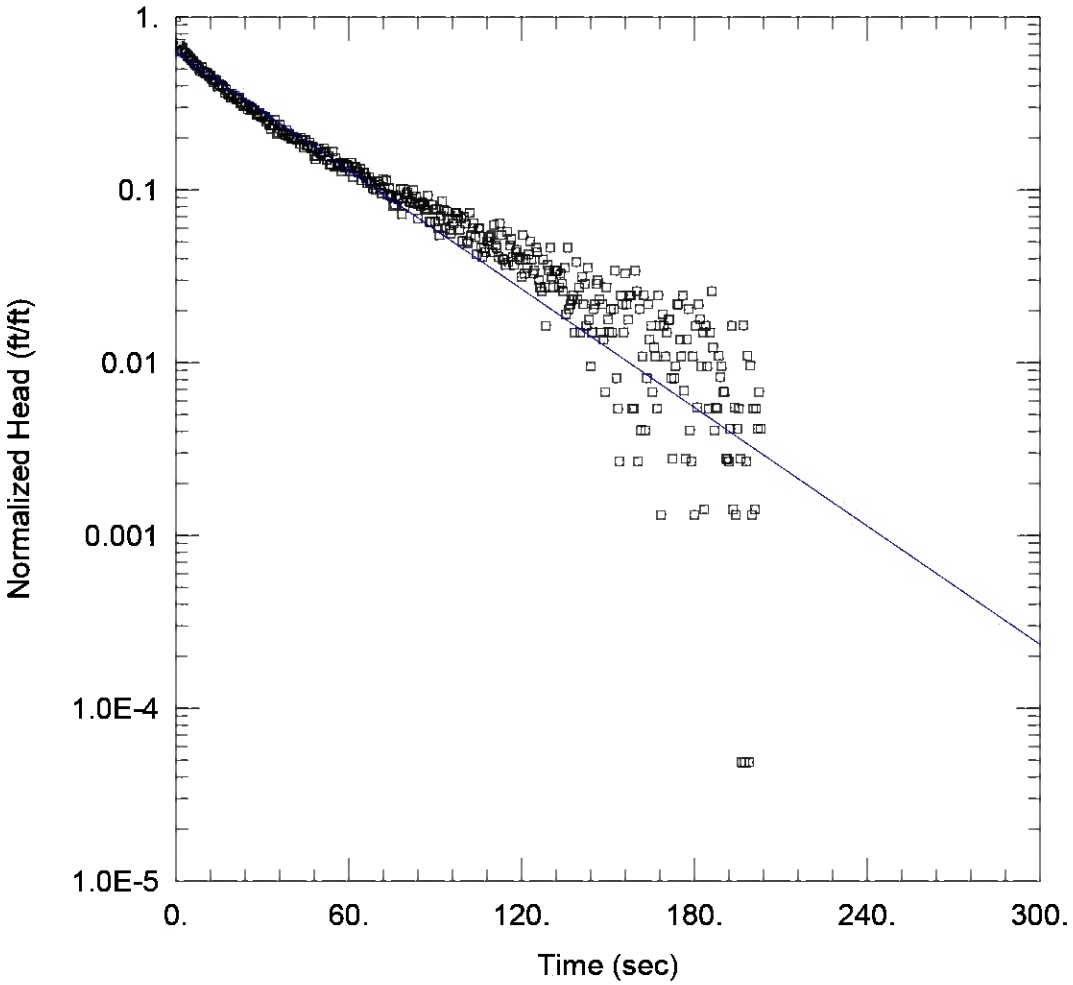
WELL DATA (CGYP-4)

Initial Displacement: 0.741 ft
Total Well Penetration Depth: 14.7 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 14.7 ft
Screen Length: 10. ft
Well Radius: 0.3438 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.0007724 cm/sec y0 = 0.4623 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\CGYP4 Slug Out 2.aqt
Date: 11/08/21 Time: 10:53:38

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: CGYP-4

AQUIFER DATA

Saturated Thickness: 14.7 ft Anisotropy Ratio (Kz/Kr): 1.

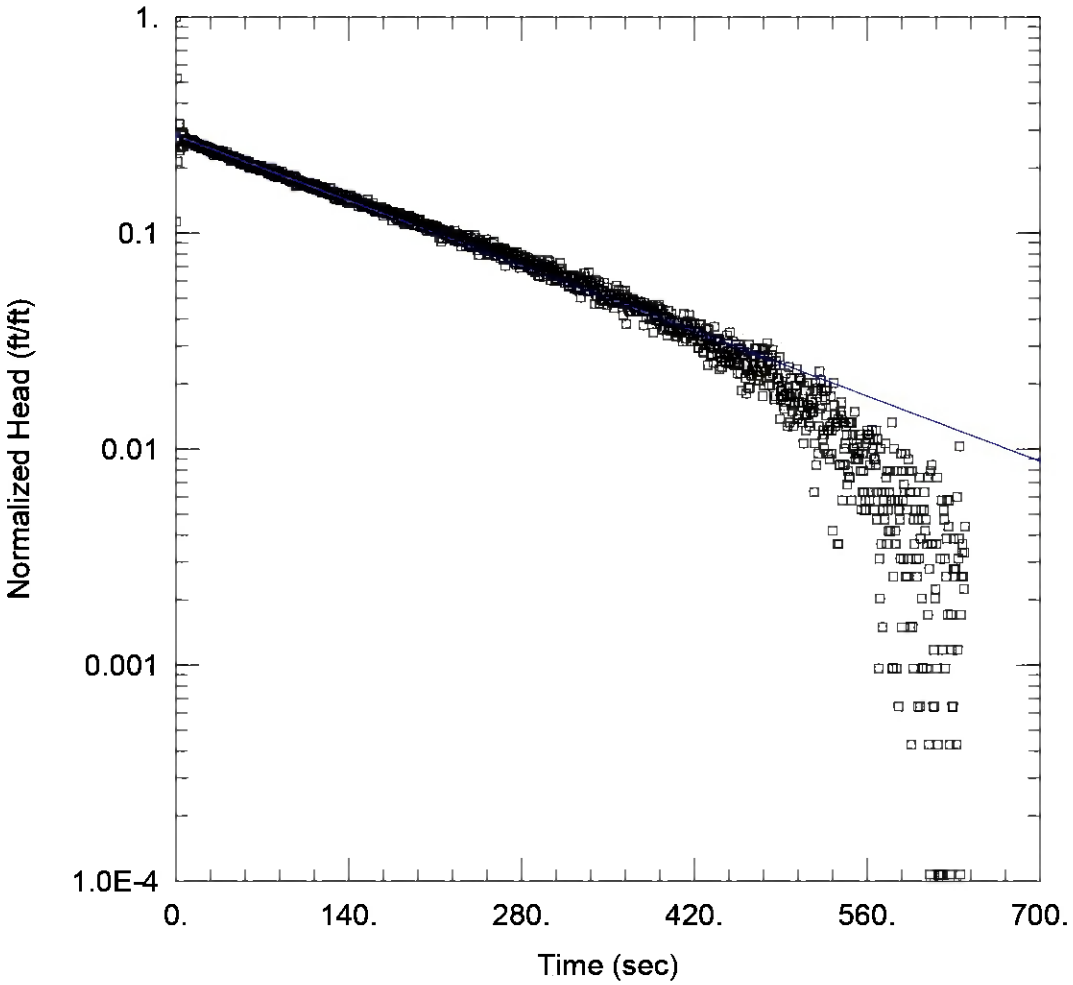
WELL DATA (CGYP-4)

Initial Displacement: 0.732 ft
Total Well Penetration Depth: 14.7 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 14.7 ft
Screen Length: 10. ft
Well Radius: 0.3438 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.0007743 cm/sec y0 = 0.4594 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\CGYP-5 slug in 1.aqt
Date: 11/09/21 Time: 13:37:30

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: CGYP-5

AQUIFER DATA

Saturated Thickness: 13.76 ft Anisotropy Ratio (Kz/Kr): 1.

