

**SAVANNAH HARBOR EXPANSION
GENERAL REEVALUATION REPORT**



**DREDGED MATERIAL
PHYSICAL ANALYSIS REPORT**



Savannah Harbor Deepening General Re-evaluation Report

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1.0 Site Geology

1.1 General

The study area is underlain with unconsolidated and partly consolidated Atlantic Coastal Plain sediments. These sediments generally consist of unconsolidated to semi-consolidated layers of sand and clay; and semi-consolidated to very dense limestone and dolomite and can achieve thicknesses of about 5,500 feet. They range in age from late Cretaceous (approximately 100 million years old) to recent, or Holocene. The Atlantic Coastal Plain sediments overlie sedimentary strata and volcanics of Triassic age to early Jurassic age (approximately 230 million years old to about 170 million years old, respectively). These rocks overlie crystalline basement rocks of Paleozoic age (from 680 to 230 million years old) consisting of igneous intrusives and low-grade metamorphic rocks. The rock record is not continuous and time gaps exist where either no sediment deposition occurred or where erosional forces removed the rock record. In the project area, the post-Cretaceous sediments (those deposited within the last 65 million years) are estimated to be about 1,800 to 2,500 feet thick. These strata intersect a horizontal plane in a northeast to southwest trend and dip and thicken to the southeast. A discussion of the post-Cretaceous Atlantic Coastal Plain sediments follows, in descending order of occurrence. For the purpose of this discussion, the strata will be referred to based on time-rock units (i.e., rocks deposited during the same geologic time division).

1.2 Post-Miocene Units

The post-Miocene units consist of sediments deposited during the Pliocene, Pleistocene, and Holocene (recent) geologic ages (12 million years old and younger). These sediments are comprised of interbedded floodplain deposits of reworked alluvial and beach material and reworked Miocene sediments. Typically, these floodplain sediments are tan, gray, or greenish gray in color.

The post-Miocene unit sediments are found at the surface throughout the area. They consist of phosphatic, micaceous, and clayey sands of Pliocene age; feldspathic sands and gravels with clay beds of Pleistocene age; and varying mixes of clays, silts, sands, and gravels of Holocene age. There is very little fossil material in these sediments. In some areas, Pliocene and Pleistocene sediments may be missing from the geologic record. It is uncertain if these sediments exist within the project area.

The Holocene (recent) sediments generally consist of varying mixtures of clays, silts, sands, and, occasionally, gravels. Within the project area, these sediments are represented by low and high liquid-limit clays with varying amounts of sand and organic matter (CL and CH); inorganic, low and high liquid-limit silts (ML and MH); silty sands containing up to 40 percent silts, some clay and mica (SM); and cleaner, poorly graded sands containing less than 12 percent silts and clays (SP, SP-SM). The consistency of the fine-grained soils (silts and clays) can be described as very soft to soft. The coarse-grained soils (sands) can be described as very loose to dense, with the majority being

medium. The materials are somewhat cohesive when small amounts of silt or clay are present; however, they tend to slough below the water table when there is little fine material.

The Holocene materials are often associated with beaches and dunes. They were carried from topographically high areas from the Piedmont and upstream Coastal Plains and deposited during the formation of the floodplain of the Savannah River. The sediments are mixed by hydraulic action of the waters in the river and by erosion and reposition of the riverbank and river shoals as the river meanders. There is no active method for sediment accumulation beyond the banks of the river. Consequently, with the exception of accumulations of organic material, there are no materials being deposited there.

Immediately below the Holocene Unit is the Pleistocene series of sediments. These sediments generally consist of arkosic sands and gravels with discontinuous lignitic and fossiliferous clay beds and overlying micaceous sands. These are underlain by the Pliocene sediments, which consist of phosphatic, micaceous, and clayey sands with limestone and dolomite beds. These sediment beds are thin and have not been regularly identified in the project area.

1.3 Miocene Units

According to Clarke and others (1990), the Miocene units (20 to 12 million years old) can be subdivided into three sub-units (Miocene unit A, B, and C), each consisting of three geologically similar beds. The lowest bed of each sub-unit consists of a basal carbonate layer of sandy, phosphatic limestone or dolomite. A layer of interlaminated silty clay and clayey silt overlies the basal carbonate layer. The upper beds consist of sand layers of poorly sorted, very fine to granule-sized quartz sand with some phosphatic and dolomitic grains. Each three-bed unit is separated from the beds above and below it by an erosional surface, or unconformity. These layers are of importance because they form the primary confining layer for the principal artesian aquifer in the area.

The Miocene units at the project extend to a depth of about 220 feet in the upper reaches of the project area. They can achieve a thickness of about 470 feet along the coastal area, but range from about 60 to 175 feet thick under the project area. Miocene Unit C, the lowest unit, appears to be missing in the project area.

The beds of the Miocene were deposited during transgressions and regressions (rising and lowering) of the sea. The basal carbonates were deposited in open marine water during full transgressions. During this time, the land surface was at its greatest depth below the water surface. As the sea regressed, the interlayered silts and clays were deposited in a shallower, nearshore environment that allowed for the settling of the fine silts and clays. In this environment, coarser materials were already removed from the sediment and calcareous materials were not a major contributor. The upper sand beds were deposited in a shallow water, nearshore environment. At this time, the

water was at its shallowest. Materials deposited during the period the sea transgressed inland were, apparently, removed during some erosional event. As the next sea regression occurred, the next sequence of beds was deposited until the final sequence, Miocene Unit A, was deposited.

1.4 Oligocene Unit

Sediments of the Oligocene units were deposited between 35 and 20 million years ago. This unit can be as thick as 120 feet, and in some areas it is missing. The unit is estimated at approximately 60 thick under the project area, based on geophysical data.

The Oligocene unit sediments are typically tan colored limestones with varying amounts of micrite (dense, non-porous limestone), fine fossil foraminifera shells, and silt and clay-sized phosphate. The sediments were deposited in an offshore mounded carbonate bank environment, with some sand material being deposited where the bank nears the shore.

1.5 Eocene Units

Immediately below the Oligocene Unit are the Eocene Units. The Eocene sediments, deposited between 55 and 35 million years ago, are subdivided into three sub-units: the upper, middle, and lower Eocene Units. It is the source of the principal artesian aquifer in the Savannah area, the Floridan Aquifer.

1.5.1 Upper Eocene Unit

The upper Eocene Unit throughout most of the coastal area of Georgia consists of the massive, fossiliferous, Ocala Limestone. There is some glauconite at the base of the unit and an increase in clastic material in the northern coastal areas, including the project area. This unit is more than 200 feet thick throughout the coastal area, and achieves a thickness of 400 feet in some areas. These sediments were deposited in a warm, shallow water, nearshore carbonate bank environment, similar to the other Eocene units.

1.5.2 Middle Eocene Unit

The middle Eocene Unit is separated from the lower and upper units by erosional surfaces, or unconformities. It is lithologically similar to the lower unit, and can be distinguished based on the abundance of microfossils. The upper beds of this unit are more dolomitic than the upper beds of the lower unit and contrast with the lower limestone beds of the upper Eocene Unit. This unit can be up to 1,000 feet thick in some areas. At Hutchinson Island and Fort Pulaski, near Savannah, Georgia, the unit is 700 and 540 feet thick, respectively. This unit is most likely more than 700 feet thick in the study area. These sediments were deposited in an environment similar to that of the lower Eocene Unit.

1.5.3 Lower Eocene Unit

This unit unconformably overlies the Paleocene unit below it. It consists of carbonate sediments, predominantly glauconitic limestones and dolomites, with sand beds in the upper part. These beds attain a thickness of up to 800 feet in the southern coastal area of Georgia but are only 120 to 180 feet thick in the project area. This unit was deposited in a nearshore warm, shallow, open marine environment.

1.6 Paleocene Unit

Sediments of the Paleocene Unit were deposited between 65 and 55 million years ago. The Paleocene Unit in the northern coastal Georgia area consists of glauconitic sand, argillaceous sand, and medium to dark gray clays. The uppermost beds of the unit consist of a hard, sandy, glauconitic, fossiliferous limestone. The Paleocene Unit can be over 425 feet thick, but there is little data in the coastal area to develop accurate estimates in the project area. The Paleocene time marked the beginning of a regional sea transgression that lasted through the Eocene. The sediments represent marine to marginal marine, nearshore depositional environments. This unit unconformably overlies late Cretaceous age sediments.

2.0 Subsurface Investigations

2.1 Background

The Geology/Hydrogeology and HTRW Design Section, U.S. Army Corps of Engineers, Savannah District, has performed a number of subsurface investigations within the project area over the last 35 years. Several hundred borings have been drilled within and adjacent to the Savannah Harbor. The majority of these borings were along the north side of the channel and were drilled for the Savannah Harbor Widening and the Savannah Harbor Deepening projects, both completed at the end of the last century. These borings were constructed for the purpose of evaluating the in-situ materials within specific areas of the channel for harbor modification projects. The majority of the borings were water-borne; however, land-based borings have been completed to identify soil materials within the channel side slopes for the purpose of determining the most probable channel side slopes resulting for each proposed harbor modification. The investigations have used a variety of methods to obtain subsurface data, including Vibrocore, spoonspooning, coring, and sub-bottom sonic profiling. Standard penetration sampling using a split-barrel sampler was the method most often used. Using this method, a 1-3/8 inch inner diameter standard split barrel sampler was driven through the material using a 140-pound hammer with a 30-inch fall. The sampler was retrieved and the material was described in accordance with the Unified Soil Classification System. Selected samples were submitted for a variety of mechanical analyses, including grain size analysis, Atterberg limits, natural moisture content, and specific gravity calculations.

2.2 Procedures

The majority of the borings constructed within the channel were drilled from a floating barge using a variety of core drills to recover the samples. The barges were somewhat stabilized using steel spuds or anchors. They raised and lowered with the tide cycle. Drilling was very difficult off these platforms and often had to be terminated due to strong tides that would not allow the drill crew to maneuver the barge to a boring location. Wakes caused by high winds and ship traffic also greatly hampered the ability to drill from such a platform.

This drilling platform was also used to construct the Vibracore borings. This method involved vibrating a plastic tube through the subsurface soils to collect a sample that provided a more representative indication of the in-situ nature of the soils. This method could recover soft muds and loose sands that were often lost using standard penetration methods with a split-barrel sampler. However, this method generally did not penetrate stiff silts and clays or medium dense sands, or other materials exhibiting some degree of cementation, induration, or other characteristic of lithification. Also, this method did not provide adequate data that could be easily related to the relative strengths of the soils penetrated using other drilling methods.

During the mid 1980's, drilling was conducted using the U.S. Army Corps of Engineers self-elevating barge Explorer. This barge was a powered vessel that could maneuver on its own using twin diesel motors. It also had the ability to elevate itself above the water on three legs to eliminate the actions of the tide cycles and wave action. Drilling from this platform proved to be much more efficient and allowed the employment of more consistent drilling techniques. In addition, the Explorer allowed drilling in areas that were inaccessible to the standard barge due to rapid tide currents, deep water, and extreme distances from land.

3.0 Material Summary

3.1 General

The sediments underlying the project area are largely a result of varying depositional environments. As such, the sediments are discontinuous both vertically and horizontally and numerous variations occur over short distances. Boring logs completed for these investigations are included in Appendix A of this document. Analytical results of the mechanical analyses of the samples collected during these investigations are provided in Appendix B. The plans showing the locations of the borings are provided as Appendix D.

3.2 Soils

The uppermost sediments consist of varying mixtures of poorly-graded sands (SP), silty sands (SM), poorly-graded gravels (GP), organic silts (OH), low liquid-limit and high liquid-limit silts (ML and MH), clayey sands (SC), and low liquid-limit and high liquid-limit clays (CL and CH). Standard penetration tests from borings indicate the consistency of the fine-grained soils (silts and clays) range from very soft (0 to 4 blows per foot) to very dense (50 or greater blows per foot), while the coarse-grained soils (sands and gravels) range in consistency from dense (30 to 50 blows per foot) to very dense (50 or greater blows per foot). Typically, these soils vary in color from tan, gray, brown, light brown, and greenish to bluish gray. Generally, soils at the river bottom exhibit lower consistency than the deeper soils. The bottom soils are often very loose and semi-liquid and can extend from the bottom of the river channel to only a few inches to several feet deep.

The underlying soils consist of silty sands (SM), clayey sands (SC), high liquid-limit silts (MH), and low liquid-limit and high liquid-limit clays (CL and CH). Standard penetration tests indicate the consistencies of the fine-grained soils range from stiff (8 to 15 blows per foot) to hard (30 or greater blows per foot), while the coarse-grained soils range in density from dense (30 to 50 blows per foot) to very dense (50 or greater blows per foot). In general, these soils are characterized by a significant increase in blow counts, consistency, and cohesiveness. These soils are often described as gray, grayish green, green, and olive green.

3.3 Rock

Lenses of moderately hard to hard limestone have been encountered in borings constructed around the project area; however, its occurrence has been below the depths of concern for this project. In addition, borings drilled in 1969 identified compaction shale in the northern end of the channel, near Kings Island turning basin. This lithology has not been identified in any of the more recent borings and this material may be analogous to the greenish-gray to olive green, stiff to hard, fat silts and dense to very dense silty sands that have been described in later borings.

A high resolution, sub-bottom acoustic survey was performed in the channel during the early 1990's as part of the investigation program for the recently completed harbor deepening. This survey showed an area of high acoustic impedance within the middle channel (stations 70+000 to 24+000). Borings drilled in this area and subsequent dredging indicated this material was similar to the greenish-gray to olive green, stiff to hard, fat clays and dense to very dense silty sands described above.

Thin layers of rock were identified in a boring constructed in 2002 at the interface between the post-Miocene sediments and the top of the Miocene. The layer was no more than a few centimeters thick and was a green, fine-grained, sandstone. These more recent borings also describe black gravels and oblong rock fragments within the Miocene sediments, consistent with the geological descriptions of the phosphatic materials within the Miocene sediments provided above in Section 1.3. These materials were encountered both within and below the project depth.

4.0 Radiological Screening

4.1 Purpose

The Savannah Harbor Deepening project area is located downstream from the Savannah River Site, where radioactive materials are processed. Releases of radioactive materials from the site have been documented over the years, raising concern as to whether such releases could cause accumulation of these materials within the sediments that are to be removed from within the project area. The likelihood of this occurring has been considered improbable; nevertheless, a decision was made to screen selected sediment samples that were collected during the 2002 investigations for gross radioactivity.

4.2 Procedures

All samples collected during the 2002 subsurface investigations were placed in sample jars, labeled, inventoried, boxed, and shipped to the Savannah District Army Corps of Engineers' Environmental and Materials Unit located in Marietta, Georgia. Initially, the entire stack of sample boxes was screened, and then selected individual samples. Prior to performing the analyses described in Section 2.1, above, randomly selected jar samples from every boring hole was screened for gross radioactivity. This process involved using a Bicon Geiger Mueller gauge equipped with a pancake probe. The probe was placed approximately 1 centimeter above the soil samples, and the highest reading was recorded. Readings were also collected from around the facility to determine ambient background levels.

4.3 Results

All results were measured in milli-Rems per hour (mRem/hr). Background values varied between 0.01 and 0.03 mRem/hr. Values from the sediment samples ranged from 0.02 to 0.04 mRem/hr. These results are consistent with the background values, with only a few samples exhibiting an increase of 0.01 mRem/hr over the background range. This should be anticipated, since these soils contain phosphatic and glauconitic minerals, along with other clays, that exhibit naturally-occurring levels above background levels. These results are two magnitudes below acceptable action levels approved by OSHA and the EPA that range between 1 mRem/hr and 5mRem/hr. Based on these results, it is believed that the levels of gross radioactivity measured in the samples is naturally occurring and poses no hazards to the environment.

5.0 Possible Effects of the Project on Ground Water

In the past, any proposed deepening of Savannah Harbor has raised questions about the possible effects this action would have on the confining layer of the principal artesian aquifer, known as the Floridan aquifer, and, ultimately, on the aquifer itself.

In light of some of the seemingly conflicting data, additional information was needed to adequately assess the possible effects of a deepened channel on the Upper Brunswick aquifer (as described by Clarke and others, 1990) and the Upper Floridan (principal artesian) aquifer that underlies the entire project area. It was decided that further studies should be conducted to verify the generalized data available from previous studies (mentioned above) of these aquifers. These studies would look at the potential impacts to the confining layer due to removing some confining and relict stream channel material. The results of these additional studies completed to date are provided in a separate document. Additional studies have yet to be completed. They are planned for completion in 2004.

6.0 Additional Geotechnical Requirements

Changes in channel geometry due to deepening, widening, realignment, slope stability, or feature avoidance require re-evaluation of existing data. As channel geometry continues to change, older geotechnical data is no longer adequate to evaluate these changes for a number of reasons. One concern is that there may be an insufficient number of borings located in areas that were naturally deeper than proposed project depths but no longer are. Another concern is that older borings, drilled for a much shallower project, were completed at depths that are shallower than proposed project depths. Also, as channels become deeper to accommodate larger vessels bend wideners are often added in areas that have not been previously investigated. These concerns were considered prior to the performance of the investigations conducted for the re-evaluation of this project. However, as additional changes in channel geometry are identified these concerns will be re-evaluated and additional subsurface investigations will be required.

APPENDIX A
SAVANNAH HARBOR
BORING LOGS

SAVANNAH HARBOR BORING LOGS

Kings Island
Turning Basin

DRILLING LOG	DIV. 4 South Atlantic	INSTALLATION Savannah, Ga.	SHEET 1 OF 2 SHEETS
1. PROJECT Savannah Harbor Widening and Deepening, Phase 2		10. SIZE AND TYPE OF PIT 1-3/8" Splitspoon, R	
2. LOCATION (Coordinates of Station) See Plan		11. DATUM FOR ELEVATION SHOWN (TIIM or MSL) Core Bit MLL	
3. DRILLING AGENCY Savannah District		12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314 C.D. #8	
4. HOLE NO. (As shown on drawing title and file number) 1		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	
5. NAME OF DRILLER Creamer		DISTURBED 1 UNDISTURBED 0	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		14. TOTAL NUMBER CORE BOXES 2	
7. THICKNESS OF OVERBURDEN		15. ELEVATION GROUND WATER 0.0' - Tidal	
8. DEPTH DRILLED INTO ROCK		16. DATE HOLE STARTED 19 Mar 69 COMPLETED 20 Mar 69	
9. TOTAL DEPTH OF HOLE 45.5'		17. ELEVATION TOP OF HOLE -14.3'	
		18. TOTAL CORE RECOVERY FOR BORING 58%	
		19. SIGNATURE OF INSPECTOR Allen Merritt, Robert L. Slesen, Geologist	

ELEVATION e	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	5		Water Very thin, very soft, layer of OL-organic silt above sand			No Sample obtained of OL materials, stratum very thin
	10					NO SAMPLES OBTAINED ONLY
-14.3'	15		SH-Gray, very fine grained, silty sand		Jan 1	
	20		ML-Greenish gray, clayey to sandy silt, moderate resistance to knife blade penetration from 18.0' to 24.5'	100		Splitspoon 16.5' to 18.0' 4" Casing set to 18.5'
	25			86		Pull #1, 18.0' to 19.5' Run 1.5', Rec 1.5'
	30		SH-Gray, silty, very fine grained sand, moderate resistance to knife blade penetration from 24.5' to 29.5'	40		Pull #2, 19.5' to 24.5' Run 5.0', Rec 4.3' CI 0.7'
	35		SH - - - - Continued on Sheet #2 - - - -			Pull #3, 24.5' to 29.5' Run 5.0', Rec 2.0' CI 3.0'

(Revised by Amendment No. 0001)

DRILLING LOG (Cont Sheet)

VARIATION TOP OF HOLE

-14.3'

Hole No.

1

PROJECT Savannah Harbor
Widening and Deepening, Phase 2

INSTALLATION

Savannah, Ga.

SHEET 2
OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	35		SM-Tan, very fine grained, silty sand, slight resistance to knife blade penetration from 39.5' to 41.6'	24	1	Pull #4, 29.5' to 34.5' Run 5.0', Rec 1.2' Cl 3.8'
				44		Pull #5, 34.5' to 38.8' Run 4.3', Rec 1.9' Cl 2.4'
	40			72		Pull #6, 38.8' to 41.6' Run 2.8', Rec 2.0' Cl 0.8'
	45		Compaction shale, gray, sandy, moderate resistance to knife blade penetration BOTTOM OF HOLE 45.5'	80		Pull #7, 41.6' to 45.5' Run 3.9', Rec 3.1' Cl 0.8'
			Soils field classified in accordance with the Unified Soil Classification System.			Used 150 to 250 lbs. pressure while coring

ONLY
 USE
 THIS
 AREA

HOLE NO. 2

DRILLING LOG		DIVISION South Atlantic	INSTALLATION Savannah	SHEET 1 OF 2 SHEETS
1. PROJECT Savannah Harb Widening and Deepening, Phase 2		10. SIZE AND TYP. 7 FT 1-3/8" Splitspoon, R		
2. LOCATION (Coordinates or Station) See Plan		11. DATUM FOR ELEVATION SHOWN (TIIM or MSL) Core Bit M.W.		
3. DRILLING AGENCY Savannah District		12. MANUFACTURER'S DESIGNATION OF DRILL Falling 314 C.D. 78		
4. HOLE NO. (As shown on drawing title and file number) 2		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED: 1 Jar UNDISTURBED: 0		
5. NAME OF DRILLER King		14. TOTAL NUMBER CORE BOXES 2		
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		15. ELEVATION GROUND WATER 0.0 - Tidal		
7. THICKNESS OF OVERBURDEN		16. DATE HOLE STARTED 21 Mar 69		
8. DEPTH DRILLED INTO ROCK		17. ELEVATION TOP OF HOLE -14.0'		
9. TOTAL DEPTH OF HOLE 46.2'		18. TOTAL CORE RECOVERY FOR BORING 55 %		
		19. SIGNATURE OF INSPECTOR Allen Merritt, Robert Siesen, Geologist		

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
	5		Water, very thin layer, very soft OL-organic silt above sand			Casing drilled in 2.0'	
	10					<div style="border: 2px solid black; padding: 10px; width: 100%; height: 100%;"> <p style="font-size: 2em; margin: 0;">RECORDATION ONLY</p> <p style="font-size: 2em; margin: 0;">FOR</p> </div>	
-14.0	15		SP-Tan-gray, very fine sand, slightly silty		Jan 1		Splitspoon 14.0' to 15.5'
	20		SH-Gray, silty, very fine grained to medium grained sand, micaceous, with thin layers of ML-sandy silt, moderate resistance to blade penetration from 15.5' to 19.0'	71			Pull #1, 15.5' to 19.0' Run 3.5', Rec 2.5' Cl 1.0'
	25		Siltstone, moderate resistance to knife blade penetration from 19.0' to 31.0'	90			Pull #2, 19.0' to 24.0' Run 5.0', Rec 4.5' Cl 0.5'
	30			43		Pull #3, 24.0' to 31.0' Run 7.0', Rec 3.0' Cl 4.0'	
			----- Continued on Sheet #2 -----				Soft spots recorded this run

(Revised by Amendment No. 0001)

PROJECT Savannah Harbor Widening and Deepening, Phase 2 INSTALLATION Savannah, Ga. SHEET OF 2 SHEETS 2

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			Siltstone			
	35		SM-Gray, very fine grained, slightly silty sand, very slight resistance to knife blade penetration from 31.0' to 36.0', SM sand and ML sandy silt with generally slight and spotty moderately resistance to knife blade penetration from 36.0' to 46.2'	60		Pull #4, 31.0' to 36.0' Run 5.0', Rec 3.0' Cl 2.0'
		32		Pull #5, 36.0' to 38.5' Run 2.5', Rec 1.7' Cl 0.8'		
	40	68		Pull #6, 38.5' to 41.0' Run 2.5', Rec 1.7' Cl 0.8'		
		8		Pull #7, 41.0' to 46.2' Run 5.2', Rec 0.4' Cl 4.8'		
	45		Core recovery less than 10%. Driller reported material as soft while coring.			
			BOTTOM OF HOLE 46.2'		2	

Soils field classified in accordance with the Unified Soil Classification System.

INFORMATION ONLY

PROJECT Savannah Harbor Widening and Deepening, Phase 2		LOCATION Savannah, GA.	SHEET 1 OF 2 SHEET
LOCATION (Coordinates or Station) See Plan		10. SIZE AND TYPE OF PIT 1-3/8" Splitspoon/R Core	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) BIC
3. DRILLING AGENCY Savannah District		NLW	
4. HOLE NO. (As shown on drawing title and file number) 3		12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314 C.D. #8	
5. NAME OF DRILLER Creamer		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		DISTURBED 1 Jar UNDISTURBED 0	
7. THICKNESS OF OVERBURDEN		14. TOTAL NUMBER CORE BOXES 2	
8. DEPTH DRILLED INTO ROCK		15. ELEVATION GROUND WATER 0.0 - Tidal	
9. TOTAL DEPTH OF HOLE 46.4'		16. DATE HOLE STARTED 24 Mar 69 COMPLETED 24 Mar 69	
		17. ELEVATION TOP OF HOLE -13.5'	
		18. TOTAL CORE RECOVERY FOR BORING 60 %	
		19. SIGNATURE OF INSPECTOR Allen Merritt, Robert L. Siesen, Geologist	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	5		Water			
	5		OL-Very thin soft layer organic silt above sand			
-13.5'	15		SM-Tan, gray, silty, fine grained sand		Jar 1	Splitspoon from 13.5' to 19.5' Used from 150 to 200 lbs pressure to core.
	20		Fine grained to medium grained, slightly clayey, slight to moderate resistance to knife penetration from 19.5' to 24.5'	80		Pull #1, 19.5' to 24.5' Run 5.0', Rec 4.0' Cl 1.0'
	25		SM-Tan to gray, slightly silty, very fine grained sand with few thin layers of SM sand, generally slight resistance to knife blade penetration from 24.5' to 37.6'	68		Pull #2, 24.5' to 37.6' Run 6.6', Rec 4.5' Cl 1.1'
	30		----- Continued on Sheet #2 -----			

NEED FOR INFORMATION ONLY

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

-13.5'

Hole No.

3

PROJECT Savannah Harbor
Widening and Deepening, Phase 2

INSTALLATION

Savannah, Ga.

SHEET

2

OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			SM-Tan to gray, slightly silty, very fine grained sand		1	
	35			52		Pull #3, 31.1' to 35.3' Run 4.2', Rec 2.2' Cl 2.0'
-37.6'				43		Pull #4, 35.3' to 37.6' Run 2.3', Rec 1.0' Cl 1.3'
	40		Compaction shale, gray; very fine grained, silt and sand with layers of CL-sandy clay, moderate to fairly high resistance to knife blade penetration	49		Pull #5, 37.6' to 46.4' Run 8.8', Rec 4.3' Cl 4.5'
	45					
-46.4			BOTTOM OF HOLE 46.4'			
			Soils field classified in accordance with the Unified Soils Classification System.			

INFORMATION ONLY

DRILLING LOG

DIVISION So Atlantic

HOLE NO. 4

1. PROJECT Savannah Harbor Widening and Deepening, Phase 2
 2. LOCATION (Coordinates or Station) See Plan
 3. DRILLING AGENCY Savannah District
 4. HOLE NO. (As shown on drawing title and file number) 4
 5. NAME OF DRILLER Creamer
 6. DIRECTION OF HOLE
 VERTICAL INCLINED _____ DEG. FROM VERT.
 7. THICKNESS OF OVERBURDEN _____
 8. DEPTH DRILLED INTO ROCK _____
 9. TOTAL DEPTH OF HOLE 44.6'

INSTALLATION Savannah Ga. SHEET 1 OF 2 SHEETS
 10. SIZE AND TYPE OF BIT 1-3/8" Splitspoon/R Core Bit
 11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MLW
 12. MANUFACTURER'S DESIGNATION OF DRILL Filling 314 G.D. #8
 13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN
 DISTURBED 1 UNDISTURBED 0
 14. TOTAL NUMBER CORE BOXES 2
 15. ELEVATION GROUND WATER 0.0 - Tidal
 16. DATE HOLE STARTED 3 Apr 69 COMPLETED 3 Apr 69
 17. ELEVATION TOP OF HOLE -13.5
 18. TOTAL CORE RECOVERY FOR BORING 69 %
 19. SIGNATURE OF INSPECTOR Allen Merritt Robert L. Siesen, Geologist

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	5		Water			FOR INFORMATION ONLY
	11					
-13.5'	15		SM-Gray, very fine grained, silty sand, slight resistance to knife blade penetration from 15.0' to 18.5'	100	Jar 1	
	20		Moderate resistance to knife blade penetration from 18.5' to 24.6'			
	25		Slight to moderate resistance to penetration of knife blade from 24.6' to 35.8'	74		Pull #2, 18.5' to 24.6' Run 6.1', Rec 4.5' Cl 1.6'
	30		Soft Layers	60	1	Pull #3, 24.6' to 34.6' Run 10.0', Rec 6.0' Cl 4.0'

Continued on Sheet #2

(Revised by Amendment No. 0001)

PROJECT Savannah Harbor Installation Savannah, Ga. SHEET 2 OF 2 SHEETS

DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
35		SM-Gray, very fine grained, silty sand			
		Compaction shale, moderate resistance to penetration with knife blade.	64		Pull #4, 34.6' to 44.6' Run 10.0', Rec 6.4' Cl 3.6'
40					Loss was left in hole not washed away.

-44.6' BOTTOM OF HOLE 44.6'

45		Soils field classified in accordance with the Unified Soil Classification System.			
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FOR INFORMATION ONLY

DRILLING LOG

South Atlantic

INSTALLATION

Savannah, Ga.

