2024 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT CLASS 3 LANDFILL AREA 2 WINYAH GENERATING STATION

by Santee Cooper
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1. Annual Groundwater Monitoring Report Summary

The South Carolina Public Service Authority (Santee Cooper) has prepared this 2024 Annual Groundwater Monitoring Corrective Action Report for Class 3 Landfill Area 2 at the Winyah Generating Station (WGS). This 2024 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).

The Class 3 Landfill Area 2 at WGS received approval to operate from South Carolina Department of Environmental Services (SCDES), formerly the South Carolina Department of Health and Environmental Control (SCDHEC), on December 20, 2021, and initial receipt of waste began on March 28, 2022. This relatively new CCR landfill is subject to the groundwater monitoring and corrective action requirements described under § 257.90 through § 257.98. The Class 3 Landfill Area 2 is located within the footprint of Ash Pond A, which is an existing surface impoundment subject to the CCR Rule undergoing closure by removal. Several of the monitoring wells used for the groundwater monitoring network for Ash Pond A are also included in the monitoring network for the Class 3 Landfill Area 2. In addition to the federal CCR Rule groundwater monitoring program discussed throughout, a SCDES approved groundwater monitoring program is also being implemented in accordance with the SCDES Permit #LF3-00042. This document addresses the requirement for the Owner/Operator to prepare an Annual Groundwater Monitoring and Corrective Action Report per § 257.90(e).

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, 2024), the Class 3 Landfill Area 2 was in a detection monitoring program. Based on the February 2024 sampling event, statistically significant increases (SSIs) of the following Appendix III constituents were identified: calcium and chloride in monitoring well WLF-A2-6, sulfate in monitoring wells WAP-9, WAP-19, and WLF-A2-6, and total dissolved solids in monitoring wells WAP-9, WAP-19, and WLF-A2-6. A successful ASD was completed in October 2024 within 90 days of identifying the SSIs in the July 2024 statistical report of the February 2024 sampling data. The report concluded that Ash Pond A is the alternative source of the Appendix III SSIs detected downgradient of the Class 3 Landfill Area 2. Based on data from the July 2024 sampling event, SSIs of the following Appendix III constituents were identified: calcium, chloride, and fluoride in monitoring well WLF-A2-6, sulfate in monitoring wells WAP-9, WAP-19, and WLF-A2-6, and total dissolved solids in monitoring wells WAP-9, WAP-19, and WLF-A2-6. Due to the similar results in the July 2024 sampling event to the February 2024 sampling, Santee Cooper holds that the ASD completed and certified in October 2024 conclusions apply to the SSIs identified in the February and July 2024 sampling events. Therefore, at the end of the current annual reporting period (December 31, 2024), the Class 3 Landfill Area 2 remained in detection monitoring. The remaining groundwater requirements to initiate assessment monitoring, identify Appendix IV statistically significant levels (SSLs) and establish groundwater protection standards (GWPS), initiate and complete an assessment of corrective measures, hold a public meeting, select a corrective action remedy, and implement remedial activities are not applicable at this time.

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) and (c)

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, except as provided in paragraph (g) of this section.
Once a groundwater monitoring system and groundwater monitoring program has been established at the CCR unit as required by this subpart, the owner or operator must conduct groundwater monitoring and, if necessary, corrective action through the active life and post-closure care period of the CCR unit.

As stated in Section 1, Santee Cooper is complying with the groundwater monitoring and corrective action requirements described under 40 CFR § 257.90 through § 257.98 of the CCR Rule for the WGS Class 3 Landfill Area 2. This document addresses the requirements outlined in § 257.90(e) for the 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 new CCR landfills, new CCR surface impoundments, and all lateral expansions of CCR units, the owner or operator must prepare the initial annual groundwater monitoring and corrective action report no later than January 31 of the year following the calendar year a groundwater monitoring system has been established for such CCR unit as required by this subpart, and annually thereafter. For the preceding calendar year, the annual report must document the status of the groundwater monitoring and corrective action program for the CCR unit, summarize key actions completed, describe any problems encountered, discuss actions to resolve the problems, and project key activities for the upcoming year. For purposes of this section, the owner or operator has prepared the annual report when the report is placed in the facility's operating record as required by § 257.105(h)(1).

This Annual Report documents the activities completed in 2024 for the Class 3 Landfill Area 2 at WGS as required by the CCR Rule. Groundwater sampling and analysis was conducted per the requirements described in § 257.93, and the status of the groundwater monitoring program described in § 257.94 is provided in this report.

2.2.1 Status of the Groundwater Monitoring Program

In accordance with § 257.94, groundwater monitoring wells were constructed and baseline sampling of the groundwater monitoring well network was completed for the newly constructed Class 3 Landfill Area 2 at WGS in February 2022 prior to the initial receipt of waste on March 28, 2022.

The initial detection monitoring event occurred in July 2022 during the first semi-annual sampling event following initial receipt of waste and the resulting statistical evaluation identified SSIs. This was consistent with prior groundwater analytical results associated with the monitoring of WGS Ash Pond A which was not unexpected in that the two CCR units share a footprint. Subsequently, an ASD was conducted which

evaluated groundwater quality conditions downgradient of the Class 3 Landfill Area 2 prior to the first receipt of any waste in the landfill and compared the data to Appendix III constituent concentrations detected after the landfill began operations. It concluded that Ash Pond A was the alternate source for the Appendix III SSIs detected downgradient of the new Class 3 Landfill Area 2, and that Landfill Area 2 was not a contributing source. The ASD was completed and certified March 2023 and the Landfill Area 2 continued in detection monitoring.

As noted earlier, a second ASD was completed October 2024 pursuant to 257.24 (c) (3) and the Class 3 Landfill Area 2 continued in detection monitoring. The WGS Class 3 Landfill Area 2 continues to receive waste through 2024.

A summary of the groundwater monitoring program for the new Landfill Area 2, including the analytical results for the Appendix III and Appendix IV list of constituents, is presented in Table 1 and the laboratory analytical reports, along with field sampling forms, are provided in Appendix B of this report.

2.2.2 Key Actions Completed

The following key actions were completed in 2024:

- Prepared 2023 Annual Report including:
  - Pursuant to § 257.105(h)(1) the Annual Report was placed in the facility's operating record;
  - 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 a minimum of two (2) rounds of groundwater samples (February and July) in accordance with § 257.94(b) and recorded the concentrations in the facility's operating record as required by § 257.94(f). Groundwater monitoring results are summarized in Table 1 and laboratory analytical reports are provided in Appendix B.
- Completed statistical evaluation to determine SSIs above background for Appendix III constituents in accordance with § 257.93(h)(2) (Appendix A).
- Completed a successful alternate source demonstration in October 2024 in accordance with § 257.94(e)(2) (Appendix C).
- Continued with improved potentiometric surface characterization of the uppermost aquifer given changing site conditions by completing sitewide synoptic water level measurements on an approximately quarterly basis to further evaluate temporal changes.
- Continued evaluation of turbidity, oxidation-reduction potential, and well screen submersion trends sitewide in wells and to identify wells to be redeveloped by a certified well driller to remove buildup of sediment fines and suspected biofouling on the well screens. A submersible camera was also used where applicable to investigate wells with unsubmerged screens prior to redevelopment.

2.2.3 Problems Encountered

No problems were encountered.

2.2.4 Actions to Resolve Problems

No actions were required.

2.2.5 Project Key Activities for Upcoming Year

Key activities to be completed in 2025 include the following:

- Prepare the 2024 annual report; place it in the record as required by § 257.105(h)(1); notify the Relevant State Director [§ 257.106(d)]; and post to the facility's publicly available website [§ 257.107(d)].
- Collect and analyze a minimum of two (2) rounds of groundwater samples in accordance with § 257.94(b) and record the concentrations in the facility's operating record as required by § 257.94(f).
- Conduct statistical analysis of detection monitoring analytical data to determine if SSIs over background are present and verify the validity of the certified March 2023 and October 2024 ASDs, as required by § 257.93(h) and § 257.94.
- Continue improving the potentiometric surface characterization of the uppermost aquifer given changing site conditions by expanding the number of locations for collecting surface water elevations from unlined ponds.
- Based on results from the study with the submersible camera in 2024, plans to conduct redevelopment will be finalized in 2025 and reported in the 2025 Annual Report.

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 location of the CCR unit and associated upgradient and downgradient monitoring wells for the Class 3 Landfill Area 2 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;

No monitoring wells were installed or decommissioned in 2024.

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;

Two independent samples from each background and downgradient monitoring well were collected and analyzed to satisfy the detection monitoring requirements for the Class 3 Landfill Area 2. A summary table including the sample names, dates of sample collection, reason for sample collection (Detection), and monitoring data obtained for the groundwater monitoring program for the Class 3 Landfill Area 2 is presented in Table 1 of this report. In addition, and as required by § 257.95(d)(3), the groundwater protection standards are included on Table 1. Laboratory analytical data reports, along with field sampling forms, are provided in Appendix B.

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

In February 2023, SSIs of the following Appendix III constituents were identified: calcium and chloride in monitoring well WLF-A2-6, sulfate in monitoring well WAP-19, pH in WAP-9, and total dissolved solids monitoring wells WAP-9 and WAP-19. An ASD was completed within 90 days of initially determining these SSIs in 2022. The ASD was completed on March 30, 2023. As noted in the 2023 ASD, the results are not unexpected because the Class 3 Landfill Area 2 is located within the footprint of Ash Pond A, which is currently undergoing corrective action and closure. Ash Pond A was an unlined CCR impoundment that operated for over 40 years. As supported by the 2023 ASD, the former unit has and continues to contribute to the elevated concentrations. As such, the Class 3 Landfill Area 2 remained in detection monitoring.

In February 2024, SSIs of the following Appendix III constituents were identified: calcium and chloride in monitoring well WLF-A2-6, sulfate in monitoring wells WAP-9, WAP-19, and WLF-A2-6, and total dissolved solids in monitoring wells WAP-9, WAP-19, and WLF-A2-6. A successful ASD was completed in October 2024 to address the SSIs identified in the July 2024 statistical report of the February 2024 sampling data. The report concluded that Ash Pond A continued to be the alternative source of the Appendix III SSIs detected downgradient of the Class 3 Landfill Area 2. In July 2024, SSIs of the following Appendix III constituents were identified: calcium, chloride, and fluoride in monitoring well WLF-A2-6, sulfate in monitoring wells WAP-9, WAP-19, and WLF-A2-6, and total dissolved solids in monitoring wells WAP-9, WAP-19, and WLF-A2-6. Due to the similar results in the July 2024 sampling event to the February 2024 sampling, Santee Cooper holds that the October 2024 ASD's conclusions apply to the SSIs identified in the July 2024 sampling event. Therefore, at the end of the current annual reporting period (December 31, 2024), the Class 3 Landfill Area 2 remained in detection monitoring.

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.

This Annual Report documents activities conducted to comply with Sections § 257.90 through § 257.94 of the CCR Rule. There are no applicable requirements from Sections § 257.95 through § 257.98.

Groundwater flow rate and direction are provided as Figures 2, 3, 4, and 5 for each synoptic water level event as specified in § 257.93(c).

The existing groundwater model was used in 2022 to evaluate how pond closure of WGS Ash Ponds A & B with the construction of the new landfill in the footprint of Ash Pond A may affect groundwater flow direction. The groundwater flow in the vicinity of Ash Ponds A & B and the Class 3 Landfill Area 2 has historically been radial with groundwater discharge into the surrounding surface water of the Industrial Cooling Pond and the connecting cooling water intake and discharge canals. The model conditions were updated to simulate changes in groundwater flow following closure of Ash Pond A by removal of CCR and affected soils, backfilled with clean soil to provide the required separation between groundwater and the new landfill, and covered by the Class 3 Landfill Area 2 in 65 acres of the 90-acre footprint of Ash Pond A, with a liner meeting construction standards for a new CCR landfill. Recharge was reduced from 6-inches per year to zero in the Class 3 Landfill area because by design rainfall and leachate were prevented from infiltrating into the subsurface due to the liner. Recharge remained 6-inches per year around Ash Pond B and the remaining 25 acres of Ash Pond A because those areas will remain open and will be graded for drainage. The groundwater flow model predicts that as recharge to the surficial aquifer decreases over time as the ash pond is closed and the new Class 3 Landfill is constructed, groundwater flow will shift to the north-northwest. Therefore, piezometers are planned to be installed on the south side of the Class 3 Landfill Area 2 in 2025 adjacent Ash Pond A to monitor for these predicted changes. This will provide the ability to proactively address any potential changes to the groundwater monitoring network for ongoing compliance.

TABLES

Table 1 - Summary of Analytical Results
Winyah Generating Station Class 3 Landfill Area 2 Detection Monitoring 2024

					Appendix III Constituents							Field Parameters							
Well ID	Purpose	Date of Sample Event	Laboratory Sample ID Number		Boron	Calcium	Chloride	Fluoride	Sulfate	Total Dissolved Solids	pH	Depth to Groundwater	Groundwater Elevation	pH	Specific Conductivity	Temperature	Oxidation Reduction Potential	Turbidity	Dissolved Oxygen
				Unit	ug/L	mg/L	mg/L	mg/L	mg/L	mg/L	SU	Feet	Feet	SU	uS	C	mv	NTU	ppm
				Method	EPA 6010D	EPA 6020B	EPA 300.0	EPA 300.0	EPA 300.0	SM 2540C							SM2580		
				GWPS/ US EPA MCL/RSL	----	----	----	4.00	----	----	----	----	----	----	----	----	----	----	----
	Site Background Wells																		
WAP-1	Background	2/5/24	AF90595		37.1	8.8	11.6	<0.10	30.2	80.00	4.41	4.86	24.58	4.41	139	16.98	68.0	0.100	1.06
WAP-1	Background	7/1/24	AG03721		30.4	7.5	9.26	<0.10	30.8	70.00	4.42	5.71	23.73	4.42	120	24.57	25.0	0	1.01
WAP-1	**total samples**				2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
WBW-1	Background	2/6/24	AF90634		185	2.2	4.50	<0.10	10.9	75.00	4.54	7.15	24.82	4.54	56.0	16.40	158	7.20	3.58
WBW-1	Background	7/1/24	AG03766		13.2	1.8	4.92	<0.10	7.22	<25	4.04	7.27	24.70	4.04	47.0	24.17	258	1.40	4.10
WBW-1	**total samples**				2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	Class 3 Landfill Area 2 Wells																		
WAP-9	Detection	2/7/24	AF90604		4470	345	205	<0.10	602	1702	6.17	8.88	19.16	6.17	2140	18.09	-39.0	0	0.950
WAP-9	Detection	7/2/24	AG03733		4180	313	176	<0.10	580	1542	5.83	10.96	17.08	5.83	1890	23.75	-32.0	0	0.890
WAP-9	**total samples**				2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
WAP-17	Detection	2/13/24	AF90618		3610	331	169	<0.10	757	1460	6.15	6.01	20.87	6.15	2040	19.01	33.0	3.50	0.820
WAP-17	Duplicate	2/13/24	AF90619		3710	328	162	<0.10	725	1538	***	***	***	***	***	***	***	***	***
WAP-17	Detection	7/15/24	AG03748		4220	315	240	<0.10	813	1566	5.78	6.96	19.92	5.78	2140	25.77	-149	2.60	1.06
WAP-17	Duplicate	7/15/24	AG03749		4190	309	240	<0.10	813	1604	***	***	***	***	***	***	***	***	***
WAP-17	**total samples**				4	4	4	4	4	4	2	2	2	2	2	2	2	2	2
WAP-18	Detection	2/12/24	AF90620		799	69	29.3	<0.10	132	357.5	5.75	9.91	21.13	5.75	506	17.29	77.0	6.60	1.52
WAP-18	Detection	7/15/24	AG03750		811	75.5	46.4	<0.10	152	382.5	5.37	11.32	19.72	5.37	551	27.04	112	3.40	1.33
WAP-18	**total samples**				2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
WAP-19	Detection	2/8/24	AF90621		4320	646	56.7	0.19	1800	2871	5.89	22.02	21.37	5.89	3060	19.03	83.0	3.20	0.820
WAP-19	Resample	5/2/24	AF98789		***	***	***	***	***	***	6.05	22.89	20.50	6.05	2930	22.13	-46.0	15.2	0.220
WAP-19	Detection	7/22/24	AG03751		4660	711	31.1	0.34	1810	2891	6.34	23.21	20.18	6.34	3170	22.20	-141	7.50	7.50
WAP-19	**total samples**				2	2	2	2	2	2	3	4	4	4	4	4	4	4	4
WLF-A2-1	Detection	2/13/24	AF90642		1480	193	42.9	<0.10	604	947.5	4.48	8.48	21.56	4.48	1300	18.29	130	0	0.960
WLF-A2-1	Detection	7/16/24	AG03775		1600	95.8	42.2	<0.1	196	507.5	5.18	10.44	19.60	5.18	634	23.64	-99.0	0	0.970
WLF-A2-1	**total samples**				2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
WLF-A2-2	Detection	2/13/24	AF90643		2210	182	49.8	<0.10	370	770.0	5.96	6.14	21.42	5.96	1050	19.23	46.0	0	0.810
WLF-A2-2	Detection	7/16/24	AG03776		2280	143	29.2	0.27	247	595.0	5.73	8.05	19.51	5.73	799	23.25	-119	0	1.09
WLF-A2-2	**total samples**				2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
WLF-A2-6	Detection	2/8/24	AF90644		255	235	76.4	<0.10	292	932.5	6.44	14.28	20.86	6.44	1260	17.87	65.0	0	0.889
WLF-A2-6	Duplicate	2/8/24	AF90645		258	233	76.5	<0.10	294	1029	***	***	***	***	***	***	***	***	***
WLF-A2-6	Detection	7/15/24	AG03777		395	234	79.9	<0.1	275	947.5	6.28	15.27	19.87	6.28	1240	25.61	-126	0	1.00
WLF-A2-6	**total samples**				3	3	3	3	3	3	2	2	2	2	2	2	2	2	2

Notes:

1. All groundwater samples collected from the monitoring wells for Detection Monitoring in 2024 for the constituents listed in Appendix III of the EPA CCR Rule (40 CFR) were analyzed by South Carolina Certified laboratories: Santee Cooper Analytical Services (Certification # 08552), GEL Laboratories, LLC (Certification # 10120), Eurofins (Certification # 98001), Davis & Brown (Certification # 21117), Shealy Environmental Services, Inc (Certification # 32010), Test America Laboratories Inc. Savannah (Certification # 98001), Rogers & Callcot, Inc. (Certification # 23105001), and Pace Analytical Services LLC (Certification #99030).
2. All Background and downgradient compliance wells have been sampled to meet §257.94.
3. Due to challenges with laboratory delays, all groundwater samples were not analyzed by a single laboratory. This accounts for the majority of the reporting limit variability. Matrix interference also contributed to variable RLs.
4. Depth to groundwater is measured below the top of the casing (btoc) to the water surface. Elevation is shown relative to mean sea level (msl).
5. *** means not collected. Mainly pertinant for duplicate samples.

Table 2
Cross Generating Station
2024 Synoptic Water Levels for Groundwater Monitoring Wells

		1st Event - 1/3/2024		2nd Event - 4/9/2024		3rd Event - 6/3/2024		4th Event - 11/6/2024	
Well Name	Top of Casing Elevation (ft msl)	Depth to Groundwater (ft btoc)	GW Elevation (ft msl)	Depth to Groundwater (ft btoc)	GW Elevation (ft msl)	Depth to Groundwater (ft btoc)	GW Elevation (ft msl)	Depth to Groundwater (ft btoc)	GW Elevation (ft msl)
PM-1	83.24	7.75	75.49	8.14	83.24	8.50	74.74	9.13	74.11
CBW-1	85.80	8.50	77.30	9.12	85.80	10.41	75.39	11.47	74.33
CAP-1	82.70	8.50	74.20	6.61	82.70	7.66	75.04	8.40	74.30
CAP-2	89.70	15.10	74.60	15.91	89.70	16.98	72.72	17.69	72.01
CAP-3	91.49	14.70	76.79	15.47	91.49	16.54	74.95	17.34	74.15
CAP-4	91.77	15.05	76.72	15.77	91.77	16.97	74.80	17.81	73.96
CAP-5	91.78	14.60	77.18	15.26	91.78	17.66	74.12	18.67	73.11
CAP-6	91.82	14.65	77.17	15.89	91.82	18.05	73.77	18.94	72.88
CAP-7	91.64	14.75	76.89	15.19	91.64	17.57	74.07	18.52	73.12
CAP-8	91.61	15.95	75.66	16.67	91.61	18.30	73.31	18.98	72.63
CAP-9	91.59	14.35	77.24	14.62	91.59	17.82	73.77	18.73	72.86
CAP-10	95.68	20.25	75.43	21.12	95.68	22.40	73.28	13.11	82.57
CAP-11	95.55	19.20	76.35	18.72	95.55	20.71	74.84	21.31	74.24
CAP-12	98.33	22.25	76.08	23.72	98.33	24.13	74.20	24.73	73.60
CAP-13	80.77	4.35	76.42	4.83	80.77	7.65	73.12	8.76	72.01
CAP-14	80.77	4.15	76.62	4.78	80.77	7.77	73.00	8.93	71.84
CCMLF-1	80.86	3.45	77.41	4.00	80.86	7.11	73.75	7.95	72.91
CCMLF-1D	80.65	3.20	77.45	3.74	80.65	6.89	73.76	7.74	72.91
CCMLF-2	84.08	6.75	77.33	7.43	84.08	11.53	72.55	12.74	71.34
POZ-3	82.61	4.30	78.31	4.98	82.61	7.80	74.81	8.98	73.63
POZ-4	82.73	3.95	78.78	5.07	82.73	8.34	74.39	9.35	73.38
POZ-5D	82.49	4.15	78.34	5.21	82.49	8.56	73.93	9.57	72.92
POZ-6	83.84	5.80	78.04	6.44	83.84	9.86	73.98	10.93	72.91
POZ-7	82.02	3.95	78.07	4.77	82.02	7.44	74.58	8.29	73.73
POZ-8	83.13	4.80	78.33	5.84	83.13	9.12	74.01	10.15	72.98
CLF1B-1	83.76	6.00	77.76	6.66	83.76	8.70	75.06	9.68	74.08
CLF1B-2	82.04	4.35	77.69	5.05	82.04	7.18	74.86	8.19	73.85
CLF1B-3	82.75	3.95	78.80	5.82	82.75	8.18	74.57	9.18	73.57
CLF1B-4	82.74	3.85	78.89	5.80	82.74	8.55	74.19	9.59	73.15
CLF1B-5	81.09	3.40	77.69	4.23	81.09	7.32	73.77	8.31	72.78
CLF1B-5D	80.93	3.85	77.08	4.55	80.93	7.72	73.21	8.82	72.11
CCMAP-1	80.21	4.50	75.71	5.10	80.21	7.61	72.60	8.45	71.76
CCMAP-2	81.24	6.50	74.74	7.14	81.24	8.02	73.22	8.55	72.69
CCMAP-3	81.91	6.15	75.76	6.92	81.91	8.58	73.33	8.95	72.96
CCMAP-4	81.83	4.45	77.38	5.19	81.83	7.64	74.19	8.60	73.23
CCMAP-5	83.71	6.15	77.56	6.93	83.71	9.33	74.38	10.29	73.42
CCMAP-6	84.41	7.90	76.51	8.45	84.41	11.61	72.80	12.57	71.84
CCMAP-7	81.57	7.05	74.52	7.59	81.57	8.21	73.36	8.93	72.64
CCMAP-8	82.89	6.40	76.49	6.99	82.89	9.80	73.09	10.72	72.17
CCMAP-9	82.51	6.00	76.51	6.62	82.51	9.75	72.76	10.80	71.71
CCMAP-10	81.80	5.55	76.25	6.08	81.80	9.10	72.70	10.01	71.79
CCMAP-11	80.29	4.00	76.29	5.01	80.29	8.11	72.18	9.10	71.19
CCMAP-12	80.58	4.75	75.83	5.71	80.58	7.42	73.16	8.00	72.58
CCMAP-13	80.11	4.55	75.56	5.36	80.11	6.93	73.18	7.60	72.51
CCMAP-14	78.64	4.40	74.24	4.71	78.64	5.43	73.21	6.04	72.60
CGYP-1	91.89	15.95	75.94	19.69	91.89	17.56	74.33	17.98	73.91
CGYP-2	84.88	8.50	76.38	13.20	84.88	10.56	74.32	11.01	73.87
CGYP-3	83.95	6.95	77.00	9.41	83.95	9.37	74.58	9.84	74.11
CGYP-4	83.49	6.65	76.84	8.27	83.49	8.20	75.29	8.60	74.89
CGYP-5	84.12	7.90	76.22	9.09	84.12	8.14	75.98	8.35	75.77
CGYP-6	83.93	7.15	76.08	-	-	9.46	74.47	9.91	74.02
CGYP-7	85.37	9.20	76.17	13.10	85.37	10.97	74.40	11.42	73.95
CGSPZ-1	83.31	7.45	75.86	8.64	83.31	8.61	74.70	9.22	74.09
CGSPZ-2	82.56	6.70	75.86	9.38	82.56	8.29	74.27	8.55	74.01
CGSPZ-3	82.85	4.75	78.10	6.19	82.85	9.91	72.94	10.51	72.34
CGSPZ-4	81.28	3.80	77.48	4.82	81.28	7.68	73.60	8.73	72.55
CGSPZ-5	80.56	2.75	77.81	5.39	80.56	8.27	72.29	9.62	70.94
CCMGP-1	84.30	8.15	76.15	13.43	84.30	10.07	74.23	10.53	73.77
CCMGP-2	96.73	20.05	76.68	24.20	96.73	22.54	74.19	22.97	73.76
CCMGP-3	84.44	8.45	75.99	12.38	84.44	10.54	73.90	10.97	73.47
CCMGP-4	84.82	8.50	76.32	12.78	84.82	10.31	74.51	10.79	74.03
CCMGP-5	79.91	4.70	75.21	6.06	79.91	6.56	73.35	7.08	72.83
CGS-PSE-1	-	-	75.07	-	75.27	-	74.97	-	74.80
CGS-PSE-2	-	-	81.99	-	80.27	-	79.30	-	76.85
CGS-PSE-3	-	-	79.52	-	76.88	-	76.49	-	76.52
CGS-PSE-4	-	-	76.37	-	75.64	-	74.88	-	75.43
CGS-PSE-5	-	-	78.50	-	77.28	-	76.57	-	76.49
CGS-PSE-6	-	-	74.71	-	74.58	-	74.46	-	74.21
CGS-PSE-7	-	-	83.35	-	85.75	-	85.30	-	86.29
CGYPSW-1-WSE	-	-	75.13	-	75.16	-	74.88	-	74.93
CGYPSW-2-WSE	-	-	75.15	-	75.18	-	75.02	-	75.01
CGYPSW-3-WSE	-	-	75.49	-	75.37	-	75.45	-	75.26
CGYPSW-4-WSE	-	-	75.83	-	75.69	-	75.76	-	75.75
CGYPSW-6-WSE	-	-	75.12	-	75.17	-	74.85	-	74.70
CGYPSW-7-WSE	-	-	75.15	-	75.20	-	74.83	-	74.76
CGYPSW-8-WSE	-	-	75.14	-	75.23	-	74.86	-	74.79
GMPSW-WET-1SWE	-	-	75.98	-	75.81	-	74.35	-	74.24
GMPSW-WET-2SWE	-	-	75.55	-	75.34	-	74.49	-	74.50
GMPSW-CPD-1SWE	-	-	78.47	-	77.62	-	77.38	-	77.74
STAFF GAUGE	-	-	76.80	-	76.45	-	-	-	-
STAFF GAUGE	-	-	76.63	-	76.48	-	-	-	-

Notes:

1. Additional groundwater monitoring wells used for development of potentiometric maps. These wells monitor groundwater constituent concentrations under the SCDES NPDES Permit #SC0037401 and are not used for CCR constituent concentrations.

2. Depth to Groundwater is measured below the top of casing (btoc) to the water surface. The Top of Casing Elevation and GW Elevation are shown relative to the mean sea level (msl).

3. Pond surface elevations (PSE) and staff gauge elevations were collected to aid in the potentiometric surface interpretation elevation.

FIGURES

LEGEND

- CLASS 3 LANDFILL AREA 2 WELL
- BACKGROUND WELL
- CCR UNIT BOUNDARY
- PROPERTY BOUNDARY
- POND WATER SURFACE ELEVATION MEASUREMENT LOCATION

NOTES

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

N

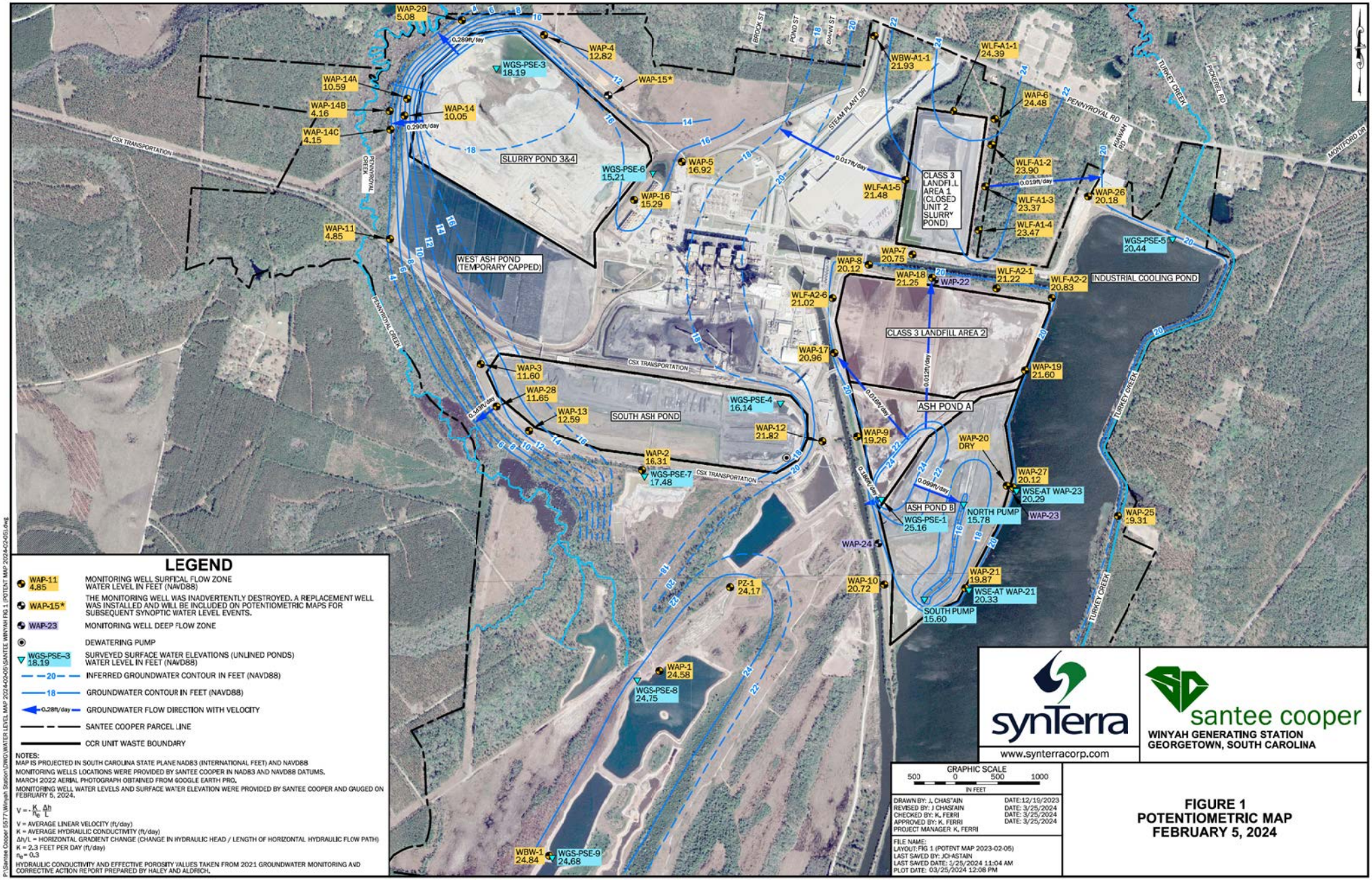
0 800 1,600
SCALE IN FEET

SANTEE COOPER
WINYAH GENERATING STATION
GEORGETOWN, SOUTH CAROLINA

LOCATION OF CLASS 3 LANDFILL AREA 2 GROUNDWATER MONITORING WELLS FOR CCR COMPLIANCE

JANUARY 2024

FIGURE 1



LEGEND

- WAP-11 4.85 — MONITORING WELL SURFICAL FLOW ZONE WATER LEVEL IN FEET (NAVD88)
- WAP-15* — THE MONITORING WELL WAS INADVERTENTLY DESTROYED. A REPLACEMENT WELL WAS INSTALLED AND WILL BE INCLUDED ON POTENTIOMETRIC MAPS FOR SUBSEQUENT SYNOPTIC WATER LEVEL EVENTS.
- WAP-23 — MONITORING WELL DEEP FLOW ZONE
- DEWATERING PUMP
- WGS-PSE-3 18.19 — SURVEYED SURFACE WATER ELEVATIONS (UNLINED PONDS) WATER LEVEL IN FEET (NAVD88)
- 20 — INFERRED GROUNDWATER CONTOUR IN FEET (NAVD88)
- 18 — GROUNDWATER CONTOUR IN FEET (NAVD88)
- 0.28ft/day — GROUNDWATER FLOW DIRECTION WITH VELOCITY
- SANTEE COOPER PARCEL LINE
- CCR UNIT WASTE BOUNDARY

NOTES:
MAP IS PROJECTED IN SOUTH CAROLINA STATE PLANE NAD83 (INTERNATIONAL FEET) AND NAVD88
MONITORING WELLS LOCATIONS WERE PROVIDED BY SANTEE COOPER IN NAD83 AND NAVD88 DATUMS.
MARCH 2022 AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH PRO.
MONITORING WELL WATER LEVELS AND SURFACE WATER ELEVATION WERE PROVIDED BY SANTEE COOPER AND GAUGED ON FEBRUARY 5, 2024.

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

V = AVERAGE LINEAR VELOCITY (ft/day)
K = AVERAGE HYDRAULIC CONDUCTIVITY (ft/day)
Δh/L = HORIZONTAL GRADIENT CHANGE (CHANGE IN HYDRAULIC HEAD / LENGTH OF HORIZONTAL HYDRAULIC FLOW PATH)
K = 2.3 FEET PER DAY (ft/day)
n_e = 0.3
HYDRAULIC CONDUCTIVITY AND EFFECTIVE POROSITY VALUES TAKEN FROM 2021 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT PREPARED BY HALEY AND ALDRICH.

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santee cooper
WINYAH GENERATING STATION
GEORGETOWN, SOUTH CAROLINA

GRAPHIC SCALE
500 0 500 1000
IN FEET

DRAWN BY: J. CHASTAIN	DATE:12/19/2023
REVISED BY: J CHASTAIN	DATE: 3/25/2024
CHECKED BY: K. FERRI	DATE: 3/25/2024
APPROVED BY: K. FERRI	DATE: 3/25/2024
PROJECT MANAGER: K. FERRI	

FILE NAME:
LAYOUT: FIG 1 (POTENT MAP 2023-02-05)
LAST SAVED BY: JCHASTAIN
LAST SAVED DATE: 3/25/2024 11:04 AM
PLOT DATE: 03/25/2024 12:08 PM

FIGURE 1
POTENTIOMETRIC MAP
FEBRUARY 5, 2024

P:\Santee Cooper 5577\Winyah Station\DWG\WATER LEVEL MAP 2024-02-05\SANTEE WINYAH FIG 1 (POTENT MAP 2024-02-05).dwg

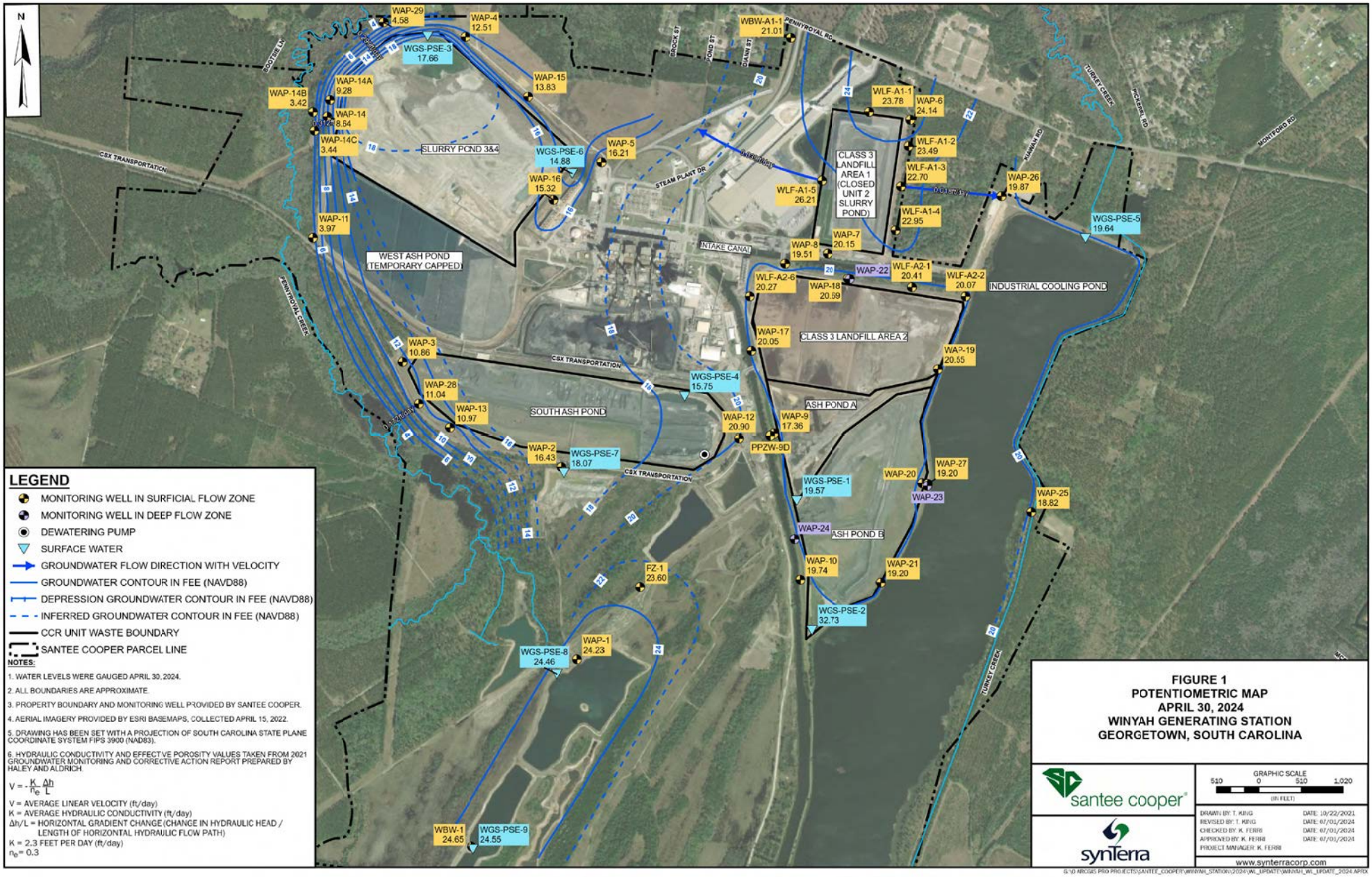

FIGURE 1
POTENTIOMETRIC MAP
APRIL 30, 2024
WINYAH GENERATING STATION
GEORGETOWN, SOUTH CAROLINA

santee cooper

synTerra

GRAPHIC SCALE
510 0 510 1,020
(IN FEET)

DRAWN BY: T. KING	DATE: 10/22/2021
REVISED BY: T. KING	DATE: 07/01/2024
CHECKED BY: K. FERRI	DATE: 07/01/2024
APPROVED BY: K. FERRI	DATE: 07/01/2024
PROJECT MANAGER: K. FERRI	

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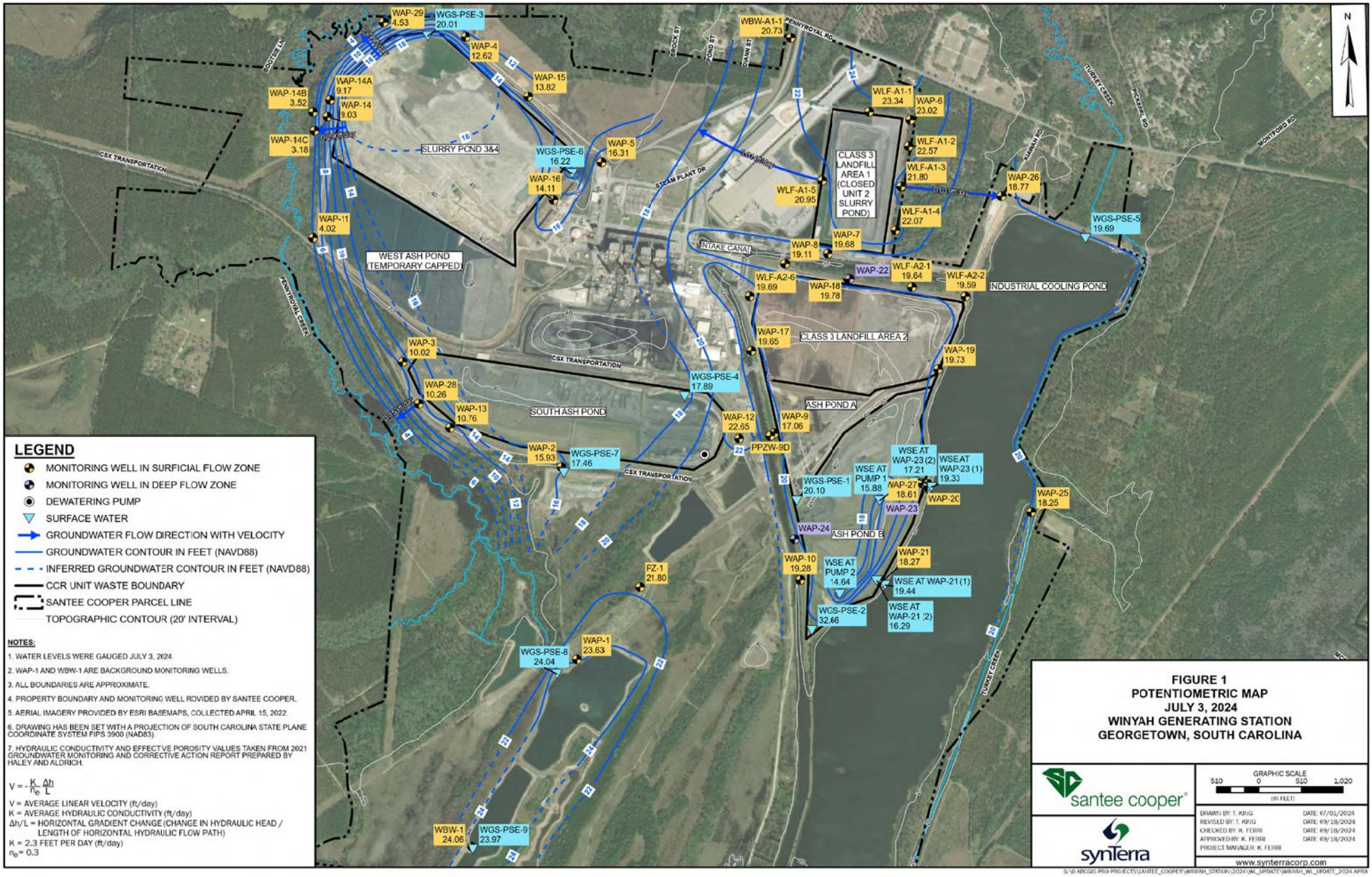

LEGEND

- MONITORING WELL IN SURFICIAL FLOW ZONE
- MONITORING WELL IN DEEP FLOW ZONE
- DEWATERING PUMP
- SURFACE WATER
- GROUNDWATER FLOW DIRECTION WITH VELOCITY
- GROUNDWATER CONTOUR IN FEET (NAVD88)
- INFERRED GROUNDWATER CONTOUR IN FEET (NAVD88)
- CCR UNIT WASTE BOUNDARY
- SANTEE COOPER PARCEL LINE
- TOPOGRAPHIC CONTOUR (20' INTERVAL)

NOTES:

1. WATER LEVELS WERE GAUGED JULY 3, 2024.
2. WAP-1 AND WBW-1 ARE BACKGROUND MONITORING WELLS.
3. ALL BOUNDARIES ARE APPROXIMATE.
4. PROPERTY BOUNDARY AND MONITORING WELL ROVIDED BY SANTEE COOPER.
5. AERIAL IMAGERY PROVIDED BY ESRI BASEMAPS, COLLECTED APRIL 15, 2022.
6. DRAWING HAS BEEN SET WITH A PROJECTION OF SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM FIPS 3900 (NAD83).
7. HYDRAULIC CONDUCTIVITY AND EFFECTVE POROSITY VALUES TAKEN FROM 2021 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT PREPARED BY HALEY AND ALDRICH.

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

V = AVERAGE LINEAR VELOCITY (ft/day)
K = AVERAGE HYDRAULIC CONDUCTIVITY (ft/day)
Δh/L = HORIZONTAL GRADIENT CHANGE (CHANGE IN HYDRAULIC HEAD / LENGTH OF HORIZONTAL HYDRAULIC FLOW PATH)
K = 2.3 FEET PER DAY (ft/day)
n_e = 0.3

FIGURE 1
POTENTIOMETRIC MAP
JULY 3, 2024
WINYAH GENERATING STATION
GEORGETOWN, SOUTH CAROLINA

santee cooper

synTerra

GRAPHIC SCALE
510 0 510 1,020
(IN FEET)

DRAWN BY: T. KING	DATE: 07/01/2024
REVISED BY: T. KING	DATE: 09/18/2024
CHECKED BY: K. FERRI	DATE: 09/18/2024
APPROVED BY: K. FERRI	DATE: 09/18/2024
PROJECT MANAGER: K. FERRI	

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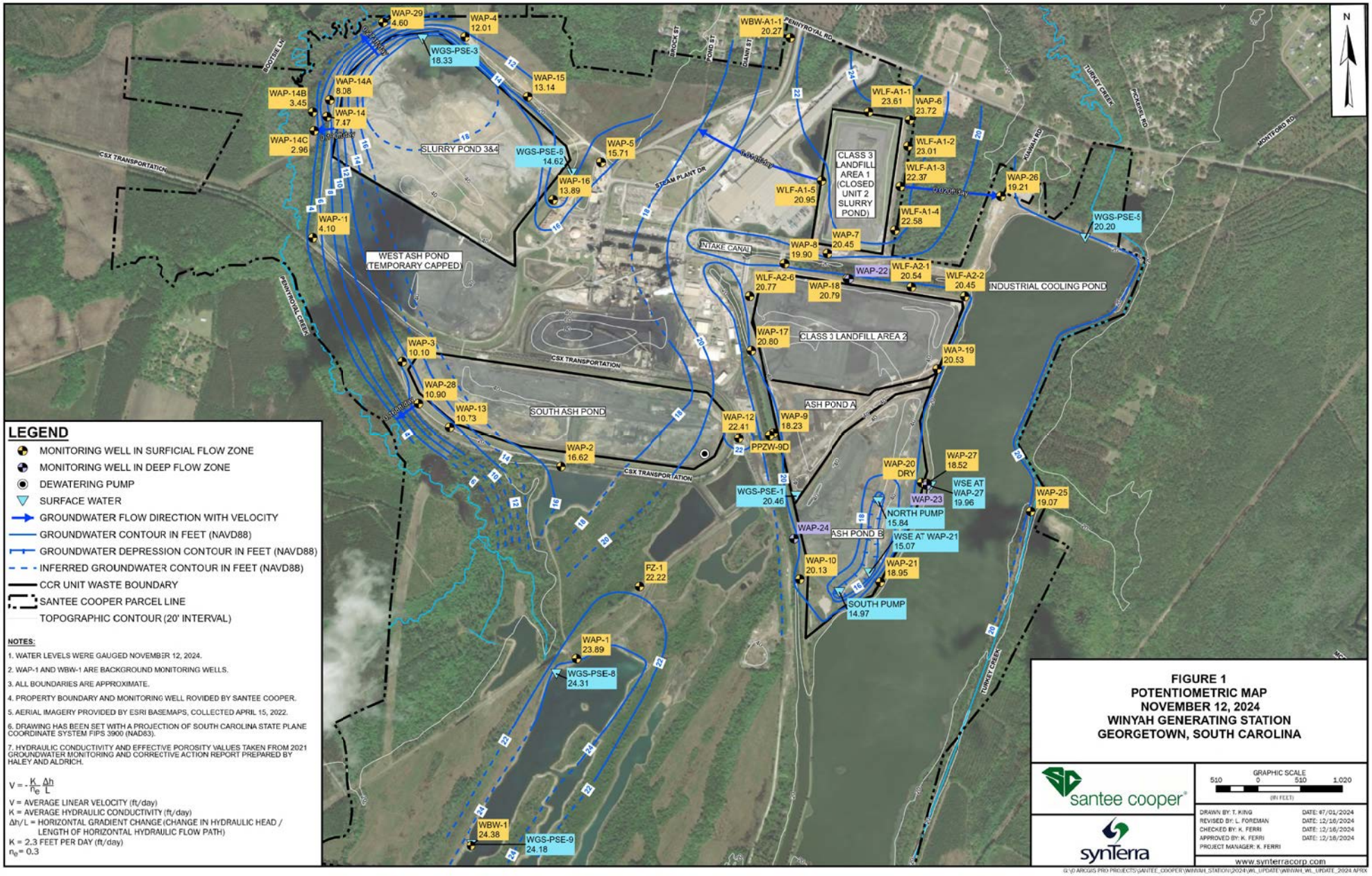

LEGEND

- MONITORING WELL IN SURFICIAL FLOW ZONE
- MONITORING WELL IN DEEP FLOW ZONE
- DEWATERING PUMP
- SURFACE WATER
- GROUNDWATER FLOW DIRECTION WITH VELOCITY
- GROUNDWATER CONTOUR IN FEET (NAVD88)
- GROUNDWATER DEPRESSION CONTOUR IN FEET (NAVD88)
- INFERRED GROUNDWATER CONTOUR IN FEET (NAVD88)
- CCR UNIT WASTE BOUNDARY
- SANTEE COOPER PARCEL LINE
- TOPOGRAPHIC CONTOUR (20' INTERVAL)

NOTES:

1. WATER LEVELS WERE GAUGED NOVEMBER 12, 2024.
2. WAP-1 AND WBW-1 ARE BACKGROUND MONITORING WELLS.
3. ALL BOUNDARIES ARE APPROXIMATE.
4. PROPERTY BOUNDARY AND MONITORING WELL ROVIDED BY SANTEE COOPER.
5. AERIAL IMAGERY PROVIDED BY ESRI BASEMAPS, COLLECTED APRIL 15, 2022.
6. DRAWING HAS BEEN SET WITH A PROJECTION OF SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM FIPS 3900 (NAD83).
7. HYDRAULIC CONDUCTIVITY AND EFFECTIVE POROSITY VALUES TAKEN FROM 2021 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT PREPARED BY HALEY AND ALDRICH.

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

V = AVERAGE LINEAR VELOCITY (ft/day)
K = AVERAGE HYDRAULIC CONDUCTIVITY (ft/day)
$\Delta h/L$ = HORIZONTAL GRADIENT CHANGE (CHANGE IN HYDRAULIC HEAD / LENGTH OF HORIZONTAL HYDRAULIC FLOW PATH)
K = 2.3 FEET PER DAY (ft/day)
n_e = 0.3

FIGURE 1
POTENTIOMETRIC MAP
NOVEMBER 12, 2024
WINYAH GENERATING STATION
GEORGETOWN, SOUTH CAROLINA

santee cooper

GRAPHIC SCALE
510 0 510 1,020
(IN FEET)

synTerra

DRAWN BY: T. KING	DATE: 07/01/2024
REVISED BY: L. FOREMAN	DATE: 12/16/2024
CHECKED BY: K. FERRI	DATE: 12/16/2024
APPROVED BY: K. FERRI	DATE: 12/16/2024
PROJECT MANAGER: K. FERRI	

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Appendix A – Statistical Analysis

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

TECHNICAL MEMORANDUM

July 15, 2024
File No. 132892-100-006-02

SUBJECT: Statistical Evaluation of the February 2024 Semiannual Groundwater Detection Monitoring Data, Winyah Generating Station, Class 3 Landfill Area 2

Pursuant to Title 40 Code of Federal Regulations (40 CFR) §257.93 and §257.94 (Rule), this memorandum summarizes the statistical evaluation of the groundwater analytical results obtained for the February 2024 semiannual detection monitoring event for the Winyah Generating Station (WGS) Class 3 Landfill Area 2. Data for this groundwater sampling event were validated on April 16, 2024 by Santee Cooper.

BACKGROUND

The results of analytical testing performed on samples collected from the groundwater monitoring network were evaluated to determine whether there has been a statistically significant increase (SSI) over background for one or more detection monitoring constituents. The Class 3 Landfill Area 2 is a new landfill located in the footprint of the excavated Ash Pond A; the first receipt of waste was March 28, 2022. As the elevated levels of detected Appendix III constituents were identified downgradient of Class 3 Landfill Area 2 prior to the placement of CCR into the unit, a successful alternate source demonstration (ASD) was prepared 90 days after SSIs were identified. The ASD supported that Appendix III constituent concentrations downgradient of Class 3 Landfill Area 2 are attributable to the former, co-located Ash Pond A.

Using intrawell evaluations, sample data from the July 2023 semiannual groundwater sampling event for the downgradient monitoring wells were compared to the background limits. The results of the groundwater detection monitoring statistical evaluation are discussed below and provided in Table 1.

STATISTICAL EVALUATION

The Rule provides four specific options to statistically evaluate whether water quality downgradient of the CCR unit (§257.93(f) (1-4)) represents a SSI of Appendix III parameters compared to background groundwater quality of the CCR Unit. The selected statistical method used for these evaluations is the upper prediction limit (UPL). This statistical method was certified by Haley & Aldrich, Inc. on December 16, 2021.

An intrawell evaluation was used for statistical analysis, which compares the most recent values from downgradient compliance wells against a background dataset composed of upgradient well data. The results of analytical testing performed on samples collected from the groundwater monitoring network were evaluated to determine whether a SSI exists for Appendix III constituents.

In order to statistically evaluate the analytical results, the prediction interval procedure uses a concentration limit for each constituent that is established from the distribution of the background data with a specified confidence level (e.g., 95 percent). The upper endpoint of a concentration limit is called the upper prediction limit (UPL). Depending on the background data distribution, parametric or non-parametric prediction limit procedures are used to evaluate groundwater monitoring data using this method. Parametric prediction limits use normally distributed data or normalized data via a transformation of the sample background data. 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 prediction limit. If all the background data are non-detect, a maximum reporting limit (RL) may serve as an approximate UPL.

After testing for outliers, the UPLs were calculated from the background dataset to evaluate whether removal of data was necessary based on sampling or measurement discrepancies. Both visual and statistical outlier tests for the background data were performed.[1] A visual inspection of the data was performed using distribution plots for the downgradient sample data. Based on our review, no sample data were identified as outliers that warranted removal from the dataset.

The groundwater analytical results for each sampling event from the background sample location (WAP-1 and WBW-1) were combined to calculate the UPL for each detected Appendix III constituent. The variability and distribution of the pooled dataset were evaluated to determine the method for UPL calculation.

Per the document *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance, March 2009* (the Unified Guidance), background concentrations were based on statistical evaluation of analytical results collected through July 2023 and updated in the Chemstat output. The background dataset will be updated in Table 1 again after four additional data points are collected (second semiannual event of 2025) in accordance with the Unified Guidance.

TREND ANALYSIS

Mann-Kendall trend analyses were performed on datasets of sufficient sample size. Results of the trend analysis are included on Table 1. In summary, approximately 96 percent of trends analyzed are identified as stable or decreasing for the compliance wells, whereas 4 percent of compliance wells demonstrated increasing trends. It is important to note that increasing trends are not part of the comparison criteria for triggering a SSI. Trend analysis will continue to be used to monitor and evaluate concentrations in the context of overall site conditions.

RESULTS OF DETECTION MONITORING DOWNGRADIENT STATISTICAL COMPARISONS

The sample concentrations from the downgradient wells for each of the detected Appendix III constituents from the February 2024 detection monitoring event were compared to their respective

[1] Visual and statistical outlier tests for background data were performed using Chemstat 6.3.0.0 and U.S. Environmental Protection Agency's ProUCL 5.1 software.

background concentration (Table 1). A sample concentration greater than the UPL is considered to represent a SSI. Intrawell comparisons were used for downgradient wells and constituents.

SSIs were identified for the following Appendix III constituents:

- Calcium SSI at WLF-A2-6
- Chloride SSI at WLF-A2-6
- Sulfate SSI at WAP-9, WAP-19 and WLF-A2-6
- Total Dissolved Solids (TDS) SSIs at WAP-9, WAP-19 and WLF-A2-6

Groundwater monitoring wells WLF-A2-1 and WLF-A2-2 have been incorporated into this statistical analysis. WLF-A2-1 and WLF-A2-2 were installed to provide additional groundwater monitoring for new Class 3 Landfill Area 2 cells and baseline sampling was completed in 2022. The February 2023 sampling event was the first detection monitoring event for these two new wells. No SSIs were identified for WLF-A2-1 or WLF-A2-2.

As noted in the 2023 ASD, the Class 3 Landfill Area 2 is within the footprint of Ash Pond A, which is undergoing corrective action and closure. The findings of the 2023 ASD show Ash Ponds A and B are contributing to the groundwater quality and statistical results for the Class 3 Landfill Area 2. Ash Ponds A and B were unlined CCR impoundments that operated for over 40 years. As supported by the 2023 ASD, the former units are contributing to elevated concentrations. As such, the Class 3 Landfill Area 2 will remain in detection monitoring while a subsequent ASD is conducted to further investigate the SSIs detected in this statistical report.

Enclosures:

Table 1 – WGS Class 3 Landfill Area 2 February 2024 Semiannual Detection Monitoring Data

TABLE

TABLE 1

WGS CLASS 3 LANDFILL AREA 2

FEBRUARY 2024 SEMIANNUAL GROUNDWATER DETECTION MONITORING DATA

																			Intra-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	February 2024 Data	Detect?	Background Limit (Upper Prediction Limit) mg/L	Background Limit (Upper Prediction Limit) ug/L	SSI
CCR Appendix-III: Boron, Total (mg/L)																							
WBW-1	12/21	43%	0.015-0.075	0.0379	0.022	0.085	0.185	0.001596	0.03995	1.055	NA	mg/L	N	0	0	No	No	Stable					
WAP-1	21/21	0%	-	0.0311	0.0284	0.054	0.055	0.0001001	0.01001	0.3219	NA	mg/L	N	0	0	Yes	No	Stable					
WAP-9	19/19	0%	-	4.83	5.16	5.728	5.8	0.7533	0.8679	0.1797	NA	mg/L	N	0	0	No	No	Stable	4.47	Y	6.25	6250.84	No
WAP-17	22/22	0%	-	5.19	4.215	9.298	14.2	6439	2.537	0.4887	NA	mg/L	N	0	0	Yes	No	Decrease	3.61	Y	14.20	14200	No
WAP-18	20/20	0%	-	4.16	3.825	8.2	8.2	6.99	2.644	0.6359	NA	mg/L	N	0	0	No	No	Stable	0.80	Y	11.21	11214.7	No
WAP-19	20/20	0%	-	4.02	4.1	4.689	6.19	0.695	0.8337	0.2072	NA	mg/L	N	0	0	Yes	No	Stable	4.32	Y	6.36	6355.05	No
WLF-A2-1	13/13	0%	-	2.56	1.82	4.768	5.5	1943	1.394	0.5451	NA	mg/L	N	0	0	No	No	Stable	1.48	Y	8.84	8841.93	No
WLF-A2-2	13/13	0%	-	2.77	2.32	4.836	5.04	1471	1.213	0.4378	NA	mg/L	N	0	0	No	No	Stable	2.21	Y	8.50	8497.58	No
WLF-A2-6	14/14	0%	-	0.38	0.365	0.532	0.74	0.01397	0.1182	0.3113	NA	mg/L	N	0	0	Yes	No	Stable	0.26	Y	0.74	740	No
CCR Appendix-III: Calcium, Total (mg/L)																							
WBW-1	9/21	57%	0.5-0.5	20.1	0.5	3.26	400	7580	87.06	4.34	NA	mg/L	N	0	0	Yes	No	Increase					
WAP-1	22/24	8%	0.5-0.5	4.13	2.3	10.36	26.9	32.44	5.696	1.38	NA	mg/L	N	0	0	Yes	No	Increase					
WAP-9	24/24	0%	-	177	151	328	453	5606	74.87	0.4235	NA	mg/L	N	0	0	Yes	No	Stable	345	Y	453.00	453000	No
WAP-17	22/22	0%	-	300	306	421.8	580	9238	96.11	0.3207	NA	mg/L	N	0	0	Yes	No	Decrease	331	Y	569.53	569527	No
WAP-18	21/21	0%	-	343	359	509	870	37880	194.6	0.5682	NA	mg/L	N	0	0	Yes	No	Decrease	69.0	Y	818.02	818016	No
WAP-19	21/21	0%	-	404	340	646	970	31040	176.2	0.4366	NA	mg/L	N	0	0	Yes	No	Stable	646	Y	970.00	970000	No
WLF-A2-1	13/13	0%	-	155	128	306.8	353	7715	87.84	0.5675	NA	mg/L	N	0	0	No	No	Stable	193	Y	353.00	353000	No
WLF-A2-2	13/13	0%	-	171	182	232	238	1785	42.25	0.2466	NA	mg/L	N	0	0	No	No	Stable	182	Y	361.28	361277	No
WLF-A2-6	14/14	0%	-	144	131.5	207.7	235	1073	32.76	0.2276	NA	mg/L	N	0	0	No	No	Stable	235	Y	148.73	148725	Yes
CCR Appendix-III: Chloride (mg/L)																							
WBW-1	21/21	0%	-	4.61	4.38	7.58	10.5	4601	2.145	0.4657	NA	mg/L	N	0	0	No	No	Increase					
WAP-1	24/24	0%	-	8.39	8.695	11.77	13.4	6.65	2.579	0.3074	NA	mg/L	N	0	0	Yes	No	Increase					
WAP-9	24/24	0%	-	125	108.5	205	229	1769	42.06	0.3371	NA	mg/L	N	0	0	Yes	No	Decrease	205.00	Y	229.00	229000	No
WAP-17	22/22	0%	-	264	235.5	604.1	769	31110	176.4	0.6681	NA	mg/L	N	0	0	Yes	No	Decrease	169.00	Y	760.24	760235	No
WAP-18	21/21	0%	-	88.7	54.4	232	260	6617	81.34	0.9171	NA	mg/L	N	0	0	No	No	Stable	29.30	Y	260.00	260000	No
WAP-19	21/21	0%	-	154	155	240	375	7971	89.28	0.58	NA	mg/L	N	0	0	No	No	Decrease	56.70	Y	383.38	383377	No
WLF-A2-1	13/13	0%	-	170	115	474.8	491	24170	155.5	0.9132	NA	mg/L	N	0	0	No	No	Stable	42.90	Y	491.00	491000	No
WLF-A2-2	13/13	0%	-	93.3	98.9	160.4	188	2465	49.65	0.5319	NA	mg/L	N	0	0	No	No	Stable	49.80	Y	323.42	323422	No
WLF-A2-6	14/14	0%	-	19.4	8.81	57.94	76.4	430.6	20.75	1.07	NA	mg/L	N	0	0	Yes	No	Stable	76.40	Y	19.50	19500	Yes
CCR Appendix-III: Fluoride (mg/L)																							
WBW-1	1/22	95%	0.1-0.1	0.1	0.1	0.1	0.1	1.31E-18	1.15E-09	1.15E-08	4	mg/L	N	0	0	No	No	NA					
WAP-1	2/22	91%	0.1-0.1	0.103	0.1	0.1285	0.14	0.0001084	0.01041	0.1009	4	mg/L	N	0	0	No	No	NA					
WAP-9	2/22	91%	0.1-0.1	0.1	0.1	0.1	0.11	0.000004545	0.002132	0.02122	4	mg/L	N	0	0	No	No	NA	0.10	N	0.11	110	No
WAP-17	12/23	48%	0.1-0.1	0.143	0.1	0.248	0.32	0.003758	0.06131	0.4286	4	mg/L	N	0	0	No	No	Stable	0.10	N	0.32	320	No
WAP-18	16/22	27%	0.1-0.1	0.972	0.985	1.994	2.51	0.5312	0.7288	0.7499	4	mg/L	N	0	0	No	No	Stable	0.10	N	2.84	2836.06	No
WAP-19	18/22	18%	0.1-0.1	0.226	0.18	0.569	0.6	0.02002	0.1415	0.6251	4	mg/L	N	0	0	Yes	No	Increase	0.19	Y	0.58	580	No
WLF-A2-1	2/13	85%	0.1-0.1	0.11	0.1	0.152	0.23	0.0013	0.03606	0.3278	4	mg/L	N	0	0	No	No	NA	0.10	N	0.23	230	No
WLF-A2-2	0/13	100%	0.1-0.1	0.1	0.1	0.1		4.616E-18	2.151E-09	2.151E-08	4	mg/L	N	0	0	No	No	NA	0.10	N	0.10	100	No
WLF-A2-6	13/14	7%	0.1-0.1	0.207	0.19	0.3035	0.31	0.005468	0.07395	0.357	4	mg/L	N	0	0	No	No	Stable	0.10	N	0.40	402.712	No
CCR Appendix-III: pH, Field (pH units)																							
WBW-1	22/22	0%	-	4.15	4.11	4.549	4.77	0.07129	0.267	0.06441	NA	pH units	N	0	0	Yes	No	Stable					
WAP-1	24/24	0%	-	4.66	4.545	6.049	7.61	0.5214	0.7883	0.1692	NA	pH units	N	0	0	No	No	Stable					
WAP-9	24/24	0%	-	5.94	5.94	6.167	6.34	0.02322	0.1524	0.02563	NA	pH units	N	0	0	Yes	No	Increase	6.17	Y	5.52, 6.27	5.52, 6.27	No
WAP-17	23/23	0%	-	6.08	6.04	6.339	6.35	0.02115	0.1454	0.02392	NA	pH units	N	0	0	No	No	Stable	6.15	Y	5.57, 6.53	5.57, 6.53	No
WAP-18	23/23	0%	-	6.21	6.35	6.723	6.8	0.2238	0.473	0.07621	NA	pH units	N	0	0	Yes	No	Stable	5.75	Y	5.21, 6.8	5.21, 6.8	No
WAP-19	23/23	0%	-	6.26	6.32	6.489	6.81	0.05481	0.2341	0.03738	NA	pH units	N	0	0	No	No	Stable	5.89	Y	5.5, 7.06	5.5, 7.06	No
WLF-A2-1	13/13	0%	-	5.12	5.18	5.652	5.7	0.201	0.4483	0.0876	NA	pH units	N	0	0	No	No	Decrease	4.48	Y	3.25, 7.1	3.25, 7.1	No
WLF-A2-2	13/13	0%	-	5.78	5.79	5.986	6.01	0.03315	0.1821	0.03151	NA	pH units	N	0	0	No	No	Stable	5.96	Y	4.95, 6.55	4.95, 6.55	No
WLF-A2-6	14/14	0%	-	6.4	6.42	6.594	6.6	0.02728	0.1652	0.0258	NA	pH units	N	0	0	Yes	No	Stable	6.44	Y	5.92, 7.01	5.92, 7.01	No
CCR Appendix-III: Sulfate (mg/L)																							
WBW-1	21/21	0%	-	6.53	5.34	10.9	14.4	7.156	2.675	0.4095	NA	mg/L	N	0	0	No	No	Increase					
WAP-1	21/24	12%	2-2	14.2	12.28	30.97	33.6	99.77	9.988	0.7058	NA	mg/L	N	0	0	No	No	Increase					
WAP-9	24/24	0%	-	190	157	347.9	602	11670	112.5	0.5939	NA	mg/L	N	0	0	Yes	No	Stable	602	Y	357.00	357000	Yes
WAP-17	22/22	0%	-	758	715.5	1132	1810	89090	298.5	0.3938	NA	mg/L	N	0	0	Yes	No	Decrease	757	Y	1810.00	1810000	No
WAP-18	21/21	0%	-	654	754	1060	1160	126900	356.2	0.5443	NA	mg/L	N	0	0	Yes	Yes	Decrease	132	Y	1662.01	1662010	No
WAP-19	21/21	0%	-	889	800	1610	1800	139300	345.4	0.3887	NA	mg/L	N	0	0	No	No	Stable	1800	Y	1228.42	1228420	Yes
WLF-A2-1	13/13	0%	-	342	279	658	739	38130	195.3	0.5718	NA	mg/L	N	0	0	No	No	Stable	604	Y	1134.04	1134040	No
WLF-A2-2	13/13	0%	-	350	351	538.2	552	16240	127.4	0.3644	NA	mg/L	N	0	0	No	No	Stable	370	Y	942.94	942939	No
WLF-A2-6	14/14	0%	-	81.2	55.85	223.8	292	5761	75.9	0.9351	NA	mg/L	N	0	0	No	No	Stable	292	Y	138.35	138347	Yes
CCR Appendix-III: Total Dissolved Solids (TDS) (mg/L)																							
WBW-1	17/20	15%	25-33.3	57.2	36.65	164.7	292.5	4180	64.65	1.13	NA	mg/L	N	0	0	Yes	No	Increase					
WAP-1	24/25	4%	100-100	66.5	53.75	128	234	2026	45.01	0.6764	NA	mg/L	N	0	0	Yes	No	NA					
WAP-9	24/24	0%	-	979	848.7	1622	2745	183700	428.6	0.4376	NA	mg/L	N	0	0	No	No	Decrease	1702	Y	1112.20	1112200	Yes
WAP-17	22/22	0%	-	1560	1537	1984	3140	230400	480	0.3075	NA	mg/L	N	0	0	Yes	No	Decrease	1460	Y	3403.49	3403490	No
WAP-18	21/21	0%	-	1370	1532	2018	2182	355000	595.8	0.4343	NA	mg/L	N	0	0	Yes	No	Decrease	357.5	Y	3045.88	3045880	No
WAP-19	21/21	0%	-	1740	1588	2818	2871	217500	466.4	0.2678	NA	mg/L	N	0	0	Yes	No	Decrease	2871	Y	2321.83	2321830	Yes
WLF-A2-1	13/13	0%	-	913	718.8	1963	2125	316600	562.6	0.6164	NA	mg/L	N	0	0	No	No	Stable	947.5	Y	2125.00	2125000	No
WLF-A2-2	13/13	0%	-	864	892.5	1260	1281	85530	292.5	0.3385	NA	mg/L	N	0	0	No	No	Stable	770	Y	2205.37	2205370	No
WLF-A2-6	14/14	0%	-	595	570.7	771.6	932.5	11450	116	0.1951	NA	mg/L	N	0	0	Yes	No	Stable	932.5	Y	815.65	815646	Yes

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TECHNICAL MEMORANDUM

December 9, 2024
File No. 132892-102

SUBJECT: Statistical Evaluation of the July 2024 Semiannual Groundwater Detection Monitoring Data, Winyah Generating Station, Class 3 Landfill Area 2

Pursuant to Title 40 Code of Federal Regulations (40 CFR) §257.93 and §257.94 (Rule), this memorandum summarizes the statistical evaluation of the groundwater analytical results obtained for the July 2024 semiannual detection monitoring event for the Winyah Generating Station (WGS) Class 3 Landfill Area 2. Data for this groundwater sampling event were validated on October 9, 2024 by Santee Cooper.

