GROUNDWATER MONITORING PLAN

PLANT SCHERER COAL COMBUSTION RESIDUALS
CCR LANDFILL
MONROE COUNTY, GEORGIA

FOR

Georgia Power

NOVEMBER 2018

GOLDER

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CERTIFICATION

This *Groundwater Monitoring Plan, Georgia Power Company - Plant Scherer Coal Combustion Residuals (CCR) Landfill* has been prepared to meet the requirements of the Georgia Solid Waste Management Rule by a qualified groundwater scientist or engineer with Golder Associates Inc. References to the appropriate 391-3-4 Rules 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 Rules of Solid Waste Management. According to 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 the Georgia Environmental Protection Division (EPD) Rules of Solid Waste Management, Chapter 391-3-4.10(6).

Golder Associates Inc.

11/1/2018

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11/1/2018

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Date

1.0 INTRODUCTION

Groundwater monitoring is required by the Georgia Environmental Protection Division (EPD) to detect and quantify potential changes in groundwater chemistry. This Groundwater Monitoring Plan (plan) describes the groundwater monitoring program for the site. This plan meets the requirements of EPD rules and uses EPD's Manual for Ground Water Monitoring dated September 1991 as a guide. Groundwater sampling locations are presented on Sheet H1C11029 (Cell 1) and Sheet H1C11030(PAC Ash Cell) of the *Design & Operations Plan for Georgia Power Company's, Plant Scherer CCB Disposal Facility,* prepared by Southern Company Generation Engineering and Construction Services, February 26, 2010.

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 EPD rules (391-3-4), the EPD rules will take precedence.

In accordance with the United States Environmental Protection Agency (USEPA) Coal Combustion Rule (§257.90), 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 EPD prior to the unscheduled installation or abandonment of monitoring wells. Well installation and/or abandonment must be directed by a qualified groundwater scientist

As required by 391-3-4.10(6)(g), a minor modification will be submitted to the EPD prior to the installation or decommissioning of monitoring wells. Well installation must be directed by a professional engineer or geologist licensed to practice in Georgia.

2.0 GEOLOGIC AND HYDROGEOLOGIC CONDITIONS

Geologic and hydrogeologic conditions for this site are described in a report, Geologic and Hydrogeologic Summary Report, prepared by Golder Associates Inc., November 2018. Key elements of this report are summarized below.

2.1 Site Geology

The site is located within the Southern Piedmont Physiographic province and is underlain by regolith consisting of residual soils and saprolite overlying fractured, crystalline bedrock. The regolith thickness ranges from approximately 3 to 30-feet below land surface. Bedrock at the site consists of interlayered feldspathic biotite gneiss with discontinuous layers and lenses of chlorite/actinolite schist and feldspathic hornblende gneiss/amphibolite. Large, discontinuous lenses or pods of mafic bodies were locally observed to be interlayered with the gneiss near the central and eastern portions of the site. A porphyritic, hornblende-biotite-feldspar diorite sill intrudes the biotite gneiss downstream of the ash pond along Berry Creek, and a diabase dike was observed north of the ash pond. Similar to the gabbro bodies, the diorite and diabase intrusives are resistant to weathering, standing out in relief relative to the surrounding differentially-weathered biotite gneiss. The biotite gneiss in the western portion of the property has been intruded by a large, discontinuous lens of unfoliated feldspathic granite which occurs as a series of isolated pavement outcrops.

The metamorphic and igneous rocks that underly the area have been subjected to physical and chemical weathering which has created a landscape dissected by creeks and streams forming a dendritic drainage pattern. These rocks are deeply weathered due to the humid climate and bedrock is typically overlain by a variably thick blanket of residual soils and saprolite. Because of such variations in rock types and structure, the depth of weathering can vary significantly over short horizontal distances. Based on boring logs, residual soils, primarily sandy silt, silty sand, sandy clay and silty clay, occur as a variably-thick blanket overlying bedrock across most of the site. The thickness of the residual soil encountered in the borings is variable, ranging from a minimum of approximately 17 feet to as much as 168 feet, with an average residual soil thickness of about 57 feet. Thickness of saprolitic soils and/or saprolitic rock range in thickness across the site but were generally encountered at or near ground surface.

2.2 Site Hydrogeology

Groundwater occurs within the regolith - fractured bedrock settings of Georgia Piedmont. The water-table occurs within the undifferentiated overburden consisting of saprolite (i.e., residual soils and weathered rock). This is a shallow, transient saturated zone in which groundwater is primarily stored within regolith and is generally unconfined. Groundwater flow occurs through the porous saprolite and is recharged by precipitation stored in residual soils and typically discharges into major streams and rivers. The fractured (crystalline) bedrock includes the upper bedrock and competent bedrock with open fractures sufficient to yield water to a well. Open fractures are the primary conduit for groundwater flow through bedrock, because the rocks lack primary porosity. Recharge to bedrock aquifer systems comes from water stored in the saturated regolith, which functions as a sponge of sorts, slowly allowing groundwater to infiltrate the bedrock through areas of enhanced permeability. This rate of infiltration is very slow, as indicated by dating of groundwater in other areas in the Piedmont exceeding 60 years.

Local complexities in groundwater flow within this aquifer are influenced by topographic and related top of rock variations on site, which produces an uppermost aquifer surface that is generally a subdued reflection of topography. Groundwater flow is east/southeast from the landfilled areas. The first zone of groundwater saturation is generally present in the regolith; however, the water table at topographic highs may occur in the upper bedrock at higher land elevations.

Based on review of the potentiometric contours, horizontal hydraulic gradient is also variable and reflects topography at the site. The horizontal gradient appears to be steeper around the perimeter of the pond, particularly along the embankment where groundwater flow lines are influenced by the constructed slope for the dam. Field hydraulic conductivity tests (i.e., slug tests) performed in a variety of geologic materials indicate an average hydraulic conductivity on the order of 10-4 centimeters per second [(cm/s); Backup data includes 58 slug test measurements across the site with an average of 2.356 feet/day (ft/day); median 1.305 ft/day]. This hydraulic conductivity is generally consistent with regional measurements within Piedmont overburden. In general, groundwater flow is potentially faster through the transitionally weathered zone; however, the magnitude of difference is nominal enough to not be considered relevant at this site.

2.3 Uppermost Aquifer

At the site, groundwater within the (saturated) overburden represents the uppermost aquifer. This uppermost aquifer is comprised of both residual soils and transitionally weathered rock and is generally unconfined. It is recharged by precipitation stored in residual soils and typically discharges into major streams and rivers.

The bedrock is recharged by groundwater that is stored in the overburden. This groundwater slowly infiltrates underlying bedrock by moving through preferentially weathered discontinuities in the bedrock mass, such as foliation/compositional layering, joints, and faults. Groundwater flow in the bedrock is through inter-connected fractures, and groundwater discharges into streams and rivers where the bedrock fractures intersect a surface water drainage.

Local complexities in groundwater flow within this aquifer are influenced by topographic and related top of rock variations on site. The water table surface is a subdued reflection of topography at the site, with groundwater generally flowing east southeast.

3.0 SELECTION OF WELL LOCATIONS

Groundwater monitoring wells are installed to monitor the uppermost aquifer beneath the site. Locations are selected based on the disposal cell layouts and site geologic and hydrogeologic considerations. Locations are chosen to serve as upgradient (SGWA), lateral or downgradient (SGWC) based on groundwater flow direction determined by potentiometric evaluation. Monitoring wells have been identified for two constructed landfill units (Cell 1 and PAC Ash Cell) and two unconstructed landfill units (Cell 2 and Cell 3). Many of the wells identified for monitoring Cell 2 and Cell 3 have not yet been installed. Following installation of these monitoring wells, a well installation report documenting the actual well locations as well as the construction details and well logs will be submitted to EPD.

Monitoring wells will generally be located outside of areas with frequent auto traffic; however, wells may be installed in heavily trafficked areas when necessary to meet the groundwater monitoring objectives of the EPD rules.

A map depicting the approved groundwater and surface water monitoring network is shown on Sheets H1C11029 and H1C11030 of the D&O Plan. The current monitoring well network consists of 20 wells located around Cell 1 and 12 wells around PAC Ash Cell to capture groundwater flow from each of the individual cells. Appendix A presents a tabulated list of individual monitoring wells with well construction details such as location coordinates, top-of-casing elevation, well depths and screened intervals. Construction details for those wells that have not yet been installed will be provided in a future well installation report. A modification that involves the addition of or a change to the monitoring network will be made by a minor modification to the permit pursuant to 391-3-4-.02(3)(b)6.

4.0 MONITORING WELL DRILLING, CONSTRUCTION, ABANDONMENT & REPORTING

The existing detection monitoring well network for Cell 1 and PAC Ash Cell is in place. Existing monitoring wells were installed following Region 4 U.S. Environmental Protection Agency Science and Ecosystem Support Division Operating Procedure for Design and Installation of Monitoring Wells as a general guide for best practices. Monitoring well logs, for the existing monitoring well network, are included in Appendix A. The following sections describe the methods used for well drilling, construction, abandonment, and reporting for modifications to the well network at the site. The proposed well network for Cell 2 and Cell 3 will be installed following the same guidance.

4.1 Drilling

A variety of well drilling methods are available for installing groundwater wells. Drilling methodology may include, but not be limited to: hollow stem augers, direct push, air rotary, mud rotary, or rotosonic techniques. The drilling

method will minimize the disturbance of subsurface materials and shall not cause impact to the groundwater. Borings will be advanced using an appropriate drilling technology capable of drilling and installing a well in site-specific geology. Drilling equipment shall be decontaminated before use and between borehole locations using the procedures described in the latest version of the Region 4 U.S. Environmental Protection Agency Science and Ecosystem Support Division Operating Procedure for Field Equipment Cleaning and Decontamination as a guide.

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

Drilling for any subsurface hydrologic investigation, installation or abandonment of groundwater 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 Counsel.

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.

4.2.1 Well Casings and Screens

American Society for Testing Materials (ASTM), National Sanitation Foundation (NSF) rated, Schedule 40, 2-inch polyvinyl chloride (PVC) pipe with flush threaded connections will be used for the well riser and screens. Compounds that can cause PVC to deteriorate (e.g., organic compounds) are not expected at this facility. If conditions warrant, other appropriate materials may be used for construction with prior written approval from the EPD.

4.2.2 Well Intake Design

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

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

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

performing sieve analysis of the formation material and determining well screen slot size based on the grain size distribution.

4.2.3 Filter Pack and Annular Seal

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

The materials used to seal the annular space must prevent hydraulic communication between strata and prevent migration from overlying areas into the well screen interval. A minimum of two feet of bentonite (i.e., 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 cementitous grout from entering the water-bearing or screened zone. If dry bentonite is used, the bentonite must be hydrated with potable water prior to grouting the remaining annulus.

The annulus above the bentonite seal will be grouted with 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 2 feet above the bentonite seal and injecting grout at low pressure/velocity.

4.2.4 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 cement grout to ground surface, where it will become a concrete apron extending outward with a radius of at approximately 2 feet from the well casing and sloped to drain water away from the well.

Each well will be fitted with a cap that contains a hole or opening to allow the pressure in the well to equalize with atmospheric pressure. In wells with above-ground protection, the space between the well casing and the protective casing may 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 may 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.

4.2.5 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 10 nephelometric turbidity units (NTUs); however, formation-specific conditions may not allow this target to be

accomplished. Additionally, the stabilization criteria contained in Appendix C, Groundwater Sampling Procedures, 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. 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 the wells' filter packs over time. Therefore, the turbidity of the groundwater from the monitoring wells may gradually increase over time after initial well development. As a result, the monitoring wells may have to be redeveloped periodically to remove the silt and clay that has worked its way into the filter pack of the monitoring wells. Each monitoring well should be redeveloped when sample turbidity values have significantly increased since initial development or since prior redevelopment. The redevelopment should be performed as described above.

4.3 Well Abandonment

Monitoring wells will be abandoned using industry-accepted practices and using the Manual for Groundwater Monitoring (1991) and Georgia Water Well Standards Act (1985) as guides. The wells will be abandoned under the direction of a geologist or engineer registered in Georgia. Neat Portland cement or bentonite will be used as appropriate to complete abandonment and seal the well borehole. Piezometers or groundwater wells located within the footprint of future landfill expansion will be over-drilled prior to abandonment.

4.4 Documentation

The following information documenting the construction and development of each well will be submitted to EPD by a qualified groundwater scientist within 30 days after completing planned well installations.

- Name of drilling contractor and type of drill rig
- Documentation that the driller, at the time the monitoring wells were installed, had a bond on file with the Water Well Standards Advisory Council
- Dates of drilling and initial well emplacement
- Drilling method and drilling fluid if used
- Well location (± 0.5 ft.)
- Borehole diameter and well casing diameter
- Well depth (± 0.1 ft.)
- Lithologic logs
- Well casing materials
- Screen materials and design

- Screen length
- Screen slot size
- Filter pack material/size and volume
- Sealant materials and volume
- Documentation of ground surface elevation (± 0.01 ft.)
- Documentation of top of casing elevation (± 0.01 ft.)
- Schematic of the well with dimensions

5.0 GROUNDWATER MONITORING PARAMETERS AND FREQUENCY

The following describes 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 groundwater well will be 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 391-3-4-.10(6), the monitoring frequency for the Appendix III parameters will be at least semi-annual during the active life of the facility and the post-closure care period. If required, assessment monitoring will be performed per Georgia Chapter 391-3-4-.10, Rules for Solid Waste Management. GPC may petition for an alternate monitoring schedule for the site pursuant to applicable rules.

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 Method, the groundwater samples will be analyzed using methods specified in USEPA Manual SW-846, EPA 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), American Society for Testing and Materials (ASTM), or other suitable analytical methods approved by the Georgia EPD. The method used will be able to reach a suitable practical quantification limit to detect natural background conditions at the facility. Field instruments used to measure pH must be accurate and reproducible to within 0.1 Standard Units (S.U.).

Table 1: GROUNDWATER MONITORING PARAMETERS & FREQUENCY

MONITORING PARAMETER		GROUNDWATER MONITORING		
		BACKGROUND	1ST SEMI-ANNUAL EVENT	2ND SEMI-ANNUAL EVENT
FIELD PARAMETERS	Temperature	X	X	X
	pH	X	X	X
	Specific Conductance	X	X	X
	Turbidity	X	X	X
	Dissolved Oxygen	X	X	X
APPENDIX III (DETECTION)	Boron	X	X	X
	Calcium	X	X	X
	Chloride	X	X	X
	Fluoride	X	X	X
	pH (field)	X	X	X
	Sulfate	X	X	X
	Total Dissolved Solids	X	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	EPA METHOD NUMBER
APPENDIX III	
Boron	EPA 6010B/6020
Calcium	EPA 6010B/6020
Chloride	EPA 300.0/300.1/9250/9251/9253/9056A
Fluoride	EPA 300.0/300.1/9214/9056A
pH	150.1 field
Sulfate	EPA 9035/9036/9038300.0/300.1/9056A
Total Dissolved Solids (TDS)	EPA 160/2540C
APPENIDX IV	
Antimony	EPA 7040/7041/6010B/6020
Arsenic	EPA 7060A/7061A/6010B/6020
Barium	EPA 7080A/7081/6010B/6020
Beryllium	EPA 7090/7091/6010B/6020
Cadmium	EPA 7130/7131A/6020
Chromium	EPA 7190/7191/6010B/6020
Cobalt	EPA 7200/7201/6010B/6020
Fluoride	EPA 300.0/300.1/9214/9056/9214
Lead	EPA 7420/7421/6010B/6020
Lithium	EPA 6010/6020B
Mercury	EPA 7470
Molybdenum	EPA 6010/6020B
Selenium	EPA 7740/7741A/6010B/6020
Thallium	EPA 7840/7841/6010/6020
Radium 226 and 228 combined	EPA 903/9320/9315

6.0 SAMPLE COLLECTION

Groundwater: 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 with prior EPD approval.

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.

Groundwater wells that are determined to be dry for two consecutive semi-annual sampling events should be replaced, unless an alternate schedule has been approved by EPD.

Surface Water: During each sampling event, samples will be collected and handled in accordance with the procedures specified in Appendix D, Surface Water Sampling and Analysis Procedures. For surface water sampling, dedicated, non-dedicated, or disposable sampling equipment may be used. Surface water samples are analyzed for the target constituents listed in Table 1 and include both Appendix III and Appendix IV constituents.

Effluent: During each sampling event, an effluent sample will be collected from the point of discharge of FGD waste stream. The FGD sample is analyzed for the target constituents listed in Table 1 and include both Appendix III and Appendix IV constituents.

7.0 CHAIN-OF-CUSTODY

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

- Sample identification numbers
- Signature of collector
- Date and time of collection
- Sample type
- Sample point identification
- Number of sample containers
- Signature of person(s) involved in the chain of possession
- Dates of possession by each individual handling the samples

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 must relinquish possession and the samples must 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 must use COC forms provided by the analytical laboratory or use a COC form similarly formatted and containing the information listed above.

8.0 FIELD AND LABORATORY QUALITY ASSURANCE/QUALITY CONTROL

Field quality control samples will be prepared the same as compliance samples with regards 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 20 samples using non-dedicated equipment.

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

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

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

9.0 REPORTING RESULTS

1) A semi-annual groundwater report that documents the results of sampling and analysis will be submitted to EPD. Semi-annual groundwater monitoring reports will be submitted to the EPD within 90 days of receipt of the groundwater analytical data from the laboratory. At a minimum, semi-annual reports will include:

2) 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

3) A brief overview of purging/sampling methodologies

4) Discussion of results

5) Recommendations for the future monitoring consistent with the Rules

6) Potentiometric surface contour map for the aquifer(s) being monitored, signed and sealed by a Georgia-registered PG or PE.

7) 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

8) Groundwater flow rate and direction calculations

9) Identification of any groundwater wells that were recently installed or decommissioned, along with a narrative description of why these actions were taken

10) 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

11) If applicable, semi-annual assessment monitoring results

12) Any alternate source demonstration completed during the previous monitoring period, if applicable

13) Laboratory reports

14) COC documentation

15) Field sampling logs including field instrument calibration, indicator parameters and parameter stabilization data

16) Documentation of non-functioning wells

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

18) Statistical analyses

19) Certification by a qualified groundwater scientist.

10.0 STATISTICAL ANALYSES

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 determine statistical limits

According to EPD rules (391-3-4-.10(6)(a), which incorporates the statistical analysis requirements of 40 CFR 257.93 by reference), the site must specify in the operating record the statistical methods to be used in evaluating groundwater monitoring data for each constituent. The statistical test chosen shall be conducted separately for each constituent in each well. As authorized by the rule, statistical tests that may be used include:

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 prediction limit. (§257.93(f)(3)).

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

Another statistical test method (such as prediction limits or control charts) that meets the performance standards of §257.93(g). 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).

Based on site-specific conditions, statistical methods may be intra-well, inter-well, or combination of both.

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, includes a flowchart that depicts the process that will be followed to develop the site-specific plan. Figure 2, Decision Logic for Determining Appropriate Statistical Methods, depicts the decision logic that will be used to

determine the appropriate method as required by 391-3-4-.10(6). Figure 3, Decision Logic for Computing Prediction Limits, presents the logic that will be used to calculate site-specific statistical limits and test compliance results against those limits.

Figure 1: STATISTICAL PLAN OVERVIEW

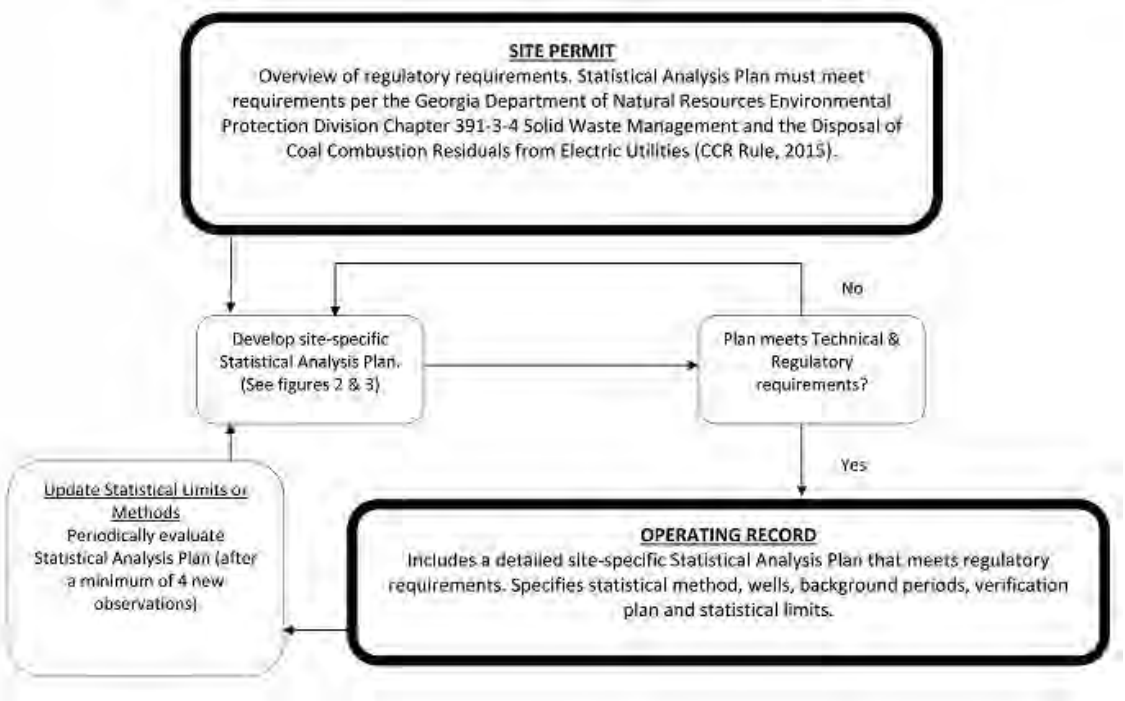


Figure 2: DECISION LOGIC FOR DETERMINING APPROPRIATE STATISTICAL METHOD

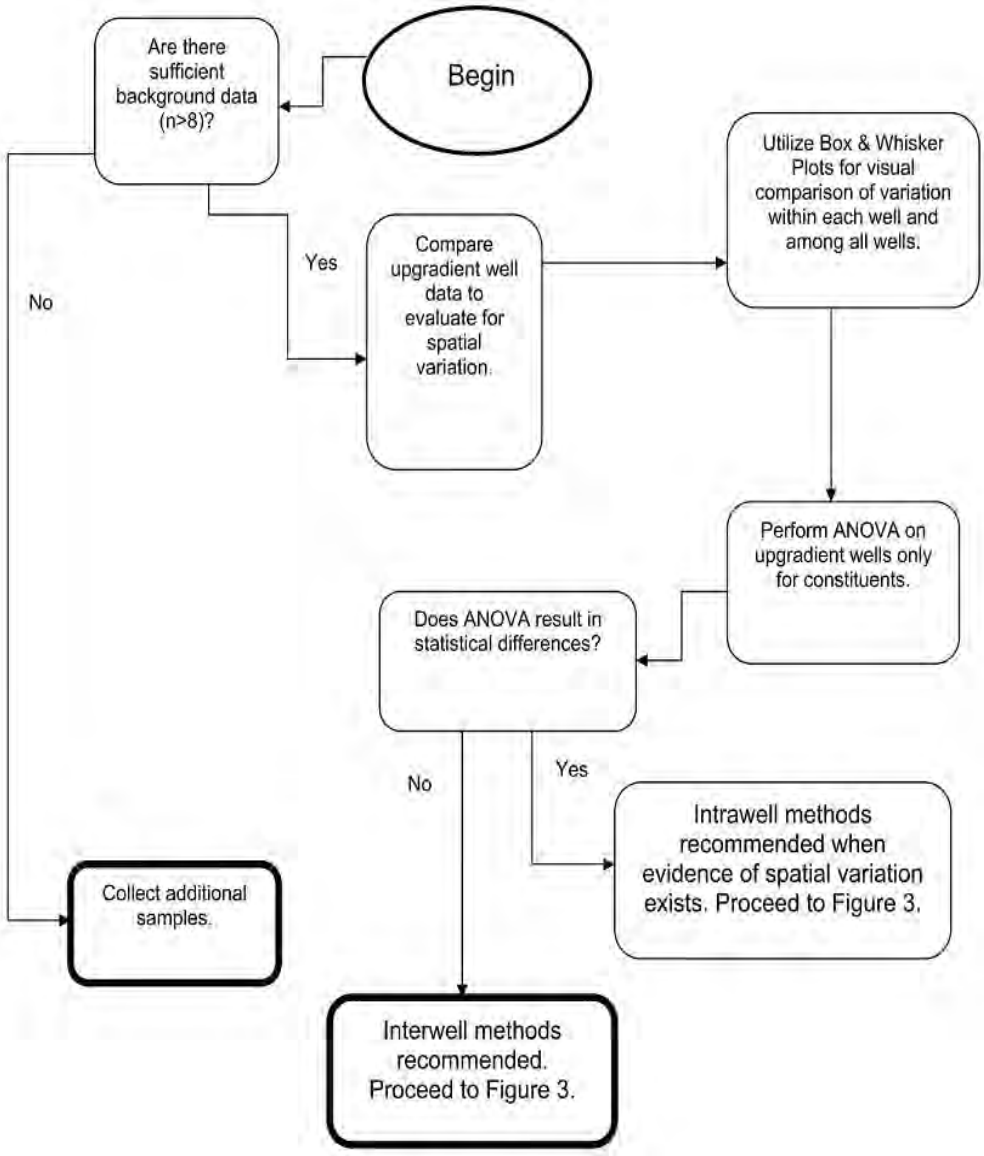
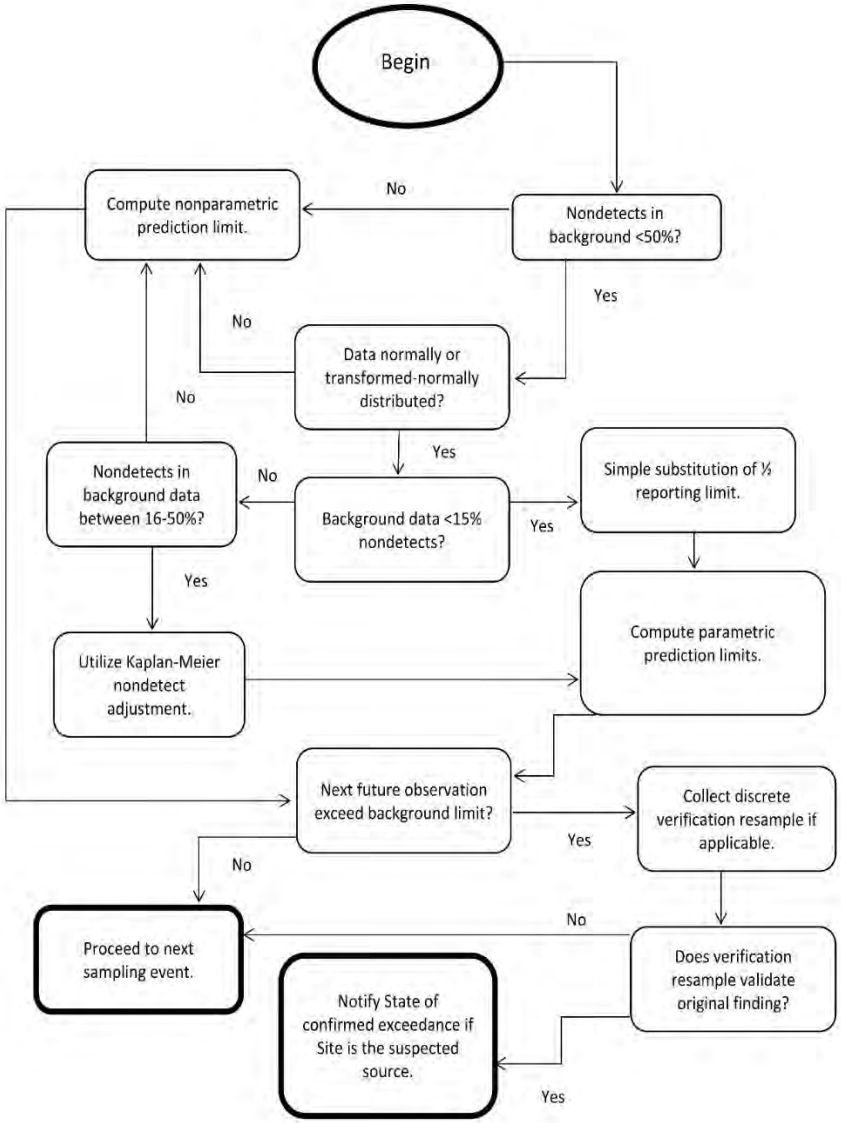


