

UPDATED GEOTECHNICAL DATA SUMMARY REPORT

**CHARLESTON NAVAL BASE CONTAINER TERMINAL
NORTH CHARLESTON, SOUTH CAROLINA
S&ME PROJECT NO. 1131-03-264**

Prepared For:

South Carolina State **PORTS AUTHORITY**

Prepared By:



620 Wando Park Boulevard
Mt. Pleasant, South Carolina 29464

May 20, 2005

APPENDIX I FIELD TESTING

BORING AND SOUNDING LOCATION PLAN (Figure 1)

TABLE OF BORINGS/SOUNDINGS

LEGEND SHEETS

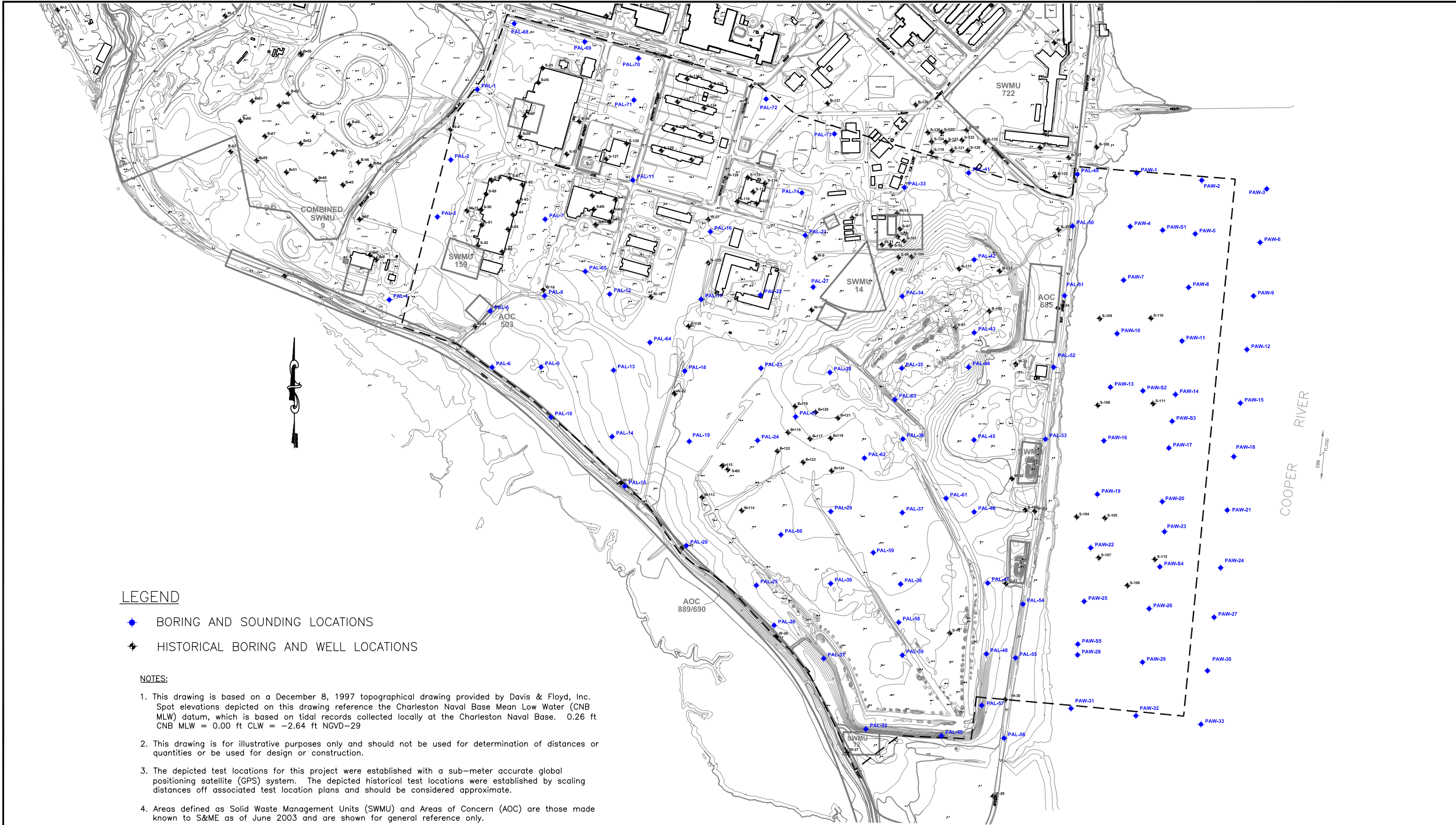
SOIL BORING, CPT AND DMT LOGS

PORE PRESSURE DISSIPATION TEST PLOTS

SHEARWAVE VELOCITY PROFILES

PIEZOMETER INSTALLATION LOGS

FIELD TESTING PROCEDURES

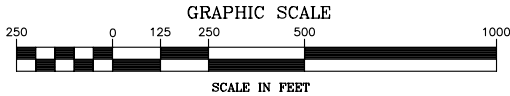


LEGEND

- ◆ BORING AND SOUNDING LOCATIONS
- ✦ HISTORICAL BORING AND WELL LOCATIONS

NOTES:

1. This drawing is based on a December 8, 1997 topographical drawing provided by Davis & Floyd, Inc. Spot elevations depicted on this drawing reference the Charleston Naval Base Mean Low Water (CNB MLW) datum, which is based on tidal records collected locally at the Charleston Naval Base. 0.26 ft CNB MLW = 0.00 ft CLW = -2.64 ft NGVD-29
2. This drawing is for illustrative purposes only and should not be used for determination of distances or quantities or be used for design or construction.
3. The depicted test locations for this project were established with a sub-meter accurate global positioning satellite (GPS) system. The depicted historical test locations were established by scaling distances off associated test location plans and should be considered approximate.
4. Areas defined as Solid Waste Management Units (SWMU) and Areas of Concern (AOC) are those made known to S&ME as of June 2003 and are shown for general reference only.



BORING AND SOUNDING LOCATION PLAN CHARLESTON NAVAL BASE CONTAINER TERMINAL SOUTH CAROLINA STATE PORTS AUTHORITY NORTH CHARLESTON, SOUTH CAROLINA		
SCALE:	AS SHOWN	DRAWN BY: LAJ
PROJECT NO.	1131-03-264	DATE: 5-13-05
FIGURE NO.	2-1	APPROVED BY:

TABLE A-1
LIST OF BORINGS & SOUNDINGS
CHARLESTON NAVAL BASE CONTAINER TERMINAL
CHARLESTON, SOUTH CAROLINA
S&ME PROJECT NO. 1131-03-264

Boring Number	Depth (ft)	Approximate Coordinates State Plane NAD 83		Ground Surface or Mudline Elevation (ft CLW)	Exploration Type
		Easting	Northing		
ON LAND BORINGS AND SOUNDINGS					
PAL-1	74	2323517	369940	10.92	CPT
PAL-2	66	2323369	369549	9.18	CPT
PAL-3	65	2323295	369232	7.68	CPT
PAL-4	59	2323028	368771	6.59	CPT
PAL-5	66	2323590	368708	10.03	CPT
PAL-6	62	2323599	368395	7.67	DMT
PAL-7	65	2323895	369214	9.71	CPT
PAL-8	100	2323891	368793	12.56	SCPT
PAL-9	65	2323871	368396	8.94	CPT
PAL-10	68	2323926	368117	7.85	CPT
PAL-11	77	2324384	369438	11.09	CPT
PAL-12	85	2324253	368802	15.94	CPT
PAL-13	79	2324274	368378	14.33	CPT
PAL-14	72	2324266	368008	9.76	CPT
PAL-15	68	2324336	367734	9.35	CPT
PAL-16	50	2324816	369152	14.29	CPT
PAL-17	49	2324761	368773	13.79	CPT
PAL-18	55	2324670	368374	12.37	CPT
PAL-19	59	2324695	367983	14.55	CPT
PAL-20	61	2324679	367403	8.31	DMT
PAL-21	53	2325342	369126	13.61	CPT
PAL-22	53	2325091	368797	15.07	CPT
PAL-23	58	2325094	368390	17.99	CPT
PAL-24	55	2325075	367988	13.71	CPT & DMT
PAL-25	69	2325068	367183	18.27	
PAL-26	76	2325167	366960	11.46	CPT
PAL-27	51	2325384	368841	13.05	CPT
PAL-28	55	2325477	368366	16.63	CPT
PAL-29	102	2325485	367592	15.00	SCPT
PAL-30	58	2325476	367190	12.21	CPT
PAL-31	81	2325443	366776	16.64	CPT
PAL-32	89	2325677	366383	15.95	CPT
PAL-33	44	2325891	369395	8.87	CPT
PAL-34	57	2325873	368787	19.71	CPT
PAL-35	57	2325876	368390	18.99	CPT
PAL-36	86	2325882	367996	15.53	CPT
PAL-37	53	2325880	367583	13.25	CPT
PAL-38	55	2325870	367189	12.36	CPT & DMT
PAL-39	75	2325872	366791	12.62	
PAL-40	86	2326097	366346	15.26	CPT
PAL-41	53	2326248	369476	9.23	CPT

TABLE A-1
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CHARLESTON NAVAL BASE CONTAINER TERMINAL
CHARLESTON, SOUTH CAROLINA
S&ME PROJECT NO. 1131-03-264

Boring Number	Depth (ft)	Approximate Coordinates State Plane NAD 83		Ground Surface or Mudline Elevation (ft CLW)	Exploration Type
		Easting	Northing		
PAL-42	61	2326276	368998	20.17	CPT
PAL-43	66	2326275	368588	21.33	CPT
PAL-44	65	2326248	368395	19.48	CPT
PAL-45	65	2326282	367993	10.98	CPT
PAL-46	49	2326279	367591	10.09	CPT
PAL-47	58	2326354	367195	17.25	CPT
PAL-48	62	2326347	366801	17.76	CPT
PAL-49	44	2326852	369469	7.53	CPT
PAL-50	46	2326826	369180	8.21	DMT
PAL-51	45	2326781	368793	7.92	CPT
PAL-52	58	2326720	368395	8.12	DMT
PAL-53	100	2326675	367995	8.97	SCPT
PAL-54	51	2326552	367075	9.00	CPT
PAL-55	46	2326509	366779	8.60	DMT
PAL-56	71	2326445	366332	7.12	CPT
PAL-57	76.5	2326320	366515	17.09	SPT Drill
PAL-58	59	2325859	366976	12.25	CPT
PAL-59	56	2325718	367363	12.86	CPT
PAL-60	61.5	2325205	367464	13.46	SPT Drill
PAL-61	59	2326123	367666	17.51	CPT
PAL-62	66.5	2325669	367890	14.33	SPT Drill
PAL-63	82	2325839	368216	18.29	CPT
PAL-64	61.5	2324476	368533	14.35	SPT Drill
PAL-65	75.5	2324117	368928	14.66	SPT Drill
PAL-66	56.5	2326248	369476	9.23	SPT Drill
PAL-67	76	2325286	368120	13.78	CPT
PAL-68	68	2323722	370307	9.93	CPT
PAL-69	68	2324413	370205	10.76	CPT
PAL-70	55	2324413	370112	11.13	CPT
PAL-71	71	2324387	369881	10.94	CPT
PAL-72	48.75	2325122	369885	11.69	CPT
PAL-73	49	2325502	369695	9.66	CPT
PAL-74	49	2325321	369364	13.23	CPT
PZ-1	45	2325872	366791	12.62	Soil Drill
PZ-2	32	2325872	366791	12.62	Soil Drill
PZ-3	20	2325872	366791	12.62	Soil Drill
PZ-4	49	2326275	368588	21.33	Soil Drill
PZ-5	35	2326275	368588	21.33	Soil Drill
PZ-6	24	2326275	368588	21.33	Soil Drill

TABLE A-1
LIST OF BORINGS & SOUNDINGS
CHARLESTON NAVAL BASE CONTAINER TERMINAL
CHARLESTON, SOUTH CAROLINA
S&ME PROJECT NO. 1131-03-264

Boring Number	Depth (ft)	Approximate Coordinates State Plane NAD 83		Ground Surface or Mudline Elevation (ft CLW)	Exploration Type
		Easting	Northing		
OVER WATER BORINGS AND SOUNDINGS					
PAW-1	49	2327175	369455	-0.3	SPT Drill
PAW-2	45	2327552	369435	-6.4	SPT Drill
PAW-3	50	2327895	369383	-10.6	SPT Drill
PAW-4	44	2327139	369187	-2.7	DMT
PAW-5	47	2327503	369135	-6.0	DMT
PAW-6	48	2327880	369080	-11.7	SPT Drill
PAW-7	44	2327109	368882	-5.2	SPT Drill
PAW-8	40	2327453	368838	-6.4	SPT Drill
PAW-9	45	2327818	368795	-7.7	SPT Drill
PAW-10	45	2327073	368596	-5.4	SPT Drill
PAW-11	54	2327434	368542	-4.3	SPT Drill
PAW-12	45	2327807	368497	-8.8	SPT Drill
PAW-13	58	2327032	368282	-5.7	DMT
PAW-14	41	2327396	368241	-6.8	DMT
PAW-15	60	2327765	368199	-9.8	SPT Drill
PAW-16	45	2327010	367994	-6.3	SPT Drill
PAW-17	65	2327361	367946	-6.5	SPT Drill
PAW-18	54	2327733	367889	-8.8	SPT Drill
PAW-19	45	2326963	367687	-7.6	SPT Drill
PAW-20	45	2327324	367648	-8.4	SPT Drill
PAW-21	55	2327697	367587	-8.1	SPT Drill
PAW-22	50	2326925	367383	-7.2	SPT Drill
PAW-23	45	2327337	367481	-8.4	SPT Drill
PAW-24	50	2327652	367286	-6.1	SPT Drill
PAW-25	45	2326897	367080	-7.0	SPT Drill
PAW-26	50	2327251	367053	-8.8	SPT Drill
PAW-27	50	2327613	367005	-6.6	SPT Drill
PAW-28	29	2326860	366796	-6.7	DMT
PAW-29	44	2327223	366770	-11.9	DMT
PAW-30	55	2327576	366707	-6.9	SPT Drill
PAW-31	50	2326818	366490	-5.7	SPT Drill
PAW-32	54	2327178	366457	-8.4	SPT Drill
PAW-33	51	2327530	366421	-9.0	SPT Drill
PAW-S1	45	2327310	369149	-4.6	SPT Drill
PAW-S2	44	2327218	368261	-6.3	SPT Drill
PAW-S3	45	2327365	368089	-7.2	SPT Drill
PAW-S4	44	2327306	367296	-10.9	DMT
PAW-S5	45	2326863	366862	-5.8	SPT Drill

LEGEND TO SOIL CLASSIFICATION AND SYMBOLS

SOIL TYPES

(Shown in Graphic Log)



Fill



Asphalt



Concrete



Topsoil



Gravel



Sand



Silt



Clay



Organic



Silty Sand



Clayey Sand



Sandy Silt



Clayey Silt



Sandy Clay



Silty Clay



Partially Weathered Rock



Cored Rock

WATER LEVELS

(Shown in Water Level Column)



= Water Level At Termination of Boring



= Water Level Taken After 24 Hours



= Loss of Drilling Water



HC = Hole Cave

CONSISTENCY OF COHESIVE SOILS

CONSISTENCY

Very Soft
Soft
Firm
Stiff
Very Stiff
Hard
Very Hard

STD. PENETRATION RESISTANCE BLOWS/FOOT

0 to 2
3 to 4
5 to 8
9 to 15
18 to 30
31 to 50
Over 50

RELATIVE DENSITY OF COHESIONLESS SOILS

RELATIVE DENSITY

Very Loose
Loose
Medium Dense
Dense
Very Dense

STD. PENETRATION RESISTANCE BLOWS/FOOT

0 to 4
5 to 10
11 to 30
31 to 50
Over 50

SAMPLER TYPES

(Shown in Samples Column)



Shelby Tube



Split Spoon



Rock Core



No Recovery

TERMS

Standard Penetration Resistance - The Number of Blows of 140 lb. Hammer Falling 30 in. Required to Drive 1.4 in. I.D. Split Spoon Sampler 1 Foot. As Specified in ASTM D-1588.

REC - Total Length of Rock Recovered in the Core Barrel Divided by the Total Length of the Core Run Times 100%.

RQD - Total Length of Sound Rock Segments Recovered that are Longer Than or Equal to 4" (mechanical breaks excluded) Divided by the Total Length of the Core Run Times 100%.



S&ME

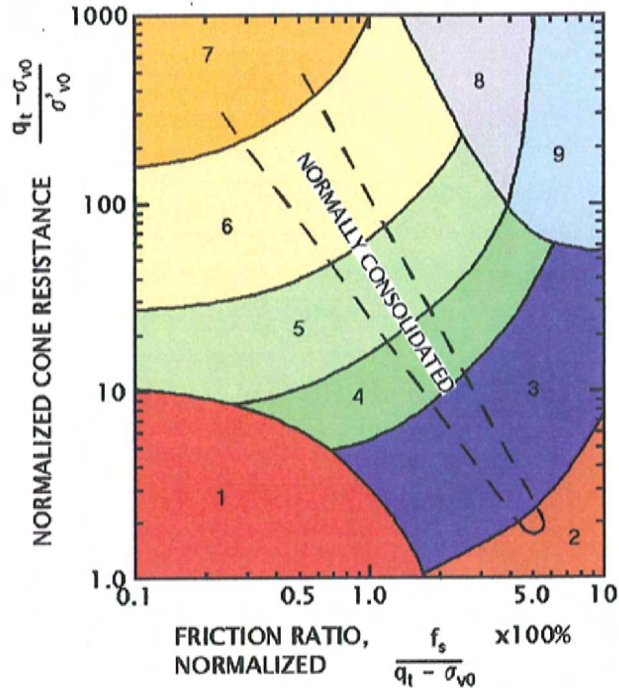
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ENVIRONMENTAL SERVICES

CPT Soil Classification Legend

Normalized Friction Ratio
Classification Chart

Zone	(q_c/p_a) N_{eq}	Soil Behavior Type (SBT)
1	2	Sensitive, Fine Grained
2	1	Organic Soils-Peats
3	1.5	Clays-Clay to Silty Clay
4	2	Silt Mixtures-Clayey Silt to Silty Clay
5	3	Sand Mixtures-Silty Sand to Sandy Silt
6	4.5	Sands-Clean Sand to Silty Sand
7	6	Gravelly Sand to Sand
8	1	Very Stiff Sand to Clayey Sand *
9	2	Very Stiff, Fine Grained *

(*) Heavily Overconsolidated or Cemented



General Notes:

UNC – Uncorrected

COR – Corrected

Class. FR – Classification based on Friction Ratio, PK Robertson, 1990, see above graph, determines Soil Behavior Type (SBT)

N_{eq} , Blow Counts – after PK Robertson 1990, uses Tip Stress UNC, q_c ; atmospheric pressure, p_a

ϕ' , Friction Angle - Robertson & Campanella 1988,
uses Tip Stress UNC, q_c ;
effective overburden stress, σ'_{vo} ;

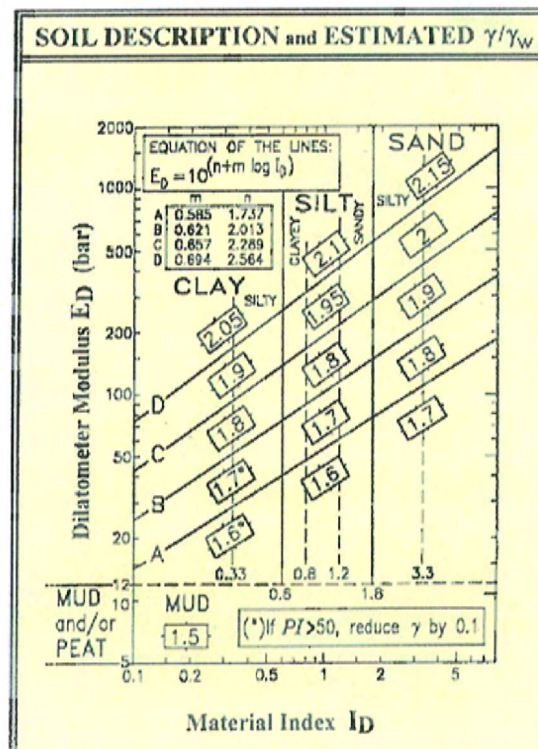
$$\tan \phi' = \frac{1}{2.68} * \left[\log \left(\frac{q_c}{\sigma'_{vo}} \right) + 0.29 \right]$$

S_u , Undrained Shear Strength - Robertson & Campanella 1988;
uses Tip Stress COR, q_t ;
overburden stress, σ_{vo} ;
 $N_{kt} = 15$

$$S_u = \left(\frac{q_t - \sigma_{vo}}{N_{kt}} \right)$$

DMT Formulas & Soil Classification Legend

SYMB	DESCRIPTION	BASIC DMT REDUCTION FORMULAE	
p_0	Corrected First Reading	$p_0 = 1.05(A - Z_M + \Delta A) - 0.05(B - Z_M - \Delta B)$	Z_M = Gage reading when vented to atm.
p_1	Corrected Second Reading	$p_1 = B - Z_M - \Delta B$	However, if ΔA & ΔB are measured with the same gage used for current readings A & B, set $Z_M=0$ (Z_M is compensated)
I_D	Material Index	$I_D = (p_1 - p_0) / (p_0 - u_0)$	u_0 = pre-insertion pore pressure
K_D	Horizontal Stress Index	$K_D = (p_0 - u_0) / \sigma'_{v0}$	σ'_{v0} = pre-insertion overburden stress
E_D	Dilatometer Modulus	$E_D = 34.7 (p_1 - p_0)$	E_D is NOT a Young's modulus E. E_D should be used only AFTER combining it with K_D (Stress History). First obtain $M_{DMT} = R_M E_D$, then e.g. $E = 0.8 M_{DMT}$
K_0	Coeff. Earth Pressure in Situ	$K_{0DMT} = (K_D / 1.5)^{0.47} - 0.6$	for $I_D < 1.2$
OCR	Overconsolidation Ratio	$OCR_{DMT} = (0.5 K_D)^{1.56}$	for $I_D < 1.2$
C_u	Undrained Shear Strength	$C_{u,DMT} = 0.22 \sigma'_{v0} (0.5 K_D)^{1.25}$	for $I_D < 1.2$
ϕ	Friction Angle	$\phi_{safb,DMT} = 28 + 14.6 \log K_D - 2.1 \log^2 K_D$	for $I_D > 1.8$
C_h	Coefficient of Consolidation	$C_{h,DMT} = 7 \text{ cm}^2 / T_{flex}$	T_{flex} from A-log t DMTA-decay curve
k_h	Coefficient of permeability	$k_h = C_h \gamma_w / M_h$ ($M_h \approx K_D M_{DMT}$)	
γ	Unit Weight and Description	(see chart)	
M	Vertical Drained Constrained Modulus	$M_{DMT} = R_M E_D$ if $I_D \leq 0.6$ $R_M = 0.14 + 2.36 \log K_D$ if $I_D \geq 3$ $R_M = 0.5 + 2 \log K_D$ if $0.6 < I_D < 3$ $R_M = R_{M,0} + (2.5 - R_{M,0}) \log K_D$ where $R_{M,0} = 0.14 + 0.15(I_D - 0.6)$ if $K_D > 10$ $R_M = 0.32 + 2.18 \log K_D$ if $R_M < 0.85$ set $R_M = 0.85$	
U_0	Equilibrium pore pressure	$U_0 = p_2 - C - Z_M + \Delta A$	In freely draining soils



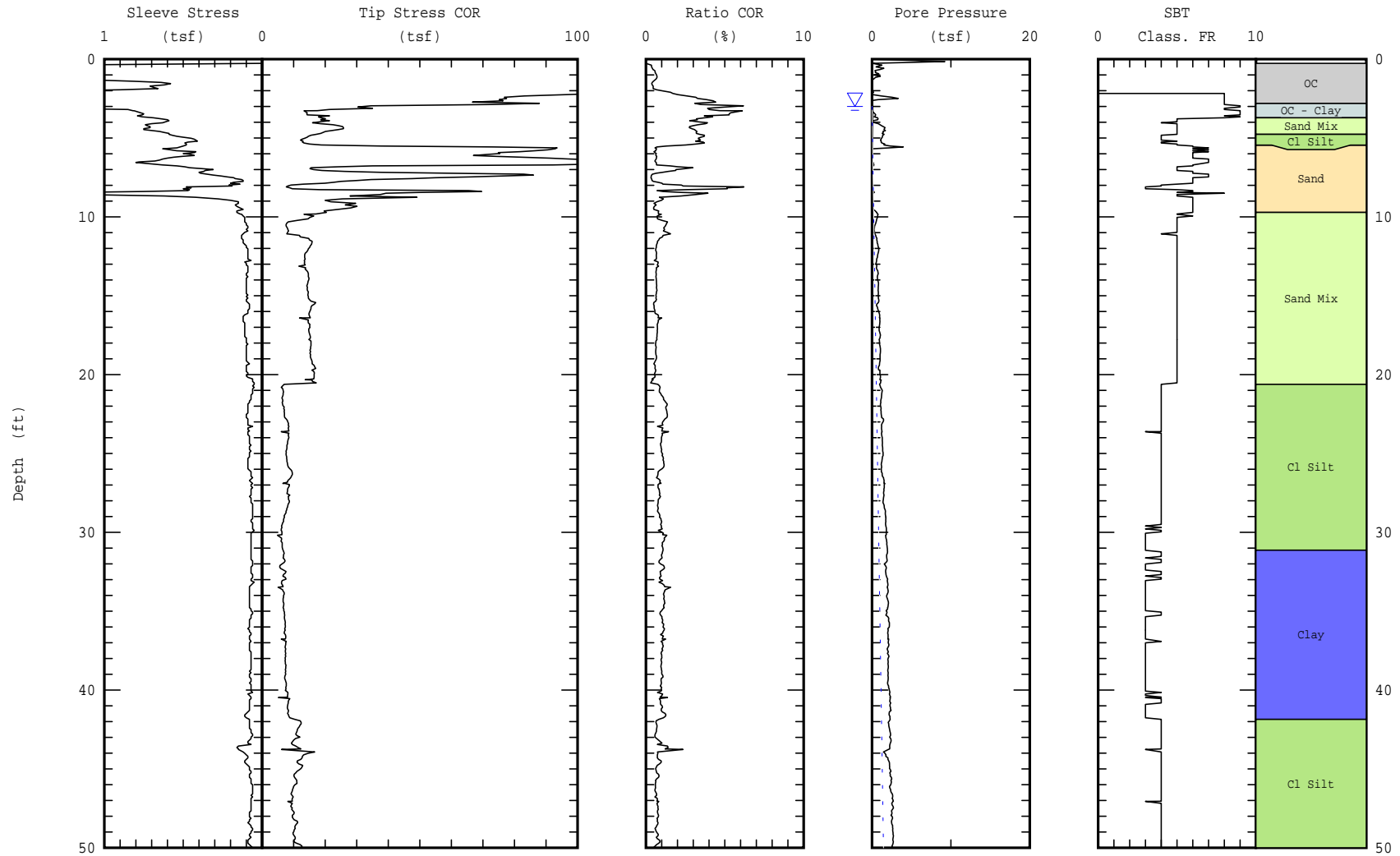


S&ME Inc. (843)884-0005
620 Wando Park Boulevard
Mt. Pleasant, SC 29464

Northing: 369940
Easting: 2323517
Elevation: 10.9 ft CLW

Date: 20/Jun/2003
Test ID: PAL-1
Project: 1131-03-264

Client: SCSA
Site: Chas. Naval Base Container Terminal



Maximum depth: 74.01 (ft)

Page 1 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

Estimated Phreatic Surface

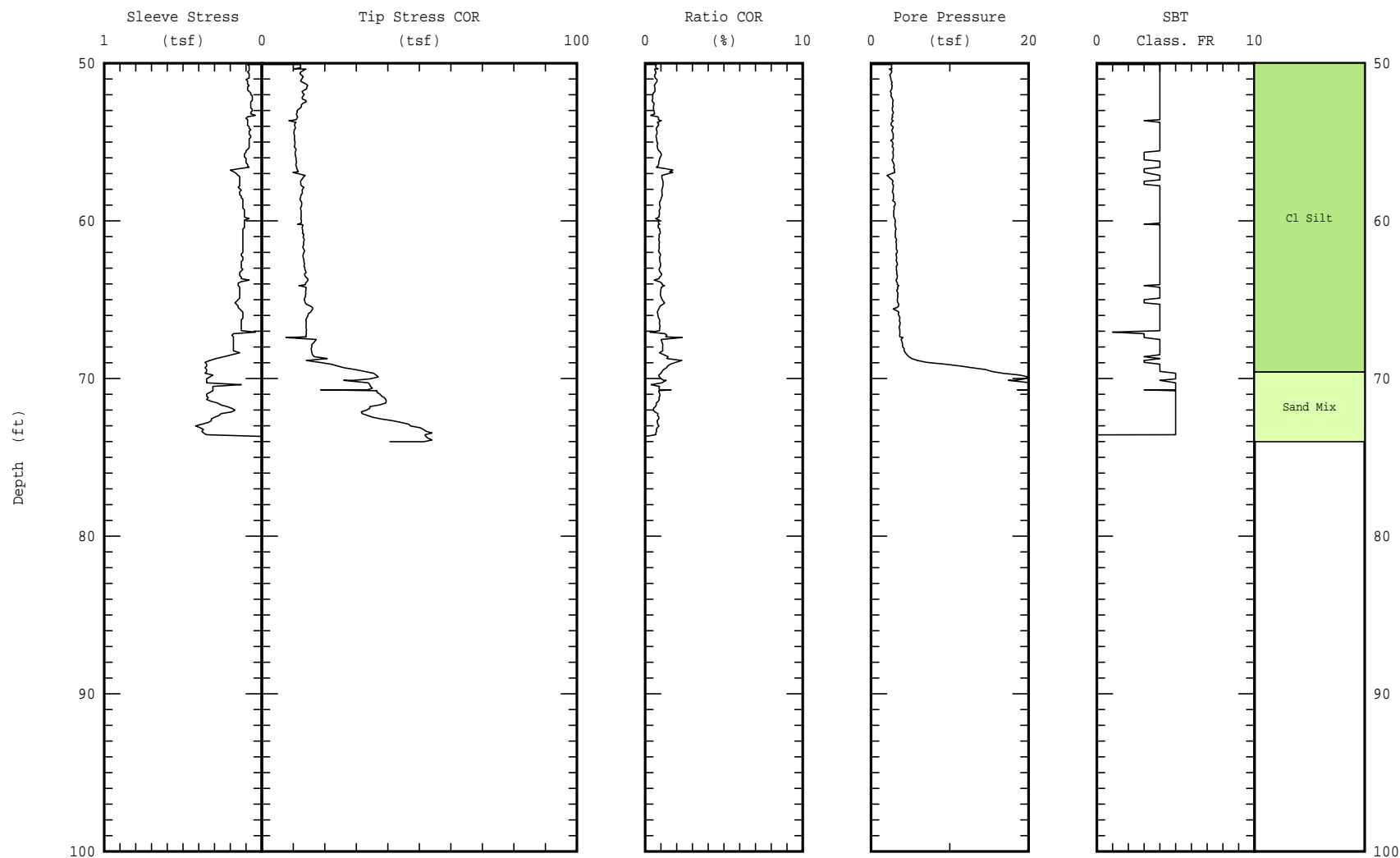


S&ME Inc. (843)884-0005
620 Wando Park Boulevard
Mt. Pleasant, SC 29464

Northing: 369940
Easting: 2323517
Elevation: 10.9 ft CLW

Date: 20/Jun/2003
Test ID: PAL-1
Project: 1131-03-264


Client: SCSPA
Site: Chas. Naval Base Container Terminal

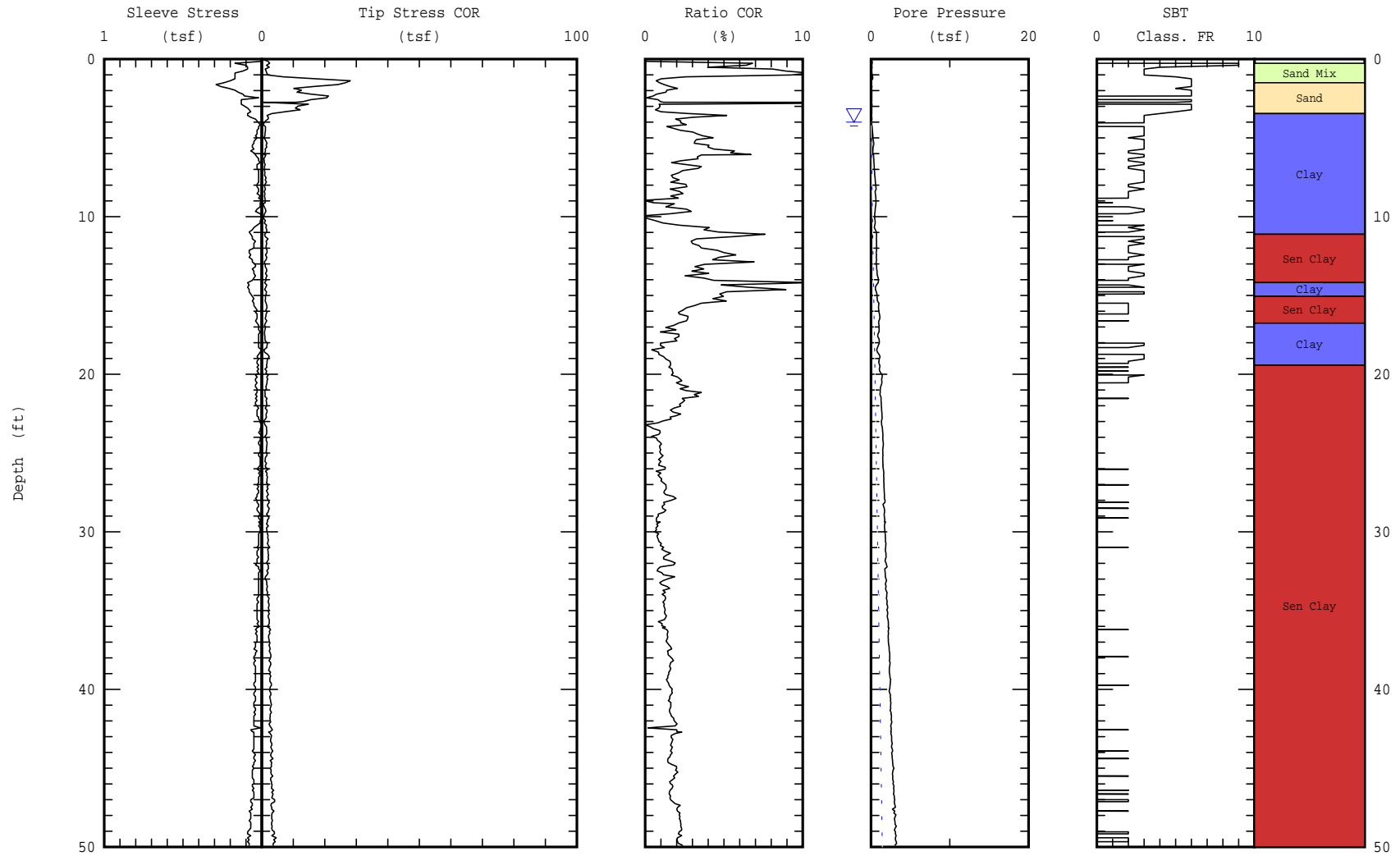



Maximum depth: 74.01 (ft)

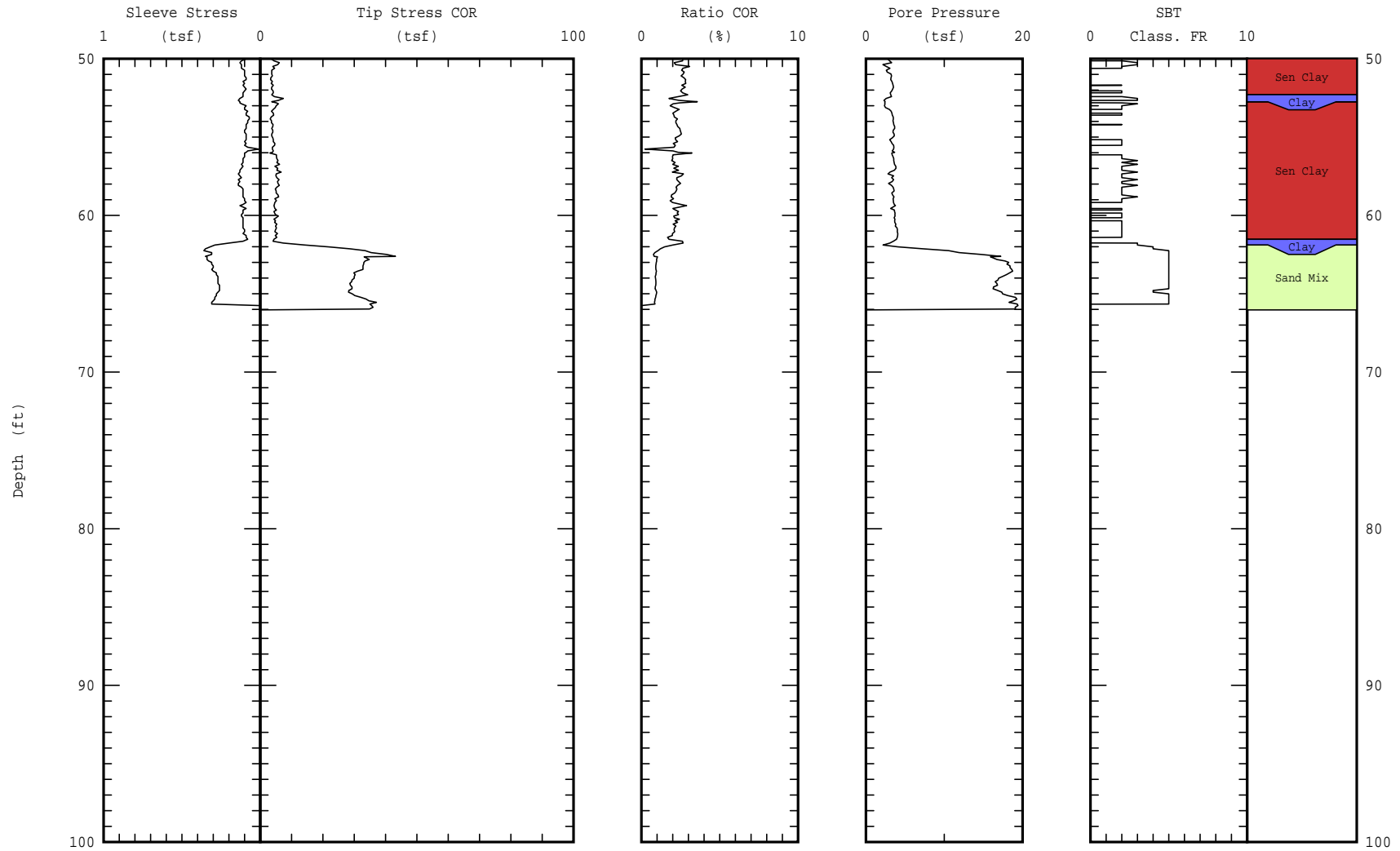
Page 2 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

 <p>S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464</p>	<p>Northing: 369548 Easting: 2323369 Elevation: 9.2 ft CLW</p>	<p>Date: 23/Jun/2003 Test ID: PAL-2 Project: 1131-03-264</p>
	<p>Client: SCSA Site: Chas. Naval Base Container Terminal</p>	




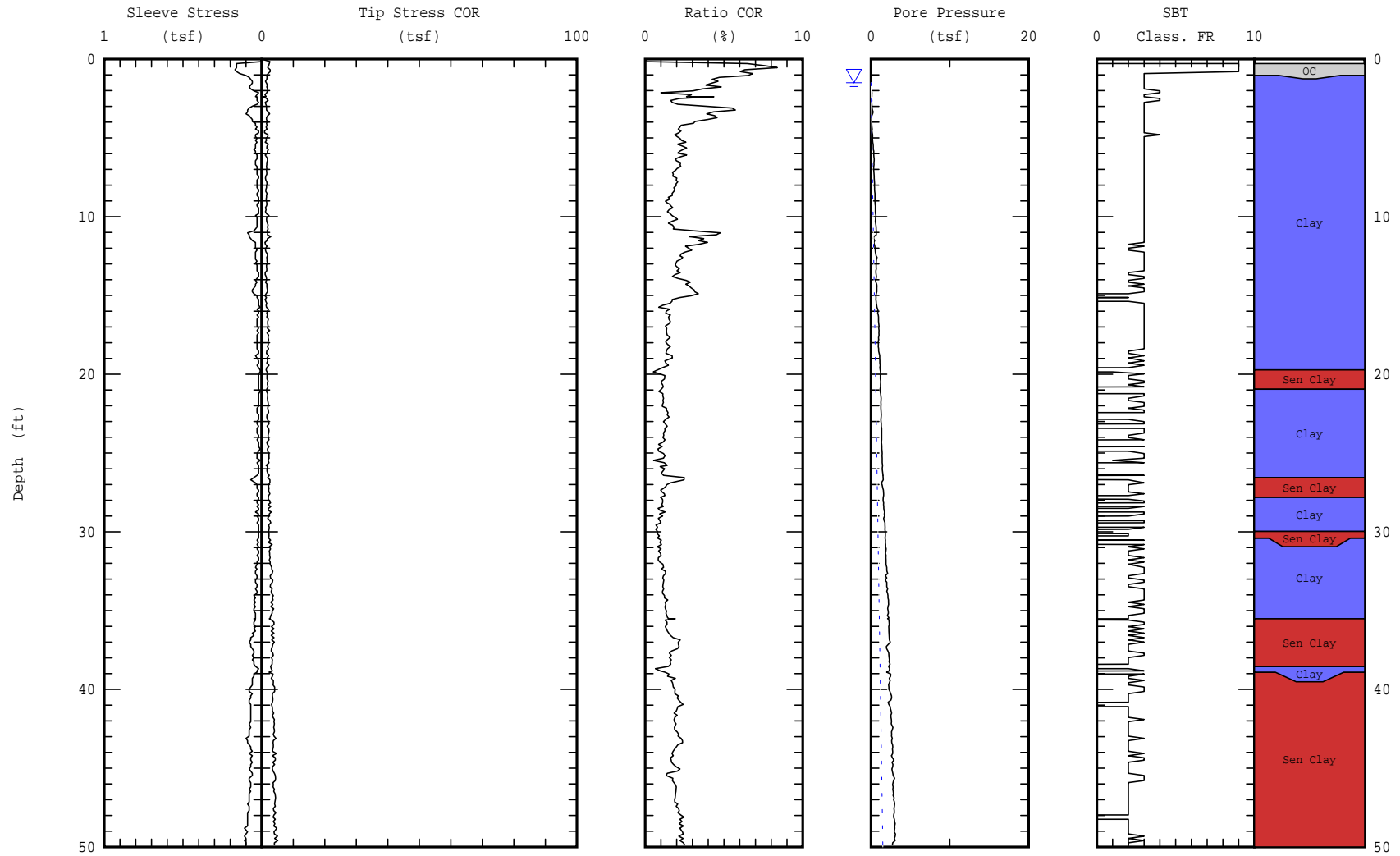
	S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464	Northing: 369548 Easting: 2323369 Elevation: 9.2 ft CLW	Date: 23/Jun/2003 Test ID: PAL-2 Project: 1131-03-264
	Client: SCSPA Site: Chas. Naval Base Container Terminal		




Maximum depth: 66.04 (ft)
Page 2 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

 <p>S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464</p>	<p>Northring: 369231 Easting: 2323295 Elevation: 7.7 ft CLW</p>	<p>Date: 23/Jun/2003 Test ID: PAL-3 Project: 1131-03-264</p>
	<p>Client: SCSPA Site: Chas. Naval Base Container Terminal</p>	



Maximum depth: 65.20 (ft)
Page 1 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)
 Estimated Phreatic Surface

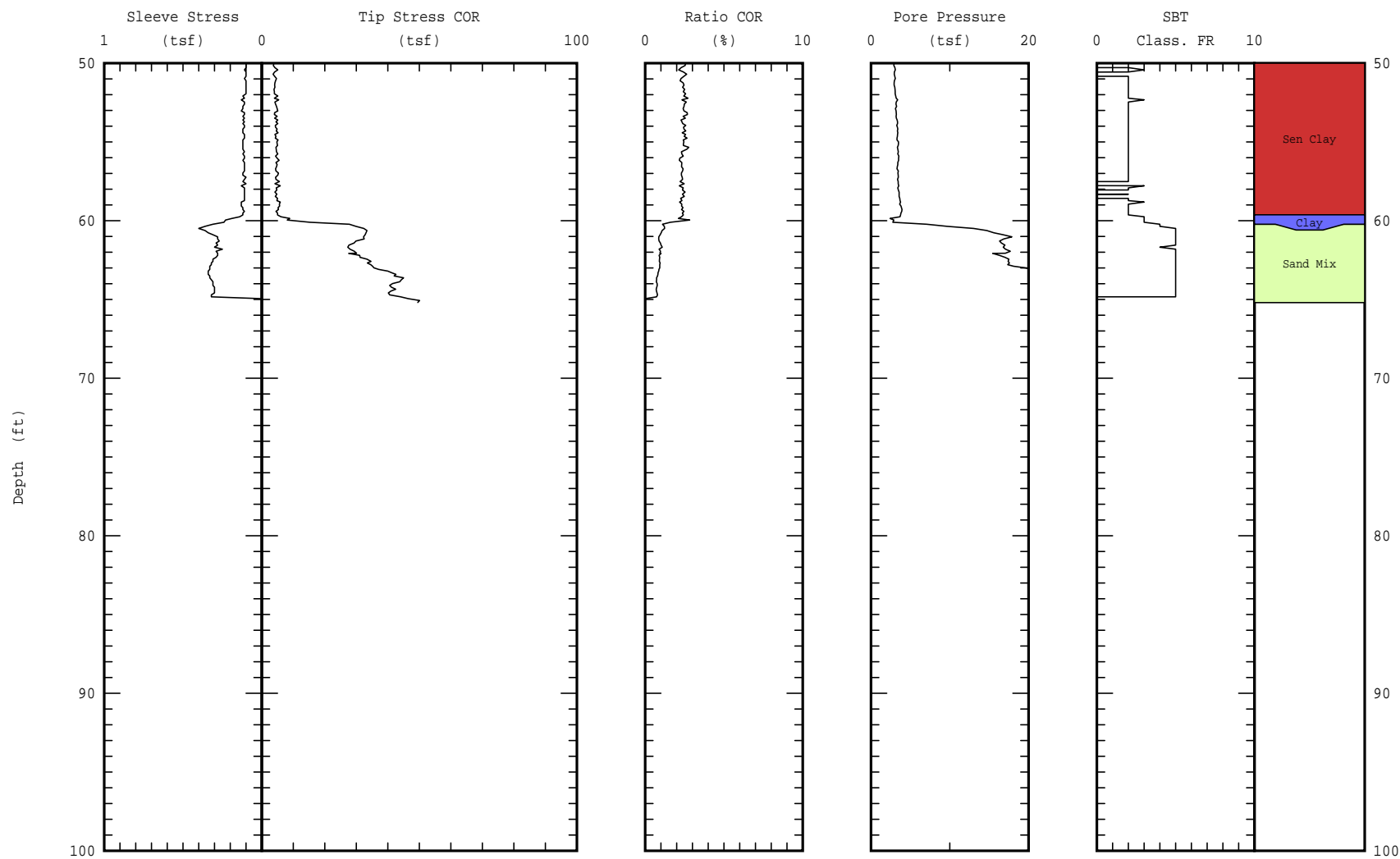


S&ME Inc. (843)884-0005
620 Wando Park Boulevard
Mt. Pleasant, SC 29464

Northing: 369231
Easting: 2323295
Elevation: 7.7 ft CLW

Date: 23/Jun/2003
Test ID: PAL-3
Project: 1131-03-264


Client: SCSPA
Site: Chas. Naval Base Container Terminal

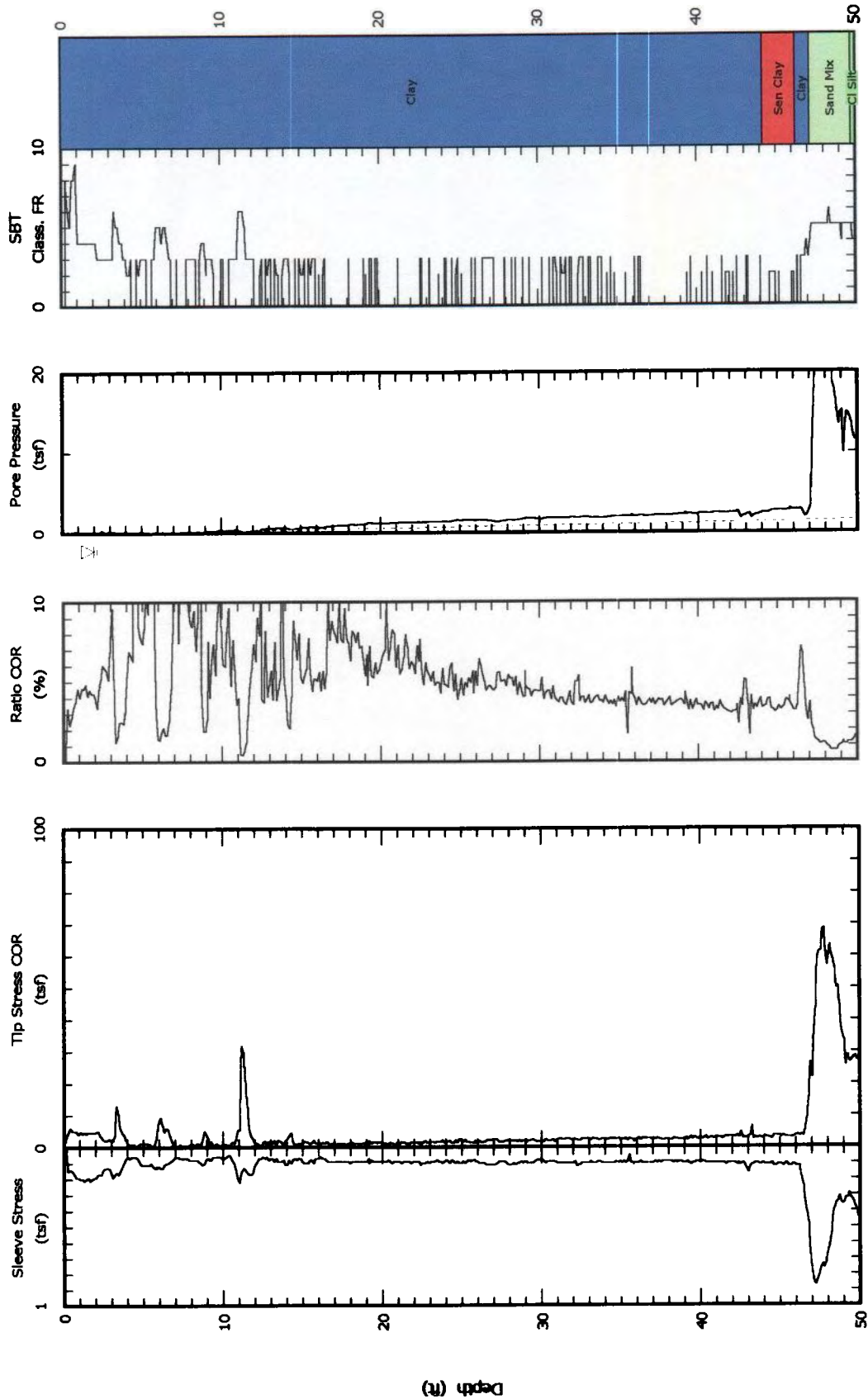


Maximum depth: 65.20 (ft)

Page 2 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)


<div data-bbox="243 1627 316 1795">  </div> <div data-bbox="191 1224 305 1612"> <p>S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464</p> </div>	<div data-bbox="191 846 337 1108"> <p>Northing: 368770 Easting: 2323027 Elevation: 6.6 Client: SCSPA Site: Chas. Naval Base Container Terminal</p> </div>	<div data-bbox="191 331 297 619"> <p>Date: 23/Jun/2003 Test ID: PAL-4 Project: 1131-03-264</p> </div>
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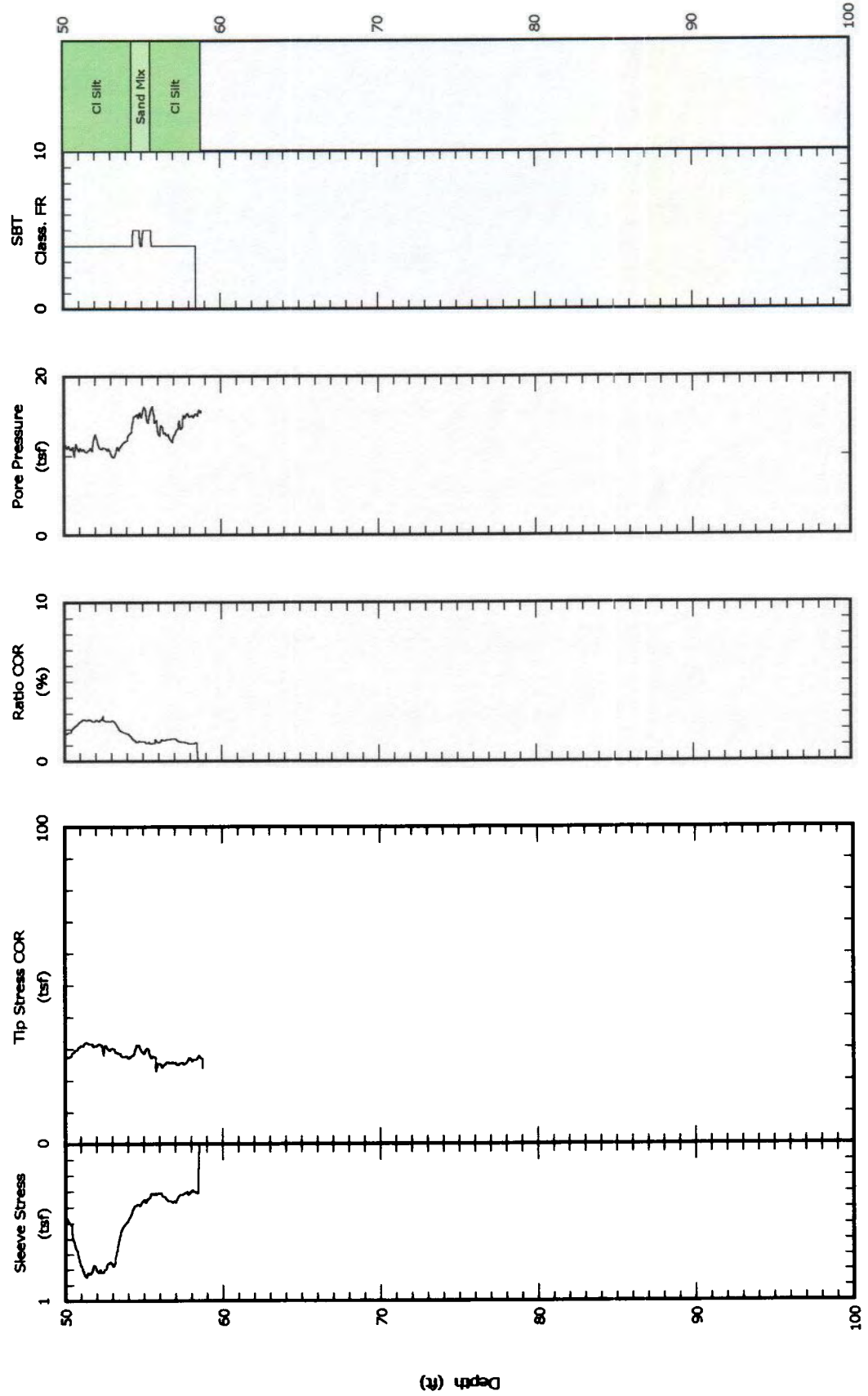


Class FR: Friction Ratio Classification (Ref: Robertson 1990)


▽ Estimated Phreatic Surface

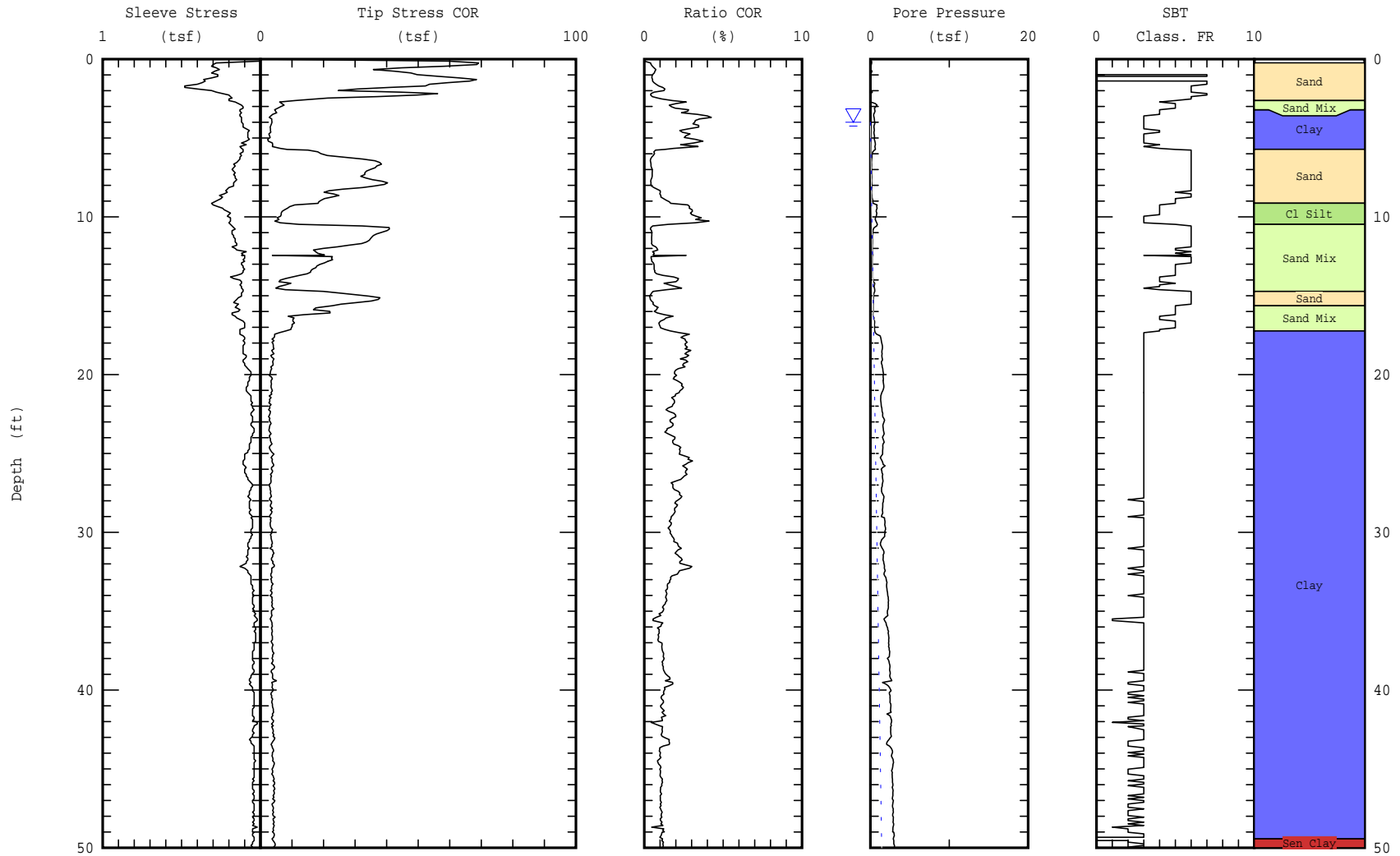
Maximum depth: 50.76 (ft)
Page 1 of 2

<p>S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464</p> 	<p>Northings: 368770 Easting: 2323027 Elevation: 6.6 Client: SCSA Site: Chas. Naval Base Container Terminal</p>	<p>Date: 23/Jun/2003 Test ID: PAL-4 Project: 1131-03-264</p>
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Class FR: Friction Ratio Classification (Ref: Robertson 1990)

	S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464	Northing: 368707 Easting: 2323589 Elevation: 10.0 ft CLW	Date: 23/Jun/2003 Test ID: PAL-5 Project: 1131-03-264
	Client: SCSA Site: Chas. Naval Base Container Terminal		



Maximum depth: 65.51 (ft)
 Page 1 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)
 ▽ Estimated Phreatic Surface

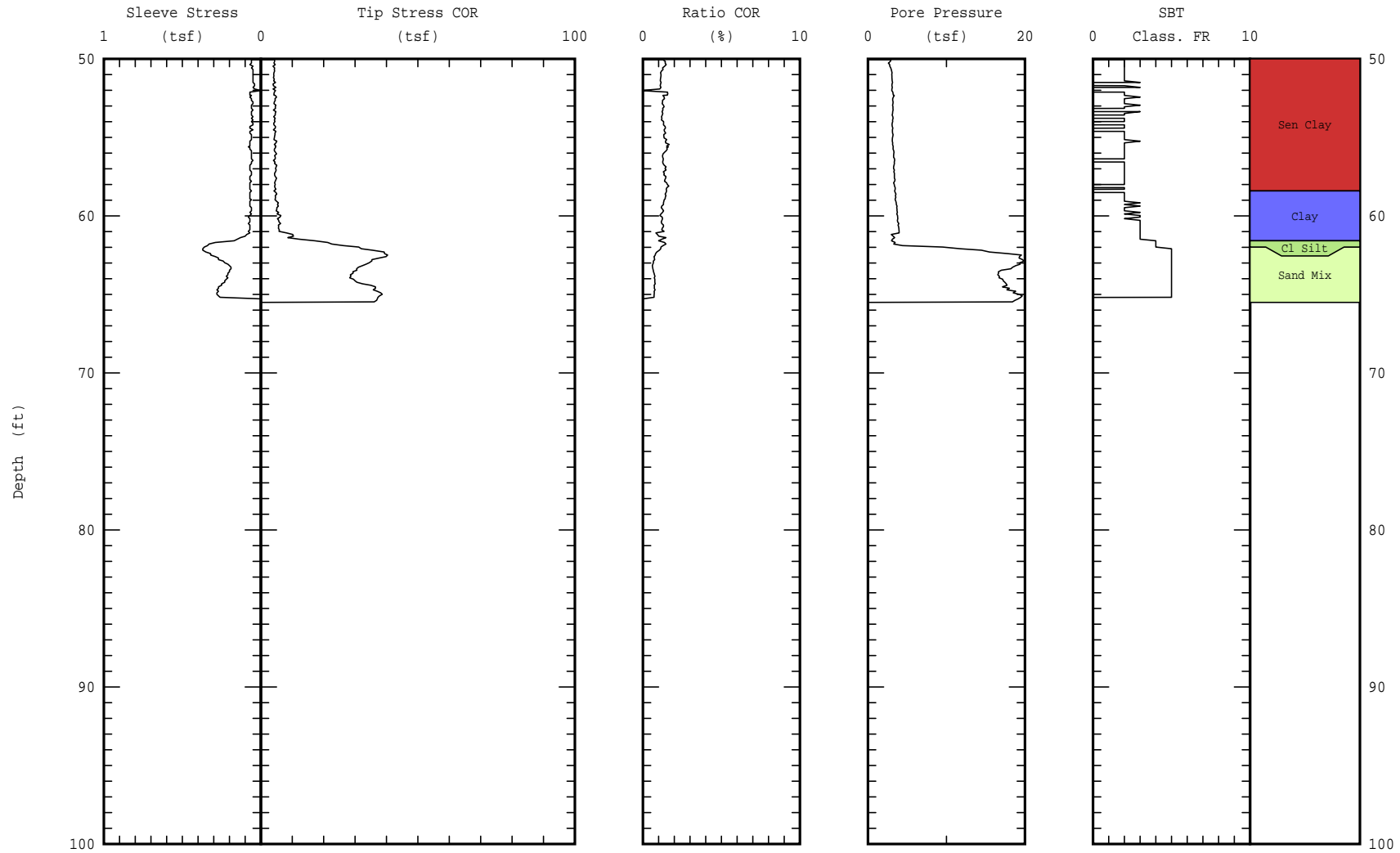


S&ME Inc. (843)884-0005
620 Wando Park Boulevard
Mt. Pleasant, SC 29464

Northing: 368707
Easting: 2323589
Elevation: 10.0 ft CLW

Date: 23/Jun/2003
Test ID: PAL-5
Project: 1131-03-264

Client: SCSPA
Site: Chas. Naval Base Container Terminal



Maximum depth: 65.51 (ft)

Page 2 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)



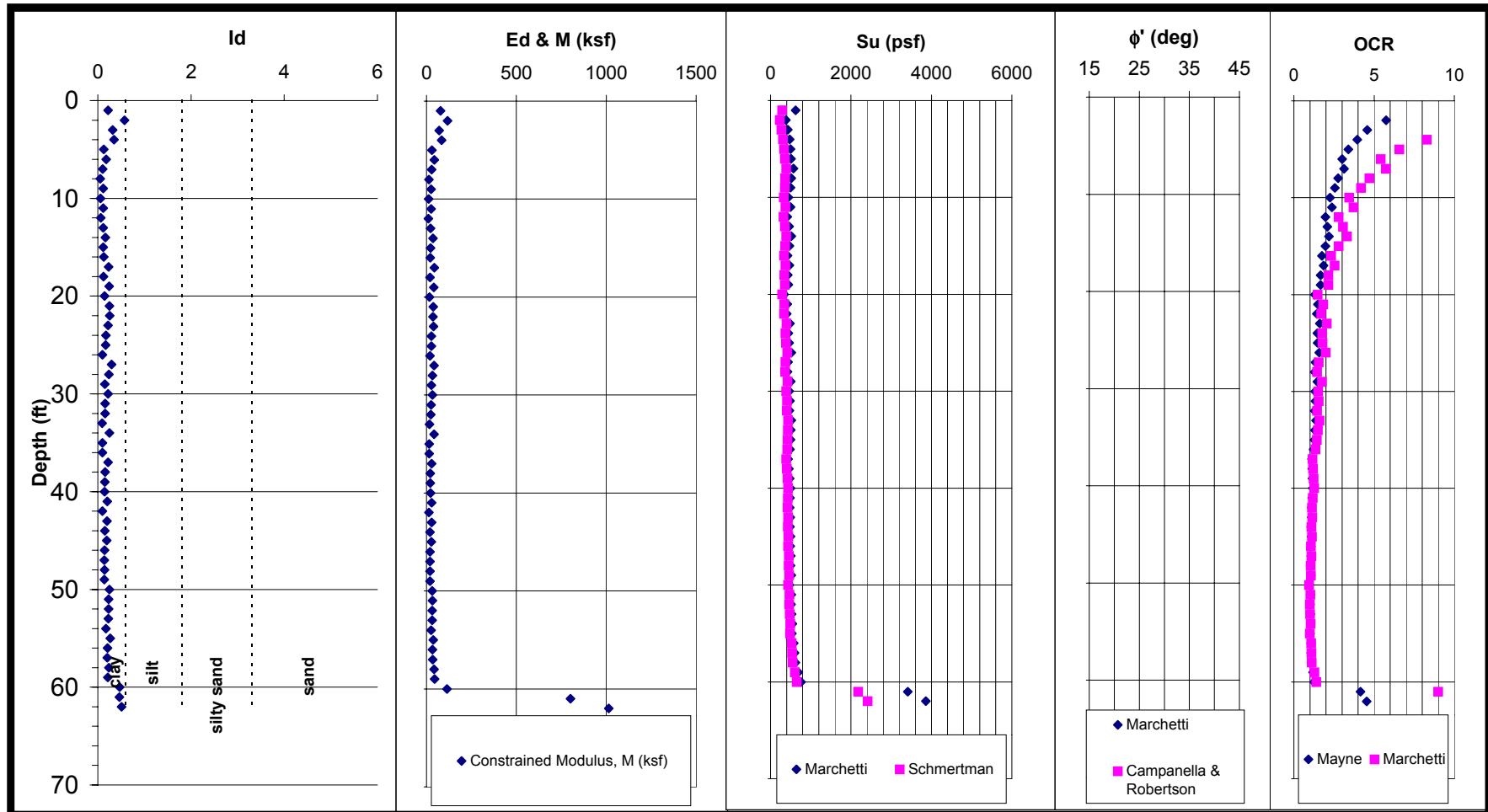
DILATOMETER TEST RESULTS


Test ID: PAL-6

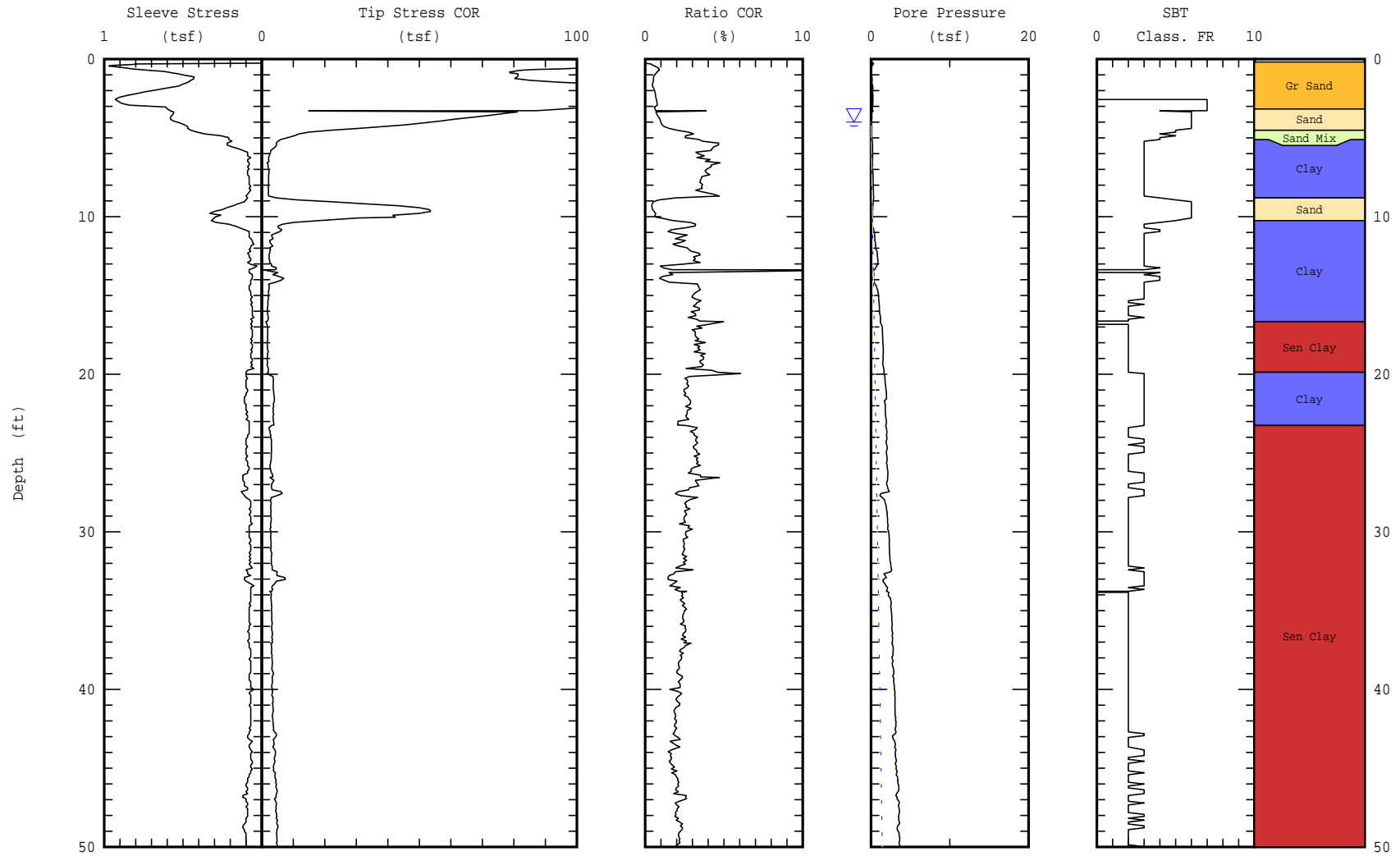
Site: Charleston Naval Base Container Terminal

