GROUNDWATER MONITORING PLAN

PLANT BOWEN ASH POND 1 (AP-1) CLOSURE
BARTOW COUNTY, GEORGIA

GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

Approved
Solid Waste Management Program

Approved By: Mark Wescott P.G. Digitally signed by Mark Wescott P.G. Date: 2025.07.16 14:22:52 -04'00'

FOR

Georgia Power

MAY 2025 (REVISION 1)

Geosyntec consultants

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I. CERTIFICATION

This *Groundwater Monitoring Plan, Georgia Power Company - Plant Bowen Ash Pond 1 (AP-1) Closure* 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 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 Chapter 391-3-4-.01(57), 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 Chapter 391-3-4-.10(6).

Signature: _____

Date: May 5, 2025

GEORGIA REGISTERED No. PE036641 PROFESSIONAL ENGINEER WHITNEY B. LAW

Signature: _____

Date: May 5, 2025

MARTIN DANIEL CROOK No. 2316 GEORGIA REGISTERED PROFESSIONAL GEOLOGIST

GEORGIA
DEPARTMENT OF NATURAL RESOURCES
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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 and surface water monitoring program for Ash Pond 1 (AP-1 or Site) at Georgia Power Company's (Georgia Power's) Plant Bowen located in Bartow County, Georgia. This plan meets the requirements of the GA EPD regulations referenced on the certification page and uses GA EPD's Manual for Ground Water Monitoring dated September 1991 as a guidance. Groundwater monitoring well locations are presented on **Figure A-1** of **Appendix A** and well construction details on **Table A-1** of **Appendix A**.

Groundwater monitoring will occur 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 has been placed in the facility's operating record and is included in Part B of the permit application. 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 the 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 the geologic and hydrogeologic conditions for the Site as described in the *Hydrogeologic Assessment Report (Revision 3)* (HAR) (Geosyntec, 2021).

2.1 SITE GEOLOGY

AP-1 is located in the Valley and Ridge Physiographic Province of northwest Georgia, which is characterized by Paleozoic sedimentary rocks that have been folded and faulted into the ridges and valleys that gave this region its name. The floor of the valley is underlain by shales, dolomites, and limestones of Cambrian and Ordovician age. Geologic mapping performed by Lawton et al. (1976) indicates that the Site is underlain by the Ordovician-Cambrian age Knox Dolomite and the Ordovician age Newala Limestone. Based on review of subsurface investigations at the Site, the bedrock is described as predominantly dolomite. AP-1 is underlain primarily by three lithologic units; (i) fill material consisting of earthen embankments and CCR material, (ii) residuum, and (iii) competent dolomite/limestone bedrock.

Based on subsurface investigations, the CCR material includes fly ash, that comprises the bulk of the CCR materials observed in AP-1, and occasional lenses of bottom ash material, generally described as light brownish gray to very dark gray, loose to stiff silty sand, and medium to coarse sand. The residuum at the Site is the result of in-place weathering of the underlying dolomite/limestone bedrock. The residuum consists mainly of mottled light brown to red to yellow, low to high plasticity, stiff to very stiff clay, silt, and silty clay. Most soils contain varying amounts of black chert nodules and chert gravel. The bedrock at the Site is described as light to dark gray, fine to medium-grained, thinly-bedded to massive, dense, and hard dolomite, limestone, and dolomitic limestone. Some evidence of weathering along fracture or bedding surfaces was observed, with some manganese or iron oxide staining. Abundant calcite veins and occasional zones of healed dolomite breccia were observed throughout the bedrock. Solution cavities or voids in the underlying limestone/dolomite bedrock form over geological timeframes along pre-existing discontinuities such as joints and bedding planes. At the Site, these cavities are typically filled with sediment from the in-place weathering of the bedrock or the downward migration of the overlying residuum, but they may also be open, or water filled.

2.2 SITE HYDROGEOLOGY

The uppermost aquifer at AP-1 is a regional groundwater aquifer that occurs in the residuum and fractured and solutioned bedrock. Under natural conditions, the potentiometric surface would be expected to be a subdued reflection of the surface topography; however, the presence of AP-1 and other features at the Plant have locally altered groundwater flow patterns. Groundwater recharge is by precipitation falling onto outcrop areas and then percolating through the residuum to bedrock. Groundwater flow in bedrock is under unconfined to semi-confined conditions from the mantle of overlying lower-permeability residuum and is controlled by secondary porosity along fractures and solution-enhanced features. Based on observations of residuum soil types and horizontal conductivity values, the movement of groundwater in the residuum and highly-weathered upper surface of the bedrock is slow and more characteristic of porous media flow than secondary porosity (fracture) flow. Groundwater flow in the underlying dolomite/limestone bedrock is likely controlled by preferential flow pathways associated with fractures and solution-enhanced joints and fissures.

Groundwater within the residuum and bedrock at AP-1 generally flows to the north and northwest. A component of flow in the southernmost portion of AP-1 is to the south and west, likely due to groundwater mounding related to historical free water storage at the recycle pond (now decommissioned). A potentiometric surface map depicting groundwater flow directions for the residuum/bedrock aquifer is provided in **Appendix A**. The potentiometric surface map represents data recorded in August 2024.

Clustered piezometers (APPZs) previously installed in the interior of AP-1 have indicated higher potentiometric heads in the CCR material than in the underlying bedrock. This is due to the presence of the low permeability residuum which retards vertical infiltration of the mounded water in AP-1. This condition results in a downward hydraulic gradient between the zone of saturation within AP-1 and the uppermost aquifer. This observation is supported by historical water levels measured in piezometers screened in the CCR. Groundwater gradients in the uppermost aquifer are also influenced by the surface water in the GSWP and former recycle pond. The calculated hydraulic gradient along the north, west, and south/southwest flow paths are 0.012 feet per foot (ft/ft), 0.013 ft/ft, and 0.026 ft/ft, respectively, based on the August 2024 potentiometric data. While vertical hydraulic gradients at AP-1 are downward, they likely reverse to an upward gradient near natural groundwater discharge areas.

Horizontal hydraulic conductivity (K_h) values for the residuum were reported by SCS (2002) to range from 1.5×10^{-8} to 1.5×10^{-4} cm/s. Vertical hydraulic conductivities (K_v) of residuum, measured in laboratory permeability tests on Shelby tube samples, had a geometric mean of 2.0×10^{-8} cm/s which compares similarly to previously reported K_v values ranging from approximately 10^{-6} to 10^{-8} cm/s. Horizontal hydraulic conductivity values measured for bedrock ranged from 1.1×10^{-5} cm/s to 1.2×10^{-2} cm/s, with a geometric mean of 8.5×10^{-4} cm/s (Geosyntec, 2021), presented in **Table 3-2** . Additional details regarding the hydrogeologic conditions in the vicinity of AP-1 are provided in the HAR.

2.3 HYDRAULIC GRADIENT AND GROUNDWATER FLOW VELOCITY

The horizontal groundwater hydraulic gradients within the uppermost aquifer beneath AP-1 were calculated using the groundwater elevation data from the August 14, 2024, gauging event. Horizontal hydraulic gradients were calculated along the flow path north of AP-1 between BGWC-9 and PZ-1, between BGWC-20 and BGWC-31 along the flow path west of AP-1, and between BGWC-24 and BGWC-40 along the flow path south/southwest of AP-1. The general trajectory of the flow paths used in the calculations and associated potentiometric contour lines are shown on **Figure A-2**. The calculated average hydraulic gradient along the northerly and westerly, and southerly/southwesterly groundwater flow path lines associated with AP-1 for the August 2024 data is 0.017 feet per foot (ft/ft).

The minimum, maximum, and average groundwater velocities were calculated using: the horizontal hydraulic conductivity (K_h) values measured for bedrock derived from slug tests; the average hydraulic gradient discussed above; and an estimated effective porosity of 0.3 for the fractured and solutioned dolomite/limestone bedrock (Geosyntec, 2021), observed site lithology, and professional judgement. Based on these parameters, Darcy's equation for flow velocity in a porous medium was used as follows:

$$V = linear\ velocity = \frac{K_h * i}{n_e}$$

where:

V = Groundwater flow velocity (ft/day)
K_h = Horizontal Hydraulic Conductivity (ft/day)
i = Horizontal hydraulic gradient (ft/ft)
h_1 and h_2 = Groundwater elevation at location 1 and 2
L = Distance between location 1 and 2
n_e = Effective porosity

The supporting hydraulic gradient calculations and groundwater flow velocity calculations are presented in **Table A-2** of **Appendix A**.

3. SELECTION OF WELL LOCATIONS

Groundwater monitoring wells were installed to monitor the uppermost occurrence of groundwater beneath the Site. 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 spacings based on site-specific conditions. The monitoring well network for AP-1 is depicted on **Figure A-1** included in **Appendix A**, Monitoring System Details. A more detailed discussion of the hydrogeological investigation conducted in support of monitoring well placement is provided in the HAR (Geosyntec, 2021).

The groundwater detection monitoring network locations were chosen to monitor upgradient (BGWA) and downgradient (BGWC) conditions at the Site based on groundwater flow direction determined by potentiometric evaluation. The potentiometric surface map, **Figure A-2** in **Appendix A**, depicts the groundwater flow direction from AP-1, based on August 2024 conditions. Wells are positioned to provide adequate coverage to detect potential impacts from the CCR impoundment. The majority of the wells, both upgradient and downgradient of AP-1, are screened in the uppermost aquifer (i.e., the upper portion of bedrock that is most fractured and solutioned), as this represents the primary zone of groundwater flow, except for wells BGWC-38D, BGWC-42D, BGWC-43D, BGWC-44D, BGWC-49D, BGWC-50D, and BGWC-53D, which were installed for vertical assessment purposes, and BGWA-47D and BGWA-48D, which were installed to characterize background groundwater conditions at two deeper intervals in the vicinity of background well BGWA-2. Both historical groundwater quality data and potentiometric surface maps illustrate that the background wells accurately represent background groundwater that has not been affected by leakage from the CCR unit. The supporting groundwater quality data summary tables and potentiometric maps are included within routine semiannual groundwater monitoring reports submitted to GA EPD. Due to the potential presence of preferential groundwater flow pathways resulting from solutioning of the dolomite/limestone bedrock, remote sensing and surface geophysical surveys were used to estimate the location of these zones. The downgradient wells are strategically placed in areas considered to have a higher likelihood of aligning with these linear flow pathways.

Monitoring wells are generally located outside of areas with frequent auto traffic (**Figure A-1**); 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 (**Table A-1**) of location coordinates for the individual monitoring wells. Additional well and piezometer construction details (i.e., top-of-casing elevation, well depths, and screened intervals) are also provided on this table. Well survey data certified by a Georgia-registered professional surveyor are included in **Appendix A**.

4. MONITORING WELL DRILLING, CONSTRUCTION, ABANDONMENT AND REPORTING

The AP-1 monitoring well network described in this plan is already in place. The existing monitoring wells were installed following USEPA Region 4 Science and Ecosystem Support Division (SESD) *Operating Procedure for Design and Installation of Monitoring Wells* (USEPA, SESDGUID-101-R1) as a general guide for best practices. Boring and well construction logs are provided in **Appendix A** for all wells and piezometers listed in **Table A-1**.. Additional monitoring wells, if necessary, will be installed and abandoned in accordance with the below procedures.

4.1 DRILLING

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

Sampling and/or coring may be used to help determine the stratigraphy and geology at the well location. Samples and cores will be logged by a qualified groundwater scientist. Screen depths will be chosen based on the target installation depth.

All drilling for any subsurface hydrologic investigation, or for 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. **Appendix A** includes the performance bonds applicable to the wells and piezometers listed in **Table A-1**.

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 diameter polyvinyl chloride (PVC) pipe with flush threaded connections will be used for the well risers and screens. Groundwater contaminants that can cause PVC to deteriorate (e.g., organic compounds) are not expected at this facility. If conditions warrant, other appropriate materials may be used for construction with prior written approval from the GA EPD.

WELL INTAKE DESIGN

Intake for groundwater monitoring wells will be designed and constructed to: (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 will not exceed 10 feet without justification as to why a longer screen is necessary (e.g., significant variation in groundwater level). If these specifications 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. If utilized, pre-packed well screens will be installed following general industry standards and using the current version of USEPA SESDGUID-101-R# 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 boring 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 elevation of filter pack depth will be monitored, 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 in the boring above the well pack 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 zones. 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 a cement and bentonite mixture (approximately 94 pounds cement / 3 to 5 pounds bentonite / 6.5 gallons of potable water) 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 two 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 air 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 detail attached in **Appendix B**, Groundwater Monitoring Well Detail, illustrates the general design and construction details for a monitoring well.

WELL DEVELOPMENT

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 stable minimum of 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.

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 a well's filter pack over time. Therefore, the turbidity of the groundwater from the monitoring wells may gradually increase over time after initial well development. As a result, monitoring wells may need to be redeveloped periodically to remove the silt and clay that has worked its way into the filter packs of the 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 included in the well installation report.

4.3 ABANDONMENT

Per Georgia Rule 391-3-4.10(6)(g), monitoring wells require abandonment and replacement after two consecutive dry sampling events, unless an alternate schedule is approved by EPD. Monitoring wells will be abandoned using industry-accepted practices and using the GA EPD *Manual for Groundwater Monitoring* (1991) and Georgia's *Well Water Standards Act of 1985* [Official Code of Georgia Annotated (O.C.G.A.) § 12-5-120, 1985] as guides. 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. A minor modification will be submitted in accordance with 391-3-4.02(3)(b)(6) prior to the installation or decommissioning of monitoring wells. Any piezometers or groundwater wells located within the footprint of AP-1 will be over-drilled prior to abandonment.

4.4 DOCUMENTATION

Within 60 days of the construction, survey, 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.

- Well identification
- Name of drilling contractor and type of drill
- Documentation that the driller, at the time the monitoring wells were installed, had a bond on file with the Water Well Advisory Council
- 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
- Details of filter pack material/size, emplacement method (narrative), and volume
- Seal emplacement method and type/volume of sealant
- Borehole diameter and well casing diameter
- Type of protective well cap and sump dimensions
- Surface seal and volumes/mix of annular seal material
- Screen length and interval reported in feet below ground surface and elevation
- Well location given to within an accuracy of 0.5 feet based upon survey from acceptable survey point datum by a Georgia-registered professional surveyor
- Well depth given to within an accuracy of 0.01 feet based upon survey from acceptable survey point datum by a Georgia-registered professional surveyor
- Lithologic logs
- Documentation that water quality field parameters meet well development criteria (Section 4.2)
- Completed calibration field forms for the water quality instrumentation used during well development activities
- Documentation of ground surface elevation (±0.01 feet)
- Documentation of top of casing elevation (±0.01 feet)
- 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 Qualified Groundwater Scientist, 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, the cost estimate based upon current year cost for the well inspections will be provided 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 from each detection monitoring well were collected and analyzed for 40 CFR §257, Subpart D, Appendix III and Appendix IV test parameters to establish a background statistical dataset. Subsequently, in accordance with the State CCR Rule, Chapter 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, closure activities, and the post closure care monitoring period. Pursuant to Chapter 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* (Anchor, 2018). Georgia Power will conduct assessment monitoring in accordance with 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, 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 will 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
	ORP	X	X
	Turbidity	X	X
	Specific Conductance	X	X
	Dissolved Oxygen	X	X
Appendix III (Detection)	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)	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	6010B/6020B
Calcium	6010B/6020B
Chloride	300.0/300.1/9250/9251/9253/9056A
Fluoride	300.0/300.1/9214/9056A
pH	150.1field
Sulfate	9035/9036/9038/300.0/300.1/9056A
Total Dissolved Solids (TDS)	160/2540C
Antimony	EPA 7040/7041/6010B/6020B
Arsenic	EPA 7060A/7061A/6010B/6020B
Barium	EPA 7080A/7081/6010B/6020B
Beryllium	EPA 7090/7091/6010B/6020B
Cadmium	EPA 7130/7131A/6020B
Chromium	EPA 7190/7191/6010B/6020B
Cobalt	EPA 7200/7201/6010B/6020B
Fluoride	300.0/300.1/9214/9056A
Lead	EPA 7420/7421/6010B/6020B
Lithium	6010/6020B
Mercury	7470
Molybdenum	6010/6020B
Selenium	EPA 7740/7741A/6010B/6020B
Thallium	EPA 7840/7841/6010/6020B
Radium 226 and 228 combined	EPA 903/9320/9315

6. GROUNDWATER SAMPLE COLLECTION

During each sampling event, 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. Alternative industry accepted sampling techniques may be used when appropriate. The applied groundwater purging and sampling methodologies will be discussed in the groundwater semi-annual monitoring reports submitted to EPD.

For groundwater sampling, positive gas displacement 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.

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

7. SURFACE WATER MONITORING PLAN

During each semi-annual groundwater sampling event, surface water samples will also be collected from the discharge of the constructed stormwater ponds; sample locations are identified on **Figure A-1**. The surface water monitoring is for the Solid Waste Management Program and is not associated with any existing industrial, industrial stormwater, and/or construction stormwater discharge permitting which are regulated by the National Pollutant Discharge Elimination System (NPDES) requirements of Section 402 of the Clean Water Act. Semi-annual sampling of the surface water locations will commence once final construction certification of the AP-1 permitted closure design has been received by GA EPD. As these stormwater ponds are designed to convey water during and immediately after rain events, it is possible that water will not be flowing from the designated sampling locations (i.e., discharge outlets) associated with these ponds during the time of the semi-annual sampling events. In the event that no flowing water is present at the sampling locations, it will be noted in the field sampling documents associated with that event.

Surface water samples will be collected and handled in accordance with standard industry practice and USEPA Region 4 *Field Branches Quality System and Technical Procedures* as a guide. When possible, the sample should be collected directly into the appropriate sample container provided by the analytical laboratory. If the sample location cannot be physically reached, an intermediate collection device may be used (e.g., a “swing sampler” with a 12-foot handle and a single use container) as presented in the current USEPA field guidance document. When non-dedicated equipment is used, it will be decontaminated prior to use and between surface water sampling locations.

Surface water samples will be analyzed for Appendix IV constituents as listed in **Table 1** and by the methods listed in **Table 2**.

8. 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
- 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 will be received by the new owner.

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.

9. 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 and surface water 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. Instruments will be recalibrated as necessary (e.g., when calibration checks indicate significant variability), and all checks and recalibration steps will be documented on the 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 if recalibration does not improve instrument function. Completed calibration field forms will be provided with the semi-annual groundwater monitoring reports.

10. REPORTING RESULTS

A semi-annual groundwater report that documents the results of sampling and analysis will be submitted to GA EPD, added to the site Operating Record, and posted to Georgia Power's CCR Website. Semi-annual groundwater monitoring reports will be submitted to the GA EPD within 90 days of receipt of the groundwater analytical data from the laboratory. 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 and associated data validation.

13. COC documentation.

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

15. Field logs and forms will be kept for each sampling event, and will include the following, but not be 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. Tabulated water quality results for the samples of discharging surface water collected semi-annually from Stormwater Ponds 1, 2, and 3. The table presents data for the current reporting period and all historical monitoring events associated with the surface water monitoring program.

19. Statistical analyses of Appendix III statistically significant increases (SSI) and Appendix IV statistically significant limits (SSL), including trend analyses of SSLs of Appendix IV constituents if the unit is currently undergoing assessment of corrective measures (if applicable).

20. An iso-concentration map of each Appendix IV constituent identified at a statistically significant level (SSL) during the reporting period. The concentrations will be contoured to the current state and, if applicable, federal groundwater protection standard. Inclusion of the map(s) is only applicable for a unit currently undergoing assessment of corrective measures and/or corrective action.

21. Certification by a qualified groundwater scientist.

22. Trend Charts (only applicable for a unit currently undergoing assessment of corrective measures and/or corrective action)

23. Updated potable water well survey, annually (if applicable based on exceedance of groundwater protection standards)

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

FIGURE 1. STATISTICAL ANALYSIS PLAN OVERVIEW

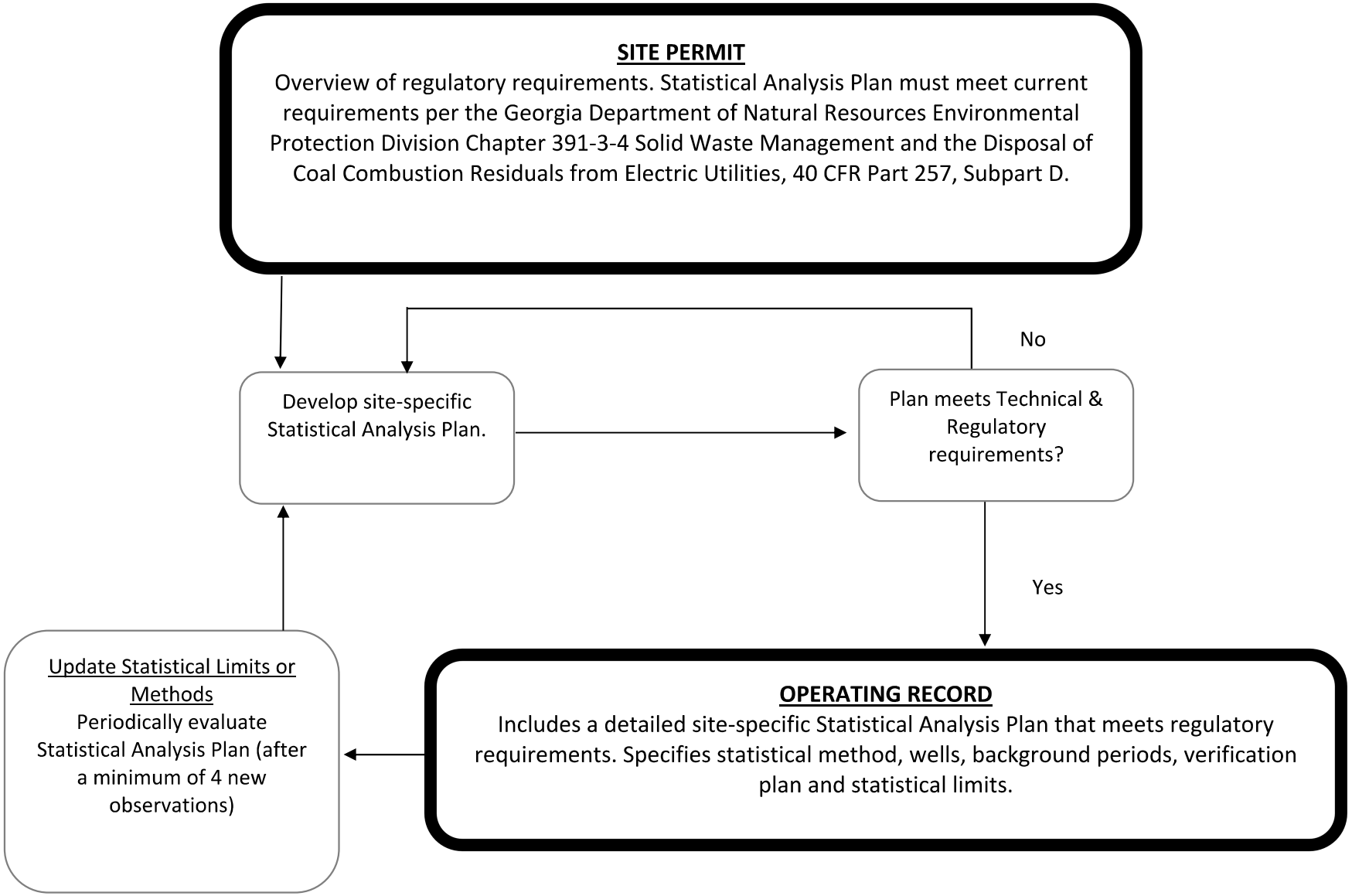
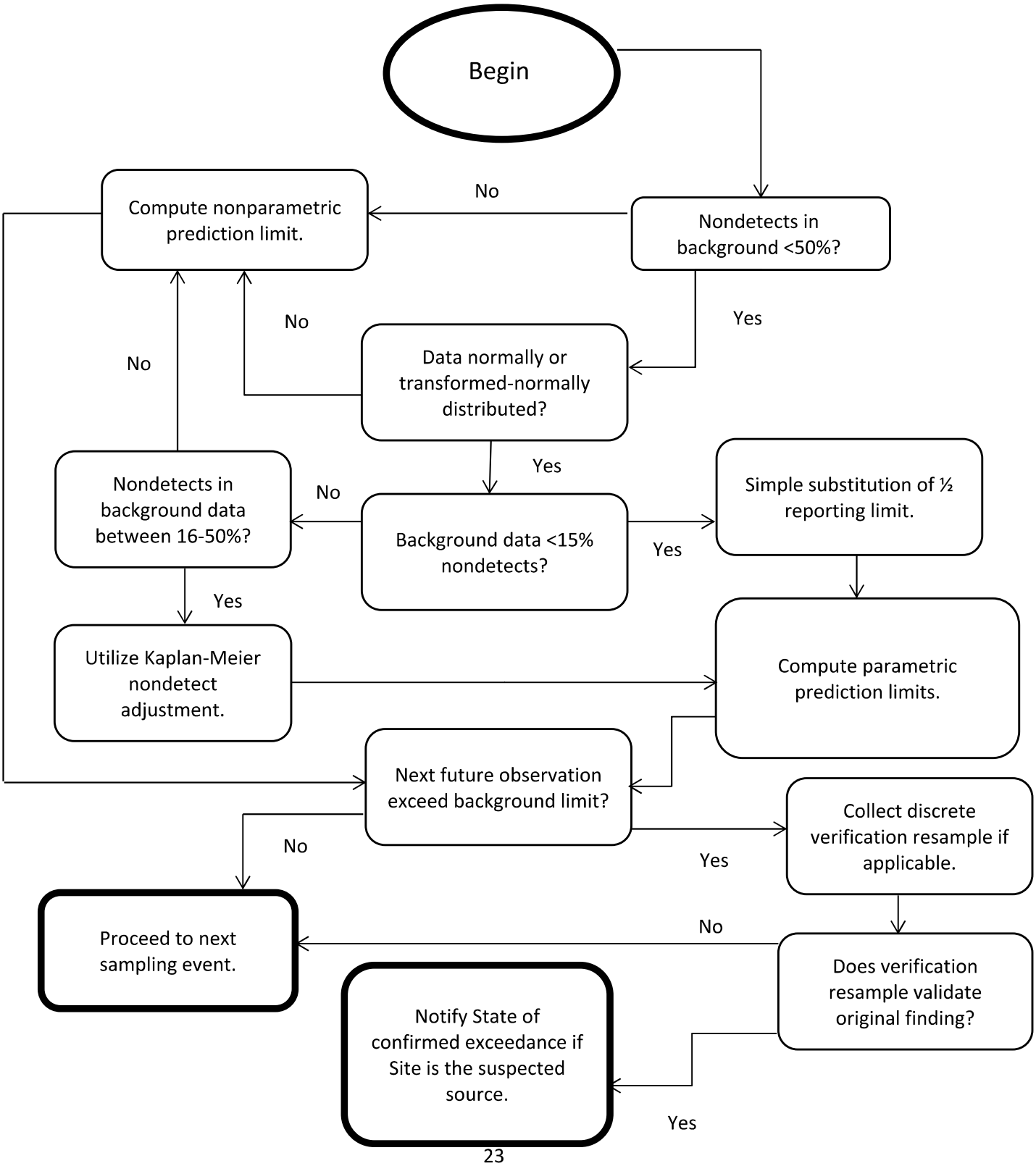


FIGURE 2. DECISION LOGIC FOR COMPUTING TOLERANCE OR PREDICTION INTERVALS



12. REFERENCES

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APPENDIX

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

A. MONITORING SYSTEM DETAILS

FIGURE A-1 COMPLIANCE MONITORING NETWORK

FIGURE A-2 BEDROCK POTENTIOMETRIC SURFACE MAP – AUGUST 2024

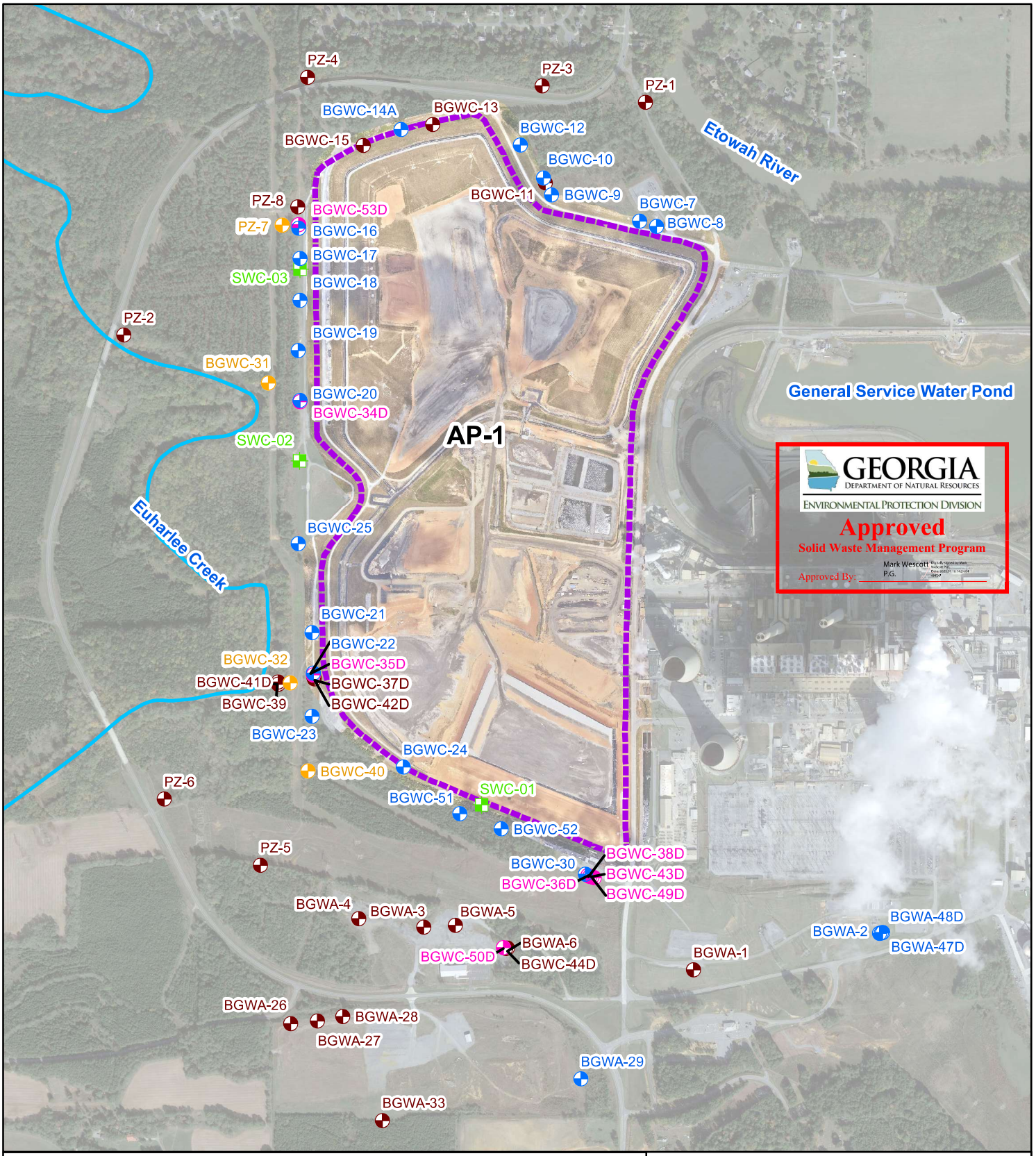
TABLE A-1 AP-1 WELL AND PIEZOMETER NETWORK DETAILS

TABLE A-2 HORIZONTAL GROUNDWATER GRADIENT AND FLOW VELOCITY CALCULATIONS

AP-1 BORING AND WELL CONSTRUCTION LOGS

CERTIFIED WELL NETWORK SURVEY DATA

PERFORMANCE BOND FOR DRILLERS



LEGEND

- Detection Monitoring Well
- Horizontal Assessment Well
- Vertical Assessment Well
- Piezometer
- Surface Water Sample Point
- Approximate AP-1 Boundary

0 500 1,000 2,000 Feet

N

Notes:
1. Aerial photograph source: Google Earth Pro, November 2019 and Georgia Power Company, August 2024.
2. Piezometers installed in support of corrective action implementation are not shown.
3, Surface water samples collected from the discharge of each of the three lined stormwater ponds that will be constructed as part of the final cover system. The placement of the surface water sample points shown on this map are based on the Permit Closure Drawings, drawing sheet no. 50.

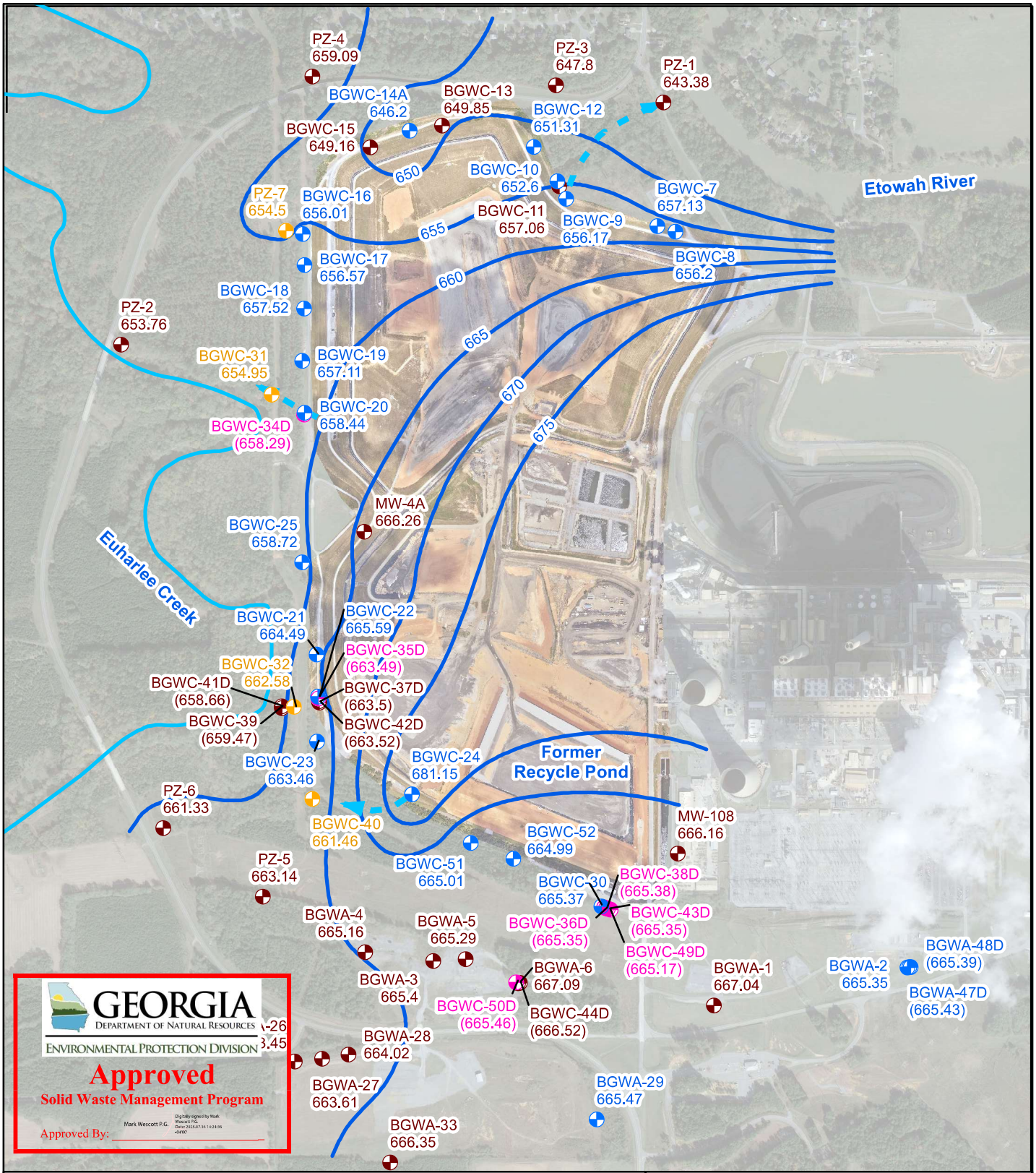
Compliance Monitoring Network

Georgia Power Company
Plant Bowen AP-1
Cartersville, Bartow County, Georgia

Geosyntec consultants

Kennesaw, GA | May 2025

Figure A-1



GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

Approved

Solid Waste Management Program

Approved By: Mark Wescott P.G. Digitally signed by Mark Wescott P.G. Date: 2025.07.16 14:24:06 -04'00'

LEGEND

- Detection Monitoring Well
- Horizontal Assessment Well
- Vertical Assessment Well
- Piezometer
- Groundwater Elevation Iso-Contour
- Approximate Groundwater Flow Direction

0 375 750 1,500 Feet

N

Notes:

1. Water level elevations recorded on August 14, 2024. Elevation provided in feet referenced to the North American Vertical Datum (NAVD) 88. The former Recycle Pond has been decommissioned.
2. The map shows only the wells/piezometers installed at the time of the gauging event.
3. MW-108 and MW-4A shown on Figure A-2 are not part of the monitoring well network. These piezometers were gauged on a routine basis to supplement data for groundwater contour development.
4. Piezometers installed in support of corrective action are not shown.
5. Water elevation in parentheses is not used in development of groundwater contours due to well being screened at a different elevation in the formation/aquifer.
6. Aerial photograph source: Google Earth Pro, Nov 2019 and Georgia Power Company, August 2024.

Potentiometric Surface Map (August 2024)

Georgia Power Company
Plant Bowen AP-1
Bartow County, Georgia

Geosyntec consultants

Kennesaw, GA | May 2025

Figure A-2

Table A-1
AP-1 Well and Piezometer Network Details
Plant Bowen AP-1, Bartow County, Georgia

Well ID	Installation Date	Northing [1]	Easting [1]	Ground Surface Elevation [2] (ft)	Top of Casing Elevation [2] (ft)	Top of Screen Elevation [2] (ft)	Bottom of Screen Elevation [2] (ft)	Well Depth [3] (ft BTOC)	Mean Kh, [4] (ft/d)	Mean Kv, [4] (ft/d)	Screened Media
Detection Monitoring Well											
BGWA-2	10/29/2015	1499374.18	2068599.59	727.00	729.69	650.59	640.59	89.40	2.25E+01	--	Bedrock
BGWA-29	8/7/2016	1498283.04	2066362.32	718.84	721.38	632.88	622.88	98.80	1.35E+01	--	Bedrock
BGWA-47D	5/13/2020	1499377.79	2068612.48	726.93	729.61	585.90	575.90	154.04	--	--	Bedrock
BGWA-48D	5/16/2020	1499380.09	2068623.31	726.64	729.38	544.97	534.97	194.74	--	--	Bedrock
BGWC-7	10/1/2015	1504711.59	2066801.40	702.49	705.38	625.18	615.18	90.50	--	--	Bedrock
BGWC-8	11/18/2015	1504671.82	2066929.46	703.71	706.43	636.83	626.83	79.90	2.85E+01	--	Bedrock
BGWC-9	11/13/2015	1504909.12	2066143.27	689.18	691.93	638.33	628.33	63.90	9.50E+00	--	Bedrock
BGWC-10	10/7/2015	1505033.22	2066081.09	683.39	686.06	633.66	623.66	62.70	--	--	Bedrock
BGWC-12	10/21/2015	1505279.88	2065908.56	691.71	694.41	626.01	616.01	78.70	3.45E+00	--	Bedrock
BGWC-14A[6]	5/4/2020	1505398.54	2065015.98	715.57	718.33	629.90	619.90	98.76	--	--	Bedrock
BGWC-16	11/12/2015	1504656.42	2064247.67	671.65	674.31	635.31	625.31	49.30	1.00E+01	--	Bedrock
BGWC-17	10/22/2015	1504432.00	2064259.38	671.25	673.65	615.35	605.35	68.60	1.95E+01	--	Bedrock
BGWC-18	10/13/2015	1504118.73	2064257.00	670.32	672.88	645.08	635.08	38.10	1.75E+01	--	Bedrock
BGWC-19	11/12/2015	1503742.25	2064244.66	671.04	673.61	628.91	618.91	55.00	6.00E+00	--	Bedrock
BGWC-20	10/9/2015	1503367.73	2064259.55	672.29	675.14	635.14	625.14	50.30	1.00E-01	--	Bedrock
BGWC-21	3/2/2016	1501627.51	2064348.09	688.53	691.33	648.63	638.63	53.00	1.30E+00	--	Bedrock
BGWC-22	10/8/2015	1501323.76	2064358.05	692.64	695.50	662.60	652.60	43.20	9.50E-01	--	Bedrock
BGWC-23	10/15/2015	1501000.57	2064350.17	693.16	695.50	654.30	644.30	51.50	2.00E-01	--	Bedrock
BGWC-24	10/27/2015	1500621.22	2065032.84	699.46	702.27	646.27	636.27	66.30	1.00E-01	--	Bedrock
BGWC-25	3/3/2016	1502292.73	2064244.10	677.60	680.47	632.87	622.87	57.90	1.00E-01	--	Bedrock
BGWC-30	1/4/2017	1499815.93	2066395.86	698.39	701.06	651.58	641.58	59.78	--	--	Bedrock
BGWC-51	1/22/2021	1500270.09	2065455.80	708.99	711.49	654.57	644.57	67.25	--	--	Bedrock
BGWC-52	1/21/2021	1500156.97	2065764.13	707.77	710.75	638.88	628.88	82.20	--	--	Bedrock
Piezometer											
BGWA-1	11/17/2015	1499101.23	2067205.48	718.33	720.90	672.00	662.00	59.20	--	--	Bedrock
BGWA-3	11/5/2015	1499420.87	2065185.74	721.80	724.28	645.08	635.08	89.50	1.75E+01	--	Bedrock
BGWA-4	3/4/2016	1499485.38	2064697.89	726.05	728.67	660.37	650.37	78.60	6.00E-01	--	Bedrock
BGWA-5	11/3/2015	1499434.58	2065421.43	718.53	720.92	661.52	651.52	69.70	1.40E+01	--	Bedrock
BGWA-6	11/6/2015	1499262.01	2065797.30	714.49	716.93	663.93	653.93	63.30	8.50E+00	--	Bedrock
BGWA-26	8/5/2016	1498697.63	2064189.94	726.09	728.65	663.55	653.55	75.40	2.90E+00	--	Bedrock
BGWA-27	8/6/2016	1498719.14	2064387.54	732.50	735.25	652.05	642.05	93.50	2.50E+00	--	Bedrock
BGWA-28	8/7/2016	1498749.21	2064577.55	734.88	737.45	661.35	651.35	86.40	2.25E+00	--	Bedrock
BGWA-33	7/10/2018	1497972.13	2064876.80	740.39	743.25	672.69	662.69	80.86	--	--	Bedrock
BGWC-11	10/16/2015	1504998.94	2066093.83	683.91	686.50	619.20	609.20	77.60	2.00E-01	--	Bedrock
BGWC-13	10/21/2015	1505435.29	2065251.21	714.77	717.43	653.83	643.83	73.90	2.15E+00	--	Bedrock
BGWC-15	10/20/2015	1505278.19	2064732.18	715.39	717.92	654.52	644.52	73.70	6.50E-01	--	Bedrock
BGWC-37D	4/25/2019	1501293.16	2064362.70	693.50	696.05	595.83	585.83	110.55	--	--	Bedrock
BGWC-39	12/6/2019	1501241.94	2064095.41	676.58	679.12	661.91	651.91	27.54	--	--	Bedrock
BGWC-41D	4/27/2020	1501255.96	2064096.23	676.43	679.12	631.76	621.76	57.69	--	--	Bedrock
BGWC-42D	5/3/2020	1501280.52	2064365.25	693.98	696.90	553.31	543.31	153.92	--	--	Bedrock
BGWC-44D	4/22/2020	1499265.15	2065811.06	714.65	717.30	584.99	574.99	142.64	--	--	Bedrock
PZ-1	5/4/2020	1505600.54	2066844.10	675.35	677.87	630.65	620.65	57.52	--	--	Bedrock
PZ-2	11/12/2015	1503856.86	2062938.81	665.92	668.25	649.22	639.22	29.33	--	--	Bedrock
PZ-3	11/17/2015	1505723.97	2066071.08	705.34	707.97	658.64	648.64	59.63	--	--	Bedrock
PZ-4	10/13/2015	1505788.58	2064316.61	715.96	718.74	669.26	659.26	59.78	--	--	Bedrock
PZ-5	10/12/2015	1499885.63	2063961.22	697.23	700.12	650.53	640.53	59.89	--	--	Bedrock
PZ-6	10/9/2015	1500379.48	2063242.81	675.50	678.32	650.80	640.80	37.82	--	--	Bedrock
PZ-8	3/9/2022	1504818.66	2064241.49	677.75	677.87	641.74	631.74	49.31	--	--	Bedrock
Assessment Monitoring Well											
BGWC-31	7/17/2018	1503497.94	2064022.71	668.12	670.54	631.12	621.12	49.72	--	--	Bedrock
BGWC-32	7/18/2018	1501252.25	2064184.30	696.36	699.36	658.46	648.46	51.20	--	--	Bedrock
BGWC-34D	7/13/2018	1503356.51	2064257.95	672.25	675.17	605.78	595.78	79.72	--	--	Bedrock
BGWC-35D	7/12/2018	1501312.20	2064358.63	693.13	695.73	625.13	615.13	80.93	--	--	Bedrock
BGWC-36D	7/2/2018	1499807.51	2066415.10	698.07	701.01	615.07	605.07	96.34	--	--	Bedrock
BGWC-38D	4/18/2019	1499802.36	2066430.17	697.52	700.34	584.86	574.86	125.81	--	--	Bedrock
BGWC-40	12/3/2019	1500589.93	2064317.38	687.12	689.59	637.45	627.45	62.47	--	--	Bedrock
BGWC-43D	4/24/2020	1499796.86	2066444.37	697.29	700.10	544.62	534.62	165.81	--	--	Bedrock
BGWC-49D	2/23/2021	1499790.13	2066461.96	696.95	699.75	398.95	388.95	311.13	--	--	Bedrock
BGWC-50D	3/19/2021	1499269.15	2065781.87	714.68	717.43	544.68	534.68	183.09	--	--	Bedrock
BGWC-53D	11/14/2024	1504685.89	2064247.38	671.46	674.58	584.40	574.40	100.48	--	--	Bedrock
PZ-7	3/9/2022	1504679.33	2064125.75	672.43	675.51	636.54	626.54	49.30	--	--	Bedrock

Notes:
-- = not available
ft = feet
ft BTOC = feet below top of casing
ft/d = feet per day
Kh = Horizontal Hydraulic Conductivity
Kv = Vertical Hydraulic Conductivity
(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).
(3) Total well depth accounts for sump if data provided on well construction logs.
(4) Source: Hydrogeologic Assessment Report, Revision 03 (Geosyntec, 2021).
(5) Survey completed by GEL Solutions on the dates presented in Appendix A of the Groundwater Monitoring Plan.
(6) Monitoring well BGWC-14 was abandoned on May 17, 2020, and replaced with BGWC-14A.

Table A-2
Horizontal Groundwater Gradient and Flow Velocity Calculations
Plant Bowen AP-1, Bartow County, Georgia

Flow Path Direction [1]	August 14, 2024				
	h_1 (ft)	h_2 (ft)	L (ft)	i (ft/ft)	Average i (ft/ft)
North Flow Path (BGWC-9 to PZ-1)	656.17	643.38	1036	0.012	0.017
West Flow Path (BGWC-20 to BGWC-31)	658.44	654.95	275	0.013	
South/Southwest Flow Path (BGWC-24 to BGWC-40)	681.15	661.46	759	0.026	

Flow Path Direction	K_h (ft/d) [2]		n_e	i (ft/ft)	V (ft/d) [3]	
AP-1 Sitewide	Min	0.03	0.30	0.017	Min	0.002
	Max	33.0			Max	1.869
	Avg	2.40			Avg	0.136

Notes:
ft = feet
ft/d = feet per day
ft/ft = feet per foot
h_1 and h_2 = groundwater elevation at location 1 and 2
$i = h_1-h_2/L$ = horizontal hydraulic gradient
K_h = horizontal hydraulic conductivity
L = distance between location 1 and 2 along the flow path
n_e = effective porosity
V = groundwater flow velocity
(1) Flow path direction relative to the orientation of AP-1 and illustrated on Figure A-2 of associated report.
(2) Source of the K_h values *Hydrogeologic Assessment Report (Revision 3)* (Geosyntec, 2021).
(3) Groundwater flow velocity equation: $V = [K_h * i] / n_e$

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-2**
LOCATION	**Euharlee, Georgia**	PAGE	**1 of 9**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**727.00 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**166 feet**
LOGGED BY	**Matt Wilson/Rhonda Tinsley**	DATE COMPLETED	**10/29/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1499374.18; Easting: 2068599.59**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
NA	NA	NA	**0 to 15.0 feet: CLAY (CL)**, red, dry, low plasticity, very stiff, fissile. (RESIDUAL) (0 to 8.0 feet: verified by visual observation down hole created by vacuum truck.) @ 0 to 8.0 feet: No recovery; interval removed with vacuum truck to clear for utilities.	0	0	100
CB	8.3/8.0	N				
			15.0 to 46.0 feet: CLAY (CH), red, dry to moist, moderate plasticity, stiff, occasional white chert nodules, trace well rounded silicic gravel. (RESIDUAL)	5	0	95
CB	11/10	N				

DEPTH IN FEET: 5, 10, 15, 20

WELL DETAILS

GAMMA LOG: 0 30 60 90 120 150

LITHO-LOGIC COLUMN

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-2**
LOCATION	**Euharlee, Georgia**	PAGE	**2 of 9**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**727.00 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**166 feet**
LOGGED BY	**Matt Wilson/Rhonda Tinsley**	DATE COMPLETED	**10/29/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1499374.18; Easting: 2068599.59**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
							15.0 to 46.0 feet: CLAY (CL), continued.	5	0	95
			25							
CB	8.8/10	N								
			30							
			35							
CB	11.3/10	N								
			40							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

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LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-2**
LOCATION	**Euharlee, Georgia**	PAGE	**3 of 9**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**727.00 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**166 feet**
LOGGED BY	**Matt Wilson/Rhonda Tinsley**	DATE COMPLETED	**10/29/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1499374.18; Easting: 2068599.59**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
			45				**15.0 to 46.0 feet: CLAY (CL)**, continued. @ 41.0 to 46.0 feet: gradational color change from red to light reddish brown.	15	0	85
CB	10.7/10	N	50				**46.0 to 74.7 feet: CLAY WITH GRAVEL (CH)**, light reddish brown, dry, very stiff, high plasticity, occasional well rounded, fine- to cobble-sized silicic gravel, dry to moist. (RESIDUAL)	15	0	85
CB	11/10	N	55				@ 56.9 to 58.5 feet: abundant black, soft, easily crumbled nodules. (Manganese?) @ 58.5 to 61.0 feet: occasional black nodules as above.			
			60							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

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LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-2**
LOCATION	**Euharlee, Georgia**	PAGE	**4 of 9**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**727.00 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**166 feet**
LOGGED BY	**Matt Wilson/Rhonda Tinsley**	DATE COMPLETED	**10/29/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1499374.18; Easting: 2068599.59**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
			65				**46.0 to 74.7 feet: CLAY WITH GRAVEL (CH)**, continued. @ 61.0 to 66.0 feet: gradual color change from light reddish brown to light brown.	15	0	85
CB	10.8/10	N					@ 66.0 feet: light brown, occasional angular black chert nodules.			
			70							
			75				**74.7 to 86.0 feet: DOLOMITE**, medium gray with calcite-filled fractures, some weathering (iron staining). (BEDROCK)	NA	NA	NA
CB	7.3/10	S								
			80							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-2**
LOCATION	**Euharlee, Georgia**	PAGE	**5 of 9**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**727.00 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**166 feet**
LOGGED BY	**Matt Wilson/Rhonda Tinsley**	DATE COMPLETED	**10/29/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1499374.18; Easting: 2068599.59**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
			85				**74.7 to 86.0 feet: DOLOMITE**, continued.	NA	NA	NA
CB	8.4/10	N	90				**86.0 to 138.0 feet: GRAVELLY CLAY (CH)**, light brown, soft, very wet, loose, gravel is angular, well graded, fine to coarse, occasional zones of deep red clay, clay has fragments of dolomite and chert. (VOID INFILL)	20	0	80
CB	5.6/10	N	95							
			100							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-2**
LOCATION	**Euharlee, Georgia**	PAGE	**6 of 9**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**727.00 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**166 feet**
LOGGED BY	**Matt Wilson/Rhonda Tinsley**	DATE COMPLETED	**10/29/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1499374.18; Easting: 2068599.59**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
							86.0 to 138.0 feet: GRAVELLY CLAY (CH), continued.	20	0	80
			105							
CB	5.8/10									
							@ 108.4 to 110.0 feet: gray sandy silt.			
			110							
			115							
CB	0/0						@ 116.0 to 136.0 feet: No recovery, wet and loose.			
			120							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-2**
LOCATION	**Euharlee, Georgia**	PAGE	**7 of 9**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**727.00 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**166 feet**
LOGGED BY	**Matt Wilson/Rhonda Tinsley**	DATE COMPLETED	**10/29/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1499374.18; Easting: 2068599.59**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
					0 30 60 90 120 150		**86.0 to 138.0 feet: GRAVELLY CLAY (CH)**, continued.	20	0	80
			125							
CB	0/0									
			130							
			135							
CB	5/10									
							138.0 to 143.0 feet: DOLOMITE, see description on next page.	NA	NA	NA
			140							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-2**
LOCATION	**Euharlee, Georgia**	PAGE	**8 of 9**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**727.00 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**166 feet**
LOGGED BY	**Matt Wilson/Rhonda Tinsley**	DATE COMPLETED	**10/29/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1499374.18; Easting: 2068599.59**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
							138.0 to 143.0 feet: DOLOMITE, medium gray with assorted quartz gravel and large chert chunks, breakage along bedding planes, some algal laminations, quartzite at bottom of interval, some iron and/or manganese deposits. (BEDROCK)	NA	NA	NA
			145				**143.0 to 151.0 feet: GRAVELLY CLAY (CH)**, light brown, soft, very wet, with fragments of dolomite and chert, gravel is angular, well graded, fine to coarse. (VOID INFILL)	20	0	80
CB	6.8/10									
			150							
							151.0 to 166.0 feet: DOLOMITE, medium gray, hard, dense, fine grained, breakage along bedding planes, some weathering evident. (BEDROCK)	NA	NA	NA
			155							
CB	8.3/10	E								
			160							

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ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-2**
LOCATION	**Euharlee, Georgia**	PAGE	**9 of 9**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**727.00 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**166 feet**
LOGGED BY	**Matt Wilson/Rhonda Tinsley**	DATE COMPLETED	**10/29/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1499374.18; Easting: 2068599.59**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
CB	8.3/10	S	165				**151.0 to 166.0 feet: DOLOMITE**, continued.	NA	NA	NA
			170				Total depth: 166.0 feet.			
			175							
			180							

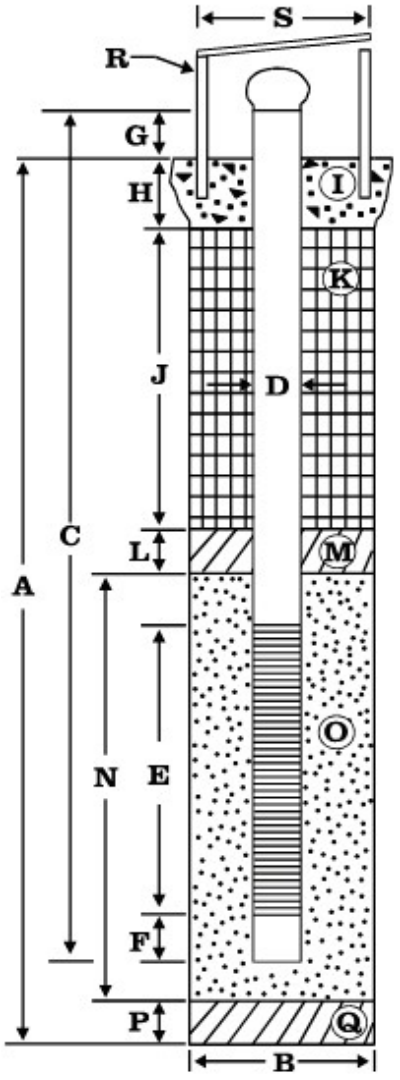
REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Well construction Log revised with new survey data dated 6/10/2020.

