

REVIEWED BY LAADATE 3/13/95REVIEWED BY gpcDATE 2/14/95

SUMMARY OF QUESTIONABLE
ERRONEOUS OR MISSING DATA
FOR

CONTRACT NO. DACW64-94-C-0040

PROJECT: SOILS TESTING, HOUSTON-GALVESTON NAVIGATION CHANNEL

BORING NO.	SAMPLE NO.	COMMENTS ON DRILLING RESULTS
93-82	5, 7	Torvane results given, samples sent to SWD → TORVANE WERE DONE IN THE FIELD
93-83	7, 11, 13 23	Torvane results given, samples sent to SWD Unconfined results recorded on lab summary sheet as .97 on test report sheet as .98
93-85	27	MC ordered, not performed
93-88	6	PP results not given, Unconfined results lab summary sheet as .12 on test report as .11
93-89	2	Blow counts indicate loose instead of very loose ✓
93-93	4	PP (.25) indicates soft instead of medium ✓
93-96	4	Unconfined results recorded on lab summary as .15 on test ✓ report .36
	18	Blow counts given, not recorded on field logs

Corrected on my copy 10

JOB NO. 14G783-4

DATE 8/26/94

PROJECT Houston-Galveston Navigation
Channel

AREA Houston, Texas

BORING NO. 93-88

SAMPLE NO. 6

DEPTH 15-17 ft

SPECIMEN NO. 1

CLASSIFICATION

Gray, Clay, Very soft, w/ shell fragments and sand seams

Tare No.	206-A	Height	5.595 in.
Tare plus Wet Specimen	332.51 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	269.67 gm	Initial Area	6.290 sq in.
Water Weight	62.84 gm	Volume	35.194 cu in.
Tare Weight	82.40 gm	Volume of Solids	cu in.
Wet Specimen	1080.90 gm	Void Ratio	
Dry Specimen	809.32 gm	Saturation	%
Water Content	33.56 %	Dry Density	87.6 lb/cu ft
Specific Gravity of Solids			
LL = 54	PL = 22	PI = 32	

Proving Ring No. 17015

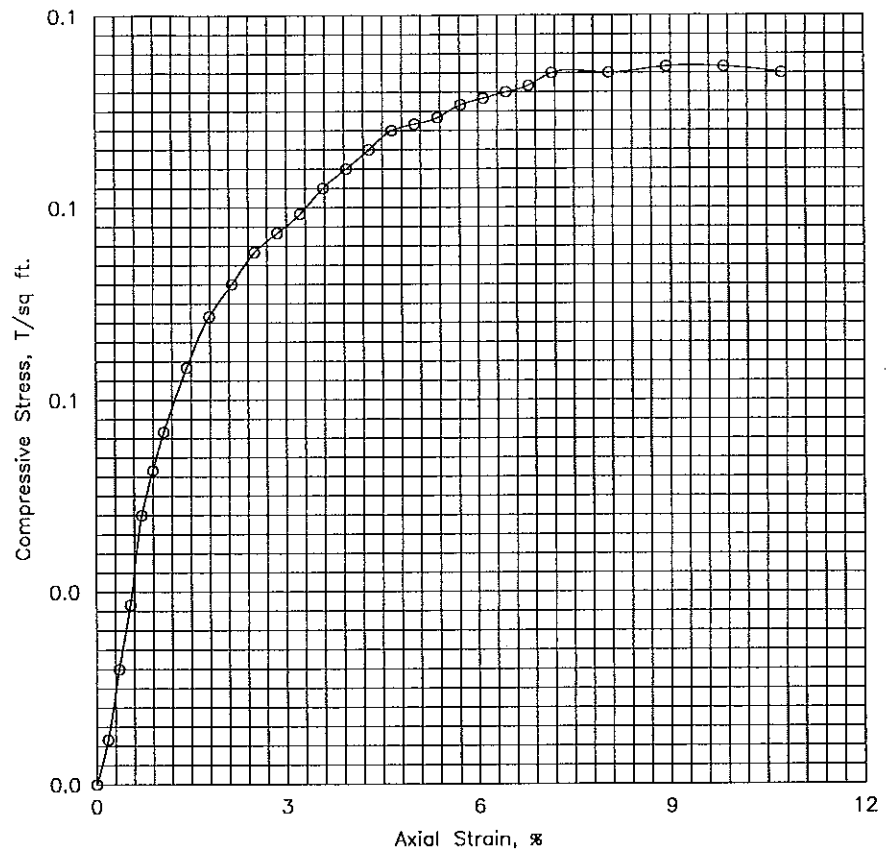
Proving Ring Constant, K = .311 lbs/div.