5

SHEET 1 OF 2 SHEETS

1. PROJECT Savannah Harbor Widening and Deepening, Phase 2

2. LOCATION (Coordinates or Station) See Plan

3. DRILLING AGENCY Savannah District

4. HOLE NO. (As shown on drawing title and file number) 5

5. NAME OF DRILLER Creamer

6. DIRECTION OF HOLE VERTICAL INCLINED DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN

8. DEPTH DRILLED INTO ROCK

9. TOTAL DEPTH OF HOLE 44.2'

10. SIZE AND TYPE OF PIT 1-3/8" Splitspoon R Core

11. DATUM FOR ELEVATION SHOWN (TIIM or MSL) M.W. BIE

12. MANUFACTURER'S DESIGNATION OF DRILL Pulling 314 C.D. #8

13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED 1 Jar UNDISTURBED 0

14. TOTAL NUMBER CORE BOXES 2

15. ELEVATION GROUND WATER 0.0 - Tidal

16. DATE HOLE STARTED 26 Mar 69 COMPLETED 26 Mar 69

17. ELEVATION TOP OF HOLE -15.0'

18. TOTAL CORE RECOVERY FOR BORING 60 %

19. SIGNATURE OF INSPECTOR Allen Herritt, Robert L. Sleson, Geol.

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	5		Water			
	10		Thin layer of soft OL-organic silt above sand			
-15.0'	15		SM-Gray-tan, silty, very fine grained sand, slightly micaceous, occasional silt layer, moderate resistance to knife blade penetration from 13.5' to 27.6'			Jar 1 Splitspoon from 15.0' to 16.5' Set 4" Casing to 19.0' Wash from 16.5' to 18.5'
	20		Soft thin layers	66		Pull #1, 18.5' to 27.6' Run 9.1', Rec 6.0' Cl 3.1'
	25					
	30		SM-Gray-tan, slightly silty, slightly clayey			
			----- Continued on Sheet #2 -----			

FOR INFORMATION ONLY

DRILLING LOG (Cont Sheet)

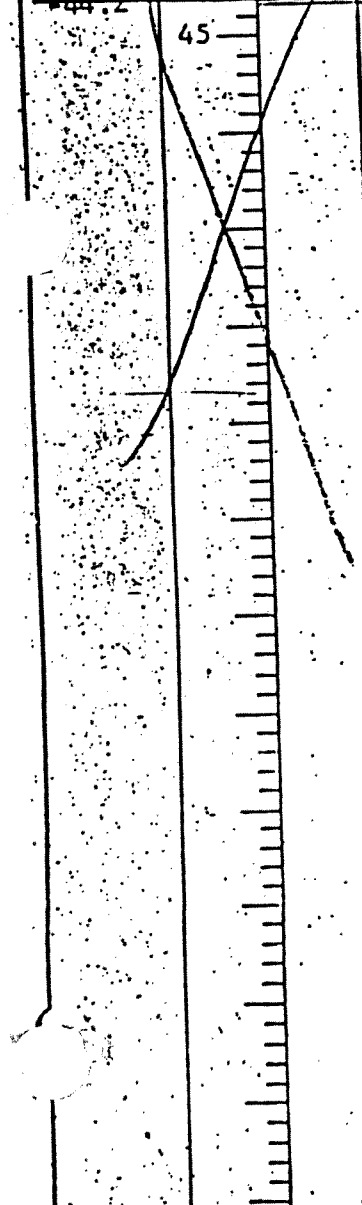
ELEVATION TOP OF HOLE -15.0' Hole No. 5

PROJECT Savannah Harbor Widening and Deepening, Phase 2

INSTALLATION Savannah, Ga.

SHEET 2 OF 2 SHEETS

VARIATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	35		SH-Gray-tan, slightly silty, slightly clayey, very fine grained sand, slight resistance to knife blade penetration from 27.6' to 34.8'	71	1	Pull #2, 27.6' to 34.8' Run 7.2', Rec 5.1' Cl 2.1'
	40		Compaction shale, gray-greenish gray, very fine grained sand, moderate resistance to knife penetration from 34.8' to 44.2'	45		Pull #3, 34.8' to 44.2' Run 9.4', Rec 4.2' Cl 5.2'
	44.2'		BOTTOM OF HOLE 44.2'		2	



Soils field classified in accordance with the Unified Soil Classification System.

FOR RECORDATION ONLY

Hole No. SH-12

DRILLING LOG		DIVISION <u>SOUTH ATLANTIC</u>	INSTALLATION <u>SAVANNAH R. IGA, GA.</u>	SHEET <u>1</u> OF <u>2</u> SHEETS
1. PROJECT <u>SAVANNAH HARBOR</u>		10. SIZE AND TYPE OF BIT <u>1 3/8" ID SPLITSPOON</u>		
LOCATION (Coordinates or Station) <u>KINGS ISLAND TURNING BASIN</u>		11. DATUM FOR ELEVATION SHOWN (MLW, MLLW, etc.) <u>MLW</u>		
DRAWING AGENCY <u>SAVANNAH DISTRICT</u>		12. MANUFACTURER'S DESIGNATION OF DRILL <u>CME 75</u>		
4. HOLE NO. (As shown on drawing title and file number) <u>SH-12</u>		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN <u>5</u>	DISTURBED <u>5</u>	UNDISTURBED <u>0</u>
5. NAME OF DRILLER <u>T.W. SCOTT</u>		14. TOTAL NUMBER CORE BOXES		
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		15. ELEVATION GROUND WATER		
7. THICKNESS OF OVERBURDEN <u>55.0'</u>		16. DATE HOLE STARTED <u>16 FEB. 1978</u>	COMPLETED <u>16 FEB. 1978</u>	
8. DEPTH DRILLED INTO ROCK <u>0.0'</u>		17. ELEVATION TOP OF HOLE <u>0.0 MLLW</u>		
9. TOTAL DEPTH OF HOLE <u>-55.0' MLW</u>		18. TOTAL CORE RECOVERY FOR BORING <u>3</u>		
		19. SIGNATURE OF INSPECTOR <u>Charles D. Griffin</u>		

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	
0.0 MLW	0'				1		0
-2.5			WATER				
			BOTTOM OF RIVER -2.5' MLW		JAR		BLOWS
	5'		MH-GREENISH GRAY SOFT CLAYEY SILT		1	NOTE: WEIGHT OF HAMMER PUSHED RODS WITH SPLITSPOON FROM -2.5' TO -17.5'	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
	10'						0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
	15'						0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
-17.5					2		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
	20'		SP. TAN POORLY GRADED SAND				5 7 10 10 20 15 17 14
	25'						
	30'		CONTINUED ON SHEET 2				
30.0							
NOTE: Soils field classification in accordance with the Unified Soil Classification System.						BLOWS PER FOOT: Number required to drive 1 3/8" ID splitspoon w/140 lb hammer falling 30".	

DRILLING LOG (Cont Sheet)

TO TOP OF HOLE

Hole No. 511-12

PROJECT SAVANNAH HARBOUR

0-0 MLW

INSTALLATION

SHEET 3

KINGS ISLAND TIDAL BASIN

SAVANNAH RIVER, GA.

OF 2 SHEETS

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	BLOWS
	30'				3		
			SP-TAN POORLY GRADED SAND				30
							36
							48
	35'						58
			WITH SOME GRAVEL				61
58.5							47
	40'		MH-GREEN HARD CLAYEY SILT WITH SILTY SAND LAYERS AND TRACES OF FINE MICA		4		40
							58
							66
	45'						81
							90
							79
					5		100
	50'						83
							100/0.9
							94
-55.0	55'		BOTTOM OF HOLE -55.0' MLW				90

Hole No. SH-14

DRILLING LOG		DIVISION South Atlantic	INSTALLATION Savannah River, Savannah, GA	SHEET 1 OF 3 SHEETS
1. PROJECT Enlargement of Kings Island Turning Basin			10. SIZE AND TYPE OF BIT 4" Auger, 1 3/8" ID	
2. LOCATION (Coordinates or Station) N 778,045 E 818,310			11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MLW 7 1/2" Fishtail	
3. DRILLING AGENCY Savannah District			12. MANUFACTURER'S DESIGNATION OF DRILL CME-75	
4. HOLE NO. (As shown on drawing title and file number) SH-14			13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED 17 UNDISTURBED 0	
5. NAME OF DRILLER T. W. Scott			14. TOTAL NUMBER CORE BOXES	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.			15. ELEVATION GROUND WATER 15.1'	
7. THICKNESS OF OVERBURDEN			16. DATE HOLE STARTED 16 May 78 COMPLETED 18 May 78	
8. DEPTH DRILLED INTO ROCK 0.0'			17. ELEVATION TOP OF HOLE -20.5' MLW 25.0	
9. TOTAL DEPTH OF HOLE 81.0'			18. TOTAL CORE RECOVERY FOR BORING	
			19. SIGNATURE OF INSPECTOR DAWN MARIE HARTLEY	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. JAR	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	BLOWS
25.0'	0		SM - Orange-brown, fine to medium grained, silty sand, moist, w/mica flakes		1	W. T. 18.5' Date 16 May 78 Depth to water during drilling.	7
	5		W/thin, tan, clay layers		2	W. T. 9.9' Water table reading 24 hrs. after hole completed.	18
	10				3		22
	15		Gray fine grained w/a little clay, damp		4		18
	20		Orange-tan, fine to medium grained, wet		5		14
5.0'	20		SC - Gray, fine grained, clayey sand, saturated		6		9
	25		W/ occasional clay layers				6
	30						8
							3
							8
							12
							9

Continued on sheet 2

NOTE: Soils field classified in accordance with the Unified Soil Classification System.

BLOWS PER FOOT:
Number required to drive 1 3/8" ID splitspoon w/ 140 lb. hammer falling 30"

DRILLING LOG (Cont Sheet) TOP OF HOLE 25.0' Hole No. SH-14

Enlargement of Kings Island Turning INSTALLATION Savannah River, Savannah, GA SHEET 3 OF 3 SHEETS

ELEVATION a	DEPTH 79.	LEGEND c	Basin CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. JAR	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) f	BLOWS
-56.0	75		MH - Dark gray-green plastic silt w/patches of fine grain gray sand throughout, w/fine mica flakes but no gravel		15		25
						27	
						16	
	80		Approximately 50% sand		17		27
			Bottom of hole 81.0'				90
	85						

DRILLING LOG		DIVISION South Atlantic	INSTALLATION Savannah River, Savannah, GA	SHEET 1 of 3 SHEETS
1. PROJECT Enlargement of Kings Island Turning Basin			10. SIZE AND TYPE OF BIT 1 3/8" ID Splitspoon	
2. LOCATION (Coordinates or Station) #777480 E318730			11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MLW 4" Spiral 7" Fishtail	
3. DRILLING AGENCY Savannah District			12. MANUFACTURER'S DESIGNATION OF DRILL CME 75	
4. HOLE NO. (As shown on drawing title and file number) SH-17			13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED: 15 UNDISTURBED: 0	
5. NAME OF DRILLER T. W. Scott			14. TOTAL NUMBER CORE BOXES	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.			15. ELEVATION GROUND WATER	
7. THICKNESS OF OVERBURDEN 81.0'			16. DATE HOLE STARTED: 18 May 78 COMPLETED: 25 May 78	
8. DEPTH DRILLED INTO ROCK 0.0'			17. ELEVATION TOP OF HOLE 25.0' MLW	
9. TOTAL DEPTH OF HOLE 81.0'			18. TOTAL CORE RECOVERY FOR BORING 3	
			19. SIGNATURE OF INSPECTOR DAWN MARIE HARTLEY	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO. JAR	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	0					BLOWS
			SM - Orange-tan, fine to medium grained silty sand, damp with a little clay and a trace of fine gravel and mica flakes		1	30
			Clay in thin layers only			50
	5		15% clay		2	40
						40
						3
						70
	10		Only a trace of clay			60
						33
					3	33
						33
	15		No clay			28
			Fine grained		4	16
						12
	20		Gray, wet, no gravel		5	18
						14
						99
	25		10-15% plastic silt			4
						5
					6	
						10
	30		Continued on sheet 2			
			NOTE: Soils field classified in accordance with the Unified Soil Classification System.	BLOWS PER FOOT: Number required to drive 1 3/8" ID Splitspoon w/140 lb. hammer falling 80".		

ELEVATION a	DEPTH 30	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. JAR	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) B
			SM - Gray fine grained silty sand with mica flakes and green and dark brown plastic silty layers			
			No silt, with organic matter		7	
	35		No organic matter			
	40				8	
	45		Fine to medium grained			
			With wood chunks		9	
			Fine grained, without wood chunks			
	50				10	
	55		Fine to medium grained			
			Medium to fine grained with small gray clay patches		11	
	60					
			Medium grained			
			Medium to coarse grained		12	
	65		With wood chunks			
			Fine to medium grained, no wood chunks, with a trace of clay			
	70		MH - Dark green plastic silt with small pockets of sand throughout, with fine mica flakes		13	
			Continued on sheet 3			

DRILLING LOG (Cont Sheet) 25.0' MLW Hole No. SH-17

PROJECT: Enlargement of Kings Island Turning Basin
 INSTALLATION: Savannah River, Savannah, GA
 SHEET 3 OF 3 SHEETS

ELEVATION a	DEPTH 70	LOG' S c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV. ERY e	BOX OR SAMPLE NO. JAR	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) f	BLOWS
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			MH - Dark green plastic silt, with fine mica flakes and small pockets of sand through- out				100
			No sand		14		89
	75						55
							30
							31
							36
	80		With occasional thin gray fine grained sand lenses		15		40
							30

			Bottom of Hole 81.0'				
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DRILLING LOG	DIVISION South Atlantic	INSTALLATION Savannah River, Savannah, GA	SHEET 1 OF 2 SHEETS
1. PROJECT Enlargement of Kings Island Turning Basin		10. SIZE AND TYPE OF BIT 1 3/8" ID Splitspoon	
2. LOCATION (Coordinates or Station) N777075 E818800		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) 4" Auger MLW 7" Fishrail	
3. DRILLING AGENCY Savannah District		12. MANUFACTURER'S DESIGNATION OF DRILL CME 75	
4. HOLE NO. (As shown on drawing title and file number) SH-18		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED 12 UNDISTURBED 0	
5. NAME OF DRILLER T. W. Scott		14. TOTAL NUMBER CORE BOXES	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		15. ELEVATION GROUND WATER	
7. THICKNESS OF OVERBURDEN 67.5'		16. DATE HOLE STARTED 1 Jun 78 COMPLETED 2 Jun 78	
8. DEPTH DRILLED INTO ROCK 0.0'		17. ELEVATION TOP OF HOLE 12.7' MLW	
9. TOTAL DEPTH OF HOLE 67.5'		18. TOTAL CORE RECOVERY FOR BORING 3	
		19. SIGNATURE OF INSPECTOR DAWN MARIE HARTLEY	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO. JAR	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) BLOWS
	0		SC - Orange-tan, fine to medium grained clayey sand, moist, with gray clay layers		1	W. T. 4.0' 12
	5		Saturated			Date 1 Jun 78 15
	5					Depth to water during drilling. 15
	5		SM - Brown, gray, fine grained, silty sand with occasional clay layers		2	W. T. 3.5' 15
	10		OL - Dark brown, soft fat, clayey organic silt		3	Water Table reading 9
	10		SM - Tan, gray, fine grained silty sand with fine mica flakes		4	24 hrs. after hole completed. 7
	15		Gray		5	
	20				6	
	20				7	
	25		Ml - Gray-green, soft plastic silt with a trace of organic matter		6	
	25		SM - Gray, fine to medium grained silty sand		7	
	30		Fine gravel layer with occasional thin gray clay layers			
	30		Continued on sheet 2			
			NOTE: Soils field classified in accordance with the Unified Soil Classification System.			
						BLOWS PER FOOT: Number required to drive 1 3/8" ID split-spoon w/140 lb. hammer falling 30"

DRILLING LOG (Cont Sheet)		ELEVATION - TOP OF HOLE 12.7' MLW		Hole No. SH-18			
PROJECT Enlargement of Kings Island Turning Basin		INSTALLATION Savannah River, Savannah, GA		SHEET 2 OF 2 SHEETS			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth, weathering, etc., if significant)	BLOWS
	30				JAR		
			SM - Gray, fine grained silty sand with occasional thin gray clay layers				22
			With a thin layer of fine gravel		8		16
	35		With mica flakes but no clay or gravel				22
			Fine to medium grained				20
			Medium to coarse grained with some fine gravel		9		15
	40						30
							20
							27
							33
	45		Fine grained, no gravel				38
							30
							33
	50				10		
							34
			MH - Green plastic silt with fine mica flakes				49
	-55						40
							41
					11		49
							57
	60						89
							40
							40
	65						80
							33
					12		41
			Bottom of Hole 67.5'				
	70						

DRILLING LOG		DIVISION South Atlantic	INSTALLATION Savannah River, Savannah, GA	SHEET 1 OF 2 SHEETS
1. PROJECT Enlargement of Kings Island Turning Basin		10. SIZE AND TYPE OF BIT 1 3/8" ID Splitspoon		
2. LOCATION (Coordinates or Station) N776665 E819180		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MLW 4" Auger 7" Fishra		
3. DRILLING AGENCY Savannah District		12. MANUFACTURER'S DESIGNATION OF DRILL CME 45; CME 75		
4. HOLE NO. (As shown on drawing title and file number) SH-20		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 15 UNDISTURBED 0		
5. NAME OF DRILLER T. W. Scott		14. TOTAL NUMBER CORE BOXES		
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		15. ELEVATION GROUND WATER		
7. THICKNESS OF OVERBURDEN 70.5'		16. DATE HOLE STARTED 24 Apr 78 COMPLETED 30 May 78		
8. DEPTH DRILLED INTO ROCK 0.0'		17. ELEVATION TOP OF HOLE 13.5' MLW		
9. TOTAL DEPTH OF HOLE 70.5'		18. TOTAL CORE RECOVERY FOR BORING		
19. SIGNATURE OF INSPECTOR C. GRIFFIN/D. HARLLEY				

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO. JAR	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	BLOWS
			ML - Tan inorganic silt with traces of fine sand and mica		1		7
			Becomes more sandy				
	5		SM - Dark gray and brown, fine to medium silty sand with soft silt layers		2	W. T. 5.0'	12
			Dark gray and green, fine grained, saturated, with no silt layers		3	Depth to water during drilling.	8
			Dark green with gray layers			W. T. 3.5'	7
	10		Gray with some pieces of rotten wood, no clay		4	Water table reading 24 hrs. after hole completed.	7
			Green, no wood				7
	15		MH - Dark brown, soft fat clayey silt with traces of fine mica		5		2
							0
							3
	20		With tan sand layers				0
			SM - Brown, fine to medium grained silty sand		6		1
			Tan and brown				4
	25		Gray, fine grained				9
							8
							10
							11
	30				7		20
							1
Continued on sheet 2						BLOWS PER FOOT:	
NOTE: Soils field classified in accordance with the Unified Soil Classification System.						Number required to drive 1 3/8" ID Splitspoon w/140 lb. hammer falling 20"	

PROJECT Enlargement of Kings Island Turning Basin INSTALLATION Savannah River, Savannah, GA SHEET 2 OF 2 SHEETS

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO. JAR	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	BLOWS
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	30		SM - Tan, gray, medium grained silty sand with occasional large size gravel				16
			Gray with gray clay layers		8		16
	35						15
							40
			No gravel				35
	40				9		42
			No Clay		10		45
							24
							46
	45		With patches of green silt				36
			No silt		11		30
							30
	50		With small gray clay patches		12		3
			MH - Green plastic silt with occasional fine grained sand lenses				18
							36
	55		With fine mica flakes		13		26
							26
							35
	60						32
							40
			No sand lenses		14		42
							42
	65						40
							40
							44
	70				15		80
							60

Bottom of Hole 70.5'

Hole No. SH-22

DRILLING LOG		DIVISION South Atlantic	INSTALLATION Savannah River, Savannah, GA	SHEET 1 OF 2 SHEETS
1. PROJECT Enlargement of Kings Island Turning Basin		10. SIZE AND TYPE OF BIT 1 3/8" ID Splitspoon		
2. LOCATION (Coordinates or Station) N776200 E819310		11. DATUM FOR ELEVATION SHOWN (FSM or MLW) MLW 4" AUGER FISHT		
3. DRILLING AGENCY Savannah District		12. MANUFACTURER'S DESIGNATION OF DRILL CME 75		
4. HOLE NO. (As shown on drawing title and file number) SH-22		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 12	UNDISTURBED 0
5. NAME OF DRILLER T. W. Scott		14. TOTAL NUMBER CORE BOXES		
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		15. ELEVATION GROUND WATER		
7. THICKNESS OF OVERBURDEN 67.5'		16. DATE HOLE	STARTED 30 May 78	COMPLETED 1 Jun 78
8. DEPTH DRILLED INTO ROCK 0.0'		17. ELEVATION TOP OF HOLE 12.5' MLW		
9. TOTAL DEPTH OF HOLE 67.5'		18. TOTAL CORE RECOVERY FOR BORING 3		
19. SIGNATURE OF INSPECTOR DAWN MARIE HARTLEY				

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	BLOWS
			SM - Brown, fine grained silty sand, moist, with mica flakes, with organic matter		JAR 1		12
			SC - Tan, fine grained clayey sand, damp, with mica flakes		2	W. T. 6.0' Date 30 May 78 Depth to water during drilling.	23
	5		SM - Orange-tan, fine to medium grained silty sand, damp, with mica flakes				25
			saturated				6
	10		MH - Dark brown, soft fat clayey silt, with fine mica flakes		3	W. T. 4.3' Water table reading 24 hrs. after hole completed.	6
			SM - Light gray, fine grained silty sand, with mica flakes		4		7
	15		With occasional thin layers of organic matter				16
							9
	20				5		12
			No organic layers				12
	25				6		12
			With occasional organic layers				12
							12
	30				7		14
			Continued on sheet 2				
			NOTE: Soils field classified in accordance with the Unified Soil Classification System.				
						BLOWS PER FOOT: Number required to drive 1 3/8" ID splitspoon w/140 lb. hammer falling 30"	

DRILLING LOG (Cont Sheet)		ELEV. 12.5' MLW		Hole No. SH-22			
PROJECT Enlargement of Kings Island Turning Basin			INSTALLATION Savannah River, Savannah, GA.		SHEET 2 OF 2 SHEETS		
ELEVATION a	DEPTH 30	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. JAR	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant.) f	BLOWS
			SM - Light gray, fine grained silty sand, with mica flakes and occasional organic layers				33
							20
							20
	35		Gray, fine to medium grained		8		29
			With occasional layers of fine gravel				17
							17
	40		Fine grained, no gravel				19
							20
			Fine to medium grained		9		14
	45						11
							17
			Fine grained				40
	50						37
			MH - Green plastic silt with fine mica flakes				23
	55				10		19
							34
							36
	60						34
							34
					11		40
	65						66
							70
					12		70
			Bottom of Hole 67.5'				
	70						

DRILLING LOG		DIVISION SOUTH ATLANTIC	INSTALLATION SAVANNAH, GA.	Hole No. SH-149
1. PROJECT SAVANNAH HARBOR DEEPENING		10. SIZE AND TYPE OF BIT 1 3/8" I.D. SPLITSPOON		SHEET 1 OF 2 SHEETS
2. LOCATION (Coordinates or Station) X = 817840 Y = 778530 (GA EAST)		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MLW		
3. DRILLING AGENCY SAVANNAH DISTRICT		12. MANUFACTURER'S DESIGNATION OF DRILL FALLING 314		
4. HOLE NO. (As shown on drawing title and file number) SH-149		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 15 UNDISTURBED 0
5. NAME OF DRILLER D. JUSTISS		14. TOTAL NUMBER CORE BOXES 0		
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		15. ELEVATION GROUND WATER SEE REMARKS		
7. THICKNESS OF OVERBURDEN 60.0'		16. DATE HOLE		STARTED 18 OCT 91 COMPLETED 18 OCT 91
8. DEPTH DRILLED INTO ROCK 0.0'		17. ELEVATION TOP OF HOLE		
9. TOTAL DEPTH OF HOLE 60.0'		18. TOTAL CORE RECOVERY FOR BORING N/A		
		19. SIGNATURE OF INSPECTOR <i>J. D. ... P.G.</i>		

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	Blows h
			(SM) BROWN SILTY FINE TO MEDIUM SAND, TRACE OF ROOTS, SLIGHTLY DAMP.		1	CLEARED OUT HOLE WITH 4" SPIRAL AUGER FROM 1.5' TO 4.5' & 6.0' TO 9.0'. JAL SAMPLE #2 TAKEN FROM AUGER FROM 1.5' TO 4.5'.	7
			(SP) LIGHT BROWN TO TAN, POORLY GRADED FINE TO MEDIUM SAND, TRACE OF SILT, SLIGHTLY DAMP.		2		
			(SM) BROWN SILTY, FINE TO MEDIUM SAND, DAMP.		3	BEGAN USING 5 1/2" FISHTAIL & ZEOGEL DRILLING MUD AT 10.5'.	15
			MEDIUM SAND, WET, MEDIUM TO COARSE SAND, SOME FINE TO MEDIUM SAND FROM 10.3' TO 10.5'.		4	SPLITSPOON DRIVES TAKEN AT 4.5' INTERVALS.	4
			WASH				
			(SC) GREENISH GRAY, CLAYEY, FINE TO MEDIUM SAND, SOME SILT, TRACE OF MICA, WET.		5	WATER LEVEL 6.5' DEPTH TO WATER DURING DRILLING.	4
			WASH			WATER LEVEL NOT ENCOUNTERED 21 OCT 91. TAPED HOLE TO 5.0'.	
			(SM) TANNISH GRAY SILTY, MEDIUM TO COARSE SAND, TRACE OF CLAY, WET.		6		18
			WASH				
			(SP) TANNISH GRAY, POORLY GRADED MEDIUM TO COARSE SAND, TRACE OF SILT, WET.		7		15
			WASH				
			SAME AS 22.5' TO 24.0'		8		13
			WASH				
			CONTINUED ON SHEET #2				
			NOTE: SOILS VISUALLY FIELD CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM.				
						Blows PER FOOT: NUMBER REQUIRED TO DRIVE 1 3/8" I.D. SPLIT-SPOON WITH 140lb. HAMMER FALLING 30".	

PROJECT SAVANNAH HARBOR DEEPENING INSTALLATION SAVANNAH, GA. SHEET 2 OF 2 SHEETS

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO. JAR	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	BLOWS
	30		Wash.				
			(SM) Grey, fine to med. silty SAND. Trace of mica, wet.		9		24
	35		Wash.				
			(SP) Grey, med. to coarse, poorly graded SAND. Trace of silt & mica, wet.		10		39
	40		Wash.				
			Same as 36.0' to 37.5' but coarse sand, Trace of fine gravel.		11		46
	45		Wash.				
			Same as 40.5' to 42.0'.		12		33
	50		Wash.				
			(GP) Greenish-grey, fine, poorly graded GRAVEL. Trace of silt & coarse sand, wet.		13		17
	55		Wash. NOTE: Wash return contained some sand and clay.				
			(CL) Greyish-green, silty, lean CLAY. Trace of mica & fine sand, slightly damp.		14		36
	60		Wash				
			Same as 54.0' to 55.5' but dry.		15		45
			Bottom of Boring 60.0'				

DRILLING LOG		VISION SOUTH ATLANTIC		INSTALLATION SAVANNAH, GA.		SHEET 1 OF 2 SHEETS	
1. PROJECT SAVANNAH HARBOR DEEPENING				10. SIZE AND TYPE OF BIT $1\frac{3}{8}$ " splitspoon, 4" spiral auger, 5/2" fishtail			
2. LOCATION (Coordinates or Station) X-817555 Y-779145 GA. EAST				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MLW			
3. DRILLING AGENCY SAVANNAH DISTRICT				12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 314			
4. HOLE NO. (As shown on drawing title and file number) SH-150		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 18		UNDISTURBED 0	
5. NAME OF DRILLER DAVID JUSTISS				14. TOTAL NUMBER CORE BOXES 0			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER SEE REMARKS			
7. THICKNESS OF OVERBURDEN 64.5'				16. DATE HOLE STARTED 16 OCT 91 COMPLETED 17 OCT 91			
8. DEPTH DRILLED INTO ROCK 0.0'				17. ELEVATION TOP OF HOLE			
9. TOTAL DEPTH OF HOLE 64.5'				18. TOTAL CORE RECOVERY FOR BORING N/A %			
				19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.			

ELEVATION a	DEPTH 0 b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY	BOX OR SAMPLE NO JAR	REMARKS (Drilling time, water loss, depth of weathering, etc. If significant) g	BLOWS
			(SP) Tan, coarse, poorly graded SAND. Damp.		1		4
			(SC) Olive, fine clayey SAND. Some silt, damp.		2	Cleaned out hole with spiral auger to 4.5'. Jar #2 taken from auger from 1.5' to 4.5'. Splitspoon drive taken at each 4.5' interval to 55.5'. Began using 5/2" fishtail & Zeogel drilling mud at 6.0'.	
	5		Fine to med. sand, trace of fine gravel, wet.		3	Water level 2.0' depth to water during drilling.	0
			Wash. NOTE: Wash return contained large amount of clay.			Water level 1.7' depth to water on 21 Oct 91. Taped hole to 19.8' depth.	
	10		Same as 4.5' to 6.0'.		4		15
			Wash				
	15		(SP) Olive grey, med., poorly graded SAND. Trace of silt, wet.		5		30
			Wash.				
	20		(SM) Olive-grey, med., silty SAND, wet.		6		21
			Wash. Note: Traces of wood in wash.				
	25		(SP) Light brown, med. to coarse, poorly graded SAND. Trace of silt, wet.		7		16
			Wash.				
			Same as 22.5' to 24.0', but with traces of fine gravel.		8		26
			Wash.				
	30		Continued on sheet #2				
			NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.				
						BLOWS PER FOOT: Number required to drive 1 3/8" I.D. splitspoon w/140 lb. hammer falling 30".	

DRILLING LOG (Cont. Sheet)

ELEVATION TOP OF HOLE

Hole No. SH-150

PROJECT
SAVANNAH HARBOR DEEPENING

INSTALLATION
SAVANNAH, GA.

