U.S. ARMY CORPS OF ENGINEERS

BORING NO. 95-146 DATE: BEGIN 6-5-95 PAGE 1 / 1
JOB NO. 946799-15 COMPLETE 6-5-95 Thin Walled Tube
PROJECT Channel To Victoria ■ 3" □ 6"
LOCATION Proposed site of weir location
ELEVATION OF HOLE
MANUFACTURER'S DESIGNATION OF DRILL RIG Ardco K4X4, C-1000, Marsh Buggy
GROUNDWATER: DEPTH 1/2 ft., ELEV. ____ ft., at end of Drilling
WEATHER Sunny & Hot
DRILLER Scott Gregurek LOGGER Iraj Mostamand

DEPTH, FEET	SAMPLE	SAMPLE NO.	PEN./TORVANE SPT.-BLOW COUNT	COLOR	MATERIAL TYPE	CONSISTENCY	SECONDARY CONSTITUENTS	STRUCTURAL FEATURES AND COMMENTS
0		1	1.25	DK-gray	clay	stiff		-w/roots & calc nod
		2	1.50	DK. gray	clay	stiff		-w/calc nod
		3	2.75	Gray	clay	v.stiff		-w/calc nod
5		4	4.5+	Yellowish gray	clay	Hard		-w/calc nod
		5	4.5+	Yellowish gray	clay	Hard		-w/calc nod & Fest, slk
		6	4.5+	Yellowish gray	clay	Hard	silty	-w/calc nod & Fest
10		7	4.5+	Yellowish gray	clay	Hard	silty	
		8	4.5+	Yellowish gray	clay	Hard	silty	-w/silt sms & silt @ bottom of sample
15	X	9	12 16 21	Gray	silt	Dense	Sandy	
20	X	10	10 18 23	Brown	Sand	Dense	silty	
25	X	11	15 23 29	Brown	Sand	V. Dense	silty	clay @ 28'
		12	4.5+	Yellowish Brown	clay	Hard		w/ Fest, slickensided
30		13	3.75	Yellowish Brown	clay	V.stiff		-w/Fest, slickensided
		14	3.50	Yellowish Brown	clay	V.stiff		-w/Fe st, slickensided
35		15	4.00	Yellowish Brown	clay	V.stiff		-w/Fe st, slickensided

Project: Channel to Victoria
Seadrift, Texas
Contract No. DACW64-94-D-0015 Delivery Order No. 0018

SUMMARY OF LABORATORY TEST RESULTS

Boring No. 95-146

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	0-1	1.25		Clay,w/roots & calcareous nodules,Stiff, Dark gray	CH	27.9											
2	1-2	1.50		Clay,w/calcareous nodules,Stiff,Dark gray	CH	22.1	93.3	113.9	64.0	25.0	100.0	100.0	98.3	96.5	92.7		1.41
3	2-4	2.75		Clay,w/calcareous nodules,Very stiff,Gray	CH	24.3											
4	4-6	4.5+		Clay,w/calcareous nodules,Hard,Yellowish gray	CH	20.6	104.6	126.2	78.0	29.0	100.0	99.2	98.2	95.2	93.5		6.10
5	6-8	4.5+		Clay,w/calcareous nodules & ferrous stains, slickensided,Hard,Yellowish brown	CH	15.1											
6	8-10	4.5+		Silty Clay,w/calcareous nodules & ferrous stains,Hard,Yellowish gray	CL	11.2											
7	10-12	4.5+		Silty Clay,Hard,Yellowish gray	CL	12.0	109.7	122.9	30.0	15.0	100.0	99.6	98.8	96.7	93.1		4.55
8	12-14	4.5+		Silty Clay,w/silt seams,Hard,Yellowish gray	CL	9.4											
9	14-15.5		37	Silty Sand,Dense,Gray	SM						100.0	98.3	97.3	85.3	47.6		
10	19-20.5		41	Silty Sand,Dense,Brown	SM						100.0	100.0	99.7	68.6	23.2		
11	24-25.5		52	Silty Sand,Very dense,Brown	SM						100.0	99.4	98.8	56.6	27.0		
12	28-30	4.5+		Clay,w/ferrous stains,slickensided,Hard, Yellowish brown	CH	27.1			73.0	28.0							
13	30-32	3.75		Clay,w/ferrous stains,slickensided,Very stiff, Yellowish brown	CH	28.2											
14	32-32	3.50		Clay,w/ferrous stains,slickensided,Very stiff, Yellowish brown	CH	28.9	93.6	120.7	80.0	30.0							
15	34-36	4.00		Clay,w/ferrous stains,slickensided,Very stiff, Yellowish brown	CH	31.6											