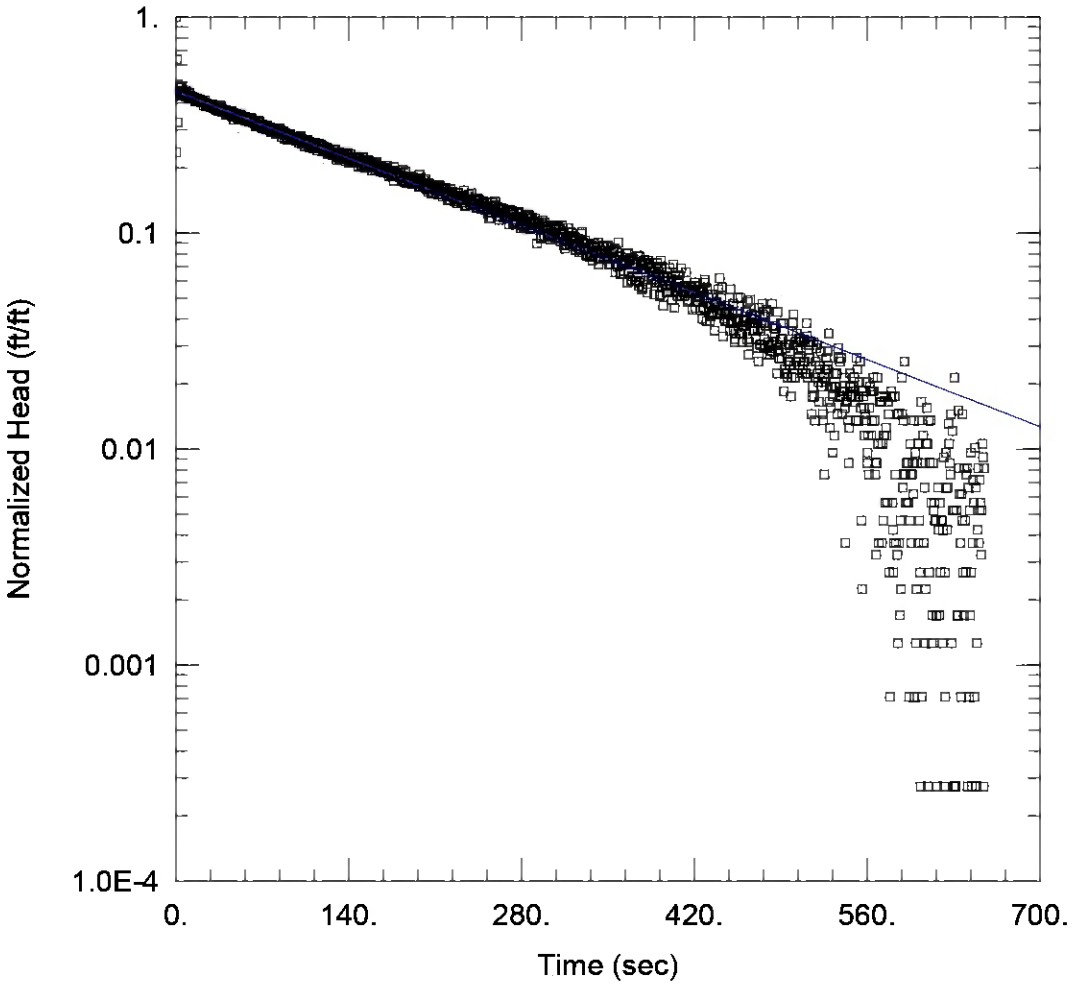
WELL DATA (CGYP-5)

Initial Displacement: 1.868 ft
Total Well Penetration Depth: 13.76 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 13.76 ft
Screen Length: 10. ft
Well Radius: 0.3438 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.0001439 cm/sec y0 = 0.5285 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\CGYP-5 slug in 2.aqt
Date: 11/09/21 Time: 14:07:54

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: CGYP-5

AQUIFER DATA

Saturated Thickness: 13.76 ft Anisotropy Ratio (Kz/Kr): 1.

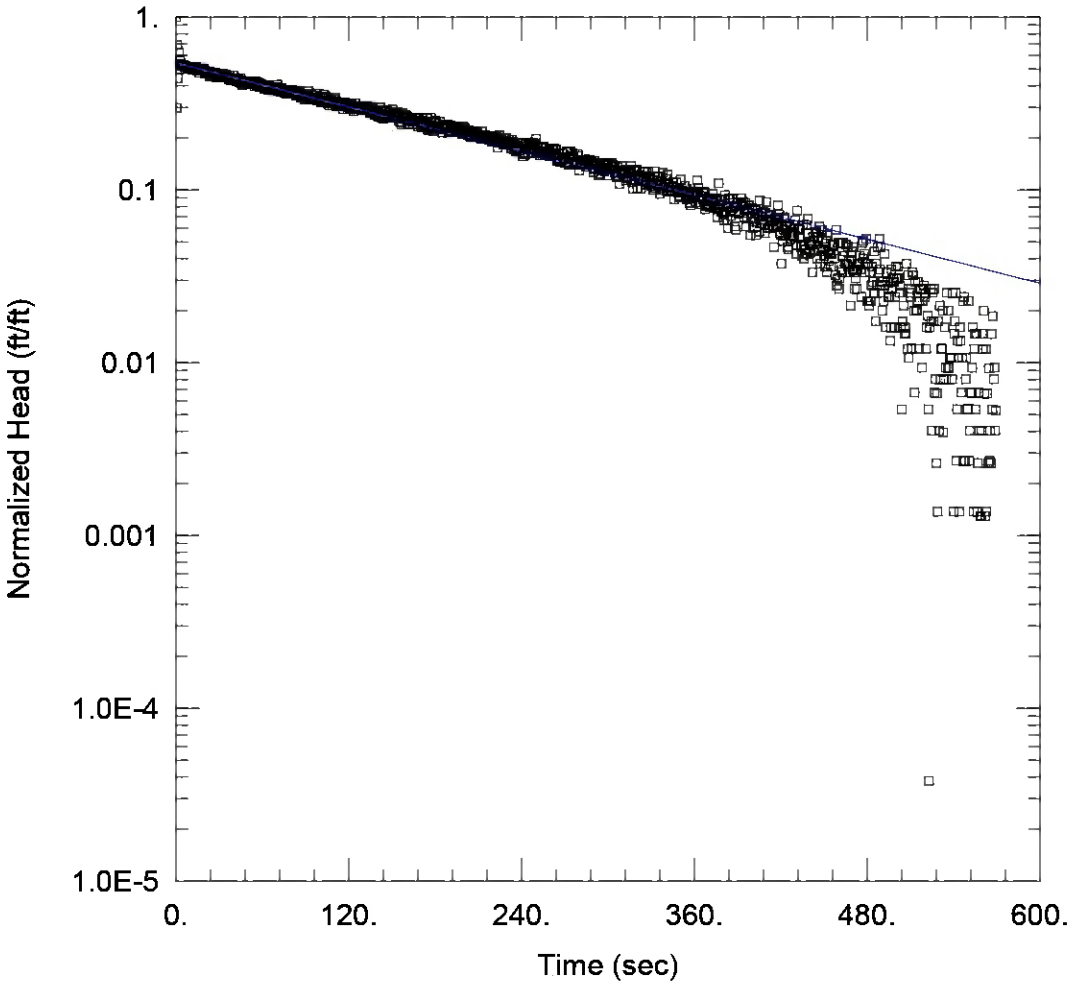
WELL DATA (CGYP-5)

Initial Displacement: 1.013 ft
Total Well Penetration Depth: 13.76 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 13.76 ft
Screen Length: 10. ft
Well Radius: 0.3438 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.0001481 cm/sec y0 = 0.4592 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\CGYP-5 slug out 1.aqt
Date: 11/09/21 Time: 14:01:56

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: CGYP-5

AQUIFER DATA

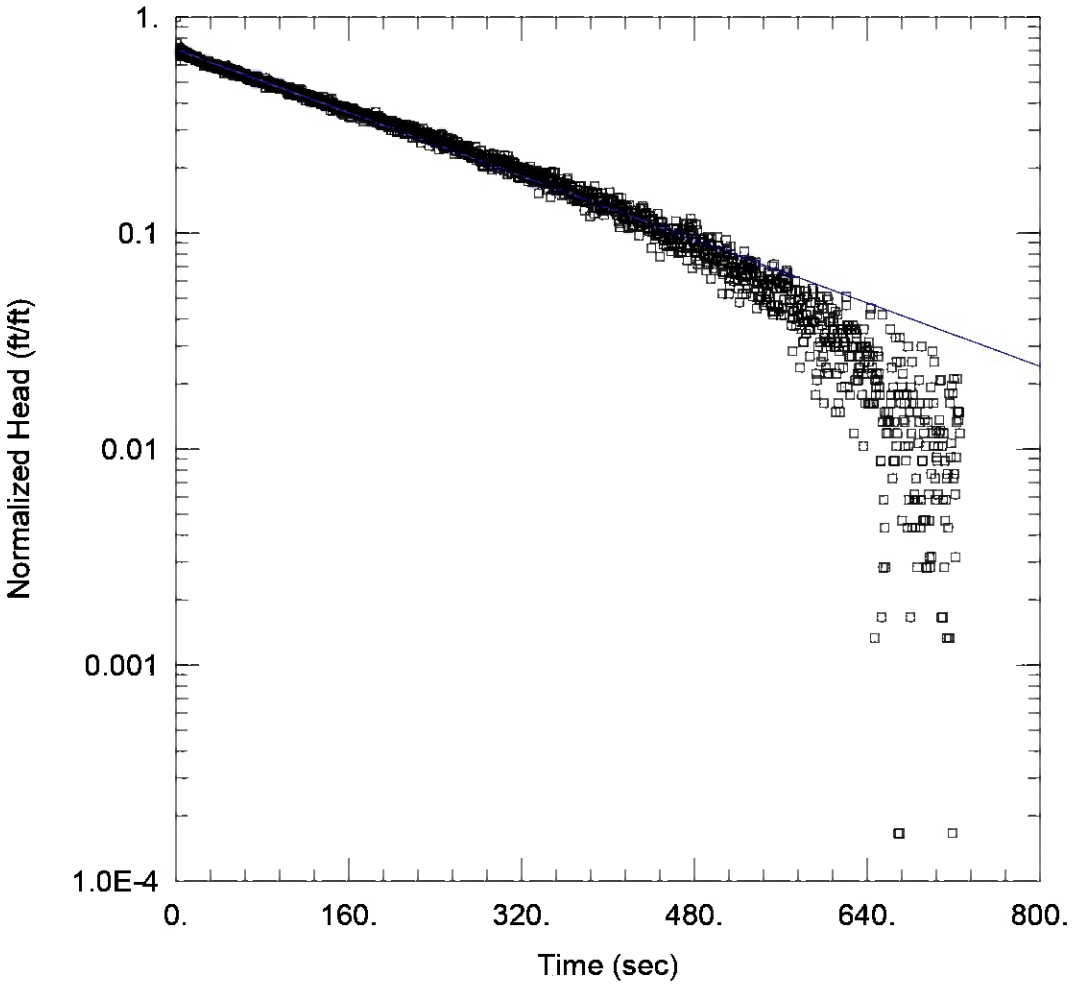
Saturated Thickness: 13.76 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (CGYP-5)

