

NOTES ON WATER TABLE LEVELS, WATER RE- TURN, CHARACTER OF DRILLING, ETC.	SAMPLE DATA					ELEVATION	DEPTH	LOG	CLASSIFICATION AND PHYSICAL CONDITION.
	PENETRATION TOOL	TOOL SIZE	METHOD n - BLOWS	ADVANCE	RECOVERY				
Set NX casing to 77.0'	"		<u>15-24-31</u> 55			127	80	16	88.5': With greenish-gray limestone.
	"		<u>12-18-22</u> 40				85	17	
	"		<u>100</u> 1"			117	90	18	
	"		<u>100</u> 4"				95	19	
	"		<u>15-31-64</u> 95			107	100	20	
	"		<u>9-22-19</u> 41				105	21	
	"		<u>20-75-30</u> 105			97	110	22	
	"		<u>100</u> 6"					23	

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	PENETRATION TOOL	TOOL SIZE	METHOD n - BLOWS	ADVANCE	RECOVERY				
	"		14-31-41 72			87	120	24	
	"		19-24-85 109				125	25	
	"		41-27-48 52			77	130	26	
	"		28-54-65 119				135	27	133.5': Sandy, stiff.
	"		14-27-25 52			67	140	28	138.5-200.0': <u>SILTY, CLAYEY SAND</u> ; Black to dark gray, angular, medium-grained, reacts to HCL.
	"		100 5"				145	29	143.5': Slightly silty, sub-angular to angular, dense.
	"		100 3"			57	150	30	
	"		100 3"					31	

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	PENETRATION TOOL	TOOL SIZE	METHOD n-BLOWS	ADVANCE	RECOVERY				
	"		$\frac{100}{3}$			47	160	32	
	"		$\frac{100}{3}$				165	33	
*Bumping spoon caused low recov.	"		30-27-28 55			37	170	34	168.5': Fine-grained.
	"		25-32-42 74				175	35	
	"		$\frac{100}{4}$			27	180	36	178.5': Possibly more silt.
**Lost sample bumping spoon out of hole.	"		$\frac{100}{4}$				185	37	
	"		$\frac{100}{3}$			17	190	38	188.5': Light gray, very slightly silty, sub- angular to sub-round, calcareous.
	"		$\frac{100}{3}$					39	

BECHTEL

SHEET 1 OF 6

GEOLOGIC LOG OF DRILL HOLE

HOLE NO. 114

PROJECT Alvin W. Vogtle Site ANGLE FROM HORIZ 90° BEARING --
 LOCATION E 623,526.3 N 1,143,503.7 BEGUN 8-17-71 COMPLETED 8-19-71
 OVERBURDEN _____ DEPTH DRILLED INTO ROCK _____ TOTAL DEPTH OF HOLE 199.0
 ELEV. WATER TABLE _____ NO. CORE BOXES _____ NO. SAMPLES TAKEN 40
 CORE RECOVERY (%) _____ FEET _____ MODEL & MAKE OF DRILL Acker
 GROUND ELEV. 212.0 HOLE LOGGED BY P. Divjak DRILLER LETCO-Ivey

NOTES ON WATER TABLE LEVELS, WATER RE- TURN, CHARACTER OF DRILLING, ETC.	SAMPLE DATA					ELEVATION	DEPTH	LOG	CLASSIFICATION AND PHYSICAL CONDITION	
	PENETRATION TOOL	TOOL SIZE	METHOD n - BLOWS	ADVANCE	RECOVERY					SAMPLE
Set 80' of 3" casing	Split Spoon								0-2.0': <u>TOPSOIL - SILTY SAND</u> ; Dark tan, fine-grained.	
				2-3-4			5	1	2.0-13.0': <u>SAND</u> ; Red-brown, fine-grained, with some silt, loose. (SM)	
				7						
				6-6-10			10	2		
				16						
				10-12-22			15	3	13.0-18.0': <u>SAND</u> ; Brown, fine to medium-grained, with some silt, medium-dense to dense. (SM)	
				34						
		11-16-17			192	4	18.0-29.0': <u>SAND</u> ; Light brown, fine-grained, medium-dense to dense. (SP)			
		33								
		10-17-17			25	5				
		34								
		7-2-10			182	6	29.0-32.5': <u>SILTY CLAY</u> ; Tan with some fine-grained sand, medium-stiff, plastic (CL)			
		12								
		6-9-10				7	32.5'-36.5': <u>SILTY SAND</u> ; Brown, fine to medium-grained with little clay.			
		19								

Hole Size 3-7/8"

Hole No. 114

Site Unit #2

PROJECT Alvin W. Vogtle Site

HOLE NO 114

NOTES
ON WATER TABLE
LEVELS, WATER RE-
TURN, CHARACTER OF
DRILLING, ETC.

SAMPLE DATA

PENETRATION TOOL	TOOL SIZE	METHOD n - BLOWS	ADVANCE	RECOVERY
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ELEVATION

DEPTH

LOG

CLASSIFICATION AND
PHYSICAL CONDITION

SAMPLE

PENETRATION TOOL	TOOL SIZE	METHOD n - BLOWS	ADVANCE	RECOVERY	ELEVATION	DEPTH	LOG	CLASSIFICATION AND PHYSICAL CONDITION
"		6-8-11 19			172	40	8	(SM/SC) 36.5-42.5': <u>SILTY SAND</u> ; Brown, fine-grained, med- ium dense.
"		14-21-32 53				45	9	(SM) 42.5-52.5': <u>SAND</u> ; Brown & tan, fine-grained, with little silt, dense.
"		13-16-17 33			162	50	10	(SP/SM) 52.5-59.0': <u>SILTY SAND</u> ; Black & brown, fine to medium-grained with shells loose to medium dense, non- calcareous, (looks organic)
"		12-10-8 18				55	11	(SM/SP) 59.0-63.0': <u>SILTY SAND</u> ; Brown, tan & black, mottled fine to medium-grained, loose. (SM/SP)
"		6-6-8 14			152	60	12	(SP) 63.0-69.0': <u>SAND</u> ; Tan, medium-grained, not cal- careous, medium-dense.
"		9-8-10 18				65	13	(SP) 69.0-75.0': <u>SANDY SILT & SAND</u> ; Brown (silt), tan (sand), fine-grained, with shells, layered, loose. (Brown, non-calcareous, tan is calcareous). (ML/SM)
"		3-3-9 12			142	70	14	
"		100 2"					15	

◀ 69.0': 100%
water loss.

Hole Size 3-7/8"

Hole No 114

Site Unit #2

NOTES ON WATER TABLE LEVELS, WATER RE- TURN, CHARACTER OF DRILLING, ETC.	SAMPLE DATA					ELEVATION	DEPTH	LOG	CLASSIFICATION AND PHYSICAL CONDITION.
	PENETRATION TOOL	TOOL SIZE	METHOD n - BLOWS	ADVANCE	RECOVERY				
80.0' changed to 2-7/8", set 80' NX casing	Split Spoon		100			132	80	16	75.0-77.5': <u>SILTY SAND</u> ; Brown, fine-grained, med- ium-dense. (SM)
			10'						
Drills hard 87.5- 88.9, possibly limestone layers.	"		19-21-25				85	17	77.5-113.0': <u>SILTY CLAY</u> ; Gray-green, with some shells & little fine- grained sand, calcareous, stiff to very stiff. (CL)
			46						
	"		83			122	90	18	88.5': Very stiff, shell or limestone fragments in bit.
			3'						
	"		11-43-54				95	19	
			97						
	"		100			112	100	20	
			1/2"						
	"		110				105	21	
			3'						
Out of hard drill at 113.0'	"		100			102	110	22	107.5': Large calcareous fragments.
			2"						
	"		13-11-21					23	113.0-119.0': <u>CLAYEY SILT</u> (ML)
			32						

