PERIODIC SAFETY FACTOR ASSESSMENT 391-3-4-.10(4) and 40 C.F.R. PART 257.73 PLANT YATES ASH POND 3 (AP-3) GEORGIA POWER COMPANY

The Federal CCR Rule, and, for Existing Surface Impoundments where applicable, the Georgia CCR Rule (391-3-4-.10) require the owner or operator of a CCR surface impoundment to conduct initial and periodic safety factor assessments. *See* 40 C.F.R. § 257.73(e); Ga. Comp. R. & Regs. r. 391.3-4-.10(4)(b)¹. The owner or operator must conduct an assessment of the CCR unit and document that the minimum safety factors outlined in § 257.73(e)(1)(i) through (iv) for the critical embankment section are achieved. In addition, the Rules require a subsequent assessment be performed within 5 years of the previous assessment. *See* 40 C.F.R. § 257.73(f)(3); Ga. Comp. R. & Regs. r. 391.3-4-.10(4)(b)¹.

The CCR surface impoundment known as Plant Yates AP-3 is located on Plant Yates property, northwest of Newnan, Georgia. The CCR surface impoundment is formed by an engineered cross-valley embankment. The critical section of AP-3 was previously determined to be at the midpoint of the crossvalley embankment. Under current conditions, the critical section remains at the midpoint of the embankment. The Notification of Intent to Initiate Closure was placed in the Operating Record on 04/20/2018 and closure has been designed to have no negative impacts on the stability of the embankment. The CCR unit no longer impounds water, therefore a Surcharge Pool analysis is no longer applicable.

The analyses used to determine the minimum safety factor for the critical section resulted in the following minimum safety factors:

Loading Condition	Minimum Calculated	Minimum Required
	Safety Factor	Safety Factor
Long-term Maximum Storage Pool (Static)	2.7	1.5
Seismic	2.4	1.0

The embankment of AP-3 is constructed of compacted silts and silty sands that are not susceptible to liquefaction. Therefore, a minimum liquefaction safety factor determination was not required. This assessment is supported by appropriate engineering calculations which are attached.

^[1] In a typographical error, 391.3-4.10(4)(b) references the "structural integrity criteria in 40 CFR 247.73," when the reference to such criteria should be 40 CFR 257.73.

I hereby certify that the safety factor assessment was conducted in accordance with 40 C.F.R. § 257.73 (e)(1).





Calculation Number: TV-YT-GPC1142841-002

Project/Plant: Plant Yates	Unit(s): 6-7	Discipline/Area: Env. Solutions							
Title/Subject: Periodic Factor of Safety Assessment for CCR Rule									
Purpose/Objective: Determine the Factor of Sa	afety of the Ash Pond 3	Dike							
System or Equipment Tag Numbers: n/a	Originator: Jacob A.	Jordan, P.E.							

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Total # of pages including cover sheet & attachments:	73		

Revision Record

Rev. No.	Description	Originator Initial / Date	Reviewer Initial / Date	Approver Initial / Date
0	Issued for Information	JAJ/06-18-21	JCP/06-18-21	JCP/06-22-21

Notes:

Purpose of Calculation

The Eugene A. Yates Power Plant (Plant Yates) was once a seven-unit, coal fired, power generation facility. Units 1-5 have been demolished and Units 6 and 7 have been converted to natural gas. Ash Pond 3 was originally constructed in August 1976 and was designed, and constructed, for emergency storage with a dike crest of elevation 755 feet. Plant Yates ceased burning coal in 2015 and thus ceased sluicing ash to Ash Pond 3 at that time. However, Ash Pond 3 is located in an area identified as the "Ash Management Area" where conditioned ash is being consolidated and compacted for closure-in-place, thus new ash has been placed within the footprint of the unit.

The purpose of this calculation is to provide an updated slope stability factor of safety assessment of the Plant Yates Ash Pond 3 dam under conditions prescribed by the EPA CCR rule.

Summary of Conclusions

The following table summarizes the factors of safety resulting from the slope stability analyses. The results indicate the safety factors of the Ash Pond 3 dam meet or exceed the minimum criteria set forth in the structural integrity criteria for existing CCR surface impoundments, 40 CFR 257.73.

Factor of Safety Summary Table

Loading Condition	Minimum Calculated Safety Factor	Minimum Required Safety Factor
Maximum Storage Pool (Static)	2.7	1.4
Seismic	2.4	1.0

Methodology

The calculation was performed using the following methods and software:

- GeoStudio 2021 R2 version 11.1.1.22085 Copyright 1991-2021, GEO-SLOPE International, Ltd.
- Strata (Version 0.8.0), University of Texas, Austin
- Morgenstern-Price analytical method

Criteria and Assumptions

The slope stability models were run using the following assumptions and design criteria:

• Seismic site response was determined using a one-dimensional equivalent linear site response analysis. The analysis was performed using Strata and utilizing random vibration theory. The input motion consisted of the USGS published 2014 Uniform Hazard Response Spectrum (UHRS) for Site Class B/C at a 2% Probability of Exceedance in 50 years. The UHRS was converted to a Fourier Amplitude Spectrum, and propagated through a

representative one-dimensional soil column using linear wave propagation with straindependent dynamic soil properties. The input soil properties and layer thickness were randomized based on defined statistical distributions to perform Monte Carlo simulations for 100 realizations, which were used to generate a median estimate of the surface ground motions.

- The median surface ground motions were then used to calculate a pseudostatic seismic coefficient for utilization in the stability analysis using the approach suggested by Bray and Tavasarou (2009). The procedure calculates the seismic coefficient for an allowable seismic displacement and a probability exceedance of the displacement. For this analysis, an allowable displacement of 0.5 ft, and a probability of exceedance of 16% were conservatively selected, providing a seismic coefficient of 0.038g for use as a horizontal acceleration in the stability analysis.
- The current required minimum criteria (factors of safety) were taken from the Structural Integrity Criteria for existing CCR surface impoundment from 40 CFR 257.73, published April 17, 2015.
- During March 2010, seven borings and five piezometers were performed and installed, respectively, on the crest of the dam, on the middle bench of the dam and on the riverbank.
- The soil properties used for the analysis (unit weight, phi angle, and cohesion) were obtained from triaxial shear testing performed on undisturbed Shelby tube samples of the dam fill and foundation soils obtained during drilling. Soil testing was performed according to applicable ASTM standards.
- The ash properties used for the analysis (unit weight, phi angle, and cohesion) were based on laboratory testing performed on undisturbed and remolded samples of ash from various plants and on engineering judgment.
- The ash pond is no longer designed to impound stormwater. Therefore, the maximum surcharge condition was not evaluated for this analysis.
- The critical section was selected at location having the apparent maximum dam height. The cross-section of the Ash Pond 3 dam was modeled using the following sources:
 - 1) A 2010 level profile survey extending from the pond surface on the upstream face of the dam to the river surface on the downstream face of the dam performed by Southern Company Services (SCS).
 - 2) Critical section developed for a slope stability analysis performed in 2000 to evaluate the effects of a proposed dam raise.
 - 3) Historical drawing H-9065, showing the typical section of the proposed dam construction including foundation elevation.

Input Data

Ash Pond AP-3

• Soil Properties: Soil properties were obtained from historic boring logs and laboratory tests that include soil classification, consolidated undrained triaxial shear tests, unconsolidated undrained triaxial shear tests, unit weight determination, and standard Proctor density testing. Ash properties were based on laboratory testing performed on remolded samples of ash from various plants and on past experience. The following effective stress values were used in the analyses.

		Effective St	ress Parameters
Soil Description	Unit Weight, pcf	Cohesion, psf	Phi Angle, degrees
Existing Fill	125	280	37
Residual Soil	121	330	29
Saprolite/PWR	125	0	38
Ash	98	0	28

• Phreatic Surface: The phreatic surface was determined using piezometers installed in 1997 and in 2010 along the crest of the dam.

Loading Conditions

The Plant Yates Ash Pond 3 Dike was evaluated for the maximum storage and seismic loading conditions.

Design Inputs/References

- SCS Calculation TV-YT-GPC603884-002
- Idriss and Boulanger, Semi-empirical procedures for evaluating liquefaction potential during earthquakes, 2004
- Youd and Idriss, Liquefaction Resistance of Soils: Summary report from the 1996 NCEER and 1998 NCEER/NSF Workshops on evaluation of liquefaction resistance of soils, 2001
- Bray, J. D. and Travasarou, T., *Pseudostatic Coefficient for Use in Simplified Seismic Slope Stability Evaluation*, Journal of Geotechnical and Environmental Engineering, American Society of Civil Engineers, September 2009
- GPC Drawing H-9065, Plant Yates Emergency Ash Pond Plan and Sections
- GPC Drawing H-9068, Plant Yates Emergency Ash Pond Elevation Excavation with 1976 boring locations
- SCS Boring Logs 1976 and 1977
- 2000 Summary of Laboratory Testing of AP-3 Dike Soils

Body of Calculation

Slope/W analysis attached.





Attachment A

Boring Location Plan



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GEORGIA POWER CO. ATLANTA, GA.

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Plant Yates AP-3 Periodic Factor of Safety Assessment

Attachment B

Boring Logs

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JOB	NAME Plant Vales Dike		BOF	RING N	0	
JOB	NO. 2181	DATE DI	RILLE	ED _6	2/16	
LAB	NO	SURFACE	ELE	. V	-	
DEPTH From To	DESCRIPTION	Sam- ple	Depth	Blows 6 Incr	per ement	N
0 30	Hed multiclosed v/mi fin-mad sa	51 1	2.5	5	15 16	31
3.0 5.0	Fm rd si fn-md sa	2	5	60	6 10	16
5,0 10.0	VIFm Jan Si In-md sa	3	7.5	10 1.	2 17	29
10.0 12.5	I V/hd multicolored fin-cs sa	51 4	10	54	1 2/6	91
12.5 150	Utta white gy the same st	5	12.5	47 5	0/4"	
15.d	Refusal	6_	15	50/1		
	, 		<u> </u>			
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		/				
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			-			
			-			
			-			
GROUND W	VATER: TOB <u>310</u> 24 hr <u>1</u> Other <u>0</u> METHOD:				l	
LOGGED BY	r I					

					_ fe	COP	ie d	
		ATLANTA TESTING & ENGINEERII Test Boring Field Log	NG CO	•	(/	,	
	J	OB NAME Plant Vales Dike		BOF	RING	NO.7	10	>
	J(DB NO. 2181 D	ATE D	RILLE	ED4	6/2	<u> </u>]{	2
	L	AB NO SU	RFACE	ELE	: V			
DEF	TH To	DESCRIPTION	Sam - ple	Depth	Blov 6 Ir	ws p ncrem	er ent	N
0	7	Alluvium - VIIse qu clayey fa-md.	sa I	2.5	3	1	1	Z
7	7.5	- VIEm Jan & white sign-modse	r. 2	5	1	0	1	1
			3	7.5	10	12	16	28
	1.5	- B.T						
					·			
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		· · · · · · · · · · · · · · · · · · ·						
		· · · · · · · · · · · · · · · · · · ·		· ·				
					CHARGON HALVED DUCCO			
GR		WATER: TOB REMARKS: 24 hr Other G METHOD:		£	<u></u>	1	1	<u>.</u>
LOG	GED	BY						

