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 cross-valley 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 The CCR unit no longer impounds water, therefore a Surcharge Pool analysis is no longer applicable.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 Safety Factor	Minimum Required 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).

10/15/2021

James C. Pegues, PE
Licensed State of Georgia, PE No. 17419

Southern Company

Technical and Project Solutions Calculation

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 Safety of the Ash Pond 3 Dike		
System or Equipment Tag Numbers: n/a	**Originator:** Jacob A. Jordan, P.E.	

Contents

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 strain-dependent 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.

Soil Description	Unit Weight, pcf	Effective Stress Parameters	
		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

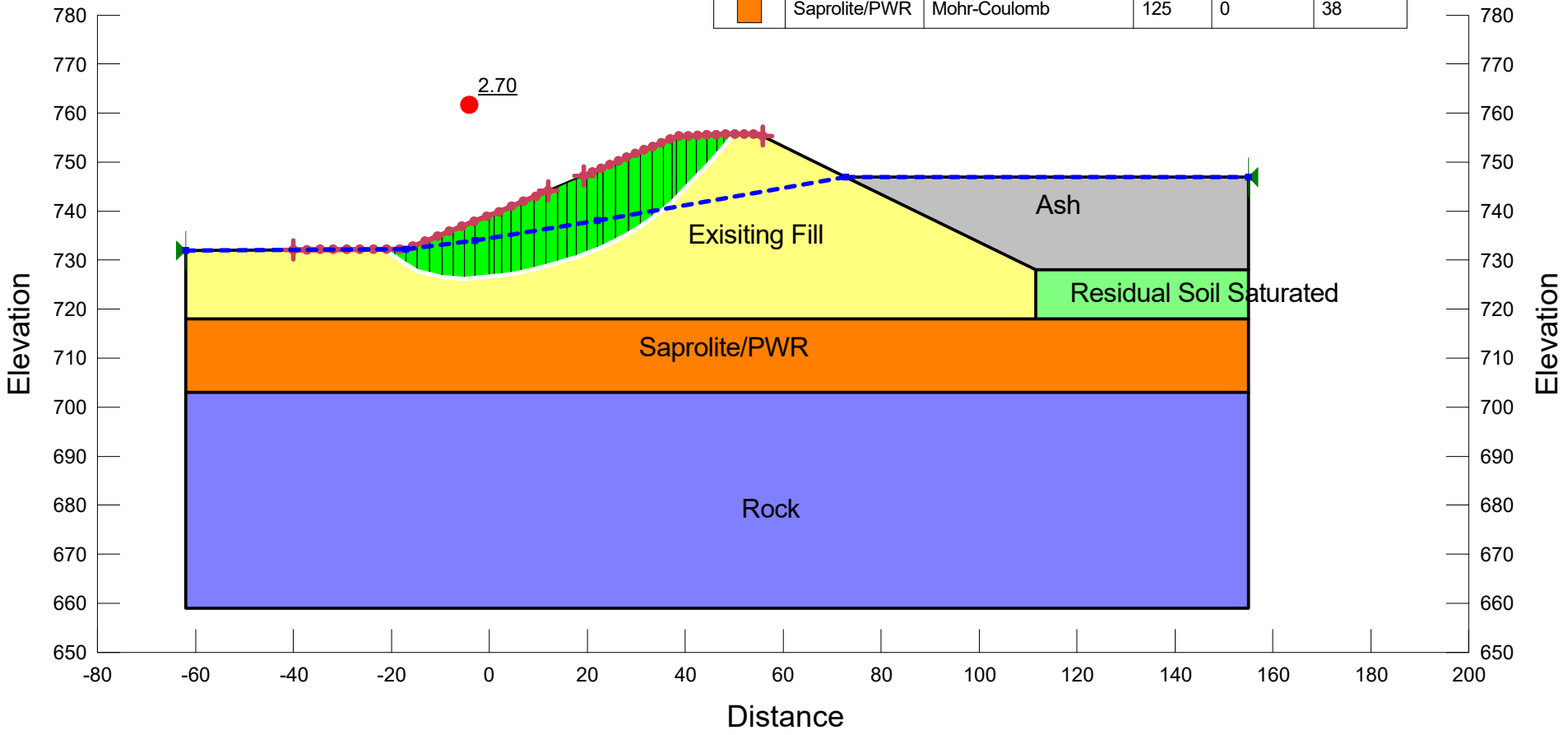
Body of Calculation

Slope/W analysis attached.

PLANT YATES
ASH POND 3

Maximum Surchage Loading

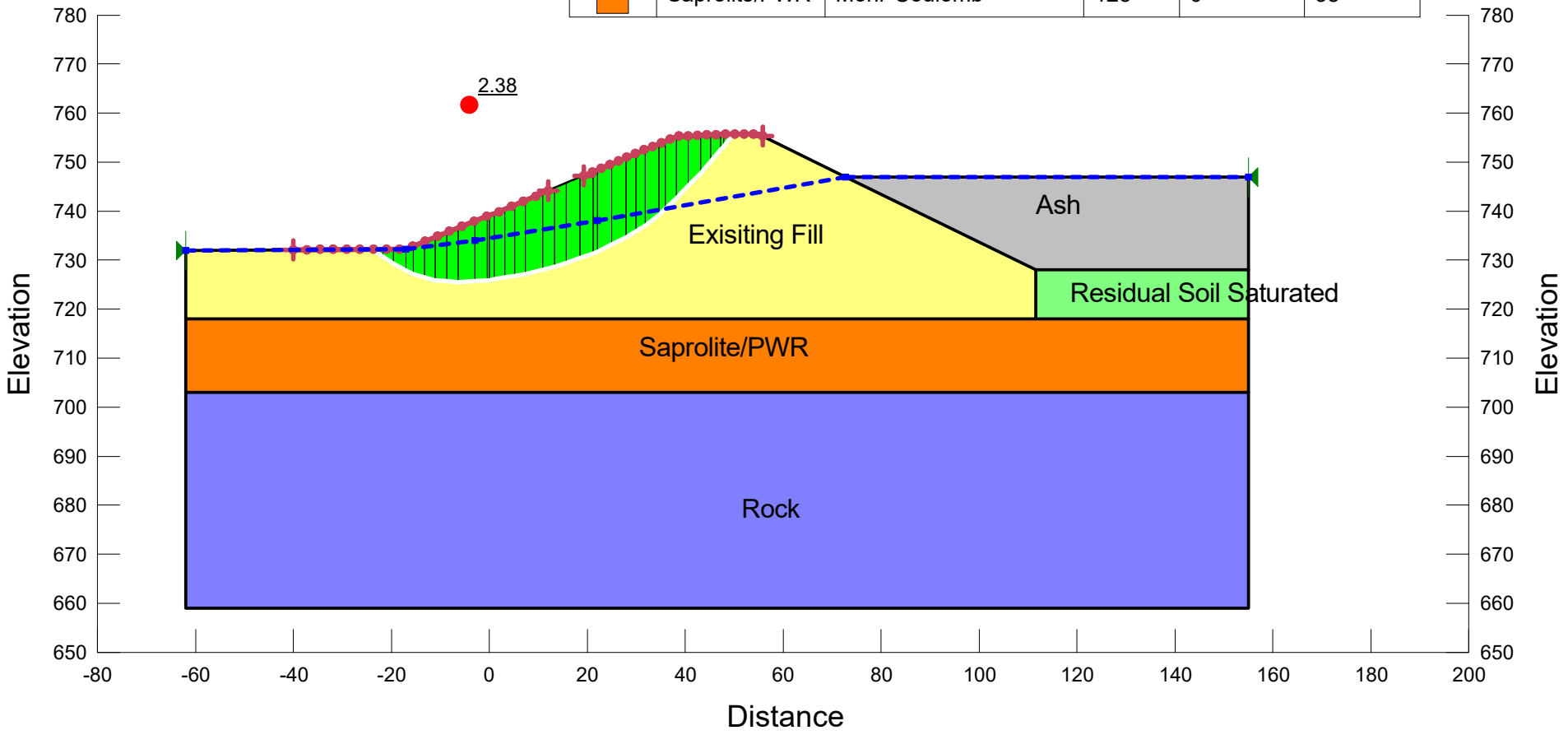
Color	Name	Material Model	Unit Weight (pcf)	Effective Cohesion (psf)	Effective Friction Angle (°)
	Ash	Mohr-Coulomb	98	0	28
	Bedrock	Bedrock (Impenetrable)			
	Existing Fill	Mohr-Coulomb	125	280	37
	Residual Soil	Mohr-Coulomb	121	330	29
	Saprolite/PWR	Mohr-Coulomb	125	0	38



PLANT YATES
ASH POND 3

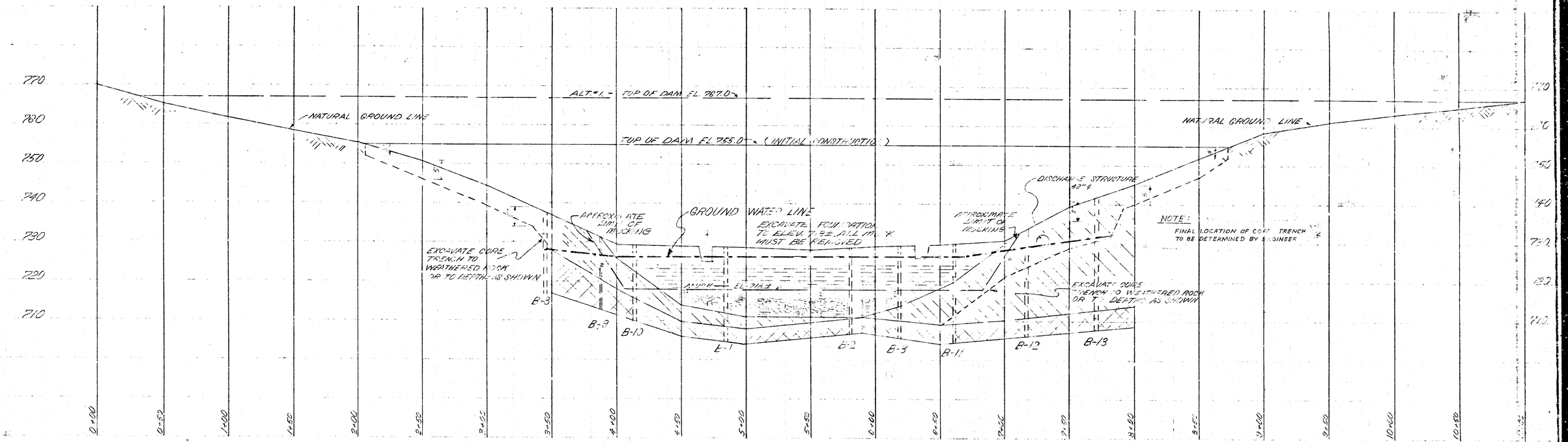
Seismic Loading
Horizontal Seismic Coefficient: 0.048g

Color	Name	Material Model	Unit Weight (pcf)	Effective Cohesion (psf)	Effective Friction Angle (°)
	Ash	Mohr-Coulomb	98	0	28
	Bedrock	Bedrock (Impenetrable)			
	Existing Fill	Mohr-Coulomb	125	280	37
	Residual Soil	Mohr-Coulomb	121	330	29
	Saprolite/PWR	Mohr-Coulomb	125	0	38



Attachment A

Boring Location Plan



VIEW LOOKING UPSTREAM
(℄ OF DAM)

NOTES:
1. SOIL PROFILE FROM BORING LOGS MADE JUNE 1976.
2. GEOLOGIC PROFILE APPROXIMATE.

LEGEND

- BLACK ORGANIC FINE SANDY SILTS AND CLAYS INTERBEDDED WITH FINE TO MEDIUM SAND LAYERS. (MUCK)
- GRAY AND WHITE GRAVELLY MEDIUM TO COARSE SAND.
- TAN BROWN AND WHITE MICACEOUS SILTY FINE TO MEDIUM SAND.
- BROWN AND WHITE, VERY DENSE PARTIALLY WEATHERED ROCK.

SCALE:
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 10'

REFERENCE DRAWINGS:

CROSS - SECTIONS: 10-208 H-9068
PLAN & SECTION: 10-208 H-9051
FOUNDATION EXCAVATION AREA DETAILS: 10-208 H-9066

GEORGIA POWER CO. ATLANTA, GA.
GENERAL ENGINEERING DEPARTMENT

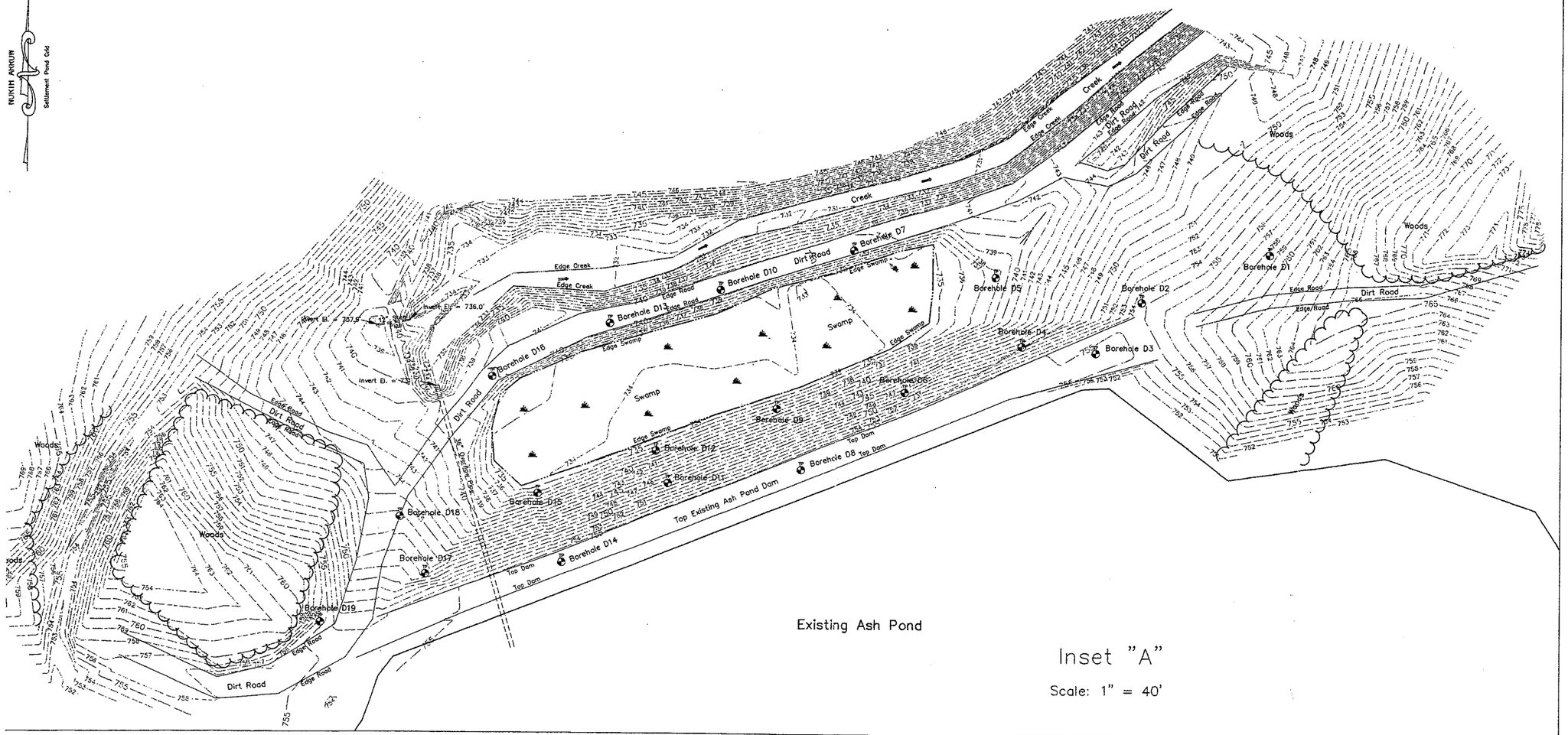
PLANT YATES
EMERGENCY ASH POND NO. 2
ELEVATION - EARTH DAM

M.D.T. 6/77

DRAWING NUMBER
LOCATION DRAWER
D-208 H-9068

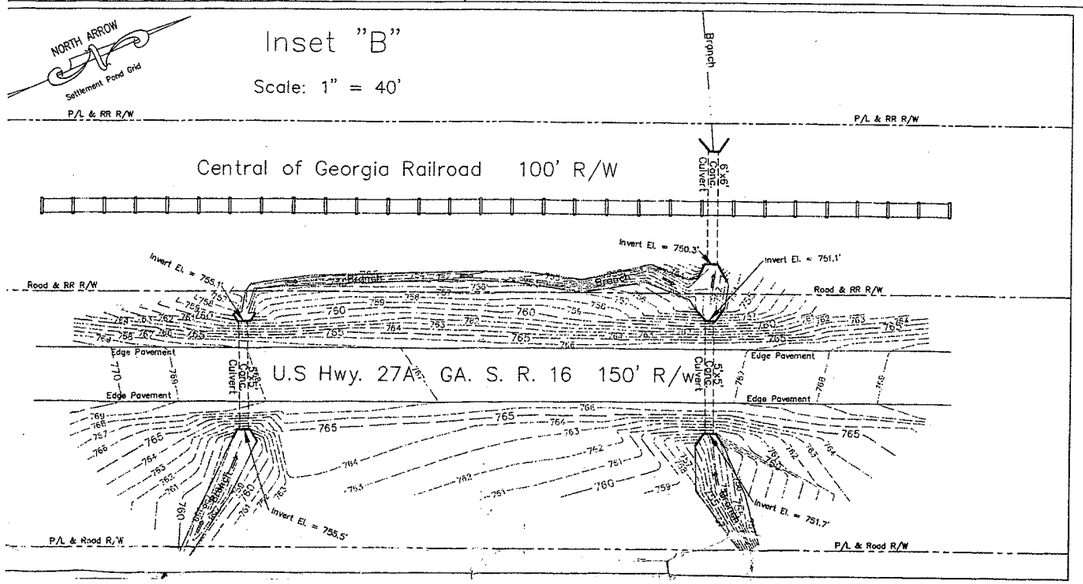
1 7-6-77 REVISED CORE TRENCH

DTT 6/15/77



Inset "A"

Scale: 1" = 40'



Inset "B"

Scale: 1" = 40'

Borehole Name	State Plane Northing	State Plane Easting	Settlement Pond Northing	Settlement Pond Easting	Elev.
D1	257198.73	175186.93	-2147.89	-256.41	758.41
D2	257098.20	175158.40	-2184.89	-356.20	754.73
D3	257044.45	175169.48	-2224.20	-391.62	755.92
D4	257000.97	175132.09	-2219.40	-448.77	747.98
D5	257015.11	175076.64	-2166.19	-469.83	737.52
D6	256906.06	175107.66	-2255.26	-539.99	748.08
D7	256937.49	174985.74	-2146.16	-580.13	739.82
D8	256805.15	175108.66	-2315.22	-621.15	756.10
D9	256817.15	175059.38	-2268.27	-640.32	738.13
D10	256834.36	174958.47	-2177.24	-684.95	740.44
D11	256714.06	175056.38	-2328.28	-725.59	747.90
D12	256720.79	175030.62	-2301.46	-735.24	737.09
D13	256748.60	174929.84	-2203.51	-771.79	740.38
D14	256610.93	175057.65	-2387.77	-808.39	755.85
D15	256627.06	175003.88	-2334.75	-826.85	736.18
D16	256650.99	174910.36	-2244.96	-862.29	739.58
D17	256521.25	175004.07	-2398.94	-912.46	747.50
D18	256531.39	174957.07	-2352.91	-931.79	746.28
D19	256433.25	174986.80	-2434.54	-993.87	755.55

Formerly Known as Plant Yates
Emergency Ash Pond.