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

JOB NO. 94G799-18 DATE 6/28/95

PROJECT Channel to Victoria

AREA Seadrift, Texas

BORING NO. 95-146 SAMPLE NO. 2 DEPTH 1-2 ft

SPECIMEN NO. 1

CLASSIFICATION
Clay,w/calcareous nodules,Stiff,Dark gray

Tare No.	Z-1	Height	5.595 in.
Tare plus Wet Specimen	481.92 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	403.09 gm	Initial Area	6.290 sq in.
Water Weight	78.83 gm	Volume	35.194 cu in.
Tare Weight	46.39 gm	Volume of Solids	cu in.
Wet Specimen	1052.57 gm	Void Ratio	
Dry Specimen	862.06 gm	Saturation	%
Water Content	22.10 %	Dry Density	93.3 lb/cu ft
Specific Gravity of Solids			

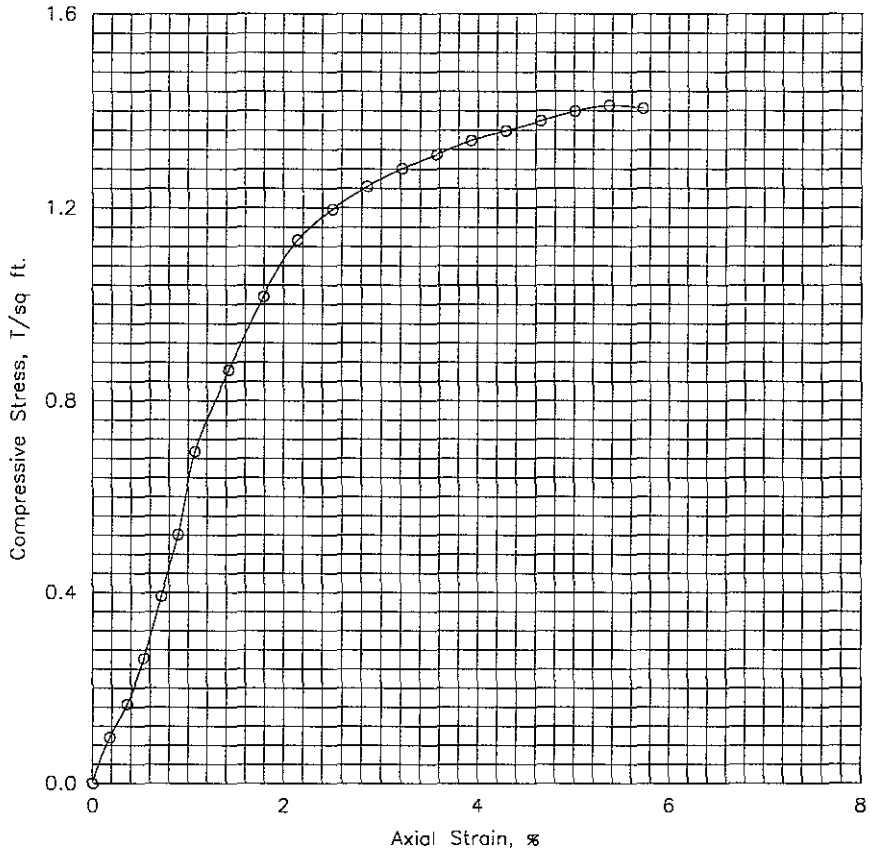
LL = 64 PL = 25 PI = 39

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	11.0	8.4	.002	6.30	.096
.4	20.	.020	19.0	14.6	.004	6.31	.166
.6	30.	.030	30.0	23.0	.005	6.32	.262
.8	40.	.040	45.0	34.5	.007	6.34	.392
1.0	50.	.050	60.0	46.0	.009	6.35	.521
1.2	60.	.060	80.0	61.3	.011	6.36	.694
1.6	80.	.080	100.0	76.6	.014	6.38	.864
1.9	100.	.100	118.0	90.4	.018	6.40	1.016
2.3	120.	.120	132.0	101.1	.021	6.43	1.133
2.6	140.	.140	140.0	107.2	.025	6.45	1.197
3.0	160.	.160	146.0	111.8	.029	6.48	1.244
3.3	180.	.180	151.0	115.7	.032	6.50	1.281
3.6	200.	.200	155.0	118.7	.036	6.52	1.310
3.9	220.	.220	159.0	121.8	.039	6.55	1.339
4.3	240.	.240	162.0	124.1	.043	6.57	1.359
4.6	260.	.260	165.0	126.4	.046	6.60	1.379
4.9	280.	.280	168.0	128.7	.050	6.62	1.399