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	2.0	.6	.002	6.30	.007
.4	20.	.020	5.0	1.6	.004	6.31	.018
.5	30.	.030	8.0	2.5	.005	6.32	.028
.7	40.	.040	12.0	3.7	.007	6.34	.042
.9	50.	.050	14.0	4.3	.009	6.35	.049
1.0	60.	.060	15.5	4.8	.011	6.36	.055
1.4	80.	.080	18.5	5.7	.014	6.38	.065
1.6	100.	.100	21.0	6.5	.018	6.40	.073
2.0	120.	.120	22.5	7.0	.021	6.43	.078
2.3	140.	.140	24.0	7.5	.025	6.45	.083
2.7	160.	.160	25.0	7.8	.029	6.48	.086
3.0	180.	.180	26.0	8.1	.032	6.50	.089
3.3	200.	.200	27.0	8.4	.036	6.52	.093
3.6	220.	.220	28.0	8.7	.039	6.55	.096
4.0	240.	.240	29.0	9.0	.043	6.57	.099
4.3	260.	.260	30.0	9.3	.046	6.60	.102
4.6	280.	.280	30.5	9.5	.050	6.62	.103
5.0	300.	.300	31.0	9.6	.054	6.65	.104
5.3	320.	.320	31.5	9.8	.057	6.67	.106
5.6	340.	.340	32.0	9.9	.061	6.70	.107
5.9	360.	.360	32.5	10.1	.064	6.72	.108
6.3	380.	.380	33.0	10.2	.068	6.75	.109
6.6	400.	.400	33.5	10.4	.071	6.77	.111
7.4	450.	.450	34.0	10.6	.080	6.84	.111
8.2	500.	.500	34.5	10.7	.089	6.91	.112

9.0	550.	.550	35.0	10.9	.098	6.98	.112
9.9	600.	.600	35.0	10.9	.107	7.05	.111

Job No. 14G783--4

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.		1			
Type of Specimen		Undisturbed			
Initial	Water content	w_0	33.6 %	%	%
	Void ratio	e_0			
	Saturation	S_0	%	%	%
	Dry density, lb/cu ft	γ_d	87.6		
Time to failure, min		t_f	9.02		
Unconfined compressive strength, T/sq ft		q_u	.11		
Undrained shear strength, T/sq ft		S_u	.06		
Sensitivity ratio		S_t			
Initial specimen diameter, in.		D_0	2.830		
Initial specimen height, in.		H_0	5.595		
Classification Gray, Clay, Very soft, w/ shell fragments and sand seams					
LL	54	PL	22	PI	32
				G_s	
Remarks		Project Houston-Galveston Navigation			
		Channel			
		Area Houston, Texas			
		Boring No. 93-88		Sample No. 6	
		Depth 15-17 ft		Date 8/26/94	
		UNCONFINED COMPRESSION TEST REPORT			

JOB NO. 14G783-4

DATE 8/26/94

PROJECT Houston-Galveston Navigation
Channel

AREA Houston, Texas

BORING NO. 93-88

SAMPLE NO. 9

DEPTH 23-25 ft

SPECIMEN NO. 1

CLASSIFICATION

Gray, Clay, Very soft, Sandy, w/ shell fragments

Tare No.	P-8	Height	5.595 in.
Tare plus Wet Specimen	279.00 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	216.49 gm	Initial Area	6.290 sq in.
Water Weight	62.51 gm	Volume	35.194 cu in.
Tare Weight	42.57 gm	Volume of Solids	cu in.
Wet Specimen	1074.08 gm	Void Ratio	
Dry Specimen	790.10 gm	Saturation	%
Water Content	35.94 %	Dry Density	85.5 lb/cu ft
Specific Gravity of Solids			
LL = 45	PL = 21	PI = 24	