Location: N. Charleston, SC


Project No.: 1131-03-264




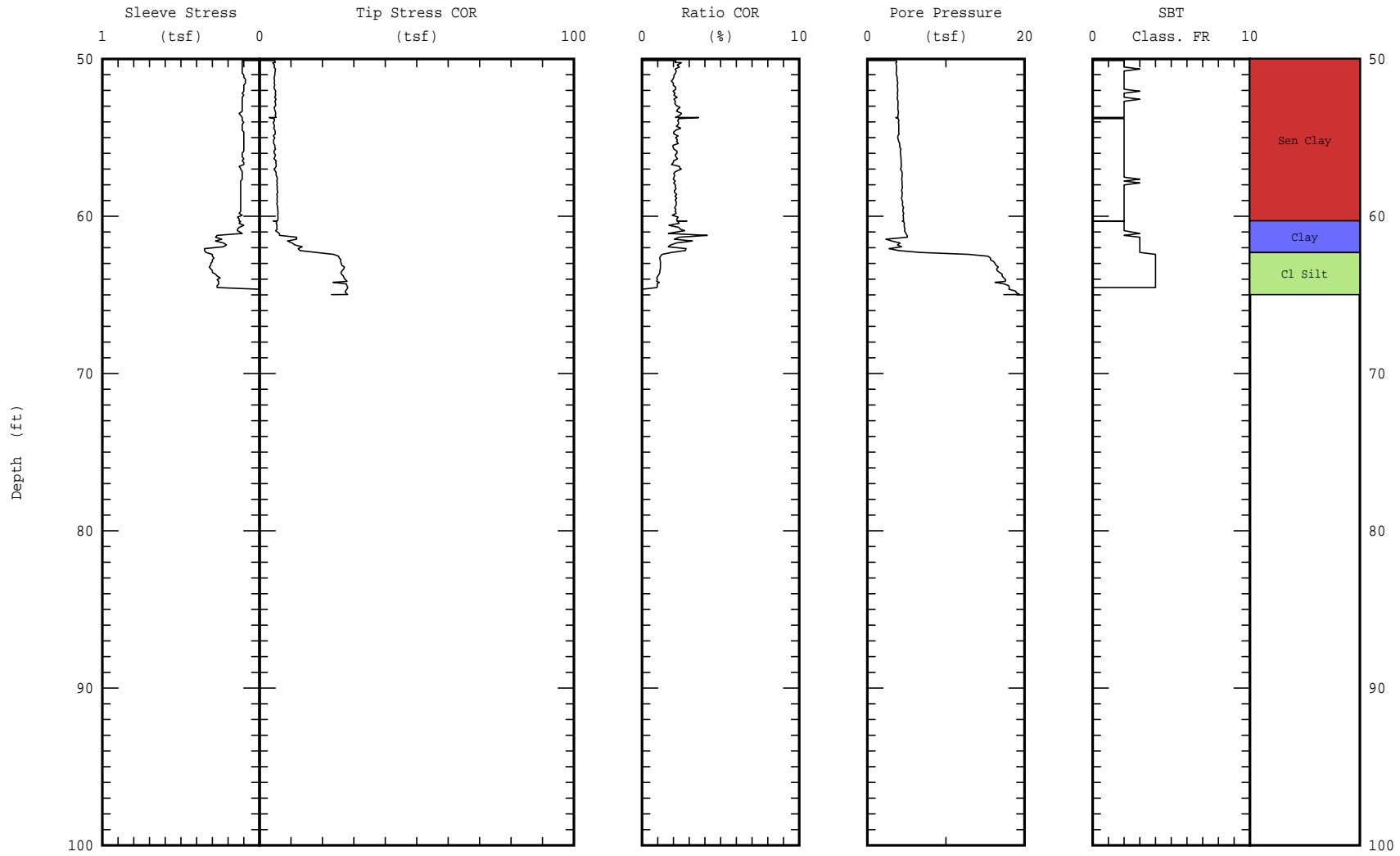
 <p>S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464</p>	<p>Northing: 369214 Easting: 2323894 Elevation: 9.7 ft CLW</p>	<p>Date: 19/Jun/2003 Test ID: PAL-7 Project: 1131-03-264</p>
	<p>Client: SCSPA Site: Chas. Naval Base Container Terminal</p>	



Page 1 of 2


Class FR: Friction Ratio Classification (Ref: Robertson 1990)
 Estimated Phreatic Surface

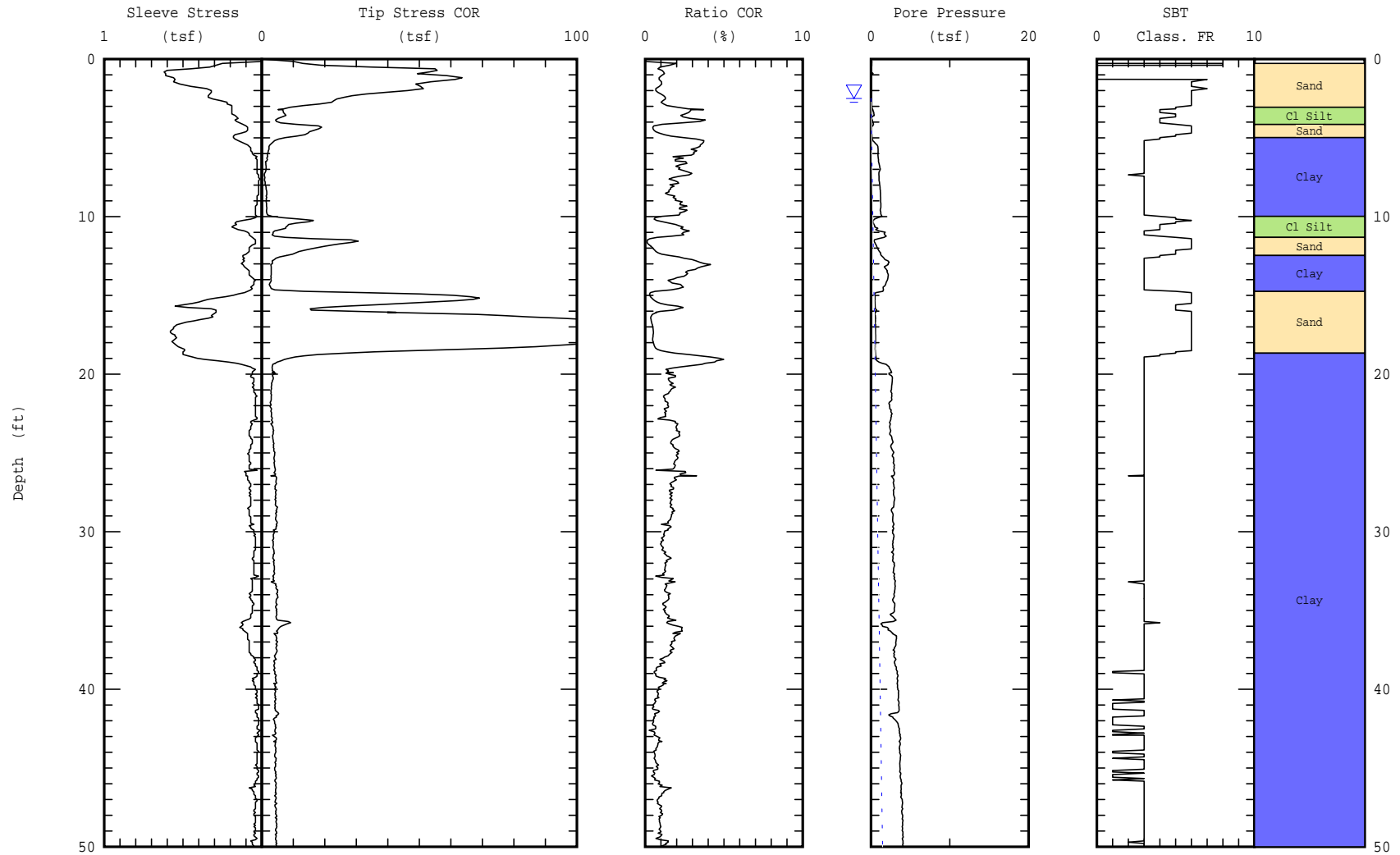
	S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464	Northing: 369214 Easting: 2323894 Elevation: 9.7 ft CLW	Date: 19/Jun/2003 Test ID: PAL-7 Project: 1131-03-264
	Client: SCSPA Site: Chas. Naval Base Container Terminal		



Maximum depth: 64.99 (ft)
Page 2 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

 <p>S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464</p>	<p>Northing: 368792 Easting: 2323891 Elevation: 12.6 ft CLW</p>	<p>Date: 20/Jun/2003 Test ID: PAL-8 Project: 1131-03-264</p>
	<p>Client: SCSPA Site: Chas. Naval Base Container Terminal</p>	



Maximum depth: 100.13 (ft)

Page 1 of 3

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

Estimated Phreatic Surface

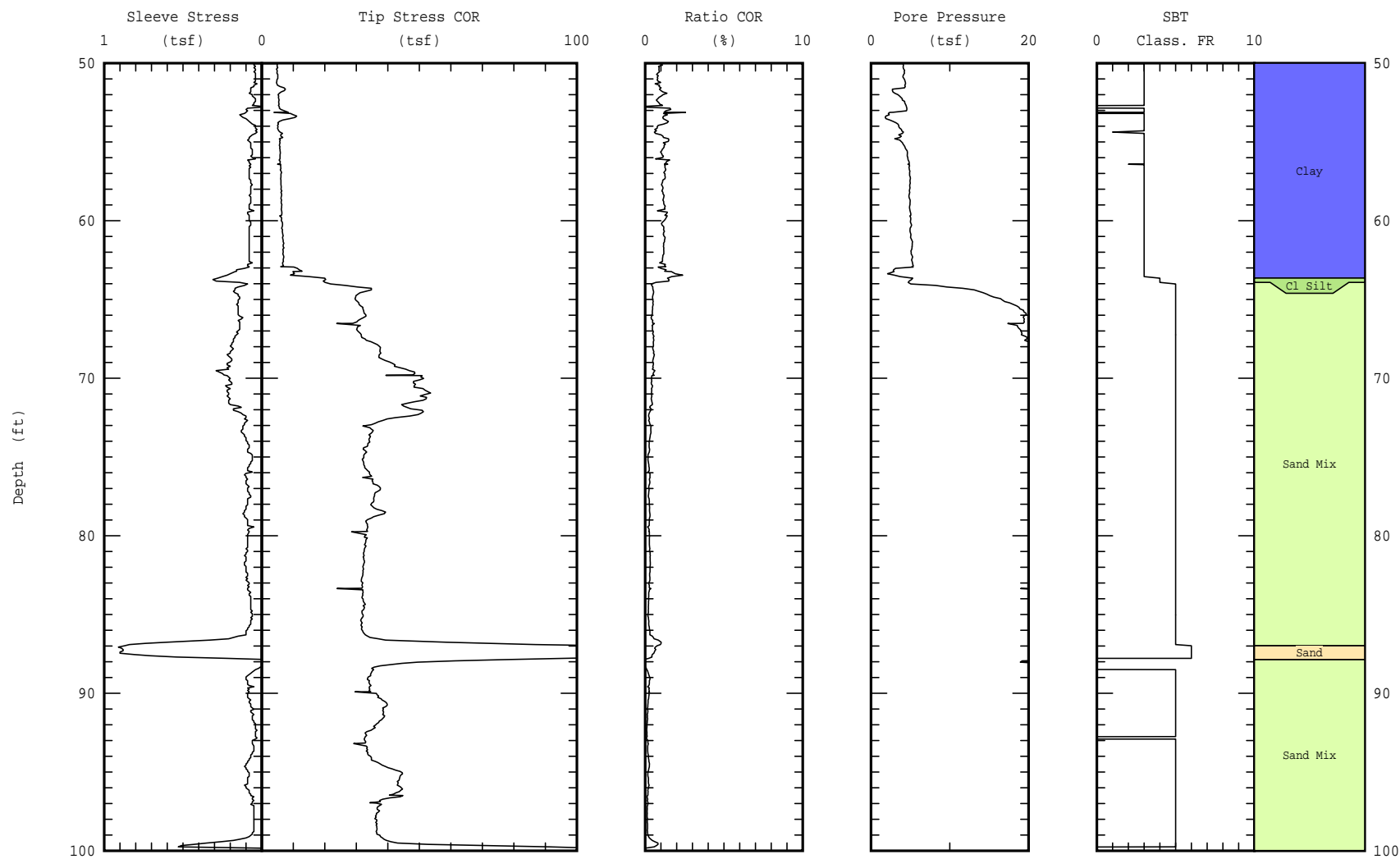


S&ME Inc. (843)884-0005
620 Wando Park Boulevard
Mt. Pleasant, SC 29464

Northing: 368792
Easting: 2323891
Elevation: 12.6 ft CLW

Date: 20/Jun/2003
Test ID: PAL-8
Project: 1131-03-264

Client: SCSPA
Site: Chas. Naval Base Container Terminal



Maximum depth: 100.13 (ft)

Page 2 of 3

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

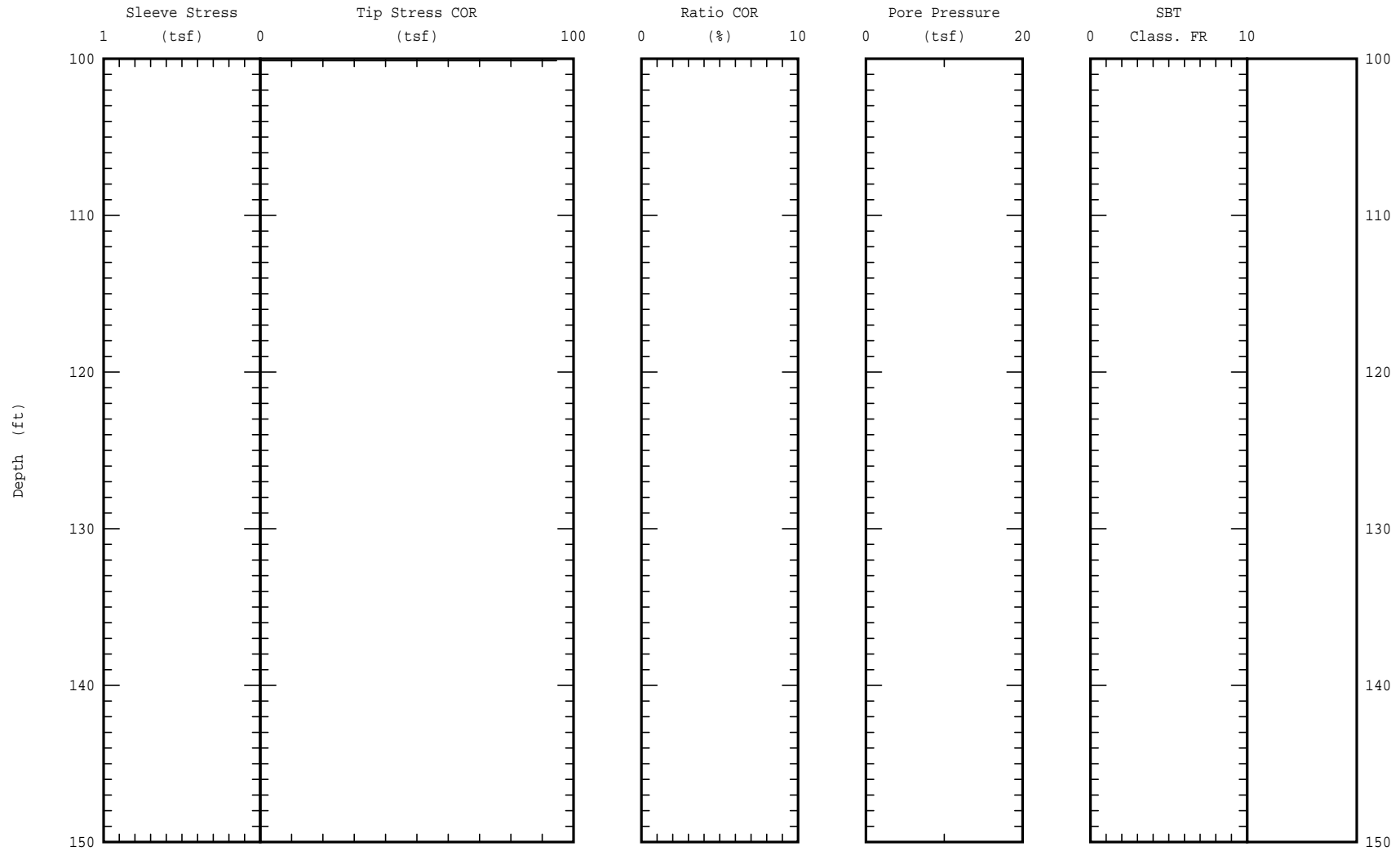


S&ME Inc. (843)884-0005
620 Wando Park Boulevard
Mt. Pleasant, SC 29464

Northing: 368792
Easting: 2323891
Elevation: 12.6 ft CLW

Date: 20/Jun/2003
Test ID: PAL-8
Project: 1131-03-264

Client: SCSPA
Site: Chas. Naval Base Container Terminal



Maximum depth: 100.13 (ft)
Page 3 of 3

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

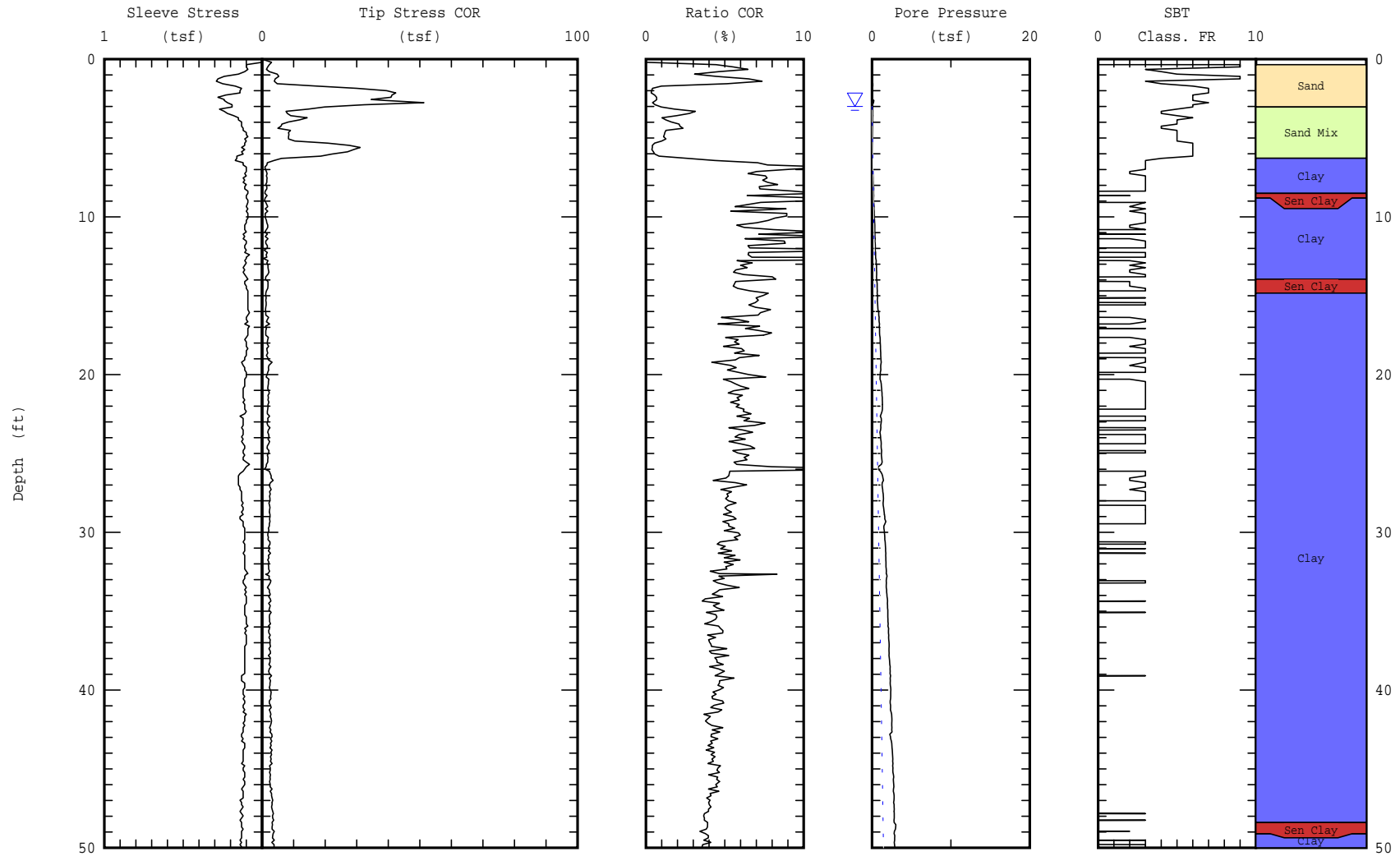


S&ME Inc. (843)884-0005
620 Wando Park Boulevard
Mt. Pleasant, SC 29464

Northing: 368396
Easting: 2323871
Elevation: 8.9 ft CLW


Date: 23/Jun/2003
Test ID: PAL-9
Project: 1131-03-264

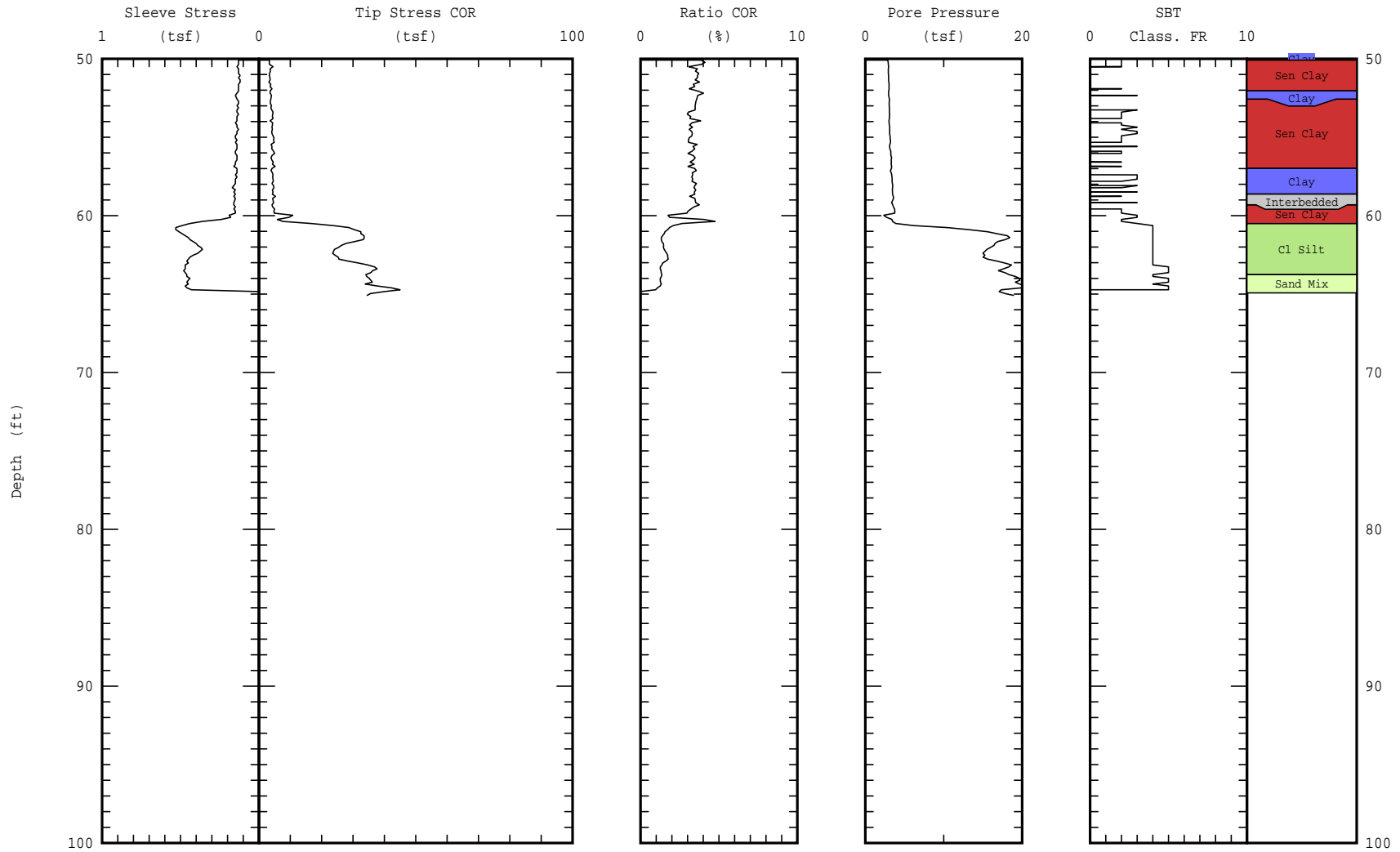
Client: SCSPA
Site: Chas. Naval Base Container Terminal



Maximum depth: 65.09 (ft)
Page 1 of 2


Class FR: Friction Ratio Classification (Ref: Robertson 1990)
Estimated Phreatic Surface

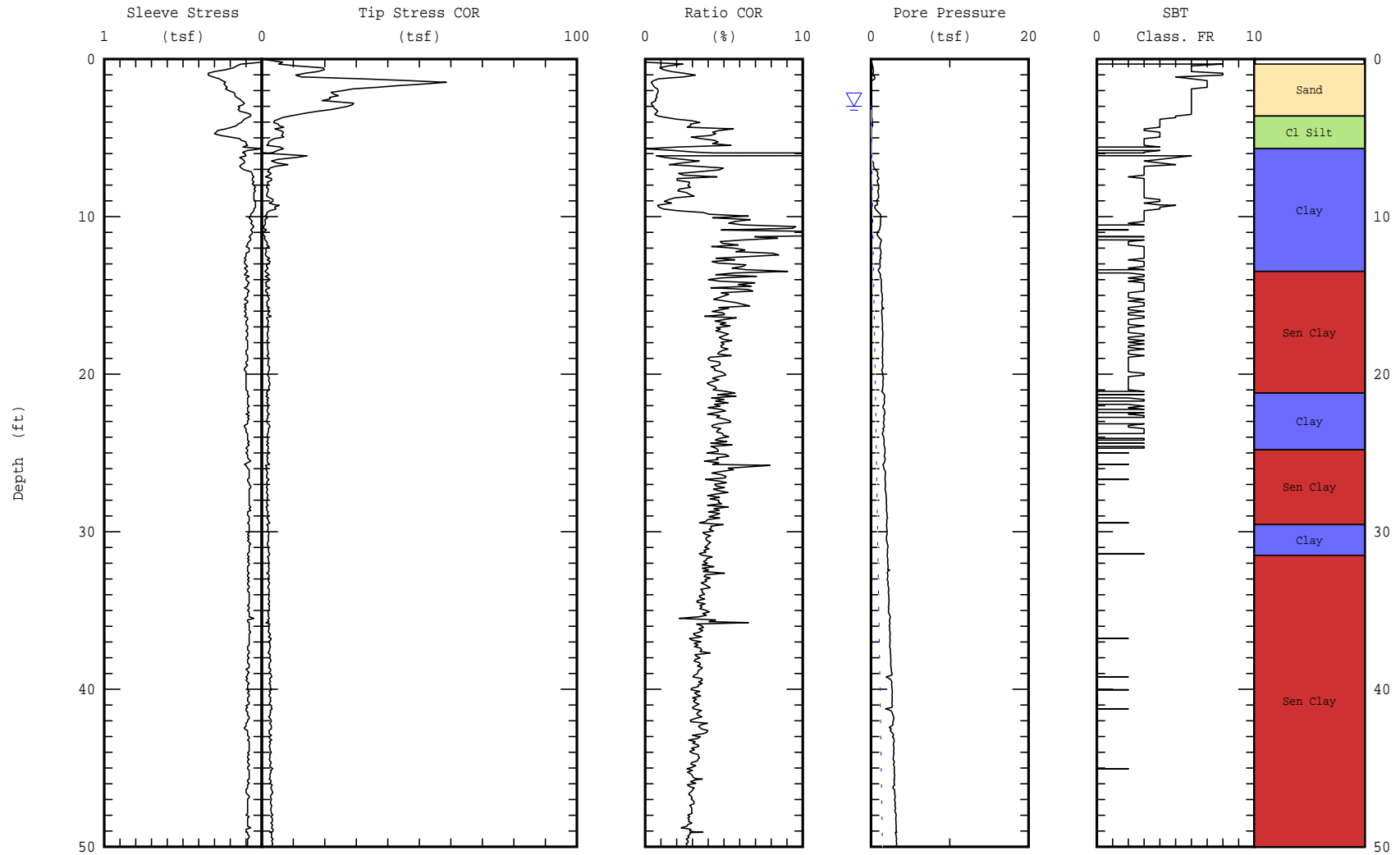
 S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464	Northing: 368396 Easting: 2323871 Elevation: 8.9 ft CLW	Date: 23/Jun/2003 Test ID: PAL-9 Project: 1131-03-264
	Client: SCSPA Site: Chas. Naval Base Container Terminal	



Maximum depth: 65.09 (ft)
 Page 2 of 2


Class FR: Friction Ratio Classification (Ref: Robertson 1990)

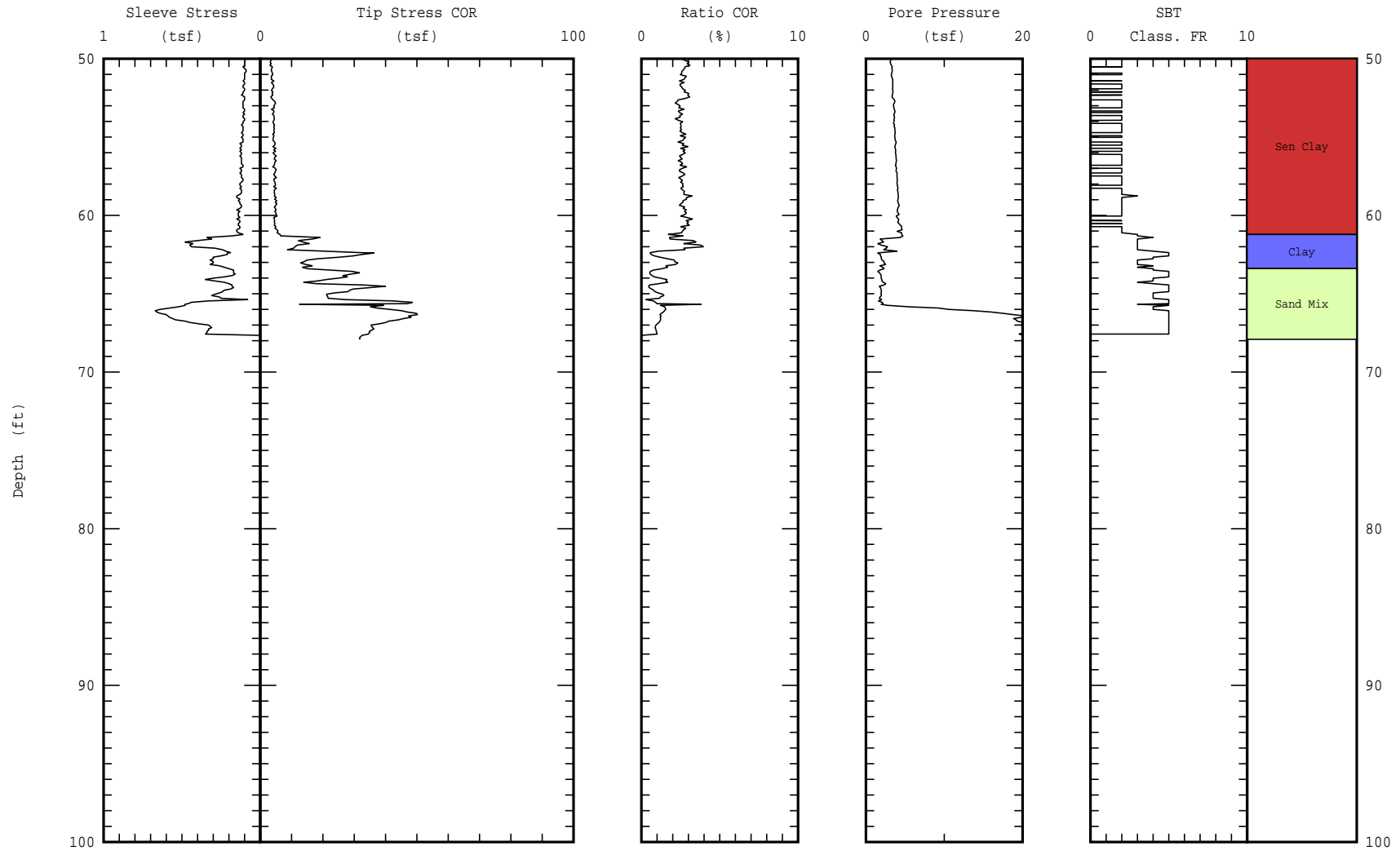
	S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464	Northing: 368117 Easting: 2323926 Elevation: 7.9 ft CLW	Date: 25/Jun/2003 Test ID: PAL-10 Project: 1131-03-264
	Client: SCSPA Site: Chas. Naval Base Container Terminal		



Maximum depth: 67.91 (ft)
 Page 1 of 2


Class FR: Friction Ratio Classification (Ref: Robertson 1990)
 Estimated Phreatic Surface

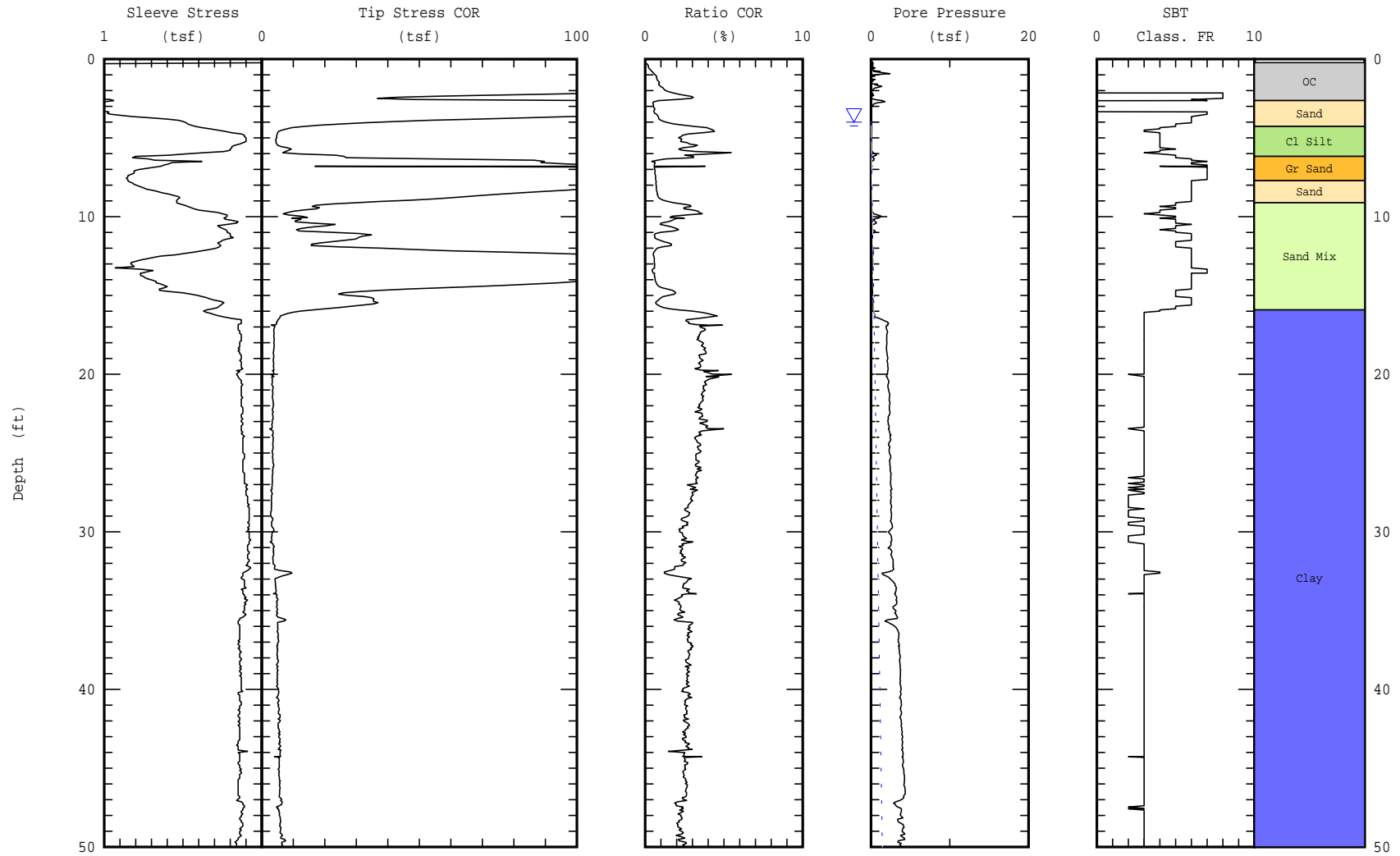
 S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464	Northing: 368117 Easting: 2323926 Elevation: 7.9 ft CLW	Date: 25/Jun/2003 Test ID: PAL-10 Project: 1131-03-264
	Client: SCSPA Site: Chas. Naval Base Container Terminal	



Maximum depth: 67.91 (ft)
 Page 2 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

 <p>S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464</p>	<p>Northing: 369438 Easting: 2324384 Elevation: 11.1 ft CLW</p>	<p>Date: 19/Jun/2003 Test ID: PAL-11 Project: 1131-03-264</p>
	<p>Client: SCSPA Site: Chas. Naval Base Container Terminal</p>	




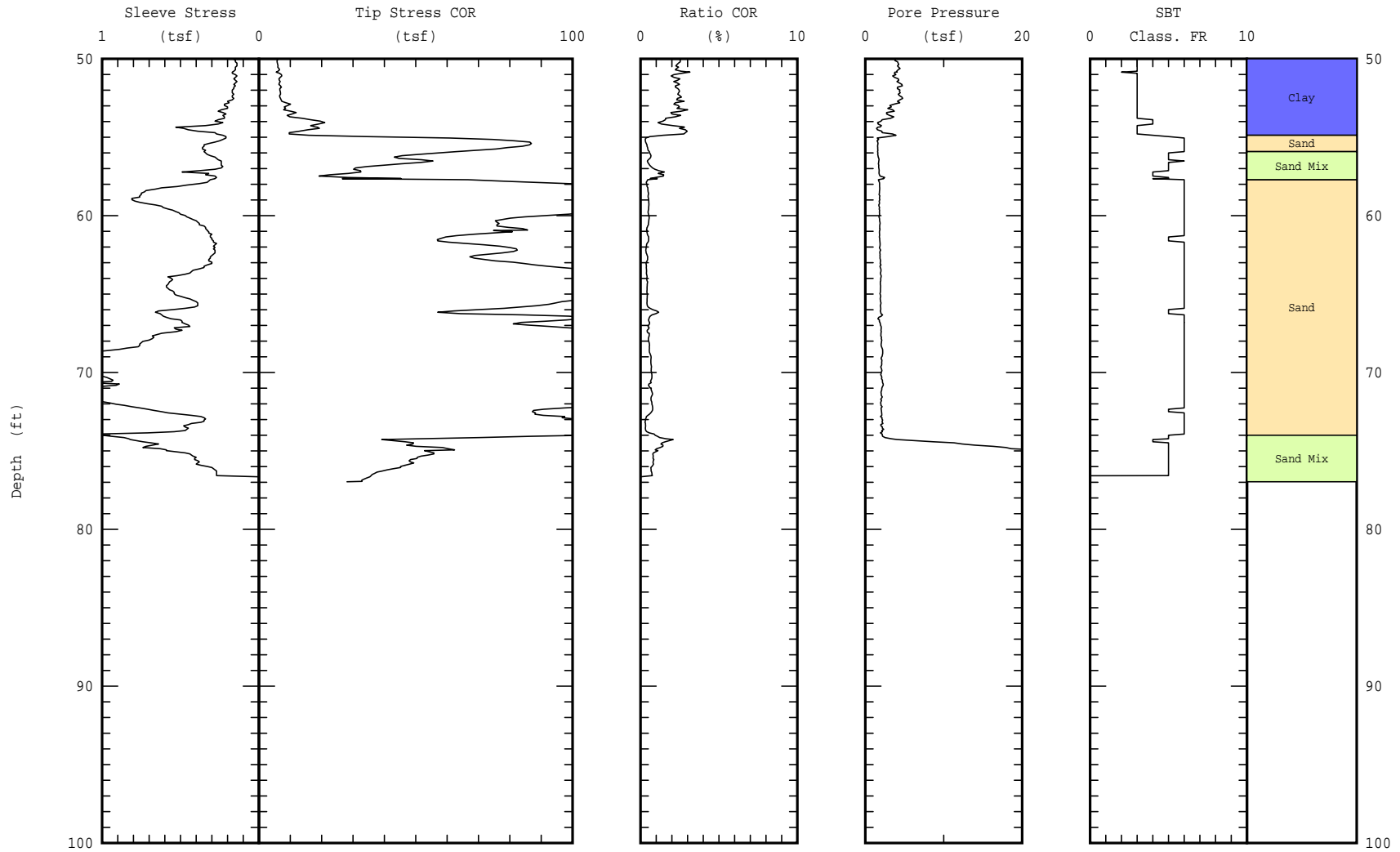
Maximum depth: 76.97 (ft)

Page 1 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

Estimated Phreatic Surface

 S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464	Northing: 369438 Easting: 2324384 Elevation: 11.1 ft CLW	Date: 19/Jun/2003 Test ID: PAL-11 Project: 1131-03-264
	Client: SCSPA Site: Chas. Naval Base Container Terminal	



Maximum depth: 76.97 (ft)
 Page 2 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

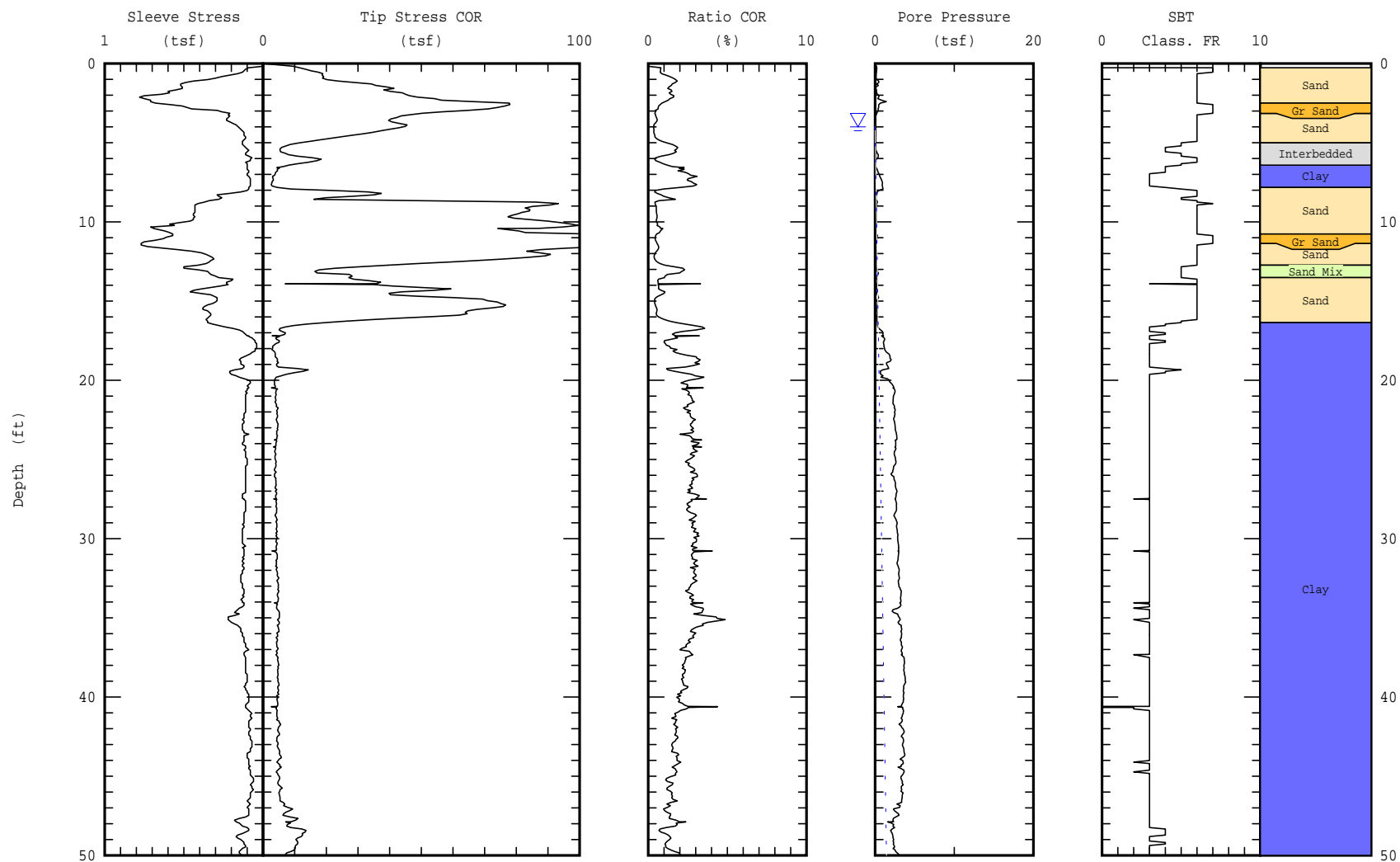


S&ME Inc. (843)884-0005
620 Wando Park Boulevard
Mt. Pleasant, SC 29464

Northing: 368802
Easting: 2324252
Elevation: 15.9 ft CLW

Date: 19/Jun/2003
Test ID: PAL-12
Project: 1131-03-264

Client: SCSA
Site: Chas. Naval Base Container Terminal



Maximum depth: 85.06 (ft)

Page 1 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

▽ Estimated Phreatic Surface

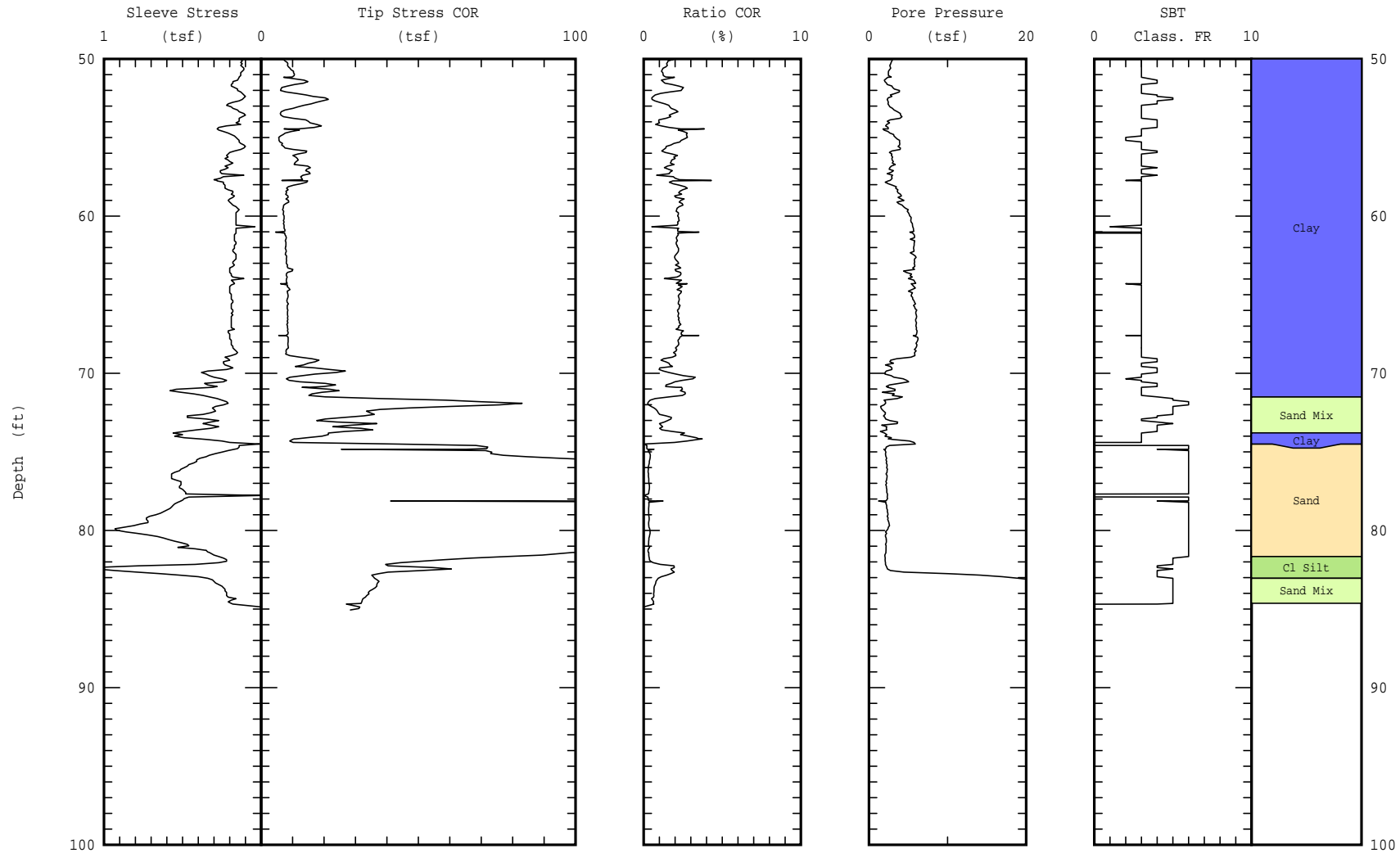


S&ME Inc. (843)884-0005
620 Wando Park Boulevard
Mt. Pleasant, SC 29464

Northing: 368802
Easting: 2324252
Elevation: 15.9 ft CLW

Date: 19/Jun/2003
Test ID: PAL-12
Project: 1131-03-264


Client: SCSPA
Site: Chas. Naval Base Container Terminal

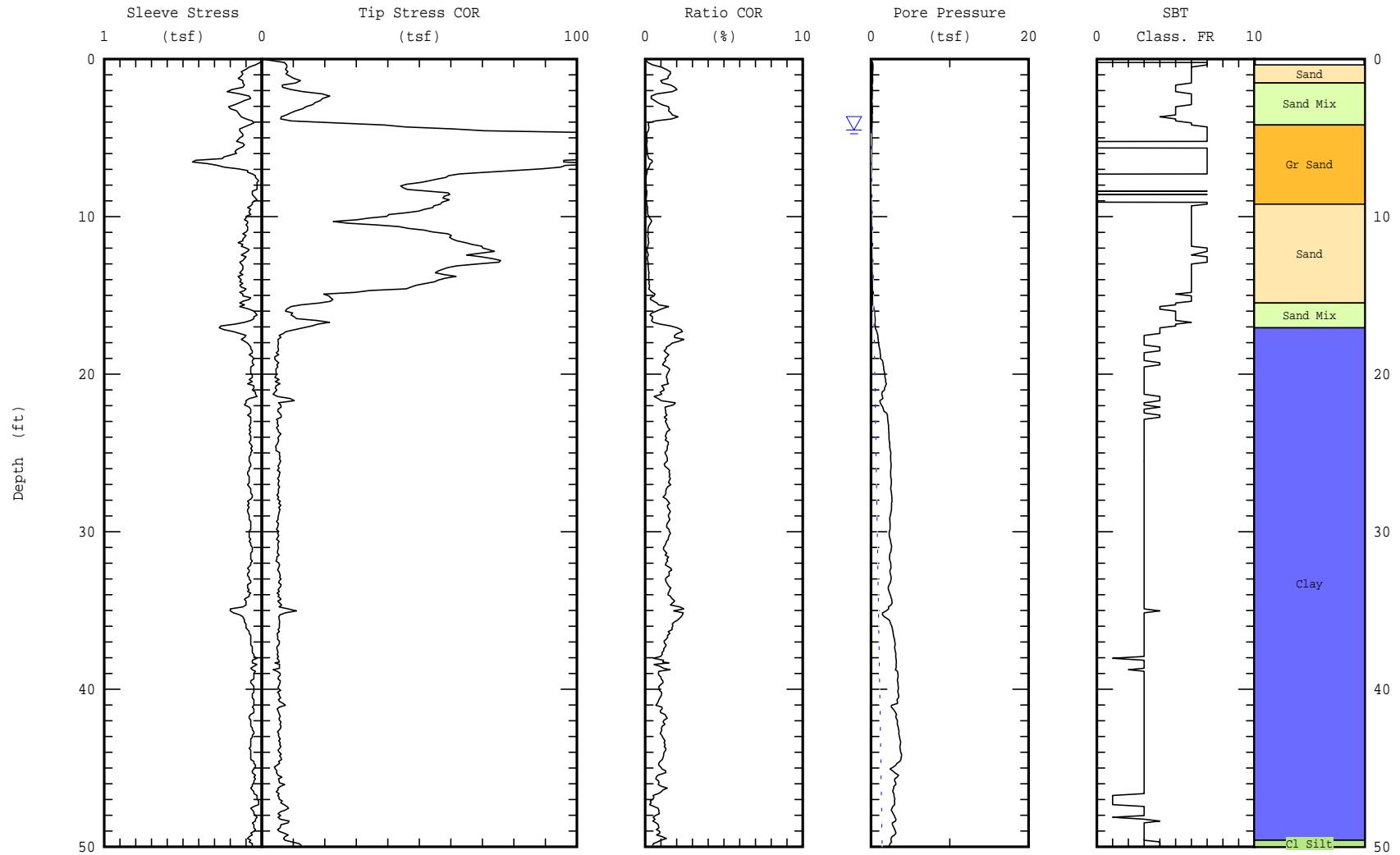


Maximum depth: 85.06 (ft)

Page 2 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

 <p>S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464</p>	<p>Northing: 368378 Easting: 2324274 Elevation: 14.3 ft CLW</p>	<p>Date: 23/Jun/2003 Test ID: PAL-13 Project: 1131-03-264</p>
	<p>Client: SCSA Site: Chas. Naval Base Container Terminal</p>	



Maximum depth: 78.55 (ft)

Page 1 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

Estimated Phreatic Surface

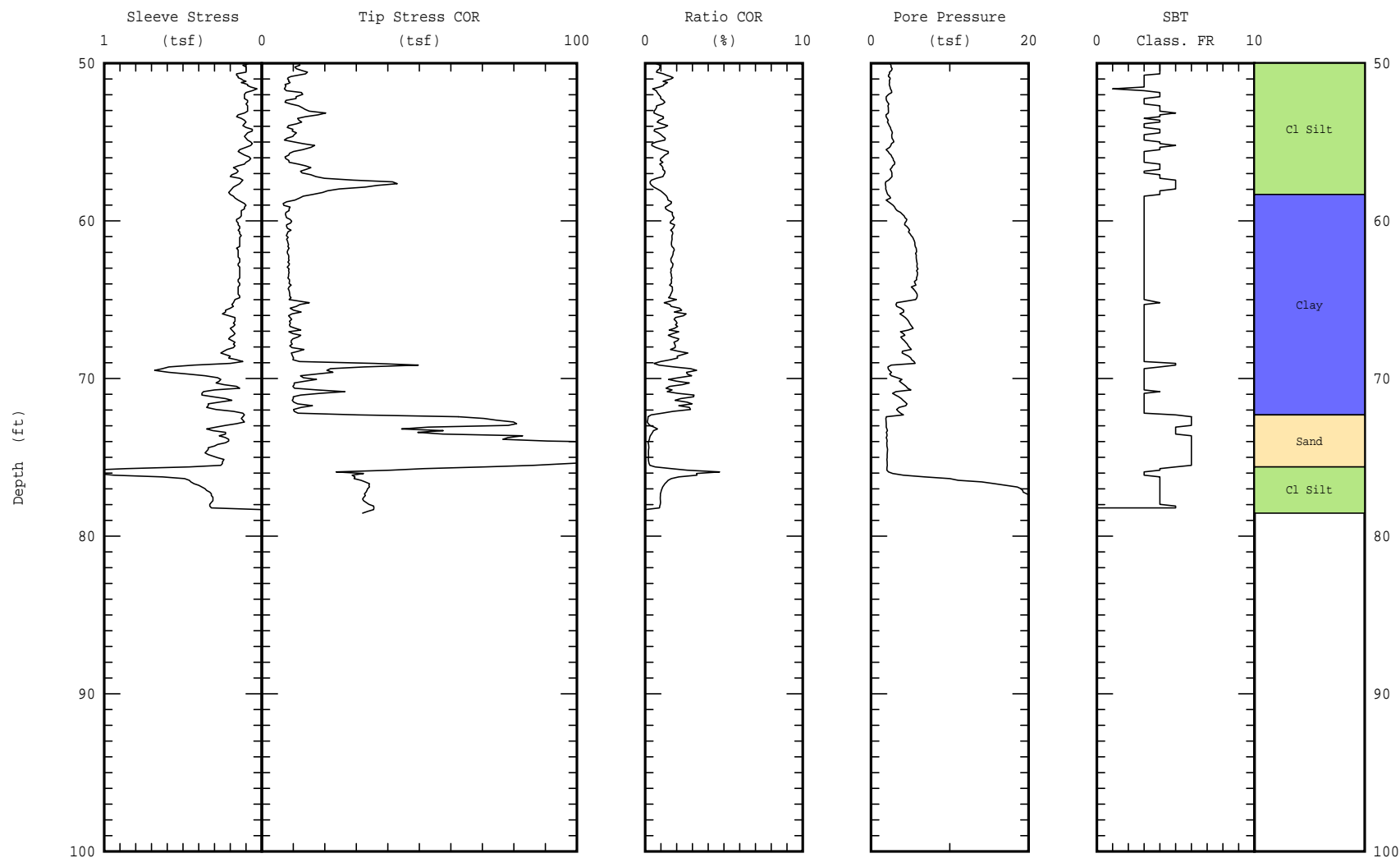


S&ME Inc. (843)884-0005
620 Wando Park Boulevard
Mt. Pleasant, SC 29464

Northing: 368378
Easting: 2324274
Elevation: 14.3 ft CLW

Date: 23/Jun/2003
Test ID: PAL-13
Project: 1131-03-264


Client: SCSPA
Site: Chas. Naval Base Container Terminal

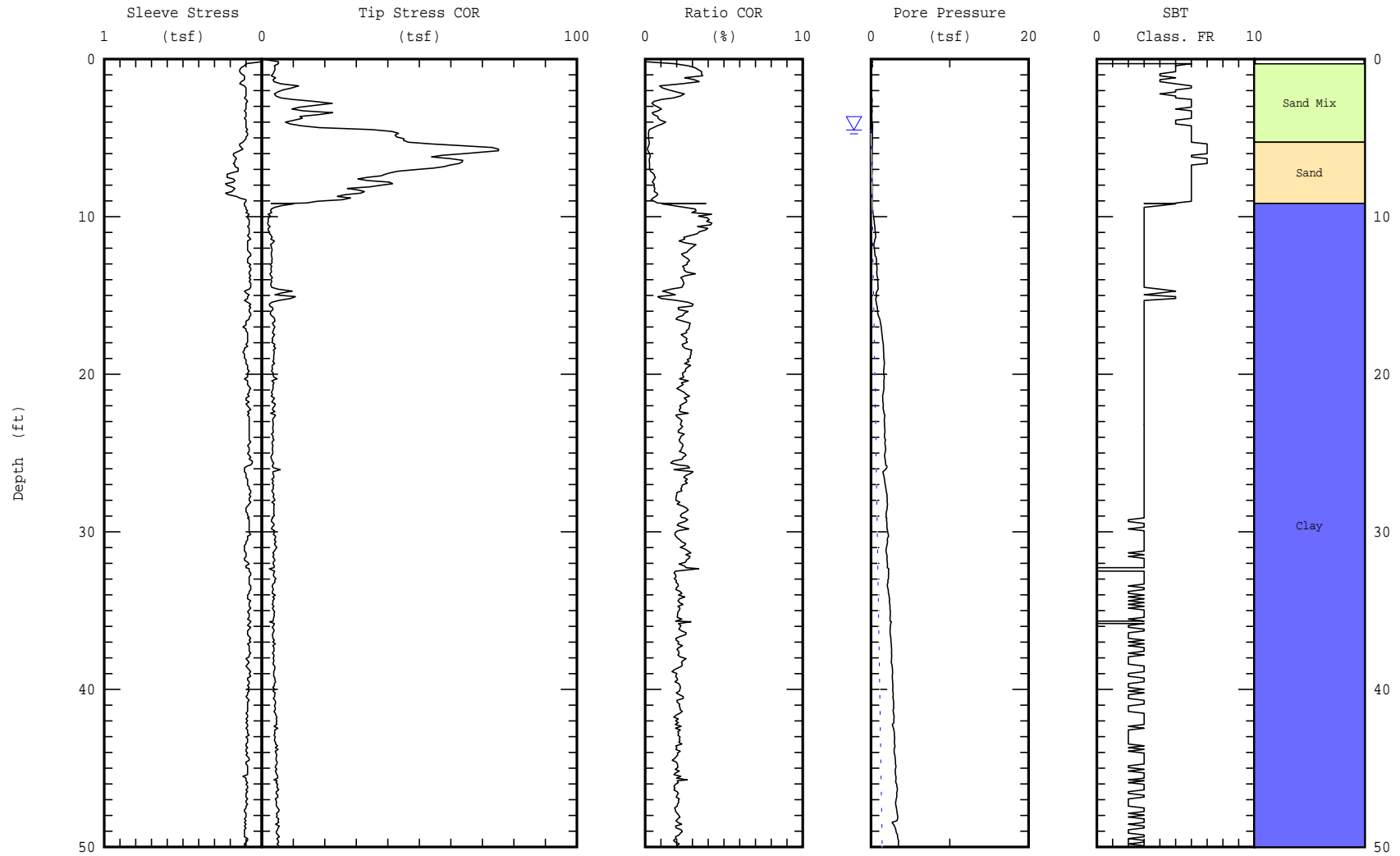


Maximum depth: 78.55 (ft)

Page 2 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

 <p>S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464</p>	<p>Northing: 368008 Easting: 2324266 Elevation: 9.8 ft CLW</p>	<p>Date: 23/Jun/2003 Test ID: PAL-14 Project: 1131-03-264</p>
	<p>Client: SCSPA Site: Chas. Naval Base Container Terminal</p>	




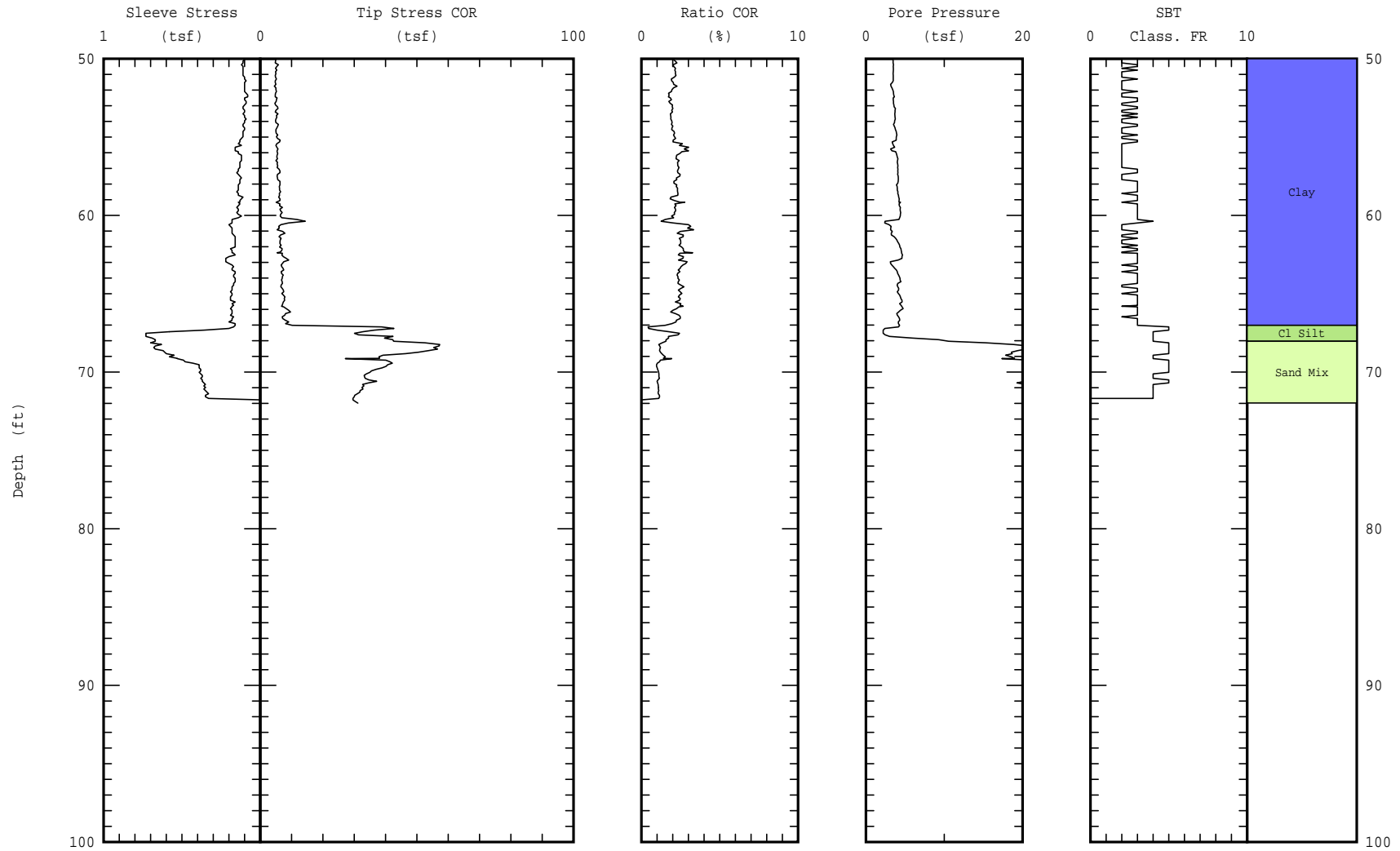
Maximum depth: 71.98 (ft)

Page 1 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

Estimated Phreatic Surface

 S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464	Northing: 368008 Easting: 2324266 Elevation: 9.8 ft CLW	Date: 23/Jun/2003 Test ID: PAL-14 Project: 1131-03-264
	Client: SCSPA Site: Chas. Naval Base Container Terminal	



Maximum depth: 71.98 (ft)
 Page 2 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

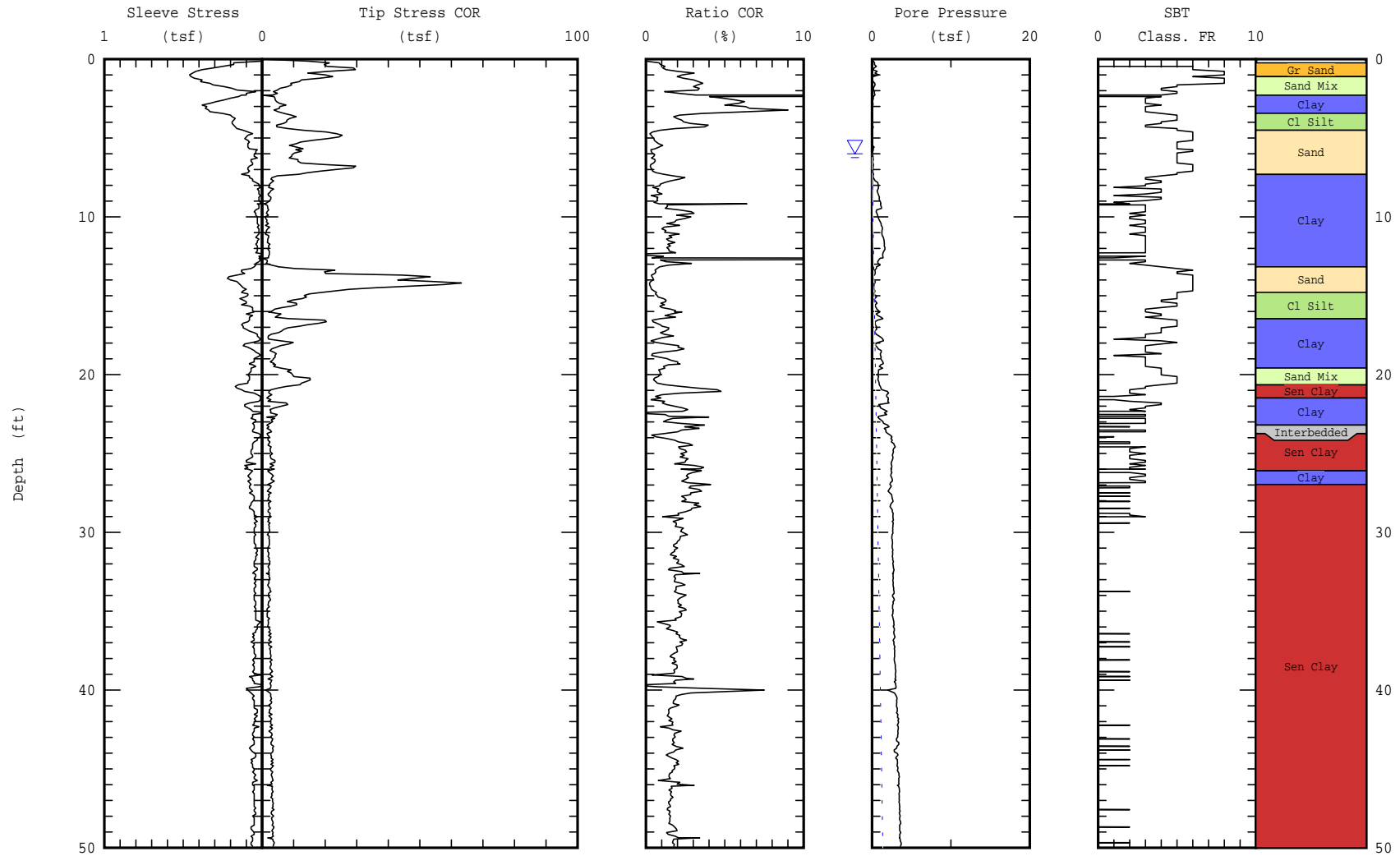


S&ME Inc. (843)884-0005
620 Wando Park Boulevard
Mt. Pleasant, SC 29464

Northing: 367734
Easting: 2324336
Elevation: 9.4 ft CLW

Date: 20/Jun/2003
Test ID: PAL-15
Project: 1131-03-264

Client: SCSPA
Site: Chas. Naval Base Container Terminal



Maximum depth: 68.00 (ft)

Page 1 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

Estimated Phreatic Surface

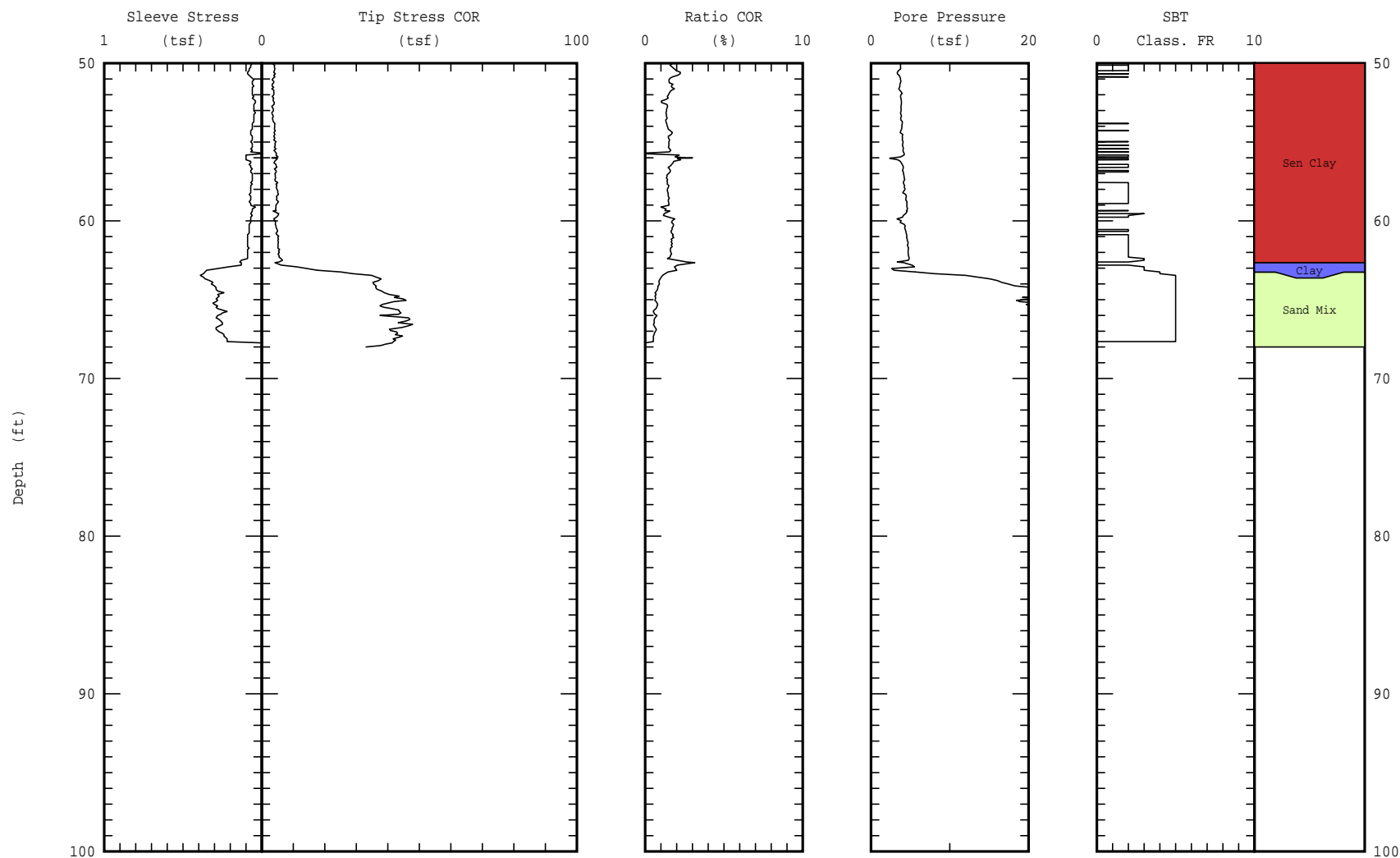


S&ME Inc. (843)884-0005
620 Wando Park Boulevard
Mt. Pleasant, SC 29464

Northing: 367734
Easting: 2324336
Elevation: 9.4 ft CLW

Date: 20/Jun/2003
Test ID: PAL-15
Project: 1131-03-264

Client: SCSPA
Site: Chas. Naval Base Container Terminal



Maximum depth: 68.00 (ft)

