GROUNDWATER MONITORING PLAN

PLANT WANSLEY – ASH POND 1 (AP-1)
HEARD AND CARROLL COUNTIES, GEORGIA

FOR

Georgia Power

REVISION A
JANUARY 2025

Geosyntec consultants

Geosyntec Consultants, 1255 Roberts Boulevard, Suite 200, Kennesaw, Georgia 30144
Phone: 678-202-9500, Fax: 678-202-9501

TABLE OF CONTENTS

LIST OF APPENDICES

I. CERTIFICATION

This *Groundwater Monitoring Plan for Georgia Power Company - Plant Wansley Ash Pond 1 (AP-1)* has been prepared by a qualified groundwater scientist or engineer with Geosyntec Consultants, Inc. (Geosyntec) to meet the requirements contained in Chapter 391-3-4-.10 of the Georgia Environmental Protection Division (GA EPD) Rules of Georgia, Solid Waste Management, Coal Combustion Residuals (i.e., State CCR Rule). References to the appropriate sections of the State CCR Rule are incorporated throughout this document.

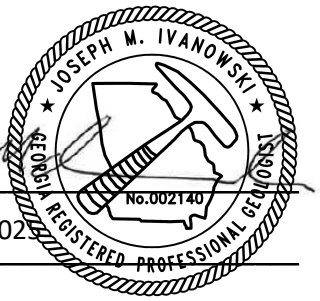
I hereby certify that this Groundwater Monitoring Plan was prepared by, or under the direct supervision of, a "Qualified Groundwater Scientist," in accordance with the State of Georgia Rules of Solid Waste Management. According to 391-3-4-.01, a Qualified Groundwater Scientist is "a professional engineer or geologist registered to practice in Georgia who has received a baccalaureate or post-graduate degree in the natural sciences or engineering and has sufficient training and experience in groundwater hydrology and related fields that enable individuals to make sound professional judgments regarding groundwater monitoring, contaminant fate and transport, and corrective action." The design of the groundwater monitoring system was developed in compliance with GA EPD Rules of Solid Waste Management, Chapter 391-3-4.10(6).

Signature: _____

Date: 1/23/2025

Signature: _____

Date: 1/23/2025



1. INTRODUCTION

Groundwater monitoring is required by the Georgia Environmental Protection Division (GA EPD) to detect and quantify potential changes in groundwater chemistry. This *Groundwater Monitoring Plan* (Plan) describes the groundwater monitoring program for Ash Pond 1 (AP-1) at Georgia Power Company's (GPC's) Plant Wansley. This plan meets the requirements of GA EPD regulations referenced on the certification page and uses GA EPD's *Manual for Ground Water Monitoring* dated September 1991 as a guide. Groundwater at the Site is monitored using a comprehensive well network that meets federal and state monitoring requirements. Groundwater monitoring well and piezometer locations are presented on **Figure A-1** and monitoring well and piezometer construction details in **Tables A-1** and **A-2,** respectively. Routine sampling and reporting began after the background groundwater conditions were established between May 2016 to September 2017. Based on groundwater conditions at the Site, an assessment monitoring program and assessment of corrective measures (ACM) program were established in January 2018 and October 2022, respectively. During the most recent annual reporting period, the Site remained in assessment monitoring.

Groundwater monitoring will continue in accordance with 391-3-4-.10 of the Georgia Solid Waste Management Rules. If the monitoring requirements specified in this plan conflict with GA EPD rules (391-3-4), the GA EPD rules will take precedent.

In accordance with the United States Environmental Protection Agency (USEPA) Coal Combustion Residual (CCR) Rule (§257.90), which is incorporated by Georgia State CCR Rule by reference, a detection monitoring well network for AP-1 has been installed and certified by a qualified professional engineer. This certification was placed in the facility's operating record. The existing monitoring wells were installed following the guidelines presented herein. Additionally, this plan documents the methods for future monitoring well installation and/or replacement, and procedures for well abandonment. As required by 391-3-4.10(6)(g), a minor modification will be submitted to GA EPD prior to the unscheduled installation or abandonment of monitoring wells. Well installation and/or abandonment must be directed by a qualified groundwater scientist.

2. GEOLOGIC AND HYDROGEOLOGIC CONDITIONS

The following section presents a summary of the geologic and hydrogeologic conditions for the Site currently and post closure as described in the *Hydrogeologic Assessment Report* (Revision 05) (HAR Rev. 05). The summary below presents only relevant information related to the groundwater monitoring network. The HAR Rev. 05 contains more detailed information regarding lithology, hydraulic conductivity, and the conceptual site model for groundwater flow.

2.1 SITE GEOLOGY

AP-1 is located in the Piedmont Physiographic Province of western Georgia, which is characterized by gently rolling hills and narrow valleys with locally pronounced linear ridges. Geologic mapping performed by Golder (2015) and revised by Geosyntec (2018) indicates that the Site is underlain by schist, amphibolite, gneiss, and quartzite. AP-1 is underlain primarily by four lithologic units; (i) alluvial deposits (ii) residual soils and saprolite, (iii) partially weathered rock (PWR), and (iv) metamorphic crystalline bedrock (generally comprised of an upper fractured portion of bedrock and a deeper, competent bedrock). Historically, AP-1 received sluiced CCR until April 2019, and CCR material is present across the bottom of AP-1 at variable thickness.

Based on subsurface investigations, the CCR material consists of fly ash, generally described as dark to medium gray, soft, and loose to very loose fine sand and silts with some clay. Discontinuous lenses of coarser bottom ash are present throughout the unit, generally described as dark gray, well-graded, fine to coarse sand and fine gravel. Alluvial deposits related to stream and drainage processes are present but not laterally continuous across the Site and likely correspond with former stream channels buried during the construction of the surface impoundment. Alluvium consists of organic silt and fine sand over-bank deposits and fine to coarse sand channel deposits. Residual and saprolitic soils (residual soil/saprolite) resulting from the in-situ weathering of the parent bedrock material make up a large portion of the Site subsurface and is generally encountered across the Site. Residual soils and saprolite are described primarily as sandy silt, silty sand, sandy clay, and silty clay. As the saprolite transitions to more rock-like material approaching the bedrock surface, a zone referred to as PWR is encountered. The PWR unit is the hard, semi-consolidated, weathered to intensely fractured rock interface. PWR may include hard, but friable, decomposed rock, as well as gravel to cobble-size rock fragments bound by clay and silt saprolite matrix. The bedrock at the Site is composed primarily of graphitic schist, muscovite schist, biotite schist, schist with interlayered mafic units, amphibolite/hornblende gneiss, granitic gneiss (Long Island Creek Gneiss), and feldspathic quartzite. The ridges to the northwest and southeast of the surface impoundment are underlain by muscovite schist and Long Island Creek Gneiss, respectively, both of which are relatively resistant to weathering. AP-1 and the Storage Water Pond, however, are underlain by schist with interlayered mafic units and feldspathic quartzite, which are more susceptible to weathering, and, thus, the layer of saprolite and PWR is thicker.

2.2 SITE HYDROGEOLOGY

While the aquifer characteristics of each lithologic unit may vary, the groundwater is interconnected between these units, and they effectively act as one, unconfined aquifer. According to previous site investigations, the potentiometric surface is a subdued reflection of the topography. The top of rock surface also generally follows topography and likely controls groundwater flow direction in the uppermost aquifer, which occurs within the saprolite and PWR (also termed the regolith) and is hydraulically

connected to the bedrock via fractures and deeply weathered areas of the rock. Recharge is by precipitation infiltrating through the saprolite to the bedrock. Groundwater flow in the bedrock is restricted entirely to flow through fractures. As described in the text of the SAR (SCS, 2007) and demonstrated by associated geotechnical data and boring logs, the top of rock is slightly to strongly weathered but generally becomes less weathered with depth. In general, core recovery increases significantly with depth as the rock becomes less weathered. Rock Quality Designation (RQD) increases significantly with depth. These site-specific data support and additional published data on bedrock hydrogeology describe a general decrease in size and occurrence of fractures with depth. Therefore, it is inferred that groundwater within the bedrock is primarily present in fractures that generally decrease in size and density with depth.

Aquifer testing was conducted by Southern Company Services (SCS) and contracted consulting firms in 2016, 2017, 2020, and 2022 to evaluate hydraulic conditions in the vicinity of AP-1. Results of these field events are discussed in detail in the HAR Rev. 05. Estimated horizontal hydraulic conductivity (K_h) values based on the aquifer testing activities at wells and piezometers (**Tables A-1** and **A-2**; obtained from the HAR Rev. 05) indicate that the bedrock has a lower geometric mean K_h (6.24×10^{-5} centimeters per sec; cm/sec) than the residual soil/saprolite and the PWR (1.21×10^{-4} cm/sec and 1.13×10^{-4} cm/sec, respectively), however, it should be noted that localized variation in thickness of the residual soil/saprolite and PWR, variable bedrock fracture density, and fractured bedrock zones may result in areas in which the fractured bedrock exhibits higher K_h values than in the overlying units. The primary zone of groundwater flow was found to be in the regolith (residual soil/saprolite and PWR) and upper fractured portion of the bedrock where the K_h is expected to be greater than the underlying competent bedrock.

Vertical hydraulic conductivity (K_v) values were measured in laboratory permeability tests on sonic drilling cores and Shelby Tubes collected from borings in CCR, alluvium, saprolite, and PWR in March 2017. The K_v obtained from the alluvium (fine-grained, over-bank deposits) was 4.6×10^{-7} cm/sec. The saprolite samples ranged an order of magnitude from 5.1×10^{-6} cm/sec to 5.5×10^{-5} cm/sec, and the PWR core yielded a K_v of 7.6×10^{-6} cm/sec.

A potentiometric surface map depicting groundwater flow in the vicinity of AP-1 is provided on **Figure A-2** in **Appendix A**. The potentiometric surface map represents data recorded in February 2024. Groundwater in the area generally flows to the south and east toward the Chattahoochee River, however, given the current pool elevation of approximately 784 ft NAVD88 in AP-1, groundwater in the near vicinity of AP-1 flows from the topographic ridges around the pond inward into the impoundment, with the exception of a component of flow away from AP-1 in a generally southeastern direction near the southeastern corner of the impoundment. In general, steeper potentiometric contours in areas of higher topographic relief give way to lower gradients as the land surface flattens toward the river.

In February 2024, the full pool elevation of AP-1 was approximately 784 ft NAVD88. During the proposed closure by removal, the free water in AP-1 will be removed and CCR excavated. During the post closure period, AP-1 will refill naturally and remain as a service water/industrial water pond. The full pool elevation of this proposed industrial pond post closure will fluctuate in the range of the free pool elevation during historical AP-1 operations, which was 781.5 to 797 ft NAVD88. Should the post closure full pool elevation be on the low end of this range, hydraulic gradients and groundwater flow velocities would be expected to be similar to what is currently (February 2024) observed in AP-1 and presented in the HAR Rev. 05. Should the post closure full pool elevation be on the high end of this range, hydraulic gradients and groundwater flow velocities would be expected to be similar to what was observed in October 2017 when the full pool elevation of AP-1 was approximately 795 ft NAVD88. A potentiometric surface map

from October 2017 is provided on **Figure A-3** to illustrate the groundwater flow expected in the vicinity of AP-1 with a high full pool elevation. These potentiometric surfaces provide endmembers and a representative range for groundwater flow. In addition, they indicate that the compliance groundwater monitoring network is sufficient to capture any potential flow from AP-1 regardless of hydraulic conditions and will remain downgradient of AP-1 in the post closure period given the proposed range for the full pool elevation of AP-1. Groundwater monitoring will continue, and the status of downgradient wells will be evaluated and refined, as needed, during the post closure care period.

Groundwater hydraulic gradients were calculated for flow path lines at AP-1 in February 2024 and October 2017. The 2017 gradients were obtained from the 2017 Annual Groundwater Monitoring and Corrective Action Report (ERM, 2018). In February 2024, hydraulic gradients along groundwater flow path lines from WGWC-20 to WGWC-27 and from PZ-01 to WGWC-17, are estimated to be 0.052 feet per foot (ft/ft) and 0.084 ft/ft, respectively. Groundwater flow velocity in the vicinity of AP-1 is estimated to be approximately 0.12 ft/day or 42.2 ft/year in 2024. The average hydraulic gradients along groundwater flow path lines associated with AP-1 in 2017 were 0.006 ft/ft (WGWC-16 to PZ-16), and 0.088 ft/ft (WGWC-40 (PZ-10) to WGWC-19). Groundwater flow velocity in the vicinity of AP-1 was estimated to be approximately 0.13 ft/day or 46.0 ft/year in 2017. The supporting hydraulic gradient calculations and groundwater flow velocity calculations are presented in **Table A-3**.

Additional details regarding the hydrogeologic conditions in the vicinity of AP-1 are provided in the HAR Rev. 05.

3. SELECTION OF WELL LOCATIONS

Groundwater monitoring wells were installed to monitor the uppermost occurrence of groundwater beneath the Site (i.e., the saprolite/PWR/upper fractured portion of the bedrock aquifer). Locations were selected based on the AP-1 footprint and geologic and hydrogeologic considerations. Georgia Power follows the recommendation as stated in Chapter 2 of the *Manual for Groundwater Monitoring* (GA EPD, 1991) to establish well spacing based on site-specific conditions. In October 2024, GA EPD requested installation of additional groundwater monitoring wells to enhance the groundwater monitoring network in the Separator Dike between AP-1 and the Storage Water Pond and along the south side of AP-1. Detection groundwater monitoring network enhancements will be accomplished by installation of thirteen new detection monitoring wells and conversion of six existing piezometers to detection monitoring wells. A map depicting the current and proposed detection monitoring well network screened within the uppermost aquifer for AP-1 is included as **Figure A-1** in **Appendix A**. A more detailed discussion of the hydrogeological investigations conducted in support of monitoring well placement is provided in the HAR Rev. 05.

Locations are chosen to serve as upgradient/background (WGWA), or downgradient (WGWC) typically based on groundwater flow direction determined by potentiometric evaluation. In addition, select background locations were chosen to monitor additional lithologies not represented in the upgradient locations. Though these locations may not be hydraulically upgradient, they accurately represent the quality of background groundwater and are outside the influence of CCR. The well naming nomenclature is based on Georgia EPD's Industrial Waste Disposal Site Design and Operations Plan – Supplemental Data for Solid Waste Handling Permit (undated). Wells are positioned to provide adequate coverage to detect potential impacts from the CCR impoundment. Both background and downgradient wells are screened in the uppermost aquifer. Groundwater levels are currently monitored in all monitoring well and piezometer locations to establish potentiometric conditions at the Site.

Monitoring wells are generally located outside of areas with frequent auto traffic; however, wells may be installed in heavily trafficked areas when necessary to meet the groundwater monitoring objectives of the GA EPD rules. In addition to the potentiometric surface map, **Appendix A** also includes a tabulated list (**Tables A-1** and **A-2**) of location coordinates for the individual detection monitoring wells, assessment wells, and piezometers used for water level monitoring. Proposed locations of the new detection monitoring wells are included in **Table A-1**. Additional well construction details (i.e., top-of-casing elevation, well depths, and screened intervals) are also provided on these tables. Any change to the groundwater monitoring network must be made by a minor modification to the permit pursuant to 391-3-4-.10(6)(g).

4. MONITORING WELL DRILLING, CONSTRUCTION, ABANDONMENT AND REPORTING

The AP-1 monitoring well network described in this plan is already in place. Existing monitoring wells were installed following USEPA Region 4 Science and Ecosystem Support Division (SESD*)* guidance document, *Design and Installation of Monitoring Wells* (USEPA, SESDGUID-101-R1; USEPA, SESDGUID-101-R2) as a general guide for best practices. Boring and well construction logs for detection monitoring wells are included in **Appendix A**. Additional monitoring wells, if necessary, will be installed in accordance with the following procedures.

4.1 DRILLING

A variety of well drilling methods are available for the purpose of installing groundwater wells. Drilling methodology may include, but not be limited to, hollow stem augers, direct push, air rotary, mud rotary, or rotasonic techniques. The drilling method shall minimize the disturbance of subsurface materials and shall not cause impact to the groundwater. Borings will be advanced using an appropriate drilling technology capable of drilling and installing a well in site-specific geology. Monitoring wells will be installed using the most current version of the USEPA Region 4 SESD SESDGUID-101-R# as a general guide for best practices. Drilling equipment shall be decontaminated before use and between borehole locations using the procedures described in the most current version of the USEPA Region 4 SESD *Operating Procedure for Field Equipment Cleaning and Decontamination* (USEPA, SESDGUID-205-R#) as a guide. Drilling and well installation activities will be directed by a qualified groundwater scientist.

Sampling and/or coring may be used to help determine the stratigraphy and geology. Samples will be logged by a qualified groundwater scientist. Screen depths will be chosen based on the depth of the uppermost aquifer.

All drilling for any subsurface hydrologic investigation, installation or abandonment of groundwater monitoring wells will be performed by a driller that has, at the time of installation, a performance bond on file with the Water Well Standards Advisory Council. Proof of bonding for wells installed at the unit is included as **Attachment A-2** in **Appendix A**. For future installations, proof of bonding will be included in the well installation reports.

As required by 391-3-4.10(6)(g), a minor modification will be submitted to GA EPD prior to the installation or decommissioning of monitoring wells. Well installation must be directed by a qualified groundwater scientist.

4.2 DESIGN AND CONSTRUCTION

Well construction materials will be sufficiently durable to resist chemical and physical degradation and will not interfere with the quality of groundwater samples.

<u>WELL CASINGS AND SCREENS</u>

American Society for Testing and Materials (ASTM), National Science Foundation (NSF) rated, Schedule 40, 2-inch polyvinyl chloride (PVC) pipe with flush threaded connections will be used for the well riser and

screens. Compounds that can cause PVC to deteriorate (e.g., organic compounds) are not expected at this facility. If conditions warrant, other USEPA approved and appropriate materials may be used for construction.

WELL INTAKE DESIGN

The design and construction of the intake of the groundwater wells shall: (1) allow sufficient groundwater flow to the well for sampling; (2) minimize the passage of formation materials (turbidity) into the well; and (3) ensure sufficient structural integrity to prevent the collapse of the intake structure.

Each groundwater monitoring well will include a well screen designed to limit the amount of formation material passing into the well when it is purged and sampled. Screens with 0.010-inch slots have proven effective for the earth materials at the Site and will be used unless geologic conditions discovered at the time of installation dictate a different size. Screen length shall not exceed 10 feet without justification as to why a longer screen is necessary (e.g., significant variation in groundwater level). If the above prove ineffective for developing a well with sufficient yield or acceptable turbidity, further steps will be taken to assure that the well screen is appropriately sized for the formation material. This may include performing sieve analysis of the formation material and determining well screen slot size based on the grain size distribution.

Pre-packed dual-wall well screens may be used for well construction. Pre-packed well screens combine a centralized inner well screen, a developed filter sand pack, and an outer conductor screen in one integrated unit composed of inert materials. Pre-packed well screens will be installed following general industry standards and using the latest version of the Region 4 U.S. Environmental Protection Agency Science and Ecosystem Support Division Operating Procedure for Design and Installation of Monitoring Wells as a general guide. If the dual-wall pre-packed-screened wells do not yield sufficient water or are excessively turbid after development, further steps will be taken to assure that the well screen is appropriately sized for the formation material. This may include performing sieve analysis of the formation material and determining well screen slot size based on the grain size distribution.

FILTER PACK AND ANNULAR SEAL

The materials used to construct the filter pack will be clean quartz sand of a size that is appropriate for the screened formation. Fabric filters will not be used as filter pack material. Sufficient filter material will be placed in the hole and measurements taken to ensure that no bridging occurs. Upon placement of the filter pack, the well may be pumped to assure settlement of the pack. If pumping is performed, the top of filter pack depth will be measured, and additional sand added if necessary. The filter pack will extend a minimum of two feet above the top of the well screen.

The materials used to seal the annular space must prevent hydraulic communication between strata and prevent migration from overlying areas into the well screen interval. A minimum of two feet of bentonite (chips, pellets, or slurry) will be placed immediately above the filter pack. The bentonite seal will extend up to the base of any overlying confining zone or the top of the water-bearing zone to prevent cementitious grout from entering the water-bearing or screened zone. If dry bentonite is used, the bentonite must be hydrated with potable water prior to grouting the remaining annulus.

The annulus above the bentonite seal will be grouted with cement/bentonite placed via tremie pipe from the top of the bentonite seal. During grouting, care will be taken to assure that the bentonite seal is not

disturbed by locating the base of the tremie pipe approximately 2 feet above the bentonite seal and injecting grout at low pressure/velocity.

PROTECTIVE CASING AND WELL COMPLETION

After allowing the grout to settle, the well will be finished by installing a flush-mount or above-ground protective casing as appropriate, and building a surface cap. The use of flush-mount wells will generally be limited to paved surfaces unless Site operations warrant otherwise. The surface cap will extend from the top of the cementitious grout to ground surface, where it will become a concrete apron extending outward with a radius of at least 2 feet from the edge of the well casing and sloped to drain water away from the well.

Each well will be fitted with a cap that contains a hole or opening to allow the pressure in the well to equalize with atmospheric pressure. In wells with above-ground protection, the space between the well casing and the protective casing will be filled with coarse sand or pea-gravel to within approximately 6 inches of the top of the well casing. A small weep hole will be drilled at the base of the metal casing for the drainage of moisture from the casing. Above ground protective covers will be locked.

Protective bollards will be installed around each above-grade groundwater monitoring well. Well construction in high traffic areas will generally be limited unless Site conditions warrant otherwise.

The groundwater monitoring well details attached in **Appendix B1**, Groundwater Monitoring Well Detail and **Appendix B2**, Groundwater Monitoring Well Detail Flush-Mount Surface Completion, illustrate the general design and construction details for a monitoring well.

WELL DEVELOPMENT

Well development will be conducted under supervision of a certified groundwater professional. After well construction is completed, wells will be developed by alternately purging and surging until relatively clear discharge water with little turbidity is observed. The goal will be to achieve a turbidity of less than 5 nephelometric turbidity units (NTUs); however, formation-specific conditions may not allow this target to be accomplished. Development can be discontinued once a turbidity of less than 10 NTU is achieved. Additionally, the stabilization criteria contained in **Appendix C** should be met. A variety of techniques may be used to develop Site groundwater monitoring wells. The method used must create reversals or surges in flow to eliminate bridging by particles around the well screen. These reversals or surges can be created by using surge blocks, bailers, or pumps. The wells will be developed using a pump capable of inducing the stress necessary to achieve the development goals. All development equipment will be decontaminated prior to first use and between wells. Well development data will be included in installation documentation reports.

In low yielding wells, potable water may be added to the well to facilitate surging of the well screen interval and removal of fine-grained sediment. If water is added, the volume will be documented and at minimum, an equal volume purged from the well.

Many geologic formations contain clay and silt particles that are small enough to work their way through the wells' filter packs over time. Therefore, the turbidity of the groundwater from the monitoring wells may gradually increase over time after initial well development. As a result, the monitoring wells may have to be redeveloped periodically to remove the silt and clay that has worked its way into the filter pack of the monitoring wells. Each monitoring well should be redeveloped when sample turbidity values have

significantly increased since initial development or since prior redevelopment. The redevelopment should be performed as described above. Well development data will be provided as part of the well installation report.

The certified surveyor's reports are included as **Attachment A-3** in **Appendix A**. Monitoring well logs for the existing monitoring well network are also included in **Appendix A**, as **Attachment A-1**.

4.3 ABANDONMENT

Per Georgia Rule 391-3-4.10(6)(g), monitoring wells require replacement after two consecutive dry sampling events, unless an alternate schedule has been approved by GA EPD Monitoring wells will be abandoned using industry-accepted practices and using the Manual for Groundwater Monitoring (1991) and (O.C.G.A) 12-5-120, 1985 as guides. The wells will be abandoned under the supervision of a qualified groundwater scientist registered to practice in the State of Georgia. A well abandonment report will be submitted to EPD within 60 days of completion of well abandonment. The wells will be abandoned under the direction of a professional geologist (P.G.) or engineer (P.E.) registered in Georgia. Neat Portland cement or bentonite will be used as appropriate to complete abandonment and seal the well borehole.

4.4 DOCUMENTATION

Within 60 days of the construction, survey, and development or abandonment of each new groundwater monitoring well completed under the direction of a qualified groundwater scientist or engineer, a well installation/abandonment report will be submitted to GA EPD. The following information will be documented in this report.

1. Well identification
2. Well drilling date
3. Well development date
4. Name of drilling contractor and type of drill rig
5. Documentation that the driller, at the time the monitoring wells were installed, had a bond on file with the Water Well Standards Advisory Council
6. Narrative of drilling technique applied, well construction details, and well development procedures, including dates, drilling fluids used (if applicable), well casing and screen materials, screen slot size, and joint type
7. Details of filter pack material/size, emplacement method (narrative), and volume
8. Seal emplacement method and type/volume of sealant
9. Borehole diameter and well casing diameter
10. Well Depth (±0.1 ft.)
11. Type of protective well cap

12. Surface seal and volumes/mix of annular seal material

13. Screen length and interval reported in feet below ground surface and elevation

14. Well location data given to within an accuracy of 0.5 feet based on survey data recorded from an acceptable survey point datum by a Georgia-registered professional surveyor

15. Well elevation data given to within an accuracy of 0.01 feet based on survey data recorded from an acceptable survey point datum by a Georgia-registered professional surveyor

16. Lithologic logs

17. Documentation that water quality field parameters meet well development criteria (Section 4.2)

18. Documentation of ground surface elevation (±0.01 feet)

19. Documentation of top of casing elevation (±0.01 feet)

20. Schematic of the well with dimensions for all components (e.g., casing, screen, sump, well pad)

In accordance with the Georgia Water Well Standards Act (O.C.G.A. § 12-5-134(5)(d(vii), at least once every five years, the owner of the property on which a monitoring well is constructed shall have the monitoring well(s) inspected by a professional engineer or professional geologist, who shall direct appropriate remedial corrective work to be performed if the well does not conform to standards. Well inspection records and records of remedial corrective work are subject to review by EPD. Additionally, as part of the post closure plan, the cost estimate based upon current year cost for the well inspections must be provided for as part of the cost calculations for the groundwater monitoring period.

5. GROUNDWATER MONITORING PARAMETERS AND FREQUENCY

The following describes AP-1 groundwater sampling requirements with respect to parameters for analysis, sampling frequency, sample preservation and shipment, and analytical methods. Groundwater samples used to provide compliance monitoring data will not be filtered prior to collection.

Table 1, Groundwater Monitoring Parameters and Frequency, presents the groundwater monitoring parameters and sampling frequency. A minimum of eight independent samples were collected from each groundwater detection well of the AP-1 network between May 2016 and September 2017 and analyzed for 40 CFR 257, Subpart D, Appendix III and Appendix IV test parameters to establish a background statistical dataset, with the exception of WGWC-20, WGWC-21 ,WGWC-22, WGWC-23, WGWC-24, and WGWC-25, which were installed in 2020 and were sampled four times to establish a background statistical dataset. The nineteen additional monitoring wells to be included in the expanded detection monitoring network will be sampled eight independent times on a quarterly basis until 2027 to establish the background statistical dataset.

In accordance with 391-3-4-.10(6), the monitoring frequency for the Appendix III parameters will be at least semi-annual during the active life of the facility and the post-closure care period. Pursuant to 391-3-4-.10(6), an assessment monitoring program was established for AP-1 based on statistically significant increases documented in the *2017 Annual Groundwater Monitoring and Corrective Action Report* (Environmental Resources Management, 2018). Georgia Power initiated an assessment of corrective measures (ACM) program on October 27, 2022. An ACM Report for AP-1 was submitted to GA EPD in March 2023. Georgia Power will continue to complete assessment monitoring activities as required in Chapter 391-3-4-.10(6).

When referenced throughout this plan, Appendix III and Appendix IV parameters refer to the parameters contained in Appendix III and Appendix IV of 40 CFR 257, Subpart D, 80 Fed. Reg. 21468 (April 17, 2015).

As shown on **Table 2**, Analytical Methods, the groundwater samples will be analyzed using methods specified in USEPA Manual SW-846, USEPA 600/4-79-020, Standard Methods for the Examination of Water and Wastewater (SM18-20), USEPA Methods for the Chemical Analysis of Water and Wastes (MCAWW), ASTM, or other suitable analytical methods approved by GA EPD. The method used will be able to reach a suitable practical quantification limit to detect natural background conditions at the facility. The groundwater samples will be analyzed by licensed and accredited laboratories through the National Environmental Laboratory Accreditation Conference (NELAC). Field instruments used to measure pH must be accurate and reproducible to within 0.1 Standard Units (S.U.).

TABLE 1
GROUNDWATER MONITORING PARAMETERS & FREQUENCY

MONITORING PARAMETER		GROUNDWATER MONITORING	
		Background	Semi-Annual Events
Field Parameters	Temperature	X	X
	pH	X	X
	Oxidation Reduction Potential (ORP)	X	X
	Turbidity	X	X
	Specific Conductance	X	X
	Dissolved Oxygen (DO)	X	X
Appendix III (Detection test parameters from 40 CFR 257, Subpart D)	Boron	X	X
	Calcium	X	X
	Chloride	X	X
	Fluoride	X	X
	pH	X	X
	Sulfate	X	X
	Total Dissolved Solids	X	X
Appendix IV (Assessment test parameters from 40 CFR 257, Subpart D)	Antimony	X	Assessment sampling frequency and parameter list determined in accordance with Georgia Chapter 391-3-4.10(6).
	Arsenic	X	
	Barium	X	
	Beryllium	X	
	Cadmium	X	
	Chromium	X	
	Cobalt	X	
	Fluoride	X	
	Lead	X	
	Lithium	X	
	Mercury	X	
	Molybdenum	X	
	Selenium	X	
	Thallium	X	
	Radium 226 & 228	X	

TABLE 2
ANALYTICAL METHODS

Parameters	USEPA Method Number
Boron	6010D/6020B
Calcium	6010D/6020B
Chloride	300.0/300.1/9250/9251/9253/9056A
Fluoride	300.0/300.1/9214/9056A
pH	150.1 field
Sulfate	9035/9036/9038/300.0/300.1/9056A
Total Dissolved Solids (TDS)	160/2540C
Antimony	EPA 7040/7041/6010D/6020B
Arsenic	EPA 7060A/7061A/6010D/6020B
Barium	EPA 7080A/7081/6010D/6020B
Beryllium	EPA 7090/7091/6010D/6020B
Cadmium	EPA 7130/7131A/6020B
Chromium	EPA 7190/7191/6010D/6020B
Cobalt	EPA 7200/7201/6010D/6020B
Fluoride	300.0/300.1/9214/9056A
Lead	EPA 7420/7421/6010D/6020B
Lithium	6010D/6020B
Mercury	7470
Molybdenum	6010D/6020B
Selenium	EPA 7740/7741A/6010D/6020B
Thallium	EPA 7840/7841/6010D/6020B
Radium 226 and 228 combined	EPA 903/9320/9315

6. GROUNDWATER SAMPLE COLLECTION

During each sampling event, groundwater samples will be collected and handled in accordance with the procedures specified in **Appendix C**, Groundwater Sampling Procedures. Sampling procedures were developed using standard industry practice and USEPA Region 4 *Field Branches Quality System and Technical Procedures* as a guide. Low-flow sampling methodology will be utilized for sample collection. EPA approved alternative industry accepted sampling methodology may be used when appropriate. The applied groundwater purging and sampling methodologies will be discussed in the groundwater semi-annual monitoring reports submitted to GA EPD.

For groundwater sampling, positive gas displacement PVC, Teflon, or stainless-steel bladder pumps will be used for purging. If dedicated bladder pumps are not used, portable bladder pumps or peristaltic pumps (with dedicated or disposable tubing) may be used. When non-dedicated equipment is used, it will be decontaminated prior to use and between wells in general accordance with USEPA LSASDPROC-205-R#.

Per Georgia Rule 391-3-4-.10(6)(g) monitoring wells require replacement after two consecutive dry sampling events. Well installation must be directed by a qualified groundwater scientist. A minor modification shall be submitted to GA EPD in accordance with Rule 391-3-4-.02 prior to the installation or decommissioning of monitoring wells.

7. CHAIN-OF-CUSTODY

All samples will be handled under chain-of-custody (COC) procedures beginning in the field. The COC record will contain the following information:

- Sample identification numbers
- Signature of collector
- Date and time of collection
- Sample type
- Sample point identification
- Number of sample containers
- Signature of person(s) involved in the chain of possession
- Dates and times of possession by each individual
- Notated date(s) and time(s) of sample transfer between individuals

The samples will remain in the custody of assigned personnel, an assigned agent, or the laboratory. If the samples are transferred to other employees for delivery or transport, the sampler or possessor will relinquish possession and the samples must be received by the new owner. The transfer times and dates during transfer of samples between individuals will be documented on the COC included with the laboratory reports.

If the samples are being shipped, a hard copy COC will be signed and enclosed within the shipping container.

Samplers will use COC forms provided by the analytical laboratory or use a COC form similarly formatted and containing the information listed above.

8. FIELD QUALITY ASSURANCE / QUALITY CONTROL

All field quality control samples will be prepared the same as compliance samples with regard to sample volume, containers, and preservation. The following quality control samples will be collected during each sampling event:

- Field Equipment Rinsate Blanks - Where sampling equipment is not new or dedicated, an equipment rinsate blank will be collected at a rate of one blank per 10 samples using non-dedicated equipment.

- Field Duplicates - Field duplicates are collected by filling additional containers at the same location, and the field duplicate is assigned a unique sample identification number. One blind field duplicate will be collected for every 20 samples.

- Field Blanks - Field blanks are collected in the field using the same water source that is used for decontamination. The water is poured directly into the supplied sample containers in the field and submitted to the laboratory for analysis of target constituents. One field blank will be collected for every 20 samples.

The groundwater samples will be analyzed by licensed and accredited laboratories through the National Environmental Laboratory Accreditation Program (NELAP).

Calibration of field instruments will occur daily and follow the recommended (specific) instrument calibration procedures provided by the manufacturer and/or equipment manual specific to each instrument. Daily calibration will be documented on field forms and these field forms will be included in all groundwater monitoring reports. Instruments will be recalibrated as necessary (e.g., when calibration checks indicate significant variability), and all checks and recalibration steps will be documented on field calibration forms. Calibration of the instruments will also be checked if any readings during sampling activities are suspect. Replacement probes and meters will be obtained as a corrective action in the event that recalibration does not improve instrument function. Calibration field forms will be provided with the semi-annual groundwater monitoring reports.

9. REPORTING RESULTS

A semi-annual groundwater report that documents the results of sampling and analysis will be submitted to GA EPD. Semi-annual groundwater monitoring reports will be submitted to GA EPD within 90 days of receipt of the groundwater analytical data from the laboratory, and signed and sealed by a Georgia-registered P.G. or P.E. At a minimum, semi-annual reports will include:

1. A narrative describing sampling activities and findings including a summary of the number of samples collected, the dates the samples were collected and whether the samples were required by the detection or assessment monitoring programs.

2. A narrative of purging/sampling methodologies, which will include the type of sampling equipment used.

3. Discussion of results.

4. Recommendations for the future monitoring consistent with the Rules.

5. Potentiometric surface contour map for the aquifer(s) being monitored, signed and sealed by a Georgia-registered P.G. or P.E.

6. Table of as-built information for groundwater monitoring wells including top of casing elevations, ground elevations, screened elevations, current groundwater elevations and depth to water measurements.

7. Groundwater flow rate and direction calculations.

8. Identification of any groundwater wells that were installed or abandoned during the preceding year, along with a narrative description of why these actions were taken.

9. 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).

10. If applicable, semi-annual assessment monitoring results.

11. Any alternate source demonstration completed during the previous monitoring period, if applicable.

12. Laboratory Reports.

13. COC documentation.

14. Field sampling logs including field instrument calibration, indicator parameters and parameter stabilization data.

15. Field logs and forms for each sampling event to include, but not limited to, well signage, well access, sampling and purging equipment condition, and any site conditions that may affect sampling.

16. Documentation of non-functioning wells.

17. Table of current analytical results for each well, highlighting statistically significant increases and concentrations above maximum contaminant level (MCL).

18. Statistical analyses.

19. Certification by a qualified groundwater scientist.

20. Plume delineation (if applicable based on exceedances of groundwater protection standards).

21. Trend analyses (if applicable based on exceedances of groundwater protection standards).

22. Annual updated potable water well survey (if applicable based on exceedances of groundwater protection standards).

10. STATISTICAL ANALYSIS

Groundwater quality data from each sampling event will be statistically evaluated to determine if there has been a statistically significant change in groundwater chemistry. Historical background data will be used to establish statistical limits. Statistical analysis techniques will be consistent with the USEPA document *Statistical Analysis of Groundwater Data at RCRA Facilities, Unified Guidance* (USEPA, 2009).

According to GA EPD rules (391-3-4-.10(6)(a)), the Site must specify in the operating record the statistical methods to be used in evaluating groundwater monitoring data for each constituent. The statistical test chosen will be conducted separately for each constituent in each well. As authorized by the rule, statistical tests that will be used include:

1. A prediction interval procedure in which an interval for each constituent is established from the distribution of the background data, and the level of each constituent in each compliance well is compared to the upper tolerance or prediction limit. [§ 257.93(f)(3)];

2. A control chart approach that gives control limits for each constituent. [§ 257.93(f)(4)];

3. Another statistical test method (such as prediction limits or control charts) that meets the performance standards of § 257.93(g) [§ 257.93(f)(5)]. A justification for an alternative method will be placed in the operating record and the Director notified of the use of an alternative test. The justification will demonstrate that the alternative method meets the performance standards of § 257.93(g).

An interwell statistical method will be used to compare Appendix III groundwater monitoring data to background conditions. Confidence intervals will be constructed for each downgradient well and used to compare Appendix IV groundwater monitoring data to groundwater protection standards.

A site-specific statistical analysis plan that provides details regarding the statistical methods to be used for AP-1 groundwater data was placed in the Site's operating record pursuant to Chapter 391-3-4-.10(6). **Figure 1**, Statistical Analysis Plan Overview, presents a flowchart that depicts the process followed to develop the site-specific plan. **Figure 2,** Decision Logic for Computing Prediction Limits, presents the logic used to calculate site-specific statistical limits and test groundwater results from detection monitoring wells against those limits.

FIGURE 1. STATISTICAL ANALYSIS PLAN OVERVIEW

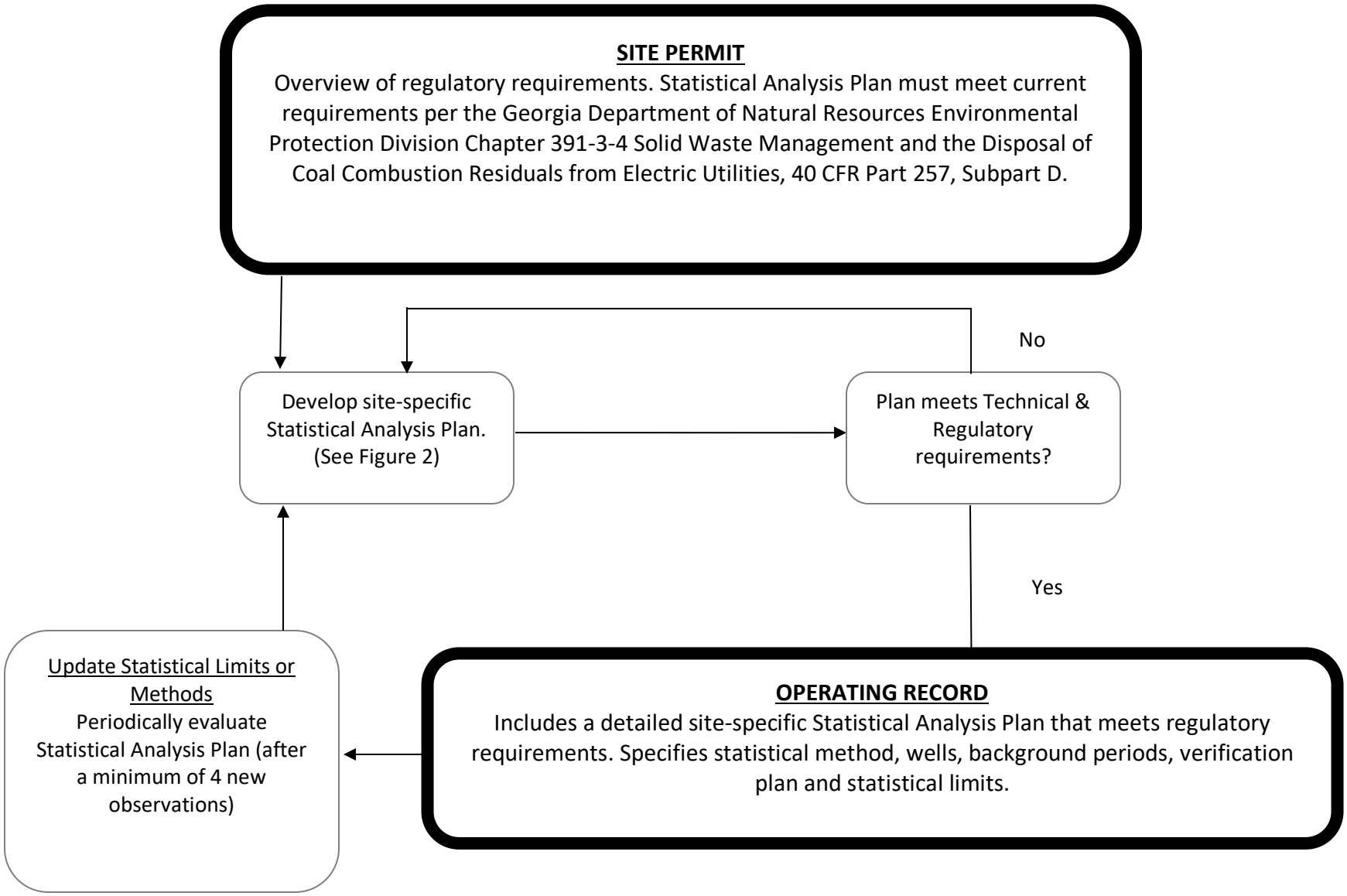
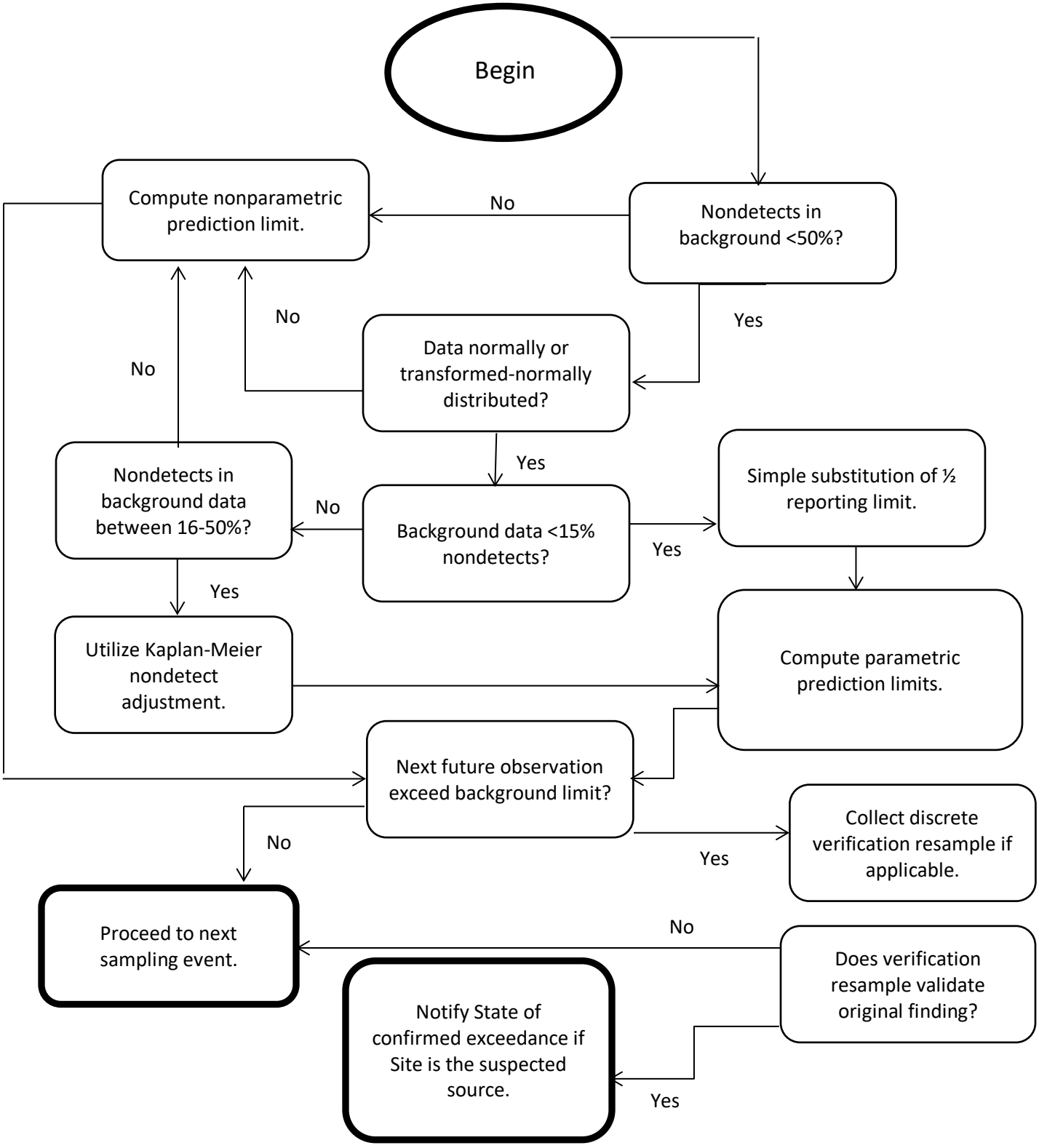


FIGURE 2. DECISION LOGIC FOR COMPUTING PREDICTION LIMITS



11. REFERENCES

Environmental Resources Management, Inc. (ERM) 2018. *2017 Annual Groundwater Monitoring and Corrective Action Report – Plant Wansley Ash Pond*, January 2018.

Georgia Environmental Protection Division, 1991. *Manual for Groundwater Monitoring*. (pp. 38).

Georgia Power Company. *History of Construction*. 40 CFR 257.73 (c)(1)(i)-(xii). Plant Wansley Ash Pond 1 (AP-1). Georgia Power Company. Retrieved from: https://www.georgiapower.com/content/dam/georgia-power/pdfs/company-pdfs/plant-wansley/20161017-constrhist-wan-ap1-final.pdf

Georgia Rules and Regulations, 2018. Rule Subject 391-3-4, Solid Waste Management. Revised March 28, 2018.

Geosyntec Consultants, 2024. *Hydrogeologic Assessment Report Revision 05 – Plant Wansley*. December 2024.

Golder Associates, 2018. *Geologic and Hydrogeologic Summary Report – Plant Wansley AP-1.* Prepared for Southern Company Services, Inc. November 2018.

United States Environmental Protection Agency, 2009. *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance*. Office of Resource Conservation and Recovery – Program Implementation and Information Division.

United States Environmental Protection Agency, Region 4 Science and Ecosystem Support Division, 2013. *Design and Installation of Monitoring Wells*. SESDGUID-101-R1.

United States Environmental Protection Agency, Region 4 Science and Ecosystem Support Division, 2018. *Design and Installation of Monitoring Wells*. SESDGUID-101-R2.

United States Environmental Protection Agency, Region 4 Science and Ecosystem Support Division, 2020. *Operating Procedure for Field Equipment Cleaning and Decontamination*. SESDPROC-205-R4.

United States Environmental Protection Agency, Region 4 Science and Ecosystem Support Division, 2017. *Operating Procedure for Groundwater Sampling*. SESDPROC-304-R4.

United States Environmental Protection Agency, 2015. *40 CFR Parts 257 and 261. Hazardous and Solid Waste Management System, Disposal of Coal Combustion Residuals from Electric Utilities, Final Rule.*

APPENDICES

A. MONITORING SYSTEM DETAILS
B. GROUNDWATER MONITORING WELL DETAIL
C. GROUNDWATER SAMPLING PROCEDURE

A. MONITORING SYSTEM DETAILS

Table A-1
AP-1 Monitoring Network Well Details
Plant Wansley, Heard and Carroll Counties, Georgia

Well ID	Previous Well / Piezometer ID	Installation Date	Purpose	Northing [1,3]	Easting [1,3]	Ground Surface Elevation [2,3] (ft NAVD88)	Top of Casing Elevation [2,3] (ft NAVD88)	Well Depth [4] (ft BTOC)	Top of Screen Elevation [2,3] (ft NAVD88)	Bottom of Screen Elevation [2,3] (ft NAVD88)	Screened Media	K_h [5] (cm/sec)
Upgradient Detection Monitoring Wells												
WGWA-1	APA-1	10/21/2015	Detection	1250656.10	2035580.71	780.37	782.93	129.56	663.37	653.37	PWR	2.0E-03
WGWA-2	APA-2D	10/16/2015	Detection	1251556.40	2035590.11	755.77	758.23	102.46	665.77	655.77	PWR/Bedrock	2.7E-04
WGWA-3	PZ-02	12/15/2014	Detection	1240848.21	2022350.10	826.63	828.91	18.68	820.23	810.23	Saprolite/Bedrock	---
WGWA-4	PZ-02D	01/13/2015	Detection	1240879.58	2022339.66	831.33	834.34	74.31	780.43	760.43	Bedrock	4.1E-04
WGWA-6	PZ-03D	01/13/2015	Detection	1241932.02	2022360.58	894.62	897.13	104.91	822.62	792.62	Bedrock	1.1E-03
WGWA-7	PZ-05	12/22/2014	Detection	1243338.63	2023843.81	894.49	897.33	40.04	867.69	857.69	Bedrock	3.7E-03
WGWA-18	PZ-07	12/16/2014	Detection	1244592.56	2025580.71	875.47	878.02	39.95	848.47	838.47	Saprolite/Bedrock	1.4E-04
Downgradient Detection Monitoring Wells												
WGWC-8	APC-1	10/29/2015	Detection	1242929.40	2029644.58	777.70	780.08	59.38	730.70	720.70	Bedrock	2.2E-05
WGWC-9	PZ-09	12/4/2014	Detection	1242801.12	2029115.75	809.33	812.03	61.50	760.93	750.93	PWR	6.0E-05
WGWC-10	APC-3D	10/27/2015	Detection	1240971.96	2026725.61	809.61	812.38	148.77	673.61	663.61	Saprolite/PWR	1.7E-05
WGWC-11	PZ-14	12/8/2014	Detection	1240860.18	2025773.39	821.44	823.96	51.22	783.14	773.14	Saprolite	1.5E-04
WGWC-12	APC-4D	10/22/2015	Detection	1240827.68	2025755.99	820.57	823.04	76.47	756.57	746.57	Bedrock	6.9E-04
WGWC-13	APC-5D	11/4/2015	Detection	1240610.93	2024585.91	807.32	809.78	95.46	734.32	714.32	Bedrock	9.5E-06
WGWC-14A	--	01/31/2017	Detection	1240604.54	2024599.63	808.20	810.94	42.74	778.20	768.20	Saprolite/PWR	1.2E-04
WGWC-15	APC-6D	11/11/2015	Detection	1240483.16	2023912.92	802.03	804.69	56.16	758.53	748.53	Bedrock	1.6E-06
WGWC-16	APC-6S	11/11/2015	Detection	1240480.46	2023903.77	801.72	804.21	34.50	779.72	769.72	Saprolite/PWR	7.1E-05
WGWC-17	APC-7	11/06/2015	Detection	1240052.06	2022623.82	813.36	816.00	95.94	730.36	720.36	Bedrock	1.1E-04
WGWC-19	APC-2	10/28/2015	Detection	1241851.51	2028949.19	780.60	783.42	94.82	698.60	688.60	Bedrock	1.3E-04
WGWC-20	PZ-22	09/29/2020	Detection	1243350.76	2029769.43	804.88	807.95	43.17	775.18	765.18	Bedrock	1.5E-04
WGWC-21	PZ-23S	10/02/2020	Detection	1242139.33	2028512.65	831.79	834.41	71.70	773.11	763.11	Bedrock	8.4E-08
WGWC-22	PZ-24	10/18/2020	Detection	1241695.25	2028116.05	807.00	810.37	43.85	776.92	766.92	PWR/Bedrock	1.3E-05
WGWC-23	PZ-25S	10/04/2020	Detection	1240769.79	2027414.58	820.50	823.80	53.80	780.40	770.40	PWR	1.2E-04
WGWC-24	PZ-26S	10/17/2020	Detection	1239916.68	2024139.82	802.22	804.80	40.77	774.43	764.43	PWR	2.2E-04
WGWC-25	PZ-27S	10/28/2020	Detection	1240184.18	2023616.69	805.98	808.98	39.87	779.51	769.51	Saprolite/PWR	2.9E-04
WGWC-30 [6]	--	--	Detection	1240037.93	2022632.36	--	--	30	780	770	Residuum	--
WGWC-31S [6]	--	--	Detection	1240822.00	2027168.63	--	--	39	782	772	PWR	--
WGWC-31D [6]	--	--	Detection	1240830.49	2027170.46	--	--	80	740	730	Bedrock	--
WGWC-32 [6]	--	--	Detection	1241724.07	2028125.24	--	--	20	795	785	Residuum	--
WGWC-33 [6]	--	--	Detection	1242764.54	2029104.51	--	--	35	785	775	Quartzite	--
WGWC-34S [6]	--	--	Detection	1245294.32	2027794.74	--	--	50	770	760	Dike Material	--
WGWC-34D [6]	--	--	Detection	1245294.32	2027794.74	--	--	130	690	680	Bedrock	--
WGWC-35S [6]	--	--	Detection	1244963.82	2028137.48	--	--	50	785	775	Dike material	--
WGWC-35D [6]	--	--	Detection	1244963.82	2028137.48	--	--	130	690	680	Bedrock	--
WGWC-36S [6]	--	--	Detection	1244514.98	2028598.55	--	--	50	770	760	Dike Material	--
WGWC-36D [6]	--	--	Detection	1244514.98	2028598.55	--	--	130	690	680	Bedrock	--
WGWC-37S	PZ-29S [7]	10/31/2020	Detection	1244317.13	2028839.68	805.80	805.30	45.42	770.28	760.28	Dike Material	--

Table A-1
AP-1 Monitoring Network Well Details
Plant Wansley, Heard and Carroll Counties, Georgia

Well ID	Previous Well / Piezometer ID	Installation Date	Purpose	Northing [1,3]	Easting [1,3]	Ground Surface Elevation [2,3] (ft NAVD88)	Top of Casing Elevation [2,3] (ft NAVD88)	Well Depth [4] (ft BTOC)	Top of Screen Elevation [2,3] (ft NAVD88)	Bottom of Screen Elevation [2,3] (ft NAVD88)	Screened Media	K_h [5] (cm/sec)
WGWC-37D	PZ-29D [7]	11/1/2020	Detection	1244304.90	2028853.29	805.77	805.24	126.95	688.69	678.69	Saprolite/PWR Bedrock	8.3E-06
WGWC-38S [6]	--	--	Detection	1243849.90	2029292.20	--	--	50	770	760	Dike Material	--
WGWC-38D [6]	--	--	Detection	1243849.90	2029292.20	--	--	130	690	680	Bedrock	--
WGWC-39	PZ-15 [7]	12/10/2014	Detection	1240457.61	2025105.38	824.59	826.86	41.46	795.79	785.79	Saprolite	3.9E-05
WGWC-40	PZ-12 [7]	12/08/2014	Detection	1240837.96	2026731.01	816.17	818.74	49.78	779.37	769.37	Saprolite	5.4E-05
WGWC-41	PZ-10 [7]	12/05/2014	Detection	1242058.41	2028554.29	829.26	832.02	31.96	810.46	800.46	Bedrock	1.1E-06
WGWC-42	PZ-20 [7]	01/31/2017	Detection	1243496.86	2030132.73	784.45	787.30	37.85	759.45	749.45	Saprolite	--
Assessment Monitoring Wells												
WGWC-27	--	9/27/2022	Assessment	1243215.51	2029878.92	778.05	780.54	41.69	749.15	739.15	Bedrock	9.2E-06
WGWC-28D	--	8/18/2023	Assessment	1243337.13	2029751.04	805.36	808.24	206.70	609.06	599.06	Bedrock	5.1E-06
PZ-26D	--	10/12/2020	Assessment	1239919.45	2024146.35	802.31	804.93	80.10	735.23	725.23	Bedrock	1.9E-05
WAMW-1 [8]	--	09/16/2018	Assessment	1241843.66	2028944.63	780.05	782.66	124.60	668.40	658.40	Bedrock	--

Notes:
ft = feet
BTOC = below top of casing
PWR = Partially Weathered Rock
K_h = horizontal hydraulic conductivity
cm/sec = centimeter per second
--- = Location not tested
(1) Coordinates in North American Datum (NAD) 1983, State Plane, Georgia-West, feet.
(2) Elevations referenced to the North American Vertical Datum of 1988 (NAVD88). Ground surface elevation defined at the survey nail installed within the well pad.
(3) Survey of WGWA-1 through WGWA-18 and WGWC-8 through WGWC-19 was completed by GEL Solutions and certified June 16, 2020. Survey of WGWC-20 through WGWC-25, PZ-26D, PZ-29S, and PZ-29D was completed by GEL Solutions and certified on November 17, 2020. Survey of WGWC-27 was completed by GEL Solutions and certified on October 13, 2022. Survey of WGWC-28D was completed by GEL Solutions and certified on September 5, 2023.
(4) Total well depth accounts for sump if data provided on well construction logs.
(5) K_h as determined by slug testing (in piezometers and wells) or iso-flow packer testing (in open bedrock boreholes). Horizontal hydraulic conductivity in bedrock is from targeted tests of fracture zones and not likely representative of bulk permeability of the rock units.
(6): Proposed detection wells to be installed in 2025. Construction information subject to change.
(7): Piezometers will be reclassified as detection wells in 2025.
(8): Piezometers to be reclassified as assessment monitoring wells in 2025.