SHEET 2
OF 2 SHEETS

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO. JAR	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	BLOWS
	30		Wash. (SP) Light brown, fine to med poorly graded SAND. Trace of silt, wet.		9		33
	35		Wash. Same as 31.5' to 33.0' but med. to coarse sand.		10		30
	40		Wash. Same as 36.0' to 37.5' but with some wood.		11		26
	45		Wash. (SP) Greyish-brown, coarse, poorly graded SAND. Trace of fine gravel & silt, wet.		12		27
	50		Wash. (CL) Greyish-green, silty lean CLAY. Trace of Mica & fine sand, dry.		13		31
	55		Wash. Same as 49.5' to 51.0' but greyish-green.		14		54
	60		Wash. (SM) Grey & greenish-grey, fine silty SAND. Trace of Mica, dry.		15	Began continuous spitspoon drives at 58.5'.	100/0.8
			(SC) Greyish-green, fine clayey SAND. Some silt, dry.		16		78
					17		42
	65		Bottom of Boring 64.5'		18		43

DRILLING LOG		VISION SOUTH ATLANTIC		INSTALLATION VANNAH, GA.		SHEET 1 OF 1 SHEETS	
1. PROJECT SAVANNAH HARBOR DEEPENING				10. SIZE AND TYPE OF BIT 1 3/8" splitspoon, 5/2" fishtail			
2. LOCATION (Coordinates or Station) X-817067 Y-779191 GA. EAST				11. DATUM FOR ELEVATION SHOWN (TBM or MSU) MLW			
3. DRILLING AGENCY SAVANNAH DISTRICT				12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 314			
4. HOLE NO. (As shown on drawing title and file number)		SH-157		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED : 5 UNDISTURBED : 0	
5. NAME OF DRILLER DAVID JUSTISS				14. TOTAL NUMBER CORE BOXES			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				16. DATE HOLE		STARTED : 10 DEC 91 COMPLETED : 10 DEC 91	
7. THICKNESS OF OVERBURDEN 59.6' (Water 38.6')				17. ELEVATION TOP OF HOLE 0.0'			
8. DEPTH DRILLED INTO ROCK 0.0'				18. TOTAL CORE RECOVERY FOR BORING N/A %			
9. TOTAL DEPTH OF HOLE 59.6'				19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.			

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	BLOWS
0.0	0						
	35		Water			Scaler change at 35.0'. Set 6" diameter casing by own weight to 43.0'.	
			Bottom of Harbor 38.6'				
-38.6'	40		(SP) Tan, poorly graded, coarse SAND.		1	Weight of rods drove splitspoon to 40.1'. Had no recovery. redrove to 40.1' then cont'd. drive to 41.6'. Sample 1 from 38.6' to 41.6'.	0
-41.6'			Some fine gravel.				67
	45		(CL) Grey, silty, lean CLAY. Some fine sand, trace of mica.		2		31
-44.6'							17
	50				3		29
							52
	55				4		45
							41
							34
							37
	55				4		43
							48
							55
-58.1'			(SC) Grey, fine clayey SAND. Some silt, trace of mica.		5		54
-59.6'	60		Bottom of Boring 59.6'				
			NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.				
						BLOWS PER FOOT: Number required to drive 1 3/8" I.D. splitspoon w/140 lb. hammer falling 30".	

DRILLING LOG		VISION SOUTH ATLANTIC		INSTALLATION SAVANNAH, GA.		SHEET 1 OF 1 SHEETS	
1. PROJECT SAVANNAH HARBOR DEEPENING				10. SIZE AND TYPE OF BIT 1 3/8" splitspoon, 5/2" fishtail			
2. LOCATION (Coordinates or Station) X=817368 Y=779194 GA. EAST				11. DATUM FOR ELEVATION SHOWN (TBM or MSU) MLW			
3. DRILLING AGENCY SAVANNAH DISTRICT				12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 314			
4. HOLE NO. (As shown on drawing title and file number) SH-158				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN.		DISTURBED 6	UNDISTURBED 0
5. NAME OF DRILLER DAVID JUSTISS				14. TOTAL NUMBER CORE BOXES 0			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER N/A		16. DATE HOLE	
7. THICKNESS OF OVERBURDEN 60.0' (WATER 34.5')				17. ELEVATION TOP OF HOLE 0.0'		STARTED 6 DEC 91	
8. DEPTH DRILLED INTO ROCK 0.0'				18. TOTAL CORE RECOVERY FOR BORING N/A %		COMPLETED 6 DEC 91	
9. TOTAL DEPTH OF HOLE 60.0'				19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.			

ELEVATION 0 _a	DEPTH 0 _b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY JAR	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	BLOWS
	30		Water			Scale change at 30.0'. Set 6" diameter casing by own weight to 40.3'.	
-34.5'	35		(SP) Tan, fine to medium, poorly graded SAND. Trace of silt.		1	Weight of rods drove splitspoon from 34.5' to 35.8', cont'd. drive to 36.0' w/one hammer blow. Pulled toolbut had no recovery.	1
-37.5'			Medium to coarse.				21
-39.0'	40		Greyish-tan, trace of wood particles.		2		35
-43.5'	45		(CH) Dark olive-grey, fat CLAY. Trace of silt, fine sand & mica.		3	Redrove first drive then cont'd. drive to 37.5'. Jar sample #1 from 34.5' to 37.5'. Began using Zeogel drilling mud at 37.5'.	38
-46.5'			Some fine sand.				9
-48.0'			(CL) Olive-grey, silty, lean CLAY. Some fine sand, trace of mica.		4		23
-49.5'	50		Trace of fine sand.				40
-51.0'			Some fine sand.				47
-52.5'	55		(CH) olive-grey, fat CLAY. Trace of fine sand & mica.		5		52
							53
							17
							48
							43
							63
							33
							31
							32
-60.0'	60		Bottom of Boring 60.0'		6		

NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.

BLOWS PER FOOT:
Number required to drive 1 3/8" I.D. splitspoon w/140 lb. hammer falling 30".


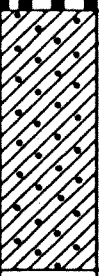
DRILLING LOG		VISION SOUTH ATLANTIC		INSTALLATION SAVANNAH, GA.		SHEET 1 OF 1 SHEETS	
1. PROJECT SAVANNAH HARBOR DEEPENING				10. SIZE AND TYPE OF BIT 1 3/8" splitspoon, 5/2" fishtail			
2. LOCATION (Coordinates or Station) X-816934 Y-778722 GA. EAST				11. DATUM FOR ELEVATION SHOWN (TBM or MSU) MLW			
3. DRILLING AGENCY SAVANNAH DISTRICT				12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 314			
4. HOLE NO. (As shown on drawing title and file number) SH-159				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 4 UNDISTURBED 0	
5. NAME OF DRILLER DAVID JUSTISS				14. TOTAL NUMBER CORE BOXES 0			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				16. DATE HOLE		STARTED 14 JAN 92 COMPLETED 14 JAN 92	
7. THICKNESS OF OVERBURDEN 50.3' (Water 41.3')				17. ELEVATION TOP OF HOLE 0.0'			
8. DEPTH DRILLED INTO ROCK 0.0'				18. TOTAL CORE RECOVERY FOR BORING N/A			
9. TOTAL DEPTH OF HOLE 50.3'				19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.			

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO. JAR	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	BLOWS
0.0	0						
			Water			Scale change at 40.0'. Set 6" diameter casing by own weight to 42.3'.	
	40		Bottom of Harbor 41.3'				
-41.3'			(SC) Olive-grey, fine clayey SAND. Trace of mica.		1		5
-42.8'			(SM) Dark grey, fine silty SAND. Trace of clay & mica.		2		33
-45.8'	45		(SC) Dark grey, fine clayey SAND. Some silt, trace of mica.		3		62
-47.3'			Trace of silt.		4		29
-50.3'	50		Bottom of Boring 50.3'				39
			NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.			BLOWS PER FOOT: Number required to drive 1 3/8" I.D. splitspoon w/140 lb. hammer falling 30".	52













DRILLING LOG		VISION SOUTH ATLANTIC	INSTALLATION SAVANNAH, GA.	SHEET 1 OF 1 SHEETS
1. PROJECT SAVANNAH HARBOR DEEPENING			10. SIZE AND TYPE OF BIT 1 1/8" Splitspoon, 5/2" Fishtail	
2. LOCATION (Coordinates or Station) X=817039 Y=778184 GA. EAST			11. DATUM FOR ELEVATION SHOWN (TBM or MSU) MLW	
3. DRILLING AGENCY SAVANNAH DISTRICT			12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 314	
4. HOLE NO. (As shown on drawing title and file number) SH-160			13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN : 5 DISTURBED : 5 UNDISTURBED : 0	
5. NAME OF DRILLER DAVID JUSTISS			14. TOTAL NUMBER CORE BOXES 0	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.			15. ELEVATION GROUND WATER N/A	
7. THICKNESS OF OVERBURDEN 50.8' (Water 40.3')			16. DATE HOLE : STARTED 14 JAN 91 : COMPLETED 14 JAN 91	
8. DEPTH DRILLED INTO ROCK 0.0'			17. ELEVATION TOP OF HOLE 0.0'	
9. TOTAL DEPTH OF HOLE 50.8'			18. TOTAL CORE RECOVERY FOR BORING N/A %	
			19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.	

ELEVATION 0.0	DEPTH 0	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY	BOX OR SAMPLE NO. JAR	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant) g	BLOWS
			Water			Scale change at 40.0'. Set 6" diameter casing by own weight to 43.4'.	
-40.3'	40		Bottom of Harbor 40.3'				
-42.6'			(MH) Dark grey to black clayey SILT.		1	Weight of rods drove splitspoon from 40.3' to 42.6'. Cont'd. drive to 43.3' with three hammer blows. Jar sample 2 from approx. 42.6' to 43.3'.	0
-43.3'			(SC) Dark grey, fine to medium clayey SAND.		2		3
			(SM) Dark grey, fine silty SAND. Trace of clay.		3		45
-46.3'	45						72
			(SC) Grey, fine clayey SAND. Some silt. Trace of mica.		4		38
						48	
-50.8'	50				5	36	
			Bottom of Boring 50.8'				
			NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.			BLOWS PER FOOT: Number required to drive 1 1/8" I.D. splitspoon w/140 lb. hammer falling 30".	

DRILLING LOG	VISION SOUTH ATLANTIC	INSTALLATION VANNAH, GA.	SHEET 1 OF 1 SHEETS
1. PROJECT SAVANNAH HARBOR DEEPENING		10. SIZE AND TYPE OF BIT 1 3/8" Splitspoon, 5/2" Fishtail	
2. LOCATION (Coordinates or Station) X=818085 Y=778090 GA. EAST		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MLW	
3. DRILLING AGENCY SAVANNAH DISTRICT		12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 314	
4. HOLE NO. (As shown on drawing title and file number) SH-161		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED 4 UNDISTURBED 0	
5. NAME OF DRILLER DAVID JUSTISS		14. TOTAL NUMBER CORE BOXES 0	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		15. ELEVATION GROUND WATER N/A	
7. THICKNESS OF OVERBURDEN 50.9' (Water 38.9')		16. DATE HOLE STARTED 14 JAN 91 COMPLETED 14 JAN 91	
8. DEPTH DRILLED INTO ROCK 0.0'		17. ELEVATION TOP OF HOLE 0.0'	
9. TOTAL DEPTH OF HOLE 50.9'		18. TOTAL CORE RECOVERY FOR BORING N/A %	
		19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO. / JAR	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant)	BLOWS
0.0	0						
-38.9'	35		Water			Scale change at 35.0'. Set 6" diameter casing by own weight to 44.9'.	
			Bottom of Harbor 38.9'			Weight of rods drove splitspoon from 38.9' to 44.9'. Jar sample 2 from approx. 44.0' to 44.9'.	
-44.0'	40		(MH) Very dark grey clayey SILT.		1		0
-44.9'	45		(SC) Dark grey, fine to medium clayey SAND.		2		
			Fine sand, some silt, trace of mica.		3		23
					4		43
-50.9'	50		Bottom of Boring 50.9'				41
			NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.			BLOWS PER FOOT: Number required to drive 1 3/8" I.D. splitspoon w/140 lb. hammer falling 30".	45


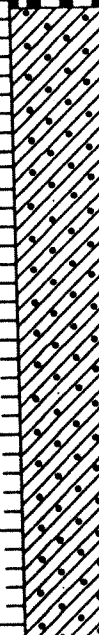
DRILLING LOG		VISION SOUTH ATLANTIC	INSTALLATION SAVANNAH, GA.	SHEET 1 OF 1 SHEETS
1. PROJECT SAVANNAH HARBOR DEEPENING			10. SIZE AND TYPE OF BIT 1 3/8" splitspoon, 5/2" fishtail	
2. LOCATION (Coordinates or Station) X-817143 Y-777680 GA. EAST			11. DATUM FOR ELEVATION SHOWN (TBM or MSU) MLW	
3. DRILLING AGENCY SAVANNAH DISTRICT			12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 314	
4. HOLE NO. (As shown on drawing title and file number) SH-162			13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED: 6 UNDISTURBED: 0	
5. NAME OF DRILLER DAVID JUSTISS			14. TOTAL NUMBER CORE BOXES 0	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.			15. ELEVATION GROUND WATER N/A	
7. THICKNESS OF OVERBURDEN 59.9' (Water 41.5')			16. DATE HOLE STARTED: 26 JAN 92 COMPLETED: 26 JAN 92	
8. DEPTH DRILLED INTO ROCK 0.0'			17. ELEVATION TOP OF HOLE 0.0'	
9. TOTAL DEPTH OF HOLE 59.9'			18. TOTAL CORE RECOVERY FOR BORING N/A %	
			19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.	

ELEVATION 0.0	DEPTH 0 b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY	BOX OR SAMPLE NO JAR	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	BLOWS
			Water			Scale change at 41.5'. Set 6" diameter casing by own weight to 43.3'.	
-41.5'			(MH) Very dark grey to black clay SILT. Some fine to coarse sand.		1	Weight of rods drove splitspoon from 41.5' to 43.4'. Jar sample 2 taken from approx. 43.0' to 43.4'.	0
-43.0'			(SC) Very grey, fine clayey SAND. Some silt.		2		59
-43.4'			Trace of mica.		3		43
-46.4'			Trace of silt.		4		43
					5		45
					6		42
							41
							46
							45
							57
							59
							45
-59.9'	60		Bottom of Boring 59.9'			BLOWS PER FOOT: Number required to drive 1 3/8" I.D. splitspoon w/140 lb. hammer falling 30".	
			NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.				







DRILLING LOG		VISION SOUTH ATLANTIC		INSTALLATION SAVANNAH, GA.		SHEET 1 OF 1 SHEETS	
1. PROJECT SAVANNAH HARBOR DEEPENING				10. SIZE AND TYPE OF BIT 1 1/8" splitspoon, 5/4" fishtail			
2. LOCATION (Coordinates or Station) X-817375 Y-777535 GA. EAST				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MLW			
3. DRILLING AGENCY SAVANNAH DISTRICT				12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314			
4. HOLE NO. (As shown on drawing title and file number) SH-163				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 6 UNDISTURBED 0	
5. NAME OF DRILLER DAVID JUSTISS				14. TOTAL NUMBER CORE BOXES 0			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER N/A		16. DATE HOLE STARTED 16 Nov 91 COMPLETED 16 NOV 91	
7. THICKNESS OF OVERBURDEN 59.8' (Water 41.8')				17. ELEVATION TOP OF HOLE 0.0'			
8. DEPTH DRILLED INTO ROCK 0.0'				18. TOTAL CORE RECOVERY FOR BORING N/A %			
9. TOTAL DEPTH OF HOLE 59.8'				19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.			

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO. JAR	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	BLOWS
0.0	0						
	40		Water			Scale change at 40.0'. Set 6" diameter casing by own weight to 45.8'.	
	41.8'		Bottom of Harbor 41.8'				
-41.8'			(MH) Dark grey, fat SILT.		1	Weight of hammer drove split-spoon from 41.8' to 44.3'. Cont'd. drive with five blows to 44.8'. Material from 41.8' to approx. 43.3' was very soft & wet.	0
-43.3'			(SC) Dark grey & grey, med. to coarse clayey SAND.		2		5
-44.8'	45		(SM) Grey, fine silty SAND. Some clay in layers up to 0.3' thick, trace of mica.		3		48
-46.3'			(SC) Greenish grey, fine clayey SAND. Some silt, trace of mica.		4		36
	50						53
	51						51
	55				5	45	
	53					53	
	51					68	
	61					61	
	62				6	62	
-59.8'	60		Bottom of Boring 59.8'				
NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.						BLOWS PER FOOT: Number required to drive 1 1/8" I.D. splitspoon w/140 lb. hammer falling 30".	

DRILLING LOG		DIVISION SOUTH ATLANTIC		INSTALLATION SAVANNAH, GA.		SHEET 1 OF 1 SHEETS	
1. PROJECT SAVANNAH HARBOR DEEPENING				10. SIZE AND TYPE OF BIT 1 1/8" SPLITSPOON, 5/2" FISHTAIL			
2. LOCATION (Coordinates or Station) X=818481 Y=777661 GA. EAST				11. DATUM FOR ELEVATION SHOWN (TBM or MSU) MLW			
3. DRILLING AGENCY SAVANNAH DISTRICT				12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314			
4. HOLE NO. (As shown on drawing title and file number) SH-164				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 6	UNDISTURBED 0
5. NAME OF DRILLER DAVID JUSTISS				14. TOTAL NUMBER CORE BOXES 0			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER N/A		16. DATE HOLE	
7. THICKNESS OF OVERBURDEN 60.5' (Water 38.6')				17. ELEVATION TOP OF HOLE 0.0'		STARTED 16 NOV 91	COMPLETED 16 NOV 91
8. DEPTH DRILLED INTO ROCK 0.0'				18. TOTAL CORE RECOVERY FOR BORING N/A %			
9. TOTAL DEPTH OF HOLE 60.5'				19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.			

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO UAR	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	BLOWS
0.0	0						
	35		Water			Scale change at 35.0'. Set 6" diameter casing by own weight to 43.6'.	
	38.6'		Bottom of Harbor 38.6'				
	40		(MH) Dark grey, clayey SILT. Very wet & soft.		1	Weight of hammer drove splitspoon from 38.6' to 44.0'. Jar 2 from 43.7' to 44.0'.	0
	43.7'		(SC) Greenish-grey, fine clayey SAND. Some silt, trace of mica.		2		
	45				3		63
	50				4		49
	55				5		67
	60				6		46
							45
							39
							100/0.9
							62
			Bottom of Boring 60.5'				
			NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.				
						BLOWS PER FOOT: Number required to drive 1 1/8" I.D. splitspoon w/140 lb. hammer falling 30".	










DRILLING LOG		VISION SOUTH ATLANTIC		INSTALLATION SAVANNAH, GA.		SHEET 1 OF 1 SHEETS	
1. PROJECT SAVANNAH HARBOR DEEPENING				10. SIZE AND TYPE OF BIT 1 3/8" splitspoon, 5/2" fishtail			
2. LOCATION (Coordinates or Station) X-817521 Y-777184 GA. EAST				11. DATUM FOR ELEVATION SHOWN (TBM or MSU) MLW			
3. DRILLING AGENCY SAVANNAH DISTRICT				12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 314			
4. HOLE NO. (As shown on drawing title and file number) SH-165				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN 6		DISTURBED 0	
5. NAME OF DRILLER DAVID JUSTISS				14. TOTAL NUMBER CORE BOXES 0			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER N/A		16. DATE HOLE STARTED 14 JAN 92 COMPLETED 14 JAN 92	
7. THICKNESS OF OVERBURDEN 50.8' (Water 38.8')				17. ELEVATION TOP OF HOLE 0.0'			
8. DEPTH DRILLED INTO ROCK 0.0'				18. TOTAL CORE RECOVERY FOR BORING N/A %			
9. TOTAL DEPTH OF HOLE 50.8'				19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.			

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO JAR	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant)	BLOWS
0.0	0						
	35		Water			Scale change at 35.0'. Set 6" diameter casing by own weight to 45.1'.	
	38.8'		Bottom of Harbor 41.5' 38.8'				
	40		(MH) Dark olive-grey, clayey SILT.		1	Weight of rods drove splitspoon from 38.8' to 43.3'. Jar sample 2 taken from approx. 42.8' to 43.3'.	0
	42.8'		(SC) Very dark grey to black, medium to coarse clayey SAND. Some silt.		2		8
	44.8'		(SM) Grey, fine silty SAND. Trace of clay & mica.		3		70
	46.3'		(SC) Grey, fine clayey SAND. Some silt, trace of mica.		4		44
	50				5		62
	50.8'				6		33
			Bottom of Boring 50.8'				
			NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.			BLOWS PER FOOT: Number required to drive 1 3/8" I.D. splitspoon w/140 lb. hammer falling 30".	

DRILLING LOG		DIVISION SOUTH ATLANTIC		INSTALLATION SAVANNAH, GA.		SHEET 1 OF 1 SHEETS	
1. PROJECT SAVANNAH HARBOR DEEPENING				10. SIZE AND TYPE OF BIT 1 3/8" splitspoon, 5 1/2" fishtail			
2. LOCATION (Coordinates or Station) X-817973 Y-777182 G.A.EAST				11. DATUM FOR ELEVATION SHOWN (TBM or MSU) MLW			
3. DRILLING AGENCY SAVANNAH DISTRICT				12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 314			
4. HOLE NO. (As shown on drawing title and file number) SH-166				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN 6		DISTURBED 0	
5. NAME OF DRILLER DAVID JUSTISS				14. TOTAL NUMBER CORE BOXES 0			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER N/A		16. DATE HOLE STARTED 14 DEC 91 COMPLETED 14 DEC 91	
7. THICKNESS OF OVERBURDEN 60.8' (Water 41.3')				17. ELEVATION TOP OF HOLE 0.0'			
8. DEPTH DRILLED INTO ROCK 0.0'				18. TOTAL CORE RECOVERY FOR BORING N/A %			
9. TOTAL DEPTH OF HOLE 60.8'				19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.			

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO. JAR	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	BLOWS
0.0	0	c	d				
			Water			Scale change at 40.0'. Set 6" diameter casing by own weight to 41.8'.	
	40		Bottom of Harbor 41.3'				
-41.3'			(SC) Grey, fine clayey SAND. Some silt.		1		25
			Occasional layer of silty fine sand up to 0.2' thick.		2		37
-45.8'	45		(SM) Grey, fine silty SAND. Trace of mica.		3		64
-47.3'					4		79
-48.8'	50		(SC) Grey, fine clayey SAND. Some silt, trace of mica.		5		52
					6		49
	55						47
							45
	60						52
							66
							65
-60.8'			Bottom of Boring 60.8'				68
			NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.			BLOWS PER FOOT: Number required to drive 1 3/8" I.D. splitspoon w/140 lb. hammer falling 30".	

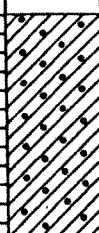
DRILLING LOG DIVISION SOUTH ATLANTIC		INSTALLATION VANNAH, GA.	SHEET 1 OF 1 SHEETS
1. PROJECT SAVANNAH HARBOR DEEPENING		10. SIZE AND TYPE OF BIT 1 3/8" splitspoon, 5/2" fishtail	
2. LOCATION (Coordinates or Station) X=819096 Y=777170 GA. EAST		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MLW	
3. DRILLING AGENCY SAVANNAH DISTRICT		12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 314	
4. HOLE NO. (As shown on drawing title and file number) SH-167		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN : DISTURBED 5 : UNDISTURBED 0	
5. NAME OF DRILLER DAVID JUSTISS		14. TOTAL NUMBER CORE BOXES 0	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		15. ELEVATION GROUND WATER N/A	
7. THICKNESS OF OVERBURDEN 59.7' (WATER 42.6')		16. DATE HOLE : STARTED 24 JAN 92 : COMPLETED 24 JAN 92	
8. DEPTH DRILLED INTO ROCK 0.0'		17. ELEVATION TOP OF HOLE 0.0'	
9. TOTAL DEPTH OF HOLE 59.7'		18. TOTAL CORE RECOVERY FOR BORING N/A %	
		19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.	

ELEVATION 0 _a	DEPTH 0 _b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY JAR	BOX OR SAMPLE NO. i	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	BLOWS
0.0'	0		Water			Scale change at 40.0'. Set 6" diameter casing by own weight to 45.1'.	
-42.6'	42.6		Bottom of Harbor 34.5'				
-44.7'	45		(CH) Dark grey, fat CLAY. Some fine sand.		1	Weight of rods drove splitspoon from 42.6' to 44.7'.	0
			(SC) Grey, fine clayey SAND. Some silt.		2		33
					3		40
					4		38
					5		56
						44	
						58	
						89	
						93	
-59.7'	60		Bottom of Boring 59.7'			BLOWS PER FOOT: Number required to drive 1 3/8" I.D. splitspoon w/140 lb. hammer falling 30".	
			NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.				

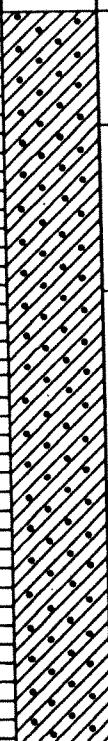
DRILLING LOG		DIVISION SOUTH ATLANTIC	INSTALLATION SAVANNAH, GA.	SHEET 1 OF 1 SHEETS
1. PROJECT SAVANNAH HARBOR DEEPENING			10. SIZE AND TYPE OF BIT 1 3/8" splitspoon, 5/2" fishtail	
2. LOCATION (Coordinates or Station) X=817468 Y=776786 GA. EAST			11. DATUM FOR ELEVATION SHOWN (TBM or MSU) MLW	
3. DRILLING AGENCY SAVANNAH DISTRICT			12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 314	
4. HOLE NO. (As shown on drawing title and file number) SH-168		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 4 UNDISTURBED 0
5. NAME OF DRILLER DAVID JUSTISS			14. TOTAL NUMBER CORE BOXES 0	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.			15. ELEVATION GROUND WATER N/A	
7. THICKNESS OF OVERBURDEN 53.5' (Water 40.7')			16. DATE HOLE STARTED 25 JAN 92 COMPLETED 25 JAN 92	
8. DEPTH DRILLED INTO ROCK 0.0'			17. ELEVATION TOP OF HOLE 0.0'	
9. TOTAL DEPTH OF HOLE 53.5'			18. TOTAL CORE RECOVERY FOR BORING N/A %	
			19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.	

ELEVATION 0.0	DEPTH 0.0	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY	BOX OR SAMPLE NO. JAR	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	BLOWS
			Water			Scale change at 40.0'. Set 6" diameter casing by own weight to 44.5'.	
	40		Bottom of Harbor 40.7 40.9				
-40.7'			(MH) Very dark grey, clayey SILT. Trace of fine to coarse sand.		1		0
-43.8'			(CL) Dark grey, silty, lean CLAY. Some fine sand. Trace of mica.		2		37
-46.0'			(SC) Grey, fine clayey SAND. Trace of silt, some mica.		3		45
	50						77
					4		70
							93
							76
-53.5'			Bottom of Boring 53.5'				
	55		NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.			BLOWS PER FOOT: Number required to drive 1 3/8" I.D. splitspoon w/140 lb. hammer falling 30".	
	60						

DRILLING LOG		DIVISION SOUTH ATLANTIC		INSTALLATION S AVANNAH, GA.		SHEET 1 OF 1 SHEETS	
1. PROJECT SAVANNAH HARBOR DEEPENING				10. SIZE AND TYPE OF BIT 1 3/8" splitspoon, 5 1/2" fishtail			
2. LOCATION (Coordinates or Station) X-817466 Y-776799 GA. EAST				11. DATUM FOR ELEVATION SHOWN (TBM or MSU) MLW			
3. DRILLING AGENCY SAVANNAH DISTRICT				12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 314			
4. HOLE NO. (As shown on drawing title and file number) SH-168A				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 2	
						UNDISTURBED 0	
5. NAME OF DRILLER DAVID JUSTISS				14. TOTAL NUMBER CORE BOXES 0			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER N/A		16. DATE HOLE	
						STARTED 25 JAN 92	
						COMPLETED 25 JAN 92	
7. THICKNESS OF OVERBURDEN 59.5' (Water 38.3')				17. ELEVATION TOP OF HOLE 0.0'			
8. DEPTH DRILLED INTO ROCK 0.0'				18. TOTAL CORE RECOVERY FOR BORING N/A %			
9. TOTAL DEPTH OF HOLE 59.5'				19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.			

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO. JAR	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	BLOWS
0.0	0						
-38.3'	35		Water Bottom of Harbor 38.3'			Scale change at 35.0'. Set 6" diameter casing by own weight to 44.5'. Hole SH-168A is a companion log to SH-168 which was completed to 53.5' before moving barge out of the shipping lane for traffic.	
-53.5'	40		Wash (see remarks)			Cleaned out from 38.3' to 53.5' with 5 1/2" fishtail.	
	45						
	50						
	55		(SC) Dark grey, fine clayey SAND. Trace of silt & mica.		1		75
							62
							75
					2		57
-59.5'	60		Bottom of Boring 59.5'				
			NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.			BLOWS PER FOOT: Number required to drive 1 3/8" I.D. splitspoon w/140 lb. hammer falling 30".	


