

U.S. ARMY CORPS OF ENGINEERS

DEPTH, FEET	SAMPLE NO.	PEN./TORVANE	SPT.-BLOW COUNT	BORING NO. <u>99-17</u> DATE: BEGIN <u>4-23-99</u> PAGE <u>1/2</u>				
				JOB NO. <u>1140114808</u> COMPLETE <u>4-23-99</u> Thin Walled Tube				
PROJECT <u>Neches River Salt water Barrier</u>				3" ☒ 6" ☐				
LOCATION <u>N=875552.18, E=3543580.63</u>				ELEVATION OF HOLE <u>1.2</u>				
MANUFACTURER'S DESIGNATION OF DRILL RIG <u>DNR 75, w/Barge</u>				GROUNDWATER: DEPTH <u>4</u> ft., ELEV. <u> </u> ft., at end of Drilling				
WEATHER <u>Cloudy</u>				DRILLER <u>Dempsey Gearam</u> LOGGER <u>Tray Mostanagid</u>				
				COLOR	MATERIAL TYPE	CONSISTENCY	SECONDARY CONSTITUENTS	STRUCTURAL FEATURES AND COMMENTS
0	J 1	0.00		Gray	Clay	V. soft		* 2.5' of standing water, w/decayed wood 0-8'
	J 2	0.00		Gray	Clay	V. soft		- sample felt out of tube 0-4'
5	3	0.00		Gray	Clay	V. soft		- set 10' of casing (Total casing below mud line 7') after taking sample #4
	4	0.00		Gray	Clay	V. soft		- w/roots & decayed wood
	5	0.00		Gray	Clay	V. soft		- w/organic material & roots
10	6	0.25		Gray	Clay	Soft	Silt	- w/organic material & roots
	7	0.50		olive gray	Clay	M. stiff		- w/organic material & roots
15	8	0.50		olive, gray & gray	Clay	M. stiff		- w/organic material & roots
	X 9	1.18		Gray	Sand	M. Dense	Clay	- w/roots & wood
								- w/pea gravel 19'-22'
20	X 10	4.81		Brown	Sand	M. Dense		- w/pea gravel added 15' off casing
	11	1.50		Yellowish Brown & gray	Clay	Stiff	Silt	- w/Fer stains
25	12	2.25		Yellowish Brown & gray	Clay	V. stiff	Silt	- w/Fer stains
	13	2.50		Yellowish Brown & gray	Clay	V. stiff	Silt	- w/Fer stains
	14	3.00		Gray & Brown	Clay	V. stiff		- w/Fer stains, SLKS
30	15	3.25		Gray & Brown	Clay	V. stiff		- w/Fer stains, SLKS
	16	4.50		Reddish Brown & gray	Clay	Hard		- w/calc nod & Fer stains, SLKS
35	17	4.50		Reddish Brown & gray	Clay	Hard		- w/calc nod & Fer stains, SLKS

Mud line

(20)

