U.S. ARMY CORPS OF ENGINEERS

BORING NO. 97-21 DATE: BEGIN 6-27-97 PAGE 1 / 1
JOB NO. 114008613A COMPLETE 6-27-97 Thin Walled Tube
PROJECT Upper Basin Detention Area B ■ 3" □ 6"
LOCATION along Brays Bayou
ELEVATION OF HOLE
MANUFACTURER'S DESIGNATION OF DRILL RIG Marsh Buggy K4X4, F-36
GROUNDWATER: DEPTH 0 ft., ELEV. ____ ft., at end of Drilling
WEATHER PARTLY CLOUDY SUNNY & HOT
DRILLER Dempsey Gearin LOGGER John Gentry

DEPTH, FEET	SAMPLE	SAMPLE NO.	PEN./TORVANE SPT.-BLOW COUNT	COLOR	MATERIAL TYPE	CONSISTENCY	SECONDARY CONSTITUENTS	STRUCTURAL FEATURES AND COMMENTS
0		1	0.75	GRAY	CLAY	MEDIUM STIFF		-w/ROOTS 0 ± 2' +BROWN 2 ± 10' -w/Calc Nods 2 ± 14' -w/Fe Nods 2 ± 12
		2	1.5	GRAY	CLAY	STIFF		
5		3	2.0	GRAY	CLAY	VERY STIFF		
		4	2.5	GRAY	CLAY	VERY STIFF		
		5	2.25	GRAY	CLAY	VERY STIFF		
10		6	2.25	REDDISH BROWN	CLAY	VERY STIFF		+GRAY 10 ± 18'
		7	2.75	REDDISH BROWN	CLAY	VERY STIFF		-w/SLICKENSIDED 12 ± 18' -w/FERROUS STAINS 12 ± 16'
15		8	3.5	REDDISH BROWN	CLAY	VERY STIFF		
		9	3.0	REDDISH BROWN	CLAY	VERY STIFF		-w/SILT SEAMS 17 ± 18'
		10	1.75	BROWN	CLAY	STIFF	SILTY	+GRAY 18 ± 20' -w/SAND SEAMS + CLAY SEAMS 18 ± 20'
20		11	2.5	REDDISH BROWN	CLAY	VERY STIFF		-w/SAND POCKETS 20 ±
		12	2.0	LT GRAY	CLAY	VERY STIFF	SANDY	
25		13	2.5	LT GRAY	CLAY	VERY STIFF	SANDY	+YELLOWISH BROWN 24' ± 26'
	J	14		LT GRAY	SAND	DENSE	SILTY	+YELLOWISH BROWN 26' ± 28'
JAR SAMPLE	X	15	10 30 22	LT GRAY	SAND	DENSE	SILTY	
30								
		16	2.0	LT GRAY +REDDISH BROWN	CLAY	VERY STIFF	SANDY	(YELLOW) -w/SAND 33' ± 33'1" (33'-35') -w/SAND SM(S) 33'1" ± 35'
35								

Project: Brays Bayou PDM

SUMMARY OF LABORATORY TEST RESULTS

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

Boring No. 97-21

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					Torvane Shear Strength (tsf)	q u (tsf)
											#4	#10	#40	#100	#200		
1	0 - 2	0.75		Clay,w/grass roots,Medium stiff,Gray	C H	26.3											
2	2 - 4	1.50		Clay,w/calcareous & ferrous nodules,Stiff, Gray	C H	22.8											
3	4 - 6	1.75		Clay,w/calcareous & ferrous nodules,Stiff, Gray	C H	20.9											
4	6 - 8	2.25		Clay,w/calcareous & ferrous nodules,Very stiff,Gray	C H	18.0	110.0	129.8	55.0	22.0							
5	8 - 10	2.25		Clay,w/calcareous & ferrous nodules,Very stiff,Gray	C H	20.7											
6	10 - 12	2.25		Clay,w/calcareous&ferrous nodules,slickensided, Very stiff,Reddish brown	C H	22.9											
7	12 - 14	2.75		Clay,w/calcareous&ferrous nodules,slickensided, Very stiff,Reddish brown	C H	27.8											
8	14 - 16	3.50		Clay,w/calcareous&ferrous nodules,slickensided, Very stiff,Reddish brown	C H	25.9											
9	16 - 18	3.00		Clay,w/calcareous&ferrous nodules,slickensided, Very stiff,Reddish brown	C H	28.6											
10	18 - 20	1.75		Silty Clay,w/sand seams,Stiff,Reddish brown	C L	22.3											
11	20 - 22	1.75		Sandy Clay,w/sand seams,Stiff,Reddish brown	C L	22.0											
12	22 - 24	1.75		Sandy Clay,w/sand seams,Stiff,Reddish brown	C L	17.8	107.5	126.6	31.0	16.0	100.0	100.0	100.0	96.3	73.3		1.20
13	24 - 26	2.25		Sandy Clay,Very stiff,Gray	C L	17.2											
14	26 - 28			Silty Sand,Dense,Gray	S M	19.9											
15	28-29.5		42	Silty Sand,Dense,Gray	S M						100.0	99.9	99.6	80.4	30.6		
16	33-35	2.00		Sandy Clay,w/sand seams,Very stiff,Reddish brown & yellowish gray	C L	17.4											