GRAPHIC SCALE

40 0 20 40 80 120

(In Feet)

1 inch = 40 feet

MONUMENTATION LEGEND

- Depicts Iron Pin Set
- Depicts Iron Pin Found
- Depicts Monument Set
- Depicts Monument Found

PATH = Groups\data\surfaces\plants\yates\emergp\emergp.dwg
SURVEY = GA2304YWI
FIELD BOOK = N/A DISK = N/A
DEED FILE = N/A LETTER FILE = 15-27

PLAT ABBREVIATIONS

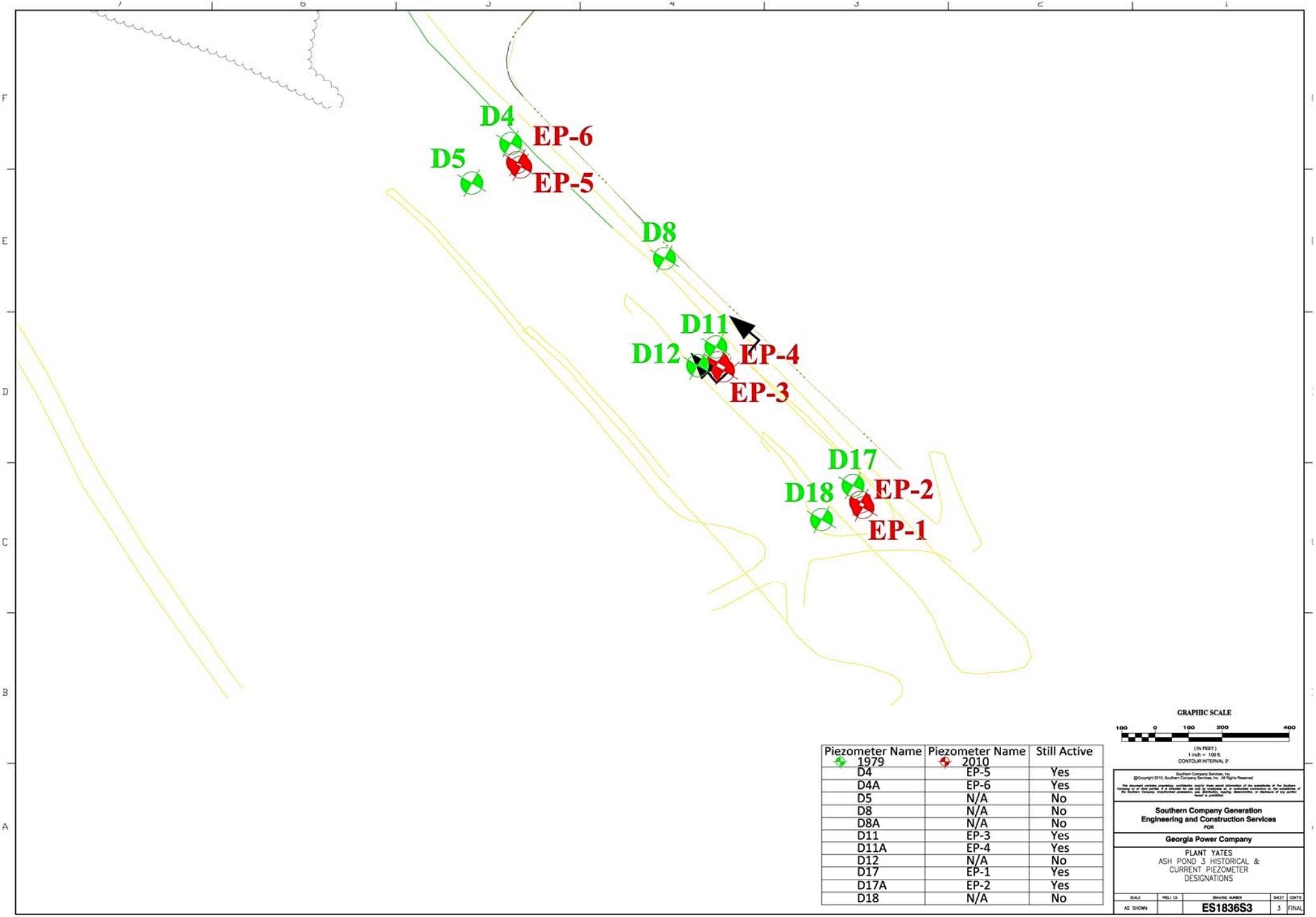
IPF – Iron Pin Found
IPS – Iron Pin Set
FPS – Fence Post Set
OTP – Open Top Pipe
CTP – Crimp Top Pipe
Conc. – Concrete
Alumn. – Aluminum
P/L – Property Line
R/W – Right of Way
C/L – Centerline
F/L – Fenceline
T/L – Transmission Line
N/F – Now or Formerly
DB – Deed Book
PB – Plat Book
MF – Map File No.

APPROVALS

GEORGIA POWER CO., ATLANTA, GA.
Land Department

Plant Yates
Ash Pond No. 3
Insets
Coweta County, Georgia

DR. JFW	TR.	Checked
SCALE 1" = 40'		DATE Nov. 1997
DRAWING NUMBER L-586-1		SHEET NO. 2 of 2



Piezometer Name 1979	Piezometer Name 2010	Still Active
D4	EP-5	Yes
D4A	EP-6	Yes
D5	N/A	No
D8	N/A	No
D8A	N/A	No
D11	EP-3	Yes
D11A	EP-4	Yes
D12	N/A	No
D17	EP-1	Yes
D17A	EP-2	Yes
D18	N/A	No

GRAPHIC SCALE

100 0 100 200 400

(IN FEET)
1 inch = 100 ft.
CONTOUR INTERVAL 2'

Southern Company Generation
Engineering and Construction Services
FOR
Georgia Power Company

PLANT YATES
ASH POND 3 HISTORICAL &
CURRENT PIEZOMETER
DESIGNATIONS

SCALE	PROJ I.D.	DRAWING NUMBER	SHEET	CONT'D
AS SHOWN		ES1836S3	3	FINAL

ANSI F1 40x28 Acad2004

Attachment B
Boring Logs

(Final Location)

ATLANTA TESTING & ENGINEERING CO.

Test Boring Field Log

JOB NAME Plant Yates - Dike BORING NO. B-1

JOB NO. 2181 DATE DRILLED 5-27-76

LAB NO. _____ SURFACE ELEV. _____

DEPTH From	DEPTH To	DESCRIPTION	Sample	Depth	Blows per 6" Increment			N
					No.	Recovery		
0"	2½'	Alluvial - Loose White Fine - coarse Sand		1'	1	2	1	3
2½'	4½'	Alluvial - Very Soft Gray Tan Clayey Fine Sandy		2½'	1	1	1	2
		Silt		5'	1	2	3	5
4½'	7½'	Alluvial - Loose Tan & Gray Fine - coarse Sand		7½'	1	0	1	1
7½'	9'	Alluvial - Very Loose Gray Tan Fine - coarse Sand		10'	1	1	3	4
		with Some Clay		12½'	3	4	10	14
9'	12'	Alluvial - Soft Gray Silty Clay		15'	15	7	9	16
12'	14½'	Alluvial - Firm Gray Tan Fine - coarse Sand		17½'	6	8	9	17
14½'	17'	Alluvial - Firm Brown Fine - coarse Sand with Rock Fragments		20'	13	40	50/5"	
17'	19'	Very Stiff Brown Tan Fine Sandy Silt						
19'	24'	Very Dense Gray Tan Silty Fine - coarse Sand with						
		Rock Lenses						
24'		"Refusal" U.D.S. 12' - 14' Tied		2 Times				
		14' - 16' Tied		2 Times				

GROUND WATER: TOB _____

24 hr 2'-0"

Other _____

DRILLING METHOD:

LOGGED BY

REMARKS:

ATE 104

ATLANTA TESTING & ENGINEERING CO.

Test Boring Field Log

JOB NAME Plant Yates Dike BORING NO. B-2

JOB NO. 2181 DATE DRILLED 5-29-76

LAB NO. _____ SURFACE ELEV. _____

DEPTH From	DEPTH To	DESCRIPTION	Sample	Depth	Blows per 6" increment			N
0"	2½'	Alluvial - Very loose Clayey Brown FINE - COARSE Sand		1'	3	1	1	2
2½'	7'	Alluvial - Very loose Clayey Gray-Brown FINE-COARSE SAND		2½'	1	1	1	2
7'	12'	Alluvial - loose Greenish Clayey Fine-coarse Sand		5'	1	2	2	4
12'	13½'	Alluvial - Firm Tan-Gray FINE-COARSE Sand		7½'	1	2	4	6
13½'	17'	Firm Gray-White Silty FINE COARSE Sand		10'	2	3	5	8
17'	20½'	Very Dense & Multi-colored FINE-COARSE Sand		12½'	18	16	11	27
20½'		"Refusal"		15'	8	12	14	26
				17½'	26	38	38	76
				20'	50/2"			100 Ref.
		U.D.S. 6' to 8' - 2 times						
		9' to 11'						
		12' to 14' could not push						

GROUND WATER: TOB _____

24 hr _____

Other _____

DRILLING METHOD:

LOGGED BY

REMARKS:

ATE 104

ATLANTA TESTING & ENGINEERING CO.

Test Boring Field Log

JOB NAME Plant Yates Dike BORING NO. B-3

JOB NO. 2181 DATE DRILLED 5-28-76

LAB NO. _____ SURFACE ELEV. _____

DEPTH From	DEPTH To	DESCRIPTION	Sample	Depth	Blows per 6" Increment			N
0"	2½'	Alluvial - Loose Brown Fine-coarse Sand		1'	3	1	3	4
2½'	5½'	Alluvial - Very loose Clayey Fine-coarse Sand		2½'	1	1	2	3
5½'	7'	Alluvial - Loose Gray & Tan Fine-coarse Sand		5'	1	3	4	7
7'	10'	Alluvial - Very soft Gray Silty Fine Sandy Clay		7½'	1	1	1	2
10½'	12'	Alluvial Stiff Gray Silty Fine - coarse Sandy Clay		10'	3	2	6	8
12'	14½'	Dense Gray White Silty Fine - Medium Sand		12½'	9	9	30	39
14½'	16'	Firm Multi-colored Micaceous Silty Fine-coarse Sand		15'	11	8	6	14
16½'	20'	Very Dense Multi-colored Micaceous Silty Fine-coarse Sand		17½'	8	8	8	16 No Rec.
20'		"Cored"		20'	49	50/6"		
-				25'	50/3"			No Rec.
		U.D.S. 6'-8'	Tried 2 Times					
		10'-12'	Tried 2 Times					
		12'-14'						
		14'-16'	Tried 2 Times					

GROUND WATER: TOB _____

24 hr _____

Other _____

DRILLING METHOD:

LOGGED BY

REMARKS:

ATE 104

LOG OF BORING

SHEET 1 OF 1

CONTRACTED WITH GEORGIA POWER CO. BORING No. B-4

PROJECT NAME PLANT YATES DAM JOB No. _____ DATE 5-31-76

ELEV.	DESCRIPTION	DEPTH IN FEET	SAMPLES NO.	TYPE	BLOWS/6"	RECOV.	NOTES
	BROWN ORGANIC CLAYEY SILT W/TRACE SAND = 18.0"						BR Si M Fn Sa
		2.5'	1	SS	1.0.1	NONE	ORG Muck w Cs Sa Sm o
	GREY ORGANIC CLAY W/TRACE SILT & SAND						WATER TABLE
		5.0'	2	SS	1.1.1		@ Time of Drilling = 2.0'
		7.5'	3	SS	2.2.3		Gy Si M Fn Sa
	light GREY MED. TO FINE SAND W/TRACE ORGANICS	10.0'	4	SS	2.3.4		D. Ho
	YELLOWISH MED. QUARTZ SAND W/SOME QUARTZ GRAVEL	12.5'	5	SS	13.16.15		Br Gy Si Cs Fn Sa
		15.0'	6	SS	5.14.22	NONE	RESIDUAL SOIL @ 17.0'
	COARSE GRAVEL						
	mottled GRAY dark & TAN MICACEOUS WEATHERED ROCK	17.5'	7	SS	22.50=4"		
		22.5'	8	SS	40.50=3"		
							DRILLER: RON E. JACKSON
	Rotary Refusal @ 24.5'						

LOG OF BORING

SHEET 1 OF 1

CONTRACTED WITH GEORGIA POWER CO. BORING No. B-5

PROJECT NAME PLANT YATES DAM - JOB No. _____ DATE 5-31-76

ELEV.	DESCRIPTION	DEPTH IN FEET	SAMPLES NO.	TYPE	BLOWS/6"	RECOV.	NOTES
	BROWN ORGANIC CLAYEY SILT W/ TRACE SAND = RD"	2.5'	1	SS	5.4.5	RD	SiMFnSa
	MED. FINE BROWN SAND W/SOME SILT & ORGANICS						WATER TABLE @ TIME of (el. Ho) DRILLING = 2.0'
	med COARSE BROWN QUARTZ SAND	5.0'	2	SS	6.5.6		
	light GREY med. to FINE SAND W/SOME GRAVEL	7.5'	3	SS	7.7.8		Cg
	fine to medium GREY SAND	10.0'	4	SS	7.8.9		
	BROWN MEDIUM QUARTZ SAND W/SOME GRAVEL & SILT	12.5	5	SS	11.9.12		
	YELLOWISH medium QUARTZ SAND	15.0'	6	SS	25.27.31		
	GREENISH SOFT WEATHERED ROCK						
	mottled YELLOWISH, GREENISH & light WEATHERED Rock	20.0'	7	SS	20.36.49		RESIDUAL SOIL @ 16.0'
		25.0'	8	SS	26.50=3"	NONE	
	GRANITIC ROCK						
	ROTARY REFUSAL @ 26.5'						DRILLER: RON F. JACKSON

LOG OF BORING

SHEET 1 OF 1

CONTRACTED WITH GEORGIA POWER CO. BORING No. B-6

PROJECT NAME PLANT YATES DAM JOB No. _____ DATE 5-31-76

ELEV.	DESCRIPTION	DEPTH IN FEET	SAMPLES NO.	TYPE	BLOWS/6"	RECOV.	NOTES
	BROWN ORGANIC SILT & SAND W/SOME CLAY						
	GREY SAND MEDIUM TO COARSE W/SOME SILT	2.5'	1	SS	2.1.2	Br S. M FN SA	WATER TABLE @ Time of DRILLING = 2.0'
		5.0'	2	SS	3.2.1	"	D. Ho w some thin Si Sa
	DARK GREY ORGANIC FINE SAND W/TRACE CLAY & SILT	7.5'	3	SS	1.2.1	Dk Gy Si to V Si FN SA	
		10.0'	4	SS	1.1.3	D. Ho w some lt Gy Md SA &	
	LIGHT GREY MEDIUM TO COARSE SAND	12.5'	5	SS	9.13.21		Residual
	LIGHT GREY & TAN SOFT WEATHERED ROCK	15.0'	6	SS	10.26.28		RESIDUAL SOIL @ 12.3'
		20.0'	7	SS	50=3"	NONE	
	~~WEATHERED ROCK~~						DRILLER: RON E. JACKSON
	ROTARY REFUSAL @ 23.5'						

ATLANTA TESTING & ENGINEERING CO.