BACKGROUND

The results of analytical testing performed on samples collected from the groundwater monitoring network were evaluated to determine whether there has been a statistically significant increase (SSI) over background for one or more detection monitoring constituents. The Class 3 Landfill Area 2 is a new landfill located in the footprint of the excavated Ash Pond A; the first receipt of waste was March 28, 2022. As the elevated levels of detected Appendix III constituents were identified downgradient of Class 3 Landfill Area 2 prior to the placement of CCR into the unit, a successful alternate source demonstration (ASD) was prepared 90 days after SSIs were identified. The ASD supported that Appendix III constituent concentrations downgradient of Class 3 Landfill Area 2 are attributable to the former, co-located Ash Pond A.

Using intrawell evaluations, sample data from the July 2024 semiannual groundwater sampling event for the downgradient monitoring wells were compared to the background limits. The results of the groundwater detection monitoring statistical evaluation are discussed below and provided in Table 1.

STATISTICAL EVALUATION

The Rule provides four specific options to statistically evaluate whether water quality downgradient of the CCR unit (§257.93(f) (1-4)) represents a SSI of Appendix III parameters compared to background groundwater quality of the CCR Unit. The selected statistical method used for these evaluations is the upper prediction limit (UPL). This statistical method was certified by Haley & Aldrich, Inc. on December 16, 2021.

An intrawell evaluation was used for statistical analysis, which compares the most recent values from downgradient compliance wells against a background dataset composed of upgradient well data. The results of analytical testing performed on samples collected from the groundwater monitoring network were evaluated to determine whether a SSI exists for Appendix III constituents.

In order to statistically evaluate the analytical results, the prediction interval procedure uses a concentration limit for each constituent that is established from the distribution of the background data with a specified confidence level (e.g., 95 percent). The upper endpoint of a concentration limit is called the upper prediction limit (UPL). Depending on the background data distribution, parametric or non-parametric prediction limit procedures are used to evaluate groundwater monitoring data using this method. Parametric prediction limits use normally distributed data or normalized data via a transformation of the sample background data. 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 prediction limit. If all the background data are non-detect, a maximum reporting limit (RL) may serve as an approximate UPL.

After testing for outliers, the UPLs were calculated from the background dataset to evaluate whether removal of data was necessary based on sampling or measurement discrepancies. Both visual and statistical outlier tests for the background data were performed.[1] A visual inspection of the data was performed using distribution plots for the downgradient sample data. Based on our review, no sample data were identified as outliers that warranted removal from the dataset.

The groundwater analytical results for each sampling event from the background sample location (WAP-1 and WBW-1) were combined to calculate the UPL for each detected Appendix III constituent. The variability and distribution of the pooled dataset were evaluated to determine the method for UPL calculation.

Per the document *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance, March 2009* (the Unified Guidance), background concentrations were based on statistical evaluation of analytical results collected through July 2023 and updated in the Chemstat output. The background dataset will be updated in Table 1 again after four additional data points are collected (second semiannual event of 2025) in accordance with the Unified Guidance.

TREND ANALYSIS

Mann-Kendall trend analyses were performed on datasets of sufficient sample size. Results of the trend analysis are included on Table 1. In summary, approximately 89 percent of trends analyzed are identified as stable or decreasing for the compliance wells. It is important to note that increasing trends are not part of the comparison criteria for triggering a SSI. Trend analysis will continue to be used to monitor and evaluate concentrations in the context of overall site conditions.

RESULTS OF DETECTION MONITORING DOWNGRADIENT STATISTICAL COMPARISONS

The sample concentrations from the downgradient wells for each of the detected Appendix III constituents from the July 2024 detection monitoring event were compared to their respective background concentration (Table 1). A sample concentration greater than the UPL is considered to represent a SSI. Intrawell comparisons were used for downgradient wells and constituents.

[1] Visual and statistical outlier tests for background data were performed using Chemstat 6.3.0.0 and U.S. Environmental Protection Agency's ProUCL 5.1 software.

SSIs were identified for the following Appendix III constituents:

- Calcium SSI at WLF-A2-6
- Chloride SSI at WLF-A2-6
- Fluoride SSI at WLF-A2-2
- Sulfate SSIs at WAP-9, WAP-19, and WLF-A2-6
- Total Dissolved Solids (TDS) SSIs at WAP-9, WAP-19, and WLF-A2-6

Groundwater monitoring wells WLF-A2-1 and WLF-A2-2 have been incorporated into this statistical analysis. WLF-A2-1 and WLF-A2-2 were installed to provide additional groundwater monitoring for new Class 3 Landfill Area 2 cells and baseline sampling was completed in 2022. The February 2023 sampling event was the first detection monitoring event for these two new wells.

As noted in the 2023 and 2024 ASDs, the Class 3 Landfill Area 2 is within the footprint of Ash Pond A, which is undergoing corrective action and closure. Ash Ponds A and B were unlined CCR impoundments that operated for over 40 years. As supported by the 2023 and 2024 ASD, the former units are contributing to fluctuating and elevated concentrations. This unit is also surrounded by a dynamic hydraulic system, which likely contributes to the variable concentrations observed in nearby monitoring wells. In addition, the 2024 ASD cited the natural occurrence of Appendix III constituents is common in the Coastal Plain physiographic region. As such, the Class 3 Landfill Area 2 will remain in detection monitoring.

Enclosures:

Table 1 – WGS Class 3 Landfill Area 2 July 2024 Semiannual Detection Monitoring Data

TABLE

TABLE 1
WGS CLASS 3 LANDFILL AREA 2
JULY 2024 SEMIANNUAL DETECTION MONITORING DATA

																			Intra-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	July 2024 Data	Detect?	Background Limit (Upper Prediction Limit) mg/L	Background Limit (Upper Prediction Limit) ug/L	SSI
CCR Appendix-III: Boron, Total (mg/L)																							
WBW-1	13/22	41%	0.015-0.075	0.0368	0.0205	0.0845	0.185	0.001548	0.03934	1.07	NA	mg/L	N	0	0	No	No	Stable					
WAP-1	22/22	0%	-	0.0311	0.02865	0.05335	0.055	0.00009536	0.009765	0.3145	NA	mg/L	N	0	0	Yes	No	Stable					
WAP-17	23/23	0%	-	5.15	4.22	9.166	14.2	6.187	2.487	0.483	NA	mg/L	N	0	0	Yes	No	Decrease	4.22	Y	14.20	14200	No
WAP-18	21/21	0%	-	4	3.75	8.2	8.2	7.174	2.678	0.6699	NA	mg/L	N	0	0	No	No	Stable	0.81	Y	11.21	11214.7	No
WAP-19	22/22	0%	-	4.07	4.15	4.657	6.19	0.6543	0.8089	0.1987	NA	mg/L	N	0	0	Yes	No	Stable	4.66	Y	6.36	6355.05	No
WAP-9	21/21	0%	-	4.78	5.1	5.72	5.8	0.7085	0.8417	0.1762	NA	mg/L	N	0	0	No	No	Decrease	4.18	Y	6.25	6250.84	No
WLF-A2-1	14/14	0%	-	2.49	1.79	4.707	5.5	1.859	1.363	0.5479	NA	mg/L	N	0	0	No	No	Stable	1.60	Y	8.84	8841.93	No
WLF-A2-2	14/14	0%	-	2.73	2.3	4.819	5.04	1.375	1.172	0.4287	NA	mg/L	N	0	0	No	No	Stable	2.28	Y	8.50	8497.58	No
WLF-A2-6	16/16	0%	-	0.381	0.375	0.5	0.74	0.01213	0.1101	0.2888	NA	mg/L	N	0	0	Yes	No	Stable	0.40	Y	0.74	740	No
CCR Appendix-III: Calcium, Total (mg/L)																							No
WBW-1	10/22	55%	0.5-0.5	19.2	0.5	3.237	400	7234	85.05	4.423	NA	mg/L	N	0	0	Yes	No	Increase					No
WAP-1	23/25	8%	0.5-0.5	4.26	2.4	10.32	26.9	31.55	5.617	1.318	NA	mg/L	N	0	0	Yes	No	Increase					No
WAP-17	23/23	0%	-	300	309	419.5	580	8828	93.96	0.3128	NA	mg/L	N	0	0	Yes	No	Decrease	315.00	Y	569.53	569527	No
WAP-18	22/22	0%	-	330	347	508.2	870	39320	198.3	0.6002	NA	mg/L	N	0	0	Yes	No	Decrease	75.50	Y	818.02	818016	No
WAP-19	23/23	0%	-	429	342	707.5	970	35230	187.7	0.4378	NA	mg/L	N	0	0	Yes	No	Stable	711.00	Y	970.00	970000	No
WAP-9	26/26	0%	-	185	155	337	453	6047	77.76	0.4207	NA	mg/L	N	0	0	Yes	No	Stable	313.00	Y	453.00	453000	No
WLF-A2-1	14/14	0%	-	151	118	303	353	7370	85.85	0.5702	NA	mg/L	N	0	0	No	No	Stable	95.80	Y	353.00	353000	No
WLF-A2-2	14/14	0%	-	169	182	231.5	238	1705	41.29	0.2439	NA	mg/L	N	0	0	No	No	Stable	143.00	Y	361.28	361277	No
WLF-A2-6	16/16	0%	-	155	132.5	234.3	235	1877	43.32	0.2792	NA	mg/L	N	0	0	No	No	Increase	234.00	Y	148.73	148725	Yes
CCR Appendix-III: Chloride (mg/L)																							No
WBW-1	22/22	0%	-	4.62	4.44	7.54	10.5	4.386	2.094	0.4533	NA	mg/L	N	0	0	No	No	Increase					No
WAP-1	25/25	0%	-	8.42	8.76	11.76	13.4	6.403	2.53	0.3004	NA	mg/L	N	0	0	Yes	No	Increase					No
WAP-17	23/23	0%	-	263	239	594.2	769	29720	172.4	0.6556	NA	mg/L	N	0	0	Yes	No	Decrease	240.00	Y	760.24	760235	No
WAP-18	22/22	0%	-	86.8	51.7	232	260	6383	79.89	0.9207	NA	mg/L	N	0	0	No	No	Stable	46.40	Y	260.00	260000	No
WAP-19	23/23	0%	-	144	134	239.3	375	8433	91.83	0.6398	NA	mg/L	N	0	0	Yes	No	Decrease	31.10	Y	383.38	383377	No
WAP-9	26/26	0%	-	128	109	205	229	1776	42.14	0.3288	NA	mg/L	N	0	0	No	No	Stable	176.00	Y	229.00	229000	No
WLF-A2-1	14/14	0%	-	161	105.1	473.5	491	23480	153.2	0.9512	NA	mg/L	N	0	0	No	No	Decrease	42.20	Y	491.00	491000	No
WLF-A2-2	14/14	0%	-	88.8	96.85	158.1	188	2569	50.69	0.5711	NA	mg/L	N	0	0	No	No	Stable	29.20	Y	323.42	323422	No
WLF-A2-6	16/16	0%	-	27.4	15.2	81.68	87	853.7	29.22	1.067	NA	mg/L	N	0	0	Yes	No	Increase	79.90	Y	19.50	19500	Yes
CCR Appendix-III: Fluoride (mg/L)																							No
WBW-1	1/23	96%	0.1-0.1	0.1	0.1	0.1	0.1	0	0	0	4	mg/L	N	0	0	No	No	NA					No
WAP-1	2/23	91%	0.1-0.1	0.103	0.1	0.127	0.14	0.000104	0.0102	0.09895	4	mg/L	N	0	0	No	No	NA					No
WAP-17	12/24	50%	0.1-0.1	0.141	0.1	0.247	0.32	0.003672	0.0606	0.429	4	mg/L	N	0	0	No	No	Stable	0.10	N	0.32	320	No
WAP-18	16/23	30%	0.1-0.1	0.934	0.91	1.988	2.51	0.5401	0.7349	0.7869	4	mg/L	N	0	0	No	No	Stable	0.10	N	2.84	2836.06	No
WAP-19	19/24	21%	0.1-1.5	0.284	0.185	0.597	0.6	0.08589	0.2931	1.031	4	mg/L	N	0	0	Yes	No	Increase	0.34	Y	0.58	580	No
WAP-9	2/24	92%	0.1-1.5	0.159	0.1	0.1085	0.11	0.08162	0.2857	1.8	4	mg/L	N	0	0	No	No	NA	0.10	N	0.11	110	No
WLF-A2-1	2/14	86%	0.1-0.1	0.109	0.1	0.1455	0.23	0.001207	0.03474	0.3179	4	mg/L	N	0	0	No	No	NA	0.10	N	0.23	230	No
WLF-A2-2	1/14	93%	0.1-0.1	0.112	0.1	0.1595	0.27	0.002064	0.04543	0.4051	4	mg/L	N	0	0	No	No	NA	0.27	Y	0.10	100	Yes
WLF-A2-6	13/16	19%	0.1-1.5	0.281	0.19	0.6075	0.31	0.1111	0.3333	1.185	4	mg/L	N	0	0	No	No	Stable	0.10	N	0.40	402.712	No
CCR Appendix-III: pH, Field (pH units)																							No
WBW-1	23/23	0%	-	4.14	4.08	4.549	4.77	0.06854	0.2618	0.06322	NA	pH units	N	0	0	Yes	No	Stable					No
WAP-1	25/25	0%	-	4.65	4.51	6.002	7.61	0.5978	0.7732	0.1663	NA	pH units	N	0	0	No	No	Stable					No
WAP-17	24/24	0%	-	6.07	6.04	6.339	6.35	0.02397	0.1548	0.02552	NA	pH units	N	0	0	No	No	Stable	5.78	Y	5.52, 6.27	5.57, 6.53	No
WAP-18	24/24	0%	-	6.17	6.33	6.72	6.8	0.2433	0.4932	0.07991	NA	pH units	N	0	0	No	No	Stable	5.37	Y	5.57, 6.53	5.21, 6.8	No
WAP-19	26/26	0%	-	6.26	6.325	6.488	6.81	0.05104	0.2259	0.03607	NA	pH units	N	0	0	No	No	Stable	6.34	Y	5.21, 6.8	5.5, 7.06	No
WAP-9	26/26	0%	-	5.95	5.94	6.168	6.34	0.02373	0.154	0.02589	NA	pH units	N	0	0	Yes	No	Increase	5.83	Y	5.5, 7.06	5.52, 6.27	No
WLF-A2-1	14/14	0%	-	5.12	5.18	5.648	5.7	0.1858	0.431	0.08415	NA	pH units	N	0	0	No	No	Decrease	5.18	Y	3.25, 7.1	3.25, 7.1	No
WLF-A2-2	14/14	0%	-	5.77	5.775	5.984	6.01	0.03077	0.1754	0.03037	NA	pH units	N	0	0	No	No	Stable	5.73	Y	4.95, 6.55	4.95, 6.55	No
WLF-A2-6	16/16	0%	-	6.4	6.42	6.593	6.6	0.02556	0.1599	0.02497	NA	pH units	N	0	0	Yes	No	Decrease	6.28	Y	5.92, 7.01	5.92, 7.01	No

TABLE 1
WGS CLASS 3 LANDFILL AREA 2
JULY 2024 SEMIANNUAL DETECTION MONITORING DATA

CCR Appendix-III: Sulfate (mg/L)																							No
WBW-1	22/22	0%	-	6.56	5.345	10.9	14.4	6.837	2.615	0.3984	NA	mg/L	N	0	0	No	No	Increase					No
WAP-1	22/25	12%	2-2	14.8	15	31.04	33.6	106.7	10.33	0.6971	NA	mg/L	N	0	0	No	No	Increase					No
WAP-17	23/23	0%	-	760	739	1123	1810	85180	291.8	0.3838	NA	mg/L	N	0	0	Yes	No	Decrease	813.00	Y	1810.00	1810000	No
WAP-18	22/22	0%	-	632	752	1058	1160	132300	363.8	0.576	NA	mg/L	N	0	0	Yes	Yes	Decrease	152.00	Y	1662.01	1662010	No
WAP-19	23/23	0%	-	991	837	1809	2320	229200	478.8	0.4832	NA	mg/L	N	0	0	No	No	Stable	1810.00	Y	1228.42	1228420	Yes
WAP-9	26/26	0%	-	217	171.1	562.3	602	21060	145.1	0.6693	NA	mg/L	N	0	0	Yes	No	Stable	580.00	Y	357.00	357000	Yes
WLF-A2-1	14/14	0%	-	331	278.5	651.3	739	36710	191.6	0.5786	NA	mg/L	N	0	0	No	No	Stable	196.00	Y	1134.04	1134040	No
WLF-A2-2	14/14	0%	-	342	346.5	537	552	15740	125.5	0.3665	NA	mg/L	N	0	0	No	No	Stable	247.00	Y	942.94	942939	No
WLF-A2-6	16/16	0%	-	106	60.6	285.3	292	9561	97.78	0.9233	NA	mg/L	N	0	0	No	No	Increase	275.00	Y	138.35	138347	Yes
CCR Appendix-III: Total Dissolved Solids (TDS) (mg/L)																							No
WBW-1	17/21	19%	25-33.3	55.7	33.3	158	292.5	4020	63.41	1.139	NA	mg/L	N	0	0	Yes	No	Stable					No
WAP-1	25/26	4%	100-100	66.7	54.38	126.3	234	1945	44.11	0.6615	NA	mg/L	N	0	0	Yes	No	Increase					No
WAP-17	23/23	0%	-	1560	1566	1983	3140	219900	468.9	0.3004	NA	mg/L	N	0	0	Yes	No	Decrease	1566.00	Y	3403.49	3403490	No
WAP-18	22/22	0%	-	1330	1492	2018	2182	382500	618.5	0.4661	NA	mg/L	N	0	0	No	No	Decrease	382.50	Y	3045.88	3045880	No
WAP-19	23/23	0%	-	1840	1596	2866	2891	300000	547.7	0.298	NA	mg/L	N	0	0	No	No	Stable	2891.00	Y	2321.83	2321830	Yes
WAP-9	26/26	0%	-	1010	866.9	1662	2745	183100	428	0.4234	NA	mg/L	N	0	0	Yes	No	Stable	1542.00	Y	1112.20	1112200	Yes
WLF-A2-1	14/14	0%	-	884	716.9	1950	2125	303900	551.3	0.6237	NA	mg/L	N	0	0	No	No	Stable	507.50	Y	2125.00	2125000	No
WLF-A2-2	14/14	0%	-	845	886.3	1258	1281	84120	290	0.3434	NA	mg/L	N	0	0	No	No	Stable	595.00	Y	2205.37	2205370	No
WLF-A2-6	16/16	0%	-	635	594.4	936.3	947.5	24060	155.1	0.2442	NA	mg/L	N	0	0	Yes	No	Stable	947.50	Y	815.65	815646	Yes

Appendix B:

Certificates of Analysis, External Lab Reports, & Field Parameters

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SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AF90595 **Location:** GW Well WAP-1 **Date:** 02/05/2024 **Sample Collector:** WJK/BB

Loc. Code WAP-1 **Time:** 14:35

Analysis	Result	Units	Test Date	Analyst	Method
Aluminum	1.2	mg/L	02/13/2024	SKJACOBS	EPA 6020B
Arsenic	5.6	ug/L	02/13/2024	SKJACOBS	EPA 6020B
Barium	81.0	ug/L	02/13/2024	SKJACOBS	EPA 6020B
Beryllium	<0.5	ug/L	02/13/2024	SKJACOBS	EPA 6020B
Calcium	8.8	mg/L	02/13/2024	SKJACOBS	EPA 6020B
Cadmium	<0.5	ug/L	02/13/2024	SKJACOBS	EPA 6020B
Cobalt	0.84	ug/L	02/13/2024	SKJACOBS	EPA 6020B
Chromium	<5.0	ug/L	02/13/2024	SKJACOBS	EPA 6020B
Iron	2460	ug/L	02/13/2024	SKJACOBS	EPA 6020B
Magnesium	0.93	mg/L	02/13/2024	SKJACOBS	EPA 6020B
Lead	<1.0	ug/L	02/13/2024	SKJACOBS	EPA 6020B
Antimony	<5.0	ug/L	02/13/2024	SKJACOBS	EPA 6020B
Selenium	<10.0	ug/L	02/13/2024	SKJACOBS	EPA 6020B
Thallium	<1.0	ug/L	02/13/2024	SKJACOBS	EPA 6020B
Boron	37.1	ug/L	02/14/2024	SKJACOBS	EPA 6010D
Lithium	<5.0	ug/L	02/14/2024	SKJACOBS	EPA 6010D
Molybdenum	<5.0	ug/L	02/14/2024	SKJACOBS	EPA 6010D
Mercury	<0.2	ug/L	02/20/2024	EUROFINS SAV	EPA 7470
Zinc	<10.0	ug/L	02/13/2024	SKJACOBS	EPA 6020B
Fluoride	<0.10	mg/L	02/14/2024	KCWELLS	EPA 300.0
Chloride	11.6	mg/L	02/14/2024	KCWELLS	EPA 300.0
Sulfate	30.2	mg/L	02/14/2024	KCWELLS	EPA 300.0
Total Dissolved Solids	80.00	mg/L	02/09/2024	KCWELLS	SM 2540C
Radium 226	2.03	pCi/L	03/05/2024	GEL	EPA 903.1 Mod
Radium 228	0.185	pCi/L	02/23/2024	GEL	EPA 904.0
Radium 226/228 Combined Calculation	2.215	pCi/L	03/21/2024	SJLEVY	EPA 903.1 Mod
pH	4.41	SU	02/05/2024	WJK/BB	
Copper	<5.0	ug/L	02/13/2024	SKJACOBS	EPA 6020B
Nickel	<0.5	ug/L	02/13/2024	SKJACOBS	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 - Manager Analytical Services Validation date: 4/15/24

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SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AF90634 **Location:** GW Well WBW-1 **Date:** 02/06/2024 **Sample Collector:** WJK/BB

Loc. Code WBW-1 **Time:** 14:12

Analysis	Result	Units	Test Date	Analyst	Method
Aluminum	0.42	mg/L	02/13/2024	SKJACOBS	EPA 6020B
Arsenic	<5.0	ug/L	02/13/2024	SKJACOBS	EPA 6020B
Barium	22.3	ug/L	02/13/2024	SKJACOBS	EPA 6020B
Beryllium	<0.5	ug/L	02/13/2024	SKJACOBS	EPA 6020B
Calcium	2.2	mg/L	02/13/2024	SKJACOBS	EPA 6020B
Cadmium	<0.5	ug/L	02/13/2024	SKJACOBS	EPA 6020B
Cobalt	0.88	ug/L	02/13/2024	SKJACOBS	EPA 6020B
Chromium	<5.0	ug/L	02/13/2024	SKJACOBS	EPA 6020B
Iron	98.7	ug/L	02/13/2024	SKJACOBS	EPA 6020B
Magnesium	0.45	mg/L	02/13/2024	SKJACOBS	EPA 6020B
Lead	<1.0	ug/L	02/13/2024	SKJACOBS	EPA 6020B
Antimony	<5.0	ug/L	02/13/2024	SKJACOBS	EPA 6020B
Selenium	<10.0	ug/L	02/13/2024	SKJACOBS	EPA 6020B
Thallium	<1.0	ug/L	02/13/2024	SKJACOBS	EPA 6020B
Boron	185	ug/L	02/14/2024	SKJACOBS	EPA 6010D
Lithium	9.9	ug/L	02/14/2024	SKJACOBS	EPA 6010D
Molybdenum	<5.0	ug/L	02/14/2024	SKJACOBS	EPA 6010D
Mercury	<0.2	ug/L	02/20/2024	EUROFINS SAV	EPA 7470
Zinc	<10.0	ug/L	02/13/2024	SKJACOBS	EPA 6020B
Fluoride	<0.10	mg/L	02/16/2024	KCWELLS	EPA 300.0
Chloride	4.50	mg/L	02/16/2024	KCWELLS	EPA 300.0
Sulfate	10.9	mg/L	02/16/2024	KCWELLS	EPA 300.0
Total Dissolved Solids	75.00	mg/L	02/13/2024	KCWELLS	SM 2540C
Radium 226	0.0320	pCi/L	03/05/2024	GEL	EPA 903.1 Mod
Radium 228	2.16	pCi/L	02/23/2024	GEL	EPA 904.0
Radium 226/228 Combined Calculation	2.192	pCi/L	03/21/2024	SJLEVY	EPA 903.1 Mod
pH	4.54	SU	02/06/2024	WJK/BM	
Copper	<5.0	ug/L	02/13/2024	SKJACOBS	EPA 6020B
Nickel	1.3	ug/L	02/13/2024	SKJACOBS	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 - Manager Analytical Services Validation date: 4/15/24

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SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AF90604 **Location:** GW Well WAP-9 **Date:** 02/07/2024 **Sample Collector:** WJK/BM

Loc. Code WAP-9 **Time:** 11:12

Analysis	Result	Units	Test Date	Analyst	Method
Aluminum	0.29	mg/L	02/14/2024	SKJACOBS	EPA 6020B
Arsenic	73.9	ug/L	02/14/2024	SKJACOBS	EPA 6020B
Barium	132	ug/L	02/14/2024	SKJACOBS	EPA 6020B
Beryllium	<0.5	ug/L	02/14/2024	SKJACOBS	EPA 6020B
Calcium	345	mg/L	02/14/2024	SKJACOBS	EPA 6020B
Cadmium	<0.5	ug/L	02/14/2024	SKJACOBS	EPA 6020B
Cobalt	<0.5	ug/L	02/14/2024	SKJACOBS	EPA 6020B
Chromium	<5.0	ug/L	02/14/2024	SKJACOBS	EPA 6020B
Iron	17300	ug/L	02/14/2024	SKJACOBS	EPA 6020B
Magnesium	56.4	mg/L	02/14/2024	SKJACOBS	EPA 6020B
Lead	<1.0	ug/L	02/14/2024	SKJACOBS	EPA 6020B
Antimony	<5.0	ug/L	02/14/2024	SKJACOBS	EPA 6020B
Selenium	<10.0	ug/L	02/14/2024	SKJACOBS	EPA 6020B
Thallium	<1.0	ug/L	02/14/2024	SKJACOBS	EPA 6020B
Boron	4470	ug/L	02/14/2024	SKJACOBS	EPA 6010D
Lithium	123	ug/L	02/14/2024	SKJACOBS	EPA 6010D
Molybdenum	<5.0	ug/L	02/14/2024	SKJACOBS	EPA 6010D
Mercury	<0.2	ug/L	02/20/2024	EUROFINS SAV	EPA 7470
Zinc	<10.0	ug/L	02/14/2024	SKJACOBS	EPA 6020B
Fluoride	<0.10	mg/L	02/16/2024	KCWELLS	EPA 300.0
Chloride	205	mg/L	02/16/2024	KCWELLS	EPA 300.0
Sulfate	602	mg/L	02/16/2024	KCWELLS	EPA 300.0
Total Dissolved Solids	1702	mg/L	02/09/2024	KCWELLS	SM 2540C
Radium 226	2.13	pCi/L	03/05/2024	GEL	EPA 903.1 Mod
Radium 228	2.17	pCi/L	02/23/2024	GEL	EPA 904.0
Radium 226/228 Combined Calculation	4.3	pCi/L	03/21/2024	SJLEVY	EPA 903.1 Mod
pH	6.17	SU	02/07/2024	WJK/BM	
Copper	<5.0	ug/L	02/14/2024	SKJACOBS	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 - Manager Analytical Services Validation date: 4/15/24

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CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AF90618 **Location:** GW Well WAP-17 **Date:** 02/13/2024 **Sample Collector:** WJK/BM

Loc. Code WAP-17 **Time:** 13:48

Analysis	Result	Units	Test Date	Analyst	Method
Arsenic	84.7	ug/L	03/01/2024	SKJACOBS	EPA 6020B
Barium	46.3	ug/L	03/01/2024	SKJACOBS	EPA 6020B
Beryllium	<0.5	ug/L	03/05/2024	SKJACOBS	EPA 6020B
Calcium	331	mg/L	03/01/2024	SKJACOBS	EPA 6020B
Cadmium	<0.5	ug/L	03/01/2024	SKJACOBS	EPA 6020B
Cobalt	<0.5	ug/L	03/01/2024	SKJACOBS	EPA 6020B
Chromium	<5.0	ug/L	03/01/2024	SKJACOBS	EPA 6020B
Iron	2330	ug/L	03/01/2024	SKJACOBS	EPA 6020B
Lead	<1.0	ug/L	03/01/2024	SKJACOBS	EPA 6020B
Antimony	<5.0	ug/L	03/01/2024	SKJACOBS	EPA 6020B
Selenium	<10.0	ug/L	03/05/2024	SKJACOBS	EPA 6020B
Thallium	<1.0	ug/L	03/01/2024	SKJACOBS	EPA 6020B
Boron	3610	ug/L	02/21/2024	SKJACOBS	EPA 6010D
Lithium	75.9	ug/L	02/21/2024	SKJACOBS	EPA 6010D
Molybdenum	17.1	ug/L	02/21/2024	SKJACOBS	EPA 6010D
Mercury	<0.2	ug/L	02/23/2024	EUROFINS SAV	EPA 7470
Zinc	<10.0	ug/L	03/05/2024	SKJACOBS	EPA 6020B
Fluoride	<0.10	mg/L	02/16/2024	KCWELLS	EPA 300.0
Chloride	169	mg/L	02/16/2024	KCWELLS	EPA 300.0
Sulfate	757	mg/L	02/16/2024	KCWELLS	EPA 300.0
Total Dissolved Solids	1460	mg/L	02/16/2024	KCWELLS	SM 2540C
Radium 226	0.899	pCi/L	03/13/2024	GEL	EPA 903.1 Mod
Radium 228	1.29	pCi/L	03/08/2024	GEL	EPA 904.0
Radium 226/228 Combined Calculation	2.189	pCi/L	03/21/2024	SJLEVY	EPA 903.1 Mod
pH	6.15	SU	02/13/2024	WJK/BM	
Copper	<5.0	ug/L	03/01/2024	SKJACOBS	EPA 6020B
Nickel	<0.5	ug/L	03/01/2024	SKJACOBS	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: _____ Validation date: 4/15/24

Linda Williams - Manager Analytical Services

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CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AF90619 **Location:** GW Well WAP-17 **Date:** 02/13/2024 **Sample Collector:** WJK/BM

Loc. Code WAP-17 DUP **Time:** 13:53

Analysis	Result	Units	Test Date	Analyst	Method
Arsenic	84.2	ug/L	03/01/2024	SKJACOBS	EPA 6020B
Barium	46.1	ug/L	03/01/2024	SKJACOBS	EPA 6020B
Beryllium	<0.5	ug/L	03/05/2024	SKJACOBS	EPA 6020B
Calcium	328	mg/L	03/01/2024	SKJACOBS	EPA 6020B
Cadmium	<0.5	ug/L	03/01/2024	SKJACOBS	EPA 6020B
Cobalt	<0.5	ug/L	03/01/2024	SKJACOBS	EPA 6020B
Chromium	<5.0	ug/L	03/01/2024	SKJACOBS	EPA 6020B
Iron	2320	ug/L	03/01/2024	SKJACOBS	EPA 6020B
Lead	<1.0	ug/L	03/01/2024	SKJACOBS	EPA 6020B
Antimony	<5.0	ug/L	03/01/2024	SKJACOBS	EPA 6020B
Selenium	<10.0	ug/L	03/05/2024	SKJACOBS	EPA 6020B
Thallium	<1.0	ug/L	03/01/2024	SKJACOBS	EPA 6020B
Boron	3710	ug/L	02/21/2024	SKJACOBS	EPA 6010D
Lithium	78.2	ug/L	02/21/2024	SKJACOBS	EPA 6010D
Molybdenum	17.6	ug/L	02/21/2024	SKJACOBS	EPA 6010D
Mercury	<0.2	ug/L	02/23/2024	EUROFINS SAV	EPA 7470
Zinc	<10.0	ug/L	03/05/2024	SKJACOBS	EPA 6020B
Fluoride	<0.10	mg/L	02/16/2024	KCWELLS	EPA 300.0
Chloride	162	mg/L	02/16/2024	KCWELLS	EPA 300.0
Sulfate	725	mg/L	02/16/2024	KCWELLS	EPA 300.0
Total Dissolved Solids	1538	mg/L	02/16/2024	KCWELLS	SM 2540C
Radium 226	0.878	pCi/L	03/13/2024	GEL	EPA 903.1 Mod
Radium 228	0.681	pCi/L	03/08/2024	GEL	EPA 904.0
Radium 226/228 Combined Calculation	1.559	pCi/L	03/21/2024	SJLEVY	EPA 903.1 Mod
Copper	<5.0	ug/L	03/01/2024	SKJACOBS	EPA 6020B
Nickel	<0.5	ug/L	03/01/2024	SKJACOBS	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: Validation date: 4/15/24

Linda Williams - Manager Analytical Services

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SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AF90620 **Location:** GW Well WAP-18 **Date:** 02/12/2024 **Sample Collector:** WJK/BM

Loc. Code WAP-18 **Time:** 12:45

Analysis	Result	Units	Test Date	Analyst	Method
Arsenic	137	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Barium	81.7	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Beryllium	<0.5	ug/L	02/21/2024	SKJACOBS	EPA 6020B
Calcium	69	mg/L	02/29/2024	SKJACOBS	EPA 6020B
Cadmium	<0.5	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Cobalt	0.58	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Chromium	<5.0	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Iron	1170	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Lead	<1.0	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Antimony	<5.0	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Selenium	<10.0	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Thallium	<1.0	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Boron	799	ug/L	02/20/2024	SKJACOBS	EPA 6010D
Lithium	84.6	ug/L	02/20/2024	SKJACOBS	EPA 6010D
Molybdenum	158	ug/L	02/20/2024	SKJACOBS	EPA 6010D
Mercury	<0.2	ug/L	02/26/2024	EUROFINS SAV	EPA 7470
Zinc	<10.0	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Fluoride	<0.10	mg/L	02/16/2024	KCWELLS	EPA 300.0
Chloride	29.3	mg/L	02/16/2024	KCWELLS	EPA 300.0
Sulfate	132	mg/L	02/16/2024	KCWELLS	EPA 300.0
Total Dissolved Solids	357.5	mg/L	02/16/2024	KCWELLS	SM 2540C
Radium 226	0.591	pCi/L	03/13/2024	GEL	EPA 903.1 Mod
Radium 228	0.211	pCi/L	03/08/2024	GEL	EPA 904.0
Radium 226/228 Combined Calculation	0.802	pCi/L	03/21/2024	SJLEVY	EPA 903.1 Mod
pH	5.75	SU	02/12/2024	WJK/BM	
Copper	<5.0	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Nickel	0.80	ug/L	02/29/2024	SKJACOBS	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 - Manager Analytical Services Validation date: 4/15/24

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SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AF90621 **Location:** GW Well WAP-19 **Date:** 02/08/2024 **Sample Collector:** WJK/BM

Loc. Code WAP-19 **Time:** 11:05

Analysis	Result	Units	Test Date	Analyst	Method
Arsenic	124	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Barium	57.0	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Beryllium	<0.5	ug/L	02/21/2024	SKJACOBS	EPA 6020B
Calcium	646	mg/L	02/29/2024	SKJACOBS	EPA 6020B
Cadmium	<0.5	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Cobalt	12.1	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Chromium	<5.0	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Iron	20700	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Lead	<1.0	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Antimony	<5.0	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Selenium	<10.0	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Thallium	<1.0	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Boron	4320	ug/L	02/20/2024	SKJACOBS	EPA 6010D
Lithium	1450	ug/L	02/20/2024	SKJACOBS	EPA 6010D
Molybdenum	36.9	ug/L	02/20/2024	SKJACOBS	EPA 6010D
Mercury	<0.2	ug/L	02/20/2024	EUROFINS SAV	EPA 7470
Zinc	23.2	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Fluoride	0.19	mg/L	02/16/2024	KCWELLS	EPA 300.0
Chloride	56.7	mg/L	02/16/2024	KCWELLS	EPA 300.0
Sulfate	1800	mg/L	02/16/2024	KCWELLS	EPA 300.0
Total Dissolved Solids	2871	mg/L	02/09/2024	KCWELLS	SM 2540C
Radium 226	0.922	pCi/L	03/13/2024	GEL	EPA 903.1 Mod
Radium 228	1.78	pCi/L	03/08/2024	GEL	EPA 904.0
Radium 226/228 Combined Calculation	2.702	pCi/L	03/21/2024	SJLEVY	EPA 903.1 Mod
pH	5.89	SU	02/08/2024	WJK/BM	
Copper	<5.0	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Nickel	10.5	ug/L	02/29/2024	SKJACOBS	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 - Manager Analytical Services Validation date: 4/15/24

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SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AF90642 **Location:** WGS well WLF-A2-1 **Date:** 02/13/2024 **Sample Collector:** WJK/BM

Loc. Code WLF-A2-1 **Time:** 11:35

Analysis	Result	Units	Test Date	Analyst	Method
Arsenic	5.3	ug/L	03/01/2024	SKJACOBS	EPA 6020B
Barium	58.9	ug/L	03/01/2024	SKJACOBS	EPA 6020B
Beryllium	<0.5	ug/L	03/05/2024	SKJACOBS	EPA 6020B
Calcium	193	mg/L	03/01/2024	SKJACOBS	EPA 6020B
Cadmium	<0.5	ug/L	03/01/2024	SKJACOBS	EPA 6020B
Cobalt	1.9	ug/L	03/01/2024	SKJACOBS	EPA 6020B
Chromium	<5.0	ug/L	03/01/2024	SKJACOBS	EPA 6020B
Iron	703	ug/L	03/01/2024	SKJACOBS	EPA 6020B
Lead	1.2	ug/L	03/01/2024	SKJACOBS	EPA 6020B
Antimony	<5.0	ug/L	03/01/2024	SKJACOBS	EPA 6020B
Selenium	<10.0	ug/L	03/05/2024	SKJACOBS	EPA 6020B
Thallium	<1.0	ug/L	03/01/2024	SKJACOBS	EPA 6020B
Copper	<5.0	ug/L	03/01/2024	SKJACOBS	EPA 6020B
Nickel	2.3	ug/L	03/01/2024	SKJACOBS	EPA 6020B
Zinc	<10.0	ug/L	03/05/2024	SKJACOBS	EPA 6020B
Boron	1480	ug/L	02/21/2024	SKJACOBS	EPA 6010D
Lithium	6.20	ug/L	02/21/2024	SKJACOBS	EPA 6010D
Molybdenum	<5.0	ug/L	02/21/2024	SKJACOBS	EPA 6010D
Mercury	<0.2	ug/L	02/23/2024	EUROFINS SAV	EPA 7470
Fluoride	<0.10	mg/L	02/16/2024	KCWELLS	EPA 300.0
Chloride	42.9	mg/L	02/16/2024	KCWELLS	EPA 300.0
Sulfate	604	mg/L	02/16/2024	KCWELLS	EPA 300.0
Total Dissolved Solids	947.5	mg/L	02/16/2024	KCWELLS	SM 2540C
pH	4.48	SU	02/13/2024	WJK/BM	
Radium 226	1.03	pCi/L	03/13/2024	GEL	EPA 903.1 Mod
Radium 228	1.83	pCi/L	03/12/2024	GEL	EPA 904.0
Radium 226/228 Combined Calculation	2.86	pCi/L	03/13/2024	SJLEVY	EPA 903.1 Mod

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

Sample Validated

Linda Williams - Manager, Analytical Services

Final Validation Date: 4/15/24

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SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AF90643 **Location:** WGS well WLF-A2-2 **Date:** 02/13/2024 **Sample Collector:** WJK/BM

Loc. Code WLF-A2-2 **Time:** 12:41

Analysis	Result	Units	Test Date	Analyst	Method
Arsenic	123	ug/L	03/01/2024	SKJACOBS	EPA 6020B
Barium	65.1	ug/L	03/01/2024	SKJACOBS	EPA 6020B
Beryllium	<0.5	ug/L	03/05/2024	SKJACOBS	EPA 6020B
Calcium	182	mg/L	03/01/2024	SKJACOBS	EPA 6020B
Cadmium	<0.5	ug/L	03/01/2024	SKJACOBS	EPA 6020B
Cobalt	<0.5	ug/L	03/01/2024	SKJACOBS	EPA 6020B
Chromium	<5.0	ug/L	03/01/2024	SKJACOBS	EPA 6020B
Iron	4180	ug/L	03/01/2024	SKJACOBS	EPA 6020B
Lead	<1.0	ug/L	03/01/2024	SKJACOBS	EPA 6020B
Antimony	<5.0	ug/L	03/01/2024	SKJACOBS	EPA 6020B
Selenium	<10.0	ug/L	03/05/2024	SKJACOBS	EPA 6020B
Thallium	<1.0	ug/L	03/01/2024	SKJACOBS	EPA 6020B
Copper	<5.0	ug/L	03/01/2024	SKJACOBS	EPA 6020B
Nickel	<0.5	ug/L	03/01/2024	SKJACOBS	EPA 6020B
Zinc	<10.0	ug/L	03/05/2024	SKJACOBS	EPA 6020B
Boron	2210	ug/L	02/21/2024	SKJACOBS	EPA 6010D
Lithium	171	ug/L	02/21/2024	SKJACOBS	EPA 6010D
Molybdenum	<5.0	ug/L	02/21/2024	SKJACOBS	EPA 6010D
Mercury	<0.2	ug/L	02/23/2024	EUROFINS SAV	EPA 7470
Fluoride	<0.10	mg/L	02/16/2024	KCWELLS	EPA 300.0
Chloride	49.8	mg/L	02/16/2024	KCWELLS	EPA 300.0
Sulfate	370	mg/L	02/16/2024	KCWELLS	EPA 300.0
Total Dissolved Solids	770.0	mg/L	02/16/2024	KCWELLS	SM 2540C
pH	5.96	SU	02/13/2024	WJK/BM	
Radium 226	0.0278	pCi/L	03/13/2024	GEL	EPA 903.1 Mod
Radium 228	4.91	pCi/L	03/12/2024	GEL	EPA 904.0
Radium 226/228 Combined Calculation	4.938	pCi/L	03/21/2024	SJLEVY	EPA 903.1 Mod

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

Sample Validated: Linda Williams - Manager, Analytical Services

Final Validation Date: 4/15/24

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SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AF90644 **Location:** WGS well WLF-A2-6 **Date:** 02/08/2024 **Sample Collector:** WJK/BM

Loc. Code WLF-A2-6 **Time:** 09:48

Analysis	Result	Units	Test Date	Analyst	Method
Arsenic	<5.0	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Barium	44.1	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Beryllium	<0.5	ug/L	02/21/2024	SKJACOBS	EPA 6020B
Calcium	235	mg/L	02/29/2024	SKJACOBS	EPA 6020B
Cadmium	<0.5	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Cobalt	<0.5	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Chromium	<5.0	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Iron	343	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Lead	<1.0	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Antimony	<5.0	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Selenium	<10.0	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Thallium	<1.0	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Copper	<5.0	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Nickel	<0.5	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Zinc	<10.0	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Boron	255	ug/L	02/20/2024	SKJACOBS	EPA 6010D
Lithium	7.34	ug/L	02/20/2024	SKJACOBS	EPA 6010D
Molybdenum	<5.0	ug/L	02/20/2024	SKJACOBS	EPA 6010D
Mercury	<0.2	ug/L	02/20/2024	EUROFINS SAV	EPA 7470
Fluoride	<0.10	mg/L	02/16/2024	KCWELLS	EPA 300.0
Chloride	76.4	mg/L	02/16/2024	KCWELLS	EPA 300.0
Sulfate	292	mg/L	02/16/2024	KCWELLS	EPA 300.0
Total Dissolved Solids	932.5	mg/L	02/09/2024	KCWELLS	SM 2540C
pH	6.44	SU	02/08/2024	WJK/BM	
Radium 226	0.169	pCi/L	03/13/2024	GEL	EPA 903.1 Mod
Radium 228	0.781	pCi/L	03/08/2024	GEL	EPA 904.0
Radium 226/228 Combined Calculation	0.95	pCi/L	03/21/2024	SJLEVY	EPA 903.1 Mod

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

Sample Validated: Linda Williams - Manager, Analytical Services

Final Validation Date: 4/15/24

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SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AF90645 **Location:** WGS well WLF-A2-6 **Date:** 02/08/2024 **Sample Collector:** WJK/BM

Loc. Code WLF-A2-6 DUP **Time:** 09:53

Analysis	Result	Units	Test Date	Analyst	Method
Arsenic	<5.0	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Barium	43.4	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Beryllium	<0.5	ug/L	02/21/2024	SKJACOBS	EPA 6020B
Calcium	233	mg/L	02/29/2024	SKJACOBS	EPA 6020B
Cadmium	<0.5	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Cobalt	<0.5	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Chromium	<5.0	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Iron	331	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Lead	<1.0	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Antimony	<5.0	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Selenium	<10.0	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Thallium	<1.0	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Copper	<5.0	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Nickel	<0.5	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Zinc	<10.0	ug/L	02/29/2024	SKJACOBS	EPA 6020B
Boron	258	ug/L	02/20/2024	SKJACOBS	EPA 6010D
Lithium	8.19	ug/L	02/20/2024	SKJACOBS	EPA 6010D
Molybdenum	<5.0	ug/L	02/20/2024	SKJACOBS	EPA 6010D
Mercury	<0.2	ug/L	02/20/2024	EUROFINS SAV	EPA 7470
Fluoride	<0.10	mg/L	02/16/2024	KCWELLS	EPA 300.0
Chloride	76.5	mg/L	02/16/2024	KCWELLS	EPA 300.0
Sulfate	294	mg/L	02/16/2024	KCWELLS	EPA 300.0
Total Dissolved Solids	1029	mg/L	02/09/2024	KCWELLS	SM 2540C
Radium 226	0.503	pCi/L	03/13/2024	GEL	EPA 903.1 Mod
Radium 228	0.515	pCi/L	03/08/2024	GEL	EPA 904.0
Radium 226/228 Combined Calculation	1.018	pCi/L	03/21/2024	SJLEVY	EPA 903.1 Mod

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

Sample Validated: Linda Williams - Manager, Analytical Services

Final Validation Date: 4/15/24

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SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AF98789 **Location:** GW Well WAP-19 **Date:** 05/02/2024 **Sample Collector:** WJK/BM

Loc. Code WAP-19 **Time:** 13:40

Analysis	Result	Units	Test Date	Analyst	Method
Cobalt	4.3	ug/L	05/09/2024	SKJACOBS	EPA 6020B
Lithium	988	ug/L	05/16/2024	SKJACOBS	EPA 6010D
pH	6.05	SU	05/02/2024	JK	

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: Validation date: 6/3/24

Linda Williams - Manager Analytical Services

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SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AG03721 **Location:** GW Well WAP-1 **Date:** 07/01/2024 **Sample Collector:** ZM/BM

Loc. Code WAP-1 **Time:** 10:53

Analysis	Result	Units	Test Date	Analyst	Method
Arsenic	9.6	ug/L	07/19/2024	SKJACOBS	EPA 6020B
Barium	68.1	ug/L	07/19/2024	SKJACOBS	EPA 6020B
Beryllium	<0.5	ug/L	07/22/2024	SKJACOBS	EPA 6020B
Calcium	7.5	mg/L	07/19/2024	SKJACOBS	EPA 6020B
Cadmium	<0.5	ug/L	07/19/2024	SKJACOBS	EPA 6020B
Cobalt	0.75	ug/L	07/19/2024	SKJACOBS	EPA 6020B
Chromium	<5.0	ug/L	07/19/2024	SKJACOBS	EPA 6020B
Lead	<1.0	ug/L	07/19/2024	SKJACOBS	EPA 6020B
Antimony	<5.0	ug/L	07/19/2024	SKJACOBS	EPA 6020B
Selenium	<10.0	ug/L	07/19/2024	SKJACOBS	EPA 6020B
Thallium	<1.0	ug/L	07/19/2024	SKJACOBS	EPA 6020B
Boron	30.4	ug/L	07/19/2024	SKJACOBS	EPA 6010D
Lithium	<5.0	ug/L	07/19/2024	SKJACOBS	EPA 6010D
Molybdenum	<5.0	ug/L	07/19/2024	SKJACOBS	EPA 6010D
Mercury	<0.2	ug/L	07/19/2024	EUROFINS SAV	EPA 7470
Fluoride	<0.10	mg/L	07/08/2024	KCWELLS	EPA 300.0
Chloride	9.26	mg/L	07/08/2024	KCWELLS	EPA 300.0
Sulfate	30.8	mg/L	07/08/2024	KCWELLS	EPA 300.0
Total Dissolved Solids	70.00	mg/L	07/03/2024	KRMATHER	SM 2540C
Radium 226	2.13	pCi/L	08/07/2024	GEL	EPA 903.1 Mod
Radium 228	2.16	pCi/L	08/02/2024	GEL	EPA 904.0
Radium 226/228 Combined Calculation	4.29	pCi/L	08/14/2024	SJLEVY	EPA 903.1 Mod
pH	4.42	SU	07/01/2024	ZM/BM	

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: Validation date: 9/30/24

Linda Williams - Manager Analytical Services

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SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AG03766 **Location:** GW Well WBW-1 **Date:** 07/01/2024 **Sample Collector:** ZM/BM

Loc. Code WBW-1 **Time:** 09:54

Analysis	Result	Units	Test Date	Analyst	Method
Arsenic	<5.0	ug/L	07/23/2024	SKJACOBS	EPA 6020B
Barium	12.9	ug/L	07/23/2024	SKJACOBS	EPA 6020B
Beryllium	<0.5	ug/L	07/23/2024	SKJACOBS	EPA 6020B
Calcium	1.8	mg/L	07/23/2024	SKJACOBS	EPA 6020B
Cadmium	<0.5	ug/L	07/23/2024	SKJACOBS	EPA 6020B
Cobalt	0.54	ug/L	07/23/2024	SKJACOBS	EPA 6020B
Chromium	<5.0	ug/L	07/23/2024	SKJACOBS	EPA 6020B
Lead	<1.0	ug/L	07/23/2024	SKJACOBS	EPA 6020B
Antimony	<5.0	ug/L	07/23/2024	SKJACOBS	EPA 6020B
Selenium	<10.0	ug/L	07/23/2024	SKJACOBS	EPA 6020B
Thallium	<1.0	ug/L	07/23/2024	SKJACOBS	EPA 6020B
Boron	13.2	ug/L	07/18/2024	SKJACOBS	EPA 6010D
Lithium	<5.0	ug/L	07/18/2024	SKJACOBS	EPA 6010D
Molybdenum	<5.0	ug/L	07/18/2024	SKJACOBS	EPA 6010D
Mercury	<0.2	ug/L	07/22/2024	EUROFINS SAV	EPA 7470
Fluoride	<0.10	mg/L	07/12/2024	KCWELLS	EPA 300.0
Chloride	4.92	mg/L	07/12/2024	KCWELLS	EPA 300.0
Sulfate	7.22	mg/L	07/12/2024	KCWELLS	EPA 300.0
Total Dissolved Solids	<25	mg/L	07/03/2024	KRMATHER	SM 2540C
Radium 226	0.102	pCi/L	08/07/2024	GEL	EPA 903.1 Mod
Radium 228	2.41	pCi/L	08/02/2024	GEL	EPA 904.0
Radium 226/228 Combined Calculation	2.512	pCi/L	08/14/2024	SJLEVY	EPA 903.1 Mod
pH	4.04	SU	07/01/2024	ZM/BM	

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: _____ Validation date: 9/30/24

Linda Williams - Manager Analytical Services

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SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AG03733 **Location:** GW Well WAP-9 **Date:** 07/02/2024 **Sample Collector:** ZM/BM

Loc. Code WAP-9 **Time:** 15:15

Analysis	Result	Units	Test Date	Analyst	Method
Arsenic	65.4	ug/L	07/19/2024	SKJACOBS	EPA 6020B
Barium	110	ug/L	07/19/2024	SKJACOBS	EPA 6020B
Beryllium	<0.5	ug/L	07/22/2024	SKJACOBS	EPA 6020B
Calcium	313	mg/L	07/19/2024	SKJACOBS	EPA 6020B
Cadmium	<0.5	ug/L	07/19/2024	SKJACOBS	EPA 6020B
Cobalt	<0.5	ug/L	07/19/2024	SKJACOBS	EPA 6020B
Chromium	<5.0	ug/L	07/19/2024	SKJACOBS	EPA 6020B
Lead	<1.0	ug/L	07/19/2024	SKJACOBS	EPA 6020B
Antimony	<5.0	ug/L	07/19/2024	SKJACOBS	EPA 6020B
Selenium	<10.0	ug/L	07/19/2024	SKJACOBS	EPA 6020B
Thallium	<1.0	ug/L	07/19/2024	SKJACOBS	EPA 6020B
Boron	4180	ug/L	07/19/2024	SKJACOBS	EPA 6010D
Lithium	84.3	ug/L	07/19/2024	SKJACOBS	EPA 6010D
Molybdenum	<5.0	ug/L	07/19/2024	SKJACOBS	EPA 6010D
Mercury	<0.2	ug/L	07/20/2024	EUROFINS SAV	EPA 7470
Fluoride	<0.10	mg/L	07/08/2024	KCWELLS	EPA 300.0
Chloride	176	mg/L	07/08/2024	KCWELLS	EPA 300.0
Sulfate	580	mg/L	07/08/2024	KCWELLS	EPA 300.0
Total Dissolved Solids	1542	mg/L	07/08/2024	KRMATHER	SM 2540C
Radium 226	1.40	pCi/L	08/07/2024	GEL	EPA 903.1 Mod
Radium 228	1.78	pCi/L	08/02/2024	GEL	EPA 904.0
Radium 226/228 Combined Calculation	3.18	pCi/L	08/14/2024	SJLEVY	EPA 903.1 Mod
pH	5.83	SU	07/02/2024	ZM/BM	

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: Validation date: 9/30/24

Linda Williams - Manager Analytical Services

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SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AG03748 **Location:** GW Well WAP-17 **Date:** 07/15/2024 **Sample Collector:** ZM/BM

Loc. Code WAP-17 **Time:** 09:12

Analysis	Result	Units	Test Date	Analyst	Method
Arsenic	70.3	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Barium	48.1	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Beryllium	<0.5	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Calcium	315	mg/L	07/24/2024	SKJACOBS	EPA 6020B
Cadmium	<0.5	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Cobalt	<0.5	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Chromium	<5.0	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Lead	<1.0	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Antimony	<5.0	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Selenium	<10.0	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Thallium	<1.0	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Copper	<5.0	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Iron	2050	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Nickel	<0.5	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Zinc	<10.0	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Boron	4220	ug/L	07/23/2024	SKJACOBS	EPA 6010D
Lithium	76.9	ug/L	07/23/2024	SKJACOBS	EPA 6010D
Molybdenum	9.38	ug/L	07/23/2024	SKJACOBS	EPA 6010D
Mercury	<0.2	ug/L	07/20/2024	EUROFINS SAV	EPA 7470
Radium 226	1.34	pCi/L	08/14/2024	GEL	EPA 903.1 Mod
Radium 228	1.61	pCi/L	08/07/2024	GEL	EPA 904.0
Radium 226/228 Combined Calculation	2.95	pCi/L	08/19/2024	SJLEVY	EPA 903.1 Mod
Fluoride	<0.10	mg/L	07/22/2024	LCWILLIA	EPA 300.0
Chloride	240	mg/L	07/22/2024	LCWILLIA	EPA 300.0
Sulfate	813	mg/L	07/22/2024	LCWILLIA	EPA 300.0
Total Dissolved Solids	1566	mg/L	07/18/2024	KRMATHER	SM 2540C
pH	5.78	SU	07/15/2024	ZM/BM	

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

Sample Validated: Linda Williams - Manager, Analytical Services

Final Validation Date: 9/30/24

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SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AG03749 **Location:** GW Well WAP-17 **Date:** 07/15/2024 **Sample Collector:** ZM/BM

Loc. Code WAP-17 DUP **Time:** 09:17

Analysis	Result	Units	Test Date	Analyst	Method
Arsenic	69.7	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Barium	47.4	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Beryllium	<0.5	ug/L	07/30/2024	SKJACOBS	EPA 6020B
Calcium	309	mg/L	07/24/2024	SKJACOBS	EPA 6020B
Cadmium	<0.5	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Cobalt	<0.5	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Chromium	<5.0	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Lead	<1.0	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Antimony	5.2	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Selenium	<10.0	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Thallium	<1.0	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Copper	<5.0	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Iron	2090	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Nickel	<0.5	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Zinc	<10.0	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Boron	4190	ug/L	07/23/2024	SKJACOBS	EPA 6010D
Lithium	77.9	ug/L	07/23/2024	SKJACOBS	EPA 6010D
Molybdenum	9.36	ug/L	07/23/2024	SKJACOBS	EPA 6010D
Mercury	<0.2	ug/L	07/22/2024	EUROFINS SAV	EPA 7470
Radium 226	1.20	pCi/L	08/14/2024	GEL	EPA 903.1 Mod
Radium 228	0.579	pCi/L	08/07/2024	GEL	EPA 904.0
Radium 226/228 Combined Calculation	1.779	pCi/L	08/19/2024	SJLEVY	EPA 903.1 Mod
Fluoride	<0.10	mg/L	07/22/2024	LCWILLIA	EPA 300.0
Chloride	240	mg/L	07/22/2024	LCWILLIA	EPA 300.0
Sulfate	813	mg/L	07/22/2024	LCWILLIA	EPA 300.0
Total Dissolved Solids	1604	mg/L	07/18/2024	KRMATHER	SM 2540C

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

Sample Validated: Linda Williams - Manager, Analytical Services

Final Validation Date: 9/30/24

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SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AG03750 **Location:** GW Well WAP-18 **Date:** 07/15/2024 **Sample Collector:** ZM/BM

Loc. Code WAP-18 **Time:** 11:35

Analysis	Result	Units	Test Date	Analyst	Method
Arsenic	117	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Barium	103	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Beryllium	<0.5	ug/L	07/30/2024	SKJACOBS	EPA 6020B
Calcium	75.5	mg/L	07/24/2024	SKJACOBS	EPA 6020B
Cadmium	<0.5	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Cobalt	0.71	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Chromium	<5.0	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Lead	<1.0	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Antimony	<5.0	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Selenium	<10.0	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Thallium	<1.0	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Copper	<5.0	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Iron	708	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Nickel	0.77	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Zinc	<10.0	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Boron	811	ug/L	07/23/2024	SKJACOBS	EPA 6010D
Lithium	80.9	ug/L	07/23/2024	SKJACOBS	EPA 6010D
Molybdenum	210	ug/L	07/23/2024	SKJACOBS	EPA 6010D
Mercury	<0.2	ug/L	07/22/2024	EUROFINS SAV	EPA 7470
Radium 226	0.949	pCi/L	08/14/2024	GEL	EPA 903.1 Mod
Radium 228	2.42	pCi/L	08/07/2024	GEL	EPA 904.0
Radium 226/228 Combined Calculation	3.369	pCi/L	08/19/2024	SJLEVY	EPA 903.1 Mod
Fluoride	<0.10	mg/L	07/22/2024	LCWILLIA	EPA 300.0
Chloride	46.4	mg/L	07/22/2024	LCWILLIA	EPA 300.0
Sulfate	152	mg/L	07/22/2024	LCWILLIA	EPA 300.0
Total Dissolved Solids	382.5	mg/L	07/18/2024	KRMATHER	SM 2540C
pH	5.37	SU	07/15/2024	ZM/BM	

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

Sample Validated: Linda Williams - Manager, Analytical Services

Final Validation Date: 9/30/24

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SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AG03751 **Location:** GW Well WAP-19 **Date:** 07/22/2024 **Sample Collector:** ZM/BM

Loc. Code WAP-19 **Time:** 11:47

Analysis	Result	Units	Test Date	Analyst	Method
Arsenic	147	ug/L	08/08/2024	SKJACOBS	EPA 6020B
Barium	77.7	ug/L	08/08/2024	SKJACOBS	EPA 6020B
Beryllium	<0.5	ug/L	08/09/2024	SKJACOBS	EPA 6020B
Calcium	711	mg/L	08/08/2024	SKJACOBS	EPA 6020B
Cadmium	<0.5	ug/L	08/08/2024	SKJACOBS	EPA 6020B
Cobalt	0.89	ug/L	08/08/2024	SKJACOBS	EPA 6020B
Chromium	<5.0	ug/L	08/08/2024	SKJACOBS	EPA 6020B
Lead	<1.0	ug/L	08/08/2024	SKJACOBS	EPA 6020B
Antimony	<5.0	ug/L	08/08/2024	SKJACOBS	EPA 6020B
Selenium	<10.0	ug/L	08/09/2024	SKJACOBS	EPA 6020B
Thallium	<1.0	ug/L	08/08/2024	SKJACOBS	EPA 6020B
Copper	<5.0	ug/L	08/08/2024	SKJACOBS	EPA 6020B
Iron	3520	ug/L	08/08/2024	SKJACOBS	EPA 6020B
Nickel	1.2	ug/L	08/08/2024	SKJACOBS	EPA 6020B
Zinc	<10.0	ug/L	08/09/2024	SKJACOBS	EPA 6020B
Boron	4660	ug/L	07/29/2024	SKJACOBS	EPA 6010D
Lithium	421	ug/L	07/29/2024	SKJACOBS	EPA 6010D
Molybdenum	13.4	ug/L	07/29/2024	SKJACOBS	EPA 6010D
Mercury	<0.2	ug/L	08/01/2024	EUROFINS SAV	EPA 7470
Radium 226	2.06	pCi/L	08/23/2024	GEL	EPA 903.1 Mod
Radium 228	2.63	pCi/L	08/13/2024	GEL	EPA 904.0
Radium 226/228 Combined Calculation	4.69	pCi/L	08/29/2024	SJLEVY	EPA 903.1 Mod
Fluoride	0.34	mg/L	08/02/2024	GEL	EPA 300.0
Chloride	31.1	mg/L	08/01/2024	GEL	EPA 300.0
Sulfate	1810	mg/l	08/02/2024	GEL	EPA 300.0
Total Dissolved Solids	2891	mg/L	07/24/2024	KRMATHER	SM 2540C
pH	6.34	SU	07/22/2024	ZM/BM	

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

Sample Validated: Linda Williams - Manager, Analytical Services

Final Validation Date: 9/30/24

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CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AG03752 **Location:** GW Well WAP-19F **Date:** 07/22/2024 **Sample Collector:** ZM/BM

