Project: Port Arthur Boat Basin

SUMMARY OF LABORATORY TEST RESULTS

Contract No. DACW64-98-D-0002 Delivery order No. 0106

Boring No. 03-89

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 #4	#10	#40	#100	#200	Torvane Shear Strength (tsf)	q u (tsf)
1	0 - 2	3.75		Silty Clay,w/grass roots sand seams & calcareous nodules,Very stiff,Yish bn & gy	C L	18.8											
2	2 - 4	0.50		Silty Clay,w/sand seams & calcareous nodules,Medium stiff,Yellowish brown & gray	C L	30.0											
3	4 - 5	0.50		Silty Clay,w/sand seams & sand layer,Medium stiff,Gray	C L	27.2											
4	5 - 6			Sandy Silt,Loose,Gray	M L	25.4											
5	5 - 6.5		9	Sandy Silt,Loose,Gray	M L	20.2											
6	8 - 10	0.50		Silty Clay,w/ferrous nodules,Medium stiff,Gray & yellowish brown	C L	30.2											
7	10 - 12	0.75		Silty Clay,w/ calcareous & ferrous nodules, Medium stiff,Yellowish brown & gray	C L	36.3											
8	12 - 14	1.25		Clay,w/calcareous nodules & ferrous stains, slks,Stiff,Yellowish brown & gray	C H	34.7	86.3	116.2	55.0	21.0							1.02
9	14 - 16	1.25		Silty Clay,w/silt seams & calcareous nodules, Stiff,Yellowish brown & gray	C L	24.2											
10	16 - 18	1.00		Silty Clay,w/silt seams & calcareous nodules, Stiff,Yellowish brown & gray	C L	24.3	99.5	123.7	43.0	17.0							
11	18 - 20	0.50		Silty Clay,w/silty sand seams & calcareous nodules,Medium stiff,Yellowish brown & gray	C L	24.8											
12	20 - 21.5		16	Silty Sand,Medium dense,Brown	S M	28.2											
13	23.5 - 25		18	Silty Sand,Medium dense,Brown	S M	27.1											
14	26 - 28	0.50		Silty Clay,w/silt seams & parting,Medium stiff, Gray	C L	32.1											
15	28 - 30	0.50		Silty Clay,w/silt seams & parting,Medium stiff, Olive gray	C L	36.0											
16	30 - 32	0.50		Silty Clay,w/silt seams & parting,Medium stiff, Olive gray	C L	36.6	84.9	115.9	47.0	19.0							0.52
17	32 - 34	0.50		Silty Clay,w/silt seams & parting,Medium stiff, Olive gray	C L	33.1											
18	34 - 36	0.50		Silty Clay,w/silt seams,Medium stiff,Olive gray	C L	37.8											
19	36 - 38	0.50		Silty Clay,w/silt seams & parting,Medium stiff, Gray	C L	34.9	83.6	112.8	47.0	20.0							0.54
20	38 - 40	0.50		Silty Clay,w/silt seams & parting,Medium stiff, Gray	C L	34.1											