9

21

SUMMARY OF LABORATORY TEST RESULTS

Contract No. DACW64-98-D-0002 Delivery Order No. 0010

Boring No. 99-17

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 (%)	P L (%)	Mechanical Analysis % Passing					Specific Gravity	q u (tsf)
											#4	#10	#40	#100	#200		
1	0 - 2	0.00		Clay, w/decayed wood, Very soft, gray	C H	62.7											
2	2 - 4	0.00		Clay, w/decayed wood, Very soft, gray	C H	88.4											
3	4 - 6	0.00		Clay, w/decayed wood, Very soft, gray	C H	72.2											
4	6 - 8	0.00		Clay, w/decayed wood, Very soft, gray	C H	61.3											
5	8 - 10	0.00		Clay, w/decayed wood & roots, Very soft, Gray	C H	56.6	62.2	97.4	99.0	43.0	100.0	100.0	100.0	100.0	100.0		
6	10 - 12	0.25		Silty Clay, w/organic material & roots, Soft, Gray	C L	27.6											
7	12 - 14	0.50		Clay, w/organic material & roots, Medium stiff, Olive gray	C H	35.4	81.9	110.9	55.0	21.0							0.57
8	14 - 16	0.50		Clay, w/organic material & roots, Medium stiff, Olive gray	C H	27.9											
9	16-17.5		29	Clayey Sand, w/roots & wood, Medium dense, Gray	S C						100.0	100.0	90.7	50.0	36.1		
10	20-21.5		19	Sand, w/pea gravel, Medium dense, Brown	S P						98.3	94.1	38.7	4.2	2.5		
11	22-24	1.50		Silty Clay, w/fer stains, Stiff, Yellowish brown & gray	C L	22.0											
12	24-26	2.25		Silty Clay, w/fer stains, Very stiff, Yellowish brown & gray	C L	21.7	103.7	126.2	35.0	18.0							2.54
13	26-28	2.50		Silty Clay, w/fer stains, Very stiff, Yellowish brown & gray	C L	21.0											
14	28-30	3.00		Clay, w/fer stains, silts, Very stiff, Gray & brown	C H	21.5											
15	30-32	3.25		Clay, w/fer stains, silts, Very stiff, Gray & brown	C H	21.3											
16	32-34	4.50+		Clay, w/calc nod & fer stains, silts, Hard, Reddish brown & gray	C H	23.4											
17	34-36	4.50+		Clay, w/calc nod & fer stains, silts, Hard, Reddish brown & gray	C H	33.6											
18	36-38	3.25		Silty Clay, w/fer stains, Very stiff, Yellowish brown & gray	C L	19.9	104.6	125.5									2.12
19	38-40	2.25		Silty Clay, w/fer stains, Very stiff, Yellowish brown & gray	C L	18.8	105.6	125.5	47.0	20.0							2.22
20	40-42	2.25		Silty Clay, w/fer stains & sand pockets, Very stiff, Yellowish brown & gray	C L	21.0											

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: Neches River Saltwater Barrier