		ATLANTA TESTING & ENGINEERING Test Boring Field Log	Co.				, ,	
	.10	DB NAME Plant gates		BOR	ING	NO	<u>B /</u>	3
×.	JC	DB NO. <u>2/8/</u> DATE	DI	RILLE	ED	13	17,	2
	L	AB NOSURFA	CE	ELE	. V			
DEF	TH	DESCRIPTION	Sam - ple	Depth	Blow 6 In	/s p crem	er ent	N
From	 	C-LIFY SITU	ŀ	2%	う	ζ	4	14
	2	TIM HLUVIAL REDITAN FINE TO CONSE STA		5	4	-4	8	12
2-	10	PICM THNA WHITE PER TINE CORRECT CALLY OF DONN		7 1/2	7	17	14	21
10	11/2	SAL TEN MICAFINITSENT		10	3	4	3	9
12%	25	VIHEDD MOLTY COLOR DITION		12'12	17	30	15	43
15	29'	VIHATO GRAVE WHITE M FINTOMED SANDYSILT		15	10	13	10	23
29'	30	VERY DENSE Group + TON SITTY FINE CODESE SOND		17 1/3	17	26	27	53
30		"Boeing TERMINETEO"		20	23	14	15	29
		· · · · · · · · · · · · · · · · · · ·		2 JOR	14 <u>6</u>	AB.	166	31
				25	15	33	26	59
				271/	5%			
				30'	56	12"	 	
			<u> </u>	<u> </u>	_			
								
2								
						<u> </u>	<u> </u>	1
GR	OUNI	WATER: TOB REMARKS:						
DRI	LLIN	G METHOD:						
11	GED	BY					AT	E 104

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		ATLANTA TESTING & ENGINEERING Test Boring Field Log	Co.					
	JC	DB NAME Plant gates			ING	NO.1	<u>3 12</u> 'le	
				FIF	V			
DEP	L/ ТН		Sam-	Dopth	Blov	ws p	er	N
From	То	DESCRIPTION	ple	Берш	6" In	crem	ent 21	
0	5	FLUVIAL SOFT RED FINT TO COTSE SANDY CLAY	 	21/2	à	3	4	6
5	7%	RESIDURL SOFT TAN MED to CONSE SANDY SILT	ļ	5	3	2	5	Ø
11/3	10	MULTY ZOLOPED DITON		71/2	3	5	6	11
10	13	MULTY COLOFED MED +0 CONSE MICA SILTY SAN	b	10_	17	12	9	31
13	15	WHERE WHITE + GARY FINE to MEDERAM SR. SI	,	12/2	8	19	J/	40
15		VIHATO MULTY COLOREDV/MiCAFINE SANDY SiLT		15	14	34	26	60
				'				
		• **						
			<u> </u>					
			_		 			
			<u> </u>					
	2. 372							
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GR	GROUND WATER: TOB <u>9</u> ^j REMARKS: 24 hr <u>42</u> 0 ther DRILLING METHOD:							
LOG	GED	ВХ					AT	E 104

		-	ATLANTA TESTING & ENGINEE Test Boring Field Log	ERING	Co.					
		JC	DB NAME Plant Yates	en A upp per		BOR	ING	NO.4	<u>B </u> 1 6	
		JC) B NO. <u>2/8/</u>				.U V	<i></i>	(<i>fi</i>	
	<u> </u>			SURFA	Sam-	ما بيا ييا تروي	Blov	vs p	er	N
	From	То	DESCRIPTION	andra alara kata kata kata kata kata kata kata k	ple	Depth	6" In	crem	ent	
	0	71/2	ALUVIAL VISOFT GRATH COTSE CLAY SAL	<u>vD</u>		21/2	_1	1	/	2
	71/2	9	ALNVIAL SOFT TAN + RED MED to CONSE	S#NP		5	0	1	0	1
	9	10	RISIDUAL TAN + GTAX MED to LOTSE SAND	HY WIME SHAVP		<u>11/2</u>	2	2	5	2
			B+10'			10	LI	8	8	16
						 	<u> </u>			
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	GR DRI		D WATER: TOB $46^{\prime\prime}$ $24 \text{ hr} 3t^{\prime\prime}$ Other 0 IG METHOD: aw Stc.M							
· ·	LO	GGED TN	BY						A-	ГЕ 104

e e				[rei	opie	[d]	
	ATLANTA TESTING & ENGINE Test Boring Field Log	ERING CO).		/		
JOB	NAME Plant Vates Dike		. BOF	RING	NO	1	
JOB	NO/8/	DATE	DRILL	ED _4	<u> 3</u>	/76	2
LAB	NO	SURFACE	ELE	E V			
DEPTH From To	DESCRIPTION	Sam ple	Depth	Blov 6 in	vs p icrem	er ent	N
07.5	Allurium - Klise gy a md-cs.	5a 1	2/2	/	ľ	1	2
7.59	Allur - Loe fam i red mi si fa	P Z	. 5	0	/	0	_/
	md-Cs sa		1/2	Z	2	5	Ζ
9.0 10.0	Fm tan égy ma-cs sa	- 4	10	4	8	8	16
			_				
10.0	Biti	· · · · · · · · · · · · · · · · · · ·		<u> </u>			
				<u> </u>			
						<u>,</u>	
							
	1 						
	· · · · · · · · · · · · · · · · · · ·			<u> </u>			
							
							
			_	_		<u> </u>	
 	í				<u> </u>		
GROUND Y	VATER: TOB <u>4.5</u> 24 hr <u>3.5</u> Other <u></u>						
DRILLING							
LOGGED B	Y						

ATLANTA TESTING & ENGINEERING Test Boring Field Log	Co.		Kec	opn	ed ,	\sum	
100 MANE Phaset theses		BUB	ING	NO	13	2	
JOB NAME DATE	 DF		D	6/	3/7	6	
LAB NO. SURFA	CE	ELE	V				
DEPTH DESCRIPTION	Sam -	Depth	Blow 6 In	/s p crem	er ent	N	
From To							
0 5 HIW- Fm rd & fan Cl Fn-Cs Sa	/	2.5	3	5	4	14	
57 Fm tane whit of fin-os sa	6	5	4	4	8	12	
7 10 Das red SI FR- Md-Cs Sa	3	7.5	2	17	14	31	
10 125 Fm fan mi In se 51	4	10	3	4	3	Z	
125 \$ V/St-hd gy & who fin-md 50 51	2	125	17	30	18	48	
25	6	15	10	13	10	23	
25 29 1/hd gy & wht in-md sa si	2	17.5	17_	26_	27	53	
79 30 VIdns gy & fan si fn-0s sa	8	20	23	14	15	29	
	1	22.5	- 19	15	16	31	
30 B.T.	10	25	15	33	26	59	
	//	27.5	50/	5-11			
1	12	30	50	21	Υ		
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	THE CONTRACTOR OF CONTRACTOR O						
GROUND WATER: TOB REMARKS: 24 hr Other							
DRILLING METHOD:							

	ATLANTA TESTING & ENGINEERING Test Boring Field Log	Co		frec	opie	,d)	
	DB NAME Plant Vites Dike		BOB		NO	12	
J	DB NO. 2181 DATI	 E DI	RILLE	ED	6/3	3/1	6
L	AB NO SURFA	CE	ELE	V		· · ·	
DEPTH From To	DESCRIPTION	Sam- ple	Depth	Blov 6 Ir	ws p icrem	er ent	N
0 50	Poss. Allur - Fm rod In-cs sa cl	1	2.5	2	3	4	7
5.0 7.5	En fan Md-cs sa si	2	5	3	2	5	7
7.5 10	1/stf multicolored md-cs sa si	3	7.5	3	5	6	11
10 13	1/fm Multicolored Mind-Cs sa	4	10	7	12	9	21
13 15	V/hd whtigy fn-md sa si	<u> </u>	12.5	8	19	21	40
		6	15	14	34	26	60
15	B.T						
						<u>.</u>	
	1						
	· ·						
GROUND	WATER: TOB REMARKS: 24 hr Other METHOD:	I			<u> </u>	L	
LOGGED	BY					e-1496-1497-1497-149	

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Field Test Boring Record Geotechnical Field Services

Southern Company Services

PROJECT	EA	P	Dik	F		EWO #	13 E A	LEAD		DI	UEV	<u>.</u>	DATE:	15-	.97
	r = 1	/		<u></u>		1 ,	2111		BORING #						
PLAN DEF	<u>(^ _)</u> этн	<u>' 4 7</u>	ES												
FROM	то				DESC	RIPTIC	N		NO	DEPTH	1st 6"	2nd 6"	3rd 6"	N	CORE BEC
0.0	3.0	1	REDBRON	walt	PRANC	$h \in M$	APROLI	d TE	1	2.5	4	7	5	12	
5.0'	11.1	` -	TAN S	AP	20617	TE	51. 5' M	-c sa	7	7.0	75	33	77	55	
·									2	11.1	35	50/		50	
										134.5	15	2.1		-0.1	
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		+													
		4													
						····· ·									
		╋													
	FROM	ТС	5		FDOM	TO	REMARKS								
SS	1.0	11.		ER	0.0	10.5									
WASH			TRI-CC	ONE											
CASING				ORE									<u></u>		
BIT		-							·						
GWATOB_			GW	/ 24 ⊦	IRS			ELEVAT	ION:						
DRILLED BY	DRI	/	MP												
800961		/ 							JR	<u> </u>					

Field Test Boring Record Geotechnical Field Services

Southern Company Services

	:< F	- AP	Dive	*	EWO #	2. 61	LEAD DRILLER						DATE:			
LOCATION	<u>.</u>	1/	DIRE		1221	<u>5- </u>		DR			BORING #	10	-/5	- / /		
PLA DED	INT TU	YAT	res							I		D2		r		
FROM	ТО			DESC	RIPTIO	N		NO	DEPTH	1st 6"	2nd 6"	3rd 6"	N	CORE REC		
0.0'	3.0	'REI	BROWN	SAN	64	SILT		1	2.5	3	4	7	11			
3.0'	6.0	' RE	BROWA	I SANT	DY CL	AYEY S.	12T	よ	5.0	5	5	4	11			
6.0'	9.5	" REI	BROW	N SA	ANDY	SILT	-	3	7.5	3	3	4	7			
9.5'	14.0	' RE	DTAN	SILT	<u>y 5</u>	AND (SAI	PROLITE	4	10.0	4	5	5	10			
14.0'	36.7	I TAA	J BROW	N 51	LTY.	SAND	Sap)	5	15.0	4	5	4	11			
								4	20.0	4	4	5	9			
								7	25.0	5	7	10	17			
								8	30.0	7	14	13	27			
								9	35.0	17	30	23	53			
										- <u>-</u>						
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		3	6.7	Aucre	e R	EFUSA	L									
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-													1			
			······································													
	FROM	то		FROM	то	REMARKS										
SS	1.0	35.0'	AUGER	0.0	36.7											
WASH			TRI-CONE													
CASING			CORE							·						
BIT	0	//				l										
GWATOB_	25.4	1'	GW 24 H	1RS		l	ELEVATION:									
	MP					LOGGED BY	D	еI	•							

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TLAN	<u>17 YA</u>	FTE;	5					•				<u> 13</u>		
DEP	тн	_		DES(RIPTIC	NI.	,	SAN	IPLE					CORE
FROM	ТО	<u> </u>			4700 1 Sec.			NO	DEPTH	1st 6"	2nd 6"	3rd 6"	'	REC
0.0	8.0'	PE	Beauly	<u>y Sa</u>	MBY (-LAYEY.	SILT	I	4.0		!			3.5
8.0'	10.0'	RĒ	<u>D Brow</u>	<u>» CLA</u>	HEYS	SYTHIS	AND	Z	9.0	I!	[!			5.0
10.0'	27.0	! Sa	PROLITI	<u>= 5</u>	ILTY	SANL	د	3	14.0					4.5
		Wi	ETQ	TOP	14.0	,'		4	19.0	ĺ				4.0'
		-		<u></u>				5	24.0	[5.0
27.0	29.0'	小了	ERAMP	DSE.	<u> </u>	DACK		6	29.0	[!	+			4.5
		+~~				-0						1	 	
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		+							├ ─-†					<u> </u>
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		+						├ ──┘	┢╾╌┥	rl	h	 	└── ┦	├ ───┘
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	FROM	то		FROM			CON.	<u> 71 N U</u>	פטטי	<u>Sa</u>	MPLE	FR		
55 WAQU]	AUGER	0.0	27.0	 							f	
CASING	<u> </u> -]	CORE	├ ───┤	<u>├</u> ───┙	 								
вл				├ ──┤	┝───┘									
WATOB_	12.8	<u></u>	GW 24 I	1RS	لــــــا 	L	ELEVAT	ION:	********		6-*			
HILLED BY	MP						LOGGED BY	DR	27		<u></u>			
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Field Test Boring Record Geotechnical Field Services