NOTES ON WATER TABLE LEVELS, WATER RE- TURN, CHARACTER OF DRILLING, ETC.	SAMPLE DATA					ELEVATION	DEPTH	LOG	CLASSIFICATION AND PHYSICAL CONDITION.		
	PENETRATION TOOL	TOOL SIZE	METHOD n - BLOWS	ADVANCE	RECOVERY					SAMPLE	
119.0': Hard drilling	Split Spoon		100			92	120	24	113.0-119.0': (con't) <u>CLAYEY SILT</u> ; Tan & gray, with some fine-grained sand & trace of shells, medium-stiff, slightly plastic, calcareous. (ML)		
			10"								119.0-140.0': <u>CLAYEY SILT</u> ; Gray-green, with little fine-grained sand, trace to no shells, very stiff, calcareous. (ML/CL)
			100						125	25	
			8 ^h								
Sample 28: HCl Soluble Test. (2.5%)	"		49-33-34			82	130	26			
			67								
			19-21-38						135	27	
Sample 29: HCl Soluble Test (0.6%)	"		59			72	140	28	114.0-143.5': <u>SILTY, CLAYEY, SAND</u> ; Dark gray-green, fine-grained, some clay, calcareous, dense. (SC)		
			+100								
Sample 30: HCl Soluble Test (1.5%)	"		31-36-50			145	145	29			
			86								
			100			62	150	30			
			2"								

PROJECT Alvin W. Vogtle Site

SHEET 5 OF 6

HOLE NO 114

NOTES ON WATER TABLE LEVELS, WATER RE- TURN, CHARACTER OF DRILLING, ETC.	SAMPLE DATA					ELEVATION	DEPTH	LOG	CLASSIFICATION AND PHYSICAL CONDITION.
	PENETRATION TOOL	TOOL SIZE	METHOD n - BLOWS	ADVANCE	RECOVERY				
Sample 31: HCl Soluble Test (2.3%)	"		$\frac{100}{3}$				115.0	31	115.0-162.0': <u>SAND</u> ; Gray, fine-grained, with some to little silt, calcareous, very dense. (SM/SP)
Sample 32: HCl Soluble Test (1.9%)	"		$\frac{100}{1}$			52	160	32	(SM/SP)
Sample 33: HCl Soluble Test (2.3%)	"		$\frac{100}{2}$				165	33	162.0-169.0': <u>SAND</u> ; Gray, fine-grained, with a little silt, calcareous, dense. (SP)
169.0': Drills easier.	"		$\frac{26-24-52}{76}$			42	170	34	169.0-174.5': <u>SILTY SAND</u> ; Dark gray-green, fine- grained, with trace of clay & what appears to be specks of decayed wood. Calcareous dense. (SM)
	"		$\frac{35-45-55}{100}$				175	35	169.0-199.0': <u>SAND</u> ; Dark gray, fine-grained, with some silt, calcareous, dense.
	"		110			32	180	36	178.5': Sub-angular to sub- round. (SM/SP)
	"		100				185	37	183.5': With fine-grained clay.
	"		$\frac{100}{7}$			22	190	38	(SM/SP)
	"		$\frac{100}{2}$					39	

Hole Size 2-7/8"

Hole No 114

Site Unit #2

PROJECT Alvin W. Vogtle Site

HOLE NO 114

NOTES ON WATER TABLE LEVELS, WATER RE- TURN, CHARACTER OF DRILLING, ETC.	SAMPLE DATA					ELEVATION	DEPTH	LOG	CLASSIFICATION AND PHYSICAL CONDITION
	PENETRATION TOOL	TOOL SIZE	METHOD n - BLOWS	ADVANCE	RECOVERY				
	"		100			12	200	40	(SM/SP)
									BOH 199.0'

Hole Size 2-7/8"

Hole No 114
Site Unit #2

BECHTEL

SHEET 1 OF 6

GEOLOGIC LOG OF DRILL HOLE

HOLE NO. 138A

PROJECT Alvin W. Vogtle Site ANGLE FROM HORIZ 90° BEARING --
 LOCATION N 1,142,966.0 E 622,509.4 BEGUN 9-17-71 COMPLETED 10-5-71
 OVERBURDEN _____ DEPTH DRILLED INTO ROCK _____ TOTAL DEPTH OF HOLE 203.0
 ELEV. WATER TABLE _____ NO. CORE BOXES _____ NO. SAMPLES TAKEN 32
 CORE RECOVERY (%) _____ FEET _____ MODEL & MAKE OF DRILL Mahew
 GROUND ELEV. 224.9 HOLE LOGGED BY N. Campagna DRILLER LETICO-Strohecker

NOTES ON WATER TABLE LEVELS, WATER RE- TURN, CHARACTER OF DRILLING, ETC.	SAMPLE DATA					ELEVATION	DEPTH	LOG	CLASSIFICATION AND PHYSICAL CONDITION
	PENETRATION TOOL	TOOL SIZE	METHOD n - BLOWS	ADVANCE	RECOVERY				
Shelby Tube sample to 96.0'.						225			
	Shelby 3"		24	20			5	UD 1	4.0': <u>SILTY SAND</u> ; Red-brown, medium to fine-grained.
	"	"	24	19	215		10	UD 2	9.0': Siltier
	"	"	24	22			15	UD 3	
	"	"	24	24	205		20	UD 4	19.0': <u>SAND</u> ; Yellow-brown, coarse to medium-grained, some silt.
	"	"	24	22			25	UD 5	24.0': <u>SILTY CLAY</u> ; Yellow- brown.
	"	"	23	23	195		30	UD 6	29.0': <u>SILTY SAND</u> ; Yellow- brown, medium to fine- grained, with trace of cla
	"	"	24	20			35	UD 7	34.0': <u>SILTY CLAY</u> ; Yellow- brown, some fine-grained sand, top. Bottom; coarse to fine grained <u>SAND</u> .

Hole Size 6"

Hole No. 138A

Site Units 3 & 4

NOTES ON WATER TABLE LEVELS, WATER RE- TURN, CHARACTER OF DRILLING, ETC.	SAMPLE DATA					ELEVATION	DEPTH	LOG	CLASSIFICATION AND PHYSICAL CONDITION.
	PENETRATION TOOL	TOOL SIZE	METHOD n - BLOWS	ADVANCE	RECOVERY				
	Shelby	3"						7	
	"	"						8	
	"	"	24	24	185	40	UD	8	39.0': <u>SANDY, SILT CLAY</u> ; Yellow-brown, fine-grained.
46.0': Lost sample.	"	"	24	21		45	UD	9	44.0': <u>SILTY SAND</u> ; Tan & yellow-brown, fine- grained, with some clay.
	"	"	24	24	175	50	UD	10	49.0': <u>SILTY CLAY</u> ; Tan & yellow-brown, with some medium-grained sand.
55.0': Lost bottom 3".	"	"	14	10		55	UD	11	54.0': <u>SAND</u> ; White, medium- grained, trace of silt.
60.0': Lost bottom 2-1/2".	"	"	18	13	165	60	UD	12	
	"	"	24	24		65	UD	13	64.0': <u>SANDY, SILTY CLAY</u> ; White with shells.
	"	"	24	24	155	70	UD	14	69.0': Same, intermixed with shell fragments.
	"	"	22	19		75	UD	15	74.0': <u>SAND</u> ; White, coarse to medium-grained, some silt.

Hole Size 6"

Hole No 138A

Site Units 3 & 4

NOTES ON WATER TABLE LEVELS, WATER RE- TURN, CHARACTER OF DRILLING, ETC.	SAMPLE DATA					ELEVATION	DEPTH	LOG	CLASSIFICATION AND PHYSICAL CONDITION.	
	PENETRATION TOOL	TOOL SIZE	METHOD n - BLOWS	ADVANCE	RECOVERY					SAMPLE
Samples 1-17 made with 4" Denison	Denison 4"		24	13		145	80		94.5-154.0': <u>CLAY</u> ; Greenish- gray, silty, hard nodules, calcareous. 96.5': Silty, shell fragment 98.5': Same. 102.5': Clayey-silt, gray, with shell fragments.	
			24	24		125	109			* 2
			24	24		105	119			* 3

Hole Size 6"

Hole No 138A
Site Units 3 & 4

NOTES ON WATER TABLE LEVELS, WATER RE- TURN, CHARACTER OF DRILLING, ETC.	SAMPLE DATA					ELEVATION	DEPTH	LOG	CLASSIFICATION AND PHYSICAL CONDITION.
	PENETRATION TOOL	TOOL SIZE	METHOD N - BLOWS	ADVANCE	RECOVERY				
	"	4"		24	18	105	120	* 4	117.0': Same.
	"	"		24	24	125		* 5	125.0': Some fine sand.
	"	"		24	14	135		* 6	133.0': Clayey-silt, gray, hard.
	"	"		24	3	138.0'		* 7	138.0': Same.
	"	"		24	24	85	140	* 8	139.0-146.5': Silty-clay, gray, cemented nodules.
	"	"		24	24			* 9	
	"	"		24	15	145		* 10	144.0': Shell fragments.
	"	"		24	24	75	150	* 11	146.5': Clayey-silt, gray, with shell fragments.
									149.5-154.0': Silty-clay, gray.

