U.S. ARMY CORPS OF ENGINEERS

BORING NO. 99-1 DATE: BEGIN 4-25-99 PAGE 1 of 2
JOB NO. 114011488 COMPLETE 4-25-99 Thin Walled Tube ● 3" ☐ 6"
PROJECT Neches River Saltwater Barrier
LOCATION N=876530.45, E=3543702.18
ELEVATION OF HOLE -1.0
MANUFACTURER'S DESIGNATION OF DRILL RIG DNR75 w/Barge & Track Buggy
GROUNDWATER: DEPTH * ft., ELEV. _____ ft., at end of Drilling
WEATHER Sunny
DRILLER Dempsey Gaarun LOGGER Troy Mostaghand

DEPTH, FEET	SAMPLE	SAMPLE NO.	PEN./TORVANE SPT.-BLOW COUNT	COLOR	MATERIAL TYPE	CONSISTENCY	SECONDARY CONSTITUENTS	STRUCTURAL FEATURES AND COMMENTS
0 mudline	J	1	0.00	Gray	Clay	V. soft		* 2' of water -w/decayed wood & roots
	J	2	0.00	Gray	Clay	V. soft		Sample fell out of tube 0-6' -w/decayed wood & roots
5	J	3	0.00	Gray	Clay	V. soft		-w/decayed wood & roots
	J	4		Gray	Silt	V. Loose		-w/decayed wood & sand
	X	5	2 1/2	Gray	Silt	V. Loose		Set 10' of casing Total casing below mudline -w/decayed wood & sand
10	X	6	1 1/2	Gray	Silt	V. Loose		-w/decayed wood & sand
	X	7	2 4	Gray	Sand	Loose	Silt	-w/decayed wood & clayey silt sms
15								
	X	8	3 5	Gray	Sand	Loose	Silt	-w/decayed wood
20								
	X	9	4 7	Gray	Sand	M. Dense		-w/silty clay sms
25								
		10	2.00	olive gray	Clay	V. stiff	Silt	-w/Fe stains & sa sms
		11	2.00	olive gray	Clay	V. stiff	Silt	-w/Fe stains & sa sms
30	J	12		olive gray	Silt	M. Dense		-w/sand
	X	13	5 7 9	olive gray	Silt	M. Dense		-w/sand
35								

(1)

U.S. ARMY CORPS OF ENGINEERS

BORING NO. 99-1 DATE: BEGIN 4-25-99 PAGE 2 12
JOB NO. 1140114808 COMPLETE 4.25.99 Thin Walled Tube
PROJECT Weches River Salt water Barrier ■ 3" □ 6"
LOCATION N = 876530.45, E = 3543702.18
ELEVATION OF HOLE —
MANUFACTURER'S DESIGNATION OF DRILL RIG DNR75 W/ Barge & Track Buggy
GROUNDWATER: DEPTH * ft., ELEV. ____ ft., at end of Drilling
WEATHER Sunny
DRILLER Dempsey Cowan LOGGER Iraj Mostamand

DEPTH, FEET	SAMPLE	SAMPLE NO.	PEN./TORVANE SPT.-BLOW COUNT	COLOR	MATERIAL TYPE	CONSIS-TENCY	SECONDARY CONSTITUENTS	STRUCTURAL FEATURES AND COMMENTS
35								
	X	14	8 11/15	Olive Gray	Silt	M. Dense		-w/Sand
		15	3.75	Brown & gray	Clay	V. stiff	Silt	-w/Fer stains & silt sms
40		16	3.50	Red & Gray	Clay	V. stiff	Silt	-w/Fer stains & silt sms
		17	3.75	Red & Gray	Clay	V. stiff	Silt	-w/Fer stains & silt sms
45		18	2.5	Reddish Brown & Gray	Clay	V. stiff		-w/calc nod & Fer stains, SLKS
		19	3.50	Reddish Brown & Gray	Clay	V. stiff		-w/Fer stains, SLKS
		20	2.75	Reddish Brown & Gray	Clay	V. stiff		-w/calc nod & Fer stains, SLKS
50		21	1.50	Reddish Brown	Clay	Stiff	Silt	-w/Fer stains & clay layer
		22	2.50	Red	Clay	V. stiff		-w/Fer stains, SLKS
		23	2.50	Red	Clay	V. stiff		-w/Fer stains, SLKS
55		24	2.50	Red	Clay	V. stiff		-w/Fer stains, SLKS -w/clayey silt layer 57-58'
		25	2.50	Red	Clay	V. stiff		-w/calc nod & Fer stains, SLKS -w/silt & silty clay layer 59-60
60								* 2' of water
								J: Jar Sample
65								
70								

