

Project : Channel enlargement channel to Victoria, Victoria, Texas

SUMMARY OF LABORATORY TEST RESULTS

Boring No. 91-10

EL. 17.9' N GVD

Contract No. DACW64-91-D-0001 Delivery Order No. 0009

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)	LL (%)	PL (%)	Mechanical Analysis % Passing					Torvane Shear Strength (tsf)	q u (tsf)
											#4	#10	#40	#100	#200		
1	0-2	3.50		Dark gray, Clay, Very stiff, w/roots & shell fragments	CH	22.4											
2	2-4	2.50		Dark gray, Clay, Very stiff, w/roots	CH	22.0	102.1	124.5	50	20							
3	4-6	1.50		Gray & yellowish brown, Clay, Stiff, w/roots	CH	22.3											
4	6-8	2.50		Gray & yellowish brown, Clay, Very stiff, Silty	CL	19.4											
5	8-10	4.5+		Gray & yellowish brown, Clay, Hard, Silty, w/silt parting	CL	19.4											
6	10-12	4.5+		Gray & yellowish brown, Clay, Hard, Silty, w/silt parting	CL	18.7	106.8	126.8	37	18	100.0	100.0	99.6		98.7		4.5
7	12-14	3.50		Grayish brown, Clay, Very stiff, w/shell fragments and ferrous stains	CH	24.8											
8	14-16	3.50		Dark gray, Clay, Very stiff, w/ferrous stains & calcareous nodule	CH	31.5											
9	16-18	1.50		Dark gray, Clay, Stiff, w/calcareous nodule	CH	40.4											
10	18-20	1.00		Dark gray, Clay, Stiff, w/calcareous nodule	CH	41.0	78.6	110.8	79	29	100.0	99.4	98.0		94.2		.64
11	20-22	1.25		Dark gray, Clay, Stiff, w/soft calcareous nodule	CH	33.9											
12	22-24	1.50		Dark gray, Clay, Stiff, w/soft calcareous nodule	CH	24.9											
13	24-26	2.00		Gray & yellowish, Clay, Very stiff, Sandy	CL	17.4											
14	26-28	2.75		Olive gray & yellowish brown, Clay, Very stiff, Sandy, w/calcareous nodule	CL	18.4	110.7	131.0	32	16	99.4	99.0	96.5		51.9		
15	28.5-30		18	Gray & yellowish, Sand, Medium dense, Silty	S M						100.0	99.6	95.4		22.7		
16	33.5-35		16	Gray, Sand, Medium dense, Gravely	S P												
17	38.5-40		33	Gray, Sand, Dense, Gravely	S P						77.5	65.5	25.5		2.3		

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

q u : Unconfined Compressive Strength, W O H : Weight of hammer, W O P : Weight of pipe

SUMMARY OF LABORATORY TEST RESULTS

Contract No. DACW64-91-D-0001 Delivery Order No.0009

[illegible]

q_u : Unconfined Compressive Strength, W_{OH} : Weight of hammer, W_{OP} : Weight of pipe