Test Boring Field Log

JOB NAME Plant Yates - Newnan BORING NO. B-1

JOB NO. 2181 DATE DRILLED 5-31-76

LAB NO. _____ SURFACE ELEV. _____

DEPTH From	DEPTH To	DESCRIPTION	Sample	Depth	Blows per 6" Increment			N
0"	4½'	Alluvial - Very loose Tan & Black Fine-coarse Sand		2½'	1	0	2	2
4½'	8'	Alluvial - Very loose Tan & Black Clayey Fine-coarse Sand		5'	1	0	2	2
8'	9½'	Alluvial - Very loose Tan Fine-coarse Sand mixed		7½'	2	1	1	2
		with Gray Fine-medium Sandy Clay		10'	2	6	8	14
				12½'	2	4	5	9
9½'	12'	Alluvial - Stiff Gray Silty Fine Sandy Clay		15'	7	9	9	18
				17½'	50/5"			
12'	14½'	Loose Tan & Brown Silty Fine-medium Sand		20'				
14½'	17½'	Firm - Multi-colored mica Silty Fine-medium Sand						
17½'		"Decrease"						

U.D.S. 9½ to 11½'

" " 12½ 14½'

" " 15½ - 17½'

GROUND WATER: TOB _____

24 hr _____

Other _____

DRILLING METHOD:

LOGGED BY

REMARKS:

ATE 1

ATLANTA TESTING & ENGINEERING CO. (recopied)

Test Boring Field Log

JOB NAME Plant Yates Dike BORING NO. 8

JOB NO. 281 DATE DRILLED 6/2/76

LAB NO. _____ SURFACE ELEV. _____

DEPTH From	DEPTH To	DESCRIPTION	Sample	Depth	Blows per 6" Increment			N
0	5.0	V/Fm red & gray clayey silty sand	2.5		7	12	17	29
5.0	6.5	~~Hard~~ Dense multicolored micaceous silty fine –	5		10	15	20	35
		Coarse sand.	7.5		16	21	32	53
6.5	10.0	Very hard tan fine – coarse sandy silt	10		20	50/6"		50/6"
10.0	15.0	V/dense multicolored & silty fine – coarse	12.5		23	34	35	69
		sand w/ quartz fragments.	15		16	47	17	64
15.0	~~17.5~~	Ditto (partially weathered rock)	17.5		50/1"			
	18.0							
	18.0	Refusal						

GROUND WATER: TOB 9' 10"

24 hr 5

Other _____

DRILLING METHOD: C

LOGGED BY

REMARKS:

(Incopied)

ATLANTA TESTING & ENGINEERING CO.

Test Boring Field Log

JOB NAME Plant Yates Dike BORING NO. 9

JOB NO. 2181 DATE DRILLED 6/2/76

LAB NO. _____ SURFACE ELEV. _____

DEPTH From	DEPTH To	DESCRIPTION	Sample	Depth	Blows per 6" Increment			N
0	3.0	Hd multicolored v/mi fn-md sa si	1	2.5	5	15	16	31
3.0	5.0	Fm rd si fn-md sa	2	5	6	6	10	16
5.0	10.0	V/fm tan si fn-md sa	3	7.5	10	12	17	29
10.0	12.5	V/hd multicolored fn-cs sa si	4	10	5	41	50/4"	91
12.5	15.0	V/hd Verns Wht & gy fn sa si ~~fn sa si~~	5	12.5	47	50/4"		
	15.0	Refusal	6	15	50/1"			

GROUND WATER: TOB 3'10"

24 hr 1'

Other _____

DRILLING METHOD:

LOGGED BY

REMARKS:

(recopied)

ATLANTA TESTING & ENGINEERING CO.

Test Boring Field Log

JOB NAME Plant Yates Dike BORING NO. 10

JOB NO. 2181 DATE DRILLED 6/2/76

LAB NO. _____ SURFACE ELEV. _____

DEPTH From	DEPTH To	DESCRIPTION	Sample	Depth	Blows per 6" Increment			N
0	7	Alluvium - V/lse gy Clayey fn-md sa.	1	2.5	3	1	1	2
7	7.5	V/Fm tan & white sl fn-md sa.	2	5	1	0	1	1
			3	7.5	10	12	16	28
	7.5	B.T						

GROUND WATER: TOB 5'

24 hr 4.5'

Other _____

DRILLING METHOD:

LOGGED BY

REMARKS:

ATLANTA TESTING & ENGINEERING CO.

Test Boring Field Log

JOB NAME Plant Yates BORING NO. B13

JOB NO. 2181 DATE DRILLED 6/3/76

LAB NO. _____ SURFACE ELEV. _____

DEPTH From	DEPTH To	DESCRIPTION	Sample	Depth	Blows per 6" Increment			N
0	5	Firm Alluvial Red Tan Fine to Coarse Clay Sand		2½	3	5	9	14
5	7	Firm Tan & White Fine-coarse Clayey Sand		5	4	4	8	12
7	10	Hard Residual Red Medium-Coarse Sand		7½	7	17	14	21
10	12½	V/Soft Tan Micaceous Fine Sandy Silt		10	3	4	3	7
12½	25	V/Hard Multy Color Diorite		12½	17	30	18	48
25	29'	V/Hard Gray & White Fine to Med Sandy Silt		15	10	13	10	23
29'	30	Very Dense Gray & Tan Silty Fine-coarse Sand		17½	17	26	27	53
30'		"Boring Terminated"		20	23	14	15	29
				22½	14	15	16	31
				25	15	33	26	59
				27½	50/5			
				30'	50/2"			

GROUND WATER: TOB 0

24 hr 10'

Other _____

DRILLING METHOD: Auger Hollow

LOGGED BY

REMARKS:

ATE 104

ATLANTA TESTING & ENGINEERING CO.

Test Boring Field Log

JOB NAME Plant Yates BORING NO. B12

JOB NO. 2181 DATE DRILLED 6/3/76

LAB NO. _____ SURFACE ELEV. _____

DEPTH From	DEPTH To	DESCRIPTION	Sample	Depth	Blows per 6" Increment			N
0	5	ALUVIAL? SOFT RED FINE to COARSE SANDY CLAY		2½	2	3	4	6
5	7½	RESIDUAL SOFT TAN MED to COARSE SANDY SILT		5	3	2	5	7
7½	10	MULTY HARD COLORED DITTO		7½	3	5	6	11
10	13	MULTY V/HARD COLORED MED to COARSE MICA SILTY SAND		10	7	12	9	21
13	15	V/HARD WHITE & GRAY FINE to MEDIUM SA. SI		12½	8	19	21	40
15		V/HARD MULTY COLORED V/MICA FINE SANDY SILT		15	14	34	26	60

GROUND WATER: TOB 9'
24 hr 4½'
Other _____

DRILLING METHOD:

LOGGED BY

REMARKS:

ATE 104

ATLANTA TESTING & ENGINEERING CO.

Test Boring Field Log

JOB NAME Plant Yates BORING NO. B11

JOB NO. 2181 DATE DRILLED 6/3/76

LAB NO. _____ SURFACE ELEV. _____

DEPTH From	DEPTH To	DESCRIPTION	Sample	Depth	Blows per 6" Increment			N
0	7½	ALLUVIAL V/SOFT GRAY MED to COARSE CLAY SAND		2½	1	1	1	2
7½	9	ALLUVIAL SOFT TAN & RED MED to COARSE SAND		5	0	1	0	1
9	10	RESIDUAL TAN & GRAY MED to COARSE SILTY W/MICA SAND		7½	2	2	5	7
		B.T. 10'		10	4	8	8	16

GROUND WATER: TOB 4'6"

24 hr 3½'

Other _____

DRILLING METHOD: Hollow Stem

LOGGED BY TW

REMARKS:

ATE 104

(Recopied)

ATLANTA TESTING & ENGINEERING CO.

Test Boring Field Log

JOB NAME Plant Yates Dike BORING NO. 11

JOB NO. 2181 DATE DRILLED 6/3/76

LAB NO. _____ SURFACE ELEV. _____

DEPTH From	DEPTH To	DESCRIPTION	Sample	Depth	Blows per 6" Increment			N
0	7.5	Alluvium - V/lse gy & md-cs sa	1	2½	1	1	1	2
7.5	9	Alluv - Lse tan & red mi si & md-cs sa	2	5	0	1	0	1
			3	7½	2	2	5	7
9.0	10.0	Fm tan & gy md-cs sa	4	10	4	8	8	16
	10.0	B.T.						

GROUND WATER: TOB 4.5'

24 hr 3.5'

Other _____

DRILLING METHOD:

LOGGED BY

REMARKS:

(recopied)

ATLANTA TESTING & ENGINEERING CO.

Test Boring Field Log

JOB NAME Plant Yates BORING NO. 13

JOB NO. 2181 DATE DRILLED 6/3/76

LAB NO. _____ SURFACE ELEV. _____

DEPTH From	DEPTH To	DESCRIPTION	Sample	Depth	Blows per 6" Increment			N
0	5	Alluv - Fm rd & tan cl Ln-cs sa	1	2.5	3	5	9	14
5	7	Fm tan & wht cl Ln-cs sa	2	5	4	4	8	12
7	10	Dns red si ~~Fr~~ Md-cs sa	3	7.5	7	17	14	31
10	12.5	Fm tan mi Ln sa si.	4	10	3	4	3	7
12.5	~~25~~	V/stf - hd gy & wht Ln-md sa si	5	12.5	17	30	18	48
	25		6	15	10	13	10	23
25	29	V/hd gy & wht Ln-md sa si.	7	17.5	17	26	27	53
29	30	V/dns gy & tan si Ln-cs sa	8	20	23	14	15	29
			9	22.5	19	15	16	31
	30	B.T.	10	25	15	33	26	59
			11	27.5	50/5"			
			12	30	50/2"			

GROUND WATER: TOB _____

24 hr 10'

Other _____

DRILLING METHOD:

LOGGED BY

REMARKS:

ATLANTA TESTING & ENGINEERING CO.

Test Boring Field Log

(recopied)

JOB NAME Plant Yates Dike BORING NO. 12

JOB NO. 2181 DATE DRILLED 6/3/76

LAB NO. _____ SURFACE ELEV. _____

DEPTH From	DEPTH To	DESCRIPTION	Sample	Depth	Blows per 6" Increment			N
0	5.0	Poss. Alluv. — Fm red fn-cs sa cl	1	2.5	2	3	4	7
5.0	7.5	Fm tan md-cs sa si	2	5	3	2	5	7
7.5	10	V/stf multicolored md-cs sa si	3	7.5	3	5	6	11
10	13	V/fm multicolored mi. si. md-cs sa	4	10	7	12	9	21
13	15	V/hd wht & gy fn-md sa si	5	12.5	8	19	21	40
			6	15	14	34	26	60
	15	B.T						

GROUND WATER: TOB 9'

24 hr 4.5

Other _____

DRILLING METHOD:

LOGGED BY

REMARKS:

Field Test Boring Record
Geotechnical Field Services

Southern Company Services

PROJECT	EWO #	LEAD DRILLER	DATE:
YATES EAP DIKE	3313 FA	DRIVEY	10-15-97

LOCATION	BORING #
PLANT YATES	D 1

DEPTH FROM	DEPTH TO	DESCRIPTION	SAMPLE NO	SAMPLE DEPTH	1st 6"	2nd 6"	3rd 6"	N	CORE REC
0.0	5.0'	SL. S. Md.-Cs Sand RED BROWN ORANGE SAPROLITE	1	2.5	4	7	5	12	
5.0'	11.1'	TAN SAPROLITE SL. S. M-C Sa	2	7.0	25	33	22	55	
			3	11.1 ~~12.0~~	35	50/.1		50/0.1	

	FROM	TO		FROM	TO	REMARKS
SS	1.0	11.1	AUGER	0.0	10.5	
WASH			TRI-CONE			
___ CASING			___ CORE			
BIT						

GWATOB_____ GW 24 HRS. _____ ELEVATION:

DRILLED BY DRI, M.P. LOGGED BY DRI

800961

Sheet ___ of ___

Field Test Boring Record
Geotechnical Field Services

Southern Company Services

PROJECT	EWO #	LEAD DRILLER	DATE:
YATES EAP DIKE	3313-FA	DRIVEY	10-15-97

LOCATION	BORING #
PLANT YATES	D2

DEPTH FROM	DEPTH TO	DESCRIPTION	SAMPLE NO	SAMPLE DEPTH	1st 6"	2nd 6"	3rd 6"	N	CORE REC
0.0'	3.0'	RED BROWN SANDY SILT	1	2.5	3	4	7	11	
3.0'	6.0'	RED BROWN SANDY CLAYEY SILT	2	5.0	5	5	6	11	
6.0'	9.5'	RED BROWN SANDY SILT	3	7.5	3	3	4	7	
9.5'	14.0'	RED TAN SILTY SAND (SAPROLITE)	4	10.0	4	5	5	10	
14.0'	36.7'	TAN BROWN SILTY SAND (Sap)	5	15.0	4	5	6	11	
			6	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	
		36.7 AUGER REFUSAL							

	FROM	TO		FROM	TO	REMARKS
SS	1.0	35.0'	AUGER	0.0	36.7	
WASH			TRI-CONE			
___ CASING			___ CORE			
BIT						

GWATOB 25.4' GW 24 HRS. _____ ELEVATION:

DRILLED BY MP LOGGED BY DRI

800961

Sheet ___ of ___

Field Test Boring Record
Geotechnical Field Services

Southern Company Services

PROJECT	EWO #	LEAD DRILLER	DATE:
YATES EAP DIKE	3313-FA	DR IVEY	10-27-97

LOCATION: PLANT YATES

BORING #: D3

DEPTH FROM	DEPTH TO	DESCRIPTION	SAMPLE NO	SAMPLE DEPTH	1st 6"	2nd 6"	3rd 6"	N	CORE REC
0.0	8.0'	RED BROWN SANDY CLAYEY SILT	1	4.0					3.5
8.0'	10.0'	RED BROWN CLAYEY SILTY SAND	2	9.0					~~5.0'~~ 4.0
10.0'	27.0'	SAPROLITE SILTY SAND	3	14.0					4.5'
		WET @ TOP 14.0'	4	19.0'					4.0'
			5	24.0					5.0
27.0'	29.0'	DECOMPOSED ROCK	6	29.0'					4.5'

	FROM	TO		FROM	TO	REMARKS: CONTINUOUS SAMPLER
SS			AUGER	0.0	29.0	
WASH			TRI-CONE			
___ CASING			___ CORE			
BIT						

GWATOB 12.8' GW 24 HRS. _____ ELEVATION:

DRILLED BY MP LOGGED BY DRI

800901

Sheet ___ of ___

Field Test Boring Record
Geotechnical Field Services

Southern Company Services

PROJECT	EWO #	LEAD DRILLER	DATE
YATES EAP DIKE	3313-FA	DR IVEY	10-30-97

LOCATION

BORING # D4

DEPTH FROM	DEPTH TO	DESCRIPTION	SAMPLE NO	SAMPLE DEPTH	1st 6"	2nd 6"	3rd 6"	N	CORE REC
0.0	1.5'	RED BROWN SANDY CLAYEY SILT	1	1.5					
1.5'	5.5'	TAN RED BROWN SANDY CLAYEY SILT	2	5.0'					
5.5'	6.5	RED BROWN SANDY CLAYEY SILT							
6.5	6.8'	DARK BROWN ORGANIC SILTY SAND	3	6.5					
6.8	12.0'	RED BROWN SANDY CLAYEY SILT	4	10.0					
		SOFT SEAM @ 8.0'							
12.0'	16.0'	SAPROLITE SANDY SILT	5	15.0'					
16.0'	19.0'	DEMPOSED ROCK	6	19.0'					
		AUGER REFUSAL @ 19.0'							

	FROM	TO		FROM	TO	REMARKS
SS			AUGER	0.0	19.0'	CONTINUOUS SAMPLER
WASH			TRI-CONE			
___ CASING			___ CORE			
BIT						

GWATOB 8.0' GW 24 HRS. 7.75' ELEVATION:

DRILLED BY M.P. LOGGED BY DRI

800561

Sheet ___ of ___

MONITO NG WELL

PROJECT: YATES EAP DIKE

WELL NO.: D4

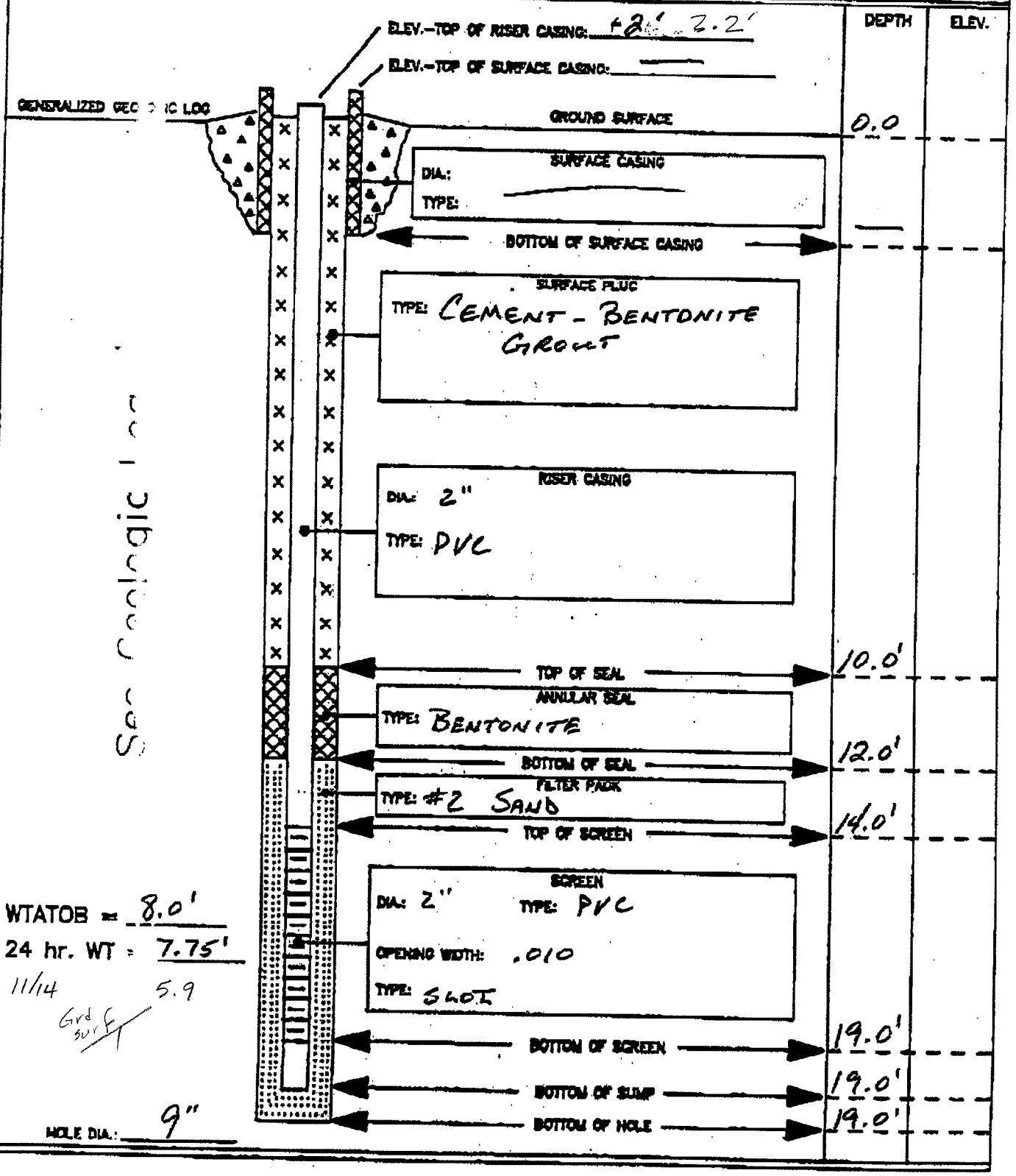
SITE:

LOCATION: PLANT YATES

BEGUN:

COMPLETED: 10-30-97

CONSTRUCTED BY: DRIVEY



WTATOB = 8.0'

24 hr. WT = 7.75'

11/14 5.9

Grd Surf

HOLE DIA.: 9"

MONITORING WELL

PROJECT: YATES EAD DIKE

WELL NO.: D4A

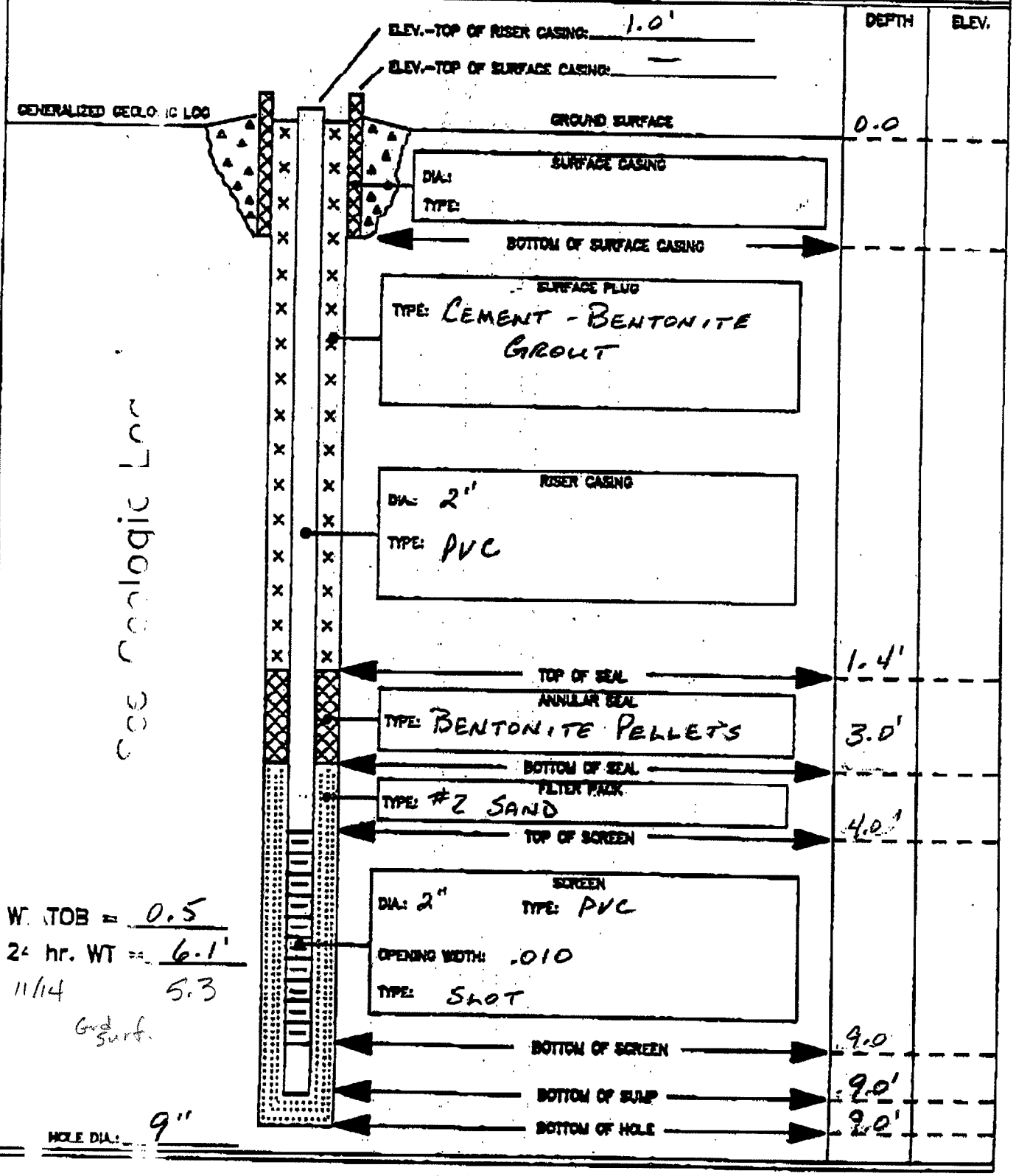
SITE:

LOCATION: PLANT YATES

BEGUN: 11-4-97

COMPLETED: 11-4-97

CONSTRUCTED BY: DR IVEY



WT TOB = 0.5

24 hr. WT = 6.1'

11/14 5.3

Grd Surf.

HOLE DIA.: 9"

Field Test Boring Record
Geotechnical Field Services

Southern Company Services

PROJECT	EWO #	LEAD DRILLER	DATE:
YATES EAP DIKE	3313-FA	DRIVEY	10-30-97

LOCATION: PLANT YATES

BORING # D5

DEPTH FROM	DEPTH TO	DESCRIPTION	SAMPLE NO	SAMPLE DEPTH	1st 6"	2nd 6"	3rd 6"	N	CORE REC
0.5	4.0'	RED BROWN SANDY CLAYEY SILT	1	2.5	2	3	4	7	
4.0'	7.0'	RED BROWN SILTY SAND	2	5.0	1	2	4	6	
7.0'	10.5'	SAPROLITE TAN SILTY SAND	3	7.5	2	3	6	9	
			4	10.5'	12	16	16	32	
		UD - 2' TO 4' REC.							2.0'
		UD - 4' TO 6' REC.							0.0

	FROM	TO		FROM	TO	REMARKS
SS	1.0'	10.5	AUGER	0.0	9.0	WET @ 4.0'
WASH			TRI-CONE			
___ CASING			___ CORE			
BIT						ABOVE GRADE

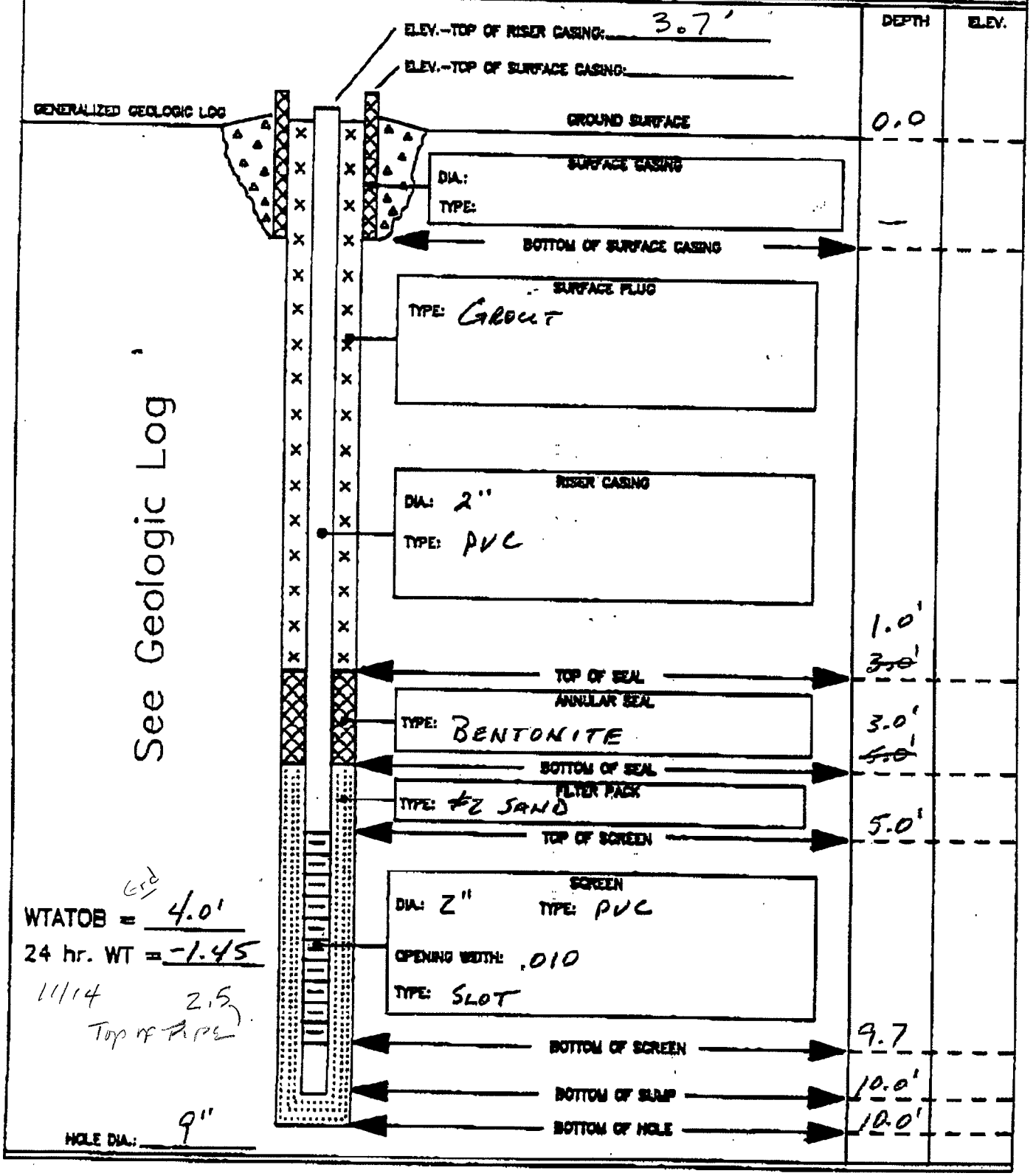
GWATOB 4.0' GW 24 HRS. -1.45 ELEVATION:

DRILLED BY MP LOGGED BY DRI

900061

MONITORING WELL

PROJECT: YATES EAP DIKE
WELL NO.: D5
SITE:
LOCATION: PLANT YATES
BEGUN: 10-30-97
COMPLETED: 10-30-97
CONSTRUCTED BY: DRIVEY



Field Test Boring Record
Geotechnical Field Services

Southern Company Services

PROJECT	EWO #	LEAD DRILLER	DATE:
YATES EAP DIKE	3313-FA	DRIVEY	11-11-97

LOCATION: PLANT YATES

BORING # D6

DEPTH FROM	DEPTH TO	DESCRIPTION	SAMPLE NO	SAMPLE DEPTH	1st 6"	2nd 6"	3rd 6"	N	CORE REC
0.0	2.0'	RED BROWN SANDY CLAYEY SILT	1	2.0					
2.0'	13.0'	BROWN TAN SANDY SILT	2	5.0					
~~13~~			3	10.0					
13.0'	13.5	DARK BROWN GREY SANDY SILT	4	13.0'					
13.5	18.0'	LIGHT BROWN SANDY SILT	5	15.0					
18.0'	28.0'	RED BROWN SANDY SILT	6	20.0'					
		MOIST @ 15.0'	7						
			7	22.0					
			8	25.0					
28.0'	29.0'	RED BROWN SANDY CLAYEY SILT	9	28.0					
29.0'	~~30.0~~ 31.0	DARK BROWN SILTY SAND	10	30.0					
31.0	35.0'	DECOMPOSED ROCK	11	35.0					

	FROM	TO		FROM	TO	REMARKS
SS			AUGER	0.0	35.0'	CONTINUOUS SAMPLER
WASH			TRICONE			
___ CASING			___ CORE			
BIT						

GWATOB 15.4' GW 24 HRS. _____ ELEVATION:

DRILLED BY MP, DRI LOGGED BY DRI

800961

Field Test Boring Record
Geotechnical Field Services

Southern Company Services

PROJECT	EWO #	LEAD DRILLER	DATE:
YATES EAP DIKE	3313-FA	DR IVEY	10-16-97

LOCATION: PLANT YATES

BORING #: D7

DEPTH FROM	DEPTH TO	DESCRIPTION	SAMPLE NO	SAMPLE DEPTH	1st 6"	2nd 6"	3rd 6"	N	CORE REC
0.0	3.0'	ASH	1	2.5'	2	2	3	5	
3.0'	9.0'	RED BROWN SANDY SILT	2	5.0'	3	3	3	6	
		WET	3	7.5	1	1	1	2	
9.0'	14.0'	ASH WET	4	10.0	WOH 18"			WOH 18"	
		GREY SILTY SAND	5	12.5	WOH 18"			WOH 18"	
14.0'	19.5'	GREY TAN SILTY SAND	6	15.0	2	2	3	5	
			7	17.5	1	1	1	2	
19.5'	22.0'	TAN ORANGE SILTY SAND	8	20.0	1	1	1	2	
22.0'	24.0'	TAN ORANGE GREY SANDY SILT	9	22.5	2	2	3	5	
24.0'	27.0'	SAPROLITE SILTY SAND	10	25.0	5	5	5	10	
27.0'	33.0'	" SANDY SILT	11	31.0	7	12	11	23	
33.0'	40.3'	DECOMPOSED ROCK SILTY SAND	12	36.0	7	23	20	43	
			13	40.3	27	50/.3		50/.3	

	FROM	TO		FROM	TO	REMARKS
SS	1.0	40.3	AUGER	0.0	39.5	
WASH			TRI-CONE			
___ CASING			___ CORE			
BIT						

GWATOB 10.2' GW 24 HRS. _____ ELEVATION:

DRILLED BY MP LOGGED BY DRT

800961

Sheet ___ of ___

Field Test Boring Record
Geotechnical Field Services

Southern Company Services

PROJECT	EWO #	LEAD DRILLER	DATE:
YATES EAP DIKE	3313-FA	DR. IVEY	10-21-97

LOCATION: PLANT YATES

BORING # D8

DEPTH FROM	DEPTH TO	DESCRIPTION	SAMPLE NO	SAMPLE DEPTH	1st 6"	2nd 6"	3rd 6"	N	CORE REC
0.0	24.0'	RED BROWN SANDY CLAYEY SILT	1	4.0'					4.0'
		SAME	2	9.0'					5.0'
			3	14.0'					5.0'
			4	19.0'					5.0
24.0'	41.4'	SAME BUT W/ SANDY SILTY SEAMS	5	24.0					5.0
			6	28.0'					5.0
			7	34.0					5.0
			8	39.0					5.0
41.4'	47.8'	41.4' MOIST	9	44.0					5.0'
		46.4 HIT SAPROLITE, DECOMPOSED	10	47.8					3.0'
		ROCK ! ROCK							
		AUGER REFUSAL @ 47.8'							