(2)

Project: Neches River Saltwater Barrier

SUMMARY OF LABORATORY TEST RESULTS

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

Boring No. 99-1

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 (%)	PL (%)	Mechanical Analysis % Passing					Specific Gravity	q u (tsf)
											#4	#10	#40	#100	#200		
1	0 - 2	0.00		Clay,w/decayed wood & roots,Very soft, Gray	C H	99.1											
2	2 - 4	0.00		Clay,w/decayed wood & roots,Very soft, Gray	C H	97.8											
3	4 - 6	0.00		Clay,w/decayed wood & roots,Very soft, Gray	C H	87.0											
4	6 - 8			Sandy Silt,w/decayed wood & sand,very loose,Gray	M L	32.4											
5	8-9.5		3	Sandy Silt,w/decayed wood & sand,Very loose,Gray	M L	49.2					100.0	100.0	99.8	87.4	50.3		
6	10-11.5		3	Sandy Silt,w/decayed wood,Very loose, Gray	M L												
7	12-13.5		6	Silty Sand,w/decayed wood & clayey silt seams,Loose,Gray	S M												
8	17-18.5		7	Sand,w/decayed wood & silt,Loose,Gray	SP-SM						100.0	99.8	27.1	9.1	7.6		
9	22-23.5		12	Sand,w/silty clay seams,Medium dense, Gray	S P												
10	27-28	2.00		Silty Clay,w/fer stains & sand seams,Very stiff,Olive gray	C L	17.5	108.6	127.5	26.0	15.0							1.97
11	28-30	2.00		Silty Clay,w/fer stains & sand seams,Very stiff,Olive gray	C L	17.5	109.1	128.2									2.02
12	30-32			Silt,w/sand,Medium dense,Olive gray	M L												
13	32-33.5		16	Silt,w/sand,Medium dense,Olive gray	M L												
14	37-38.5		26	Silt,w/sand,Medium dense,Olive gray	M L												
15	38.5-40	3.75		Silty Clay,w/fer stains & silt seams,Very stiff,Brown & gray	C L	22.0											
16	40-42	3.50		Silty Clay,w/fer stains & silt seams,Very stiff,Red & gray	C L	21.6	105.6	128.4	46.0	21.0							2.43
17	42-44	3.75		Silty Clay,w/fer stains & silt seams,Very stiff,Red & gray	C L	23.3											
18	44-46	2.50		Clay,w/calc nod & fer stains,slks,Very stiff, Reddish brown & gray	C H	32.0											
19	46-48	3.50		Clay,w/calc nod & fer stains,slks,Very stiff, Reddish brown & gray	C H	30.2	90.1	117.5	73.0	28.0							
20	48-50	2.75		Clay,w/calc nod & fer stains,slks,Very stiff, Reddish brown & gray	C H	33.6											

S # : Sample Number, P P : Pocket Penetrometer Reading, U S C : Unified Soil Classifcation, 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