JOB NO. 14G459

DATE 4/16/91

PROJECT CHANNEL ENLARGEMENT, CHANNEL TO VICTORIA, TEXAS

BOILING NO. 91-10

SAMPLE NO. 6

DEPTH 10-12 ft

SPECIMEN NO. 1

CLASSIFICATION

Gray & yellowish brown, clay, hard, silty, w/silt partings

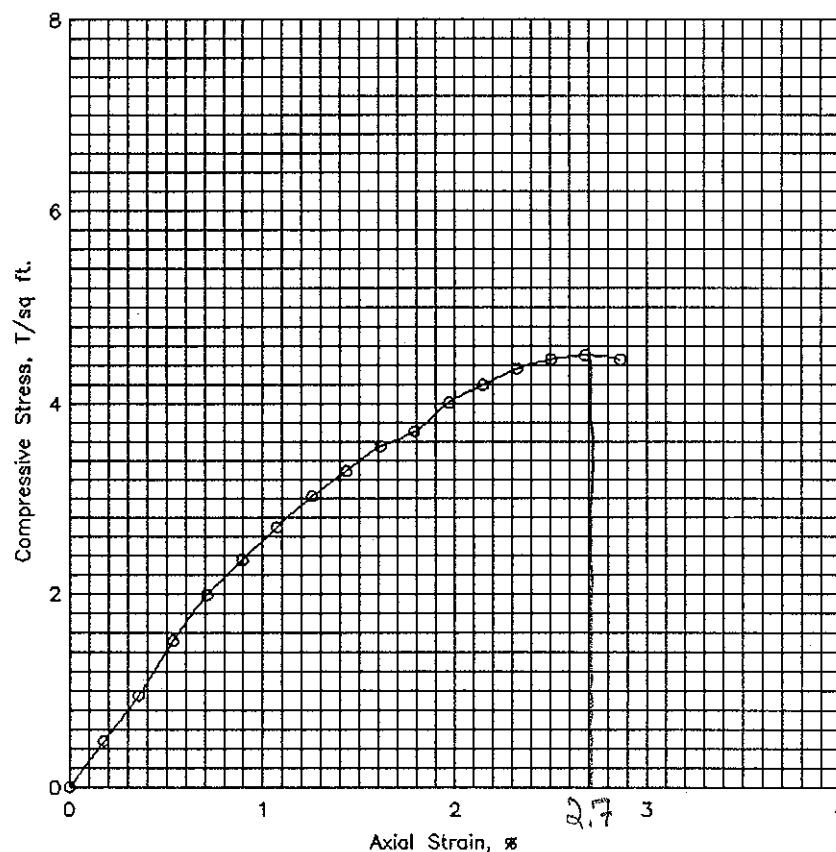
Tare No.	P-22	Height	5.595 in.
Tare plus Wet Specimen	618.21 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	527.67 gm	Initial Area	6.290 sq in.
Water Weight	90.54 gm	Volume	35.194 cu in.
Tare Weight	42.73 gm	Volume of Solids	cu in.
Wet Specimen	1171.16 gm	Void Ratio	
Dry Specimen	986.90 gm	Saturation	%
Water Content	18.67 %	Dry Density	106.8 lb/cu ft
Specific Gravity of Solids			
LL = 37	PL = 18	PI = 19	

Proving Ring No. 10170

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

Elapsed Time in.	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
.3	10.	.010	55.0	42.1	.002	6.30	.481
.6	20.	.020	109.0	83.5	.004	6.31	.952
.8	30.	.030	174.0	133.3	.005	6.32	1.517
1.1	40.	.040	229.0	175.4	.007	6.34	1.994
1.3	50.	.050	271.0	207.6	.009	6.35	2.355
1.5	60.	.060	311.0	238.2	.011	6.36	2.698
1.8	70.	.070	349.0	267.3	.013	6.37	3.022
1.9	80.	.080	381.0	291.8	.014	6.38	3.293
2.1	90.	.090	412.0	315.6	.016	6.39	3.554
2.4	100.	.100	431.0	330.1	.018	6.40	3.711
2.6	110.	.110	467.0	357.7	.020	6.42	4.014
2.8	120.	.120	489.0	374.6	.021	6.43	4.196
3.0	130.	.130	510.0	390.7	.023	6.44	4.368
3.1	140.	.140	522.0	399.9	.025	6.45	4.462
3.3	150.	.150	528.0	404.4	.027	6.46	4.505
3.4	160.	.160	524.0	401.4	.029	6.48	4.463

Failure Sketches



- ☐ Controlled stress
- ☒ Controlled strain

Test No.		1			
Type of Specimen		Undisturbed			
Initial	Water content	w_o	18.7 %	%	%
	Void ratio	e_o			
	Saturation	S_o	%	%	%
	Dry density, lb/cu ft	γ_d	106.8		
Time to failure, min		t_f	3.32		
Unconfined compressive strength, T/sq ft		q_u	4.51		
Undrained shear strength, T/sq ft		S_u	2.25		
Sensitivity ratio		S_t			
Initial specimen diameter, in.		D_o	2.830		
Initial specimen height, in.		H_o	5.595		
Classification Gray & yellowish brown, clay, hard, silty, w/silt partings					
LL	37	PL	18	PI	19
				G_s	
Remarks		Project CHANNEL ENLARGEMENT, CHANNEL TO VICTORIA			
		Area Victoria, Texas			
		Boring No. 91-10		Sample No. 6	
		Depth 10-12 ft		Date 4/16/91	
		UNCONFINED COMPRESSION TEST REPORT			