Table A-2
AP-1 Water Level Monitoring Network Piezometer Details
Plant Wansley, Heard and Carroll Counties, Georgia

Piezometer ID [1]	Purpose	Northing [2,4]	Easting [2,4]	Ground Surface Elevation [3,4] (ft NAVD88)	Top of Casing Elevation [3,4] (ft NAVD88)	Well Depth [5] (ft BTOC)	Top of Screen Elevation [3,4] (ft NAVD88)	Bottom of Screen Elevation [3,4] (ft NAVD88)	Screened Media	K_h [6] (cm/sec)
PZ-01	Water level	1240249.86	2022319.93	853.91	856.72	49.31	817.81	807.81	Bedrock	3.2E-04
PZ-04	Water level	1242592.03	2023595.91	886.13	889.01	20.48	878.93	868.93	Saprolite/Bedrock	---
PZ-06	Water level	1244382.89	2024661.39	912.30	915.15	26.95	898.60	888.60	Bedrock	3.9E-03
PZ-08	Water level	1245514.59	2026807.30	864.65	867.29	40.84	836.85	826.85	Saprolite/Bedrock	2.4E-03
PZ-16	Water level	1239419.77	2023662.22	798.05	800.70	26.15	785.05	775.05	Saprolite	3.6E-04
PZ-17	Water level	1239270.02	2023086.50	828.54	831.01	51.57	789.84	779.84	Saprolite	6.6E-04
PZ-18	Water level	1239569.52	2022299.20	812.10	814.51	36.71	788.20	778.20	Saprolite	2.8E-04
PZ-22	Water level	1243350.76	2029769.43	804.88	807.95	43.17	775.18	765.18	Bedrock	Bedrock
PZ-23D	Water level	1242139.53	2028520.87	831.89	834.32	94.80	749.92	739.92	Bedrock	4.5E-04
PZ-23S	Water level	1242139.33	2028512.65	831.79	834.41	71.70	773.11	763.11	Bedrock	Bedrock
PZ-24	Water level	1241695.25	2028116.05	807.00	810.37	43.85	776.92	766.92	PWR/Bedrock	PWR/Bedrock
PZ-25S	Water level	1240769.79	2027414.58	820.50	823.80	53.80	780.40	770.40	PWR	PWR
PZ-26S	Water level	1239916.68	2024139.82	802.22	804.80	40.77	774.43	764.43	PWR	PWR
PZ-27D	Water level	1240190.93	2023620.36	806.22	809.28	81.72	737.96	727.96	Bedrock	7.8E-04
PZ-27S	Water level	1240184.18	2023616.69	805.98	808.98	39.87	779.51	769.51	PWR	PWR
PZ-28	Water level	1240066.02	2022624.73	813.57	816.18	72.90	753.68	743.68	Saprolite/PWR	1.2E-04
PZ-30	Water level	1240592.30	2027321.68	812.43	814.80	37.47	787.83	777.83	Saprolite/PWR	---
PZ-31	Water level	1239941.77	2024324.33	807.86	810.90	42.44	778.96	768.96	Saprolite	---
PZ-32D	Water level	1243211.88	2029886.45	777.14	776.74	325.30	462.14	452.14	Bedrock	---
PZ-33D	Water level	1243211.76	2029886.78	777.14	776.74	405.30	462.14	452.14	Bedrock	---
WAMW-2	Water level	1241547.56	2028806.27	768.39	770.82	86.92	694.19	684.19	Bedrock	---
WGWA-5[8]	Water level	1241997.94	2022368.85	899.28	902.15	23.66	888.88	878.88	Saprolite/PWR/Bedrock	1.2E-03
WGWC-14[7]	Water level	1240621.86	2024584.92	806.87	809.50	52.00	764.87	754.87	PWR/Bedrock	---
WGWC-26D	Water level	1243343.66	2029758.85	805.06	808.23	69.27	749.31	739.31	Bedrock	7.1E-05

Notes:
ft = feet
BTOC = below top of casing
PWR = Partially Weathered Rock
K_h = horizontal hydraulic conductivity
cm/sec = centimeter per second
--- = Location not tested
(1) Piezometers used only to gauge water levels in vicinity of AP-1 and refine the AP-1 potentiometric map.
(2) Coordinates in North American Datum (NAD) 1983, State Plane, Georgia-West, feet.
(3) Elevations referenced to the North American Vertical Datum of 1988 (NAVD88). Ground surface elevation defined at the survey nail installed within the well pad.
(4) Survey of PZ-01 through PZ-20, and WAMW-1 and WAMW-2 was completed by GEL Solutions and certified June 16, 2020. Survey of PZ-23D through PZ-28 was completed by GEL Solutions and certified on November 17, 2020. Survey of WGWC-26D was completed by GEL Solutions and certified on October 13, 2022.
(5) Total well depth accounts for sump if data provided on piezometer construction logs.
(6) K_h as determined by slug testing (in piezometers and wells) or iso-flow packer testing (in open bedrock boreholes). Horizontal hydraulic conductivity in bedrock is from targeted tests of fracture zones and not likely representative of bulk permeability of the rock units.
(7) Well WGWC-14 was replaced as a compliance well by WGWC-14A in 2017.
(8) Well WGWA-5 converted to piezometer 2024.

Table A-3

Horizontal Groundwater Gradient and Flow Velocity Calculations

Plant Wansley AP-1, Heard and Carroll Counties, Georgia

			October 2, 2017							
Flow Path Direction[1]	**K_h (ft/day)**	**n_e**	**h_1 (ft)**	**h_2 (ft)**	**Δl (ft)**	**Δh/Δl (ft/ft)**	**V (ft/day)[3]**	**Avergae V (ft/day)[3]**	**V (ft/yr)[3]**	**V (ft/yr)[3]**
WGWC-16 to PZ-16	0.67	0.25	795.46	788.51	1080	0.006	0.017	0.126	6.3	46.0
WGWC-41[4] to WGWC-19	0.67	0.25	804.33	762.32	480	0.088	0.235		85.6	

			February 12, 2024							
Flow Path Direction	**K_h (ft/day)**	**n_e [2]**	**h_1 (ft)**	**h_2 (ft)**	**Δl (ft)**	**Δh/Δl (ft/ft)**	**V (ft/day)[3]**	**Average V (ft/day)[3]**	**V (ft/yr)[3]**	**V (ft/yr)[3]**
WGWC-20 to WGWC-27	0.17	0.10	778.05	769.74	160	0.052	0.088	0.116	32.2	42.2
PZ-01 to WGWC-17	0.17	0.10	817.92	786.60	373	0.084	0.143		52.1	

Notes:

ft = feet

ft/day = feet per day

ft/ft = feet per foot

ft/yr = feet per year

K_h = horizontal hydraulic conductivity

n_e = effective porosity

h_1, h_2 = groundwater elevation at identified wells

Δh/Δl = hydraulic gradient

Δh = change in groundwater elevation between identified wells

Δl = distance between identified wells

V = groundwater flow velocity

(1) Groundwater velocity calculations obtained from the 2017 Annual Groundwater Monitoring and Corrective Action Report (ERM, 2018)

(2) Conservative effective porosity values interpereted from values in *Groundwater* (Freeze and Cherry, 1979)

(2) Groundwater flow velocity equation: $V = [K * (\Delta h/\Delta l)] / n_e$

(3) Well WGWC-41 (PZ-10) will be reclassified as a detection well in 2025.

Legend

- Detection Monitoring Well
- Horizontal Assessment Monitoring Well
- Vertical Assessment Monitoring Well
- Piezometer
- Proposed Detection Monitoring Well
- Approximate AP-1 Boundary

Notes:
1. Proposed detection monitoring wells will be installed in 2025. Locations are approximate.
2. Well names for PZ-10, PZ-12, PZ-15, PZ-20, PZ-29S, and PZ-29D have been converted to WGWC-41, WGWC-40, WGWC-39, WGWC-42, WGWC-37S, and WGWC-37D, respectively.
3. ESRI_Topo_Map: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

N

0 500 1,000 Feet

Groundwater Monitoring Network
Plant Wansley

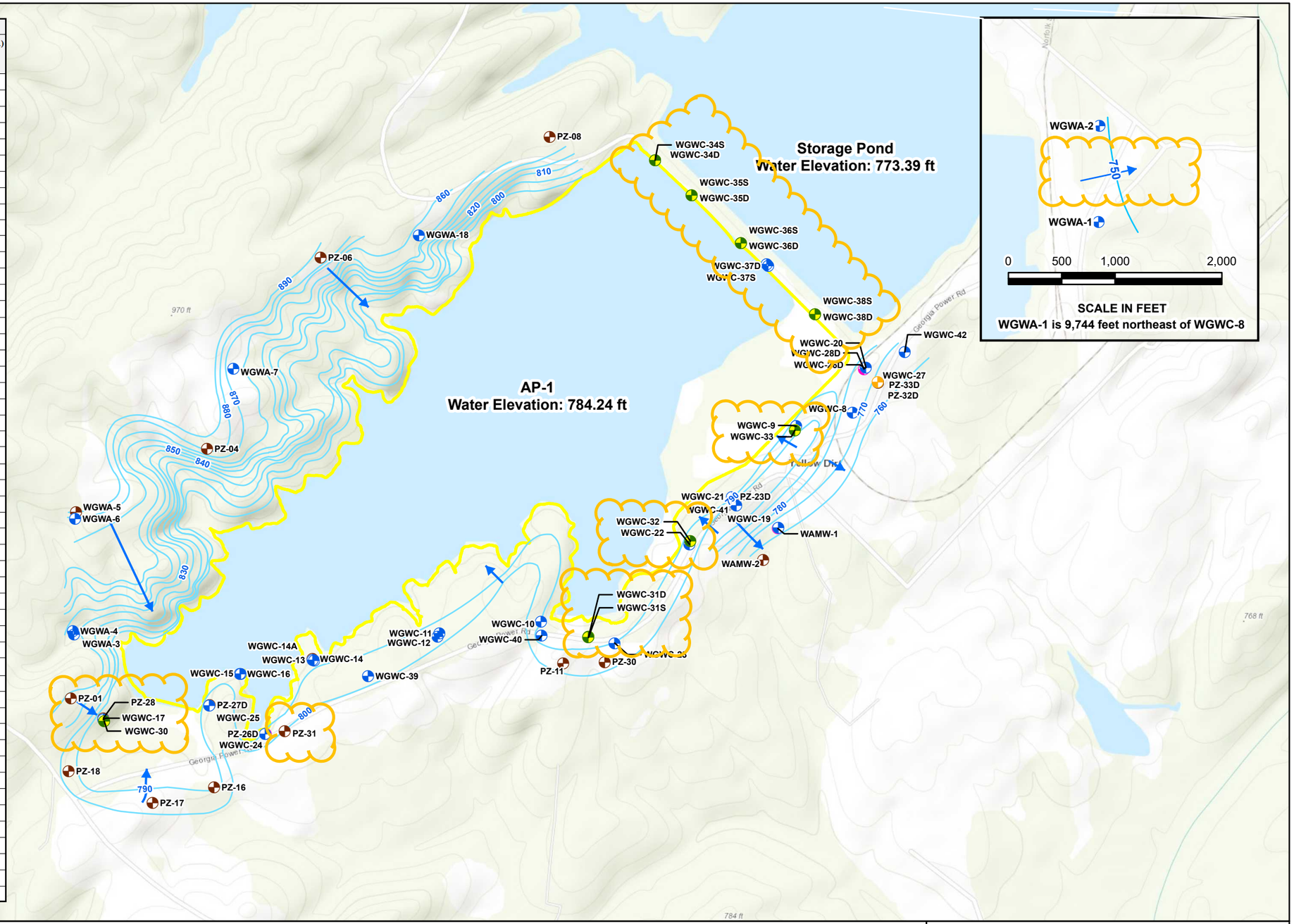
Georgia Power Company
Plant Wansley AP-1
Heard and Carroll Counties, Georgia

Geosyntec consultants

Kennesaw, GA | JANUARY 2025

Figure A-1

Well ID	Top of Casing Elevation [1] (ft)	February 12, 2024	
		Depth to Water (ft BTOC)	Groundwater Elevation [1] (ft)
WGWA-1	782.93	28.80	754.13
WGWA-2	758.23	6.48	751.75
WGWA-3	828.91	1.63	827.28
WGWA-4	834.34	4.63	829.71
WGWA-5	902.15	6.18	895.97
WGWA-6	897.13	19.78	877.35
WGWA-7	897.33	31.18	866.15
WGWA-18	878.02	21.67	856.35
WGWC-8	780.08	3.74	776.34
WGWC-9	812.03	20.85	791.18
WGWC-10	812.38	22.35	790.03
WGWC-11	823.96	28.57	795.39
WGWC-12	823.04	27.93	795.11
WGWC-13	809.78	20.32	789.46
WGWC-14	809.50	21.21	788.29
WGWC-14A	810.94	22.01	788.93
WGWC-15	804.69	18.60	786.09
WGWC-16	804.21	17.37	786.84
WGWC-17	816.00	29.40	786.60
WGWC-19	783.42	21.45	761.97
WGWC-20	807.95	29.90	778.05
WGWC-21	834.41	50.65	783.76
WGWC-22	810.37	18.28	792.09
WGWC-23	823.80	33.15	790.65
WGWC-24	804.80	12.93	791.87
WGWC-25	808.98	15.05	793.93
WGWC-26D	808.23	30.96	777.27
WGWC-27	780.54	10.80	769.74
WGWC-28D	808.24	32.46	775.78
WGWC-37S	805.24	25.37	779.87
WGWC-37D	805.30	22.35	782.95
WGWC-39	826.86	33.08	793.78
WGWC-40	818.74	31.96	786.78
WGWC-41	832.02	26.3	805.72
WGWC-42	787.30	19.58	767.72
PZ-01	856.72	38.8	817.92
PZ-04	889.01	6.03	882.98
PZ-06	915.15	26.7	888.45
PZ-08	867.29	30.92	836.37
PZ-11	823.09	28.44	794.65
PZ-16	800.70	11.35	789.35
PZ-17	831.01	38.8	792.21
PZ-18	814.51	17.95	796.56
PZ-23D	834.32	50.55	783.77
PZ-26D	804.93	12.85	792.08
PZ-27D	809.28	16.46	792.82
PZ-28	816.18	28.75	787.43
PZ-30	814.80	NM	NM
PZ-31	810.90	NM	NM
WAMW-1	782.66	22.19	760.47
WAMW-2	770.82	14.18	756.64



Legend

- Detection Monitoring Well
- Horizontal Assessment Monitoring Well
- Vertical Assessment Monitoring Well
- Piezometer
- Proposed Detection Monitoring Well
- Approximate Groundwater Flow Direction
- Groundwater Elevation Iso-Contour
- Approximate AP-1 Boundary

Notes:
1. Water level elevation recorded on February 12, 2024. Elevation provided in feet (ft) referenced to the North American Vertical Datum (NAVD) 88.
2. Water levels in wells and piezometers measured from feet below top of casing (ft BTOC).
3. WGWC-37S installed within the dike materials and may not be representative of actual groundwater conditions.
4. PZ-11 was abandoned in March 2024, following the February 12, 2024 monitoring event.
5. PZ-30 and PZ-31 were installed March 2024 and PZ-32D and PZ-33D were installed October 2024, following the February 12, 2024 monitoring event.
6. Proposed detection monitoring wells will be installed in 2025. Locations are approximate.
7. Well names for PZ-10, PZ-12, PZ-15, PZ-20, PZ-29S, and PZ-29D have been converted to WGWC-41, WGWC-40, WGWC-39, WGWC-42, WGWC-37S, and WGWC-37D, respectively.
8. ESRI_Topo_Map: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

N

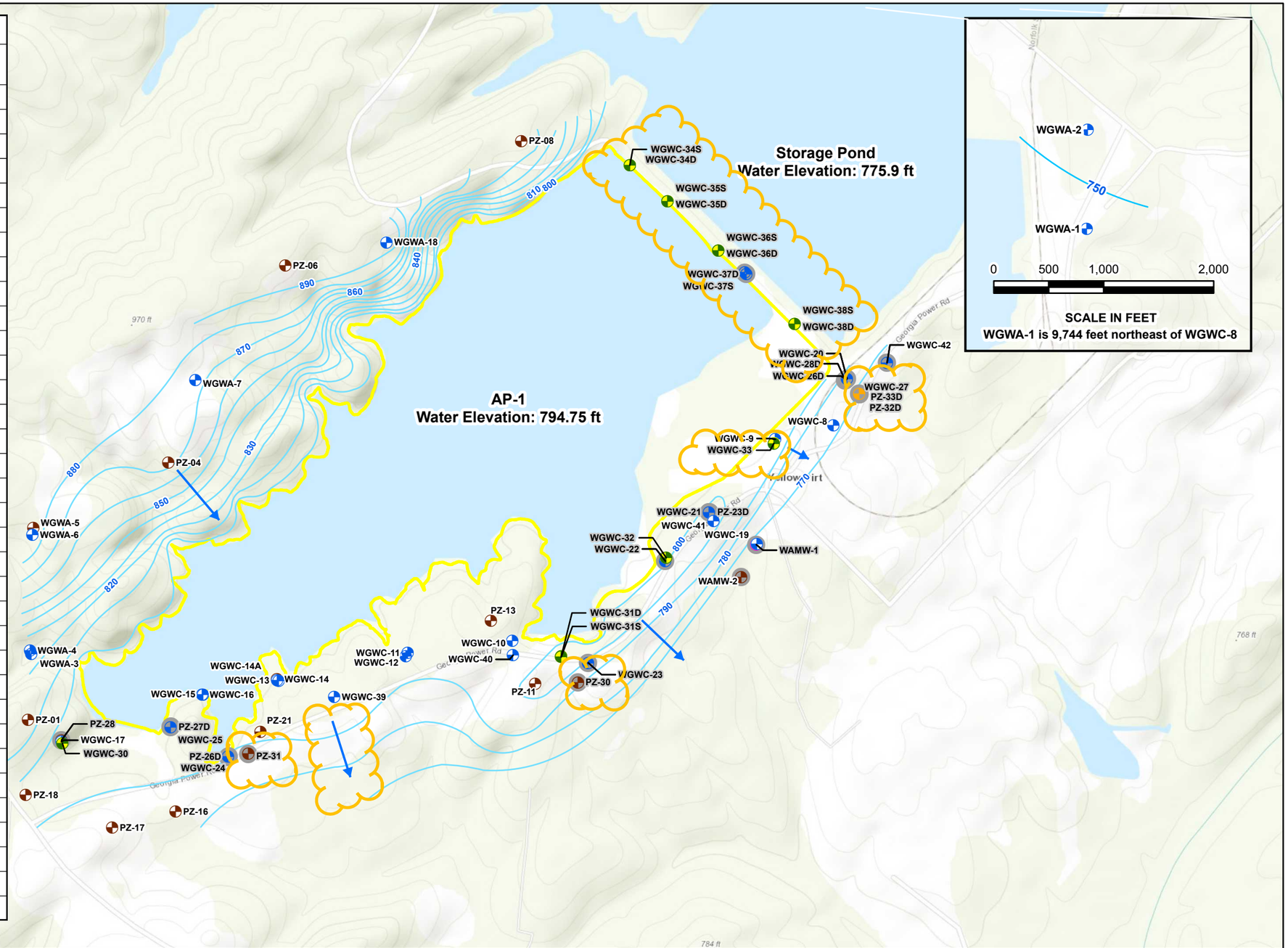
0 500 1,000 Feet

Potentiometric Surface Contour Map
February 2024
Georgia Power Company
Plant Wansley AP-1
Heard and Carroll Counties, Georgia

Geosyntec consultants
Kennesaw, GA | JANUARY 2025

Figure A-2

Well ID	Top of Casing Elevation[1] (ft)	October 2, 2017	
		Depth to Water (ft BTOC)	Groundwater Elevation[1]
WGWA-1	782.90	27.28	755.62
WGWA-2	758.30	10.83	747.47
WGWA-3	829.00	3.39	825.61
WGWA-4	834.30	5.59	828.71
WGWA-5	902.10	14.97	887.13
WGWA-6	897.10	15.45	881.65
WGWA-7	897.40	26.43	870.97
WGWC-8	780.00	4.99	775.01
WGWC-9	812.08	15.65	796.43
WGWC-10	812.60	20.04	792.56
WGWC-11	824.00	27.81	796.19
WGWC-12	823.10	27.14	795.96
WGWC-13	810.00	15.95	794.05
WGWC-14A	811.09	17.95	793.14
WGWC-15	804.50	9.99	794.51
WGWC-16	805.00	9.54	795.46
WGWC-17	816.00	20.78	795.22
WGWA-18	915.30	20.12	895.18
WGWC-19	783.40	21.08	762.32
WGWC-14	809.50	15.59	793.91
WGWC-39	826.96	31.00	795.96
WGWC-40	818.88	27.15	791.73
WGWC-41	832.16	27.83	804.33
WGWC-42	787.27	17.59	769.68
PZ-1	856.78	38.20	818.58
PZ-4	889.09	18.71	870.38
PZ-6	915.33	21.11	894.22
PZ-8	882.84	29.35	853.49
PZ-11	822.99	22.19	800.80
PZ-13	850.04	53.33	796.71
PZ-16	800.55	12.04	788.51
PZ-17	831.21	50.12	781.09
PZ-18	814.12	17.15	796.97
PZ-21	814.71	21.05	793.66



Legend

- Detection Monitoring Well
- Piezometer
- Approximate Groundwater Flow Direction
- Groundwater Elevation Iso-Contour
- Approximate AP-1 Boundary

Current Monitoring Network (Installed After 2017)

- Detection Monitoring Well
- Horizontal Assessment Monitoring Well
- Vertical Assessment Monitoring Well
- Piezometer
- Proposed Detection Monitoring Well

Notes:
1. Water level elevation recorded on October 2, 2017. Elevation provided in feet (ft) referenced to the North American Vertical Datum (NAVD) 88.
2. Water levels in wells and piezometers measured from feet below top of casing (ft BTOC).
3. AP-1 wells and piezometers were resurveyed and certified June 16, 2020. TOC and water level elevations on table represent pre resurvey elevations.
4. PZ-13 and PZ-21 were abandoned in 2019. Additionally, PZ-11 was abandoned in March 2024.
5. Proposed detection monitoring wells will be installed in 2025. Locations are approximate.
6. Well names for PZ-10, PZ-12, PZ-15, PZ-20, PZ-29S, and PZ-29D have been converted to WGWC-41, WGWC-40, WGWC-39, WGWC-42, WGWC-37S, and WGWC-37D, respectively.
7. ESRI_Topo_Map: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

N

0 500 1,000 Feet

Potentiometric Surface Contour Map
October 2017
Georgia Power Company
Plant Wansley AP-1
Heard and Carroll Counties, Georgia

Geosyntec consultants

Kennesaw, GA | JANUARY 2025

Figure A-3

Log updated with revised survey data certified 6/16/2020.
Easting and Northing in NAD 83. Elevation in NAVD 88.

RECORD OF BOREHOLE WGWA1/APA-1

SHEET 1 of 3

PROJECT: SCS Wansley
PROJECT NUMBER: 154117
DRILLED DEPTH: 127.00 ft
LOCATION: Carrollton, GA

DRILL RIG: PS-150 Track Mounted Rig
DATE STARTED: 10/19/15
DATE COMPLETED: 10/21/15

NORTHING: 1250656.10
EASTING: 2035580.71
GS ELEVATION: 780.37
TOC ELEVATION: 782.93

DEPTH W.L.: 27.6' (bgs)
ELEVATION W.L.: (amsl)
DATE W.L.: 10/21/15
TIME W.L.: 07:50

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: SAMPLE NO.	TYPE	REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
0	780	0.00 - 4.00 SILT; orange, dry (fill)	ML		776.37					
		4.00 - 26.00 CLAYEY SILT; sample mostly broken down into SILT-sized fragments; light brown to light orange brown, dry. Clasts in sample are very fine grained muscovite-plagioclase schist. (ML) (overburden)			4.00					
5	775									
10	770									
15	765		ML							
20	760									
25	755				754.37					
		26.00 - 37.00 grayish-red to grey and red. top 1' is dry, 27' and deeper is moist. Greater abundance of rock fragments in sample 1-2" in diameter. Muscovite-plagioclase schist with <5% quartz. Visible, very fine foliated texture, weathered (saprolite)			26.00					
30	750		ML							
35	745				743.37					
		37.00 - 42.00 SAPROLITE ROCK; moist, grey and brown quartzose schist with about 5% muscovite, <5% garnet <1mm-3mm. Broken into fragments up to 3" in diameter	PWR		37.00					
40	740				738.37					
		42.00 - 47.00 moist, grey and light red, weathered muscovite schist interlayered with quartz-rich lenses up to 2" thick (scarce)			42.00					
45	735	Log continued on next page								

WELL CASING
Interval: -2.5'-118'
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 117'-127'
Material: Schedule 40 PVC
Diameter: 2"
Slot Size: 0.010"
End Cap: Schedule 40 PVC

FILTER PACK
Interval: 116-127'
Type: #1 Sand/ Pre-packed Filter

FILTER PACK SEAL
Interval: 114'-116'
Type: 3/8" Bentonite Pellets

ANNULUS SEAL
Interval: 0'-114'
Type: Portland Type 1

WELL COMPLETION
Pad: 4'x4'x4"
Protective Casing: Anodized Aluminum

DRILLING METHODS
Soil Drill: 4-inch Sonic
Rock Drill: 4-inch Sonic

LOG SCALE: 1 in = 5.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Tom Ardito

GA INSPECTOR: Shannon George, P.G.
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 9/29/17

Golder Associates

BOREHOLE RECORD WANSLEY BORING LOGS.GPJ PIEDMONT.GDT 9/29/17

RECORD OF BOREHOLE WGWA1/APA-1

PROJECT: SCS Wansley
PROJECT NUMBER: 154117
DRILLED DEPTH: 127.00 ft
LOCATION: Carrollton, GA

DRILL RIG: PS-150 Track Mounted Rig
DATE STARTED: 10/19/15
DATE COMPLETED: 10/21/15

NORTHING: 1250656.41
EASTING: 2035580.13
GS ELEVATION: 780.37
TOC ELEVATION: 782.93

DEPTH W.L.: 27.6' (bgs)
ELEVATION W.L.: (amsl)
DATE W.L.: 10/21/15
TIME W.L.: 07:50

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: SAMPLE NO.	TYPE	REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
45	735	42.00 - 47.00 moist, grey and light red, weathered muscovite schist interlayered with quartz-rich lenses up to 2" thick (scarce) *(Continued)*			733.37					
		47.00 - 57.00 CLAYEY SILT; moist, white, 90% plagioclase, 5% muscovite, <5% quartz, with a 2" lense of muscovite schist and weathered pegmatite	ML		47.00 723.37					
50	730									
55	725									
60	720	57.00 - 64.00 SAPROLITE ROCK; moist, orange-brown muscovite plagioclase schist. <5% quartz. metamorphic texture present. Quartzite/quartz rich lenses at 64-66',80-80.1', and 87-88'	TWR		57.00 716.37				Portland Type 1	**WELL CASING** Interval: -2.5'-118' Material: Schedule 40 PVC Diameter: 2" Joint Type: Threaded **WELL SCREEN** Interval: 117'-127' Material: Schedule 40 PVC Diameter: 2" Slot Size: 0.010" End Cap: Schedule 40 PVC **FILTER PACK** Interval: 116-127' Type: #1 Sand/ Pre-packed Filter **FILTER PACK SEAL** Interval: 114'-116' Type: 3/8" Bentonite Pellets **ANNULUS SEAL** Interval: 0'-114' Type: Portland Type 1 **WELL COMPLETION** Pad: 4'x4'x4" Protective Casing: Anodized Aluminum **DRILLING METHODS** Soil Drill: 4-inch Sonic Rock Drill: 4-inch Sonic
65	715	64.00 - 77.00 POOR RECOVERY; broken quartzose schist, white to grey, wet			64.00					
70	710									
75	705	77.00 - 87.00 SAPROLITE ROCK; weathered muscovite schist, metamorphic foliation, lenses of quartz-rich weather resistant material, moist			703.37 77.00					
80	700									
85	695				693.37					
		87.00 - 88.00 brown, wet, foliated quartzite	TWR		87.00 692.37					
		88.00 - 91.00 moist, orange/brown, garnet muscovite schist, oxidized feldspar, weathered quartz			88.00					
90	690	Log continued on next page								

LOG SCALE: 1 in = 5.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Tom Ardito

GA INSPECTOR: Shannon George, P.G.
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 9/29/17

Golder Associates

RECORD OF BOREHOLE WGWA1/APA-1

SHEET 3 of 3

PROJECT: SCS Wansley
PROJECT NUMBER: 154117
DRILLED DEPTH: 127.00 ft
LOCATION: Carrollton, GA

DRILL RIG: PS-150 Track Mounted Rig
DATE STARTED: 10/19/15
DATE COMPLETED: 10/21/15

NORTHING: 1250656.41
EASTING: 2035580.13
GS ELEVATION: 780.37
TOC ELEVATION: 782.93

DEPTH W.L.: 27.6' (bgs)
ELEVATION W.L.: (amsl)
DATE W.L.: 10/21/15
TIME W.L.: 07:50

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: SAMPLE NO.	SAMPLES: TYPE	SAMPLES: REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES
90	690	91.00 - 107.00 SAPROLITE; moist, white/orange/brown, weathered garnet mica schist			689.37 91.00				
95	685								
100	680		TWR						
105	675				673.37 107.00				
110	670	107.00 - 113.00 wet, broken rock fragments							
115	665	113.00 - 117.00 moist, weathered orange soil with faint fabric	TWR		667.37 113.00 663.37				3/8" Bentonite Pellets
120	660	117.00 - 126.50 TRANSITIONALLY WEATHERED ROCK; wet, brown rock fragments up to 3" in diameter			117.00				#1 Sand
125	655				653.37				0.010" Slot Screen
130	650	126.50 - 127.00 SAPROLITE; light brown wix of clay, silt, fine to coarse sand and angular gravel Boring completed at 127.00 ft	TWR		127.00				
135	645								

WELL CONSTRUCTION DETAILS

WELL CASING
Interval: -2.5'-118'
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 117'-127'
Material: Schedule 40 PVC
Diameter: 2"
Slot Size: 0.010"
End Cap: Schedule 40 PVC

FILTER PACK
Interval: 116-127'
Type: #1 Sand/ Pre-packed Filter

FILTER PACK SEAL
Interval: 114'-116'
Type: 3/8" Bentonite Pellets

ANNULUS SEAL
Interval: 0'-114'
Type: Portland Type 1

WELL COMPLETION
Pad: 4'x4'x4"
Protective Casing: Anodized Aluminum

DRILLING METHODS
Soil Drill: 4-inch Sonic
Rock Drill: 4-inch Sonic

LOG SCALE: 1 in = 5.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Tom Ardito

GA INSPECTOR: Shannon George, P.G.
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 9/29/17

Golder Associates

BOREHOLE RECORD WANSLEY BORING LOGS.GPJ PIEDMONT.GDT 9/29/17

Log updated with revised survey data certified 6/16/2020.
Easting and Northing in NAD 83. Elevation in NAVD 88.

RECORD OF BOREHOLE WGWA2/APA-2D

SHEET 1 of 3

PROJECT: SCS Wansley
PROJECT NUMBER: 154117
DRILLED DEPTH: 107.00 ft
LOCATION: Carrollton, GA

DRILL RIG: PS-150 Track Mounted Rig
DATE STARTED: 10/15/15
DATE COMPLETED: 10/16/15

NORTHING: 1251556.40
EASTING: 2035590.11
GS ELEVATION: 755.77
TOC ELEVATION: 758.23

DEPTH W.L.: 11.55' (bgs)
ELEVATION W.L.: (amsl)
DATE W.L.: 10/20/15
TIME W.L.: 10:30

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: SAMPLE NO.	SAMPLES: TYPE	SAMPLES: REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES
0	755	0.00 - 5.00 SILTY CLAY; reddish-brown, firm, moist. No fabric. <5% mica flakes. Fill/overburden soil	CL		750.77				
5	750	5.00 - 7.00 SILTY CLAY; orange-red to orange-brown, moist. Oxidized and mottled black stringers (Mn Oxide) and white veins of plagioclase, weathered (saprolite)	CL		5.00 748.77				
10	745	7.00 - 25.00 SILTY CLAY; saprolite	CL		7.00 730.77				
25	730	25.00 - 30.00 CLAYEY SILT; moist, pale brown, some red clay, plagioclase stringers	ML		25.00 725.77				
30	725	30.00 - 60.00 SANDY SILT; dry to moist, pale yellow to brown. Fabric not evident	ML		30.00				
35	720								
40	715								Portland _ Type 1
45		Log continued on next page							

WELL CONSTRUCTION DETAILS

WELL CASING
Interval: -2.5'-90'
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 90'-100'
Material: Schedule 40 PVC
Diameter: 2"
Slot Size: 0.010"
End Cap: Schedule 40 PVC

FILTER PACK
Interval: 87'-100'
Type: #1 Sand/Pre-packed Filter

FILTER PACK SEAL
Interval: 84'-87'
Type: 3/8" Bentonite Pellets

ANNULUS SEAL
Interval: 0'-84'
Type: Portland Type 1

WELL COMPLETION
Pad: 4'x4'x4"
Protective Casing: Anodized Aluminum

DRILLING METHODS
Soil Drill: 4-inch Sonic
Rock Drill: 4-inch Sonic

LOG SCALE: 1 in = 5.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Tom Ardito

GA INSPECTOR: Timothy Richards
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 9/29/17

Golder Associates

BOREHOLE RECORD WANSLEY BORING LOGS.GPJ PIEDMONT.GDT 9/29/17

RECORD OF BOREHOLE WGWA2/APA-2D

PROJECT: SCS Wansley
PROJECT NUMBER: 154117
DRILLED DEPTH: 107.00 ft
LOCATION: Carrollton, GA

DRILL RIG: PS-150 Track Mounted Rig
DATE STARTED: 10/15/15
DATE COMPLETED: 10/16/15

NORTHING: 1251556.40
EASTING: 2035590.11
GS ELEVATION: 755.77
TOC ELEVATION: 758.23

DEPTH W.L.: 11.55' (bgs)
ELEVATION W.L.: (amsl)
DATE W.L.: 10/20/15
TIME W.L.: 10:30

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES
45	710	30.00 - 60.00 SANDY SILT; dry to moist, pale yellow to brown. Fabric not evident *(Continued)*	ML		695.77				
60	695	60.00 - 70.00 SANDY SILT; Quartzite rock hard cobble rock fragments	ML		60.00 685.77				
70	685	70.00 - 77.00 dry, pale yellow to brown, gravelly 73.00 - 77.00 NO RECOVERY	ML		70.00 678.77				
75	680	77.00 - 81.00 SILTY CLAY; sandy; green, moist, weathered rock with chlorite	CL		77.00 674.77				
80	675	81.00 - 83.00 GRAVELLY SILT; transitionally weathered rock, dry, pale brown	ML		81.00 672.77				
85	670	83.00 - 90.00 TRANSITIONALLY WEATHERED ROCK; brown, >3" rock fragments, moist	TWR		83.00 665.77				3/8" Bentonite – Pellets
90		Log continued on next page							

WELL CASING
Interval: -2.5'-90'
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 90'-100'
Material: Schedule 40 PVC
Diameter: 2"
Slot Size: 0.010"
End Cap: Schedule 40 PVC

FILTER PACK
Interval: 87'-100'
Type: #1 Sand/Pre-packed Filter

FILTER PACK SEAL
Interval: 84'-87'
Type: 3/8" Bentonite Pellets

ANNULUS SEAL
Interval: 0'-84'
Type: Portland Type 1

WELL COMPLETION
Pad: 4'x4'x4"
Protective Casing: Anodized Aluminum

DRILLING METHODS
Soil Drill: 4-inch Sonic
Rock Drill: 4-inch Sonic

LOG SCALE: 1 in = 5.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Tom Ardito

GA INSPECTOR: Timothy Richards
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 9/29/17

Golder Associates

RECORD OF BOREHOLE WGWA2/APA-2D

SHEET 3 of 3

PROJECT: SCS Wansley
PROJECT NUMBER: 154117
DRILLED DEPTH: 107.00 ft
LOCATION: Carrollton, GA

DRILL RIG: PS-150 Track Mounted Rig
DATE STARTED: 10/15/15
DATE COMPLETED: 10/16/15

NORTHING: 1251556.40
EASTING: 2035590.11
GS ELEVATION: 755.77
TOC ELEVATION: 758.23

DEPTH W.L.: 11.55' (bgs)
ELEVATION W.L.: (amsl)
DATE W.L.: 10/20/15
TIME W.L.: 10:30

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: SAMPLE NO.	SAMPLES: TYPE	SAMPLES: REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
90	665	90.00 - 107.00 BEDROCK; SCHIST to SCHISTOSE GNEISS; grey; trace garnets (1-3mm), trace muscovite			90.00				#1 Sand	**WELL CASING** Interval: -2.5'-90' Material: Schedule 40 PVC Diameter: 2" Joint Type: Threaded
95	660								0.010" Screen Slot	**WELL SCREEN** Interval: 90'-100' Material: Schedule 40 PVC Diameter: 2" Slot Size: 0.010" End Cap: Schedule 40 PVC
		97.00 - 107.00 quartzite with muscovite, pyrite, garnet	BR							**FILTER PACK** Interval: 87'-100' Type: #1 Sand/Pre-packed Filter
100	655								#1 Sand	**FILTER PACK SEAL** Interval: 84'-87' Type: 3/8" Bentonite Pellets
										ANNULUS SEAL Interval: 0'-84' Type: Portland Type 1
105	650				648.77				3/8" Bentonite Pellets	**WELL COMPLETION** Pad: 4'x4'x4" Protective Casing: Anodized Aluminum
		Boring completed at 107.00 ft								**DRILLING METHODS** Soil Drill: 4-inch Sonic Rock Drill: 4-inch Sonic
110	645									
115	640									
120	635									
125	630									
130	625									
135										

LOG SCALE: 1 in = 5.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Tom Ardito

GA INSPECTOR: Timothy Richards
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 9/29/17

Golder Associates

BOREHOLE RECORD WANSLEY BORING LOGS.GPJ PIEDMONT.GDT 9/29/17

Log updated with revised survey data certified 6/16/2020. Original boring ID in parentheses.
Easting and Northing in NAD 83. Elevation in NAVD 88.

WGWA-3 (PZ-02)

PAGE 1 OF 1

ECS38198

SOUTHERN COMPANY

LOG OF TEST BORING AND WELL INSTALLATION

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Ash Pond Piezometers
LOCATION Plant Wansley

DATE STARTED 12/15/2014 **COMPLETED** 12/15/2014 **SURF. ELEV.** 826.63 **COORDINATES:** N:1240848.21 E:2022350.10
CONTRACTOR CASCADE **EQUIPMENT** SONIC **METHOD** Rotosonic
DRILLED BY T.Ardito **LOGGED BY** S. Baxter **CHECKED BY** L. Millet **ANGLE** **BEARING**
BORING DEPTH 18 ft. **GROUND WATER DEPTH: DURING** **COMP.** 3.5 ft. **DELAYED** 9.6 ft. after 24 hrs.
NOTES

DEPTH (ft) | GRAPHIC LOG

STRATA DESCRIPTION

ELEV.

Silty Gravel (GM)
- brown, moist, fine to medium grain, angular, mottled yellow

- brown, moist, fine to medium grain, angular, mottled orange

819.63

Gneiss
- brown, fine grain, hard to medium hard, moderately weathered, non-foliated

808.63

WELL DATA

Protective aluminum cover with bollards
4-foot square concrete pad
Top of casing Elev. = 828.91

ELEV. (DEPTH)

Surface Seal: concrete
824.63 (2.0)

Annular Fill: Cement-Bentonite Grout - 1 bag, 46 lbs, Portland Type I/II, 5.5 gal
823.03 (3.6)

Annular Seal: bentonite chips - 1 bag, 50 lbs, Baroid 3/8" chips
821.03 (5.6)

Filter: silica filter sand - 4 bags, 50 lbs, #1A filter media
820.23 (6.4)

Well: 2" OD PVC (SCH 40)

Well: 2" OD PVC (SCH 40)
Screen: 10 ft. pre-pack

810.23

Sump:0.40 ft. (16.4)

Bottom of borehole at 18.0 feet.

Log updated with revised survey data certified 6/16/2020. Original boring ID in parentheses.
Easting and Northing in NAD 83. Elevation in NAVD 88.

SOUTHERN COMPANY

LOG OF TEST BORING AND WELL INSTALLATION

BORING WGWA-4 (PZ-02D) PAGE 1 OF 2

ECS38198

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Ash Pond Piezometers
LOCATION Plant Wansley

DATE STARTED 1/6/2015 **COMPLETED** 1/13/2015 **SURF. ELEV.** 831.33 **COORDINATES:** N:1240879.58 E:2022339.66
CONTRACTOR SCS Field Services **EQUIPMENT** CME550 **METHOD** Hollow Stem Auger; HQ Rock Core
DRILLED BY T. Milam **LOGGED BY** S. Baxter **CHECKED BY** L. Millet **ANGLE** **BEARING**
BORING DEPTH 70 ft. **GROUND WATER DEPTH: DURING** **COMP.** **DELAYED** 4.88 ft. after 1000 hrs.
NOTES

DEPTH (ft)	GRAPHIC LOG	STRATA DESCRIPTION	ELEV.	WELL DATA	ELEV. (DEPTH)
				Protective aluminum cover with bollards 2-foot square concrete pad Top of casing Elev. = 834.34	
				← Surface Seal: concrete	829.33 (2.0)
5					
			822.93		
10		**Gneiss with interlayered schist** - light blue-gray, red staining, fine to medium grain, medium hard to hard, moderately to highly weathered, inclined, banded, quartz, biotite, muscovite - brown with red stained fractures, fine to medium grain, medium hard to hard, moderately to highly weathered, inclined, banded, low to moderate angle fractures, fracture healing by quartz+feldspar			
15		- brown with red stained fractures, fine to medium grain, medium hard to hard, moderately to highly weathered, inclined, banded, low to moderate angle fractures, fracture healing by quartz+feldspar			
20				← Annular Fill: Cement-Bentonite Grout - 6 bags, 46 lbs, Portland Type I/II, 33 gal	
25		- light blue-gray with red to dark brown stining, very fine to medium grain, medium hard to hard, moderately weathered, inclined, banded, low to high angle fractures, quartz, biotite, muscovite			
30		- blue-gray with red staining, very fine to medium grain, hard, not to moderately weathered, inclined, banded, low angle fractures with partial to complete healing, open fractures along foliation planes, quartz, feldspar, biotite, pyrite			
35		- light blue-gray, very fine to medium grain, hard, not to slightly weathered, inclined, banded, low angle fractures, open to completely healed, felspar, muscovite, biotite, trace chorite			
40		- light blue-gray, very fine to medium grain, hard, not to slightly weathered, inclined, banded, low angle fractures, open to completely healed, felspar, muscovite, biotite, trace chorite			

(Continued Next Page)

SOUTHERN COMPANY

LOG OF TEST BORING AND WELL INSTALLATION

BORING WGWA-4 (PZ-02D) PAGE 2 OF 2

ECS38198

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Ash Pond Piezometers

LOCATION Plant Wansley

DEPTH (ft)	GRAPHIC LOG	STRATA DESCRIPTION	ELEV.	WELL DATA	ELEV. (DEPTH)
				Protective aluminum cover with bollards 2-foot square concrete pad Top of casing Elev. = 834.34	
		Gneiss with interlayered schist *(Con't)*		(CONTINUED)	
					789.23 (42.1)
45		- gray with light gray banding, fine to medium grain, hard, not weathered, inclined, banded, low- and high-angle fractures, biotite, quartz, feldspar, trace pyrite		Annular Seal: bentonite pellets - 1/2 bucket, 3/8" pellets, 5 gal bucket	
					785.83 (45.5)
50		- gray with light gray banding, fine to medium grain, hard, not weathered, inclined, banded, low- and high-angle fractures, biotite, quartz, feldspar, trace pyrite		Filter: silica filter sand - 3 bags, 50 lbs, #1A filter media	
					780.43 (50.9)
55		- gray with light gray banding, fine to medium grain, hard, not weathered, inclined, banded, low- and high-angle fractures, biotite, quartz, feldspar, trace pyrite		**Well: 2" OD PVC (SCH 40)**	
60		- gray with light gray banding, fine to medium grain, hard, not weathered, inclined, banded, low- and high-angle fractures, biotite, quartz, feldspar, trace pyrite		**Well: 2" OD PVC (SCH 40)** **Screen: 20 ft. pre-pack**	
65		- gray with light gray banding, fine to medium grain, hard, not weathered, inclined, banded, numerous low- and high-angle fractures, biotite, quartz, feldspar, trace pyrite			
70		- gray with light gray banding, fine to medium grain, hard, not weathered, inclined, banded, numerous low- and high-angle fractures, biotite, quartz, feldspar, trace pyrite	761.33		
		Bottom of borehole at 70.0 feet.		Sump:0.40 ft.	760.43

Log updated with revised survey data certified 6/16/2020. Original boring ID in parentheses.
Easting and Northing in NAD 83. Elevation in NAVD 88.

WGWA-5 (PZ-03S)
PAGE 1 OF 1
ECS38198

SOUTHERN COMPANY

LOG OF TEST BORING AND WELL INSTALLATION

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Ash Pond Piezometers
LOCATION Plant Wansley

DATE STARTED 12/23/2014 **COMPLETED** 12/23/2014 **SURF. ELEV.** 899.28 **COORDINATES:** N:1241997.94 E:2022368.85
CONTRACTOR CASCADE **EQUIPMENT** SONIC **METHOD** Rotosonic
DRILLED BY T.Ardito **LOGGED BY** S. Baxter **CHECKED BY** L. Millet **ANGLE** **BEARING**
BORING DEPTH 21 ft. **GROUND WATER DEPTH: DURING** **COMP.** 10.1 ft. **DELAYED** 9.6 ft. after 24 hrs.
NOTES

DEPTH (ft) | GRAPHIC LOG

STRATA DESCRIPTION

Silt (ML)
- brown, moist, sandy, mottled orange, micaceous, trace weathered rock

887.28

Silty Sand (SM)
- gray, moist, fine to coarse grain, trace partially weathered rock

884.28

Schist
- gray, fine grain, hard to medium hard, moderately to slightly weathered, thickly foliated, more competent with depth

878.28

Bottom of borehole at 21.0 feet.

WELL DATA

Protective aluminum cover with bollards
4-foot square concrete pad
Top of casing Elev. = 902.15

ELEV. (DEPTH)

Surface Seal: concrete
897.28 (2.0)

Annular Fill: Cement-Bentonite Grout - 4 bags, 46 lbs, Portland Type I/II, 22 gal
892.68 (6.6)

Annular Seal: bentonite chips - 1 bag, 50 lbs, Baroid 3/8" chips
890.68 (8.6)

Filter: silica filter sand - 4 bags, 50 lbs, #1A filter media
888.88 (10.4)

Well: 2" OD PVC (SCH 40)

Well: 2" OD PVC (SCH 40)
Screen: 10 ft. pre-pack

878.88 (20.4)
Sump:0.40 ft.

2012 GEOTECH LOG WITH WELL - ESEE2012DATABASE.GDT - 2/26/15 15:57 - S:\WORKGROUPS\APC GENERAL SERVICE COMPLEX\CIVIL TECH SUPPORT\DRILLING\PROJECTS\WANSLEY ASH POND PIEZ\GINT\PLANT_WANSLEY_ASH_POND_1 (2).GPJ

Log updated with revised survey data certified 6/16/2020. Original boring ID in parentheses.
Easting and Northing in NAD 83. Elevation in NAVD 88.

