

U.S. ARMY CORPS OF ENGINEERS

DEPTH, FEET		SAMPLE	SAMPLE NO.	PEN./TORVANE	SPT.-BLOW COUNT	BORING NO. <u>94-B</u> DATE: BEGIN <u>3/14/94</u> PAGE <u>2</u> / <u>12</u> JOB NO. <u>146727-6</u> COMPLETE <u>3/14/94</u> Thin Walled Tube PROJECT <u>Wallisville Lake, Trinity River & Tributaries</u> ☒ 3" ☐ 6" LOCATION <u>near Wallisville, TX</u> ELEVATION OF HOLE _____ MANUFACTURER'S DESIGNATION OF DRILL RIG <u>FALCON 36</u> GROUNDWATER: DEPTH <u>0**</u> ft., ELEV. _____ ft., at end of Drilling WEATHER <u>Clear, Warm</u> DRILLER <u>RANDY GREEN</u> LOGGER <u>Phozum</u>				
						COLOR	MATERIAL TYPE	CONSISTENCY	SECONDARY CONSTITUENTS	STRUCTURAL FEATURES AND COMMENTS
35			19	2.0		Reddish Brown	clay	v. stiff	silt	
40			20	4.5		Reddish Brown	clay	hard		
45										** water level at end of Drilling
50										
55										
60										
65										
70										

JOB NO. 14G727-12

DATE 4/6/94

PROJECT Lake Wallisville, Trinity River
and Tributaries,

AREA near Wallisville, Texas

BORING NO. 94-8

SAMPLE NO. 3

DEPTH 4-6 ft

SPECIMEN NO. 1

CLASSIFICATION

Dark gray, Clay, Very stiff

Tare No.	W-19	Height	5.595 in.
Tare plus Wet Specimen	397.27 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	318.90 gm	Initial Area	6.290 sq in.
Water Weight	78.37 gm	Volume	35.194 cu in.
Tare Weight	42.70 gm	Volume of Solids	cu in.
Wet Specimen	1122.53 gm	Void Ratio	
Dry Specimen	874.42 gm	Saturation	%
Water Content	28.37 %	Dry Density	94.7 lb/cu ft
Specific Gravity of Solids			
LL = 65	PL =	PI =	

Proving Ring No. 10170

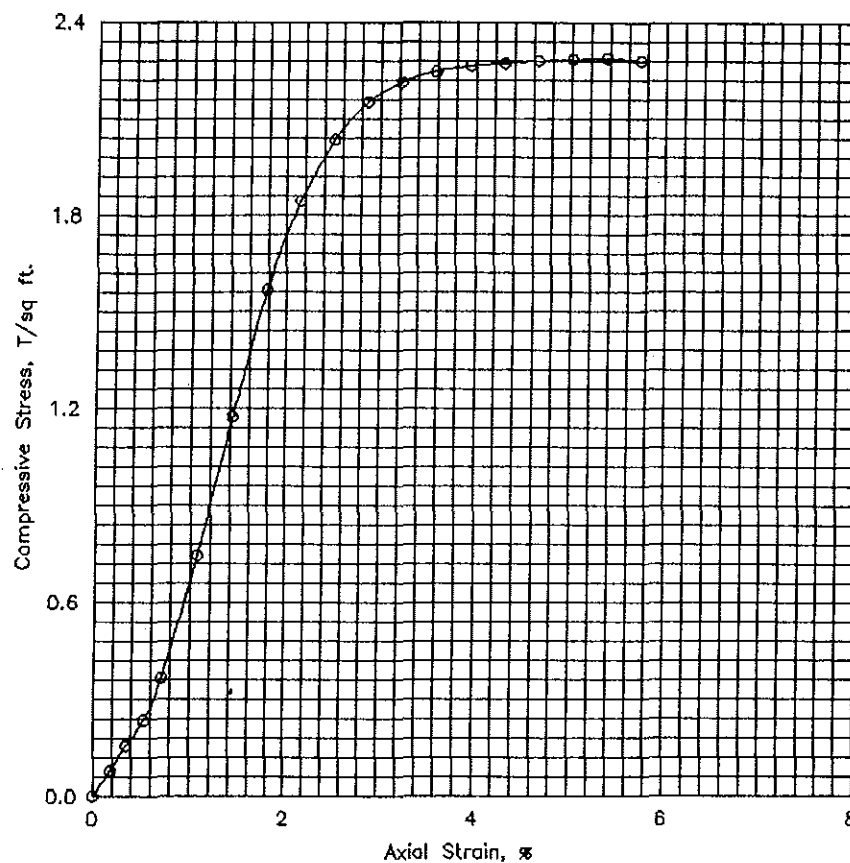
Proving Ring Constant, K = .766 lbs/div.

