Project : Pelican Island Disposal Area
Galveston, Texas
Contract No. DACW64-92-D-0005 Delivery order No. 0023

SUMMARY OF LABORATORY TEST RESULTS

Boring No. 93-213

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 #4	#10	#40	#100	#200	Torvane Shear Strength (tsf)	q u (tsf)
1	0 - 2	1.50		Gray,Clay,Stiff,w/roots	CH	48.4											
2	2 - 4	0.00		Gray,Clay,Very soft,w/organic material	CH	53.3										0.09	
3	4 - 6	0.00		Gray,Clay,Very soft,w/sand pockets&organic material	CH	46.8	71.8	105.5	70	27	100.0	100.0	99.6	99.0	97.4	0.08	0.16
4	6 - 7.5		5	Gray,Sand,Loose,Silty	SM	30.5											
5	8 - 10	0.00		Gray,Clay,Very soft,w/sand pockets&organic material	CH	33.0										0.06	
6	10 - 11.5	0.25	2	Gray,Clay,Soft,Sandy	CL	30.6											
7	12 - 14	0.00		Gray,Clay,Very soft,Sandy	CL	28.7										0.09	
8	14 -16	0.25		Gray,Clay,Soft,w/organic material	CH	56.2										0.13	
9	16 - 18	0.00		Gray,Clay,Very soft,w/organic material	CH	55.1										0.09	
10	18 - 20	0.00		Gray,Clay,Very soft,w/organic material	CH	59.5	63.9	101.9	114	37	100.0	100.0	100.0	99.6	98.8	0.08	0.19
11	20 - 22	0.00		Gray,Clay,Very soft,w/organic material	CH	52.7										0.08	
12	22 - 24	0.00		Gray,Clay,Very soft,w/organic material	CH	51.9										0.06	
13	24 - 26	0.25		Gray,Clay,Soft,w/sand pockets	CH	41.1	79.9	112.7	77	27	100.0	100.0	99.5	97.5	97.0	0.13	0.27
14	26 - 28	0.00		Gray,Clay,Very soft,w/sand pockets	CH	39.2										0.09	
15	28 - 30			Gray,Sand,Dense,Silty,w/shell fragments	SM												
16	30 - 31.5		36	Gray,Sand,Dense,Silty,w/shell fragments	SM												
17	35 - 36.5		42	Gray,Sand,Dense,Silty,w/shell fragments	SM												

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

Geotest Engineering, Inc.

Project : Pelican Island Disposal Area
Galveston, Texas
Contract No. DACW64-92-D-0005 Delivery order No. 0023