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PROJECT

LOCATION

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EWD #

3313-FA

DATE:

10-27-97

Southern Company Services 📥

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YATE.	s Ef	<u>4 P</u>	DIKE		331	S-FA		K J	-UE	۲ ,	00000-	10-	50-	7/	
												4	-	,	
DEP	ТН			DESC	RIPTIO	N		SA	IPLE				N	CORE	
FROM	то	_						NO	DEPTH	1st 6*	2nd 6*	3rd 6*		REC	
0.0	1.5	! LE	BROWN	SAN	NY C	AVEY SIL	T	1	1.5						
1.5'	5.5	"TAR	LED BRA	ard S	andy (WAVEY SI	47	2	5.0'						
5.5'	6.5	REI	BROWN	SAN	by C.	LAYEY SIL	T								
4.5	6.8	' Dai	UK BROW	N DR	GANI	e SILTY S	AND	3	4.5						
6.8	12.0'	RE	BROWN	SAND!	Car	YEY SILT	1	4	10.0						
		50	FT SEA	MQ	8.0	,1									
12.01	16.0	1 500	PROLITE-	SAL	124	SILT		5	15.0'						
16.0'	19.0	' De	MPOSEL	R	PCL			6	19.0						
	<u></u>														
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		+	Augen Person @ 19 pl												
		M	HULLER FEFUSAL @ 19.0												
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	FROM	то		FROM	τo	REMARKS		)		ç		1.1 A		· · · ·	
SS			AUGER	0.0	19.0'		NR	<u> </u>			-/	w1 >			
WASH			TRI-CONE									· · · · · ·			
CASING			CORE										-		
BIT								,							
GWATOB	8.0	)'	GW 24 H	HRS	7.75	E	LEVAT	ION:							
	Л.Р.						GGED BY	DR	T						
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# Field Test Boring Record Geolechnical Field Services

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PROJECT			<u>ر</u>		EWO #		LEAD	DRILLER				DATE:		
YATE	<u>s E</u>	AP	DIKE		331	3-FA		DR:	IVE	Y		10.	- 38 -	97
LOCATION	NT	YAT	E5								BORING #	D5		
DEP	тн			DESC	BIPTIC	NI		SAN	APLE					CORF
FROM	TO					-		NO	DEPTH	1st 6*	2nd 6"	3rd 6*		REC
0.5	4.0	<u> / k</u>	ED BROW	w Sai	NDY (	LAYEY SI	LT	1	2.5	2	3	4	7	
4.0'	7.0	<u>' R</u>	ed Beow		2	5.0	1	2	4	4				
7.0'	10.5		APRO LI	SILTY SAN	VD_	3	7.5	2	3	6	9			
								4	10.5	12	16	14	52	
		_												
		6	1D - 2'T	04'	REC									2.0'
		L	10-4'2	06	REC									0.0
						,						,		
						······································								
	FROM	то		FROM	TO	REMARKS		d						
SS	1.0'	10.5	AUGER	0.0	9.0	WETCO	2 4	.01						
WASH			TRI-CONE											
CASING														
віт						ABOU	E G	LADE						
GWATOB_	4.0	1	GW 24 H	IRS	- 1.4	5/	LEVAT	FION:				****		[
DRILLED BY	MP						OGGED B	Y DA	T					l
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PROJECT	<u>,</u>	10	2	••••••	EWO #		LEAD D	RILLER	,			DATE:	11 9	2 >
LUCATION	<u>E</u> [		DIKE	-	55	3-FA			ما سک ا	EY	BORING #			<u> </u>
PLAN	17 7	ATE	5									26		
FROM	то	-		DESC	RIPTIO	N		NO		1st 6"	2nd 6"	3rd 6"	N	CORF REC
0.0	2.0'	Re	D Beow	n Sa	NDYC	WAYEY SI	LT	1	2.0					
2.0'	13.0	BR	OWN TAN	Sa	NDY	SILT		2	5.0					
K ^B								3	10.0					
13.0'	13.5	Dai	rk Brow	J GRE	y Sa	NDY SIL	.τ	ર્પ	13.0					
13.5	18.0'	410	HT BRO	wn .	SAND	y SILT	-	5	15.0					
18.0	28.0	RE	BROWN	SA	NDY	SILT		6	20.0					
		Mo	IST @	15.0	0'			3,						
								7	22.0					
								8	25.0					
28.01	29.0'	REI	BEOWN	SAN	Dy Cr	AVEY SIL	.7	9	28.0					
29.0'	71.0 3 <del>070</del>	Da	ex Brou	J 5	LTY	SAND		10	30.0					
31.0	35.0'	DE	COMPOS	ED	Roc	K		]]	35.0					
						<b>.</b>								
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	FROM	TO		FROM	то	REMARKS	C s	717		DUC	$\leq \Lambda$	MPLA	R	
<b>S</b> 5			AUGER	0.0	35.0'				. ,					
WASH			TRICONE											
CASING														
вп														
GWATOB_	15.4	/	GW 24 H	IRS		1	ELEVAT	ION:	·····		A .12000			
DRILLED BY	MP,	Dr:	F				LOGGED BY	DR	I					
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Southern Company Services 📤

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PROJECT	EA	ı f	)	DIKE		ewo# 331	3 <i>-FA</i>	LEAD DI		eI	- UEY	/	DATE:	-16-	.97
	17 Y	4-	TE	<								BORING # ~	<u>) フ</u>		
DEP	TH	<u> </u>							SAN	IPLE		4			COBE
FROM	ТО				DESC	RIPTIO	N		NO	DEPTH	1st 6"	2nd 6"	3rd 6"	N	REC
0,0	3.0	1	As	Н					1	2.5	2	2	3	5	
3.0'	9.0	1	REI	BROWN	SAN	uby .	SILT		2	5.0'	3	3	3	6	
								went	3	7.5	1	1	1	2	
9.0'	14.0	, (	As	Н				wat	4	10.0	W	P#T	5"	WOH 18"	
			Gil	REY SI	LTY	SAN	ıD		5	12.5	w	# 18	1	WOH 18"	
14.0'	19.5	-1	GR	EY TA	N SI	LT4	SAND		6	15.0	Z	2	3	5	
									7	17.5	1	1	1	2	
19.51	22.0	)/	TA	N ORA	NGE	SIL	TY SAN	AD	8	70,0	1	(	1	Z	
22.0'	24.0	<u>،'</u>  ·	IAN	DRANG	AE GIR	EY 3	SANDY SI	17	9	12.5	Ζ	Z	3	5	
24.0'	27.0	,	54	PROLITE		SILT	Y SAND		10.0	25.0	5	5	5	10	
27.0'	33.0	<u>'</u>		11	5	AND	1 SILT	-	110	31.0	7	12	[]	23	
33.0'	40.3	'	DEC	OMP05	EDR	ock S	SILTY SAN	US	12	36.0	7	23	20	43	
									13	40.3	27	50/3		50	
															_
	-														
	FROM	T	го		FROM	то	REMARKS								-
SS	1.0	ų	). 3	AUGER	0.0	39.5									
WASH				TRI-CONE											
CASING				CORE											
BIT															
GWATOB_	10.2	2'		GW 24 H	IRS		E	LEVAT	ION:						
DRILLED BY	Dr I	NF	>				L	OGGED BY	' \ P	T	······				
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Southern Company Services

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PROJE OT		~ `			EWO		113A	DBILER			-	in a more		
PATES	EA	P	DIKE		33	13-F/	4	DR	I.	εY			21-	97
LOCATION	17 1	Vat.	£ <	<del></del>							BORING #	アマ	<del>~</del> 1	11
DE	PTH		<u></u>					64		<u></u>		<u> 18</u>		
FROM	TO			DES	SCRIPTI	ON		NO	DEPTH	1st 6"	2nd 6*	3rd 6*	N	CORE
0.0	24.	<u>0' </u> 2	Beow,	N SF	CI ALDYI	SILT		1	4.0	1				4.0
-	-	5	AME					2	9.0'					5.0'
					•			3	14.0'					5.0'
								4	19.0'					50
24.0'	41.	4154	ME BUT	w/s	ANDY	SILTY ISEAMS	5	5	240					CO
	ļ			/	•			6	280					5.0
	L							7	34.0		-			5.0
			-		,			8	39,0					5.0
41.4'	47.8	2' 41	.4' MOI	ST				9	440					5.0'
		4	6.4 HI	T SA	PROL	ITE, De	ECOMPOS	avo	47.8					30
		Ro	CK	Pock	<							i		2.0
NF.::		4	uChER	DEF	usa	104	7.8'							
										· · ·				
				••••		· ·		·					<u> </u>	
								<del>  </del>						
							· · · · · · · ·						<b> </b>	
								<u>  </u>		<b> </b>				
	FROM	TO		FROM	то	REMARKS	<u> </u>	<u> </u>			Sum			
<b>S</b> 5			AUGER	0.0	47.8				10000	<u> </u>	-AMP	LLK_		
WASH			TRICONE				•		-					{
CASING			CORE				· · · ·							
вл										:		· ···		
WATOB_	32.	41	GW 24 H	IRS.	· · · ·		ELEVAT	'ON:						
RILLED BY	MP		· •••		-		LOGGED B	20				<u> </u>		
7901		_					L	JR						



NOV-06-1997	10:52	FROM	GEOTECHNICAL	FIELD	SER.	
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### Field Test Boring Record Gcotechnical Field Services

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PROJECT	3	EAF	DIKE	-	ewo # 331	3-FA	LEAD	DRILLER	IL	IEY	Se.		27-	.97
	ANT	- V	ATES			,		(au (2,000, 0,0000, 1,000, 1,000, 1)	1		BORING #	8A		
DEP	TH			DESC	BIPTIC	N		SAN	APLE	1	+		N	CORE
FROM	TO	10	. \					NO	DEPTH	1st 6"	2nd 6"	3rd 6"		REC
0.0		KE	ED BROW,	1 JAI	194C	way Si	<u>LT</u>		4.0		ļ			4.0
-									9.0					5.0'
								1	14.0					5.0
		Ц.	D- 18.4	° TO	20.	o'					1			2.0'
		U	D 20,0	0' TO	22.	0'								1.9
									24.0					
									29.0					5.0'
									34.0					5.0'
									25.0'					1.0'
														<u>е</u>
				· · · · · · · · · · · · · · · · · · ·										
														· ·
			1	,		DEMAGNE								
	FROM	то		FROM	TO	REMARKS	Zqn	JTIN	1000	ے و	<u>SAM</u>	olak	2	
SS			AUGER	0.0	35.0	6.0	N.	ØF	DOR	MG	D8			
CASING			CORE		ļ			·				·····		
BIT									·····					
GWATOB_	DRY	/	GW 24 F	IRS	19.2	L 2   E	LEVAT	ION:						
ORILLED BY	MP						OGGED B	Y DP	I	<del></del>	····			
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PROJECT			$\sim$		EWO#		LEAD	DRILLER		· _		DATE:		
A LOCATION	TES	tA_	P DIN	E	33	13-FA		Ĵ	NI	VEY		//		.47
F	LANT	YA	res					_			BORING #	29		
DEP	ÎH			DESC	RIPTIC	N	_	SA	MPLE		t	1	N	CORE
FHOM		1/-	20		)			NO .	DEPTH	151.6-	200 6-	3rd 6"		REC
0.0	6.0	(5)	L) JAN.	by C	LAYE	Y JIL	7		5.0	\				
6.0	14.0	) (	SANDY	SILT				2	0.0					
14.0'	14.5	-' YE	LOW B	rown	BLAG	c.K								
		$\searrow$	ECOMPO	sed	Pac	2		3	140					
145	150	1 D_	a Base L	<u> </u>		Saux N								
17.2		- FE			- ( Y	JAND			12.0					
15.0'	18,5	-T/	IN JU	<u>-</u>	DAN	2	· · · · · · · · ·	5	18.5					
18.5	19.0	<u> </u>	REY S	SILTY	<u> </u>	AD		6	19.0					
19.0'	23.5	-' Le	BROW	TAN	5,,	TY SA.	ND	7	20.0					
23.5	26.0	'G	REY TAN	( 5a,	vD u	J/BIG								
			Adulta				·	8	250					
			RAVEL					0	20.0					
				,										
	****													
						····· <u>-</u>								
	FROM	то	1	FROM	то	REMARKS	<u> </u>				<			
55			AUGER	0.0	26.0'	Mois	- 0	14.1	<u>~uo</u> 5	US_	-AN	MEN	<	
WASH			TRI-CONE				<u> </u>							
CASING						ABOUT	5.0	Sou	ATH W	DEST	OF S	TAKE		
BLL			•				-			~~ 1	<u>-,                                    </u>	<u></u>		
GWATOB_	2.0	)	GW 24 I	IRS	<b>.</b>		ELEVA	ION:	· · · · · · · · · · · · · · · · · · ·	-				
OHILLED SY	MP			·			L <b>OG</b> GED B	۲ ک	et					
800961										·····				

