

U.S. ARMY CORPS OF ENGINEERS

DEPTH, FEET		SAMPLE NO.	PEN./TORVANE	SPT.-BLOW COUNT	BORING NO. <u>97-24</u> DATE: BEGIN <u>6-27-99</u> PAGE <u>1/1/1</u> JOB NO. <u>1140086134</u> COMPLETE <u>6-27-99</u> Thin Walled Tube PROJECT <u>Upper Basin Detention Area C</u> ☒ 3" ☐ 6" LOCATION <u>along Brays Bayou</u> ELEVATION OF HOLE _____ MANUFACTURER'S DESIGNATION OF DRILL RIG <u>Marsh Buggy K4x4, F-36</u> GROUNDWATER: DEPTH <u>0</u> ft., ELEV. _____ ft., at end of Drilling WEATHER <u>PARTLY CLOUDY SUNNY + HOT</u> DRILLER <u>Dempsey Gorman</u> LOGGER <u>John Gentry</u>				
		COLOR	MATERIAL TYPE	CONSISTENCY	SECONDARY CONSTITUENTS	STRUCTURAL FEATURES AND COMMENTS			
0		1	1.0	GRAY	CLAY	STIFF		-w/ROOTS 0'-2'	
		2	1.25	GRAY	CLAY	STIFF		-w/505M(S) @ 3'	
5		3	2.5	GRAY	CLAY	VERY STIFF			
		4	3.5	LT GRAY	CLAY	VERY STIFF	SANDY	-yell. w/ Fe Nods 6'-12'	
		5	3.75	LT GRAY	CLAY	VERY STIFF	SANDY		
10		6	3.25	LT GRAY	CLAY	VERY STIFF	SANDY		
		X 7	7.94	GRAY	SAND	MEDIUM DENSE	SILTY		
15									
		X 8	5.412	GRAY	SAND	MEDIUM DENSE	SILTY		
20									
		X 9	4.59	GRAY	CLAY	STIFF		-BROWN 22'-35'	
25		10	2.5	GRAY	CLAY	VERY STIFF	S	-w/SAND SEAMS 22'-22.1"	
		11	1.5	GRAY	CLAY	STIFF	SANDY	-w/Ferrous Nodules 26'-35'	
		12	1.75	GRAY	CLAY	STIFF	SANDY		
30		13	2.5	GRAY	CLAY	VERY STIFF	SANDY		
		14	3.0	GRAY	CLAY	VERY STIFF	SANDY	-w/Calc Nods 32'-35'	
35		15	3-25	GRAY	CLAY	VERY STIFF	SANDY		

GEOTEST ENGINEERING, INC.

Project: Brays Bayou PDM

SUMMARY OF LABORATORY TEST RESULTS

Contract No. DACW64-95-D-0007 Delivery Order No. 0035

Boring No. 97-24

S #	Depth (ft)	P P (tsf)	SPT Blows per Foot	Visual Classification	U S C	M c (%)	Dry Unit Wt (pcf)	Wet Unit Wt (pcf)	L L (%)	P L (%)	Mechanical Analysis % Passing					Torvane Shear Strength (tsf)	q u (tsf)
											#4	#10	#40	#100	#200		
1	0 - 2	1.00		Clay,w/grass roots,Stiff,Gray	C H	23.3											
2	2 - 4	1.25		Clay,Stiff,Gray	C H	23.8											
3	4 - 6	1.25		Clay,w/sand seams,Stiff,Dark gray	C H	23.1	96.5	118.7	51.0	20.0	100.0	100.0	99.1	97.5	95.4		1.23
4	6 - 8	3.50		Sandy Clay,w/ferrous nodules,Very stiff, Yellowish gray	C L	16.4											
5	8 - 10	3.75		Sandy Clay,w/ferrous nodules,Very stiff, Yellowish gray	C L	16.2											
6	10 - 12	3.25		Sandy Clay,w/ferrous nodules,Very stiff, Yellowish gray	C L	17.0	110.2	129.0	35.0	17.0							
7	12-13.5		13	Silty Sand,Medium dense,Gray	S M												
8	17-18.5		18	Silty Sand,Medium dense,Gray	SP-SM						100.0	100.0	100.0	50.2	10.2		
9	22-23.5		14	Clay,w/sand seams,Stiff,Gray	C H	24.1											
10	24-26	2.50		Sandy Clay,w/sand seams,Very stiff,Gray	C L	23.0											
11	26-28	1.50		Sandy Clay,w/ferrous nodules & sand seams, Stiff,Gray	C L	20.4											
12	28-30	1.75		Sandy Clay,w/ferrous nodules & sand seams, Stiff,Gray	C L	15.7											
13	30-32	2.50		Sandy Clay,w/ferrous nodules & sand seams, Very stiff,Gray	C L	15.7											
14	32-34	3.00		Sandy Clay,w/calc & fer nod & sand seams, Very stiff,Gray	C L	15.8	111.8	129.5	35.0	17.0	100.0	99.9	99.1	95.8	77.9		2.26
15	34-35	3.25		Sandy Clay,w/calc & fer nod & sand seams, Very stiff,Gray	C L	15.6											

