PRELIMINARY INVESTIGATIONS OF SUBMERGED AREAS

Delivery Order Number 023 Date 10/21/04
Project A N W Refuge

Location ID Number J-6
Coordinates: X 2636032
Y 13233024
Water Depth 3.0
Pipe Length 15 13/16s

Tide Staff Readings:

	Time	Reading
Morning		
Mid-Day		
Evening		

Push No. 1 Time 9:58
Weight of Pipe Penetration (WOP) 4.3 Comment SOE + CL
One-Hand Push (40-lb) Depth 5.3 Comments SOE + CL

One-Hand Push (70-lb) Depth 5.8 Comments SA CL

Two-Hand Push to Refusal – Depth 6.6 Comments SA & Shell
Jig 7.5 SA & Shell

Push No. 2 Time 10:17
Weight of Pipe Penetration (WOP) 4.0 Comment
One-Hand Push (40-lb) Depth 5.8 Comments CL

One-Hand Push (70-lb) Depth 6.0 Comments SA CL

Two-Hand Push to Refusal – Depth 6.3 Comments SA & Shell
Jig 9.0 SA & Shell 6.3 to 7.0
7.0 to 9.0 Shell

Hand Proving Ring Penetrometer Test? yes
Hand Vane Shear Test?

Technician (Probe Handler) mike A Recorder Gary L.

HAND CONE PENETRATION TEST (CPT)

Delivery Order Number 023 Date 10/24/04
Project A N W Refuge

Location ID Number J-6 Weight of Proving Ring
Time 10:34 Weight of Rod Section 13 lbs

Weight of Rod Penetration 5.0 Number of Rods 3
Comments

End Depth	Dial	No. Rods	Comment	End Depth	Dial	No. Rods	Comment
5.3	45		SA CL w/shell				
5.6	51						
5.9	53						
6.0	106						
6.3	278		Shell				
6.6	185		Shell				
7.0	91		SA CL w/shell				
7.3	85		" " " "				
7.6	140		Shell				
7.9	178		"				
8.0	258		"				