Initial Displacement: 0.75 ft Static Water Column Height: 13.76 ft
Total Well Penetration Depth: 13.76 ft Screen Length: 10. ft
Casing Radius: 0.08333 ft Well Radius: 0.3438 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.0001419 cm/sec y0 = 0.4073 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\CGYP-5 slug out 2.aqt
Date: 11/09/21 Time: 14:52:44

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: CGYP-5

AQUIFER DATA

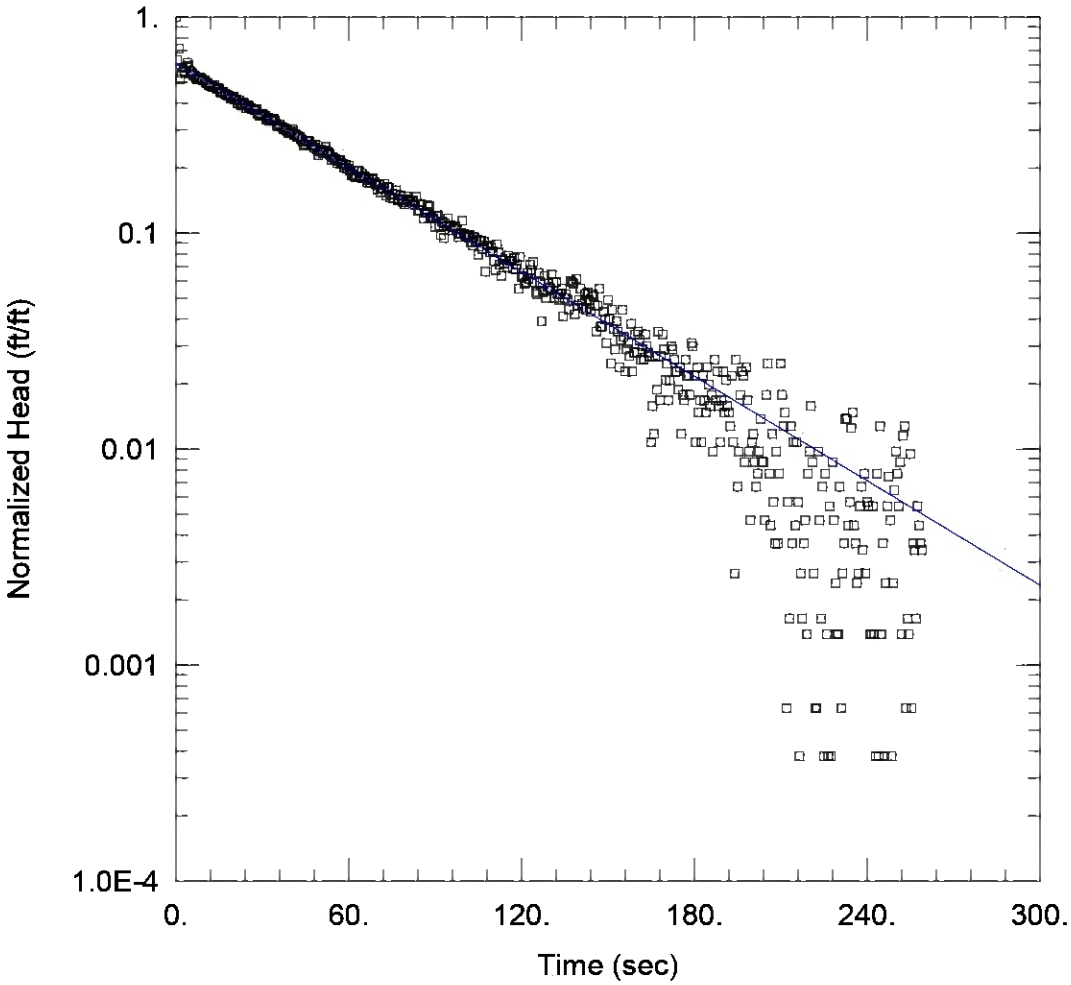
Saturated Thickness: 13.76 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (CGYP-5)

Initial Displacement: 0.6669 ft Static Water Column Height: 13.76 ft
Total Well Penetration Depth: 13.76 ft Screen Length: 10. ft
Casing Radius: 0.08333 ft Well Radius: 0.3438 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.0001225 cm/sec y0 = 0.4725 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\CGYP-6 slug in 1.aqt
Date: 11/09/21 Time: 15:07:12

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: CGYP-6

AQUIFER DATA

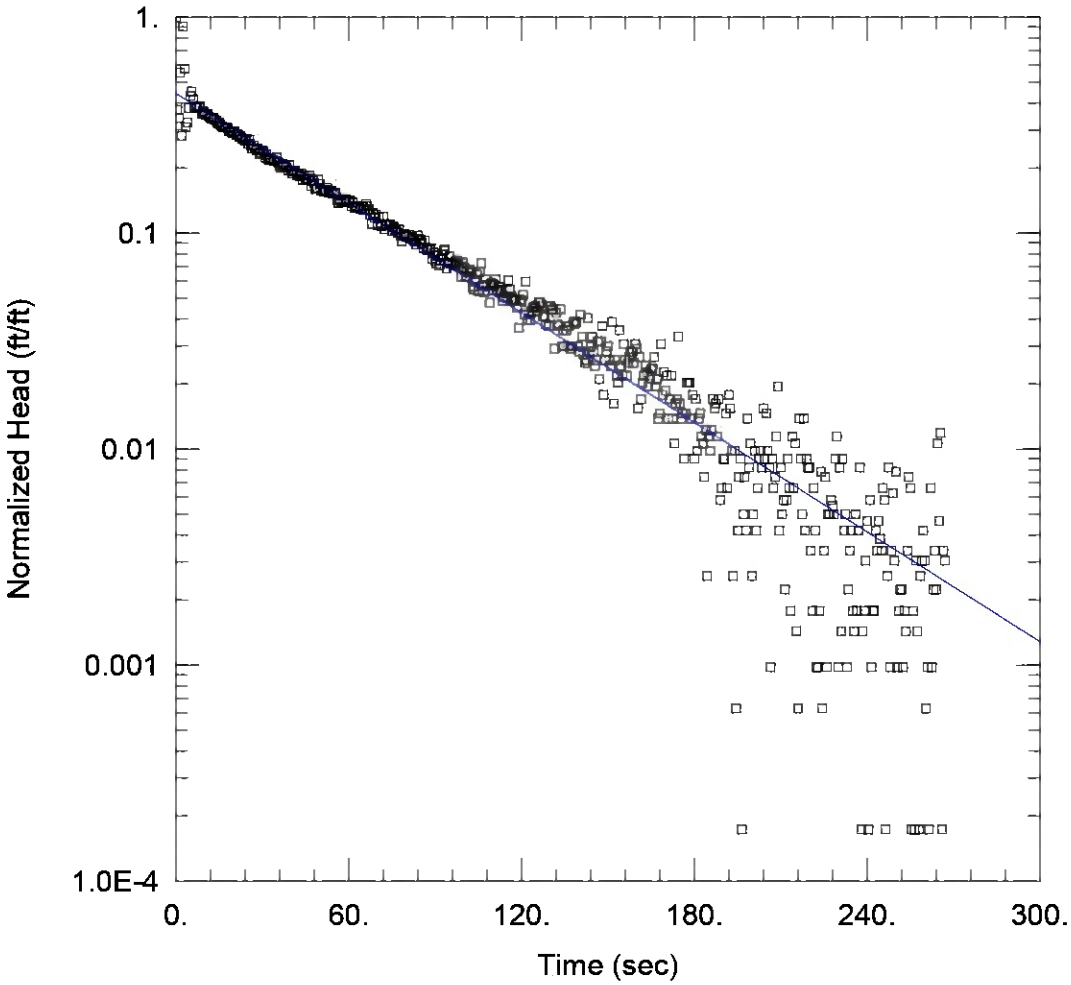
Saturated Thickness: 13.37 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (CGYP-6)

Initial Displacement: 0.9886 ft Static Water Column Height: 13.37 ft
Total Well Penetration Depth: 13.37 ft Screen Length: 10. ft
Casing Radius: 0.08333 ft Well Radius: 0.3438 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.0005347 cm/sec y0 = 0.6054 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\CGYP-6 slug in 2.aqt
Date: 11/09/21 Time: 15:16:47