SOUTHERN COMPANY

LOG OF TEST BORING AND WELL INSTALLATION

BORING WGWA-6 (PZ-03D)

ECS38198

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Ash Pond Piezometers
LOCATION Plant Wansley

DATE STARTED 12/16/2014 **COMPLETED** 1/13/2015 **SURF. ELEV.** 894.62 **COORDINATES:** N:1241932.02 E:2022360.58
CONTRACTOR SCS Field Services **EQUIPMENT** CME550 **METHOD** Hollow Stem Auger; HQ Rock Core
DRILLED BY T. Milam **LOGGED BY** S. Baxter **CHECKED BY** L. Millet **ANGLE** **BEARING**
BORING DEPTH 100.5 ft. **GROUND WATER DEPTH: DURING** **COMP.** 13.2 ft. **DELAYED** 15 ft. after 24 hrs.
NOTES

DEPTH (ft)	GRAPHIC LOG	STRATA DESCRIPTION	ELEV.	WELL DATA	ELEV. (DEPTH)
				Protective aluminum cover with bollards 2-foot square concrete pad Top of casing Elev. = 897.13	
		Silt (ML)		← Surface Seal: concrete	892.62 (2.0)
5					
			886.62		
10		**Partially Weathered Rock (PWR)**			
			881.62		
15					
			877.62		
20		**Gneiss with interlayered schist** - gray and light gray, gray-brown, fine to medium grain, medium hard, moderately to slightly weathered, inclined, low angle fractures on foliation planes, biotite, quartz, feldspar			
25		- gray and dark gray-brown, fine to coarse grain, soft to hard, moderately to not weathered, inclined, banded, inclined fractures on foliation planes, biotite, quartz, feldspar			
30		- gray and light gray, fine to medium grain, soft to hard, slightly to not weathered, inclined, banded, very light gray quartz banding, coarse grained schist, foliation plane fractures, biotite, quartz, feldspar		← Annular Fill: Cement-Bentonite Grout - 6 bags, 46 lbs, Portland Type I/II, 33 gal	
35		- gray and light gray, fine to medium grain, soft to hard, slightly to not weathered, inclined, banded, very light gray quartz banding, coarse grained schist, foliation plane fractures, biotite, quartz, feldspar			
40		- gray and light gray, fine to medium grain, hard, not weathered, inclined, banded, few low angle fractures, biotite, quartz, feldspar			

(Continued Next Page)

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Ash Pond Piezometers

LOCATION Plant Wansley

DEPTH (ft)	GRAPHIC LOG	STRATA DESCRIPTION	ELEV.	WELL DATA
				Protective aluminum cover with bollards 2-foot square concrete pad Top of casing Elev. = 897.13
			(CONTINUED)	ELEV. (DEPTH)
		Gneiss with interlayered schist *(Con't)*		
45		- gray and light gray, fine to coarse grain, hard, not weathered, inclined, banded, coarse grained schist, quartz-felsic banding		
50		- gray and light gray, fine to coarse grain, hard, not weathered, inclined, banded, coarse grained schist, quartz-felsic banding, trace pyrite on foliation planes		
55		- gray and light gray, fine to coarse grain, hard, not weathered, inclined, banded, coarse grained schist, quartz-felsic banding, pyrite common on foliation planes		
60		- gray and light gray, fine to coarse grain, hard, not weathered, inclined, banded, coarse grained schist, quartz-felsic banding, pyrite common on foliation planes		834.12 (60.5)
65		- gray and light gray, fine to coarse grain, hard, not weathered, inclined, banded, coarse grained schist, quartz-felsic banding, pyrite common on foliation planes		Annular Seal: bentonite pellets - 1/2 bucket, 3/8" pellets, 5 gal bucket 829.02 (65.6)
70		- gray and light gray, fine to coarse grain, hard, not weathered, inclined, banded, coarse grained schist, quartz-felsic banding, pyrite common on foliation planes, micro-folds, garnet up to 4mm		Filter: silica filter sand - 3 bags, 50 lbs, #1A filter media
75		- gray and light gray, fine to coarse grain, hard, not weathered, inclined, banded, coarse grained schist, quartz-felsic banding, pyrite common on foliation planes, micro-folds, garnet up to 4mm		822.62 (72.0)
80		- gray and light gray, fine to coarse grain, hard, not weathered, inclined, banded, coarse grained schist, quartz-felsic banding, pyrite common on foliation planes, micro-folds		**Well: 2" OD PVC (SCH 40)**
85		- gray and light gray, fine to coarse grain, hard, not weathered, inclined, banded, coarse grained schist, quartz-felsic banding, pyrite common on foliation planes, micro-folds, finer grained downward		**Well: 2" OD PVC (SCH 40)** **Screen: 30 ft. pre-pack**

(Continued Next Page)

SOUTHERN COMPANY

LOG OF TEST BORING AND WELL INSTALLATION

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Ash Pond Piezometers
LOCATION Plant Wansley

DEPTH (ft)	GRAPHIC LOG	STRATA DESCRIPTION	ELEV.	WELL DATA	ELEV. (DEPTH)
				Protective aluminum cover with bollards 2-foot square concrete pad Top of casing Elev. = 897.13	
				(CONTINUED)	
90		**Gneiss with interlayered schist** *(Con't)* - gray and light gray, fine to coarse grain, hard, not weathered, inclined, banded, coarse grained schist, quartz-felsic banding, pyrite common on foliation planes, micro-folds, massive quartz vein			
95		- gray and light gray, fine to coarse grain, hard, not weathered, inclined, banded, coarse grained schist, quartz-felsic banding, pyrite common on foliation planes, micro-folds, massive quartz vein			
100		- gray and light gray, fine to coarse grain, hard, not weathered, inclined, banded, coarse grained schist, quartz-felsic banding, pyrite common on foliation planes, micro-folds, massive quartz vein	794.12		
		Bottom of borehole at 100.5 feet.			792.62
				Sump:0.40 ft.	

Log updated with revised survey data certified 6/16/2020. Original boring ID in parentheses.
Easting and Northing in NAD 83. Elevation in NAVD 88.

SOUTHERN COMPANY

LOG OF TEST BORING AND WELL INSTALLATION

WGWA-7 (PZ-05)
PAGE 1 OF 1
ECS38198

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Ash Pond Piezometers
LOCATION Plant Wansley

DATE STARTED 12/22/2014 **COMPLETED** 12/22/2014 **SURF. ELEV.** 894.49 **COORDINATES:** N:1243338.63 E:2023843.81
CONTRACTOR CASCADE **EQUIPMENT** SONIC **METHOD** Rotosonic
DRILLED BY T.Ardito **LOGGED BY** S. Baxter **CHECKED BY** L. Millet **ANGLE** **BEARING**
BORING DEPTH 38.1 ft. **GROUND WATER DEPTH: DURING** **COMP.** 9.7 ft. **DELAYED** 10.1 ft. after 24 hrs.
NOTES

DEPTH (ft)	GRAPHIC LOG	STRATA DESCRIPTION	ELEV.	WELL DATA	ELEV. (DEPTH)
				Protective aluminum cover with bollards 4-foot square concrete pad Top of casing Elev. = 897.33	
0		**Silt (ML)** - red, wet, sandy, mottled brown and orange, trace clay, mica, weathered rock		Surface Seal: concrete	892.49 (2.0)
5					
10				Annular Fill: Cement-Bentonite Grout - 6 bags, 46 lbs, Portland Type I/II, 33 gal	
15		- gray, moist, sandy, mottled orange and brown, trace mica and weathered rock			
20			872.49		
25		**Schist** - gray, fine grain, hard, not to slightly weathered, massive to thickly banded			870.79 (23.7)
				Annular Seal: bentonite chips - 1 bag, 50 lbs, Baroid 3/8" chips	868.79 (25.7)
				Filter: silica filter sand - 4 bags, 50 lbs, #1A filter media	867.69 (26.8)
30				**Well: 2" OD PVC (SCH 40)**	
				Well: 2" OD PVC (SCH 40) **Screen: 10 ft. pre-pack**	
35					857.69
			856.49	Sump:0.40 ft.	(36.8)

Bottom of borehole at 38.1 feet.

Log updated with revised survey data certified 6/16/2020. Original boring ID in parentheses.
Easting and Northing in NAD 83. Elevation in NAVD 88.

WGWA-18 (PZ-07)
PAGE 1 OF 1
ECS38198

SOUTHERN COMPANY

LOG OF TEST BORING AND WELL INSTALLATION

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Ash Pond Piezometers
LOCATION Plant Wansley

DATE STARTED 12/16/2014 **COMPLETED** 12/16/2014 **SURF. ELEV.** 875.47 **COORDINATES:** N: 1244592.56 E:2025580.71
CONTRACTOR CASCADE **EQUIPMENT** SONIC **METHOD** Rotosonic
DRILLED BY T.Ardito **LOGGED BY** S. Baxter **CHECKED BY** L. Millet **ANGLE** **BEARING**
BORING DEPTH 37.1 ft. **GROUND WATER DEPTH: DURING** **COMP.** 16.5 ft. **DELAYED** 21.7 ft. after 24 hrs.
NOTES

DEPTH (ft) | GRAPHIC LOG

STRATA DESCRIPTION

Silt (ML)
- brown, moist, sandy, mottled orange and red, trace mica and angular fine gravel

- brown, moist, mottled brown and red, trace fine gravel

ELEV. 848.47

Schist
- gray, fine grain, medium hard, moderately to highly weathered, massive to thickly foliated

ELEV. 838.47

Bottom of borehole at 37.1 feet.

WELL DATA

Protective aluminum cover with bollards
4-foot square concrete pad
Top of casing Elev. = 878.02

ELEV. (DEPTH)

Surface Seal: concrete
873.47
(2.0)

Annular Fill: Cement-Bentonite Grout - 4 bags, 46 lbs, Portland Type I/II, 22 gal

852.97
(22.5)

Annular Seal: bentonite chips - 1 bag, 50 lbs, Baroid 3/8" chips
850.97
(24.5)

Filter: silica filter sand - 4 bags, 50 lbs, #1A filter media
848.47
(27.0)

Well: 2" OD PVC (SCH 40)

Well: 2" OD PVC (SCH 40)
Screen: 10 ft. pre-pack

838.47

Sump:0.40 ft.

2012 GEOTECH LOG WITH WELL - ESEE2012DATABASE.GDT - 2/26/15 15:57 - S:\WORKGROUPS\APC GENERAL SERVICE COMPLEX\CIVIL TECH SUPPORT\DRILLING\PROJECTS\WANSLEY ASH POND PIEZ\GINT\PLANT_WANSLEY_ASH_POND_1 (2).GPJ

Log updated with revised survey data certified 6/16/2020.
Easting and Northing in NAD 83. Elevation in NAVD 88.

RECORD OF BOREHOLE WGWC8/APC-1

PROJECT: SCS Wansley
PROJECT NUMBER: 154117
DRILLED DEPTH: 57.00 ft
LOCATION: Carrollton, GA

DRILL RIG: PS-150 Track Mounted Rig
DATE STARTED: 10/29/15
DATE COMPLETED: 10/29/15

NORTHING: 1242929.40
EASTING: 2029644.58
GS ELEVATION: 777.70
TOC ELEVATION: 780.08

DEPTH W.L.: 36' (bgs)
ELEVATION W.L.: (amsl)
DATE W.L.: 11/02/2015
TIME W.L.: 12:00

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: SAMPLE NO.	TYPE	REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
0		0.00 - 2.00 SAPROLITE; overburden, dry to moist, brown to reddish orange	ML		775.70					
	775	2.00 - 4.00 CLAYEY SILT; dry to moist, brown overburden (saprolite)			2.00 773.70					
5		4.00 - 8.00 red orange overburden (saprolite)	ML		4.00 769.70					
	770	8.00 - 24.00 dry to moist, brown to reddish orange			8.00					
10										
	765									
15										
	760									
20									Portland Type 1	
	755				753.70					
25		24.00 - 28.00 GRAVELLY CLAY; wet, yellow-orange, trace black and white stringers, manganese oxide and weathered feldspar, lean clay	GC		24.00 749.70					
	750	28.00 - 29.00 CLAYEY SAND/TRANSITIONALLY WEATHERED ROCK; wet, brown, clayey silt, some fine to coarse sand, some fine gravel size rock fragments	TWR		28.00 748.70					
30		29.00 - 57.00 Mylonitic QUARTZITE ROCK; white to light brown, rock is less coherent and likely fractured around 54-56' interval	BR		29.00					
	745									
35										
	740									
40										
	735								3/8" Bentonite Pellets	
45		Log continued on next page								

WELL CASING
Interval: -2.5'-47'
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 47'-57'
Material: Schedule 40 PVC
Diameter: 2"
Slot Size: 0.010"
End Cap: Schedule 40 PVC

FILTER PACK
Interval: 45'-57'
Type: #1 Sand/Prepacked FIlter

FILTER PACK SEAL
Interval: 41.5'-45'
Type: 3/8" Bentonite Pellets

ANNULUS SEAL
Interval: 0'-41.5'
Type: Portland Type 1

WELL COMPLETION
Pad: 4'x4'x4"
Protective Casing: Anodized Aluminum

DRILLING METHODS
Soil Drill: Hydrovac/4-inch Sonic
Rock Drill: 4-inch Sonic

LOG SCALE: 1 in = 5.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Tom Ardito

GA INSPECTOR: Kristen Jurinko
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 9/29/17

Golder Associates

RECORD OF BOREHOLE WGWC8/APC-1

PROJECT: SCS Wansley
PROJECT NUMBER: 154117
DRILLED DEPTH: 57.00 ft
LOCATION: Carrollton, GA

DRILL RIG: PS-150 Track Mounted Rig
DATE STARTED: 10/29/15
DATE COMPLETED: 10/29/15

NORTHING: 1242929.40
EASTING: 2029644.58
GS ELEVATION: 777.70
TOC ELEVATION: 780.08

DEPTH W.L.: 36' (bgs)
ELEVATION W.L.: (amsl)
DATE W.L.: 11/02/2015
TIME W.L.: 12:00

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: SAMPLE NO.	TYPE	REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
45		29.00 - 57.00 Mylonitic QUARTZITE ROCK; white to light brown, rock is less coherent and likely fractured around 54-56' interval *(Continued)*							#1 Sand	**WELL CASING** Interval: -2.5'-47' Material: Schedule 40 PVC Diameter: 2" Joint Type: Threaded
	730									**WELL SCREEN** Interval: 47'-57' Material: Schedule 40 PVC Diameter: 2" Slot Size: 0.010" End Cap: Schedule 40 PVC
50			BR							
	725								0.010" Slot Screen	**FILTER PACK** Interval: 45'-57' Type: #1 Sand/Prepacked Filter
55					720.70					**FILTER PACK SEAL** Interval: 41.5'-45' Type: 3/8" Bentonite Pellets
	720	Boring completed at 57.00 ft								**ANNULUS SEAL** Interval: 0'-41.5' Type: Portland Type 1
60										**WELL COMPLETION** Pad: 4'x4'x4" Protective Casing: Anodized Aluminum
	715									**DRILLING METHODS** Soil Drill: Hydrovac/4-inch Sonic Rock Drill: 4-inch Sonic
65										
	710									
70										
	705									
75										
	700									
80										
	695									
85										
	690									
90										

LOG SCALE: 1 in = 5.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Tom Ardito

GA INSPECTOR: Kristen Jurinko
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 9/29/17

Golder Associates

Log updated with revised survey data certified 6/16/2020. Original boring ID in parentheses.
Easting and Northing in NAD 83. Elevation in NAVD 88.

SOUTHERN COMPANY

LOG OF TEST BORING AND WELL INSTALLATION

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Ash Pond Piezometers
LOCATION Plant Wansley

DATE STARTED 12/4/2014 **COMPLETED** 12/4/2014 **SURF. ELEV.** 809.33 **COORDINATES:** N:1242801.12 E:209115.75
CONTRACTOR CASCADE **EQUIPMENT** SONIC **METHOD** Rotosonic
DRILLED BY T.Ardito **LOGGED BY** S. Baxter **CHECKED BY** L. Millet **ANGLE** **BEARING**
BORING DEPTH 58 ft. **GROUND WATER DEPTH: DURING** **COMP.** 17 ft. **DELAYED** 12.78 ft. after 24 hrs.
NOTES

DEPTH (ft)	GRAPHIC LOG	STRATA DESCRIPTION	ELEV.	WELL DATA	ELEV. (DEPTH)
				Protective aluminum cover with bollards 4-foot square concrete pad Top of casing Elev. = 812.03	
		Utility Clearance (HYDROEXCAVATION)		← Surface Seal: concrete	807.33 (2.0)
10			799.33		
15		**Well-graded Sandy Gravel (GM)** - tan, dry, fine to coarse grain, mottled brown and orange			
20			789.33		
		Silt (ML) - orange, wet, clayey, mottled yellow, with coarse gravel		← Annular Fill: Cement-Bentonite Grout - 6 bags, 46 lbs, Portland Type I/II, 33 gal	
25			786.33		
		Silty Gravel (GM) - white, dry, fine to coarse grain, light brown mottling, some oxidation			
35		- mottled orange	771.33		
40		**Partially Weathered Rock** - gray, fine to medium grain, medium hard to hard, moderately to			

(Continued Next Page)

SOUTHERN COMPANY

LOG OF TEST BORING AND WELL INSTALLATION

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Ash Pond Piezometers
LOCATION Plant Wansley

DEPTH (ft)	GRAPHIC LOG	STRATA DESCRIPTION	ELEV.	WELL DATA	ELEV. (DEPTH)
				Protective aluminum cover with bollards 4-foot square concrete pad Top of casing Elev. = 812.03	
45		highly weathered, with oxidation **Partially Weathered Rock***(Con't)*		(CONTINUED)	767.83 (41.5)
				Annular Seal: bentonite chips - 1 bag, 50 lbs, Baroid 3/8" chips	765.23 (44.1)
				Filter: silica filter sand - 4.5 bags, 50 lbs, #1A filter media	760.93 (48.4)
50				**Well: 2" OD PVC (SCH 40)**	
				Well: 2" OD PVC (SCH 40) **Screen: 10 ft. pre-pack**	
55			751.33		750.93
		Bottom of borehole at 58.0 feet.		Sump:0.40 ft.	

Log updated with revised survey data certified 6/16/2020.
Easting and Northing in NAD 83. Elevation in NAVD 88.

RECORD OF BOREHOLE WGWC10/APC-3D

PROJECT: SCS Wansley
PROJECT NUMBER: 154117
DRILLED DEPTH: 146.00 ft
LOCATION: Carrollton, GA

DRILL RIG: PS-150 Track Mounted Rig
DATE STARTED: 10/27/15
DATE COMPLETED: 10/27/15

NORTHING: 1240971.96
EASTING: 2026725.61
GS ELEVATION: 809.61
TOC ELEVATION: 812.38

DEPTH W.L.: 7.73' (bgs)
ELEVATION W.L.: (amsl)
DATE W.L.: 10/27/15
TIME W.L.: 14:41

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: SAMPLE NO.	SAMPLES: TYPE	SAMPLES: REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
0		0.00 - 11.00 SILT; dry to moist, yellow to orange-red, some clay, some very fine sand, trace muscovite	ML							**WELL CASING** Interval: -2.5'-136' Material: Schedule 40 PVC Diameter: 2" Joint Type: Threaded **WELL SCREEN** Interval: 136'-146' Material: Schedule 40 PVC Diameter: 2' Slot Size: 0.010" End Cap: Schedule 40 PVC **FILTER PACK** Interval: 134'-136 Type: #1 Sand Prepacked Filter **FILTER PACK SEAL** Interval: 131.5'-134' Type: 3/8" Bentonite Pellets **ANNULUS SEAL** Interval: 0'-131.5' Type: Portland Type 1 **WELL COMPLETION** Pad: 4'x4'x4" Protective Casing: Anodized Aluminum **DRILLING METHODS** Soil Drill: 4-inch Sonic Rock Drill: 4-inch Sonic
5	805	6.00: Shelby Tube Collected: 6'-8'								
10	800				798.61					
		11.00 - 23.00 CLAYEY SILT; dry to moist, orange to red, 5-10% muscovite, trace black MnO, trace garnet, trace quartz, saprolite	ML		11.00 786.61					
15	795									
20	790									
		23.00 - 37.00 SILT; moist, yellow brown, some clay, come very fine sand, layers of white CLAYEY SILT, 3" thick lense of weathered pegmatite material at 25', 39', and 42'	ML		23.00					
25	785									
30	780									
35	775	36.00: Shelby Tube Collected: 36'-38'			772.61					
		37.00 - 40.00 CLAYEY SILT; some weathered pegmatite material, white/pink weathered potassium feldspar and plagioclase	ML		37.00 769.61					
40	770									
		40.00 - 47.00 SILT; moist, yellow brown, some clay, come very fine sand, layers of white CLAYEY SILT, 3" thick lense of weathered pegmatitic material at 42'	ML		40.00					
45	765	Log continued on next page								

LOG SCALE: 1 in = 5.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Tom Ardito

GA INSPECTOR: Shannon George, P.G.
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 9/29/17

Golder Associates

RECORD OF BOREHOLE WGWC10/APC-3D

PROJECT: SCS Wansley
PROJECT NUMBER: 154117
DRILLED DEPTH: 146.00 ft
LOCATION: Carrollton, GA

DRILL RIG: PS-150 Track Mounted Rig
DATE STARTED: 10/27/15
DATE COMPLETED: 10/27/15

NORTHING: 1240971.96
EASTING: 2026725.61
GS ELEVATION: 809.61
TOC ELEVATION: 812.38

DEPTH W.L.: 7.73' (bgs)
ELEVATION W.L.: (amsl)
DATE W.L.: 10/27/15
TIME W.L.: 14:41

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: SAMPLE NO.	SAMPLES: TYPE	SAMPLES: REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
45			ML		762.61					**WELL CASING** Interval: -2.5'-136' Material: Schedule 40 PVC Diameter: 2" Joint Type: Threaded
		47.00 - 58.00 SAPROLITE; moist, grayish brown with some orange mineral oxidation, weathered muscovite schist, predominately weathered feldspars, 10-15%muscovite, <10% quartz			47.00					
50	760		ML							**WELL SCREEN** Interval: 136'-146' Material: Schedule 40 PVC Diameter: 2' Slot Size: 0.010" End Cap: Schedule 40 PVC
55	755									**FILTER PACK** Interval: 134'-136 Type: #1 Sand Prepacked Filter **FILTER PACK SEAL** Interval: 131.5'-134' Type: 3/8" Bentonite Pellets
					751.61					**ANNULUS SEAL** Interval: 0'-131.5' Type: Portland Type 1
		58.00 - 58.10 1" black layer with gravel size quarts grains, silt sized black particles			58.10					
60	750	58.10 - 88.00 moist, grayish brown with some orange mineral oxidation, weathered muscovite schist, predominately weathered feldspars								**WELL COMPLETION** Pad: 4'x4'x4" Protective Casing: Anodized Aluminum
65	745								Portland _ Type 1	**DRILLING METHODS** Soil Drill: 4-inch Sonic Rock Drill: 4-inch Sonic
70	740									
75	735									
80	730									
85	725									
					721.61					
		88.00 - 92.00 SANDY SILT; moist to wet, orange brown, sandy silt, very fine to fine sand, trace fine gravel, micaceous	ML		88.00					
90	720	Log continued on next page								

LOG SCALE: 1 in = 5.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Tom Ardito

GA INSPECTOR: Shannon George, P.G.
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 9/29/17

Golder Associates

RECORD OF BOREHOLE WGWC10/APC-3D

PROJECT: SCS Wansley
PROJECT NUMBER: 154117
DRILLED DEPTH: 146.00 ft
LOCATION: Carrollton, GA

DRILL RIG: PS-150 Track Mounted Rig
DATE STARTED: 10/27/15
DATE COMPLETED: 10/27/15

NORTHING: 1240971.96
EASTING: 2026725.61
GS ELEVATION: 809.61
TOC ELEVATION: 812.38

DEPTH W.L.: 7.73' (bgs)
ELEVATION W.L.: (amsl)
DATE W.L.: 10/27/15
TIME W.L.: 14:41

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES SAMPLE NO.	SAMPLES TYPE	SAMPLES REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
90		88.00 - 92.00 SANDY SILT; moist to wet, orange brown, sandy silt, very fine to fine sand, trace fine gravel, micaceous *(Continued)*	ML		717.61					
		92.00 - 96.00 SAPROLITE; moist, grayish brown with some orange mineral oxidation, weathered muscovite schist, predominantly feldspar, trace quartz, trace biotite, trace garnet	ML		92.00 713.61					
95	715	96.00 - 97.00 SANDY SILT; moist to wet, orange brown, sandy silt, very fine to fine sand, trace fine gravel, micaceous	ML		96.00 712.61					
		97.00 - 106.00 SAPROLITE; moist, grayish brown with some orange mineral oxidation, weathered muscovite schist, predominantly feldspar, trace quartz, trace biotite, trace garnet	ML		97.00 703.61					
100	710									
105	705									
		106.00 - 116.00 NO RECOVERY			106.00 693.61					
110	700									
115	695									
		116.00 - 119.00 SAPROLITE ROCK; garnetiferous, muscovite meta quartzite rock fragments up to 2.5" interbedded with weathered muscovite schist	TWR		116.00 690.61					
120	690	119.00 - 139.00 moist to wet, silty clay and silt, weathered garnet, muscovite, plagioclase, schist, trace quartz			119.00					
125	685									
130	680								3/8" Bentonite Pellets	
135	675									

Log continued on next page

WELL CASING
Interval: -2.5'-136'
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 136'-146'
Material: Schedule 40 PVC
Diameter: 2'
Slot Size: 0.010"
End Cap: Schedule 40 PVC

FILTER PACK
Interval: 134'-136
Type: #1 Sand Prepacked Filter

FILTER PACK SEAL
Interval: 131.5'-134'
Type: 3/8" Bentonite Pellets

ANNULUS SEAL
Interval: 0'-131.5'
Type: Portland Type 1

WELL COMPLETION
Pad: 4'x4'x4"
Protective Casing: Anodized Aluminum

DRILLING METHODS
Soil Drill: 4-inch Sonic
Rock Drill: 4-inch Sonic

LOG SCALE: 1 in = 5.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Tom Ardito

GA INSPECTOR: Shannon George, P.G.
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 9/29/17

Golder Associates

RECORD OF BOREHOLE WGWC10/APC-3D

SHEET 4 of 4

PROJECT: SCS Wansley
PROJECT NUMBER: 154117
DRILLED DEPTH: 146.00 ft
LOCATION: Carrollton, GA

DRILL RIG: PS-150 Track Mounted Rig
DATE STARTED: 10/27/15
DATE COMPLETED: 10/27/15

NORTHING: 1240971.96
EASTING: 2026725.61
GS ELEVATION: 809.61
TOC ELEVATION: 812.38

DEPTH W.L.: 7.73' (bgs)
ELEVATION W.L.: (amsl)
DATE W.L.: 10/27/15
TIME W.L.: 14:41

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: SAMPLE NO.	TYPE	REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
135		119.00 - 139.00 moist to wet, silty clay and silt, weathered garnet, muscovite, plagioclase, schist, trace quartz *(Continued)*			670.61				#1 Sand	**WELL CASING** Interval: -2.5'-136' Material: Schedule 40 PVC Diameter: 2" Joint Type: Threaded
140	670	139.00 - 142.00 SILTY SAND; wet, very fine to fine sand, mottled texture	SM		139.00 667.61				0.010" Slot Screen	**WELL SCREEN** Interval: 136'-146' Material: Schedule 40 PVC Diameter: 2' Slot Size: 0.010" End Cap: Schedule 40 PVC
145	665	142.00 - 145.00 SAPROLITE-ROCK/TRANSITIONALLY WEATHERED ROCK; wet, transitionally weathered garnet quartz muscovite plagioclase schist	TWR		142.00 664.61					**FILTER PACK** Interval: 134'-136 Type: #1 Sand Prepacked Filter
		145.00 - 146.00 wet, wilty sand, some mineral oxidation, 15-20% quartz			145.00 663.61					**FILTER PACK SEAL** Interval: 131.5'-134' Type: 3/8" Bentonite Pellets
		Boring completed at 146.00 ft								**ANNULUS SEAL** Interval: 0'-131.5' Type: Portland Type 1
150	660									**WELL COMPLETION** Pad: 4'x4'x4" Protective Casing: Anodized Aluminum
										DRILLING METHODS Soil Drill: 4-inch Sonic Rock Drill: 4-inch Sonic
155	655									
160	650									
165	645									
170	640									
175	635									
180	630									

LOG SCALE: 1 in = 5.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Tom Ardito

GA INSPECTOR: Shannon George, P.G.
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 9/29/17

Golder Associates

BOREHOLE RECORD WANSLEY BORING LOGS.GPJ PIEDMONT.GDT 9/29/17

Log updated with revised survey data certified 6/16/2020. Original boring ID in parentheses.
Easting and Northing in NAD 83. Elevation in NAVD 88.

SOUTHERN COMPANY

LOG OF TEST BORING AND WELL INSTALLATION

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Ash Pond Piezometers
LOCATION Plant Wansley

DATE STARTED 12/8/2014 **COMPLETED** 12/9/2014 **SURF. ELEV.** 821.44 **COORDINATES:** N:1240860.18 E:2025773.39
CONTRACTOR CASCADE **EQUIPMENT** SONIC **METHOD** Rotosonic
DRILLED BY T.Ardito **LOGGED BY** S. Baxter **CHECKED BY** L. Millet **ANGLE** **BEARING**
BORING DEPTH 47 ft. **GROUND WATER DEPTH: DURING** **COMP.** 27 ft. **DELAYED** 31.6 ft. after 24 hrs.
NOTES

DEPTH (ft) | GRAPHIC LOG

STRATA DESCRIPTION

Silt (ML)
- red, moist, sandy, mottled yellow, trace mica

- mottled yellow, trace gravel

- mottled brown

- gray, moist, mottled orange, black, and white, micaceous

WELL DATA

ELEV.

Protective aluminum cover with bollards
4-foot square concrete pad
Top of casing Elev. = 823.96

ELEV. (DEPTH)

Surface Seal: concrete
819.44
(2.0)

Annular Fill: Cement-Bentonite Grout - 6 bags, 46 lbs, Portland Type I/II, 33 gal

788.84
(32.6)

Annular Seal: bentonite chips - 1 bag, 50 lbs, Baroid 3/8" chips

786.84
(34.6)

Filter: silica filter sand - 3.5 bags, 50 lbs, #1A filter media

783.14
(38.3)

(Continued Next Page)

SOUTHERN COMPANY

LOG OF TEST BORING AND WELL INSTALLATION

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Ash Pond Piezometers
LOCATION Plant Wansley

DEPTH (ft)	GRAPHIC LOG	STRATA DESCRIPTION	ELEV.	WELL DATA	ELEV. (DEPTH)
				Protective aluminum cover with bollards 4-foot square concrete pad Top of casing Elev. = 823.96	
45		**Silt (ML)***(Con't)* (CONTINUED)		**Well: 2" OD PVC (SCH 40)** **Well: 2" OD PVC (SCH 40)** **Screen: 10 ft. pre-pack**	
			774.44		
		Bottom of borehole at 47.0 feet.		Sump:0.40 ft.	773.14

Log updated with revised survey data certified 6/16/2020.
Easting and Northing in NAD 83. Elevation in NAVD 88.

RECORD OF BOREHOLE WGWC12/APC-4D

SHEET 1 of 2

PROJECT: SCS Wansley
PROJECT NUMBER: 154117
DRILLED DEPTH: 77.00 ft
LOCATION: Carrollton, GA

DRILL RIG: PS-150 Track Mounted Rig
DATE STARTED: 10/22/15
DATE COMPLETED: 10/22/15

NORTHING: 1240827.68
EASTING: 2025755.99
GS ELEVATION: 820.57
TOC ELEVATION: 823.04

DEPTH W.L.: 20.1' (bgs)
ELEVATION W.L.: (amsl)
DATE W.L.: 10/22/15
TIME W.L.: 08:05

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	ELEV. / DEPTH (ft)
0	820	0.00 - 4.00 CLAYEY SILT; dry to moist, orange-red, <5% muscovite, <5% medium quartz grains, homogenous texture, no fabric	ML	816.57
5	815	4.00 - 6.00 moist, yellow, orange, garnet, muscovite, plagioclase		4.00 814.57
		6.00 - 7.00 dry to moist, orange-red, <5% muscovite, <5% medium quartz grains, homogenous texture, no fabric		6.00 813.57
10	810	7.00 - 17.00 SAPROLITE/TRANSITIONALLY WEATHERED ROCK; moist (7-49') to wet (49-56'), yellow orange to brown and orange, weathered garnet muscovite feldspar (plagioclase + K-spar) schist, metamorphic fabric more apparent at depth due to the material being less weathered Shelby Tube Collected: 16'-17'	TWR	7.00
15	805			803.57
		17.00 - 27.00 transitionally weathered rock, weathered garnet rich, with muscovite, feldspar, schist fabric		17.00
20	800			
25	795			793.57
		27.00 - 37.00 less weathered, relict fabric evident		27.00
30	790			
35	785			783.57
		37.00 - 56.00 transitionally weathered rock, moist to wet at 49 feet		37.00
40	780			
45		Log continued on next page		

SAMPLES: SAMPLE NO. | TYPE | REC

MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES: Portland Type 1

WELL CONSTRUCTION DETAILS

WELL CASING
Interval: -2.5'-64'
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 64'-74'
Material: Schedule 40 PVC
Diameter: 2'
Slot Size: 0.010"
End Cap: Schedule 40 PVC

FILTER PACK
Interval: 61.5'-77'
Type: #1 Sand/ Prepack Filter

FILTER PACK SEAL
Interval: 59'-61.5'
Type: 3/8" Bentonite Pellets

ANNULUS SEAL
Interval: 0'-59'
Type: Portland Type 1

WELL COMPLETION
Pad: 4'x4'x4"
Protective Casing: Anodized Aluminum

DRILLING METHODS
Soil Drill: 4-inch Sonic
Rock Drill: 4-inch Sonic

LOG SCALE: 1 in = 5.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Tom Ardito

GA INSPECTOR: Shannon George, P.G.
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 9/29/17

Golder Associates

BOREHOLE RECORD WANSLEY BORING LOGS.GPJ PIEDMONT.GDT 9/29/17

RECORD OF BOREHOLE WGWC12/APC-4D

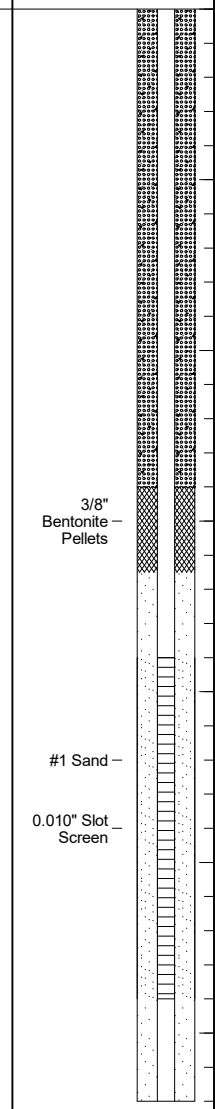
PROJECT: SCS Wansley
PROJECT NUMBER: 154117
DRILLED DEPTH: 77.00 ft
LOCATION: Carrollton, GA

DRILL RIG: PS-150 Track Mounted Rig
DATE STARTED: 10/22/15
DATE COMPLETED: 10/22/15

NORTHING: 1240827.68
EASTING: 2025755.99
GS ELEVATION: 820.57
TOC ELEVATION: 823.04

DEPTH W.L.: 20.1' (bgs)
ELEVATION W.L.: (amsl)
DATE W.L.: 10/22/15
TIME W.L.: 08:05

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	REC
45	775	37.00 - 56.00 transitionally weathered rock, moist to wet at 49 feet *(Continued)*						
50	770							
55	765				764.57			
		56.00 - 57.00 SAPROLITE-ROCK; moist to wet, green and dark grey, very fine grained metamorphic rock interlayered with light greenish-grey clay. transition zone			56.00 763.57			
		57.00 - 77.00 ROCK; unweathered competent grey to dark grey quartzite, predominantly quartz, 5-10% muscovite, <5% garnet, <5% pyrite. rock is difficult to break with several hammer strikes, but is broken into discs along mica foliations from drilling action. rock broken into smaller fragments from 71-72' interval.			57.00			
60	760							
65	755		BR					
70	750							
75	745				743.57			
		Boring completed at 77.00 ft						
80	740							
85	735							
90								



WELL CASING
Interval: -2.5'-64'
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 64'-74'
Material: Schedule 40 PVC
Diameter: 2'
Slot Size: 0.010"
End Cap: Schedule 40 PVC

FILTER PACK
Interval: 61.5'-77'
Type: #1 Sand/ Prepack Filter

FILTER PACK SEAL
Interval: 59'-61.5'
Type: 3/8" Bentonite Pellets

ANNULUS SEAL
Interval: 0'-59'
Type: Portland Type 1

WELL COMPLETION
Pad: 4'x4'x4"
Protective Casing: Anodized Aluminum

DRILLING METHODS
Soil Drill: 4-inch Sonic
Rock Drill: 4-inch Sonic

LOG SCALE: 1 in = 5.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Tom Ardito

GA INSPECTOR: Shannon George, P.G.
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 9/29/17

Golder Associates

Log updated with revised survey data certified 6/16/2020.
Easting and Northing in NAD 83. Elevation in NAVD 88.

RECORD OF BOREHOLE WGWC13/APC-5D

SHEET 1 of 3

PROJECT: SCS Wansley
PROJECT NUMBER: 154117
DRILLED DEPTH: 96.00 ft
LOCATION: Carrollton, GA

DRILL RIG: PS-150 Track Mounted Rig
DATE STARTED: 11/2/15
DATE COMPLETED: 11/4/15

NORTHING: 1240610.93
EASTING: 2024585.91
GS ELEVATION: 807.32
TOC ELEVATION: 809.78

DEPTH W.L.: 20.25' (bgs)
ELEVATION W.L.: (amsl)
DATE W.L.: 11/4/15
TIME W.L.: 10:08

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: SAMPLE NO.	TYPE	REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
0	805	0.00 - 2.00 SILT; moist, orange overburden	ML		805.32					**WELL CASING** Interval: -2.5'-73' Material: Schedule 40 PVC Diameter: 2" Joint Type: Threaded
		2.00 - 7.00 CLAYEY SILT; moist, brown, micaceous, trace garnets up to 1cm, materials are loose/soft	ML		2.00 800.32					**WELL SCREEN** Interval: 73'-93' 3" Material: Schedule 40 PVC Diameter: 2' Slot Size: 0.010" End Cap: Schedule 40 PVC
5	800	7.00 - 22.00 SILTY SAND; moist to wet (18 - 26 feet), orange, brown and white (saprolite)	SM		7.00					**FILTER PACK** Interval: 69.5'-96' Type: #1 Sand/ Prepack Filter
10	795									**FILTER PACK SEAL** Interval: 66.5'-69.5' Type: 3/8" Bentonite Pellets
15	790	16.00: Shelby Tube Collected: 16'-17'								**ANNULUS SEAL** Interval: 0'-66.5' Type: Portland Type 1
20	785				785.32					**WELL COMPLETION** Pad: 4'x4'x4" Protective Casing: Anodized Aluminum
		22.00 - 26.00 SAPROLITE; weathered pegmatite	ML		22.00 781.32					**DRILLING METHODS** Soil Drill: 4-inch Sonic Rock Drill: 4-inch Sonic
25	780	26.00 - 28.00 trace quartz, wet			26.00 779.32					
		28.00 - 35.00 SILTY CLAY; moist, very light brown. metamorphic foliation present. trace gravel size quartzite rock fragments (saprolite)	CL		28.00 772.32					
30	775	35.00 - 36.00 SAPROLITE-ROCK; weathered micaceous meta-quartzite	TWR		35.00 771.32				Portland Type 1	
35	770	36.00 - 46.00 ROCK; light brown quartzite with light orange oxidation, micaceous meta quartzite	BR		36.00					
40	765									
45		Log continued on next page								

LOG SCALE: 1 in = 5.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Tom Ardito

GA INSPECTOR: Shannon George, P.G.
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 9/29/17

Golder Associates

BOREHOLE RECORD WANSLEY BORING LOGS.GPJ PIEDMONT.GDT 9/29/17

RECORD OF BOREHOLE WGWC13/APC-5D

PROJECT: SCS Wansley
PROJECT NUMBER: 154117
DRILLED DEPTH: 96.00 ft
LOCATION: Carrollton, GA

DRILL RIG: PS-150 Track Mounted Rig
DATE STARTED: 11/2/15
DATE COMPLETED: 11/4/15

NORTHING: 1240610.93
EASTING: 2024585.91
GS ELEVATION: 807.32
TOC ELEVATION: 809.78

DEPTH W.L.: 20.25' (bgs)
ELEVATION W.L.: (amsl)
DATE W.L.: 11/4/15
TIME W.L.: 10:08

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: SAMPLE NO.	SAMPLES: TYPE	SAMPLES: REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
45			BR		761.32 / 46.00					
		46.00 - 56.00 more competent rock								
	760									
50										
	755									
55					751.32 / 56.00					
		56.00 - 87.00 light brown quartzite with light orange oxidation, micaceous meta quartzite								
	750									
60										
	745									
65										
	740								3/8" Bentonite Pellets	
70										
	735		BR							
75										
	730									
80										
	725								0.010" Slot Screen	
85									#1 Sand	
					720.32 / 87.00					
	720	87.00 - 96.00 grey and pink quartzite								
90		Log continued on next page								

WELL CASING
Interval: -2.5'-73'
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 73'-93' 3"
Material: Schedule 40 PVC
Diameter: 2'
Slot Size: 0.010"
End Cap: Schedule 40 PVC

FILTER PACK
Interval: 69.5'-96'
Type: #1 Sand/ Prepack Filter

FILTER PACK SEAL
Interval: 66.5'-69.5'
Type: 3/8" Bentonite Pellets

ANNULUS SEAL
Interval: 0'-66.5'
Type: Portland Type 1

WELL COMPLETION
Pad: 4'x4'x4"
Protective Casing: Anodized Aluminum

DRILLING METHODS
Soil Drill: 4-inch Sonic
Rock Drill: 4-inch Sonic

LOG SCALE: 1 in = 5.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Tom Ardito

GA INSPECTOR: Shannon George, P.G.
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 9/29/17

Golder Associates

RECORD OF BOREHOLE WGWC13/APC-5D

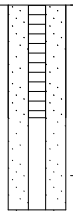
PROJECT: SCS Wansley
PROJECT NUMBER: 154117
DRILLED DEPTH: 96.00 ft
LOCATION: Carrollton, GA

DRILL RIG: PS-150 Track Mounted Rig
DATE STARTED: 11/2/15
DATE COMPLETED: 11/4/15

NORTHING: 1240610.93
EASTING: 2024585.91
GS ELEVATION: 807.32
TOC ELEVATION: 809.78

DEPTH W.L.: 20.25' (bgs)
ELEVATION W.L.: (amsl)
DATE W.L.: 11/4/15
TIME W.L.: 10:08

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: SAMPLE NO.	TYPE	REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
90	715	87.00 - 96.00 grey and pink quartzite *(Continued)*								
95					711.32					
		Boring completed at 96.00 ft								
100	710									
105	705									
110	700									
115	695									
120	690									
125	685									
130	680									
135	675									



WELL CASING
Interval: -2.5'-73'
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 73'-93' 3"
Material: Schedule 40 PVC
Diameter: 2'
Slot Size: 0.010"
End Cap: Schedule 40 PVC

FILTER PACK
Interval: 69.5'-96'
Type: #1 Sand/ Prepack Filter

FILTER PACK SEAL
Interval: 66.5'-69.5'
Type: 3/8" Bentonite Pellets

ANNULUS SEAL
Interval: 0'-66.5'
Type: Portland Type 1

WELL COMPLETION
Pad: 4'x4'x4"
Protective Casing: Anodized Aluminum

DRILLING METHODS
Soil Drill: 4-inch Sonic
Rock Drill: 4-inch Sonic

LOG SCALE: 1 in = 5.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Tom Ardito

GA INSPECTOR: Shannon George, P.G.
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 9/29/17

Golder Associates

Log updated with revised survey data certified 6/16/2020.
Easting and Northing in NAD 83. Elevation in NAVD 88.

WELL NUMBER WGWC-14A

ERM
3200 Windy Hill Rd Ste 1500W
Atlanta, GA 30339
Telephone: 678-486-2700

COORDINATES: N:1240604.54 E:2024599.63

CLIENT Southern Company Services, Inc.
PROJECT NAME Plant Wansley
PROJECT NUMBER 0372406
PROJECT LOCATION AP-1
DATE STARTED 1/31/17 **COMPLETED** 1/31/17
GROUND ELEVATION 808.20 **HOLE SIZE** 4.25 inches
DRILLING CONTRACTOR Southern Comparny Services, Inc
GROUND WATER LEVELS:
DRILLING METHOD Hollow Stem Auger 2"
AT TIME OF DRILLING ---
LOGGED BY MR **CHECKED BY** GEJ
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0					
			ML		(ML) Orange SILT, non-plastic, dry
					2.0
	SS	100	SM		806.20 (SM) Brownish orange Silty SAND, loose, micaceous, dry
5					
	SS	100	SM		(SM) SAA, with white feldspar veins
10					
	SS	100	SM		(SM) SAA, medium dense, denser with depth, well graded, fine - coarse grained
15					
	SS	90	SM		(SM) SAA, reddish orange, moist
					18.5
20			CL		789.70 (CL) Orange Silty CLAY, stiff, low plasticity, moist
	SS	70	CL		(CL) Reddish orange Silty CLAY, medium stiff, low plasticity, wet
25			CL		(CL) Orange Silty CLAY, stiff, low plasticity, saprolitic, wet
					24.0
					784.20
	SS	60	CL		(CL) SAA, very stiff
30					28.0
					780.20
	SS	60			PWR, foliated
35					33.0
					775.20
40					

WELL DIAGRAM

Casing Type: PVC

70/30 Portland Cement / bentonite mix

PEL plug 3/8"

20/40 industrial quartz (ANSI std 61) 4" UPACK

Refusal at 40.0 feet.
Bottom of borehole at 40.0 feet.

Log updated with revised survey data certified 6/16/2020.
Easting and Northing in NAD 83. Elevation in NAVD 88.

RECORD OF BOREHOLE WGWC15/APC-6D

SHEET 1 of 2

PROJECT: SCS Wansley
PROJECT NUMBER: 154117
DRILLED DEPTH: 53.50 ft
LOCATION: Carrollton, GA

DRILL RIG: PS-150 Track Mounted Rig
DATE STARTED: 11/11/15
DATE COMPLETED: 11/11/15

NORTHING: 1240483.16
EASTING: 2023912.92
GS ELEVATION: 802.03
TOC ELEVATION: 804.69

DEPTH W.L.: 5.85' (bgs)
ELEVATION W.L.: (amsl)
DATE W.L.: 11/13/15
TIME W.L.:

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
0	800	0.00 - 3.00 CLAYEY SILT; homogenous overburden, orange brown, dry to moist	ML		799.03					
		3.00 - 5.00 CLAYEY SILT; homogenous overburden some coarse gravel, some subrounded weathered cobbles of quartzite, trace white and black staining, orange brown, dry to moist			3.00 797.03					
5		5.00 - 7.00 CLAYEY SILT; homogenous overburden, orange brown, black foliations, moist, soft			5.00 795.03					
	795	7.00 - 9.00 SILTY SAND; grey/brown, silty sand to clayey sand, moist Shelby Tube Collected: 7'-9'	SM		7.00 793.03					
10		9.00 - 11.00 SILTY SAND; with some gravel, subangular, slightly weathered quartzite; greyish brown, moist			9.00 791.03					
	790	11.00 - 14.00 GRAVELY CLAYEY SILT; fine to coarse quartzite gravel, some medium coarse sand, trace black, brown and white micaceous foliations; greyish brown	MLG		11.00 788.03					
15		14.00 - 16.00 SILTY CLAY; micaceous, grey, trace brown and black foliations, dry. soft to firm	CL		14.00 786.03					
	785	16.00 - 22.00 CLAYEY GRAVEL; fine to coarse gravel and cobbles, some white quartzite, red, orange and black staining, brown silty clay, moist Shelby Tube Collected: 17.1'-17.5'	GC		16.00 780.03				Portland Type 1	**WELL CASING** Interval: -2.5'-43' Material: Schedule 40 PVC Diameter: 2" Joint Type: Threaded
20										**WELL SCREEN** Interval: 43.5'-53.5' Material: Schedule 40 PVC Diameter: 2' Slot Size: 0.010" End Cap: Schedule 40 PVC
	780	22.00 - 24.50 TRANSITIONALLY WEATHERED ROCK/SAPROLITE; cobble and pulverized quartzite	TWR		22.00 777.53					**FILTER PACK** Interval: 41'-53.5' Type: #1 Sand/Prepack filter
25		24.50 - 27.00 weathered quartzose schist, trace fine pyrite, drill pulverized rock into grey powder, some 3-4" cobbles			24.50 775.03					**FILTER PACK SEAL** Interval: 38.8'-41' Type: 3/8" Bentonite Pellets
	775	27.00 - 29.00 weathered, quartzose gravel, some grey clay			27.00 773.03					**ANNULUS SEAL** Interval: 0'-38.8' Type: Portland Type 1
		29.00 - 30.00 weathered, pulverized schist, wet			29.00 772.03					**WELL COMPLETION** Pad: 4'x4'x4" Protective Casing: Anodized Aluminum
30		30.00 - 33.00 weathered, quartzose gravel, some grey clay, wet			30.00 769.03					**DRILLING METHODS** Soil Drill: 4-inch Sonic Rock Drill: 4-inch Sonic
	770	33.00 - 37.00 BEDROCK; quartzose schist/gneiss, large garnets, green amphibole, mica, black hornblende/biotite, white feldspar	BR		33.00 765.03					
35										
	765	37.00 - 43.00 various sizes of mafic gneiss and quartzose schist, weathered			37.00 759.03				3/8" Bentonite Pellets	
40										
	760	43.00 - 53.50 mafic gneiss, fine to coarse grey gravel, small weathered cobbles, bedrock			43.00					
45		Log continued on next page								

LOG SCALE: 1 in = 5.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: David Wilcox

GA INSPECTOR: Kristen Jurinko
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 9/29/17

Golder Associates

BOREHOLE RECORD WANSLEY BORING LOGS.GPJ PIEDMONT.GDT 9/29/17

RECORD OF BOREHOLE WGWC15/APC-6D

SHEET 2 of 2

PROJECT: SCS Wansley
PROJECT NUMBER: 154117
DRILLED DEPTH: 53.50 ft
LOCATION: Carrollton, GA

DRILL RIG: PS-150 Track Mounted Rig
DATE STARTED: 11/11/15
DATE COMPLETED: 11/11/15

NORTHING: 1240483.16
EASTING: 2023912.92
GS ELEVATION: 802.03
TOC ELEVATION: 804.69

DEPTH W.L.: 5.85' (bgs)
ELEVATION W.L.: (amsl)
DATE W.L.: 11/13/15
TIME W.L.:

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: SAMPLE NO.	TYPE	REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
45		43.00 - 53.50 mafic gneiss, fine to coarse grey gravel, small weathered cobbles, bedrock *(Continued)*							#1 Sand 0.010" slot screen	**WELL CASING** Interval: -2.5'-43' Material: Schedule 40 PVC Diameter: 2" Joint Type: Threaded **WELL SCREEN** Interval: 43.5'-53.5' Material: Schedule 40 PVC Diameter: 2' Slot Size: 0.010" End Cap: Schedule 40 PVC **FILTER PACK** Interval: 41'-53.5' Type: #1 Sand/Prepack filter **FILTER PACK SEAL** Interval: 38.8'-41' Type: 3/8" Bentonite Pellets **ANNULUS SEAL** Interval: 0'-38.8' Type: Portland Type 1 **WELL COMPLETION** Pad: 4'x4'x4" Protective Casing: Anodized Aluminum **DRILLING METHODS** Soil Drill: 4-inch Sonic Rock Drill: 4-inch Sonic
50	755									
55	750				748.53					
60	745	Boring completed at 53.50 ft								
65	740									
70	735									
75	730									
80	725									
85	720									
90	715									

LOG SCALE: 1 in = 5.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: David Wilcox

GA INSPECTOR: Kristen Jurinko
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 9/29/17

Golder Associates

BOREHOLE RECORD WANSLEY BORING LOGS.GPJ PIEDMONT.GDT 9/29/17

Log updated with revised survey data certified 6/16/2020.
Easting and Northing in NAD 83. Elevation in NAVD 88.

