

JOB NO. 14G533

DATE 1/6/92

PROJECT Gulf Intracoastal Waterway near Sargent Beach, Texas

BORING NO. 91-305

SAMPLE NO. 2

DEPTH 2-4 ft

SPECIMEN NO. 1

CLASSIFICATION

Gray, Clay, very soft, Sandy, w/woods & roots

Tare No.	P-220	Height	5.595 in.
Tare plus Wet Specimen	458.30 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	353.03 gm	Initial Area	6.290 sq in.
Water Weight	105.27 gm	Volume	35.194 cu in.
Tare Weight	42.54 gm	Volume of Solids	cu in.
Wet Specimen	1048.18 gm	Void Ratio	
Dry Specimen	782.78 gm	Saturation	%
Water Content	33.90 %	Dry Density	84.7 lb/cu ft
Specific Gravity of Solids			
LL = 36	PL = 18	PI = 18	

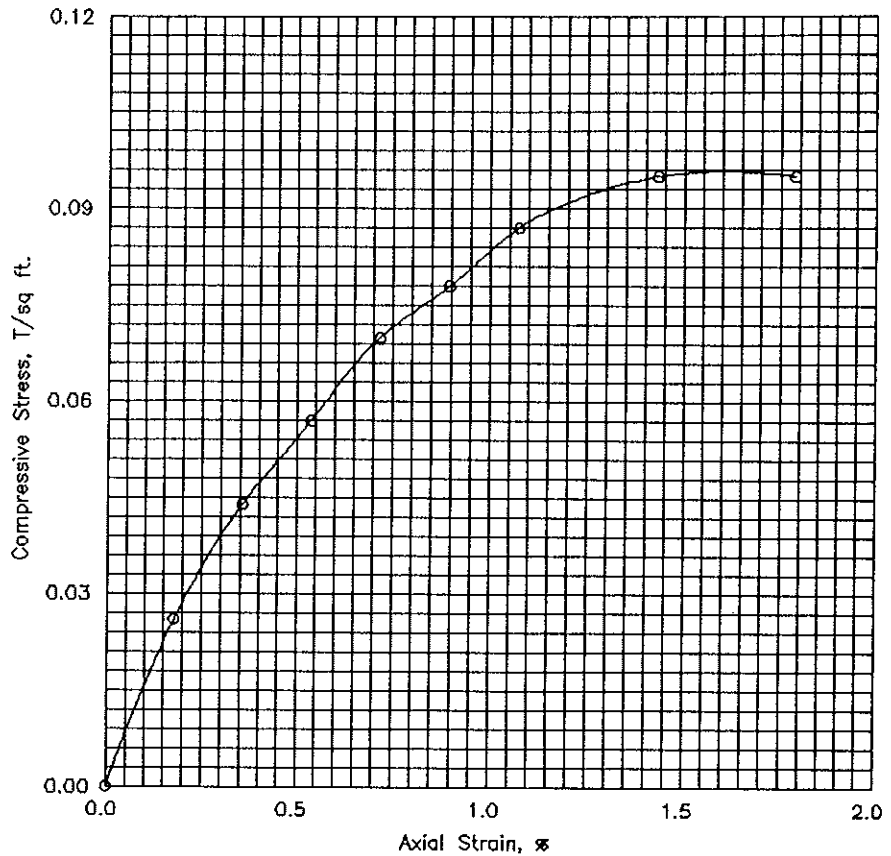
Proving Ring No. 10170

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	3.0	2.3	.002	6.30	.026
.3	20.	.020	5.0	3.8	.004	6.31	.044
.5	30.	.030	6.5	5.0	.005	6.32	.057
.7	40.	.040	8.0	6.1	.007	6.34	.070
.9	50.	.050	9.0	6.9	.009	6.35	.078
1.0	60.	.060	10.0	7.7	.011	6.36	.087
1.3	80.	.080	11.0	8.4	.014	6.38	.095
1.6	100.	.100	11.0	8.4	.018	6.40	.095

