PERIODIC SAFETY FACTOR ASSESSMENT
391-3-4-.10(4) and 40 C.F.R. PART 257.73
PLANT SCHERER ASH POND (AP-1)
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 the Plant Scherer Ash Pond 1 (AP-1) is located on Plant Scherer property, approximately 8 miles northeast of Forsyth, Georgia. The ash pond is formed by engineered cross-valley embankments. The critical section of this CCR unit was previously determined to be the embankment located on the north side of the impoundment. Under current conditions, the north side embankment remains the critical section. The Notification of Intent to Initiate Closure was placed in the Operating Record on 10/30/2020 and closure has been designed to have no negative impacts on the stability of the perimeter embankments.

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)	1.6	1.5
Maximum Surcharge Pool (Static)	1.6	1.4
Seismic	1.4	1.0

The embankments of the ash pond are constructed of clays, 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).

1/15/2021

James C. Peques, P.E.
Licensed State of Georgia, PE No. 17419

Southern Company

Technical and Project Solutions Calculation

Calculation Number: TV-SH-GPC1102937-001

Project/Plant: Plant Scherer Ash Pond	**Unit(s):** -	**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 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/06-09-21	JCP/06-09-21	JCP/06-09-21

Notes:

Purpose of Calculation

Plant Scherer has disposed of coal combustion by-products (ash) in one main storage impoundment that was commissioned in 1980. The Ash Pond dike was constructed to a crest elevation of El. 505 with 3(H):1(V) upstream and downstream slopes, intermediate berms, and a maximum height of approximately 110 ft. The stability of this structure was analyzed in 2016 for the CCR Rule. The purpose of this calculation is to update the stability analysis of the Ash Pond dike.

Summary of Conclusions

The following table lists the factors of safety for various slope stability failure conditions. All conditions are steady state except where noted. Construction cases were not considered. The analyses indicate that in all cases the factor of safety is above the require minimum.

Load Conditions	Computed Factor of Safety	Required Minimum Factor of Safety
Long-term Maximum Storage (Static)	1.6	1.5
Maximum Surcharge Pool (Static)	1.6	1.4
Seismic	1.4	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 0.036g 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.
- The soil properties of unit weight, phi angle, and cohesion were obtained from triaxial shear testing performed on UD samples of the dike fill material obtained during drilling in July 2010, and from data analyses on the Strength Properties of Foundation dated November 2, 1976 and parameters used during the stability analysis indicated on Plant Scherer Ash Pond Dam Stability Analysis dated May 30, 1986 and September 10, 2010. The triaxial shear testing was performed according to ASTM D 4767.
- Properties for ash were based on laboratory testing performed on undisturbed and remolded samples of ash from various plants and on previous project experience.
- The COE EM 1110-2-1902, October 2003, allows the use of the phreatic surface established for the maximum storage condition (normal pool) in the analysis for the maximum surcharge loading condition. This is based on the short term duration of the surcharge loading relative to the permeability of the embankment and the foundation materials. This method is used in the analysis for the impoundments at this facility with surcharge loading.
- The cross-sections of the dike were obtained using the following sources:
    1. Original design Drawing No. E1H1058 Section A-A
    2. Soil borings conducted in July 2010.

<u>Ash Pond Soil Properties</u>

The following soil properties were used in the analyses. This data was obtained from the laboratory triaxial testing performed in August 2010 by MACTEC and from a review and evaluation of the 1976, 1986, and 2010 analyses. The effective shear strength properties for the foundation soils were derived from the p’ – q’ plot of the 1976 data presented in Calculation No. 7, Strength Properties of Foundation, prepared in 1976 by Southern Company Services. Although the laboratory test results could not be located in Georgia Power files, the p’-q’ data were apparently derived from normal and confining stresses obtained from triaxial tests performed on foundation soils obtained from numerous subsurface borings. The p’- q’ data was plotted and a linear regression was performed to arrive at the cohesion and friction angle values used in the analyses herein.

Soil Materials	Moist Unit Weight (pcf)	Effective Stress Parameters		Total Stress Parameters		Data Source
		Internal Friction Angle	Cohesion (psf)	Internal Friction Angle	Cohesion (psf)	
Embankment Fill	120	33	63	20	700	Triaxial Test Dated July 2010
Foundation Soil	108	24	302	20	500	Analysis Dated May 1986
Rock Bolster	110	42	0	42	0	Analysis Dated September 2010
Consolidated Ash	105	20	0	--	--	
Sluiced Ash	80	10	0	10	0	

Hydrologic Considerations

The following hydraulic information, based on the calculation package Schnabel Reference 16C17023.00, Hydrologic and Hydraulic Support Services, Coal Combustion Residuals Storage Analysis, dated August 15, 2016, prepared by Schnabel Engineering., was used in the analyses. This calculation states that the Ash Pond is capable of handling the PMP with a maximum surcharge pool elevation of 501.6.

Based on Georgia Power's (GP) Land Department Drawing P404-2, 20150465 Plant Scherer Ash Pond Aerial Topo and Bathymetric Survey, the top elevation of the ash along the east dike of the Ash Pond is approximately El. 497 as of October 31, 2015. This ash load has been be incorporated into the ash pond analyses for current conditions. An ash/final cover (closure) elevation for the Ash Pond of Elev. 505 is used for a full ash load case.

Loading Conditions

The Plant McIntosh Ash Pond Dike was evaluated for the maximum storage, maximum surcharge, and seismic loading conditions.

Design Inputs/References

E&CS Calculation TV-SH-GPC601471-591-001
USGS Earthquake Hazards website, http://earthquake.usgs.gov/hazards/hazmaps/.
GPC Land Department Drawing P404-2 Plant Scherer Ash Pond – October 31, 2015 Survey
GPC Drawing E1H1002 - Plant Scherer Ash Disposal Pond Dam General Sections and Details
GPC Drawing E1H1058Plant Scherer Ash Disposal Pond Dam Plan, Sections and Details of Instrumentation
Plant Scherer Ash Pond Dam Stability Analysis, November 1, 1976
Plant Scherer Ash Pond Dam Stability Analysis, May 30, 1986
Ref. 16C17023.00 Hydrologic and Hydraulic Support Services, Coal Combustion Residuals Storage Analysis, prepared by Schnabel Engineering, August 15, 2016
Boring Logs
MACTEC Lab Report
Foundation Soils p'- q' Plot – 1986 Data (with Linear Regression)

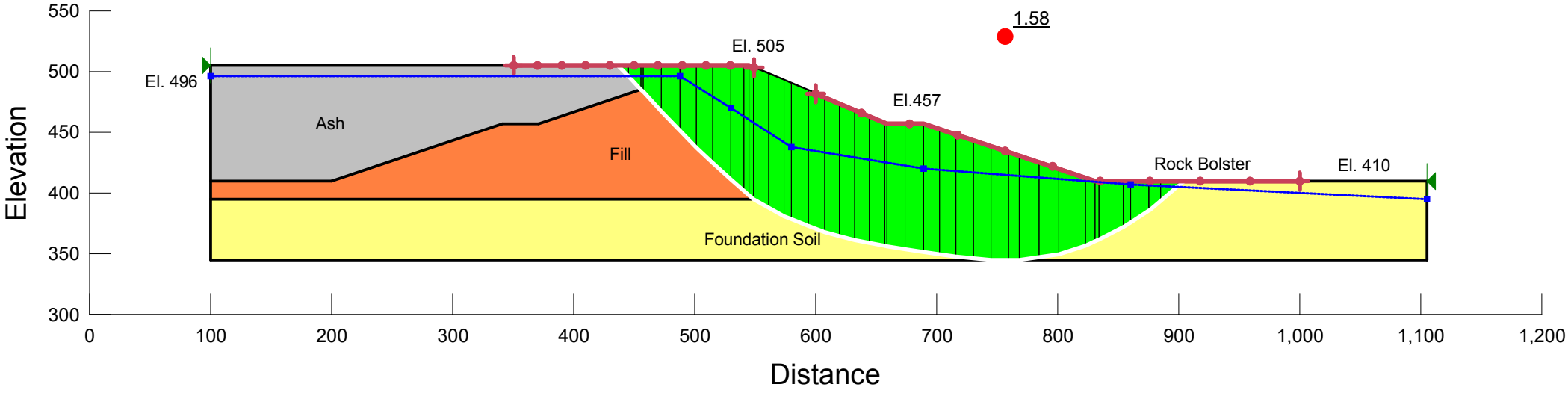
Bray, J. D. and Travasarou, T., Pseudostatic Coefficient for Use in Simplified Seismic Slope Stability Evaluation, Journal of Geotechnical and Environmental Engineering, American Society of Civil Engineers, September 2009

Body of Calculation

SLOPE/W modeling attached.

Plant Scherer Ash Pond Dike Stability Analysis (Section A-A)

Downstream Steady State w/ Full Loading Ash

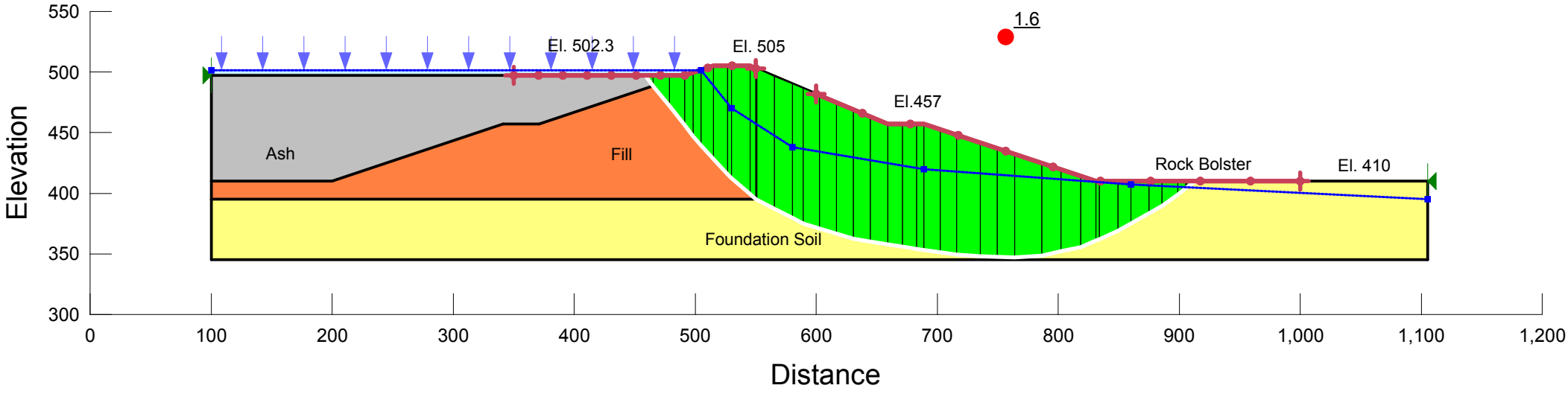


Method: Morgenstern-Price

Optimization of slip surface location

Plant Scherer Ash Pond Dike Stability Analysis (Section A-A)

Downstream Max. Surcharge Pool

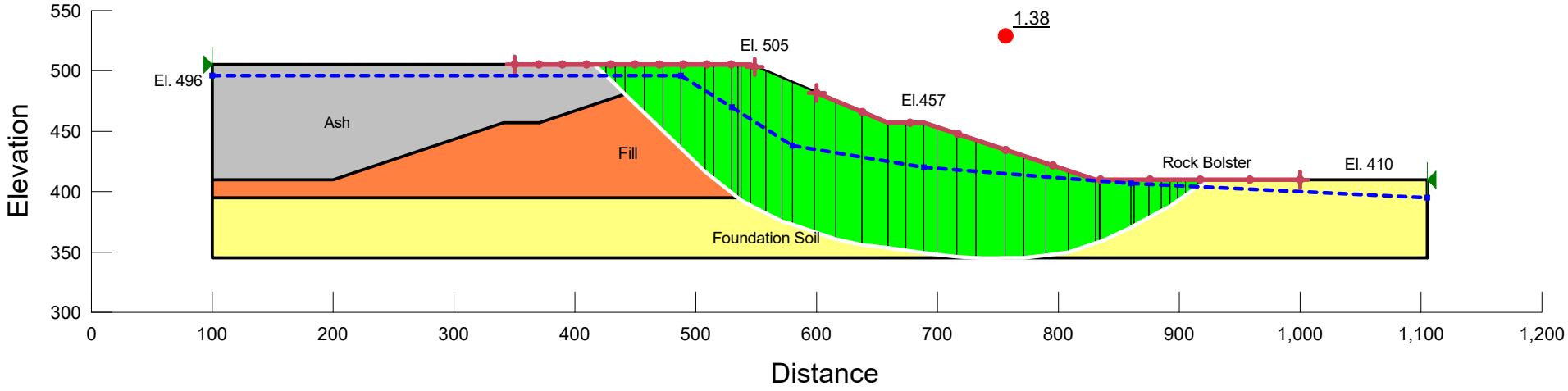


Method: Morgenstern-Price

Optimization of slip surface location

Plant Scherer Ash Pond Dike Stability Analysis (Section A-A)

Downstream Seismic w/ Full Loading Ash (0.5 ft disp.)



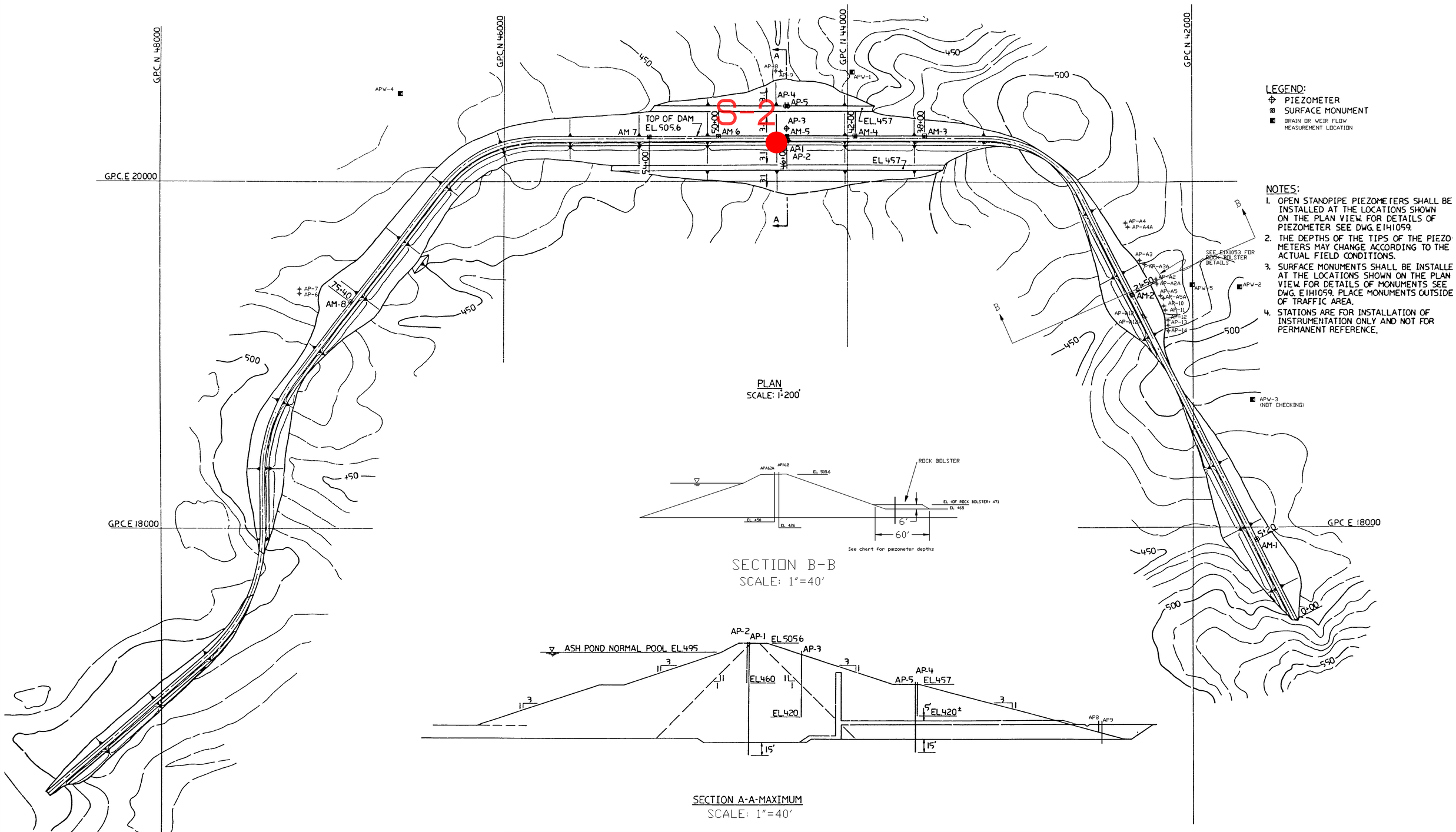
Method: Morgenstern-Price

Optimization of slip surface location

Attachment A

Figures - Boring Location Plans

E1H1058



LEGEND:
- PIEZOMETER
- SURFACE MONUMENT
- DRAIN OR WEIR FLOW MEASUREMENT LOCATION

NOTES:
1. OPEN STANDPIPE PIEZOMETERS SHALL BE INSTALLED AT THE LOCATIONS SHOWN ON THE PLAN VIEW. FOR DETAILS OF PIEZOMETER SEE DWG. E1H1059.
2. THE DEPTHS OF THE TIPS OF THE PIEZOMETERS MAY CHANGE ACCORDING TO THE ACTUAL FIELD CONDITIONS.
3. SURFACE MONUMENTS SHALL BE INSTALLE AT THE LOCATIONS SHOWN ON THE PLAN VIEW. FOR DETAILS OF MONUMENTS SEE DWG. E1H1059. PLACE MONUMENTS OUTSIDE OF TRAFFIC AREA.
4. STATIONS ARE FOR INSTALLATION OF INSTRUMENTATION ONLY AND NOT FOR PERMANENT REFERENCE.

PLAN
SCALE: 1"=200'

See chart for piezometer depths

SECTION B-B
SCALE: 1"=40'

SECTION A-A-MAXIMUM
SCALE: 1"=40'

PIEZOMETER NUMBER	TOP OF PIPE ELEVATION	TIP OF PIPE ELEVATION	ZONE
AP1	508.92	375.6	FOUNDATION
AP2	508.19	459.0	FILL
AP3	495.92	420.0	FILL
AP4	457.63	420.0	FILL
AP5	457.79	378.0	FOUNDATION
AP6	478.89	415.1±	FOUNDATION
AP7	478.44	441.1±	FOUNDATION
AP8	410.49	368.0	FOUNDATION
AP9	411.90	397.0	FOUNDATION
AP10	472.00	418.0	FOUNDATION
AP11	471.92	444.0	FOUNDATION
AP12	475.75	461.0±	FOUNDATION
AP13	475.19	443.0±	FOUNDATION
AP14	476.00	431.0±	FOUNDATION
APA4	485.80	427.0	FOUNDATION
APA4A	485.52	456.0	FOUNDATION
APA3	478.08	448.0	FOUNDATION
APA3A	478.69	467.0	FOUNDATION
APA2	474.61	439.0	FOUNDATION
APA2A	475.92	450.0	FOUNDATION
APA5	472.00	425.0	FOUNDATION
APA5A	472.00	443.0	FOUNDATION

REFERENCES:
- E1H1001 ASH DISPOSAL POND DAM GENERAL ARRANGEMENT
- E1H1002 ASH DISPOSAL POND DAM GENERAL SECTIONS AND DETAILS
- E1H1059 RETENTION (SETTLING) POND PLAN, SECTIONS AND DETAILS OF INSTRUMENTATION
- E1H1060 WATER STORAGE POND DAM PLAN, SECTIONS AND DETAILS OF INSTRUMENTATION
- E1X1053 ROCK BOLSTER DETAILS

CAD E1H1058
CADOVERLAY LVG-0

REVISION	DATE	BY	CHK'D	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
REVISION 1	DATE 4-13-95	LVG	HAF	FOR APPRVLS SEE EDRF 9504015				
PIEZOMETERS ADDED								
REVISION 0	DATE 4-8-80	BJB	RDP	RMF	FCJ			JFG
ISSUED FOR CONSTRUCTION								

Southern Company Services Inc.
for
GEORGIA POWER COMPANY

PLANT SCHERER
ASH DISPOSAL POND DAM
PLAN, SECTIONS AND DETAILS
OF INSTRUMENTATION

DESIGNED BEW DRAWN BJB CHECKED RDP

SCALE	LOCATION	DRAWING NUMBER	REV.
AS SHOWN	10-505	E1H1058	1

34 x 44

05-04-95 10:35a

Attachment B

Boring Logs

SOUTHERN COMPANY
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DRILLING LOG

GEOLOGICAL SERVICES

Hole No. S-2

Sheet 1 of 5

SITE	**Plant Sherer Ash Pond**			HOLE DEPTH	**126**	SURF.ELEV.	N/A
LOCATION	Plant Scherer Ash Pond Dam Section A-A			COORDINATES N	N/A	E	N/A
ANGLE	0	BEARING	0	CONTRACTOR	MACTEC	DRILL NO.	N/A
DRILLING METHOD	Mud Rotory			NO. SAMPLES	26	NO. U.D. SAMPLES	3
CASING SIZE	N/A	LENGTH	N/A	CORE SIZE	N/A	TOTAL % REC.	N/A
WATER TABLE DEPTH	N/A	ELEV.	N/A	TIME AFTER COMP.	N/A	DATE TAKEN	N/A
TYPE GROUT	Portland	QUANTITY	N/A	MIX	1:1	DRILLING START DATE	6/22/2010
DRILLER	Larry Carter	RECORDER	Javier Lopez	APPROVED	Luke Garland	DRILLING COMP. DATE	6/23/2010

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments	% Rec	RQD
0									
1									
2									
3		reddish orange clayey SILT (ML)	1	1-2.5	3-4-6	10			
4									
5		reddish orange clayey SILT (ML)	2	3.5-5	3-5-6	11			
6									
7									
8		reddish orange clayey SILT (ML)	3	6.5-8	3-2-4	6			
9									
10									
11		reddish orange clayey SILT (ML)	4	9.5-11	3-5-7	12			
12									
13									
14									
15									
16		reddish orange clayey SILT (ML)	5	14.5-16	4-7-9	16			
17									
18									
19									
20									
21		reddish orange clayey SILT (ML)	6	19.5-21	4-7-9	16			
22									
23							Shelby Tube from 21.5-23.5		
24									

Form GS9901 7-26-2004

SOUTHERN COMPANY
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DRILLING LOG

GEOLOGICAL SERVICES

Hole No. S-2

Sheet 2 of 5

SITE **Plant Sherer Ash Pond** TOTAL DEPTH **126** SURF.ELEV. N/A

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments	% Rec	RQD
25									
26		reddish orange clayey SILT (ML)	7	24.5-26	3-6-6	12			
27									
28									
29									
30									
31		reddish orange clayey SILT (ML)	8	29.5-31	4-5-8	13			
32									
33									
34									
35									
36		reddish orange clayey SILT (ML)	9	34.5-36	4-6-7	13			
37									
38									
39									
40									
41		reddish orange clayey SILT (ML)	10	39.5-41	4-9-9	18			
42									
43									
44									
45									
46		reddish orange clayey SILT (ML)	11	44.5-46	5-7-10	17			
47									
48									
49									
50									
51		reddish orange clayey SILT (ML)	12	49.5-51	7-9-12	21			
52									
53									
54									
55									
56		reddish orange clayey SILT (ML)	13	54.5-56	5-7-8	15			

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SOUTHERN COMPANY
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DRILLING LOG

GEOLOGICAL SERVICES

Hole No. S-2

Sheet 3 of 5

SITE **Plant Sherer Ash Pond** TOTAL DEPTH **126** SURF.ELEV. N/A

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments	% Rec	RQD
57									
58									
59									
60									
61		reddish orange clayey SILT (ML)	14	59.5-61	6-8-12	20			
62									
63									
64									
65							Shelby Tube from 63.5-65.5		
66									
67							Shelby Tube from 65.5-67.5		
68									
69									
70									
71		reddish orange clayey SILT (ML)	15	69.5-71	8-8-12	20			
72									
73									
74									
75									
76		reddish orange clayey SILT (ML)	16	74.5-76	6-8-10	18			
77									
78									
79									
80									
81		reddish orange clayey SILT (ML)	17	79.5-81	6-9-12	21			
82									
83									
84									
85									
86		reddish orange clayey SILT (ML)	18	84.5-86	4-9-9	18			
87									
88									

Form GS9901 7-26-2004

SOUTHERN COMPANY
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DRILLING LOG

GEOLOGICAL SERVICES

Hole No. S-2

Sheet 4 of 5

SITE **Plant Sherer Ash Pond** TOTAL DEPTH **126** SURF.ELEV. N/A

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments	% Rec	RQD
89									
90									
91		reddish orange clayey SILT (ML)	19	89.5-91	6-8-10	18			
92									
93									
94									
95									
96		reddish orange clayey SILT (ML)	20	94.5-96	8-11-17	28			
97									
98									
99									
100									
101		reddish orange clayey SILT (ML)	21	99.5-101	5-10-14	24			
102									
103									
104									
105									
106		reddish orange clayey SILT (ML)	22	104.5-106	6-9-13	22	fill		
107									
108									
109									
110									
111		gray and yellow sandy SILT (ML)	23	109.5-111	8-10-13	23	residual		
112									
113									
114									
115									
116		gray and yellow sandy SILT (ML)	24	114.5-116	6-12-16	28			
117									
118									
119									
120									

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DRILLING LOG

GEOLOGICAL SERVICES

Hole No. S-2

Sheet 5 of 5

SITE **Plant Sherer Ash Pond** TOTAL DEPTH **126** SURF.ELEV. N/A

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments	% Rec	RQD
121		gray and yellow sandy SILT (ML)	25	119.5-121	13-17-20	37			
122									
123									
124									
125									
126		gray and white silty SAND (SM)	26	124.5-126	34-50/5	100+			
127		Boring Completed @ 126'							
128									
129									
130									
131									
132									
133									
134									
135									
136									
137									
138									
139									
140									
141									
142									
143									
144									
145									
146									
147									
148									
149									
150									
151									
152									

Form GS9901 7-26-2004

Attachment C

Soil Laboratory Analyses by MACTEC Engineering and Consulting.