5.3	300.	.300	170.0	130.2	.054	6.65	1.411
5.6	320.	.320	170.0	130.2	.057	6.67	1.405

Job No. 94G799-18

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_0	22.1 %	%	%	%
	Void ratio	e_0				
	Saturation	S_0	%	%	%	%
	Dry density, lb/cu ft	γ_d	93.3			
Time to failure, min		t_f	5.27			
Unconfined compressive strength, T/sq ft		q_u	1.41			
Undrained shear strength, T/sq ft		S_u	.71			
Sensitivity ratio		S_t				
Initial specimen diameter, in.		D_0	2.830			
Initial specimen height, in.		H_0	5.595			

Classification Clay,w/calcareous nodules,Stiff,Dark gray

LL	64	PL	25	PI	39	G_s	

Remarks

Project Channel to Victoria

Area Seadrift, Texas

Boring No. 95-146 | Sample No. 2

Depth El 1-2 ft | Date 6/28/95

UNCONFINED COMPRESSION TEST REPORT

ENG FORM 1 JUN 65 3659

PLATE XI-2

Geotest Engineering, Inc.

PLATE

JOB NO. 94G799-18 DATE 6/28/95

PROJECT Channel to Victoria

AREA Seadrift, Texas

BORING NO. 95-146 SAMPLE NO. 4 DEPTH 4-6 ft

SPECIMEN NO. 1

CLASSIFICATION
Clay,w/calcareous nodules,Hard,Yellowish gray

Tare No.	HP-6	Height	5.595 in.
Tare plus Wet Specimen	436.95 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	369.71 gm	Initial Area	6.290 sq in.
Water Weight	67.24 gm	Volume	35.194 cu in.
Tare Weight	43.58 gm	Volume of Solids	cu in.
Wet Specimen	1165.62 gm	Void Ratio	
Dry Specimen	966.38 gm	Saturation	%
Water Content	20.62 %	Dry Density	104.6 lb/cu ft
Specific Gravity of Solids			