Page 2 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

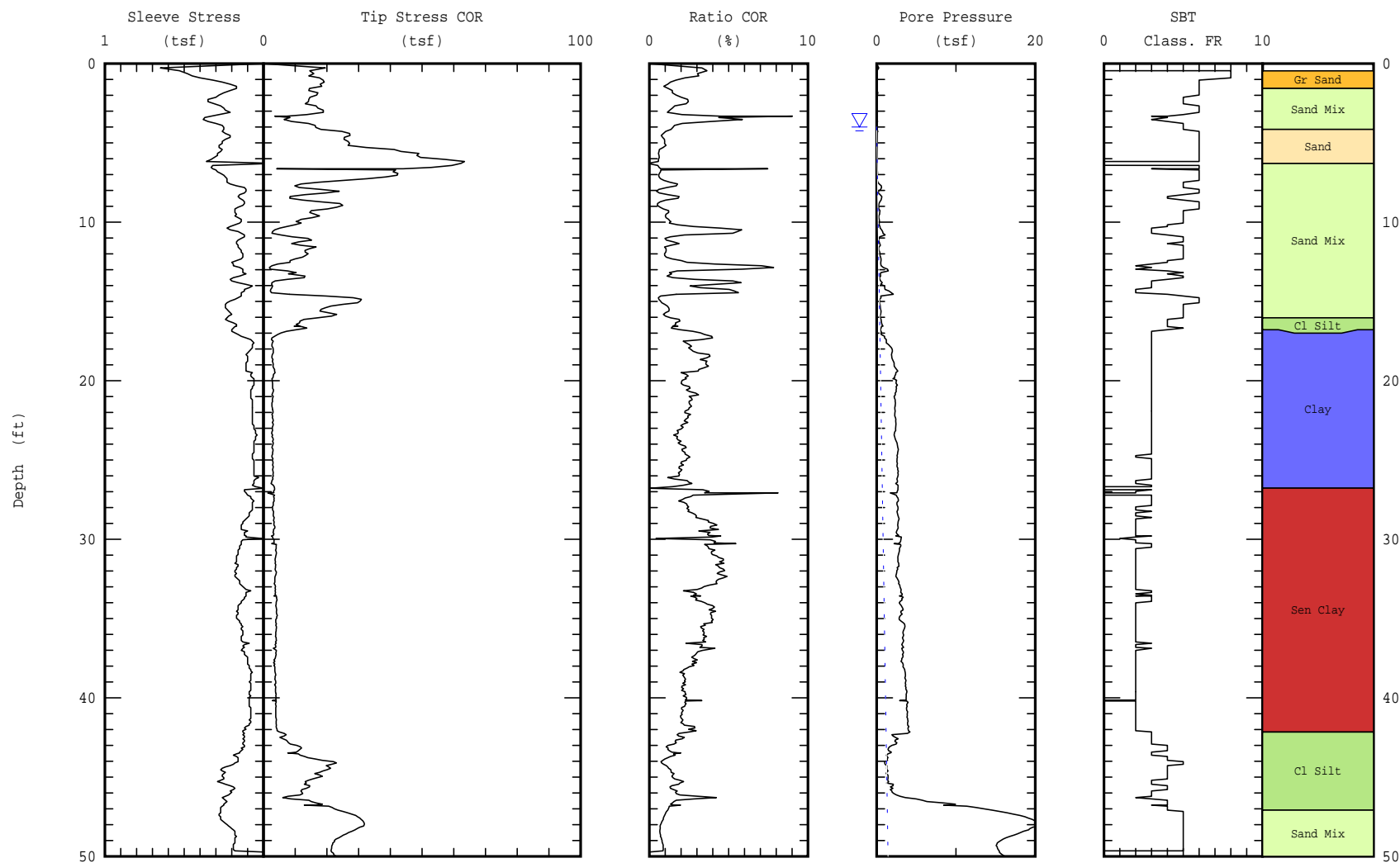


S&ME Inc. (843)884-0005
620 Wando Park Boulevard
Mt. Pleasant, SC 29464

Northing: 369152
Easting: 2324816
Elevation: 14.3 ft CLW

Date: 23/Jun/2003
Test ID: PAL-16
Project: 1131-03-264

Client: SCSPA
Site: Chas. Naval Base Container Terminal



Maximum depth: 50.07 (ft)

Page 1 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

Estimated Phreatic Surface

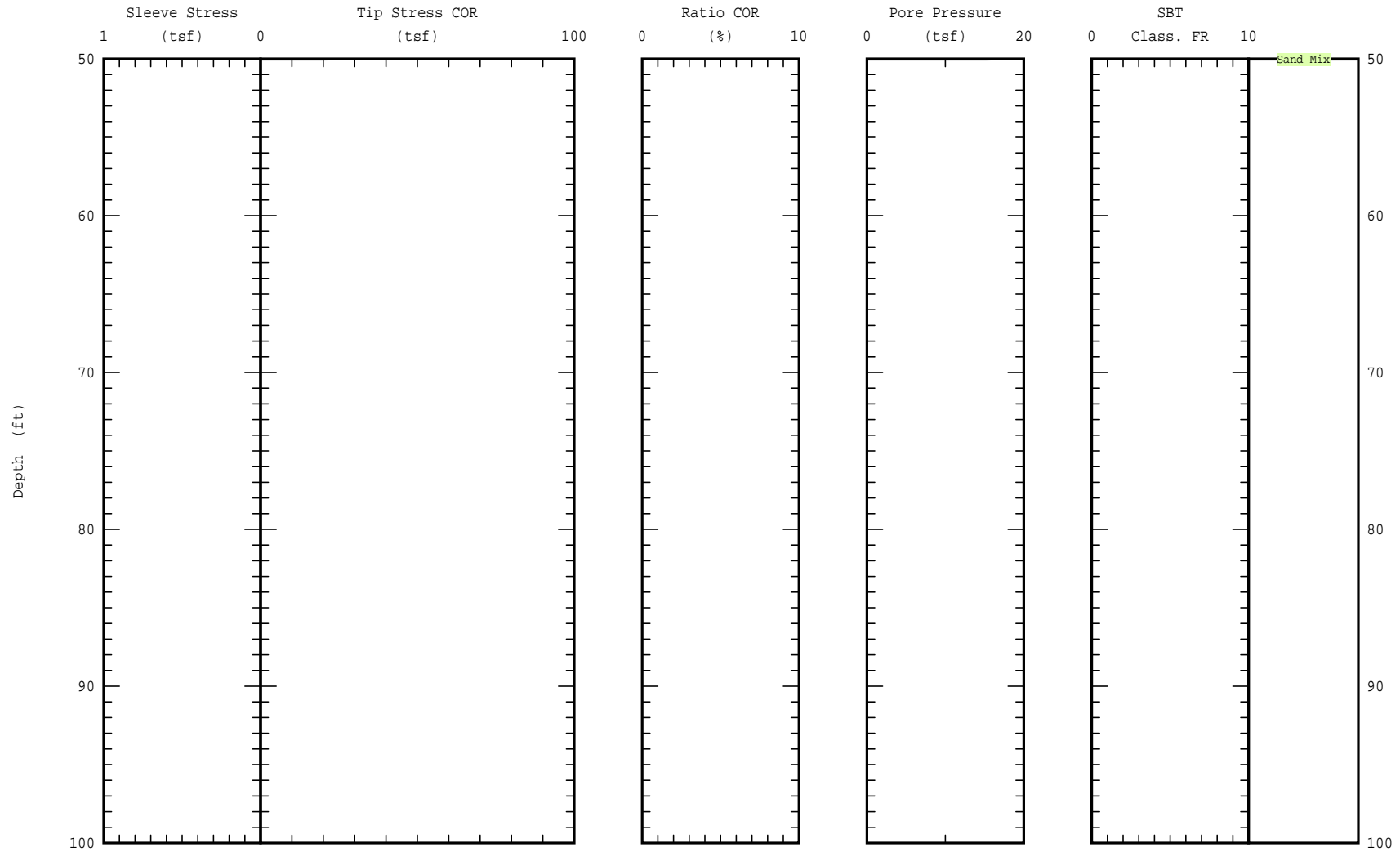


S&ME Inc. (843)884-0005
620 Wando Park Boulevard
Mt. Pleasant, SC 29464

Northing: 369152
Easting: 2324816
Elevation: 14.3 ft CLW

Date: 23/Jun/2003
Test ID: PAL-16
Project: 1131-03-264

Client: SCSPA
Site: Chas. Naval Base Container Terminal



Maximum depth: 50.07 (ft)

Page 2 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

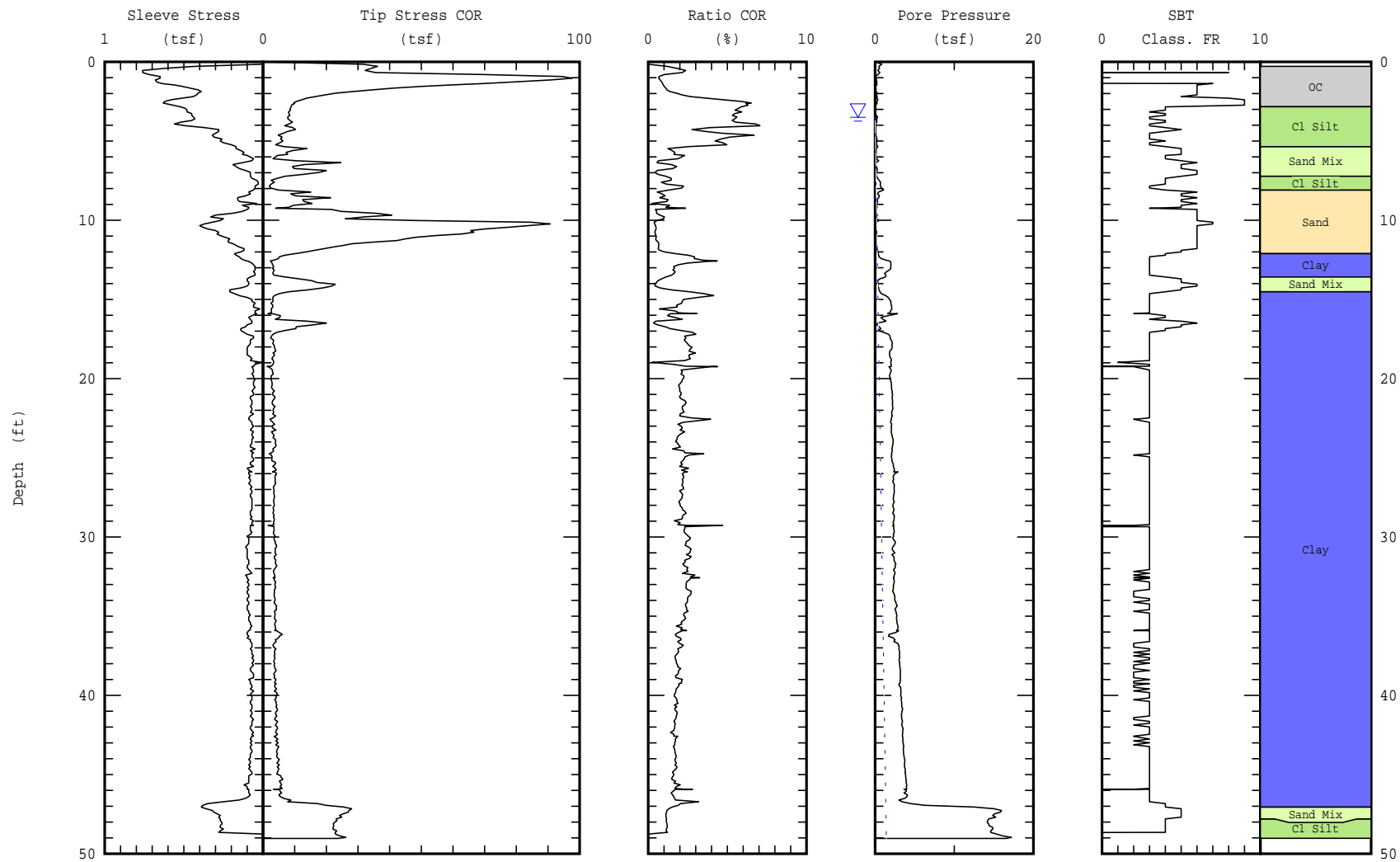


S&ME Inc. (843)884-0005
620 Wando Park Boulevard
Mt. Pleasant, SC 29464

Northing: 368772
Easting: 2324761
Elevation: 13.8 ft CLW

Date: 25/Jun/2003
Test ID: PAL-17
Project: 1131-03-264


Client: SCSPA
Site: Chas. Naval Base Container Terminal

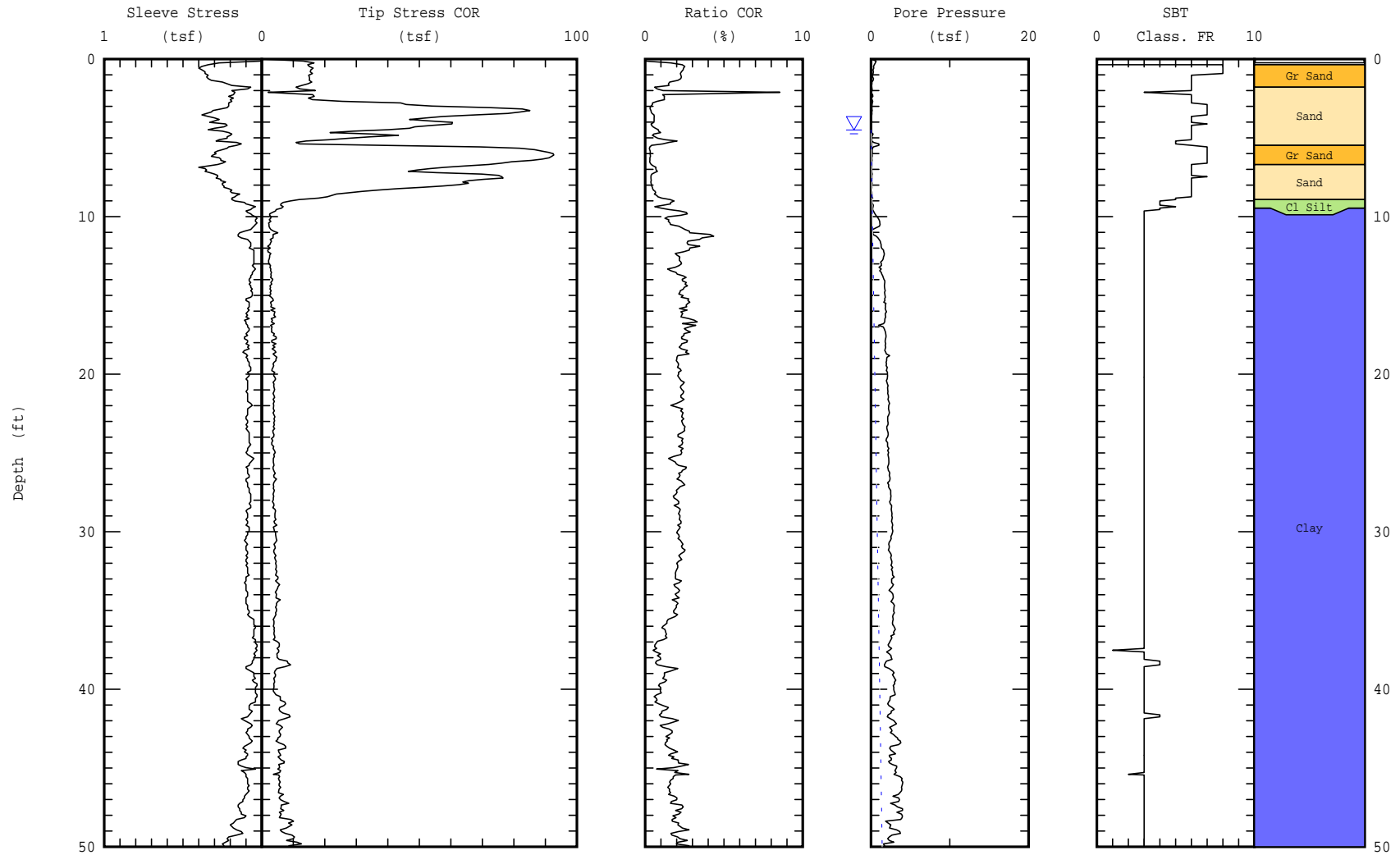


Maximum depth: 49.03 (ft)

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

Estimated Phreatic Surface

 <p>S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464</p>	<p>Northing: 368374 Easting: 2324670 Elevation: 12.4 ft CLW</p>	<p>Date: 25/Jun/2003 Test ID: PAL-18 Project: 1131-03-264</p>
	<p>Client: SCSA Site: Chas. Naval Base Container Terminal</p>	



Maximum depth: 55.01 (ft)
Page 1 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)
Estimated Phreatic Surface

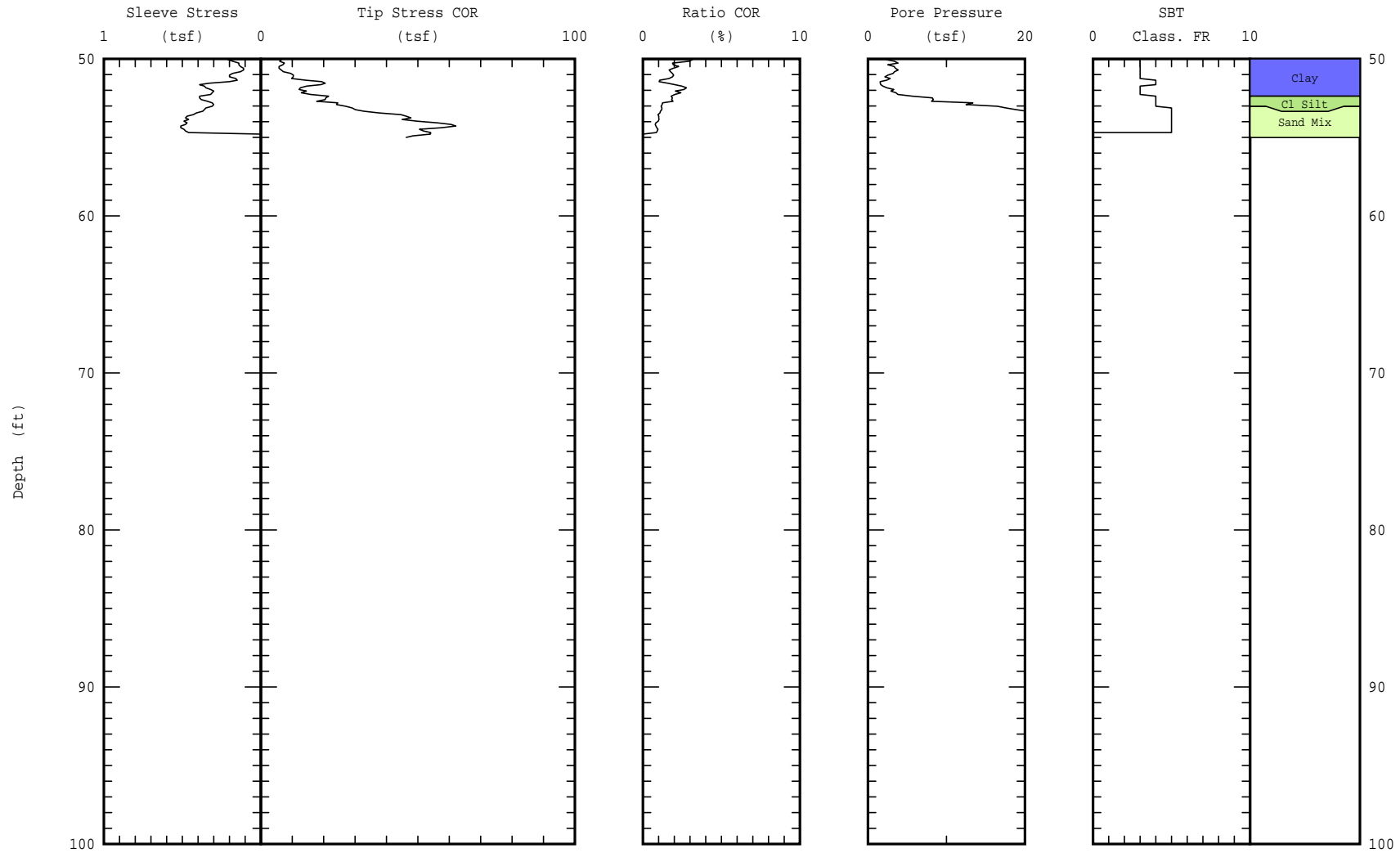


S&ME Inc. (843)884-0005
620 Wando Park Boulevard
Mt. Pleasant, SC 29464

Northing: 368374
Easting: 2324670
Elevation: 12.4 ft CLW

Date: 25/Jun/2003
Test ID: PAL-18
Project: 1131-03-264


Client: SCSPA
Site: Chas. Naval Base Container Terminal

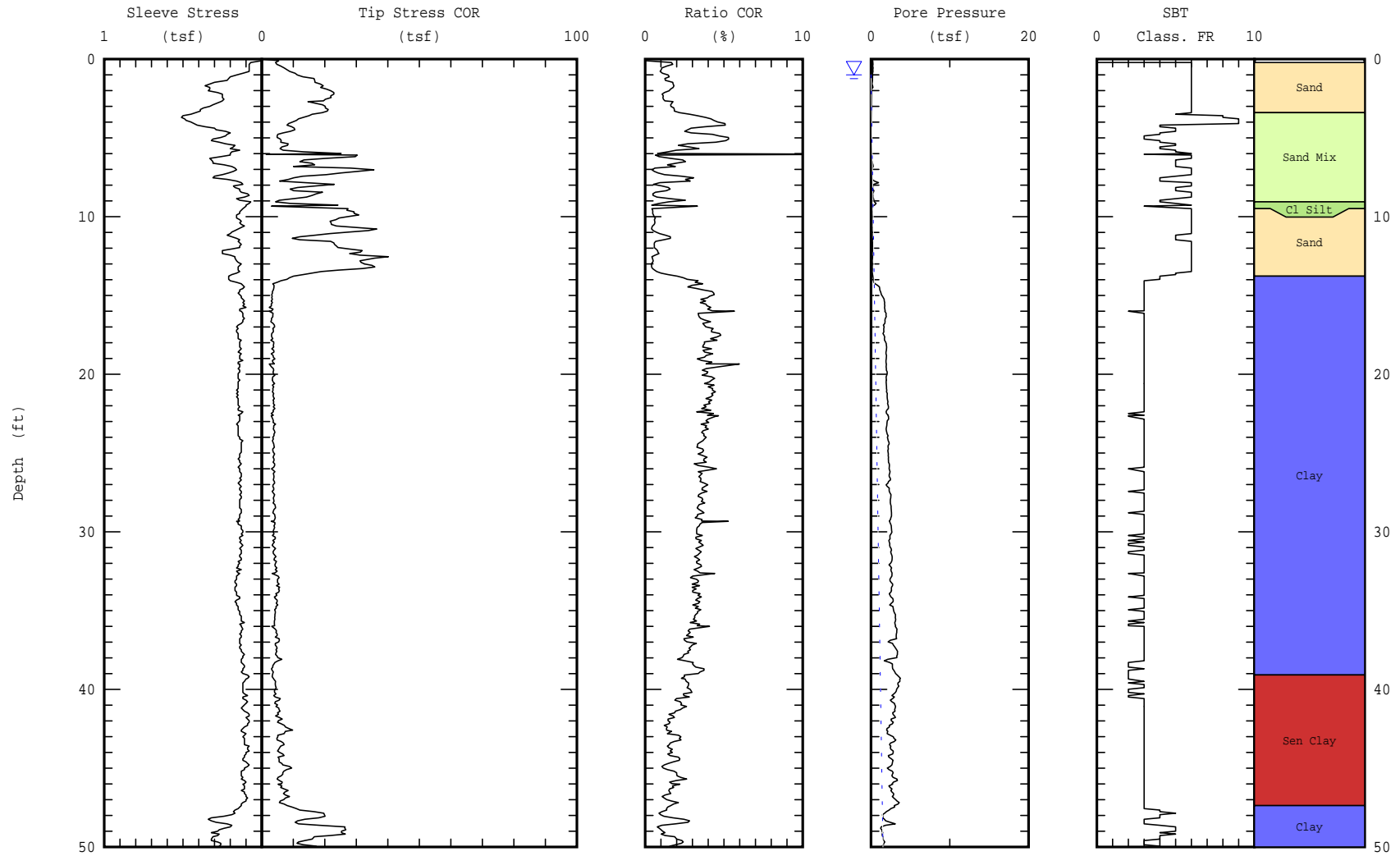


Maximum depth: 55.01 (ft)

Page 2 of 2


Class FR: Friction Ratio Classification (Ref: Robertson 1990)

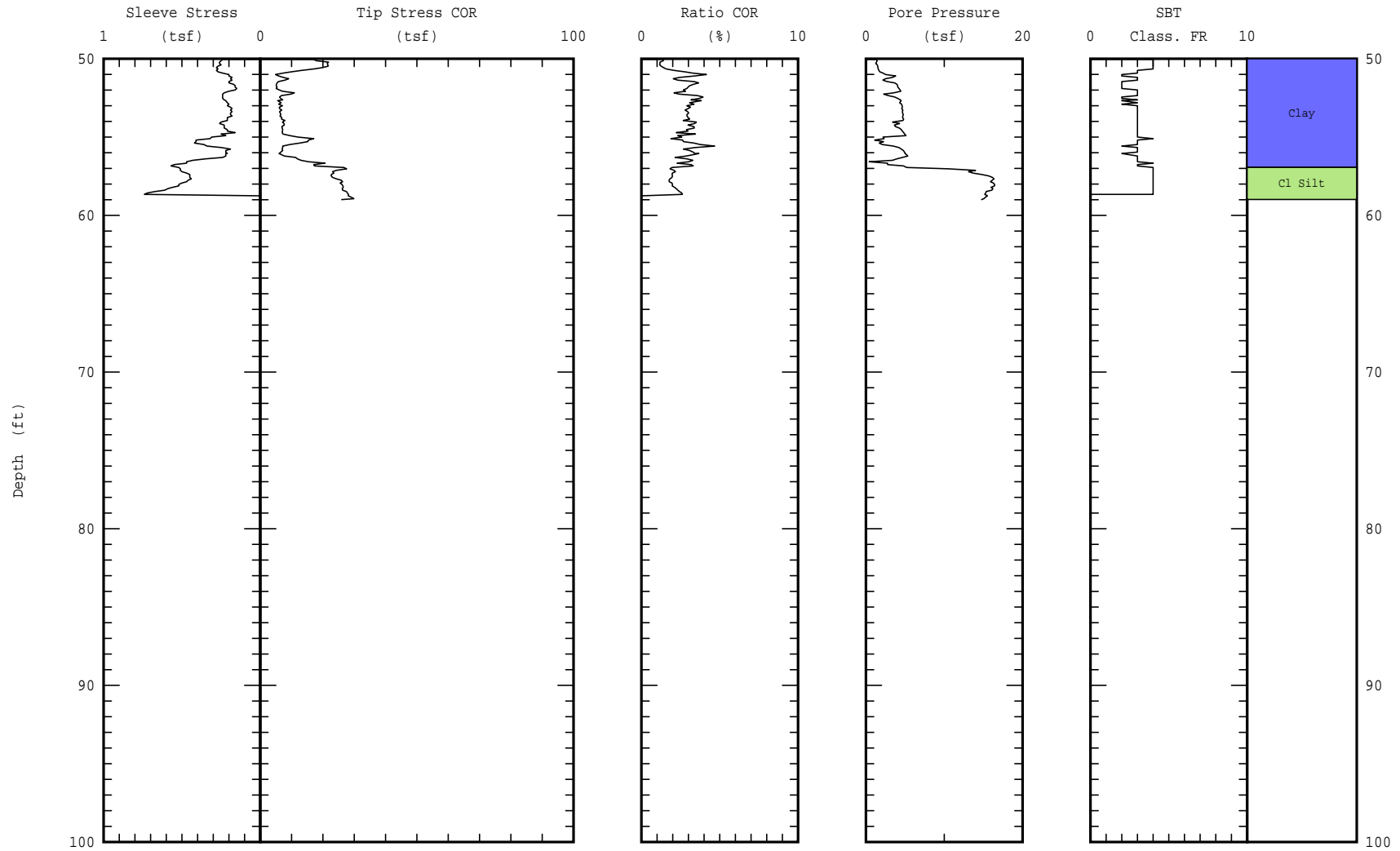
	S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464	Northing: 367982 Easting: 2324695 Elevation: 14.6 ft CLW	Date: 25/Jun/2003 Test ID: PAL-19 Project: 1131-03-264
	Client: SCSPA Site: Chas. Naval Base Container Terminal		



Page 1 of 2


Class FR: Friction Ratio Classification (Ref: Robertson 1990)
 Estimated Phreatic Surface

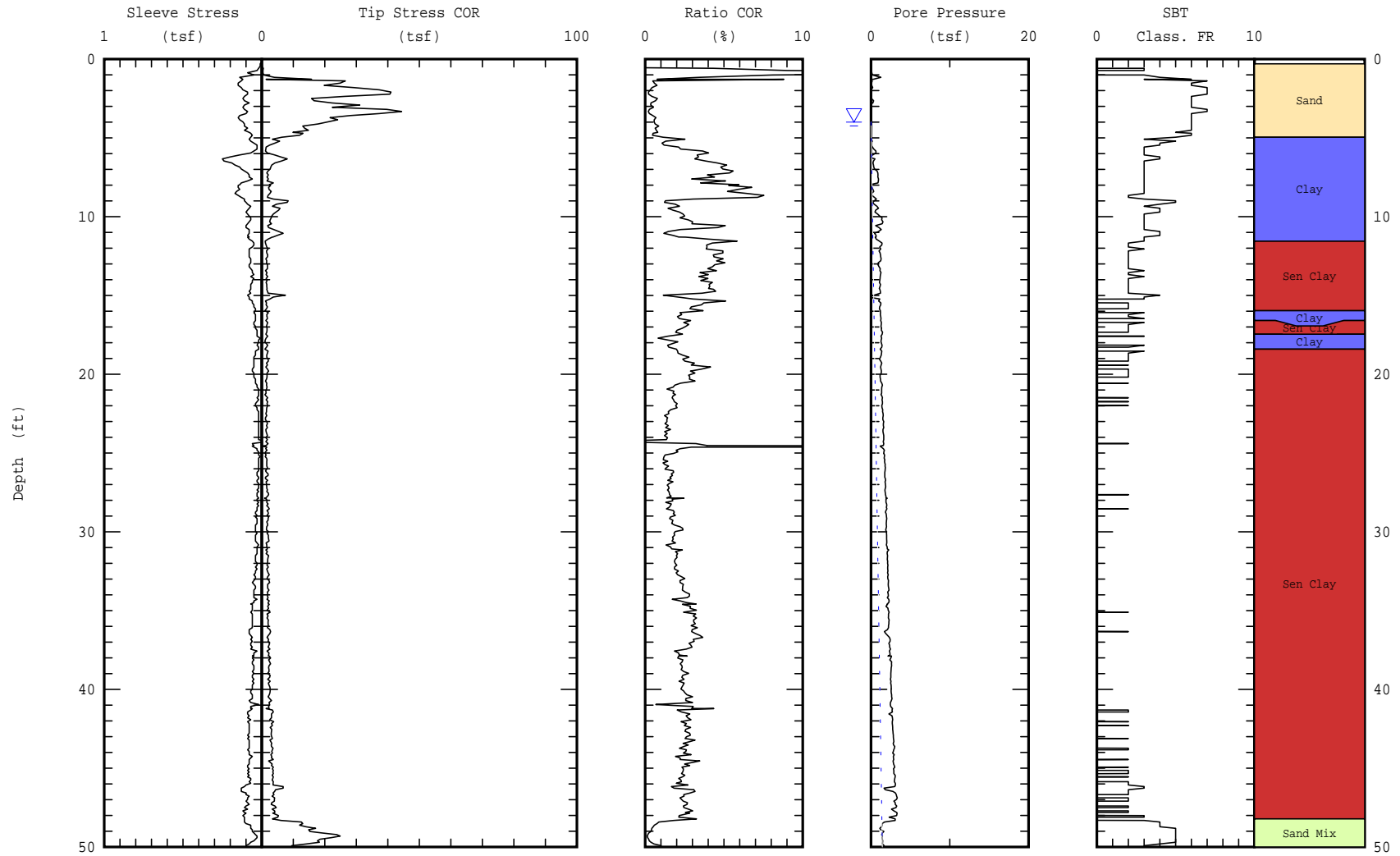
	S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464	Northing: 367982 Easting: 2324695 Elevation: 14.6 ft CLW	Date: 25/Jun/2003 Test ID: PAL-19 Project: 1131-03-264
	Client: SCSPA Site: Chas. Naval Base Container Terminal		



Maximum depth: 59.00 (ft)
Page 2 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

 <p>S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464</p>	<p>Northing: 367403 Easting: 2324678 Elevation: 8.3 ft CLW</p>	<p>Date: 17/Jun/2003 Test ID: PAL-20 Project: 1131-03-264</p>
	<p>Client: SCSPA Site: Chas. Naval Base Container Terminal</p>	




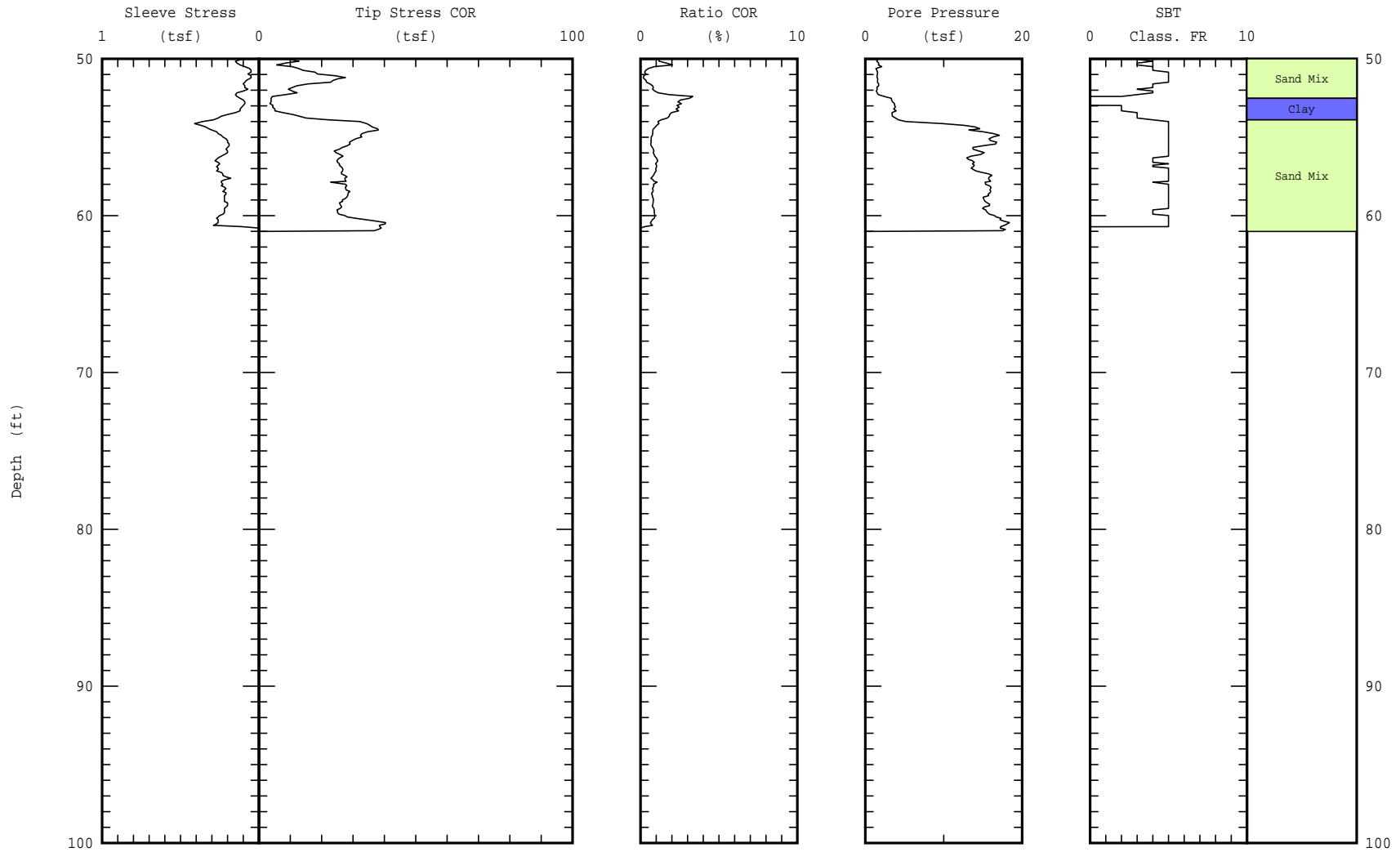
Maximum depth: 61.01 (ft)

Page 1 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

Estimated Phreatic Surface

 <p>S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464</p>	<p>Northing: 367403 Easting: 2324678 Elevation: 8.3 ft CLW</p>	<p>Date: 17/Jun/2003 Test ID: PAL-20 Project: 1131-03-264</p>
	<p>Client: SCSPA Site: Chas. Naval Base Container Terminal</p>	



Maximum depth: 61.01 (ft)
Page 2 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)



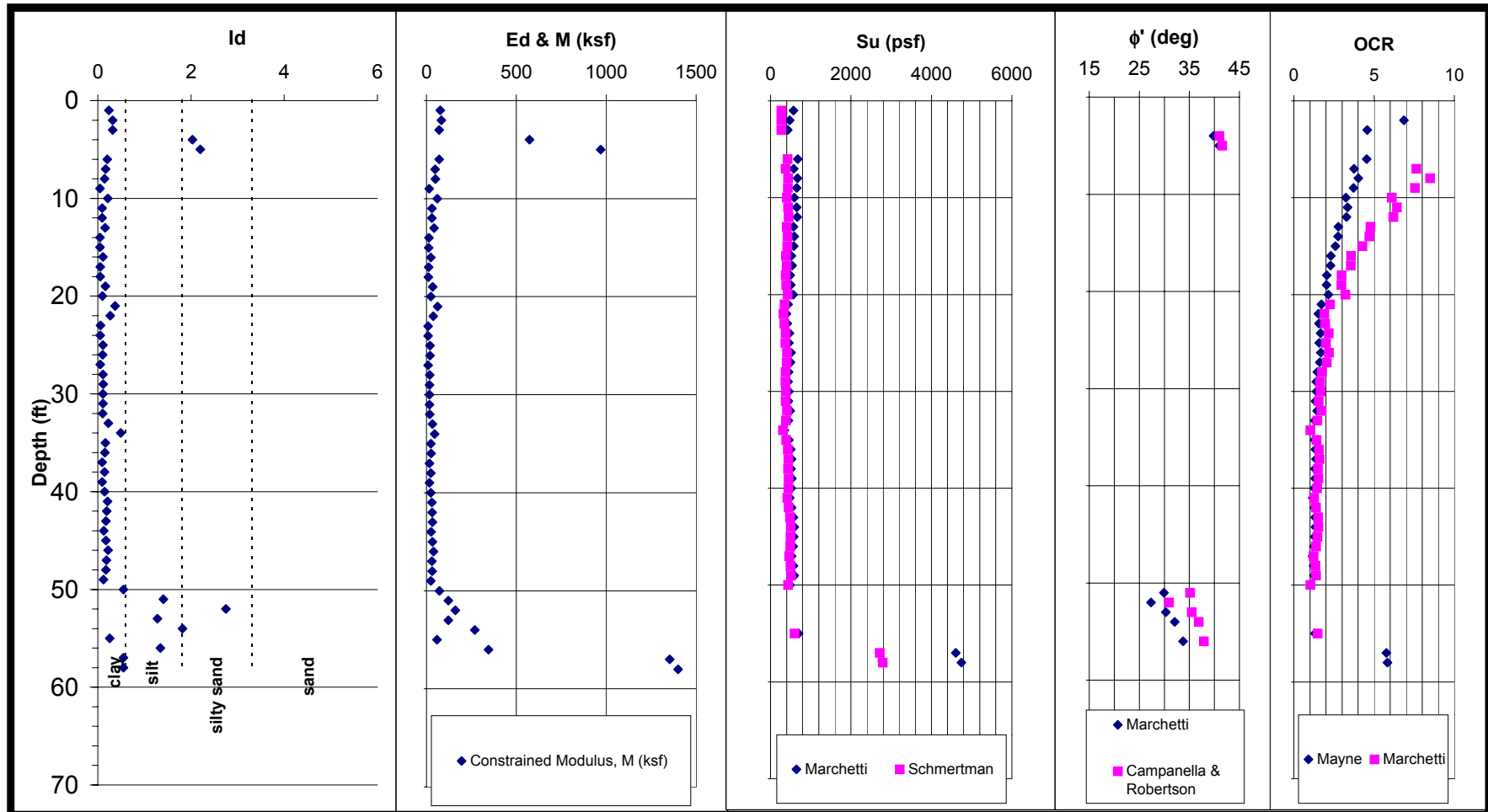
DILATOMETER TEST RESULTS

Test ID: PAL-20

Site: Charleston Naval Base Container Terminal

Location: N. Charleston, SC

Project No.: 1131-03-264



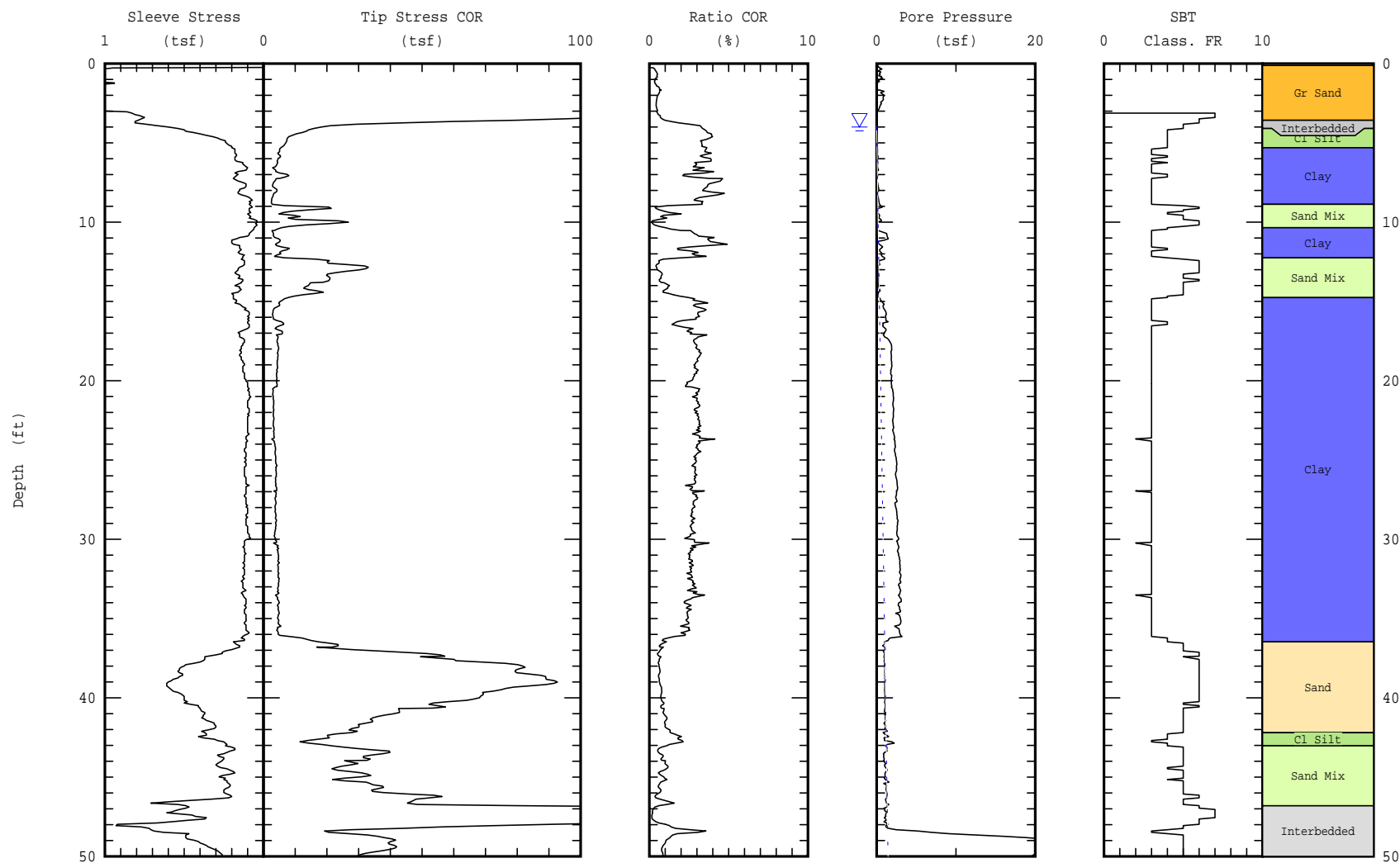


S&ME Inc. (843)884-0005
620 Wando Park Boulevard
Mt. Pleasant, SC 29464

Northings: 369126
Easting: 2325341
Elevation: 13.6 ft CLW

Date: 19/Jun/2003
Test ID: PAL-21
Project: 1131-03-264

Client: SCSA
Site: Chas. Naval Base Container Terminal




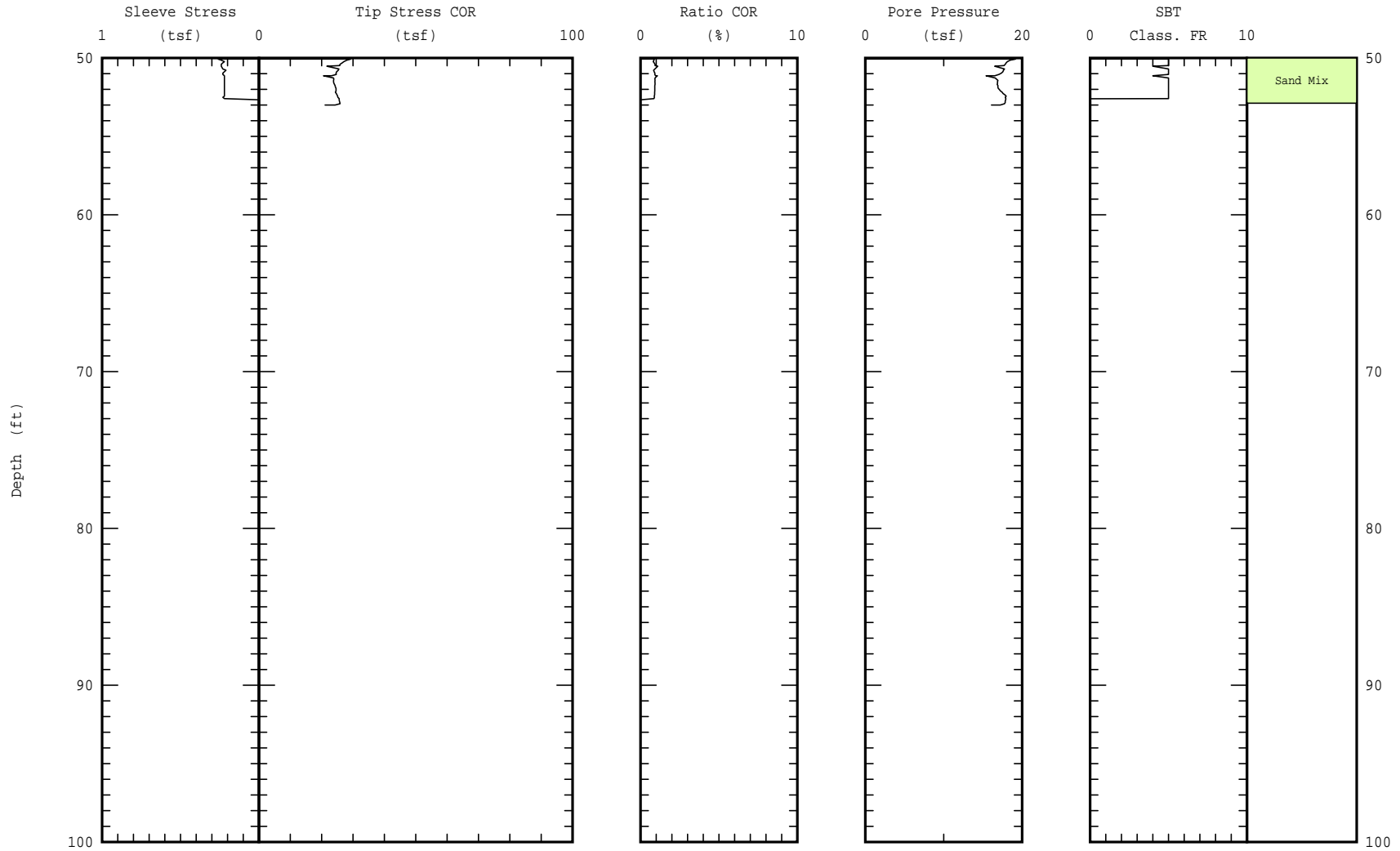
Maximum depth: 53.00 (ft)

Page 1 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)


Estimated Phreatic Surface

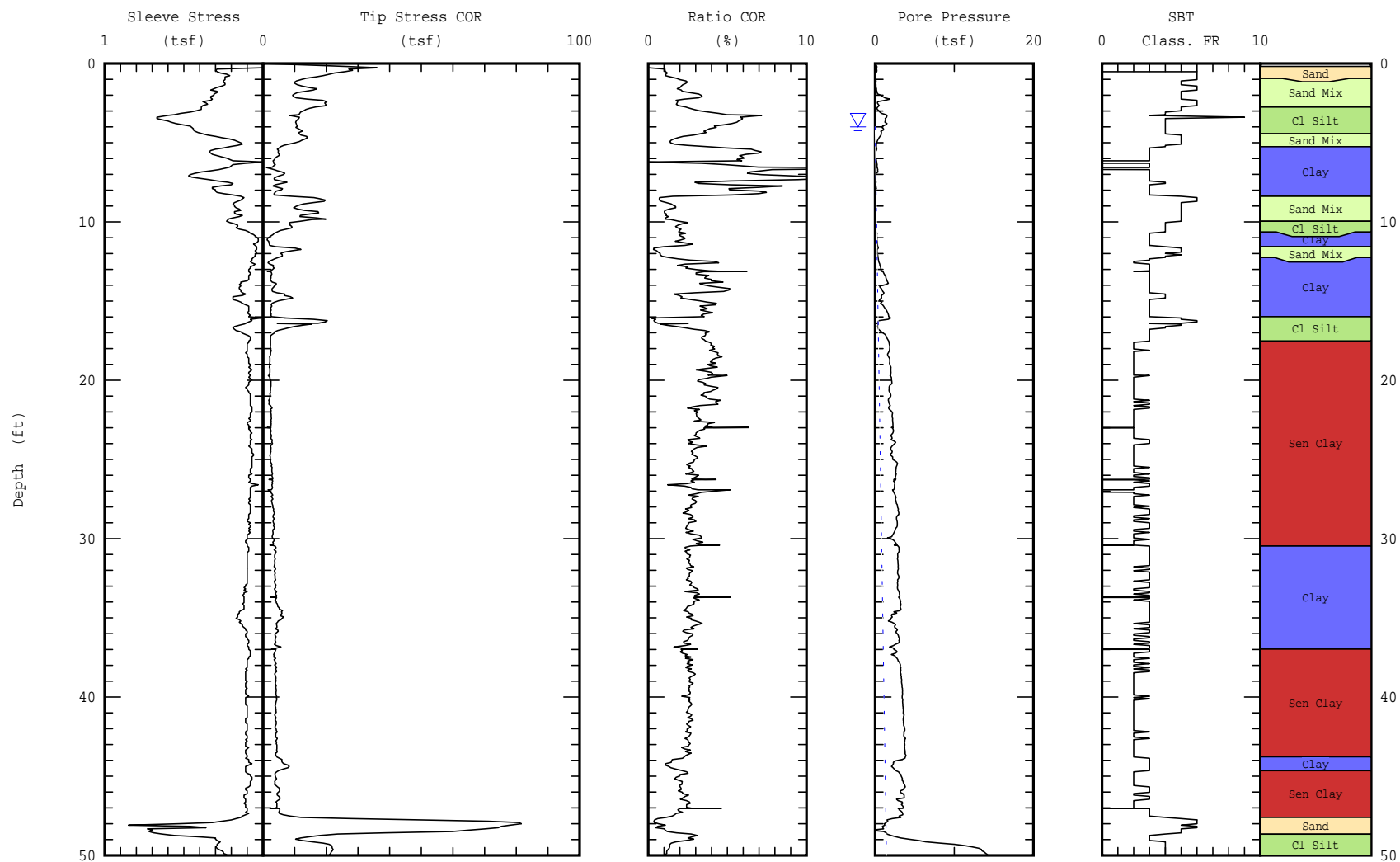
 S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464	Northing: 369126 Easting: 2325341 Elevation: 13.6 ft CLW	Date: 19/Jun/2003 Test ID: PAL-21 Project: 1131-03-264
	Client: SCSPA Site: Chas. Naval Base Container Terminal	



Maximum depth: 53.00 (ft)
 Page 2 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

	S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464	Northing: 368797 Easting: 2325091 Elevation: 15.1 ft CLW	Date: 19/Jun/2003 Test ID: PAL-22 Project: 1131-03-264
	Client: SCSPA Site: Chas. Naval Base Container Terminal		



Maximum depth: 53.00 (ft)

Page 1 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

Estimated Phreatic Surface

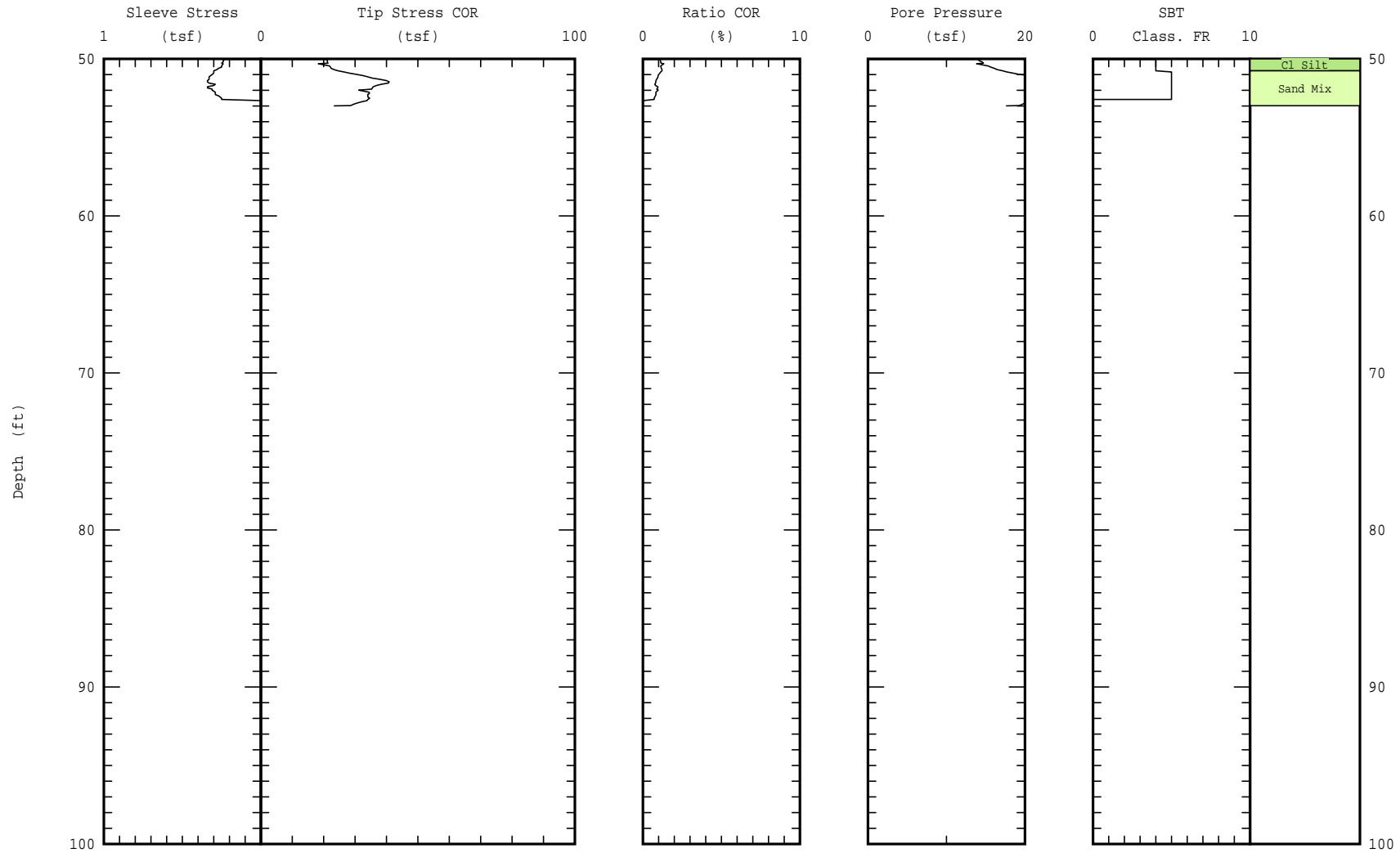


S&ME Inc. (843)884-0005
620 Wando Park Boulevard
Mt. Pleasant, SC 29464

Northing: 368797
Easting: 2325091
Elevation: 15.1 ft CLW

Date: 19/Jun/2003
Test ID: PAL-22
Project: 1131-03-264

Client: SCSPA
Site: Chas. Naval Base Container Terminal



Maximum depth: 53.00 (ft)
Page 2 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

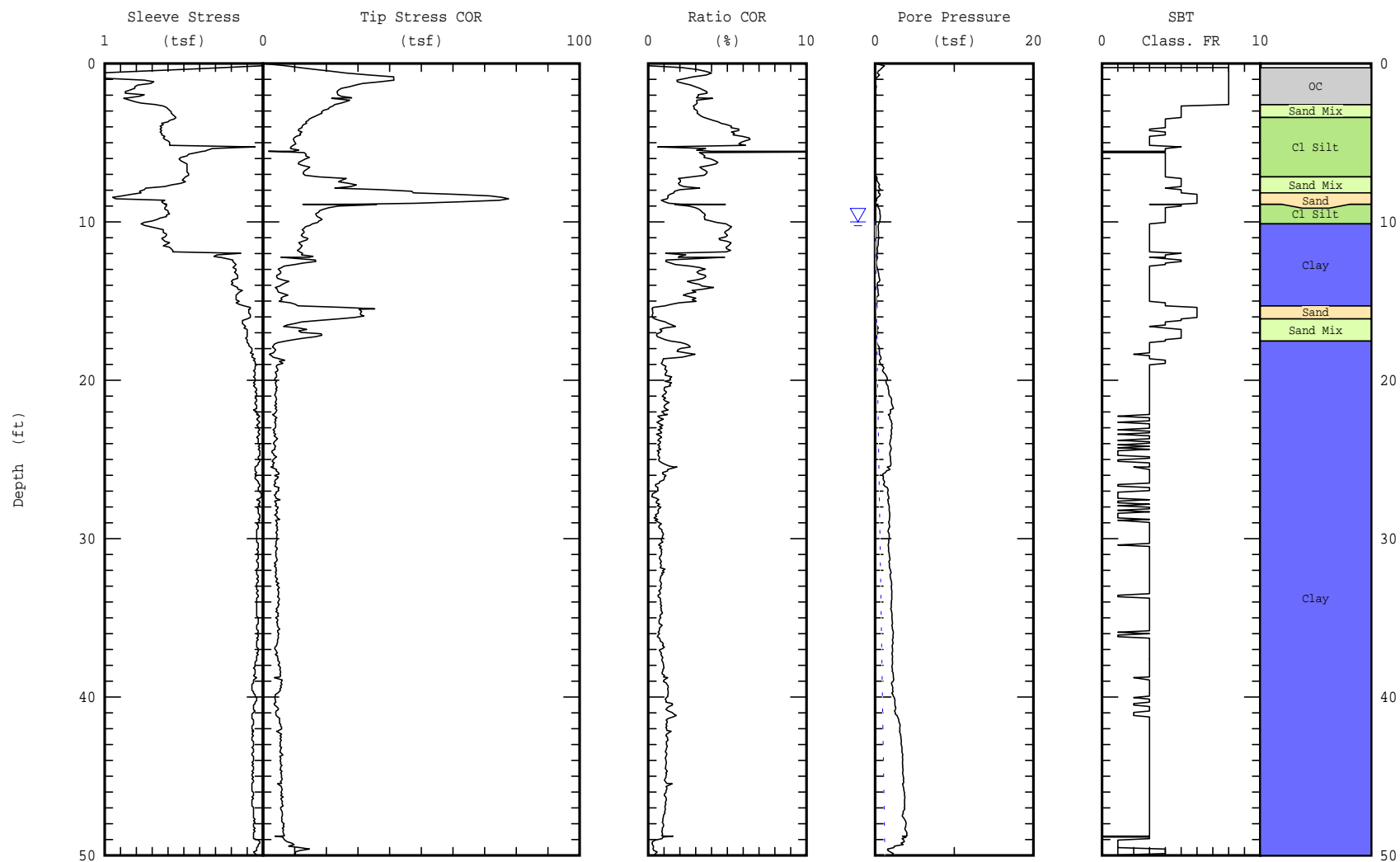


S&ME Inc. (843)884-0005
620 Wando Park Boulevard
Mt. Pleasant, SC 29464

Northing: 368389
Easting: 2325093
Elevation: 18.0 ft CLW

Date: 18/Jun/2003
Test ID: PAL-23
Project: 1131-03-264

Client: SCSA
Site: Chas. Naval Base Container Terminal




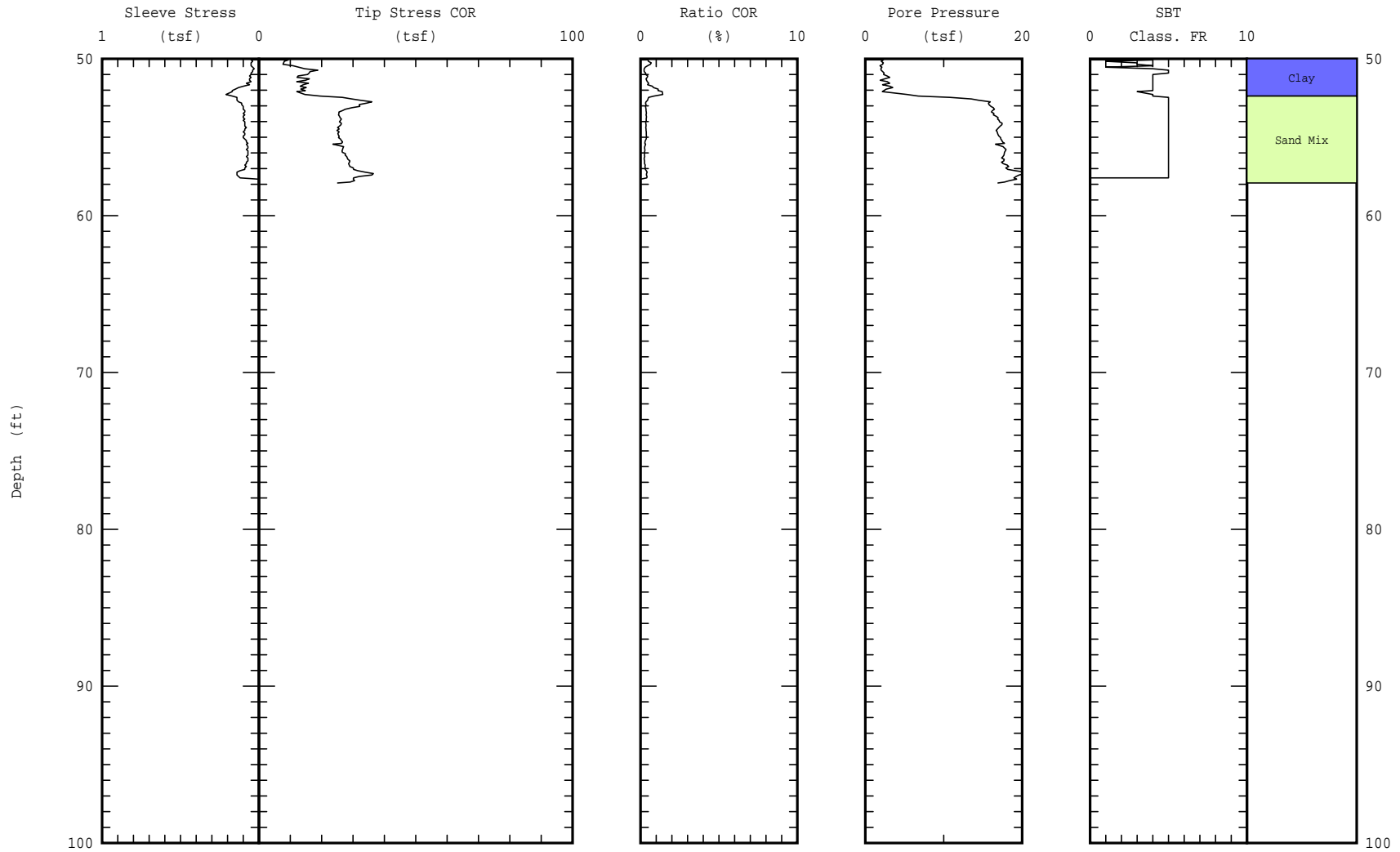
Maximum depth: 57.92 (ft)

Page 1 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)


Estimated Phreatic Surface

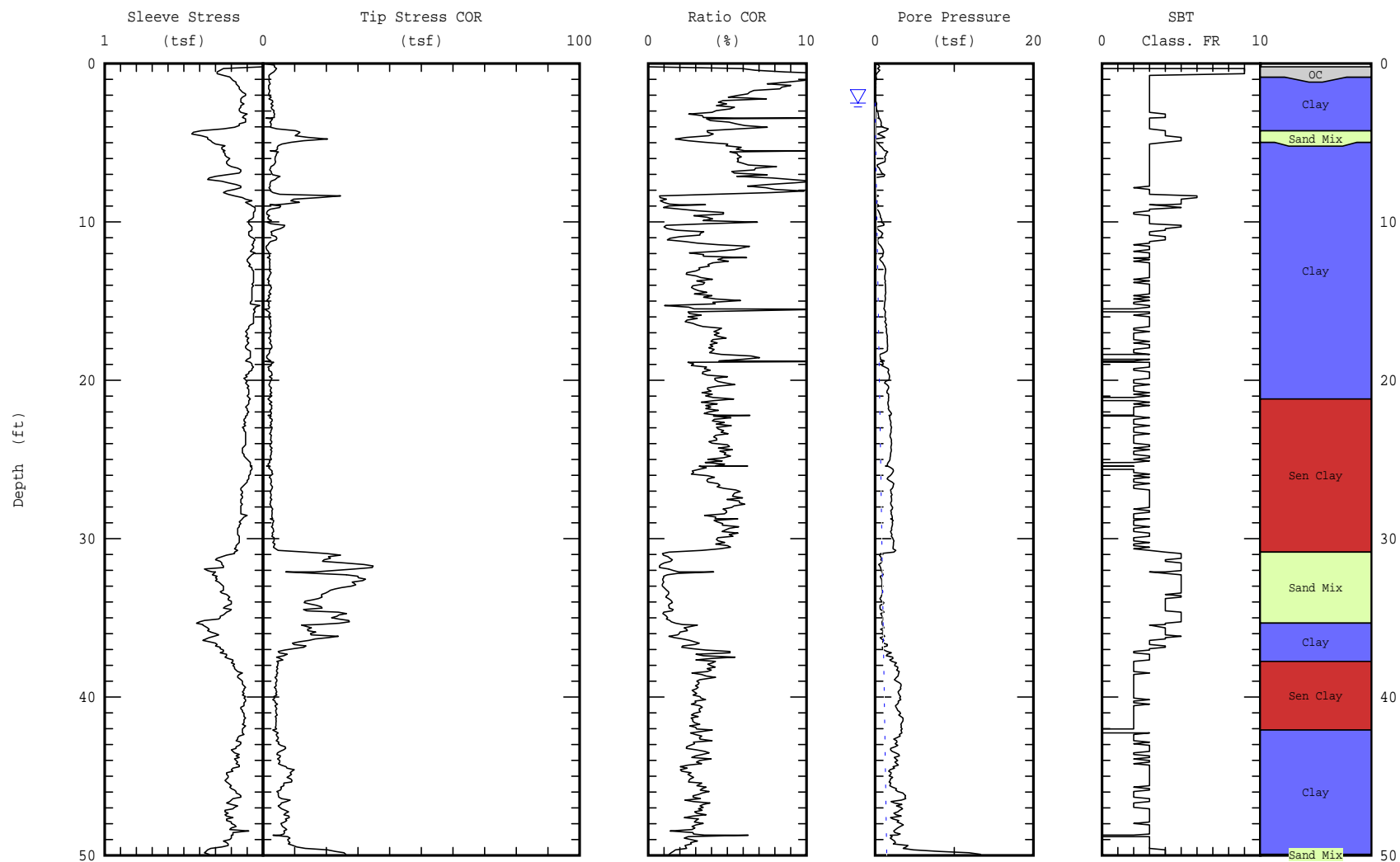
	S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464	Northing: 368389 Easting: 2325093 Elevation: 18.0 ft CLW	Date: 18/Jun/2003 Test ID: PAL-23 Project: 1131-03-264
	Client: SCSPA Site: Chas. Naval Base Container Terminal		



Maximum depth: 57.92 (ft)
 Page 2 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

 <p>S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464</p>	<p>Northing: 367987 Easting: 2325074 Elevation: 13.7 ft CLW</p>	<p>Date: 19/Jun/2003 Test ID: PAL-24 Project: 1131-03-264</p>
	<p>Client: SCSPA Site: Chas. Naval Base Container Terminal</p>	




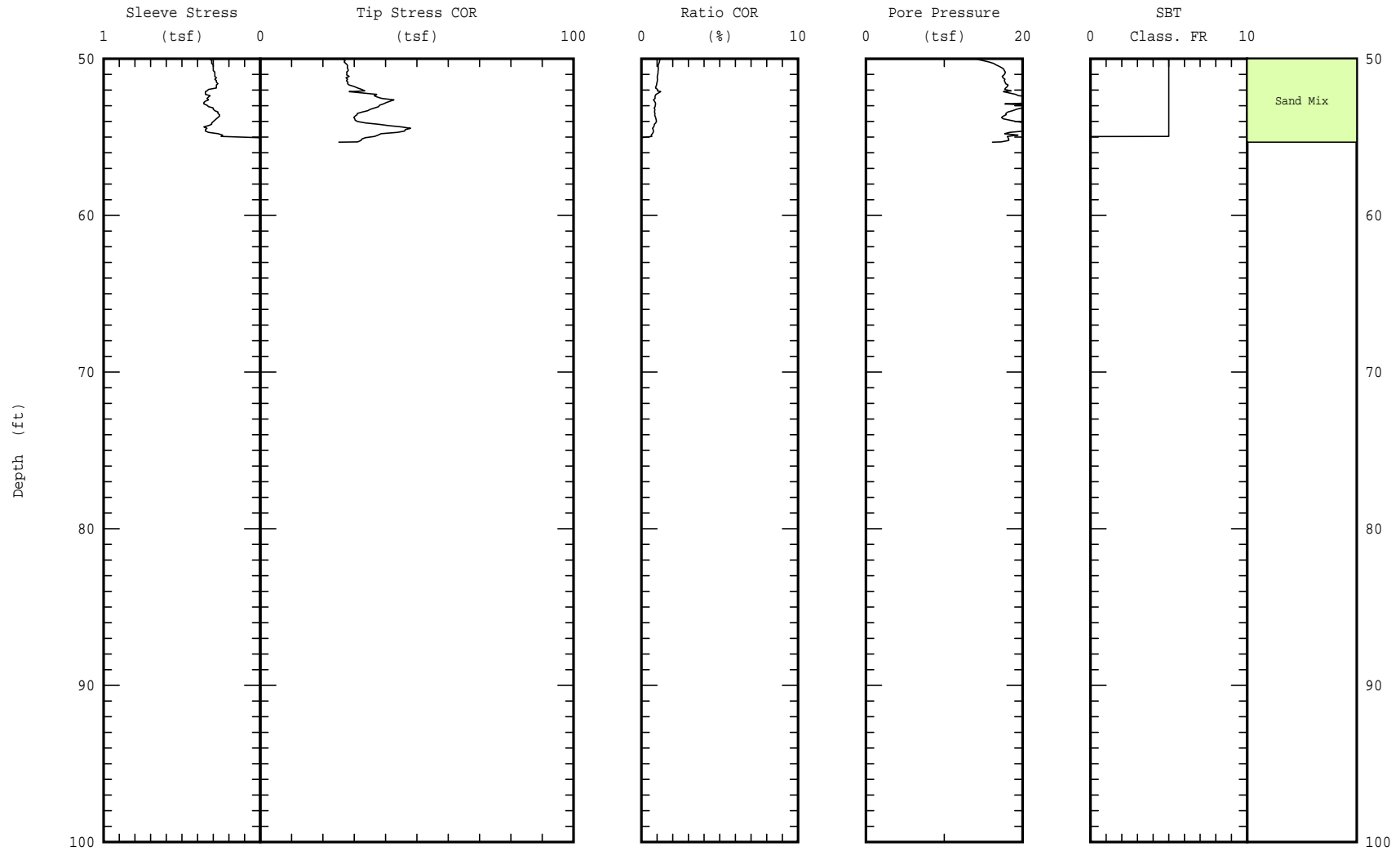
Maximum depth: 55.33 (ft)