RECORD OF BOREHOLE WGWC16/APC-6S

SHEET 1 of 1

PROJECT: SCS Wansley
PROJECT NUMBER: 154117
DRILLED DEPTH: 32.00 ft
LOCATION: Carrollton, GA

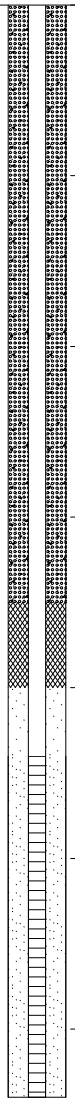
DRILL RIG: PS-150 Track Mounted Rig
DATE STARTED: 11/11/15
DATE COMPLETED: 11/11/15

NORTHING: 1240480.46
EASTING: 2023903.77
GS ELEVATION: 801.72
TOC ELEVATION: 804.21

DEPTH W.L.: 5.99' (bgs)
ELEVATION W.L.: (amsl)
DATE W.L.: 11/13/15
TIME W.L.:

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE DESCRIPTION	USCS	GRAPHIC LOG	ELEV. DEPTH (ft)	SAMPLES SAMPLE NO.	SAMPLES TYPE	SAMPLES REC
0	800	0.00 - 3.00 CLAYEY SILT (ML); Trace mica flakes, orange brown, homogenous, moist (wet from previous drilling), firm	ML		798.72			
		3.00 - 5.00 trace coarse gravel, trace mica flakes, light and trace foliations, firm gravel-subrounded quartzite			3.00 796.72			
5	795	5.00 - 7.00 SILTY CLAY (ML); trace coarse sand (black, subrounded, firm), orange brown, some light brown and black foliation, moist	ML		5.00 794.72			
		7.00 - 9.00 SILTY SAND (SM); poorly graded, fine to coarse, angular, white quartzite, some clay, orange brown, wet Shelby Tube Collected: 7'-9'	SM		7.00 792.72			
10	790	9.00 - 11.00 CLAYEY SILT (ML); saprolite, trace coarse sand, trace fine gravel, stained black and white quartzite, black, dark brown and light brown foliations, some mica flakes, dry to moist	ML		9.00 790.72			
		11.00 - 15.00 CLAYEY SILT with GRAVEL; fine to coarse brown gravel, trace rounded cobbles, trace medium coarse sand, quartzite stained black and red, some black foliations, moist			11.00 786.72			
15	785	15.00 - 17.00 SILTY SAND; trace fine gravel (quartzite, quartz and schist), orange brown, dry to moist	SM		15.00 784.72			
		17.00 - 20.00 SILTY CLAY (ML); gravelly, fine to coarse gravel, cobbles of white quartzite, trace mica flakes, red, orange and black stringers, moist	ML		17.00 781.72			
20	780	20.00 - 22.00 SILT (ML); micaceous, trace to large cobbles of quartzite, angular, white/black/orange weathered schist	MLG		20.00 779.72			
		22.00 - 26.00 SAPROLITE (ML); pulverized quartzose schist, some cobbles of quartzose schist with coarse sand, orange staining, dry			22.00 775.72			
25	775	26.00 - 26.30 GRAVELLY SILT (MLG); brown, weathered micaceous schist, small fracture with fine gravel, dark brown, red brow, orange foliations, moist			774.72			
			ML		27.00 773.72			
		26.30 - 27.00 SILT (ML); micaceous, grey silt, moist	TWR		28.00 772.71			
		27.00 - 28.00 SAPROLITE			29.00 771.72			
30	770	28.00 - 29.00 TRANSITIONALLY WEATHERED ROCK; saprolite and gravel, quartzose schist, some cobbles, dry			30.00 770.72			
		29.00 - 30.00 sand and gravel, coarse, weathered quartzose schist, small to large cobbles, dry			31.00 769.72			
		30.00 - 31.00 sand and gravel, some grey quartzose schist, some silt, fine to coarse sand, fine to coarse gravel, trace cobbles, angular						
35	765	31.00 - 32.00 sand and gravel, saprolite and coarse, weathered quartzose schist, small to large cobbles, some sand, dry						
		Boring completed at 32.00 ft						
40	760							
45								

MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES



WELL CONSTRUCTION DETAILS

WELL CASING
Interval: -2.5'-23'
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 22'-32'
Material: Schedule 40 PVC
Diameter: 2'
Slot Size: 0.010"
End Cap: Schedule 40 PVC

FILTER PACK
Interval: 20'-32'
Type: #1 Sand/Prepack Filter

FILTER PACK SEAL
Interval: 17.5'-20'
Type: 3/8" Bentonite Pellets

ANNULUS SEAL
Interval: 0'-17.5'
Type: Type 1 Portland

WELL COMPLETION
Pad: 4'x4'x4"
Protective Casing: Anodized Aluminum

DRILLING METHODS
Soil Drill: 4-inch Sonic
Rock Drill: 4-inch Sonic

LOG SCALE: 1 in = 5.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: David Wilcox

GA INSPECTOR: Kristen Jurinko
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 9/29/17

Golder Associates

BOREHOLE RECORD WANSLEY BORING LOGS.GPJ PIEDMONT.GDT 9/29/17

Log updated with revised survey data certified 6/16/2020.
Easting and Northing in NAD 83. Elevation in NAVD 88.

RECORD OF BOREHOLE WGWC17/APC-7

PROJECT: SCS Wansley
PROJECT NUMBER: 154117
DRILLED DEPTH: 97.00 ft
LOCATION: Carrollton, GA

DRILL RIG: PS-150 Track Mounted Rig
DATE STARTED: 11/6/15
DATE COMPLETED: 11/6/15

NORTHING: 1240052.06
EASTING: 2022623.82
GS ELEVATION: 813.36
TOC ELEVATION: 816.00

DEPTH W.L.: 23' (bgs)
ELEVATION W.L.: (amsl)
DATE W.L.: 11/6/15
TIME W.L.: 08:00

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES SAMPLE NO.	SAMPLES TYPE	SAMPLES REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
0	810	0.00 - 13.00 CLAYEY SILT; moist, orange red and orange brown, mottled, homogenous, soft.	ML							**WELL CASING** Interval: -2.5'-83' Material: Schedule 40 PVC Diameter: 6" Joint Type: Threaded **WELL SCREEN** Interval: 83'-93' Material: Schedule 40 PVC Diameter: 2' Slot Size: 0.010" End Cap: Schedule 40 PVC **FILTER PACK** Interval: 81'-94' Type: #1 sand/ Prepack Filter **FILTER PACK SEAL** Interval: 78.5'-81' Type: 3/8" Bentonits Pellets **ANNULUS SEAL** Interval: 0'-78.5' Type: Portland Type 1 **WELL COMPLETION** Pad: 4'x4'x4" Protective Casing: Anodized Aluminum **DRILLING METHODS** Soil Drill: 4-inch Sonic Rock Drill: 4-inch Sonic
5		7.00: Shelby Tube Collected: 7'-9'								
10	805				800.36					
15	800	13.00 - 17.00 CLAYEY SILT; dry to moist, light brown to orange, mottled, relict metamorphic texture, fine to medium sand, light brown	ML		13.00 796.36					
20	795	17.00 - 27.00 SILTY SAND; Fine to medium, light brown Shelby Tube Collected: 17'-19'	SM		17.00 786.36					
25	790									
30	785	27.00 - 37.00 CLAYEY SILT; dry to moist, light brown to orange, mottled, relict metamorphic texture, fine to medium sand, light brown	ML		27.00 776.36					
35	780									
40	775	37.00 - 42.00 CLAYEY SILT and SILT; dry to moist, brown and grey, metamorphic texture observed, predominantly feldspar, varying amounts of quartz (<5-15%), biotite and muscovite (5-15%), saprolite			37.00 771.36				Portland Tpe 1	
45	770	42.00 - 47.00 NO RECOVERY; not competent (soil washout)			42.00					

Log continued on next page

LOG SCALE: 1 in = 5.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Tom Ardito

GA INSPECTOR: Kristen Jurinko
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 9/29/17

Golder Associates

RECORD OF BOREHOLE WGWC17/APC-7

PROJECT: SCS Wansley
PROJECT NUMBER: 154117
DRILLED DEPTH: 97.00 ft
LOCATION: Carrollton, GA

DRILL RIG: PS-150 Track Mounted Rig
DATE STARTED: 11/6/15
DATE COMPLETED: 11/6/15

NORTHING: 1240052.06
EASTING: 2022623.82
GS ELEVATION: 813.36
TOC ELEVATION: 816.00

DEPTH W.L.: 23' (bgs)
ELEVATION W.L.: (amsl)
DATE W.L.: 11/6/15
TIME W.L.: 08:00

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES SAMPLE NO.	TYPE	REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
45		42.00 - 47.00 NO RECOVERY; not competent (soil washout) *(Continued)*			766.36					
	765	47.00 - 53.00 CLAYEY SILT and SILT; dry to moist, brown and grey, metamorphic texture observed, predominantly feldspar, varying amounts of quartz (<5-15%), biotite and muscovite (5-15%), saprolite	ML		47.00 760.36					
50	760	53.00 - 54.00 SILT; grey silt, weathered quartzite and gneiss, trace black laminations, chunks of silt, speckled greywacke	ML		53.00 759.36					
55		54.00 - 57.00 SILT; saprolitic texture more predominant			54.00 756.36					
	755	57.00 - 59.00 SILT; dry, dark brown silt, some fine coarse sand, white quartz/feldspar, some thin laminations of quartzite			57.00 754.36					
60		59.00 - 67.00 TRANSITIONALLY WEATHERED ROCK; clayey silt, weathered quartzite, trace black minerals	TWR		59.00					
65	750				746.36					
	745	67.00 - 71.00 CLAYEY SAND/SILTY SAND; large cobbles of gneiss and quartzite	SC-SM		67.00 742.36					
70		71.00 - 76.00 CLAYEY SAND; moist, brown, some orange silty sand, muscovite, weathered quartzite			71.00					
	740									
75		75.00: 75'-76' large cobbles present			737.36					
	735	76.00 - 82.00 BEDROCK; grey and white, fractured quartzite, some light orange from mineral oxidation, staining present	BR		76.00					
80					731.36				3/8" Bentonite Pellets	
	730	82.00 - 93.00 quartzite			82.00					
85									#1 sand	
	725								0.010" slot screen	
90		Log continued on next page								

WELL CASING
Interval: -2.5'-83'
Material: Schedule 40 PVC
Diameter: 6"
Joint Type: Threaded

WELL SCREEN
Interval: 83'-93'
Material: Schedule 40 PVC
Diameter: 2'
Slot Size: 0.010"
End Cap: Schedule 40 PVC

FILTER PACK
Interval: 81'-94'
Type: #1 sand/ Prepack Filter

FILTER PACK SEAL
Interval: 78.5'-81'
Type: 3/8" Bentonits Pellets

ANNULUS SEAL
Interval: 0'-78.5'
Type: Portland Type 1

WELL COMPLETION
Pad: 4'x4'x4"
Protective Casing: Anodized Aluminum

DRILLING METHODS
Soil Drill: 4-inch Sonic
Rock Drill: 4-inch Sonic

LOG SCALE: 1 in = 5.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Tom Ardito

GA INSPECTOR: Kristen Jurinko
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 9/29/17

Golder Associates

RECORD OF BOREHOLE WGWC17/APC-7

PROJECT: SCS Wansley
PROJECT NUMBER: 154117
DRILLED DEPTH: 97.00 ft
LOCATION: Carrollton, GA

DRILL RIG: PS-150 Track Mounted Rig
DATE STARTED: 11/6/15
DATE COMPLETED: 11/6/15

NORTHING: 1240052.06
EASTING: 2022623.82
GS ELEVATION: 813.36
TOC ELEVATION: 816.00

DEPTH W.L.: 23' (bgs)
ELEVATION W.L.: (amsl)
DATE W.L.: 11/6/15
TIME W.L.: 08:00

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: SAMPLE NO.	TYPE	REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
90		82.00 - 93.00 quartzite *(Continued)*			720.36					
	720	93.00 - 97.00 SCHIST; fractured quartzitic schist	BR		93.00 716.36				3/8" Bentonite Pellets	
95		Boring completed at 97.00 ft								
	715									
100										
	710									
105										
	705									
110										
	700									
115										
	695									
120										
	690									
125										
	685									
130										
	680									
135										

WELL CASING
Interval: -2.5'-83'
Material: Schedule 40 PVC
Diameter: 6"
Joint Type: Threaded

WELL SCREEN
Interval: 83'-93'
Material: Schedule 40 PVC
Diameter: 2'
Slot Size: 0.010"
End Cap: Schedule 40 PVC

FILTER PACK
Interval: 81'-94'
Type: #1 sand/ Prepack Filter

FILTER PACK SEAL
Interval: 78.5'-81'
Type: 3/8" Bentonits Pellets

ANNULUS SEAL
Interval: 0'-78.5'
Type: Portland Type 1

WELL COMPLETION
Pad: 4'x4'x4"
Protective Casing: Anodized Aluminum

DRILLING METHODS
Soil Drill: 4-inch Sonic
Rock Drill: 4-inch Sonic

LOG SCALE: 1 in = 5.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Tom Ardito

GA INSPECTOR: Kristen Jurinko
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 9/29/17

Golder Associates

Log updated with revised survey data certified 6/16/2020.
Easting and Northing in NAD 83. Elevation in NAVD 88.

RECORD OF BOREHOLE WGWC19/APC-2

PROJECT: SCS Wansley
PROJECT NUMBER: 154117
DRILLED DEPTH: 92.00 ft
LOCATION: Carrollton, GA

DRILL RIG: PS-150 Track Mounted Rig
DATE STARTED: 10/28/15
DATE COMPLETED: 10/28/15

NORTHING: 1241851.51
EASTING: 2028949.19
GS ELEVATION: 780.60
TOC ELEVATION: 783.42

DEPTH W.L.: 20.5' (bgs)
ELEVATION W.L.: (amsl)
DATE W.L.: 10/28/15
TIME W.L.: 13:10

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. DEPTH (ft)	SAMPLES: SAMPLE NO.	SAMPLES: TYPE	SAMPLES: REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
0	780	0.00 - 27.00 SILTY SAND; reddish orange overburden	SM							**WELL CASING** Interval: -2.5'-82' Material: Schedule 40 PVC Diameter: 2" Joint Type: Threaded **WELL SCREEN** Interval: 82'-92' Material: Schedule 40 PVC Diameter: 2' Slot Size: 0.010" End Cap: Schedule 40 PVC **FILTER PACK** Interval: 79.1'-92' Type: #1 Sand/Prepacked Filter **FILTER PACK SEAL** Interval: 77'-79.1' Type: 3/8" Bentonite Pellets **ANNULUS SEAL** Interval: 0'-77' Type: Portland Type 1 **WELL COMPLETION** Pad: 4'x4'x4" Protective Casing: Anodized Aluminum **DRILLING METHODS** Soil Drill: Hydrovac/4-inch Sonic Rock Drill: 4-inch Sonic
5	775									
10	770									
15	765									
20	760	22.00: Shelby Tube Collected: 22'-24'								
25	755				753.60					
		27.00 - 30.00 SILT; dry to moist, light brown, brown, orange brown and grey. Trace white feldspar and black MnO laminations, trace fine gravel, quartz-rich lense from 30-33' (35% quartz). some weathered schist (saprolite)	ML		27.00					
30	750	30.00 - 33.00 some severely weathered gneiss			750.60 30.00					
					747.60					
		33.00 - 60.00 dry to moist, light brown, brown, orange brown and grey. Trace white feldspar and black MnO laminations, trace fine gravel, quartz-rich lense from 30-33' (35% quartz). some weathered schist (saprolite)			33.00				Portland Type 1	
35	745									
40	740									
45		Log continued on next page								

LOG SCALE: 1 in = 5.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Tom Ardito

GA INSPECTOR: Kristen Jurinko
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 9/29/17

Golder Associates

BOREHOLE RECORD WANSLEY BORING LOGS.GPJ PIEDMONT.GDT 9/29/17

RECORD OF BOREHOLE WGWC19/APC-2

PROJECT: SCS Wansley
PROJECT NUMBER: 154117
DRILLED DEPTH: 92.00 ft
LOCATION: Carrollton, GA

DRILL RIG: PS-150 Track Mounted Rig
DATE STARTED: 10/28/15
DATE COMPLETED: 10/28/15

NORTHING: 1241851.51
EASTING: 2028949.19
GS ELEVATION: 780.60
TOC ELEVATION: 783.42

DEPTH W.L.: 20.5' (bgs)
ELEVATION W.L.: (amsl)
DATE W.L.: 10/28/15
TIME W.L.: 13:10

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES SAMPLE NO.	SAMPLES TYPE	SAMPLES REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
45	735	33.00 - 60.00 dry to moist, light brown, brown, orange brown and grey. Trace white feldspar and black MnO laminations, trace fine gravel, quartz-rich lense from 30-33' (35% quartz). some weathered schist (saprolite) *(Continued)*								
50	730									
55	725									
60	720				720.60					
		60.00 - 63.00 stiffer with trace gravel			60.00					
					717.60					
		63.00 - 70.00 TRANSITIONALLY WEATHERED ROCK; brown micaceous schist and garnetiferous greywacke, dry	PWR		63.00					
65	715									
					710.60					
70	710	70.00 - 87.00 ROCK; garnetiferous greywacke with white plagioclase laminations			70.00					
75	705									
			BR						3/8" Bentonite Pellets	
80	700									
85	695								#1 Sand	
					693.60				0.010" Slot Screen	
		87.00 - 92.00 ROCK; wet, dark grey micaceous schist	BR		87.00					
90		Log continued on next page								

WELL CASING
Interval: -2.5'-82'
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 82'-92'
Material: Schedule 40 PVC
Diameter: 2'
Slot Size: 0.010"
End Cap: Schedule 40 PVC

FILTER PACK
Interval: 79.1'-92'
Type: #1 Sand/Prepacked FIlter

FILTER PACK SEAL
Interval: 77'-79.1'
Type: 3/8" Bentonite Pellets

ANNULUS SEAL
Interval: 0'-77'
Type: Portland Type 1

WELL COMPLETION
Pad: 4'x4'x4"
Protective Casing: Anodized Aluminum

DRILLING METHODS
Soil Drill: Hydrovac/4-inch Sonic
Rock Drill: 4-inch Sonic

LOG SCALE: 1 in = 5.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Tom Ardito

GA INSPECTOR: Kristen Jurinko
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 9/29/17

Golder Associates

RECORD OF BOREHOLE WGWC19/APC-2

PROJECT: SCS Wansley
PROJECT NUMBER: 154117
DRILLED DEPTH: 92.00 ft
LOCATION: Carrollton, GA

DRILL RIG: PS-150 Track Mounted Rig
DATE STARTED: 10/28/15
DATE COMPLETED: 10/28/15

NORTHING: 1241851.51
EASTING: 2028949.19
GS ELEVATION: 780.60
TOC ELEVATION: 783.42

DEPTH W.L.: 20.5' (bgs)
ELEVATION W.L.: (amsl)
DATE W.L.: 10/28/15
TIME W.L.: 13:10

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: SAMPLE NO.	SAMPLES: TYPE	SAMPLES: REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
90	690	87.00 - 92.00 ROCK; wet, dark grey micaceous schist *(Continued)*	BR		688.60					
		Boring completed at 92.00 ft								
95	685									
100	680									
105	675									
110	670									
115	665									
120	660									
125	655									
130	650									
135										

WELL CASING
Interval: -2.5'-82'
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 82'-92'
Material: Schedule 40 PVC
Diameter: 2'
Slot Size: 0.010"
End Cap: Schedule 40 PVC

FILTER PACK
Interval: 79.1'-92'
Type: #1 Sand/Prepacked Fllter

FILTER PACK SEAL
Interval: 77'-79.1'
Type: 3/8" Bentonite Pellets

ANNULUS SEAL
Interval: 0'-77'
Type: Portland Type 1

WELL COMPLETION
Pad: 4'x4'x4"
Protective Casing: Anodized Aluminum

DRILLING METHODS
Soil Drill: Hydrovac/4-inch Sonic
Rock Drill: 4-inch Sonic

LOG SCALE: 1 in = 5.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Tom Ardito

GA INSPECTOR: Kristen Jurinko
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 9/29/17

Golder Associates

Survey data certified 11/17/2020. Original boring ID in parentheses.
Easting an Northing in NAD 83. Elevation in NAVD 88.

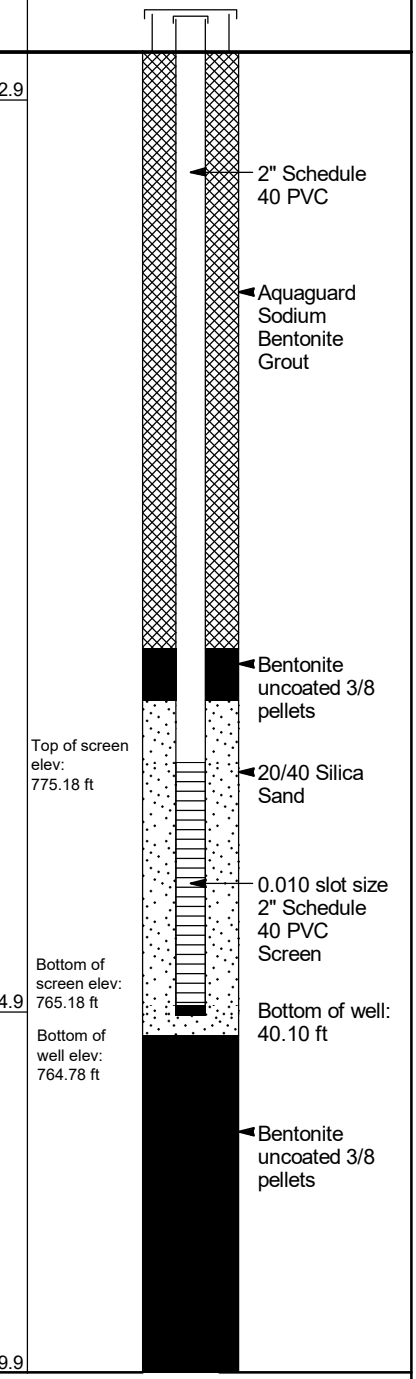
Geosyntec consultants
engineers | scientists | innovators
Geosyntec Consultants
1255 Roberts Boulevard
Kennesaw, GA 30144

WGWC-20 (PZ-22)

CLIENT Southern Company Services
PROJECT NAME Plant Wansley Ash Pond 1 (AP-1) Piezometer Installation
PROJECT NUMBER GW7327
PROJECT LOCATION Plant Wansley AP-1
DATE STARTED 9/29/20 **COMPLETED** 9/29/20
NORTHING 1243350.76 ft **EASTING** 2029769.43 ft
DRILLER Cascade Drilling
GROUND ELEVATION 804.88 ft **BORING DIAMETER** 6 in.
DRILLING METHOD Sonic
TOP OF CASING ELEVATION 807.95 ft
SAMPLING METHOD 4 in. core 6 in. override
GEOPHYSICAL CONTRACTOR ---
RIG TYPE Terrasonic 1051181
LOGGED BY A. Ramsey **CHECKED BY** A. Reimer

DEPTH (ft)	ELEVATION (ft)	REMARKS	MATERIAL DESCRIPTION
0			Air Knife Excavation (0 ft to 2 ft) NO SAMPLE
		2 ft: Significant rig chatter.	802.9 QUARTZITE, pinkish gray to grayish blue, wet, very hard, granular, trace pyrite, abundant iron oxide staining and scaling on fracture faces.
	800		6 ft: Increasing pink.
10		10 ft: Decreased rig chatter.	10 ft: Pinkish gray to pinkish white, trace bluish gray, moderately fractured.
	790	15 ft: Loss of circulation.	
20			20 ft: Few planar fractures with iron oxidation scaling, trace epidote at joints.
	780	25 to 30 ft: Coarse sand slough due to drilling.	
30			30 ft: Heavily fractured with iron oxidation scaling and dendrites, trace to some mafics from 32 ft to 35 ft, abundant mica.
	770		35 ft: Pinkish white to light gray, fractured with iron oxidation staining to 37 ft, increasing competency with depth.
40			764.9 GNEISS, light blue to gray, faint micaceous banding, abundant iron oxide staining, competent, fractured by drilling at joints and few fine fractures, very hard, wet.
	760		45 ft: Light bluish gray to light olive gray, very fine laminations, competent with trace natural fractures and trace iron oxidation staining.
50			
	750		749.9

Bottom of borehole at 55.0 feet.



SCS MONITORING WELLS WANSLEY_PIEZOMETER INSTALL_2020.GPJ ACP GINT LIBRARY CH.GLB 1/5/21

Survey data certified 11/17/2020. Original boring ID in parentheses.
Easting an Northing in NAD 83. Elevation in NAVD 88.

Geosyntec consultants
engineers | scientists | innovators
Geosyntec Consultants
1255 Roberts Boulevard
Kennesaw, GA 30144

WGWC-21 (PZ-23S)

CLIENT Southern Company Services
PROJECT NAME Plant Wansley Ash Pond 1 (AP-1) Piezometer Installation
PROJECT NUMBER GW7327
PROJECT LOCATION Plant Wansley AP-1
DATE STARTED 10/2/20 **COMPLETED** 10/2/20
NORTHING 1242139.33 ft **EASTING** 2028512.65 ft
DRILLER Cascade Drilling
GROUND ELEVATION 831.79 ft **BORING DIAMETER** 6 in.
DRILLING METHOD Sonic
TOP OF CASING ELEVATION 834.41 ft
SAMPLING METHOD 4 in. core 6 in. override
GEOPHYSICAL CONTRACTOR ---
RIG TYPE Terrasonic 1051181
LOGGED BY A. Ramsey **CHECKED BY** A. Reimer

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
0	830			Air Knife Excavation (0 ft to 10 ft) NO SAMPLE	2" Schedule 40 PVC
5	825				
10	820			821.8 NO RECOVERY (10 ft to 17 ft)	Aquaguard Sodium Bentonite Grout
15	815			814.8 GNEISS, bluish gray, abundant iron oxidation and scaling on fracture faces, thin to moderate laminations, wet.	
20	810			20 ft: Bluish gray and olive to olive gray.	
25	805			26 ft: Bluish gray.	
30	800			30 to 40 ft: Abundant potential fractures throughout.	
35	795			33 ft to 36 ft: Recovered core broke into pebble sized fragments.	

SCS MONITORING WELLS WANSLEY_PIEZOMETER INSTALL_2020.GPJ ACP GINT LIBRARY CH.GLB 1/5/21

(Continued Next Page)

Geosyntec consultants
engineers | scientists | innovators
Geosyntec Consultants
1255 Roberts Boulevard
Kennesaw, GA 30144

WGWC-21 (PZ-23S)

CLIENT Southern Company Services
PROJECT NAME Plant Wansley Ash Pond 1 (AP-1) Piezometer Installation
PROJECT NUMBER GW7327
PROJECT LOCATION Plant Wansley AP-1

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
40				GNEISS, bluish gray, abundant iron oxidation and scaling on fracture faces, thin to moderate laminations, wet. *(continued)*	
	790				
45					Aquaguard Sodium Bentonite Grout
	785				
50				50 ft to 53 ft: Minimal iron scaling.	Bentonite uncoated 3/8 pellets
	780				
55					20/40 Silica Sand
	775				Top of screen elev: 773.11 ft
60				60 ft: Large potassium feldspar minerals, fractures throughout.	
	770				
65					0.010 slot size 2" Schedule 40 PVC Screen
	765				Bottom of screen elev: 763.11 ft
70					Bottom of well: 69.09 ft Bottom of well elev: 762.71 ft
	760				20/40 Silica Sand
75				756.8 Bottom of borehole at 75.0 feet.	

Survey data certified 11/17/2020. Original boring ID in parentheses.
Easting an Northing in NAD 83. Elevation in NAVD 88.

Geosyntec consultants
engineers | scientists | innovators
Geosyntec Consultants
1255 Roberts Boulevard
Kennesaw, GA 30144

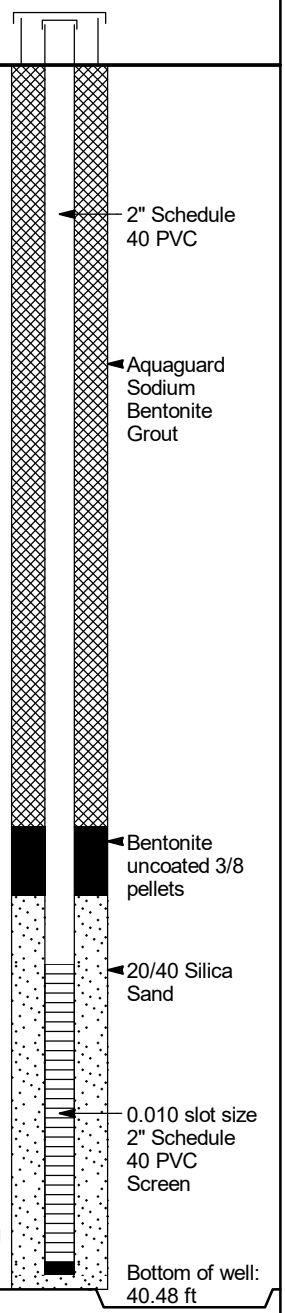
WGWC-22 (PZ-24)

CLIENT Southern Company Services
PROJECT NAME Plant Wansley Ash Pond 1 (AP-1) Piezometer Installation
PROJECT NUMBER GW7327
PROJECT LOCATION Plant Wansley AP-1
DATE STARTED 10/18/20 **COMPLETED** 10/18/20
NORTHING 1241695.25 ft **EASTING** 2028116.05 ft
DRILLER Cascade Drilling
GROUND ELEVATION 807.00 ft **BORING DIAMETER** 6 in.
DRILLING METHOD Sonic
TOP OF CASING ELEVATION 810.37 ft
SAMPLING METHOD 4 in. core 6 in. override
GEOPHYSICAL CONTRACTOR ---
RIG TYPE Terrasonic 1051181
LOGGED BY T. Kessler **CHECKED BY** A. Reimer

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION
0	807			Air Knife Excavation (0 ft to 10 ft) NO SAMPLE
10	797			797.0 SILTY CLAY, reddish yellow with brown and white mottling, fine grained, medium plasticity, some sand, moist.
15	792			794.0 SILTY CLAY, reddish yellow with red, brown and white mottling, with fine grained sand, medium plasticity, firm, moist (SAPROLITE).
25	782	25 ft: Increased rig chatter, drilled 25 to 30 ft, no returns.		782.0 PARTIALLY WEATHERED ROCK (PWR), reddish yellow, large gravel, silty clays and fine sand throughout, iron oxidation staining between 27 ft and 30 ft, loose, dry.
30	777			777.0 PARTIALLY WEATHERED ROCK (PWR), gneiss, gray, loose gravel and coarse sand trhroughout, iron staining on fracture, surfaces wet.
35	772	35 ft: Increased rig chatter, advance rate slowed.		772.0 GNEISS, gray, intensely fractured and moderately weathered, iron staining on fractures, wet.
40	767			39 ft to 40 ft: Distinct fracture zone between 39 ft and 40 ft, wet. 766.0

Bottom of borehole at 41.0 feet.

CONSTRUCTION DIAGRAM



SCS MONITORING WELLS WANSLEY_PIEZOMETER INSTALL_2020.GPJ ACP GINT LIBRARY CH.GLB 1/6/21

Survey data certified 11/17/2020. Original boring ID in parentheses.
Easting an Northing in NAD 83. Elevation in NAVD 88.

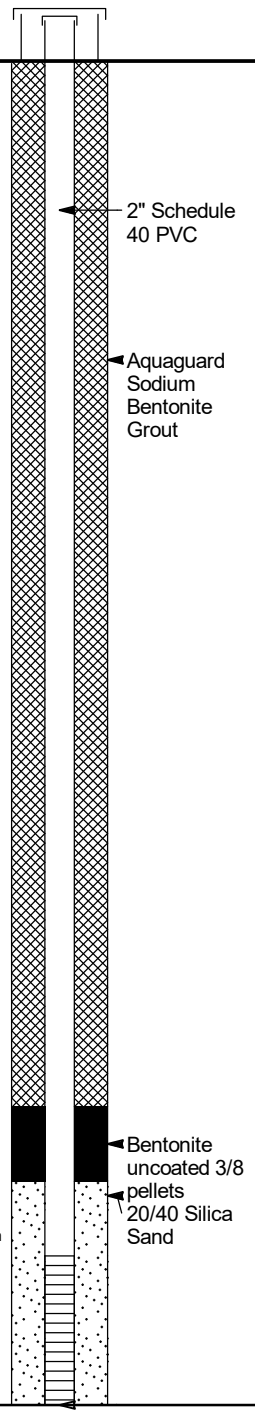
Geosyntec consultants
engineers | scientists | innovators
Geosyntec Consultants
1255 Roberts Boulevard
Kennesaw, GA 30144

WGWC-23 (PZ-25S)

CLIENT Southern Company Services
PROJECT NAME Plant Wansley Ash Pond 1 (AP-1) Piezometer Installation
PROJECT NUMBER GW7327
PROJECT LOCATION Plant Wansley AP-1
DATE STARTED 10/4/20 **COMPLETED** 10/4/20
NORTHING 1240769.79 ft **EASTING** 2027414.58 ft
DRILLER Cascade Drilling
GROUND ELEVATION 820.50 ft **BORING DIAMETER** 6 in.
DRILLING METHOD Sonic
TOP OF CASING ELEVATION 823.80 ft
SAMPLING METHOD 4 in. core 6 in. override
GEOPHYSICAL CONTRACTOR ---
RIG TYPE Terrasonic 1051181
LOGGED BY A. Ramsey **CHECKED BY** A. Reimer

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION
0	820			Air Knife Excavation (0 ft to 10 ft) NO SAMPLE
5	815			
10	810	10 ft: Very poor recovery, very soft with sporadic hard intervals.		810.5 PARTIALLY WEATHERED ROCK (PWR), gneiss, very pale reddish brown, thinly laminated, laminations are friable into coarse sand, some iron staining and scaling, hard.
15	805			
20	800	20 ft: Very soft, core washed out by drilling.		800.5 NO RECOVERY (20 ft to 30 ft)
25	795			
30	790			790.5 PARTIALLY WEATHERED ROCK (PWR), highly weathered gneiss, very pale reddish yellowish brown, soft with trace hard pieces, clayey sand, very fine to coarse, iron staining in bottom 2 ft, trace banding visible, dry to wet.
35	785	35 ft: Drilled without water.		
				38 ft: Iron oxide staining between 38 ft and 40 ft.
40	780			780.5 PARTIALLY WEATHERED ROCK (PWR), highly weathered gneiss, pale reddish brown, hard to very hard, moderately friable, some coarse sand, abundant iron staining and scaling.
				775.5

CONSTRUCTION DIAGRAM



SCS MONITORING WELLS WANSLEY_PIEZOMETER INSTALL_2020.GPJ ACP GINT LIBRARY CH.GLB 1/5/21

(Continued Next Page)

Geosyntec consultants
engineers | scientists | innovators
Geosyntec Consultants
1255 Roberts Boulevard
Kennesaw, GA 30144

WGWC-23 (PZ-25S)

CLIENT Southern Company Services
PROJECT NAME Plant Wansley Ash Pond 1 (AP-1) Piezometer Installation
PROJECT NUMBER GW7327
PROJECT LOCATION Plant Wansley AP-1

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
45	775			PARTIALLY WEATHERED ROCK (PWR), gneiss, with trace very hard schistose gneiss fragments and clayey sandy silt, pale reddish brown, banded, micaceous, non plastic, some iron staining, hard, moist to dry.	Bottom of screen elev: 770.40 ft Bottom of well elev: 770.00 ft 0.010 slot size 2" Schedule 40 PVC Screen Bottom of well: 50.50 ft
50	770				
55	765			765.5 SCHIST, black, very hard, thinly laminated.	
60	760			760.5 GNEISS, pink, very pale brown, massive with some thin laminations.	
65	755				
70	750				Bentonite uncoated 3/8 pellets
75				745.5	

Bottom of borehole at 75.0 feet.

Survey data certified 11/17/2020. Original boring ID in parentheses.
Easting an Northing in NAD 83. Elevation in NAVD 88.

Geosyntec consultants
engineers | scientists | innovators
Geosyntec Consultants
1255 Roberts Boulevard
Kennesaw, GA 30144

WGWC-24 (PZ-26S)

CLIENT Southern Company Services
PROJECT NAME Plant Wansley Ash Pond 1 (AP-1) Piezometer Installation
PROJECT NUMBER GW7327
PROJECT LOCATION Plant Wansley AP-1
DATE STARTED 10/17/20 **COMPLETED** 10/17/20
NORTHING 1239916.68 ft **EASTING** 2024139.82 ft
DRILLER Cascade Drilling
GROUND ELEVATION 802.22 ft **BORING DIAMETER** 6 in.
DRILLING METHOD Sonic
TOP OF CASING ELEVATION 804.80 ft
SAMPLING METHOD 4 in. core 6 in. override
GEOPHYSICAL CONTRACTOR ---
RIG TYPE Terrasonic 1051181
LOGGED BY V. Taukoor **CHECKED BY** A. Reimer

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION
0	802			Air Knife Excavation (0 ft to 10 ft) NO SAMPLE
5	795			
10	790			792.2 SANDY SILT, dark red, fine grained with some coarse sand, micaceous, low plasticity.
15	785			786.2 SANDY SILT, olive yellow, relic rock structure, stiff, low plasticity, moist to dry.
20	780			20 ft: Moisture increases with depth.
25	775			776.2 PARTIALLY WEATHERED ROCK (PWR), large quartzite rock fragments, light olive green, gravel and sand throughout, moist. 775.2 SANDY SILT, olive yellow, relic rock structure, low plasticity, moist.
30	770			772.2 PARTIALLY WEATHERED ROCK (PWR), large quartzite rock fragments, light gray to yellow, heavily fractured from 30 ft to 35 ft, moderately fractured from 35 ft to 39 ft, some iron staining, moist to wet.
35	765			763.2

CONSTRUCTION DIAGRAM

- 2" Schedule 40 PVC
- Aquaguard Sodium Bentonite Grout
- Bentonite uncoated 3/8 pellets
- 20/40 Silica Sand
- Top of screen elev: 774.43 ft
- 0.010 slot size 2" Schedule 40 PVC Screen
- Bottom of screen elev: 764.43 ft
- Bottom of well elev: 764.03 ft
- Bottom of well: 38.19 ft

Bottom of borehole at 39.0 feet.

SCS MONITORING WELLS WANSLEY_PIEZOMETER INSTALL_2020.GPJ ACP GINT LIBRARY CH.GLB 1/5/21

Survey data certified 11/17/2020. Original boring ID in parentheses.
Easting an Northing in NAD 83. Elevation in NAVD 88.

Geosyntec consultants
engineers | scientists | innovators
Geosyntec Consultants
1255 Roberts Boulevard
Kennesaw, GA 30144

WGWC-25 (PZ-27S)

CLIENT Southern Company Services
PROJECT NAME Plant Wansley Ash Pond 1 (AP-1) Piezometer Installation
PROJECT NUMBER GW7327
PROJECT LOCATION Plant Wansley AP-1
DATE STARTED 10/28/20 **COMPLETED** 10/28/20
NORTHING 1240184.18 ft **EASTING** 2023616.69 ft
DRILLER Cascade Drilling
GROUND ELEVATION 805.98 ft **BORING DIAMETER** 6 in.
DRILLING METHOD Sonic
TOP OF CASING ELEVATION 808.98 ft
SAMPLING METHOD 4 in. core 6 in. override
GEOPHYSICAL CONTRACTOR ---
RIG TYPE Terrasonic 1051181
LOGGED BY T. Wilson **CHECKED BY** A. Reimer

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION
0	805			Air Knife Excavation (0 ft to 9 ft) NO SAMPLE
				797.0
				NO RECOVERY (9 ft to 11 ft)
				795.0
				SAPROLITE, silty clay with sand, yellowish red, firm, low plasticity, fine sand, trace mica, gravel, root material, moist.
				790.7
				PARTIALLY WEATHERED ROCK (PWR), silty sand with gravel, yellow, loose, well graded, fine to coarse, dry.
				787.0
				SAPROLITE, silty clay with sand, yellowish red, firm, low plasticity, fine sand, layer of gravelly mica, moist.
				778.0
				PARTIALLY WEATHERED ROCK (PWR), silty sand with clay, yellowish brown, moist, loose, well graded, fine to coarse, moist. 29 ft: some gravel, grayish brown.
5	800			
10	795			
15	790			
20	785			
25	780			
30	775			
35	770			
				767.0

CONSTRUCTION DIAGRAM

- 2" Schedule 40 PVC
- Aquaguard Sodium Bentonite Grout
- Bentonite uncoated 3/8 pellets
- 20/40 Silica Sand
- Top of screen elev: 779.51 ft
- 0.010 slot size 2" Schedule 40 PVC Screen
- Bottom of screen elev: 769.51 ft
- Bottom of well elev: 769.11 ft
- Bottom of well: 36.87 ft

Bottom of borehole at 39.0 feet.

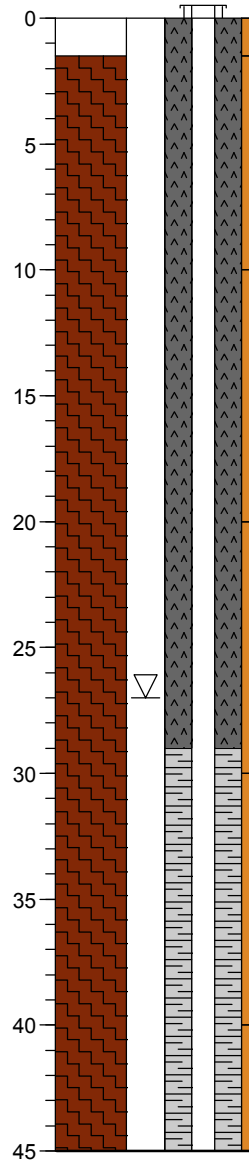
SCS MONITORING WELLS WANSLEY_PIEZOMETER INSTALL_2020.GPJ ACP GINT LIBRARY CH.GLB 1/5/21

Geosyntec consultants
engineers | scientists | innovators

Client: Southern Company Services
Project: Plant Wansley Well Installation
Address: 1371 Liberty Church Rd, Carrollton, GA

WELL LOG
Well No. WGWC-26D
Page: 1 of 2

Drilling Start Date:	**09/26/2022**	Boring Depth (ft):	**70**	Well Depth (ft TOC):	**69.57**
Drilling End Date:	**09/26/2022**	Boring Diameter (in):	**6**	Well Diameter (in):	**2**
Drilling Company:	**Cascade Drilling**	Sampling Method(s):	**Core Barrel**	Screen Slot (in):	**0.010**
Drilling Method:	**Sonic 4x6**	DTW During Drilling (ft):	**27.0**	Riser Material:	**Sch 40 PVC**
Drilling Equipment:	**Terrasonic**	Ground Surface Elev. (ft):	**805.06 NAV88**	Screen Material:	**Sch 40 PVC Slotted**
Driller:	**Cory Franklin**	Top of Casing Elev. (ft):	**808.23 NAV88**	Seal Material(s):	**Grout/Bentonite**
Logged By:	**T. Kessler**	Location (N,E):	**1243343.658, 2029758.846**	Filter Pack:	**20/40 Sand**



DEPTH (ft)	SOIL/ROCK VISUAL DESCRIPTION	REMARKS	ELEVATION (ft NAV88)
0	(0') Hand augered material. Not logged.	Hand augered to 1.5 feet bgs.	805
	(1.5') QUARTZITE; pinkish gray, hard, heavily fractured and broken into gravel at joints, trace bluish gray quartzite gravel, trace pyrite, abundant iron staining.	Hard drilling.	
5			800
10	(10') Gray to grayish blue, heavily fractured at 10 and 20 feet bgs, abundant iron oxide staining in fractures, trace epidote at joints.		795
15			790
20	(20') Heavy iron staining throughout.		785
25	(25') Heavily fractured from 25-26.5 and 29-30 feet bgs, unfractured rock is bluish gray.		780
30	(30') Grayish blue, fractures at 30-32 feet bgs, iron staining in fracture zone.		775
	(32') Sand-filled fracture zone from 32-26 feet bgs consisting of poorly graded SAND (SP), subangular, medium to coarse grain, damp		
35	(36') Grayish blue, fractures at 36-40 feet bgs, iron staining and fracture zone.		770
40	(40') Pinkish gray, fracture at 44 feet bgs, trace iron staining.		765
45			

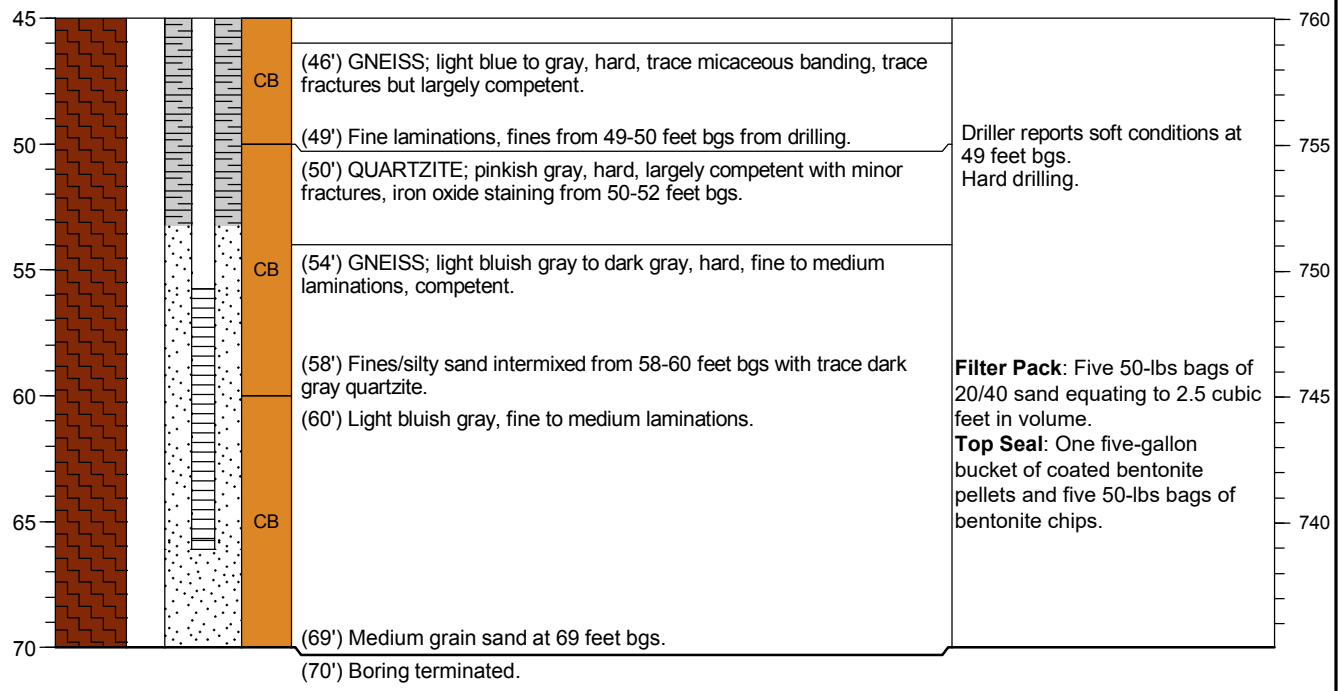
NOTES: Coordinates in North American Datum (NAD) 1983, State Plane, Georgia-West, feet. Vertical elevations are referenced to the North American Vertical Datum (NAVD) of 1988. Well completed with aboveground (+3.17 ft) PVC stickup. Well depth measured from top of casing (TOC). Seal extended due to proximity of adjacent well screen.

Geosyntec consultants
engineers | scientists | innovators

Client: Southern Company Services
Project: Plant Wansley Well Installation
Address: 1371 Liberty Church Rd, Carrollton, GA

WELL LOG
Well No. WGWC-26D
Page: 2 of 2

Drilling Start Date:	**09/26/2022**	Boring Depth (ft):	**70**	Well Depth (ft TOC):	**69.57**
Drilling End Date:	**09/26/2022**	Boring Diameter (in):	**6**	Well Diameter (in):	**2**
Drilling Company:	**Cascade Drilling**	Sampling Method(s):	**Core Barrel**	Screen Slot (in):	**0.010**
Drilling Method:	**Sonic 4x6**	DTW During Drilling (ft):	**27.0**	Riser Material:	**Sch 40 PVC**
Drilling Equipment:	**Terrasonic**	Ground Surface Elev. (ft):	**805.06 NAV88**	Screen Material:	**Sch 40 PVC Slotted**
Driller:	**Cory Franklin**	Top of Casing Elev. (ft):	**808.23 NAV88**	Seal Material(s):	**Grout/Bentonite**
Logged By:	**T. Kessler**	Location (N,E):	**1243343.658, 2029758.846**	Filter Pack:	**20/40 Sand**



DEPTH (ft)	SOIL/ROCK VISUAL DESCRIPTION	REMARKS	ELEVATION (ft NAV88)
	(46') GNEISS; light blue to gray, hard, trace micaceous banding, trace fractures but largely competent.		
	(49') Fine laminations, fines from 49-50 feet bgs from drilling.	Driller reports soft conditions at 49 feet bgs. Hard drilling.	
	(50') QUARTZITE; pinkish gray, hard, largely competent with minor fractures, iron oxide staining from 50-52 feet bgs.		
	(54') GNEISS; light bluish gray to dark gray, hard, fine to medium laminations, competent.		
	(58') Fines/silty sand intermixed from 58-60 feet bgs with trace dark gray quartzite.	**Filter Pack**: Five 50-lbs bags of 20/40 sand equating to 2.5 cubic feet in volume. **Top Seal**: One five-gallon bucket of coated bentonite pellets and five 50-lbs bags of bentonite chips.	
	(60') Light bluish gray, fine to medium laminations.		
	(69') Medium grain sand at 69 feet bgs.		
	(70') Boring terminated.		

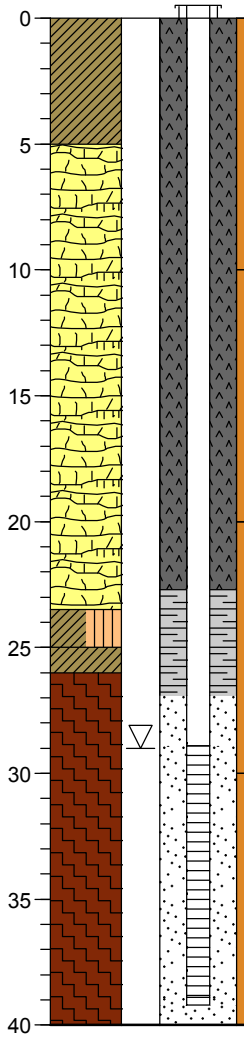
NOTES: Coordinates in North American Datum (NAD) 1983, State Plane, Georgia-West, feet. Vertical elevations are referenced to the North American Vertical Datum (NAVD) of 1988. Well completed with aboveground (+3.17 ft) PVC stickup. Well depth measured from top of casing (TOC). Seal extended due to proximity of adjacent well screen.

Geosyntec consultants
engineers | scientists | innovators

Client: Southern Company Services
Project: Plant Wansley Well Installation
Address: 1371 Liberty Church Rd, Carrollton, GA

WELL LOG
Well No. WGWC-27
Page: 1 of 1

Drilling Start Date:	**09/26/2022**	Boring Depth (ft):	**40**	Well Depth (ft TOC):	**42.18**
Drilling End Date:	**09/27/2022**	Boring Diameter (in):	**6**	Well Diameter (in):	**2**
Drilling Company:	**Cascade Drilling**	Sampling Method(s):	**Core Barrel**	Screen Slot (in):	**0.010**
Drilling Method:	**Sonic 4x6**	DTW During Drilling (ft):	**29.0**	Riser Material:	**Sch 40 PVC**
Drilling Equipment:	**Terrasonic**	Ground Surface Elev. (ft):	**778.05 NAV88**	Screen Material:	**Sch 40 PVC Slotted**
Driller:	**Cory Franklin**	Top of Casing Elev. (ft):	**780.54 NAV88**	Seal Material(s):	**Grout/Bentonite**
Logged By:	**T. Kessler**	Location (N,E):	**1243215.513, 2029878.918**	Filter Pack:	**20/40 Sand**



DEPTH (ft)	SOIL/ROCK VISUAL DESCRIPTION	REMARKS	ELEVATION (ft NAV88)
0	(0') CLAY (CL); reddish-brown, moist, firm, medium plasticity, coarse angular gravel throughout with trace silt and sand.	Hand augered to 10 feet bgs.	775
5	(5') PARTIALLY WEATHERED ROCK; relict rock structures from 5-10 feet bgs.		770
10	(10') Yellowish red, relict rock structures throughout.		765
15	(16.5') SANDY SILTY CLAY (CL); white to pinkish white, moist, firm, medium to low plasticity, relict rock structures throughout.		760
20			
25	(23') White, dry, hard, friable, light gray gneiss fragments throughout.	Rock encountered at 26 feet bgs; hard drilling. PWR appears to be gneiss. Wet zone largely influenced by drilling water in rods. No signs of staining.	755
	(23.5') SILTY CLAY (CL-ML); yellowish red, wet, soft, low plasticity to nonplastic, trace fine sand.		750
	(25') SANDY CLAY (CL); white to pinkish white, dry to moist, firm, low to medium plasticity, PWR throughout.		
30	(26') GNEISS; dark to light gray, dry, hard, competent, trace quartzite banding throughout, trace garnets, trace hornblende and plagioclase.		
	(29') Light gray, wet, fractured, abundant fine to coarse sand and trace silt.	**Filter Pack:** Six 50 lbs bags 20/40 sand equating to 3 cubic feet in volume. **Top Seal:** One five gallon bucket of coated bentonite pellets	745
35	(30') Heavily fractured, abundant iron oxide staining throughout but heavy from 30-32 feet bgs.		
	(35') Stiff, broken into gravel with fine to medium grain light gray sand.	Very hard drilling. Rod drop from 36.5 to 37 feet bgs.	740
40	(40') Boring terminated.		

NOTES: Coordinates in North American Datum (NAD) 1983, State Plane, Georgia-West, feet. Vertical elevations are referenced to the North American Vertical Datum (NAVD) of 1988. Well completed with aboveground (+2.49 feet) PVC stickup. Well depth measured from top of casing (TOC).