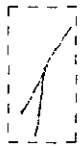
LL = 78 PL = 29 PI = 49

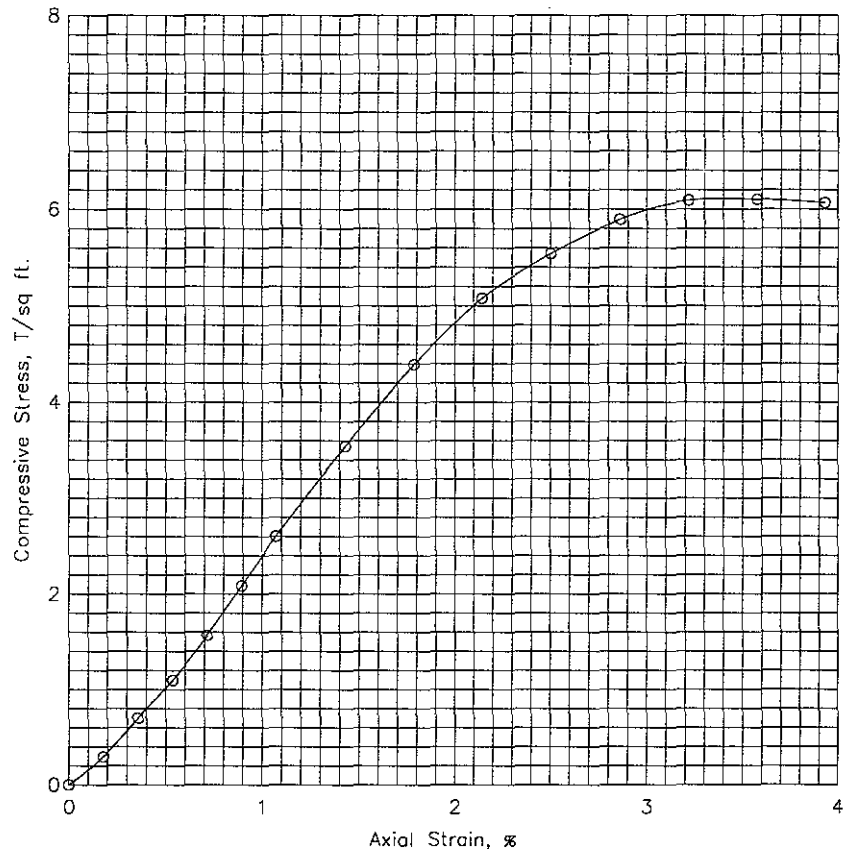
Proving Ring No. 10170
Proving Ring Constant, K = .766 lbs/div.

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	34.0	26.0	.002	6.30	.298
.4	20.	.020	80.0	61.3	.004	6.31	.699
.7	30.	.030	126.0	96.5	.005	6.32	1.099
.9	40.	.040	180.0	137.9	.007	6.34	1.567
1.1	50.	.050	240.0	183.8	.009	6.35	2.086
1.4	60.	.060	300.0	229.8	.011	6.36	2.602
1.9	80.	.080	410.0	314.1	.014	6.38	3.543
2.3	100.	.100	510.0	390.7	.018	6.40	4.392
2.8	120.	.120	592.0	453.5	.021	6.43	5.079
3.2	140.	.140	648.0	496.4	.025	6.45	5.539
3.5	160.	.160	692.0	530.1	.029	6.48	5.894
3.9	180.	.180	718.0	550.0	.032	6.50	6.093
4.3	200.	.200	722.0	553.1	.036	6.52	6.104
4.3	220.	.220	720.0	551.5	.039	6.55	6.065

Job No. 94G799-18

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	104.6			
Time to failure, min		t_f	4.27			
Unconfined compressive strength, T/sq ft		q_u	6.10			
Undrained shear strength, T/sq ft		S_u	3.05			
Sensitivity ratio		S_t				
Initial specimen diameter, in.		D_0	2.830			
Initial specimen height, in.		H_0	5.595			

Classification Clay,w/calcareous nodules,Hard,Yellowish gray

LL	78	PL	29	PI	49	G_s

Remarks

Project Channel to Victoria

Area Seadrift, Texas

Boring No. 95-146 | Sample No. 4

Depth 4-6 ft | Date 6/28/95

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UNCONFINED COMPRESSION TEST REPORT

ENG FORM 1 JUN 65 3659

PLATE XI-2

Geotest Engineering, Inc.

PLATE

JOB NO. 94G799-18 DATE 6/28/95

PROJECT Channel to Victoria

AREA Seadrift, Texas

BORING NO. 95-146 SAMPLE NO. 7 DEPTH 10-12 ft

SPECIMEN NO. 1

CLASSIFICATION
Silty Clay,Hard,Yellowish gray

Tare No.	IM-10	Height	5.595 in.
Tare plus Wet Specimen	370.06 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	334.88 gm	Initial Area	6.290 sq in.
Water Weight	35.18 gm	Volume	35.194 cu in.
Tare Weight	42.73 gm	Volume of Solids	cu in.
Wet Specimen	1135.91 gm	Void Ratio	
Dry Specimen	1013.83 gm	Saturation	%
Water Content	12.04 %	Dry Density	109.7 lb/cu ft
Specific Gravity of Solids			