MACTEC

engineering and constructing a better tomorrow

August 19, 2010

Mr. Wayne Wang, P.E.
Southern Company Services
Bin 10185
241 Ralph McGill Boulevard NE
Atlanta, GA 30308-3374

Telephone No. 404-506-1324
Email: wwang@southernco.com

Subject: **Report of Laboratory Testing**
Plant Scherer Ash Pond
MACTEC Project No.: 6152-10-0200

Mr. Wang:

MACTEC Engineering and Consulting, Inc. (MACTEC) has completed the laboratory testing for Plant Scherer Ash Pond project. The work was authorized by Mr. Wayne Wang. Ten Shelby tube samples were delivered to our Atlanta office on June 28, 2010.

As requested by Mr. Wang, MACTEC performed six Consolidated Undrained Triaxial Compressive tests (ASTM D4767). The test results arte included in the Appendix.

We appreciate the opportunity of serving your laboratory testing need and look forward to our continued association. If you have questions or if we can be of further assistance, please contact us.

Very truly yours,

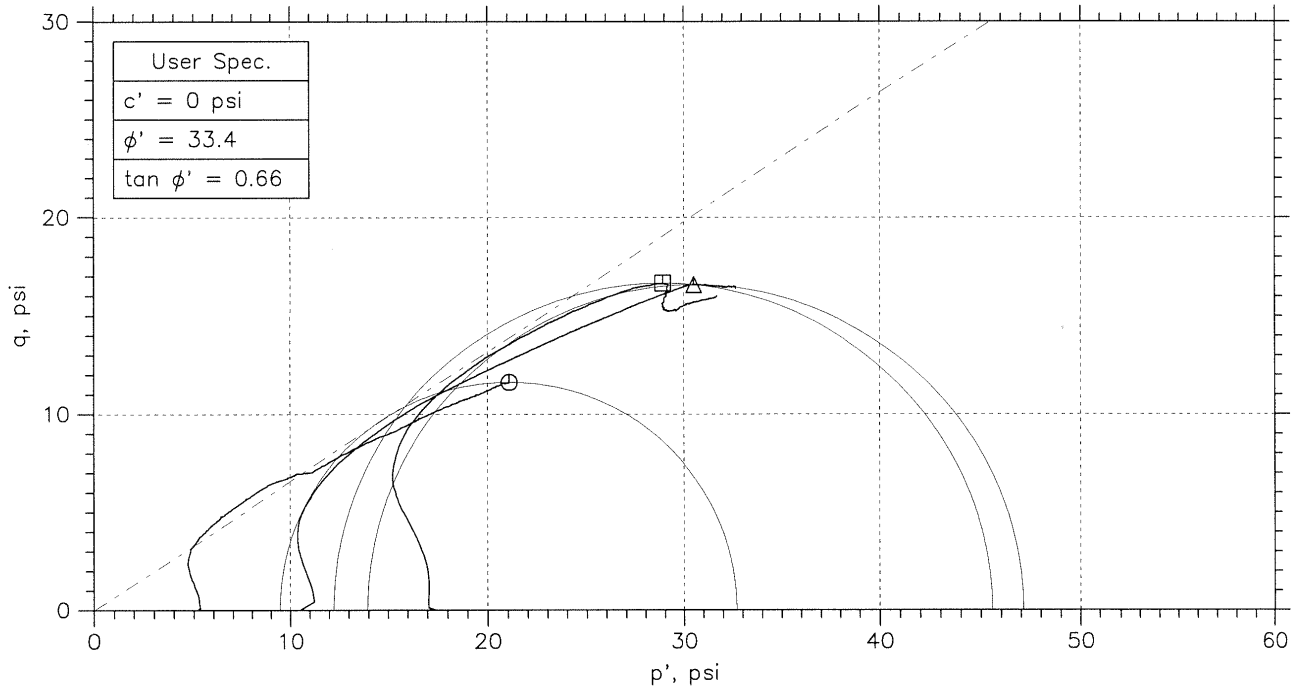
MACTEC ENGINEERING AND CONSULTING, INC.

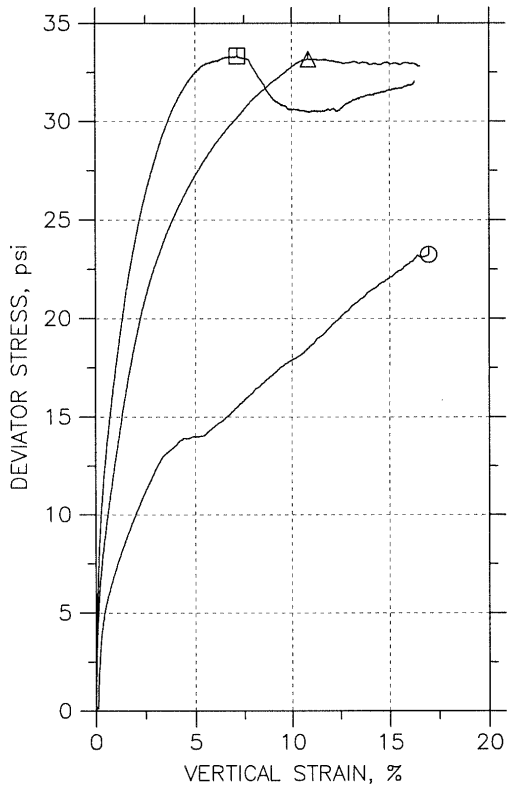
Jianren Wang, P.E.
Principal Engineer

John E. Lynch
Principal

APPENDIX

CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767

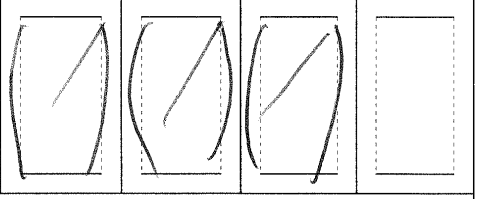




Symbol		⊙	△	⊡	
Sample No.		UD	UD	UD	
Test No.		10334.1	10334.2	10334.3	
Depth		16.5-18.5ft	16.5-18.5ft	16.5-18.5ft	
Initial	Diameter, in	2.88	2.864	2.867	
	Height, in	5.961	5.967	5.962	
	Water Content, %	31.8	31.0	32.4	
	Dry Density, pcf	90.09	88.37	89.	
	Saturation, %	98.5	92.2	98.0	
	Void Ratio	0.871	0.907	0.894	
Before Shear	Water Content, %	31.9	32.1	32.0	
	Dry Density, pcf	90.55	90.35	90.43	
	Saturation*, %	100.0	100.0	100.0	
	Void Ratio	0.861	0.866	0.864	
	Back Press., psi	110.	100.	100.	
Ver. Eff. Cons. Stress, psi		5.262	10.49	17.5	
Shear Strength, psi		11.62	16.58	16.66	
Strain at Failure, %		17	10.9	7.16	
Strain Rate, %/min		0.01	0.01	0.01	
B-Value		0.94	0.86	0.96	
Estimated Specific Gravity		2.7	2.7	2.7	
Liquid Limit		---	---	---	
Plastic Limit		---	---	---	

MACTEC

Project: Plant Sherer Ash Pond
Location: S-1
Project No.: 6154100200
Boring No.: S-1
Sample Type: Undisturbed



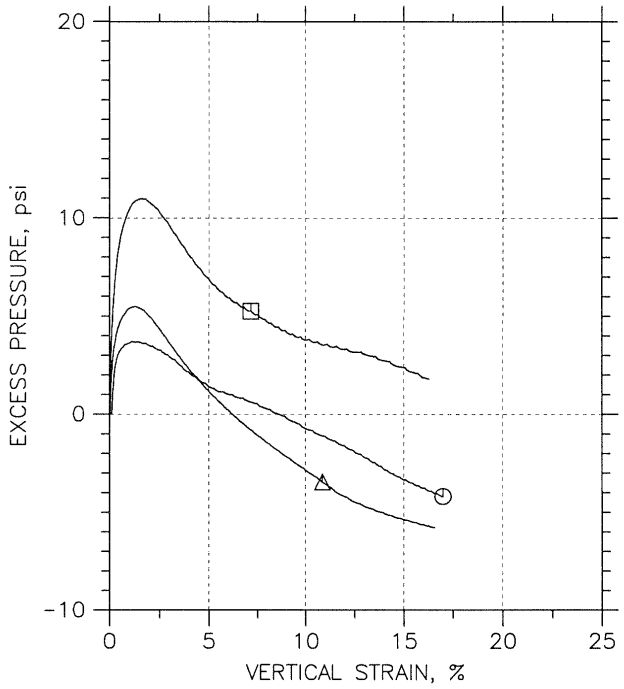
Description: Reddish Brown Sandy Silt
Remarks: ASTM D4767-04

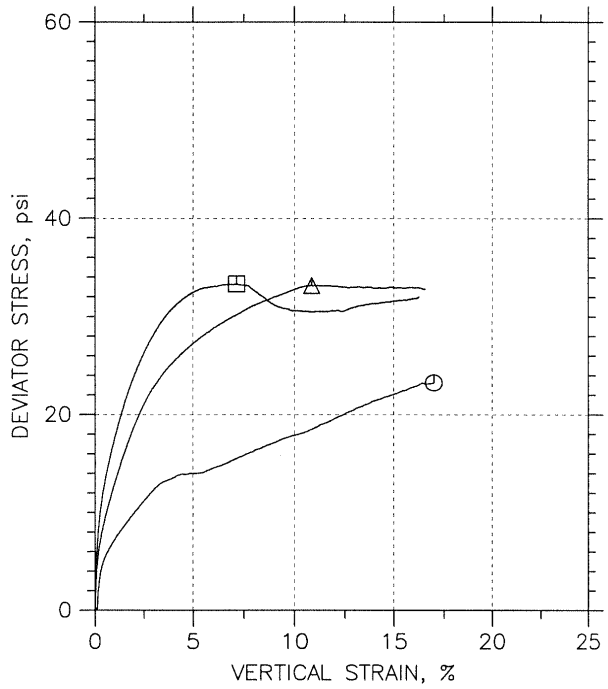
Phase calculations based on start and end of test.

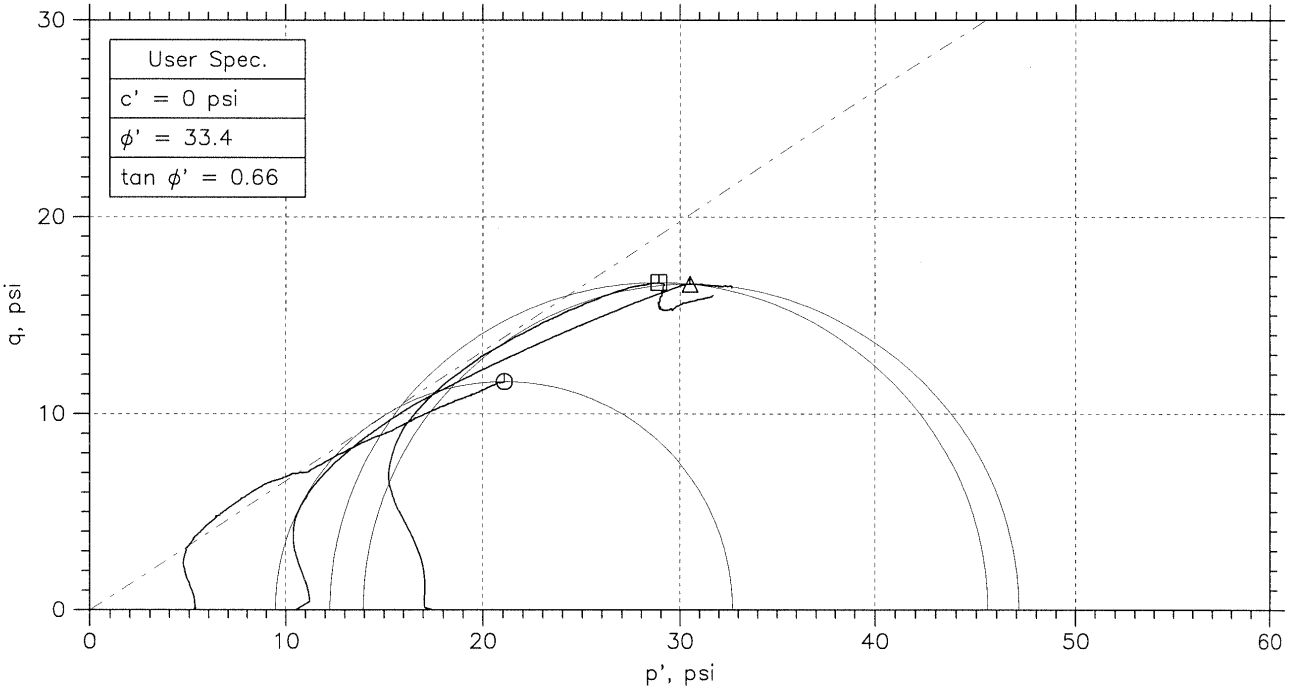
* Saturation is set to 100% for phase calculations.

Thu, 22-JUL-2010 13:16:03

CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767







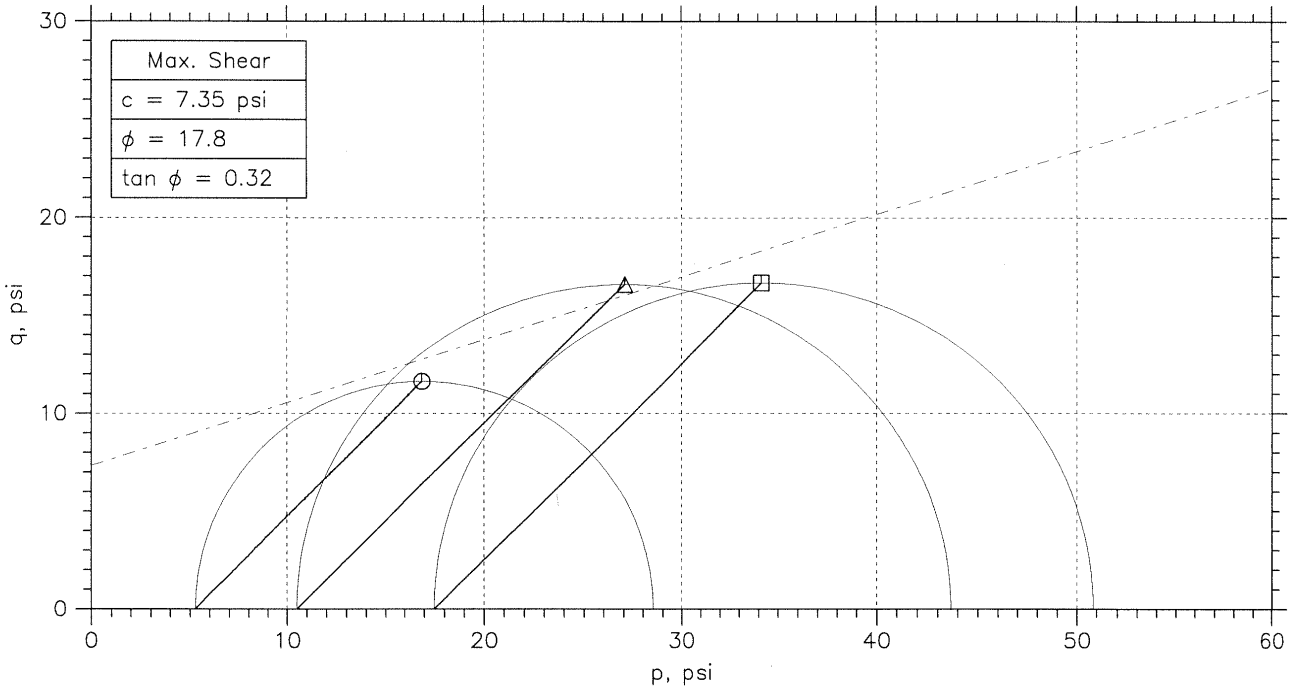
	Sample No.	Test No.	Depth	Tested By	Test Date	Checked By	Check Date	Test File
⏲	UD	10334.1	16.5-18.5ft	JW	7/2/10	DGS	8/20/10	10334.1_2581.dat
△	UD	10334.2	16.5-18.5ft	JW	7/2/10	DGS	8/20/10	10334.2a_2582.dat
⊡	UD	10334.3	16.5-18.5ft	JW	7/2/10	DGS	8/20/10	10334.3a_2583.dat

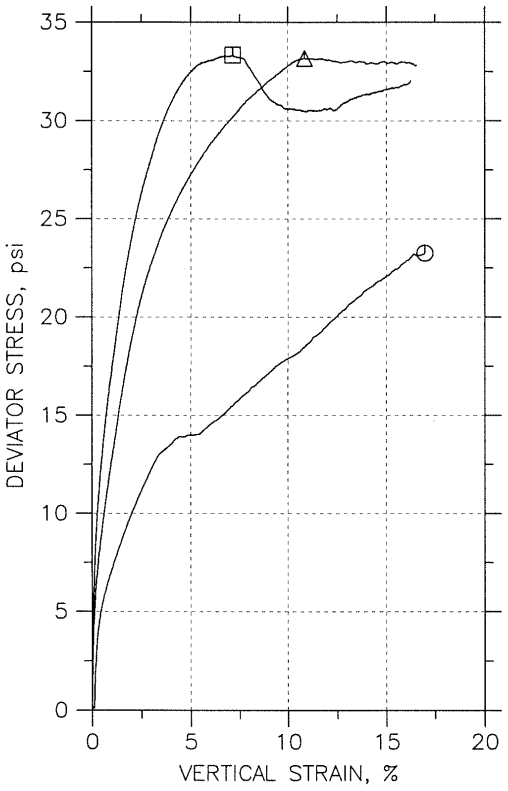
MACTEC

Project: Plant Sherer Ash Pond	Location: S-1	Project No.: 6154100200
Boring No.: S-1	Sample Type: Undisturbed	
Description: Reddish Brown Sandy Silt		
Remarks: ASTM D4767-04		

Thu, 22-JUL-2010 13:16:04

CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767

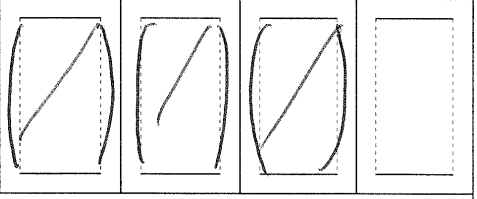




Symbol		⏀	△	⏍	
Sample No.		UD	UD	UD	
Test No.		10334.1	10334.2	10334.3	
Depth		16.5-18.5ft	16.5-18.5ft	16.5-18.5ft	
Initial	Diameter, in	2.88	2.864	2.867	
	Height, in	5.961	5.967	5.962	
	Water Content, %	31.8	31.0	32.4	
	Dry Density, pcf	90.09	88.37	89.	
	Saturation, %	98.5	92.2	98.0	
	Void Ratio	0.871	0.907	0.894	
Before Shear	Water Content, %	31.9	32.1	32.0	
	Dry Density, pcf	90.55	90.35	90.43	
	Saturation*, %	100.0	100.0	100.0	
	Void Ratio	0.861	0.866	0.864	
	Back Press., psi	110.	100.	100.	
Ver. Eff. Cons. Stress, psi		5.262	10.49	17.5	
Shear Strength, psi		11.62	16.58	16.66	
Strain at Failure, %		17	10.9	7.16	
Strain Rate, %/min		0.01	0.01	0.01	
B-Value		0.94	0.86	0.96	
Estimated Specific Gravity		2.7	2.7	2.7	
Liquid Limit		---	---	---	
Plastic Limit		---	---	---	

MACTEC

Project: Plant Sherer Ash Pond
Location: S-1
Project No.: 6154100200
Boring No.: S-1
Sample Type: Undisturbed
Description: Reddish Brown Sandy Silt
Remarks: ASTM D4767-04

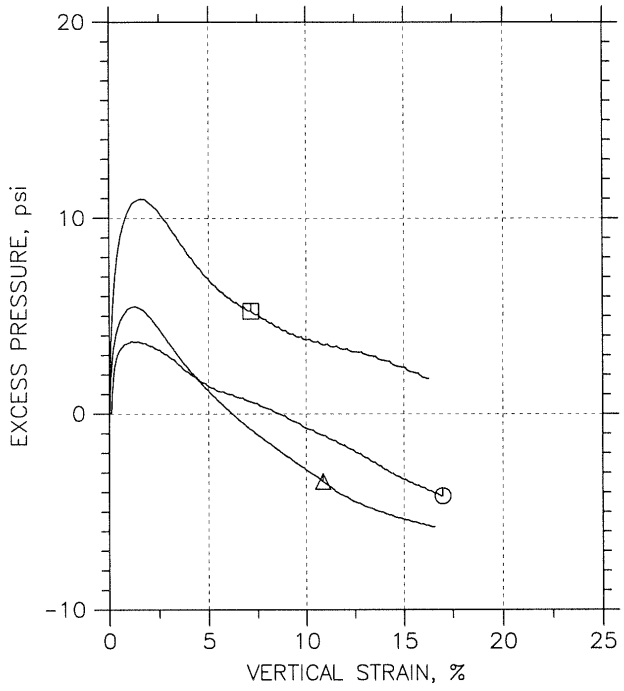


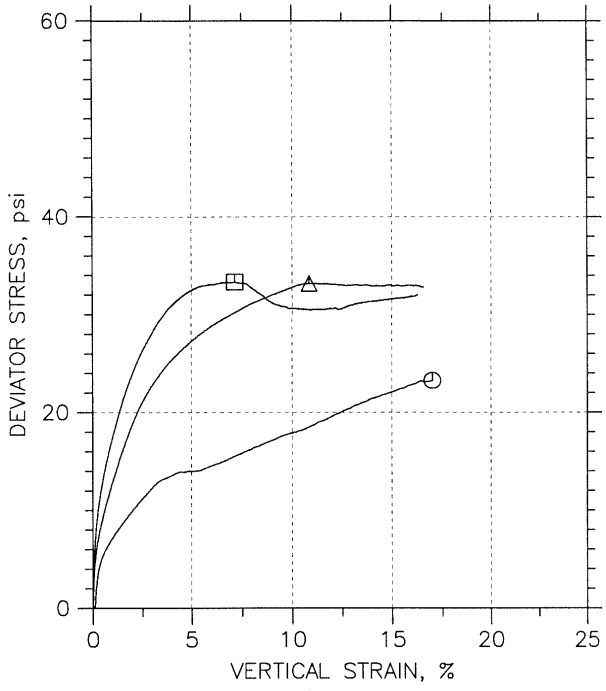
Phase calculations based on start and end of test.