S # : Sample Number, P P : Pocket Penetrometer Reading, U S C : Unified Soil Classification, M c : Moisture Content

q u : Uncogined Compressive Strength, W O H : Weight of hammer, W O P : Weight of Pipe

JOB NO. 114008613

DATE 7/7/97

PROJECT Brays Bayou PDM

AREA Houston, Texas

BORING NO. 97-24

SAMPLE NO. 3

DEPTH 4-6 ft

SPECIMEN NO. 1

CLASSIFICATION

Clay, w/sand seams, Stiff, Dark gray

Tare No.	IB-11	Height	5.595 in.
Tare plus Wet Specimen	581.95 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	480.98 gm	Initial Area	6.290 sq in.
Water Weight	100.97 gm	Volume	35.194 cu in.
Tare Weight	42.98 gm	Volume of Solids	cu in.
Wet Specimen	1097.10 gm	Void Ratio	
Dry Specimen	891.57 gm	Saturation	%
Water Content	23.05 %	Dry Density	96.5 lb/cu ft
Specific Gravity of Solids			
LL = 51	PL = 20	PI = 31	

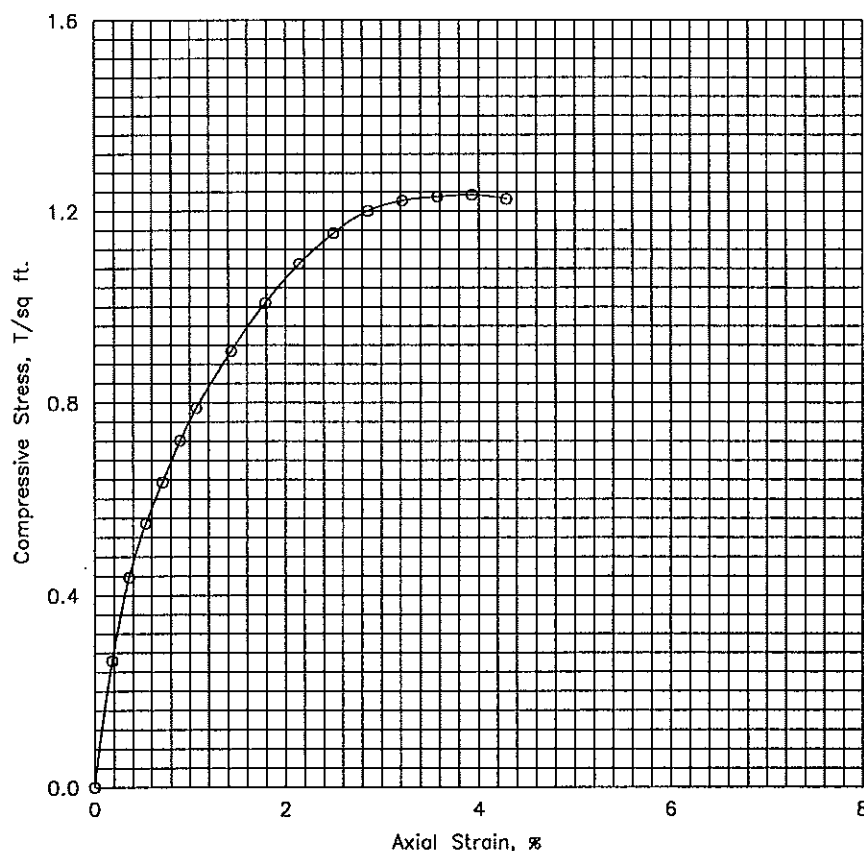
Proving Ring No. 10170

Proving Ring Constant, K = .766 lbs/div.