Page 1 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

Estimated Phreatic Surface

	S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464	Northing: 367987 Easting: 2325074 Elevation: 13.7 ft CLW	Date: 19/Jun/2003 Test ID: PAL-24 Project: 1131-03-264
	Client: SCSPA Site: Chas. Naval Base Container Terminal		



Maximum depth: 55.33 (ft)
 Page 2 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)



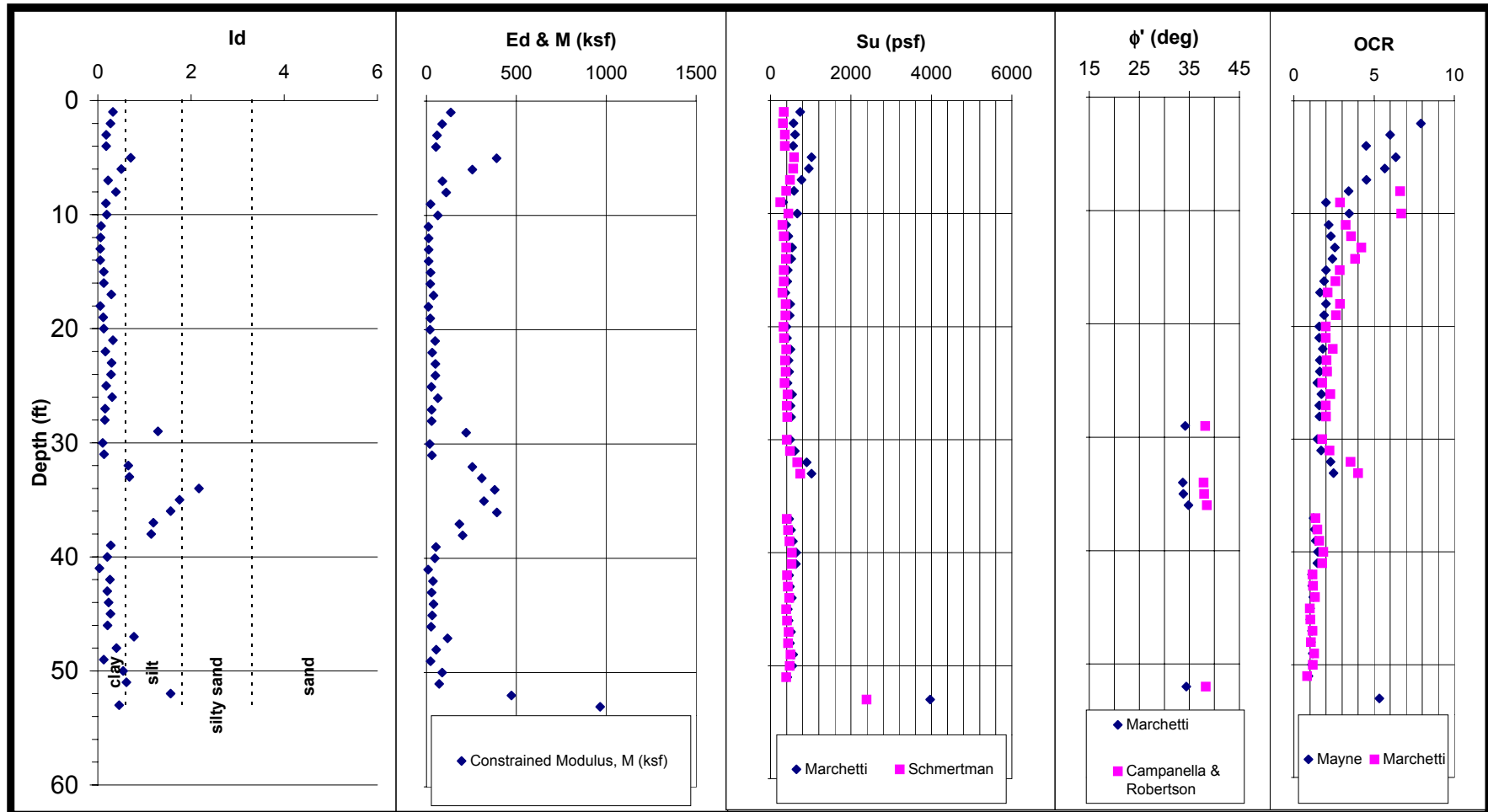
DILATOMETER TEST RESULTS


Test ID: PAL-24

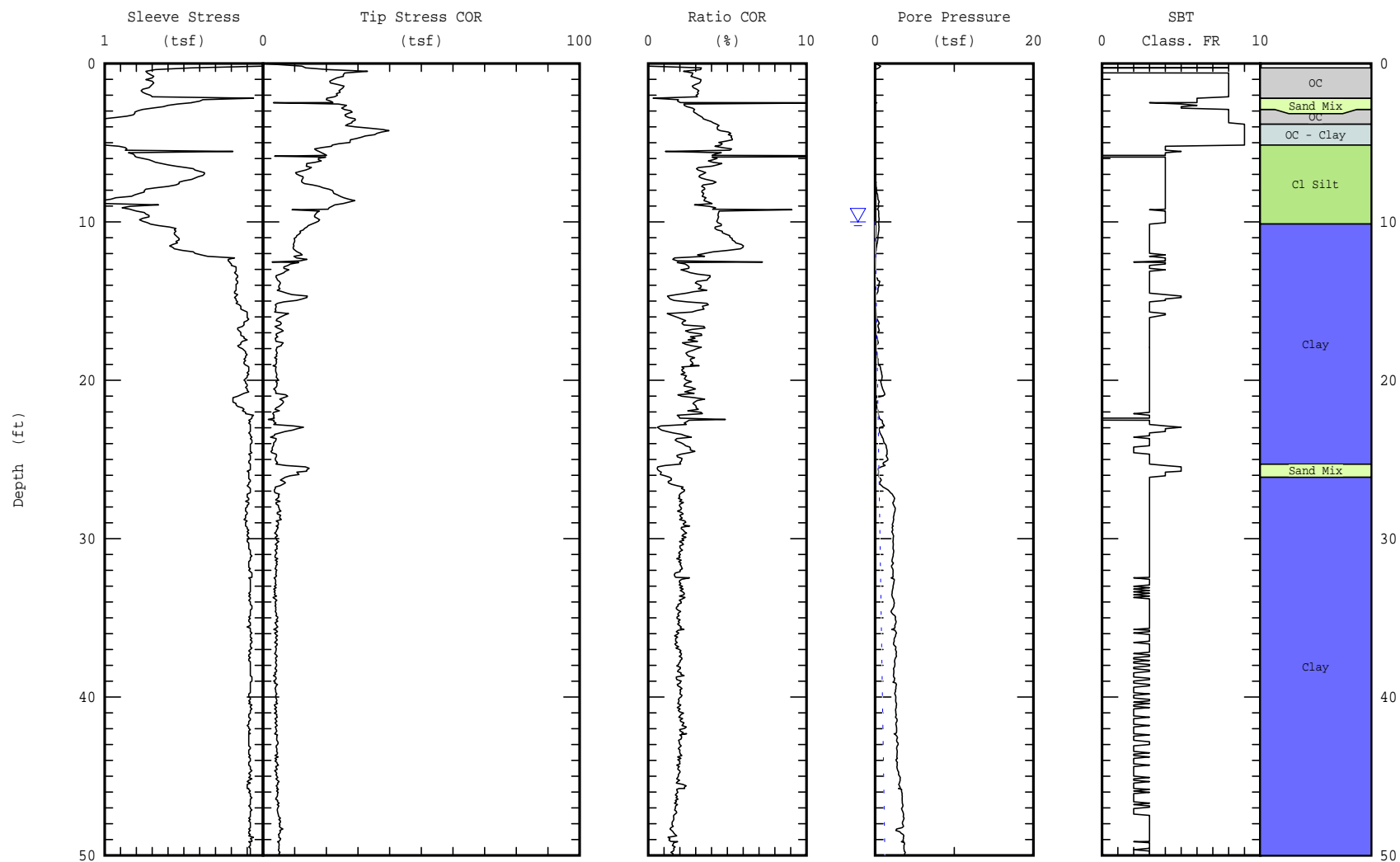
Site: Charleston Naval Base Container Terminal

Location: N. Charleston, SC

Project No.: 1131-03-264



 <p>S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464</p>	<p>Northing: 367182 Easting: 2325068 Elevation: 18.3 ft CLW</p>	<p>Date: 18/Jun/2003 Test ID: PAL-25 Project: 1131-03-264</p>
	<p>Client: SCSPA Site: Chas. Naval Base Container Terminal</p>	




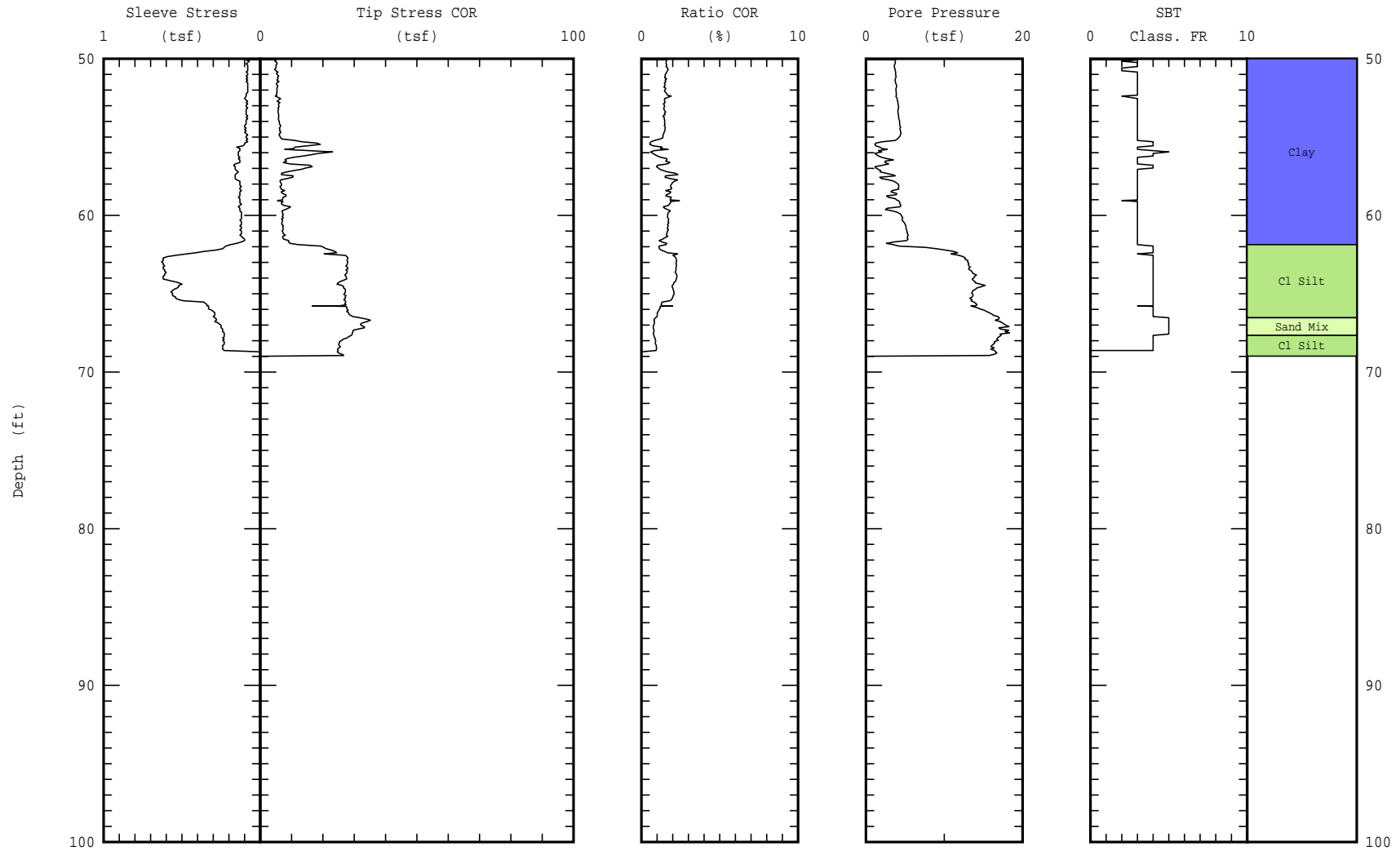
Maximum depth: 69.00 (ft)

Page 1 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

Estimated Phreatic Surface


	S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464	Northing: 367182 Easting: 2325068 Elevation: 18.3 ft CLW	Date: 18/Jun/2003 Test ID: PAL-25 Project: 1131-03-264
	Client: SCSPA Site: Chas. Naval Base Container Terminal		

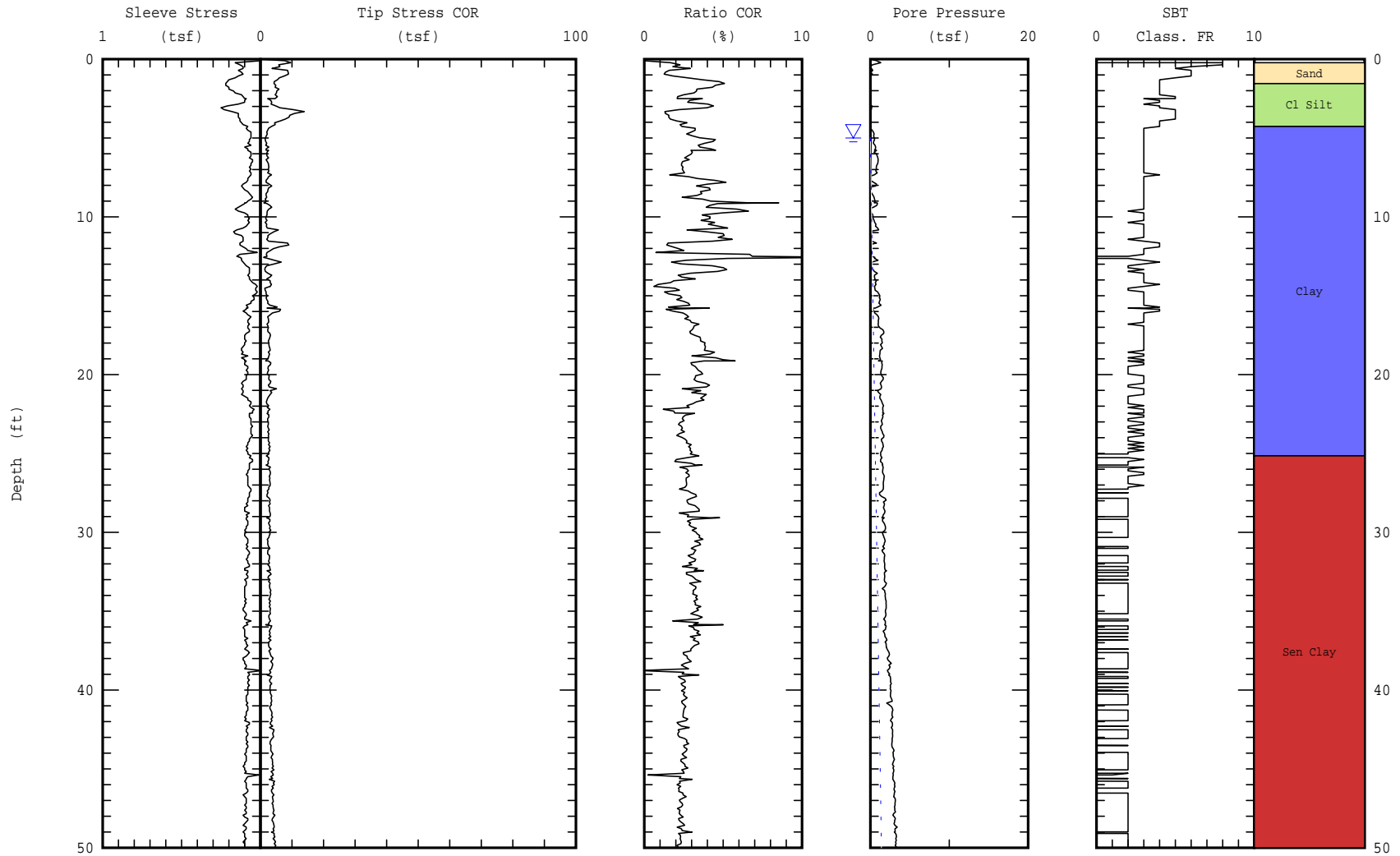


Maximum depth: 69.00 (ft)


Page 2 of 2


Class FR: Friction Ratio Classification (Ref: Robertson 1990)

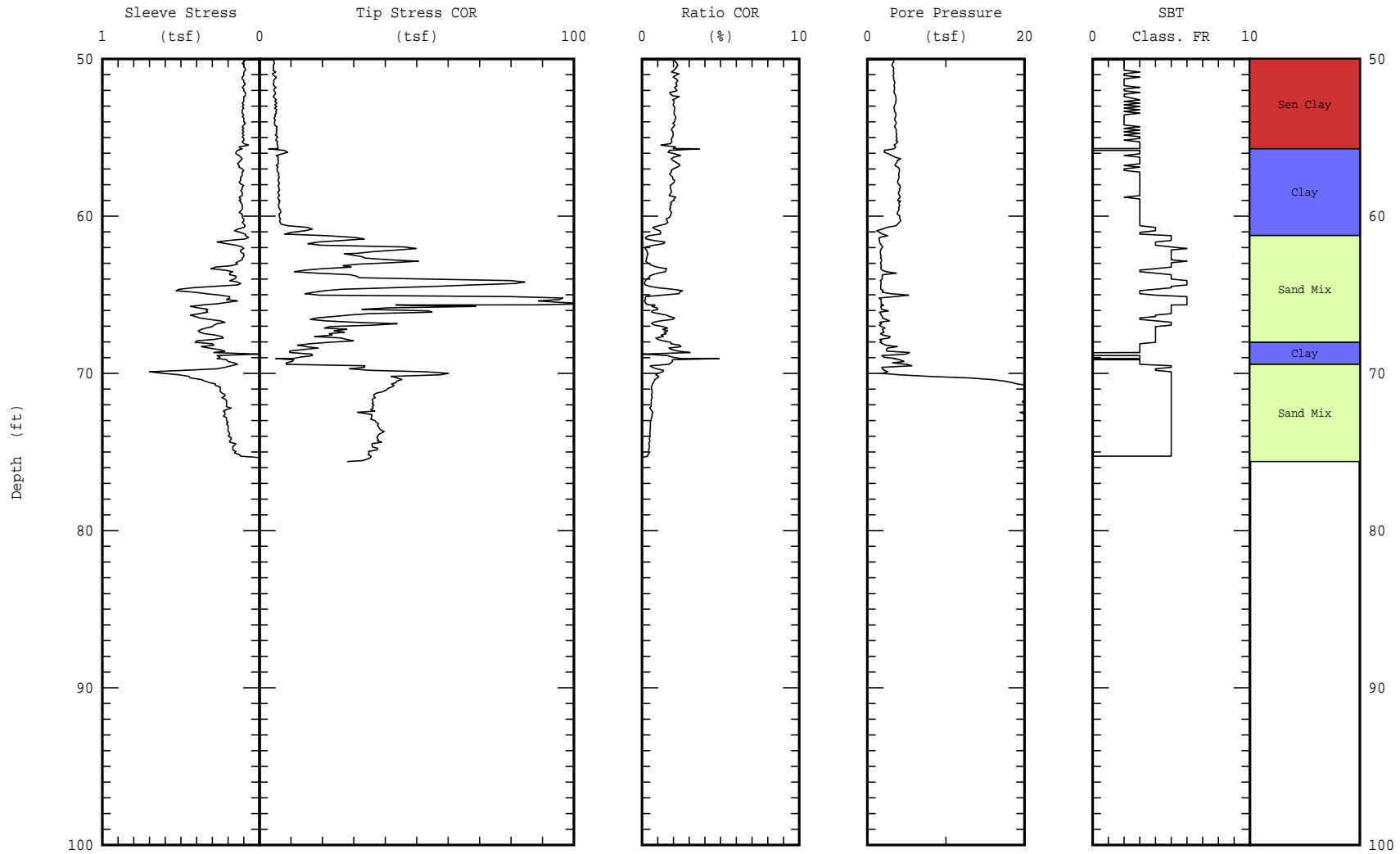
 <p>S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464</p>	<p>Northing: 366959 Easting: 2325166 Elevation: 11.5 ft CLW</p>	<p>Date: 15/Jul/2003 Test ID: PAL-26 Project: 1131-03-264</p>
	<p>Client: SCSPA Site: Chas. Naval Base Container Terminal</p>	



Maximum depth: 75.61 (ft)
Page 1 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)
 Estimated Phreatic Surface

	S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464	Northing: 366959 Easting: 2325166 Elevation: 11.5 ft CLW	Date: 15/Jul/2003 Test ID: PAL-26 Project: 1131-03-264
	Client: SCSPA Site: Chas. Naval Base Container Terminal		



Maximum depth: 75.61 (ft)
Page 2 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

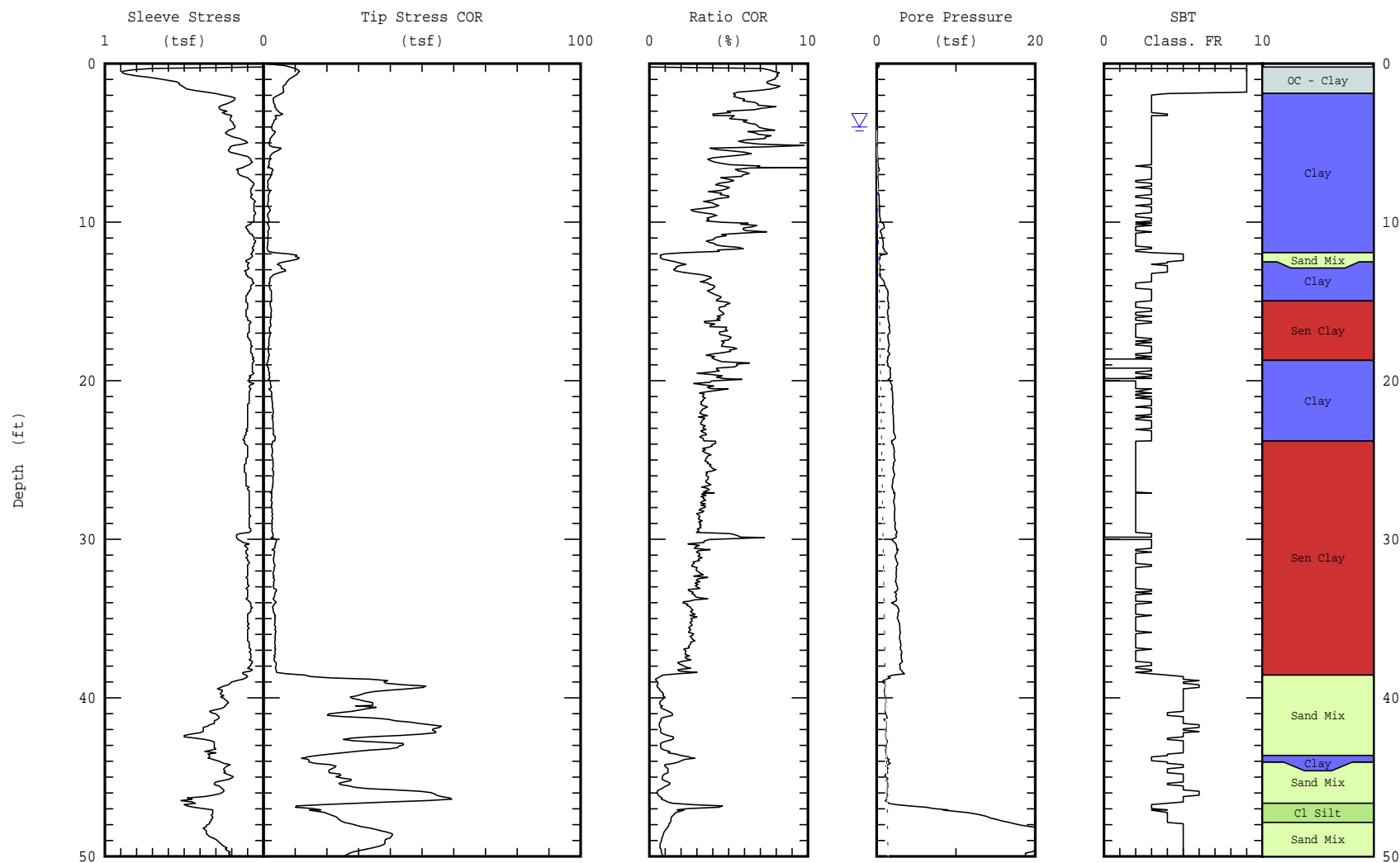


S&ME Inc. (843)884-0005
620 Wando Park Boulevard
Mt. Pleasant, SC 29464

Northing: 368841
Easting: 2325384
Elevation: 13.1 ft CLW

Date: 19/Jun/2003
Test ID: PAL-27
Project: 1131-03-264

Client: SCSPA
Site: Chas. Naval Base Container Terminal




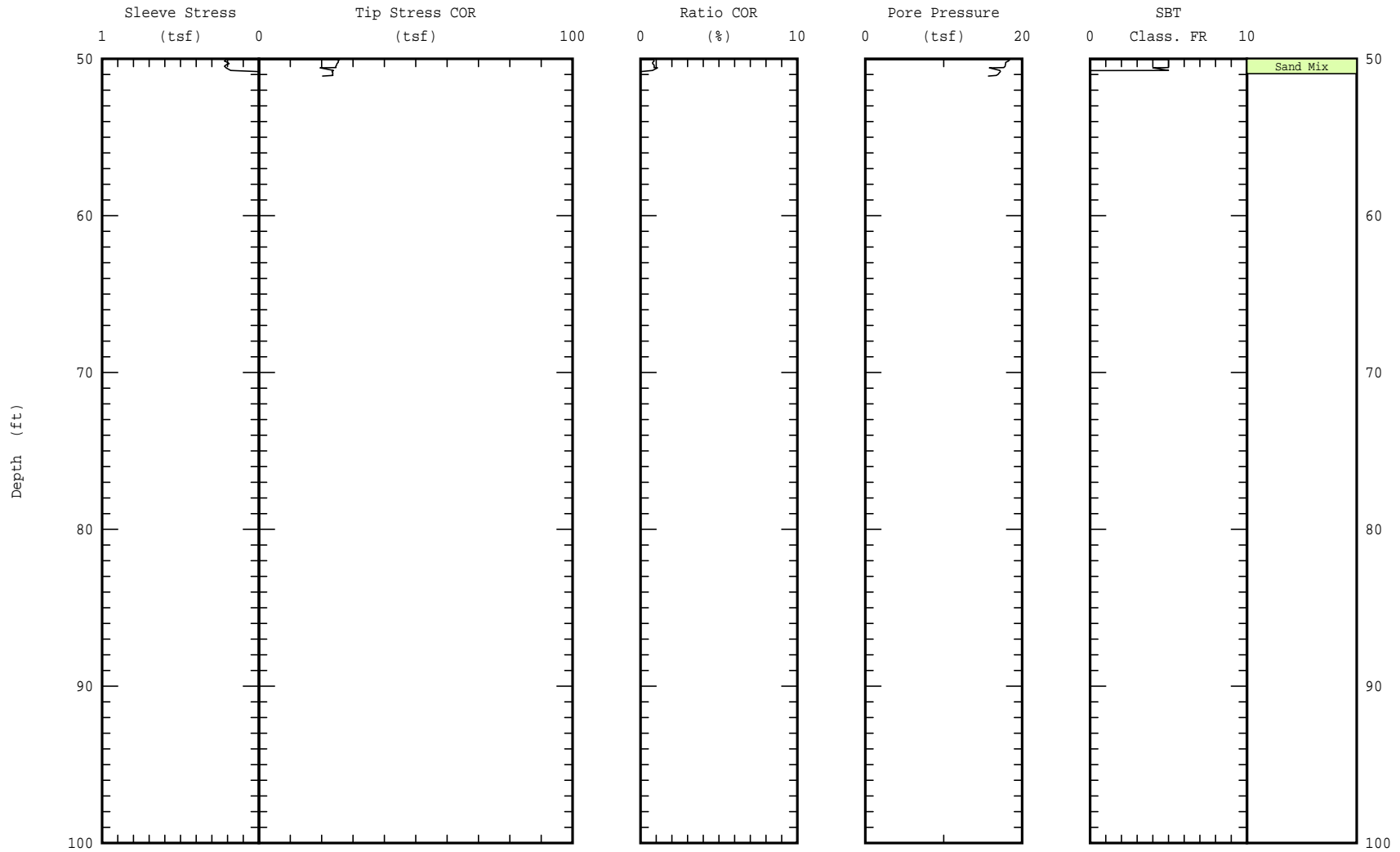
Maximum depth: 51.10 (ft)

Page 1 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)


Estimated Phreatic Surface

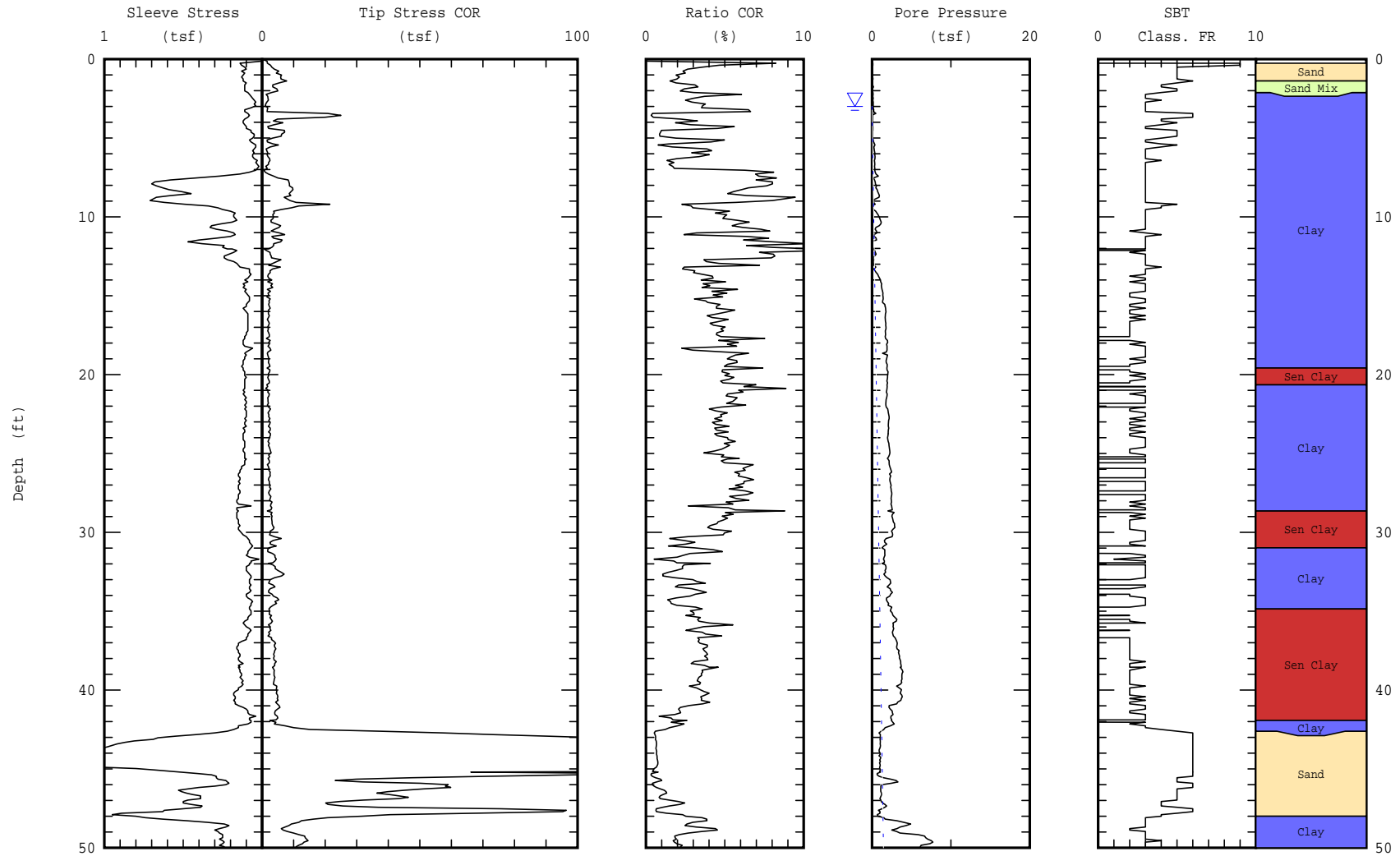
	S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464	Northing: 368841 Easting: 2325384 Elevation: 13.1 ft CLW	Date: 19/Jun/2003 Test ID: PAL-27 Project: 1131-03-264
	Client: SCSPA Site: Chas. Naval Base Container Terminal		



Maximum depth: 51.10 (ft)
 Page 2 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

 <p>S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464</p>	<p>Northing: 368366 Easting: 2325477 Elevation: 16.6 ft CLW</p>	<p>Date: 19/Jun/2003 Test ID: PAL-28 Project: 1131-03-264</p>
	<p>Client: SCSPA Site: Chas. Naval Base Container Terminal</p>	




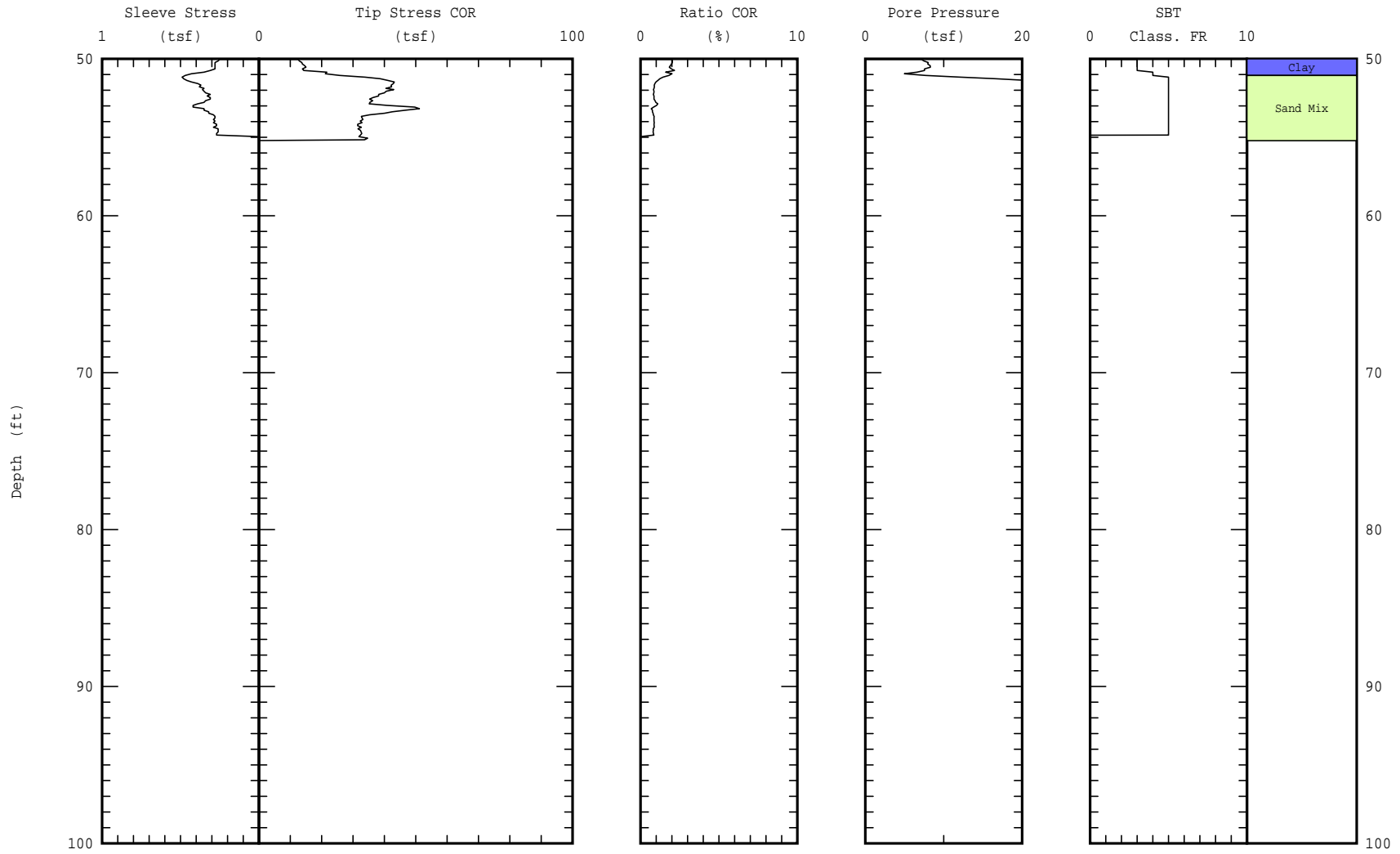
Maximum depth: 55.21 (ft)

Page 1 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)


Estimated Phreatic Surface

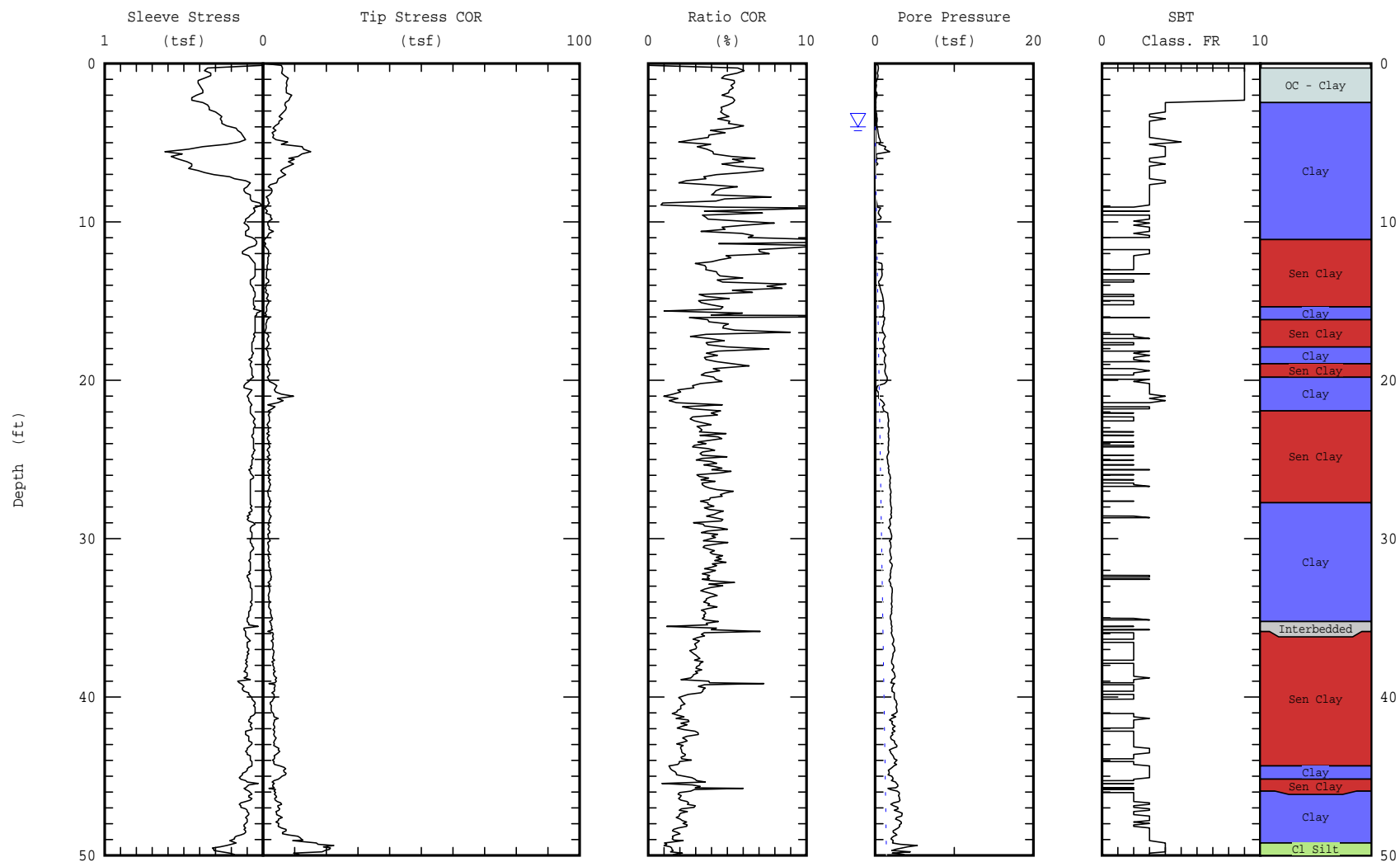
	S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464	Northing: 368366 Easting: 2325477 Elevation: 16.6 ft CLW	Date: 19/Jun/2003 Test ID: PAL-28 Project: 1131-03-264
	Client: SCSPA Site: Chas. Naval Base Container Terminal		



Maximum depth: 55.21 (ft)
Page 2 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

 <p>S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464</p>	<p>Northing: 367591 Easting: 2325485 Elevation: 15.0 ft CLW</p>	<p>Date: 20/Jun/2003 Test ID: PAL-29 Project: 1131-03-264</p>
	<p>Client: SCSPA Site: Chas. Naval Base Container Terminal</p>	



Maximum depth: 103.45 (ft)

Page 1 of 3

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

Estimated Phreatic Surface

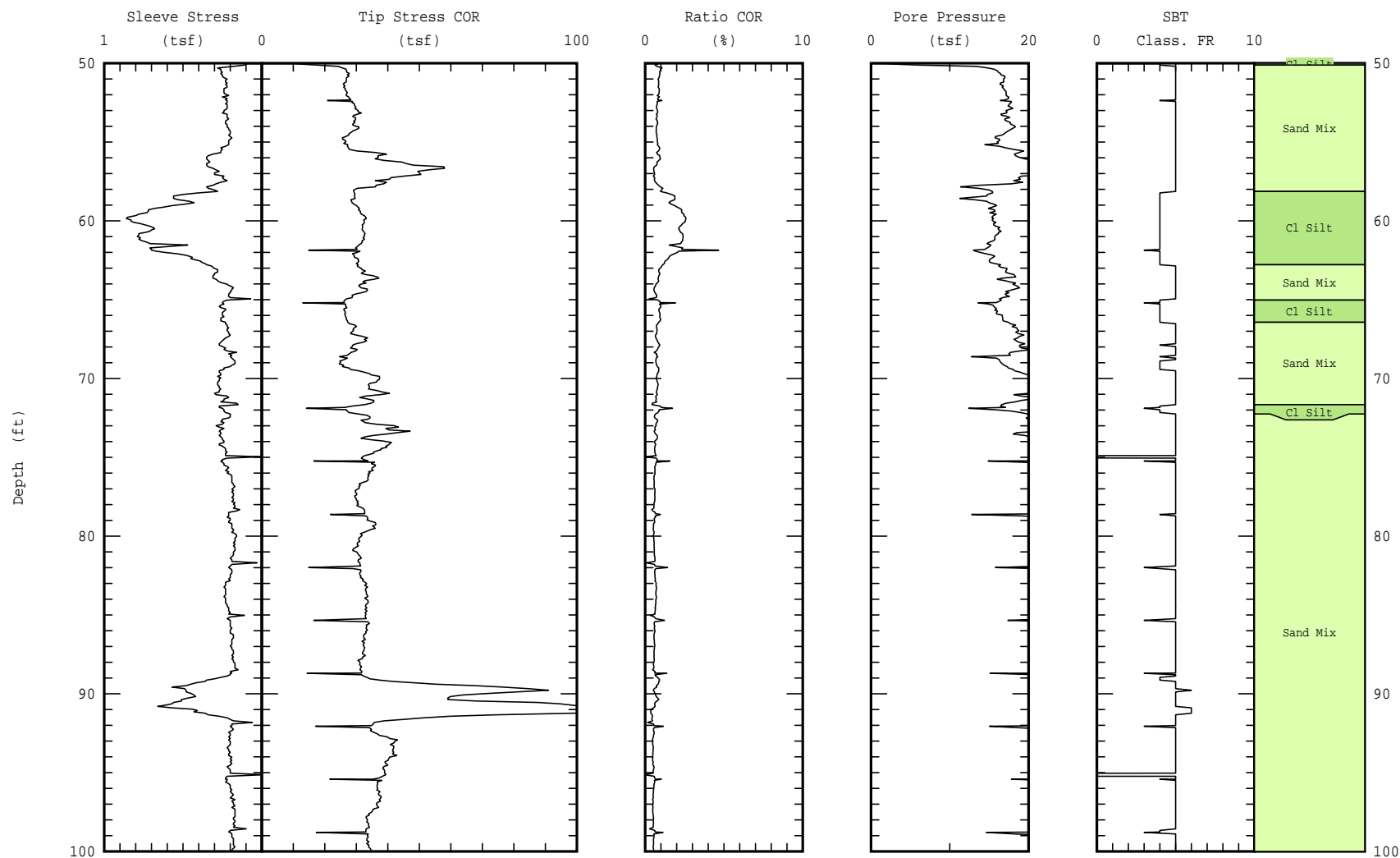


S&ME Inc. (843)884-0005
620 Wando Park Boulevard
Mt. Pleasant, SC 29464

Northings: 367591
Easting: 2325485
Elevation: 15.0 ft CLW

Date: 20/Jun/2003
Test ID: PAL-29
Project: 1131-03-264


Client: SCSPA
Site: Chas. Naval Base Container Terminal

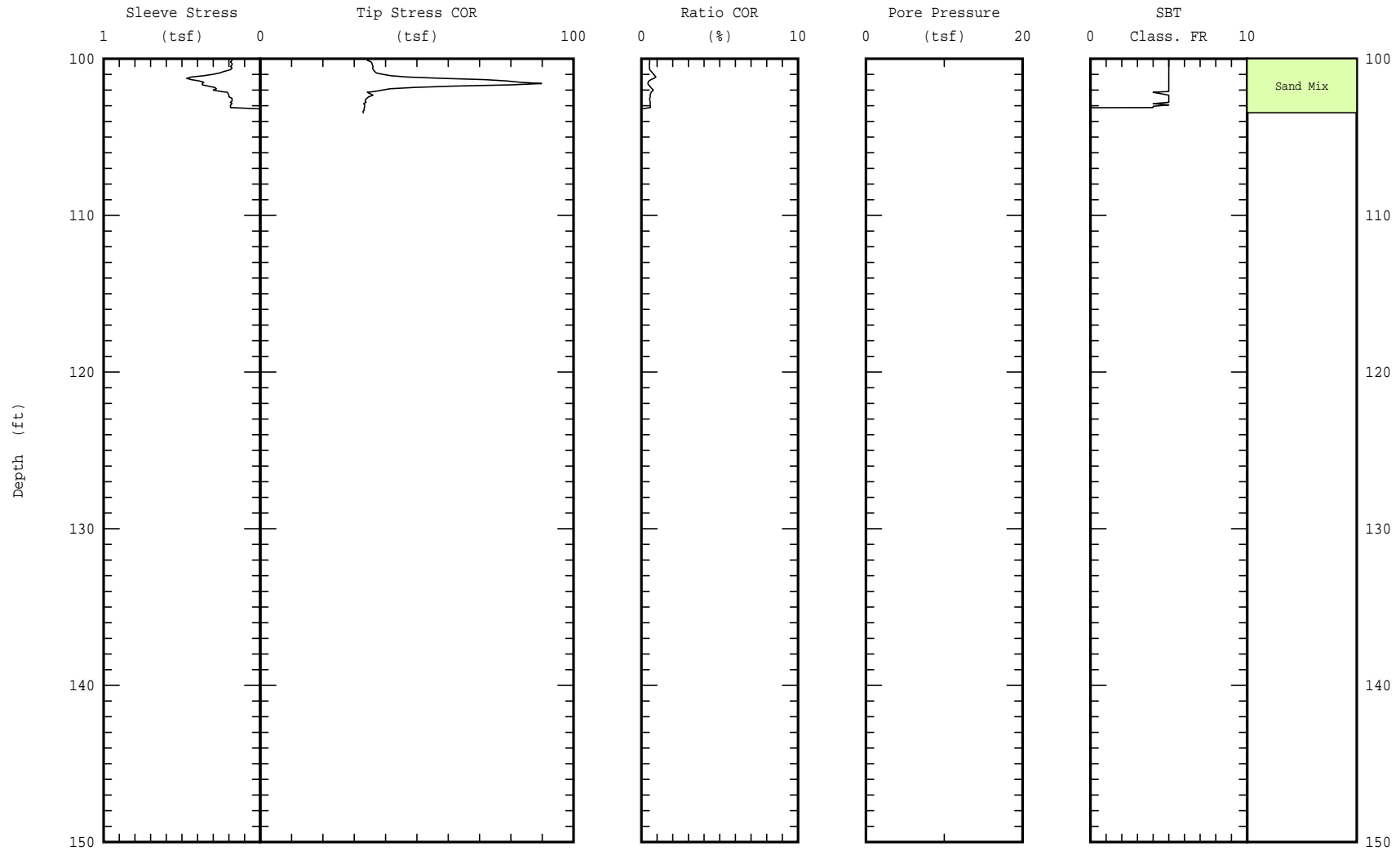


Maximum depth: 103.45 (ft)

Page 2 of 3

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

	S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464	Northing: 367591 Easting: 2325485 Elevation: 15.0 ft CLW	Date: 20/Jun/2003 Test ID: PAL-29 Project: 1131-03-264
	Client: SCSPA Site: Chas. Naval Base Container Terminal		



Maximum depth: 103.45 (ft)
Page 3 of 3

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

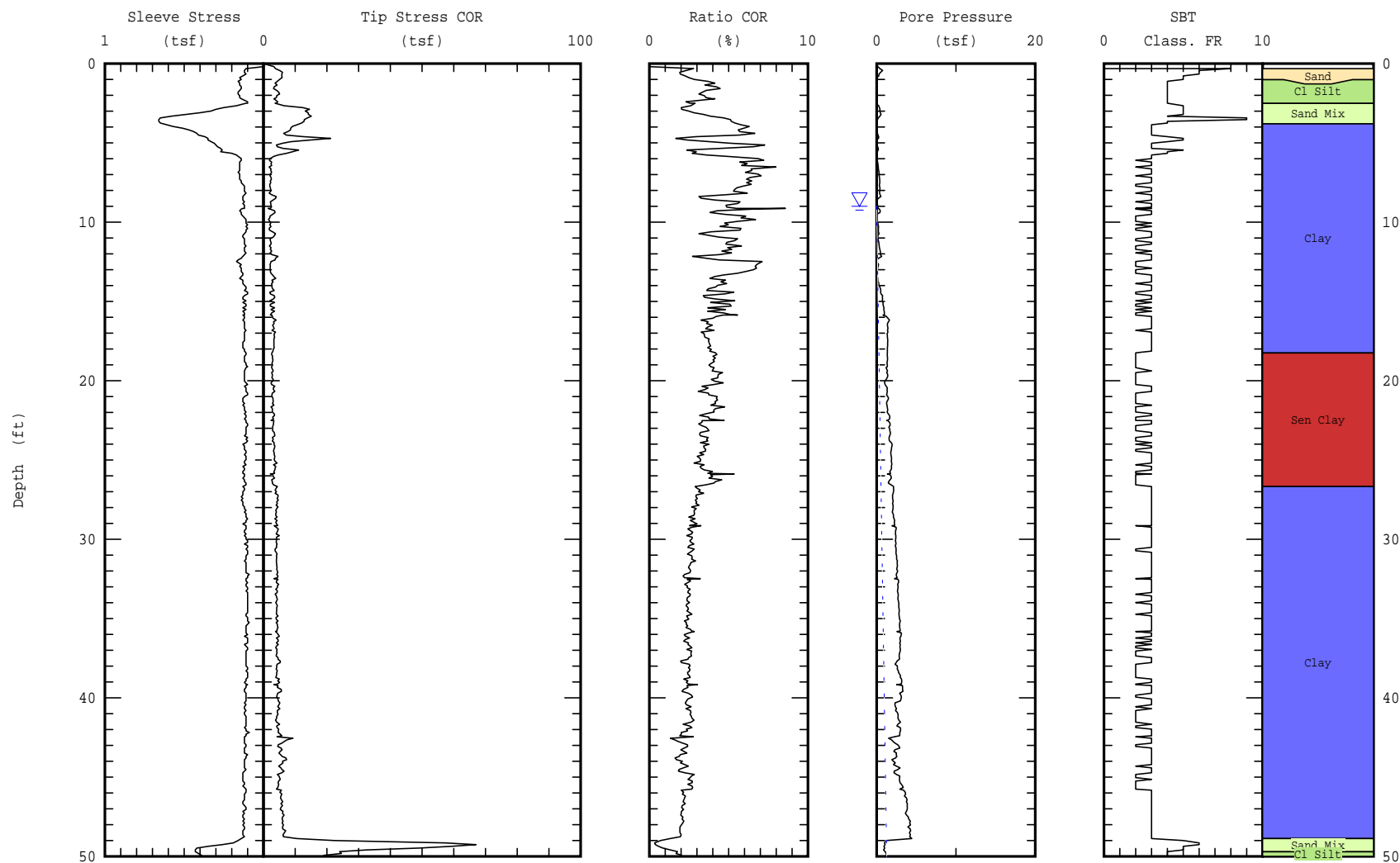


S&ME Inc. (843)884-0005
620 Wando Park Boulevard
Mt. Pleasant, SC 29464

Northing: 367190
Easting: 2325475
Elevation: 12.2 ft CLW

Date: 18/Jun/2003
Test ID: PAL-30
Project: 1131-03-264

Client: SCSPA
Site: Chas. Naval Base Container Terminal




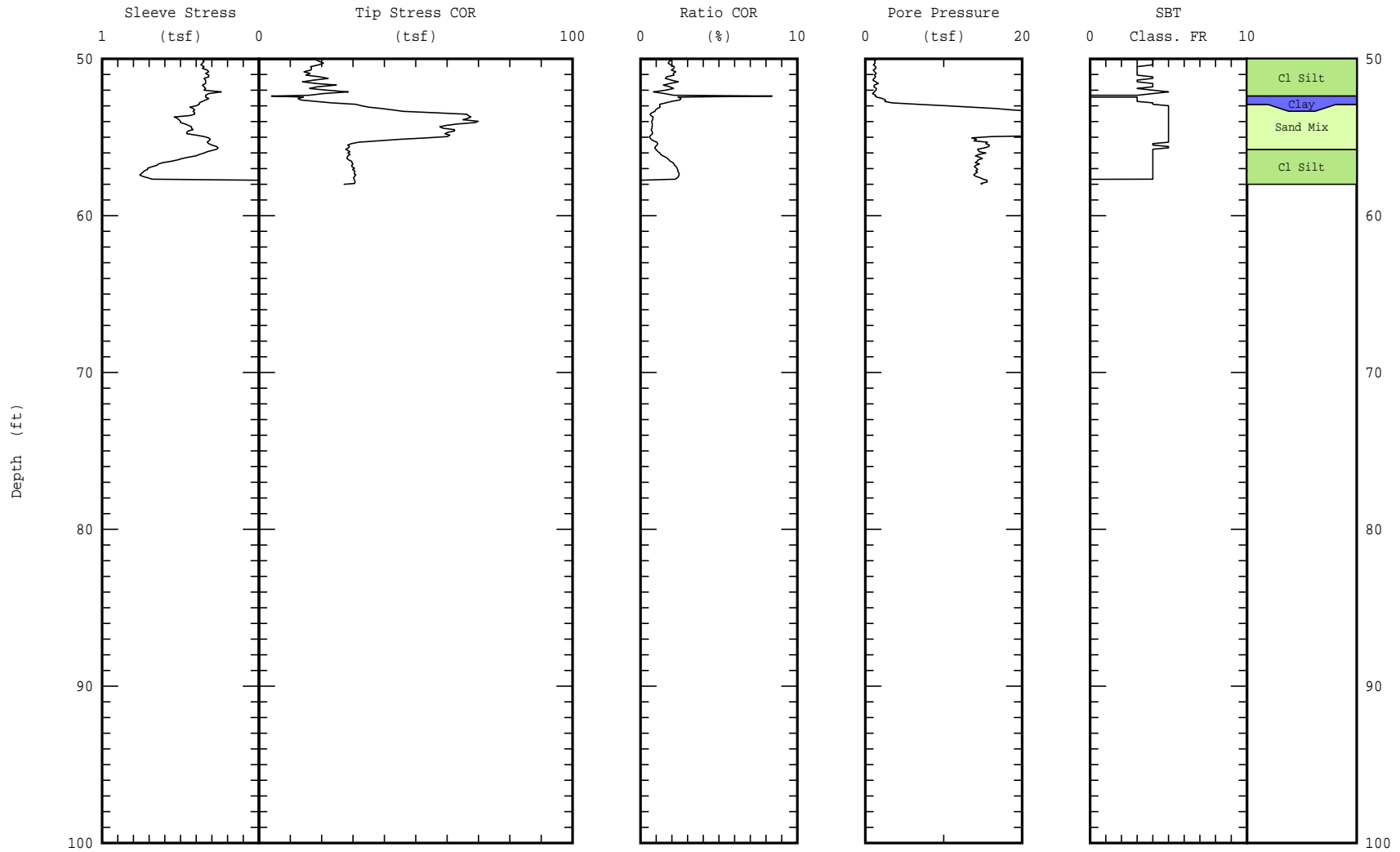
Maximum depth: 58.00 (ft)

Page 1 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)


Estimated Phreatic Surface

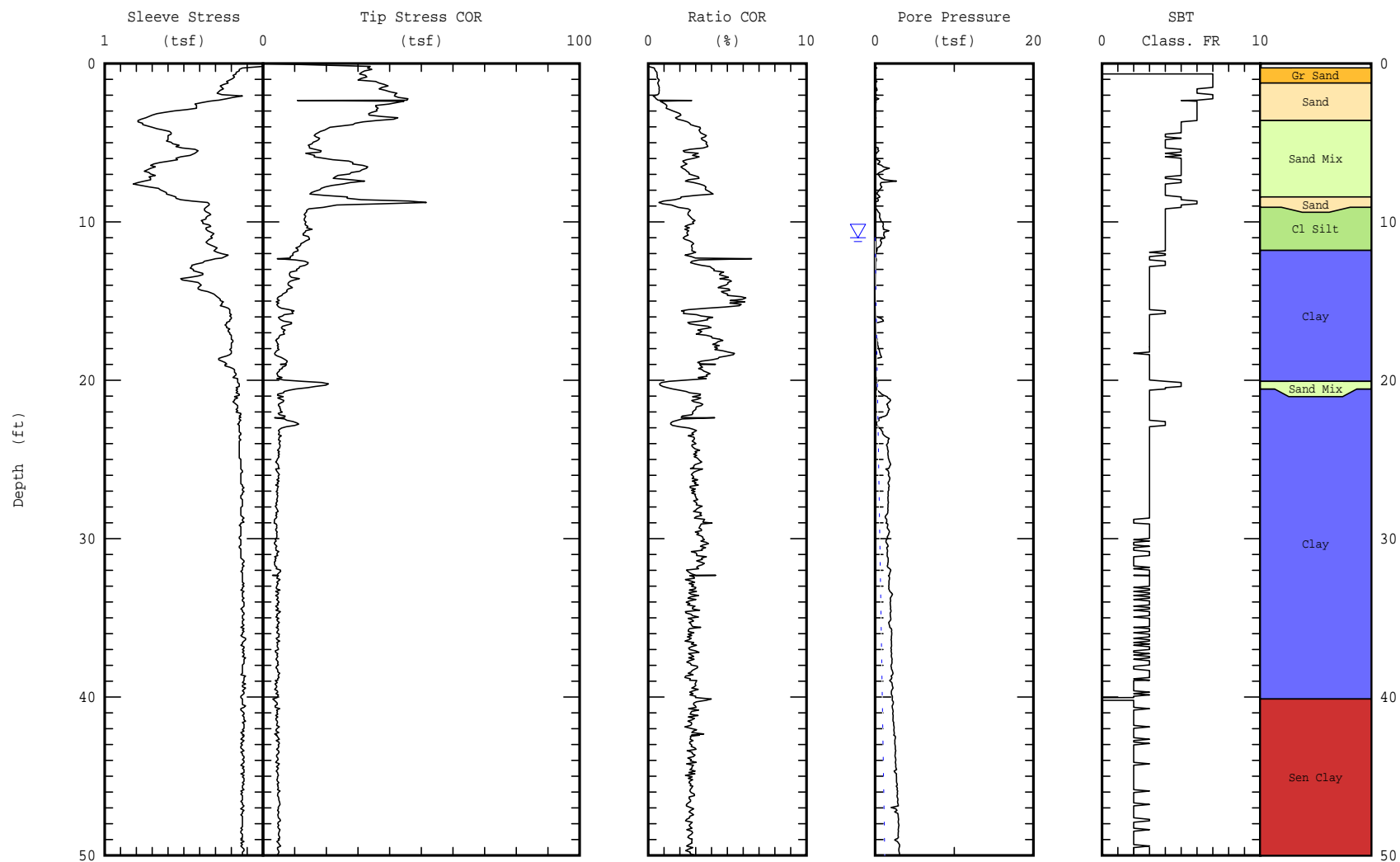
	S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464	Northing: 367190 Easting: 2325475 Elevation: 12.2 ft CLW	Date: 18/Jun/2003 Test ID: PAL-30 Project: 1131-03-264
	Client: SCSPA Site: Chas. Naval Base Container Terminal		



Maximum depth: 58.00 (ft)
 Page 2 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

 <p>S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464</p>	<p>Northing: 366775 Easting: 2325442 Elevation: 16.6 ft CLW</p>	<p>Date: 18/Jun/2003 Test ID: PAL-31 Project: 1131-03-264</p>
	<p>Client: SCSPA Site: Chas. Naval Base Container Terminal</p>	



Maximum depth: 80.94 (ft)

Page 1 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

Estimated Phreatic Surface

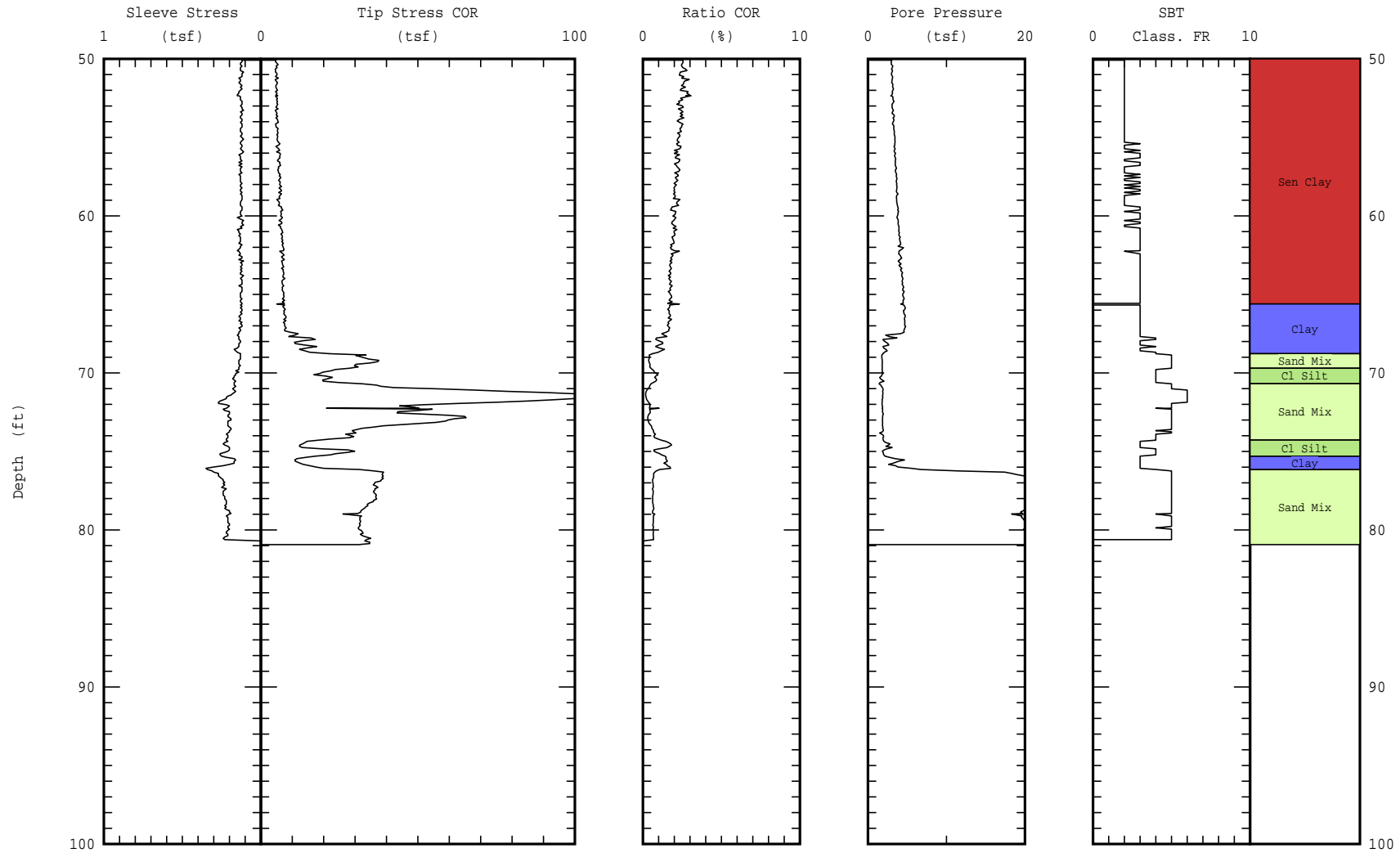


S&ME Inc. (843)884-0005
620 Wando Park Boulevard
Mt. Pleasant, SC 29464

Northing: 366775
Easting: 2325442
Elevation: 16.6 ft CLW

Date: 18/Jun/2003
Test ID: PAL-31
Project: 1131-03-264

Client: SCSPA
Site: Chas. Naval Base Container Terminal



Maximum depth: 80.94 (ft)

Page 2 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

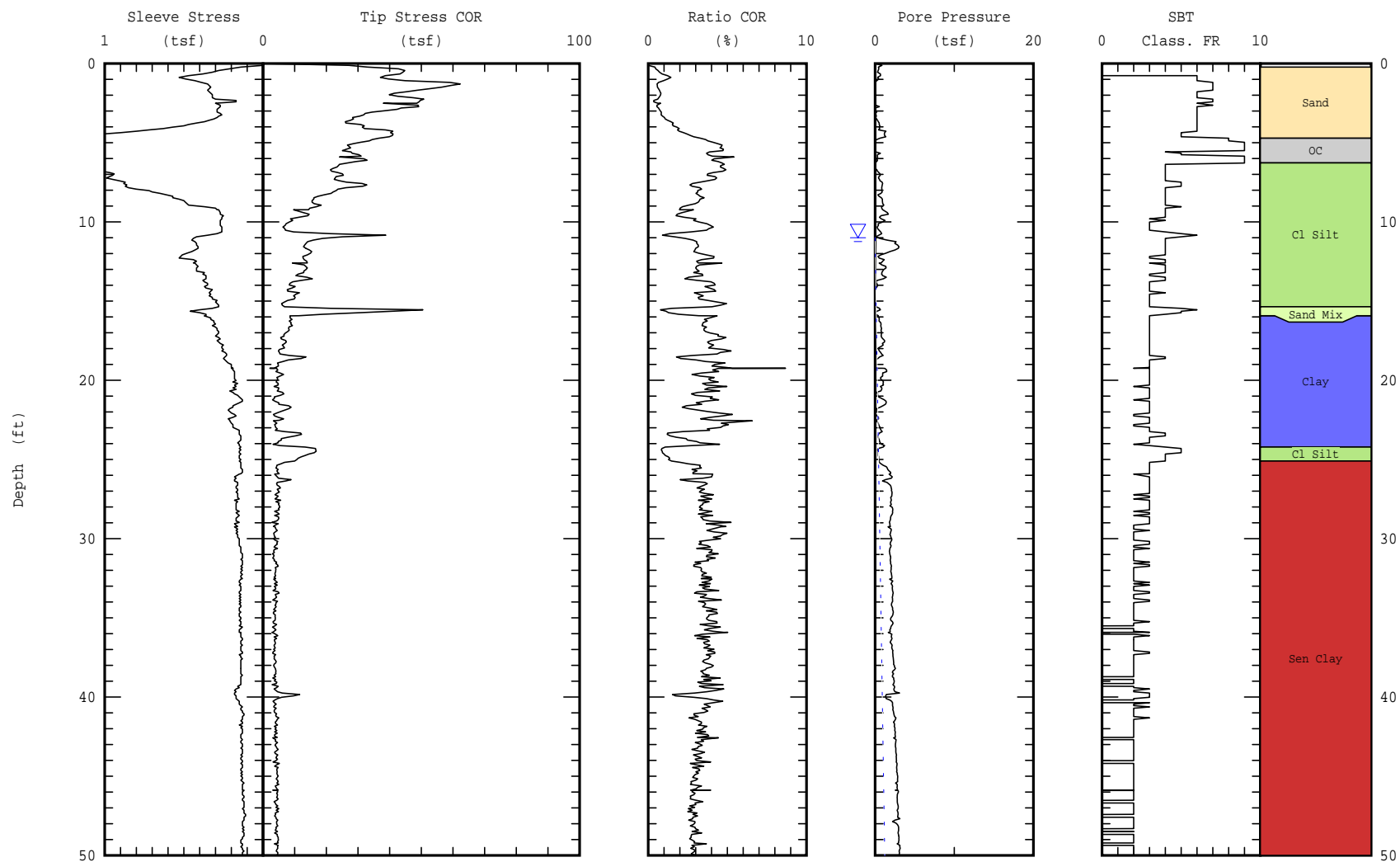


S&ME Inc. (843)884-0005
620 Wando Park Boulevard
Mt. Pleasant, SC 29464

Northing: 366382
Easting: 2325676
Elevation: 16.0 ft CLW

Date: 18/Jun/2003
Test ID: PAL-32
Project: 1131-03-264

Client: SCSPA
Site: Chas. Naval Base Container Terminal



Maximum depth: 88.84 (ft)