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	9.0	6.9	.002	6.30	.079
.4	20.	.020	18.0	13.8	.004	6.31	.157
.6	30.	.030	27.0	20.7	.005	6.32	.235
.7	40.	.040	42.0	32.2	.007	6.34	.366
1.1	60.	.060	86.0	65.9	.011	6.36	.746
1.5	80.	.080	136.0	104.2	.014	6.38	1.175
1.8	100.	.100	182.0	139.4	.018	6.40	1.567
2.2	120.	.120	215.0	164.7	.021	6.43	1.845
2.5	140.	.140	238.0	182.3	.025	6.45	2.035
2.8	160.	.160	253.0	193.8	.029	6.48	2.155
3.1	180.	.180	261.0	199.9	.032	6.50	2.215
3.5	200.	.200	266.0	203.8	.036	6.52	2.249
3.8	220.	.220	269.0	206.1	.039	6.55	2.266
4.1	240.	.240	271.0	207.6	.043	6.57	2.274
4.5	260.	.260	273.0	209.1	.046	6.60	2.282
4.8	280.	.280	274.5	210.3	.050	6.62	2.286
5.1	300.	.300	276.0	211.4	.054	6.65	2.290
5.5	320.	.320	276.0	211.4	.057	6.67	2.282

30 Nov 70

Job No. 14G727-12

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.		1			
Type of Specimen		Undisturbed			
Initial	Water content	w_0	28.4 %	%	%
	Void ratio	e_0			
	Saturation	S_0	%	%	%
	Dry density, lb/cu ft	γ_d	94.7		
Time to failure, min		t_f	5.10		
Unconfined compressive strength, T/sq ft		q_u	2.29		
Undrained shear strength, T/sq ft		S_u	1.15		
Sensitivity ratio		S_t			
Initial specimen diameter, in.		D_0	2.830		
Initial specimen height, in.		H_0	5.595		

Classification Dark gray, Clay, Very stiff

LL	65	PL	PI	G _o
Remarks			Project Lake Wallisville, Trinity River	
			and Tributaries,	
			Area near Wallisville, Texas	
			Boring No. 94-8	Sample No. 3
			Depth 4-6 ft	Date 4/6/94
			UNCONFINED COMPRESSION TEST REPORT	

ENG FORM 3659
1 JUN 65

Geotest Engineering, Inc.