WELL DETAILS

Project Number:	151114-03	Boring/Well No.:	BGWA-2
Client Name:	Southern Company	Top of Casing Elev.:	729.69 ft. NAVD88
Project Name:	Plant Bowen Hydrogeologic Investigation	Ground Surface Elev.:	727.1 ft. NAVD88
		Installation Date:	10/29/15
Location:	Euharlee, Georgia	Driller:	Cascade Drilling
			Leon Logan, Driller



	Depth (feet)	Elevation (feet, NAVD88)
S	+3.1	730.2
R	+2.9	729.69
G	0.0	726.79
H	1.0	725.79
J	59.8	666.99
C	72.0	654.79
L	75.0	651.79
A	76.2	650.59
N		
E		
F	86.2	640.59
	86.5	640.29
P	87.0	639.79
B	166.0	560.79

EXPLORATORY BORING

A. Total depth:	166.0 ft.
B. Diameter:	2 in.
Drilling method:	Rotosonic

WELL CONSTRUCTION

C. Well casing length:	89.4 ft.
Well casing material:	Schedule 40 PVC
D. Well casing diameter:	2 in.
E. Well screen length:	10.0 ft.
Well screen type:	3.5-inch OD U-Pak PVC
Well screen slot size:	0.010 in.
F. Well sump/end cap length	0.3 ft.
G. Well casing height (stickup):	2.9 ft.
H. Surface seal thickness:	1.0 ft.
I. Surface seal material:	Concrete
J. Annular seal thickness:	71.0 ft.
K. Annular seal material:	Cement/bentonite grout (1.0-59.8 ft.)
	Bentonite chips (59.8-72.0 ft.)
L. Filter pack seal thickness:	3.0 ft.
M. Filter pack seal material:	Bentonite pellets
N. Sand pack thickness:	12.0 ft.
O. Sand pack material:	#1 Silica sand
P. Bottom material thickness:	79.0 ft.
Q. Bottom material:	Bentonite chips
R. Protective casing material:	Aluminum
S. Protective casing diameter:	Square – 4 in.
Well centralizer depths:	NA

NOTES:

OD = Outside diameter. PVC = Polyvinyl chloride.
Bentonite pellets allowed to hydrate for 1 hour.
Bentonite chips allowed to hydrate for over 8 hours.
NAVD88 = North American Vertical Datum of 1988.

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-29**
LOCATION	**Euharlee, Georgia**	PAGE	**1 of 5**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**718.84 ft NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**97 feet**
LOGGED BY	**Jim Redwine**	DATE COMPLETED	**8/7/16**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1498283.04; Easting: 2066362.32**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
	5.3/7	N				**0 to 13.0 feet: CLAY (CL)**, red, stiff, silty clay with occasional to frequent quartz pebbles and chert fragments. No topsoil.			
			5				19	1	80
						Tested with 10 percent hydrochloric acid every foot, no reaction.			
	9/10	N							
			10				5	5	90
						@ 13.0 feet: contact gradational.			
						13.0 to 24.0 feet: CLAY (CL), orange, occasionally yellow red or mottled, stiff, silty clay with occasional to frequent quartz pebbles and chert fragments.			
			15				5	5	90
	7/10	N							
			20				1	4	90

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-29**
LOCATION	**Euharlee, Georgia**	PAGE	**2 of 5**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**718.84 ft NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**97 feet**
LOGGED BY	**Jim Redwine**	DATE COMPLETED	**8/7/16**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1498283.04; Easting: 2066362.32**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		N				**13.0 to 24.0 feet: CLAY (CL)**, continued.			
						@ 24.0 feet: contact gradational.	40	10	50
			25			**24.0 to 54.0 feet: CLAY (CL)**, yellow to orange, sometimes red speckled stiff, silty clay with occasional to frequent quartz pebbles and chert fragments, and silty zones (clayey silt to silty clay).	19	1	80
						@ 24.0 to 24.7 feet: quartz pebble rich zone; one quartz cobble.			
	7.8/10	N							
			30			Tested with 10 percent hydrochloric acid every foot, no reaction.	3	2	95
			35				0	2	98
						@ 36.0 to 36.5 feet: gravelly zone, chert crushed by drilling.			
	9/10	N							
			40				0	5	95

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-29**
LOCATION	**Euharlee, Georgia**	PAGE	**3 of 5**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**718.84 (718.86) ft NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**97 feet**
LOGGED BY	**Jim Redwine**	DATE COMPLETED	**8/7/16**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1498283.04; Easting: 2066362.32**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		N				**24.0 to 54.0 feet: CLAY (CL)**, continued.			
						@ 43.5 to 45.0 feet: redder clay zone.			
			45				1	19	80
	10.3/10	N				Tested with 10 percent hydrochloric acid every foot, no reaction.			
			50				0	5	95
						@ 54.0 feet: contact gradational.			
			55			**54.0 to 61.0 feet: SILT (ML)**, yellow silt with occasional fine sand zones and rare dark areas (organics, organic sands, manganese compounds?).	0	0	100
	9.3/10	N							
			60				0	0	100

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-29**
LOCATION	**Euharlee, Georgia**	PAGE	**4 of 5**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**718.84 (718.86) ft NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**97 feet**
LOGGED BY	**Jim Redwine**	DATE COMPLETED	**8/7/16**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1498283.04; Easting: 2066362.32**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		N				**54.0 to 61.0 feet: SILT (ML)**, continued.			
						@ 61.0 feet: contact gradational.			
						61.0 to 67.0 feet: CLAY (CL), yellow silty clay with frequent chert fragments.			
			65			@ 65.0 to 66.0 feet: mostly white, chert fragments.	33	33	34
	1.5/10					**67.0 to 77.0 feet: DOLOMITE**, light to medium gray, fine-grained, dolomite.			
						@ 68.0 feet: small amount of rock encountered.			
						@ 68.0 to 71.0 feet: driller reports no rock.			
			70						
		S				@ 71.0 feet: approximate top of rock.			
						@ 71.0 to 77.0 feet: driller reports alternating rock, soft drilling.			
			75						
	1.8/10	S				**77.0 to 97.0 feet: DOLOMITE**, weathered/dissolutioned light gray to tan, fine-grained dolomite. Also very fine-grained tan to light gray LIMESTONE with limestone also weathered/dissolutioned, occasional quartz sand grains floating in the limestone matrix.			
			80						

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-29**
LOCATION	**Euharlee, Georgia**	PAGE	**5 of 5**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**718.84 ft NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**97 feet**
LOGGED BY	**Jim Redwine**	DATE COMPLETED	**8/7/16**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1498283.04; Easting: 2066362.32**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
			85			**77.0 to 97.0 feet: DOLOMITE**, continued.			
						Tested every foot with 10 percent hydrochloric acid.			
	5/10	S	90						
		W				@ 92.5 to 95.0 feet: fine-grained medium gray calcereous dolomite (mild reaction to 10 percent hydrochloric acid).			
			95			@ 95.0 to 95.7 feet: light gray to white, fractured chert. @ 95.7 to 97.0 feet: light gray, fine to medium-grained dolomite.			
						Total depth: 97.0 feet.			
			100						

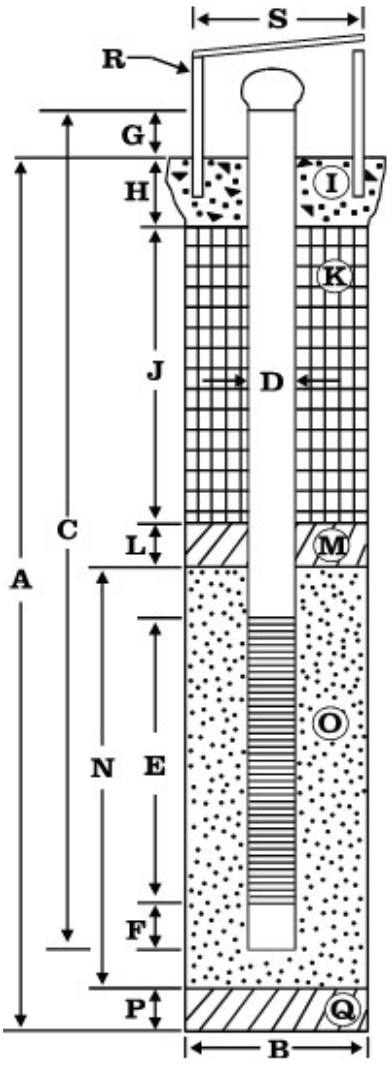
REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent.

ANCHOR QEA

Well construction Log revised with new survey data dated 6/10/2020.

WELL DETAILS

Project Number:	151114-03	Boring/Well No.:	BGWA-29
Client Name:	Southern Company	Top of Casing Elev.:	721.38
Project Name:	Plant Bowen Hydrogeologic Investigation	Ground Surface Elev.:	718.86 ft. NAVD88
		Installation Date:	08/07/2016-08/08/2016
Location:	Cartersville, Georgia	Driller:	Cascade Drilling
			Thomas Ardito, Driller



	Depth (feet)	Elevation (feet, NAVD88)
S	+2.5	721.39
R	+2.3	721.38
G	0.0	719.08
H	2.0	717.08
J	62.0	657.08
C	78.0	641.08
L	82.5	636.58
A	86.2	632.88
N	96.2	622.88
E	96.5	622.58
F	97.0	622.08
P	N/A	N/A

EXPLORATORY BORING

A. Total depth:	97.0 ft.
B. Diameter:	6 in.
Drilling method:	Rotosonic PS-150

WELL CONSTRUCTION

C. Well casing length:	100.0 ft.
Well casing material:	Schedule 40 PVC
D. Well casing diameter:	2 in.
E. Well screen length:	10 ft.
Well screen type:	Pre-pack
Well screen slot size:	0.010 in.
F. Well sump/end cap length	0.3 ft.
G. Well casing height (stickup):	3.0 ft.
H. Surface seal thickness:	2.0 ft.
I. Surface seal material:	Concrete
J. Annular seal thickness:	76.0 ft.
K. Annular seal material:	Bentonite grout (2.0-62.0 ft.)
	3/8" Bentonite chips (62.0-78.0 ft.)
L. Filter pack seal thickness:	4.5 ft.
M. Filter pack seal material:	Bentonite pellets
N. Sand pack thickness:	14.5 ft.
O. Sand pack material:	Heavy fine sand/#1 SS
P. Bottom material thickness:	N/A
Q. Bottom material:	N/A
R. Protective casing material:	Aluminum
S. Protective casing diameter:	Square – 4 in.
Well centralizer depths:	N/A

NOTES:

SS = Silica Sand.
OD = Outside diameter. PVC = Polyvinyl chloride.
Bentonite pellets allowed to hydrate at least 1 hour.
Bentonite chips allowed to hydrate at least 4 hours.
NAVD88 = North American Vertical Datum of 1988.

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BGWA-47D

CLIENT Southern Company Services
PROJECT NAME Bowen Groundwater SRV-AP1
PROJECT NUMBER GW6581C
PROJECT LOCATION Euharlee, GA
DATE STARTED 5/12/20 **COMPLETED** 5/13/20
NORTHING 1499377.79 ft **EASTING** 2068612.48 ft
DRILLER Cascade Drilling
GROUND ELEVATION 726.93 ft **BORING DIAMETER** 6 in
DRILLING METHOD Sonic
TOP OF CASING ELEVATION 729.61 ft
SAMPLING METHOD 4" core 6" override
GEOPHYSICAL CONTRACTOR ---
RIG TYPE Terra Sonic Full Size Track Mounted Rig
LOGGED BY C. Hug **CHECKED BY** J. Ivanowski

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
0				Hydro Excavation (0 ft to 7 ft) NO SAMPLE	
	720			719.9 CLAY, Dark red (7.5R 3/6), low to medium plasticity, firm to stiff, trace of fine sand, dry to moist.	
10				From 13 ft: Trace of fine, subrounded quartz gravel. From 15 ft: Slightly silty.	Schedule 40 PVC 2"
	710				
20				From 24 ft: Firm to stiff, less gravel, moist.	Aquaguard Sodium Bentonite Grout
	700			696.9 CLAY with GRAVEL, Dark red (7.5R, 3/6), high plasticity, firm to stiff, trace fine sand, gravel is fine to coarse, rounded to subrounded, quartz, moist.	
30				693.9 GRAVELLY CLAY, Dark red (7.5R, 3/6), high plasticity, firm to stiff, trace fine sand, gravel is fine to coarse, rounded to subrounded, quartz, moist. 691.9	
	690			CLAY, Light red (2.5YR 6/8), high plasticity, trace fine sand, moist. From 37 ft: Light red (2.5YR 7/8) and reddish yellow (5YR 7/8) mottled, with some dark red pebbles, high plasticity, trace of fine to coarse, rounded quartz gravel.	
40					
	680			47 ft: Trace fine sand.	

(Continued Next Page)

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CLIENT Southern Company Services **PROJECT NAME** Bowen Groundwater SRV-AP1

PROJECT NUMBER GW6581C **PROJECT LOCATION** Euharlee, GA

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
50				CLAY, Light red (2.5YR 6/8), high plasticity, trace fine sand, moist. *(continued)*	
				From 52 ft: With occasional coarse, rounded to subrounded quartz and chert gravel, up to 4 in in length.	
	670			From 57 ft: Reddish yellow (5YR 7/8) with minor light gray (5YR 7/1) mottling, high plasticity, firm to stiff, trace fine gravel.	
				667.9	
60				CLAY with GRAVEL, Reddish yellow (5YR 7/8), some red (7.5R 5/8) mottling, minor black organic matter, high plasticity, gravel is fine to coarse grained, subrounded, quartz and angular limestone. Band of gray angular limestone gravel between 60 and 60.5 ft.	
				666.4	
				GRAVELLY CLAY, Light red (2.5YR 7/8) and reddish yellow (5YR 7/8) mottled, high plasticity, gravel is subrounded quartz and angular limestone.	
				660.9	
	660			CLAY with GRAVEL, Light red (2.5YR 7/8) and reddish yellow (5YR 7/8) mottled, high plasticity, gravel is subrounded quartz and angular limestone. Occasional larger fragments of limestone up to 6 in length.	
70					
		78.5 ft: 4 in rods falling without resistance, 6 in casing 'scraping' along the borehole sides. No returns, no recovery.			
	650				
				648.9	
				648.4 LIMESTONE/DOLOMITE, Dark gray, slightly weathered, massive, very fractured, recovered with fine sand and silt.	
80				VOID (78.5 ft to 110 ft)	
	640				
90					
	630				
100					

Aquaguard Sodium Bentonite Grout

Bentonite uncoated 3/8" chips

(Continued Next Page)

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CLIENT Southern Company Services **PROJECT NAME** Bowen Groundwater SRV-AP1

PROJECT NUMBER GW6581C **PROJECT LOCATION** Euharlee, GA

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
110		114 ft: 4 in rods and 6 in casing drop without resistance, no returns, no recovery. 117 ft: Soft but steady drilling between 118 and 127 ft, recovery of 3 ft indicates that some fines may be washed away.		VOID (78.5 ft to 110 ft) *(continued)*	
				616.9	
				LIMESTONE/DOLOMITE, Gray, slightly weathered to fresh, massive, with fine, white calcarecous veins along healed fracture planes, minor reddish yellow iron oxide staining, with calcite and aragonite crystals, some iron oxide stained.	
				612.9	
				VOID (114 ft to 115 ft)	
				611.9	
				LIMESTONE/DOLOMITE, Gray, slightly weathered to fresh, massive, with fine, white calcarecous veins along healed fracture planes, minor reddish yellow iron oxide staining, with calcite and aragonite crystals.	
	610			610.9	
				VOID (116 ft to 118 ft)	
				608.9	
120				LIMESTONE/DOLOMITE, Gray, slightly weathered to fresh, massive, with fine, white calcarecous veins along healed fracture planes, minor reddish yellow iron oxide staining, with calcite and aragonite crystals. From 122 ft: With yellow and light brown silty/clayey staining. Some calcite and aragonite crystallization along fracture planes. Minor pale green chloride mineralization in places, with abundance of pale brown iron oxide staining around 127 ft.	Bentonite uncoated 3/8" chips
		127.5 ft: 4 in rods and 6 in casing drop without resistance, no returns, no recovery. 131 ft: Driller reports drilling in rock, no recovery.			
	600			599.4	
				VOID (127.5 ft to 131 ft)	
130				595.9	
				LIMESTONE/DOLOMITE - No recovery, lithology based on previous core recovery.	
		137 ft: 4 in rods and 6 in casing drop without resistance, no returns, no recovery. 141 ft: Driller reports drilling in rock, no recovery.			
	590			589.9	Bentonite coated 3/8" pellets
				VOID (137 ft to 141 ft)	
140				585.9	
				LIMESTONE/DOLOMITE - No recovery.	
					20/40 Silica Sand
	580			579.9	0.010 slot size 2" Pre Pack, U-Pack Screen
				VOID (147 ft to 153 ft)	
150				573.9	

Bottom of borehole at 153.0 feet.

Easting and Northing in NAD 1983.
Elevation in NAVD 88.

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BGWA-48D

CLIENT Southern Company Services
PROJECT NAME Bowen Groundwater SRV-AP1
PROJECT NUMBER GW6581C
PROJECT LOCATION Euharlee, GA
DATE STARTED 5/14/20 **COMPLETED** 5/16/20
NORTHING 1499380.09 ft **EASTING** 2068623.31 ft
DRILLER Cascade Drilling
GROUND ELEVATION 726.63 ft **BORING DIAMETER** 6 in
DRILLING METHOD Sonic
TOP OF CASING ELEVATION 729.37 ft
SAMPLING METHOD 4" core 6" override
GEOPHYSICAL CONTRACTOR ---
RIG TYPE Terra Sonic Full Size Track Mounted Rig
LOGGED BY C. Hug **CHECKED BY** J. Ivanowski

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
0				Hydro Excavation (0 ft to 10 ft) NO SAMPLE	
	720				
10				716.6 CLAY, Dark red (2.5YR 3/6), low to medium plasticity, with trace fine rounded gravel, trace fine sand. Occasional fine to coarse, rounded quartz/chert gravel, moist, firm to stiff.	Schedule 40 PVC 2"
	710			17 ft: With trace of fine to coarse, subrounded to rounded quartz gravel.	
20					
	700			699.6 GRAVELLY CLAY, Reddish yellow (5YR 7/6) and yellowish red (5YR 4/6) mottled, medium to high plasticity, gravel is fine to coarse, subrounded to rounded, quartz/chert, minor black silty pebbles at 29 ft, moist.	
30				694.6 CLAY, Reddish yellow (YR 7/8), yellowish red (5YR 5/8), and pinkish white (5YR 8/2) mottled, high plasticity, trace fine sand, stiff, moist.	Aquaguard Sodium Bentonite Grout
				692.1 CLAY, Dark red (2.5YR 3/6), medium to high plasticity, trace fine sand, trace mica, moist, slightly silty.	
	690				
40				40 ft: Large, rounded sandstone fragment, with black staining, subrounded to rounded quartz and chert gravel.	
				From 42 ft: Dark red (2.5 YR 3/6) and reddish yellow (5YR 5/8) mottled. 683.6	
				GRAVELLY CLAY, Dark red (2.5 YR 3/6) and reddish yellow (5YR 5/8) mottled, medium to high plasticity, gravel is fine to coarse, rounded to subrounded, quartz and chert. 681.6	
	680			CLAY Dark red (2.5YR 3/6), medium to high plasticity, trace fine sand, trace fine quartz and chert gravel.	

(Continued Next Page)

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CLIENT Southern Company Services **PROJECT NAME** Bowen Groundwater SRV-AP1

PROJECT NUMBER GW6581C **PROJECT LOCATION** Euharlee, GA

DEPTH (ft)	ELEVATION (ft)	REMARKS	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
50			CLAY Dark red (2.5YR 3/6), medium to high plasticity, trace fine sand, trace fine quartz and chert gravel. *(continued)* At 51 ft: Some pinkish white (5YR 8/2), moist, stiff.	
	670			
60			666.6 CLAYEY GRAVEL, Dark red (2.5 YR 3/6) and reddish yellow (5YR 5/8) mottled, fine to coarse, rounded to subrounded, quartz and chert, clay is high plasticity, slightly silty. 665.6 CLAY Dark red (2.5YR 3/6), medium to high plasticity, trace fine sand, trace fine quartz gravel. 663.1 CLAYEY SAND, Brown (7.5YR 5/4), fine to medium grained, subangular, quartz, soft, wet, sharp contact with underlying rock. 661.6	Aquaguard Sodium Bentonite Grout
	660		LIMESTONE/DOLOMITE, Dark gray, massive, slightly weathered, with white, calcareous veins, with some sandy clay, recovered as pieces of rock with pale gray clayey sand and silty sand. 656.6	
70		70 ft: Driller reports very low resistance, no returns.	VOID (70 to 71 ft) 655.6 Void potentially filled with soft material.	
		74 ft: Driller reports very low resistance, no returns.	LIMESTONE/DOLOMITE, Dark gray, massive, slightly weathered, with fine calcarous veins, with some yellow staining. 652.6	
			VOID (74 to 76 ft) 650.6 Void potentially filled with soft material.	
	650		LIMESTONE/DOLOMITE, Dark gray, with fine white veins, some secondary mineralization along fracture planes, with occasional pockets up to 6 in in length of softer material between 77 ft and 87 ft.	
80				
	640		87 ft: Vertical and horizontal fracture planes, fresh rock with pieces of rock up to 7 in long.	
90				Bentonite uncoated 3/8" chips
	630	99 ft: 4 in rods falling without resistance, 6 in casing 'scraping' along the borehole sides. No returns, no recovery.	96 ft to 97 ft: Some yellow staining, with secondary calcite and aragonite crystallization along fracture planes, with some brown iron oxide staining, slightly silty. 627.6 VOID (99 ft to 105 ft)	
100			621.6	
	620			

(Continued Next Page)

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CLIENT Southern Company Services **PROJECT NAME** Bowen Groundwater SRV-AP1

PROJECT NUMBER GW6581C **PROJECT LOCATION** Euharlee, GA

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
110				LIMESTONE/DOLOMITE, Dark gray with white, fine calcareous veins throughout, massive, with secondary calcite and aragonite crystallization along fracture planes, with some brown iron oxide staining, with horizontal and vertical fracture planes, slightly silty. *(continued)*	
	610			117 ft: Very broken core, vertical and horizontal fractures with calcite mineralization, silty.	
120		122 ft: 4 in rods falling without resistance, 6 in casing 'scraping' along the borehole sides. No returns, no recovery.		604.6 VOID (122 ft to 139 ft)	
	600				
130					
	590			587.6	
140				LIMESTONE/DOLOMITE, Dark gray with white, fine calcareous veins throughout, massive, with secondary calcite and aragonite crystallization along fracture planes, with some brown and yellow iron oxide staining, with horizontal and vertical fracture planes, slightly silty. From 141 ft: Larger fragments of intact core up to 7 in length, crystalline, hard, more fractured between 142 and 147 ft.	
	580			147 ft: Brown staining, with calcite and aragonte crystallization, very broken and fractured between 147 ft and 157 ft.	
150					Bentonite uncoated 3/8" chips
	570			157 ft: Minor pale brown staining, very broken and fractures, slightly silty.	
160					

(Continued Next Page)

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CLIENT Southern Company Services **PROJECT NAME** Bowen Groundwater SRV-AP1

PROJECT NUMBER GW6581C **PROJECT LOCATION** Euharlee, GA

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
170	560			LIMESTONE/DOLOMITE, Dark gray with white, fine calcareous veins throughout, massive, with secondary calcite and aragonite crystallization along fracture planes, with some brown and yellow iron oxide staining, with horizontal and vertical fracture planes, slightly silty. From 141 ft: Larger fragments of intact core up to 7 in length, crystalline, hard, more fractured between 142 and 147 ft. *(continued)*	Bentonite uncoated 3/8" chips
180	550			177 ft: Very broken, with vertical and horizontal fracture planes, secondary mineralization, some pale green (chloride) mineralization and calcite/aragonite crystals along undulating fracture planes.	Bentonite coated 3/8" pellets
190	540				20/40 Silica Sand 0.010 slot size 2" Pre Pack, U-Pack Screen 534.6

Bottom of borehole at 192.0 feet.

Easting and Northing in NAD 1983.
Elevation in NAVD 88.

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-7**
LOCATION	**Euharlee, Georgia**	PAGE	**1 of 5**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**702.49 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**87.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**10/01/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1504711.59; Easting: 2066801.40**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
CB	5.5/6.5	N					**0 to 2.7 feet: TOPSOIL**, brown, moist, silt and clay, abundant wood pieces.	0	0	100
		N	5				**2.7 to 16.5 feet: CLAY (CH)**, red with tan and light brown mottling, moist, very stiff, high plasticity, friable, breaks easily into small pieces. (RESIDUAL)	0	0	100
CB	11/10	N	10				@ 11.5 to 16.5 feet: very hard, moderate plasticity. @ 13.0 to 16.5 feet: dry, no plasticity.			
CB	11.6/10	N	15				**16.5 to 46.9 feet: SILTY CLAY (CL)**, yellowish red with yellow, tan, and white mottling, dry, low plasticity, hard. (RESIDUAL)	0	0	100
			20							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent.
Well installation supervised by Will Newton of Southern Company.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-7**
LOCATION	**Euharlee, Georgia**	PAGE	**2 of 5**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**702.49 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**87.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**10/01/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1504711.59; Easting: 2066801.40**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		N					**16.5 to 46.9 feet: SILTY CLAY (CL)**, continued. @ 20.0 feet: very hard, no plasticity.	0	0	100
			25							
							@ 25.5 feet: moderate plasticity.	0	0	100
CB	10.6/10	N					@ 26.5 feet: color change to red with tan, yellow and white mottling. (RESIDUAL)			
			30							
			35							
CB	6.2/10	N								
			40							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent.
Well installation supervised by Will Newton of Southern Company.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-7**
LOCATION	**Euharlee, Georgia**	PAGE	**3 of 5**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**702.49 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**87.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**10/01/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1504711.59; Easting: 2066801.40**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		N	45				**16.5 to 46.9 feet: SILTY CLAY (CL)**, continued. @ 42.3 to 46.9 feet: abundant chert nodules.	0	0	100
CB	5.5/10	N					**46.9 to 47.9 feet: SILT WITH GRAVEL (ML)**, brown, moist, slightly plastic, soft, gravel is angular, heavily weathered limestone.	40-50	0	50-60
		E					**47.9 to 57.5 feet: LIMESTONE**, dark gray, hard, very fine grained crystals, surface has powdery appearance, rare calcite veins, breakage along bedding planes. (BEDROCK)	NA	NA	NA
		E								
		E	50							
		E								
		E								
		E								
		E								
		E	55							
		E								
CB	7.4/10	E								
		S					**57.5 to 59.5 feet: DOLOMITE**, dark gray, hard, very fine grained crystals, rare calcite veins, breakage along bedding planes. (BEDROCK)	NA	NA	NA
		W								
		E	60				**59.5 to 61.0 feet: LIMESTONE**, desc. on next page.	NA	NA	NA

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent.
Well installation supervised by Will Newton of Southern Company.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-7**
LOCATION	**Euharlee, Georgia**	PAGE	**4 of 5**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**702.49 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**87.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**10/01/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1504711.59; Easting: 2066801.40**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		E					**59.5 to 61.0 feet: LIMESTONE**, dark gray, hard, very fine grained crystals, surface has powdery appearance, rare calcite veins. (BEDROCK)	NA	NA	NA
		S					**61.0 to 62.0 feet: DOLOMITE**, dark gray, hard, very fine grained crystals, rare calcite veins, breakage along bedding planes. (BEDROCK)	NA	NA	NA
		E					**62.0 to 87.5 feet: LIMESTONE**, dark gray, hard, very fine grained crystals, surface has powdery appearance, rare calcite veins, breakage along bedding planes. (BEDROCK)	NA	NA	NA
		E								
		E								
		E	65							
CB	6.0/10	E								
		E								
		E								
		E	70							
		E								
		E								
		E								
		E								
		E	75							
		E								
CB	4.0/10	E								
		E								
		E								
		E								
		E	80							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. Well installation supervised by Will Newton of Southern Company.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-7**
LOCATION	**Euharlee, Georgia**	PAGE	**5 of 5**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**702.49 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**87.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**10/01/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1504711.59; Easting: 2066801.40**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		E			0 30 60 90 120 150		**62.0 to 87.5 feet: LIMESTONE**, continued.	NA	NA	NA
		E								
		E								
		E								
		W					@ 84.0 to 86.5 feet: weakly effervescent.			
		W	85							
		W								
		W								
CB							Total depth: 87.5 feet.			
			90							
			95							
			100							

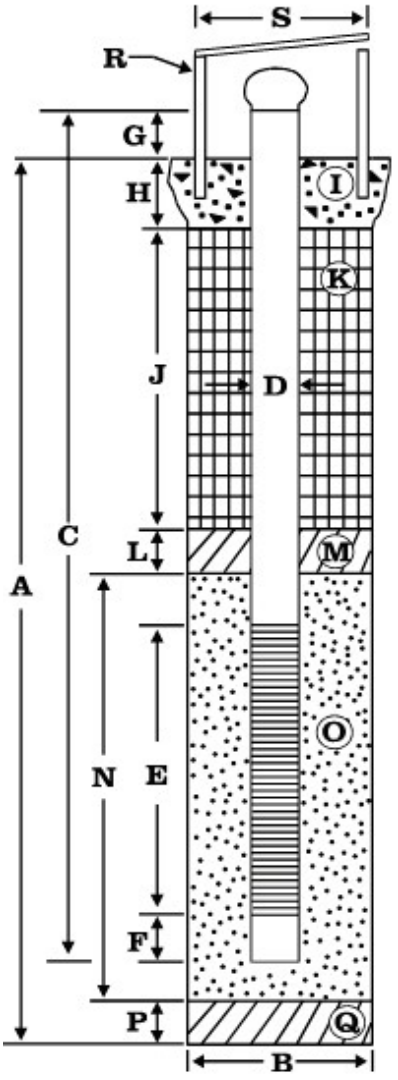
REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent.
Well installation supervised by Will Newton of Southern Company.

ANCHOR QEA

Well construction Log revised with new survey data dated 6/10/2020.

WELL DETAILS

Project Number:	151114-03	Boring/Well No.:	BGWC-7
Client Name:	Southern Company	Top of Casing Elev.:	705.38 ft. NAVD88
Project Name:	Plant Bowen Hydrogeologic Investigation	Ground Surface Elev.:	702.7 ft. NAVD88
		Installation Date:	10/01/15
Location:	Euharlee, Georgia	Driller:	Cascade Drilling
			Leon Logan, Driller



	Depth (feet)	Elevation (feet, NAVD88)
S	+3.2	705.9
R	+3.0	705.38
G	0.0	702.38
H	1.0	701.38
J	40.0	665.38
C	72.2	630.18
L	75.2	627.18
A	77.2	625.18
N		
E		
F	87.2	615.18
	87.5	614.88
P	87.5	614.88
B	NA	NA

EXPLORATORY BORING

A. Total depth:	86.5 ft.
B. Diameter:	6 in.
Drilling method:	Rotosonic

WELL CONSTRUCTION

C. Well casing length:	90.5 ft.
Well casing material:	Schedule 40 PVC
D. Well casing diameter:	2 in.
E. Well screen length:	10.0 ft.
Well screen type:	3.5-inch OD U-Pak PVC
Well screen slot size:	0.010 in.
F. Well sump/end cap length	0.3 ft.
G. Well casing height (stickup):	3.0 ft.
H. Surface seal thickness:	1.0 ft.
I. Surface seal material:	Concrete
J. Annular seal thickness:	70.2 ft.
K. Annular seal material:	Cement/bentonite grout (1.0-40.0 ft.)
	Bentonite chips (40.0-72.2 ft.)
L. Filter pack seal thickness:	3.0 ft.
M. Filter pack seal material:	Bentonite pellets
N. Sand pack thickness:	12.3 ft.
O. Sand pack material:	#1 Silica sand
P. Bottom material thickness:	NA
Q. Bottom material:	NA
R. Protective casing material:	Aluminum
S. Protective casing diameter:	Square – 4 in.
Well centralizer depths:	NA

NOTES:

OD = Outside diameter. PVC = Polyvinyl chloride.
Bentonite pellets allowed to hydrate for 1 hour.
Bentonite chips allowed to hydrate for over 8 hours.
NAVD88 = North American Vertical Datum of 1988.

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-8**
LOCATION	**Euharlee, Georgia**	PAGE	**1 of 5**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**703.71 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**86.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**11/18/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1504671.82; Easting: 2066929.46**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
NA	NA	NA			0 30 60 90 120 150		**0 to 59.4 feet: CLAY (CH)**, dark red, dry, very stiff, high plasticity, occasional small chert nodules and nodules of light gray, soft, powdery material. (0 to 10.0 feet: No recovery. Interval removed with vacuum truck to clear for utilities. Red clay via visual observation down hole.)	0	0	100
			5							
CB	6.5/6.5	N	10					0	0	100
			15							
CB	11.3/10	N								
			20							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-8**
LOCATION	**Euharlee, Georgia**	PAGE	**2 of 5**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**703.71 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**86.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**11/18/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1504671.82; Easting: 2066929.46**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
							0 to 59.4 feet: CLAY (CH), continued.	0	0	100
			25							
CB	10.8/10	N					@ 26.5 feet: color change to light brownish red with dark red, light gray and tan mottling.			
			30							
			35							
CB	10.9/10	N					@ 36.5 feet: color change to reddish light brown with light gray and tan mottling, density change to firm.			
			40							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-8**
LOCATION	**Euharlee, Georgia**	PAGE	**3of 5**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**703.71 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**86.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**11/18/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1504671.82; Easting: 2066929.46**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
			45				**0 to 59.4 feet: CLAY (CH)**, continued.	0	0	100
							@ 43.1 to 43.3 feet: gray silt layer.			
CB	**10.5/10**	N	50							
CB	**10.4/10**	N	55				@ 56.5 feet: wet, color change to red.			
		W	60				**59.4 to 63.8 feet: CLAY**, description on next page.	0	0	100

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-8**
LOCATION	**Euharlee, Georgia**	PAGE	**4 of 5**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**703.71 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**86.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**11/18/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1504671.82; Easting: 2066929.46**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		W			0 30 60 90 120 150		**59.4 to 63.8 feet: CLAY**, red, moist, firm, high plasticity, weakly effervescent. (RESIDUAL)	0	0	100
		E	65				**63.8 to 67.6 feet: LIMESTONE**, dark gray, thinly bedded, 1- to 2-inch thick beds, breakage along bedding planes, microcrystaline, effervesces readily, slightly weathered, red iron oxide stains on surfaces. (BEDROCK)	NA	NA	NA
CB	6.5/10	E S					**67.6 to 80.0 feet: DOLOMITE**, light gray to gray, fine grained crystals, medium bed thickness, 3- to 10-inches thick, breakage along bedding planes, laminations and thin banding in places, beds appear to be dipping 25 to 30 degrees, slighty weathered, some red iron-oxide staining. (BEDROCK) @ 68.5 to 71.0 feet: void.	NA	NA	NA
			70			VOID				
			75							
CB	1.1/10	S								
			80							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-8**
LOCATION	**Euharlee, Georgia**	PAGE	**5 of 5**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**703.71 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**86.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**11/18/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1504671.82; Easting: 2066929.46**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		NA	85				**67.6 to 80.0 feet: DOLOMITE**, continued. @ 80.0 to 86.5 feet: clay-filled void, no recovery of void material in core barrel, but red clay residue on tip of bit indicates that it is clay filled. (VOID INFILL)	0	0	100
			90				Total depth: 86.5 feet.			
			95							
			100							

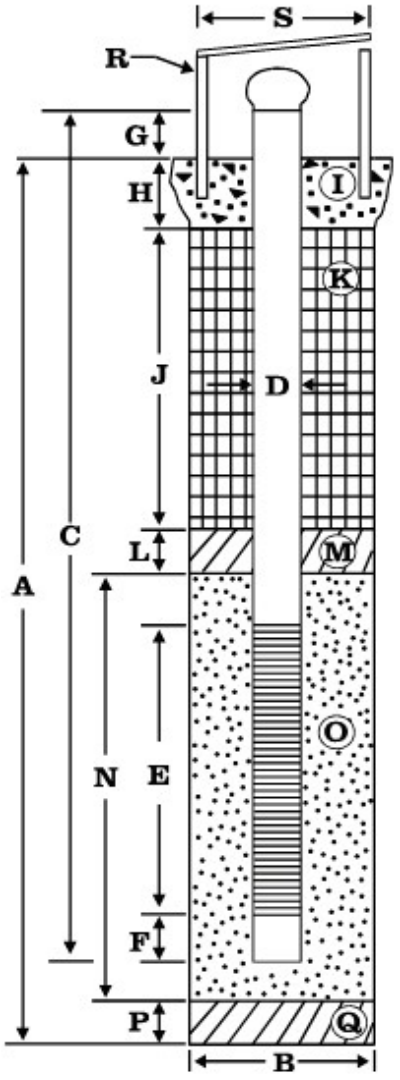
REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Well construction Log revised with new survey data dated 6/10/2020.

WELL DETAILS

Project Number:	151114-03	Boring/Well No.:	BGWC-8
Client Name:	Southern Company	Top of Casing Elev.:	706.43 ft. NAVD88
Project Name:	Plant Bowen Hydrogeologic Investigation	Ground Surface Elev.:	703.9 ft. NAVD88
		Installation Date:	11/18/15
Location:	Euharlee, Georgia	Driller:	Cascade Drilling
			Leon Logan, Driller



	Depth (feet)	Elevation (feet, NAVD88)
S	+3.1	707.0
R	+2.9	706.43
G	0.0	703.53
H	1.0	702.53
J	40.5	663.03
C	60.3	643.23
L	64.8	638.73
A	66.7	636.83
N		
E	76.7	626.83
F	77.0	626.53
P	78.0	625.53
B	86.5	617.03

EXPLORATORY BORING

A. Total depth:	86.5 ft.
B. Diameter:	6 in.
Drilling method:	Rotosonic

WELL CONSTRUCTION

C. Well casing length:	79.9 ft.
Well casing material:	Schedule 40 PVC
D. Well casing diameter:	2 in.
E. Well screen length:	10.0 ft.
Well screen type:	3.5-inch OD U-Pak PVC
Well screen slot size:	0.010 in.
F. Well sump/end cap length	0.3 ft.
G. Well casing height (stickup):	2.9 ft.
H. Surface seal thickness:	1.0 ft.
I. Surface seal material:	Concrete
J. Annular seal thickness:	59.3 ft.
K. Annular seal material:	Bentonite grout (1.0-40.5 ft.)
	Bentonite chips (40.5-60.3 ft.)
L. Filter pack seal thickness:	4.5 ft.
M. Filter pack seal material:	Bentonite pellets
N. Sand pack thickness:	13.2 ft.
O. Sand pack material:	#1 Silica sand
P. Bottom material thickness:	8.5 ft.
Q. Bottom material:	Native/Bentonite chips
R. Protective casing material:	Aluminum
S. Protective casing diameter:	Square – 4 in.
Well centralizer depths:	NA

NOTES:

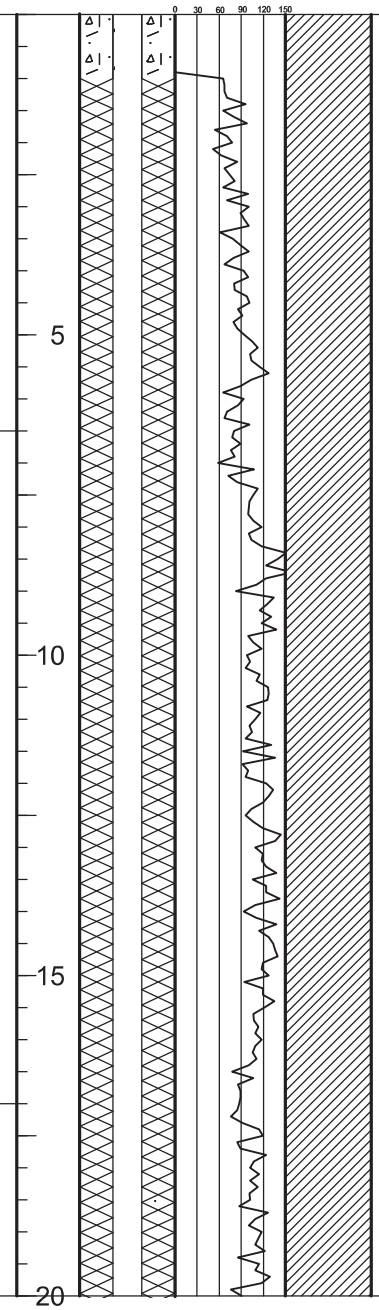
OD = Outside diameter. PVC = Polyvinyl chloride.
Bentonite pellets allowed to hydrate for 1 hour.
Bentonite chips allowed to hydrate for over 4 hours.
NAVD88 = North American Vertical Datum of 1988.

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-9**
LOCATION	**Euharlee, Georgia**	PAGE	**1 of 4**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**689.18 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**68 feet**
LOGGED BY	**Rhonda Tinsley**	DATE COMPLETED	**11/13/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1504909.12; Easting: 2066143.27**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
CB	**4.7/7.0**	N					**0 to 39 feet: CLAY (CL)**, reddish brown, crumbly, chert fragments, moist at surface. (RESIDUAL)	10	0	90
CB	**10.3/10**	NA					@ 7.0 feet: large chert fragment.			
CB	**10.5/10**	NA					@ 17.0 feet: frequent chert fragments, some black.	10	0	90



REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-9**
LOCATION	**Euharlee, Georgia**	PAGE	**2 of 4**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**689.18 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**68 feet**
LOGGED BY	**Rhonda Tinsley**	DATE COMPLETED	**11/13/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1504909.12; Easting: 2066143.27**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
					0 30 60 90 120 150		**0 to 39 feet: CLAY (CL)**, continued.	10	0	90
			25							
CB	**10.2/10**	NA					@ 27.0 feet: softer.	10	0	90
			30							
			35							
CB	**4.5/10**	NA								
						VOID	**39.0 to 41.0 feet: VOID**, mud filled.	NA	NA	NA
			40							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-9**
LOCATION	**Euharlee, Georgia**	PAGE	**3 of 4**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**689.18 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**68 feet**
LOGGED BY	**Rhonda Tinsley**	DATE COMPLETED	**11/13/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1504909.12; Easting: 2066143.27**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
					0 30 60 90 120 150	VOID	**39.0 to 41.0 feet: VOID**, continued.	NA	NA	NA
							41.0 to 68.0 feet: DOLOMITE, gray, hard, calcite filled fractures, fine grained, slight weathering. (BEDROCK)	NA	NA	NA
			45							
CB	9.7/10	S								
			50							
							@ 54.0 feet: large calcite-filled vugs and fractures with iron staining, brecciated dolomite and chert nodules, possible fracture zone (some very large pieces).			
			55							
CB	8.5/11	NA								
			60							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-9**
LOCATION	**Euharlee, Georgia**	PAGE	**4 of 4**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**689.18 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**68 feet**
LOGGED BY	**Rhonda Tinsley**	DATE COMPLETED	**11/13/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1504909.12; Easting: 2066143.27**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
CB		S	65			VOID VOID	**41.0 to 68.0 feet: DOLOMITE**, continued. @ 61.0 to 63.0 feet: VOID. @ 65.0 to 68.0 feet: VOID.	NA	NA	NA
			70 75 80				Total depth: 68.0 feet.			

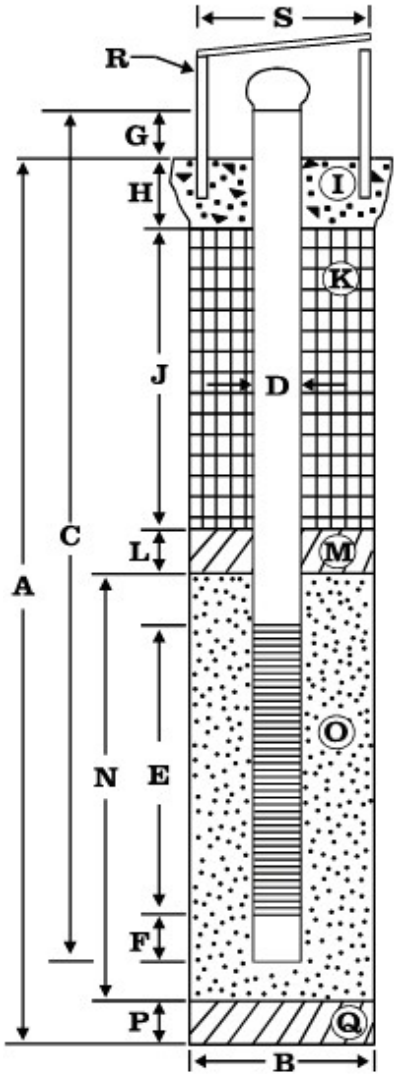
REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Well construction Log revised with new survey data dated 6/10/2020.

WELL DETAILS

Project Number:	151114-03	Boring/Well No.:	BGWC-9
Client Name:	Southern Company	Top of Casing Elev.:	691.93 ft. NAVD88
Project Name:	Plant Bowen Hydrogeologic Investigation	Ground Surface Elev.:	689.4 ft. NAVD88
		Installation Date:	11/13/15
Location:	Euharlee, Georgia	Driller:	Cascade Drilling
			Jimmy Hall, Jr., Driller



	Depth (feet)	Elevation (feet, NAVD88)
S	+3.1	692.5
R	+2.9	691.93
G	0.0	689.03
H	1.0	688.03
J	35.0	654.03
	43.0	646.03
L	47.5	641.53
	50.7	638.33
N, E	60.7	628.33
F	61.0	628.03
	61.0	628.03
P	68.0	621.03

EXPLORATORY BORING

A. Total depth:	68.0 ft.
B. Diameter:	6 in.
Drilling method:	Rotosonic

WELL CONSTRUCTION

C. Well casing length:	63.9 ft.
Well casing material:	Schedule 40 PVC
D. Well casing diameter:	2 in.
E. Well screen length:	10.0 ft.
Well screen type:	3.5-inch OD U-Pak PVC
Well screen slot size:	0.010 in.
F. Well sump/end cap length	0.3 ft.
G. Well casing height (stickup):	2.9 ft.
H. Surface seal thickness:	1.0 ft.
I. Surface seal material:	Concrete
J. Annular seal thickness:	42.0 ft.
K. Annular seal material:	Bentonite grout (1.0-35.0 ft.)
	Bentonite chips (35.0-43.0 ft.)
L. Filter pack seal thickness:	3.5 ft.
M. Filter pack seal material:	Bentonite pellets
N. Sand pack thickness:	12.5 ft.
O. Sand pack material:	#1 Silica sand
P. Bottom material thickness:	8.0 ft.
Q. Bottom material:	Bentonite chips
R. Protective casing material:	Aluminum
S. Protective casing diameter:	Square – 4 in.
Well centralizer depths:	NA

NOTES:

OD = Outside diameter. PVC = Polyvinyl chloride.
Bentonite pellets allowed to hydrate for 1 hour.
Bentonite chips allowed to hydrate for over 4 hours.
NAVD88 = North American Vertical Datum of 1988.

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-10**
LOCATION	**Euharlee, Georgia**	PAGE	**1 of 4**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**683.39 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**67 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**10/07/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1505033.22; Easting: 2066081.09**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
CB	8.1/7.0	N					**0 to 0.8 foot: GRAVEL (GW)**, gray, loose, wet, angular, road base.	100	0	0
							@ 0 to 0.2 foot: grass and topsoil.	0	0	100
							0.8 to 9.7 feet: CLAY (CH), yellowish red with dark red and tan mottling, stiff, high plasticity, trace silt in zones, occasional coarse sand grain size white nodules. (RESIDUAL)			
							@ 0.8 to 1.0 foot: moist, dry below.			
			5							
CB	11.8/10	N								
			10				**9.7 to 26.1 feet: SILTY CLAY (CH)**, light yellowish red with dark red and tan patches, moist, soft to stiff, moderately plastic. (RESIDUAL)	0	0	100
							@ 14.0 feet: trace sand, trace dark gray specs.			
			15				@ 16.2 to 16.5 feet: friable, dry, breaks apart in horizontal layers.			
CB	10.9/10	N					@ 17.0 to 27.0 feet: occasional chert nodules.			
			20							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-10**
LOCATION	**Euharlee, Georgia**	PAGE	**2 of 4**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**683.39 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**67 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**10/07/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1505033.22; Easting: 2066081.09**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		N			0 30 60 90 120 150		**9.7 to 26.1 feet: SILTY CLAY (CH)**, continued.	0	0	100
			25				@ 23.7 to 26.1 feet: very soft, low plasticity, trace sand, mottled orange and white.			
							26.1 to 45.9 feet: CLAY (CH), light reddish brown with occasional red and gray mottling, high plasticity, moist, stiff, trace chert nodules. (RESIDUAL)	0	0	100
CB	10.8/10	N	30							
			35							
CB	9.8/10	N					@ 37.0 feet: abundant chert nodules.			
			40							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-10**
LOCATION	**Euharlee, Georgia**	PAGE	**3 of 4**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**683.39 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**67 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**10/07/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1505033.22; Easting: 2066081.09**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		N			0 30 60 90 120 150		**26.1 to 45.9 feet: CLAY (CH)**, continued.	0	0	100
		N	45				@ 44.8 to 45.2 feet: dark grayish brown, silt layer with light gray nodules. @ 45.2 to 45.9 feet: clay with angular gravel, stiff, dry.			
		S					**45.9 to 57.8 feet: DOLOMITE**, dark gray, hard, dense, occasional white laminations, sample is heavily disturbed from coring, no voids, very fine grained crystals, individual beds range from 0.5- to 8-inches thick, breakage along bedding planes. (BEDROCK)	NA	NA	NA
CB	6.2/10	S	50				@ 45.9 to 47.0 feet: heavily weathered, possible grout bleed. @ 47.0 to 57.8 feet: unweathered. @ 47.4 to 48.4 feet: color change to light gray. @ 51.4 to 54.6 feet: chert nodules and dolomite in calcite matrix; possible fracture zone. @ 51.4 to 57.8 feet: abundant calcite veins, effervesces.			
CB	10/10	S	55							
		E					**57.8 to 60.7 feet: LIMESTONE**, dark gray with white powdery surface, hard, dense, abundant calcite veins, effervesces readily, microcrystalline. (BEDROCK)	NA	NA	NA
			60							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-10**
LOCATION	**Euharlee, Georgia**	PAGE	**4 of 4**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**683.39 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**67 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**10/07/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1505033.22; Easting: 2066081.09**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		E					**57.8 to 60.7 feet: LIMESTONE**, continued.	NA	NA	NA
		S					**60.7 to 67.0 feet: DOLOMITE**, dark gray, hard, very fine grained crystals, no voids, occasional calcite veins, unweathered, breakage along bedding planes, possible slickensides observed, individual beds are 0.5- to 8.0-inches thick. (BEDROCK)	NA	NA	NA
			65							
							Total depth: 67.0 feet.			
			70							
			75							
			80							

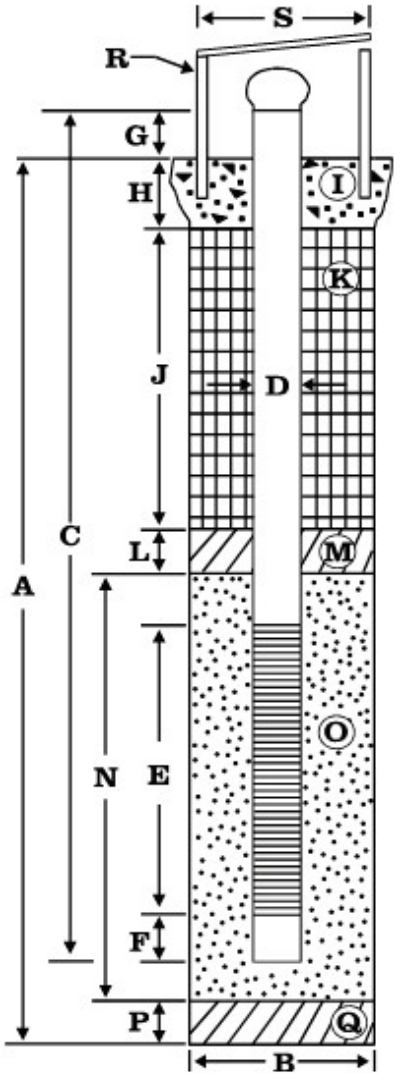
REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Well construction Log revised with new survey data dated 6/10/2020.