Elapsed Time min.	Dial Reading 0.001"	Cumulative Change in.	Proving Ring Dial Reading	Axial Load lb	Axial Strain	Area Corr. sq in.	Compr. Stress tsf
.0	0.	.000	.0	.0	.000	6.29	.000
.2	10.	.010	30.0	23.0	.002	6.30	.263
.4	20.	.020	50.0	38.3	.004	6.31	.437
.6	30.	.030	63.0	48.3	.005	6.32	.549
.8	40.	.040	73.0	55.9	.007	6.34	.635
.9	50.	.050	83.0	63.6	.009	6.35	.721
1.1	60.	.060	91.0	69.7	.011	6.36	.789
1.4	80.	.080	105.0	80.4	.014	6.38	.907
1.8	100.	.100	117.0	89.6	.018	6.40	1.008
2.0	120.	.120	127.0	97.3	.021	6.43	1.090
2.4	140.	.140	135.0	103.4	.025	6.45	1.154
2.7	160.	.160	141.0	108.0	.029	6.48	1.201
3.0	180.	.180	144.0	110.3	.032	6.50	1.222
3.3	200.	.200	145.5	111.5	.036	6.52	1.230
3.7	220.	.220	146.5	112.2	.039	6.55	1.234
4.0	240.	.240	146.0	111.8	.043	6.57	1.225

Job No. 114008613

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.		1			
Type of Specimen		Undisturbed			
Initial	Water content	w_0	23.1 %	%	%
	Void ratio	e_0			
	Saturation	S_0	%	%	%
	Dry density, lb/cu ft	γ_d	96.5		
Time to failure, min		t_f	3.68		
Unconfined compressive strength, T/sq ft		q_u	1.23		
Undrained shear strength, T/sq ft		S_u	.62		
Sensitivity ratio		S_t			
Initial specimen diameter, in.		D_0	2.830		
Initial specimen height, in.		H_0	5.595		
Classification Clay, w/sand seams, Stiff, Dark gray					
LL	51	PL	20	PI	31
Remarks		Project Brays Bayou PDM			
		Area Houston, Texas			
		Boring No. 97-24		Sample No. 3	
		Depth 4-6 ft		Date 7/7/97	
		UNCONFINED COMPRESSION TEST REPORT			

JOB NO. 114008613

DATE 7/7/97

PROJECT Brays Bayou PDM

AREA Houston, Texas

BORING NO. 97-24

SAMPLE NO. 14

DEPTH 32-34 ft

SPECIMEN NO. 1

CLASSIFICATION

Silty Clay,w/calc & fer nod & sand seams,Very stiff,Gray

Tare No.	SK21	Height	5.595 in.
Tare plus Wet Specimen	618.75 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	540.08 gm	Initial Area	6.290 sq in.
Water Weight	78.67 gm	Volume	35.194 cu in.
Tare Weight	43.85 gm	Volume of Solids	cu in.
Wet Specimen	1196.28 gm	Void Ratio	
Dry Specimen	1032.58 gm	Saturation	%
Water Content	15.85 %	Dry Density	111.8 lb/cu ft
Specific Gravity of Solids			
LL = 35	PL = 17	PI = 18	