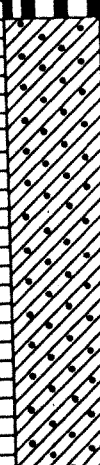
DRILLING LOG		DIVISION SOUTH ATLANTIC		INSTALLATION SAVANNAH, GA.		SHEET 1 OF 1 SHEETS	
1. PROJECT SAVANNAH HARBOR DEEPENING				10. SIZE AND TYPE OF BIT 1 3/8" SPLITSPOON, 5/2" FISHTAIL			
2. LOCATION (Coordinates or Station) X-818211 Y-776659 GA. EAST				11. DATUM FOR ELEVATION SHOWN (TBM or MSU) MLW			
3. DRILLING AGENCY SAVANNAH DISTRICT				12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314			
4. HOLE NO. (As shown on drawing title and file number) SH-169				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 5	UNDISTURBED 0
5. NAME OF DRILLER DAVID JUSTISS				14. TOTAL NUMBER CORE BOXES 0			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER N/A		16. DATE HOLE	
7. THICKNESS OF OVERBURDEN 60.3' (Water 40.8')				17. ELEVATION TOP OF HOLE 0.0'		STARTED 26 JAN 92	COMPLETED 26 JAN 92
8. DEPTH DRILLED INTO ROCK 0.0'				18. TOTAL CORE RECOVERY FOR BORING N/A %			
9. TOTAL DEPTH OF HOLE 60.3'				19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.			

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	BLOWS
0.0	0						
	40		Water Bottom of Harbor 40.8'			Scale change at 40.0'. Set 6" diameter casing by own weight to 41.1'.	
-40.8'			(SC) Olive grey, fine clayey SAND. Some silt. Trace of mica.		1		22
-43.8'			Grey.		2		38
-48.3'			Trace of silt.		3		41
	50						48
	55				4		44
							42
							52
							54
							68
							66
							76
							82
-60.3'	60		Bottom of Boring 60.3'		5		76
			NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.			BLOWS PER FOOT: Number required to drive 1 3/8" I.D. splitspoon w/140 lb. hammer falling 30".	

DRILLING LOG		VISION SOUTH ATLANTIC		INSTALLATION SAVANNAH, GA.		SHEET 1 OF 1 SHEETS	
1. PROJECT SAVANNAH HARBOR DEEPENING				10. SIZE AND TYPE OF BIT 1 3/8" SPLITSPOON, 5/2" FISHTAIL			
2. LOCATION (Coordinates or Station) X-818054 Y-775978 GA. EAST				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MLW			
3. DRILLING AGENCY SAVANNAH DISTRICT				12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314			
4. HOLE NO. (As shown on drawing title and file number) SH-172				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 4	
5. NAME OF DRILLER DAVID JUSTISS				14. TOTAL NUMBER CORE BOXES		0	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER		N/A	
7. THICKNESS OF OVERBURDEN 59.9' (Water 43.4')				16. DATE HOLE		STARTED 25 JAN 92	
8. DEPTH DRILLED INTO ROCK 0.0'				17. ELEVATION TOP OF HOLE		0.0'	
9. TOTAL DEPTH OF HOLE 59.9'				18. TOTAL CORE RECOVERY FOR BORING		N/A	
				19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.			

ELEVATION 0.0	DEPTH 0	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. UAR	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	BLOWS
			Water			Scale change at 40.0'. Set 6" diameter casing by own weight to 44.3'.	0
	40		Bottom of Harbor 43.4'				
	43.4'		(CL) Dark grey, silty lean CLAY. Some fine sand.		1		27
	45						99
	47.9'		Dark (SC) Olive-grey, fine clayey SAND. Some silt, trace of mica.		2		32
	50		Olive-grey.				31
	55				3		90
							89
							100/0.6
							100/0.9
							90
							54
	59.9'		Bottom of Boring 59.9'		4		39
			NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.			BLOWS PER FOOT: Number required to drive 1 3/8" I.D. splitspoon w/140 lb. hammer falling 30".	






DRILLING LOG		DIVISION SOUTH ATLANTIC	INSTALLATION SAVANNAH, GA.	SHEET 1 OF 1 SHEETS
1. PROJECT SAVANNAH HARBOR DEEPENING			10. SIZE AND TYPE OF BIT 1 3/8" SPLITSPOON, 5 1/2" FISHTAIL	
2. LOCATION (Coordinates or Station) X-818264 Y-775913 GA. EAST			11. DATUM FOR ELEVATION SHOWN (TBM or MSU) MLW	
3. DRILLING AGENCY SAVANNAH DISTRICT			12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314	
4. HOLE NO. (As shown on drawing title and file number) SH-173		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 5
				UNDISTURBED 0
5. NAME OF DRILLER DAVID JUSTISS			14. TOTAL NUMBER CORE BOXES 0	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.			15. ELEVATION GROUND WATER N/A	
7. THICKNESS OF OVERBURDEN 59.8' (Water 44.4')			16. DATE HOLE	
			STARTED 27 JAN 92	
			COMPLETED 27 JAN 92	
8. DEPTH DRILLED INTO ROCK 0.0'			17. ELEVATION TOP OF HOLE 0.0'	
9. TOTAL DEPTH OF HOLE 59.8'			18. TOTAL CORE RECOVERY FOR BORING N/A %	
			19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.	

ELEVATION 0.0	DEPTH 0.0	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. JAR	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	BLOWS
			Water			Scale change at 40.0'. Set 6" diameter casing by own weight to 48.2'.	
	40		Bottom of Harbor 44.4'				
-44.4'	45		(MH) Very dark grey to black clayey SILT.		1	Weight of rods drove splitspoon from 44.4' to 47.9'. Jar sample 2 taken from approx. 47.5' to 47.9'.	0
-47.5'	50		(SC) Dark grey, fine clayey SAND. Trace of silt.		2 3 4 5		18 49 94 99 71 81 89
-59.8'	60		Bottom of Boring 59.8'				100/0.9
NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.						BLOWS PER FOOT: Number required to drive 1 3/8" I.D. splitspoon w/140 lb. hammer falling 30".	

DRILLING LOG		DIVISION SOUTH ATLANTIC	INSTALLATION SAVANNAH, GA.	SHEET 1 OF 1 SHEETS
1. PROJECT SAVANNAH HARBOR DEEPENING			10. SIZE AND TYPE OF BIT 1 1/8" SPLITSPOON, 5/2" FISHTAIL	
2. LOCATION (Coordinates or Station) X-818856 Y-775859 GA. EAST			11. DATUM FOR ELEVATION SHOWN (TBM or MSU) MLW	
3. DRILLING AGENCY SAVANNAH DISTRICT			12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314	
4. HOLE NO. (As shown on drawing title and file number) SH-174			13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED: 6 UNDISTURBED: 0	
5. NAME OF DRILLER DAVID JUSTISS			14. TOTAL NUMBER CORE BOXES 0	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.			15. ELEVATION GROUND WATER N/A	
7. THICKNESS OF OVERBURDEN 59.6' (Water 41.6')			16. DATE HOLE STARTED 27 JAN 92 COMPLETED 27 JAN 92	
8. DEPTH DRILLED INTO ROCK 0.0'			17. ELEVATION TOP OF HOLE 0.0'	
9. TOTAL DEPTH OF HOLE 59.6'			18. TOTAL CORE RECOVERY FOR BORING N/A %	
			19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.	

ELEVATION 0.0	DEPTH 0.0	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO JAR	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant) f	BLOWS
			Water			Scale change at 40.0'. Set 6" diameter casing by own weight to 41.9'.	
	40		Bottom of Harbor 41.6'				
-41.6'			(SC) Dark grey, fine clayey SAND. Some silt, trace of mica.		1		30
-43.1'			(SM) Dark grey, fine silty SAND. Some clay & mica.		2		76
-46.1'	45		(SC) Grey, fine clayey SAND. Trace of silt.		3		49
-49.1'			Dark grey.		4		34
	50						38
	55				5		44
							55
							61
							64
							68
							92
-59.6'	60		Bottom of Boring 59.6'		6		80
			NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.			BLOWS PER FOOT: Number required to drive 1 1/8" I.D. splitspoon w/140 lb. hammer falling 30".	

DRILLING LOG		DIVISION SOUTH ATLANTIC	INSTALLATION SAVANNAH, GA.	SHEET 1 OF 1 SHEETS
1. PROJECT SAVANNAH HARBOR DEEPENING		10. SIZE AND TYPE OF BIT 1 1/8" SPLITSPOON, 5/2" FISHTAIL		
2. LOCATION (Coordinates or Station) X-818516 Y-775447 GA. EAST		11. DATUM FOR ELEVATION SHOWN (TBM or MSU) MLW		
3. DRILLING AGENCY SAVANNAH DISTRICT		12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314		
4. HOLE NO. (As shown on drawing title and file number) SH-175		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 5	UNDISTURBED 0
5. NAME OF DRILLER DAVID JUSTISS		14. TOTAL NUMBER CORE BOXES 0		
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		15. ELEVATION GROUND WATER N/A		
7. THICKNESS OF OVERBURDEN 60.1' (Water 43.6')		16. DATE HOLE	STARTED 17 NOV 91	COMPLETED 17 NOV 91
8. DEPTH DRILLED INTO ROCK 0.0'		17. ELEVATION TOP OF HOLE 0.0'		
9. TOTAL DEPTH OF HOLE 60.1'		18. TOTAL CORE RECOVERY FOR BORING N/A %		
19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.				

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	BLOWS
0.0	0	c	d	e	UAR	g	
	40		Water			Scale change at 40.0'. Set 6" diameter casing by own weight to 44.1'.	
-43.6'			Bottom of Harbor 43.6'				
-45.1'	45		(SC) Greenish-grey, fine clayey SAND. Some silt, trace of mica.		1		24
			Light olive to greenish-grey.				37
-46.6'			Greenish-grey.		2		42
							42
	50				3		49
							74
	55				4		50
							57
	60				5		77
							77
-60.1'			Bottom of Boring 60.1'				90
						BLOWS PER FOOT: Number required to drive 1 1/8" I.D. splitspoon w/140 lb. hammer falling 30".	
NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.							

DRILLING LOG		DIVISION South Atlantic	INSTALLATION Savannah, GA	SHEET 1 OF 2 SHEETS
1. PROJECT Savannah Harbor Widening		10. SIZE AND TYPE OF BIT 3/8" ID splitspoon &		
2. LOCATION (Coordinates or Station) Y-819190, Y-775340		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) 4X5 1/2		
DRILLING AGENCY Savannah District		12. MANUFACTURER'S DESIGNATION OF DRILL MIW carballoy		
4. HOLE NO. (As shown on drawing title and file number) SH-84		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN 11		
5. NAME OF DRILLER T.W. Scott, E. Mauldin		14. TOTAL NUMBER CORE BOXES 0		
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL, <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		15. ELEVATION GROUND WATER 0.0 MLW		
7. THICKNESS OF OVERBURDEN 50.1'		16. DATE HOLE STARTED 12 Sep 83 COMPLETED 12 Sep 83		
8. DEPTH DRILLED INTO ROCK 0.0'		17. ELEVATION TOP OF HOLE 0.0 MLW		
9. TOTAL DEPTH OF HOLE 50.1'		18. TOTAL CORE RECOVERY FOR BORING % 100		
		19. SIGNATURE OF INSPECTOR James E. Bolen Geologist		

ELEVATION 0.0 a	DEPTH 0 b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. JAR	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g																									
	0		Sea Water 0.0'-26.9'			Blows																									
	10					Note: Change of scale @ 20.0'. SAMPLE LAB <table border="1"> <tr> <th>No.</th> <th>Class</th> <th>LL</th> <th>PL</th> <th>PI</th> </tr> <tr> <td>2</td> <td>SP</td> <td>NP</td> <td>NP</td> <td>NP</td> </tr> <tr> <td>3</td> <td>SP</td> <td>NP</td> <td>NP</td> <td>NP</td> </tr> <tr> <td>7</td> <td>MH</td> <td>74</td> <td>35</td> <td>39</td> </tr> <tr> <td>10</td> <td>CH</td> <td>113</td> <td>39</td> <td>74</td> </tr> </table>	No.	Class	LL	PL	PI	2	SP	NP	NP	NP	3	SP	NP	NP	NP	7	MH	74	35	39	10	CH	113	39	74
No.	Class	LL	PL	PI																											
2	SP	NP	NP	NP																											
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10	CH	113	39	74																											
	20																														
	25																														
	26.9		Bottom of Harbor 26.9'																												
	27.5		SM-Gray silty coarse, medium sand low silt content		1																										
	28.5		Gray, black with traces of fine gravel and clay		2																										
	29.2		Gray silty coarse medium sand, low silt content		3																										
	30				4																										
	35				5																										
	38.0		ML-Dark green clayey silt with 15% fine sand		6																										
	40				7																										
	42				8																										
			Continued on Sheet 2 Note: Soils field classified in accordance with the Unified Soil Classification System.			Blows Per Foot: Number required to drive 1 3/8" ID splitspoon w/140 lb. hammer falling 30".																									

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE		Hole No. SH-84		
PROJECT			INSTALLATION		SHEET 2	
Savannah Harbor Widening			Savannah, GA		OF 2 SHEETS	
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO. JAR	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant.)
-42.0	42b	c	d	e		f
-42.5			ML-Dark green clayey silt, with 15% fine sand		8	Began Coring at 42.5'
			Core Loss-42.5'-45.6' believed to be clayey silt, easily washed out, rapid bit penetration.	0 RQD		Pull 1 From 42.5' To 45.6' Run 3.1' Rec 0.0' CL 3.1'
				0		All core washed out.
						Note: Change of scale at 45.0'
-45.6	45		ML-Dark green clayey silt, with 15% fine sand		9	Note: Resume split-
					10	spooning at 45.6'
					11	
-50.1	50		Bottom of Hole: 50.1'			Note: Depth figure in column 'e' is a taped depth after Pull.

DRILLING LOG		DIVISION South Atlantic	INSTALLATION Savannah, GA		SHEET 1 OF 1 SHEETS
1. PROJECT Savannah Harbor Widening			10. SIZE AND TYPE OF BIT 1-3/8" ID splitspoon, 5"		
2. LOCATION (Coordinates or Station) X-820005, Y-773530			11. DATUM FOR ELEVATION SHOWN (TBM or MSL) fishtail MLW		
3. DRILLING AGENCY Savannah District			12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314		
4. HOLE NO. (As shown on drawing title and title number) SH-83			13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 8
5. NAME OF DRILLER T.W. SCOTT			14. TOTAL NUMBER CORE BOXES		UNDISTURBED 0
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL, <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.			15. ELEVATION GROUND WATER		
7. THICKNESS OF OVERBURDEN 45.8'			16. DATE HOLE		STARTED 10 Sep 83
8. DEPTH DRILLED INTO ROCK 0.0'			17. ELEVATION TOP OF HOLE 0.0'		COMPLETED 11 Sep 83
9. TOTAL DEPTH OF HOLE 45.8'			18. TOTAL CORE RECOVERY FOR BORING %		
			19. SIGNATURE OF INSPECTOR James Arthur, Geologist		

ELEVATION 0.0'	DEPTH 0'	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	Blows
			Sea Water 0.0'-17.3'		JAR		
-17.3	17		Bottom of Harbor: 17.3'			Note change of scale at 17.0'	
-20.3	22		SP-Gray medium to coarse poorly graded sand with trace of fine gravel		1	Note: Set 6" casing to 17.3'.	2
-23.3			Tannish gray with trace of silt		2	Weight of rods with hammer drove splitspoon from 17.3' to 18.3'. Continued drive to 18.8'	38
-24.8	27		SM-Tannish gray fine to medium silty sand with layer of gray plastic silt		3	Reset casing to 24.2', 34.0' 35.8' and 36.8'.	40
-30.8	32		SP-Tannish gray fine to medium poorly graded sand with trace of silt		4		69
			Gray, fine grained, trace of mica			SAMPLE LAB	30
			Tannish gray, fine to medium grained.		5	No. Class LL PL PI	30
			Medium to coarse grained with 15% fine gravel			1 SP NP NP NP	27
			Fine to medium grained with trace of fine gravel.			2 SC.H 55 21 34	56
						4 SP NP NP NP	30
						7 CH 105 34 71	36
-35.3	37				6	32.3' Ten blows required to drive splitspoon from 33.7' to 33.8'	51
-39.8	42		CL-Green micaceous lean clay		7		47
			With 20% fine sand				30
-45.8			Bottom of Hole: 45.8'		8	39.8' Casing stopped following wash with fishtail	48
			Note: Soils field classified in accordance with the Unified Soil Classification System.				43
						Blows Per Foot: Number required to drive 1 3/8" ID splitspoon w/140 lb. hammer falling 30".	43

Hole No. SH-85

DRILLING LOG	DIVISION South Atlantic	INSTALLATION Savannah, GA	SHEET 1 OF 2 SHEETS
1. PROJECT Savannah Harbor Widening		10. SIZE AND TYPE OF BIT 1 3/8" ID splitspoon	
2. LOCATION (Coordinates or Station) X-821038, Y-771926		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MLW	
3. DRILLING AGENCY Savannah District		12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314	
4. HOLE NO. (As shown on drawing title and file number) SH-85		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 12
5. NAME OF DRILLER T.W. Scott and Earl Maulden		14. TOTAL NUMBER CORE BOXES	UNDISTURBED 0
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL, <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		15. ELEVATION GROUND WATER 0.0 MLW	
7. THICKNESS OF OVERBURDEN 50.0'		16. DATE HOLE	STARTED 13 Sep 83
8. DEPTH DRILLED INTO ROCK 0.0'		COMPLETED	
9. TOTAL DEPTH OF HOLE 50.0'		17. ELEVATION TOP OF HOLE 0.0 MLW	
		18. TOTAL CORE RECOVERY FOR BORING %	
		19. SIGNATURE OF INSPECTOR James E. Bolen Geologist <i>James E. Bolen</i>	

ELEVATION 0.0	DEPTH 0	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. JAR	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) f																														
	0		Sea Water 0.0'-21.5'			Note: Change of scale at 20.0'																														
	10																																			
	20		Bottom of Harbor: 21.5'																																	
	21.5		Wood chips, fibers (old piling ?)		1																															
	23.0		SM-Gray, brown silty coarse, medium sand (low silt content)		2	<table border="1"> <thead> <tr> <th colspan="5">SAMPLE LAB</th> </tr> <tr> <th>No.</th> <th>Class</th> <th>LL</th> <th>PL</th> <th>PI</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>SP</td> <td>NP</td> <td>NP</td> <td>NP</td> </tr> <tr> <td>6</td> <td>SP</td> <td>NP</td> <td>NP</td> <td>NP</td> </tr> <tr> <td>7</td> <td>CH</td> <td>99</td> <td>31</td> <td>68</td> </tr> <tr> <td>10</td> <td>CH</td> <td>97</td> <td>34</td> <td>63</td> </tr> </tbody> </table>	SAMPLE LAB					No.	Class	LL	PL	PI	2	SP	NP	NP	NP	6	SP	NP	NP	NP	7	CH	99	31	68	10	CH	97	34	63
SAMPLE LAB																																				
No.	Class	LL	PL	PI																																
2	SP	NP	NP	NP																																
6	SP	NP	NP	NP																																
7	CH	99	31	68																																
10	CH	97	34	63																																
	25																																			
	30		Gray silty medium grained sand, with a trace of coarse sand		3																															
					4																															
					5																															
					6																															
	35																																			
			Gray silty medium fine sand																																	
	40		ML-Dark green clayey silt with 10% fine sand		7																															
					8																															
					9																															
	45		Continued on Sheet 2 Note: Soils field classified in accordance with the Unified Soil Classification System.			Blows Per Foot: Number required to drive 1 3/8" ID splitspoon w/140 lb. hammer falling 30".																														

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

0.0' MLW

Hole No. SH-85

PROJECT

Savannah Harbor Widening

INSTALLATION

Savannah, GA

SHEET 2

OF 2 SHEETS

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO. JAR	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	Blow:
a	b	c	d	e		f	g
-49.0	45		ML-Dark green clayey silt with 10% fine sand With 15% fine sand		9		5
					10		6
					11		5
					12		6
-50.0	50		Bottom of Hole: 50.0'				

DRILLING LOG		DIVISION South Atlantic	INSTALLATION Savannah, GA	SHEET 1 OF 1 SHEETS
1. PROJECT Savannah Harbor Widening			10. SIZE AND TYPE OF BIT 1 3/8" ID splitspoon 5"	
2. LOCATION (Coordinates or Station) X-824219, Y-768031			11. DATUM FOR ELEVATION SHOWN (TBM or MSL) fishtail MLW	
3. DRILLING AGENCY Savannah District			12. MANUFACTURER'S DESIGNATION OF DRILL Falling 314	
4. HOLE NO. (As shown on drawing title and file number) SH-86			13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED: 7 UNDISTURBED: 0	
5. NAME OF DRILLER T.W. Scott			14. TOTAL NUMBER CORE BOXES	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.			15. ELEVATION GROUND WATER	
7. THICKNESS OF OVERBURDEN 51.0'			16. DATE HOLE STARTED: 14 Sep 83 COMPLETED: 14 Sep 83	
8. DEPTH DRILLED INTO ROCK 0.0'			17. ELEVATION TOP OF HOLE 0.0' MLW	
9. TOTAL DEPTH OF HOLE 51.0'			18. TOTAL CORE RECOVERY FOR BORING 2	
			19. SIGNATURE OF INSPECTOR <i>James E. Bolen</i> James Bolen & James Arthur, Geologist	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO. JAR	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
0.0	0	e	d	e	JAR	g Blows
0.0	0		Sea Water 0.0'-31.2			Note: Change of scale at 30.0'
-31.2	30		Bottom of Harbor 31.2'			
-34.6	35	X	No Recovery (See Remarks)			Note: 31.2'-34.6' weight of tool string with hammer drove splitspoon. Had no sample recovery, but residual soil indicated medium grained silty sand.
		•••••	SM-Gray to brown medium to coarse silty sand with some clay.		1	
		•••••	38.6'-39.0' wood		2	
-40.5	40	•••••	Fine to medium grained			SAMPLE LAB No. Class LL PL PI
-42.0		•••••	SP-Tannish gray medium to coarse poorly graded sand with trace of silt.		3	2 SP-SM NP NP NP 7 3 SP-SM NP NP NP 7 5 SP-SM NP NP NP 11
-43.5		•••••	SM-Tan, gray medium to coarse silty sand with trace of fine gravel.		4	Began second drive from 36.0'
-46.5	45	•••••	SP-Tannish gray medium to coarse poorly graded sand with trace of silt.		5	Casing set at 37.5' Casing followed each wash with fishtail to 46.5' where it remained until hole was completed.
-51.0	50	•••••	SM-Green fine silty sand		6	
		•••••	Bottom of Hole: 51.0'		7	
			Note Soils field classified in accordance with the Unified Soil Classification System.			Blows Per Foot: Number required to drive 1 3/8" ID splitspoon w/140 lb. hammer falling 30".

DRILLING LOG	DIVISION South Atlantic	INSTALLATION Savannah, GA	SHEET 1 OF 2 SHEETS
1. PROJECT Savannah Harbor Widening		10. SIZE AND TYPE OF BIT 3/8" ID splitspoon	
2. LOCATION (Coordinates or Station) X-826323, Y-765959		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL	
3. DRILLING AGENCY Savannah District		12. MANUFACTURER'S DESIGNATION OF DRILL Falling 314	
4. HOLE NO. (As shown on title and file number) SH-87		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED: 9 UNDISTURBED: 0	
5. NAME OF DRILLER E. Maulden & T. Scott		14. TOTAL NUMBER CORE BOXES	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL, <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		15. ELEVATION GROUND WATER 0.0' MLW	
7. THICKNESS OF OVERBURDEN 50.0'		16. DATE HOLE STARTED: 14 Sep 83 COMPLETED: 15 Sep 83	
8. DEPTH DRILLED INTO ROCK 0.0'		17. ELEVATION TOP OF HOLE 0.0 MLW	
9. TOTAL DEPTH OF HOLE 50.0'		18. TOTAL CORE RECOVERY FOR BORING 2	
		19. SIGNATURE OF INSPECTOR James E. Bolen, Geologist <i>James E. Bolen</i>	

ELEVATION 0.0'	DEPTH 0	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f JAR	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g																									
	10		Sea Water 0.0'-19.6'			Note: Change of scale at 10.0'																									
	15					<table border="1"> <tr><th colspan="5">SAMPLE LAB</th></tr> <tr><th>No.</th><th>Class</th><th>LL</th><th>PL</th><th>PI</th></tr> <tr><td>3</td><td>SP</td><td>NP</td><td>NP</td><td>NP</td></tr> <tr><td>7</td><td>SP</td><td>NP</td><td>NP</td><td>NP</td></tr> <tr><td>9</td><td>SC-H</td><td>65</td><td>26</td><td>39</td></tr> </table>	SAMPLE LAB					No.	Class	LL	PL	PI	3	SP	NP	NP	NP	7	SP	NP	NP	NP	9	SC-H	65	26	39
SAMPLE LAB																															
No.	Class	LL	PL	PI																											
3	SP	NP	NP	NP																											
7	SP	NP	NP	NP																											
9	SC-H	65	26	39																											
-19.6	20		Bottom of Harbor 19.6'																												
	25		SM-Gray, brown silty coarse medium sand with 5% rounded fine gravel, subangular grains		1	Note: Weight of hammer 19.6'-20.5'																									
	25				2	7																									
	25				3	15																									
	25				4	21																									
	25				5	18																									
-28.0	30	X	No Sample			46																									
	30					Note: Because of mathematical error, accidentally washed out from 28.0'-32.0' while setting casing.																									
-32.0	35		SM-Gray, brown silty coarse medium sand with 5% rounded fine gravel			17																									
-35.0	35		Continued on Sheet 2			32																									
			Note: Soils field classified in accordance with the Unified Soil Classification System.			Blows Per Foot: Number required to drive 1 3/8" ID splitspoon with 140lb hammer falling 30".																									

PROJECT Savannah Harbor Widening INSTALLATION Savannah, GA SHEET 2 OF 2 SHEETS

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant!)		
-35±0	35b	c	d	e	JAR	E	B1	
			SM-Gray, brown silty coarse, medium sand with 10% fine gravel, low silt content, subangular grains		6		40	
	40		Silty coarse sand with some fine gravel		7		43	
							33	
							18	
							26	
	45					8		51
								17
-48.0								12
	50			ML-Dark green, clayey silt with 25% fine sand		9		37
-50.0			Bottom of Hole: 50.0'				62	

DRILLING LOG	DIVISION South Atlantic	INSTALLATION Savannah, GA	SHEET OF 2 SHEETS
1. PROJECT Savannah Harbor Widening		10. SIZE AND TYPE OF BIT 1 3/8" ID splitspoon 4"	
2. LOCATION (Coordinates or Station) X-828814, Y-763538		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MLW	
3. DRILLING AGENCY Savannah District		12. MANUFACTURER'S DESIGNATION OF DRILL Sprague & Henwood	
4. HOLE NO. (As shown on drawing title and file number) SH-70		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 6
5. NAME OF DRILLER T.W. SCOTT		UNDISTURBED 0	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		14. TOTAL NUMBER CORE BOXES	
7. THICKNESS OF OVERBURDEN 60.1'		15. ELEVATION GROUND WATER	
8. DEPTH DRILLED INTO ROCK 0.0'		16. DATE HOLE	STARTED 8 Sep 82
9. TOTAL DEPTH OF HOLE 60.1'		COMPLETED 8 Sep 82	
		17. ELEVATION TOP OF HOLE 0.0'	
		18. TOTAL CORE RECOVERY FOR BORING	
		19. SIGNATURE OF INSPECTOR J. Arthur, Geologist	

ELEVATION a	DEPTH 0 b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0		Water			Note: Top of Hole established at 0.0' MLW.
	20					Note: Scale changed at 20.0'
	25					Note: Checked water depth using tape with heavy weight.
-27.5			Bottom of Harbor 27.5'			
	30		MH-Gray fat silt.		JAR	Note: 27.5' to 30.7' weight of rod string drove splitspoon. 30.7'-43.6' weight of rod string plus hammer drove splitspoon.
	35				1	
	40					
-43.6			SM-Gray fine to medium silty sand		2	
	45		With layers of gray fat silt			
-47.5'			Continued on Sheet # 2			
			Note: Soils field classified in accordance with the Unified Soil Classification System.			Blows Per Foot: Number required to drive 1 3/8 ID splitspoon w/140

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

0.0' MLW

Hole No. SH-70

OBJECT Savannah Harbor Widening

INSTALLATION Savannah, GA

SHEET OF 2 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV. ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	47.5					
	50		SM-Gray fine to medium silty sand with layers of gray fat silt.			30
-51.1			Green medium to coarse silty sand with trace of fine gravel and mica		3	100/0.9
-52.6			MH-Green fat silt with some fine sand and mica		4	50
	55		SM-Green fine silty sand with some mica With trace of fine gravel		5	30
						50
						20
						47
-60.1	60		With no gravel		6	45
			Bottom of Hole: -60.1'			

DRILLING LOG		DIVISION South Atlantic	INSTALLATION Savannah, GA	SHEET OF 1 SHEETS
1. PROJECT Savannah Harbor Widening			10. SIZE AND TYPE OF BIT 1 3/8" ID 5" splitspoon	
2. LOCATION (Coordinates or Station) X-830688, Y-761519			11. DATUM FOR ELEVATION SHOWN (FBM or MSL) MLW	
3. DRILLING AGENCY Savannah District			12. MANUFACTURER'S DESIGNATION OF DRILL Sprague Henwood	
4. HOLE NO. (As shown on drawing title and file number) SH-69			13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	
5. NAME OF DRILLER T. Scott			DISTURBED 2 UNDISTURBED 0	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.			14. TOTAL NUMBER CORE BOXES	
7. THICKNESS OF OVERRURDEN			15. ELEVATION GROUND WATER	
8. DEPTH DRILLED INTO ROCK			16. DATE HOLE	
9. TOTAL DEPTH OF HOLE 57.0			STARTED 26 Jul 82 COMPLETED 28 Jul 82	
			17. ELEVATION TOP OF HOLE 0.0 MLW	
			18. TOTAL CORE RECOVERY FOR BORING 3	
			19. SIGNATURE OF INSPECTOR B. Green & T. Scott	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
0.0	0					
	5		Water			
	10					
	15					
	20					
-22.0	25		CH-Dark gray, fat clay, with seams of SC		1	Note: Spoon pushed by weight of drill string and hammer
	30					
	35					
-37.0	40		SP-Gray, medium-grained, poorly sorted sand, with some silt.		2	
	45					
-45.0	45		FLM GM		3	
	50		No Sample		4	Note: Switched to 300 lb. hammer and 5 inch spoon at EL.-48.0'
	55					
-57.0	60		Bottom of Hole: -57.0' Note: Soils field classified in accordance with the Unified Soil Classification System.			Note: Hole abandoned at EL. -57.0 due to gravel in hole. Blows Per foot: Number required to drive 1 3/8" ID splitspoon w/140 lb. hammer falling.