Loc. Code WAP-19F **Time:** 11:52

Analysis	Result	Units	Test Date	Analyst	Method
Arsenic	<5.0	ug/L	08/08/2024	SKJACOBS	EPA 6020B
Barium	<5.0	ug/L	08/08/2024	SKJACOBS	EPA 6020B
Beryllium	<0.5	ug/L	08/09/2024	SKJACOBS	EPA 6020B
Calcium	<0.5	mg/L	08/08/2024	SKJACOBS	EPA 6020B
Cadmium	<0.5	ug/L	08/08/2024	SKJACOBS	EPA 6020B
Cobalt	<0.5	ug/L	08/08/2024	SKJACOBS	EPA 6020B
Chromium	<5.0	ug/L	08/08/2024	SKJACOBS	EPA 6020B
Lead	<1.0.	ug/L	08/08/2024	SKJACOBS	EPA 6020B
Antimony	<5.0	ug/L	08/08/2024	SKJACOBS	EPA 6020B
Selenium	<10.0	ug/L	08/09/2024	SKJACOBS	EPA 6020B
Thallium	<1.0	ug/L	08/08/2024	SKJACOBS	EPA 6020B
Copper	<5.0	ug/L	08/08/2024	SKJACOBS	EPA 6020B
Iron	<50.0	ug/L	08/08/2024	SKJACOBS	EPA 6020B
Nickel	<0.5	ug/L	08/08/2024	SKJACOBS	EPA 6020B
Zinc	<10.0	ug/L	08/09/2024	SKJACOBS	EPA 6020B
Boron	<10.0	ug/L	07/29/2024	SKJACOBS	EPA 6010D
Lithium	<5.0	ug/L	07/29/2024	SKJACOBS	EPA 6010D
Molybdenum	<5.0	ug/L	07/29/2024	SKJACOBS	EPA 6010D
Mercury	<0.2	ug/L	08/01/2024	EUROFINS SAV	EPA 7470
Radium 226	1.30	pCi/L	08/23/2024	GEL	EPA 903.1 Mod
Radium 228	1.39	pCi/L	08/13/2024	GEL	EPA 904.0
Radium 226/228 Combined Calculation	2.69	pCi/L	08/29/2024	SJLEVY	EPA 903.1 Mod
Fluoride	<0.1	mg/L	08/01/2024	GEL	EPA 300.0
Chloride	<0.2	mg/L	08/01/2024	GEL	EPA 300.0
Sulfate	<0.4	mg/l	08/01/2024	GEL	EPA 300.0
Total Dissolved Solids	1.250	mg/L	07/24/2024	KRMATHER	SM 2540C

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

Sample Validated: Linda Williams - Manager, Analytical Services

Final Validation Date: 9/30/24

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SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AG03775 **Location:** WGS well WLF-A2-1 **Date:** 07/16/2024 **Sample Collector:** ZM/BM

Loc. Code WLF-A2-1 **Time:** 10:34

Analysis	Result	Units	Test Date	Analyst	Method
Arsenic	94.5	ug/L	08/20/2024	SKJACOBS	EPA 6020B
Barium	31.0	ug/L	08/20/2024	SKJACOBS	EPA 6020B
Beryllium	<0.5	ug/L	08/20/2024	SKJACOBS	EPA 6020B
Calcium	95.8	mg/L	08/20/2024	SKJACOBS	EPA 6020B
Cadmium	<0.5	ug/L	08/20/2024	SKJACOBS	EPA 6020B
Cobalt	1.9	ug/L	08/20/2024	SKJACOBS	EPA 6020B
Chromium	<5.0	ug/L	08/20/2024	SKJACOBS	EPA 6020B
Lead	<1.0	ug/L	08/20/2024	SKJACOBS	EPA 6020B
Antimony	5.9	ug/L	08/20/2024	SKJACOBS	EPA 6020B
Selenium	<10.0	ug/L	08/20/2024	SKJACOBS	EPA 6020B
Thallium	<1.0	ug/L	08/20/2024	SKJACOBS	EPA 6020B
Copper	<5.0	ug/L	08/20/2024	SKJACOBS	EPA 6020B
Iron	4180	ug/L	08/20/2024	SKJACOBS	EPA 6020B
Nickel	0.79	ug/L	08/20/2024	SKJACOBS	EPA 6020B
Zinc	<10.0	ug/L	08/20/2024	SKJACOBS	EPA 6020B
Boron	1600	ug/L	07/25/2024	SKJACOBS	EPA 6010D
Lithium	25.1	ug/L	07/25/2024	SKJACOBS	EPA 6010D
Molybdenum	31.0	ug/L	07/25/2024	SKJACOBS	EPA 6010D
Mercury	<0.2	ug/L	07/22/2024	EUROFINS SAV	EPA 7470
Radium 226	0.855	pCi/L	08/14/2024	GEL	EPA 903.1 Mod
Radium 228	0.949	pCi/L	08/07/2024	GEL	EPA 904.0
Radium 226/228 Combined Calculation	1.804	pCi/L	08/19/2024	SJLEVY	EPA 903.1 Mod
Fluoride	<0.1	mg/L	07/20/2024	GEL	EPA 300.0
Chloride	42.2	mg/L	07/20/2024	GEL	EPA 300.0
Sulfate	196	mg/l	07/20/2024	GEL	EPA 300.0
Total Dissolved Solids	507.5	mg/L	07/18/2024	KRMATHER	SM 2540C
pH	5.18	SU	07/16/2024	ZM/BM	

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

Sample Validated: Linda Williams - Manager, Analytical Services

Final Validation Date: 9/30/24

santee cooper

One Riverwood Drive
P.O. Box 2946101
Moncks Corner, SC 29461-2901
(843) 761-8000

SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AG03776 **Location:** WGS well WLF-A2-2 **Date:** 07/16/2024 **Sample Collector:** ZM/BM

Loc. Code WLF-A2-2 **Time:** 09:37

Analysis	Result	Units	Test Date	Analyst	Method
Arsenic	115	ug/L	08/20/2024	SKJACOBS	EPA 6020B
Barium	51.5	ug/L	08/20/2024	SKJACOBS	EPA 6020B
Beryllium	<0.5	ug/L	08/20/2024	SKJACOBS	EPA 6020B
Calcium	143	mg/L	08/20/2024	SKJACOBS	EPA 6020B
Cadmium	<0.5	ug/L	08/20/2024	SKJACOBS	EPA 6020B
Cobalt	<0.5	ug/L	08/20/2024	SKJACOBS	EPA 6020B
Chromium	<5.0	ug/L	08/20/2024	SKJACOBS	EPA 6020B
Lead	<1.0	ug/L	08/20/2024	SKJACOBS	EPA 6020B
Antimony	5.4	ug/L	08/20/2024	SKJACOBS	EPA 6020B
Selenium	<10.0	ug/L	08/20/2024	SKJACOBS	EPA 6020B
Thallium	<1.0	ug/L	08/20/2024	SKJACOBS	EPA 6020B
Copper	<5.0	ug/L	08/20/2024	SKJACOBS	EPA 6020B
Iron	3520	ug/L	08/20/2024	SKJACOBS	EPA 6020B
Nickel	<0.5	ug/L	08/20/2024	SKJACOBS	EPA 6020B
Zinc	<10.0	ug/L	08/20/2024	SKJACOBS	EPA 6020B
Boron	2280	ug/L	07/25/2024	SKJACOBS	EPA 6010D
Lithium	153	ug/L	07/25/2024	SKJACOBS	EPA 6010D
Molybdenum	<5.0	ug/L	07/25/2024	SKJACOBS	EPA 6010D
Mercury	<0.2	ug/L	07/22/2024	EUROFINS SAV	EPA 7470
Radium 226	0.603	pCi/L	08/14/2024	GEL	EPA 903.1 Mod
Radium 228	0.176	pCi/L	08/07/2024	GEL	EPA 904.0
Radium 226/228 Combined Calculation	0.779	pCi/L	08/19/2024	SJLEVY	EPA 903.1 Mod
Fluoride	0.27	mg/L	08/06/2024	GEL	EPA 300.0
Chloride	29.2	mg/L	07/20/2024	GEL	EPA 300.0
Sulfate	247	mg/l	07/20/2024	GEL	EPA 300.0
Total Dissolved Solids	595.0	mg/L	07/18/2024	KRMATHER	SM 2540C
pH	5.73	SU	07/16/2024	ZM/BM	

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

Sample Validated: Final Validation Date: 9/30/24

Linda Williams - Manager, Analytical Services

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SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AG03777 **Location:** WGS well WLF-A2-6 **Date:** 07/15/2024 **Sample Collector:** ZM/BM

Loc. Code WLF-A2-6 **Time:** 10:25

Analysis	Result	Units	Test Date	Analyst	Method
Arsenic	<5.0	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Barium	43.6	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Beryllium	<0.5	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Calcium	234	mg/L	07/24/2024	SKJACOBS	EPA 6020B
Cadmium	<0.5	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Cobalt	<0.5	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Chromium	<5.0	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Lead	<1.0	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Antimony	<5.0	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Selenium	<10.0	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Thallium	<1.0	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Copper	<5.0	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Iron	287	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Nickel	<0.5	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Zinc	<10.0	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Boron	395	ug/L	07/23/2024	SKJACOBS	EPA 6010D
Lithium	6.80	ug/L	07/23/2024	SKJACOBS	EPA 6010D
Molybdenum	<5.0	ug/L	07/23/2024	SKJACOBS	EPA 6010D
Mercury	<0.2	ug/L	07/22/2024	EUROFINS SAV	EPA 7470
Radium 226	0.729	pCi/L	08/14/2024	GEL	EPA 903.1 Mod
Radium 228	0.155	pCi/L	08/07/2024	GEL	EPA 904.0
Radium 226/228 Combined Calculation	0.884	pCi/L	08/19/2024	SJLEVY	EPA 903.1 Mod
Fluoride	<0.1	mg/L	08/06/2024	GEL	EPA 300.0
Chloride	79.9	mg/L	07/20/2024	GEL	EPA 300.0
Sulfate	275	mg/l	07/20/2024	GEL	EPA 300.0
Total Dissolved Solids	947.5	mg/L	07/18/2024	KRMATHER	SM 2540C
pH	6.28	SU	07/15/2024	ZM/BM	

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

Sample Validated: Linda Williams - Manager, Analytical Services

Final Validation Date: 9/30/24

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SANTEE COOPER ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

LAB CERTIFICATION #08552

Sample # AG03779 **Location:** WGS well WLF-A2-6F **Date:** 07/15/2024 **Sample Collector:** ZM/BM

Loc. Code WLF-A2-6F **Time:** 10:30

Analysis	Result	Units	Test Date	Analyst	Method
Arsenic	<5.0	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Barium	<5.0	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Beryllium	<0.5	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Calcium	<0.5	mg/L	07/24/2024	SKJACOBS	EPA 6020B
Cadmium	<0.5	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Cobalt	<0.5	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Chromium	<5.0	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Lead	<1.0	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Antimony	<5.0	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Selenium	<10.0	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Thallium	<1.0	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Copper	<5.0	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Iron	<50.0	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Nickel	<0.5	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Zinc	<10.0	ug/L	07/24/2024	SKJACOBS	EPA 6020B
Boron	<10.0	ug/L	07/23/2024	SKJACOBS	EPA 6010D
Lithium	<5.0	ug/L	07/23/2024	SKJACOBS	EPA 6010D
Molybdenum	<5.0	ug/L	07/23/2024	SKJACOBS	EPA 6010D
Mercury	<0.2	ug/L	07/22/2024	EUROFINS SAV	EPA 7470
Radium 226	0.651	pCi/L	08/14/2024	GEL	EPA 903.1 Mod
Radium 228	1.25	pCi/L	08/07/2024	GEL	EPA 904.0
Radium 226/228 Combined Calculation	1.901	pCi/L	08/19/2024	SJLEVY	EPA 903.1 Mod
Fluoride	<0.1	mg/L	07/20/2024	GEL	EPA 300.0
Chloride	<0.2	mg/L	07/20/2024	GEL	EPA 300.0
Sulfate	<0.4	mg/l	07/20/2024	GEL	EPA 300.0
Total Dissolved Solids	<25	mg/L	07/18/2024	KRMATHER	SM 2540C

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

Sample Validated: Linda Williams - Manager, Analytical Services

Final Validation Date: 9/30/24

GEL Laboratories LLC
a member of The GEL Group INC

2040 Savage Road | Charleston, SC 29407
843.556.8171
gel.com

March 06, 2024

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

Re: ABS Lab Analytical
Work Order: 654972

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, 2024. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

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,

Jordan Melton

Jordan Melton for
Julie Robinson
Project Manager

Purchase Order: 125915/JM02.08.G01.3/36500
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: 654972 GEL Work Order: 654972

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 Jordan Melton

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

Certificate of Analysis

Report Date: March 6, 2024

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:	AF90605	Project:	SOOP00119
Sample ID:	654972001	Client ID:	SOOP001
Matrix:	GW		
Collect Date:	07-FEB-24 10:07		
Receive Date:	09-FEB-24		
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	0.936	+/-0.907	1.49	3.00	pCi/L			JE1	02/23/24	1110	2568526	1
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		2.11	+/-0.917	0.840	1.00	pCi/L			LXP1	03/05/24	0913	2571356	2

The following Analytical Methods were performed:

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

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			90.7	(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

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

Certificate of Analysis

Report Date: March 6, 2024

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:	AF90606	Project:	SOOP00119
Sample ID:	654972002	Client ID:	SOOP001
Matrix:	GW		
Collect Date:	07-FEB-24 10:12		
Receive Date:	09-FEB-24		
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	0.147	+/-0.989	1.81	3.00	pCi/L			JE1	02/23/24	1110	2568526	1
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		1.69	+/-0.674	0.577	1.00	pCi/L			LXP1	03/05/24	0913	2571356	2

The following Analytical Methods were performed:

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

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			85.8	(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 6, 2024

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:	AF90604	Project:	SOOP00119
Sample ID:	654972003	Client ID:	SOOP001
Matrix:	GW		
Collect Date:	07-FEB-24 11:12		
Receive Date:	09-FEB-24		
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		2.17	+/-0.887	1.13	3.00	pCi/L			JE1	02/23/24	1110	2568526	1
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		2.13	+/-0.867	0.754	1.00	pCi/L			LXP1	03/05/24	0913	2571356	2

The following Analytical Methods were performed:

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

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			92.8	(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 6, 2024

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: AF90596
Sample ID: 654972004
Matrix: GW
Collect Date: 06-FEB-24 10:25
Receive Date: 09-FEB-24
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		1.51	+/-0.814	1.16	3.00	pCi/L			JE1	02/23/24	1110	2568526	1
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		4.23	+/-1.22	0.752	1.00	pCi/L			LXP1	03/05/24	0913	2571356	2

The following Analytical Methods were performed:

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

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			92.2	(15%-125%)

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

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Lc/LC: Critical Level
PF: Prep Factor
RL: Reporting Limit
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 6, 2024

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: AF90597
Sample ID: 654972005
Matrix: GW
Collect Date: 06-FEB-24 11:19
Receive Date: 09-FEB-24
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		3.16	+/-1.37	2.00	3.00	pCi/L			JE1	02/23/24	1111	2568526	1
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		4.72	+/-1.18	0.676	1.00	pCi/L			LXP1	03/05/24	0948	2571356	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	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
DL: Detection Limit
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Lc/LC: Critical Level
PF: Prep Factor
RL: Reporting Limit
SQL: Sample Quantitation Limit

GEL LABORATORIES LLC
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Certificate of Analysis

Report Date: March 6, 2024

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:	AF90599	Project:	SOOP00119
Sample ID:	654972006	Client ID:	SOOP001
Matrix:	GW		
Collect Date:	06-FEB-24 12:45		
Receive Date:	09-FEB-24		
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	0.0789	+/-1.34	2.47	3.00	pCi/L			JE1	02/23/24	1225	2568526	1
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	0.470	+/-0.485	0.761	1.00	pCi/L			LXP1	03/05/24	0948	2571356	2

The following Analytical Methods were performed:

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

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			88.6	(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

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

Certificate of Analysis

Report Date: March 6, 2024

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:	AF90602	Project:	SOOP00119
Sample ID:	654972007	Client ID:	SOOP001
Matrix:	GW		
Collect Date:	06-FEB-24 09:24		
Receive Date:	09-FEB-24		
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	-0.0579	+/-0.881	1.66	3.00	pCi/L			JE1	02/23/24	1111	2568526	1
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		1.30	+/-0.721	0.811	1.00	pCi/L			LXP1	03/05/24	0948	2571356	2

The following Analytical Methods were performed:

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

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			92.1	(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: March 6, 2024

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:	AF90634	Project:	SOOP00119
Sample ID:	654972008	Client ID:	SOOP001
Matrix:	GW		
Collect Date:	06-FEB-24 14:12		
Receive Date:	09-FEB-24		
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		2.16	+/-0.884	1.10	3.00	pCi/L			JE1	02/23/24	1111	2568526	1
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	0.0320	+/-0.140	0.374	1.00	pCi/L			LXP1	03/05/24	0948	2571356	2

The following Analytical Methods were performed:

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

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			89.5	(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 6, 2024

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: AF90595
Sample ID: 654972009
Matrix: GW
Collect Date: 05-FEB-24 14:35
Receive Date: 09-FEB-24
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	0.185	+/-0.587	1.09	3.00	pCi/L			JE1	02/23/24	1111	2568526	1
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		2.03	+/-0.764	0.653	1.00	pCi/L			LXP1	03/05/24	0948	2571356	2

The following Analytical Methods were performed:

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

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			90.3	(15%-125%)

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

Column headers are defined as follows:

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

QC Summary

Report Date: March 6, 2024

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

Contact: Ms. Jeanette Gilmetti

Workorder: 654972

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gas Flow										
Batch 2568526										
QC1205650263 654136001 DUP										
Radium-228	U	0.712		1.52	pCi/L	72.3		(0% - 100%)	JE1	02/23/24 11:11
	Uncertainty	+/-1.28		+/-0.944						
QC1205650264 LCS										
Radium-228	72.0			71.4	pCi/L		99.2	(75%-125%)		02/23/24 11:11
	Uncertainty			+/-3.83						
QC1205650262 MB										
Radium-228			U	0.536	pCi/L					02/23/24 11:11
	Uncertainty			+/-0.599						
Rad Ra-226										
Batch 2571356										
QC1205655691 654972001 DUP										
Radium-226		2.11		1.74	pCi/L	19.2		(0% - 100%)	LXP1	03/05/24 10:05
	Uncertainty	+/-0.917		+/-0.865						
QC1205655693 LCS										
Radium-226	26.4			31.4	pCi/L		119	(75%-125%)		03/05/24 10:05
	Uncertainty			+/-3.08						
QC1205655690 MB										
Radium-226			U	0.318	pCi/L					03/05/24 10:05
	Uncertainty			+/-0.318						
QC1205655692 654972001 MS										
Radium-226	137	2.11		130	pCi/L		93.5	(75%-125%)		03/05/24 10:05
	Uncertainty	+/-0.917		+/-13.6						

Notes:

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

The Qualifiers in this report are defined as follows:

- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- J Value is estimated
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- H Analytical holding time was exceeded
- < Result is less than value reported

QC Summary

Workorder: 654972

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

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

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 #: 654972

Product: **GFPC, Ra228, Liquid**
Analytical Method: EPA 904.0/SW846 9320 Modified
Analytical Procedure: GL-RAD-A-063 REV# 5
Analytical Batch: 2568526

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

GEL Sample ID#	Client Sample Identification
654972001	AF90605
654972002	AF90606
654972003	AF90604
654972004	AF90596
654972005	AF90597
654972006	AF90599
654972007	AF90602
654972008	AF90634
654972009	AF90595
1205650262	Method Blank (MB)
1205650263	654136001(AF87814) Sample Duplicate (DUP)
1205650264	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.

Preparation Information

Homogenous Matrix
Sample 654972003 (AF90604) was non-homogenous matrix. yellow liquid 654972003 (AF90604).

Technical Information

Recounts
Sample 654972006 (AF90599) was recounted due to a suspected false positive. 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: 2571356

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

GEL Sample ID#	Client Sample Identification
654972001	AF90605
654972002	AF90606
654972003	AF90604
654972004	AF90596
654972005	AF90597
654972006	AF90599
654972007	AF90602
654972008	AF90634
654972009	AF90595
1205655690	Method Blank (MB)
1205655691	654972001(AF90605) Sample Duplicate (DUP)
1205655692	654972001(AF90605) Matrix Spike (MS)
1205655693	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.

Preparation Information

Aliquot Reduced
1205655691 (AF90605DUP), 1205655692 (AF90605MS) and 654972001 (AF90605) Aliquots were reduced due to limited 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.

654972

Contract Lab Info: GEL Contract Lab Due Date (Lab Only): 3 / 8 / 24 Send report to lcwillia@santeecooper.com & sherri.levy@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: LINDA.WILLIAMS@santeecooper.com

Date Results Needed by: ___/___/___

Project/Task/Unit #: 125915 / JM02.08.G01.3 / 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		
AF90665	WAP-10	2/7/24	1007	WJK BM	2	P	G	GW	2		1	1		
06	WAP-10 DUP		1012											
04	WAP-9		1112											
AF90596	WAP-2	2/6/24	1025	WJK BB										
97	WAP-2R		1119											
99	WAP-4		1245											
AF90602	WAP-7		0924											
34	WBW-1		1412											
AF90595	WAP-1	2/5/24	1435	WJK BB										

Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time
SHevy	35594	2/9/24	0951		GEL	2/9/24	0951
Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time
	GEL	2-9-24	1550		GEL	2/9/24	1550
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
- ☐ Naphthalene
- ☐ 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)

JR

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: SOOP	SDG/AR/COC/Work Order: 654972
Received By: CLM	Date Received: 2/9/24
Carrier and Tracking Number	Circle Applicable: FedEx Express FedEx Ground UPS Field Services Courier Other Cooler 1 - 19° (RCHEM) Cooler 3 - 4° Cooler 2 - 3° Cooler 4 - 0°

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 indicates radioactive [illegible]
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 indicates [illegible]
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: See above with coolers
4 Daily check performed and passed on IR temperature gun?	✓			Temperature Device Serial #: IR8-23 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) Times are different on sample ID's: AF91624-629
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):
and also on sample ID: AF91632 compared to the COC.
* 654978 + 654976

PM (or PMA) review: Initials MEA Date 2/12/24 Page 1 of 1

GL-CHL-SR-C01 Rev 7

List of current GEL Certifications as of 06 March 2024

State	Certification
Alabama	42200
Alaska	17-018
Alaska Drinking Water	SC00012
Arkansas	88-00651
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	KY90129
Kentucky Wastewater	KY90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2023019
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122024-05
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	2023-152
Pennsylvania NELAP	68-00485
Pucrto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-23-21
Utah NELAP	SC000122023-38
Vermont	VT87156
Virginia NELAP	460202
Washington	C780

GEL Laboratories LLC
a member of The GEL Group INC

2040 Savage Road | Charleston, SC 29407
843.556.8171
gel.com

March 13, 2024

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

Re: ABS Lab Analytical
Work Order: 655802

Dear Ms. Gilmetti:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on February 16, 2024. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

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,

Max Gloth for
Julie Robinson
Project Manager

Purchase Order: 125915/JM02.08.G01.1/36500
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: 655802 GEL Work Order: 655802

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 

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

Certificate of Analysis

Report Date: March 13, 2024

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:	AF90636	Project:	SOOP00119
Sample ID:	655802001	Client ID:	SOOP001
Matrix:	GW		
Collect Date:	13-FEB-24 10:13		
Receive Date:	16-FEB-24		
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		1.51	+/-0.822	1.16	3.00	pCi/L			JE1	03/08/24	0946	2572476	1
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		1.47	+/-0.594	0.456	1.00	pCi/L			MJ2	03/13/24	0753	2571365	2

The following Analytical Methods were performed:

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

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			91.5	(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: March 13, 2024

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:	AF90641	Project:	SOOP00119
Sample ID:	655802002	Client ID:	SOOP001
Matrix:	GW		
Collect Date:	12-FEB-24 14:05		
Receive Date:	16-FEB-24		
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	-0.125	+/-0.626	1.26	3.00	pCi/L			JE1	03/08/24	0946	2572476	1
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		0.548	+/-0.327	0.279	1.00	pCi/L			MJ2	03/13/24	0753	2571365	2

The following Analytical Methods were performed:

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

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			85.7	(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 13, 2024

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:	AF90620	Project:	SOOP00119
Sample ID:	655802003	Client ID:	SOOP001
Matrix:	GW		
Collect Date:	12-FEB-24 12:45		
Receive Date:	16-FEB-24		
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	0.211	+/-0.607	1.12	3.00	pCi/L			JE1	03/08/24	0946	2572476	1
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		0.591	+/-0.416	0.528	1.00	pCi/L			MJ2	03/13/24	0753	2571365	2

The following Analytical Methods were performed:

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

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			93.1	(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

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Certificate of Analysis

Report Date: March 13, 2024

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:	AF90644	Project:	SOOP00119
Sample ID:	655802004	Client ID:	SOOP001
Matrix:	GW		
Collect Date:	08-FEB-24 09:48		
Receive Date:	16-FEB-24		
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	0.781	+/-0.759	1.24	3.00	pCi/L			JE1	03/08/24	0946	2572476	1
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	0.169	+/-0.241	0.421	1.00	pCi/L			MJ2	03/13/24	0753	2571365	2

The following Analytical Methods were performed:

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

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			84.9	(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 13, 2024

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:	AF90645	Project:	SOOP00119
Sample ID:	655802005	Client ID:	SOOP001
Matrix:	GW		
Collect Date:	08-FEB-24 09:53		
Receive Date:	16-FEB-24		
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	0.515	+/-0.562	0.927	3.00	pCi/L			JE1	03/08/24	0946	2572476	1
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		0.503	+/-0.356	0.438	1.00	pCi/L			MJ2	03/13/24	0753	2571365	2

The following Analytical Methods were performed:

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

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			91.8	(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: March 13, 2024

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:	AF90621	Project:	SOOP00119
Sample ID:	655802006	Client ID:	SOOP001
Matrix:	GW		
Collect Date:	08-FEB-24 11:05		
Receive Date:	16-FEB-24		
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		1.78	+/-0.945	1.35	3.00	pCi/L			JE1	03/08/24	0946	2572476	1
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		0.922	+/-0.428	0.291	1.00	pCi/L			MJ2	03/13/24	0753	2571365	2

The following Analytical Methods were performed:

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

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			88.5	(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 13, 2024

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:	AF90638	Project:	SOOP00119
Sample ID:	655802007	Client ID:	SOOP001
Matrix:	GW		
Collect Date:	14-FEB-24 10:10		
Receive Date:	16-FEB-24		
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	0.639	+/-1.00	1.73	3.00	pCi/L			JE1	03/08/24	0947	2572476	1
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		1.33	+/-0.579	0.530	1.00	pCi/L			MJ2	03/13/24	0753	2571365	2

The following Analytical Methods were performed:

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

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			80.2	(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

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Certificate of Analysis

Report Date: March 13, 2024

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:	AF90639	Project:	SOOP00119
Sample ID:	655802008	Client ID:	SOOP001
Matrix:	GW		
Collect Date:	14-FEB-24 11:05		
Receive Date:	16-FEB-24		
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	0.184	+/-0.870	1.60	3.00	pCi/L			JE1	03/08/24	0947	2572476	1
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		0.491	+/-0.345	0.338	1.00	pCi/L			MJ2	03/13/24	0753	2571365	2

The following Analytical Methods were performed:

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

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			88.1	(15%-125%)

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

Column headers are defined as follows:

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

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Certificate of Analysis

Report Date: March 13, 2024

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:	AF90640	Project:	SOOP00119
Sample ID:	655802009	Client ID:	SOOP001
Matrix:	GW		
Collect Date:	14-FEB-24 11:10		
Receive Date:	16-FEB-24		
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	1.24	+/-1.04	1.67	3.00	pCi/L			JE1	03/08/24	0947	2572476	1
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		0.528	+/-0.374	0.441	1.00	pCi/L			MJ2	03/13/24	0826	2571365	2

The following Analytical Methods were performed:

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

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			85.3	(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: March 13, 2024

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:	AF90635	Project:	SOOP00119
Sample ID:	655802010	Client ID:	SOOP001
Matrix:	GW		
Collect Date:	14-FEB-24 12:19		
Receive Date:	16-FEB-24		
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	0.394	+/-0.951	1.70	3.00	pCi/L			JE1	03/08/24	0947	2572476	1
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		1.24	+/-0.502	0.386	1.00	pCi/L			MJ2	03/13/24	0826	2571365	2

The following Analytical Methods were performed:

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

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			78.3	(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
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QC Summary

Report Date: March 13, 2024

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

Contact: **Ms. Jeanette Gilmetti**

Workorder: **655802**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gas Flow										
Batch 2572476										
QC1205657971 655802001 DUP										
Radium-228		1.51		1.40	pCi/L	7.46		(0% - 100%)	JE1	03/08/24 09:46
	Uncertainty	+/-0.822		+/-0.907						
QC1205657972 LCS										
Radium-228	73.2			66.6	pCi/L		91	(75%-125%)		03/08/24 09:46
	Uncertainty			+/-4.09						
QC1205657970 MB										
Radium-228			U	0.608	pCi/L					03/08/24 09:46
	Uncertainty			+/-0.873						
Rad Ra-226										
Batch 2571365										
QC1205655728 655802001 DUP										
Radium-226		1.47		1.29	pCi/L	12.8		(0% - 100%)	MJ2	03/13/24 09:02
	Uncertainty	+/-0.594		+/-0.569						
QC1205655730 LCS										
Radium-226	26.9			25.2	pCi/L		93.7	(75%-125%)		03/13/24 09:02
	Uncertainty			+/-2.32						
QC1205655727 MB										
Radium-226			U	0.112	pCi/L					03/13/24 09:02
	Uncertainty			+/-0.191						
QC1205655729 655802001 MS										
Radium-226	135	1.47		110	pCi/L		80.5	(75%-125%)		03/13/24 09:02
	Uncertainty	+/-0.594		+/-9.77						

Notes:

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

The Qualifiers in this report are defined as follows:

- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- J Value is estimated
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- H Analytical holding time was exceeded
- < Result is less than value reported

QC Summary

Workorder: **655802**

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

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

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 #: 655802

Product: **GFPC, Ra228, Liquid**
Analytical Method: EPA 904.0/SW846 9320 Modified
Analytical Procedure: GL-RAD-A-063 REV# 5
Analytical Batch: 2572476

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

GEL Sample ID#	Client Sample Identification
655802001	AF90636
655802002	AF90641
655802003	AF90620
655802004	AF90644
655802005	AF90645
655802006	AF90621
655802007	AF90638
655802008	AF90639
655802009	AF90640
655802010	AF90635
1205657970	Method Blank (MB)
1205657971	655802001(AF90636) Sample Duplicate (DUP)
1205657972	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: 2571365

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

GEL Sample ID#	Client Sample Identification
655802001	AF90636
655802002	AF90641
655802003	AF90620
655802004	AF90644
655802005	AF90645
655802006	AF90621
655802007	AF90638
655802008	AF90639

655802009	AF90640
655802010	AF90635
1205655727	Method Blank (MB)
1205655728	655802001(AF90636) Sample Duplicate (DUP)
1205655729	655802001(AF90636) Matrix Spike (MS)
1205655730	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, 1205655729 (AF90636MS), 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.

655802

Contract Lab Info: GEL Contract Lab Due Date (Lab Only): 3 / 15 / 24 Send report to lcwillia@santeecooper.com & sherri.levy@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: LINDA.WILLIAMS@santeecooper.com

Date Results Needed by: ___/___/___

Project/Task/Unit #: 125915 / JM02.08.E01.1 / 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		
AF90636	WLF-A1-1	2/13/24	1013	WJTK BM	2	P	G	GW	2		X	X		
AF90641	WLF-A1-5	2/12/24	1405	〃	〃	〃	〃	〃	〃		〃	〃		
20	WAP-18	〃	1245	〃	〃	〃	〃	〃	〃		〃	〃		
44	WLF-A2-6	2/8/24	0948	〃	〃	〃	〃	〃	〃		〃	〃		
45	WLF-A2-6 DUP	〃	0953	〃	〃	〃	〃	〃	〃		〃	〃		
21	WAP-19	〃	1105	〃	〃	〃	〃	〃	〃		〃	〃		
AF90638	WLF-A1-3	2/14/24	1010	〃	〃	〃	〃	〃	〃		〃	〃		
39	WLF-A1-4	〃	1105	〃	〃	〃	〃	〃	〃		〃	〃		
40	WLF-A1-4 DUP	〃	1110	〃	〃	〃	〃	〃	〃		〃	〃		
35	WBW-A1-1	〃	1219	〃	〃	〃	〃	〃	〃		〃	〃		

Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time
[signature]	36851	2/16/24	0925	[signature]	GEL	2/16/24	0925
Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time
[signature]	GEL	2/16/24	1450	[signature]	GEL	2/16/24	1450
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
☐ Naphthalene
☐ 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: 655802
Received By: QG	Date Received: 2/16/24
Carrier and Tracking Number	Circle Applicable: FedEx Express FedEx Ground UPS Field Services Courier Other

n/a

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: 12°C
4	Daily check performed and passed on IR temperature gun?	✓			Temperature Device Serial #: IR1-23 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?	✓			client and 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 MCR Date 2/19/24 Page 1 of 1

List of current GEL Certifications as of 13 March 2024

State	Certification
Alabama	42200
Alaska	17-018
Alaska Drinking Water	SC00012
Arkansas	88-00651
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	KY90129
Kentucky Wastewater	KY90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2023019
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122024-05
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	2023-152
Pennsylvania NELAP	68-00485
Pucrto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-23-21
Utah NELAP	SC000122023-38
Vermont	VT87156
Virginia NELAP	460202
Washington	C780

GEL Laboratories LLC
a member of The GEL Group INC

2040 Savage Road | Charleston, SC 29407
843.556.8171
gel.com

March 13, 2024

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

Re: ABS Lab Analytical
Work Order: 655804

Dear Ms. Gilmetti:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on February 16, 2024. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

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,

Max Gloth for
Julie Robinson
Project Manager

Purchase Order: 125915/JM02.09.G01.1/36500
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: 655804 GEL Work Order: 655804

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

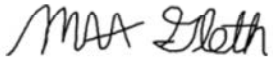
** Analyte is a surrogate compound

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 

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

Certificate of Analysis

Report Date: March 13, 2024

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:	AF90624	Project:	SOOP00119
Sample ID:	655804001	Client ID:	SOOP001
Matrix:	GW		
Collect Date:	12-FEB-24 11:47		
Receive Date:	16-FEB-24		
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	-0.535	+/-0.788	1.64	3.00	pCi/L			JE1	03/08/24	1059	2572465	1
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		1.35	+/-0.542	0.322	1.00	pCi/L			MJ2	03/13/24	0826	2571365	2

The following Analytical Methods were performed:

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

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			82.3	(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 13, 2024

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:	AF90608	Project:	SOOP00119
Sample ID:	655804002	Client ID:	SOOP001
Matrix:	GW		
Collect Date:	14-FEB-24 14:04		
Receive Date:	16-FEB-24		
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	1.32	+/-0.890	1.35	3.00	pCi/L			JE1	03/08/24	1100	2572465	1
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		0.578	+/-0.333	0.340	1.00	pCi/L			MJ2	03/13/24	0826	2571365	2

The following Analytical Methods were performed:

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

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			81.9	(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 13, 2024

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:	AF90609	Project:	SOOP00119
Sample ID:	655804003	Client ID:	SOOP001
Matrix:	GW		
Collect Date:	14-FEB-24 14:09		
Receive Date:	16-FEB-24		
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	1.10	+/-1.01	1.63	3.00	pCi/L			JE1	03/08/24	1100	2572465	1
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	0.320	+/-0.323	0.506	1.00	pCi/L			MJ2	03/13/24	0826	2571365	2

The following Analytical Methods were performed:

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

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			64.3	(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: March 13, 2024

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:	AF90642	Project:	SOOP00119
Sample ID:	655804004	Client ID:	SOOP001
Matrix:	GW		
Collect Date:	13-FEB-24 11:35		
Receive Date:	16-FEB-24		
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	1.83	+/-1.29	2.03	3.00	pCi/L			JE1	03/12/24	1000	2572465	1
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		1.03	+/-0.460	0.429	1.00	pCi/L			MJ2	03/13/24	0826	2571365	2

The following Analytical Methods were performed:

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

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			71.8	(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: March 13, 2024

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:	AF90643	Project:	SOOP00119
Sample ID:	655804005	Client ID:	SOOP001
Matrix:	GW		
Collect Date:	13-FEB-24 12:41		
Receive Date:	16-FEB-24		
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		4.91	+/-1.51	1.89	3.00	pCi/L			JE1	03/12/24	1000	2572465	1
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226	U	0.0278	+/-0.261	0.585	1.00	pCi/L			MJ2	03/13/24	0826	2571365	2

The following Analytical Methods were performed:

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

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			72.6	(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

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Certificate of Analysis

Report Date: March 13, 2024

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:	AF90618	Project:	SOOP00119
Sample ID:	655804006	Client ID:	SOOP001
Matrix:	GW		
Collect Date:	13-FEB-24 13:48		
Receive Date:	16-FEB-24		
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	+/-1.11	1.79	3.00	pCi/L			JE1	03/08/24	1100	2572465	1
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		0.899	+/-0.461	0.395	1.00	pCi/L			MJ2	03/13/24	0826	2571365	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	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
DL: Detection Limit
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Lc/LC: Critical Level
PF: Prep Factor
RL: Reporting Limit
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 13, 2024

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:	AF90619	Project:	SOOP00119
Sample ID:	655804007	Client ID:	SOOP001
Matrix:	GW		
Collect Date:	13-FEB-24 13:53		
Receive Date:	16-FEB-24		
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	0.681	+/-0.716	1.18	3.00	pCi/L			JE1	03/08/24	1100	2572465	1
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		0.878	+/-0.468	0.450	1.00	pCi/L			MJ2	03/13/24	0902	2571365	2

The following Analytical Methods were performed:

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

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			85.8	(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 13, 2024

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:	AF90598	Project:	SOOP00119
Sample ID:	655804008	Client ID:	SOOP001
Matrix:	GW		
Collect Date:	08-FEB-24 14:39		
Receive Date:	16-FEB-24		
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		1.44	+/-0.813	1.17	3.00	pCi/L			JE1	03/08/24	1100	2572465	1
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		0.879	+/-0.454	0.471	1.00	pCi/L			MJ2	03/13/24	0902	2571365	2

The following Analytical Methods were performed:

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

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			90.8	(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 13, 2024

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:	AF90637	Project:	SOOP00119
Sample ID:	655804009	Client ID:	SOOP001
Matrix:	GW		
Collect Date:	08-FEB-24 13:20		
Receive Date:	16-FEB-24		
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		1.26	+/-0.783	1.14	3.00	pCi/L			JE1	03/08/24	1100	2572465	1
Rad Radium-226													
Lucas Cell, Ra226, Liquid "As Received"													
Radium-226		2.02	+/-0.672	0.333	1.00	pCi/L			MJ2	03/13/24	0902	2571365	2

The following Analytical Methods were performed:

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

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			86.9	(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

QC Summary

Report Date: March 13, 2024

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

Contact: Ms. Jeanette Gilmetti

Workorder: 655804

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gas Flow										
Batch 2572465										
QC1205657933 655804001 DUP										
Radium-228	U	-0.535	U	0.00679	pCi/L	N/A		N/A	JE1	03/08/24 11:00
	Uncertainty	+/-0.788		+/-0.454						
QC1205657934 LCS										
Radium-228	73.0			63.6	pCi/L		87.1	(75%-125%)		03/08/24 11:00
	Uncertainty			+/-3.85						
QC1205657932 MB										
Radium-228			U	1.35	pCi/L					03/08/24 12:18
	Uncertainty			+/-1.28						
Rad Ra-226										
Batch 2571365										
QC1205655728 655802001 DUP										
Radium-226		1.47		1.29	pCi/L	12.8		(0% - 100%)	MJ2	03/13/24 09:02
	Uncertainty	+/-0.594		+/-0.569						
QC1205655730 LCS										
Radium-226	26.9			25.2	pCi/L		93.7	(75%-125%)		03/13/24 09:02
	Uncertainty			+/-2.32						
QC1205655727 MB										
Radium-226			U	0.112	pCi/L					03/13/24 09:02
	Uncertainty			+/-0.191						
QC1205655729 655802001 MS										
Radium-226	135	1.47		110	pCi/L		80.5	(75%-125%)		03/13/24 09:02
	Uncertainty	+/-0.594		+/-9.77						

Notes:

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

The Qualifiers in this report are defined as follows:

- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- J Value is estimated
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- H Analytical holding time was exceeded
- < Result is less than value reported

QC Summary

Workorder: **655804**

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

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

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 #: 655804

Product: **GFPC, Ra228, Liquid**
Analytical Method: EPA 904.0/SW846 9320 Modified
Analytical Procedure: GL-RAD-A-063 REV# 5
Analytical Batch: 2572465

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

GEL Sample ID#	Client Sample Identification
655804001	AF90624
655804002	AF90608
655804003	AF90609
655804004	AF90642
655804005	AF90643
655804006	AF90618
655804007	AF90619
655804008	AF90598
655804009	AF90637
1205657932	Method Blank (MB)
1205657933	655804001(AF90624) Sample Duplicate (DUP)
1205657934	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 1205657932 (MB) was recounted due to a suspected blank false positive. The recount is reported. Samples 655804004 (AF90642) and 655804005 (AF90643) were re-eluted and recounted to verify sample results. The recounts are reported.

Product: **Lucas Cell, Ra226, Liquid**
Analytical Method: EPA 903.1 Modified
Analytical Procedure: GL-RAD-A-008 REV# 15
Analytical Batch: 2571365

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

GEL Sample ID#	Client Sample Identification
655804001	AF90624
655804002	AF90608

655804003	AF90609
655804004	AF90642
655804005	AF90643
655804006	AF90618
655804007	AF90619
655804008	AF90598
655804009	AF90637
1205655727	Method Blank (MB)
1205655728	655802001(AF90636) Sample Duplicate (DUP)
1205655729	655802001(AF90636) Matrix Spike (MS)
1205655730	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, 1205655729 (AF90636MS), 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.

655804

Contract Lab Info: GEL Contract Lab Due Date (Lab Only): 3 / 15 / 24 Send report to lcwillia@santeecooper.com & sherri.levy@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: LINDA.WILLIAMS@santeecooper.com

Date Results Needed by: ___/___/___

Project/Task/Unit #: 125915 / JM02.09.G001.1 / 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		
AF90624	WAP-22	2/12/24	1147	WJK BM	2	P	G	GW	2		X	X		
AF90608	WAP-12	2/14/24	1404											
AF90609	WAP-12 DUP	1	1409											
AF90642	WLF-A2-1	2/13/24	1135											
43	WLF-A2-2		1241											
18	WAP-17		1348											
19	WAP-17 DUP		1353											
AF90598	WAP-3	2/8/24	1439											
AF90637	WLF-A1-2	2/8/24	1320											

Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time
	36851	2/16/24	0925		GEL	2/16/24	0925
Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time
		2/16/24	1550		GEL	2/16/24	1550
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
☐ Naphthalene
☐ 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: 655804
Received By: QG	Date Received: 2/16/24
Carrier and Tracking Number	Circle Applicable: FedEx Express FedEx Ground UPS Field Services Courier Other

n/a

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: 12°C
4	Daily check performed and passed on IR temperature gun?	✓			Temperature Device Serial #: IR1-23 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?	✓			client and 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 MCD Date 2/19/24 Page 1 of 1

List of current GEL Certifications as of 13 March 2024

State	Certification
Alabama	42200
Alaska	17-018
Alaska Drinking Water	SC00012
Arkansas	88-00651
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	KY90129
Kentucky Wastewater	KY90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2023019
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122024-05
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	2023-152
Pennsylvania NELAP	68-00485
Pucrto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-23-21
Utah NELAP	SC000122023-38
Vermont	VT87156
Virginia NELAP	460202
Washington	C780

eurofins | Environment Testing

1 2 3 4 5 6 7 8 9 10 11 12 13 14

ANALYTICAL REPORT

PREPARED FOR

Attn: Linda Williams
South Carolina Public Service Authority
Santee Cooper
PO BOX 2946101
Moncks Corner, South Carolina 29461-2901

Generated 2/21/2024 10:43:07 AM

JOB DESCRIPTION

125915/JM02.08.G01.1/26500

JOB NUMBER

680-246792-1

Eurofins Savannah
5102 LaRoche Avenue
Savannah GA 31404

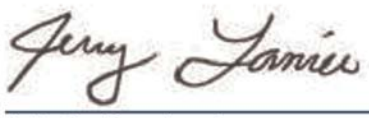
See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Southeast, LLC Project Manager.

Authorization



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2/21/2024 10:43:07 AM

Authorized for release by
Jerry Lanier, Project Manager I
Jerry.Lanier@et.eurofinsus.com
(912)250-0281

Table of Contents

Job ID: 680-246792-1 — Eurofins Savannah

Job Narrative
680-246792-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 2/15/2024 10:30 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 14.8°C.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.1/26500

Job ID: 680-246792-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-246792-1	AF90644	GW	02/08/24 09:48	02/15/24 10:30
680-246792-2	AF90645	GW	02/08/24 09:53	02/15/24 10:30
680-246792-3	AF90621	GW	02/08/24 11:05	02/15/24 10:30
680-246792-4	AF90637	GW	02/08/24 13:20	02/15/24 10:30
680-246792-5	AF90602	GW	02/06/24 09:24	02/15/24 10:30
680-246792-6	AF90634	GW	02/06/24 14:12	02/15/24 10:30
680-246792-7	AF90595	GW	02/05/24 14:35	02/15/24 10:30

Method Summary

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.1/26500

Job ID: 680-246792-1

Method	Method Description	Protocol	Laboratory
7470A	Mercury (CVAA)	SW846	EET SAV
7470A	Preparation, Mercury	SW846	EET SAV

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET SAV = Eurofins Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Definitions/Glossary

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.1/26500

Job ID: 680-246792-1

Qualifiers

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Detection Summary

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.1/26500

Job ID: 680-246792-1

Client Sample ID: AF90644 — Lab Sample ID: 680-246792-1

No Detections.

Client Sample ID: AF90645 — Lab Sample ID: 680-246792-2

No Detections.

Client Sample ID: AF90621 — Lab Sample ID: 680-246792-3

No Detections.

Client Sample ID: AF90637 — Lab Sample ID: 680-246792-4

No Detections.

Client Sample ID: AF90602 — Lab Sample ID: 680-246792-5

No Detections.

Client Sample ID: AF90634 — Lab Sample ID: 680-246792-6

No Detections.

Client Sample ID: AF90595 — Lab Sample ID: 680-246792-7

No Detections.

This Detection Summary does not include radiochemical test results.

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.1/26500

Job ID: 680-246792-1

Client Sample ID: AF90644
Date Collected: 02/08/24 09:48
Date Received: 02/15/24 10:30

Lab Sample ID: 680-246792-1
Matrix: GW

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.200	U	0.200		ug/L		02/20/24 10:58	02/20/24 16:08	1

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.1/26500

Job ID: 680-246792-1

Client Sample ID: AF90645
Date Collected: 02/08/24 09:53
Date Received: 02/15/24 10:30

Lab Sample ID: 680-246792-2
Matrix: GW

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.200	U	0.200		ug/L		02/20/24 10:58	02/20/24 16:16	1

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.1/26500

Job ID: 680-246792-1

Client Sample ID: AF90621
Date Collected: 02/08/24 11:05
Date Received: 02/15/24 10:30

Lab Sample ID: 680-246792-3
Matrix: GW

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.200	U	0.200		ug/L		02/20/24 10:58	02/20/24 16:18	1

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.1/26500

Job ID: 680-246792-1

Client Sample ID: AF90637
Date Collected: 02/08/24 13:20
Date Received: 02/15/24 10:30

Lab Sample ID: 680-246792-4
Matrix: GW

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.200	U	0.200		ug/L		02/20/24 10:58	02/20/24 16:21	1

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.1/26500

Job ID: 680-246792-1

Client Sample ID: AF90602
Date Collected: 02/06/24 09:24
Date Received: 02/15/24 10:30

Lab Sample ID: 680-246792-5
Matrix: GW

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.200	U	0.200		ug/L		02/20/24 10:58	02/20/24 16:48	1

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.1/26500

Job ID: 680-246792-1

Client Sample ID: AF90634
Date Collected: 02/06/24 14:12
Date Received: 02/15/24 10:30

Lab Sample ID: 680-246792-6
Matrix: GW

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.200	U	0.200		ug/L		02/20/24 10:58	02/20/24 16:27	1

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.1/26500

Job ID: 680-246792-1

Client Sample ID: AF90595
Date Collected: 02/05/24 14:35
Date Received: 02/15/24 10:30

Lab Sample ID: 680-246792-7
Matrix: GW

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.200	U	0.200		ug/L		02/20/24 10:58	02/20/24 16:29	1

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.1/26500

Job ID: 680-246792-1

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 680-823551/1-A
Matrix: Water
Analysis Batch: 823745

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 823551

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.200	U	0.200		ug/L		02/20/24 10:58	02/20/24 15:49	1

Lab Sample ID: LCS 680-823551/2-A
Matrix: Water
Analysis Batch: 823745

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 823551

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			2.50	2.542		ug/L		102	80 - 120		

Lab Sample ID: 400-251111-H-1-C MS
Matrix: Water
Analysis Batch: 823745

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 823551

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.200	U	1.00	0.9942		ug/L		99	80 - 120		

Lab Sample ID: 400-251111-H-1-D MSD
Matrix: Water
Analysis Batch: 823745

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 823551

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.200	U	1.00	0.9929		ug/L		99	80 - 120	0	20

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.1/26500

Job ID: 680-246792-1

Metals

Prep Batch: 823551

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-246792-1	AF90644	Total/NA	GW	7470A	
680-246792-2	AF90645	Total/NA	GW	7470A	
680-246792-3	AF90621	Total/NA	GW	7470A	
680-246792-4	AF90637	Total/NA	GW	7470A	
680-246792-5	AF90602	Total/NA	GW	7470A	
680-246792-6	AF90634	Total/NA	GW	7470A	
680-246792-7	AF90595	Total/NA	GW	7470A	
MB 680-823551/1-A	Method Blank	Total/NA	Water	7470A	
LCS 680-823551/2-A	Lab Control Sample	Total/NA	Water	7470A	
400-251111-H-1-C MS	Matrix Spike	Total/NA	Water	7470A	
400-251111-H-1-D MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	

Analysis Batch: 823745

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-246792-1	AF90644	Total/NA	GW	7470A	823551
680-246792-2	AF90645	Total/NA	GW	7470A	823551
680-246792-3	AF90621	Total/NA	GW	7470A	823551
680-246792-4	AF90637	Total/NA	GW	7470A	823551
680-246792-5	AF90602	Total/NA	GW	7470A	823551
680-246792-6	AF90634	Total/NA	GW	7470A	823551
680-246792-7	AF90595	Total/NA	GW	7470A	823551
MB 680-823551/1-A	Method Blank	Total/NA	Water	7470A	823551
LCS 680-823551/2-A	Lab Control Sample	Total/NA	Water	7470A	823551
400-251111-H-1-C MS	Matrix Spike	Total/NA	Water	7470A	823551
400-251111-H-1-D MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	823551

Lab Chronicle

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.1/26500

Job ID: 680-246792-1

Client Sample ID: AF90644
Date Collected: 02/08/24 09:48
Date Received: 02/15/24 10:30

Lab Sample ID: 680-246792-1
Matrix: GW

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	7470A			823551	DW	EET SAV	02/20/24 10:58
Total/NA	Analysis	7470A		1	823745	DW	EET SAV	02/20/24 16:08

Client Sample ID: AF90645
Date Collected: 02/08/24 09:53
Date Received: 02/15/24 10:30

Lab Sample ID: 680-246792-2
Matrix: GW

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	7470A			823551	DW	EET SAV	02/20/24 10:58
Total/NA	Analysis	7470A		1	823745	DW	EET SAV	02/20/24 16:16

Client Sample ID: AF90621
Date Collected: 02/08/24 11:05
Date Received: 02/15/24 10:30

Lab Sample ID: 680-246792-3
Matrix: GW

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	7470A			823551	DW	EET SAV	02/20/24 10:58
Total/NA	Analysis	7470A		1	823745	DW	EET SAV	02/20/24 16:18

Client Sample ID: AF90637
Date Collected: 02/08/24 13:20
Date Received: 02/15/24 10:30

Lab Sample ID: 680-246792-4
Matrix: GW

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	7470A			823551	DW	EET SAV	02/20/24 10:58
Total/NA	Analysis	7470A		1	823745	DW	EET SAV	02/20/24 16:21

Client Sample ID: AF90602
Date Collected: 02/06/24 09:24
Date Received: 02/15/24 10:30

Lab Sample ID: 680-246792-5
Matrix: GW

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	7470A			823551	DW	EET SAV	02/20/24 10:58
Total/NA	Analysis	7470A		1	823745	DW	EET SAV	02/20/24 16:48

Client Sample ID: AF90634
Date Collected: 02/06/24 14:12
Date Received: 02/15/24 10:30

Lab Sample ID: 680-246792-6
Matrix: GW

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	7470A			823551	DW	EET SAV	02/20/24 10:58
Total/NA	Analysis	7470A		1	823745	DW	EET SAV	02/20/24 16:27

Lab Chronicle

Client: South Carolina Public Service Authority
Job ID: 680-246792-1
Project/Site: 125915/JM02.08.G01.1/26500

Client Sample ID: AF90595
Lab Sample ID: 680-246792-7
Date Collected: 02/05/24 14:35
Matrix: GW
Date Received: 02/15/24 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	7470A			823551	DW	EET SAV	02/20/24 10:58
Total/NA	Analysis	7470A		1	823745	DW	EET SAV	02/20/24 16:29

Laboratory References:

EET SAV = Eurofins Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Contract Lab Info: TA-SAV Contract Lab Due Date (Lab Only): 2/22/24 Send report to lcwillis@santeecooper.com & sherri.levy@santeecooper.com

2/21/2024

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: LINDA.WILLIAMS@santeecooper.com

Date Results Needed by: ___/___/___

Project/Task/Unit #: 125915 / JM02.08.G01.1 / 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	Hg			
AF90644	WLF-A2-6	2/8/24	0948	WJK BM	1	P	G	GW	2	7470 RL= 0.2 ug/L	X			
45	WLF-A2-6 DUP	"	0953	"	"	"	"	"	"		"			
21	WAP-19	"	1105	"	"	"	"	"	"		"			
AF90637	WLF-A1-2	"	1320	"	"	"	"	"	"		"			
AF90602	WAP-7	2/6/24	0924	WJK BB	"	"	"	"	"		"			
34	WBW-1	"	1412	"	"	"	"	"	"		"			
AF90595	WAP-1	2/5/24	1435	"	"	"	"	"	"		"			

680-246792 Chain of Custody

Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time
Sherry	35594	2/14/24	1000				
Relinquished by:	**Employee#**	**Date**	**Time**	**Received by:**	**Employee #**	**Date**	**Time**
Relinquished by:	**Employee#**	**Date**	**Time**	**Received by:**	**Employee #**	**Date**	**Time**
				[illegible]		2/15/24	1030

Sample Receiving (Internal Use Only)
TEMP (°C):_____ Initial:_____
Correct pH: Yes No
Preservative Lot#: 14.8/14.8
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
☐ Naphthalene
☐ 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)

Login Sample Receipt Checklist

Client: South Carolina Public Service Authority

Job Number: 680-246792-1

Login Number: 246792

List Source: Eurofins Savannah

List Number: 1

Creator: Munro, Caroline

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	False	Thermal preservation not required.
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Accreditation/Certification Summary

Client: South Carolina Public Service Authority
Job ID: 680-246792-1
Project/Site: 125915/JM02.08.G01.1/26500

Laboratory: Eurofins Savannah

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
South Carolina	State	98001	06-30-24

eurofins | Environment Testing

1 2 3 4 5 6 7 8 9 10 11 12 13 14

ANALYTICAL REPORT

PREPARED FOR

Attn: Linda Williams
South Carolina Public Service Authority
Santee Cooper
PO BOX 2946101
Moncks Corner, South Carolina 29461-2901

Generated 2/22/2024 1:44:35 PM

JOB DESCRIPTION

125915/JM02.08.G01.3/36500

JOB NUMBER

680-246795-1

Eurofins Savannah
5102 LaRoche Avenue
Savannah GA 31404

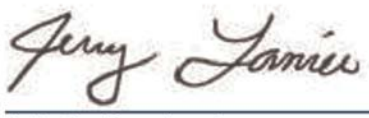
See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Southeast, LLC Project Manager.

Authorization



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Authorized for release by
Jerry Lanier, Project Manager I
Jerry.Lanier@et.eurofinsus.com
(912)250-0281

Table of Contents

Job ID: 680-246795-1 — Eurofins Savannah

Job Narrative
680-246795-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 2/15/2024 10:30 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 14.8°C.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.3/36500

Job ID: 680-246795-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-246795-1	AF90598	GW	02/08/24 14:39	02/15/24 10:30
680-246795-2	AF90605	GW	02/07/24 10:07	02/15/24 10:30
680-246795-3	AF90606	GW	02/07/24 10:12	02/15/24 10:30
680-246795-4	AF90604	GW	02/07/24 11:12	02/15/24 10:30
680-246795-5	AF90596	GW	02/06/24 10:25	02/15/24 10:30
680-246795-6	AF90597	GW	02/06/24 11:19	02/15/24 10:30
680-246795-7	AF90599	GW	02/06/24 12:45	02/15/24 10:30

Method Summary

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.3/36500

Job ID: 680-246795-1

Method	Method Description	Protocol	Laboratory
7470A	Mercury (CVAA)	SW846	EET SAV
7470A	Preparation, Mercury	SW846	EET SAV

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET SAV = Eurofins Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.3/36500

Job ID: 680-246795-1

Qualifiers

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Detection Summary

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.3/36500

Job ID: 680-246795-1

Client Sample ID: AF90598 — Lab Sample ID: 680-246795-1

No Detections.

Client Sample ID: AF90605 — Lab Sample ID: 680-246795-2

No Detections.

Client Sample ID: AF90606 — Lab Sample ID: 680-246795-3

No Detections.

Client Sample ID: AF90604 — Lab Sample ID: 680-246795-4

No Detections.

Client Sample ID: AF90596 — Lab Sample ID: 680-246795-5

No Detections.

Client Sample ID: AF90597 — Lab Sample ID: 680-246795-6

No Detections.

Client Sample ID: AF90599 — Lab Sample ID: 680-246795-7

No Detections.

This Detection Summary does not include radiochemical test results.

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.3/36500

Job ID: 680-246795-1

Client Sample ID: AF90598
Date Collected: 02/08/24 14:39
Date Received: 02/15/24 10:30

Lab Sample ID: 680-246795-1
Matrix: GW

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.200	U	0.200		ug/L		02/20/24 10:58	02/20/24 16:32	1

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.3/36500

Job ID: 680-246795-1

Client Sample ID: AF90605
Date Collected: 02/07/24 10:07
Date Received: 02/15/24 10:30

Lab Sample ID: 680-246795-2
Matrix: GW

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.200	U	0.200		ug/L		02/20/24 10:58	02/20/24 16:35	1

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.3/36500

Job ID: 680-246795-1

Client Sample ID: AF90606
Date Collected: 02/07/24 10:12
Date Received: 02/15/24 10:30

Lab Sample ID: 680-246795-3
Matrix: GW

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.200	U	0.200		ug/L		02/20/24 10:58	02/20/24 16:37	1

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.3/36500

Job ID: 680-246795-1

Client Sample ID: AF90604
Date Collected: 02/07/24 11:12
Date Received: 02/15/24 10:30

Lab Sample ID: 680-246795-4
Matrix: GW

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.200	U	0.200		ug/L		02/20/24 10:58	02/20/24 16:40	1

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.3/36500

Job ID: 680-246795-1

Client Sample ID: AF90596
Date Collected: 02/06/24 10:25
Date Received: 02/15/24 10:30

Lab Sample ID: 680-246795-5
Matrix: GW

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.200	U	0.200		ug/L		02/20/24 10:58	02/20/24 16:24	1

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.3/36500

Job ID: 680-246795-1

Client Sample ID: AF90597
Date Collected: 02/06/24 11:19
Date Received: 02/15/24 10:30

Lab Sample ID: 680-246795-6
Matrix: GW

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.200	U	0.200		ug/L		02/20/24 10:58	02/20/24 16:51	1

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.3/36500

Job ID: 680-246795-1

Client Sample ID: AF90599
Date Collected: 02/06/24 12:45
Date Received: 02/15/24 10:30

Lab Sample ID: 680-246795-7
Matrix: GW

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.200	U	0.200		ug/L		02/20/24 10:58	02/20/24 16:53	1

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 680-823551/1-A
Matrix: Water
Analysis Batch: 823745

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 823551

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.200	U	0.200		ug/L		02/20/24 10:58	02/20/24 15:49	1

Lab Sample ID: LCS 680-823551/2-A
Matrix: Water
Analysis Batch: 823745

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 823551

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			2.50	2.542		ug/L		102	80 - 120		

Lab Sample ID: 400-251111-H-1-C MS
Matrix: Water
Analysis Batch: 823745

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 823551

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.200	U	1.00	0.9942		ug/L		99	80 - 120		

Lab Sample ID: 400-251111-H-1-D MSD
Matrix: Water
Analysis Batch: 823745

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 823551

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.200	U	1.00	0.9929		ug/L		99	80 - 120	0	20

Metals

Prep Batch: 823551

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-246795-1	AF90598	Total/NA	GW	7470A	
680-246795-2	AF90605	Total/NA	GW	7470A	
680-246795-3	AF90606	Total/NA	GW	7470A	
680-246795-4	AF90604	Total/NA	GW	7470A	
680-246795-5	AF90596	Total/NA	GW	7470A	
680-246795-6	AF90597	Total/NA	GW	7470A	
680-246795-7	AF90599	Total/NA	GW	7470A	
MB 680-823551/1-A	Method Blank	Total/NA	Water	7470A	
LCS 680-823551/2-A	Lab Control Sample	Total/NA	Water	7470A	
400-251111-H-1-C MS	Matrix Spike	Total/NA	Water	7470A	
400-251111-H-1-D MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	

Analysis Batch: 823745

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-246795-1	AF90598	Total/NA	GW	7470A	823551
680-246795-2	AF90605	Total/NA	GW	7470A	823551
680-246795-3	AF90606	Total/NA	GW	7470A	823551
680-246795-4	AF90604	Total/NA	GW	7470A	823551
680-246795-5	AF90596	Total/NA	GW	7470A	823551
680-246795-6	AF90597	Total/NA	GW	7470A	823551
680-246795-7	AF90599	Total/NA	GW	7470A	823551
MB 680-823551/1-A	Method Blank	Total/NA	Water	7470A	823551
LCS 680-823551/2-A	Lab Control Sample	Total/NA	Water	7470A	823551
400-251111-H-1-C MS	Matrix Spike	Total/NA	Water	7470A	823551
400-251111-H-1-D MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	823551

Lab Chronicle

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.3/36500

Job ID: 680-246795-1

Client Sample ID: AF90598
Date Collected: 02/08/24 14:39
Date Received: 02/15/24 10:30

Lab Sample ID: 680-246795-1
Matrix: GW

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	7470A			823551	DW	EET SAV	02/20/24 10:58
Total/NA	Analysis	7470A		1	823745	DW	EET SAV	02/20/24 16:32

Client Sample ID: AF90605
Date Collected: 02/07/24 10:07
Date Received: 02/15/24 10:30

Lab Sample ID: 680-246795-2
Matrix: GW

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	7470A			823551	DW	EET SAV	02/20/24 10:58
Total/NA	Analysis	7470A		1	823745	DW	EET SAV	02/20/24 16:35

Client Sample ID: AF90606
Date Collected: 02/07/24 10:12
Date Received: 02/15/24 10:30

Lab Sample ID: 680-246795-3
Matrix: GW

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	7470A			823551	DW	EET SAV	02/20/24 10:58
Total/NA	Analysis	7470A		1	823745	DW	EET SAV	02/20/24 16:37

Client Sample ID: AF90604
Date Collected: 02/07/24 11:12
Date Received: 02/15/24 10:30

Lab Sample ID: 680-246795-4
Matrix: GW

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	7470A			823551	DW	EET SAV	02/20/24 10:58
Total/NA	Analysis	7470A		1	823745	DW	EET SAV	02/20/24 16:40

Client Sample ID: AF90596
Date Collected: 02/06/24 10:25
Date Received: 02/15/24 10:30

Lab Sample ID: 680-246795-5
Matrix: GW

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	7470A			823551	DW	EET SAV	02/20/24 10:58
Total/NA	Analysis	7470A		1	823745	DW	EET SAV	02/20/24 16:24

Client Sample ID: AF90597
Date Collected: 02/06/24 11:19
Date Received: 02/15/24 10:30

Lab Sample ID: 680-246795-6
Matrix: GW

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	7470A			823551	DW	EET SAV	02/20/24 10:58
Total/NA	Analysis	7470A		1	823745	DW	EET SAV	02/20/24 16:51

Lab Chronicle

Client: South Carolina Public Service Authority
Job ID: 680-246795-1
Project/Site: 125915/JM02.08.G01.3/36500

Client Sample ID: AF90599
Lab Sample ID: 680-246795-7
Date Collected: 02/06/24 12:45
Matrix: GW
Date Received: 02/15/24 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	7470A			823551	DW	EET SAV	02/20/24 10:58
Total/NA	Analysis	7470A		1	823745	DW	EET SAV	02/20/24 16:53

Laboratory References:

EET SAV = Eurofins Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Contract Lab Info: TA-SAV Contract Lab Due Date (Lab Only): 2 / 22 / 24 Send report to lcwillia@santeecooper.com & sherri.levy@santeecooper.com

2/22/2024

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: LINDA.WILLIAMS@santeecooper.com

Date Results Needed by: ___/___/___

Project/Task/Unit #: 125915 / JM02.08.G01.3 / 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	Hg			
AF90598	WAP-3	2/8/24	1439	WJK BM	1	P	G	GW	2	7470 RL=0.2 µg/L	X			
AF90605	WAP-10	2/7/24	1007											
06	WAP-10 DUP		1012											
04	WAP-9		1112											
AF90596	WAP-2	2/6/24	1025	WJK BB										
97	WAP-2R		1119											
99	WAP-4		1245											

680-246795 Chain of Custody

Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time
SLevy	35594	2/14/24	1000				
Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time
Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time
						2/15/24	1030

Sample Receiving (Internal Use Only)
TEMP (°C):_____ Initial:_____
Correct pH: Yes No
Preservative Lot#:
14.8/14.8
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
☐ NO2
☐ Br
☐ NO3
☐ SO4

MISC.
☐ BTEX
☐ Naphthalene
☐ 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)

Login Sample Receipt Checklist

Client: South Carolina Public Service Authority

Job Number: 680-246795-1

Login Number: 246795

List Source: Eurofins Savannah

List Number: 1

Creator: Munro, Caroline

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	False	Thermal preservation not required.
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Accreditation/Certification Summary

Client: South Carolina Public Service Authority
Job ID: 680-246795-1
Project/Site: 125915/JM02.08.G01.3/36500

Laboratory: Eurofins Savannah

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
South Carolina	State	98001	06-30-24

eurofins | Environment Testing

1 2 3 4 5 6 7 8 9 10 11 12 13 14

ANALYTICAL REPORT

PREPARED FOR

Attn: Linda Williams
South Carolina Public Service Authority
Santee Cooper
PO BOX 2946101
Moncks Corner, South Carolina 29461-2901

Generated 2/27/2024 12:48:25 PM

JOB DESCRIPTION

125915/JM02.08.G01.1/36500

JOB NUMBER

680-246968-1

Eurofins Savannah
5102 LaRoche Avenue
Savannah GA 31404

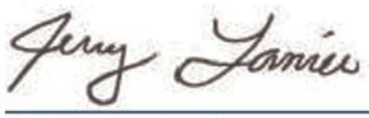
See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Southeast, LLC Project Manager.