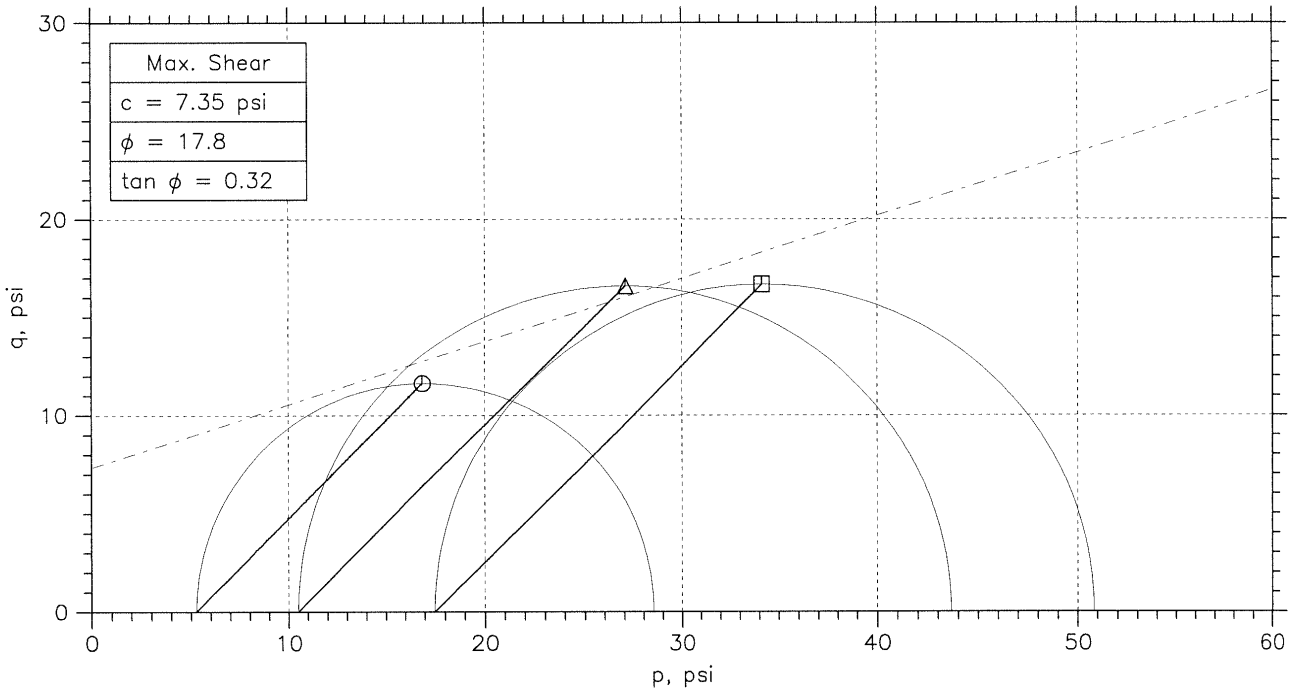
* Saturation is set to 100% for phase calculations.

Thu, 22-JUL-2010 10:08:11

CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767







	Sample No.	Test No.	Depth	Tested By	Test Date	Checked By	Check Date	Test File
⊙	UD	10334.1	16.5-18.5ft	JW	7/2/10	JGS	8/20/10	10334.1_2581.dat
△	UD	10334.2	16.5-18.5ft	JW	7/2/10	JGS	8/20/10	10334.2a_2582.dat
⊡	UD	10334.3	16.5-18.5ft	JW	7/2/10	JGS	8/20/10	10334.3a_2583.dat

MACTEC

Project: Plant Sherer Ash Pond	Location: S-1	Project No.: 6154100200
Boring No.: S-1	Sample Type: Undisturbed	
Description: Reddish Brown Sandy Silt		
Remarks: ASTM D4767-04		

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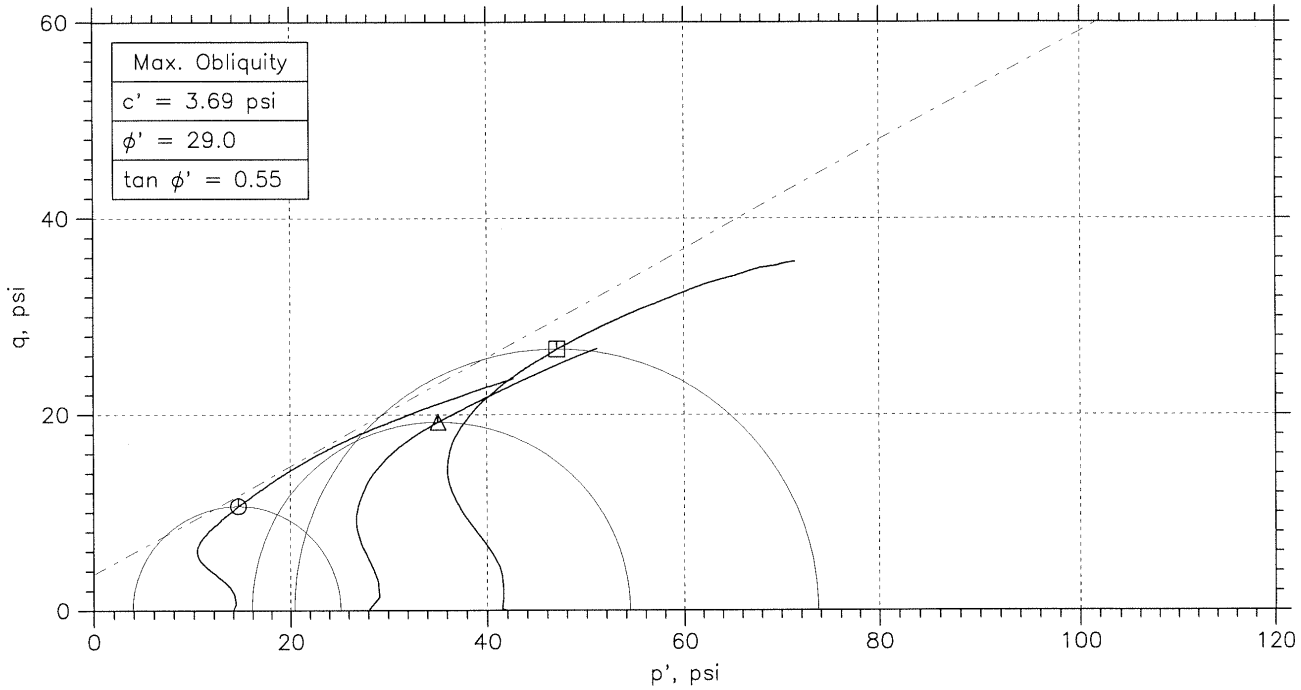
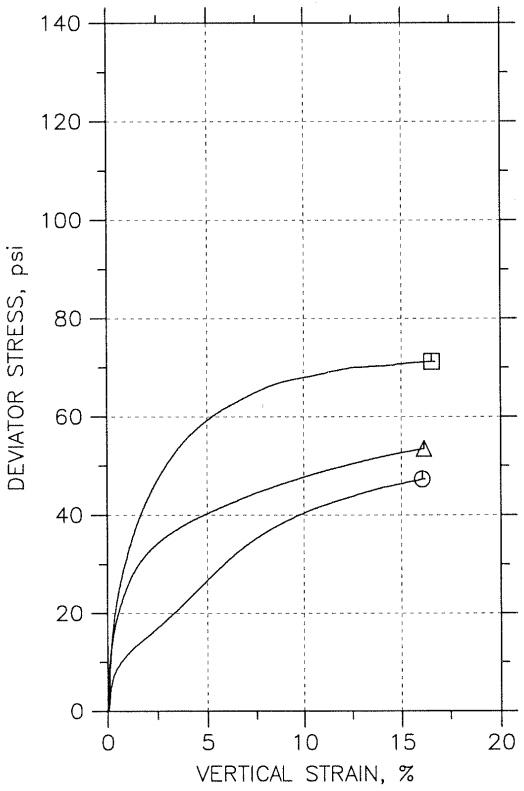
CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767

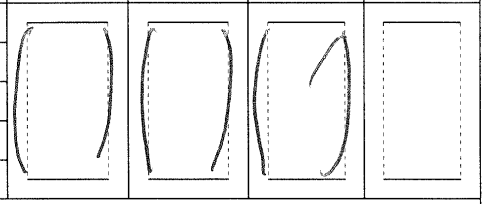




Symbol		⏲	△	⊡	
Sample No.		UD	UD	UD	
Test No.		10338.1	10338.2	10338.3	
Depth		61.5-63.5ft	61.5-63.5ft	61.5-63.5ft	
Initial	Diameter, in	2.864	2.869	2.872	
	Height, in	5.957	5.974	5.587	
	Water Content, %	25.3	25.4	22.5	
	Dry Density, pcf	98.43	97.19	102.5	
	Saturation, %	98.7	95.8	97.1	
	Void Ratio	0.681	0.702	0.614	
Before Shear	Water Content, %	24.8	25.8	22.9	
	Dry Density, pcf	99.91	98.23	102.9	
	Saturation*, %	100.0	100.0	100.0	
	Void Ratio	0.656	0.684	0.608	
	Back Press., psi	120.	110.	100.	
Ver. Eff. Cons. Stress, psi		14.	28.01	42.	
Shear Strength, psi		23.63	26.71	35.6	
Strain at Failure, %		16.1	16.2	16.6	
Strain Rate, %/min		0.02	0.02	0.02	
B-Value		0.97	0.90	0.96	
Estimated Specific Gravity		2.65	2.65	2.65	
Liquid Limit		---	---	---	
Plastic Limit		---	---	---	

MACTEC

Project: Plant Sherer Ash Pond
Location: S-3
Project No.: 6154100200
Boring No.: S-3
Sample Type: Undisturbed
Description: Brown Silty Sand
Remarks: ASTM D4767-04



Phase calculations based on start and end of test.

* Saturation is set to 100% for phase calculations.

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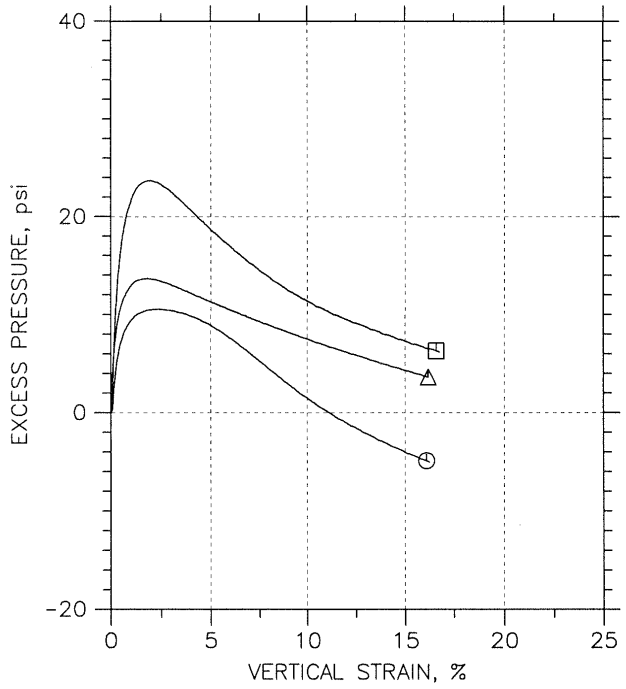
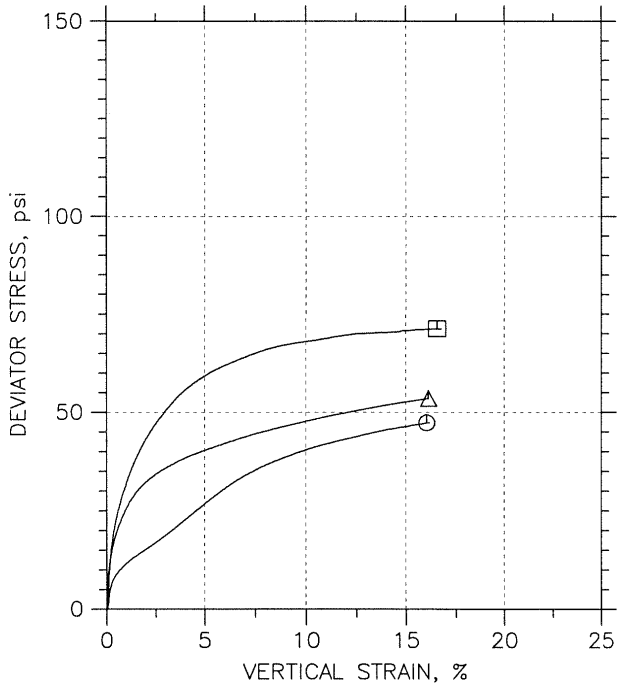
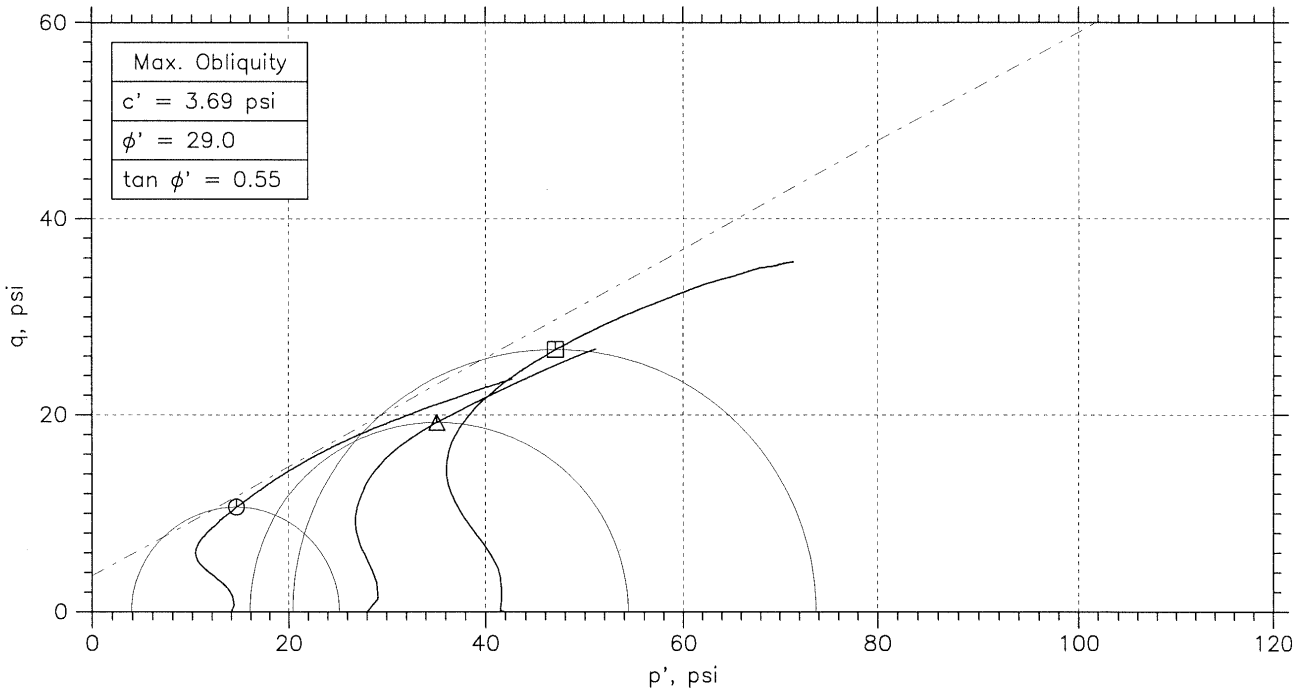
CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767







	Sample No.	Test No.	Depth	Tested By	Test Date	Checked By	Check Date	Test File
⊙	UD	10338.1	61.5-63.5ft	JW	7/12/10	JEF	8/20/10	10338.1a_2581.dat
△	UD	10338.2	61.5-63.5ft	JW	7/12/10	JEF	8/20/10	10338.2a_2582.dat
⊡	UD	10338.3	61.5-63.5ft	JW	7/12/10	JEF	8/20/10	10338.3a_2583.dat

MACTEC

Project: Plant Sherer Ash Pond	Location: S-3	Project No.: 6154100200
Boring No.: S-3	Sample Type: Undisturbed	
Description: Brown Silty Sand		
Remarks: ASTM D4767-04		

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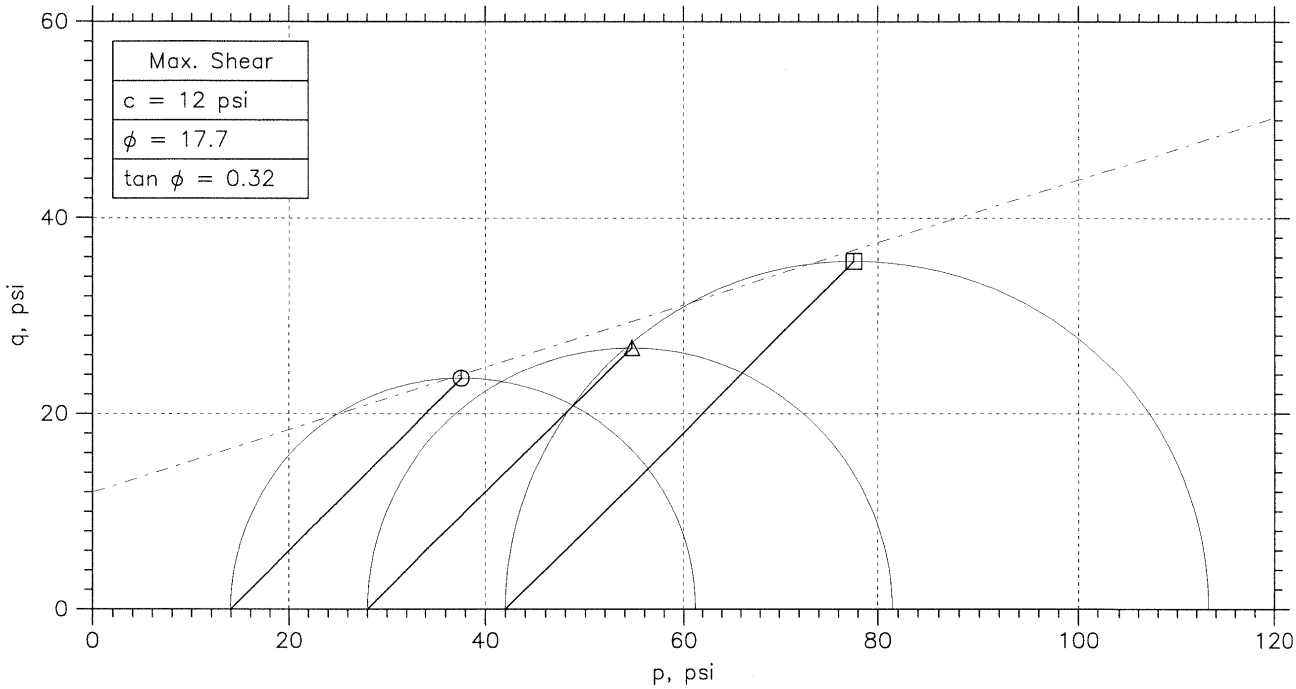
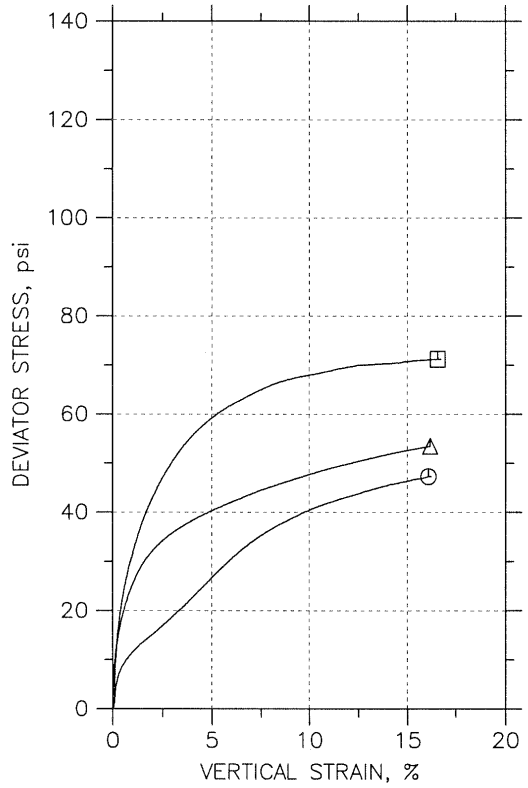
CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767

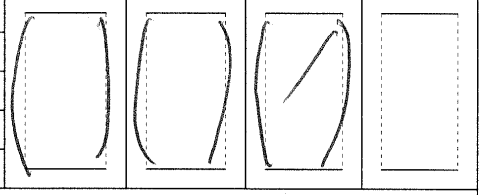




Symbol		⏲	△	⊡	
Sample No.		UD	UD	UD	
Test No.		10338.1	10338.2	10338.3	
Depth		61.5-63.5ft	61.5-63.5ft	61.5-63.5ft	
Initial	Diameter, in	2.864	2.869	2.872	
	Height, in	5.957	5.974	5.587	
	Water Content, %	25.3	25.4	22.5	
	Dry Density, pcf	98.43	97.19	102.5	
	Saturation, %	98.7	95.8	97.1	
	Void Ratio	0.681	0.702	0.614	
Before Shear	Water Content, %	24.8	25.8	22.9	
	Dry Density, pcf	99.91	98.23	102.9	
	Saturation*, %	100.0	100.0	100.0	
	Void Ratio	0.656	0.684	0.608	
	Back Press., psi	120.	110.	100.	
Ver. Eff. Cons. Stress, psi		14.	28.01	42.	
Shear Strength, psi		23.63	26.71	35.6	
Strain at Failure, %		16.1	16.2	16.6	
Strain Rate, %/min		0.02	0.02	0.02	
B-Value		0.97	0.90	0.96	
Estimated Specific Gravity		2.65	2.65	2.65	
Liquid Limit		---	---	---	
Plastic Limit		---	---	---	

MACTEC

Project: Plant Sherer Ash Pond
Location: S-3
Project No.: 6154100200
Boring No.: S-3
Sample Type: Undisturbed
Description: Brown Silty Sand
Remarks: ASTM D4767-04



Phase calculations based on start and end of test.