DRILLING LOG		DIVISION South Atlantic	INSTALLATION Savannah, GA	SHEET 1 OF 1 SHEETS
1. PROJECT Savannah Harbor Widening			10. SIZE AND TYPE OF BIT 3/8" ID splitspoon 5"	
LOCATION (Coordinates or Station) X-821600, Y-771180			11. DATUM FOR ELEVATION SHOWN (FBM or MSL) rinstail MLW	
3. DRILLING AGENCY Savannah District			12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314	
4. HOLE NO. (As shown on title and file number) SH-82			13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED 9 UNDISTURBED 0	
5. NAME OF DRILLER T.W. Scott			14. TOTAL NUMBER CORE BOXES 0	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.			15. ELEVATION GROUND WATER	
7. THICKNESS OF OVERBURDEN 49.6'			16. DATE HOLE STARTED 9 Sep 83 COMPLETED 10 Sep 83	
8. DEPTH DRILLED INTO ROCK 0.0'			17. ELEVATION TOP OF HOLE 0.0'	
9. TOTAL DEPTH OF HOLE 49.6'			18. TOTAL CORE RECOVERY FOR BORING %	
			19. SIGNATURE OF INSPECTOR James Arthur, Geologist	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
0.0'	0				JAR	Blows
			Sea Water 0.0'-22.8'			Note: Change of scale at 22.0'
-22.8	22		Bottom of Harbor: 22.8'			
-24.3			SP-Ian fine to medium poorly graded sand with trace of silt		1	Note: Set 6" casing to 27.4'. Reset casing to 33.0', 37.9' and 40.1'.
-25.8	27		Medium to coarse grained with trace of fine gravel			
			Fine to medium grained with no gravel			
-28.8			Gray, medium to coarse grained.		2	SAMPLE LAB
						No. Class LL PL PI
-31.8	32		Coarse grained, no silt			2 SP NP NP NP 19
					3	4 SP NP NP NP
-33.3			Trace of fine gravel, layer of blue fat clay from 34.5' to 34.8'			8 SM - - - 48
-34.8					4	
			Coarse grained with trace of silt, fine gravel and layer of fat clay from 35.8' to 36.0'			
-37.8	37				5	
			Medium to coarse grained			
-42.3	42					
			Coarse grained with trace of fine gravel, thin layer of clayey sand from 43.2'-43.5'		6	
-43.8			With 15% fine gravel			
					7	
-46.8	47		SM-Green fine silty sand with trace of mica and fine gravel.		8	Note: 47.9'-48.3' cleaned out hole with fishtail.
					9	
-49.6			Bottom of Hole: 49.6'			
			Note: Soils field classified in accordance with the Unified Soil Classification System.			Blows Per Foot: Number required to drive 1 3/4" ID splitspoon w/140 lb. hammer falling 30".

DRILLING LOG		South Atlantic		Savannah, Ga.		SHEETS 1	
1. PROJECT Widening & Deepening Savannah Harbor				10. SIZE AND TYPE OF BIT 3-1/2" ID Sampler			
2. LOCATION (Coordinates or Station) Sta. 94B, N. Side				11. DATUM FOR ELEVATION SHOWN (FOR DATA ONLY) MLW			
3. DRILLING AGENCY Alpine Geophysical Asso.				12. MANUFACTURER'S DESIGNATION OF DRILL Alpine 20' Laboratory Sampler			
4. HOLE NO. (As shown on drawing title and file number) V-90A				13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		DISBURSED 1	
5. NAME OF DRILLER Al Stockel				14. TOTAL NUMBER CORE BOXES 1 Plastic Tube			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER Tide Gage 6.3			
7. THICKNESS OF OVERBURDEN				16. DATE HOLE		STARTED 5-24-67	
8. DEPTH DRILLED INTO ROCK				17. ELEVATION TOP OF HOLE -36.7		COMPLETED 5-24-67	
9. TOTAL DEPTH OF HOLE 7.5'				18. TOTAL CORE RECOVERY FOR BORING 71 %			
				19. SIGNATURE OF INSPECTOR J. A. Albritton			

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water lost, depth of weathering, etc., if significant)
-35.0						Time Sec./Ft.
			No Sample			Zone-of-Core-Loss 0.5
-40.0			SM-Green, micaceous, fine, silty sand.	71	V-90A	-36.7 to -38.9 0.5
			ML-Green, dense, sandy silt, toward a compaction shale			1.0
			BOTTOM OF HOLE -44.2'			1.0
			Soils field classified in accordance with the Unified Soil Classification System.			grading below -43.0'

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DRILLING LOG		DIVISION SOUTH ATLANTIC	INSTALLATION SAVANNAH RIVER HARBOR	SHEET 1 OF 2 SHEETS
PROJECT KINGS ISLAND TIKVINGE BASIN		10. SIZE AND TYPE OF BIT 1 3/8" ID SPLITSPOON		
2. LOCATION (Coordinates or Station) OP'D SITE STA. 100750 1 1/2' NORTH EAST OF BLINNE BUOY 19		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MLW		
3. DRILLING AGENCY SAVANNAH DISTRICT		12. MANUFACTURER'S DESIGNATION OF DRILL SPPD:UF & HENWOOD		
4. HOLE NO. (As shown on drawing title and file number) CS 1		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED: 5 UNDISTURBED: 0		
5. NAME OF DRILLER J. Mc DONALD		14. TOTAL NUMBER CORE BOXES		
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		15. ELEVATION GROUND WATER		
7. THICKNESS OF OVERBURDEN		16. DATE HOLE STARTED: 3 MARCH 1973 COMPLETED: 3 MARCH 1973		
8. DEPTH DRILLED INTO ROCK		17. ELEVATION TOP OF HOLE 0.0' MLW		
9. TOTAL DEPTH OF HOLE 45.1' BELOW MLW		18. TOTAL CORE RECOVERY FOR BORING 3		
		19. SIGNATURE OF INSPECTOR Charles D. Griffin		

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	0					
	5		- WATER			
	10					
-13.6			WATER DEPTH 13.6' AT MLW			
	15		SM. GRAY SILTY FINE & MEDIUM SAND		1	88
						79
						81
	20		W/GREEN		2	68
						76
						84
	25		OLIVE GREEN		3	93
						100
						89
						63
	30				4	74

CONTINUED ON SHEET NO 2

DRILLING LOG (Cont Sheet) FROM TOP OF HOLE

-13.6 BELOW MLW-

Hole No. CS 1

PROJECT KINGS ISLAND TESTING STATION

INSTALLATION CANTONMENT PINE HARBOR

SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	35		SM- OLIVE GREEN SILTY FINE SAND		5	100 99 88 100 94 88 93 76 94 98
	45		NOTE: Soils field classified in accordance with the Unified Soil Classification System.			<u>BLOWS PER FOOT:</u> Number required to drive 1 1/8" ID splitspoon w/140 lb. hammer falling 30"

DRILLING LOG

DIVISION

Hole No. **CS 2**

PROJECT

Kings Island Turning Basin
 LOCATION (Coordinates or Stationing) **100' NE of GN 16**
Approx. 350' from pier edge

INSTALLATION

SHEET 1
OF 2 SHEETS

3. DRILLING AGENCY
Savannah District

10. SIZE AND TYPE OF BIT
11. DATUM FOR ELEVATION SHOWN (TTM or MSL)

4. HOLE NO. (As shown on drawing title and file number)
CS-2

12. MANUFACTURER'S DESIGNATION OF DRILL
Spencer & Harwood

5. NAME OF DRILLER
McDonnell

13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN
DISTURBED **3** UNDISTURBED

6. DIRECTION OF HOLE
 VERTICAL INCLINED _____ DEG. FROM VERT.

14. TOTAL NUMBER CORE BOXES **0**

15. ELEVATION GROUND WATER
In River

7. THICKNESS OF OVERBURDEN

16. DATE HOLE STARTED **5 April 73** COMPLETED **11 April 73**

8. DEPTH DRILLED INTO ROCK

17. ELEVATION TOP OF HOLE **0.0' MLW**

9. TOTAL DEPTH OF HOLE **45.0'**

18. TOTAL CORE RECOVERY FOR BORING

19. SIGNATURE OF INSPECTOR
Edward McLaughlin

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
	0'					
	5'					
	10'					
	15'					
	17.6'		Water depth 17.6' at MLW			
	18'		SP-Tan poorly graded sand		1	
	20'		ML- Green & Gray fine sandy silt micaceous slight plasticity		2	
	25'				3	
	25'				4	
	30'		SM- Green & Gray silty fine sand micaceous slight plasticity		5	
	30'					

DRILLING LOG

DIVISION

Hole No. **CS-2**

1. PROJECT Kings Island		INSTALLATION		SHEET 2
2. LOCATION (Coordinates or Station) See Plans		10. SIZE AND TYPE OF BIT L11		OF 2
3. DRILLING AGENCY Southern District		11. DATUM FOR PLP/AYISHI GROUND (TBM or MSL)		
4. HOLE NO. (As shown on drawing title and file number) CS-2		12. MANUFACTURER'S DESIGNATION OF DRILL		
5. NAME OF DRILLER McDonnell		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 5 UNDISTURBED
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		14. TOTAL NUMBER CORE BOXES 0		15. ELEVATION GROUND WATER In situ
7. THICKNESS OF OVERBURDEN		16. DATE HOLE STARTED 5 Nov 73 COMPLETED 11 Dec 73		17. ELEVATION TOP OF HOLE 2.2' b.t. MSL
8. DEPTH DRILLED INTO ROCK		18. TOTAL CORE RECOVERY FOR BORING 3		
9. TOTAL DEPTH OF HOLE 25.0'		19. SIGNATURE OF INSPECTOR <i>[Signature]</i>		

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	30'				1	
	35'				6	
	40'		ML-Green & Gray fine sand silt micaceous slight plasticity		7	
	45'				8	
			Soils field classified in accordance with the Unified Soil Classification System.			BLOWS PER FOOT: Number required to drive 1 1/2" ID splitspoon w/140 lb. hammer falling 30".

Hole No. CS-3

DRILLING LOG		DIVISION <i>South Atlantic</i>	INSTALLATION <i>Savannah River</i>	SHEET 1 OF 2 SH
1. PROJECT <i>Kings Island Terminal</i>		10. SIZE AND TYPE OF BIT <i>MLW</i>		
2. LOCATION (Coordinates or Station) <i>Access Road from Highway 295</i>		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) <i>MLW</i>		
3. DRILLING AGENCY <i>Savannah District</i>		12. MANUFACTURER'S DESIGNATION OF DRILL <i>Standard</i>		
4. HOLE NO. (As shown on drawing title and file number) <i>CS-3</i>		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED <i>6</i>	UNDISTURBED
5. NAME OF DRILLER <i>M.S. Smith</i>		14. TOTAL NUMBER CORE BOXES <i>0</i>		
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		15. ELEVATION GROUND WATER <i>In River</i>		
7. THICKNESS OF OVERBURDEN		16. DATE HOLE STARTED <i>17 April 73</i> COMPLETED <i>19 April 73</i>		
8. DEPTH DRILLED INTO ROCK		17. ELEVATION TOP OF HOLE <i>0.0 = MLW</i>		
9. TOTAL DEPTH OF HOLE <i>41.9'</i>		18. TOTAL CORE RECOVERY FOR BORING <i>3</i>		
		19. SIGNATURE OF INSPECTOR <i>Edward M. ...</i>		

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	5'		Water			
	10'		Water depth 11.9' MLW			
	15'				1	42
						45
						48
	20'		SM - Gray & Green silty fine sand micaceous slight plasticity when wet		2	43
						47
						58
	25'				3	65
						67
						70
	30'					72

Hole No. CS-3

DRILLING LOG		DIVISION South ATLANTIC	INSTALLATION Savannah River	SHEET No 2 OF 2 SH
1. PROJECT Kings Island Turning Basin		10. SIZE AND TYPE OF BIT		
2. LOCATION (Coordinates or Station) See Plan		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.L.W.		
3. DRILLING AGENCY Savannah District		12. MANUFACTURER'S DESIGNATION OF DRILL S... ..		
4. HOLE NO. (As shown on drawing title and file number) CS-3		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		UNDISTURBED
5. NAME OF DRILLER McDonald		14. TOTAL NUMBER CORE BOXES 0		
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		15. ELEVATION GROUND WATER In River		
7. THICKNESS OF OVERBURDEN		16. DATE HOLE		STARTED 19 Apr 1973 COMPLETED 19 Apr 1973
8. DEPTH DRILLED INTO ROCK		17. ELEVATION TOP OF HOLE 0.0 of M.L.W.		
9. TOTAL DEPTH OF HOLE 146.9'		18. TOTAL CORE RECOVERY FOR BORING		19. SIGNATURE OF INSPECTOR Gerald McDonald

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	35'				4	63
						57
						60
			SM - Gray & Green silty fine sand micaceous slight plasticity when wet			73
						70
						65
	45'		cut out to dump with fish tail		5	61
			SM - Gray & Green silty fine Sand - micaceous		6	100/c. 95'
			Soils field classified in accordance with the Unified Soil Classification System.			BLOWS PER FOOT: Number required to drive 1 1/2" ID splitspoon w/140 lb hammer falling 30".

Hole No. CS-4

DRILLING LOG		DIVISION South ATLANTIC	INSTALLATION SAVANNAH RIVER HARBOR	SHEET 1 OF 2 SHEETS
1. PROJECT KINGS ISLAND TURNING BASIN		10. SIZE AND TYPE OF BIT 1 1/2" DIA. DOUBLE FLUTE		
2. LOCATION (Coordinates or Station) 75° 10' 00" W 25° 30' 00" N		11. DATUM FOR ELEVATION SHOWN (TBM or MLLW) MLLW		
3. DRILLING AGENCY SAVANNAH DISTRICT		12. MANUFACTURER'S DESIGNATION OF DRILL FAIRBANKS 314		
4. HOLE NO. (As shown on drawing title and file number) CS-4		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN 7		UNDISTURBED 0
5. NAME OF DRILLER J. McDonald		14. TOTAL NUMBER CORE BOXES		
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		15. ELEVATION GROUND WATER		
7. THICKNESS OF OVERBURDEN		16. DATE HOLE STARTED 23 APRIL 1975		COMPLETED 23 APRIL 1975
8. DEPTH DRILLED INTO ROCK		17. ELEVATION TOP OF HOLE 0.0 MLLW		
9. TOTAL DEPTH OF HOLE 46.0' BELOW MLLW		18. TOTAL CORE RECOVERY FOR BORING %		3
		19. SIGNATURE OF INSPECTOR Charles D. Gillie		

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	0				1	18
	5		SM-TAN SILTY FINE & MEDIUM SAND		2	18
	10				3	17
	15					19
	20					16
	25		SP SM-TAN POORLY GRADED SAND		4	20
	30				5	21
	35					22
	40					35
	45				6	30
	50					34
	55					26
	60					29
	65					36
	70					21
	75					
	80					
	85					
	90					
	95					
	100					

CONTINUED ON SHEET NO 2

DRILLING LOG (Cont Sheet)

LOCATION TOP OF HOLE

0.3 BELOW MSL

Hole No. CS-4

PROJECT

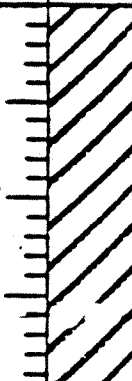
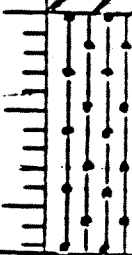

KINGS ISLAND TRENCH BASIN

INSTALLATION

SAVANNAH RIVER WAREHOUSE

SHEET 2

OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) R	BLOWS
	35		CH. GRAY FAT CLAY SLIGHTLY MICACEOUS				51 49 41 68 61
	40		SP, SM. GREEN POORLY GRADED SAND		7		59 71 72 68
-46.3	45						59

NOTE: Soils field classified in accordance with the Unified Soil Classification System.

BLOWS PER FOOT:

Number required to drive 1 1/2" ID splitspoon w/140 lb. hammer falling 30".

DRILLING LOG		DIVISION SOUTH ATLANTIC		LOCALITY SAVANNAH JEFF HARBOR		SHEET 1 OF 2 SHEETS	
PROJECT KINGS ISLAND TURNING BASIN				10. SIZE AND TYPE OF BIT 1 7/8" 10 SPLITSPAWN			
2. LOCATION (Coordinates or Station) TA. 100+250 AT WATERS EDGE				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M L M			
DRILLING AGENCY SAVANNAH DISTRICT				12. MANUFACTURER'S DESIGNATION OF DRILL FALLING 314			
HOLE NO. (As shown on drawing title and file number) CS 5		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN 4		DISTURBED 0		UNDISTURBED 0	
3. NAME OF DRILLER J. McDONALD				14. TOTAL NUMBER CORE BOXES 1			
4. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER 0.0 MLW			
5. THICKNESS OF OVERBURDEN				16. DATE HOLE STARTED 26 APRIL 1973		COMPLETED 26 APRIL 1973	
6. DEPTH DRILLED INTO ROCK				17. ELEVATION TOP OF HOLE 0.0 MLW			
7. TOTAL DEPTH OF HOLE 45.9' BELOW MLW				18. TOTAL CORE RECOVERY FOR BORING 3			
				19. SIGNATURE OF INSPECTOR <i>Charles D. Griffin</i>			

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
					1	
		WATER	WATER DEPTH 1.5 AT MLW			
5			ML-GRAY INORGANIC SILT			
10						
15						
20						
25			SM-TAN & GRAY SILTY FINE MEDIUM SAND		2	
30						
			CONTINUED ON SHEET No. 2			

DRILLING LOG (Cont Sheet) SECTION TOP OF HOLE

PROJECT: *KINGS ISLAND TUGGING BASIN* INSTALLATION: *SALVANNON OVER LIDSENIC* Hole No. *CS 5* SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	BLOWS
	30		<i>CL- GREEN & GRAY SILTY SANDY CLAY</i>		<i>JAR 3</i>		9 11 21
	35		<i>SP SM. GREEN POORLY GRADED SILTY SAND</i>		<i>4</i>		19 20 30 34 36 46 49
	40						
	45						
			NOTE: Soils field classified in accordance with the Unified Soil Classification System.			<p align="center"><u>BLOWS PER FOOT:</u> Number required to drive 1 1/8" ID splitspoon w/140 lb. hammer falling 30".</p>	

Hole No. **CS-6**

DRILLING LOG	DIVISION SOUTH ATLANTIC	INSTALLATION SAVANNAH RIVER HARBOR	SHEET 1 OF 2 SHEETS
PROJECT KINGS ISLAND TURNING BASIN		10. SIZE AND TYPE OF BIT 1 3/8" ID SPLITSPOON	
LOCATION (Coordinates or Station) NORTH 50' OF BN 1A		11. DATUM FOR ELEVATION SHOWN (TBM or MLL) MLW	
DRILLING AGENCY SAVANNAH DISTRICT		12. MANUFACTURER'S DESIGNATION OF DRILL FRILING 314	
HOLE NO. (As shown on drawing title sheet file number) CS 6		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 4 UNDISTURBED 0
NAME OF DRILLER J. Mc DONALD		14. TOTAL NUMBER CORE BOXES	
DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		15. ELEVATION GROUND WATER	
THICKNESS OF OVERBURDEN		16. DATE HOLE	STARTED 27 APRIL 1973 COMPLETED 27 APRIL 1973
DEPTH DRILLED INTO ROCK		17. ELEVATION TOP OF HOLE 0.0' MLW	
TOTAL DEPTH OF HOLE 29.8' BELOW MLW		18. TOTAL CORE RECOVERY FOR BORING	3
		19. SIGNATURE OF INSPECTOR Charles D. Griffin	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant)
0	0					SLOWS
	5		WATER			
	10					
	15					
2.5			WATER DEPTH 16.5 AT MLW			
	20		ML - GRAY INORGANIC SILT W/ SILTY SAND LAYERS		1	
	25		CH - GRAY FAT CLAY W/ GRAVEL		2	
	30		CONTINUED ON SHEET No. 2		3	

DRILLING LOG (Cont. Sheet)

LOCATION TOP OF HOLE

16.5' BELOW ML

Hole No. CS 6

PROJECT: KING'S ISLAND TURNING BASIN

INSTALLATION: SAVANNAH RIVER HARBOR

SHEET 2 OF 2 SHEETS

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	BLOWS
	30		SM- GRAY SILTY FINE MEDIUM SAND				21
	35						32
							34
							41
							40
	40		GREEN, SLIGHTLY MICACEOUS		4		43
							46
							49
	45						51
46.5							52
							56
			NOTE: Soils field classified in accordance with the Unified Soil Classification System.	BLOWS PER FOOT: Number required to drive 1 1/8" ID splitspoon w/140 lb hammer falling 30"			

Hole No. **CS-7**

DRILLING LOG	DIVISION SOUTH ATLANTIC	INSTALLATION SAVANNAH R. ? HARBOR	SHEET 1 OF 2 SHEETS
1. PROJECT KINGS ISLAND TURNING BASIN		10. SIZE AND TYPE OF BIT 1 3/8" ID SPLITSPOON	
2. LOCATION (Coordinates or Station) SEE PLAN OPPOSITE STA. 92500 AT WATERS EDGE		11. DATUM FOR ELEVATION SHOWN (TBM or MLL) MLW	
3. DRILLING AGENCY SAVANNAH DISTRICT		12. MANUFACTURER'S DESIGNATION OF DRILL FALLING 314	
4. HOLE NO. (As shown on drawing title and file number) CS 7		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED 5 UNDISTURBED 0	
5. NAME OF DRILLER J. McDONALD		14. TOTAL NUMBER CORE BOXES	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		15. ELEVATION GROUND WATER	
7. THICKNESS OF OVERBURDEN		16. DATE HOLE STARTED 27 APRIL 1973 COMPLETED 27 APRIL 1973	
8. DEPTH DRILLED INTO ROCK		17. ELEVATION TOP OF HOLE 0.0' MLW	
9. TOTAL DEPTH OF HOLE 45.5' BELOW MLW		18. TOTAL CORE RECOVERY FOR BORING	
		19. SIGNATURE OF INSPECTOR <i>Charles D. Griffin</i>	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
-0.8			WATER DEPTH 0.8' AT MLW		JAR	FLUWS
	5		ML - GRAY INORGANIC SILT W/SILTY SAND LAYERS		1	
	10					
	15		CH - GRAY FAT CLAY W/ GRAVEL		2	
	20		SM - GRAY SILTY FINE MEDIUM SAND			
	25				3	
	30		GREEN, SLIGHTLY MICACEOUS		4	
			CONTINUED ON SHEET NO. 2			

DRILLING LOG (Cont Sheet, SECTION TOP OF HOLE

PROJECT: **KINGS ISLAND TURNING BASIN** INSTALLATION: **O. B. FLOW MLN SAVANNAH RIVER HARBOR** Hole No. **CS 7** SHEET **2** OF **2** SHEETS

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	30	c	d	e	f	B BLOWS
						51
						54
	35		SM-GREEN SILTY FINE SAND, SLIGHTLY MICACEOUS			62
						64
						59
	40					61
						62
						60
						58
45.5	45				5	51

NOTE: Soils field classified in accordance with the Unified Soil Classification System.

BLOWS PER FOOT:
Number required to drive 1 1/2" ID splitspoon w/140 lb hammer falling 30"

DRILLING LOG		DIVISION <i>South Atlantic</i>	INSTALLATION <i>Savannah</i>	Hole No. CS-8	SHEET, 1 OF 2 SHEETS
1. PROJECT <i>Kings Island Trench Basin</i>		10. SIZE AND TYPE OF BIT <i>1 3/4" ID Split Spoon</i>		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) <i>MLW</i>	
2. LOCATION (Coordinates or Station) <i>OPPOSITE Sta. 99+330</i>		12. MANUFACTURER'S DESIGNATION OF DRILL <i>314 Fastlog</i>		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	
3. DRILLING AGENCY <i>Savannah District</i>		14. TOTAL NUMBER CORE BOXES <i>0</i>		15. ELEVATION GROUND WATER <i>Boring In River</i>	
4. HOLE NO. (As shown on drawing title and file number) CS-8		16. DATE HOLE STARTED <i>30 April 73</i>		17. ELEVATION TOP OF HOLE	
5. NAME OF DRILLER <i>McDonald</i>		18. TOTAL CORE RECOVERY FOR BORING		19. SIGNATURE OF INSPECTOR <i>Shirley McLeod</i>	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		17. ELEVATION TOP OF HOLE		18. TOTAL CORE RECOVERY FOR BORING	
7. THICKNESS OF OVERBURDEN		18. TOTAL CORE RECOVERY FOR BORING		19. SIGNATURE OF INSPECTOR	
8. DEPTH DRILLED INTO ROCK		19. SIGNATURE OF INSPECTOR			
9. TOTAL DEPTH OF HOLE <i>150'</i>					

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	0					
	5					
	10					
	15		<i>Water</i>			
	20					
	25					
	30		<i>Depth at MLW, 30.0'</i>			

DRILLING LOG

DIVISION **Southern Atlantic**

INSTALLATION **...**

ET 2
OF 2 SHEETS

1. PROJECT **Kings Island Tunnelling Basin**

2. LOCATION (Coordinates or Station) **See Plans**

3. DRILLING AGENCY **...**

4. HOLE NO. (As shown on drawings and file number) **CS-8**

5. NAME OF DRILLER **McDonald**

6. DIRECTION OF HOLE
 VERTICAL INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN

8. DEPTH DRILLED INTO ROCK

9. TOTAL DEPTH OF HOLE **45.0'**

10. SIZE AND TYPE OF BIT **1 1/2" ID Split Spoon**

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) **N.I.W.**

12. MANUFACTURER'S DESIGNATION OF DRILL **EIA Fuline**

13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN
DISTURBED **4** UNDISTURBED

14. TOTAL NUMBER CORE BOXES **0**

15. ESTIMATED GROUND WATER BORING **...**

16. DATE HOLE STARTED **30 Apr. 73** COMPLETED **1 May 73**

17. ELEVATION TOP OF HOLE

18. TOTAL CORE RECOVERY FOR BORING

19. SIGNATURE OF INSPECTOR **Edward J. ...**

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	30'		SM- Gray silty sand with layers dark gray OH		1	NX casing set at 33.4', advanced to 37.9'
	35'		SP- Gray poorly graded sand		2	
	40'		SM- Green silty fine sand micaceous slight plasticity white, wet		3	
	45'				4	
Soils field classified in accordance with the Unified Soil Classification System.				<p>BLOWS PER FOOT:</p> <p>Number required to drive 1 1/2" ID splitspoon w/140 lb hammer falling 30".</p>		

DRILLING LOG		DIVISION <i>Southern Atlantic</i>	INSTALLATION <i>Savannah River</i>	SHEET <i>1</i> OF 2 SHEETS
1. PROJECT <i>Kings Island Turbine Basin</i>		10. SIZE AND TYPE OF BIT <i>1 3/8" ID Split Spoon</i>		
2. LOCATION (Coordinates or Station) <i>OPPOSITE SP. 94000</i>		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) <i>M.L.W.</i>		
3. DRILLING AGENCY <i>Savannah District</i>		12. MANUFACTURER'S DESIGNATION OF DRILL <i>B. L. Frillion</i>		
4. HOLE NO. (As shown on drawing title and file number) <i>CS-9</i>		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED <i>6</i>	UNDISTURBED
5. NAME OF DRILLER <i>M. S. Donald</i>		14. TOTAL NUMBER CORE BOXES <i>0</i>		
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		15. ELEVATION-GROUND WATER <i>Boxing In River</i>		
7. THICKNESS OF OVERBURDEN		16. DATE HOLE STARTED <i>2 May 73</i> COMPLETED <i>2 May 73</i>		
8. DEPTH DRILLED INTO ROCK		17. ELEVATION TOP OF HOLE		
9. TOTAL DEPTH OF HOLE <i>25.4'</i>		18. TOTAL CORE RECOVERY FOR BORING <i>2</i>		
		19. SIGNATURE OF INSPECTOR <i>Edwin J. Miller</i>		

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	0'				1	
	5'					
	10'		Water			
	15'					
	20'		Water depth 20.2' MLW MH-Green elastic silt		1	
	25'		SP- Gray poorly graded Sand		2	
	30'					

NX casing set at 25.4'

Advanced NX casing to 29.9'

DRILLING LOG		DIVISION <i>South Atlantic</i>	INSTALLATION <i>Savannah River</i>	FIGURE NO. <i>CS-9</i>	SHEET 2 OF 2 SHEETS
1. PROJECT <i>Kings Trench Turbine Basin</i>		10. SIZE AND TYPE OF BIT <i>1 7/8" ID Splitpoint</i>			
2. LOCATION (Coordinates of Station) <i>D137</i>		11. DATUM FOR ELEVATION SHOWN (FSM or MSL) <i>MLW</i>			
3. DRILLING AGENCY <i>South Atlantic District</i>		12. MANUFACTURER'S DESIGNATION OF DRILL <i>E & F Line</i>			
4. HOLE NO. (As shown on drawing and file number) <i>CS-9</i>		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED <i>6</i>	UNDISTURBED
5. NAME OF DRILLER <i>McDonald</i>		14. TOTAL NUMBER CORE BOXES <i>0</i>			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		15. ELEVATION GROUND WATER BORING IN RIVER <i>20.0</i>			
7. THICKNESS OF OVERBURDEN		16. DATE HOLE STARTED		COMPLETED	
8. DEPTH DRILLED INTO ROCK		<i>2 May 73</i>		<i>2 May 73</i>	
9. TOTAL DEPTH OF HOLE <i>45.4'</i>		17. ELEVATION TOP OF HOLE			
		18. TOTAL CORE RECOVERY FOR BORING			
		19. SIGNATURE OF INSPECTOR <i>Shirley McLeod</i>			

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	30'				1	
	35'		SM - Gray silty fine sand micaceous 30.4 - 34.9'		3	
	40'		Gray silty fine & medium sand 34.9' - 37.9' Green silty fine sand micaceous 37.9' - 45.4'		4	Advanced AX casing to 35.7'
					5	
	45'				6	
Soils field classified in accordance with the Unified Soil Classification System.				BLOWS PER FOOT: Hammer required to drive 1 1/2" ID splitpoint w/140 lb. hammer falling 50"		

DRILLING LOG		DIVISION <i>South Atlantic</i>	INSTALLATION <i>Savannah River</i>	SHEET 1
PROJECT <i>Kings Island Turning Basin</i>		OF 2 SHEETS		
LOCATION (Coordinates or Station) <i>Opposite Sta. 1001500</i>		10. SIZE AND TYPE OF BIT <i>1 3/8" ID Split 3000</i>		
APPROX. 270' FROM WATERS EDGE		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) <i>M.L.W.</i>		
DRILLING AGENCY <i>Savannah District</i>		12. MANUFACTURER'S DESIGNATION OF DRILL <i>314-Failing</i>		
4. HOLE NO. (As shown on drawing title and file number) <i>CS-10</i>		13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN <i>7</i>	DISTURBED	UNDISTURBED
5. NAME OF DRILLER <i>McDonald</i>		14. TOTAL NUMBER CORE BOXES <i>0</i>		
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		15. ELEVATION GROUND WATER <i>Boring In River</i>		
7. THICKNESS OF OVERBURDEN		16. DATE HOLE STARTED <i>3 May 73</i>	COMPLETED <i>7 May 73</i>	
8. DEPTH DRILLED INTO ROCK		17. ELEVATION TOP OF HOLE		
9. TOTAL DEPTH OF HOLE <i>45.7'</i>		18. TOTAL CORE RECOVERY FOR BORING <i>2</i>		
19. SIGNATURE OF INSPECTOR <i>Edward Mauland</i>				

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant)
	0					
	5		Water			
	10		Water - depth 11.9' MLW			
	11.9		MH - Green elastic silt		1	NX casing set at 14.8'
	15				2	
	20		SM - Gray silty fine & medium sand micaceous w/occasional small gravel 13.4' - 17.9'		3	NX casing advanced to 19.9'
	25		17.9' - 45.7' Gray & Green silty fine sand micaceous		4	
	30					

DRILLING LOG

DIVISION

South Atlantic

INSTALLATION

HOLE NO. CS-10

PROJECT

Kings Island Turning Basin

SAVANNAH DIVISION

SHEET 2
OF 2 SHEETS

LOCATION (Coordinates or Station)

See Plan

10. SIZE AND TYPE OF BIT 1 3/4" ID Splitspoon
11. DATUM FOR ELEVATION SHOWN (TUM or MSL)

DRILLING AGENCY

Savannah District

12. MANUFACTURER'S DESIGNATION OF DRILL
314 Falling

4. HOLE NO. (As shown on draw 18 (111) 1 and 111a number)

CS-10

13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN
DISTURBED 7 UNDISTURBED

5. NAME OF DRILLER

McDonald

14. TOTAL NUMBER CORE BOXES 0

6. DIRECTION OF HOLE

VERTICAL INCLINED _____ DEG. FROM VERT.