Authorization



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Authorized for release by
Jerry Lanier, Project Manager I
Jerry.Lanier@et.eurofinsus.com
(912)250-0281

Table of Contents

Job ID: 680-246968-1 — Eurofins Savannah

Job Narrative
680-246968-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 2/21/2024 10:05 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 14.2°C.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.1/36500

Job ID: 680-246968-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-246968-1	AF90642	Water	02/13/24 11:35	02/21/24 10:05
680-246968-2	AF90643	Water	02/13/24 12:41	02/21/24 10:05
680-246968-3	AF90618	Water	02/13/24 13:48	02/21/24 10:05
680-246968-4	AF90619	Water	02/13/24 13:53	02/21/24 10:05
680-246968-5	AF90641	Water	02/12/24 14:05	02/21/24 10:05
680-246968-6	AF90636	Water	02/13/24 10:13	02/21/24 10:05
680-246968-7	AF90638	Water	02/14/24 10:10	02/21/24 10:05
680-246968-8	AF90639	Water	02/14/24 11:05	02/21/24 10:05
680-246968-9	AF90640	Water	02/14/24 11:10	02/21/24 10:05
680-246968-10	AF90635	Water	02/14/24 12:19	02/21/24 10:05
680-246968-11	AF90608	Water	02/14/24 14:04	02/21/24 10:05
680-246968-12	AF90609	Water	02/14/24 14:09	02/21/24 10:05
680-246968-13	AF90630	Water	02/15/24 11:25	02/21/24 10:05
680-246968-14	AF90623	Water	02/15/24 12:20	02/21/24 10:05
680-246968-15	AF90633	Water	02/15/24 14:12	02/21/24 10:05
680-246968-16	AF90625	Water	02/15/24 10:35	02/21/24 10:05
680-246968-17	AF90613	Water	02/15/24 13:31	02/21/24 10:05
680-246968-18	AF90620	Water	02/12/24 12:45	02/21/24 10:05
680-246968-19	AF90624	Water	02/12/24 11:47	02/21/24 10:05

Method Summary

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.1/36500

Job ID: 680-246968-1

Method	Method Description	Protocol	Laboratory
7470A	Mercury (CVAA)	SW846	EET SAV
7470A	Preparation, Mercury	SW846	EET SAV

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET SAV = Eurofins Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.1/36500

Job ID: 680-246968-1

Qualifiers

Metals

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Detection Summary

Client: South Carolina Public Service Authority
Job ID: 680-246968-1
Project/Site: 125915/JM02.08.G01.1/36500

Client Sample ID: AF90642 **Lab Sample ID: 680-246968-1**

No Detections.

Client Sample ID: AF90643 **Lab Sample ID: 680-246968-2**

No Detections.

Client Sample ID: AF90618 **Lab Sample ID: 680-246968-3**

No Detections.

Client Sample ID: AF90619 **Lab Sample ID: 680-246968-4**

No Detections.

Client Sample ID: AF90641 **Lab Sample ID: 680-246968-5**

No Detections.

Client Sample ID: AF90636 **Lab Sample ID: 680-246968-6**

No Detections.

Client Sample ID: AF90638 **Lab Sample ID: 680-246968-7**

No Detections.

Client Sample ID: AF90639 **Lab Sample ID: 680-246968-8**

No Detections.

Client Sample ID: AF90640 **Lab Sample ID: 680-246968-9**

No Detections.

Client Sample ID: AF90635 **Lab Sample ID: 680-246968-10**

No Detections.

Client Sample ID: AF90608 **Lab Sample ID: 680-246968-11**

No Detections.

Client Sample ID: AF90609 **Lab Sample ID: 680-246968-12**

No Detections.

Client Sample ID: AF90630 **Lab Sample ID: 680-246968-13**

No Detections.

Client Sample ID: AF90623 **Lab Sample ID: 680-246968-14**

No Detections.

Client Sample ID: AF90633 **Lab Sample ID: 680-246968-15**

No Detections.

Client Sample ID: AF90625 **Lab Sample ID: 680-246968-16**

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Savannah

Detection Summary

Client: South Carolina Public Service Authority
Job ID: 680-246968-1
Project/Site: 125915/JM02.08.G01.1/36500

Client Sample ID: AF90613
Lab Sample ID: 680-246968-17

No Detections.

Client Sample ID: AF90620
Lab Sample ID: 680-246968-18

No Detections.

Client Sample ID: AF90624
Lab Sample ID: 680-246968-19

No Detections.

This Detection Summary does not include radiochemical test results.

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.1/36500

Job ID: 680-246968-1

Client Sample ID: AF90642
Date Collected: 02/13/24 11:35
Date Received: 02/21/24 10:05

Lab Sample ID: 680-246968-1
Matrix: Water

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.200	U	0.200		ug/L		02/22/24 15:20	02/23/24 17:33	1

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.1/36500

Job ID: 680-246968-1

Client Sample ID: AF90643
Date Collected: 02/13/24 12:41
Date Received: 02/21/24 10:05

Lab Sample ID: 680-246968-2
Matrix: Water

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.200	U	0.200		ug/L		02/22/24 15:20	02/23/24 17:39	1

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.1/36500

Job ID: 680-246968-1

Client Sample ID: AF90618
Date Collected: 02/13/24 13:48
Date Received: 02/21/24 10:05

Lab Sample ID: 680-246968-3
Matrix: Water

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.200	U	0.200		ug/L		02/22/24 15:20	02/23/24 17:42	1

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.1/36500

Job ID: 680-246968-1

Client Sample ID: AF90619
Date Collected: 02/13/24 13:53
Date Received: 02/21/24 10:05

Lab Sample ID: 680-246968-4
Matrix: Water

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.200	U	0.200		ug/L		02/22/24 15:20	02/23/24 17:44	1

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.1/36500

Job ID: 680-246968-1

Client Sample ID: AF90641
Date Collected: 02/12/24 14:05
Date Received: 02/21/24 10:05

Lab Sample ID: 680-246968-5
Matrix: Water

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.200	U	0.200		ug/L		02/22/24 15:20	02/23/24 17:46	1

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.1/36500

Job ID: 680-246968-1

Client Sample ID: AF90636
Date Collected: 02/13/24 10:13
Date Received: 02/21/24 10:05

Lab Sample ID: 680-246968-6
Matrix: Water

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.200	U	0.200		ug/L		02/22/24 15:20	02/23/24 17:48	1

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.1/36500

Job ID: 680-246968-1

Client Sample ID: AF90638
Date Collected: 02/14/24 10:10
Date Received: 02/21/24 10:05

Lab Sample ID: 680-246968-7
Matrix: Water

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.200	U	0.200		ug/L		02/22/24 15:20	02/23/24 17:50	1

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.1/36500

Job ID: 680-246968-1

Client Sample ID: AF90639
Date Collected: 02/14/24 11:05
Date Received: 02/21/24 10:05

Lab Sample ID: 680-246968-8
Matrix: Water

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.200	U	0.200		ug/L		02/22/24 15:20	02/23/24 17:52	1

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.1/36500

Job ID: 680-246968-1

Client Sample ID: AF90640
Date Collected: 02/14/24 11:10
Date Received: 02/21/24 10:05

Lab Sample ID: 680-246968-9
Matrix: Water

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.200	U	0.200		ug/L		02/22/24 15:20	02/23/24 17:54	1

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.1/36500

Job ID: 680-246968-1

Client Sample ID: AF90635
Date Collected: 02/14/24 12:19
Date Received: 02/21/24 10:05

Lab Sample ID: 680-246968-10
Matrix: Water

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.200	U	0.200		ug/L		02/22/24 15:20	02/23/24 17:56	1

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.1/36500

Job ID: 680-246968-1

Client Sample ID: AF90608
Date Collected: 02/14/24 14:04
Date Received: 02/21/24 10:05

Lab Sample ID: 680-246968-11
Matrix: Water

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.200	U	0.200		ug/L		02/26/24 11:43	02/26/24 17:12	1

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.1/36500

Job ID: 680-246968-1

Client Sample ID: AF90609
Date Collected: 02/14/24 14:09
Date Received: 02/21/24 10:05

Lab Sample ID: 680-246968-12
Matrix: Water

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.200	U	0.200		ug/L		02/26/24 11:43	02/26/24 17:18	1

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.1/36500

Job ID: 680-246968-1

Client Sample ID: AF90630
Date Collected: 02/15/24 11:25
Date Received: 02/21/24 10:05

Lab Sample ID: 680-246968-13
Matrix: Water

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.200	U	0.200		ug/L		02/26/24 11:43	02/26/24 17:20	1

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.1/36500

Job ID: 680-246968-1

Client Sample ID: AF90623
Date Collected: 02/15/24 12:20
Date Received: 02/21/24 10:05

Lab Sample ID: 680-246968-14
Matrix: Water

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.200	U	0.200		ug/L		02/26/24 11:43	02/26/24 17:22	1

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.1/36500

Job ID: 680-246968-1

Client Sample ID: AF90633
Date Collected: 02/15/24 14:12
Date Received: 02/21/24 10:05

Lab Sample ID: 680-246968-15
Matrix: Water

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.200	U	0.200		ug/L		02/26/24 11:43	02/26/24 17:24	1

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.1/36500

Job ID: 680-246968-1

Client Sample ID: AF90625
Date Collected: 02/15/24 10:35
Date Received: 02/21/24 10:05

Lab Sample ID: 680-246968-16
Matrix: Water

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.200	U	0.200		ug/L		02/26/24 11:43	02/26/24 17:26	1

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.1/36500

Job ID: 680-246968-1

Client Sample ID: AF90613
Date Collected: 02/15/24 13:31
Date Received: 02/21/24 10:05

Lab Sample ID: 680-246968-17
Matrix: Water

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.200	U	0.200		ug/L		02/26/24 11:43	02/26/24 17:32	1

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.1/36500

Job ID: 680-246968-1

Client Sample ID: AF90620
Date Collected: 02/12/24 12:45
Date Received: 02/21/24 10:05

Lab Sample ID: 680-246968-18
Matrix: Water

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.200	U	0.200		ug/L		02/26/24 11:43	02/26/24 17:34	1

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.1/36500

Job ID: 680-246968-1

Client Sample ID: AF90624
Date Collected: 02/12/24 11:47
Date Received: 02/21/24 10:05

Lab Sample ID: 680-246968-19
Matrix: Water

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.200	U	0.200		ug/L		02/26/24 11:43	02/26/24 17:36	1

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 680-824088/1-A
Matrix: Water
Analysis Batch: 824292

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 824088

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.200	U	0.200		ug/L		02/22/24 15:20	02/23/24 17:00	1

Lab Sample ID: LCS 680-824088/2-A
Matrix: Water
Analysis Batch: 824292

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 824088

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	2.50	2.384		ug/L		95	80 - 120

Lab Sample ID: 680-246896-E-1-E MS
Matrix: Water
Analysis Batch: 824292

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 824088

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.200	U F1	1.00	0.5773	F1	ug/L		58	80 - 120

Lab Sample ID: 680-246896-E-1-F MSD
Matrix: Water
Analysis Batch: 824292

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 824088

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.200	U F1	1.00	0.6176	F1	ug/L		62	80 - 120	7	20

Lab Sample ID: MB 680-824551/1-A
Matrix: Water
Analysis Batch: 824780

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 824551

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.200	U	0.200		ug/L		02/26/24 11:43	02/26/24 17:08	1

Lab Sample ID: LCS 680-824551/2-A
Matrix: Water
Analysis Batch: 824780

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 824551

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	2.50	2.120		ug/L		85	80 - 120

Lab Sample ID: 680-246968-11 MS
Matrix: Water
Analysis Batch: 824780

Client Sample ID: AF90608
Prep Type: Total/NA
Prep Batch: 824551

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.200	U	1.00	0.8729		ug/L		87	80 - 120

Lab Sample ID: 680-246968-11 MSD
Matrix: Water
Analysis Batch: 824780

Client Sample ID: AF90608
Prep Type: Total/NA
Prep Batch: 824551

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.200	U	1.00	0.8121		ug/L		81	80 - 120	7	20

Metals

Prep Batch: 824088

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-246968-1	AF90642	Total/NA	Water	7470A	
680-246968-2	AF90643	Total/NA	Water	7470A	
680-246968-3	AF90618	Total/NA	Water	7470A	
680-246968-4	AF90619	Total/NA	Water	7470A	
680-246968-5	AF90641	Total/NA	Water	7470A	
680-246968-6	AF90636	Total/NA	Water	7470A	
680-246968-7	AF90638	Total/NA	Water	7470A	
680-246968-8	AF90639	Total/NA	Water	7470A	
680-246968-9	AF90640	Total/NA	Water	7470A	
680-246968-10	AF90635	Total/NA	Water	7470A	
MB 680-824088/1-A	Method Blank	Total/NA	Water	7470A	
LCS 680-824088/2-A	Lab Control Sample	Total/NA	Water	7470A	
680-246896-E-1-E MS	Matrix Spike	Total/NA	Water	7470A	
680-246896-E-1-F MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	

Analysis Batch: 824292

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-246968-1	AF90642	Total/NA	Water	7470A	824088
680-246968-2	AF90643	Total/NA	Water	7470A	824088
680-246968-3	AF90618	Total/NA	Water	7470A	824088
680-246968-4	AF90619	Total/NA	Water	7470A	824088
680-246968-5	AF90641	Total/NA	Water	7470A	824088
680-246968-6	AF90636	Total/NA	Water	7470A	824088
680-246968-7	AF90638	Total/NA	Water	7470A	824088
680-246968-8	AF90639	Total/NA	Water	7470A	824088
680-246968-9	AF90640	Total/NA	Water	7470A	824088
680-246968-10	AF90635	Total/NA	Water	7470A	824088
MB 680-824088/1-A	Method Blank	Total/NA	Water	7470A	824088
LCS 680-824088/2-A	Lab Control Sample	Total/NA	Water	7470A	824088
680-246896-E-1-E MS	Matrix Spike	Total/NA	Water	7470A	824088
680-246896-E-1-F MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	824088

Prep Batch: 824551

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-246968-11	AF90608	Total/NA	Water	7470A	
680-246968-12	AF90609	Total/NA	Water	7470A	
680-246968-13	AF90630	Total/NA	Water	7470A	
680-246968-14	AF90623	Total/NA	Water	7470A	
680-246968-15	AF90633	Total/NA	Water	7470A	
680-246968-16	AF90625	Total/NA	Water	7470A	
680-246968-17	AF90613	Total/NA	Water	7470A	
680-246968-18	AF90620	Total/NA	Water	7470A	
680-246968-19	AF90624	Total/NA	Water	7470A	
MB 680-824551/1-A	Method Blank	Total/NA	Water	7470A	
LCS 680-824551/2-A	Lab Control Sample	Total/NA	Water	7470A	
680-246968-11 MS	AF90608	Total/NA	Water	7470A	
680-246968-11 MSD	AF90608	Total/NA	Water	7470A	

Analysis Batch: 824780

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-246968-11	AF90608	Total/NA	Water	7470A	824551

Metals (Continued)

Analysis Batch: 824780 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-246968-12	AF90609	Total/NA	Water	7470A	824551
680-246968-13	AF90630	Total/NA	Water	7470A	824551
680-246968-14	AF90623	Total/NA	Water	7470A	824551
680-246968-15	AF90633	Total/NA	Water	7470A	824551
680-246968-16	AF90625	Total/NA	Water	7470A	824551
680-246968-17	AF90613	Total/NA	Water	7470A	824551
680-246968-18	AF90620	Total/NA	Water	7470A	824551
680-246968-19	AF90624	Total/NA	Water	7470A	824551
MB 680-824551/1-A	Method Blank	Total/NA	Water	7470A	824551
LCS 680-824551/2-A	Lab Control Sample	Total/NA	Water	7470A	824551
680-246968-11 MS	AF90608	Total/NA	Water	7470A	824551
680-246968-11 MSD	AF90608	Total/NA	Water	7470A	824551

Lab Chronicle

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.1/36500

Job ID: 680-246968-1

Client Sample ID: AF90642
Date Collected: 02/13/24 11:35
Date Received: 02/21/24 10:05

Lab Sample ID: 680-246968-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	7470A			824088	DW	EET SAV	02/22/24 15:20
Total/NA	Analysis	7470A		1	824292	DW	EET SAV	02/23/24 17:33

Client Sample ID: AF90643
Date Collected: 02/13/24 12:41
Date Received: 02/21/24 10:05

Lab Sample ID: 680-246968-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	7470A			824088	DW	EET SAV	02/22/24 15:20
Total/NA	Analysis	7470A		1	824292	DW	EET SAV	02/23/24 17:39

Client Sample ID: AF90618
Date Collected: 02/13/24 13:48
Date Received: 02/21/24 10:05

Lab Sample ID: 680-246968-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	7470A			824088	DW	EET SAV	02/22/24 15:20
Total/NA	Analysis	7470A		1	824292	DW	EET SAV	02/23/24 17:42

Client Sample ID: AF90619
Date Collected: 02/13/24 13:53
Date Received: 02/21/24 10:05

Lab Sample ID: 680-246968-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	7470A			824088	DW	EET SAV	02/22/24 15:20
Total/NA	Analysis	7470A		1	824292	DW	EET SAV	02/23/24 17:44

Client Sample ID: AF90641
Date Collected: 02/12/24 14:05
Date Received: 02/21/24 10:05

Lab Sample ID: 680-246968-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	7470A			824088	DW	EET SAV	02/22/24 15:20
Total/NA	Analysis	7470A		1	824292	DW	EET SAV	02/23/24 17:46

Client Sample ID: AF90636
Date Collected: 02/13/24 10:13
Date Received: 02/21/24 10:05

Lab Sample ID: 680-246968-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	7470A			824088	DW	EET SAV	02/22/24 15:20
Total/NA	Analysis	7470A		1	824292	DW	EET SAV	02/23/24 17:48

Lab Chronicle

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.1/36500

Job ID: 680-246968-1

Client Sample ID: AF90638
Lab Sample ID: 680-246968-7
Date Collected: 02/14/24 10:10
Matrix: Water
Date Received: 02/21/24 10:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	7470A			824088	DW	EET SAV	02/22/24 15:20
Total/NA	Analysis	7470A		1	824292	DW	EET SAV	02/23/24 17:50

Client Sample ID: AF90639
Lab Sample ID: 680-246968-8
Date Collected: 02/14/24 11:05
Matrix: Water
Date Received: 02/21/24 10:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	7470A			824088	DW	EET SAV	02/22/24 15:20
Total/NA	Analysis	7470A		1	824292	DW	EET SAV	02/23/24 17:52

Client Sample ID: AF90640
Lab Sample ID: 680-246968-9
Date Collected: 02/14/24 11:10
Matrix: Water
Date Received: 02/21/24 10:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	7470A			824088	DW	EET SAV	02/22/24 15:20
Total/NA	Analysis	7470A		1	824292	DW	EET SAV	02/23/24 17:54

Client Sample ID: AF90635
Lab Sample ID: 680-246968-10
Date Collected: 02/14/24 12:19
Matrix: Water
Date Received: 02/21/24 10:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	7470A			824088	DW	EET SAV	02/22/24 15:20
Total/NA	Analysis	7470A		1	824292	DW	EET SAV	02/23/24 17:56

Client Sample ID: AF90608
Lab Sample ID: 680-246968-11
Date Collected: 02/14/24 14:04
Matrix: Water
Date Received: 02/21/24 10:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	7470A			824551	DW	EET SAV	02/26/24 11:43
Total/NA	Analysis	7470A		1	824780	DW	EET SAV	02/26/24 17:12

Client Sample ID: AF90609
Lab Sample ID: 680-246968-12
Date Collected: 02/14/24 14:09
Matrix: Water
Date Received: 02/21/24 10:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	7470A			824551	DW	EET SAV	02/26/24 11:43
Total/NA	Analysis	7470A		1	824780	DW	EET SAV	02/26/24 17:18

Client Sample ID: AF90630

Lab Sample ID: 680-246968-13

Date Collected: 02/15/24 11:25

Matrix: Water

Date Received: 02/21/24 10:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	7470A			824551	DW	EET SAV	02/26/24 11:43
Total/NA	Analysis	7470A		1	824780	DW	EET SAV	02/26/24 17:20

Client Sample ID: AF90623

Lab Sample ID: 680-246968-14

Date Collected: 02/15/24 12:20

Matrix: Water

Date Received: 02/21/24 10:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	7470A			824551	DW	EET SAV	02/26/24 11:43
Total/NA	Analysis	7470A		1	824780	DW	EET SAV	02/26/24 17:22

Client Sample ID: AF90633

Lab Sample ID: 680-246968-15

Date Collected: 02/15/24 14:12

Matrix: Water

Date Received: 02/21/24 10:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	7470A			824551	DW	EET SAV	02/26/24 11:43
Total/NA	Analysis	7470A		1	824780	DW	EET SAV	02/26/24 17:24

Client Sample ID: AF90625

Lab Sample ID: 680-246968-16

Date Collected: 02/15/24 10:35

Matrix: Water

Date Received: 02/21/24 10:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	7470A			824551	DW	EET SAV	02/26/24 11:43
Total/NA	Analysis	7470A		1	824780	DW	EET SAV	02/26/24 17:26

Client Sample ID: AF90613

Lab Sample ID: 680-246968-17

Date Collected: 02/15/24 13:31

Matrix: Water

Date Received: 02/21/24 10:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	7470A			824551	DW	EET SAV	02/26/24 11:43
Total/NA	Analysis	7470A		1	824780	DW	EET SAV	02/26/24 17:32

Client Sample ID: AF90620

Lab Sample ID: 680-246968-18

Date Collected: 02/12/24 12:45

Matrix: Water

Date Received: 02/21/24 10:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	7470A			824551	DW	EET SAV	02/26/24 11:43
Total/NA	Analysis	7470A		1	824780	DW	EET SAV	02/26/24 17:34

Lab Chronicle

Client: South Carolina Public Service Authority
Project/Site: 125915/JM02.08.G01.1/36500

Job ID: 680-246968-1

Client Sample ID: AF90624
Date Collected: 02/12/24 11:47
Date Received: 02/21/24 10:05

Lab Sample ID: 680-246968-19
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	7470A			824551	DW	EET SAV	02/26/24 11:43
Total/NA	Analysis	7470A		1	824780	DW	EET SAV	02/26/24 17:36

Laboratory References:

EET SAV = Eurofins Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Contract Lab Info: TA-SAV Contract Lab Due Date (Lab Only): 2 / 29 / 24 Send report to lcwillia@santeecooper.com & sherri.levy@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 #: 125915 / JM02.08.G01.1 / 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	HG
AF90642	WLF-A2-1	2/13/24	1135	WJK BM	1	P	G	GW	2	7470 RL = 0.2 mg/L	X
43	WLF-A2-2		1241								
18	WAP-17		1348								
19	WAP-17 DUP		1353								
AF90641	WLF-A1-5	2/12/24	1405								
AF90636	WLF-A1-1	2/13/24	1013								
AF90638	WLF-A1-3	2/14/24	1010								
39	WLF-A1-4		1105								
40	WLF-A1-4 DUP		1110								
35	WBW-A1-1		1219								

680-246968 Chain of Custody

Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time
SLevy	35594	2/20/24	1300			2/21/24	1005
Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time
Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time

Sample Receiving (Internal Use Only)
TEMP (°C): 14.2/14.2 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
☐ Naphthalene
☐ 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

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)

2/27/2024

Contract Lab Info: TA-SAV Contract Lab Due Date (Lab Only): 2 / 29 / 24 Send report to lcwillia@santeecooper.com & sherri.levy@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 #: 125915 / JM02.09.G01.1 / 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	Hg			
AF90608	WAP-12	2/14/24	1404	WJK BM	1	P	G	GW	2	7470 RL= 0.2 ug/L	X			
09	WAP-12 DUP	〃	1409	〃	〃	〃	〃	〃	〃		〃			
AF90630	WAP-27	2/15/24	1125	〃	〃	〃	〃	〃	〃		〃			
23	WAP-21	〃	1220	〃	〃	〃	〃	〃	〃		〃			
33	WAP-29	〃	1412	〃	〃	〃	〃	〃	〃		〃			
AF90625	WAP-23	〃	1035	〃	〃	〃	〃	〃	〃		〃			
13	WAP-14A	〃	1331	〃	〃	〃	〃	〃	〃		〃			
AF90620	WAP-18	2/12/24	1245	〃	〃	〃	〃	〃	〃		〃			
AF90624	WAP-22	〃	1147	〃	〃	〃	〃	〃	〃		〃			

Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time
Slevy	35594	2/20/24	1300			2/21/24	1005
Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time
Relinquished by:	Employee#	Date	Time	Received by:	Employee #	Date	Time

Sample Receiving (Internal Use Only)
TEMP (°C): 11.2 / 14.2 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
☐ Naphthalene
☐ THM/HAA
☐ VOC
☐ Oil & Grease
☐ E. Coli
☐ Total Coliform
☐ pH
☐ Dissolved As
☐ Dissolved Fe
☐ Rad 226
☐ Rad 228
☐ PCB

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

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)

Login Sample Receipt Checklist

Client: South Carolina Public Service Authority

Job Number: 680-246968-1

Login Number: 246968

List Source: Eurofins Savannah

List Number: 1

Creator: Stewart, Rendaisha

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Accreditation/Certification Summary

Client: South Carolina Public Service Authority
Job ID: 680-246968-1
Project/Site: 125915/JM02.08.G01.1/36500

Laboratory: Eurofins Savannah

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
South Carolina	State	98001	06-30-24

Appendix C – Alternate Source Demonstration

HALEY ALDRICH

www.haleyaldrich.com

REPORT ON
ALTERNATE SOURCE DEMONSTRATION
WINYAH GENERATING STATION
CLASS 3 LANDFILL AREA 2
GEORGETOWN, SOUTH CAROLINA

by Haley & Aldrich, Inc.
Greenville, South Carolina

for South Carolina Public Service Authority (Santee Cooper)
Moncks Corner, South Carolina

File No 0132892-102
October 2024

Certification Page

SANTEE COOPER
WINYAH GENERATING STATION
CLASS 3 LANDFILL AREA 2
APPENDIX III SSI ALTERNATE SOURCE DEMONSTRATION

Pursuant to 40 CFR §257.94(e)(2), Haley & Aldrich, Inc., on behalf of Santee Cooper, conducted an Alternate Source Demonstration to substantiate that a source other than the Class 3 Landfill Area 2 caused the statistically significant increase (SSI) over background identified during detection monitoring. I certify that this report and all attachments were prepared by me or under my supervision. I am a professional engineer who is registered in the State of South Carolina.

This certification and the underlying data support the conclusion that a source other than the Class 3 Landfill Area 2 is the cause of the SSI over background levels for Appendix III constituents identified during detection monitoring of this unit.

The information contained in this evaluation is, to the best of my knowledge, true, accurate, and complete.

HALEY & ALDRICH, INC.

Susan W Jackson, P.E.

Susan Jackson, P.E.
South Carolina Professional Engineer
Registration Number 25476

October 13, 2024

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List of Figures Appended at End of Report

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1. Introduction

On behalf of Santee Cooper, Haley & Aldrich, Inc. (Haley & Aldrich) prepared this Alternate Source Demonstration (ASD) pursuant to Title 40 of the Code of Federal Regulations (40 CFR) Part §257.94(e)(2) to demonstrate that a source other than the Winyah Generating Station (WGS) Class 3 Landfill Area 2 (Landfill Area 2) caused a statistically significant increase (SSI) over background levels for multiple Appendix III constituents. The general site location is provided as Figure 1. The Class 3 Landfill Area 2 groundwater monitoring well network is provided as Figure 2.

Santee Cooper is the owner and operator of WGS, which consists of four coal-fired generating units and associated ancillary equipment, including coal combustion residual (CCR) impoundments and landfills. WGS is located approximately 10 miles from the Atlantic Ocean, between Pennyroyal Creek and Turkey Creek in Georgetown, South Carolina (Figure 1). WGS is located within the Lower Coastal Plain of the Atlantic Coastal Plain physiographic province in South Carolina, and the site and surrounding area are relatively flat, with natural ground surface elevations between approximately 15 and 30 feet above mean sea level (MSL).

Landfill Area 2 was constructed within a portion of the footprint of Ash Pond A, which was closed by removal in accordance with State of South Carolina requirements. The first receipt of waste into Landfill Area 2 was on March 28, 2022. The first statistical analysis following the receipt of waste was completed by Haley & Aldrich on December 30, 2022, pursuant to 40 CFR §257.93 and §257.94.

The initial statistical evaluation of Appendix III constituents detected in groundwater downgradient of the Landfill Area 2 resulted in SSIs of Appendix III constituents, including boron, calcium, chloride, sulfate, and total dissolved solids (TDS) in monitoring wells WAP-9, WAP-17, WAP-18, WAP-19, and WLF-A2-6, and fluoride in monitoring wells WAP-19 and WLF-A2-6. This result was not unexpected because of the co-location of Landfill Area 2 and Ash Pond A and the adjacency to Ash Pond B, both of which were undergoing implementation of a corrective action program in accordance with 40 CFR §257.98(a)(2). An ASD was completed March 2023 to demonstrate that Ash Ponds A and B were the sources of the SSIs of Appendix III constituents; therefore, the new Landfill Area 2 was not the source, and it continued in detection monitoring using intrawell statistics.

In 2024, after completion of the February 2024 detection monitoring event and corresponding July 2024 statistical report, SSIs for multiple Appendix III constituents were identified from the following monitoring wells:

- Calcium at WLF-A2-6
- Chloride at WLF-A2-6
- Sulfate at WAP-9, WAP-19, and WLF-A2-6
- TDS at WAP-9, WAP-19, and WLF-A2-6

Haley & Aldrich was retained by Santee Cooper to conduct an ASD to determine if a source other than the Landfill Area 2 caused the SSIs. As presented in the sections that follow, findings of this ASD support the conclusion that the SSIs resulting from the statistical analysis of the July 2024 monitoring event were the result of a physical alternative source coupled with dynamic site conditions, specifically historical impacts from the Ash Ponds A and B, as well as periods of extreme rain events and dynamic hydrogeologic conditions from adjacent surface water bodies (Cooling Pond, Intake Canal, and Discharge

Canal). Furthermore, the ASD demonstrates that it is unlikely the relatively new Landfill Area 2 is currently a contributing source of the SSIs.

1.1 SCOPE AND OBJECTIVE

The objective of this ASD is to present site-specific information, along with a technical evaluation, to document that the Landfill Area 2 is not responsible for current concentrations of Appendix III constituents identified in downgradient monitoring wells WLF-A2-6, WAP-9, and WAP-19.

1.2 CCR RULE AND ASD REQUIREMENTS

The U.S. Environmental Protection Agency (USEPA) regulations regarding detection monitoring programs for CCR units, such as landfills, provide owners and operators with the option to conduct an ASD when an Appendix III constituent is identified as a SSI (40 CFR §257.94(e)(2)).

According to the CCR Rule, an owner or operator may "demonstrate that a source other than the CCR unit caused the SSI over background levels for a constituent or that the SSI resulted from an error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. The owner or operator must complete the written demonstration within 90 days of detecting a statistically significant increase over background levels to include obtaining a certification from a qualified professional engineer […]."

In the absence of South Carolina-specific regulatory requirements for landfill ASDs, the *North Carolina Solid Waste Section Guidelines for Alternate Source Demonstration Submittals for Solid Waste Management Facilities* (NCDEQ, 2017) was used as a reference. This guidance document defines six lines of evidence that an owner/operator could pursue for an ASD, which are listed below; it also requires an ASD to address the first three lines of evidence (Items 1 through 3) at a minimum. The last three lines of evidence (Items 4 through 6) may also be used to support the first three lines of evidence.

1. Existence of an alternate source.
2. A hydraulic connection exists between the alternative source and the groundwater well with the SSI.
3. Constituent(s) (or precursor constituents) are present at the alternative source or along the flow path from the alternative source prior to a possible release from the unit.
4. The relative concentration and distribution of constituents in the zone of contamination are more strongly linked to the alternative source than to the unit when the fate and transport characteristics of the constituents are considered.
5. The concentration observed in groundwater could not have resulted from the unit, given the waste constituents and concentrations in the unit leachate and wastes, and the site's hydrogeologic conditions.
6. Data supporting conclusions regarding the alternative source are historically consistent with hydrogeologic conditions and findings of the monitoring program.

Additionally, the USEPA has commented in Part A Determinations that to rebut monitoring data and analysis that resulted in a SSI, an ASD should be supported by site-specific facts, analytical data, and evidence as outlined in the *EPA Solid Waste Disposal Facility Criteria Technical Manual* (USEPA, 1993) which is consistent with the lines of evidence presented above.

1.3 MONITORING WELL NETWORK FOR THE WGS LANDFILL AREA 2

The initial monitoring well network for Landfill Area 2 was installed prior to and during construction of Landfill Area 2 (Figure 2). The Ash Ponds A and B are located essentially on an island, surrounded by the WGS Industrial Cooling Pond (Cooling Pond) and associated intake and discharge canals, except for a small area of land connection near the WGS Unit 1 and 2 cooling tower. As such, the design of the Landfill Area 2 groundwater monitoring well network relied on pre-existing groundwater monitoring networks for Ash Pond A. Specifically, the existing CCR groundwater monitoring network and WGS's existing network required by the facility's National Pollutant Discharge Elimination System (NPDES) permit issued by South Carolina Department of Environmental Services (SCDES), which requires groundwater monitoring wells for Ash Ponds A and B, were considered because of their co-location.

The full monitoring well network for Landfill Area 2 includes two background monitoring wells (WBW-1 and WAP-1) that are already in use for groundwater monitoring of other WGS CCR units, including Ash Ponds A and B. The network currently includes seven downgradient monitoring wells (WAP-9, WAP-17, WAP-18, WAP 19, WLF-A2-1, WLF-A2-2, and WLF-A2-6) that surround Landfill Area 2. Four of these monitoring wells (WAP-9, WAP-17, WAP-18, and WAP-19) pre-existed the Landfill Area 2 and are currently used to monitor Ash Pond A pursuant to the CCR Rule; in fact, monitoring well WAP-9 has historically been used to monitor the Ash Pond A since 1995, pursuant to SCDES requirements.

In accordance with 40 CFR §257.94, groundwater monitoring wells were constructed, and baseline sampling of the groundwater monitoring well network was completed for the newly constructed Landfill Area 2 in February 2022. First receipt of waste was in March 2022.

Two groundwater monitoring wells (WLF-A2-1 and WLF-A2-2) were installed in December 2021 for the next phase of Landfill Area 2 construction. These wells were installed early enough to allow time to collect a minimum of eight independent baseline samples (occurred monthly in 2022), prior to those new cells accepting the initial deposition of waste in January 2023.

The downgradient monitoring wells for Landfill Area 2 are screened in the same hydrostratigraphic unit and monitor groundwater quality in the uppermost aquifer and most are primarily at the waste boundary. At this time, SSIs have not been observed in the new well locations since completion of baseline sampling; however, water table elevation results from these well locations indicate alternating hydraulic head from surrounding unlined water bodies, such as the Industrial Cooling Pond, Intake Canal, and Discharge Canal are likely impacting Appendix III constituent migration.

The Sampling and Analysis Plan and the Groundwater Monitoring Plan for WGS were updated to reflect changes in site conditions and procedures on August 18, 2023 and October 2, 2023, respectively.

2. Alternative Source Demonstration

Consistent with the CCR Rule and guidance documents, this ASD evaluates multiple lines of evidence to address the identified SSIs individually and collectively. The ASD activities performed by Haley & Aldrich included evaluations of hydrogeological considerations with detailed reviews of the historical shallow potentiometric surface and direct comparison of data to published values. A technical engineering evaluation of the additional construction and operations of Landfill Area 2 subsequent to the initial 2023 ASD was conducted to evaluate the potential that the relatively new landfill was a contributing source. None of Landfill Area 2 has been closed and capped at this time.

The findings of this ASD are generally consistent with the findings of the prior ASD, in that the WGS Ash Ponds A and B are the alternate source. The identified SSIs do not appear to be related to a long-term or substantial release from Landfill Area 2. Rather, the ASD evaluations indicate that residual constituents in groundwater beneath the excavated WGS Ash Ponds A and B are the original source of the SSIs of Appendix III constituents. Additionally, variability in the groundwater data may be attributed to the dynamic site conditions due to ash pond closure activities, periods of extreme rain events, and dynamic hydrogeologic conditions from adjacent surface water bodies impacted with Appendix III constituents. Locations of surface water samples and key site features are provided in Figure 3. The findings of the ASD evaluations and the lines of evidence that support this determination are described below.

2.1 SITE HISTORY FOR THE ASH POND A, ASH POND B, AND LANDFILL AREA 2

The history of the WGS Ash Pond A, Ash Pond B, and Landfill Area 2 was incorporated into the initial ASD evaluation because of its relevance in determining the source of the SSIs. In summary, the approximately 65-acre Landfill Area 2 was constructed in a portion of the footprint of the excavated 90-acre Ash Pond A. Ash Pond A and Ash Pond B are bounded by the Intake Canal to the north, the Industrial Cooling Pond to the east, and the Discharge Canal to the west and south, with a small connecting landmass at the northwest corner of Landfill Area 2 and Ash Pond A. Ash Pond A is separated from Ash Pond B by an intermediate dike, which is generally aligned from west to east.

Ash Ponds A and B were constructed in 1975 to serve as permitted industrial wastewater treatment ponds, and they were unlined. As noted in the *Location Restriction Compliance Demonstration* (Geosyntec Consultants [Geosyntec], 2018), the bottom of Ash Pond A was estimated to be approximately 20 feet above MSL (National Geodetic Vertical Datum of 1929 [NGVD 29]) in the central portion to less than 20 feet above MSL NGVD 29 in the northeastern portion. The bottom of Ash Pond B was estimated to be approximately 19 feet above MSL NGVD 29 across most of the pond. The seasonal high-water level at WAP-9 was 21.46 feet above MSL NGVD (Geosyntec, 2018). Neither pond met the requirements of 40 CFR §257.60 for placement of CCRs above the uppermost aquifer. Both Ash Ponds A and B received ash-sluiced wastewater containing fly ash and bottom ash. Inflows of CCR waste and non-CCR wastewater ceased prior to the regulatory deadline of April 11, 2021, and the ponds are undergoing final stages of closure-by-removal with removal of a pre-determined amount of subsurface soil in some areas of the ponds. Removal of CCR is complete in Ash Pond A but not in Ash Pond B.

As referenced on Figure 4, the first receipt of waste into the Landfill Area 2 occurred in cell 4S on March 28, 2022, followed by receipt of waste into cell 4N on April 5, 2022, 5N on June 8, 2022, 5S on June 12, 2022, 6N on January 27, 2023, 6S and 7N on February 17, 2023, and 7S on April 4, 2023. Cell 8 has not begun construction, with no immediate plans to undergo construction until additional landfill capacity is needed.

At this time, Landfill Area 2 is operating and receiving waste, and no sections of the landfill have been capped for closure. Ash contact stormwater and leachate are collected and discharged to the permitted Industrial Cooling Pond. Landfill Area 2 has a composite liner system with a leachate collection and removal system (LCRS) that meets the standards of 40 CFR §257.70.

2.2 WGS ASH POND A AND ASH POND B CONTENTS

The prior contents of WGS Ash Ponds A and B are discussed in this section because they are identified as the original cause for SSIs of Appendix III constituents in this ASD. Ash Ponds A and B received both fly ash and bottom ash from the WGS coal-fired generating units from 1975 until CCR and non-CCR wastewater inflows ceased prior to the regulatory deadline of April 11, 2021. Throughout this period, ash was routinely removed from the unlined ponds for beneficial use. Bottom ash was excavated, screened, and removed from the ponds for use in the concrete block industry since the 1990s. Beginning in 2015, a mixture of predominantly fly ash and some bottom ash was excavated, screened, and removed for processing in an on-site SEFA STAR® unit. Even during times of CCR removal, Ash Ponds A and B contained liquids as defined in the CCR Rule.

Even with removal of the CCRs and a layer of subsurface soils, the initial ASD noted there are measurable concentrations of Appendix IV constituents in subsurface soil. Appendix III constituents were not analyzed with the subsurface soil sampling. Santee Cooper conducted extensive subsurface soil testing as a component of the WGS Ash Pond A State Closure Plan.

2.3 WGS CLASS 3 LANDFILL AREA 2 CONTENTS

Landfill Area 2 has received predominantly ponded ash from the WGS ash ponds undergoing closure. The ponded ash is a mixture of approximately 80 percent fly ash and 20 percent bottom ash. Landfill Area 2 other CCR waste streams may include non-specification gypsum and non-marketable CCR ash or bottom ash which may be intermittently received at relatively low percentages. According to Area 2 Load Reporting from Santee Cooper provided to Haley & Aldrich for review on October 4, 2024, a total of 19 loads of non-wallboard quality (poor quality or off-specification) gypsum was disposed of in the landfill over a period of two days in 2022; however, this is a small quantity compared to the overall contents of Area 2. The primary composition of the landfill consists of ash from various ponds at WGS, including Ash Ponds A and B, the West Ash Pond, and the South Ash Pond.

2.4 WGS CLASS 3 LANDFILL AREA 2 CONSTRUCTION AND OPERATIONS

The Landfill Area 2 is a permitted Class 3 Industrial Solid Waste Landfill (Permit #LF3-00042), which was specifically designed, constructed, and operated to meet the requirements of the CCR Rule (40 CFR Part §257) and SCDES landfill regulations. The findings in the March 2023 ASD for the Landfill Area 2 were supported by a review of the construction, operations, and ongoing inspections of this new landfill. For the initial ASD, it appeared unlikely that there was a release from Landfill Area 2 that could be contributing to the SSIs of Appendix III or Appendix IV constituents. For this ASD, these findings appear to continue to hold true based on a review of subsequent landfill operations, including a review of inspection reports and a release from the landfill due to an extreme weather event. The Operator-in-Charge and WGS employee, Richie Mills, was interviewed regarding landfill operations for this ASD. Based on the construction, operations, a detailed review of the sole CCR release, and ongoing inspections as described in subsequent sections, there is no associated evidence indicating a substantial or long-term release from Landfill Area 2 is contributing to the SSIs of Appendix III constituents.

As noted in a previous ASD, Landfill Area 2 was designed and constructed to meet the location's restriction requirements in 40 CFR §257.60 through §257.64, including placement of waste with greater than 5 feet of separation from the seasonal high-water table and for unstable areas (Geosyntec, 2021). Landfill Area 2 was constructed with a composite liner system, a LCRS, and a contact stormwater collection system. It was designed and constructed to prohibit the release of materials, including leachate, into the environment. Contact stormwater onto open areas of the landfill is routed through the leachate collection system. However, there was one exception, with a release of CCRs and CCR ash contact water into Ash Pond A after an extreme weather event that occurred December 17 and 18, 2023. This weather event is discussed in more detail in Section 2.8.

Throughout the construction process, Santee Cooper's licensed Professional Engineers (P.E.s) oversaw the construction to ensure it was completed in accordance with the permitted construction drawings, with a few limited exceptions previously approved by SCDES. Additionally, construction quality assurance was contracted to a third-party consultant, Insight Group, who performed industry-standard testing to ensure and certify construction was completed as designed and permitted. An overview of the construction documents and process was completed with the March 2023 ASD, and the finding was that the construction design and implementation reflects standard industry practices in accordance with state and federal regulations that are geared to prohibiting long-term or substantial releases of CCRs.

Santee Cooper continues to oversee the operation of Landfill Area 2 and oversees or conducts routine inspections. WGS personnel complete daily informal inspections and weekly formal inspections in accordance with standard engineering practices and 40 CFR §257.84. The Operator-in-Charge works full-time at WGS and is a certified Class 3 landfill manager authorized by the State of South Carolina.

2.4.1 Landfill Design

Landfill Area 2 is currently approximately 2,000 feet wide and 1,500 feet long. Landfill Area 2 started receiving material in March 2022 and CCR from Ash Ponds A and B. Stormwater is routed to the on-site Industrial Cooling Pond via the Discharge Canal. Landfill Area 2 was designed with an internal drain, a decant structure that allows rainwater that contacts CCR to be collected within the active (or open) waste placement area and drain directly to the leachate management system. All decant structures are designed to drain the active contact rainwater using a contact water attenuation basin to temporarily store the contact water. The operational grading plans and fill sequencing were designed to channel any rainwater within the active area to the attenuation basin/decant structure, and subsequently to the permitted leachate management system. As of October 2024, Landfill Area 2 has no final cover, as it continues to be actively filled.

The CCR Rule under 40 CFR §257.60(a) states that new CCR landfills "must be constructed with a base that is located no less than 1.52 meters (5 feet) above the upper limit of the uppermost aquifer, or must demonstrate that there will not be an intermittent, recurring, or sustained hydraulic connection between any portion of the base of the CCR unit and the uppermost aquifer due to normal fluctuations in groundwater elevations (including the seasonal high water table)." Geosyntec noted Landfill Area 2 is designed with a base that is located greater than 5 feet above the seasonal high-water table, except for the leachate collection system sumps. To address the requirements of the location restriction, the sumps were equipped with a "clay plug under-liner" constructed beneath the base of the CCR unit, which supplements the landfill composite liner system and forms a hydraulic barrier that prevents intermittent, recurring, or sustained hydraulic connection between the sump areas and the uppermost aquifer. As noted in the March 2023 ASD, in the *Location Restrictions Compliance Demonstration*

(Geosyntec, 2021), Geosyntec reviewed the design and construction of Landfill Area 2 and reported that it complied with the requirements of 40 CFR §257.60(a) due to its design and placement above the uppermost aquifer. These findings indicate that the CCR material in the landfill is not in contact with the groundwater. The Geosyntec report was certified by a P.E. on November 11, 2021.

2.4.2 Composite Liner and Leachate Collection and Removal System

As described in the March 2023 ASD, the Landfill Area 2 liner system was designed and constructed to meet the design criteria requirements. The Design Engineer-of-Record P.E. certified that the design of the composite liner and the LCRS meets the design criteria requirements of 40 CFR §257.70 (Geosyntec, 2017a). On October 27, 2017, Geosyntec's P.E. certified the composite liner liquid flow rates through the lower component (geosynthetic clay layer) of the alternate composite liner for the unit and determined the liquid flow rate is no greater than through 2 feet of compacted soils with a hydraulic conductivity of 1×10^{-7} centimeters per second, and thus meets the requirement of 40 CFR §257.70 (Geosyntec, 2017b).

The landfill leachate pumps operate on a regular basis to handle and discharge leachate and ash contact stormwater. According to the Operator-in-Charge, the pumps operate on a nearly continuous basis aside from when on-going maintenance is required, and there has been no change in the operating process or construction of the leachate pumps and pipe system since the date of the initial ASD. However, the leachate pumps are replaced regularly due to failures with periods of time where the pumps were not operable because replacements were not readily available. The leachate system is enclosed and lined until it discharges into the Cooling Pond (Geosyntec, 2021).

2.4.1 Placement of Waste

To determine the likelihood that CCR material within the landfill may have been in contact with the groundwater, groundwater elevations in the monitoring wells were compared to the seasonal high-water table provided in the Geosyntec report. At the time of the Geosyntec report, the groundwater elevations ranged from 21 feet above MSL in the central portion of Landfill Area 2 to elevation 20 feet above MSL in the north, east, and west portions of the perimeter of Landfill Area 2. Landfill liner elevations are above 25 feet above MSL. Based on data available subsequent to the 2021 report, groundwater elevations have ranged from 17 feet above MSL as shown in the hydrograph provided in Appendix A and potentiometric maps provided in Appendix B to a maximum of approximately 23.5 feet above MSL at WLF-A1-2. Key cross-sectional detail from the Geosyntec report is provided in Appendix C.

Based on the Geosyntec report and subsequent measured groundwater elevations, the bottom layer of CCRs placed in the cells of Landfill Area 2 remained consistently above the highest measured groundwater elevation. In contrast, the residual subsurface soils under the landfill and in open areas of Ash Pond A are at times in contact with the uppermost aquifer.

2.4.2 Contact Stormwater Management

Contact water is a stormwater runoff that has been in contact with exposed CCR waste in the active areas of Landfill Area 2. The Landfill Area 2 contact water is managed through sequential management as ongoing lifts of waste are placed in a landfill area cell. Initially, when the elevation of waste was below the elevation of the landfill perimeter, contact water was removed via pumps and discharged to the WGS Industrial Cooling Pond. After the elevation of CCR waste was raised above the elevation of the landfill perimeter, a chimney drain decant structure was installed. The chimney drain consists of a

perforated vertical concrete riser pipe and is surrounded by attenuating basins. The attenuating basins are depressed areas around the decant structure intended to help filter the contact water. The entire active area, including the attenuating basins, is graded to drain toward the decant structure. The vertical decant structure pipe connects to a horizontal connector pipe at the base, which conveys contact water by gravity through the leachate collection system to the Industrial Cooling Pond.

2.4.3 Annual Inspections

The Landfill Area 2 is formally inspected weekly by trained landfill operators under the supervision of the Operator-in-Charge. It is also inspected annually by licensed professional civil engineers in compliance with 40 CFR §257.84(b) of the CCR Rule. From a compliance perspective, the landfill is inspected monthly by SCDES. To date, there have been no landfill violations based on regulatory inspections according to the Operator-in-Charge. Additional inspections include routine fugitive dust inspections of the site and weekly stormwater pollution prevention inspections by Santee Cooper employees.

The March 2023 ASD included a review of the routine operations and inspections of Landfill Area 2, and the finding was that there was no obvious evidence of a release directly from Landfill Area 2. A review of subsequent annual and weekly inspections was completed with the following observations discussed in the subsections below.

2.4.3.1 Class 3 Landfill Area 2 2022 and 2023 Fugitive Dust Control Reports

The 2022 and 2023 Fugitive Dust Control Inspection Reports noted that there were no citizen complaints to report and standard controls were sufficient; therefore, corrective actions were not taken. Both inspections were conducted in compliance with Santee Cooper's CCR Fugitive Dust Plan.

2.4.3.2 CCR Class 3 Area 2 2022 and 2023 Landfill Inspections

The 2022 annual inspection was conducted to assess the stability and functionality of the WGS CCR landfills and was certified by a P.E., Alfred D. Manalac, on October 24, 2022. The report stated: "In summary, the WGS CCR Class 3 Landfills Area 1 and Area 2 were generally found in satisfactory condition. No recognized existing or potential management unit safety deficiencies were noted at the time of inspection within the parameters of design and operation." A recommendation was made to lower the water elevation within the perimeter dikes of Landfill Area 2 with temporary pumps until the installed drainage system is able to be used and to prevent stagnant ponding of runoff surface water when possible. The physical site inspection was conducted September 27, 2022. Landfill Area 2 contained an estimated 483,332 cubic yards of materials at the time of the inspection.

The 2023 inspection was conducted September 14, 2023. In the inspection report, the Santee Cooper's P.E., Alfred D. Manalac, who conducted the inspection stated: "In summary, the WGS CCR Class 3 Landfills Area 1 and Area 2 were generally found in satisfactory condition. No recognized existing or potential management unit safety deficiencies were noted at the time of inspection within the parameters of design and operation." Landfill Area 2 contained an estimated 1,259,151 cubic yards of material at the time of the inspection.

The annual inspections were made by conducting file reviews of the operating record and a physical site inspection. The inspector reviewed weekly inspections conducted by WGS personnel that indicated no major structural or operational problems. The overall condition of the landfill was found to be satisfactory. The annual inspection for 2024 has not yet been completed. Weekly inspections are

conducted by WGS staff working for the Operator-in-Charge and signed by a station manager. A review of the provided 2024 weekly inspections reflects no significant issues.

For regulatory compliance, Landfill Area 2 is inspected monthly by SCDES. According to the Operator-in-Charge, there have been no violations and the SCDES records reflect no periods of non-compliance. Notably, SCDES did not classify the December 2023 release as an incident, as further described in Section 2.4.6 below, because there was not a dike breach and the CCR and the ash contact stormwater released from Landfill Area 2 were fully contained in Ash Pond A.

2.4.4 Extreme Weather Incident

The following are pertinent observations from Santee Cooper's Report to File on the December 2023 extreme weather event. Appendix D references the Landfill Area 1 and 2 Weather Impacts/Incident (*December 17-80, 2023- Landfill Area 1 and Area 2 Weather Impacts, Santee Cooper Note to File,* Jeremy Poetzscher and Domenic Ciccolella), June 19, 2024. A summary is provided below:

- The event occurred between December 17 and 18, 2023, when Georgetown County, South Carolina received an estimated 12 to 13 inches of rainfall in an approximate 24-hour period. This 24-hour precipitation total falls between the 100-year and the 200-year storm interval for the areas as published in the National Oceanic Atmospheric Administration's Precipitation-Frequency tables.
- The result was a release of both CCRs and ash contact stormwater from the landfill waste boundary; however, there was not a breach in the Ash Pond A dike and all CCR and ash contact wastewater were contained within Ash Pond A. All released CCR was fully recovered within less than one week after the incident according to the Operator-in-Charge.
- Landfill Area 2 sustained various amounts of CCR and side-slope erosion that required correction action to mitigate further slope stability concerns and/or further release of CCRs outside the permitted waste boundaries.
- The volume of CCRs and water release is unknown; however, the released CCRs and CCR contact stormwater were captured in the excavated footprint of Ash Pond A that remained open (approximately 13 acres). Corrective action included removal of visible CCRs by December 25, 2023. The ash contact stormwater water was directed from Ash Pond A to the Industrial Cooling Pond system.

2.5 GROUNDWATER QUALITY – APPENDIX III AND APPENDIX IV CONSTITUENT EVALUATION

As previously discussed, Landfill Area 2 is located within the footprint of Ash Pond A. Time-series gradients for Appendix III constituents in downgradient well locations are provided in Appendix E. As shown in the time-series graphs, concentrations of Appendix III constituents detected in monitoring wells during baseline sampling prior to receiving CCRs are consistent with historical sampling results obtained while Ash Ponds A and B were in operation. Historically, there has been some variability in the data, which possibly reflects the ongoing and dynamic excavation and closure activities, including dewatering for Ash Ponds A and B with simultaneous construction activities in and around Landfill Area 2 (see Section 2.9 for a further evaluation of time-series trends). Landfill Area 2 is also located in a dynamic hydrogeologic setting between Pennyroyal and Turkey Creek, which are tributaries to the Sampit River and several industrial surface water bodies, including the Intake Canal, Discharge Canal, and the Industrial Cooling Pond. Increasing trends, such as those observed for sulfate and chloride in WLF-A2-6 in the time-series graphs, are likely associated with such activities and the dynamic

hydrogeologic setting, as this monitoring location is also located at the intersection of the Intake and Discharge Canals. WAP-19 shows significant increases for TDS, which are likely attributable to influence from the Cooling Pond. As noted in Section 2.9, these concentrations in WLF-A2-6 and WAP-19 are also lower than those detected in the nearby surface water samples and may represent an additional source to the co-located soils from the former ash pond beneath the landfill. Explanations to why Appendix III constituents may be in the Industrial Cooling Pond and surrounding water bodies are provided in Section 2.9.

2.6 STATISTICAL EVALUATION

As cited in the March 2023 ASD, the interwell and intrawell statistical evaluations used were from Landfill Area 2, Ash Pond A, and Ash Pond B prior to the first placement of CCRs and post-CCR placement in Landfill Area 2. This demonstrated SSIs for boron, calcium, chloride, fluoride, sulfate, and TDS before waste placement. This was not unexpected, because Landfill Area 2 is located within the footprint of a previously impacted area, Ash Pond A.

On July 15, 2024, Haley & Aldrich conducted an intrawell statistical evaluation of the first semiannual detection monitoring event for Landfill Area 2.

For the first event of 2024, the following SSIs were identified for Appendix III constituents:

- Calcium at WLF-A2-6;
- Chloride at WLF-A2-6;
- Sulfate at WAP-9, WAP-19, and WLF-A2-6; and
- TDS at WAP-9, WAP-19, and WLF-A2-6.

Groundwater monitoring wells WLF-A2-1 and WLF-A2-2 were also incorporated into this statistical analysis. Monitoring wells WLF-A2-1 and WLF-A2-2 were installed to provide additional groundwater monitoring for new Landfill Area 2 cells, and baseline groundwater sampling was completed in 2022. The February 2023 sampling monitoring event was the first detection for these two new wells. No SSIs were identified for WLF-A2-1 or WLF-A2-2. Fluoride, though this has been noted as a SSI in the past, was not considered a SSI during the February 2024 sampling monitoring event. Additionally, except for pH in WAP-9 and fluoride at WAP-19, trends for the Landfill Area 2 compliance well network were shown as stable or decreasing during a review of Mann-Kendall trend evaluations. While the Mann-Kendall evaluations are not used to determine SSIs, they are a valuable addition to the overall statistical review, as this test is used to determine whether a time-series has a monotonic upward or downward trend considering the historical dataset and does not require that the data be normally distributed or linear.

As discussed in the March 2023 ASD, statistical evaluations for the February 2023 semiannual sampling event for Landfill Area 2 and Ash Ponds A and B, prior to first placement of CCRs, and the summary of the statistical evaluation of Appendix III constituents post-first receipt of CCRs demonstrate that the area was impacted in a similar capacity (e.g., concentration magnitude and spatial variability) prior to placement of CCRs in the new landfill (Haley & Aldrich, 2023). Since activities are ongoing for the closure of Ash Ponds A and B and due to variability in surrounding water bodies, the groundwater aquifer is not in equilibrium, and increases in the Appendix III and Appendix IV constituents may be observed while the system remains out of equilibrium. When an equilibrium condition is re-established, concentrations of the constituents are likely to stabilize.

2.7 HYDROGEOLOGICAL EVALUATION

The hydrogeological evaluation for this ASD consisted of preparation of potentiometric contour maps and review of data to evaluate the groundwater flow and distribution of Appendix III and Appendix IV constituents prior to and after the placement of CCRs in Landfill Area 2.

Quarterly potentiometric maps from 2023 and the first two quarters of 2024 for WGS are presented in Appendix B. A hydrograph of water levels for the downgradient monitoring wells for Landfill Area 2, Ash Ponds A and B, and surrounding water bodies' elevations in the Discharge Canal and Industrial Cooling Pond are presented in Appendix A. Time-series plots of Appendix III constituents of concern for Landfill Area 2, including the confirmation sampling event conducted in July 2024, are presented in Appendix E.

As discussed in the March 2023 ASD, the potentiometric maps are used to interpret groundwater flow direction and to calculate approximate flow rates (velocity) in feet per day. The potentiometric map contour interpretations were refined in 2022 because Santee Cooper began measuring the ponded surface water elevations in the unlined ash pond (WGS-PSE-1), as well as the Industrial Cooling Pond (WGS-PSE-5), during the 2022 semiannual monitoring events to supplement the groundwater elevation data. The ponded surface water monitored by WGS-PSE-1 in Ash Pond A is assumed to recharge to the shallow groundwater because the pond is unlined and due to the depth to groundwater in the nearby groundwater monitoring wells.

Potentiometric maps show that groundwater has generally flowed in a radial pattern from the Ash Ponds A and B toward adjacent water bodies (the Intake Canal, Industrial Cooling Pond, and Discharge Canal). Since 2023, water table elevations from well locations near these water bodies have shown fluctuations, which when compared to the adjacent monitoring well network, indicate localized flow reversal attributable to significant weather events and water management activities. Prior to 2022, a standard elevation (20 feet above MSL) was used for surface water bodies in the potentiometric mapping of the site. In 2023, quarterly synoptic water levels demonstrate that the Industrial Cooling Pond elevation varies, from 19.24 feet above MSL observed in November 2023 to 20.44 feet above MSL in February 2024. Process water from WGS is discharged to the Cooling Pond for wastewater and stormwater management purposes, then discharged through the permitted NPDES outfall, when necessary. This results in fluctuations in water elevations in the Industrial Cooling Pond that may prevent contaminants in groundwater from migrating under assumed conditions. Arrow annotations on the potentiometric maps provided in Appendix B were provided in this ASD to represent observed individual flow reversals between the surrounding water bodies and the measured water table. The differences in head between the groundwater elevation and the Cooling Pond may restrict the mobility of the Appendix III constituents; thus, it is likely to observe variations in concentrations that correlate to climatic events, such as significant droughts or storm events, such as hurricanes. Coupled with the relatively flat hydraulic gradient observed at the site, the more mobile Appendix III constituents may be stagnant or even become more concentrated because of the reversals in hydraulic head.

Additionally, as Ash Ponds A and B continue to undergo closure-by-removal; dewatering and construction have continued to create a dynamic environment near the waste boundary. This may also create localized reversals in hydraulic head.

As discussed in the prior ASD and as still holds true for this ASD, it is unlikely that a release directly from the Landfill Area 2 would have reached downgradient monitoring wells during the early years of landfill operations. The distance between the initial placement of the waste to the groundwater monitoring well (WAP-17) closest to the cell that received the initial waste varies; however, it is at least 30 feet.

Using average groundwater velocities calculated from 2022 to the second quarter of 2024 (Appendix F), a release of CCR constituents in the active cell areas (cells 4N, 4S, 5N, 5S, 6N, 6S, 7N, and 7S) would take an average of 50 years from the waste boundary to the closest respective downgradient monitoring well, if any were to occur. Using the highest velocity calculated between 2022 and 2024 for the landfill (0.044 feet per day), a release upgradient of WAP-A2-6 and WAP-9, which both showed SSIs for the first semiannual sampling event of 2024, would not have reached these well locations until 2028 and 2062, respectively. The estimates provided in this table only account for the velocity calculations and do not consider constituent adsorption resulting in plume retardation or changes in hydraulic head from the Industrial Cooling Pond or surrounding water bodies, which would decrease constituent migration from a landfill release to the downgradient monitoring wells. In addition, the estimate also does not account for the time required to travel between the liner and the water table. A detailed table showing a comparison of average and worst-case flow velocities since landfill operation started is provided as Appendix F, along with corresponding distances to the waste.

Since Ash Ponds A and B began operating in 1975, based on the hydrogeological evaluation, it has been determined that during the operation period, there has been sufficient time for releases from Ash Ponds A and B to migrate to the downgradient monitoring wells. The groundwater flow velocity likely would have been greater during their operation due to the additional hydraulic head on the ponds. Conversely, one would conclude that there has not been enough time for a release from the new Landfill Area 2 to have reached the downgradient monitoring wells, even if that release occurred on the first day of operation on March 28, 2022.

2.8 SIGNIFICANT STORM EVENTS

Historical weather events have also contributed to the variability observed at WGS and Landfill Area 2. Since its construction, the South Carolina coast has had 13 notable hurricane or tropical storm landfalls near the Georgetown area, each bringing significant rainfall. According to the National Weather Service, over a three-day period in September 2016, precipitation from Hurricane Hermine brought over 14 inches of rainfall to the Georgetown area. During the prior year, October 1 through 5, 2015, Hurricane Joaquin caused historical flooding in the Georgetown area. Georgetown County received nearly 20 inches of rainfall over this five-day period. Because of the relatively slow-draining lowlands, the Black River and lower tributaries, including those flowing toward the Waccamaw River, remained in a flood stage for nearly two weeks in October. At the time of these major storm events, Landfill Area 2 had not been constructed and had not begun receiving waste. As depicted in the hydrograph (Appendix A), a potentiometric high was gauged following this storm event and again after Hurricane Matthew, which may have mobilized impacts from Ash Pond A. Significant precipitation amounts may have percolated through the unit and likely created a slug of impacted groundwater from Ash Pond A. Based on the time between the historical rain event and current flow velocities for the area, the recent increases in constituent concentrations may represent the leading edge of a short-term release attributable to historical weather events that took place prior to the ash pond removal and Landfill Area 2 construction.

After Landfill Area 2 construction, contact stormwater drains to the leachate collection system, which is then transferred to the Industrial Cooling Pond as part of the stormwater management process. As mentioned previously, the Industrial Cooling Pond is discharged through the permitted NPDES outfall only when necessary. With varying water levels, it has hydrogeological influence over the groundwater wells near Ash Ponds A and B and Landfill Area 2.

2.9 SUMMARY OF FINDINGS FOR THE LABORATORY ANALYTICAL DATA EVALUATION

To confirm the concentrations observed in monitoring wells WAP-9, WAP-19, WLF-A2-6, and WLF-A2-2, Haley & Aldrich collected a groundwater sample from these monitoring well locations using low-flow techniques in accordance with USEPA Technical Instructions and Santee Cooper standard protocols. Nine surface water samples were also collected to provide a comparison to surrounding surface water bodies. Sampling locations are provided on Figure 3. Contact stormwater and leachate samples were also collected from the Landfill Area 2 system for verification purposes. Samples were shipped on ice to Pace Analytical National Laboratory in Mt. Juliet, Tennessee using standard chain of custody procedures. Groundwater samples, surface water samples, and the contact water/leachate sample were analyzed for Appendix III constituents by USEPA Methods 2540 C-2011 (TDS), 9040C (pH), 9056A (chloride, fluoride, and sulfate), and 6010D (boron and calcium). Field data sheets and laboratory analytical data are provided Appendix G. Tabulated data are provided for review in Table 1 (below).

Upon review of the laboratory analytical data, the Appendix III confirmation samples derived from the monitoring wells were similar to those found in the original samples from the February 2024 sampling event. As shown in the time-series graphs provided in Appendix E, the data are generally within historical concentrations for this unit. The data have varied through time for Appendix III constituents, particularly near WLF-A2-2, which is located near the Intake Canal and Industrial Cooling Pond. As discussed in Section 2.6 of this report, Appendix III constituents are not showing increasing trends for most locations in the Landfill Area 2 downgradient compliance monitoring well network; however, WAP-19, located along the Industrial Cooling Pond, showed an increase in chloride and sulfate during the confirmation sampling.

Notably, surface water samples collected during the study demonstrated generally higher levels of Appendix III constituents from the two locations collected from directly adjacent shallow monitoring wells, except for sulfate at SW-4. Comparisons between the surface water samples collected directly adjacent to monitoring well locations along the Industrial Cooling Pond (SW-4 and WAP-19) and Discharge Canal (SW-7 and WLF-A2-6) are provided below in Table 1. Locations of the surface water samples with respect to the monitoring well network are provided on Figure 3.

Water quality in the approximate 400-acre Industrial Cooling Pond is a combination of the natural site background conditions which are discussed below, WGS stormwater inflows, wastewater inflows, evaporation, and the relatively infrequent discharges. Inflows from the landfills have been previously discussed. Additionally, as noted in the Worley Parsons Water Balance diagram dated July 30, 2020, permitted industrial inflows include receiving the discharge from the WGS Low Volume Wastewater Pond. The Low Volume Wastewater Pond contains station washdown water from flue gas desulfurization areas and likely accounts for the higher concentrations of Appendix III constituents observed, including gypsum, and accounts for approximately 4 million gallons of the inflow to the Industrial Cooling Pond per day.

Table 1: Comparison of Industrial Surface Water and Groundwater Data

Constituent	SCDNR Values	WLF-A2-6	SW-7	WAP-9	WAP-19	SW-4	Leachate Area 2
Boron	NE	0.391	26.7	4.33	4.45	26.9	7.65
Calcium	200	234	775	250	676	778	618
Chloride	40-500	87	1,480	162	37.7	1,470	396
Fluoride	0.9 – 6.9	<1.5	3.3	<1.5	<1.5	4.2	<1.5

Table 1: Comparison of Industrial Surface Water and Groundwater Data							
Constituent	**SCDNR Values**	**WLF-A2-6**	**SW-7**	**WAP-9**	**WAP-19**	**SW-4**	**Leachate Area 2**
Sulfate	NE	283	1,190	509	2,320	1,180	1,530
TDS	800	891	5,770	1,230	2,810	5,730	2,870

Notes:
Laboratory results presented in milligrams per liter.
NE: Not established in the South Carolina Department of Natural Resources (SCDNR) report.
Samples collected July 8 and 9, 2024

Table 1 also contains comparison criteria with established groundwater background values from the SCDNR for the sub-basin. As discussed in the publication, groundwater becomes increasingly mineralized downgradient approaching the coast. Where fossil-shell material is abundant, and as common with this site that is located in a coastal setting, it contains hard, alkaline, calcium bicarbonate water, which may account for partial contribution to the high Appendix III concentrations observed at WGS. According to the SCDNR report, the Waccamaw sub-basin is defined by the following:

- Calcium and bicarbonate are the predominant ions present from the abundance of fossil shells.
- High levels of chloride may represent incompletely flushed seawater from the aquifer.
- TDS averages of approximately 800 milligrams per liter (mg/L) exist in the Waccamaw sub-basin, which is caused by suspended aragonite.
- Hardness ranges from negligible to 200 mg/L (as calcium carbonate) have been observed.
- Levels of fluoride higher than drinking water standards are also relatively common in this area and are attributed to fluorapatite found in fossilized shark teeth.