Job No. 14C533

Failure Sketches



- ☐ Controlled stress
☒ Controlled strain

Test No.		1			
Type of Specimen		Undisturbed			
Initial	Water content	w_0	33.9 %	%	%
	Void ratio	e_0			
	Saturation	S_0	%	%	%
	Dry density, lb/cu ft	γ_d	84.7		
Time to failure, min		t_f	1.33		
Unconfined compressive strength, $T/sq\ ft$		q_u	.10		
Undrained shear strength, $T/sq\ ft$		S_u	.05		
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/woods & roots

LL	36	PL	18	PI	18	G_s
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Remarks	Project Gulf Intracoastal Waterway	
	Area Near Sargent Beach, Texas	
	Boring No. 91-305	Sample No. 2
	Depth 2-4 ft	Date 1/6/92

UNCONFINED COMPRESSION TEST REPORT

JOB NO. 14G533

DATE 1/6/92

PROJECT Gulf Intracoastal Waterway near Sargent Beach, Texas

BORING NO. 91-305³⁰⁴

SAMPLE NO. 6

DEPTH 10 - 12 ft

SPECIMEN NO. 1

CLASSIFICATION

Gray, Clay, very soft, Sandy, w/shell fragments & sand pockets

Tare No.	P-200	Height	5.595 in.
Tare plus Wet Specimen	448.30 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	339.81 gm	Initial Area	6.290 sq in.
Water Weight	108.49 gm	Volume	35.194 cu in.
Tare Weight	42.38 gm	Volume of Solids	cu in.
Wet Specimen	1086.91 gm	Void Ratio	
Dry Specimen	796.41 gm	Saturation	%
Water Content	36.48 %	Dry Density	86.2 lb/cu ft
Specific Gravity of Solids			
LL = 38	PL = 18	PI = 20	