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: CGYP-6

AQUIFER DATA

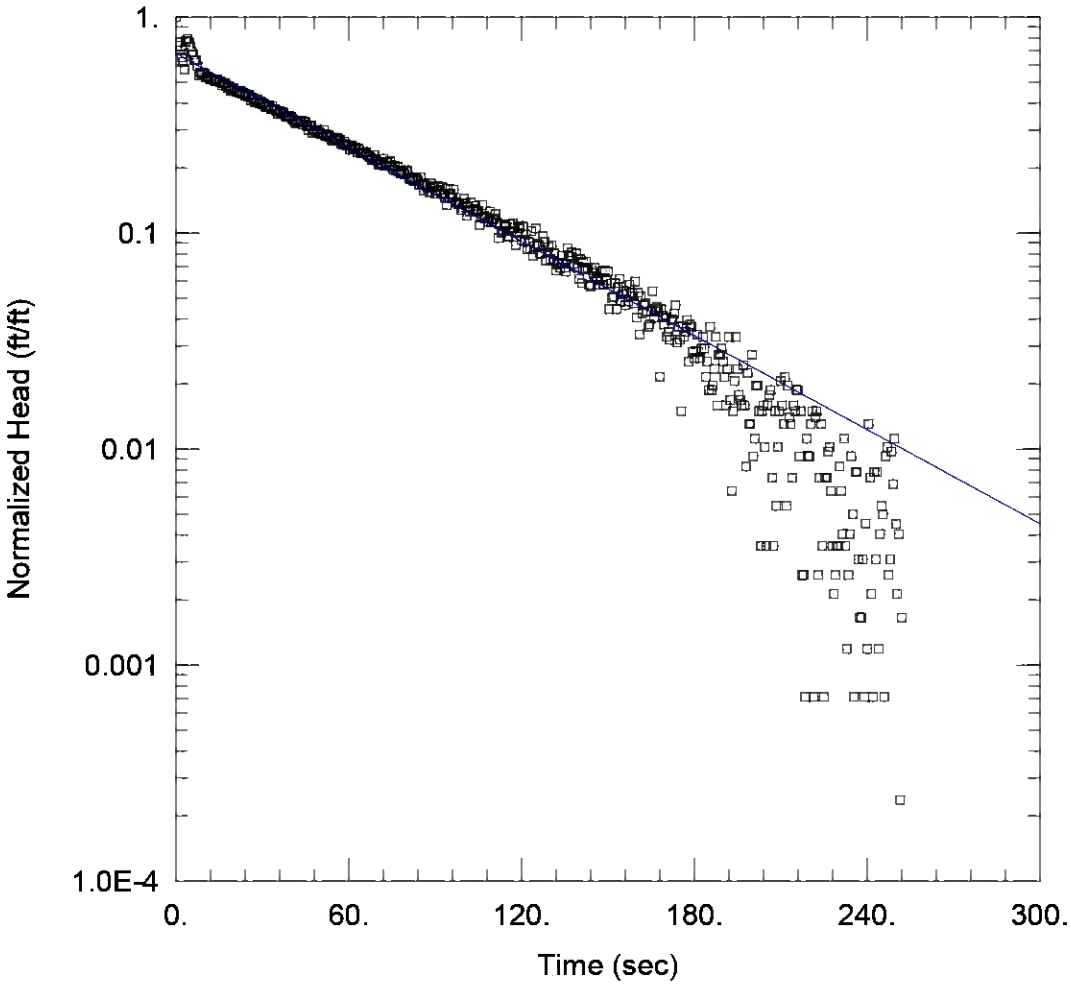
Saturated Thickness: 13.37 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (CGYP-6)

Initial Displacement: 1.244 ft
Total Well Penetration Depth: 13.37 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 13.37 ft
Screen Length: 10. ft
Well Radius: 0.3438 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.0005616 cm/sec
y0 = 0.5522 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\CGYP-6 slug out 1.aqt
Date: 11/09/21 Time: 15:13:09

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: CGYP-6

AQUIFER DATA

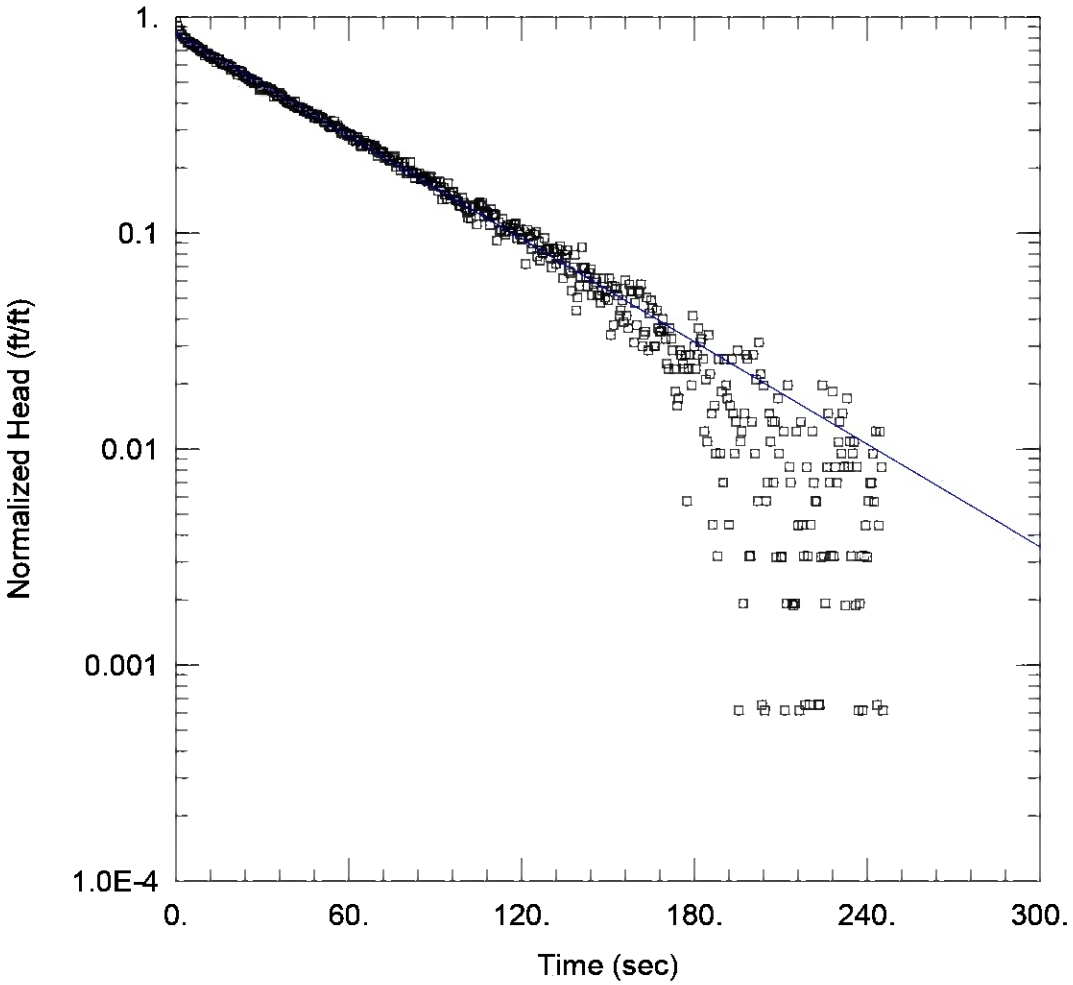
Saturated Thickness: 13.37 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (CGYP-6)

Initial Displacement: 1.053 ft Static Water Column Height: 13.37 ft
Total Well Penetration Depth: 13.37 ft Screen Length: 10. ft
Casing Radius: 0.08333 ft Well Radius: 0.3438 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.0004815 cm/sec y0 = 0.7143 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\CGYP-6 slug out 2.aqt
Date: 11/09/21 Time: 15:21:42

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: CGYP-6

AQUIFER DATA

Saturated Thickness: 13.37 ft Anisotropy Ratio (Kz/Kr): 1.

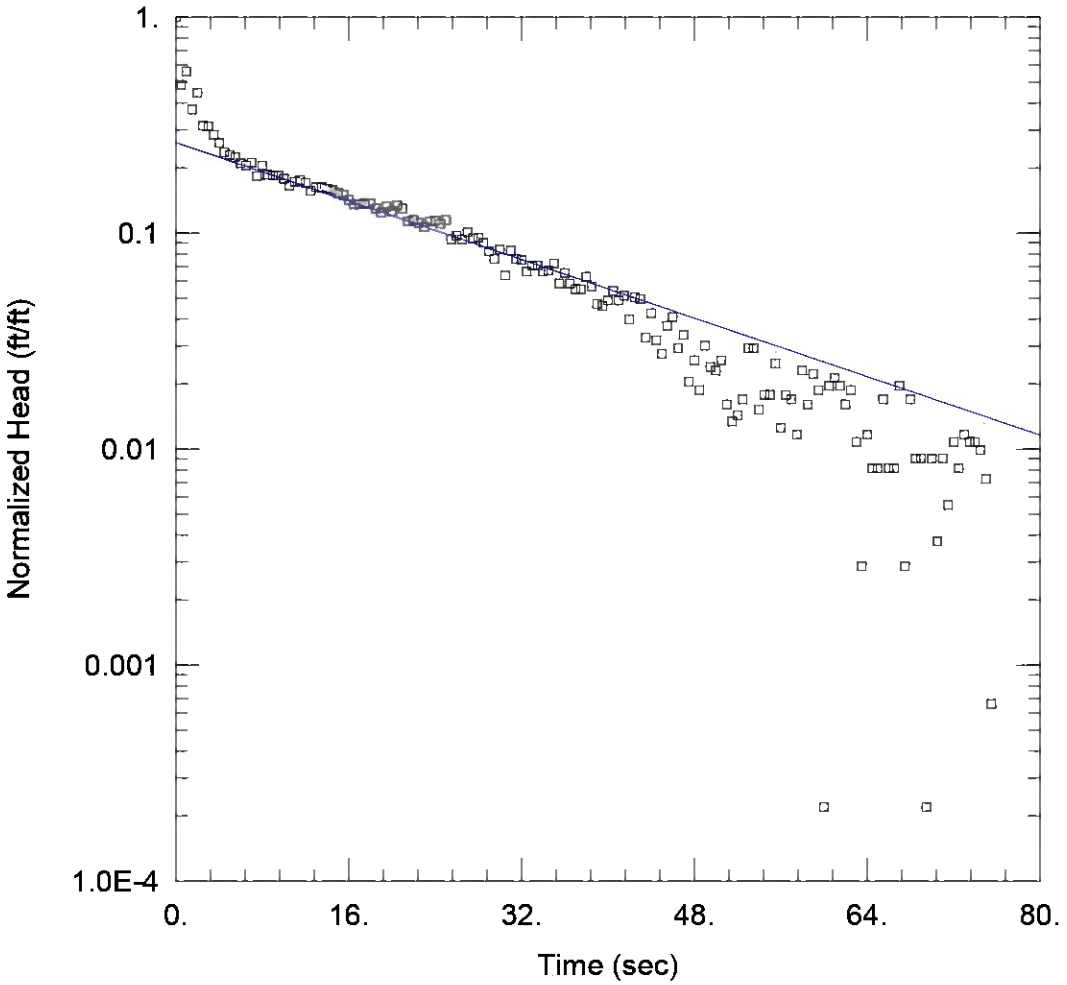
WELL DATA (CGYP-6)