PLATE XI-2

PLATE

JOB NO. 14G727-12

DATE 4/7/94

PROJECT Lake Wallisville, Trinity River
and Tributaries,

AREA near Wallisville, Texas

BORING NO. 94-8

SAMPLE NO. 6

DEPTH 10-12 ft

SPECIMEN NO. 1

CLASSIFICATION

Yellowish gray, Clay, Very stiff, w/calcareous nodules & blocky structure

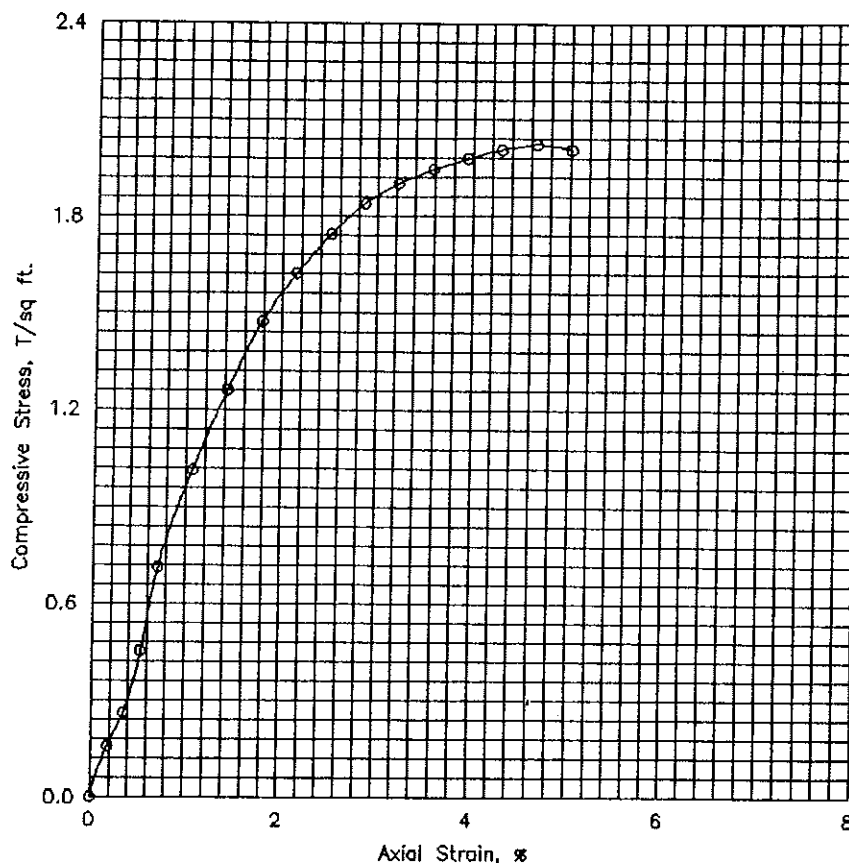
Tare No.	P-219	Height	5.595 in.
Tare plus Wet Specimen	422.42 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	346.54 gm	Initial Area	6.290 sq in.
Water Weight	75.88 gm	Volume	35.194 cu in.
Tare Weight	42.65 gm	Volume of Solids	cu in.
Wet Specimen	1162.70 gm	Void Ratio	
Dry Specimen	930.39 gm	Saturation	%
Water Content	24.97 %	Dry Density	100.7 lb/cu ft
Specific Gravity of Solids			
LL = 61	PL =	PI =	

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
.3	20.	.020	30.0	23.0	.004	6.31	.262
.5	30.	.030	52.0	39.8	.005	6.32	.453
.6	40.	.040	82.0	62.8	.007	6.34	.714
1.0	60.	.060	117.0	89.6	.011	6.36	1.015
1.3	80.	.080	146.0	111.8	.014	6.38	1.262
1.6	100.	.100	171.0	131.0	.018	6.40	1.473
2.0	120.	.120	189.0	144.8	.021	6.43	1.622
2.3	140.	.140	204.0	156.3	.025	6.45	1.744
2.6	160.	.160	216.0	165.5	.029	6.48	1.840
2.9	180.	.180	224.0	171.6	.032	6.50	1.901
3.2	200.	.200	230.0	176.2	.036	6.52	1.945
3.5	220.	.220	235.0	180.0	.039	6.55	1.979
3.8	240.	.240	239.0	183.1	.043	6.57	2.006
4.2	260.	.260	242.0	185.4	.046	6.60	2.023
4.7	280.	.280	241.0	184.6	.050	6.62	2.007

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.		1			
Type of Specimen		Undisturbed			
Initial	Water content	w_0	25.0 %	%	%
	Void ratio	e_0			
	Saturation	S_0	%	%	%
	Dry density, lb/cu ft	γ_d	100.7		
Time to failure, min		t_f	4.20		
Unconfined compressive strength, T/sq ft		q_u	2.02		
Undrained shear strength, T/sq ft		S_u	1.01		
Sensitivity ratio		S_t			
Initial specimen diameter, in.		D_0	2.830		
Initial specimen height, in.		H_0	5.595		
Classification Yellowish gray, Clay, Very stiff, w/calcareous nodules & blocky structure					
LL	61	PL		PI	G_s
Remarks		Project Lake Wallisville, Trinity River			
		and Tributaries,			
		Area near Wallisville, Texas			
		Boring No. 94-8		Sample No. 6	
		Depth 10-12 ft		Date 4/7/94	
UNCONFINED COMPRESSION TEST REPORT					