Page 1 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

Estimated Phreatic Surface

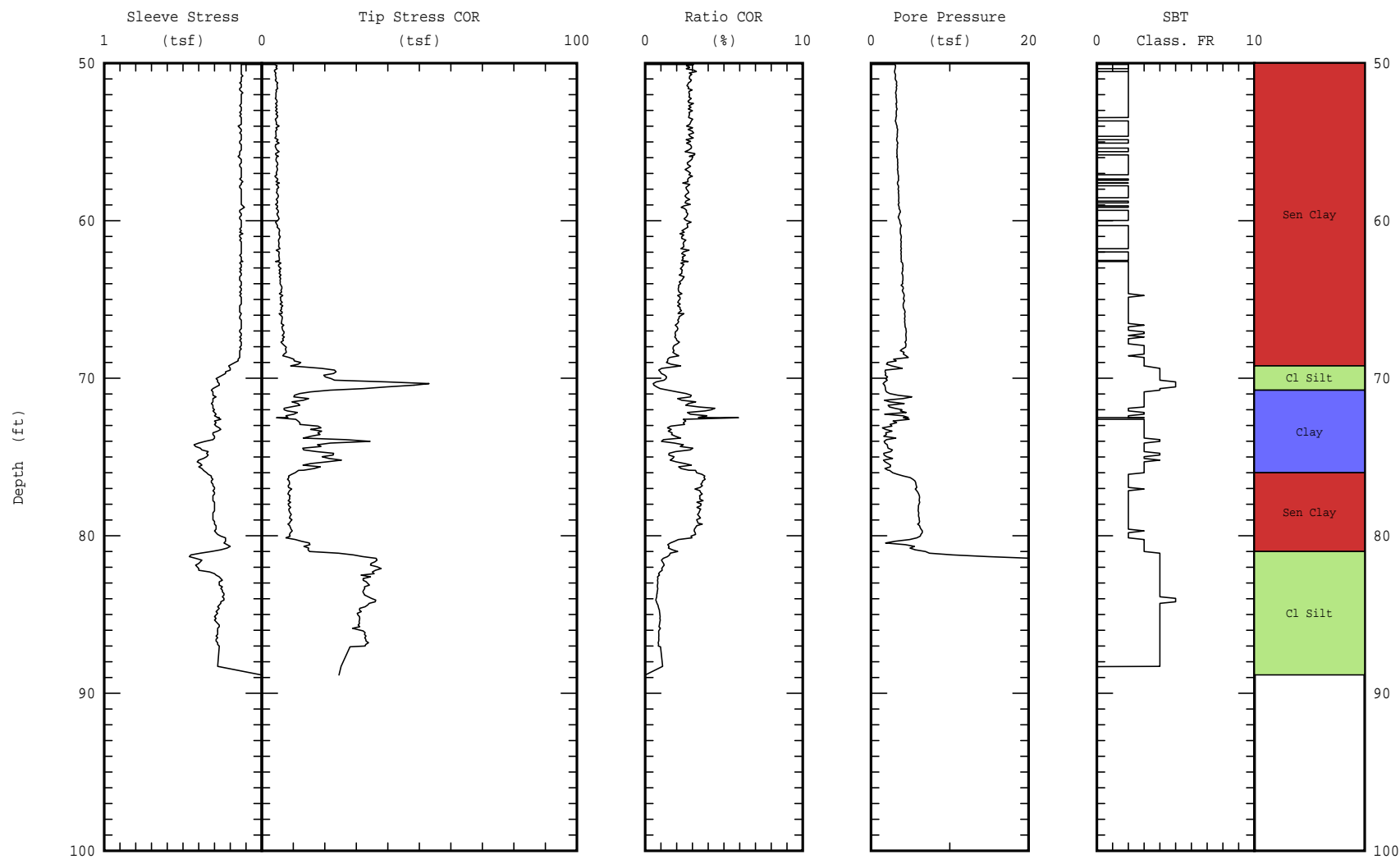


S&ME Inc. (843)884-0005
620 Wando Park Boulevard
Mt. Pleasant, SC 29464

Northing: 366382
Easting: 2325676
Elevation: 16.0 ft CLW

Date: 18/Jun/2003
Test ID: PAL-32
Project: 1131-03-264

Client: SCSPA
Site: Chas. Naval Base Container Terminal



Maximum depth: 88.84 (ft)

Page 2 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

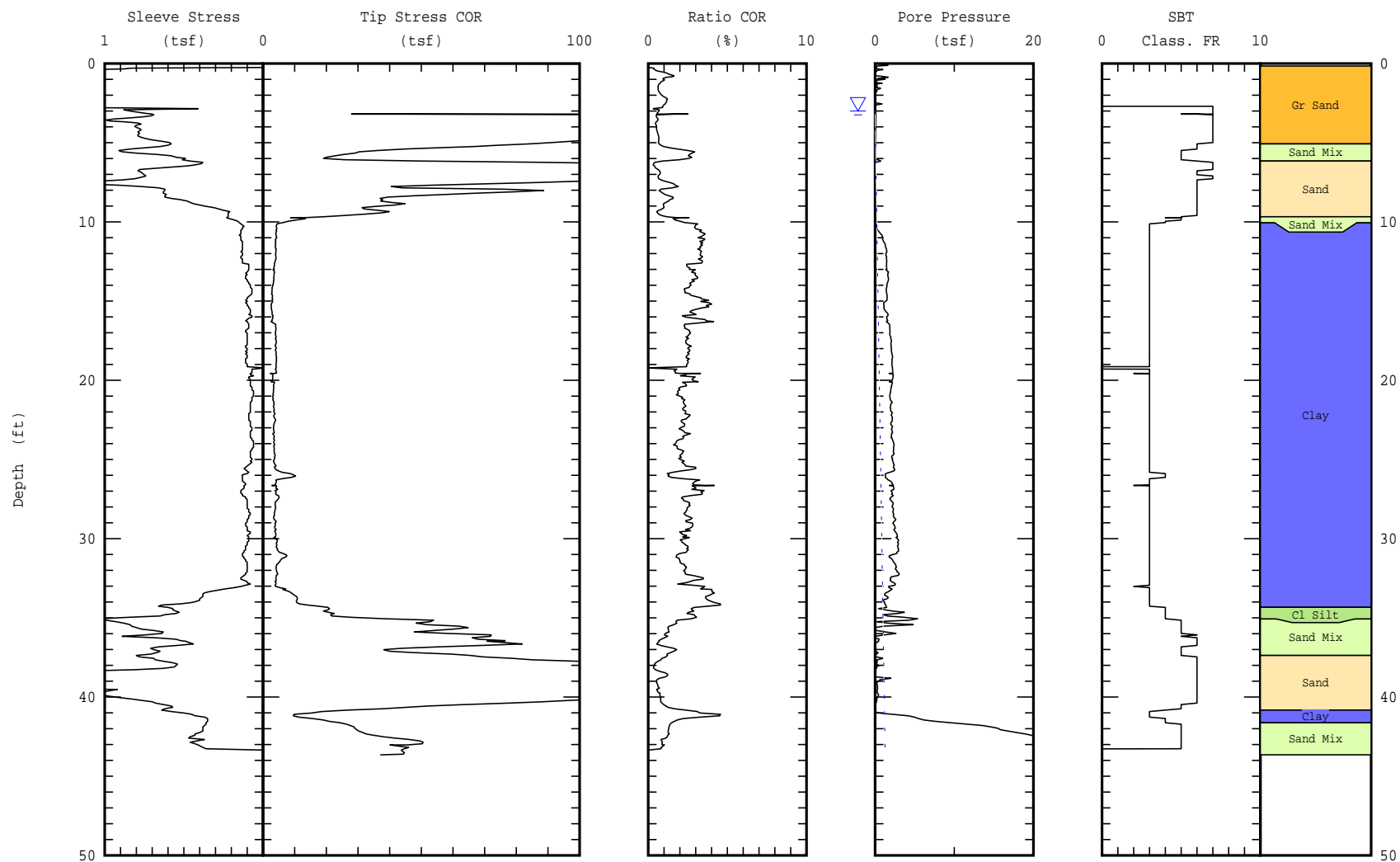


S&ME Inc. (843)884-0005
620 Wando Park Boulevard
Mt. Pleasant, SC 29464

Northing: 369395
Easting: 2325891
Elevation: 8.9 ft CLW

Date: 23/Jun/2003
Test ID: PAL-33
Project: 1131-03-264

Client: SCSPA
Site: Chas. Naval Base Container Terminal



Maximum depth: 43.65 (ft)

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

▽ Estimated Phreatic Surface

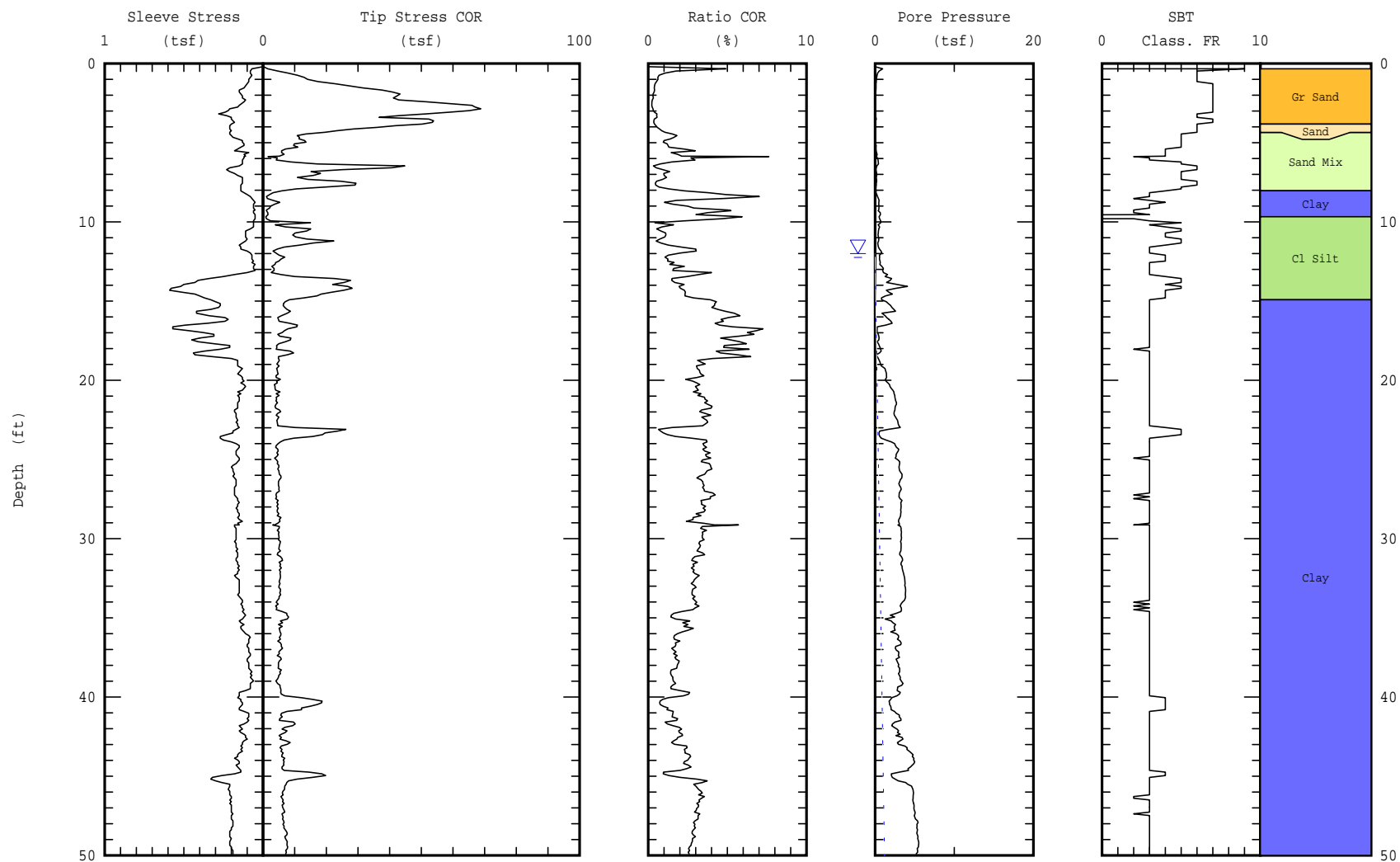


S&ME Inc. (843)884-0005
620 Wando Park Boulevard
Mt. Pleasant, SC 29464

Northing: 368786
Easting: 2325873
Elevation: 19.7 ft CLW

Date: 25/Jun/2003
Test ID: PAL-34
Project: 1131-03-264

Client: SCSA
Site: Chas. Naval Base Container Terminal




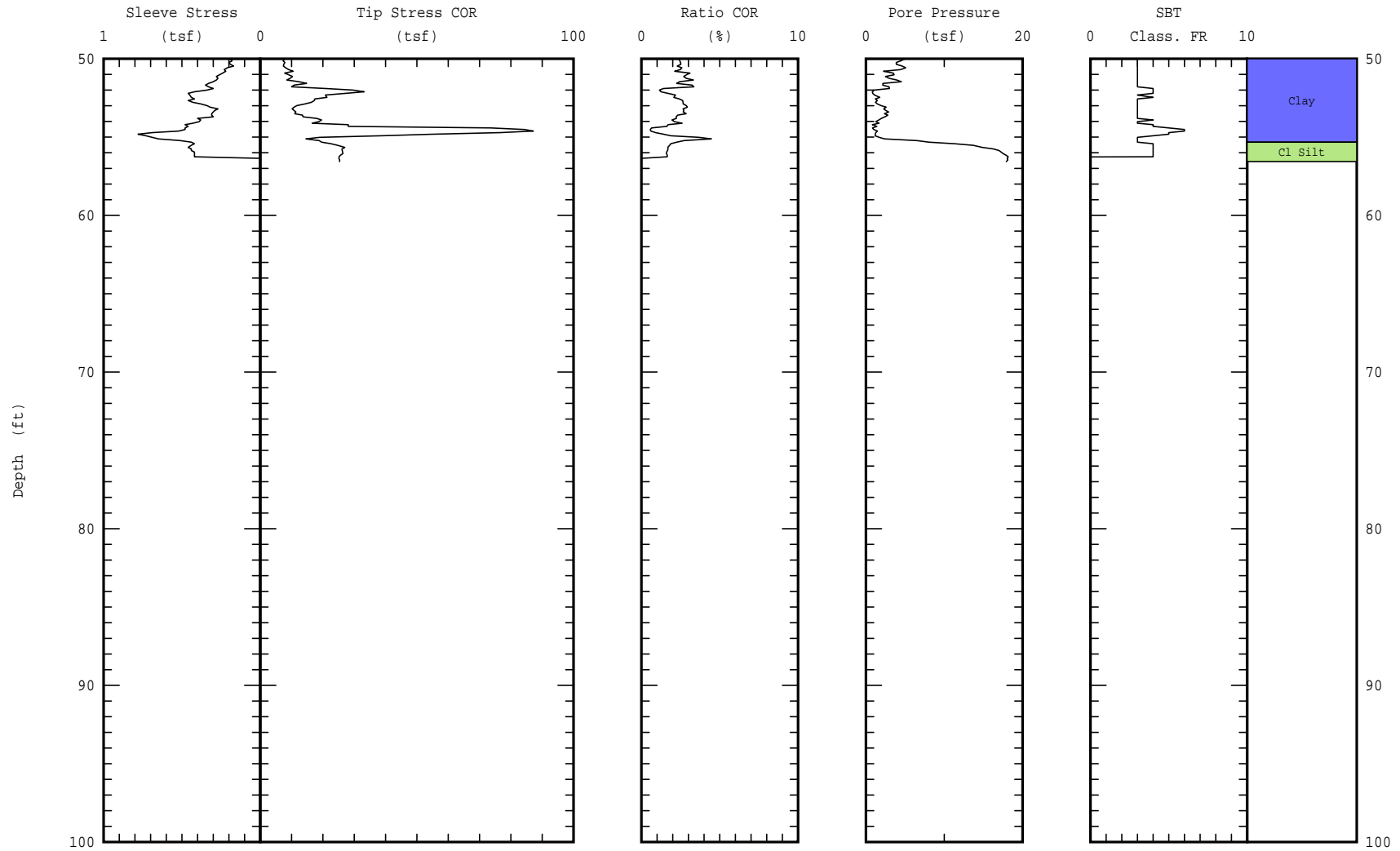
Maximum depth: 56.57 (ft)

Page 1 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

Estimated Phreatic Surface

 S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464	Northing: 368786 Easting: 2325873 Elevation: 19.7 ft CLW	Date: 25/Jun/2003 Test ID: PAL-34 Project: 1131-03-264
	Client: SCSPA Site: Chas. Naval Base Container Terminal	



Maximum depth: 56.57 (ft)
 Page 2 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

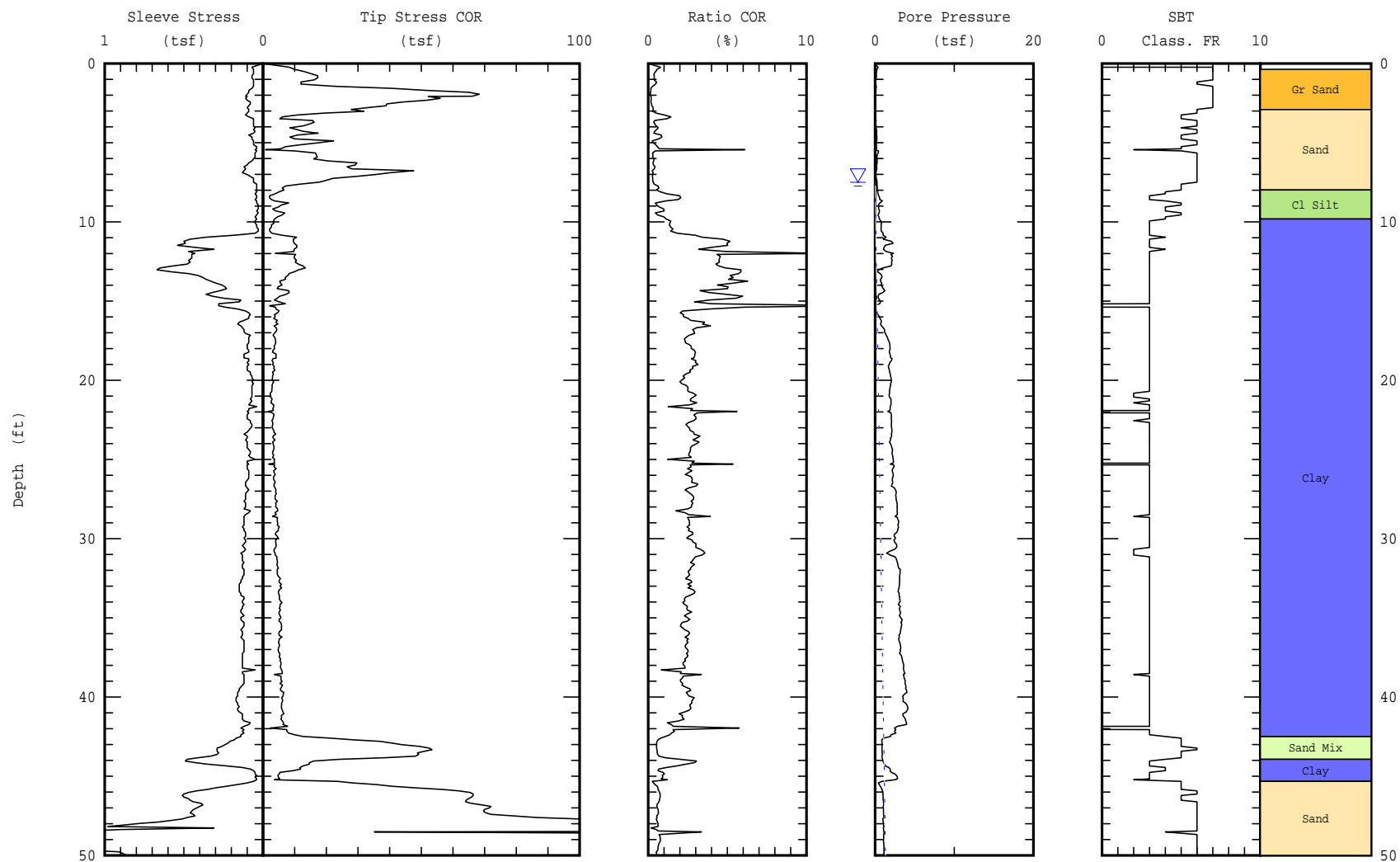


S&ME Inc. (843)884-0005
620 Wando Park Boulevard
Mt. Pleasant, SC 29464

Northing: 368389
Easting: 2325876
Elevation: 19.0 ft CLW

Date: 25/Jun/2003
Test ID: PAL-35
Project: 1131-03-264

Client: SCSA
Site: Chas. Naval Base Container Terminal




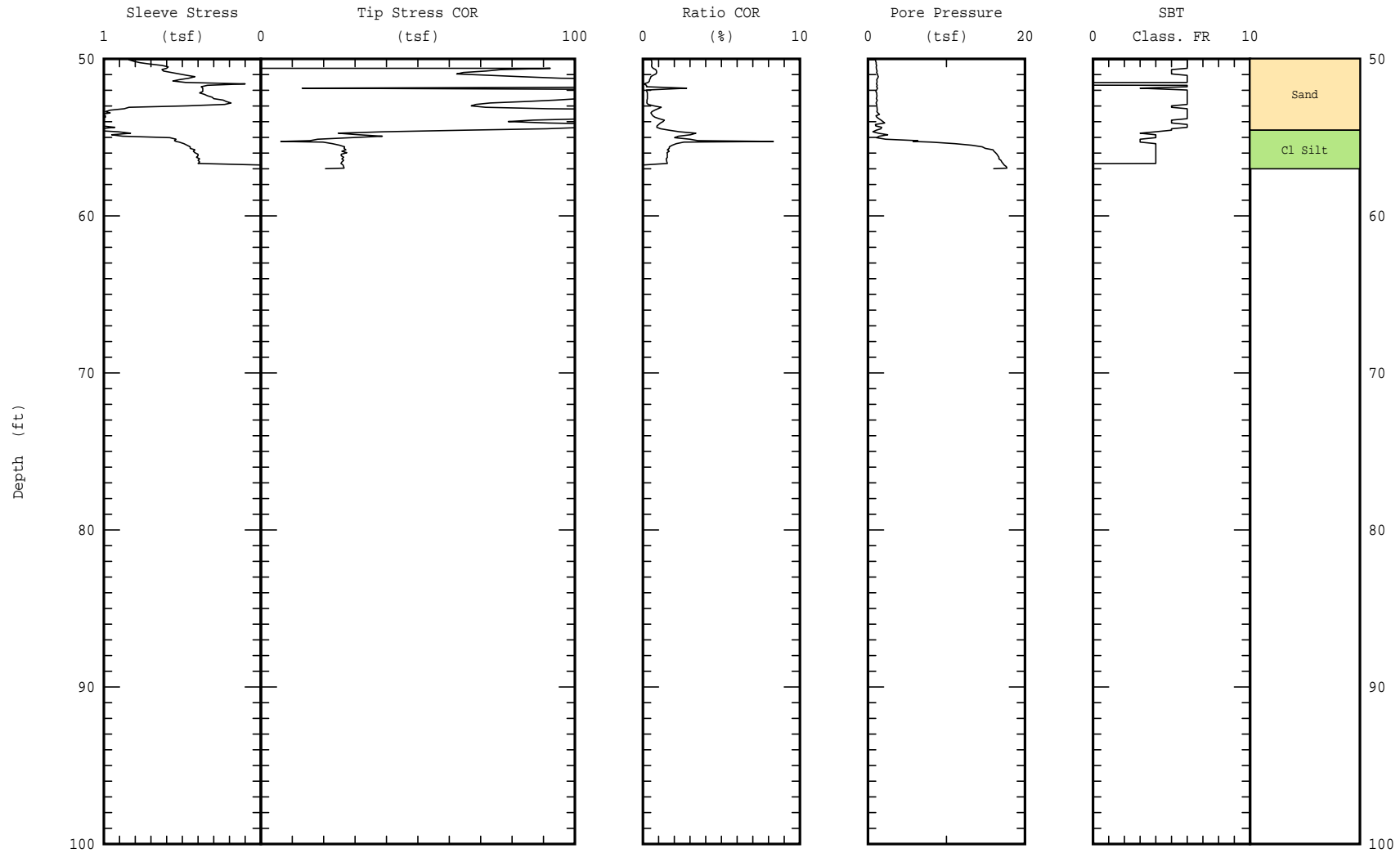
Maximum depth: 57.00 (ft)

Page 1 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)


Estimated Phreatic Surface

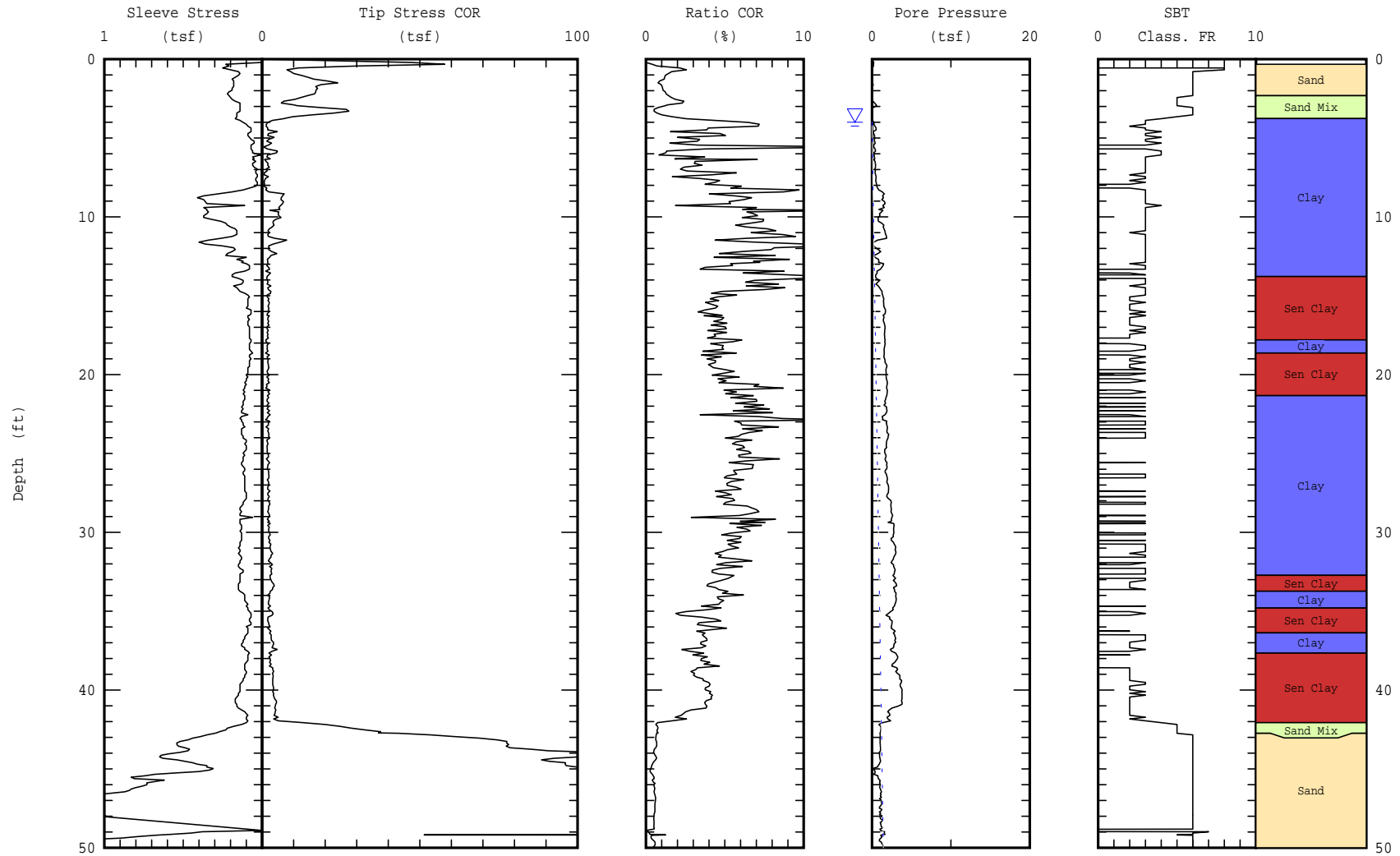
 <p>S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464</p>	<p>Northing: 368389 Easting: 2325876 Elevation: 19.0 ft CLW</p>	<p>Date: 25/Jun/2003 Test ID: PAL-35 Project: 1131-03-264</p>
	<p>Client: SCSPA Site: Chas. Naval Base Container Terminal</p>	




Maximum depth: 57.00 (ft)
Page 2 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

 <p>S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464</p>	<p>Northing: 367996 Easting: 2325882 Elevation: 15.5 ft CLW</p>	<p>Date: 19/Jun/2003 Test ID: PAL-36 Project: 1131-03-264</p>
	<p>Client: SCSPA Site: Chas. Naval Base Container Terminal</p>	



Page 1 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)
 Estimated Phreatic Surface

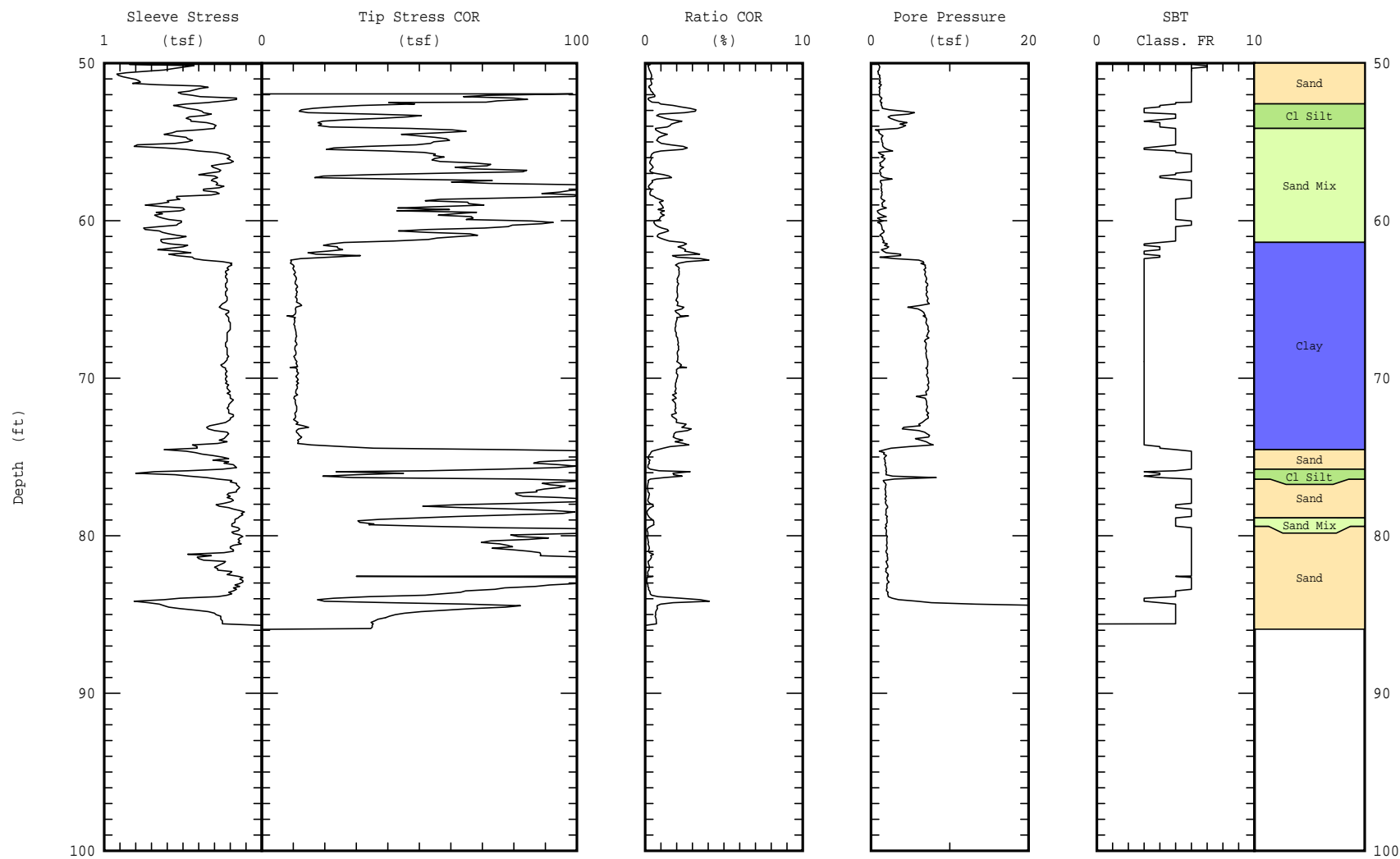


S&ME Inc. (843)884-0005
620 Wando Park Boulevard
Mt. Pleasant, SC 29464

Northing: 367996
Easting: 2325882
Elevation: 15.5 ft CLW

Date: 19/Jun/2003
Test ID: PAL-36
Project: 1131-03-264

Client: SCSPA
Site: Chas. Naval Base Container Terminal



Maximum depth: 85.94 (ft)

Page 2 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

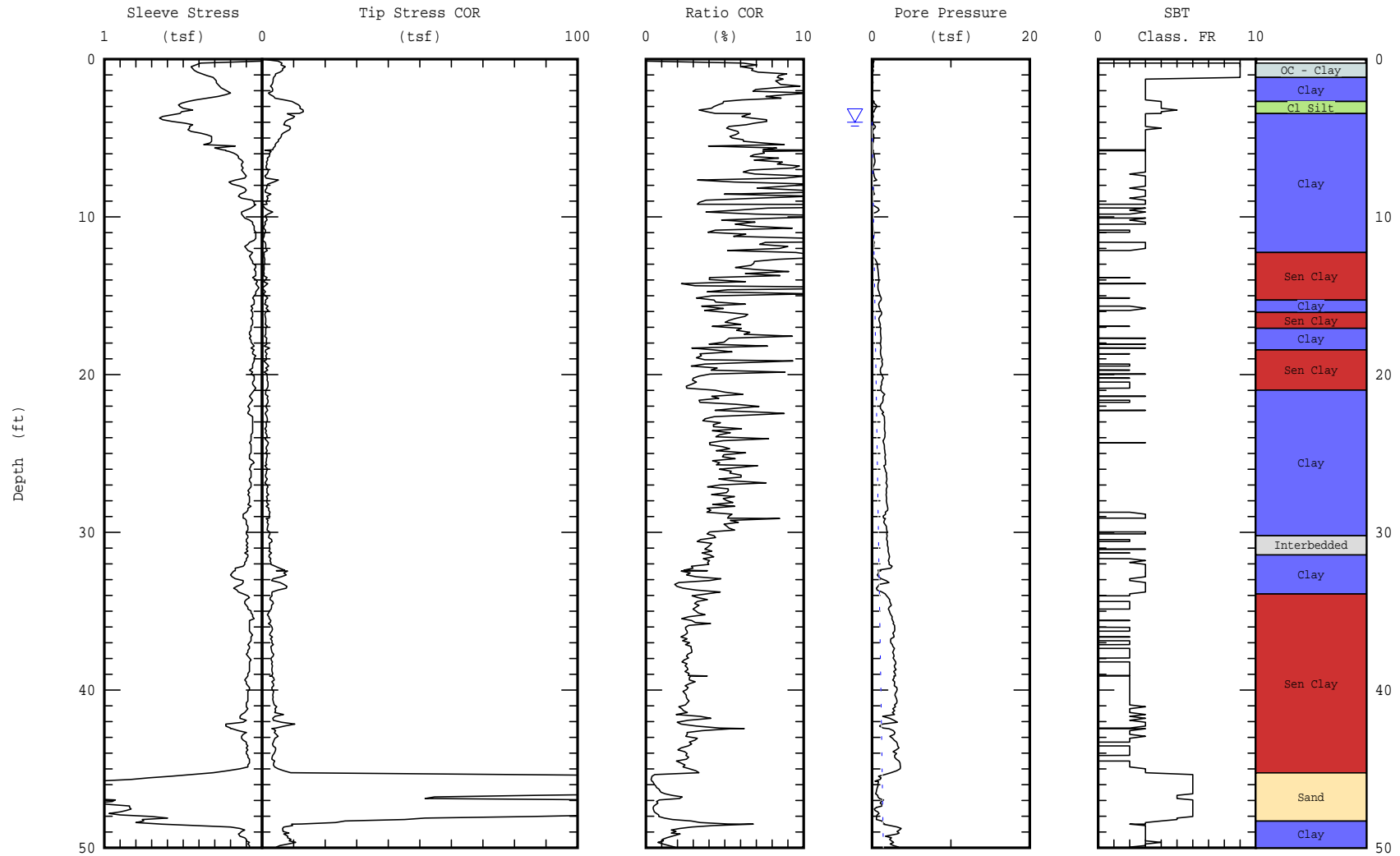


S&ME Inc. (843)884-0005
620 Wando Park Boulevard
Mt. Pleasant, SC 29464

Northing: 367582
Easting: 2325879
Elevation: 13.3 ft CLW

Date: 20/Jun/2003
Test ID: PAL-37
Project: 1131-03-264

Client: SCSA
Site: Chas. Naval Base Container Terminal



Maximum depth: 53.09 (ft)
Page 1 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)
Estimated Phreatic Surface

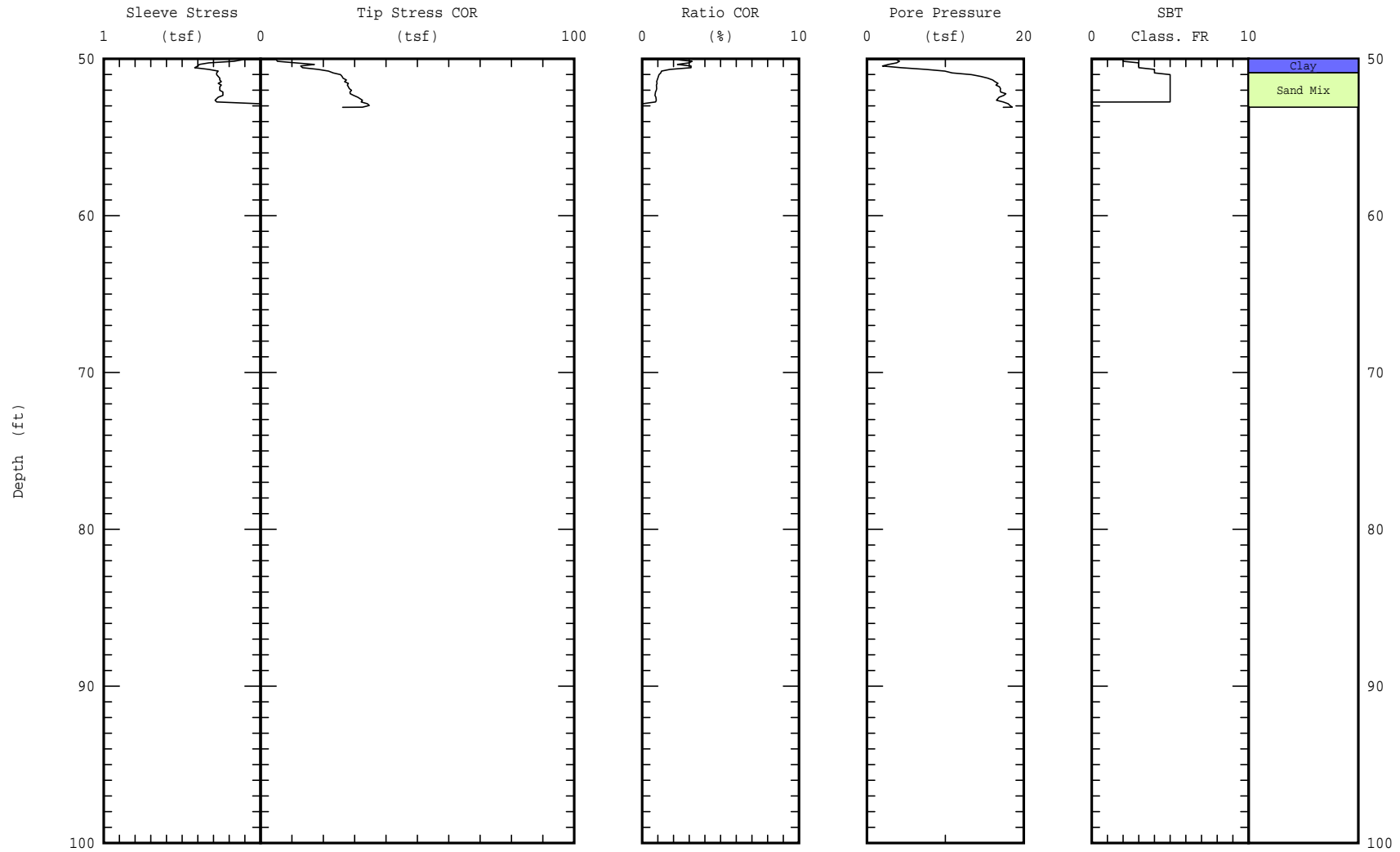



S&ME Inc. (843)884-0005
620 Wando Park Boulevard
Mt. Pleasant, SC 29464

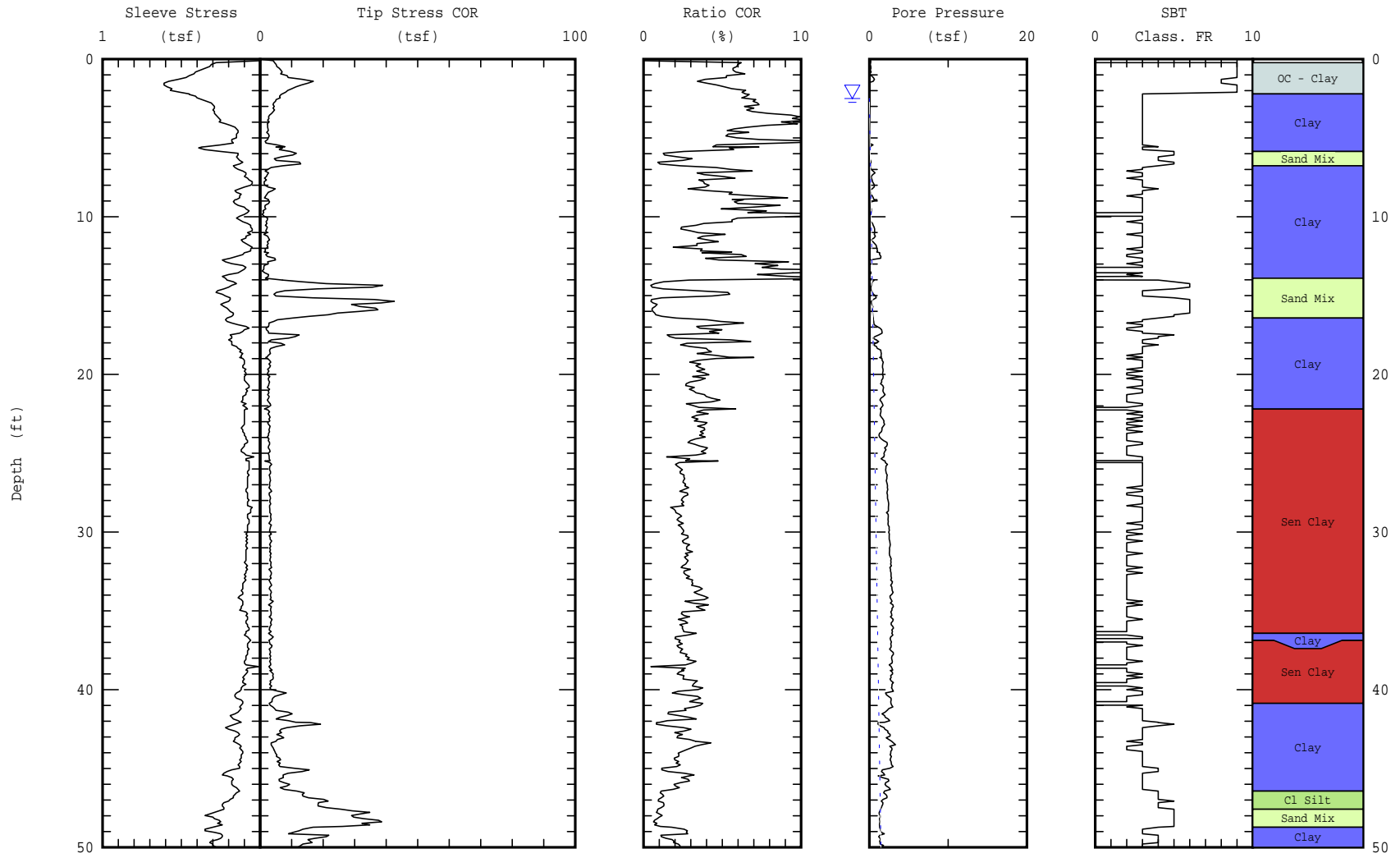
Northing: 367582
Easting: 2325879
Elevation: 13.3 ft CLW

Date: 20/Jun/2003
Test ID: PAL-37
Project: 1131-03-264

Client: SCSPA
Site: Chas. Naval Base Container Terminal




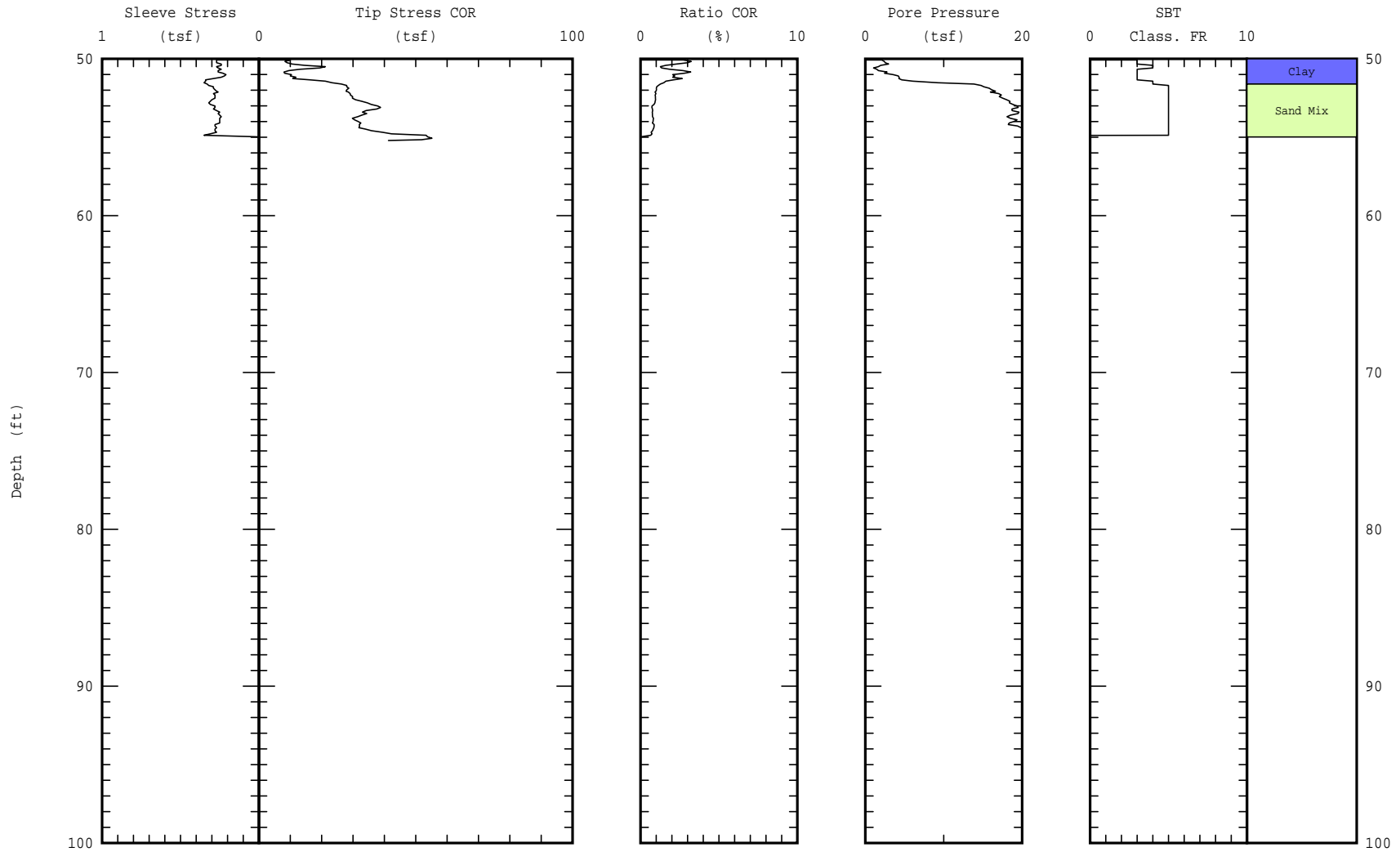
 S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464	Northing: 367189 Easting: 2325869 Elevation: 12.4 ft CLW	Date: 19/Jun/2003 Test ID: PAL-38 Project: 1131-03-264
	Client: SCSPA Site: Chas. Naval Base Container Terminal	



Maximum depth: 55.22 (ft)
 Page 1 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)
 Estimated Phreatic Surface

	S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464	Northing: 367189 Easting: 2325869 Elevation: 12.4 ft CLW	Date: 19/Jun/2003 Test ID: PAL-38 Project: 1131-03-264
	Client: SCSPA Site: Chas. Naval Base Container Terminal		



Maximum depth: 55.22 (ft)
Page 2 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)



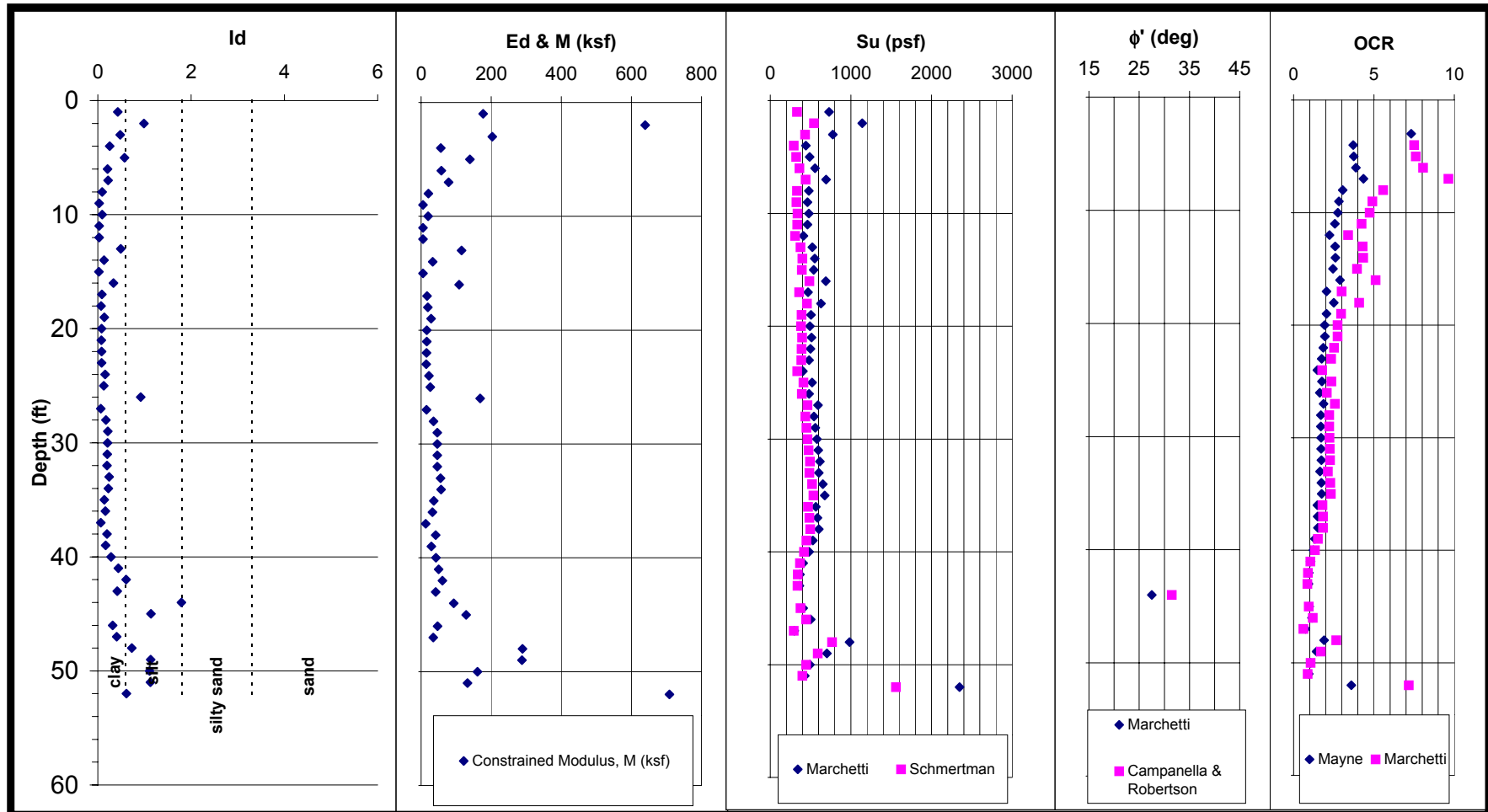
DILATOMETER TEST RESULTS

Test ID: PAL-38

Site: Charleston Naval Base Container Terminal

Location: N. Charleston, SC

Project No.: 1131-03-264



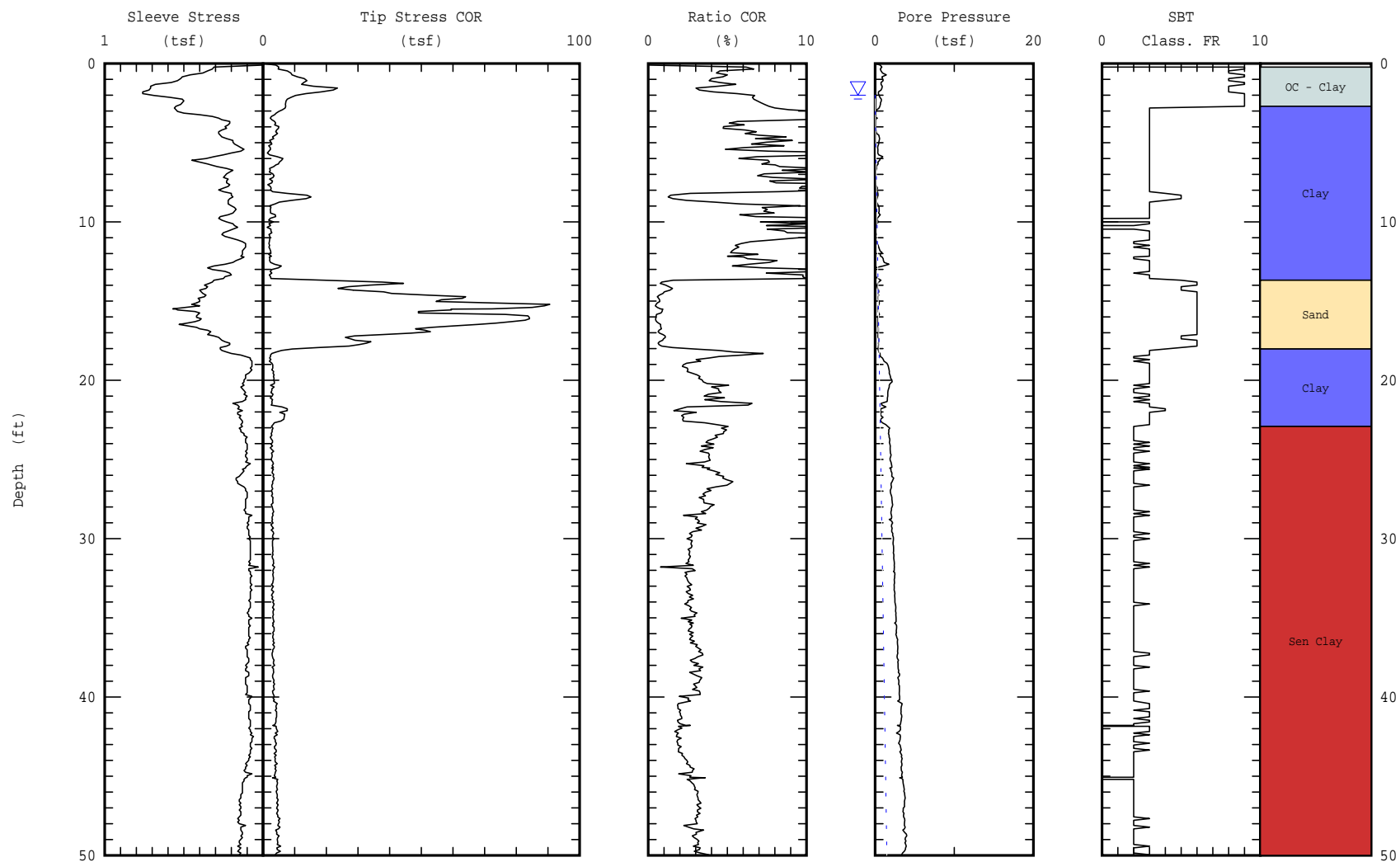


S&ME Inc. (843)884-0005
620 Wando Park Boulevard
Mt. Pleasant, SC 29464

Northing: 366790
Easting: 2325872
Elevation: 12.6 ft CLW

Date: 19/Jun/2003
Test ID: PAL-39
Project: 1131-03-264

Client: SCSPA
Site: Chas. Naval Base Container Terminal



Maximum depth: 75.08 (ft)

Page 1 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

Estimated Phreatic Surface

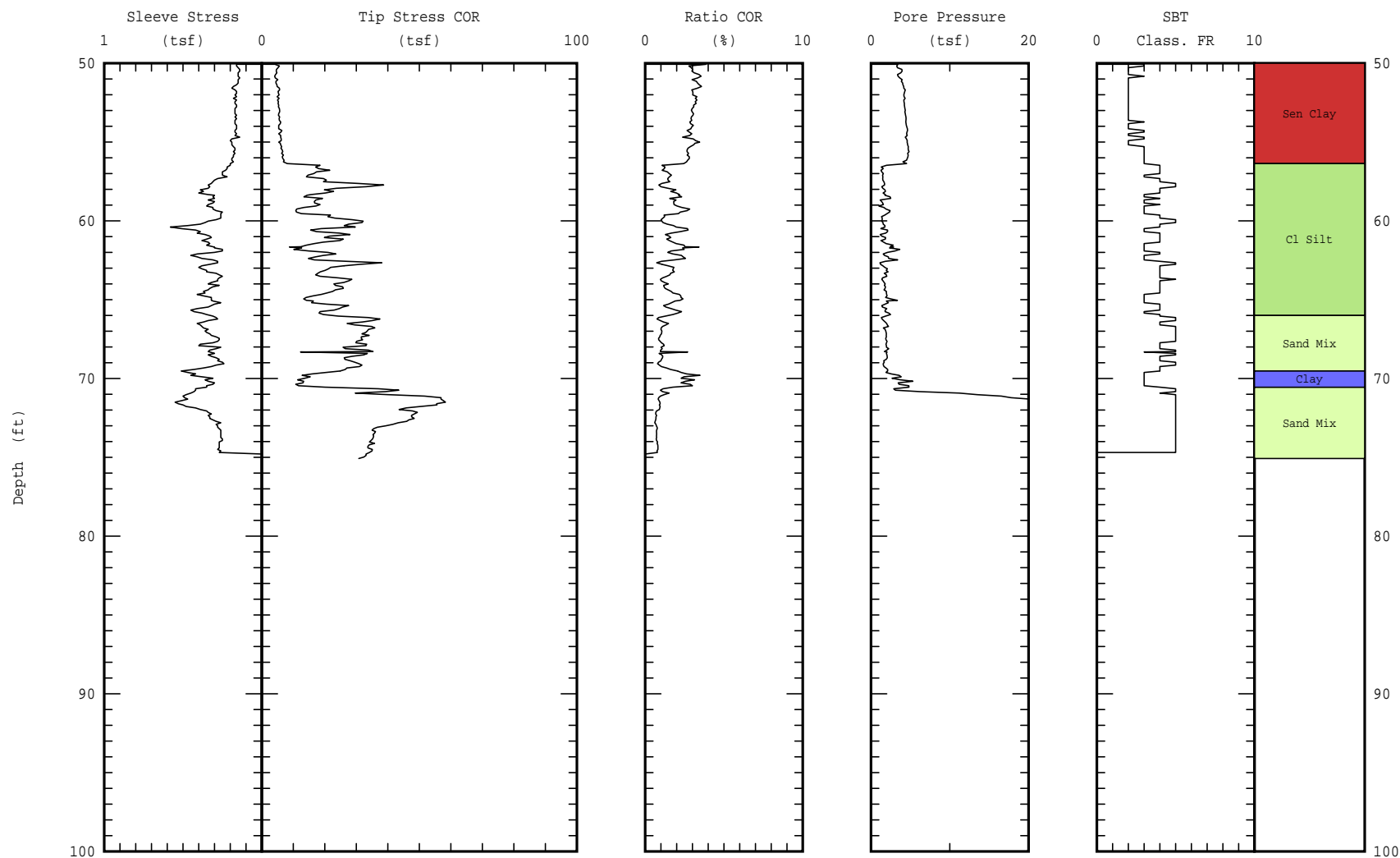


S&ME Inc. (843)884-0005
620 Wando Park Boulevard
Mt. Pleasant, SC 29464

Northing: 366790
Easting: 2325872
Elevation: 12.6 ft CLW

Date: 19/Jun/2003
Test ID: PAL-39
Project: 1131-03-264


Client: SCSPA
Site: Chas. Naval Base Container Terminal

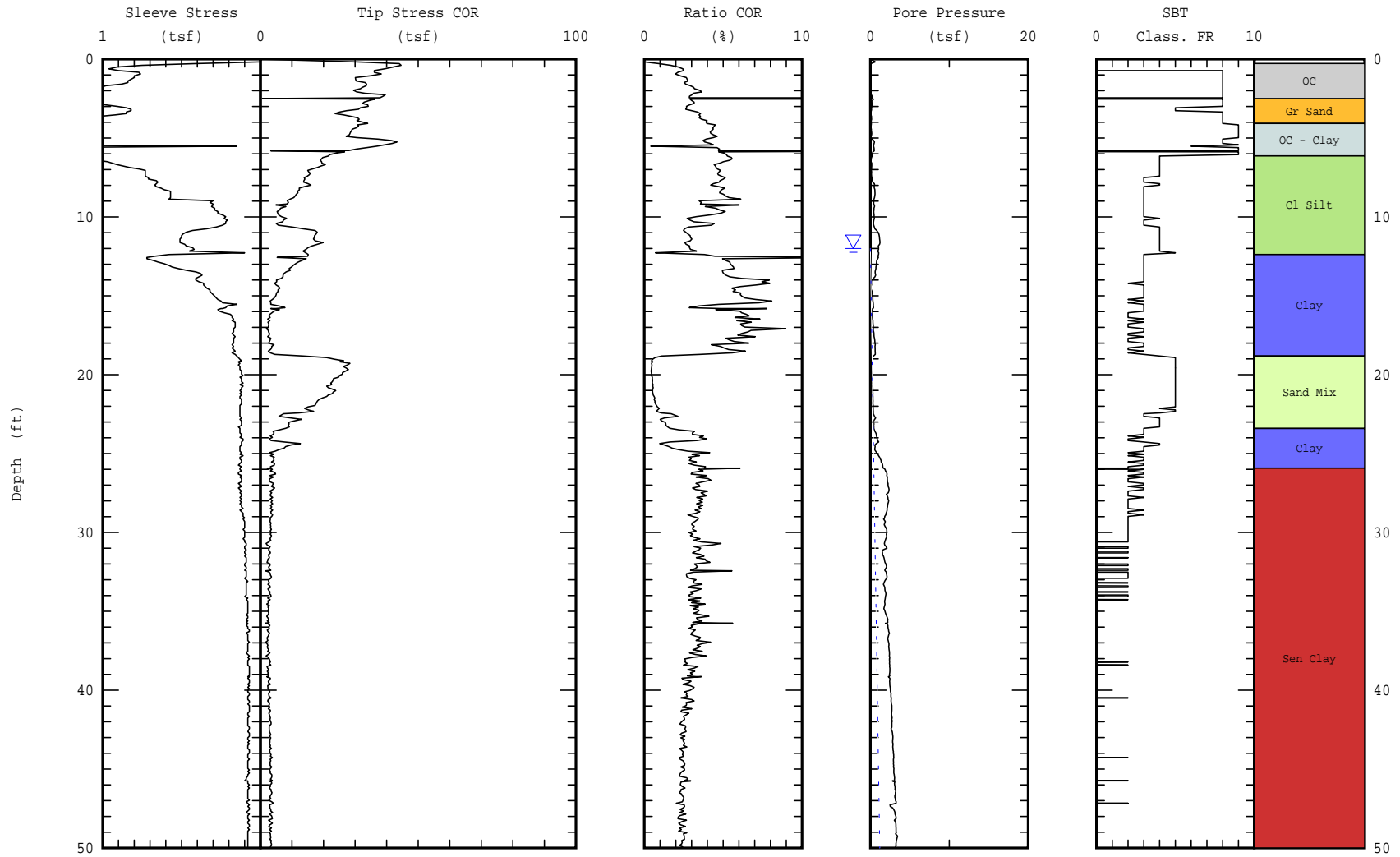


Maximum depth: 75.08 (ft)

Page 2 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

 S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464	Northing: 366345 Easting: 2326096 Elevation: 15.3 ft CLW	Date: 18/Jun/2003 Test ID: PAL-40 Project: 1131-03-264
	Client: SCSA Site: Chas. Naval Base Container Terminal	



Maximum depth: 85.68 (ft)

Page 1 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

Estimated Phreatic Surface

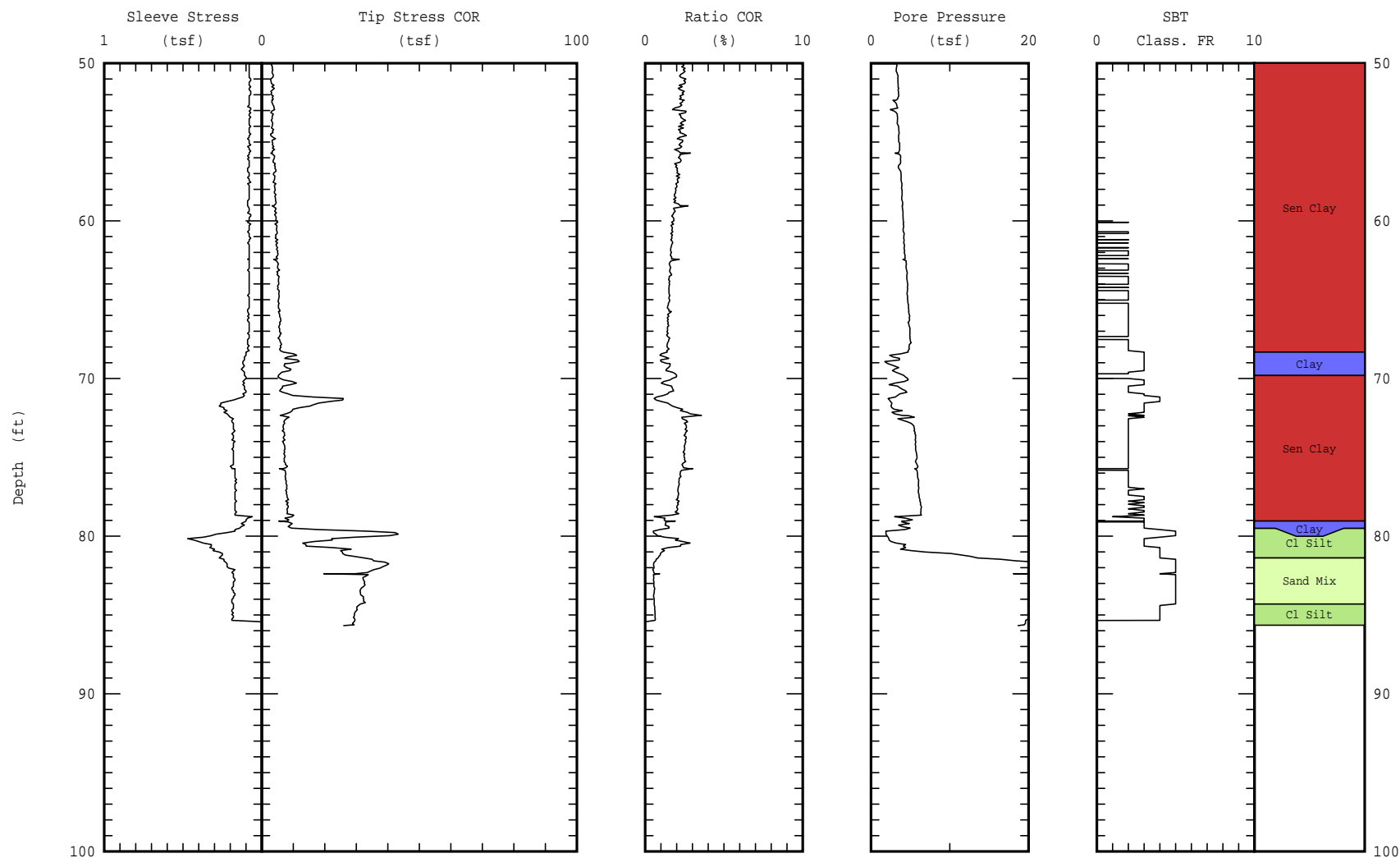


S&ME Inc. (843)884-0005
620 Wando Park Boulevard
Mt. Pleasant, SC 29464

Northing: 366345
Easting: 2326096
Elevation: 15.3 ft CLW

Date: 18/Jun/2003
Test ID: PAL-40
Project: 1131-03-264

Client: SCSPA
Site: Chas. Naval Base Container Terminal



Maximum depth: 85.68 (ft)

Page 2 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

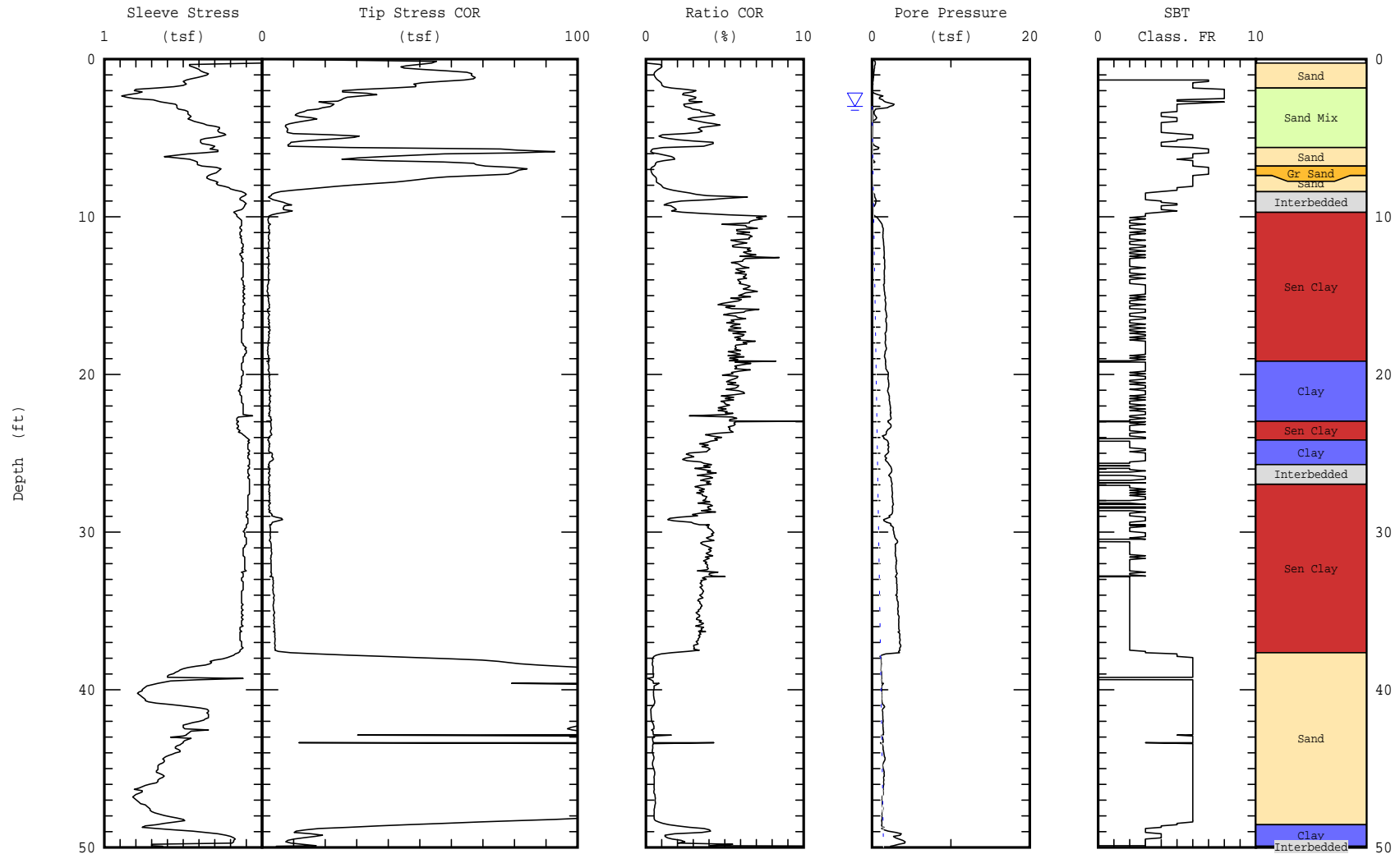


S&ME Inc. (843)884-0005
620 Wando Park Boulevard
Mt. Pleasant, SC 29464

Northing: 369476
Easting: 2326248
Elevation: 9.2 ft CLW

Date: 23/Jun/2003
Test ID: PAL-41
Project: 1131-03-264

Client: SCSA
Site: Chas. Naval Base Container Terminal




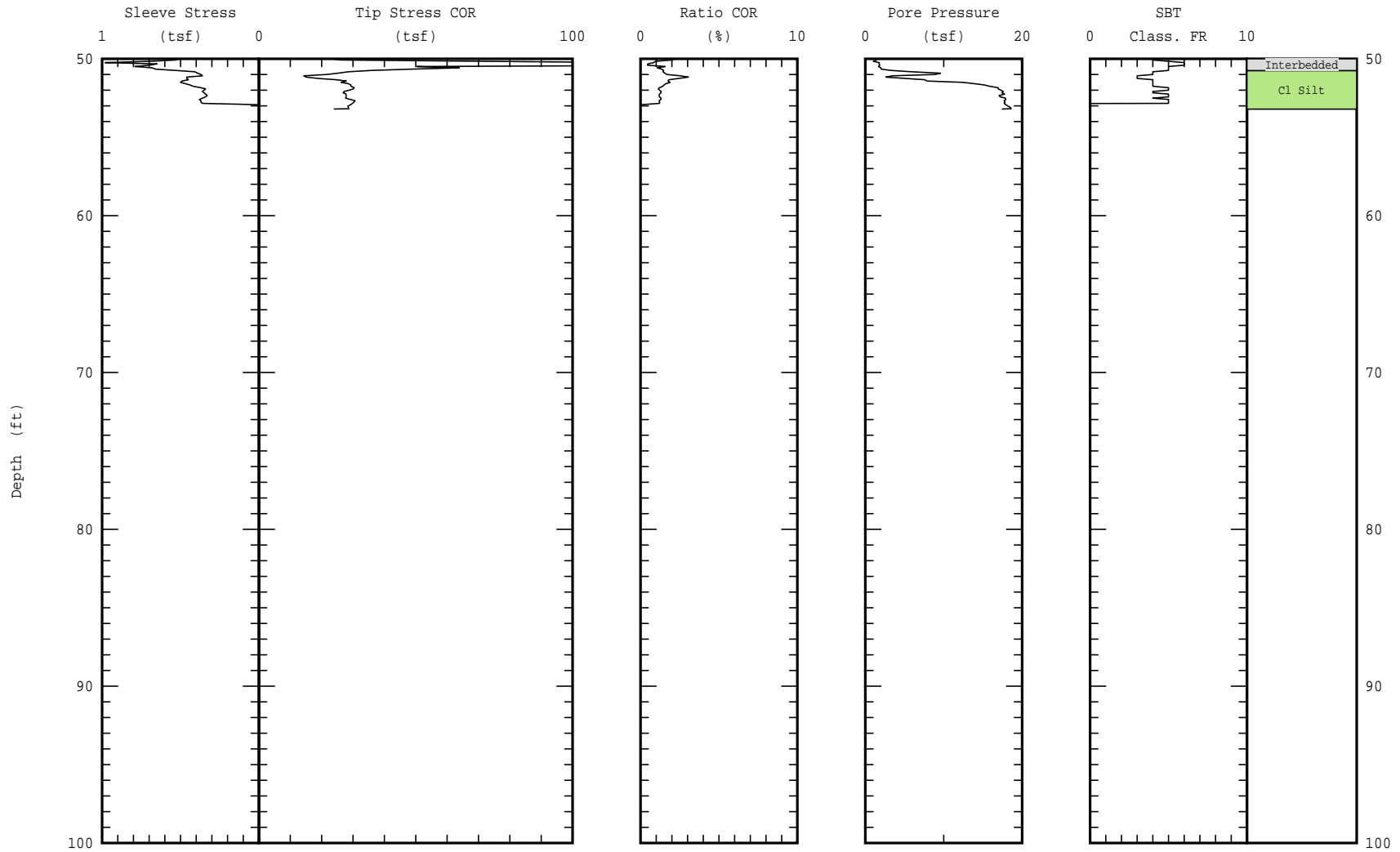
Maximum depth: 53.21 (ft)