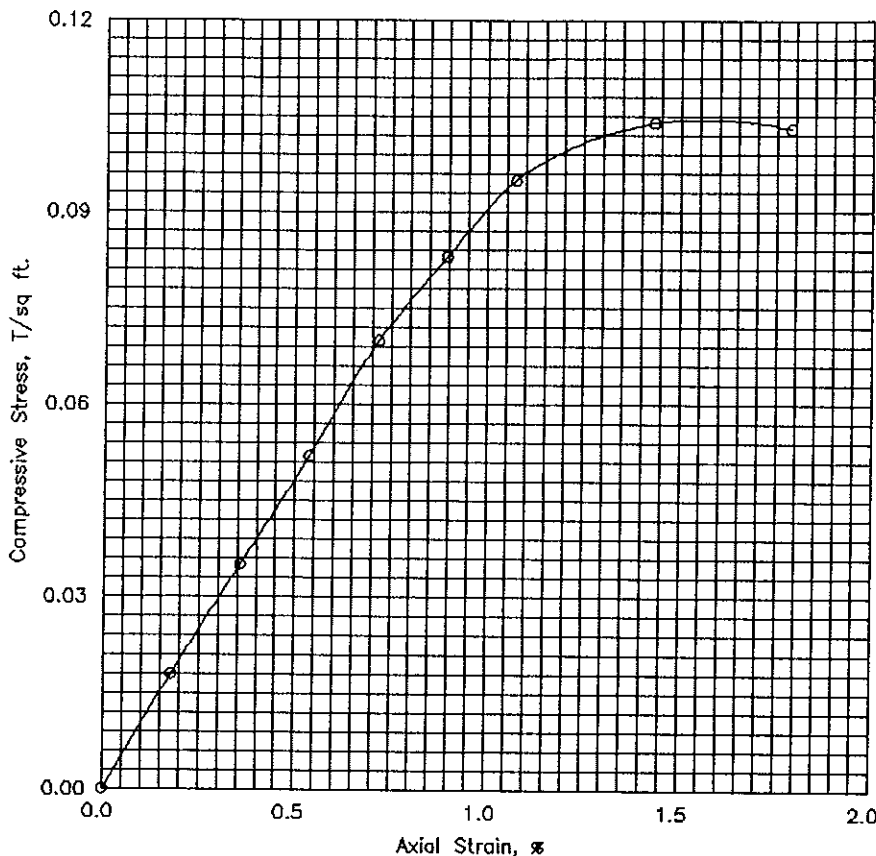
Proving Ring No. 10170

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	2.0	1.5	.002	6.30	.018
.3	20.	.020	4.0	3.1	.004	6.31	.035
.5	30.	.030	6.0	4.6	.005	6.32	.052
.7	40.	.040	8.0	6.1	.007	6.34	.070
.9	50.	.050	9.5	7.3	.009	6.35	.083
1.0	60.	.060	11.0	8.4	.011	6.36	.095
1.4	80.	.080	12.0	9.2	.014	6.38	.104
1.7	100.	.100	12.0	9.2	.018	6.40	.103

Job No. 14G533

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.		1			
Type of Specimen		Undisturbed			
Initial	Water content	w_0	36.5 %	%	%
	Void ratio	e_0			
	Saturation	S_0	%	%	%
	Dry density, lb/cu ft	γ_d	86.2		
Time to failure, min		t_f	1.37		
Unconfined compressive strength, T/sq ft		q_u	.10		
Undrained shear strength, T/sq ft		S_u	.05		
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 & sand packets					
LL	38	PL	18	PI	20
Remarks		G.			
		Project Gulf Intracoastal Waterway			
		Area Near Sargent Beach, Texas			
		Boring No. 91-305 301/		Sample No. 6	
		Depth 10 - 12 ft		Date 1/6/92	
UNCONFINED COMPRESSION TEST REPORT					

91-304
340+80

U.S. ARMY CORPS OF ENGINEERS

STA 340+80

BORING NO. 91-304 DATE: BEGIN 11-29-91 PAGE 11
 JOB NO. 146531 COMPLETE 12-04-91 Thin Walled Tube
 PROJECT G I W W ☒ 3" ☐ 6"
 LOCATION SARGENT BEACH STA. 344+00
 ELEVATION OF HOLE _____
 MANUFACTURER'S DESIGNATION OF DRILL RIG ARDCO
 GROUNDWATER: DEPTH 0 ft., ELEV. _____ ft., at end of Drilling
 WEATHER MOSTLY CLOUDY
 DRILLER Douglas Mitchell LOGGER John A. Hendrix

DEPTH, FEET	SAMPLE NO.	PEN./TORVANE	SPT.-BLOW CO	COLOR	MATERIAL TYPE	CONSISTENCY	SECONDARY CONSTITUENTS	STRUCTURAL FEATURES AND COMMENTS
0	1	0.25		GRAY	CLAY	SOFT		-W/ROOTS 0'-2'
	2	0		GRAY	CLAY	VERY SOFT		
5	3	0		GRAY	CLAY	VERY SOFT		
	4	0		GRAY	CLAY	VERY SOFT	SANDY	
	5	0		GRAY	CLAY	VERY SOFT	SANDY	
10	6	0.25		GRAY	CLAY	SOFT	SANDY	-W/SHELL FRAGMENTS 10'-13'
	7	0.5		GRAY	CLAY	MEDIUM STIFF	SANDY	
15	8	0.5		GRAY	CLAY	MEDIUM STIFF		-W/SANDS RAM 15'-16'
	9	0.5		GRAY	CLAY	MEDIUM STIFF		-W/SHELL FRAGMENTS 13'-16'
20	X 10	4.7		BROWN	SAND	MEDIUM DENSE	SILTY	*FINE
25	X 11	2.25		BROWN	CLAY	VERY STIFF		*4. LIGHT GRAY 23'-29'
	12	2.75		BROWN	CLAY	VERY STIFF		
	13	2.75		BROWN	CLAY	VERY STIFF		
30	14	0.25		BROWN	CLAY	SOFT		
	15	0.25		BROWN	CLAY	SOFT		-W/CALCAREOUS + FERROUS 32'-35'
35	16	2.5		BROWN	CLAY	VERY STIFF		

U.S. ARMY CORPS OF ENGINEERS

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Project : Gulf Intracoastal Waterway, near Sargent Beach, Texas
Contract No. DACW64-92-D-0001

SUMMARY OF LABORATORY TEST RESULTS

Boring No.