NOTES ON WATER TABLE LEVELS, WATER RE- TURN, CHARACTER OF DRILLING, ETC.	SAMPLE DATA					ELEVATION	DEPTH	LOG	CLASSIFICATION AND PHYSICAL CONDITION.
	PENETRATION TOOL	TOOL SIZE	METHOD n - BLOWS	ADVANCE	RECOVERY				
	"	"	24	19	65	160	*	12	154.0-187.0': <u>SAND</u> ; Gray, fine-grained, very dense.
	"	"	24	24	55	170	*	13	
	"	"	24	23	45	180	*	14	
	"	"	24	22	35	190	*	15	187.0-203.0': Sand, very silty.

PROJECT Alvin W. Vogtle Site

SHEET 6 OF 6

HOLE NO 138A

NOTES ON WATER TABLE LEVELS, WATER RE- TURN, CHARACTER OF DRILLING, ETC.	SAMPLE DATA					ELEVATION	DEPTH	LOG	CLASSIFICATION AND PHYSICAL CONDITION.
	PENETRATION TOOL	TOOL SIZE	METHOD n - BLOWS	ADVANCE	RECOVERY				
*16: No recovery (199.0-201.0')	"	"		24	0	25	200	* 16	-
	"	"		24	18				
Grouted hole up through clay.									BOH 203.0'

Hole Size 6"

Hole No 138A

Site Units 3 & 4

BECHTEL

SHEET 1 OF 4

GEOLOGIC LOG OF DRILL HOLE

HOLE NO. 202

PROJECT Alvin W. Vogtle Site ANGLE FROM HORIZ 90° BEARING _____

LOCATION N 1,142,710 E 623,380 BEGUN 1-4-72 COMPLETED 1-10-72

OVERBURDEN _____ DEPTH DRILLED INTO ROCK _____ TOTAL DEPTH OF HOLE 155.7 ft.

ELEV. WATER TABLE _____ NO. CORE BOXES _____ NO. SAMPLES TAKEN 24

CORE RECOVERY (%) _____ FEET _____ MODEL & MAKE OF DRILL Acker Mark II

GROUND ELEV. 215.5 ft HOLE LOGGED BY N. Campagna DRILLER Alexander

NOTES ON WATER TABLE LEVELS, WATER RE- TURN, CHARACTER OF DRILLING, ETC.	SAMPLE DATA					ELEVATION	DEPTH	LOG	CLASSIFICATION AND PHYSICAL CONDITION	
	PENETRATION TOOL	TOOL SIZE	METHOD n - BLOWS	ADVANCE	RECOVERY					SAMPLE
Augered dry hole to 50'. 4" Flight Auger. Driven with 140 lb. hammer.						216				
	Split Spoon 2"		1-1-2 3	18"			5	1	SAND: Red-brown, fine, very loose.	
	Shelby 3"		push	24"	24"			2	Loose.	
	Split Spoon 2"		3-4-5 9	18"		206	10			
	"	"	8-10-10 20	18"			15	3	Becomes firm with some silt.	
	Shelby 3"			24"	24"	196	20	4	Changes to medium fine.	
	Split Spoon 2"		8-11-17 28	18"			25	5	SAND: Mottled red-brown and tan, medium fine, trace clay, firm.	
Shelby 3"		push	20"	20"	186	30	6			
Split Spoon 2"		7-10-12 22	24"	24"			7	SAND: Tan, silty, firm, fine, with clay seams with black and white inclusions.		

Hole Size 4"

Hole No. 202

Site Em. Cooling Tower

NOTES ON WATER TABLE LEVELS, WATER RE- TURN, CHARACTER OF DRILLING, ETC.	SAMPLE DATA					ELEVATION	DEPTH	LOG	CLASSIFICATION AND PHYSICAL CONDITION.
	PENETRATION TOOL	TOOL SIZE	METHOD n - BLOWS	ADVANCE	RECOVERY				
	Shelby	3"	push	24"	24"	176	40	8	
								8A	
No recovery. Augered to 50' but could only get sampler to 44' in dry hole. Switched to mud.	Split Spoon	2"	<u>5-8-11</u> 19	18"	0		45	9	
	Shelby	3"	push	24"	0	166	50	10	
No recovery.	"	3"	push	13"	0				
Reamed with 7-7/8" Ø tri-cone roller bit. Hard drill- ing 57' to 58'.	Split Spoon	2"	<u>5-9-12</u> 21	18"			55		
	"	2"	<u>16-37-40</u> 77	18"	4"	156	60	11	SAND: Yellow, fine to medium, very dense.
	"	"	<u>5-11-13</u> 24	18"	0				SAND: Silty, medium to fine, firm, mottled red and tan; some clay in red zone.
Stopped hole at 68' on 1-5-72. Tried sawtooth cutter at 69', too hard to cut. Used carbide cutter at 69.5'. Hit shells about 68.8'.	Shelby	2"	push	9"	0		65	12	
	Dennison	4"	cored	24"	24"	146	70	13	SHELLS: Light yellow, sandy clay matrix.

PROJECT Alvin W. Vogtle Site

SHEET 3 OF 4

HOLE NO. 202

NOTES ON WATER TABLE LEVELS, WATER RE- TURN, CHARACTER OF DRILLING, ETC.	SAMPLE DATA					ELEVATION	DEPTH	LOG	CLASSIFICATION AND PHYSICAL CONDITION.
	PENETRATION TOOL	TOOL SIZE	METHOD n - BLOWS	ADVANCE	RECOVERY				
50% water loss at 77'.	Split spoon	2"	100/			136	80	14	SHELLS: Cemented with silty calcareous sand.
100% water loss at 80'.			8"						
1-6-72 stopped at 80'.	"	"	100/	5"		126	90	15	
Out of shells at 83'.			5"						
Set 6 inch casing.								16	CLAY: Very hard, gray green cemented silty.
Grouted hole to 94'.	Dennison	4"	cored	18"	16"			17	
Stopped at 103.5' on 1-7-72.								18	
6" sample in shoe.	"	"	cored	24"	24"	106	110		CLAY: Hard gray-green silty cemented.