JOB NO. 14G727-12

DATE 4/7/94

PROJECT Lake Wallisville, Trinity River
and Tributaries,

AREA near Wallisville, Texas

BORING NO. 94-8

SAMPLE NO. 9

DEPTH 16-18 ft

SPECIMEN NO. 1

CLASSIFICATION

Yellowish gray, Clay, Very stiff, w/blocky structure

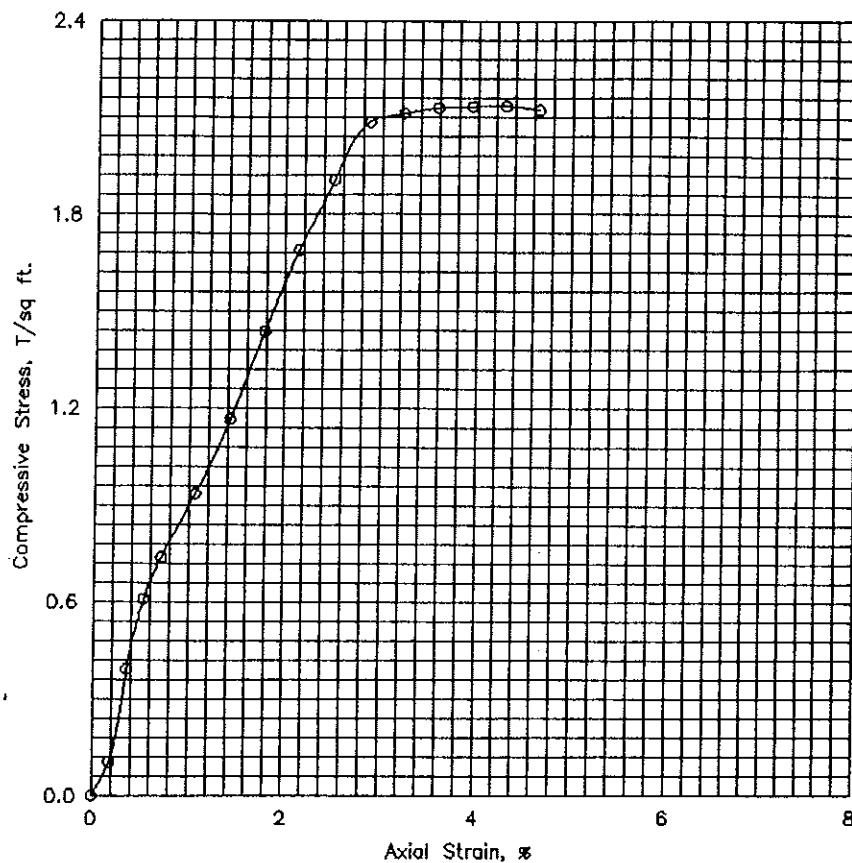
Tare No.	W-18	Height	5.595 in.
Tare plus Wet Specimen	392.18 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	322.06 gm	Initial Area	6.290 sq in.
Water Weight	70.12 gm	Volume	35.194 cu in.
Tare Weight	42.53 gm	Volume of Solids	cu in.
Wet Specimen	1156.76 gm	Void Ratio	
Dry Specimen	924.78 gm	Saturation	%
Water Content	25.08 %	Dry Density	100.1 lb/cu ft
Specific Gravity of Solids			
LL = 65	PL =	PI =	

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	12.0	9.2	.002	6.30	.105
.4	20.	.020	45.0	34.5	.004	6.31	.393
.6	30.	.030	70.0	53.6	.005	6.32	.610
.8	40.	.040	85.0	65.1	.007	6.34	.740
1.1	60.	.060	108.0	82.7	.011	6.36	.937
1.5	80.	.080	135.0	103.4	.014	6.38	1.167
1.8	100.	.100	167.0	127.9	.018	6.40	1.438
2.1	120.	.120	197.0	150.9	.021	6.43	1.690
2.5	140.	.140	223.0	170.8	.025	6.45	1.906
2.8	160.	.160	245.0	187.7	.029	6.48	2.087
3.1	180.	.180	249.0	190.7	.032	6.50	2.113
3.5	200.	.200	252.0	193.0	.036	6.52	2.131
3.8	220.	.220	253.5	194.2	.039	6.55	2.135
4.1	240.	.240	254.5	194.9	.043	6.57	2.136
4.4	260.	.260	254.0	194.6	.046	6.60	2.124

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.		1			
Type of Specimen w		Undisturbed			
Initial	Water content	w_0	25.1 %	%	%
	Void ratio	e_0			
	Saturation	S_0	%	%	%
	Dry density, lb/cu ft	γ_d	100.1		
Time to failure, min		t_f	4.13		
Unconfined compressive strength, $T/sq\ ft$		q_u	2.14		
Undrained shear strength, $T/sq\ ft$		S_u	1.07		
Sensitivity ratio		S_x			
Initial specimen diameter, in.		D_0	2.830		
Initial specimen height, in.		H_0	5.595		
Classification Yellowish gray, Clay, Very stiff, w/blocky structure					
LL	65	PL		PI	C_u
Remarks		Project Lake Wallisville, Trinity River			
		and Tributaries,			
		Area near Wallisville, Texas			
		Boring No. 94-8		Sample No. 9	
		Depth 16-18 ft		Date 4/7/94	
		UNCONFINED COMPRESSION TEST REPORT			