* Saturation is set to 100% for phase calculations.

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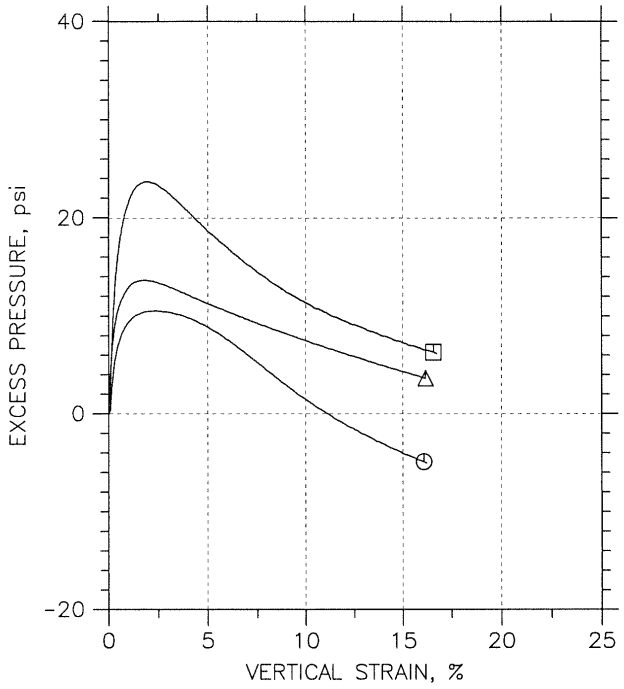
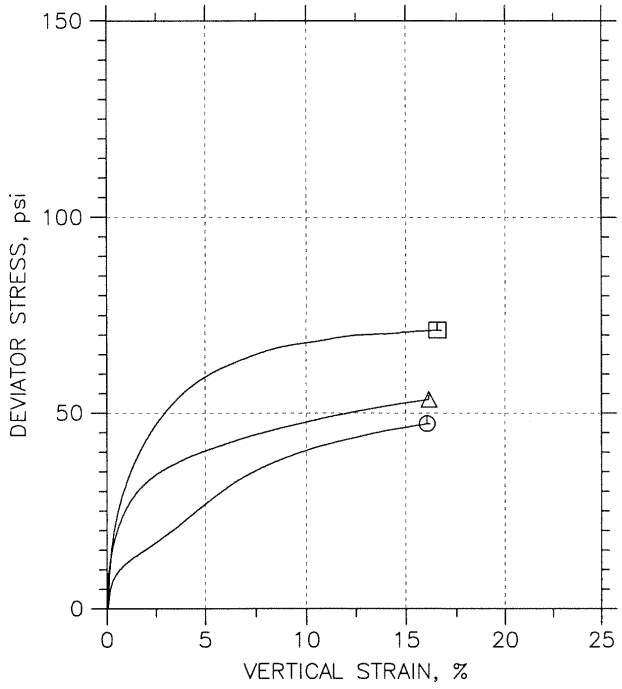
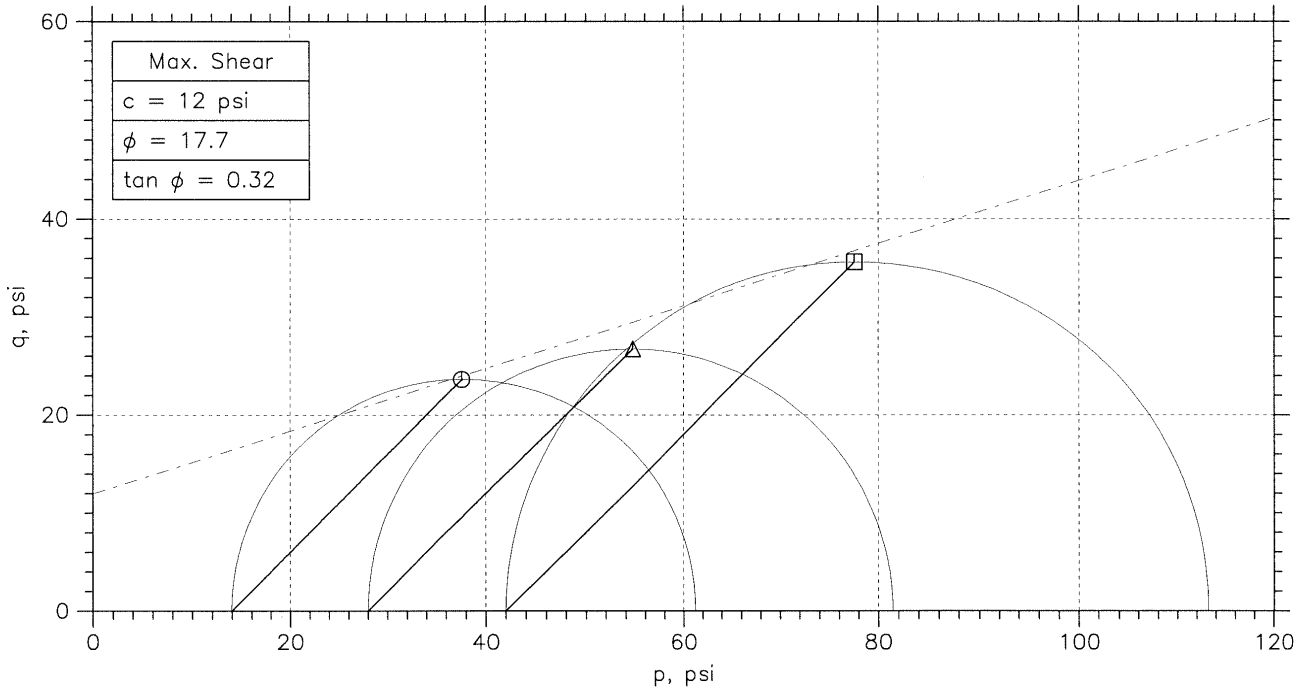
CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767







	Sample No.	Test No.	Depth	Tested By	Test Date	Checked By	Check Date	Test File
⊙	UD	10338.1	61.5-63.5ft	JW	7/12/10	JEF	8/20/10	10338.1a_2581.dat
△	UD	10338.2	61.5-63.5ft	JW	7/12/10	JEF	8/20/10	10338.2a_2582.dat
⊡	UD	10338.3	61.5-63.5ft	JW	7/12/10	JEF	8/20/10	10338.3a_2583.dat

MACTEC

Project: Plant Sherer Ash Pond	Location: S-3	Project No.: 6154100200
Boring No.: S-3	Sample Type: Undisturbed	
Description: Brown Silty Sand		
Remarks: ASTM D4767-04		

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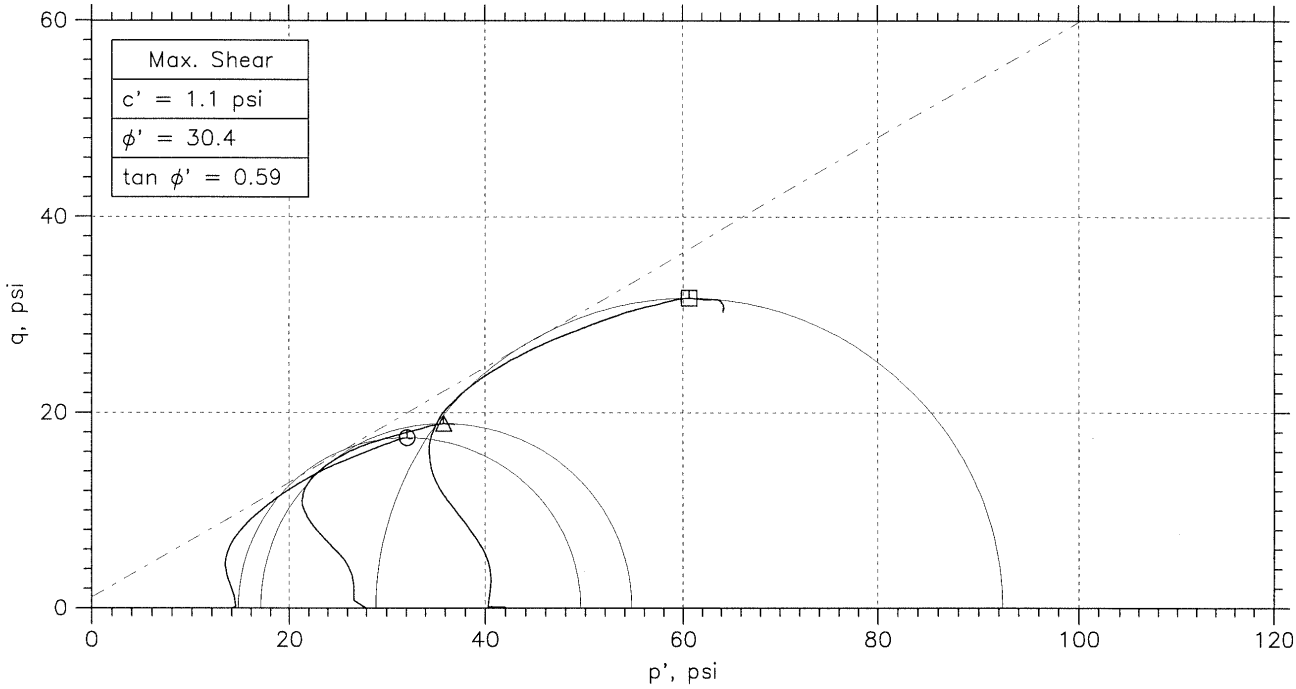
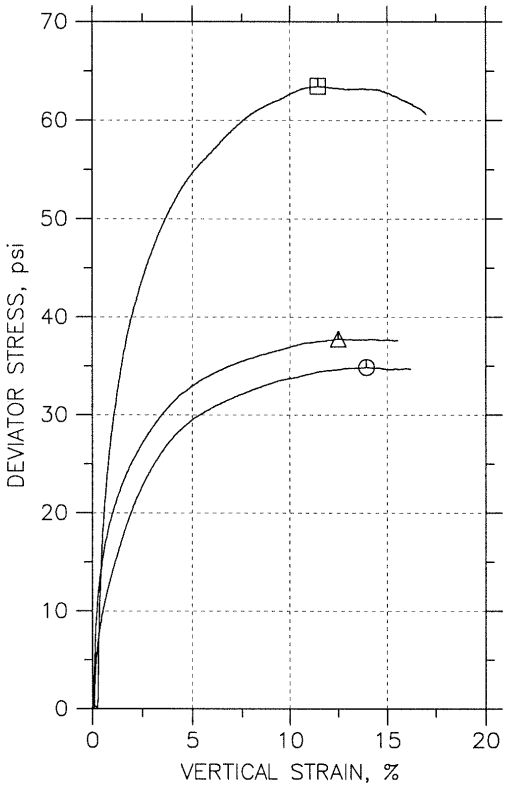
CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767

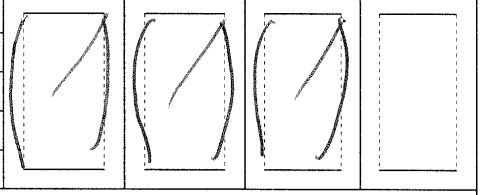




Symbol		⏲	△	⊡	
Sample No.		UD	UD	UD	
Test No.		10339.1	10337.2	10337.3	
Depth		63.5-65.5ft	65.5-67.5ft	65.5-67.5ft	
Initial	Diameter, in	2.864	2.874	2.864	
	Height, in	5.957	5.562	5.946	
	Water Content, %	29.1	30.9	28.9	
	Dry Density, pcf	92.79	92.03	95.25	
	Saturation, %	98.4	102.8	103.9	
	Void Ratio	0.783	0.798	0.737	
Before Shear	Water Content, %	29.3	29.8	27.3	
	Dry Density, pcf	93.15	92.45	95.97	
	Saturation*, %	100.0	100.0	100.0	
	Void Ratio	0.776	0.789	0.724	
	Back Press., psi	120.	110.	100.	
Ver. Eff. Cons. Stress, psi		14.	28.	41.99	
Shear Strength, psi		17.43	18.87	31.72	
Strain at Failure, %		14	12.5	11.5	
Strain Rate, %/min		0.02	0.02	0.02	
B-Value		0.95	0.95	0.92	
Estimated Specific Gravity		2.65	2.65	2.65	
Liquid Limit		---	---	---	
Plastic Limit		---	---	---	

MACTEC

Project: Plant Sherer Ash Pond
Location: S-2
Project No.: 6154100200
Boring No.: S-2
Sample Type: Undisturbed



Description: Brown Sandy Silt
Remarks: ASTM D4767-04

Phase calculations based on start and end of test.

* Saturation is set to 100% for phase calculations.

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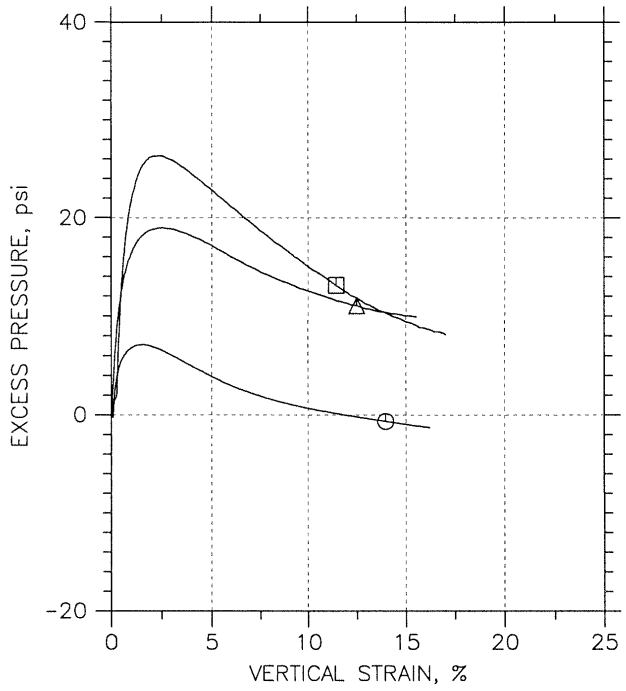
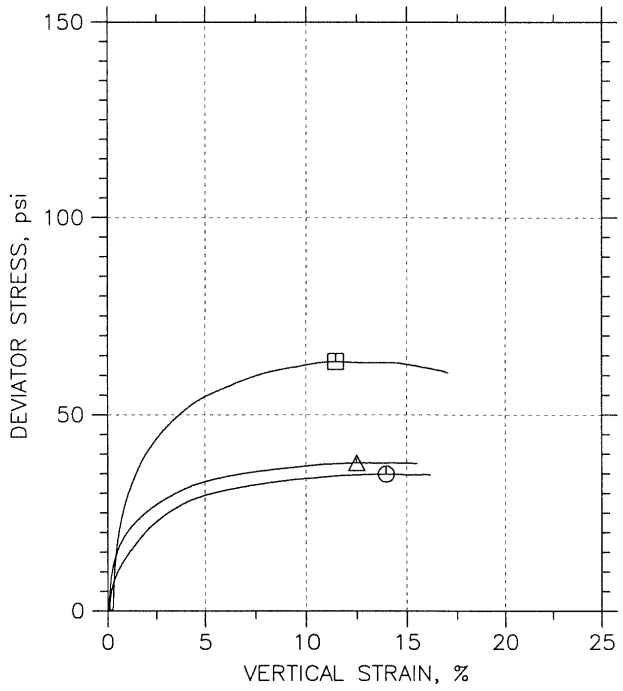
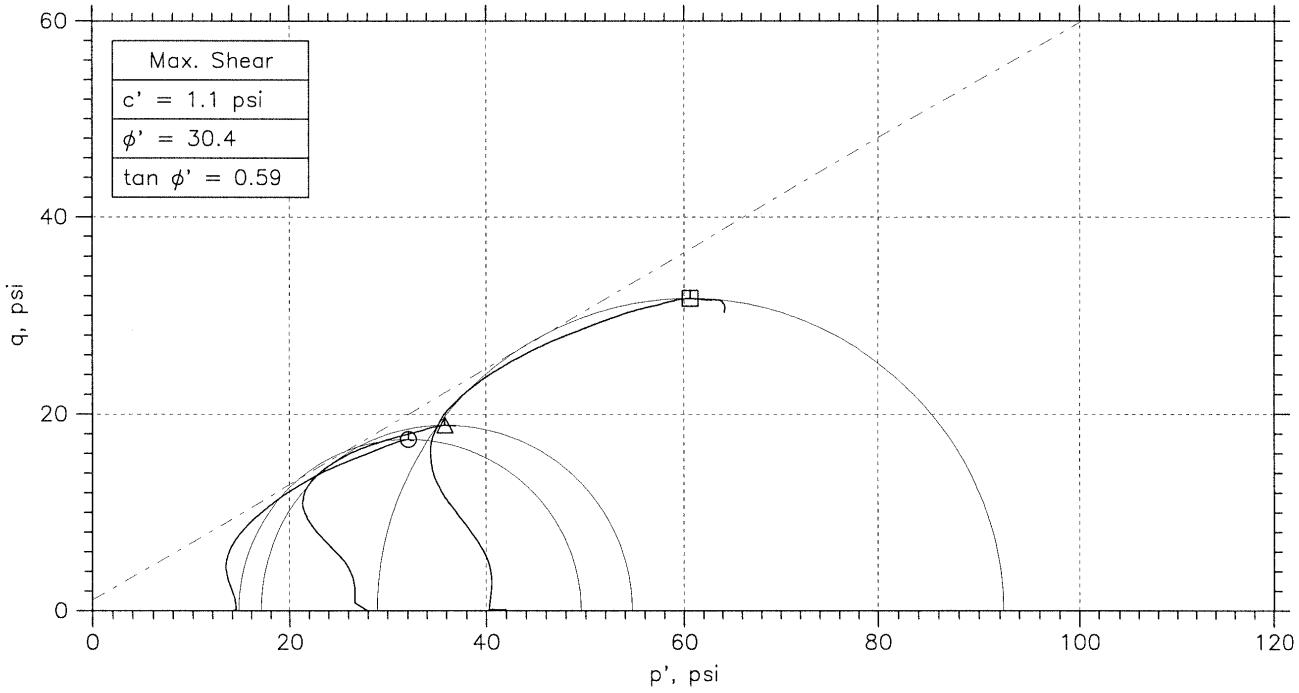
CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767







	Sample No.	Test No.	Depth	Tested By	Test Date	Checked By	Check Date	Test File
⊙	UD	10339.1	63.5-65.5ft	JW	7/15/10	JGT	8/20/10	10339.1a_2582.dat
△	UD	10337.2	65.5-67.5ft	JW	7/14/10	JGT	8/20/10	10337.2a_2581.dat
⊡	UD	10337.3	65.5-67.5ft	JW	7/14/10	JGT	8/20/10	10337.3_2583.dat

MACTEC

Project: Plant Sherer Ash Pond	Location: S-2	Project No.: 6154100200
Boring No.: S-2	Sample Type: Undisturbed	
Description: Brown Sandy Silt		
Remarks: ASTM D4767-04		

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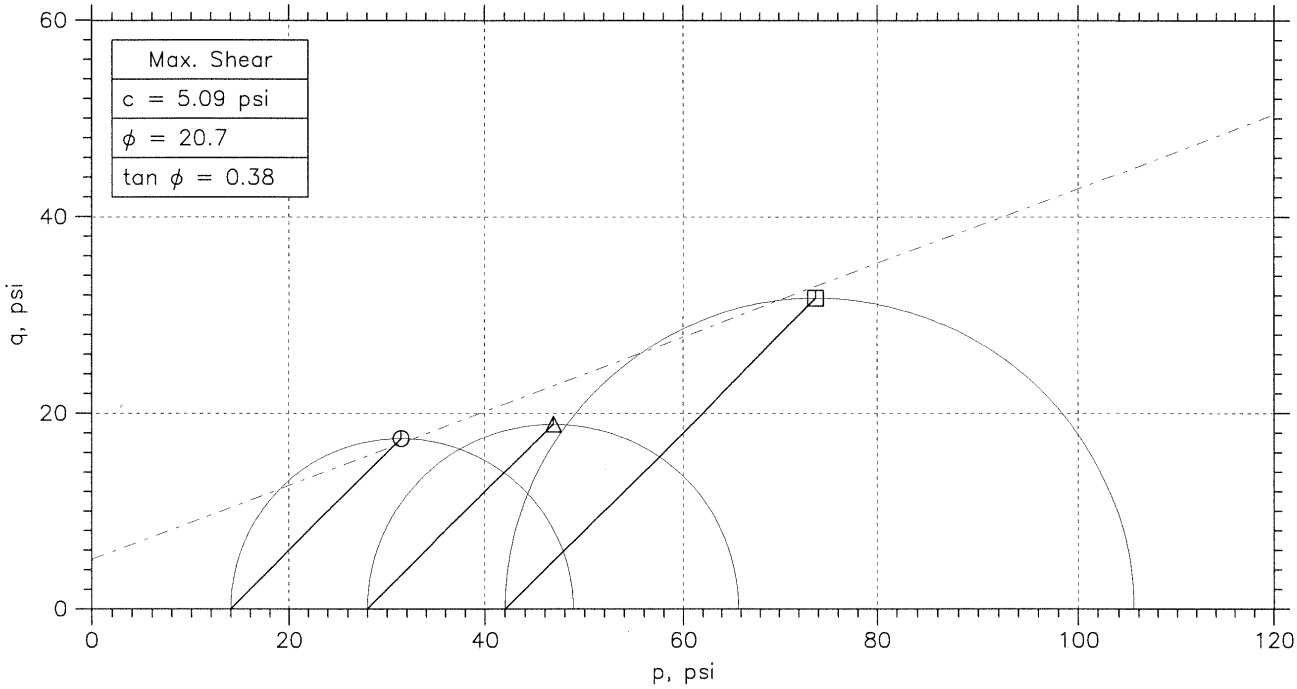
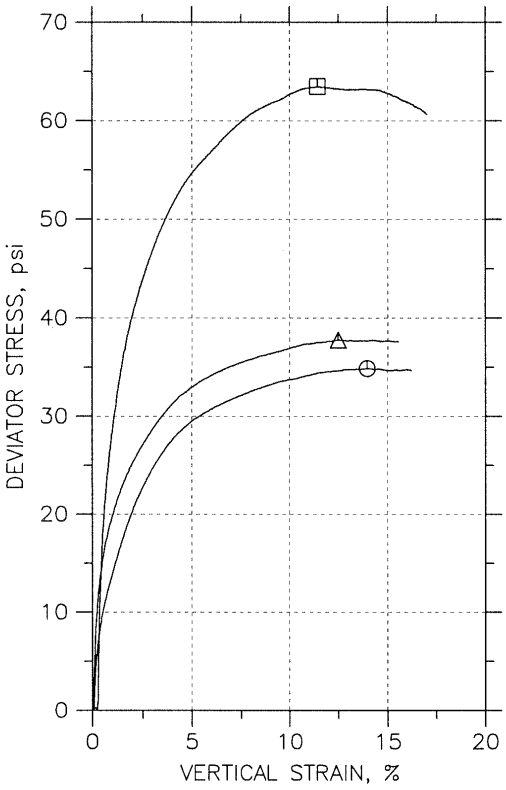
CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767