As shown in Table 1, chloride and fluoride fall within these published background values for the area. While TDS remains slightly above the 800 mg/L average for this area, contributions from the natural formation are also likely occurring. The background concentrations indicate that beyond residual historical impacts from Ash Ponds A and B, Appendix III constituent concentrations may be attributable to natural variations in the localized groundwater quality.

The contact stormwater and leachate sample collected from the Landfill Area 2 noted “Area 2 Leachate” on the chain of custody and in Table 1 contained similar concentrations of Appendix III constituents in direct comparison to groundwater sampling data derived from the downgradient groundwater monitoring wells. This was anticipated based on the nature of the contact stormwater and leachate from CCR material.

One field blank was also collected using laboratory-provided deionized water near Landfill Area 2 to indicate the potential for surrounding site contributions during groundwater sample collection. The field blank contained estimated (J) concentrations of fluoride (64.1 J micrograms per liter [µg/L]) and calcium (98.1 J µg/L); however, these concentrations are not considered to impact the overall usability of this data or the conclusions of this report.

In summary, higher concentrations of Appendix III constituents have been observed around the Class III Area 2 Landfill and are likely attributable to naturally occurring elements in the coastal plain, WGS

stormwater inflows, wastewater inflows, evaporation, and the relatively infrequent discharges for the Industrial Cooling Pond Complex.

2.10 GEOCHEMICAL EVALUATION

A geochemical evaluation was performed on WGS groundwater data to help inform the potential source of SSIs above background in wells WAP-9, WAP-19, and WLF-A2-6. The evaluation consisted of time-series and bivariate trend analyses utilizing the impacted and site background wells (i.e., WBW-1, WBW-A1-1, and WAP-1). WBW-A1-1 is typically used as the background well for the Landfill Area 1, but was also used in this evaluation to assess site wide background conditions. A subset of analytes was evaluated that are key indicators of the potential sources of SSIs above background. These analytes include sulfate, calcium, chloride, TDS, and boron. Although boron does not show SSIs above background, it is an important constituent to consider because boron has been shown to be highly leachable from fly ash material regardless of the source material or coal processing operations (Izquierdo & Queroi, 2012). Since the source of landfill material is predominantly ponded ash from Ash Pond B, the South Ash Pond, and some from West Ash Pond, boron could be an indicator of impacts from recent landfill material emplacement.

Appendix E shows time-series diagrams for select analytes illustrating data collected since 2015 to help elucidate water quality changes pre- and post-landfill emplacement (shown by the dashed line in Appendix E). A second dashed line indicates a recent large storm event that may have impacted the water quality. In general, many increases in Appendix III constituents occur around the timing of landfill material emplacement; however, several observations suggest the landfill itself is not likely the source. Observations for each analyte are described below.

2.10.1 Sulfate

Sulfate concentrations in Figure 2.10.5-1 indicate that since initial landfill CCR material emplacement, which occurred in cell 4S on March 28, 2022, there have been increases observed in wells WAP-19, WAP-9, and WLF-A2-6. Of note, WAP-19, adjacent to landfill cell 7S, did not receive waste until April 4, 2023, which was after the initial increase in sulfate observed in 2022. Additionally, nearby cells 6S and 7N did not receive initial waste until February 17, 2023, which was after the initial increase. However, there is also a similar increase in sulfate concentration observed in background well WBW-A1-1 that cannot be related to landfill influences. Further, increases in sulfate concentration at WAP-9 and background well WBW-A1-1 seem to begin prior to landfill material emplacement. Additionally, WAP-9 sulfate concentrations are within the range observed in historical pre-landfill data, indicating there is a source other than the landfill that can produce the observed concentrations. There also appears to be an increasing sulfate trend observed based on eight data points collected prior to landfill material emplacement at WLF-A2-6.

2.10.2 Chloride

Chloride concentrations were noted to show a SSI above background in well WLF-A2-6; however, the increase in chloride appears to begin prior to landfill material emplacement around December 2021, precluding the landfill from impacting chloride concentrations. Additionally, background wells WBW-1 and WAP-1 also show similar moderate increases in chloride concentrations around the same period, further suggesting the landfill is not the source of chloride.

2.10.3 Calcium

Calcium shows a SSI above background for well WLF-A2-6. However, this increase in calcium is also observed in downgradient wells WAP-9 and WAP-19, in addition to all three background wells. For background well WBW-1, the increasing concentrations began prior to landfill material emplacement. Further, the increases in calcium in wells WAP-19 and WAP-9 are within the range observed by historical values, suggesting these fluctuations are not abnormal. Although WLF-A2-6 shows an increase in calcium concentrations compared with historical data, the dataset is very limited, beginning in 2021, compared with the other two downgradient wells; therefore, it is unclear if these results suggest landfill influence, especially in consideration of the initial waste placement dates compared to the time of travel for groundwater. The impact to background wells suggests the source could be more widespread and does not point to the landfill.

2.10.4 Boron

Boron is one of the most common elements that is highly leachable from fly ash and other CCR-related materials. Since the material placed within the landfill area is mostly fly ash from Ash Ponds A and B, it would be expected that leaching of the ash material would be accompanied by increases in boron concentrations. Boron concentrations in the impacted downgradient wells are much higher than the background wells, but concentrations remain stable from pre- to post-landfill material emplacement, suggesting the landfill material is not impacting the water quality.

In summary, while some increases in Appendix III constituents, such as calcium, sulfate, and TDS appear to coincide with the initial landfill material emplacement into cell 4S on March 28, 2022, evidence suggests there are also impacts at background wells, with some predating the landfill, indicating an alternative source. Additionally, no concurrent rise in boron concentrations, which would be expected from the highly leachable fly ash in the landfill, has been observed at the impacted wells.

2.10.5 TDS

TDS concentrations show significant increases in wells WAP-19, WAP-9, and WLF-A2-6 around the timing of initial landfill material emplacement, with concentrations well above historical pre-landfill values. WAP-19, adjacent to landfill cell 7S, which did not receive waste until February 7, 2023, experienced a significant increase in TDS prior to this date. However, large spikes in TDS concentrations occur around the same time in background wells WBW-A1-1 and WBW-1, with increases in TDS occurring at WBW-1 beginning several years prior to landfill material emplacement. Thus, these results suggest there could be an alternative source impacting background and downgradient wells rather than Landfill Area 2.

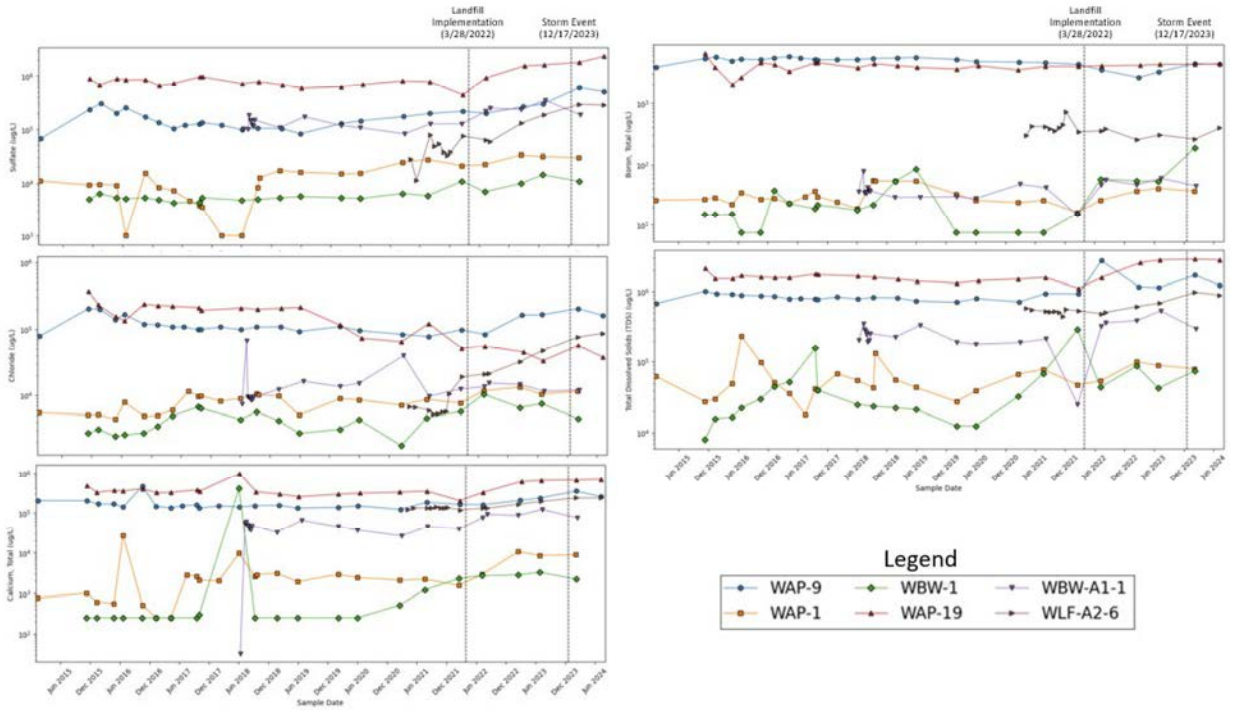

***Figure 2.10.5-1**: Temporal Plots of Select Analytes and Groundwater Wells*

To better understand the sources of calcium, sulfate, and TDS in downgradient and some background wells, a bivariate analysis was conducted. TDS increases are often linked to ions, such as sulfate, and the calcium-to-sulfate relationship can help identify the source. Gypsum dissolution, which has a 1:1 molar calcium-to-sulfate ratio, is a common cause of increased sulfate, calcium, and TDS, while dissolution of other common calcium-sulfate or carbonate fly ash minerals would produce a different ratio. Thus, if calcium and sulfate ions are predominantly a result of gypsum dissolution, the molar ratio of 1:1 would be maintained in the observed water quality.

Figure 2.10.5-2 shows a comparison of molar calcium versus sulfate concentrations in recent and historical (dataset spans from 1994 to 2024) downgradient and background well samples, where the dashed line represents the calcium to sulfate ratio of 1:1. Samples that fall along this line are consistent with gypsum dissolution being a contributing source. Samples that fall off the line have influence from other calcium and/or sulfate sources. For all background and downgradient wells, samples representing post-landfill emplacement (bold symbols in Figure 2.10.5-2) show a shift compared with pre-landfill data (translucent symbols in Figure 2.10.5-2) toward the molar calcium to sulfate ratio line of 1:1, indicating a potential increased influence from gypsum dissolution. Downgradient well WAP-19 and background well WBW-A1-1 show all historical and recent data fall along the calcium-sulfate ratio line equal to 1, and post-landfill emplacement samples show a shift toward elevated sulfate and calcium concentrations. Historically, WAP-9, WLF-A2-6, WBW-1, and WAP-1 do not fall along the line but show some samples close to or along the line, indicating historical influences from gypsum dissolution are not uncommon.

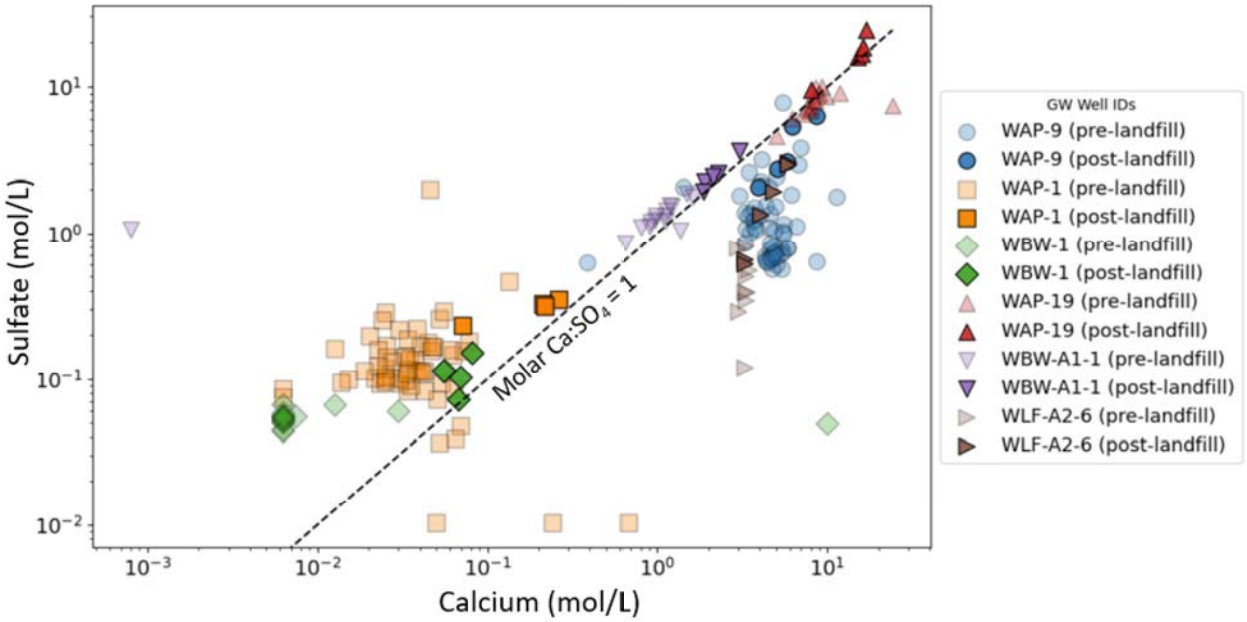

Figure 2.10.5-2: *Molar Calcium Versus Sulfate for Select Groundwater Wells*

The cause of the shift toward elevated calcium and sulfate is not currently well understood, but an evaluation of water levels compared with calcium, sulfate, TDS, and boron shows changing water elevations in the Industrial Cooling Pond and monitoring wells could be contributing factors. Figure 2.10.5-3 shows bivariate plots of water level (elevations in feet) versus boron, calcium, TDS, and sulfate. A notable observation in all wells (background and downgradient), except WLF-A2-6, is that as water elevation decreases, all post-landfill samples shift toward higher calcium, sulfate, and TDS concentrations compared with historical data, although some overlap with historical data exists. Boron concentrations remain relatively constant with changing water elevations, indicating little impacts due to changing hydraulics, further suggesting the source responsible for higher calcium, sulfate, and TDS concentrations post-landfill may not be related to landfill material emplacement.

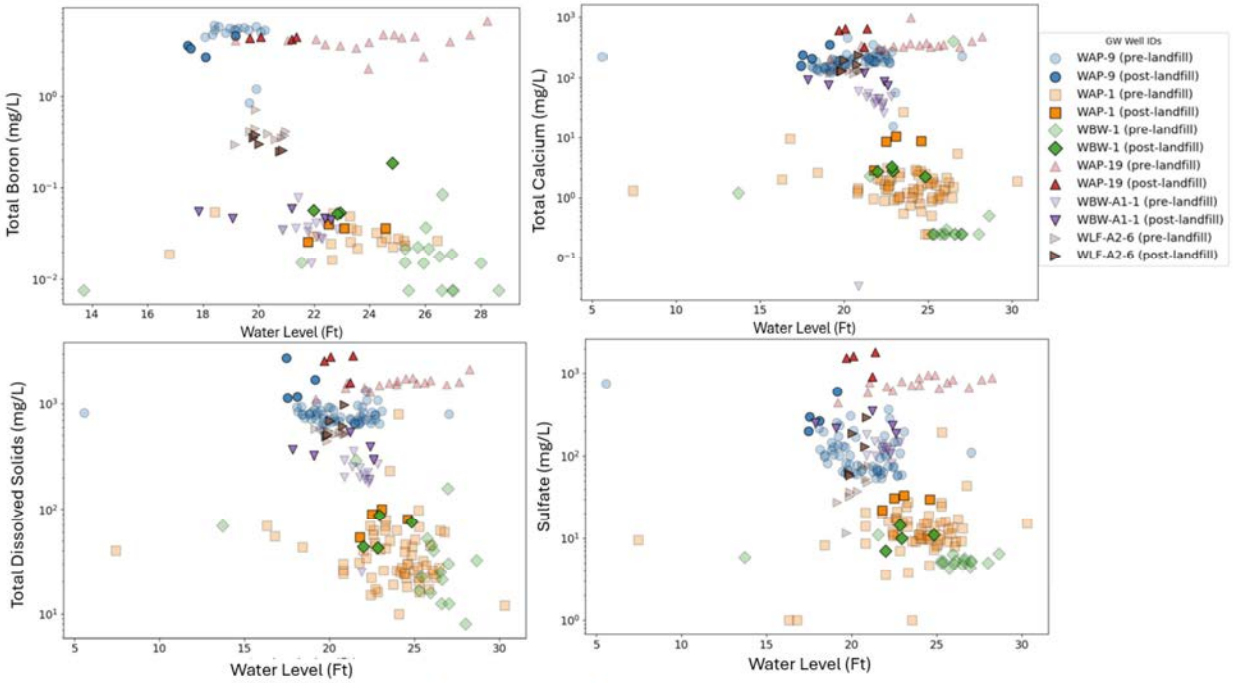

Figure 2.10.5-3: *Bivariate Plots*

In summary, the following lines of evidence based on the geochemical analysis indicate the source of increasing chloride, calcium, sulfate, and TDS at downgradient wells cannot definitively be associated with impacts due to the landfill and indicate the influence of an alternate source. Impacts show indications originating from gypsum dissolution effects that may be associated with changing water levels, and some changes in Appendix III constituents appear to occur prior to landfill material emplacement. The cause of changing water levels may not related to the landfill operations or the landfill material itself. The geochemical lines of evidence are summarized below:

- WLF-A2-6 – increases in chloride appear to begin prior to landfill material emplacement around December 2021, precluding the landfill from being the source of chloride.
- Increasing sulfate concentrations around the timing of landfill material emplacement are observed at background well WBW-A1-1, indicating there could be a source of sulfate that is not related to the landfill.
- Sulfate concentrations began increasing at WAP-9 and potentially WLF-A2-6 prior to landfill material emplacement, suggesting the landfill is not the source.
- Increases in calcium concentrations are observed prior to and near the period of landfill material emplacement for downgradient wells *and* background wells, suggesting a source other than the landfill, as background wells are not affected by the landfill. Additionally, increases in calcium concentrations at two of the three downgradient wells of interest are within their historical data range.
- Increases in TDS concentrations are related to increases in dissolved ions, such as calcium and sulfate, since the composition of TDS includes sulfate and calcium, which cannot be definitively associated with the landfill at this time. Additionally, large TDS spikes in background wells occur around the timing of the landfill material emplacement, suggesting a more widespread source of dissolved solids.

- Boron is highly leachable from fly ash material but shows no change in concentrations from pre- to post-landfill samples, suggesting the landfill material is not a major source of increasing Appendix III constituents.
- Post-landfill emplacement samples from all wells, both background and downgradient, show a shift toward a molar calcium-to-sulfate ratio of 1:1, indicating an increasing influence of gypsum dissolution, with some wells (WAP-19 and WBW-A1-1) consistently aligning along this ratio historically and recently, while others (WAP-9, WLF-A2-6, WBW-1, and WAP-1) exhibit occasional historical alignment, suggesting the potential for intermittent gypsum dissolution effects. Even though gypsum is a material common to WGS in that it has been stored for beneficial use in nearby locations and was disposed of in the Landfill Area 1, the Closed Unit 2 Slurry Pond, and Slurry Pond 3&4, only minimal amounts of gypsum have been disposed of in Landfill Area 2 or Ash Ponds A and B.
- Water level comparisons with calcium, sulfate, TDS, and boron suggest declining water elevations may play a role in the source of Appendix III SSIs above background, except at well WLF-A2-6. Lower water levels in post-landfill samples correspond with higher calcium, sulfate, and TDS concentrations compared to historical data. Boron levels remain stable.

3. Findings and Conclusions

Haley & Aldrich has concluded that Ash Pond A is the alternate source for the Appendix III SSIs detected downgradient of the new Landfill Area 2, coupled with dynamic site conditions which may be exacerbating and causing variability in constituent concentrations. Consistent with 40 CFR §257.94(e)(2), this written successful ASD includes obtaining a certification from a qualified P.E. within 90 days of detecting a SSI above background levels. As a result, and consistent with 40 CFR §257.94(e)(2), Landfill Area 2 at the WGS will remain in detection monitoring.

- **An alternative source exists.** Appendix III (referenced in Appendix E) and Appendix IV groundwater constituent concentrations are known to historically exist in groundwater prior to the first receipt of waste in Landfill Area 2. WGS Ash Pond A pre-dates the existence of Landfill Area 2. Ash Ponds A and B are in a corrective action program pursuant to 40 CFR §257.98, which includes removal of the source through excavation of the CCRs, then monitored natural attenuation with adaptive site management.
- **A hydraulic connection exists between the alternative source and the groundwater well with the significant increase.** Many of the monitoring wells used to monitor shallow groundwater for Landfill Area 2 also monitor Ash Pond A, which has now been excavated. The monitoring wells are screened in the same hydrostratigraphic unit as the existing wells that have historically monitored groundwater for Ash Ponds A and B since circa 1995. Ash Ponds A and B are clearly hydraulically connected to groundwater, as evidenced by the fact that the Ash Ponds A and B were unlined and that impacts of Appendix III and Appendix IV constituents have been identified, whereas Landfill Area 2 was constructed to not be hydraulically connected to groundwater.

  Additionally, based on the Landfill Area 2 design, construction, and location, there is not a known hydraulic connection between Landfill Area 2 and the uppermost surficial aquifer. Landfill Area 2 was designed and constructed to meet the location restriction requirements in 40 CFR §257.60 through §257.64, including placement of waste with greater than 5 feet of separation from the seasonal high-water table. Landfill Area 2 was constructed with a composite liner system, a LCRS, and a contact stormwater collection system, in accordance with state and federal regulations. Landfill Area 2 has also demonstrated through inspection reports that satisfactory conditions exist, except for a release due to a storm event in December 2023, which was quickly addressed.
- **Constituent(s) (or precursor constituents) are present at the alternative source or along the flow path from the alternative source prior to a possible release from the unit.** As discussed in the prior ASD, a pre-waste disposal statistical evaluation and groundwater data provide information on groundwater quality prior to initial receipt of CCRs into Landfill Area 2 and demonstrates that significant impacts existed prior to the first receipt of waste. This supports the premise that the CCRs in Landfill Area 2 is not the source of CCR Appendix III or Appendix IV constituents in groundwater at this time.
- **Relative concentration and distribution of constituents in the zone of contamination are more strongly linked to the alternative source than to the unit when the fate and transport characteristics of the constituents are considered.** Previous isoconcentration maps demonstrate that the plume's geometry is relatively similar to that before waste placement, and that the lateral distribution of Appendix III and Appendix IV constituents does not appear to be indicative of a point source release from Landfill Area 2. Furthermore, the distribution of

Appendix III constituents may be more closely linked to the influence from surrounding surface water bodies (e.g., TDS increase at WAP-19) or natural variation found near the coast rather than originating from Landfill Area 2.

- **Concentration observed in groundwater could not have resulted from the unit given the waste constituents and concentrations in the unit leachate and wastes, and the Site's hydrogeologic conditions.** As discussed in the original ASD, the distance between the initial placement of the waste to the closest groundwater monitoring well (WAP-17) varies; however, it is at least 30 feet. Using average groundwater velocities calculated from 2022 to the second quarter of 2024 (Appendix F), a release of CCR constituents in the active cell areas (cells 4N, 4S, 5N, 5S, 6N, 6S, 7N, and 7S) would take an average of 50 years from the waste boundary to their respective closest downgradient monitoring well, if any were to occur.

  The Landfill Area 2 design, construction, and operation, including the placement of CCRs into the landfill, makes it unlikely that there was a release from this relatively new landfill, which would have contributed to the constituent concentrations in groundwater. The leachate and contact stormwater are captured and pumped to the discharge point without contact with the environment.

  Furthermore, upon review of surface water elevation data captured since 2022, the surrounding water bodies at times exhibit a higher water level than the heads observed at the monitoring wells, evidencing the occurrence of a temporary groundwater flow reversal event, which would slow the migration of impacts from the prior ash pond footprint. This can account for variations in the concentrations observed for decades.

- **Data supporting conclusions regarding the alternative source are historically consistent with hydrogeologic conditions and findings of the monitoring program.** Ash Ponds A contained CCR from 1975 until excavation was complete and Ash Pond B excavation in not yet complete. The ponds were unlined, with a hydrogeologic connection to the uppermost aquifer. The 2018 initial detection monitoring event for Ash Pond A identified SSIs for the same Appendix III constituents as identified after placement of CCRs into Landfill Area 2 in March 2022.

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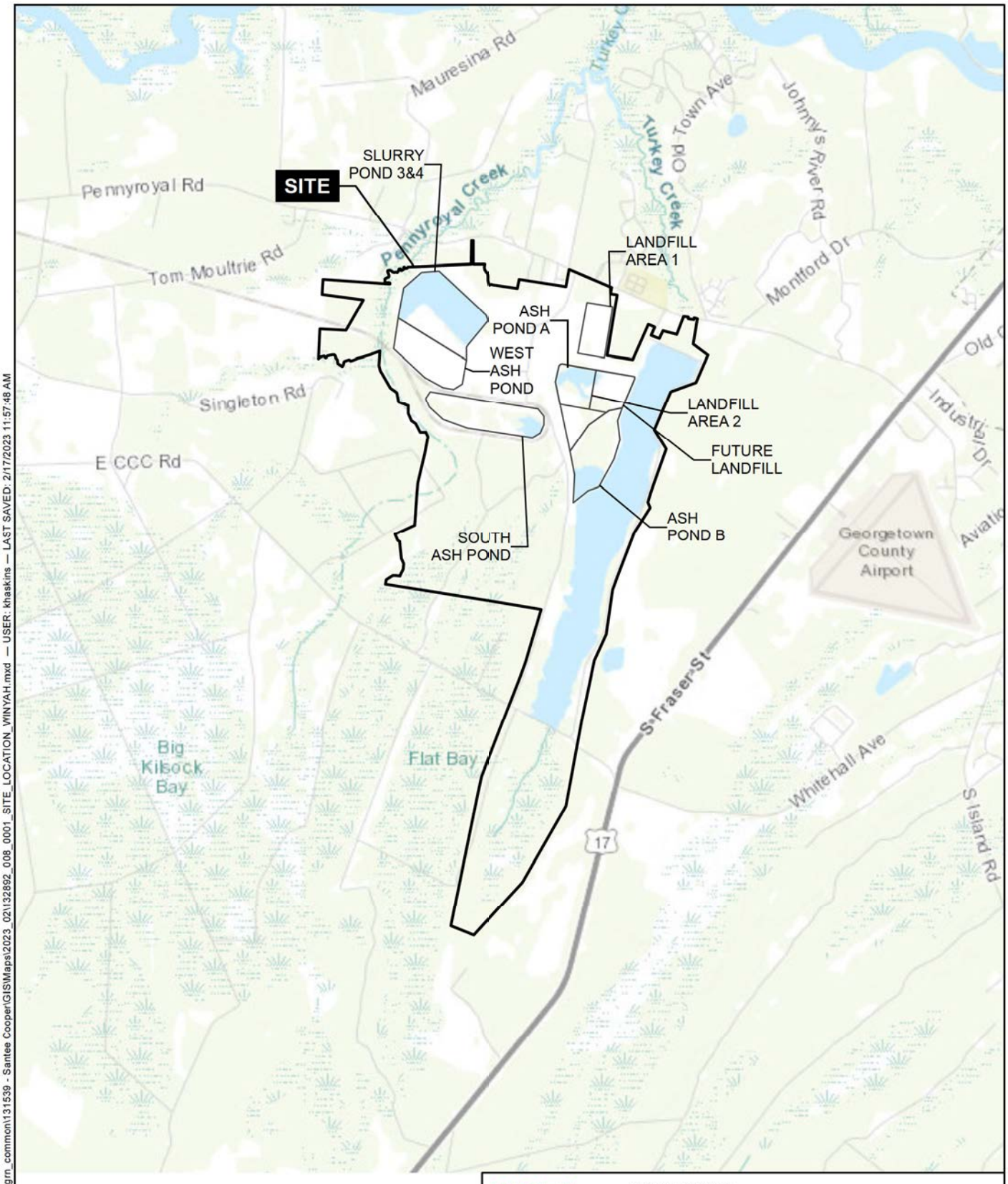
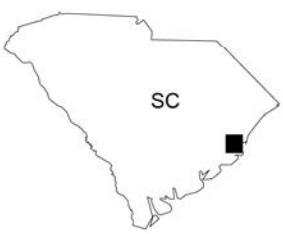
FIGURES





MAP SOURCE: ESRI

HALEY ALDRICH

SANTEE COOPER
WINYAH GENERATING STATION
GEORGETOWN, SOUTH CAROLINA

SITE LOCATION MAP

SEPTEMBER 2024

FIGURE 1

GIS FILE PATH: \\haleyaldrich.com\share\grm_common\131539 - Santee Cooper\GISMaps\2023_02\132892_008_0001_SITE_LOCATION_WINYAH.mxd — USER: khaskins — LAST SAVED: 2/17/2023 11:57:48 AM

LEGEND

- CCR MONITORING WELL
- BACKGROUND WELL
- UNLINED POND
- CCR UNIT BOUNDARY
- PROPERTY BOUNDARY

NOTES

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

N

0 400 800

SCALE IN FEET

HALEY ALDRICH

SANTEE COOPER
WINYAH GENERATING STATION
GEORGETOWN, SOUTH CAROLINA

CLASS 3 LANDFILL AREA 2 GROUNDWATER MONITORING WELLS FOR CCR COMPLIANCE

SEPTEMBER 2024

FIGURE 2

LEGEND

- CCR MONITORING WELL
- SURFACE WATER SAMPLE
- CCR UNIT BOUNDARY
- PROPERTY BOUNDARY

NOTES

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

N

0 600 1,200
SCALE IN FEET

HALEY ALDRICH

SANTEE COOPER
WINYAH GENERATING STATION
GEORGETOWN, SOUTH CAROLINA

SURFACE WATER SAMPLING LOCATIONS

SEPTEMBER 2024

FIGURE 3

LEGEND

- CRR MONITORING WELL
- BACKGROUND MONITORING WELL
- SURFACE WATER SAMPLE

SOIL SAMPLE DEPTH (INCHES)

- 0 IN
- 6 IN
- 12 IN
- 24 IN
- 30 IN
- 36 IN
- AREA 2 LANDFILL CELL (2021)
- SOIL SAMPLE GRID
- CCR UNIT BOUNDARY
- SITE_BOUNDARY

NOTES

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

N

0 300 600

SCALE IN FEET

HALEY ALDRICH

SANTEE COOPER
VINYAH GENERATING STATION
GEORGETOWN, SOUTH CAROLINA

LANDFILL AREA 2 CELLS AND WASTE PLACEMENT DATES

CCTOBER 2024

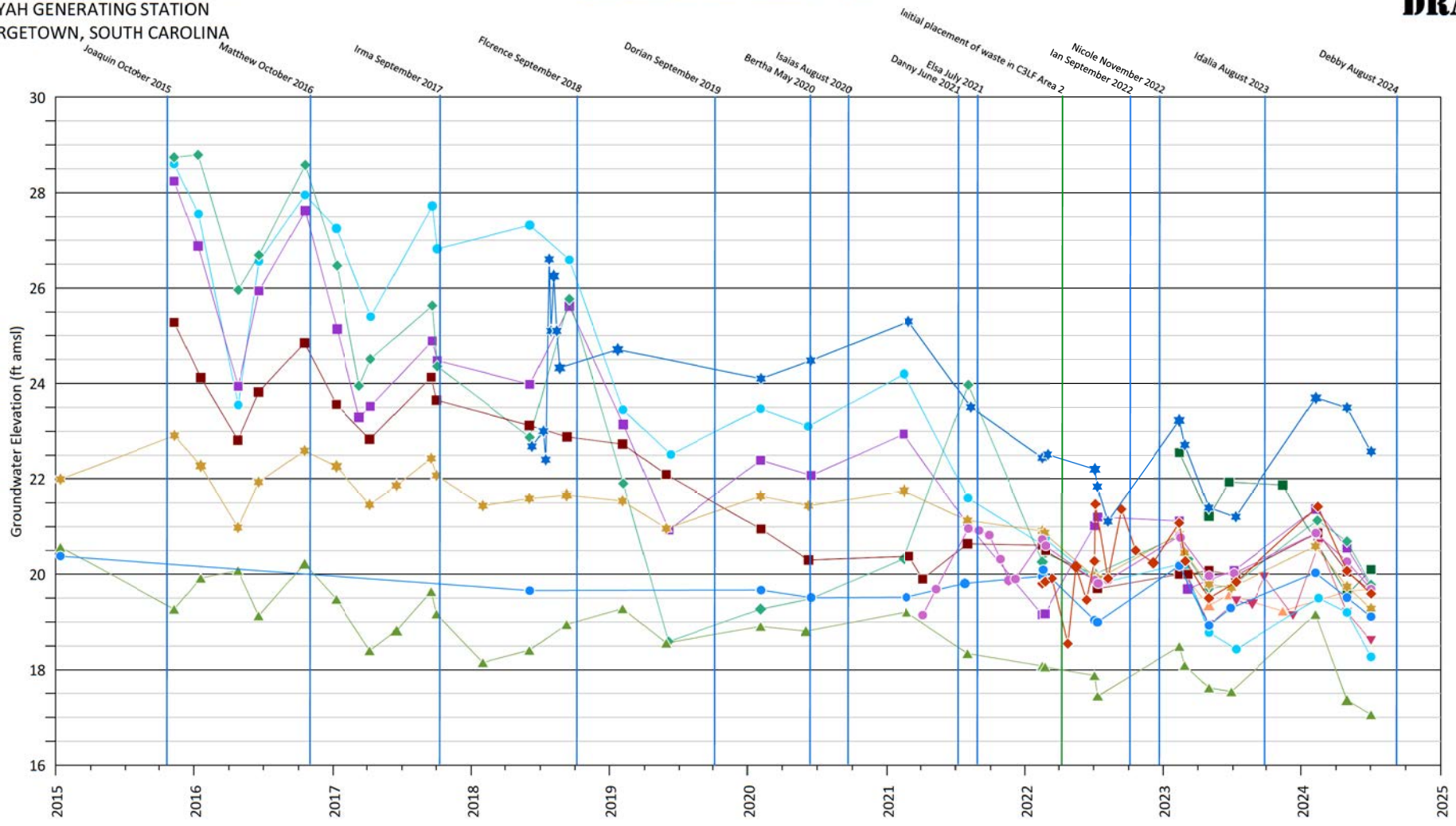
FIGURE 4

APPENDIX A
Hydrograph of Class 3 Landfill Area 2 Monitoring Wells and Surface Water Elevations

CLASS III LANDFILL TREND GRAPHS
WINYAH GENERATING STATION
GEORGETOWN, SOUTH CAROLINA

GROUNDWATER ELEVATION

DRAFT



NOTES:
1. FT AMSL = FEET ABOVE MEAN SEA LEVEL

LEGEND:

WAP-8	WAP-18	WAP-27	WLF-A1-2
WAP-9	WAP-19	WGS-PSE-1	WLF-A2-2
WAP-10	WAP-21	WGS-PSE-5	WLF-A2-6
WAP-17			

HALEY ALDRICH

September 2024

APPENDIX B
SynTerra Potentiometric Maps (2023 – 2024)

Notes:
Potentiometric Maps provided in 2023 Annual Report by Santee Cooper. Mark-ups by Haley & Aldrich. NDPES and other pertinent elevation details were used in interpretation of potentiometric surface

Symbology:
← Red arrows represent typical flow patterns reflected in general potentiometric interpretation.

LEGEND

WAP-3 12.87	MONITORING WELL SURFICAL FLOW ZONE WATER LEVEL IN FEET (NAVD88)
WAP-27	MONITORING WELL INTERMEDIATE FLOW ZONE
WAP-23	MONITORING WELL DEEP FLOW ZONE
◉	DEWATERING PUMP
WGS-PSE-1 22.55	SURVEYED SURFACE WATER ELEVATIONS (UNLINED PONDS) WATER LEVEL IN FEET (NAVD88)
—20—	INFERRED GROUNDWATER CONTOUR IN FEET (NAVD88)
←0.28ft/day	GROUNDWATER FLOW DIRECTION WITH VELOCITY
— —	SANTEE COOPER PARCEL LINE
——	CCR UNIT WASTE BOUNDARY

NOTES:
MAP IS PROJECTED IN SOUTH CAROLINA STATE PLANE NAD83 (INTERNATIONAL FEET) AND NAVD88
MONITORING WELLS LOCATIONS WERE PROVIDED BY SANTEE COOPER IN NAD83 AND NAVD88 DATUMS.
MARCH 2022 AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH PRO.
MONITORING WELL WATER LEVELS AND SURFACE WATER ELEVATION WERE PROVIDED BY SANTEE COOPER AND GAUGED ON FEBRUARY 13, 2023.

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

V = AVERAGE LINEAR VELOCITY (ft/day)
K = AVERAGE HYDRAULIC CONDUCTIVITY (ft/day)
$\Delta h/\Delta L$ = HORIZONTAL GRADIENT CHANGE (CHANGE IN HYDRAULIC HEAD / LENGTH OF HORIZONTAL HYDRAULIC FLOW PATH)
K = 2.3 FEET PER DAY (ft/day)
n_e = 0.3
HYDRAULIC CONDUCTIVITY AND EFFECTIVE POROSITY VALUES TAKEN FROM 2021 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT PREPARED BY HALEY AND ALDRICH.

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santee cooper
WINYAH GENERATING STATION
GEORGETOWN, SOUTH CAROLINA

GRAPHIC SCALE
500 0 500 1000
IN FEET

DRAWN BY: J. CHASTAIN DATE: 5/16/2023
REVISED BY: DATE:
CHECKED BY: K. FERRI DATE: 5/16/2023
APPROVED BY: K. FERRI DATE: 5/16/2023
PROJECT MANAGER: K. FERRI

FILE NAME:
LAYOUT: FIG 1 (2023 WL MAP)
LAST SAVED BY: JCHASTAIN
LAST SAVED DATE: 5/16/2023 9:23 AM
PLOT DATE: 05/16/2023 9:24 AM

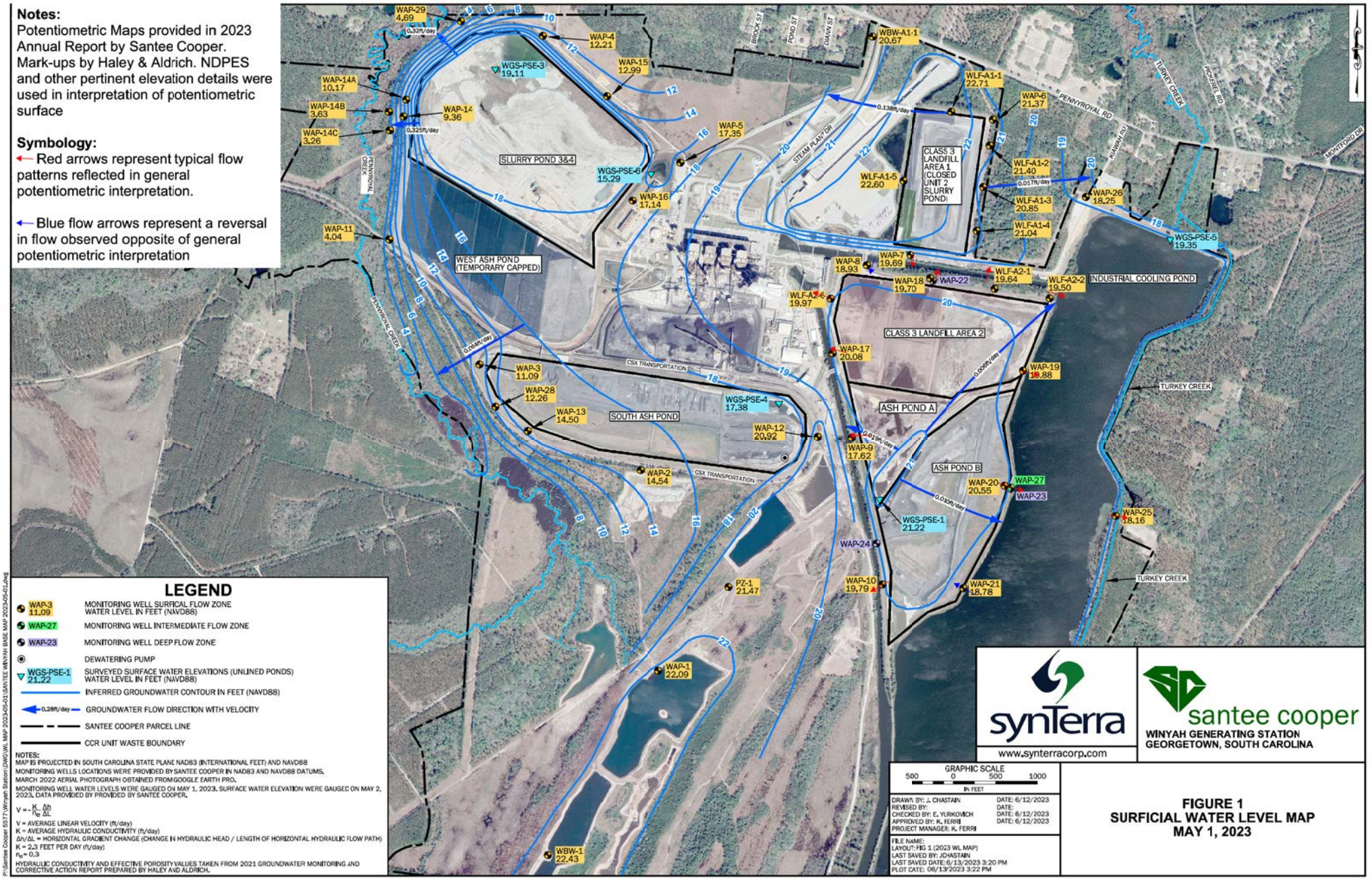
FIGURE 1
SURFICIAL WATER LEVEL MAP
FEBRUARY 13, 2023

P:\Santee Cooper 5577\Winyah Station\DWG\SANTEE WINYAH BASE MAP 2023-04-24.dwg

Notes:
Potentiometric Maps provided in 2023 Annual Report by Santee Cooper. Mark-ups by Haley & Aldrich. NDPES and other pertinent elevation details were used in interpretation of potentiometric surface

Symbology:
← Red arrows represent typical flow patterns reflected in general potentiometric interpretation.

← Blue flow arrows represent a reversal in flow observed opposite of general potentiometric interpretation



LEGEND

- WAP-3 11.09 — MONITORING WELL SURFICAL FLOW ZONE WATER LEVEL IN FEET (NAVD88)
- WAP-27 — MONITORING WELL INTERMEDIATE FLOW ZONE
- WAP-23 — MONITORING WELL DEEP FLOW ZONE
- DEWATERING PUMP
- WGS-PSE-1 21.22 — SURVEYED SURFACE WATER ELEVATIONS (UNLINED PONDS) WATER LEVEL IN FEET (NAVD88)
- INFERRED GROUNDWATER CONTOUR IN FEET (NAVD88)
- 0.28ft/day — GROUNDWATER FLOW DIRECTION WITH VELOCITY
- SANTEE COOPER PARCEL LINE
- CCR UNIT WASTE BOUNDARY

NOTES:
MAP IS PROJECTED IN SOUTH CAROLINA STATE PLANE NAD83 (INTERNATIONAL FEET) AND NAVD88
MONITORING WELLS LOCATIONS WERE PROVIDED BY SANTEE COOPER IN NAD83 AND NAVD88 DATUMS.
MARCH 2022 AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH PRO.
MONITORING WELL WATER LEVELS WERE GAUGED ON MAY 1, 2023. SURFACE WATER ELEVATION WERE GAUGED ON MAY 2, 2023. DATA PROVIDED BY PROVIDED BY SANTEE COOPER.

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

V = AVERAGE LINEAR VELOCITY (ft/day)
K = AVERAGE HYDRAULIC CONDUCTIVITY (ft/day)
Δh/ΔL = HORIZONTAL GRADIENT CHANGE (CHANGE IN HYDRAULIC HEAD / LENGTH OF HORIZONTAL HYDRAULIC FLOW PATH)
K = 2.3 FEET PER DAY (ft/day)
n_e = 0.3
HYDRAULIC CONDUCTIVITY AND EFFECTIVE POROSITY VALUES TAKEN FROM 2021 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT PREPARED BY HALEY AND ALDRICH.

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GEORGETOWN, SOUTH CAROLINA

GRAPHIC SCALE
500 0 500 1000
IN FEET

DRAWN BY: J. CHASTAIN DATE: 6/12/2023
REVISED BY: DATE:
CHECKED BY: E. YURKOVICH DATE: 6/12/2023
APPROVED BY: K. FERRI DATE: 6/12/2023
PROJECT MANAGER: K. FERRI

FILE NAME:
LAYOUT: FIG 1 (2023 WL MAP)
LAST SAVED BY: JCHASTAIN
LAST SAVED DATE: 6/13/2023 3:20 PM
PLOT DATE: 06/13/2023 3:22 PM

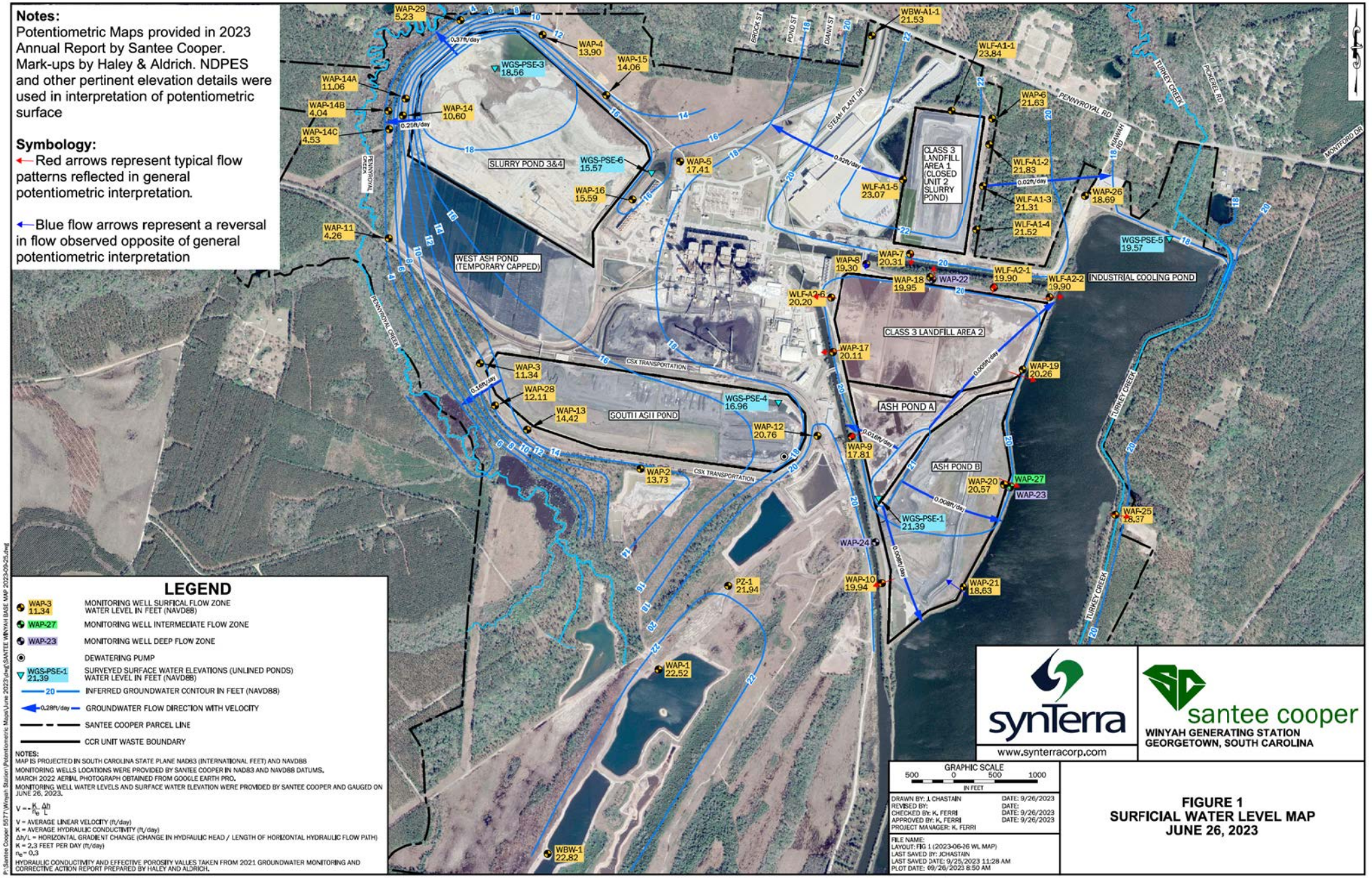
FIGURE 1
SURFICIAL WATER LEVEL MAP
MAY 1, 2023

P:\Santee Cooper 5577\Winyah Station\DWG\WL MAP 2023-05-01\SANTEE WINYAH BASE MAP 2023-05-01.dwg

Notes:
Potentiometric Maps provided in 2023 Annual Report by Santee Cooper. Mark-ups by Haley & Aldrich. NDPES and other pertinent elevation details were used in interpretation of potentiometric surface

Symbology:
Red arrows represent typical flow patterns reflected in general potentiometric interpretation.

Blue flow arrows represent a reversal in flow observed opposite of general potentiometric interpretation



LEGEND

- WAP-3 11.34 — MONITORING WELL SURFICAL FLOW ZONE WATER LEVEL IN FEET (NAVD88)
- WAP-27 — MONITORING WELL INTERMEDIATE FLOW ZONE
- WAP-23 — MONITORING WELL DEEP FLOW ZONE
- DEWATERING PUMP
- WGS-PSE-1 21.39 — SURVEYED SURFACE WATER ELEVATIONS (UNLINED PONDS) WATER LEVEL IN FEET (NAVD88)
- 20 — INFERRED GROUNDWATER CONTOUR IN FEET (NAVD88)
- 0.28ft/day — GROUNDWATER FLOW DIRECTION WITH VELOCITY
- SANTEE COOPER PARCEL LINE
- CCR UNIT WASTE BOUNDARY

NOTES:
MAP IS PROJECTED IN SOUTH CAROLINA STATE PLANE NAD83 (INTERNATIONAL FEET) AND NAVD88
MONITORING WELLS LOCATIONS WERE PROVIDED BY SANTEE COOPER IN NAD83 AND NAVD88 DATUMS.
MARCH 2022 AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH PRO.
MONITORING WELL WATER LEVELS AND SURFACE WATER ELEVATION WERE PROVIDED BY SANTEE COOPER AND GAUGED ON JUNE 26, 2023.

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

V = AVERAGE LINEAR VELOCITY (ft/day)
K = AVERAGE HYDRAULIC CONDUCTIVITY (ft/day)
$\Delta h/L$ = HORIZONTAL GRADIENT CHANGE (CHANGE IN HYDRAULIC HEAD / LENGTH OF HORIZONTAL HYDRAULIC FLOW PATH)
K = 2.3 FEET PER DAY (ft/day)
n_e = 0.3
HYDRAULIC CONDUCTIVITY AND EFFECTIVE POROSITY VALUES TAKEN FROM 2021 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT PREPARED BY HALEY AND ALDRICH.

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GEORGETOWN, SOUTH CAROLINA

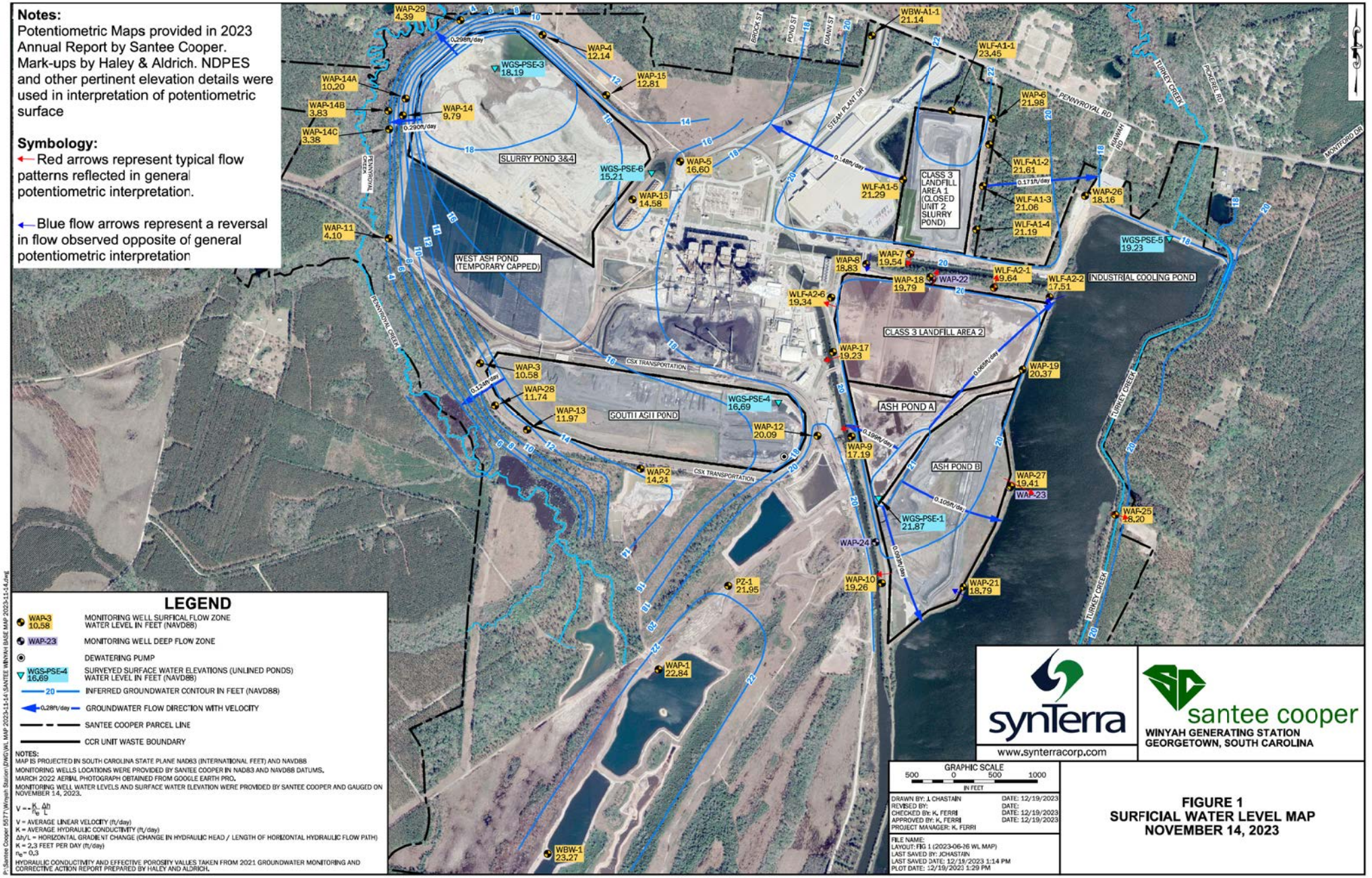
GRAPHIC SCALE
500 0 500 1000
IN FEET

DRAWN BY: L CHASTAIN DATE: 9/26/2023
REVISED BY: DATE:
CHECKED BY: K. FERRI DATE: 9/26/2023
APPROVED BY: K. FERRI DATE: 9/26/2023
PROJECT MANAGER: K. FERRI

FILE NAME:
LAYOUT: FIG 1 (2023-06-16 WL MAP)
LAST SAVED BY: JCHASTAIN
LAST SAVED DATE: 9/25/2023 11:28 AM
PLOT DATE: 09/26/2023 8:50 AM

FIGURE 1
SURFICIAL WATER LEVEL MAP
JUNE 26, 2023

P:\Santee Cooper 5577\Winyah Station\Potentiometric Maps\June 2023\dwg\SANTEE WINYAH BASE MAP 2023-09-26.dwg


Notes:
Potentiometric Maps provided in 2023 Annual Report by Santee Cooper. Mark-ups by Haley & Aldrich. NDPES and other pertinent elevation details were used in interpretation of potentiometric surface
Symbology:
Red arrows represent typical flow patterns reflected in general potentiometric interpretation.
Blue flow arrows represent a reversal in flow observed opposite of general potentiometric interpretation
SLURRY POND 3&4
WEST ASH POND (TEMPORARY CAPPED)
CLASS 3 LANDFILL AREA 1 (CLOSED UNIT 2 SLURRY POND)
CLASS 3 LANDFILL AREA 2
INDUSTRIAL COOLING POND
ASH POND A
ASH POND B
SOUTH ASH POND
CSX TRANSPORTATION
STEAM PLANT DR
PENNYROYAL RD
TURKEY CREEK
PENNYROYAL CREEK
BROOK ST
POND ST
DAWN ST
PICKEREL RD
MONTFORD DR
LEGEND
WAP-3 10.58 MONITORING WELL SURFICAL FLOW ZONE WATER LEVEL IN FEET (NAVD88)
WAP-23 MONITORING WELL DEEP FLOW ZONE
DEWATERING PUMP
WGS-PSE-4 16.69 SURVEYED SURFACE WATER ELEVATIONS (UNLINED PONDS) WATER LEVEL IN FEET (NAVD88)
20 INFERRED GROUNDWATER CONTOUR IN FEET (NAVD88)
0.28ft/day GROUNDWATER FLOW DIRECTION WITH VELOCITY
SANTEE COOPER PARCEL LINE
CCR UNIT WASTE BOUNDARY
NOTES:
MAP IS PROJECTED IN SOUTH CAROLINA STATE PLANE NAD83 (INTERNATIONAL FEET) AND NAVD88
MONITORING WELLS LOCATIONS WERE PROVIDED BY SANTEE COOPER IN NAD83 AND NAVD88 DATUMS.
MARCH 2022 AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH PRO.
MONITORING WELL WATER LEVELS AND SURFACE WATER ELEVATION WERE PROVIDED BY SANTEE COOPER AND GAUGED ON NOVEMBER 14, 2023.
V = AVERAGE LINEAR VELOCITY (ft/day)
K = AVERAGE HYDRAULIC CONDUCTIVITY (ft/day)
Δh/L = HORIZONTAL GRADIENT CHANGE (CHANGE IN HYDRAULIC HEAD / LENGTH OF HORIZONTAL HYDRAULIC FLOW PATH)
K = 2.3 FEET PER DAY (ft/day)
ne = 0.3
HYDRAULIC CONDUCTIVITY AND EFFECTIVE POROSITY VALUES TAKEN FROM 2021 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT PREPARED BY HALEY AND ALDRICH.
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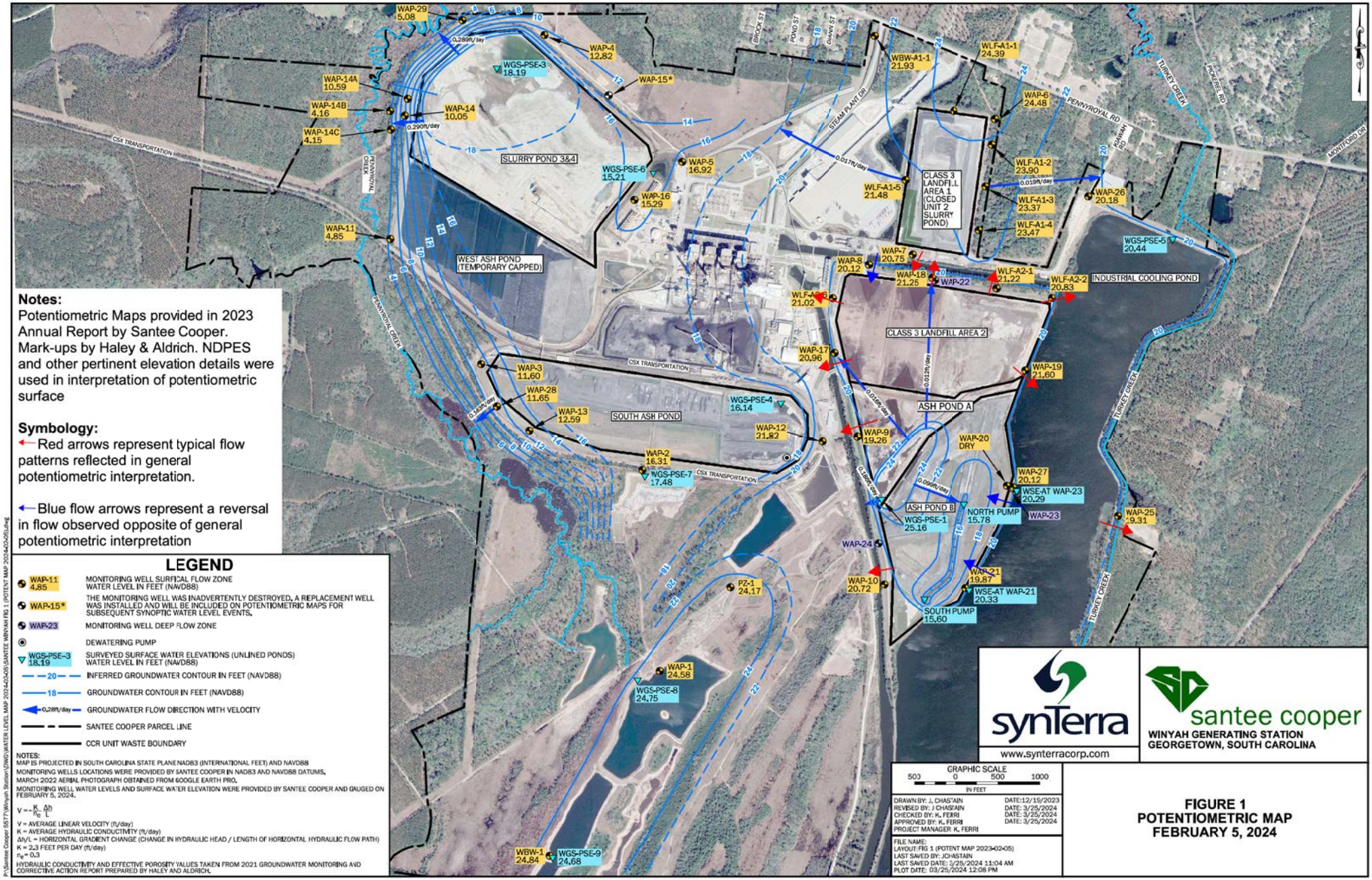
santee cooper
WINYAH GENERATING STATION
GEORGETOWN, SOUTH CAROLINA
GRAPHIC SCALE
500 0 500 1000
IN FEET
DRAWN BY: J. CHASTAIN DATE: 12/19/2023
REVISED BY: DATE:
CHECKED BY: K. FERRI DATE: 12/19/2023
APPROVED BY: K. FERRI DATE: 12/19/2023
PROJECT MANAGER: K. FERRI
FILE NAME:
LAYOUT: FIG 1 (2023-06-16 WL MAP)
LAST SAVED BY: JCHASTAIN
LAST SAVED DATE: 12/19/2023 1:14 PM
PLOT DATE: 12/19/2023 1:29 PM
FIGURE 1
SURFICIAL WATER LEVEL MAP
NOVEMBER 14, 2023
P:\Santee Cooper 5677\Winyah Station\DWG\WL MAP 2023-11-14\SANTEE WINYAH BASE MAP 2023-11-14.dwg



Notes:
Potentiometric Maps provided in 2023 Annual Report by Santee Cooper. Mark-ups by Haley & Aldrich. NDPES and other pertinent elevation details were used in interpretation of potentiometric surface

Symbology:
Red arrows represent typical flow patterns reflected in general potentiometric interpretation.

Blue flow arrows represent a reversal in flow observed opposite of general potentiometric interpretation

LEGEND

- WAP-11 4.85 — MONITORING WELL SURFICAL FLOW ZONE WATER LEVEL IN FEET (NAVD88)
- WAP-15* — THE MONITORING WELL WAS INADVERTENTLY DESTROYED, A REPLACEMENT WELL WAS INSTALLED AND WILL BE INCLUDED ON POTENTIOMETRIC MAPS FOR SUBSEQUENT SYNOPTIC WATER LEVEL EVENTS.
- WAP-23 — MONITORING WELL DEEP FLOW ZONE
- DEWATERING PUMP
- WGS-PSE-3 18.19 — SURVEYED SURFACE WATER ELEVATIONS (UNLINED PONDS) WATER LEVEL IN FEET (NAVD88)
- 20 — INFERRED GROUNDWATER CONTOUR IN FEET (NAVD88)
- 18 — GROUNDWATER CONTOUR IN FEET (NAVD88)
- 0.28ft/day — GROUNDWATER FLOW DIRECTION WITH VELOCITY
- SANTEE COOPER PARCEL LINE
- CCR UNIT WASTE BOUNDARY

NOTES:
MAP IS PROJECTED IN SOUTH CAROLINA STATE PLANE NAD83 (INTERNATIONAL FEET) AND NAVD88
MONITORING WELLS LOCATIONS WERE PROVIDED BY SANTEE COOPER IN NAD83 AND NAVD88 DATUMS.
MARCH 2022 AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH PRO.
MONITORING WELL WATER LEVELS AND SURFACE WATER ELEVATION WERE PROVIDED BY SANTEE COOPER AND GAUGED ON FEBRUARY 5, 2024.

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

V = AVERAGE LINEAR VELOCITY (ft/day)
K = AVERAGE HYDRAULIC CONDUCTIVITY (ft/day)
Δh/L = HORIZONTAL GRADIENT CHANGE (CHANGE IN HYDRAULIC HEAD / LENGTH OF HORIZONTAL HYDRAULIC FLOW PATH)
K = 2.3 FEET PER DAY (ft/day)
n_e = 0.3
HYDRAULIC CONDUCTIVITY AND EFFECTIVE POROSITY VALUES TAKEN FROM 2021 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT PREPARED BY HALEY AND ALDRICH.