Figure 3: DECISION LOGIC FOR COMPUTING PREDICTION LIMITS



11.0 REFERNCES

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APPENDIX A

MONITORING SYSTEM DETAILS

A1 MONITORING NETWORK WELL DETAILS

A2 CELL 1 MONITORING WELL LOGS

A3 PAC ASH CELL MONITORING WELL LOGS

A1. MONITORING NETWORK WELL DETAILS
Georgia Power - Plant SchererJuliette, GA

Well ID	Hydraulic Location	Latitute	Longitude	Top of Casing Elevation (feet msl)	Ground Surface Elevation (feet msl)	Total Depth (feet bgs)	Top of Screen Elevation (feet msl)	Bottom of Screen Elevation (feet msl)	Screen Length (feet)
CELL 1									
GWC-1	Downgradient	33.07878	-83.79131	414.82	411.82	38.2	346.9	336.6	10.3
GWC-2	Downgradient	33.07806	-83.79152	444.06	440.74	58.2	332.1	321.8	10.3
GWC-3	Downgradient	33.07751	-83.79247	445.63	442.72	49.7	370.8	360.5	10.3
GWC-4	Downgradient	33.07653	-83.79300	374.75	371.54	43.3	378.6	368.3	10.3
GWC-5	Downgradient	33.07554	-83.79305	380.03	376.91	34.1	372.8	362.5	10.3
GWC-6	Downgradient	33.07466	-83.79356	410.22	407.19	48.5	377.5	367.2	10.3
GWC-7	Downgradient	33.07375	-83.79430	411.57	408.31	58.7	369.7	359.4	10.3
GWC-8	Downgradient	33.07290	-83.79499	396.50	393.18	53.5	364.6	354.3	10.3
GWC-9	Downgradient	33.07296	-83.79587	415.70	412.36	20.1	376.2	365.9	10.3
GWC-10	Downgradient	33.07393	-83.79635	418.07	414.29	35.1	367.9	357.6	10.3
GWC-11	Downgradient	33.07487	-83.79713	407.80	404.76	34.4	378.1	367.8	10.3
GWC-12	Downgradient	33.07578	-83.79786	386.01	383.02	37.7	385.3	375.0	10.3
GWC-13	Downgradient	33.07677	-83.79839	392.68	389.30	43.3	386.6	376.3	10.3
GWC-14	Downgradient	33.07764	-83.79930	402.19	399.06	27.5	386.2	375.9	10.3
GWA-15	Upgradient	33.07862	-83.79873	412.75	409.54	29.5	395.6	385.3	10.3
GWA-16	Upgradient	33.07927	-83.79776	419.58	416.54	57.8	396.5	386.2	10.3
GWA-17	Upgradient	33.07916	-83.79656	403.41	400.25	46.8	409.2	398.9	10.3
GWC-18	Downgradient	33.07858	-83.79554	439.64	436.36	60.4	389.6	379.3	10.3
GWC-19	Downgradient	33.07760	-83.79407	429.98	426.12	58.0	382.3	372.0	10.3
GWC-20	Downgradient	33.07844	-83.79249	426.09	422.82	72.7	363.7	353.4	10.3
Cell 2									
GWA-23	Upgradient	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
GWA-24	Upgradient	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
GWC-25	Downgradient	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
GWC-26	Downgradient	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
GWC-27	Downgradient	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
GWC-28	Downgradient	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD

A1. MONITORING NETWORK WELL DETAILS
Georgia Power - Plant Scherer
Juliette, GA

Well ID	Hydraulic Location	Latitute	Longitude	Top of Casing Elevation (feet msl)	Ground Surface Elevation (feet msl)	Total Depth (feet bgs)	Top of Screen Elevation (feet msl)	Bottom of Screen Elevation (feet msl)	Screen Length (feet)
Cell 3									
GWC-30	Downgradient	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
GWC-31	Downgradient	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
GWC-32	Downgradient	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
GWC-33	Downgradient	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
GWC-34	Downgradient	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
GWC-35	Downgradient	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
GWC-36	Downgradient	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
GWC-37	Downgradient	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
GWC-38	Downgradient	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
GWA-39	Upgradient	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
GWA-40	Upgradient	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
GWA-41	Upgradient	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
GWC-42	Downgradient	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
GWC-43	Downgradient	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
GWC-44	Downgradient	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
PAC ASH CELL									
GWA-21	Upgradient	33.08045	-83.79814	422.30	419.56	20.7	411.9	401.6	10.3
GWA-22	Upgradient	33.08123	-83.79810	444.23	441.75	42.5	412.0	401.7	10.3
GWA-45	Upgradient	33.08044	-83.80327	450.89	447.98	35.5	425.7	415.4	10.3
GWA-46	Upgradient	33.08075	-83.80214	460.86	458.10	47.0	424.2	413.9	10.3
GWA-47	Upgradient	33.08097	-83.80100	465.55	462.81	54.2	421.7	411.4	10.3
GWA-48	Upgradient	33.08121	-83.79984	461.47	458.73	64.2	407.6	397.3	10.3
GWA-49	Upgradient	33.08142	-83.79870	432.61	429.96	41.0	401.9	391.6	10.3
GWC-29	Downgradient	33.07825	-83.80058	399.39	396.69	27.1	382.6	372.3	10.3
GWC-50	Downgradient	33.07837	-83.79980	406.92	404.18	36.5	380.7	370.4	10.3
GWC-51	Downgradient	33.07815	-83.80149	409.89	406.88	26.8	393.4	383.1	10.3
GWC-52	Downgradient	33.07852	-83.80225	416.89	414.14	32.9	394.3	384.0	10.3
GWC-53	Downgradient	33.07948	-83.80310	435.57	432.93	33.0	412.9	402.6	10.3

Notes:

1. feet msl = feet mean sea level
2. feet bgs = feet below ground surface

GOLDER

SOUTHERN COMPANY

LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility
LOCATION Cell 1

DATE STARTED 10/28/2009 **COMPLETED** 10/28/2009 **SURF. ELEV.** 371.5 **COORDINATES:** N 1,120,077.83 E 2,411,556.16
CONTRACTOR SCS Field Services **EQUIPMENT** CME-550 **METHOD** Hollow Stem Auger
DRILLED BY P. Smith **LOGGED BY** D. Brooks **CHECKED BY** R. Tinsley **ANGLE** _____ **BEARING** _____
BORING DEPTH 36 ft. **GROUND WATER DEPTH: DURING** 6 ft. **COMP.** _____ **DELAYED** _____
NOTES Well installed. Refer to well data sheet.

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		Residuum, sandy SILT (MLS) and silty SAND (SM)						
5		▽						
10								
15								
			352.0					
20		Silty SAND (SM); mottled black and white; fine grained; gnessic saprolite		SS -1	19.5-21.0	3-5-16 (21)		

(Continued Next Page)

SOUTHERN COMPANY

LOG OF TEST BORING

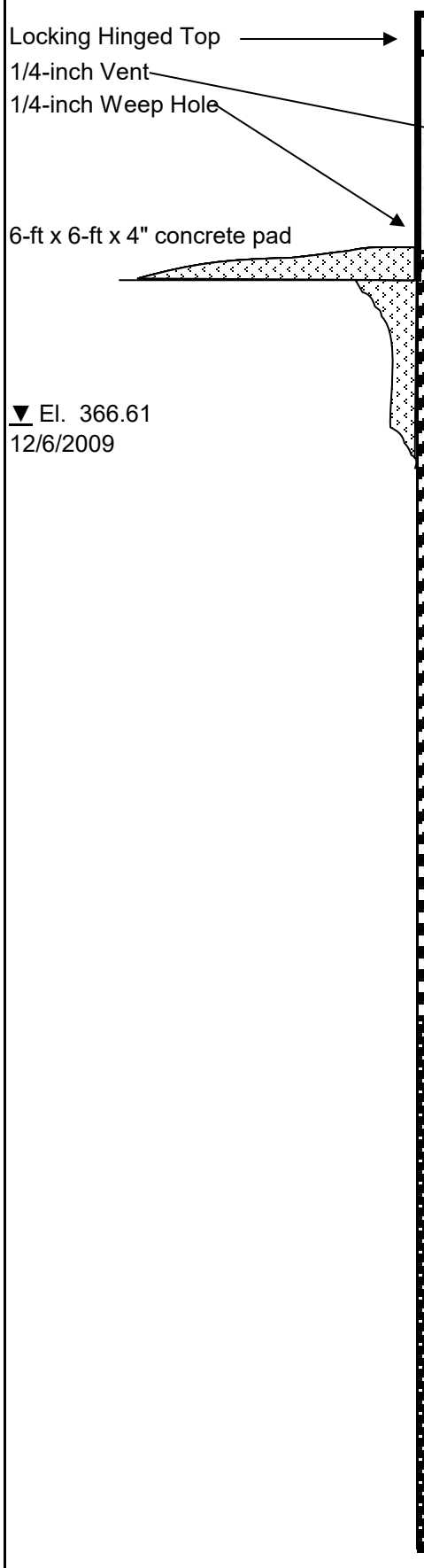
SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility
LOCATION Cell 1

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		Silty SAND (SM); mottled black and white; fine grained; gnessic saprolite *(Con't)*						
25				SS -2	24.5-26.0	11-7-9 (16)		
30		Silty SAND (SM); mottled black and white; fine to medium grained		SS -3	29.5-31.0	21-15-11 (26)		
35			335.5	SS -4	34.5-36.0	7-9-21 (30)		
		Bottom of borehole at 36.0 feet.						
40								
45								
50								

WELL CONSTRUCTION LOG — Southern Company Generation

PROJECT: Plant Scherer	DRILLING CO.: SCS, Inc.	WELL NAME
CCB Storage Facility	DRILLER: P. Smith	
LOCATION: Cell 1	RIG TYPE: CME 550	
LOGGER: D. Brooks	DRILLING METHODS: HSA	GWC-1
DATE CONSTRUCTED: 10/28/2009		



	DEPTH FEET	ELEVATION FT, MSL
TOP OF RISER	-3.21	374.75
2" Threaded Riser Cap; Pea Gravel in annular space		
GROUND SURFACE	0.00	371.54
PROTECTIVE CASING SIZE: 4x4-inch TYPE: Anodized Aluminum		
BOTTOM OF PROTECTIVE CASING		
BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 8 cubic feet		
RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded		
TOP OF SEAL	19.50	352.04
ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie		
TOP OF FILTER PACK	22.00	349.54
FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 2.5 bags PLACEMENT: Tremie; wash with water		
BOTTOM OF RISER / TOP OF SCREEN	24.69	346.85
SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch		
BOTTOM OF SCREEN	34.69	336.85
BOTTOM OF CASING	34.99	336.55

SOUTHERN COMPANY

LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility
LOCATION Cell 1

DATE STARTED 10/7/2009 **COMPLETED** 10/7/2009 **SURF. ELEV.** 376.9 **COORDINATES:** N 1,119,816.77 E 2,411,493.24
CONTRACTOR SCS Field Services **EQUIPMENT** CME-550 **METHOD** Hollow Stem Auger
DRILLED BY S. Denty **LOGGED BY** L. Millet **CHECKED BY** R. Tinsley **ANGLE** _____ **BEARING** _____
BORING DEPTH 54.5 ft. **GROUND WATER DEPTH: DURING** _____ **COMP.** _____ **DELAYED** _____
NOTES Well installed. Refer to well data sheet.

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		Very moist, sandy SILT (MLS) and silty SAND (SM)						
5								
10								
15								
			357.4					
20		Wet, silty SAND (SM); green and white with occassional orange mottling; gneissic saprolite		SS -1	19.5-21.0	2-3-6 (9)		

(Continued Next Page)

SOUTHERN COMPANY

LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility
LOCATION Cell 1

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		Wet, silty SAND (SM); green and white with occassional orange mottling; gneissic saprolite *(Con't)*						
25		Wet, silty SAND (SM); green and white with occassional lite orange and black mottling; soft; gneissic saprolite		SS -2	24.5-26.0	3-5-7 (12)		
30		Wet, silty SAND (SM); green and white with occassional orange mottling; soft; gneissic saprolite		SS -3	29.5-31.0	6-5-6 (11)		
35				SS -4	34.5-36.0	5-5-9 (14)		
40				SS -5	39.5-41.0	4-5-8 (13)		
45				SS -6	44.5-46.0	4-6-10 (16)		
50		Wet, silty SAND (SM); black, green and white with occassional lite orange mottling; micaceous;		SS -7	49.5-51.0	6-7-10 (17)		

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SOUTHERN COMPANY

LOG OF TEST BORING

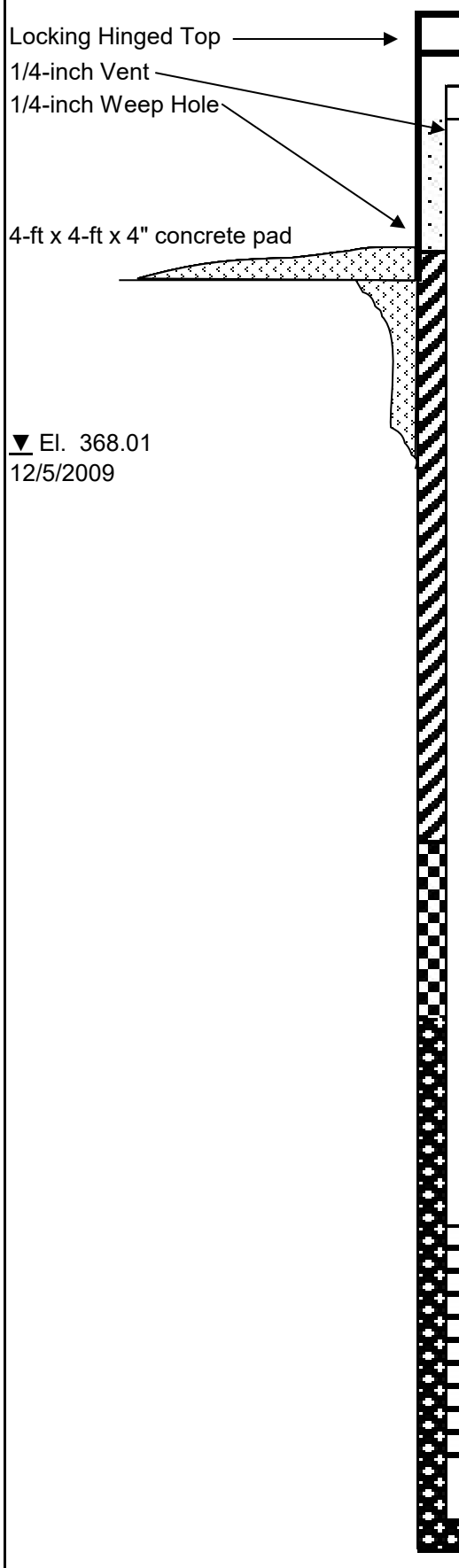
SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility
LOCATION Cell 1

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		gneissic saprolite Wet, silty SAND (SM); green and white with occassional orange mottling; gneissic saprolite *(Con't)*						
55			320.9	SS -8	54.5-56.0	7-10-15 (25)		
		Bottom of borehole at 54.5 feet.						
60								
65								
70								
75								

WELL CONSTRUCTION LOG — Southern Company Generation

PROJECT:Plant Scherer	DRILLING CO.: SCS, Inc.	WELL NAME
CCB Storage facility	DRILLER: S. Denty	
LOCATION: Cell 1	RIG TYPE: CME 550	
LOGGER: L. Millet	DRILLING METHODS: HSA	GWC-2
DATE CONSTRUCTED: 10/8/2009		



	DEPTH FEET	ELEVATION FT, MSL
TOP OF RISER	-3.12	380.03
2" Threaded Riser Cap; Pea Gravel in annular space		
GROUND SURFACE	0.00	376.91
PROTECTIVE CASING SIZE: 4x4-inch TYPE: Anodized Aluminum		
BOTTOM OF PROTECTIVE CASING		
BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 4.5 cubic feet		
RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded		
TOP OF SEAL	40.98	335.93
ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie		
TOP OF FILTER PACK	42.98	333.93
FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 6 3/4 bags PLACEMENT: Tremie; wash with water		
BOTTOM OF RISER / TOP OF SCREEN	44.78	332.13
SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch		
BOTTOM OF SCREEN	54.78	322.13
BOTTOM OF CASING	55.08	321.83

SOUTHERN COMPANY

LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility
LOCATION Cell 1

DATE STARTED 10/29/2009 **COMPLETED** 10/29/2009 **SURF. ELEV.** 407.2 **COORDINATES:** N 1,119,614.01 E 2,411,202.80
CONTRACTOR Ranger **EQUIPMENT** CME-550 **METHOD** Hollow Stem Auger
DRILLED BY Ranger **LOGGED BY** D. Brooks **CHECKED BY** R. Tinsley **ANGLE** **BEARING**
BORING DEPTH 46 ft. **GROUND WATER DEPTH: DURING** 38 ft. **COMP.** **DELAYED**
NOTES Well installed. Refer to well data sheet.

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		Sandy SILT (MLS) and SILT (ML)						
5								
10								
15								
20		Sandy SILT (MLS), mottled orange, tan and black, micaceous		SS -1	18.5-20.0	4-4-7 (11)		

(Continued Next Page)

SOUTHERN COMPANY

LOG OF TEST BORING

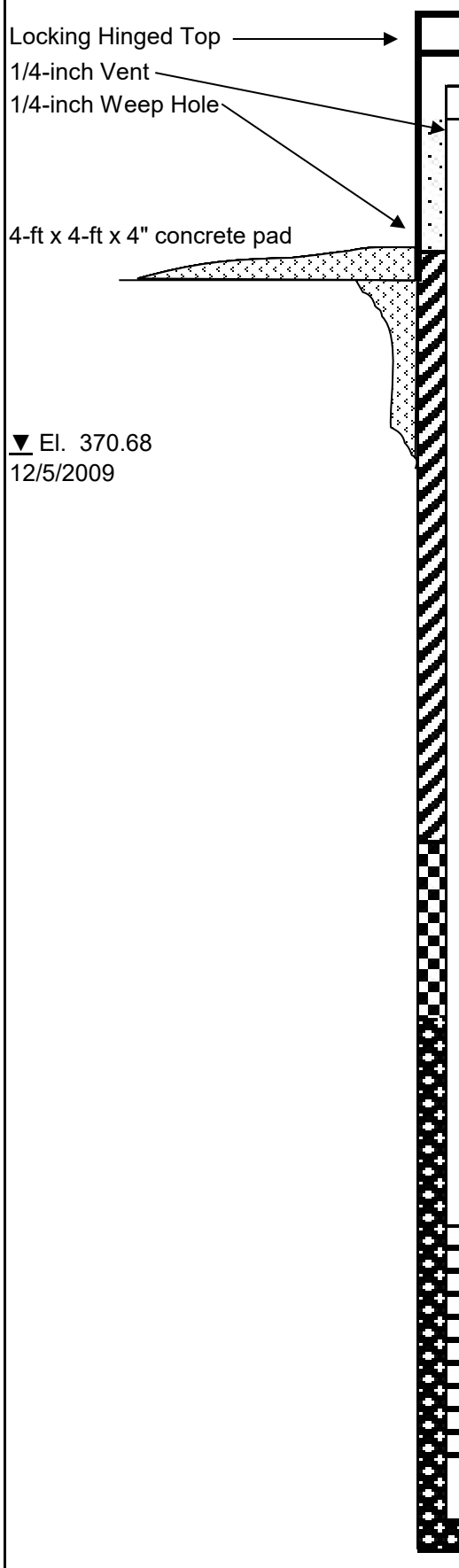
SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility
LOCATION Cell 1

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		Sandy SILT (MLS) and SILT (ML) *(Con't)*						
25		Sandy SILT (MLS), mottled orange, tan and black with tan lean CLAY (CL), micaceous		SS -2	23.5-25.0	5-5-7 (12)		
			378.7					
30		Silty SAND (SM), mottled orange, tan, white and black, fine grained, micaceous		SS -3	28.5-30.0	8-9-14 (23)		
35		Silty SAND (SM), mottled orange and tan with trace amounts of white sand, fine grained, micaceous		SS -4	33.5-35.0	11-12-22 (34)		
40		Silty SAND (SM), mottled orange and whit, fine to medium grained, micaceous		SS -5	38.5-40.0	17-28-44 (72)		
45		Silty SAND (SM), mottled orange, tan, and black, fine grained, micaceous		SS -6	43.5-43.9	24-30-50/-7" (100+)		
			361.2					Auger refusal.
		Bottom of borehole at 46.0 feet.						
50								

WELL CONSTRUCTION LOG — Southern Company Generation

PROJECT:Plant Scherer	DRILLING CO.: SCS, Inc.	WELL NAME
CCB Storage FacilitySolid Waste Management	DRILLER: Ranger	
LOCATION: Cell 1	RIG TYPE: CME 55	
LOGGER: D. Brooks	DRILLING METHODS: HSA	GWC-3
DATE CONSTRUCTED: 10/29/2009		



	DEPTH FEET	ELEVATION FT, MSL
TOP OF RISER	-3.03	410.22
2" Threaded Riser Cap; Pea Gravel in annular space		
GROUND SURFACE	0.00	407.19
PROTECTIVE CASING SIZE: 4x4-inch TYPE: Anodized Aluminum		
BOTTOM OF PROTECTIVE CASING		
BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 14 cubic feet		
RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded		
TOP OF SEAL	31.90	375.29
ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie		
TOP OF FILTER PACK	34.40	372.79
FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 6.5 bags PLACEMENT: Tremie; wash with water		
BOTTOM OF RISER / TOP OF SCREEN	36.40	370.79
SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch		
BOTTOM OF SCREEN	46.40	360.79
BOTTOM OF CASING	46.70	360.49

HOLE DIA: 9"

SOUTHERN COMPANY

LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility
LOCATION Cell 1

DATE STARTED 11/2/2009 **COMPLETED** 11/2/2009 **SURF. ELEV.** 408.3 **COORDINATES:** N 1,119,256.25 E 2,411,041.63
CONTRACTOR Ranger **EQUIPMENT** CME-550 **METHOD** Hollow Stem Auger
DRILLED BY Ranger **LOGGED BY** W. Clanton **CHECKED BY** R. Tinsley **ANGLE** **BEARING**
BORING DEPTH 39.5 ft. **GROUND WATER DEPTH: DURING** 27.5 ft. **COMP.** **DELAYED**
NOTES Well installed. Refer to well data sheet.

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		Sandy SILT (MLS) and SILT (ML)						
5								
10								
15								
			389.8					
20		Damp, soft, SILT (ML), mottled black, tan and orange, micaceous		SS -1	18.5-20.0	11-7-10 (17)		

GEOTECH ENGINEERING LOGS - ESEE DATABASE.GDT - 4/27/10 11:56 - T:\ESEE MAJOR PROJECTS\GINT SOFTWARE\SCHERER GYP.GPJ

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SOUTHERN COMPANY

LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

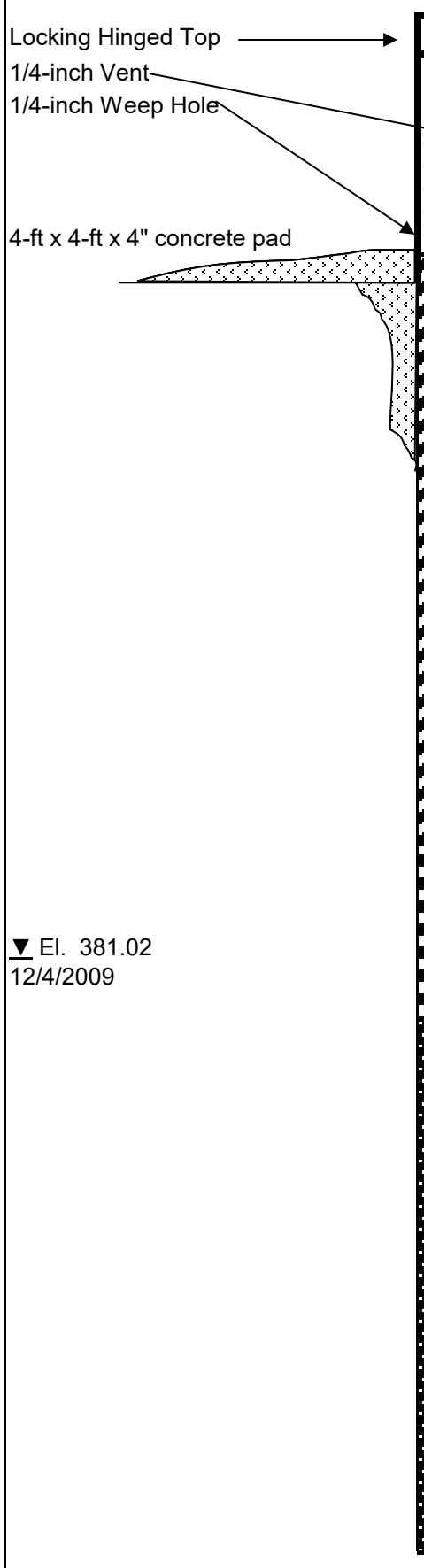
PROJECT Plant Scherer CCB Storage Facility
LOCATION Cell 1

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
25		Damp, soft, SILT (ML), mottled black, tan and orange, micaceous *(Con't)* Very damp, soft, SILT (ML), mottled black, tan, white and orange, micaceous		SS -2	23.5-25.0	7-8-11 (19)		
		▽	379.8					
30		Very moist, soft, silty SAND (SM) and SILT (ML); mottled black, tan, orange and white; fine grained; very micaceous with large mica flakes		SS -3	28.5-30.0	9-13-20 (33)		
35		Moist, soft, silty SAND (SM); mottled black, tan, orange and white; fine to medium grained; micaceous		SS -4	33.5-33.9	50/5" (100+)		
			369.8					
		Moist, soft, clayey SAND (SC); black with orange, tan and white mottles; fine grained; micaceous	368.8	SS -5	38.5-39.0	50 (0)		auger refusal.
40		Bottom of borehole at 39.5 feet.						
45								
50								

GEOTECH ENGINEERING LOGS - ESEE DATABASE.GDT - 4/27/10 11:56 - T:\ESEE MAJOR PROJECTS\GINT SOFTWARE\SCHERER GYP.GPJ

WELL CONSTRUCTION LOG — Southern Company Generation

PROJECT: Plant Scherer	DRILLING CO.: SCS, Inc.	WELL NAME
CCB Storage Facility	DRILLER: Ranger	
LOCATION: Cell 1	RIG TYPE: CME 550	
LOGGER: W. Clanton	DRILLING METHODS: HSA	GWC-4
DATE CONSTRUCTED:11/21/2009		



	DEPTH FEET	ELEVATION FT, MSL
TOP OF RISER	-3.26	411.57
2" Threaded Riser Cap; Pea Gravel in annular space		
GROUND SURFACE	0.00	408.31
PROTECTIVE CASING SIZE: 4x4-inch TYPE: Anodized Aluminum		
BOTTOM OF PROTECTIVE CASING		
BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 11.5 cubic feet		
RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded		
TOP OF SEAL	26.30	382.01
ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1.25 buckets PLACEMENT: Tremie		
TOP OF FILTER PACK	27.95	380.36
FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 5.5 bags PLACEMENT: Tremie; wash with water		
BOTTOM OF RISER / TOP OF SCREEN	29.70	378.61
SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch		
BOTTOM OF SCREEN	39.70	368.61
BOTTOM OF CASING	40.00	368.31

SOUTHERN COMPANY

LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility
LOCATION Cell 1

DATE STARTED 10/7/2009 **COMPLETED** 10/7/2009 **SURF. ELEV.** 393.2 **COORDINATES:** N 1,118,897.72 E 2,411,025.70
CONTRACTOR SCS Field Services **EQUIPMENT** CME-550 **METHOD** Hollow Stem Auger; HQ Rock Core
DRILLED BY T. Milam **LOGGED BY** LM/BG **CHECKED BY** R. Tinsley **ANGLE** _____ **BEARING** _____
BORING DEPTH 34.8 ft. **GROUND WATER DEPTH: DURING** _____ **COMP.** _____ **DELAYED** 20.2 ft. after 18 hrs.
NOTES Elevation based on stake. Offset 5' west of stake. Well installed. Refer to well data sheet.