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PROJECT	s EA	1 P	DIKE		ewo # <i>3313</i>	3 - FA	LEAD DF	NILLER DK	I.	EΥ		DATE: 10 -	-16 -	<del>9</del> 7
	- V,	175 <	<u>UINC</u>				<b>4</b>				BORING #	D10		
DEP	TH			DESCE		1		SAN	IPLE				N	CORE
FROM		1				•		NO	DEPTH	1st 6"	2nd 6"	3rd 6"	}	REC
0.0	4.5	Asi	ł	-					2.5	2	5	4		
4.5	7.5	RED	BROWN	SAN	DY Cr	AVEY SI	LT	2	5.0	2	2	Z	4	<u>.                                    </u>
. (7)							WET	3	7.5		18"		18"	
7.5'	10.0	As	H.				with	4	10.0	2	3	4	7	
10.0'	13.0	' SA	PROLIT	FE S	- 1LTY	SAND		5	12.5	3	4	6	10	
13.0'	15.0'	RE	D BROW	N SA	NDY	SILT		6	16.0	W	0.H	-	Wolt 18"	
15.0'	18.0	'GR	EY SI	LTY	SAND	>		7-	17.5	-				
18,0'	20,0	GR	EY BRO	NA S	SILT	Y SANZ	2	7	19.5	3	3	4	7	
20.0'	29.0	'TA	N SAN	10				8	23.0	Z	2	Z	4	
								9	25.5	Ζ	3	4	7	
								10.0	28.0	5	8	9	17	
29 0'	37.5	1 54	PRALIT	E S	SILT	Y SAN	Ъ	11	31.5	10	9	11	20	
	-							12	34,5	17	10	8	[8	
			0											
		3	7.5	Auc	ER	PEFUS	SA-1							
····				/// -/	2.	<u></u>								
							<u></u>							
	FROM	то		FROM	то	REMARKS		I	L	I	I	L.,	L	I
SS	1.0	36.5	AUGER	0.0	37,5									
WASH			TRI-CONE			·								
CASING			CORE											
BIT													`	
GWATOB	19.3	Ζ'	GW 24 H	IRS			ELEVA [.]	TION:						
DRILLED BY	DPT	- M	P				LOGGED	av D	RI	-				
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	. F	AD	Dive		EWD#	2-FA	LEAD OF		T	εY	~	DATE;	-10-	97
		<u></u>	DIRE								BORING	11		
DEP	TH	1						SA	MPLE					CORE
FROM	TO	-		DESC	RIPTIO	N		NO	DEPTH	1st 6."	2nd 6*	3rd 6"	N	REC
0.0	19.5	1 TAN	RED Bea	WA -	SILT	Y SAN	6	1	5.0'					
								2	10.0					
								3	15.0'					
19.5'	20.0	'Bri	INN VELL	SWBL	ack]	DECOMPO	SEP	4	70.0'					
		Ro	ek											
20.0'	25.0'	(PE)	BROWN	TAN :	SAND	YSILT		5	25.0					
25.0'	30.0	' Rei	BROWN	512	<u>.77</u>	SAND		6	30.0					
		Mo	157@	28.0	<u>, '</u>									
30.0	32.3	5	IPROLIT	f G	30	2.01		7	23			<u> </u>		
		A	46.ER	REF	USA	L@ 32	.3'							
			·····											
	FROM	то		FROM		REMARKS	Co	NTI	NUO	vs z	SAMI	ourk		
<u>\$</u> \$			AUGER	0.0	32.5	<u>  `</u>								
WASH			TRI-CONE											
CASING			CORE					<del></del>						
BIT				•										
GWATOB			GW 24 H	IRS			ELEVAT	ION:						
DRILLED BY	MP						LOGGED BY	DR	2I					
1000A1											2.			



PROJECT					LEWD .							IDATE.		·····
VATES	EA	P	DIKE		331	3-FA			2 I	VEY		11-	11-9	71
PLAN	ir y	ATE	5							l l	BORING #	DIA	1	
DEF	TH		-					SAL		<b>-</b>				CODE
FROM	то			DESC	RIPTIC	N		NO	DEPTH	1st 6"	2nd 6"	3rd 6"	N	REC
0.0	9.0	RE	BROWN	SAN	or Ce	AV SILT (	(xin)	1	3.0				<u>, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>	
9.0'	13.0	RE	D BROWN	1 512	TY S	JAND		2	10.0					
13.0'	25.0	RE	D BROW	SN S	SAND	SILT		3	15.0'					
								4	20.0					
						· · · · · · · · · · · · · · · · · · ·		5	25.0'					
								<b>.</b>		******				
					• • •									
			·	<u></u>										
					*****	<u></u>								
								****						
		-												
			Q 20		<u></u>									5 2
			Q C A	<u> 19 7</u> .	0									20
			Q 100	<u>το ι</u>	. <u>v</u>									202
			$\bigcirc$ 10.0	70 1										2.0
		40	0 12.0	TO 1	4.0									0.8
		+				<u></u>								
														-
				6000		REMARKS A -								
<b>\$</b> \$		10	AUGER	PHOM P.O	250	<u> </u>	Out	Jamp J.	1 1.4.4	,, C		3400		
WASH			TRI-CONE		~~~~~			1711	UVIDL	1 % and	an M	To the	k.	
CASING			CORE							·····				
BIT														
GWATOB_	DRY	-	GW 24 H	1RS		EI	EVATI	ON:						
UNILLED BY	11				**	LO	GGED BY	0	eI					



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Field Test Boring Record Geotechnical Field Services Southern Company Services 📤

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PROJECT	s E	AP	DIKE		ewo + 331	s-FA	LEADD	DRILLER DRJ	CUE	$\checkmark$		DATE: //-	6 - 9	77
LOCATION									****	ľ	BORING #	D12		
DEP	TH							SAN	IPLE					CORE
FROM	ТО			DESC	RIPTIO	N		NO	DEPTH	1st 6*	2nd 6*	3rd 6*	N	REC
0.0	21.0	.1	SILTY	SAN	<u>م</u> ر			1	5.0					
		Mo	ьт e	8.5	r	_		2	8.5					
								3	10,0					
								4	20.0					
21.0'	22.0	' WH	ITE TAI	N SE	AND	GRA	VEL	5	ZZ.0'					
					•									
		A	UGER	KEFU	15AL	. @ 27			,					
		_							· .					
		U	D - Z'-	4'										0.0
		N'	0-4-	8'				ļ						2.0'
								<b> </b>						
						<del>,</del>		ļ						
			······											
								ļ					, 	
						REMARKS	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~							
99	FROM	TO	AUCCO	FROM	07		ĆO	NTIN	1401	13 5	SAMP	LER		
WASH		*	TRICONE	0.0	<i>KK.U</i>									
CASING			CORE					· · · · · · · · · · · · · · · · · · ·						
ВІТ	<b>_</b>													
GWATOB_	12'	21	GW 24 H	IRS	•	•	ELEVAT	rion:						· .
DRILLED BY	MP				~~~~~		LOGGED B	Ϋ́ Ď	RI				,	
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Southern Company Services

PROJECT	s E	AP	DIKE		ewo * 331	3- FA	LEAD D		RI	UEY		DATE:	-20-	.97
LOCATION	INT	VA	TES			······				1	BORING #	013	_	
DEP	TH			DESC	RIPTIO	N		SAN		1-1-07			N	CORE
	3.0	1 A <	I FI							1st 6" []	2nd 6"		9	<u>REC</u>
201	1. ~	1 Dax	R 110	<u></u>	5		. N	/	0.5		8	4	17	
اسر ر	<i>Q.3</i>	IN	DROWN	<u>JRANG</u>	<u>ne s</u>	167754	DA	2	5,0	7	0		7	VNOS
6.5	10.3	KE T	D DROU	<u>c nc</u>	ANDY	1 JILT		7	1.5	2			C	- unet
10.3	10	A	N DROU		SILT	Y SAA	<u>1</u> ,2	4	10.0	5	5	5	10	
13.0	14.5	KE	20 Brou	UN S	DILTY	1 SAN	D	5	12.5	5	3	4	2	
14.5'	16.5	1 RE	D Brow	S he	SAND	Y SIL	r	6	15.0	Ζ	4	3	7	
16.51	27.0	'Ce	EYTAN	1 SIL	TY	SAND	•	7	17.5	1	(	1	2	
								8	20.0	5	3	5	8	
								9	72,5	4	4	7	11	
								10	250	4	5	7	12	
27.0'	33.4	150	DRAUT	e 5		SAU	<u> </u>	11	275	. 7	12	12	2.4	
Dine	<u> </u>		FRULIT		16/7			19	200	20	14	70	20	
								10	50,0	20	17	$\omega$	37	
		-												
		_				·····								
		3.	3.4 Au	IGER	2 Re	FusA	L							
								0 <b>.</b> .						
														<u>.</u>
	FROM	то		FROM	то	REMARKS			Ll	I				
SS	1.0	30.0	AUGER	0,0	33,4									
WASH			TRI-CONE											
CASING			CORE											
віт		71												
GWATOB_	7.0	<u> </u>	GW 24 I	HRS			ELEVAT	ION:						
	MP						LOGGED BY	DR	T					

