U.S. ARMY CORPS OF ENGINEERS

BORING NO. 98-76 DATE: BEGIN 7-15-98 PAGE 1 / 1
JOB NO. 1140086157 COMPLETE 7-15-98 Thin Walled Tube
PROJECT Greens Bayou ■ 3" □ 6"
LOCATION along Greens Bayou
ELEVATION OF HOLE
MANUFACTURER'S DESIGNATION OF DRILL RIG MAYHEW 200
GROUNDWATER: DEPTH Dry ft., ELEV. ____ ft., at end of Drilling
WEATHER PARTLY CLOUDY SUNNY +HOT
DRILLER PEMPSEY GERREN LOGGER JOHN A. GENTRY

DEPTH, FEET	SAMPLE	SAMPLE NO.	PEN./TORVANE SPT.-BLOW COUNT	COLOR	MATERIAL TYPE	CONSISTENCY	SECONDARY CONSTITUENTS	STRUCTURAL FEATURES AND COMMENTS
0	J	1	4.25	GRAY	CLAY	HARD		-w/ ROOTS 0-2'
		2	2.0	GRAY	CLAY	VERY STIFF		-w/ Calcareous Nodules 2-4
5		3	2.5	GRAY + YELLOW	CLAY	VERY STIFF		-w/ FERROUS NODULES 4-10
		4	1.75	GRAY + YELLOW	CLAY	STIFF		
		5	2.5	GRAY + YELLOW	CLAY	VERY STIFF		
10		6	4.25	YELLOW + GRAY	CLAY	HARD		-w/ CRAWFISH HOLE 10-12 -w/ SAND SEAMS 10-20 -w/ SILT SEAMS 10-20
		7	4.5	RED + GRAY	CLAY	HARD		-w/ Ferrous Nodules 12-20
15		8	4.5	RED + GRAY	CLAY	HARD		
		9	4.5+	RED + GRAY	CLAY	HARD		
		10	4.5+	RED + GRAY	CLAY	HARD		-w/ Ferrous Nodules 18-20
20								
25								
30								* J = JAR SAMPLE
35								

GEOTEST ENGINEERING, INC.

Project: Greens Bayou

SUMMARY OF LABORATORY TEST RESULTS

Contract No. DACW64-95-D-0007 Delivery Order No. 0047

Boring No. 97-76

S #	Depth (ft)	P P (tsf)	SPT Blows per Foot	Visual Classification	U S C	Mc (%)	Dry Unit Wt (pcf)	Wet Unit Wt (pcf)	L L (%)	PL (%)	Mechanical Analysis % Passing #4	#10	#40	#100	#200	Torvane Shear Strength (tsf)	q u (tsf)	
1	0 - 2	1.25		Sandy Clay,w/roots,Stiff,Gray	C L	18.9												
2	2 - 4	1.00		Sandy Clay,w/calc & fer nod,Stiff,Gray	C L	19.7												
3	4 - 6	2.25		Sandy Clay,w/calc & fer nod,Very stiff, Yellowish gray	C L	19.1	108.8	129.6	36.0	17.0	99.8	96.0	92.7	81.3	61.4		2.07	16
4	6 - 8	3.75		Sandy Clay,w/calc & fer nod,Very stiff, Yellowish gray	C L	16.1												
5	8 - 10	3.75		Clay,w/sand seams,slks,Very stiff,Yellowish Gray	C H	20.5												
6	10 - 12	4.25		Clay,w/sand seams,slks,Hard,Yellowish Gray	C H	21.3												
7	12 - 14	3.50		Clay,w/sand seams & fer stains,slks,Very stiff,Gray & Brown	C H	24.0												
8	14 - 16	4.5+		Clay,w/calc nod,slks,Hard,Red & Gray	C H	25.0	94.4	118.0	55.0	22.0								
9	16 - 18	4.5+		Clay,w/fer stains,slks,Hard,Red & Gray	C H	28.2												
10	18 - 20	4.5+		Clay,w/fer stains,slks,Hard,Red & Gray	C H	22.6												
11	20 - 22	4.5+		Clay,w/fer stains,slks,Hard,Red & Gray	C H	24.2												
12	22 - 24	4.5+		Clay,w/fer stains,slks,Hard,Red & Gray	C H	23.6												
13	24 - 26	4.5+		Clay,w/fer stains,slks,Hard,Red & Gray	C H	20.6	102.4	123.4	62.0	26.0	99.8	99.7	99.6	98.8	98.2		4.02	17
14	26 - 28	4.5+		Clay,w/fer stains,slks,Hard,Red & Gray	C H	25.0												
15	28 - 30	4.5+		Clay,w/fer stains,slks,Hard,Red & Gray	C H	26.1												