JOB NO. 14G727-12

DATE 4/7/94

PROJECT Lake Wallisville, Trinity River
and Tributaries,

AREA near Wallisville, Texas

BORING NO. 94-8

SAMPLE NO. 12

DEPTH 22-24 ft

SPECIMEN NO. 1

CLASSIFICATION

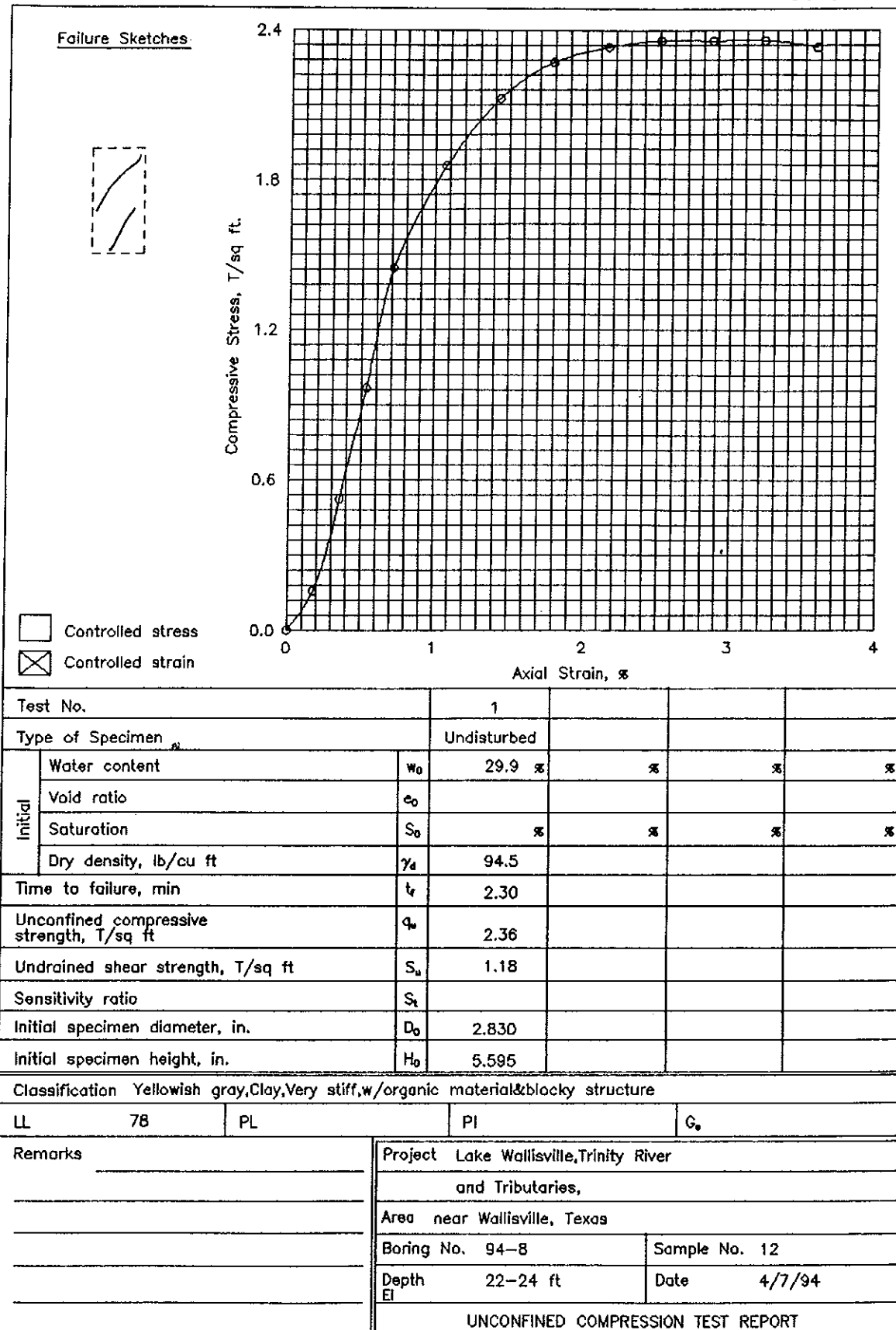
Yellowish gray, Clay, Very stiff, w/organic material & blocky structure