	FROM	TO		FROM	TO
SS			AUGER	0.0	47.8'
WASH			TRICONE		
___ CASING			___ CORE		
BIT					

REMARKS: CONTINUOUS SAMPLER

GWATOB 32.4' GW 24 HRS. ELEVATION:

DRILLED BY MP LOGGED BY DRI

660961

Sheet ___ of ___

MONITORING WELL

PROJECT: YATES EAP DIKE

WELL NO.: D 8

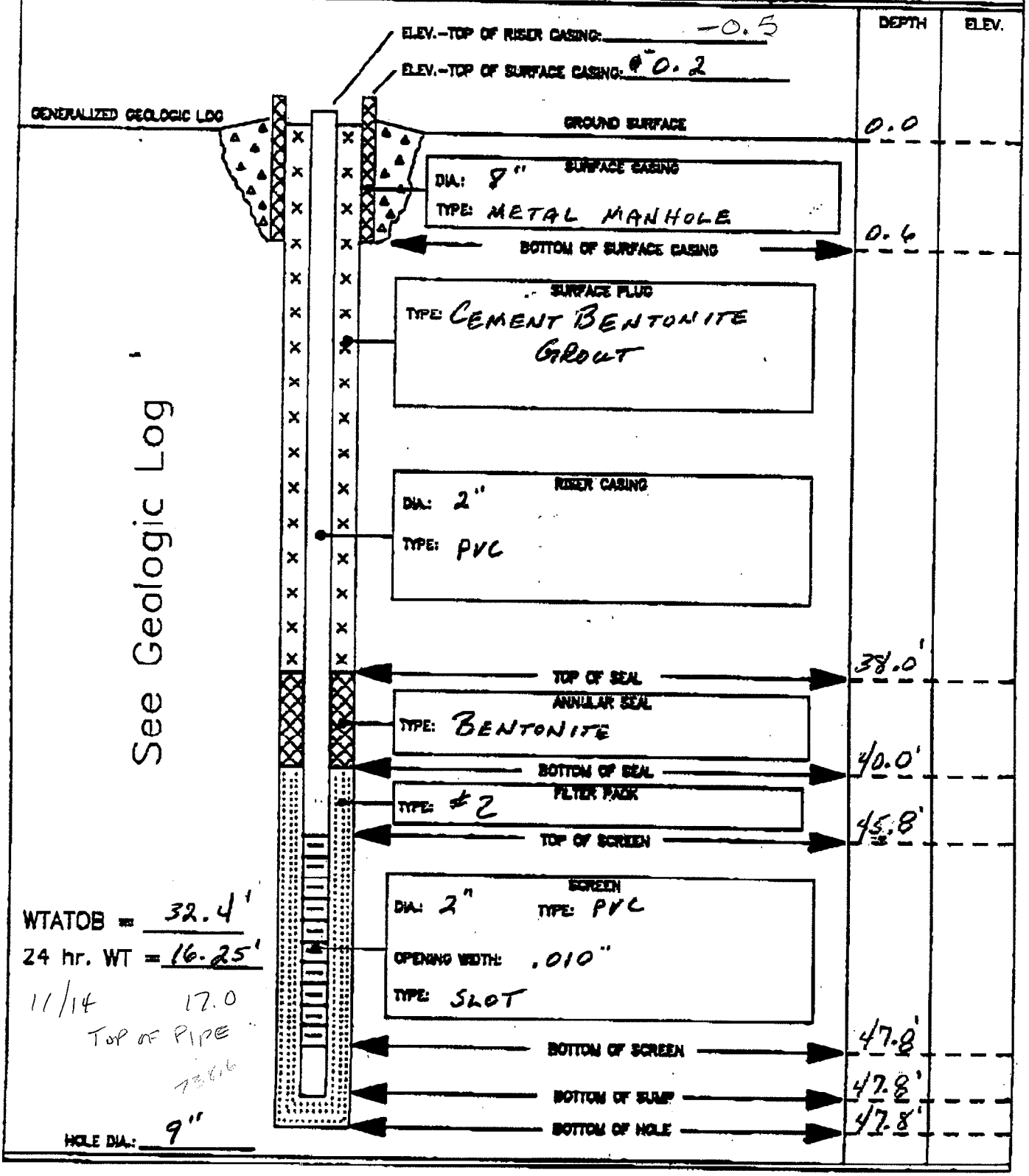
SITE:

LOCATION: PLANT YATES

BEGUN:

COMPLETED: 10-27-97

CONSTRUCTED BY: M. HUGHES, D. RIVEY, M. PERRIEN



WTATOB = 32.4'

24 hr. WT = 16.25'

11/14 17.0

Top of Pipe

HOLE DIA.: 9"

Field Test Boring Record
Geotechnical Field Services

Southern Company Services

PROJECT	EWO #	LEAD DRILLER	DATE:
YATES EAP DIKE	3313-FA	DR IVEY SR	10-27-97

LOCATION: PLANT YATES — BORING #: 8A

DEPTH FROM	DEPTH TO	DESCRIPTION	SAMPLE NO	SAMPLE DEPTH	1st 6"	2nd 6"	3rd 6"	N	CORE REC
0.0		RED BROWN SANDY CLAY SILT		4.0'					4.0'
				9.0'					5.0'
				14.0					5.0'
		UD - 18.0' TO 20.0'							2.0'
		UD 20.0' TO 22.0'							1.9'
				24.0					
				29.0					5.0'
				34.0'					5.0'
				35.0'					1.0'

	FROM	TO		FROM	TO	REMARKS: CONTINUOUS SAMPLER
SS			AUGER	0.0	35.0'	6.0' N. OF BORING D8
WASH			TRI-CONE			
___ CASING			___ CORE			
BIT						

GWATOB DRY — GW 24 HRS. 19.2 — ELEVATION:

DRILLED BY MP — LOGGED BY DRI

800961

Sheet ___ of ___

MONITORING WELL

PROJECT: YATES EAP DIKE

WELL NO.: D8A

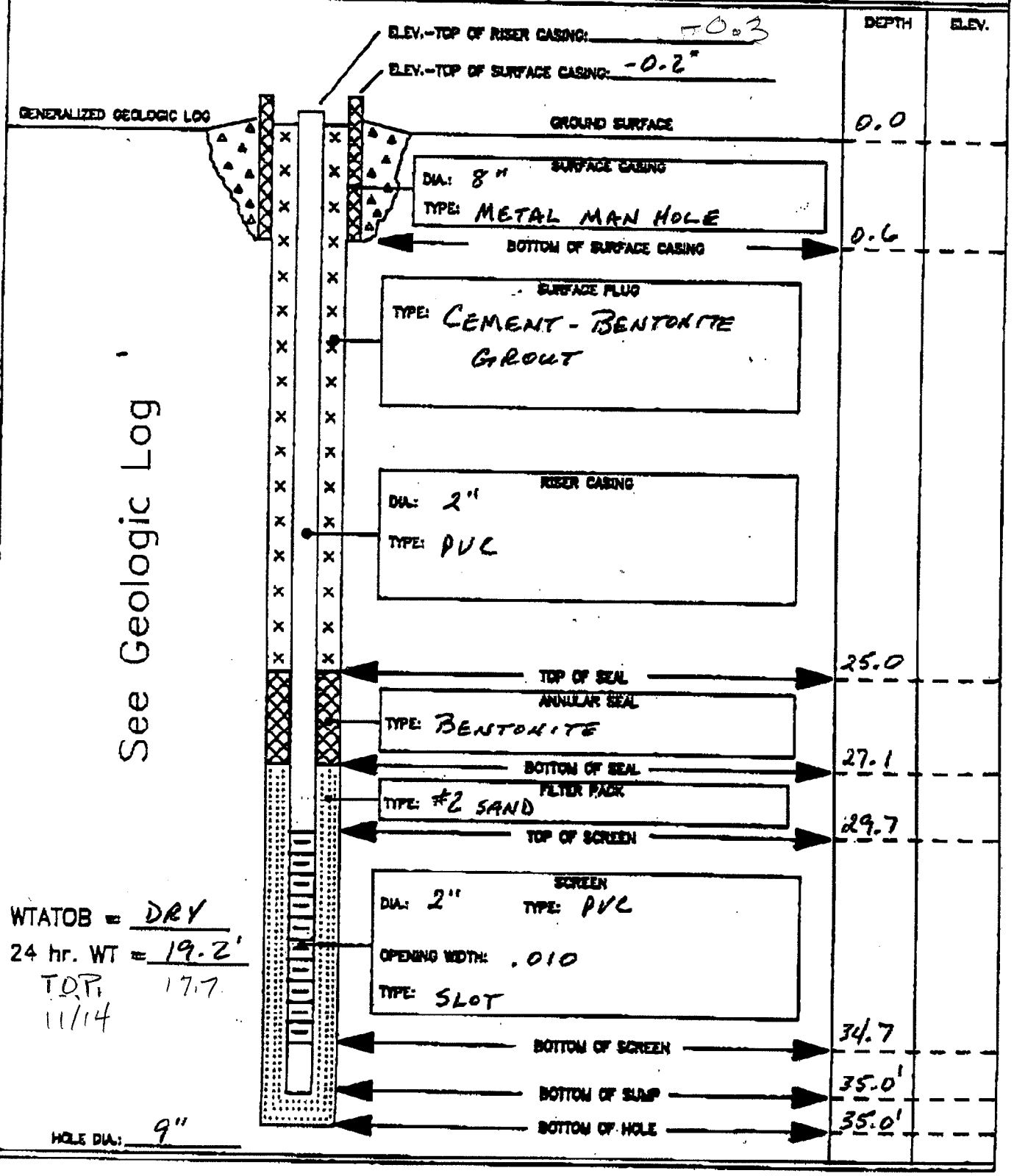
SITE:

LOCATION: PLANT YATES

BEGUN: 10-27-97

COMPLETED: 10-27-97

CONSTRUCTED BY: DRIVEY



WTATOB = DRY

24 hr. WT = 19.2'

T.O.P. 17.7

11/14

HOLE DIA: 9"

Field Test Boring Record
Geotechnical Field Services

Southern Company Services

PROJECT	EWO #	LEAD DRILLER	DATE:
YATES EAP DIKE	3313-FA	DRIVEY	11-5-97

LOCATION: PLANT YATES

BORING #: D9

DEPTH FROM	DEPTH TO	DESCRIPTION	SAMPLE NO	SAMPLE DEPTH	1st 6"	2nd 6"	3rd 6"	N	CORE REC
0.0	6.0'	(FILL) SANDY CLAYEY SILT	1	5.0					
6.0'	14.0'	SANDY SILT	2	10.0					
14.0'	14.5'	YELLOW BROWN BLACK							
		DECOMPOSED ROCK	3	14.0'					
14.5	15.0'	RED BROWN SILTY SAND	4	15.0					
15.0'	18.5'	TAN SILTY SAND	5	18.5					
18.5	19.0'	GREY SILTY SAND	6	19.0'					
19.0'	23.5'	RED BROWN TAN SILTY SAND	7	20.0'					
23.5'	26.0'	GREY TAN SAND W/ BIG							
		GRAVEL	8	25.0'					

	FROM	TO		FROM	TO	REMARKS
						CONTINUOUS SAMPLER
SS			AUGER	0.0	26.0'	MOIST @ 14.0'
WASH			TRI-CONE			
___ CASING			___ CORE			ABOUT 5.0' SOUTH WEST OF STAKE
BIT						

GWATOB 2.0' GW 24 HRS. _____ ELEVATION:

DRILLED BY MP LOGGED BY DRI

800961

Field Test Boring Record
Geotechnical Field Services

Southern Company Services

PROJECT	EWO #	LEAD DRILLER	DATE:
YATES EAP DIKE	3313-FA	DRIVEY	10-16-97

LOCATION	BORING #
PLANT YATES	D10

DEPTH FROM	DEPTH TO	DESCRIPTION	SAMPLE NO	SAMPLE DEPTH	1st 6"	2nd 6"	3rd 6"	N	CORE REC
0.0'	4.5'	ASH	1	2.5	2	3	4	7	
4.5'	7.5'	RED BROWN SANDY CLAYEY SILT	2	5.0	2	2	2	4	
		WET	3	7.5		1/18"		1/18"	
7.5'	10.0	ASH WET	4	10.0	2	3	4	7	
10.0'	13.0'	SAPROLITE SILTY SAND	5	12.5	3	4	6	10	
13.0'	15.0'	RED BROWN SANDY SILT	6	16.0	WOH 18"			WOH 18"	
15.0'	18.0'	GREY SILTY SAND	~~7~~	~~17.5~~					
18.0'	20.0'	GREY BROWN SILTY SAND	7	19.5	3	3	4	7	
20.0'	29.0'	TAN SAND	8	23.0	2	2	2	4	
			9	25.5	2	3	4	7	
			10.0	28.0	5	8	9	17	
29.0'	37.5'	SAPROLITE SILTY SAND	11	31.5	10	9	11	20	
			12	36.5	17	10	8	18	
		37.5 AUGER REFUSAL							

	FROM	TO		FROM	TO	REMARKS
SS	1.0	36.5	AUGER	0.0	37.5	
WASH			TRI-CONE			
___ CASING			___ CORE			
BIT						

GWATOB 19.2' GW 24 HRS. _____ ELEVATION:

DRILLED BY DRI, MP LOGGED BY DRI

800961

Sheet ___ of ___

Field Test Boring Record
Geotechnical Field Services

Southern Company Services

PROJECT	EWD #	LEAD DRILLER	DATE:
YATES EAP DIKE	3313-FA	DR IVEY	11-10-97

LOCATION

BORING # D 11

DEPTH FROM	DEPTH TO	DESCRIPTION	SAMPLE NO	SAMPLE DEPTH	1st 6"	2nd 6"	3rd 6"	N	CORE REC
0.0	19.5'	TAN RED BROWN SILTY SAND	1	5.0'					
			2	10.0'					
			3	15.0'					
19.5'	20.0'	BROWN YELLOW BLACK DECOMPOSED	4	20.0'					
		ROCK							
20.0'	25.0'	RED BROWN TAN SANDY SILT	5	25.0'					
25.0'	30.0'	RED BROWN SILTY SAND	6	30.0'					
		MOIST @ 28.0'							
30.0	32.3	SAPROLITE @ 30.0'	7	32.3					
		AUGER REFUSAL @ 32.3'							

	FROM	TO		FROM	TO	REMARKS
SS			AUGER	0.0	32.3'	CONTINUOUS SAMPLER
WASH			TRI-CONE			
___ CASING			___ CORE			
BIT						

GWATOB_____ GW 24 HRS._____ ELEVATION:

DRILLED BY MP LOGGED BY DRI

800961

Sheet ___ of ___

MONITO NG WELL

PROJECT: YATES EAD DIKE

WELL NO.: D11

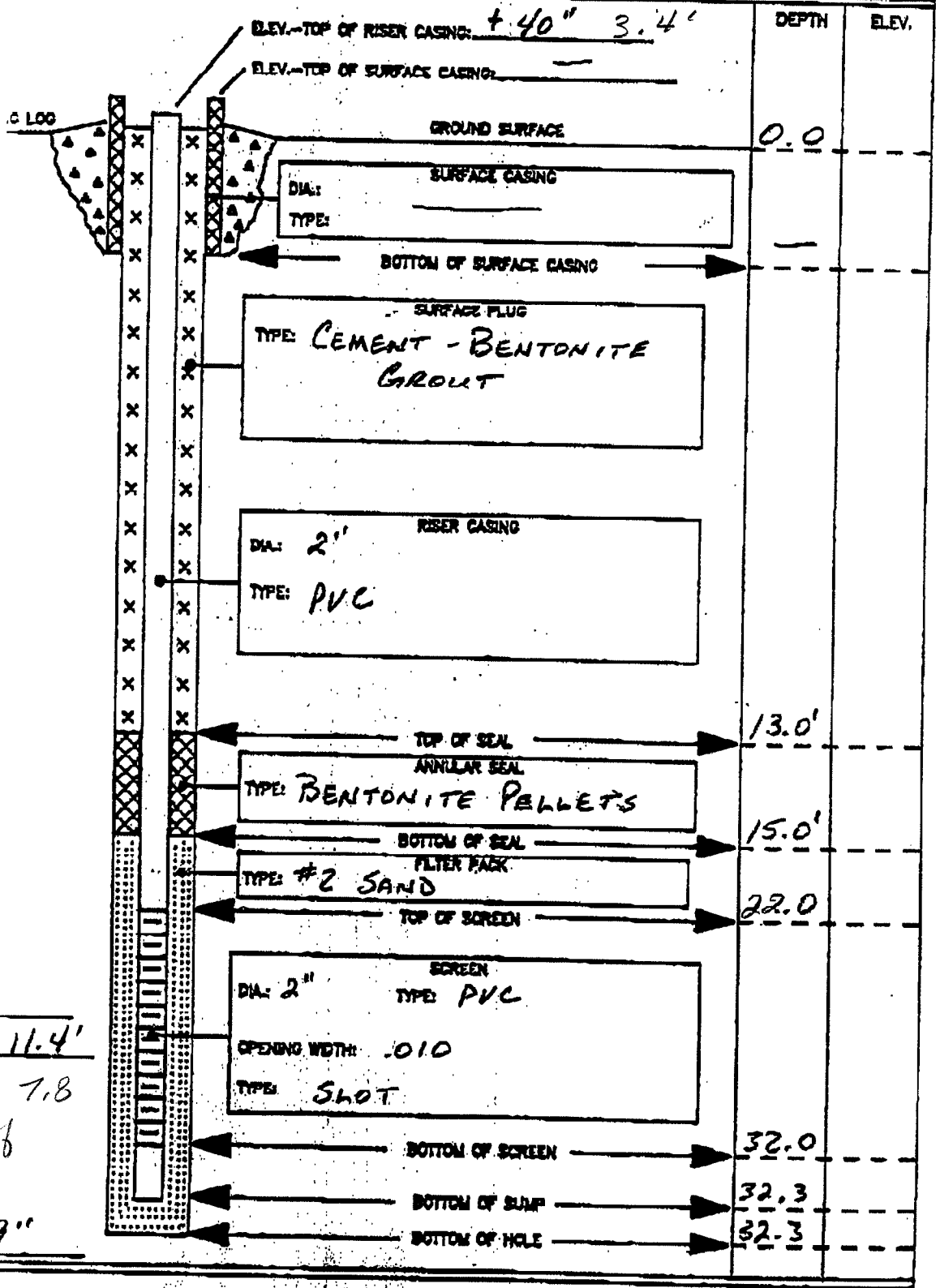
SITE:

LOCATION: PLANT YATES

BEGUN:

COMPLETED: 11-10-97

CONSTRUCTED BY: DRIVEY



W. TOB = —

24 hr. WT 11.4'

11/14 7.8

grd surf

HOLE DIA.: 9"

Field Test Boring Record
Geotechnical Field Services

Southern Company Services

PROJECT	EWO #	LEAD DRILLER	DATE:
YATES EAP DIKE	3313-FA	DR JUEY	11-11-97

LOCATION: PLANT YATES

BORING #: D11A

DEPTH FROM	DEPTH TO	DESCRIPTION	SAMPLE NO	SAMPLE DEPTH	1st 6"	2nd 6"	3rd 6"	N	CORE REC
0.0	9.0'	RED BROWN SANDY CLAY SILT (MIX)	1	3.0					
9.0'	13.0'	RED BROWN SILTY SAND	2	10.0					
13.0'	25.0'	RED BROWN SAND SILT	3	15.0'					
			4	20.0'					
			5	25.0'					
		UD @ 3.0 TO 5.0							2.0
		UD @ 5.0 TO 7.0							2.0'
		UD @ 10.0 TO 12.0							2.0'
		UD @ 12.0 TO 14.0							0.8

	FROM	TO		FROM	TO	REMARKS: ABOUT
SS			AUGER	0.0	25.0'	CONTINUOUS SAMPLER
WASH			TRI-CONE			
___ CASING			___ CORE			
BIT						

GWATOB DRY GW 24 HRS. ELEVATION:

DRILLED BY MP LOGGED BY DRI

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Sheet ___ of ___

'ONIT(:NG WELL

PROJECT: YATES EAP DIKE

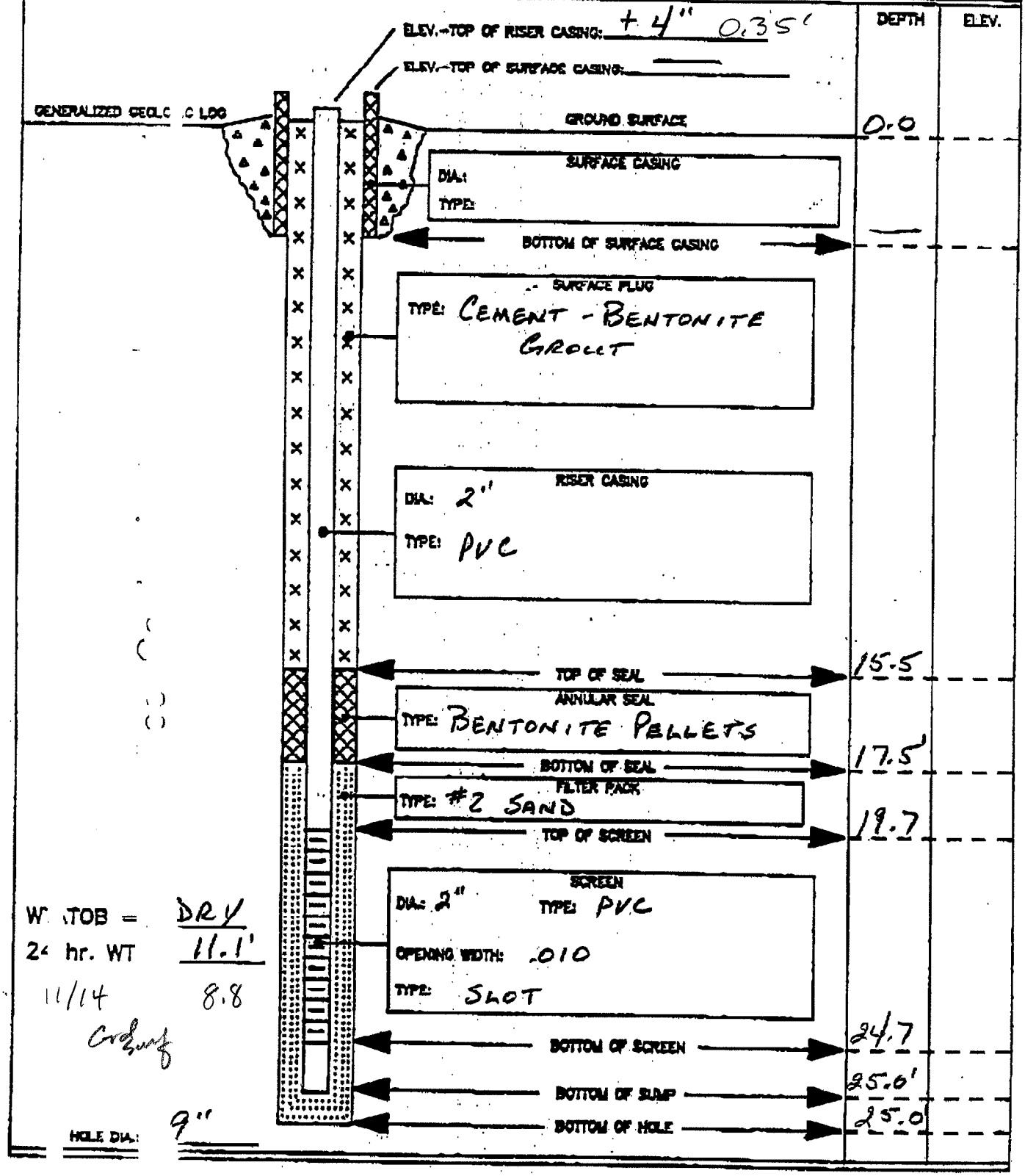
WELL NO.: D11A

LOCATION: PLANT YATES

RUN

COMPLETED: 11-11-97

CONSTRUCTED BY: DR JUEY



WT TOB = DRY

24 hr. WT 11.1'

11/14 8.8

Caving

HOLE DIA: 9"

Field Test Boring Record
Geotechnical Field Services

Southern Company Services

PROJECT	EWO #	LEAD DRILLER	DATE:
YATES EAP DIKE	3313-FA	DRIVEY	11-6-97

LOCATION

BORING # D12

DEPTH FROM	DEPTH TO	DESCRIPTION	SAMPLE NO	SAMPLE DEPTH	1st 6"	2nd 6"	3rd 6"	N	CORE REC
0.0	21.0'	SILTY SAND	1	8.0					
		MOIST @ 8.5'	2	8.5					
			3	10.0					
			4	20.0					
21.0'	22.0'	WHITE TAN SAND & GRAVEL	5	22.0'					
		AUGER REFUSAL @ 22.0'							
		UD - 2'-4'							0.0
		UD - 6'-8'							2.0'

	FROM	TO		FROM	TO	REMARKS
SS			AUGER	0.0	22.0'	CONTINUOUS SAMPLER
WASH			TRICONE			
___ CASING			___ CORE			
BIT						

GWATOB 12'2" GW 24 HRS. ELEVATION:

DRILLED BY MP LOGGED BY DRI

800961

Sheet ___ of ___

MONITC NG WELL

PROJECT: YATES EAD DIKE

WELL NO.: D12

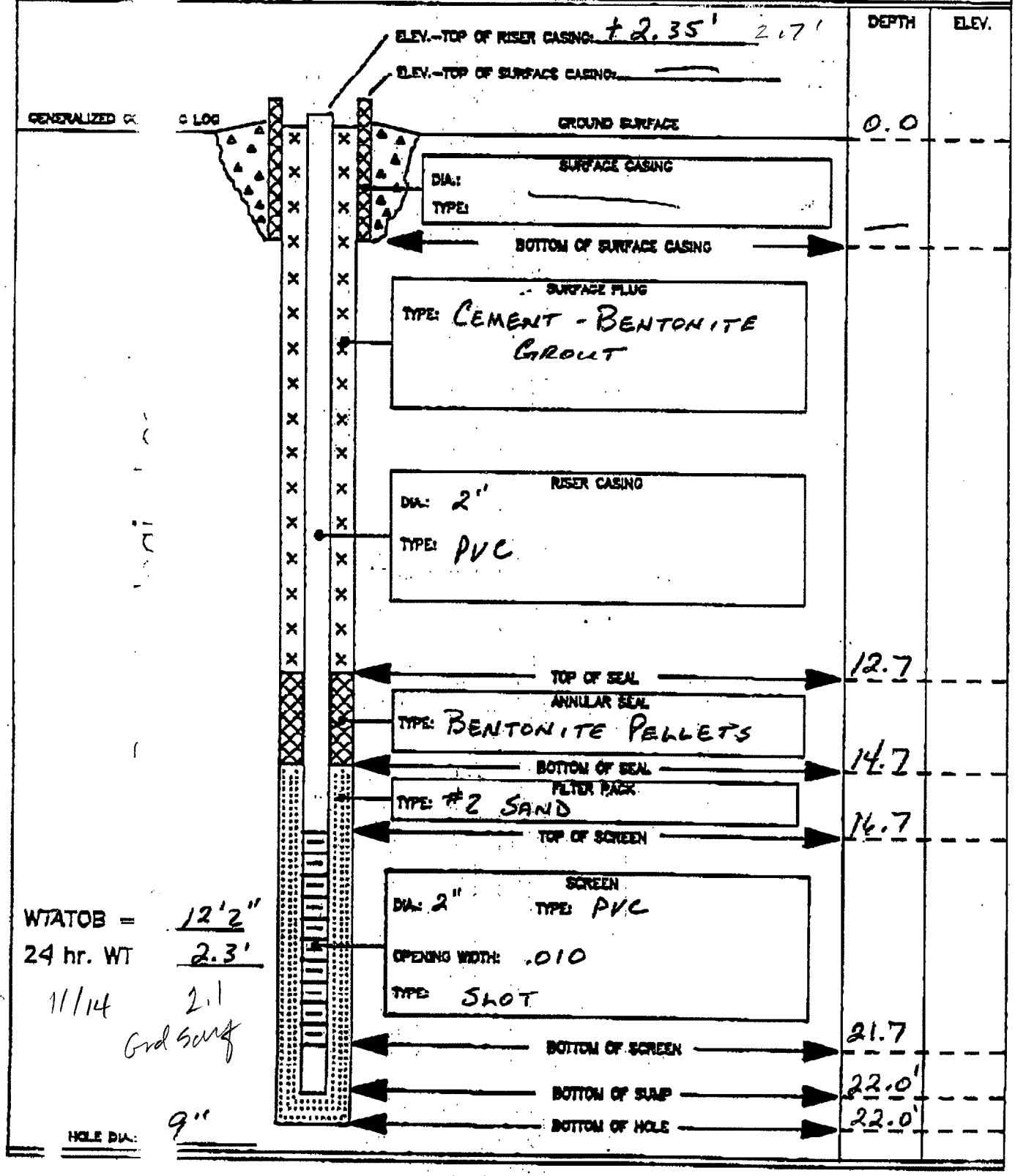
SITE:

LOCATION: PLANT YATES

BEGUN:

COMPLETED: 11-6-97

CONSTRUCTED BY: DR IVEY



WTATOB = 12'2"

24 hr. WT 2.3'

11/14 2.1

Grd Surf

HOLE DIA: 9"

Field Test Boring Record
Geotechnical Field Services

Southern Company Services

PROJECT	EWO #	LEAD DRILLER	DATE:
YATES EAP DIKE	3313-FA	DRIVEY	10-20-97

LOCATION	BORING #
PLANT YATES	D13

DEPTH FROM	DEPTH TO	DESCRIPTION	SAMPLE NO	SAMPLE DEPTH	1st 6"	2nd 6"	3rd 6"	N	CORE REC
0.0	3.0'	ASH FILL	1	2.5	4	4	5	9	
3.0'	6.5'	RED BROWN ORANGE SILTY SAND	2	5.0	4	8	9	17	
6.5'	10.3'	RED BROWN SANDY SILT	~~3~~	7.5	2	1	1	2	V MOIST - WET
10.3'	~~11.5'~~ 13.0'	TAN BROWN SILTY SAND	4	10.0'	3	5	5	10	
~~11.5'~~ 13.0'	14.5'	RED BROWN SILTY SAND	5	12.5	3	3	4	7	
14.5'	16.5'	RED BROWN SANDY SILT	6	15.0'	2	4	3	7	
16.5'	27.0'	GREY TAN SILTY SAND	7	17.5	1	1	1	2	
			8	20.0	5	3	5	8	
			9	22.5	4	4	7	11	
			10	25.0'	4	5	7	12	
27.0'	33.4	SAPROLITE SILTY SAND	11	27.5	7	12	12	24	
			12	30.0	20	19	20	39	
		33.4' AUGER REFUSAL							

	FROM	TO		FROM	TO	REMARKS
SS	1.0	30.0	AUGER	0.0	33.4	
WASH			TRI-CONE			
___ CASING			___ CORE			
BIT						

GWATOB 7.2' GW 24 HRS. _____ ELEVATION:

DRILLED BY MP LOGGED BY DRT

800961

Sheet ___ of ___

Field Test Boring Record
Geotechnical Field Services

Southern Company Services

PROJECT	EWO #	LEAD DRILLER	DATE:
YATES EAP DIKE	3313-FA	DR IUEY	10-21-97

LOCATION	BORING #
PLANT YATES	D14

DEPTH FROM	DEPTH TO	DESCRIPTION	SAMPLE NO	SAMPLE DEPTH	1st 6"	2nd 6"	3rd 6"	N	CORE REC
0.8		RED BROWN SR. Clay of SANDY SILT	1	3.9'					3.4'
		SAME	2	8.9					5.0'
		SAME W/ LIGHT SILTY SAND SEAMS	3	13.6'					5.0'
		SAME	4	18.9					5.0
		SAME	5	23.9					5.0
		SAME	6	28.9					5.0
		SAME	7	33.9					5.0
	38.9	36.9 TO 38.9 VERY MOIST	8	38.3					4.4
		CLAEY FINE SANDY SILT W/							
		A LITTLE ORGANICS (BLACK Lense) & DECOMPOSED							
		ROCK							
38.9	45.0	SAPROLITE W/ SEAMS OF DECOMPO	9	43.9					3.3
		SED ROCK							
			10	~~45.~~					
		SAME		45.0'					1.6

	FROM	TO		FROM	TO	REMARKS
SS			AUGER	0.0	45.0'	CONTINUOUS SAMPLER
WASH			TRI-CONE			
___ CASING			___ CORE			
BIT						

GWATOB 22.3' GW 24 HRS. _____ ELEVATION:

DRILLED BY MP, DRI LOGGED BY DRI, GW

800961

Sheet ___ of ___

Field Test Boring Record
Geotechnical Field Services

Southern Company Services

PROJECT	EWO #	LEAD DRILLER	DATE:
YATES EAP DIKE	3313-FA	DR IVEY	11-7-97

LOCATION	BORING #
PLANT YATES	D15

DEPTH FROM	DEPTH TO	DESCRIPTION	SAMPLE NO	SAMPLE DEPTH	1st 6"	2nd 6"	3rd 6"	N	CORE REC
0.0'	2.0'	TAN SILTY SAND	1	1.5					
2.0'	3.5	BROWN SILTY SAND	2	3.0					
3.5	5.0'	RED SILTY SAND	3	3.5					
5.0'	6.0'	TAN RED SANDY SILT	4	5.5					
6.0'	6.5'	DARK GREY SILTY SAND	5	6.5					
6.5	8.0'	SAPROLITE SANDY SILT	6	7.5					
8.0'	12.5	SAPROLITE SILTY SAND							
		SOFT @ 4.0', 4.5'							

	FROM	TO		FROM	TO	REMARKS
SS			AUGER	0.0	12.5	CONTINUOUS SAMPLER
WASH			TRI-CONE			
___ CASING			___ CORE			
BIT						

GWATOB 11'2" GW 24 HRS. 0.0 ELEVATION:

DRILLED BY MP LOGGED BY DRI

800961

Sheet ___ of ___

Field Test Boring Record
Geotechnical Field Services

Southern Company Services

PROJECT	EWO #	LEAD DRILLER	DATE:
YATES EAP DIKE	3313 FA	DRIVEY	10-20-97

LOCATION	BORING #
PLANT YATES	D16

DEPTH FROM	DEPTH TO	DESCRIPTION	SAMPLE NO	SAMPLE DEPTH	1st 6"	2nd 6"	3rd 6"	N	CORE REC
0.0	12.0'	FILL ASH & SILTY SAND	1	2.5	3	5	7	12	
		BOULDER @ 4.5'	2	5.0	4	9	20	29	
			3	7.5	3	3	5	8	
			4	10.0	1	1	1	2	
12.0'	13.5'	TAN GREY SILTY SAND	5	12.5	4	50/4"		100/18"	
13.5'	17.0'	TAN BROWN SILTY FINE SAND	6	15.0	2	5	5	10	
17.0'	22.2	SAPROLITE SILTY SAND	7	17.5	3	3	4	7	
			8	20.0	15	15	15	30	
		22.2' AUGER REFUSAL							

	FROM	TO		FROM	TO	REMARKS
SS	1.0'	20.0'	AUGER	0.0	22.2	
WASH			TRI-CONE			
___ CASING			___ CORE			
BIT						

GWATOB 7.0' GW 24 HRS. ____ ELEVATION:

DRILLED BY MP LOGGED BY DRF

800961

Sheet ___ of ___

Field Test Boring Record
Geotechnical Field Services

Southern Company Services

PROJECT	EWO #	LEAD DRILLER	DATE:
YATES BAP DIKE	3313-FA	DRIVEY SR	10-3-97

LOCATION

BORING # D17

DEPTH FROM	DEPTH TO	DESCRIPTION	SAMPLE NO	SAMPLE DEPTH	1st 6"	2nd 6"	3rd 6"	N	CORE REC
0.0	3.0'	RED BROWN SANDY CLAYEY SILT	1	2.5	1	1	2	3	
3.0	4.5'	RED BROWN SILTY SAND FILL	2	6.5	3	5	7	12	
4.5'	8.0'	RED BROWN SILTY SAND							
8.0'	12.0'	YELLOW BROWN SILTY SAND	3	11.5	6	10	8	18	
		7.5' MOIST							
12.0'	16.5'	ROCK LENS, DECOMPOSED ROCK	4	16.5	9	10	8	18	
		AUGER REFUSAL @ 16.5							

	FROM	TO		FROM	TO	REMARKS
SS	1.0	16.5	AUGER	0.0	16.5	
WASH			TRI-CONE			
___ CASING			___ CORE			
BIT						

GWATOB 7.4' GW 24 HRS. ELEVATION:

DRILLED BY MP LOGGED BY DRI

800961

Sheet ___ of ___

MONITORING WELL

PROJECT: YATES EAD DIKE

WELL NO.: D17

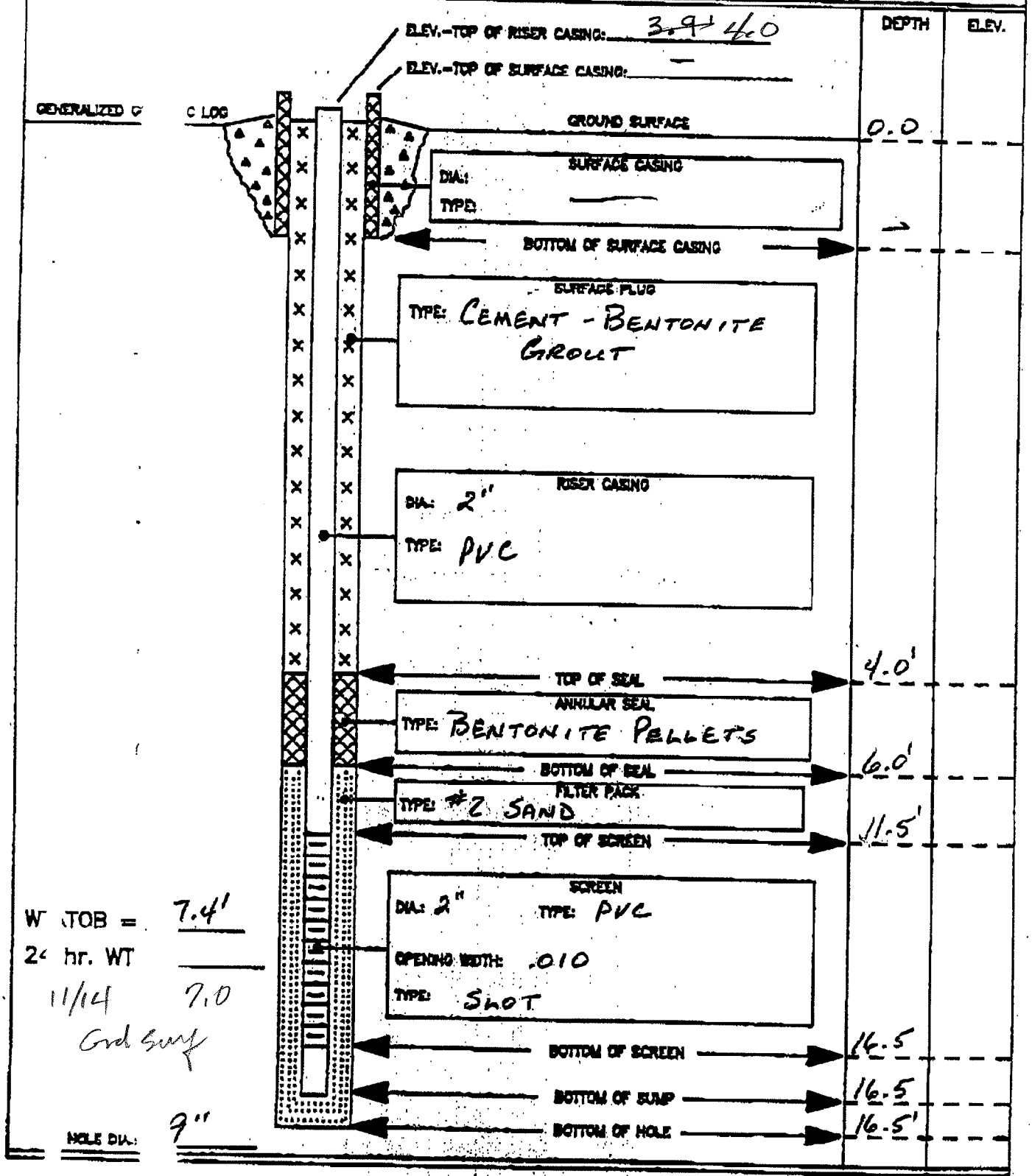
SITE:

LOCATION: PLANT YATES

BEGUN: 11-4-97

COMPLETED: 11-4-97

CONSTRUCTED BY: DR IVEY



W TOB = 7.4'

24 hr. WT

11/14 7.0

Grd Surf

HOLE DIA: 9"

Field Test Boring Record
Geotechnical Field Services

Southern Company Services

PROJECT	EWO #	LEAD DRILLER	DATE:
YATES EAP DIKE	3313-FA	DR JUEY	11-4-97

LOCATION

BORING # D17A

DEPTH FROM	DEPTH TO	DESCRIPTION	SAMPLE NO	SAMPLE DEPTH	1st 6"	2nd 6"	3rd 6"	N	CORE REC
0.5	3.5'	RED BROWN SANDY CLAYEY SILT	1	2.5					
3.5'	6.0'	RED BROWN YELLOW TAN SANDY							
		CLAYEY SILT	2	5.0'					
6.0'	6.5'	YELLOW BROWN SILTY SAND	3	6.5					
6.5'	8.0'	YELLOW BROWN BLACK DECOMPOSED	4	7.0'					
		ROCK							
8.0'	9.0'	RED BROWN TAN CLAYEY SILT	5	8.5					
9.0'	10.0'	RED TAN SILTY SAND	6.0	10.0'					
		WET @ 7.0'							
		UD @ 3.0' TO 5.0'							1'-10"
		UD @ 5.0' TO 7.0'							2.0'

	FROM	TO		FROM	TO
SS			AUGER	0.0	10.0
WASH			TRI-CONE		
___ CASING			___ CORE		
BIT					

REMARKS CONTINUOUS SAMPLER

GWATOB DRY GW 24 HRS. ELEVATION:

DRILLED BY MP LOGGED BY DRT

90D361

Sheet ___ of ___

MONITORING WELL

PROJECT: YATES EAD DIKE

WELL NO.: D17A

SITE:

LOCATION: PLANT YATES

BEGUN: 11-4-97

COMPLETED: 11-4-97

CONSTRUCTED BY: DR JUEY

GENERALIZED GEOLOGIC LOG

ELEV.–TOP OF RISER CASING: 0' TOP OF CONC. 5.0

ELEV.–TOP OF SURFACE CASING: —

	DEPTH	ELEV.
GROUND SURFACE	0.0	
SURFACE CASING — DIA: TYPE:	—	
BOTTOM OF SURFACE CASING		
SURFACE PLUG — TYPE: CEMENT - BENTONITE GROUT		
RISER CASING — DIA: 2" TYPE: PVC		
TOP OF SEAL	1.0'	
ANNULAR SEAL — TYPE: BENTONITE PELLETS		
BOTTOM OF SEAL	3.0'	
FILTER PACK — TYPE: #2 SAND		
TOP OF SCREEN	5.0'	
SCREEN — DIA: 2" TYPE: PVC; OPENING WIDTH: .010; TYPE: SLOT		
BOTTOM OF SCREEN	10.0'	
BOTTOM OF SUMP	10.0'	
BOTTOM OF HOLE	10.0'	

W. TOB = DRY

24 hr. WT = 1

11/14 7.5

Good Survey

HOLE DIA.: 9"

Field Test Boring Record
Geotechnical Field Services

Southern Company Services

PROJECT	EWO #	LEAD DRILLER	DATE:
YATES EAP DIKE	3313-FA	DRIVEY	11-3-97

LOCATION: PLANT YATES

BORING # D18

DEPTH FROM	DEPTH TO	DESCRIPTION	SAMPLE NO	SAMPLE DEPTH	1st 6"	2nd 6"	3rd 6"	N	CORE REC
0.0	2.5'	RED BROWN SANDY CLAYEY SILT	1	2.5'	3	7	7	14	
2.5'	16.0'	SAPROLITE SILTY SAND	2	6.0'	2	4	4	8	
		MOIST @ 7.5'	3	11.0	3	3	7	10	
			4	16.0	16	22	20	42	

	FROM	TO		FROM	TO	REMARKS
SS	1.0	16.0'	AUGER	0.0	14.5	
WASH			TRI-CONE			
___ CASING			___ CORE			
BIT						

GWATOB DRY GW 24 HRS. ELEVATION:

DRILLED BY MP, DRI LOGGED BY DRI

8/97DR1

Sheet ___ of ___

MONITORING WELL

PROJECT: YATES EAP DIKE

WELL NO.: D18

SITE:

LOCATION: PLANT YATES

BEGUN: 11-3-97

COMPLETED: 11-3-97

CONSTRUCTED BY: DRIVEY

ELEV.-TOP OF RISER CASING: 0.97' 1.0

ELEV.-TOP OF SURFACE CASING:

GENERALIZED GEOLOGIC LOG

See Geologic Log

	DEPTH	ELEV.
GROUND SURFACE	0.0	
SURFACE CASING — DIA: TYPE: NONE		
BOTTOM OF SURFACE CASING	—	
SURFACE PLUG — TYPE: CEMENT - BENTONITE GROUT		
RISER CASING — DIA: 2" TYPE: PVC		
TOP OF SEAL	5.5	
ANNULAR SEAL — TYPE: BENTONITE		
BOTTOM OF SEAL	7.5	
FILTER PACK — TYPE: #2 SAND		
TOP OF SCREEN	9.5	
SCREEN — DIA: 2" TYPE: PVC; OPENING WIDTH: .010; TYPE: SLOT		
BOTTOM OF SCREEN	14.2	
BOTTOM OF SUMP	14.5	
BOTTOM OF HOLE	16.0'	

WTATOB = DRY

24 hr. WT = _____

11/14 7.5 Grd Surf

HOLE DIA: 9"

Field Test Boring Record
Geotechnical Field Services

Southern Company Services

PROJECT	EWO #	LEAD DRILLER	DATE:
YATES EAP DIKE	3313 FA	DRIVEY	10-15-97

LOCATION	BORING #
PLANT YATES	D19

DEPTH FROM	DEPTH TO	DESCRIPTION	SAMPLE NO	SAMPLE DEPTH	1st 6"	2nd 6"	3rd 6"	N	CORE REC
0-0	4.5'	RED BROWN CLAYEY SILT	1	2.5'	2	3	4	7	
4.5'	5.0'	RED ORANGE SILTY SAND	2	5.0'	3	3	4	7	
5.0'	10.0'	SAPROLITE @ 5.0' TAN SILTY SAND							
10.0'	15.0'	TAN SANDY SILT	3	11.0	2	1	1	2	
15.0'	20.5'	TAN SILTY SAND	4	16.0	2	7	9	16	
20.5'	25.3'	DECOMPOSED ROCK	5	21.0	2	9	14	23	
			6	25.3	35	50/.3		50/.3	

	FROM	TO		FROM	TO	REMARKS
SS	1.0'	25.3'	AUGER	0.0	24.5	
WASH			TRI-CONE			
___ CASING			___ CORE			
BIT						

GWATOB 19.4' GW 24 HRS. _____ ELEVATION:

DRILLED BY MP LOGGED BY DRT

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Sheet ___ of ___

D4
D4A
D5
D8
D8A
D11
D11A
PIEZOS

D12
D17
D17A
D18

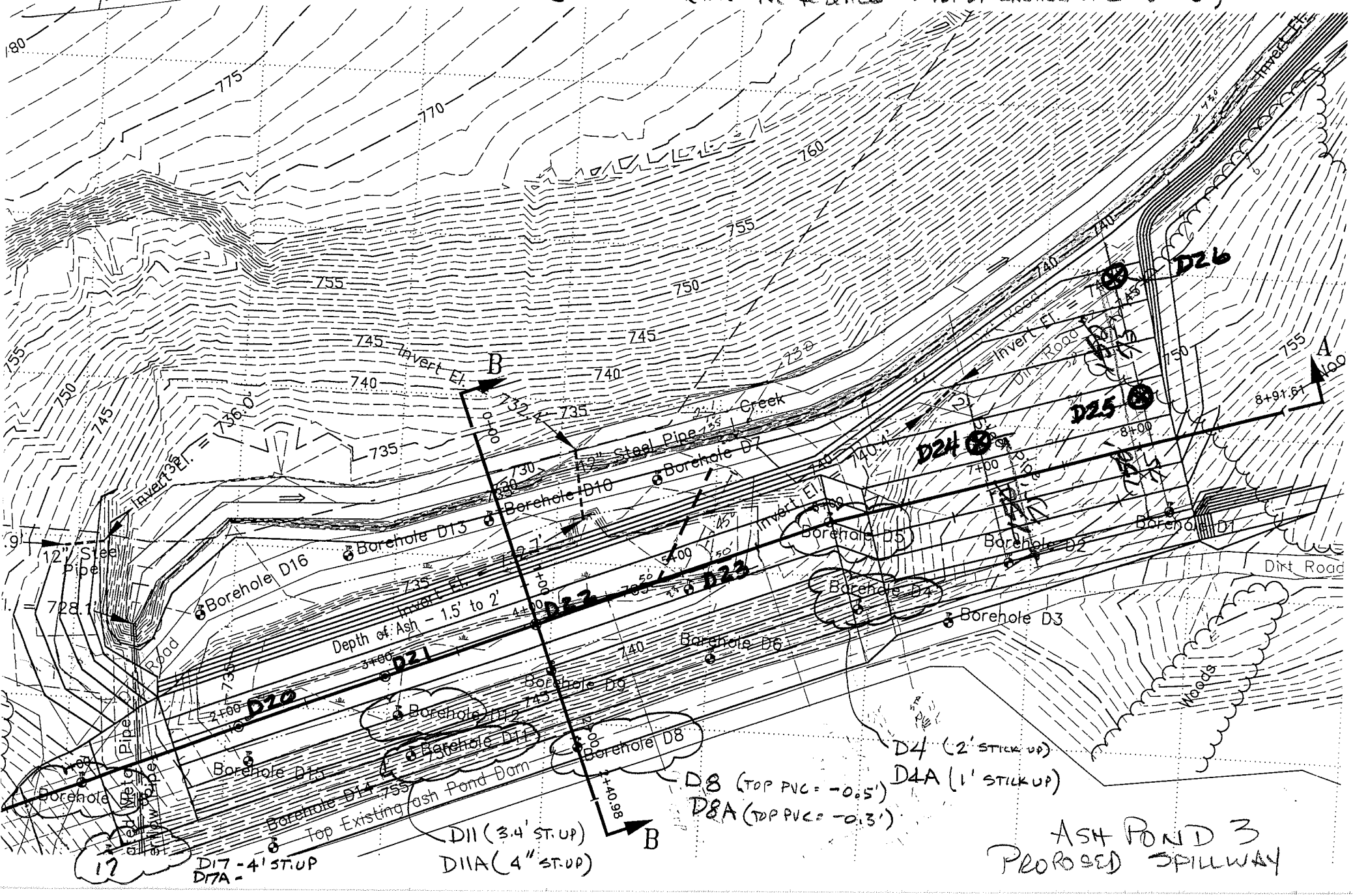
D22, D25 D26, SPT's 5' c-c To Refusal; Add Sample @ 2.5'

GWT Depth

Grout ~~Holes~~ After Drilling.