Geosyntec consultants
engineers | scientists | innovators

Client: Southern Company Services
Project: Plant Wansley Well Installation
Address: 1371 Liberty Church Rd, Carrollton, GA

WELL LOG
Well No. WGWC-28D
Page: 1 of 5

Drilling Start Date:	**06/26/2023**	Boring Depth (ft):	**220**	Well Depth (ft TOC):	**209.6**
Drilling End Date:	**08/18/2023**	Boring Diameter (in):	**6**	Well Diameter (in):	**2**
Drilling Company:	**Cascade Drilling**	Sampling Method(s):	**Core Barrel**	Screen Slot (in):	**0.010**
Drilling Method:	**Sonic 4x6**	DTW During Drilling (ft):	**32.0**	Riser Material:	**Sch 40 PVC**
Drilling Equipment:	**Terrasonic TSI-150T**	Ground Surface Elev. (ft):	**805.36 NAV88**	Screen Material:	**Sch 40 PVC U-Pack**
Driller:	**C. Franklin/B. Griffis**	Top of Casing Elev. (ft):	**808.24 NAV88**	Seal Material(s):	**Grout/Bentonite**
Logged By:	**T. Kessler/T. Payne**	Location (N,E):	**1243337.13, 2029751.04**	Filter Pack:	**20/40 Sand**

DEPTH (ft)	Sample Type	SOIL/ROCK VISUAL DESCRIPTION	REMARKS	ELEVATION (ft NAV88)
0	GR	(0') Hand augered material. Not logged.		805
5	CB	(2') QUARTZITE; pinkish gray, hard, heavily fractured, broken into gravel and joints, trace bluish gray quartzite gravel, trace gneiss gravel, iron staining in joints.	Hard drilling ~300 gallons used, ~50% retention, gravel largely generated by rig	800
10	CB	(10') QUARTZITE; pinkish gray, hard, heavily fractured, trace light bluish gray quartzite gravel and trace gneiss throughout, abundant iron oxide staining in fractures.	~200 gallons of water used, ~60% return	795
15				790
20	CB	(20') No recovery.		785
25				780
30	CB	(30') QUARTZITE; pinkish gray (unfractured rock is grayish blue), hard, heavily fractured, abundant iron oxide staining.	~60-70% water return	775
35		(35') Grayish blue from 35-36 feet bgs.		770
40	CB	(39') Silty/fine sand from 39-40 feet bgs. (40') QUARTZITE; grayish blue (pinkish gray in fracture zones), hard, largely competent with minimal fractures.	Low water return ~20%	765
45				

NOTES: Coordinates in North American Datum (NAD) 1983, State Plane, Georgia-West, feet. Vertical elevations are referenced to the North American Vertical Datum (NAVD) of 1988. Boring backfilled with bentonite pellets to 207.8 ft bgs prior to well installation. Well completed with aboveground (+2.88 ft) PVC stickup with metal protective cover and guard posts set in concrete. Well depth measured from top of casing (TOC).

Geosyntec consultants
engineers | scientists | innovators

Client: Southern Company Services
Project: Plant Wansley Well Installation
Address: 1371 Liberty Church Rd, Carrollton, GA

WELL LOG
Well No. WGWC-28D
Page: 2 of 5

Drilling Start Date:	**06/26/2023**	Boring Depth (ft):	**220**	Well Depth (ft TOC):	**209.6**
Drilling End Date:	**08/18/2023**	Boring Diameter (in):	**6**	Well Diameter (in):	**2**
Drilling Company:	**Cascade Drilling**	Sampling Method(s):	**Core Barrel**	Screen Slot (in):	**0.010**
Drilling Method:	**Sonic 4x6**	DTW During Drilling (ft):	**32.0**	Riser Material:	**Sch 40 PVC**
Drilling Equipment:	**Terrasonic TSI-150T**	Ground Surface Elev. (ft):	**805.36 NAV88**	Screen Material:	**Sch 40 PVC U-Pack**
Driller:	**C. Franklin/B. Griffis**	Top of Casing Elev. (ft):	**808.24 NAV88**	Seal Material(s):	**Grout/Bentonite**
Logged By:	**T. Kessler/T. Payne**	Location (N,E):	**1243337.13, 2029751.04**	Filter Pack:	**20/40 Sand**

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	Sample Type	SOIL/ROCK VISUAL DESCRIPTION	REMARKS	ELEVATION (ft NAV88)
45				CB	(48') Iron oxide staining evident in fracture zones.		760
50				CB	(50') QUARTZITE; pinkish gray to grayish blue, hard, competent, quartz seams throughout.		755
55							750
60				CB	(60') QUARTZITE; bluish gray green, hard, competent, quartz seams throughout.	Switch bit	745
65					(64') Iron staining. (65') Same as above.		740
				GR	(67') GNEISS; light bluish gray, hard, fine laminations, micaceous.		
70				CB	(69') Large fracture zone with iron oxide staining from 69-70 feet bgs. (70') Competent.	Packer testing conducted from 70-80 ft bgs	735
75							730
80				CB	(80') AMPHIBOLITE GNEISS; gray to dark gray, hard, fine laminations, competent, pink quartz inclusions throughout.	Packer testing conducted from 80-90 ft bgs	725
85							720
90							

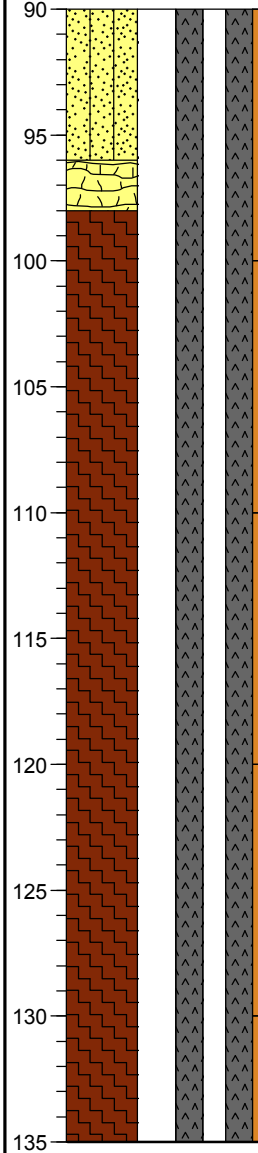
NOTES: Coordinates in North American Datum (NAD) 1983, State Plane, Georgia-West, feet. Vertical elevations are referenced to the North American Vertical Datum (NAVD) of 1988. Boring backfilled with bentonite pellets to 207.8 ft bgs prior to well installation. Well completed with aboveground (+2.88 ft) PVC stickup with metal protective cover and guard posts set in concrete. Well depth measured from top of casing (TOC).

Geosyntec consultants
engineers | scientists | innovators

Client: Southern Company Services
Project: Plant Wansley Well Installation
Address: 1371 Liberty Church Rd, Carrollton, GA

WELL LOG
Well No. WGWC-28D
Page: 3 of 5

Drilling Start Date:	**06/26/2023**	Boring Depth (ft):	**220**	Well Depth (ft TOC):	**209.6**
Drilling End Date:	**08/18/2023**	Boring Diameter (in):	**6**	Well Diameter (in):	**2**
Drilling Company:	**Cascade Drilling**	Sampling Method(s):	**Core Barrel**	Screen Slot (in):	**0.010**
Drilling Method:	**Sonic 4x6**	DTW During Drilling (ft):	**32.0**	Riser Material:	**Sch 40 PVC**
Drilling Equipment:	**Terrasonic TSI-150T**	Ground Surface Elev. (ft):	**805.36 NAV88**	Screen Material:	**Sch 40 PVC U-Pack**
Driller:	**C. Franklin/B. Griffis**	Top of Casing Elev. (ft):	**808.24 NAV88**	Seal Material(s):	**Grout/Bentonite**
Logged By:	**T. Kessler/T. Payne**	Location (N,E):	**1243337.13, 2029751.04**	Filter Pack:	**20/40 Sand**



DEPTH (ft)	SOIL/ROCK VISUAL DESCRIPTION	REMARKS	ELEVATION (ft NAV88)
90	(90') SILTY SAND (SM); gray, loose, fine-grained with abundant angular gravel (amphibolite gneiss), moist.	Fine sand likely crushed from drill rig Packer testing conducted from 90-100 ft bgs	715
95	(96') PARTIALLY WEATHERED ROCK; dark brown, loose, thin fine sand lenses (~1 cm thick) separating PWR layers, contain horizontal stained banding, relict rock structure, abundant medium to coarse grained sand (subangular), wet to moist becoming dry at 98 feet bgs, abundant iron staining.		710
100	(98') AMPHIBOLITE GNEISS; dark gray, hard, large grains and abundant pink quartz inclusions. (100') Same as above.	Packer testing conducted from 100-110 ft bgs	705
105	(105') Rock is broken into angular gravel.		700
110	(110') With pink quartzite (similar to 2-10 ft bgs), rock is broken into angular gravel throughout. (112') Fractures with abundant iron staining.	Pump dry from 110-120 feet bgs; unable to seal packer Overdrilling very difficult; stall rod location/lock rods multiple times, suspect bit damage Pull 6 inches out to replace bit	695
115	(117') Fractures with abundant iron staining.		690
120	(120') AMPHIBOLITE GNEISS/GNEISS; dark gray, hard, some visible thin laminations, large grains with abundant pink/orange quartz inclusions, rock is broken into gravel and iron staining present from 120-122 feet bgs.	Low water return - suspect highly fractured	685
125	(128') Rock is broken into gravel.		680
130	(130') Pinkish gray from 130-132 feet bgs, heavily fractured quartzite, coarse and angular to subangular sand, abundant iron staining from 130-132 feet bgs.	Suspect sand due to rig crush Hole acccepting water	675
135			

NOTES: Coordinates in North American Datum (NAD) 1983, State Plane, Georgia-West, feet. Vertical elevations are referenced to the North American Vertical Datum (NAVD) of 1988. Boring backfilled with bentonite pellets to 207.8 ft bgs prior to well installation. Well completed with aboveground (+2.88 ft) PVC stickup with metal protective cover and guard posts set in concrete. Well depth measured from top of casing (TOC).

Geosyntec consultants
engineers | scientists | innovators

Client: Southern Company Services
Project: Plant Wansley Well Installation
Address: 1371 Liberty Church Rd, Carrollton, GA

WELL LOG
Well No. WGWC-28D
Page: 4 of 5

Drilling Start Date:	**06/26/2023**	Boring Depth (ft):	**220**	Well Depth (ft TOC):	**209.6**
Drilling End Date:	**08/18/2023**	Boring Diameter (in):	**6**	Well Diameter (in):	**2**
Drilling Company:	**Cascade Drilling**	Sampling Method(s):	**Core Barrel**	Screen Slot (in):	**0.010**
Drilling Method:	**Sonic 4x6**	DTW During Drilling (ft):	**32.0**	Riser Material:	**Sch 40 PVC**
Drilling Equipment:	**Terrasonic TSI-150T**	Ground Surface Elev. (ft):	**805.36 NAV88**	Screen Material:	**Sch 40 PVC U-Pack**
Driller:	**C. Franklin/B. Griffis**	Top of Casing Elev. (ft):	**808.24 NAV88**	Seal Material(s):	**Grout/Bentonite**
Logged By:	**T. Kessler/T. Payne**	Location (N,E):	**1243337.13, 2029751.04**	Filter Pack:	**20/40 Sand**

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	Sample Type	SOIL/ROCK VISUAL DESCRIPTION	REMARKS	ELEVATION (ft NAV88)
135				CB		Harder drilling	670
140				CB	(140') AMPHIBOLITE GNEISS/GNEISS; dark gray, hard, thin visible laminations, pink quartz inclusions throughout.	~50% water retention Packer testing conducted from 140-150 ft bgs	665
145				CB	(145') Broken into gravel from 145-150 feet bgs.		660
150				CB	(149') Heavily weathered gneiss and abundant iron staining. (150') Micaceous.	50% return Packer testing conducted from 150-160 ft bgs	655
155				CB			650
160				GR	(159') Trace iron staining. (160') Same as above. (161') Iron staining from 161-162 feet bgs.	60% return Packer testing conducted from 160-170 ft bgs	645
165				GR			640
170				CB	(170') Same as above.	No packer due to similarity to previous intervals, lack of fracture	635
175				CB	(174') Trace iron staining.		630
180							

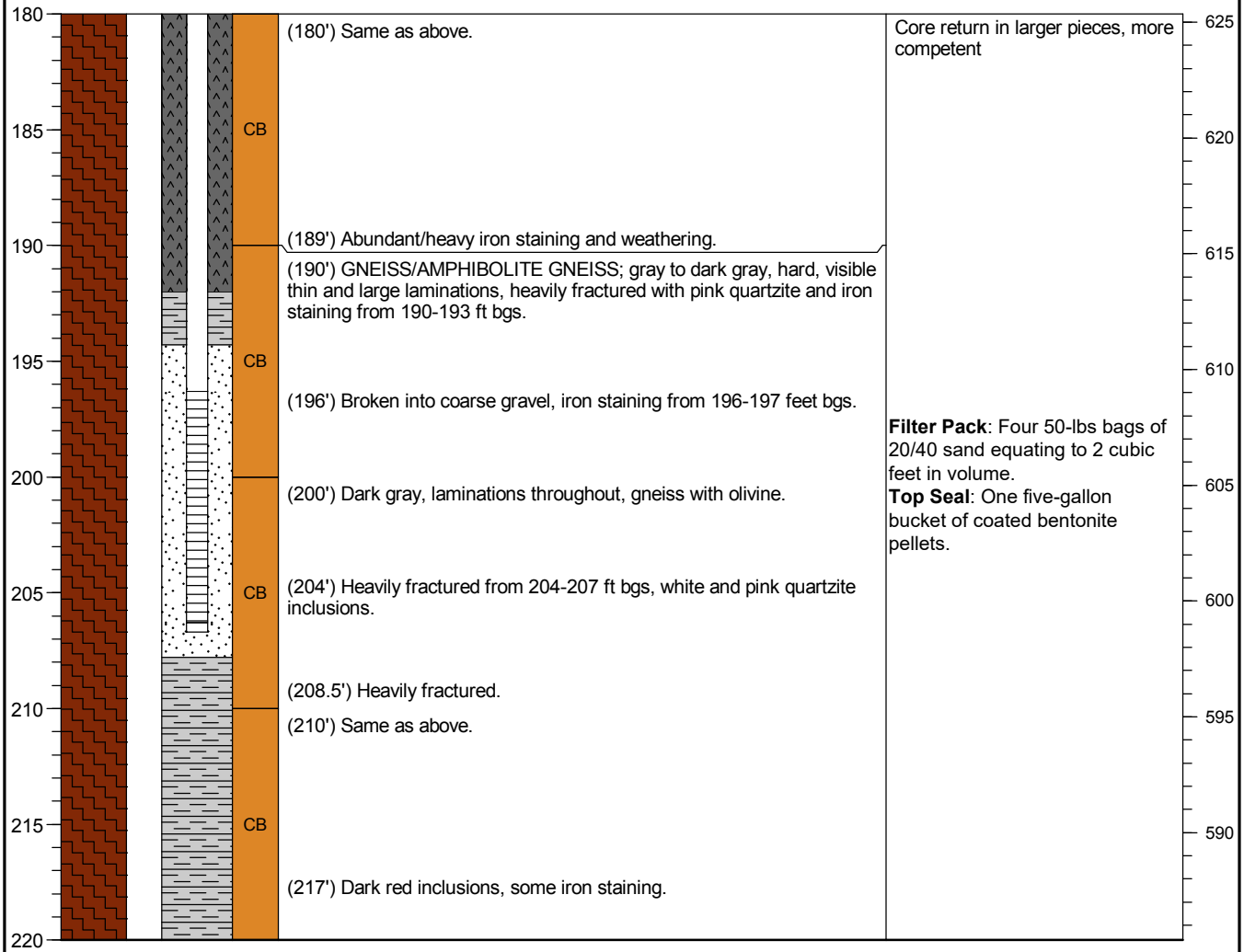
NOTES: Coordinates in North American Datum (NAD) 1983, State Plane, Georgia-West, feet. Vertical elevations are referenced to the North American Vertical Datum (NAVD) of 1988. Boring backfilled with bentonite pellets to 207.8 ft bgs prior to well installation. Well completed with aboveground (+2.88 ft) PVC stickup with metal protective cover and guard posts set in concrete. Well depth measured from top of casing (TOC).

Geosyntec consultants
engineers | scientists | innovators

Client: Southern Company Services
Project: Plant Wansley Well Installation
Address: 1371 Liberty Church Rd, Carrollton, GA

WELL LOG
Well No. WGWC-28D
Page: 5 of 5

Drilling Start Date:	**06/26/2023**	Boring Depth (ft):	**220**	Well Depth (ft TOC):	**209.6**
Drilling End Date:	**08/18/2023**	Boring Diameter (in):	**6**	Well Diameter (in):	**2**
Drilling Company:	**Cascade Drilling**	Sampling Method(s):	**Core Barrel**	Screen Slot (in):	**0.010**
Drilling Method:	**Sonic 4x6**	DTW During Drilling (ft):	**32.0**	Riser Material:	**Sch 40 PVC**
Drilling Equipment:	**Terrasonic TSI-150T**	Ground Surface Elev. (ft):	**805.36 NAV88**	Screen Material:	**Sch 40 PVC U-Pack**
Driller:	**C. Franklin/B. Griffis**	Top of Casing Elev. (ft):	**808.24 NAV88**	Seal Material(s):	**Grout/Bentonite**
Logged By:	**T. Kessler/T. Payne**	Location (N,E):	**1243337.13, 2029751.04**	Filter Pack:	**20/40 Sand**



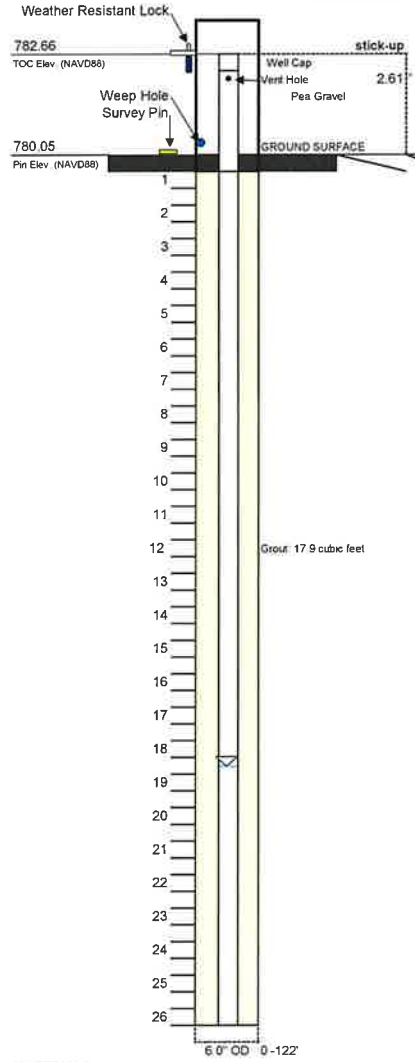
NOTES: Coordinates in North American Datum (NAD) 1983, State Plane, Georgia-West, feet. Vertical elevations are referenced to the North American Vertical Datum (NAVD) of 1988. Boring backfilled with bentonite pellets to 207.8 ft bgs prior to well installation. Well completed with aboveground (+2.88 ft) PVC stickup with metal protective cover and guard posts set in concrete. Well depth measured from top of casing (TOC).

Log updated with revised survey data certified 6/16/2020
Easting and Northing in NAD 83 Elevation in NAVD 88

ATLANTIC COAST CONSULTING, INC.

WAMW-1
BORING ID

PROJECT:	Plant Wansley - Ash Pond	PROJECT NO.:	I054-110
TOTAL DEPTH:	124.94 ft. TOC	SITE LOCATION:	Carrollton, Georgia
DATE BEGIN:	7-Sep-2018	DRILLER:	Issac Youub
DATE COMPLETE:	16-Sep-2018	RIG TYPE:	T-300 Rotosonic
INSTALLED BY:	Cascade	METHOD:	Rotosonic
SUPERVISED BY:	Ryan Walker	TOC Elev.	782.66 NAVD88
WATER 1ST ENCOUNTERED:	55' BGS		
WATER AFTER 48 HOURS:	21.34' TOC		



Northing: 1241843.66
Easting: 2028944.63

SURFACE COMPLETION:
4"x4" Aluminum Protective Casing
4'x4'x4" Concrete Pad
Weather Resistant Lock
Survey Pin

SOIL DESCRIPTION

0.00 - 10.00'
No recovery; Hydrovac

10.0 - 19.0 Recovery (9/9)
Reddish orange, silty SAND (overburden)
(SM)

19.0 - 29.0 Recovery (10/10)
Reddish orange, silty SAND (overburden)
(SM)

MATERIALS:

GROUT:		Portland Type I/II Cement
MANUFACTURER:		Sakrete
BENTONITE SEAL:		3/8" Bentonite Pellets
MANUFACTURER:		PDS
FILTER PACK SAND:		20/40 Mesh
MANUFACTURER:		Filter Media GP#1
WELL SCREEN:		Sch. 40 - 2" PVC
MANUFACTURER:		Silver-Line™
SLOT SIZE:		0.010-Inch Slot
WELL CASING:		Sch. 40 - 2" PVC
MANUFACTURER:		Silver-Line™

TOC - Top of Casing
ID - Inside Diameter; OD - Outside Diameter
NAVD88 - North American Vertical Datum of 1988
BGS - Below Ground Surface

ATLANTIC COAST CONSULTING, INC.

WAMW-1
BORING ID

PROJECT:	Plant Wansley - Ash Pond	PROJECT NO.:	1054-110
TOTAL DEPTH:	124.94 ft. TOC	SITE LOCATION:	Carrollton, Georgia
DATE BEGIN:	14-Sep-2018	DRILLER:	Issac Youub
DATE COMPLETE:	16-Sep-2018	RIG TYPE:	T-300 Rotosonic
INSTALLED BY:	Cascade	METHOD:	Rotosonic
SUPERVISED BY:	Ryan Walker	TOC Elev.	782.66 NAVD88
WATER 1ST ENCOUNTERED:	55' BGS		
WATER AFTER 48 HOURS:	21.34' TOC		

Elevation NAVD88	Depth BGS	
28		Reddish orange, silty SAND (overburden) (SM)
29		
30		29.0 - 39.0 Recovery (10/10) Reddish orange to light brown, sandy SILT, trace gravel, MnO laminations (ML)
31		
32		
33		
34		
35		
36		
37		
38		
39		39.0 - 49.0 Recovery (10/10) Reddish orange to light brown, sandy SILT, trace gravel, MnO laminations (ML)
40		
41		
42		
43		
44		
45		
46		
47		
48		
49		49.0 - 59.0 Recovery (10/10) Reddish orange to light brown, sandy SILT, trace gravel, MnO laminations (ML)
50		
51		
52		

6.0" OD 0-122'

MATERIALS:

GROUT:		Portland Type I/II Cement
MANUFACTURER:		Sakrete
BENTONITE SEAL:		3/8" Bentonite Pellets
MANUFACTURER:		PDS
FILTER PACK SAND:		20/40 Mesh
MANUFACTURER:		Filter Media GP#1
WELL SCREEN:		Sch. 40 - 2" PVC
MANUFACTURER:		Silver-Line™
SLOT SIZE:		0.010-Inch Slot
WELL CASING:		Sch. 40 - 2" PVC
MANUFACTURER:		Silver-Line™

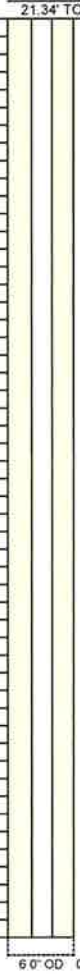
TOC - Top of Casing
ID - Inside Diameter; OD - Outside Diameter
NAVD88 - North American Vertical Datum of 1988
BGS - Below Ground Surface

ATLANTIC COAST CONSULTING, INC.

WAMW-1
BORING ID

PROJECT:	Plant Wansley - Ash Pond	PROJECT NO.:	I054-110
TOTAL DEPTH:	124.94 ft. TOC	SITE LOCATION:	Carrollton, Georgia
DATE BEGIN:	14-Sep-2018	DRILLER:	Issac Youub
DATE COMPLETE:	16-Sep-2018	RIG TYPE:	T-300 Rotosonic
INSTALLED BY:	Cascade	METHOD:	Rotosonic
SUPERVISED BY:	Ryan Walker	TOC Elev.	782.66 NAVD88
WATER 1ST ENCOUNTERED:	55' BGS		
WATER AFTER 48 HOURS:	21.34' TOC		

Elevation NAVD88	Depth BGS
	54
	55
	56
	57
	58
	59
	60
	61
	62
	63
	64
	65
	66
	67
	68
	69
	70
	71
	72
	73
	74
	75
	76
	77
	78



49.0 - 59.0 Recovery (10/10)
Reddish orange to light brown, sandy SILT, trace gravel, MnO laminations (ML)

59.0 - 69.0 Recovery (10/10)
Brown to tan, white and gray, silty Sand, trace gravel. Saprolite (SM)

69.0 - 79.0 Recovery (8/10)
Brown to tan, white and gray, silty Sand, trace gravel. Saprolite (SM)

MATERIALS:

GROUT:	Portland Type I/II Cement
MANUFACTURER:	Sakrete
BENTONITE SEAL:	3/8" Bentonite Pellets
MANUFACTURER:	PDS
FILTER PACK SAND:	20/40 Mesh
MANUFACTURER:	Filter Media GP#1
WELL SCREEN:	Sch. 40 - 2" PVC
MANUFACTURER:	Silver-Line™
SLOT SIZE:	0.010-Inch Slot
WELL CASING:	Sch. 40 - 2" PVC
MANUFACTURER:	Silver-Line™

TOC - Top of Casing
ID - Inside Diameter; OD - Outside Diameter
NAVD88 - North American Vertical Datum of 1988
BGS - Below Ground Surface

ATLANTIC COAST CONSULTING, INC.

WAMW-1
BORING ID

PROJECT:	Plant Wansley - Ash Pond	PROJECT NO.:	I054-110
TOTAL DEPTH:	124.94 ft. TOC	SITE LOCATION:	Carrollton, Georgia
DATE BEGIN:	14-Sep-2018	DRILLER:	Issac Youub
DATE COMPLETE:	16-Sep-2018	RIG TYPE:	T-300 Rotosonic
INSTALLED BY:	Cascade	METHOD:	Rotosonic
SUPERVISED BY:	Ryan Walker	TOC Elev.	782.66 NAVD88
WATER 1ST ENCOUNTERED:	55' BGS		
WATER AFTER 48 HOURS:	21.34' TOC		

Elevation NAVD88	Depth BGS
	80
	81
	82
	83
	84
	85
	86
	87
	88
	89
	90
	91
	92
	93
	94
	95
	96
	97
	98
	99
	100
	101
	102
	103
	104

6.0" OD 0 -122'

79.0 - 89.0 Recovery (4/10)
Dark gray micaeous Schist, wet - broken pieces

89.0 - 92.0 Recovery (0/3)

92.00 - 99.00
No recovery

99.00 - 109.00 Recovery (5/10)
Dark gray micaceous Schist, wet

MATERIALS:

GROUT:	Portland Type I/II Cement
MANUFACTURER	Sakrete
BENTONITE SEAL	3/8" Bentonite Pellets
MANUFACTURER	PDS
FILTER PACK SAND	20/40 Mesh
MANUFACTURER	Filter Media GP#1
WELL SCREEN	Sch. 40 - 2" PVC
MANUFACTURER	Silver-Line™
SLOT SIZE:	0.010-Inch Slot
WELL CASING	Sch. 40 - 2" PVC
MANUFACTURER	Silver-Line™

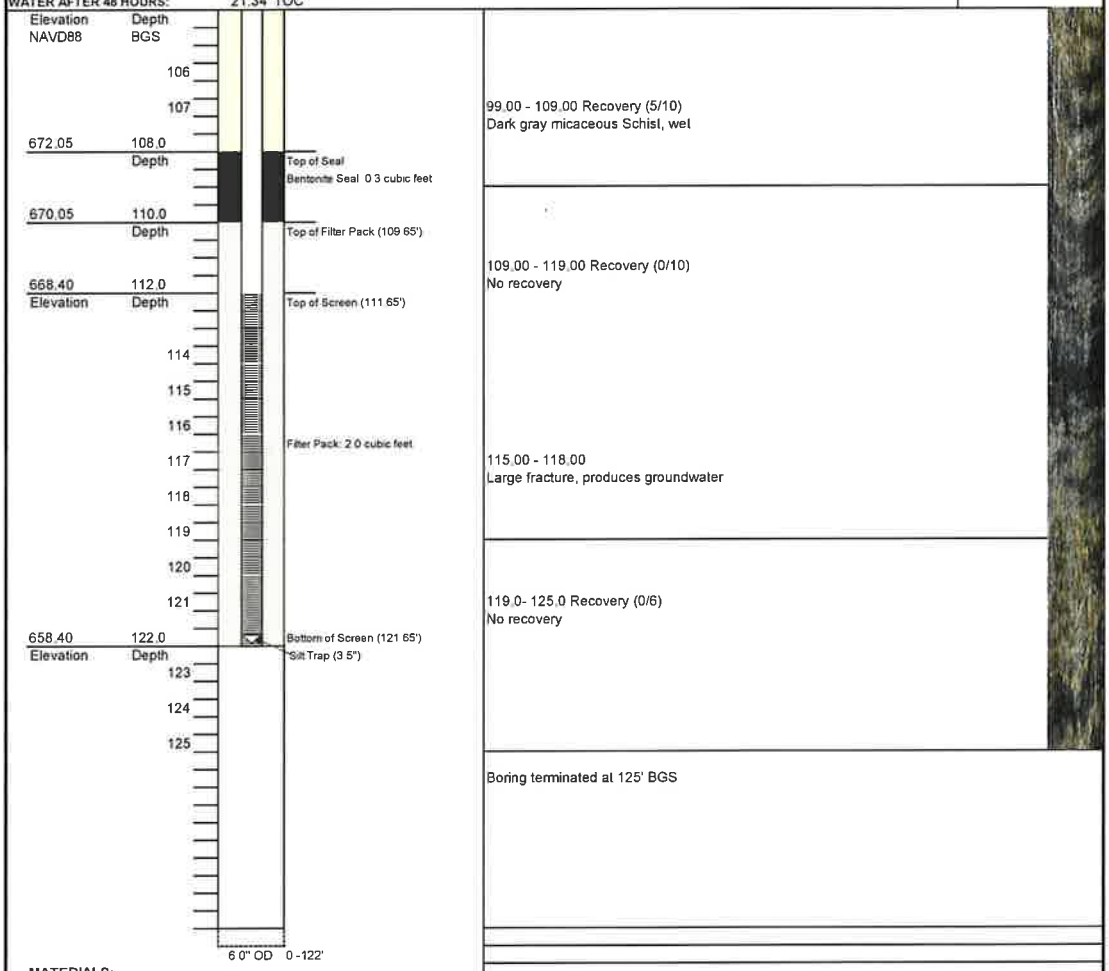
TOC - Top of Casing
ID - Inside Diameter; OD - Outside Diameter
NAVD88 - North American Vertical Datum of 1988
BGS - Below Ground Surface

ATLANTIC COAST CONSULTING, INC.

WAMW-1

BORING ID

PROJECT:	Plant Wansley - Ash Pond	PROJECT NO.:	I054-110
TOTAL DEPTH:	124.94 ft TOC	SITE LOCATION:	Carrollton, Georgia
DATE BEGIN:	14-Sep-2018	DRILLER:	Issac Youub
DATE COMPLETE:	16-Sep-2018	RIG TYPE:	T-300 Rotosonic
INSTALLED BY:	Cascade	METHOD:	Rotosonic
SUPERVISED BY:	Ryan Walker	TOC Elev.	782.66 NAVD88
WATER 1ST ENCOUNTERED:	55' BGS		
WATER AFTER 48 HOURS:	21.34' TOC		



99.00 - 109.00 Recovery (5/10)
Dark gray micaceous Schist, wet

109.00 - 119.00 Recovery (0/10)
No recovery

115.00 - 118.00
Large fracture, produces groundwater

119.0- 125.0 Recovery (0/6)
No recovery

Boring terminated at 125' BGS

MATERIALS:

GROUT:		Portland Type I/II Cement
MANUFACTURER:		Sakrete
BENTONITE SEAL		3/8" Bentonite Pellets
MANUFACTURER		PDS
FILTER PACK SAND		20/40 Mesh
MANUFACTURER:		Filter Media GP#1
WELL SCREEN		Sch. 40 - 2" PVC
MANUFACTURER		Silver-Line™
SLOT SIZE:		0.010-Inch Slot
WELL CASING		Sch. 40 - 2" PVC
MANUFACTURER		Silver-Line™

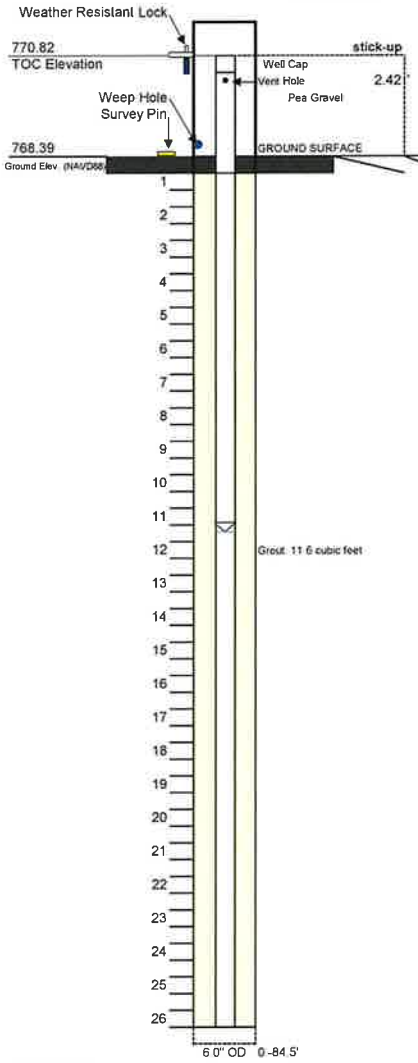
TOC - Top of Casing
ID - Inside Diameter; OD - Outside Diameter
NAVD88 - North American Vertical Datum of 1988
BGS - Below Ground Surface

Log updated with revised survey data certified 6/16/2020
Easting and Northing in NAD 83 Elevation in NAVD 88

ATLANTIC COAST CONSULTING, INC.

WAMW-2
BORING ID

PROJECT:	Plant Wansley - Ash Pond	PROJECT NO.:	I054-110
TOTAL DEPTH:	85.14 ft. TOC	SITE LOCATION:	Carrollton, Georgia
DATE BEGIN:	12-Sep-2018	DRILLER:	Issac Youub
DATE COMPLETE:	14-Sep-2018	RIG TYPE:	T-300 Rotosonic
INSTALLED BY:	Cascade	METHOD:	Rotosonic
SUPERVISED BY:	Ryan Walker	TOC Elev.	770.82 NAVD88
WATER 1ST ENCOUNTERED:	44' BGS		
WATER AFTER 48 HOURS:	14.42' TOC		



Northing: 1241547.56
Easting: 2028806.27

SURFACE COMPLETION:
4"x4" Aluminum Protective Casing
4'x4'x4" Concrete Pad
Weather Resistant Lock
Survey Pin

SOIL DESCRIPTION

0.00 - 10.00'
No recovery; Hydrovac

10.0 - 19.0'
Orange to reddish brown, SILT, little quartz gravel (ML)

19.0 - 29.0 Recovery (10/10)
Orangish brown, clayey SILT (MH)

MATERIALS:

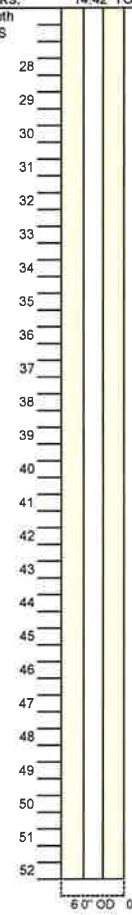
GROUT:		Portland Type I/II Cement
MANUFACTURER		Sakrete
BENTONITE SEAL:		3/8" Bentonite Pellets
MANUFACTURER		PDS
FILTER PACK SAND		20/40 Mesh
MANUFACTURER		Filter Media GP#1
WELL SCREEN		Sch. 40 - 2" PVC
MANUFACTURER		Silver-Line™
SLOT SIZE		0.010-Inch Slot
WELL CASING		Sch. 40 - 2" PVC
MANUFACTURER		Silver-Line™

TOC - Top of Casing
ID - Inside Diameter; OD - Outside Diameter
NAVD88 - North American Vertical Datum of 1988
BGS - Below Ground Surface

ATLANTIC COAST CONSULTING, INC.

WAMW-2
BORING ID

PROJECT:	Plant Wansley - Ash Pond	PROJECT NO.:	I054-110
TOTAL DEPTH:	86.14 ft. TOC	SITE LOCATION:	Carrollton, Georgia
DATE BEGIN:	12-Sep-2018	DRILLER:	Issac Youub
DATE COMPLETE:	14-Sep-2018	RIG TYPE:	T-300 Rotosonic
INSTALLED BY:	Cascade	METHOD:	Rotosonic
SUPERVISED BY:	Ryan Walker	TOC Elev.	770.82 NAVD88
WATER 1ST ENCOUNTERED:	44' BGS		
WATER AFTER 48 HOURS:	14.42' TOC		



19.0 - 29.0 Recovery (10/10)
Orangish brown, clayey SILT (MH)

29.0 - 39.0 Recovery (10/10)
Orangish brown, clayey SILT (MH)

39.0 - 49.0 Recovery (10/10)
Orangish brown, clayey SILT (MH)

44.0 - 48.0
Dark brown to reddish brown, dry silty CLAY (CH)

49.0 - 59.0 Recovery (10/10)
Reddish brown, clayey SILT (MH)

MATERIALS:

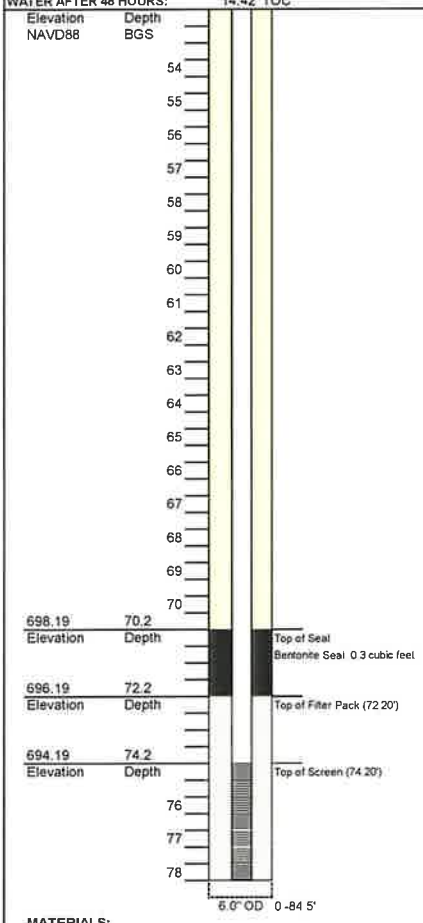
GROUT:		Portland Type I/II Cement
MANUFACTURER:		Sakrete
BENTONITE SEAL:		3/8" Bentonite Pellets
MANUFACTURER:		PDS
FILTER PACK SAND:		20/40 Mesh
MANUFACTURER:		Filter Media GP#1
WELL SCREEN:		Sch. 40 - 2" PVC
MANUFACTURER:		Silver-Line™
SLOT SIZE:		0.010-Inch Slot
WELL CASING:		Sch. 40 - 2" PVC
MANUFACTURER:		Johnson Screens™

TOC - Top of Casing
ID - Inside Diameter; OD - Outside Diameter
NAVD88 - North American Vertical Datum of 1988
BGS - Below Ground Surface

ATLANTIC COAST CONSULTING, INC.

WAMW-2
BORING ID

PROJECT:	Plant Wansley - Ash Pond	PROJECT NO.:	I054-110
TOTAL DEPTH:	86.14 ft. TOC	SITE LOCATION:	Carrollton, Georgia
DATE BEGIN:	12-Sep-2018	DRILLER:	Issac Youub
DATE COMPLETE:	14-Sep-2018	RIG TYPE:	T-300 Rotosonic
INSTALLED BY:	Cascade	METHOD:	Rotosonic
SUPERVISED BY:	Ryan Walker	TOC Elev.	770.82 NAVD88
WATER 1ST ENCOUNTERED:	44' BGS		
WATER AFTER 48 HOURS:	14.42' TOC		



Reddish brown, clayey SILT (MH)

55.00 - 56.00
Brown, wet SILT

56.00 - 59.00
Light brown, orange and gray, dry to moist, SILT (MH) Saprolite

59.0 - 69.0 Recovery (4.2/10)
Brown micaceous schist and garnetiferous greywacke, dry

69.0 - 79.0 Recovery (3.4/10)
Brown to gray, greywacke/schist with white plagioclase laminations, some garnets with banding.

MATERIALS:

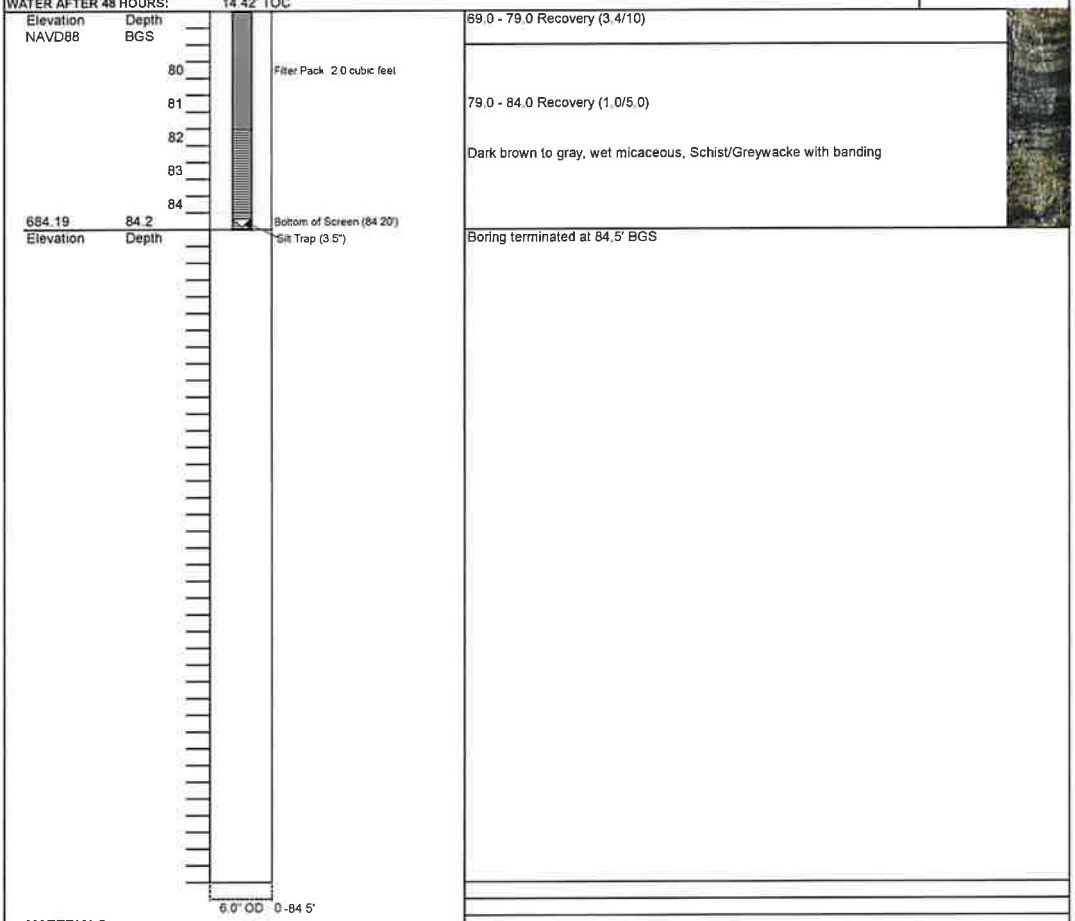
GROUT:		Portland Type I/II Cement
MANUFACTURER:		Sakrete
BENTONITE SEAL:		3/8" Bentonite Pellets
MANUFACTURER:		PDS
FILTER PACK SAND:		20/40 Mesh
MANUFACTURER:		Filter Media GP#1
WELL SCREEN:		Sch. 40 - 2" PVC
MANUFACTURER:		Silver-Line™
SLOT SIZE:		0.010-inch Slot
WELL CASING:		Sch. 40 - 2" PVC
MANUFACTURER:		Johnson Screens™

TOC - Top of Casing
ID - Inside Diameter; OD - Outside Diameter
NAVD88 - North American Vertical Datum of 1988
BGS - Below Ground Surface

ATLANTIC COAST CONSULTING, INC.

WAMW-2
BORING ID

PROJECT:	Plant Wansley - Ash Pond	PROJECT NO.:	I054-110
TOTAL DEPTH:	86.14 ft. TOC	SITE LOCATION:	Carrollton, Georgia
DATE BEGIN:	12-Sep-2018	DRILLER:	Issac Youub
DATE COMPLETE:	14-Sep-2018	RIG TYPE:	T-300 Rotosonic
INSTALLED BY:	Cascade	METHOD:	Rotosonic
SUPERVISED BY:	Ryan Walker	TOC Elev.	770.82 NAVD88
WATER 1ST ENCOUNTERED:	44' BGS		
WATER AFTER 48 HOURS:	14.42' TOC		



69.0 - 79.0 Recovery (3.4/10)

79.0 - 84.0 Recovery (1.0/5.0)

Dark brown to gray, wet micaceous, Schist/Greywacke with banding

Boring terminated at 84.5' BGS

MATERIALS:

GROUT:		Portland Type I/II Cement
MANUFACTURER:		Sakrete
BENTONITE SEAL:		3/8" Bentonite Pellets
MANUFACTURER:		PDS
FILTER PACK SAND:		20/40 Mesh
MANUFACTURER:		Filter Media GP#1
WELL SCREEN:		Sch. 40 - 2" PVC
MANUFACTURER:		Silver-Line™
SLOT SIZE:		0.010-Inch Slot
WELL CASING:		Sch. 40 - 2" PVC
MANUFACTURER:		Johnson Screens™

TOC - Top of Casing
ID - Inside Diameter; OD - Outside Diameter
NAVD88 - North American Vertical Datum of 1988
BGS - Below Ground Surface

Log updated with revised survey data certified 6/16/2020.
Easting and Northing in NAD 83. Elevation in NAVD 88.

SOUTHERN COMPANY

LOG OF TEST BORING AND WELL INSTALLATION

BORING PZ-01
PAGE 1 OF 2
ECS38198

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Ash Pond Piezometers
LOCATION Plant Wansley

DATE STARTED 12/12/2014 **COMPLETED** 12/12/2014 **SURF. ELEV.** 853.91 **COORDINATES:** N:1240249.86 E:2022319.93
CONTRACTOR CASCADE **EQUIPMENT** SONIC **METHOD** Rotosonic
DRILLED BY T.Ardito **LOGGED BY** S. Baxter **CHECKED BY** L. Millet **ANGLE** **BEARING**
BORING DEPTH 47.6 ft. **GROUND WATER DEPTH: DURING** **COMP.** 19.1 ft. **DELAYED** 16.7 ft. after 24 hrs.
NOTES

DEPTH (ft)	GRAPHIC LOG	STRATA DESCRIPTION	ELEV.	WELL DATA	ELEV. (DEPTH)
				Protective aluminum cover with bollards 4-foot square concrete pad Top of casing Elev. = 856.72	
5		**Clayey Gravel (GC)** - red, moist, fine grain, trace sand	848.91	← Surface Seal: concrete	851.91 (2.0)
10		**Silt (ML)** - gray, moist, sandy, yellow mottling, trace mica and angular rock fragments			
15		- mottled brown, larger angular rock fragments	838.91		
20		**Schist** - gray, fine to aphanitic grain, hard to medium hard, slightly to moderately weathered		← Annular Fill: Cement-Bentonite Grout - 6 bags, 46 lbs, Portland Type I/II, 33 gal	
25		- very hard, becomes non-foliated			
30					820.71 (33.2)
35				← Annular Seal: bentonite chips - 1 bag, 5 lbs, Baroid 3/8" chips	0 818.71 (35.2)
				← Filter: silica filter sand - 4 bags, 50 lbs, #1A filter media	817.81 (36.1)
40				**Well: 2" OD PVC (SCH 40)**	

(Continued Next Page)

SOUTHERN COMPANY

LOG OF TEST BORING AND WELL INSTALLATION

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Ash Pond Piezometers
LOCATION Plant Wansley

DEPTH (ft)	GRAPHIC LOG	STRATA DESCRIPTION	ELEV.	WELL DATA	ELEV. (DEPTH)
				Protective aluminum cover with bollards 4-foot square concrete pad Top of casing Elev. = 856.72	
45		**Schist***(Con't)* (CONTINUED)		**Well: 2" OD PVC (SCH 40)** **Screen: 10 ft. pre-pack**	
				Sump:0.40 ft.	807.81 (46.1)
			806.31		

Bottom of borehole at 47.6 feet.

Log updated with revised survey data certified 6/16/2020.
Easting and Northing in NAD 83. Elevation in NAVD 88.

SOUTHERN COMPANY

LOG OF TEST BORING AND WELL INSTALLATION

BORING PZ-04
PAGE 1 OF 1
ECS38198

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Ash Pond Piezometers
LOCATION Plant Wansley

DATE STARTED 12/22/2014 **COMPLETED** 12/22/2014 **SURF. ELEV.** 886.13 **COORDINATES:** N:1242592.03 E:2023595.91
CONTRACTOR CASCADE **EQUIPMENT** SONIC **METHOD** Rotosonic
DRILLED BY T.Ardito **LOGGED BY** S. Baxter **CHECKED BY** L. Millet **ANGLE** **BEARING**
BORING DEPTH 17 ft. **GROUND WATER DEPTH: DURING** **COMP.** 4.5 ft. **DELAYED** 6 ft. after 24 hrs.
NOTES

DEPTH (ft)	GRAPHIC LOG	STRATA DESCRIPTION	ELEV.	WELL DATA	ELEV. (DEPTH)
				Protective aluminum cover with bollards 4-foot square concrete pad Top of casing Elev. = 889.01	
		Silt (ML) - orange, moist, sandy, mottled red, trace mica		Surface Seal: concrete	883.53 (2.6)
				Annular Seal: bentonite chips - 1 bag, 50 lbs, Baroid 3/8" chips	
5		- brown, moist, sandy, mottled orange, trace mica and weathered rock			881.53 (4.6)
				Filter: silica filter sand - 4.5 bags, 50 lbs, #1A filter media	
			878.13		878.93 (7.2)
		Schist - gray, fine grain, soft to medium hard, slightly to moderately weathered, thinly foliated, oxide staining		**Well: 2" OD PVC (SCH 40)**	
10					
				Well: 2" OD PVC (SCH 40) **Screen: 10 ft. pre-pack**	
15			869.13		868.93
		Bottom of borehole at 17.0 feet.		Sump:0.40 ft.	

2012 GEOTECH LOG WITH WELL - ESEE2012DATABASE.GDT - 2/26/15 15:57 - S:\WORKGROUPS\APC GENERAL SERVICE COMPLEX\CIVIL TECH SUPPORT\DRILLING\PROJECTS\WANSLEY ASH POND PIEZ\GINT\PLANT_WANSLEY_ASH_POND_1 (2).GPJ

Log updated with revised survey data certified 6/16/2020.
Easting and Northing in NAD 83. Elevation in NAVD 88.

SOUTHERN COMPANY

LOG OF TEST BORING AND WELL INSTALLATION

BORING PZ-06
PAGE 1 OF 1
ECS38198

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Ash Pond Piezometers
LOCATION Plant Wansley

DATE STARTED 12/16/2014 **COMPLETED** 12/17/2014 **SURF. ELEV.** 912.30 **COORDINATES:** N:1244382.89 E:2024661.39
CONTRACTOR CASCADE **EQUIPMENT** SONIC **METHOD** Rotosonic
DRILLED BY T.Ardito **LOGGED BY** S. Baxter **CHECKED BY** L. Millet **ANGLE** **BEARING**
BORING DEPTH 23 ft. **GROUND WATER DEPTH: DURING** **COMP.** 7.8 ft. **DELAYED** 8.3 ft. after 24 hrs.
NOTES

DEPTH (ft)	GRAPHIC LOG	STRATA DESCRIPTION	ELEV.	WELL DATA	ELEV. (DEPTH)
				Protective aluminum cover with bollards 4-foot square concrete pad Top of casing Elev. = 915.15	
		Silt (ML) - orange, moist, clayey, mottled dark orange, trace mica and weathered rock		Surface Seal: concrete	910.30 (2.0)
5		- brown, moist, sandy, mottled orange and red, trace mica and weathered rock		Annular Fill: Cement-Bentonite Grout - 2 bags, 46 lbs, Portland Type I/II, 11 gal	
			904.30		904.30 (8.0)
10		**Schist** - gray, fine grain, medium hard to hard, moderately to highly weathered, foliated, oxide staining		Annular Seal: bentonite chips - 1 bag, 50 lbs, Baroid 3/8" chips	900.70 (11.6)
				Filter: silica filter sand - 4 bags, 50 lbs, #1A filter media	898.60 (13.7)
15				**Well: 2" OD PVC (SCH 40)**	
				Well: 2" OD PVC (SCH 40) **Screen: 10 ft. pre-pack**	
20			889.30		
		Bottom of borehole at 23.0 feet.		Sump:0.40 ft.	888.60

2012 GEOTECH LOG WITH WELL - ESEE2012DATABASE.GDT - 2/26/15 15:57 - S:\WORKGROUPS\APC GENERAL SERVICE COMPLEX\CIVIL TECH SUPPORT\DRILLING\PROJECTS\WANSLEY ASH POND PIEZ\GINT\PLANT_WANSLEY_ASH_POND_1 (2).GPJ

Log updated with revised survey data certified 6/16/2020.
Easting and Northing in NAD 83. Elevation in NAVD 88.

SOUTHERN COMPANY

LOG OF TEST BORING AND WELL INSTALLATION

BORING PZ-08
PAGE 1 OF 1
ECS38198

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Ash Pond Piezometers
LOCATION Plant Wansley

DATE STARTED 12/15/2014 **COMPLETED** 12/15/2014 **SURF. ELEV.** 864.65 **COORDINATES:** N:1245514.59 E:2026807.30
CONTRACTOR CASCADE **EQUIPMENT** SONIC **METHOD** Rotosonic
DRILLED BY T.Ardito **LOGGED BY** S. Baxter **CHECKED BY** L. Millet **ANGLE** **BEARING**
BORING DEPTH 37.5 ft. **GROUND WATER DEPTH: DURING** **COMP.** 9.5 ft. **DELAYED** 13.6 ft. after 24 hrs.
NOTES

DEPTH (ft)	GRAPHIC LOG	STRATA DESCRIPTION	ELEV.
5		**Silt (ML)** - orange, dry, sandy, mottled light brown and red, trace mica and gravel	
			857.65
10		**Silty Sand (SM)** - brown, dry, fine to medium grain, mottled orange, trace mica and gravel	
15			
20			
25		- gray, dry, fine to medium grain, mottled orange and light brown, trace mica and gravel	
			835.65
30		**Gneiss** - gray, fine grain, hard, slightly weathered, massive, some oxidation	
35			827.65)

Bottom of borehole at 37.5 feet.