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		CLAY (CL); red and tan; medium stiff; damp; low plasticity						
5								
10								
15								
20		▼		SS -1	19.5-21.0	2-3-5 (8)		
			372.2					
		SILT (ML); gray; medium dense; moist; micaceous						

GEOTECH ENGINEERING LOGS - ESEE DATABASE.GDT - 4/27/10 11:56 - T:\ESEE MAJOR PROJECTS\GINT SOFTWARE\SCHERER GYP.GPJ

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SOUTHERN COMPANY

LOG OF TEST BORING

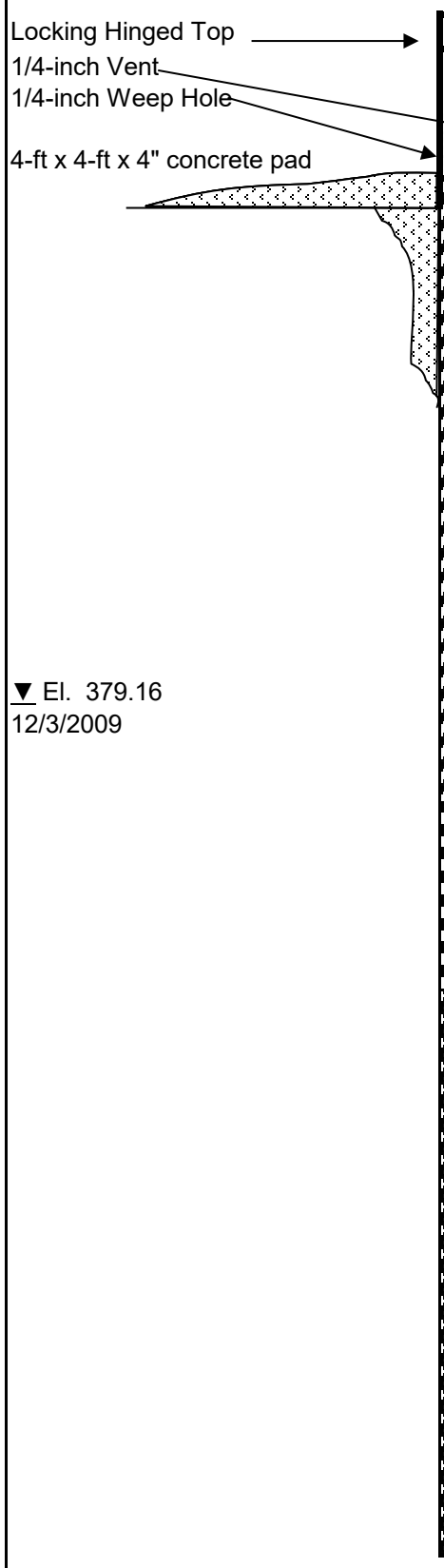
SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility
LOCATION Cell 1

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		SILT (ML); gray; medium dense; moist; micaceous *(Con't)*						
25				SS -2	24.5-26.0	3-3-6 (9)		
			367.2					
		Silty SAND (SM); gray; fine grained; dense; very moist; micaceous						
			364.2					
		GNEISS - black and white, weathered, hard augering						
30			363.2	SS -3	29.5-29.7	50/2" (100+)		
		GNEISS - black and white, fine to medium grain, hard, not weathered						Auger refusal.
				RC -1	30.0-34.8		100 (100)	
35			358.4					
		Bottom of borehole at 34.8 feet.						
40								
45								
50								

WELL CONSTRUCTION LOG — Southern Company Generation

PROJECT: Plant Scherer	DRILLING CO.: SCS, Inc.	WELL NAME
CCB Storage Facility	DRILLER: S. Denty	
LOCATION: Cell 1	RIG TYPE: CME 550	
LOGGER: B. Gallagher	DRILLING METHODS: HAS/HQ Core	GWC-5
DATE CONSTRUCTED: 10/22/09		



	DEPTH FEET	ELEVATION FT, MSL
TOP OF RISER	-3.32	396.50
2" Threaded Riser Cap Pea Gravel in annular space		
GROUND SURFACE	0.00	393.18
PROTECTIVE CASING SIZE: 4x4-inch TYPE: Anodized Aluminum		
BOTTOM OF PROTECTIVE CASING		
BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 7 cubic feet		
RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded		
TOP OF SEAL	14.97	378.21
ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: PLACEMENT: Tremie		
TOP OF FILTER PACK	16.97	376.21
FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: PLACEMENT: Tremie; wash with water		
BOTTOM OF RISER / TOP OF SCREEN	20.43	372.75
SCREEN DIA: 2-inch TYPE: Schedule 40 PVC OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch		
BOTTOM OF SCREEN	30.43	362.75
BOTTOM OF CASING	30.73	362.45

SOUTHERN COMPANY

LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility
LOCATION Cell 1

DATE STARTED 10/8/2009 **COMPLETED** 10/8/2009 **SURF. ELEV.** 412.4 **COORDINATES:** N 1,118,575.72 E 2,410,872.48
CONTRACTOR SCS Field Services **EQUIPMENT** CME-550 **METHOD** Hollow Stem Auger; HQ Rock Core
DRILLED BY T. Milam **LOGGED BY** LM/BG **CHECKED BY** R. Tinsley **ANGLE** _____ **BEARING** _____
BORING DEPTH 44.5 ft. **GROUND WATER DEPTH: DURING** _____ **COMP.** _____ **DELAYED** _____
NOTES Offset 5' west of stake. Well installed. Refer to well data sheet.

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
5		CLAY (CL)						
10			402.4					
15		SILT (ML)	397.4					
20		Silty SAND (SM); tan with orange and black mottling; loose; dry; abundant mica						
		Silty SAND (SM); tan with orange and black mottling; loose; dry; abundant mica	392.4	SS -1	19.5-21.0	3-5-6 (11)		

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SOUTHERN COMPANY

LOG OF TEST BORING

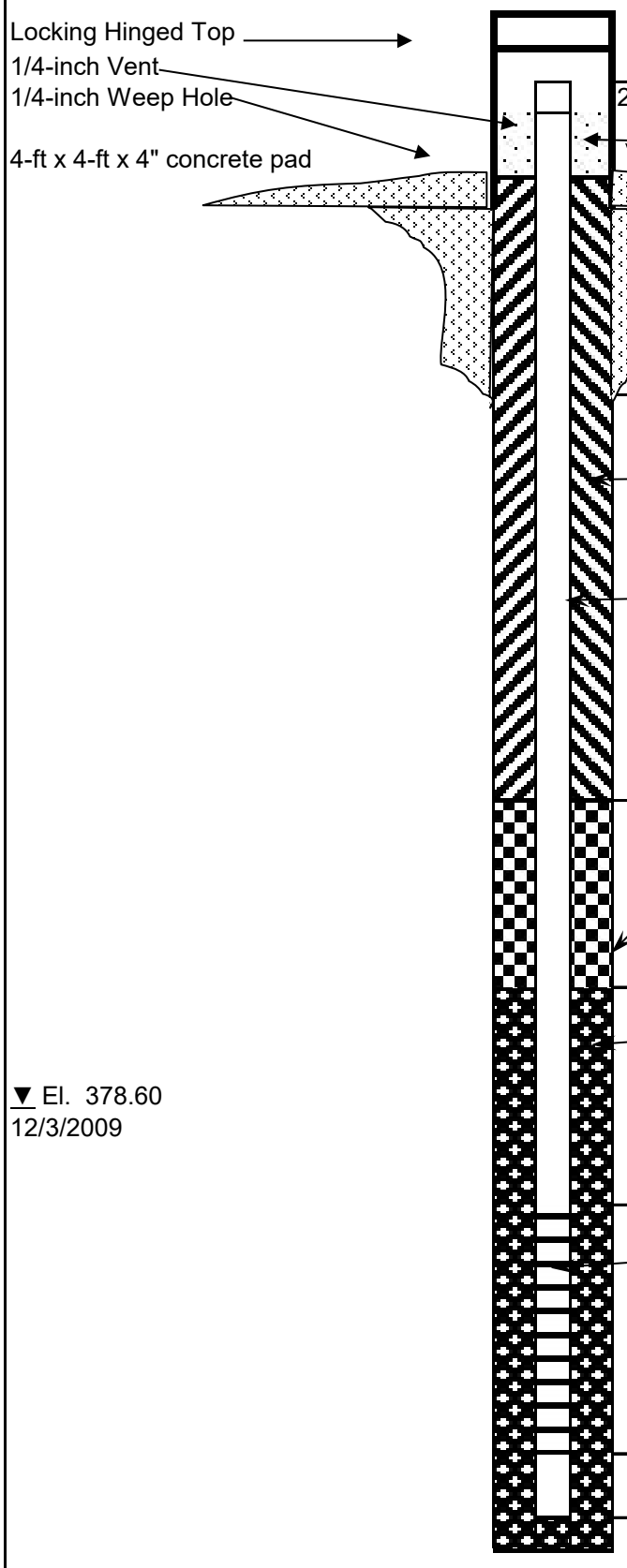
SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility
LOCATION Cell 1

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
25		Silty SAND (SM); black and tan with occasional black mottling; very fine to fine grained; loose; dry; mica		SS -2	24.0-25.5	5-6-10 (16)		
30		White cobble		SS -3	29.5-29.8	50/4" (100+)		Auger refusal.
35		**GNEISS** - white and black, medium to fine grain, soft to medium hard, slightly to highly weathered, banded		RC -1	34.0-35.5		100 (0)	
		Micaceous seam at 35.9'		RC -2	35.5-40.5		100	
40			370.7					
		SCHIST - black, soft, highly weathered Secondary quartz seam at 41.9'		RC -3	40.5-44.5		50 (30)	Lost all water return at 42.0'..
		Nearly completely weathered mica seam at 43.8'	367.9					
45		Bottom of borehole at 44.5 feet.						
50								

WELL CONSTRUCTION LOG — Southern Company Generation

PROJECT: Plant Scherer	DRILLING CO.: SCS, Inc.	WELL NAME
CCB Storage Facility	DRILLER: S. Denty	
LOCATION: Cell 1	RIG TYPE: CME 550	
LOGGER: B. Gallagher	DRILLING METHODS: HAS/HQ Core	GWC-6
DATE CONSTRUCTED: 10/21/09		



	DEPTH FEET	ELEVATION FT, MSL
TOP OF RISER	-3.34	415.70
2" Threaded Riser Cap Pea Gravel in annular space		
GROUND SURFACE	0.00	412.36
PROTECTIVE CASING SIZE: 4x4-inch TYPE: Anodized Aluminum		
BOTTOM OF PROTECTIVE CASING		
BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 13 cubic feet		
RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded		
TOP OF SEAL	29.86	382.50
ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: PLACEMENT: Tremie		
TOP OF FILTER PACK	31.86	380.50
FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: PLACEMENT: Tremie; wash with water		
BOTTOM OF RISER / TOP OF SCREEN	34.86	377.50
SCREEN DIA: 2-inch TYPE: Schedule 40 PVC OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch		
BOTTOM OF SCREEN	44.86	367.50
BOTTOM OF CASING	45.16	367.20

SOUTHERN COMPANY

LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility
LOCATION Cell 1

DATE STARTED 10/19/2009 **COMPLETED** 10/20/2009 **SURF. ELEV.** 414.3 **COORDINATES:** N 1,118,243.66 E 2,410,645.83
CONTRACTOR SCS Field Services **EQUIPMENT** CME-550 **METHOD** Hollow Stem Auger
DRILLED BY S. Denty **LOGGED BY** B. Gallagher **CHECKED BY** R. Tinsley **ANGLE** _____ **BEARING** _____
BORING DEPTH 54.5 ft. **GROUND WATER DEPTH: DURING** 39.5 ft. **COMP.** _____ **DELAYED** _____
NOTES Elevation based on stake. Well installed. Refer to well data sheet.

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
5		*Residuum*, CLAY (CL); red; medium dense; damp; low plasticity; trace mica						
			405.3					
10		*Residuum*, SILT (ML); tan; medium dense; damp; with mica						
15			398.3					
		Saprolite, silty SAND (SM); tan and black; medium dense; damp; with mica (remnant gneiss texture)						
20				SS -1	19.5-21.0	5-6-8 (14)		

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SOUTHERN COMPANY

LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility
LOCATION Cell 1

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		Saprolite, silty SAND (SM); tan and black; medium dense; damp; with mica (remnant gneiss texture) *(Con't)*	389.8					
25		*Saprolite*, poorly graded SAND with SILT (SP-SM); tan, white and black; medium dense; damp; with iron oxide stain (remnant gneiss texture)		SS -2	24.5-26.0	6-8-16 (24)		
			384.8					
30		*Saprolite*, silty SAND (SM); white and tan; medium dense; moist		SS -3	29.5-31.0	6-6-8 (14)		
35				SS -4	34.5-36.0	3-5-6 (11)		
		▽	374.8					
40		*Saprolite*, poorly graded SAND (SP); white, black, and tan; medium dense to dense; moist; trace mica		SS -5	39.5-41.0	5-8-10 (18)		
45				SS -6	44.5-46.0	5-11-15 (26)		
50				SS -7	49.5-51.0	17-23-28 (51)		

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SOUTHERN COMPANY

LOG OF TEST BORING

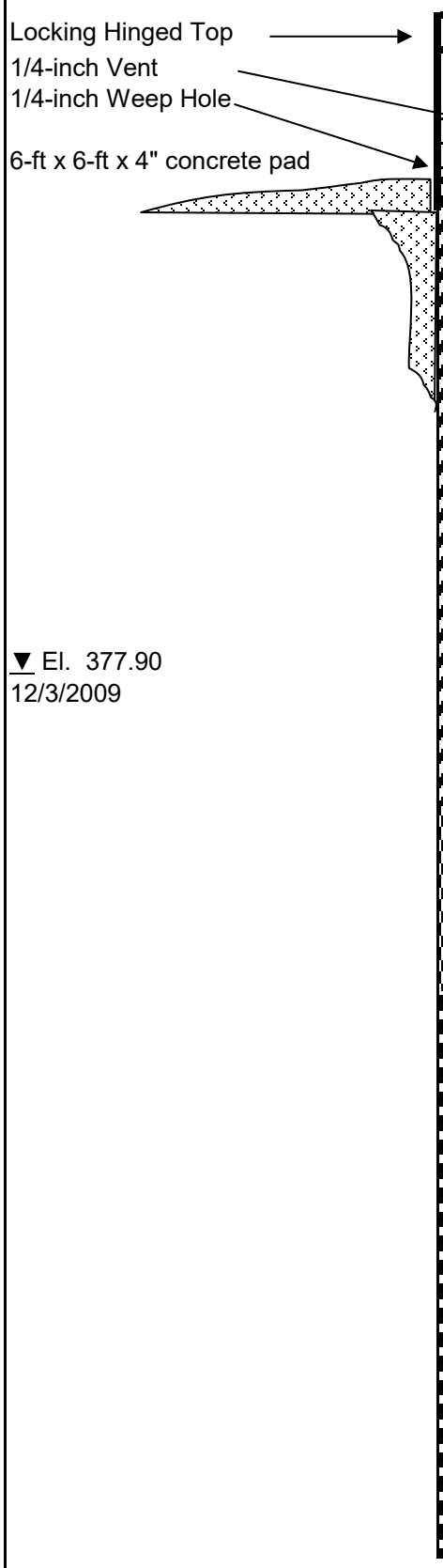
SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility
LOCATION Cell 1

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		Saprolite, poorly graded SAND (SP); white, black, and tan; medium dense to dense; moist; trace mica *(Con't)*						
			359.7					
55		Bottom of borehole at 54.5 feet.		SS -8	54.5-54.6	50/1" (100+)		
60								
65								
70								
75								

WELL CONSTRUCTION LOG — Southern Company Generation

PROJECT: Plant Scherer	DRILLING CO.: SCS, Inc.	WELL NAME
CCB Storage Facility	DRILLER: P. Smith	
LOCATION: Cell 1	RIG TYPE: CME 550	
LOGGER: Ben Gallagher	DRILLING METHODS: HSA	GWC-7
DATE CONSTRUCT 10/20/2009		



	DEPTH FEET	ELEVATION FT, MSL
TOP OF RISER	-3.78	418.07
2" Threaded Riser Cap Pea Gravel in annular space		
GROUND SURFACE	0.00	414.29
PROTECTIVE CASING SIZE: 4x4-inch TYPE: Anodized Aluminum		
BOTTOM OF PROTECTIVE CASING		
BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 18 cubic feet **RISER CASING** DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded		
TOP OF SEAL	39.90	374.39
ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie		
TOP OF FILTER PACK	41.70	372.59
FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 5 bags PLACEMENT: Tremie; wash with water		
BOTTOM OF RISER / TOP OF SCREEN	44.57	369.72
SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch		
BOTTOM OF SCREEN	54.57	359.72
BOTTOM OF CASING	54.87	359.42

RECORD OF BOREHOLE GWC-8A

SHEET 1 of 1

PROJECT: SCS-Plant Scherer
PROJECT NUMBER: 1662350A-01
DRILLED DEPTH: 45.00 ft
LOCATION: Juliette, GA

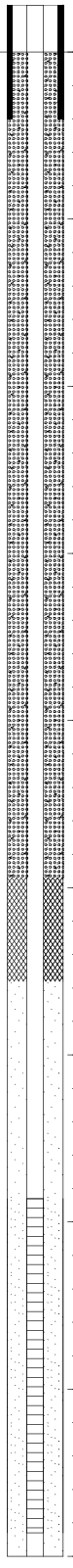
DRILL RIG: CME 550
DATE STARTED: 3/29/17
DATE COMPLETED: 3/29/17

NORTHING: 1,117,918.73
EASTING: 2,410,376.00
GS ELEVATION: 398.20
TOC ELEVATION: 401.47 ft

DEPTH W.L.:22.4'
DATE W.L.:3/30/2017
TIME W.L.:9:00

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	BLOWS per 6 in (140 lb hammer 30 inch drop)	N-VALUE	REC
0	395	0.00 - 8.50 SM, SILTY SAND, non-plastic; dark brown; non-cohesive, dry, w<PL, loose.	SM			S1	DO	2-2-2	4	0.00 / 1.50
5										
	390				389.7					
		8.50 - 18.50 CL, CLAY with trace organics, moderate plasticity; dark brown to red brown; cohesive, moist, w~PL very soft.			8.50	S2	DO	1-2-1	3	0.16 / 1.50
10	385		CL			S3	DO	1-1-3	4	0.66 / 1.50
15										
	380				379.7					
		18.50 - 19.50 ML, SILT with trace fine sand, non to low plasticity; red brown to black; cohesive, moist, w<PL, soft.	ML		18.50 378.7	S4	DO	3-4-6	10	1.50 / 1.50
20		19.50 - 23.50 SP, Poorly-graded SAND, fine to coarse, non plastic; white to black; non-cohesive, moist, w<pl, loose.	SP		19.50					
	375				374.7					
		23.50 - 33.50 SM, SILTY SAND, fine to coarse, non to low plasticity; white to black to bronze, saprolite, biotite gneiss; non-cohesive, moist, w<PL, loose			23.50	S5	DO	2-7-10	17	1.50 / 1.50
25										
	370		SM			S6	DO	10-25-42	67	1.16 / 1.50
30										
	365				364.7					
		33.50 - 45.00 SC, CLAYEY SAND, fine to coarse, non-plastic; gray to olive; non-cohesive, wet, w<PL, very dense.			33.50	S7	DO	20-50/5	50/5	0.75 / 1.50
35										
	360		SC			S8	DO	50/4	50/4	0.16 / 1.50
40										
	355									
						S9	DO	50/5	50/5	0.33 / 1.50
45		Boring completed at 45.00 ft			353.2					

MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES



WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0' - 44.7'
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Flush/Screw

WELL SCREEN
Interval: 34.3' - 44.3'
Material: Schedule 40 PVC
Diameter: 2"
Slot Size: 0.010
End Cap: 44.3' - 44.7"

FILTER PACK
Interval: 27.8' - 45'
Type: FilterSil

FILTER PACK SEAL
Interval: 24.7' - 27.8'
Type: Pel-Plug Bentonite Pellets

ANNULUS SEAL
Interval: 0' - 24.7'
Type: CETCO Pure Gold Grout (70:30)

WELL COMPLETION
Pad: 6'x6'x6"
Protective Casing: Aluminum 4" x 4" x 5'
Bollards: 5' Round Steel

DRILLING METHODS
Soil Drill: 4.25 inch HSA
Rock Drill: N/A

LOG SCALE: 1 in = 5.5 ft
DRILLING COMPANY: Southern Company Services
DRILLER: Sean Denty

GA INSPECTOR: Michael Boatman, P.G.
CHECKED BY: Rachel Kirkman, PG
DATE: 4/21/17

Golder Associates

BOREHOLE RECORD 1662350A-01.GPJ PIEDMONT.GDT 4/21/17

SOUTHERN COMPANY

LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

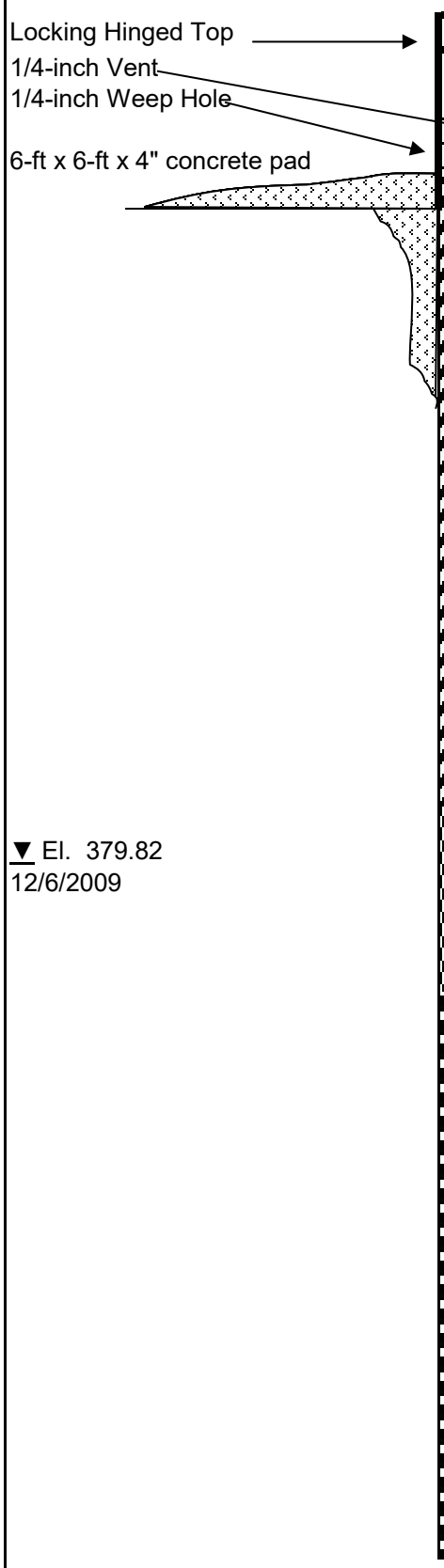
PROJECT Plant Scherer CCB Storage Facility
LOCATION Cell 1

DATE STARTED 11/4/2009 **COMPLETED** 11/4/2009 **SURF. ELEV.** 383.0 **COORDINATES:** N 1,117,955.52 E 2,410,167.44
CONTRACTOR Ranger **EQUIPMENT** CME-550 **METHOD** Hollow Stem Auger
DRILLED BY Ranger **LOGGED BY** W. Clanton **CHECKED BY** R. Tinsley **ANGLE** _____ **BEARING** _____
BORING DEPTH 16.5 ft. **GROUND WATER DEPTH: DURING** 2.5 ft. **COMP.** _____ **DELAYED** _____
NOTES Well installed. Refer to well data sheet.

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
5		Sandy SILT (MLS) to silty SAND (SM) ▽						
10								
15		Damp, silty SAND (SM); dark greenish gray with white and pale brown mottles; fine grained; micaceous; gneissic saprolite	368.5	SS -1	14.5-16.0	8-8-33 (41)		auger refusal.
20		Bottom of borehole at 16.5 feet.						

WELL CONSTRUCTION LOG — Southern Company Generation

PROJECT: Plant Scherer	DRILLING CO.: SCS, Inc.	WELL NAME
CCB Storage Facility	DRILLER: Ranger	
LOCATION: Cell 1	RIG TYPE: CME 550	
LOGGER: Clanton	DRILLING METHODS: HSA	GWC-9
DATE CONSTRUCTED: 11/4/2009		



	DEPTH FEET	ELEVATION FT, MSL
TOP OF RISER	-2.99	386.01
2" Threaded Riser Cap Pea Gravel in annular space		
GROUND SURFACE	0.00	383.02
PROTECTIVE CASING SIZE: 4x4-inch TYPE: Anodized Aluminum		
BOTTOM OF PROTECTIVE CASING		
BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 0.8		
RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded		
TOP OF SEAL	2.49	380.53
ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: PLACEMENT: Tremie		
TOP OF FILTER PACK	4.79	378.23
FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: PLACEMENT: Tremie; wash with water		
BOTTOM OF RISER / TOP OF SCREEN	6.79	376.23
SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch		
BOTTOM OF SCREEN	16.79	366.23
BOTTOM OF CASING	17.09	365.93

SOUTHERN COMPANY

LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility
LOCATION Cell 1

DATE STARTED 11/3/2009 **COMPLETED** 11/3/2009 **SURF. ELEV.** 389.3 **COORDINATES:** N 1,118,306.84 E 2,410,018.16
CONTRACTOR SCS Field Services **EQUIPMENT** CME-550 **METHOD** Hollow Stem Auger
DRILLED BY S. Denty **LOGGED BY** W. Clanton **CHECKED BY** R. Tinsley **ANGLE** _____ **BEARING** _____
BORING DEPTH 35.5 ft. **GROUND WATER DEPTH: DURING** _____ **COMP.** _____ **DELAYED** _____
NOTES Well installed. Refer to well data sheet.

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		Sandy SILT (MLS) to silty SAND (SM)						
5								
10								
15								
			369.8					
20		Damp, silty SAND (SM); mottled green, orange, reddish brown, black, and light brownish yellow with laminations of pink SAND; fine grained; very micaceous		SS -1	19.5-21.0	7-8-16 (24)		

(Continued Next Page)

SOUTHERN COMPANY

LOG OF TEST BORING

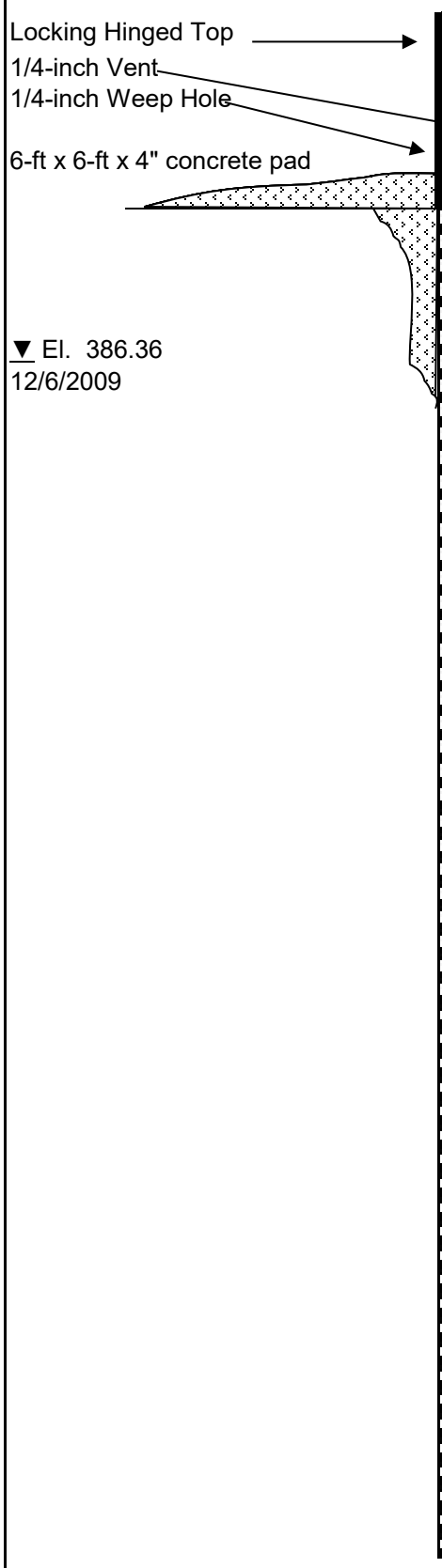
SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility
LOCATION Cell 1

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
25		Damp, silty SAND (SM); mottled green, orange, reddish brown, black, and light brownish yellow with laminations of pink SAND; fine grained; very micaceous *(Con't)*		SS -2	24.5-26.0	7-12-21 (33)		
30		Damp, silty SAND (SM); mottled reddish brown, dark brown, reddish orange, white, and tan; fine grained; micaceous		SS -3	29.5-31.0	10-13-20 (33)		
35		Damp, silty SAND (SM); mottled green, reddish yellow, reddish brown, white, yellowish brown, and dark brown with shards of pink silica; fine grained; micaceous	353.8	SS -4	34.5-36.0	11-20-24 (44)		
		Bottom of borehole at 35.5 feet.						
40								
45								
50								

WELL CONSTRUCTION LOG — Southern Company Generation

PROJECT: Plant Scherer	DRILLING CO.: SCS, Inc.	WELL NAME
CCB Storage Facility	DRILLER: S. Denty	
LOCATION: Cell 1	RIG TYPE: CME 550	
LOGGER: W. Clanton	DRILLING METHODS: HSA	GWC-10
DATE CONSTRUCTED: 11/3/09		



	DEPTH FEET	ELEVATION FT, MSL
TOP OF RISER	-3.38	392.68
2" Threaded Riser Cap Pea Gravel in annular space		
GROUND SURFACE	0.00	389.30
PROTECTIVE CASING SIZE: 4x4-inch TYPE: Anodized Aluminum		
BOTTOM OF PROTECTIVE CASING		
BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 10 cubic feet		
RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded		
TOP OF SEAL	17.19	372.11
ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie		
TOP OF FILTER PACK	19.19	370.11
FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 6 bags PLACEMENT: Tremie; wash with water		
BOTTOM OF RISER / TOP OF SCREEN	21.39	367.91
SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch		
BOTTOM OF SCREEN	31.39	357.91
BOTTOM OF CASING	31.69	357.61

SOUTHERN COMPANY

LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility
LOCATION Cell 1

DATE STARTED 11/3/2009 **COMPLETED** 11/3/2009 **SURF. ELEV.** 399.1 **COORDINATES:** N 1,118,649.13 E 2,409,778.45
CONTRACTOR Ranger **EQUIPMENT** CME-550 **METHOD** Hollow Stem Auger
DRILLED BY Ranger **LOGGED BY** W. Clanton **CHECKED BY** R. Tinsley **ANGLE** _____ **BEARING** _____
BORING DEPTH 30 ft. **GROUND WATER DEPTH: DURING** _____ **COMP.** _____ **DELAYED** _____
NOTES Well installed. Refer to well data sheet.