44005

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	0.00		Gray, Clay, Very soft, Sandy, w/woods & roots	CL	40.8											
2	2-4	0.00		Gray, Clay, Very soft, Sandy, w/woods & roots	CL	33.9	84.7	113.4	36	18	100.0	100.0	99.9	99.8	81.9	0.06	0.10
3	4-6	0.00 C=25		Gray, Clay, Very soft UC 5.2-5.5 = 100 SWD TR C = 130	CH CL	37	84	115	36	17					71		C = 130
4	6-8	0.00 C=25		Gray, Clay, Very soft, Sandy (DS) SWD	CL	38.2	83	117	35	14					81		
5	8-10	0.00 C=25		Gray, Clay, Very soft, Sandy 9.5-10" SWD TR C = 160	CL	35.2	85	119	36	15					73		C = 160
6	10-12	0.00		Gray, Clay, Very soft, Sandy, w/shell fragments & sand pockets	CL	36.5	86.2	117.7	38	18	100.0	99.8	99.4	98.5	77.7	0.10	0.10
7	12-14	0.00		Gray, Clay, Very soft, Sandy, w/shell fragments & sand pockets	CL	34.5										0.12	
8	14-16	0-50 C=25		Gray, Clay, Medium stiff, w/shell fragments 15.5-16 SWD UC = 130 TR = 230	CH CL	32.1	90	118.9	39	16					83		C = 230
9	16-18	0.00		Gray, Clay, Very soft, Sandy, w/sand pockets	CL	31.5	90.6	119.1	41							0.14	
10	18.5-20		13	Brown, Sand, Medium dense, Silty	S M	20.1					100.0	100.0	91.6	77.1	43.1		
11	23.5-25	2.00		Red & gray, Clay, Very stiff, w/ferrous stains	CH	31.9											
12	25-27	3.00		Red & gray, Clay, Very stiff, w/calcareous nodules and ferrous stains, slickensided	CH	29.8	94.7	122.9	74								
13	27-29	3.00		Red & gray, Clay, Very stiff, w/ferrous stains, slickensided	CH	23.8											
14	29-31	0.25		Red, Clay, Soft, w/ferrous stains	CH	58.2											
15	31-33	0.25		Red, Clay, Soft, w/ferrous stains	CH	57.3	66.4	104.7	80	28	100.0	100.0	100.0	99.6	96.8	0.20	
16	33-35	2.25		Red & gray, Clay, Very stiff, w/calcareous nodules and ferrous stains	CH	32.2											
17	35-37	2.25		Red & gray, Clay, Very stiff, w/ferrous stains	CH	28.5											

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

Project : Gulf Intracoastal Waterway, near Sargent Beach, Texas
Contract No. DACW64-92-D-0001

SUMMARY OF LABORATORY TEST RESULTS

Boring No.

91-305 *304*

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 (%)	P L (%)	Mechanical Analysis % Passing					Torvane Shear Strength (tsf)	q u (tsf)
											#4	#10	#40	#100	#200		
18	37-39	2.50		Red & gray, Clay, Very stiff, w/calcareous nodules & ferrous stains	CH	30.8											
19	89-41	2.75		Red & gray, Clay, Very stiff, w/ferrous stains & silt seams	CH	29.4											
20	41-43	3.00		Red & gray, Clay, Very stiff, w/ferrous stains & silt seams	CH	31.2											
21	43-45	2.75		Red & gray, Clay, Very stiff, w/calcareous nodules, slickensided	CH	29.5	95.1	123.2	76								
22	45-47	3.00		Red & gray, Clay, Very stiff, w/calcareous nodules	CH	28.1											
23	47-49	3.25		Red & gray, Clay, Very stiff, w/calcareous nodules	CH	27.4											
24	49-50	4.5+		Red & gray, Clay, Hard, w/calcareous nodules	CH	25.7											