WELL DATA

Protective aluminum cover with bollards
4-foot square concrete pad
Top of casing Elev. = 867.29

ELEV. (DEPTH)

Surface Seal: concrete
862.65
(2.0)

Annular Fill: Cement-Bentonite Grout - 6 bags, 46 lbs, Portland Type I/II, 33 gal

842.55
(22.1)

Annular Seal: bentonite chips - 1 bag, 50 lbs, Baroid 3/8" chips

840.15
(24.5)

Filter: silica filter sand - 4 bags, 50 lbs, #1A filter media

836.85
(27.8)

Well: 2" OD PVC (SCH 40)

Well: 2" OD PVC (SCH 40)
Screen: 10 ft. pre-pack

826.85

Sump:0.40 ft.

2012 GEOTECH LOG WITH WELL - ESEE2012DATABASE.GDT - 2/26/15 15:57 - S:\WORKGROUPS\APC GENERAL SERVICE COMPLEX\CIVIL TECH SUPPORT\DRILLING\PROJECTS\WANSLEY ASH POND PIEZ\GINT\PLANT_WANSLEY_ASH_POND_1 (2).GPJ

Log updated with revised survey data certified 6/16/2020.
Easting and Northing in NAD 83. Elevation in NAVD 88.

Well renamed in 2025 to WGWC-41

SOUTHERN COMPANY

LOG OF TEST BORING AND WELL INSTALLATION

BORING PZ-10
PAGE 1 OF 1
ECS38198

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Ash Pond Piezometers
LOCATION Plant Wansley

DATE STARTED 12/5/2014 **COMPLETED** 12/5/2014 **SURF. ELEV.** 829.26 **COORDINATES:** N:1242058.41 E:2028554.29
CONTRACTOR CASCADE **EQUIPMENT** SONIC **METHOD** Rotosonic
DRILLED BY T.Ardito **LOGGED BY** S. Baxter **CHECKED BY** L. Millet **ANGLE** **BEARING**
BORING DEPTH 30 ft. **GROUND WATER DEPTH: DURING** **COMP.** 17 ft. **DELAYED** 20.25 ft. after 24 hrs.
NOTES

DEPTH (ft) | GRAPHIC LOG

STRATA DESCRIPTION

ELEV.

Utility Clearance (HYDROEXCAVATION)

819.26

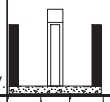
Gneiss
- gray, fine to medium grain, hard to medium hard, slightly to moderately weathered, massive, banded, with oxidation

- light brown, heavier oxidation

799.26

Bottom of borehole at 30.0 feet.

WELL DATA



Protective aluminum cover with bollards
4-foot square concrete pad
Top of casing Elev. = 832.02

ELEV. (DEPTH)

Surface Seal: concrete
827.26 (2.0)

Annular Fill: Cement-Bentonite Grout - 3 bags, 46 lbs, Portland Type I/II, 16.5 gal

814.96 (14.3)

Annular Seal: bentonite chips - 1 bag, 50 lbs, Baroid 3/8" chips

812.96 (16.3)

Filter: silica filter sand - 3.5 bags, 50 lbs, #1A filter media

810.46 (18.8)

Well: 2" OD PVC (SCH 40)

Well: 2" OD PVC (SCH 40)
Screen: 10 ft. pre-pack

800.46 (28.8)

Sump:0.40 ft.

2012 GEOTECH LOG WITH WELL - ESEE2012DATABASE.GDT - 2/26/15 15:57 - S:\WORKGROUPS\APC GENERAL SERVICE COMPLEX\CIVIL TECH SUPPORT\DRILLING\PROJECTS\WANSLEY ASH POND PIEZ\GINT\PLANT_WANSLEY_ASH_POND_1 (2).GPJ

Log updated with revised survey data certified 6/16/2020.
Easting and Northing in NAD 83. Elevation in NAVD 88.

Well renamed in 2025 to WGWC-40

SOUTHERN COMPANY

LOG OF TEST BORING AND WELL INSTALLATION

BORING PZ-12
PAGE 1 OF 2
ECS38198

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Ash Pond Piezometers
LOCATION Plant Wansley

DATE STARTED 12/8/2014 **COMPLETED** 12/8/2014 **SURF. ELEV.** 816.17 **COORDINATES:** N:1240838.50 E:2026731.05
CONTRACTOR CASCADE **EQUIPMENT** SONIC **METHOD** Rotosonic
DRILLED BY T.Ardito **LOGGED BY** S. Baxter **CHECKED BY** L. Millet **ANGLE** **BEARING**
BORING DEPTH 47 ft. **GROUND WATER DEPTH: DURING** **COMP.** 22 ft. **DELAYED** 24.28 ft. after 24 hrs.
NOTES

DEPTH (ft)	GRAPHIC LOG	STRATA DESCRIPTION	WELL DATA	ELEV. (DEPTH)
			Protective aluminum cover with bollards 4-foot square concrete pad Top of casing Elev. = 818.74	
0		**Silt (ML)** - orange, dry, sandy, mottled red and white, micaceous, trace gravel	Surface Seal: concrete	814.17 (2.0)
5				
10				
15		- red, moist, mottled yellow with black spots, micaceous, trace gravel	Annular Fill: Cement-Bentonite Grout - 6 bags, 46 lbs, Portland Type I/II, 33 gal	
20				
25				
30		- mottled orange		783.57 (32.6)
35			Annular Seal: bentonite chips - 1 bag, 50 lbs, Baroid 3/8" chips	781.57 (34.6)
			Filter: silica filter sand - 3.5 bags, 50 lbs, #1A filter media	779.37 (36.8)
40			**Well: 2" OD PVC (SCH 40)**	

(Continued Next Page)

Well renamed in 2025 to WGWC-40

SOUTHERN COMPANY

LOG OF TEST BORING AND WELL INSTALLATION

BORING PZ-12
PAGE 2 OF 2
ECS38198

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Ash Pond Piezometers
LOCATION Plant Wansley

DEPTH (ft)	GRAPHIC LOG	STRATA DESCRIPTION	ELEV.	WELL DATA	ELEV. (DEPTH)
				Protective aluminum cover with bollards 4-foot square concrete pad Top of casing Elev. = 818.74	
45		**Silt (ML)***(Con't)* (CONTINUED)		**Well: 2" OD PVC (SCH 40)** **Screen: 10 ft. pre-pack**	
			769.17	Sump:0.40 ft.	769.37
		Bottom of borehole at 47.0 feet.			

Log updated with revised survey data certified 6/16/2020.
Easting and Northing in NAD 83. Elevation in NAVD 88.

Well renamed in 2025 to WGWC-39

SOUTHERN COMPANY

LOG OF TEST BORING AND WELL INSTALLATION

BORING PZ-15
PAGE 1 OF 1
ECS38198

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Ash Pond Piezometers
LOCATION Plant Wansley

DATE STARTED 12/10/2014 **COMPLETED** 12/10/2014 **SURF. ELEV.** 824.59 **COORDINATES:** N:1240457.61 E:2025105.38
CONTRACTOR CASCADE **EQUIPMENT** SONIC **METHOD** Rotosonic
DRILLED BY T.Ardito **LOGGED BY** S. Baxter **CHECKED BY** L. Millet **ANGLE** **BEARING**
BORING DEPTH 37 ft. **GROUND WATER DEPTH: DURING** **COMP.** 22.5 ft. **DELAYED** 30.5 ft. after 24 hrs.
NOTES

DEPTH (ft)	GRAPHIC LOG	STRATA DESCRIPTION	ELEV.	WELL DATA	ELEV. (DEPTH)
				Protective aluminum cover with bollards 4-foot square concrete pad Top of casing Elev. = 826.86	
0		**Utility Clearance (HYDROEXCAVATION)**		Surface Seal: concrete	822.59 (2.0)
5			817.59		
10		**Silt (ML)** - red, moist, sandy, mottled brown and yellow with black streaking, micaceous, trace gravel		Annular Fill: Cement-Bentonite Grout - 6 bags, 46 lbs, Portland Type I/II, 33 gal	
15					
20					
25		- wet			802.29 (22.3)
				Annular Seal: bentonite chips - 1 bag, 50 lbs, Baroid 3/8" chips	
					797.99 (26.6)
				Filter: silica filter sand - 4 bags, 50 lbs, #1A filter media	
30					795.79 (28.8)
				Well: 2" OD PVC (SCH 40)	
35				**Well: 2" OD PVC (SCH 40)** **Screen: 10 ft. pre-pack**	
			787.59		
		Bottom of borehole at 37.0 feet.			785.79
				Sump:0.40 ft.	

2012 GEOTECH LOG WITH WELL - ESEE2012DATABASE.GDT - 2/26/15 15:58 - S:\WORKGROUPS\APC GENERAL SERVICE COMPLEX\CIVIL TECH SUPPORT\DRILLING\PROJECTS\WANSLEY ASH POND PIEZ\GINT\PLANT_WANSLEY_ASH_POND_1 (2).GPJ

Log updated with revised survey data certified 6/16/2020.
Easting and Northing in NAD 83. Elevation in NAVD 88.

SOUTHERN COMPANY

LOG OF TEST BORING AND WELL INSTALLATION

BORING PZ-16
PAGE 1 OF 1
ECS38198

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Ash Pond Piezometers
LOCATION Plant Wansley

DATE STARTED 12/10/2014 **COMPLETED** 12/11/2014 **SURF. ELEV.** 798.05 **COORDINATES:** N:1239419.77 E:2023662.22
CONTRACTOR CASCADE **EQUIPMENT** SONIC **METHOD** Rotosonic
DRILLED BY T.Ardito **LOGGED BY** S. Baxter **CHECKED BY** L. Millet **ANGLE** **BEARING**
BORING DEPTH 24.5 ft. **GROUND WATER DEPTH: DURING** **COMP.** 11.4 ft. **DELAYED** 10.5 ft. after 24 hrs.
NOTES

DEPTH (ft) | GRAPHIC LOG | STRATA DESCRIPTION | WELL DATA

Protective aluminum cover with bollards
4-foot square concrete pad
Top of casing Elev. = 800.70

ELEV. | ELEV. (DEPTH)

Silt (ML)
- brown, moist, clayey, mottled orange

Surface Seal: concrete
796.05 (2.0)

- gray, moist, sandy, mottled orange, trace gravel

Annular Fill: Cement-Bentonite Grout - 2 bags, 46 lbs, Portland Type I/II, 11 gal

787.95 (10.1)

- wet

Annular Seal: bentonite chips - 1 bag, 50 lbs, Baroid 3/8" chips

785.95 (12.1)

Filter: silica filter sand - 4.5 bags, 50 lbs, #1A filter media

785.05 (13.0)

782.05

Well: 2" OD PVC (SCH 40)

Silty Sand (SM)
- gray, wet, fine to coarse grain, trace mica

Well: 2" OD PVC (SCH 40)
Screen: 10 ft. pre-pack

775.05 (23.0)

Sump:0.50 ft.

773.55

Bottom of borehole at 24.5 feet.

2012 GEOTECH LOG WITH WELL - ESEE2012DATABASE.GDT - 2/26/15 15:58 - S:\WORKGROUPS\APC GENERAL SERVICE COMPLEX\CIVIL TECH SUPPORT\DRILLING\PROJECTS\WANSLEY ASH POND PIEZ\GINT\PLANT_WANSLEY_ASH_POND_1 (2).GPJ

Log updated with revised survey data certified 6/16/2020.
Easting and Northing in NAD 83. Elevation in NAVD 88.

SOUTHERN COMPANY

LOG OF TEST BORING AND WELL INSTALLATION

BORING PZ-17
PAGE 1 OF 2
ECS38198

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Ash Pond Piezometers
LOCATION Plant Wansley

DATE STARTED 12/11/2014 **COMPLETED** 12/11/2014 **SURF. ELEV.** 828.54 **COORDINATES:** N:1239270.02 E:2023086.51
CONTRACTOR CASCADE **EQUIPMENT** SONIC **METHOD** Rotosonic
DRILLED BY T.Ardito **LOGGED BY** S. Baxter **CHECKED BY** L. Millet **ANGLE** **BEARING**
BORING DEPTH 48 ft. **GROUND WATER DEPTH: DURING** **COMP.** 23.1 ft. **DELAYED** 23.6 ft. after 24 hrs.
NOTES

DEPTH (ft)	GRAPHIC LOG	STRATA DESCRIPTION	WELL DATA	ELEV. (DEPTH)
			Protective aluminum cover with bollards 4-foot square concrete pad Top of casing Elev. = 831.01	ELEV.
		Silt (ML) - orange, moist, clayey, mottled yellow, trace mica and angular rock	Surface Seal: concrete	826.54 (2.0)
5				
10		- orange, moist, sandy, mottled light brown and yellow, trace mica		
15				
20		- mottled red	Annular Fill: Cement-Bentonite Grout - 6 bags, 46 lbs, Portland Type I/II, 33 gal	
25				
30		- tan, very moist		
35		- dark brown, dry, sandy, micaceous, with gravel		794.94 (33.6)
			Annular Seal: bentonite chips - 1 bag, 50 lbs, Baroid 3/8" chips	792.94 (35.6)
			Filter: silica filter sand - 4 bags, 50 lbs, #1A filter media	
40				789.84 (38.7)

(Continued Next Page)

SOUTHERN COMPANY

LOG OF TEST BORING AND WELL INSTALLATION

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Ash Pond Piezometers
LOCATION Plant Wansley

DEPTH (ft)	GRAPHIC LOG	STRATA DESCRIPTION	ELEV.	WELL DATA	ELEV. (DEPTH)
				Protective aluminum cover with bollards 4-foot square concrete pad Top of casing Elev. = 831.01	
				(CONTINUED)	
45		**Silt (ML)***(Con't)*		**Well: 2" OD PVC (SCH 40)**	
				Well: 2" OD PVC (SCH 40) **Screen: 10 ft. pre-pack**	
			780.54		779.84
		Bottom of borehole at 48.0 feet.		Sump:0.40 ft.	

Log updated with revised survey data certified 6/16/2020.
Easting and Northing in NAD 83. Elevation in NAVD 88.

SOUTHERN COMPANY

LOG OF TEST BORING AND WELL INSTALLATION

BORING PZ-18
PAGE 1 OF 1
ECS38198

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Ash Pond Piezometers
LOCATION Plant Wansley

DATE STARTED 12/11/2014 **COMPLETED** 12/12/2014 **SURF. ELEV.** 812.10 **COORDINATES:** N:1239569.52 E:2022299.20
CONTRACTOR CASCADE **EQUIPMENT** SONIC **METHOD** Rotosonic
DRILLED BY T.Ardito **LOGGED BY** S. Baxter **CHECKED BY** L. Millet **ANGLE** **BEARING**
BORING DEPTH 37 ft. **GROUND WATER DEPTH: DURING** **COMP.** 17.9 ft. **DELAYED** 16.1 ft. after 24 hrs.
NOTES

DEPTH (ft)	GRAPHIC LOG	STRATA DESCRIPTION	ELEV.	WELL DATA	ELEV. (DEPTH)
				Protective aluminum cover with bollards 4-foot square concrete pad Top of casing Elev. = 814.51	
0		**Utility Clearance (HYDROEXCAVATION)**		Surface Seal: concrete	810.10 (2.0)
10			802.10		
		Silt (ML) - red, moist, sandy, mottled yellow with black streaks, trace mica and weathered rock		Annular Fill: Cement-Bentonite Grout - 6 bags, 46 lbs, Portland Type I/II, 33 gal	
20		- mottled orange and white			789.50 (22.6)
				Annular Seal: bentonite chips - 1 bag, 50 lbs, Baroid 3/8" chips	788.20 (23.9)
				Filter: silica filter sand - 4 bags, 50 lbs, #1A filter media	(24.6) 787.50
				Well: 2" OD PVC (SCH 40)	
30		- light brown, wet, mottled orange with black specks		**Well: 2" OD PVC (SCH 40)** **Screen: 10 ft. pre-pack**	
				Sump:0.40 ft.	778.20 (33.9)
			775.10		

Bottom of borehole at 37.0 feet.

2012 GEOTECH LOG WITH WELL - ESEE2012DATABASE.GDT - 2/26/15 15:58 - S:\WORKGROUPS\APC GENERAL SERVICE COMPLEX\CIVIL TECH SUPPORT\DRILLING\PROJECTS\WANSLEY ASH POND PIEZ\GINT\PLANT_WANSLEY_ASH_POND_1 (2).GPJ

Log updated with revised survey data certified 6/16/2020.
Easting and Northing in NAD 83. Elevation in NAVD 88.

Well renamed in 2025 to WGWC-42

WELL NUMBER PZ-20

ERM
3200 Windy Hill Rd Ste 1500W
Atlanta, GA 30339
Telephone: 678-486-2700

COORDINATES: N:1243496.86 E:2030132.73

CLIENT Southern Company Services, Inc.
PROJECT NAME Plant Wansley
PROJECT NUMBER 0372406
PROJECT LOCATION AP
DATE STARTED 1/31/17 **COMPLETED** 1/31/17
GROUND ELEVATION 784.45 **HOLE SIZE** 4.25 inches
DRILLING CONTRACTOR Southern Comparny Services, Inc
GROUND WATER LEVELS:
DRILLING METHOD Hollow Stem Auger 2"
AT TIME OF DRILLING 14.50 ft
LOGGED BY MR **CHECKED BY** GEJ
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				Hydrovac. No sample collected
10				10.0
	SS	SM		(SM) white, brown, & red Silty SAND, loose, moist
				14.0
15		SM		(SM) red silty SAND, very dense, moist
				15.0
	SS	SM		(SM) reddish pink Silty SAND with lenses of white CLAY, loose, moist
20				20.0
	SS	SP-SM		(SP-SM) reddish orange SAPROLITE, poorly graded, granitic remnant rock fabric, moist
25				25.0
	SS	SP		(SP) red, brown, & orange coarse SAND, loose, quartz, wet
30				
	SS	SP		(SP) SAA
35				35.0

WELL DIAGRAM

Casing Type: PVC

70/30 Portland Cement / bentonite mix

765.45

PEL plug 3/8"

761.95

759.45

20/40 industrial quartz (ANSI std 61) 4" UPACK

749.45

Refusal at 35.0 feet.
Bottom of borehole at 35.0 feet.

Survey data certified 11/17/2020.
Easting an Northing in NAD 83. Elevation in NAVD 88.

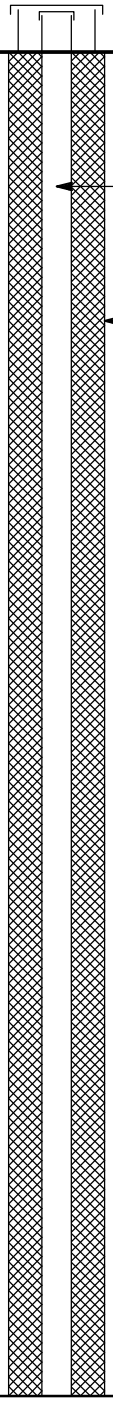
Geosyntec consultants
engineers | scientists | innovators
Geosyntec Consultants
1255 Roberts Boulevard
Kennesaw, GA 30144

PIEZOMETER PZ-23D

CLIENT Southern Company Services
PROJECT NAME Plant Wansley Ash Pond 1 (AP-1) Piezometer Installation
PROJECT NUMBER GW7327
PROJECT LOCATION Plant Wansley AP-1
DATE STARTED 9/30/20 **COMPLETED** 10/2/20
NORTHING 1242139.53 ft **EASTING** 2028520.87 ft
DRILLER Cascade Drilling
GROUND ELEVATION 831.89 ft **BORING DIAMETER** 6 in.
DRILLING METHOD Sonic
TOP OF CASING ELEVATION 834.32 ft
SAMPLING METHOD 4 in. core 6 in. override
GEOPHYSICAL CONTRACTOR ---
RIG TYPE Terrasonic 1051181
LOGGED BY A. Ramsey **CHECKED BY** A. Reimer

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION
0	830			Air Knife Excavation (0 ft to 5 ft) NO SAMPLE
		5 ft: Significant rig chatter.		826.9 PARTIALLY WEATHERED ROCK (PWR), gneiss, very pale brown to brown, wet, very thin lamination, hard, friable, some coarse silty sand throughout, few 2 inch thick competent non-friable fragments, wet.
10	820	10 ft: Decreased rig chatter, advance rate slowed ~50%.		14 ft: Highly weathered, white to reddish brown, clayey with silty to very fine sand, original bandad structure visible, abundant iron oxidation staining to 18 ft, very soft to soft, low plasticity to non-plastic, moist to 18 ft then dry.
20	810			811.9 GNEISS, gray to bluish gray, iron scaling present on fracture faces and vertical hairline fractures, broken into cobble size pieces along joints, faint thin banding, very hard, wet. Fracture zone between 20 ft and 23 ft.
		27 ft: Some water circulation loss observed.		25 ft: Fracture zone between 25 ft and 27 ft.
30	800			30 ft: Fracture zone between 30 ft and 33 ft.
				35 ft: Fracture zone between 35 ft and 36 ft.
40	790	40 ft: Significantly increased rig chatter, no return of drill water.		47 ft: Little to no iron scaling. 781.9

CONSTRUCTION DIAGRAM



SCS MONITORING WELLS WANSLEY_PIEZOMETER INSTALL_2020.GPJ ACP GINT LIBRARY CH.GLB 1/5/21

(Continued Next Page)

Geosyntec consultants
engineers | scientists | innovators
Geosyntec Consultants
1255 Roberts Boulevard
Kennesaw, GA 30144

PIEZOMETER PZ-23D

CLIENT Southern Company Services
PROJECT NAME Plant Wansley Ash Pond 1 (AP-1) Piezometer Installation
PROJECT NUMBER GW7327
PROJECT LOCATION Plant Wansley AP-1

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
50	780			GNEISS, gray to bluish gray, iron scaling present on fracture faces and vertical hairline fractures, broken into cobble size pieces along joints, faint thin banding, very hard, wet.	
				53 ft: Likely fracture.	
60	770			60 ft: Increased separation of minerals in very thin laminations.	Aquaguard Sodium Bentonite Grout
70	760			75 ft: Large potassium feldspar minerals.	Bentonite uncoated 3/8 pellets
80	750			80 ft: Potassium feldspar throughout.	20/40 Silica Sand; Top of screen elev: 749.92 ft
90	740	90 ft: Increased rig chatter and resistance.			0.010 slot size 2" Schedule 40 PVC Screen; Bottom of screen elev: 739.92 ft; Bottom of well elev: 739.52 ft; Bottom of well: 92.37 ft; Slough
				736.9 Bottom of borehole at 95.0 feet.	

Survey data certified 11/17/2020.
Easting an Northing in NAD 83. Elevation in NAVD 88.

Geosyntec consultants
engineers | scientists | innovators
Geosyntec Consultants
1255 Roberts Boulevard
Kennesaw, GA 30144

PIEZOMETER PZ-26D

CLIENT Southern Company Services
PROJECT NAME Plant Wansley Ash Pond 1 (AP-1) Piezometer Installation
PROJECT NUMBER GW7327
PROJECT LOCATION Plant Wansley AP-1
DATE STARTED 10/12/20 **COMPLETED** 10/12/20
NORTHING 1239919.45 ft **EASTING** 2024146.35 ft
DRILLER Cascade Drilling
GROUND ELEVATION 802.31 ft **BORING DIAMETER** 6 in.
DRILLING METHOD Sonic
TOP OF CASING ELEVATION 804.93 ft
SAMPLING METHOD 4 in. core 6 in. override
GEOPHYSICAL CONTRACTOR ---
RIG TYPE Terrasonic 1051181
LOGGED BY T. Kessler **CHECKED BY** A. Reimer

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION
0	802			Air Knife Excavation (0 ft to 9 ft) NO SAMPLE
5	795			
				793.3
10	790			SANDY SILT, yellow, relic rock structure, fine to medium grained, low plasticity, soft, wet.
15	785			
20	780			
25	775			777.3 SAPROLITE, gravel, sand and silt with large rock fragments, relic rock structure, moist.
30	770			773.3 PARTIALLY WEATHERED ROCK (PWR), large quartzite rock fragments, gravel, light gray to yellow, gravel, sand, iron staining, moist.
35	765	36 ft: Increased rig chatter. 39 ft: Advance rate slowed.		763.3

CONSTRUCTION DIAGRAM

2" Schedule 40 PVC

Aquaguard Sodium Bentonite Grout

SCS MONITORING WELLS WANSLEY_PIEZOMETER INSTALL_2020.GPJ ACP GINT LIBRARY CH.GLB 1/5/21

(Continued Next Page)

Geosyntec consultants
engineers | scientists | innovators
Geosyntec Consultants
1255 Roberts Boulevard
Kennesaw, GA 30144

PIEZOMETER PZ-26D

CLIENT Southern Company Services
PROJECT NAME Plant Wansley Ash Pond 1 (AP-1) Piezometer Installation
PROJECT NUMBER GW7327
PROJECT LOCATION Plant Wansley AP-1

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
40				QUARTZITE, pinkish gray, slightly weathered and highly fractured, large quartz fragments, micaceous, iron staining, hard, wet. *(continued)*	
	760				
45					
	755	49 ft: Increased rig chatter.			Aquaguard Sodium Bentonite Grout
50					
	750				
55					
	745	59 ft: Increased rig chatter.			
60				59 ft: Pinkish gray to blue gray.	Bentonite uncoated 3/8 pellets
	740				
65					20/40 Silica Sand
	735				Top of screen elev: 735.23 ft
70				69 ft: Blue gray.	
	730				0.010 slot size 2" Schedule 40 PVC Screen
75					Bottom of screen elev: 725.23 ft
	725				Bottom of well elev: 724.83 ft
				723.3	Bottom of well: 77.47 ft

Bottom of borehole at 79.0 feet.

Survey data certified 11/17/2020.
Easting an Northing in NAD 83. Elevation in NAVD 88.

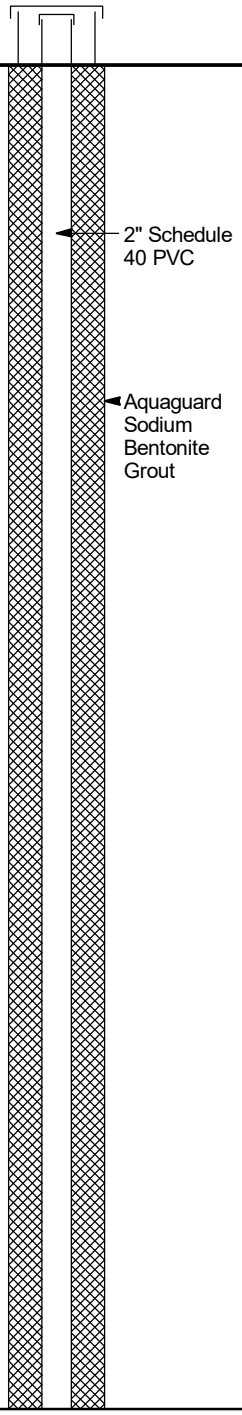
Geosyntec consultants
engineers | scientists | innovators
Geosyntec Consultants
1255 Roberts Boulevard
Kennesaw, GA 30144

PIEZOMETER PZ-27D

CLIENT Southern Company Services
PROJECT NAME Plant Wansley Ash Pond 1 (AP-1) Piezometer Installation
PROJECT NUMBER GW7327
PROJECT LOCATION Plant Wansley AP-1
DATE STARTED 10/15/20 **COMPLETED** 10/15/20
NORTHING 1240190.93 ft **EASTING** 2023620.36 ft
DRILLER Cascade Drilling
GROUND ELEVATION 806.22 ft **BORING DIAMETER** 6 in.
DRILLING METHOD Sonic
TOP OF CASING ELEVATION 809.28 ft
SAMPLING METHOD 4 in. core 6 in. override
GEOPHYSICAL CONTRACTOR ---
RIG TYPE Terrasonic 1051181
LOGGED BY T. Kessler **CHECKED BY** A. Reimer

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION
0	805			Air Knife Excavation (0 ft to 9 ft) NO SAMPLE
5	800			
				797.2
10	795			SAPROLITE, yellowish red, silty, dense, low plasticity, relic rock structures preset, mica, dry.
		13 ft: Increased rig chatter.		793.2
15	790			PARTIALLY WEATHERED ROCK (PWR), brown, large rock fragments, clayey sandy silts, hard, low plasticity, dry.
		19 ft: Advance rate slowed.		787.2
20	785			SAPROLITE, yellowish red, silty with fine sand, medium plasticity, dense, moist.
25	780			
				778.2
30	775	30 ft: Advance rate slowed.		PARTIALLY WEATHERED ROCK (PWR), brown, large rock fragments, clayey sandy silts, low plasticity, hard, moist.
35	770			770.2
				SCHIST, gray, micaceous, sand and clay filled fracture between 37 and 38 ft.
				39 ft: Iron staining on fractured surfaces from 39 ft to 44 ft, olive

CONSTRUCTION DIAGRAM



SCS MONITORING WELLS WANSLEY_PIEZOMETER INSTALL_2020.GPJ ACP GINT LIBRARY CH.GLB 1/5/21

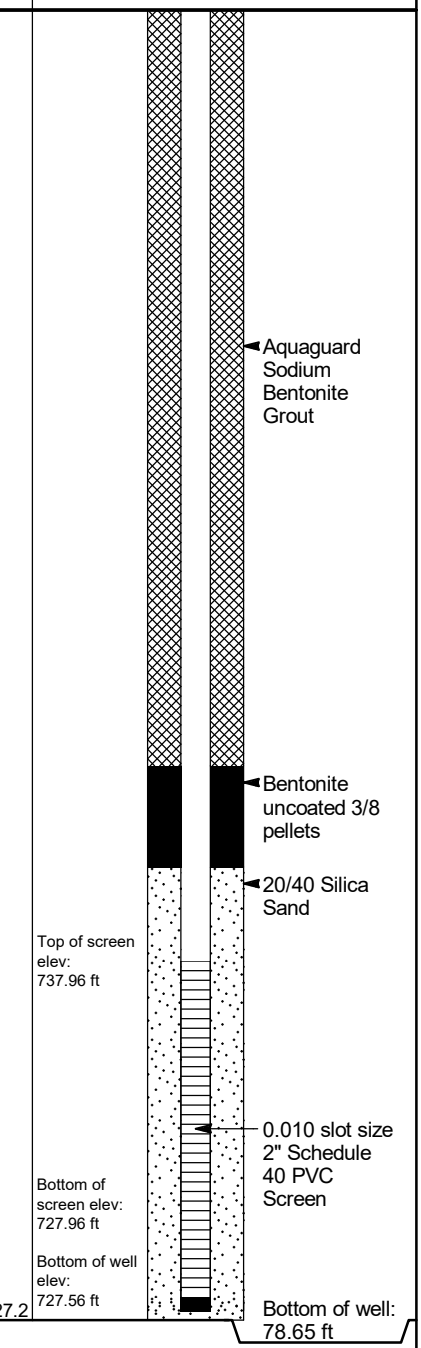
(Continued Next Page)

Geosyntec consultants
engineers | scientists | innovators
Geosyntec Consultants
1255 Roberts Boulevard
Kennesaw, GA 30144

PIEZOMETER PZ-27D

CLIENT Southern Company Services
PROJECT NAME Plant Wansley Ash Pond 1 (AP-1) Piezometer Installation
PROJECT NUMBER GW7327
PROJECT LOCATION Plant Wansley AP-1

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION
40	765			staining on fractured surfaces from 44 ft to 48 ft, quartz banding, garnets present. SCHIST, gray, micaceous, sand and clay filled fracture between 37 and 38 ft. *(continued)*
45	760	49 ft: Slow advance rate, moderate rig chatter.		48 ft to 49 ft: Highly weathered, gray, silty sands and gravel, wet.
50	755			
55	750	59 ft: Slow advance rate, increased rig chatter.		59 ft: Highly fractured, gravel and weathered cobbles, less garnet, sand zone at 64 ft.
60	745			
65	740	69 ft: Slow advance rate, significant rig chatter.		69 ft: Highly fractured, gravel and weathered cobbles, some quartzite fragments.
70	735			
75	730			
727.2				Bottom of borehole at 79.0 feet.



Survey data certified 11/17/2020.
Easting an Northing in NAD 83. Elevation in NAVD 88.

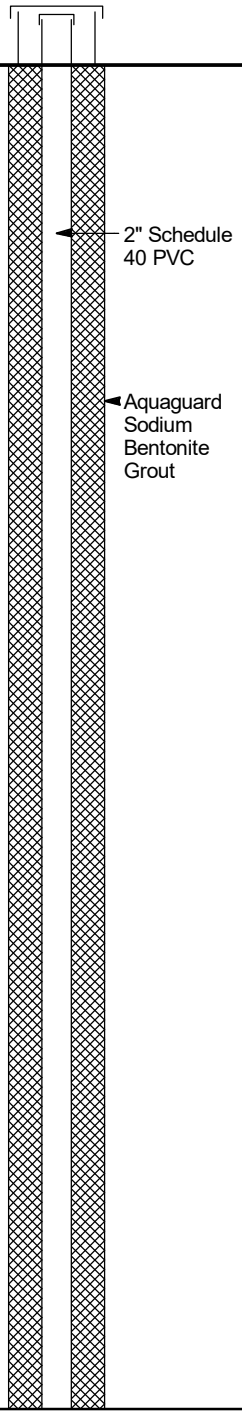
Geosyntec consultants
engineers | scientists | innovators
Geosyntec Consultants
1255 Roberts Boulevard
Kennesaw, GA 30144

PIEZOMETER PZ-28

CLIENT Southern Company Services
PROJECT NAME Plant Wansley Ash Pond 1 (AP-1) Piezometer Installation
PROJECT NUMBER GW7327
PROJECT LOCATION Plant Wansley AP-1
DATE STARTED 10/29/20 **COMPLETED** 10/29/20
NORTHING 1240066.02 ft **EASTING** 2022624.73 ft
DRILLER Cascade Drilling
GROUND ELEVATION 813.57 ft **BORING DIAMETER** 6 in.
DRILLING METHOD Sonic
TOP OF CASING ELEVATION 816.18 ft
SAMPLING METHOD 4 in. core 6 in. override
GEOPHYSICAL CONTRACTOR ---
RIG TYPE Terrasonic 1051181
LOGGED BY T. Wilson **CHECKED BY** A. Reimer

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION
0				Air Knife Excavation (0 ft to 4 ft) NO SAMPLE
	810			809.6
5				SILTY CLAY with sand, red, soft, low plasticity, trace root material, moist.
				806.6
	805			SILTY SAND with clay, reddish yellow, fine grained, moist, loose, poorly graded, moist.
10				10 ft: Increasing clay content with depth.
	800			
15				
	795			
20				793.6
				NO RECOVERY (20 ft to 23 ft)
	790			790.6
25				SILTY CLAY with sand, reddish yellow, soft, low plasticity, fine grained, moist.
	785			
30				
	780			
35				
	775			773.6

CONSTRUCTION DIAGRAM



SCS MONITORING WELLS WANSLEY_PIEZOMETER INSTALL_2020.GPJ ACP GINT LIBRARY CH.GLB 1/5/21

(Continued Next Page)

Geosyntec consultants
engineers | scientists | innovators
Geosyntec Consultants
1255 Roberts Boulevard
Kennesaw, GA 30144

PIEZOMETER PZ-28

CLIENT Southern Company Services
PROJECT NAME Plant Wansley Ash Pond 1 (AP-1) Piezometer Installation
PROJECT NUMBER GW7327
PROJECT LOCATION Plant Wansley AP-1

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
40				SAPROLITE, sandy silt, reddish yellow, stiff, non plastic, iron concretions and staining, faint rock fabric visible, moist.	
	770				
45					Aquaguard Sodium Bentonite Grout
	765				
50				51 ft: Dense, well graded, trace gravel, increasing gravel content with depth.	
	760				Bentonite uncoated 3/8 pellets
55					
	755				20/40 Silica Sand
60					Top of screen elev: 753.68 ft
				751.6	
				PARTIALLY WEATHERED ROCK (PWR), silty sand and gravel, very pale brown, fine to coarse grained, relic rock structure, iron staining, increasing gravel with depth, moist.	
	750				
65					0.010 slot size 2" Schedule 40 PVC Screen
					Bottom of screen elev: 743.68 ft
	745				Bottom of well elev: 743.28 ft
70				743.1	Bottom of well: 70.29 ft

Bottom of borehole at 70.5 feet.

Survey data certified 11/17/2020.
Easting an Northing in NAD 83. Elevation in NAVD 88.

Well renamed in 2025 to WGWC-37S

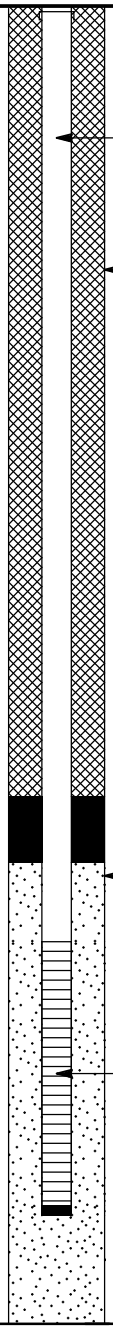
Geosyntec consultants
engineers | scientists | innovators
Geosyntec Consultants
1255 Roberts Boulevard
Kennesaw, GA 30144

PIEZOMETER PZ-29S

CLIENT Southern Company Services
PROJECT NAME Plant Wansley Ash Pond 1 (AP-1) Piezometer Installation
PROJECT NUMBER GW7327
PROJECT LOCATION Plant Wansley AP-1
DATE STARTED 10/30/20 **COMPLETED** 10/31/20
NORTHING 1244317.13 ft **EASTING** 2028839.68 ft
DRILLER Cascade Drilling
GROUND ELEVATION 805.80 ft **BORING DIAMETER** 6 in.
DRILLING METHOD Sonic
TOP OF CASING ELEVATION 805.30 ft
SAMPLING METHOD 4 in. core 6 in. override
GEOPHYSICAL CONTRACTOR ---
RIG TYPE Terrasonic 1051181
LOGGED BY T. Wilson **CHECKED BY** A. Reimer

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION
0				Air Knife Excavation (0 ft to 10 ft) NO SAMPLE
	800			
10				795.8 SILTY CLAY, reddish brown, firm, no plasticity, trace gravel and mica, moist.
	790			
20				20 ft: Stiff, trace white sand layers, fine grained.
	780			
30				775.8 NO RECOVERY (30 ft to 32 ft) 773.8
	770			SILTY CLAY, reddish brown, firm, no plasticity, trace gravel, cobbles and mica, moist.
40				766.3 765.8 CLAYEY SILT, dark brownish yellow (10YR, 4/4), dry, loose, no plasticity, some gravel and mica. 763.8 SANDY SILT, brown, soft, no plasticity, some clay and gravel, moist. 762.1 SILTY CLAY, yellowish red, stiff, low plasticity, trace gravel and mica, moist. 760.8
	760			SANDY SILT, brown, soft, no plasticity, some clay and gravel, moist. CLAYEY SILT, dark brownish yellow, loose, no plasticity, some gravel and mica, dry.
50				755.8 Bottom of borehole at 50.0 feet.

CONSTRUCTION DIAGRAM



SCS MONITORING WELLS WANSLEY_PIEZOMETER INSTALL_2020.GPJ ACP GINT LIBRARY CH.GLB 1/5/21

Survey data certified 11/17/2020.
Easting an Northing in NAD 83. Elevation in NAVD 88.

Well renamed in 2025 to WGWC-37D

Geosyntec consultants
engineers | scientists | innovators
Geosyntec Consultants
1255 Roberts Boulevard
Kennesaw, GA 30144

PIEZOMETER PZ-29D

CLIENT Southern Company Services
PROJECT NAME Plant Wansley Ash Pond 1 (AP-1) Piezometer Installation
PROJECT NUMBER GW7327
PROJECT LOCATION Plant Wansley AP-1
DATE STARTED 10/31/20 **COMPLETED** 11/1/20
NORTHING 1244304.90 ft **EASTING** 2028853.29 ft
DRILLER Cascade Drilling
GROUND ELEVATION 805.77 ft **BORING DIAMETER** 6 in.
DRILLING METHOD Sonic
TOP OF CASING ELEVATION 805.24 ft
SAMPLING METHOD 4 in. core 6 in. override
GEOPHYSICAL CONTRACTOR ---
RIG TYPE Terrasonic 1051181
LOGGED BY T. Wilson **CHECKED BY** A. Reimer

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
0				Air Knife Excavation (0 ft to 10 ft) NO SAMPLE	
	800				2" Schedule 40 PVC
10				795.8 NO RECOVERY (10 ft to 11 ft) 794.8 SILT, dark yellowish brown to reddish brown, soft, few coarse gravel, some clay, non plastic, moist.	Aquaguard Sodium Bentonite Grout
	790				
20				20 ft: Stiff.	
	780				
30				775.8 NO RECOVERY (30 ft to 31 ft) 774.8 SILT, reddish brown, soft, few coarse gravel, some clay, non plastic, moist.	
	770				
40				767.3 CLAYEY SILT, dark yellowish brown, soft, few coarse gravel mica present, dry.	
	760			755.8	

SCS MONITORING WELLS WANSLEY_PIEZOMETER INSTALL_2020.GPJ ACP GINT LIBRARY CH.GLB 1/5/21

(Continued Next Page)

Well renamed in 2025 to WGWC-37D

Geosyntec consultants
engineers | scientists | innovators
Geosyntec Consultants
1255 Roberts Boulevard
Kennesaw, GA 30144

PIEZOMETER PZ-29D

CLIENT Southern Company Services
PROJECT NAME Plant Wansley Ash Pond 1 (AP-1) Piezometer Installation
PROJECT NUMBER GW7327
PROJECT LOCATION Plant Wansley AP-1

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
50				SANDY SILT, yellowish brown, yellowish red, light greenish gray, and strong brown, stiff, trace fine to coarse gravel, some clay, non plastic, mica present, moist.	
	750			746.8	
60				CLAYEY SILT, strong brown, soft, few coarse gravel mica present, dry. 745.8	
				SANDY SILT, yellowish brown, yellowish red, light greenish gray, and strong brown, stiff, trace fine to coarse gravel, some clay, non-plastic, mica present, moist.	
	740				
70					
	730				
80				725.8 CLAYEY SILT, reddish brown, very stiff, few fine tocoarse gravel, little fine-medium sand, medium plasticity, moist.	Aquaguard Sodium Bentonite Grout
	720				
90				715.8 SANDY SILT, strong brown, very stiff, little coarse gravel, some clay, non-plastic, mica present, moist.	
	710				
100				705.8 NO RECOVERY (100 ft to 102 ft)	
				703.8 SILTY CLAY, red, stiff, trace fine to coarse gravel, non-plastic, increasing clay content with depth, moist.	
	700				

SCS MONITORING WELLS WANSLEY_PIEZOMETER INSTALL_2020.GPJ ACP GINT LIBRARY CH.GLB 1/5/21

(Continued Next Page)

Well renamed in 2025 to WGWC-37D

Geosyntec consultants
engineers | scientists | innovators
Geosyntec Consultants
1255 Roberts Boulevard
Kennesaw, GA 30144

PIEZOMETER PZ-29D

CLIENT Southern Company Services
PROJECT NAME Plant Wansley Ash Pond 1 (AP-1) Piezometer Installation
PROJECT NUMBER GW7327
PROJECT LOCATION Plant Wansley AP-1

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
110	690			SILTY CLAY, red, stiff, trace fine to coarse gravel, non-plastic, increasing clay content with depth, moist. *(continued)*	Aquaguard Sodium Bentonite Grout Bentonite uncoated 3/8 pellets 20/40 Silica Sand
				687.3	Top of screen elev: 688.69 ft
120				SILT, light greenish gray, soft, some clay, non-plastic, trace subrounded gravel, moist.	
				685.8	
				NO RECOVERY (120 ft to 126 ft)	0.010 slot size 2" Schedule 40 PVC Screen
	680			679.8	Bottom of screen elev: 678.69 ft
				SCHIST, light grayish olive, weathered, numerous natural fractures with iron staining, with weathered garnets and mica, thinly foliated.	Bottom of well elev: 678.29 ft
				676.8	Bottom of well: 127.48 ft

Bottom of borehole at 129.0 feet.

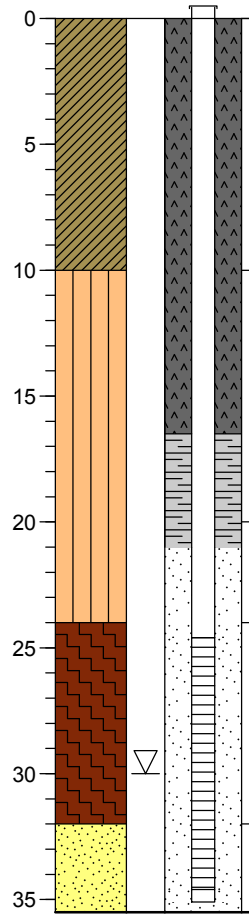
Geosyntec consultants
engineers | scientists | innovators

Client: Southern Company Services
Project: Plant Wansley Well Installation
Address: 1371 Liberty Church Rd, Carrollton, GA

WELL LOG

Well No. PZ-30
Page: 1 of 1

Drilling Start Date:	3/28/2024	Boring Depth (ft):	35.5	Well Depth (ft):	35.1
Drilling End Date:	3/30/2024	Boring Diameter (in):	6"	Well Diameter (in):	2
Drilling Company:	Cascade Drilling	Sampling Method(s):	Core Barrel	Screen Slot (in):	0.010
Drilling Method:	Sonic	DTW During Drilling (ft):	30.0	Riser Material:	Sch 40 PVC
Drilling Equipment:	Terra Sonic 150CC	Ground Surface Elev. (ft):	812.43	Screen Material:	Sch 40 PVC U-Pack
Driller:	K. Grant	Top of Casing Elev. (ft):	814.80	Seal Material(s):	Bentonite
Logged By:	T. Kessler/Z. Webb	North, East (Y,X):	1240592.30, 2027321.68	Filter Pack:	20/40 Sand



DEPTH (ft)	SOIL/ROCK VISUAL DESCRIPTION	REMARKS	ELEVATION (ft MSL)
0	(0') Silty CLAY (CL); pinkish gray, dry to moist, trace angular to subangular gravel throughout, no recovery-soil logged from air knifed material.	Logged air knife material.	810
5			805
10	(8') Trace rock from 8-10 feet bgs - highly weathered schist (broken into gravel). (10') Sandy SILT (ML); pinkish gray, dry, friable, relict rock structure, abundant PWR, trace fine-grained sand throughout.	Hard drilling and increased rig chatter.	800
15	(16') PWR increases with depth. (16.5') PWR includes iron staining.	Increased chatter from 14-15 feet bgs. Hard drilling, swelling noted in core.	795
20	(20') Sandy SILT (ML); pinkish gray, dry, PWR (broken into medium to coarse gravel-sized pieces), trace fine-grained sand throughout, with iron staining throughout.	Hard drilling from 20-30 feet bgs.	790
25	(24') GNEISS; moderate orange pink with bluish white banding, hard, moderately weathered, abundant iron staining throughout.	**Filter Pack:** Four and one half 50-lbs bags of 20/40 sand equating to 225 cubic feet in volume. **Top Seal:** One five-gallon bucket of bentonite pellets.	785
30	(30') Coarse grained subangular reddish yellow sand, with iron staining throughout.		
35	(32') SAND (SP); reddish yellow, coarse grained subangular sand with trace PWR and abundant subrounded to subangular gneiss fragments. (35.5') Boring terminated.		780

NOTES: Coordinates in North American Datum (NAD) 1983, State Plane, Georgia-West, feet. Vertical elevations are referenced to the North American Vertical Datum (NAVD) of 1988. Well completed with 6 inch long PVC sump below well screen, and aboveground (+2.37 feet) PVC stickup with metal protective cover and guard posts set in concrete. Well depth measured from ground surface.

Geosyntec consultants
engineers | scientists | innovators

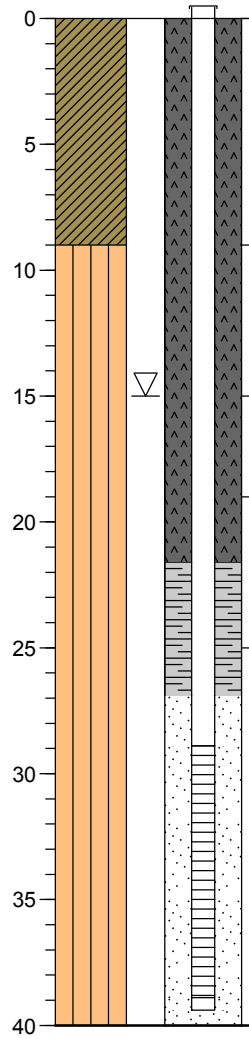
Client: Southern Company Services
Project: Plant Wansley Well Installation
Address: 1371 Liberty Church Rd, Carrollton, GA

WELL LOG

Well No. PZ-31
Page: 1 of 1

Drilling Start Date:	3/21/2024	Boring Depth (ft):	40	Well Depth (ft):	39.4
Drilling End Date:	3/22/2024	Boring Diameter (in):	6"	Well Diameter (in):	2
Drilling Company:	Cascade Drilling	Sampling Method(s):	Core Barrel	Screen Slot (in):	0.010
Drilling Method:	Sonic	DTW During Drilling (ft):	15.0	Riser Material:	Sch 40 PVC
Drilling Equipment:	Terra Sonic 150CC	Ground Surface Elev. (ft):	807.86	Screen Material:	Sch 40 PVC U-Pack
Driller:	K. Grant	Top of Casing Elev. (ft):	810.90	Seal Material(s):	Bentonite
Logged By:	Z. Webb	North, East (Y,X):	1239941.77, 2024324.33	Filter Pack:	20/40 Sand

DEPTH (ft)	SOIL/ROCK VISUAL DESCRIPTION	REMARKS	ELEVATION (ft MSL)
0	(0') Silty CLAY (CL); red, moist becoming drier with depth, low plasticity.	Logged air knife material.	805
5			
10	(9') Sandy SILT (ML); red, moist, soft, low plasticity, with coarse grained sand interspersed, abundant mica.		800
15	(15') Sandy SILT (ML); light brown, moist, low plasticity, some coarse grained sand and rock fragments throughout, abundant mica, orange bands within core (iron staining).		795
20	(19') Sandy SILT (ML); light brown, moist, low plasticity, PWR fragments throughout, abundant mica, reddish yellow bands.		790
25	(25') Sandy SILT (ML); pale brown, moist, low plasticity, mica and PWR fragments throughout, orange bands.		785
30	(29') Decreasing moisture content with depth, chalkier with depth, reddish yellow bands throughout, iron staining.	**Filter Pack:** Four and one half 50-lbs bags of 20/40 sand equating to 225 cubic feet in volume. **Top Seal:** One five-gallon bucket of bentonite pellets.	780
35			775
40	(40') Boring terminated.		770



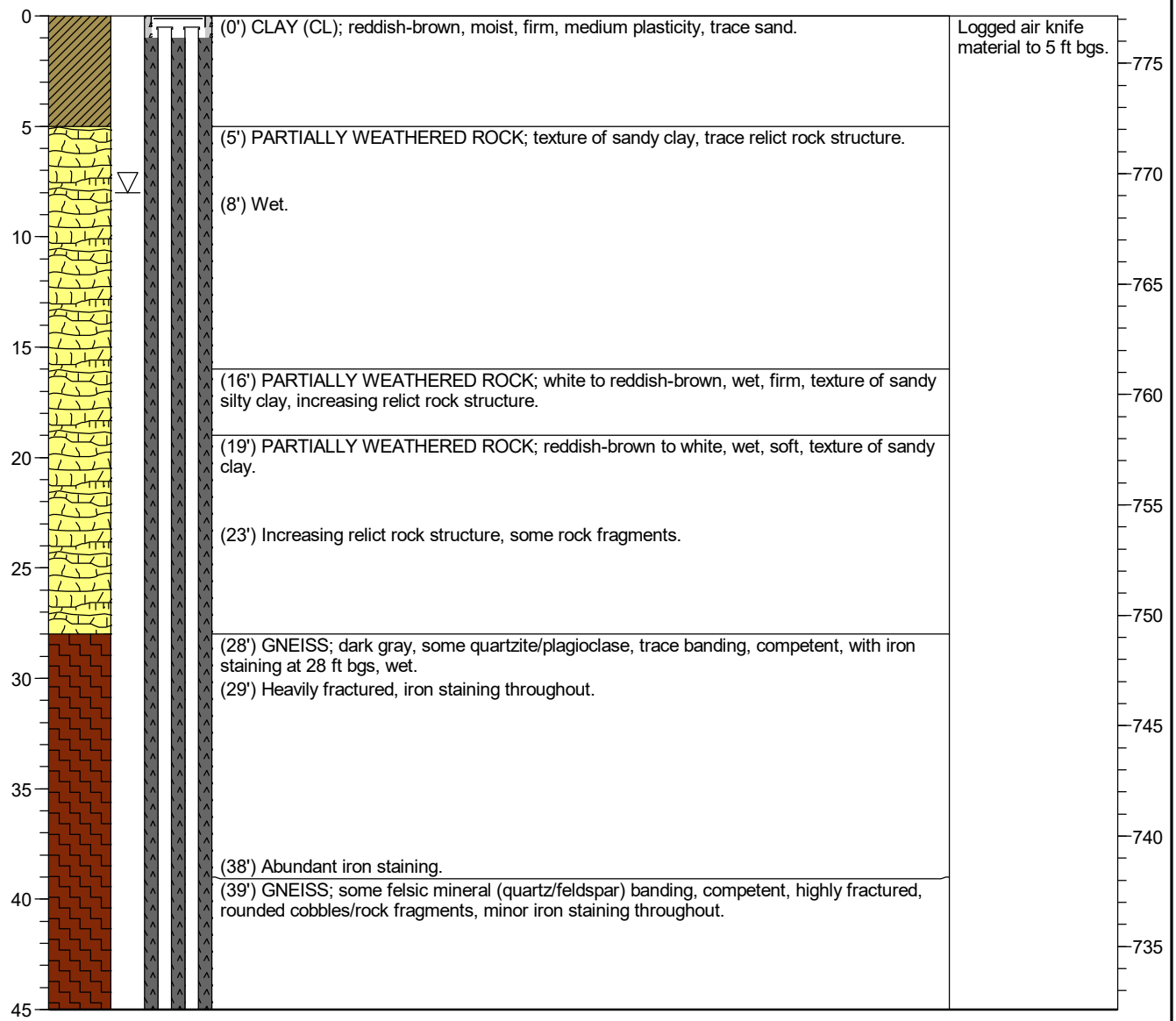
NOTES: Coordinates in North American Datum (NAD) 1983, State Plane, Georgia-West, feet. Vertical elevations are referenced to the North American Vertical Datum (NAVD) of 1988. Well completed with 6 inch long PVC sump below well screen, and aboveground (+3.04 feet) PVC stickup with metal protective cover and guard posts set in concrete. Well depth measured from ground surface.