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Southern Company Services

# Field Test Boring Record Geotechnical Field Services

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PROJECT	EI	$! \rho$	Dive		EWO # ろて/	3-FA		RILLER	THE	Y		DATE: 10 -	21-	97
LOCATION		· /	UIND		~ ~ / / ·	- 1/1	<i>L</i>	<u></u>		- /	BORING #	NIU	~ 1	<u>· (</u>
DEP	<u>тн</u>	<u>ATE</u>	: >					SAN	<b>I</b> PLE					COBE
FROM	то	1		DESC		N • • •		NO	DEPTH	1st 6"	2nd 6"	3rd 6"	N	REC
0.8		RE	D BRO	WX AC	SAND	y SIL	Г	1	3,9	(				3.4
		SA	ME	1				Z	8.9					5.0'
		SA	ME N	>/116+	IT SIK	TY SAND S	SEAMS	3	13.6					5.0'
		5,A	ME		8. 2			4	18.9					5.0
		SA	MĒ		1 2 2 2 2 2			5	23.9					5.0
		SA	MÉ					6	78.9					5-0
		SA.	ME					7	33,9					5.0
	38.9	34	,9 TC	38.	91	ERY MO	IST	8	38.3					4.4
		C	AEY FI	NES	SAND	Y SILT	-w/	Ū						
		A	(BLAC LITTLE	k Lens ORG	C) ANIO	cs \$ Jea	MPOSE	<b>D</b>	, e					
		Ro	CK											
38.9	45.0	SAI	ROLITE	w	SEAN	S OF DE	COMPO	9	43.9					3,3
	,	SEL	Roc	ĸ		i j i i								
				•				10.00	45.					
		54	NE					1	450					1.6
					<u> </u>				1-7-					/ <u>×</u>
	FROM	то		FROM	то	REMARKS	(	200	- est	MONE		hand	ER	L
SS			AUGER	0.0	45.0'		~		e					
WASH			TRI-CONE	Ī										
CASING			CORE											
BIT														
GWATOB_	22.	3'	GW 24	HRS			ELEVAT	ION:						
DRILLED BY	MP,	DR	T				LOGGED B	Ď	RI	, G	W			
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Sheet _____ of _____

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ATE	s Ē,	4P	DIKE		EWO #	- FA		R	Iu	IEY		DATE:	.7-	97
	NT	YAT	- FS								BORING #	Dis	<u></u>	
DEP	ТН			DESC	RIPTIO	N		SAN		101 6"	Tonder		N	CORE
	20'		5.1	5	1./b			<u>u</u> 1	1.5	151.0	2110 0	210.0		
7 0'	76		Proved	<u>ر در</u> د برک		Saus		,	7.0					+
z 6	5.2	Re	DUBCH	<u></u> 5	<u>y</u> v s	A. 13	- 6	<u></u> ?	7.0					
/ ./	3.0	, ,	D	<u>5121</u>		HAN D		, 1	2.5					
5.0	4.0		VLED .	JAN	<u> </u>	ILT	7	* 	5.5			<u> </u>	·····	· ·
6.0	4.5	' Dat	rk Galey	5,	674	SAND		)	4,S					
6.5	8,0	5a	PROLITE	<u></u> 54	WDY	SILT	4	•	7.5		ļ			
8.0'	12.5	SAI	PROLITE.	51	LTY	SAND	)							
			······											
			·····	*****		<u></u>								
				· · ·										
		50	FT	4.0	<u>, 4.</u>	5					 			
										·				
<u> </u>		-		··· ·····										
						··· •								
			1	T		REMARKS								
55	FHOM	10	AUGER	PHOM	10		CONT	• 1 N	0000	S	ANNOL	<u> </u>	,	
WASH		···- ··· ···	TRI-CONE	0.0	16.5									
CASING			CORE		1. 1997 B. B. 1998 B. 1998	1999 B. B. Markel Market and Communication		uar (c. est est	200 A. 11 A.A. 10					
BIJ.						,								<u> </u>
WATOB_	11'2	) <b>r</b>	GW 24 I	HRS	0.0	El	EVATION							

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PROJECT		<u> </u>	λ.		EWO #	2	LEAD DR	ILLER	0-	a.1		DATE:	10 0	2 ~ 2
YATES	S E	AP	DIKE		531.	SFA		$\mathcal{V}$	L-L		BORING #	10-0	20-	
PLAN	17 1	AT	5									<u>D16</u>		
DEP FROM	тн то	-		DESCI	RIPTIO	N	ł	SAN NO	IPLE DEPTH	1st 6"	2nd 6"	3rd 6"	N	CORE REC
0.0	12.0'	F	LL ASH	1 4 3	SILTY	SAND		1	2.5	3	5	7	12	
		T	Boulder	2 Q	4.5	_/		2	5.0	4	9	20	29	
								3	7.5	3	3	5	8	
								4	10.0	1	1	1	Ζ	
12.0'	13.5	1 TAX	I GREY	SIL	TY	SAND		5	12.5	y)	0#	-	18"	
13.5'	17.0	1 TAN	1 BROWI	J SIL	TY	FINE SA	ND	6	15.0	2	5	5	10	
17.0'	22.7	25	APROLI	TE a	SILT	Y SANE		7	17.5	3	3	4	7	
								8	20.0	15	15	15	30	
						т.								
			<u> </u>										·	
		Z	2.2	AUG	ED	REEUSI	26							
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	: '													
	FROM	то		FROM	то	REMARKS			1				I	
SS	1.0'	20.0	AUGER	0.0	22.2									
WASH			TRI-CONE											
CASING			CORE											
BIT														
GWATOB	7.0	<u>,</u>	GW 24 I	HRS		[E	LEVAT	ION:						
DRILLED BY	MP					L	OGGED BY	DI	eI					
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## Field Test Boring Record Geotechnical Field Services

Southern Company Services

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PROJECT		A D	)		EWDI	r.A	LEAD DI		T		9	DATE:	2 .0	37
LOCATION			DIRE		12013	s-Pn		DR	LVE	<u>; y Jr</u>	BORING .	<u> </u>	- 2 -	( /
DEP	TH							SAI				D/	1	0005
FROM	ТО			DESC	RIPTIO	N		NO	DEPTH	1st 6"	2nd 6"	3rd 6"	N	REC
0.0	3.0	'REI	BROWN	SANDY	Chay	EY SILT	-	1	2.5	1	1	Z	3	
3.0	4.5	1 REI	BROWN	( 511	.77 .	SAND FI	LL X	Ζ	6,5	3	5	7	12	
4.51	8.0	1 RET	BROWN	SILT	Y SA,	NS -								
8.0'	12.0	' YEL	LOW BLD	WAN S	SILT	Y SAM	3	3	11.5	4	10	8	18	
		7.	5' Mol	sт										
12.0'	16.5	1 Roc	ek Lea	15, D	ecom	POSED	Rock	4	16.5	9	10	8	18	
			•											<u></u>
		A	IGER .	REFU	sAL	@ 14.	5							
4														
			-											
		,				<u></u>								
			-											
	·							*						
	•					**** <b>***</b> ***								
	FROM	то		FROM	то	REMARKS								
55	1.0	16.5	AUGER	0.0	16.5									
WASH			TRI-CONE											
CASING			CORE											
ВГТ	·····													
GWATOB_	7.0	1'	GW 24	IRS		E	LEVAT	ON:						
DRILLED BY	MP				•	ľ	LOGGED BY	DI	2I					
900001														



PROJECT					EMO #	·	LEAD	RILLER				DATE:		
YATE	es E	AP	UIK	E	33	<u>13-FA</u>		<u> </u>	2 I	JEY		//-	- 4-	97
LOCATION											BDAING #	DIT	7A	
DEP	TH	<b></b>		DESC	RIPTIC	N		SAN	IPLE		÷	<b>-</b>	N	CORE
FROM	то							NO	DEPTH	1st 6"	2nd 6*	3rd 6*		REC
0.5	3.5	RE	0 BROWN	J .SAN	Dy C	AYEY S	11T	1	2.5					
3.5'	6.0	"Red	BEONNY	ELLOW	TAN	FANDY								
		C.	AYEY -	SILT	-	1		2	5.0					
6.0'	4.5	' YE	LLOW BI	eown	SIL	TY SAN	6	3	6.5					
4.5'	8.0	1 YEL	LOW BROW	WBLA	CK D	FCOMPOS	ED	4	7.0'					·
		Ra	ck			×		1						
8.0'	9.0	' PEI	BROWN	TAN	LIAL	IEV SIL	τ	5	8.5					· · · · ·
9.0'	10.0	' D=)	TAI	SILT	·v .5	ANN	·	le D	10.0					
	<u> </u>													
		1,)	== 0	7	<u>~'</u>									
		a												
		U	d @	3.0' 7	ъ 5.	0'								1'-10"
										:				
		u)		5-0'	TO T	7.0'								2.0'
		_												
	FROM	то		FROM	то	REMARKS	Cao	NTI	JUDL	18	SAN	per	L	
SS			AUGER	0.0	10.0									
WASH			TRI-CONE											
CASING			CORE											
віт						]							,	
GWATOB_	DRY		GW 24 I	-IRS			ELEVAT	ÍÓN:						
DRILLED BY	MP						LOGGED B	Y DA	.7					
00/0001										<b></b>				



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Southern Company Services

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PROJECT	EA	ΡÌ	IKE		EWO #	3-FA	LEAD D		Ive	ΞY		DATE:	' - تى ھ	37
LOCATION	T YA	TES								l	BORING #	D 18		
DEF FROM				DESC	RIPTIC	N		SA!	DEPTH	1st 6*	2nd 6*	3rd 6*	N	CORE
0.0	2.5	'LE	BROWN	SAND	Y CAR	YEY SI	47	1	2.5	3	7	7	14	
2.5'	14.0	' 5 ₈	PROLIT	<u> </u>	L.TY	SAND		٢	6.0'	Z	4	4	8	
		Mie	sr@ 7	1.51				3	11.0	3	3	7	10	
				******			······································	4	16.0	16	22	20	42	
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	<u></u>													
						·····								
	5004		I	FROM	70	REMARKS						·		
\$\$	1.0	16.0	AUGER	D.0	14.5									
WASH			TRICONE				·····	***						
CASING			CORE										•	
GWATOB_	DRY	, 	GW 24	I IRS			ELEVAT	ION:						
DHILLED BY	MP,	DR.	E	· ••••••			LOGGED BY	DR	I			<u>×</u>		