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santee cooper
WINYAH GENERATING STATION
GEORGETOWN, SOUTH CAROLINA

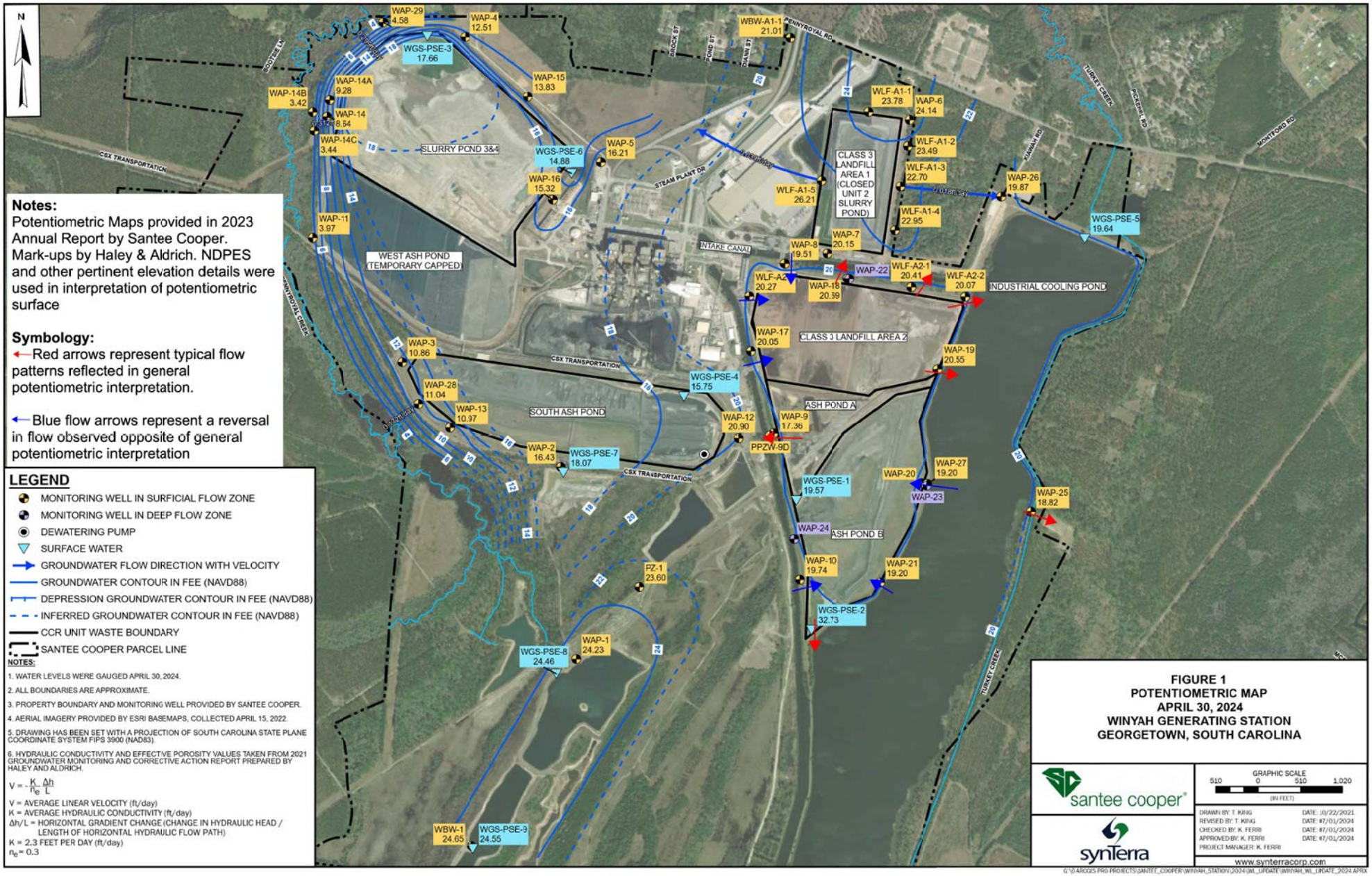
GRAPHIC SCALE
500 0 500 1000
IN FEET

DRAWN BY: J. CHASTAIN	DATE:12/19/2023
REVISED BY: J CHASTAIN	DATE: 3/25/2024
CHECKED BY: K. FERRI	DATE: 3/25/2024
APPROVED BY: K. FERRI	DATE: 3/25/2024
PROJECT MANAGER: K. FERRI	

FILE NAME:
LAYOUT: FIG 1 (POTENT MAP 2023-02-05)
LAST SAWED BY: JCHASTAIN
LAST SAWED DATE: 3/25/2024 11:04 AM
PLOT DATE: 03/25/2024 12:08 PM

FIGURE 1
POTENTIOMETRIC MAP
FEBRUARY 5, 2024

P:\Santee Cooper 5577\Winyah Station\DWG\WATER LEVEL MAP 2024-02-05\SANTEE WINYAH FIG 1 (POTENT MAP 2024-02-05).dwg



Notes:
Potentiometric Maps provided in 2023 Annual Report by Santee Cooper. Mark-ups by Haley & Aldrich. NDPES and other pertinent elevation details were used in interpretation of potentiometric surface

Symbology:
←Red arrows represent typical flow patterns reflected in general potentiometric interpretation.

←Blue flow arrows represent a reversal in flow observed opposite of general potentiometric interpretation

LEGEND

- MONITORING WELL IN SURFICIAL FLOW ZONE
- MONITORING WELL IN DEEP FLOW ZONE
- DEWATERING PUMP
- SURFACE WATER
- GROUNDWATER FLOW DIRECTION WITH VELOCITY
- GROUNDWATER CONTOUR IN FEE (NAVD88)
- DEPRESSION GROUNDWATER CONTOUR IN FEE (NAVD88)
- INFERRED GROUNDWATER CONTOUR IN FEE (NAVD88)
- CCR UNIT WASTE BOUNDARY
- SANTEE COOPER PARCEL LINE

NOTES:

1. WATER LEVELS WERE GAUGED APRIL 30, 2024.
2. ALL BOUNDARIES ARE APPROXIMATE.
3. PROPERTY BOUNDARY AND MONITORING WELL PROVIDED BY SANTEE COOPER.
4. AERIAL IMAGERY PROVIDED BY ESRI BASEMAPS, COLLECTED APRIL 15, 2022.
5. DRAWING HAS BEEN SET WITH A PROJECTION OF SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM FIPS 3900 (NAD83).
6. HYDRAULIC CONDUCTIVITY AND EFFECTIVE POROSITY VALUES TAKEN FROM 2021 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT PREPARED BY HALEY AND ALDRICH.

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

V = AVERAGE LINEAR VELOCITY (ft/day)
K = AVERAGE HYDRAULIC CONDUCTIVITY (ft/day)
Δh/L = HORIZONTAL GRADIENT CHANGE (CHANGE IN HYDRAULIC HEAD / LENGTH OF HORIZONTAL HYDRAULIC FLOW PATH)
K = 2.3 FEET PER DAY (ft/day)
n_e = 0.3

FIGURE 1
POTENTIOMETRIC MAP
APRIL 30, 2024
WINYAH GENERATING STATION
GEORGETOWN, SOUTH CAROLINA

santee cooper

GRAPHIC SCALE
510 0 510 1,020
(IN FEET)

DRAWN BY: T. KING	DATE: 10/22/2021
REVISED BY: T. KING	DATE: 07/01/2024
CHECKED BY: K. FERRI	DATE: 07/01/2024
APPROVED BY: K. FERRI	DATE: 07/01/2024
PROJECT MANAGER: K. FERRI	

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G:\0 ARCGIS PRO PROJECTS\SANTEE_COOPER\WINYAH_STATION\2024\WI_UPDATE\WINYAH_WI_UPDATE_2024.APRX

APPENDIX C
Geosyntec Landfill Cross-Sections II, Drawing 14 of 33, November 2021

Prepared for

Santee Cooper Power
1 Riverwood Drive
Moncks Corner, South Carolina 29461

LOCATION RESTRICTIONS COMPLIANCE DEMONSTRATION

LANDFILL AREA 2
WINYAH GENERATING STATION
GEORGETOWN, SOUTH CAROLINA

Prepared by

Geosyntec consultants

engineers | scientists | innovators

201 E. McBee Avenue, Suite 201
Greenville, South Carolina 29601

Project Number GSC5242.40BT

November 2021

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Geosyntec
consultants

Certification Statement – Demonstration of Compliance with Location Restrictions

Federal CCR Rule: 40 CFR §257.60-64

CCR Unit: Landfill Area 2 of the WGS Class Three Landfill

Certification:

I, **Scott M. Graves**, a qualified professional engineer registered in the state of **South Carolina**, am the design engineer-of-record for the above-referenced coal combustion residual (CCR) Unit – the design of which is documented in the *Winyah Generating Station Class Three Landfill Permit Application* approved by the South Carolina Department of Health and Environmental Control (SCDHEC) on September 15, 2017 [Permit #LF3-00042]. Based on the evaluations presented in this Location Restrictions Compliance Demonstration Report, the above-referenced CCR Unit is, in my professional opinion, demonstrated to be in compliance with the United States Environmental Protection Agency (USEPA) minimum location restriction requirements for the siting criteria of 40 CFR §257.60-64 for new coal combustion residuals (CCR) landfills.

Seal and Signature: SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER No. 33535 SCOTT M. GRAVES 11/29/2021

Firm Seal: SOUTH CAROLINA GEOSYNTEC CONSULTANTS, INC. No. 773 CERTIFICATE OF AUTHORIZATION

Printed Name: Scott M. Graves

PE License Number: 33535 State: South Carolina

1 INTRODUCTION

Geosyntec Consultants (Geosyntec) has prepared this *Location Restrictions Compliance Demonstration* on behalf of the South Carolina Public Service Authority doing business as (d.b.a.) Santee Cooper (Santee Cooper). The subject of this compliance demonstration is the coal combustion residual (CCR) unit known as "Landfill Area 2" at the Winyah Generation Station (WGS) located in Georgetown, South Carolina (Figure 1). The Landfill Area 2 is a new CCR landfill (classified under the South Carolina Department of Health and Environmental Control (SCDHEC) solid waste program as a "Class Three Landfill"), currently under construction and located in a portion of the area that was occupied by Ash Pond A at the WGS site; Ash Pond A is undergoing closure-by-removal.

On April 17, 2015, the Environmental Protection Agency (EPA) promulgated the federal Coal Combustion Residual Rule (CCR Rule) that establishes national minimum criteria for existing and new CCR landfills and surface impoundments. The landfill is subject to the CCR Rule as a new CCR landfill as defined in 40 CFR §257.53, and as such is required to make demonstrations documenting whether or not the CCR unit is in compliance with the location restriction requirements under 40 Code of Federal Regulations (CFR) §257.60 through §257.64. Initial waste placement within a new landfill cannot occur until these demonstrations have been completed and placed in the facility's operating record. This document serves as WGS's location restriction demonstrations for Landfill Area 2 at WGS.

1.1 Facility Location

The WGS is a coal-fired steam electric generating facility located at 661 Steam Plant Drive, Georgetown, SC 29440, owned and operated by Santee Cooper. The WGS site is located approximately 4 miles southwest of the city of Georgetown, South Carolina, and is accessed via US Hwy 17 to Pennyroyal Road. A general site vicinity map is presented on Figure 1 included with this report. The WGS includes an approximately 2,184-acre parcel for station operations and an adjacent approximately 344-acre parcel of land that is presently undeveloped.

The WGS generates CCRs during power generation and the air quality control process. The CCRs are recycled for beneficial use to the extent possible. Historically, some of the CCRs generated by the WGS were placed in six on-site ponds/surface impoundments.

Going forward, CCRs generated at WGS that are not beneficially used will be disposed of in an on-site CCR landfill. Additionally, CCRs from existing on-site impoundments being closed-by-removal will either be beneficially used or disposed of in an on-site CCR landfill. Accordingly, Santee Cooper is constructing a Class Three Landfill (CCR landfill) at the WGS, composed of two separate areas (i.e., units). The first area, Landfill Area 1, was constructed in 2018, is currently in operation, and was previously certified as being in compliance with the location restrictions in a stand-alone demonstration dated July 2018.

The second area to be developed, and the subject of this report, is Landfill Area 2, which will have a lined area of up to 75.3 acres and a net airspace (waste disposal) volume of up to approximately 9,684,000 cubic yards. Landfill Area 2 is being constructed over portions of Ash Pond A, with the landfill construction occurring after the closure-by-removal of the affected ash pond areas. A Notification of Intent to Close for Ash Pond A was placed in the Operating Record on April 9, 2021. Landfill Area 2 is shown on Figure 2.

1.2 Previous Investigations and Reports

Santee Cooper has implemented a number of hydrogeologic and geotechnical investigations at the WGS site to collect geologic, hydrogeologic, and geotechnical data. This includes previous investigations in and around the footprint of Landfill Area 2. This information was used in the studies, characterization reports, and engineering design of Landfill Area 2, which culminated in approval and issuance of a Class Three Landfill Permit by the SCDHEC on September 15, 2017 [Permit #LF3-00042]. Through this permit application process, Landfill Area 2 was evaluated for siting criteria and designed in accordance with SCDHEC regulatory standards that are consistent with, and in some cases more stringent than, the Federal CCR Rule standards for siting and design of new CCR landfills. As such, this Federal CCR Rule Location Restrictions Compliance Demonstration is based on and supported by the detailed information contained in the approved SCDHEC permit application documents, which are as follows:

- *Landfill Siting Study*, Winyah Generating Station, Georgetown, South Carolina, April 2016, prepared by Geosyntec Consultants;

- *Site Hydrogeologic Characterization Study Report*, Winyah Generating Station, Georgetown, South Carolina, April 2016, prepared by Geosyntec Consultants; and

- *Class Three Landfill Permit Application,* Winyah Generating Station, Georgetown, South Carolina, August 2016, prepared by Geosyntec Consultants, (with revisions as contained in "Revised Technical Application received June 5, 2017" as approved by SCDHEC on September 15, 2017).

1.3 Site Geology and Hydrogeology

The WGS site is located within the Atlantic Coastal Plain physiographic province which is a wedge of unconsolidated to well-consolidated, Cretaceous to recent sediments. A review of South Carolina Coastal Plain hydrostratigraphy (Campbell and Coes, 2010) identifies several hydrostratigraphic layers (aquifers and confining units). In ascending order, they include the Gramling Aquifer and confining unit, Charleston Aquifer and confining unit, McQueen Branch Aquifer and confining unit, Crouch Branch Aquifer and confining unit, Gordon Aquifer and confining unit, and the surficial aquifer.

The aquifers of most interest at this site are the surficial aquifer and Gordon Aquifer. The surficial aquifer is the water-table aquifer and consists mainly of terrace sediments that were deposited during transgressions and regressions of a post-Miocene sea. The surficial aquifer is lithologically heterogeneous but generally consists of quartz gravel and sand, silt, clay, and shelly sand and unconformably overlies the Gordon aquifer, which is the lowermost aquifer of the Floridan Aquifer system. The Gordon Aquifer represents the permeable portion of the Williamsburg Formation (upper Chicora Member) in the vicinity of the site. As detailed in the *Site Hydrogeologic Characterization Study Report* (Geosyntec, 2016b), the surficial aquifer and Gordon Aquifer exhibit similar hydrogeologic properties and are not separated hydrogeologically. Therefore, the Gordon Aquifer and surficial aquifer are collectively termed the surficial aquifer in Geosyntec (2016b) and are designated as the uppermost aquifer at the site in accordance with 40 CFR §257.40.

Historical groundwater elevation measurements in the surficial aquifer at the site were influenced by the water levels in the slurry ponds and ash ponds. In recent years, some ponds have been closed; others are in the process of being closed. Once the new landfill is constructed, an engineered liner and leachate control system will eliminate recharge to

the water table. For these reasons, Geosyntec (2016b) developed and presented a modeled seasonal high water table representing conditions after closure of the slurry ponds and ash ponds. In particular, this seasonal high water table includes conditions beneath the to-be-closed Ash Pond A where Landfill Area 2 is located. A map of the seasonal high water table conditions used for this location restrictions evaluation as well as for the engineering design of Landfill Area 2, taken from the *Site Hydrogeologic Characterization Study Report* (Geosyntec, 2016b), is included in this report as Figure 3.

2 LOCATION RESTRICTIONS EVALUATION

The location restrictions under §257.60 through §257.64 include: (1) Placement above the uppermost aquifer; (2) wetlands; (3) fault areas; (4) seismic impact zones; and (5) unstable areas. Each of these locations is generally recognized as having the potential to impact the structure of any disposal unit.

2.1 Placement Above the Uppermost Aquifer

40 CFR §257.60(a) states that new CCR landfills "must be constructed with a base that is located no less than 1.52 meters (five feet) above the upper limit of the uppermost aquifer, or must demonstrate that there will not be an intermittent, recurring, or sustained hydraulic connection between any portion of the base of the CCR unit and the uppermost aquifer due to normal fluctuations in groundwater elevations (including the seasonal high water table)." The "uppermost aquifer" is defined by §257.40 as the geologic formation nearest the natural ground surface that is an aquifer, as well as lower aquifers that are hydraulically interconnected with this aquifer within the facility's property boundary. This definition includes a shallow, deep, perched, confined or unconfined aquifer, provided it yields usable water.

As mentioned, the uppermost aquifer at the site is the surficial aquifer, which is an unconfined aquifer consisting of mixtures of predominantly sand and minor amounts of silt and clay. A map of the modeled post-pond drainage seasonal high water table is included in Figure 3 of this report. As shown, the groundwater elevations range from 21 feet above mean sea level (ft, MSL) in the central portion of where Landfill Area 2 will occupy, to elevation 20 ft, MSL around the north, east, and west portions of the Landfill Area 2 perimeter.

The map of landfill base grades superimposed along with the seasonal high water table is included in Appendix A, and was taken from the set of Engineering Drawings included in the *Class Three Landfill Permit Application* (Geosyntec, 2016c). This map also shows the Landfill Area 2 subgrade (bottom of liner system) grading plan (i.e., base of the CCR unit). Accompanying landfill cross sections through Landfill Area 2 (Cross Sections "C", "D", and "E") are also included in Appendix A. Inspection of this information reveals that Landfill Area 2 is designed with a base that is located greater than 5-ft above the seasonal high water table, with the exception of the "sumps" (i.e., low points) of the landfill cells. To address this location restriction, the sumps will be equipped with a "clay plug under-liner" constructed beneath the base of the CCR unit – engineering details of which are included in Appendix A. This under-liner beneath the CCR unit will supplement the landfill composite liner system present beneath all of Landfill Area 2 and will form the hydraulic barrier to prevent an intermittent, recurring, or sustained hydraulic connection between the sump areas (where the base is less than 5-ft above the seasonal high water table) and the uppermost aquifer.

For the foregoing reasons, Landfill Area 2 is judged to be in compliance with the requirements of 40 CFR §257.60 for placement above the uppermost aquifer.

2.2 Wetlands

40 CFR §257.61(a) states that new CCR landfills "must not be located in wetlands, as defined in §232.2 of this chapter, unless the owner or operator demonstrates…that the CCR unit meets the requirements of paragraph (a)(1) through (5) of this section." Wetlands, as defined in 40 CFR §232.2, means "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

As stated in the *Landfill Siting Study* (Geosyntec, April 2016a), the landfill is being constructed within the limits of portions of the to-be-closed Ash Pond A. Waste treatment systems, including treatment ponds designed to meet the requirements of the Clean Water Act (CWA), are not waters of the United States and are exempt from permitting under Section 404 of the CWA. Any wetlands that may exist within these boundaries are exempt from permitting because the CCR ponds are considered part of the existing waste treatment system which is permitted and operated under National Pollutant Discharge

Elimination System (NPDES) Permit No. SC0022471. Therefore, Landfill Area 2 is judged to be in compliance with the requirements of 40 CFR §257.61 for wetlands. Because Landfill Area 2 is not located in wetlands, there is no need for the demonstrations to show that the CCR unit meets the requirements of paragraphs (a)(1) through (a)(5) of 40 CFR §257.61.

2.3 Fault Areas

40 CFR §257.62(a) states that new CCR landfills "must not be located within 60 meters (200 feet) of the outermost damage zone of a fault that has had displacement in Holocene time unless the owner or operator demonstrates by the dates specified in paragraph (c) of this section that an alternative setback distance of less than 60 meters (200 feet) will prevent damage to the structural integrity of the CCR unit."

A summary of the structural features in South Carolina are summarized in Maybin (1998) and is provided in the *Site Hydrogeologic Characterization Study* (Geosyntec, 2016b). From an assessment of this information, it is concluded that no structural features indicative of recent (Holocene-age) faulting have been identified within 20 miles of the WGS site. The lack of a nearby fault zone has been further confirmed through previous WGS site-specific subsurface investigations documented in Geosyntec (2016b), which have showed no evidence of recent faults (i.e., no linear features that could be indicative of surface expression of a fault and no evidence of any stratigraphic offsets at depth which could be suggestive of faulting).

For the foregoing reasons, Landfill Area 2 is judged to be in compliance with the requirements of 40 CFR §257.62 for fault areas.

2.4 Seismic Impact Zones

40 CFR §257.63(a) states that new CCR landfills must not be located in seismic impact zones unless the owner or operator makes certain demonstrations. A seismic impact zone is defined as "an area having a 2% or greater probability that the maximum expected horizontal acceleration, expressed as a percentage of the earth's gravitational pull (g), will exceed 0.10 g in 50 years." Seismic zones, which represent areas of the United States with the greatest seismic risk, are identified on U.S. Geological Survey (USGS) national seismic hazard maps as well as regional seismic hazard maps developed by local experts considering the regional geologic setting and seismicity.

As documented in the *Seismic Hazard Evaluation and Site Response Analysis (*Appendix D-1 of the *Class Three Landfill Permit Application* (Geosyntec, 2016c)), the WGS site is located in a seismic impact zone. Accordingly, 40 CFR §257.63(a) requires a demonstration that "all structural components including liners, leachate collection and removal systems, and surface water control systems, are designed to resist the maximum horizontal acceleration in lithified earth material for the site." This demonstration is made through the engineering analyses and design presented in the *Class Three Landfill Permit Application* (Geosyntec, 2016c) and summarized in the remainder of this section.

The first step to address this location restriction and design the landfill to resist the horizontal acceleration from the specified seismic event was to conduct a "site response analysis" to evaluate the effect of local site conditions on the expected seismic-induced ground motions at the site. The objective of the site response analysis is to calculate accelerations, shear strains, and shear stresses within the site soil profiles. The methodology for the site response analysis is summarized by the following approach: (i) evaluate published seismic hazard maps to assess the maximum horizontal acceleration in lithified earth material for the site area; (ii) develop the target response spectrum, including the peak ground acceleration (PGA), at a hypothetical firm ground outcrop at WGS corresponding to the appropriate seismic hazard level; (iii) select the earthquake magnitude that contributes predominantly to the seismic hazard at WGS; (iv) select a set of ground motion time histories that envelope the target spectrum, and are generally consistent with the source and path characteristics of expected ground motions at WGS; and (v) perform a "seismic site response" analysis using "DEEPSOIL®", a one-dimensional, nonlinear site response analysis program. The outcome of the site response analysis, provided in the *Seismic Hazard Evaluation and Site Response Analysis* presented in the *Class Three Landfill Permit Application* (Geosyntec, 2016c), was a set of calculated maximum horizontal equivalent acceleration (MHEA) vs. depth profiles and cyclic stress ratios (CSR), which were subsequently used in the seismic slope stability analysis and the liquefaction potential analysis described below.

The second step to address this location restriction and design the landfill to resist the horizontal acceleration from the specified seismic event was to conduct seismic stability analyses and liquefaction analyses of the foundation and structural components of Landfill Area 2. Details are provided in the *Static and Seismic Global Slope Stability Analysis* (Appendix D-2), and the *Liquefaction Analysis* (Appendix D-3) of the *Class Three Landfill Permit Application* (Geosyntec, 2016c), and the results are summarized below.

- Analyses were performed to evaluate seismic (as well as static) global slope stability of the landfill (critical cross section at Landfill Area 2). The term "global slope stability" refers to sliding scenarios that pass though (i) the waste mass only (Waste Slope Stability); (ii) the waste mass and foundation soils (Foundation Stability); and (iii) the waste mass and along the liner system interface (Waste-Block Liner Stability). Final cover system (on which the surface drainage features are placed) seismic stability was also analyzed. The analysis results demonstrate that the minimum calculated factor of safety (FS) against failure under seismic loading conditions is greater than the required minimum, thereby showing that the structural components of the landfill are designed with adequate seismic stability (i.e., are designed to resist the maximum horizontal acceleration in lithified earth material for the site).

- Liquefaction analyses were performed to evaluate the potential for liquefaction of foundation soils during an earthquake event and the potential effect on the integrity of Landfill Area 2. The analysis used geotechnical information collected from standard penetration test (SPT) borings and cone penetration test (CPT) soundings advanced through the perimeter dikes and within areas proposed for waste disposal (i.e., the landfill footprint)) during previous site investigations. The factor of safety against liquefaction (FS_{Liq}) was computed at every depth interval where data was collected for SPT borings and CPT soundings. The results of the analyses indicate that liquefiable soils were not observed in the perimeter dikes or foundation soils beneath the perimeter dikes of Landfill Area 2. Liquefiable foundation soils beneath the proposed footprint of Landfill Area 2 were not observed under initial conditions, and the liquefaction resistance of these soils is expected to further increase with additional waste placement

For the foregoing reasons, Landfill Area 2 is judged to be in compliance with the requirements of 40 CFR §257.63 for seismic impact zones.

2.5 Unstable Areas

40 CFR §257.64(a) indicates that new CCR landfills "must not be located in an unstable area unless the owner or operator demonstrates…that recognized and generally accepted good engineering practices have been incorporated into the design of the CCR unit to ensure that the integrity of the structural components of the CCR unit will not be disrupted." An unstable area means a location that is susceptible to natural or human-

induced events or forces capable of impairing the integrity, including structural components of some or all of the CCR unit that are responsible for preventing releases from such unit. Unstable areas can include poor foundation conditions, areas susceptible to mass movements, and karst terrains. To assess whether Landfill Area 2 may be situated in an unstable area, following factors were considered:

- On-site or local soil conditions that may result in differential settling;
- On-site or local geologic or geomorphologic features; and
- On-site or local human-made features or events (both surface and subsurface).

Landfill Area 2 has been sited in consideration of available site-specific and local/regional data from the previous *Landfill Siting Study* and *Site Hydrogeologic Characterization Study Report* (Geosyntec 2016a and 2016b, respectively). With respect to the potential presence of unstable areas, these reports reveal the following about Landfill Area 2:

- The site is not situated in an area of karst terrain.
- The site is not situated in an area with geologic features or the potential for geomorphically-induced phenomena that could be indicators of susceptibility to mass movements (i.e., landslides, avalanches, debris slides and flows, soil flocculation, block sliding, rock falls, or excessive surface erosion).
- The site is not situated in an area that could be subject to coastal or river erosion.
- The site is not situated in an area of known subsurface mines, or in an area experiencing significant water or mineral withdrawal, nor do there appear to be evidence of other human-made features or man-induced events that could result in the downslope transport of soil and rock material that would make the CCR unit susceptible to mass movements or otherwise impair the integrity of the unit.
- The site is not situated (as previously discussed) in an area of active faulting.

The *Class Three Landfill Permit Application* (Geosyntec, 2016c) presents analyses to address on-site or local soil conditions in and around Landfill Area 2. The resulting design includes structural components and features appropriately selected based on these

calculations, which demonstrate that adequate performance is predicted. With respect to potentially unstable areas, the permitted landfill design reveals the following:

- The site does not appear to be situated on poor foundation conditions that could differentially settle significantly or provide inadequate foundation support to the extent that could make the CCR unit susceptible to mass movements or otherwise impair the integrity of the structural components. This is based on foundation settlement analyses, static slope stability calculations, and the aforementioned seismic analyses and liquefaction analyses – all presented in Geosyntec (2016c).

For the foregoing reasons, Landfill Area 2 is judged to be in compliance with the requirements of §257.64 for unstable areas.

3 CONCLUSIONS

Geosyntec is confident the data on which this report is based demonstrates compliance with location restrictions per 40CFR §257.60 through §257.64. A compliance summary of the CCR Rule location restrictions and design criteria requirements addressed in this document are provided in Table 1 below.

Table 1 Location Restriction Compliance Summary

Winyah Area 2 Landfill		Compliant?	
Regulation	**CCR Location Restriction**	**YES**	**NO**
257.60	Placement Above Uppermost Aquifer	X	
257.61	Wetlands	X	
257.62	Fault Areas	X	
257.63	Seismic Impact Zones	X	
257.64	Unstable Areas	X	

4 REFERENCES

Campbell, B.G., and Coes, A.L., eds., 2010. Groundwater Availability in the Atlantic Coastal Plain of North and South Carolina: U.S. Geological Survey Professional Paper 1773, 241 p., 7 pls.

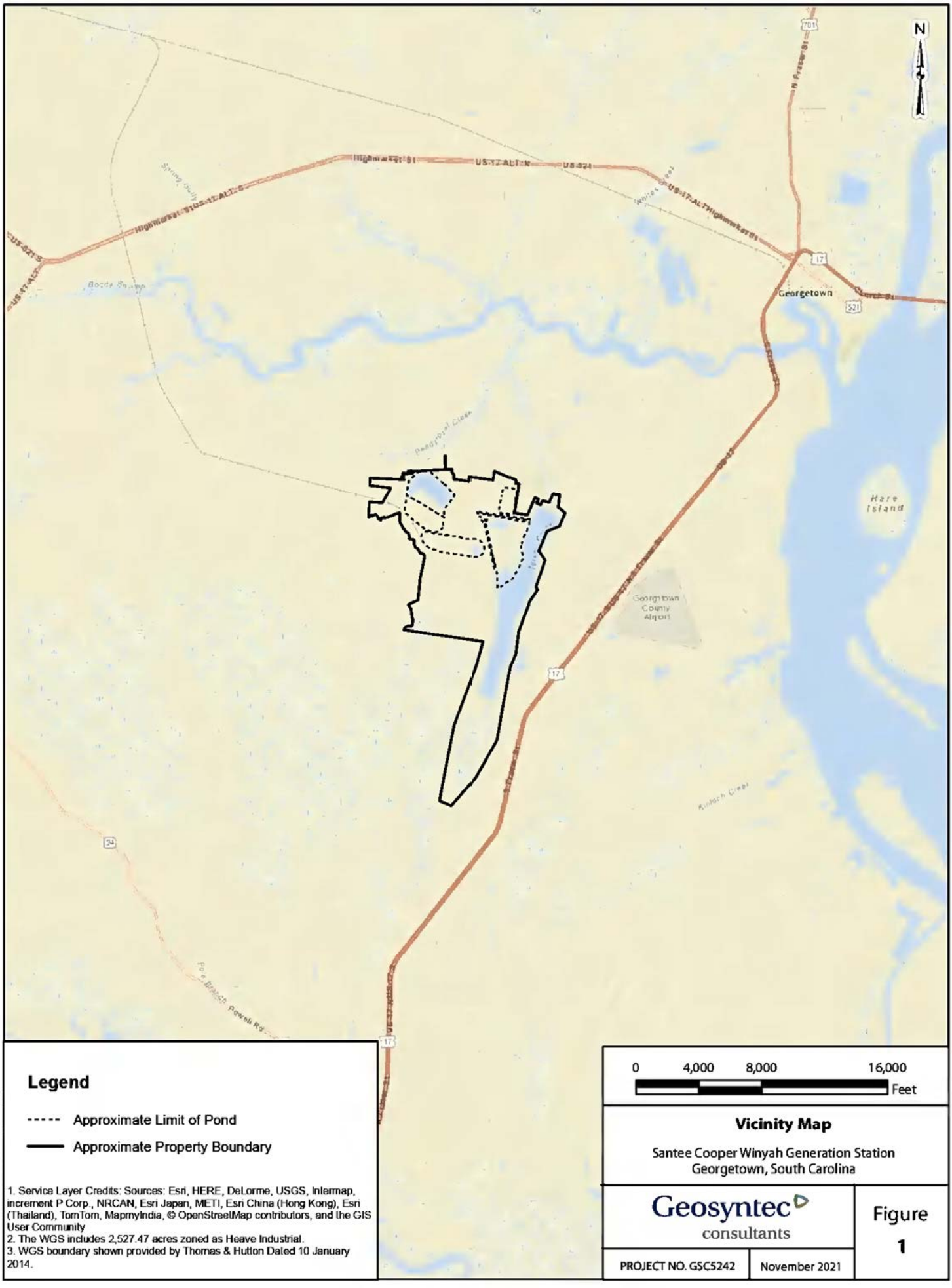
Geosyntec Consultants (Geosyntec), 2016a. *Landfill Siting Study,* Winyah Generating Station, Georgetown, South Carolina. April, 2016.

Geosyntec, 2016b. *Site Hydrogeologic Characterization Study Report,* Winyah Generating Station, Georgetown, South Carolina. April, 2016.

Geosyntec, 2016c. *Class Three Landfill Permit Application,* Winyah Generating Station, Georgetown, South Carolina. August 2016 (with revisions as contained in "Revised Technical Application received June 5, 2017" as approved by SCDHEC on September 15, 2017).

Maybin, A.H., Clendenin, C.W., Jr., and Daniels, D.L., 1998. Structural Features of South Carolina: South Carolina Geological Survey General Geologic Map Series 4, 1:500,000.

FIGURES



1. Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community
2. The WGS includes 2,527.47 acres zoned as Heave Industrial.
3. WGS boundary shown provided by Thomas & Hutton Dated 10 January 2014.

Vicinity Map

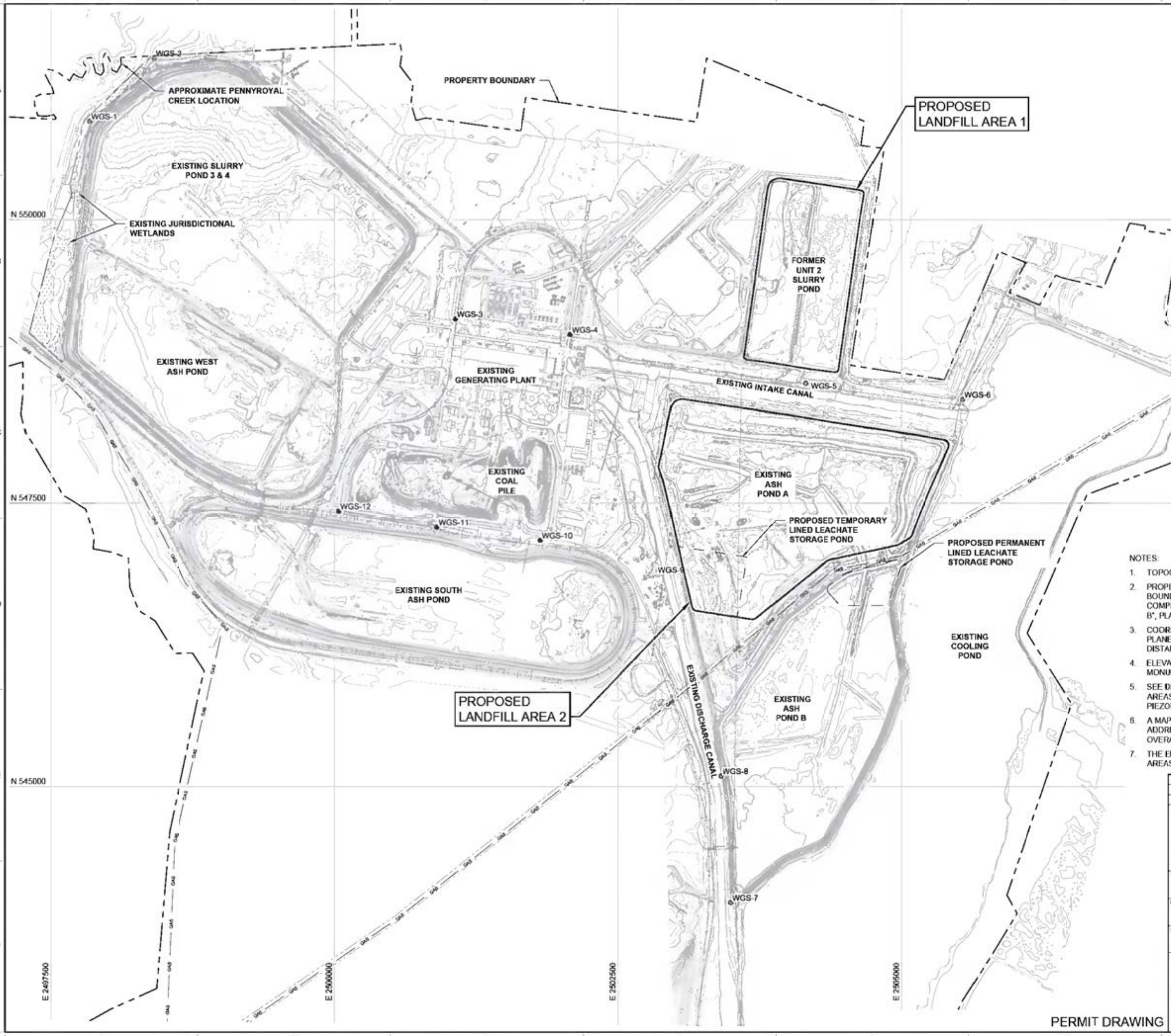
Santee Cooper Winyah Generation Station
Georgetown, South Carolina

Geosyntec consultants

PROJECT NO. GSC5242 | November 2021

Figure 1

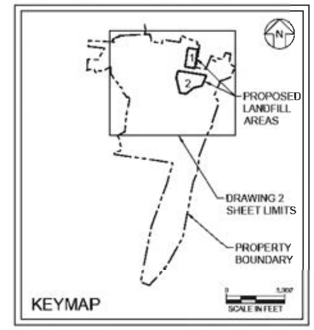
N:\S\Santee Cooper\GIS\MXD\2016_April\Fig1_Location.mxd



LEGEND

- EXISTING GROUND ELEVATION CONTOUR (FT, MSL) (NOTES 1, 2)
- EXISTING ROAD
- EXISTING VEGETATION
- EXISTING GAS PIPELINE
- EXISTING OVERHEAD ELECTRIC LINE
- EXISTING RAILROAD TRACKS
- EXISTING WATERLINE
- EXISTING SURVEY BENCHMARK
- EXISTING SURVEY CONTROL MONUMENT
- PROPERTY BOUNDARY
- PROPOSED LANDFILL AREAS (LIMIT OF LINER)

0 400' 800'
SCALE IN FEET



NOTES:

1. TOPOGRAPHIC SURVEY PROVIDED BY THOMAS & HUTTON DATED 06/29/11 AND REVISED ON 01/14/12.
2. PROPERTY BOUNDARY LINE PROVIDED BY THOMAS & HUTTON, DRAWING TITLED "PLAT OF THE BOUNDARY AND COMBINATION OF VARIOUS PARCELS CONTAINING 2527.47 ACRES TOTAL COMPRISING WINYAH GENERATING STATION AND THE SUBDIVISION TO CREATE TRACT A AND TRACT B", PLAT DATE 11/25/13.
3. COORDINATES AND DIRECTIONS SHOWN ON THIS DRAWING ARE BASED ON SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM (NAD83) (CORS) (INT'L FT). DISTANCES SHOWN ARE GROUND DISTANCES, NOT GRID DISTANCES.
4. ELEVATIONS ON THIS SURVEY ARE REFERENCED TO NGVD 1929 DATUM AS DERIVED FROM NGS MONUMENT PID#DD1957.
5. SEE DRAWING 3 FOR AN EXISTING CONDITIONS PLAN IN THE VICINITY OF THE PROPOSED LANDFILL AREAS, SHOWN AT AN ENLARGED SCALE. LOCATION OF SOIL BORINGS, MONITORING WELLS, PIEZOMETERS, AND SURFACE WATER MONITORING POINTS ARE SHOWN ON DRAWING 4.
6. A MAP SHOWING ABUTTING PROPERTY OWNERS, ACCOMPANIED BY A LIST OF THE NAMES AND ADDRESSES OF ADJACENT PROPERTY OWNERS, IS PROVIDED IN APPLICATION SECTION "2D" OF THE OVERALL PERMIT APPLICATION PACKAGE.
7. THE ENGINEERING REPORT DISCUSSES POSSIBLE SOIL STOCKPILING. NO SPECIFIC STOCKPILE AREAS HAVE BEEN DESIGNATED AT THIS TIME.

REV	DATE	DESCRIPTION	DRN	APP

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2201 EAST MCBEE AVENUE, SUITE 201
GREENVILLE, SOUTH CAROLINA 29601 USA
PHONE: 864.134.4900

santee cooper

TITLE: OVERALL SITE PLAN

PROJECT: CLASS THREE LANDFILL PERMIT APPLICATION

SITE: WINYAH GENERATING STATION
GEORGETOWN, SOUTH CAROLINA

DESIGN BY:	CFB	DATE:	AUGUST 2016
DRAWN BY:	CET	PROJECT NO.:	GSC5242
CHECKED BY:	SMG	FILE:	W-0-SC-585-00-0026-002
REVIEWED BY:	RW	DRAWING NO.:	
APPROVED BY:	SMG	2	OF

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER No. 33535 SCOTT M. GRAVES
8/9/2016
SOUTH CAROLINA GEOSYNTEC CONSULTANTS INC. No. 173 CERTIFICATE OF AUTHORIZATION

PERMIT DRAWING

FIGURE 2

(NOV. 2021 LANDFILL AREA 2 LOCATION RESTRICTIONS DEMONSTRATION)

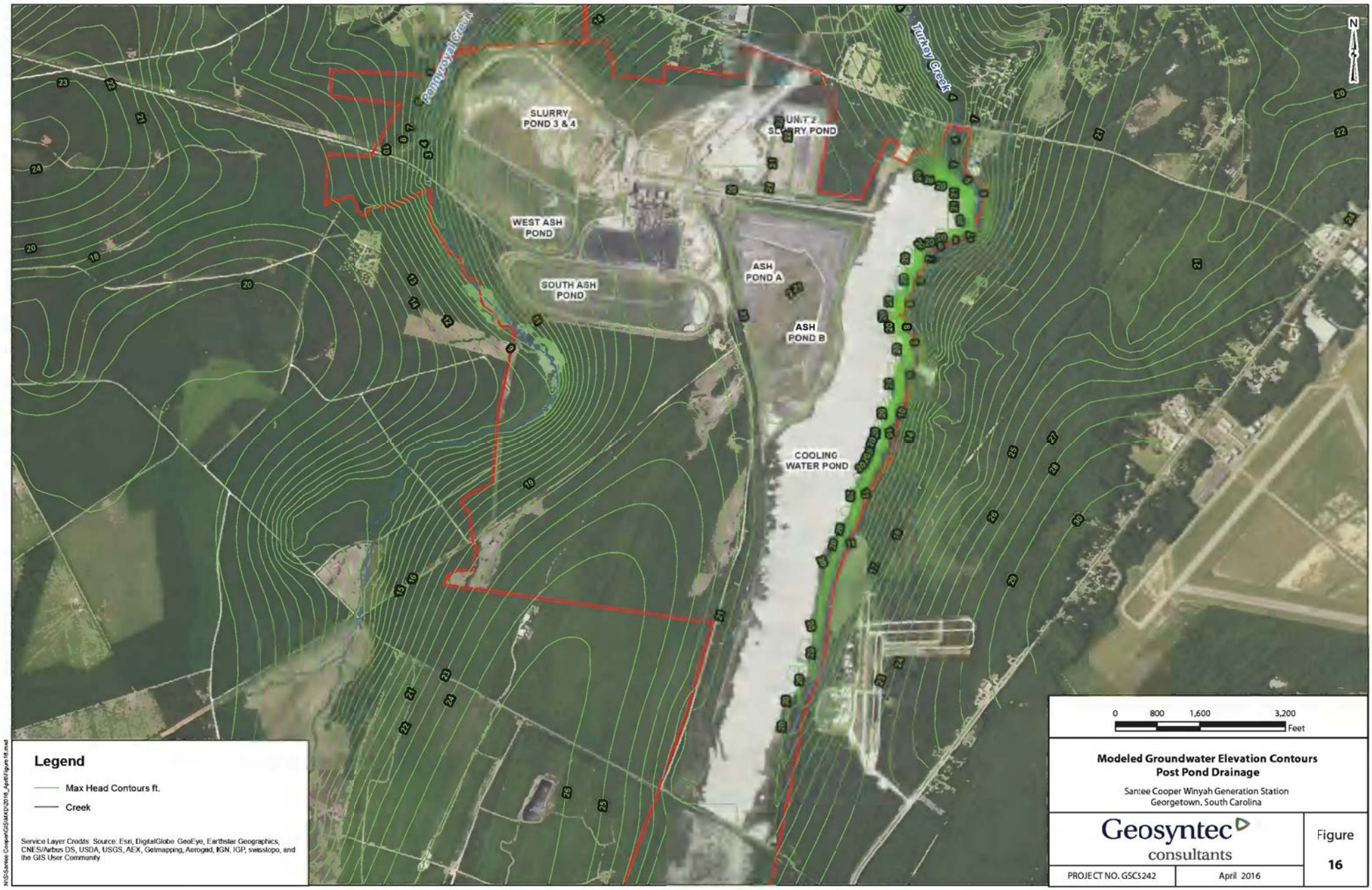
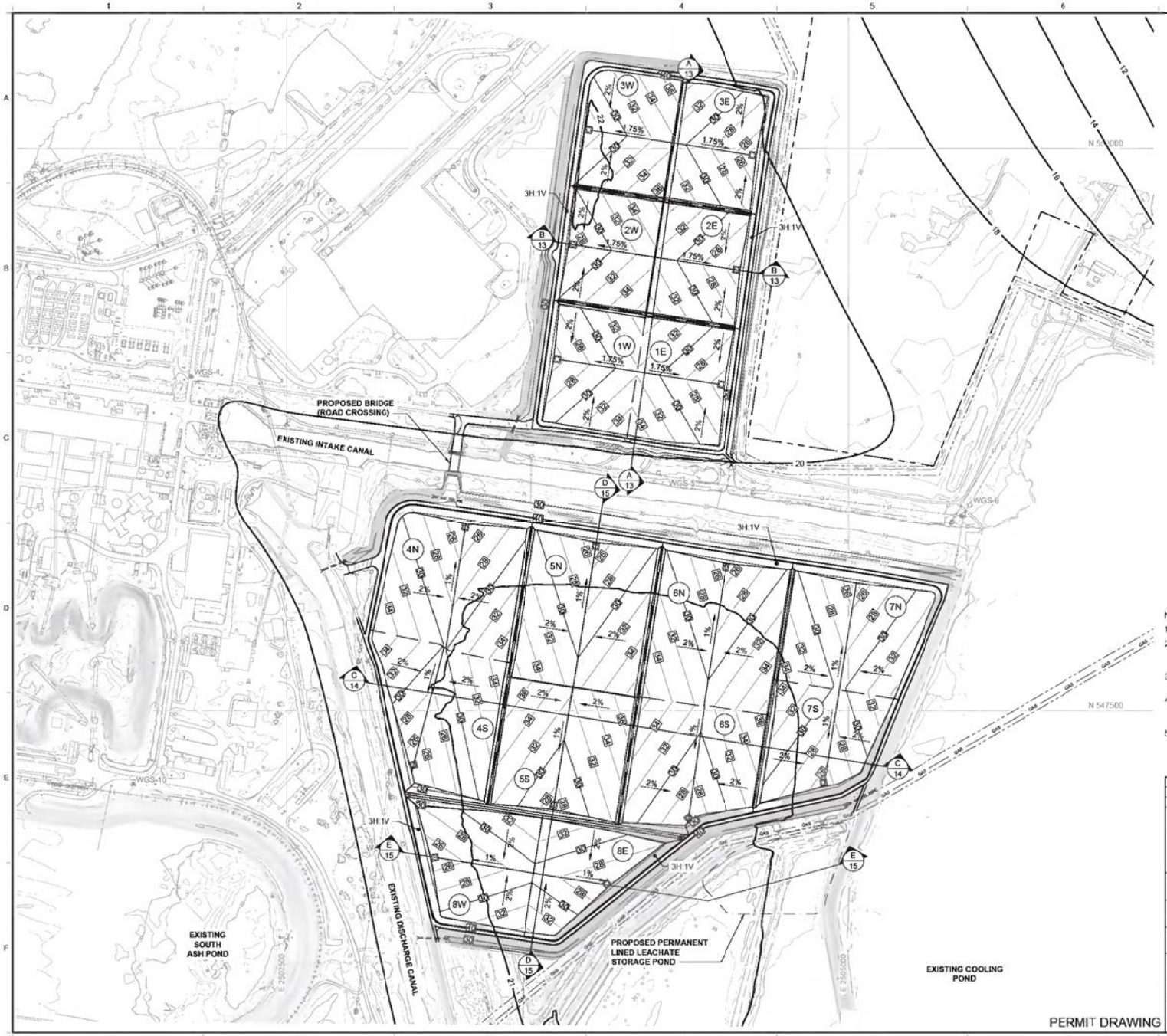


FIGURE 3

(NOV. 2021 LANDFILL AREA 2 LOCATION RESTRICTIONS DEMONSTRATION)

APPENDIX A

SUPPORTING DOCUMENTATION



LEGEND

- EXISTING GROUND ELEVATION CONTOUR (FT, MSL) (NOTES 1, 3)
- EXISTING DIRT/GRAVEL ROAD
- EXISTING VEGETATION
- EXISTING BUILDING
- EXISTING GAS PIPELINE AND EASEMENT LIMITS (NOTE 1)
- EXISTING OVERHEAD ELECTRIC LINE
- EXISTING RAILROAD TRACKS
- EXISTING WATERLINE
- PROPERTY BOUNDARY (NOTE 1)
- PROPOSED LANDFILL AREAS (LIMIT OF LINER)
- CELL BOUNDARY
- 2E — CELL DESIGNATION
- 28 — PROPOSED LINER SUBGRADE ELEVATION CONTOUR (FT, MSL) (NOTE 4)
- 20 — SEASONAL HIGH WATER TABLE (GROUNDWATER ELEVATION) CONTOUR (FT, MSL) (NOTE 5)
- PROPOSED LEACHATE COLLECTION SUMP
- PROPOSED DRAINAGE CULVERT

N

0 200' 400'
SCALE IN FEET

NOTES:

1. EXISTING SITE CONDITIONS AND PROPERTY BOUNDARY TAKEN FROM DRAWING 3.
2. COORDINATES AND DIRECTIONS SHOWN ON THIS DRAWING ARE BASED ON SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM (NAD83) (CORS) (INT'L FT). DISTANCES SHOWN ARE GROUND DISTANCES, NOT GRID DISTANCES.
3. ELEVATIONS ON THIS SURVEY ARE REFERENCED TO NGVD 1929 DATUM AS DERIVED FROM NGS MONUMENT PID8DD1957.
4. WITHIN THE LIMIT OF LINER, PROPOSED CONTOURS REFER TO THE LANDFILL LINER SUBGRADE (BOTTOM OF CLAY COMPONENT OF THE LINER SYSTEM). OUTSIDE THE LIMIT OF LINER, PROPOSED CONTOURS REFER TO FINISHED GRADE.
5. GROUNDWATER ELEVATION CONTOURS ARE MODELED POST-POND DRAINAGE AS PRESENTED IN GEOSYNTEC CONSULTANTS 2016: "SITE HYDROGEOLOGIC CHARACTERIZATION STUDY REPORT", FIGURES 16A AND 16B FOR CONDITIONS IN AND AROUND LANDFILL AREAS 1 AND 2, RESPECTIVELY.

REV	DATE	DESCRIPTION	DRN	APP
1	JUNE 2017	UPDATED SECTION E LINE	CET	SMG

Geosyntec consultants
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PHONE: 864.434.4900

santee cooper

TITLE: SUBGRADE (BOTTOM OF LINER SYSTEM) GRADING PLAN

PROJECT: CLASS THREE LANDFILL PERMIT APPLICATION

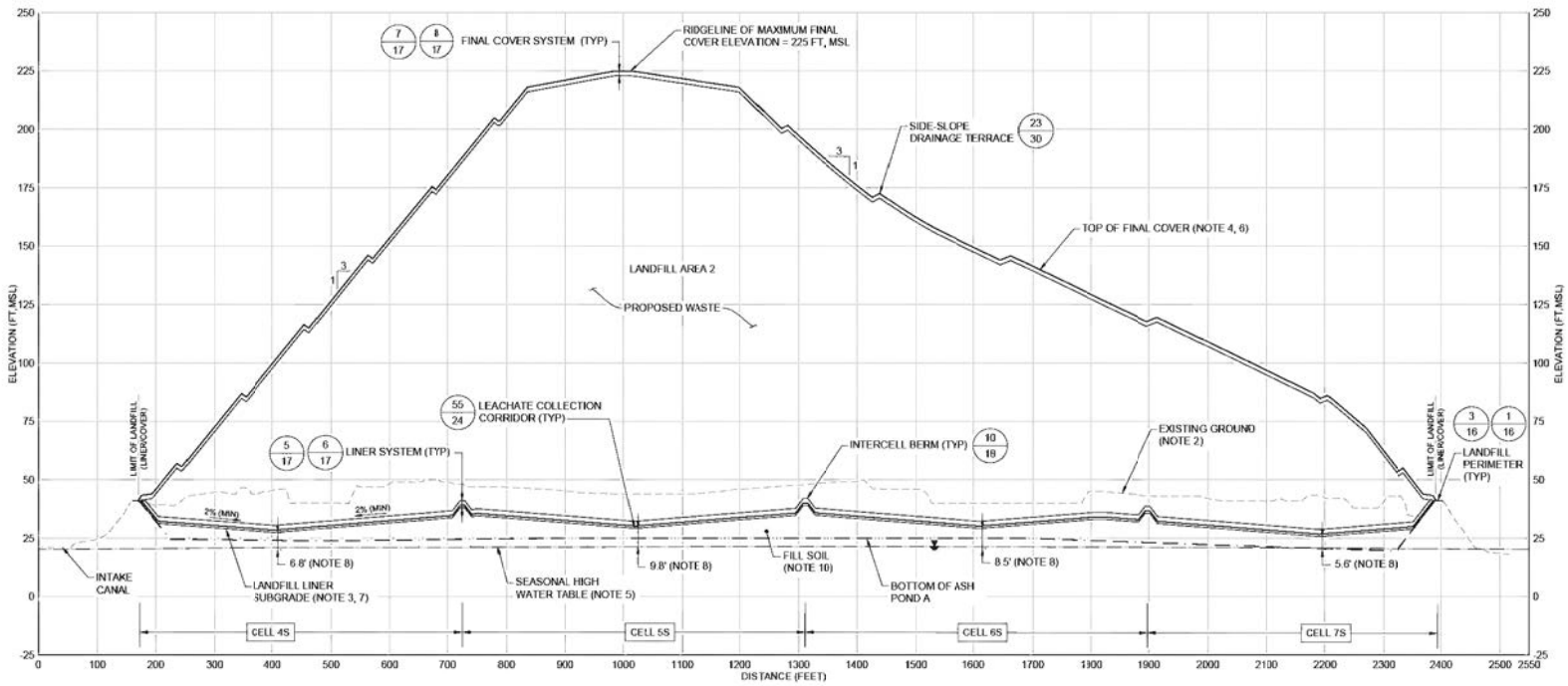
SITE: WINYAH GENERATING STATION
GEORGETOWN, SOUTH CAROLINA

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 32535 SCOTT M. GRATES

SOUTH CAROLINA GEOSYNTEC CONSULTANTS, INC. No. 773 CERTIFICATE OF AUTHORIZATION

DESIGN BY:	CFB	DATE:	AUGUST 2016
DRAWN BY:	CET	PROJECT NO:	GSC5242
CHECKED BY:	SMG	FILE:	W-0-SC-585-00-0026-004
REVIEWED BY:	RW	DRAWING NO:	6 OF 33
APPROVED BY:	SMG		

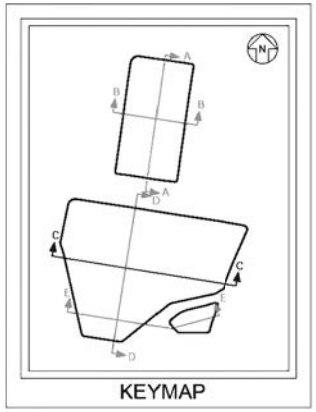
PERMIT DRAWING



C / 6 SECTION
LANDFILL CROSS SECTION C
SCALE: 1"=40'

NOTES:

1. ELEVATIONS ARE IN FEET ABOVE MEAN SEA LEVEL (FT, MSL).
2. EXISTING GROUND SHOWN ON THIS DRAWING IS TAKEN FROM THE TOPOGRAPHIC BASE MAP SHOWN ON DRAWING 3.
3. LANDFILL LINER SUBGRADE (BOTTOM OF CLAY COMPONENT OF THE LINER SYSTEM) SHOWN ON THIS DRAWING IS TAKEN FROM DRAWING 6.
4. TOP OF FINAL COVER SHOWN ON THIS DRAWING IS TAKEN FROM DRAWING 12.
5. SEASONAL HIGH WATER TABLE REFERS TO POST-POND DRAINAGE MODELED GROUNDWATER ELEVATION SURFACE TAKEN FROM DRAWING 6, WHICH IS THE HIGH WATER TABLE PRESENTED IN GEOSYNTEC CONSULTANTS 2016 "SITE HYDROGEOLOGIC CHARACTERIZATION REPORT".
6. TOP OF FINAL COVER GRADES ARE SLOPED AT 3H:1V ON LANDFILL SIDESLOPES BETWEEN DRAINAGE TERRACES, AND FIVE PERCENT ON THE LANDFILL TOP AREAS. SLOPES AND FINAL COVER SYSTEM LAYER THICKNESS MAY APPEAR DISTORTED ON THESE CROSS SECTIONS DUE TO THE EXAGGERATED VERTICAL SCALE AND WHAT MAY BE A SKEWED ANGLE AT WHICH THESE SECTIONS WERE CUT COMPARED TO THE THREE-DIMENTIONAL TRUE SLOPE DIRECTIONS.
7. LINER GRADES ARE SLOPED AT 3H:1V ON LINER SIDESLOPES, AND AT A MINIMUM OF TWO PERCENT TOWARDS THE LEACHATE COLLECTION CORRIDORS ON THE LANDFILL FLOOR AREAS. LEACHATE COLLECTION CORRIDORS ARE SLOPED AT A MINIMUM OF ONE PERCENT TOWARDS THE SUMPS. LINER THICKNESS SHOWN ON THESE CROSS SECTIONS IS FOR THE PROPOSED OPTION 2 LINER SYSTEM WHICH USES A ONE-FOOT THICK COMPACTED CLAY LAYER. SLOPES AND LAYER THICKNESS MAY APPEAR DISTORTED ON THESE CROSS SECTIONS DUE TO THE EXAGGERATED VERTICAL SCALE AND WHAT MAY BE A SKEWED ANGLE AT WHICH THESE SECTIONS WERE CUT COMPARED TO THE THREE-DIMENTIONAL TRUE SLOPE DIRECTIONS.
8. WATER TABLE SEPARATION DISTANCES LABELED ON THIS DRAWING REFER TO THE AS-DESIGNED PRE-SETTLEMENT DISTANCE TO THE HIGH WATER TABLE FROM THE BOTTOM OF THE LINER SYSTEM (LINER SUBGRADE) AS SHOWN ON DRAWING 6. REFER TO THE SETTLEMENT CALCULATIONS THAT ACCOMPANY THIS PERMIT APPLICATION FOR DETAILED CALCULATIONS OF LANDFILL BASE GRADE SETTLEMENT AND DEMONSTRATION THAT A MINIMUM POST-SETTLEMENT SEPARATION OF THREE FEET BETWEEN THE BASE OF THE LINER SYSTEM AND THE HIGH WATER TABLE IS PREDICTED TO BE MAINTAINED.
9. REFER TO TABLE ON DRAWING 23 FOR POST-SETTLEMENT ELEVATIONS AND WATER TABLE SEPARATION DISTANCES AT BOTTOM OF EACH SUMP.
10. FOLLOWING REMOVAL OF EXISTING ASH MATERIAL (TO APPROXIMATE BOTTOM OF SLURRY POND / ASH POND AS SHOWN ON CROSS SECTIONS), STRUCTURAL FILL SOIL SHALL BE PLACED AND COMPACTED IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS AS NEEDED TO ACHIEVE THE LANDFILL LINER SUBGRADE ELEVATIONS AND GRADES.



KEYMAP

VERTICAL SCALE IN FEET: 0, 25', 50'
HORIZONTAL SCALE IN FEET: 0, 100', 200'

PERMIT DRAWING

REV	DATE	DESCRIPTION	DRN	APP
2	JUNE 2017	ADDED NOTE 10	CET	SMG
1	FEB 2017	ADDED NOTE 9 AND GROUNDWATER SEPARATION INFO	CET	SMG

Geosyntec consultants
201 EAST MCBEE AVENUE, SUITE 201
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PHONE: 864.454.4900

santee cooper

TITLE: LANDFILL CROSS SECTIONS II

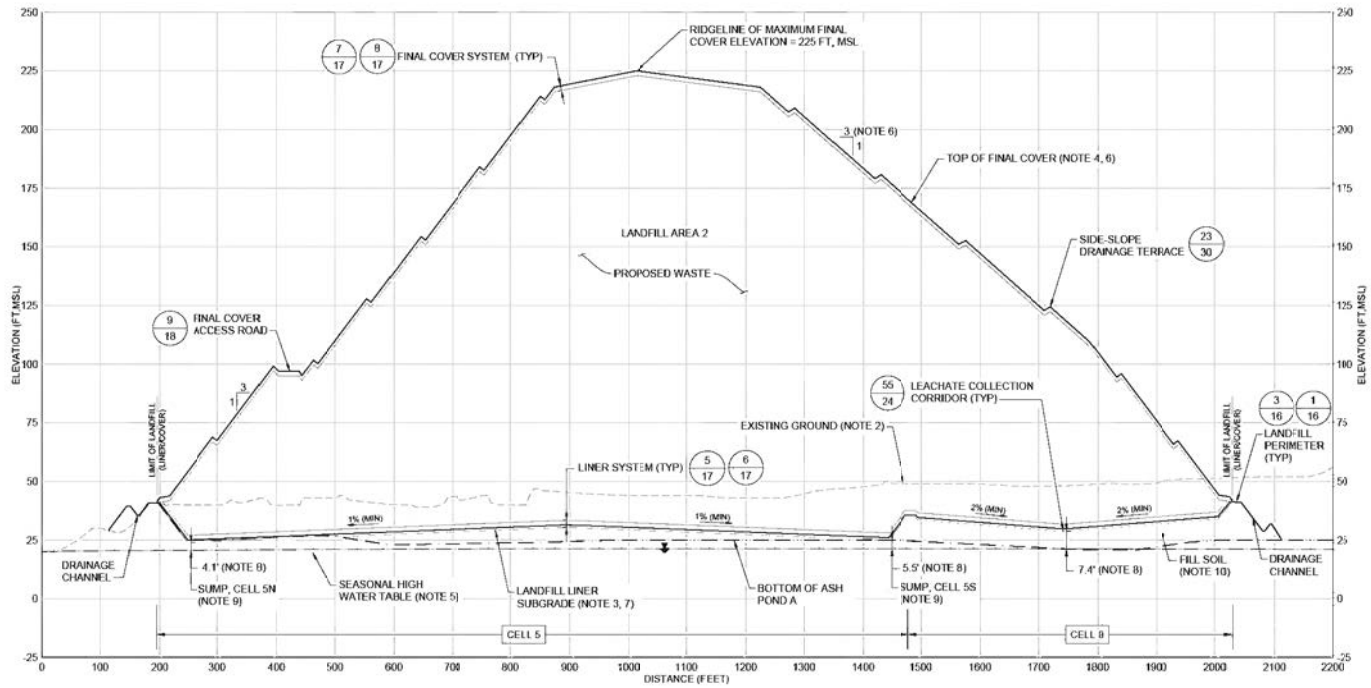
PROJECT: CLASS THREE LANDFILL PERMIT APPLICATION

SITE: WINYAH GENERATING STATION
GEORGETOWN, SOUTH CAROLINA

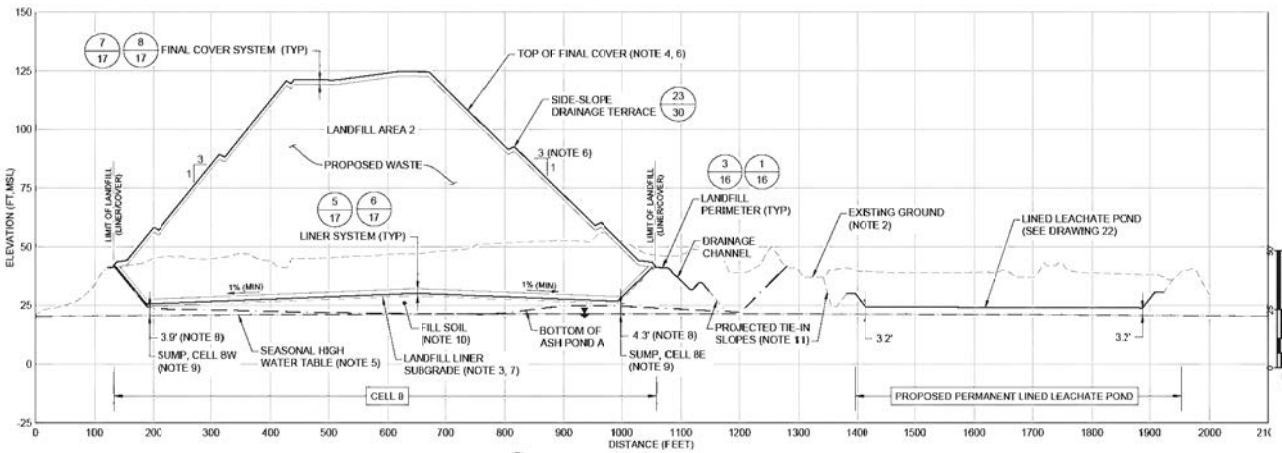
SOUTH CAROLINA PROFESSIONAL ENGINEER No. 33535 SCOTT M. GRATES

SOUTH CAROLINA GEOSYNTEC CONSULTANTS, INC. No. 773 CERTIFICATE OF AUTHORIZATION

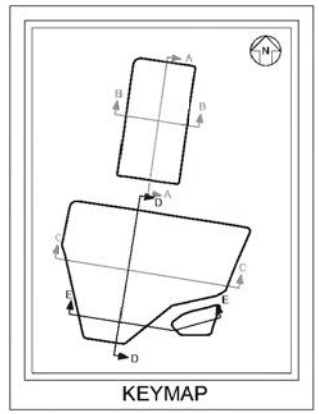
DESIGN BY:	CFB	DATE:	AUGUST 2016
DRAWN BY:	CET	PROJECT NO:	GSC5242
CHECKED BY:	SMG	FILE:	W-0-SC-585-00-0026-013
REVIEWED BY:	RW	DRAWING NO:	14 OF 33
APPROVED BY:	SMG		



D/6 SECTION
LANDFILL CROSS SECTION D
SCALE: 1"=4'



E/6 SECTION
LANDFILL CROSS SECTION E
SCALE: 1"=4'



NOTES:

1. ELEVATIONS ARE IN FEET ABOVE MEAN SEA LEVEL (FT, MSL).
2. EXISTING GROUND SHOWN ON THIS DRAWING IS TAKEN FROM THE TOPOGRAPHIC BASE MAP SHOWN ON DRAWING 3.
3. LANDFILL LINER SUBGRADE (BOTTOM OF CLAY COMPONENT OF THE LINER SYSTEM) SHOWN ON THIS DRAWING IS TAKEN FROM DRAWING 6.
4. TOP OF FINAL COVER SHOWN ON THIS DRAWING IS TAKEN FROM DRAWING 12.
5. SEASONAL HIGH WATER TABLE REFERS TO POST-POND DRAINAGE MODELED GROUNDWATER ELEVATION SURFACE TAKEN FROM DRAWING 6, WHICH IS THE HIGH WATER TABLE PRESENTED IN GEOSYNTEC CONSULTANTS 2016 "SITE HYDROGEOLOGIC CHARACTERIZATION REPORT".
6. TOP OF FINAL COVER GRADES ARE SLOPED AT 3H:1V ON LANDFILL SIDESLOPES BETWEEN DRAINAGE TERRACES, AND FIVE PERCENT ON THE LANDFILL TOP AREAS. SLOPES AND FINAL COVER SYSTEM LAYER THICKNESS MAY APPEAR DISTORTED ON THESE CROSS SECTIONS DUE TO THE EXAGGERATED VERTICAL SCALE AND WHAT MAY BE A SKEWED ANGLE AT WHICH THESE SECTIONS WERE CUT COMPARED TO THE THREE-DIMENTIONAL TRUE SLOPE DIRECTIONS.
7. LINER GRADES ARE SLOPED AT 3H:1V ON LINER SIDESLOPES, AND AT A MINIMUM OF TWO PERCENT TOWARDS THE LEACHATE COLLECTION CORRIDORS ON THE LANDFILL FLOOR AREAS. LEACHATE COLLECTION CORRIDORS ARE SLOPED AT A MINIMUM OF ONE PERCENT TOWARDS THE SUMPS. LINER THICKNESS SHOWN ON THESE CROSS SECTIONS IS FOR THE PROPOSED OPTION 2 LINER SYSTEM WHICH USES A ONE-FOOT THICK COMPACTED CLAY LAYER. SLOPES AND LAYER THICKNESS MAY APPEAR DISTORTED ON THESE CROSS SECTIONS DUE TO THE EXAGGERATED VERTICAL SCALE AND WHAT MAY BE A SKEWED ANGLE AT WHICH THESE SECTIONS WERE CUT COMPARED TO THE THREE-DIMENTIONAL TRUE SLOPE DIRECTIONS.
8. WATER TABLE SEPARATION DISTANCES LABELED ON THIS DRAWING REFER TO THE AS-DESIGNED PRE-SETTLEMENT DISTANCE TO THE HIGHWATER TABLE FROM THE BOTTOM OF THE LINER SYSTEM (LINER SUBGRADE) AS SHOWN ON DRAWING 6. REFER TO THE SETTLEMENT CALCULATIONS THAT ACCOMPANY THIS PERMIT APPLICATION FOR DETAILED CALCULATIONS OF LANDFILL BASE GRADE SETTLEMENT AND DEMONSTRATION THAT A MINIMUM POST-SETTLEMENT SEPARATION OF THREE FEET BETWEEN THE BASE OF THE LINER SYSTEM AND THE HIGH WATERTABLE IS PREDICTED TO BE MAINTAINED.
9. REFER TO TABLE ON DRAWING 23 FOR POST-SETTLEMENT ELEVATIONS AND WATER TABLE SEPARATION DISTANCES AT BOTTOM OF EACH SUMP.
10. FOLLOWING REMOVAL OF EXISTING ASH MATERIAL (TO APPROXIMATE BOTTOM OF SLURRY POND / ASH POND AS SHOWN ON CROSS SECTIONS), STRUCTURAL FILL SOIL SHALL BE PLACED AND COMPACTED IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS AS NEEDED TO ACHIEVE THE LANDFILL LINER SUBGRADE ELEVATIONS AND GRADES.
11. PROJECTED TIE-IN SLOPES ARE TO ACCOMPLISH TIE-IN TO THE ESTIMATED FUTURE GROUND SURFACE THAT WILL EXIST AFTER REMOVAL OF ASH MATERIAL FROM ASH PONDS A AND B.