Hole Size 4"

Hole No 202

Site Em. Cooling Tower

NOTES ON WATER TABLE LEVELS, WATER RE- TURN, CHARACTER OF DRILLING, ETC.	SAMPLE DATA					ELEVATION	DEPTH	LOG	CLASSIFICATION AND PHYSICAL CONDITION.
	PENETRATION TOOL	TOOL SIZE	METHOD R - BLOWS	ADVANCE	RECOVERY				
	Dennison	4"	cored	24"	24"	96	120	19	Not cemented below.
Top 9" slipped out of liner but was replaced and sealed.	"	4"	cored	24"	24"	86	125	20	
	"	"	cored	24"	24"	76	130	21	
	"	"	cored	24"	20"	66	135	22	
Drilling easier at 143'.									Numerous shells at bottom, dark green clayey sand in shoe from 146.5'.
Drilling much easier at 148'.	Split Spoon	2"	100/7"	13"	66	140	145	23	
Stopped at 150' on 1-9-72.	"	"	100/8"	14"	66	150	150	24	
									SAND: Gray to black, silty, fine.
									Bottom of Hole at 155.7'

BECHTEL

SHEET 1 OF 4

GEOLOGIC LOG OF DRILL HOLE

HOLE NO. 203

PROJECT Alvin W. Vogtle Site ANGLE FROM HORIZ 90° BEARING _____
 LOCATION N 1,142,730 E 623,650 BEGUN 1-5-72 COMPLETED 1-8-72
 OVERBURDEN _____ DEPTH DRILLED INTO ROCK _____ TOTAL DEPTH OF HOLE 155 ft.
 ELEV. WATER TABLE _____ NO. CORE BOXES _____ NO. SAMPLES TAKEN 26
 CORE RECOVERY (%) _____ FEET _____ MODEL & MAKE OF DRILL Acker Mark II
 GROUND ELEV. 210.9 ft HOLE LOGGED BY V. Campagna DRILLER Cleo Ivey

NOTES ON WATER TABLE LEVELS, WATER RE- TURN, CHARACTER OF DRILLING, ETC.	SAMPLE DATA					ELEVATION	DEPTH	LOG	CLASSIFICATION AND PHYSICAL CONDITION	
	PENETRATION TOOL	TOOL SIZE	METHOD n - BLOWS	ADVANCE	RECOVERY					SAMPLE
Drilled with 7-7/8" tri-cone to 81.5'.						211			TOPSOIL	
	Split Spoon	2"	3-3-5 8	18"			5	1	SAND: Red-brown, fine.	
	Shelby	3"	push	24' 19"		201	10	UD 1	Silty.	
	Split Spoon	2"	8-12-14 26	18"			15	2	SAND: Red-brown, silty fine and silty clay.	
	Shelby	3"	push	12' 15"		191	20	UD 2		
	Split Spoon	2"	10-17-19 36	18"			25	3	SAND: Mottled red and tan, medium.	
	Shelby	3"	push	14' 17"			30	UD 3		
	"		push	18' 18"	181			UD 4		
	Split Spoon	2"	6-8-13 21	18"						

Hole Size 8"

Hole No. 203
Site Railroad Entrance

NOTES ON WATER TABLE LEVELS, WATER RE- TURN, CHARACTER OF DRILLING, ETC.	SAMPLE DATA				ELEVATION	DEPTH	LOG	CLASSIFICATION AND PHYSICAL CONDITION.
	PENETRATION TOOL	TOOL SIZE	METHOD n - BLOWS	ADVANCE				
	Split Spoon	2"	6-8-13 21	18"			4	CLAY: Tan, sandy.
	Shelby	3"	push	24"	171	40	UD 5	SAND: Mottled, red and tan, medium-fine, trace of clay.
	Split Spoon	2"	34	18"		45	5	SAND: Mottled tan and red medium fine; bottom 2" black and 2" white sand.
	Shelby	3"	push	20"			UD 6	
No recovery 49.7 - 50.7'.	"	"	push	12"	161	50	6	SAND: Tan, medium, with black streaks.
	Split Spoon	2"	11-16-35 51	18"		55	6	
Stopped at 55' on 1-5-72.	Shelby	3"	push	24"	151	60	UD 7	CLAY: Mottled tan and gray, sandy.
	Split Spoon	2"	8-14-21 35	18"		65	7	SAND: Mottled tan and gray silty fine.
	Shelby	3"	push	24"			UD 8	Same as above.
Shells at 73.0' to 73.5'.					141	70		CLAY: Yellow-green silty with brown stains.

NOTES ON WATER TABLE LEVELS, WATER RE- TURN, CHARACTER OF DRILLING, ETC.	SAMPLE DATA				ELEVATION	DEPTH	LOG	CLASSIFICATION AND PHYSICAL CONDITION.	
	PENETRATION TOOL	TOOL SIZE	METHOD n - BLOWS	ADVANCE RECOVERY					SAMPLE
Set 6" I.D. casing to 81'. Drilled with 5-7/8" tri-cone from 81.5'-155.0'.	Split Spoon	2"	8-12-15 27	18"	131	80	8	CLAY: Hard, gray-green, silty	
	Dennison 4"	cored	24"	24"	121	90	D 1		
	"	"	cored	24"	24"	111	100	D 2	With shells.
	"	"	cored	24"	24"	105	105	D 3	Very hard, with cemented nodules.
	"	"	cored	24"	18"	101	110	D 4	
	"	"	cored	24"	21"			D 5	

BECHTEL

SHEET 1 OF 5

GEOLOGIC LOG OF DRILL HOLE

PROJECT Alvin W. Vogtle Site ANGLE FROM HORIZ 90° BEARING _____
 LOCATION N 1,142,710 E 623,910 BEGUN 1-9-72 COMPLETED 1-17-72
 OVERBURDEN _____ DEPTH DRILLED INTO ROCK _____ TOTAL DEPTH OF HOLE 155 ft.
 ELEV. WATER TABLE _____ NO. CORE BOXES _____ NO. SAMPLES TAKEN 24
 CORE RECOVERY (%) _____ FEET _____ MODEL & MAKE OF DRILL Acker Mark II
 GROUND ELEV. 212.8 ft. HOLE LOGGED BY N. Campagna DRILLER Cleo Ivey

NOTES ON WATER TABLE LEVELS, WATER RE- TURN, CHARACTER OF DRILLING, ETC.	SAMPLE DATA					ELEVATION	DEPTH	LOG	CLASSIFICATION AND PHYSICAL CONDITION	
	PENETRATION TOOL	TOOL SIZE	METHOD n - BLOWS	ADVANCE	RECOVERY					SAMPLE
						213				
	Split Spoon	2"	<u>3-4-4</u> 8	18"			5	1	SAND: Red-brown, loose.	
	Shelby	3"	push	24"	18"	203	10	1	Silty, fine.	
	Split Spoon	2"	<u>9-11-14</u> 25	18"			15	2	Medium fine, firm.	
	Shelby	3"	push	16"	16"			TD 2	Silty, fine.	
	"	"	push	12"	12"	193	20	TD 3	Silty, medium fine.	
	Split Spoon	2"	<u>19-22-22</u> 44	18"			25	3	Red-brown, changing to tan, medium fine, dense.	
	Shelby	3"	push	18"	17"			TD 4	Silty, with some clay.	
						183	30			

Hole Size 6"

Hole No. 204
Site Em. Cooling Tower

NOTES ON WATER TABLE LEVELS, WATER RE- TURN, CHARACTER OF DRILLING, ETC.	SAMPLE DATA				ELEVATION	DEPTH	LOG	CLASSIFICATION AND PHYSICAL CONDITION.
	PENETRATION TOOL	TOOL SIZE	METHOD n - BLOWS	ADVANCE RECOVERY				
<p>Stopped at 48' on 1-9-72.</p> <p>Sample in shoe only. Too much resistance with sawtooth 1" be- hind shoe; cored 30" w/ carbide bit. No recovery. Tried sawtooth, but no good.</p> <p>Note: S.S. sample went to 3' below bottom i.e., 70' to 73'; water loss at that depth.</p> <p>UD-7 tube out of round after pushing. Lost water at 70'. Hole caving 50' - 60'.</p>	Split Spoon	2"	8-11-17 28	18"	173	40	4	<p>CLAY: Tan, very sandy, very stiff. SAND: Tan, medium fine with trace clay.</p>
	Shelby	3"	push	18"		5	UD	
	Split Spoon	2"	8-11-17 28	18"	163	45	5	<p>With black and white streaks.</p>
	Shelby	3"	push	6" 0		50	5	
	Dennison	4"	cored	8" 4"	153	50	5	<p>CLAY: Tan and gray, very sandy, hard.</p>
	"	"	cored	30" 0		55	5	
	Split Spoon	2"	25-40-50 90	18"	143	55	5	<p>SILT: Gray, clayey with tan fine sand, laminations and one piece of shell, very stiff.</p>
	Shelby	3"	push	24" 13"		60	6	
	Split Spoon	2"	7-8-13 21	18"	143	65	6	<p>CLAY: Light green plastic, silty with 1" of shell, firm.</p>
	Shelby	3"	push	24" 24"		70	7	
Split Spoon	2"	5-3-2 5	18"		70	7		

Hole Size 6"

Hole No 204
Site Em. Cooling Tower

NOTES ON WATER TABLE LEVELS, WATER RE- TURN, CHARACTER OF DRILLING, ETC.	SAMPLE DATA				ELEVATION	DEPTH	LOG	CLASSIFICATION AND PHYSICAL CONDITION.
	PENETRATION TOOL	TOOL SIZE	METHOD n - BLOWS	ADVANCE RECOVERY				
Stopped at 80' on 1-10-72. Set 6" I.D. casing to 80', 1-11-72.					133	80		
Used worn carbide bit.	Dennison	4"	cored	24"15"		85	D1	CLAY: Very hard, gray- green silty.
Bottom 6" left in hole. Top 14" slipped out of liner.	"	"	cored	24"	123	90	D2	Hard, silty with shells. (Disturbed removing from barrel).
	"	"	cored	24"21"		95	D3	
	"	"	cored	24"24"	113	100	D4	Very hard, with shells.
	"	"	cored	24"18"	103	110	D5	CLAY: Very hard, light gray green, silty with cemente nodules.