Southern Company Services

Indians       PLANT       ATES       ROMMAN       D 19         DEPTH       DESCRIPTION       NO       DEPTH       1st6"       2nd6"       3rd6"       N       RCORE         FROM       TO       DESCRIPTION       NO       DEPTH       1st6"       2nd6"       3rd6"       N       REC         FROM       TO       J. 5'       LED       BROWANCAE SILT       J. 2.5'       Z       3       4       7         5.0'       J. 0'       SARPELITE @ 5.0'       TANSLITY SAND       Z       5.0'       J. 2       1       I. Z         J.0.0'       J.5.0'       TAN       SANDY       SILT'       J. 10'       Z       1       I. Z         J.0.0'       J.0.0'       TAN       SANDY       SILT'       J. 10'       Z       1       I. Z         J.0.0'       J.0.0'       TAN       SANDY       SILT'       J. 10'       Z       1       I. Z         J.0.0'       J.0.0'       TAN       SANDY       SILT'       J. 10'       Z       1       I. Z         J.0.0'       J.2.3'       DECOMPOSED       ROLK       S       Z10'       Z       1       I. Z         J.0.0'       J.2.3'	PROJECT	s E.A	ι ρ	DIKE		EWO # 331	3 FA	LEAD DF		Σu	EΥ		DATE: 10	-15 -	.97
DEPTH FROM       TO       DESCRIPTION       SAMPLE NO       DEPTH 1316"       2nd 6"       N       CORE REC         P 0       4.5'       LED BROWAN (LAYEY SILT       1       2.5'       Z       3       4       7         4.5'       5.0'       PED BRANCE SILT       1       2.5'       Z       3       4       7         5.0'       10.0'       SAPROLITE @ 5.0'       TANSUTY SAND       Z       5.0'       3       3       4       7         5.0'       10.0'       SAPROLITE @ 5.0'       TANSUTY SAND       Z       10.0'       Z       1       Z         15.0'       ZO.5'       TAN       SANDY       SILT'       3       11.0'       Z       1       Z         20.5'       ZS.3'       DECOMPOSED       POCIK       5       21.0'       Z       7       14'       Z3         20.5'       25.3'       DECOMPOSED       POCIK       5       21.0'       Z       7       14'       Z3         20.5'       25.3'       S       5%'       5%'       S'       S		τ Y	I AT	ES								BORING #	D19	)	
FROM       TO       DESCRIPTION       NO       DEPTH       1st 6*       2nd 6*       N       REC         D - 0       4.5'       LED BROWN (LAYEY SILT       1       2.5'       2       3       4       7         4.5'       5.0'       LED BROWN (LAYEY SILT       1       2.5'       2       3       4       7         5.0'       10.0'       SAPROLITE @ 5.0'       TANSILTY SAND       Z       5.0'       3       3       4       7         10.0'       IS.0'       TAN SANDY SILT'       3       11.0       Z       1       1       2         15.0'       20.5'       TAN SILTY SAND       4       160       2       7       9       14       23         20.5'       25.3'       DEEDMPOSED BOCK       5       210       2       9       14       23         4       423       355       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       <	DEP	TH /	$\overline{\mathbf{h}}$				-		SAN	<i>I</i> PLE					COBE
D - 0       4.5'       LED BROWN (LAYEY SILT       1       2.5'       2       3       4       7         4.5'       5.0'       RED DRANGE SILTY SAND       Z       5.0'       3       3       4       7         5.0'       10.0'       SAPROLITE @ S.O'       TANJUTYSAND       III.0       Z       (I       III.0         10.0'       15.0'       TAN       SANDY SILT'       3       11.0       Z       (I       III.0         15.0'       ZO.S'       TAN       SANDY SILT'       3       11.0       Z       (I       III.0         20.5'       ZO.S'       TAN       SAND       4       14.0       Z       7       9       14         20.5'       ZO.S'       TAN       SAND       4       14.0       Z       7       9       14       Z3         20.5'       ZO.S'       TAN       SAND       4       10.0       Z       9       14       Z3         20.5'       ZO.S'       TAN       SAND       4       10.0       2       10.0       10.0       10.0         20.5'       ZO.S'       ZO.S'       ZO.S'       ZO.S'       ZO.S'       ZO.S'       2       2	FROM	то			DESC	RIPTIO	N		NO	DEPTH	1st 6"	2nd 6"	3rd 6*	Ν	REC
4.5'       S.O'       BED DRANGE SILTY SAND       Z       S.O'       3       3       4       7         S.O'       10.0'       SAPROLITE @ S.O'       TANSANDY       SILT'       3       11.0       Z       (       Z         10.0'       IS.O'       TAN       SANDY       SILT'       3       11.0       Z       (       Z         15.0'       ZO.S'       TAN       SILTY       SAND       4       16.0       Z       7       9       1/6         20.5'       ZS.3'       Decomposed Pock       5       ZIO       2       9       1/4       Z3         20.5'       ZS.3'       Decomposed Pock       5       ZIO       2       9       1/4       Z3         20.5'       ZS.3'       Decomposed Pock       5       ZIO       2       9       1/4       Z3         20.5'       ZS.3'       Decomposed Pock       5       ZIO       2       1       1         20.5'       ZS.3'       S       SS	0-0	4.5	$'\ell$	ED BROW	DN CA	AYE	Y SIL	Г	1	2.5	2	3	4	7	
5.0'       10.0'       SAPROLITE @ 5.0'       TAN SANDY SILT'       3       11.0       2       1       1       Z         15.0'       ZO.5'       TAN SILTY SAND       4       16.9       2       7       9       14         20.5'       Z5.3'       DECOMPOSED POCK       5       210       2       9       14       23         20.5'       25.3'       DECOMPOSED POCK       5       210       2       9       14       23         4       25.3       35       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5% <td>4.51</td> <td>5.0'</td> <td>R</td> <td>D DRANG</td> <td>E SI</td> <td>TY -</td> <td>SAND</td> <td></td> <td>2</td> <td>5.0</td> <td>3</td> <td>3</td> <td>4</td> <td>7</td> <td></td>	4.51	5.0'	R	D DRANG	E SI	TY -	SAND		2	5.0	3	3	4	7	
10.0'       15.0'       TAN       SANDY       SILTY       3       11.0       2       1       1       Z         15.0'       20.5'       TAN       SILTY       SAND       4       14.9       2       7       9       14         20.5'       25.3'       DEEDMPOSED ROCK       5       210       2       9       14       23         4       25.3       35       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%	5.0'	10.0	/ .	SAPROLIT	- E @	5.0'	TAN SILTY	SAND							
15.0'       20.5'       TAN       51.1TY       SAND       4       160       2       7       9       14         20.5'       25.3'       Decomposed Rock       5       210       2       9       14       23         6       25.3       35       5%       5%       5%       5%       5%       5%         1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       <	10.0'	15.0	17	AN SA	NDY	5,1			3	11.0	Ζ	(	(	Z	
20.5 ¹ 25.3 ¹ DECOMPOSED ROCK 5 210 2 9 14 23 6 253 35 595 595 595 595 595 595 595 595 59	15.0'	20.5	17	AN SIL	TY	SAN	۵		4	16.0	2	7	9	16	
4     25.3     35     5%     5%       9     9     9     9     9     9       9     9     9     9     9     9       9     9     9     9     9     9       9     9     9     9     9     9       9     9     9     9     9     9       9     9     9     9     9     9       9     9     9     9     9     9	20.51	25.3	1]	ECOMPO	SED	Roci	<		5	210	2	9	14	23	
FROM     TO     FROM     TO     FROM     TO     FROM     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I     I <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>6</td> <td>25,3</td> <td>35</td> <td>50/3</td> <td></td> <td>50/ /.3</td> <td></td>									6	25,3	35	50/3		50/ /.3	
Image: Second															
Image: Second state of the se															
Image: Second															
Image: Second															
Image: Second															
Image: Second															
Image: Second															
FROM     TO     FROM     TO     REMARKS       SS     /. 0'     25.3'     AUGER     0.0     24.5       WASH     TRI-CONE						a									
FROM     TO     FROM     TO     REMARKS       SS     /. O'     25.3'     AUGER     O. O     24.5       WASH     TRI-CONE															
FROM     TO     FROM     TO     REMARKS       SS     /. O'     25.3'     AUGER     O. O     24.5       WASH     TRI-CONE															
FROM       TO       FROM       TO       REMARKS         SS       /. O' 25.3'       AUGER       O. O       24.5         WASH       TRI-CONE															
FROM     TO     FROM     TO     REMARKS       SS     /. 0' 25.3' AUGER     0.0 24.5															
SS     /. 0' 25.3'     AUGER     0.0     24.5       WASH     TRI-CONE		FROM	то		FROM	то	REMARKS								
WASH TRI-CONE  CASINGCORE   BITCORE   GWATOB /9.4'   GW 24 HRSELEVATION:   DRILLED BY M. P.	SS	1.0'	25.3	AUGER	0.0	245									
CASINGCORE   BITCORE   GWATOB /9.4'   GWATOB /9.4'   GW 24 HRSELEVATION:   DRILLED BY M. P.	WASH			TRI-CONE											
BII     GWATOB     Image: Principal state s	CASING			CORE											
	BII GWATOR	19.4	/'	GW 24	L			ELEVAT	ION:						
	DRILLED BY	MP						LOGGED B	<u>مر ۲</u>	T					

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Southern Company Services

	Ates	Asi	h Pond	Dike	ewo #	13 FA	LEAD	RILLER	τνεγ	1		DATE:	-12-	.98	]
	Ates	-						_	,			-20			]
DÉP FROM	TH TO	-		DESC	RIPTIO	N		SAI NO	MPLE DEPTH	1st 6"	2nd 6"	3rd 6"	N	CORE REC	1
0.0	3.0	K	ecl SAr	chy 3	Silt				2.5	/	/	1	2	BEF	M
3.0	6.0	KE	edish 6	REY	5A.	Ndy Si	17	2	5.0	1	1	1	2	5	<i>e</i> ,9
6.0	9.5	A-	h Ist	21)-	Red	SANdy 5	10075	3	7.5	W	0	H	~	MySm	1
9.5	13.5	V	Ellowis	h REC	-1 - CIA	22 - 1 1 <u>V - SANC</u>	14 5:17	4	10.0	WO	H.,	ン	2	ML	ek
P		/	-			/	+-	5	12.5	1	7	3	5	ML	Shu Cl
13.5	17.0		AN WE	+ 5;	14.1 =	SAND		6	15-0	2	3	2	5	FESAF	5
17.0	26.4	TA	N+Wh	ite 3	: Hy?	SADROI	itε	7	17.5	2	3	4	7	1	
						/		8	20.0	5	7	14	21		
								9	27,5	6	7	7	14	SM	
								10	25,0	3	3	2	5		ĺ
			REFUSAL	' <i>A</i> +	26.4	4		11	764	50 <del>4</del>	-	-	-	2	1
-															1
			•.												
															1
															1
			h			<u> </u>								:	
	, <u>, , , , , , , , , , , , , , , , , , </u>	1													
					<del></del>										
	FROM	то		FROM	то	REMARKS	ALIGE	e ke	fusa	1 At	26.	4			J
SS	0.0	26.4	AUGER	0.0	26.4		/								
WASH			TRI-CONE											x	ł
BIT								i							
GWATOB_	4.0		_ GW 24 H	IRS0	=F 30	8	ELEVAT	ION:							
DRILLED BY	DRI	-	``````````````````````````````````````				LOGGED B	' RH	/						

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PROJECT	las	Asl	Dut	N. V.	EWO #	DID TI	LEAD DI					DATE:	17-	92	
LOCATION	125	<u>1750</u>	[BNC]	DIRE	1.5	513 FM		RI		<u>ey</u>	BORING #		-10-	18	
	ATE	5										)- ~	/	-	
FROM	TO			DESC	RIPTIO	N		NO	DEPTH	1st 6"	2nd 6"	3rd 6"	N	CORE REC	
0.0	4.5	Li	te Bei	Gri UN	SANO	ly 5:1	+	1	2.5	7	1	1	2	Berm Bil	She
4.5	6.0	Li	HE GRA	1 5AN	udy	Silt		2	5.0	1	1	1	2		
6.0	11.0	/	<u>1sh '</u>		/			3	7.5	$\omega$	0	H		10	H
				<u></u>	<u></u>			4	10.0	1/18			1/18		
11.0	20.6	, Ke	d CIAY	ish	JANO	y Sil	+	5	12.5	i	1	4	5	ML	
			/			/		6	15.0	1	3	4	7		
								7	17.5	2	3	5	8		
							hel <	8	200	1	2	2	4	6	
20.6	25.0	> 1.)E	4. Silty	SA1	ROLit	-E V	chong 2	. Y	225	R	4	21	25	)54,	
		Ta	Bra	,lite	- al	Jsi so	< 	10	25.0	9	10	25	35	SA	
										-					
						*									
	FROM	то		FROM	то	REMARKS	Auge	RK	efys.	<u>41 A</u>	4 2	5.0			
SS	0.0	25.0	AUGER	0.0	25.0										
WASH			TRI-CONE												
CASING			CORE												
BIT							<b>.</b>								
GWATOB_	<u> </u>	2	. GW 24 I	HRSO	FF JO	8	ELEVAT	ION:							
DRILLED BY	DRI						LOGGED BY	R	Y						