Initial Displacement: 0.7865 ft
Total Well Penetration Depth: 13.37 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 13.37 ft
Screen Length: 10. ft
Well Radius: 0.3438 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.0005252 cm/sec y0 = 0.6574 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\PM-1 slug in 1.aqt
Date: 11/10/21 Time: 15:48:50

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: PM-1

AQUIFER DATA

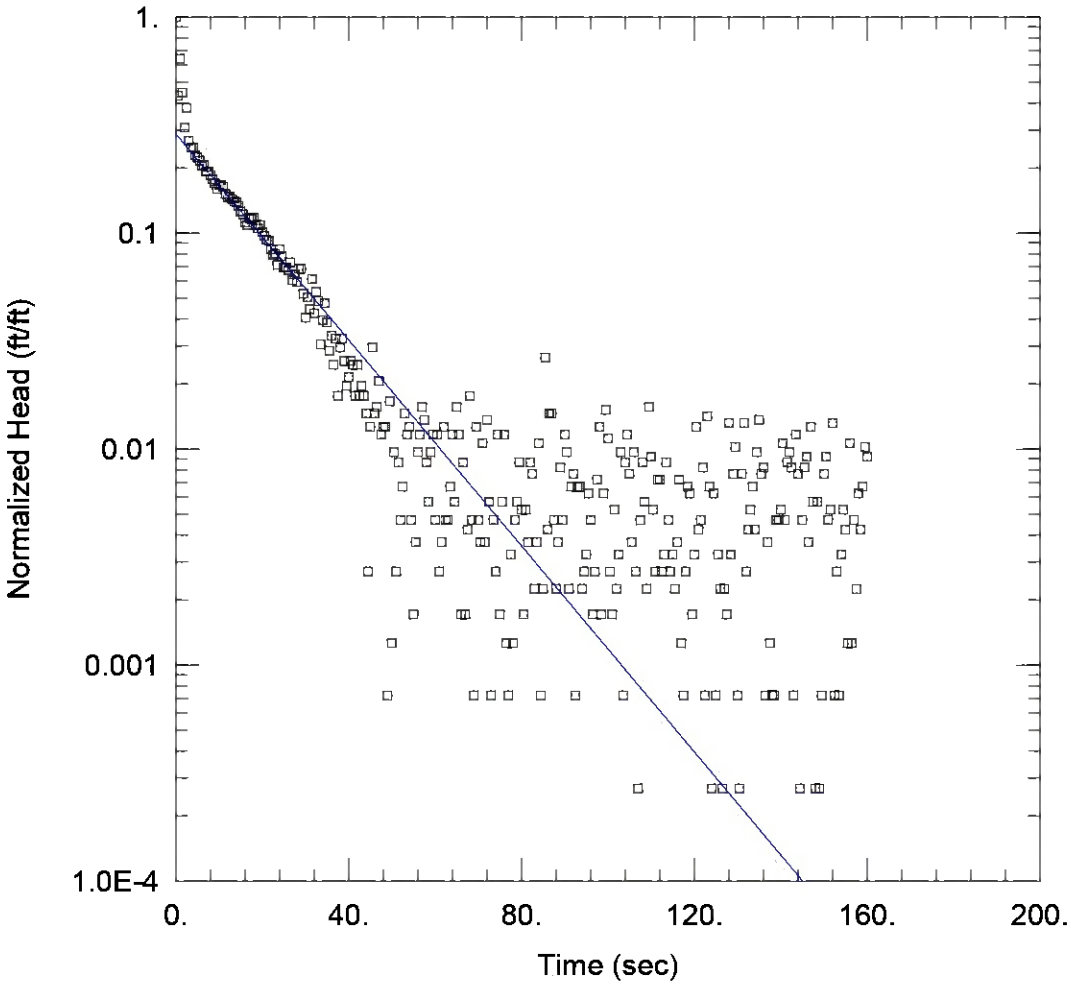
Saturated Thickness: 17.1 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (PM-1)

Initial Displacement: 1.134 ft
Total Well Penetration Depth: 17.1 ft
Casing Radius: 0.1042 ft
Static Water Column Height: 17.1 ft
Screen Length: 17.1 ft
Well Radius: 0.25 ft
Gravel Pack Porosity: 0.2

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.002385 cm/sec
y0 = 0.2976 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\PM-1 slug in 2.aqt
Date: 11/10/21 Time: 15:49:56

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: PM-1

AQUIFER DATA

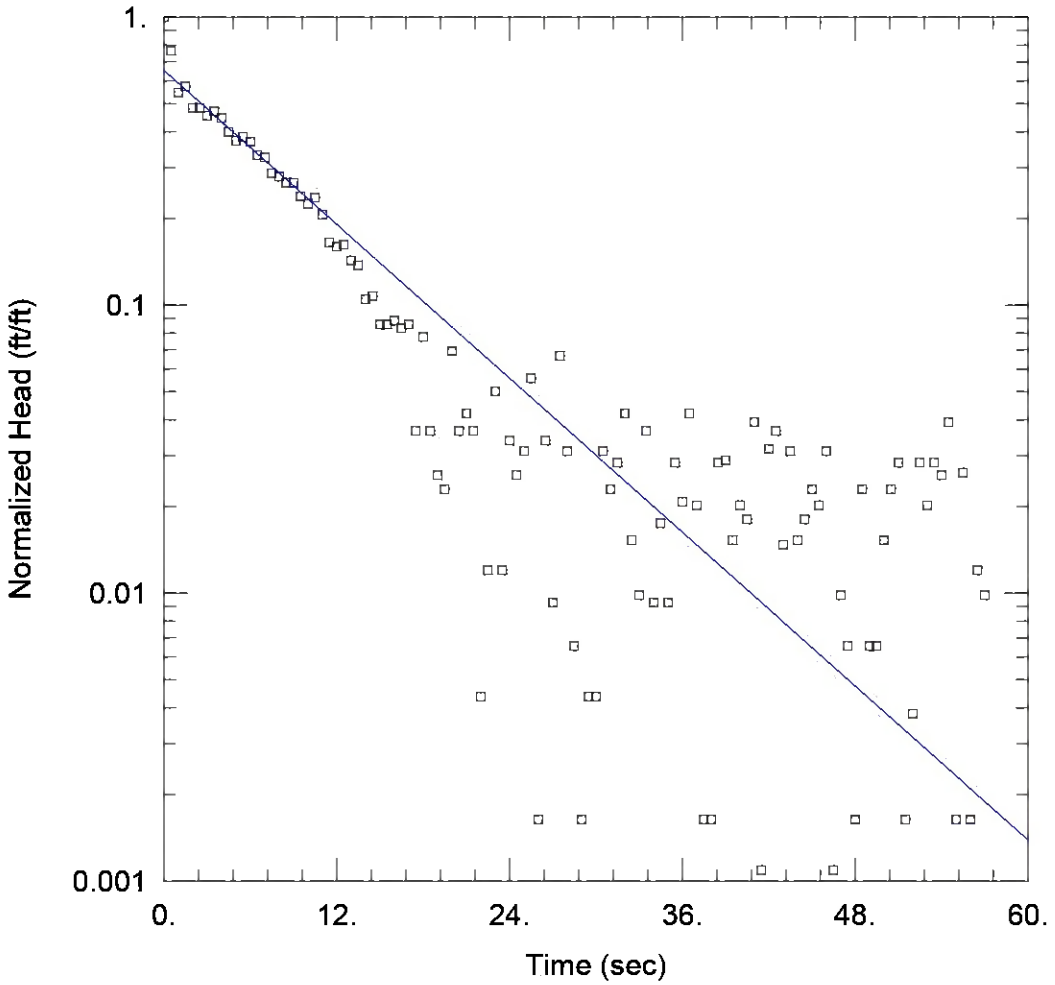
Saturated Thickness: 17.1 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (PM-1)

Initial Displacement: 1.006 ft
Total Well Penetration Depth: 17.1 ft
Casing Radius: 0.1042 ft
Static Water Column Height: 17.1 ft
Screen Length: 17.1 ft
Well Radius: 0.25 ft
Gravel Pack Porosity: 0.2

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.003361 cm/sec
y0 = 0.2893 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\PM-1 slug in 3.aqt
Date: 11/10/21 Time: 15:50:38