WELL DETAILS

Project Number:	151114-03	Boring/Well No.:	BGWC-10
Client Name:	Southern Company	Top of Casing Elev.:	686.06 ft. NAVD88
Project Name:	Plant Bowen Hydrogeologic Investigation	Ground Surface Elev.:	683.6 ft. NAVD88
		Installation Date:	10/06/15
Location:	Euharlee, Georgia	Driller:	Cascade Drilling
			Leon Logan, Driller



	Depth (feet)	Elevation (feet, NAVD88)
S	+3.2	686.8
R	+3.0	686.06
G	0.0	683.06
H	1.0	682.06
K		
J	40.0	643.06
D		
C		
L	44.7	638.36
M	47.8	635.26
A	49.4	633.66
N		
E		
O		
F	59.4	623.66
	59.7	623.36
P	61.0	622.06
Q	67.0	616.06
B		

EXPLORATORY BORING

A. Total depth:	67.0 ft.
B. Diameter:	6 in.
Drilling method:	Rotosonic

WELL CONSTRUCTION

C. Well casing length:	62.7 ft.
Well casing material:	Schedule 40 PVC
D. Well casing diameter:	2 in.
E. Well screen length:	10.0 ft.
Well screen type:	3.5-inch OD U-Pak PVC
Well screen slot size:	0.010 in.
F. Well sump/end cap length	0.3 ft.
G. Well casing height (stickup):	3.0 ft.
H. Surface seal thickness:	1.0 ft.
I. Surface seal material:	Concrete
J. Annular seal thickness:	43.7 ft.
K. Annular seal material:	Cement/bentonite grout (1.0-40.0 ft.)
	Bentonite chips (40.0-59.8 ft.)
L. Filter pack seal thickness:	3.1 ft.
M. Filter pack seal material:	Bentonite pellets
N. Sand pack thickness:	13.2 ft.
O. Sand pack material:	#1 Silica sand
P. Bottom material thickness:	6.0 ft.
Q. Bottom material:	Bentonite chips
R. Protective casing material:	Aluminum
S. Protective casing diameter:	Square – 4 in.
Well centralizer depths:	NA

NOTES:

OD = Outside diameter. PVC = Polyvinyl chloride.
Bentonite pellets allowed to hydrate for 1 hour.
Bentonite chips allowed to hydrate for over 8 hours.
NAVD88 = North American Vertical Datum of 1988.

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-12**
LOCATION	**Euharlee, Georgia**	PAGE	**1 of 5**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**691.71 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**85.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**10/21/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1505279.88; Easting: 2065908.56**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
CB	5.8/5.5	N					**0 to 0.6 foot: TOPSOIL.**	0	0	100
							0.6 to 48.4 feet: CLAY (CH), dark red, moist, stiff, high plasticity, occasional white chert nodules. (RESIDUAL)	0	0	100
			5							
CB	11.3/10	N					@ 5.5 feet: color change to light brownish red with tan mottling, consistency change to very stiff, dry.			
			10							
			15							
CB	11/10	N								
			20							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-12**
LOCATION	**Euharlee, Georgia**	PAGE	**2 of 5**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**691.71 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**85.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**10/21/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1505279.88; Easting: 2065908.56**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
							0.6 to 48.4 feet: CLAY (CH), continued.	0	0	100
							@ 22.9 feet: moist, consistency change to firm.			
			25				@ 24.5 to 24.6 feet: silt layer; yellowish brown with white mottling; no plasticity.			
CB	11.3/10	N					@ 25.5 feet: color change to light yellowish brown with red mottling.			
			30				@ 29.9 feet: color change to light reddish brown.			
							@ 32.9 feet: color change to light brown with tan and dark brown mottling, brown colored fraction is silty.			
			35				@ 35.2 feet: fine sand seam.			
CB	11.7/10	N								
			40				@ 39.5 feet: consistency change to soft.			

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-12**
LOCATION	**Euharlee, Georgia**	PAGE	**3 of 5**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**691.71 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**85.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**10/21/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1505279.88; Easting: 2065908.56**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
					0 30 60 90 120 150		**0.6 to 48.4 feet: CLAY (CH)**, continued. @ 41.7 feet: consistency change to firm. @ 44.4 feet: seam of fine gravel-sized granular brownish gray material. @ 45.0 feet: same as above.	0	0	100
			45							
CB	8.0/10	N								
		N					**48.4 to 51.1 feet: GRAVELLY CLAY (CH)**, brownish red, wet, soft, moderate plasticity, gravel is angular, fine to cobble-sized, heavily weathered dolomite. (VOID INFILL)	40	0	60
			50							
		N					**51.1 to 56.6 feet: CLAYEY GRAVEL (GC)**, gray and brownish red, gravel is gray, fine to cobble-sized, angular, heavily weathered dolomite, clay is brownish red, moderate plasticity, soft, wet. (VOID INFILL) @ 51.6 to 51.9 feet: sandy interval, gray sand, does not effervesce. @ 52.8 to 53.1 feet: gray sandy interval, as above.	80	0	20
			55							
CB	9.1/10	S					**56.6 to 60.0 feet: DOLOMITE**, light gray with red discolorations, abundant voids filled with calcite, heavily weathered. (BEDROCK)	NA	NA	NA
			60							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-12**
LOCATION	**Euharlee, Georgia**	PAGE	**4 of 5**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**691.71 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**85.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**10/21/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1505279.88; Easting: 2065908.56**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		NA				VOID	@ 60.0 to 62.0 feet: driller noted a 3-foot void from approximately 60.0 to 63.0 feet bgs. Bottom foot of void filled with gravelly clay and sand.	NA	NA	NA
		E					**62.0 to 66.5 feet: CLAYEY SILTY GRAVELLY SAND (SP/CH)**, mixed red, dark gray and light brown. Sand is light brown to dark gray, fine grained. Silt is dark gray, compact, no plasticity. Gravel is weathered dolomite (effervesces readily). Clay is red with moderate plasticity. (VOID INFILL)	30	50	20
			65				@ 63.0 to 66.5 feet: wet, soupy, very soft.			
CB	3.5/6.5									
		S					**66.5 to 67.0 feet: DOLOMITE**. (BEDROCK)	NA	NA	NA
		NA				VOID	@ 67.0 to 69.0 feet: void.			
		E					**69.0 to 70.6 feet: SAND WITH SILT AND GRAVEL (SP-SM)**, sand is brown to light gray, fine to medium grained, silt is light gray, compact, gravel is weathered dolomite, effervesces readily. (VOID INFILL)	30	50	20
			70							
		S					**70.6 to 75.5 feet: DOLOMITE**, gray, slightly weathered, medium grained, small voids, bedding planes and fractures filled with coarse grained white and pink colored calcite crystals. (BEDROCK)	NA	NA	NA
CB	2.7/3.5									
			75							
CB	9.2/10	N					**75.5 to 83.8 feet: CLAY WITH GRAVEL AND SAND (CH)**, light red, wet, soft. Gravel is weathered dolomite, sand is dark gray, fine grained. (VOID INFILL)	20	10	70
							@ 76.9 to 77.0 feet: sand layer.			
			80							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-12**
LOCATION	**Euharlee, Georgia**	PAGE	**5of 5**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**691.71 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**85.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**10/21/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1505279.88; Easting: 2065908.56**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		N					**75.5 to 83.8 feet: CLAY WITH GRAVEL AND SAND (CH)**, continued. @ 80.2 to 80.3 feet: sand layer. @ 81.0 to 81.1 feet: light gray silt layer. @ 81.8 to 81.9 feet: sand layer. @ 82.8 to 83.1 feet: sand layer.	20	10	70
		S	85				**83.8 to 85.5 feet: DOLOMITE**, light gray with red discolorations, abundant voids filled with calcite, heavily weathered. (BEDROCK)	NA	NA	NA
			90				Total depth: 85.5 feet.			
			95							
			100							

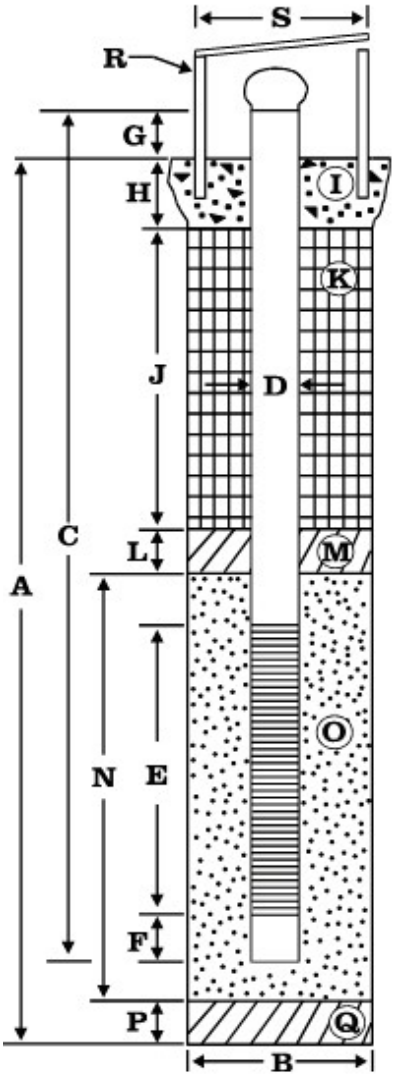
REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Well construction Log revised with new survey data dated 6/10/2020.

WELL DETAILS

Project Number:	151114-03	Boring/Well No.:	BGWC-12
Client Name:	Southern Company	Top of Casing Elev.:	694.41 ft. NAVD88
Project Name:	Plant Bowen Hydrogeologic Investigation	Ground Surface Elev.:	691.9 ft. NAVD88
		Installation Date:	10/21/15
Location:	Euharlee, Georgia	Driller:	Cascade Drilling
			David Wilcox, Driller



	Depth (feet)	Elevation (feet, NAVD88)
S	+3.3	695.2
R	+3.1	694.41
G	0.0	691.31
H	1.0	690.31
J	40.0	651.31
C	59.8	631.51
L	62.8	628.51
M	65.3	626.01
N		
E		
O		
F	75.3	616.01
	75.6	615.71
P	76.7	614.61
Q	85.5	605.81
B		

EXPLORATORY BORING

A. Total depth:	85.5 ft.
B. Diameter:	6 in.
Drilling method:	Rotosonic

WELL CONSTRUCTION

C. Well casing length:	78.7 ft.
Well casing material:	Schedule 40 PVC
D. Well casing diameter:	2 in.
E. Well screen length:	10.0 ft.
Well screen type:	3.5-inch OD U-Pak PVC
Well screen slot size:	0.010 in.
F. Well sump/end cap length	0.3 ft.
G. Well casing height (stickup):	3.1 ft.
H. Surface seal thickness:	1.0 ft.
I. Surface seal material:	Concrete
J. Annular seal thickness:	58.8 ft.
K. Annular seal material:	Cement/bentonite grout (1.0-40.0 ft.)
	Bentonite chips (40.0-59.8 ft.)
L. Filter pack seal thickness:	3.0 ft.
M. Filter pack seal material:	Bentonite pellets
N. Sand pack thickness:	13.9 ft.
O. Sand pack material:	#1 Silica sand
P. Bottom material thickness:	8.8 ft.
Q. Bottom material:	Bentonite chips
R. Protective casing material:	Aluminum
S. Protective casing diameter:	Square – 4 in.
Well centralizer depths:	NA

NOTES:

OD = Outside diameter. PVC = Polyvinyl chloride.
Bentonite pellets allowed to hydrate for 1 hour.
Bentonite chips allowed to hydrate for over 8 hours.
NAVD88 = North American Vertical Datum of 1988.

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

BGWC-14A

CLIENT Southern Company Services
PROJECT NAME Bowen Groundwater SRV-AP1
PROJECT NUMBER GW6581C
PROJECT LOCATION Euharlee, GA
DATE STARTED 5/4/20 **COMPLETED** 5/4/20
NORTHING 1505398.53 ft **EASTING** 2065015.97 ft
DRILLER Cascade Drilling
GROUND ELEVATION 715.57 ft **BORING DIAMETER** 6 in
DRILLING METHOD Sonic
TOP OF CASING ELEVATION 718.33 ft
SAMPLING METHOD 4" core 6" override
GEOPHYSICAL CONTRACTOR ---
RIG TYPE Terra Sonic Full Size Track Mounted Rig
LOGGED BY C. Hug **CHECKED BY** J. Ivanowski

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
0				Hydro Excavation (0-12 ft) NO SAMPLE	
	710				
10				703.6	
				CLAY, Yellowish red (5YR 5/8) and reddish yellow (5YR 6/8) mottled, medium to high plasticity, firm to stiff, with trace of fine, angular limestone gravel. From 16 ft: Reddish yellow, high plasticity, trace of fine sand, stiff.	Schedule 40 PVC 2"
	700			697.1	
20				CLAYEY SAND, Yellowish red (5YR 5/8) and reddish yellow (5YR 6/8) mottled, fine grained, subrounded to subangular, quartz, wet.	Aquaguard Sodium Bentonite Grout
				694.6	
				CLAY, Yellowish red (5YR 5/8) and reddish yellow (5YR 6/8) mottled, high plasticity, trace fine sand, trace fine, gray limestone gravel.	
	690			688.6	
				SANDY CLAY, Yellowish brown (10YR 5/8), yellow (10YR 7/8), and yellowish red (5 YR 5/8), low plasticity, sand is fine grained, subangular, quartz, soft, moist. From 29 ft: With light gray mottling and red bands, soft, residual soil.	
30				679.6	
	680			SILTY CLAY, Reddish yellow (7.5 YR 7/8) and yellowish red (5YR 5/8) mottled, minor light gray, soft, low to medium plasticity, with limestone fragments up to 3 inch long. From 39 ft: Becoming more silty, bordering clayey silt.	
				674.6	
40				SILT, Reddish yellow (7.5 YR 7/8) and yellowish red (5YR 5/8) mottled, minor light gray, soft, non plastic to low plasticity, with limestone fragments up to 3 inch long.	Bentonite uncoated 3/8" chips
				669.6	
	670			SILTY CLAY, Yellowish red (5YR 5/8), medium to high plasticity, with limestone fragments up to 4 inch long and some fine sand.	

(Continued Next Page)

Geosyntec consultants
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Kennesaw, GA 30144

CLIENT Southern Company Services **PROJECT NAME** Bowen Groundwater SRV-AP1

PROJECT NUMBER GW6581C **PROJECT LOCATION** Euharlee, GA

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
50				SILTY CLAY, Yellowish red (5YR 5/8), medium to high plasticity, with limestone fragments up to 4 inch long and some fine sand. *(continued)*	
		56.5 ft: Driller reported no returns, no resistance on 4" rod. Six inch override scratching sides when advanced with no drilling effort.		661.6	
	660			SILTY CLAY with GRAVEL, Light olive brown (2.5Y 5/6) and yellow (2.5Y 7/8), very fine sand, with some silt and clay, with angular limestone fragments up to 1.5 inch long.	Bentonite uncoated 3/8" chips
				659.1	
60				VOID (56.5 to 70 ft)	
	650				
70		70 ft: Moderately hard drilling. 74 ft: Driller reported no returns, no resistance on 4" rod. Six inch override scratching sides when advanced with no drilling effort.		645.6	
				LIMESTONE/DOLOMITE, Dark gray and dark bluish gray, massive to thinly bedded, highly fractured, with fine calcite veins throughout, with secondary mineralization along fracture planes, recovered as gravel sized, subrounded pieces of limestone and disc-shaped core fragments. With horizontal and vertical fracture planes, fresh to slightly weathered.	
	640			642.1	
				VOID (73.5 to 78 ft)	
				637.6	
80				LIMESTONE/DOLOMITE, Dark gray and dark bluish gray, massive to thinly bedded, highly fractured, with fine calcite veins throughout, with secondary mineralization along fracture planes, recovered as gravel sized, subrounded pieces of limestone and disc-shaped core fragments. With horizontal and vertical fracture planes, fresh to slightly weathered.	Bentonite coated 3/8" pellets
	630	86 to 89 ft: Driller getting returns. 89-96ft: No returns. 86 to 96 ft: No voids reported.			
90				89 ft: Larger pieces of core recovered up to 4 inch length, massive, fresh, dolomitic, with fine white calcite veins.	20/40 Silica Sand 0.010 slot size 2" Pre Pack, U-Pack Screen
	620			619.57	

Bottom of borehole at 96.0 feet.

Easting and Northing in NAD 1983.
Elevation in NAVD 88.

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-16**
LOCATION	**Euharlee, Georgia**	PAGE	**1 of 3**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**671.65 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**47 feet**
LOGGED BY	**Rhonda Tinsley**	DATE COMPLETED	**11/12/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1504656.42; Easting: 2064247.67**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
NA	NA	NA			0 30 60 90 120 150		**0 to 20.0 feet: CLAY (CH)**, yellowish brown, stiff, mottled. (RESIDUAL) (0 to 10.0 feet: vacuumed for utility clearance.)	0	0	100
			5							
CB	8.5/10	N	10							
			15							
CB	9.0/10	NA								
			20							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-16**
LOCATION	**Euharlee, Georgia**	PAGE	**2 of 3**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**671.65 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**47 feet**
LOGGED BY	**Rhonda Tinsley**	DATE COMPLETED	**11/12/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1504656.42; Easting: 2064247.67**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
							20.0 to 21.5 feet: SAND (SP), loose, fine grained, stiff.	0	0	100
							21.5 to 24.0 feet: DOLOMITE, white, pulverized due to dry sonic drilling, weathered. (WEATHERED BEDROCK)	NA	NA	NA
		S	25				**24.0 to 31.0 feet: CLAY WITH GRAVEL (CH)**, yellowish brown, wet, gravel composed of dolomite. (VOID INFILL)	NA	NA	NA
CB	8.5/10	E								
			30				**31.0 to 32.0 feet: SAND (SP)**, white to light gray, loose. (VOID INFILL)	40	60	0
							32.0 to 40.0 feet: DOLOMITE, gray, hard, with many calcite-filled fractures. (BEDROCK)	NA	NA	NA
			35							
CB	7.6/10	S					@ 37.0 feet: dolomite is weathered, fractured, and water stained with vugs, possible breccia.			
			40							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-16**
LOCATION	**Euharlee, Georgia**	PAGE	**3 of 3**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**671.65 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**47 feet**
LOGGED BY	**Rhonda Tinsley**	DATE COMPLETED	**11/12/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1504656.42; Easting: 2064247.67**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
CB		S	45				**40.0 to 46.0 feet: SILTY SAND WITH GRAVEL (SM)**, mottled brown and yellowish brown, loose, gravel composed of dolomite. (VOID INFILL)	20	60	20
		N					**46.0 to 47.0 feet: CLAY WITH GRAVEL (CH)**, yellowish brown, stiff, dolomite gravel. (VOID INFILL)	NA	NA	NA
			50				Total depth: 47.0 feet.			
			55							
			60							

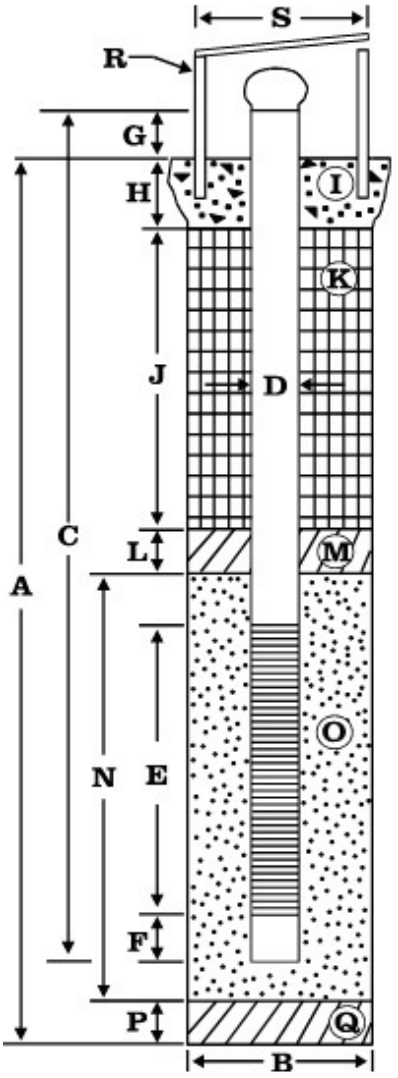
REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Well construction Log revised with new survey data dated 6/10/2020.

WELL DETAILS

Project Number:	151114-03	Boring/Well No.:	BGWC-16
Client Name:	Southern Company	Top of Casing Elev.:	674.31 ft. NAVD88
Project Name:	Plant Bowen Hydrogeologic Investigation	Ground Surface Elev.:	671.7 ft. NAVD88
		Installation Date:	11/12/15
Location:	Euharlee, Georgia	Driller:	Cascade Drilling
			Jimmy Hall, Jr., Driller



	Depth (feet)	Elevation (feet, NAVD88)
S	+3.2	674.9
R	+3.1	674.31
G	0.0	671.21
H	1.0	670.21
K		
J	15.0	656.21
D		
C		
L	30.0	641.20
M	34.0	637.21
A	35.9	635.31
N		
E		
O		
F	45.9	625.31
	46.2	625.01
P	47.0	624.21
Q	NA	NA
B		

EXPLORATORY BORING

A. Total depth:	47.0 ft.
B. Diameter:	6 in.
Drilling method:	Rotosonic

WELL CONSTRUCTION

C. Well casing length:	49.2 ft.
Well casing material:	Schedule 40 PVC
D. Well casing diameter:	2 in.
E. Well screen length:	10.0 ft.
Well screen type:	3.5-inch OD U-Pak PVC
Well screen slot size:	0.010 in.
F. Well sump/end cap length	0.3 ft.
G. Well casing height (stickup):	3.0 ft.
H. Surface seal thickness:	1.0 ft.
I. Surface seal material:	Concrete
J. Annular seal thickness:	29.0 ft.
K. Annular seal material:	Bentonite grout (1.0-15.0 ft.)
	Bentonite chips (15.0-30.0 ft.)
L. Filter pack seal thickness:	4.0 ft.
M. Filter pack seal material:	Bentonite pellets
N. Sand pack thickness:	13.0 ft.
O. Sand pack material:	#1 Silica sand
P. Bottom material thickness:	NA
Q. Bottom material:	NA
R. Protective casing material:	Aluminum
S. Protective casing diameter:	Square – 4 in.
Well centralizer depths:	NA

NOTES:

OD = Outside diameter. PVC = Polyvinyl chloride.
Bentonite pellets allowed to hydrate for 1 hour.
Bentonite chips allowed to hydrate for over 8 hours.
NAVD88 = North American Vertical Datum of 1988.

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-17**
LOCATION	**Euharlee, Georgia**	PAGE	**1 of 4**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**671.25 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**66.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**10/22/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1504432.00; Easting: 2064259.38**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
CB	8.7/6.5	N			0 30 60 90 120 150		**0 to 1.1 feet: TOPSOIL**, dark grayish brown, silt, abundant plant debris.	NA	NA	NA
		N					**1.1 to 12.6 feet: GRAVELLY SANDY SILT (ML)**, light brown, loose, dry, crumbly, does not effervesce, gravel is rounded to well rounded, gravel composed of chert, appears to be quartzite. (FILL) @ 2.3 to 2.5 feet: dark gray silt layer, plant debris.	25	25	50
			5							
CB	12.7/10	N								
			10							
		N					**12.6 to 21.5 feet: CLAY (CH)**, light reddish brown, moist, stiff, high plasticity, occasional chert nodules, trace white and gray granular material, soft. (RESIDUAL) @ 15.5 feet: soft, wet.	0	0	100
			15							
CB	11.1/10									
		E					@ 18.9 20 20.1 feet: silty clay, effervesces readily.			
			20							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-17**
LOCATION	**Euharlee, Georgia**	PAGE	**2 of 4**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**671.25 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**66.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**10/22/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1504432.00; Easting: 2064259.38**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		W					**12.6 to 21.5 feet: CLAY (CH)**, continued. @ 20.1 to 21.5 feet: very wet; soupy, effervesces weakly.	0	0	100
		N					**21.5 to 23.5 feet: CLAYEY GRAVEL (GC)**, light reddish brown, wet, fine to cobble angular dolomite gravel, low plasticity, very wet clay. (VOID INFILL)	80	0	20
		N	25				**23.5 to 30.6 feet: CLAY (CH)**, red, with abundant chert nodules, wet, high plasticity, firm, significant amounts of "grout bleed" in interval. (RESIDUAL)	0	0	100
CB	10.7/10									
		N	30				**30.6 to 34.8 feet: CLAY WITH GRAVEL (CH)**, light brownish red, wet, high plasticity, soft, gravel composed of weathered dolomite. (VOID INFILL)	10	0	90
		SW	35				**34.8 to 36.5 feet: DOLOMITE**, gray, moderately well weathered, medium-grained crystals, few intact beds remain, approximately 1- to 2-inches thick. (BEDROCK)	NA	NA	NA
CB	7.9/10	N					@ 34.8 to 35.5 feet: zone of mixed clay and heavily weathered dolomite.	25	0	75
			40				**36.5 to 42.1 feet: GRAVELLY CLAY (CH)**, light brownish red, wet, very soft, high plasticity clay, gravel is weathered dolomite, some beds can be observed, approximately 2- to 4-inches thick, effervesces weakly. (WEATHERED BEDROCK)			

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-17**
LOCATION	**Euharlee, Georgia**	PAGE	**3 of 4**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**671.25 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**66.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**10/22/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1504432.00; Easting: 2064259.38**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		W					**36.5 to 42.1 feet: GRAVELLY CLAY (CH)**, continued.	25	0	75
		E	45				**42.1 to 46.5 feet: SANDY GRAVEL WITH CLAY (GW-GC)**, reddish brown grading to grayish brown, loose, wet, gray fraction may be ash?, effervesces readily. (VOID INFILL) @ 45.5 to 46.5 feet: possible ash layer.	50	30	20
CB	8.6/10	W					**46.5 to 49.6 feet: CLAYEY GRAVEL (GC)**, light brownish red, wet, gravel is fine to cobble-sized, angular dolomite, clay is moderate plasticity, very soft. (WEATHERED BEDROCK)	80	0	20
		E	50				**49.6 to 50.8 feet: CLAY WITH SAND AND GRAVEL (CH)**, light brownish red and dark brown mixed, high plasticity clay, soft, wet, sand is dark brown, fine grained, gravel is fine to coarse, angular, effervesces readily. (VOID INFILL)	20	20	60
							50.8 to 52.4 feet: CLAY WITH GRAVEL (CH), brownish red, stiff, moist, high plasticity, occasional fine to coarse gravel. (VOID INFILL)	20	0	80
		S					**52.4 to 66.5 feet: DOLOMITE**, light gray, heavily weathered, abundant calcite-filled voids, few unweathered beds remain, approximately 1- to 2-inches thick, breakage along bedding planes. (BEDROCK) @ 52.4 to 53.6 feet: heavily weathered. @ 53.6 to 55.1 feet: moderately weathered. @ 55.1 to 56.5 feet: heavily weathered.	NA	NA	NA
CB	11.3/10	E	55				@ 58.1 to 59.3 feet: zone of heavily weathered dolomite, readily effervesces, light brown, wet, soft, dolomite easily broken by hand, trace sand. (WEATHERED BEDROCK)			
		S	60							

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ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-17**
LOCATION	**Euharlee, Georgia**	PAGE	**4 of 4**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**671.25 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**66.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**10/22/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1504432.00; Easting: 2064259.38**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		S	65			VOID	**52.4 to 66.5 feet: DOLOMITE**, continued. @ 59.3 to 66.5 feet: dolomite, weathered, dry sonic drilling pulverized most of sample, fine grained crystals, abundant calcite-filled fractures and voids. @ 60.0 to 62.0 feet: void was reported by driller.	NA	NA	NA
			70							
			75							
			80							

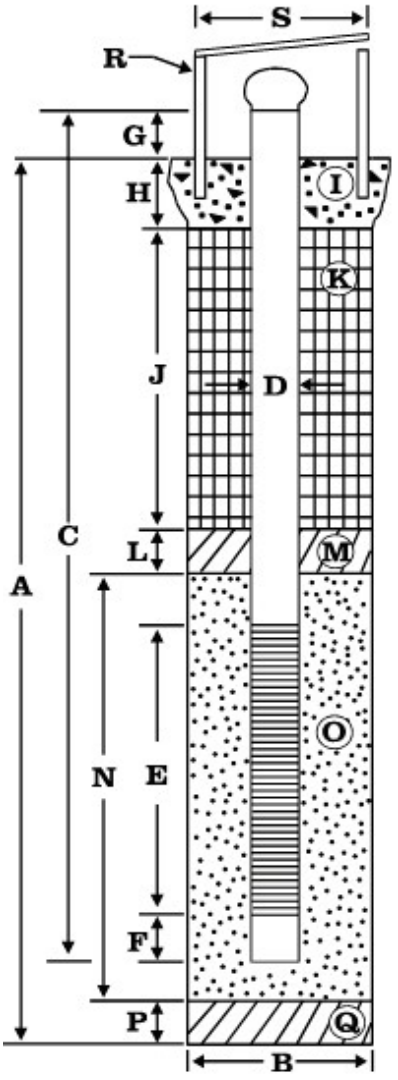
REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Well construction Log revised with new survey data dated 6/10/2020.

WELL DETAILS

Project Number:	151114-03	Boring/Well No.:	BGWC-17
Client Name:	Southern Company	Top of Casing Elev.:	673.65 ft. NAVD88
Project Name:	Plant Bowen Hydrogeologic Investigation	Ground Surface Elev.:	671.3 ft. NAVD88
		Installation Date:	10/22/15
Location:	Euharlee, Georgia	Driller:	Cascade Drilling
			David Wilcox, Driller



	Depth (feet)	Elevation (feet, NAVD88)
S	+2.8	674.1
R	+2.6	673.65
G	0.0	671.05
H	1.0	670.05
J	20.2	650.85
C	48.5	622.55
L	53.6	617.45
M	55.7	615.35
N		
E		
O		
F	65.7	605.35
	66.0	605.05
P	66.5	604.55
Q	NA	NA
B		

EXPLORATORY BORING

A. Total depth:	66.5 ft.
B. Diameter:	6 in.
Drilling method:	Rotosonic

WELL CONSTRUCTION

C. Well casing length:	68.6 ft.
Well casing material:	Schedule 40 PVC
D. Well casing diameter:	2 in.
E. Well screen length:	10.0 ft.
Well screen type:	3.5-inch OD U-Pak PVC
Well screen slot size:	0.010 in.
F. Well sump/end cap length	0.3 ft.
G. Well casing height (stickup):	2.6 ft.
H. Surface seal thickness:	1.0 ft.
I. Surface seal material:	Concrete
J. Annular seal thickness:	47.5 ft.
K. Annular seal material:	Cement/bentonite grout (1.0-20.2 ft.)
	Bentonite chips (20.2-48.5 ft.)
L. Filter pack seal thickness:	5.1 ft.
M. Filter pack seal material:	Bentonite pellets
N. Sand pack thickness:	12.9 ft.
O. Sand pack material:	#1 Silica sand
P. Bottom material thickness:	NA.
Q. Bottom material:	NA
R. Protective casing material:	Aluminum
S. Protective casing diameter:	Square – 4 in.
Well centralizer depths:	NA

NOTES:

OD = Outside diameter. PVC = Polyvinyl chloride.
Bentonite pellets allowed to hydrate for 1 hour.
Bentonite chips allowed to hydrate for over 8 hours.
NAVD88 = North American Vertical Datum of 1988.

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-18**
LOCATION	**Euharlee, Georgia**	PAGE	**1 of 3**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**670.32 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**46.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**10/13/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1504118.73; Easting: 2064257.00**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
CB	6.5/6.5	N			0 30 60 90 120 150		**0 to 8.4 feet: SILT (ML)**, light brownish gray, very stiff, dry, no plasticity, crumbles under pressure, trace red coloration in small veins and filament-like veins, one piece of vegetation (rootlet) at 5.1 feet. (RESIDUAL) @ 0 to 0.5 foot: abundant rootlets.	0	0	100
			5							
CB	11.3/10	N								
							8.4 to 21.6 feet: SILTY CLAY (CH), light brownish gray with red mottling, dry, stiff, medium plasticity. (RESIDUAL) @ 12.0 feet: moist, firm. @ 13.2 feet: wet, soft.	0	0	100
			10							
			15							
CB	8.1/10	N					@ 16.5 to 21.6 feet: abundant chert nodules, color change to light reddish brown.			
			20							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-18**
LOCATION	**Euharlee, Georgia**	PAGE	**2 of 3**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**670.32 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**46.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**10/13/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1504118.73; Easting: 2064257.00**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		N					**8.4 to 21.6 feet: SILTY CLAY (CH)**, continued.	0	0	100
		S	25				**21.6 to 29.0 feet: DOLOMITE**, light gray, hard, dense, wet, moderately weathered, fine grained, abundant rust colored discoloration on surfaces, identifiable beds are between 1- and 4-inches thick, breakage along bedding planes. (BEDROCK)	NA	NA	NA
CB	6.6/10	S								
		NA	30			VOID	@ 29.0 to 33.0 feet: driller notes void.			
		N	35				**33.0 to 39.0 feet: GRAVELLY CLAY (CH)**, light reddish brown, soft, wet, moderate plasticity, gravel is angular, well graded, fine to cobble-size dolomite. (VOID INFILL)	30	0	70
CB	6.2/10	N								
			40				**39.0 to 46.5 feet: CLAYEY GRAVEL (GC)**, description on next page.	60	0	40

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-18**
LOCATION	**Euharlee, Georgia**	PAGE	**3 of 3**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**670.32 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**46.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**10/13/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1504118.73; Easting: 2064257.00**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		N	45		0 30 60 90 120 150		**39.0 to 46.5 feet: CLAYEY GRAVEL (GC)**, light reddish brown, wet, well graded, fine to cobble size, angular dolomite gravel, very soft, moderate plasticity clay. (VOID INFILL)	60	0	40
			50				Total depth: 46.5 feet.			
			55							
			60							

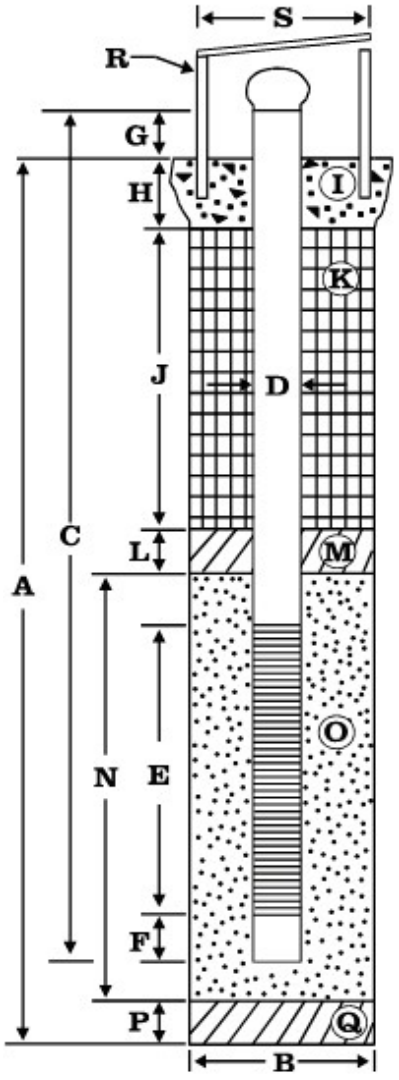
REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Well construction Log revised with new survey data dated 6/10/2020.

WELL DETAILS

Project Number:	151114-03	Boring/Well No.:	BGWC-18
Client Name:	Southern Company	Top of Casing Elev.:	672.88 ft. NAVD88
Project Name:	Plant Bowen Hydrogeologic Investigation	Ground Surface Elev.:	670.3 ft. NAVD88
		Installation Date:	10/13/15
Location:	Euharlee, Georgia	Driller:	Cascade Drilling
			David Wilcox, Driller



	Depth (feet)	Elevation (feet, NAVD88)
S	+2.9	673.2
R	+2.7	672.88
G	0.0	670.18
H	1.0	669.18
J	14.5	655.68
C	19.6	650.58
L	22.8	647.38
M	25.1	645.08
N		
E		
O		
F	35.1	635.08
	35.4	634.78
P	35.8	634.38
Q	46.5	623.68
A		
B		

EXPLORATORY BORING

A. Total depth:	46.5 ft.
B. Diameter:	6 in.
Drilling method:	Rotosonic

WELL CONSTRUCTION

C. Well casing length:	38.1 ft.
Well casing material:	Schedule 40 PVC
D. Well casing diameter:	2 in.
E. Well screen length:	10.0 ft.
Well screen type:	3.5-inch OD U-Pak PVC
Well screen slot size:	0.010 in.
F. Well sump/end cap length	0.3 ft.
G. Well casing height (stickup):	2.7 ft.
H. Surface seal thickness:	1.1 ft.
I. Surface seal material:	Concrete
J. Annular seal thickness:	18.6 ft.
K. Annular seal material:	Cement/bentonite grout (1.0-14.5 ft.)
	Bentonite chips (14.5-19.6 ft.)
L. Filter pack seal thickness:	3.2 ft.
M. Filter pack seal material:	Bentonite pellets
N. Sand pack thickness:	13.0 ft.
O. Sand pack material:	#1 Silica sand
P. Bottom material thickness:	10.7 ft.
Q. Bottom material:	Bentonite chips
R. Protective casing material:	Aluminum
S. Protective casing diameter:	Square – 4 in.
Well centralizer depths:	NA

NOTES:

OD = Outside diameter. PVC = Polyvinyl chloride.
Bentonite pellets allowed to hydrate for 1 hour.
Bentonite chips allowed to hydrate for over 8 hours.
NAVD88 = North American Vertical Datum of 1988.

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-19**
LOCATION	**Euharlee, Georgia**	PAGE	**1 of 3**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**671.04 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**56.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**10/12/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1503742.25; Easting: 2064244.66**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
CB	7.3/6.5	N					**0 to 1.2 feet: TOPSOIL**, brown, soft, abundant vegetation.	0	0	100
		N					**1.2 to 3.3 feet: CLAY WITH GRAVEL (CL)**, light brown, moist, stiff, no plasticity, fine to coarse angular gray gravel. (FILL)	30	0	70
		N					@ 3.0 to 3.3 feet: clayey gravel layer.	80	0	20
			5				**3.3 to 11.6 feet: CLAY (CL)**, light brown, dry, hard, low plasticity. (RESIDUAL)	0	0	100
CB	4.4/10	N					@ 5.6 to 5.7 feet: chert nodules, white. @ 6.1 to 6.2 feet: chert nodules, white.			
			10							
							11.6 to 19.5 feet: CLAY (CH), light brown, moist, stiff, high plasticity. (RESIDUAL) @ 12.3 feet: thin layer of white, soft, granular material. @ 12.3 to 19.5 feet: occasional white chert nodules.	0	0	100
			15							
CB	5.4/10	N								
		S	20				**19.5 to 20.2 feet: DOLOMITE**, desc. on next page.	NA	NA	NA

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-19**
LOCATION	**Euharlee, Georgia**	PAGE	**2 of 3**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**671.04 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**56.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**10/12/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1503742.25; Easting: 2064244.66**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		S			0 30 60 90 120 150	VOID	**19.5 to 20.2 feet: DOLOMITE**, medium grained, highly weathered, parts are soft and crumbly. @ 20.2 to 21.7 feet: VOID, as reported by driller.	NA	NA	NA
		N					**21.7 to 24.0 feet: GRAVELLY CLAY (CH)**, light brown, wet, soft, moderate plasticity, gravel is angular, well graded, fine to cobble-sized. (VOID INFILL)	40	0	60
		S	25				**24.0 to 27.8 feet: DOLOMITE**, dark gray, partially pulverized by drilling, individual beds 1- to 5-inches thick, breakage along bedding planes, slightly weathered.	NA	NA	NA
CB	7.8/10	S					**27.8 to 30.2 feet: GRAVELLY CLAY (CH)**, light brown, wet, soft, moderate plasticity, gravel is highly weathered dolomite. (VOID INFILL)	30	0	70
		N	30				@ 30.1 to 30.2 feet: light gray sand layer.	0	0	100
		N					**30.2 to 32.1 feet: CLAY (CH)**, light reddish brown, wet, highly plastic. (RESIDUAL)			
		N					**32.1 to 32.9 feet: GRAVELLY CLAY (CH)**, same as at 27.8 to 30.2 feet. (VOID INFILL)	30	0	70
		N	35				**32.9 to 35.3 feet: CLAY (CH)**, same as at 30.2 to 32.1 feet. (RESIDUAL) @ 32.9 feet: thin light gray sand layer.	0	0	100
CB	6.0/10	N					**35.3 to 39.3 feet: CLAYEY GRAVEL (GW)**, light brown, wet, loose, well graded, fine to cobble sized dolomite gravel. (VOID INFILL)	70	0	30
			40				**39.3 to 41.7 feet: CLAY (CH)**, desc. on next page.	0	0	100

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-19**
LOCATION	**Euharlee, Georgia**	PAGE	**3 of 3**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**671.04 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**56.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**10/12/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1503742.25; Easting: 2064244.66**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		N					**39.3 to 41.7 feet: CLAY (CH)**, light yellowish red, very soft, wet, high plasticity. (VOID INFILL)	0	0	100
		S					**41.7 to 45.8 feet: DOLOMITE**, light gray, wet, pulverized by dry sonic drilling, slightly weathered. (BEDROCK)	NA	NA	NA
			45							
		N					**45.8 to 47.7 feet: CLAYEY GRAVEL (GW)**, same as at 35.9 to 39.3 feet. (VOID INFILL)	60	0	40
CB	12.0/10	N					**47.7 to 48.4 feet: SAND (SP)**, light gray, fine grained, poorly graded, does not effervesce, weakly cemented, breaks up in fingers. (VOID INFILL)	0	100	0
								60	0	40
								0	100	0
			50				**48.4 to 48.7 feet: CLAYEY GRAVEL (GW)**, same as at 45.8 to 47.7 feet. (VOID INFILL)	80	0	20
							48.7 to 49.1 feet: SAND (SP), same as at 47.7 to 48.4 feet. (VOID INFILL)			
							49.1 to 52.8 feet: CLAYEY GRAVEL (GW), light reddish brown, wet, loose, well graded, fine to cobble size.			
		S					@ 51.5 to 52.2 feet: light gray silt bandings. (VOID INFILL)	NA	NA	NA
		S					**52.8 to 56.0 feet: DOLOMITE**, gray, sample is pulverized from dry sonic drilling, hard, dense, slightly weathered. (BEDROCK)			
			55							
		S								
		N					**56.0 to 56.5 feet: DOLOMITE AND CLAY (DOL/CH)**, light reddish brown, firm, high plasticity clay, dolomite is in layers 0.1- to 0.2-feet thick with clay in between, dolomite is heavily weathered. (WEATHERED BEDROCK)	0	0	100
							Total depth: 56.5 feet.			
			60							

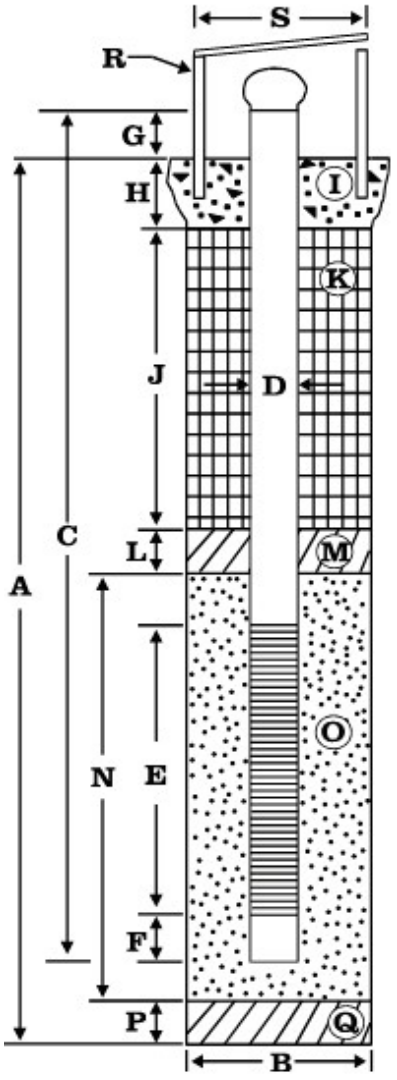
REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Well construction Log revised with new survey data dated 6/10/2020.

WELL DETAILS

Project Number:	151114-03	Boring/Well No.:	BGWC-19
Client Name:	Southern Company	Top of Casing Elev.:	673.61 ft. NAVD88
Project Name:	Plant Bowen Hydrogeologic Investigation	Ground Surface Elev.:	671.1 ft. NAVD88
		Installation Date:	10/12/15
Location:	Euharlee, Georgia	Driller:	Cascade Drilling
			Leon Logan, Driller



	Depth (feet)	Elevation (feet, NAVD88)
S	+3.2	674.3
R	+3.0	673.61
G	0.0	670.61
H	1.0	669.61
J	15.5	655.11
	36.8	633.81
L	39.8	630.81
	41.7	628.91
F	51.7	618.91
	52.0	618.61
P	52.3	618.31
B	56.5	614.11

EXPLORATORY BORING

A. Total depth:	56.5 ft.
B. Diameter:	6 in.
Drilling method:	Rotosonic

WELL CONSTRUCTION

C. Well casing length:	55.0 ft.
Well casing material:	Schedule 40 PVC
D. Well casing diameter:	2 in.
E. Well screen length:	10.0 ft.
Well screen type:	3.5-inch OD U-Pak PVC
Well screen slot size:	0.010 in.
F. Well sump/end cap length	0.3 ft.
G. Well casing height (stickup):	3.0 ft.
H. Surface seal thickness:	1.0 ft.
I. Surface seal material:	Concrete
J. Annular seal thickness:	35.8 ft.
K. Annular seal material:	Cement/bentonite grout (1.0-15.5 ft.)
	Bentonite chips (15.5-36.8 ft.)
L. Filter pack seal thickness:	3.0 ft.
M. Filter pack seal material:	Bentonite pellets
N. Sand pack thickness:	12.5 ft.
O. Sand pack material:	#1 Silica sand
P. Bottom material thickness:	4.2 ft.
Q. Bottom material:	Bentonite chips
R. Protective casing material:	Aluminum
S. Protective casing diameter:	Square – 4 in.
Well centralizer depths:	NA

NOTES:

OD = Outside diameter. PVC = Polyvinyl chloride.
Bentonite pellets allowed to hydrate for 1 hour.
Bentonite chips allowed to hydrate for over 8 hours.
NAVD88 = North American Vertical Datum of 1988.

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-20**
LOCATION	**Euharlee, Georgia**	PAGE	**1 of 3**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**672.29 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**46.9 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**10/09/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1503367.73; Easting: 2064259.55**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
CB	7.7/6.5	E	0				**0 to 1.7 feet: ROAD BASE, GRAVEL (GW)**, gray, angular, dry, silty gravel. (FILL) @ 1.0 to 1.7 feet: silty gravel.	100	0	0
		E/N					**1.7 to 4.0 feet: MIX OF CLAY, AND ROAD BASE GRAVEL (CH/GW)**, clay is yellowish red, firm, moist, high plasticity; gravel is gray, angular, dry. (FILL)	50	0	50
		N	5				**4.0 to 17.0 feet: CLAY (CH)**, reddish light brown with light red mottling, high plasticity, damp, stiff. (RESIDUAL) @ 5.8 to 5.9 feet: white chert nodule.	0	0	100
CB	8.2/10						@ 8.2 feet: chert nodules (black) layer. @ 10.1 feet: 0.1-foot layer of black chert nodules. @ 11.4 to 11.5 feet: layer of rust colored granular material.			
			10							
			15							
CB	5.8/10	E E					**17.0 to 46.5 feet: LIMESTONE**, dark gray, hard, dense, effervesces readily, unweathered, sharp contact at 17.0 feet, individual beds range from 0.05- to 0.2-feet thick, surface of beds have white powdery texture, breakage along bedding planes. (BEDROCK)	NA	NA	NA
		E								
			20							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-20**
LOCATION	**Euharlee, Georgia**	PAGE	**2 of 3**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**672.29 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**46.9 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**10/09/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1503367.73; Easting: 2064259.55**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		E	25				**17.0 to 46.5 feet: LIMESTONE**, continued. @ 16.5 to 26.5 feet: poor recovery, driller did not note any voids. Driller noted that the formation took the water he added during drilling. @ 17.7 to 18.4 feet: lenticular and linear calcite-filled veins. @ 22.4 to 23.1 feet: surface of beds have weathered orange to rust colored residue.	NA	NA	NA
		E								
		E								
CB	6.9/10									
		E	30							
		E								
		E								
		E					@ 31.3 to 33.2 feet: color change to light gray, some vertical calcite veins. Does not have powdery surface texture. Evidence of weathering on surfaces, rust red residue on outer surfaces. @ 33.2 to 34.0 feet: abundant calcite veins.			
		E								
		E	35							
		E								
CB	6.3/10						@ 36.5 to 38.4 feet: some rust-colored weathering staining on rock surfaces.			
		E								
		E								
			40				@ 39.0 to 39.7 feet: 0.7-foot-thick bed with horizontal and vertical calcite veins.			

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-20**
LOCATION	**Euharlee, Georgia**	PAGE	**3 of 3**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**672.29 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**46.9 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**10/09/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1503367.73; Easting: 2064259.55**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		E					**17.0 to 46.9 feet: LIMESTONE**, continued.	NA	NA	NA
		E								
		E								
		E	45				@ 45.5 to 46.5 feet: rust-colored staining on surfaces, slightly weathered, chert nodules and calcite veins.			
							Total depth: 46.9 feet.			
			50							
			55							
			60							

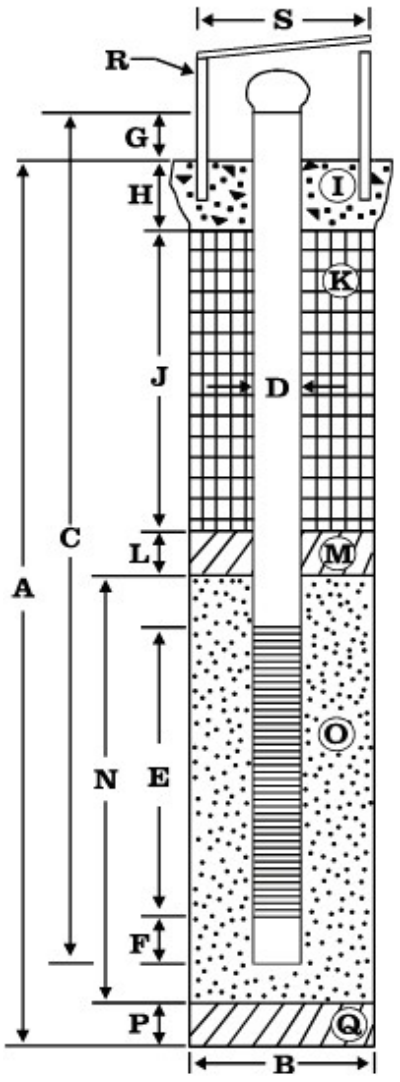
REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Well construction Log revised with new survey data dated 6/10/2020.

WELL DETAILS

Project Number:	151114-03	Boring/Well No.:	BGWC-20
Client Name:	Southern Company	Top of Casing Elev.:	675.14 ft. NAVD88
Project Name:	Plant Bowen Hydrogeologic Investigation	Ground Surface Elev.:	672.3 ft. NAVD88
		Installation Date:	10/09/15
Location:	Euharlee, Georgia	Driller:	Cascade Drilling
			David Wilcox, Driller



	Depth (feet)	Elevation (feet, NAVD88)
S	+3.6	675.9
R	+3.4	675.14
G	0.0	671.74
H	1.0	670.74
J	15.2	656.54
L	30.8	640.94
M	33.8	637.94
N	36.6	635.14
F	46.6	625.14
P	46.9	624.84
Q	46.9	624.84
B	NA	NA

EXPLORATORY BORING

A. Total depth:	46.9 ft.
B. Diameter:	6 in.
Drilling method:	Rotosonic

WELL CONSTRUCTION

C. Well casing length:	50.3 ft.
Well casing material:	Schedule 40 PVC
D. Well casing diameter:	2 in.
E. Well screen length:	10.0 ft.
Well screen type:	3.5-inch OD U-Pak PVC
Well screen slot size:	0.010 in.
F. Well sump/end cap length	0.3 ft.
G. Well casing height (stickup):	3.1 ft.
H. Surface seal thickness:	1.3 ft.
I. Surface seal material:	Concrete
J. Annular seal thickness:	29.8 ft.
K. Annular seal material:	Cement/bentonite grout (1.0-15.2ft.)
	Bentonite chips (15.2-30.8 ft.)
L. Filter pack seal thickness:	3.0 ft.
M. Filter pack seal material:	Bentonite pellets
N. Sand pack thickness:	13.1 ft.
O. Sand pack material:	#1 Silica sand
P. Bottom material thickness:	NA
Q. Bottom material:	NA
R. Protective casing material:	Aluminum
S. Protective casing diameter:	Square – 4 in.
Well centralizer depths:	NA

NOTES:

OD = Outside diameter. PVC = Polyvinyl chloride.
Bentonite pellets allowed to hydrate for 1 hour.
Bentonite chips allowed to hydrate for over 8 hours.
NAVD88 = North American Vertical Datum of 1988.