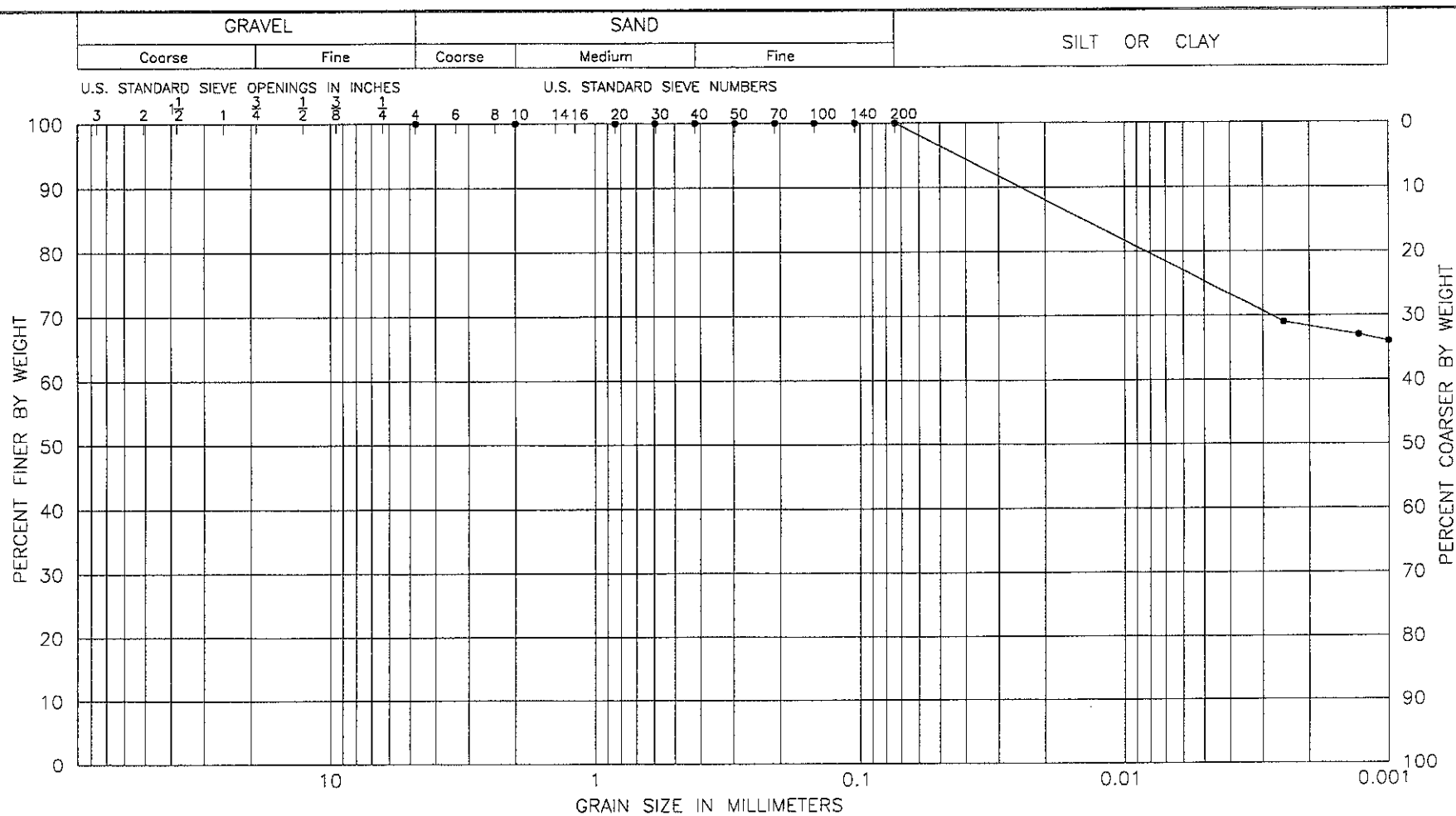
SUMMARY OF LABORATORY TEST RESULTS

Contract No. DACW64-98-D-0002 Delivery Order No. 0010

Boring No. 99-17

[illegible]

S #: Sample Number, P P : Pocket Penetrometer Reading, U S C : Unified Soil Classification, M c : Moisture Content
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LEGEND	BORING NO.	SAMPLE NO.	DEPTH FT.	SAMPLE DESCRIPTION
.....	99-17	5	8-10	Clay,w/decayed wood & roots,gray

GRAIN SIZE DISTRIBUTION CURVES

SUMMARY OF LABORATORY TEST RESULTS

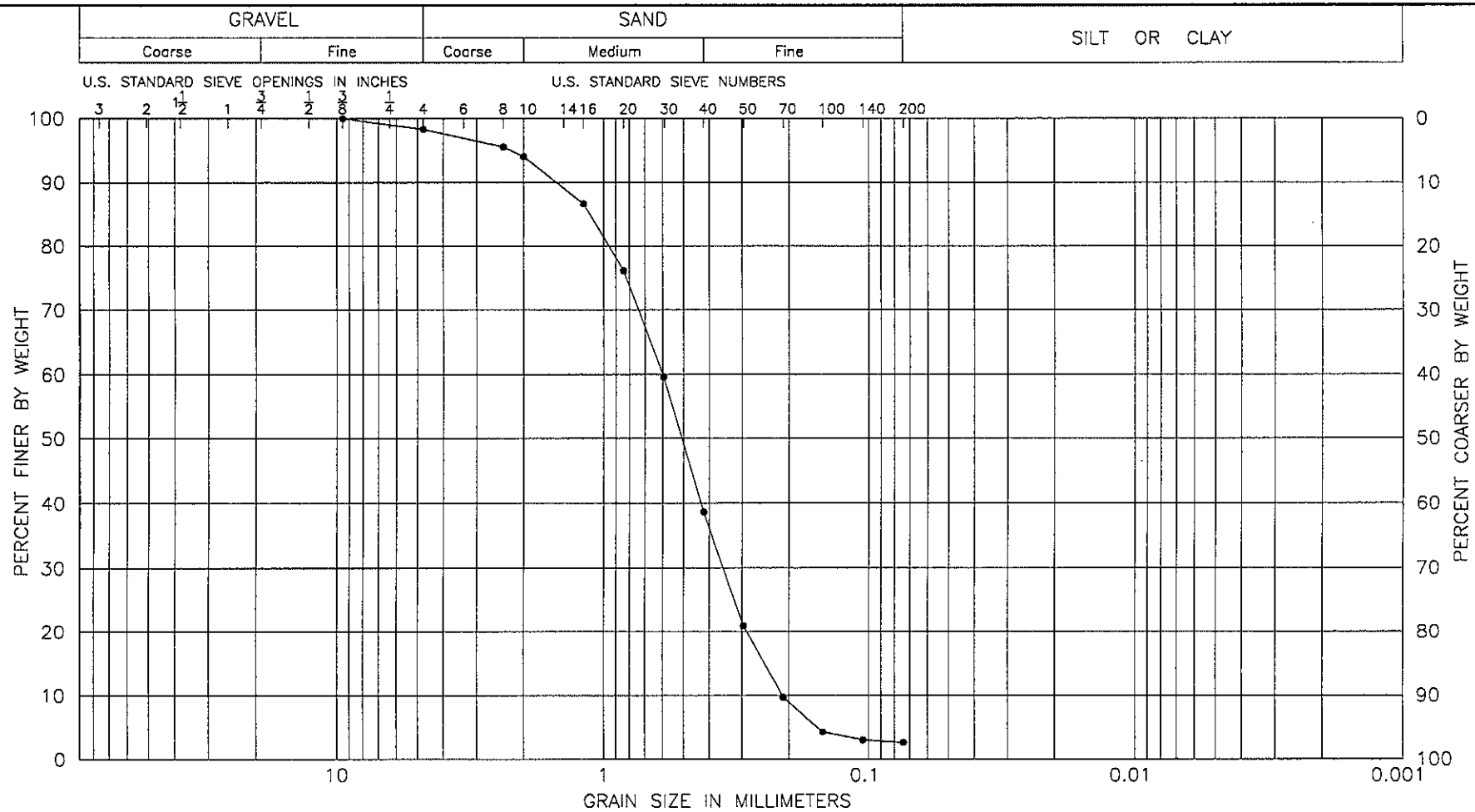
Project: Neches river Saltwater barrier
Contract No. DACW64-98-D-0002