Page 1 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)


Estimated Phreatic Surface

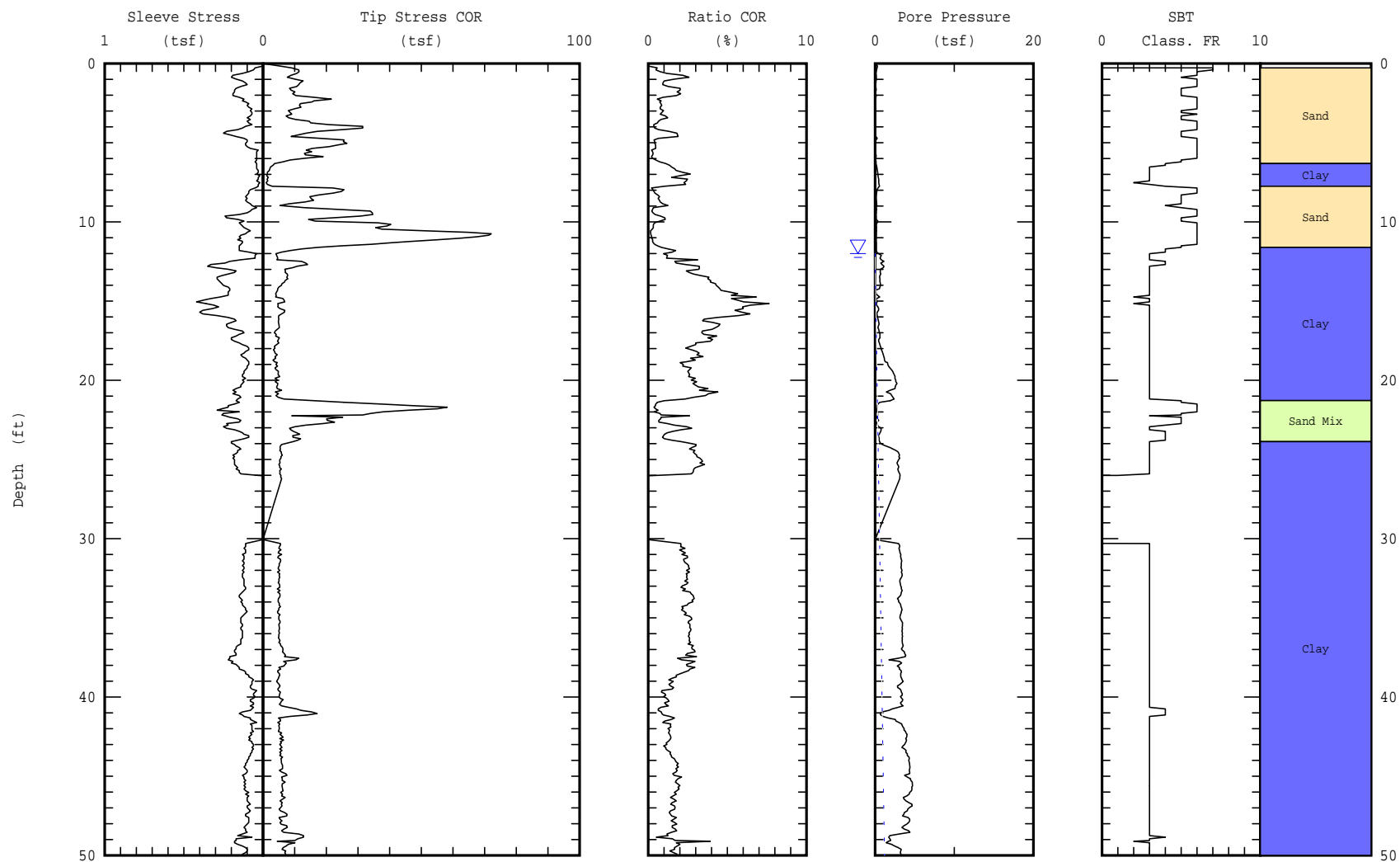
	S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464	Northing: 369476 Easting: 2326248 Elevation: 9.2 ft CLW	Date: 23/Jun/2003 Test ID: PAL-41 Project: 1131-03-264
	Client: SCSPA Site: Chas. Naval Base Container Terminal		



Maximum depth: 53.21 (ft)
 Page 2 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

	S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464	Northing: 368997 Easting: 2326276 Elevation: 20.2 ft CLW	Date: 25/Jun/2003 Test ID: PAL-42 Project: 1131-03-264
	Client: SCSPA Site: Chas. Naval Base Container Terminal		




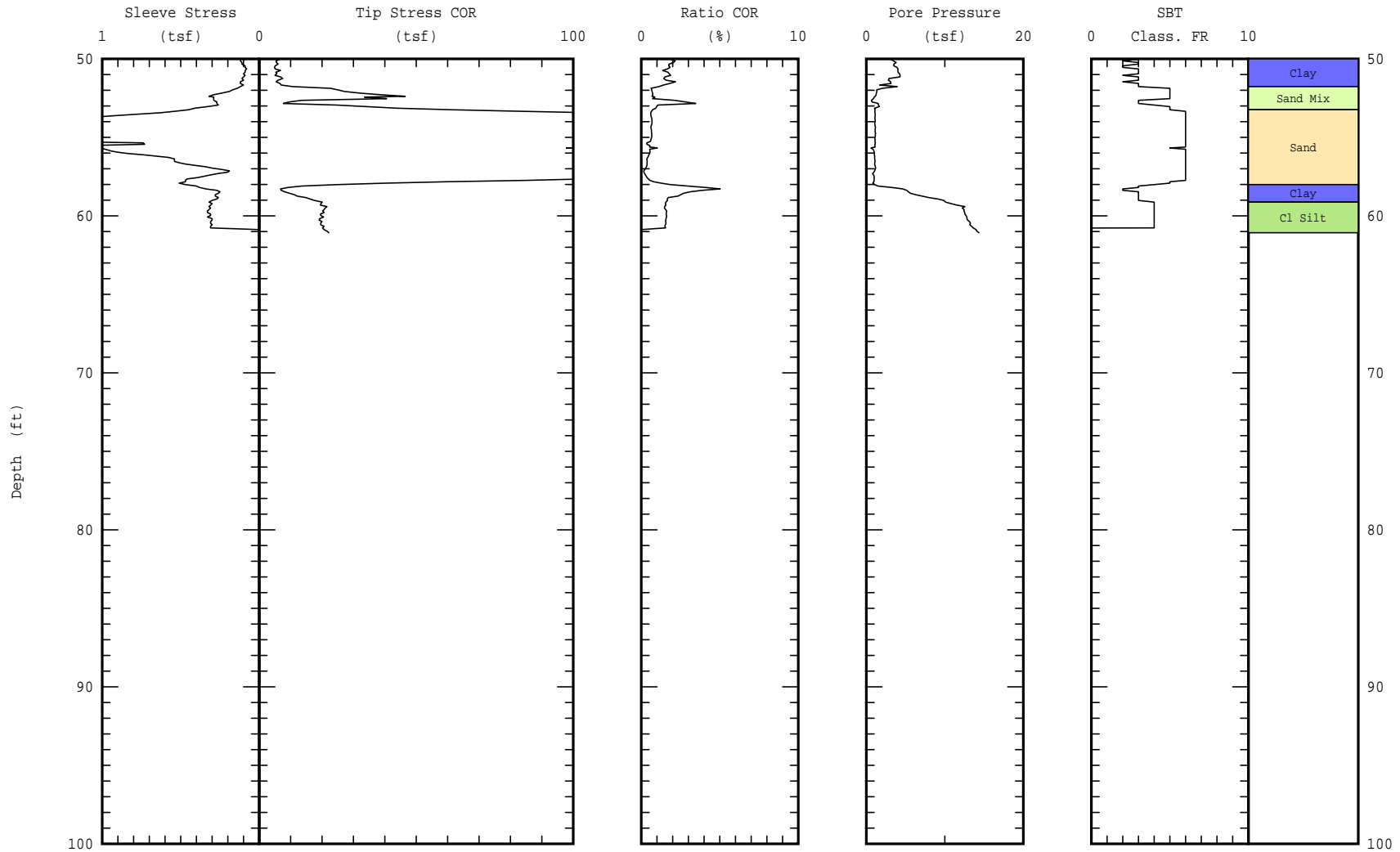
Maximum depth: 61.08 (ft)

Page 1 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

Estimated Phreatic Surface

 S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464	Northing: 368997 Easting: 2326276 Elevation: 20.2 ft CLW	Date: 25/Jun/2003 Test ID: PAL-42 Project: 1131-03-264
	Client: SCSPA Site: Chas. Naval Base Container Terminal	



Maximum depth: 61.08 (ft)
 Page 2 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

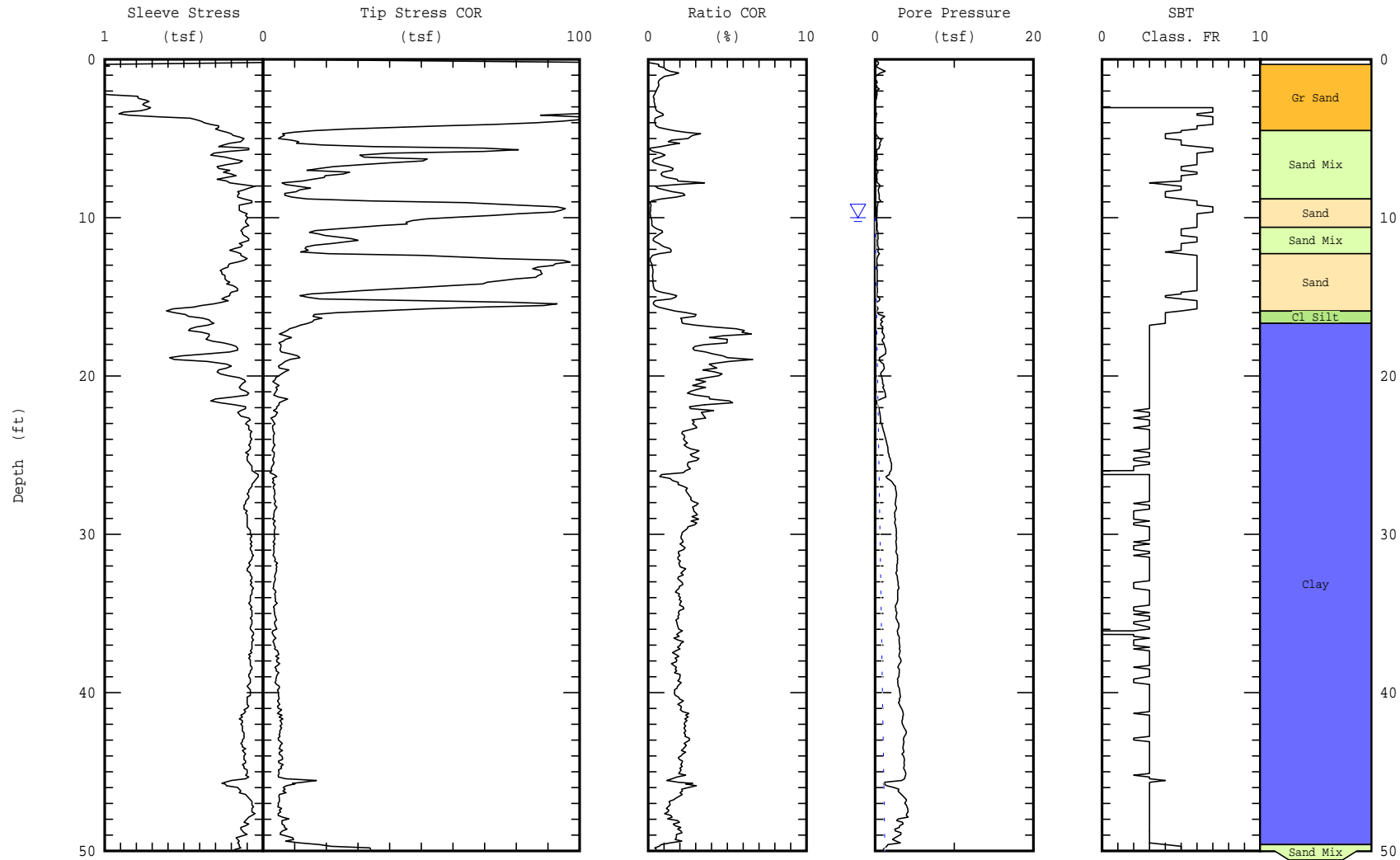


S&ME Inc. (843)884-0005
620 Wando Park Boulevard
Mt. Pleasant, SC 29464

Northing: 368588
Easting: 2326275
Elevation: 21.3 ft CLW

Date: 25/Jun/2003
Test ID: PAL-43
Project: 1131-03-264

Client: SCSA
Site: Chas. Naval Base Container Terminal




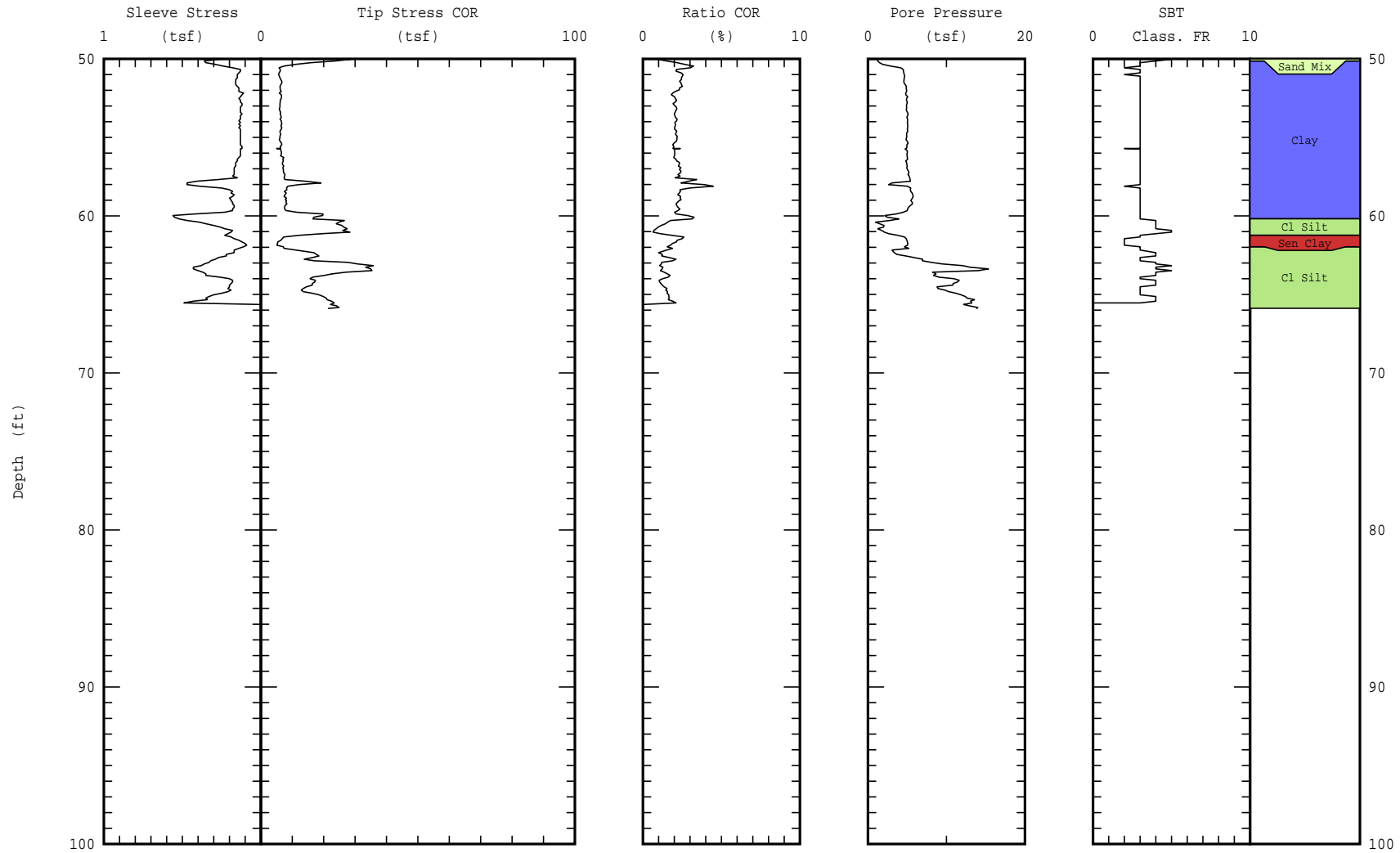
Maximum depth: 65.89 (ft)

Page 1 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

Estimated Phreatic Surface


 <p>S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464</p>	<p>Northing: 368588 Easting: 2326275 Elevation: 21.3 ft CLW</p>	<p>Date: 25/Jun/2003 Test ID: PAL-43 Project: 1131-03-264</p>
	<p>Client: SCSPA Site: Chas. Naval Base Container Terminal</p>	

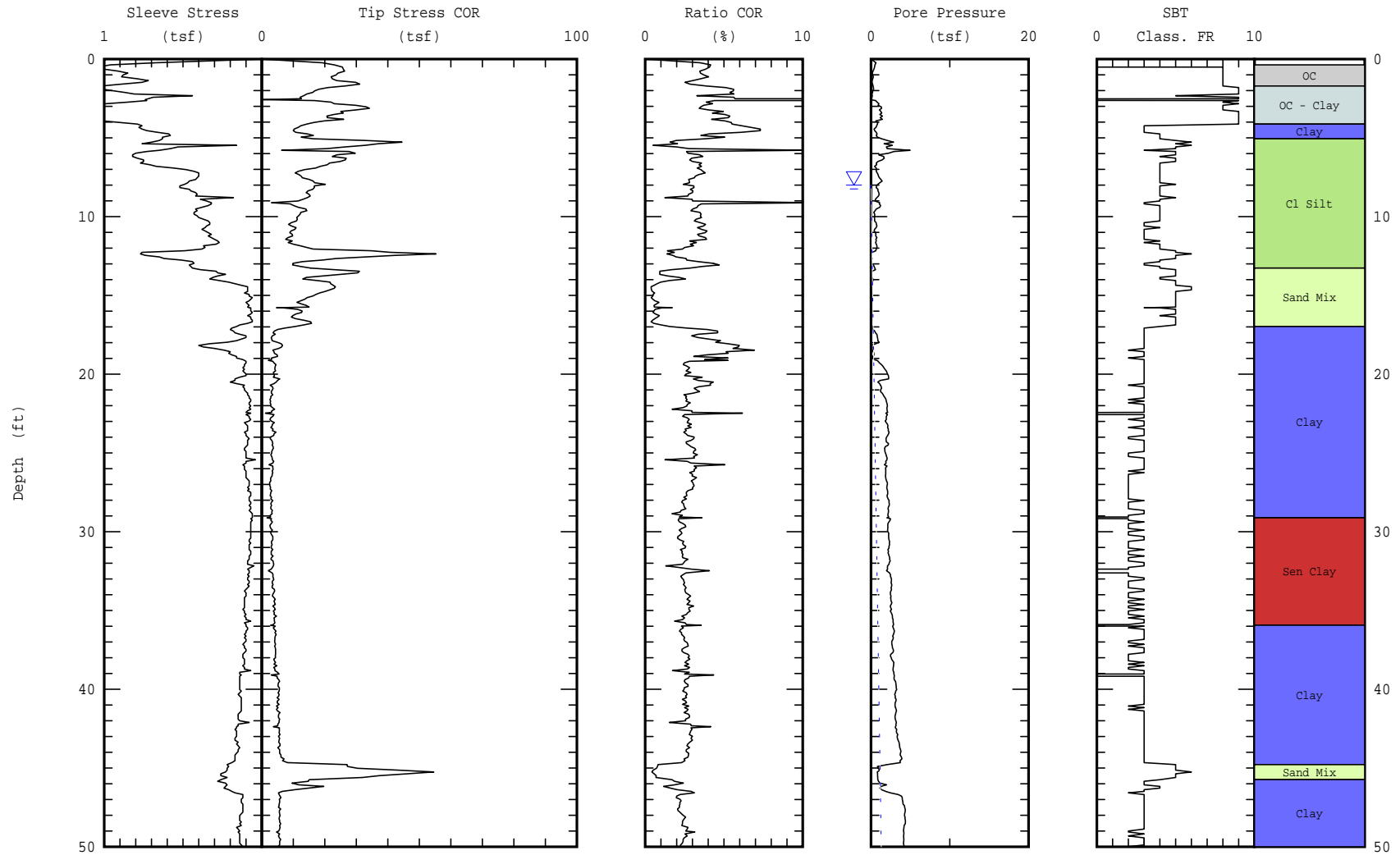


Maximum depth: 65.89 (ft)

Page 2 of 2


Class FR: Friction Ratio Classification (Ref: Robertson 1990)

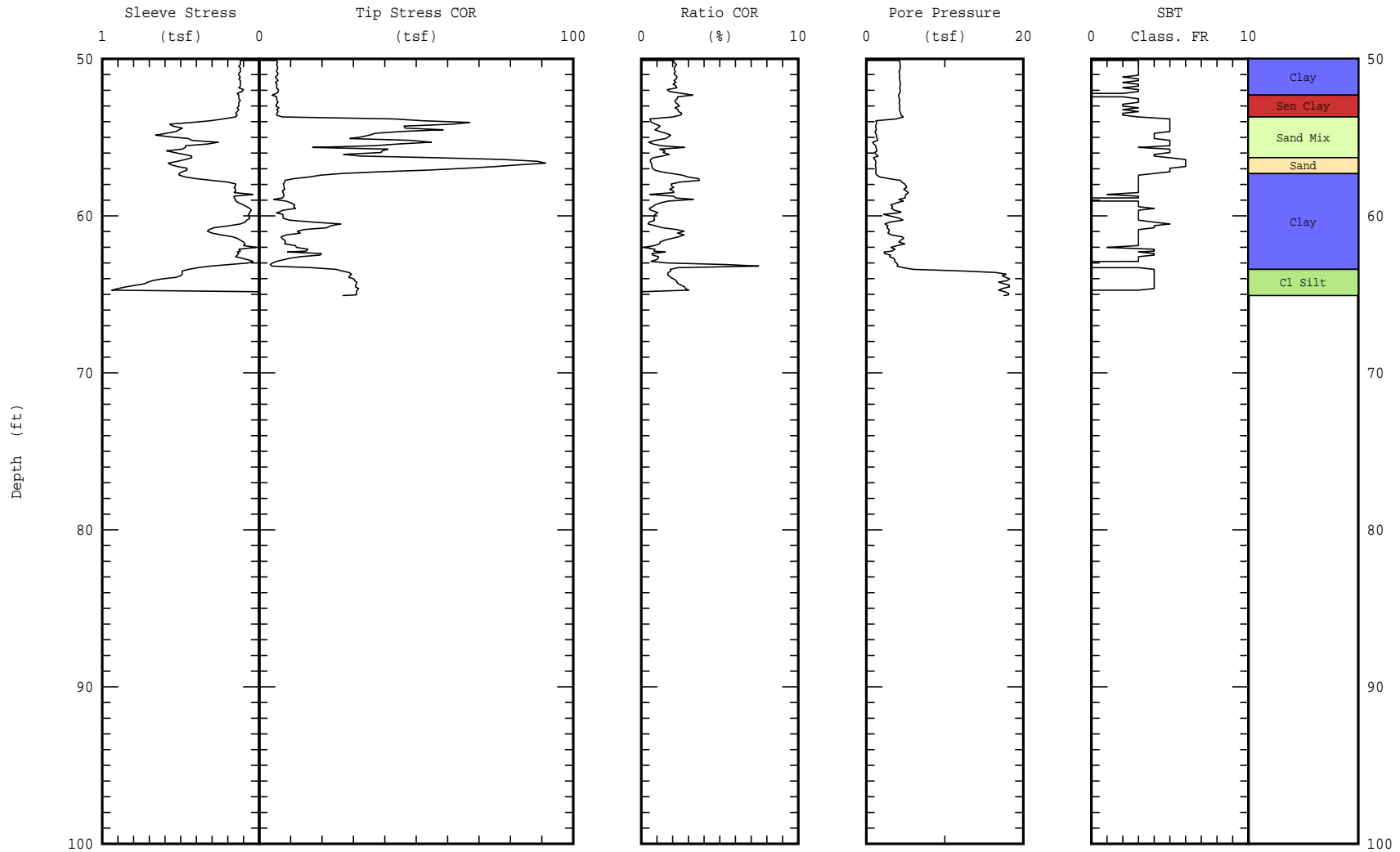
	S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464	Northing: 368395 Easting: 2326248 Elevation: 19.5 ft CLW	Date: 25/Jun/2003 Test ID: PAL-44 Project: 1131-03-264
	Client: SCSPA Site: Chas. Naval Base Container Terminal		



Maximum depth: 65.08 (ft)
 Page 1 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)
 Estimated Phreatic Surface

 S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464	Northing: 368395 Easting: 2326248 Elevation: 19.5 ft CLW	Date: 25/Jun/2003 Test ID: PAL-44 Project: 1131-03-264
	Client: SCSPA Site: Chas. Naval Base Container Terminal	



Maximum depth: 65.08 (ft)
 Page 2 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

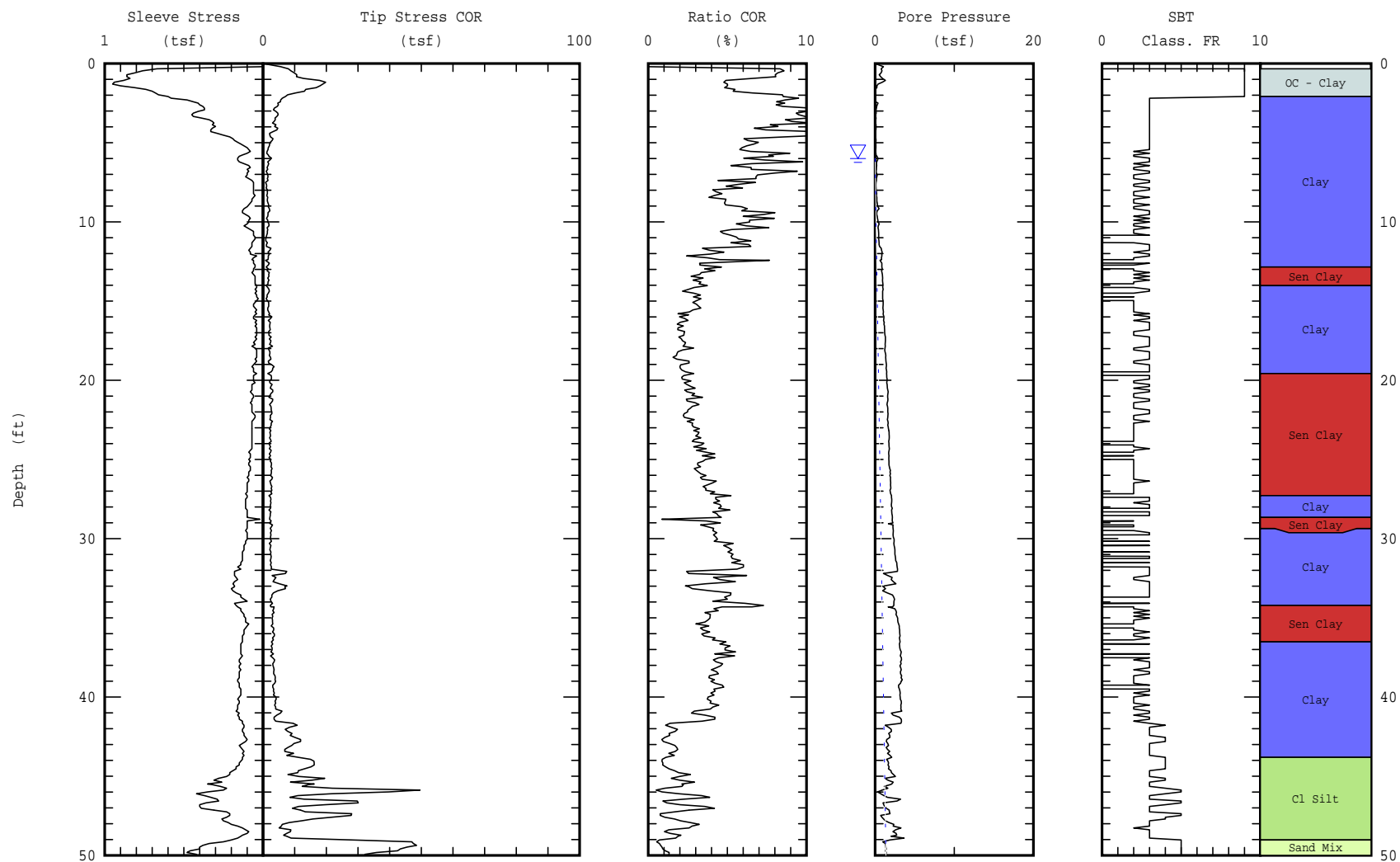


S&ME Inc. (843)884-0005
620 Wando Park Boulevard
Mt. Pleasant, SC 29464

Northing: 367993
Easting: 2326281
Elevation: 11.0 ft CLW

Date: 19/Jun/2003
Test ID: PAL-45
Project: 1131-03-264

Client: SCSA
Site: Chas. Naval Base Container Terminal




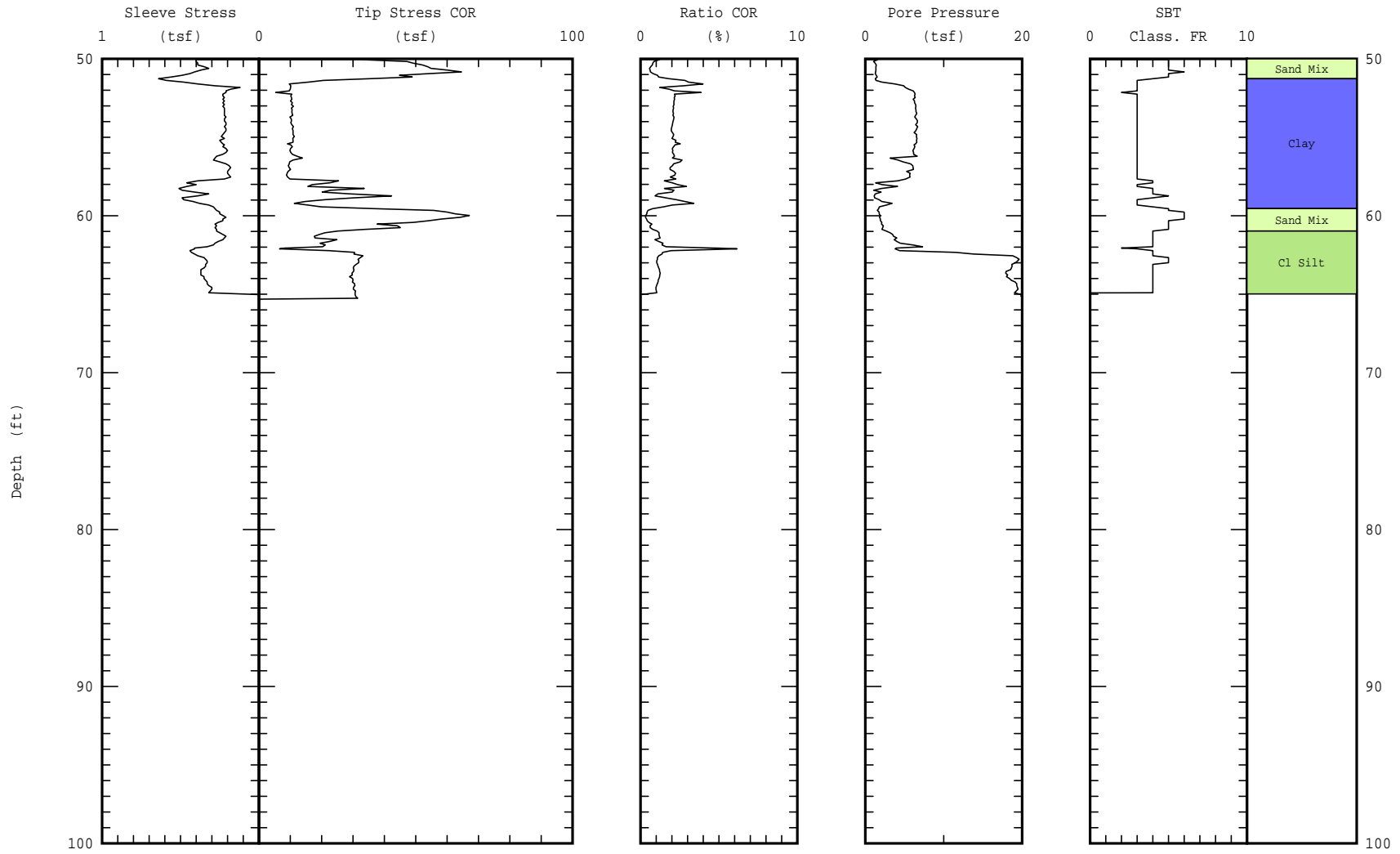
Maximum depth: 65.32 (ft)

Page 1 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

Estimated Phreatic Surface

	S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464	Northing: 367993 Easting: 2326281 Elevation: 11.0 ft CLW	Date: 19/Jun/2003 Test ID: PAL-45 Project: 1131-03-264
	Client: SCSPA Site: Chas. Naval Base Container Terminal		



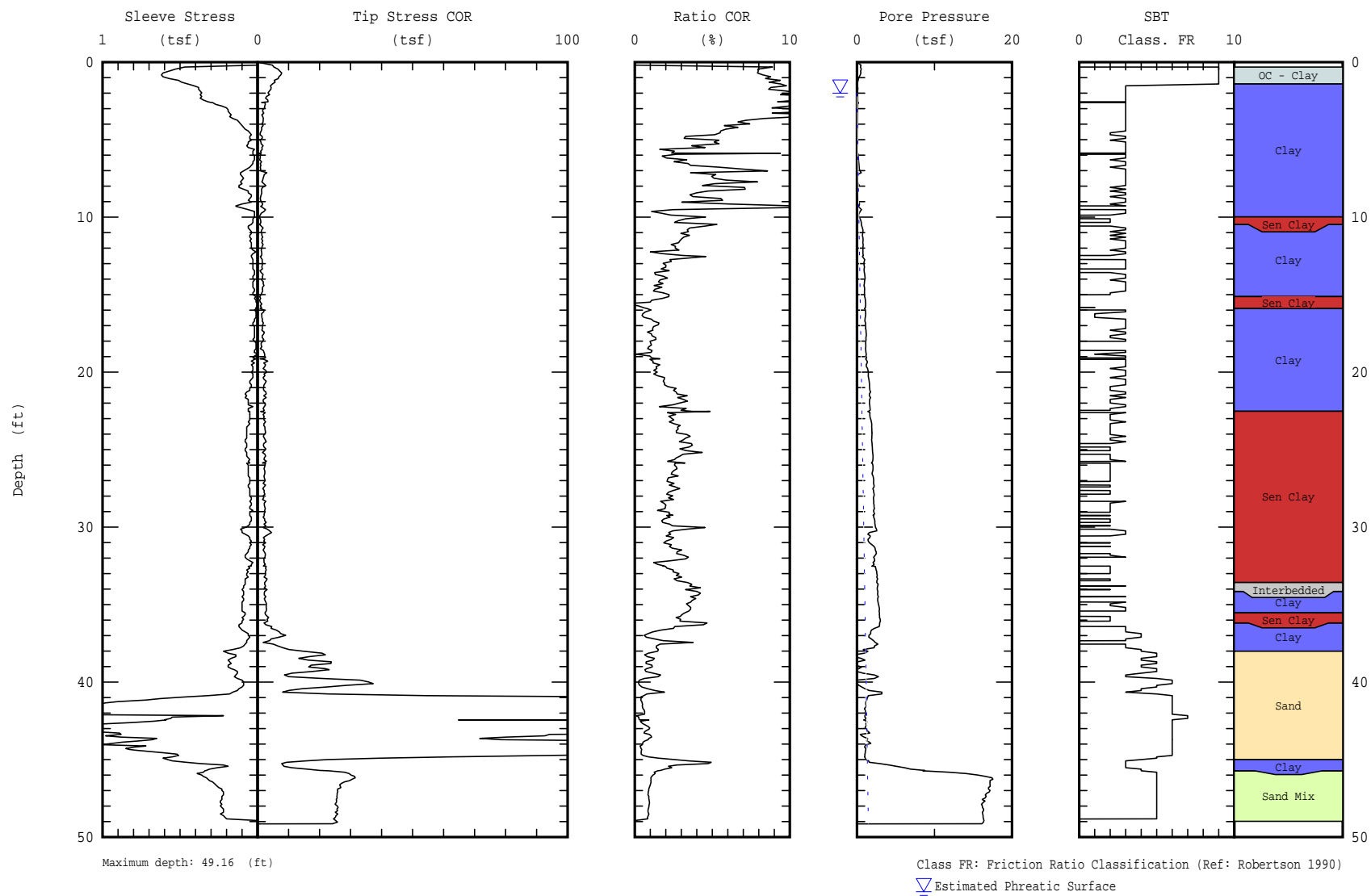


S&ME Inc. (843)884-0005
620 Wando Park Boulevard
Mt. Pleasant, SC 29464

Northing: 367591
Easting: 2326279
Elevation: 10.1 ft CLW

Date: 19/Jun/2003
Test ID: PAL-46
Project: 1131-03-264

Client: SCSPA
Site: Chas. Naval Base Container Terminal



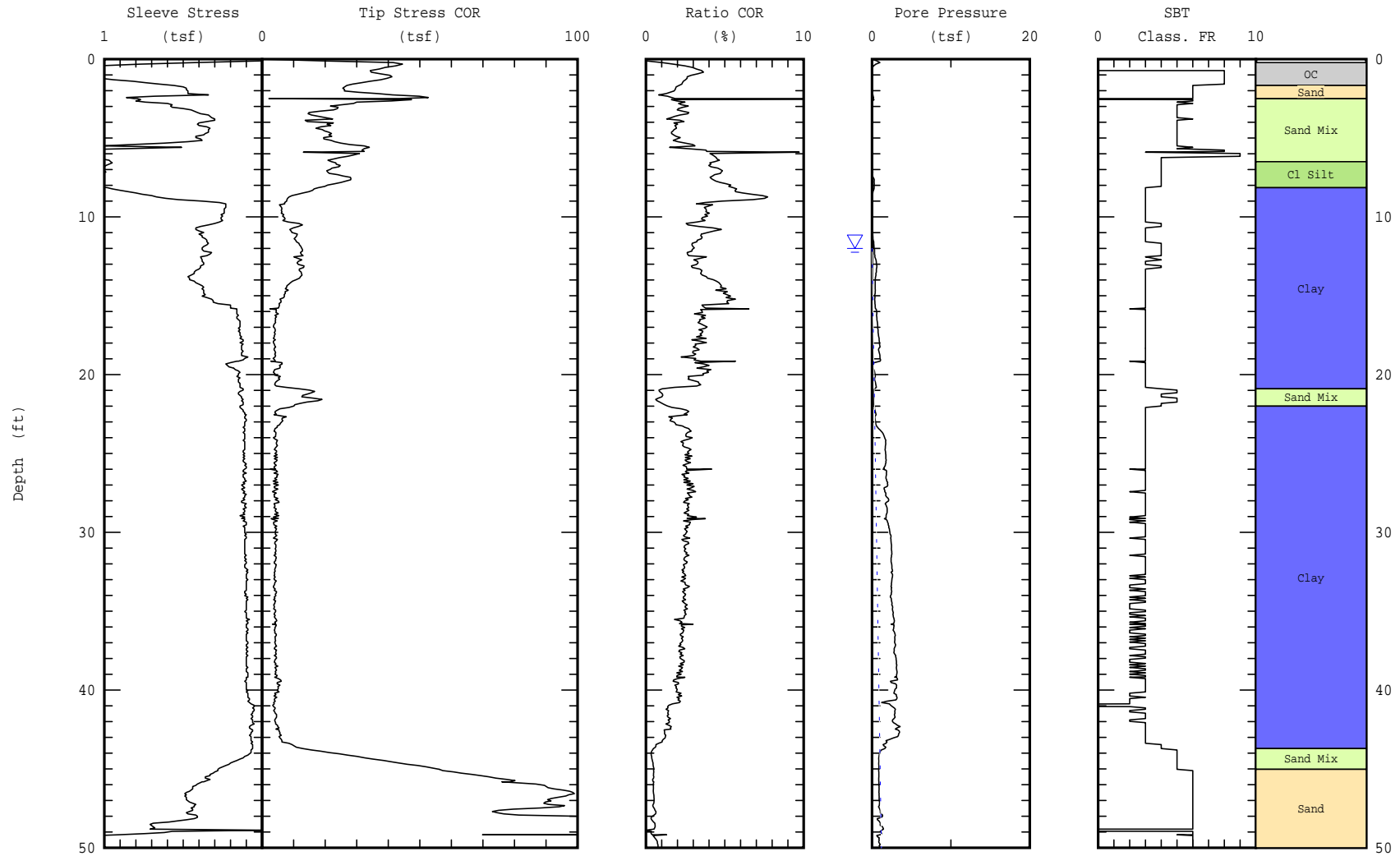


S&ME Inc. (843)884-0005
620 Wando Park Boulevard
Mt. Pleasant, SC 29464

Northings: 367195
Easting: 2326354
Elevation: 17.3 ft CLW

Date: 18/Jun/2003
Test ID: PAL-47
Project: 1131-03-264

Client: SCSA
Site: Chas. Naval Base Container Terminal



Maximum depth: 57.91 (ft)

Page 1 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

Estimated Phreatic Surface

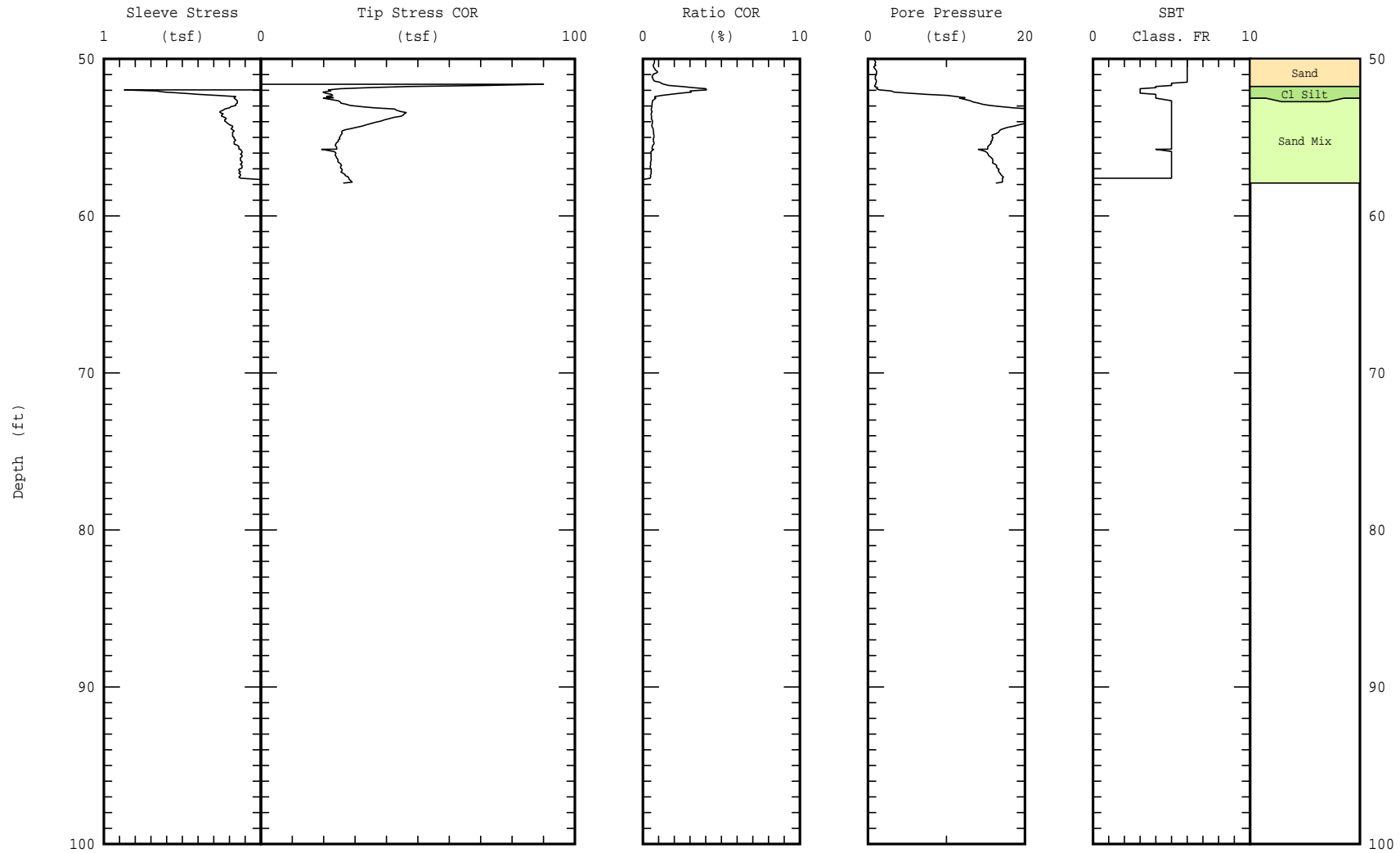


S&ME Inc. (843)884-0005
620 Wando Park Boulevard
Mt. Pleasant, SC 29464

Northing: 367195
Easting: 2326354
Elevation: 17.3 ft CLW

Date: 18/Jun/2003
Test ID: PAL-47
Project: 1131-03-264

Client: SCSPA
Site: Chas. Naval Base Container Terminal



Maximum depth: 57.91 (ft)

Page 2 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

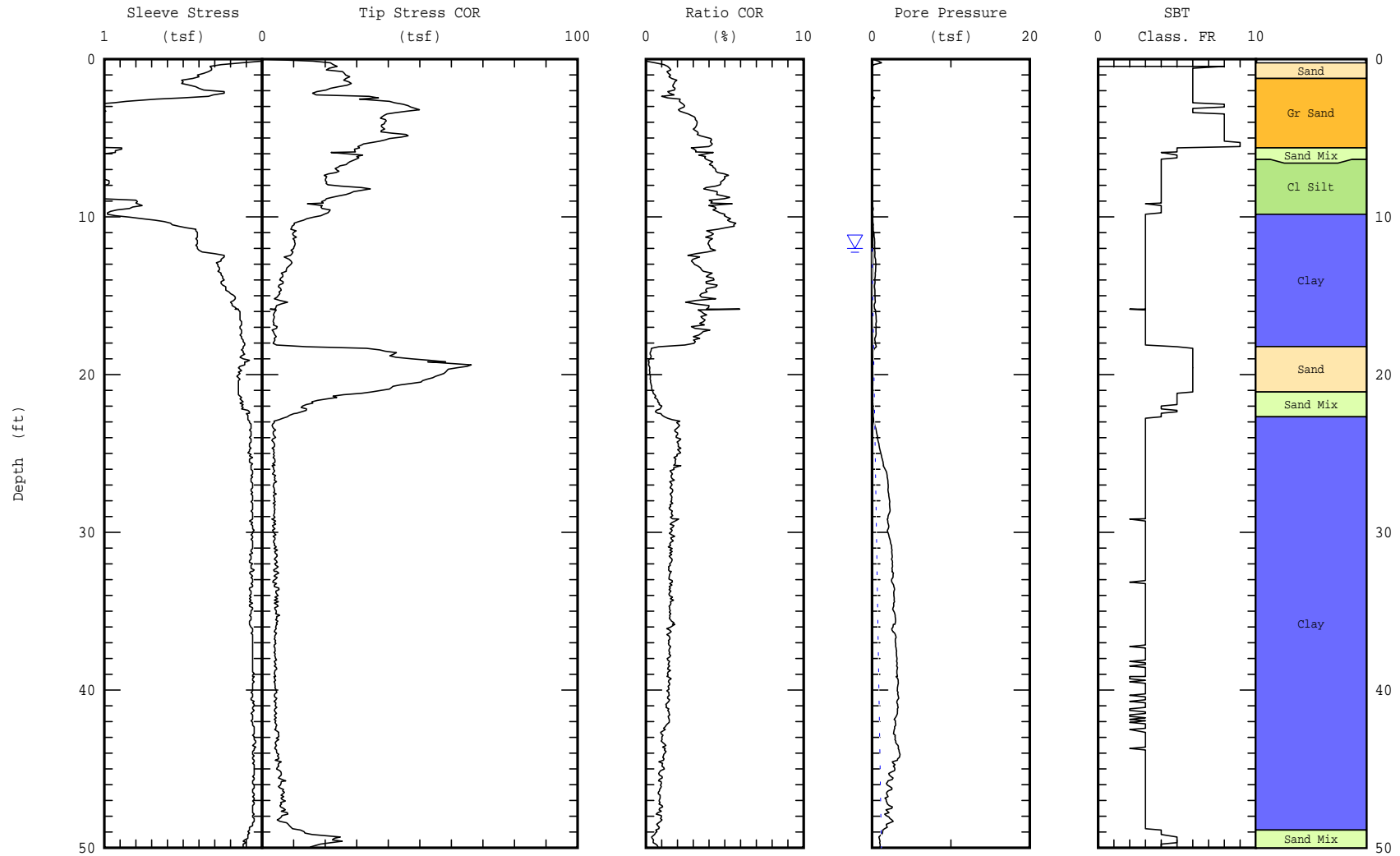


S&ME Inc. (843)884-0005
620 Wando Park Boulevard
Mt. Pleasant, SC 29464

Northing: 366800
Easting: 2326347
Elevation: 17.8 ft CLW

Date: 18/Jun/2003
Test ID: PAL-48
Project: 1131-03-264

Client: SCSPA
Site: Chas. Naval Base Container Terminal




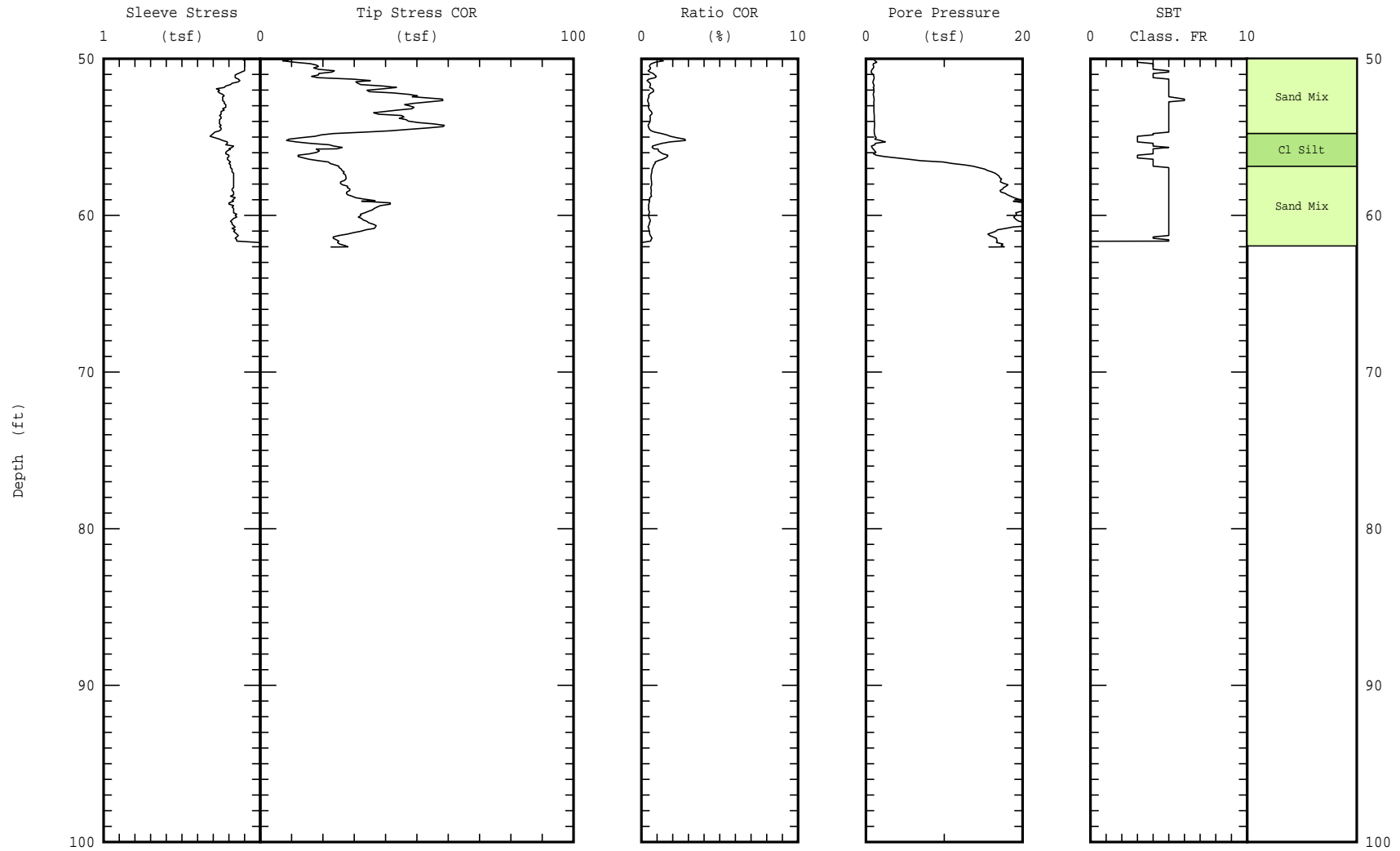
Maximum depth: 62.02 (ft)

Page 1 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)


Estimated Phreatic Surface

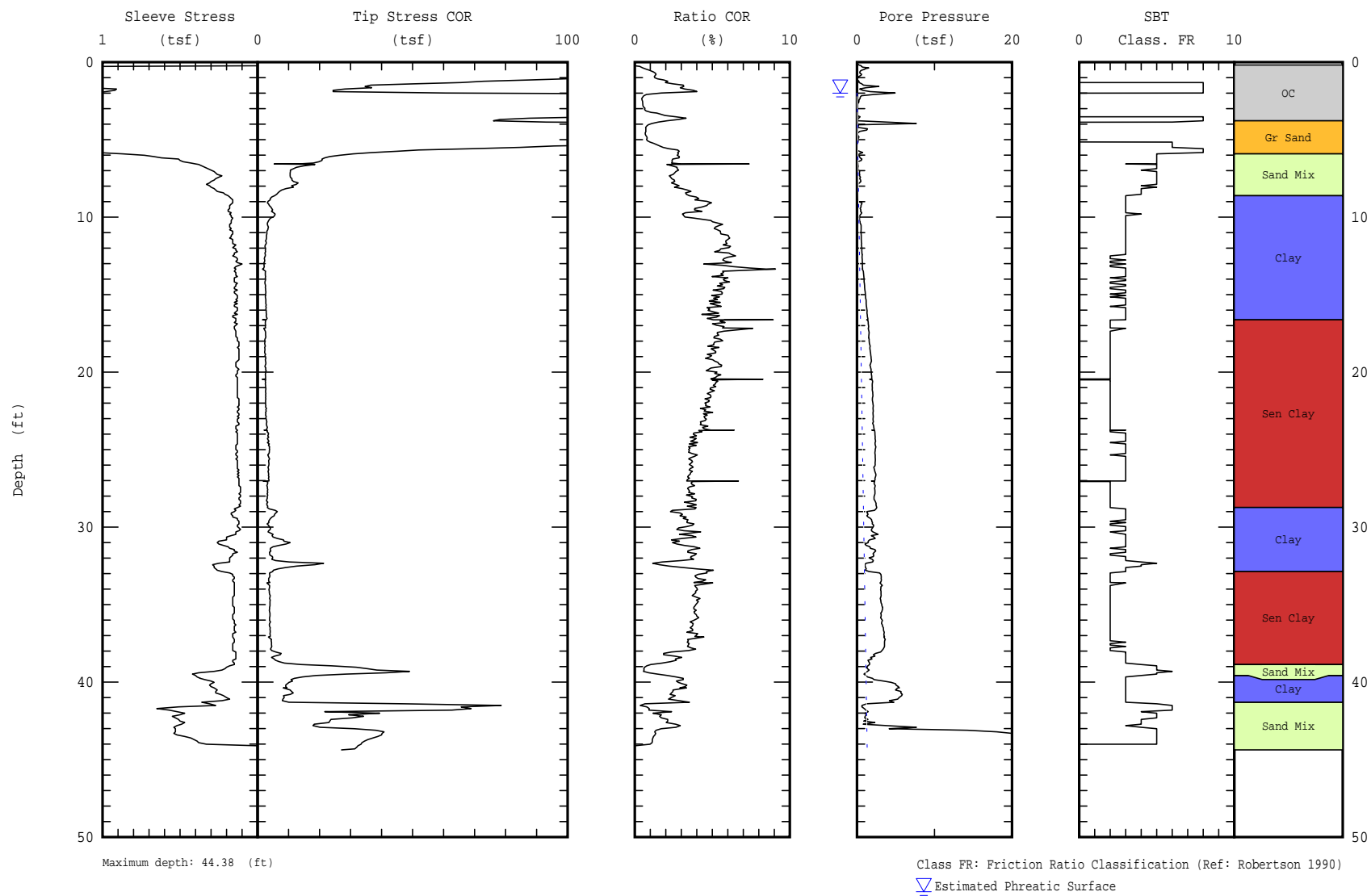
 <p>S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464</p>	<p>Northing: 366800 Easting: 2326347 Elevation: 17.8 ft CLW</p>	<p>Date: 18/Jun/2003 Test ID: PAL-48 Project: 1131-03-264</p>
	<p>Client: SCSPA Site: Chas. Naval Base Container Terminal</p>	



Maximum depth: 62.02 (ft)
Page 2 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

	S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464	Northing: 369468 Easting: 2326852 Elevation: 7.5 ft CLW	Date: 23/Jun/2003 Test ID: PAL-49 Project: 1131-03-264
	Client: SCSPA Site: Chas. Naval Base Container Terminal		





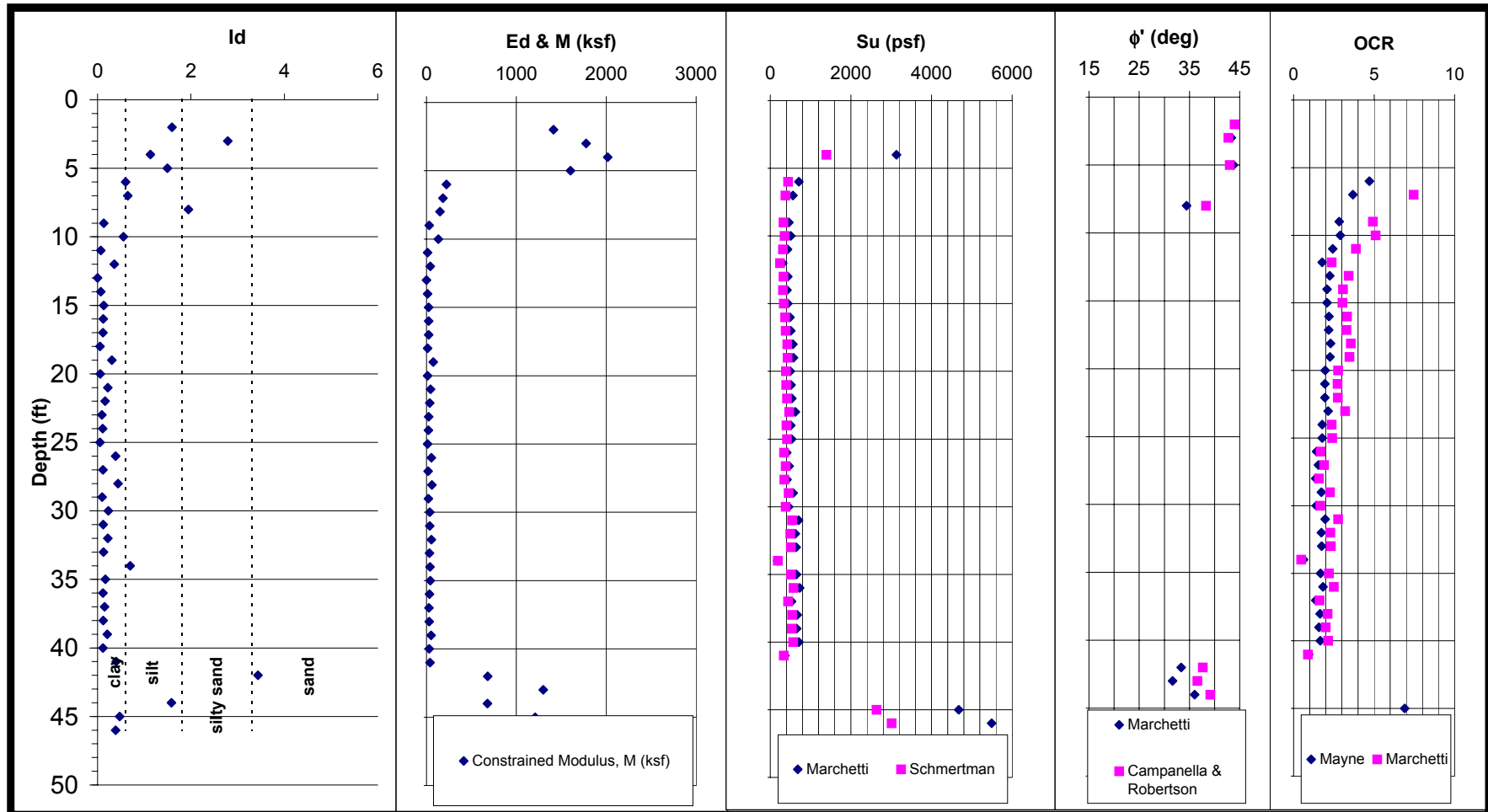
DILATOMETER TEST RESULTS

Test ID: PAL-50

Site: Charleston Naval Base Container Terminal

Location: N. Charleston, SC

Project No.: 1131-03-264



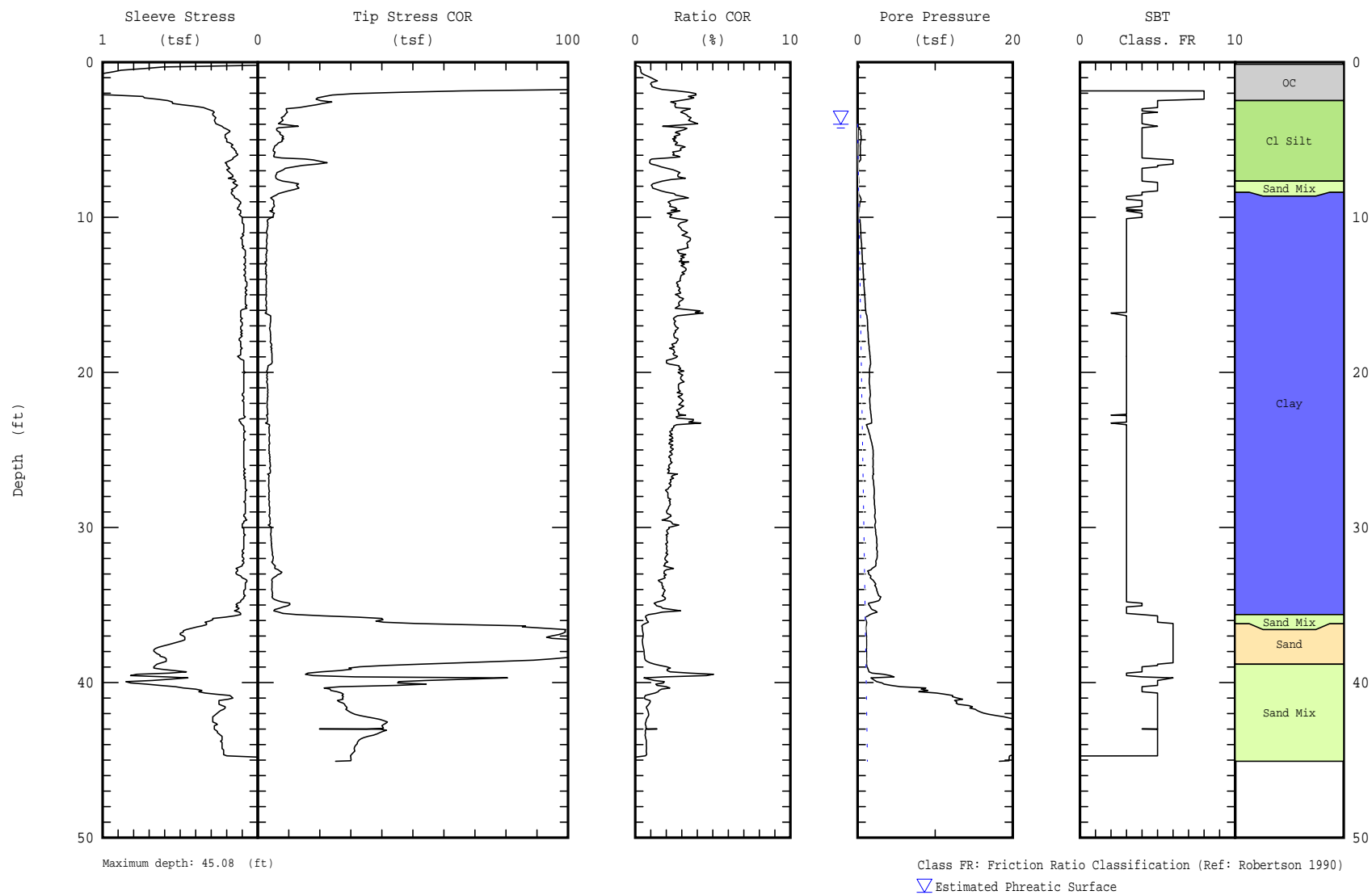


S&ME Inc. (843)884-0005
620 Wando Park Boulevard
Mt. Pleasant, SC 29464

Northing: 368792
Easting: 2326780
Elevation: 7.9 ft CLW

Date: 18/Jun/2003
Test ID: PAL-51
Project: 1131-03-264

Client: SCSPA
Site: Chas. Naval Base Container Terminal





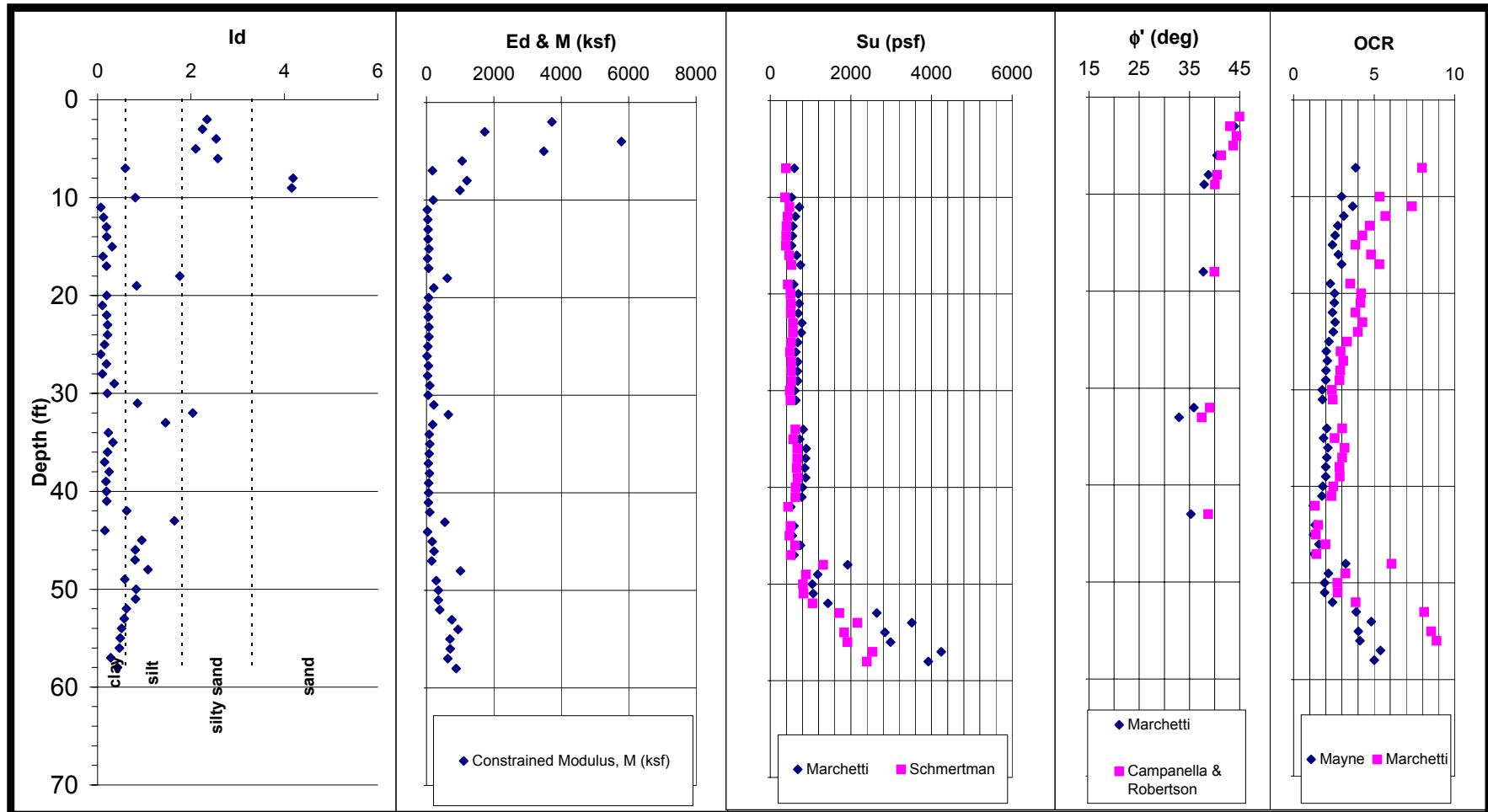
DILATOMETER TEST RESULTS

Test ID: PAL-52

Site: Charleston Naval Base Container Terminal

Location: N. Charleston, SC

Project No.: 1131-03-264



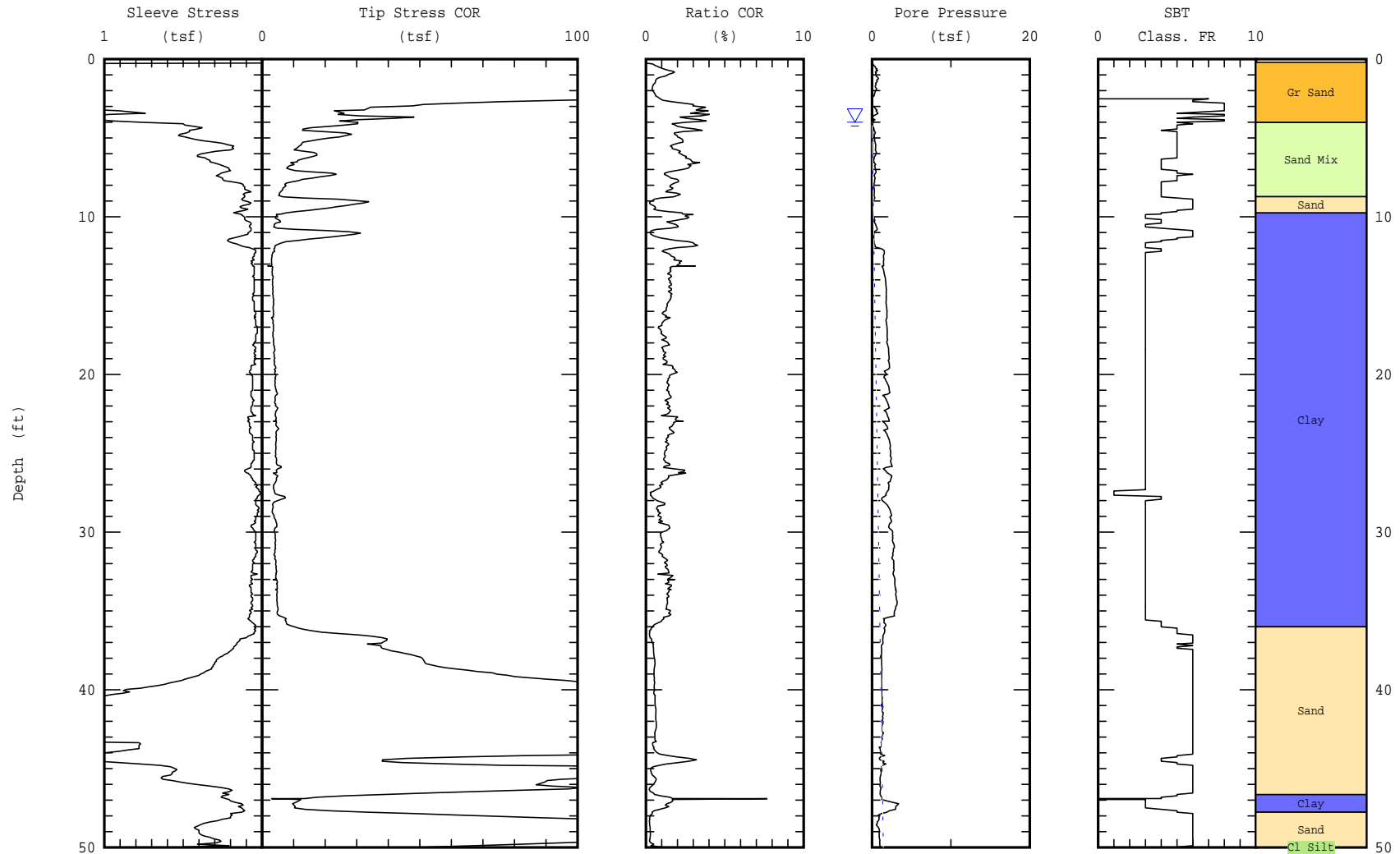


S&ME Inc. (843)884-0005
620 Wando Park Boulevard
Mt. Pleasant, SC 29464

Northing: 367995
Easting: 2326675
Elevation: 9.0 ft CLW

Date: 18/Jun/2003
Test ID: PAL-53
Project: 1131-03-264

Client: SCSA
Site: Chas. Naval Base Container Terminal




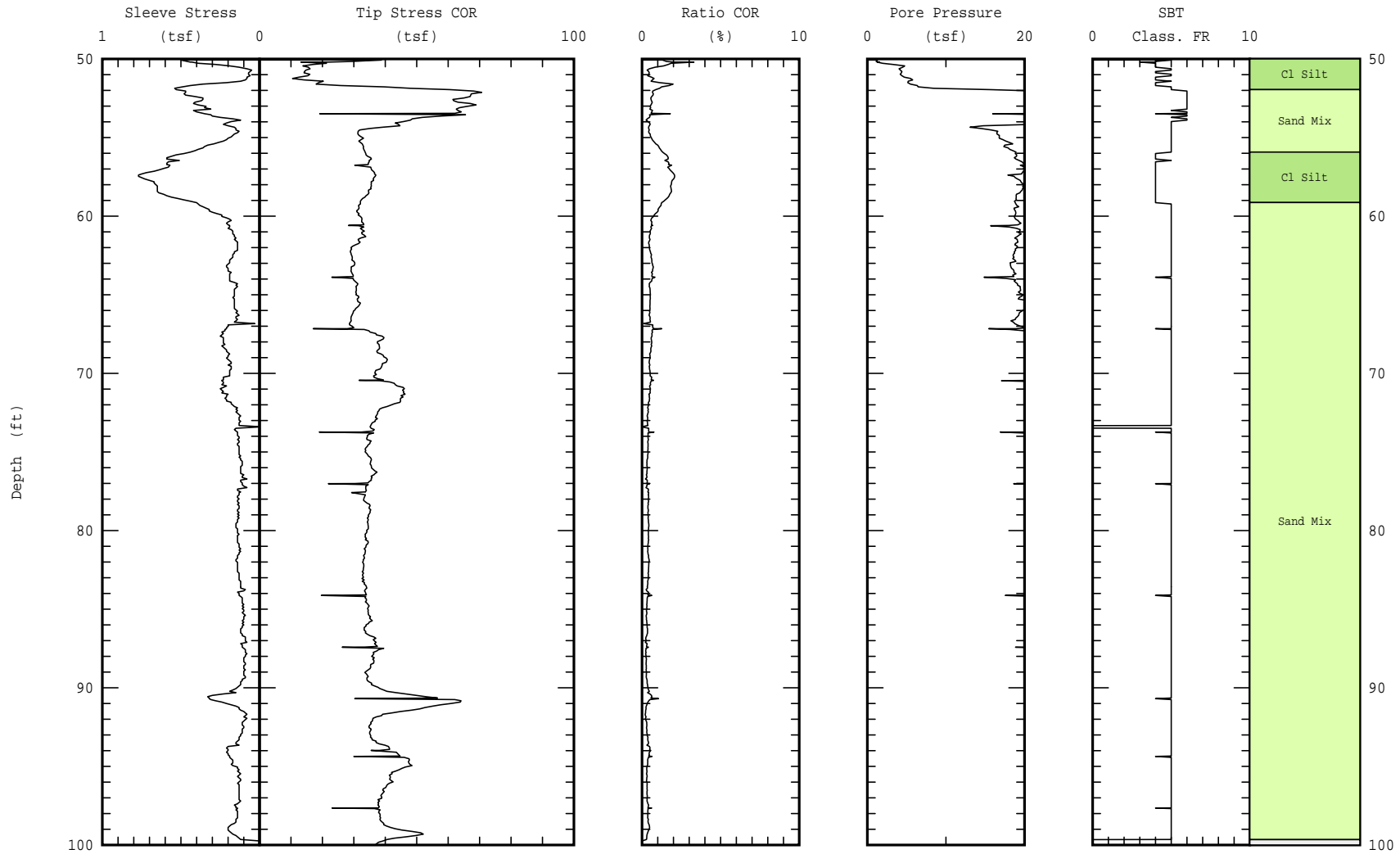
Maximum depth: 100.04 (ft)