Geosyntec consultants
engineers | scientists | innovators

Client: Southern Company Services
Project: Plant Wansley Well Installation
Address: 1371 Liberty Church Rd, Carrollton, GA

WELL LOG
Well No. PZ-32D/33D
Page: 1 of 10

Drilling Start Date:	3/5/2024	Boring Depth (ft):	413	Well Depth (ft TOC):	325.3 (32D), 405.3 (33D)
Drilling End Date:	10/17/2024	Boring Diameter (in):	4", 6"	Well Diameter (in):	1 (32D), 2 (33D)
Drilling Company:	Cascade Drilling	Sampling Method(s):	Core Barrel	Screen Slot (in):	0.010
Drilling Method:	Sonic	DTW During Drilling (ft):	8.0	Riser Material:	Sch 80 PVC
Drilling Equipment:	Terra Sonic 150CC	Ground Surface Elev. (ft):	777.14	Screen Material:	Sch 80 PVC Slotted
Driller:	J. Hall, D. Wilcox, K. Grant	Top of Casing Elev. (ft):	776.74 (32D,33D)	Seal Material(s):	Grout/Bentonite
Logged By:	D. Kegley, T. Kessler	North, East:	(see Notes below)*	Filter Pack:	#1 Sand



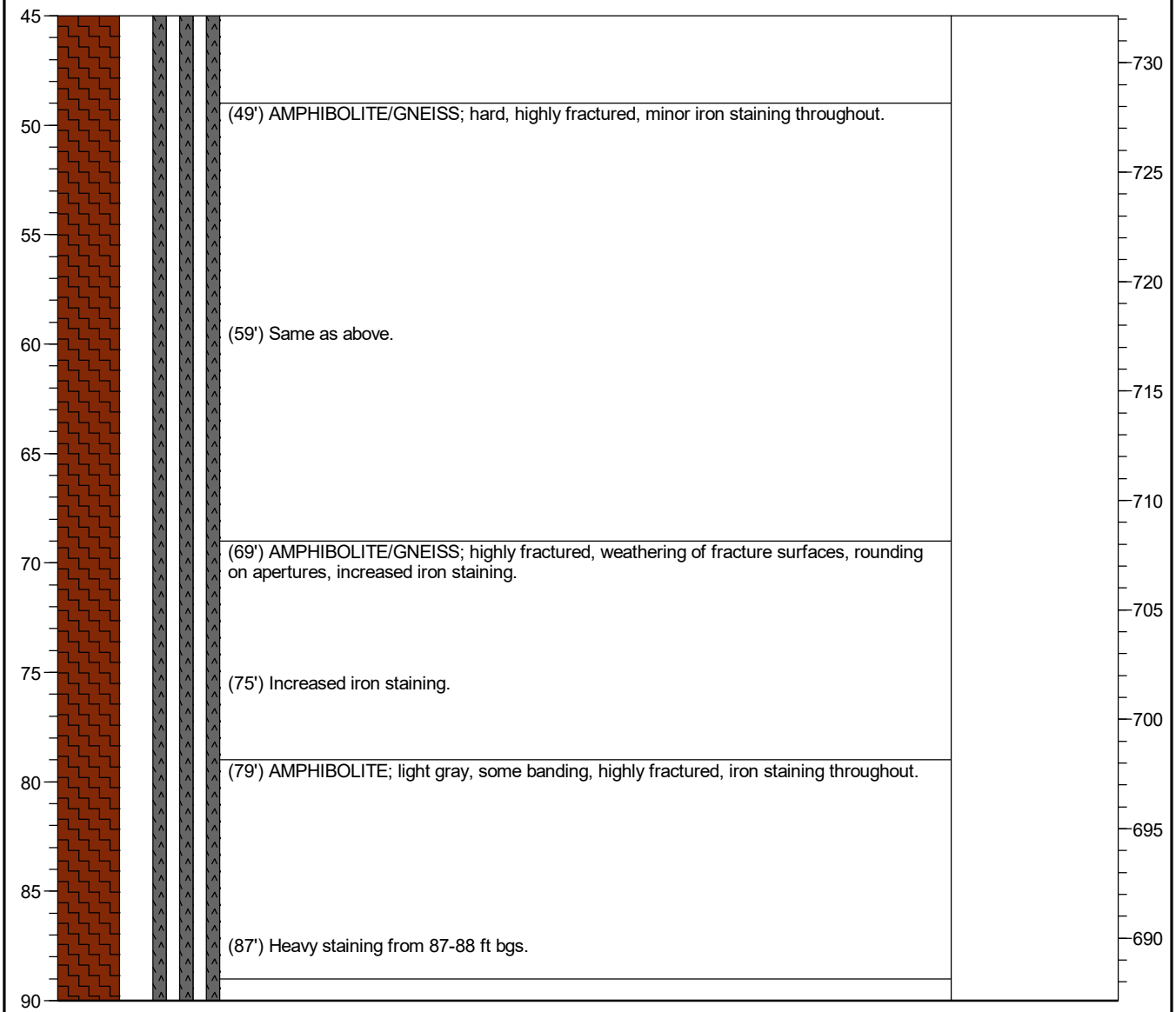
NOTES: Boring backfilled with bentonite to 408.6 ft below ground surface (bgs) prior to installing wells.
*PZ-32D - 1243211.88 N, 2029886.45 E; PZ-33D - 1243211.76 N, 2029886.78 E. Coordinates in North American Datum (NAD) 1983, State Plane, Georgia-West, feet. Vertical elevations are referenced to the North American Vertical Datum (NAVD) of 1988. Wells completed with flush-mount well cover set in concrete. Top of Casing (toc). Total well depth includes 4-inch sump.

Geosyntec consultants
engineers | scientists | innovators

Client: Southern Company Services
Project: Plant Wansley Well Installation
Address: 1371 Liberty Church Rd, Carrollton, GA

WELL LOG
Well No. PZ-32D/33D
Page: 2 of 10

Drilling Start Date:	**3/5/2024**	Boring Depth (ft):	**413**	Well Depth (ft TOC):	**325.3 (32D), 405.3 (33D)**
Drilling End Date:	**10/17/2024**	Boring Diameter (in):	**4", 6"**	Well Diameter (in):	**1 (32D), 2 (33D)**
Drilling Company:	**Cascade Drilling**	Sampling Method(s):	**Core Barrel**	Screen Slot (in):	**0.010**
Drilling Method:	**Sonic**	DTW During Drilling (ft):	**8.0**	Riser Material:	**Sch 80 PVC**
Drilling Equipment:	**Terra Sonic 150CC**	Ground Surface Elev. (ft):	**777.14**	Screen Material:	**Sch 80 PVC Slotted**
Driller:	**J. Hall, D. Wilcox, K. Grant**	Top of Casing Elev. (ft):	**776.74 (32D,33D)**	Seal Material(s):	**Grout/Bentonite**
Logged By:	**D. Kegley, T. Kessler**	North, East:	**(see Notes below)***	Filter Pack:	**#1 Sand**



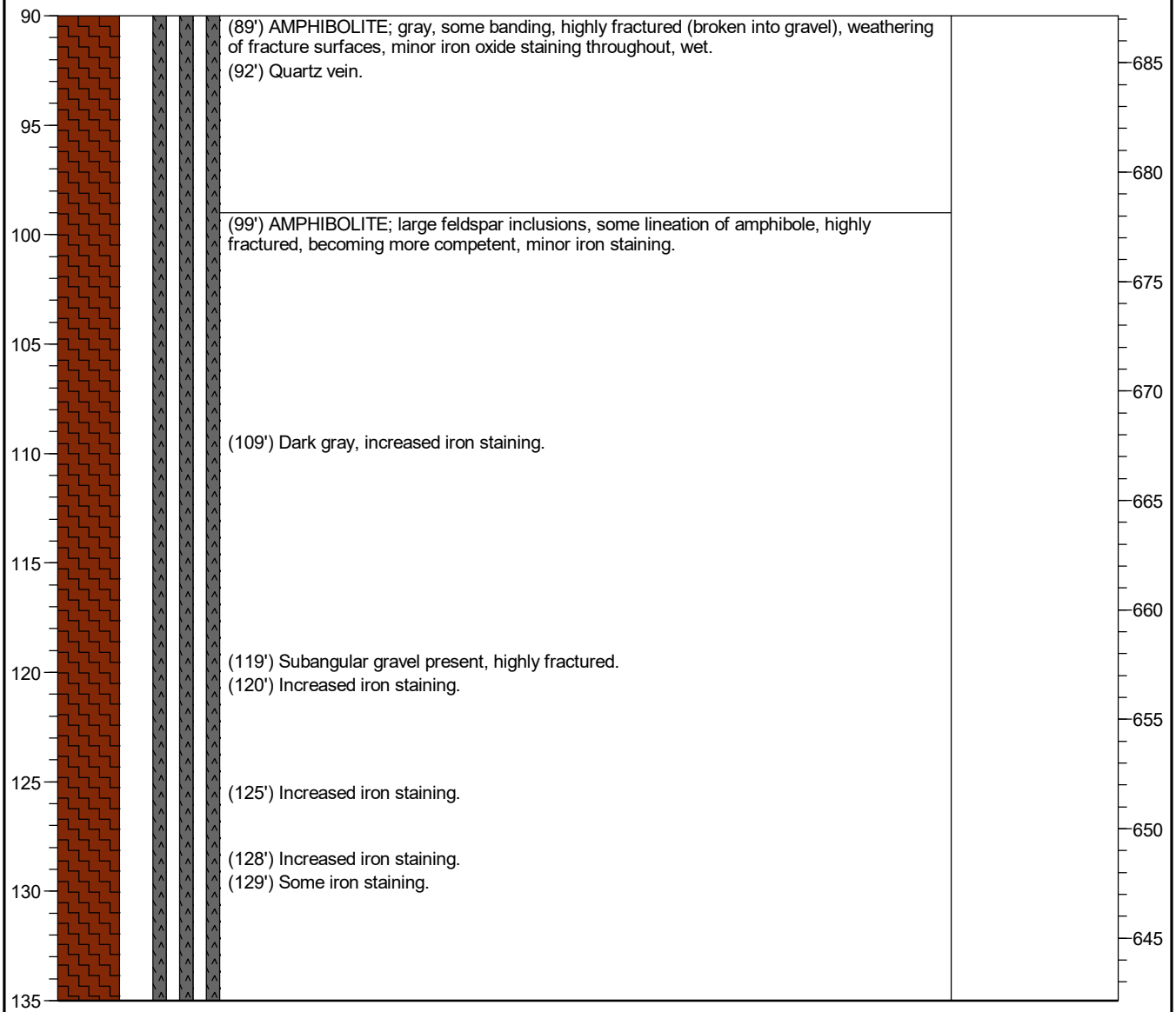
NOTES: Boring backfilled with bentonite to 408.6 ft below ground surface (bgs) prior to installing wells.
*PZ-32D - 1243211.88 N, 2029886.45 E; PZ-33D - 1243211.76 N, 2029886.78 E. Coordinates in North American Datum (NAD) 1983, State Plane, Georgia-West, feet. Vertical elevations are referenced to the North American Vertical Datum (NAVD) of 1988. Wells completed with flush-mount well cover set in concrete. Top of Casing (toc). Total well depth includes 4-inch sump.

Geosyntec consultants
engineers | scientists | innovators

Client: Southern Company Services
Project: Plant Wansley Well Installation
Address: 1371 Liberty Church Rd, Carrollton, GA

WELL LOG
Well No. PZ-32D/33D
Page: 3 of 10

Drilling Start Date:	3/5/2024	Boring Depth (ft):	413	Well Depth (ft TOC):	325.3 (32D), 405.3 (33D)
Drilling End Date:	10/17/2024	Boring Diameter (in):	4", 6"	Well Diameter (in):	1 (32D), 2 (33D)
Drilling Company:	Cascade Drilling	Sampling Method(s):	Core Barrel	Screen Slot (in):	0.010
Drilling Method:	Sonic	DTW During Drilling (ft):	8.0	Riser Material:	Sch 80 PVC
Drilling Equipment:	Terra Sonic 150CC	Ground Surface Elev. (ft):	777.14	Screen Material:	Sch 80 PVC Slotted
Driller:	J. Hall, D. Wilcox, K. Grant	Top of Casing Elev. (ft):	776.74 (32D,33D)	Seal Material(s):	Grout/Bentonite
Logged By:	D. Kegley, T. Kessler	North, East:	(see Notes below)*	Filter Pack:	#1 Sand



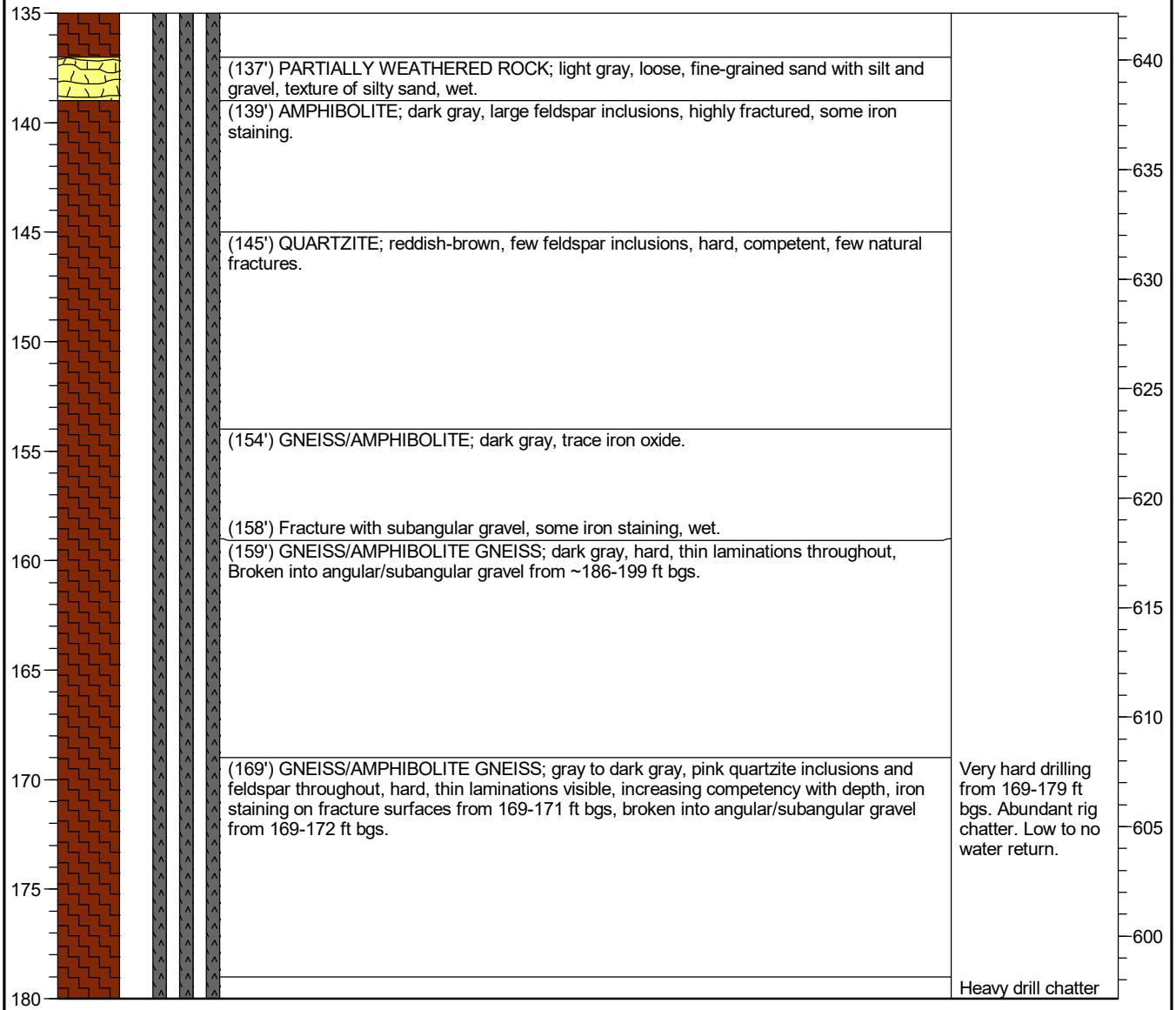
NOTES: Boring backfilled with bentonite to 408.6 ft below ground surface (bgs) prior to installing wells.
*PZ-32D - 1243211.88 N, 2029886.45 E; PZ-33D - 1243211.76 N, 2029886.78 E. Coordinates in North American Datum (NAD) 1983, State Plane, Georgia-West, feet. Vertical elevations are referenced to the North American Vertical Datum (NAVD) of 1988. Wells completed with flush-mount well cover set in concrete. Top of Casing (toc). Total well depth includes 4-inch sump.

Geosyntec consultants
engineers | scientists | innovators

Client: Southern Company Services
Project: Plant Wansley Well Installation
Address: 1371 Liberty Church Rd, Carrollton, GA

WELL LOG
Well No. PZ-32D/33D
Page: 4 of 10

Drilling Start Date:	3/5/2024	Boring Depth (ft):	413	Well Depth (ft TOC):	325.3 (32D), 405.3 (33D)
Drilling End Date:	10/17/2024	Boring Diameter (in):	4", 6"	Well Diameter (in):	1 (32D), 2 (33D)
Drilling Company:	Cascade Drilling	Sampling Method(s):	Core Barrel	Screen Slot (in):	0.010
Drilling Method:	Sonic	DTW During Drilling (ft):	8.0	Riser Material:	Sch 80 PVC
Drilling Equipment:	Terra Sonic 150CC	Ground Surface Elev. (ft):	777.14	Screen Material:	Sch 80 PVC Slotted
Driller:	J. Hall, D. Wilcox, K. Grant	Top of Casing Elev. (ft):	776.74 (32D,33D)	Seal Material(s):	Grout/Bentonite
Logged By:	D. Kegley, T. Kessler	North, East:	(see Notes below)*	Filter Pack:	#1 Sand



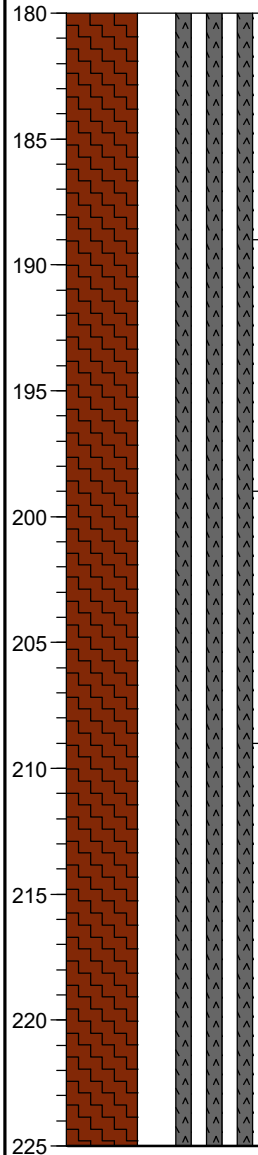
NOTES: Boring backfilled with bentonite to 408.6 ft below ground surface (bgs) prior to installing wells.
*PZ-32D - 1243211.88 N, 2029886.45 E; PZ-33D - 1243211.76 N, 2029886.78 E. Coordinates in North American Datum (NAD) 1983, State Plane, Georgia-West, feet. Vertical elevations are referenced to the North American Vertical Datum (NAVD) of 1988. Wells completed with flush-mount well cover set in concrete. Top of Casing (toc). Total well depth includes 4-inch sump.

Geosyntec consultants
engineers | scientists | innovators

Client: Southern Company Services
Project: Plant Wansley Well Installation
Address: 1371 Liberty Church Rd, Carrollton, GA

WELL LOG
Well No. PZ-32D/33D
Page: 5 of 10

Drilling Start Date:	3/5/2024	Boring Depth (ft):	413	Well Depth (ft TOC):	325.3 (32D), 405.3 (33D)
Drilling End Date:	10/17/2024	Boring Diameter (in):	4", 6"	Well Diameter (in):	1 (32D), 2 (33D)
Drilling Company:	Cascade Drilling	Sampling Method(s):	Core Barrel	Screen Slot (in):	0.010
Drilling Method:	Sonic	DTW During Drilling (ft):	8.0	Riser Material:	Sch 80 PVC
Drilling Equipment:	Terra Sonic 150CC	Ground Surface Elev. (ft):	777.14	Screen Material:	Sch 80 PVC Slotted
Driller:	J. Hall, D. Wilcox, K. Grant	Top of Casing Elev. (ft):	776.74 (32D,33D)	Seal Material(s):	Grout/Bentonite
Logged By:	D. Kegley, T. Kessler	North, East:	(see Notes below)*	Filter Pack:	#1 Sand



DEPTH (ft)	SOIL/ROCK VISUAL DESCRIPTION	REMARKS	ELEVATION (ft MSL)
180	(179') GNEISS/AMPHIBOLITE GNEISS; gray to dark gray, pink quartzite and feldspar inclusions visible, thin laminations visible, abundant fractures with iron staining throughout.	from 179-189 ft bgs. ~30% water return.	595
	(181') Light gray, mostly quartzite, competent from 181-182 ft bgs.		
185	(186') Broken into angular/subangular gravel from ~186-199 ft bgs.		590
190	(189') GNEISS/AMPHIBOLITE GNEISS; gray to dark gray, abundant pink quartzite (feldspar inclusions) throughout, hard, thin laminations, black staining on fracture surfaces, trace iron staining.	~20% water return.	585
195			580
200	(199') GNEISS/AMPHIBOLITE GNEISS; gray to dark gray, hard, thin laminations, competent.		575
	(203') Quartzite seam ~1" thick, abundant pink quartzite and feldspar.		
205	(204') Thin ~1mm fractures from 204-209 ft bgs.		570
210	(209') GNEISS/AMPHIBOLITE GNEISS; dark gray, trace angular gravel from 209-212 ft bgs, abundant feldspar/pink quartzite, hard, thin laminations, competent, trace ~1mm fractures throughout.	Heavy rig chatter from 209-213 and 214-215 ft bgs. ~30% water return.	565
215	(215') Trace angular gravel from 215-219 ft bgs.		560
220	(219') Increasing feldspar content with depth.	Increase in competency with depth. ~40-60% water return.	555
225			

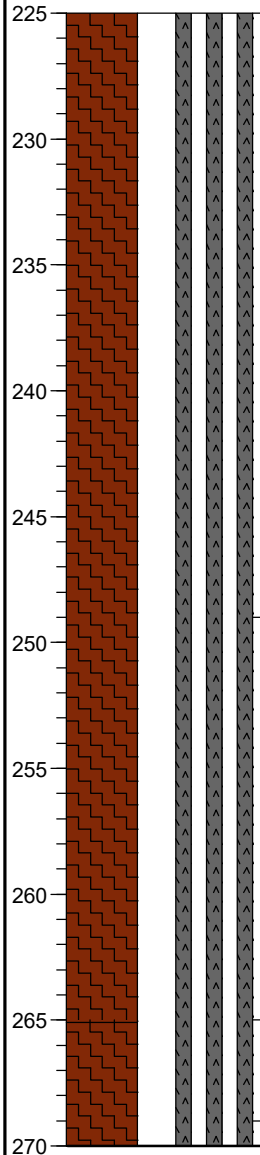
NOTES: Boring backfilled with bentonite to 408.6 ft below ground surface (bgs) prior to installing wells.
*PZ-32D - 1243211.88 N, 2029886.45 E; PZ-33D - 1243211.76 N, 2029886.78 E. Coordinates in North American Datum (NAD) 1983, State Plane, Georgia-West, feet. Vertical elevations are referenced to the North American Vertical Datum (NAVD) of 1988. Wells completed with flush-mount well cover set in concrete. Top of Casing (toc). Total well depth includes 4-inch sump.

Geosyntec consultants
engineers | scientists | innovators

Client: Southern Company Services
Project: Plant Wansley Well Installation
Address: 1371 Liberty Church Rd, Carrollton, GA

WELL LOG
Well No. PZ-32D/33D
Page: 6 of 10

Drilling Start Date:	3/5/2024	Boring Depth (ft):	413	Well Depth (ft TOC):	325.3 (32D), 405.3 (33D)
Drilling End Date:	10/17/2024	Boring Diameter (in):	4", 6"	Well Diameter (in):	1 (32D), 2 (33D)
Drilling Company:	Cascade Drilling	Sampling Method(s):	Core Barrel	Screen Slot (in):	0.010
Drilling Method:	Sonic	DTW During Drilling (ft):	8.0	Riser Material:	Sch 80 PVC
Drilling Equipment:	Terra Sonic 150CC	Ground Surface Elev. (ft):	777.14	Screen Material:	Sch 80 PVC Slotted
Driller:	J. Hall, D. Wilcox, K. Grant	Top of Casing Elev. (ft):	776.74 (32D,33D)	Seal Material(s):	Grout/Bentonite
Logged By:	D. Kegley, T. Kessler	North, East:	(see Notes below)*	Filter Pack:	#1 Sand



DEPTH (ft)	SOIL/ROCK VISUAL DESCRIPTION	REMARKS	ELEVATION (ft MSL)
225	(225') Broken into angular to subangular gravel from 225-229 ft bgs.		550
230	(229') Increasing feldspar, trace mica, increasing small fractures.	Water return reduced to ~20%.	545
235		Heavy rig chatter.	540
240	(239') Rock broken into medium angular gravel from 239-241 ft bgs.		535
245	(246') Abundant feldspar and quartzite from 246-249 ft bgs. (247') Rock broken into medium angular gravel from 247-249 ft bgs.		530
250	(249') GNEISS/AMPHIBOLITE GNEISS; medium gray (N5), abundant grayish orange pink (5YR 7/2) feldspar throughout, hard, thin laminations, trace ~1mm fractures throughout with black staining in fractures.	Heavy rig chatter. Suspect fractures from 249-254 ft bgs.	525
255	(254') Broken into angular gravel from 254-256 ft bgs, small grayish green (10GY 5/2) inclusions from 254-255.5 ft bgs.		520
260	(259') Same as above.	Heavy chatter from 259-264 ft bgs.	515
265	(265') MUSCOVITE SCHIST; medium gray (N5), abundant white (N9) quartz and grayish orange pink (5YR 7/2) feldspar throughout, some biotite and some mica throughout, hard, competent. (267') Trace grayish yellow-green (5GY 7/2) inclusions, iron staining from 267-269 ft bgs.	Heavy rig chatter from 266-269 ft bgs.	510
270	(269') MUSCOVITE SCHIST; medium dark gray (N4), abundant white (N9) quartz and		

NOTES: Boring backfilled with bentonite to 408.6 ft below ground surface (bgs) prior to installing wells.
*PZ-32D - 1243211.88 N, 2029886.45 E; PZ-33D - 1243211.76 N, 2029886.78 E. Coordinates in North American Datum (NAD) 1983, State Plane, Georgia-West, feet. Vertical elevations are referenced to the North American Vertical Datum (NAVD) of 1988. Wells completed with flush-mount well cover set in concrete. Top of Casing (toc). Total well depth includes 4-inch sump.

Geosyntec consultants engineers | scientists | innovators	**Client:** Southern Company Services **Project:** Plant Wansley Well Installation **Address:** 1371 Liberty Church Rd, Carrollton, GA	**WELL LOG** **Well No.** PZ-32D/33D **Page:** 7 of 10

Drilling Start Date:	**3/5/2024**	Boring Depth (ft):	**413**	Well Depth (ft TOC):	**325.3 (32D), 405.3 (33D)**
Drilling End Date:	**10/17/2024**	Boring Diameter (in):	**4", 6"**	Well Diameter (in):	**1 (32D), 2 (33D)**
Drilling Company:	**Cascade Drilling**	Sampling Method(s):	**Core Barrel**	Screen Slot (in):	**0.010**
Drilling Method:	**Sonic**	DTW During Drilling (ft):	**8.0**	Riser Material:	**Sch 80 PVC**
Drilling Equipment:	**Terra Sonic 150CC**	Ground Surface Elev. (ft):	**777.14**	Screen Material:	**Sch 80 PVC Slotted**
Driller:	**J. Hall, D. Wilcox, K. Grant**	Top of Casing Elev. (ft):	**776.74 (32D,33D)**	Seal Material(s):	**Grout/Bentonite**
Logged By:	**D. Kegley, T. Kessler**	North, East:	**(see Notes below)***	Filter Pack:	**#1 Sand**

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	SOIL/ROCK VISUAL DESCRIPTION	REMARKS	ELEVATION (ft MSL)
270				grayish orange pink (5YR 7/2) feldspar laminations/seams throughout, some biotite and mica throughout, hard, competent, abundant moderate yellow-green (5GY 7/4) epidote in ~1" thick lens/seam from 269-270 ft bgs, schist friable where thin (<5cm thick).		505
275				(279') Same as above.		500
280				(282.5') GNEISS/AMPHIBOLITE GNEISS; greenish black (5GY 2/1), abundant moderate brown (5YR 4/4) feldspar throughout, hard, thin laminations, competent, trace fine fractures less than 1mm throughout, broken into subangular-angular gravel throughout.		495
285						490
290				(289') GNEISS/AMPHIBOLITE GNEISS; dark gray (N3), abundant grayish orange pink (5YR 7/2) feldspar, trace white (N9) quartz and epidote, hard, thin laminations, competent, trace fine (<1mm) fractures with dark greenish gray (5G 4/1) staining on faces, trace cubic pyrite crystals visbile in fracture faces.	Heavy rig chatter from 289-299 ft bgs.	485
295						480
300				(299') Light brownish gray (10YR 6/2), abundant fine sand (recovered material consisted of sand crush from drilling operations), wet, loose.	Very hard drilling from 299-309 ft bgs.	475
305						470
310				(309') Abundant small (<1mm) pyrite throughout.		465
315				(314') Trace medium (~3-5mm) cubic pyrite crystals.		

NOTES: Boring backfilled with bentonite to 408.6 ft below ground surface (bgs) prior to installing wells.
*PZ-32D - 1243211.88 N, 2029886.45 E; PZ-33D - 1243211.76 N, 2029886.78 E. Coordinates in North American Datum (NAD) 1983, State Plane, Georgia-West, feet. Vertical elevations are referenced to the North American Vertical Datum (NAVD) of 1988. Wells completed with flush-mount well cover set in concrete. Top of Casing (toc). Total well depth includes 4-inch sump.

Geosyntec consultants
engineers | scientists | innovators

Client: Southern Company Services
Project: Plant Wansley Well Installation
Address: 1371 Liberty Church Rd, Carrollton, GA

WELL LOG
Well No. PZ-32D/33D
Page: 8 of 10

Drilling Start Date:	3/5/2024	Boring Depth (ft):	413	Well Depth (ft TOC):	325.3 (32D), 405.3 (33D)
Drilling End Date:	10/17/2024	Boring Diameter (in):	4", 6"	Well Diameter (in):	1 (32D), 2 (33D)
Drilling Company:	Cascade Drilling	Sampling Method(s):	Core Barrel	Screen Slot (in):	0.010
Drilling Method:	Sonic	DTW During Drilling (ft):	8.0	Riser Material:	Sch 80 PVC
Drilling Equipment:	Terra Sonic 150CC	Ground Surface Elev. (ft):	777.14	Screen Material:	Sch 80 PVC Slotted
Driller:	J. Hall, D. Wilcox, K. Grant	Top of Casing Elev. (ft):	776.74 (32D,33D)	Seal Material(s):	Grout/Bentonite
Logged By:	D. Kegley, T. Kessler	North, East:	(see Notes below)*	Filter Pack:	#1 Sand

DEPTH (ft)	SOIL/ROCK VISUAL DESCRIPTION	REMARKS	ELEVATION (ft MSL)
315	(315') Trace iron staining from 315-316 ft bgs.		460
320	(319') Same as above. (320') Trace medium/large pyrite crystals.		455
325	(327') Trace epidote.		450
330	(329') GNEISS/AMPHIBOLITE GNEISS; dark greenish gray (5GY 4/1), abundant grayish orange pink (5YR 7/2) feldspar, some white (N9) quartz/quartzite, hard, thin laminations, competent, abundant small (<1mm) fractures from 329-330 ft bgs with very light gray staining present in open fractures, wet. (329.5') Trace weathered small garnet in fracture zone, trace pyrite. (334') Small (less than 1mm) fractures with black staining on fractures.	Core broken into angular gravel from 332-336 ft bgs. Driller reports soft spot at 334 ft bgs.	445
335			440
340	(339') GNEISS/AMPHIBOLITE GNEISS; dark greenish gray (5GY 4/1), abundant gray orange pink (5YR 7/2) feldspar throughout, abundant white (N9) quartzite, hard, thin laminations throughout, competent, abundant small (<1mm) fractures throughout with gray (N8) and dark greenish gray (5GY 4/1) staining and fractures, abundant iron staining on fracture surfaces from 339-340 ft bgs, broken into medium subangular gravel from 339-340 ft bgs, wet.		435
345	(347') Trace/some ~1-2mm pyrite crystals and ~0.5mm garnet in fracture faces, trace iron staining from 347-347.5 ft bgs.		430
350	(349') GNEISS/AMPHIBOLITE GNEISS; dark gray (N3), abundant light brown (5YR 5/6) feldspar throughout, hard, thin laminations throughout, competent, thin (<1mm) fractures throughout with gray (N8) dark green gray (5G 4/1) and black (N1) staining on fracture surfaces, broken into medium to large subrounded to angular gravel (heavily weathered gneiss, friable) with abundant iron staining from 349-351 ft bgs, trace garnet at 349-349.1 ft bgs, wet. (351') Trace very small (>0.5mm) pyrite in fractures.	Heavy rig chatter from 349-353 ft bgs.	425
355	(357') Angular gravel from 357-357.5 ft bgs.		420
360			

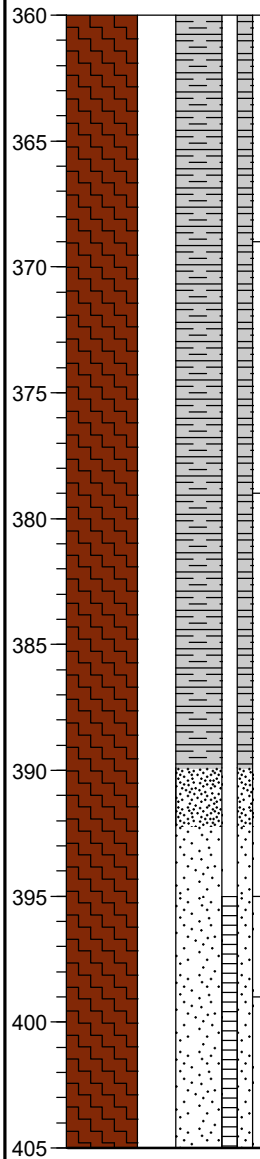
NOTES: Boring backfilled with bentonite to 408.6 ft below ground surface (bgs) prior to installing wells.
*PZ-32D - 1243211.88 N, 2029886.45 E; PZ-33D - 1243211.76 N, 2029886.78 E. Coordinates in North American Datum (NAD) 1983, State Plane, Georgia-West, feet. Vertical elevations are referenced to the North American Vertical Datum (NAVD) of 1988. Wells completed with flush-mount well cover set in concrete. Top of Casing (toc). Total well depth includes 4-inch sump.

Geosyntec consultants
engineers | scientists | innovators

Client: Southern Company Services
Project: Plant Wansley Well Installation
Address: 1371 Liberty Church Rd, Carrollton, GA

WELL LOG
Well No. PZ-32D/33D
Page: 9 of 10

Drilling Start Date:	3/5/2024	Boring Depth (ft):	413	Well Depth (ft TOC):	325.3 (32D), 405.3 (33D)
Drilling End Date:	10/17/2024	Boring Diameter (in):	4", 6"	Well Diameter (in):	1 (32D), 2 (33D)
Drilling Company:	Cascade Drilling	Sampling Method(s):	Core Barrel	Screen Slot (in):	0.010
Drilling Method:	Sonic	DTW During Drilling (ft):	8.0	Riser Material:	Sch 80 PVC
Drilling Equipment:	Terra Sonic 150CC	Ground Surface Elev. (ft):	777.14	Screen Material:	Sch 80 PVC Slotted
Driller:	J. Hall, D. Wilcox, K. Grant	Top of Casing Elev. (ft):	776.74 (32D,33D)	Seal Material(s):	Grout/Bentonite
Logged By:	D. Kegley, T. Kessler	North, East:	(see Notes below)*	Filter Pack:	#1 Sand



DEPTH (ft)	SOIL/ROCK VISUAL DESCRIPTION	REMARKS	ELEVATION (ft MSL)
360	(359') GNEISS/AMPHIBOLITE GNEISS; dark gray (N3), abundant light brown (5YR 5/6) feldspar throughout, trace epidote throughout core, hard, competent, some small (>1mm) fractures throughout with dark greenish gray and gray staining on fracture surfaces, some very small pyrite (>0.05-0.5mm) throughout core concentrated in, but not limited to, open fractures, wet.	Very heavy rig chatter from 359-364.5 ft bgs.	415
365	(363') Broken into medium to large angular gravel from 363-367 ft bgs.		410
370	(369') GNEISS/AMPHIBOLITE GNEISS; black (N2), abundant moderate brown (5YR4/4) feldspar decreasing with depth, hard, some thin laminations, competent, small (>1mm) fractures from 369-372 ft bgs with white and dark green gray staining on fracture surfaces, wet.	Very heavy rig chatter from 369-379 ft bgs.	405
375	(371') Broken into medium to coarse angular to subangular gravel from 371-377 ft bgs. (372') Some epidote from 372-373 ft bgs. (376') Some epidote from 376-379 ft bgs.		400
380	(379') GNEISS/GRANITIC AMPHIBOLITE GNEISS; dark gray (N3), abundant light brown (5YR 5/6) feldspar, small white (N9) quartzite (1-2mm thick) and some epidote throughout, hard, thin laminations decrease with depth, competent, some small fractures (>1mm) throughout with white and dark green gray staining on faces, broken into small to coarse angular to subangular gravel throughout core, wet.	Heavy rig chatter; very hard drilling from 379-389 ft bgs.	395
385	(384') Some quartzite (1-2" thick) from 384-384.5 ft bgs.		390
390	(390') Abundant biotite in fractures, large (~1" thick) quartzite vein vertically from 390-391.5 ft bgs.		385
395	(395') BIOTITE HORNFELS/WEAK SCHIST; medium dark gray (N4), fine-grained, abundant biotite and mica, some light brown (5YR 5/6) feldspar, pyrite crystals (1-2mm), and epidote throughout, trace small garnets (<1mm), trace thin laminations, competent, some fractures (1-5mm) with white calcium-rich fill (HCl reactive), wet.		380
400	(399') BIOTITE HORNFELS/WEAK SCHIST; medium dark gray (N4), abundant biotite and mica, some thin (1-5mm) white (N9) quartzite lenses, some light brown (5YR 5/6) feldspar and small (1.5mm) pyrite crystals throughout, trace small garnets (<1mm) and epidote throughout, decreasing feldspar and quartzite with depth, hard, competent, wet.		375
405			

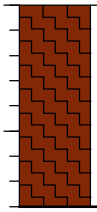
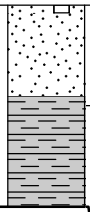
NOTES: Boring backfilled with bentonite to 408.6 ft below ground surface (bgs) prior to installing wells.
*PZ-32D - 1243211.88 N, 2029886.45 E; PZ-33D - 1243211.76 N, 2029886.78 E. Coordinates in North American Datum (NAD) 1983, State Plane, Georgia-West, feet. Vertical elevations are referenced to the North American Vertical Datum (NAVD) of 1988. Wells completed with flush-mount well cover set in concrete. Top of Casing (toc). Total well depth includes 4-inch sump.

Geosyntec consultants
engineers | scientists | innovators

Client: Southern Company Services
Project: Plant Wansley Well Installation
Address: 1371 Liberty Church Rd, Carrollton, GA

WELL LOG
Well No. PZ-32D/33D
Page: 10 of 10

Drilling Start Date:	3/5/2024	Boring Depth (ft):	413	Well Depth (ft TOC):	325.3 (32D), 405.3 (33D)
Drilling End Date:	10/17/2024	Boring Diameter (in):	4", 6"	Well Diameter (in):	1 (32D), 2 (33D)
Drilling Company:	Cascade Drilling	Sampling Method(s):	Core Barrel	Screen Slot (in):	0.010
Drilling Method:	Sonic	DTW During Drilling (ft):	8.0	Riser Material:	Sch 80 PVC
Drilling Equipment:	Terra Sonic 150CC	Ground Surface Elev. (ft):	777.14	Screen Material:	Sch 80 PVC Slotted
Driller:	J. Hall, D. Wilcox, K. Grant	Top of Casing Elev. (ft):	776.74 (32D,33D)	Seal Material(s):	Grout/Bentonite
Logged By:	D. Kegley, T. Kessler	North, East:	(see Notes below)*	Filter Pack:	#1 Sand

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	SOIL/ROCK VISUAL DESCRIPTION	REMARKS	ELEVATION (ft MSL)
405				(405') Broken into angular gravel from 405-406 ft bgs.		370
410				(409') BIOTITE HORNFELS/WEAK SCHIST; medium dark gray (N4), fine to medium grained, abundant biotite, mica, and epidote throughout, some white (N9) feldspar becoming moderate orange pink (10R 7/4) in the bottom 2", trace garnets throughout, hard, some thin (1-~5mm) white (N9) quartzite lenses, competent, trace calcium-rich fracture infilling at 409 ft bgs, wet. (411') Trace white calcium-rich fill (HCl reactive) of fractures at 411 ft bgs. (413') Boring terminated.		365

NOTES: Boring backfilled with bentonite to 408.6 ft below ground surface (bgs) prior to installing wells.
*PZ-32D - 1243211.88 N, 2029886.45 E; PZ-33D - 1243211.76 N, 2029886.78 E. Coordinates in North American Datum (NAD) 1983, State Plane, Georgia-West, feet. Vertical elevations are referenced to the North American Vertical Datum (NAVD) of 1988. Wells completed with flush-mount well cover set in concrete. Top of Casing (toc). Total well depth includes 4-inch sump.

Easting and Northing in NAD 83. Elevation in NAVD 88.

RECORD OF BOREHOLE WGWC-14/APC-5S

SHEET 1 of 2

PROJECT: SCS Wansley
PROJECT NUMBER: 154117
DRILLED DEPTH: 52.00 ft
LOCATION: Carrollton, GA

DRILL RIG: PS-150 Track Mounted Rig
DATE STARTED: 11/4/15
DATE COMPLETED: 11/5/15

NORTHING: 1,240,621.86
EASTING: 2,024,584.92
GS ELEVATION: 806.87
TOC ELEVATION: 809.50 ft

DEPTH W.L.: 33' (bgs)
ELEVATION W.L.: (amsl)
DATE W.L.: 11/4/15
TIME W.L.: 14:00

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: SAMPLE NO.	TYPE	REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
0	805	0.00 - 2.00 SILT; OVERBURDEN; moist, orange	ML		804.87					
		2.00 - 11.00 CLAYEY SILT; moist, brown, micaceous, trace garnet, material is loose/soft 6.00: Shelby Tube Collected: 6'-7'	ML		2.00 795.87					
10	795	11.00 - 26.70 SILTY CLAY; moist to wet, light orange to orange-brown. weathered pegmatitic unit, veins of feldspar, manganese and quartz (<5%), saprolite	CL		11.00					
20	785								Portland Type 1	
25		26.00 - 37.00 lense of silty clay Shelby Tube Collected: 26'-26.7'			780.17					
30	780	26.70 - 43.00 SAP-ROCK; TRANSITIONALLY WEATHERED ROCK; meta granitic in texture and composition. predominantly k-spa and plagioclase with increasing quartz content with depth (<5-20%)	CL TWR		26.70					
35	775									
40	770				769.87				3/8" Bentonite Pellets	
	765				763.87					
45		43.00 - 52.00 ROCK; wet, light brown meta-quartzite with light orange mineral oxidation. meta-quartzite, 5-10% muscovite	BR		43.00					

Log continued on next page

WELL CASING
Interval: -2.5'-42'
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 42'-52'
Material: Schedule 40 PVC
Diameter: 2'
Slot Size: 0.010"
End Cap: Schedule 40 PVC

FILTER PACK
Interval: 39'-52'
Type: #1 Sand/ Prepack Filter

FILTER PACK SEAL
Interval: 36'-39'
Type: 3/8" Bentonite Pellets

ANNULUS SEAL
Interval: 0'-36'
Type: Portland Type 1

WELL COMPLETION
Pad: 4'x4'x4"
Protective Casing: Anodized Aluminum

DRILLING METHODS
Soil Drill: 4-inch Sonic
Rock Drill: 4-inch Sonic

LOG SCALE: 1 in = 5.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Tom Ardito

GA INSPECTOR: Shannon George, P.G.
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 9/29/17

Golder Associates

BOREHOLE RECORD WANSLEY BORING LOGS.GPJ PIEDMONT.GDT 9/29/17

Easting and Northing in NAD 83. Elevation in NAVD 88.

RECORD OF BOREHOLE WGWC-14/APC-5S

SHEET 2 of 2

PROJECT: SCS Wansley
PROJECT NUMBER: 154117
DRILLED DEPTH: 52.00 ft
LOCATION: Carrollton, GA

DRILL RIG: PS-150 Track Mounted Rig
DATE STARTED: 11/4/15
DATE COMPLETED: 11/5/15

NORTHING: 1,240,621.86
EASTING: 2,024,584.92
GS ELEVATION: 806.87
TOC ELEVATION: 809.50 ft

DEPTH W.L.: 33' (bgs)
ELEVATION W.L.: (amsl)
DATE W.L.: 11/4/15
TIME W.L.: 14:00

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: SAMPLE NO.	TYPE	REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
45		43.00 - 52.00 ROCK; wet, light brown meta-quartzite with light orange mineral oxidation. meta-quartzite, 5-10% muscovite *(Continued)*	BR		754.87				#1 sand 0.010" slot screen	**WELL CASING** Interval: -2.5'-42' Material: Schedule 40 PVC Diameter: 2" Joint Type: Threaded **WELL SCREEN** Interval: 42'-52' Material: Schedule 40 PVC Diameter: 2' Slot Size: 0.010" End Cap: Schedule 40 PVC **FILTER PACK** Interval: 39'-52' Type: #1 Sand/ Prepack Filter **FILTER PACK SEAL** Interval: 36'-39' Type: 3/8" Bentonite Pellets **ANNULUS SEAL** Interval: 0'-36' Type: Portland Type 1 **WELL COMPLETION** Pad: 4'x4'x4" Protective Casing: Anodized Aluminum **DRILLING METHODS** Soil Drill: 4-inch Sonic Rock Drill: 4-inch Sonic
50	760									
55	755	Boring completed at 52.00 ft								
60	750									
65	745									
70	740									
75	735									
80	730									
85	725									
90	720									

LOG SCALE: 1 in = 5.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Tom Ardito

GA INSPECTOR: Shannon George, P.G.
CHECKED BY: Rachel P. Kirkman, P.G.
DATE: 9/29/17

Golder Associates

BOREHOLE RECORD WANSLEY BORING LOGS.GPJ PIEDMONT.GDT 9/29/17

SURETY RIDER

To be attached to and form a part of

Bond No. 800031223

Type of Bond: Performance Bond for Water Well Contractors

dated effective June 30, 2017
(MONTH-DAY-YEAR)

executed by Michael C. Rice/Cascade Drilling, L.P. , as Principal,
(PRINCIPAL)

and by Atlantic Specialty Insurance Company , as Surety,

in favor of State of Georgia
(OBLIGEE)

in consideration of the mutual agreements herein contained the Principal and the Surety hereby consent to changing

Coverage under the bond to include:
Michael Coleman

Nothing herein contained shall vary, alter or extend any provision or condition of this bond except as herein expressly stated.

This rider is effective December 21, 2017
(MONTH-DAY-YEAR)

Signed and Sealed December 21, 2017
(MONTH-DAY-YEAR)

Michael C. Rice/Cascade Drilling, L.P.
(PRINCIPAL)

By: _____
(PRINCIPAL)

Atlantic Specialty Insurance Company

By: _____
Elizabeth R. Hahn, Attorney-in-Fact

ATLANTIC SPECIALTY INSURANCE COMPANY CORPORATE SEAL 986 NEW YORK

S-0443/GE 8/08

XDP

OneBeacon
INSURANCE GROUP

Power of Attorney

KNOW ALL MEN BY THESE PRESENTS, that ATLANTIC SPECIALTY INSURANCE COMPANY, a New York corporation with its principal office in Plymouth, Minnesota, does hereby constitute and appoint: **Deanna M. French, Jill A. Wallace, Susan B. Larson, Elizabeth R. Hahn, Jana M. Roy, Scott McGilvray, Mindee L. Rankin, Ronald J. Lange, John R. Claeys, Roger Kaltenbach, Guy Armfield, Scott Fisher**, each individually if there be more than one named, its true and lawful Attorney-in-Fact, to make, execute, seal and deliver, for and on its behalf as surety, any and all bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof; provided that no bond or undertaking executed under this authority shall exceed in amount the sum of: **sixty million dollars ($60,000,000)** and the execution of such bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof in pursuance of these presents, shall be as binding upon said Company as if they had been fully signed by an authorized officer of the Company and sealed with the Company seal. This Power of Attorney is made and executed by authority of the following resolutions adopted by the Board of Directors of ATLANTIC SPECIALTY INSURANCE COMPANY on the twenty-fifth day of September, 2012:

Resolved: That the President, any Senior Vice President or Vice-President (each an "Authorized Officer") may execute for and in behalf of the Company any and all bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof, and affix the seal of the Company thereto; and that the Authorized Officer may appoint and authorize an Attorney-in-Fact to execute on behalf of the Company any and all such instruments and to affix the Company seal thereto; and that the Authorized Officer may at any time remove any such Attorney-in-Fact and revoke all power and authority given to any such Attorney-in-Fact.

Resolved: That the Attorney-in-Fact may be given full power and authority to execute for and in the name and on behalf of the Company any and all bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof, and any such instrument executed by any such Attorney-in-Fact shall be as binding upon the Company as if signed and sealed by an Authorized Officer and, further, the Attorney-in-Fact is hereby authorized to verify any affidavit required to be attached to bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof.

This power of attorney is signed and sealed by facsimile under the authority of the following Resolution adopted by the Board of Directors of ATLANTIC SPECIALTY INSURANCE COMPANY on the twenty-fifth day of September, 2012:

Resolved: That the signature of an Authorized Officer, the signature of the Secretary or the Assistant Secretary, and the Company seal may be affixed by facsimile to any power of attorney or to any certificate relating thereto appointing an Attorney-in-Fact for purposes only of executing and sealing any bond, undertaking, recognizance or other written obligation in the nature thereof, and any such signature and seal where so used, being hereby adopted by the Company as the original signature of such officer and the original seal of the Company, to be valid and binding upon the Company with the same force and effect as though manually affixed.

IN WITNESS WHEREOF, ATLANTIC SPECIALTY INSURANCE COMPANY has caused these presents to be signed by an Authorized Officer and the seal of the Company to be affixed this eighth day of December, 2014.

ATLANTIC SPECIALTY INSURANCE COMPANY CORPORATE SEAL 1986 NEW YORK

By _____
Paul J. Brehm, Senior Vice President

STATE OF MINNESOTA
HENNEPIN COUNTY

On this eighth day of December, 2014, before me personally came Paul J. Brehm, Senior Vice President of ATLANTIC SPECIALTY INSURANCE COMPANY, to me personally known to be the individual and officer described in and who executed the preceding instrument, and he acknowledged the execution of the same, and being by me duly sworn, that he is the said officer of the Company aforesaid, and that the seal affixed to the preceding instrument is the seal of said Company and that the said seal and the signature as such officer was duly affixed and subscribed to the said instrument by the authority and at the direction of the Company.