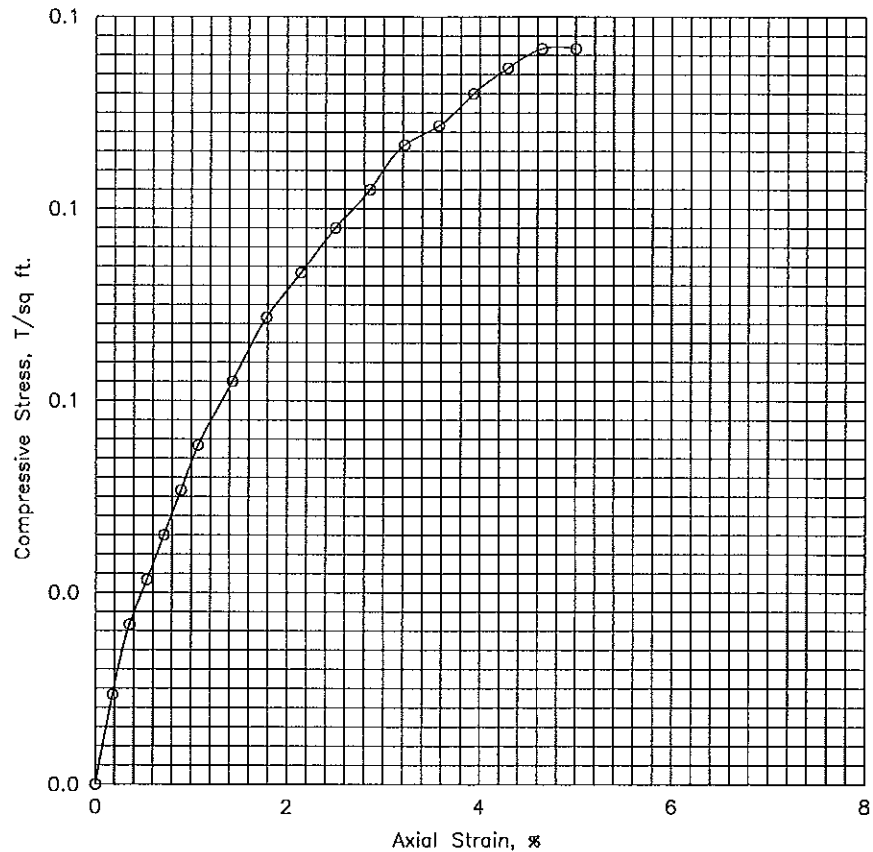
Proving Ring No. 17015

Proving Ring Constant, K = .311 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	4.0	1.2	.002	6.30	.014
.3	20.	.020	7.0	2.2	.004	6.31	.025
.5	30.	.030	9.0	2.8	.005	6.32	.032
.7	40.	.040	11.0	3.4	.007	6.34	.039
.9	50.	.050	13.0	4.0	.009	6.35	.046
1.0	60.	.060	15.0	4.7	.011	6.36	.053
1.4	80.	.080	18.0	5.6	.014	6.38	.063
1.7	100.	.100	21.0	6.5	.018	6.40	.073
2.0	120.	.120	23.0	7.1	.021	6.43	.080
2.4	140.	.140	25.0	7.8	.025	6.45	.087
2.7	160.	.160	27.0	8.4	.029	6.48	.093
3.0	180.	.180	29.0	9.0	.032	6.50	.100
3.3	200.	.200	30.0	9.3	.036	6.52	.103
3.7	220.	.220	31.5	9.8	.039	6.55	.108
4.0	240.	.240	33.0	10.2	.043	6.57	.112
4.3	260.	.260	34.0	10.6	.046	6.60	.115
4.6	280.	.280	34.0	10.6	.050	6.62	.115

Job No. 14G783-4

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.		1			
Type of Specimen		Undisturbed			
Initial	Water content	w_0	35.9 %	%	%
	Void ratio	e_0			
	Saturation	S_0	%	%	%
	Dry density, lb/cu ft	γ_d	85.5		
Time to failure, min		t_f	4.32		
Unconfined compressive strength, T/sq ft		q_u	.12		
Undrained shear strength, T/sq ft		S_u	.06		
Sensitivity ratio		S_t			
Initial specimen diameter, in.		D_0	2.830		
Initial specimen height, in.		H_0	5.595		
Classification Gray, Clay, Very soft, Sandy, w/ shell fragments					
LL	45	PL	21	PI	24
Remarks		Project Houston-Galveston Navigation Channel Area Houston, Texas Boring No. 93-88 Sample No. 9 Depth 23-25 ft Date 8/26/94			
UNCONFINED COMPRESSION TEST REPORT					