15. ELEVATION GROUNDWATER Boring In River

7. THICKNESS OF OVERBURDEN

16. DATE HOLE STARTED 3 May 73 COMPLETED 7 May 73

8. DEPTH DRILLED INTO ROCK

17. ELEVATION TOP OF HOLE

9. TOTAL DEPTH OF HOLE 45.7'

18. TOTAL CORE RECOVERY FOR BORING

19. SIGNATURE OF INSPECTOR Edward McIlhenny

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
58'					Jar	
59'						
55'						
56'						
59'			SM - Gray & Green silty fine sand micaceous			
60'						
45'						
			Soils field classified in accordance with the Unified Soil Classification System.			BLWS PER FOOT: Number required to drive 1 3/4" ID splitspoon w/140 lb. hammer falling 30"

SAVANNAH HARBOR BORING LOGS

From Station 97+750

To

Station 103+000

DRILLING LOG		DIV. South Atlantic	INSTALLATION Savannah, Ga.	Hole No. _____	SHEET 1 OF 2 SHEETS
1. PROJECT Savannah Harbor Widening and Deepening, Phase 2			10. SIZE AND TYPE OF PIT 1-3/8" Splitspoon, R		
2. LOCATION (Coordinates of Station) See Plan			11. DATUM FOR ELEVATION SHOWN (TIIM or MSL) Core Bit		
3. DRILLING AGENCY Savannah District			12. MANUFACTURER'S DESIGNATION OF DRILL Falling 314 C.D. #8		
4. HOLE NO. (As shown on drawing title and file number) 1			13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		
5. NAME OF DRILLER Creaner			DISTURBED 1 UNDISTURBED 0		
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.			14. TOTAL NUMBER CORE BOXES 2		
7. THICKNESS OF OVERBURDEN			15. ELEVATION GROUND WATER 0.0' - Tidal		
8. DEPTH DRILLED INTO ROCK			16. DATE HOLE STARTED 19 Mar 69 COMPLETED 20 Mar 69		
9. TOTAL DEPTH OF HOLE 45.5'			17. ELEVATION TOP OF HOLE -14.3'		
			18. TOTAL CORE RECOVERY FOR BORING 58%		
			19. SIGNATURE OF INSPECTOR Allen Merritt, Robert L. Slesen, Geologist		

ELEVATION e	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	5		Water Very thin, very soft, layer of OL-organic silt above sand			No Sample obtained of OL materials, stratum very thin
	10					
	15		SH-Gray, very fine grained, silty sand			14.3' to 16.5' Washed out while setting casing
	20		ML-Greenish gray, clayey to sandy silt, moderate resistance to knife blade penetration from 18.0' to 24.5'	100		Splitspoon 16.5' to 18.0' 4" Casing set to 18.5' Pull #1, 18.0' to 19.5' Run 1.5', Rec 1.5'
	25		SH-Gray, silty, very fine grained sand, moderate resistance to knife blade penetration from 24.5' to 29.5'	86		Pull #2, 19.5' to 24.5' Run 5.0', Rec 4.3' Cl 0.7'
	30			40		Pull #3, 24.5' to 29.5' Run 5.0', Rec 2.0' Cl 3.0'
			Continued on Sheet #2			

ONLY
 USE
 THIS
 SIDE
 OF
 SHEET

(Revised by Amendment No. 0001)

PROJECT Savannah Harbor Widening and Deepening, Phase 2 INSTALLATION Savannah, Ga. SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	35		SM-Tan, very fine grained, silty sand, slight resistance to knife blade penetration from 39.5' to 41.6'	24	1	Pull #4, 29.5' to 34.5' Run 5.0', Rec 1.2' Cl 3.8'
				44		Pull #5, 34.5' to 38.8' Run 4.3', Rec 1.9' Cl 2.4'
	40			72		Pull #6, 38.8' to 41.6' Run 2.8', Rec 2.0' Cl 0.8'
	45			80	Compaction shale, gray, sandy, moderate resistance to knife blade penetration BOTTOM OF HOLE 45.5'	

Soils field classified in accordance with the Unified Soil Classification System.

Used 150 to 250 lbs. pressure while coring

CORING ONLY

DRILLING LOG		DIVISION South Atlantic	INSTALLATION Savannah	HOLE NO. 2	SHEET 1 OF 2 SHEETS
1. PROJECT Savannah Harb Widening and Deepening, Phase 2		10. SIZE AND TYPE 7 PIT 1-3/8" Splitspoon, K		11. DATUM FOR ELEVATION SHOWN (TIIM or MSL) Core Bit	
2. LOCATION (Coordinates or Sectors) See Plan		12. MANUFACTURER'S DESIGNATION OF DRILL Fallinr 314 C.D. 78		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	
3. DRILLING AGENCY Savannah District		14. TOTAL NUMBER CORE BOXES 2		15. ELEVATION GROUND WATER 0.0 - Tidal	
4. HOLE NO. (As shown on drawing title and file number) 2		16. DATE HOLE STARTED 21 Mar 69		17. ELEVATION TOP OF HOLE -14.0'	
5. NAME OF DRILLER King		18. TOTAL CORE RECOVERY FOR BORING 55%		19. SIGNATURE OF INSPECTOR Allen Merritt, Robert Siesen, Geologist	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		7. THICKNESS OF OVERBURDEN		8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE 46.2'					

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	0		Water, very thin layer, very soft OL-organic silt above sand			Casing drilled in 2.0'
	5					REFORMATION ONLY FOR
	10					
-14.0	15		SP-Tan-gray, very fine sand, slightly silty		Jan 1 Splitspoon 14.0' to 15.5'	
	20		SH-Gray, silty, very fine grained to medium grained sand, micaceous, with thin layers of ML-sandy silt, moderate resistance to blade penetration from 15.5' to 19.0'	71		Pull #1, 15.5' to 19.0' Run 3.5', Rec 2.5' Cl 1.0'
	25		Siltstone, moderate resistance to knife blade penetration from 19.0' to 31.0'	90		Pull #2, 19.0' to 24.0' Run 5.0', Rec 4.5' Cl 0.5'
	30			43		Pull #3, 24.0' to 31.0' Run 7.0', Rec 3.0' Cl 4.0'
					1	Soft spots recorded this run

(Revised by Amendment No. 0001)

Continued on Sheet #2

PROJECT Savannah Harbor Widening and Deepening, Phase 2 | INSTALLATION Savannah, Ga. | SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			Siltstone			
	35		SM-Gray, very fine grained, slightly silty sand, very slight resistance to knife blade penetration from 31.0' to 36.0', SM sand and ML sandy silt with generally slight and spotty moderately resistance to knife blade penetration from 36.0' to 46.2'	60		Pull #4, 31.0' to 36.0' Run 5.0', Rec 3.0' Cl 2.0'
		33			Pull #5, 36.0' to 38.5' Run 2.5', Rec 1.7' Cl 0.8'	
	40			68		Pull #6, 38.5' to 41.0' Run 2.5', Rec 1.7' Cl 0.8'
				8		Pull #7, 41.0' to 46.2' Run 5.2', Rec 0.4' Cl 4.8'
	45					
			BOTTOM OF HOLE 46.2'		2	

Soils field classified in accordance with the Unified Soil Classification System.

INFORMATION ONLY

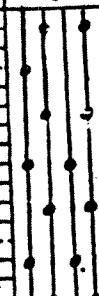
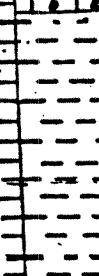

HOLE NO. 3

PROJECT Savannah Harbor Widening and Deepening, Phase 2		LOCATION Savannah, GA.	SHEET 1 OF 2 SHEET
LOCATION (Coordinates or Station) See Plan		10. SIZE AND TYPE OF PIT 1-3/8" Splitspoon/R Core	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) Bit
3. DRILLING AGENCY Savannah District		12. MANUFACTURER'S DESIGNATION OF DRILL MLW Falling 314 C.D. #8	
4. HOLE NO. (As shown on drawing title and file number) 3		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	
5. NAME OF DRILLER Creamer		DISTURBED 1 Jar UNDISTURBED 0	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		14. TOTAL NUMBER CORE BOXES 2	
7. THICKNESS OF OVERBURDEN		15. ELEVATION GROUND WATER 0.0 - Tidal	
8. DEPTH DRILLED INTO ROCK		16. DATE HOLE STARTED 24 Mar 69 COMPLETED 24 Mar 69	
9. TOTAL DEPTH OF HOLE 46.4'		17. ELEVATION TOP OF HOLE -13.5'	
		18. TOTAL CORE RECOVERY FOR BORING 60 %	
		19. SIGNATURE OF INSPECTOR Allen Merritt, Robert L. Siesen, Geologist	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
-13.5'	0		Water OL-Very thin soft layer organic silt above sand			
	15		SM-Tan, gray, silty, fine grained sand		Jar 1	Splitspoon from 13.5' to 19.5' Used from 150 to 200 lbs pressure to core.
	20		Fine grained to medium grained, slightly clayey, slight to moderate resistance to knife penetration from 19.5' to 24.5'	58		Pull #1, 19.5' to 24.5' Run 5.0', Rec 4.0' Cl 1.0'
	25		SM-Tan to gray, slightly silty, very fine grained sand with few thin layers of SN sand, generally slight resistance to knife blade penetration from 24.5' to 37.6'	68		Pull #2, 24.5' to 31.1' Run 6.6', Rec 4.5' Cl 1.1'
	30		----- Continued on Sheet #2 -----			

NEED FOR INFORMATION ONLY

PROJECT **Savannah Harbor Widening and Deepening, Phase 2** INSTALLATION **Savannah, Ga.** SHEET **2** OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	35		SM-Tan to gray, slightly silty, very fine grained sand	52	1	Pull #3, 31.1' to 35.3' Run 4.2', Rec 2.2' Cl 2.0'
-37.6'	40		Compaction shale, gray; very fine grained, silt and sand with layers of CL-sandy clay, moderate to fairly high resistance to knife blade penetration	43		Pull #4, 35.3' to 37.6' Run 2.3', Rec 1.0' Cl 1.3'
	45			49		Pull #5, 37.6' to 46.4' Run 8.8', Rec 4.3' Cl 4.5'
-46.4			BOTTOM OF HOLE 46.4'		2	
			Soils field classified in accordance with the Unified Soils Classification System.			

**NO INFORMATION
TO BE
OBTAINED
FROM
THIS
LOG**

Hole No. SH-12

DRILLING LOG		DIVISION <u>SOUTH ATLANTIC</u>	INSTALLATION <u>SAVANNAH R. (KA, GA.)</u>
1. PROJECT <u>SAVANNAH HARBOR</u>		SHEET 1 OF 2 SHEETS	
2. LOCATION (Coordinates or Station) <u>KINGS ISLAND TURNING BASIN</u>		10. SIZE AND TYPE OF BIT <u>1 3/8" ID SPLITSPOON</u>	
3. DRILLING AGENCY <u>SAVANNAH DISTRICT</u>		11. DATUM FOR ELEVATION SHOWN <u>MLW</u>	
4. HOLE NO. (As shown on drawing title and file number) <u>SH-12</u>		12. MANUFACTURER'S DESIGNATION OF DRILL <u>CME 75</u>	
5. NAME OF DRILLER <u>T. W. SCOTT</u>		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		DISTURBED <u>5</u> UNDISTURBED <u>0</u>	
7. THICKNESS OF OVERBURDEN <u>55.0'</u>		14. TOTAL NUMBER CORE BOXES	
8. DEPTH DRILLED INTO ROCK <u>0.0'</u>		15. ELEVATION GROUND WATER	
9. TOTAL DEPTH OF HOLE <u>-55.0' MLW</u>		16. DATE HOLE STARTED <u>14 FEB. 1978</u> COMPLETED <u>14 FEB. 1978</u>	
		17. ELEVATION TOP OF HOLE <u>0.0 MLW</u>	
		18. TOTAL CORE RECOVERY FOR BORING	
		19. SIGNATURE OF INSPECTOR <u>Charles D. Griffin</u>	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
0.0 MLW	0'				1	
-2.5			WATER			
			BOTTOM OF RIVER - 2.5' MLW		JAR	BLOWS
	5'		MH-GREENISH GRAY SOFT CLAYEY SILT		1	NOTE: WEIGHT OF HAMMER PUSHED RODS WITH SPLITSPOON FROM -2.5' TO -17.5'
	10'					
	15'					
-17.5						
	20'		SP. TAN POORLY GRADED SAND		2	
	25'					
	30'					
30.0			CONTINUED ON SHEET 2			

NOTE: Soils field classified in accordance with the Unified Soil Classification System.

BLOWS PER FOOT:
Number required to drive 1 3/8" ID splitspoon w/140 lb hammer falling 30".

DRILLING LOG (Cont Sheet)

TO TOP OF HOLE

Hole No. 511-12

PROJECT SAVANNAH MARBLE
KINGS ISLAND TREATMENT BASIN

INSTALLATION 0-2 MLW
SAVANNAH RIVER, GA.

SHEET 2
OF 2 SHEETS

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOV- ERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	BLOWS
	30'				3		30
			SP-TAN Poorly GRADED SAND				36
							40
	35'						58
							61
58.5			WITH SOME GRAVEL				47
	40'				4		40
			MH-GREEN HARD CLAYEY SILT WITH SILTY SAND LAYERS AND TRACES OF FINE MICA				58
							66
	45'						81
							90
							79
					5		100
	50'						83
							100/0.9
							94
-55.0	55'		BOTTOM OF HOLE -55.0' MLW				90

DRILLING LOG		DIVISION South Atlantic	Hole No. SH-14	
1. PROJECT Enlargement of Kings Island turning Basin		INSTALLATION Savannah River, Savannah, GA		SHEET 1 OF 3 SHEETS
2. LOCATION (Coordinates or Station) N 778,045 E 818,310		10. SIZE AND TYPE OF BIT 4" Auger, 1 3/8" ID		
3. DRILLING AGENCY Savannah District		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) split spoon MLW 7 1/2" Fishtail		
4. HOLE NO. (As shown on drawing title and file number) SH-14		12. MANUFACTURER'S DESIGNATION OF DRILL CME-75		
5. NAME OF DRILLER T. W. Scott		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 17 UNDISTURBED 0
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		14. TOTAL NUMBER CORE BOXES		
7. THICKNESS OF OVERBURDEN		15. ELEVATION GROUND WATER 15.1'		
8. DEPTH DRILLED INTO ROCK 0.0'		16. DATE HOLE		STARTED 16 May 78 COMPLETED 18 May 78
9. TOTAL DEPTH OF HOLE 81.0'		17. ELEVATION TOP OF HOLE -20.5' MLW 25.0		
		18. TOTAL CORE RECOVERY FOR BORING		
		19. SIGNATURE OF INSPECTOR DAWN MARIE HARTLEY		

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO. JAR	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	BLOWS
25.0'	0		SM - Orange-brown, fine to medium grained, silty sand, moist, w/mica flakes		1.	W. T. 18.5'	7
	5		W/thin, tan, clay layers		2	Date 16 May 78 Depth to water during drilling.	7 3
	10						7
	15		Gray fine grained w/a little clay, damp		3	W. T. 9.9'	18
	20		Orange-tan, fine to medium grained, wet		4	Water table reading 24 hrs. after hole completed.	22
5.0'	20		SC - Gray, fine grained, clayey sand, saturated		5		22
	25		W/ occasional clay layers		6		18
	30						6
							4
							8
							3
							8
							12
							9
			Continued on sheet 2				
			NOTE: Soils field classified in accordance with the Unified Soil Classification System.				
						<u>BLOWS PER FOOT:</u> Number required to drive 1 3/8" ID split spoon w/ 140 lb. hammer falling 20"	

DILLING LOG (Cont Sheet)

TO TOP OF HOLE
MLW

Hole No. SH-14

enlargement of Kings Island Turning

INSTALLATION Savannah River, Savannah, GA

SHEET 2

OF 3 SHEETS

EL ELEVATION	DEPTH	LEGEND	Basin CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO. JAR	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	BLOWS
a	b	c	d	e		f	
6.0'	30		SC - Gray, fine grained, clayey sand, w/occasional clay layers saturated		77		6
			SM - Gray-brown, medium to fine grained silty sand, saturated				18
	35		Fine to medium grained w/fine gravel and gray clay layers		8		25
	40		Gray, fine grained, no gravel				25
	45		No clay, w/a fine gravel layer		9		12
	50		Fine to medium grained		10		18
	55		Traces of decomposing organic matter				24
30.5'			SC - Gray, fine grained, clayey sand		11		28
32.5'			SM - Gray, fine to medium grained silty sand		12		30
	60		W/fine gravel				22
	65		Coarse grained w/gray clay patches		13		28
	70		No clay		14		30
4.0'			MH - Dark gray-green, plastic silt, w/ fine mica flakes & some fine gravel				23

DRILLING LOG (Cont Sheet)

TOP OF HOLE

25.0'

Hole No. SH-14

Enlargement of Kings Island Turning

INSTALLATION

Savannah River, Savannah, GA

SHEET 3
OF 3 SHEETS

ELEVATION a	DEPTH	LEGEND c	Basin CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV. ERY e	BOX OR SAMPLE NO. JAR	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant!)	BLOWS f
	79		MH				
			MH - Dark gray-green plastic silt w/patches of fine grain gray sand throughout, w/fine mica flakes but no gravel		15		25
	75						27
							70
							27
					16		65
							70
-56.0	80		Approximately 50% sand		17		27
			Bottom of hole 81.0'				90

DRILLING LOG		DIVISION South Atlantic	INSTALLATION Savannah River, Savannah, GA	SHEET 1 OF 3 SHEETS
1. PROJECT Enlargement of Kings Island Turning Basin			10. SIZE AND TYPE OF BIT 1 3/8" ID Splitspoon	
2. LOCATION (Coordinates of Station) #777480 E 318730			11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MTW 4" Spiral 7" Fish tail	
3. DRILLING AGENCY Savannah District			12. MANUFACTURER'S DESIGNATION OF DRILL CME 75	
4. HOLE NO. (As shown on drawing title and file number) SH-17			13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED 15 UNDISTURBED 0	
5. NAME OF DRILLER T. W. Scott			14. TOTAL NUMBER CORE BOXES	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.			15. ELEVATION GROUND WATER	
7. THICKNESS OF OVERBURDEN 81.0'			16. DATE HOLE STARTED 18 May 78 COMPLETED 25 May 78	
8. DEPTH DRILLED INTO ROCK 0.0'			17. ELEVATION TOP OF HOLE 25.0' MTW	
9. TOTAL DEPTH OF HOLE 81.0'			18. TOTAL CORE RECOVERY FOR BORING 3	
			19. SIGNATURE OF INSPECTOR DAWN MARIE HARTLEY	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO. JAR	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	BLOWS
	0		SM - Orange-tan, fine to medium grained silty sand, damp with a little clay and a trace of fine gravel and mica flakes		1		30
			Clay in thin layers only				50
	5		15% clay		2		40
			Only a trace of clay				33
	10		No clay		3		33
			Fine grained				33
	15		Gray, wet, no gravel		4		28
					5		16
	20						12
							18
	25		10-15% plastic silt		6		14
							99
	30						4
							5

Continued on sheet 2

NOTE: Soils field classified in accordance with the Unified Soil Classification System.

BLOWS PER FOOT:
Number required to drive 1 3/8" ID Splitspoon w/140 lb. hammer falling 30".

DRILLING LOG (Cont Sheet)

REF 4 TOP OF HOLE

25.0' MLW

Hole No. SH-17

PROJECT Enlargement of Kings Island
Turning Basin

INSTALLATION Savannah River, Savannah, GA

SHEET 2
OF 3 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. JAR	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) f
	30		SM - Gray fine grained silty sand with mica flakes and green and dark brown plastic silty layers			
			No silt, with organic matter		7	
	35		No organic matter			
	40				8	
	45		Fine to medium grained With wood chunks		9	
	50		Fine grained, without wood chunks		10	
	55		Fine to medium grained		11	
	60		Medium to fine grained with small gray clay patches			
	65		Medium grained Medium to coarse grained		12	
			With wood chunks Fine to medium grained, no wood chunks, with a trace of clay			
	70		MH - Dark green plastic silt with small pockets of sand throughout, with fine mica flakes		13	
			Continued on sheet 3			

DRILLING LOG (Cont Sheet) 25.0' MLW Hole No. SH-17

PROJECT: Enlargement of Kings Island Turning Basin INSTALLATION: Savannah River, Savannah, GA SHEET 3 OF 3 SHEETS

ELEVATION a	DEPTH b	LOG c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV. e	BOX OR SAMPLE NO. JAR	REMARKS (Drill time, water loss, depth of weathering, etc., if significant) f	BLOWS g
	70		MH - Dark green plastic silt, with fine mica flakes and small pockets of sand through- out				100
			No sand		14		89
	75						55
							30
							31
							36
	80		With occasional thin gray fine grained sand lenses		15		40
							30
			Bottom of Hole 81.0'				

DRILLING LOG

DIVISION
South Atlantic

INSTALLATION

Savannah River, Savannah, GA

SHEET 1
OF 2 SHEETS

1. PROJECT
Enlargement of Kings Island
Turning Basin

2. LOCATION (Coordinates or Station)
N777075 E818800

3. DRILLING AGENCY
Savannah District

4. HOLE NO. (As shown on drawing title and file number)
SH-18

5. NAME OF DRILLER
T. W. Scott

6. DIRECTION OF HOLE
 VERTICAL INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 67.5'

8. DEPTH DRILLED INTO ROCK 0.0'

9. TOTAL DEPTH OF HOLE 67.5'

10. SIZE AND TYPE OF BIT 1 3/8" ID Split Spoon

11. DATUM FOR ELEVATION SHOWN (FSM or MSL) 4" Auger
MLW 7" Fishrail

12. MANUFACTURER'S DESIGNATION OF DRILL
CME 75

13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN | DISTURBED | UNDISTURBED
| 12 | 0

14. TOTAL NUMBER CORE BOXES

15. ELEVATION GROUND WATER

16. DATE HOLE | STARTED | COMPLETED
| 1 Jun 78 | 2 Jun 78

17. ELEVATION TOP OF HOLE 12.7' MLW

18. TOTAL CORE RECOVERY FOR BORING

19. SIGNATURE OF INSPECTOR
DAWN MARIE HARTLEY

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO. JAR	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	BLOWS
	0		SC - Orange-tan, fine to medium grained clayey sand, moist, with gray clay layers		1	W. T. 4.0'	12
	5		Saturated			Date 1 Jun 78	15
	5					Depth to water during drilling.	15
	10		SM - Brown, gray, fine grained, silty sand with occasional clay layers		2	W. T. 3.5'	15
	10		OL - Dark brown, soft fat, clayey organic silt		3	Water Table reading 24 hrs. after hole completed.	9
	10		SM - tan, gray, fine grained silty sand with fine mica flakes		4		7
	15		Gray				0
	15						14
	15						20
	20						6
	20						6
	20						7
	25		MI - Gray-green, soft plastic silt with a trace of organic matter		5		14
	25						14
	25						15
	25		SM - Gray, fine to medium grained silty sand		6		21
	25						16
	30		Fine gravel layer with occasional thin gray clay layers		7		12
	30						16
	30		Continued on sheet 2				25

NOTE: Soils field classified in accordance with the Unified Soil Classification System.

BLOWS PER FOOT:
Number required to drive 1 3/8" ID split-spoon w/140 lb. hammer

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth, weathering, etc., if significant)	BLOWS
	30				JAR		
			SM - Gray, fine grained silty sand with occasional thin gray clay layers				22
			With a thin layer of fine gravel		8		16
			With mica flakes but no clay or gravel				22
35			Fine to medium grained				20
			Medium to coarse grained with some fine gravel		9		15
40							30
							20
							27
							33
							38
45			Fine grained, no gravel				30
							33
					10		
50							34
			MH - Green plastic silt with fine mica flakes				49
							40
-55							41
					11		49
							57
							89
60							40
							40
							80
65							33
					12		41
			Bottom of Hole 67.5'				
70							

DRILLING LOG		DIVISION South Atlantic	INSTALLATION Savannah River, Savannah, GA	SHEET 1 OF 2 SHEETS
1. PROJECT Enlargement of Kings Island Turning Basin		10. SIZE AND TYPE OF BIT 1 3/8" ID Splitspoon		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) 4" Auger 7" Fishra
2. LOCATION (Coordinates or Station) N776665 E819180		12. MANUFACTURER'S DESIGNATION OF DRILL MLW CME 45; CME 75		
3. DRILLING AGENCY Savannah District		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 15 UNDISTURBED 0
4. HOLE NO. (As shown on drawing title and file number) SH-20		14. TOTAL NUMBER CORE BOXES		
5. NAME OF DRILLER T. W. Scott		15. ELEVATION GROUND WATER		
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		16. DATE HOLE		STARTED 24 Apr 78 COMPLETED 30 May 78
7. THICKNESS OF OVERBURDEN 70.5'		17. ELEVATION TOP OF HOLE 13.5' MLW		
8. DEPTH DRILLED INTO ROCK 0.0'		18. TOTAL CORE RECOVERY FOR BORING		
9. TOTAL DEPTH OF HOLE 70.5'		19. SIGNATURE OF INSPECTOR C. GRIFFIN/D. HARLLEY		

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO. JAR	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	BLOWS
			ML - Tan inorganic silt with traces of fine sand and mica		1		7
			_____ Becomes more sandy				
	5		SM - Dark gray and brown, fine to medium silty sand with soft silt layers		2	W. T. 5.0'	12
			Dark gray and green, fine grained, saturated, with no silt layers		3	Date 24 Apr 78	8
			Dark green with gray layers			Depth to water during drilling.	7
	10		Gray with some pieces of rotten wood, no clay			W. T. 3.5'	
			Green, no wood		4	Water table reading 24 hrs. after hole completed.	7
							7
	15		MH - Dark brown, soft fat clayey silt with traces of fine mica				2
					5		0
							3
							0
	20		With tan sand layers				1
			SM - Brown, fine to medium grained silty sand		6		4
			Tan and brown				9
	25		Gray, fine grained				8
							10
					7		111
							20
	30						1

Continued on sheet 2
NOTE: Soils field classified in accordance with the Unified Soil Classification System.