PROJECT Alvin W. Vogtle Site

SHEET 4 OF 5

HOLE NO 204

NOTES
ON WATER TABLE
LEVELS, WATER RE-
TURN, CHARACTER OF
DRILLING, ETC.

SAMPLE DATA

PENETRATION TOOL	TOOL SIZE	METHOD n - BLOWS	ADVANCE	RECOVERY
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ELEVATION

DEPTH

LOG

CLASSIFICATION AND
PHYSICAL CONDITION.

SAMPLE

Dennison 4" cored 24" 24"

" " cored 24" 23"

" " cored 24" 14"

Split Spoon 2" 16-18-25
43 18"

93

120

125

83

130

135

73

140

145

63

150

n
6

n
7

D
8

8

Stopped at 142'
on 1-13-72.

CLAY: Dark green, sandy and
SAND, clayey, medium fine.

Hole Size 6"

Hole No 204

Site Em. Cooling Tower

PROJECT Alvin W. Vogtle Site

SHEET 5 OF 5

HOLE NO 204

NOTES ON WATER TABLE LEVELS, WATER RE- TURN, CHARACTER OF DRILLING, ETC.	SAMPLE DATA					ELEVATION	DEPTH	LOG	CLASSIFICATION AND PHYSICAL CONDITION.
	PENETRATION TOOL	TOOL SIZE	METHOD n - BLOWS	ADVANCE	RECOVERY				
	Split Spoon	2"	10-30-45 75	18"		53	160	9	SAND: Dark gray, silty, fine. Bottom of Hole 155'. Hole grouted to 80', casing pulled.

Hole Size 6"

Hole No 204
Site Em. Cooling Tow

BECHTEL

SHEET 1 OF 4
HOLE NO. 216

GEOLOGIC LOG OF DRILL HOLE

PROJECT Alvin W. Vogtle Site ANGLE FROM HORIZ 90° BEARING _____
 LOCATION N 1,142,930 E 623,650 BEGUN 1-18-72 COMPLETED 1-20-72
 OVERBURDEN _____ DEPTH DRILLED INTO ROCK _____ TOTAL DEPTH OF HOLE 142.5 ft.
 ELEV. WATER TABLE _____ NO. CORE BOXES _____ NO. SAMPLES TAKEN 24
 CORE RECOVERY (%) _____ FEET _____ MODEL & MAKE OF DRILL Acker Mark II
 GROUND ELEV. 210.6 ft. HOLE LOGGED BY N. Campagna DRILLER LETICO-Ivey

NOTES ON WATER TABLE LEVELS, WATER RE- TURN, CHARACTER OF DRILLING, ETC.	SAMPLE DATA					ELEVATION	DEPTH	LOG	CLASSIFICATION AND PHYSICAL CONDITION
	PENETRATION TOOL	TOOL SIZE	METHOD n - BLOWS	ADVANCE	RECOVERY				
						211			
	Split Spoon	2"	2-3-3 6	18"			5	1	SAND: Red-brown, medium to fine, loose.
	Shelby 3"		push	24' 24"		201	10	UD 1	Silty.
	Split Spoon	2"	6-7-9 16	18"			15	2	No silt, firm.
	Shelby 3"		push	14' 16"		191	20	UD 2	
	Split Spoon	2"	7-7-8 15	18"			25	3	Mottled tan and gray, medium to fine, with 1" tan clay layers.
	Shelby 3"		push	16" 14"				UD 3	Mottled tan and gray, fine
	"	"	push	23" 14"		181	30	UD 4	

Hole Size 6"

Hole No. 216
Site Auxillary Bldg.

NOTES ON WATER TABLE LEVELS, WATER RE- TURN, CHARACTER OF DRILLING, ETC.	SAMPLE DATA					ELEVATION	DEPTH	LOG	CLASSIFICATION AND PHYSICAL CONDITION.
	PENETRATION TOOL	TOOL SIZE	METHOD n - BLOWS	ADVANCE	RECOVERY				
No recovery. No recovery. Sample washed around perimeter, badly disturbed.	Split Spoon	2"	6-5-5	18"		171	40	4	CLAY: Mottled tan and gray, sandy, with black and white streaks, stiff.
	Shelby	3"	push	16"	15"			5	Mottled tan and red-brown, medium to fine.
	"	"	push	21"	21"			6	Some silt and black streaks.
	Split Spoon	2"	24-24-35	59	18"			5	Mottled tan and gray, medium with black streaks, very dense.
	Shelby	3"	push	4"	0				
	Dennison	4"	cored	24"	0	161	50		Tan with black streaks, medium to fine.
	"	"	cored	24"	18"			7	Some silt.
	"	"	cored	24"	4"			8	
	Split Spoon	2"	5-7-0	16	18"	151	60	6	SAND: Tan, clayey, to sandy clay, firm.
	Shelby	3"	push	22"	22"			9	
Split Spoon	2"	100	1/2"		141	70	7	SHELLS: In silty sand matrix.	

Stopped at 62' on
1-18-72.

PROJECT Alvin W. Vogtle Site

SHEET 3 OF 4

HOLE NO 216

NOTES ON WATER TABLE LEVELS, WATER RE- TURN, CHARACTER OF DRILLING, ETC.	SAMPLE DATA					ELEVATION	DEPTH	LOG	CLASSIFICATION AND PHYSICAL CONDITION.
	PENETRATION TOOL	TOOL SIZE	METHOD P-BLOWS	ADVANCE	RECOVERY				
Set 6" casing to 80'.	Dennison	4"	cored	24"	2"	131	80	D1	CLAY: Very hard, gray-green, silty, with shells.
	"	"	cored	24"	2"		85	D2	
	"	"	cored	24"	24"	121	90	D3	Hard.
	"	"	cored	24"	22"	111	100	D4	Very hard, light gray-green
	"	"	cored	24"	24"	101	110	D5	No shells.

Hole Size 8" - 6"

Hole No 216

Site Auxilliary B 1c

NOTES ON WATER TABLE LEVELS, WATER RE- TURN, CHARACTER OF DRILLING, ETC.	SAMPLE DATA					ELEVATION	DEPTH	LOG	CLASSIFICATION AND PHYSICAL CONDITION.
	PENETRATION TOOL	TOOL SIZE	METHOD n - BLOWS	ADVANCE	RECOVERY				
Top 15" slid out of liner when removing from barrel.	Dennison	4"	cored	24"	19"	91	120	[Hatched pattern]	Hard, light gray-green, silty.
	"	"	cored	24"	20"	81	130		
	Split		31-40-60			71	140	[Dotted pattern]	SAND: Black and gray, silty, fine, less silt in gray. Bottom of Hole 142.5'.
	Spoon	2"	100	18"			145		

GEOLOGIC LOG OF DRILL HOLE

HOLE NO. 226

PROJECT Alvin W. Vogtle Site ANGLE FROM HORIZ 90° BEARING _____
 LOCATION N 1,142,940 E 625,070 BEGUN 2-5-72 COMPLETED 2-18-72
 OVERBURDEN _____ DEPTH DRILLED INTO ROCK _____ TOTAL DEPTH OF HOLE 162
 ELEV. WATER TABLE _____ NO. CORE BOXES _____ NO. SAMPLES TAKEN 26
 CORE RECOVERY (%) _____ FEET _____ MODEL & MAKE OF DRILL S & H
 GROUND ELEV. 218.6 feet HOLE LOGGED BY W. Kubba DRILLER S & H
 Mason Sexton