Boring No.	S#	Visual Classification	U S C	Mechanical Analysis																	
				% Passing																	
				#2	#1 1/2	#1	#1/2	#3/4	#3/8	#4	#8	#10	#16	#20	#30	#40	#50	#70	#100	#140	#200
99-11	7	Sand,medium dense,brown	SP	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.9	99.8	99.5	99.0	96.6	83.2	28.2	5.7	2.7	2.2	2.0
99-13	6	Sand,w/silt,loose,gray	SP-SM	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.3	96.2	85.0	58.7	30.1	12.4	10.0	7.9	6.4
99-13	8	Silty Sand,w/clayey silt pockets,medium dense, gray	SM	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.6	97.5	90.2	71.6	45.6	24.7	15.1	13.4	12.3
99-13	13	Silty Sand,medium sand,yellowish brown & gray	SM	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.8	93.5	70.6	45.0
99-14	6	Sand,w/wood,medium dense,brown	SP	100.0	100.0	100.0	100.0	100.0	100.0	99.8	99.8	99.7	99.4	98.5	94.6	76.0	42.0	16.2	5.9	3.0	2.8
99-14	7	Sand,w/gravel,medium dense,brown	SP-SM	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.9	99.3	98.0	92.9	70.4	47.0	29.1	19.3	14.2	10.6
99-14	18	Silty Sand,w/silty clay seams,dense,brown	SM	100.0	100.0	100.0	100.0	100.0	100.0	99.8	98.3	97.5	89.2	74.0	53.0	31.0	21.7	17.8	15.6	14.5	13.0
99-16	6	Sand,w/silt,loose,gray	SP-SM	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.5	95.1	72.8	34.9	20.1	12.7	8.1
99-16	8	Sand,dense,gray	SP	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.9	99.9	99.8	99.2	97.1	86.5	65.0	38.0	11.8	3.8	1.6
99-17	9	Clayey Sand,w/roots & wood,medium dense, gray	SC	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.8	99.2	96.9	90.7	79.3	63.5	50.0	42.4	36.1
99-17	10	Sand,w/pea gravel,medium dense,brown	SP	100.0	100.0	100.0	100.0	100.0	100.0	98.3	95.6	94.1	86.7	76.2	59.6	38.7	20.9	9.7	4.2	2.9	2.5
99-19	1	Sand,w/silt,loose,brown	SP	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.8	99.4	98.2	92.1	72.8	32.5	11.6	6.5	4.7
99-19	3	Sand,dense,brown	SP	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.8	98.4	93.5	73.8	33.0	10.4	3.8	2.2	1.4
99-20	2	Sand,medium dense,brown	SP	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.8	99.7	99.6	99.5	98.3	89.0	68.7	38.6	11.2	5.4	4.0
99-20	4	Sand,dense,brown	SP	100.0	100.0	100.0	100.0	100.0	100.0	99.9	99.9	99.8	99.5	98.5	94.1	76.2	48.0	18.7	4.7	2.3	1.5
99-21	8	Sand,medium dense,gray	SP	100.0	100.0	100.0	100.0	100.0	100.0	99.9	99.2	98.9	98.4	96.6	91.1	76.6	46.6	17.7	8.1	4.3	3.2
99-22	5	Sand,medium dense,gray	SP	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	98.4	94.7	86.3	71.6	41.5	17.1	7.4	5.3	4.7