S # : Sample Number, P P : Pocket Penetrometer Reading, U S C : Unified Soil Classifcation, M c : Moisture Content
q u : Uncogined Compressive Strength, W O H : Weight of hammer, W O P : Weight of Pipe

JOB NO. 114008614 DATE 3/1/98

PROJECT Greens Bayou

EA Houston, Texas

BORING NO. 97-76 SAMPLE NO. 3 DEPTH 4-6 ft

SPECIMEN NO. 1

CLASSIFICATION
Sandy Clay,w/calc & fer nod,Very stiff,Yellowish Gray

Tare No.	HP24	Height	5.595 in.
Tare plus Wet Specimen	486.43 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	386.28 gm	Initial Area	6.290 sq in.
Water Weight	100.15 gm	Volume	35.194 cu in.
Tare Weight	43.28 gm	Volume of Solids	cu in.
Wet Specimen	1197.50 gm	Void Ratio	
Dry Specimen	926.87 gm	Saturation	%
Water Content	29.20 %	Dry Density	100.3 lb/cu ft
Specific Gravity of Solids			

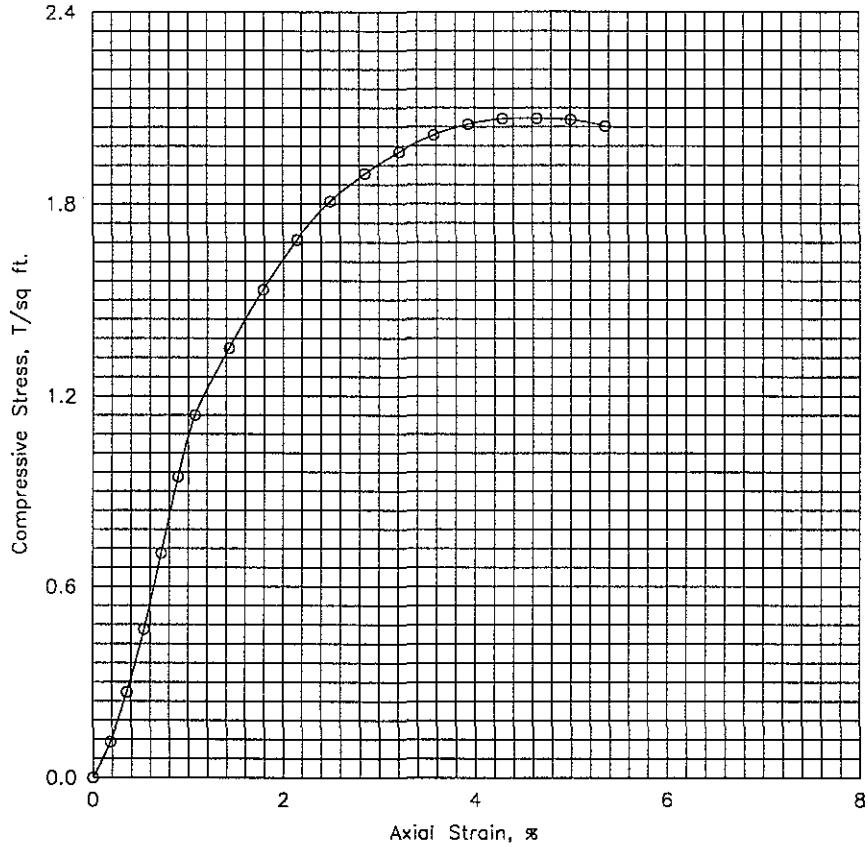
LL = 36 PL = 17 PI = 19

Proving Ring No. 10170
Proving Ring Constant, K = .757 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	13.0	9.8	.002	6.30	.112
.3	20.	.020	31.0	23.5	.004	6.31	.268
.5	30.	.030	54.0	40.9	.005	6.32	.465
.7	40.	.040	82.0	62.1	.007	6.34	.705
.9	50.	.050	110.0	83.3	.009	6.35	.945
1.0	60.	.060	133.0	100.7	.011	6.36	1.140
1.4	80.	.080	158.0	119.6	.014	6.38	1.349
1.7	100.	.100	180.0	136.3	.018	6.40	1.532
2.0	120.	.120	199.0	150.6	.021	6.43	1.687
2.3	140.	.140	214.0	162.0	.025	6.45	1.808
2.6	160.	.160	225.0	170.3	.029	6.48	1.894
4.0	180.	.180	234.0	177.1	.032	6.50	1.962
3.3	200.	.200	241.0	182.4	.036	6.52	2.014