JOB NO. 14G783-4

DATE 8/26/94

PROJECT Houston-Galveston Navigation
Channel

AREA Houston, Texas

BORING NO. 93-88

SAMPLE NO. 13

DEPTH 31-33 ft

SPECIMEN NO. 1

CLASSIFICATION

Brown & gray, Clay, Very soft, w/calcareous nodules

Tare No.	P-208	Height	5.595 in.
Tare plus Wet Specimen	445.65 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	346.05 gm	Initial Area	6.290 sq in.
Water Weight	99.60 gm	Volume	35.194 cu in.
Tare Weight	42.70 gm	Volume of Solids	cu in.
Wet Specimen	1078.25 gm	Void Ratio	
Dry Specimen	811.73 gm	Saturation	%
Water Content	32.83 %	Dry Density	87.9 lb/cu ft
Specific Gravity of Solids			
LL = 82	PL = 30	PI = 52	

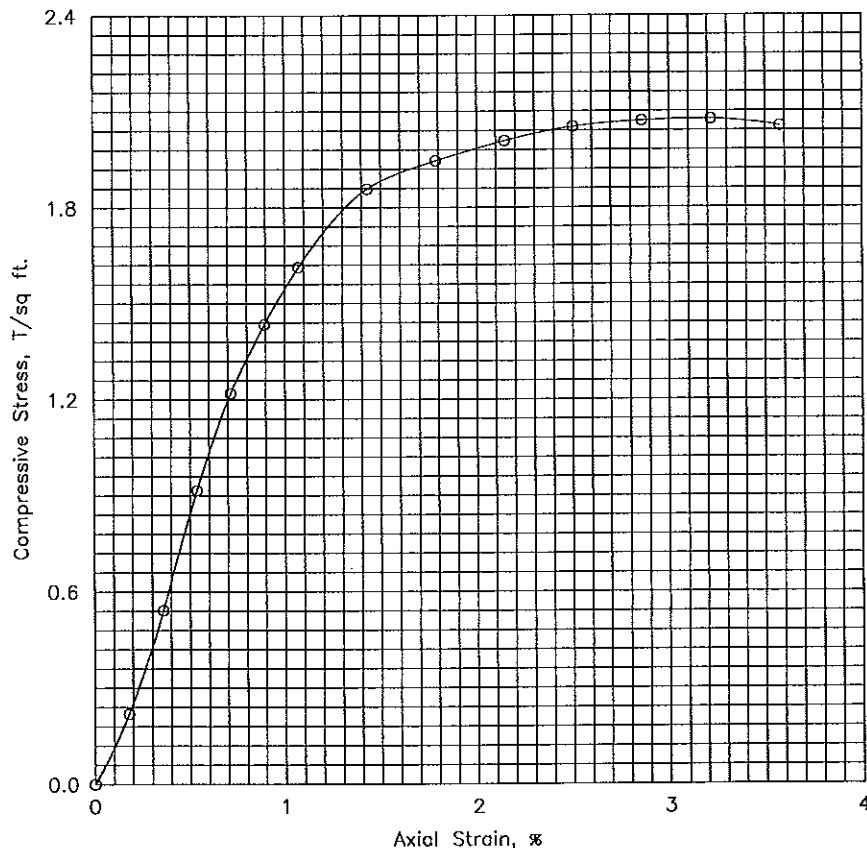
Proving Ring No. 10170

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	25.0	19.1	.002	6.30	.219
.3	20.	.020	62.0	47.5	.004	6.31	.542
.5	30.	.030	105.0	80.4	.005	6.32	.916
.7	40.	.040	140.0	107.2	.007	6.34	1.219
.9	50.	.050	165.0	126.4	.009	6.35	1.434
1.0	60.	.060	186.0	142.5	.011	6.36	1.613
1.4	80.	.080	215.0	164.7	.014	6.38	1.858
1.7	100.	.100	226.0	173.1	.018	6.40	1.946
2.0	120.	.120	234.0	179.2	.021	6.43	2.008
2.4	140.	.140	240.0	183.8	.025	6.45	2.052
2.7	160.	.160	243.0	186.1	.029	6.48	2.070
3.0	180.	.180	244.5	187.3	.032	6.50	2.075
3.3	200.	.200	243.0	186.1	.036	6.52	2.054