Take Round of RDGS On Existing Piezos.
(Let Me Know Reference – TOP of CASING or GROUND)

3313F4



Field Test Boring Record
Geotechnical Field Services

Southern Company Services

PROJECT	EWO #	LEAD DRILLER	DATE:
VATES Ash Pond Dike	3313 FA	DRIVEY	11-12-98

LOCATION: VATES

BORING #: D-20

DEPTH FROM	DEPTH TO	DESCRIPTION	SAMPLE NO	SAMPLE DEPTH	1st 6"	2nd 6"	3rd 6"	N	CORE REC
0.0	3.0	Red Sandy Silt	1	2.5	1	1	1	2	BFM FL LL
3.0	6.0	Reddish Grey Sandy Silt	2	5.0	1	1	1	2	
6.0	9.5	Ash 1st 12" (ASH ROOTS) - Red Sandy Silt	3	7.5	WOH	0	H	—	ML/SM
9.5	13.5	yellowish Red Silty CL-Sandy Silt	4	10.0	WOH	H	2	2	ML
			5	12.5	1	2	3	5	ML
13.5	17.0	TAN Wet Silty SAND	6	15.0	2	3	2	5	SM (SAP)
17.0	26.4	TAN + White Silty fg sand SAPROLITE	7	17.5	2	3	4	7	
			8	20.0	5	7	14	21	
			9	22.5	6	7	7	14	SM (SAP)
			10	25.0	3	3	2	5	
		Refusal At 26.4	11	~~26.4~~ 27.5	50/4	—	—	—	

	FROM	TO		FROM	TO	REMARKS: Auger Refusal At 26.4
SS	0.0	26.4	AUGER	0.0	26.4	
WASH			TRI-CONE			
___ CASING			___ CORE			
BIT						

GWATOB 4.0 GW 24 HRS. OFF JOB ELEVATION:

DRILLED BY DRI LOGGED BY RH

800961

Sheet ___ of ___

Field Test Boring Record
Geotechnical Field Services

Southern Company Services

PROJECT	EWO #	LEAD DRILLER	DATE:
YATES Ash Pond Dike	3313 FA	DRI IVEY	11-12-98

LOCATION	BORING #
YATES	D-21

DEPTH FROM	DEPTH TO	DESCRIPTION	SAMPLE NO	SAMPLE DEPTH	1st 6"	2nd 6"	3rd 6"	N	CORE REC
0.0	4.5	Lite Brown Gray Sandy Silt	1	2.5	2	1	1	2	Berm Fill SM/ML
4.5	6.0	Lite GRAY Sandy Silt	2	5.0	1	1	1	2	
6.0	11.0	Ash	3	7.5	W	0	H	—	Ash
			4	10.0	1/18	—		1/18	
11.0	20.6	Red Clayish Sandy Silt SC CL	5	12.5	1	1	4	5	ML
			6	15.0	1	3	4	7	
			7	17.5	2	3	5	8	
		Lower Layer Wet	8	20.0	1	2	2	4	
20.6	25.0	Wet, Silty SAPROLITE	9	22.5	2	4	21	25	SM SAP
		Tan-Brn white abd si sa	10	25.0	9	10	25	35	

	FROM	TO		FROM	TO
SS	0.0	25.0	AUGER	0.0	25.0
WASH			TRI-CONE		
___ CASING			___ CORE		
BIT					

REMARKS: Auger Refusal At 25.0

GWATOB 9.0 GW 24 HRS. OFF JOB ELEVATION:

DRILLED BY DRI LOGGED BY RH

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Sheet ___ of ___

Field Test Boring Record
Geotechnical Field Services

Southern Company Services

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PROJECT	EWO #	LEAD DRILLER	DATE:
Yates Ash Pond Dike	3313 FA	DR Ivey	11-12-98

LOCATION: Plant Yates

BORING #: D-22

DEPTH FROM	DEPTH TO	DESCRIPTION	SAMPLE NO	SAMPLE DEPTH	1st 6"	2nd 6"	3rd 6"	N	CORE REC
0.0	6.0	Red-Brown Sandy Silt	1	2.5	1	1	1	2	
			2	5.0	1	1	1	2	
6.0	10.0	Fly Ash	3	7.5	W	O	H		
		No Sample Recovered	4	10.0	W	O	H		
10.0	20.0	Red slight Clayey Sandy Silt	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	
20.0	23.0	Med gray fine sand trace Sand & Gravel	9	22.5	2	3	10	13	SP
23.0	26.0	Dk Brown Black Silty Saprolite some	10	25.0	12	11	7	18	SM
26.0	28.5	White-Brown Silty Saprolite some	11	27.5	4	12	25	37	Sap.
		N.R. ? =	12	28.5	10/0			10/0	

	FROM	TO		FROM	TO	REMARKS
SS	1.0	28.5	AUGER	0.0	28.5	
WASH			TRI-CONE			
___ CASING			___ CORE			
BIT						

GWATOB 2.6 GW 24 HRS. OFF Job ELEVATION:

DRILLED BY DRI LOGGED BY RW, DRI

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Field Test Boring Record
Geotechnical Field Services

Southern Company Services

PROJECT	EWO #	LEAD DRILLER	DATE:
YATES Ash DIKE	3313 FA	DRIVEY	11-11-98

LOCATION	BORING #
YATES	A-23

DEPTH FROM	DEPTH TO	DESCRIPTION	SAMPLE NO	SAMPLE DEPTH	1st 6"	2nd 6"	3rd 6"	N	CORE REC
0.0	3.5	Brown Silty SAND	1	2.5	1	1	1	2	1 Ash
3.5	6.0	Ash	2	5.0	WOH	—	—	—	
6.0	10.5	Red Clayish Sandy Silt	3	7.5	WOH	1	1	2	
			4	10.0	2	2	3	5	ML
10.5	13.0	Wet Sandy Silt	5	12.5	3	3	4	7	
13.0	14.5	Tan Gy SAND.	6	15.0	50/5.5	—	—	50/5.5	SM-SP
15.0	21.0	Brown + White Saprolite	7	17.5	10	7	8	15	SM
			8	20.0	12	13	13	26	fine Silty SAND
21.0	25.0	Tan Silty SAND Saprolite	9	22.5	38	50/4	—	50/4	
		Refusal At 25.0	10	25.0	50/3	—	—	50/3	

	FROM	TO		FROM	TO	REMARKS
SS	0.0	25.0	AUGER	0.0	25.0	Auger Refusal @ 25.0'
WASH			TRI-CONE			
___ CASING			___ CORE			
BIT						

GWATOB 9.1 GW 24 HRS. OFF JOB ELEVATION:

DRILLED BY DRI LOGGED BY RH

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Sheet ___

Field Test Boring Record
Geotechnical Field Services

Southern Company Services

PROJECT	EWO #	LEAD DRILLER	DATE:
YATES ASH POND #3	3313-FU	DR IVEY	5-24-99

LOCATION

BORING # D-24

DEPTH FROM	DEPTH TO	DESCRIPTION	SAMPLE NO	SAMPLE DEPTH	1st 6"	2nd 6"	3rd 6"	N	CORE REC
0.0	4.5'	SANDY CLAYEY SILT	1	2.5	1	2	3	5	
4.5'	8.0'	SANDY CLAYEY SILT W/MICA	2	5.5	2	4	4	8	
8.0'	12.0'	MOIST SAPROLITE (SILTY SAND)	3	10.5	2	2	3	5	
12.0'	47.0'	SAPROLITE SANDY SILT	4	15.5	1	2	4	6	
			5	20.5	1	3	5	8	
			6	25.5	1	5	7	12	
			7	30.5	6	9	10	19	
			8	35.5	20	35	50/5"	85/11"	
			9	40.5	25	20	24	44	
			10	44.1	50/.1			50/.1	
		AUGER REFUSAL @ 47.0'							

	FROM	TO		FROM	TO	REMARKS
SS	1.0	44.1'	AUGER	0.0	47.0'	
WASH			TRI-CONE			
___ CASING			___ CORE			
BIT						

GWATOB 19.0 GW 24 HRS. 9.0 ELEVATION:

DRILLED BY DRI LOGGED BY RH

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Sheet 1 of 1

Field Test Boring Record
Geotechnical Field Services

Southern Company Services

PROJECT	EWO #	LEAD DRILLER	DATE:
Yates Ash Pond #3	3313 FU	DR Ivey	5-25

LOCATION

BORING # D-25

DEPTH FROM	DEPTH TO	DESCRIPTION	SAMPLE NO	SAMPLE DEPTH	1st 6"	2nd 6"	3rd 6"	N	CORE REC
0.0	3.0	Clay	1	2.5	4	5	6	11	
3.0	8.0	Sandy Clayey Silt	2	5.5	4	5	5	10	
8.0	45.8'	Clayey Silty Saprolite (wet)	3	10.5	1	1	1	2	
			4	15.5	1	2	4	6	
			5	20.5	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	40.5	19	15	16	31	
			10	44.5	50/6			50/6"	
		Auger Refusal 45.8'							

	FROM	TO		FROM	TO	REMARKS
SS	1.0	44.5	AUGER	0.0	45.8'	
WASH			TRICONE			
___ CASING			___ CORE			
BIT						

GWATOB 18.6 GW 24 HRS. 10.3 ELEVATION:

DRILLED BY DRI LOGGED BY RH

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Sheet 1 of 1

Field Test Boring Record
Geotechnical Field Services

Southern Company Services

PROJECT	EWO #	LEAD DRILLER	DATE:
Yates Ash Pond #3	3313F6	DR Ivey	5-25

LOCATION

BORING # D-26

DEPTH FROM	DEPTH TO	DESCRIPTION	SAMPLE NO	SAMPLE DEPTH	1st 6"	2nd 6"	3rd 6"	N	CORE REC
0	4.0	Clayey Silt	1	2.5	2	4	4	8	
4.0	8.0	Sandy Clayey Silt	2	5	1	1	3	4	
8.0	14.0	Wet Clayey Silt w/ Sap.	3	10	1	1	2	3	
14.0'	40.4'	Wet Silty SAPROLITE	4	15	2	3	3	6	
			5	20	3	6	6	12	
			6	25	3	12	32	44	
			7	28'-9"	50/3			50/3"	
			8	33'-8"	50/5			50/2"	
			9	38'-11"	50/5			50/5"	
		Auger Refusal 40.4							

	FROM	TO		FROM	TO	REMARKS
SS	1.0	40.4'	AUGER	0.0	40.4'	
WASH			TRI-CONE			
___ CASING			___ CORE			
BIT						

GWATOR 18.4 GW 24 HRS. 6.5 ELEVATION:

DRILLED BY DRI LOGGED BY RH

800961

Sheet 1 of 1

Plant Yates Ash Pond 3 Temporary Piezometers

Piez.	Ref.	Ref. Elev.	GW Depth 10/30/97	GW Elev. 10/30/97	GW Depth 11/14/97	GW Elev. 11/14/97	GW Depth 11/11/98	GW Elev. 11/11/98	GW Depth 6/8/99	GW Elev. 6/8/99
D4	Ground	747.98	7.75	740.23	5.90	742.08	5.40	742.58	6.00	741.98
D4A	"	747.98	6.10	741.88	5.30	742.68	4.80	743.18	5.40	742.58
D5	"	737.52	-1.50	739.02	-1.20	738.72	0.40	737.12	-0.80	738.32
D8	"	756.09	16.80	739.29	17.50	738.59	17.60	738.49	17.20	738.89
D8A	"	756.09	19.50	736.59	18.00	738.09	12.50	743.59	12.80	743.29
D11	"	747.90	8.00	739.90	7.80	740.10	8.40	739.50	7.80	740.10
D11A	"	747.90	11.10	736.80	8.80	739.10	8.90	739.00	8.50	739.40
D12	"	737.08	2.30	734.78	2.10	734.98	-0.20	737.28	-0.80	737.88
D17	"	747.50	7.40	740.10	7.00	740.50	7.00	740.50	8.00	739.50
D17A	"	747.50	7.50	740.00	7.50	740.00	7.30	740.20	5.00	742.50
D18	"	746.28	--	--	7.50	738.78	7.40	738.88	7.20	739.08

Attachment C
Laboratory Analyses

PLANT YATES
ASH POND 3 DIKE
TEST SUMMARY/DESIGN PARAMETERS

BAG SAMPLES

SOIL NEW FILL

Sample Design.		Depth	USCS	% Fines	PI	LL	Max. Dry Weight	Optimum Moisture	95% Dry Un.Wt.	UU Test @95%, Opt +2 c	phi	Total Unit Wt.	Sat. Unit Wt.	CU Test w/ ppr @ 95%, Opt +2 c	phi	c'	phi'	Total Unit Wt.	Sat. Unit Wt.
TP@BA30		3'	MH	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'	MH	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**		Unsaturated		**0.04**	**36.5**	**111.3**	**117.7**
										0.6	**16**		**116.4**	Saturated - Assumed Parameters					

COMPACTED ASH

Sample Design.		Depth	USCS	% Fines	PI	LL	Max. Dry Weight	Optimum Moisture	95% Dry Un.Wt.	UU Test @95 %, Opt c	phi	Total Unit Wt.	CU Test w/ ppr @ 95%, Opt c	phi	c'	phi'	Total Unit Wt.	Sat. 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
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**

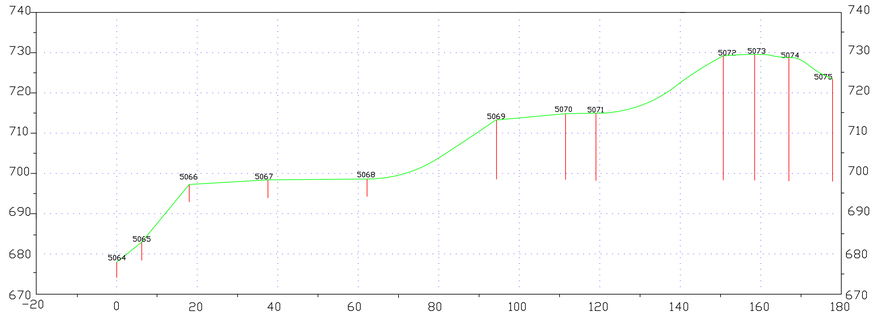
FOUNDATION & EXISTING FILL
UNDISTURBED SAMPLES

Sample Design.	Depth	USCS	Section	UU Test c	phi	Dry Weight	Total Unit Weight	Sat. Unit Wt.	CU Test w/ ppr c	phi	c'	phi'	Dry Weight	Total Unit Weight	Sat. Unit 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	
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	
D8A	18' - 20'	MH	"CORE"	--	--	--	--		--	--	--	--	--	--	--	
FOUNDATION			**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 ASH - SATURATED				**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 MATERIAL				**0**	**30**			**125**			**0**	**30**			**125**	Assumed
SAPROLITE/PWR				**0**	**38**			**125**			**0**	**38**			**125**	Assumed

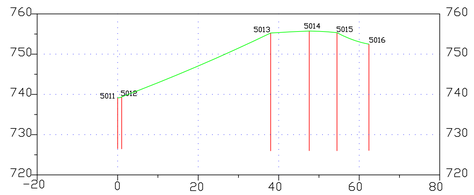
SC 1792606-05

Attachment D
Critical Section Profile

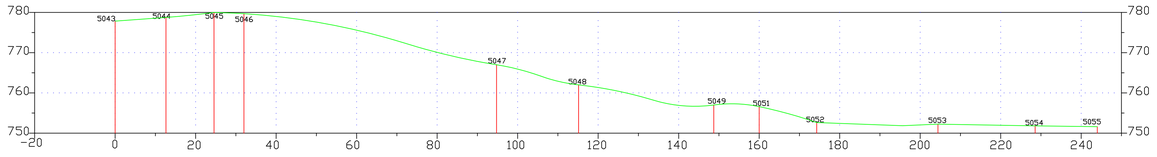
SECTION A-Ash Pond 1
Vertical Scale: 1" = 20'
Horizontal Scale: 1" = 100'



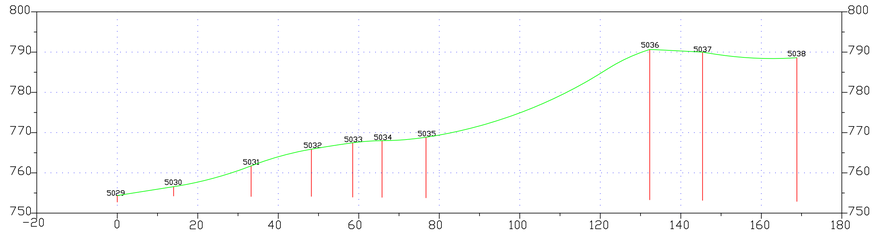
SECTION B-Ash Pond 2
Vertical Scale: 1" = 20'
Horizontal Scale: 1" = 20'



SECTION C-Ash Pond 3
Vertical Scale: 1" = 20'
Horizontal Scale: 1" = 20'



SECTION D-Ash Pond A
Vertical Scale: 1" = 20'
Horizontal Scale: 1" = 20'



SECTION E-Ash Pond B'
Vertical Scale: 1" = 20'
Horizontal Scale: 1" = 20'

Southern Company Generation
Engineering and Construction Services
FOR

Georgia Power Company

PLANT YATES
ASH POND DIKE
CROSS SECTIONS

SCALE	PROJ I.D.	DRAWING NUMBER	SHEET	CONT'D
AS SHOWN		**ES1836S1B**	1B	FINAL

ANSI F: 40x28 Acad2004