S#: Sample Number, U S C: Unified Soil Classification

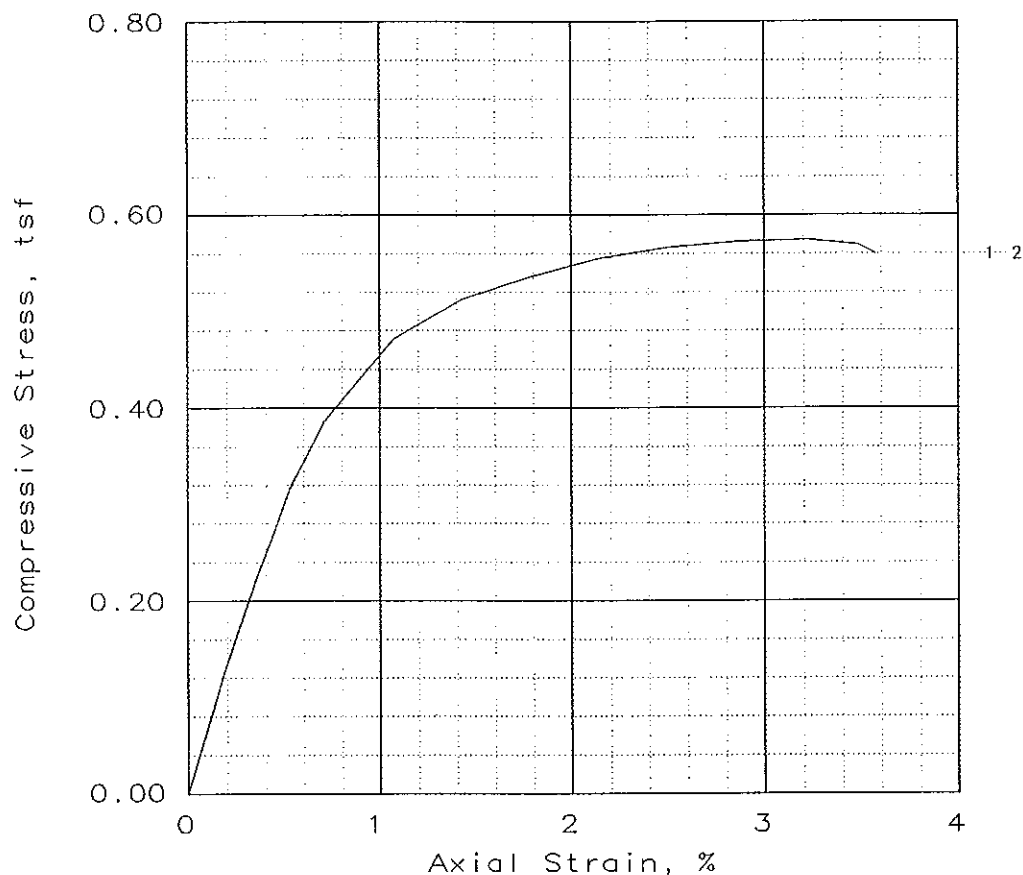


GRAIN SIZE DISTRIBUTION CURVES



GRAIN SIZE DISTRIBUTION CURVES

UNCONFINED COMPRESSION TEST



SAMPLE NO.:	1	2		
Unconfined strength, tsf	0.57	0.57		
Undrained shear strength, tsf	0.29	0.29		
Failure strain, %	3.2	3.2		
Strain rate, %/min	1.07	1.07		
Water content, %	35.4	35.4		
Wet density, pcf	110.9	110.9		
Dry density, pcf	81.9	81.9		
Saturation, %	91.0	91.0		
Void ratio	1.0434	1.0434		
Specimen diameter, in	2.83	2.83		
Specimen height, in	5.60	5.60		
Height/diameter ratio	1.98	1.98		