Job No. 14G783-4

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.		1			
Type of Specimen		Undisturbed			
Initial	Water content	w_0	32.8 %	%	%
	Void ratio	e_0			
	Saturation	S_0	%	%	%
	Dry density, lb/cu ft	γ_d	87.9		
Time to failure, min		t_f	3.03		
Unconfined compressive strength, T/sq ft		q_u	2.07		
Undrained shear strength, T/sq ft		S_u	1.04		
Sensitivity ratio		S_t			
Initial specimen diameter, in.		D_0	2.830		
Initial specimen height, in.		H_0	5.595		
Classification Brown & gray, Clay, Very soft, w/calcareous nodules					
LL	82	PL	30	PI	52
Remarks		Project Houston--Galveston Navigation Channel Area Houston, Texas Boring No. 93-88 Sample No. 13 Depth 31-33 ft Date 8/26/94 El			
UNCONFINED COMPRESSION TEST REPORT					

U.S. ARMY CORPS OF ENGINEERS

DEPTH, FEET		SAMPLE NO.	SAMPLE NO.	PEN./TORVANE	SPT.-BLOW COUNT	BORING NO. <u>94-88</u>	DATE: BEGIN <u>7-21-94</u>	PAGE <u>1 / 2</u>		
						JOB NO. <u>946783-1</u>	COMPLETE <u>7-21-94</u>	Thin Walled Tube		
						PROJECT <u>HOUSTON-GALVESTON Navigation Channel</u>	☒ 3"	☐ 6"		
						LOCATION <u>DISPOSAL AREA 15</u>				
						ELEVATION OF HOLE				
						MANUFACTURER'S DESIGNATION OF DRILL RIG <u>Arco R444, C-1000 Marsh Buggy</u>				
						GROUNDWATER: DEPTH <u>0</u> ft., ELEV. _____ ft., at end of Drilling				
						WEATHER <u>SUNNY & HOT</u>				
						DRILLER <u>SCOTT G. RECURRE</u>	LOGGER <u>JOHN A. GENTRY</u>			
						COLOR	MATERIAL TYPE	CONSISTENCY	SECONDARY CONSTITUENTS	STRUCTURAL FEATURES AND COMMENTS
	0					BROWN	SAND	MEDIUM DENSE	SILTY	-w/Shell 0'-2'
		1				BROWN	SAND	MEDIUM DENSE	SILTY	
	5					BROWN	SAND	MEDIUM DENSE	SILTY	
		2	14 13 16			BROWN	SAND	MEDIUM DENSE	SILTY	
	10					BROWN	SAND	MEDIUM DENSE	SILTY	
		3	45.6			BROWN	SAND	MEDIUM DENSE	SILTY	
	15					GRAY	CLAY	VERY SOFT		-w/Sand 12'-13'
		4	0/0.0			GRAY	CLAY	VERY SOFT		
		5	233			GRAY	SAND	LOOSE	SILTY	-w/Shell Fragments
	20					GRAY	CLAY	VERY SOFT		
		6	0/0.0			GRAY	CLAY	VERY SOFT		
		7				GRAY	SAND	VERY LOOSE		
		8	W.O.P.			GRAY	SAND	VERY LOOSE		
	25					GRAY	CLAY	VERY SOFT	SANDY	-w/Shell Fragments
		9	0/0.0			GRAY	CLAY	VERY SOFT	SANDY	
		10	2.5			BROWN	CLAY	VERY STIFF		GRAY 25'-35'
		11	2.75			BROWN	CLAY	VERY STIFF		
	30					BROWN	CLAY	VERY STIFF		-w/Carcass Nodules 29'-30'
		12	3.0			BROWN	CLAY	VERY STIFF		
		13	2.5			BROWN	CLAY	VERY STIFF		
	35					BROWN	CLAY	VERY STIFF		-w/SAND POCKETS 33'-35'
		14	2.75			BROWN	CLAY	VERY STIFF		