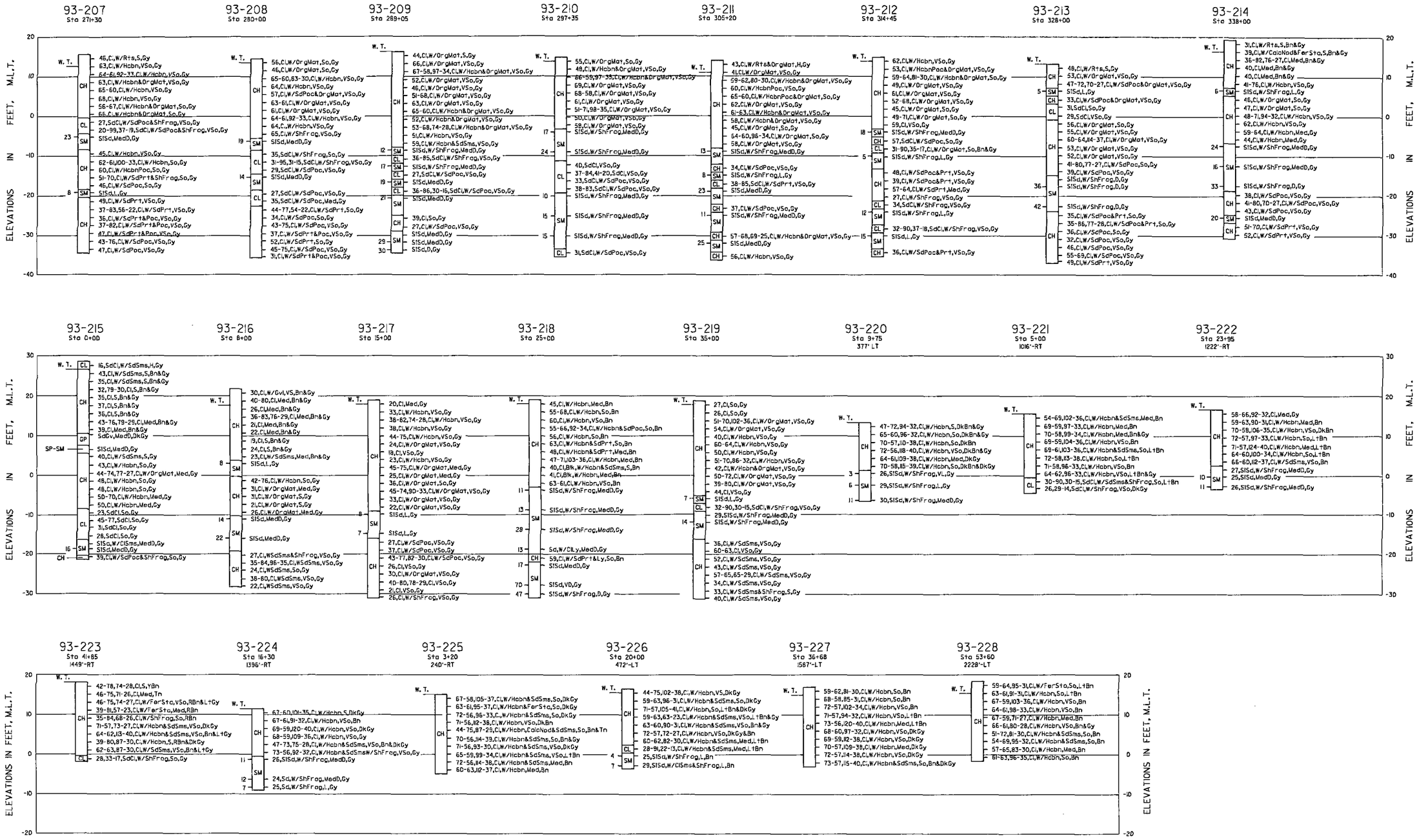
SUMMARY OF LABORATORY TEST RESULTS

Boring No. 93-213

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 #4	#10	#40	#100	#200	Torvane Shear Strength (tsf)	q u (tsf)
18	37 - 39	0.25		Gray,Clay,Soft,w/sand parting&sand pockets	CH	35.3										0.13	
19	39 - 41	0.25		Gray,Clay,Soft,w/sand parting&sand pockets	CH	34.7	85.8	115.5	77	28	100.0	100.0	99.4	97.8	95.7	0.14	0.28
20	41 - 43	0.25		Gray,Clay,Soft,w/sand pockets	CH	35.8										0.13	
21	43 - 45	0.00		Gray,Clay,Very soft,w/sand pockets	CH	31.8										0.10	
22	45 - 46.5	0.00	W.O.H	Gray,Clay,Very soft,w/sand pockets	CH	45.8											
23	47 - 49	0.00		Gray,Clay,Very soft,w/sand pockets	CH	54.8	69.3	107.3								0.08	0.16
24	49 - 50	0.00		Gray,Clay,Very soft,w/sand parting	CH	48.9										0.07	

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

Geotest Engineering, Inc.