Page 1 of 3

Class FR: Friction Ratio Classification (Ref: Robertson 1990)


Estimated Phreatic Surface

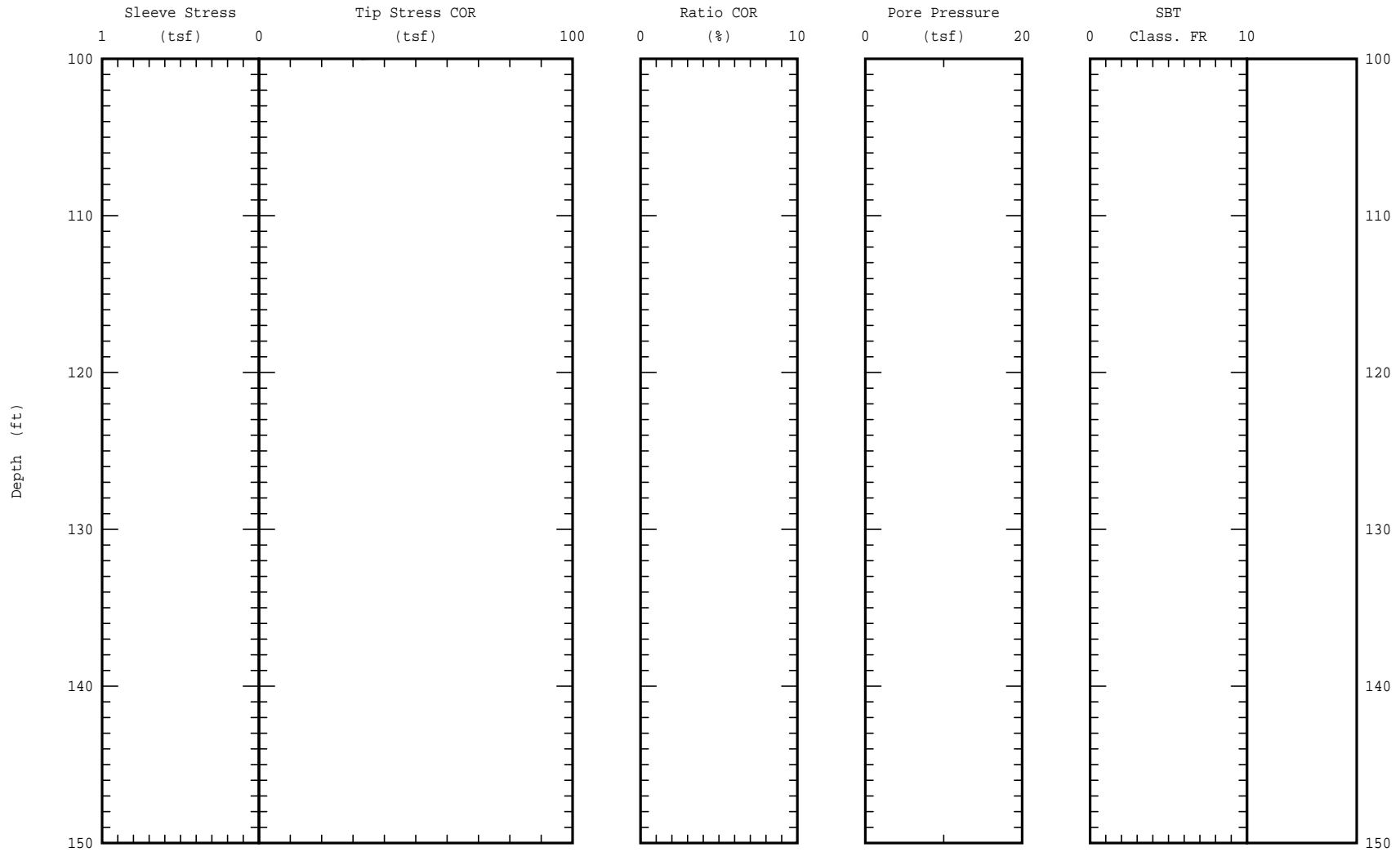
	S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464	Northing: 367995 Easting: 2326675 Elevation: 9.0 ft CLW	Date: 18/Jun/2003 Test ID: PAL-53 Project: 1131-03-264
	Client: SCSPA Site: Chas. Naval Base Container Terminal		



Maximum depth: 100.04 (ft)
 Page 2 of 3


Class FR: Friction Ratio Classification (Ref: Robertson 1990)

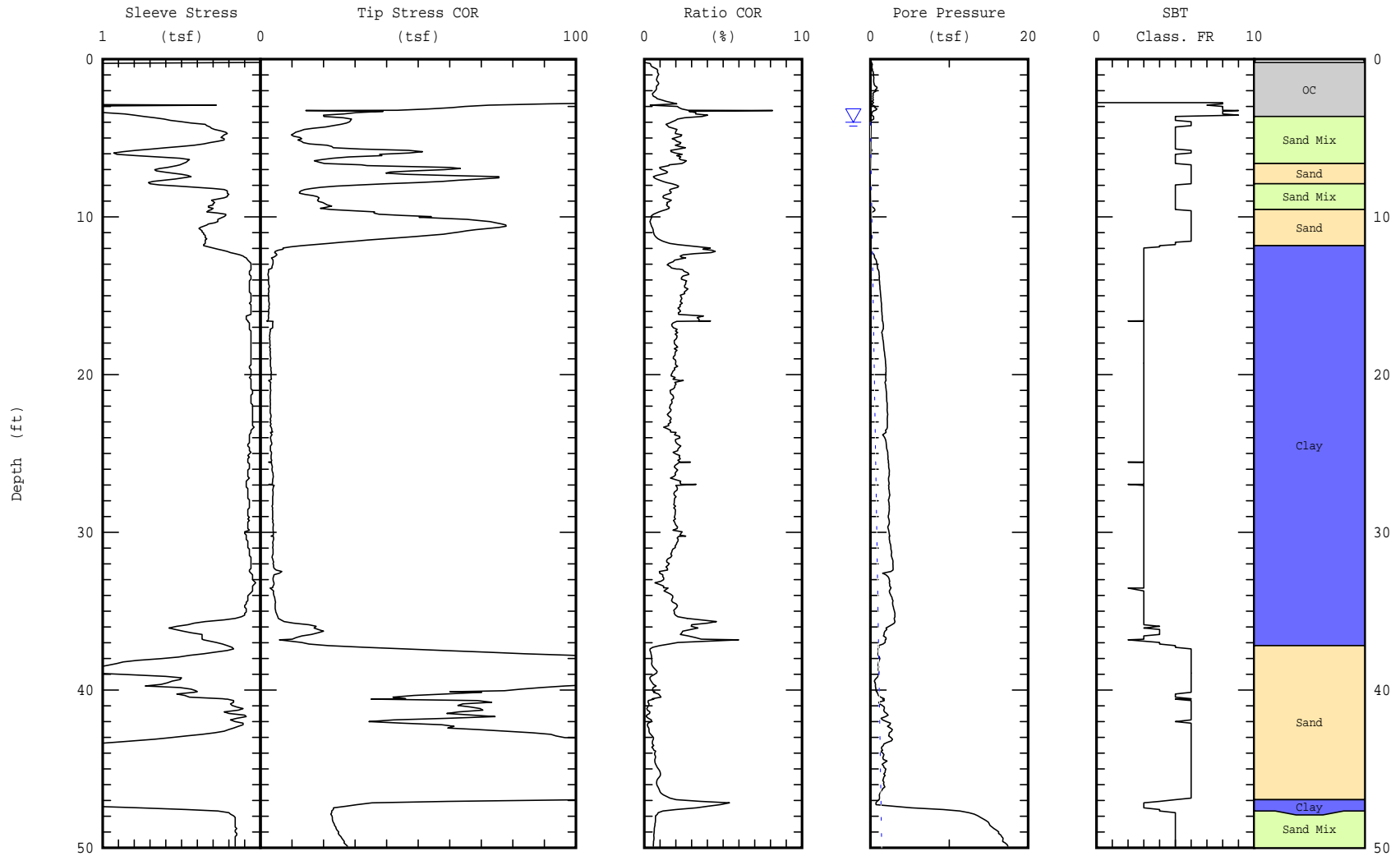
 S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464	Northing: 367995 Easting: 2326675 Elevation: 9.0 ft CLW	Date: 18/Jun/2003 Test ID: PAL-53 Project: 1131-03-264
	Client: SCSPA Site: Chas. Naval Base Container Terminal	



Maximum depth: 100.04 (ft)
 Page 3 of 3


Class FR: Friction Ratio Classification (Ref: Robertson 1990)

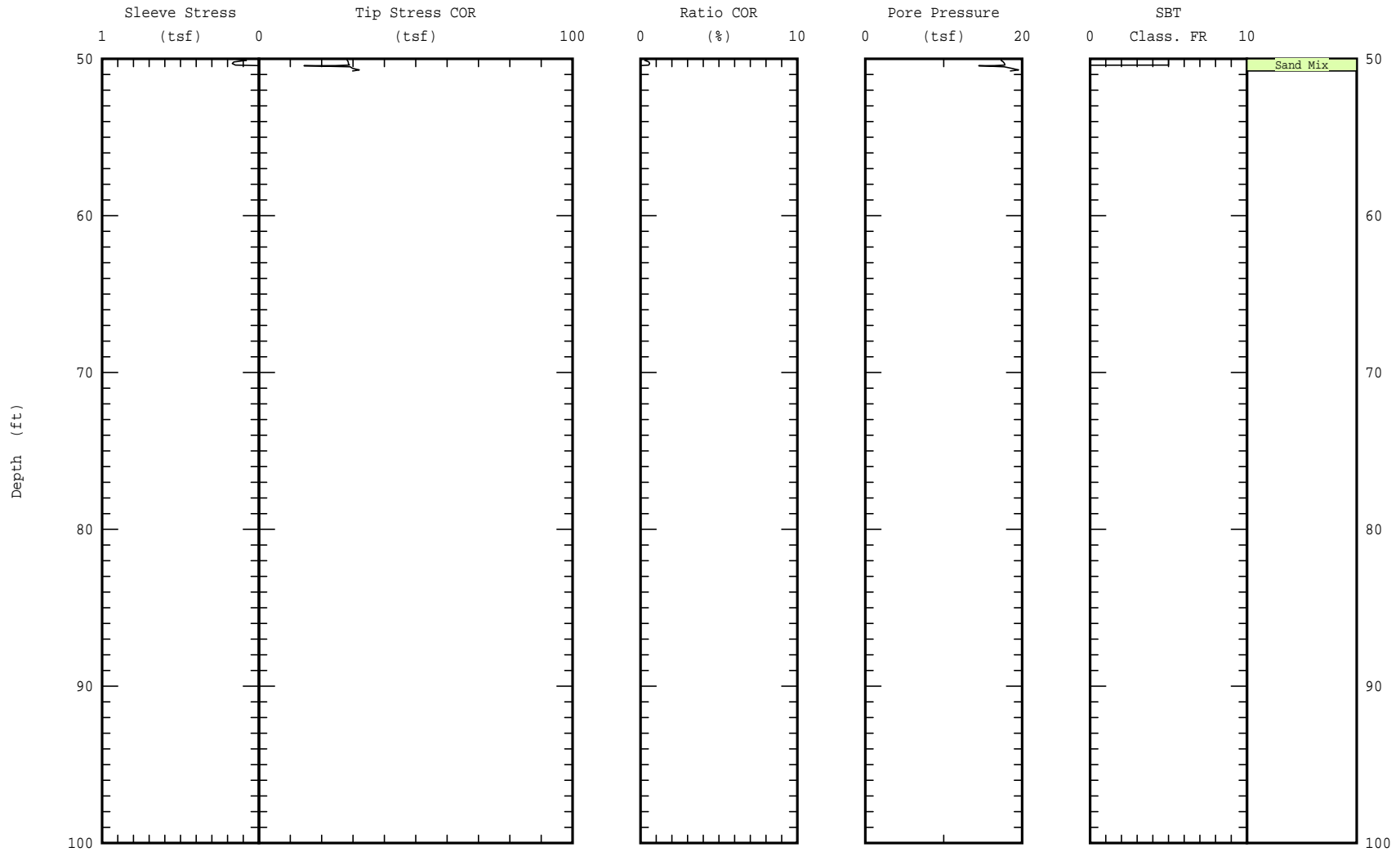
 <p>S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464</p>	<p>Northing: 367075 Easting: 2326551 Elevation: 9.0 ft CLW</p>	<p>Date: 18/Jun/2003 Test ID: PAL-54 Project: 1131-03-264</p>
	<p>Client: SCSA Site: Chas. Naval Base Container Terminal</p>	



Maximum depth: 50.78 (ft)
Page 1 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)
Estimated Phreatic Surface

	S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464	Northing: 367075 Easting: 2326551 Elevation: 9.0 ft CLW	Date: 18/Jun/2003 Test ID: PAL-54 Project: 1131-03-264
	Client: SCSPA Site: Chas. Naval Base Container Terminal		



Maximum depth: 50.78 (ft)
 Page 2 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)



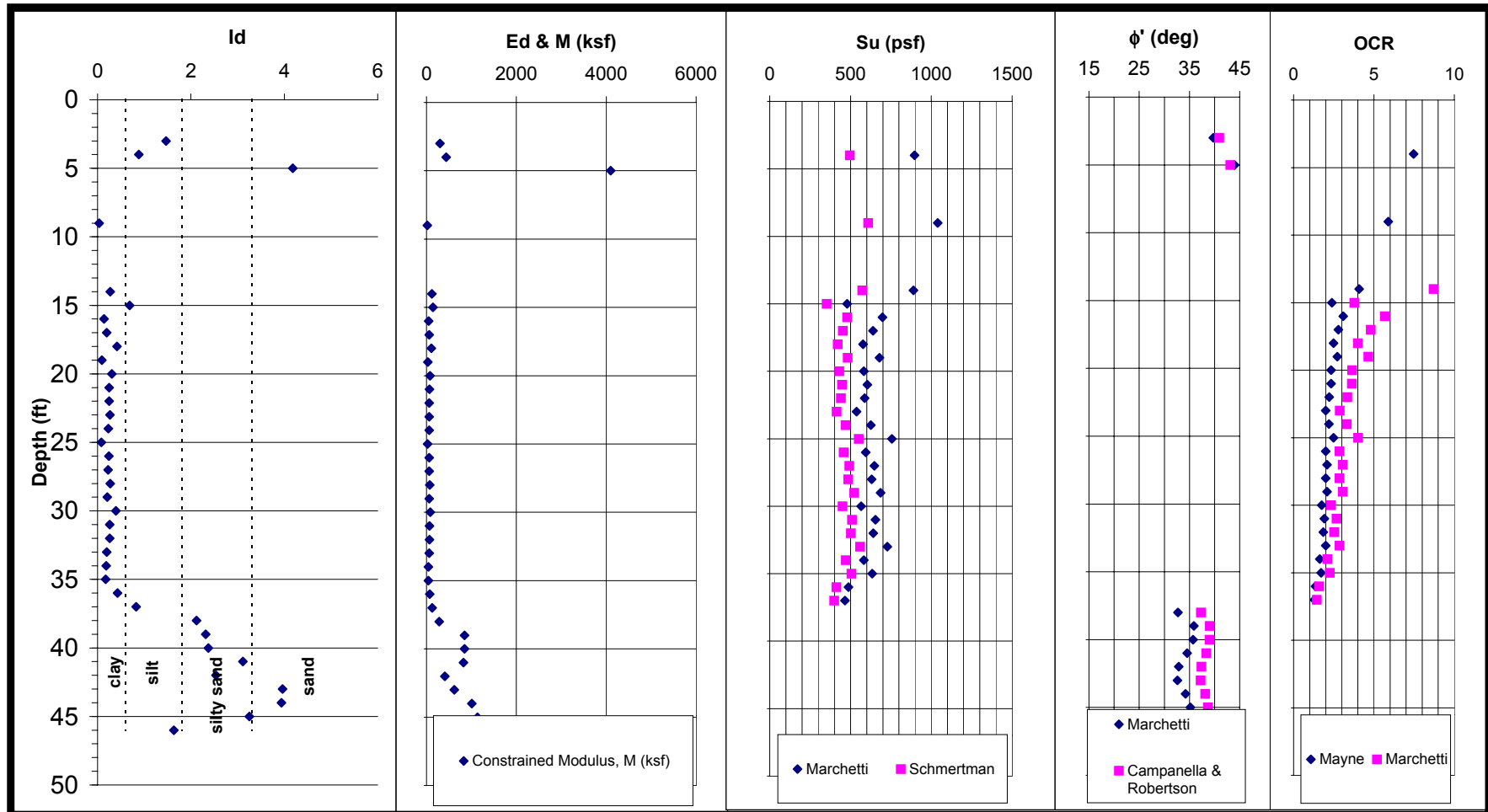
DILATOMETER TEST RESULTS


Test ID: PAL-55

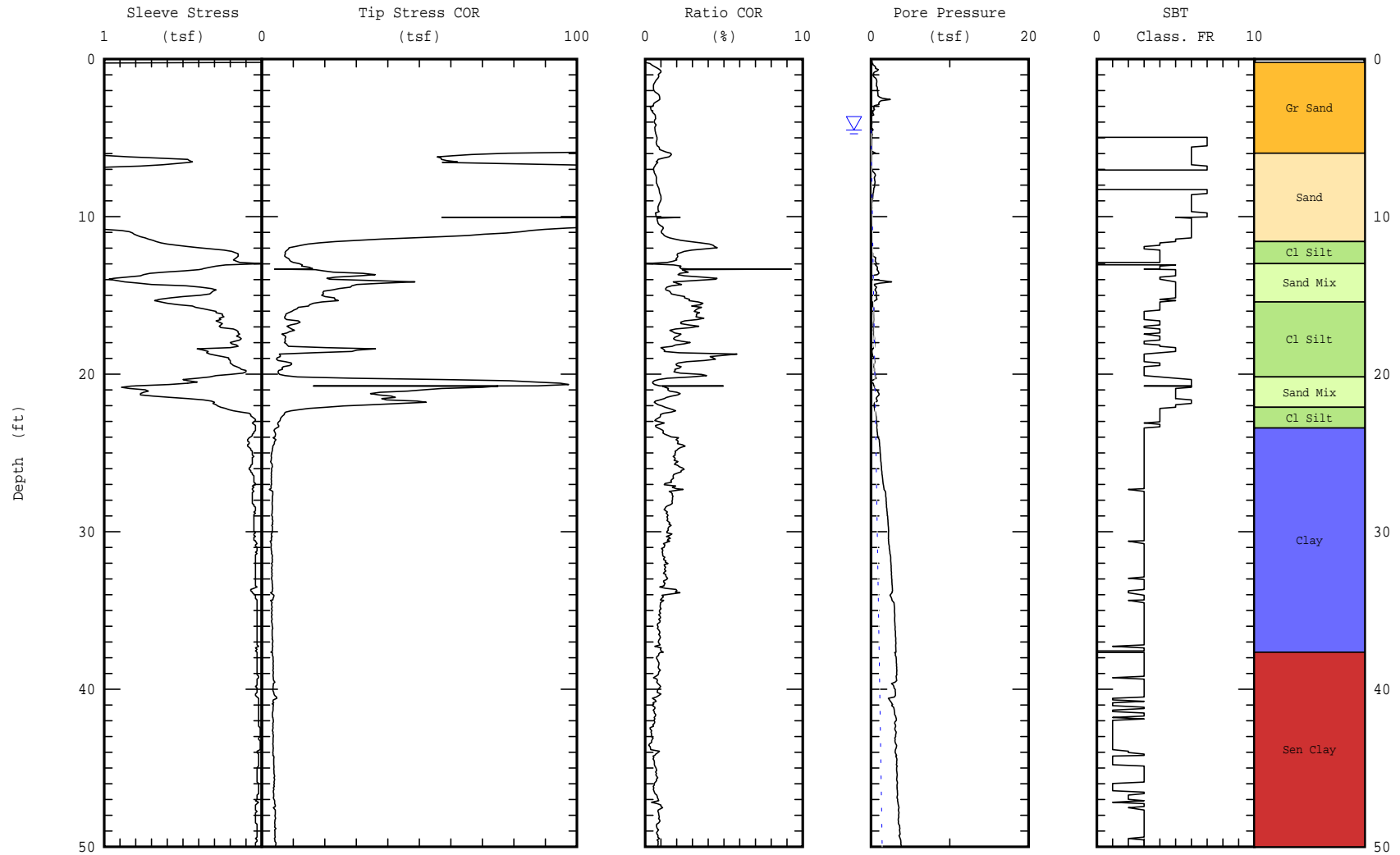
Site: Charleston Naval Base Container Terminal

Location: N. Charleston, SC

Project No.: 1131-03-264




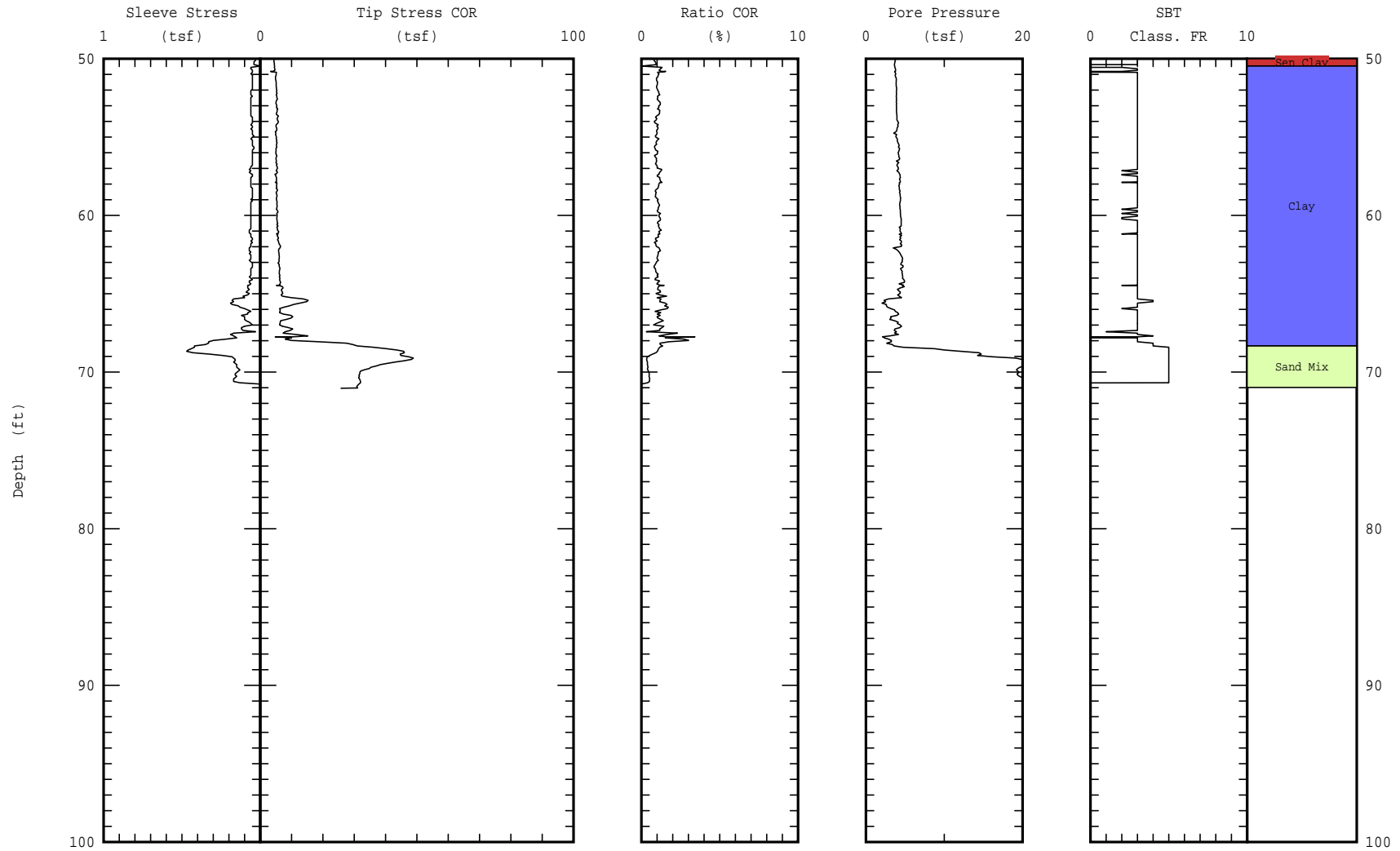
	S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464	Northing: 366332 Easting: 2326444 Elevation: 7.1 ft CLW	Date: 18/Jun/2003 Test ID: PAL-56 Project: 1131-03-264
	Client: SCSPA Site: Chas. Naval Base Container Terminal		



Maximum depth: 71.04 (ft)
 Page 1 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)
 Estimated Phreatic Surface

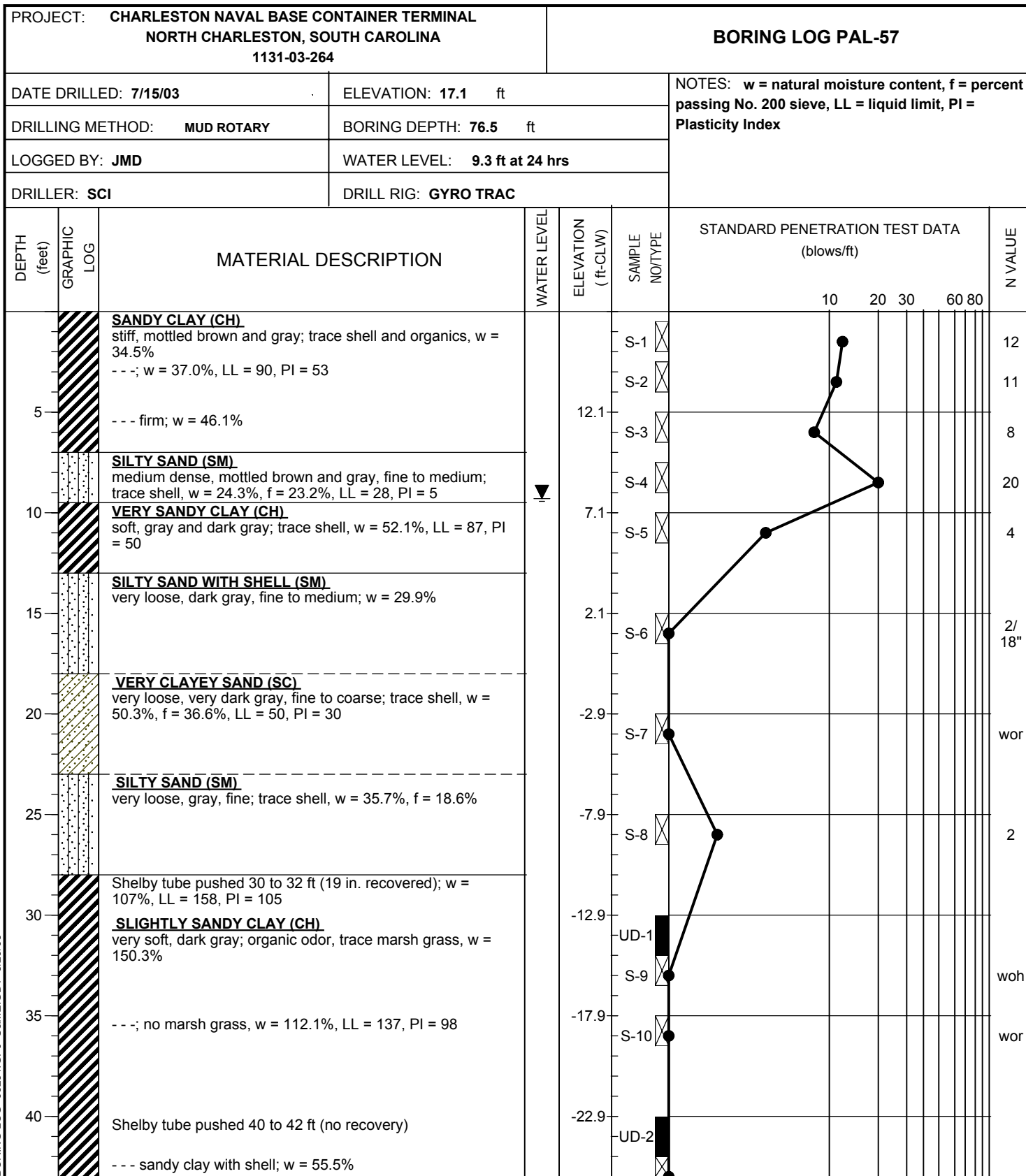
 <p>S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464</p>	<p>Northing: 366332 Easting: 2326444 Elevation: 7.1 ft CLW</p>	<p>Date: 18/Jun/2003 Test ID: PAL-56 Project: 1131-03-264</p>
	<p>Client: SCSA Site: Chas. Naval Base Container Terminal</p>	



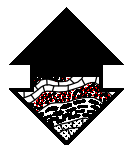
Maximum depth: 71.04 (ft)

Page 2 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)


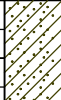



1. BORING AND SAMPLING IS IN ACCORDANCE WITH ASTM D-1586.
2. PENETRATION (N-VALUE) IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

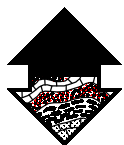


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620 Wando Park Boulevard
Mt. Pleasant, SC

PROJECT: CHARLESTON NAVAL BASE CONTAINER TERMINAL NORTH CHARLESTON, SOUTH CAROLINA 1131-03-264				BORING LOG PAL-57										
DATE DRILLED: 7/15/03		ELEVATION: 17.1 ft			NOTES: w = natural moisture content, f = percent passing No. 200 sieve, LL = liquid limit, PI = Plasticity Index									
DRILLING METHOD: MUD ROTARY		BORING DEPTH: 76.5 ft												
LOGGED BY: JMD		WATER LEVEL: 9.3 ft at 24 hrs												
DRILLER: SCI		DRILL RIG: GYRO TRAC												
DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION			WATER LEVEL	ELEVATION (ft-CLW)	SAMPLE NO/TYPE	STANDARD PENETRATION TEST DATA (blows/ft)						N VALUE
								10	20	30	60	80		
45		---; w = 50.3%, LL = 113, PI = 74				-27.9	S-11							wor
		--- slightly sandy clay, gray; no organic odor, trace shell, w = 74.9%, f = 89.8%, LL = 84, PI = 56					S-12							wor
50		Shelby tube pushed 53 to 55 ft (14 in. recovered); w = 70.6%, LL = 121, PI = 81				-32.9	S-13							wor
		---; w = 95.8%					UD-3							
55						-37.9	S-14							woh
60		---; w = 88.9%				-42.9	S-15							woh
65		--- very sandy clay; trace shell, w = 58.3%, f = 57.1%, LL = 56, PI = 37				-47.9	S-16							2
70		<u>VERY CLAYEY SAND (SC)</u> very loose, gray, fine; trace shell , w = 55.2%, f = 47.0%, LL = 38, PI = 19				-52.9	S-17							3
		<u>COOPER MARL: SANDY SILT (ML)</u> stiff, olive brown												
75		<u>BORING TERMINATED AT 76.5 FEET</u>				-57.9	S-18							14

1. BORING AND SAMPLING IS IN ACCORDANCE WITH ASTM D-1586.
2. PENETRATION (N-VALUE) IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.



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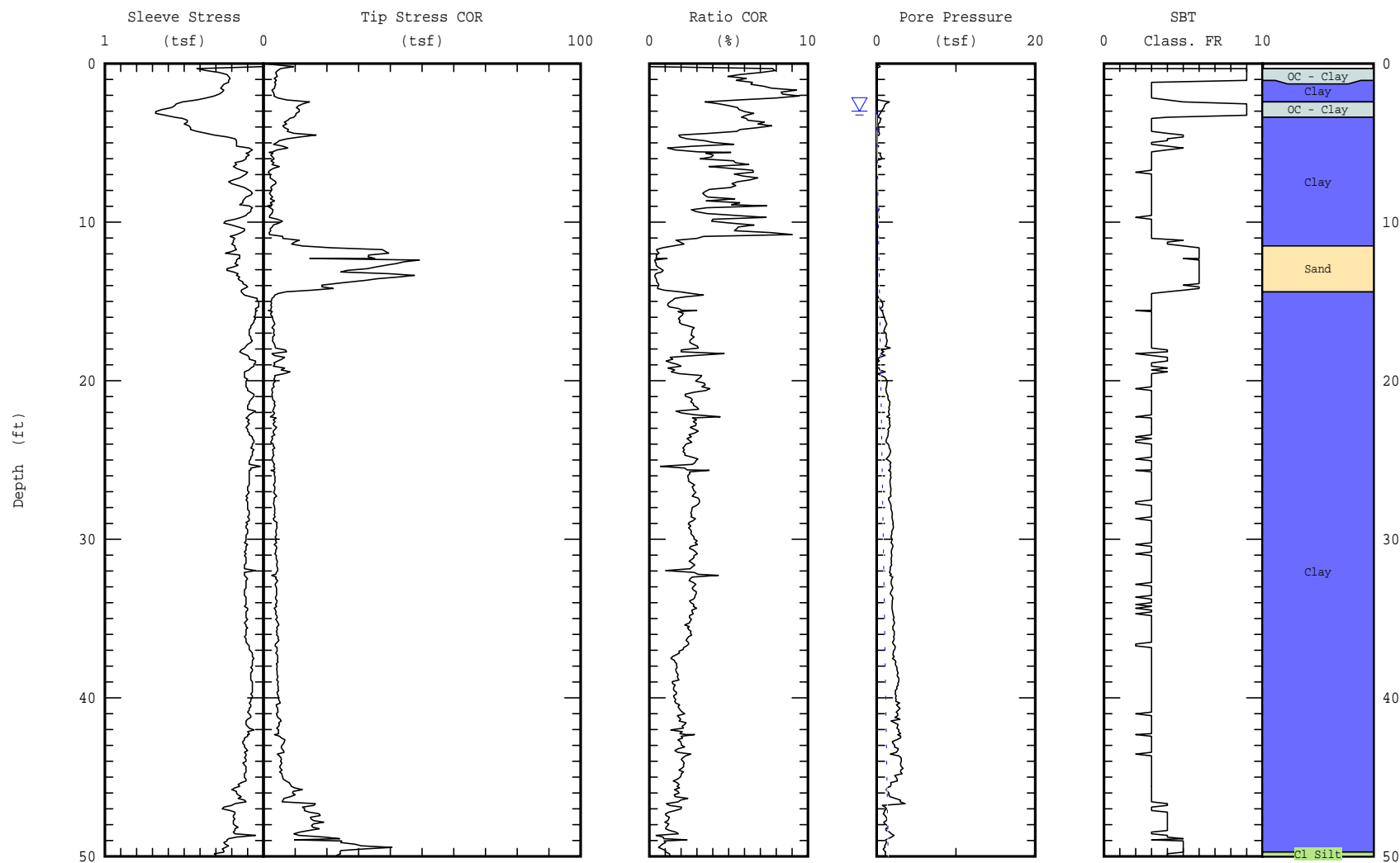


S&ME Inc. (843)884-0005
620 Wando Park Boulevard
Mt. Pleasant, SC 29464

Northing: 366976
Easting: 2325859
Elevation: 12.3 ft CLW

Date: 15/Jul/2003
Test ID: PAL-58
Project: 1131-03-264

Client: SCSPA
Site: Chas. Naval Base Container Terminal




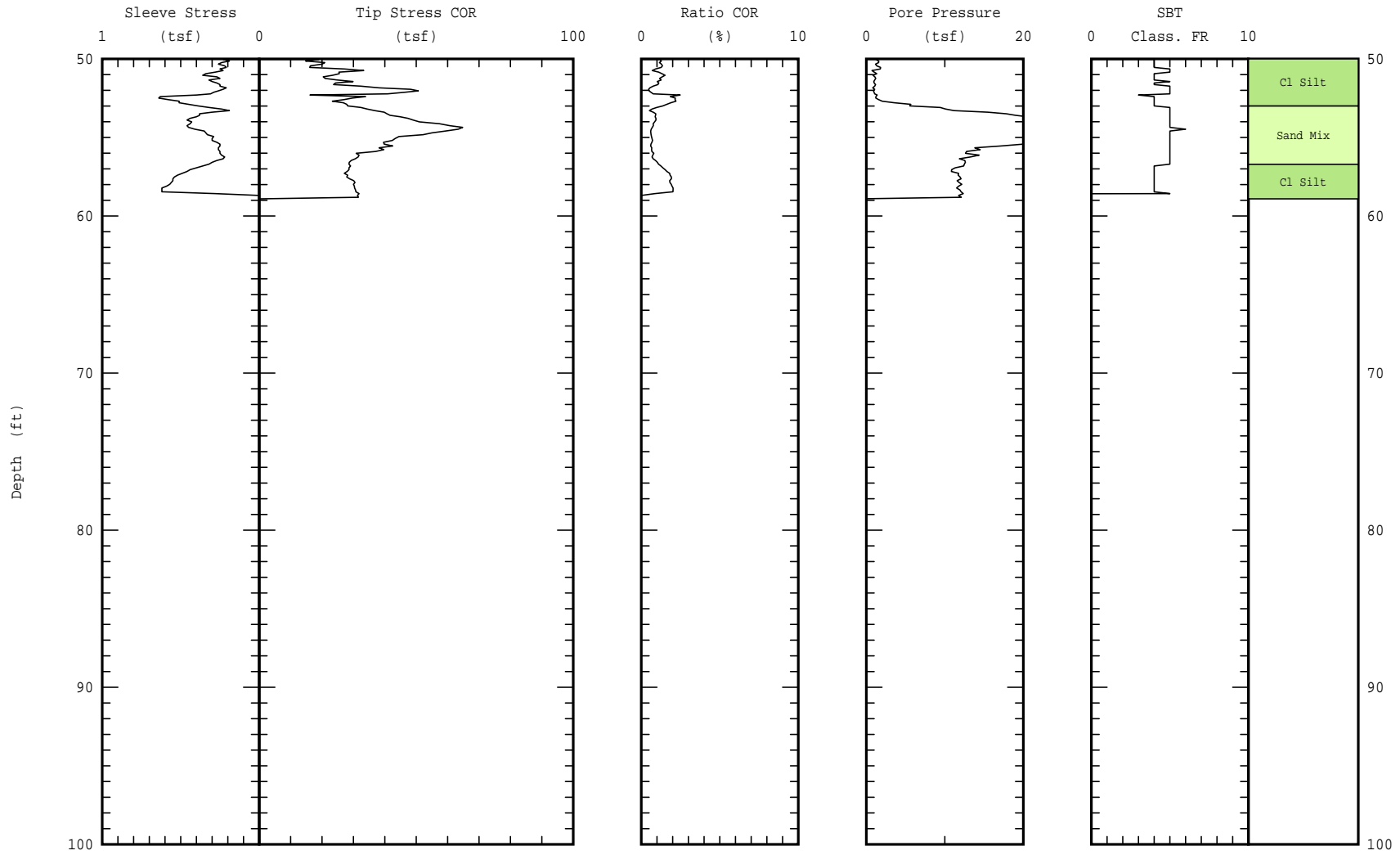
Maximum depth: 58.91 (ft)

Page 1 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)


Estimated Phreatic Surface

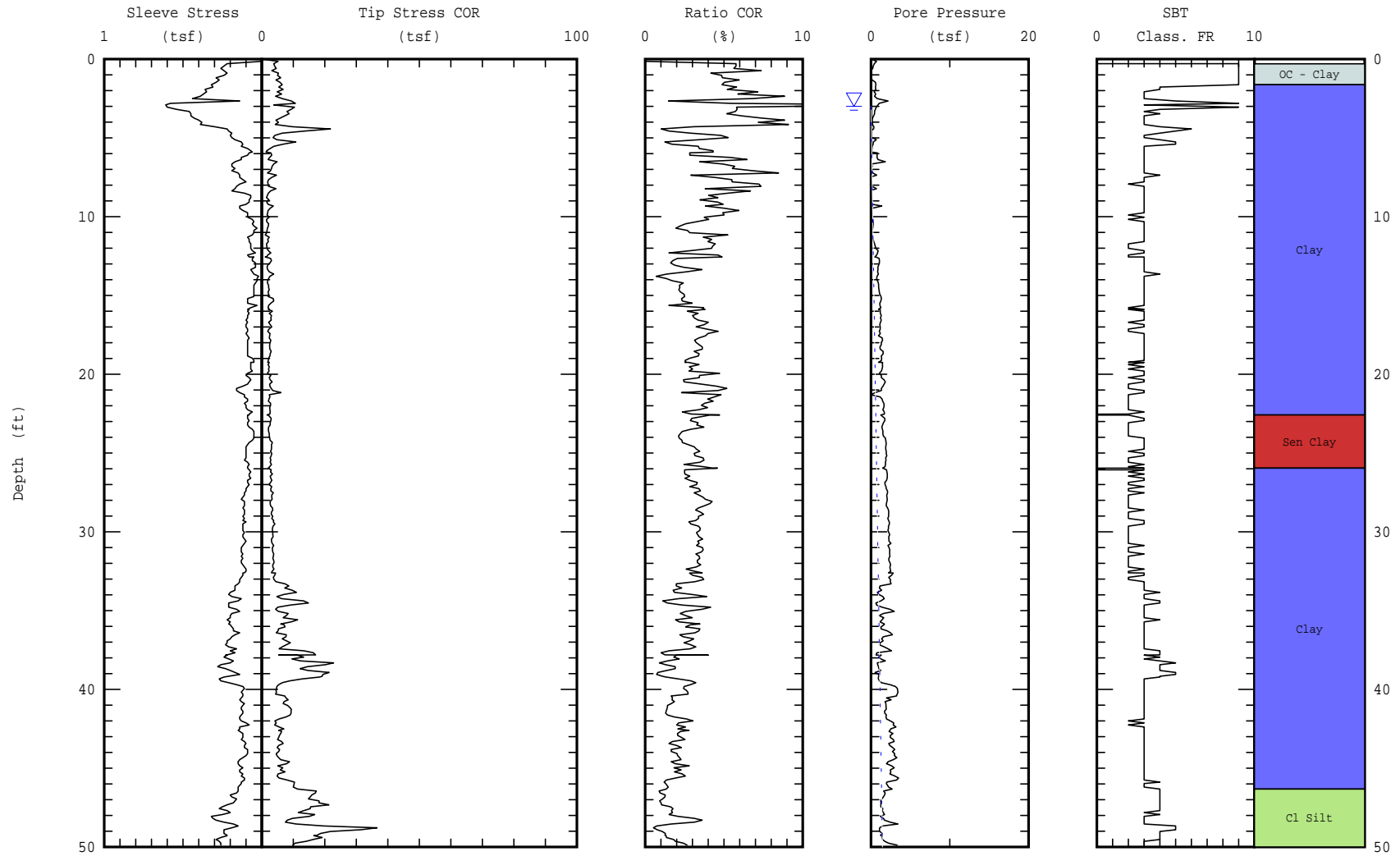
 S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464	Northing: 366976 Easting: 2325859 Elevation: 12.3 ft CLW	Date: 15/Jul/2003 Test ID: PAL-58 Project: 1131-03-264
	Client: SCSA Site: Chas. Naval Base Container Terminal	



Maximum depth: 58.91 (ft)
 Page 2 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

 <p>S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464</p>	<p>Northing: 367362 Easting: 2325717 Elevation: 12.9 ft CLW</p>	<p>Date: 15/Jul/2003 Test ID: PAL-59 Project: 1131-03-264</p>
	<p>Client: SCSPA Site: Chas. Naval Base Container Terminal</p>	



Maximum depth: 55.96 (ft)

Page 1 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

Estimated Phreatic Surface

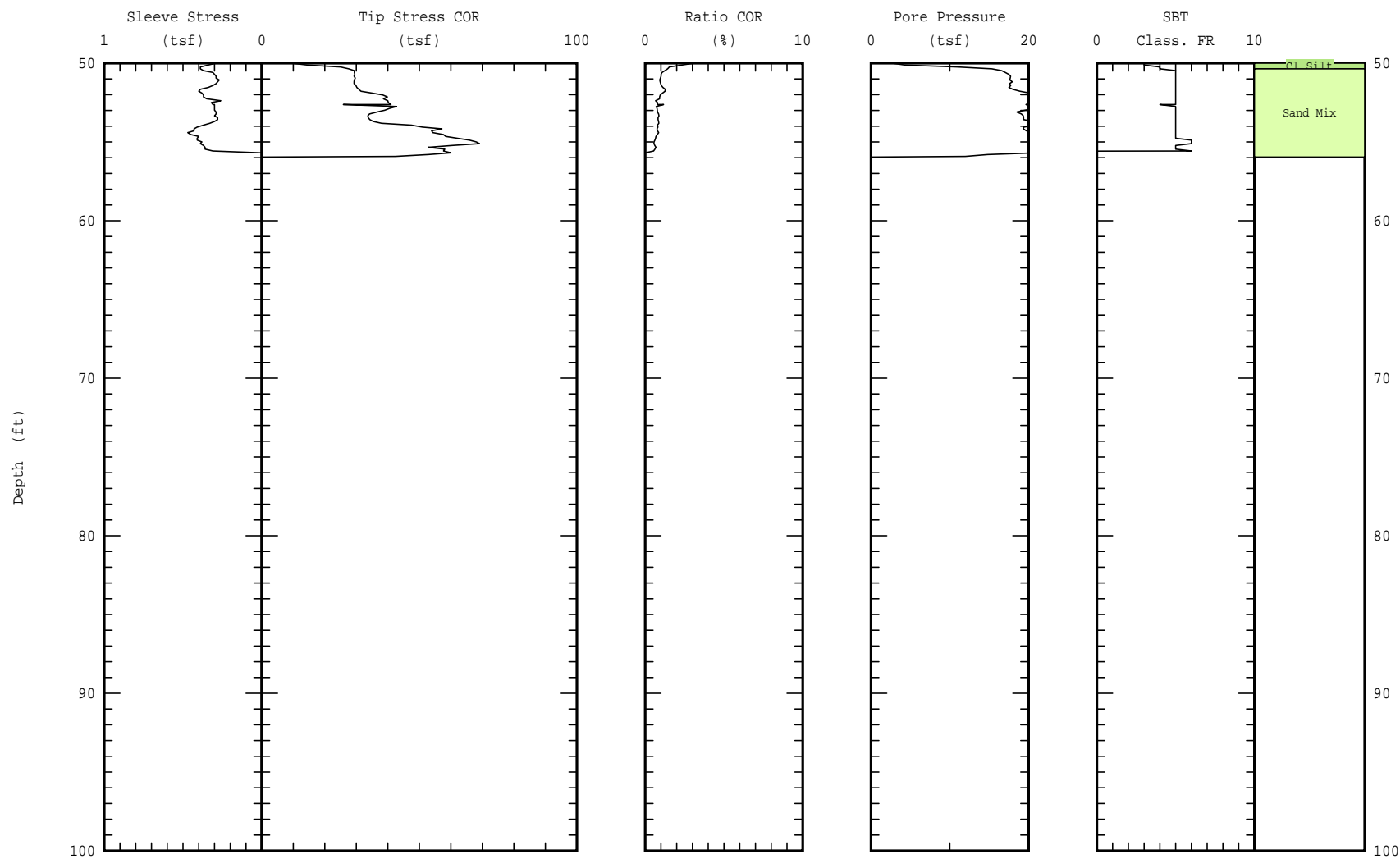


S&ME Inc. (843)884-0005
620 Wando Park Boulevard
Mt. Pleasant, SC 29464

Northing: 367362
Easting: 2325717
Elevation: 12.9 ft CLW

Date: 15/Jul/2003
Test ID: PAL-59
Project: 1131-03-264

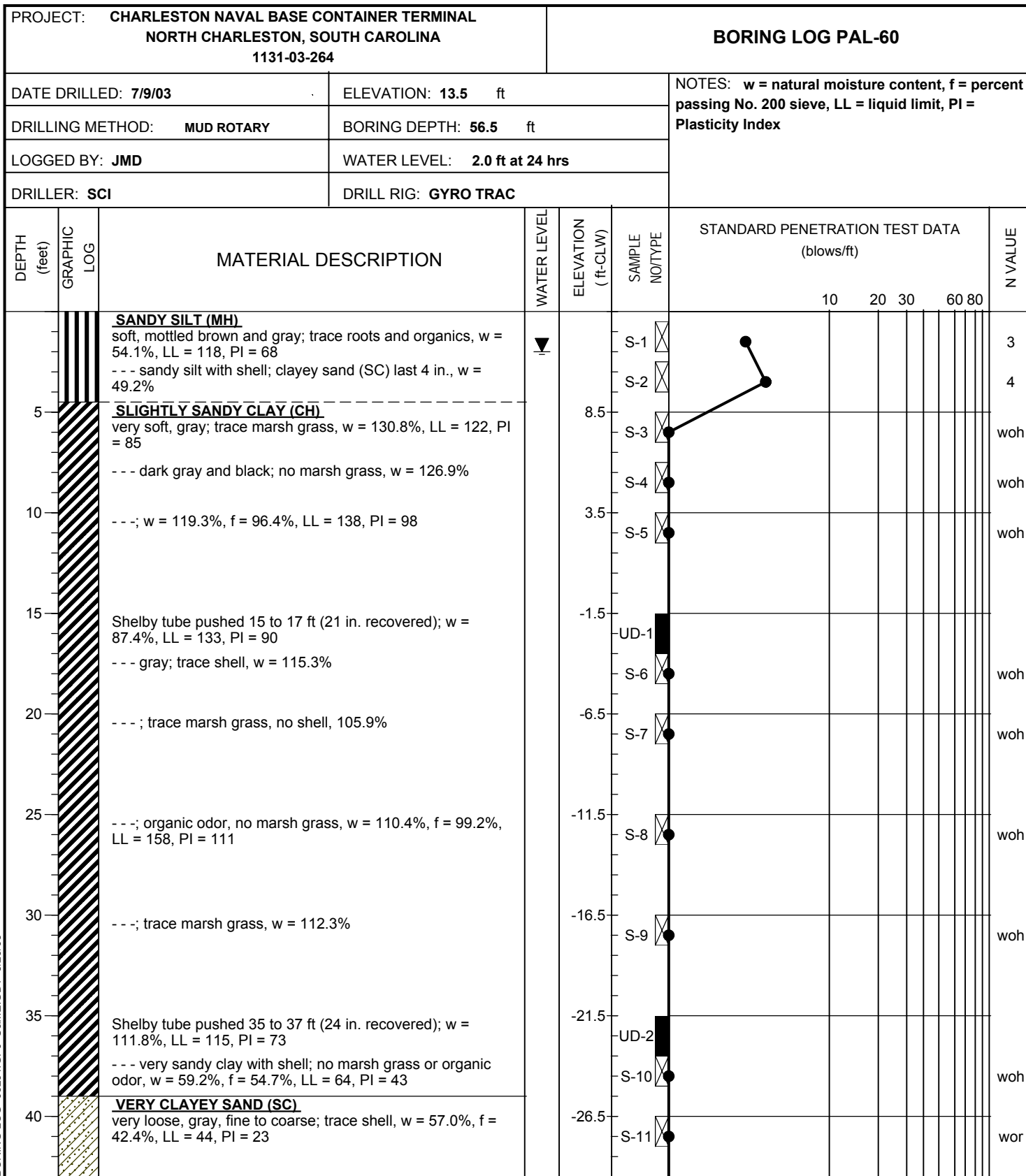
Client: SCSPA
Site: Chas. Naval Base Container Terminal



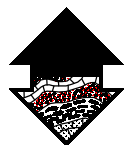
Maximum depth: 55.96 (ft)

Page 2 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)



1. BORING AND SAMPLING IS IN ACCORDANCE WITH ASTM D-1586.
2. PENETRATION (N-VALUE) IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.



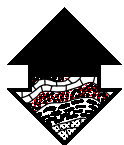
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 Mt. Pleasant, SC

PROJECT: CHARLESTON NAVAL BASE CONTAINER TERMINAL NORTH CHARLESTON, SOUTH CAROLINA 1131-03-264				BORING LOG PAL-60			
DATE DRILLED: 7/9/03		ELEVATION: 13.5 ft		NOTES: w = natural moisture content, f = percent passing No. 200 sieve, LL = liquid limit, PI = Plasticity Index			
DRILLING METHOD: MUD ROTARY		BORING DEPTH: 56.5 ft					
LOGGED BY: JMD		WATER LEVEL: 2.0 ft at 24 hrs					
DRILLER: SCI		DRILL RIG: GYRO TRAC					

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (ft-CLW)	SAMPLE NO/TYPE	STANDARD PENETRATION TEST DATA (blows/ft)						N VALUE
						10	20	30	60	80		
45		---; little shell, w = 63.3%		-31.5	S-12							wor
50		--- clayey sand with shell, loose; trace clay nodules, w = 52.6%, f = 34.4%		-36.5	S-13							5
55		COOPER MARL: SANDY SILT (ML) stiff, olive brown		-41.5	S-14							11
		<u>BORING TERMINATED AT 56.5 FEET</u>										


1. BORING AND SAMPLING IS IN ACCORDANCE WITH ASTM D-1586.
2. PENETRATION (N-VALUE) IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

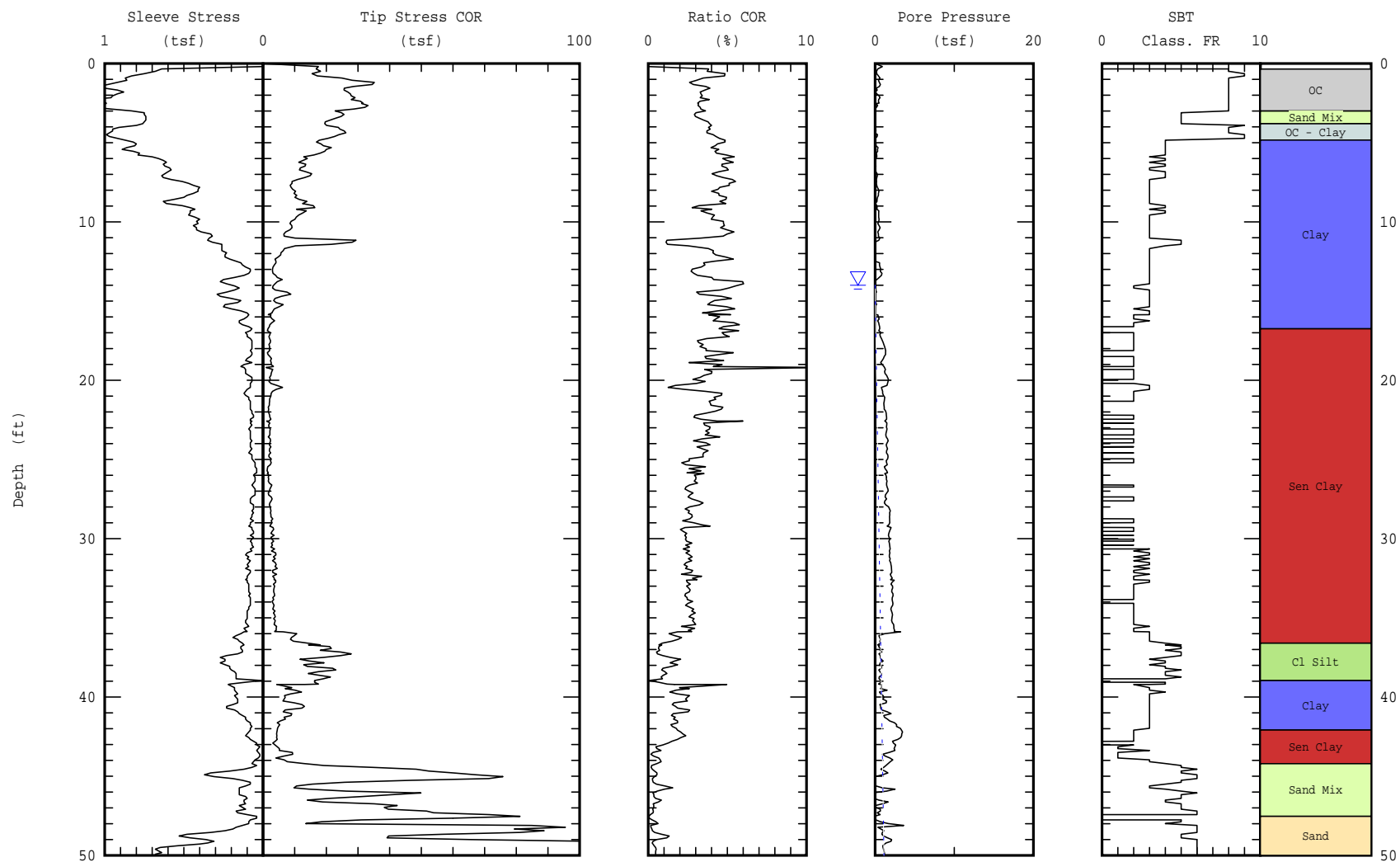


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 S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464	Northing: 367666 Easting: 2326123 Elevation: 17.5 ft CLW	Date: 15/Jul/2003 Test ID: PAL-61 Project: 1131-03-264
	Client: SCSPA Site: Chas. Naval Base Container Terminal	



Maximum depth: 58.91 (ft)

Page 1 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

Estimated Phreatic Surface

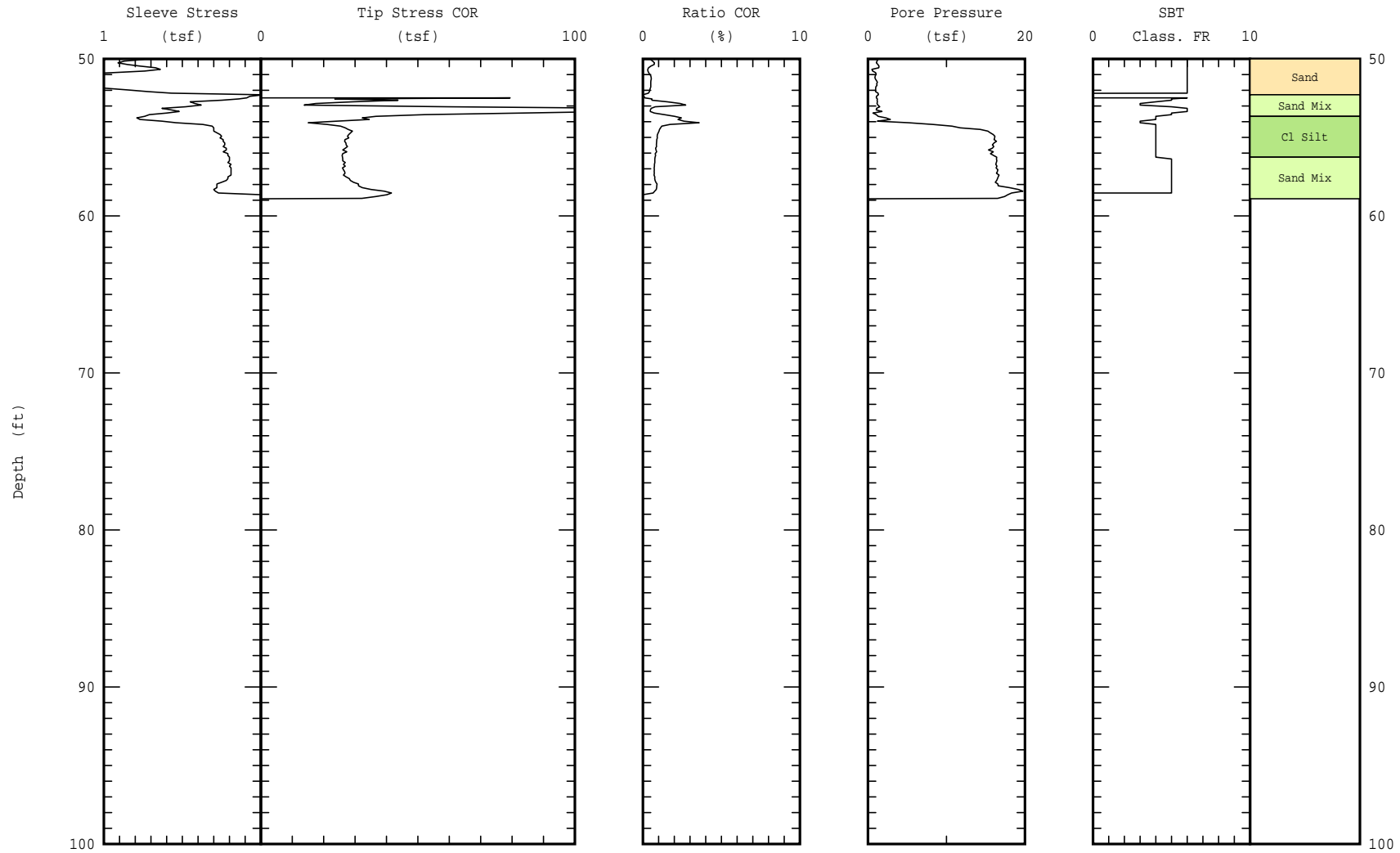


S&ME Inc. (843)884-0005
620 Wando Park Boulevard
Mt. Pleasant, SC 29464

Northing: 367666
Easting: 2326123
Elevation: 17.5 ft CLW

Date: 15/Jul/2003
Test ID: PAL-61
Project: 1131-03-264

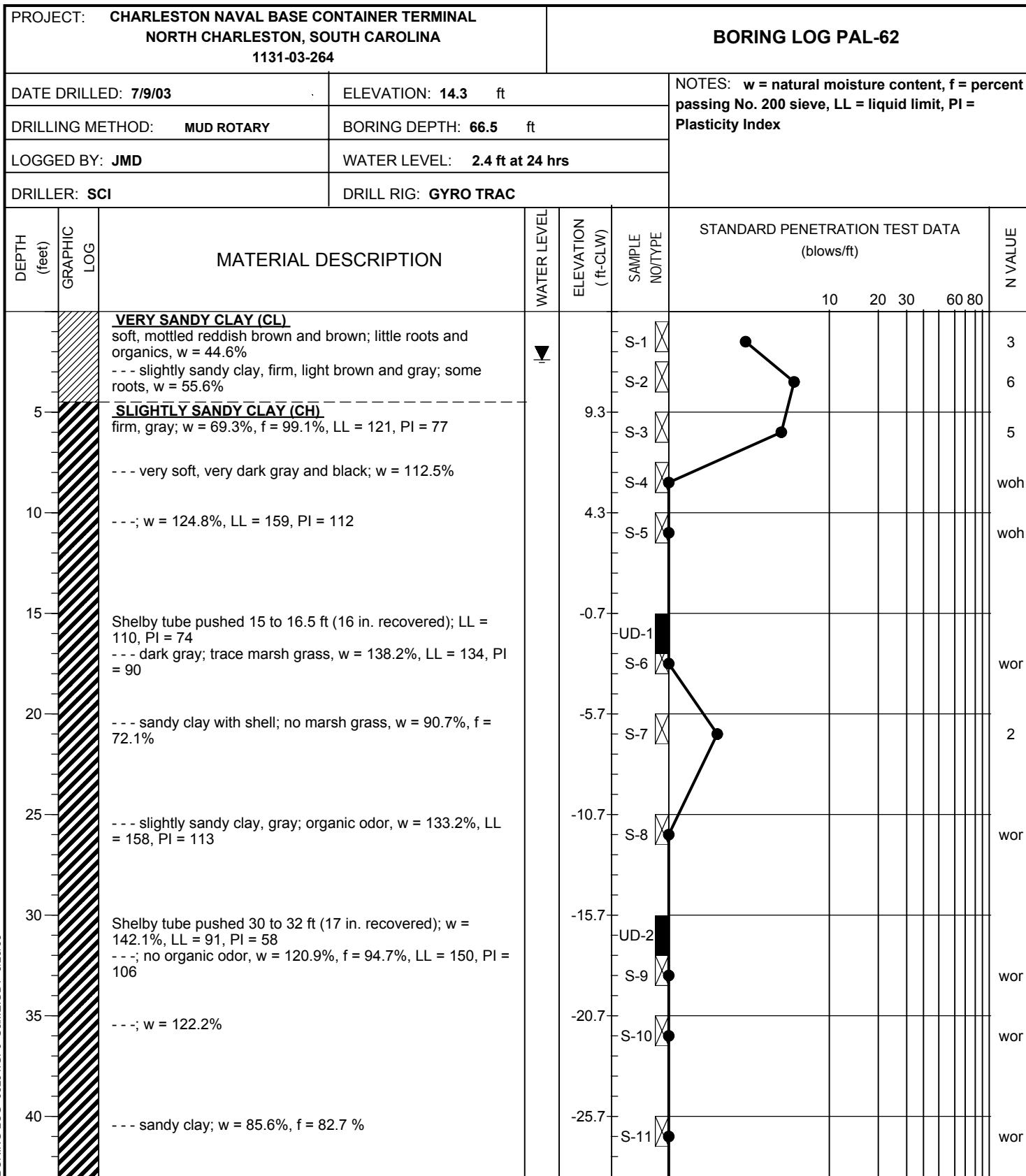
Client: SCSPA
Site: Chas. Naval Base Container Terminal



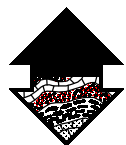
Maximum depth: 58.91 (ft)

Page 2 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)



1. BORING AND SAMPLING IS IN ACCORDANCE WITH ASTM D-1586.
2. PENETRATION (N-VALUE) IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.