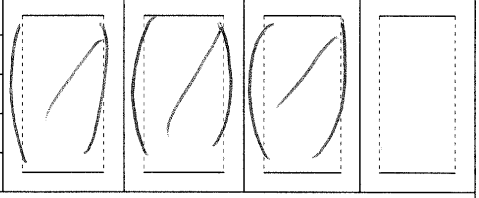




Symbol		⊙	△	⊡	
Sample No.		UD	UD	UD	
Test No.		10339.1	10337.2	10337.3	
Depth		63.5-65.5ft	65.5-67.5ft	65.5-67.5ft	
Initial	Diameter, in	2.864	2.874	2.864	
	Height, in	5.957	5.562	5.946	
	Water Content, %	29.1	30.9	28.9	
	Dry Density, pcf	92.79	92.03	95.25	
	Saturation, %	98.4	102.8	103.9	
	Void Ratio	0.783	0.798	0.737	
Before Shear	Water Content, %	29.3	29.8	27.3	
	Dry Density, pcf	93.15	92.45	95.97	
	Saturation*, %	100.0	100.0	100.0	
	Void Ratio	0.776	0.789	0.724	
	Back Press., psi	120.	110.	100.	
Ver. Eff. Cons. Stress, psi		14.	28.	41.99	
Shear Strength, psi		17.43	18.87	31.72	
Strain at Failure, %		14	12.5	11.5	
Strain Rate, %/min		0.02	0.02	0.02	
B-Value		0.95	0.95	0.92	
Estimated Specific Gravity		2.65	2.65	2.65	
Liquid Limit		---	---	---	
Plastic Limit		---	---	---	

MACTEC

Project: Plant Sherer Ash Pond
Location: S-2
Project No.: 6154100200
Boring No.: S-2
Sample Type: Undisturbed



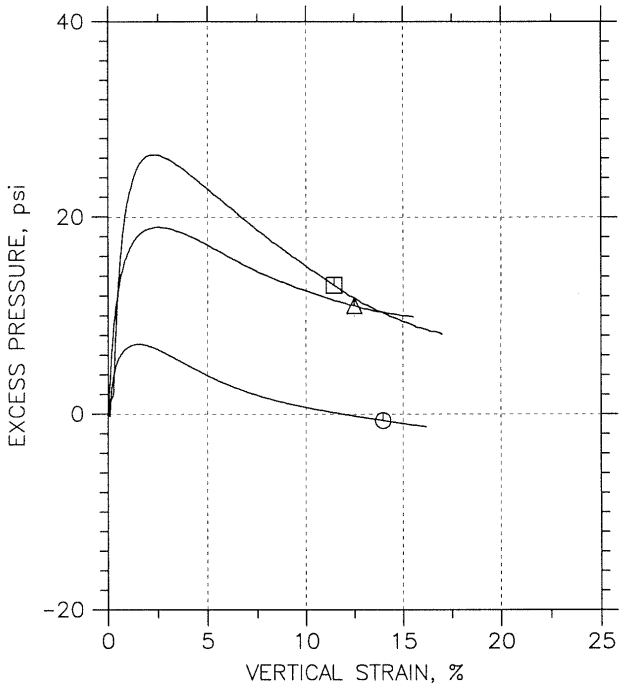
Description: Brown Sandy Silt
Remarks: ASTM D4767-04

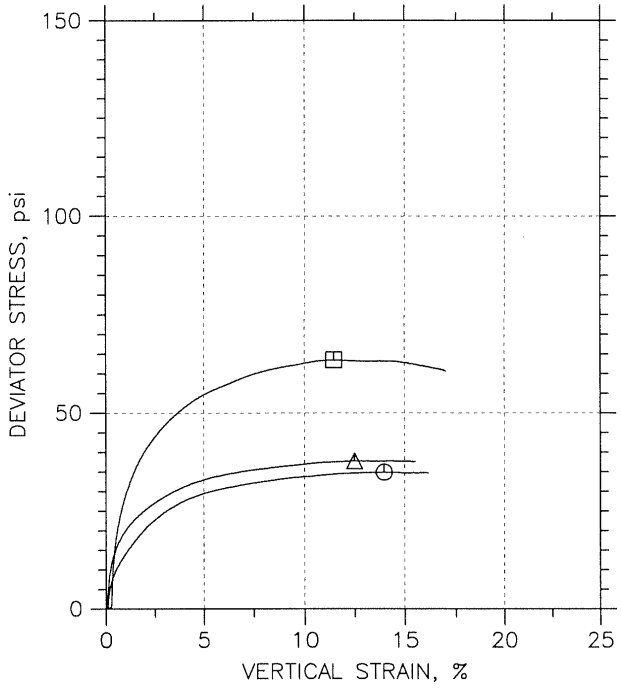
Phase calculations based on start and end of test.

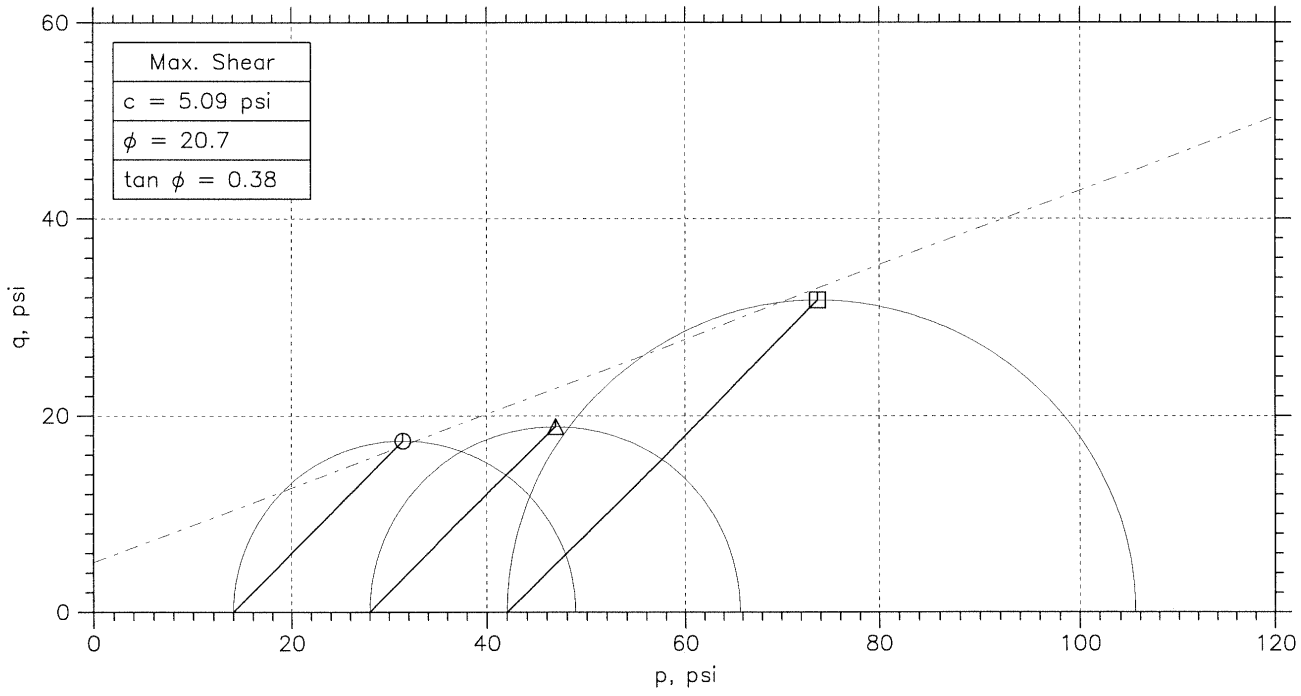
* Saturation is set to 100% for phase calculations.

Thu, 22-JUL-2010 10:40:43

CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767







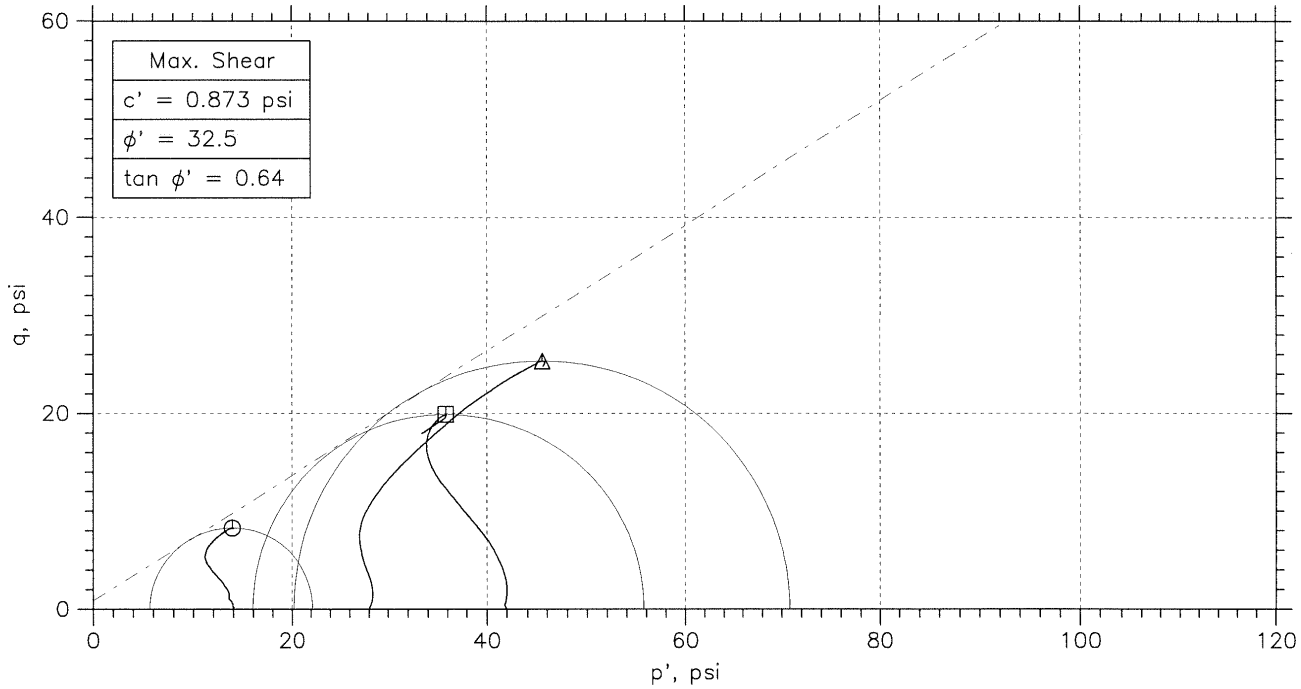
	Sample No.	Test No.	Depth	Tested By	Test Date	Checked By	Check Date	Test File
⊙	UD	10339.1	63.5-65.5ft	JW	7/15/10	JET	8/20/10	10339.1a_2582.dat
△	UD	10337.2	65.5-67.5ft	JW	7/14/10	JET	8/20/10	10337.2a_2581.dat
□	UD	10337.3	65.5-67.5ft	JW	7/14/10	JET	8/20/10	10337.3_2583.dat

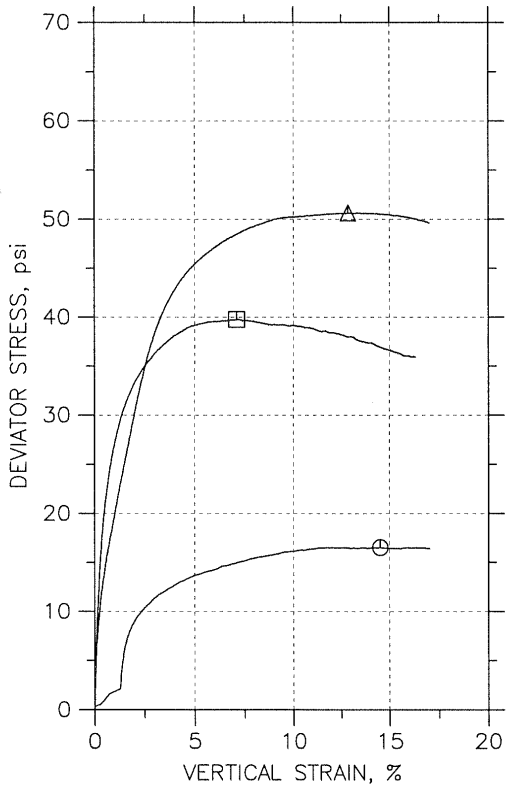
MACTEC

Project: Plant Sherer Ash Pond	Location: S-2	Project No.: 6154100200
Boring No.: S-2	Sample Type: Undisturbed	
Description: Brown Sandy Silt		
Remarks: ASTM D4767-04		

Thu, 22-JUL-2010 10:40:43

CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767

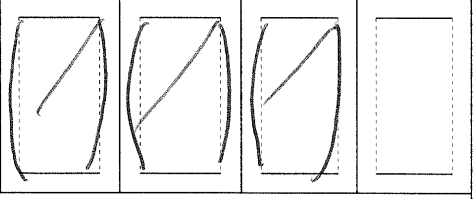




Symbol		⊙	△	⊡	
Sample No.		UD	UD	UD	
Test No.		10341.1	10341.2	10341.3	
Depth		41.5-43.5ft	41.5-43.5ft	41.5-43.5ft	
Initial	Diameter, in	2.878	2.867	2.872	
	Height, in	5.97	5.975	5.946	
	Water Content, %	34.1	42.2	28.0	
	Dry Density, pcf	83.67	78.26	84.47	
	Saturation, %	92.4	100.3	77.3	
	Void Ratio	0.977	1.11	0.958	
Before Shear	Water Content, %	33.0	40.6	31.8	
	Dry Density, pcf	88.3	79.73	89.82	
	Saturation*, %	100.0	100.0	100.0	
	Void Ratio	0.874	1.07	0.842	
	Back Press., psi	90.	110.	100.	
Ver. Eff. Cons. Stress, psi		14.	28.	41.99	
Shear Strength, psi		8.256	25.31	19.88	
Strain at Failure, %		14.5	12.9	7.11	
Strain Rate, %/min		0.01	0.01	0.01	
B-Value		0.96	0.96	0.95	
Estimated Specific Gravity		2.65	2.65	2.65	
Liquid Limit		---	---	---	
Plastic Limit		---	---	---	

MACTEC

Project: Plant Sherer Ash Pond
Location: S-1
Project No.: 6154100200
Boring No.: S-1
Sample Type: Undisturbed



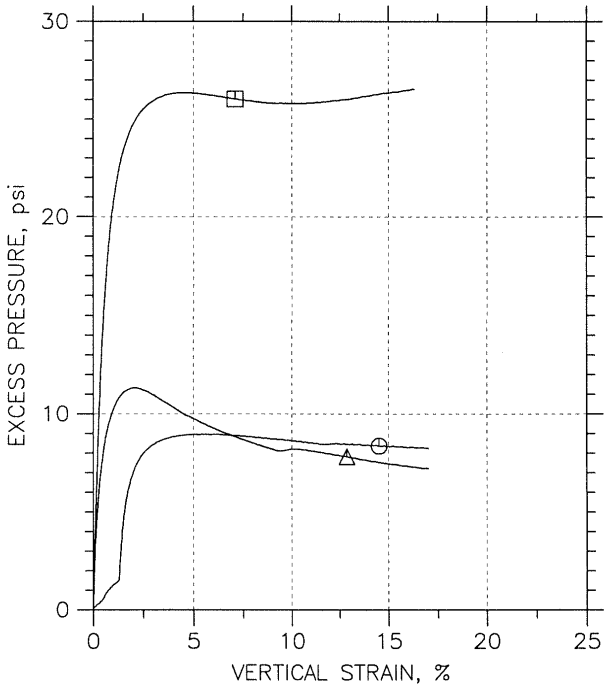
Description: Tan Sandy Silt with Mica
Remarks: ASTM D4767-04

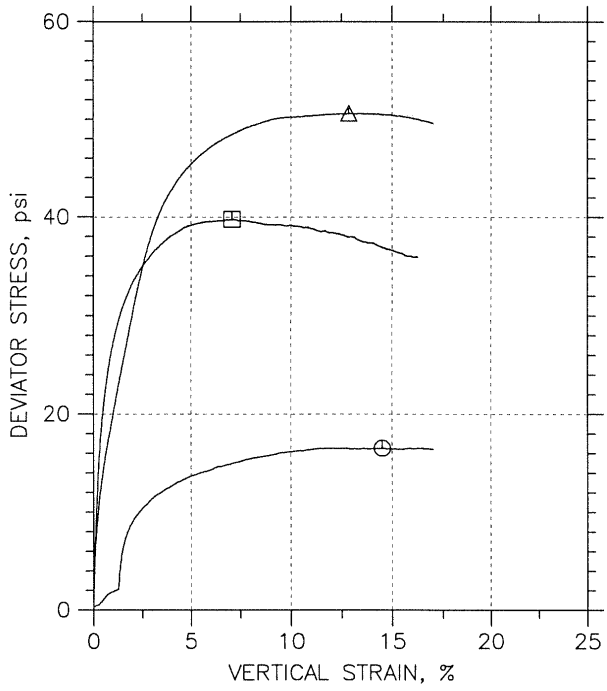
Phase calculations based on start and end of test.

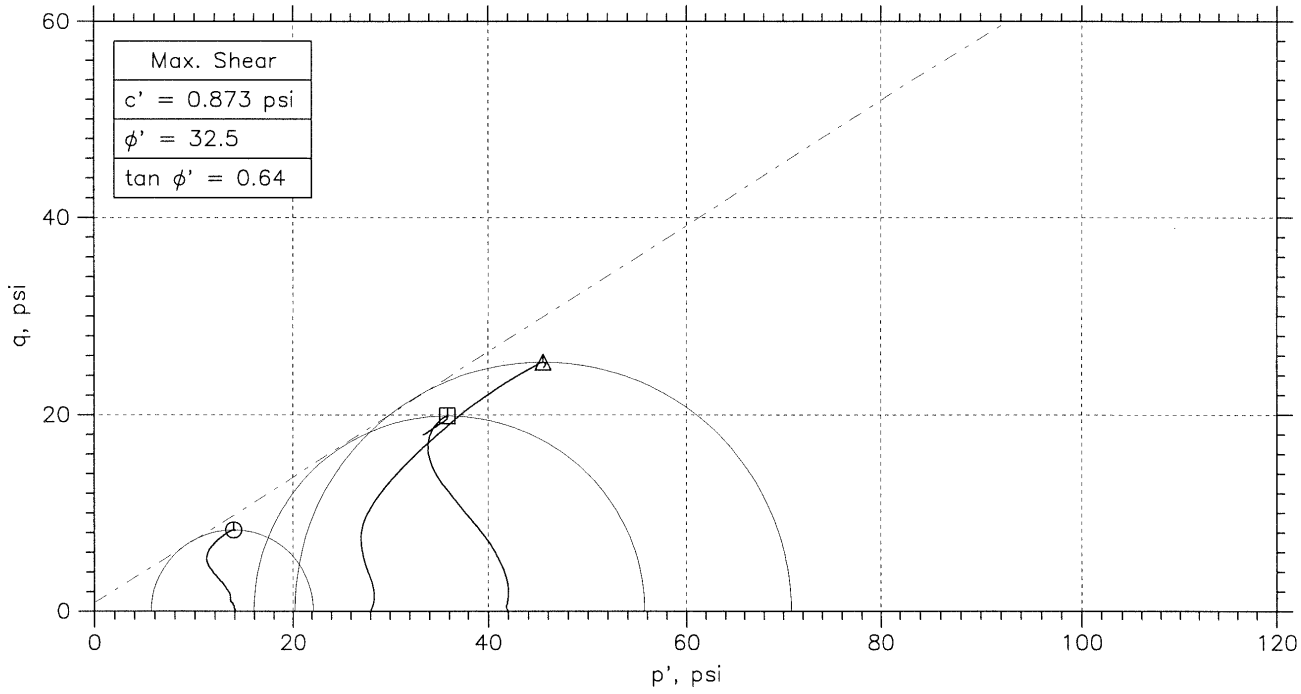
* Saturation is set to 100% for phase calculations.