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: PM-1

AQUIFER DATA

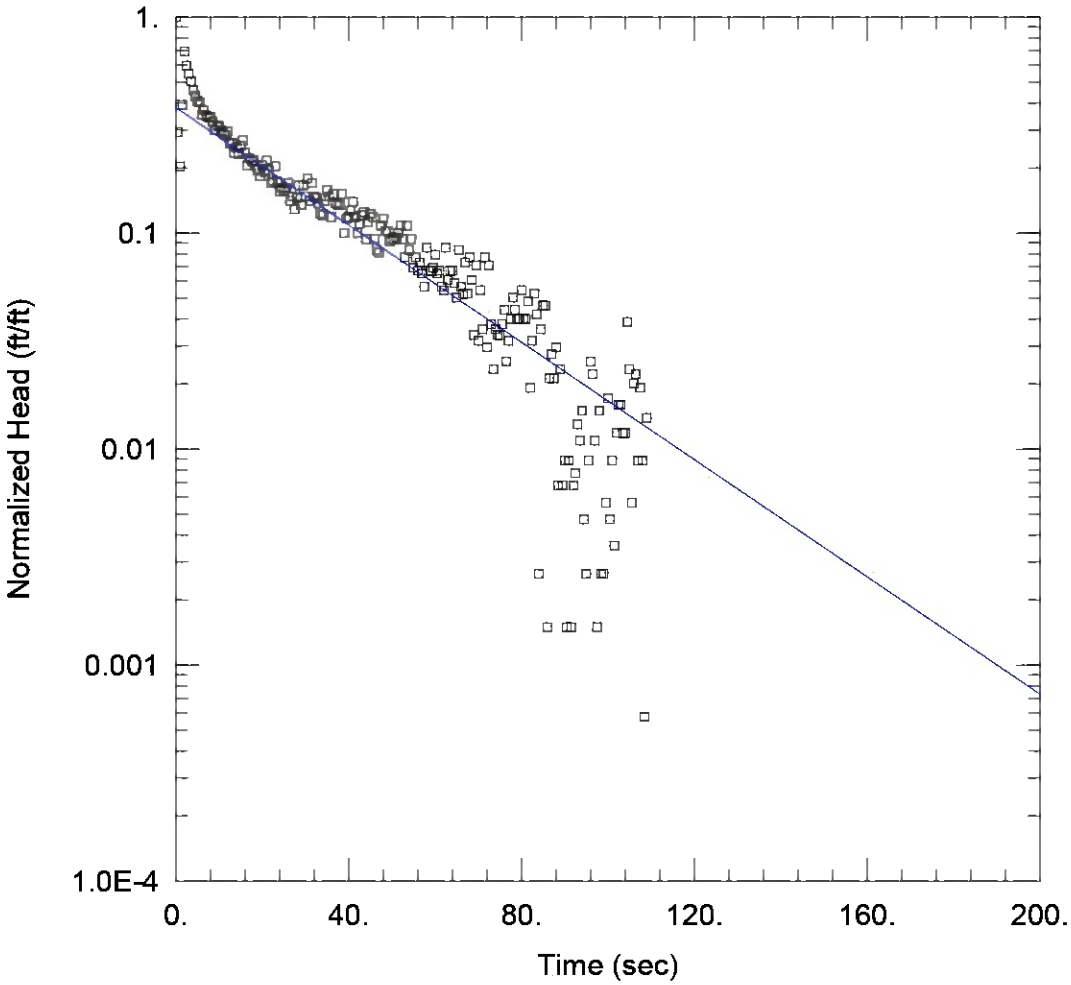
Saturated Thickness: 17.1 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (PM-1)

Initial Displacement: 0.3664 ft
Total Well Penetration Depth: 17.1 ft
Casing Radius: 0.1042 ft
Static Water Column Height: 17.1 ft
Screen Length: 17.1 ft
Well Radius: 0.25 ft
Gravel Pack Porosity: 0.2

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.006277 cm/sec
y0 = 0.2392 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\PM-1 slug out 1.aqt
Date: 11/10/21 Time: 15:51:32

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: PM-1

AQUIFER DATA

Saturated Thickness: 17.1 ft Anisotropy Ratio (Kz/Kr): 1.

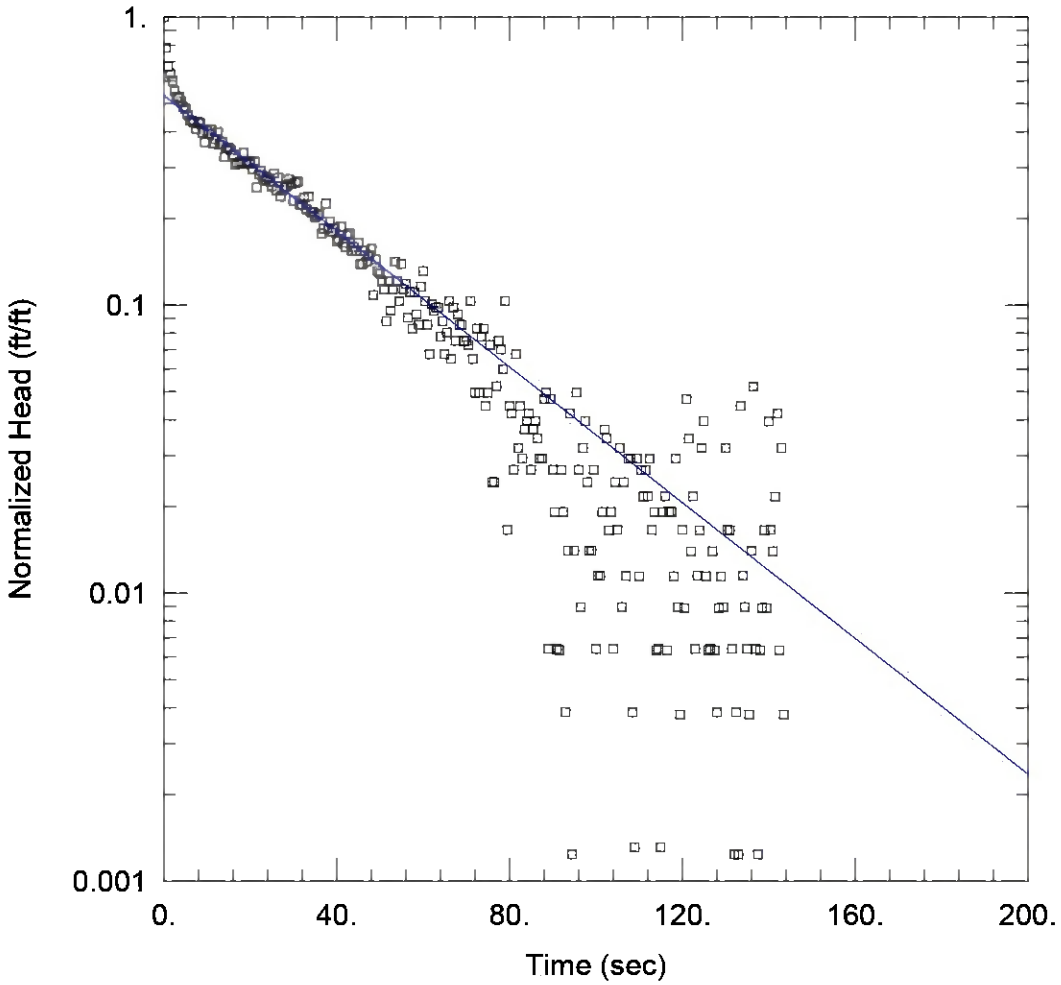
WELL DATA (PM-1)

Initial Displacement: 0.4823 ft
Total Well Penetration Depth: 17.1 ft
Casing Radius: 0.1042 ft
Static Water Column Height: 17.1 ft
Screen Length: 17.1 ft
Well Radius: 0.25 ft
Gravel Pack Porosity: 0.2

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.001913 cm/sec y0 = 0.1835 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\PM-1 slug out 2.aqt
Date: 11/10/21 Time: 15:52:36

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: PM-1

AQUIFER DATA

Saturated Thickness: 17.1 ft Anisotropy Ratio (Kz/Kr): 1.