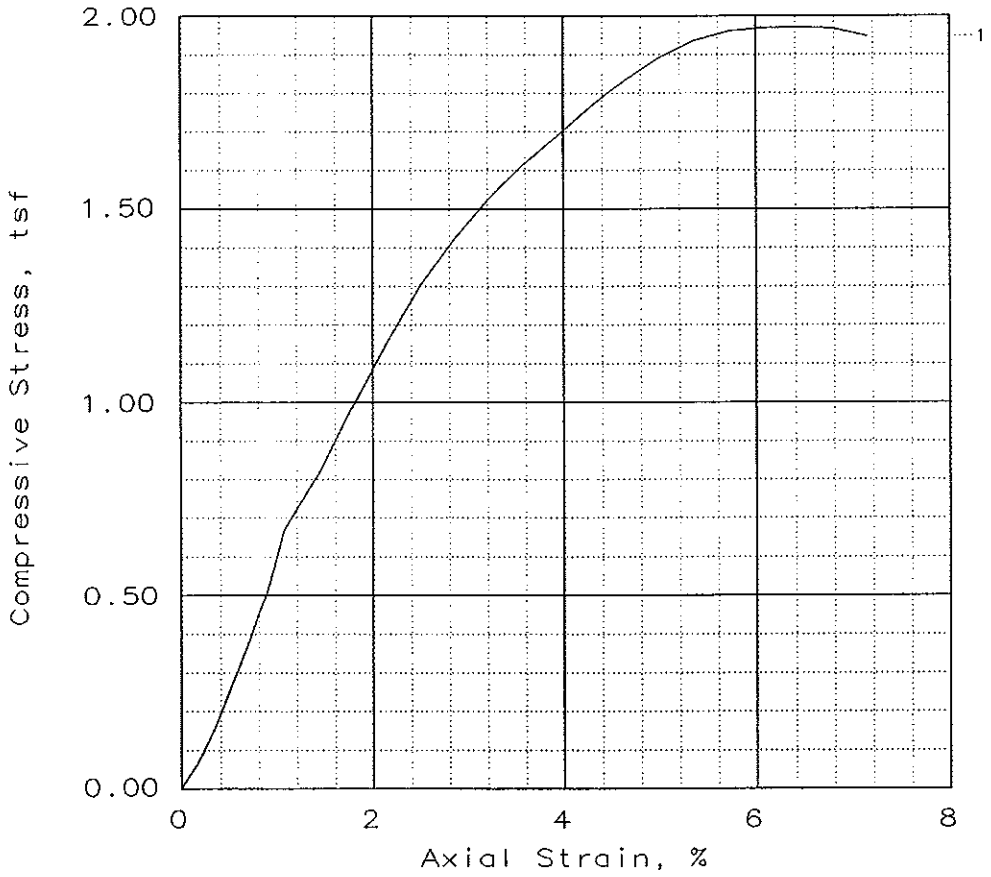
Contract No. DACW64-98-D-0002 Delivery Order No. 0010

Boring No. 99-1

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 (%)	PL (%)	Mechanical Analysis % Passing					Specific Gravity	q u (tsf)
											#4	#10	#40	#100	#200		
21	50-52	1.50		Silty Clay,w/fer stains & clay layer,Stiff, Reddish brown	C L	29.1											
22	52-54	2.50		Clay,w/fer stains,slks,Very stiff,Red	C H	31.5											
23	54-56	2.50		Clay,w/fer stains,slks,Very stiff,Red	C H	29.0											
24	56-58	2.50		Clay,w/fer stains & clayey silt layer,Very stiff,Red	C H	29.5											
25	58-60	2.50		Clay,w/calc nod & fer stains & silt layer, slks,Very stiff,Red	C H	30.1											

S # : Sample Number, P P : Pocket Penetrometer Reading, U S C : Unified Soil Classifcation, M c : Moisture Content
q u : Unconfined Compressive Strength, W O H : Weight of hammer, W O P : Weight of Pipe

UNCONFINED COMPRESSION TEST



SAMPLE NO.:	1			
Unconfined strength, tsf	1.97			
Undrained shear strength, tsf	0.99			
Failure strain, %	6.4			
Strain rate, %/min	1.07			
Water content, %	17.5			
Wet density, pcf	127.5			
Dry density, pcf	108.6			
Saturation, %	88.4			
Void ratio	0.5239			
Specimen diameter, in	2.83			
Specimen height, in	5.60			
Height/diameter ratio	1.98			