Thu, 22-JUL-2010 13:15:32

CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767







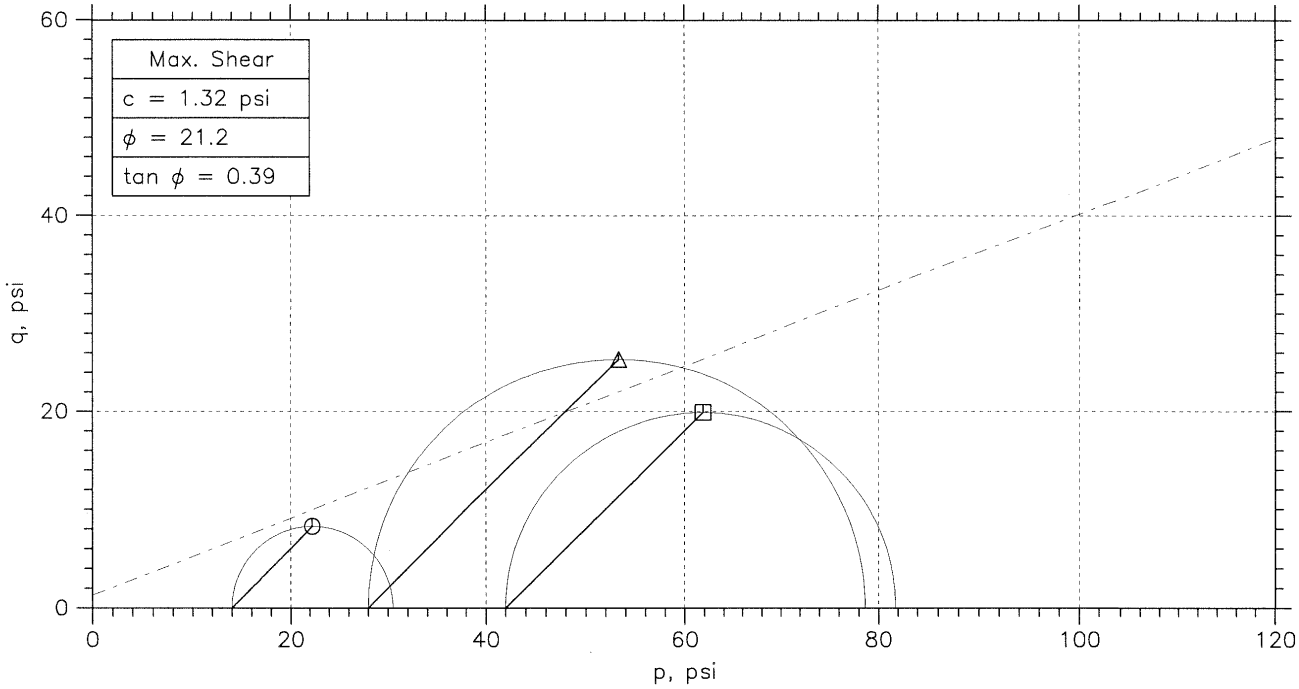
	Sample No.	Test No.	Depth	Tested By	Test Date	Checked By	Check Date	Test File
⊙	UD	10341.1	41.5-43.5ft	JW	7/8/10	JET	8/20/10	10341.1_2581.dat
△	UD	10341.2	41.5-43.5ft	JW	7/8/10	JET	8/20/10	10341.2_2582.dat
⊡	UD	10341.3	41.5-43.5ft	JW	7/8/10	JET	8/20/10	10341.3a_2583.dat

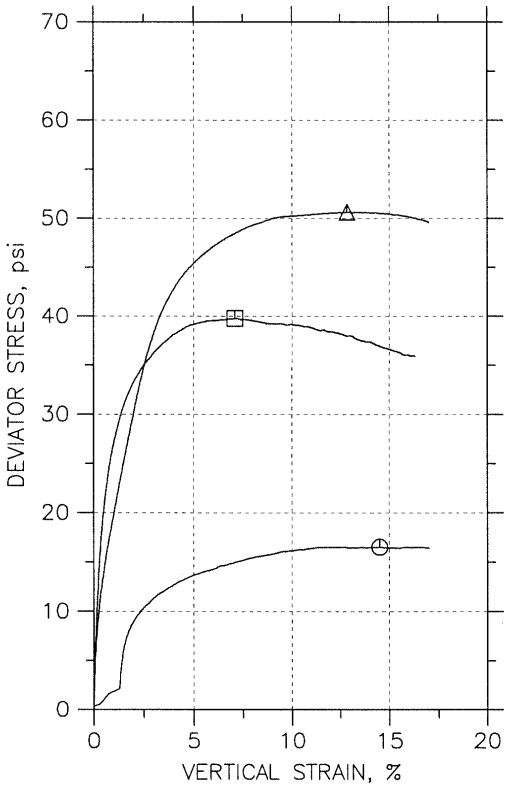
MACTEC

Project: Plant Sherer Ash Pond	Location: S-1	Project No.: 6154100200
Boring No.: S-1	Sample Type: Undisturbed	
Description: Tan Sandy Silt with Mica		
Remarks: ASTM D4767-04		

Thu, 22-JUL-2010 13:15:33

CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767

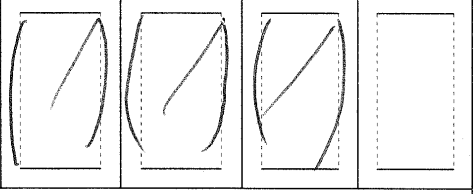




Symbol		⏲	△	⊡	
Sample No.		UD	UD	UD	
Test No.		10341.1	10341.2	10341.3	
Depth		41.5-43.5ft	41.5-43.5ft	41.5-43.5ft	
Initial	Diameter, in	2.878	2.867	2.872	
	Height, in	5.97	5.975	5.946	
	Water Content, %	34.1	42.2	28.0	
	Dry Density, pcf	83.67	78.26	84.47	
	Saturation, %	92.4	100.3	77.3	
	Void Ratio	0.977	1.11	0.958	
Before Shear	Water Content, %	33.0	40.6	31.8	
	Dry Density, pcf	88.3	79.73	89.82	
	Saturation*, %	100.0	100.0	100.0	
	Void Ratio	0.874	1.07	0.842	
	Back Press., psi	90.	110.	100.	
Ver. Eff. Cons. Stress, psi		14.	28.	41.99	
Shear Strength, psi		8.256	25.31	19.88	
Strain at Failure, %		14.5	12.9	7.11	
Strain Rate, %/min		0.01	0.01	0.01	
B-Value		0.96	0.96	0.95	
Estimated Specific Gravity		2.65	2.65	2.65	
Liquid Limit		---	---	---	
Plastic Limit		---	---	---	

MACTEC

Project: Plant Sherer Ash Pond
Location: S-1
Project No.: 6154100200
Boring No.: S-1
Sample Type: Undisturbed



Description: Tan Sandy Silt with Mica
Remarks: ASTM D4767-04

Phase calculations based on start and end of test.

* Saturation is set to 100% for phase calculations.

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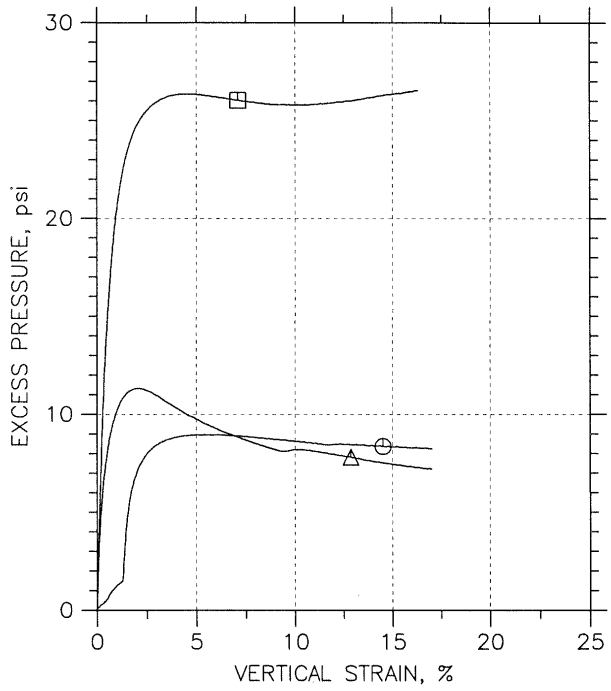
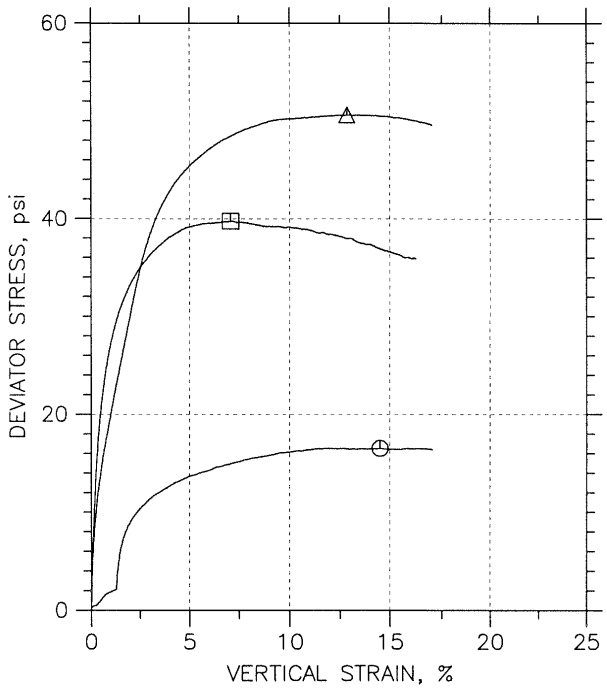
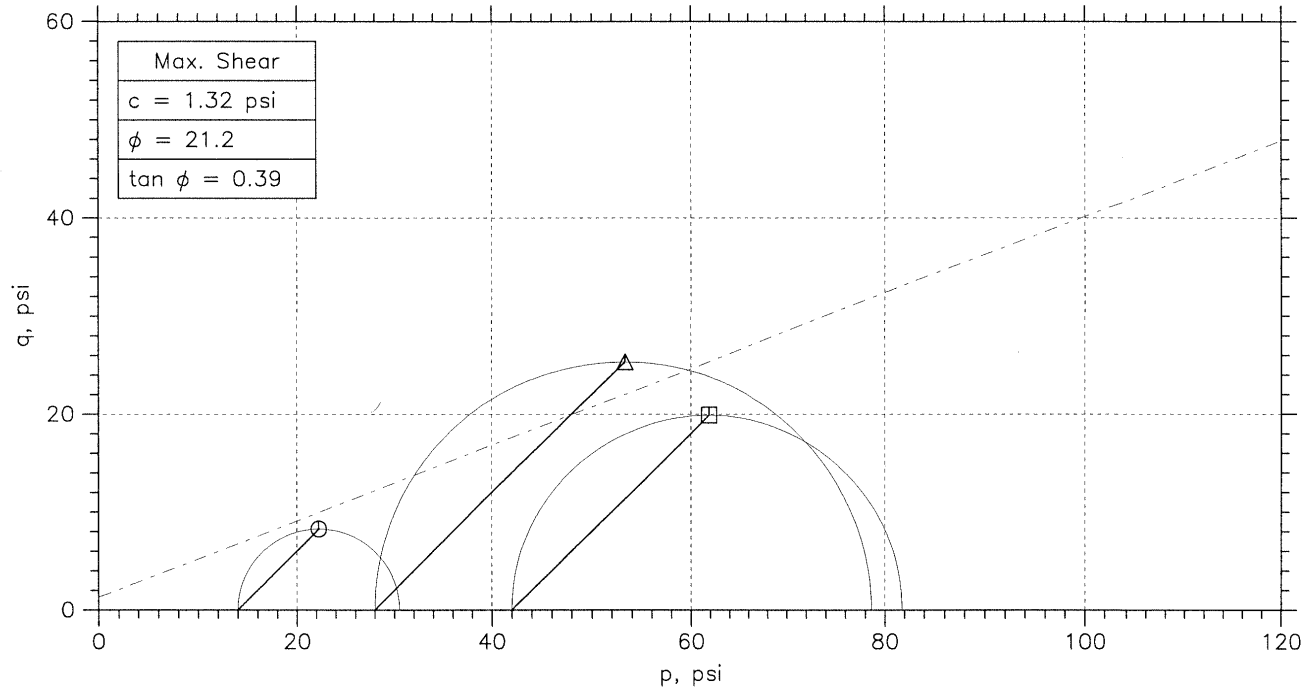
CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767







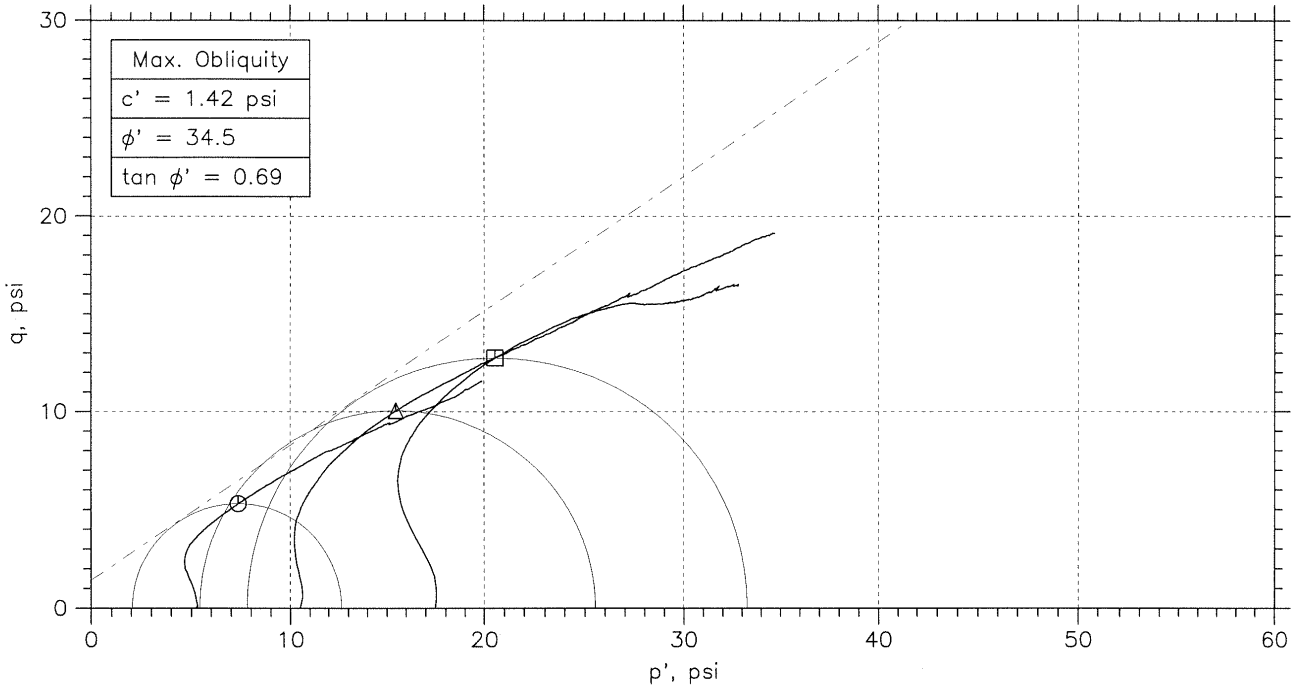
	Sample No.	Test No.	Depth	Tested By	Test Date	Checked By	Check Date	Test File
⊙	UD	10341.1	41.5-43.5ft	JW	7/8/10	JGT	8/20/10	10341.1_2581.dat
△	UD	10341.2	41.5-43.5ft	JW	7/8/10	JGT	8/20/10	10341.2_2582.dat
⊡	UD	10341.3	41.5-43.5ft	JW	7/8/10	JGT	8/20/10	10341.3a_2583.dat

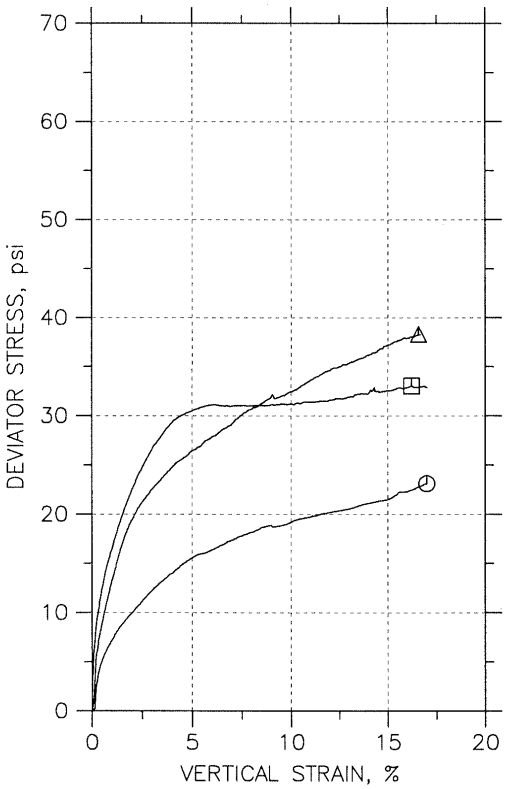
MACTEC

Project: Plant Sherer Ash Pond	Location: S-1	Project No.: 6154100200
Boring No.: S-1	Sample Type: Undisturbed	
Description: Tan Sandy Silt with Mica		
Remarks: ASTM D4767-04		

Thu, 22-JUL-2010 10:20:05

CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767

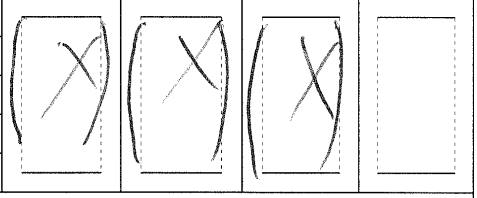




Symbol		⏲	△	⊡	
Sample No.		UD	UD	UD	
Test No.		10342.1	10342.2	10336.3	
Depth		24.5-26.5ft	24.5-26.5ft	26.5-28.5ft	
Initial	Diameter, in	2.866	2.87	2.86	
	Height, in	5.95	5.576	5.963	
	Water Content, %	30.0	28.1	29.9	
	Dry Density, pcf	92.46	93.6	93.84	
	Saturation, %	100.8	96.9	103.7	
	Void Ratio	0.789	0.767	0.763	
Before Shear	Water Content, %	29.5	28.7	28.4	
	Dry Density, pcf	92.79	94.01	94.38	
	Saturation*, %	100.0	100.0	100.0	
	Void Ratio	0.783	0.76	0.753	
	Back Press., psi	120.	120.	110.	
Ver. Eff. Cons. Stress, psi		5.252	10.5	17.5	
Shear Strength, psi		11.55	19.14	16.51	
Strain at Failure, %		17	16.6	16.2	
Strain Rate, %/min		0.02	0.01	0.02	
B-Value		0.96	0.95	0.95	
Estimated Specific Gravity		2.65	2.65	2.65	
Liquid Limit		---	---	---	
Plastic Limit		---	---	---	

MACTEC

Project: Plant Scherer Ash Pond
Location: S-3
Project No.: 6154100200
Boring No.: S-3
Sample Type: Undisturbed



Description: Brown Sandy Silt
Remarks: ASTM D4767-04

Phase calculations based on start and end of test.

* Saturation is set to 100% for phase calculations.

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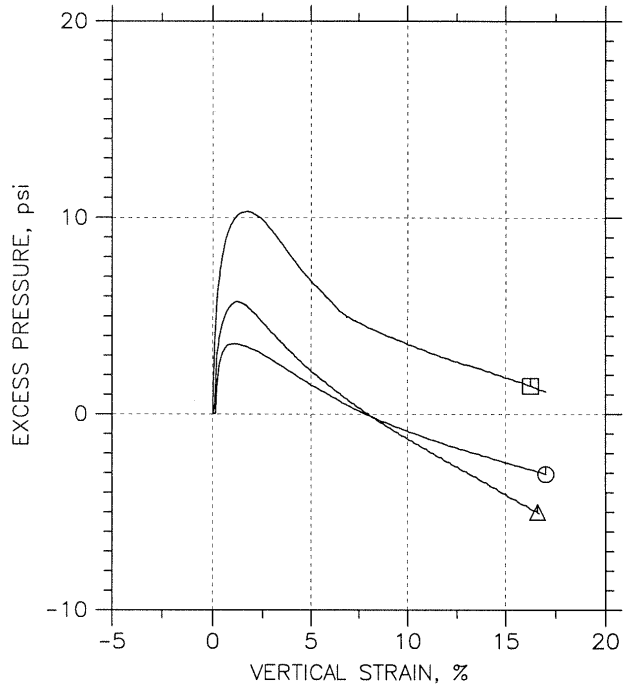
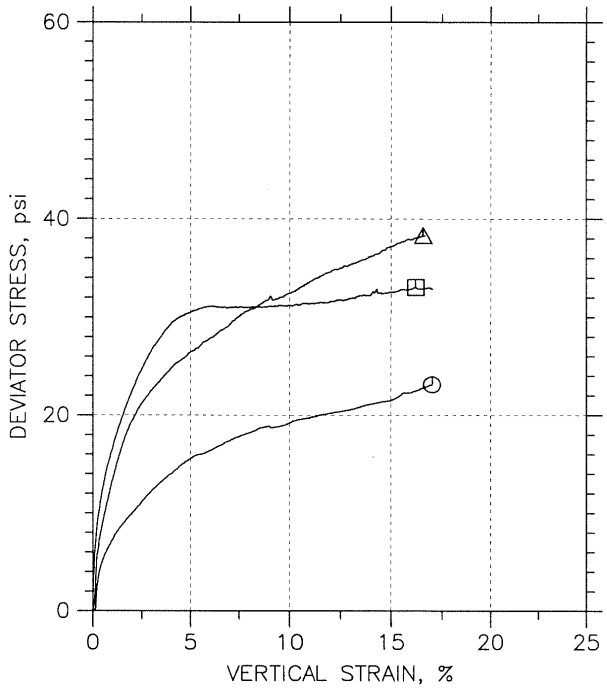
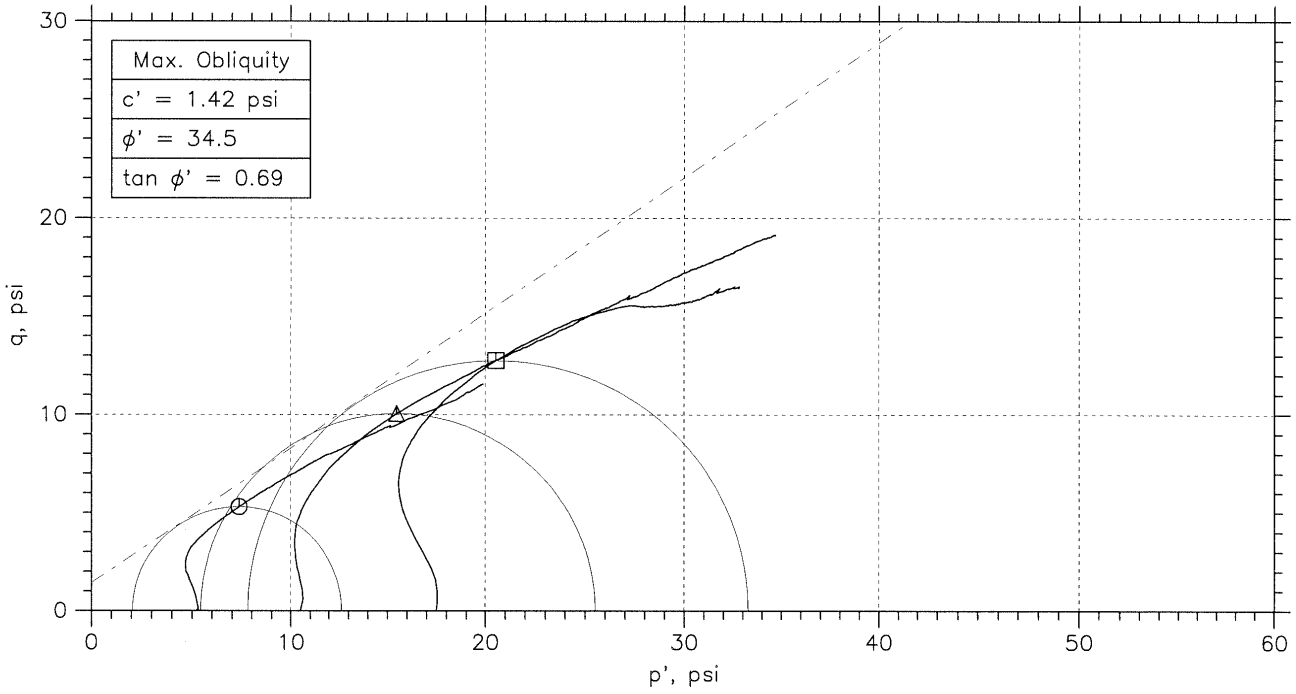
CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767