Southern Company Services  $\bigwedge_{\mathcal{L}} \mathcal{EL} \mathcal{F}$ 

PROJECT	155 A.	h P	Nd Dik	E	EWO #	FA		RILLER R Tu	ZV			DATE:	12-9	87
	<u> </u>			<u>~</u>		<u> </u>		1 - 16 ⁰	-/		BORING #			
<u> </u>	NT (	INTE										y - d d	T	
DEP FROM	то ТО			DESC	RIPTIO	N		SAN NO	NPLE DEPTH	1st 6"	2nd 6*	3rd 6"	N	CORE REC
0.0	6.0	K	d-BROL	JN 3	Andy	5:14		1	2.5		1		2	W.
					7			2	5.0	1	1	1	2	/ rut
6.0	10.0	F.	ly Ash					3	7.5	دى	0	H	)	1
		L	b SAM	3/4	RECOI	bered		4	10.0	ω	0	14	$\int J$	Her -
10.0	20.0	K	ed CLAY	Ey S	Andy	5;1 <del>1</del>		5	12.5	1	1	1	2	ML
				/	/-			6	15.0	2	5	6	11	
								7	17.5	3	4	5	9	
								8	20.0	2	3	3	6	F
20.0	23.0	Mu	And +	GRA	ivel.	l toprov l	)	9	225	2	3	10	13	SP
23.0	26.0	Pš	ACK Sil	÷γ [≤] ς	ne ADRO	jitc		.10	25.0	12	11	7	18	M
26.0	28.5	- (a	hite -	BROWN	انک د	ty SADRO	lite	11	27.5	4	12	25	57	Sap.
						N. F. ?	ň	12	28.5	200			0/0	
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	FROM	то		FROM	то	REMARKS								
SS	1.0	27.5	AUGER	0.0	28.5									
WASH			TRI-CONE											
CASING				<b> </b>									<u></u>	
віт				<u> </u>		<u> </u>								
GWATOB	2.6		GW 24 I	HRS	FF .	Tob E	LEVAT	ION:				<u>.</u>		<u></u>
DRILLED BY	DRI					LC	OGGED B	Y RN	, DR	Ĩ				
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MINES 8-426 1789

	ls<	Act	N.V.	<u></u>	EWO#	13 54	LEAD D	RILLER	- LISV		·	DATE:	1-11-	72	
	1/55	<u> </u>	$D_{i}E_{i}$			15 / 11		<u>R</u> _L	VEY	1		- 23			
DEP	77 <u>5</u> TH			DEOO				SAI	MPLE					CORE	
FROM	то			DESC	RIPTIO	N		NO	DEPTH	1st 6"	2nd 6"	3rd 6*		REC	
0.0	3.5	B	ROWN S	<u>Silty</u>	SAN	٩		1	2.5	1	1	1	2	$) \downarrow 0$	i L
3.5	6.0		7sh					2	5.0	WOH				Arah	<b></b>
6.0	10.5	- Re	d CLAY	<u>sh 51</u>	Andy	5;17		3	7.5	WOH	1	1	2	$\backslash$	
			/		/			4	100	2	2	3	5	) pr	~
10.5	13.0	4	DEF SA	ndy	5: 17	-		5	125	3	3	4	7	/	
13.0	14.5	- 5	ANO-	,				6	15.0	50		-	50 5.5	SMA	sР
15.0	21.0	Be	own + 1	stite	. Sai	rolite		7	17.5	10	7	8	15	15B	2
					,			8	20.0	12	13	13	<i>a</i> 6	-la	``
21.0	25.0		in Silk		nd <	Anpoli	ŧε	g	22.5	38	50	-	50 4	13	SI
			REFUSA	1 A+	' 25	.0		10	25.0	50	_	-	50		So
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	FROM			FROM	то	REMARKS	1.00	0	21		)701			l	
SS	00	25.0	AUGER	0.0	250		<u>14UYE</u>		<u> 74 )</u>		. 03.0				
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GWATOB	<u>.</u> Р	١	_ GW 24	HRS. 👲	FF J	60	ELEVAT	ION:					,		State of the second
DRILLED BY	DRZ	-					LOGGED B	' RH	1						State of the State of the State
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$\begin{array}{c c c c c c c c c c c c c c c c c c c $	PROJECT	s A.	su F	2.1) #	3	EWO:	13-FU	LEAD DR		>0	Tur	.v	DATE:	-24	-99
DEPTH         DESORIPTION         SAMPLE         C         C         P           FROM         TO         NO         DEPTH         1st 6"         2nd 6"         N         REC           0.0         4.5'         SAMDY         CLAYEY         SLT         1         Z.S         1         Z         3         S           4.5'         8.0'         SAMDY         CLAYEY         SLT         J/MICA         Z         S.S         Z         4         4         8           8.0'         /Z.0'         MOIST         SAPEDLITE         SLTY         J/MICA         Z         S.S         Z         3         S           7         7.0'         SAPROLITE         SAMDY SILT         4         /S.S         I         Z         Y         S           7         50.5         6         9         /O         19         S         S           9         45.5         2.5         ZO         2.4         44         S         S           9         45.5         2.5         ZO         2.4         44         S         S           9         45.5         2.5         ZO         2.4         44         S	LOCATION	<u> </u>	<u> </u>								Ī	BORING	7-7	4	
FROM     TO     DESCRIPTION     NO     PREC     2 and 6"     N     PREC       0.0     4.5'     SANDY     CLAYEY     SILT     1     Z.5     1     Z     3     S       4.5'     S.O'     SANDY     CLAYEY     SILT     J/MICA     Z     S.S     Z     4     4     8       3.0'     /Z.O'     MOIST     SAPEDLITE     SILT     J/MICA     Z     S.S     Z     4     4     8       7.0'     SAPEDLITE     SANDY SILT     4     /S.S     1     Z     3     S       7.0'     Y.O'     SAPEDLITE     SANDY SILT     4     /S.S     1     Z     4     4       8     S.S     ZO     35     S     7     1Z       9     40.5     ZS     ZO     24     44       9     40.5     ZS     ZO     Z4     44       9     40.5     ZS     ZO     Z4     44       9     40.5     ZS     ZO     <	DEP	тн	·						SAL		l	•		7	CORE
0.0 4.5' SANDY CLAYEY SILT I Z.5 I Z 3 5 4.5' S.O' SANDY CLAYEY SILT W/MICA Z 5.5 Z 4 4 8 8.0' /2.0' MOIST SAPPOLITE SILT W/MICA Z 5.5 Z 4 4 8 7.0' 47.0' SAPROLITE SANDY SILT 4 5.5 I Z 4 5 7.0' 47.0' SAPROLITE SANDY SILT 4 5.5 I Z 4 5 7.0' 5.5 Z 2 3 5 7.0' 2.5 I 3 7 12 7.5 Z 6 9 10 19 8 35.5 Z0 35 50 8 35.5 Z0 24 44 10 44.1 52 9 40.5 Z5 Z0 24 44 10 44.1 52 10 44.	FROM	то			DESC	RIPTIO	N		NO	DEPTH	1st 6*	2nd 6*	3rd 6*	N	REC
4.5 ⁻¹ 8.0 ¹ SANDY CLAYEY SILT W/MICA       Z       5.5       Z       4       4       8         8.0 ¹ 72.0 ¹ MOIST       SAPEDLITE       SILTY SAND       3       10.5       Z       Z       3       5         12.0 ¹ 47.0 ¹ SAPEDLITE       SANDY SILZ       4       15.5       1       Z       4       4         20.5       1       3       5       8       5       7       12         2       20.5       1       3       5       8       7       12         2       20.5       1       5       7       12       7       8.35.5       20       35       57       7       17         3       9       40.5       2.5       20       2.4       44       7       7       8.35.5       20       35       77       17         3       9       40.5       2.5       20       2.4       44       7.0       77       77       77       77       77       77       77       77       77       77       77       77       77       77       77       77       77       77       77       77	0.0	4.5	-1	SANDY	CLAY	'EY	SILT		1	2.5	1	Z	3	5	
8.0' 12.0' MOIST SAPPOLIFE (SILTY SAND) 3 10.5 Z 2 3 5 12.0' 47.0' SAPPOLIFE SANDY SILT 4 15.5 1 2 4 4 5 20.5 1 3 5 8 6 25.5 1 5 7 12 7 36.5 6 9 10 19 8 35.5 20 35 52 7 9 40.5 25 20 24 44 10 44.1 57 1 2 4 10 44.1 57 1 2 4 1 4 1 2 4 1 4 1 2 4 1 4 1 4 1 4 1 4 1 4 1 4 1 4 1	4.5'	8.0	15	NDY CA	AYEY	· SIL	T W/MI	CA	Z	5.5	2	4	4	8	
12.0'       47.0'       SAPROLITE       SAMDY SILT       4       15.5       1       2       4       4         *       5       20.5       1       3       5       8         *       -       6       25.5       1       5       7       12         -       7       20.5       1       5       7       12         -       7       20.5       6       9       10       19         -       7       20.5       55       52       8       35.5       20       25       7       12         -       9       40.5       25       20       35       52       8       35.7       7       1       10       19       10       19       10       19       10       19       10       19       10       19       10       19       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10	8.0'	12 .	o' M	9157	SAPED	LITE	(SILTY.	Saud	3	10.5	Ζ	2	3	5	
5       20.5       1       3       5       8         6       25.5       1       5       7       12         7       80.5       6       9       10       19         8       35.5       20       35       50       37       12         9       40.5       25       20       24       44         10       44.1       57       37       37       37         10       44.1       57       25       20       24       44         10       44.1       57       35       57       37       37         10       44.1       57       35       50       24       44       37       37       37       37       37       37       37       37       37       37       37       37       37       37       37       37       37       37       37       37       37       37       37       37       37       37       37       37       37       37       37       37       37       37       37       37       37       37       37       37       37       37       37       37       37       37 <td>12.0'</td> <td>47.0</td> <td>,' <u>5</u></td> <td>Afrol 11</td> <td>-E</td> <td>SAN</td> <td>DY SILE</td> <td></td> <td>4</td> <td>15.5</td> <td>1</td> <td>2</td> <td>4</td> <td>4</td> <td></td>	12.0'	47.0	,' <u>5</u>	Afrol 11	-E	SAN	DY SILE		4	15.5	1	2	4	4	
6       25.5       1       5       7       12         7       50.5       6       9       10       19         8       35.5       20       35       50       87////////////////////////////////////		4	*	•					5	20.5	1	3	5	8	
7       50.5       6       9       10       19         8       35.5       20       35       59       8%         9       40.5       2.5       20       2.4       44         10       44.1       5%       2.5       20       2.4       44         10       44.1       5%       2.5       20       2.4       44         10       44.1       5%       2.5       20       2.4       44         10       44.1       5%       2.5       20       2.4       44         10       44.1       5%       3.5       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5%       5% <td></td> <td></td> <td></td> <td></td> <td>~</td> <td></td> <td>• •</td> <td></td> <td>6</td> <td>25.5</td> <td>1</td> <td>5</td> <td>7</td> <td>12</td> <td></td>					~		• •		6	25.5	1	5	7	12	
8     35.5     20     35     35.7     77.0       9     40.5     2.5     2.0     2.4     4.4       10     44.1     77.1     77.1     77.1       10     44.1     77.0     1     1     1       10     44.1     77.0     1     1     1       10     44.1     77.0     1     1     1       10     44.1     77.0     1     1     1       10     44.1     77.0     1     1     1       10     44.1     77.0     1     1     1       10     44.1     77.0     1     1     1       10     44.1     77.0     1     1     1       11     1     1     1     1     1       11     1     1     1     1     1       11     1     1     1     1     1       11     1     1     1     1     1       11     1     1     1     1     1       11     1     1     1     1     1       11     1     1     1     1     1       12     1     1     1   <									7	30,5	6	9	10	19.	
9     40.5     25     20     24     44       10     44.1     5%1     5%1     5%1       10     44.1     5%1     5%1     5%1       10     44.1     5%1     5%1     5%1       10     44.1     5%1     5%1     5%1       10     44.1     5%1     5%1     5%1       10     44.1     5%1     5%1     5%1       10     44.1     5%1     5%1     5%1       10     44.1     5%1     5%1     5%1       10     10     10     10     10       10     10     10     10     10       10     10     10     10     10       10     10     10     10     10       10     10     10     10     10       10     10     10     10     10       10     10     10     10     10       10     10     10     10     10       10     10     10     10     10       10     10     10     10     10       10     10     10     10     10       10     10     10     10     10	÷								8	35,5	20	35	5/5	85/1	•
Image: 10 million     Image: 10 mill									9	40.5	25	20	24	44	•
Augree Refusal @ 47.0       Augree Refusal @ 47.0       Augree Refusal @ 47.0       Image: State									10	44.1	5%1			5%	
Augree Refuse Legator       FROM       TO       FROM       TRICONE       GWATOB       JRLLED BY       DRLLED BY       DRL															
Augree Refusal @ 47.0       Augree Refusal @ 47.0       Image: Augree Refusal @ 47.0       Image: Augree Refusal @ 47.0       Image: Augree Refusal @ 17.0															
FROM     TO     FROM     TO     REMARKS       \$\$     J.O     4% J'     AUGER     O.O     47.0°       WASH     TRI-CONE				Augre	e Rei	FUSA	204	7.0							
FROM     TO     FROM     TO     REMARKS       SS     1.0     4%/1     AUGER     0.0     47.0       WASH     TRI-CONE															
FROM     TO     FROM     TO     REMARKS       \$\$     1.0     44.1'     AUGER     0.0     47.0'       WASH     TRI-CONE						,									
FROM     TO     FROM     TO     REMARKS       SS     1.0     44.1'     AUGER     0.0     47.0'       WASH     TRI-CONE						************************************	**							~	
FROM     TO     FROM     TO     REMARKS       SS     J.O     44.1'     AUGER     O.O     47.0'       WASH     TRI-CONE															
FROM         TO         FROM         TO         REMARKS           \$\$         1.0         44/1         AUGER         0.0         47.0           WASH         TRI-CONE			-							,					
FROM     TO     FROM     TO     REMARKS       SS     1.0     44.1'     AUGER     0.0     47.0'       WASH     TRI-CONE							<b>**</b>			·					
\$\$     1.0     44.1'     AUGER     0.0     47.0'       WASH     TRI-CONE		FROM	то		FROM	TO	REMARKS			,				I	
WASH     TRI-CONE      CASING    CORE       BIT    CORE       BIT    CORE       BIT    CORE       GWATOB_19.0     GW 24 HRS. 9.0       ELEVATION:        DRILLED BY     DRIL	\$\$	1.0	44.1	AUGER	0.0	47.0			_						
CASING CORE BIT CORE BIT GWATOB 19:0 GW 24 HRS. 7:0 ELEVATION:	WASH			TRI-CONE					•					•	
GWATOB_19.0 GW 24 HRS. 7.0 ELEVATION:	CASING		en esteratura en com	CORE						•		RATION - MANAGERIA	,#k, 1993-95,		
GWATOB 12.0 GW 24 HRS. 7.0 ELEVATION:	811					0 -	L								
LOGGED BY RH	GWATOB_	17.5	2	GW 24 i	-IRS	7.0	EI	EVATI	ON:					·	-
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LOCATION	•											)-25	-	
DEP	TH			DESC	RIPTIO	N		SAN	APLE		1	Y	N	CORE
FROM	TO					•		NO	DEPTH	1st 6"	2nd 6*	3rd 6"		<u>HEC</u>
0.0	3.0		Clay_					1	2.5	4	5	6	11	
3.0	8.0	54	mdy C	LAYEY	<u> 311</u>			2	5.5	4	5	5	10	
8.0	45.8	1 1	yey Sy	te 3	Apent	ite ( i	(t-x)	3	10.5	1	1	1	2	
				/	•			4	15.5	-1	2	4	6	
	•	₽ -					-	5	25	3	6	8	14	
				`		· • •		6	25.5	6	12.	14	26	
								7	30.5	4	8	12	20	
								8	35.5	12	13	25	38	
								9	15.5	19	15	16	31	•
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	FROM	TO		FROM	τ <mark></mark>	REMARKS			,					
93	1.0	44.5	AUGER	0.0	45.8									
WASH			TRICONE						<b>,</b>					
				1										
BIT				1										
GWATOB.	18.6	·	GW 24 I	IRS4	10.3		ELEVAT	10N:						
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PROJECT	D. #>	-	s OWS		LEAD DRI					DATE:	2-	
YATES ASH YOND # 5 3313 FU						PR	- K	EY	BORING #			
D-24										7		
DEPTH	DESCRIPTION					SAN NO	DEPTH	1st 6"	2nd 6*	3rd 6-	N	
DO 40	CLANLY SIN					1	25	2	4	4	P	
U.D 8.0	Sandy Claury Silt					2	5	k	1	3	4	
80 140	Lizet Claured Kelt 12/ Kan					?	10	}	]	2	Э	
110' 404	Let Silde	Sano	DLI.	re.		4	15	2	3	3	6	
17.0	·		0-1			5	20	3	6	5	17	
		`		**************************************		6	25	3	12.	32	44	
						7	28-9"	50			50/3"	
						8	33-8	P S			50/2+	1
						9	38-11	59			50/.	•
	Auner R	fuse	14	0.4	1							
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FRCM	то	FROM	то	REMARKS			•					
55 1.0	0.4 AUGER	0.0	40.4									
WASH .	TRI-CONE						<b></b> .					
CASING									_ مذان فالك مسر_			
вл			<b>-</b>	1				<u></u>		·	·	
GWATOR 18.4 GW 24 HRS. 6.5 ELEVATION:												
DAILLED BY DRI					LOGIGED 81	P	<u> </u>					