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

U.S. ARMY CORPS OF ENGINEERS

344100

3 NO. 4-304 DATE: BEGIN 1/10/92 PAGE 112

JOB NO. 146531 COMPLETE 1/10/92 Thin Walled Tube

PROJECT GTWW 23" x 6"

LOCATION Sargent beach Sta 240+50

ELEVATION OF HOLE

MANUFACTURER'S DESIGNATION OF DRILL RIG Fairing CPO 2

GROUNDWATER: DEPTH 0 ft., ELEV. 0 ft., at end of Drilling

WEATHER clear / sunny

DRILLER D. Geeran LOGGER P. Crowell

DEPTH, FEET	SAMPLE NO.	SAMPLE NO.	PEN./TORVANE	SPT.-BLOW COUNT	COLOR	MATERIAL TYPE	CONSISTENCY	SECONDARY CONSTITUENTS	STRUCTURAL FEATURES AND COMMENTS
0									
	1	X	W.O.P		Gray	silt	v. loose	clay	w/ roots
	2	X	W.O.P		Gray	silt	"	clay	w/ roots
5	3	X	W.O.P		Gray	silt	"	clay	w/ roots
	4		0.00		Gray	silt	"	clay	w/ roots
10	5		0.00		Gray	silt	"	clay	w/ roots
	6		0.25		Gray	silt	"	clay	w/ roots & shell
	7		0.75		Gray	silt	"	clay	w/ shell Tan.
15	8		1.0		Gray	clay	stiff	silt	Tan
	9		1.0		Gray	clay	stiff	silt	Tan
20	10		1.0		Gray	clay	stiff	silt	Tan
	11		1.5		Gray	clay	stiff	silt	Tan
	12		1.5		Gray	clay	stiff	silt	into Tan w/ calc Nod
25	13		2.0		Tan	clay	Very stiff	silt	w/ calc Nod
	14		2.0		Tan	clay	Very stiff	silt	w/ calc Nod
30	15		2.0		Gray	clay	Very stiff	silt	w/ calc Nod
	16		2.5		Tan	clay	Very stiff		Gray w/ calc Nod
	17		2.5		Tan	clay	Very stiff		Gray w/ calc Nod
35	18		3.0		Tan	clay	Very stiff		Gray w/ calc Nod

Driller material 0-10'

U.S. ARMY CORPS OF ENGINEERS

DEPTH, FEET		SAMPLE NO.	PEN./TORVANE	SPT.-BLOW COUNT	BORING NO. <u>91-305</u> DATE: BEGIN <u>1/14/92</u> PAGE <u>2 / 2</u>					
JOB NO. <u>14G-531</u> COMPLETE <u>1/19/92</u> Thin Walled Tube ☒ 3" ☐ 6"										
PROJECT <u>G.I.W.W.</u>					LOCATION <u>Sargeant Beach Sta 340+50</u>					
ELEVATION OF HOLE _____					MANUFACTURER'S DESIGNATION OF DRILL RIG <u>Feilds CF02</u>					
GROUNDWATER: DEPTH <u>0</u> ft., ELEV. _____ ft., at end of Drilling					WEATHER <u>cool clear</u>					
DRILLER <u>A. Cerrina</u>					LOGGER <u>P. Crowell</u>					
		COLOR	MATERIAL TYPE	CONSISTENCY	SECONDARY CONSTITUENTS	STRUCTURAL FEATURES AND COMMENTS				
-35-	19	3.0	Tan	Clay	Very stiff		gray w/calc nod			
-40-	20	2.5	Tan	Clay	Very stiff		gray			
	21	2.5	Tan	Clay	Very stiff		gray			
	22	3.0	Tan	Clay	Very stiff		gray			
-45-	23	3.0	Tan	Clay	Very stiff		gray			
	24	3.0	Tan	Clay	Very stiff		gray			
-50-	25	3.0	Tan	Clay	Very stiff		gray			
							Bottom of 91-304 @ 50			
							W.O.P: weight of pipe			
-55-										
-60-										
-65-										
-70-										