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. 114008613 DATE 7/2/97

PROJECT Brays Bayou PDM

AREA Houston, Texas

BORING NO. 97-21 SAMPLE NO. 12 DEPTH 22-24 ft

SPECIMEN NO. 1

CLASSIFICATION
Silty Clay,w/sand seams,Stiff,Reddish brown

Tare No.	P207	Height	5.595 in.
Tare plus Wet Specimen	532.68 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	458.81 gm	Initial Area	6.290 sq in.
Water Weight	73.87 gm	Volume	35.194 cu in.
Tare Weight	43.18 gm	Volume of Solids	cu in.
Wet Specimen	1169.56 gm	Void Ratio	
Dry Specimen	993.06 gm	Saturation	%
Water Content	17.77 %	Dry Density	107.5 lb/cu ft

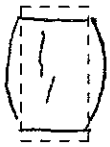
Specific Gravity of Solids
LL = 31 PL = 16 PI = 15

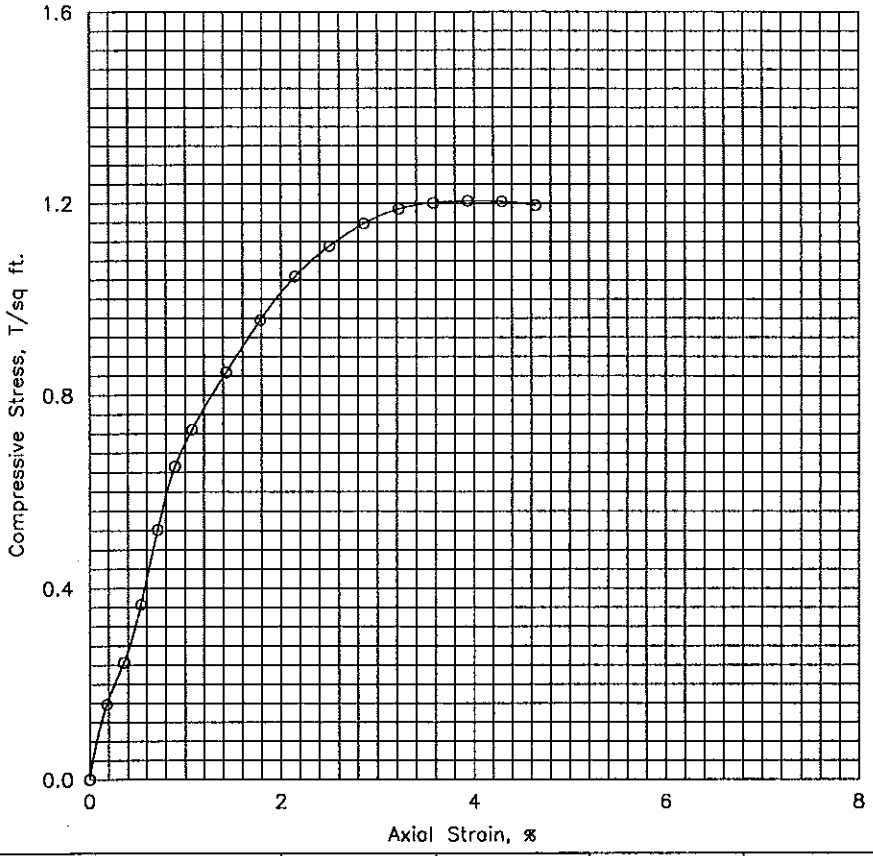
Proving Ring No. 10170
Proving Ring Constant, K = .766 lbs/div.

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	18.0	13.8	.002	6.30	.158
.4	20.	.020	28.0	21.4	.004	6.31	.245
.5	30.	.030	42.0	32.2	.005	6.32	.366
.7	40.	.040	60.0	46.0	.007	6.34	.522
.9	50.	.050	75.0	57.4	.009	6.35	.652
1.1	60.	.060	84.0	64.3	.011	6.36	.729
1.4	80.	.080	98.0	75.1	.014	6.38	.847
1.7	100.	.100	111.0	85.0	.018	6.40	.956
2.1	120.	.120	122.0	93.5	.021	6.43	1.047
2.4	140.	.140	130.0	99.6	.025	6.45	1.111
2.7	160.	.160	136.0	104.2	.029	6.48	1.158
3.0	180.	.180	140.0	107.2	.032	6.50	1.188
3.3	200.	.200	142.0	108.8	.036	6.52	1.201
3.7	220.	.220	143.0	109.5	.039	6.55	1.205
4.0	240.	.240	143.5	109.9	.043	6.57	1.204
4.3	260.	.260	143.0	109.5	.046	6.60	1.196

Job No. 114008613

Failure Sketches





☐ Controlled stress
☒ Controlled strain

Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_0	17.8 %	%	%	%
	Void ratio	e_0				
	Saturation	S_0	%	%	%	%
	Dry density, lb/cu ft	γ_d	107.5			
Time to failure, min		t_f	3.67			
Unconfined compressive strength, T/sq ft		q_u	1.20			
Undrained shear strength, T/sq ft		S_u	.60			
Sensitivity ratio		S_t				
Initial specimen diameter, in.		D_0	2.830			
Initial specimen height, in.		H_0	5.595			

Classification Silty Clay,w/sand seams,Stiff,Reddish brown

LL	31	PL	16	PI	15	G_s	

Remarks

Project Brays Bayou PDM

Area Houston, Texas

Boring No. 97-21 | Sample No. 12

Depth El 22-24 ft | Date 7/2/97

UNCONFINED COMPRESSION TEST REPORT

ENG FORM 3659
1 JUN 65

PLATE XI-2