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-21**
LOCATION	**Euharlee, Georgia**	PAGE	**1 of 3**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**688.53 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**57 feet**
LOGGED BY	**Jim Redwine**	DATE COMPLETED	**03/02/16**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1501627.51; Easting: 2064348.09**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
CB	7/7	N					**0 to 0.3 foot: TOPSOIL**	NA	NA	NA
		E					**0.3 to 1.0 foot: LIMESTONE GRAVEL**, gray, fine limestone, part of road base.	NA	NA	NA
		N					**1.0 to 4.6 feet: CLAY (CL)**, red to gray mottled. (RESIDUAL)	NA	NA	NA
							Acid test performed every 1.0 feet throughout boring.			
			5				**4.6 to 27.0 feet: CLAY (CL)**, reddish to yellowish, slightly mottled, stiff. (RESIDUAL)	NA	NA	NA
CB	10/10	N								
			10							
			15							
CB	10/10	N						1	4	95
			20							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-21**
LOCATION	**Euharlee, Georgia**	PAGE	**2 of 3**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**688.53 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**57 feet**
LOGGED BY	**Jim Redwine**	DATE COMPLETED	**03/02/16**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1501627.51; Easting: 2064348.09**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
CB	10/10	N					**4.6 to 25.3 feet: CLAY (CL)**, continued.	1	4	95
		N	25				@ 25.3 to 25.5 feet: gray to red silt zone, possibly weathered dolomite, no reaction to hydrochloric acid.			
CB	10/10	N					**27.0 to 32.0 feet: CLAY (CH)**, brown, very soft, soupy mud (toothpaste consistency) in sleeve. Rods dropped from 27.0 to 32.0 feet. (VOID INFILL)	2	2	96
			30							
		S					**32.0 to 41.0 feet: DOLOMITE**, light to dark gray, medium-grained, no effervescence without scratching. (BEDROCK)	NA	NA	NA
		E								
		S								
			35							
		S					@ 32.8 to 33.0 feet: light gray grout, reacts with hydrochloric acid.			
CB	6/10	S								
			40							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-21**
LOCATION	**Euharlee, Georgia**	PAGE	**3 of 3**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**688.53 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**57 feet**
LOGGED BY	**Jim Redwine**	DATE COMPLETED	**03/02/16**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1501627.51; Easting: 2064348.09**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
CB	6/10		45		0 30 60 90 120 150		**32.0 to 41.0 feet: DOLOMITE**, continued.	NA	NA	NA
							41.0 to 45.5 feet: DOLOMITE, weathered zone, tan mud on top, tripoli (silt-sized weathered dolomite residuum) on bottom. (WEATHERED BEDROCK) @ Approximately 44.0 feet: trace mottled dolomite.	NA	NA	NA
CB	10/10	S	50				**45.5 to 57.0 feet: DOLOMITE**, light to dark gray, medium-grained with occasional horizontal lighter-colored coarse-grained dolomite beds and occasional near vertical healed fractures. Fracture filling has a slight reaction to hydrochloric acid.	NA	NA	NA
		S								
		S	55							
							Total depth: 57.0 feet.			
			60							

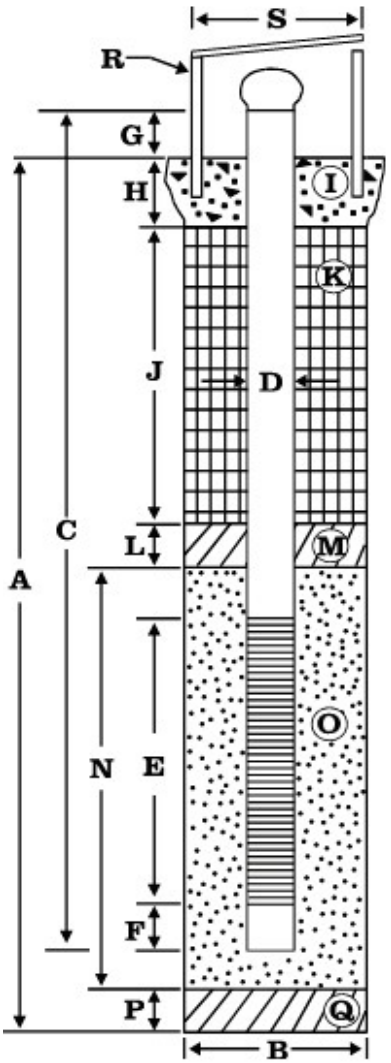
REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Well construction Log revised with new survey data dated 6/10/2020.

WELL DETAILS

Project Number:	151114-03	Boring/Well No.:	BGWC-21
Client Name:	Southern Company	Top of Casing Elev.:	691.33 ft. NAVD88
Project Name:	Plant Bowen Hydrogeologic Investigation	Ground Surface Elev.:	688.6 ft. NAVD88
		Installation Date:	03/02/2016
Location:	Euharlee, Georgia	Driller:	Cascade Drilling
			Thomas Ardito, Driller



	Depth (feet)	Elevation (feet, NAVD88)
S	NA	NA
R	+2.8	691.33
G	0.0	688.53
H	1.0	687.53
J	23.0	665.53
C	33.5	655.03
L	37.0	651.53
M	39.9	648.83
N	49.9	638.63
E	50.2	638.23
F	51.0	637.53
P	57.0	631.53
Q		
B		

EXPLORATORY BORING

A. Total depth:	57.0 ft.
B. Diameter:	6 in.
Drilling method:	Rotosonic

WELL CONSTRUCTION

C. Well casing length:	53.4 ft.
Well casing material:	Schedule 40 PVC
D. Well casing diameter:	2 in.
E. Well screen length:	10 ft.
Well screen type:	3.5-inch OD U-Pak PVC
Well screen slot size:	0.010 in.
F. Well sump/end cap length	0.3 ft.
G. Well casing height (stickup):	2.8 ft.
H. Surface seal thickness:	1.0 ft.
I. Surface seal material:	Concrete
J. Annular seal thickness:	32.5 ft.
K. Annular seal material:	Cement/bentonite grout (1.0-23.0 ft.)
	Bentonite chips (23.0-33.5 ft.)
L. Filter pack seal thickness:	3.5 ft.
M. Filter pack seal material:	Bentonite pellets
N. Sand pack thickness:	14.0 ft.
O. Sand pack material:	#1 Silica sand
P. Bottom material thickness:	6.0 ft.
Q. Bottom material:	Bentonite chips
R. Protective casing material:	Aluminum
S. Protective casing diameter:	Square – 4 in.
Well centralizer depths:	NA

NOTES:

SS = silica sand.
OD = Outside diameter. PVC = Polyvinyl chloride.
Bentonite pellets allowed to hydrate for 1 hour.
Bentonite chips allowed to hydrate for over 8 hours.
Bottom material bentonite chips allowed to hydrate for 1 hour.
NAVD88 = North American Vertical Datum of 1988.

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-22**
LOCATION	**Euharlee, Georgia**	PAGE	**1 of 3**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**692.64 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**46.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**10/08/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1501323.76; Easting: 2064358.05**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
CB	5.1/6.5	NA			0 30 60 90 120 150		**0 to 0.3 foot: TOPSOIL**, abundant plant debris.	NA	NA	NA
		N					**0.3 to 2.9 feet: CLAYEY SILT (ML)**, reddish brown, dry, no plasticity, stiff. (FILL)	0	0	100
		N					**2.9 to 26.5 feet: CLAY (CH)**, red with yellow and tan mottling, dry, hard, moderate plasticity. (RESIDUAL)	0	0	100
			5							
CB	12.1/10	N					@ 8.2 feet: color change to light red with red, yellow and tan mottling.			
			10				@ 10.6 feet: color change to light brown with red, yellow and tan mottling.			
			15							
CB	12.0/10	N					@ 18.6 feet: moist, consistency change to stiff.			
			20							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-22**
LOCATION	**Euharlee, Georgia**	PAGE	**2 of 3**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**692.64 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**46.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**10/08/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1501323.76; Easting: 2064358.05**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		N	25				**2.9 to 26.5 feet: CLAY (CH)**, continued. @ 20.6 feet: consistency change to soft. @ 22.3 feet: consistency change to stiff, occasional chert nodules, highly plastic.	0	0	100
CB	1.9/2.5	N					**26.5 to 27.6 feet: GRAVELLY SILT (ML)**, light reddish brown, soft, wet, angular coarse gravel, slightly plastic. (WEATHERED BEDROCK)	40	0	60
		S					**27.6 to 46.5 feet: DOLOMITE**, dark gray, hard, dense, very fine crystals, ribboned with horizontal calcite veins, some vertical calcite veins, sample is broken along bedding planes, beds range from 0.5- to 5-inches thick. (BEDROCK)	NA	NA	NA
		S								
CB	6.7/7.5	S	30							
		S					@ 27.6 to 29.6 feet: slightly weathered, rust colored deposits on bedding surfaces.			
		S					@ 29.6 to 46.5 feet: unweathered			
		S				VOID	@ 32.0 feet: 2- to 3-inch void.			
		S					@ 32.3 to 43.3 feet: no calcite veins.			
		S	35							
		S								
CB	9.3/10	S								
		S								
		S								
		S	40							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-22**
LOCATION	**Euharlee, Georgia**	PAGE	**3 of 3**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**692.64 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**46.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**10/08/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1501323.76; Easting: 2064358.05**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		S	45				**27.6 to 46.5 feet: DOLOMITE**, continued. @ 43.3 to 46.5 feet: some vertical calcite veins.	NA	NA	NA
		S								
		S								
		S								
		S								
		S								
			50				Total depth: 46.5 feet.			
			55							
			60							

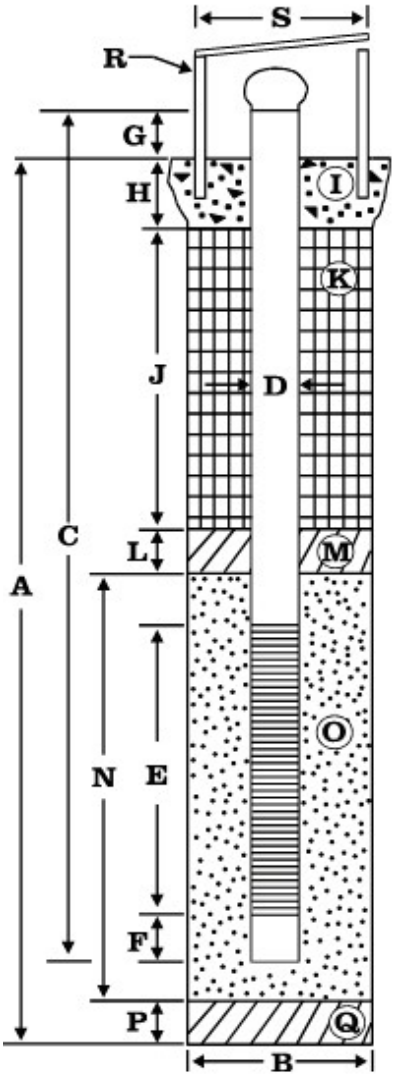
REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Well construction Log revised with new survey data dated 6/10/2020.

WELL DETAILS

Project Number:	151114-03	Boring/Well No.:	BGWC-22
Client Name:	Southern Company	Top of Casing Elev.:	695.50 ft. NAVD88
Project Name:	Plant Bowen Hydrogeologic Investigation	Ground Surface Elev.:	692.6 ft. NAVD88
		Installation Date:	10/08/15
Location:	Euharlee, Georgia	Driller:	Cascade Drilling
			Leon Logan, Driller



	Depth (feet)	Elevation (feet, NAVD88)
S	+3.2	695.8
R	+3.0	695.6
G	0.0	692.6
H	1.0	691.6
J	20.5	672.1
	24.8	667.8
L	28.5	664.1
	29.9	662.7
F	39.9	652.7
	40.2	652.4
P	40.5	652.1
B	46.5	646.1

EXPLORATORY BORING

A. Total depth:	46.5 ft.
B. Diameter:	6 in.
Drilling method:	Rotosonic

WELL CONSTRUCTION

C. Well casing length:	43.3 ft.
Well casing material:	Schedule 40 PVC
D. Well casing diameter:	2 in.
E. Well screen length:	10.0 ft.
Well screen type:	3.5-inch OD U-Pak PVC
Well screen slot size:	0.010 in.
F. Well sump/end cap length	0.3 ft.
G. Well casing height (stickup):	3.0 ft.
H. Surface seal thickness:	1.0 ft.
I. Surface seal material:	Concrete
J. Annular seal thickness:	23.8 ft.
K. Annular seal material:	Cement/bentonite grout (1.0-20.5 ft.)
	Bentonite chips (20.5-24.8 ft.)
L. Filter pack seal thickness:	3.7 ft.
M. Filter pack seal material:	Bentonite pellets
N. Sand pack thickness:	12.0 ft.
O. Sand pack material:	#1 Silica sand
P. Bottom material thickness:	6.0 ft.
Q. Bottom material:	Bentonite chips
R. Protective casing material:	Aluminum
S. Protective casing diameter:	Square – 4 in.
Well centralizer depths:	NA

NOTES:

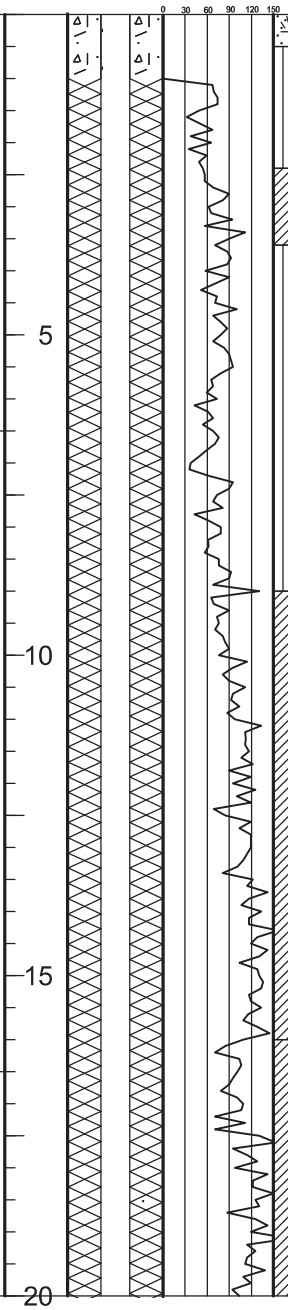
OD = Outside diameter. PVC = Polyvinyl chloride.
Bentonite pellets allowed to hydrate for 1 hour.
Bentonite chips allowed to hydrate for over 8 hours.
NAVD88 = North American Vertical Datum of 1988.

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-23**
LOCATION	**Euharlee, Georgia**	PAGE	**1 of 3**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**693.16 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**56.5 feet**
LOGGED BY	**Rhonda Tinsley**	DATE COMPLETED	**10/15/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1501000.57; Easting: 2064350.17**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
CB	5.7/6.5	N	**0 to 0.5 foot: TOPSOIL**, dark brown, with vegetation.	NA	NA	NA
			0.5 to 2.4 feet: GRAVELLY SILT (ML), reddish brown, soft.	NA	NA	NA
			2.4 to 3.6 feet: CLAY (CL), yellowish brown and tan mottled, stiff, with black organics.	NA	NA	NA
			3.6 to 9.0 feet: SILT (ML), dark brown, dry, crumbly, with organics.	NA	NA	NA
CB	11.5/10	N	**9.0 to 16.0 feet: CLAY WITH GRAVEL (CL)**, yellowish brown, mottled, dry, hard. (RESIDUAL)	NA	NA	NA
CB	11.6/10	N	**16.0 to 27.5 feet: CLAY (CL)**, yellowish brown, stiff, with angular chert gravel. (RESIDUAL)	NA	NA	NA



REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-23**
LOCATION	**Euharlee, Georgia**	PAGE	**2 of 3**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**693.16 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**56.5 feet**
LOGGED BY	**Rhonda Tinsley**	DATE COMPLETED	**10/15/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1501000.57; Easting: 2064350.17**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		N	25				**16.0 to 27.5 feet: CLAY (CL)**, continued.	NA	NA	NA
		N								
CB	9.5/10									
							27.5 to 28.0 feet: CLAY WITH GRAVEL (CL), gray, soft, gravel is composed of weathered dolomite.	10	10	80
								NA	NA	NA
		E					**28.0 to 56.5 feet: DOLOMITE**, black to gray, hard, dense, with calcite-filled fractures. (BEDROCK)			
		S	30							
			35							
CB	9/10	S*								
							@ 39.0 to 41.0 feet: staining, evidence of slight weathering.			
			40							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-23**
LOCATION	**Euharlee, Georgia**	PAGE	**3 of 3**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**693.16 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**56.5 feet**
LOGGED BY	**Rhonda Tinsley**	DATE COMPLETED	**10/15/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1501000.57; Easting: 2064350.17**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		N			0 30 60 90 120 150		**28.0 to 56.5 feet: DOLOMITE**, continued.	NA	NA	NA
CB	8.4/10	S*	45							
			50							
			55							
							Total depth: 56.5 feet.			
			60							

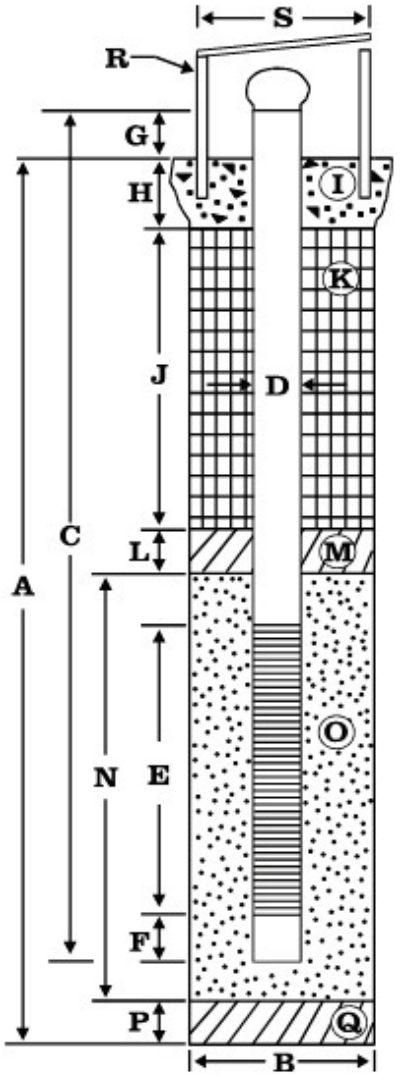
REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Well construction Log revised with new survey data dated 6/10/2020.

WELL DETAILS

Project Number:	151114-03	Boring/Well No.:	BGWC-23
Client Name:	Southern Company	Top of Casing Elev.:	695.50 ft. NAVD88
Project Name:	Plant Bowen Hydrogeologic Investigation	Ground Surface Elev.:	693.2 ft. NAVD88
		Installation Date:	10/15/15
Location:	Euharlee, Georgia	Driller:	Cascade Drilling
			David Wilcox, Driller



	Depth (feet)	Elevation (feet, NAVD88)
S	+3.1	696.3
R	+2.9	695.50
G	0.0	692.60
H	1.0	691.60
J	25.0	667.60
C	32.5	660.10
L	35.9	656.70
A	38.3	654.30
N		
E		
F	48.3	644.30
	48.6	644.00
P	49.0	643.60
B	56.5	636.10

EXPLORATORY BORING

A. Total depth:	56.5 ft.
B. Diameter:	6 in.
Drilling method:	Rotosonic

WELL CONSTRUCTION

C. Well casing length:	51.5 ft.
Well casing material:	Schedule 40 PVC
D. Well casing diameter:	2 in.
E. Well screen length:	10.0 ft.
Well screen type:	3.5-inch OD U-Pak PVC
Well screen slot size:	0.010 in.
F. Well sump/end cap length	0.3 ft.
G. Well casing height (stickup):	2.9 ft.
H. Surface seal thickness:	1.0 ft.
I. Surface seal material:	Concrete
J. Annular seal thickness:	31.5 ft.
K. Annular seal material:	Cement/bentonite grout (1.0-25.0 ft.)
	Bentonite chips (25.0-32.5 ft.)
L. Filter pack seal thickness:	3.4 ft.
M. Filter pack seal material:	Bentonite pellets
N. Sand pack thickness:	12.1 ft.
O. Sand pack material:	#1 Silica sand
P. Bottom material thickness:	7.5 ft.
Q. Bottom material:	Bentonite chips
R. Protective casing material:	Aluminum
S. Protective casing diameter:	Square – 4 in.
Well centralizer depths:	NA

NOTES:

OD = Outside diameter. PVC = Polyvinyl chloride.
Bentonite pellets allowed to hydrate for 1 hour.
Bentonite chips allowed to hydrate for over 8 hours.
NAVD88 = North American Vertical Datum of 1988.

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-24**
LOCATION	**Euharlee, Georgia**	PAGE	**1 of 4**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**699.46 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**66.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**10/27/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1500621.22; Easting: 2065032.84**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
CB	6.5/6.5	N					**0 to 3.0 feet: MIX OF CLAY, SILT, SAND AND FINE GRAVEL**, dark gray and reddish brown, moist. (FILL)	10	20	70
		N	5				**3.0 to 37.7 feet: CLAY (CH)**, light grayish brown with red and light gray mottling, dry, high plasticity, stiff. (RESIDUAL)	0	0	100
CB	10.8/10	N	10				@ 6.5 feet: color change to light reddish brown with light gray mottling.			
			15				@ 12.5 feet: consistency change to very stiff.			
CB	10.9/10	N	20							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-24**
LOCATION	**Euharlee, Georgia**	PAGE	**2 of 4**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**699.46 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**66.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**10/27/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1500621.22; Easting: 2065032.84**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		N	25				**3.0 to 37.7 feet: CLAY (CH)**, continued.	0	0	100
CB	10/10	N					@ 26.0 to 26.1 feet: black chert nodules. @ 26.0 to 29.2 feet: abundant chert nodules. @ 26.5 feet: moist to wet.			
			30				@ 29.2 to 37.7 feet: occasional chert nodules.			
CB	8.2/10	N S	35				**37.7 to 41.6 feet: DOLOMITE**, gray, moderately weathered, wet, few beds can be discerned approximately 0.5- to 3-inches thick, moderately competent, drilling broke sample up into angular gravel sized pieces. (BEDROCK)	NA	NA	NA
			40							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-24**
LOCATION	**Euharlee, Georgia**	PAGE	**3 of 4**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**699.46 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**66.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**10/27/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1500621.22; Easting: 2065032.84**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		S					**37.7 to 41.6 feet: (top of rock) DOLOMITE**, continued.	NA	NA	NA
		N					**41.6 to 46.5 feet: GRAVELLY CLAY (CH)**, light reddish brown, wet, soft, moderate plasticity, sticky, gravel is angular, heavily weathered dolomite. (VOID INFILL) @ 41.6 to 41.8 feet: extremely weathered dolomite zone, can break apart with hands.	40	0	60
CB	7.4/10	E	45				**46.5 to 66.5 feet: LIMESTONE**, dark gray, microcrystalline, thinly bedded, beds approximately 0.5- to 3-inches thick, breakage along bedding planes, surface of beds has powdery appearance. (BEDROCK)	NA	NA	NA
			50				@ 52.5 to 52.7 feet: very thin black and white laminations, algal structures?			
			55				@ 53.8 to 63.0 feet: abundant light red vein and fracture infillings. Slightly weathered surfaces.			
CB	8.6/10	E								
			60							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-24**
LOCATION	**Euharlee, Georgia**	PAGE	**4 of 4**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**699.46 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**66.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**10/27/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1500621.22; Easting: 2065032.84**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		E	65				**46.5 to 66.5 feet: LIMESTONE**, continued. @ 63.0 to 63.6 feet: 0.6-foot thick bed.	NA	NA	NA
			70				Total depth: 66.5 feet.			
			75							
			80							

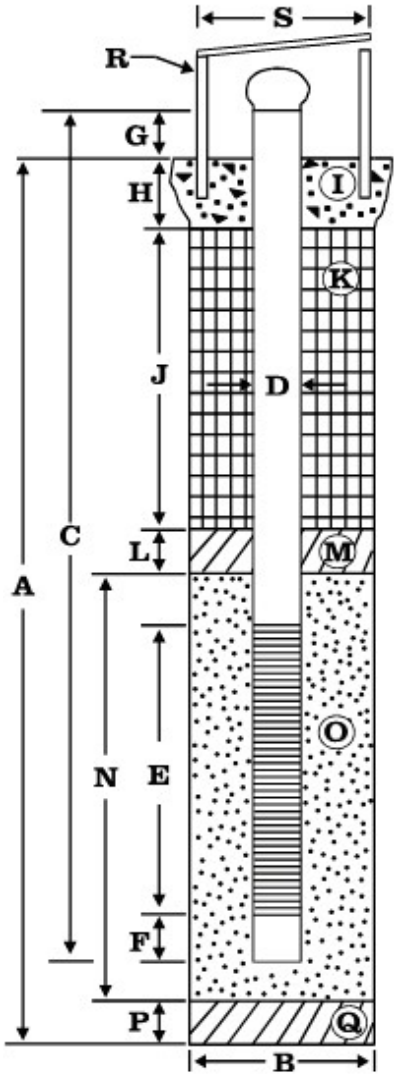
REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Well construction Log revised with new survey data dated 6/10/2020.

WELL DETAILS

Project Number:	151114-03	Boring/Well No.:	BGWC-24
Client Name:	Southern Company	Top of Casing Elev.:	702.27 ft. NAVD88
Project Name:	Plant Bowen Hydrogeologic Investigation	Ground Surface Elev.:	699.5 ft. NAVD88
		Installation Date:	10/27/15
Location:	Euharlee, Georgia	Driller:	Cascade Drilling
			David Wilcox, Driller



	Depth (feet)	Elevation (feet, NAVD88)
S	+3.2	702.7
R	+3.0	702.27
G	0.0	699.27
H	1.0	698.27
J	20.2	679.07
C	47.5	651.77
L	50.5	648.77
A	53.0	646.27
N	63.0	636.27
E	63.3	635.97
F	64.0	635.27
P	66.5	632.77
B		

EXPLORATORY BORING

A. Total depth:	66.5 ft.
B. Diameter:	6 in.
Drilling method:	Rotosonic

WELL CONSTRUCTION

C. Well casing length:	66.4 ft.
Well casing material:	Schedule 40 PVC
D. Well casing diameter:	2 in.
E. Well screen length:	10.0 ft.
Well screen type:	3.5-inch OD U-Pak PVC
Well screen slot size:	0.010 in.
F. Well sump/end cap length	0.3 ft.
G. Well casing height (stickup):	3.0 ft.
H. Surface seal thickness:	1.1 ft.
I. Surface seal material:	Concrete
J. Annular seal thickness:	46.5 ft.
K. Annular seal material:	Cement/bentonite grout (1.0-20.2 ft.)
	Bentonite chips (20.2-47.5 ft.)
L. Filter pack seal thickness:	3.0 ft.
M. Filter pack seal material:	Bentonite pellets
N. Sand pack thickness:	13.5 ft.
O. Sand pack material:	#1 Silica sand
P. Bottom material thickness:	2.5 ft.
Q. Bottom material:	Bentonite chips
R. Protective casing material:	Aluminum
S. Protective casing diameter:	Square – 4 in.
Well centralizer depths:	NA

NOTES:

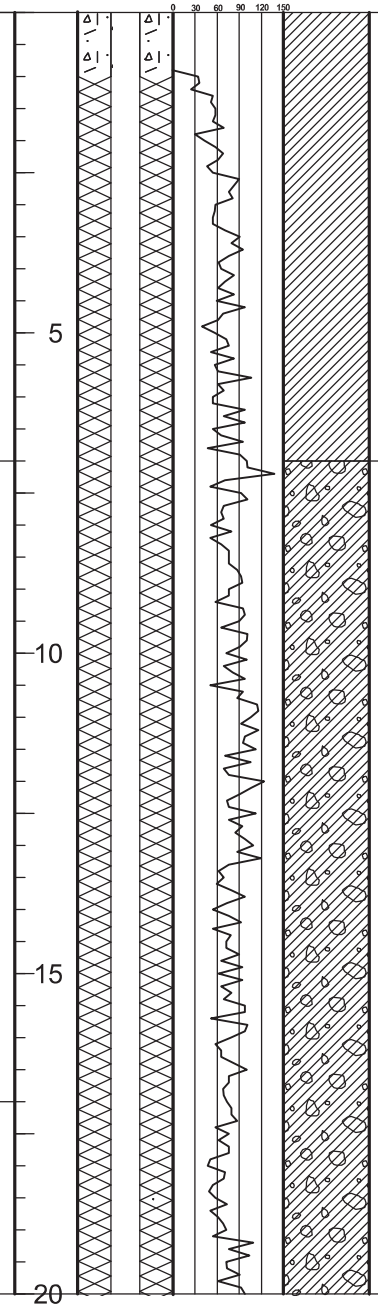
OD = Outside diameter. PVC = Polyvinyl chloride.
Bentonite pellets allowed to hydrate for 1 hour.
Bentonite chips allowed to hydrate for over 8 hours.
NAVD88 = North American Vertical Datum of 1988.

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-25**
LOCATION	**Euharlee, Georgia**	PAGE	**1 of 3**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**677.60 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**57 feet**
LOGGED BY	**Jim Redwine**	DATE COMPLETED	**03/03/16**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1502292.73; Easting: 2064244.10**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
CB	7/7	N	**0 to 7.0 feet: CLAY (CL)**, red to light brown mottled, stiff. (RESIDUAL) No topsoil - scraped off from previous construction? Acid test performed every 1.0 feet throughout boring.	2	5	93
CB	10/10	N	**7.0 to 24.0 feet: CLAY (CL)**, tan to reddish brown, stiff, with rare to frequent gravel in matrix. (RESIDUAL)	NA	NA	NA
CB	10/10	N	@ 16.5 to 17.0 feet: no gravel in sample.	0	5	95



REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-25**
LOCATION	**Euharlee, Georgia**	PAGE	**2 of 3**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**677.60 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**57 feet**
LOGGED BY	**Jim Redwine**	DATE COMPLETED	**03/03/16**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1502292.73; Easting: 2064244.10**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
CB	10/10	N					**7.0 to 24.0 feet: CLAY (CL)**, continued.	NA	NA	NA
			25				**24.0 to 29.0 feet: CLAY (CL)**: tan to grayish brown, stiff to plastic. Getting wetter, more plastic, less red, with depth, occasional gravel. (RESIDUAL)	NA	NA	NA
CB	10/10	N								
			30				**29.0 to 37.0 feet: CLAY (CL) WITH GRAVEL**, light orange to tan, stiff to plastic clay with frequent gravel and occasional very weathered dolomite zones. (RESIDUAL)	NA	NA	NA
			35					35	15	50
CB	7/10	S					**37.0 to 52.5 feet: DOLOMITE BRECCIA**, gray dolomite clasts, from a few milimeters to a few inches in size, with white cement between the clasts. Cement looks like carbonate, but only an occasional reaction to dilute hydrochloric acid.	NA	NA	NA
			40							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-25**
LOCATION	**Euharlee, Georgia**	PAGE	**3 of 3**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**677.60 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**57 feet**
LOGGED BY	**Jim Redwine**	DATE COMPLETED	**03/03/16**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1502292.73; Easting: 2064244.10**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
CB	7/10	S			0 30 60 90 120 150		**37.0 to 52.5 feet: DOLOMITE BRECCIA**, continued.	NA	NA	NA
			45							
CB	7/10	S					@ 48.0 to 51.0 feet: void. Driller thought relativity open, not mud-filled, though difficult to tell.			
			50							
		S					**52.5 to 54.0 feet: DOLOMITE**, light gray, medium-grained. Vertical and approximately 45° fractures filled with carbonate mineral(s). Some carbonate cement reacts with hydrochloric acid, some does not.	NA	NA	NA
		S	55				**54.0 to 57.0 feet: DOLOMITE BRECCIA**, same as at 37.0 to 52.5 feet.	NA	NA	NA
							Total depth: 57.0 feet.			
			60							

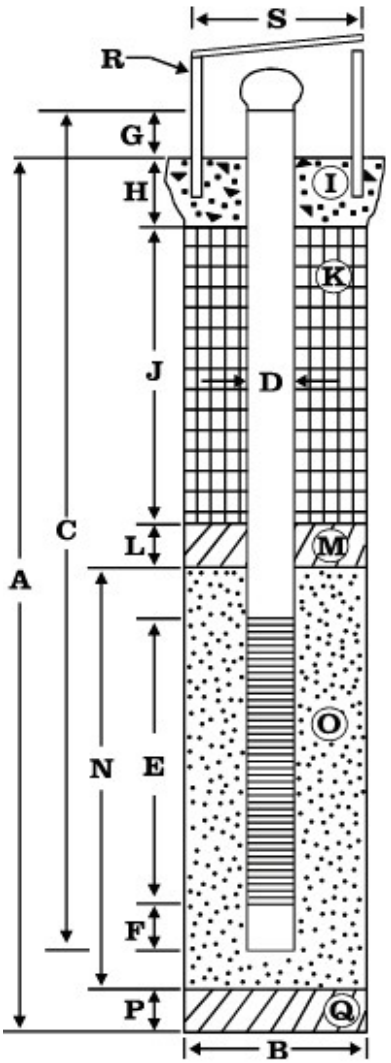
REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Well construction Log revised with new survey data dated 6/10/2020.

WELL DETAILS

Project Number:	151114-03	Boring/Well No.:	BGWC-25
Client Name:	Southern Company	Top of Casing Elev.:	680.47 ft. NAVD88
Project Name:	Plant Bowen Hydrogeologic Investigation	Ground Surface Elev.:	677.6 ft. NAVD88
		Installation Date:	03/03/16
Location:	Euharlee, Georgia	Driller:	Cascade Drilling
			Thomas Ardito, Driller



	Depth (feet)	Elevation (feet, NAVD88)
S	NA	NA
R	+2.9	680.47
G	0.0	677.57
H	1.0	676.57
J	33.0	644.57
C	39.0	638.57
L	42.0	635.57
M	44.7	632.87
N	54.7	622.87
E	55.0	622.57
F	57.0	620.57
P	57.0	620.57
B		

EXPLORATORY BORING

A. Total depth:	57.0 ft.
B. Diameter:	6 in.
Drilling method:	Rotosonic

WELL CONSTRUCTION

C. Well casing length:	58.3 ft.
Well casing material:	Schedule 40 PVC
D. Well casing diameter:	2 in.
E. Well screen length:	10.0 ft.
Well screen type:	3.5-inch OD U-Pak PVC
Well screen slot size:	0.010 in.
F. Well sump/end cap length	0.3 ft.
G. Well casing height (stickup):	2.9 ft.
H. Surface seal thickness:	1.0 ft.
I. Surface seal material:	Concrete
J. Annular seal thickness:	38.0 ft.
K. Annular seal material:	Cement/bentonite grout (1.0-33.0 ft.)
	Bentonite chips (33.0-39.0 ft.)
L. Filter pack seal thickness:	3.0 ft.
M. Filter pack seal material:	Bentonite pellets
N. Sand pack thickness:	15.0 ft.
O. Sand pack material:	#1 Silica sand
P. Bottom material thickness:	2.0 ft.
Q. Bottom material:	Bentonite chips
R. Protective casing material:	Aluminum
S. Protective casing diameter:	Square – 4 in.
Well centralizer depths:	NA

NOTES:

SS = silica sand.
OD = Outside diameter. PVC = Polyvinyl chloride.
Bentonite pellets allowed to hydrate for 1 hour.
Bentonite chips allowed to hydrate for over 4 hours.
NAVD88 = North American Vertical Datum of 1988.

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-30**
LOCATION	**Euharlee, Georgia**	PAGE	**1 of 3**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**698.39 ft NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**58 feet**
LOGGED BY	**Jim Redwine**	DATE COMPLETED	**1/4/17**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83) WZ Northing: 1499815.93; Easting: 2066395.86**		

SAMPLING METHOD	RECOVERY (FEET)	ACID TEST RESULT	DEPTH (FEET)	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
CB	9.25/7	N	5			0 to 10.0 feet: CLAY (CH), overburden, stiff plastic, orange to red to yellow (minor) Acid tested with 10% hydrochloric acid at least every foot	0	5	95
CB	11.0/10	N	10			@ 10.0 feet: Contact gradational 10.0 to 34.0 feet: CLAY (CH), yellow stiff silty to plastic with rare gravel	5	25	70
CB	12.0/10	N	15						
			20						

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-30**
LOCATION	**Euharlee, Georgia**	PAGE	**2 of 3**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**698.39 ft NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**58 feet**
LOGGED BY	**Jim Redwine**	DATE COMPLETED	**1/4/17**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83) WZ Northing: 1499815.93; Easting: 2066395.86**		

SAMPLING METHOD	RECOVERY (FEET)	ACID TEST RESULT	DEPTH (FEET)	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
CB		N	25			10.0 to 34.0 feet: CLAY (CH), yellow stiff silty to plastic with rare gravel Acid tested with 10% hydrochloric acid at least every foot			
CB	9.0/7	N E	30			33.0 to 33.5 feet: DOLOMITE, weathered, pebbles @ 33.0 to 34.0 feet: ground rock due to drilling @ approximately 34.0 feet: top of rock	1	4	95
CB	2.0/3	W	35			34.0 to 38.0 feet: DOLOMITE, fine to medium grained, gray, occasional thin (1") black chert layers @ 34.5 and 36.4 feet, approximate: CHERT, black			
CB	0.0/10		40			@ 38.0 to 44.0 feet: VOID, no recovery			

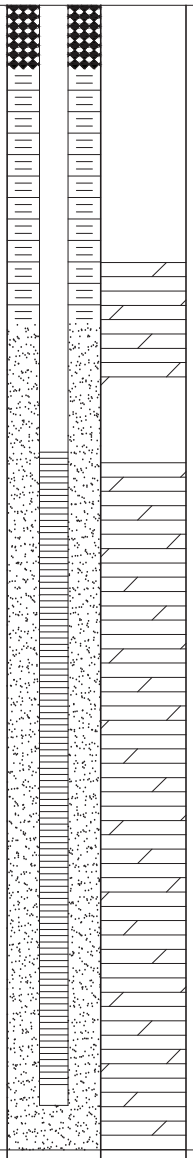
REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-30**
LOCATION	**Euharlee, Georgia**	PAGE	**3 of 3**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**698.39 ft NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**58 feet**
LOGGED BY	**Jim Redwine**	DATE COMPLETED	**1/4/17**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83) WZ Northing: 1499815.93; Easting: 2066395.86**		

SAMPLING METHOD	RECOVERY (FEET)	ACID TEST RESULT	DEPTH (FEET)	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
CB			45			@ 38.0 to 44.0 feet: VOID, no recovery 44.0 to 58.0 feet: DOLOMITE, fine to medium grained, gray @ 46.0 to 47.0 feet: VOID, no recovery @ 47.0 to 58.0 feet: some voids likely, but not easily noticeable by driller; partial recovery			
CB	4.0/11	W/E	50			Acid tested with 10% hydrochloric acid at least every foot			
			55						
						Total depth: 58.0 feet			
			60						

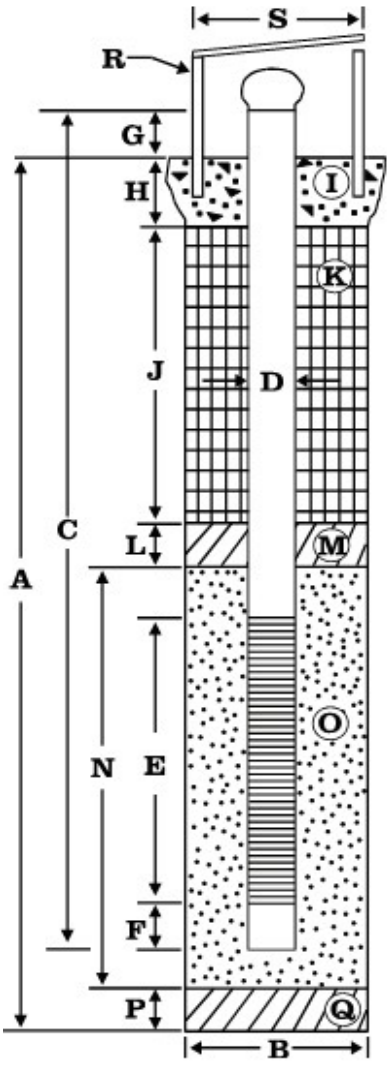
REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent.

ANCHOR QEA

Well construction Log revised with new survey data dated 6/10/2020.

WELL DETAILS

Project Number:	151114-03	Boring/Well No.:	BGWC-30
Client Name:	Southern Company	Top of Casing Elev.:	701.06 ft
Project Name:	Plant Bowen Hydrogeologic Investigation	Ground Surface Elev.:	698.50 ft. NAVD88
		Installation Date:	01/04/17 - 01/09/17
Location:	Cartersville, Georgia	Driller:	Cascade Drilling



	Depth (feet)	Elevation (feet, NAVD88)
S	+2.68	701.18
R	+2.48	701.06
G	0.0	698.58
H	2.0	696.58
J	29.0	669.58
C	41.0	657.58
L	45.0	653.58
A	47.0	651.58
N		
E		
O		
F	57.0	641.58
	57.3	641.28
	58.0	640.58
P	58.0	640.58
B		

EXPLORATORY BORING

A. Total depth:	58.0 ft.
B. Diameter:	6 in.
Drilling method:	Rotosonic PS-150

WELL CONSTRUCTION

C. Well casing length:	59.8 ft.
Well casing material:	Schedule 40 PVC
D. Well casing diameter:	2 in.
E. Well screen length:	10 ft.
Well screen type:	Pre-pack
Well screen slot size:	0.010 in.
F. Well sump/end cap length	0.3 ft.
G. Well casing height (stickup):	2.5 ft.
H. Surface seal thickness:	2.0 ft.
I. Surface seal material:	Concrete
J. Annular seal thickness:	39.0 ft.
K. Annular seal material:	Bentonite grout (2.0-29.0 ft.)
	3/8" Bentonite chips (29.0-41.0 ft.)
L. Filter pack seal thickness:	4.0 ft.
M. Filter pack seal material:	Bentonite pellets
N. Sand pack thickness:	13.0 ft.
O. Sand pack material:	#1 SS
P. Bottom material thickness:	N/A
Q. Bottom material:	N/A
R. Protective casing material:	Aluminum
S. Protective casing diameter:	Square – 4 in.
Well centralizer depths:	N/A

NOTES:

SS = Silica Sand.
OD = Outside diameter. PVC = Polyvinyl chloride.
Bentonite pellets allowed to hydrate at least 1 hour.
Bentonite chips allowed to hydrate at least 4 hours.
NAVD88 = North American Vertical Datum of 1988.

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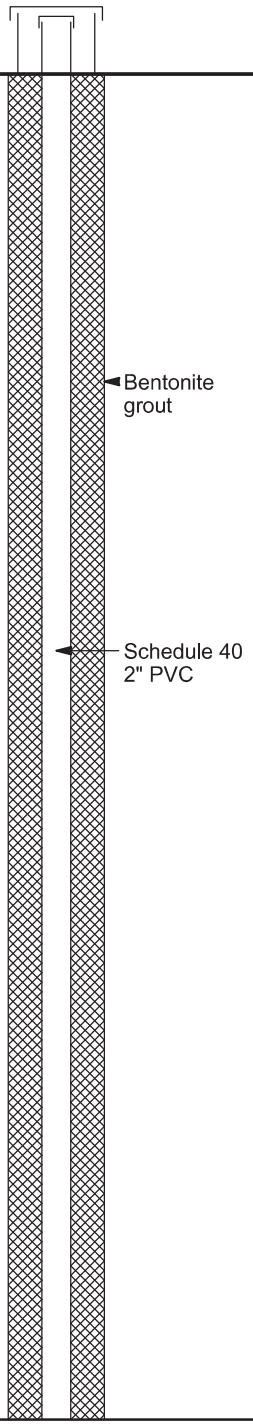
BGWC-51

CLIENT Southern Company Services
PROJECT NAME Plant Bowen Well Installation
PROJECT NUMBER GW6581C
PROJECT LOCATION Euharlee, GA
DATE STARTED 1/22/21 **COMPLETED** 1/22/21
NORTHING 1500270.09 ft **EASTING** 2065455.80 ft
DRILLER Cascade Drilling
GROUND ELEVATION 708.99 ft **BORING DIAMETER** 6 in
DRILLING METHOD Sonic
TOP OF CASING ELEVATION 711.49 ft
SAMPLING METHOD 4 in core 6 in override
GEOPHYSICAL CONTRACTOR ---
RIG TYPE Terrasonic 11-38212
LOGGED BY T. Kessler **CHECKED BY** J. Ivanowski

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION
0				Air Knife Excavation (0 to 10 ft) NO SAMPLE
	705			
5				
	700			
10				699.0
				SILTY CLAY, Red with yellow and black mottling throughout, stiff, medium plasticity, trace sand, highly weathered rock fragments, moist.
				697.0
				SAPROLITE, Pink, low plasticity clay, trace silts and sands, iron staining, remnant rock structures, moist.
	695			
15				
	690			
20		20 ft: Increased drill chatter.		20 ft: Dark reddish brown.
	685			
25				683.0
				SANDY CLAY, Yellow, stiff, low plasticity, trace chert gravel, moist.
	680	30 to 40 ft: Intermittant increase of drill chatter.		
30				30 ft: Strong brown with black mottling, trace silt and sand.
	675			

CONSTRUCTION DIAGRAM



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PIEZOMETER BGWC-51

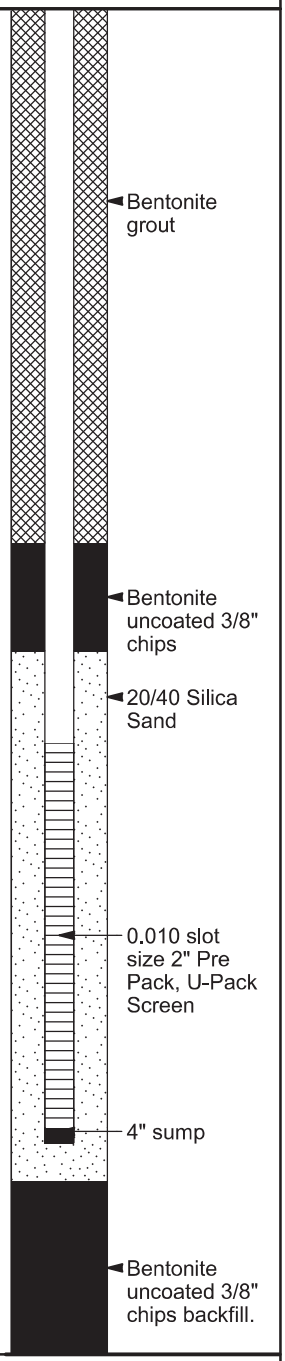
CLIENT Southern Company Services **PROJECT NAME** Plant Bowen Well Installation

PROJECT NUMBER GW6581C **PROJECT LOCATION** Euharlee, GA

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION
35				SANDY CLAY, Yellow, stiff, low plasticity, trace chert gravel, moist. *(continued)*
				37 ft: Yellow.
	670			
40				40 ft: Reddish yellow.
	665			
45				
				661.0
	660			DOLOMITE/DOLOMITIC LIMESTONE, White, pink, gray, thinly laminated, iron staining, fractures present.
50				
	655	55 ft: Highly weathered. 57 to 60 ft: Void space encountered. Rods dropping without resistance.		
55				
				652.0
	650			NO RECOVERY (VOID 57-60 ft)
60				NO RECOVERY (60 - 70 ft)
		60 to 70 ft: Very soft drilling, no drill chatter.		
	645			
65				
	640			
70				639.0

Bottom of borehole at 70.0 feet.

CONSTRUCTION DIAGRAM



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BGWC-52

CLIENT Southern Company Services
PROJECT NAME Plant Bowen Well Installation
PROJECT NUMBER GW6581C
PROJECT LOCATION Euharlee, GA
DATE STARTED 1/19/21 **COMPLETED** 1/21/21
NORTHING 1500156.97 ft **EASTING** 2065764.13 ft
DRILLER Cascade Drilling
GROUND ELEVATION 707.77 ft **BORING DIAMETER** 6 in
DRILLING METHOD Sonic
TOP OF CASING ELEVATION 710.75 ft
SAMPLING METHOD 4 in core 6 in override
GEOPHYSICAL CONTRACTOR ---
RIG TYPE Terrasonic 11-38212
LOGGED BY T. Kessler **CHECKED BY** J. Ivanowski

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
0	705			Air Knife Excavation (0-10 ft) NO SAMPLE	
5	700				Bentonite grout
10	695			697.8 SILTY CLAY, Reddish yellow with white and yellow mottling, stiff, medium plasticity, trace fine sand, moist.	
15	690				Schedule 40 2" PVC
20	685			18 ft: Soft. 20 ft: Black mottling throughout, trace gravel.	
25	680				
30	675				
35	670			667.8	Bentonite grout

(Continued Next Page)

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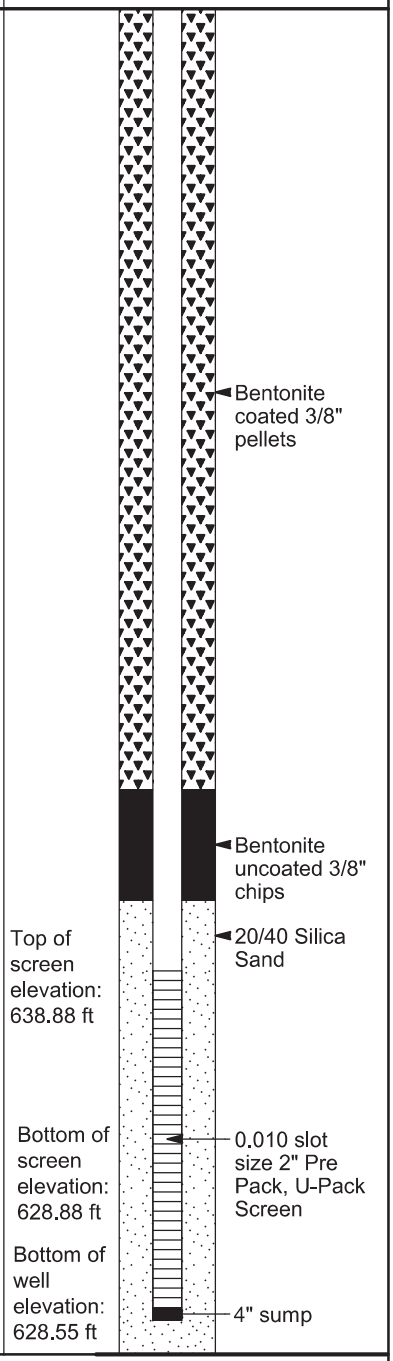
PIEZOMETER BGWC-52

CLIENT Southern Company Services **PROJECT NAME** Plant Bowen Well Installation

PROJECT NUMBER GW6581C **PROJECT LOCATION** Euharlee, GA

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION
40				LIMESTONE, Gray, fine grained, thinly bedded, occasional white chert veins, iron staining near the top.
	665	40 to 43 ft: No recovery. 43 ft: Increased drill chatter. Slow drilling with minimal water return.		
45				
	660			
50				50 ft: Black chert veins throughout, iron staining on fractured surfaces.
	655	54 ft: Increased drill chatter.		
55				
	650			
60				
	645	64 ft: Return water changed from clear to white.		
65				
	640			
70				70 ft: Trace iron staining.
	635			
75		76 to 80 ft: Slow drilling with no return of water.		
	630			
80				From 78 ft: With abundance of chert, white, iron staining throughout.
				627.8

Bottom of borehole at 80.0 feet.



Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-1**
LOCATION	**Euharlee, Georgia**	PAGE	**1 of 3**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**718.33 NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**56.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**11/17/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**NAD83 (WZ) Northing: 1499101.23 ; Easting: 2067205.48**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
NA	NA	NA			0 30 60 90 120 150		**0 to 38.0 feet: CLAY (CH)**, light brown with light gray mottling, moist, very stiff, medium plasticity, occasional black chert nodules. (RESIDUAL) @ 0 to 11.0 feet: No recovery; interval removed with vacuum truck to clear for utilities. Lithology confirmed in 0 to 11 foot interval via visual inspection down borehole.	0	0	100
			5							
			10							
CB	8.3/5.5	N								
			15							
CB	11.5/10	N					@ 16.5 feet: plasticity change to high plasticity. Occasional dark brown soft granular nodules.			
			20							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-1**
LOCATION	**Euharlee, Georgia**	PAGE	**2 of 3**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**718.33 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**56.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**11/17/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**NAD83 (WZ) Northing: 1499101.23; Easting: 2067205.48**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
			25				**11.0 to 38.0 feet: CLAY (CH)**, continued.	0	0	100
CB	11.6/10	N	30				@ 30.3 feet: wet, consistency change to firm. @ 31.7 to 34.1 feet: color change to mottled dark brown and light brown. @ 32.4 feet: thin seam of white/light gray powdery material.			
CB	9.0/10	N S	35				**38.0 to 56.5 feet: DOLOMITE**, dark gray, bedded, beds range from 1- to 5-inches thick, breakage along bedding planes, fine grained crystals, occasional black chert nodules. (BEDROCK)	NA	NA	NA
			40							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-1**
LOCATION	**Euharlee, Georgia**	PAGE	**3 of 3**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**718.33 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**56.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**11/17/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**NAD83 (WZ) Northing: 1499101.23; Easting: 2067205.48**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
					0 30 60 90 120 150		**38.0 to 56.5 feet: DOLOMITE**, continued.	NA	NA	NA
							@ 38.0 to 39.4 feet: weathered zone-red, light red and light gray clay mixed with weathered dolomite.			
							@ 39.4 to 42.4 feet: slightly weathered, some light brown and rust colored staining and residue, abundant black chert in this interval.			
							@ 42.4 to 55.2 feet: unweathered.			
			45							
CB	5.9/10	S					@ 45.8 to 46.5 feet: dolomite appears brecciated and deformed with calcite infill between brecciated pieces of dolomite and what appears to be sand (ground up rock?) (fracture zone?).			
							@ 46.5 to 48.0 feet: abundant calcite-filled fractures.			
							@ 48.0 to 51.0 feet: void.			
						VOID				
			50							
			55				@ 55.2 to 56.5 feet: brecciated dolomite with calcite infill, trace iron-oxide staining (fracture zone?).			
							Total depth: 56.5 feet.			
			60							

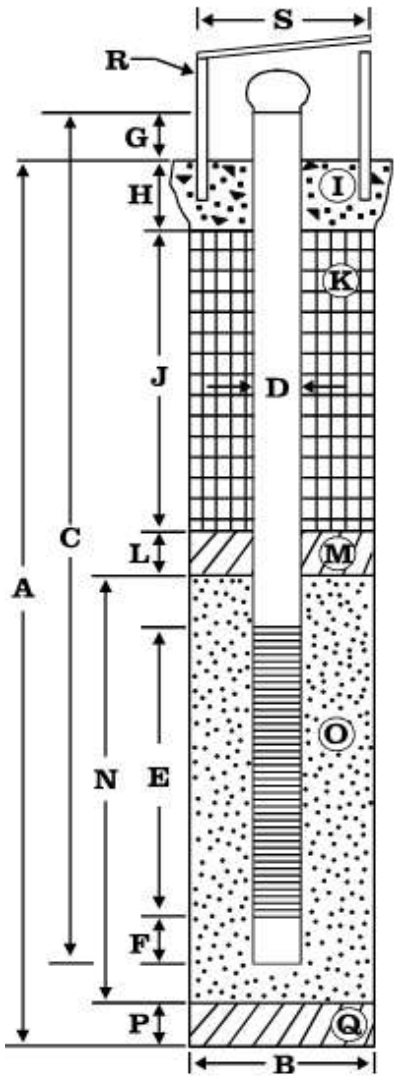
REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Well construction Log revised with new survey data dated 6/10/2020.