Project : Gulf Intracoastal Waterway, near Sargent Beach, Texas
 Contract No. DACW64-92-D-0001 Delivery No. 0005

SUMMARY OF LABORATORY TEST RESULTS

Boring No. 91-304

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 (%)	P L (%)	Mechanical Analysis % Passing					Torvane Shear Strength (tsf)	q u (tsf)
											#4	#10	#40	#100	#200		
1	0.5-2	0.00	W.O.P	Gray, Clay, Very soft, Sandy, w/shell fragments	CL	51.3											
2	2.5-4	0.00	W.O.P	Gray, Clay, Very soft, Sandy, w/shell fragments	CL	40.3			39		100.0	100.0	99.8	94.2	79.6		
3	4.5-6	0.00	W.O.P	Gray, Clay, Very soft, Sandy, w/shell fragments	CL	51.4											
4	6-8	0.00		Gray, Silt, Very loose, Clayey, w/ roots Clay. So	CL CL	44	76		45	17							
5	8-10	0.00		Gray, Clay, Very soft, w/shell fragments and roots	CH	48.0											
6	10-12	0.25		Gray, Silt, Very loose, Clayey, w/roots and shell	CL CH												
7	12-14	0.75		Brown & gray, Clay, Medium stiff, Sandy, w/shell fragments	CL	37.5			48								
8	14-16	0.50		Gray & olive gray, Clay, Medium stiff	CH	55.5											
9	16-18	0.50		Olive gray, Clay, Medium stiff	CH	60.9											
10	18-20	1.00		Olive gray, Clay, Stiff	CH	47.9											
11	20-22	1.50		Gray & tan, Clay, Stiff, Silty	CL CH	44	76		102	29							
12	22-24	2.00		Olive gray & brown, Clay, Very stiff, w/calcareous nodules, slickensided	CH	42.9											
13	24-26	2.25		Brown & gray, Clay, Very stiff, w/calcareous nodules, slickensided	CH	41.5											
14	26-28	2.50		Brown & gray, Clay, Very stiff, w/calcareous nodules, slickensided	CH	34.4			79		100.0	99.9	99.8	99.7	99.6		
15	28-30	2.50		Brown & gray, Clay, Very stiff, w/calcareous nodules, slickensided	CH	32.8											
16	30-32	2.25		Gray & brown, Clay, Very stiff, w/calcareous nodules, slickensided	CH	30.1											
17	32-34	3.25		Brown & gray, Clay, Very stiff, w/calcareous nodules and ferrous stains	CH	26.2											

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

Project : Gulf Intracoastal Waterway, near Sargent Beach, Texas
 Contract No. DACW64-92-D-0001 Delivery No. 0005

SUMMARY OF LABORATORY TEST RESULTS

Boring No. ³⁰⁵
 91-304

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 (%)	P L (%)	Mechanical Analysis % Passing					Torvane Shear Strength (tsf)	q u (tsf)
											#4	#10	#40	#100	#200		
18	34-36	3.50		Brown, Clay, Very stiff, w/ferrous stains, slickensided	CH	32.6											
19	36-38	3.00		Brown & gray, Clay, Very stiff, w/calcareous nodules, slickensided	CH	31.0			74		99.5	98.9	98.8	98.6	98.5		
20	38-40	3.25		Brown & gray, Clay, Very stiff, w/ferrous stains & blocky structure, slickensided	CH	27.1											
21	40-42	3.75		Brown & gray, Clay, Very stiff, w/silt seams and blocky structure, slickensided	CH	30.5											
22	42-44	2.75		Brown & gray, Clay, Very stiff, w/silt seams, slickensided	CH	29.8											
23	44-46	3.00		Brown & gray, Clay, Very stiff, w/calcareous nodules and silt seams, slickensided	CH	30.9											
24	46-48	2.75		Brown & gray, Clay, Very stiff, w/silt seams, slickensided	CH	27.4			66		100.0	100.0	100.0	100.0	100.0		
25	48-50	3.25		Brown & gray, Clay, Very stiff, w/silt seams and ferrous stains, slickensided	CH	28.3											

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