3.6	220.	.220	246.0	186.2	.039	6.55	2.048
4.0	240.	.240	249.0	188.5	.043	6.57	2.065
4.3	260.	.260	250.0	189.3	.046	6.60	2.066
4.6	280.	.280	250.5	189.6	.050	6.62	2.062
4.9	300.	.300	249.0	188.5	.054	6.65	2.042

Job No. 114008614

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_0	29.2 %	%	%	%
	Void ratio	e_0				
	Saturation	S_0	%	%	%	%
	Dry density, lb/cu ft	γ_d	100.3			
Time to failure, min		t_f	4.27			
Unconfined compressive strength, T/sq ft		q_u	2.07			
Undrained shear strength, T/sq ft		S_u	1.03			
Sensitivity ratio		S_t				
Initial specimen diameter, in.		D_0	2.830			
Initial specimen height, in.		H_0	5.595			

Classification Sandy Clay,w/calc & fer nod,Very stiff,Yellowish Gray

LL	36	PL	17	PI	19	G_s	

Remarks

Project Greens Bayou

Area Houston, Texas

Boring No. 97-76 | Sample No. 3

Depth El 4-6 ft | Date 3/1/98

UNCONFINED COMPRESSION TEST REPORT

ENG FORM 1 JUN 65 3659

PLATE XI-2

JOB NO. 114008614 DATE 3/1/98

PROJECT Greens Bayou

AREA Houston, Texas

BORING NO. 97-76 SAMPLE NO. 13 DEPTH 24-26 ft

SPECIMEN NO. 1

CLASSIFICATION
Clay,w/fer stains,slks,Hard,Red & Gray

Tare No.	WB2	Height	5.595 in.
Tare plus Wet Specimen	464.72 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	392.88 gm	Initial Area	6.290 sq in.
Water Weight	71.84 gm	Volume	35.194 cu in.
Tare Weight	43.40 gm	Volume of Solids	cu in.
Wet Specimen	1140.11 gm	Void Ratio	
Dry Specimen	945.71 gm	Saturation	%
Water Content	20.56 %	Dry Density	102.4 lb/cu ft
Specific Gravity of Solids			