JOB NO. 14 G45

DATE 4/16/91

PROJECT CHANNEL ENLARGEMENT, CHANNEL TO VICTORIA, TEXAS

BORING NO. 91-10

SAMPLE NO. 10

DEPTH 18-20 ft

SPECIMEN NO. 1

CLASSIFICATION

Dark gray, clay, stiff, w/calcareous nodules

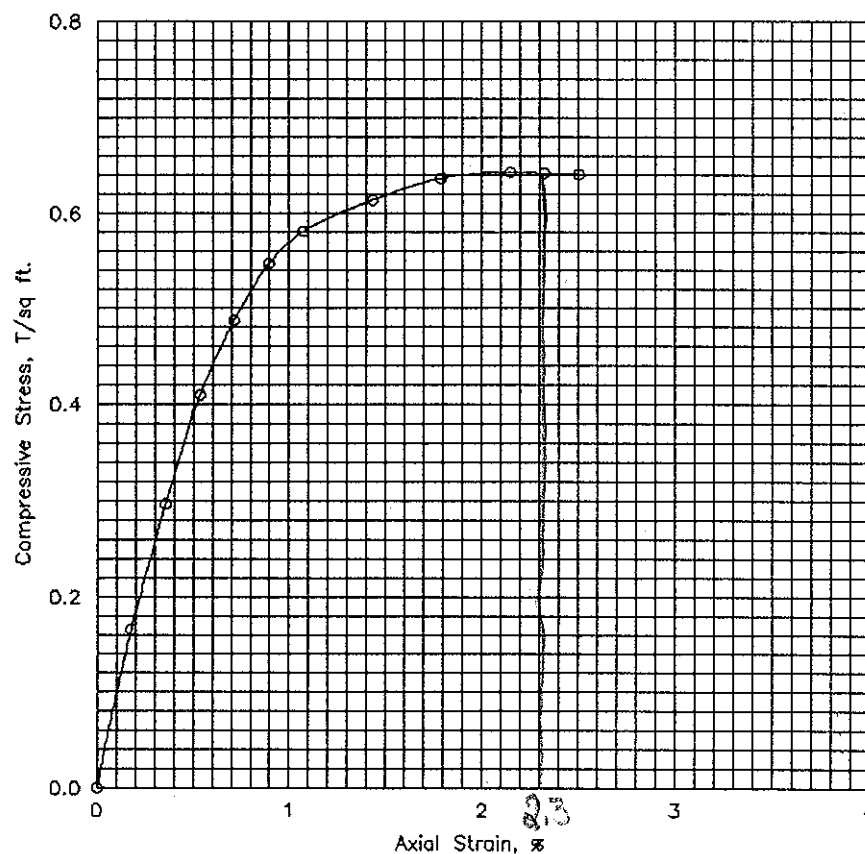
Tare No.	P-20	Height	5.595 in.
Tare plus Wet Specimen	979.23 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	707.06 gm	Initial Area	6.290 sq in.
Water Weight	272.17 gm	Volume	35.194 cu in.
Tare Weight	42.52 gm	Volume of Solids	cu in.
Wet Specimen	1023.49 gm	Void Ratio	
Dry Specimen	726.11 gm	Saturation	%
Water Content	40.96 %	Dry Density	78.6 lb/cu ft
Specific Gravity of Solids			
LL = 79	PL = 29	PI = 50	

Proving Ring No. 10170

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

Elapsed Time In.	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
.3	10.	.010	19.0	14.6	.002	6.30	.166
.5	20.	.020	34.0	26.0	.004	6.31	.297
.7	30.	.030	47.0	36.0	.005	6.32	.410
.9	40.	.040	56.0	42.9	.007	6.34	.487
1.0	50.	.050	63.0	48.3	.009	6.35	.547
1.4	60.	.060	67.0	51.3	.011	6.36	.581
1.5	80.	.080	71.0	54.4	.014	6.38	.614
1.9	100.	.100	74.0	56.7	.018	6.40	.637
2.3	120.	.120	75.0	57.4	.021	6.43	.643
2.5	130.	.130	75.0	57.4	.023	6.44	.642
2.6	140.	.140	75.0	57.4	.025	6.45	.641