REV	DATE	DESCRIPTION	ORIG	APP
2	JUNE 2017	ADDED NOTES 10 AND 11	CET	SMG
1	FEB 2017	ADDED NOTE 9 AND GROUNDWATER SEPARATION INFO	CET	SMG

Geosyntec consultants
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GREENVILLE, SOUTH CAROLINA 29601 USA
PHONE: 864.453.4900

santee cooper

TITLE: LANDFILL CROSS SECTIONS III

PROJECT: CLASS THREE LANDFILL PERMIT APPLICATION

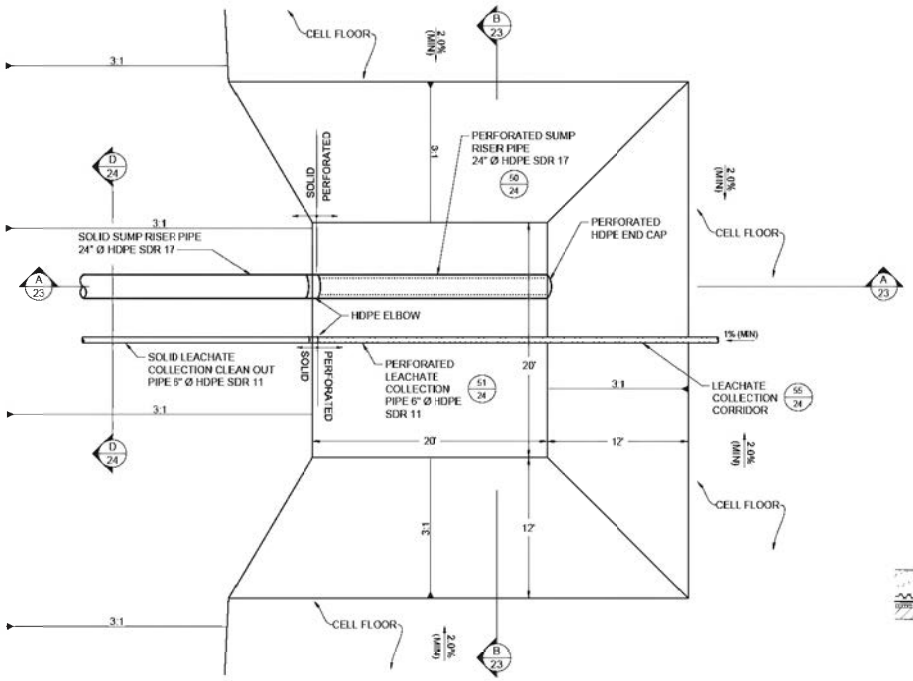
SITE: WINYAH GENERATING STATION
GEORGETOWN, SOUTH CAROLINA

DESIGN BY:	CFB	DATE:	AUGUST 2016
DRAWN BY:	CET	PROJECT NO:	GSC5242
CHECKED BY:	SMG	FILE:	W-0-SC-585-00-0026-014
REVIEWED BY:	RW	DRAWING NO:	15 OF 33
APPROVED BY:	SMG		

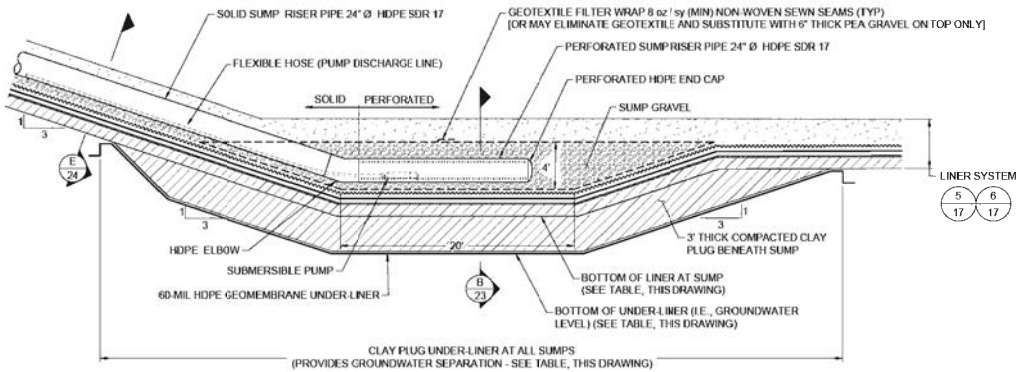
SOUTH CAROLINA PROFESSIONAL ENGINEER No. 32535 SCOTT M. GRATES

SOUTH CAROLINA GEOSYNTEC CONSULTANTS, INC. No. 773 CERTIFICATE OF AUTHORIZATION

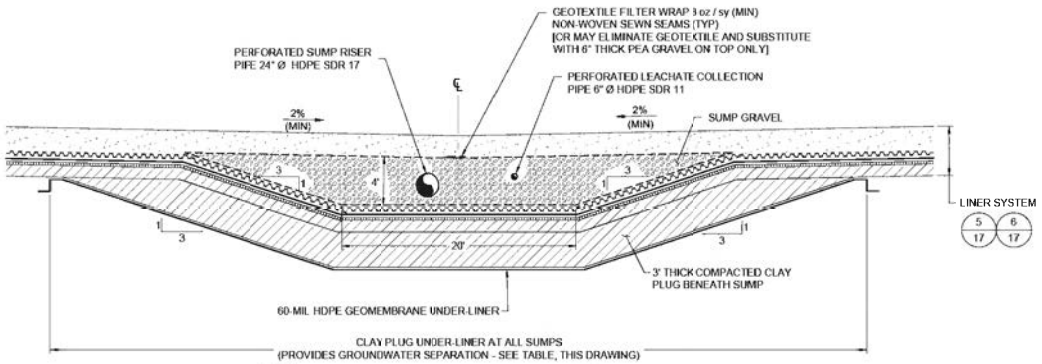
PERMIT DRAWING



34 / -- PLAN
LEACHATE COLLECTION SUMP
SCALE: NTS



A 23 SECTION
LEACHATE COLLECTION SUMP
SCALE: N.T.S.



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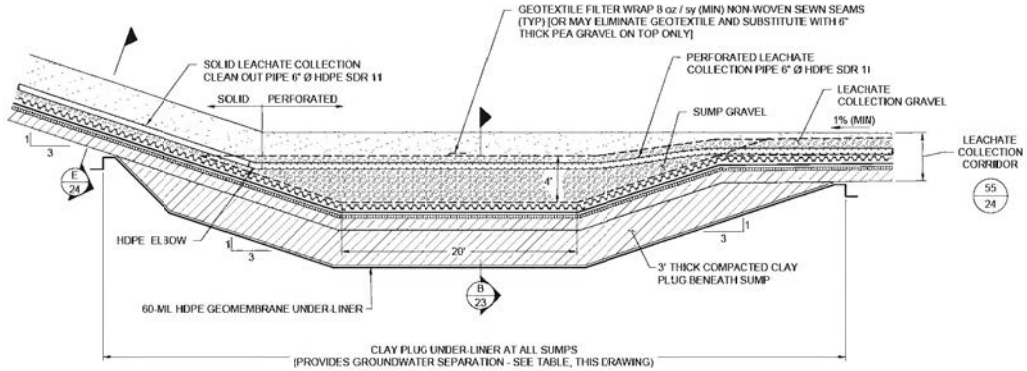
LEACHATE COLLECTION SUMP
SCALE: N.T.S.



C 23 SECTION
LEACHATE COLLECTION SUMP
SCALE: N.T.S.

POST-SETTLEMENT GROUNDWATER SEPARATION AT SUMP LOCATIONS			
SUMP ID	BOTTOM OF SUMP ELEVATION (FT, MSL)	BOTTOM OF CLAY PLUG (I.E., WATER TABLE) ELEVATION (FT, MSL)	GROUNDWATER SEPARATION (FT)
1W	21.6	18.6	3.0
1E	21.3	18.3	3.0
2W	23.1	20.1	3.0
2E	21.4	18.4	3.0
3W	23.1	20.1	3.0
3E	20.8	17.8	3.0
4N	20.7	17.7	3.0
4S	20.6	17.6	3.0
5N	21.2	18.2	3.0
5S	23.3	20.3	3.0
6N	21.2	18.2	3.0
6S	22.3	19.3	3.0
7N	21.2	18.2	3.0
7S	21.4	18.4	3.0
8W	21.0	18.0	3.0
8E	22.2	19.2	3.0

NOTES:

1. ALL SUMP RISERS SHALL BE PROVIDED WITH SEALABLE BLIND FLANGES AS APPROVED BY THE ENGINEER. ALL FLANGES FOR ALL PIPE SIZES SHALL HAVE RED RUBBER GASKETS. THE NUTS, BOLTS, AND WASHERS USED TO SECURE THE BLIND FLANGES SHALL BE ZINC PLATED.
2. ALL PIPE PENETRATIONS THROUGH LINER SYSTEM SHALL BE DOUBLE BANDED WITH NON-ADJUSTABLE STAINLESS STEEL CLAMPS (SEE SHEET 25 FOR DETAIL).
3. DETAILS ARE DRAWN SHOWING THE "OPTION 2" LINER SYSTEM WHICH IS ANTICIPATED TO BE USED. IF "OPTION 1" LINER SYSTEM IS USED, MAINTAIN CONSISTENCY WITH THE CONCEPTS SHOWN ON THESE DETAILS.

PERMIT DRAWING

REV	DATE	DESCRIPTION	DRN	APP
2	JUNE 2017	UPDATED ISOPE LABELS	CET	SMG
1	FEB 2017	REVISED SUMP DETAILS	CET	SMG

Geosyntec consultants
201 EAST MCBEE AVENUE, SUITE 201
GREENVILLE, SOUTH CAROLINA 29601 USA
PHONE: 864 454 4905

santee cooper

TITLE: LEACHATE SUMP PLAN

PROJECT: CLASS THREE LANDFILL PERMIT APPLICATION

SITE: WINYAH GENERATING STATION
GEORGETOWN, SOUTH CAROLINA

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 32535 SCOTT M. GRATES

SOUTH CAROLINA GEOSYNTEC CONSULTANTS, INC No. 773 CERTIFICATE OF AUTHORIZATION

DESIGN BY:	CFB	DATE:	AUGUST 2016
DRAWN BY:	CET	PROJECT NO:	GSC5242
CHECKED BY:	SMG	FILE:	W-0-SC-585-00-0026-024
REVIEWED BY:	RW	DRAWING NO:	23 OF 33
APPROVED BY:	SMG		

APPENDIX D
Santee Cooper June 19, 2024, Internal Note to File: December 17-18, 2023 – Landfill Area 1 and Area 2 Weather Impacts

WGS CLASS 3 LANDFILL AREA 2 CONSTRUCTION AND OPERATIONS

The Winyah Generating Station (WGS) Class 3 Landfill Area 2 (Landfill Area 2) is a permitted Industrial Solid Waste Landfill (Permit #LF3-00042), which was specifically designed, constructed, and is operated to meet requirements of the coal-combustion residuals (CCR) Rule (Title 40 Code of Federal Regulations [40 CFR] Part §257) and South Carolina Department of Environmental Services (SCDES) landfill regulations. The findings in the initial Alternative Source Demonstration (ASD) dated March 2023 for the Landfill Area 2 was that based on the construction, operations, and ongoing inspections of this new landfill as described in subsequent sections, it appears unlikely that there is a release at this time from the landfill which could be contributing to the statistically significant increase (SSIs) of Appendix III or Appendix IV constituents. For this ASD, these findings appear to continue to hold true based on a review of subsequent landfill operations, including a review of the inspection reports and the one release from the landfill due to an extreme weather event. The Landfill Area 2 Operator-in-Charge and WGS employee, Richie Mills, was interviewed regarding landfill operations for this ASD. Based on the construction, operations, a detailed review of the sole CCR release, and ongoing inspections as described in subsequent sections, it appears unlikely that the landfill is contributing to the SSIs of Appendix III constituents.

As noted in a previous ASD, Landfill Area 2 was designed and constructed to meet the location's restriction requirements in 40 CFR §257.60 through §257.64, including placement of waste with greater than 5 feet of separation from the seasonal high-water table and for unstable areas (Geosyntec, 2021). Landfill Area 2 was constructed with a composite liner system, a LCRS, and a contact stormwater collection system. It was designed and constructed to prohibit the release of materials, including leachate, into the environment. Contact stormwater on open areas of the landfill is routed through the leachate collection system. However, there was one exception of this with a release of CCR and CCR ash contact water into the Ash Pond A with an extreme weather event which occurred December 17 and 18, 2023. This is discussed in more detail in a Section 2.8.

Throughout the construction process, Santee Cooper's licensed Professional Engineers (P.E.s) oversaw the construction to ensure it was completed in accordance with the permitted construction drawings, with a few limited exceptions previously approved by SCDES, which are described in the following paragraph. Additionally, construction quality assurance was contracted to a third-party consultant, Insight Group, who performed industry-standard testing to ensure and certify construction was completed as designed and permitted. An overview of the construction documents and process was completed with the March 2023 ASD and the finding was that the construction design and implementation reflects standard industry practices in accordance with state and federal regulations which are geared to prohibiting long-term or substantial releases of CCR.

Santee Cooper continues to oversee the operation of the Landfill Area 2 and oversees or conducts routine inspections. WGS personnel complete daily informal inspections and weekly formal inspections in accordance with standard engineering practices and 40 CFR §257.84. The Operator-in-Charge works full-time at WGS and is a certified Class 3 landfill manager authorized by the state of South Carolina.

LANDFILL DESIGN

The Landfill Area 2 is currently approximately 2,000 feet wide, 1,500 feet long with same slope as Landfill Area 1. Landfill Area 2 started receiving material in March 2022 and CCR from the Ash Ponds A and B. Stormwater is routed to the onsite Industrial Cooling Pond via the Discharge Canal. The Landfill Area 2 was designed with an internal drain, a decant structure that allows rainwater that contacts CCR

to be collected within the active (or open) waste placement area and drain directly to the leachate management system. All decant structures are designed to drain the active contact rainwater using a contact water attenuation basin to temporarily store the contact water. The operational grading plans and fill sequencing were designed to channel any rainwater within the active area to the attenuation basin/decant structure, and subsequently to the permitted leachate management system. As of August 2024, Landfill Area 2 has no final cover as it continues to be actively filled.

PLACEMENT OF WASTE

The CCR Rule under 40 CFR §257.60(a) states that new CCR landfills "must be constructed with a base that is located no less than 1.52 meters (5 feet) above the upper limit of the uppermost aquifer." As noted in the March 2023 ASD, in the *Location Restrictions Compliance Demonstration* (Geosyntec, 2021) Geosyntec reviewed the design and construction of Landfill Area 2 and reported that it complied with the requirements of 40 CFR §257.60(a) due to its placement above the uppermost aquifer.

COMPOSITE LINER AND LEACHATE COLLECTION AND REMOVAL SYSTEM

As found in the March 2023 ASD, the Landfill Area 2 liner system was designed and constructed to meet the design criteria requirements. The Design Engineer-of-Record P.E. certified that the design of the composite liner and the LCRS meets the design criteria requirements of 40 CFR §257.70 (Geosyntec, 2017a). On October 27, 2017, Geosyntec's P.E. certified the composite liner liquid flow rates through the lower component (geosynthetic clay layer) of the alternate composite liner for the unit and determined the liquid flow rate is no greater than through 2 feet of compacted soils with a hydraulic conductivity of 1×10^{-7} centimeters per second, and thus meets the requirement of 40 CFR §257.70 (Geosyntec, 2017b).

The landfill leachate pumps operate on a regular basis to handle and discharge leachate and ash contact stormwater. According to the Operator-in-Charge, the pumps operate on a nearly continuous basis and there have been no change in the operations or construction of the leachate pumps and pipe system since the date of the initial ASD.

CONTACT STORMWATER MANAGEMENT

Contact water is a stormwater runoff that has been in contact with exposed CCR waste in the active areas of Landfill Area 2. The contact water is managed through sequential management as ongoing lifts of waste are placed in a landfill area cell. Initially, when the elevation of waste was below the elevation of the landfill perimeter, contact water was removed via pumps and discharged to the WGS Cooling Pond Complex. After the elevation of CCR waste was raised above the elevation of the landfill perimeter, a chimney drain decant structure was installed. The chimney drain consists of a perforated vertical concrete riser pipe and is surrounded by attenuating basins. The attenuating basin is a depressed area around the decant structure intended to help filter the contact water. The entire active area, including the attenuating basin, is graded to drain toward the decant structure. The vertical, decant structure pipe connects to a horizontal connector pipe at the base, which conveys contact water by gravity through the leachate collection system to the WGS Cooling Pond Complex, a permitted Industrial Cooling Pond. The leachate system is enclosed and lined until it discharges into the WGS Cooling Pond Complex (Geosyntec, 2021).

ANNUAL INSPECTIONS

The Landfill Area 2 is formally inspected weekly by trained landfill operators under the supervision of the Operator-in-Charge. It is also inspected annually by licensed professional civil engineers in compliance

with 40 CFR §257.84(b) of the CCR Rule. From a compliance perspective, the landfill is inspected monthly by SCDES. To date, there have been no landfill violations based on regulatory inspections according to the Operator-in-Charge. Additional inspections include routine fugitive dust inspections of the site and weekly stormwater pollution prevention inspections by Santee Cooper employees.

The March 2023 ASD included a review of the routine operations and inspections of Landfill Area 2, and the finding was that there was no obvious evidence of a release directly from the Landfill Area 2. A review of subsequent annual and weekly inspections was completed with the following observations:

Class 3 Landfill Area 2 2022 and 2023 Fugitive Dust Control Reports

The 2022 Fugitive Dust Control inspection report noted that there were no citizen complaints to report in 2022 and standard controls were sufficient, therefore corrective actions were not taken. As with the 2022 report, the 2023 Fugitive Dust Control report noted there were no citizen complaints to report and standard controls were sufficient, therefore no corrective action taken. Both inspections were conducted in compliance with Santee Cooper's CCR Fugitive Dust Plan.

CCR Class 3 Area 2 2022 and 2023 Landfill Inspections

The 2022 annual inspection was conducted to assess the stability and functionality of the WGS CCR landfills and was certified by a professional engineer, Alfred D. Manalac, on October 24, 2022 . The report stated: "In summary, the WGS CCR Class 3 Landfills Area 1 and Area 2 were generally found in satisfactory condition. No recognized existing or potential management unit safety deficiencies were noted at the time of inspection within the parameters of design and operation." A recommendation was made to lower the water elevation within the perimeters dikes of Landfill Area 2 with temporary pumps, until the installed drainage system is able to be used and to prevent stagnant ponding of runoff surface water when possible. The physical site inspection was conducted September 27, 2022. Area 2 contains ~483,332 CY at the time of the inspection.

The 2023 inspection was conducted September 14, 2023. In the report, the Santee Cooper professional engineer who conducted the inspection stated: "In summary, the WGS CCR Class 3 Landfills Area 1 and Area 2 were generally found in satisfactory condition. No recognized existing or potential management unit safety deficiencies were noted at the time of inspection within the parameters of design and operation." The certifying PE was Alfred D. Manalac. At the time of the inspection, Area 2 contained ~1,259,151 CY of material.

The annual inspections were made by conducting file reviews in the operating record and conducting a physical visual site inspection. The inspector reviewed weekly inspections conducted by Winyah personnel that indicated no major structural or operational problems. The overall condition was found to be in satisfactory. The annual inspection for 2024 has not yet been completed. Weekly inspections are conducted by staff working for the Land Operator in Charge and signed by station manager and a review of the provided 2024 weekly inspections reflect no significant issues.

SCDES inspectors come approximately monthly. According to Richie Mills, there have been no violations and the SCDES records reflect no periods of non-compliance. Notably, SCDES did not classify the December 2023 release as an incident because there were not a dike breach and the CCR and the ash contact stormwater released from Landfill Area 2 was fully contained in Ash Pond A.

EXTREME WEATHER INCIDENT

The following are pertinent observations from Santee Cooper's Report to File on the December 2023 extreme weather event. Appendix A references the Landfill Area 1 and 2 Weather Impacts/Incident *(December 17-80, 2023- Landfill Area 1 and Area 2 Weather Impacts, Santee Cooper Note to File, Jeremy Poetzscher and Domenic Ciccolella), June 19, 2024*. A summary is provided below:

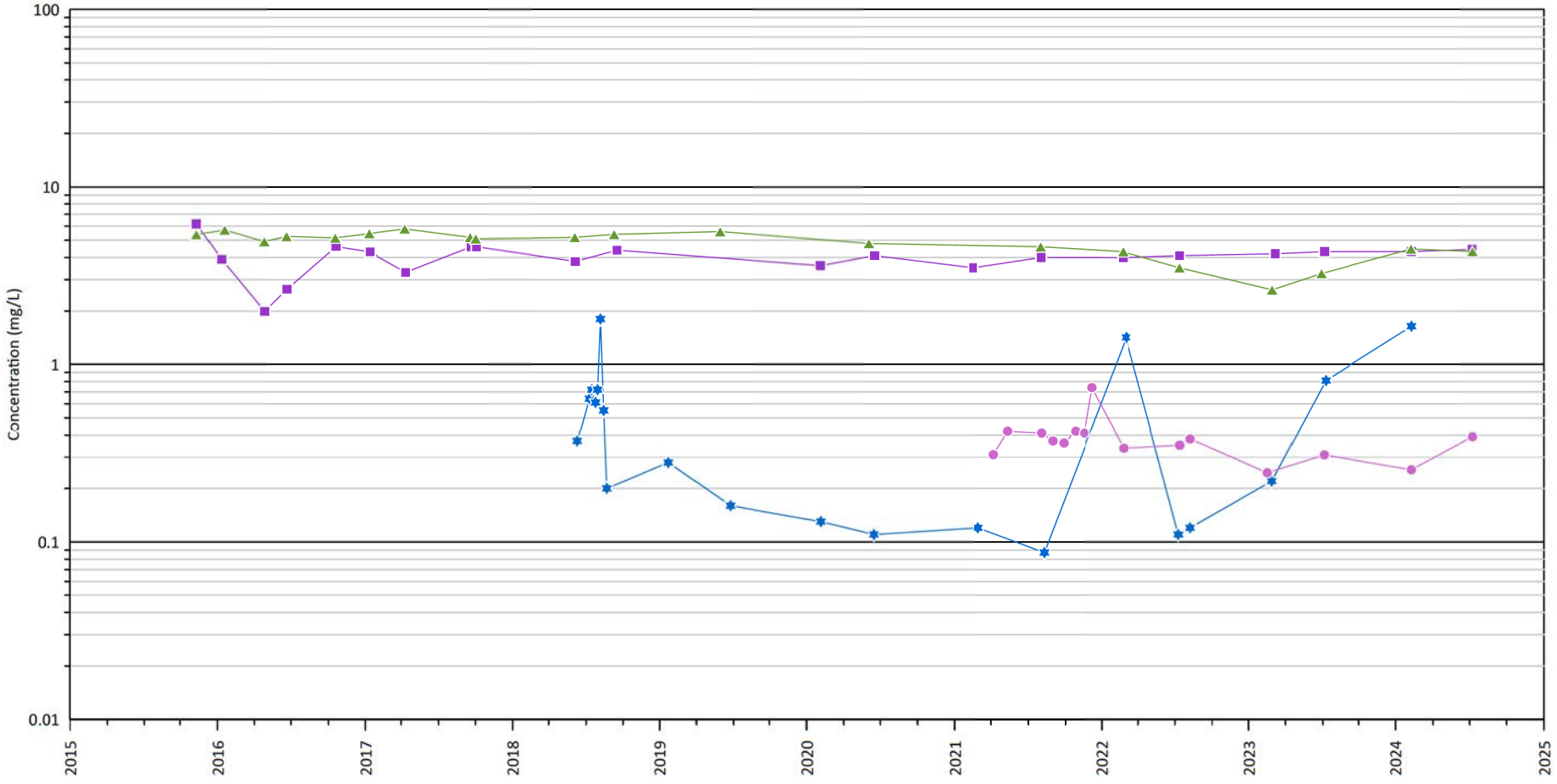
- The event occurred between December 17 and 18, 2023 when Georgetown County, South Carolina received an estimated 12 to 13 inches of rainfall with an approximate 24-hour period. This 24-hour precipitation total falls between the 100-year and the 200-year storm interval for the areas as published in the NOAAA Precipitation-Frequency tables.
- The result was a release of both CCR and ash-contact stormwater from the landfill waste boundary but there was not a breach in the Ash Pond A dike and all CCR and ash contact wastewater was contained withing Ash Pond A. All release CCR was fully recovered within less than a week after the incident according to the Landfill Operator in Charge
- Landfill Area 2 sustained various amounts of CCR and side slope erosion that require correction action to mitigate further slope stability concerns and/or further release of CCR outside the permitted waste boundaries.
- The volume of CCR and water release is unknown, but the released CCR and CCR contact stormwater was captured in the excavated footprint of Ash Pond A that remained open (~ 13 acres). Corrective action included removal of visible CCR by December 25, 2023. The ash contact stormwater water was directed from the Ash Pond A to the Industrial Cooling Pond system.

APPENDIX E
Time-Series Graphs

CLASS III LANDFILL TREND GRAPHS
WINYAH GENERATING STATION
GEORGETOWN, SOUTH CAROLINA

DRAFT

BORON



NOTES:
1. FILLED IN SYMBOL INDICATES A DETECTION. OPEN SYMBOL INDICATES NON-DETECT BELOW THE REPORTING LIMIT.
2. mg/L = MILLIGRAMS PER LITER

LEGEND:
WAP-19
WLF-A1-2
WLF-A2-6
WAP-9

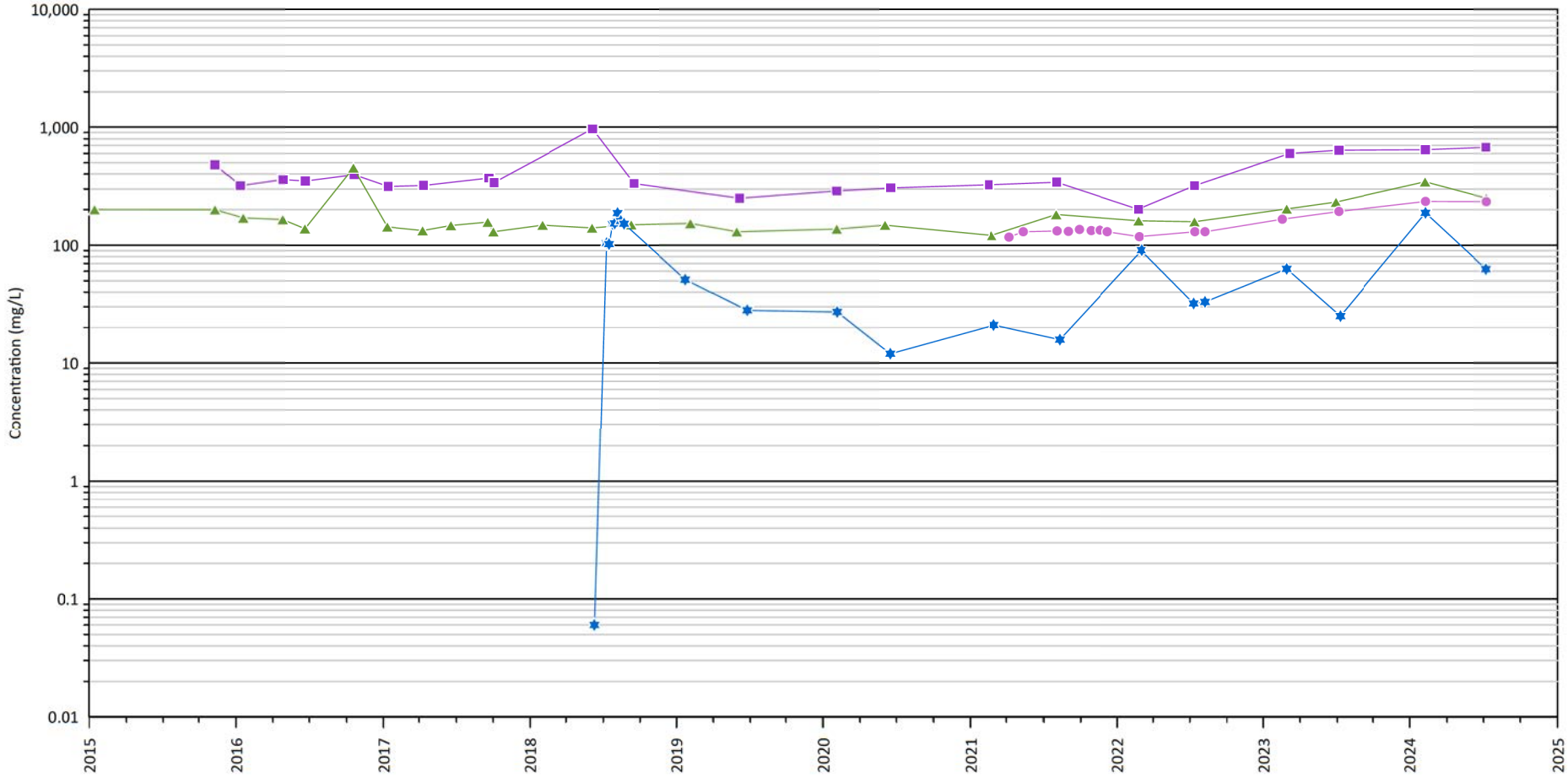
HALEY ALDRICH

August 2024

CLASS III LANDFILL TREND GRAPHS
WINYAH GENERATING STATION
GEORGETOWN, SOUTH CAROLINA

DRAFT

CALCIUM



NOTES:
1. FILLED IN SYMBOL INDICATES A DETECTION. OPEN SYMBOL INDICATES NON-DETECT BELOW THE REPORTING LIMIT.
2. mg/L = MILLIGRAMS PER LITER

LEGEND:
WAP-19
WLF-A1-2
WLF-A2-6
WAP-9

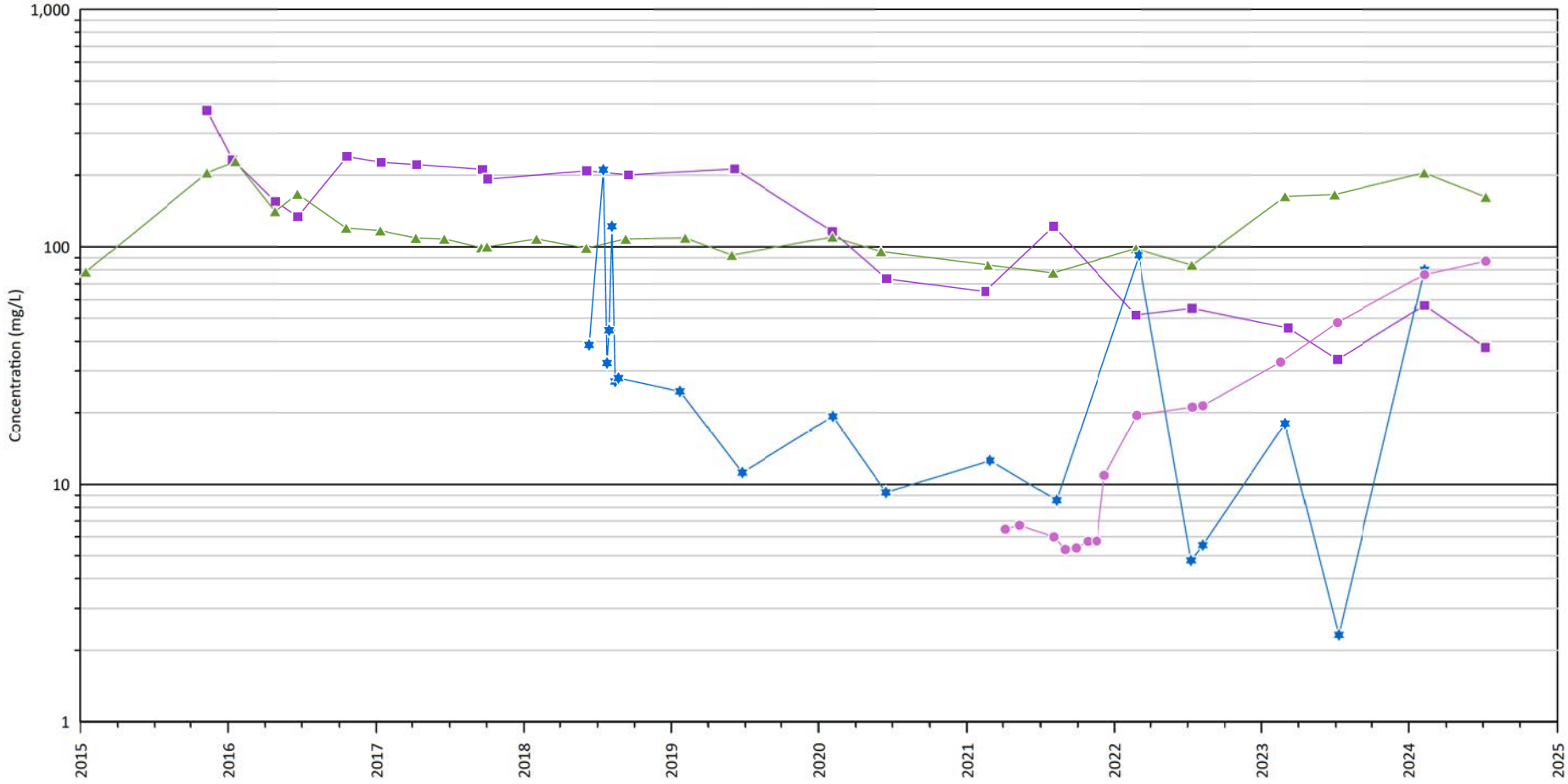
HALEY ALDRICH

August 2024

CLASS III LANDFILL TREND GRAPHS
WINYAH GENERATING STATION
GEORGETOWN, SOUTH CAROLINA

DRAFT

CHLORIDE



NOTES:
1. FILLED IN SYMBOL INDICATES A DETECTION. OPEN SYMBOL INDICATES NON-DETECT BELOW THE REPORTING LIMIT.
2. mg/L = MILLIGRAMS PER LITER

LEGEND:
WAP-19
WLF-A1-2
WLF-A2-6
WAP-9

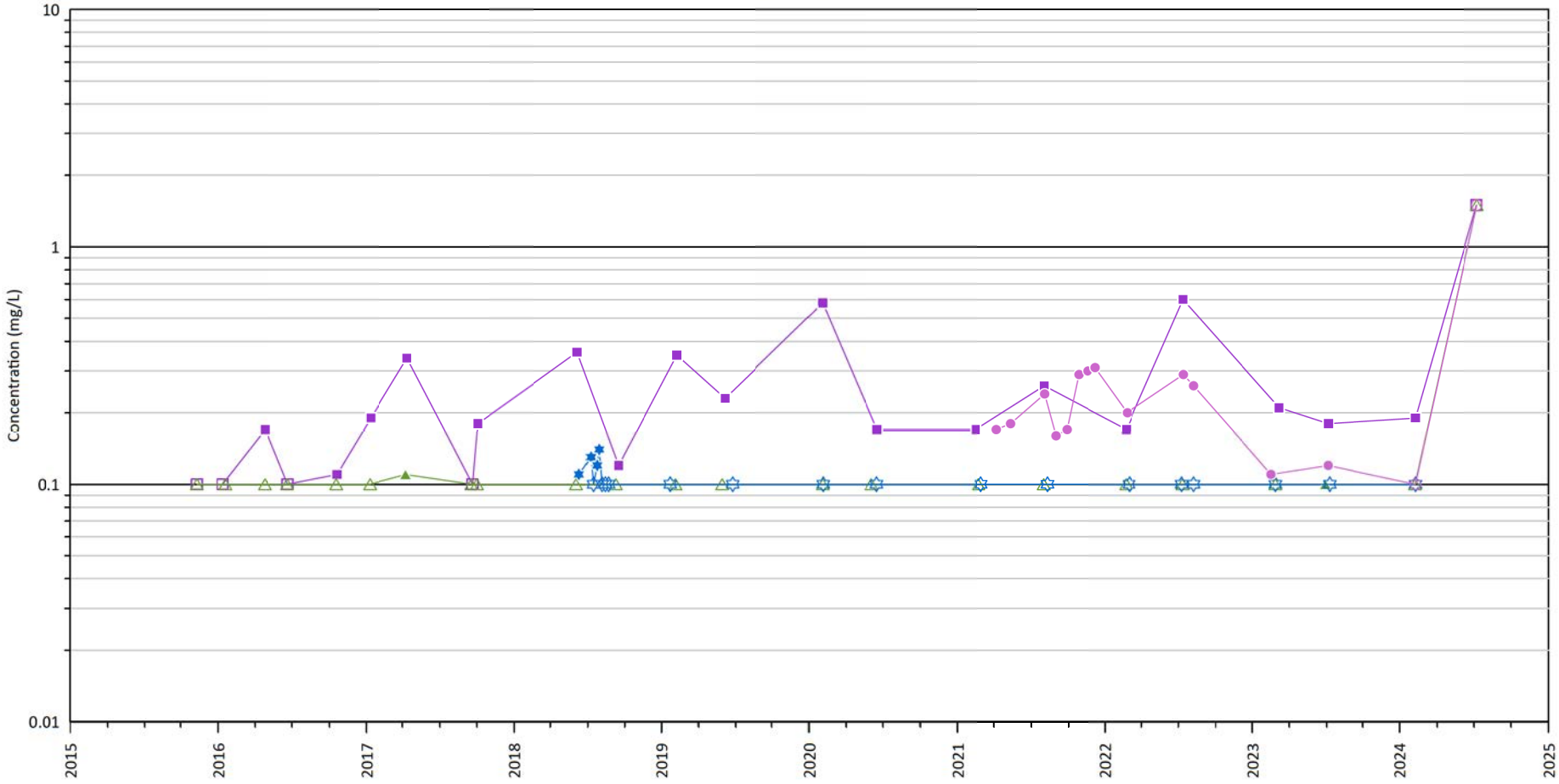
HALEY ALDRICH

August 2024

CLASS III LANDFILL TREND GRAPHS
WINYAH GENERATING STATION
GEORGETOWN, SOUTH CAROLINA

DRAFT

FLUORIDE



NOTES:
1. FILLED IN SYMBOL INDICATES A DETECTION. OPEN SYMBOL INDICATES NON-DETECT BELOW THE REPORTING LIMIT.
2. mg/L = MILLIGRAMS PER LITER

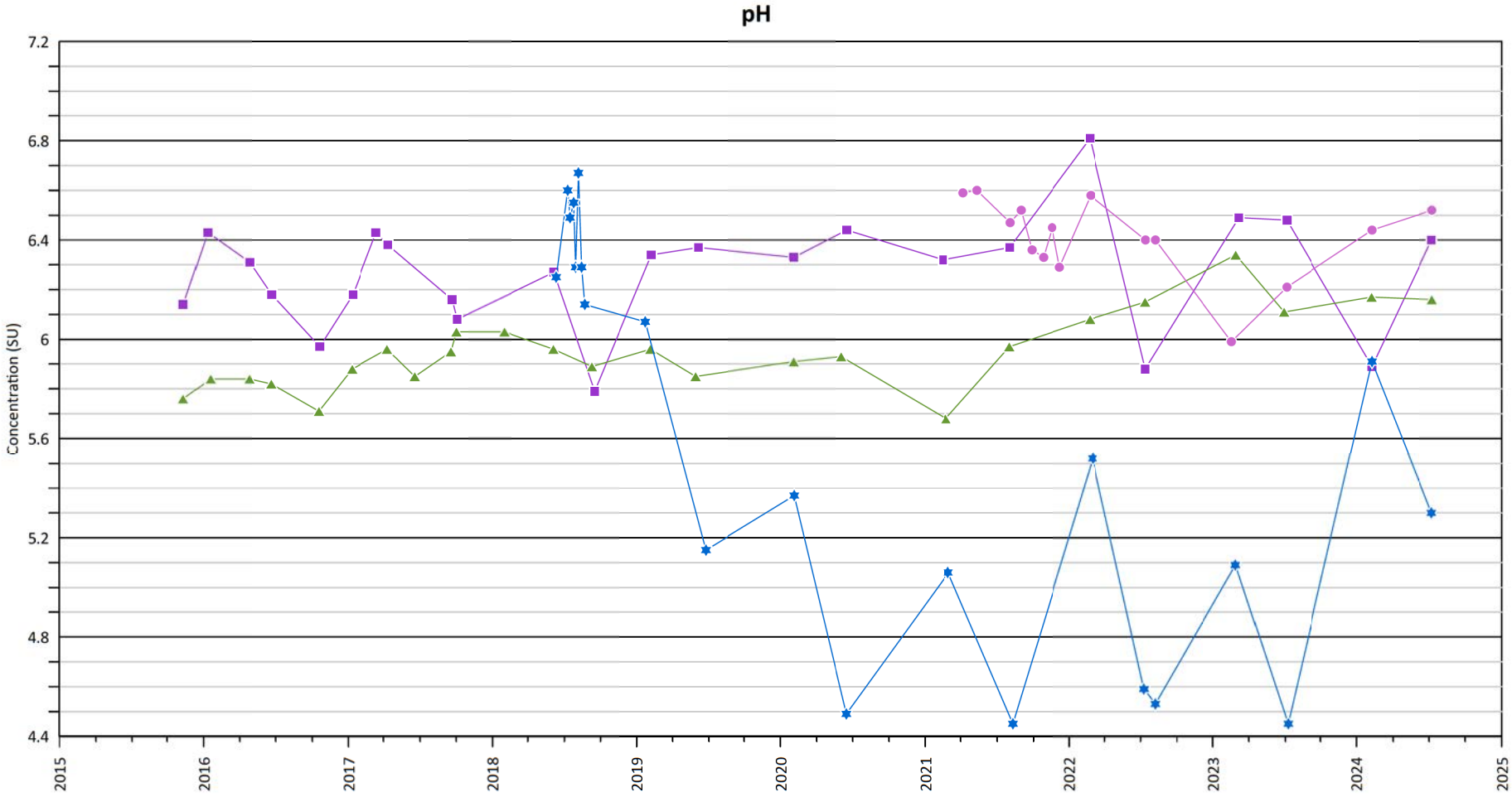
LEGEND:
WAP-19
WLF-A1-2
WLF-A2-6
WAP-9

HALEY ALDRICH

August 2024

CLASS III LANDFILL TREND GRAPHS
WINYAH GENERATING STATION
GEORGETOWN, SOUTH CAROLINA

DRAFT



NOTES:
1. SU = STANDARD UNITS

LEGEND:
WAP-19
WLF-A1-2
WLF-A2-6
WAP-9

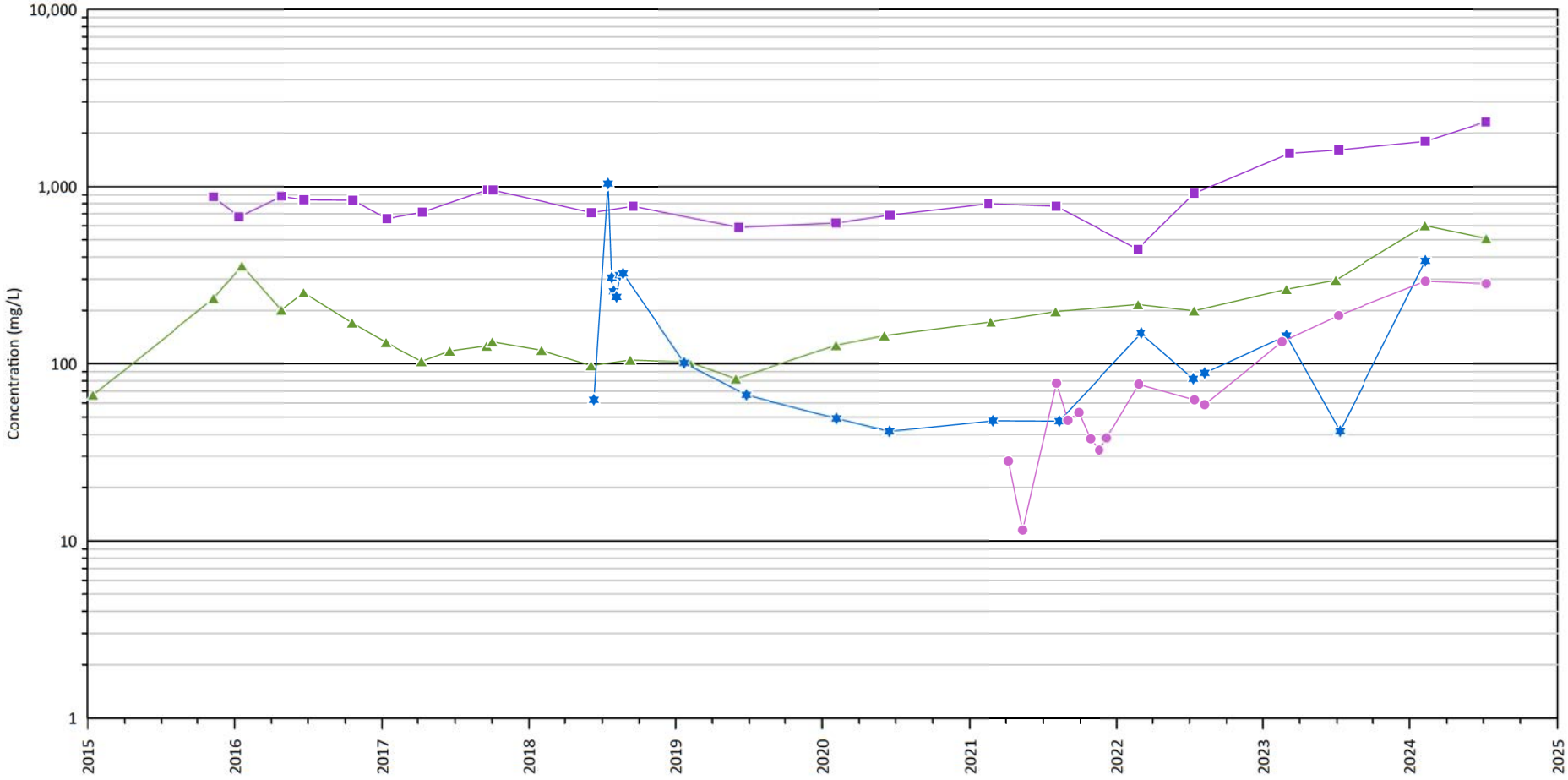
HALEY ALDRICH

August 2024

CLASS III LANDFILL TREND GRAPHS
WINYAH GENERATING STATION
GEORGETOWN, SOUTH CAROLINA

DRAFT

SULFATE



NOTES:
1. FILLED IN SYMBOL INDICATES A DETECTION. OPEN SYMBOL INDICATES NON-DETECT BELOW THE REPORTING LIMIT.
2. mg/L = MILLIGRAMS PER LITER

LEGEND:
WAP-19
WLF-A1-2
WLF-A2-6
WAP-9

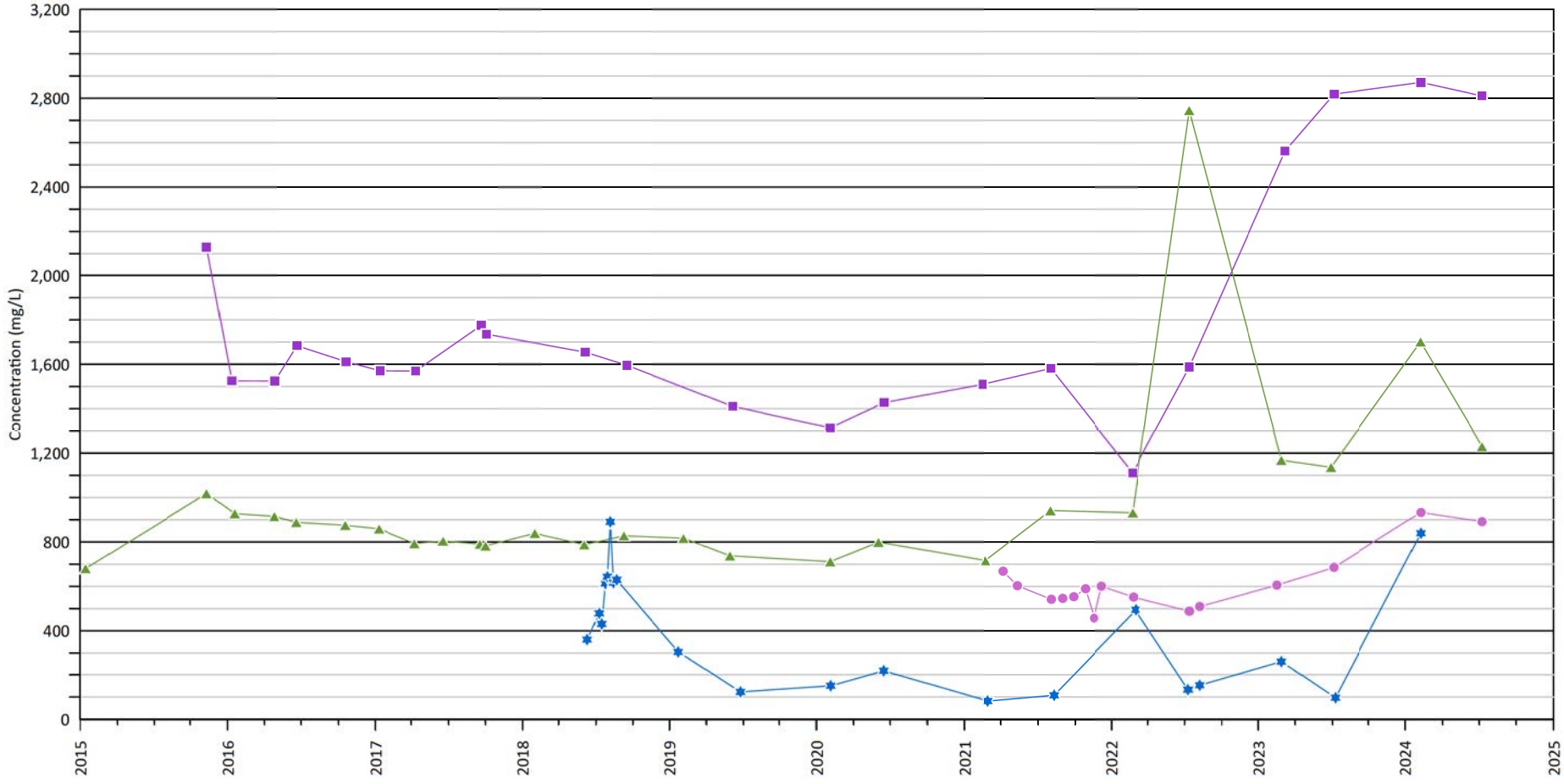
HALEY ALDRICH

August 2024

CLASS III LANDFILL TREND GRAPHS
WINYAH GENERATING STATION
GEORGETOWN, SOUTH CAROLINA

DRAFT

TOTAL DISSOLVED SOLIDS (TDS)



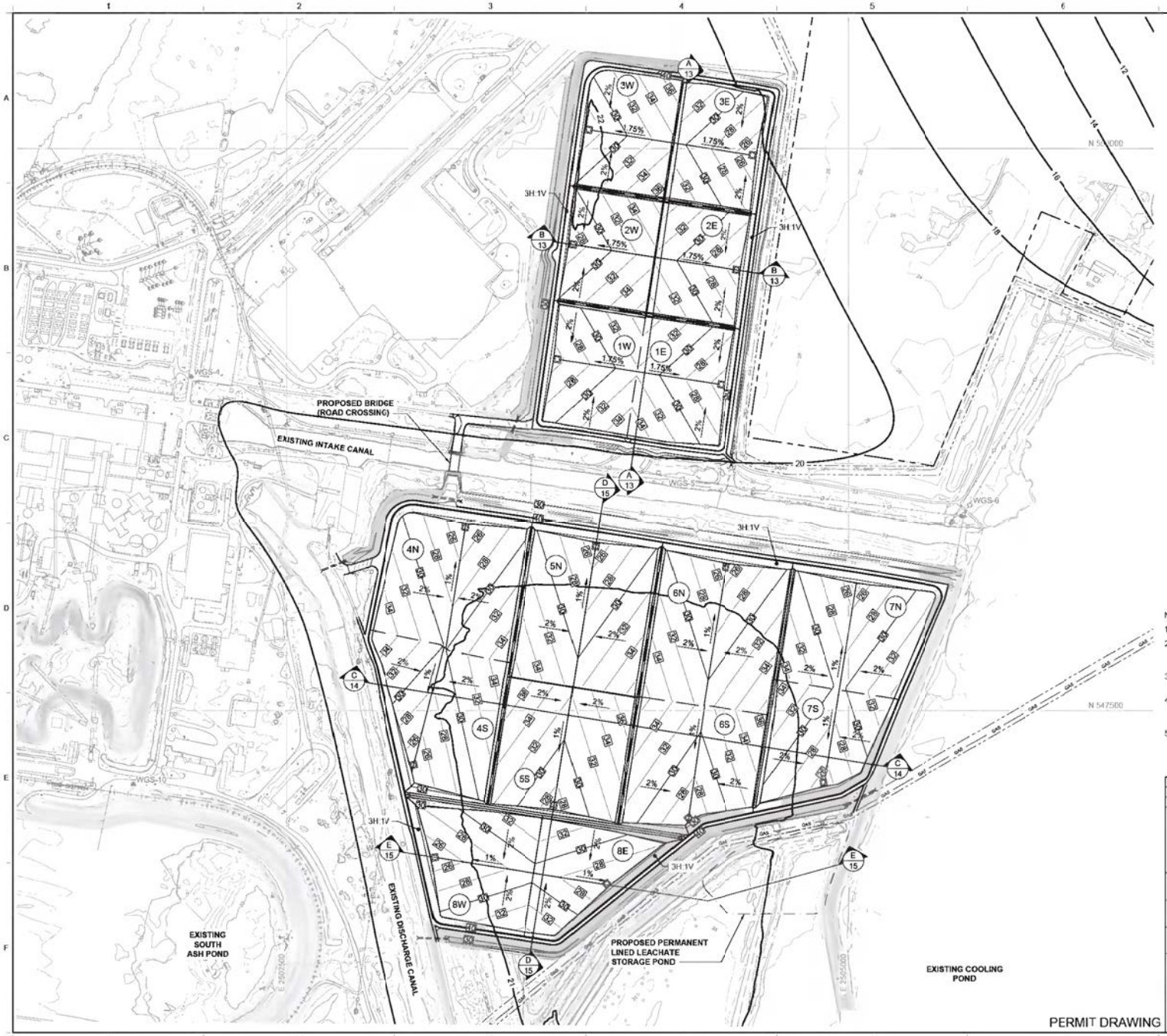
NOTES:
1. FILLED IN SYMBOL INDICATES A DETECTION. OPEN SYMBOL INDICATES NON-DETECT BELOW THE REPORTING LIMIT.
2. mg/L = MILLIGRAMS PER LITER

LEGEND:
WAP-19
WLF-A1-2
WLF-A2-6
WAP-9

HALEY ALDRICH

August 2024

APPENDIX F
Flow Velocity Comparison Information



LEGEND

- EXISTING GROUND ELEVATION CONTOUR (FT, MSL) (NOTES 1, 3)
- EXISTING DIRT/GRAVEL ROAD
- EXISTING VEGETATION
- EXISTING BUILDING
- EXISTING GAS PIPELINE AND EASEMENT LIMITS (NOTE 1)
- EXISTING OVERHEAD ELECTRIC LINE
- EXISTING RAILROAD TRACKS
- EXISTING WATERLINE
- PROPERTY BOUNDARY (NOTE 1)
- PROPOSED LANDFILL AREAS (LIMIT OF LINER)
- CELL BOUNDARY
- 2E — CELL DESIGNATION
- 28 — PROPOSED LINER SUBGRADE ELEVATION CONTOUR (FT, MSL) (NOTE 4)
- 20 — SEASONAL HIGH WATER TABLE (GROUNDWATER ELEVATION) CONTOUR (FT, MSL) (NOTE 5)
- PROPOSED LEACHATE COLLECTION SUMP
- PROPOSED DRAINAGE CULVERT

N

0 200' 400'
SCALE IN FEET

NOTES:

1. EXISTING SITE CONDITIONS AND PROPERTY BOUNDARY TAKEN FROM DRAWING 3.
2. COORDINATES AND DIRECTIONS SHOWN ON THIS DRAWING ARE BASED ON SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM (NAD83) (CORS) (INT'L FT). DISTANCES SHOWN ARE GROUND DISTANCES, NOT GRID DISTANCES.
3. ELEVATIONS ON THIS SURVEY ARE REFERENCED TO NGVD 1929 DATUM AS DERIVED FROM NGS MONUMENT PID8DD1957.
4. WITHIN THE LIMIT OF LINER, PROPOSED CONTOURS REFER TO THE LANDFILL LINER SUBGRADE (BOTTOM OF CLAY COMPONENT OF THE LINER SYSTEM). OUTSIDE THE LIMIT OF LINER, PROPOSED CONTOURS REFER TO FINISHED GRADE.
5. GROUNDWATER ELEVATION CONTOURS ARE MODELED POST-POND DRAINAGE AS PRESENTED IN GEOSYNTEC CONSULTANTS 2016: "SITE HYDROGEOLOGIC CHARACTERIZATION STUDY REPORT", FIGURES 16A AND 16B FOR CONDITIONS IN AND AROUND LANDFILL AREAS 1 AND 2, RESPECTIVELY.

REV	DATE	DESCRIPTION	DRN	APP
1	JUNE 2017	UPDATED SECTION E LINE	CET	SMG

Geosyntec consultants
201 EAST MCBEE AVENUE, SUITE 201
GREENVILLE, SOUTH CAROLINA 29601 USA
PHONE: 864.434.4900

santee cooper

TITLE: SUBGRADE (BOTTOM OF LINER SYSTEM) GRADING PLAN

PROJECT: CLASS THREE LANDFILL PERMIT APPLICATION

SITE: WINYAH GENERATING STATION
GEORGETOWN, SOUTH CAROLINA

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 32535 SCOTT M. GRATES

SOUTH CAROLINA GEOSYNTEC CONSULTANTS, INC. No. 773 CERTIFICATE OF AUTHORIZATION

DESIGN BY:	CFB	DATE:	AUGUST 2016
DRAWN BY:	CET	PROJECT NO:	GSC5242
CHECKED BY:	SMG	FILE:	W-0-SC-585-00-0026-004
REVIEWED BY:	RW	DRAWING NO:	6 OF 33
APPROVED BY:	SMG		

PERMIT DRAWING

WGS Class 3 Landfill Area 2 Flow Velocity Comparison

Landfill Cell Number	Date of Initial Waste Placement	Sampling Event Date	Days between 1st waste placement in the cell & sampling event	Closest Downgradient Well Location*	Approximate Distance from Cell Boundary to Well (ft)	Flow reversals observed since waste placement & surface water elevation collection?	Average Flow Velocity (V) 2022-2024 (ft/day)	Plume migration distance (with average) in ft	Could plume have reached well? Y/N (avg)	Estimated time of plume arrival to boundary (yrs)	Highest Flow Velocity (V) observed for Area 2 between 2022-2024 (ft/day)	Plume migration distance (with highest reported velocity) in feet	Could plume have reached well? Y/N (with highest)	Estimated time of plume arrival to boundary (yrs)
4N	5-Apr-22	Feb-24	667	WLF-A2-6	98	Yes	0.013	8.7	No	21	0.044	29.348	No	6
5N	8-Jun-22	Feb-24	603	WAP-18	96	No	0.013	7.8	No	20	0.044	26.532	No	6
6N	27-Jan-23	Feb-24	370	WLF-A2-1	86	Yes	0.013	4.8	No	18	0.044	16.28	No	5
7N	17-Feb-23	Feb-24	349	WLF-A2-1	82	Yes	0.013	4.5	No	17	0.044	15.356	No	5
4S	28-Mar-22	Feb-24	675	WAP-17	98	Yes	0.013	8.8	No	21	0.044	29.7	No	6
5S	12-Jun-22	Feb-24	599	WAP-17	597	Yes	0.013	7.8	No	126	0.044	26.356	No	37
6S	17-Feb-23	Feb-24	349	WAP-19	431	No	0.013	4.5	No	91	0.044	15.356	No	27
7S	4-Apr-23	Feb-24	303	WAP-19	13	No	0.013	3.9	Yes	3	0.044	13.332	Yes	1
4S	28-Mar-22	Feb-24	675	WAP-9	650	No	0.013	8.8	No	137	0.044	29.7	No	40

**Highlighted wells represent SSI for the Feb 24 groundwater sampling event*

Monitoring well water levels used in calculations we gauged and provided by Santee Cooper

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

V = AVERAGE LINEAR VELOCITY (ft/day)
K = AVERAGE HYDRAULIC CONDUCTIVITY (ft/day)
Δh/L = HORIZONTAL GRADIENT CHANGE (CHANGE IN HYDRAULIC HEAD / LENGTH OF HORIZONTAL HYDRAULIC FLOW PATH)
K = 2.3 FEET PER DAY (ft/day)
n_e = 0.3

HYDRAULIC CONDUCTIVITY AND EFFECTIVE POROSITY VALUES TAKEN FROM 2021 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT PREPARED BY HALEY AND ALDRICH.

APPENDIX G
Field Forms and Laboratory Analytical Reports

Santee Cooper

LOW-FLOW GROUNDWATER SAMPLING RECORD

Page 1 of 1

PROJECT	Winyah Sampling Santee Cooper	FILE NO.	0132892-102
LOCATION	Georgetown, SC	PROJECT MGR.	M. Spillane
CLIENT	Santee Cooper	FIELD REP	T. Vaughn / D. Parry
CONTRACTOR	Haley and Aldrich	DATE	07-09-2024

LOW-FLOW GROUNDWATER SAMPLING INFORMATION

Well ID	Sample Area 2 Leachate	Depth to Top Of Well Screen	NA
Depth Of Well (ft.) per Log	NA	Depth to Bottom of Well Screen	" "
Reference Mark	NA	Depth of Pump or Tubing Intake:	" "
Depth to Water from Reference Mark (ft.)	NA	Date Well Installed:	" "
Time Started	9:25	Tubing Present in Well?	" "
Depth to Product (ft.)	NA	Tubing Replaced in Well?	" "
Field Measured Depth Of Well (ft.)	NA	Tubing Type/Lot Number	" "
Inside Well Diameter (in.)	NA	Additional Comments:	
Static Water Depth (ft.)	NA		
Volume Of Water In Well (gallons/liters)	NA		
Purging Device	NA		
Volume of Bailer/Pump Capacity	~1 Liter cup		
Cleaning Procedure	Alconox / DI water		
Volume Removed	NA		
Time Purging Started	NA		
Time Purging Stopped	NA		
Instrument Used to Monitor Field Parameters	Horiba U-50		
Sampling Device	dipper with cup ~1 Liter		
Cleaning Procedure	Alconox / DI water		
Color	Clear		
Odor	no odor		

TIME SAMPLES COLLECTED	
	Samples collected @ 9:40
	-
	-
	-
	-
	-

PARAMETERS														
Time (24 hour)	9:30													
Temp, C (+/-3%)	24.80													
Conductivity, us/cm (+/- 3%)	3.68													
Dissolved Oxygen, mg/L (+/- 10%)	11.18													
pH (+/-0.1)	6.48													
ORP/eH, mv (+/- 10mv)	-53													
Turbidity, NTU (<5 NTU)	2.7													
Volume purged, gallons	NA													
Depth To Water from Casing, ft	NA													
Purge Rate, ml/min	NA													

Remarks: (ie: field filtrations, persons communicated with at site, activities nearby during sampling, etc.)

Note! Surface water Samples

Santee Cooper

LOW-FLOW GROUNDWATER SAMPLING RECORD

Page 1 of 1

PROJECT	Winyah Sampling Santee Cooper	FILE NO.	0132892 - 102
LOCATION	Georgetown, SC	PROJECT MGR.	M. Spillane
CLIENT	Santee Cooper	FIELD REP	D. Barry / T. Vaughan
CONTRACTOR	Haley and Aldrich	DATE	09-09-2024

LOW-FLOW GROUNDWATER SAMPLING INFORMATION

Well ID	SW-1	Depth to Top Of Well Screen	NA
Depth Of Well (ft.) per Log	NA	Depth to Bottom of Well Screen	" "
Reference Mark	NA	Depth of Pump or Tubing Intake:	" "
Depth to Water from Reference Mark (ft.)	NA	Date Well Installed:	" "
Time Started	11:40	Tubing Present in Well?	" "
Depth to Product (ft.)	NA	Tubing Replaced in Well?	" "
Field Measured Depth Of Well (ft.)	NA	Tubing Type/Lot Number	" "
Inside Well Diameter (in.)	NA	Additional Comments:	
Static Water Depth (ft.)	NA		
Volume Of Water In Well (gallons/liters)	NA		
Purging Device	NA		
Volume of Bailer/Pump Capacity	~1 Liter sample cup		
Cleaning Procedure	Alconox / di water		
Volume Removed	NA		
Time Purging Started	NA		
Time Purging Stopped	NA		
Instrument Used to Monitor Field Parameters	Horiba U-50		
Sampling Device	1 Liter cup - grab sample		
Cleaning Procedure	Alconox / Di water		
Color	Slightly yellow, mostly clear		
Odor	no odor		

TIME SAMPLES COLLECTED		
	Sampled @ 12:05	

PARAMETERS														
	Time (24 hour)	13:10												
	Temp, C (+/- 3%)	37.62												
	Conductivity, us/cm (+/- 3%)	5.58												
	Dissolved Oxygen, mg/L (+/- 10%)	6.71												
	pH (+/-0.1)	7.81												
	ORP/eH, mv (+/-10mv)	94												
	Turbidity, NTU (<5 NTU)	119												
	Volume purged, gallons	NA												
	Depth To Water from Casing, ft	NA												
	Purge Rate, ml/min	NA												

Remarks: (ie: field filtrations, persons communicated with at site, activities nearby during sampling, etc.)