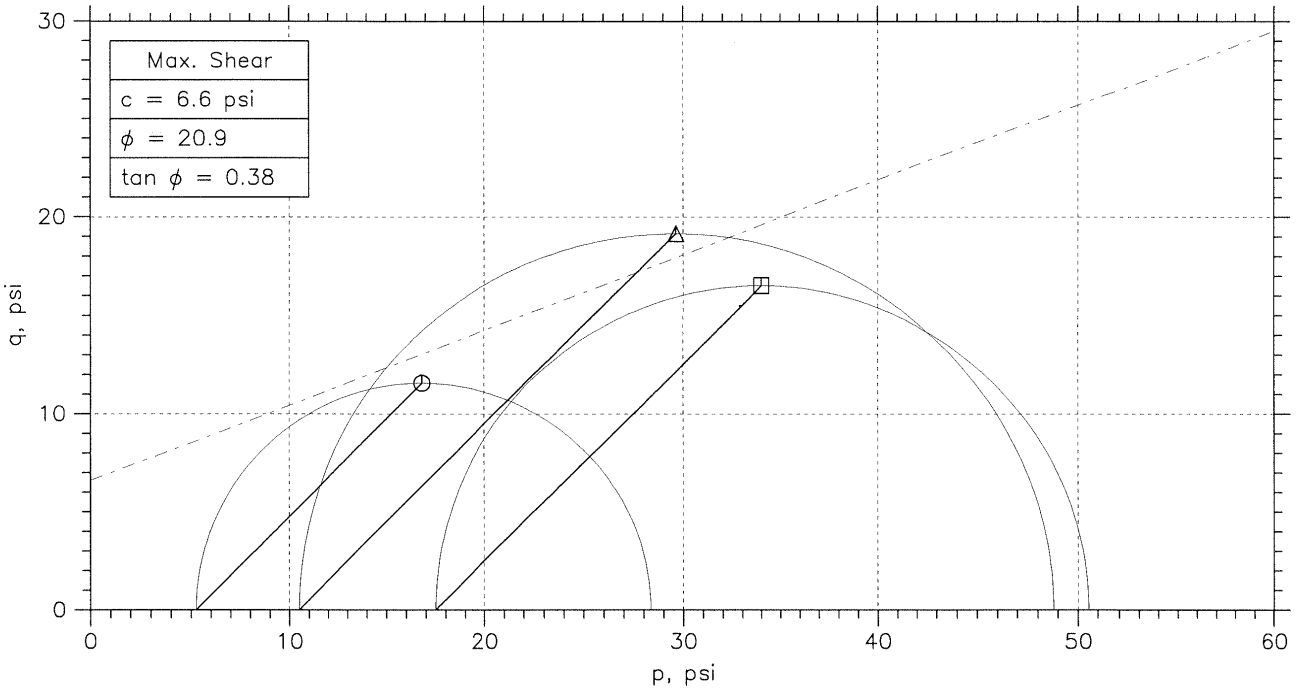
	Sample No.	Test No.	Depth	Tested By	Test Date	Checked By	Check Date	Test File
⊙	UD	10342.1	24.5-26.5	JW	7/13/10	JGT	8/20/10	10342.1_2580.dat
△	UD	10342.2	24.5-26.5ft	JW	7/9/10	JGT	8/20/10	10342.2a_2546.dat
⊡	UD	10336.3	26.5-28.5ft	JW	7/13/10	JGT	8/20/10	10336.3_2546.dat

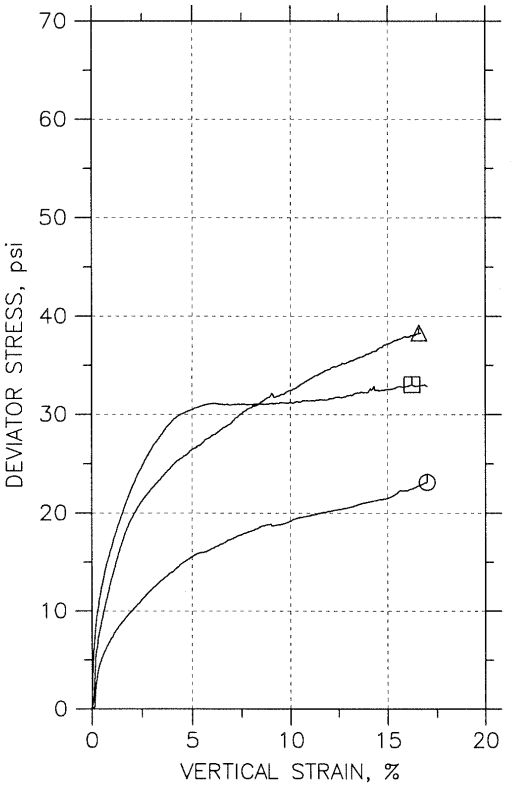
MACTEC

Project: Plant Scherer Ash Pond	Location: S-3	Project No.: 6154100200
Boring No.: S-3	Sample Type: Undisturbed	
Description: Brown Sandy Silt		
Remarks: ASTM D4767-04		

Thu, 22-JUL-2010 13:24:50

CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767





Symbol		⏲	△	⊡	
Sample No.		UD	UD	UD	
Test No.		10342.1	10342.2	10336.3	
Depth		24.5-26.5ft	24.5-26.5ft	26.5-28.5ft	
Initial	Diameter, in	2.866	2.87	2.86	
	Height, in	5.95	5.576	5.963	
	Water Content, %	30.0	28.1	29.9	
	Dry Density, pcf	92.46	93.6	93.84	
	Saturation, %	100.8	96.9	103.7	
	Void Ratio	0.789	0.767	0.763	
Before Shear	Water Content, %	29.5	28.7	28.4	
	Dry Density, pcf	92.79	94.01	94.38	
	Saturation*, %	100.0	100.0	100.0	
	Void Ratio	0.783	0.76	0.753	
	Back Press., psi	120.	120.	110.	
Ver. Eff. Cons. Stress, psi		5.252	10.5	17.5	
Shear Strength, psi		11.55	19.14	16.51	
Strain at Failure, %		17	16.6	16.2	
Strain Rate, %/min		0.02	0.01	0.02	
B-Value		0.96	0.95	0.95	
Estimated Specific Gravity		2.65	2.65	2.65	
Liquid Limit		---	---	---	
Plastic Limit		---	---	---	

MACTEC

Project: Plant Scherer Ash Pond

Location: S-3

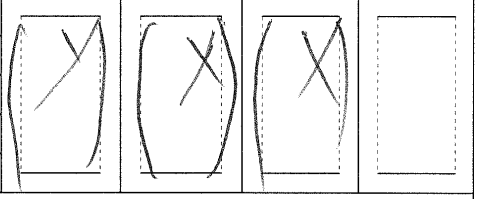
Project No.: 6154100200

Boring No.: S-3

Sample Type: Undisturbed

Description: Brown Sandy Silt

Remarks: ASTM D4767-04

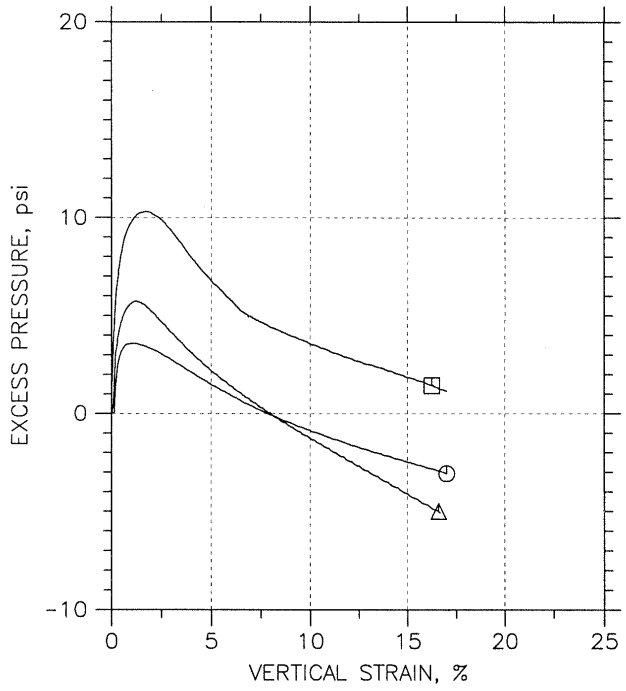


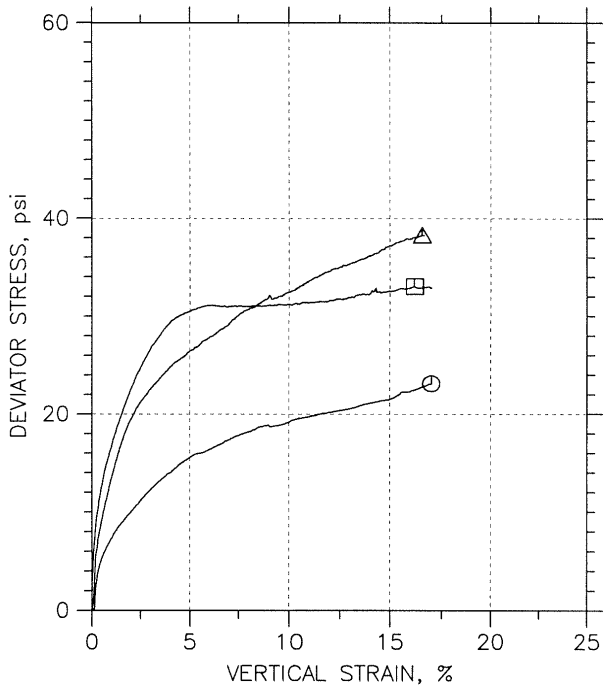
Phase calculations based on start and end of test.

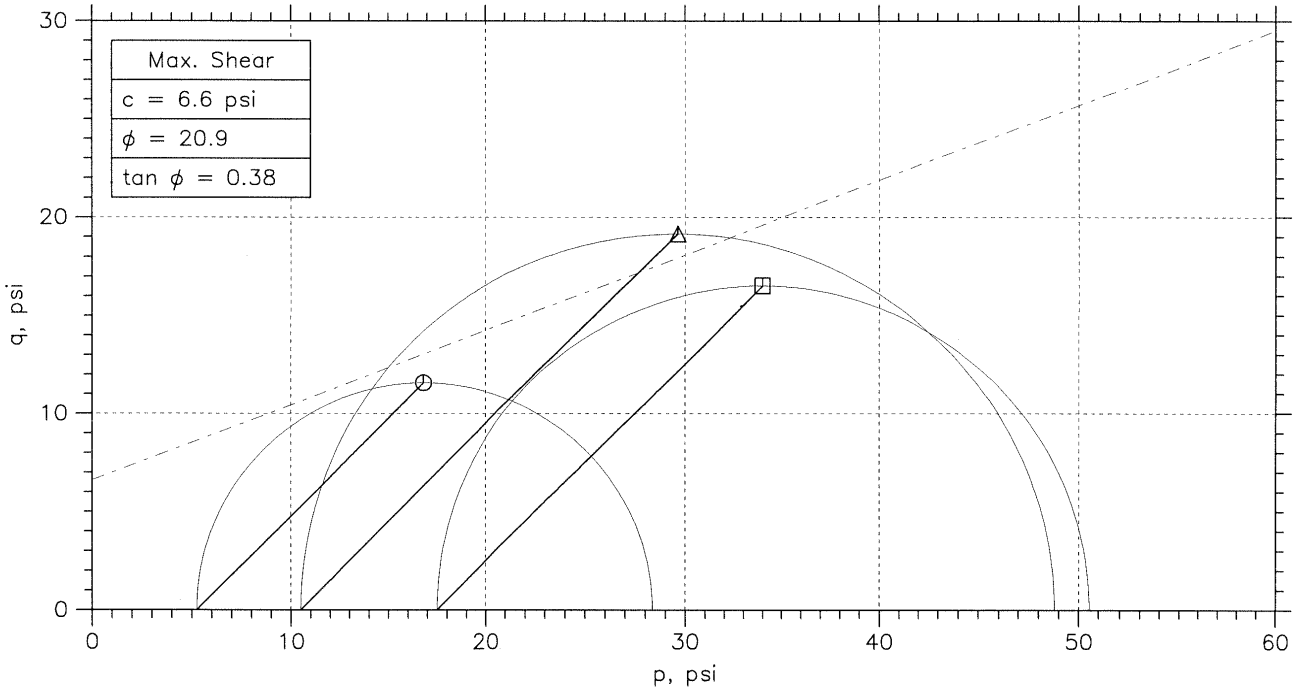
* Saturation is set to 100% for phase calculations.

Thu, 22-JUL-2010 11:10:53

CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767







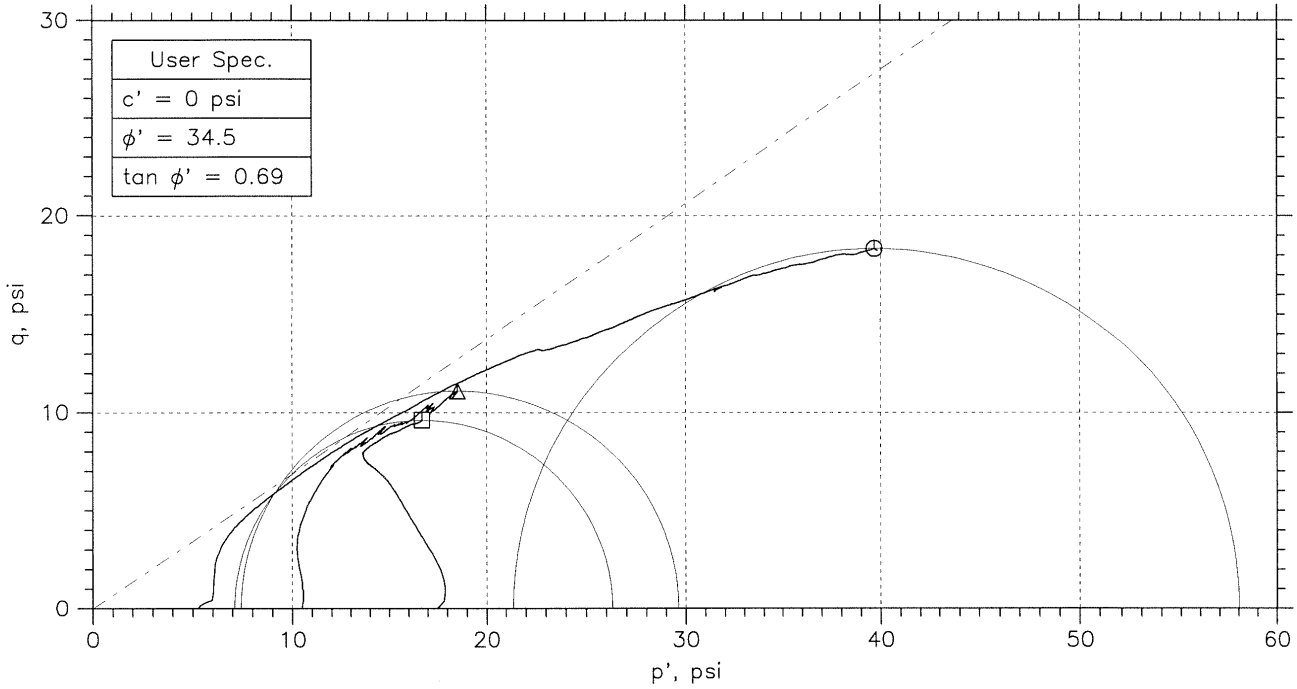
	Sample No.	Test No.	Depth	Tested By	Test Date	Checked By	Check Date	Test File
⊙	UD	10342.1	24.5-26.5	JW	7/13/10	JEJ	8/20/10	10342.1_2580.dat
△	UD	10342.2	24.5-26.5ft	JW	7/9/10	JEJ	8/20/10	10342.2a_2546.dat
⊡	UD	10336.3	26.5-28.5ft	JW	7/13/10	JEJ	8/20/10	10336.3_2546.dat

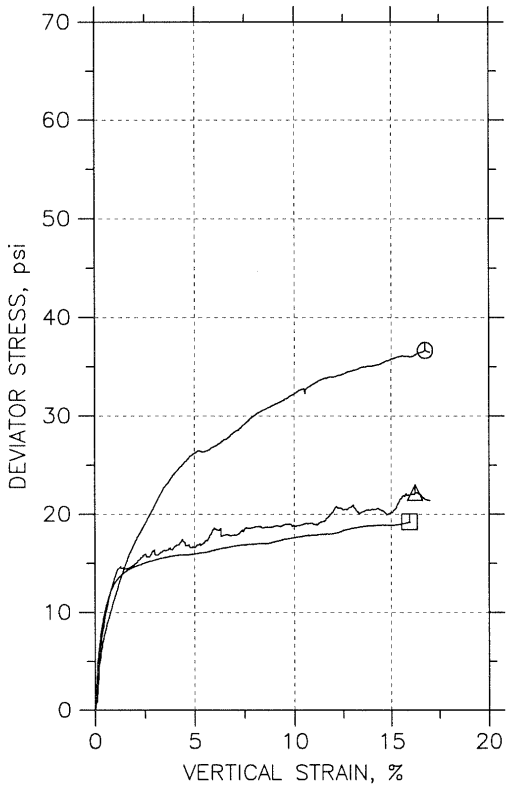
MACTEC

Project: Plant Scherer Ash Pond	Location: S-3	Project No.: 6154100200
Boring No.: S-3	Sample Type: Undisturbed	
Description: Brown Sandy Silt		
Remarks: ASTM D4767-04		

Thu, 22-JUL-2010 11:10:53

CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767





Symbol		⏲	△	⊡	
Sample No.		UD	UD	UD	
Test No.		10343.1	10343.2	10343.3	
Depth		21.5-23.5ft	21.5-23.5ft	21.5-23.5ft	
Initial	Diameter, in	2.876	2.884	2.88	
	Height, in	5.957	5.829	5.966	
	Water Content, %	28.8	33.3	37.9	
	Dry Density, pcf	91.27	82.98	78.91	
	Saturation, %	93.8	88.7	91.7	
	Void Ratio	0.813	0.994	1.1	
Before Shear	Water Content, %	30.0	36.4	38.8	
	Dry Density, pcf	92.17	84.26	81.59	
	Saturation*, %	100.0	100.0	100.0	
	Void Ratio	0.795	0.963	1.03	
	Back Press., psi	119.	100.	100.	
Ver. Eff. Cons. Stress, psi		5.246	10.5	17.5	
Shear Strength, psi		18.32	11.1	9.6	
Strain at Failure, %		16.8	16.2	15.9	
Strain Rate, %/min		0.01	0.01	0.01	
B-Value		0.85	0.92	0.96	
Estimated Specific Gravity		2.65	2.65	2.65	
Liquid Limit		---	---	---	
Plastic Limit		---	---	---	

MACTEC

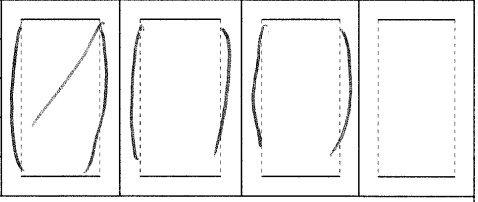
Project: Plant Sherer Ash Pond

Location: S-2

Project No.: 6154100200

Boring No.: S-2

Sample Type: Undisturbed



Description: Brown Sandy Silt

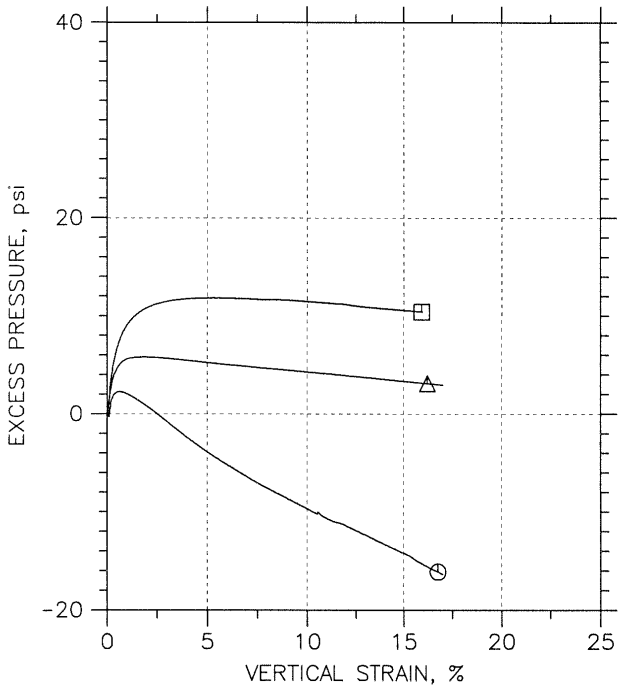
Remarks: ASTM D4767-04

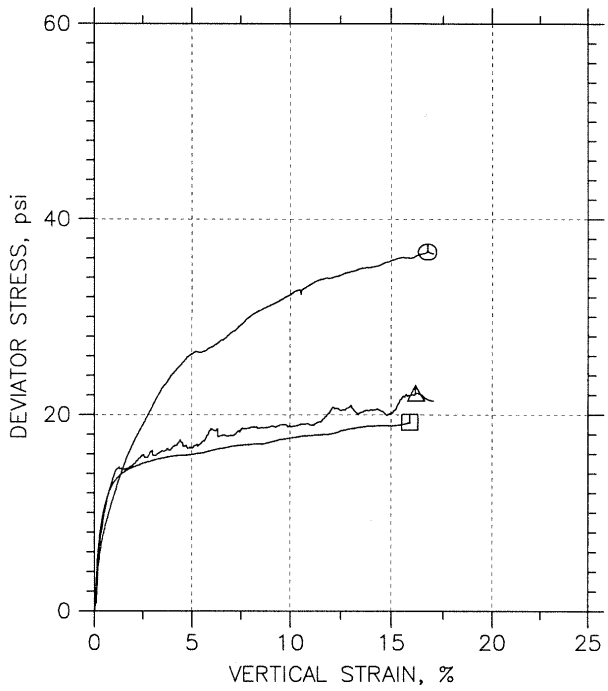
Phase calculations based on start and end of test.

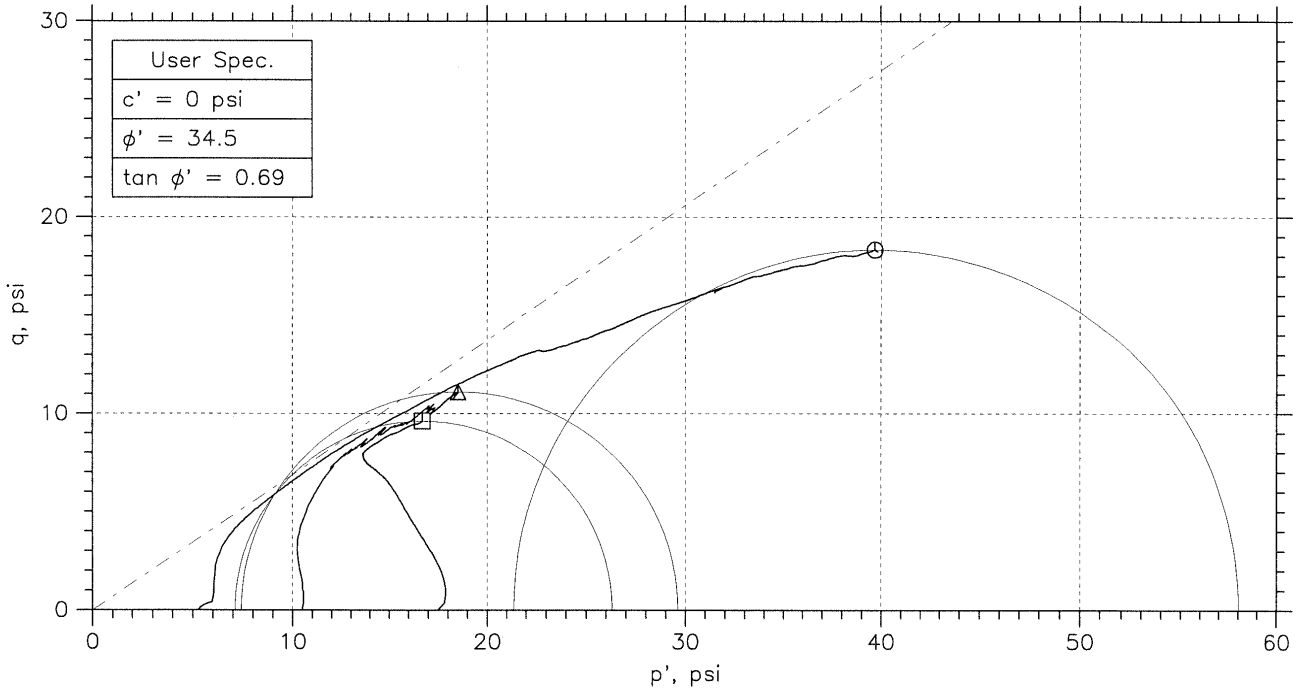
* Saturation is set to 100% for phase calculations.