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Plant Yates Ash Pond 3 Temporary Piezometers

Plant fates Ash fond of the provide the CW El										OW Danth	
	Di	ez Ref.	Ref. Elev.	<u>GW Depth</u> <u>10/30/97</u>	<u>GW Elev.</u> <u>10/30/97</u>	<u>GW Depth</u> <u>11/14/97</u>	<u>GW Elev.</u> <u>11/14/97</u>	<u>GW Depth</u> <u>11/11/98</u>	<u>GW Elev.</u> <u>11/11/98</u>	<u>6/8/99</u>	<u>6/8/99</u>
KNA		Groun	d 747.98 747.98	7.75 6.10	740.23 741.88	5.90 5.30	742.08 742.68	5.40 4.80	742.58 743.18	6.00 5.40	741.98 742.58
		11	737.52	-1.50	739.02	-1.20	738.72	0.40	737.12	-0.80	738.32
	ξ (D8 D8	11	756.09 756.09	16.80 19.50	739.29 736.59	17.50 18.00	738.59 738.09	17.60 12.50	738.49 743.59	17.20 12.80	738.89 743.29
,		υ Δ ¹¹	747.90 747.90	8.00 11.10	739.90 736.80	7.80 8.80	740.10 739.10	8.40 8.90	739.50 739.00	7.80 8.50	740.10 739.40
	5-D12	<b>~</b>	737.08	2.30	734.78	2.10	734.98	-0.20	737.28	-0.80	737.88
	D17 	, " 7 A "	747.50 747.50	7.40 7.50	740.10 740.00	7.00 7.50	740.50 740.00	7.00 7.30	740.50 740.20	8.00 5.00	739.50 742.50
$\mathcal{F}_{C_{i,q}}$	D18	3 "	746.28			7.50	738.78	7.40	738.88	7.20	739.08
	<u> </u>										

### Attachment C

Laboratory Analyses
## PLANT YATES ASH POND 3 DIKE TEST SUMMARY/DESIGN PARAMETERS

BAG SAMPLES

SOIL NEW FI	LL							95%	UUT	est @95%,	Opt +2			CU Te	st w/ ppr @ 9	95%, Opt	+2	
Sampl	e					Max. Dry	Optimum	Dry			Total	Sat.					Total	Sat.
Design.	Depth	USCS	% Fines	PI	LL	Weight	Moisture	Un.Wt.	<u>c</u>	phi	Unit Wt.	Unit Wt.	<u>c</u>	phi	<u>c'</u>	phi'	Unit Wt.	Unit Wt.
TP@BA30	3'	МН	57	15	60	85.8	28.9	81.5	0.61	26.4	106.5	112.8	0.42	16.3	0.12	33.2	106.8	114.3
TP@BA37	2'	MH	62	20	62	93.7	26.2	89	0.43	21.5	114.3	118.3	0.56	13	0.13	37.2	113.9	119
TP@BA37	5'	SM	23.5	7	38	101.7	19.2	96.6	0.64	25.6	117.1	121.8	1.15	16.1	0	41	117.4	123.3
TP@BA38	4'	мн	87	26	63	84.7	31	80.4	0.82	23.1	107.1	112.8	0.52	17.1	0	38.7	107.2	114.2
								DESIGN	0.56	22.3	111.3		Unsaturate	d	0.04	36.5	111.3	117.7
									0.6	16		116.4	Saturated -	<ul> <li>Assumed I</li> </ul>	Parameters			

COMPACTED AS	SH							95%	UU Te	st @95 %,	Opt		CU T	est w/ ppr	@ 95%, Op	/t	
Sam	nple					Max. Dry	Optimum	Dry			Total			1		Total	Sat.
Design.	Depth	USCS	% Fines	P]	LL	Weight	Moisture	<u>Un.Wt.</u>	<u>c</u>	phi	Unit Wt.	<u>c</u>	phi	<u>c'</u>	<u>phi'</u>	Unit Wt.	Unit Wt.
BAG 1	4'	ML	90	NP	NP	89.8	22.1	85.3	0.65	32.6	104.3	0.46	30.6	0	32.7	104.3	110.1
					1				L								
BAG 2	4'	ML	74	NP	NP	87.3	23	82.9	0.82	31.1	102.2	0.58	17.1	0.06	33.1	102.1	110.8
BAG 3	4'	ML	89	NP	NP	83.1	25.5	78.9	0.64	30.3	99	0.26	18.2	0	33.1	99	109.3
BAG 4	4'	ML	55	NP	NP	84.6	24.4	80.3	0.59	32.8	99.7	1.1	25	0	36	99.7	110.6
								DESIGN	0.67	31	101.3			0.02	33.6	101.3	110.2

FOUNDAT	ION & EXIS	TING FILL														_
UNDISTUR	RBED SAMP	PLES			00	Test						CU Test v	w/ ppr			
	Sample					Dry	Total Unit	Sat. Unit				1	Dry	Total Unit	Sat. Unit	
Design.	Depth	USCS	Section	<u>c</u>	<u>phi</u>	<u>Weight</u>	Weight	Wt.	<u>c</u>	phi	<u>c'</u>	<u>phi'</u>	Weight	Weight	Weight	_
D5	2' - 4'	SM	FDN.SOIL	0.61	11.2	96.1	119.7	122.6	0.47	17.1	0.34	27.2	91.9	114.5	120.8	
D11A	5'-7'	SM	EX. FILL						1.16	30.8	0.26	39	100	121.3	126.1	
D11A	10' - 12'	SM	EX. FILL	0.52	30.3	101	122	125.6								
D12	6' - 8'	SM	EX. FILL	0.95	18.8	101.3	124.4	125.7	1.61	21.3	0.3	35.1	98.8	122.6	124.5	1
							L									
D17A	3'-7'	SM	FDN SOIL	0.81	10.8	79.8	110.9	113.1	0.84	18.1	0.31	32.3	91.1	115.9	121.3	1
							ļ									
D8A	18' - 20'	MH	CORE"					L					<u> </u>			J
	FOUNDAT	ION	DESIGN	0.71	11		115.3	117.9			0.33	29.8		115.2	121.1	Saturated
	EXISTING	FILL	DESIGN	0.74	24.6		123.2	125.7			0.28	37.1		122	125.3	Saturated
				0.5	26		115									Unsaturated Assumed Paameters/Weight
POND AS	H - SATURA	ATED		0	10			104.3			0	10			104.3	Plant Bowen Ash Stack Stability Report,9/25/91
																weight only, Parameters Assumed. Doesn't
																actually enter into problem.
DRAIN M/	ATERIAL			0	30			125			0	30			125	Assumed
SAPROLI	TE/PWR			0	38			125			0	38			125	Assumed
					,					s				,		

5C YT97206-05 MBN 7/17/2003 Plant Yates AP-3 Periodic Factor of Safety Assessment

## Attachment D

**Critical Section Profile** 





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