WELL DETAILS

Project Number:	151114-03	Boring/Well No.:	BGWA-1
Client Name:	Southern Company	Top of Casing Elev.:	720.90 ft. NAVD88
Project Name:	Plant Bowen Hydrogeologic Investigation	Ground Surface Elev.:	718.33 ft. NAVD88
		Installation Date:	11/17/15
Location:	Euharlee, Georgia	Driller:	Cascade Drilling
			Leon Logan, Driller



	Depth (feet)	Elevation (feet, NAVD88)
S	+3.0	721.40
R	+2.8	720.90
G	0.0	718.10
H	1.0	717.10
J	20.0	698.10
C	40.2	677.90
L	43.8	674.30
A	46.1	672.00
N	56.1	662.00
E	56.4	661.70
F	56.4	661.70
P	56.5	661.60
B		

EXPLORATORY BORING

A. Total depth:	56.5 ft.
B. Diameter:	6 in.
Drilling method:	Rotosonic

WELL CONSTRUCTION

C. Well casing length:	59.2 ft.
Well casing material:	Schedule 40 PVC
D. Well casing diameter:	2 in.
E. Well screen length:	10.0 ft.
Well screen type:	3.5-inch OD U-Pak PVC
Well screen slot size:	0.010 in.
F. Well sump/end cap length	0.3 ft.
G. Well casing height (stickup):	2.8 ft.
H. Surface seal thickness:	1.0 ft.
I. Surface seal material:	Concrete
J. Annular seal thickness:	39.2 ft.
K. Annular seal material:	Bentonite grout (1.0-20.0 ft.)
	Bentonite chips (20.0-40.2 ft.)
L. Filter pack seal thickness:	3.6 ft.
M. Filter pack seal material:	Bentonite pellets
N. Sand pack thickness:	12.6 ft.
O. Sand pack material:	#1 Silica sand
P. Bottom material thickness:	0.1 ft.
Q. Bottom material:	Native Material
R. Protective casing material:	Aluminum
S. Protective casing diameter:	Square – 4 in.
Well centralizer depths:	NA

NOTES:

OD = Outside diameter. PVC = Polyvinyl chloride.
Bentonite pellets allowed to hydrate for 1 hour.
Bentonite chips allowed to hydrate for over 4 hours.
NAVD88 = North American Vertical Datum of 1988.

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-3**
LOCATION	**Euharlee, Georgia**	PAGE	**1 of 5**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**721.80 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**86.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**11/05/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1499420.87; Easting: 2065185.74**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
NA	NA	NA			0 30 60 90 120 150		**0 to 38.8 feet: SILTY CLAY (CL),** light reddish brown with white mottling, moist, firm, low plasticity, occasional chert nodule. (0 to 8.5 feet: verified by visual observation down borehole.) (RESIDUAL) @ 0 to 8.5 feet: No recovery; interval removed with vacuum truck to clear for utilities.	0	0	100
CB	9.3/8.0	N	5							
			10							
			15							
CB	10.4/10	N					@ 17.6 to 18.6 feet: mostly white nodules, soft, easily crumbled by hand. @ 17.9 feet: seam of red coloration.			
			20							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-3**
LOCATION	**Euharlee, Georgia**	PAGE	**2 of 5**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**721.80 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**86.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**11/05/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1499420.87; Easting: 2065185.74**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
					0 30 60 90 120 150		**0 to 38.8 feet: SILTY CLAY (CL),** continued.			
			25				@ 25.7 to 25.9 feet: mostly black chert nodules.			
CB	11/10	N					@ 27.1 to 39.1 feet: occasional dark brown and black soft, fissile nodules.			
			30				@ 30.0 feet: moisture change to moist to damp.			
			35							
CB	10.8/10	N					@ 38.3 feet: consistency change to soft, wet, abundant chert nodules. @ 39.1 to 39.2 feet: black nodules.			
			40				**38.8 to 52.3 feet: SILT WITH CLAY (ML)**, see description on next page.	0	0	100

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-3**
LOCATION	**Euharlee, Georgia**	PAGE	**3 of 5**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**721.80 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**86.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**11/05/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1499420.87; Easting: 2065185.74**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
			45				**38.8 to 52.3 feet: SILT WITH CLAY (ML)**, light reddish brown with dark red laminations and banding, slight plasticity, soft, wet. (RESIDUAL) @ 42.0 to 42.2 feet: chert nodules and dark red clay. @ 43.9 to 44.2 feet: abundant dark brown and black nodules. @ 44.2 to 45.0 feet: dark red clay mixed and swirled into matrix.	0	0	100
CB	10.6/10	N	50				@ 50.7 to 51.9 feet: dark red clay mixed in silt matrix. @ 51.9 to 52.3 feet: large dark brown nodule, broken into pieces by drilling.	0	0	100
			55				**52.3 to 60.0 feet: SILTY CLAY (CH)**, light brown with dark red and tan mottling, wet, medium plasticity, firm, occasional black nodules. (RESIDUAL)			
CB	5.7/10	N	60							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-3**
LOCATION	**Euharlee, Georgia**	PAGE	**4 of 5**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**721.80 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**86.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**11/05/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1499420.87; Easting: 2065185.74**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		N					**60.0 to 62.5 feet: MIX OF CLAY, SILT, CHERT AND BLACK NODULES** in a granular (except for fines) matrix (CL), color is a blend of red, brown, white and black. (VOID INFILL)	0	0	100
		NA	65				**62.5 to 66.5 feet: NO RECOVERY**, sample soft, wet and soupy, did not go into core barrel.			
CB	0/10						**66.5 to 76.5 feet: NO RECOVERY**, driller reports very soft and soupy formation. Driller tagged bottom of hole, sample did not fall out, it likely was so soft it never went into core barrel. (VOID INFILL)			
			70							
			75							
CB	9.0/10	N					@ 76.5 to 77.8 feet: gravelly clay, light reddish brown, very soft, wet. (VOID INFILL)			
		S					**77.8 to 86.5 feet: DOLOMITE**, see description on next page.	NA	NA	NA
			80							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-3**
LOCATION	**Euharlee, Georgia**	PAGE	**5 of 5**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**721.80 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**86.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**11/05/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1499420.87; Easting: 2065185.74**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		S	85				**77.8 to 86.5 feet: DOLOMITE**, light gray, fine grained crystals, thinly bedded (0.5- to 3-inches thick), breakage along bedding planes, slightly weathered, some iron oxide stains on surface, trace calcite-filled fractures and voids. Driller reported the formation took in the water used for drilling.	NA	NA	NA
			90				Total depth: 86.5 feet.			
			95							
			100							

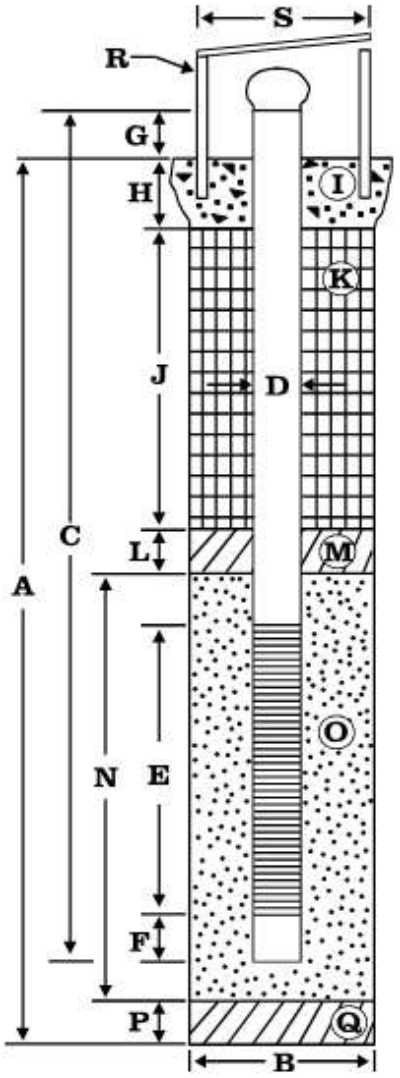
REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Well construction Log revised with new survey data dated 6/10/2020.

WELL DETAILS

Project Number:	151114-03	Boring/Well No.:	BGWA-3
Client Name:	Southern Company	Top of Casing Elev.:	724.28 ft. NAVD88
Project Name:	Plant Bowen Hydrogeologic Investigation	Ground Surface Elev.:	721.90 ft. NAVD88
		Installation Date:	11/05/15
Location:	Euharlee, Georgia	Driller:	Cascade Drilling
			Leon Logan, Driller



	Depth (feet)	Elevation (feet, NAVD88)
S	+3.2	725.10
R	+3.0	724.28
G	0.0	721.28
H	1.0	720.28
J	45.6	675.68
C	70.3	650.98
L	74.0	647.28
A	76.2	645.08
N	86.2	635.08
E	86.5	634.78
F	86.5	635.40
P	NA	NA
B		

EXPLORATORY BORING

A. Total depth:	86.5 ft.
B. Diameter:	6 in.
Drilling method:	Rotosonic

WELL CONSTRUCTION

C. Well casing length:	89.5 ft.
Well casing material:	Schedule 40 PVC
D. Well casing diameter:	2 in.
E. Well screen length:	10.0 ft.
Well screen type:	3.5-inch OD U-Pak PVC
Well screen slot size:	0.010 in.
F. Well sump/end cap length	0.3 ft.
G. Well casing height (stickup):	3.0 ft.
H. Surface seal thickness:	1.0 ft.
I. Surface seal material:	Concrete
J. Annular seal thickness:	69.3 ft.
K. Annular seal material:	Bentonite grout (1.0-45.6 ft.)
	Bentonite chips (46.5-70.3 ft.)
L. Filter pack seal thickness:	3.7 ft.
M. Filter pack seal material:	Bentonite pellets
N. Sand pack thickness:	12.6 ft.
O. Sand pack material:	#1 Silica sand
P. Bottom material thickness:	NA
Q. Bottom material:	NA-None
R. Protective casing material:	Aluminum
S. Protective casing diameter:	Square – 4 in.
Well centralizer depths:	NA

NOTES:

OD = Outside diameter. PVC = Polyvinyl chloride.
Bentonite pellets allowed to hydrate for 1 hour.
Bentonite chips allowed to hydrate for over 8 hours.
NAVD88 = North American Vertical Datum of 1988.

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-4**
LOCATION	**Euharlee, Georgia**	PAGE	**1 of 4**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**726.05 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**77 feet**
LOGGED BY	**Jim Redwine**	DATE COMPLETED	**03/04/16**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1499485.38; Easting: 2064697.89**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
CB	7/7	N			0 30 60 90 120 150		**0 to 0.2 feet: COARSE CONSTRUCTION GRAVEL.** (FILL) **0.2 to 7.0 feet: CLAY (CL)**, red to yellow mottled, plastic to stiff to crumbly. @ 1.0 feet, and at every foot throughout entire boring: acid test. (RESIDUAL) Acid test performed every 1.0 feet throughout boring.	0	10	90
			5							
CB	10/10	N					**7.0 to 15.0 feet: CLAY (CL)**, yellow to red mottled, stiff to crumbly, with remnant rock pieces (mostly chert). Chert or carbonite gravel approximately 10 to 40 percent. (RESIDUAL)	2	2	96
			10							
			15				**15.0 to 27.0 feet: CLAY (CL)**, yellow, stiff, rare chert gravel or remnant dolomite. (RESIDUAL)			
CB	10/10	N						5	5	90
			20							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-4**
LOCATION	**Euharlee, Georgia**	PAGE	**2 of 4**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**726.05 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**77 feet**
LOGGED BY	**Jim Redwine**	DATE COMPLETED	**03/04/16**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1499485.38; Easting: 2064697.89**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
CB	10/10	N	25				**15.0 to 27.0 feet: CLAY (CL)**, continued.	5	5	90
CB	10/10	N	30				**27.0 to 31.5 feet: CLAY (CL)**, stiff, orange to yellow, rare chert gravel or remnant dolomite. (RESIDUAL)	5	5	90
							31.5 to 35.0 feet: CLAY (CL), orange to yellow, stiff to crumbly, with chert zones. (RESIDUAL) @ 32.4 to 32.6 feet: residual chert. @ 33.6 to 35.0 feet: residual chert.	40	10	50
			35				**35.0 to 48.0 feet: CLAY (CL)**, orange to yellow, stiff, with occasional chert gravel. (RESIDUAL)	10	0	90
CB	7/10	N	40							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-4**
LOCATION	**Euharlee, Georgia**	PAGE	**3 of 4**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**726.05 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**77 feet**
LOGGED BY	**Jim Redwine**	DATE COMPLETED	**03/04/16**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1499485.38; Easting: 2064697.89**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
CB	10/10	N	45				**35.0 to 48.0 feet: CLAY (CL)**, continued.	10	0	90
CB	10/10		50				**48.0 to 57.0 feet: CLAY (CL)**, orange to yellow, stiff to plastic, with occasional gravel and/or sand zones. @ 48.0 to 48.8 feet: fine chert gravel in clay.	5	10	85
							@ 51.6 to 51.7 feet: weathered slate in clay.	15	15	70
			55				@ 54.6 to 54.8 feet: chert gravel in clay.			
							@ 56.0 to 56.1 feet: quartz sand zone in clay.	0	25	75
CB	7/10						@ 57.0 to 57.1 feet: 1- to 2-inch chert fragment. @ 57.1 to 60.0 feet: no recovery.			
			60							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-4**
LOCATION	**Euharlee, Georgia**	PAGE	**4 of 4**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**726.05 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**77 feet**
LOGGED BY	**Jim Redwine**	DATE COMPLETED	**03/04/16**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1499485.38; Easting: 2064697.89**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
CB	7/10	S					**60.0 to 62.0 feet: CHERTY DOLOMITE**, gray to tan, breaks like chert, can be scratched/fizzed. (BEDROCK) @ 60.0 feet: top of rock.	NA	NA	NA
		S					**62.0 to 70.4 feet: DOLOMITE to LIMESTONE**, medium gray, very fine grained, siliceous, slight reaction to hydrochloric acid in places. Reacts to hydrochloric acid when powdered. (BEDROCK)	NA	NA	NA
			65							
		S								
CB	8/10	S								
			70							
		S					**70.4 to 72.0 feet: CHERTY DOLOMITE**, gray, medium-grained, white fenestral/anastomosing texture (depositional). (BEDROCK) @ 71.0 to 72.0 feet: iron-stained joint.	NA	NA	NA
							72.0 to 77.0 feet: DOLOMITE, fine to medium-grained, of various textures, few brown chert nodules. Quartz sand grains floating in dolomite in a few places. Coarse pink calcite along some healed fractures. Iron-stained joints. Exact location of features not known due to core loss and rubble in sleeve. (BEDROCK)	NA	NA	NA
		S								
			75							
							Total depth: 77.0 feet.			
			80							

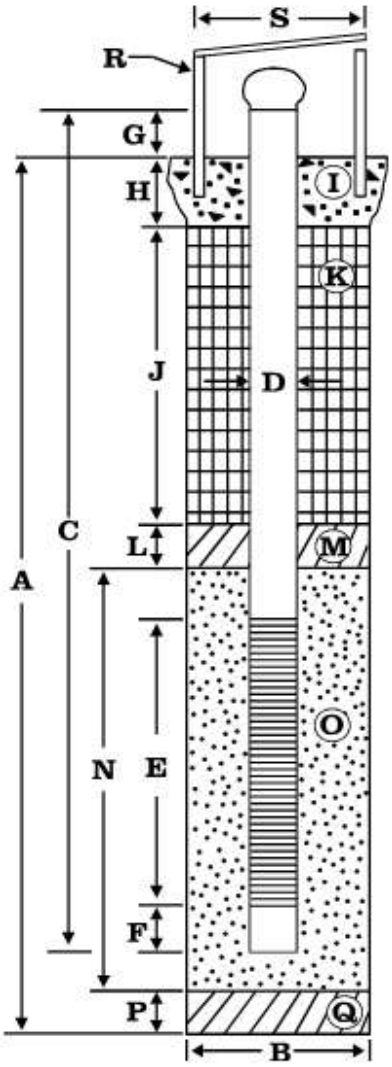
REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Well construction Log revised with new survey data dated 6/10/2020.

WELL DETAILS

Project Number:	151114-03	Boring/Well No.:	BGWA-4
Client Name:	Southern Company	Top of Casing Elev.:	728.67 ft. NAVD88
Project Name:	Plant Bowen Hydrogeologic Investigation	Ground Surface Elev.:	726.1 ft. NAVD88
		Installation Date:	03/04/16
Location:	Euharlee, Georgia	Driller:	Cascade Drilling
			Thomas Ardito, Driller



	Depth (feet)	Elevation (feet, NAVD88)
S	NA	NA
R	+2.6	728.67
G	0.0	726.07
H	1.0	725.07
K		
J	53.0	673.07
D		
C		
L	59.0	667.07
M	63.0	663.07
A	65.7	660.37
N		
E		
O		
F	75.7	650.37
	76.0	650.07
P	77.0	649.07
Q	NA	NA
B		

EXPLORATORY BORING

A. Total depth:	77.0 ft.
B. Diameter:	6 in.
Drilling method:	Rotosonic

WELL CONSTRUCTION

C. Well casing length:	79.0 ft.
Well casing material:	Schedule 40 PVC
D. Well casing diameter:	2 in.
E. Well screen length:	10.0 ft.
Well screen type:	3.5-inch OD U-Pak PVC
Well screen slot size:	0.010 in.
F. Well sump/end cap length	0.3 ft.
G. Well casing height (stickup):	2.6 ft.
H. Surface seal thickness:	1.0 ft.
I. Surface seal material:	Concrete
J. Annular seal thickness:	58.0 ft.
K. Annular seal material:	Cement/bentonite grout (1.0-53.0 ft.)
	Bentonite chips (53.0-59.0 ft.)
L. Filter pack seal thickness:	4.0 ft.
M. Filter pack seal material:	Bentonite pellets
N. Sand pack thickness:	14.0 ft.
O. Sand pack material:	#1 Silica sand
P. Bottom material thickness:	NA
Q. Bottom material:	NA
R. Protective casing material:	Aluminum
S. Protective casing diameter:	Square – 4 in.
Well centralizer depths:	NA

NOTES:

SS = silica sand.
OD = Outside diameter. PVC = Polyvinyl chloride.
Bentonite pellets allowed to hydrate for 1 hour.
Bentonite chips allowed to hydrate for 4 hours.
NAVD88 = North American Vertical Datum of 1988.

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-5**
LOCATION	**Euharlee, Georgia**	PAGE	**1 of 4**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**718.53 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**66.7 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**11/03/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1499434.58; Easting: 2065421.43**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
NA	NA	NA					**0 to 1.0 foot: ROAD BASE GRAVEL**, gray.	100	0	0
							1.0 to 23.5 feet: SILTY CLAY (CL), mottled light brown, dark red, tan and white, moist, low plasticity, some patches of dark gray, some black angular chert nodules, stiff. (RESIDUAL)	0	0	100
			5				@ 0 to 8.0 feet: No recovery; interval removed with vacuum truck to clear for utilities. Interval lithology verified by visual inspection down borehole.			
CB	8.0/8.5	N								
			10							
							@ 11.1 to 11.3 feet: layer of fine grained, loose, orange sand.			
			15							
CB	11.4/10	N								
			20							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-5**
LOCATION	**Euharlee, Georgia**	PAGE	**2 of 4**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**718.53 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**66.7 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**11/03/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1499434.58; Easting: 2065421.43**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
							1.0 to 23.5 feet: SILTY CLAY (CL), continued.	0	0	100
							@ 20.8 to 21.0 feet: chert nodules.			
							@ 21.7 to 22.6 feet: mostly chert nodules.			
							@ 23.2 to 23.5 feet: mostly chert nodules.			
			25				**23.5 to 47.0 feet: SILTY CLAY (CH)**, light reddish brown, moist to damp, high plasticity, stiff, some chert nodules. (RESIDUAL)	0	0	100
CB	9.4/10	N								
			30							
			35				@ 35.5 feet: color change to brownish red, wet.			
CB	10.6/10	N								
			40							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-5**
LOCATION	**Euharlee, Georgia**	PAGE	**3 of 4**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**718.53 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**66.7 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**11/03/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1499434.58; Easting: 2065421.43**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
			45				**23.5 to 47.0 feet: SILTY CLAY (CH)**, continued.	0	0	100
CB	9.5/10	N					**47.0 to 48.8 feet: SILT (ML)**, wet, light brown with dark red banding, no plasticity, firm, occasional black nodules (Mn?). (RESIDUAL)	0	0	100
							48.8 to 49.9 feet: SILTY CLAY (CH), light reddish brown, moist to damp, high plasticity, stiff, some chert nodules. (RESIDUAL)	0	0	100
		S	50				**49.9 to 66.5 feet: DOLOMITE**, gray, fine grained crystals, competent, bedded, beds range from 0.25 to 0.5 feet, breakage along bedding planes, unweathered to slightly weathered. (BEDROCK)	NA	NA	NA
						VOID	@ 49.9 to 50.2 feet: heavily weathered zone.			
							@ 50.2 to 50.7 feet: 0.5 feet bed, hard, dense, competent.			
							@ 51.0 to 53.0 feet: driller reported a void, no clay in sample. Void may be unfilled.			
			55							
CB	8.5/10	S					@ 56.5 feet: evidence of slight weathering, trace iron oxide stains on surfaces.			
			60							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-5**
LOCATION	**Euharlee, Georgia**	PAGE	**4 of 4**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**718.53 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**66.7 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**11/03/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1499434.58; Easting: 2065421.43**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		S	65		0 30 60 90 120 150		**49.9 to 66.5 feet: DOLOMITE**, continued. @ 63.6 to 65.1 feet: light red colored banding, not laminar, but wavy and undular.	NA	NA	NA
			70				Total depth: 66.7 feet.			
			75							
			80							

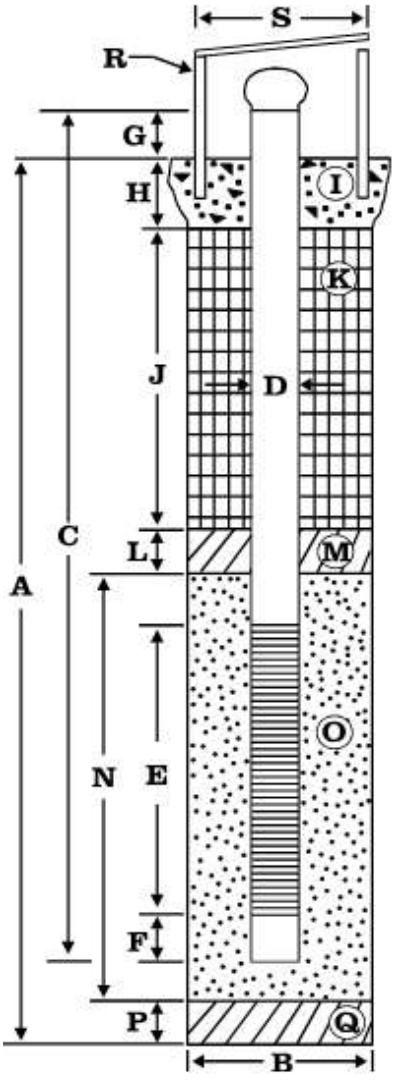
REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent.

ANCHOR QEA

Well construction Log revised with new survey data dated 6/10/2020.

WELL DETAILS

Project Number:	151114-03	Boring/Well No.:	BGWA-5
Client Name:	Southern Company	Top of Casing Elev.:	720.92 ft. NAVD88
Project Name:	Plant Bowen Hydrogeologic Investigation	Ground Surface Elev.:	718.5 ft. NAVD88
		Installation Date:	11/03/15
Location:	Euharlee, Georgia	Driller:	Cascade Drilling
			Leon Logan, Driller



	Depth (feet)	Elevation (feet, NAVD88)
S	+3.2	721.7
R	+3.0	720.92
G	0.0	717.92
H	1.0	716.92
I		
K		
J	39.8	678.12
D		
C		
L	49.3	668.62
M	54.2	663.72
A		
N	56.4	661.52
E		
O		
F	66.4	651.52
	66.7	651.22
P	68.7	649.22
Q	NA	NA
B		

EXPLORATORY BORING

A. Total depth:	66.7 ft.
B. Diameter:	6 in.
Drilling method:	Rotosonic

WELL CONSTRUCTION

C. Well casing length:	69.7 ft.
Well casing material:	Schedule 40 PVC
D. Well casing diameter:	2 in.
E. Well screen length:	10.0 ft.
Well screen type:	3.5-inch OD U-Pak PVC
Well screen slot size:	0.010 in.
F. Well sump/end cap length	0.3 ft.
G. Well casing height (stickup):	3.0 ft.
H. Surface seal thickness:	1.0 ft.
I. Surface seal material:	Concrete
J. Annular seal thickness:	48.3 ft.
K. Annular seal material:	Cement/bentonite grout (1.0-39.8 ft.)
	Bentonite chips (39.8-49.3 ft.)
L. Filter pack seal thickness:	4.9 ft.
M. Filter pack seal material:	Bentonite pellets
N. Sand pack thickness:	12.5 ft.
O. Sand pack material:	#1 Silica sand
P. Bottom material thickness:	NA
Q. Bottom material:	NA
R. Protective casing material:	Aluminum
S. Protective casing diameter:	Square – 4 in.
Well centralizer depths:	NA

NOTES:

OD = Outside diameter. PVC = Polyvinyl chloride.
Bentonite pellets allowed to hydrate for 1 hour.
Bentonite chips allowed to hydrate for over 8 hours.
NAVD88 = North American Vertical Datum of 1988.

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-6**
LOCATION	**Euharlee, Georgia**	PAGE	**1 of 4**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**714.49 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**66.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**11/06/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1499262.01; Easting: 2065797.30**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
NA	NA	NA			0 30 60 90 120 150		**0 to 20.3 feet: SILT WITH CLAY (ML)**, light brown silt with dark red clay mottling, moist, firm, slight plasticity. (RESIDUAL) @ 0 to 9.0 feet: No recovery; interval removed with vacuum truck to clear for utilities. Interval logged via visual observation down borehole.	0	0	100
CB	10/7.5	N	5				@ 12.8 feet: occasional chert nodules.			
			10				@ 14.3 to 15.3 feet: gray silt fraction.			
CB	10.8/10	N	15							
			20							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-6**
LOCATION	**Euharlee, Georgia**	PAGE	**2 of 4**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**714.49 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**66.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**11/06/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1499262.01; Easting: 2065797.30**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
							0 to 20.3 feet: SILT WITH CLAY (ML), continued.			
							20.3 to 24.3 feet: SILTY CLAY (CH), light brownish red, soft, moist to wet, moderate plasticity, occasional chert nodules. (RESIDUAL)	0	0	100
			25				**24.3 to 32.1 feet: SILT WITH CLAY (ML)**, light brown silt with dark red mottling (clay fraction), no plasticity, moist, firm. (RESIDUAL)	0	0	100
CB	11.2/10	N					@ 26.5 feet: wet.			
			30				@ 30.4 to 32.1 feet: occasional black nodules.			
							32.1 to 38.8 feet: CLAY WITH GRAVEL, brownish grayish red, highly weathered, gravel is fragments of low grade metamorphic rock, either phyllite or schist, very thin planes of breakage in gravel, high plasticity, moist, firm. (RESIDUAL)	30	0	70
			35							
CB	11.1/10	N								
							38.8 to 45.0 feet: SILT (ML), description on next page.	0	0	100
			40							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-6**
LOCATION	**Euharlee, Georgia**	PAGE	**3 of 4**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**714.49 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**66.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**11/06/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1499262.01; Easting: 2065797.30**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		N	45				**38.8 to 45.0 feet: SILT (ML)**, yellowish brown, very soft, wet, no plasticity, some white and dark brown mottling. (RESIDUAL)	0	0	100
		S					**45.0 to 66.5 feet: DOLOMITE**, light gray, fine grained crystals, thinly bedded, 0.5- to 2-inches thick, breakage along bedding surfaces, slightly weathered, some iron oxide staining on surfaces, trace fine calcite filled fractures. (BEDROCK)	NA	NA	NA
CB	6.2/10	S					@ 45.0 to 46.5 feet: highly weathered zone, wet.			
			50				@ 50.5 to 53.0 feet: color change to light buff gray.			
			55							
CB	9.6/10	S					@ 56.5 to 58.6 feet: color change to dark gray, increases in amount of calcite-filled fractures.			
							@ 58.6 feet: color change to light gray.			
			60							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-6**
LOCATION	**Euharlee, Georgia**	PAGE	**4 of 4**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**714.49 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**66.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**11/06/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1499262.01; Easting: 2065797.30**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		S	65				**45.0 to 66.5 feet: DOLOMITE**, continued. @ 61.0 to 66.5 feet: driller reported more water return (lower permeability). @ 61.6 to 63.8 feet: occasional gray-green residue on bedding surfaces.	NA	NA	NA
			70				Total depth: 66.5 feet.			
			75							
			80							

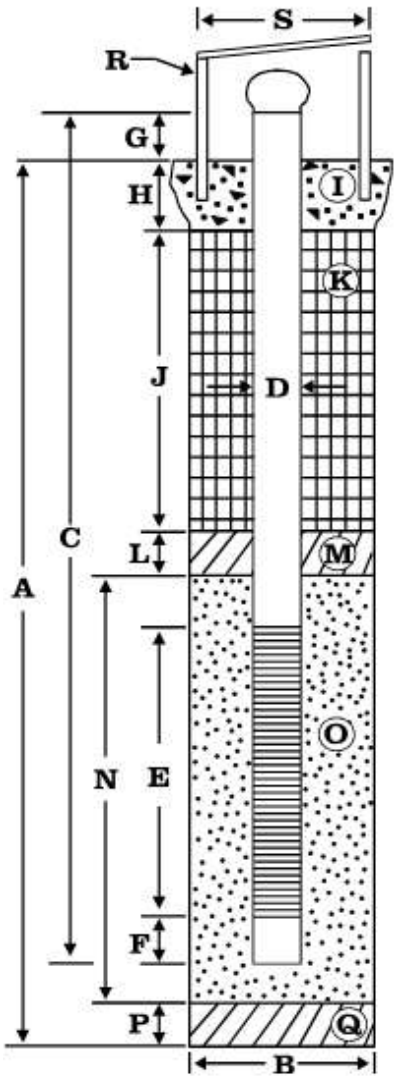
REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Well construction Log revised with new survey data dated 6/10/2020.

WELL DETAILS

Project Number:	151114-03	Boring/Well No.:	BGWA-6
Client Name:	Southern Company	Top of Casing Elev.:	716.93 ft. NAVD88
Project Name:	Plant Bowen Hydrogeologic Investigation	Ground Surface Elev.:	713.93 ft. NAVD88
		Installation Date:	11/06/15
Location:	Euharlee, Georgia	Driller:	Cascade Drilling
			Leon Logan, Driller



	Depth (feet)	Elevation (feet, NAVD88)
S	+3.2	717.7
R	+3.0	716.93
G	0.0	713.93
H	1.0	712.93
J	29.0	684.93
C	43.9	670.03
L	47.5	666.43
M	50.0	663.93
N	60.0	653.93
E	60.3	653.63
F	60.9	653.03
P	66.5	648.0
B		

EXPLORATORY BORING

A. Total depth:	66.5 ft.
B. Diameter:	6 in.
Drilling method:	Rotosonic

WELL CONSTRUCTION

C. Well casing length:	63.3 ft.
Well casing material:	Schedule 40 PVC
D. Well casing diameter:	2 in.
E. Well screen length:	10.0 ft.
Well screen type:	3.5-inch OD U-Pak PVC
Well screen slot size:	0.010 in.
F. Well sump/end cap length	0.3 ft.
G. Well casing height (stickup):	3.0 ft.
H. Surface seal thickness:	1.0 ft.
I. Surface seal material:	Concrete
J. Annular seal thickness:	42.9 ft.
K. Annular seal material:	Bentonite grout (1.0-29.0 ft.)
	Bentonite chips (29.0-43.9 ft.)
L. Filter pack seal thickness:	3.6 ft.
M. Filter pack seal material:	Bentonite pellets
N. Sand pack thickness:	13.4 ft.
O. Sand pack material:	#1 Silica sand
P. Bottom material thickness:	5.6 ft.
Q. Bottom material:	Bentonite chips
R. Protective casing material:	Aluminum
S. Protective casing diameter:	Square – 4 in.
Well centralizer depths:	NA

NOTES:

OD = Outside diameter. PVC = Polyvinyl chloride.
Bentonite pellets allowed to hydrate for 1 hour.
Bentonite chips allowed to hydrate for over 4 hours.
NAVD88 = North American Vertical Datum of 1988.

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-11**
LOCATION	**Euharlee, Georgia**	PAGE	**1 of 4**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**683.91 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**76.5 feet**
LOGGED BY	**R. Tinsley (0-66.5 ft.)/Matt Wilson (66.5-76.5 ft.)**	DATE COMPLETED	**10/17/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1504998.94; Easting: 2066093.83**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
CB	6.5/6.5	N			0 30 60 90 120 150		**0 to 0.6 foot: TOPSOIL**			
							0.6 to 16.5 feet: CLAY (CL), reddish brown, stiff, with chert gravel, moist, plastic. (RESIDUAL)	0	0	100
			5							
CB	10.8/10	N								
			10							
			15							
CB	10.4/10	N					**16.5 to 46.0 feet: CLAY (CH)**, yellowish red with red and tan mottling, stiff, moderate to high plasticity, wet, angular chert fragments. (RESIDUAL)	0	0	100
			20							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-11**
LOCATION	**Euharlee, Georgia**	PAGE	**2 of 4**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**683.91 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**76.5 feet**
LOGGED BY	**R. Tinsley (0-66.5 ft.)/Matt Wilson (66.5-76.5 ft.)**	DATE COMPLETED	**10/17/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1504998.94; Easting: 2066093.83**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		N	25				**16.5 to 46.0 feet: CLAY (CH)**, continued. @ 20.0 to 46.5 feet: sand sized chert fragments.	0	0	100
CB	9.9/10	N								
			30							
			35							
		S								
CB	9.6/10									
			40							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-11**
LOCATION	**Euharlee, Georgia**	PAGE	**3 of 4**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**683.91 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**76.5 feet**
LOGGED BY	**R. Tinsley (0-66.5 ft.)/Matt Wilson (66.5-76.5 ft.)**	DATE COMPLETED	**10/17/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1504998.94; Easting: 2066093.83**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
CB		N	45				**16.5 to 46.0 feet: CLAY (CH)**, continued.	0	0	100
CB	3.7/15.5						**46.0 to 50.0 feet: DOLOMITE**, dark gray, weathered and stained. (BEDROCK)	NA	NA	NA
		S	50			VOID	@ 50.0 to 56.5 feet: Void, mud filled.			
			55				**56.5 to 61.0 feet: SILTY CLAY WITH GRAVEL (CL)**, yellowish brown, very loose, gravel composed of dolomite. (VOID INFILL)	NA	NA	NA
						VOID	@ 58.0 to 60.0 feet: Void, mud filled.			
			60							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-11**
LOCATION	**Euharlee, Georgia**	PAGE	**4 of 4**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**683.91 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**76.5 feet**
LOGGED BY	**R. Tinsley (0-66.5 ft.)/Matt Wilson (66.5-76.5 ft.)**	DATE COMPLETED	**10/17/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1504998.94; Easting: 2066093.83**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		S					**56.5 to 61.0 feet: SILTY CLAY WITH GRAVEL (CL)**, continued.	NA	NA	NA
							61.0 to 62.0 feet: CLAY WITH GRAVEL (CL), gray, gravel composed of dolomite. (VOID INFILL)	NA	NA	NA
CB	**4.5/4.5**						**62.0 to 68.8 feet: DOLOMITE**, dark gray, hard, calcite-filled fractures, staining and weathering. (BEDROCK)	NA	NA	NA
			65							
		S								
CB	**8.7/10**						@ 66.5 to 68.2 feet: abundant calcite-filled fractures.			
							@ 68.2 to 68.8 feet: white lineations dipping at approximately 35 degrees, also white lenticular shapes dipping at 35 degrees.	NA	NA	NA
		E	70				**68.8 to 76.5 feet: LIMESTONE**, dark gray, thinly bedded, beds range from 0.5 to 2 inches, breakage along bedding planes, fine to medium grained crystals, outside surface has white powdery texture, occasional calcite-filled fractures, no apparent structural features. (BEDROCK)			
			75							
							Total depth: 76.5 feet.			
			80							

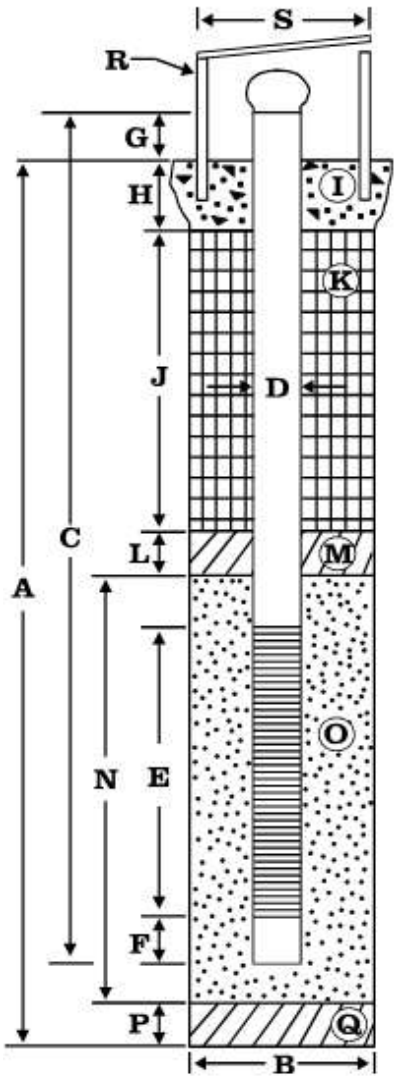
REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Well construction Log revised with new survey data dated 6/10/2020.

WELL DETAILS

Project Number:	151114-03	Boring/Well No.:	BGWC-11
Client Name:	Southern Company	Top of Casing Elev.:	686.50 ft. NAVD88
Project Name:	Plant Bowen Hydrogeologic Investigation	Ground Surface Elev.:	684.1 ft. NAVD88
		Installation Date:	10/16/15
Location:	Euharlee, Georgia	Driller:	Cascade Drilling
			David Wilcox, Driller



	Depth (feet)	Elevation (feet, NAVD88)
S	+3.2	687.3
R	+3.0	686.50
G	0.0	683.50
H	1.0	682.50
I		
K		
J	40.0	643.50
D		
C	58.5	625.00
L	61.9	621.60
M	64.3	619.20
A		
O		
N		
E		
F	74.3	609.20
	74.6	608.90
P	76.5	607.00
Q	76.5	607.00
B		

EXPLORATORY BORING

A. Total depth:	76.5 ft.
B. Diameter:	6 in.
Drilling method:	Rotosonic

WELL CONSTRUCTION

C. Well casing length:	77.6 ft.
Well casing material:	Schedule 40 PVC
D. Well casing diameter:	2 in.
E. Well screen length:	10.0 ft.
Well screen type:	3.5-inch OD U-Pak PVC
Well screen slot size:	0.010 in.
F. Well sump/end cap length	0.3 ft.
G. Well casing height (stickup):	3.0 ft.
H. Surface seal thickness:	1.0 ft.
I. Surface seal material:	Concrete
J. Annular seal thickness:	57.5 ft.
K. Annular seal material:	Cement/bentonite grout (1.0-40.0 ft.)
	Bentonite chips (40.0-58.5 ft.)
L. Filter pack seal thickness:	3.4 ft.
M. Filter pack seal material:	Bentonite pellets
N. Sand pack thickness:	12.1 ft.
O. Sand pack material:	#1 Silica sand
P. Bottom material thickness:	2.5 ft.
Q. Bottom material:	Bentonite pellets
R. Protective casing material:	Aluminum
S. Protective casing diameter:	Square – 4 in.
Well centralizer depths:	NA

NOTES:

OD = Outside diameter. PVC = Polyvinyl chloride.
Bentonite pellets allowed to hydrate for 1 hour.
Bentonite chips allowed to hydrate for over 8 hours.
NAVD88 = North American Vertical Datum of 1988.

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-13**
LOCATION	**Euharlee, Georgia**	PAGE	**1 of 4**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**714.77 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**76.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**10/21/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1505435.29; Easting: 2065251.21**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
CB	5.0/6.5	N			0 30 60 90 120 150		**0 to 3.8 feet: CLAY (CL)**, red with tan and white mixed in, dry, slight plasticity, firm, abundant rootlets at 0 to 1.0 foot. (FILL)	0	0	100
							3.8 to 35.1 feet: CLAY (CH), dark red, dry, moderate plasticity, firm, occasional chert nodules and white granular material. (RESIDUAL)	0	0	100
CB	11.6/10	N	5				@ 7.8 feet: color change to light brownish red with dark red and light brown mottling, consistency change to stiff.			
			10				@ 13.0 feet: plasticity change to high plasticity.			
CB	11.5/10	N	15				@ 17.2 feet: moist, consistency change to soft.			
			20							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-13**
LOCATION	**Euharlee, Georgia**	PAGE	**2 of 4**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**714.77 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**76.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**10/21/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1505435.29; Easting: 2065251.21**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		N	25				**3.8 to 35.1 feet: CLAY (CH)**, continued. @ 20.5 feet: consistency change to stiff, moisture change to dry.	0	0	100
CB	12/10	N	30				@ 26.5 feet: color change to light yellowish red.			
		N	35				**35.1 to 36.5 feet: SILT (ML)**, light brown, dry, no plasticity, firm, some black nodules, trace clay.	0	0	100
CB	10.7/10	N					**36.5 to 46.0 feet: CLAY (CH)**, red with light brown and tan mottling, wet, soft, moderate plasticity, occasional black chert nodules. (RESIDUAL)	0	0	100
			40							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-13**
LOCATION	**Euharlee, Georgia**	PAGE	**3 of 4**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**714.77 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**76.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**10/21/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1505435.29; Easting: 2065251.21**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		N	45				**36.5 to 46.0 feet: CLAY (CH)**, continued.	0	0	100
CB	8.8/10	S					**46.0 to 76.5 feet: DOLOMITE**, gray, bedded, beds range from 0.5- to 2-inches thick, breakage along bedding planes, no evidence of weathering, fine grained crystals. (BEDROCK)	NA	NA	NA
		S					@ 46.0 to 46.5 feet: highly weathered dolomite with red clay, soft.			
			50				@ 46.5 to 49.5 feet: some thin calcite-filled fractures.			
		S								
		S					@ 52.0 to 52.5 feet: black chert and filled fractures - fracture fill material does not effervesce.			
		S	55				@ 55.0 to 55.9 feet: black chert and filled fractures (do not effervesce).			
CB	8.5/10	S								
		S					@ 58.9 to 66.5 feet: bed thickness increase from 3- to 12-inches thick. Beds appear to be dipping 13 degrees.			
			60							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-13**
LOCATION	**Euharlee, Georgia**	PAGE	**4 of 4**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**714.77 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**76.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**10/21/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1505435.29; Easting: 2065251.21**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		S					**46.0 to 76.5 feet: DOLOMITE**, continued.	NA	NA	NA
		NA				VOID	@ 61.5 to 63.0 feet: driller reports void.			
		S								
		S	65				@ 65.3 to 65.9 feet: chert.			
		S								
CB	9.6/10	S								
		S								
		S	70							
		S					@ 72.3 to 73.9 feet: single bed 1.6-feet thick.			
		S								
		S	75							
							Total depth: 76.5 feet.			
			80							

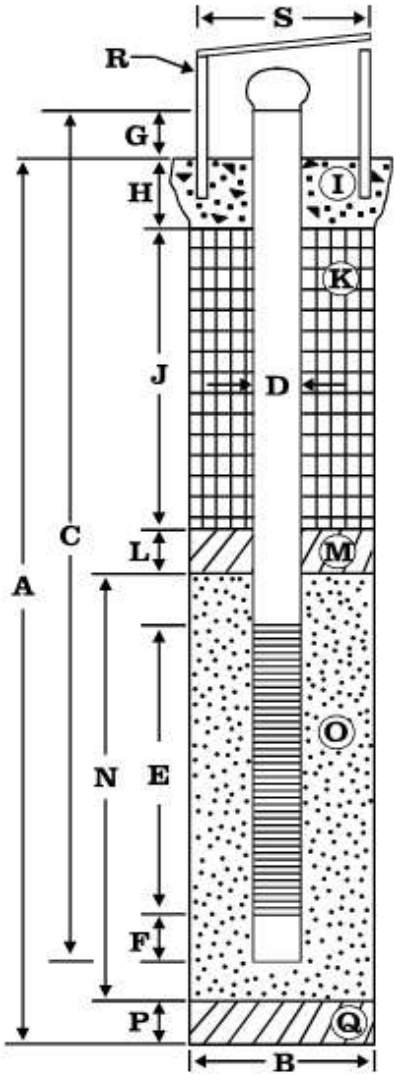
REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NAVD88 = North American Vertical Datum of 1988. NAD83 WZ = North American Datum of 1983, West Zone.

ANCHOR QEA

Well construction Log revised with new survey data dated 6/10/2020.

WELL DETAILS

Project Number:	151114-03	Boring/Well No.:	BGWC-13
Client Name:	Southern Company	Top of Casing Elev.:	717.43 ft. NAVD88
Project Name:	Plant Bowen Hydrogeologic Investigation	Ground Surface Elev.:	714.9 ft. NAVD88
		Installation Date:	10/21/15
Location:	Euharlee, Georgia	Driller:	Cascade Drilling
			Leon Logan, Driller



	Depth (feet)	Elevation (feet, NAVD88)
S	+3.3	718.3
R	+3.1	717.43
G	0.0	714.33
H	1.0	713.33
J	19.3	695.03
C	54.7	659.63
L	58.9	655.43
M	60.5	653.83
N		
E		
O		
F	70.5	643.83
	70.8	643.53
P	72.5	641.83
Q	76.5	637.83
B		

EXPLORATORY BORING

A. Total depth:	76.5 ft.
B. Diameter:	6 in.
Drilling method:	Rotosonic

WELL CONSTRUCTION

C. Well casing length:	73.9 ft.
Well casing material:	Schedule 40 PVC
D. Well casing diameter:	2 in.
E. Well screen length:	10.0 ft.
Well screen type:	3.5-inch OD U-Pak PVC
Well screen slot size:	0.010 in.
F. Well sump/end cap length	0.3 ft.
G. Well casing height (stickup):	3.1 ft.
H. Surface seal thickness:	1.0 ft.
I. Surface seal material:	Concrete
J. Annular seal thickness:	33.7 ft.
K. Annular seal material:	Cement/bentonite grout (1.0-19.3 ft.)
	Bentonite chips (19.3-54.7 ft.)
L. Filter pack seal thickness:	4.2 ft.
M. Filter pack seal material:	Bentonite pellets
N. Sand pack thickness:	13.6 ft.
O. Sand pack material:	#1 Silica sand
P. Bottom material thickness:	4.0 ft.
Q. Bottom material:	Bentonite chips
R. Protective casing material:	Aluminum
S. Protective casing diameter:	Square – 4 in.
Well centralizer depths:	NA

NOTES:

OD = Outside diameter. PVC = Polyvinyl chloride.
Bentonite pellets allowed to hydrate for 1 hour.
Bentonite chips allowed to hydrate for over 8 hours.
NAVD88 = North American Vertical Datum of 1988.

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-15**
LOCATION	**Euharlee, Georgia**	PAGE	**1 of 4**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**715.39 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**76.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**10/14/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1505278.19; Easting: 2064732.18**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
CB	7.8/6.5	N			0 30 60 90 120 150		**0 to 0.8 foot: ROAD BASE GRAVEL**, gray, angular. (FILL)	100	0	0
							0.8 to 3.1 feet: CLAY WITH GRAVEL (CH), red with dark red and light brown mottling, stiff to hard, dry, high plasticity, gravel is road base, gray. (FILL)	15	0	85
							@ 2.5 to 2.8 feet: layer of road base gravel, gray.			
			5				**3.1 to 7.1 feet: SILTY CLAY WITH GRAVEL (CL)**, black, dry, no plasticity, sooty, occasional granular carbon-like material, occasional gravel-sized piece of coal-like material. (FILL)	20	0	80
CB	8.6/10	N					**7.1 to 56.5 feet: CLAY (CH)**, red with light brown mottling, dry, stiff, high plasticity. (RESIDUAL)	0	0	100
			10							
							@ 14.0 feet: color change to light red with light brown mottling.			
			15							
CB	12.7/10	N								
							@ 19.6 to 22.0 feet: abundant fine gravel to cobble sized chert nodules.			
			20							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-15**
LOCATION	**Euharlee, Georgia**	PAGE	**2 of 4**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**715.39 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**76.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**10/14/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1505278.19; Easting: 2064732.18**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
							7.1 to 56.5 feet: CLAY (CH), continued.	0	0	100
			25				@ 24.8 feet: moist, consistency change to firm.			
CB	12.1/10	N					@ 26.5 feet: color change to light brownish red.			
			30				@ 29.0 feet: wet, occasional chert nodules.			
			35				@ 35.0 to 36.5 feet: abundant chert nodules, stiff, dry.			
CB	10.5/10	N					@ 36.5 to 37.3 feet: clayey silt layer, wet, reddish yellow. @ 37.3 to 43.6 feet: color change to red, dry, abundant chert nodules.			
			40							

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-15**
LOCATION	**Euharlee, Georgia**	PAGE	**3 of 4**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**715.39 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**76.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**10/14/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1505278.19; Easting: 2064732.18**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG (0 30 60 90 120 150)	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
			45				**7.1 to 56.5 feet: CLAY (CH)**, continued. @ 43.6 to 45.0 feet: majority of sample is chert nodules. @ 45.0 to 45.2 feet: sand layer, light brown, poorly graded, fine grained, loose.	0	0	100
CB	11.9/10	N	50							
			55				@ 55.0 to 56.5 feet: abundant black chert nodules.			
CB	1.0/2.0	N					**56.5 to 58.5 feet: GRAVELLY CLAY (CH)**, light brownish red, high plasticity, wet, highly weathered dolomite. (WEATHERED BEDROCK)	30	0	70
CB	9.1/8.0	S	60				**58.5 to 76.5 feet: DOLOMITE**, description on next page.	NA	NA	NA

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWC-15**
LOCATION	**Euharlee, Georgia**	PAGE	**4 of 4**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**715.39 ft. NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**76.5 feet**
LOGGED BY	**Matt Wilson**	DATE COMPLETED	**10/14/15**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1505278.19; Easting: 2064732.18**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	GAMMA LOG	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
					0 30 60 90 120 150		**58.5 to 76.5 feet: DOLOMITE**, light gray, bedded, beds range from 0.5- to 5-inches thick, breakage along bedding planes, mostly unweathered, some zones show slight weathering, medium grained, occasional thin calcite veins, evidence of vertical fractures. @ 59.6 to 59.7 feet: black chert nodules. @ 59.6 to 59.8 feet: slight weathering, rust colored discoloration on surfaces. @ 60.8 to 60.9 feet: slight weathering, as above.	NA	NA	NA
			65							
CB	9.2/10	S								
			70				@ 71.4 to 75.2 feet: bed thickness increase, range from 3- to 5-inches thick.			
			75							
							Total depth: 76.5 feet.			
			80							

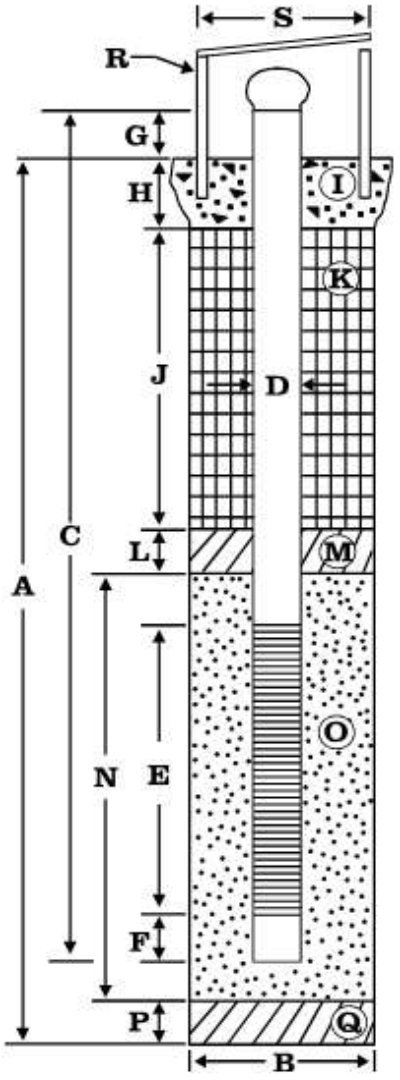
REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent.

ANCHOR QEA

Well construction Log revised with new survey data dated 6/10/2020.

WELL DETAILS

Project Number:	151114-03	Boring/Well No.:	BGWC-15
Client Name:	Southern Company	Top of Casing Elev.:	717.92 ft. NAVD88
Project Name:	Plant Bowen Hydrogeologic Investigation	Ground Surface Elev.:	715.5 ft. NAVD88
		Installation Date:	10/20/15
Location:	Euharlee, Georgia	Driller:	Cascade Drilling
			David Wilcox, Driller



	Depth (feet)	Elevation (feet, NAVD88)
S	+3.3	718.8
R	+3.0	717.92
G	0.0	714.92
H	1.0	713.92
I		
K		
J	17.6	697.32
D		
C	54.5	660.42
L	58.6	656.32
M	60.4	654.52
A		
N		
E		
O		
F	70.4	644.52
	70.7	644.22
P	71.2	643.72
Q	76.5	638.42
B		

EXPLORATORY BORING

A. Total depth:	76.5 ft.
B. Diameter:	6 in.
Drilling method:	Rotosonic

WELL CONSTRUCTION

C. Well casing length:	73.7 ft.
Well casing material:	Schedule 40 PVC
D. Well casing diameter:	2 in.
E. Well screen length:	10.0 ft.
Well screen type:	3.5-inch OD U-Pak PVC
Well screen slot size:	0.010 in.
F. Well sump/end cap length	0.3 ft.
G. Well casing height (stickup):	3.0 ft.
H. Surface seal thickness:	1.0 ft.
I. Surface seal material:	Concrete
J. Annular seal thickness:	53.5 ft.
K. Annular seal material:	Cement/bentonite grout (1.0-17.6 ft.)
	Bentonite chips (17.6-54.5 ft.)
L. Filter pack seal thickness:	4.1 ft.
M. Filter pack seal material:	Bentonite pellets
N. Sand pack thickness:	12.6 ft.
O. Sand pack material:	#1 Silica sand
P. Bottom material thickness:	5.3 ft.
Q. Bottom material:	Bentonite chips
R. Protective casing material:	Aluminum
S. Protective casing diameter:	Square – 4 in.
Well centralizer depths:	NA

NOTES:

OD = Outside diameter. PVC = Polyvinyl chloride.
Bentonite pellets allowed to hydrate for 1 hour.
Bentonite chips allowed to hydrate for over 8 hours.
NAVD88 = North American Vertical Datum of 1988.