Comments

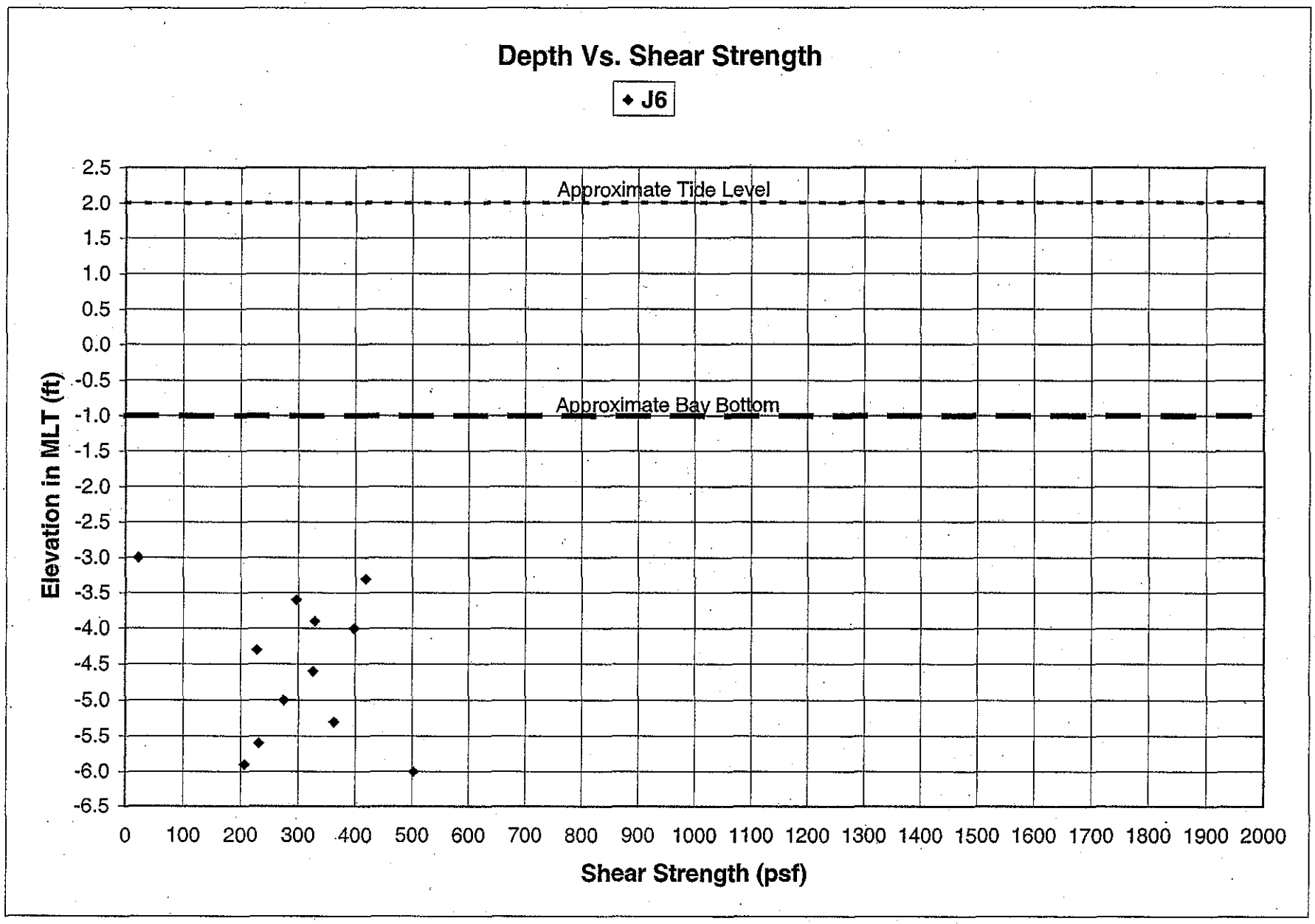
B23

Hand Cone Penetrometer Test and Analysis: RTB 11/8/4

Project: Aransas National Wildlife Ref. - BUS Site "J"
Location: Dunham Bay located outside of Rockport, TX
Delivery Order #: 0023
Date of Testing: 10/20/04 to 10/22/04

Probing Results					
Resistance	Depth1 '	Depth2 '	MLT1'	MLT2'	Average
Weight of Pipe	4.3	4.0	-2.3	-2.0	-2.2
1 HP (40lbs)	5.3	5.8	-3.3	-3.8	-3.6
1 HP (70lbs)	5.8	6.0	-3.8	-4.0	-3.9
2 Hand Refusal	6.6	6.3	-4.6	-4.3	-4.5

HCPT ID	~ Bay Bottom (MLT in ft)	Water Depth (ft)	# of Rods	Rod End-depth (ft)	Thickness Soil Layer (ft)	Total Unit Wt. of Soil (pcf)	N_k factor	Total Stress (psf)	Dial Reading	Dial Conv. X(lb)	Capacity q_c (psi)	**shear str. S_u (psf)**	**Below Mudline (ft)**	**~ Elev. MLT in ft**
J6	-1.0	3	3	5.0	2.0	90	9	180.0	0	0.7	2.7	23	2.0	-3.0
	-1.0	3	3	5.3	2.3	110	13	433.0	121	38.7	40.7	418	2.3	-3.3
	-1.0	3	3	5.6	0.3	110	13	466.0	87	28.1	30.0	297	2.6	-3.6
	-1.0	3	3	5.9	0.3	110	13	499.0	97	31.2	33.2	329	2.9	-3.9
	-1.0	3	3	6.0	0.1	110	13	510.0	117	37.5	39.4	398	3.0	-4.0
	-1.0	3	3	6.3	0.3	105	12	541.5	64	20.8	22.8	228	3.3	-4.3
	-1.0	3	3	6.6	0.3	110	13	574.5	98	31.5	33.5	327	3.6	-4.6
	-1.0	3	3	7.0	0.4	105	12	616.5	78	25.2	27.2	275	4.0	-5.0
	-1.0	3	3	7.3	0.3	110	13	649.5	110	35.3	37.2	363	4.3	-5.3
	-1.0	3	3	7.6	0.3	105	12	681.0	68	22.1	24.0	232	4.6	-5.6
	-1.0	3	3	7.9	0.3	105	12	712.5	62	20.2	22.2	206	4.9	-5.9
	-1.0	3	3	8.0	0.1	110	13	723.5	152	48.5	50.4	503	5.0	-6.0


Depth Vs. Shear Strength
J6
Approximate Tide Level
Approximate Bay Bottom
Elevation in MLT (ft)
2.5
2.0
1.5
1.0
0.5
0.0
-0.5
-1.0
-1.5
-2.0
-2.5
-3.0
-3.5
-4.0
-4.5
-5.0
-5.5
-6.0
-6.5
0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000
Shear Strength (psf)