Santee Cooper

LOW-FLOW GROUNDWATER SAMPLING RECORD

Page 1 of 1

PROJECT	Winyah Sampling Santee Cooper	FILE NO.	0132892-102
LOCATION	Georgetown, SC	PROJECT MGR.	M. Spillane
CLIENT	Santee Cooper	FIELD REP	D. Perry / T. Vaughn
CONTRACTOR	Haley and Aldrich	DATE	07-09-2024

LOW-FLOW GROUNDWATER SAMPLING INFORMATION

Well ID	SW-02	Depth to Top Of Well Screen	NA
Depth Of Well (ft.) per Log	NA	Depth to Bottom of Well Screen	" "
Reference Mark	NA	Depth of Pump or Tubing Intake:	" "
Depth to Water from Reference Mark (ft.)	NA	Date Well Installed:	" "
Time Started	11:15	Tubing Present in Well?	" "
Depth to Product (ft.)	NA	Tubing Replaced in Well?	" "
Field Measured Depth Of Well (ft.)	NA	Tubing Type/Lot Number	" "
Inside Well Diameter (in.)	NA	Additional Comments:	
Static Water Depth (ft.)	NA		
Volume Of Water In Well (gallons/liters)	NA		
Purging Device	NA		
Volume of Bailer/Pump Capacity	~1 Liter		
Cleaning Procedure	Alconox / DI water		
Volume Removed	NA		
Time Purging Started	NA		
Time Purging Stopped	NA		
Instrument Used to Monitor Field Parameters	Horiba U-50		
Sampling Device	1 Liter cup - grab sample		
Cleaning Procedure	Alconox / DI water		
Color	mostly clear, slightly cloudy		
Odor	no odor		

TIME SAMPLES COLLECTED	
	Sample collected @ 11:45
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PARAMETERS														
	Time (24 hour)	11:40												
	Temp, C (+/- 3%)	36.95												
	Conductivity, us/cm (+/- 3%)	5.62												
	Dissolved Oxygen, mg/L (+/- 10%)	6.85												
	pH (+/-0.1)	7.75												
	ORP/eH, mv (+/- 10mv)	67												
	Turbidity, NTU (+/- NTU)	77.1												
	Volume purged, gallons	NA												
	Depth To Water from Casing, ft	NA												
	Purge Rate, ml/min	NA												

Remarks: (ie: field filtrations, persons communicated with at site, activities nearby during sampling, etc.)

Note: Surface water sampling

Santee Cooper

LOW-FLOW GROUNDWATER SAMPLING RECORD

Page 1 of 1

PROJECT	Winyah Sampling Santee Cooper	FILE NO.	0132892-102
LOCATION	Georgetown, SC	PROJECT MGR.	M. Spillane
CLIENT	Santee Cooper	FIELD REP	D. Parry / T. Vaughn
CONTRACTOR	Haley and Aldrich	DATE	09-09-2024

LOW-FLOW GROUNDWATER SAMPLING INFORMATION

Well ID	SW-3	Depth to Top Of Well Screen	NA
Depth Of Well (ft.) per Log	NA	Depth to Bottom of Well Screen	" "
Reference Mark	NA	Depth of Pump or Tubing Intake:	" "
Depth to Water from Reference Mark (ft.)	NA	Date Well Installed:	" "
Time Started	10:45	Tubing Present in Well?	" "
Depth to Product (ft.)	NA	Tubing Replaced in Well?	" "
Field Measured Depth Of Well (ft.)	NA	Tubing Type/Lot Number	" "
Inside Well Diameter (in.)	NA	Additional Comments:	
Static Water Depth (ft.)	NA		
Volume Of Water In Well (gallons/liters)	NA		
Purging Device	NA		
Volume of Bailer/Pump Capacity	~ 1 Liter		
Cleaning Procedure	Alconox / DI water		
Volume Removed	NA		
Time Purging Started	NA		
Time Purging Stopped	NA		
Instrument Used to Monitor Field Parameters	Horiba U-50		
Sampling Device	1 Liter cup - grab sample		
Cleaning Procedure	Alconox / di water		
Color	mostly clear		
Odor	no odor		
TIME SAMPLES COLLECTED	Samples collected @ 11:20		

PARAMETERS														
Time (24 hour)	11:21													
Temp, C (+/- 3%)	36.70													
Conductivity, us/cm (+/- 3%)	5.55													
Dissolved Oxygen, mg/L (+/- 10%)	6.28													
pH (+/- 0.1)	7.74													
ORP/eH, mv (+/- 10mv)	89													
Turbidity, NTU (<5 NTU)	76.8													
Volume purged, gallons	NA													
Depth To Water from Casing, ft	NA													
Purge Rate, ml/min	NA													

Remarks: (ie: field filtrations, persons communicated with at site, activities nearby during sampling, etc.)

Santee Cooper

LOW-FLOW GROUNDWATER SAMPLING RECORD

Page 1 of 1

PROJECT	Winyah sampling - Santee Cooper	FILE NO.	0132992-102
LOCATION	Georgetown, SC	PROJECT MGR.	M. Spillane
CLIENT	Santee Cooper	FIELD REP	D. Berry / T. Vaughn
CONTRACTOR	Haley and Aldrich	DATE	27-09-2024

LOW-FLOW GROUNDWATER SAMPLING INFORMATION

Well ID	SW-4	Depth to Top Of Well Screen	NA
Depth Of Well (ft.) per Log	NA	Depth to Bottom of Well Screen	" "
Reference Mark	NA	Depth of Pump or Tubing Intake:	" "
Depth to Water from Reference Mark (ft.)	NA	Date Well Installed:	" "
Time Started	10:15	Tubing Present in Well?	" "
Depth to Product (ft.)	NA	Tubing Replaced in Well?	" "
Field Measured Depth Of Well (ft.)	NA	Tubing Type/Lot Number	" "
Inside Well Diameter (in.)	NA	Additional Comments:	
Static Water Depth (ft.)	NA		
Volume Of Water In Well (gallons/liters)	NA		
Purging Device	NA		
Volume of Bailer/Pump Capacity	~1 Liter cup - grab		
Cleaning Procedure	Alconox / DI water		
Volume Removed	NA		
Time Purging Started	NA		
Time Purging Stopped	NA		
Instrument Used to Monitor Field Parameters	Horiba U-50		
Sampling Device	1 Liter cup - grab sample		
Cleaning Procedure	Alconox / DI water		
Color	mostly clear		
Odor	no odor		

TIME SAMPLES COLLECTED	
	Sample collected @ 10:45

PARAMETERS														
Time (24 hour)	10:55													
Temp, C (+/-3%)	36.29													
Conductivity, us/cm (+/-3%)	5.60													
Dissolved Oxygen, mg/L (+/-10%)	6.55													
pH (+/-0.1)	7.67													
ORP/eH, mv (+/-10mv)	51													
Turbidity, NTU (<5 NTU)	57.6													
Volume purged, gallons	NA													
Depth To Water from Casing, ft	NA													
Purge Rate, ml/min	NA													

Remarks: (ie: field filtrations, persons communicated with at site, activities nearby during sampling, etc.)

Note! surface water sampling

Santee Cooper

LOW-FLOW GROUNDWATER SAMPLING RECORD

Page 1 of 1

PROJECT	Winyah Sampling - Santee Cooper	FILE NO.	0132892-102
LOCATION	Georgetown, SC	PROJECT MGR.	H. Spillane
CLIENT	Santee Cooper	FIELD REP	D. Parry / T. Vaughn
CONTRACTOR	Haley and Aldrich	DATE	07-09-2024

LOW-FLOW GROUNDWATER SAMPLING INFORMATION

Well ID	SW-05	Depth to Top Of Well Screen	NA
Depth Of Well (ft.) per Log	NA	Depth to Bottom of Well Screen	" "
Reference Mark	NA	Depth of Pump or Tubing Intake:	" "
Depth to Water from Reference Mark (ft.)	NA	Date Well Installed:	" "
Time Started	9:50	Tubing Present in Well?	" "
Depth to Product (ft.)	NA	Tubing Replaced in Well?	" "
Field Measured Depth Of Well (ft.)	NA	Tubing Type/Lot Number	" "
Inside Well Diameter (in.)	NA	Additional Comments:	
Static Water Depth (ft.)	NA		
Volume Of Water In Well (gallons/liters)	NA		
Purging Device	NA		
Volume of Bailer/Pump Capacity	1 Liter		
Cleaning Procedure	Alconox / DI water		
Volume Removed	NA		
Time Purging Started	NA		
Time Purging Stopped	NA		
Instrument Used to Monitor Field Parameters	Horiba U-50		
Sampling Device	Cup - grab sample		
Cleaning Procedure	Alconox / DI water		
Color	Mostly clear		
Odor	no odor		
TIME SAMPLES COLLECTED	Samples collected @ 10:20		

PARAMETERS													
Time (24 hour)	10:30												
Temp, C (+/- 3%)	34.60												
Conductivity, us/cm (+/- 3%)	5.62												
Dissolved Oxygen, mg/L (+/- 10%)	6.38												
pH (+/-0.1)	7.55												
ORP/eH, mv (+/- 10mv)	-48												
Turbidity, NTU (<5 NTU)	111												
Volume purged, gallons	NA												
Depth To Water from Casing, ft	NA												
Purge Rate, ml/min	NA												

Remarks: (ie: field filtrations, persons communicated with at site, activities nearby during sampling, etc.)

Santee Cooper

LOW-FLOW GROUNDWATER SAMPLING RECORD

Page 1 of 1

PROJECT	Winyah Sampling - Santee Cooper	FILE NO.	0132892-102
LOCATION	Georgetown, SC	PROJECT MGR.	M. Spillane
CLIENT	Santee Cooper	FIELD REP	D. Parry / T. Vaughn
CONTRACTOR	Haley and Aldrich	DATE	07-09-2024

LOW-FLOW GROUNDWATER SAMPLING INFORMATION

Well ID	SW-6	Depth to Top Of Well Screen	NA
Depth Of Well (ft.) per Log	NA	Depth to Bottom of Well Screen	" "
Reference Mark	NA	Depth of Pump or Tubing Intake:	" "
Depth to Water from Reference Mark (ft.)	NA	Date Well Installed:	" "
Time Started	13:45	Tubing Present in Well?	" "
Depth to Product (ft.)	NA	Tubing Replaced in Well?	" "
Field Measured Depth Of Well (ft.)	NA	Tubing Type/Lot Number	" "
Inside Well Diameter (in.)	NA	Additional Comments:	
Static Water Depth (ft.)	NA		
Volume Of Water in Well (gallons/liters)	NA		
Purging Device	NA		
Volume of Bailer/Pump Capacity	~ 1 Liter		
Cleaning Procedure	Alconox / Di water		
Volume Removed	NA		
Time Purging Started	NA		
Time Purging Stopped	NA		
Instrument Used to Monitor Field Parameters	Horiba U-50		
Sampling Device	~1 Liter cup - grab		
Cleaning Procedure	Alconox / Di water		
Color	clear		
Odor	no odor		

TIME SAMPLES COLLECTED		
	Samples collected @ 14:05	
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PARAMETERS														
	Time (24 hour)	14:14												
	Temp, C (+/-3%)	32.44												
	Conductivity, us/cm (+/-3%)	5.50												
	Dissolved Oxygen, mg/L (+/-10%)	7.95												
	pH (+/-0.1)	7.83												
	ORP/eH, mv (+/-10mv)	95												
	Turbidity, NTU (+5 NTU)	162												
	Volume purged, gallons	NA												
	Depth To Water from Casing, ft	NA												
	Purge Rate, ml/min	NA												

Remarks: (ie: field filtrations, persons communicated with at site, activities nearby during sampling, etc.)

Santee Cooper

LOW-FLOW GROUNDWATER SAMPLING RECORD

PROJECT	Wirtyah Sampling - Santee Cooper	FILE NO.	013892-102
LOCATION	Georgetown, SC	PROJECT MGR.	M. Spillane
CLIENT	Santee Cooper	FIELD REP	D. Parry / T. Vaughn
CONTRACTOR	Haley and Aldrich	DATE	09-09-2024

LOW-FLOW GROUNDWATER SAMPLING INFORMATION

Well ID	SW-7	Depth to Top Of Well Screen	NA
Depth Of Well (ft.) per Log	NA	Depth to Bottom of Well Screen	" "
Reference Mark	NA	Depth of Pump or Tubing Intake:	" "
Depth to Water from Reference Mark (ft.)	NA	Date Well Installed:	" "
Time Started	7:00	Tubing Present in Well?	" "
Depth to Product (ft.)	NA	Tubing Replaced in Well?	" "
Field Measured Depth Of Well (ft.)	NA	Tubing Type/Lot Number	" "
Inside Well Diameter (in.)	NA	Additional Comments:	
Static Water Depth (ft.)	NA		
Volume Of Water In Well (gallons/liters)	NA		
Purging Device	NA		
Volume of Bailer/Pump Capacity	~ 1 Liter		
Cleaning Procedure	Alconox / Di water		
Volume Removed	NA		
Time Purging Started	NA		
Time Purging Stopped	NA		
Instrument Used to Monitor Field Parameters	Horiba U-50		
Sampling Device	1 Liter cup - grab		
Cleaning Procedure	Alconox / Di water		
Color	clear		
Odor	no odor		

TIME SAMPLES COLLECTED	Samples collected @ 7:35	

PARAMETERS														
	Time (24 hour)	7:56												
	Temp, C (+/- 3%)	34.14												
	Conductivity, us/cm (+/- 3%)	5.59												
	Dissolved Oxygen, mg/L (+/- 10%)	6.52												
	pH (+/-0.1)	7.14												
	ORP/eH, mv (+/- 10mv)	117												
	Turbidity, NTU (<5 NTU)	112												
	Volume purged, gallons	NA												
	Depth To Water from Casing, ft	NA												
	Purge Rate, ml/min	NA												

Remarks: (ie: field filtrations, persons communicated with at site, activities nearby during sampling, etc.)

Santee Cooper

LOW-FLOW GROUNDWATER SAMPLING RECORD

PROJECT	Winyah Sampling Santee Cooper	FILE NO.	0132892-102
LOCATION	Georgetown, SC	PROJECT MGR.	M. Spillane
CLIENT	Santee Cooper	FIELD REP	D. Parry / T. Vaughn
CONTRACTOR	Haley and Aldrich	DATE	03-09-2024

LOW-FLOW GROUNDWATER SAMPLING INFORMATION

Well ID	SW-8	Depth to Top Of Well Screen	NA
Depth Of Well (ft.) per Log	NA	Depth to Bottom of Well Screen	" "
Reference Mark	NA	Depth of Pump or Tubing Intake:	" "
Depth to Water from Reference Mark (ft.)	NA	Date Well Installed:	" "
Time Started	8:40	Tubing Present in Well?	" "
Depth to Product (ft.)	NA	Tubing Replaced in Well?	" "
Field Measured Depth Of Well (ft.)	NA	Tubing Type/Lot Number	" "
Inside Well Diameter (in.)	NA	Additional Comments:	
Static Water Depth (ft.)	NA		
Volume Of Water In Well (gallons/liters)	NA		
Purging Device	NA		
Volume of Bailer/Pump Capacity	~ 1 Liter		
Cleaning Procedure	Alconox / Di water		
Volume Removed	NA		
Time Purging Started	NA		
Time Purging Stopped	NA		
Instrument Used to Monitor Field Parameters	Horiba U-50		
Sampling Device	NA		
Cleaning Procedure	Alconox / Di water		
Color	Clear		
Odor	no odor		

TIME SAMPLES COLLECTED		Samples collected @ 9:10	

PARAMETERS	Time (24 hour)													
	Temp, C (+/- 3%)													
	Conductivity, us/cm (+/- 3%)													
	Dissolved Oxygen, mg/L (+/- 10%)													
	pH (+/-0.1)													
	ORP/eH, mv (+/-10mv)													
	Turbidity, NTU (<5 NTU)													
	Volume purged, gallons													
	Depth To Water from Casing, ft													
	Purge Rate, ml/min													

Remarks: (ie: field filtrations, persons communicated with at site, activities nearby during sampling, etc.)

Santee Cooper

LOW-FLOW GROUNDWATER SAMPLING RECORD

Page 1 of 1

PROJECT	Winyah Sampling - Santee Cooper	FILE NO.	013892-102
LOCATION	Georgetown, SC	PROJECT MGR.	M. Spillane
CLIENT	Santee Cooper	FIELD REP	D. Perry / T. Vaughn
CONTRACTOR	Haley and Aldrich	DATE	07-09-2024

LOW-FLOW GROUNDWATER SAMPLING INFORMATION

Well ID	SW-9	Depth to Top Of Well Screen	NA
Depth Of Well (ft.) per Log	NA	Depth to Bottom of Well Screen	" "
Reference Mark	NA	Depth of Pump or Tubing Intake:	" "
Depth to Water from Reference Mark (ft.)	NA	Date Well Installed:	" "
Time Started	11:50	Tubing Present in Well?	" "
Depth to Product (ft.)	NA	Tubing Replaced in Well?	" "
Field Measured Depth Of Well (ft.)	NA	Tubing Type/Lot Number	" "
Inside Well Diameter (in.)	NA	Additional Comments:	
Static Water Depth (ft.)	NA		
Volume Of Water In Well (gallons/liters)	NA		
Purging Device	NA		
Volume of Bailer/Pump Capacity	~1 Liter		
Cleaning Procedure	Alconox / Di water		
Volume Removed	NA		
Time Purging Started	NA		
Time Purging Stopped	NA		
Instrument Used to Monitor Field Parameters	Horiba U-50		
Sampling Device	1 Liter exp - grab		
Cleaning Procedure	Alconox / Di water		
Color	clear		
Odor	no odor		

TIME SAMPLES COLLECTED	
	Samples collected @ 12:25

PARAMETERS														
	Time (24 hour)	12:27												
	Temp, C (+/- 3%)	41.13												
	Conductivity, us/cm (+/- 3%)	5.65												
	Dissolved Oxygen, mg/L (+/- 10%)	5.27												
	pH (+/- 0.1)	7.71												
	ORP/eH, mv (+/- 10mv)	108												
	Turbidity, NTU (<5 NTU)	103												
	Volume purged, gallons	NA												
	Depth To Water from Casing, ft	NA												
	Purge Rate, ml/min	NA												

Remarks: (ie: field filtrations, persons communicated with at site, activities nearby during sampling, etc.)

Santee Cooper

LOW-FLOW GROUNDWATER SAMPLING RECORD

Page 1 of 1

PROJECT	Winyah Sampling Santee Cooper	FILE NO.	0132892-102
LOCATION	Georgetown, SC	PROJECT MGR.	H. Spillane
CLIENT	Santee Cooper	FIELD REP	D. Perry / T. Vaughn
CONTRACTOR	Haley & Aldrich	DATE	07-09-2024

LOW-FLOW GROUNDWATER SAMPLING INFORMATION

Well ID	WAP-09	Depth to Top Of Well Screen	10.0
Depth Of Well (ft.) per Log	20.0	Depth to Bottom of Well Screen	20.0
Reference Mark	NA	Depth of Pump or Tubing Intake:	17.0
Depth to Water from Reference Mark (ft.)	10.99	Date Well Installed:	9/22/2015
Time Started	12:42	Tubing Present in Well?	NO
Depth to Product (ft.)	NA	Tubing Replaced in Well?	NO
Field Measured Depth Of Well (ft.)	20.0	Tubing Type/Lot Number	1/4" polyethylene
Inside Well Diameter (in.)	2.0	Additional Comments:	
Static Water Depth (ft.)	10.99		
Volume Of Water In Well (gallons/liters)	1.47		
Purging Device	peristaltic		
Volume of Bailer/Pump Capacity	200 mL/min		
Cleaning Procedure	Alconox/Di water		
Volume Removed	1/2 gallon		
Time Purging Started	12:42		
Time Purging Stopped	13:13		
Instrument Used to Monitor Field Parameters	Horiba U-50		
Sampling Device	peristaltic pump		
Cleaning Procedure	Alconox/Di water		
Color	slightly cloudy/yellow		
Odor	no odor		

TIME SAMPLES COLLECTED	
	Sampled @ 1315
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PARAMETERS													
	Time (24 hour)	12:47	12:52	12:57	13:03	13:08	13:13						
	Temp, C (+/-3%)	27.76	26.41	25.71	25.54	25.45	25.47						
	Conductivity, us/cm (+/-3%)	1.63	1.64	1.61	1.57	1.54	1.55						
	Dissolved Oxygen, mg/L (+/-10%)	32.1	6.1	0.0	0.0	0.0	0.0						
	pH (+/-0.1)	6.32	6.27	6.23	6.19	6.17	6.16						
	ORP/eH, mv (+/-10mv)	-84	-92	-95	-96	-96	-97						
	Turbidity, NTU (+5 NTU)	0.7	0.4	0.6	0.5	1.0	1.1						
	Volume purged, gallons	.26	0.26	0.26	0.42	0.26	0.26						
	Depth To Water from Casing, ft	11.1	11.1	11.1	11.2	11.2	11.2						
	Purge Rate, ml/min	200	→	→	→	→	→						

Remarks: (ie: field filtrations, persons communicated with at site, activities nearby during sampling, etc.)

Santee Cooper

LOW-FLOW GROUNDWATER SAMPLING RECORD

PROJECT	Winyah Sampling Santee Cooper	FILE NO.	0182892-102
LOCATION	Georgetown, SC	PROJECT MGR.	H. Spillane
CLIENT	Santee Cooper	FIELD REP	D. Pamy / T. Vaughn
CONTRACTOR	Haley and Aldrich	DATE	07-08-2024

LOW-FLOW GROUNDWATER SAMPLING INFORMATION

Well ID	WAP-19	Depth to Top Of Well Screen	14
Depth Of Well (ft.) per Log	24.0	Depth to Bottom of Well Screen	24
Reference Mark	NA	Depth of Pump or Tubing Intake:	21
Depth to Water from Reference Mark (ft.)	28.69	Date Well Installed:	9/22/2015
Time Started	14:54	Tubing Present in Well?	NO
Depth to Product (ft.)	NA	Tubing Replaced in Well?	NO
Field Measured Depth Of Well (ft.)	24.0	Tubing Type/Lot Number	1/4" polyethylene
Inside Well Diameter (in.)	2.0	Additional Comments:	
Static Water Depth (ft.)	23.69		
Volume Of Water In Well (gallons/liters)	0.05		
Purging Device	peristaltic		
Volume of Bailer/Pump Capacity	100 mL/min		
Cleaning Procedure	Alconox / Di water		
Volume Removed	~1/4 gal		
Time Purging Started	14:55		
Time Purging Stopped	15:40		
Instrument Used to Monitor Field Parameters	Horiba U-50		
Sampling Device	peristaltic pump		
Cleaning Procedure	Alconox / Di water		
Color	Clear		
Odor	no odor		

TIME SAMPLES COLLECTED		
	Sampled at 15:45	
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PARAMETERS												
Time (24 hour)	14:58	15:02	15:06	15:10	15:14	15:19	15:23	15:27	15:32	15:36	15:40	
Temp, C (+/-3%)	29.58	28.78	28.45	27.97	27.70	27.61	27.10	26.45	26.31	26.23	26.05	
Conductivity, us/cm (+/- 3%)	2.70	2.81	2.89	2.95	2.98	2.98	2.98	3.01	3.01	3.03	3.05	
Dissolved Oxygen, mg/L (+/- 10%)	2.89	1.27	0.94	0.74	0.48	0.31	0.19	0.06	0.0	0.0	0.0	
pH (+/-0.1)	6.04	6.18	6.20	6.26	6.30	6.35	6.37	6.40	6.40	6.41	6.40	
ORP/eH, mv (+/-10mv)	-14	-33	-51	-78	-89	-101	-105	-109	-111	-112	-112	
Turbidity, NTU (+5 NTU)	7.2	3.6	25.0	27.2	20.9	16.4	13.6	9.6	6.8	5.3	3.8	
Volume purged, gallons	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.26	0.26	0.21	0.21	
Depth To Water from Casing, ft	23.89	28.87	23.88	23.87	23.87	23.87	23.86	23.86	23.85	23.85	23.85	
Purge Rate, ml/min	100										→	

Remarks: (ie: field filtrations, persons communicated with at site, activities nearby during sampling, etc.)

Santee Cooper

LOW-FLOW GROUNDWATER SAMPLING RECORD

PROJECT	Winyah Sampling Santee Cooper	FILE NO.	0132892-102
LOCATION	Georgetown, SC	PROJECT MGR.	H. Spillane
CLIENT	Santee Cooper	FIELD REP	D. Parry / T. Vaughn
CONTRACTOR	Haley and Aldrich	DATE	07-09-2024

LOW-FLOW GROUNDWATER SAMPLING INFORMATION

Well ID	NLF-A2-6	Depth to Top Of Well Screen	14
Depth Of Well (ft.) per Log	24.0'	Depth to Bottom of Well Screen	24
Reference Mark	NA	Depth of Pump or Tubing Intake:	21
Depth to Water from Reference Mark (ft.)	15.24	Date Well Installed:	03/03/2021
Time Started	7:20	Tubing Present in Well?	NO
Depth to Product (ft.)	NA	Tubing Replaced in Well?	NO
Field Measured Depth Of Well (ft.)	24.0	Tubing Type/Lot Number	1/4" polyethylene
Inside Well Diameter (in.)	2"	Additional Comments:	
Static Water Depth (ft.)	15.24		
Volume Of Water In Well (gallons/liters)	1.43		
Purging Device	peristaltic		
Volume of Bailer/Pump Capacity	200/250 mL/min		
Cleaning Procedure	Alconox / Di water		
Volume Removed	~1/2 gal		
Time Purging Started	7:20		
Time Purging Stopped	7:50		
Instrument Used to Monitor Field Parameters	Horiba U-50		
Sampling Device	peristaltic pump		
Cleaning Procedure	Alconox / Di water		
Color	Slightly cloudy		
Odor	no odor		

TIME SAMPLES COLLECTED	
	Sampled at 8:00
	-
	-
	-
	-
	-

PARAMETERS							
Time (24 hour)	7:24	7:30	7:35	7:40	7:45	7:50	
Temp, C (+/- 3%)	25.48	25.28	25.14	25.10	25.14	26.21	
Conductivity, us/cm (+/- 3%)	1.16	1.16	1.15	1.15	1.16	1.16	
Dissolved Oxygen, mg/L (+/- 10%)	4.08	0.67	0.0	0.0	0.0	0.0	
pH (+/-0.1)	6.56	6.47	6.49	6.50	6.51	6.52	
ORP/eH, mv (+/-10mv)	-87	-92	-97	-100	-101	-102	
Turbidity, NTU (<5 NTU)	0.0	0.0	0.0	0.0	0.0	0.0	
Volume purged, gallons	0.32	0.26	0.26	0.26	0.26	-	
Depth To Water from Casing, ft	15.28	15.28	15.28	15.30	15.30	15.31	
Purge Rate, ml/min	200/250 →						

Remarks: (ie: field filtrations, persons communicated with at site, activities nearby during sampling, etc.)

ANALYTICAL REPORT

July 23, 2024

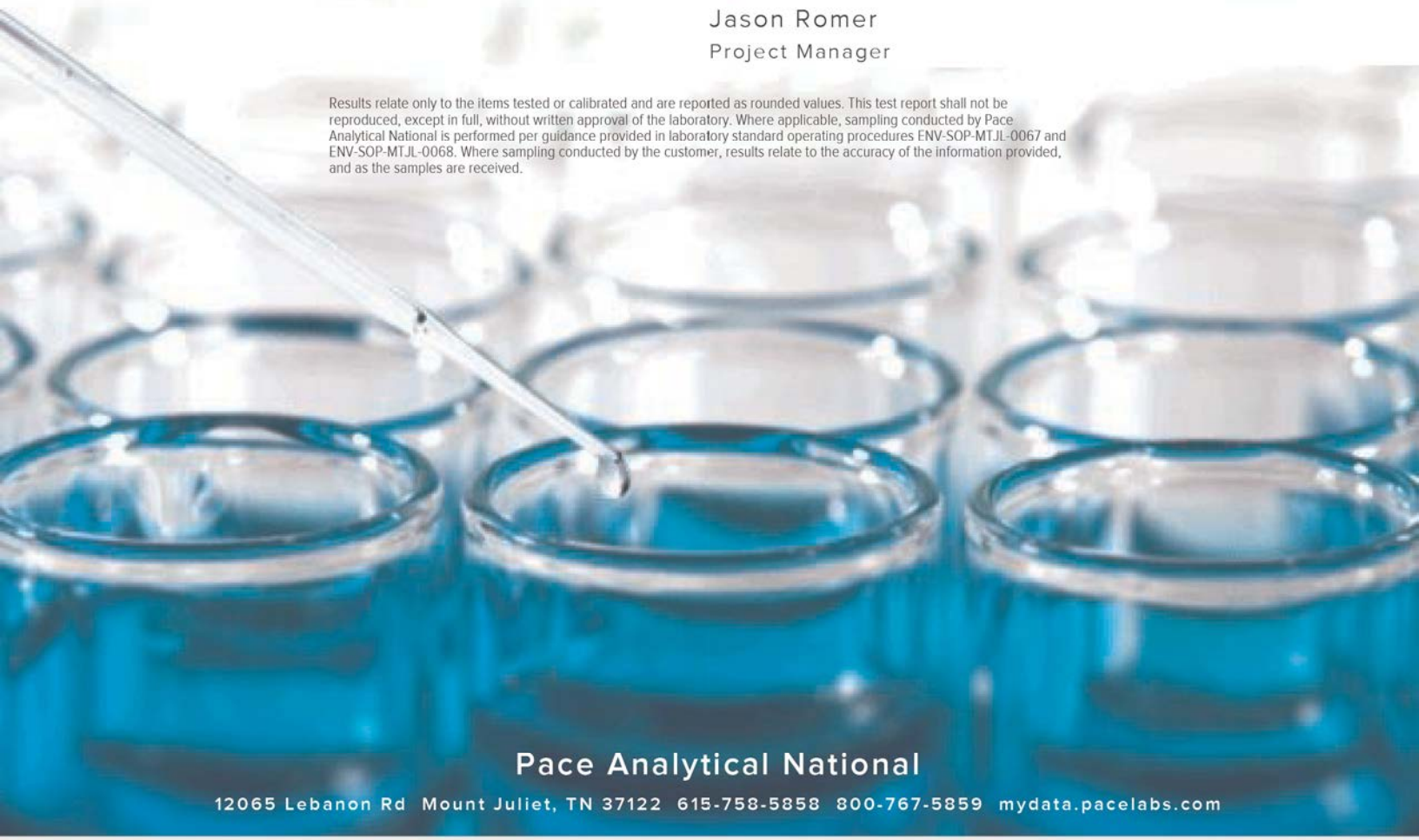
Haley & Aldrich-Greenville, SC

Sample Delivery Group:	L1755725
Samples Received:	07/11/2024
Project Number:	0132892-002
Description:	Santee Cooper

Report To: Montgomery Spillane
400 Augusta St.
Suite 100
Greenville, SC 29601

Entire Report Reviewed By:

Jason Romer
Project Manager



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 mydata.pacelabs.com

TABLE OF CONTENTS

SW-1 L1755725-01 GW

Collected by: Thomas V. | Collected date/time: 07/09/24 12:05 | Received date/time: 07/11/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2321734	1	07/12/24 09:43	07/12/24 15:34	DLS	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2321595	1	07/12/24 17:20	07/12/24 17:20	KRB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2326376	10	07/22/24 21:46	07/22/24 21:46	DLH	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2323826	1	07/22/24 13:52	07/23/24 12:28	DJS	Mt. Juliet, TN

SW-2 L1755725-02 GW

Collected by: Thomas V. | Collected date/time: 07/09/24 11:45 | Received date/time: 07/11/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2321734	1	07/12/24 09:43	07/12/24 15:34	DLS	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2321595	1	07/12/24 17:20	07/12/24 17:20	KRB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2326376	10	07/22/24 22:19	07/22/24 22:19	DLH	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2323826	1	07/22/24 13:52	07/23/24 12:35	DJS	Mt. Juliet, TN

SW-3 L1755725-03 GW

Collected by: Thomas V. | Collected date/time: 07/09/24 11:20 | Received date/time: 07/11/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2321734	1	07/12/24 09:43	07/12/24 15:34	DLS	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2321595	1	07/12/24 17:20	07/12/24 17:20	KRB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2326376	10	07/22/24 22:53	07/22/24 22:53	DLH	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2323826	1	07/22/24 13:52	07/23/24 12:36	DJS	Mt. Juliet, TN

SW-4 L1755725-04 GW

Collected by: Thomas V. | Collected date/time: 07/09/24 10:45 | Received date/time: 07/11/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2321734	1	07/12/24 09:43	07/12/24 15:34	DLS	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2321595	1	07/12/24 17:20	07/12/24 17:20	KRB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2326376	10	07/23/24 00:01	07/23/24 00:01	DLH	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2323826	1	07/22/24 13:52	07/23/24 12:38	DJS	Mt. Juliet, TN

SW-5 L1755725-05 GW

Collected by: Thomas V. | Collected date/time: 07/09/24 10:20 | Received date/time: 07/11/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2321765	1	07/12/24 08:51	07/12/24 18:13	DLS	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2321595	1	07/12/24 17:20	07/12/24 17:20	KRB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2326376	10	07/23/24 00:35	07/23/24 00:35	DLH	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2323826	1	07/22/24 13:52	07/23/24 12:40	DJS	Mt. Juliet, TN

SW-6 L1755725-06 GW

Collected by: Thomas V. | Collected date/time: 07/09/24 14:05 | Received date/time: 07/11/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2321765	1	07/12/24 08:51	07/12/24 18:13	DLS	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2321595	1	07/12/24 17:20	07/12/24 17:20	KRB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2326376	10	07/23/24 01:09	07/23/24 01:09	DLH	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2323826	1	07/22/24 13:52	07/23/24 12:45	DJS	Mt. Juliet, TN

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

SW-7 L1755725-07 GW

Collected by: Thomas V. | Collected date/time: 07/09/24 07:35 | Received date/time: 07/11/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2321765	1	07/12/24 08:51	07/12/24 18:13	DLS	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2321595	1	07/12/24 17:20	07/12/24 17:20	KRB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2326376	10	07/23/24 01:43	07/23/24 01:43	DLH	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2323826	1	07/22/24 13:52	07/23/24 12:46	DJS	Mt. Juliet, TN

SW-8 L1755725-08 GW

Collected by: Thomas V. | Collected date/time: 07/09/24 09:10 | Received date/time: 07/11/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2321765	1	07/12/24 08:51	07/12/24 18:13	DLS	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2321595	1	07/12/24 17:20	07/12/24 17:20	KRB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2326376	10	07/23/24 02:17	07/23/24 02:17	DLH	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2323826	1	07/22/24 13:52	07/23/24 12:48	DJS	Mt. Juliet, TN

SW-9 L1755725-09 GW

Collected by: Thomas V. | Collected date/time: 07/09/24 12:25 | Received date/time: 07/11/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2321765	1	07/12/24 08:51	07/12/24 18:13	DLS	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2321595	1	07/12/24 17:20	07/12/24 17:20	KRB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2326376	10	07/23/24 03:24	07/23/24 03:24	DLH	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2323826	1	07/22/24 13:52	07/23/24 12:50	DJS	Mt. Juliet, TN

AREA 2-LEACHATE L1755725-10 GW

Collected by: Thomas V. | Collected date/time: 07/09/24 09:40 | Received date/time: 07/11/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2321765	1	07/12/24 08:51	07/12/24 18:13	DLS	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2321595	1	07/12/24 17:20	07/12/24 17:20	KRB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2326376	10	07/23/24 03:58	07/23/24 03:58	DLH	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2323826	1	07/22/24 13:52	07/23/24 12:51	DJS	Mt. Juliet, TN

AREA 1-LEACHATE L1755725-11 GW

Collected by: Thomas V. | Collected date/time: 07/09/24 10:00 | Received date/time: 07/11/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2321765	1	07/12/24 08:51	07/12/24 18:13	DLS	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2321595	1	07/12/24 17:20	07/12/24 17:20	KRB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2326376	10	07/23/24 04:32	07/23/24 04:32	DLH	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2323826	1	07/22/24 13:52	07/23/24 12:53	DJS	Mt. Juliet, TN

WAP-9 L1755725-12 GW

Collected by: Thomas V. | Collected date/time: 07/09/24 13:15 | Received date/time: 07/11/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2321765	1	07/12/24 08:51	07/12/24 18:13	DLS	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2321595	1	07/12/24 17:20	07/12/24 17:20	KRB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2326376	10	07/23/24 05:06	07/23/24 05:06	DLH	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2323826	1	07/22/24 13:52	07/23/24 12:54	DJS	Mt. Juliet, TN

WAP-19 L1755725-13 GW

Collected by: Thomas V. | Collected date/time: 07/08/24 15:45 | Received date/time: 07/11/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2321765	1	07/12/24 08:51	07/12/24 18:13	DLS	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2321595	1	07/12/24 17:20	07/12/24 17:20	KRB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2326376	10	07/23/24 05:40	07/23/24 05:40	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2326376	100	07/23/24 05:57	07/23/24 05:57	DLH	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2323826	1	07/22/24 13:52	07/23/24 12:56	DJS	Mt. Juliet, TN

WLF-A2-6 L1755725-14 GW

Collected by: Thomas V. | Collected date/time: 07/09/24 08:00 | Received date/time: 07/11/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2321765	1	07/12/24 08:51	07/12/24 18:13	DLS	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2321595	1	07/12/24 17:20	07/12/24 17:20	KRB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2326376	10	07/23/24 06:47	07/23/24 06:47	DLH	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2323826	1	07/22/24 13:52	07/23/24 12:58	DJS	Mt. Juliet, TN

WLF-A1-2 L1755725-15 GW

Collected by: Thomas V. | Collected date/time: 07/08/24 14:02 | Received date/time: 07/11/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2323826	1	07/22/24 13:52	07/23/24 12:59	DJS	Mt. Juliet, TN

FIELD BLANK L1755725-16 GW

Collected by: Thomas V. | Collected date/time: 07/09/24 15:00 | Received date/time: 07/11/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2323165	1	07/15/24 11:52	07/15/24 14:43	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2321595	1	07/12/24 17:20	07/12/24 17:20	KRB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2326376	1	07/23/24 07:21	07/23/24 07:21	DLH	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2323826	1	07/22/24 13:52	07/23/24 13:04	DJS	Mt. Juliet, TN

CASE NARRATIVE

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

Jason Romer
Project Manager

DETECTION SUMMARY

Gravimetric Analysis by Method 2540 C-2011

Client ID	Lab Sample ID	Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
SW-1	L1755725-01	Dissolved Solids	5490000		100000	1	07/12/2024 15:34	WG2321734
SW-2	L1755725-02	Dissolved Solids	5450000		100000	1	07/12/2024 15:34	WG2321734
SW-3	L1755725-03	Dissolved Solids	5460000		100000	1	07/12/2024 15:34	WG2321734
SW-4	L1755725-04	Dissolved Solids	5730000		100000	1	07/12/2024 15:34	WG2321734
SW-5	L1755725-05	Dissolved Solids	5050000		100000	1	07/12/2024 18:13	WG2321765
SW-6	L1755725-06	Dissolved Solids	5160000		100000	1	07/12/2024 18:13	WG2321765
SW-7	L1755725-07	Dissolved Solids	5770000		100000	1	07/12/2024 18:13	WG2321765
SW-8	L1755725-08	Dissolved Solids	5290000		100000	1	07/12/2024 18:13	WG2321765
SW-9	L1755725-09	Dissolved Solids	5360000		100000	1	07/12/2024 18:13	WG2321765
AREA 2-LEACHATE	L1755725-10	Dissolved Solids	2870000		50000	1	07/12/2024 18:13	WG2321765
AREA 1-LEACHATE	L1755725-11	Dissolved Solids	2870000		50000	1	07/12/2024 18:13	WG2321765
WAP-9	L1755725-12	Dissolved Solids	1230000		20000	1	07/12/2024 18:13	WG2321765
WAP-19	L1755725-13	Dissolved Solids	2810000		50000	1	07/12/2024 18:13	WG2321765
WLF-A2-6	L1755725-14	Dissolved Solids	891000		13300	1	07/12/2024 18:13	WG2321765

Wet Chemistry by Method 9056A

Client ID	Lab Sample ID	Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
SW-1	L1755725-01	Chloride	1500000		3790	10000	10	07/22/2024 21:46	WG2326376
SW-1	L1755725-01	Fluoride	3620		640	1500	10	07/22/2024 21:46	WG2326376
SW-1	L1755725-01	Sulfate	1190000		5940	50000	10	07/22/2024 21:46	WG2326376
SW-2	L1755725-02	Chloride	1470000		3790	10000	10	07/22/2024 22:19	WG2326376
SW-2	L1755725-02	Fluoride	3300		640	1500	10	07/22/2024 22:19	WG2326376
SW-2	L1755725-02	Sulfate	1170000		5940	50000	10	07/22/2024 22:19	WG2326376
SW-3	L1755725-03	Chloride	1470000		3790	10000	10	07/22/2024 22:53	WG2326376
SW-3	L1755725-03	Fluoride	3430		640	1500	10	07/22/2024 22:53	WG2326376
SW-3	L1755725-03	Sulfate	1180000		5940	50000	10	07/22/2024 22:53	WG2326376
SW-4	L1755725-04	Chloride	1470000		3790	10000	10	07/23/2024 00:01	WG2326376
SW-4	L1755725-04	Fluoride	4250		640	1500	10	07/23/2024 00:01	WG2326376
SW-4	L1755725-04	Sulfate	1180000		5940	50000	10	07/23/2024 00:01	WG2326376
SW-5	L1755725-05	Chloride	1480000		3790	10000	10	07/23/2024 00:35	WG2326376
SW-5	L1755725-05	Fluoride	3300		640	1500	10	07/23/2024 00:35	WG2326376
SW-5	L1755725-05	Sulfate	1190000		5940	50000	10	07/23/2024 00:35	WG2326376
SW-6	L1755725-06	Chloride	1420000		3790	10000	10	07/23/2024 01:09	WG2326376
SW-6	L1755725-06	Fluoride	4280		640	1500	10	07/23/2024 01:09	WG2326376
SW-6	L1755725-06	Sulfate	1140000		5940	50000	10	07/23/2024 01:09	WG2326376
SW-7	L1755725-07	Chloride	1480000		3790	10000	10	07/23/2024 01:43	WG2326376
SW-7	L1755725-07	Fluoride	3340		640	1500	10	07/23/2024 01:43	WG2326376
SW-7	L1755725-07	Sulfate	1190000		5940	50000	10	07/23/2024 01:43	WG2326376
SW-8	L1755725-08	Chloride	1470000		3790	10000	10	07/23/2024 02:17	WG2326376
SW-8	L1755725-08	Fluoride	3260		640	1500	10	07/23/2024 02:17	WG2326376
SW-8	L1755725-08	Sulfate	1180000		5940	50000	10	07/23/2024 02:17	WG2326376
SW-9	L1755725-09	Chloride	1470000		3790	10000	10	07/23/2024 03:24	WG2326376
SW-9	L1755725-09	Fluoride	4400		640	1500	10	07/23/2024 03:24	WG2326376
SW-9	L1755725-09	Sulfate	1190000		5940	50000	10	07/23/2024 03:24	WG2326376
AREA 2-LEACHATE	L1755725-10	Chloride	396000		3790	10000	10	07/23/2024 03:58	WG2326376
AREA 2-LEACHATE	L1755725-10	Sulfate	1530000		5940	50000	10	07/23/2024 03:58	WG2326376
AREA 1-LEACHATE	L1755725-11	Chloride	228000		3790	10000	10	07/23/2024 04:32	WG2326376
AREA 1-LEACHATE	L1755725-11	Sulfate	1630000		5940	50000	10	07/23/2024 04:32	WG2326376
WAP-9	L1755725-12	Chloride	162000		3790	10000	10	07/23/2024 05:06	WG2326376
WAP-9	L1755725-12	Sulfate	509000		5940	50000	10	07/23/2024 05:06	WG2326376
WAP-19	L1755725-13	Chloride	37700		3790	10000	10	07/23/2024 05:40	WG2326376
WAP-19	L1755725-13	Sulfate	2320000		59400	500000	100	07/23/2024 05:57	WG2326376
WLF-A2-6	L1755725-14	Chloride	87000		3790	10000	10	07/23/2024 06:47	WG2326376
WLF-A2-6	L1755725-14	Sulfate	283000		5940	50000	10	07/23/2024 06:47	WG2326376

Wet Chemistry by Method 9056A

Client ID	Lab Sample ID	Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
FIELD BLANK	L1755725-16	Fluoride	64.1	J	64.0	150	1	07/23/2024 07:21	WG2326376

Metals (ICP) by Method 6010D

Client ID	Lab Sample ID	Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
SW-1	L1755725-01	Boron	26900		20.0	200	1	07/23/2024 12:28	WG2323826
SW-1	L1755725-01	Calcium	771000	V	79.3	1000	1	07/23/2024 12:28	WG2323826
SW-2	L1755725-02	Boron	26900		20.0	200	1	07/23/2024 12:35	WG2323826
SW-2	L1755725-02	Calcium	774000		79.3	1000	1	07/23/2024 12:35	WG2323826
SW-3	L1755725-03	Boron	26800		20.0	200	1	07/23/2024 12:36	WG2323826
SW-3	L1755725-03	Calcium	772000		79.3	1000	1	07/23/2024 12:36	WG2323826
SW-4	L1755725-04	Boron	26900		20.0	200	1	07/23/2024 12:38	WG2323826
SW-4	L1755725-04	Calcium	778000		79.3	1000	1	07/23/2024 12:38	WG2323826
SW-5	L1755725-05	Boron	27000		20.0	200	1	07/23/2024 12:40	WG2323826
SW-5	L1755725-05	Calcium	775000		79.3	1000	1	07/23/2024 12:40	WG2323826
SW-6	L1755725-06	Boron	26500		20.0	200	1	07/23/2024 12:45	WG2323826
SW-6	L1755725-06	Calcium	770000		79.3	1000	1	07/23/2024 12:45	WG2323826
SW-7	L1755725-07	Boron	26700		20.0	200	1	07/23/2024 12:46	WG2323826
SW-7	L1755725-07	Calcium	775000		79.3	1000	1	07/23/2024 12:46	WG2323826
SW-8	L1755725-08	Boron	26700		20.0	200	1	07/23/2024 12:48	WG2323826
SW-8	L1755725-08	Calcium	785000		79.3	1000	1	07/23/2024 12:48	WG2323826
SW-9	L1755725-09	Boron	26800		20.0	200	1	07/23/2024 12:50	WG2323826
SW-9	L1755725-09	Calcium	777000		79.3	1000	1	07/23/2024 12:50	WG2323826
AREA 2-LEACHATE	L1755725-10	Boron	7650		20.0	200	1	07/23/2024 12:51	WG2323826
AREA 2-LEACHATE	L1755725-10	Calcium	618000		79.3	1000	1	07/23/2024 12:51	WG2323826
AREA 1-LEACHATE	L1755725-11	Boron	4800		20.0	200	1	07/23/2024 12:53	WG2323826
AREA 1-LEACHATE	L1755725-11	Calcium	697000		79.3	1000	1	07/23/2024 12:53	WG2323826
WAP-9	L1755725-12	Boron	4330		20.0	200	1	07/23/2024 12:54	WG2323826
WAP-9	L1755725-12	Calcium	250000		79.3	1000	1	07/23/2024 12:54	WG2323826
WAP-19	L1755725-13	Boron	4450		20.0	200	1	07/23/2024 12:56	WG2323826
WAP-19	L1755725-13	Calcium	676000		79.3	1000	1	07/23/2024 12:56	WG2323826
WLF-A2-6	L1755725-14	Boron	391		20.0	200	1	07/23/2024 12:58	WG2323826
WLF-A2-6	L1755725-14	Calcium	234000		79.3	1000	1	07/23/2024 12:58	WG2323826
WLF-A1-2	L1755725-15	Calcium	62600		79.3	1000	1	07/23/2024 12:59	WG2323826
FIELD BLANK	L1755725-16	Calcium	98.1	J	79.3	1000	1	07/23/2024 13:04	WG2323826

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	5490000		100000	1	07/12/2024 15:34	WG2321734

Wet Chemistry by Method 9040C

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.85	T8	1	07/12/2024 17:20	WG2321595

Sample Narrative:

L1755725-01 WG2321595: 7.85 at 21.9C

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	1500000		3790	10000	10	07/22/2024 21:46	WG2326376
Fluoride	3620		640	1500	10	07/22/2024 21:46	WG2326376
Sulfate	1190000		5940	50000	10	07/22/2024 21:46	WG2326376

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	26900		20.0	200	1	07/23/2024 12:28	WG2323826
Calcium	771000	V	79.3	1000	1	07/23/2024 12:28	WG2323826

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	5450000		100000	1	07/12/2024 15:34	WG2321734

Wet Chemistry by Method 9040C

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.81	T8	1	07/12/2024 17:20	WG2321595

Sample Narrative:

L1755725-02 WG2321595: 7.81 at 21.7C

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	1470000		3790	10000	10	07/22/2024 22:19	WG2326376
Fluoride	3300		640	1500	10	07/22/2024 22:19	WG2326376
Sulfate	1170000		5940	50000	10	07/22/2024 22:19	WG2326376

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	26900		20.0	200	1	07/23/2024 12:35	WG2323826
Calcium	774000		79.3	1000	1	07/23/2024 12:35	WG2323826

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	5460000		100000	1	07/12/2024 15:34	WG2321734

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.79	T8	1	07/12/2024 17:20	WG2321595

Sample Narrative:

L1755725-03 WG2321595: 7.79 at 21.6C

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	1470000		3790	10000	10	07/22/2024 22:53	WG2326376
Fluoride	3430		640	1500	10	07/22/2024 22:53	WG2326376
Sulfate	1180000		5940	50000	10	07/22/2024 22:53	WG2326376

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Boron	26800		20.0	200	1	07/23/2024 12:36	WG2323826
Calcium	772000		79.3	1000	1	07/23/2024 12:36	WG2323826

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	5730000		100000	1	07/12/2024 15:34	WG2321734

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.80	T8	1	07/12/2024 17:20	WG2321595

Sample Narrative:

L1755725-04 WG2321595: 7.8 at 21.6C

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	1470000		3790	10000	10	07/23/2024 00:01	WG2326376
Fluoride	4250		640	1500	10	07/23/2024 00:01	WG2326376
Sulfate	1180000		5940	50000	10	07/23/2024 00:01	WG2326376

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Boron	26900		20.0	200	1	07/23/2024 12:38	WG2323826
Calcium	778000		79.3	1000	1	07/23/2024 12:38	WG2323826

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	5050000		100000	1	07/12/2024 18:13	WG2321765

Wet Chemistry by Method 9040C

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.77	T8	1	07/12/2024 17:20	WG2321595

Sample Narrative:

L1755725-05 WG2321595: 7.77 at 21.8C

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	1480000		3790	10000	10	07/23/2024 00:35	WG2326376
Fluoride	3300		640	1500	10	07/23/2024 00:35	WG2326376
Sulfate	1190000		5940	50000	10	07/23/2024 00:35	WG2326376

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	27000		20.0	200	1	07/23/2024 12:40	WG2323826
Calcium	775000		79.3	1000	1	07/23/2024 12:40	WG2323826

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	5160000		100000	1	07/12/2024 18:13	WG2321765

Wet Chemistry by Method 9040C

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.92	T8	1	07/12/2024 17:20	WG2321595

Sample Narrative:

L1755725-06 WG2321595: 7.92 at 21C

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	1420000		3790	10000	10	07/23/2024 01:09	WG2326376
Fluoride	4280		640	1500	10	07/23/2024 01:09	WG2326376
Sulfate	1140000		5940	50000	10	07/23/2024 01:09	WG2326376

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	26500		20.0	200	1	07/23/2024 12:45	WG2323826
Calcium	770000		79.3	1000	1	07/23/2024 12:45	WG2323826

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	5770000		100000	1	07/12/2024 18:13	WG2321765

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.83	T8	1	07/12/2024 17:20	WG2321595

Sample Narrative:

L1755725-07 WG2321595: 7.83 at 20.9C

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	1480000		3790	10000	10	07/23/2024 01:43	WG2326376
Fluoride	3340		640	1500	10	07/23/2024 01:43	WG2326376
Sulfate	1190000		5940	50000	10	07/23/2024 01:43	WG2326376

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Boron	26700		20.0	200	1	07/23/2024 12:46	WG2323826
Calcium	775000		79.3	1000	1	07/23/2024 12:46	WG2323826

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	5290000		100000	1	07/12/2024 18:13	WG2321765

Wet Chemistry by Method 9040C

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.81	T8	1	07/12/2024 17:20	WG2321595

Sample Narrative:

L1755725-08 WG2321595: 7.81 at 21.1C

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	1470000		3790	10000	10	07/23/2024 02:17	WG2326376
Fluoride	3260		640	1500	10	07/23/2024 02:17	WG2326376
Sulfate	1180000		5940	50000	10	07/23/2024 02:17	WG2326376

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	26700		20.0	200	1	07/23/2024 12:48	WG2323826
Calcium	785000		79.3	1000	1	07/23/2024 12:48	WG2323826

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	5360000		100000	1	07/12/2024 18:13	WG2321765

Wet Chemistry by Method 9040C

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.78	T8	1	07/12/2024 17:20	WG2321595

Sample Narrative:

L1755725-09 WG2321595: 7.78 at 21C

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	1470000		3790	10000	10	07/23/2024 03:24	WG2326376
Fluoride	4400		640	1500	10	07/23/2024 03:24	WG2326376
Sulfate	1190000		5940	50000	10	07/23/2024 03:24	WG2326376

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	26800		20.0	200	1	07/23/2024 12:50	WG2323826
Calcium	777000		79.3	1000	1	07/23/2024 12:50	WG2323826

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	2870000		50000	1	07/12/2024 18:13	WG2321765

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	6.46	T8	1	07/12/2024 17:20	WG2321595

Sample Narrative:

L1755725-10 WG2321595: 6.46 at 21.1C

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	396000		3790	10000	10	07/23/2024 03:58	WG2326376
Fluoride	U		640	1500	10	07/23/2024 03:58	WG2326376
Sulfate	1530000		5940	50000	10	07/23/2024 03:58	WG2326376

Sample Narrative:

L1755725-10 WG2326376: dilution due to high SO4

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Boron	7650		20.0	200	1	07/23/2024 12:51	WG2323826
Calcium	618000		79.3	1000	1	07/23/2024 12:51	WG2323826

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	2870000		50000	1	07/12/2024 18:13	WG2321765

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	6.79	T8	1	07/12/2024 17:20	WG2321595

Sample Narrative:

L1755725-11 WG2321595: 6.79 at 21.1C

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	228000		3790	10000	10	07/23/2024 04:32	WG2326376
Fluoride	U		640	1500	10	07/23/2024 04:32	WG2326376
Sulfate	1630000		5940	50000	10	07/23/2024 04:32	WG2326376

Sample Narrative:

L1755725-11 WG2326376: dilution due to high SO4

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Boron	4800		20.0	200	1	07/23/2024 12:53	WG2323826
Calcium	697000		79.3	1000	1	07/23/2024 12:53	WG2323826

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	1230000		20000	1	07/12/2024 18:13	WG2321765

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	6.66	T8	1	07/12/2024 17:20	WG2321595

Sample Narrative:

L1755725-12 WG2321595: 6.66 at 21.2C

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	162000		3790	10000	10	07/23/2024 05:06	WG2326376
Fluoride	U		640	1500	10	07/23/2024 05:06	WG2326376
Sulfate	509000		5940	50000	10	07/23/2024 05:06	WG2326376

Sample Narrative:

L1755725-12 WG2326376: dilution due to high SO4

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Boron	4330		20.0	200	1	07/23/2024 12:54	WG2323826
Calcium	250000		79.3	1000	1	07/23/2024 12:54	WG2323826

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	2810000		50000	1	07/12/2024 18:13	WG2321765

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	6.89	T8	1	07/12/2024 17:20	WG2321595

Sample Narrative:

L1755725-13 WG2321595: 6.89 at 21.4C

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	37700		3790	10000	10	07/23/2024 05:40	WG2326376
Fluoride	U		640	1500	10	07/23/2024 05:40	WG2326376
Sulfate	2320000		59400	500000	100	07/23/2024 05:57	WG2326376

Sample Narrative:

L1755725-13 WG2326376: dilution due to high SO4

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Boron	4450		20.0	200	1	07/23/2024 12:56	WG2323826
Calcium	676000		79.3	1000	1	07/23/2024 12:56	WG2323826

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	891000		13300	1	07/12/2024 18:13	WG2321765

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.08	T8	1	07/12/2024 17:20	WG2321595

Sample Narrative:

L1755725-14 WG2321595: 7.08 at 21C

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	87000		3790	10000	10	07/23/2024 06:47	WG2326376
Fluoride	U		640	1500	10	07/23/2024 06:47	WG2326376
Sulfate	283000		5940	50000	10	07/23/2024 06:47	WG2326376

Sample Narrative:

L1755725-14 WG2326376: dilution due to high SO4

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Boron	391		20.0	200	1	07/23/2024 12:58	WG2323826
Calcium	234000		79.3	1000	1	07/23/2024 12:58	WG2323826

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Calcium	62600		79.3	1000	1	07/23/2024 12:59	WG2323826

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	ND		10000	1	07/15/2024 14:43	WG2323165

Wet Chemistry by Method 9040C

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.04	T8	1	07/12/2024 17:20	WG2321595

Sample Narrative:

L1755725-16 WG2321595: 7.04 at 21.8C

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	U		379	1000	1	07/23/2024 07:21	WG2326376
Fluoride	64.1	J	64.0	150	1	07/23/2024 07:21	WG2326376
Sulfate	U		594	5000	1	07/23/2024 07:21	WG2326376

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	U		20.0	200	1	07/23/2024 13:04	WG2323826
Calcium	98.1	J	79.3	1000	1	07/23/2024 13:04	WG2323826

Method Blank (MB)

(MB) R4093630-1 07/12/24 15:34

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

L1755413-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1755413-02 07/12/24 15:34 • (DUP) R4093630-3 07/12/24 15:34

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	680000	681000	1	0.147		10

L1755488-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1755488-01 07/12/24 15:34 • (DUP) R4093630-4 07/12/24 15:34

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	239000	233000	1	2.54		10

Laboratory Control Sample (LCS)

(LCS) R4093630-2 07/12/24 15:34

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800000	8650000	98.3	85.0-115	

Method Blank (MB)

(MB) R4093656-1 07/12/24 18:13

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

L1755004-12 Original Sample (OS) • Duplicate (DUP)

(OS) L1755004-12 07/12/24 18:13 • (DUP) R4093656-3 07/12/24 18:13

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1270000	1330000	1	4.04		10

L1755725-12 Original Sample (OS) • Duplicate (DUP)

(OS) L1755725-12 07/12/24 18:13 • (DUP) R4093656-4 07/12/24 18:13

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1230000	1260000	1	2.25		10

Laboratory Control Sample (LCS)

(LCS) R4093656-2 07/12/24 18:13

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800000	8710000	99.0	85.0-115	

Method Blank (MB)

(MB) R4094522-1 07/15/24 14:43

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

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

(LCS) R4094522-2 07/15/24 14:43 • (LCSD) R4094522-3 07/15/24 14:43

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Dissolved Solids	8800000	8670000	8760000	98.5	99.5	85.0-115			1.03	10

L1755703-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1755703-01 07/12/24 17:20 • (DUP) R4093282-2 07/12/24 17:20

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.88	7.88	1	0.000		1

Sample Narrative:
OS: 7.88 at 21.1C
DUP: 7.88 at 21.4C

L1755725-16 Original Sample (OS) • Duplicate (DUP)

(OS) L1755725-16 07/12/24 17:20 • (DUP) R4093282-3 07/12/24 17:20

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.04	7.04	1	0.000		1

Sample Narrative:
OS: 7.04 at 21.8C
DUP: 7.04 at 21.4C

Laboratory Control Sample (LCS)

(LCS) R4093282-1 07/12/24 17:20

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	su	su	%	%	
pH	10.0	10.0	100	99.0-101	

Sample Narrative:
LCS: 10.01 at 22.4C

Method Blank (MB)

(MB) R4097234-1 07/22/24 18:40

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

L1755080-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1755080-01 07/22/24 19:13 • (DUP) R4097234-3 07/22/24 19:30

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	9790	9580	1	2.14		15
Fluoride	125	131	1	0.000		15
Sulfate	11800	11700	1	0.0978		15

L1755080-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1755080-02 07/22/24 20:21 • (DUP) R4097234-6 07/22/24 20:38

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	2590	2630	1	1.49		15
Fluoride	7420	7490	1	1.04		15
Sulfate	31800	31800	1	0.0176		15

Laboratory Control Sample (LCS)

(LCS) R4097234-2 07/22/24 18:56

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Chloride	40000	39900	99.6	80.0-120	
Fluoride	8000	7950	99.3	80.0-120	
Sulfate	40000	39800	99.5	80.0-120	

L1755080-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1755080-01 07/22/24 19:13 • (MS) R4097234-4 07/22/24 19:47 • (MSD) R4097234-5 07/22/24 20:04

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	40000	9790	46500	47100	91.9	93.2	1	80.0-120			1.10	15
Fluoride	8000	125	7860	7960	96.6	97.9	1	80.0-120			1.28	15
Sulfate	40000	11800	48100	48500	90.9	91.9	1	80.0-120			0.830	15

L1755080-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1755080-02 07/22/24 20:21 • (MS) R4097234-7 07/22/24 20:55

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	40000	2590	41900	98.3	1	80.0-120	
Fluoride	8000	7420	13900	80.6	1	80.0-120	
Sulfate	40000	31800	64300	81.2	1	80.0-120	

Method Blank (MB)

(MB) R4097296-1 07/23/24 12:25

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Boron	U		20.0	200
Calcium	U		79.3	1000

Laboratory Control Sample (LCS)

(LCS) R4097296-2 07/23/24 12:26

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Boron	1000	943	94.3	80.0-120	
Calcium	10000	9700	97.0	80.0-120	

L1755725-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1755725-01 07/23/24 12:28 • (MS) R4097296-4 07/23/24 12:31 • (MSD) R4097296-5 07/23/24 12:33

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Boron	1000	26900	27700	27700	82.7	87.1	1	75.0-125			0.162	20
Calcium	10000	771000	782000	771000	110	0.000	1	75.0-125		V	1.42	20

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
T8	Sample(s) received past/too close to holding time expiration.
V	The sample concentration is too high to evaluate accurate spike recoveries.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

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

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

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

Company Name/Address:
Haley & Aldrich-Greenville, SC

400 Augusta St.
Suite 100
Greenville. SC 29601

Billing Information:
Attn: Accounts Payable
400 Augusta Street
Suite 100
Greenville, SC 29601

Pres Chk

Report to: **Montgomery Spillane**

Email To: **mspillane@haleyaldrich.com**

Project Description: **Santee Cooper**

City/State Collected: George Town SC

Please Circle: PT MT CT (ET)

Phone: **864-214-8765**

Client Project # **0132892-002**

Lab Project # **HALALDGSC-SANTEE**

Collected by (print): Thomas Vaughn

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

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

Date Results Needed

Quote #

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	BICP,CAICP 250mlHDPE-HNO3	CAICP 250mlHDPE-HNO3	CL, F, SO4 125mlHDPE-NoPres	PH 125mlHDPE-NoPres	TDS 1L-HDPE NoPres					Remarks	Sample # (lab only)
SW-1	Grab	GW	—	7/9/24	1205	4	X	X	X	X	X						-01
SW-2		GW	—		1145	4	X	X	X	X	X						-02
SW-3		GW	—		1120	4	X	X	X	X	X						-03
SW-4		GW	—		1045	4	X	X	X	X	X						-04
SW-5		GW	—	↓	1020	4	X	X	X	X	X						-05
SW-6		GW	—	7/9/24	1405	4	X		X	X	X						-06
SW-7		GW	—	7/9/24	735	4	X		X	X	X						-07
SW-8		GW	—	7/9/24	910	4	X	X	X	X	X						-08
SW-9		GW	—	7/9/24	1225	4	X	X	X	X	X						-09
Area 2-Leachate	↓	GW	—	7/9/24	940	4	X	X	X	X	X						-10

Analysis / Container / Preservative

Chain of Custody Page 1 of 2

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN

12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # L1755725

E156

Acctnum: **HALALDGSC**
Template: **T256003**
Prelogin: **P1087252**
PM: **526 - Chris McCord**
PB: BW 7/2

Shipped Via: **FedEX Ground**

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

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via: __ UPS X FedEx __ Courier _____

Tracking #

Sample Receipt Checklist

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

7/11 MM

Relinquished by: (Signature)	Date: 7/10/24	Time:	Received by: (Signature)	Trip Blank Received: Yes / (No) HCL / MeoH TBR
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) Claser	Date: 7/11/24 Time: 0900

If preservation required by Login: Date/Time

Hold:

Condition: NCF / (OK)

Company Name/Address:
Haley & Aldrich-Greenville, SC

400 Augusta St.
Suite 100
Greenville. SC 29601

Billing Information:
Attn: Accounts Payable
400 Augusta Street
Suite 100
Greenville, SC 29601

Pres Chk

Report to:
Montgomery Spillane

Email To: **mspillane@haleyaldrich.com**

Project Description:
Santee Cooper

City/State Collected: Georgetown, SC

Please Circle: PT MT CT (ET)

Phone: **864-214-8765**

Client Project #
0132892-002

Lab Project #
HALALDGSC-SANTEE

Collected by (print):
Thomas Vaughan

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
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Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	BICP,CAICP 250mlHDPE-HNO3	CAICP 250mlHDPE-HNO3	CL, F, SO4 125mlHDPE-NoPres	PH 125mlHDPE-NoPres	TDS 1L-HDPE NoPres	Remarks	Sample # (lab only)
Area 1-Leachate	Grab	GW	—	7/9/24	1000	4	X	~~X~~	X	X	X		-11
WAP-9		GW	—	7/8/24	1315	4	X		X	X	X		-12
WAP-19		GW	—	7/8/24	1545	4	X	~~X~~	X	X	X		-13
~~WLF-A1-2~~	TMV	GW	—	7/8/24	1402	1		~~X~~	~~X~~			Just G	
WLF-A2-6		GW	—	7/9/24	800	4	X	X	X	X	X		-14
WLF-A1-2	Grab	GW	—	7/8/24	1402	1		X					-15
Field Blank	Grab	~~GW~~		7/9/24	1500	4	X		X	X	X		-16
		~~GW~~											
		~~GW~~											
		~~GW~~											

Analysis / Container / Preservative

Chain of Custody Page 2 of 2

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN

12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # L1755725

Table #

Acctnum: **HALALDGSC**

Template: **T256003**

Prelogin: **P1087252**

PM: **526 - Chris McCord**

PB: BW 7/2

Shipped Via: **FedEX Ground**

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

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx X Courier _____

Tracking #

Sample Receipt Checklist

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

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No (HCL / MeoH TBR)	
	7/10/24				
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 7/11/24 Time: 0900	Hold: Condition: NCF / (OK)
			Chasen		

L1755725

Tracking Numbers		Temperature
4047 5488 2048		EDA84.1 +0.3 = 4.4
4047 5438 2037		EDA81.8 +0.3 = 2.1

Closen
Name

7/11/24
Date