Description: Silty Clay,w/fer stains&sd sms,V.Stiff,Ol Gray

LL = 26	PL = 15	PI = 11	ASS. GS= 2.65	Type: Undisturbed

Project No.: 1140114813
Date: 7-6-99
Remarks:

Fig. No.: ———

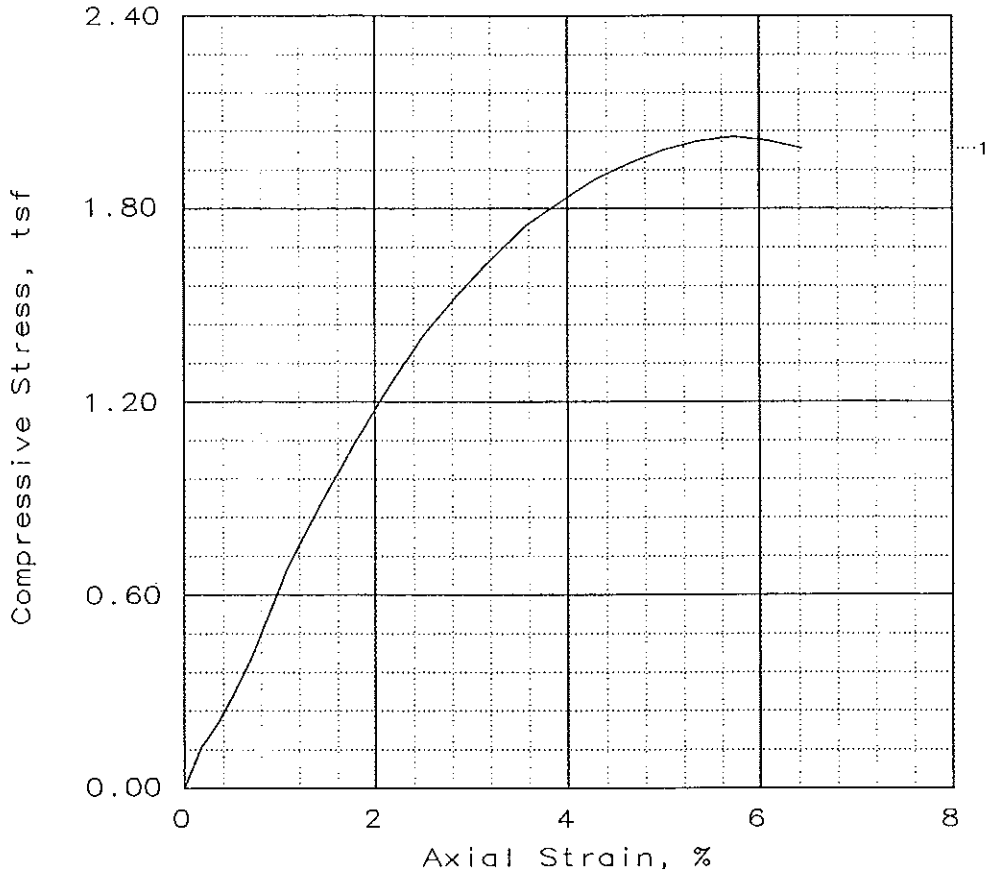
Client: U.S Army Corps of Engineers
Galveston District Office
Project: Neches River Saltwater Barrier

Location: Boring No. 99-1
Sample No. 10 Depth: 27-28 ft

UNCONFINED COMPRESSION TEST

GEOTEST ENGINEERING, INC.

UNCONFINED COMPRESSION TEST



SAMPLE NO.:	1			
Unconfined strength, tsf	2.02			
Undrained shear strength, tsf	1.01			
Failure strain, %	5.7			
Strain rate, %/min	1.07			
Water content, %	17.5			
Wet density, pcf	128.2			
Dry density, pcf	109.1			
Saturation, %	89.9			
Void ratio	0.5162			
Specimen diameter, in	2.83			
Specimen height, in	5.60			
Height/diameter ratio	1.98			

Description: Silty Clay,w/fer stains&sd sms,V.Stiff,Ol Gray

ASS. GS= 2.65 | Type: Undisturbed

Project No.: 1140114813
Date: 7-6-99
Remarks:

Fig. No.: ——

Client: U.S Army Corps of Engineers
Galveston District Office
Project: Neches River Saltwater Barrier

Location: Boring No. 99-1
Sample No. 11 Depth: 28-30 ft

UNCONFINED COMPRESSION TEST

GEOTEST ENGINEERING, INC.