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

Project: Port Arthur Boat Basin

SUMMARY OF LABORATORY TEST RESULTS

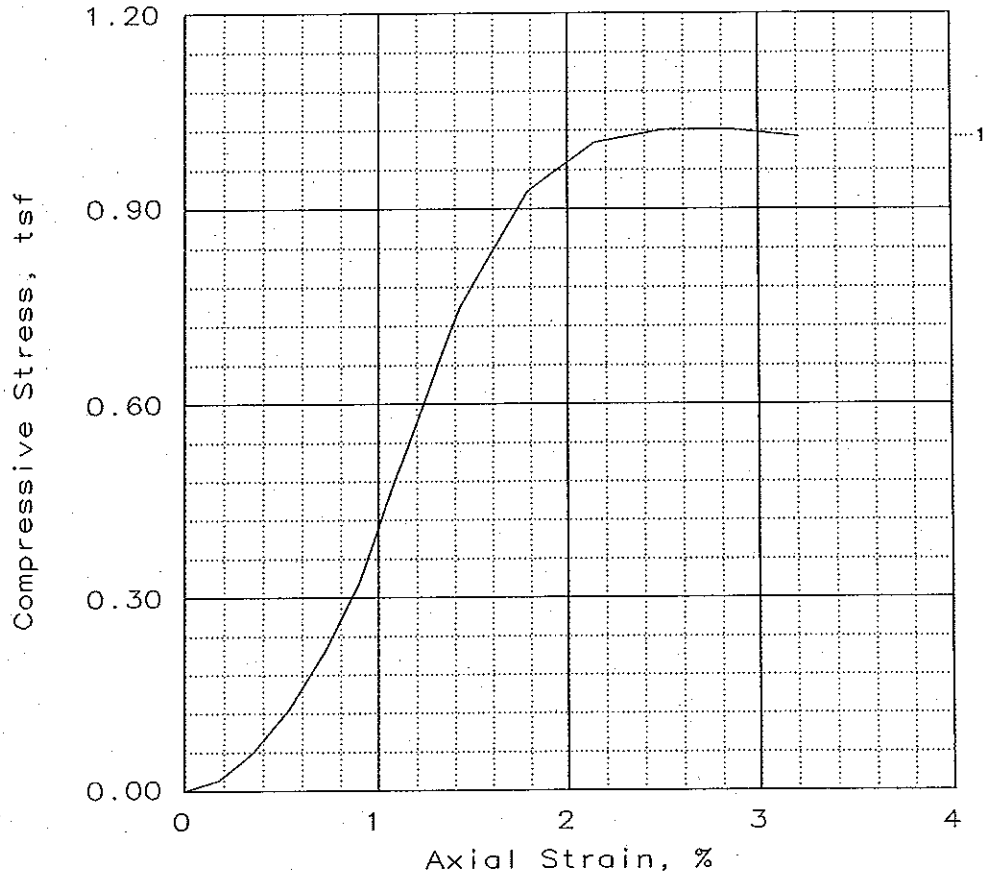
Contract No. DACW64-98-D-0002 Delivery order No. 0106

Boring No. 03-89

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					Torvane Shear Strength (tsf)	q u (tsf)
											#4	#10	#40	#100	#200		
21	40-42	0.50		Silty Clay,w/silt seams & parting,Medium stiff, Gray	C L	35.0											
22	42-44	0.50		Clay,w/silt seams,Medium stiff,Gray	C H	41.0											
23	44-46	1.00		Clay,w/silt seams,Stiff,Gray	C H	45.2											
24	46-48	1.00		Clay,w/silt seams,Stiff,Gray	C H	43.7											
25	48-50	1.00		Clay,w/silt seams,Stiff,Gray	C H	46.2											

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

UNCONFINED COMPRESSION TEST



SAMPLE NO.:	1			
Unconfined strength, tsf	1.02			
Undrained shear strength, tsf	0.51			
Failure strain, %	2.5			
Strain rate, %/min	1.07			
Water content, %	34.7			
Wet density, pcf	116.2			
Dry density, pcf	86.3			
Saturation, %	99.8			
Void ratio	0.9241			
Specimen diameter, in	2.83			
Specimen height, in	5.60			
Height/diameter ratio	1.98			

Description: Clay,w/calc nod & fer stains,slks,S,Yish bn&gy

LL = 55	PL = 21	PI = 34	ASS. GS= 2.66	Type: Undisturbed

Project No.: 11401272106

Date: 09-26-2003

Remarks:

Client: U.S Army Corps of Engineers
Galveston District Office

Project: Port Arthur Boat Basin

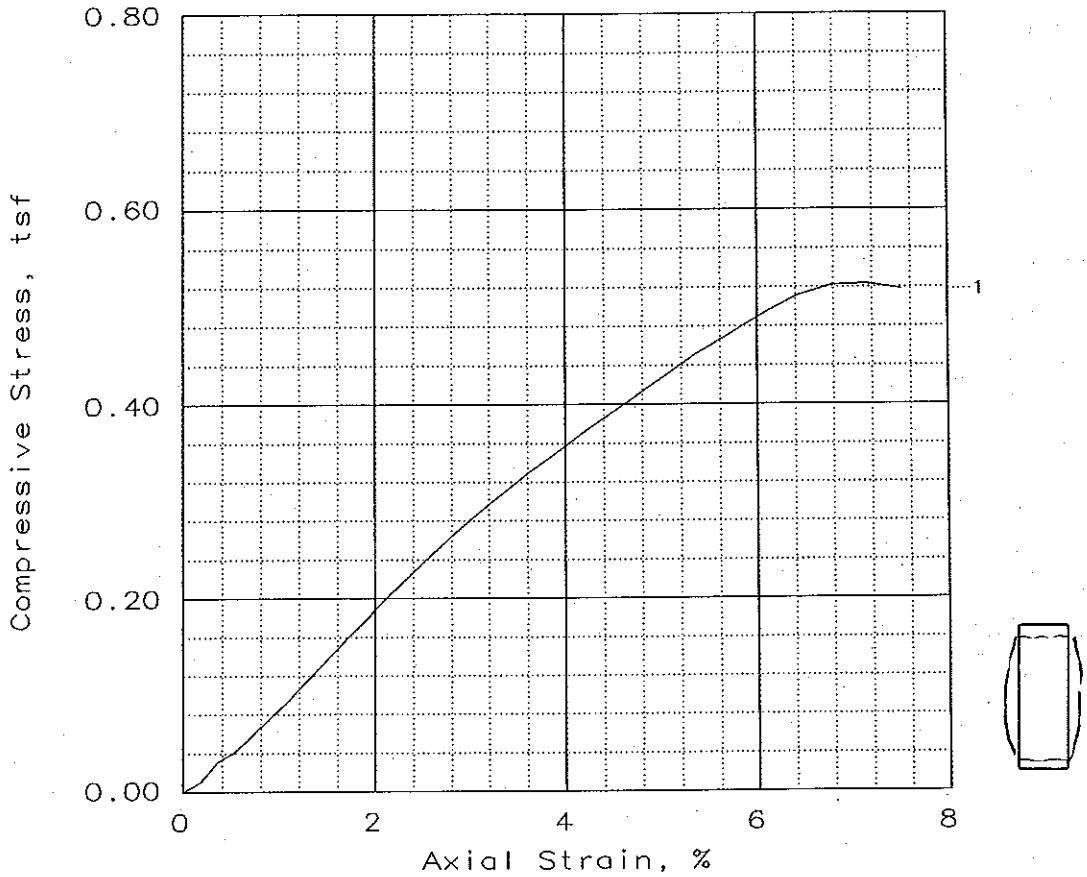
Location: Boring No. 03-89
Sample No. 8 Depth: 12-14 ft.

UNCONFINED COMPRESSION TEST

GEOTEST ENGINEERING, INC.

Fig. No.: ——

UNCONFINED COMPRESSION TEST



SAMPLE NO.:	1			
Unconfined strength, tsf	0.52			
Undrained shear strength, tsf	0.26			
Failure strain, %	7.1			
Strain rate, %/min	1.07			
Water content, %	36.6			
Wet density, pcf	115.9			
Dry density, pcf	84.9			
Saturation, %	99.8			
Void ratio	0.9931			
Specimen diameter, in	2.83			
Specimen height, in	5.60			
Height/diameter ratio	1.98			

Description: Silty Clay,w/silt sms&parting,M Stiff,Olive gy

LL = 47	PL = 19	PI = 28	ASS. GS= 2.71	Type: Undisturbed

Project No.: 11401272106

Date: 09-26-2003

Remarks:

Client: U.S Army Corps of Engineers
Galveston District Office

Project: Port Arthur Boat Basin

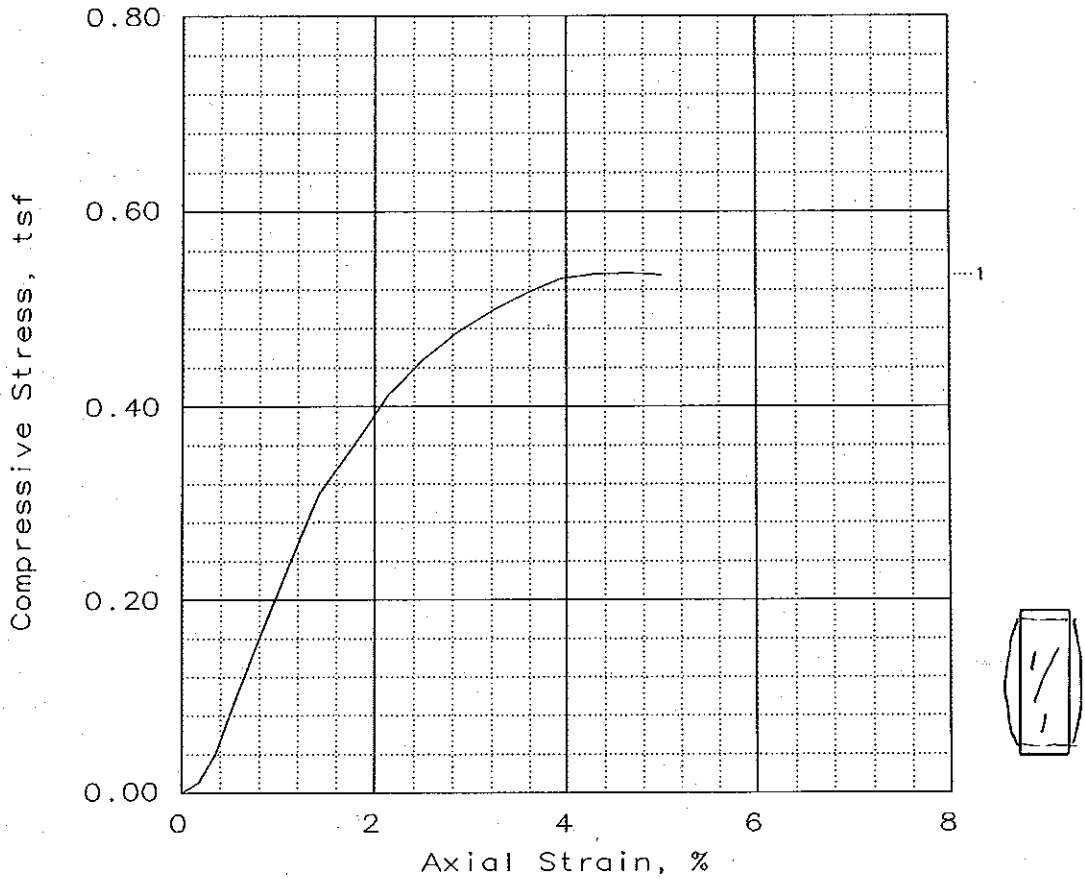
Location: Boring No. 03-89
Sample No. 16 Depth: 30-32 ft.

UNCONFINED COMPRESSION TEST

GEOTEST ENGINEERING, INC.

Fig. No.: ——

UNCONFINED COMPRESSION TEST



SAMPLE NO.:	1			
Unconfined strength, tsf	0.54			
Undrained shear strength, tsf	0.27			
Failure strain, %	4.6			
Strain rate, %/min	1.07			
Water content, %	34.9			
Wet density, pcf	112.8			
Dry density, pcf	83.6			
Saturation, %	94.5			
Void ratio	0.9785			
Specimen diameter, in	2.83			
Specimen height, in	5.60			
Height/diameter ratio	1.98			

Description: Silty Clay,w/silt sms&parting,Medium Stiff,Gray

LL = 47	PL = 20	PI = 27	ASS. GS= 2.65	Type: Undisturbed

Project No.: 11401272106

Date: 09-26-2003

Remarks:

Client: U.S Army Corps of Engineers
Galveston District Office

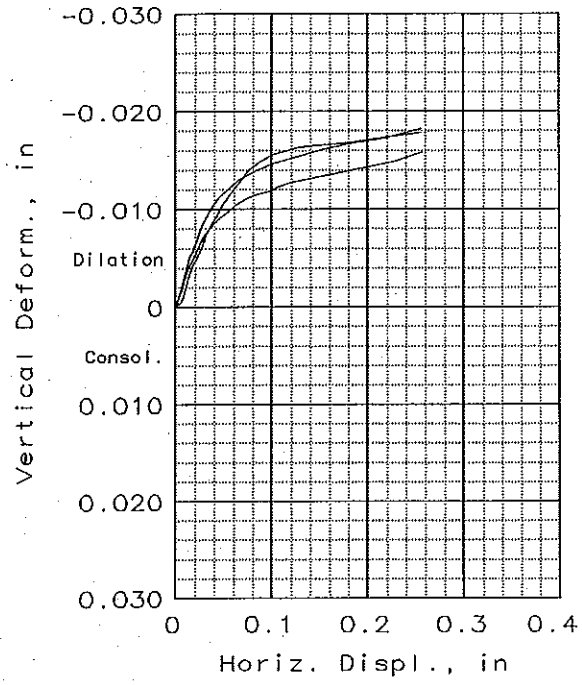
Project: Port Arthur Boat Basin

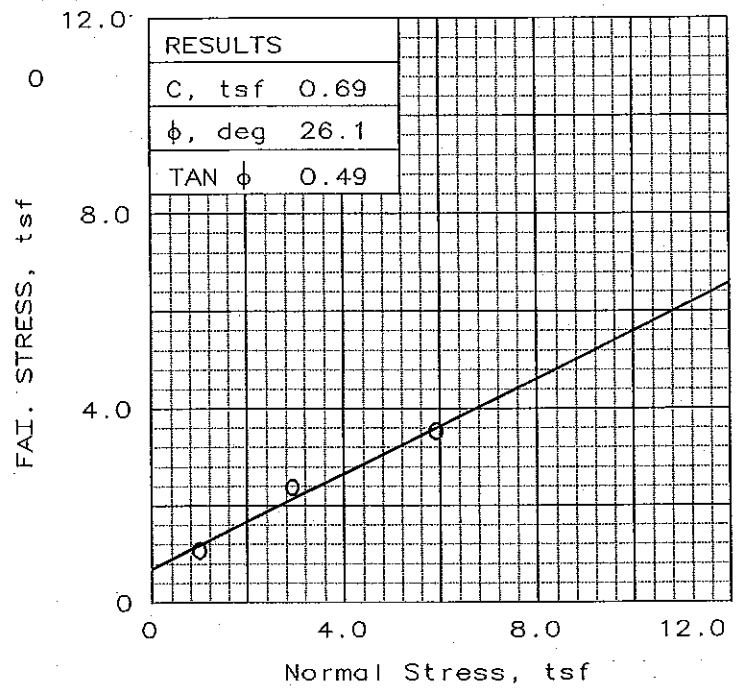
Location: Boring No. 03-89
Sample No. 19 Depth: 36-38 ft.

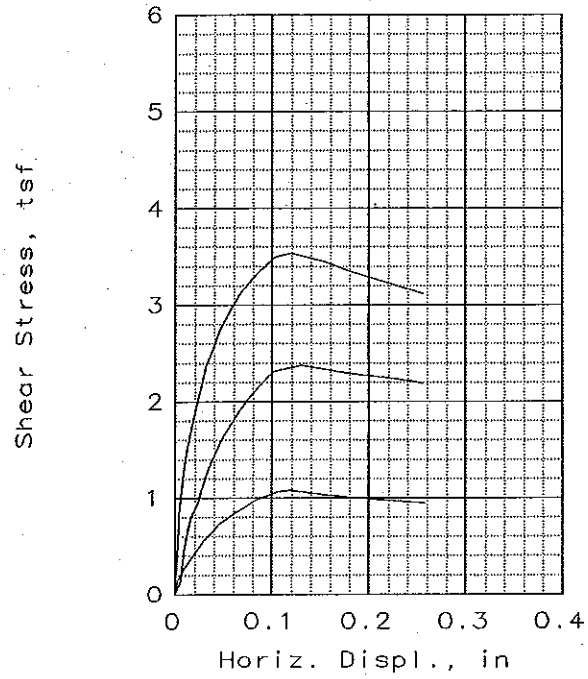
UNCONFINED COMPRESSION TEST

GEOTEST ENGINEERING, INC.

Fig. No.: ——







	SAMPLE NO.:	1	2	3
INITIAL	WATER CONTENT, %	23.6	24.9	24.4
	DRY DENSITY, pcf	99.8	99.1	99.5
	SATURATION, %	95.2	98.5	97.7
	VOID RATIO	0.658	0.669	0.663
	DIAMETER, in	2.50	2.50	2.50
	HEIGHT, in	1.00	1.00	1.00
AT TEST	WATER CONTENT, %	22.8	22.8	20.9
	DRY DENSITY, pcf	101.6	103.1	106.5
	SATURATION, %	96.4	99.9	100.0
	VOID RATIO	0.628	0.604	0.554
	DIAMETER, in	2.50	2.50	2.50
	HEIGHT, in	0.98	0.96	0.93
	NORMAL STRESS, tsf	1.05	3.01	5.98
	FAI. STRESS, tsf	1.08	2.38	3.53
	DISPLACEMENT, in	0.12	0.13	0.12
	RESIDUAL STRESS, tsf			
	DISPLACEMENT, in			
	Strain rate, %/min	0.0022	0.0070	0.0022

SAMPLE TYPE: Undisturbed
DESCRIPTION: Silty Clay,w/silt sms&calc nod,S,Yish bn & gy
LL= 43 PL= 17 PI= 26
ASSUMED SPECIFIC GRAVITY= 2.65
REMARKS:

Fig. No.: _____

CLIENT: U.S Army Corps of Engineers Galveston District office
PROJECT: Port Arthur Boat Basin

SAMPLE LOCATION: Boring No. 03-89
Sample No. 10 Depth: 16-18 ft.

PROJ. NO.: 11401272106 DATE: 9-28-2003

DIRECT SHEAR TEST REPORT

GEOTEST ENGINEERING, INC.