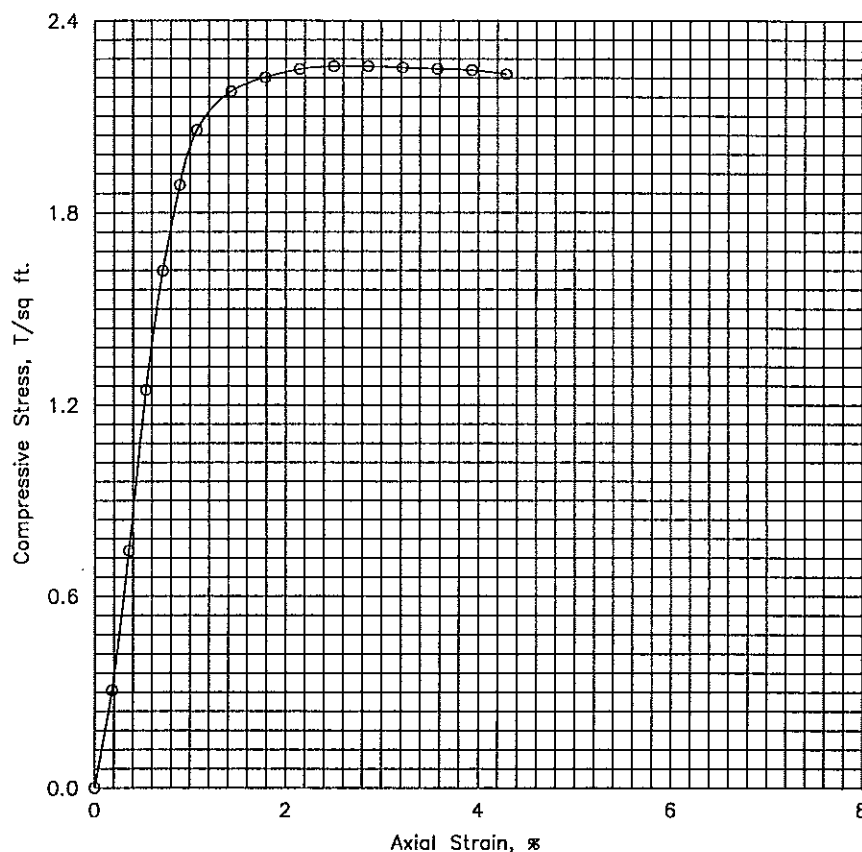
Proving Ring No. 10170

Proving Ring Constant, K = .766 lbs/div.

Elapsed Time min.	Dial Reading 0.001"	Cumulative Change in.	Proving Ring Dial Reading	Axial Load lb	Axial Strain	Area Corr. sq in.	Compr. Stress tsf
.0	0.	.000	.0	.0	.000	6.29	.000
.2	10.	.010	35.0	26.8	.002	6.30	.306
.4	20.	.020	85.0	65.1	.004	6.31	.743
.6	30.	.030	143.0	109.5	.005	6.32	1.247
.8	40.	.040	186.0	142.5	.007	6.34	1.619
.9	50.	.050	217.0	166.2	.009	6.35	1.886
1.1	60.	.060	237.0	181.5	.011	6.36	2.056
1.4	80.	.080	252.0	193.0	.014	6.38	2.178
1.7	100.	.100	258.0	197.6	.018	6.40	2.222
2.0	120.	.120	262.0	200.7	.021	6.43	2.248
2.3	140.	.140	264.0	202.2	.025	6.45	2.257
2.7	160.	.160	265.0	203.0	.029	6.48	2.257
3.0	180.	.180	265.5	203.4	.032	6.50	2.253
3.3	200.	.200	266.0	203.8	.036	6.52	2.249
3.7	220.	.220	266.5	204.1	.039	6.55	2.245
4.0	240.	.240	266.0	203.8	.043	6.57	2.232

Job No. 114008613

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.		1	
Type of Specimen		Undisturbed	
Initial	Water content	w_0	15.9 %
	Void ratio	e_0	
	Saturation	S_0	%
	Dry density, lb/cu ft	γ_d	111.8
Time to failure, min		t_f	2.67
Unconfined compressive strength, T/sq ft		q_u	2.26
Undrained shear strength, T/sq ft		S_u	1.13
Sensitivity ratio		S_t	
Initial specimen diameter, in.		D_0	2.830
Initial specimen height, in.		H_0	5.595
Classification Silty Clay, w/calc & fer nod & sand seams, Very stiff, Gray			
LL	35	PL	17
		PI	18
Remarks		G_s	
		Project Brays Bayou PDM	
		Area Houston, Texas	
		Boring No. 97-24	Sample No. 14
		Depth 32-34 ft	Date 7/7/97
		UNCONFINED COMPRESSION TEST REPORT	