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		Sandy SILT (MLS) to silty SAND (SM)						
5								
10								
15								
			380.6					
20		Moist, silty SAND (SM); mottled white, light brown, orange, and black; fine grained; micaceous		SS -1	18.5-20.0	6-7-10 (17)		

(Continued Next Page)

LOG OF TEST BORING

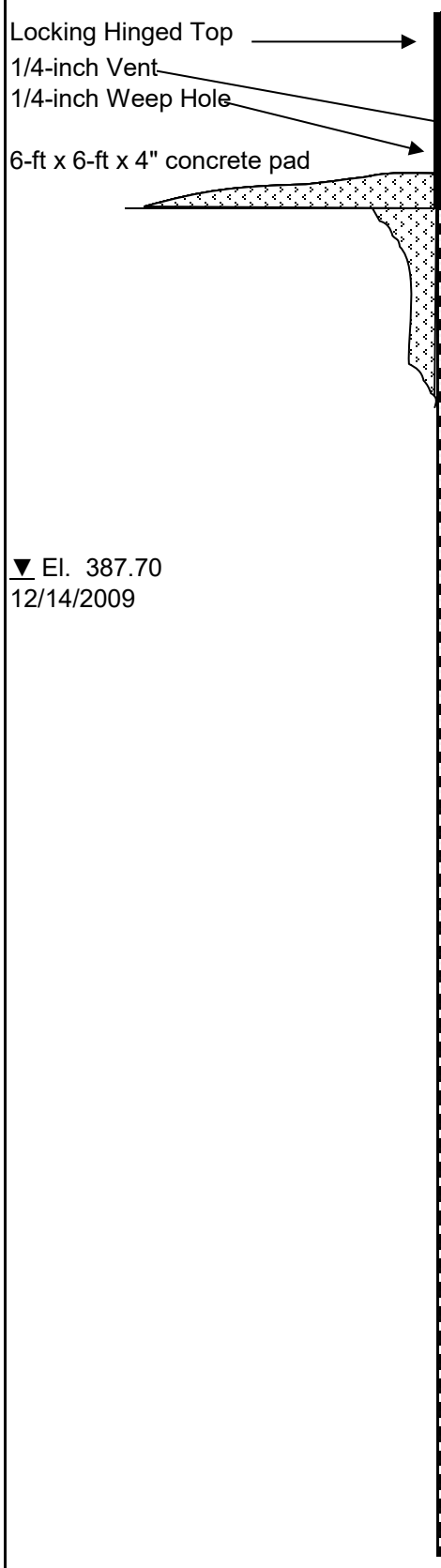
SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility
LOCATION Cell 1

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
25		Moist, silty SAND (SM); mottled white, light brown, orange, and black; fine grained; micaceous *(Con't)* Moist, silty SAND (SM); light brown with orange, green and black mottles; fine grained; micaceous; some gneissic saprolite		SS -2	23.5-25.0	5-9-11 (20)		
30		Moist, silty SAND (SM); mottled white, black, and blackish green; fine grained; micaceous; gneissic saprolite	369.1	SS -3	28.5-30.0	6-14-18 (32)		
		Bottom of borehole at 30.0 feet.						
35								
40								
45								
50								

WELL CONSTRUCTION LOG — Southern Company Generation

PROJECT: Plant Scherer	DRILLING CO.: SCS, Inc.	WELL NAME
CCB Storage Facility	DRILLER: Ranger	
LOCATION: Cell 1	RIG TYPE: CME 550	
LOGGER: W. Clanton	DRILLING METHODS: HSA	GWC-11
DATE CONSTRUCTED: 11/3/09		



	DEPTH FEET	ELEVATION FT, MSL
TOP OF RISER	-3.13	402.19
2" Threaded Riser Cap Pea Gravel in annular space		
GROUND SURFACE	0.00	399.06
PROTECTIVE CASING SIZE: 4x4-inch TYPE: Anodized Aluminum		
BOTTOM OF PROTECTIVE CASING		
BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 7 cubic feet		
RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded		
TOP OF SEAL	16.50	382.56
ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie		
TOP OF FILTER PACK	19.00	380.06
FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 5 bags PLACEMENT: Tremie; wash with water		
BOTTOM OF RISER / TOP OF SCREEN	21.00	378.06
SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch		
BOTTOM OF SCREEN	31.00	368.06
BOTTOM OF CASING	31.30	367.76

SOUTHERN COMPANY

LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility
LOCATION Cell 1

DATE STARTED 11/3/2009 **COMPLETED** 11/3/2009 **SURF. ELEV.** 409.5 **COORDINATES:** N 1,118,978.20 E 2,409,554.10
CONTRACTOR Ranger **EQUIPMENT** CME-550 **METHOD** Hollow Stem Auger
DRILLED BY Ranger **LOGGED BY** W. Clanton **CHECKED BY** R. Tinsley **ANGLE** _____ **BEARING** _____
BORING DEPTH 33.5 ft. **GROUND WATER DEPTH: DURING** _____ **COMP.** _____ **DELAYED** _____
NOTES Well installed. Refer to well data sheet.

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		Moist, lean CLAY (CL); mottled orange, black and light brown; micaceous						
5								
10								
15								
20				SS -1	18.5-20.0	17-11-3 (14)		

(Continued Next Page)

SOUTHERN COMPANY

LOG OF TEST BORING

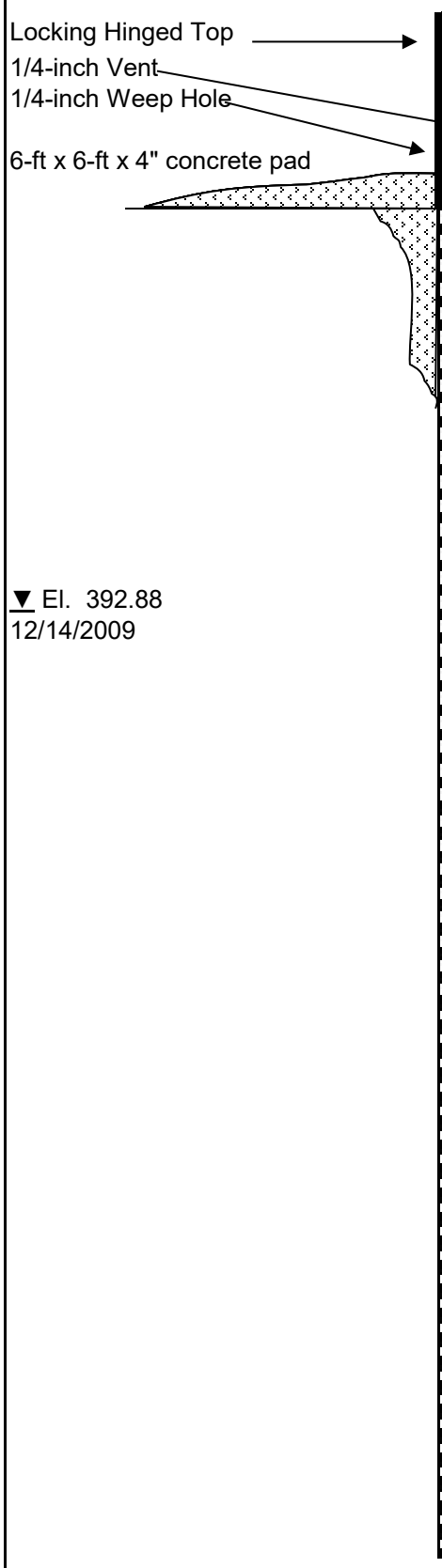
SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility
LOCATION Cell 1

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
			386.0					
25		Wet, clayey SAND (SC); mottled ornge, white, tan and black; fine grained; micaceous		SS -2	23.5-25.0	5-6-7 (13)		
30		Wet, clayey SAND (SC); mottled ornge, white and tan with sparse black organics; fine grained; micaceous		SS -3	28.5-30.0	7-11-15 (26)		
			376.0					
35		Bottom of borehole at 33.5 feet.		SS -4	33.5-35.0	6-11-8 (19)		
40								
45								
50								

WELL CONSTRUCTION LOG — Southern Company Generation

PROJECT: Plant Scherer	DRILLING CO.: SCS, Inc.	WELL NAME
CCB Storage Facility	DRILLER: Ranger	
LOCATION: Cell 1	RIG TYPE: CME 550	
LOGGER: W. Clanton	DRILLING METHODS: HSA	GWC-12
DATE CONSTRUCTED: 11/3/09		



	DEPTH FEET	ELEVATION FT, MSL
TOP OF RISER	-3.21	412.75
2" Threaded Riser Cap Pea Gravel in annular space		
GROUND SURFACE	0.00	409.54
PROTECTIVE CASING SIZE: 4x4-inch TYPE: Anodized Aluminum		
BOTTOM OF PROTECTIVE CASING		
BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 8.5 cubic feet		
RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded		
TOP OF SEAL	20.12	389.42
ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie		
TOP OF FILTER PACK	22.22	387.32
FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 5 bags PLACEMENT: Tremie; wash with water		
BOTTOM OF RISER / TOP OF SCREEN	24.22	385.32
SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch		
BOTTOM OF SCREEN	34.22	375.32
BOTTOM OF CASING	34.52	375.02

SOUTHERN COMPANY

LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility
LOCATION Cell 1

DATE STARTED 11/2/2009 **COMPLETED** 11/2/2009 **SURF. ELEV.** 416.5 **COORDINATES:** N 1,119,338.88 E 2,409,390.71
CONTRACTOR Ranger **EQUIPMENT** CME-550 **METHOD** Hollow Stem Auger
DRILLED BY Ranger **LOGGED BY** W. Clanton **CHECKED BY** R. Tinsley **ANGLE** _____ **BEARING** _____
BORING DEPTH 39.5 ft. **GROUND WATER DEPTH: DURING** _____ **COMP.** _____ **DELAYED** _____
NOTES Well installed. Refer to well data sheet.

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		Sandy SILT (MLS) to silty SAND (SM)						
5								
10								
15								
			398.0					
		SILT (ML); brownish yellow with black mottles; micaceous with large flakes of mica		SS -1	18.5-20.0	7-5-6 (11)		
20								

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SOUTHERN COMPANY

LOG OF TEST BORING

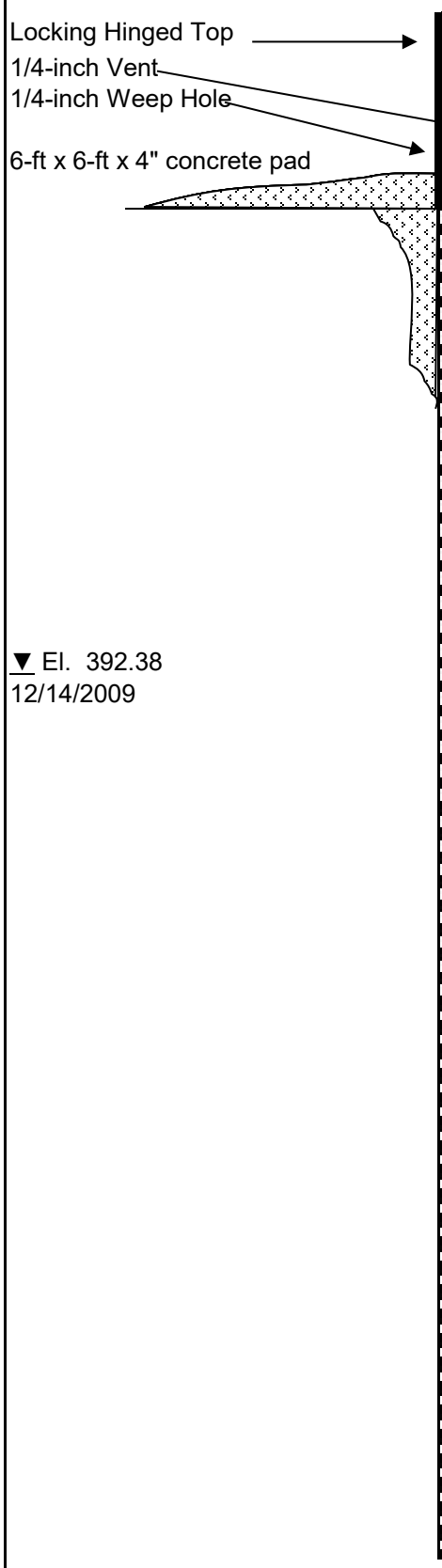
SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility
LOCATION Cell 1

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		SILT (ML); brownish yellow with black mottles; micaceous with large flakes of mica *(Con't)*						
		Damp, SILT (ML) and silty SAND (SM); mottled light brown, black, orange and white; micaceous		SS -2	23.5-25.0	4-7-11 (18)		
25								
30		Very damp, SILT (ML) with very fine grain silty SAND (SM); mottled black and dark brown; micaceous	386.5	SS -3	29.5-31.0	6-8-11 (19)		
		Damp, SILT (ML) with very fine grain silty SAND (SM); mottled light brown, black, orange and white; micaceous						
		Very damp, silty SAND (SM); mottled white, tan, orange, and black; fine grained; micaceous		SS -4	33.5-35.0	12-16-20 (36)		
35								
		Very damp, silty SAND (SM); mottled white, tan, and black; fine grained; micaceous	377.0	SS -5	38.5-40.0	5-9-12 (21)		
40		Bottom of borehole at 39.5 feet.						
45								
50								

WELL CONSTRUCTION LOG — Southern Company Generation

PROJECT: Plant Scherer	DRILLING CO.: SCS, Inc.	WELL NAME
CCB Storage Facility	DRILLER: Ranger	
LOCATION: Cell 1	RIG TYPE: CME 550	
LOGGER: W. Clanton	DRILLING METHODS: HSA	GWC-13
DATE CONSTRUCTED: 11/2/09		



	DEPTH FEET	ELEVATION FT, MSL
TOP OF RISER	-3.04	419.58
2" Threaded Riser Cap Pea Gravel in annular space		
GROUND SURFACE	0.00	416.54
PROTECTIVE CASING SIZE: 4x4-inch TYPE: Anodized Aluminum		
BOTTOM OF PROTECTIVE CASING		
BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 11.25 cubic feet		
RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded		
TOP OF SEAL	25.69	390.85
ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie		
TOP OF FILTER PACK	27.69	388.85
FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 5 bags PLACEMENT: Tremie; wash with water		
BOTTOM OF RISER / TOP OF SCREEN	29.99	386.55
SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch		
BOTTOM OF SCREEN	39.99	376.55
BOTTOM OF CASING	40.29	376.25

SOUTHERN COMPANY

LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility
LOCATION Cell 1

DATE STARTED 11/4/2009 **COMPLETED** 11/4/2009 **SURF. ELEV.** 400.3 **COORDINATES:** N 1,119,655.06 E 2,409,111.27
CONTRACTOR Ranger **EQUIPMENT** CME-550 **METHOD** Hollow Stem Auger
DRILLED BY Ranger **LOGGED BY** W. Clanton **CHECKED BY** R. Tinsley **ANGLE** _____ **BEARING** _____
BORING DEPTH 25 ft. **GROUND WATER DEPTH: DURING** 9.5 ft. **COMP.** _____ **DELAYED** _____
NOTES Well installed. Refer to well data sheet.

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
5		Sandy SILT (MLS) to silty SAND (SM)						
10		▽						
15			381.8					
20		Moist, silty SAND (SM); greenish black, white, yellow, and brown; fine grained; micaceous		SS -1	18.5-20.0	5-8-13 (21)		

GEOTECH ENGINEERING LOGS - ESEE DATABASE.GDT - 4/27/10 11:56 - T:\ESEE MAJOR PROJECTS\GINT SOFTWARE\SCHERER GYP.GPJ

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SOUTHERN COMPANY

LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

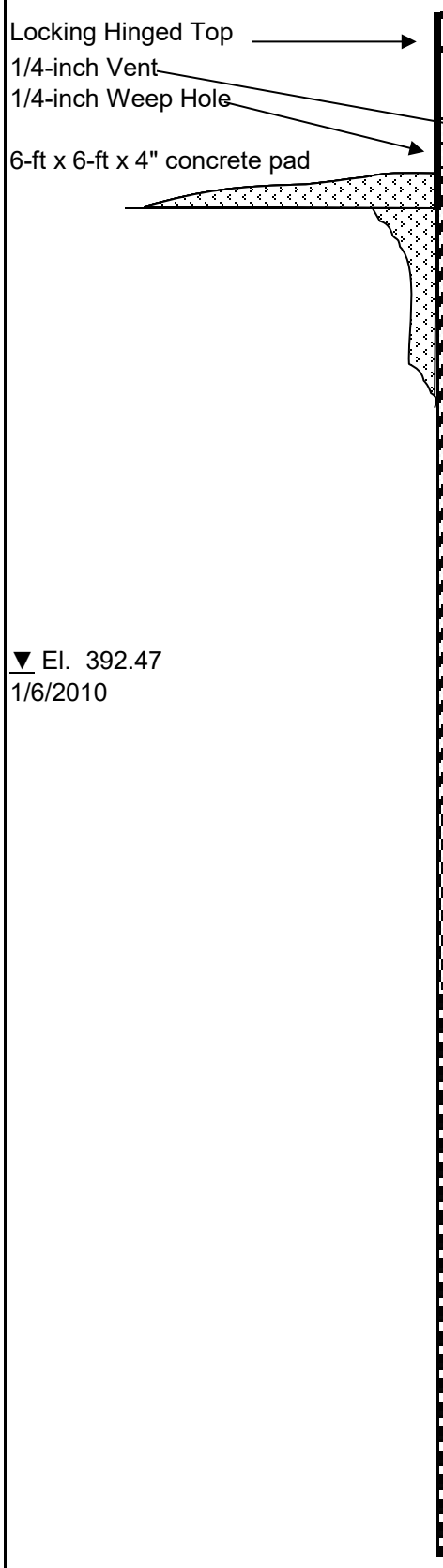
PROJECT Plant Scherer CCB Storage Facility
LOCATION Cell 1

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
25		Moist, silty SAND (SM); greenish black, white, yellow, and brown; fine grained; micaceous *(Con't)*	375.3					
		Bottom of borehole at 25.0 feet.						

30
35
40
45
50

WELL CONSTRUCTION LOG — Southern Company Generation

PROJECT: Plant Scherer	DRILLING CO.: SCS, Inc.	WELL NAME
CCB Storage Facility	DRILLER: Ranger	
LOCATION: Cell 1	RIG TYPE: CME 550	
LOGGER: W. Clanton	DRILLING METHODS: HSA	GWC-14
DATE CONSTRUCTED: 11/4/09		



	DEPTH FEET	ELEVATION FT, MSL
TOP OF RISER	-3.16	403.41
2" Threaded Riser Cap Pea Gravel in annular space		
GROUND SURFACE	0.00	400.25
PROTECTIVE CASING SIZE: 4x4-inch TYPE: Anodized Aluminum		
BOTTOM OF PROTECTIVE CASING		
BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 4.05 cubic feet		
RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded		
TOP OF SEAL	10.07	390.18
ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie		
TOP OF FILTER PACK	12.17	388.08
FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 5 bags PLACEMENT: Tremie; wash with water		
BOTTOM OF RISER / TOP OF SCREEN	14.07	386.18
SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch		
BOTTOM OF SCREEN	24.07	376.18
BOTTOM OF CASING	24.37	375.88

SOUTHERN COMPANY

LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility
LOCATION Cell 1

DATE STARTED 11/4/2009 **COMPLETED** 11/4/2009 **SURF. ELEV.** 411.8 **COORDINATES:** N 1,120,009.78 E 2,409,282.00
CONTRACTOR Ranger **EQUIPMENT** CME-550 **METHOD** Hollow Stem Auger
DRILLED BY Ranger **LOGGED BY** W. Clanton **CHECKED BY** R. Tinsley **ANGLE** _____ **BEARING** _____
BORING DEPTH 25 ft. **GROUND WATER DEPTH: DURING** _____ **COMP.** _____ **DELAYED** _____
NOTES Well installed. Refer to well data sheet.

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		Sandy SILT (MLS) to silty SAND (SM)						
5								
10								
15								
20		Moist, SILT (ML) with silty SAND (SM); yellowish orange with black mottles; fine grained; micaceous		SS -1	18.5-20.0	10-10-15 (25)		
			389.8					
		Moist, silty SAND (SM); mottled light brown, orange, and black; fine grained; micaceous						

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SOUTHERN COMPANY

LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

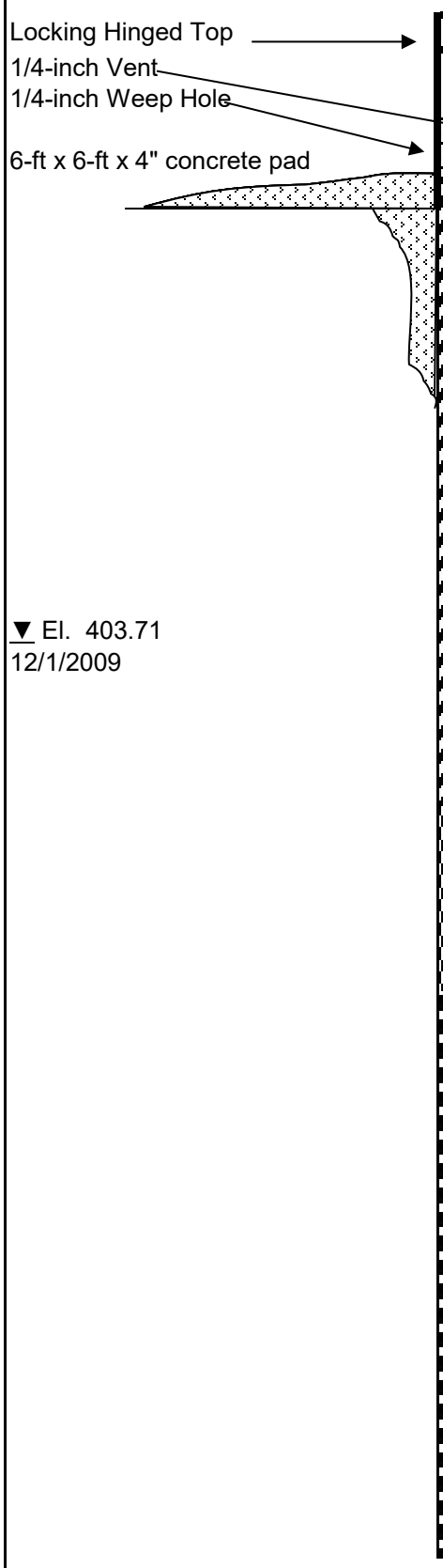
PROJECT Plant Scherer CCB Storage Facility
LOCATION Cell 1

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
25		Moist, silty SAND (SM); mottled light brown, orange, and black; fine grained; micaceous *(Con't)*	386.8	SS -2	23.5-25.0	6-9-18 (27)		
		Bottom of borehole at 25.0 feet.						

30
35
40
45
50

WELL CONSTRUCTION LOG — Southern Company Generation

PROJECT: Plant Scherer	DRILLING CO.: SCS, Inc.	WELL NAME
CCB Storage Facility	DRILLER: Ranger	
LOCATION: Cell 1	RIG TYPE: CME 550	
LOGGER: W. Clanton	DRILLING METHODS: HSA	GWA-15
DATE CONSTRUCT 11/4/2009		



	DEPTH FEET	ELEVATION FT, MSL
TOP OF RISER	-3.00	414.82
2" Threaded Riser Cap Pea Gravel in annular space		
GROUND SURFACE	0.00	411.82
PROTECTIVE CASING SIZE: 4x4-inch TYPE: Anodized Aluminum		
BOTTOM OF PROTECTIVE CASING		
BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 4.5 cubic feet		
RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded		
TOP OF SEAL	11.69	400.13
ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie		
TOP OF FILTER PACK	13.94	397.88
FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 5 bags PLACEMENT: Tremie; wash with water		
BOTTOM OF RISER / TOP OF SCREEN	16.19	395.63
SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch		
BOTTOM OF SCREEN	26.19	385.63
BOTTOM OF CASING	26.49	385.33

SOUTHERN COMPANY

LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility
LOCATION Cell 1

DATE STARTED 10/13/2009 **COMPLETED** 10/13/2009 **SURF. ELEV.** 440.7 **COORDINATES:** N 1,120,248.79 E 2,409,579.59
CONTRACTOR SCS Field Services **EQUIPMENT** CME-550 **METHOD** Hollow Stem Auger
DRILLED BY P. Smith **LOGGED BY** D. Brooks **CHECKED BY** R. Tinsley **ANGLE** _____ **BEARING** _____
BORING DEPTH 55 ft. **GROUND WATER DEPTH: DURING** 35 ft. **COMP.** _____ **DELAYED** _____
NOTES Well installed. Refer to well data sheet.