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-26**
LOCATION	**Euharlee, Georgia**	PAGE	**1 of 4**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**726.09 ft NAVD 1988**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**77 feet**
LOGGED BY	**Jim Redwine**	DATE COMPLETED	**8/4/16**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1498697.63; Easting: 2064189.94**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
	8.5/7	N				**0 to 9.0 feet: CLAY (CL)**, stiff, red, silty clay, with occasional gravel and occasional gray to yellow mottling. Mottling increases with depth.			
			5			Tested with 10 percent hydrochloric acid every foot, no reaction.	2	1	97
	12.5/10	N							
			10			**9.0 to 17.0 feet: CLAY (CL)**, stiff, red to yellow to gray mottled, silty clay with frequent gravel and rock fragments.	10	5	85
			15			Tested with 10 percent hydrochloric acid every foot, no reaction.	20	20	60
	12.3/10	N				**17.0 to 57.0 feet: CLAY (CH)**, stiff to occasionally plastic yellow to tan silty clay with rare rock fragments and red clay zones.			
			20				1	1	98

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-26**
LOCATION	**Euharlee, Georgia**	PAGE	**2 of 4**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**726.09 ft NAVD 1988**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**77 feet**
LOGGED BY	**Jim Redwine**	DATE COMPLETED	**8/4/16**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1498697.63; Easting: 2064189.94**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		N	25			**17.0 to 57.0 feet: CLAY (CH)**, continued.	10	5	85
	10.0/10	N	30			Tested with 10 percent hydrochloric acid every foot, no reaction.	5	5	90
	11.3/10	N	35				1	1	98
			40				8	2	90

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-26**
LOCATION	**Euharlee, Georgia**	PAGE	**3 of 4**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**726.09 ft NAVD 1988**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**77 feet**
LOGGED BY	**Jim Redwine**	DATE COMPLETED	**8/4/16**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1498697.63; Easting: 2064189.94**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		N	45			**17.0 to 57.0 feet: CLAY (CL)**, continued.	8	2	90
	9.8/10	N	50			Tested with 10 percent hydrochloric acid every foot, no reaction.	1	2	97
			55				10	2	88
	5.8/10	S	60			@ 57.0 feet: top of rock. **57.0 to 69.0 feet: DOLOMITE**, light gray, fine to very fine-grained.			

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-26**
LOCATION	**Euharlee, Georgia**	PAGE	**4 of 4**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**726.09 (726.10) ft NAVD 1988**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**77 feet**
LOGGED BY	**Jim Redwine**	DATE COMPLETED	**8/4/16**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1498697.63; Easting: 2064189.94**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		S				**57.0 to 69.0 feet: DOLOMITE**, continued. Tested with 10 percent hydrochloric acid at least every foot.			
		W W W				@ 63.0 to 63.5 feet: tan color (slight weathering), laminations, some reaction to hydrochloric acid, calcereous dolomite or dolomitic limestone.			
			65			@ 66.0 feet: some floating quartz sand grains.			
	8.5/10					@ 69.0 feet: Contact gradational or uncertain. **69.0 to 69.9 feet: DOLOMITE**, interlayered, fine and medium-grained, gray, some mottling, some pyrite in rock matrix and along joints.			
			70			**69.9 to 70.0 feet: CHERT**, tan. @ 69.9 to 70.3 feet: weathered zone. **70.0 to 74.5 feet: DOLOMITE**, fine to very fine-grained, light gray, rare pyrite, contact gradational.			
			75			**74.5 to 77.0 feet: DOLOMITE**, medium-grained, medium gray, some mottling, fenestral structures (light gray to white).			
						Total depth: 77.0 feet. Driller reports boring took water from 67.0 to 77.0 feet, and frequent small rod drops from 68.0 to 75.0 feet.			
			80						

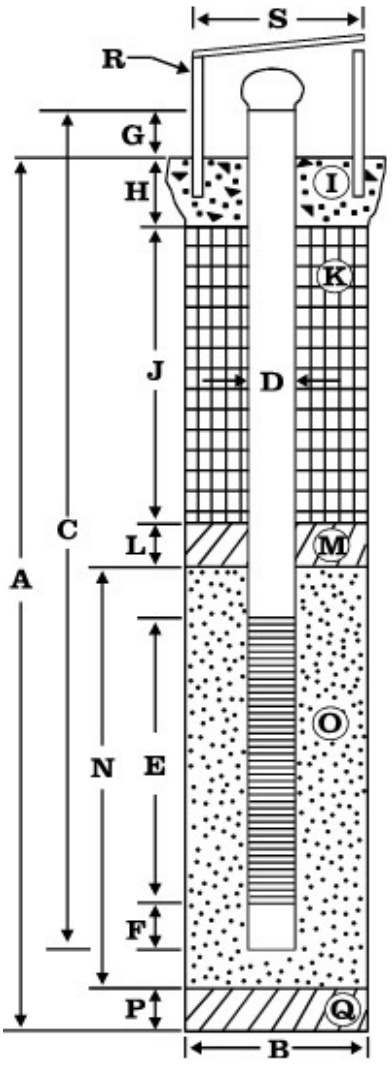
REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent.

ANCHOR QEA

Well construction Log revised with new survey data dated 6/10/2020.

WELL DETAILS

Project Number:	151114-03	Boring/Well No.:	BGWA-26
Client Name:	Southern Company	Top of Casing Elev.:	728.65
Project Name:	Plant Bowen Hydrogeologic Investigation	Ground Surface Elev.:	726.10 ft. NAVD88
		Installation Date:	08/04/2016-08/05/2016
Location:	Cartersville, Georgia	Driller:	Cascade Drilling
			Thomas Ardito, Driller



	Depth (feet)	Elevation (feet, NAVD88)
S	+2.6	728.66
R	+2.4	728.65
G	0.0	726.25
H	2.0	724.25
J	51.0	675.25
C	58.0	668.25
L	60.5	665.75
M	62.7	663.55
A	72.7	653.55
F	73.0	653.25
N	74.0	652.25
E	77.0	649.25
P		
Q		
B		

EXPLORATORY BORING

A. Total depth:	77.0 ft.
B. Diameter:	6 in.
Drilling method:	Rotosonic PS-150

WELL CONSTRUCTION

C. Well casing length:	76.0 ft.
Well casing material:	Schedule 40 PVC
D. Well casing diameter:	2 in.
E. Well screen length:	10 ft.
Well screen type:	Pre-pack
Well screen slot size:	0.010 in.
F. Well sump/end cap length	0.3 ft.
G. Well casing height (stickup):	3.0 ft.
H. Surface seal thickness:	2.0 ft.
I. Surface seal material:	Concrete
J. Annular seal thickness:	56.0 ft.
K. Annular seal material:	Bentonite grout (2.0-51.0 ft.)
	3/8" Bentonite chips (51.0-58.0 ft.)
L. Filter pack seal thickness:	2.5 ft.
M. Filter pack seal material:	Bentonite pellets
N. Sand pack thickness:	13.5 ft.
O. Sand pack material:	#1 SS
P. Bottom material thickness:	3 ft.
Q. Bottom material:	3/8" Bentonite chips
R. Protective casing material:	Aluminum
S. Protective casing diameter:	Square – 4 in.
Well centralizer depths:	N/A

NOTES:

SS = Silica Sand.
OD = Outside diameter. PVC = Polyvinyl chloride.
Bentonite pellets allowed to hydrate at least 1 hour.
Bentonite chips allowed to hydrate at least 4 hours.
NAVD88 = North American Vertical Datum of 1988.

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-27**
LOCATION	**Euharlee, Georgia**	PAGE	**1 of 5**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**732.50 ft NAVD1988**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**92 feet**
LOGGED BY	**Jim Redwine**	DATE COMPLETED	**8/5/16**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1498719.14; Easting: 2064387.54**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
	8/7	N				**0 to 1.0 foot: TOPSOIL**, brown.			
						1.0 to 17.0 feet: CLAY (CL), stiff, red, silty clay, with occasional to frequent quartz gravel and chert fragments.			
			5				2	1	97
	10.8/10	N							
			10				2	1	97
						Tested with 10 percent hydrochloric acid every foot, no reaction.			
			15				2	1	97
	9/10	N				@ 17.0 feet: contact gradational.			
						17.0 to 28.0 feet: CLAY (CL), orange to yellow to gray mottled, stiff clay with occasional to frequent chert fragments.			
			20				20	5	75

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NT = Not tested.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-27**
LOCATION	**Euharlee, Georgia**	PAGE	**2 of 5**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**732.50 ft NAVD1988**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**92 feet**
LOGGED BY	**Jim Redwine**	DATE COMPLETED	**8/5/16**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1498719.14; Easting: 2064387.54**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		N				**17.0 to 28.0 feet: CLAY (CL)**, continued.			
			25				4	1	95
	11.8/10	N				@ 28.0 feet: contact gradational.			
						28.0 to 44.0 feet: CLAY (CL), mostly yellow to brown to gray to red, sometimes mottled, stiff, clay with rare to frequent chert fragments.			
			30				1	1	98
			35			Tested with 10 percent hydrochloric acid every foot, no reaction.	5	5	90
	12/10	N							
			40				3	1	96

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NT = Not tested.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-27**
LOCATION	**Euharlee, Georgia**	PAGE	**3 of 5**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**732.50 ft NAVD1988**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**92 feet**
LOGGED BY	**Jim Redwine**	DATE COMPLETED	**8/5/16**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1498719.14; Easting: 2064387.54**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		N				**28.0 to 44.0 feet: CLAY (CL)**, continued.			
			45			**44.0 to 47.0 feet: SILT (ML)**, yellow alluvial(?) silt zone with some rock fragments, chert, slate(?) and dolomite(?) observed.	1	1	98
	11.5/10					**47.0 to 58.5 feet: CLAY (CL)**, yellow to (rarely) red stiff clay with occasional to frequent chert fragments.			
			50			@ 48.5 to 49.5 feet: more chert fragments in zone, approximately 20 percent.	1	1	98
			55				10	5	85
	1.5/2					@ 56.9 feet: thin organic or manganese layer.			
	0/12	NT				**58.5 to 67.0 feet: MUD**, driller reported rod drop, not void but very soft; soft until top of rock.			
			60				15	15	70

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NT = Not tested.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-27**
LOCATION	**Euharlee, Georgia**	PAGE	**4 of 5**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**732.50 ft NAVD1988**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**92 feet**
LOGGED BY	**Jim Redwine**	DATE COMPLETED	**8/5/16**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1498719.14; Easting: 2064387.54**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		NT	65			**58.5 to 67.0 feet: MUD**, continued.			
			70			@ 71.0 feet: top of rock.			
	5.5/6	S				**71.0 to 92.0 feet: DOLOMITE**, very fine to fine-grained, medium gray (occasionally light or dark gray) dolomite with occasional laminations and rare chert lenses. @ 71.0 to 77.0 feet: several iron-stained near vertical joints.			
	7/10	S	75						
			80						

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NT = Not tested.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-27**
LOCATION	**Euharlee, Georgia**	PAGE	**5 of 5**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**732.50 ft NAVD1988**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**92 feet**
LOGGED BY	**Jim Redwine**	DATE COMPLETED	**8/5/16**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1498719.14; Easting: 2064387.54**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		S	85			**71.0 to 92.0 feet: DOLOMITE**, continued. @ 81.0 to 82.0 feet: driller reports rod drop (void). @ 85.0 to 86.0 feet: driller reports rod drop (void). @ 90.0 feet: tested with 10 percent hydrochloric acid every foot, slight reaction. @ 90.0 to 92.0 feet: driller reports several small rod drops. @ 90.5 to 91.0 feet: slightly weathered zone, staining. @ 91.5 feet: chert lens.			
	4.5/5	W S	90						
			95			Total depth: 92.0 feet.			
			100						

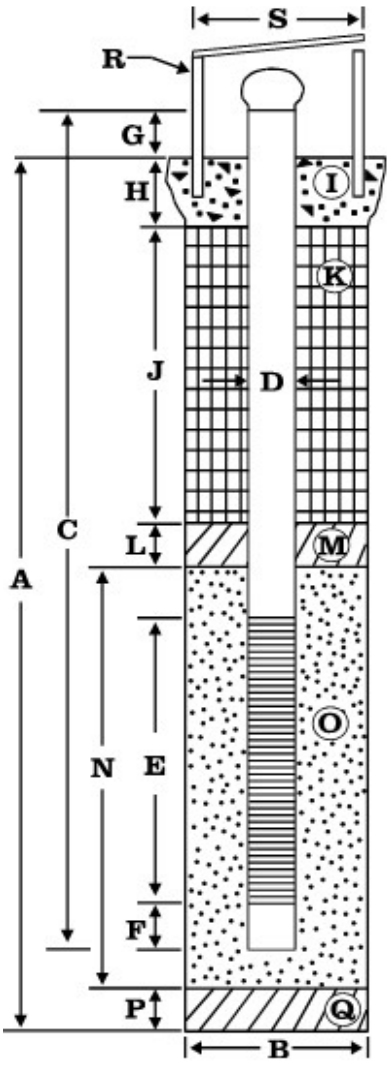
REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NT = Not tested.

ANCHOR QEA

Well construction Log revised with new survey data dated 6/10/2020.

WELL DETAILS

Project Number:	151114-03	Boring/Well No.:	BGWA-27
Client Name:	Southern Company	Top of Casing Elev.:	735.25
Project Name:	Plant Bowen Hydrogeologic Investigation	Ground Surface Elev.:	732.55 ft. NAVD88
		Installation Date:	08/05/2016-08/06/2016
Location:	Cartersville, Georgia	Driller:	Cascade Drilling
			Thomas Ardito, Driller



	Depth (feet)	Elevation (feet, NAVD88)
S	+2.7	735.29
R	+2.5	735.25
G	0.0	732.75
H	2.0	730.75
J	65.0	667.75
C	74.0	658.75
L	76.5	656.25
A	80.7	652.05
N		
E		
F	90.7	642.05
	91.0	641.75
P	92.0	640.75
B	N/A	N/A

EXPLORATORY BORING

A. Total depth:	92.0 ft.
B. Diameter:	6 in.
Drilling method:	Rotosonic PS-150

WELL CONSTRUCTION

C. Well casing length:	94.0 ft.
Well casing material:	Schedule 40 PVC
D. Well casing diameter:	2 in.
E. Well screen length:	10 ft.
Well screen type:	Pre-pack
Well screen slot size:	0.010 in.
F. Well sump/end cap length	0.3 ft.
G. Well casing height (stickup):	3.0 ft.
H. Surface seal thickness:	2.0 ft.
I. Surface seal material:	Concrete
J. Annular seal thickness:	72.0 ft.
K. Annular seal material:	Bentonite grout (2.0-65.0 ft.)
	3/8" Bentonite chips (65.0-74.0 ft.)
L. Filter pack seal thickness:	2.5 ft.
M. Filter pack seal material:	Bentonite pellets
N. Sand pack thickness:	15.5 ft.
O. Sand pack material:	Heavy fine sand/#1 SS
P. Bottom material thickness:	N/A
Q. Bottom material:	N/A
R. Protective casing material:	Aluminum
S. Protective casing diameter:	Square – 4 in.
Well centralizer depths:	N/A

NOTES:

SS = Silica Sand.
OD = Outside diameter. PVC = Polyvinyl chloride.
Bentonite pellets allowed to hydrate at least 1 hour.
Bentonite chips allowed to hydrate at least 4 hours.
NAVD88 = North American Vertical Datum of 1988.

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-28**
LOCATION	**Euharlee, Georgia**	PAGE	**1 of 5**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**734.88 ft NAVD1988**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**87 feet**
LOGGED BY	**Jim Redwine**	DATE COMPLETED	**8/6/16**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1498749.21; Easting: 2064577.55**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
	8/7	N				**0 to 2.0 feet: TOPSOIL**, brown.			
						2.0 to 15.2 feet: CLAY (CL), red, stiff, silty clay with rare to frequent quartz pebbles and chert fragments.			
			5				4	1	95
	11.3/10	N				@ 8.0 to 13.0 feet: mottled with yellow and gray.			
			10				20	5	75
						Tested with 10 percent hydrochloric acid every foot, no reaction.			
			15			Contact gradational.	10	10	80
						15.2 to 27.0 feet: CLAY (CL), orange to orange, red, yellow and gray mottled, stiff, silty clay with rare to frequent quartz pebbles and chert fragments.			
	10/10	N							
			20				20	80	60

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-28**
LOCATION	**Euharlee, Georgia**	PAGE	**2 of 5**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**734.88 ft NAVD1988**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**87 feet**
LOGGED BY	**Jim Redwine**	DATE COMPLETED	**8/6/16**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1498749.21; Easting: 2064577.55**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		N	25			**15.2 to 27.0 feet: CLAY (CL)**, continued.	10	5	85
	12.3/10	N	30			@ 27.0 feet: contact gradational. **27.0 to 38.0 feet: CLAY (CL)**, yellow, occasionally orange, red or mottled, stiff, silty clay with occasional to frequent chert fragments.	1	1	98
			35			Tested with 10 percent hydrochloric acid every foot, no reaction.	10	10	80
	12/10	N	40			@ 38.0 feet: contact gradational. **38.0 to 41.5 feet: CLAYEY SILT to SILTY CLAY (CL-ML)**, yellow.	4	1	95

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-28**
LOCATION	**Euharlee, Georgia**	PAGE	**3 of 5**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**734.88 ft NAVD1988**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**87 feet**
LOGGED BY	**Jim Redwine**	DATE COMPLETED	**8/6/16**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1498749.21; Easting: 2064577.55**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		N				**38.0 to 41.5 feet: CLAYEY SILT to SILTY CLAY (CL-ML)**, continued.			
						41.5 to 42.5 feet: CLAY (CL), yellow to orange to red or mottled, stiff, silty clay with occasional chert fragments.			
						42.5 to 45.0 feet: SILT (ML), yellow silt with occasional black material (organics or manganese?).			
			45			**45.0 to 57.0 feet: CLAY (CL)**, yellow to orange to red or mottled stiff silty clay with occasional to frequent chert fragments.	4	1	95
	11/10	N							
			50				8	2	90
						Tested with 10 percent hydrochloric acid every foot, no reaction.			
			55						
	10.3/10	N				@ 57.0 feet: contact gradational.			
						57.0 to 64.0 feet: CLAY (CL), orange to tan, occasionally red, stiff, silty clay with occasional to frequent chert fragments.			
			60				5	10	85

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-28**
LOCATION	**Euharlee, Georgia**	PAGE	**4 of 5**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**734.88 ft NAVD1988**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**87 feet**
LOGGED BY	**Jim Redwine**	DATE COMPLETED	**8/6/16**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1498749.21; Easting: 2064577.55**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		N				**57.0 to 64.0 feet: CLAY (CL)**, continued.			
			65			@ 64.0 feet: contact gradational. **64.0 to 67.0 feet: SILT (ML)**, yellow with rare brown, fine sand.	1	1	98
	6.3/10	S				@ 67.0 feet: top of rock. **67.0 to 76.0 feet: DOLOMITE**, fine-grained, medium gray dolomite.			
			70			Tested with 10 percent hydrochloric acid every foot.			
			75			@ 73.5 to 75.0 feet: driller reports rod drop, void.			
		W				**76.0 to 87.0 feet: DOLOMITE** **76.0 to 76.4 feet: DOLOMITE**, slightly weathered zone, laminated dolomite, slightly calcereous, minor weathered tan laminated chert.			
	7.3/10	S				@ 76.4 to 77.4 feet: exact location not known due to core loss, dark gray, fine-grained, calcereous dolomite.			
			80						

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent.

ANCHOR QEA

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**BGWA-28**
LOCATION	**Euharlee, Georgia**	PAGE	**5 of 5**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**734.88 ft NAVD1988**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**87 feet**
LOGGED BY	**Jim Redwine**	DATE COMPLETED	**8/6/16**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1498749.21; Easting: 2064577.55**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		S	85			**76.0 to 87.0 feet: DOLOMITE**, continued. @ 80.6 to 80.8 feet: location approximate due to core loss. White dolomite or dolomitic marble. @ 80.8 to 81.0 feet: light to medium gray, fine-grained dolomite with occasional chert lenses near bottom of run. @ 80.7 to 84.9 feet: light gray and white chert.			
			90 95 100			Total depth: 87.0 feet.			

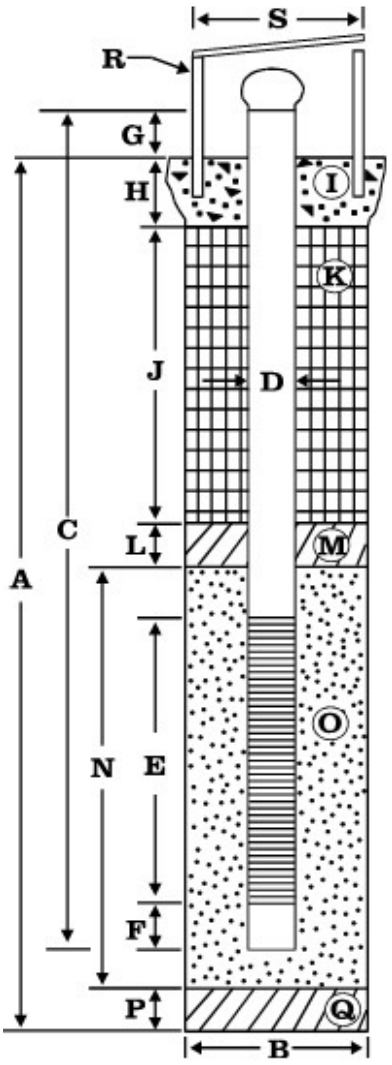
REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent.

ANCHOR QEA

Well construction Log revised with new survey data dated 6/10/2020.

WELL DETAILS

Project Number:	151114-03	Boring/Well No.:	BGWA-28
Client Name:	Southern Company	Top of Casing Elev.:	737.45
Project Name:	Plant Bowen Hydrogeologic Investigation	Ground Surface Elev.:	734.91 ft. NAVD88
		Installation Date:	08/06/2016-08/07/2016
Location:	Cartersville, Georgia	Driller:	Cascade Drilling
			Thomas Ardito, Driller



	Depth (feet)	Elevation (feet, NAVD88)
	+2.6	737.49
	+2.4	737.45
	0.0	735.05
	2.0	733.05
	61.0	674.05
	67.5	667.55
	70.5	664.55
	73.7	661.35
	83.7	651.35
	84.0	650.05
	85.0	650.05
	87.0	648.05

EXPLORATORY BORING

A. Total depth:	87.0 ft.
B. Diameter:	6 in.
Drilling method:	Rotosonic PS-150

WELL CONSTRUCTION

C. Well casing length:	87.0 ft.
Well casing material:	Schedule 40 PVC
D. Well casing diameter:	2 in.
E. Well screen length:	10 ft.
Well screen type:	Pre-pack
Well screen slot size:	0.010 in.
F. Well sump/end cap length	0.3 ft.
G. Well casing height (stickup):	3.0 ft.
H. Surface seal thickness:	2.0 ft.
I. Surface seal material:	Concrete
J. Annular seal thickness:	65.5 ft.
K. Annular seal material:	Bentonite grout (2.0-61.0 ft.)
	3/8" Bentonite chips (61.0-67.5 ft.)
L. Filter pack seal thickness:	3.0 ft.
M. Filter pack seal material:	Bentonite pellets
N. Sand pack thickness:	14.5 ft.
O. Sand pack material:	Heavy fine sand/#1 SS
P. Bottom material thickness:	2 ft.
Q. Bottom material:	Bentonite pellets
R. Protective casing material:	Aluminum
S. Protective casing diameter:	Square – 4 in.
Well centralizer depths:	N/A

NOTES:

SS = Silica Sand.
OD = Outside diameter. PVC = Polyvinyl chloride.
Bentonite pellets allowed to hydrate at least 1 hour.
Bentonite chips allowed to hydrate at least 4 hours.
NAVD88 = North American Vertical Datum of 1988.

Boring Log revised with new survey data dated 6/10/2020.

Geosyntec consultants
engineers | scientists | innovators

Geosyntec Consultants
1255 Roberts Boulevard
Kennesaw, GA 30144

BGWA-33

CLIENT Southern Company Services
PROJECT NAME Plant Bowen
PROJECT NUMBER GW6581C
PROJECT LOCATION Euharlee Georgia
DATE STARTED 7/10/18 **COMPLETED** 7/11/18
NORTHING 11497972.13 ft **EASTING** 2064876.80 ft
DRILLER Cascade Drilling
GROUND ELEVATION 740.39 ft **BORING DIAMETER** 6 in
DRILLING METHOD Sonic
TOP OF CASING ELEVATION 743.25 ft
SAMPLING METHOD 4" core 6" overide
GEOPHYSICAL CONTRACTOR ---
RIG TYPE Terrasonic 10S1181
LOGGED BY C. Hug **CHECKED BY** J. Ivanowski

DEPTH (ft)	ELEVATION (ft msl)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
0	740			CLAY, Dark brown, red and orange mottled, trace white and pale grey, medium to high plasticity, some silt, dry to moist, weakly cemented and highly calcareous pebbles.	
5	735			5.5' : Zone of white weakly cemented calcareous/dolomitic material, dry, silty. Increased white calcareous and cherty material, orange and red lamination, moist.	
10	730			CLAY with SAND, Dark red brown, with white and pale grey, medium to high plasticity, with some fine grained angular sand, highly weathered dolomite and chert gravel, breaking down to silty powder.	
				From 13': More orange and more silty, with fine grained angular sand.	
15	725			From 15': Increased amount of fine grained sand, concentrated in patches.	
				17.5'-18': Band of white clayey silt, comprising highly weathered dolomite and calcareous material, dry.	
20	720			CLAY with SAND, Orange brown, medium to high plasticity.	- Bentonite grout
				From 21': Increased amount of fine sand bordering clayey sand in places.	
25	715			From 24': Some gray, highly weathered limestone/ dolomitic pebbles, breaking down to silty powder.	- Schedule 40 PVC 2"
				From 28': Some red mottling.	
30	710			SANDY CLAY with GRAVEL, Brown, orange, medium to high plasticity, sand is fine grained, angular quartz with coarse angular quartz and chert gravel and cobbles between 29' and 31', some red mottling, trace black pebbles and some silty patches.	
				With coarse angular quartz and chert gravel and cobbles.	

(Continued Next Page)

Boring Log revised with new survey data dated 6/10/2020.

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Kennesaw, GA 30144

BGWA-33

CLIENT Southern Company Services
PROJECT NAME Plant Bowen
PROJECT NUMBER GW6581C
PROJECT LOCATION Euharlee Georgia

DEPTH (ft)	ELEVATION (ft msl)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
40	705			SANDY CLAY with GRAVEL, Brown, orange, medium to high plasticity, sand is fine grained, angular quartz with coarse angular quartz and chert gravel and cobbles between 29' and 31', some red mottling, trace black pebbles and some silty patches. *(continued)* 38': Band of fine to coarse angular quartz/chert gravel.	
	700			SANDY CLAY, Red, orange brown, mottled, medium plasticity, sand is fine grained, angular, quartz, with some silt and trace of fine grained angular dolomite and limestone gravel.	
45	695			LIMESTONE/DOLOMITE, Gray and pale gray, recovered as fine to coarse grained angular gravel, with silty clay and some cobbles. SANDY CLAY, Red orange, low to medium plasticity, sand is fine grained angular quartz, trace of fine limestone gravel. 44': Red brown mottled, brown areas predominantly silty, with occasional thin/fine bands of fine sand ~1-2mm thick. 46'; With gray limestone/ dolomite gravel, fine to coarse grained, with sandy clay and silt.	
50	690			SILT, Pale brown, non plastic to low plasticity with trace fine grained sand. With more frequent, fine angular dark gray, limestone gravel, some red mottling. 51.5': Zone of dark gray angular limestone gravel.	
55	685			LIMESTONE, Gray with white veins, massive,slightly weathered to fresh, recovered as discs of core up to 1" length and angular fragments.	- Bentonite 3/8" chips
60	680			Recovered as pieces of core and discs up to 1" thick with secondary mineralization (calcite) and white calcareous veins throughout.	
65	675			More competent rock recovered as pieces of core between 3" and 9" in length.	
70	670			Gray, recovered as fresh to slightly weathered limestone fragments and pieces of core with calcite mineralization along fracture planes.	- 20/40 Silica Sand - 0.010 slot size 2" Pre Pack, U-Pack Screen

(Continued Next Page)

Boring Log revised with new survey data dated 6/10/2020.

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BGWA-33

CLIENT Southern Company Services
PROJECT NAME Plant Bowen
PROJECT NUMBER GW6581C
PROJECT LOCATION Euharlee Georgia

DEPTH (ft)	ELEVATION (ft msl)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
	665			LIMESTONE, Gray with white veins, massive,slightly weathered to fresh, recovered as discs of core up to 1" length and angular fragments. *(continued)*	Sump
80	660			Bottom of borehole at 79.0 feet.	
85	655				
90	650				
95	645				
100	640				
105	635				
110	630				

75

Easting and Northing in NAD 1983.
Elevation in NAVD 88.

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BGWC-37D

CLIENT Southern Company Services
PROJECT NAME Groundwater SRV-AP1
PROJECT NUMBER GW6581C
PROJECT LOCATION Euharlee, GA
DATE STARTED 4/24/19 **COMPLETED** 4/25/19
NORTHING 1501293.16 ft **EASTING** 2064362.70 ft
DRILLER Cascade Drilling
GROUND ELEVATION 693.50 ft **BORING DIAMETER** 6 in
DRILLING METHOD Sonic
TOP OF CASING ELEVATION 696.05 ft
SAMPLING METHOD 4" core 6" override
GEOPHYSICAL CONTRACTOR ---
RIG TYPE Terrasonic 11-38212
LOGGED BY C. Hug **CHECKED BY** J. Ivanowski

DEPTH (ft)	ELEVATION (ft msl)	REMARKS	MATERIAL DESCRIPTION
0	693		Hydro Excavation (0 to 15 ft) NO SAMPLE
5	690		
10	685		
15	680	Water added at top of run.	CLAY/SANDY CLAY, Brown, reddish-brown, low to medium plasticity, sand is fine to medium grained, subrounded, quartz, trace fine gravel, moist.
20	675		CLAY, Red-brown, yellow mottled, low to medium plasticity, with trace of fine to medium grained sand, moist. 22 ft: With grey, angular limestone fragments up to 2 inches long.
25	670	25 to 35 ft: No voids reported.	LIMESTONE, Dark grey, minor white calcareous veins, massive, fine grained, recovered as angular fragments and disc shaped pieces of rock up to 4 inch in diameter.
30	665		
35	660	35-45 ft: No voids or soft drilling reported.	More competent fragments of limestone at 35 ft. 35 to 37 ft: With yellow/brown iron oxide staining.
	655		

CONSTRUCTION DIAGRAM
- Bentonite grout
- Schedule 40 PVC 2"
- Bentonite uncoated 3/8" chips

(Continued Next Page)

Boring Log revised with new survey data dated 6/10/2020.

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BGWC-37D

CLIENT Southern Company Services
PROJECT NAME Groundwater SRV-AP1
PROJECT NUMBER GW6581C
PROJECT LOCATION Euharlee, GA

DEPTH (ft)	ELEVATION (ft msl)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
45	650	25 to 35 ft: No voids reported.		LIMESTONE, Dark grey, minor white calcareous veins, massive, fine grained, recovered as angular fragments and disc shaped pieces of rock up to 4 inch in diameter. *(continued)* 41 ft: With white, calcareous mineralization along healed fracture planes.	
50	645				
55	640	No recovery, run was not lost in hole. Very soft drilling with some resistance.		54 ft: Dark grey, some calcareous veins and secondary mineralization along fracture planes, fresh, moderate strength. NO RECOVERY (55 to 65 ft)	
60	635				
65	630	65 to 75 ft: No voids reported.		LIMESTONE, Dark grey, some black, massive, fine grained, minor white calcareous veins, recovered as subrounded gravel sized core fragments and cobbles. Recovered with pale grey, silty coating. Minor yellowish-brown iron oxide staining at 65 ft.	
70	625				
75	620	75 to 85 ft: No voids reported.		With pale grey, silty coating and some secondary calcite mineralization along fracture planes.	Bentonite uncoated 3/8" chips
80	615				
85	610	85 to 95 ft: No voids reported.			

(Continued Next Page)

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BGWC-37D

CLIENT Southern Company Services
PROJECT NAME Groundwater SRV-AP1
PROJECT NUMBER GW6581C
PROJECT LOCATION Euharlee, GA

DEPTH (ft)	ELEVATION (ft msl)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
90	605	95 to 110 ft: No voids reported.		LIMESTONE, Dark grey, some black, massive, fine grained, minor white calcareous veins, recovered as subrounded gravel sized core fragments and cobbles. Recovered with pale grey, silty coating. *(continued)*	- Bentonite 3/8" chips
95	600				
100	595				- 20/40 Silica Sand
105	590				- 0.010 slot size 2" Pre Pack, U-Pack Screen
110	585			Bottom of borehole at 110.0 feet.	
115	580				
120	575				
125	570				
130	565				

Easting and Northing in NAD 1983.
Elevation in NAVD 1988.

Boring Log revised with new survey data dated 6/10/2020.

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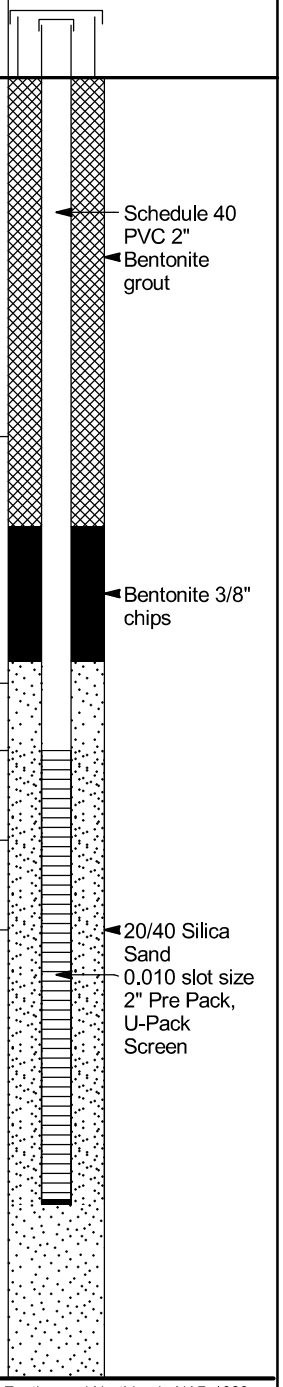
BGWC-39

CLIENT Southern Company Services
PROJECT NAME Groundwater SRV-AP1
PROJECT NUMBER GW6581C
PROJECT LOCATION Euharlee, GA
DATE STARTED 12/5/19 **COMPLETED** 12/6/19
NORTHING 1501241.94 ft **EASTING** 2064095.41 ft
DRILLER Cascade Drilling
GROUND ELEVATION 676.58 ft **BORING DIAMETER** 6 in
DRILLING METHOD Sonic
TOP OF CASING ELEVATION 679.12 ft
SAMPLING METHOD 4" core 6" override
GEOPHYSICAL CONTRACTOR ---LOGGED
RIG TYPE 1051181 Compact Crawler
BY N.Tilahun **CHECKED BY** J. Ivanowski

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION
0	675	Hand Auger 0-9 ft.		CLAY, Brown, low plasticity, trace fine sand and silt, soft to firm, moist.
5	670			6 ft: Trace black mottling.
10	665			CLAY, Yellowish brown, low plasticity, trace fine sand and silt, firm, trace black mottles, dry. 9 ft: With angular gravel, stiff, trace black matter.
15	660	Void reported by drillers, lost circulation (approx 200 gal of water).		LIMESTONE, Gray, with white calcareous veins, fine grained, fresh platy fragments, broken pieces due to drilling.
				NO RECOVERY (15-17 ft)
				LIMESTONE, Gray, with white calcareous veins, fine grained, fresh platy fragments, broken pieces due to drilling.
20	655			LIMESTONE, Gray, with white calcareous veins, fine grained, fresh platy fragments, broken pieces due to drilling.
25	650			

CONSTRUCTION DIAGRAM



Bottom of borehole at 29.0 feet.

Easting and Northing in NAD 1983.
Elevation in NAVD 1988.

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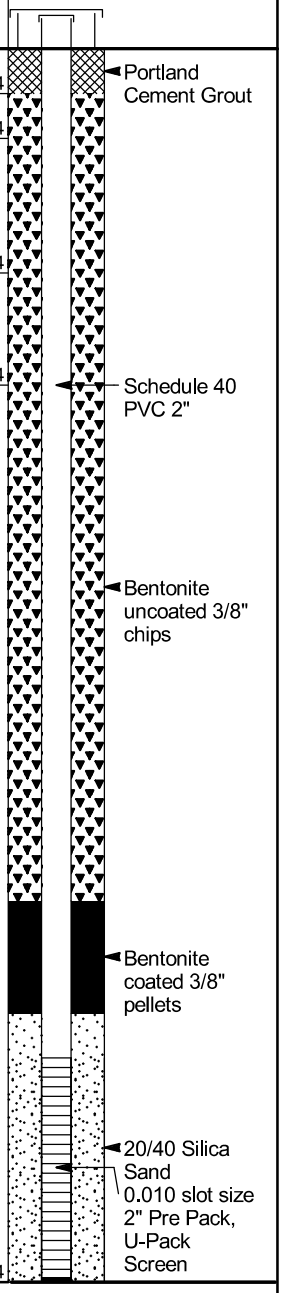
BGWC-41D

CLIENT Southern Company Services
PROJECT NAME Bowen Groundwater SRV-AP1
PROJECT NUMBER GW6581C
PROJECT LOCATION Euharlee, GA
DATE STARTED 4/26/20 **COMPLETED** 4/27/20
NORTHING 1501255.96 ft **EASTING** 2064096.23 ft
DRILLER Cascade Drilling
GROUND ELEVATION 676.43 ft **BORING DIAMETER** 6 in
DRILLING METHOD Sonic
TOP OF CASING ELEVATION 679.12 ft
SAMPLING METHOD 4" core 6" override
GEOPHYSICAL CONTRACTOR ---
RIG TYPE Terra Sonic Compact Crawler
LOGGED BY N.Tilahun **CHECKED BY** J. Ivanowski

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION
0				Hand Auger (0-2 ft) NO SAMPLE
				674.4
				CLAY, Brown, low to medium plasticity, trace silt and fine grained sand, soft, moist.
				672.4
	670			LIMESTONE/DOLOMITE, Gray, fine grained, platy fragments, calcite fillings, slightly weathered, with iron oxide stained, hard.
10		10 ft to 15 ft: Core barrel joint broken, driller unable to retrieve sample.		666.4 NO SAMPLE (10 ft to 15 ft)
				661.4
	660			LIMESTONE/DOLOMITE, Gray, fine grained, platy fragments, calcite fillings, slightly weathered, iron oxide stained, hard.
20				18 ft to 19 ft: Soft zone. 20 ft: Few calcite fillings, fresh rock.
	650			
30				30 ft: Trace calcite filling, slightly weathered.
	640			
40				40 ft: Gray to dark gray, few calcite fillings, slightly weathered.
	630			
50				50 ft: Gray to dark gray, trace calcite fillings, slightly weathered.
				621.4

CONSTRUCTION DIAGRAM



Bottom of borehole at 55.0 feet.

Easting and Northing in NAD 1983.
Elevation in NAVD 1988.

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BGWC-42D

CLIENT Southern Company Services
PROJECT NAME Bowen Groundwater SRV-AP1
PROJECT NUMBER GW6581C
PROJECT LOCATION Euharlee, GA
DATE STARTED 5/2/20 **COMPLETED** 5/3/20
NORTHING 1501280.51 ft **EASTING** 2064365.25 ft
DRILLER Cascade Drilling
GROUND ELEVATION 693.97 ft **BORING DIAMETER** 6 in
DRILLING METHOD Sonic
TOP OF CASING ELEVATION 696.90 ft
SAMPLING METHOD 4" core 6" override
GEOPHYSICAL CONTRACTOR ---
RIG TYPE Terra Sonic Full Size Track Mounted Rig
LOGGED BY C. Hug **CHECKED BY** J. Ivanowski

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
0	690			Hydro Excavation (0 ft to 16 ft) NO SAMPLE	Schedule 40 PVC 2"
10	680			678.0	Aquaguard Sodium Bentonite Grout
				CLAY, Yellowish red (5YR 5/8), low to medium plasticity, few fine sand, trace of angular, gray limestone, soft, moist. 19 ft to 20 ft: Larger angular fragments of limestone.	
20	670	25 ft to 26 ft: Disturbed soil sample (collected in 1-gal zip lock bag). No voids reported between 26 ft and 151 ft.		668.0	
30	660	36 ft: Potential fines washed away.		LIMESTONE/DOLOMITE Dark gray, massive, with white veins throughout, hard, recovered as pieces of core up to 6 in in length, slightly weathered to fresh, highly fractured, fractures are partly healed with calcite mineralization. 36 ft: Core is very broken, recovered as gravel sized piezed of limestone/dolomite, subangular to subrounded, slightly silty.	
40	650			46 ft: Less recovery, core is very broken. Dark gray, some white calcareous veins, calcite mineralization along fracture planes, horizontal and vertical fractures.	Bentonite uncoated 3/8" chips

(Continued Next Page)

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CLIENT Southern Company Services **PROJECT NAME** Bowen Groundwater SRV-AP1

PROJECT NUMBER GW6581C **PROJECT LOCATION** Euharlee, GA

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
50				LIMESTONE/DOLOMITE Dark gray, massive, with white veins throughout, hard, recovered as pieces of core up to 6 in in length, slightly weathered to fresh, highly fractured, fractures are partly healed with calcite mineralization. *(continued)*	
	640				Bentonite uncoated 3/8" chips
				56 ft: Dark gray to black, with some white veins, fresh, hard, recovered as disc shaped fragments of core and fine to coarse grained, subrounded, gravel sized limestone, secondary mineralization of calcite along fracture planes.	
60					
	630				
70					
	620				
80					
	610				
90					
	600	96 ft: With mechanical breaks due to drilling.		96 ft: Dark gray, predominantly massive, fresh limestone/dolomite. Less calcite veins, with vertical fractures.	
100					
	590				

(Continued Next Page)

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CLIENT Southern Company Services **PROJECT NAME** Bowen Groundwater SRV-AP1

PROJECT NUMBER GW6581C **PROJECT LOCATION** Euharlee, GA

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
110	580			LIMESTONE/DOLOMITE Dark gray, massive, with white veins throughout, hard, recovered as pieces of core up to 6 in in length, slightly weathered to fresh, highly fractured, fractures are partly healed with calcite mineralization. *(continued)*	
120	570			116 ft: Dark bluish gray to black, massive, fresh, hard, very fractures, minor white calcareous veins, recovered as subrounded gravel sized fragments and disc shaped pieces of core up to 1 in length.	Bentonite uncoated 3/8" chips
130	560			126 ft: Highly fractured, very broken, calcite and aragonite mineralization along fracture planes.	Bentonite coated 3/8" pellets
140	550				20/40 Silica Sand 0.010 slot size 2" Pre Pack, U-Pack Screen
150					543.0

Bottom of borehole at 151.0 feet.

Easting and Northing in NAD 1983.
Elevation in NAVD 1988.

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BGWC-44D

CLIENT Southern Company Services
PROJECT NAME Bowen Groundwater SRV-AP1
PROJECT NUMBER GW6581C
PROJECT LOCATION Euharlee, GA
DATE STARTED 4/20/20 **COMPLETED** 4/22/20
NORTHING 1499265.14 ft **EASTING** 2065811.06 ft
DRILLER Cascade Drilling
GROUND ELEVATION 714.65 ft **BORING DIAMETER** 6 in
DRILLING METHOD Sonic
TOP OF CASING ELEVATION 717.29 ft
SAMPLING METHOD 4" core 6" override
GEOPHYSICAL CONTRACTOR ---
RIG TYPE Terra Sonic Compact Crawler
LOGGED BY N.Tilahun **CHECKED BY** J. Ivanowski

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
0	710			Hydro Excavation (0 ft to 10 ft) NO SAMPLE	
10	700			704.7 SILTY CLAY, Light brown, low plasticity, trace gravel and few fine to coarse sand, moist, firm, trace chert.	Schedule 40 PVC 2" Aquaguard Sodium Bentonite Grout
20	690	20 ft: No void reported.		694.7 NO RECOVERY (20 ft to 30 ft)	
30	680			684.7 GRAVELLY CLAY, Yellowish brown, low to medium plasticity, few to some fragments of gravel, wet, firm to soft. 682.7 PARTIALLY WEATHERED ROCK, Light gray, angular fragments of dolomite, dry to moist, gravel size increase with depth.	
40	670			674.7 DOLOMITE/LIMESTONE, Light gray, fine grained, platy rock fragments, few iron oxide staining, few calcile fillings. 669.7 VOID (45 ft to 50 ft) 664.7	

(Continued Next Page)

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CLIENT Southern Company Services **PROJECT NAME** Bowen Groundwater SRV-AP1

PROJECT NUMBER GW6581C **PROJECT LOCATION** Euharlee, GA

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
50				DOLOMITE/LIMESTONE, Light gray, fine grained, platy rock fragments, few iron oxide staining, few calcile fillings. 50 ft to 52 ft: Yellowish gray, massive rock fragments.	
	660				Bentonite uncoated 3/8" chips
60				60 ft: Hard drilling.	
	650				
70				70 ft: More massive and less platy rock fragments.	
	640				
80				80 ft: More massive and less platy rock fragments, yellowish gray to gray.	
	630				
90				90 ft: More massive and less platy rock fragments, yellow gray to gray.	
	620				
100					
	610				

(Continued Next Page)

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CLIENT Southern Company Services **PROJECT NAME** Bowen Groundwater SRV-AP1

PROJECT NUMBER GW6581C **PROJECT LOCATION** Euharlee, GA

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
110	600			DOLOMITE/LIMESTONE, Light gray, fine grained, platy rock fragments, few iron oxide staining, few calcile fillings. *(continued)*	Bentonite uncoated 3/8" chips
120	590			120 ft: Platy rock fragments.	Bentonite coated 3/8" pellets
130	580			584.7 DOLOMITE/LIMESTONE, Yellowish gray to gray, some calcite fillings, some rock gragments and platy, fine grained, trace iron oxide staining.	20/40 Silica Sand 0.010 slot size 2" Pre Pack, U-Pack Screen
140				574.7 Bottom of borehole at 140.0 feet.	

Easting and Northing in NAD 1983.
Elevation in NAVD 1988.

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**PZ-1**
LOCATION	**Euharlee, Georgia**	PAGE	**1 of 3**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**675.35 ft NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**57 feet**
LOGGED BY	**Jim Redwine**	DATE COMPLETED	**6/23/16**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1505600.54; Easting: 2066844.10**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
			5			**0 to 10.0 feet: Hydrovac.**			
	7.7/7	N	10			**10.0 to 15.5 feet: CLAY (CL)**, brown, stiff, silty clay with rare sand and organic matter. Topsoil or paleosoil horizon. Gets redder with depth. Tested every foot with 10 percent hydrochloric acid. No reaction.			
			15			@ 15.0 to 15.5 feet: mottled. @ 15.5 feet: contact gradational. **15.5 to 17.0 feet: CLAY (CL)**, reddish brown, stiff, silty clay with occasional fine gravel.			
	11.5/10	N				@ 17.0 feet: contact gradational. **17.0 to 18.5 feet: CLAY (CH)**, reddish brown, wet, plastic, gravelly clay.			
			20			**18.5 to 22.5 feet: CLAY (CL)**, see next page for description.			

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NT = Not tested.

ANCHOR QEA

Prepared at the Request of Legal Counsel. Privileged and Confidential Work Product and Attorney/Client Communication.

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**PZ-1**
LOCATION	**Euharlee, Georgia**	PAGE	**2 of 3**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**675.35 ft NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**57 feet**
LOGGED BY	**Jim Redwine**	DATE COMPLETED	**6/23/16**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1505600.54; Easting: 2066844.10**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
						18.5 to 22.5 feet: CLAY (CL), stiff, orange to red to yellow gray, mottled, silty clay with occasional chert gravel.			
						22.5 to 22.8 feet: SANDSTONE, weathered white quartz sandstone.			
						@ 22.8 feet: contact gradational.			
						22.8 to 24.0 feet: SANDSTONE, white to red, sandy clay (remnant sandstone).			
			25			**24.0 to 30.0 feet: GRAVEL (GW)**, gravelly, red to yellow, stiff clay to clayey chert gravel.			
	10.3/10	N							
			30			@ 30.0 feet: contact gradational.			
						30.0 to 37.0 feet: CLAY (CH), stiff to plastic, yellowish brown, slightly silty clay with rare gravel.			
						Tested every foot with 10 percent hydrochloric acid. No reaction.			
			35						
						@ 37.0 feet: material wet at bottom.			
	0/7	NT				**37.0 to 43.0 feet: no recovery**. Possibly interbedded weathered rock and clay (driller's interpretation). Some resistance during drilling.			
			40						

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NT = Not tested.

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LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**PZ-1**
LOCATION	**Euharlee, Georgia**	PAGE	**3 of 3**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**675.35 ft NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**57 feet**
LOGGED BY	**Jim Redwine**	DATE COMPLETED	**6/23/16**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1505600.54; Easting: 2066844.10**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
						37.0 to 43.0 feet: no recovery, continued.			
	2.5/3	S	45			**43.0 to 46.0 feet: DOLOMITE**, light gray, very fine-grained dolomite, some calcite along fractures.			
	2/11	NT	50			**46.0 to 55.0 feet: no recovery**, interbedded, weathered rock and clay.			
		S	55			**55.0 to 57.0 feet: DOLOMITE**, light gray, very fine-grained dolomite, some calcite along fractures.			
			60			Total depth: 57.0 feet.			

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent. NT = Not tested.

ANCHOR QEA

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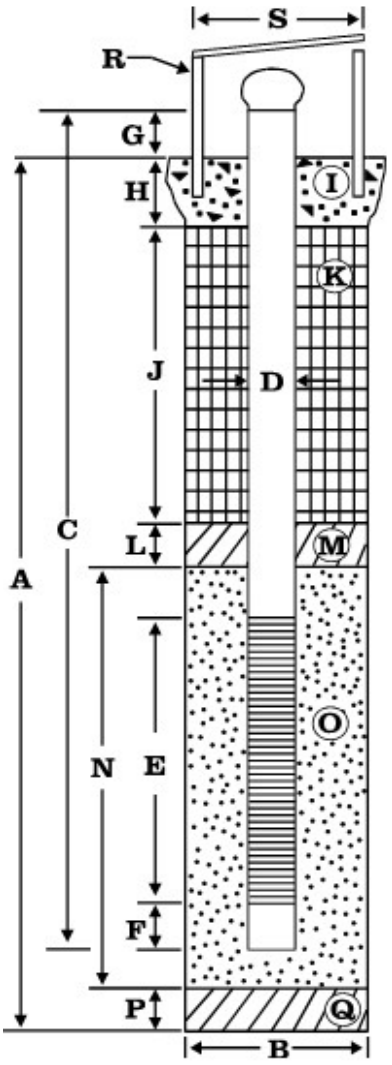
WELL DETAILS

Project Number:	151114-03	Boring/Well No.:	PZ-1
Client Name:	Southern Company	Top of Casing Elev.:	677.87 ft NAVD88
Project Name:	Plant Bowen Hydrogeologic Investigation	Ground Surface Elev.:	675.29 ft NAVD88
		Installation Date:	06/23/2016-06/24/2016
Location:	Euharlee, Georgia	Driller:	Cascade Drilling
			Thomas Ardito, Driller



	Depth (feet)	Elevation (feet, NAVD88)
S	+2.5	677.83
R	+2.52	677.87
G	0.0	675.35
H	2.0	673.35
J	31.5	643.85
C	38.0	637.35
L	40.5	634.85
A	44.7	630.65
F	54.7	620.65
	55.0	620.35
P	57.0	618.35
B	N/A	N/A

EXPLORATORY BORING

A. Total depth:	57.0 ft.
B. Diameter:	6 in.
Drilling method:	Rotosonic PS-150

WELL CONSTRUCTION

C. Well casing length:	50.0 ft.
Well casing material:	PVC
D. Well casing diameter:	2 in.
E. Well screen length:	10 ft.
Well screen type:	PVC
Well screen slot size:	0.010 in.
F. Well sump/end cap length	0.3 ft.
G. Well casing height (stickup):	3.0 ft.
H. Surface seal thickness:	2.0 ft.
I. Surface seal material:	Concrete
J. Annular seal thickness:	36.0 ft.
K. Annular seal material:	Bentonite grout (2.0-31.5 ft.)
	3/8" Bentonite chips (31.5-38.0 ft.)
L. Filter pack seal thickness:	2.5 ft.
M. Filter pack seal material:	Bentonite pellets
N. Sand pack thickness:	16.5 ft.
O. Sand pack material:	Heavy fine sand/#1 SS
P. Bottom material thickness:	N/A
Q. Bottom material:	N/A
R. Protective casing material:	Aluminum
S. Protective casing diameter:	Square – 4 in.
Well centralizer depths:	N/A

NOTES:

SS = Silica Sand.
OD = Outside diameter. PVC = Polyvinyl chloride.
Bentonite pellets allowed to hydrate at least 1 hour.
Bentonite chips allowed to hydrate at least 4 hours.
NAVD88 = North American Vertical Datum of 1988.