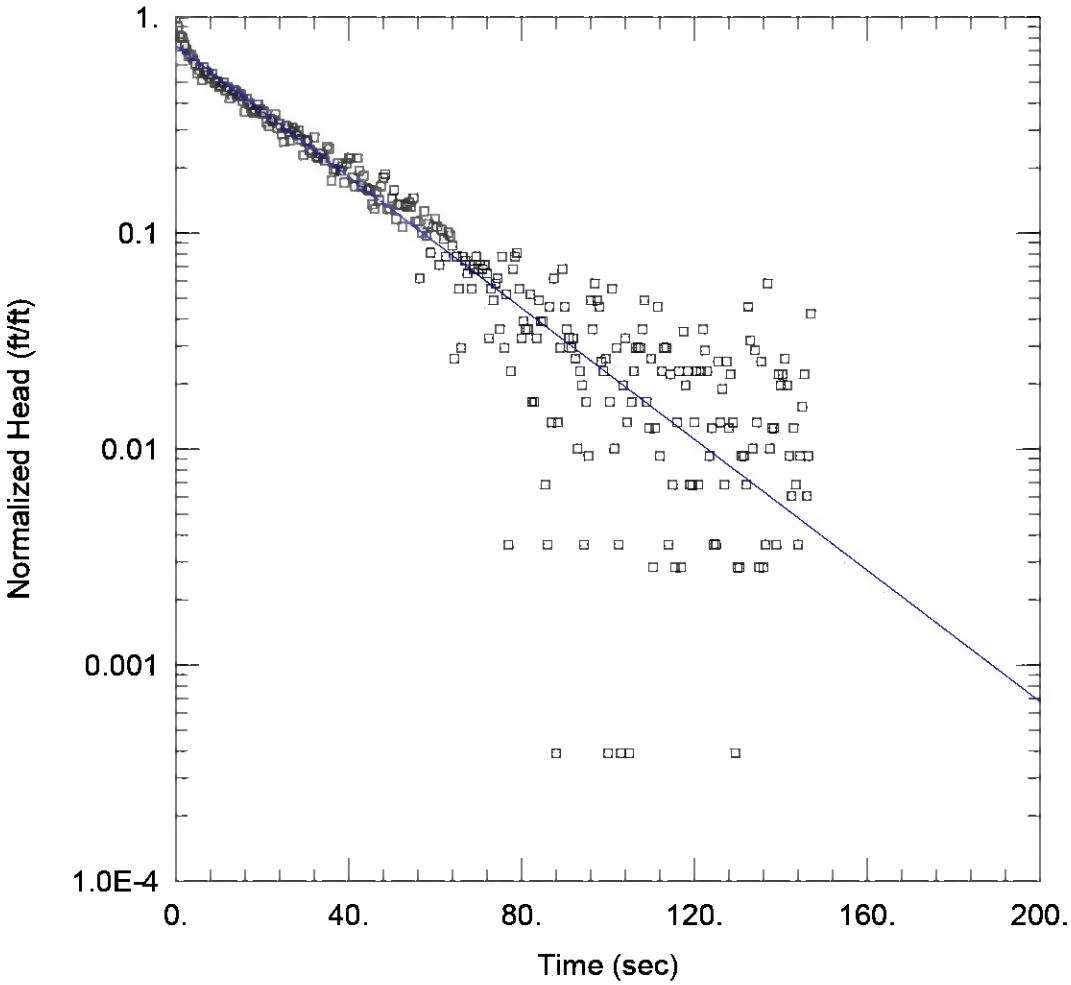
WELL DATA (PM-1)

Initial Displacement: 0.3925 ft
Total Well Penetration Depth: 17.1 ft
Casing Radius: 0.1042 ft
Static Water Column Height: 17.1 ft
Screen Length: 17.1 ft
Well Radius: 0.25 ft
Gravel Pack Porosity: 0.2

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.00166 cm/sec y0 = 0.2096 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\PM-1 slug out 3.aqt
Date: 11/10/21 Time: 15:55:51

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: PM-1

AQUIFER DATA

Saturated Thickness: 17.1 ft Anisotropy Ratio (Kz/Kr): 1.

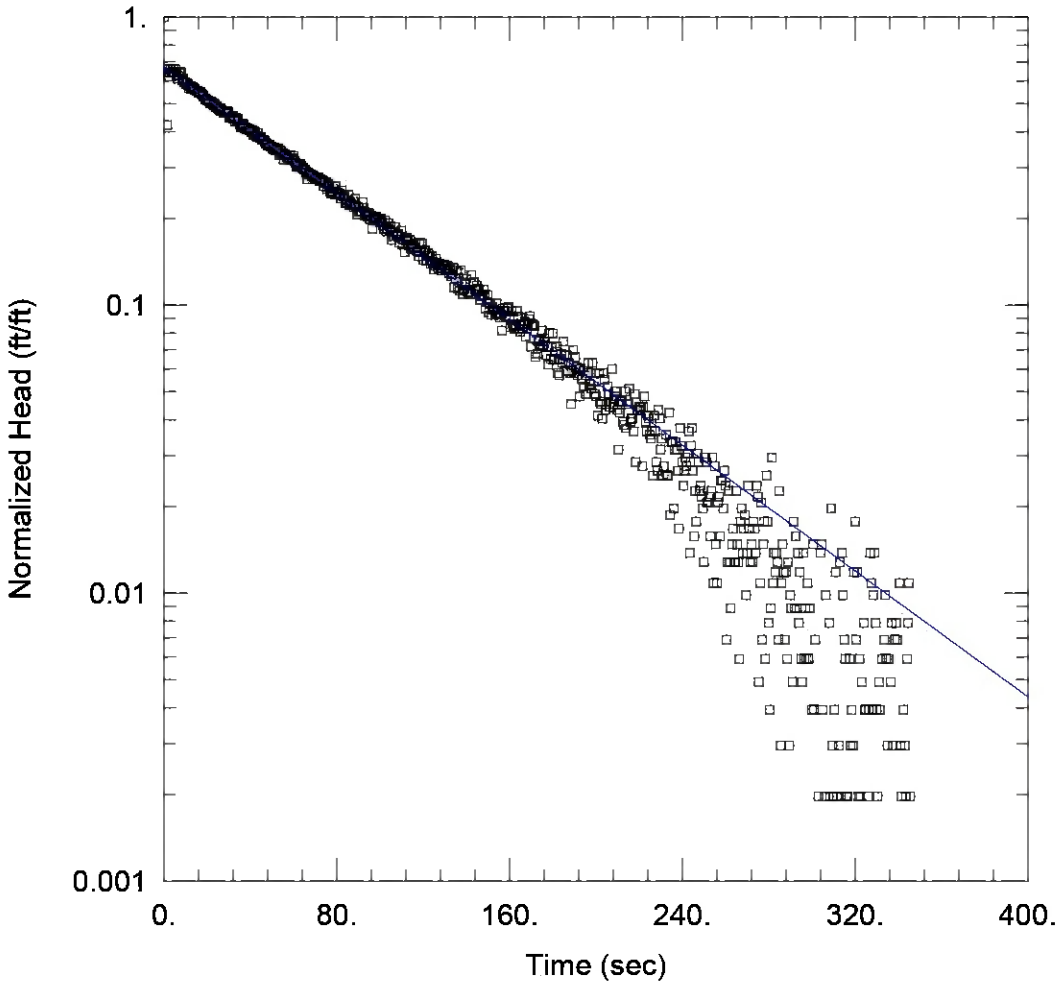
WELL DATA (PM-1)

Initial Displacement: 0.3101 ft
Total Well Penetration Depth: 17.1 ft
Casing Radius: 0.1042 ft
Static Water Column Height: 17.1 ft
Screen Length: 17.1 ft
Well Radius: 0.25 ft
Gravel Pack Porosity: 0.2

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.00214 cm/sec y0 = 0.2286 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\POZ-4 slug in 1.aqt
Date: 11/10/21 Time: 15:43:54

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: POZ-4

AQUIFER DATA

Saturated Thickness: 8.66 ft Anisotropy Ratio (Kz/Kr): 1.

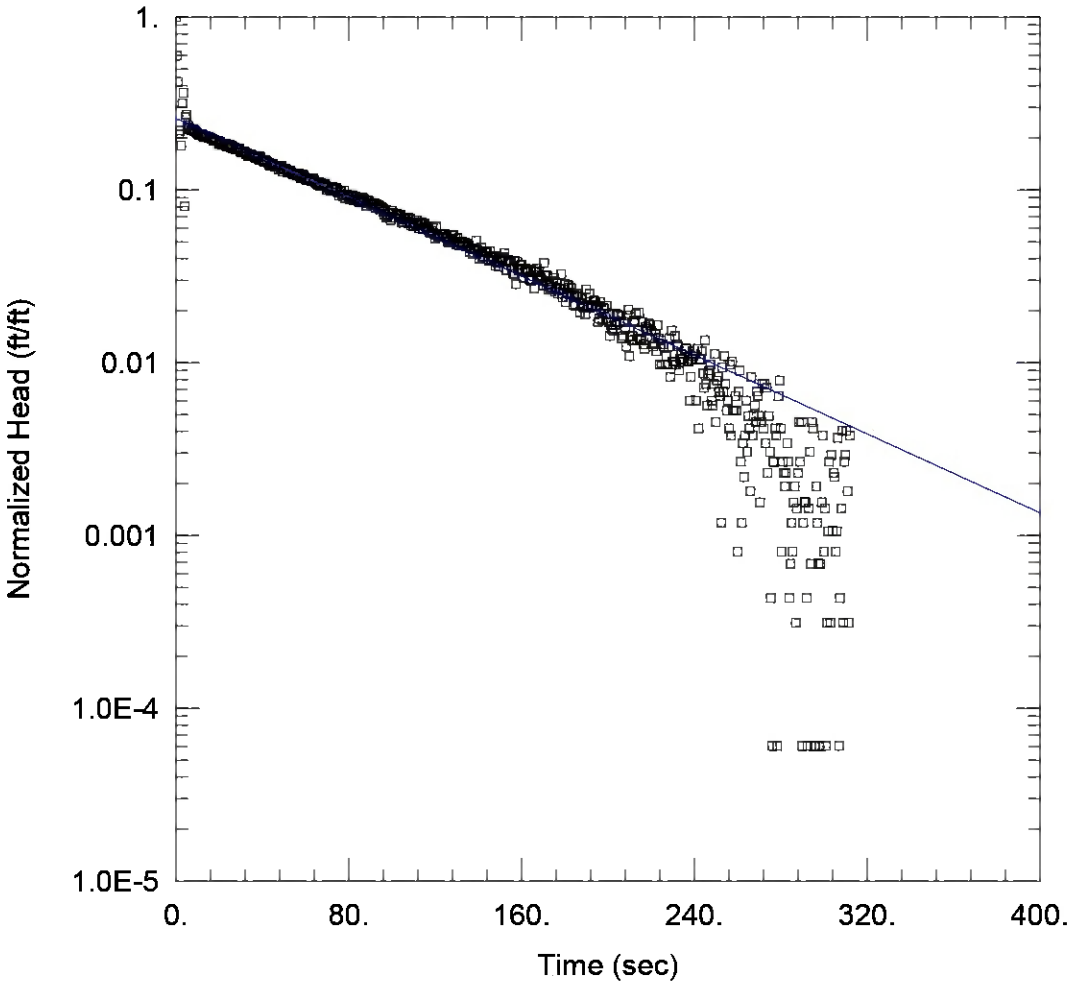
WELL DATA (POZ-4)

Initial Displacement: 1.016 ft
Total Well Penetration Depth: 8.66 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 8.66 ft
Screen Length: 5. ft
Well Radius: 0.3438 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.0006012 cm/sec y0 = 0.6789 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\POZ-4 slug in 2.aqt
Date: 11/10/21 Time: 16:13:56

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: POZ-4

AQUIFER DATA

Saturated Thickness: 8.66 ft Anisotropy Ratio (Kz/Kr): 1.