NOTES ON WATER TABLE LEVELS, WATER RE- TURN, CHARACTER OF DRILLING, ETC.	SAMPLE DATA					ELEVATION	DEPTH	LOG	CLASSIFICATION AND PHYSICAL CONDITION
	PENETRATION TOOL	TOOL SIZE	METHOD n - BLOWS	ADVANCE	RECOVERY				
Operation down most of day, pump problems and adjusting mast.	Split Spoon	2"	0-0-3 3	18"		219	5	1* UD*	SAND: Red-brown, fine Fine to medium
	Shelby	3"		24"	23"			1'	
Lost sample U.D. 2*	Split Spoon	2"	7-12-14 26	18"		209	10	2* UD*	
	Shelby Shelby	3" 3"	250	24" 18"	0 12"	199	20	1 UD	SAND: Red-brown, silty, little clay, medium to coa
Dropped iron bar in hole, moved 3 feet away and started new hole. Asterisks in- dicate samples from initial hole (aborted Bottom of initial hole 20'.	Split Spoon	2"	6-12-14 28	18"			25	1 UD	
	Shelby	3"	400	12"	12"	189	30	2 UD	TOP: Red-brown. BOTTOM: Tan, clayey.
	Split Spoon	2"	8-13-17 30	18"				2	Light brown, clayey, fine with silt.

Hole Size 6-7/8"

Hole No. 226
 Site Unit #1 Cooling Tower

NOTES ON WATER TABLE LEVELS, WATER RE- TURN, CHARACTER OF DRILLING, ETC.	SAMPLE DATA					ELEVATION	DEPTH	LOG	CLASSIFICATION AND PHYSICAL CONDITION.
	PENETRATION TOOL	TOOL SIZE	METHOD n - BLOWS	ADVANCE	RECOVERY				

	Shelby 3"	3"	100	24'19"		179	40	UD 3	<p><u>CLAY</u>: Tan to red-brown sand clay at top, tan, clayey sand with silt, medium at bottom.</p> <p><u>SAND</u>: Red mottled, white sand, little silt, medium.</p>
	Split Spoon	2"	7-11-10 21	18"			45	3 UD 4	
	Shelby 3"	3"	no sample	3" 3"				UD 5	Coarse, little silt from 48' - 48' 3".
Recovery in the 6" head only. Stopped at 2-8-72 at 50'.	Denison 3"	3"	no sample	24'0"		169	50	UD 6	<p><u>SAND</u>: Light tan, mottled with brown silty sand, medium to coarse, some clay, dense.</p>
	" "	" "		18'10"			55	UD 7	
Stopped on 2-9-72 at 60'.	" "	" "	no sample	24'3"		159	60	UD 8	White to tan, silty, coarse.
Sample UD-8 was "soopy".	" "	4"		24'21"				UD 4	<p>Same as above.</p>
	Split Spoon	2"	14-27-44 71	18"			65	UD 9	
	Denison 4"	4"		24'16"				UD 5	<p><u>CLAY</u>: Light tan, sandy, stiff.</p>
Stopped on 2-10-72 at 70'.						149	70		<p><u>SAND</u>: Light tan, coarse to medium, little silt.</p>
	Split Spoon	2"	5-10-14 24	18"				5	

Hole Size 6-7/8"

Hole No 226
Site Unit #1 Cooling Tower

NOTES ON WATER TABLE LEVELS, WATER RE- TURN, CHARACTER OF DRILLING, ETC.	SAMPLE DATA					ELEVATION	DEPTH	LOG	CLASSIFICATION AND PHYSICAL CONDITION.	
	PENETRATION TOOL	TOOL SIZE	METHOD n - BLOWS	ADVANCE	RECOVERY					SAMPLE
<p>Stopped 2-11-72 at 90'. Started 2-14-72 by casing to 91' casing seated adequately. Stopped 2-14-72 at 93-1/2'.</p>	Denison	4"		24"	14"	139	80	UD 10	Tan, light green to white, some silt, medium to coarse.	
	Split Spoon	2"	100 5"	5"	5"			6	SHELL: White, mottled brown, very dense.	
	"	"	8-9-20 29	18"			129	90	7	CLAY: Grayish-green to green clay (weathered); very stiff, with shells.
	Denison	4"		24"	18"			95	UD 11	Calcareous, cemented nodul shells, 1/4" cemented sand layer.
	"	"		24"	19"		119	100	UD 12	Same as above but more sh noted.
	"	"		24"	24"		109	110	UD 13	Same as above.

Hole Size 6-7/8" - 5-7/8"

Hole No 226

Site Unit #1 Cooling T

NOTES ON WATER TABLE LEVELS, WATER RE- TURN, CHARACTER OF DRILLING, ETC.	SAMPLE DATA				ELEVATION	DEPTH	LOG	CLASSIFICATION AND PHYSICAL CONDITION.
	PENETRATION TOOL	TOOL SIZE	METHOD n - BLOWS	ADVANCE RECOVERY				
Stopped 2-15-72 at 123-1/2'. Started 2-16-72 taking sample at 123-1/2'.	Denison	4"	24"	19"	99	120		Cemented nodules, cal- careous, some shells.
				125	89	130	UD 14	
Actually full recovery was obtained but an 8" piece fell out and was not included in liner. Stopped 2-16-72 at 135-1/2'.	"	"	24"	16"	89	130		Very hard.
				135	79	140	UD 15	
Poor sample.	"	"	24"	16"	79	140		Same as above.
				145	69	150	UD 16 8	

PROJECT Alvin W. Vogtle Site

HOLE NO 226

NOTES ON WATER TABLE LEVELS, WATER RE- TURN, CHARACTER OF DRILLING, ETC.	SAMPLE DATA					ELEVATION	DEPTH	LOG	CLASSIFICATION AND PHYSICAL CONDITION.
	PENETRATION TOOL	TOOL SIZE	METHOD P-BLOWS	ADVANCE	RECOVERY				
Stopped 2-17-72 at 158'.	Denison	4"		24'	21'			UD 17	SAND: Grayish-black sand, light silt, coarse, very dense.
	Split Spoon	2"	34-60-62 122		18'	59	160	9	
									Bottom of Hole 162'.
						49	170		

Hole Size 5-7/8"

Hole No 226
Site Unit #1 Cooling Tower

BECHTEL

SHEET 1 OF 4

GEOLOGIC LOG OF DRILL HOLE

HOLE NO. 235

PROJECT Alvin W. Vogtle Site ANGLE FROM HORIZ 90° BEARING _____
 LOCATION N 1,143,650 E 624,450 BEGUN 2-8-72 COMPLETED 2-14-72
 OVERBURDEN _____ DEPTH DRILLED INTO ROCK _____ TOTAL DEPTH OF HOLE 135.5'
 ELEV. WATER TABLE _____ NO. CORE BOXES _____ NO. SAMPLES TAKEN 24
 CORE RECOVERY (%) _____ FEET _____ MODEL & MAKE OF DRILL Acker Mark II
 GROUND ELEV. 206.2 feet HOLE LOGGED BY R. Mittelberger DRILLER LETCO-Alexander

NOTES ON WATER TABLE LEVELS, WATER RE- TURN, CHARACTER OF DRILLING, ETC.	SAMPLE DATA					ELEVATION	DEPTH	LOG	CLASSIFICATION AND PHYSICAL CONDITION
	PENETRATION TOOL	TOOL SIZE	METHOD n - BLOWS	ADVANCE	RECOVERY				
	Split Spoon	2"	2-3-4 7	18"			5	1	SAND: Red-brown, medium to fine.
	Shelby	3"	push	24"	19"		10	UD 1	With silt.
	Split Spoon	2"	9-15-17 32	18"			15	2	Layers of tan, brown and red, fine, with clay.
	Shelby	3"	push	24"	18"		20	UD 2	As above.
	Split Spoon	2"	5-11-17 28	18"			25	3	Medium to fine.
	Shelby	3"	push	24"	15"		30	UD 3	Tan, brown, medium to fine, with silt.
	Split Spoon	2"	11-14-13 27	18"				4	Tan, medium.