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**PZ-2**
LOCATION	**Euharlee, Georgia**	PAGE	**1 of 2**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**665.92 ft NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**37 feet**
LOGGED BY	**Jim Redwine**	DATE COMPLETED	**6/24/16**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1503856.86; Easting: 2062938.81**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
	7.8/7	N				**0 to 1.0 foot: CLAY (TOPSOIL)**, brown, silty.			
						1.0 to 8.0 feet: SILT (ML), tan (at top) to orange, dry, clayey silt, crumbly.			
			5						
	9.2/10	N				@ 8.0 feet: contact gradational.			
						8.0 to 12.0 feet: SILTY CLAY to CLAYEY SILT (CL-ML), tan to orange to light brown, stiff, silty clay to clayey silt, more moisture than unit above, holds together.			
			10						
						@ 12.0 feet: top of rock.			
		S			Z Z Z Z	**12.0 to 12.5 feet: ROCK**, powdered due to dry drilling.			
						12.5 to 27.0 feet: DOLOMITE, weathered tan to gray, very fine-grained (smooth) dolomite.			
			15			Recovery mostly rubble. Frequent red staining on rock surfaces indicating groundwater flow.			
	7.7/10	S				Tested every foot with 10 percent hydrochloric acid.			
			20						

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent.

ANCHOR QEA

Prepared at the Request of Legal Counsel. Privileged and Confidential Work Product and Attorney/Client Communication.

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**PZ-2**
LOCATION	**Euharlee, Georgia**	PAGE	**2 of 2**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**665.92 ft NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**37 feet**
LOGGED BY	**Jim Redwine**	DATE COMPLETED	**6/24/16**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1503856.86; Easting: 2062938.81**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
						12.5 to 27.0 feet: DOLOMITE, continued.			
			25			Tested every foot with 10 percent hydrochloric acid.			
	3.2/10	N				**27.0 to 36.0 feet: CLAY (CH)**, orange, wet, plastic, silty clay with occasional gravel.			
			30						
			35			**36.0 to 37.0 feet: SILT (ML)**, tan to gray silt, (intensely weathered dolomite). Reacts with 10 percent hydrochloric acid because powdered/ground.			
						Total depth: 37.0 feet.			
			40						

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent.

ANCHOR QEA

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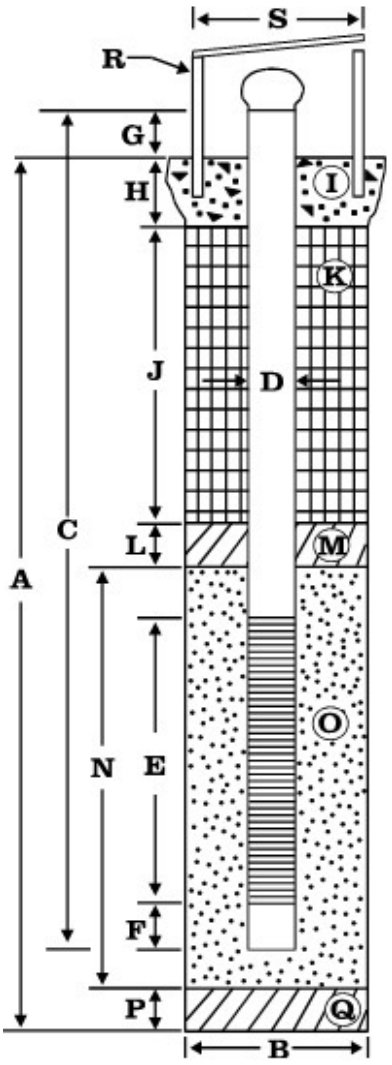
WELL DETAILS

Project Number:	151114-03	Boring/Well No.:	PZ-2
Client Name:	Southern Company	Top of Casing Elev.:	668.25 ft. NAVD88
Project Name:	Plant Bowen Hydrogeologic Investigation	Ground Surface Elev.:	665.99 ft. NAVD88)
		Installation Date:	06/24/2016-06/25/2016
Location:	Euharlee, Georgia	Driller:	Cascade Drilling
			Thomas Ardito, Driller



	Depth (feet)	Elevation (feet, NAVD88)
S	+2.3	668.32
R	+2.3	668.25
G	0.0	665.92
H	2.0	663.92
K		
J	N/A	N/A
D		
C	11.0	654.29
L	13.0	652.92
M	16.7	649.22
A		
N		
E		
O		
F	26.7	639.22
	27.0	638.92
P	28.0	637.92
Q	37.0	628.92
B		

EXPLORATORY BORING

A. Total depth:	37.0 ft.
B. Diameter:	6 in.
Drilling method:	Rotosonic PS-150

WELL CONSTRUCTION

C. Well casing length:	30.0 ft.
Well casing material:	PVC
D. Well casing diameter:	2 in.
E. Well screen length:	10 ft.
Well screen type:	PVC
Well screen slot size:	0.010 in.
F. Well sump/end cap length	0.3 ft.
G. Well casing height (stickup):	2.3 ft.
H. Surface seal thickness:	2.0 ft.
I. Surface seal material:	Concrete
J. Annular seal thickness:	8.0 ft.
K. Annular seal material:	Bentonite chips/Bentonite grout (2.0-11.0 ft.)
	N/A
L. Filter pack seal thickness:	2.0 ft.
M. Filter pack seal material:	Bentonite pellets
N. Sand pack thickness:	15.0 ft.
O. Sand pack material:	Heavy fine sand/#1 SS
P. Bottom material thickness:	9 ft.
Q. Bottom material:	Bentonite chips
R. Protective casing material:	Aluminum
S. Protective casing diameter:	Square – 4 in.
Well centralizer depths:	N/A

NOTES:

SS = Silica Sand.
OD = Outside diameter. PVC = Polyvinyl chloride.
Bentonite pellets allowed to hydrate at least 1 hour.
Bentonite chips allowed to hydrate at least 4 hours.
NAVD88 = North American Vertical Datum of 1988.

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**PZ-3**
LOCATION	**Euharlee, Georgia**	PAGE	**1 of 3**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**705.34 ft NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**57 feet**
LOGGED BY	**Jim Redwine**	DATE COMPLETED	**6/21/16**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1505723.97; Easting: 2066071.08**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
	8.5/7	N				**0 to 2.0 feet: TOPSOIL; CLAY (CL)**, brownish red silty clay, occasional fine gravel topsoil.			
						2.0 to 17.0 feet: CLAY (CL), red, stiff, silty clay, rare chert gravel.			
			5						
	10.8/10	N				@ 7.0 to 8.5 feet: topsoil cave in from top of hole, result of drilling.			
						Overburden tested with 10 percent hydrochloric acid every foot, no reaction.			
			10						
						@ 15.0 to 17.0 feet: material yellowish red. Black chert at 16.0 feet			
			15						
	5.3/10	N				@ 17.0 feet: contact gradational.			
						17.0 to 38.0 feet: CLAY (CH), orange to yellow to red, wet, plastic, silty clay with rare chert gravel.			
			20						

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent.

ANCHOR QEA

Prepared at the Request of Legal Counsel. Privileged and Confidential Work Product and Attorney/Client Communication.

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**PZ-3**
LOCATION	**Euharlee, Georgia**	PAGE	**2 of 3**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**705.34 ft NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**57 feet**
LOGGED BY	**Jim Redwine**	DATE COMPLETED	**6/21/16**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1505723.97; Easting: 2066071.08**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
			25			**17.0 to 38.0 feet: CLAY (CH)**, continued.			
	4.2/10	N				Overburden tested with 10 percent hydrochloric acid every foot, no reaction.			
			30						
			35						
	8.5/10	N S				@ 38.0 feet: top of rock. **38.0 to 57.0 feet: DOLOMITE**, dark to medium gray, fine to medium-grained dolomite. Numerous mechanical fractures due to drilling.			
			40						

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent.

ANCHOR QEA

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Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**PZ-3**
LOCATION	**Euharlee, Georgia**	PAGE	**3 of 3**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**705.34 ft NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**57 feet**
LOGGED BY	**Jim Redwine**	DATE COMPLETED	**6/21/16**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1505723.97; Easting: 2066071.08**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
		S	45			**38.0 to 57.0 feet: DOLOMITE**, continued. Tested every foot with 10 percent hydrochloric acid.			
	4.3/10	S	50			@ 50.0 to 54.0 feet: void, driller believes relatively open.			
			55			@ 56.5 feet: staining along joints near bottom of hole (approximately 0.5 foot from bottom of hole).			
			60			Total depth: 57.0 feet.			

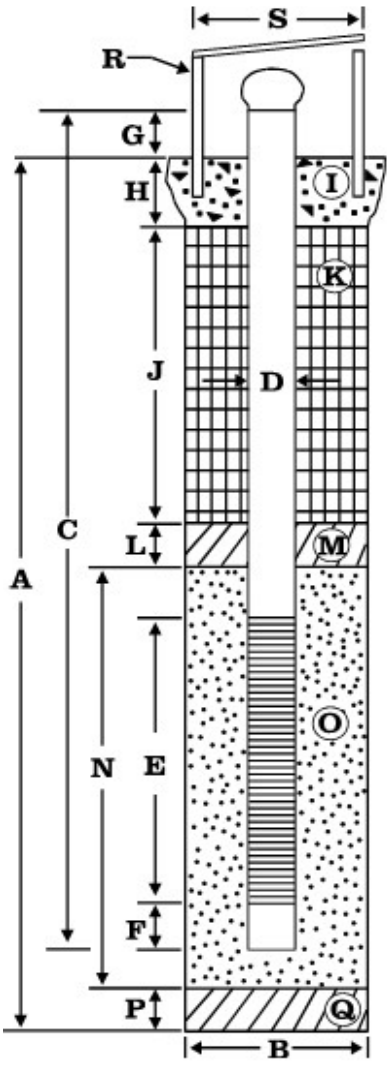
REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent.

ANCHOR QEA

Prepared at the Request of Legal Counsel. Privileged and Confidential Work Product and Attorney/Client Communication.

WELL DETAILS

Project Number:	151114-03	Boring/Well No.:	PZ-3
Client Name:	Southern Company	Top of Casing Elev.:	707.97 ft NAVD88
Project Name:	Plant Bowen Hydrogeologic Investigation	Ground Surface Elev.:	705.28 ft. NAVD88
		Installation Date:	06/21/2016-06/22/2016
Location:	Euharlee, Georgia	Driller:	Cascade Drilling
			Thomas Ardito, Driller



	Depth (feet)	Elevation (feet, NAVD88)
	+2.7	707.90
	+2.6	707.97
	0.0	705.34
	2.0	703.34
	32.0	673.34
	40.5	664.84
	42.5	662.84
	46.7	658.64
	56.7	648.64
	57.0	648.34
	57.0	648.34
	N/A	N/A

EXPLORATORY BORING

A. Total depth:	57.0 ft.
B. Diameter:	6 in.
Drilling method:	Rotosonic PS-150

WELL CONSTRUCTION

C. Well casing length:	60.0 ft.
Well casing material:	PVC
D. Well casing diameter:	2 in.
E. Well screen length:	10 ft.
Well screen type:	PVC
Well screen slot size:	0.010 in.
F. Well sump/end cap length	0.3 ft.
G. Well casing height (stickup):	2.6 ft.
H. Surface seal thickness:	2.0 ft.
I. Surface seal material:	Concrete
J. Annular seal thickness:	38.5 ft.
K. Annular seal material:	Bentonite grout (Aquaguard) (2.0-32.0 ft.)
	Bentonite pellets (32.0-40.5 ft.)
L. Filter pack seal thickness:	2.0 ft.
M. Filter pack seal material:	Bentonite pellets
N. Sand pack thickness:	14.5 ft.
O. Sand pack material:	Heavy fine sand/#1 SS
P. Bottom material thickness:	N/A
Q. Bottom material:	N/A
R. Protective casing material:	Aluminum
S. Protective casing diameter:	Square – 4 in.
Well centralizer depths:	N/A

NOTES:

SS = Silica Sand.
OD = Outside diameter. PVC = Polyvinyl chloride.
Bentonite pellets allowed to hydrate at least 1 hour.
Bentonite chips allowed to hydrate at least 4 hours.
NAVD88 = North American Vertical Datum of 1988.

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**PZ-4**
LOCATION	**Euharlee, Georgia**	PAGE	**1 of 3**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**715.96 ft NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**57 feet**
LOGGED BY	**Jim Redwine**	DATE COMPLETED	**6/22/16**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1505788.58; Easting: 2064316.61**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
	9.1/7	N				**0 to 1.5 feet: TOPSOIL**, dark brown.			
						1.5 to 17.0 feet: CLAY (CH), light brown, stiff, silty clay with occasional gravel, occasionally mottled, mottling increases with depth.			
			5						
	9.3/10	N							
			10			Overburden tested with 10 percent hydrochloric acid every foot, no reaction.			
			15						
	3.8/10	N				**17.0 to 18.0 feet: CHERT**, black algal chert somewhere between 17.0 and 24.0 feet: Shown at 17.0 to 18.0 feet because at top of core bag.			
						18.0 to 24.0 feet: WEATHERED ROCK and MUD, interbedded.			
			20						

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent.

ANCHOR QEA

Prepared at the Request of Legal Counsel. Privileged and Confidential Work Product and Attorney/Client Communication.

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**PZ-4**
LOCATION	**Euharlee, Georgia**	PAGE	**2 of 3**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**715.96 ft NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**57 feet**
LOGGED BY	**Jim Redwine**	DATE COMPLETED	**6/22/16**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1505788.58; Easting: 2064316.61**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
						18.0 to 24.0 feet: WEATHERED ROCK and MUD, continued.			
			25			**24.0 to 27.0 feet: CLAY and CHERT GRAVEL**, stiff, reddish brown clay and chert gravel (angular) in clay matrix.			
	0/9	N				**27.0 to 36.0 feet: MUD**, very soft mud, no recovery.			
			30						
			35						
	3/11	S N				**36.0 to 39.0 feet: DOLOMITE**, 3 feet of recovery, fine-grained, gray dolomite and occasional black chert. Difficult to know depth due to core loss. @ 36.0 to 37.0 feet: black chert. @ 37.0 to 39.0 feet: fine-grained gray dolomite.			
						39.0 to 47.0 feet: WEATHERED MATERIAL: see following page for description.			
			40						

REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent.

Boring Log revised with new survey data dated 6/10/2020.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Plant Bowen Hydrogeological Investigation**	BORING NUMBER	**PZ-4**
LOCATION	**Euharlee, Georgia**	PAGE	**3 of 3**
DRILLED BY	**Cascade Drilling, Inc.**	GROUND SURFACE ELEVATION	**715.96 ft NAVD88**
DRILL METHOD	**Rotosonic - PS-150**	TOTAL DEPTH	**57 feet**
LOGGED BY	**Jim Redwine**	DATE COMPLETED	**6/22/16**
SAMPLING METHOD	**4-in. ID by 10-ft. core barrel (CB)**	BOREHOLE DIAMETER	**6-inches**
COORDINATES	**(NAD83 WZ) Northing: 1505788.58; Easting: 2064316.61**		

SAMPLING METHOD	RECOVERY (FEET)	10% HCL SOLUTION ACID TEST RESULT	DEPTH IN FEET	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION	GRA %	SAND %	FINES %
			45			**39.0 to 47.0 feet: WEATHERED MATERIAL**, interbedded with rock lenses (driller's interpretation), 3 feet recovery, continued.			
	3.3/10	S	50			**47.0 to 55.0 feet: DOLOMITE**, fine-grained, medium gray dolomite with rare calcite in vugs and fractures. Rock broken due to drilling. A few black angular chert pieces which could have come from above. @ 47.0 to 55.0 feet: 1 foot of recovery, rock near top (driller's interpretation). @ 55.0 feet: siliceous dolomite fragments. Reaction with 10 percent hydrochloric acid when powdered, occasional reaction fresh. Calcite-filled fractures or calcite in matrix.			
		S N	55			**55.0 to 57.0 feet: DOLOMITE**, dissolution evidence at top of core (55 feet), medium to dark gray, fine-grained dolomite. @ 57.0 feet: carbonate-filled joint, no reaction to hydrochloric acid every foot, so not calcite.			
			60			Total depth: 57.0 feet. Well making water. Cleared up after about 20 minutes of pumping.			

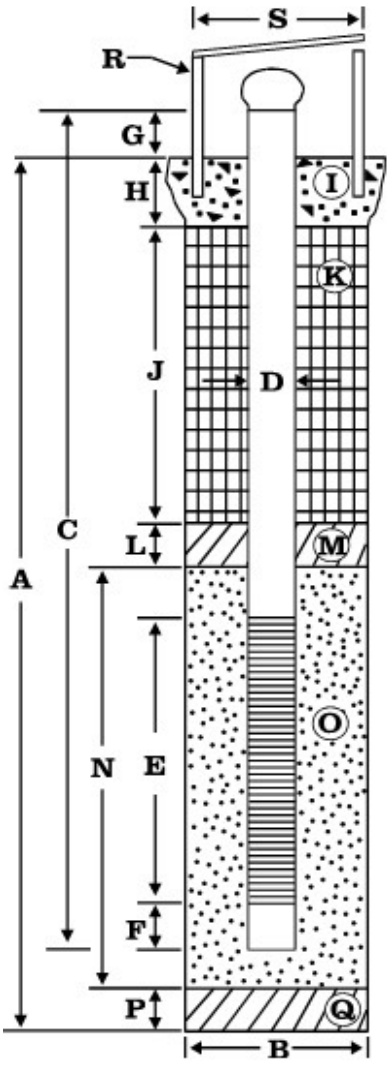
REMARKS: Acid test: E = Effervesces readily; N = No effervescence; S = Effervesces when the surface is scratched; W = Weakly effervescent.

ANCHOR QEA

Prepared at the Request of Legal Counsel. Privileged and Confidential Work Product and Attorney/Client Communication.

WELL DETAILS

Project Number:	151114-03	Boring/Well No.:	PZ-4
Client Name:	Southern Company	Top of Casing Elev.:	718.74 ft NAVD88
Project Name:	Plant Bowen Hydrogeologic Investigation	Ground Surface Elev.:	715.93 ft NAVD88
		Installation Date:	06/22/2016-06/23/2016
Location:	Euharlee, Georgia	Driller:	Cascade Drilling
			Thomas Ardito, Driller



	Depth (feet)	Elevation (feet, NAVD88)
S	+2.9	718.71
R	+2.78	718.74
G	0.0	715.96
H	2.0	713.96
J	22.0	693.96
C	40.0	675.96
L	42.5	673.46
A	46.7	669.26
N		
E		
O		
F	56.7	659.26
	57.0	658.96
P	57.0	658.96
Q	N/A	N/A
B		

EXPLORATORY BORING

A. Total depth:	57.0 ft.
B. Diameter:	6 in.
Drilling method:	Rotosonic PS-150

WELL CONSTRUCTION

C. Well casing length:	60.0 ft.
Well casing material:	PVC
D. Well casing diameter:	2 in.
E. Well screen length:	10 ft.
Well screen type:	PVC
Well screen slot size:	0.010 in.
F. Well sump/end cap length	0.3 ft.
G. Well casing height (stickup):	2.78 ft.
H. Surface seal thickness:	2.0 ft.
I. Surface seal material:	Concrete
J. Annular seal thickness:	38.0 ft.
K. Annular seal material:	Bentonite grout (Aquaguard) (2.0-22.0 ft.)
	Bentonite pellets (22.0-40.0 ft.)
L. Filter pack seal thickness:	2.5 ft.
M. Filter pack seal material:	Bentonite pellets
N. Sand pack thickness:	14.5 ft.
O. Sand pack material:	Heavy fine sand/#1 SS
P. Bottom material thickness:	N/A
Q. Bottom material:	N/A
R. Protective casing material:	Aluminum
S. Protective casing diameter:	Square – 4 in.
Well centralizer depths:	N/A

NOTES:

SS = Silica Sand.
OD = Outside diameter. PVC = Polyvinyl chloride.
Bentonite pellets allowed to hydrate at least 1 hour.
Bentonite chips allowed to hydrate at least 4 hours.
NAVD88 = North American Vertical Datum of 1988.

Boring Log revised with new survey data dated 6/10/2020.

Geosyntec consultants
engineers | scientists | innovators

Geosyntec Consultants
1255 Roberts Boulevard
Kennesaw, GA 30144

PZ-5

CLIENT Southern Company Services
PROJECT NAME Groundwater SRV-AP1
PROJECT NUMBER GW6581C
PROJECT LOCATION Euharlee, GA
DATE STARTED 12/3/19 **COMPLETED** 12/4/19
NORTHING 1499885.63 ft **EASTING** 2063961.22 ft
DRILLER Cascade Drilling
GROUND ELEVATION 697.23 ft **BORING DIAMETER** 6 in
DRILLING METHOD Sonic
TOP OF CASING ELEVATION 700.12 ft
SAMPLING METHOD 4" core 6" override
GEOPHYSICAL CONTRACTOR ---
RIG TYPE 1051181 Compact Crawler
LOGGED BY N.Tilahun **CHECKED BY** J. Ivanowski

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
0	695	Hand Auger 0-10 ft.		CLAY, Brown, medium plasticity, trace fine sand and silt, firm to stiff, moist.	
5	690			6 ft: Reddish brown, some yellow mottling.	
				8 to 9 ft: Reddish brown, some white mottling.	
10	685			CLAY, Reddish brown to yellow brown, low to medium plasticity, trace silt and fine sand, some chert fragments between 13 and 15 ft, firm to stiff, moist.	
15	680				Schedule 40 PVC 2"
20	675			CLAY, Yellowish brown to red brown, low to medium plasticity, firm, few angular to subrounded gravel, trace silt and fine sand, few chert fragments.	Bentonite grout
25	670				

(Continued Next Page)

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PZ-5

CLIENT Southern Company Services **PROJECT NAME** Groundwater SRV-AP1

PROJECT NUMBER GW6581C **PROJECT LOCATION** Euharlee, GA

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
30				CLAY, Yellowish brown to red brown, low to medium plasticity, firm, few angular to subrounded gravel, trace silt and fine sand, few chert fragments. *(continued)*	
	665			CLAY, Yellowish brown, few black mottles, medium to high plasticity, trace silt and fine sand, trace gravel, soft to firm, wet.	
35					Bentonite grout
	660	Soft drilling, driller lost approx. 100 gal of water.			
40				NO RECOVERY (39 to 42 ft)	
	655			LIMESTONE/DOLOMITE, Gray, some white calcite veins, fine grained, hard, fresh to slightly weathered, massive, broken into pieces due to drilling.	Bentonite 3/8" chips
45		Void reported by driller.		NO RECOVERY (45 to 49 ft)	
	650				
50		Hard drilling from 49 ft. Lost approx 200 gal of water.		LIMESTONE/DOLOMITE, Gray, some white calcite veins, fine grained, hard, fresh to slightly weathered, massive, broken into pieces due to drilling.	20/40 Silica Sand
	645				
55					0.010 slot size 2" Pre Pack, U-Pack Screen

Bottom of borehole at 57.0 feet.

Easting and Northing in NAD 1983.
Elevation in NAVD 1988.

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PZ-6

CLIENT Southern Company Services
PROJECT NUMBER GW6581C
DATE STARTED 12/8/19 **COMPLETED** 12/8/19
DRILLER Cascade Drilling
DRILLING METHOD Sonic
SAMPLING METHOD 4" core 6" override
RIG TYPE 1051181 Compact Crawler

PROJECT NAME Groundwater SRV-AP1
PROJECT LOCATION Euharlee, GA
NORTHING 1500379.48 ft **EASTING** 2063242.81 ft
GROUND ELEVATION 675.50 ft **BORING DIAMETER** 6 in
TOP OF CASING ELEVATION 678.32 ft
GEOPHYSICAL CONTRACTOR ---
LOGGED BY N.Tilahun **CHECKED BY** J. Ivanowski

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION
0	675	Hand Auger 0-10 ft.		NO RECOVERY (0 to 10 ft)
10	665			CLAY, Yellowish brown, medium to high plasticity, trace fine sand, silt and gravel, stiff, moist.
15	660			GRAVELLY CLAY, Yellowish brown, low to medium plasticity, some subrounded to rounded gravel, trace silt, few sand, soft, moist to wet.
20	655	19 ft: Soft drilling.		NO RECOVERY (19 to 20 ft)
				LIMESTONE/DOLOMITE, Gray, white calcite mineralization, fine grained, thin bedded, breaks along bedding, fresh, broken pieces due to drilling, some iron staining.
25	650	26-29 ft: Soft drilling.		26 ft: Increased iron staining.
30	645	29 ft: Moderate to hard drilling, lost approx 100 gal of water. 31-35 ft: Soft drilling.		29 ft: Increased iron staining.

CONSTRUCTION DIAGRAM

- Schedule 40 PVC 2"
- Bentonite grout
- Bentonite 3/8" chips
- 20/40 Silica Sand
- 0.010 slot size 2" Pre Pack, U-Pack Screen

Bottom of borehole at 35.0 feet.

Easting and Northing in NAD 1983.
Elevation in NAVD 1988.

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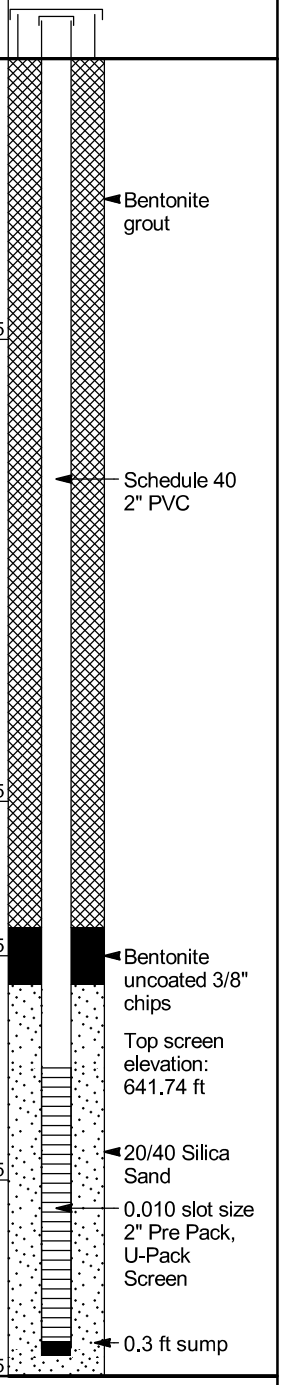
PZ-8

CLIENT Southern Company Services
PROJECT NAME Plant Bowen Well Installation
PROJECT NUMBER GW6581C
PROJECT LOCATION Euharlee, GA
DATE STARTED 3/10/2022 **COMPLETED** 2/10/2022
NORTHING 1504818.66 ft **EASTING** 2064241.49 ft
DRILLER Cascade Drilling
GROUND ELEVATION 677.75 ft **BORING DIAMETER** 6 in
DRILLING METHOD Sonic
TOP OF CASING ELEVATION 680.72 ft
SAMPLING METHOD 4 in core 6 in override
GEOPHYSICAL CONTRACTOR ---
RIG TYPE TSI 150CC
LOGGED BY N.Tilahun **CHECKED BY** J. Ivanowski

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION
0	675	0 to 10 ft: Hand Auger		Hand Auger Excavation (0-10 ft) NO SAMPLE
10	665	From 10 ft: Sonic drilling.		667.75 CLAY, Yellowish brown, medium to high plasticity, soft to stiff, laminated, trace fine to medium grained sand, few mottles, few silt, moist.
20	655			19 ft: Wet. 20 ft: Some black mottles, trace gravel, firm to stiff.
25	650			651.25 PARTIALLY WEATHERED ROCK (PWR), Gray, pulverized due to sonic drilling and angular rock fragments, weathered, dry.
30	645			645.75 DOLOMITE, Gray, hard, weathered, some calcite fillings, mostly platy rock fragments, stained fracture surfaces, wet.
40	635			637.75 NO RECOVERY (40-47 ft) 41 to 43 ft: VOID, open, rods dropped without resistance.
45				630.75

CONSTRUCTION DIAGRAM



Bottom of borehole at 47.0 feet.

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BGWC-31

CLIENT Southern Company Services
PROJECT NAME Plant Bowen
PROJECT NUMBER GW6581C
PROJECT LOCATION Euharlee Georgia
DATE STARTED 7/17/18 **COMPLETED** 7/17/18
NORTHING 1503497.94 ft **GROUND** **EASTING** 2064022.71 ft
DRILLER Cascade Drilling
ELEVATION 668.12 ft **BORING DIAMETER** 6 in
DRILLING METHOD Sonic
TOP OF CASING ELEVATION 670.54 ft
SAMPLING METHOD 4" core 6" overide
GEOPHYSICAL CONTRACTOR ---
RIG TYPE Terrasonic 10S1181
LOGGED BY C. Hug **CHECKED BY** J. Ivanowski

DEPTH (ft)	ELEVATION (ft msl)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
0	668			SANDY CLAY, Dark brown, medium plasticity, fine to medium grained sand, subrounded to subangular quartz, with roots and wood fragments in upper 3'.	
5	665			From 4' : Orange brown, less sand. Orange brown, medium to high plasticity, with trace fine sand. Between 5.5' and 7': With fine to coarse subrounded quartz gravel.	Bentonite grout
10	660			Becomes with trace gravel. CLAY with SAND, Orange, pale brown and gray, medium to high plasticity, with black silty spots and trace gravel.	Schedule 40 PVC 2"
15	655			Embedded angular quartz cobble 3" long. Increased black mottling, black material is weakly to strongly cemented, iron rich. Some brown strongly cemented angular iron rich gravel. \Becomes white,orange, red brown, mottled,slightly silty, with some angular chert gravel.	
20	650			1/4" wide fine band of grey clayey sand, sand is fine to medium grained. LIMESTONE, Dark gray, white veins, massive, fresh to slightly weathered, some orange (iron oxide) staining, recovered as fine to coarse angular gravel and rock pieces. POSSIBLE VOID. 20'-23.5'. Drill rods dropped without resistance.	
25	645			LIMESTONE, Gray, dark gray, white veins, massive, fresh to slightly weathered, recovered as angular, fine to coarse gravel sized rock fragments. Pale gray color, with orange brown iron oxide staining, and secondary calcite mineralization along fracture planes.	Bentonite 3/8" chips
30	640			Vertical fracture along piece of core (~4" length) with secondary calcite mineralization. Recovered as flat discs of core and fine to coarse gravel sized rock fragments.	
	635			Orange iron oxide staining and calcite mineralization along healed fracture veins, subrounded gravel fragments.	

(Continued Next Page)

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CLIENT Southern Company Services **PROJECT NAME** Plant Bowen

PROJECT NUMBER GW6581C **PROJECT LOCATION** Euharlee Georgia

DEPTH (ft)	ELEVATION (ft msl)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
40	630			LIMESTONE, Gray, dark gray, white veins, massive, fresh to slightly weathered, recovered as angular, fine to coarse gravel sized rock fragments. *(continued)* Some vertical fracture planes, calcite mineralization and calcite filling along healed fractures. Dark gray, recovered as more competent rock, comprising pieces of core up to 8" length, less white veins, fresh bedrock.	20/40 Silica Sand 0.010 slot size 2" Pre Pack, U-Pack Screen Sump
45	625				
	620			Bottom of borehole at 49.0 feet.	
50	615				
55	610				
60	605				
65	600				
70	595				

35
40
45

Easting and Northing in NAD 1983.
Elevation in NAVD 1988.

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BGWC-32

CLIENT Southern Company Services
PROJECT NAME Plant Bowen
PROJECT NUMBER GW6581C
PROJECT LOCATION Euharlee Georgia
DATE STARTED 7/18/18 **COMPLETED** 7/18/18
NORTHING 1501252.25 ft **EASTING** 2064184.30 ft
DRILLER Cascade Drilling
GROUND ELEVATION 696.36 ft **BORING DIAMETER** 6 in
DRILLING METHOD Sonic
TOP OF CASING ELEVATION 699.36 ft
SAMPLING METHOD 4" core 6" overide
GEOPHYSICAL CONTRACTOR ---
RIG TYPE Terrasonic 10S1181
LOGGED BY C. Hug **CHECKED BY** J. Ivanowski

DEPTH (ft)	ELEVATION (ft msl)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
0	695			CLAY, Brown, orange, medium to high plasticity, stiff, with trace fine sand and some red mottling, moist.	
5	690			Between 5.5' and 8': Tree roots and wood fragments.	- Bentonite grout
10	685			From 9': Orange red brown mottled, high plasticity.	
15	680			From 12': With coarse grained gravel sized zones of strong cementation, possibly iron rich, not breaking under finger pressure,with trace fine angular limestone powder.	- Schedule 40 PVC 2"
20	675				
25	670			From 24': Predominantly red with brown mottling, slightly more silty, trace fine angular sand.	
30	665			NO RECOVERY Possible silt, driller reported very low resistance during drilling.	- Bentonite 3/8" chips
				LIMESTONE, Gray, white veins, massive, slightly weathered to fresh, some secondary calcite mineralization along fracture planes/surfaces, recovered as angular cobbles and gravel.	

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BGWC-32

CLIENT Southern Company Services
PROJECT NAME Plant Bowen
PROJECT NUMBER GW6581C
PROJECT LOCATION Euharlee Georgia

DEPTH (ft)	ELEVATION (ft msl)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
40	660			LIMESTONE, Gray, white veins, massive, slightly weathered to fresh, some secondary calcite mineralization along fracture planes/surfaces, recovered as angular cobbles and gravel. *(continued)*	
45	655			Dark gray, only occasional veins of calcite, massive, fresh.	20/40 Silica Sand 0.010 slot size 2" Pre Pack, U-Pack Screen Sump
50	650			Bottom of borehole at 49.0 feet.	
55	645				
60	640				
65	635				
70	630				
	625				

35
40
45

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BGWC-34D

CLIENT Southern Company Services
PROJECT NAME Plant Bowen
PROJECT NUMBER GW6581C
PROJECT LOCATION Euharlee Georgia
DATE STARTED 7/13/18 **COMPLETED** 7/16/18
NORTHING 1503356.51 ft **EASTING** 2064257.95 ft
DRILLER Cascade Drilling
GROUND ELEVATION 672.25 ft **BORING DIAMETER** 6 in
DRILLING METHOD Sonic
TOP OF CASING ELEVATION 675.17 ft
SAMPLING METHOD 4" core 6" overide
GEOPHYSICAL CONTRACTOR ---
RIG TYPE Terrasonic 10S1181
LOGGED BY C. Hug **CHECKED BY** J. Ivanowski

DEPTH (ft)	ELEVATION (ft msl)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
0	672			Air vacuum to clear utilities. NO RECOVERY.	
5	670				Bentonite grout
10	665				Schedule 40 PVC 2"
15	660			FILL, Gray, dark gray, fine to coarse, angular, recovered with some orange clay. FILL.	
20	655			CLAY, Orange, yellow, minor red mottling, high plasticity, with some black spotting, trace fine angular sand.	
25	650			LIMESTONE, Dark gray, massive with white veins, fresh to slightly weathered, recovered as discs of core up to 2" thick and angular fine to coarse gravel.	
30	645				
	640				

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BGWC-34D

CLIENT Southern Company Services
PROJECT NAME Plant Bowen
PROJECT NUMBER GW6581C
PROJECT LOCATION Euharlee Georgia

DEPTH (ft)	ELEVATION (ft msl)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
35				LIMESTONE, Dark gray, massive with white veins, fresh to slightly weathered, recovered as discs of core up to 2" thick and angular fine to coarse gravel. *(continued)*	
	635				
40				Dark gray, massive, recovered as discs of core and angular fragments, fine to coarse gravel with cobbles.	- Bentonite 3/8" chips
	630				
45					
	625				
50					
	620				
55					
	615				
60				Dark gray and gray, recovered as fine to coarse gravel, angular.	
	610				
65				Increased white calcite veins along sealed fractures and secondary mineralization along fracture planes, recovered as more compact and larger pieces of core up to 4" in length.	
	605			Recovered as fine to coarse angular gravel and cobble sized fragments of core.	
70				Brown orange (iron oxide) staining.	- 20/40 Silica Sand - 0.010 slot size 2" Pre Pack, U-Pack Screen
	600				

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CLIENT Southern Company Services
PROJECT NAME Plant Bowen
PROJECT NUMBER GW6581C
PROJECT LOCATION Euharlee Georgia

DEPTH (ft)	ELEVATION (ft msl)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
75				LIMESTONE, Dark gray, massive with white veins, fresh to slightly weathered, recovered as discs of core up to 2" thick and angular fine to coarse gravel. *(continued)*	
	595			Orange, red and brown (iron oxide) staining.	- Sump
				Bottom of borehole at 78.0 feet.	
80	590				
85	585				
90	580				
95	575				
100	570				
105	565				
110	560				

Easting and Northing in NAD 1983.
Elevation in NAVD 1988.

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BGWC-35D

CLIENT Southern Company
PROJECT NAME Plant Bowen
Services **PROJECT NUMBER**
PROJECT LOCATION Euharlee Georgia
GW6581C **DATE STARTED** **COMPLETED** 7/12/18
NORTHING 1501312.20 ft **EASTING** 2064358.63 ft
7/12/18
DRILLER Cascade Drilling
GROUND ELEVATION 693.13 ft **BORING DIAMETER** 6 in
DRILLING METHOD Sonic
TOP OF CASING ELEVATION 695.73 ft
SAMPLING METHOD 4" core 6" overide
GEOPHYSICAL CONTRACTOR ---
RIG TYPE Terrasonic 10S1181
LOGGED BY C. Hug **CHECKED BY** J. Ivanowski

DEPTH (ft)	ELEVATION (ft msl)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
				Air vacuum to clear utilities. No Recovery.	
5	690				Bentonite grout
10	685			CLAY, Orange brown, some gray mottling, medium to high plasticity, with trace fine angular sand.	Schedule 40 PVC 2"
15	680			From 16.5' : With some pale brown, some black fine lamination, silty patches, trace fine angular gravel and some red mottling.	
20	675			From 21': Red.	
25	670			LIMESTONE, Dark gray, massive, some orange (iron oxide) staining and some mineralization of calcite. recovered as fine to coarse gravel, angular and disc shaped pieces of core up to 1" length.	
30	665			29': Slightly more pale gray.	
	660				

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CLIENT Southern Company Services
PROJECT NAME Plant Bowen
PROJECT NUMBER GW6581C
PROJECT LOCATION Euharlee Georgia

DEPTH (ft)	ELEVATION (ft msl)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
40	655			LIMESTONE, Dark gray, massive, some orange (iron oxide) staining and some mineralization of calcite. recovered as fine to coarse gravel, angular and disc shaped pieces of core up to 1" length. *(continued)* 37': Dark gray with white quartz filled veins and secondary calcite mineralization along fracture lanes/surfaces.	
				POTENTIAL VOID (39'-42').	
45	650			LIMESTONE, Gray, dark gray massive with white quartz veins and secondary calcite mineralization, fresh.	- Bentonite 3/8" chips
50	645			Dark gray, massive sections with no to minor white veins in upper part of run, increased white, secondary calcite mineralization in lower parts of run, fresh to slightly weathered.	
55	640				
60	635			59': Gray, dark gray with white veins and secondary mineralization along fractured planes/ surfaces, recovered as rounded gravel and pebbles of limestone.	
65	630			62': White calcareous and quartz rich veins, recovered as angular and subangular gravel and cobbles.	
70	625			69': Dark gray, recovered as angular fine to coarse grained gravel and cobbles, massive, fresh with white calcite veins.	- 20/40 Silica Sand - 0.010 slot size 2" Pre Pack, U-Pack Screen
	620				

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CLIENT Southern Company Services
PROJECT NAME Plant Bowen
PROJECT NUMBER GW6581C
PROJECT LOCATION Euharlee Georgia

DEPTH (ft)	ELEVATION (ft msl)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
75				LIMESTONE, Gray, dark gray massive with white quartz veins and secondary calcite mineralization, fresh. *(continued)*	
	615				Sump
				Bottom of borehole at 79.0 feet.	
80					
	610				
85					
	605				
90					
	600				
95					
	595				
100					
	590				
105					
	585				
110					
	580				

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Elevation in NAVD 1988.

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BGWC-36D

CLIENT Southern Company Services
PROJECT NAME Plant Bowen
PROJECT NUMBER GW6581C
PROJECT LOCATION Euharlee Georgia
DATE STARTED 7/2/18 **COMPLETED** 7/3/18
NORTHING 1499807.51 ft **EASTING** 2066415.10 ft
DRILLER Cascade Drilling
GROUND ELEVATION 698.07 ft **BORING DIAMETER** 6 in
DRILLING METHOD Sonic
TOP OF CASING ELEVATION 701.01 ft
SAMPLING METHOD 4" core 6" overide
GEOPHYSICAL CONTRACTOR ---
RIG TYPE Terrasonic 10S1181
LOGGED BY C. Hug **CHECKED BY** J. Ivanowski

DEPTH (ft)	ELEVATION (ft msl)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
0				CLAY, Orange red to red brown, trace fine angular sand, medium to high plasticity.	
	695				
5				From 4': Red, some white weakly cemented pebbles and trace fine grained angular gravel.	
				Mottled red and orange, trace fine gravel.	
	690				
10				From 11': Trace fine to medium grained gravel, red and orange mottled.	
	685			From 13': With some white and pale gray, highly weathered, moderately cemented calcareous pebbles, up to 0.5" in diameter.	
15					- Bentonite grout
	680			From 18': Predominantly gray and orange, trace fine grained sand.	
20					- Schedule 40 PVC 2"
	675				
25					
	670				
30					
	665				

(Continued Next Page)

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BGWC-36D

CLIENT Southern Company Services
PROJECT NAME Plant Bowen
PROJECT NUMBER GW6581C
PROJECT LOCATION Euharlee Georgia

DEPTH (ft)	ELEVATION (ft msl)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
40	660			CLAY, Orange red to red brown, trace fine angular sand, medium to high plasticity. *(continued)* 35': With angular rock fragments up to 3" in diameter (limestone) and quartz gravel, slightly more silty. 37.5': Gray, angular, quartz rich limestone fragment.	
45	655			LIMESTONE, Gray, white, massive, white calcareous veins throughout, drilled as pieces of rock.	
				POTENTIAL VOID (45'-47'). Driller reports dropping rods, no resistance.	
50	650			LIMESTONE, Gray, with white calcareous veins, massive, fresh to slightly weathered, minor brown iron oxide staining. Drilled as discs of core and fragments up to 3" length, angular medium to high strength.	
				POTENTIAL VOID (50'-52.5'). Driller reports dropping rods, no resistance.	
55	645			LIMESTONE Gray, white calcareous veins, massive, breaking angular, fresh, high strength, minor iron oxide staining. Recovered as discs of rock fragments.	
60	640			POTENTIAL VOID (59'-64'). Potential SILT. Driller reports very low resistance during drilling.	- Bentonite 3/8" chips
65	635			LIMESTONE, Gray, white spotted and calcareous veins throughout, massive fresh, high strength, recovered as angular rock core fragments , up to 3" length.	
70	630			POTENTIAL VOID (69'-72'). Driller reports very low resistance during drilling.	
	625			LIMESTONE, Gray, white massive, fresh to slightly weathered, medium to high strength, coarse gravel sized, angular, recovered as disc shaped core fragments up to 2" length.	

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BGWC-36D

CLIENT Southern Company Services
PROJECT NAME Plant Bowen
PROJECT NUMBER GW6581C
PROJECT LOCATION Euharlee Georgia

DEPTH (ft)	ELEVATION (ft msl)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
80	620			LIMESTONE, Gray, white massive, fresh to slightly weathered, medium to high strength, coarse gravel sized, angular, recovered as disc shaped core fragments up to 2" length. *(continued)*	
85	615				
90	610			POTENTIAL VOID (87'-93'). Driller reports very low resistance during drilling.	- 20/40 Silica Sand - 0.010 slot size 2" Pre Pack, U-Pack Screen
95	605			LIMESTONE, Gray, white, massive, slightly weathered with calcareous white veins, and some brown iron oxide staining, recovered with some brown/ orange clayey sand.	- Sump
100	600			Bottom of borehole at 93.5 feet.	
105	595				
110	590				
	585				

75
80
85
90

Easting and Northing in NAD 1983.
Elevation in NAVD 1988.

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BGWC-38D

CLIENT Southern Company Services
PROJECT NAME Groundwater SRV-AP1
PROJECT NUMBER GW6581C
PROJECT LOCATION Euharlee, GA
DATE STARTED 4/16/19 **COMPLETED** 4/18/19
NORTHING 1499802.36 ft **EASTING** 2066430.17 ft
DRILLER Cascade Drilling
GROUND ELEVATION 697.52 ft **BORING DIAMETER** 6 in
DRILLING METHOD Sonic
TOP OF CASING ELEVATION 700.34 ft
SAMPLING METHOD 4" core 6" override
GEOPHYSICAL CONTRACTOR ---
RIG TYPE Terrasonic 11-38212
LOGGED BY C. Hug **CHECKED BY** J. Ivanowski

DEPTH (ft)	ELEVATION (ft msl)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
0	695			Hydro Excavation (0-10 ft) NO SAMPLE	
5	690				Bentonite grout
10	685			CLAY, Reddish-brown, some yellow, low to medium plasticity, trace fine sand, moist. With fine, angular gravel sized chert and dolomite fragments, pale grey to white, angular.	
15	680			Red and yellow, some grey mottles, low to medium plasticity, trace fine grained, angular sand, moist. With some fine grained, angular chert and dolomite gravel. 18 ft: Large chert-rich limestone fragment, 4 inches long, 2 inches in diameter, increasing yellow mottling, slightly more sandy.	Schedule 40 PVC 2"
20	675				
25	670	25 ft: End drilling 4/16/2019		24.8 ft: Large, chert rich limestone fragment, dark grey, some white, angular 5 inches x 3 inches. Between 27 and 30 ft: Pale grey and red mottled. From 29 ft: Occasional pale grey mottling.	
30	665			From 30 ft: With fine sand lenses and depositional layering (1-2mm), trace of fine limestone gravel, moist, stiff.	
35	660			From 36 ft: Brown, yellowish brown, medium to high plasticity, trace fine sand, moist to wet, soft to firm, with angular, dark grey limestone fragments up to 2 inches long. 39-40 ft: With grey, sandy silty areas of weathered limestone fragments.	

(Continued Next Page)

Boring Log revised with new survey data dated 6/10/2020.

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BGWC-38D

CLIENT Southern Company Services
PROJECT NAME Groundwater SRV-AP1
PROJECT NUMBER GW6581C
PROJECT LOCATION Euharlee, GA

DEPTH (ft)	ELEVATION (ft msl)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
40				CLAY, Reddish-brown, some yellow, low to medium plasticity, trace fine sand, moist. With fine, angular gravel sized chert and dolomite fragments, pale grey to white, angular. *(continued)*	
	655			43 ft: Dark grey, angular limestone fragments up to 5 inches long.	
45				45 ft: Angular limestone fragment, 5 inches x 3 inches.	
	650			48-49 ft: With fine to coarse grainded gravel sized limestone fragments, angular, grey, up to 5 inches in diameter.	
50				51 ft: Large, angular chert fragment, white to pale grey, 5 inches in diameter.	
	645			53 ft: Angular limestone fragment, 4 inches long.	
55					Bentonite grout
	640			56 ft: With dark brown SANDY CLAY, sand is fine to coarse grained, subangular, quartz. From 57 ft: CLAY with SAND, Brown red and yellow, medium to high plasticity, sand is fine to medium grained, subangular, trace of fine limestone gravel.	
60					
	635			63 to 64 ft: Lens of fine to coarse gravel sized limestone fragments in sandy, silty clay matrix.	
65		67 to 77 ft: Driller reports general 'easy' drilling, with softer and harder patches.			
	630			LIMESTONE, Dark grey, grey, white, massive, with calcareous veins, minor yellowish-brown iron oxide staining, drilled as angular fragments of rock and disc shaped core fragments, with some chert rich fragments.	
70					
	625	Driller reports rods dropping between 74 and 76 ft, no resistance.			
75				Potential VOID (74 to 76 ft)	
		Softer and harder drilling, but no rod dropping.		LIMESTONE, Dark grey, grey, white, massive, with calcareous veins, minor yellowish-brown iron oxide staining, drilled as angular fragments of rock and disc shaped core fragments, with some chert rich fragments.	
	620				
80					Bentonite uncoated 3/8" chips
	615				
85					

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CLIENT Southern Company Services
PROJECT NAME Groundwater SRV-AP1
PROJECT NUMBER GW6581C
PROJECT LOCATION Euharlee, GA

DEPTH (ft)	ELEVATION (ft msl)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
90	610			LIMESTONE, Dark grey, grey, white, massive, with calcareous veins, minor yellowish-brown iron oxide staining, drilled as angular fragments of rock and disc shaped core fragments, with some chert rich fragments. *(continued)*	
95	605	From 97': Harder drilling, slow progress.		From 97: Larger, competent pieces of limestone up to 4 inches in length, grey, white, massive, fresh.	
100	600				
105	595	107 to 117 ft: Fast drilling throughout run, no voids reported.		From 105 to 107 ft: Drilled as three competent pieces of intact limestone core up to 12 inches long, fresh, no fractures to slightly fractured.	
110	590			Between 109 and 113 ft: Some brown and yellow iron oxide staining along fracture planes. Rock is generally recovered as grey, angular fragments of rock up to 4 inches long, with white calcareous veins and discs of core up to 1 inch length. No staining between 115 and 117 ft.	- Bentonite 3/8" chips
115	585				- 0.010 slot size 2" Pre Pack, U-Pack Screen - 20/40 Silica Sand
120	580				
125	575				
130	570			Bottom of borehole at 127.0 feet.	

Easting and Northing in NAD 1983.
Elevation in NAVD 1988.

Boring Log revised with new survey data dated 6/10/2020.

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BGWC-40

CLIENT Southern Company Services
PROJECT NAME Groundwater SRV-AP1
PROJECT NUMBER GW6581C
PROJECT LOCATION Euharlee, GA
DATE STARTED 12/3/19 **COMPLETED** 12/3/19
NORTHING 1500589.93 ft **EASTING** 2064317.38 ft
DRILLER Cascade Drilling
GROUND ELEVATION 687.12 ft **BORING DIAMETER** 6 in
DRILLING METHOD Sonic
TOP OF CASING ELEVATION 689.59 ft
SAMPLING METHOD 4" core 6" override
GEOPHYSICAL CONTRACTOR ---LOGGED
RIG TYPE 1051181 Compact Crawler
BY N.Tilahun **CHECKED BY** J. Ivanowski

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
0	685	Hand Auger 0-10 ft.		CLAY, Reddish brown, medium plasticity, firm to stiff, trace silt and fine sand, moist.	
5	680			4 ft: Trace yellow mottling.	
				8-9 ft: Yellowish brown.	
10	675			CLAY, Yellowish brown to reddish brown, low to medium plasticity, trace silt, sand and angular gravel, firm to stiff, trace black and whitle mottles, moist.	
15	670				Schedule 40 PVC 2"
20	665			CLAY, Yellowish brown to reddish brown, black mottles, high plasticity, trace silt and fine sand, few angular to subangular rock fragments, stiff, moist to wet.	Bentonite grout
25	660			GRAVELLY CLAY, Brown, medium to high plasticity, stiff, some limestone and dolomite rock fragments, wet.	

(Continued Next Page)

Boring Log revised with new survey data dated 6/10/2020.

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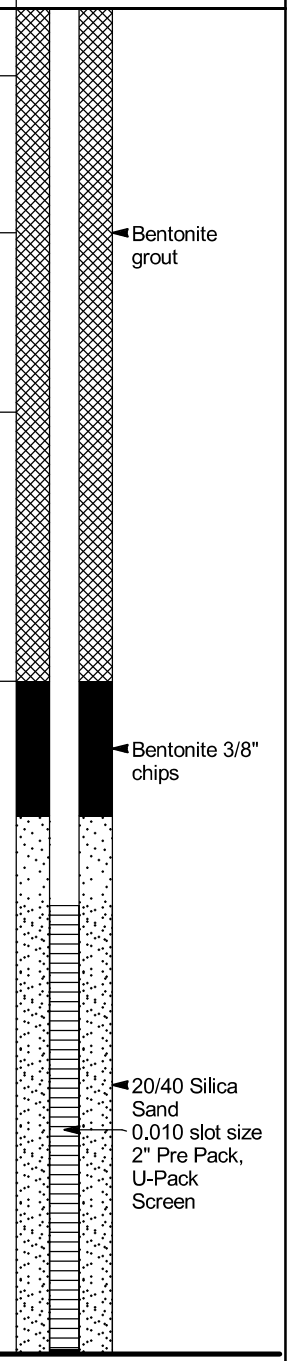
BGWC-40

CLIENT Southern Company Services **PROJECT NAME** Groundwater SRV-AP1

PROJECT NUMBER GW6581C **PROJECT LOCATION** Euharlee, GA

DEPTH (ft)	ELEVATION (ft)	REMARKS	MATERIAL DESCRIPTION
30		31-33 ft: Very soft drilling - potential void filling.	GRAVELLY CLAY, Brown, medium to high plasticity, stiff, some limestone and dolomite rock fragments, wet. *(continued)*
	655		PARTIALLY WEATHERED ROCK, Limestone and dolomite, dry.
35		35-38 ft: Very soft drilling - potential void filling.	GRAVELLY CLAY, Brown, medium to high plasticity, stiff, some limestone and dolomite rock fragments, wet.
	650		
40		39-45 ft: Very soft drilling - potential void filling.	GRAVELLY CLAY, Brown, high plasticity, stiff, few limetone and dolomite rock fragments, firm to stiff, wet.
	645		
45			LIMESTONE, Light gray, white calcite veins, few iron staining, hard, moderately bedded (breaking along bedding), broken pieces due to drilling.
	640		
50			
	635		
55			
	630	57-60 ft: Soft drilling, lost circulation (approx 100 gal of water) - potential void.	
60			Bottom of borehole at 60.0 feet.

CONSTRUCTION DIAGRAM



Easting and Northing in NAD 1983.
Elevation in NAVD 1988.