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.		1			
Type of Specimen		Undisturbed			
Initial	Water content	w_0	41.0 %	%	%
	Void ratio	e_0			
	Saturation	S_0	%	%	%
	Dry density, lb/cu ft	γ_d	78.6		
Time to failure, min		t_f	2.25		
Unconfined compressive strength, T/sq ft		q_u	.64		
Undrained shear strength, T/sq ft		S_u	.32		
Sensitivity ratio		S_t			
Initial specimen diameter, in.		D_0	2.830		
Initial specimen height, in.		H_0	5.595		
Classification Dark gray, clay, stiff, w/calcareous nodules					
LL	79	PL	29	PI	50
Remarks		G _s			
		Project CHANNEL ENLARGEMENT, CHANNEL TO VICTORIA			
		Area Victoria, Texas			
		Boring No. 91-10		Sample No. 10	
		Depth 18-20 ft		Date 4/16/91	
		EI			
UNCONFINED COMPRESSION TEST REPORT					

U.S. ARMY CORPS OF ENGINEERS

DEPTH, FEET		SAMPLE NO.	PEN./TORVANE	SPT. - BLOW COUNT	COLOR	MATERIAL TYPE	CONSISTENCY	SECONDARY CONSTITUENTS	STRUCTURAL FEATURES AND COMMENTS
BORING NO. <u>91-10</u> DATE: BEGIN <u>7/1/56</u> PAGE <u>1</u> JOB NO. <u>144446</u> COMPLETE <u>7/1/56</u> Thin Walled Tube ☒ 3" ☐ 6" PROJECT <u>VICTORIA Channel</u> LOCATION <u>VICTORIA Channel</u> ELEVATION OF HOLE _____ MANUFACTURER'S DESIGNATION OF DRILL RIG <u>7-1/2" - 56</u> GROUNDWATER: DEPTH <u>7'7"</u> ft., ELEV. _____ ft., at end of Drilling WEATHER <u>Windy, warm RAINY</u> DRILLER <u>W. De Force</u> LOGGER <u>J.L. - 29</u>									
0	1	3.5	GRAY	clay	VERY STIFF			w/roots	
	2	1.5	"	clay	STIFF				
5	3	1.5	"	"	"				
	4	3.0	GRAY	CLAY	VERY STIFF				
	5	4.5	"	"	HARD				
10	6	4.5	"	"	"				
	7	4.5	GRAY	clay	HARD				
15	8	3.0	"	"	VERY STIFF				
	9	2.0	"	"	VERY STIFF				
	10	1.0	"	"	MEDIUM STIFF				
20	11	1.5	GRAY	clay	STIFF				
	12	1.5	"	"	"				
25	13	2.5	"	clay	VERY STIFF	Sandy			
	14	3.0	"	"	"	"		SAND @ 28'	
30	15	3 1/4	TAN	SAND	Medium dense				
	16	4 1/4	TAN	SAND	"				
35	17	4 1/4	TAN	SAND	"				

U.S. ARMY CORPS OF ENGINEERS

DEPTH, FEET		SAMPLE NO.	PEN./TORVANE	SPT.-BLOW COUNT	BORING NO. <u>91-10</u> DATE: BEGIN <u>7-21-91</u> PAGE <u>2 / 2</u> JOB NO. <u>146446</u> COMPLETE <u>7-21-91</u> Thin Walled Tube ☒ 3" ☐ 6" PROJECT <u>VICTORIA CHANNEL</u> LOCATION <u>VICTORIA CHANNEL</u> ELEVATION OF HOLE _____ MANUFACTURER'S DESIGNATION OF DRILL RIG <u>Failing - 36</u> GROUNDWATER: DEPTH <u>117</u> ft., ELEV. _____ ft., at end of Drilling WEATHER <u>WINDY WARM RAINY</u> DRILLER <u>W. De Fourn</u> LOGGER <u>J. BORG</u>				
					COLOR	MATERIAL TYPE	CONSISTENCY	SECONDARY CONSTITUENTS	STRUCTURAL FEATURES AND COMMENTS
35									
40									
45									
50									
55									
60									
65									
70									

Bottom of 91-10
(45')