BLOWS PER FOOT:
Number required to drive 1 3/8" ID Splitspoon w/140 lb. hammer falling 30"

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV. ERY e	BOX OR SAMPLE NO. JAR	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant.) f	BLOWS g
	30		SM - Light gray, fine grained silty sand, with mica flakes and occasional organic layers				33
	35		Gray, fine to medium grained with occasional layers of fine gravel		8		20 20 29
	40		Fine grained, no gravel				17 17 19 20
	45		Fine to medium grained		9		14 11 17
	50		Fine grained				40 37
	55		MH - Green plastic silt with fine mica flakes		10		23 19 34 36
	60						34 34 40
	65				11		66 70
	70		Bottom of Hole 67.5'		12		70

Hole No. SH-22

DRILLING LOG	DIVISION South Atlantic	INSTALLATION Savannah River, Savannah, GA	SHEET 1 OF 2 SHEETS
PROJECT Enlargement of Kings Island Turning Basin		10. SIZE AND TYPE OF BIT 1 3/8" ID Splitspoon	
LOCATION (Coordinates or Station) N776200 EA19310		11. DATUM FOR ELEVATION SHOWN (FSM or MSL) MLW	4" AUGER FISHT.
DRILLING AGENCY Savannah District		12. MANUFACTURER'S DESIGNATION OF DRILL CME 75	
HOLE NO. (As shown on drawing title and file number) SH-22		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 12 UNDISTURBED 0
NAME OF DRILLER T. W. SCOTT		14. TOTAL NUMBER CORE BOXES	
DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		15. ELEVATION GROUND WATER	
THICKNESS OF OVERBURDEN 67.5'		16. DATE HOLE	STARTED 30 May 78 COMPLETED 1 Jun 78
DEPTH DRILLED INTO ROCK 0.0'		17. ELEVATION TOP OF HOLE 12.5' MLW	
TOTAL DEPTH OF HOLE 67.5'		18. TOTAL CORE RECOVERY FOR BORING	3
		19. SIGNATURE OF INSPECTOR DAWN MARIE HARTLEY	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant)	BLOWS
			SM - Brown, fine grained silty sand, moist, with mica flakes, with organic matter		JAR 1		12
			SC - Tan, fine grained clayey sand, damp, with mica flakes		2	W. T. 6.0' Date 30 May 78 Depth to water during drilling.	23
	5		SM - Orange-tan, fine to medium grained silty sand, damp, with mica flakes				25
			saturated				6
	10		MH - Dark brown, soft fat clayey silt, with fine mica flakes		3	W. T. 4.3' Water table reading 24 hrs. after hole completed.	6
			SM - Light gray, fine grained silty sand, with mica flakes		4		7
	15		With occasional thin layers of organic matter				9
					5		12
							12
	20						15
			No organic layers		6		12
							12
	25		With occasional organic layers				12
					7		12
	30						14
			Continued on sheet 2				
			NOTE: Soils field classified in accordance with the Unified Soil Classification System.				
						BLOWS PER FOOT: Number required to drive 1 3/8" ID splitspoon w/140 lb. hammer falling 30".	

LOGGING LOG (Cont Sheet)

REFV 1 TOP OF HOLE 13.5' MLW

Hole No. SH-20

Enlargement of Kings Island
Turning Basin

INSTALLATION
Savannah River, Savannah, GA

SHEET 2
OF 2 SHEETS

VATION a	DEPTH 30	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV. ERY e	BOX OR SAMPLE NO. JAR	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) R	BLOWS
			SM - Tan, gray, medium grained silty sand with occasional large size gravel				16
			Gray with gray clay layers		8		16
	35		No gravel		9		15
			No Clay		10		40
	45		With patches of green silt		11		35
			No silt		12		42
	50		With small gray clay patches		13		45
			MH - Green plastic silt with occasional fine grained sand lenses		14		24
	55		With fine mica flakes		15		46
	60		No sand lenses				36
	65						26
	70						26
			Bottom of Hole 70.5'				35

DRILLING LOG		DIVISION SOUTH ATLANTIC	INSTALLATION SAVANNAH, GA.	Hole No. SH-149
1. PROJECT SAVANNAH HARBOR DEEPENING		SHEET 1 OF 2 SHEETS		
2. LOCATION (Coordinates or Station) X = 817840, Y = 778530 (GA EAST)		10. SIZE AND TYPE OF BIT 1 3/8" I.D. SPLITSPOON,		
3. DRILLING AGENCY SAVANNAH DISTRICT		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MLW		
4. HOLE NO. (As shown on drawing title and file number) SH-149		12. MANUFACTURER'S DESIGNATION OF DRILL FALLING 314		
5. NAME OF DRILLER D. JUSTISS		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		DISTURBED 15 UNDISTURBED 0		
7. THICKNESS OF OVERBURDEN 60.0'		14. TOTAL NUMBER CORE BOXES 0		
8. DEPTH DRILLED INTO ROCK 0.0'		15. ELEVATION GROUND WATER SEE REMARKS		
9. TOTAL DEPTH OF HOLE 60.0'		16. DATE HOLE STARTED 18 OCT 91 COMPLETED 18 OCT 91		
		17. ELEVATION TOP OF HOLE		
		18. TOTAL CORE RECOVERY FOR BORING N/A		
		19. SIGNATURE OF INSPECTOR J. J. [Signature] P.G.		

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	Blows
			(SM) BROWN SILTY FINE TO MEDIUM SAND, TRACE OF ROOTS, SLIGHTLY DAMP.		1	CLEANED OUT HOLE WITH 4" SPIRAL AUGER FROM 1.5' TO 4.5' & 6.0' TO 9.0'. JAL SAMPLE #2 TAKEN FROM AUGER FROM 1.5' TO 4.5'.	7
			(SP) LIGHT BROWN TO TAN, POORLY GRADED FINE TO MEDIUM SAND, TRACE OF SILT, SLIGHTLY DAMP.		2		
			(SM) BROWN SILTY, FINE TO MEDIUM SAND, DAMP.		3	BEGAN USING 5 1/2" FISHTAIL & ZEOGEL DRILLING MUD AT 10.5'.	15
			MEDIUM SAND, WET.				
			MEDIUM TO COARSE SAND, SOME FINE TO MEDIUM, SAND FROM 10.3' TO 10.5'.		4	SPLITSPOON DRIVES TAKEN AT 4.5' INTERVALS.	4
			WASH				
			(SC) GREENISH GRAY, CLAYEY, FINE TO MEDIUM SAND, SOME SILT, TRACE OF MICA, WET.		5	WATER LEVEL 6.5' DEPTH TO WATER DURING DRILLING.	4
			WASH				
			(SM) TANNISH GRAY, SILTY, MEDIUM TO COARSE SAND, TRACE OF CLAY, WET.		6	WATER LEVEL NOT ENCOUNTERED 21 OCT 91. TAPED HOLE TO 5.0'.	
			WASH				
			(SP) TANNISH GRAY, POORLY GRADED MEDIUM TO COARSE SAND, TRACE OF SILT, WET.		7		18
			WASH				
			SAME AS 22.5' TO 24.0'.		8		15
			WASH				
			CONTINUED ON SHEET #2				13
			NOTE: SOILS VISUALLY FIELD CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM.				

Blows PER FOOT:
NUMBER REQUIRED TO DRIVE 1 3/8" I.D. SPLIT-SPOON WITH 140 lb. HAMMER FALLING 30".

DRILLING LOG (Cont. Sheet)








ELEVATION TOP OF HOLE

Hole No. SH-149

PROJECT
SAVANNAH HARBOR DEEPENING

INSTALLATION
SAVANNAH, GA.

SHEET 2
OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. JAR	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) f	BLOWS g
	30		Wash.				
			(SM) Grey, fine to med. silty SAND. Trace of mica, wet.		9		24
			Wash.				
	35		(SP) Grey, med. to coarse, poorly graded SAND. Trace of silt & mica, wet.		10		39
			Wash.				
	40		Same as 36.0' to 37.5' but coarse sand, Trace of fine gravel.		11		46
			Wash.				
	45		Same as 40.5' to 42.0'.		12		33
			Wash.				
	50		(GP) Greenish-grey, fine, poorly graded GRAVEL. Trace of silt & coarse sand, wet.		13		17
			Wash. NOTE: Wash return contained some sand and clay.				
	55		(CL) Greyish-green, silty, lean CLAY. Trace of mica & fine sand, slightly damp.		14		36
			Wash				
	60		Same as 54.0' to 55.5' but dry.		15		45
			Bottom of Boring 60.0'				

DRILLING LOG		"VISION" SOUTH ATLANTIC		INSTALLATION SAVANNAH, GA.		Hole No. SH-150	
1. PROJECT SAVANNAH HARBOR DEEPENING				10. SIZE AND TYPE OF BIT 1 3/8" splitspoon, 4" spiral auger, 5/2" fishtail		SHEET 1 OF 2 SHEETS	
2. LOCATION (Coordinates or Station) X-817555 Y-779145 GA. EAST				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MLW			
3. DRILLING AGENCY SAVANNAH DISTRICT				12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 314			
4. HOLE NO. (As shown on drawing title and file number) SH-150				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 18 UNDISTURBED 0	
5. NAME OF DRILLER DAVID JUSTISS				14. TOTAL NUMBER CORE BOXES 0			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER SEE REMARKS			
7. THICKNESS OF OVERBURDEN 64.5'				16. DATE HOLE		STARTED 16 OCT 91 COMPLETED 17 OCT 91	
8. DEPTH DRILLED INTO ROCK 0.0'				17. ELEVATION TOP OF HOLE			
9. TOTAL DEPTH OF HOLE 64.5'				18. TOTAL CORE RECOVERY FOR BORING N/A %			
				19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.			

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY	BOX OR SAMPLE NO JAR	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0		(SP) Tan, coarse, poorly graded SAND. Damp.		1	
	5		(SC) Olive, fine clayey SAND. Some silt, damp.		2	Cleaned out hole with spiral auger to 4.5'. Jar #2 taken from auger from 1.5' to 4.5'. Splitspoon drive taken at each 4.5' interval to 55.5'. Began using 5/2" fishtail & Zeogel drilling mud at 6.0'.
			Fine to med. sand, trace of fine gravel, wet.		3	Water level 2.0' depth to water during drilling.
			Wash NOTE: Wash return contained large amount of clay.			0
	10		Same as 4.5' to 6.0'.		4	Water level 1.7' depth to water on 21 Oct 91. Taped hole to 19.8' depth.
			Wash			15
	15		(SP) Olive grey, med., poorly graded SAND. Trace of silt, wet.		5	
			Wash.			30
	20		(SM) Olive-grey, med., silty SAND, wet.		6	
			Wash. Note: Traces of wood in wash.			21
	25		(SP) Light brown, med. to coarse, poorly graded SAND. Trace of silt, wet.		7	
			Wash.			16
			Same as 22.5' to 24.0', but with traces of fine gravel.		8	
			Wash.			26
	30		Continued on sheet #2			
			NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.			
						BLOWS PER FOOT: Number required to drive 1 3/8" I.D. splitspoon w/140 lb. hammer falling 30".

ELEVATION a	DEPTH 30 b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. JAR	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	BLOWS
			Wash. (SP) Light brown, fine to med poorly graded SAND. Trace of silt, wet.		9		33
	35		Wash. Same as 31.5'to 33.0'but med. to coarse sand.		10		30
	40		Wash. Same as 36.0'to 37.5' but with some wood.		11		26
	45		Wash. (SP) Greyish-brown, coarse, poorly graded SAND. Trace of fine gravel & silt, wet.		12		27
	50		Wash. (CL) Greyish-green, silty lean CLAY. Trace of Mica & fine sand, dry.		13		31
	55		Wash. Same as 49.5'to 51.0' but greyish-green.		14		54
	60		Wash. (SM) Gray & greenish-grey, fine silty SAND. Trace of Mica, dry.		15	Began continuous spitspoon drives at 58.5'.	100/0.8
			(SC) Greyish-green, fine clayey SAND. Some silt, dry.		16		78
					17		42
	65		Bottom of Boring 64.5'		18		43

DRILLING LOG		VISION SOUTH ATLANTIC		INSTALLATION SAVANNAH, GA.		Hole No. SH-157	
1. PROJECT SAVANNAH HARBOR DEEPENING				10. SIZE AND TYPE OF BIT 1 3/8" splitspoon, 5/2" fishtail		SHEET 1 OF 1 SHEETS	
2. LOCATION (Coordinates or Station) X-817067 Y-779191 GA. EAST				11. DATUM FOR ELEVATION SHOWN (TBM or MSU) MLW			
3. DRILLING AGENCY SAVANNAH DISTRICT				12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 314			
4. HOLE NO. (As shown on drawing title and file number) SH-157				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 5	
5. NAME OF DRILLER DAVID JUSTISS				14. TOTAL NUMBER CORE BOXES		UNDISTURBED 0	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER N/A			
7. THICKNESS OF OVERBURDEN 59.6' (Water 38.6')				16. DATE HOLE		STARTED 10 DEC 91	
8. DEPTH DRILLED INTO ROCK 0.0'				17. ELEVATION TOP OF HOLE 0.0'		COMPLETED 10 DEC 91	
9. TOTAL DEPTH OF HOLE 59.6'				18. TOTAL CORE RECOVERY FOR BORING N/A		%	
				19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.			

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc. If significant)	BLOWS
0.0	0						
	35		Water			Scaler change at 35.0'. Set 6" diameter casing by own weight to 43.0'.	
-38.6'			Bottom of Harbor 38.6'				
	40		(SP) Tan, poorly graded, coarse SAND.		1	Weight of rods drove splitspoon to 40.1'. Had no recovery. redrove to 40.1' then cont'd. drive to 41.6'. Sample 1 from 38.6' to 41.6'.	0
-41.6'			Some fine gravel.				67
	45		(CL) Grey, silty, lean CLAY. Some fine sand, trace of mica.		2		31
-44.6'							17
	50						29
	55				3	52	
					4	45	
						41	
						34	
						37	
-58.1'						43	
						48	
						55	
-59.6'	60		(SC) Grey, fine clayey SAND. Some silt, trace of mica.		5		54
			Bottom of Boring 59.6'				
NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.							BLOWS PER FOOT: Number required to drive 1 3/8" I.D. splitspoon w/140 lb. hammer falling 30".

DRILLING LOG		VISION SOUTH ATLANTIC		INSTALLATION SAVANNAH, GA.		SHEET 1 OF 1 SHEETS	
1. PROJECT SAVANNAH HARBOR DEEPENING				10. SIZE AND TYPE OF BIT 1 3/8" splitspoon, 5/2" fishtail			
2. LOCATION (Coordinates or Station) X=817368 Y=779194 GA. EAST				11. DATUM FOR ELEVATION SHOWN (TBM or MSU) MLW			
3. DRILLING AGENCY SAVANNAH DISTRICT				12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 314			
4. HOLE NO. (As shown on drawing title and file number) SH-158				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 6	UNDISTURBED 0
5. NAME OF DRILLER DAVID JUSTISS				14. TOTAL NUMBER CORE BOXES 0			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER N/A		16. DATE HOLE	
7. THICKNESS OF OVERBURDEN 60.0' (WATER 34.5')				17. ELEVATION TOP OF HOLE 0.0'		STARTED 6 DEC 91	COMPLETED 6 DEC 91
8. DEPTH DRILLED INTO ROCK 0.0'				18. TOTAL CORE RECOVERY FOR BORING N/A %			
9. TOTAL DEPTH OF HOLE 60.0'				19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.			

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	BLOWS
0.0	0						
	30		Water			Scale change at 30.0'. Set 6" diameter casing by own weight to 40.3'.	
-34.5'	35		Bottom of Harbor 34.5'				
			(SP) Tan, fine to medium, poorly graded SAND. Trace of silt.		1	Weight of rods drove splitspoon from 34.5' to 35.8', cont'd. drive to 36.0' w/one hammer blow. Pulled tool but had no recovery.	1 21 35
			Medium to coarse.				
			Greyish-tan, trace of wood particles.		2	Redrove first drive then cont'd. drive to 37.5'. Jar sample #1 from 34.5' to 37.5'. Began using Zeogel drilling mud at 37.5'.	38 9 23
			(CH) Dark olive-grey, fat CLAY. Trace of silt, fine sand & mica.		3		40 47
			Some fine sand.				52
			(CL) Olive-grey, silty, lean CLAY. Some fine sand, trace of mica.		4		53
			Trace of fine sand.				17
			Some fine sand.				48
			(CH) olive-grey, fat CLAY. Trace of fine sand & mica.		5		43 63 33
					6		31 32
			Bottom of Boring 60.0'				
			NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.			BLOWS PER FOOT: Number required to drive 1 3/8" I.D. splitspoon w/140 lb. hammer falling 30".	

DRILLING LOG		VISION SOUTH ATLANTIC	INSTALLATION SAVANNAH, GA.	Hole No. SH-159	SHEET 1 OF 1 SHEETS
1. PROJECT SAVANNAH HARBOR DEEPENING			10. SIZE AND TYPE OF BIT 1 3/8" splitspoon, 5/2" fishtail		
2. LOCATION (Coordinates or Station) X-816934 Y-778722 GA. EAST			11. DATUM FOR ELEVATION SHOWN (TBM or MSU) MLW		
3. DRILLING AGENCY SAVANNAH DISTRICT			12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 314		
4. HOLE NO. (As shown on drawing title and file number) SH-159			13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED: 4 UNDISTURBED: 0		
5. NAME OF DRILLER DAVID JUSTISS			14. TOTAL NUMBER CORE BOXES 0		
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.			15. ELEVATION GROUND WATER N/A		
7. THICKNESS OF OVERBURDEN 50.3' (Water 41.3')			16. DATE HOLE STARTED: 14 JAN 92 COMPLETED: 14 JAN 92		
8. DEPTH DRILLED INTO ROCK 0.0'			17. ELEVATION TOP OF HOLE 0.0'		
9. TOTAL DEPTH OF HOLE 50.3'			18. TOTAL CORE RECOVERY FOR BORING N/A		
			19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.		

ELEVATION 0.0	DEPTH 0	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. JAR	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant) f	BLOWS
			Water			Scale change at 40.0'. Set 6" diameter casing by own weight to 42.3'.	
	40		Bottom of Harbor 41.3'				
-41.3'			(SC) Olive-grey, fine clayey SAND. Trace of mica.		1		5
-42.8'			(SM) Dark grey, fine silty SAND. Trace of clay & mica.		2		33
-45.8'	45		(SC) Dark grey, fine clayey SAND. Some silt, trace of mica.		3		62
-47.3'			Trace of silt.		4		29
-50.3'	50		Bottom of Boring 50.3'				39
			NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.			BLOWS PER FOOT: Number required to drive 1 3/8" I.D. splitspoon w/140 lb. hammer falling 30".	52

DRILLING LOG		VISION SOUTH ATLANTIC		INSTALLATION SAVANNAH, GA.		SHEET 1 OF 1 SHEETS	
1. PROJECT SAVANNAH HARBOR DEEPENING				10. SIZE AND TYPE OF BIT 1 1/8" Splitspoon, 5 1/2" Fishtail			
2. LOCATION (Coordinates or Station) X=817039 Y=778184 GA. EAST				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MLW			
3. DRILLING AGENCY SAVANNAH DISTRICT				12. MANUFACTURER'S DESIGNATION OF DRILL FALING 314			
4. HOLE NO. (As shown on drawing title and file number) SH-160				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 5	
5. NAME OF DRILLER DAVID JUSTISS				14. TOTAL NUMBER CORE BOXES		0	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER		N/A	
7. THICKNESS OF OVERBURDEN 50.8' (Water 40.3')				16. DATE HOLE		STARTED 14 JAN 91	
8. DEPTH DRILLED INTO ROCK 0.0'				17. ELEVATION TOP OF HOLE		0.0'	
9. TOTAL DEPTH OF HOLE 50.8'				18. TOTAL CORE RECOVERY FOR BORING		N/A %	
				19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.			

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO. JAR	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant)	BLOWS
0.0	0						
			Water			Scale change at 40.0'. Set 6" diameter casing by own weight to 43.4'.	
	40		Bottom of Harbor 40.3'				
-40.3'			(MH) Dark grey to black clayey SILT.		1	Weight of rods drove splitspoon from 40.3' to 42.6'. Cont'd. drive to 43.3' with three hammer blows. Jar sample 2 from approx. 42.6' to 43.3'.	0
-42.6'			(SC) Dark grey, fine to medium clayey SAND.		2		3
-43.3'			(SM) Dark grey, fine silty SAND. Trace of clay.		3		45
	45						72
-46.3'			(SC) Grey, fine clayey SAND. Some silt. Trace of mica.		4		38
	50				5	48	
-50.8'			Bottom of Boring 50.8'				36
NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.						BLOWS PER FOOT: Number required to drive 1 1/8" I.D. splitspoon w/140 lb. hammer falling 30".	

DRILLING LOG		VISION SOUTH ATLANTIC		INSTALLATION		Hole No. 37-101	
1. PROJECT SAVANNAH HARBOR DEEPENING				VANNAH, GA.		SHEET 1 OF 1 SHEETS	
2. LOCATION (Coordinates or Station) X=818085 Y=778090 GA. EAST				10. SIZE AND TYPE OF BIT 1 3/8" Splitspoon, 5/2" Fishtail		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MLW	
3. DRILLING AGENCY SAVANNAH DISTRICT				12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 314			
4. HOLE NO. (As shown on drawing title and file number) SH-161				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 4	
5. NAME OF DRILLER DAVID JUSTISS				14. TOTAL NUMBER CORE BOXES		0	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER		N/A	
7. THICKNESS OF OVERBURDEN 50.9' (Water 38.9')				16. DATE HOLE		STARTED 14 JAN 91	
8. DEPTH DRILLED INTO ROCK 0.0'				17. ELEVATION TOP OF HOLE		0.0'	
9. TOTAL DEPTH OF HOLE 50.9'				18. TOTAL CORE RECOVERY FOR BORING		N/A	
				19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.			

ELEVATION 0.0	DEPTH 0.0	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY	BOX OR SAMPLE NO. JAR	REMARKS (Drilling time, water loss, depth of weathering, etc. If significant) g	
			Water			BLOWS	
	35					Scale change at 35.0'. Set 6" diameter casing by own weight to 44.9'.	
	-38.9'		Bottom of Harbor 38.9'			Weight of rods drove splitspoon from 38.9' to 44.9'. Jar sample 2 from approx. 44.0' to 44.9'.	
	40		(MH) Very dark grey clayey SILT.		1	0	
	-44.0'						
	-44.9'		(SC) Dark grey, fine to medium clayey SAND.		2		
	45		Fine sand, some silt, trace of mica.		3	23	
						43	
	50				4	41	
	-50.9'		Bottom of Boring 50.9'			45	
NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.				BLOWS PER FOOT: Number required to drive 1 3/8" I.D. splitspoon w/140 lb. hammer falling 30".			

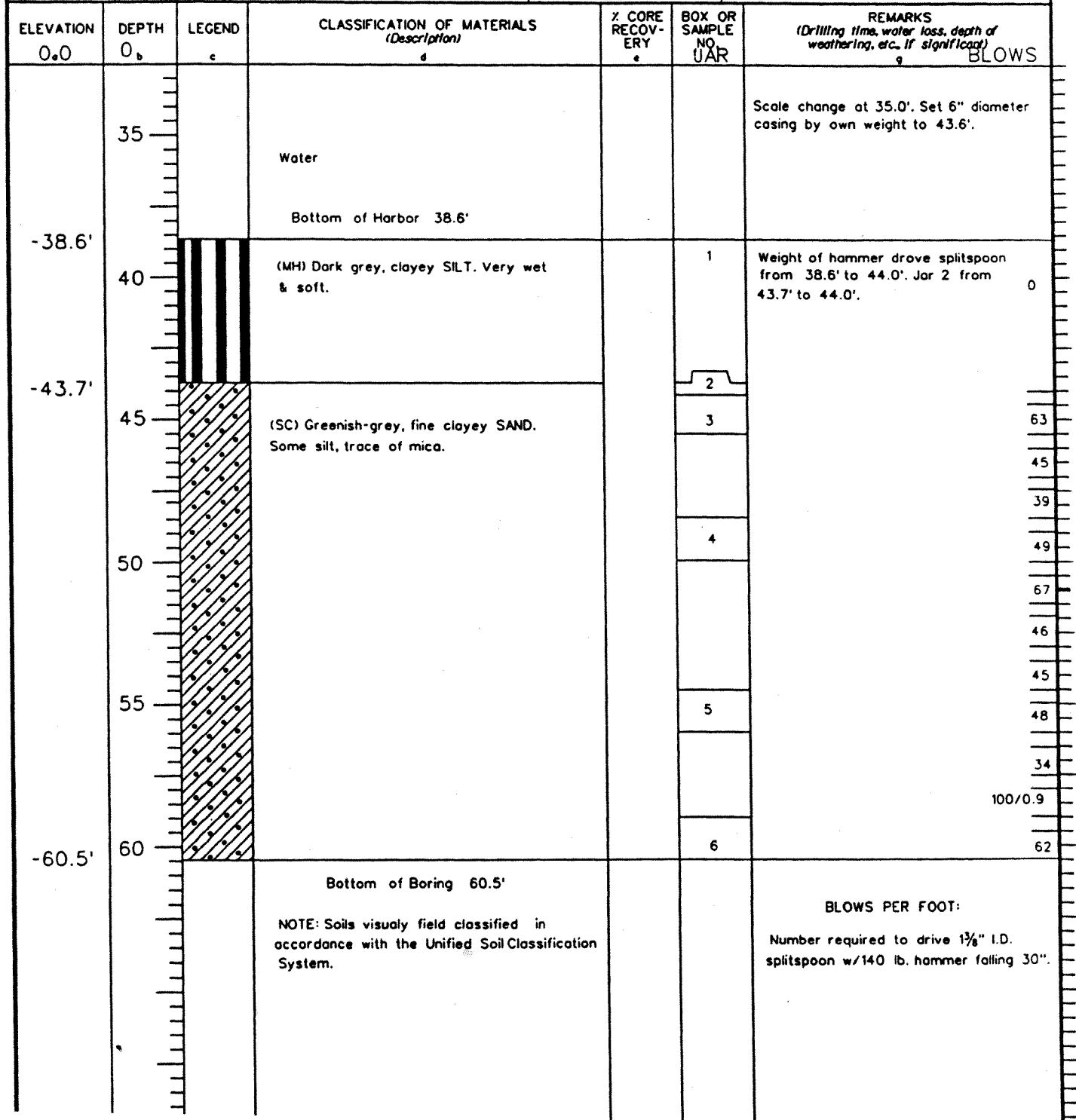
DRILLING LOG		VISION SOUTH ATLANTIC	INSTALLATION SAVANNAH, GA.	SHEET 1 OF 1 SHEETS
1. PROJECT SAVANNAH HARBOR DEEPENING			10. SIZE AND TYPE OF BIT 1 1/8" splitspoon, 5/2" fishtail	
2. LOCATION (Coordinates or Station) X-817143 Y-777680 GA. EAST			11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MLW	
3. DRILLING AGENCY SAVANNAH DISTRICT			12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 314	
4. HOLE NO. (As shown on drawing title and file number) SH-162			13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED: 6 UNDISTURBED: 0	
5. NAME OF DRILLER DAVID JUSTISS			14. TOTAL NUMBER CORE BOXES 0	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.			15. ELEVATION GROUND WATER N/A	
7. THICKNESS OF OVERBURDEN 59.9' (Water 41.5')			16. DATE HOLE STARTED: 26 JAN 92 COMPLETED: 26 JAN 92	
8. DEPTH DRILLED INTO ROCK 0.0'			17. ELEVATION TOP OF HOLE 0.0'	
9. TOTAL DEPTH OF HOLE 59.9'			18. TOTAL CORE RECOVERY FOR BORING N/A %	
			19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO. JAR	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant)	BLOWS
0.0	0						
	40		Water			Scale change at 41.5'. Set 6" diameter casing by own weight to 43.3'.	
-41.5'			Bottom of Harbor 41.5'				
-43.0'			(MH) Very dark grey to black clayey SILT. Some fine to coarse sand.		1	Weight of rods drove splitspoon from 41.5' to 43.4'. Jar sample 2 taken from approx. 43.0' to 43.4'.	0
-43.4'			(SC) Very grey, fine clayey SAND. Some silt.		2		59
	45		Trace of mica.		3		43
-46.4'			Trace of silt.		4		43
	50				5		45
	55				6		42
	60		Bottom of Boring 59.9'				41
			NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.				46
						BLOWS PER FOOT: Number required to drive 1 1/8" I.D. splitspoon w/140 lb. hammer falling 30".	45

DRILLING LOG		VISION SOUTH ATLANTIC		INSTALLATION SAVANNAH, GA.		Hole No. 37-10J	
1. PROJECT SAVANNAH HARBOR DEEPENING				10. SIZE AND TYPE OF BIT 1 1/8" splitspoon, 5/4" fishtail		SHEET 1 OF 1 SHEETS	
2. LOCATION (Coordinates or Station) X-817375 Y-777535 GA. EAST				11. DATUM FOR ELEVATION SHOWN (TBM or MSJ) MLW			
3. DRILLING AGENCY SAVANNAH DISTRICT				12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314			
4. HOLE NO. (As shown on drawing title and file number) SH-163				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED: 6 UNDISTURBED: 0			
5. NAME OF DRILLER DAVID JUSTISS				14. TOTAL NUMBER CORE BOXES 0			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER N/A			
7. THICKNESS OF OVERBURDEN 59.8' (Water 41.8')				16. DATE HOLE STARTED: 16 Nov 91 COMPLETED: 16 NOV 91			
8. DEPTH DRILLED INTO ROCK 0.0'				17. ELEVATION TOP OF HOLE 0.0'			
9. TOTAL DEPTH OF HOLE 59.8'				18. TOTAL CORE RECOVERY FOR BORING N/A			
				19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.			