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		Sandy SILT (MLS) to silty SAND (SM)						
5								
10								
15								
			421.2					
20		Silty SAND (SM); mottled orange and black; fine grained; micaceous		SS -1	19.5-21.0	3-3-4 (7)		

(Continued Next Page)

SOUTHERN COMPANY

LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility
LOCATION Cell 1

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		Silty SAND (SM); mottled orange and black; fine grained; micaceous *(Con't)*						
25				SS -2	24.5-26.0	3-3-6 (9)		
30		Silty SAND (SM) with trace amounts of light brown CLAY (CL); mottled orange, light yellowish brown and black; fine grained; micaceous		SS -3	29.5-31.0	2-3-4 (7)		
			406.2					
35		▽ Clayey silty SAND (SC-SM); mottled light brown, black and white; fine grained; micaceous; pyrite present; gneissic saprolite		SS -4	34.5-36.0	3-3-4 (7)		
			401.2					
40		SAND (SP); mottled black, white and orange; saprolite		SS -5	39.5-41.0	6-9-11 (20)		
45				SS -6	44.5-46.0	12-15-19 (34)		
50		SAND (SP); mottled black, white and orange; saprolite; harder than above		SS -7	49.5-51.0	23-36-43 (79)		

(Continued Next Page)

SOUTHERN COMPANY

LOG OF TEST BORING

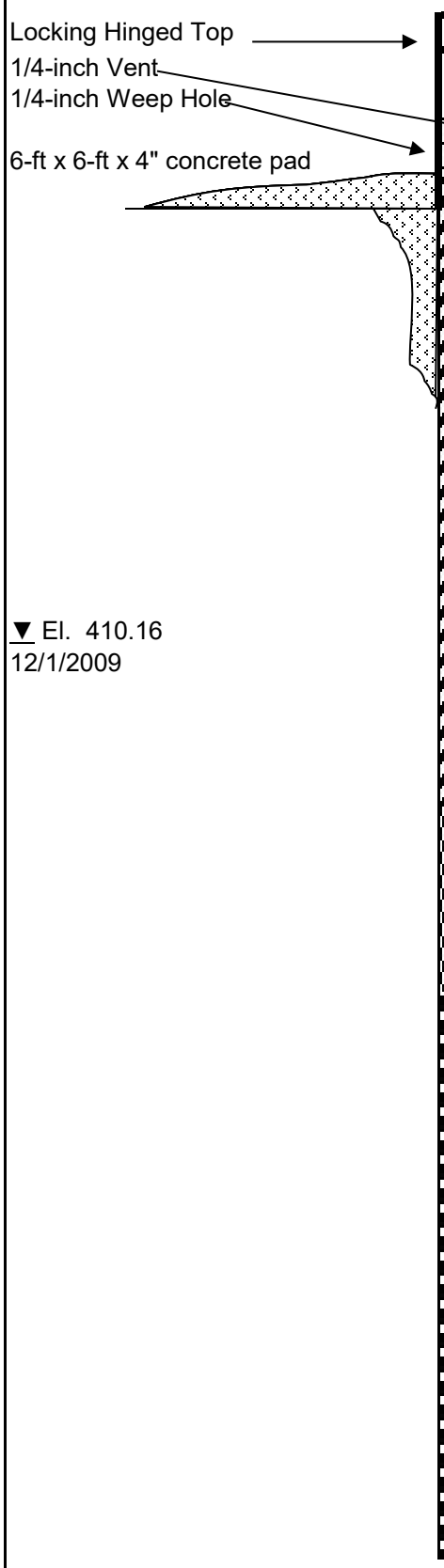
SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility
LOCATION Cell 1

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		SAND (SP); mottled black, white and orange; saprolite *(Con't)*						
55			385.7	SS -8	54.5-54.8	50/4" (100+)		auger refusal.
		Bottom of borehole at 55.0 feet.						
60								
65								
70								
75								

WELL CONSTRUCTION LOG — Southern Company Generation

PROJECT: Plant Scherer	DRILLING CO.: SCS, Inc.	WELL NAME
CCB Storage Facility	DRILLER: Phillip Smith	
LOCATION: Cell 1	RIG TYPE: CME 550	
LOGGER: D. Brooks	DRILLING METHODS: HSA	GWA-16
DATE CONSTRUCTED: 10/13/09		



	DEPTH FEET	ELEVATION FT, MSL
TOP OF RISER	-3.32	444.06
2" Threaded Riser Cap Pea Gravel in annular space		
GROUND SURFACE	0.00	440.74
PROTECTIVE CASING SIZE: 4x4-inch TYPE: Anodized Aluminum		
BOTTOM OF PROTECTIVE CASING		
BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 18 cubic feet		
RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded		
TOP OF SEAL	39.70	401.04
ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie		
TOP OF FILTER PACK	42.20	398.54
FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 5 bags PLACEMENT: Tremie; wash with water		
BOTTOM OF RISER / TOP OF SCREEN	44.20	396.54
SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch		
BOTTOM OF SCREEN	54.20	386.54
BOTTOM OF CASING	54.50	386.24

SOUTHERN COMPANY

LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility
LOCATION Cell 1

DATE STARTED 9/28/2009 **COMPLETED** 9/28/2009 **SURF. ELEV.** 442.7 **COORDINATES:** N 1,120,211.10 E 2,409,946.33
CONTRACTOR SCS Field Services **EQUIPMENT** CME-550X **METHOD** Hollow Stem Auger
DRILLED BY S. Denty **LOGGED BY** J. Jordan **CHECKED BY** R. Tinsley **ANGLE** _____ **BEARING** _____
BORING DEPTH 43.3 ft. **GROUND WATER DEPTH: DURING** _____ **COMP.** _____ **DELAYED** _____
NOTES Well installed. Refer to well data sheet.

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		Dark red, sandy LEAN CLAY (CL)						Auger cuttings used for soil classifications from 0-20 ft..
			439.2					
5		SILT (ML), yellowish red, micaceous, trace of fine sand						
10								
15								
20		Sandy, dry, yellowish brown, with black stringers		SS -1	19.5-21.0	2-3-4 (7)		

(Continued Next Page)

SOUTHERN COMPANY

LOG OF TEST BORING

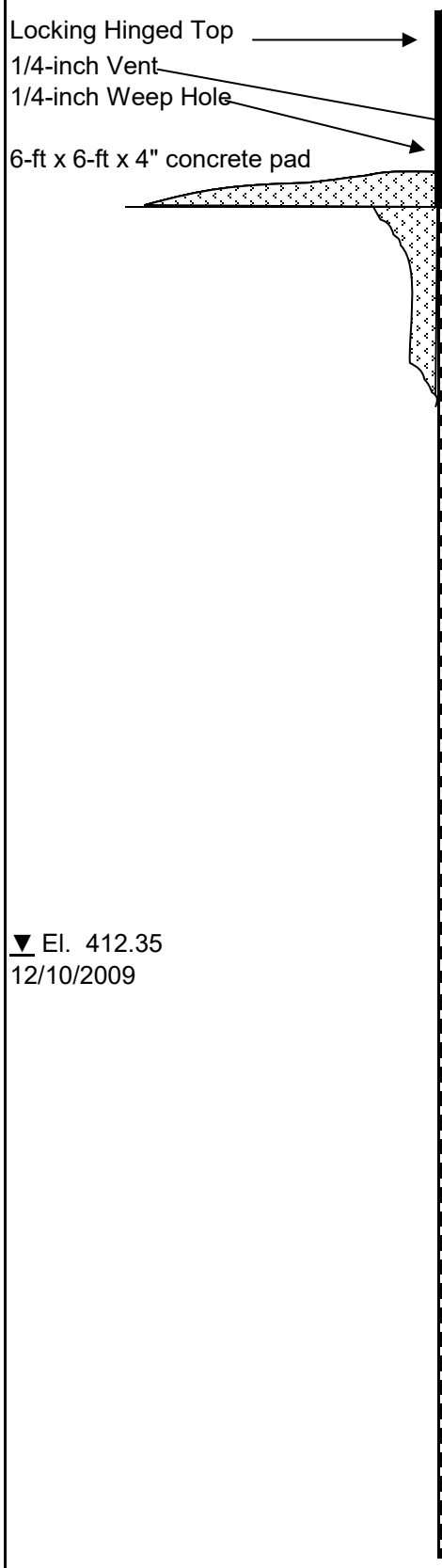
SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility
LOCATION Cell 1

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		SILT (ML), yellowish red, micaceous, trace of fine sand *(Con't)*						
			418.2					
25		White to light olive brown, medium dense, SILTY SAND (SM), with relict structure and reddish black stringers		SS -2	24.5-26.0	7-11-10 (21)		
30		Very dense, moist		SS -3	29.5-31.0	17-28-34 (62)		
35		SAPROLITE		SS -4	34.5-34.8	50/4" (100+)		
40		Saturated		SS -5	39.5-39.8	50/4" (100+)		
		Auger refusal at 43.3 feet.	399.4					
		Bottom of borehole at 43.3 feet.						
45								
50								

WELL CONSTRUCTION LOG — Southern Company Generation

PROJECT: Plant Scherer	DRILLING CO.: SCS, Inc.	WELL NAME
CCB Storage Facility	DRILLER: Denty	
LOCATION: Cell 1	RIG TYPE: CME 550	
LOGGER: Jordan	DRILLING METHODS: HSA	GWA-17
DATE CONSTRUCTED: 9/28/09		



	DEPTH FEET	ELEVATION FT, MSL
TOP OF RISER	-2.91	445.63
2" Threaded Riser Cap Pea Gravel in annular space		
GROUND SURFACE	0.00	442.72
PROTECTIVE CASING SIZE: 4x4-inch TYPE: Anodized Aluminum		
BOTTOM OF PROTECTIVE CASING		
BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 13.25 cubic feet		
RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded		
TOP OF SEAL	28.55	414.17
ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie		
TOP OF FILTER PACK	30.55	412.17
FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 5 bags PLACEMENT: Tremie; wash with water		
BOTTOM OF RISER / TOP OF SCREEN	33.55	409.17
SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch		
BOTTOM OF SCREEN	43.55	399.17
BOTTOM OF CASING	43.85	398.87

SOUTHERN COMPANY

LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility
LOCATION Cell 1

DATE STARTED 9/29/2009 **COMPLETED** 9/29/2009 **SURF. ELEV.** 428.3 **COORDINATES:** N 1,119,998.62 E 2,410,261.90
CONTRACTOR SCS Field Services **EQUIPMENT** CME-550X **METHOD** Hollow Stem Auger
DRILLED BY S. Denty **LOGGED BY** J. Jordan **CHECKED BY** R. Tinsley **ANGLE** _____ **BEARING** _____
BORING DEPTH 59.5 ft. **GROUND WATER DEPTH: DURING** _____ **COMP.** _____ **DELAYED** _____
NOTES Well installed. Refer to well data sheet.

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		LEAN CLAY (CL), silty, red, trace fine sand						Auger cuttings used for classifications from 0 -19.5 feet.
5		Grading silty, moist, yellowish red						
10		Strong brown						
15								
			408.8					
20		Firm, strong brown SILT (ML), with yellowish red layers, moist		SS -1	19.5-21.0	2-3-2 (5)		

GEOTECH ENGINEERING LOGS - ESEE DATABASE.GDT - 4/27/10 11:56 - T:\ESEE MAJOR PROJECTS\GINT SOFTWARE\SCHERER GYP.GPJ

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SOUTHERN COMPANY

LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility
LOCATION Cell 1

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		Firm, strong brown SILT (ML), with yellowish red layers, moist *(Con't)*						
			403.8					
25		Medium dense, reddish yellow SILTY SAND (SM), with weathered rock		SS -2	24.5-26.0	3-5-8 (13)		
30		Dark olive, white, and orange speckled SAPROLITE		SS -3	29.5-31.0	4-5-8 (13)		"Salt and pepper" appearance.
35		Dark olive and white		SS -4	34.5-36.0	5-6-5 (11)		
40				SS -5	39.5-41.0	7-8-10 (18)		
			383.8					
45		Alternating zones of olive, black, and white and zones of micaceous, strong brown SANDY SILT (ML) SAPROLITE, very moist		SS -6	44.5-46.0	3-5-9 (14)		
50		Gold, yellowish red, and dark olive, thinly layered		SS -7	49.5-51.0	6-16-9 (25)		Free water in rods.

(Continued Next Page)

SOUTHERN COMPANY

LOG OF TEST BORING

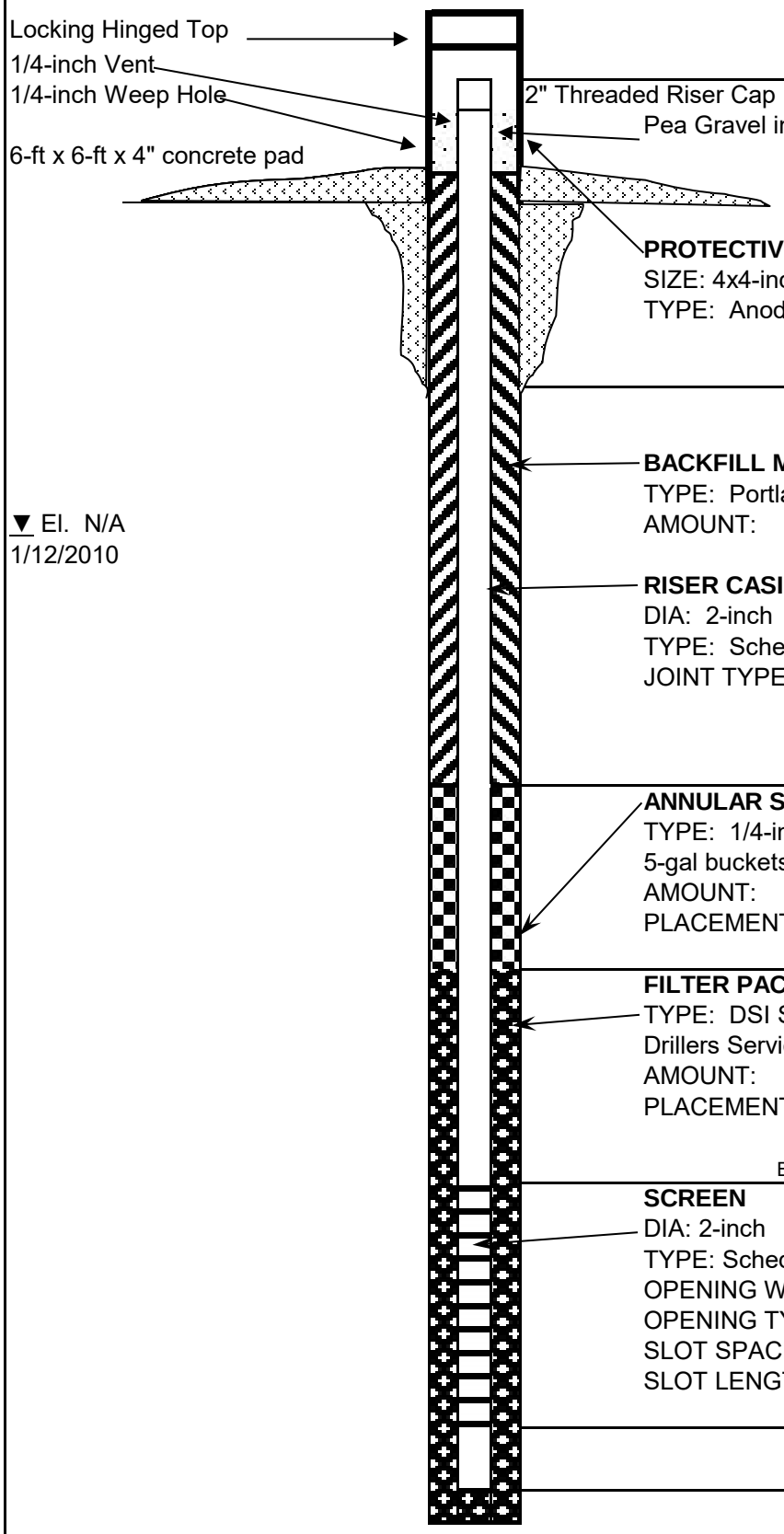
SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility
LOCATION Cell 1

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		with white nodules of weathered calcite Alternating zones of olive, black, and white and zones of micaceous, strong brown SANDY SILT (ML) SAPROLITE, very moist *(Con't)*						
55				SS -8	54.5-56.0	12-17-21 (38)		
		Boring terminated at 61 feet.						
60			367.3	SS -9	59.5-61.0	19-30-48 (78)		
		Bottom of borehole at 59.5 feet.						
65								
70								
75								

WELL CONSTRUCTION LOG — Southern Company Generation

PROJECT: Plant Scherer	DRILLING CO.: SCS, Inc.	WELL NAME
CCB Storage Facility	DRILLER: Denty	
LOCATION: Cell 1	RIG TYPE: CME 550	
LOGGER: Jordan	DRILLING METHODS: HSA	GWC-18
DATE CONSTRUCTED: 9/29/09		



	DEPTH FEET	ELEVATION FT, MSL
TOP OF RISER	-3.28	439.64
2" Threaded Riser Cap Pea Gravel in annular space		
GROUND SURFACE	0.00	436.36
PROTECTIVE CASING SIZE: 4x4-inch TYPE: Anodized Aluminum		
BOTTOM OF PROTECTIVE CASING		
BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 20 cubic feet		
RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded		
TOP OF SEAL	42.89	393.47
ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie		
TOP OF FILTER PACK	44.89	391.47
FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 5 bags PLACEMENT: Tremie; wash with water		
BOTTOM OF RISER / TOP OF SCREEN	46.81	389.55
SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch		
BOTTOM OF SCREEN	56.81	379.55
BOTTOM OF CASING	57.11	379.25

SOUTHERN COMPANY

LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility
LOCATION Cell 1

DATE STARTED 10/2/2009 **COMPLETED** 10/2/2009 **SURF. ELEV.** 426.1 **COORDINATES:** N 1,119,645.90 E 2,410,712.92
CONTRACTOR SCS Field Services **EQUIPMENT** CME-550 **METHOD** Hollow Stem Auger
DRILLED BY S. Denty **LOGGED BY** L. Millet **CHECKED BY** R. Tinsley **ANGLE** _____ **BEARING** _____
BORING DEPTH 70 ft. **GROUND WATER DEPTH: DURING** _____ **COMP.** _____ **DELAYED** _____
NOTES Well installed. Refer to well data sheet.

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		Sandy SILT (MLS) to silty SAND (SM)						
20		Dry, silty SAND (SM); red with occassional white lenses and black mottles; very fine to fine grained; micaceous; friable	406.6	SS -1	19.5-21.0	2-3-2 (5)		

(Continued Next Page)

SOUTHERN COMPANY

LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility
LOCATION Cell 1

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		Dry, silty SAND (SM); red with occassional white lenses and black mottles; very fine to fine grained; micaceous; friable *(Con't)*						
25				SS -2	24.5-26.0	3-2-3 (5)		
30				SS -3	29.5-31.0	4-4-6 (10)		
35		Dry, clayey SAND (SC); mottled green, black and light orangish brown; very fine to fine grained; micaceous; soft; gneissic saprolite	391.6	SS -4	34.5-36.0	4-5-7 (12)		
40		Dry, clayey SAND (SC); green, black and white with occassional dark orange mottling; very fine to fine grained; micaceous; soft; gneissic saprolite		SS -5	39.5-41.0	4-6-8 (14)		
45				SS -6	44.5-46.0	8-8-16 (24)		
50		Dry, clayey SAND (SC); white and dark tan; very fine to medium grained; micaceous; soft;		SS -7	49.5-51.0	18-25-25 (50)		

(Continued Next Page)

SOUTHERN COMPANY

LOG OF TEST BORING

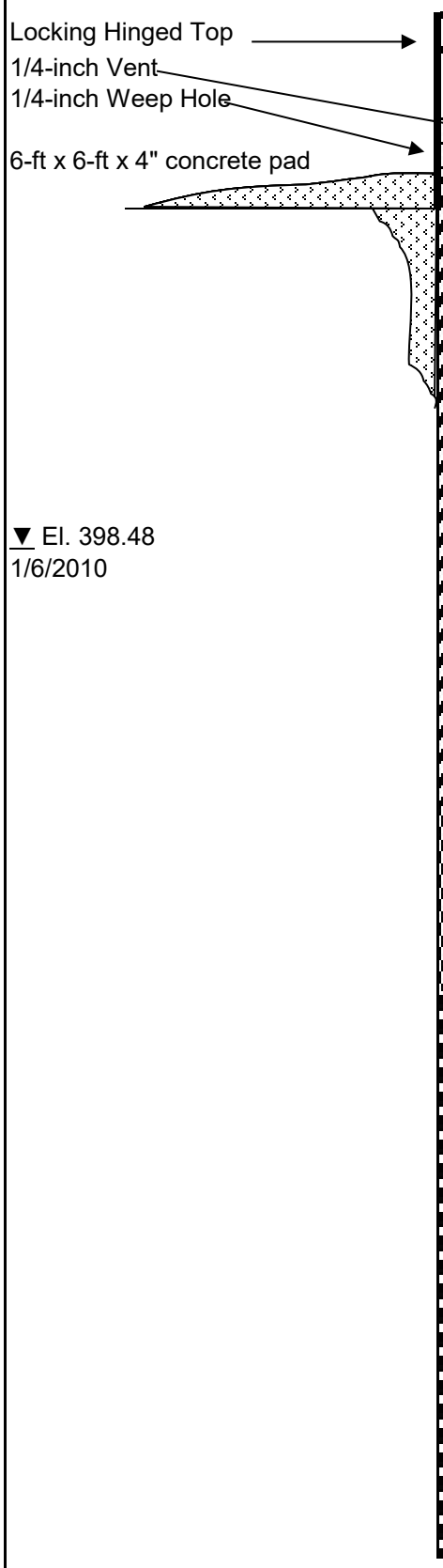
SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility
LOCATION Cell 1

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		gneissic saprolite Dry, clayey SAND (SC); mottled green, black and light orangish brown; very fine to fine grained; micaceous; soft; gneissic saprolite *(Con't)*						
55		Dry, clayey SAND (SC); white and black with dark orange mottling; very fine to medium grained; micaceous		SS -8	54.5-56.0	21-35-49 (84)		
60				SS -9	59.5-59.8	50/4" (100+)		
			361.6					
65		Moist, sandy CLAY (CS); black and grey; sparse mica; soft		SS -10	64.5-64.6	50/1" (100+)		
			356.6					
70		Clayey SAND (SC); light brown and black with orange mottling; very fine to medium grained; micaceous	356.1	SS -11	69.5-69.7	50/2" (100+)		
		Bottom of borehole at 70.0 feet.						
75								

WELL CONSTRUCTION LOG — Southern Company Generation

PROJECT: Plant Scherer	DRILLING CO.: SCS, Inc.	WELL NAME
CCB Storage Facility	DRILLER: Denty	
LOCATION: Cell 1	RIG TYPE: CME 550	
LOGGER: Millet	DRILLING METHODS: HSA	GWC-19
DATE CONSTRUCTED: 10/2/09		



	DEPTH FEET	ELEVATION FT, MSL
TOP OF RISER	-3.86	429.98
2" Threaded Riser Cap Pea Gravel in annular space		
GROUND SURFACE	0.00	426.12
PROTECTIVE CASING SIZE: 4x4-inch TYPE: Anodized Aluminum		
BOTTOM OF PROTECTIVE CASING		
BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 20.25 cubic feet		
RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded		
TOP OF SEAL	39.74	386.38
ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie		
TOP OF FILTER PACK	41.74	384.38
FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 5 bags PLACEMENT: Tremie; wash with water		
BOTTOM OF RISER / TOP OF SCREEN	43.84	382.28
SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch		
BOTTOM OF SCREEN	53.84	372.28
BOTTOM OF CASING	54.14	371.98

SOUTHERN COMPANY

LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility
LOCATION Cell 1

DATE STARTED 10/6/2009 **COMPLETED** 10/6/2009 **SURF. ELEV.** 422.8 **COORDINATES:** N 1,119,950.63 E 2,411,195.26
CONTRACTOR SCS Field Services **EQUIPMENT** CME-550 **METHOD** Hollow Stem Auger
DRILLED BY S. Denty **LOGGED BY** L. Millet **CHECKED BY** R. Tinsley **ANGLE** _____ **BEARING** _____
BORING DEPTH 69.6 ft. **GROUND WATER DEPTH: DURING** _____ **COMP.** _____ **DELAYED** _____
NOTES Well installed. Refer to well data sheet.

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		Sandy SILT (MLS) and silty SAND (SM)						
20		Dry, sandy SILT (MLS); orange with light brown and black mottles; friable		SS -1	19.5-21.0	4-5-6 (11)		

(Continued Next Page)

SOUTHERN COMPANY

LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility
LOCATION Cell 1

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		Sandy SILT (MLS) and silty SAND (SM) *(Con't)*						
25		Dry, sandy SILT (MLS); orange and light brown with black organics; friable; micaceous		SS -2	24.5-26.0	4-4-6 (10)		
			393.3					
30		Dry, silty SAND (SM); light orange and tan with occassional black mottles; friable; micaceous		SS -3	29.5-31.0	4-5-7 (12)		
			388.3					
35		Dry, clayey SAND (SC); black, green and light tan with occassional light orange mottling; very fine to fine grained; micaceous		SS -4	34.5-36.0	6-5-6 (11)		
40		Moist, clayey SAND (SC); black and white with black and orange mottling; very fine to fine grained; micaceous; gneissic saprolite		SS -5	39.5-41.0	6-7-9 (16)		
45		Moist, clayey SAND (SC); black and white with black and orange mottling; very fine to fine grained; micaceous; soft		SS -6	44.5-46.0	8-10-16 (26)		
			373.3					
50				SS -7	49.5-51.0	11-19-24 (43)		

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SOUTHERN COMPANY

LOG OF TEST BORING

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Scherer CCB Storage Facility
LOCATION Cell 1

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION	SAMPLE TYPE NUMBER	SAMPLE DEPTH (ft.)	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)	COMMENTS
		Moist, silty SAND (SM); brown and white striated with orange mottling; very fine to fine grained; micaceous *(Con't)*						
55		Wet, silty SAND (SM); black and white with dark brown mottling; very fine to fine grained; micaceous; gneissic saprolite		SS -8	54.5-56.0	19-18-20 (38)		
			363.3					
60		Wet, sandy SILT (MLS); black with light and dark orange mottling; micaceous		SS -9	59.5-61.0	34-45-48 (93)		
65		Wet, sandy SILT (MLS); black and white with occassional orange mottling; micaceous; garnets; gneissic saprolite		SS -10	64.5-66.0	15-20-19 (39)		
			353.3					
70		SLATE; gray	353.0	SS -11	69.5-69.7	50/2" (100+)		
		Bottom of borehole at 69.6 feet.						
75								

SOUTHERN COMPANY
Energy to Serve Your World™

DRILLING LOG

GEOLOGICAL SERVICES

Hole No. GWA-21

Sheet 1 of 1

SITE **Georgia Power Company Plant Scherer** HOLE DEPTH 17 SURF.ELEV. 419.56

LOCATION PAC/Ash Cell COORDINATES N 1120675.77 E 2409462.77

ANGLE 0 BEARING 0 CONTRACTOR Boart Longyear DRILL NO. BL100C

DRILLING METHOD Sonic NO. SAMPLES Continuous NO. U.D. SAMPLES 0

WATER TABLE DEPTH ELEV. TIME AFTER COMP. DATE TAKEN

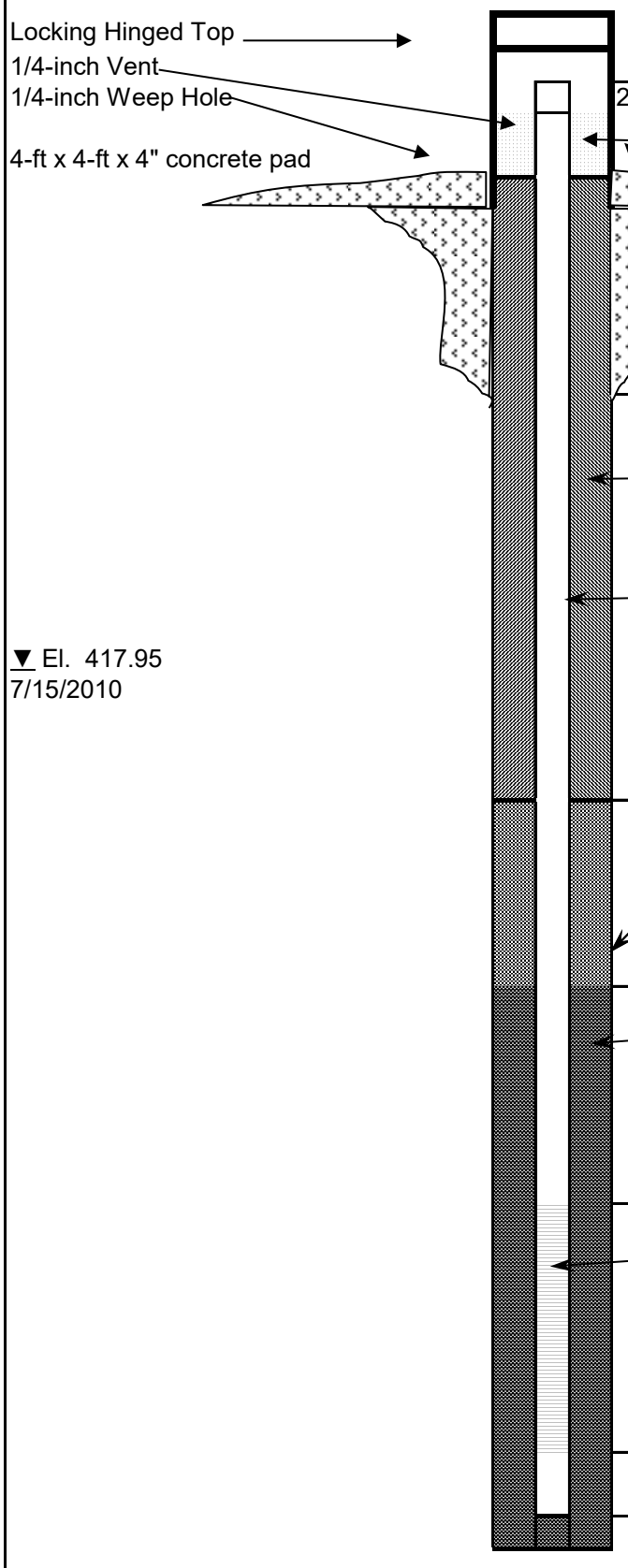
TYPE GROUT QUANTITY MIX DRILLING START DATE 6/29/2010