Hole Size 7-7/8"

Hole No. 235
 Site Shops & Warehouses

NOTES ON WATER TABLE LEVELS, WATER RE- TURN, CHARACTER OF DRILLING, ETC.	SAMPLE DATA					ELEVATION	DEPTH	LOG	CLASSIFICATION AND PHYSICAL CONDITION.
	PENETRATION TOOL	TOOL SIZE	METHOD n - BLOWS	ADVANCE	RECOVERY				
Keep sample.	Shelby 3"		push	24"	13"		40	UD 4	Medium to coarse.
	Split Spoon	2"		39	18"		45	5	As above
	Shelby 3"		push	24"	0"		50	UD 5	No recovery.
	Denison 4"		core	24"	10"		50	UD 6	Loss of water at 51', tan, fine, silty.
	Split Spoon	2"		15	18"		55	6	Mottled, tan-brown, fine and layers of clay.
	Shelby 3"		push	24"	24"		60	UD 7	Tan, fine, silty.
	Split Spoon	2"		100+	2"		65	7	SHELL: Silty, brown to tan, shell fragments.
	Pitcher 3"		core	30"	25"		70	8 UD 8	CLAY: Dark gray-green, calcareous, very hard, with nodules and fine silt layers. Calcareous, cemented.

Casing to 68-1/2'
concrete grout to
clay layer.

NOTES ON WATER TABLE LEVELS, WATER RE- TURN, CHARACTER OF DRILLING, ETC.	SAMPLE DATA					ELEVATION	DEPTH	LOG	CLASSIFICATION AND PHYSICAL CONDITION.
	PENETRATION TOOL	TOOL SIZE	METHOD n - BLOWS	ADVANCE	RECOVERY				
Do not keep.	Pitcher	3"	core	30"	10"		80		Same as above.
	"	"	core	30"	21"		85	UD 9	
	"	"	core	30"	18"		90	UD 10	
	"	"	core	30"	23"		95	UD 11	
	"	"	core	30"	13"		100		Same as above.
	"	"	core	30"	13"		105	UD 12	
	"	"	core	30"	13"		110	UD 13	Same as above.

NOTES ON WATER TABLE LEVELS, WATER RE- TURN, CHARACTER OF DRILLING, ETC.	SAMPLE DATA					ELEVATION	DEPTH	LOG	CLASSIFICATION AND PHYSICAL CONDITION.
	PENETRATION TOOL	TOOL SIZE	METHOD n - BLOWS	ADVANCE	RECOVERY				
	Pitcher	3"	core	30"	24"			UD 14	Same as above.
	"	"	core	30"	24"		120	UD 15	Soft.
	"	"	core	30"	21"		125	UD 16	<u>SAND</u> : Green, medium to fine, silty.
							130		
							135		Bottom of Hole 135.5'

4.0 STATUS OF DRILL HOLES

In response to the request for a discussion of the status of the 474 holes referenced in FSAR Section 2.5.4.3.1 and any holes in addition to these (letter from E. G. Adensam to D. O. Foster, dated February 19, 1985), the following discussion and accompanying tables are submitted.

4.1 Holes Penetrating the Blue Bluff Marl

All of the holes that were drilled through the water-table aquifer, the Blue Bluff marl, and into the underlying confined aquifer are listed on Table 4-1. The status of each hole is also shown. It is normal practice of the engineering firms conducting the drilling of exploratory holes to fill them with grout following their completion, unless they are utilized as an observation or production well. Table 4-1 includes 17 active wells. Nine are active ground water observation wells open to the confined aquifer. There are four production wells open to the unnamed Lisbon sand (Tertiary), three of which supply construction water and one supplies water for the Simulator Building. In addition, four wells are completed as production wells open to the deeper Tuscaloosa Formation (Cretaceous); two are plant operation make-up wells, and two are wells originally planned as make-up wells, but are presently planned not to be utilized. Observation well 181 is currently inactive. This well is scheduled to be abandoned (grouted) in the near future.

(1)

All observation wells monitoring the unnamed Lisbon sand (Tertiary aquifer) were sealed in the Blue Bluff marl with cement grout during well construction to prevent communication between aquifers.

(1)

All of the remaining holes on Table 4-1 were for exploratory purposes only. There is documentation that all of the holes were grouted except 236, 237, and 239. Although there are no data to indicate the exact disposition of these holes, it is believed these were also grouted.

(1)

The grouting method used for sealing all holes, exploratory, seismic, and observation wells is the same. The method employed is commonly known as the "tremie method", which is performed by insertion of a small diameter pipe (drill rods, 1/2 to 1-inch steel or PVC, etc.) to near the bottom of the hole and pumping cement slurry through the pipe, filling the hole from the bottom up. Grouting continues until grout appears at the top of the hole. This method is employed to assure that the hole is completely grouted and no voids are present.

4.2 Other Holes in the Confined Aquifer

Several exploratory holes were drilled through alluvium of the Savannah River flood plain into the confined aquifer, but did not penetrate the marl. As discussed in the FSAR, the Blue Bluff marl is not present beneath the flood plain of the river. All of the holes on Table 4-2 were drilled in the flood plain into the confined aquifer. The area is stratigraphically below the bottom of the marl.

Of these holes, two were completed as observation wells, one of which was grouted in 1985 because its location interferred with construction of the river facilities. The other is a flowing well that has been capped and equipped with a pressure gage for monitoring.

There is documentation that hole 123 was grouted to elevation 29 feet but there is no documentation as to the final completion or abandonment of the remaining holes. The grouting method for sealing observation well 121 and hole 123 was the tremie method as discussed in Section 4.1.

4.3 Holes Drilled only into the Unconfined Aquifer or River Alluvium

Holes penetrating only the unconfined aquifer or the river alluvium are shown on Table 4-3. Thirty of these holes were completed as observation wells to monitor the unconfined aquifer, thirteen of which are still in use. Of the remaining seventeen, 10 have been grouted, leaving seven that are inactive but with no documentation concerning the method of abandonment.

One of the wells, PW-1, is the water supply well for Plant Wilson.

Included in Table 4-3 are a number of wells constructed as temporary observation wells in the backfill at the Powerblock excavation. These wells (LT and ST series) were installed to monitor the water level in the backfill as backfilling operations were conducted to assure that the

TABLE 4-1

HOLES THAT PENETRATE BLUE BLUFF MARL AQUICLUDE

(Drilled into confined aquifer)

<u>Hole Number</u>	<u>Status</u>	<u>Hole Number</u>	<u>Status</u>
1	Grouted	107A	Grouted
2	Grouted	109	Grouted
3	Grouted	111	Grouted
5	Grouted	111A	Grouted
6	Grouted	113	Grouted
7	Grouted	114	Grouted
8	Grouted	114A	Grouted
9	Grouted	116	Grouted
10	Grouted	119	Grouted
11	Grouted	122	Grouted
12	Grouted	132	Grouted
13	Grouted	133	Grouted
14	Grouted	134	Grouted
15	Grouted	135	Obs. well, grouted
16	Grouted	136	Grouted
17	Grouted	137	Grouted
18	Grouted	138A	Grouted in marl**
19	Grouted	139	Grouted
20	Grouted	144	Obs. well, grouted
21	Grouted	144A	Grouted
22	Grouted	145	Grouted
23	Grouted	147	Obs. well, grouted
24	Obs. well, grouted*	152	Grouted
25	Grouted	156	Grouted
26	Obs. well, grouted	157	Grouted
27	Obs. well, active	170	Grouted
29	Obs. well, active	175	Obs. well, grouted
31	Obs. well, grouted	180	Grouted
32	Obs. well, grouted	181	Obs. well, inactive
33	Obs. well, grouted	182	Grouted
37	Grouted	202	Grouted
38	Grouted	203	Grouted in marl
39	Grouted	204	Grouted in marl
40	Grouted	216	Grouted
42	Grouted	217	Grouted
42A	Obs. well, grouted	218	Grouted
42B	Obs. well, grouted (1)	219	Grouted
42C	Obs. well, grouted (1)	220	Grouted in marl
45	Grouted	221	Grouted
101A	Obs. well, grouted	222	Grouted
102	Grouted	223	Grouted
102A	Grouted	224	Grouted
104A	Grouted	225	Grouted
105	Grouted	226	Grouted
106	Grouted	227	Grouted
107	Grouted	228	Grouted

(1) Not drilled into confined aquifer, screened in marl aquiclude.