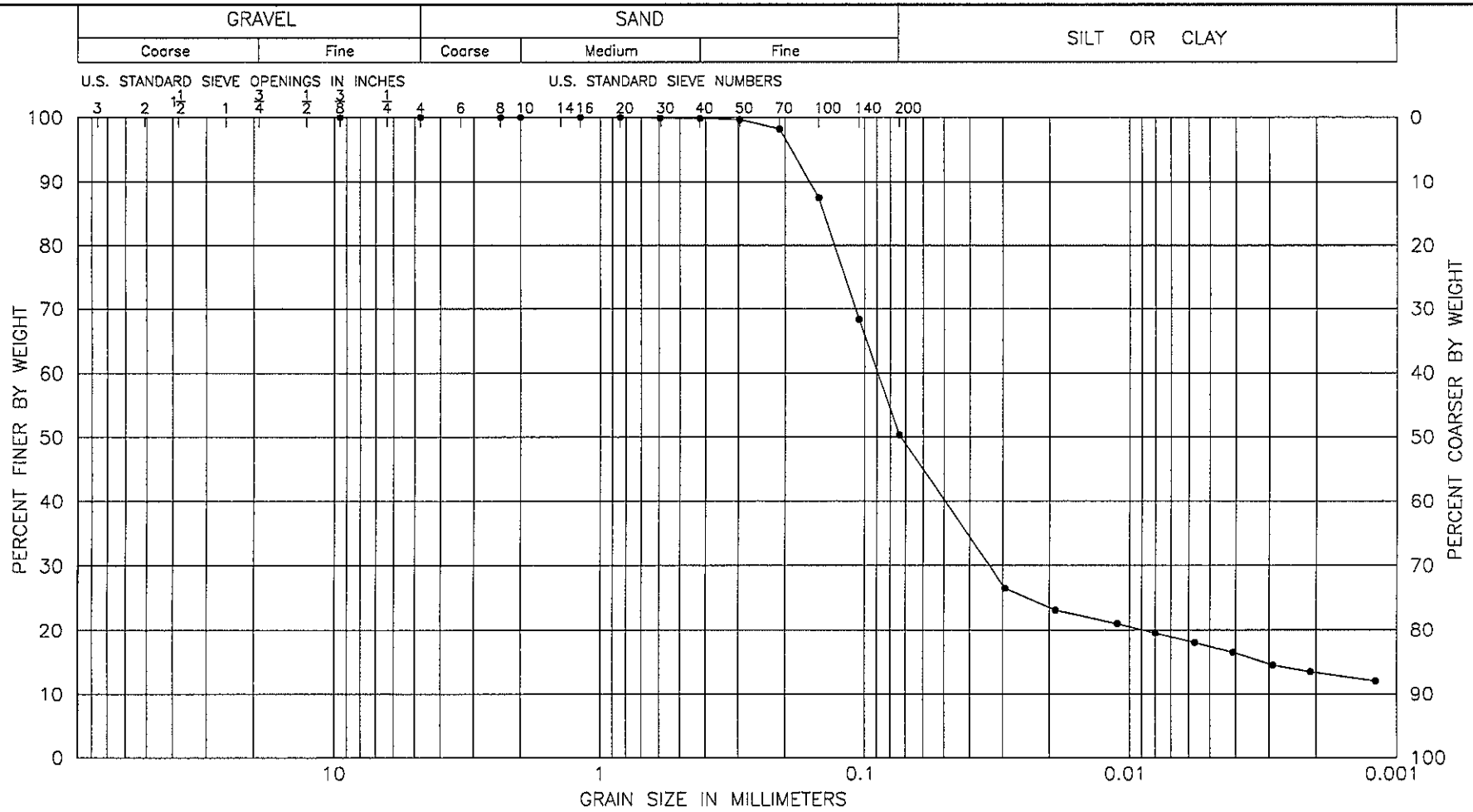
SUMMARY OF LABORATORY TEST RESULTS

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
99-1	5	Sandy Silt,w/decayed wood & sand,very loose,gray	ML	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.9	99.8	99.6	98.2	87.4	68.3	50.3
99-1	8	Sand,w/decayed wood & silt,loose, gray	SP-SM	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.8	95.6	82.3	54.9	27.1	14.4	10.4	9.1	8.3	7.6
99-2	9	Sand,w/decayed wood,medium dense,gray	SP	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.6	98.2	94.7	80.1	38.6	7.6	4.3	3.7	3.3
99-3	8	Sand,w/pea gravel,medium dense,gray	SP	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.9	99.8	98.9	96.6	90.3	74.7	43.5	5.5	1.7	1.3	1.2
99-4	8	Silty Sand,w/roots,loose,gray	SM	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.9	99.3	97.4	89.7	69.7	46.7	33.0	27.8	23.7
99-5	7	Sand,medium dense,gray	SP	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.5	97.3	88.3	63.6	28.4	6.7	4.5	4.0	3.7
99-5	8	Sand,w/pea gravel,medium dense,gray	SP	100.0	100.0	100.0	100.0	100.0	99.6	98.9	98.4	98.1	95.7	87.7	66.6	37.6	16.1	5.6	3.7	3.3	3.1
99-6	11	Sand,w/decayed wood & pea gravel,medium dense gray	SP	100.0	100.0	100.0	100.0	100.0	100.0	99.5	98.0	97.1	91.3	83.2	69.8	53.8	31.6	10.3	6.4	5.1	3.9