DRILLER S. Gautney RECORDER D. Brooks APPROVED DRILLING COMP. DATE 6/29/2010

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments	% Rec	RQD
0	419.56	Sandy CLAY							
1	418.56								
2	417.56								
3	416.56								
4	415.56								
5	414.56	Clayey SAND							
6	413.56								
7	412.56								
8	411.56								
9	410.56								
10	409.56	Weathered rock							
11	408.56								
12	407.56								
13	406.56								
14	405.56								
15	404.56								
16	403.56								
17	402.56								
18	401.56	17' - Bottom of boring							
19	400.56								
20	399.56								
21	398.56								
22	397.56								
23	396.56								
24	395.56								

WELL CONSTRUCTION LOG — Southern Company Generation

PROJECT: Plant Scherer	DRILLING CO.: Boart Longyear	WELL NAME
	DRILLER: S. Gautney	
LOCATION: PAC/Ash Cell	RIG TYPE: BL100C	
LOGGER: D. Brooks	DRILLING METHODS: Sonic	GWA-21
DATE CONSTRUCTED: 6/29/2010		



	DEPTH FEET	ELEVATION FT, MSL
TOP OF RISER	-2.74	422.30
2" Threaded Riser Cap Pea Gravel in annular space		
GROUND SURFACE	0.00	419.56
PROTECTIVE CASING SIZE: 4-inch round TYPE: Anodized Aluminum		
BOTTOM OF PROTECTIVE CASING		
BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 16 gal		
RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded		
TOP OF SEAL	3.66	415.90
ANNULAR SEAL TYPE: 3/8-inch bentonite pellets Enviroplug 50# bags AMOUNT: 0.5 bag PLACEMENT: Tremie		
TOP OF FILTER PACK	5.66	413.90
FILTER PACK TYPE: DSI Sand - #2 Drillers Services, Inc. 0.5 cubic foot bags AMOUNT: 4 bags PLACEMENT: Tremie; wash with water		
BOTTOM OF RISER / TOP OF SCREEN	7.66	411.90
SCREEN DIA: 2-inch TYPE:ASTM-NSF Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch		
BOTTOM OF SCREEN	17.66	401.90
BOTTOM OF CASING	17.96	401.60

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DRILLING LOG

GEOLOGICAL SERVICES

Hole No. GWA-22

Sheet 1 of 2

SITE **Georgia Power Company Plant Scherer** HOLE DEPTH 40 SURF.ELEV. 441.75

LOCATION PAC/Ash Cell COORDINATES N 1120962.58 E 2409473.48

ANGLE 0 BEARING 0 CONTRACTOR Boart Longyear DRILL NO. BL100C

DRILLING METHOD Sonic NO. SAMPLES Continuous NO. U.D. SAMPLES 0

WATER TABLE DEPTH ELEV. TIME AFTER COMP. DATE TAKEN

TYPE GROUT QUANTITY MIX DRILLING START DATE 6/29/2010

DRILLER S. Gautney RECORDER D. Brooks APPROVED DRILLING COMP. DATE 6/30/2010

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments	% Rec	RQD
0	441.75	Reddish orange sandy SILT, dry, micaceous							
1	440.75								
2	439.75								
3	438.75								
4	437.75								
5	436.75								
6	435.75								
7	434.75								
8	433.75								
9	432.75								
10	431.75	-Same as above							
11	430.75								
12	429.75	Orange, tan, and white clayey SILT, dry, micaceous							
13	428.75								
14	427.75								
15	426.75								
16	425.75								
17	424.75								
18	423.75								
19	422.75								
20	421.75	-Same as above							
21	420.75								
22	419.75								
23	418.75								
24	417.75								

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DRILLING LOG
GEOLOGICAL SERVICES

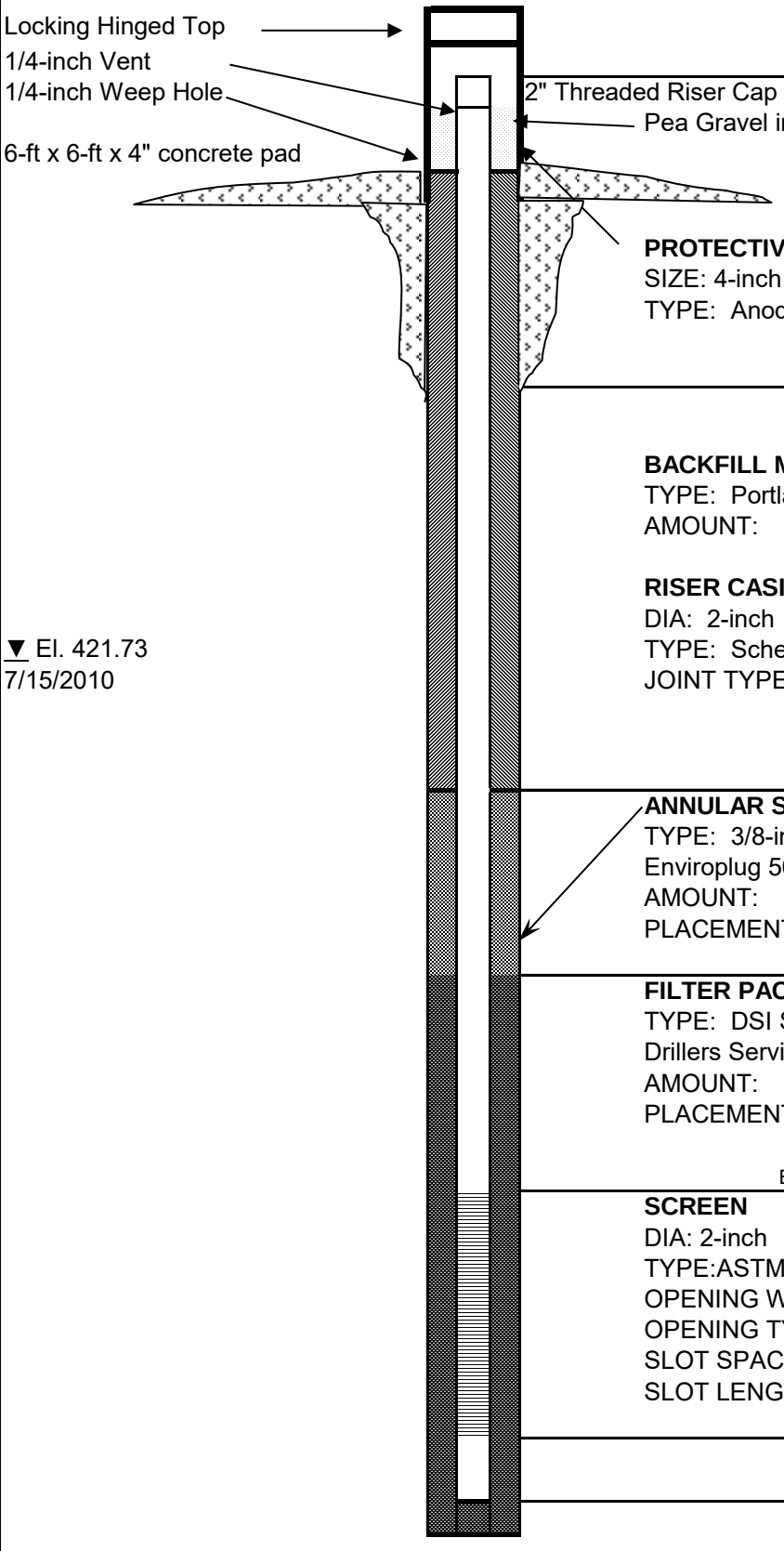
Hole No. GWA-22
Sheet 2 of 2

SITE **Georgia Power Company Plant Scherer** TOTAL DEPTH **40** SURF.ELEV. 441.75

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments	% Rec	RQD
25	416.75	SAPROLITIC GNEISS, moist							
26	415.75								
27	414.75								
28	413.75								
29	412.75								
30	411.75								
31	410.75								
32	409.75								
33	408.75	Intact GNEISS, fractured with iron staining							
34	407.75								
35	406.75								
36	405.75								
37	404.75								
38	403.75								
39	402.75								
40	401.75								
41	400.75	40' - Bottom of boring							
42	399.75								
43	398.75								
44	397.75								
45	396.75								
46	395.75								
47	394.75								
48	393.75								
49	392.75								
50	391.75								
51	390.75								
52	389.75								
53	388.75								
54	387.75								
55	386.75								

WELL CONSTRUCTION LOG — Southern Company Generation

PROJECT: Plant Scherer	DRILLING CO.: Boart Longyear	WELL NAME
	DRILLER: S. Gautney	
LOCATION: PAC/Ash Cell	RIG TYPE: BL100C	
LOGGER: D. Brooks	DRILLING METHODS: Sonic	GWA-22
DATE CONSTRUCTED: 6/30/2010		



	DEPTH FEET	ELEVATION FT, MSL
TOP OF RISER	-2.48	444.23
2" Threaded Riser Cap Pea Gravel in annular space		
GROUND SURFACE	0.00	441.75
PROTECTIVE CASING SIZE: 4-inch round TYPE: Anodized Aluminum		
BOTTOM OF PROTECTIVE CASING		
BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 16 gal **RISER CASING** DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded		
TOP OF SEAL	25.97	415.78
ANNULAR SEAL TYPE: 3/8-inch bentonite pellets Enviroplug 50# bags AMOUNT: 0.5 bag PLACEMENT: Tremie		
TOP OF FILTER PACK	27.97	413.78
FILTER PACK TYPE: DSI Sand - #2 Drillers Services, Inc. 0.5 cubic foot bags AMOUNT: 4 bags PLACEMENT: Tremie; wash with water		
BOTTOM OF RISER / TOP OF SCREEN	29.72	412.03
SCREEN DIA: 2-inch TYPE:ASTM-NSF Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch		
BOTTOM OF SCREEN	39.72	402.03
BOTTOM OF CASING	40.02	401.73

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DRILLING LOG
GEOLOGICAL SERVICES

Hole No. GWA-45
Sheet 1 of 2

SITE **Georgia Power Company Plant Scherer** HOLE DEPTH 33 SURF.ELEV. 447.98

LOCATION PAC/Ash Cell COORDINATES N 1120669.52 E 2407889.43

ANGLE 0 BEARING 0 CONTRACTOR Boart Longyear DRILL NO. BL100C

DRILLING METHOD Sonic NO. SAMPLES Continuous NO. U.D. SAMPLES 0

WATER TABLE DEPTH ELEV. TIME AFTER COMP. DATE TAKEN

TYPE GROUT QUANTITY MIX DRILLING START DATE 6/23/2010

DRILLER S. Gautney RECORDER L. Millet APPROVED DRILLING COMP. DATE 6/23/2010

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments	% Rec	RQD
0	447.98	Dark red silty CLAY, dry, hard, occasional black mottling, mica							
1	446.98								
2	445.98								
3	444.98								
4	443.98								
5	442.98								
6	441.98								
7	440.98								
8	439.98								
9	438.98								
10	437.98	Red, orange, and tan clayey SILT, black and white mottling, mica							
11	436.98								
12	435.98								
13	434.98								
14	433.98								
15	432.98								
16	431.98								
17	430.98								
18	429.98								
19	428.98								
20	427.98	Brown, tan, green, and orange silty SAND, saturated, with white mottling, high mica content							
21	426.98								
22	425.98								
23	424.98								
24	423.98								

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DRILLING LOG
GEOLOGICAL SERVICES

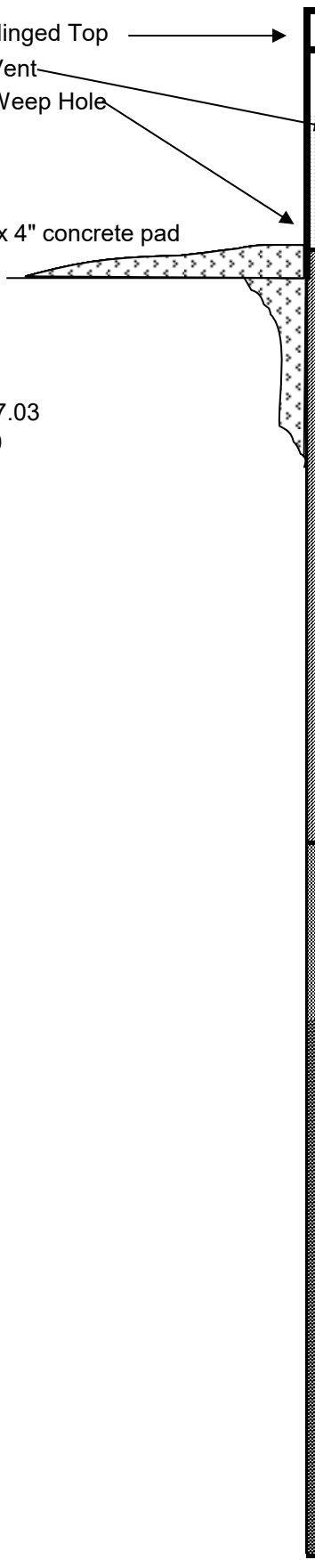
Hole No. GWA-45
Sheet 2 of 2

SITE **Georgia Power Company Plant Scherer** TOTAL DEPTH **33** SURF.ELEV. 447.98

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments	% Rec	RQD
25	422.98								
26	421.98								
27	420.98								
28	419.98								
29	418.98								
30	417.98	Green and white SAND, wet, orange mottling, mica							
31	416.98								
32	415.98								
33	414.98								
		33' - Bottom of boring							
34	413.98								
35	412.98								
36	411.98								
37	410.98								
38	409.98								
39	408.98								
40	407.98								
41	406.98								
42	405.98								
43	404.98								
44	403.98								
45	402.98								
46	401.98								
47	400.98								
48	399.98								
49	398.98								
50	397.98								
51	396.98								
52	395.98								
53	394.98								
54	393.98								
55	392.98								

WELL CONSTRUCTION LOG — Southern Company Generation

PROJECT: Plant Scherer	DRILLING CO.: Boart Longyear	WELL NAME
	DRILLER: S. Gautney	
LOCATION: PAC/Ash Cell	RIG TYPE: BL100C	
LOGGER: L. Millet	DRILLING METHODS: Sonic	GWA-45
DATE CONSTRUCTED: 6/23/2010		



	DEPTH FEET	ELEVATION FT, MSL
TOP OF RISER	-2.91	450.89
2" Threaded Riser Cap		
Pea Gravel in annular space		
GROUND SURFACE	0.00	447.98
PROTECTIVE CASING SIZE: 4-inch round TYPE: Anodized Aluminum		
BOTTOM OF PROTECTIVE CASING		
BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 16 gal		
RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded		
TOP OF SEAL	18.29	429.69
ANNULAR SEAL TYPE: 3/8-inch bentonite pellets Enviroplug 50# bags AMOUNT: 0.5 bag PLACEMENT: Tremie		
TOP OF FILTER PACK	20.29	427.69
FILTER PACK TYPE: DSI Sand - #2 Drillers Services, Inc. 0.5 cubic foot bags AMOUNT: 4 bags PLACEMENT: Tremie; wash with water		
BOTTOM OF RISER / TOP OF SCREEN	22.29	425.69
SCREEN DIA: 2-inch TYPE:ASTM-NSF Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch		
BOTTOM OF SCREEN	32.29	415.69
BOTTOM OF CASING	32.59	415.39

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DRILLING LOG

GEOLOGICAL SERVICES

Hole No. GWA-46

Sheet 1 of 2

SITE **Georgia Power Company Plant Scherer** HOLE DEPTH 43.5 SURF.ELEV. 458.10

LOCATION PAC/Ash Cell COORDINATES N 1120783.75 E 2408235.72

ANGLE 0 BEARING 0 CONTRACTOR Boart Longyear DRILL NO. BL100C

DRILLING METHOD Sonic NO. SAMPLES Continuous NO. U.D. SAMPLES 0

WATER TABLE DEPTH ELEV. TIME AFTER COMP. DATE TAKEN

TYPE GROUT QUANTITY MIX DRILLING START DATE 6/23/2010

DRILLER S. Gautney RECORDER L. Millet APPROVED DRILLING COMP. DATE 6/23/2010

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments	% Rec	RQD
0	458.10	Red silty CLAY, dry, hard, with occasional black mottling, mica							
1	457.10								
2	456.10								
3	455.10								
4	454.10								
5	453.10								
6	452.10								
7	451.10								
8	450.10								
9	449.10								
10	448.10	Orange clayey SILT, wet, with mica							
11	447.10								
12	446.10	Orange and pink silty CLAY, dry, with black and white mottling, trace mica							
13	445.10								
14	444.10								
15	443.10								
16	442.10								
17	441.10								
18	440.10								
19	439.10								
20	438.10	Tan sandy CLAY, wet, with black mottling, trace mica							
21	437.10								
22	436.10								
23	435.10								
24	434.10								

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DRILLING LOG
GEOLOGICAL SERVICES

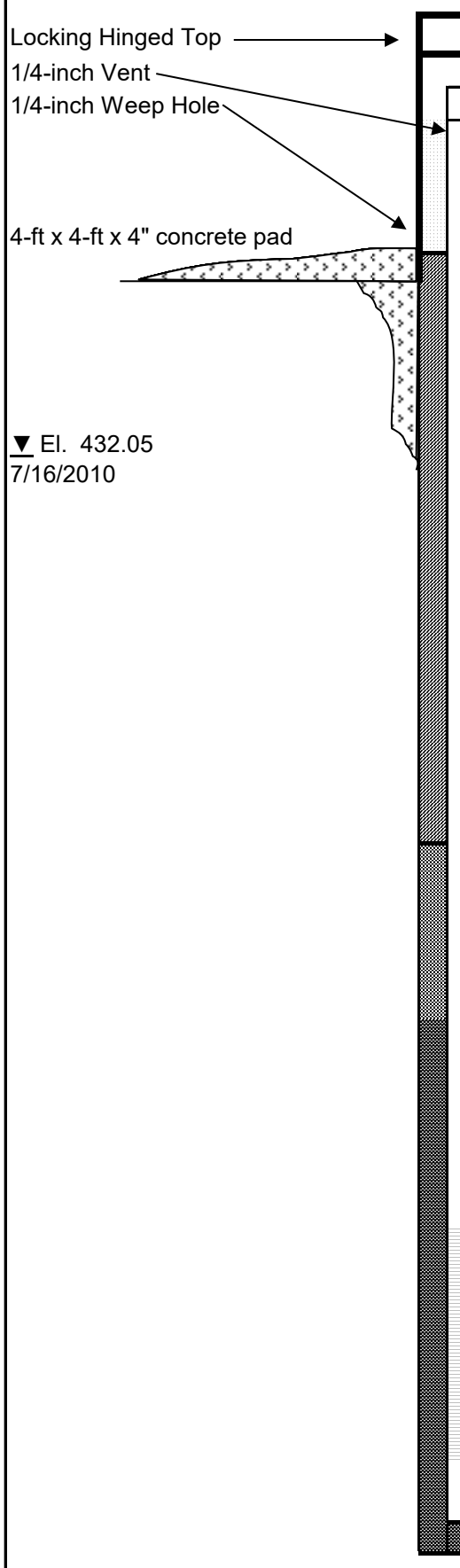
Hole No. GWA-46
Sheet 2 of 2

SITE **Georgia Power Company Plant Scherer** TOTAL DEPTH **43.5** SURF.ELEV. 458.1

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments	% Rec	RQD
25	433.10	Tan silty CLAY, wet, with heavy black mottling, trace mica							
26	432.10								
27	431.10								
28	430.10								
29	429.10								
30	428.10	Brown and orange silty SAND, wet, with black and white mottling							
31	427.10								
32	426.10								
33	425.10								
34	424.10								
35	423.10								
36	422.10								
37	421.10	Green and white SAND, wet, medium to coarse grained, with mica							
38	420.10								
39	419.10								
40	418.10	Green and brown sandy SILT, wet, with mica, clay							
41	417.10								
42	416.10								
43	415.10								
44	414.10	43.5' - Bottom of boring							
45	413.10								
46	412.10								
47	411.10								
48	410.10								
49	409.10								
50	408.10								
51	407.10								
52	406.10								
53	405.10								
54	404.10								
55	403.10								

WELL CONSTRUCTION LOG — Southern Company Generation

PROJECT: Plant Scherer	DRILLING CO.: Boart Longyear	WELL NAME
	DRILLER: S. Gautney	
LOCATION: PAC/Ash Cell	RIG TYPE: BL100C	
LOGGER: L. Millet	DRILLING METHODS: Sonic	GWA-46
DATE CONSTRUCTED: 6/23/2010		



	DEPTH FEET	ELEVATION FT, MSL
TOP OF RISER	-2.76	460.86
2" Threaded Riser Cap		
Pea Gravel in annular space		
GROUND SURFACE	0.00	458.10
PROTECTIVE CASING SIZE: 4-inch round TYPE: Anodized Aluminum		
BOTTOM OF PROTECTIVE CASING		
BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 36 gal		
RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded		
TOP OF SEAL	29.94	428.16
ANNULAR SEAL TYPE: 3/8-inch bentonite pellets Enviroplug 50# bags AMOUNT: 0.5 bag PLACEMENT: Tremie		
TOP OF FILTER PACK	31.94	426.16
FILTER PACK TYPE: DSI Sand - #2 Drillers Services, Inc. 0.5 cubic foot bags AMOUNT: 4 bags PLACEMENT: Tremie; wash with water		
BOTTOM OF RISER / TOP OF SCREEN	33.94	424.16
SCREEN DIA: 2-inch TYPE:ASTM-NSF Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch		
BOTTOM OF SCREEN	43.94	414.16
BOTTOM OF CASING	44.24	413.86

HOLE DIA: 6"

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DRILLING LOG

GEOLOGICAL SERVICES

Hole No. GWA-47

Sheet 1 of 2

SITE: **Georgia Power Company Plant Scherer** HOLE DEPTH: 55 SURF.ELEV.: 462.81

LOCATION: PAC/Ash Cell COORDINATES N: 1120862.99 E: 2408585.25

ANGLE: 0 BEARING: 0 CONTRACTOR: Boart Longyear DRILL NO.: BL100C

DRILLING METHOD: Sonic NO. SAMPLES: Continuous NO. U.D. SAMPLES: 0

WATER TABLE DEPTH: ELEV.: TIME AFTER COMP.: DATE TAKEN:

TYPE GROUT: QUANTITY: MIX: DRILLING START DATE: 6/22/2010

DRILLER: S. Gautney RECORDER: L. Millet APPROVED: DRILLING COMP. DATE: 6/22/2010

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments	% Rec	RQD
0	462.81	Dark red silty CLAY, dry, hard, trace mica							
1	461.81								
2	460.81								
3	459.81								
4	458.81								
5	457.81								
6	456.81								
7	455.81								
8	454.81								
9	453.81								
10	452.81	Orange, tan, and pink sandy SILT, dry, with clay, mica							
11	451.81								
12	450.81								
13	449.81	Orange and white sandy CLAY, dry, with mica, pink and black mottling							
14	448.81								
15	447.81								
16	446.81	Orange and white sandy CLAY, dry, trace mica, dark brown and pink mottling							
17	445.81								
18	444.81								
19	443.81								
20	442.81								
21	441.81								
22	440.81								
23	439.81								
24	438.81								

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DRILLING LOG
GEOLOGICAL SERVICES

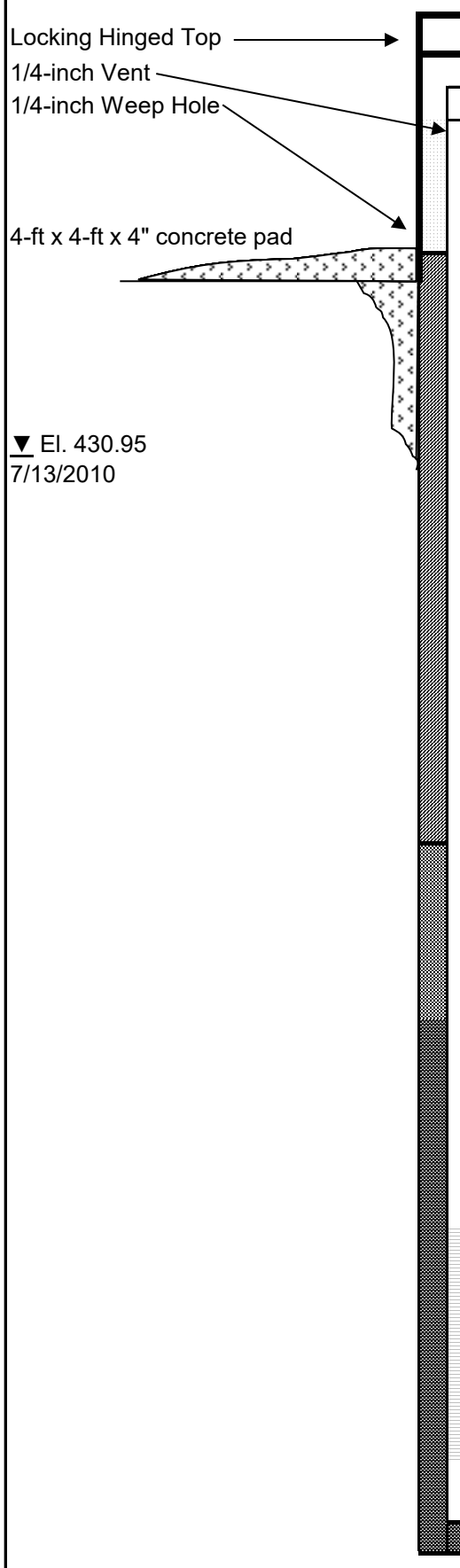
Hole No. GWA-47
Sheet 2 of 2

SITE **Georgia Power Company Plant Scherer** TOTAL DEPTH **55** SURF.ELEV. 462.81

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments	% Rec	RQD
25	437.81	-As above with black mottling, high mica content							
26	436.81								
27	435.81								
28	434.81								
29	433.81								
30	432.81	Tan sandy SILT, wet, loose, with clay							
31	431.81								
32	430.81								
33	429.81	Green and white SAPROLITIC GNEISS, with black and orange mottling, mica							
34	428.81								
35	427.81								
36	426.81								
37	425.81								
38	424.81								
39	423.81								
40	422.81	Gray and white SAPROLITIC GNEISS, wet, with occasional orange mottling, mica							
41	421.81								
42	420.81								
43	419.81								
44	418.81								
45	417.81								
46	416.81								
47	415.81								
48	414.81								
49	413.81								
50	412.81	Weathered black and white GNEISS, dry							
51	411.81								
52	410.81								
53	409.81								
54	408.81								
55	407.81								
		55' - Bottom of boring							

WELL CONSTRUCTION LOG — Southern Company Generation

PROJECT: Plant Scherer	DRILLING CO.: Boart Longyear	WELL NAME
	DRILLER: S. Gautney	
LOCATION: PAC/Ash Cell	RIG TYPE: BL100C	
LOGGER: L. Millet	DRILLING METHODS: Sonic	GWA-47
DATE CONSTRUCTED: 6/22/10		



	DEPTH FEET	ELEVATION FT, MSL
TOP OF RISER	-2.74	465.55
2" Threaded Riser Cap		
Pea Gravel in annular space		
GROUND SURFACE	0.00	462.81
PROTECTIVE CASING SIZE: 4-inch round TYPE: Anodized Aluminum		
BOTTOM OF PROTECTIVE CASING		
BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 60 gal		
RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded		
TOP OF SEAL	37.16	425.65
ANNULAR SEAL TYPE: 3/8-inch bentonite pellets Enviroplug 50# bags AMOUNT: 0.5 bag PLACEMENT: Tremie		
TOP OF FILTER PACK	39.16	423.65
FILTER PACK TYPE: DSI Sand - #2 Drillers Services, Inc. 0.5 cubic foot bags AMOUNT: 4 bags PLACEMENT: Tremie; wash with water		
BOTTOM OF RISER / TOP OF SCREEN	41.16	421.65
SCREEN DIA: 2-inch TYPE:ASTM-NSF Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch		
BOTTOM OF SCREEN	51.16	411.65
BOTTOM OF CASING	51.46	411.35

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DRILLING LOG

GEOLOGICAL SERVICES

Hole No. GWA-48

Sheet 1 of 3

SITE **Georgia Power Company Plant Scherer** HOLE DEPTH 72 SURF.ELEV. 458.73

LOCATION PAC/Ash Cell COORDINATES N 1120953.85 E 2408939.90

ANGLE 0 BEARING 0 CONTRACTOR Boart Longyear DRILL NO. BL100C

DRILLING METHOD Sonic NO. SAMPLES Continuous NO. U.D. SAMPLES 0

WATER TABLE DEPTH ELEV. TIME AFTER COMP. DATE TAKEN

TYPE GROUT QUANTITY MIX DRILLING START DATE 6/21/2010

DRILLER S. Gautney RECORDER L. Millet APPROVED DRILLING COMP. DATE 6/22/2010

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments	% Rec	RQD
0	458.73	Dark red silty CLAY, dry, hard, trace mica							
1	457.73								
2	456.73								
3	455.73								
4	454.73								
5	453.73	Black and white GNEISS							
6	452.73								
7	451.73	Dark orange and red silty CLAY, dry, hard, black mottling trace mica							
8	450.73								
9	449.73								
10	448.73								
11	447.73	Orange and black silty CLAY, dry, trace mica							
12	446.73								
13	445.73								
14	444.73								
15	443.73								
16	442.73								
17	441.73								
18	440.73	Gneiss boulder, about 6"							
19	439.73	Orange sandy CLAY, dry, loose, trace mica							
20	438.73								
21	437.73								
22	436.73								
23	435.73								
24	434.73								