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BGWC-43D

CLIENT Southern Company Services
PROJECT NAME Bowen Groundwater SRV-AP1
PROJECT NUMBER GW6581C
PROJECT LOCATION Euharlee, GA
DATE STARTED 4/23/20 **COMPLETED** 4/24/20
NORTHING 1499796.85 ft **EASTING** 2066444.37 ft
DRILLER Cascade Drilling
GROUND ELEVATION 697.29 ft **BORING DIAMETER** 6 in
DRILLING METHOD Sonic
TOP OF CASING ELEVATION 700.10 ft
SAMPLING METHOD 4" core 6" override
GEOPHYSICAL CONTRACTOR ---
RIG TYPE Terra Sonic Compact Crawler
LOGGED BY N.Tilahun **CHECKED BY** J. Ivanowski

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
0				Hydro Excavation (0 ft to 10 ft) NO SAMPLE	
	690				
10				687.3 CLAY, Yellowish and reddish brown, low to medium plasticity, trace fine to coarse sand, trace angular chert, firm, moist.	Schedule 40 PVC 2"
	680				Aquaguard Sodium Bentonite Grout
20				20 ft: Few black mottles, laminated, few rock fragments of chert and dolomite.	
	670				
30				30 ft: Yellowish brown, trace black mottles.	
	660				
40				657.3 LIMESTONE/DOLOMITE, Dark gray, fine grained, platy rock fragments, hard, slightly weathered, with iron oxide staining.	Bentonite uncoated 3/8" chips
	650				

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CLIENT Southern Company Services **PROJECT NAME** Bowen Groundwater SRV-AP1

PROJECT NUMBER GW6581C **PROJECT LOCATION** Euharlee, GA

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
50				LIMESTONE/DOLOMITE, Dark gray, fine grained, platy rock fragments, hard, slightly weathered, with iron oxide staining. *(continued)*	
				50 ft: Calcite fillings.	
	640				Bentonite uncoated 3/8" chips
60					
	630				
70					
	620				
80				617.3	
				NO RECOVERY (90 ft to 100 ft)	
	610				
90		90 ft: Potential void filling.		605.3	
				LIMESTONE/DOLOMITE, Dark gray, fine grained, platy rock fragments, hard, slightly weathered, with iron oxide staining.	
	600				
100				100 ft: Slightly weathered, some iron oxide staining, trace calcite fillings, few small pieces of rock fragments.	

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CLIENT Southern Company Services **PROJECT NAME** Bowen Groundwater SRV-AP1

PROJECT NUMBER GW6581C **PROJECT LOCATION** Euharlee, GA

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
110				LIMESTONE/DOLOMITE, Dark gray, fine grained, platy rock fragments, hard, slightly weathered, with iron oxide staining. *(continued)*	
				113 ft to 116 ft: Soft zone, mostly clay, dry recovery below.	
	580				
120				120 ft: Few calcite fillings, yellowish gray, iron oxide staining.	Bentonite uncoated 3/8" chips
	570				
130				130 ft: Yellowish gray to gray, few calcite fillings, some weathering and iron oxide staining.	
	560				
140				140 ft: Yellowish gray to gray, few calcite fillings, some weathering and iron oxide staining.	
	550				Bentonite coated 3/8" pellets
150				150 ft: Yellowish gray to gray, few calcite fillings, some weathering and iron oxide staining.	20/40 Silica Sand
	540				0.010 slot size 2" Pre Pack, U-Pack Screen
160					534.3

Bottom of borehole at 163.0 feet.

Easting and Northing in NAD 1983.
Elevation in NAVD 1988.

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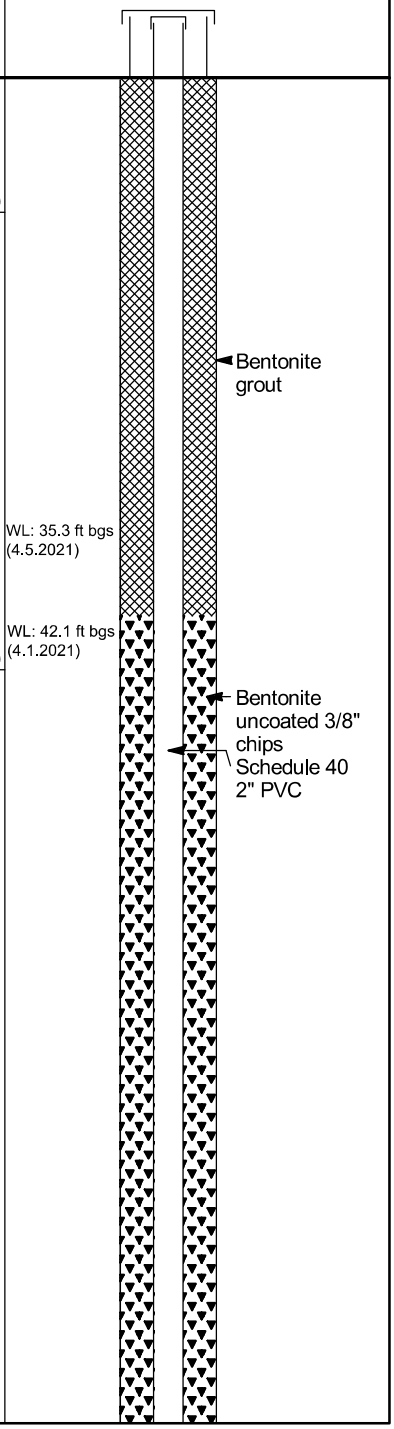
BGWC-49D

CLIENT Southern Company Services
PROJECT NAME Plant Bowen Well Installation
PROJECT NUMBER GW6581C
PROJECT LOCATION Euharlee, GA
DATE STARTED 1/23/21 **COMPLETED** 2/23/21
NORTHING 1499790.13 ft **EASTING** 2066461.96 ft
DRILLER Tom Ardito, Cascade Drilling
GROUND ELEVATION 696.95 ft **BORING DIAMETER** 6 in
DRILLING METHOD Sonic
TOP OF CASING ELEVATION 699.75 ft
SAMPLING METHOD 4 in core 6 in override
GEOPHYSICAL CONTRACTOR GEL Solutions
RIG TYPE Terrasonic 1051181
LOGGED BY T. Kessler and A. Ramsey **CHECKED BY** J. Ivanowski

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION
0		Geophysical logging consisted of acoustic televiewer, optical televiewer, caliper, fluid conductivity, fluid temperature, single point resistance (SPR), spontaneous potential (SP), and heat pulse flowmeter (HPF). Refer to separate report.		Air Knife Excavation (0 to 10 ft) NO SAMPLE
10				687.0 SILTY CLAY, Brownish yellow with white mottling, medium plasticity, iron oxide staining throughout, with rock fragments, trace sand, firm, moist.
20				16 ft: Some fine gravel.
30				30 ft: With highly weathered rock gravel throughout, color changes to brownish yellow.
40		Increased rig chatter, slower drilling rate, some loss of circulation.		40 to 43 ft: With large, brownish yellow rock fragments. 653.0 DOLOMITE, Gray, fine to medium grained, with some fractures, and visible iron oxide staining at 44 ft, with white calcite veins at 44 ft and 45 ft, weak reaction with HCL.
50				50 ft: White calcite veins throughout.
60		Rig chatters, no returns.		58 ft: Light gray, with iron oxide staining and moderately weathered. 60 ft: Medium to coarse grained, friable.
70		From 70 ft: Logger: A. Ramsey		70 ft: Gray with some dark gray, fine to medium grained, visible iron staining at 71 ft, calcite veins throughout, massive.
80				80 ft: Some iron oxide staining throughout, fracture at 80 ft.
90				90 ft: Trace calcite fillings, some iron oxide staining, fractured at 96 ft, massive.
100				

CONSTRUCTION DIAGRAM



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CLIENT Southern Company Services **PROJECT NAME** Plant Bowen Well Installation

PROJECT NUMBER GW6581C **PROJECT LOCATION** Euharlee, GA

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
100				DOLOMITE, Gray, fine to medium grained, with some fractures, and visible iron oxide staining at 44 ft, with white calcite veins at 44 ft and 45 ft, weak reaction with HCL. *(continued)*	
110				112 ft: Fracture.	
120				571.0	
130				NO RECOVERY (VOID 126 to 131 ft) Driller reports no resistance during drop 566.0	
140		140 to 150 ft: 3 ft recovery, voides reported by the driller.		DOLOMITE, Gray, trace calcite fillings and iron oxide staining, massive. 140 ft: Thin laminations, with some voids.	
150				150 ft: Some iron oxide staining.	
160					
170					Bentonite uncoated 3/8" chips
180				514.0	
190				NO RECOVERY (VOID 183 to 192 ft) Driller reports no resistance during drop. 505.0	
200				DOLOMITE, Gray, trace calcite fillings and iron oxide staining, massive. 493.0	
210				NO RECOVERY (VOID 204 to 205 ft) Driller reports no resistance during drop. 492.0 DOLOMITE, Gray, abundance of calcite fillings up to 1 inch thick and significant iron oxide staining, increasing with depth.	

(Continued Next Page)

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CLIENT Southern Company Services **PROJECT NAME** Plant Bowen Well Installation

PROJECT NUMBER GW6581C **PROJECT LOCATION** Euharlee, GA

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
220				482.0 NO RECOVERY (VOID 215 to 225 ft) Driller reports no resistance during drop.	
				472.0 DOLOMITE, Dark gray and white, partially weathered, fine to medium grained, thinly laminated, abundant iron oxide staining.	
230				230 ft: Trace iron oxide staining, unweathered to fresh.	
				234 to 240 ft: Trace iron oxide staining and calcite filling.	
240					Bentonite uncoated 3/8" chips
250					
260		260 ft: Very slow drilling (10 ft in 50 min)		260 ft: Fine to medium grained, massive.	
270				270 ft: With some calcite filled veins.	
280					
290					Bentonite coated 1/2" pellets
300				297 ft: Trace fractures visible with iron oxide staining from 302 to 307 ft.	Top of screen elev: 398.95 ft
					Bottom of screen elev: 388.95 ft
310				307 ft: With some iron oxide staining. 310 ft: Abundant calcite filled fractures.	0.010 slot size 2" Pre Pack, U-Pack Screen 4" sump Bottom of well elev: 388.62 ft 20/40 Silica Sand
				380.0 DOLOMITE, Gray, fine to medium grained, massive, with some calcite filled veins and abundant fractures with visible iron oxide staining.	
320					Bentonite uncoated 3/8" chips backfill

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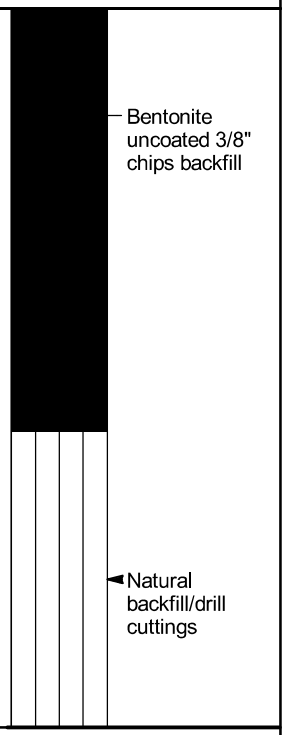
CLIENT Southern Company Services **PROJECT NAME** Plant Bowen Well Installation

PROJECT NUMBER GW6581C **PROJECT LOCATION** Euharlee, GA

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
330				DOLOMITE, Gray, fine to medium grained, massive, with some calcite filled veins and abundant fractures with visible iron oxide staining. *(continued)*	
340				342 ft: Significant calcite filled fractures.	
350				352 ft: Dark gray, fine to medium grained, thinly laminated to massive, calcite filled veins throughout, abundant iron oxide staining.	
360		Drill cuttings settled in open hole after pumping/flushing of borehole.			
370					
380				315.0	



Bottom of borehole at 382.0 feet.

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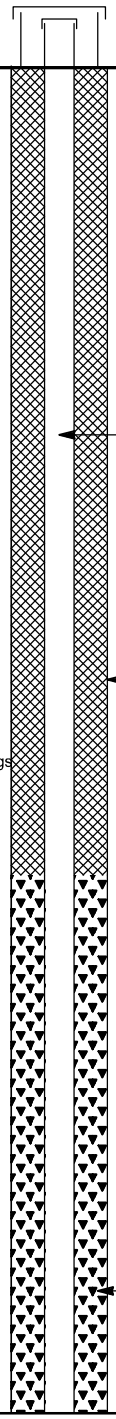
BGWC-50D

CLIENT Southern Company Services
PROJECT NAME Plant Bowen Well Installation
PROJECT NUMBER GW6581C
PROJECT LOCATION Euharlee, GA
DATE STARTED 3/2/21 **COMPLETED** 3/19/21
NORTHING 1499269.15 ft **EASTING** 2065781.87 ft
DRILLER Donald Hall, Cascade Drilling
GROUND ELEVATION 714.67 ft **BORING DIAMETER** 6 in
DRILLING METHOD Sonic
TOP OF CASING ELEVATION 717.43 ft
SAMPLING METHOD 4 in core 6 in override
GEOPHYSICAL CONTRACTOR GEL Solutions
RIG TYPE Pro Sonic 150 Full Size
LOGGED BY C. Cain **CHECKED BY** J. Ivanowski

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION
0	710	Geophysical logging consisted of acoustic televiewer, caliper, fluid conductivity, fluid temperature, single point resistance (SPR), spontaneous potential (SP), and heat pulse flowmeter (HPF). Refer to separate report.		Air Knife Excavation (0 to 10 ft) NO SAMPLE
10	704.7			SILTY CLAY, Yellowish brown, medium plasticity, some iron oxide staining throughout, with gravel sized rock fragments throughout and few sand, moist.
20	700			
30	690			25 ft: Layer of coarse gravel with yellowish brown sand.
				30 ft: Increased iron oxide staining, some mottling, few gravel.
40	680			35 ft: Dark gray gravel layer (8 inch thick), comprised of angular rock fragments.
	678.7			DOLOMITE, Gray, fine to medium grained, small veins of calcite.
50	670			45 ft: Visible iron oxide staining.
				47 ft: Light gray, with calcite veins throughout, some iron oxide staining.
		52-55 ft: Driller reports dropping rods, no resistance.		
	662.7			NO RECOVERY (VOID 52 to 55 ft)
	660			659.7

CONSTRUCTION DIAGRAM



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CLIENT Southern Company Services **PROJECT NAME** Plant Bowen Well Installation

PROJECT NUMBER GW6581C **PROJECT LOCATION** Euharlee, GA

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
60	650	66 ft: Slow drilling, heavy rig chatter, no water returns.		DOLOMITE, Dark gray, fine to medium grained, with calcite filled veins and occasional calcite crystals throughout, with heavy iron oxide staining, becoming lighter gray with depth.	
70	640			75 ft: Heavy iron oxide staining, some calcite filled veins.	
80	630			80 to 82 ft: Heavy iron oxide staining, some large calcite filled veins.	
				86 to 88 ft: Little iron oxide staining, small calcite filled veins.	
90		89-90 ft: Driller reports dropping rods, no returns.		625.7 NO RECOVERY (VOID 89 to 90 ft) 624.7 DOLOMITE, Light gray, fine to medium grained, with calcite filled veins, massive, wet.	Bentonite uncoated 3/8" chips
100	620	96 ft: Very soft zone.			Bentonite uncoated 3/8" chips
	610	103 ft: Very soft drilling, no water returns. 106 to 136 ft: No water returns.		103 to 106 ft: Iron oxide staining.	
110		110 ft: No water returns.		110 to 116 ft: Light gray, few minor areas of iron oxide staining, small calcite filled veins throughout.	
	600			116 and 121 ft: Iron oxide staining.	

(Continued Next Page)

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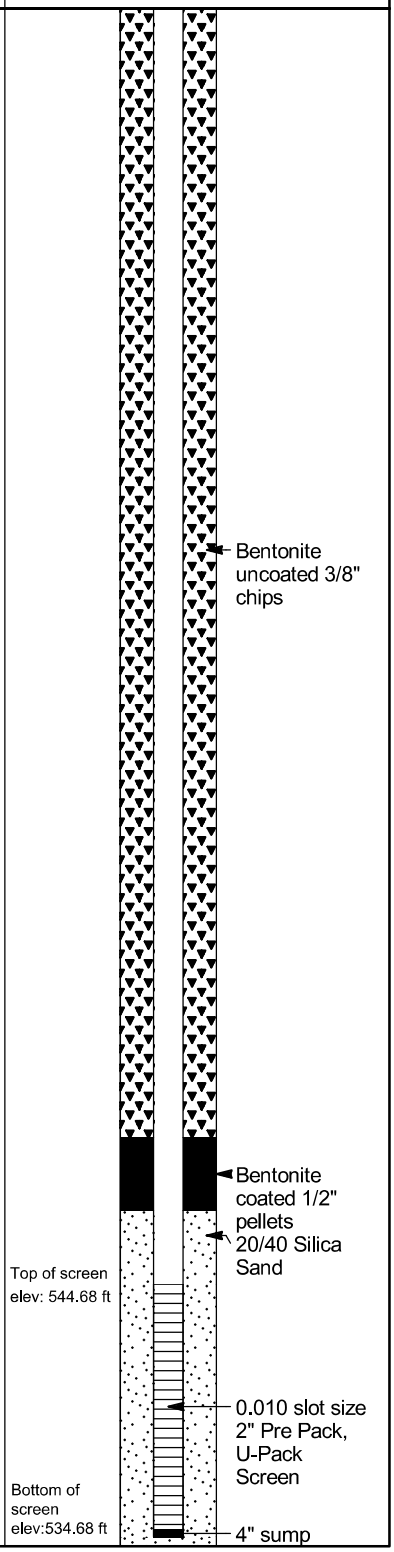
CLIENT Southern Company Services **PROJECT NAME** Plant Bowen Well Installation

PROJECT NUMBER GW6581C **PROJECT LOCATION** Euharlee, GA

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION
120				DOLOMITE, Light gray, fine to medium grained, with calcite filled veins, massive, wet. *(continued)*
	590			119 ft: Larger calcite crystals.
130				128 to 131 ft: Heavy iron oxide staining.
	580	136 ft: Water returns, slow drilling.		136 ft: Large calcite veins, little iron oxide staining.
140				
	570	146 ft: Very slow drilling.		146 ft: Iron oxide staining
150				
	560	156 ft: Heavy rig chatter.		154 ft: Iron oxide staining.
160				
	550			
170				
	540	176 ft: Slow drilling.		
180				

CONSTRUCTION DIAGRAM



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CLIENT Southern Company Services **PROJECT NAME** Plant Bowen Well Installation

PROJECT NUMBER GW6581C **PROJECT LOCATION** Euharlee, GA

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
190	530			DOLOMITE, Light gray, fine to medium grained, with calcite filled veins, massive, wet. *(continued)*	Bottom of well elev: 534.35 ft
				190 to 193 ft: Fine grained, calcite throughout, with iron oxide staining.	Bentonite uncoated 3/8" chips backfill
200	520			196 ft: Minor iron oxide staining throughout.	Natural backfill/drill cuttings
	510			508.7	

Bottom of borehole at 206.0 feet.

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BGWC-53D

CLIENT Southern Company Services
PROJECT NAME Plant Bowen
PROJECT NUMBER GW6581F
PROJECT LOCATION Euharlee, Georgia
DATE STARTED 10/29/2024 **COMPLETED** 11/14/2024
NORTHING 1504685.89 ft **EASTING** 2064247.38 ft
DRILLER Cascade Drilling
GROUND ELEVATION 671.46 ft **BORING DIAMETER** 6 in.
DRILLING METHOD Sonic
TOP OF CASING ELEVATION 674.58 ft
SAMPLING METHOD Continuous Core
GEOPHYSICAL CONTRACTOR ---
RIG TYPE Terrasonic CC
LOGGED BY T. Kessler/A. Tomlinson **CHECKED BY** M. Crook

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
0					Aboveground protective casing with guard posts
5	DP	0-20 feet: ~30-40 gallons used during overdrill, 5% return		(0') CLAY (CL); light yellowish-brown (10YR 6/4), moist, medium plasticity to nonplastic, trace silt and fine sand throughout.	
10				(6') Trace white (10YR 8/1) mottling, abundant angular gravel (5-10 mm) from 6-8 ft bgs.	2" Sch 40 PVC Riser
15	DP			(10') Silty CLAY (CL-ML); brownish yellow (10YR 6/6) with trace white (10YR 8/1) mottling from 10-15 ft bgs, moist, medium to low plasticity, trace fine sand throughout.	Approx. 26 gallon of Aquaguard Bentonite Grout
20				(16.6') Abundant medium to small angular gravel from 16.6-16.8 ft bgs.	
25	DP	20-42 feet: ~200-180 gallons used during over drill ~5% return		(20') Sandy CLAY (CL); yellow (10YR 7/6) with trace white (10YR 8/1) mottling throughout, wet, low plasticity, abundant small to medium subrounded gravel throughout, abundance of angular medium to fine-grained sand. (21') Dark grayish brown (10YR 4/2) from 21-23 ft bgs. (23') Medium plasticity from 23-26 ft bgs.	Approx. 119 gallon of 3/8" Bentonite Pellets
30					
35				(30') SAND (SP); yellow (10YR 7/6), moist, fine-grained, subrounded to subangular, trace silt throughout, abundant large angular gravel from 30-31.5 ft bgs. (31.5') Becomes light gray (10YR 6/1).	

(Continued Next Page)

CLIENT Southern Company Services **PROJECT NAME** Plant Bowen
PROJECT NUMBER GW6581F **PROJECT LOCATION** Euharlee, Georgia

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
35	DP			(36.5') Layer of yellow (10YR 7/6) medium to low plasticity sandy clay from 36.5-37 ft bgs, contains fine, subrounded to subangular sand, medium plasticity.	
40		42-50 feet: 75 gallons used, 5-10% return		(40') Silty SAND (SM); light yellowish-brown (2.5Y 6/4), wet, fine-grained, subrounded, HCl reactive. (41.5') Abundant large to medium angular gravel from 41.5-42 ft bgs. (42') DOLOMITIC LIMESTONE; medium gray (N/5), hard, heavily fractured, abundant iron staining on fracture surfaces from 42-47 ft bgs, abundant calcite on fracture surfaces, wet.	2" Sch 40 PVC Riser
45	DP	Heavy rig chatter poss. void from 47-50 feet bgs			Approx. 119 gallon of 3/8" Bentonite Pellets
50				(50') DOLOMITIC LIMESTONE; medium gray (N/5), hard, abundant iron staining on fracture surfaces throughout, HCl reactive, wet.	
55	DP	Void from 53-55 feet bgs 50-70 feet: 250 gallons, 5% return			
60		Void from 57-59 feet bgs, suspect sediment filled to to some resistance		(60') DOLOMITIC LIMESTONE; medium gray (N/5), broken into subangular and subrounded large gravel at fracture faces, hard, abundant iron staining on fracture surfaces, trace calcite veins throughout, HCl reactive, wet.	
65	DP	Void from 60-66 feet bgs, rod drop-suspect open			
70				(70') DOLOMITIC LIMESTONE; medium gray (N/5), broken into medium to large subangular gravel on fracture faces, hard, abundant iron staining on fracture faces, abundant calcite veins throughout, wet.	
75		70-80 feet: 50 gallons, 75%		(74') Very pale orange (10YR 8/2).	

(Continued Next Page)

CLIENT Southern Company Services **PROJECT NAME** Plant Bowen
PROJECT NUMBER GW6581F **PROJECT LOCATION** Euharlee, Georgia

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
75	DP	return, slow drilling			Approx. 119 gallon of 3/8" Bentonite Pellets
80				(80') DOLOMITIC LIMESTONE; medium gray (N/5), broken into medium angular gravel from 80-86 ft bgs, hard, abundant iron staining on fracture faces (throughout core), abundant calcite veins throughout, weak HCl reaction, wet.	Approx. 5 gallon of uncoated 3/8" Bentonite Pellets
85	DP	80-90 feet: 45 gallons used, 5% return		(85') Trace very pale orange (10YR 8/2) limestone at 85 ft bgs.	Approx. 24 gallon of #1 Silica Well Pack Sand
90				(90') DOLOMITIC LIMESTONE; medium gray (N/5), hard, few fractures with iron staining, abundant calcite veins, wet.	2" Sch 40 PVC Slotted Screen (0.010")
95	DP	Dolomite from 95-100 feet bgs, ~100 gallons water used, 0-5% return		(95') Abundant staining throughout, decreased HCl reaction.	PVC End Cap
100				(100') DOLOMITIC LIMESTONE; medium gray (N/5), hard, abundant iron staining throughout, abundant calcite veins throughout, wet. (101') Broken into medium angular to subangular gravel from 101-105 ft bgs.	
105	DP				
110				(110') DOLOMITIC LIMESTONE; medium gray (N/5), hard, abundant iron staining throughout, calcite veins throughout, some light gray (N/3) limestone, hard, wet, mild HCl reaction, from 110-115 ft bgs.	Approx. 72 gallon of uncoated 3/8" Bentonite Pellets
115				(114') Broken into small to medium angular gravel from 114-116 ft bgs.	

(Continued Next Page)

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CLIENT Southern Company Services **PROJECT NAME** Plant Bowen
PROJECT NUMBER GW6581F **PROJECT LOCATION** Euharlee, Georgia

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
115	DP				
120				(120') DOLOMITIC LIMESTONE; medium gray (N/3), hard, abundant iron staining throughout, some calcite throughout, wet.	
125	DP			(128') Light gray limestone.	
130					

Bottom of borehole at 130.0 ft bgs.

Geosyntec consultants
engineers | scientists | innovators

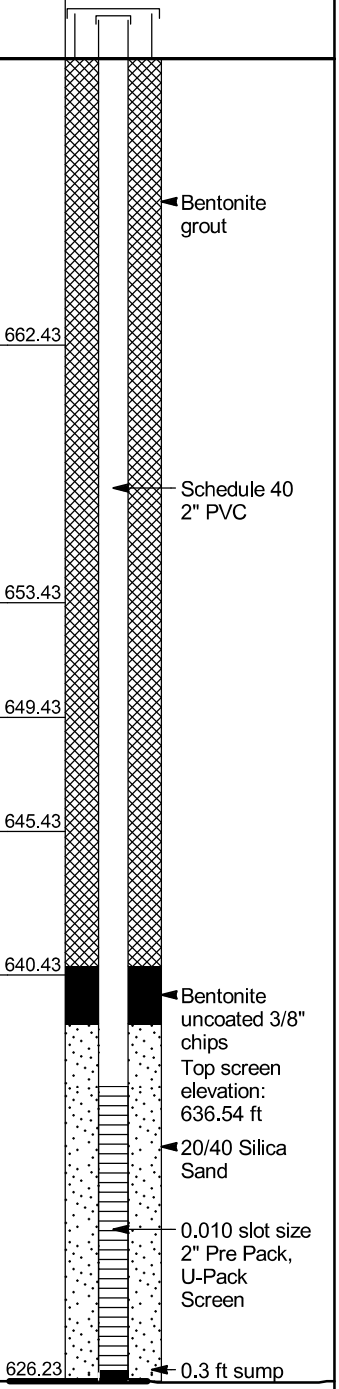
Geosyntec Consultants
1255 Roberts Boulevard
Kennesaw, GA 30144

PZ-7

CLIENT Southern Company Services
PROJECT NAME Plant Bowen Well Installation
PROJECT NUMBER GW6581C
PROJECT LOCATION Euharlee, GA
DATE STARTED 3/9/2022 **COMPLETED** 3/9/2022
NORTHING 1504679.33 ft **EASTING** 2064125.75 ft
DRILLER Cascade Drilling
GROUND ELEVATION 672.43 ft **BORING DIAMETER** 6 in
DRILLING METHOD Sonic
TOP OF CASING ELEVATION 675.51 ft
SAMPLING METHOD 4 in core 6 in override
GEOPHYSICAL CONTRACTOR ---
RIG TYPE TSI 150CC
LOGGED BY N.Tilahun **CHECKED BY** J. Ivanowski

DEPTH (ft)	ELEVATION (ft)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION
0	672.43	0 to 10 ft: Hand Auger		Hand Auger Excavation (0-10 ft) NO SAMPLE
5	670			
10	665	From 10 ft: Sonic drilling. Depth to water approximately 12 ft (measured post installation).		662.43 NO RECOVERY (10-19 ft)
15	660			
20	655			653.43 VOID, Mud/Clay-filled; soft zone between 19 and 23 ft
25	650			649.43 SANDY CLAY, Yellowish brown, low plasticity, with rock fragments at the bottom, wet.
30	645			645.43 PARTIALLY WEATHERED ROCK (PWR), Recovered as SANDY CLAY with increased dolomite rock fragments, hard drilling. From 30 ft: Yellowish brown and light gray clay, low plasticity, dolomite rock fragments, wet.
35	640			640.43 DOLOMITE, Gray, hard, calcite filling, weathered, stained fracture surface, platy rock fragments. 34 to 40 ft: Soft drilling, with gravelly clay.
40	635			
45	630			626.23

CONSTRUCTION DIAGRAM



Bottom of borehole at 46.2 feet.

Well ID	Casing Northing	Casing Easting	Top of Casing Elevation	Nail or Pad Northing	Nail or Pad Easting	Nail or Pad Elevation	Description
APPZ-1R	1502759.7800	2066712.0150	723.72	1502759.7100	2066712.2590	721.30	Pad
APPZ-2R	1501247.0710	2066003.5910	716.76	No Nail or Pad	No Nail or Pad	No Nail or Pad	
APPZ-3R	1501850.7590	2065381.0620	723.25	No Nail or Pad	No Nail or Pad	No Nail or Pad	
APPZ-4R	1504159.3210	2066162.0150	756.27	No Nail or Pad	No Nail or Pad	No Nail or Pad	
APPZ-5R	1504384.2060	2065318.1520	781.01	No Nail or Pad	No Nail or Pad	No Nail or Pad	
BGWA-1	1499101.2330	2067205.4840	720.90	1499099.7450	2067205.5570	718.33	Nail
BGWA-2	1499374.1780	2068599.5890	729.69	1499375.5380	2068599.2110	727.00	Nail
BGWA-3	1499420.8650	2065185.7410	724.28	1499419.7940	2065186.4400	721.80	Nail
BGWA-4	1499485.3840	2064697.8860	728.67	1499484.6470	2064697.8230	726.05	Nail
BGWA-5	1499434.5770	2065421.4290	720.92	1499435.8630	2065420.9790	718.53	Nail
BGWA-6	1499262.0060	2065797.2960	716.93	1499260.7270	2065797.4950	714.49	Nail
BGWA-26	1498697.6320	2064189.9360	728.65	1498696.3750	2064190.2360	726.09	Nail
BGWA-27	1498719.1370	2064387.5440	735.25	1498717.9660	2064387.8850	732.50	Nail
BGWA-28	1498749.2120	2064577.5480	737.45	1498748.0330	2064577.8260	734.88	Nail
BGWA-29	1498283.0400	2066362.3220	721.38	1498283.3350	2066363.4710	718.84	Nail
BGWA-33	1497972.1280	2064876.8020	743.25	1497973.2410	2064876.5710	740.39	Nail
BGWA-47D	1499377.7920	2068612.4750	729.61	1499379.0260	2068612.1590	726.93	Nail
BGWA-48D	1499380.0920	2068623.3120	729.38	1499381.3800	2068622.8110	726.64	Nail
BGWC-7	1504711.5850	2066801.4010	705.38	1504712.9730	2066801.6590	702.49	Nail
BGWC-8	1504671.8190	2066929.4570	706.43	1504671.9610	2066928.1400	703.71	Nail
BGWC-9	1504909.1160	2066143.2740	691.93	1504910.3720	2066143.9980	689.18	Nail
BGWC-10	1505033.2210	2066081.0870	686.06	1505032.4430	2066080.0010	683.39	Nail
BGWC-11	1504998.9380	2066093.8330	686.50	1504998.1840	2066092.6800	683.91	Nail
BGWC-12	1505279.8790	2065908.5600	694.41	1505280.6600	2065909.6220	691.71	Nail
BGWC-13	1505435.2910	2065251.2120	717.43	1505436.6470	2065250.9020	714.77	Nail
BGWC-14A	1505398.5370	2065015.9770	718.33	1505397.3710	2065016.4760	715.57	Nail
BGWC-15	1505278.1860	2064732.1750	717.92	1505279.3650	2064731.5540	715.39	Nail
BGWC-16	1504656.4230	2064247.6720	674.31	1504656.5440	2064248.9800	671.65	Nail
BGWC-17	1504432.0000	2064259.3780	673.65	1504432.1320	2064260.9170	671.25	Nail
BGWC-18	1504118.7310	2064257.0010	672.88	1504118.8950	2064258.2360	670.32	Nail
BGWC-19	1503742.2490	2064244.6620	673.61	1503742.2750	2064246.0870	671.04	Nail
BGWC-20	1503367.7320	2064259.5540	675.14	1503367.8070	2064260.9880	672.29	Nail
BGWC-21	1501627.5070	2064348.0850	691.33	1501627.5620	2064348.7420	688.53	Nail
BGWC-22	1501323.7580	2064358.0500	695.50	1501324.0060	2064359.4500	692.64	Nail
BGWC-23	1501000.5660	2064350.1650	695.50	1501000.7820	2064351.5070	693.16	Nail
BGWC-24	1500621.2160	2065032.8370	702.27	1500620.1040	2065032.3600	699.46	Nail
BGWC-25	1502292.7330	2064244.0960	680.47	1502292.7670	2064244.7480	677.60	Nail
BGWC-30	1499815.9250	2066395.8550	701.06	1499816.6510	2066394.2650	698.39	Nail
BGWC-31	1503497.9400	2064022.7100	670.54	1503498.6900	2064022.7850	668.12	Nail
BGWC-32	1501252.2530	2064184.3000	699.36	1501251.1230	2064184.4130	696.36	Nail
BGWC-34D	1503356.5090	2064257.9510	675.17	1503356.5380	2064259.1800	672.25	Nail
BGWC-35D	1501312.1980	2064358.6280	695.73	1501312.2690	2064359.9690	693.13	Nail
BGWC-36D	1499807.5120	2066415.1000	701.01	1499808.5320	2066415.4490	698.07	Nail
BGWC-37D	1501293.1560	2064362.7040	696.05	1501293.4130	2064364.0670	693.50	Nail
BGWC-38D	1499802.3640	2066430.1680	700.34	1499803.5490	2066430.5880	697.52	Nail
BGWC-39	1501241.9360	2064095.4090	679.12	1501240.8940	2064095.1310	676.58	Nail
BGWC-40	1500589.9290	2064317.3780	689.59	1500589.8560	2064315.9070	687.12	Nail
BGWC-41D	1501255.9640	2064096.2330	679.12	1501254.7560	2064095.8860	676.43	Nail
BGWC-42D	1501280.5170	2064365.2520	696.90	1501281.0250	2064366.5510	693.98	Nail
BGWC-43D	1499796.8560	2066444.3710	700.10	1499798.0660	2066444.7590	697.29	Nail

BGWC-44D	1499265.1490	2065811.0610	717.30	1499263.9630	2065811.3480	714.65	Nail
DW-1B	1502384.2010	2065959.4780	728.04	1502384.2690	2065959.2050	725.13	Pad
DW-2B	1502362.7920	2065954.5780	721.89	1502362.8750	2065954.3250	719.12	Pad
MW-4A	1502511.8620	2064690.3200	715.08	No Nail or Pad	No Nail or Pad	No Nail or Pad	
MW-108	1500193.9750	2066947.2050	715.27	1500193.7950	2066947.1990	711.88	Pad
PZ-1	1505600.5370	2066844.1000	677.87	1505600.2290	2066842.9740	675.35	Nail
PZ-2	1503856.8610	2062938.8050	668.25	1503857.6020	2062937.9100	665.92	Nail
PZ-3	1505723.9720	2066071.0830	707.97	1505722.6360	2066070.7810	705.34	Nail
PZ-4	1505788.5820	2064316.6100	718.74	1505788.4030	2064315.3880	715.96	Nail
PZ-5	1499885.6270	2063961.2240	700.12	1499886.8430	2063961.7310	697.23	Nail
PZ-6	1500379.4810	2063242.8090	678.32	1500378.7200	2063241.9120	675.50	Nail

Benchmark	Northing	Easting	Elevation
BM-B1	1504573.789	2067395.885	717.78

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: 05/26/2020-06/02/2020. 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-B1 SET BY GEL SOLUTIONS USING A TRIMBLE DINI LEVEL

GEORGIA REGISTERED No. LS-3119 LAND SURVEYOR JIMMY R. TOOLE

06/10/2020

GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

Approved

Solid Waste Management Program

Approved By: Mark Wescott P.G. Digitally signed by Mark Wescott P.G. Date: 2025.07.16 14:26:14 -04'00'

Well ID	Casing Northing	Casing Easting	Top of Casing Elevation	Nail or Pad Northing	Nail or Pad Easting	Nail or Pad Elevation	Description
BGWC-51	1500270.088	2065455.804	711.489	1500271.133	2065456.272	708.991	NAIL
BGWC-52	1500156.965	2065764.132	710.748	1500158.037	2065764.506	707.772	NAIL
Benchmark	Northing	Easting	Elevation				
BM-B1	1504573.789	2067395.885	717.78				

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: 01/26/2021. 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-B1 SET BY GEL SOLUTIONS USING A TRIMBLE DINI LEVEL

1/28/2021

GEORGIA REGISTERED No. LS003464 PROFESSIONAL LAND SURVEYOR JOHN DEREK BRADNER

GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

Approved

Solid Waste Management Program

Approved By: Mark Wescott P.G. Digitally signed by Mark Wescott P.G. Date: 2025.07.16 14:26:45 -04'00'

Well ID	Casing Northing	Casing Easting	Top of Casing Elevation	Nail or Pad Northing	Nail or Pad Easting	Nail or Pad Elevation	Description
BGWC-49D	1499790.128	2066461.957	699.75	1499791.623	2066462.261	696.95	NAIL
BGWC-50D	1499269.15	2065781.874	717.434	1499267.799	2065782.021	714.675	NAIL
Benchmark	Northing	Easting	Elevation				
BM-B1	1504573.789	2067395.885	717.78				

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: 03/23/2021. 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-B1 SET BY GEL SOLUTIONS USING A TRIMBLE DINI LEVEL

3/25/2021

GEORGIA REGISTERED No. LS003464 PROFESSIONAL LAND SURVEYOR JOHN DEREK BRADNER

COA - LS003119
Exp. 06/30/2022

GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

Approved

Solid Waste Management Program

Approved By: Mark Wescott P.G. Digitally signed by Mark Wescott P.G. Date: 2025.07.16 14:27:15 -04'00'

Well ID	Casing Northing	Casing Easting	Top of Casing Elevation	Nail or Pad Northing	Nail or Pad Easting	Nail or Pad Elevation	Description
EUHARLEE CREEK	1501041.232	2063608.031	676.50	N/A	N/A	N/A	N/A
PZ7	1504679.327	2064125.75	675.51	1504679.363	2064124.588	672.43	NAIL
PZ8	1504818.662	2064241.494	680.72	1504818.35	2064242.811	677.75	NAIL
Benchmark	Northing	Easting	Elevation				
BM-B1	1504573.789	2067395.885	717.78				

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: 04/07/2022. 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-B1 SET BY GEL SOLUTIONS USING A TRIMBLE DINI LEVEL

4/11/2022

GEORGIA REGISTERED No. LS003464 PROFESSIONAL LAND SURVEYOR JOHN DEREK BRADNER

COA - LS003119
Exp. 06/30/2022

GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

Approved
Solid Waste Management Program

Approved By: Mark Wescott P.G. Digitally signed by Mark Wescott P.G. Date: 2025.07.16 14:27:43 -04'00'

Well ID	Casing Northing	Casing Easting	Top of Casing Elevation	Nail or Pad Northing	Nail or Pad Easting	Nail or Pad Elevation	Description
BGWC-53D	1504685.888	2064247.384	674.58	1504686.061	2064249.418	671.46	NAIL
Benchmark	Northing	Easting	Elevation				
BM-B1	1504573.789	2067395.885	717.78				

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: 11/25/2024. 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-B1 SET BY GEL SOLUTIONS USING A TRIMBLE DINI LEVEL

11/26/2024

COA - LS003119
Exp. 06/30/2025

GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

Approved

Solid Waste Management Program

Approved By: Mark Wescott P.G. Digitally signed by Mark Wescott P.G. Date: 2025.07.16 14:28:12 -04'00'

CLIENT'S COPY

SURETY BOND CONTINUATION CERTIFICATE

TO: State of Georgia
Division of Environmental Protection
2 Martin Luther King Jr. Drive SE
Suite 1252
Atlanta, GA 30334

To be attached to and form a part of: Performance Bond for Well Contractors and Drillers

Principal on the Bond: Michael C. Rice/Cascade Drilling, L.P.

Surety Bond Number: K08315607

Bond Amount: Twenty Thousand and 00/100 Dollars ($20,000.00)

In consideration of the agreed premium charged for this bond, it is understood and agreed that the following change shall be made to this obligation:

[x] **CONTINUATION CERTIFICATE**

This certificate extends the life of the bond to June 30, 2017. It is executed upon the express condition that the surety's liability under said bond, together with this and all previous continuation certificates, shall not be cumulative and shall in no event exceed the amount specifically set forth in said bond or any existing certificate changing the amount of said bond.

Signed, sealed and dated this 26th day of May , 2015 .

Westchester Fire Insurance Company

By: Katie J

Katie Snider, Attorney-in-Fact

Surety of Record: Westchester Fire Insurance Company
436 Walnut Street
Philadelphia, PA 19106
Phone: (415) 547-4513

Agent of Record: Kibble & Prentice, a USI Company
601 Union Street, Suite 1000
Seattle, WA 98101
Phone: (206) 441-6300

Power of Attorney

WESTCHESTER FIRE INSURANCE COMPANY

Know all men by these presents: That **WESTCHESTER FIRE INSURANCE COMPANY,** a corporation of the Commonwealth of Pennsylvania pursuant to the following Resolution, adopted by the Board of Directors of the said Company on December 11, 2006, to wit:

"RESOLVED, that the following authorizations relate to the execution, for and on behalf of the Company, of bonds, undertakings, recognizances, contracts and other written commitments of the Company entered into the ordinary course of business (each a "Written Commitment"):

(1) Each of the Chairman, the President and the Vice Presidents of the Company is hereby authorized to execute any Written Commitment for and on behalf of the Company, under the seal of the Company or otherwise.

(2) Each duly appointed attorney-in-fact of the Company is hereby authorized to execute any Written Commitment for and on behalf of the Company, under the seal of the Company or otherwise, to the extent that such action is authorized by the grant of powers provided for in such persons written appointment as such attorney-in-fact.

(3) Each of the Chairman, the President and the Vice Presidents of the Company is hereby authorized, for and on behalf of the Company, to appoint in writing any person the attorney-in-fact of the Company with full power and authority to execute, for and on behalf of the Company, under the seal of the Company or otherwise, such Written Commitments of the Company as may be specified in such written appointment, which specification may be by general type or class of Written Commitments or by specification of one or more particular Written Commitments.

(4) Each of the Chairman, the President and Vice Presidents of the Company in hereby authorized, for and on behalf of the Company, to delegate in writing any other officer of the Company the authority to execute, for and on behalf of the Company, under the Company's seal or otherwise, such Written Commitments of the Company as are specified in such written delegation, which specification may be by general type or class of Written Commitments or by specification of one or more particular Written Commitments.

(5) The signature of any officer or other person executing any Written Commitment or appointment or delegation pursuant to this Resolution, and the seal of the Company, may be affixed by facsimile on such Written Commitment or written appointment or delegation.

FURTHER RESOLVED, that the foregoing Resolution shall not be deemed to be an exclusive statement of the powers and authority of officers, employees and other persons to act for and on behalf of the Company, and such Resolution shall not limit or otherwise affect the exercise of any such power or authority otherwise validly granted or vested.

Does hereby nominate, constitute and appoint Heather Allen, Holly E Ulfers, Katie Snider, Nancy N Hill, Roxana Palacios, Steven W Palmer, all of the City of SEATTLE, Washington, each individually if there be more than one named, its true and lawful attorney-in-fact, to make, execute, seal and deliver on its behalf, and as its act and deed any and all bonds, undertakings, recognizances, contracts and other writings in the nature thereof in penalties not exceeding Fifteen million dollars & zero cents ($15,000,000.00) and the execution of such writings in pursuance of these presents shall be as binding upon said Company, as fully and amply as if they had been duly executed and acknowledged by the regularly elected officers of the Company at its principal office,

IN WITNESS WHEREOF, the said Stephen M. Haney, Vice-President, has hereunto subscribed his name and affixed the Corporate seal of the said **WESTCHESTER FIRE INSURANCE COMPANY** this 22 day of December 2014.

WESTCHESTER FIRE INSURANCE COMPANY

Stephen M. Haney, Vice President

COMMONWEALTH OF PENNSYLVANIA
COUNTY OF PHILADELPHIA ss.

On this 22 day of December, AD. 2014 before me, a Notary Public of the Commonwealth of Pennsylvania in and for the County of Philadelphia came Stephen M. Haney, Vice-President of the **WESTCHESTER FIRE INSURANCE COMPANY** to me personally known to be the individual and officer who executed the preceding instrument, and he acknowledged that he executed the same, and that the seal affixed to the preceding instrument is the corporate seal of said Company; that the said corporate seal and his signature were duly affixed by the authority and direction of the said corporation, and that Resolution, adopted by the Board of Directors of said Company, referred to in the preceding instrument, is now in force.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my official seal at the City of Philadelphia the day and year first above written.

COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
KAREN E. BRANDT, Notary Public
City of Philadelphia, Phila. County
My Commission Expires Sept. 26, 2018

Notary Public

I, the undersigned Assistant Secretary of the **WESTCHESTER FIRE INSURANCE COMPANY,** do hereby certify that the original POWER OF ATTORNEY, of which the foregoing is a substantially true and correct copy, is in full force and effect.

In witness whereof, I have hereunto subscribed my name as Assistant Secretary, and affixed the corporate seal of the Corporation, this 26th day of May, 2015.

William L. Kelly, Assistant Secretary

THIS POWER OF ATTORNEY MAY NOT BE USED TO EXECUTE ANY BOND WITH AN INCEPTION DATE AFTER December 22, 2016.

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 NEW YORK CORPORATE SEAL 986

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

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 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

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)

GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION
Approved
Solid Waste Management Program
Approved By: Mark Wescott P.G. Digitally signed by Mark Wescott P.G. Date: 2025.07.16 14:28:55 -04'00'

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

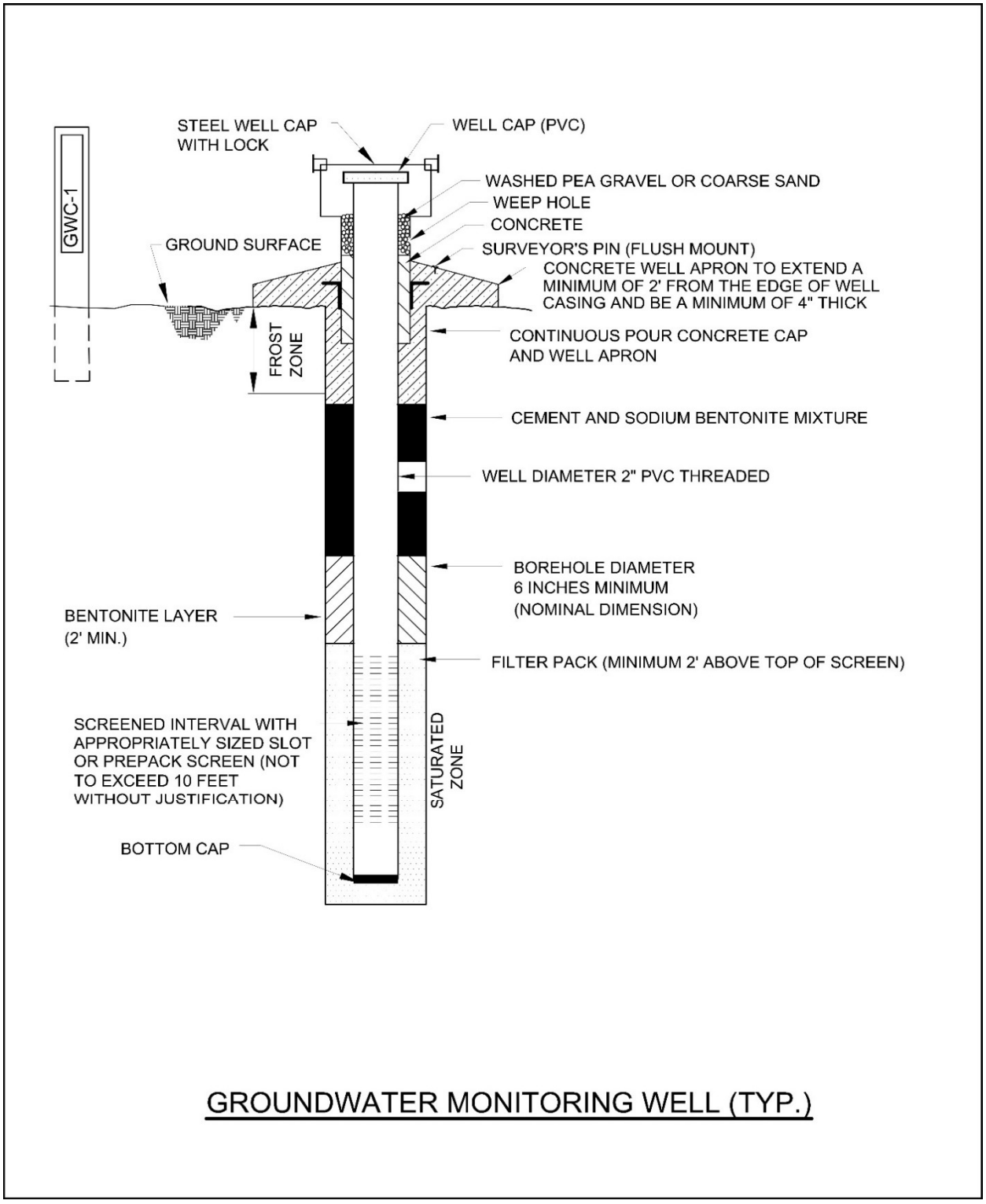
This Power of Attorney expires
January 31, 2025

_____
Kara Barrow, Secretary

Please direct bond verifications to surety@intactinsurance.com

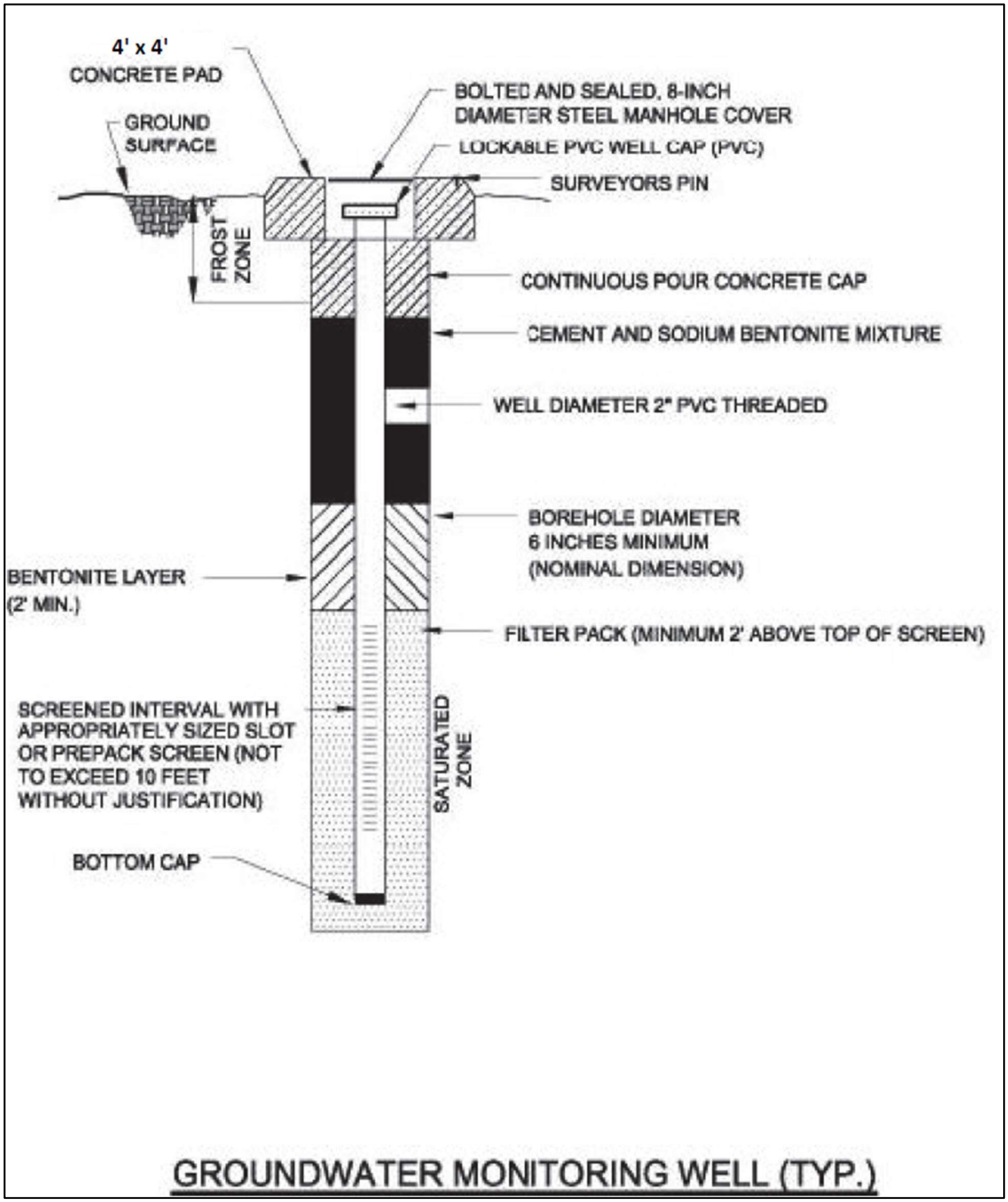
B. GROUNDWATER MONITORING WELL DETAIL

ABOVE-GROUND WELL CONFIGURATION



GROUNDWATER MONITORING WELL (TYP.)

FLUSH-MOUNT WELL CONFIGURATION



C. GROUNDWATER SAMPLING PROCEDURE

Groundwater sampling will be conducted using the most current applicable *EPA Region 4 SESD Field Branches Quality System and Technical Procedures* as a guide (https://www.epa.gov/quality/quality-system-and-technical-procedures-sesd-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 0.1 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 EPA Region 4 SESD guidance document, *Operating Procedure - Field Equipment Cleaning and Decontamination* (EPA, 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 EPA Region 4 SESD guidance document, *Operating Procedure – Groundwater Sampling* (EPA, 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.