99-7	5	Sand,w/silt,loose,gray	SP-SM	100.0	100.0	100.0	100.0	100.0	100.0	99.8	98.6	98.1	95.4	87.4	69.6	46.5	28.1	13.8	7.8	6.3	5.7
99-7	7	Sand,w/silt & pea gravel, medium dense, gray	SP-SM	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	98.7	92.3	73.1	44.9	23.0	9.9	6.3	5.6	5.2
99-8	5	Sand,w/pea gravel, loose, gray	SP	100.0	100.0	100.0	100.0	100.0	100.0	99.7	98.8	98.1	93.0	79.7	53.1	28.1	18.1	10.6	6.3	5.4	4.9
99-8	7	Sand, w/decayed wood & gravel,medium dense, gray	SP-SM	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.8	98.5	91.2	77.4	54.4	32.2	17.8	10.2	8.1	7.1	6.5
99-8	15	Clayey Silt,w/sand,medium dense,yellowish gray	ML	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.9	99.9	99.8	99.5	93.3	82.2	64.6
99-10	6	Sand,loose,gray	SP-SM	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	98.2	92.6	78.6	50.2	27.4	14.1	8.4	6.5	5.4
99-10	8	Sand,w/silt,clay pockets,medium dense,gray	SP-SM	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	98.1	91.3	71.5	42.1	20.2	10.9	9.0	8.0	7.2
99-10	13	Silt,medium dense,yelllowish brown & gray	ML	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.9	99.9	99.9	99.9	99.9	99.8	98.7
99-11	6	Sity Sand,medium dense,gray	SM	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.9	99.3	96.4	76.6	32.5	18.7	14.3