TARA JANELLE STAFFORD
NOTARY PUBLIC - MINNESOTA
My Commission Expires
January 31, 2020

_____
Notary Public

I, the undersigned, Assistant Secretary of ATLANTIC SPECIALTY INSURANCE COMPANY, a New York Corporation, do hereby certify that the foregoing power of attorney is in full force and has not been revoked, and the resolutions set forth above are now in force.

Signed and sealed. Dated 21 day of December, 2017

ATLANTIC SPECIALTY INSURANCE COMPANY CORPORATE SEAL 1986 NEW YORK

This Power of Attorney expires
October 1, 2019

_____
James G. Jordan, Assistant Secretary

CONTINUATION CERTIFICATE

SAFECO Insurance Company of America , Surety upon

a certain Bond No. 4993104

dated effective June 30, 1987
(MONTH-DAY-YEAR)

on behalf of Southern Company Services, Inc.
(PRINCIPAL)

and in favor of Georgia Department of Natural Resources, Environmental Protection Division

(OBLIGEE)

does hereby continue said bond in force for the further period

beginning on June 30, 2017
(MONTH-DAY-YEAR)

and ending on June 30, 2018
(MONTH-DAY-YEAR)

Amount of bond $10,000.00

Description of bond Water Well Contractors & Drillers

PROVIDED: That this continuation certificate does not create a new obligation and is executed upon the express condition and provision that the Surety's liability under said bond and this and all Continuation Certificates issued in connection therewith shall not be cumulative and that the said Surety's aggregate liability under said bond and this and all such Continuation Certificates on account of all defaults committed during the period (regardless of the number of years) said bond had been and shall be in force, shall not in any event exceed the amount of said bond as hereinbefore set forth.

Signed and dated on May 04, 2017
(MONTH-DAY-YEAR)

SAFECO Insurance Company of America

By

D- Ann Kleidosty, Attorney-in-Fact

S-0157/GEEF 11/99

THIS POWER OF ATTORNEY IS NOT VALID UNLESS IT IS PRINTED ON RED BACKGROUND.
This Power of Attorney limits the acts of those named herein, and they have no authority to bind the Company except in the manner and to the extent herein stated.

Certificate No. 7710213

American States Insurance Company
First National Insurance Company of America
General Insurance Company of America
Safeco Insurance Company of America

POWER OF ATTORNEY

KNOWN ALL PERSONS BY THESE PRESENTS: That American States Insurance Company is a corporation duly organized under the laws of the State of Indiana, that First National Insurance Company of America, General Insurance Company of America, and Safeco Insurance Company of America are corporations duly organized under the laws of the State of New Hampshire (herein collectively called the "Companies"), pursuant to and by authority herein set forth, does hereby name, constitute and appoint,

Brooke A. Sharp; Christine Doczy; D-Ann Kleidosty; Gary D. Eklund; Sharon J. Potts; Sylvia M. Ogle

all of the city of Atlanta, state of GA each individually if there be more than one named, its true and lawful attorney-in-fact to make, execute, seal, acknowledge and deliver, for and on its behalf as surety and as its act and deed, any and all undertakings, bonds, recognizances and other surety obligations, in pursuance of these presents and shall be as binding upon the Companies as if they have been duly signed by the president and attested by the secretary of the Companies in their own proper persons.

IN WITNESS WHEREOF, this Power of Attorney has been subscribed by an authorized officer or official of the Companies and the corporate seals of the Companies have been affixed thereto this 4th day of April, 2017.

American States Insurance Company
First National Insurance Company of America
General Insurance Company of America
Safeco Insurance Company of America

By: _____
David M. Carey, Assistant Secretary

STATE OF PENNSYLVANIA ss
COUNTY OF MONTGOMERY

On this 4th day of April, 2017, before me personally appeared David M. Carey, who acknowledged himself to be the Assistant Secretary of American States Insurance Company, First National Insurance Company of America, General Insurance Company of America, and Safeco Insurance Company of America, and that he, as such, being authorized so to do, execute the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my notarial seal at King of Prussia, Pennsylvania, on the day and year first above written.

COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Teresa Pastella, Notary Public
Upper Merion Twp., Montgomery County
My Commission Expires March 28, 2021
Member, Pennsylvania Association of Notaries

By: _____
Teresa Pastella, Notary Public

This Power of Attorney is made and executed pursuant to and by authority of the following By-laws and Authorizations of The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company which resolutions are now in full force and effect reading as follows:

ARTICLE IV – OFFICERS – Section 12. Power of Attorney. Any officer or other official of the Corporation authorized for that purpose in writing by the Chairman or the President, and subject to such limitation as the Chairman or the President may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Corporation to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Corporation by their signature and executed, such instruments shall be as binding as if signed by the President and attested to by the Secretary. Any power or authority granted to any representative or attorney-in-fact under the provisions of this article may be revoked at any time by the Board, the Chairman, the President or by the officer or officers granting such power or authority.

Certificate of Designation – The President of the Company, acting pursuant to the Bylaws of the Company, authorizes David M. Carey, Assistant Secretary to appoint such attorneys-in-fact as may be necessary to act on behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations.

Authorization – By unanimous consent of the Company's Board of Directors, the Company consents that facsimile or mechanically reproduced signature of any assistant secretary of the Company, wherever appearing upon a certified copy of any power of attorney issued by the Company in connection with surety bonds, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

I, Renee C. Llewellyn, the undersigned, Assistant Secretary, of American States Insurance Company, First National Insurance Company of America, General Insurance Company of America, and Safeco Insurance Company of America do hereby certify that the original power of attorney of which the foregoing is a full, true and correct copy of the Power of Attorney executed by said Companies, is in full force and effect and has not been revoked.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this 4th day of May, 2017.

By: _____
Renee C. Llewellyn, Assistant Secretary

Not valid for mortgage, note, loan, letter of credit, currency rate, interest rate or residual value guarantees.

To confirm the validity of this Power of Attorney call 1-610-832-8240 between 9:00 am and 4:30 pm EST on any business day.

Bond Number 1001126889

Performance Bond For Drillers

Name of Driller Phillip Pitts and Stan White

Know All Men By These Presents

That we Phillip Pitts and Stan White and _____ Thompson Engineering, Inc. any and all employees, officers and partners (collectively hereinafter, **Principal**), and we American Contractors Indemnity Company, duly organized under the laws of the State of California (hereinafter, **Surety**), are held and firmly bound unto the Director of the Environmental Protection Division, Department of Natural Resources, State of Georgia (**Director**) and his or her Successor or Successors in office, as **Obligee**, in the full sum of **FIFTEEN THOUSAND DOLLARS ($15,000.00)** for the payment of which will and truly to be made, the Principal and Surety bind ourselves, our heirs, administrators, successors and assigns, jointly and severally, by these presents.

WHEREAS, the Water Well Standards Act of 1985 (O.C.G.A. §§ 12-5-120 *et seq.*) (the Act) requires that a Driller, as that term is defined by the Act, have a performance bond with the Director to ensure compliance with the Act; and WHEREAS the above bound Principal is subject to the terms and provisions of said Act.

NOW, THEREFORE, the conditions of this obligation are such that if the above bound Principal shall fully and faithfully perform the duties and in all things comply with the procedures and standards set forth in the Act as now and hereafter amended, and the rules and regulations promulgated pursuant thereto, including but not limited to the correction of any violation of such procedures and standards upon discovery, irrespective of whether such discovery is made before completion of any well subject to this bond, then this obligation shall be void; otherwise it shall remain in full force and effect.

And Surety, for value received, agrees that no amendment to existing laws, rules or regulations, or adoption of new laws, rules or regulations shall in anyway discharge its obligation on this bond, and does hereby waive notice of any such amendment, adoption or modification.

This bond shall be effective from the 1st day of November, 2018 and shall continue in effect until June 30, 2019, unless sooner terminated by mutual agreement of Principal and Surety, provided that no such termination may be made unless sixty (60) days' prior written notice is made to the Director. In the event of such termination, the rights of the Director as Obligee and beneficiaries under this bond which arose prior to such termination shall continue.

IN WITNESS THEREOF the Principal and Surety have caused these present to be duly signed and sealed, this the 26th day of February, 2019.

Principal
Thompson Engineering, Inc.

Print name: Chad R. Brown
Title: CLO + Secretary

Seal:

THOMPSON ENGINEERING, INC. CORPORATE SEAL ALABAMA

Surety
American Contractors Indemnity Company

Print name: Dewey Brashier
Title: Attorney-in-Fact

Seal:

Revised March 2017

TOKIO MARINE HCC

POWER OF ATTORNEY

AMERICAN CONTRACTORS INDEMNITY COMPANY TEXAS BONDING COMPANY
UNITED STATES SURETY COMPANY U.S. SPECIALTY INSURANCE COMPANY

KNOW ALL MEN BY THESE PRESENTS: That American Contractors Indemnity Company, a California corporation, Texas Bonding Company, an assumed name of American Contractors Indemnity Company, United States Surety Company, a M aryland corporation and U.S. Specialty Insurance Company, a Texas corporation (collectively, the "Companies"), do by these presents make, constitute and appoint:

Jim E. Brashier, Troy P. Wagener, Loren Richard Howell, Jr., Dewey Brashier,
Kathleen B. Scarborough, Susan Skrmetta, John W. Nance

its true and lawful Attorney(s)-in-fact, each in their separate capacity if more than one is named above, with full power and authority hereby conferred in its name, place and stead, to execute, acknowledge and deliver **any and all bonds, recognizances, undertakings or other instruments or contracts of suretyship to include riders, amendments, and consents of surety, providing the bond penalty does not exceed** ******Unlimited****** Dollars (***unlimited***). This Power of Attorney shall expire without further action on April 23rd, 2022. This Power of Attorney is granted under and by authority of the following resolutions adopted by the Boards of Directors of the Companies:

Be it Resolved, that the President, any Vice-President, any Assistant Vice-President, any Secretary or any Assistant Secretary shall be and is hereby vested with full power and authority to appoint any one or more suitable persons as Attorney(s)-in-Fact to represent and act for and on behalf of the Company subject to the following provisions:

Attorney-in-Fact may be given full power and authority for and in the name of and on behalf of the Company, to execute, acknowledge and deliver, any and all bonds, recognizances, contracts, agreements or indemnity and other conditional or obligatory undertakings, including any and all consents for the release of retained percentages and/or final estimates on engineering and construction contracts, and any and all notices and documents canceling or terminating the Company's liability thereunder, and any such instruments so executed by any such Attorney-in-Fact shall be binding upon the Company as if signed by the President and sealed and effected by the Corporate Secretary.

Be it Resolved, that the signature of any authorized officer and seal of the Company heretofore or hereafter affixed to any power of attorney or any certificate relating thereto by facsimile, and any power of attorney or certificate bearing facsimile signature or facsimile seal shall be valid and binding upon the Company with respect to any bond or undertaking to which it is attached.

IN WITNESS WHEREOF, The Companies have caused this instrument to be signed and their corporate seals to be hereto affixed, this 1st day of June, 2018.

AMERICAN CONTRACTORS INDEMNITY COMPANY TEXAS BONDING OMPANY
UNITED STATES SURETY COMPANY U.S. SPECIALTY INSURANCE COMPANY

State of California

County of Los Angeles

By: _____
Daniel P. Aguilar, Vice President

A Notary Public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document

On this 1st day of June, 2018, before me, Sonia O. Carrejo, a notary public, personally appeared Daniel P. Aguilar, Vice President of American Contractors Indemnity Company, Texas Bonding Company, United States Surety Company and U.S. Specialty Insurance Company who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____ (seal)

SONIA O. CARREJO
Notary Public - California
Los Angeles County
Commission # 2239479
My Comm. Expires Apr 23, 2022

I, Kio Lo, Assistant Secretary of American Contractors Indemnity Company, Texas Bonding Company, United States Surety Company and U.S. Specialty Insurance Company, do hereby certify that the above and foregoing is a true and correct copy of a Power of Attorney, executed by said Companies, which is still in full force and effect; furthermore, the resolutions of the Boards of Directors, set out in the Power of Attorney are in full force and effect.

In Witness Whereof, I have hereunto set my hand and affixed the seals of said Companies at Los Angeles, California this 26th day of February, 2019.

Corporate Seals
Bond No. 1001126889

Agency No. 17033

_____
Kio Lo, Assistant Secretary

HCCSMANPOA06/2018

visit tmhcc.com/surety for more information

CONTINUATION CERTIFICATE

Atlantic Specialty Insurance Company , Surety upon

a certain Bond No. 800033976

Issued on 9/27/2017
Expires on 6/30/2019
Renewed on 3/4/2019
Expires on 6/30/2021

dated effective 09/27/2017
(MONTH-DAY-YEAR)

on behalf of Ricky Davis / Cascade Drilling, L.P.
(PRINCIPAL)

and in favor of Department of Natural Resources, State of Georgia
(OBLIGEE)

does hereby continue said bond in force for the further period

beginning on 06/30/2019
(MONTH-DAY-YEAR)

and ending on 06/30/2021
(MONTH-DAY-YEAR)

Amount of bond Thirty Thousand and 00/100 Dollars ($30,000.00)

Description of bond Performance Bond for Water Well Contractors

Premium: $1200.00

PROVIDED: That this continuation certificate does not create a new obligation and is executed upon the express condition and provision that the Surety's liability under said bond and this and all Continuation Certificates issued in connection therewith shall not be cumulative and that the said Surety's aggregate liability under said bond and this and all such Continuation Certificates on account of all defaults committed during the period (regardless of the number of years) said bond had been and shall be in force, shall not in any event exceed the amount of said bond as hereinbefore set forth.

Signed and dated on March 4th, 2019
(MONTH-DAY-YEAR)

Atlantic Specialty Insurance Company

By _____
Attorney-in-Fact Andrew P. Larsen

Parker, Smith & Feek, Inc.
Agent

2233 112th Ave NE Bellevue, WA 98004
Address of Agent

425-709-3600
Telephone Number of Agent

S-0157/GE 8/08

XDP

Power of Attorney

KNOW ALL MEN BY THESE PRESENTS, that ATLANTIC SPECIALTY INSURANCE COMPANY, a New York corporation with its principal office in Plymouth, Minnesota, does hereby constitute and appoint: **Deanna M. French, Susan B. Larson, Elizabeth R. Hahn, Jana M. Roy, Scott McGilvray, Mindee L. Rankin, Ronald J. Lange, John R. Claeys, Roger Kaltenbach, Guy Armfield, Scott Fisher, Andrew P. Larsen, Nicholas Fredrickson, William M. Smith, Derek Sabo, Charla M. Boadle**, each individually if there be more than one named, its true and lawful Attorney-in-Fact, to make, execute, seal and deliver, for and on its behalf as surety, any and all bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof; provided that no bond or undertaking executed under this authority shall exceed in amount the sum of: **unlimited** and the execution of such bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof in pursuance of these presents, shall be as binding upon said Company as if they had been fully signed by an authorized officer of the Company and sealed with the Company seal. This Power of Attorney is made and executed by authority of the following resolutions adopted by the Board of Directors of ATLANTIC SPECIALTY INSURANCE COMPANY on the twenty-fifth day of September, 2012:

Resolved: That the President, any Senior Vice President or Vice-President (each an "Authorized Officer") may execute for and in behalf of the Company any and all bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof, and affix the seal of the Company thereto; and that the Authorized Officer may appoint and authorize an Attorney-in-Fact to execute on behalf of the Company any and all such instruments and to affix the Company seal thereto; and that the Authorized Officer may at any time remove any such Attorney-in-Fact and revoke all power and authority given to any such Attorney-in-Fact.

Resolved: That the Attorney-in-Fact may be given full power and authority to execute for and in the name and on behalf of the Company any and all bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof, and any such instrument executed by any such Attorney-in-Fact shall be as binding upon the Company as if signed and sealed by an Authorized Officer and, further, the Attorney-in-Fact is hereby authorized to verify any affidavit required to be attached to bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof.

This power of attorney is signed and sealed by facsimile under the authority of the following Resolution adopted by the Board of Directors of ATLANTIC SPECIALTY INSURANCE COMPANY on the twenty-fifth day of September, 2012:

Resolved: That the signature of an Authorized Officer, the signature of the Secretary or the Assistant Secretary, and the Company seal may be affixed by facsimile to any power of attorney or to any certificate relating thereto appointing an Attorney-in-Fact for purposes only of executing and sealing any bond, undertaking, recognizance or other written obligation in the nature thereof, and any such signature and seal where so used, being hereby adopted by the Company as the original signature of such officer and the original seal of the Company, to be valid and binding upon the Company with the same force and effect as though manually affixed.

IN WITNESS WHEREOF, ATLANTIC SPECIALTY INSURANCE COMPANY has caused these presents to be signed by an Authorized Officer and the seal of the Company to be affixed this twenty-seventh day of April, 2020.

ATLANTIC SPECIALTY INSURANCE COMPANY CORPORATE SEAL 1986 NEW YORK

By _____
Paul J. Brehm, Senior Vice President

STATE OF MINNESOTA
HENNEPIN COUNTY

On this twenty-seventh day of April, 2020, before me personally came Paul J. Brehm, Senior Vice President of ATLANTIC SPECIALTY INSURANCE COMPANY, to me personally known to be the individual and officer described in and who executed the preceding instrument, and he acknowledged the execution of the same, and being by me duly sworn, that he is the said officer of the Company aforesaid, and that the seal affixed to the preceding instrument is the seal of said Company and that the said seal and the signature as such officer was duly affixed and subscribed to the said instrument by the authority and at the direction of the Company.

ALISON DWAN NASH-TROUT
NOTARY PUBLIC - MINNESOTA
My Commission Expires
January 31, 2025

_____
Notary Public

I, the undersigned, Secretary of ATLANTIC SPECIALTY INSURANCE COMPANY, a New York Corporation, do hereby certify that the foregoing power of attorney is in full force and has not been revoked, and the resolutions set forth above are now in force.

Signed and sealed. Dated 12 day of April, 2021.

ATLANTIC SPECIALTY INSURANCE COMPANY CORPORATE SEAL 1986 NEW YORK

This Power of Attorney expires
January 31, 2025

_____
Kara Barrow, Secretary

Please direct bond verifications to surety@intactinsurance.com

CONTINUATION
CERTIFICATE

Atlantic Specialty Insurance Company , Surety upon

a certain Bond No. 800033976

dated effective 09/27/2017
(MONTH-DAY-YEAR)

on behalf of Ricky Davis / Cascade Drilling, L.P.
(PRINCIPAL)

and in favor of Department of Natural Resources, State of Georgia
(OBLIGEE)

does hereby continue said bond in force for the further period

beginning on 06/30/2021
(MONTH-DAY-YEAR)

and ending on 06/30/2023
(MONTH-DAY-YEAR)

Amount of bond Thirty Thousand and 00/100 Dollars ($30,000.00)

Description of bond Performance Bond for Water Well Contractors

PROVIDED: That this continuation certificate does not create a new obligation and is executed upon the express condition and provision that the Surety's liability under said bond and this and all Continuation Certificates issued in connection therewith shall not be cumulative and that the said Surety's aggregate liability under said bond and this and all such Continuation Certificates on account of all defaults committed during the period (regardless of the number of years) said bond had been and shall be in force, shall not in any event exceed the amount of said bond as hereinbefore set forth.

Signed and dated on April 12th , 2021
(MONTH-DAY-YEAR)

Atlantic Specialty Insurance Company

By Andrew P. Larsen
Attorney-in-Fact Andrew P. Larsen

Parker, Smith & Feek, Inc.
Agent

2233 112th Ave NE Bellevue, WA 98004
Address of Agent

425-709-3600
Telephone Number of Agent

S-0157/GE 8/08

XDP

CONTINUATION
CERTIFICATE

Atlantic Specialty Insurance Company , Surety upon

a certain Bond No. 800033976

dated effective September 27, 2017
(MONTH-DAY-YEAR)

on behalf of Ricky Davis / Cascade Drilling, L.P.
(PRINCIPAL)

and in favor of Department of Natural Resources, State of Georgia
(OBLIGEE)

does hereby continue said bond in force for the further period

beginning on June 30, 2023
(MONTH-DAY-YEAR)

and ending on June 30, 2025
(MONTH-DAY-YEAR)

Amount of bond Thirty Thousand and 00/100 Dollars ($30,000.00)

Description of bond Performance Bond for Water Well Contractors

Premium:

PROVIDED: That this continuation certificate does not create a new obligation and is executed upon the express condition and provision that the Surety's liability under said bond and this and all Continuation Certificates issued in connection therewith shall not be cumulative and that the said Surety's aggregate liability under said bond and this and all such Continuation Certificates on account of all defaults committed during the period (regardless of the number of years) said bond had been and shall be in force, shall not in any event exceed the amount of said bond as hereinbefore set forth.

Signed and dated on April 13, 2023
(MONTH-DAY-YEAR)

Atlantic Specialty Insurance Company

By _____
ATTORNEY-IN-FACT Carlos A. Albelo

intact INSURANCE

Power of Attorney

KNOW ALL MEN BY THESE PRESENTS, that ATLANTIC SPECIALTY INSURANCE COMPANY, a New York corporation with its principal office in Plymouth, Minnesota, does hereby constitute and appoint: **Megan Sivley, Melissa Haddick, Sandra Parker, Orlando Aguirre, Stacy Killebrew, Carlos A. Albelo**, each individually if there be more than one named, its true and lawful Attorney-in-Fact, to make, execute, seal and deliver, for and on its behalf as surety, any and all bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof; provided that no bond or undertaking executed under this authority shall exceed in amount the sum of: **unlimited** and the execution of such bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof in pursuance of these presents, shall be as binding upon said Company as if they had been fully signed by an authorized officer of the Company and sealed with the Company seal. This Power of Attorney is made and executed by authority of the following resolutions adopted by the Board of Directors of ATLANTIC SPECIALTY INSURANCE COMPANY on the twenty-fifth day of September, 2012:

Resolved: That the President, any Senior Vice President or Vice-President (each an "Authorized Officer") may execute for and in behalf of the Company any and all bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof, and affix the seal of the Company thereto; and that the Authorized Officer may appoint and authorize an Attorney-in-Fact to execute on behalf of the Company any and all such instruments and to affix the Company seal thereto; and that the Authorized Officer may at any time remove any such Attorney-in-Fact and revoke all power and authority given to any such Attorney-in-Fact.

Resolved: That the Attorney-in-Fact may be given full power and authority to execute for and in the name and on behalf of the Company any and all bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof, and any such instrument executed by any such Attorney-in-Fact shall be as binding upon the Company as if signed and sealed by an Authorized Officer and, further, the Attorney-in-Fact is hereby authorized to verify any affidavit required to be attached to bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof.

This power of attorney is signed and sealed by facsimile under the authority of the following Resolution adopted by the Board of Directors of ATLANTIC SPECIALTY INSURANCE COMPANY on the twenty-fifth day of September, 2012:

Resolved: That the signature of an Authorized Officer, the signature of the Secretary or the Assistant Secretary, and the Company seal may be affixed by facsimile to any power of attorney or to any certificate relating thereto appointing an Attorney-in-Fact for purposes only of executing and sealing any bond, undertaking, recognizance or other written obligation in the nature thereof, and any such signature and seal where so used, being hereby adopted by the Company as the original signature of such officer and the original seal of the Company, to be valid and binding upon the Company with the same force and effect as though manually affixed.

IN WITNESS WHEREOF, ATLANTIC SPECIALTY INSURANCE COMPANY has caused these presents to be signed by an Authorized Officer and the seal of the Company to be affixed this first day of January, 2023.

ATLANTIC SPECIALTY INSURANCE COMPANY CORPORATE SEAL 1986 NEW YORK

By _____
Sarah A. Kolar, General Counsel

STATE OF MINNESOTA
HENNEPIN COUNTY

On this first day of January, 2023, before me personally came Sarah A. Kolar, General Counsel of ATLANTIC SPECIALTY INSURANCE COMPANY, to me personally known to be the individual and officer described in and who executed the preceding instrument, and she acknowledged the execution of the same, and being by me duly sworn, that she is the said officer of the Company aforesaid, and that the seal affixed to the preceding instrument is the seal of said Company and that the said seal and the signature as such officer was duly affixed and subscribed to the said instrument by the authority and at the direction of the Company.

ALISON DWAN NASH-TROUT
NOTARY PUBLIC - MINNESOTA
My Commission Expires
January 31, 2026

_____
Notary Public

I, the undersigned, Secretary of ATLANTIC SPECIALTY INSURANCE COMPANY, a New York Corporation, do hereby certify that the foregoing power of attorney is in full force and has not been revoked, and the resolutions set forth above are now in force.

Signed and sealed. Dated 13th day of April, 2023.

ATLANTIC SPECIALTY INSURANCE COMPANY CORPORATE SEAL 1986 NEW YORK

This Power of Attorney expires
January 31, 2025

_____
Kara Barrow, Secretary

Please direct bond verifications to surety@intactinsurance.com

Well ID	Casing Northing	Casing Easting	Top of Casing Elevation	Nail on Pad Northing	Nail on Pad Easting	Nail on Pad Elevation
PZ-1	1240249.8630	2022319.9310	856.72	1240249.9700	2022320.5080	853.91
PZ-4	1242592.0290	2023595.9140	889.01	1242592.3380	2023596.5490	886.13
PZ-6	1244382.8880	2024661.3940	915.15	1244383.1700	2024661.9960	912.30
PZ-8	1245514.5910	2026807.2980	867.29	1245514.7420	2026806.5550	864.65
PZ-10	1242058.4080	2028554.2850	832.02	1242059.0170	2028553.7330	829.26
PZ-11	1240578.8710	2026933.0880	823.09	1240579.6810	2026932.6430	820.21
PZ-12	1240837.9640	2026731.0050	818.74	1240838.5000	2026731.0470	816.17
PZ-15	1240457.6050	2025105.3770	826.86	1240456.9660	2025105.5600	824.59
PZ-16	1239419.7700	2023662.2240	800.70	1239419.1270	2023662.3410	798.05
PZ-17	1239270.0160	2023086.5000	831.01	1239269.7540	2023086.3130	828.54
PZ-18	1239569.5150	2022299.1990	814.51	1239569.7940	2022300.1040	812.10
PZ-20	1243496.8600	2030132.7300	787.30	1243495.6070	2030132.0520	784.45
WAMW-1	1241843.6600	2028944.6250	782.66	1241844.0310	2028943.9790	780.05
WAMW-2	1241547.5560	2028806.2670	770.82	1241547.1220	2028805.7030	768.39
WGWA-1	1250656.0950	2035580.7080	782.93	1250656.4090	2035580.1280	780.37
WGWA-2	1251556.3950	2035590.1080	758.23	1251556.3970	2035589.4980	755.77
WGWA-3	1240848.2140	2022350.0950	828.91	1240848.0950	2022350.8040	826.63
WGWA-4	1240879.5820	2022339.6570	834.34	1240879.8680	2022340.9730	831.33
WGWA-5	1241997.9440	2022368.8480	902.15	1241998.0000	2022369.7100	899.28
WGWA-6	1241932.0170	2022360.5840	897.13	1241931.8200	2022361.6140	894.62
WGWA-7	1243338.6270	2023843.8080	897.33	1243337.9640	2023843.4880	894.49
WGWA-18	1244592.5610	2025580.7050	878.02	1244592.1320	2025580.1320	875.47
WGWC-8	1242929.4040	2029644.5810	780.08	1242928.7100	2029644.4410	777.70
WGWC-9	1242801.1220	2029115.7520	812.03	1242800.5100	2029116.3540	809.33
WGWC-10	1240971.9590	2026725.6080	812.38	1240971.3740	2026725.3710	809.61
WGWC-11	1240860.1770	2025773.3940	823.96	1240859.5740	2025772.9470	821.44
WGWC-12	1240827.6760	2025755.9870	823.04	1240827.1900	2025755.4920	820.57
WGWC-13	1240610.9290	2024585.9120	809.78	1240610.3180	2024586.1010	807.32
WGWC-14A	1240604.5360	2024599.6310	810.94	1240603.9380	2024598.3360	808.20
WGWC-15	1240483.1620	2023912.9150	804.69	1240483.1680	2023912.2850	802.03
WGWC-16	1240480.4570	2023903.7730	804.21	1240480.3010	2023903.1200	801.72
WGWC-17	1240052.0560	2022623.8220	816.00	1240052.0140	2022623.1790	813.36
WGWC-19	1241851.5120	2028949.1850	783.42	1241851.9040	2028948.5970	780.60

Benchmark	Northing	Easting	Elevation
BM-W1	1243475.416	2029633.083	804.08
BM-W2	1251565.596	2035853.723	747.75

SURVEY DATA CERTIFICATION FOR SOUTHERN COMPANY TO DETERMINE NORTHING, EASTING, AND VERTICAL ELEVATION OF THE NAIL IN THE CONCRETE PAD & THE PVC WELL CASING. DATE OF FIELD SURVEY & INSPECTION: 06/03/2020-06/10/2020. FIELD SURVEY POSITIONAL TOLERANCE=0.5 FEET HORIZONTAL-NAD'83, 0.01 VERTICAL-NAVD '88. EQUIPMENT USED FOR HORIZONTAL LOCATION: TRIMBLE R10 RTK GPS & TRIMBLE S5 ROBOTIC TOTAL STATION. THE VERTICAL LOCATION OF EACH SURVEYED POINT WAS ESTABLISHED BASED UPON LEVEL RUNS WITH A DIGITAL LEVEL LOOP FROM VERTICAL CONTROL ESTABLISHED BY ON-SITE BENCHMARK BM-W1 & BM-W2 SET BY GEL SOLUTIONS USING A TRIMBLE DINI LEVEL

06/16/2020

Well ID	Casing Northing	Casing Easting	Top of Casing Elevation	Nail on Pad Northing	Nail on Pad Easting	Nail on Pad Elevation	
PZ-22	1243350.7570	2029769.4340	807.95	1243351.5210	2029768.3170	804.88	PZ-22 has been renamed WGWC-20
PZ-23D	1242139.5320	2028520.8680	834.32	1242138.6260	2028521.5100	831.89	
PZ-23S	1242139.3280	2028512.6500	834.41	1242138.3710	2028513.3390	831.79	PZ-23S has been renamed WGWC-21
PZ-24	1241695.2460	2028116.0540	810.37	1241694.5570	2028117.2730	807.00	PZ-24 has been renamed WGWC-22
PZ-25S	1240769.7850	2027414.5750	823.80	1240770.8890	2027414.3720	820.50	PZ-25S has been renamed WGWC-23
PZ-26D	1239919.4530	2024146.3480	804.93	1239920.5460	2024145.9060	802.31	
PZ-26S	1239916.6790	2024139.8210	804.80	1239917.8130	2024139.2740	802.22	PZ-26S has been renamed WGWC-24
PZ-27D	1240190.9250	2023620.3600	809.28	1240191.2500	2023619.0790	806.22	
PZ-27S	1240184.1820	2023616.6900	808.98	1240184.5500	2023615.5290	805.98	PZ-27S has been renamed WGWC-25
PZ-28	1240066.0150	2022624.7330	816.18	1240066.0550	2022623.6960	813.57	
PZ-29D	1244304.8990	2028853.2900	805.24	1244304.4270	2028852.7910	805.77	PZ-29D is being renamed WGWC-37D
PZ-29S	1244317.1290	2028839.6800	805.30	1244316.6610	2028839.1970	805.80	PZ-29S is being renamed WGWC-37S

Benchmark	Northing	Easting	Elevation
BM-W1	1243475.416	2029633.083	804.08

SURVEY DATA CERTIFICATION FOR SOUTHERN COMPANY TO DETERMINE NORTHING, EASTING, AND VERTICAL ELEVATION OF THE NAIL IN THE CONCRETE PAD & THE PVC WELL CASING. DATE OF FIELD SURVEY & INSPECTION: 11/04/2020-11/05/2020. FIELD SURVEY POSITIONAL TOLERANCE=0.5 FEET HORIZONTAL-NAD'83, 0.01 VERTICAL-NAVD '88. EQUIPMENT USED FOR HORIZONTAL LOCATION: TRIMBLE R10 RTK GPS & TRIMBLE S5 ROBOTIC TOTAL STATION. THE VERTICAL LOCATION OF EACH SURVEYED POINT WAS ESTABLISHED BASED UPON LEVEL RUNS WITH A DIGITAL LEVEL LOOP FROM VERTICAL CONTROL ESTABLISHED BY ON-SITE BENCHMARK BM-W1 SET BY GEL SOLUTIONS USING A TRIMBLE DINI LEVEL

11/17/2020

GEL ENGINEERING OF NC INC

Plant Wansley Monitoring Wells

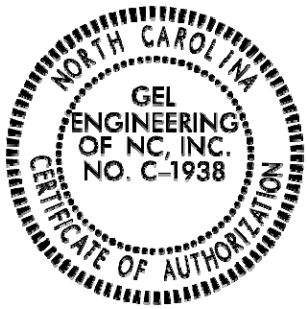
Field Surveys: 10/11/2022

Well ID	Casing Northing	Casing Easting	Top of Casing Elevation	Nail or Pad Northing	Nail or Pad Easting	Nail or Pad Elevation	Description
WGWC-26D	1243343.658	2029758.846	808.23	1243344.161	2029757.977	805.06	NAIL
WGWC-27	1243215.513	2029878.918	780.54	1243215.002	2029879.991	778.05	NAIL
CSB-2022-01	1243334.918	2029756.286	804.93	N/A	N/A	N/A	BORING
CSB-2022-02	1243337.255	2029761.150	804.86	N/A	N/A	N/A	BORING
CSB-2022-03	1243341.239	2029768.805	804.81	N/A	N/A	N/A	BORING

Benchmark	Northing	Easting	Elevation
BM-W1	1243475.416	2029633.083	804.08

SURVEY DATA CERTIFICATION FOR SOUTHERN COMPANY TO DETERMINE NORTHING, EASTING, AND VERTICAL ELEVATION OF THE NAIL IN THE CONCRETE PAD & THE PVC WELL CASING. DATE OF FIELD SURVEY & INSPECTION: 10/11/2022. FIELD SURVEY POSITIONAL TOLERANCE=0.5 FEET HORIZONTAL-NAD'83, 0.01 VERTICAL-NAVD '88. EQUIPMENT USED FOR HORIZONTAL LOCATION: TRIMBLE R10 & R12 RTK GPS & TRIMBLE S5 ROBOTIC TOTAL STATION. THE VERTICAL LOCATION OF EACH SURVEYED POINT WAS ESTABLISHED BASED UPON LEVEL RUNS WITH A DIGITAL LEVEL LOOP FROM VERTICAL CONTROL ESTABLISHED BY ON-SITE BENCHMARK BM-W1 SET BY GEL SOLUTIONS USING A TRIMBLE DINI LEVEL

10/13/2022



COA - LS003119
Exp. 12/31/2022

GEL ENGINEERING OF NC INC

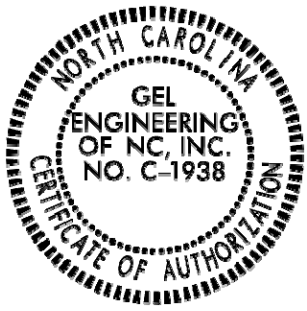
Plant Wansley Monitoring Wells

Field Surveys: 8/29/2023

Well ID	Casing Northing	Casing Easting	Top of Casing Elevation	Nail or Pad Northing	Nail or Pad Easting	Nail or Pad Elevation	Description
WGWC-28D	1243337.128	2029751.04	808.24	1243338.077	2029750.31	805.36	NAIL
Benchmark	Northing	Easting	Elevation				
BM-W1	1243475.416	2029633.083	804.08				

SURVEY DATA CERTIFICATION FOR SOUTHERN COMPANY TO DETERMINE NORTHING, EASTING, AND VERTICAL ELEVATION OF THE NAIL IN THE CONCRETE PAD & THE PVC WELL CASING. DATE OF FIELD SURVEY & INSPECTION: 8/29/2023. FIELD SURVEY POSITIONAL TOLERANCE=0.5 FEET HORIZONTAL-NAD'83, 0.01 VERTICAL-NAVD '88. EQUIPMENT USED FOR HORIZONTAL LOCATION: TRIMBLE R10 & R12 RTK GPS & TRIMBLE S5 ROBOTIC TOTAL STATION. THE VERTICAL LOCATION OF EACH SURVEYED POINT WAS ESTABLISHED BASED UPON LEVEL RUNS WITH A DIGITAL LEVEL LOOP FROM VERTICAL CONTROL ESTABLISHED BY ON-SITE BENCHMARK BM-W1 SET BY GEL SOLUTIONS USING A TRIMBLE DINI LEVEL

9/5/2023



COA - LS003119
Exp. 12/31/2022

GEL ENGINEERING OF NC INC

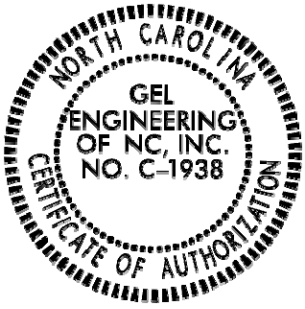
Plant Wansley Monitoring Wells

Field Surveys: 7/01/2024

Well ID	Casing Northing	Casing Easting	Top of Casing Elevation	Nail or Pad Northing	Nail or Pad Easting	Nail or Pad Elevation	Description
PZ-30	1240592.295	2027321.682	814.80	1240591.324	2027321.634	812.43	NAIL
PZ-31	1239941.772	2024324.328	810.90	1239940.65	2024324.993	807.86	NAIL
Benchmark	Northing	Easting	Elevation				
BM-W1	1243475.416	2029633.083	804.08				

SURVEY DATA CERTIFICATION FOR SOUTHERN COMPANY TO DETERMINE NORTHING, EASTING, AND VERTICAL ELEVATION OF THE NAIL IN THE CONCRETE PAD & THE PVC WELL CASING. DATE OF FIELD SURVEY & INSPECTION: 7/01/2024. FIELD SURVEY POSITIONAL TOLERANCE=0.5 FEET HORIZONTAL-NAD'83, 0.01 VERTICAL-NAVD '88. EQUIPMENT USED FOR HORIZONTAL LOCATION: TRIMBLE R12 RTK GPS & TRIMBLE S5 ROBOTIC TOTAL STATION. THE VERTICAL LOCATION OF EACH SURVEYED POINT WAS ESTABLISHED BASED UPON LEVEL RUNS WITH A DIGITAL LEVEL LOOP FROM VERTICAL CONTROL ESTABLISHED BY ON-SITE BENCHMARK BM-W1 SET BY GEL SOLUTIONS USING A TRIMBLE DINI LEVEL

7/1/2024



COA - LS003119
Exp. 12/31/2024

GEL ENGINEERING OF NC INC

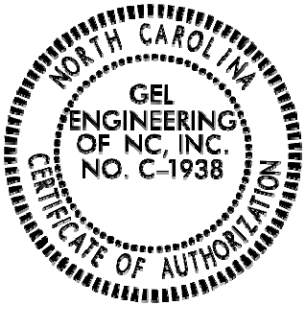
Plant Wansley Monitoring Wells

Field Surveys: 11/06/2024

Well ID	Casing Northing	Casing Easting	Top of Casing Elevation	Nail or Pad Northing	Nail or Pad Easting	Nail or Pad Elevation	Description
PZ-32D	1243211.878	2029886.449	776.74	1243211.283	2029887.715	777.14	NAIL
PZ-33D	1243211.758	2029886.775	776.74				
Benchmark	Northing	Easting	Elevation				
BM-W1	1243475.416	2029633.083	804.08				

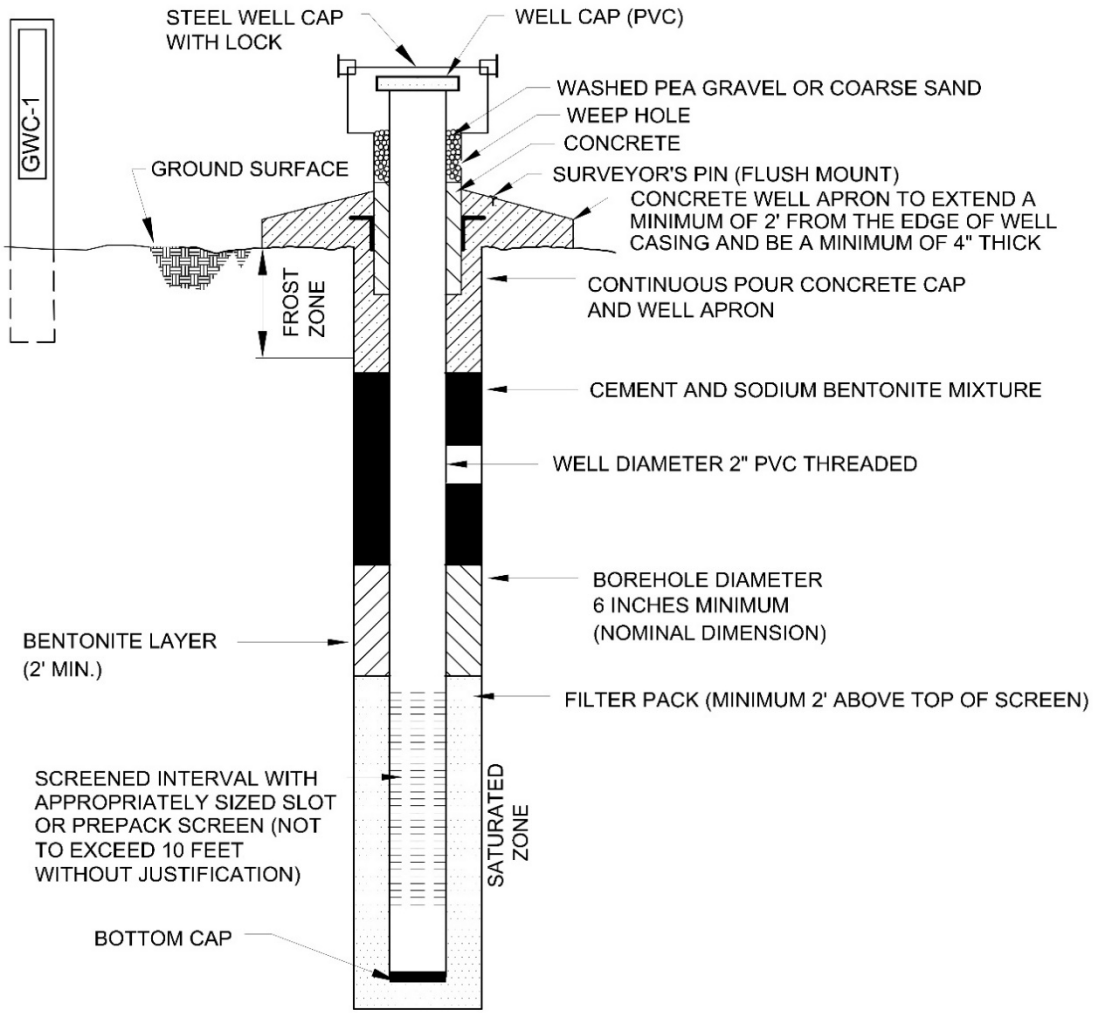
SURVEY DATA CERTIFICATION FOR SOUTHERN COMPANY TO DETERMINE NORTHING, EASTING, AND VERTICAL ELEVATION OF THE NAIL IN THE CONCRETE PAD & THE PVC WELL CASING. DATE OF FIELD SURVEY & INSPECTION:11/06/2024. FIELD SURVEY POSITIONAL TOLERANCE=0.5 FEET HORIZONTAL-NAD'83, 0.01 VERTICAL-NAVD '88. EQUIPMENT USED FOR HORIZONTAL LOCATION: TRIMBLE R12 RTK GPS & TRIMBLE S5 ROBOTIC TOTAL STATION. THE VERTICAL LOCATION OF EACH SURVEYED POINT WAS ESTABLISHED BASED UPON LEVEL RUNS WITH A DIGITAL LEVEL LOOP FROM VERTICAL CONTROL ESTABLISHED BY ON-SITE BENCHMARK BM-W1 SET BY GEL SOLUTIONS USING A TRIMBLE DINI LEVEL

11/7/2024



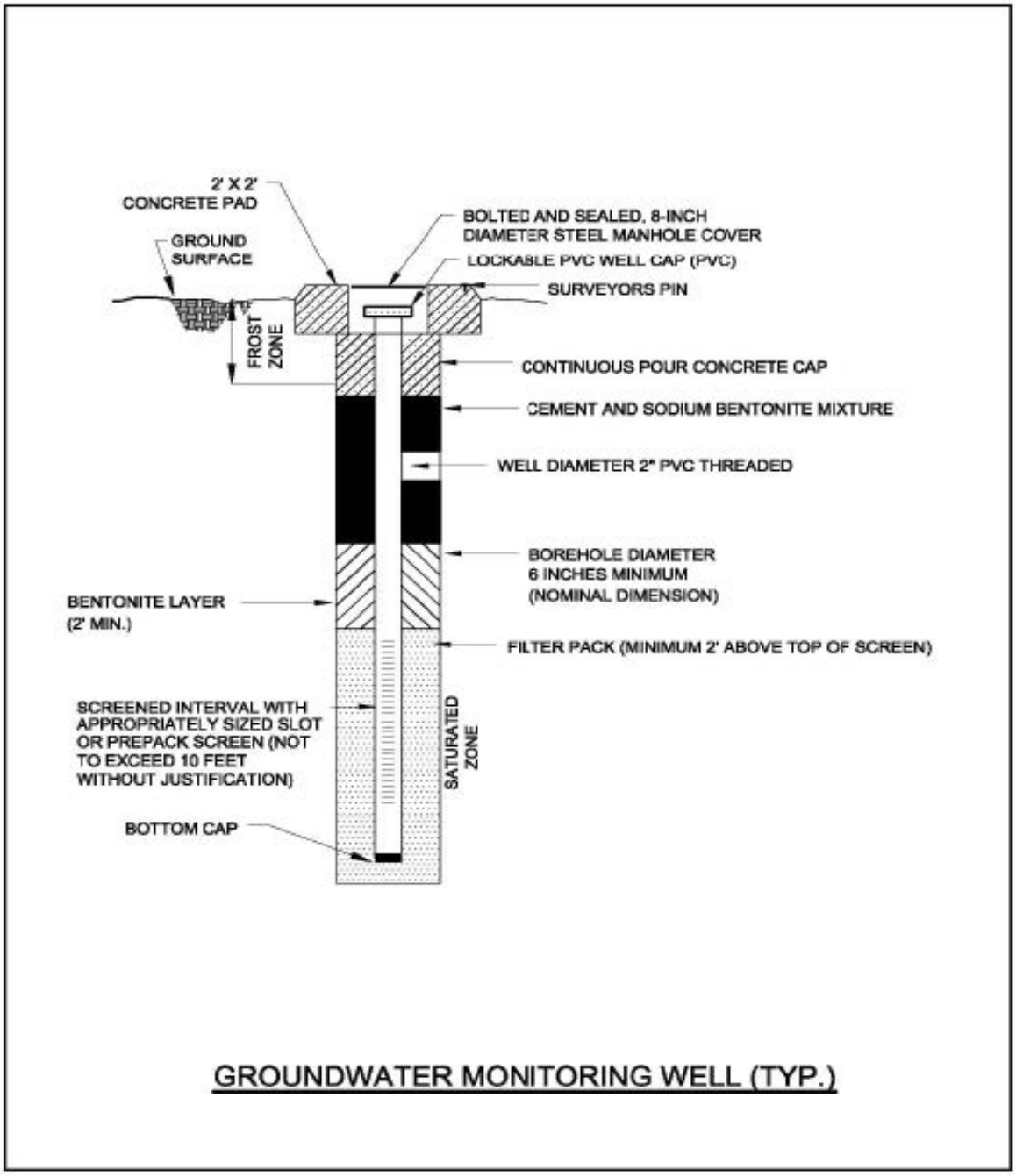
COA - LS003119
Exp. 12/31/2024

B1. GROUNDWATER MONITORING WELL DETAIL ABOVE-GROUND SURFACE COMPLETION



GROUNDWATER MONITORING WELL (TYP.)

B2. GROUNDWATER MONITORING WELL DETAIL FLUSH MOUNT SURFACE COMPLETION



GROUNDWATER MONITORING WELL (TYP.)

C. GROUNDWATER SAMPLING PROCEDURE

Groundwater sampling will be conducted using the most current applicable USEPA Region 4 SESD Field Branches Quality System and Technical Procedures as a guide (https://www.epa.gov/quality/quality-system-and-technical-procedures-lsasd-field-branches). The following procedures describe the general methods associated with groundwater sampling at the Site. Prior to sampling, the well must be evacuated (purged) to ensure that representative groundwater is obtained. Any item coming in contact with the inside of the well casing or the well water will be kept in a clean container and handled only with gloved hands.

Georgia Power will follow the procedures below at each well to ensure that a representative sample is collected:

1. Check the well, the lock, and the locking cap for damage or evidence of tampering. Record observations and notify Georgia Power if it appears that the well has been compromised.

2. Measure and record the depth to water in all wells to be sampled prior to purging using a water measuring device consisting of probe and measuring tape capable of measuring water levels with accuracy to 0.01 foot. Static water levels will be measured from each well, within a 24-hour period. The water level measuring device will be decontaminated prior to lowering in each well.

3. Install Pump: If a dedicated pump is not present, slowly lower the pump into the well to the midpoint of the well screen or a depth otherwise approved by the hydrogeologist or project scientist. The pump intake must be kept at least two feet above the bottom of the well to prevent disturbance and suspension of any sediment present in the bottom of the well. Record the depth to which the pump is lowered. All non-dedicated equipment will be decontaminated before use and between well locations using procedures described in the latest version of the USEPA Region 4 SESD guidance document, *Operating Procedure for Field Equipment Cleaning and Decontamination* (USEPA, SESDGUID-205-R#) as a guide.

4. Measure Water Level: Immediately prior to purging, measure the water level again with the pump in the well. Leave the water level measuring device in the well.

5. Purge Well: Begin pumping the well at approximately 100 to 500 milliliters per minute (mL/min). Monitor the water level continually. Maintain a steady flow rate that results in a stabilized water level with 0.3 feet or less of variability. Avoid entraining air in the tubing. Record each adjustment made to the pumping rate and the water level measured immediately after each adjustment.

6. Monitor Indicator Parameters: Monitor and record the field indicator parameters [turbidity, temperature, specific conductance, pH, oxidation-reduction potential (ORP), and dissolved oxygen (DO)] approximately every three to five minutes. The well is considered stabilized and ready for sample collection when the indicator parameters have stabilized for three consecutive readings at a minimum:

   ±0.1 for pH

   ±5% for specific conductance (conductivity)

±10% or ±0.2 mg/L (whichever is greater) for DO where DO>0.5mg/L. If DO<0.5mg/L no stabilization criteria apply

<5 NTU for turbidity

Temperature – Record only, not used for stabilization criteria

ORP – Record only, not used for stabilization criteria.

7. Collect samples at a low-flow rate according to the most current version of USEPA Region 4 SESD guidance document, *Operating Procedure for Groundwater Sampling* (USEPA, SESDPROC-301-R#), and such that drawdown of the water level within the well is stable. Flow rate must be reduced if excessive drawdown is observed during sampling. All sample containers should be filled with minimal turbulence by allowing the groundwater to flow from the tubing gently down the inside of the container.

8. Compliance samples will be unfiltered; however, to determine if turbidity is affecting sample results (i.e., >10 NTU), duplicate samples may be filtered in the field prior to being placed in a sample container, clearly marked as filtered and preserved. Filtering will be accomplished by the use of 0.45-micron filters on the sampling line. At least two filter volumes of sample will pass through before filling sample containers. A new filter must be used for each well and each sampling event. Filtered samples are not considered compliance samples and are only used to evaluate the effects of turbidity. Additional details related to managing for elevated turbidity is discussed below.

9. All sample bottles will be filled, capped, and placed in an ice containing cooler immediately after sampling where temperature control is required. Samples that do not require temperature control will be placed in a clean and secure container.

10. Sample containers and preservative will be appropriate for the analytical method being used.

11. Information contained on sample container labels will include:

    a. Name of facility

    b. Date and time of sampling

    c. Sample description (well number)

    d. Sampler's initials

    e. Preservatives

    f. Analytical method(s)

12. After samples are collected, samplers will remove all non-dedicated equipment. Upon completion of all activity the well will be closed and locked.

13. Samples will be delivered to the laboratory following appropriate COC and temperature control requirements. The goal for sample delivery will be within 48 hours of collection.

Throughout the sampling process new latex or nitrile gloves will be worn by the sampling personnel. A clean pair of new, disposable gloves will be worn each time a different location is sampled, and new gloves donned prior to filling sample bottles. Gloves will be discarded after sampling each well and before sampling the next well.

The goal when sampling is to attain a turbidity of less than 5 NTU; however, samples may be collected where turbidity is less than 10 NTU and the stabilization criteria described above are met.

If sample turbidity is greater than 5 NTU and all other stabilization criteria have been met, samplers will continue purging for 3 additional hours in order to reduce the turbidity to 5 NTU or less.

- If turbidity remains above 5 NTU but is less than 10 NTU, and all other parameters are stabilized, the well can be sampled.

- Where turbidity remains above 10 NTU, an unfiltered sample will be collected followed by a filtered sample that has passed through an in-line 0.45-micron filter attached to the discharge (sample collection) tube. Data from filtered samples will only be used to quantify the effects of turbidity on sample results.

Samplers will identify the sample bottle as containing a filtered sample on the sample bottle label and on the COC form.

A brief overview of purging and sampling methodologies, including the type of sampling equipment used will be provided in routine monitoring reports.