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DRILLING LOG
GEOLOGICAL SERVICES

Hole No. GWA-48
Sheet 2 of 3

SITE **Georgia Power Company Plant Scherer** TOTAL DEPTH **72** SURF.ELEV. 458.73

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments	% Rec	RQD
25	433.73	Orange sandy SILT, dry, loose with black, pink and white mottling, trace mica							
26	432.73								
27	431.73								
28	430.73								
29	429.73								
30	428.73								
31	427.73	Orange silty CLAY, moist, trace mica with black and tan mottling							
32	426.73								
33	425.73								
34	424.73								
35	423.73	Green, black and white saprolitic GNEISS							
36	422.73								
37	421.73								
38	420.73								
39	419.73								
40	418.73								
41	417.73	Light green and white relict GNEISS, high clay content, m							
42	416.73								
43	415.73								
44	414.73	-relict GNEISS							
45	413.73								
46	412.73								
47	411.73								
48	410.73	Dark green and white weathered GNEISS with orange mottling, dry							
49	409.73								
50	408.73	Black, white and green weathered GNEISS, dry							
51	407.73								
52	406.73								
53	405.73								
54	404.73								
55	403.73								
56	402.73								

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DRILLING LOG
GEOLOGICAL SERVICES

Hole No. GWA-48
Sheet 3 of 3

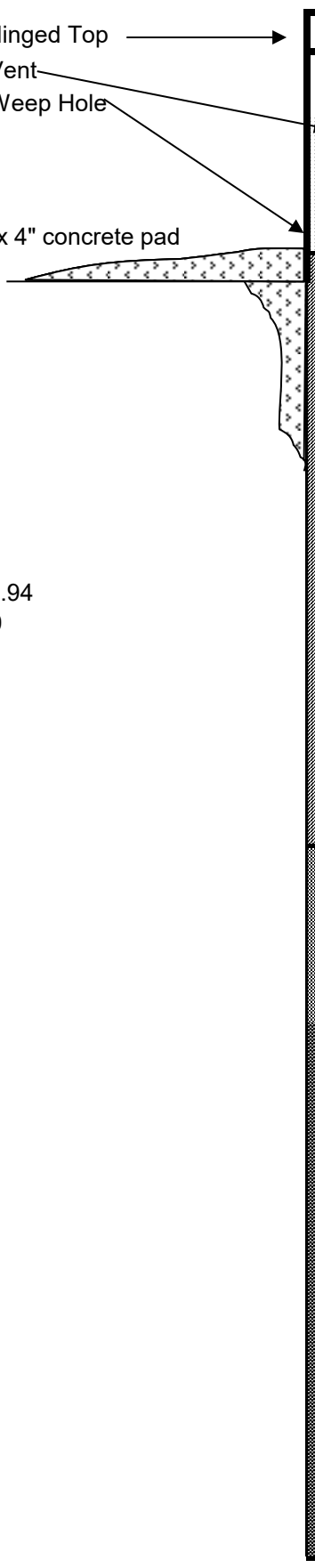
SITE **Georgia Power Company Plant Scherer** TOTAL DEPTH **72** SURF.ELEV. 458.73

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments	% Rec	RQD
57	401.73								
58	400.73								
59	399.73								
69	389.73								
61	397.73	Dark gray green clayey SILT, dry, hard, with mica, trace sand							
62	396.73								
63	395.73								
64	394.73								
65	393.73	Dark green gray clayey SAND, wet, very fine to fine-grained							
66	392.73								
67	391.73								
68	390.73	Intact black and white GNEISS							
69	389.73								
70	388.73								
71	387.73								
72	386.73								
		72' - Bottom of boring							

Form GS9901 8-19-2008

WELL CONSTRUCTION LOG — Southern Company Generation

PROJECT: Plant Scherer	DRILLING CO.: Boart Longyear	WELL NAME
	DRILLER: S. Gautney	
LOCATION: PAC/Ash Cell	RIG TYPE: BL100C	
LOGGER: L. Millet	DRILLING METHODS: Sonic	GWA-48
DATE CONSTRUCTED: 6/22/2010		



	DEPTH FEET	ELEVATION FT, MSL
TOP OF RISER	-2.74	461.47
2" Threaded Riser Cap; Pea Gravel in annular space		
GROUND SURFACE	0.00	458.73
PROTECTIVE CASING SIZE: 4-inch round TYPE: Anodized Aluminum		
BOTTOM OF PROTECTIVE CASING		
BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 64 gal		
RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded		
TOP OF SEAL	47.11	411.62
ANNULAR SEAL TYPE: 3/8-inch bentonite pellets Enviroplug 50# bags AMOUNT: 0.5 bag PLACEMENT: Tremie		
TOP OF FILTER PACK	49.11	409.62
FILTER PACK TYPE: DSI Sand - #2 Drillers Services, Inc. 0.5 cubic foot bags AMOUNT: 4 bags PLACEMENT: Tremie; wash with water		
BOTTOM OF RISER / TOP OF SCREEN	51.11	407.62
SCREEN DIA: 2-inch TYPE:ASTM-NSF Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch		
BOTTOM OF SCREEN	61.11	397.62
BOTTOM OF CASING	61.41	397.32

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DRILLING LOG
GEOLOGICAL SERVICES

Hole No. GWA-49
Sheet 1 of 2

SITE **Georgia Power Company Plant Scherer** HOLE DEPTH 37 SURF.ELEV. 429.96

LOCATION PAC/Ash Cell COORDINATES N 1121030.47 E 2409288.70

ANGLE 0 BEARING 0 CONTRACTOR Boart Longyear DRILL NO. BL100C

DRILLING METHOD Sonic NO. SAMPLES Continuous NO. U.D. SAMPLES 0

WATER TABLE DEPTH ELEV. TIME AFTER COMP. DATE TAKEN

TYPE GROUT QUANTITY MIX DRILLING START DATE 6/21/2010

DRILLER S. Gautney RECORDER L. Millet APPROVED DRILLING COMP. DATE 6/21/2010

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments	% Rec	RQD
0	429.96	Orange and reddish orange silty CLAY, with mica, black organics							
1	428.96								
2	427.96								
3	426.96								
4	425.96								
5	424.96								
6	423.96	-As above with black mottling and increasing mica							
7	422.96								
8	421.96								
9	420.96	-As above with light green mottling and increasing mica							
10	419.96	Tan and black silty CLAY, high mica content, with dark orange mottling							
11	418.96								
12	417.96								
13	416.96								
14	415.96	-Pink, orange and white as above							
15	414.96								
16	413.96								
17	412.96	-As above with black mottling, moist							
18	411.96								
19	410.96	Orange and white sandy CLAY, moist, with pink and black mottling							
20	409.96								
21	408.96	Dark orange and white sandy CLAY, moist, with mica, black mottling							
22	407.96								
23	406.96								
24	405.96								

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DRILLING LOG
GEOLOGICAL SERVICES

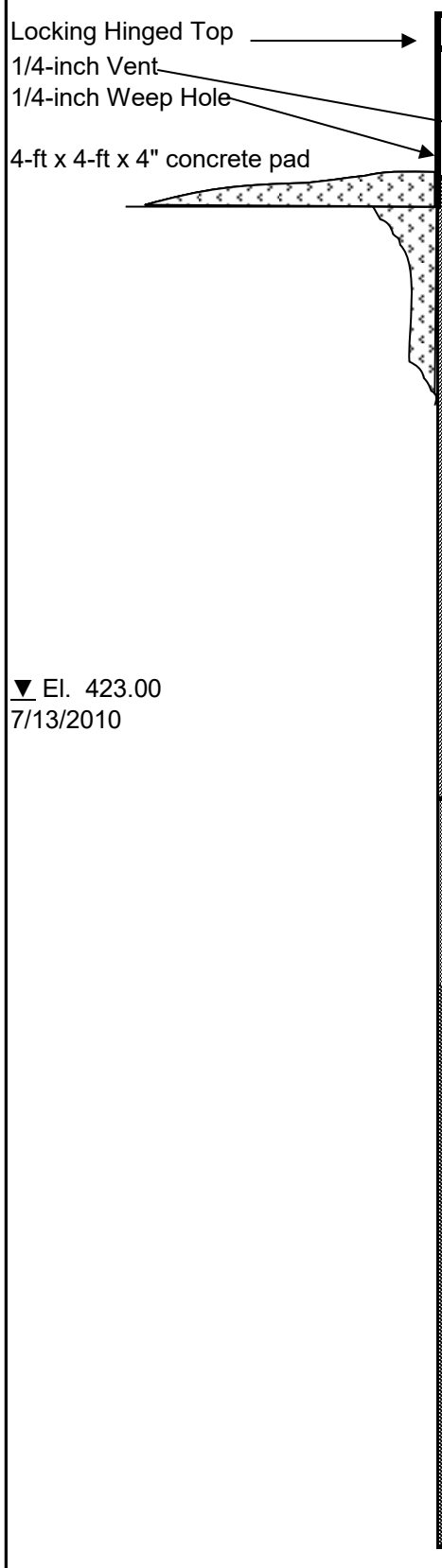
Hole No. GWA-49
Sheet 2 of 2

SITE **Georgia Power Company Plant Scherer** TOTAL DEPTH **37** SURF.ELEV. 429.96

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments	% Rec	RQD
25	404.96	Dark green, black, and white SAPROLITIC GNEISS, with orange mottling, some mice							
26	403.96								
27	402.96								
28	401.96								
29	400.96								
30	399.96								
31	398.96	Dark green, black, and white clayey SAND, saturated, loose, medium to coarse grained							
32	397.96								
33	396.96	Dark green, black, and white SAPROLITIC GNEISS, dry							
34	395.96								
35	394.96								
36	393.96								
37	392.96								
38	391.96	37' - Bottom of boring							
39	390.96								
40	389.96								
41	388.96								
42	387.96								
43	386.96								
44	385.96								
45	384.96								
46	383.96								
47	382.96								
48	381.96								
49	380.96								
50	379.96								
51	378.96								
52	377.96								
53	376.96								
54	375.96								
55	374.96								

WELL CONSTRUCTION LOG — Southern Company Generation

PROJECT: Plant Scherer	DRILLING CO.: Boart Longyear	WELL NAME
	DRILLER: S. Gautney	
LOCATION: PAC/Ash Cell	RIG TYPE: BL100C	
LOGGER: L. Millet	DRILLING METHODS: Sonic	GWA-49
DATE CONSTRUCTED: 6/21/2010		



	DEPTH FEET	ELEVATION FT, MSL
TOP OF RISER	-2.65	432.61
2" Threaded Riser Cap Pea Gravel in annular space		
GROUND SURFACE	0.00	429.96
PROTECTIVE CASING SIZE: 4-inch round TYPE: Anodized Aluminum		
BOTTOM OF PROTECTIVE CASING		
BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 10 gal		
RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded		
TOP OF SEAL	24.05	405.91
ANNULAR SEAL TYPE: 3/8-inch bentonite pellets Enviroplug 50# bags AMOUNT: 0.75 bag PLACEMENT: Tremie		
TOP OF FILTER PACK	26.05	403.91
FILTER PACK TYPE: DSI Sand - #2 Drillers Services, Inc. 0.5 cubic foot bags AMOUNT: 3.5 bags PLACEMENT: Tremie; wash with water		
BOTTOM OF RISER / TOP OF SCREEN	28.05	401.91
SCREEN DIA: 2-inch TYPE:ASTM-NSF Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch		
BOTTOM OF SCREEN	38.05	391.91
BOTTOM OF CASING	38.35	391.61

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DRILLING LOG

GEOLOGICAL SERVICES

Hole No. GWC-29

Sheet 1 of 1

SITE **Georgia Power Company Plant Scherer** HOLE DEPTH 25 SURF.ELEV. 396.69

LOCATION PAC/Ash Cell COORDINATES N 1119875.66 E 2408717.92

ANGLE 0 BEARING 0 CONTRACTOR Boart Longyear DRILL NO. BL100C

DRILLING METHOD Sonic NO. SAMPLES Continuous NO. U.D. SAMPLES 0

WATER TABLE DEPTH ELEV. TIME AFTER COMP. DATE TAKEN

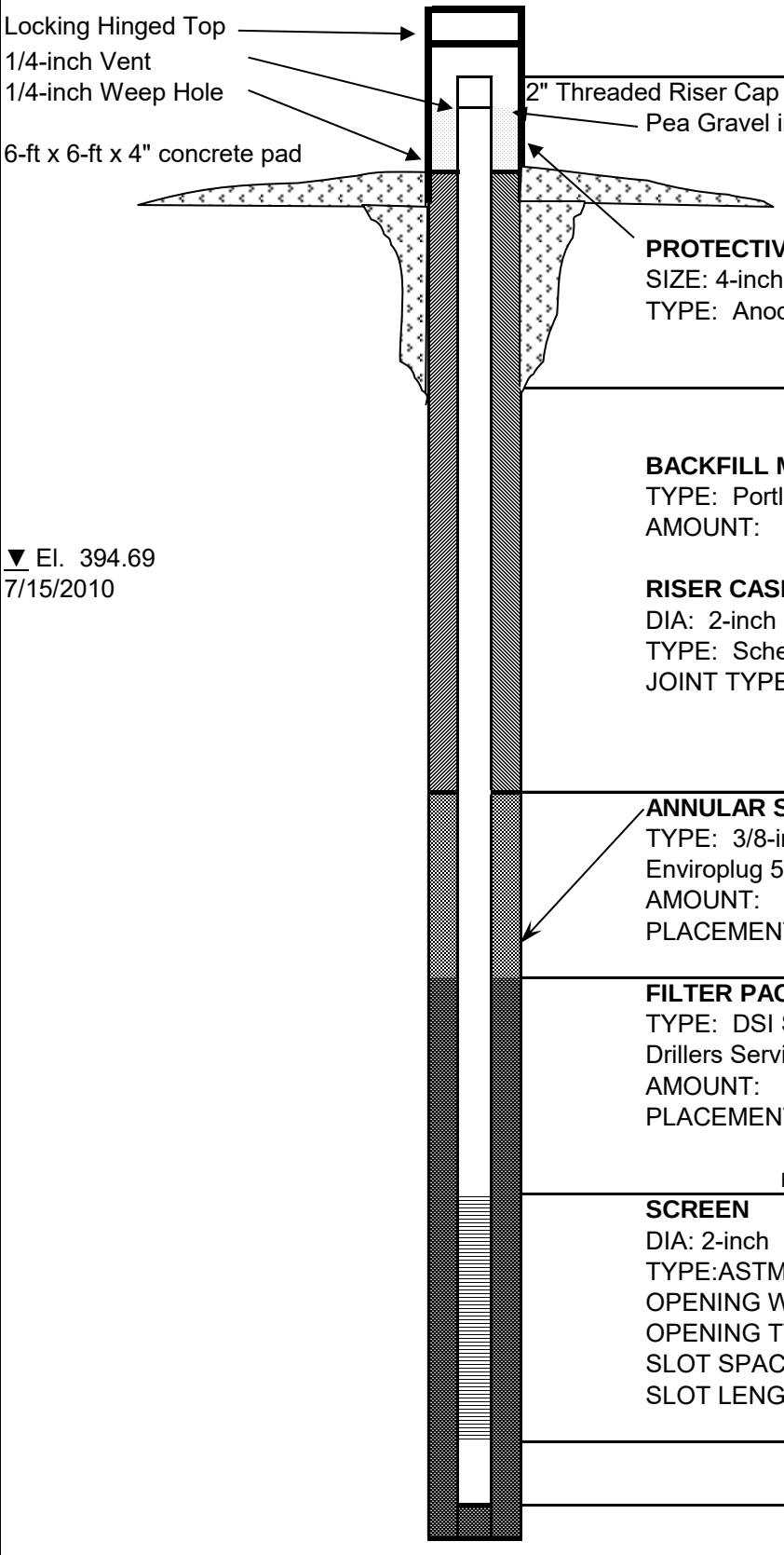
TYPE GROUT QUANTITY MIX DRILLING START DATE 6/28/2010

DRILLER S. Gautney RECORDER D. Brooks APPROVED DRILLING COMP. DATE 6/28/2010

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments	% Rec	RQD
0	396.69	Orangish-red clayey SILT, dry, micaceous							
1	395.69								
2	394.69								
3	393.69								
4	392.69								
5	391.69								
6	390.69								
7	389.69								
8	388.69								
9	387.69								
10	386.69	-Same as above, tan and orange							
11	385.69								
12	384.69								
13	383.69								
14	382.69								
15	381.69								
16	380.69								
17	379.69								
18	378.69	Gray and white SAPROLITE, gneissic, wet, micaceous							
19	377.69								
20	376.69								
21	375.69								
22	374.69								
23	373.69								
24	372.69								
25	371.69	25' - Bottom of boring							

WELL CONSTRUCTION LOG — Southern Company Generation

PROJECT: Plant Scherer	DRILLING CO.: Boart Longyear	WELL NAME
	DRILLER: S. Gautney	
LOCATION: PAC/Ash Cell	RIG TYPE: BL100C	
LOGGER: D. Brooks	DRILLING METHODS: Sonic	GWC-29
DATE CONSTRUCTED: 6/28/2010		



	DEPTH FEET	ELEVATION FT, MSL
TOP OF RISER	-2.70	399.39
2" Threaded Riser Cap Pea Gravel in annular space		
GROUND SURFACE	0.00	396.69
PROTECTIVE CASING SIZE: 4-inch round TYPE: Anodized Aluminum		
BOTTOM OF PROTECTIVE CASING		
BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 16 gal **RISER CASING** DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded		
TOP OF SEAL	10.35	386.34
ANNULAR SEAL TYPE: 3/8-inch bentonite pellets Enviroplug 50# bags AMOUNT: 0.5 bag PLACEMENT: Tremie		
TOP OF FILTER PACK	12.35	384.34
FILTER PACK TYPE: DSI Sand - #2 Drillers Services, Inc. 0.5 cubic foot bags AMOUNT: 4 bags PLACEMENT: Tremie; wash with water		
BOTTOM OF RISER / TOP OF SCREEN	14.10	382.59
SCREEN DIA: 2-inch TYPE:ASTM-NSF Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch		
BOTTOM OF SCREEN	24.10	372.59
BOTTOM OF CASING	24.40	372.29

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DRILLING LOG

GEOLOGICAL SERVICES

Hole No. GWC-50

Sheet 1 of 2

SITE **Georgia Power Company Plant Scherer** HOLE DEPTH 35 SURF.ELEV. 404.18

LOCATION PAC/Ash Cell COORDINATES N 1119917.65 E 2408955.89

ANGLE 0 BEARING 0 CONTRACTOR Boart Longyear DRILL NO. BL100C

DRILLING METHOD Sonic NO. SAMPLES Continuous NO. U.D. SAMPLES 0

WATER TABLE DEPTH ELEV. TIME AFTER COMP. DATE TAKEN

TYPE GROUT QUANTITY MIX DRILLING START DATE 6/28/2010

DRILLER S. Gautney RECORDER D. Brooks APPROVED DRILLING COMP. DATE 6/28/2010

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments	% Rec	RQD
0	404.18	Red sandy CLAY, dry, micaceous							
1	403.18								
2	402.18								
3	401.18								
4	400.18								
5	399.18								
6	398.18								
7	397.18								
8	396.18								
9	395.18								
10	394.18	Pink, tan, and orange sandy SILT, with clay, dry, micaceous							
11	393.18								
12	392.18								
13	391.18								
14	390.18								
15	389.18								
16	388.18								
17	387.18	White, orange, and tan sandy SILT, dry, micaceous							
18	386.18								
19	385.18								
20	384.18								
21	383.18								
22	382.18								
23	381.18								
24	380.18								

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DRILLING LOG
GEOLOGICAL SERVICES

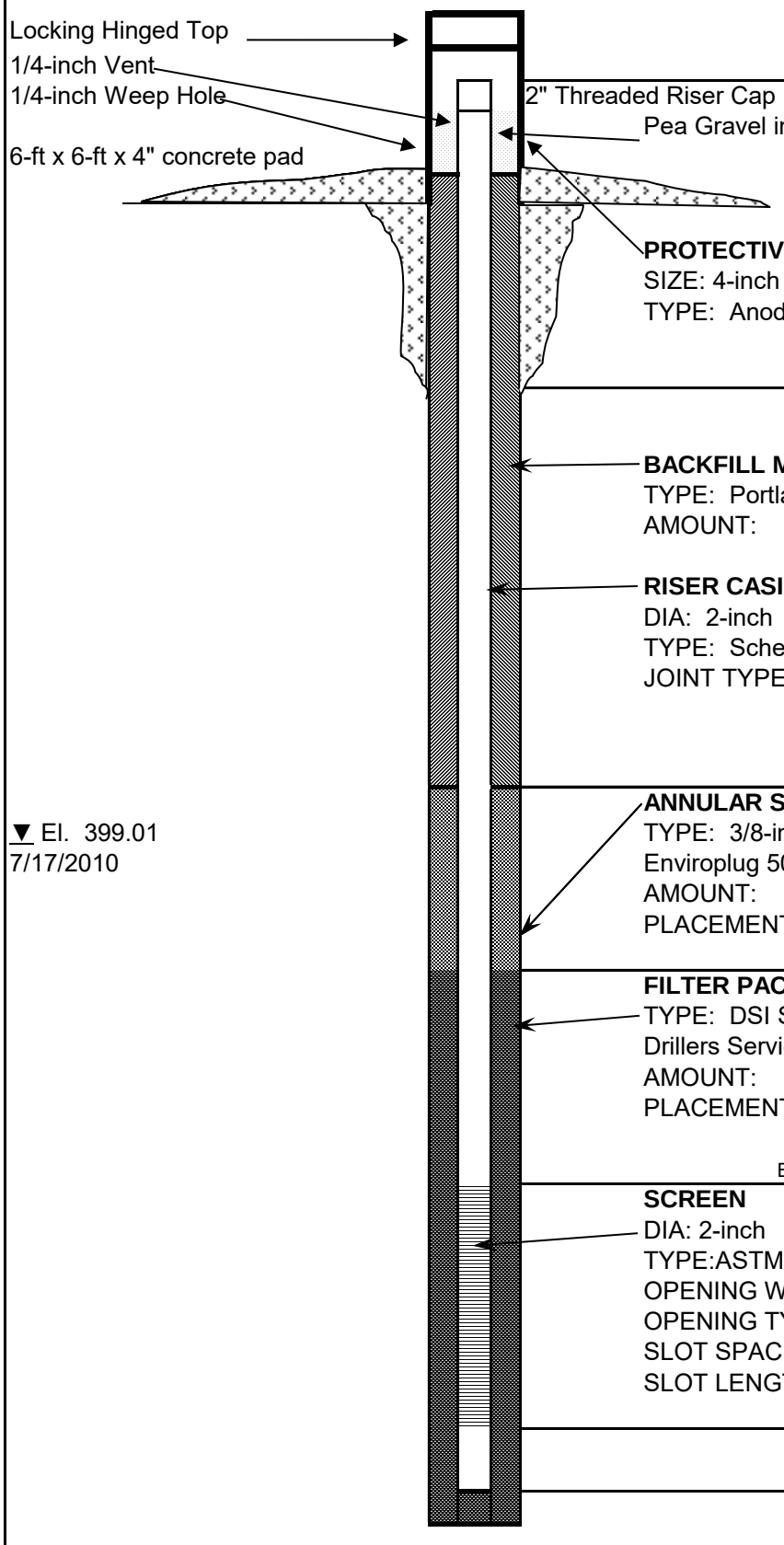
Hole No. GWC-50
Sheet 2 of 2

SITE **Georgia Power Company Plant Scherer** TOTAL DEPTH **35** SURF.ELEV. 404.18

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments	% Rec	RQD
25	379.18	Gray and white gneissic SAPROLITE, wet, micaceous							
26	378.18								
27	377.18								
28	376.18								
29	375.18								
30	374.18	Hard saprolite							
31	373.18								
32	372.18								
33	371.18								
34	370.18								
35	369.18								
36	368.18	35' - Bottom of boring							
37	367.18								
38	366.18								
39	365.18								
40	364.18								
41	363.18								
42	362.18								
43	361.18								
44	360.18								
45	359.18								
46	358.18								
47	357.18								
48	356.18								
49	355.18								
50	354.18								
51	353.18								
52	352.18								
53	351.18								
54	350.18								
55	349.18								

WELL CONSTRUCTION LOG — Southern Company Generation

PROJECT: Plant Scherer	DRILLING CO.: Boart Longyear	WELL NAME
	DRILLER: S. Gautney	
LOCATION: PAC/Ash Cell	RIG TYPE: BL100C	
LOGGER: D. Brooks	DRILLING METHODS: Sonic	GWC-50
DATE CONSTRUCTED: 6/28/2010		



	DEPTH FEET	ELEVATION FT, MSL
TOP OF RISER	-2.74	406.92
2" Threaded Riser Cap Pea Gravel in annular space		
GROUND SURFACE	0.00	404.18
PROTECTIVE CASING SIZE: 4-inch round TYPE: Anodized Aluminum		
BOTTOM OF PROTECTIVE CASING		
BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 16 gal		
RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded		
TOP OF SEAL	19.71	384.47
ANNULAR SEAL TYPE: 3/8-inch bentonite pellets Enviroplug 50# bags AMOUNT: 0.5 bag PLACEMENT: Tremie		
TOP OF FILTER PACK	21.71	382.47
FILTER PACK TYPE: DSI Sand - #2 Drillers Services, Inc. 0.5 cubic foot bags AMOUNT: 4 bags PLACEMENT: Tremie; wash with water		
BOTTOM OF RISER / TOP OF SCREEN	23.46	380.72
SCREEN DIA: 2-inch TYPE:ASTM-NSF Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch		
BOTTOM OF SCREEN	33.46	370.72
BOTTOM OF CASING	33.76	370.42

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DRILLING LOG

GEOLOGICAL SERVICES

Hole No. GWC-51

Sheet 1 of 1

SITE **Georgia Power Company Plant Scherer** HOLE DEPTH 26.5 SURF.ELEV. 406.88

LOCATION PAC/Ash Cell COORDINATES N 1119835.85 E 2408437.10

ANGLE 0 BEARING 0 CONTRACTOR Ranger DRILL NO. CME550

DRILLING METHOD HSA NO. SAMPLES 5 NO. U.D. SAMPLES 0

WATER TABLE DEPTH ELEV. TIME AFTER COMP. DATE TAKEN

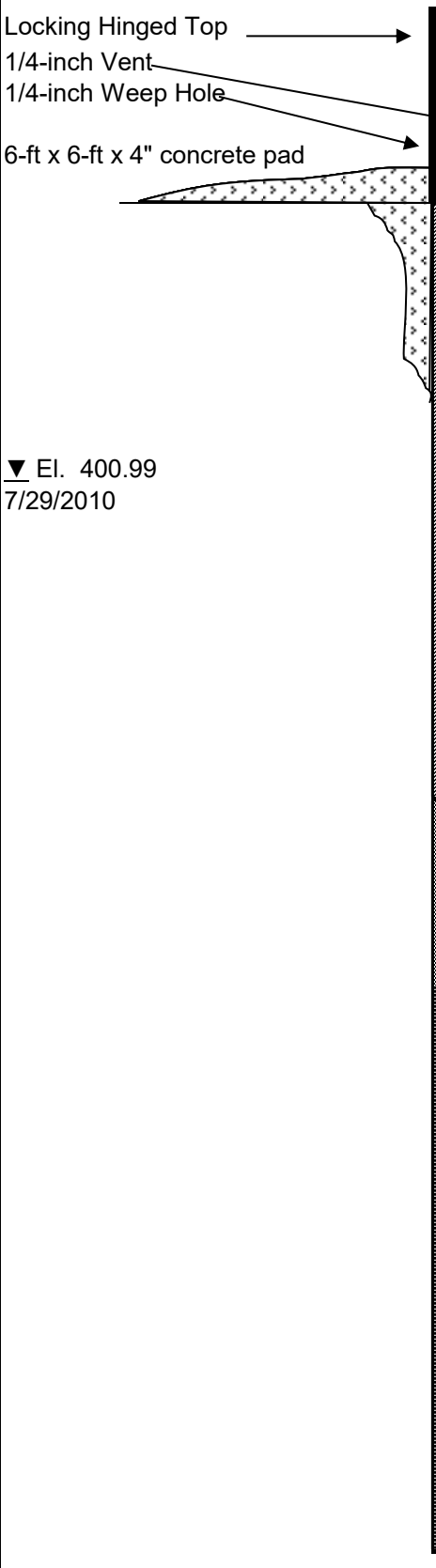
TYPE GROUT QUANTITY MIX DRILLING START DATE 7/26/2010