Tare No.	W-10	Height	5.595 in.
Tare plus Wet Specimen	281.10 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	226.17 gm	Initial Area	6.290 sq in.
Water Weight	54.93 gm	Volume	35.194 cu in.
Tare Weight	42.30 gm	Volume of Solids	cu in.
Wet Specimen	1133.39 gm	Void Ratio	
Dry Specimen	872.68 gm	Saturation	%
Water Content	29.87 %	Dry Density	94.5 lb/cu ft
Specific Gravity of Solids			
LL = 78	PL =	PI =	

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	60.0	46.0	.004	6.31	.524
.6	30.	.030	111.0	85.0	.005	6.32	.968
.8	40.	.040	166.0	127.2	.007	6.34	1.445
1.1	60.	.060	214.0	163.9	.011	6.36	1.856
1.4	80.	.080	246.0	188.4	.014	6.38	2.126
1.7	100.	.100	264.0	202.2	.018	6.40	2.273
2.0	120.	.120	272.0	208.4	.021	6.43	2.334
2.3	140.	.140	276.0	211.4	.025	6.45	2.359
2.6	160.	.160	277.0	212.2	.029	6.48	2.359
2.9	180.	.180	278.0	212.9	.032	6.50	2.359
3.3	200.	.200	276.0	211.4	.036	6.52	2.333



SUMMARY OF LABORATORY TEST RESULTS

Contract No. DACW64-93-D-0005 Delivery Order No. 0012

Boring No. 94-8

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		Dark gray, Clay, Stiff, w/grass roots	C H	30.2											
2	2 - 4	1.25		Dark gray, Clay, Stiff	C H	29.0											
3	4 - 6	2.00		Dark gray, Clay, Very stiff	C H	28.4	94.7	121.6	65		100.0	100.0	99.6	98.8	98.3		2.29
4	6 - 8	2.25		Yellowish gray, Clay, Very stiff, w/calcareous nodules	C H	22.1											
5	8 - 10	3.00		Yellowish gray, Clay, Very stiff, w/calcareous nodules	C H	20.4											
6	10 - 12	2.25		Yellowish gray, Clay, Very stiff, w/calcareous nodules and blocky structure	C H	25.0	100.7	125.9	61		100.0	100.0	99.5	98.4	98.2		2.02
7	12 - 14	2.00		Yellowish gray, Clay, Very stiff, w/calcareous nodules and blocky structure	C H	30.8											
8	14 - 16	2.25		Yellowish gray, Clay, Very stiff, w/blocky structure	C H	32.2											
9	16 - 18	3.00		Yellowish gray, Clay, Very stiff, w/blocky structure	C H	25.1	100.1	125.2	65		100.0	100.0	99.7	98.3	97.4		2.14
10	18 - 20	3.25		Yellowish gray, Clay, Very stiff, Sandy	C L	22.9											
11	20 - 22	3.75		Yellowish gray, Clay, Very stiff, w/blocky structure	C H	26.4											
12	22 - 24	3.25		Yellowish gray, Clay, Very stiff, w/organic material and blocky structure	C H	29.9	94.5	122.7	78		100.0	100.0	100.0	99.6	99.0		2.36
13	24 - 26	4.25		Yellowish gray, Clay, Hard, w/calcareous nodules and blocky structure	C H	24.9											
14	26 - 28	4.50		Yellowish gray, Clay, Hard, w/calcareous nodules, slickensided	C H	22.1											
15	28 - 30	4.5 +		Yellowish gray, Clay, Hard, w/calcareous nodules and sand parting	C H	21.7											
16	30 - 32	4.00		Yellowish gray, Clay, Very stiff, w/calcareous nodules	C H	22.4											
17	32 - 34	4.00		Yellowish gray, Clay, Very stiff, w/calcareous nodules and sand parting	C H	21.5											
18	34 - 36	3.50		Reddish brown, Clay, Very stiff, Sandy, w/calcareous nodules	C L	20.4											
19	36 - 38	3.00		Reddish brown, Clay, Very stiff, Silty, w/calcareous nodules	C L	19.4											
20	38 - 40	4.5 +		Reddish brown, Clay, Hard, Slickensided	C H	24.5											

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