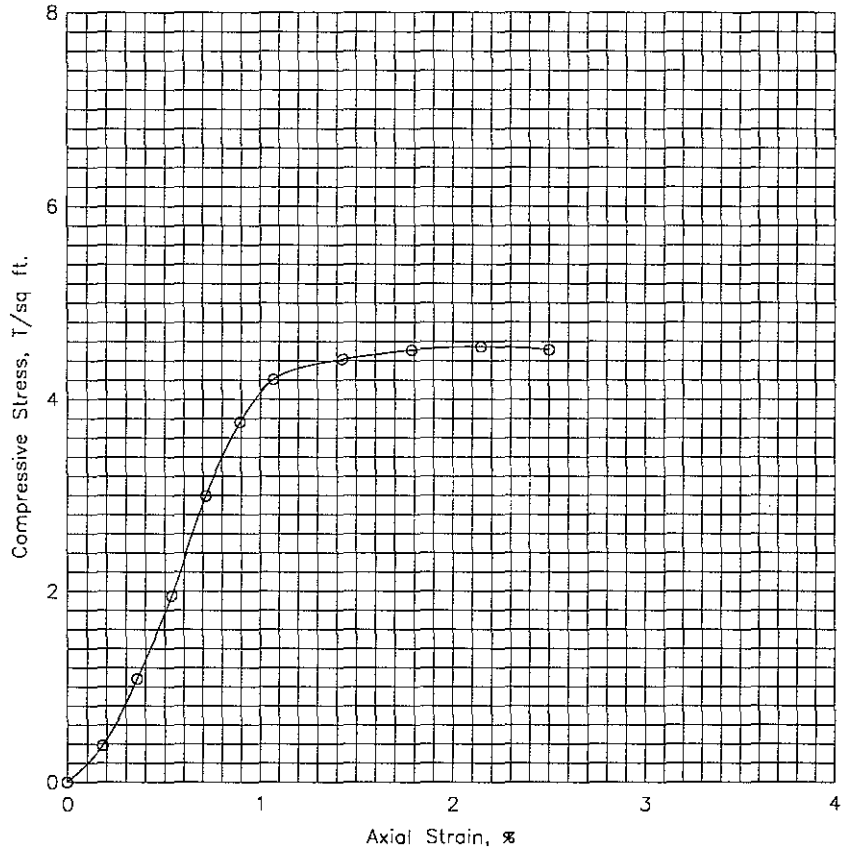
LL = 30 PL = 15 PI = 15

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	44.0	33.7	.002	6.30	.385
.4	20.	.020	124.0	95.0	.004	6.31	1.083
.6	30.	.030	224.0	171.6	.005	6.32	1.953
.8	40.	.040	344.0	263.5	.007	6.34	2.995
.9	50.	.050	433.0	331.7	.009	6.35	3.763
1.2	60.	.060	485.0	371.5	.011	6.36	4.207
1.5	80.	.080	511.0	391.4	.014	6.38	4.416
2.0	100.	.100	524.0	401.4	.018	6.40	4.512
2.3	120.	.120	530.0	406.0	.021	6.43	4.547
2.5	140.	.140	528.0	404.4	.025	6.45	4.514

Job No. 94G799-18

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_0	12.0 %	%	%	%
	Void ratio	e_0				
	Saturation	S_0	%	%	%	%
	Dry density, lb/cu ft	γ_d	109.7			
Time to failure, min		t_f	2.33			
Unconfined compressive strength, T/sq ft		q_u	4.55			
Undrained shear strength, T/sq ft		S_u	2.27			
Sensitivity ratio		S_t				
Initial specimen diameter, in.		D_0	2.830			
Initial specimen height, in.		H_0	5.595			

Classification Silty Clay,Hard,Yellowish gray

LL	30	PL	15	PI	15	G_s	

Remarks

Project Channel to Victoria

Area Seadrift, Texas

Boring No. 95-146 | Sample No. 7

Depth El 10-12 ft | Date 6/28/95

UNCONFINED COMPRESSION TEST REPORT

ENG FORM 1 JUN 65 3659

PLATE XI-2

Geotest Engineering, Inc.

PLATE