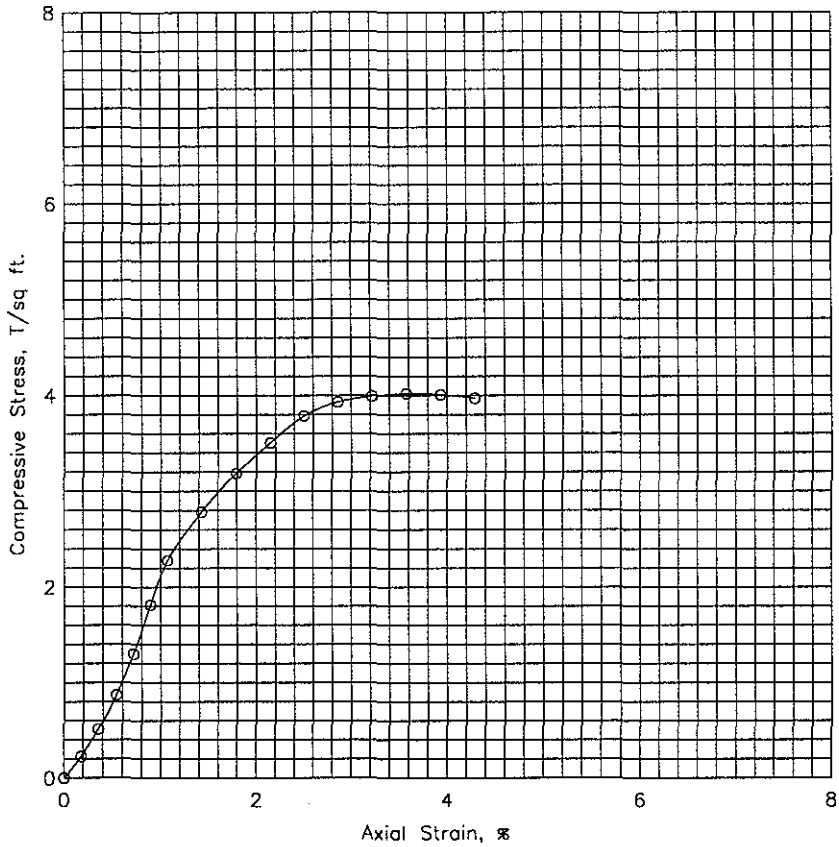
LL = 62 PL = 26 PI = 36

Proving Ring No. 10170
Proving Ring Constant, K = .757 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	26.0	19.7	.002	6.30	.225
.3	20.	.020	59.0	44.7	.004	6.31	.509
.5	30.	.030	101.0	76.5	.005	6.32	.870
.7	40.	.040	151.0	114.3	.007	6.34	1.299
.9	50.	.050	211.0	159.7	.009	6.35	1.812
1.0	60.	.060	266.0	201.4	.011	6.36	2.280
1.3	80.	.080	326.0	246.8	.014	6.38	2.784
1.6	100.	.100	374.0	283.1	.018	6.40	3.183
2.0	120.	.120	413.0	312.6	.021	6.43	3.502
2.3	140.	.140	448.0	339.1	.025	6.45	3.785
2.6	160.	.160	467.0	353.5	.029	6.48	3.931
4.0	180.	.180	476.0	360.3	.032	6.50	3.992
3.3	200.	.200	481.0	364.1	.036	6.52	4.019
3.6	220.	.220	481.5	364.5	.039	6.55	4.008
4.0	240.	.240	479.0	362.6	.043	6.57	3.972

Job No. 114008614

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_0	20.6 %	%	%	%
	Void ratio	e_0				
	Saturation	S_0	%	%	%	%
	Dry density, lb/cu ft	γ_d	102.4			
Time to failure, min		t_f	3.30			
Unconfined compressive strength, T/sq ft		q_u	4.02			
Undrained shear strength, T/sq ft		S_u	2.01			
Sensitivity ratio		S_t				
Initial specimen diameter, in.		D_0	2.830			
Initial specimen height, in.		H_0	5.595			

Classification Clay,w/fer stains,slks,Hard,Red & Gray

LL	62	PL	26	PI	36	G_s	

Remarks

Project Greens Bayou

Area Houston, Texas

Boring No. 97-76 | Sample No. 13

Depth El 24-26 ft | Date 3/1/98

UNCONFINED COMPRESSION TEST REPORT

ENG FORM 1 JUN 65 3659

PLATE XI-2

Geotest Engineering, Inc.

PLATE