TABLE 4-1 (Continued)

HOLES THAT PENETRATE BLUE BLUFF MARL AQUICLUDE

(Drilled into confined aquifer)

<u>Hole Number</u>	<u>Status</u>	<u>Hole Number</u>	<u>Status</u>
229	Grouted	502	Grouted
230	Grouted	503	Grouted
235	Grouted	503A	Grouted
236	No closure record	504	Grouted
237	No closure record	505	Grouted
238	Grouted in marl	506	Grouted
239	No closure record	507	Grouted
243	Obs. well, grouted	508	Grouted
244	Obs. well, grouted in marl***	509	Grouted
245	Obs. well, grouted	510	Grouted
246	Obs. well, grouted	511	Grouted
247	Obs. well, grouted in marl	512	Grouted
248	Obs. well, grouted in marl	513	Grouted
249	Obs. well, grouted in marl	514	Grouted
301	Grouted	515	Grouted
302	Grouted	516	Grouted
303	Grouted	517	Grouted
304	Grouted	518	Grouted
305	Grouted	519	Grouted
306	Grouted	520	Grouted
307	Grouted	521	Grouted
308	Grouted	522	Grouted
309	Grouted	523	Grouted
310	Grouted	524	Grouted
311	Grouted	601	Grouted
312	Grouted	603	Grouted
313	Grouted	605	Grouted
314	Grouted	607	Grouted
316	Grouted	609	Grouted
319	Grouted	609A	Grouted
322	Grouted	610	Grouted
324	Grouted	611	Grouted
326	Grouted	613	Grouted
329	Grouted	615	Grouted
331	Grouted	617	Grouted
333	Grouted	619	Grouted
334	Grouted (1)	621	Grouted
335	Grouted	623	Grouted
336	Grouted	624	Grouted
337	Grouted	625	Grouted
338	Grouted	627	Grouted
339	Grouted	629	Grouted
408	Grouted	631	Grouted
409	Grouted	633	Grouted
501	Grouted	702	Grouted
501A	Grouted	704	Grouted

(0632g)

TABLE 4-1 (Continued)

HOLES THAT PENETRATE BLUE BLUFF MARL AQUICLUDE

(Drilled into confined aquifer)

<u>Hole Number</u>	<u>Status</u>	<u>Hole Number</u>	<u>Status</u>
705	Grouted	P-5	Grouted
705A	Grouted	RF-1	Grouted
706A	Grouted	RF-1	Grouted
707	Grouted	RF-2	Grouted
709	Grouted	RF-3	Grouted
711	Grouted	RF-4	Grouted
712A	Grouted	RF-5	Grouted
713	Grouted	RF-6	Grouted
850	Grouted	RF-7	Grouted
850A	Obs. well, active	RF-8	Grouted
851	Grouted	RF-9	Grouted
851A	Obs. well, active	CW-1	Construction well, active
852	Obs. well, active	CW-2	Construction well, active
853	Obs. well, active	CW-3	Construction well, active
854	Obs. well, active	MU-1	Make-up well, active
855	Obs. well, active	MU-1A	Make-up well, grouted (1)
856	Obs. well, active	MU-2	Make-up well, active
P-1	Grouted	MU-2A	Make-up well, active
P-2	Grouted	SB-1	Simulator bldg. well, active
P-3	Grouted		
P-4	Grouted	TW-1	Test well, active

* Obs. well, grouted - hole was completed as observation well. Observation well was grouted at later date.

** Grouted in marl - hole was drilled through marl. Marl was grouted before hole abandoned.

*** Obs. well, grouted in marl - hole was drilled through marl. Marl was grouted and hole completed as observation well open to unconfined aquifer.

TABLE 4-2

HOLES DRILLED INTO CONFINED AQUIFER
WHERE BLUE BLUFF MARL IS NOT PRESENT*

<u>Hole Number</u>	<u>Status</u>
28	No closure record
30	No closure record
34	Obs. well, inactive
35A	No closure record
36A	No closure record
36B	No closure record
120	No closure record
121	Obs. well, grouted
123	Grouted to El. 29
401	No closure record
402	No closure record
403	No closure record
404	No closure record
405	No closure record
406	No closure record
407	No closure record
OD-1	No closure record
RH-1	No closure record

* Holes located in Savannah River channel
where Blue Bluff Marl is not present.

TABLE 4-3

HOLES DRILLED INTO THE UNCONFINED AQUIFER
OR RIVER ALLUVIUM

<u>Hole Number</u>	<u>Status</u>	<u>Hole Number</u>	<u>Status</u>
42D	Obs. well, grouted	ST-6	Grouted
42E	Obs. well, grouted	ST-7	Grouted
124	Obs. well, inactive	ST-8	Grouted
129	Obs. well, active	ST-8A	Grouted
138	Obs. well, grouted	ST-9	Grouted
140	Obs. well, grouted	ST-10	Grouted
141	Obs. well, grouted	ST-11	Grouted
142	Obs. well, active	ST-11A	Grouted
143	Obs. well, grouted	ST-12	Grouted
145G	Obs. well, inactive	ST-13	Grouted
176	Obs. well, inactive	ST-14	Grouted
177	Obs. well, grouted	ST-14A	Grouted
178	Obs. well, grouted	ST-15	Grouted
179	Obs. well, active	ST-A	Grouted
243	Obs. well, grouted	ST-B	Grouted
244	Obs. well, inactive	WWP-37	Grouted
245	Obs. well, grouted	PW-1	Plant Wilson well, active
247	Obs. well, inactive	RF 601	Grouted
248	Obs. well, inactive	RF 602	Grouted
249	Obs. well, inactive	RF 603	Grouted
800	Obs. well, active	RF 604	Grouted
801	Obs. well, active	RF 605	Grouted
802	Obs. well, active	RF 606	Grouted
803A	Obs. well, active	RF 607	Backfilled w/ sand*
804	Obs. well, active	RF 608	Grouted
805A	Obs. well, active	RF 609	Grouted
806B	Obs. well, active	RF 610	Grouted
807A	Obs. well, active	RF 611	Grouted
LT-1	Grouted	RF 612	Backfilled w/ sand*
LT-1A	Obs. well, active	RF 613	Backfilled w/ sand*
LT-2	Grouted	RF 614	Grouted
LT-3	Grouted	RF 615	Grouted
LT-4	Grouted	RF 616	Grouted
LT-5	Grouted	RF 617	Grouted
LT-6	Grouted	RF 618	Grouted
LT-7	Obs. well, active	RF 621	Grouted
LT-8	Grouted	RF 623	Grouted
LT-9	Grouted	RF 626	Grouted
LT-10	Grouted	RF 628	Grouted
LT-11	Grouted	RF 631	Grouted
ST-1	Grouted	RF 634	Grouted
ST-2	Grouted	RF 636	Grouted
ST-3	Grouted	RF 637	Grouted
ST-4	Grouted	RF 638	Grouted
ST-5	Grouted	RF 639	Grouted

* Hole located in Savannah River

TABLE 4-3 (continued)

HOLES DRILLED INTO THE UNCONFINED AQUIFER
OR RIVER ALLUVIUM

<u>Hole Number</u>	<u>Status</u>
RF 640	Grouted
P-1	Grouted
P-1A	Grouted
P-2	Grouted
P-3	Grouted
P-3A	Grouted
P-4	Grouted
P-4A	Grouted
P-5	Grouted
P-6	Grouted
P-6A	Grouted
P-6B	Grouted
P-6C	Grouted
P-6D	Grouted