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	BLOWS
0.0	0						
	40		Water				
			Bottom of Harbor 41.8'			Scale change at 40.0'. Set 6" diameter casing by own weight to 45.8'.	
-41.8'		(MH)	Dark grey, fat SILT.		1		
-43.3'		(SC)	Dark grey & grey, med. to coarse clayey SAND.		2	Weight of hammer drove split-spoon from 41.8' to 44.3'. Cont'd. drive with five blows to 44.8'.	0
-44.8'	45	(SM)	Grey, fine silty SAND. Some clay in layers up to 0.3' thick, trace of mica.		3		5
-46.3'		(SC)	Greenish grey, fine clayey SAND. Some silt, trace of mica.		4	Material from 41.8' to approx. 43.3' was very soft & wet.	48
	50						36
							53
	55				5		51
							35
							45
							53
							68
							61
-59.8'	60		Bottom of Boring 59.8'		6		62
			NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.			BLOWS PER FOOT: Number required to drive 1 1/8" I.D. splitspoon w/140 lb. hammer falling 30".	

DRILLING LOG		VISION SOUTH ATLANTIC		INSTALLATION SAVANNAH, GA.		SHEET 1 OF 1 SHEETS			
1. PROJECT SAVANNAH HARBOR DEEPENING				10. SIZE AND TYPE OF BIT 1 3/8" SPLITSPOON, 5/2" FISHTAIL					
2. LOCATION (Coordinates or Station) X=818481 Y=777661 GA. EAST				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MLW					
3. DRILLING AGENCY SAVANNAH DISTRICT				12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314					
4. HOLE NO. (As shown on drawing title and file number) SH-164		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 6		UNDISTURBED 0			
5. NAME OF DRILLER DAVID JUSTISS				14. TOTAL NUMBER CORE BOXES 0					
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER N/A					
7. THICKNESS OF OVERBURDEN 60.5' (Water 38.6')				16. DATE HOLE STARTED 16 NOV 91				COMPLETED 16 NOV 91	
8. DEPTH DRILLED INTO ROCK 0.0'				17. ELEVATION TOP OF HOLE 0.0'				18. TOTAL CORE RECOVERY FOR BORING N/A	
9. TOTAL DEPTH OF HOLE 60.5'				19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.					



DRILLING LOG		VISION SOUTH ATLANTIC		INSTALLATION SAVANNAH, GA.		Hole No. SH-165	
1. PROJECT SAVANNAH HARBOR DEEPENING				10. SIZE AND TYPE OF BIT 1 3/8" splitspoon, 5/2" fishtail		SHEET 1 OF 1 SHEETS	
2. LOCATION (Coordinates or Station) X-817521 Y-777184 GA. EAST				11. DATUM FOR ELEVATION SHOWN (TBM or MSU) MLW			
3. DRILLING AGENCY SAVANNAH DISTRICT				12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 314			
4. HOLE NO. (As shown on drawing title and file number) SH-165				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 6	
5. NAME OF DRILLER DAVID JUSTISS				14. TOTAL NUMBER CORE BOXES		0	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER N/A			
7. THICKNESS OF OVERBURDEN 50.8' (Water 38.8')				16. DATE HOLE		STARTED 14 JAN 92	
8. DEPTH DRILLED INTO ROCK 0.0'				17. ELEVATION TOP OF HOLE		0.0'	
9. TOTAL DEPTH OF HOLE 50.8'				18. TOTAL CORE RECOVERY FOR BORING N/A			
				19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.			

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO. JAR	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
0.0	0					
	35		Water			Scale change at 35.0'. Set 6" diameter casing by own weight to 45.1'. BLOWS
-38.8'			Bottom of Harbor 41.5' 38.8'			
	40		(MH) Dark olive-grey, clayey SILT.		1	Weight of rods drove splitspoon from 38.8' to 43.3'. Jar sample 2 taken from approx. 42.8' to 43.3'. BLOWS PER FOOT: Number required to drive 1 3/8" I.D. splitspoon w/140 lb. hammer falling 30".
-42.8'			(SC) Very dark grey to black, medium to coarse clayey SAND. Some silt.		2	
-44.8'			(SM) Grey, fine silty SAND. Trace of clay & mica.		3	
-46.3'			(SC) Grey, fine clayey SAND. Some silt, trace of mica.		4	
	50				5	
-50.8'			Bottom of Boring 50.8'		6	
			NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.			

DRILLING LOG		VISION SOUTH ATLANTIC		INSTALLATION SAVANNAH, GA.		SHEET 1 OF 1 SHEETS	
1. PROJECT SAVANNAH HARBOR DEEPENING				10. SIZE AND TYPE OF BIT 1 3/8" splitspoon, 5/2" fishtail			
2. LOCATION (Coordinates or Station) X=817973 Y=777182 GA.EAST				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MLW			
3. DRILLING AGENCY SAVANNAH DISTRICT				12. MANUFACTURER'S DESIGNATION OF DRILL FALING 314			
4. HOLE NO. (As shown on drawing title and file number) SH-166				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 6	UNDISTURBED 0
5. NAME OF DRILLER DAVID JUSTISS				14. TOTAL NUMBER CORE BOXES 0			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER N/A		16. DATE HOLE STARTED 14 DEC 91 COMPLETED 14 DEC 91	
7. THICKNESS OF OVERBURDEN 60.8' (Water 41.3')				17. ELEVATION TOP OF HOLE 0.0'			
8. DEPTH DRILLED INTO ROCK 0.0'				18. TOTAL CORE RECOVERY FOR BORING N/A %			
9. TOTAL DEPTH OF HOLE 60.8'				19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.			

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	BLOWS
0.0	0	c	d		JAR		
			Water			Scale change at 40.0'. Set 6" diameter casing by own weight to 41.8'.	
	40		Bottom of Harbor 41.3'				
-41.3'			(SC) Grey, fine clayey SAND. Some silt.		1		25
	45		Occasional layer of silty fine sand up to 0.2' thick.		2		37
-45.8'			(SM) Grey, fine silty SAND. Trace of mica.		3		64
-47.3'					4		79
-48.8'			(SC) Grey, fine clayey SAND. Some silt, trace of mica.		5		52
	50						49
	55				6		47
	60						45
							52
							66
							65
-60.8'			Bottom of Boring 60.8'				68
						BLOWS PER FOOT: Number required to drive 1 3/8" I.D. splitspoon w/140 lb. hammer falling 30".	

DRILLING LOG		DIVISION SOUTH ATLANTIC	INSTALLATION SAVANNAH, GA.	SHEET 1 OF 1 SHEETS
1. PROJECT SAVANNAH HARBOR DEEPENING			10. SIZE AND TYPE OF BIT 1 1/8" splitspoon, 5/2" fishtail	
2. LOCATION (Coordinates or Station) X=817468 Y=776786 GA. EAST			11. DATUM FOR ELEVATION SHOWN (TBM or MSU) MLW	
3. DRILLING AGENCY SAVANNAH DISTRICT			12. MANUFACTURER'S DESIGNATION OF DRILL FALING 314	
4. HOLE NO. (As shown on drawing title and file number) SH-168			13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED 4 UNDISTURBED 0	
5. NAME OF DRILLER DAVID JUSTISS			14. TOTAL NUMBER CORE BOXES 0	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.			15. ELEVATION GROUND WATER N/A	
7. THICKNESS OF OVERBURDEN 53.5' (Water 40.7')			16. DATE HOLE STARTED 25 JAN 92 COMPLETED 25 JAN 92	
8. DEPTH DRILLED INTO ROCK 0.0'			17. ELEVATION TOP OF HOLE 0.0'	
9. TOTAL DEPTH OF HOLE 53.5'			18. TOTAL CORE RECOVERY FOR BORING N/A %	
			19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	BLOWS
0.0	0	c	d		JAR		
			Water			Scale change at 40.0'. Set 6" diameter casing by own weight to 44.5'.	
-40.7'	40		Bottom of Harbor ^{40.7} 40.9				
			(MH) Very dark grey, clayey SILT. Trace of fine to coarse sand.		1		0
-43.8'	45		(CL) Dark grey, silty, lean CLAY. Some fine sand. Trace of mica.		2		37
-46.0'			(SC) Grey, fine clayey SAND. Trace of silt, some mica.		3		45
	50						77
					4		70
							93
-53.5'	55		Bottom of Boring 53.5'				76
			NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.			BLOWS PER FOOT: Number required to drive 1 1/8" I.D. splitspoon w/140 lb. hammer falling 30".	
	60						

DRILLING LOG		DIVISION SOUTH ATLANTIC	INSTALLATION SAVANNAH, GA.	SHEET 1 OF 1 SHEETS
1. PROJECT SAVANNAH HARBOR DEEPENING		10. SIZE AND TYPE OF BIT 1 3/8" SPLITSPOON, 5/2" FISHTAIL		
2. LOCATION (Coordinates or Station) X-818211 Y-776659 GA. EAST		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MLW		
3. DRILLING AGENCY SAVANNAH DISTRICT		12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314		
4. HOLE NO. (As shown on drawing title and file number) SH-169		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 5	UNDISTURBED 0
5. NAME OF DRILLER DAVID JUSTISS		14. TOTAL NUMBER CORE BOXES 0		
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		15. ELEVATION GROUND WATER N/A		
7. THICKNESS OF OVERBURDEN 60.3' (Water 40.8')		16. DATE HOLE	STARTED 26 JAN 92	COMPLETED 26 JAN 92
8. DEPTH DRILLED INTO ROCK 0.0'		17. ELEVATION TOP OF HOLE 0.0'		
9. TOTAL DEPTH OF HOLE 60.3'		18. TOTAL CORE RECOVERY FOR BORING N/A %		
19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.				

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	BLOWS
0.0	0	e	d	.	UAR	g	
			Water			Scale change at 40.0'. Set 6" diameter casing by own weight to 41.1'.	
	40		Bottom of Harbor 40.8'				
-40.8'			(SC) Olive grey, fine clayey SAND. Some silt. Trace of mica.		1		22
-43.8'			Grey.		2		38
	45						41
			Trace of silt.		3		48
-48.3'							44
	50				4		42
							52
	55				5		54
							68
	60						66
							76
							82
-60.3'			Bottom of Boring 60.3'				76
			NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.			BLOWS PER FOOT: Number required to drive 1 3/8" I.D. splitspoon w/140 lb. hammer falling 30".	



DRILLING LOG		VISION SOUTH ATLANTIC		INSTALLATION SAVANNAH, GA.		SHEET 1 OF 1 SHEETS	
1. PROJECT SAVANNAH HARBOR DEEPENING				10. SIZE AND TYPE OF BIT 1 3/8" splitspoon, 5/2" fishtail			
2. LOCATION (Coordinates or Station) X=817736 Y=776361 GA. EAST				11. DATUM FOR ELEVATION SHOWN (TBM or MSU) MLW			
3. DRILLING AGENCY SAVANNAH DISTRICT				12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 314			
4. HOLE NO. (As shown on drawing title and file number) SH-171				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 6	
						UNDISTURBED 0	
5. NAME OF DRILLER DAVID JUSTISS				14. TOTAL NUMBER CORE BOXES 0			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER N/A		16. DATE HOLE	
						STARTED 14 DEC 91	
						COMPLETED 14 DEC 91	
7. THICKNESS OF OVERBURDEN 60.5' (WATER 39.5')				17. ELEVATION TOP OF HOLE 0.0'			
8. DEPTH DRILLED INTO ROCK 0.0'				18. TOTAL CORE RECOVERY FOR BORING N/A %			
9. TOTAL DEPTH OF HOLE 60.5'				19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.			

ELEVATION 0.0	DEPTH 0	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY JAR	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	BLOWS h
			Water			Scale change at 35.0'. Set 6" diameter casing by own weight to 45.7'.	
	35		Bottom of Harbor 39.5'				
	-39.5'		(MH) Dark grey, clayey SILT.		1	Weight of rods drove splitspoon from 39.5' to 45.5'.	0
	-44.5'		(SC) Dark grey, fine to medium clayey SAND.		2		
	-45.5'		(CH) Grey, fat CLAY. Some silt & fine sand.		3		5
	-48.5'		(SC) Grey, fine clayey SAND.		4		5
	50						38
	55				5		49
	60				6		49
	-60.5'		Bottom of Boring 60.5'				
NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.						BLOWS PER FOOT: Number required to drive 1 3/8" I.D. splitspoon w/140 lb. hammer falling 30".	




DRILLING LOG		VISION SOUTH ATLANTIC		INSTALLATION SAVANNAH, GA.		HOLE NO. SH-172	
1. PROJECT SAVANNAH HARBOR DEEPENING				10. SIZE AND TYPE OF BIT 1 3/8" SPLITSPOON, 5 1/2" FISHTAIL		SHEET 1 OF 1 SHEETS	
2. LOCATION (Coordinates or Station) X-818054 Y-775978 GA. EAST				11. DATUM FOR ELEVATION SHOWN (TBM or MSU) MLW			
3. DRILLING AGENCY SAVANNAH DISTRICT				12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314			
4. HOLE NO. (As shown on drawing title and file number) SH-172				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED 4 UNDISTURBED 0			
5. NAME OF DRILLER DAVID JUSTISS				14. TOTAL NUMBER CORE BOXES 0			
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER N/A			
7. THICKNESS OF OVERBURDEN 59.9' (Water 43.4')				16. DATE HOLE STARTED 25 JAN 92 COMPLETED 25 JAN 92			
8. DEPTH DRILLED INTO ROCK 0.0'				17. ELEVATION TOP OF HOLE 0.0'			
9. TOTAL DEPTH OF HOLE 59.9'				18. TOTAL CORE RECOVERY FOR BORING N/A %			
				19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.			

ELEVATION 0.0	DEPTH 0.0	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. JAR	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant) g	BLOWS
	40		Water			Scale change at 40.0'. Set 6" diameter casing by own weight to 44.3'.	0
	-43.4'		Bottom of Harbor 43.4'				
	45		(CL) Dark grey, silty lean CLAY. Some fine sand.		1		27
	-47.9'		Dark (SC) Olive-grey, fine clayey SAND. Some silt, trace of mica.		2		99
	50		Olive-grey.		3		32
	55				4		31
	-59.9'		Bottom of Boring 59.9'				90
			NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.				89
							100/0.6
							100/0.9
							90
							54
							39
						BLOWS PER FOOT: Number required to drive 1 3/8" I.D. splitspoon w/140 lb. hammer falling 30".	

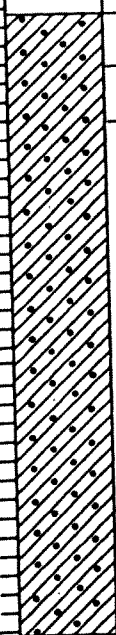
DRILLING LOG		DIVISION SOUTH ATLANTIC	INSTALLATION SAVANNAH, GA.	SHEET 1 OF 1 SHEETS
1. PROJECT SAVANNAH HARBOR DEEPENING			10. SIZE AND TYPE OF BIT 1 3/8" SPLITSPOON, 5/2" FISHTAIL	
2. LOCATION (Coordinates or Station) X-818264 Y-775913 GA. EAST			11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MLW	
3. DRILLING AGENCY SAVANNAH DISTRICT			12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314	
4. HOLE NO. (As shown on drawing title and file number) SH-173		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 5	UNDISTURBED 0
5. NAME OF DRILLER DAVID JUSTISS			14. TOTAL NUMBER CORE BOXES 0	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.			15. ELEVATION GROUND WATER N/A	
7. THICKNESS OF OVERBURDEN 59.8' (Water 44.4')			16. DATE HOLE STARTED 27 JAN 92 COMPLETED 27 JAN 92	
8. DEPTH DRILLED INTO ROCK 0.0'			17. ELEVATION TOP OF HOLE 0.0'	
9. TOTAL DEPTH OF HOLE 59.8'			18. TOTAL CORE RECOVERY FOR BORING N/A	
			19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.	

ELEVATION 0.0	DEPTH 0.0	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. UAR	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)	BLOWS
			Water			Scale change at 40.0'. Set 6" diameter casing by own weight to 48.2'.	
	40		Bottom of Harbor 44.4'				
-44.4'	45		(MH) Very dark grey to black clayey SILT.		1	Weight of rods drove splitspoon from 44.4' to 47.9'. Jar sample 2 taken from approx. 47.5' to 47.9'.	0
-47.5'	50		(SC) Dark grey, fine clayey SAND. Trace of silt.		2 3		18
	55				4		49
	59.8'		Bottom of Boring 59.8'		5		94
	60						99
							71
							81
							89
							100/0.9
			NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.			BLOWS PER FOOT: Number required to drive 1 3/8" I.D. splitspoon w/140 lb. hammer falling 30".	

DRILLING LOG		DIVISION SOUTH ATLANTIC		INSTALLATION SAVANNAH, GA.		HOLE NO. SH-174	
1. PROJECT SAVANNAH HARBOR DEEPENING				10. SIZE AND TYPE OF BIT 1 3/8" SPLITSPOON, 5/2" FISHTAIL		SHEET 1 OF 1 SHEETS	
2. LOCATION (Coordinates or Station) X-818856 Y-775859 GA. EAST				11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MLW			
3. DRILLING AGENCY SAVANNAH DISTRICT				12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314			
4. HOLE NO. (As shown on drawing title and file number) SH-174				13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 6	
5. NAME OF DRILLER DAVID JUSTISS				14. TOTAL NUMBER CORE BOXES 0		UNDISTURBED 0	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.				15. ELEVATION GROUND WATER N/A			
7. THICKNESS OF OVERBURDEN 59.6' (Water 41.6')				16. DATE HOLE STARTED 27 JAN 92		COMPLETED 27 JAN 92	
8. DEPTH DRILLED INTO ROCK 0.0'				17. ELEVATION TOP OF HOLE 0.0'			
9. TOTAL DEPTH OF HOLE 59.6'				18. TOTAL CORE RECOVERY FOR BORING N/A			
				19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.			

ELEVATION 0.0	DEPTH 0	LEGEND e	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. JAR	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant) g
			Water			BLOWS
	40		Bottom of Harbor 41.6'			Scale change at 40.0'. Set 6" diameter casing by own weight to 41.9'.
-41.6'			(SC) Dark grey, fine clayey SAND. Some silt, trace of mica.		1	
-43.1'			(SM) Dark grey, fine silty SAND. Some clay & mica.		2	
-46.1'	45					
-49.1'			(SC) Grey, fine clayey SAND. Trace of silt.		3	
	50		Dark grey.		4	
	55				5	
-59.6'	60		Bottom of Boring 59.6'		6	
			NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.			BLOWS PER FOOT: Number required to drive 1 3/8" I.D. splitspoon w/140 lb. hammer falling 30".

DRILLING LOG		DIVISION SOUTH ATLANTIC	INSTALLATION SAVANNAH, GA.	SHEET 1 OF 1 SHEETS
1. PROJECT SAVANNAH HARBOR DEEPENING			10. SIZE AND TYPE OF BIT 1 3/8" SPLITSPOON, 5/2" FISHTAIL	
2. LOCATION (Coordinates or Station) X=818516 Y=775447 GA. EAST			11. DATUM FOR ELEVATION SHOWN (TBM or MSU) MLW	
3. DRILLING AGENCY SAVANNAH DISTRICT			12. MANUFACTURER'S DESIGNATION OF DRILL Failing 314	
4. HOLE NO. (As shown on drawing title and file number) SH-175		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 5 UNDISTURBED 0
5. NAME OF DRILLER DAVID JUSTISS			14. TOTAL NUMBER CORE BOXES 0	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.			15. ELEVATION GROUND WATER N/A	
7. THICKNESS OF OVERBURDEN 60.1' (Water 43.6')			16. DATE HOLE STARTED 17 NOV 91 COMPLETED 17 NOV 91	
8. DEPTH DRILLED INTO ROCK 0.0'			17. ELEVATION TOP OF HOLE 0.0'	
9. TOTAL DEPTH OF HOLE 60.1'			18. TOTAL CORE RECOVERY FOR BORING N/A %	
			19. SIGNATURE OF INSPECTOR JAMES ARTHUR, P.G.	

ELEVATION 0.0	DEPTH 0 _b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. UAR	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	BLOWS h
	40		Water			Scale change at 40.0'. Set 6" diameter casing by own weight to 44.1'.	
-43.6'			Bottom of Harbor 43.6'				
-45.1'	45		(SC) Greenish-grey, fine clayey SAND. Some silt, trace of mica.		1		24
			Light olive to greenish-grey.				37
-46.6'			Greenish-grey.		2		42
	50						42
					3		49
	55						74
					4		50
							57
	60				5		77
							77
-60.1'			Bottom of Boring 60.1'				90
			NOTE: Soils visually field classified in accordance with the Unified Soil Classification System.			BLOWS PER FOOT: Number required to drive 1 3/8" I.D. splitspoon w/140 lb. hammer falling 30".	

Hole No. **CS-1**

DRILLING LOG	DIVISION SOUTH ATLANTIC	INSTALLATION SAVANNAH RIVER HARBOR	SHEET 1 OF 2 SHEETS
PROJECT KINGS ISLAND TIKYING BASIN		10. SIZE AND TYPE OF BIT 1 1/2" ID SPLITSPOON	
2. LOCATION (Coordinates or Station) OPPOSITE STA. 1001750 1 1/2' NORTH EAST OF RUNWAY BUDY 19		11. DATUM FOR ELEVATION SHOWN (TBM or MLL) MLW	
3. DRILLING AGENCY SAVANNAH DISTRICT		12. MANUFACTURER'S DESIGNATION OF DRILL SPROGUE & HENWOOD	
4. HOLE NO. (As shown on drawing title and file number) CS 1		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN 5	DISTURBED 0
5. NAME OF DRILLER J. Mc DONALD		14. TOTAL NUMBER CORE BOXES 0	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		15. ELEVATION GROUND WATER	
7. THICKNESS OF OVERBURDEN		16. DATE HOLE STARTED 3 MARCH 1973	
8. DEPTH DRILLED INTO ROCK		COMPLETED 3 MARCH 1973	
9. TOTAL DEPTH OF HOLE 45.1' BELOW MLW		17. ELEVATION TOP OF HOLE 0.0' MLW	
		18. TOTAL CORE RECOVERY FOR BORING 3	
		19. SIGNATURE OF INSPECTOR Charles D. Griffin	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	0					
	5		- WATER			
	10					
-13.6			WATER DEPTH 13.6' AT MLW			
	15		SH. GRAY SILTY FINE & MEDIUM SAND		1	88
						79
						81
	20		W/GREEN		2	68
						76
						84
	25		OLIVE GREEN		3	93
						100
						89
						63
	30				4	74

CONTINUED ON SHEET NO 2

DRILLING LOG (Cont Sheet) ION TOP OF HOLE -13.6 BELOW MLW- Hole No. **CS 1**

PROJECT **KINGS ISLAND TURNING EMIN** INSTALLATION **GUANINIAN RIVER WADAR** SHEET **2**
OF **2** SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV. ERY e	BOX OR SAMPLE NO. JAR	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) R FLOW?
			SM- OLIVE GREEN SILTY FINE SAND			100
						99
						88
	35					100
						94
						88
	40				5	93
						76
						94
	45					98

NOTE: Soils field classified in accordance with the Unified Soil Classification System.

BLOWS PER FOOT:

Number required to drive 1 1/2" ID splitspoon w/140 lb hammer falling 30"

DRILLING LOG

DIVISION

Hole No. **CS 2**

PROJECT

Kings Island Turning Basin

INSTALLATION

SHEET 1 OF 2 SHEETS

2. LOCATION (Coordinates or Site No) **100' NE of DN 16
Approx. 350' from pierless edge**

10. SIZE AND TYPE OF BIT

11. DAYUM FOR ELEVATION SHOWN (TTM or MSL)

3. DRILLING AGENCY

Saginaw District

12. MANUFACTURER'S DESIGNATION OF DRILL

Spencer 4 1/2" Hand

4. HOLE NO. (As shown on drawing title and file number)

CS-2

13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN

DISTURBED **3**

UNOISTURBED

5. NAME OF DRILLER

McDonnell

14. TOTAL NUMBER CORE BOXES

0

6. DIRECTION OF HOLE

VERTICAL INCLINED _____ DEG. FROM VERT.

15. ELEVATION GROUND WATER

In River

7. THICKNESS OF OVERBURDEN

16. DATE HOLE

STARTED **5 April 73** COMPLETED **11 April 73**

8. DEPTH DRILLED INTO ROCK

17. ELEVATION TOP OF HOLE **0.0' MLLW**

9. TOTAL DEPTH OF HOLE **45.0'**

18. TOTAL CORE RECOVERY FOR BORING

3

19. SIGNATURE OF INSPECTOR

[Signature]

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	0'					
	5'					
	10'					
	15'					
	17.6'		Water depth 17.6' at MLLW			
	20'		SP-Tan poorly graded sand		1	
	25'		ML-Green & Gray fine sandy silt micaceous slight plasticity		2	
	30'		SM-Green & Gray silty fine sand micaceous slight plasticity		3	
					4	
					5	

30
65
44
71
68
50
48

DRILLING LOG		DIVISION	INSTALLATION	SHEET OF
1. PROJECT <i>Kings Island</i>			10. SIZE AND TYPE OF BIT	
2. LOCATION (Coordinates or Station) <i>Site 710</i>			11. DATUM FOR ELEVATION MEASUREMENT (TBM or MSL) <i>L.I.</i>	
3. DRILLING AGENCY <i>Southern District</i>			12. MANUFACTURER'S DESIGNATION OF DRILL	
4. HOLE NO. (As shown on drawing title and file number) <i>CS-2</i>			13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED <i>5</i>
5. NAME OF DRILLER <i>MS Donahue</i>			14. TOTAL NUMBER CORE BOXES <i>0</i>	
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.			15. ELEVATION GROUND WATER <i>In 5.1000</i>	
7. THICKNESS OF OVERBURDEN			16. DATE HOLE STARTED <i>5 Nov 73</i> COMPLETED <i>11 Dec 73</i>	
8. DEPTH DRILLED INTO ROCK			17. ELEVATION TOP OF HOLE <i>7.2' of MSL</i>	
9. TOTAL DEPTH OF HOLE <i>25.0'</i>			18. TOTAL CORE RECOVERY FOR BORING <i>3</i>	
			19. SIGNATURE OF INSPECTOR <i>[Signature]</i>	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	30'				1	
					2	
					3	
					4	
	35'		ML-Green & Gray fine sand, silt micaceous slight plasticity		6	
					7	
	40'				8	
					9	
	45'				10	
					11	
					12	
					13	
					14	
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					98	
					99	
					100	

Soils field classified in accordance with the Unified Soil Classification System.

BLOWS PER FOOT:
Number required to drive 1 1/2" ID splitspoon w/140 lb. hammer falling 30".

DRILLING LOG		DIVISION <i>South Atlantic</i>	INSTALLATION <i>Savannah River</i>	Hole No. CS-3
1. PROJECT <i>Kings Island</i>		10. SIZE AND TYPE OF BIT <i>1 1/2"</i>		SHEET 1 OF 3 SH
2. LOCATION (Coordinates or Station) <i>1 Approx 240' East of Marker E265</i>		11. DATUM FOR ELEVATION SHOWN (TTM or MSL) <i>M.S.L.</i>		
3. DRILLING AGENCY <i>Savannah District</i>		12. MANUFACTURER'S DESIGNATION OF DRILL <i>...</i>		
4. HOLE NO. (As shown on drawing title and file number) CS-3		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN		DISTURBED 6 UNDISTURBED
5. NAME OF DRILLER <i>M. S. ...</i>		14. TOTAL NUMBER CORE BOXES 0		
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		15. ELEVATION GROUND WATER <i>In River</i>		
7. THICKNESS OF OVERBURDEN		16. DATE HOLE STARTED 17 April 73 COMPLETED 18 April 73		
8. DEPTH DRILLED INTO ROCK		17. ELEVATION TOP OF HOLE 0.0 = M.L.W.		
9. TOTAL DEPTH OF HOLE 41.91		18. TOTAL CORE RECOVERY FOR BORING		
		19. SIGNATURE OF INSPECTOR <i>...</i>		

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	0					
	5'		Water			
	10'					
	11.9'		Water depth 11.9' MLW			
	15'				1	
	20'		SM - Gray & Green silty fine sand micaceous slight plasticity when wet		2	
	25'				3	
	30'					
						42
						45
						48
						49
						47
						58
						65
						67
						70
						72

DRILLING LOG		DIVISION South ATLANTIC	INSTALLATION Savannah River	SHEET No 1 OF 2 SH
1. PROJECT Kings Island Turning Basin		10. SIZE AND TYPE OF BIT M.W.		
2. LOCATION (Coordinates or Station) See Plan		11. DATUM FOR ELEVATION SHOWN (TTM or MSD) M.W.		
3. DRILLING AGENCY Savannah District		12. MANUFACTURER'S DESIGNATION OF DRILL S...		
4. HOLE NO. (As shown on drawing title and file number) CS-3		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 6	UNDISTURBED
5. NAME OF DRILLER McDonald		14. TOTAL NUMBER CORE BOXES 0		
6. DIRECTION OF HOLE <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED _____ DEG. FROM VERT.		15. ELEVATION GROUND WATER In River		
7. THICKNESS OF OVERBURDEN		16. DATE HOLE	STARTED 19 Apr 1973	COMPLETED 19 Apr 1973
8. DEPTH DRILLED INTO ROCK		17. ELEVATION TOP OF HOLE 0.0 at M.W.		
9. TOTAL DEPTH OF HOLE 146.9'		18. TOTAL CORE RECOVERY FOR BORING 3		
		19. SIGNATURE OF INSPECTOR James McDonald		

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	0'				1	
	35'		SM - Gray & Green silty fine sand micaceous slight plasticity when Wet		5	
	40'				5	
	45'		cut out to depth with fish tail		6	
			SM - Gray & Green silty fine sand - micaceous		6	100/c. 95'
Soils field classified in accordance with the Unified Soil Classification System.				BLOWS PER FOOT: Number required to drive 1 1/2" ID splitspoon w/140 lb hammer falling 30".		