Description: Clay, w/roots, Med. stiff, olive gray

LL = 55	PL = 21	PI = 34	ASS. GS= 2.68	Type: Undisturbed
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Project No.: 1140114810

Date: 6-08-99

Remarks:

Assumed Specific gravity

Client: U.S Army Corps of Engineers

Galveston office District

Project: Neches River Saltwater Barrier

Location: Boring No. 99-17

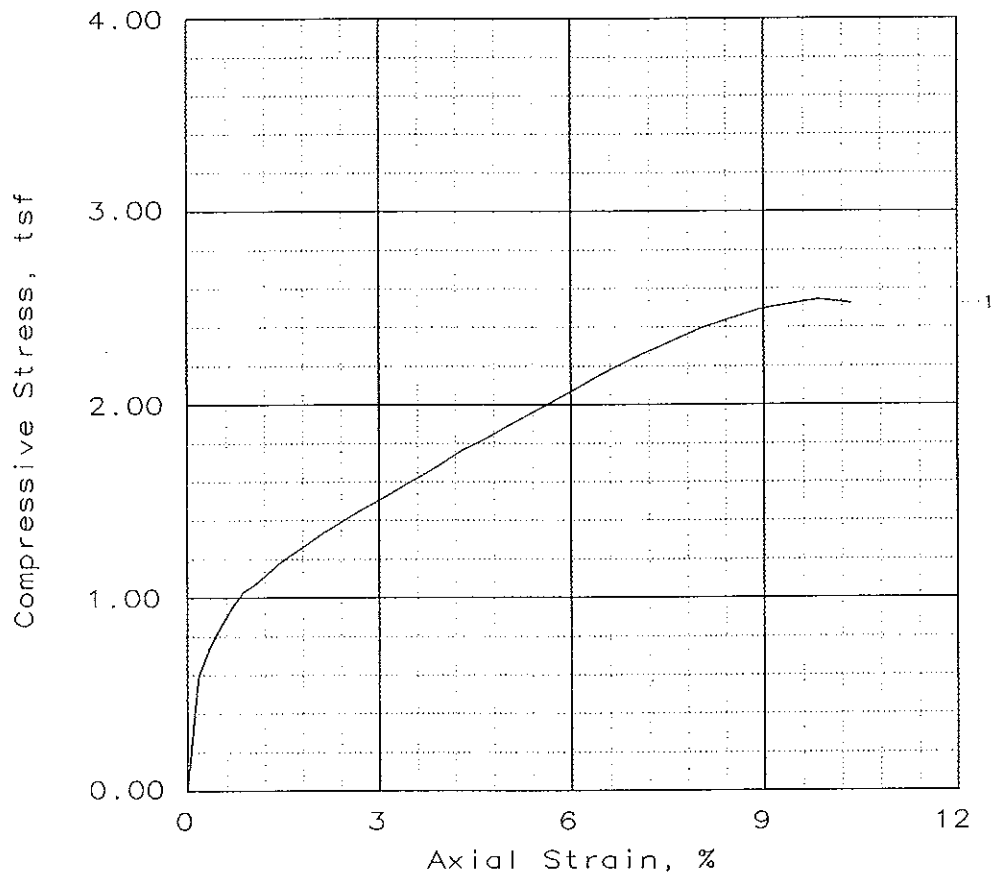
Sample No. 7 Depth: 12-14 ft

UNCONFINED COMPRESSION TEST

GEOTEST ENGINEERING, INC.