NOTES;

1. SOILS HAVE BEEN CLASSIFIED IN ACCORDANCE WITH MILITARY STANDARD 619B "UNIFIED SOIL CLASSIFICATION SYSTEM FOR ROADS, AIRFIELDS, EMBANKMENTS, AND FOUNDATIONS." CONSISTENCY OF SOILS SUCH AS SOFT, MEDIUM, HARD, LOOSE, DENSE, ETC., ARE RELATIVE TERMS BASED ON ESTIMATED UNDISTURBED SHEAR STRENGTH OF THE MATERIAL AS DETERMINED BY VISUAL CLASSIFICATION POCKET PENETROMETER TESTS AND PENETRATION RESISTANCE DURING SAMPLING.

2. FIGURES TO THE RIGHT OF BORING LOGS ARE WATER CONTENTS IN PERCENT OF THE DRY WEIGHT, DRY DENSITY, LIQUID LIMIT, PLASTIC LIMIT, AND BAR LINEAR SHRINKAGE. (MC-UDW),(LL-PL),(B.L.S.)= FIGURES TO THE LEFT OF BORING LOGS ARE BLOWS PER FOOT OF PENETRATION FROM STANDARD PENETRATION TESTING.

3. BORINGS WERE DRILLED USING WET ROTARY DRILLING TECHNIQUES AND UNDISTURBED SAMPLES WHERE RECOVERED WITH A 3-INCH DIAMETER THIN WALL SAMPLER WHERE COHESIVE MATERIALS WERE ENCOUNTERED. WHERE COHESIVE MATERIALS WERE ENCOUNTERED, DISTURBED SAMPLES WERE TAKEN WITH A SPLIT SPOON *SAMPLER DURING PERFORMANCE OF STANDARD PENETRATION TESTING.*

VISUAL CLASSIFICATIONS

Blk Black(y)	H Hard	Rts Root(s)	Tr Traces
Bn Brown(ish)	Hbn Hydrocarbon	S Stiff	V Very
Calc Calcareous	L Loose	Sd Sandy)	Wd Wood
Cl Clay(ey)	Ly Layer(s)	Sh Shell(y)	W/ With
D Dense	Mat Material	Sl Silty	W.O.P. Weight Of Pipe
Dk Dark	Med Medium	Slks Slicken Sides	Y Yellow(ish)
Fer Ferrous	Nod Nodules	Sms Seams	W.T. Water Table
Frag Fragment(s)	Org Organic	So Soft	
Gv Gravel(y)	Poc Pocket(s)	St Stone(s)	
Gy Gray(ish)	Prt Parting	Tn Tan(ish)	

LABORATORY CLASSIFICATION

CH INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS.
CL INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, LEAN CLAYS.
GP POORLY-GRADED GRAVELS OR GRAVEL-SAND MIXTURES, LITTLE OR NO FINES.
SM SILTY SANDS, SAND-SILT MIXTURES.
SP-SM OR SM-SP SLIGHTLY SILTY SANDS, SANDS WITH SOME SILTS

HOUSTON-GALVESTON NAVIGATION CHANNELS

BORING LOGS
HOUSTON SHIP CHANNEL
PELICAN ISLAND

U.S. ARMY ENGINEER DISTRICT, GALVESTON, TEXAS

SHEET 2 OF 2

EXHIBIT F-

Boring No. / El	Depth	V/So	So.	MED.	ST.
93-211: 9'	4'-6' (13.9)	220			
5'	8'-10'		300		
1'	12'-14'	220			
-5	18-20'		360		
-17	30'-32'	140			
-30	43'-45'	140			
93-212: 10'	4'-6' (14.8)		250		
+4'	10'-12'	190			
0	14'-16'		270		
-6	22-24'		260		
-18	32-34'			530	
-28	42-44'	160			
93-213: 8'	4-6' (13.2)	160			
-6	18'-20'	190			
-12	24-26'		270		
-27	39'-41'		280		
-33	45'-46.5'	160			
93-214: 14.4'	4'-6' (19.4')			660	
8.4	10'-12'	140			
4'	18-20'	170			
-1.6'	22'-24'			580	
-26.6	46-48'	220			
93-215: 13.5	14'-16' (28.58)			530	
150	27'-29'			630	
-5.5	33'-35'			780	
-11.5	39'-41'	270			