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

Job No. 1140114810



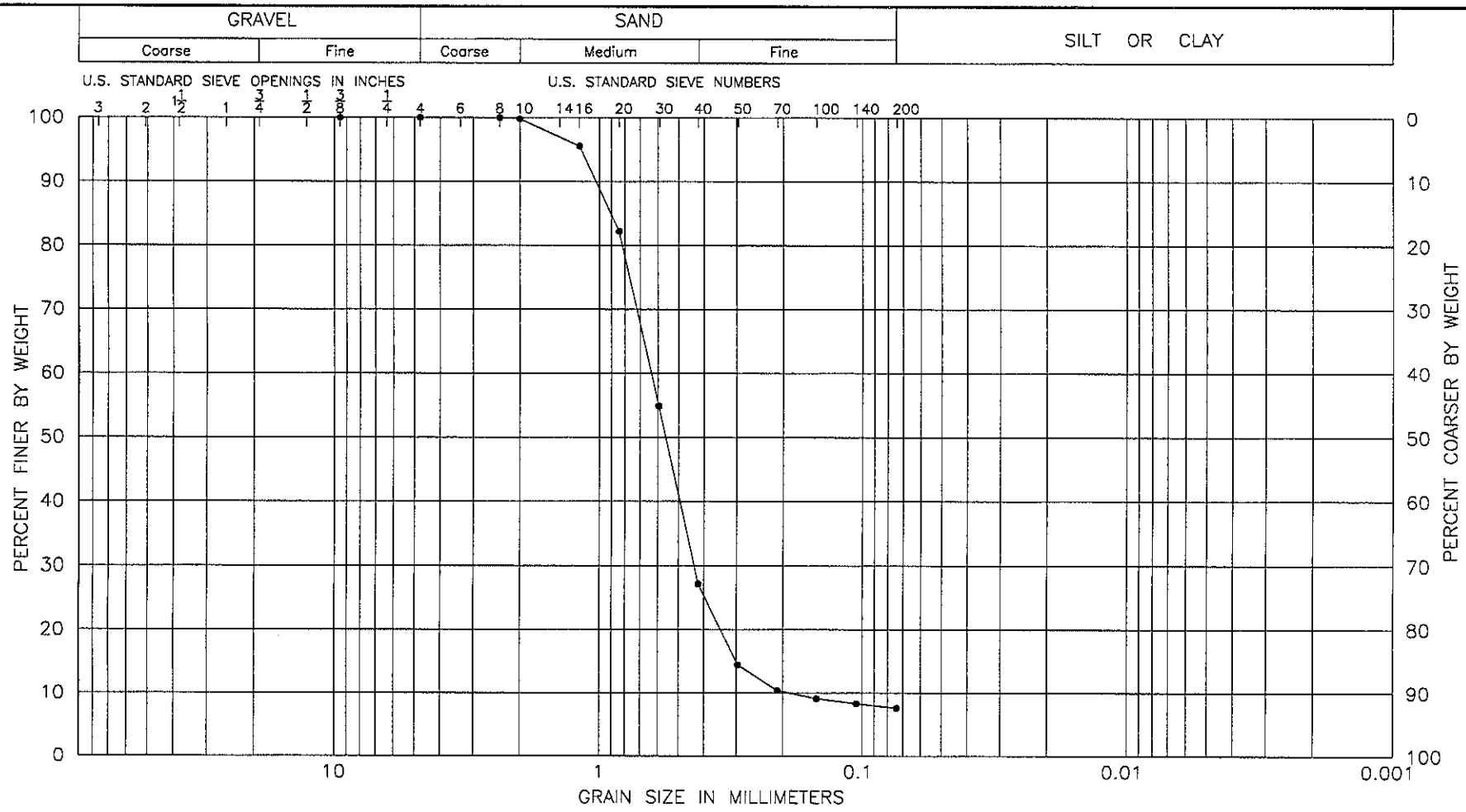
LEGEND	BORING NO.	SAMPLE NO.	DEPTH FT.	SAMPLE DESCRIPTION
●●●●●	99–1	5	8–9.5	Sandy Silt, w/decayed wood & sand, loose, gray

FIGURE

GRAIN SIZE DISTRIBUTION CURVES

Geotest Engineering, Inc.

Job No. 1140114810



LEGEND	BORING NO.	SAMPLE NO.	DEPTH FT.	SAMPLE DESCRIPTION
●●●●●	99–1	8	17–18.5	Sand, w/decayed wood & silt, loose, gray

FIGURE

GRAIN SIZE DISTRIBUTION CURVES

Geotest Engineering, Inc.