Fig. No.: _____

UNCONFINED COMPRESSION TEST



SAMPLE NO.:	1			
Unconfined strength, tsf	2.54			
Undrained shear strength, tsf	1.27			
Failure strain, %	9.8			
Strain rate, %/min	1.07			
Water content, %	21.7			
Wet density, pcf	126.2			
Dry density, pcf	103.7			
Saturation, %	94.7			
Void ratio	0.6135			
Specimen diameter, in	2.83			
Specimen height, in	5.60			
Height/diameter ratio	1.98			

Description: Silty Clay, w/fer stains, Very stiff, Yish Bn&Gy

LL = 35	PL = 18	PI = 17	ASS. GS = 2.68	Type: Undisturbed
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Project No.: 1140114810

Date: 6-08-99

Remarks:

Assumed Specific gravity

Client: U.S Army Corps of Engineers

Galveston office District

Project: Neches River Saltwater Barrier

Location: Boring No. 99-17

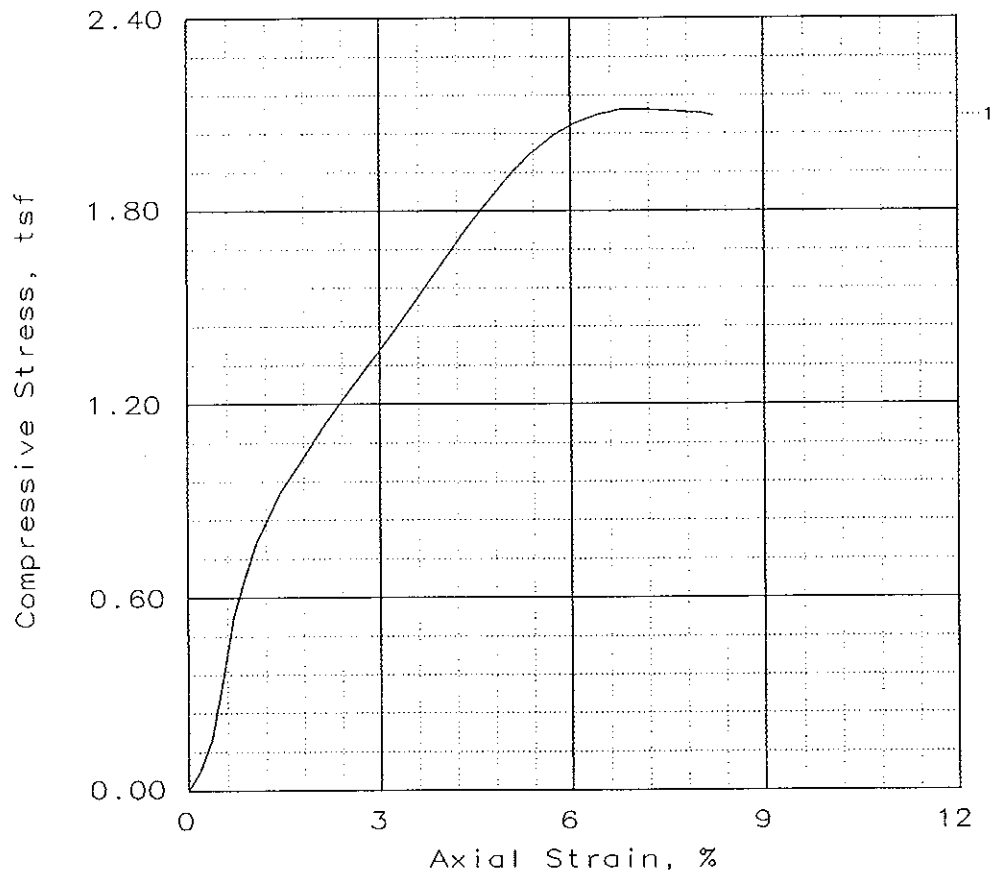
Sample No. 12 Depth: 24-26 ft

UNCONFINED COMPRESSION TEST

GEOTEST ENGINEERING, INC.

Fig. No.: _____

UNCONFINED COMPRESSION TEST



SAMPLE NO.:	1			
Unconfined strength, tsf	2.12			
Undrained shear strength, tsf	1.06			
Failure strain, %	6.8			
Strain rate, %/min	1.07			
Water content, %	19.9			
Wet density, pcf	125.5			
Dry density, pcf	104.6			
Saturation, %	89.0			
Void ratio	0.5990			
Specimen diameter, in	2.83			
Specimen height, in	5.60			
Height/diameter ratio	1.98			

Description: Silty Clay, w/fer stains, Very stiff, Yish Bn&Gy

			ASS. GS= 2.68	Type: Undisturbed
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Project No.: 1140114810

Date: 6-08-99

Remarks:

Assumed Specific gravity

Client: U.S Army Corps of Engineers

Galveston office District

Project: Neches River Saltwater Barrier

Location: Boring No. 99-17

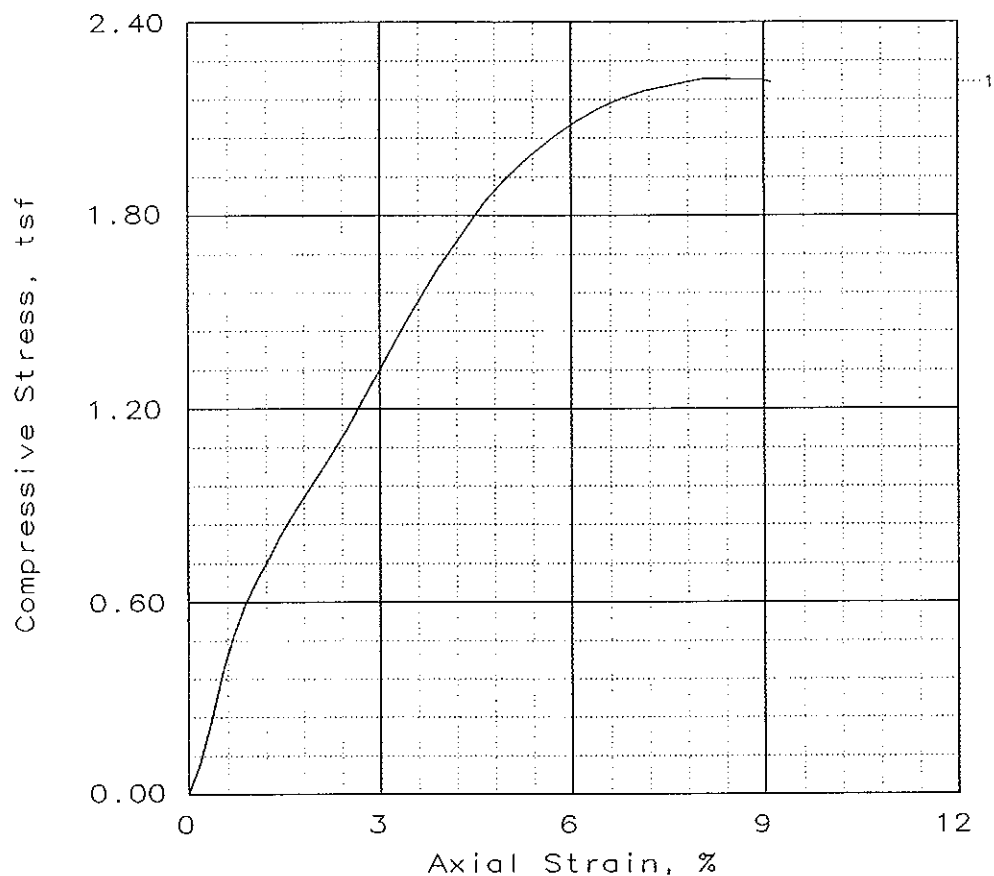
Sample No. 18 Depth: 36-38 ft

UNCONFINED COMPRESSION TEST

GEOTEST ENGINEERING, INC.

Fig. No.: _____

UNCONFINED COMPRESSION TEST



SAMPLE NO.:	1			
Unconfined strength, tsf	2.22			
Undrained shear strength, tsf	1.11			
Failure strain, %	8.0			
Strain rate, %/min	1.07			
Water content, %	18.8			
Wet density, pcf	125.5			
Dry density, pcf	105.6			
Saturation, %	86.1			
Void ratio	0.5839			
Specimen diameter, in	2.83			
Specimen height, in	5.60			
Height/diameter ratio	1.98			

Description: Silty Clay, w/fer stains, Very stiff, Yish Bn&Gy

LL = 47 PL = 20 PI = 27 ASS. GS = 2.68 Type: Undisturbed

Project No.: 1140114810

Date: 6-08-99

Remarks:

Assumed Specific gravity

Client: U.S Army Corps of Engineers

Galveston office District

Project: Neches River Saltwater Barrier

Location: Boring No. 99-17

Sample No. 19 Depth: 38-40 ft

UNCONFINED COMPRESSION TEST

GEOTEST ENGINEERING, INC.

Fig. No.: _____