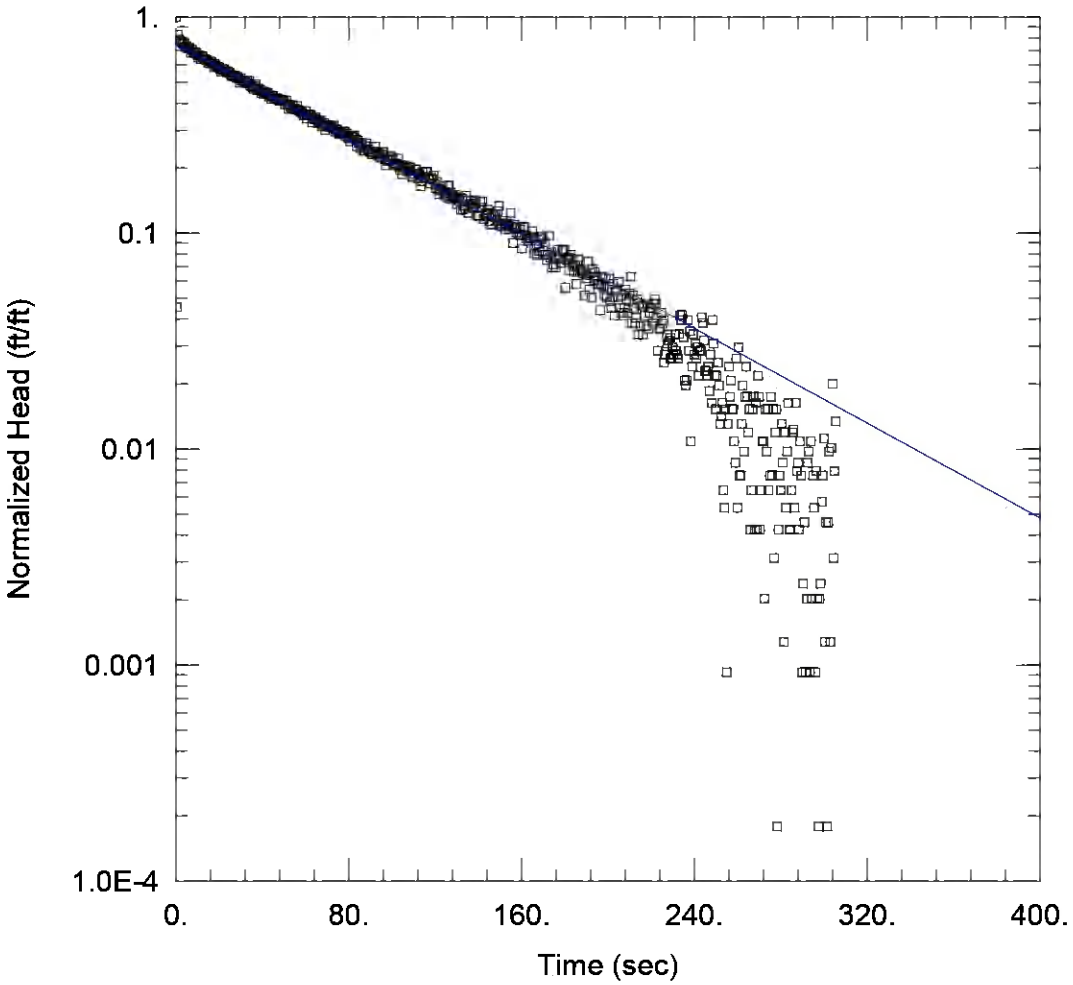
WELL DATA (POZ-4)

Initial Displacement: 2.677 ft
Total Well Penetration Depth: 8.66 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 8.66 ft
Screen Length: 5. ft
Well Radius: 0.3438 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.000628 cm/sec y0 = 0.6943 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\POZ-4 slug out 1.aqt
Date: 11/10/21 Time: 16:01:28

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: POZ-4

AQUIFER DATA

Saturated Thickness: 8.66 ft Anisotropy Ratio (Kz/Kr): 1.

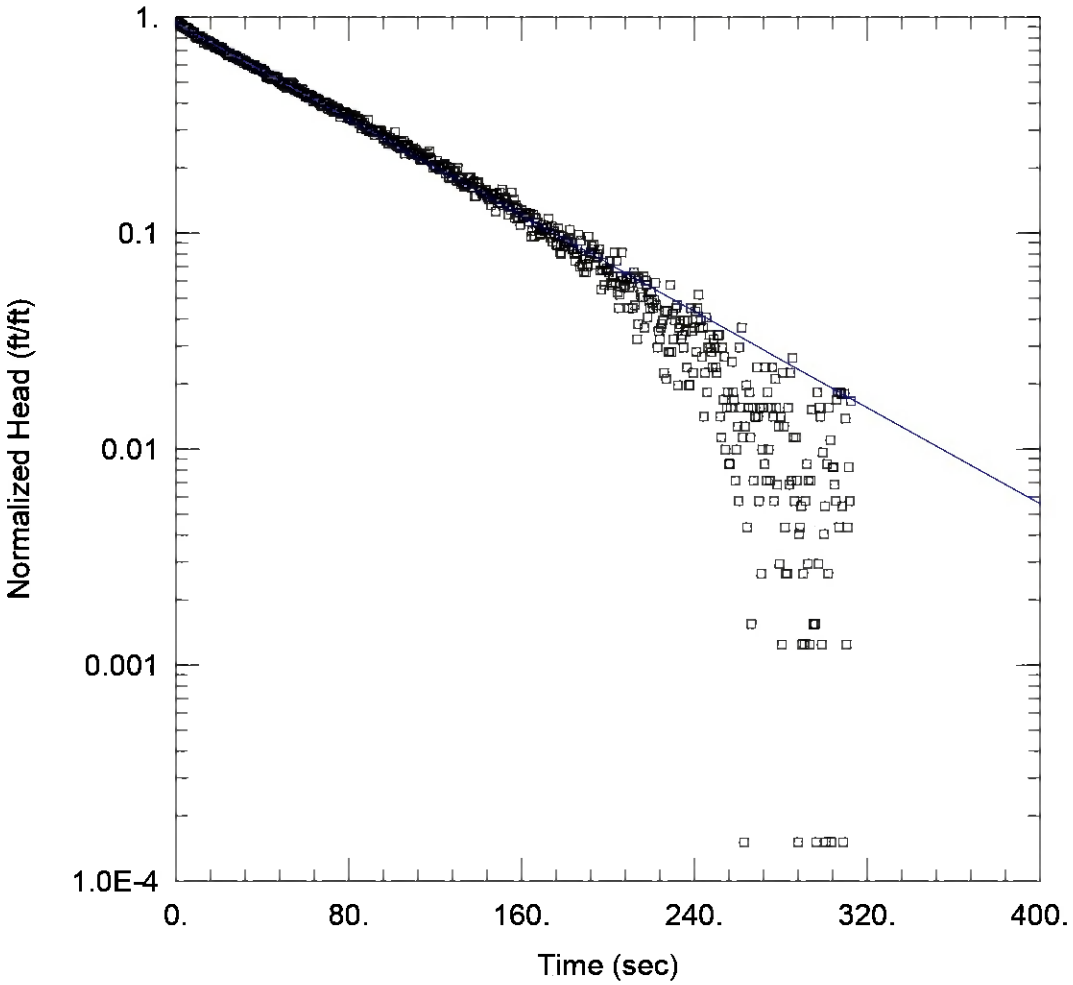
WELL DATA (POZ-4)

Initial Displacement: 0.9062 ft
Total Well Penetration Depth: 8.66 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 8.66 ft
Screen Length: 5. ft
Well Radius: 0.3438 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.0006036 cm/sec y0 = 0.6804 ft



WELL TEST ANALYSIS

Data Set: C:\Users\nschaffer\Documents\SCC slug working\POZ-4 slug out 2.aqt
Date: 11/10/21 Time: 16:32:06

PROJECT INFORMATION

Company: Haley & Aldrich
Client: Santee Cooper
Project: 131539
Location: Cross, SC
Test Well: POZ-4

AQUIFER DATA

Saturated Thickness: 8.66 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (POZ-4)

Initial Displacement: 0.7151 ft
Total Well Penetration Depth: 8.66 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 8.66 ft
Screen Length: 5. ft
Well Radius: 0.3438 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.0006124 cm/sec y0 = 0.6719 ft