Torvane Reading

0.35

0

DEPTH, FEET		SAMPLE NO.	PEN./TORVANE	SPT.-BLOW COUNT	COLOR	MATERIAL TYPE	CONSISTENCY	SECONDARY CONSTITUENTS	STRUCTURAL FEATURES AND COMMENTS
BORING NO. <u>93-88</u> DATE: BEGIN <u>7-21-94</u> PAGE <u>2 1 2</u> JOB NO. <u>946783.1</u> COMPLETE <u>7-21-94</u> Thin Walled Tube PROJECT <u>Houston-Galveston Navigation channel</u> ☒ 3" ☐ 6" LOCATION <u>075 Y 05A U AREA 15</u> ELEVATION OF HOLE _____ MANUFACTURER'S DESIGNATION OF DRILL RIG <u>Arco K44U, C-1000 Marsh Buggy</u> GROUNDWATER: DEPTH <u>0</u> ft., ELEV. _____ ft., at end of Drilling WEATHER <u>SUNNY & HOT</u> DRILLER <u>JOE T. CREGG</u> LOGGER <u>JOHN A. GENTLE</u>									
35	15	2.5			LIGHT BROWN	CLAY	VERY STIFF		- w/ S&P ROCKETS 35'-41'
	14	3.0			LIGHT BROWN	CLAY	VERY STIFF		- w/ Calcareous Nodules 35'-41'
40	17	3.25			LIGHT BROWN	CLAY	VERY STIFF		- w/ Ferruginous Nodules 35'-41'
									Torvane Multiplier 0.2
45									
50									
55									
60									
65									
70									

Project: on-Galveston Navigation Channel

SUMMARY OF LABORATORY TEST RESULTS

Contract No. DACW64-94-C-0040Boring No. 93-88

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			Brown,Sand,Medium dense,Silty,w/shell fragments	S M												
2	2-3.5		29	Brown,Sand,Medium dense,Silty,w/shell fragments	S M												
3	7-8.5		11	Brown,Sand,Medium dense,Silty,w/shell fragments	S M						95.9	93.8	78.1	81.6	19.5		
4	11-13	0.00		Gray,Clay,Very soft,w/sand layer	C H	31.6											
5	13-14.5		6	Gray,Sand,Loose,Silty,w/shell fragments	S M						100.0	99.9	99.7	86.3	38.7		
6	15-17	0.0		Gray,Clay,Very soft,w/shell fragments & sand seams	C H	33.6	87.6	117.0	54	22	100.0	99.9	99.7	96.8	84.6		0.12 - 11
7	17-19			Gray,Sand,Very loose,Silty,w/shell fragments	S M												
8	19-20.5		W.O.P	Gray,Sand,Very loose,Silty,w/shell fragments	S M												
9	23-25	0.00		Gray,Clay,Very soft,Sandy,w/shell fragments	C L	35.9	85.5	116.3	45	21	90.7	89.3	88.5	85.2	66.3		0.12
10	25-27	2.25		Brown & gray,Clay,Very stiff,w/calcareous nodules	C H	22.7											
11	27-29	2.25		Brown & gray,Clay,Very stiff,w/calcareous nodules	C H	22.7											
12	29-31	2.75		Brown & gray,Clay,Very stiff,w/calcareous nodules	C H	28.0											
13	31-33	2.25		Brown & gray,Clay,Very stiff,w/calcareous nodules	C H	32.8	87.9	116.7	82	30	100.0	100.0	100.0	99.6	98.8		2.07
14	33-35	3.25		Brown & gray,Clay,Very stiff,w/calcareous nodules	C H	23.3											
15	35-37	2.75		Brown,Clay,Very stiff,w/calcareous nodules ferrous stains and sand pockets	C H	20.2											
16	37-39	3.00		Brown,Clay,Very stiff,w/calcareous nodules ferrous stains and sand pockets	C H	21.3											
17	39-41	3.25		Brown,Clay,Very stiff,w/calcareous nodules ferrous stains and sand pockets	C H	21.2											

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