Thu, 22-JUL-2010 13:22:41

CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767







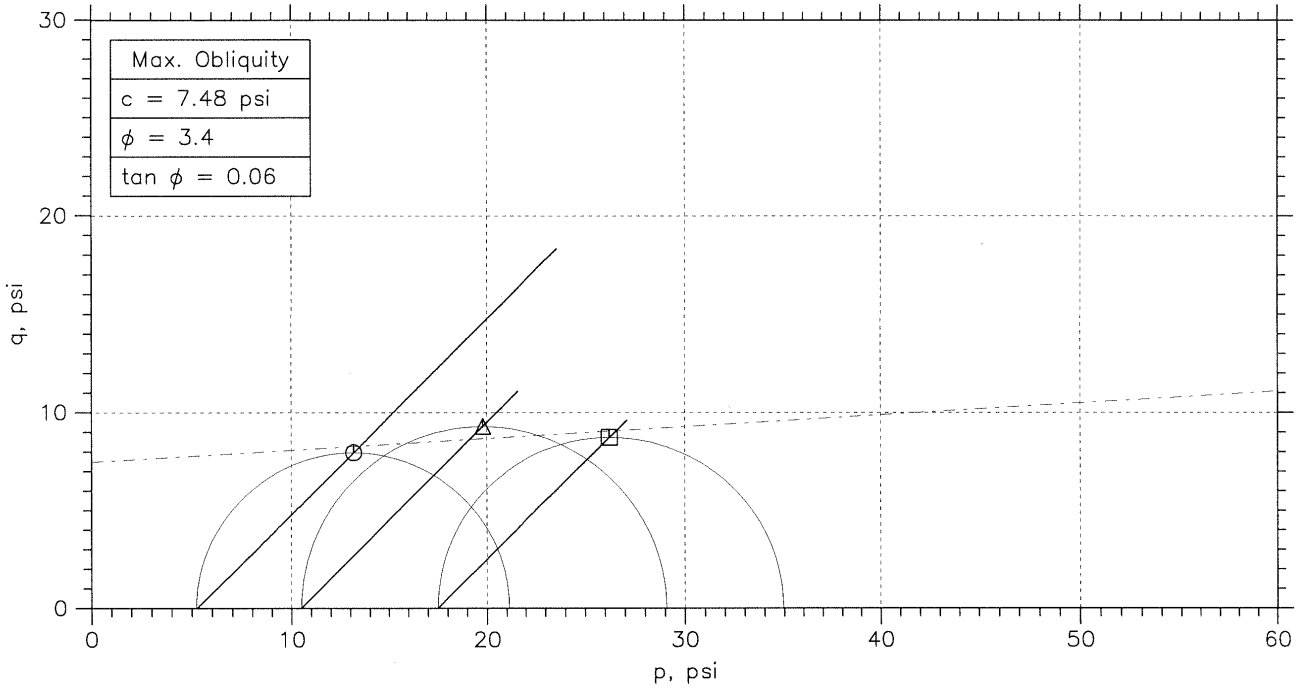
	Sample No.	Test No.	Depth	Tested By	Test Date	Checked By	Check Date	Test File
⊙	UD	10343.1	21.5-23.5ft	JW	7/2/10	DGJ	8/20/10	10343.1_2547.dat
△	UD	10343.2	21.5-23.5ft	JW	7/2/10	DGJ	8/20/10	10343.2_2546.dat
⊡	UD	10343.3	21.5-23.5ft	JW	7/4/10	DGJ	8/20/10	10343.3a_2583.dat

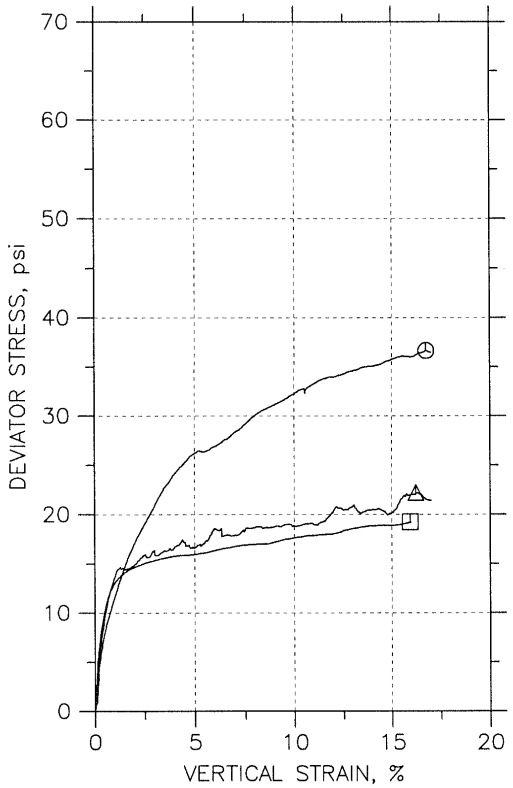
MACTEC

Project: Plant Sherer Ash Pond	Location: S-2	Project No.: 6154100200
Boring No.: S-2	Sample Type: Undisturbed	
Description: Brown Sandy Silt		
Remarks: ASTM D4767-04		

Thu, 22-JUL-2010 13:22:41

CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767





Symbol		⏲	△	⊡	
Sample No.		UD	UD	UD	
Test No.		10343.1	10343.2	10343.3	
Depth		21.5-23.5ft	21.5-23.5ft	21.5-23.5ft	
Initial	Diameter, in	2.876	2.884	2.88	
	Height, in	5.957	5.829	5.966	
	Water Content, %	28.8	33.3	37.9	
	Dry Density, pcf	91.27	82.98	78.91	
	Saturation, %	93.8	88.7	91.7	
	Void Ratio	0.813	0.994	1.1	
Before Shear	Water Content, %	30.0	36.4	38.8	
	Dry Density, pcf	92.17	84.26	81.59	
	Saturation*, %	100.0	100.0	100.0	
	Void Ratio	0.795	0.963	1.03	
	Back Press., psi	119.	100.	100.	
Ver. Eff. Cons. Stress, psi		5.246	10.5	17.5	
Shear Strength, psi		18.32	11.1	9.6	
Strain at Failure, %		16.8	16.2	15.9	
Strain Rate, %/min		0.01	0.01	0.01	
B-Value		0.85	0.92	0.96	
Estimated Specific Gravity		2.65	2.65	2.65	
Liquid Limit		---	---	---	
Plastic Limit		---	---	---	

MACTEC

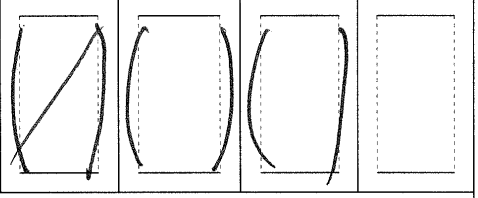
Project: Plant Sherer Ash Pond

Location: S-2

Project No.: 6154100200

Boring No.: S-2

Sample Type: Undisturbed



Description: Brown Sandy Silt

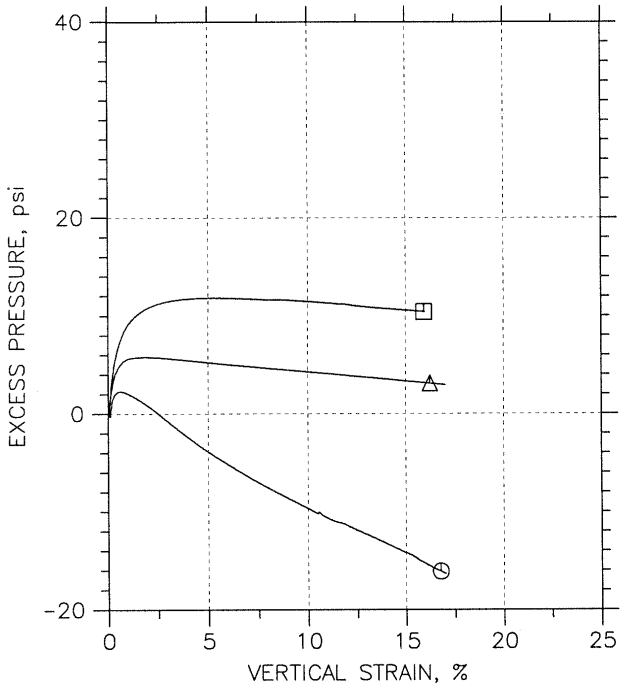
Remarks: ASTM D4767-04

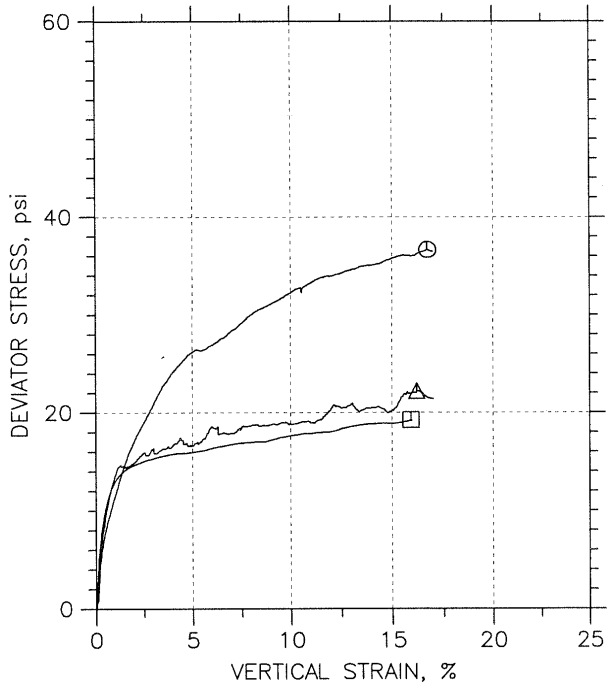
Phase calculations based on start and end of test.

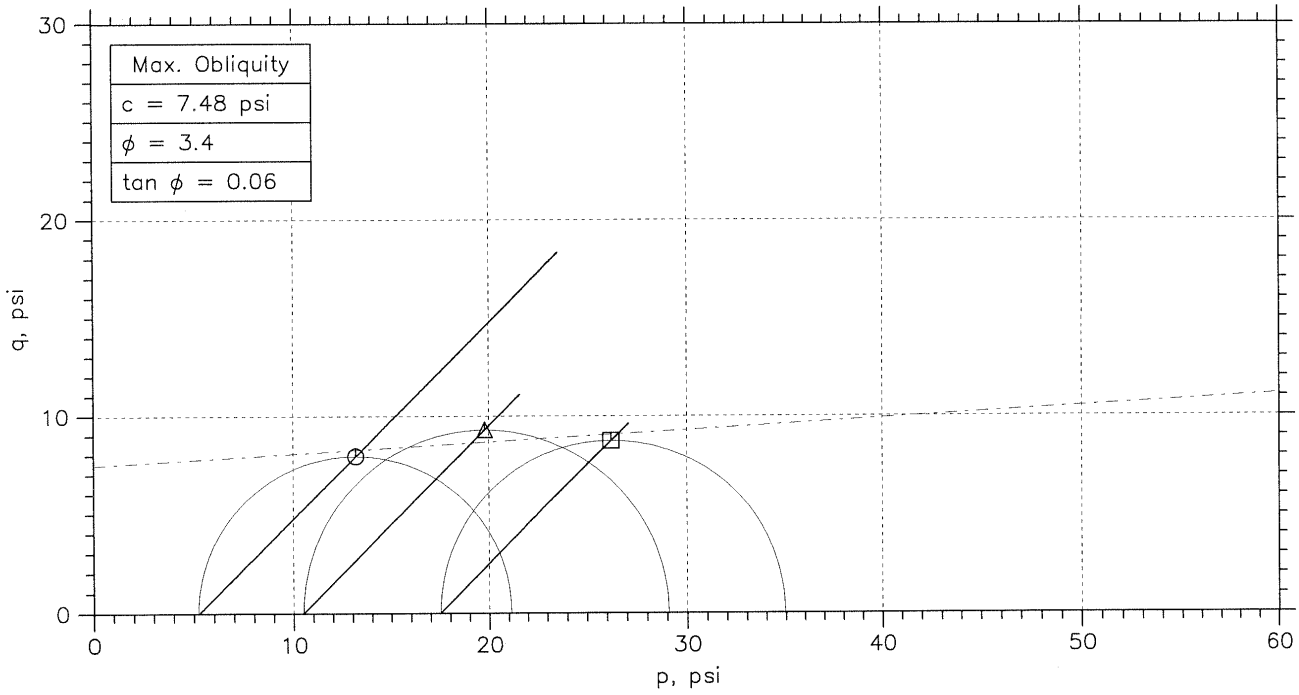
* Saturation is set to 100% for phase calculations.

Thu, 29-JUL-2010 15:02:43

CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767







	Sample No.	Test No.	Depth	Tested By	Test Date	Checked By	Check Date	Test File
⊙	UD	10343.1	21.5-23.5ft	JW	7/2/10	JGF	8/20/10	10343.1_2547.dat
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⊡	UD	10343.3	21.5-23.5ft	JW	7/4/10	JGF	8/20/10	10343.3a_2583.dat

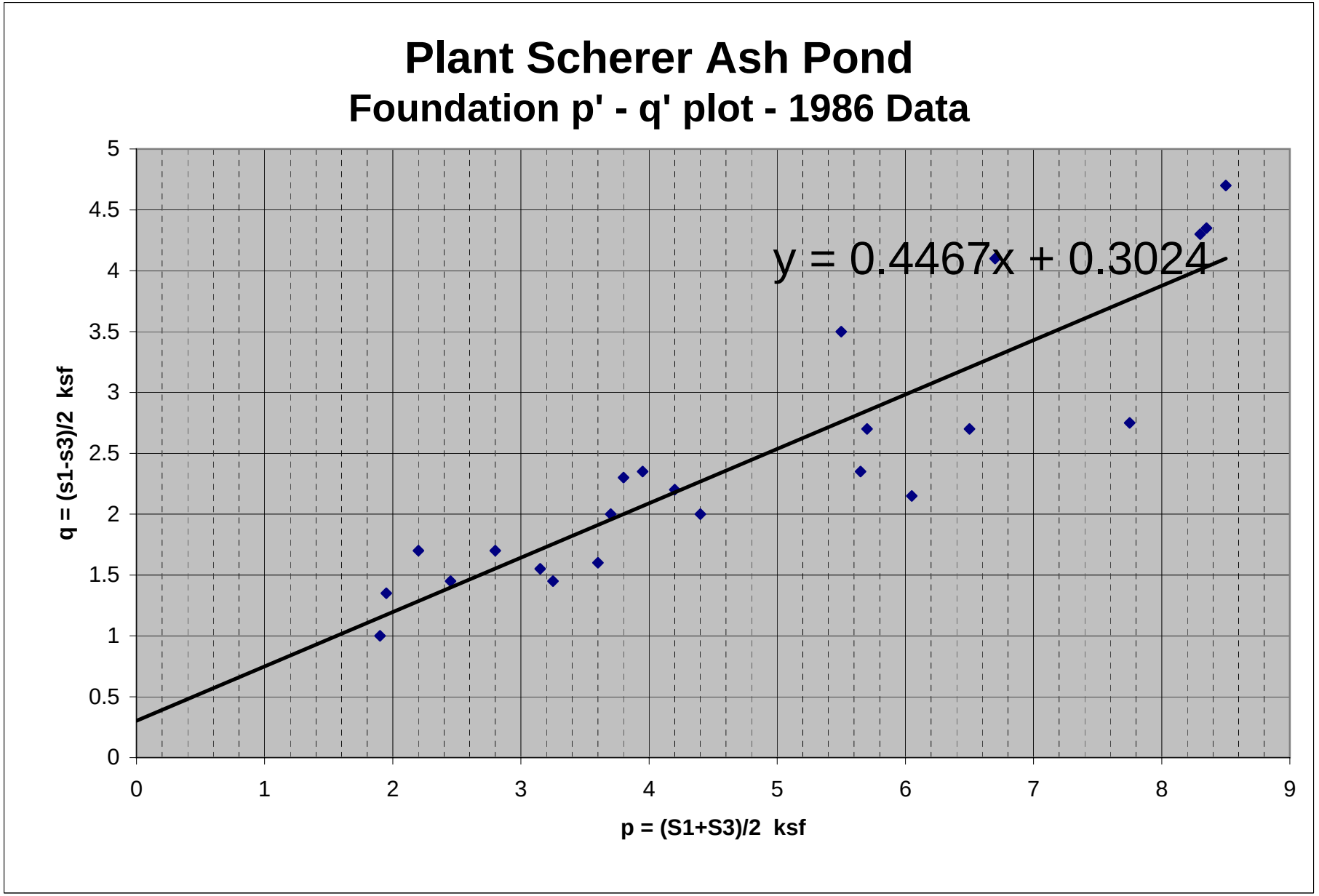
MACTEC

Project: Plant Sherer Ash Pond	Location: S-2	Project No.: 6154100200
Boring No.: S-2	Sample Type: Undisturbed	
Description: Brown Sandy Silt		
Remarks: ASTM D4767-04		

Thu, 29-JUL-2010 15:02:43

Attachment D

Foundation soil p' – q' Plot
1976 Historic Data with Linear Regression



CALCULATION COVER SHEET

Calc. No. 7

SDS No.

PROJECT Plant Scherer DISCIPLINE Hydro No. of Sheets 2

SUBJECT

Strength Properties of Fdn. ϕ'_{qc}

TITLE

Strength of Fdn ϕ'_{qc}

STATEMENT OF PROBLEM

Calculate ϕ'_{qc} for Ash Pond Foundation using P-Q curve.

INDEX

Calculations have been prepared in accordance with Engineering Procedure Manual Procedure 4-4

Prepared by CC Date 11-2-76

Reviewed by Robert Ragan Date 11-2-76

REV. NO.	DESCRIPTION	BY / DATE	REVIEWED / DATE
A	FOR APPROVAL	CC 11-2-76	RDR 11-2-76

SCH-API 025

CONFIDENTIAL BUSINESS INFORMATION

SSI24-46-2

Southern Services, Inc.

JOB PLANT SCHERER DESIGNED BJB DATE 11-2-76

CHECKED CC DATE 11-2-76

SUBJECT CALCULATE P & Q FOR CUPP RESULT OF ASH POND FOUNDATION SHEET ____ OF ____

Boring #	σ_1'	σ_3'	$\frac{\sigma_1' + \sigma_3'}{2}$	$\frac{\sigma_1' - \sigma_3'}{2}$					
C-167	6.3	1.6	3.95	2.35					
▲	10.8	2.6	6.7	4.1					
	13.2	3.8	8.5	4.7					
C-171	3.9	1.0	2.45	1.45					
●	6.4	2.0	4.2	2.2					
	12.7	4.0	8.35	4.35					
C-172	6.1	1.5	3.8	2.3					
■	9.0	2.0	5.5	3.5					
	12.6	4.0	8.3	4.3					
C-174	2.9	.9	1.9	1.0					
	5.2	2.0	3.6	1.6					
	9.2	3.8	6.5	2.7					
C-166	4.7	1.6	3.15	1.55					
▼	6.4	2.4	4.4	2.					
	10.5	5.0	7.75	2.75					
C-106	2.5	1.5	2.0	.05					
EL 22'-24'	4.7	1.8	3.25	1.45					
◆	8.0	3.3	5.65	2.35					
C-106	3.9	.5	2.2	1.7					
EL 17'-19'	5.7	1.7	3.7	2.0					
○	8.4	3.0	5.7	2.7					
C-103	3.3	.6	1.95	1.35					
□	4.5	1.1	2.8	1.7					
	8.2	3.9	6.05	2.15					

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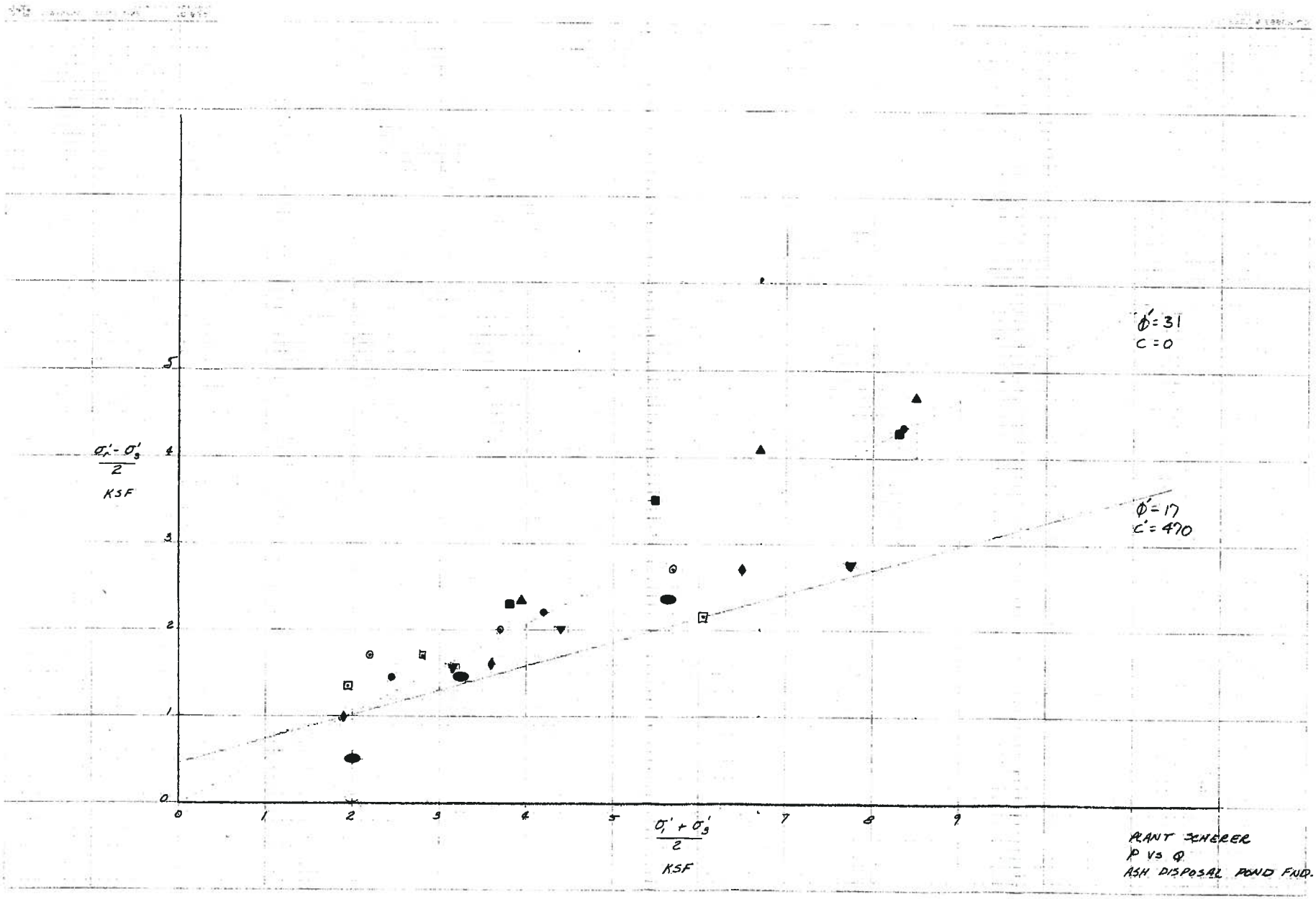
SS 124-10-1



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