DRILLER J. Crowe RECORDER L. Garland APPROVED DRILLING COMP. DATE 7/27/2010

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments	% Rec	RQD
0	406.88	reddish brown slightly sandy SILT micacous							
1	405.88								
2	404.88								
3	403.88								
4	402.88	yellow brown slightly sandy SILT micacous	1	3.5-5	4-5-6	11			
5	401.88								
6	400.88								
7	399.88								
8	398.88								
9	397.88	gary and orangish brown sandy SILT with some coarse to fine quartz	2	8.5-10	5-13-14	27			
10	396.88								
11	395.88								
12	394.88								
13	393.88								
14	392.88	saprolite medium to fine grained sandy SILT	3	13.5-15	4-6-7	13			
15	391.88								
16	390.88								
17	389.88								
18	388.88								
19	387.88	Saprolite slightly clayey SILT	4	18.5-20	6-10-16	26			
20	386.88								
21	385.88								
22	384.88								
23	383.88								
24	382.88								

WELL CONSTRUCTION LOG — Southern Company Generation

PROJECT: Plant Scherer	DRILLING CO.: Ranger	WELL NAME
	DRILLER: J. Crowe	
LOCATION: PAC/Ash Cell	RIG TYPE CME 550	
LOGGER: L. Garland	DRILLING METHODS: Sonic	GWC-51
DATE CONSTRUCTED: 7/27/2010		



	DEPTH FEET	ELEVATION FT, MSL
TOP OF RISER	-3.01	409.89
2" Threaded Riser Cap Pea Gravel in annular space		
GROUND SURFACE	0.00	406.88
PROTECTIVE CASING SIZE: 4-inch round TYPE: Anodized Aluminum		
BOTTOM OF PROTECTIVE CASING		
BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 16 gal		
RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded		
TOP OF SEAL	9.94	396.94
ANNULAR SEAL TYPE: 3/8-inch bentonite pellets Enviroplug 50# bags AMOUNT: 0.5 bag PLACEMENT: Tremie		
TOP OF FILTER PACK	11.94	394.94
FILTER PACK TYPE: DSI Sand - #2 Drillers Services, Inc. 0.5 cubic foot bags AMOUNT: 4 bags PLACEMENT: Tremie; wash with water		
BOTTOM OF RISER / TOP OF SCREEN	13.49	393.39
SCREEN DIA: 2-inch TYPE:ASTM-NSF Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch		
BOTTOM OF SCREEN	23.49	383.39
BOTTOM OF CASING	23.79	383.09

SOUTHERN COMPANY
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DRILLING LOG

GEOLOGICAL SERVICES

Hole No. GWC-52

Sheet 1 of 2

SITE: **Georgia Power Company Plant Scherer** HOLE DEPTH: 30 SURF.ELEV.: 414.14

LOCATION: PAC/Ash Cell COORDINATES N: 1119972.46 E: 2408203.87

ANGLE: 0 BEARING: 0 CONTRACTOR: Boart Longyear DRILL NO.: BL100C

DRILLING METHOD: Sonic NO. SAMPLES: Continuous NO. U.D. SAMPLES: 0

WATER TABLE DEPTH: ELEV.: TIME AFTER COMP.: DATE TAKEN:

TYPE GROUT: QUANTITY: MIX: DRILLING START DATE: 6/24/2010

DRILLER: S. Gautney RECORDER: L. Millet APPROVED: DRILLING COMP. DATE: 6/24/2010

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments	% Rec	RQD
0	414.14	Orange clayey SILT, wet, sticky, with mica							
1	413.14								
2	412.14								
3	411.14								
4	410.14								
5	409.14								
6	408.14								
7	407.14	Orange and brown clayey SILT, wet, with green mottling, mica							
8	406.14								
9	405.14								
10	404.14	Tan and white clayey SILT, wet, mica							
11	403.14								
12	402.14								
13	401.14								
14	400.14								
15	399.14	-Dark brown, black, orange, and green as above							
16	398.14	Tan sandy SILT, wet, white and black mottling, mica							
17	397.14								
18	396.14								
19	395.14								
20	394.14	Brown silty SAND, saturated, very fine to fine grained, occasional black mottling, mica							
21	393.14								
22	392.14								
23	391.14								
24	390.14								

SOUTHERN COMPANY
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DRILLING LOG
GEOLOGICAL SERVICES

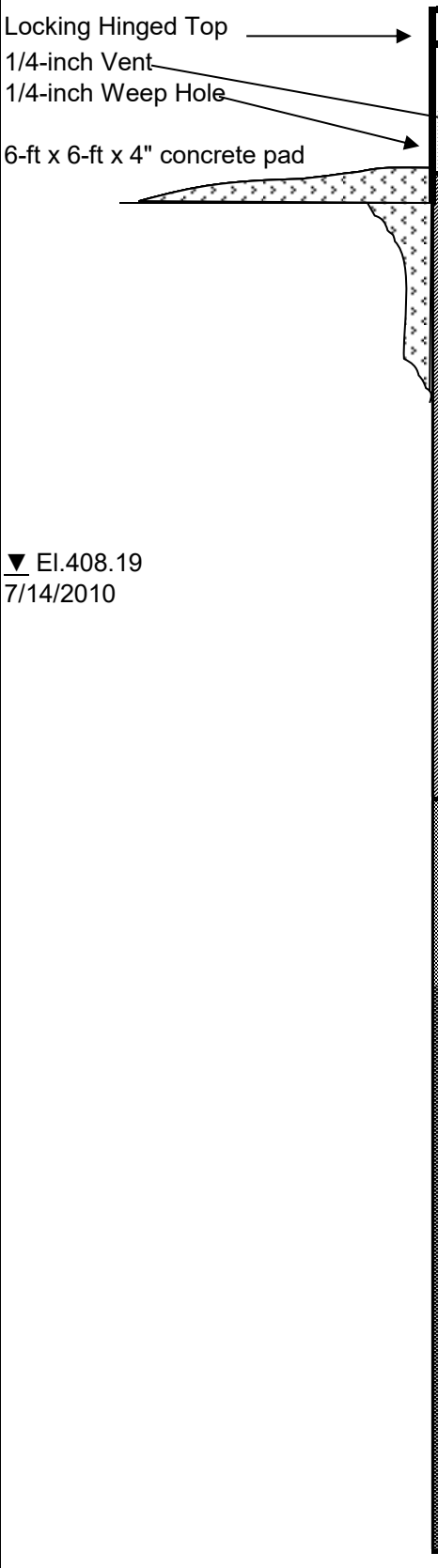
Hole No. GWC-52
Sheet 2 of 2

SITE **Georgia Power Company Plant Scherer** TOTAL DEPTH **30** SURF.ELEV. 414.14

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments	% Rec	RQD
25	389.14	Green and white SAPROLITIC GNEISS, wet, with mica							
26	388.14								
27	387.14								
28	386.14								
29	385.14								
30	384.14								
31	383.14	30' - Bottom of boring							
32	382.14								
33	381.14								
34	380.14								
35	379.14								
36	378.14								
37	377.14								
38	376.14								
39	375.14								
40	374.14								
41	373.14								
42	372.14								
43	371.14								
44	370.14								
45	369.14								
46	368.14								
47	367.14								
48	366.14								
49	365.14								
50	364.14								
51	363.14								
52	362.14								
53	361.14								
54	360.14								
55	359.14								

WELL CONSTRUCTION LOG — Southern Company Generation

PROJECT: Plant Scherer	DRILLING CO.: Boart Longyear	WELL NAME
	DRILLER: S. Gautney	
LOCATION: PAC/Ash Cell	RIG TYPE: BL100C	
LOGGER: L. Millet	DRILLING METHODS: Sonic	GWC-52
DATE CONSTRUCTED: 6/24/2010		



	DEPTH FEET	ELEVATION FT, MSL
TOP OF RISER	-2.75	416.89
2" Threaded Riser Cap Pea Gravel in annular space		
GROUND SURFACE	0.00	414.14
PROTECTIVE CASING SIZE: 4-inch round TYPE: Anodized Aluminum		
BOTTOM OF PROTECTIVE CASING		
BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 7 gal		
RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded		
TOP OF SEAL	15.85	398.29
ANNULAR SEAL TYPE: 3/8-inch bentonite pellets Enviroplug 50# bags AMOUNT: 0.5 bag PLACEMENT: Tremie		
TOP OF FILTER PACK	17.85	396.29
FILTER PACK TYPE: DSI Sand - #2 Drillers Services, Inc. 0.5 cubic foot bags AMOUNT: 4 bags PLACEMENT: Tremie; wash with water		
BOTTOM OF RISER / TOP OF SCREEN	19.85	394.29
SCREEN DIA: 2-inch TYPE:ASTM-NSF Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch		
BOTTOM OF SCREEN	29.85	384.29
BOTTOM OF CASING	30.15	383.99

SOUTHERN COMPANY
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DRILLING LOG

GEOLOGICAL SERVICES

Hole No. GWC-53

Sheet 1 of 2

SITE **Georgia Power Company Plant Scherer** HOLE DEPTH 28 SURF.ELEV. 432.93

LOCATION PAC/Ash Cell COORDINATES N 1120319.92 E 2407942.97

ANGLE 0 BEARING 0 CONTRACTOR Boart Longyear DRILL NO. BL100C

DRILLING METHOD Sonic NO. SAMPLES Continuous NO. U.D. SAMPLES 0

WATER TABLE DEPTH ELEV. TIME AFTER COMP. DATE TAKEN

TYPE GROUT QUANTITY MIX DRILLING START DATE 6/23/2010

DRILLER S. Gautney RECORDER L. Millet APPROVED DRILLING COMP. DATE 6/23/2010

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments	% Rec	RQD
0	432.93	Dark red silty CLAY, dry, hard, with mica							
1	431.93								
2	430.93								
3	429.93								
4	428.93								
5	427.93	Orange and tan silty CLAY, dry, hard, trace mica							
6	426.93								
7	425.93								
8	424.93								
9	423.93								
10	422.93	Tan, orange, and light green silty CLAY, dry, plastic, trace mica, occasional sandy zones							
11	421.93								
12	420.93								
13	419.93								
14	418.93								
15	417.93								
16	416.93								
17	415.93	Tan and brown silty CLAY, wet, with mica and dark brown mottling							
18	414.93								
19	413.93								
20	412.93	Green and tan clayey SAND, saturated, very fine to fine grained, with mica							
21	411.93								
22	410.93	Tan sandy CLAY, wet, white mottling, with mica							
23	409.93								
24	408.93								

SOUTHERN COMPANY
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DRILLING LOG
GEOLOGICAL SERVICES

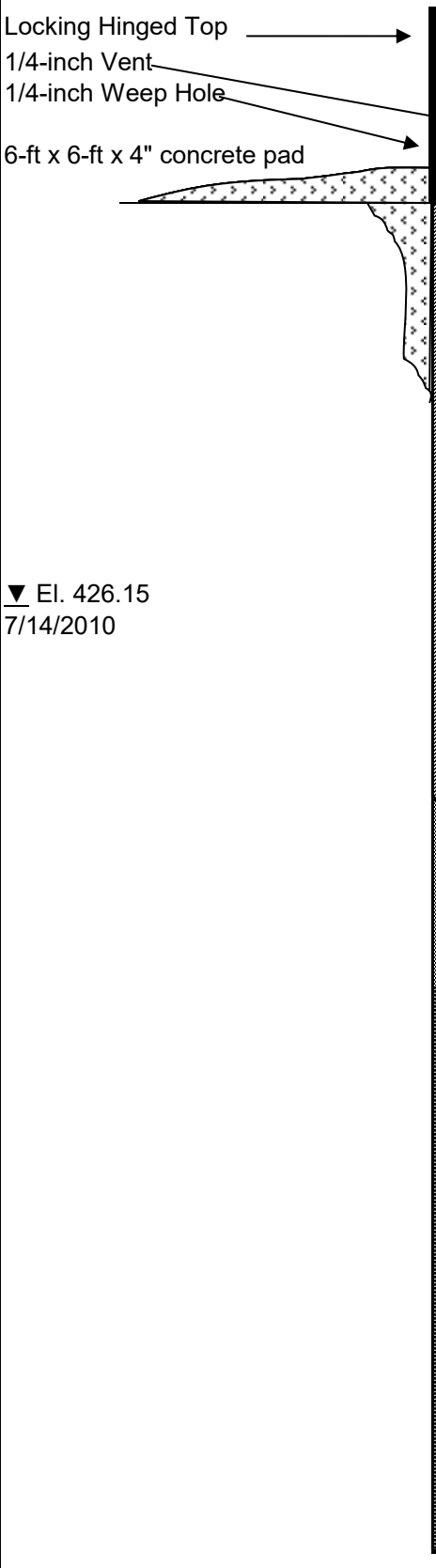
Hole No. GWC-53
Sheet 2 of 2

SITE **Georgia Power Company Plant Scherer** TOTAL DEPTH **28** SURF.ELEV. 432.93

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments	% Rec	RQD
25	407.93								
26	406.93	Green silty CLAY, wet, tan and white mottling, with mica							
27	405.93								
28	404.93								
29	403.93	28' - Bottom of boring							
30	402.93								
31	401.93								
32	400.93								
33	399.93								
34	398.93								
35	397.93								
36	396.93								
37	395.93								
38	394.93								
39	393.93								
40	392.93								
41	391.93								
42	390.93								
43	389.93								
44	388.93								
45	387.93								
46	386.93								
47	385.93								
48	384.93								
49	383.93								
50	382.93								
51	381.93								
52	380.93								
53	379.93								
54	378.93								
55	377.93								

WELL CONSTRUCTION LOG — Southern Company Generation

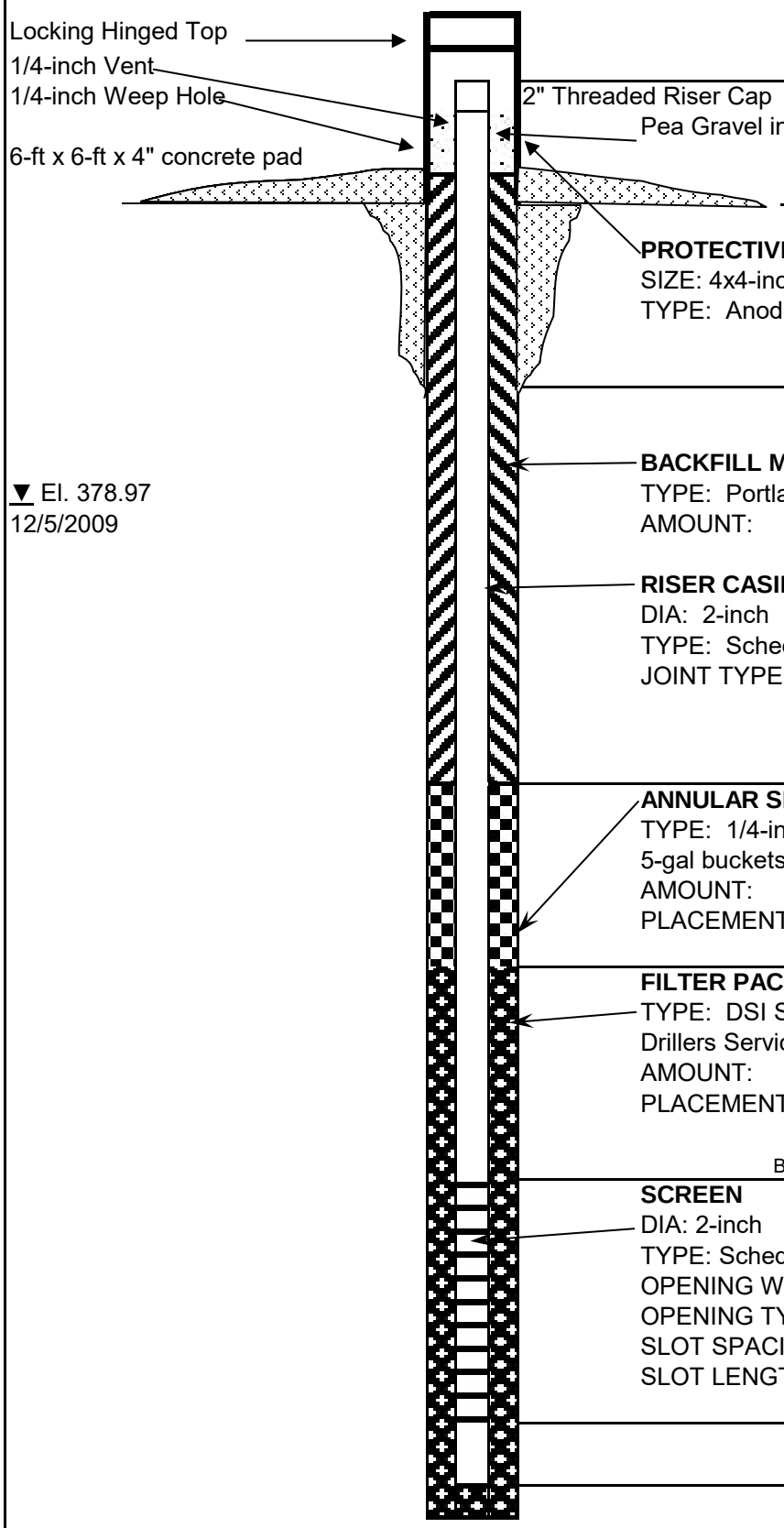
PROJECT: Plant Scherer	DRILLING CO.: Boart Longyear	WELL NAME
	DRILLER: S. Gautney	
LOCATION: PAC/Ash Cell	RIG TYPE: BL100C	
LOGGER: L. Millet	DRILLING METHODS: Sonic	GWC-53
DATE CONSTRUCTED: 6/23/2010		



	DEPTH FEET	ELEVATION FT, MSL
TOP OF RISER	-2.64	435.57
2" Threaded Riser Cap Pea Gravel in annular space		
GROUND SURFACE	0.00	432.93
PROTECTIVE CASING SIZE: 4-inch round TYPE: Anodized Aluminum		
BOTTOM OF PROTECTIVE CASING		
BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 16 gal		
RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded		
TOP OF SEAL	16.06	416.87
ANNULAR SEAL TYPE: 3/8-inch bentonite pellets Enviroplug 50# bags AMOUNT: 0.5 bag PLACEMENT: Tremie		
TOP OF FILTER PACK	18.06	414.87
FILTER PACK TYPE: DSI Sand - #2 Drillers Services, Inc. 0.5 cubic foot bags AMOUNT: 4 bags PLACEMENT: Tremie; wash with water		
BOTTOM OF RISER / TOP OF SCREEN	20.06	412.87
SCREEN DIA: 2-inch TYPE:ASTM-NSF Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch		
BOTTOM OF SCREEN	30.06	402.87
BOTTOM OF CASING	30.36	402.57

WELL CONSTRUCTION LOG — Southern Company Generation

PROJECT: Plant Scherer	DRILLING CO.: SCS, Inc.	WELL NAME
CCB Storage Facility	DRILLER: Denty	
LOCATION: Cell 1	RIG TYPE: CME 550	
LOGGER: Millet	DRILLING METHODS: HSA	GWC-20
DATE CONSTRUCTED: 10/6/09		

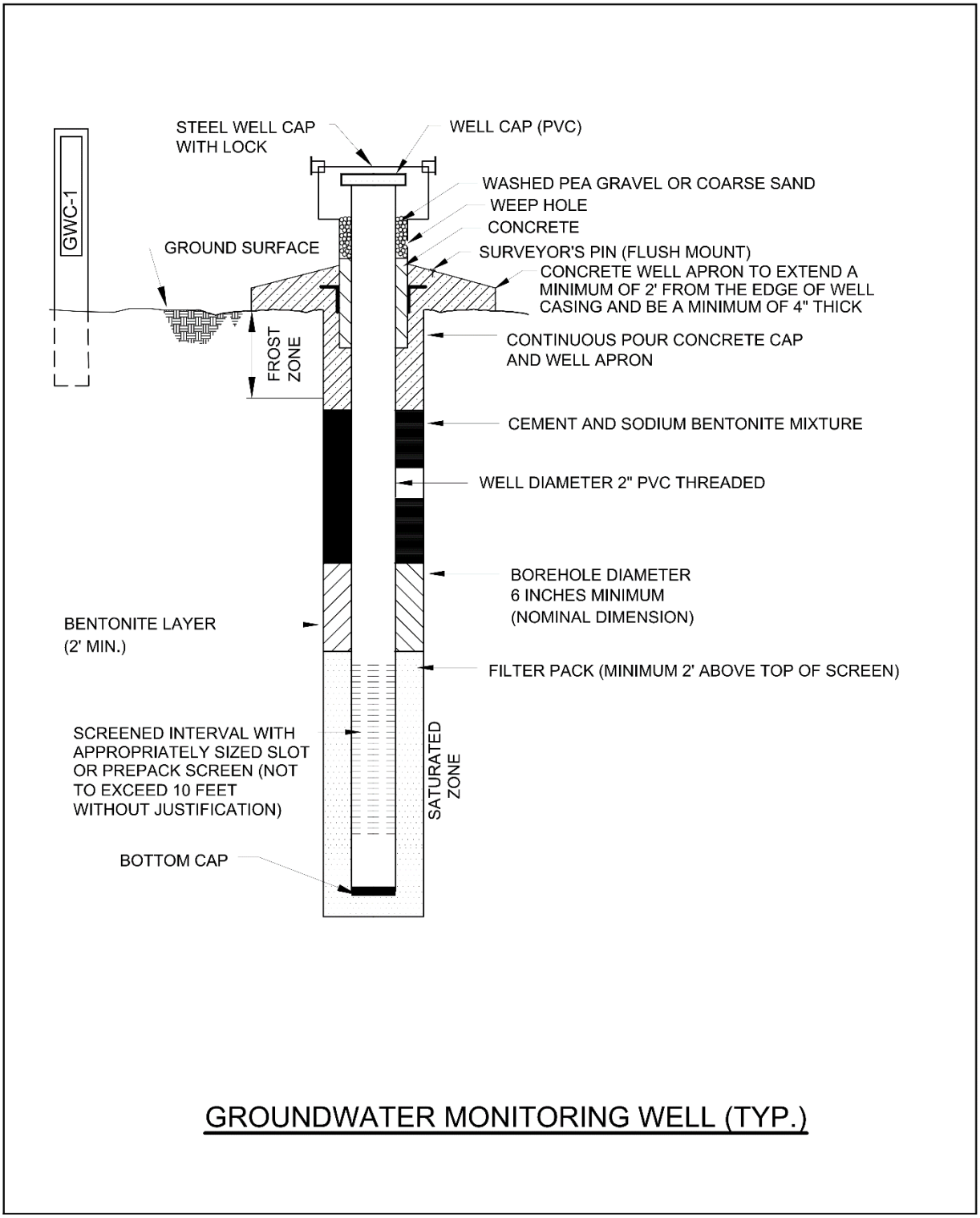


	DEPTH FEET	ELEVATION FT, MSL
TOP OF RISER	-3.27	426.09
2" Threaded Riser Cap Pea Gravel in annular space		
GROUND SURFACE	0.00	422.82
PROTECTIVE CASING SIZE: 4x4-inch TYPE: Anodized Aluminum		
BOTTOM OF PROTECTIVE CASING		
BACKFILL MATERIAL TYPE: Portland Cement Grout AMOUNT: 15.3 cubic feet		
RISER CASING DIA: 2-inch TYPE: Schedule 40 PVC JOINT TYPE: Flush Threaded		
TOP OF SEAL	55.10	367.72
ANNULAR SEAL TYPE: 1/4-inch coated bentonite pellets 5-gal buckets AMOUNT: 1 bucket PLACEMENT: Tremie		
TOP OF FILTER PACK	57.03	365.79
FILTER PACK TYPE: DSI Sand - 1A (20/30) Drillers Services, Inc. AMOUNT: 5 bags PLACEMENT: Tremie; wash with water		
BOTTOM OF RISER / TOP OF SCREEN	59.13	363.69
SCREEN DIA: 2-inch TYPE: Schedule 40 PVC Prepack OPENING WIDTH: 0.01-inch OPENING TYPE: Slotted SLOT SPACING: 0.25-inch SLOT LENGTH: 1.5-inch		
BOTTOM OF SCREEN	69.13	353.69
BOTTOM OF CASING	69.43	353.39

APPENDIX B

GROUNDWATER MONITORING WELL DETAIL

B. GROUNDWATER MONITORING WELL DETAIL



GROUNDWATER MONITORING WELL (TYP.)

APPENDIX C

GROUNDWATER SAMPLING PROCEDURES

C. GROUNDWATER SAMPLING PROCEDURES

Groundwater sampling will be conducted using USEPA Region 4 Field Quality and Technical Procedures as a guide. 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.

GPC 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 GPC 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. 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 submersible pump into the well to the midpoint of the well screen or a depth otherwise approved by the hydrogeologist or project scientist. In case of peristaltic pump, the tubing will be likewise lowered slowly to the target depth. The pump intake or tubing for peristaltic pump must be kept at least two (2) 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. Non-dedicated pumps and wiring will be decontaminated before use and between well locations using procedures described in the latest version of the *Region 4 U.S. Environmental Protection Agency Science and Ecosystem Support Division (SESD) Operating Procedure for Field Equipment Cleaning and Decontamination* 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 ft. 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, 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 S.U. for pH
   - ±5 % for specific conductance (conductivity)
   - ±10% for DO where DO>0.5 mg/L. If DO<0.5 mg/L no stabilization criteria apply
   - ≤10 NTUs for turbidity
   - Temperature – Record only, not used for stabilization criteria
   - ORP – Record only, not used for stabilization criteria.

7) Collect samples at a flow rate between 50 and 250 mL/min 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. 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) 8)Compliance samples will be unfiltered; however, to determine if turbidity is affecting sample results, a second sample 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. Filtered samples are not considered compliance samples and are only used to evaluate the effects of turbidity.

9) 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 non-dedicated equipment. Upon completion of field activity the well will be closed and locked.

13) Samples will be delivered to the laboratory following appropriate chain-of-custody (COC) and temperature control requirements. The goal for sample delivery will be within 48 hours of collection. If delivery is delayed, samples should not be analyzed after the method-prescribed hold time.

Throughout the sampling process new 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 NTUs however, samples may be collected where turbidity is less than 10 NTUs and the stabilization criteria described above are met.

If sample turbidity is greater than 5 NTUs and other stabilization criteria have been met, samplers will continue purging for 3 additional hours in order to reduce the turbidity to 5 NTUs or less.

- If turbidity remains above 5 NTUs but is less than 10 NTUs, and other parameters are stabilized, the well can be sampled.
- Where turbidity remains above 10 NTUs, an unfiltered sample will be collected followed by a second 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 COC form.

APPENDIX C

SURFACE WATER SAMPLING PROCEDURES AND ANALYTICAL REQUIREMENTS

D. SURFACE WATER SAMPLING AND ANALYSIS PROCEDURES

Surface water samples will be collected in accordance with the general procedures outlined below if flowing water is observed at each sampling location. These procedures were developed using field sampling guidelines described in the *USEPA Region 4 Field Branches Quality System and Technical Procedures* (https://www.epa.gov/quality/quality-system-and-technical-procedures-sesd-field-branches). Surface water samples will be analyzed for the parameters contained in Table 1 and include both Appendix III and Appendix IV constituents.

If a dipper or other transfer vessel other than the sample container is used, it must be composed of a non-porous inert material such as glass, PVC, polyethylene, or stainless steel. The following procedures will be used to collect surface water samples:

a) Hold the bottle near the base with one hand, and with the other, remove the cap.

a) Rinse the sample container with the water to be sampled prior to filling the container, unless the sample containers are pre-preserved. Pre-preserved sample containers should not be rinsed prior to sampling.

b) Hold the container underneath the water surface and allow the container to be filled with water. Remove the container from underneath the surface and place the cap back on the container.

c) Label the sample container to, at a minimum, include: Sample Number, Name of Collector, Date and Time of Collection, and Place/Point of Collection.

d) Place the samples in a cooler containing water-ice, if required, for courier or hand delivery to the laboratory within the sample hold times.

e) Follow COC and temperature protocols.

The minimum sampling frequency for surface water will be semiannual.

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