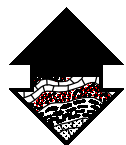
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620 Wando Park Boulevard
 Mt. Pleasant, SC

PROJECT: CHARLESTON NAVAL BASE CONTAINER TERMINAL NORTH CHARLESTON, SOUTH CAROLINA 1131-03-264				BORING LOG PAL-62			
DATE DRILLED: 7/9/03		ELEVATION: 14.3 ft		NOTES: w = natural moisture content, f = percent passing No. 200 sieve, LL = liquid limit, PI = Plasticity Index			
DRILLING METHOD: MUD ROTARY		BORING DEPTH: 66.5 ft					
LOGGED BY: JMD		WATER LEVEL: 2.4 ft at 24 hrs					
DRILLER: SCI		DRILL RIG: GYRO TRAC					

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (ft-CLW)	SAMPLE NO/TYPE	STANDARD PENETRATION TEST DATA (blows/ft)						N VALUE	
						10	20	30	60	80			
45		VERY CLAYEY SAND (SC) very loose, gray, fine to medium; trace shell, w = 57.8%, f = 44.4%, LL = 38, PI = 21		-30.7	S-12								wor
50		SANDY CLAY (CH) very soft, gray; trace sand lenses, w = 87.5%		-35.7	S-13								wor
55		--- slightly sandy clay; no sand lenses, w = 87.0%, LL = 86, PI = 58		-40.7	S-14								wor
60		---; trace shell, trace sand lenses, w = 96.5%, f = 95.3%		-45.7	S-15								woh
65		COOPER MARL: SLIGHTLY SANDY CLAY (CL) stiff, olive brown		-50.7	S-16								10
		<u>BORING TERMINATED AT 66.5 FEET</u>											

1. BORING AND SAMPLING IS IN ACCORDANCE WITH ASTM D-1586.
2. PENETRATION (N-VALUE) IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.



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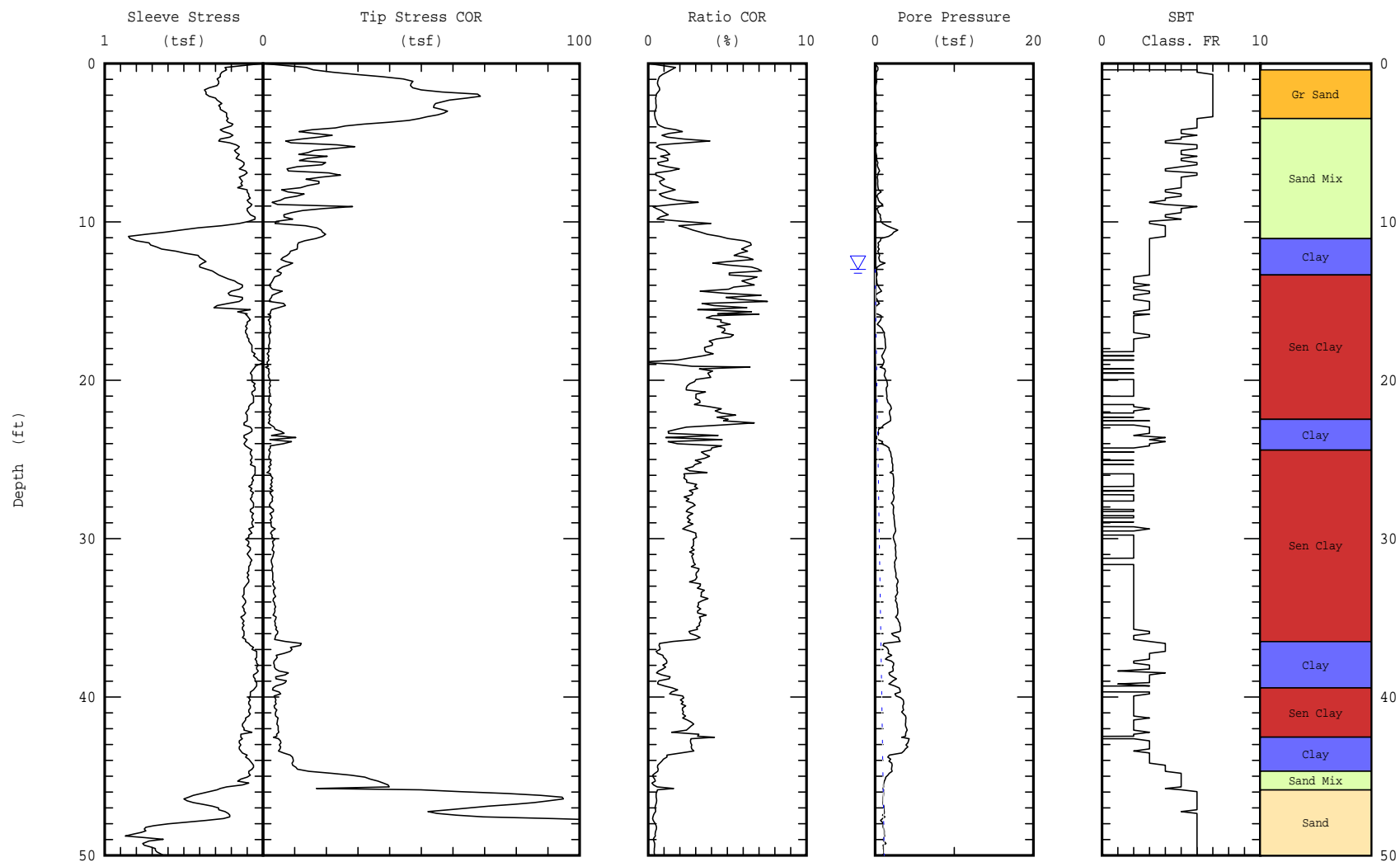


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620 Wando Park Boulevard
Mt. Pleasant, SC 29464

Northing: 368215
Easting: 2325838
Elevation: 18.3 ft CLW

Date: 15/Jul/2003
Test ID: PAL-63
Project: 1131-03-264

Client: SCSA
Site: Chas. Naval Base Container Terminal




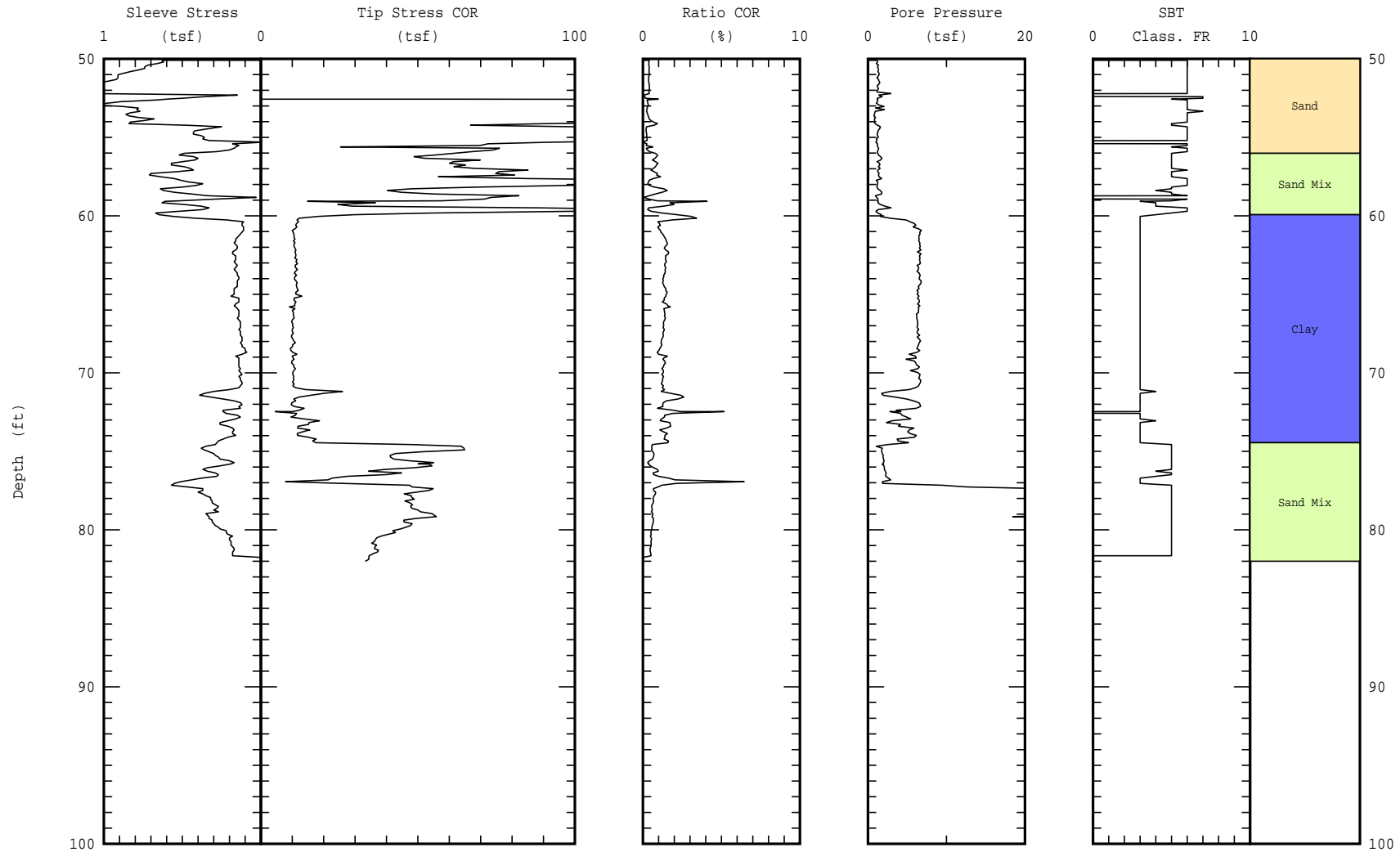
Maximum depth: 82.00 (ft)

Page 1 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

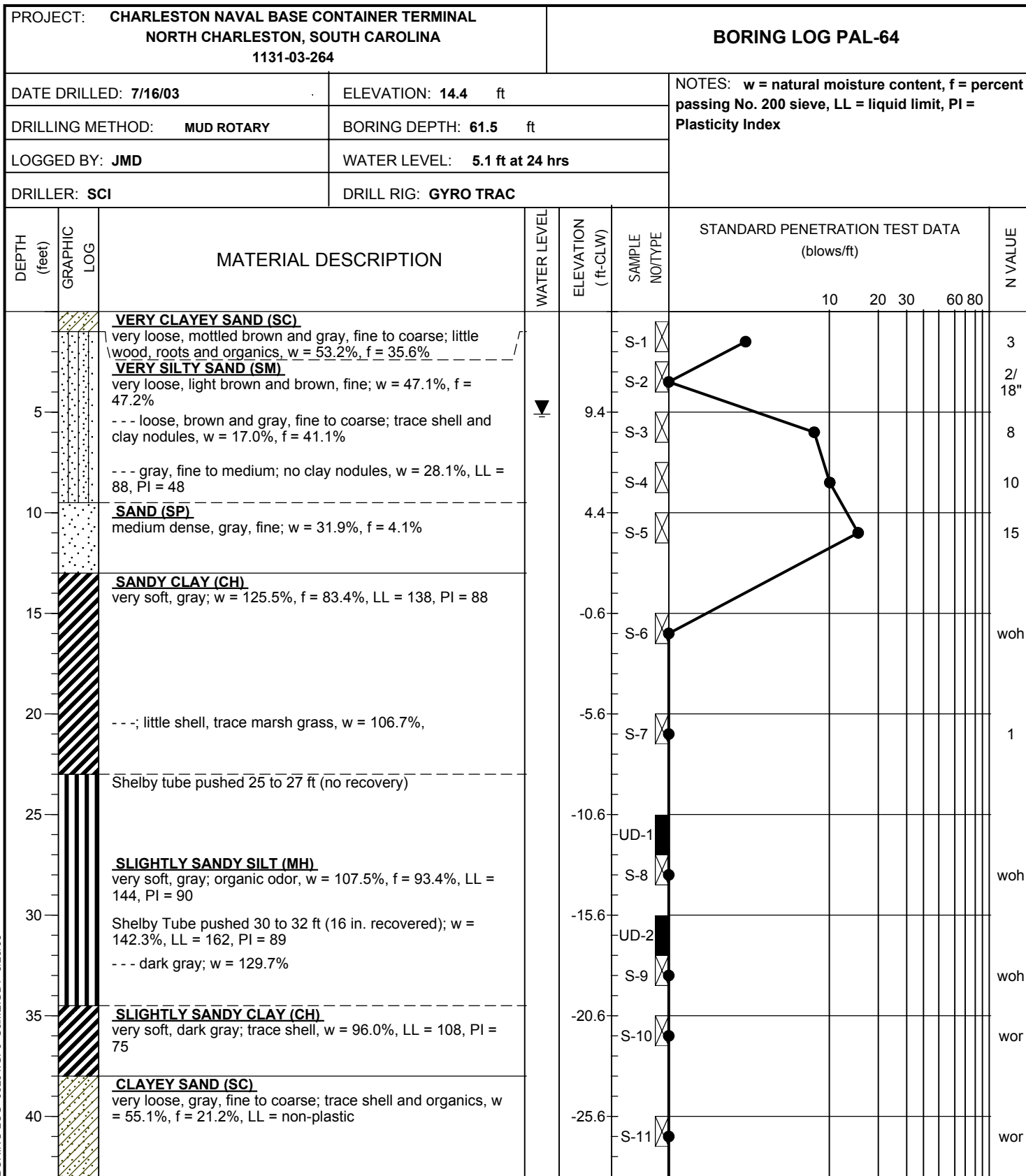
Estimated Phreatic Surface

 <p>S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464</p>	<p>Northing: 368215 Easting: 2325838 Elevation: 18.3 ft CLW</p>	<p>Date: 15/Jul/2003 Test ID: PAL-63 Project: 1131-03-264</p>
	<p>Client: SCSPA Site: Chas. Naval Base Container Terminal</p>	

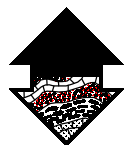


Maximum depth: 82.00 (ft)
Page 2 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)



1. BORING AND SAMPLING IS IN ACCORDANCE WITH ASTM D-1586.
2. PENETRATION (N-VALUE) IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.



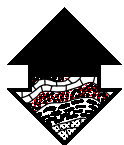
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PROJECT: CHARLESTON NAVAL BASE CONTAINER TERMINAL NORTH CHARLESTON, SOUTH CAROLINA 1131-03-264				BORING LOG PAL-64			
DATE DRILLED: 7/16/03		ELEVATION: 14.4 ft		NOTES: w = natural moisture content, f = percent passing No. 200 sieve, LL = liquid limit, PI = Plasticity Index			
DRILLING METHOD: MUD ROTARY		BORING DEPTH: 61.5 ft					
LOGGED BY: JMD		WATER LEVEL: 5.1 ft at 24 hrs					
DRILLER: SCI		DRILL RIG: GYRO TRAC					

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (ft-CLW)	SAMPLE NO/TYPE	STANDARD PENETRATION TEST DATA (blows/ft)						N VALUE
						10	20	30	60	80		
45		---; no organics, w = 55.1%, f = 30.8%, LL = 52, PI = 25		-30.6	S-12							woh
50		Shelby tube pushed 50 to 52 ft (24 in. recovered); w = 69.1%, LL = 112, PI = 79		-35.6	UD-3							
		SANDY SILT (MH) very soft, gray; trace shell, w = 87.2%, f = 74.6%, LL = 124, PI = 47			S-13							woh
55		VERY SANDY CLAY (CH) very soft, gray; trace shell, w = 73.1%, f = 55.0%, LL = 56, PI = 41		-40.6	S-14							wor
60		COOPER MARL: SANDY SILT (ML) stiff, olive brown		-45.6	S-15							15
		<u>BORING TERMINATED AT 61.5 FEET</u>										

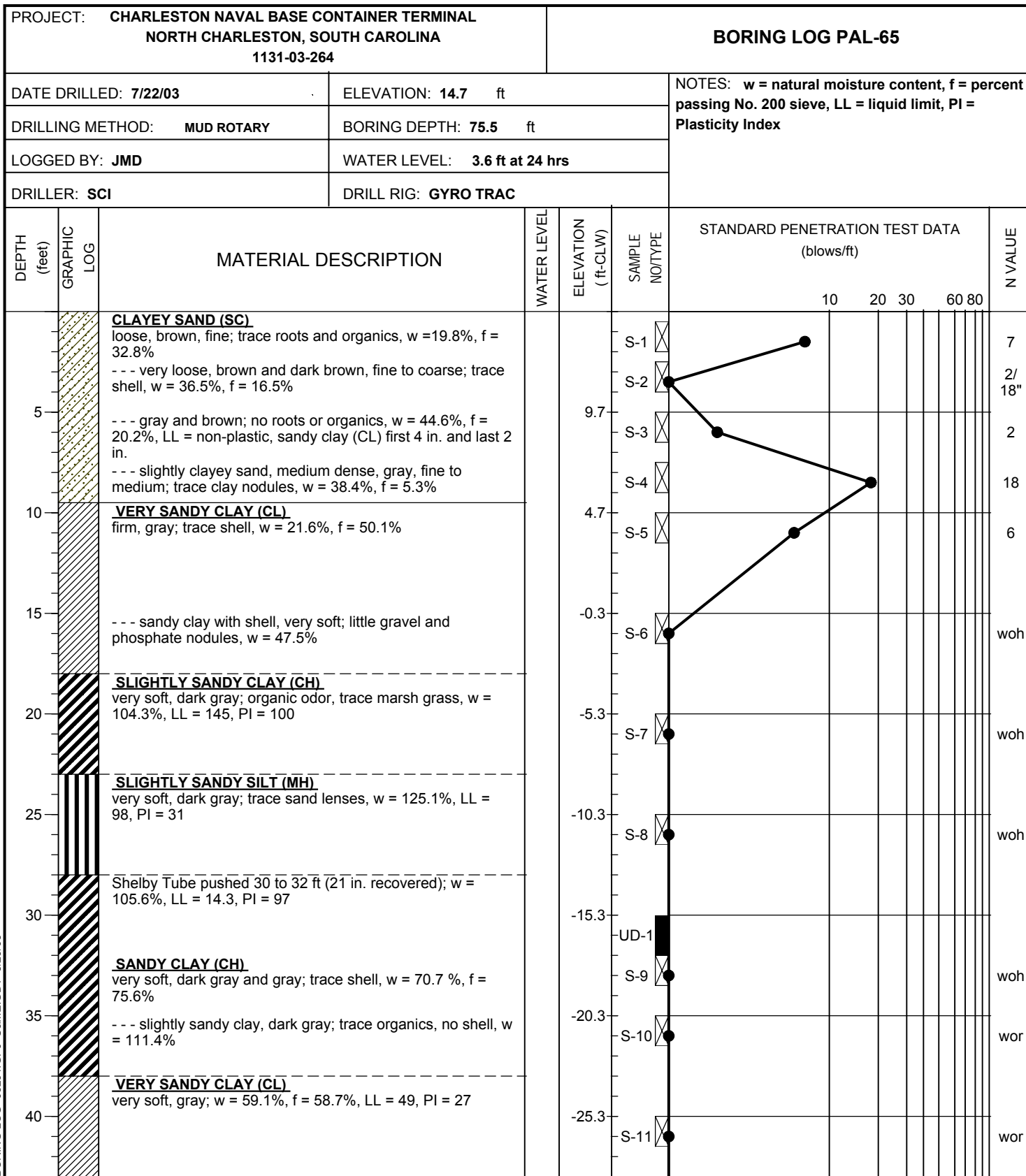
1. BORING AND SAMPLING IS IN ACCORDANCE WITH ASTM D-1586.
2. PENETRATION (N-VALUE) IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.



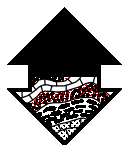
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1. BORING AND SAMPLING IS IN ACCORDANCE WITH ASTM D-1586.
2. PENETRATION (N-VALUE) IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

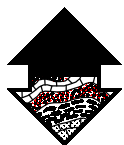


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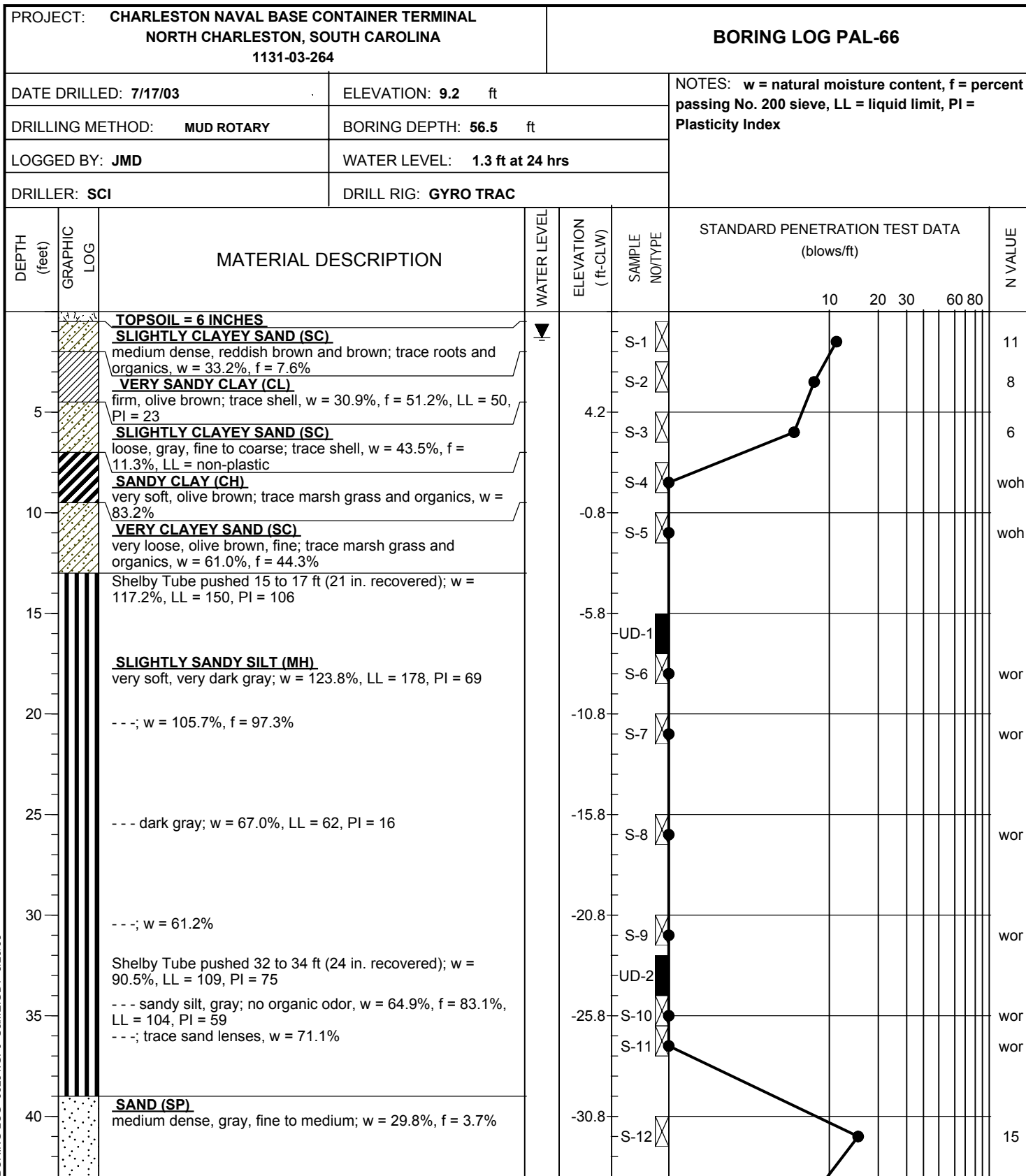
PROJECT: CHARLESTON NAVAL BASE CONTAINER TERMINAL NORTH CHARLESTON, SOUTH CAROLINA 1131-03-264				BORING LOG PAL-65								
DATE DRILLED: 7/22/03		ELEVATION: 14.7 ft			NOTES: w = natural moisture content, f = percent passing No. 200 sieve, LL = liquid limit, PI = Plasticity Index							
DRILLING METHOD: MUD ROTARY		BORING DEPTH: 75.5 ft										
LOGGED BY: JMD		WATER LEVEL: 3.6 ft at 24 hrs										
DRILLER: SCI		DRILL RIG: GYRO TRAC										
DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (ft-CLW)	SAMPLE NO/TYPE	STANDARD PENETRATION TEST DATA (blows/ft)					N VALUE	
						10	20	30	60	80		
45		<u>CLAYEY SAND (SC)</u> very loose, gray, fine to coarse; trace shell, w = 56.4%, f = 28.3%, LL = 43, PI = 17		-30.3	S-12							wor
50		<u>SLIGHTLY SILTY SAND (SM)</u> very loose, gray, fine to medium; trace shell, w = 39.2%, f = 13.1%, LL = 32, PI = 5		-35.3	S-13							woh
55		Shelby Tube pushed 55 to 57 ft (no recovery) -- -; w = 52.9%		-40.3	UD-2							
60		<u>SANDY CLAY (CH)</u> very soft, dark gray; trace shell and sand lenses, w = 71.5%, f = 82.2%, LL = 137, PI = 97		-45.3	S-14							wor
65		Shelby Tube pushed 62 to 64 ft (20 in. recovered); w = 97.6%, LL = 146, PI = 93		-50.3	S-15							
		<u>SANDY SILT (MH)</u> very soft, dark gray; trace sand lenses, w = 97.3%		-50.3	S-16							woh
70		<u>CLAYEY SAND (SC)</u> loose, gray, fine to coarse; little clay nodules, trace shell, w = 39.4%, f = 19.5%, LL = non=plastic		-55.3	S-17							9
		<u>COOPER MARL: SANDY SILT (ML)</u> stiff, olive brown		-60.3	S-18							11
75		<u>BORING TERMINATED AT 75.5 FEET</u>										

1. BORING AND SAMPLING IS IN ACCORDANCE WITH ASTM D-1586.
2. PENETRATION (N-VALUE) IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

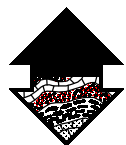


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1. BORING AND SAMPLING IS IN ACCORDANCE WITH ASTM D-1586.
2. PENETRATION (N-VALUE) IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.



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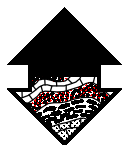
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PROJECT: CHARLESTON NAVAL BASE CONTAINER TERMINAL NORTH CHARLESTON, SOUTH CAROLINA 1131-03-264				BORING LOG PAL-66			
DATE DRILLED: 7/17/03		ELEVATION: 9.2 ft		NOTES: w = natural moisture content, f = percent passing No. 200 sieve, LL = liquid limit, PI = Plasticity Index			
DRILLING METHOD: MUD ROTARY		BORING DEPTH: 56.5 ft					
LOGGED BY: JMD		WATER LEVEL: 1.3 ft at 24 hrs					
DRILLER: SCI		DRILL RIG: GYRO TRAC					

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (ft-CLW)	SAMPLE NO/TYPE	STANDARD PENETRATION TEST DATA (blows/ft)	N VALUE
45	[Dotted Pattern]	--- loose; w = 24.1%, f = 1.0%		-35.8	S-13 [X]	10	5
50	[Dotted Pattern]	SLIGHTLY SILTY SAND WITH SHELL (SM) medium dense, gray, fine to medium; little phosphate nodules, w = 14.8%, f = 9.7%		-40.8	S-14 [X]	25	25
55	[Hatched Pattern]	COOPER MARL: SANDY SILT (ML) very stiff, olive brown		-45.8	S-15 [X]	22	22
<u>BORING TERMINATED AT 56.5 FEET</u>							

BORING LOG 03264.GPJ S&ME.GDT 8/26/03

1. BORING AND SAMPLING IS IN ACCORDANCE WITH ASTM D-1586.
2. PENETRATION (N-VALUE) IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.



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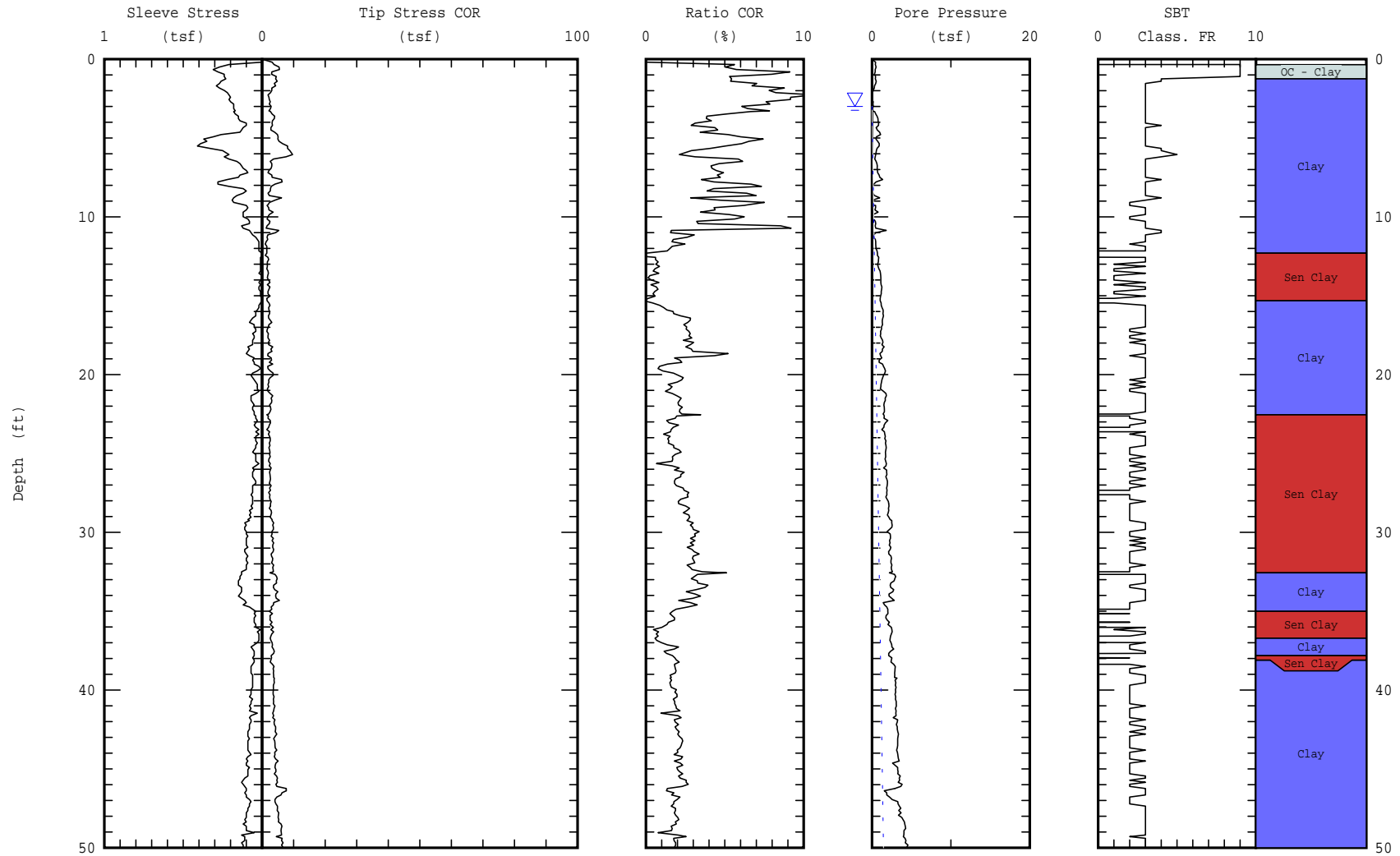


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Northing: 368120
Easting: 2325286
Elevation: 13.8 ft CLW

Date: 15/Jul/2003
Test ID: PAL-67
Project: 1131-03-264

Client: SCSPA
Site: Chas. Naval Base Container Terminal



Maximum depth: 75.79 (ft)

Page 1 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

Estimated Phreatic Surface

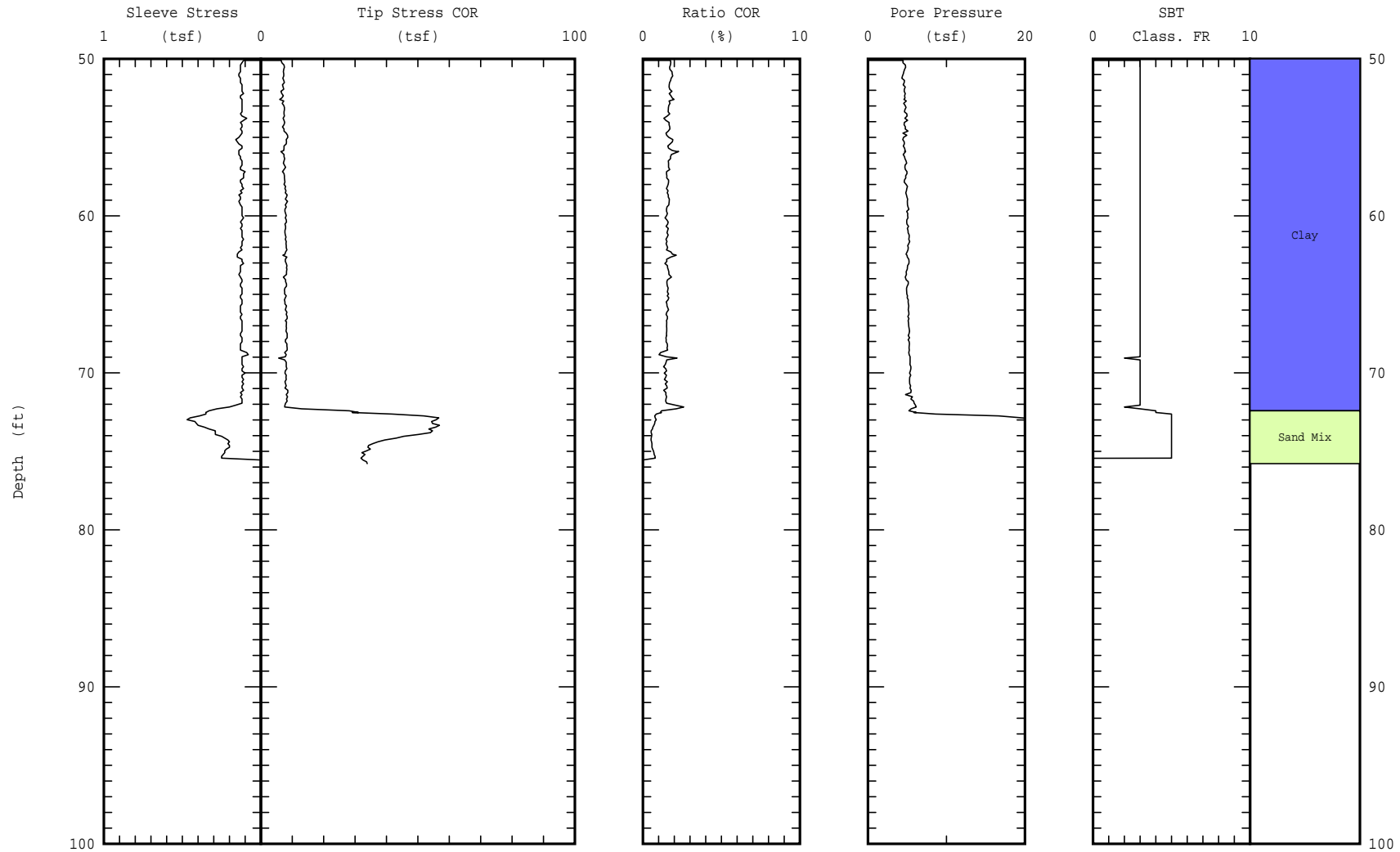


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Northing: 368120
Easting: 2325286
Elevation: 13.8 ft CLW

Date: 15/Jul/2003
Test ID: PAL-67
Project: 1131-03-264


Client: SCSPA
Site: Chas. Naval Base Container Terminal

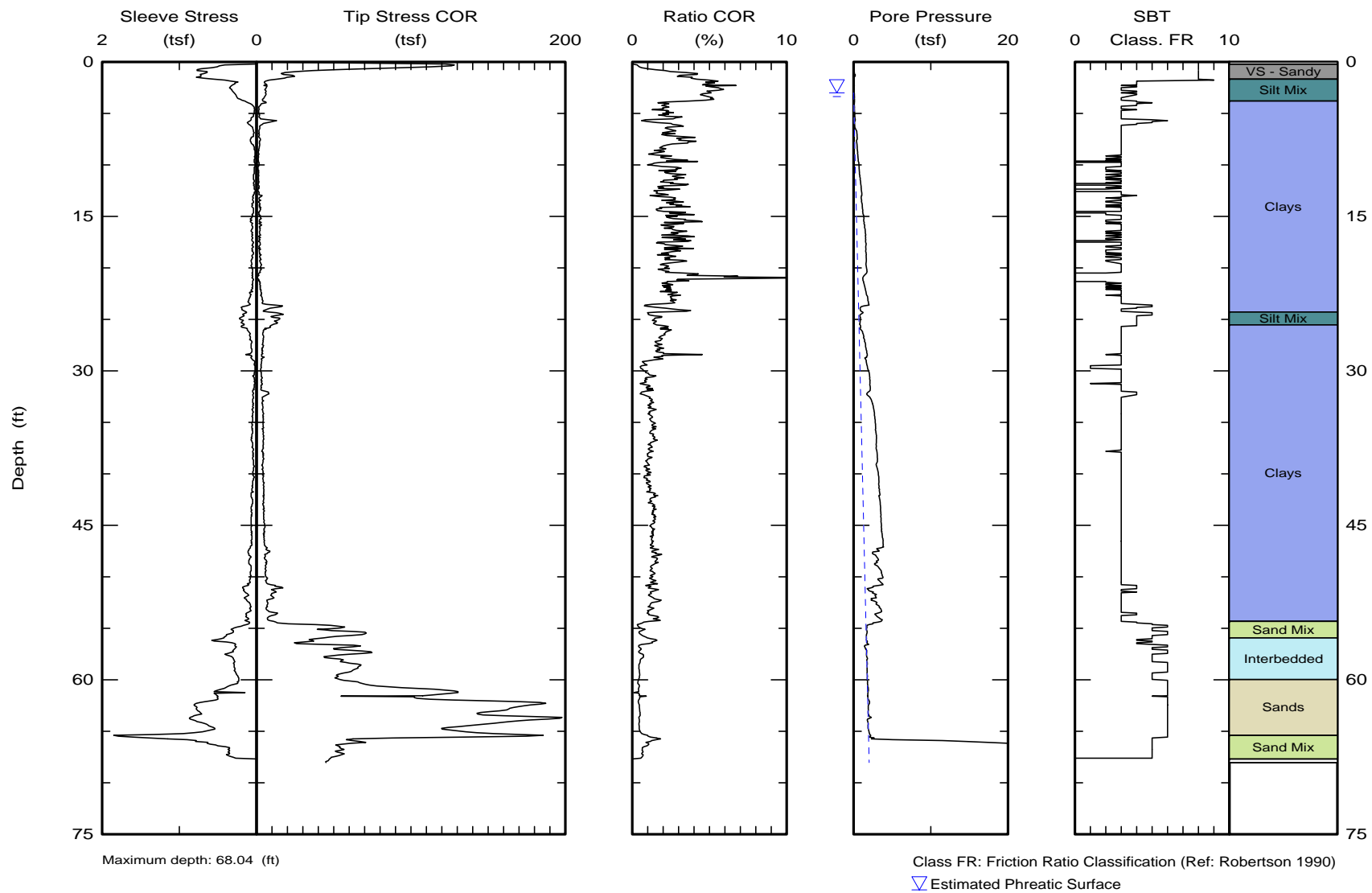



Maximum depth: 75.79 (ft)

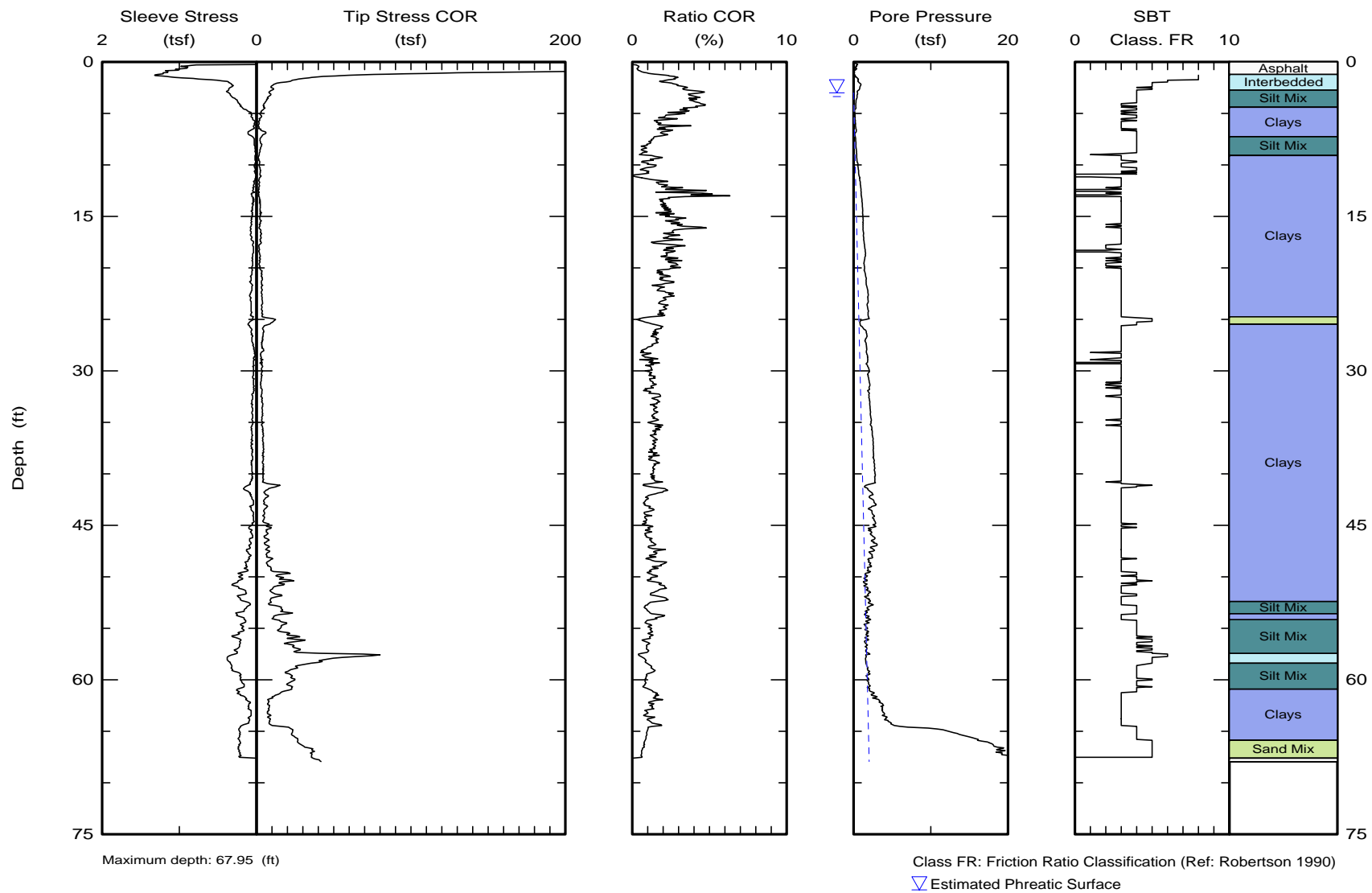
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Class FR: Friction Ratio Classification (Ref: Robertson 1990)

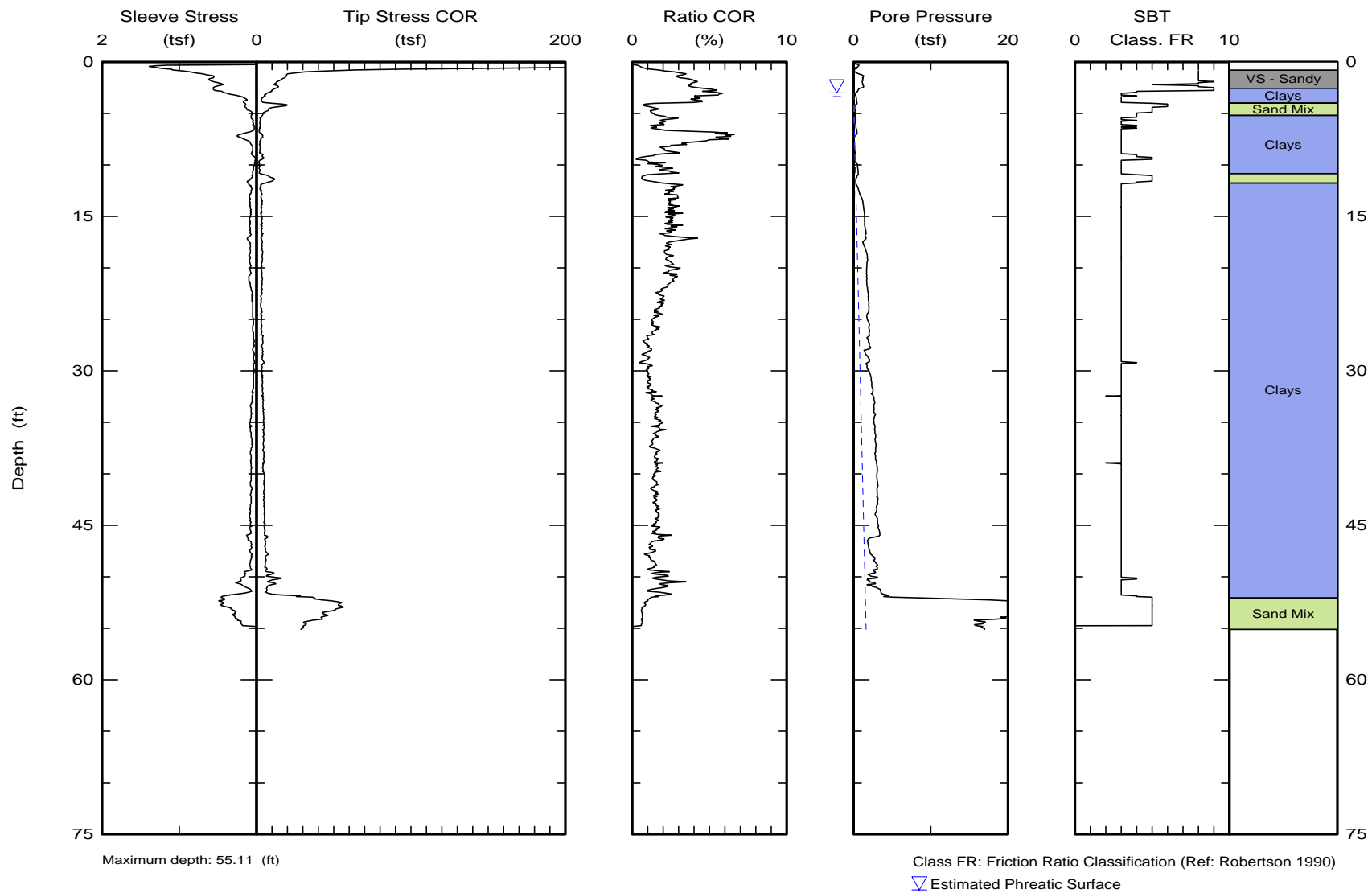
 <p>S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464 www.smeinc.com</p>	<p>Northing: 370307 Easting: 2323722 Elevation:</p>	<p>Date: 04/Apr/2005 Test ID: PAL-68 Project: 1131-03-264</p>
	<p>Client: SCSPA Job Site: Charleston Naval Base Container Termin</p>	




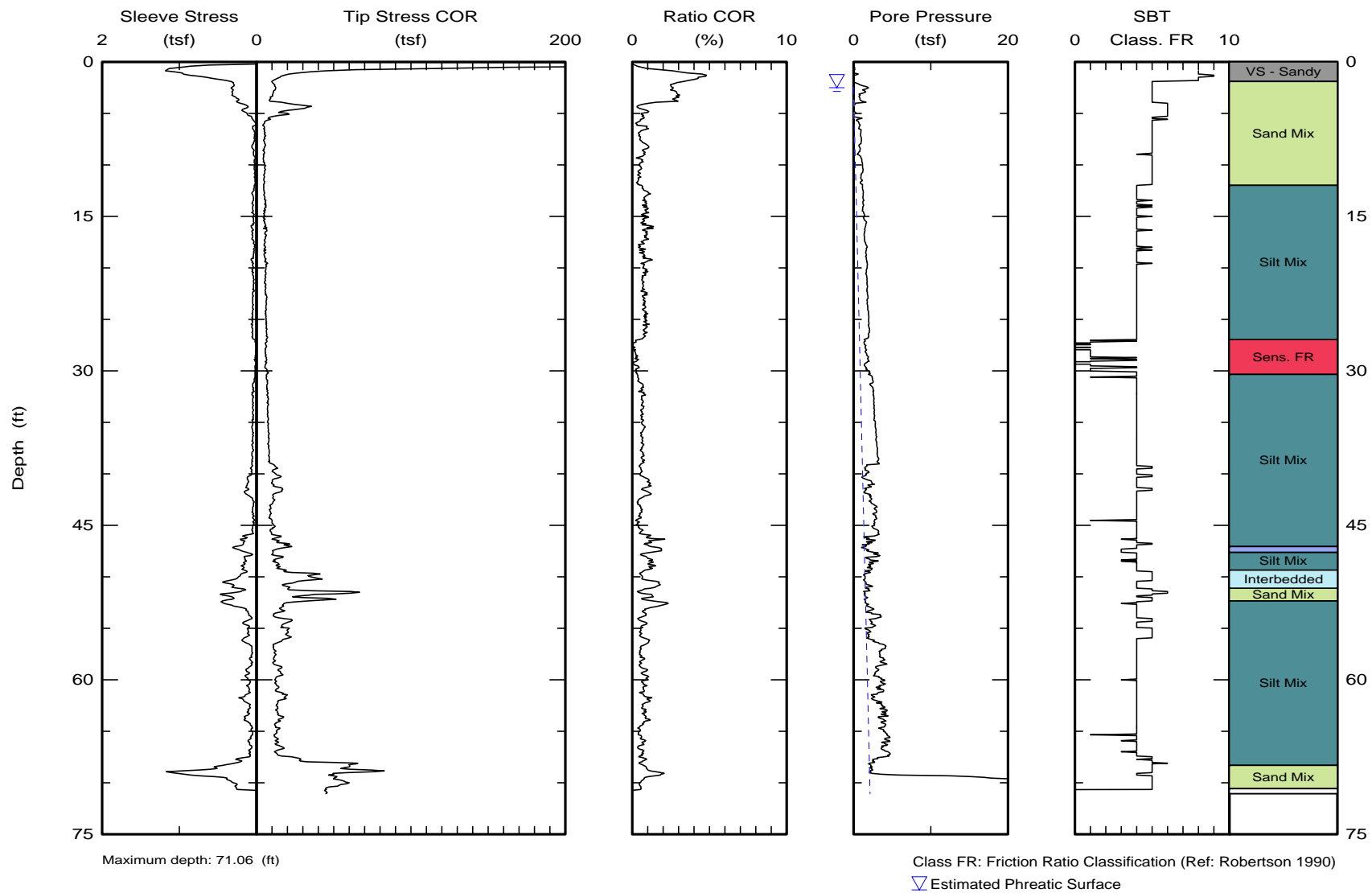
 <p>S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464 www.smeinc.com</p>	<p>Northing: 370205 Easting: 2324413 Elevation: 10.76 ft CLW</p>	<p>Date: 04/Apr/2005 Test ID: PAL-69 Project: 1131-03-264</p>
	<p>Client: SCSPA Job Site: Chas. Naval Base Container Terminal</p>	




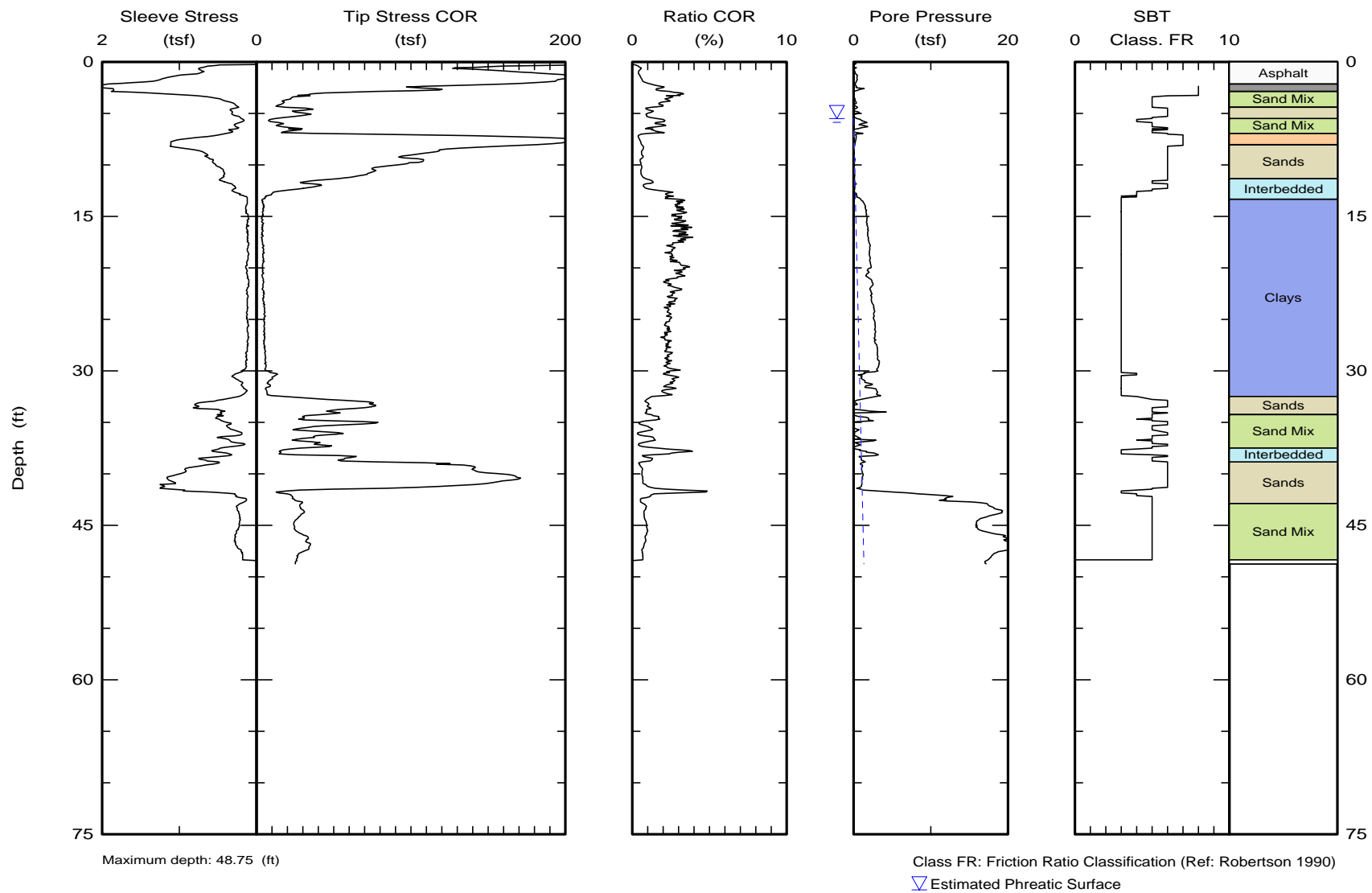
	S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464 www.smeinc.com	Northing: 370112 Easting: 2324413 Elevation: 11.13 ft CLW	Date: 04/Apr/2005 Test ID: PAL-70 Project: 1131-03-264
		Client: SCSPA Job Site: Chas. Naval Base Container Terminal	




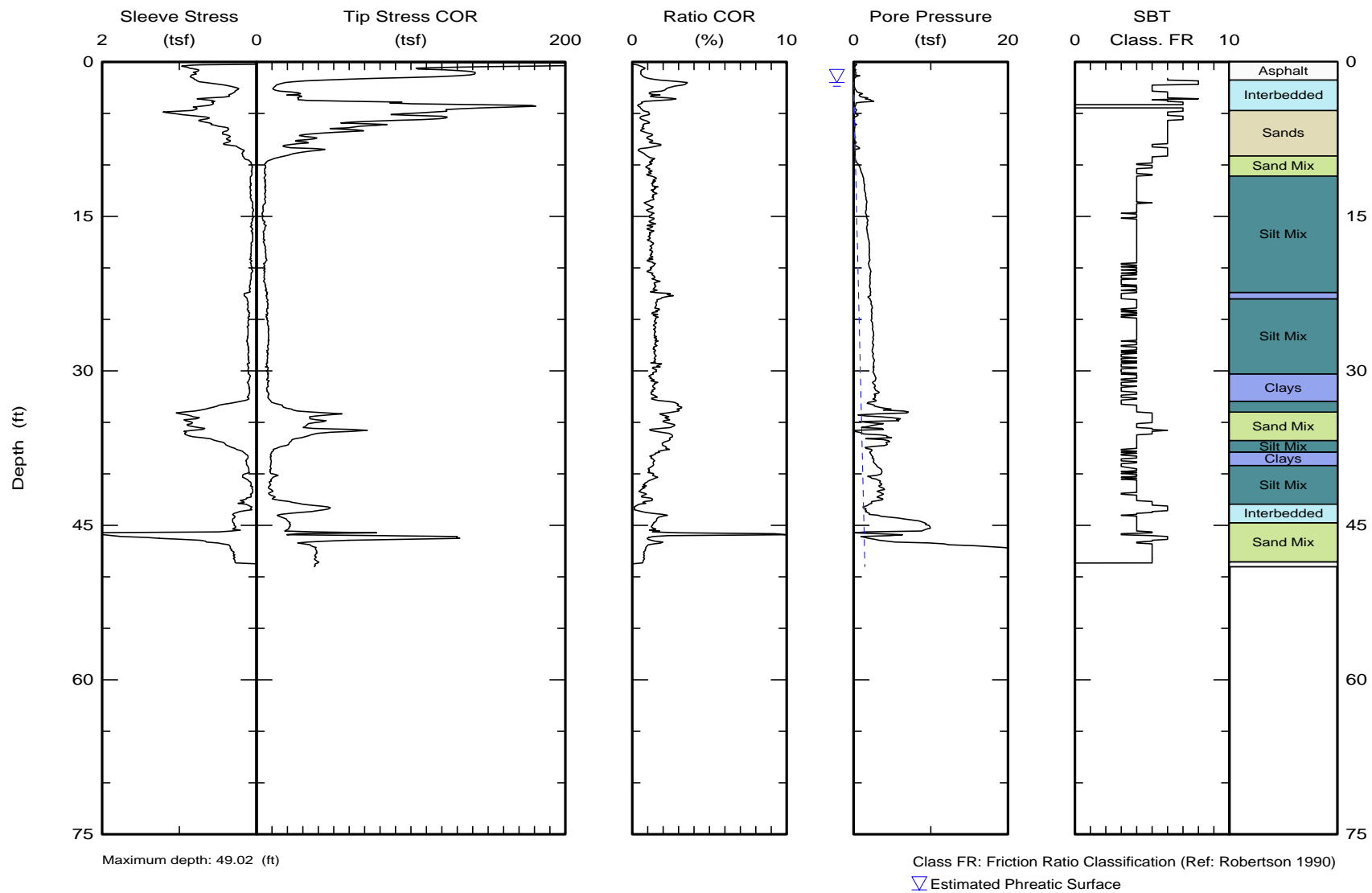
	S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464 www.smeinc.com	Northing: 369881 Easting: 2324387 Elevation: 10.94 ft CLW	Date: 05/Apr/2005 Test ID: PAL-71 Project: 1131-03-264
		Client: SCSPA Job Site: Chas. Naval Base Container Terminal	




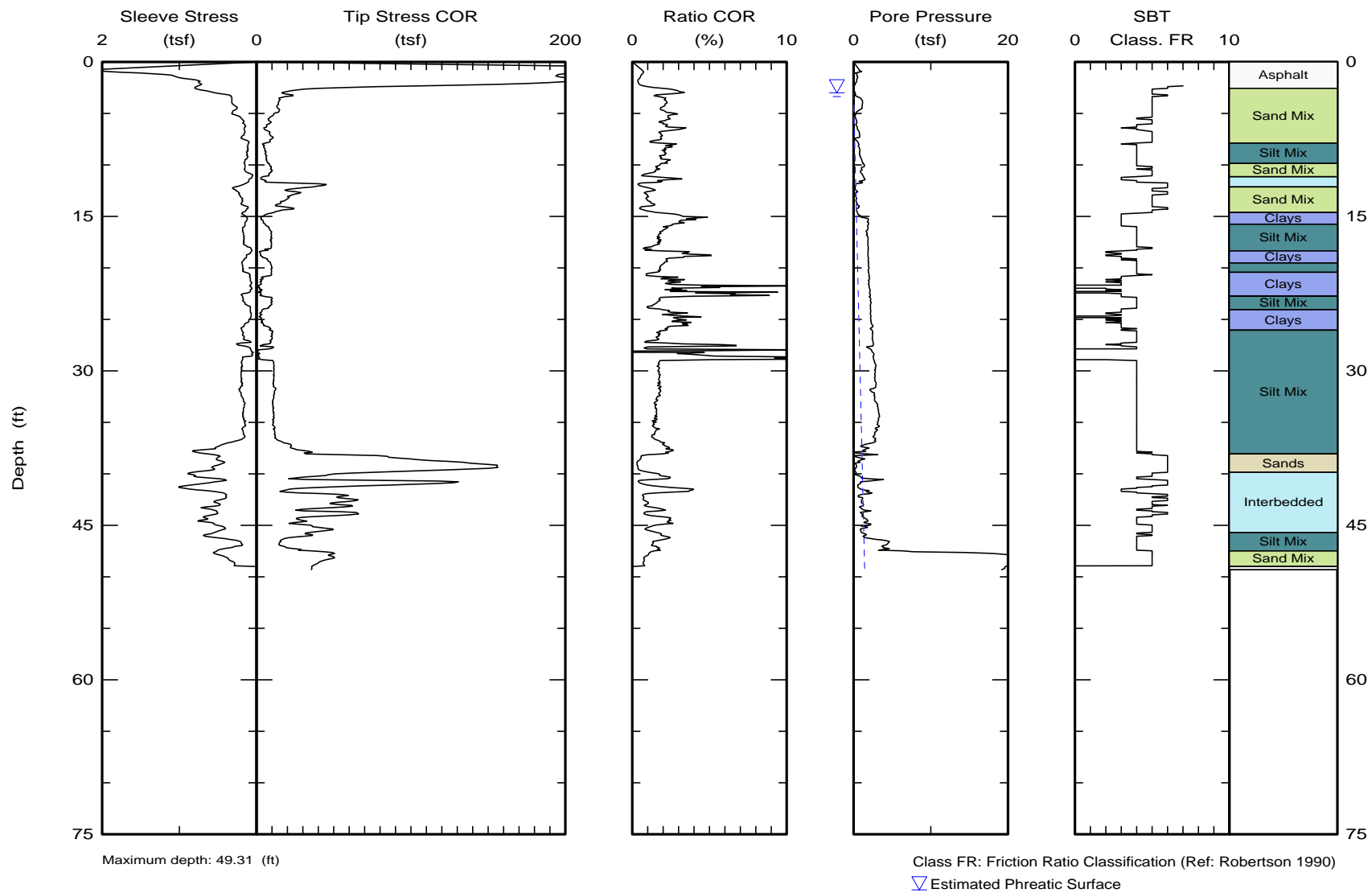
	S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464 www.smeinc.com	Northing: 369885 Easting: 2325122 Elevation: 11.69 ft CLW	Date: 05/Apr/2005 Test ID: PAL-72 Project: 1131-03-264
		Client: SCSPA Job Site: Chas. Naval Base Container Terminal	

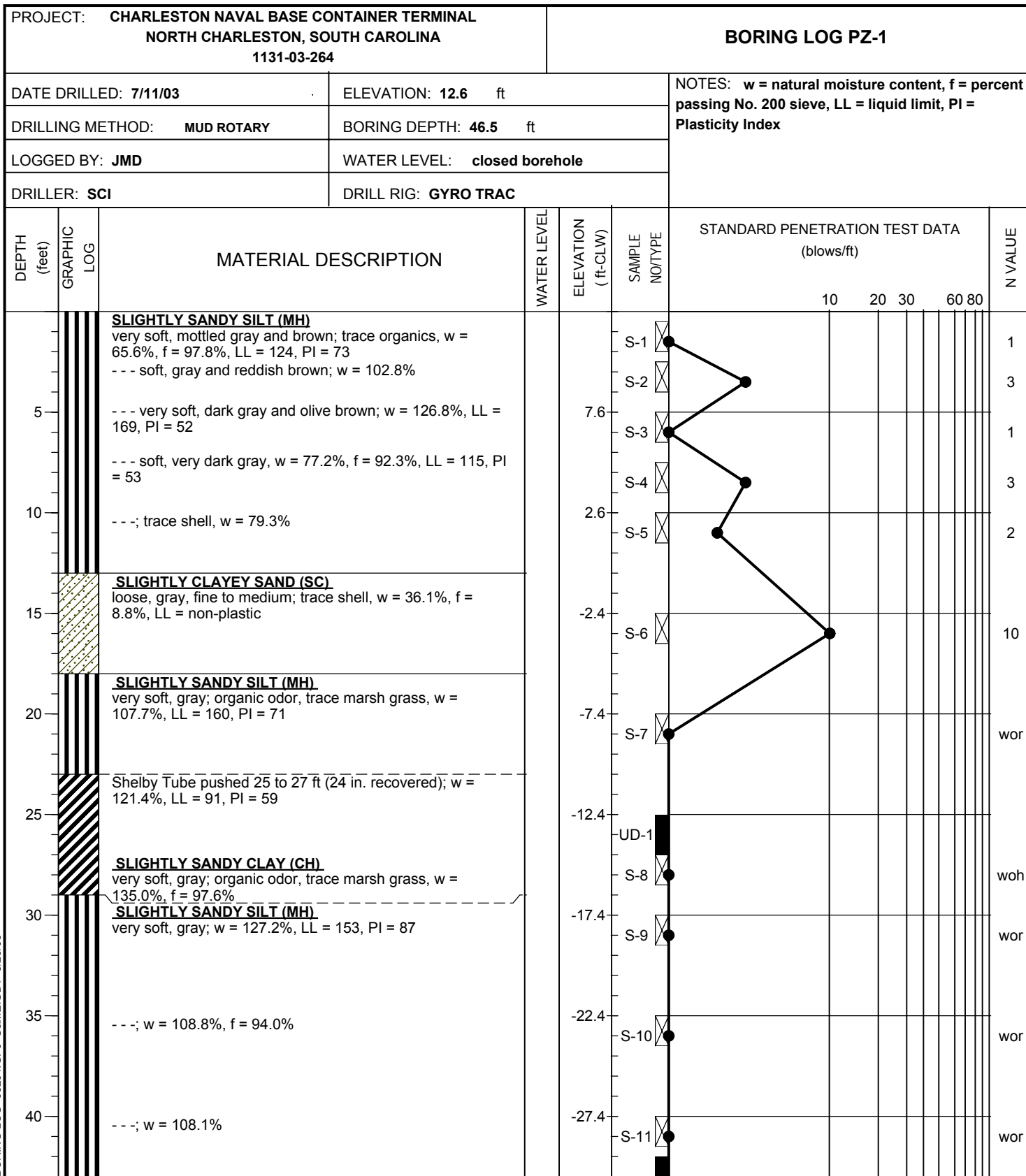


	S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464 www.smeinc.com	Northing: 369695 Easting: 2325502 Elevation: 9.66 ft CLW Client: SCSPA Job Site: Chas. Naval Base Container Terminal	Date: 05/Apr/2005 Test ID: PAL-73 Project: 1131-03-264

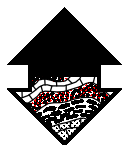


 <p>S&ME Inc. (843)884-0005 620 Wando Park Boulevard Mt. Pleasant, SC 29464</p> <p>www.smeinc.com</p>	<p>Northing: 369364 Easting: 2325321 Elevation: 13.23 ft CLW</p>	<p>Date: 05/Apr/2005 Test ID: PAL-74 Project: 1131-03-264</p>
	<p>Client: SCSPA Job Site: Chas. Naval Base Container Terminal</p>	





1. BORING AND SAMPLING IS IN ACCORDANCE WITH ASTM D-1586.
2. PENETRATION (N-VALUE) IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

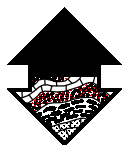


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PROJECT: CHARLESTON NAVAL BASE CONTAINER TERMINAL NORTH CHARLESTON, SOUTH CAROLINA 1131-03-264				BORING LOG PZ-1								
DATE DRILLED: 7/11/03		ELEVATION: 12.6 ft			NOTES: w = natural moisture content, f = percent passing No. 200 sieve, LL = liquid limit, PI = Plasticity Index							
DRILLING METHOD: MUD ROTARY		BORING DEPTH: 46.5 ft										
LOGGED BY: JMD		WATER LEVEL: closed borehole										
DRILLER: SCI		DRILL RIG: GYRO TRAC										
DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (ft-CLW)	SAMPLE NO/TYPE	STANDARD PENETRATION TEST DATA (blows/ft)						N VALUE
						10	20	30	60	80		
45		Shelby Tube pushed 42 to 44 ft (24 in. recovered); w = 70.3%, LL = 75, PI = 47 ---; w = 106.9%, f = 96.7%, LL = 160, PI = 104 <u>BORING TERMINATED AT 46.5 FEET</u> <u>PIEZOMETER PUSHED TO A DEPTH OF 50 FEET</u>		-32.4	UD-2 ■ S-12 ●						wor	

1. BORING AND SAMPLING IS IN ACCORDANCE WITH ASTM D-1586.
2. PENETRATION (N-VALUE) IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.



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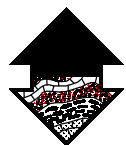
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PROJECT: CHARLESTON NAVAL BASE CONTAINER TERMINAL NORTH CHARLESTON, SOUTH CAROLINA 1131-03-264				BORING LOG PZ-2			
DATE DRILLED: 7/15/03		ELEVATION: 12.6 ft		NOTES: w = natural moisture content, f = percent passing No. 200 sieve, LL = liquid limit, PI = Plasticity Index			
DRILLING METHOD: MUD ROTARY		BORING DEPTH: 33.5 ft					
LOGGED BY: JMD		WATER LEVEL: closed borehole					
DRILLER: SCI		DRILL RIG: GYRO TRAC					

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (ft-CLW)	SAMPLE NO/TYPE	STANDARD PENETRATION TEST DATA (blows/ft)					N VALUE
						10	20	30	60	80	
5		Drilled out 0 to 32 ft		7.6							
10				2.6							
15				-2.4							
20				-7.4							
25				-12.4							
30				-17.4							
		<u>SLIGHTLY SANDY SILT (MH)</u> very soft, gray; organic odor, trace shell, w = 122.2%, f = 98.4%, LL = 152, PI = 85 <u>BORING TERMINATED AT 33.5 FEET</u> <u>PIEZOMETER PUSHED TO A DEPTH OF 37 FEET</u>			S-1						

1. BORING AND SAMPLING IS IN ACCORDANCE WITH ASTM D-1586.
2. PENETRATION (N-VALUE) IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.



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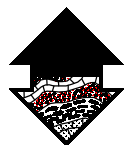
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PROJECT: CHARLESTON NAVAL BASE CONTAINER TERMINAL NORTH CHARLESTON, SOUTH CAROLINA 1131-03-264				BORING LOG PZ-3								
DATE DRILLED: 7/10/03		ELEVATION: 12.6 ft			NOTES: w = natural moisture content, f = percent passing No. 200 sieve, LL = liquid limit, PI = Plasticity Index							
DRILLING METHOD: MUD ROTARY		BORING DEPTH: 21.5 ft										
LOGGED BY: JMD		WATER LEVEL: closed borehole										
DRILLER: SCI		DRILL RIG: GYRO TRAC										
DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (ft-CLW)	SAMPLE NO/TYPE	STANDARD PENETRATION TEST DATA (blows/ft)					N VALUE	
						10	20	30	60	80		
5		Drilled out 0 to 20 ft		7.6								
10				2.6								
15				-2.4								
20			<u>SLIGHTLY SANDY SILT (MH)</u> very soft, gray; trace organics, w = 108.6%, f = 94.4%, LL = 169, PI = 100 <u>BORING TERMINATED AT 21.5 FEET</u> <u>PIEZOMETER PUSHED TO A DEPTH OF 25 FEET</u>		-7.4	S-1	●					wor

BORING LOG 03264.GPJ S&ME.GDT 8/26/03

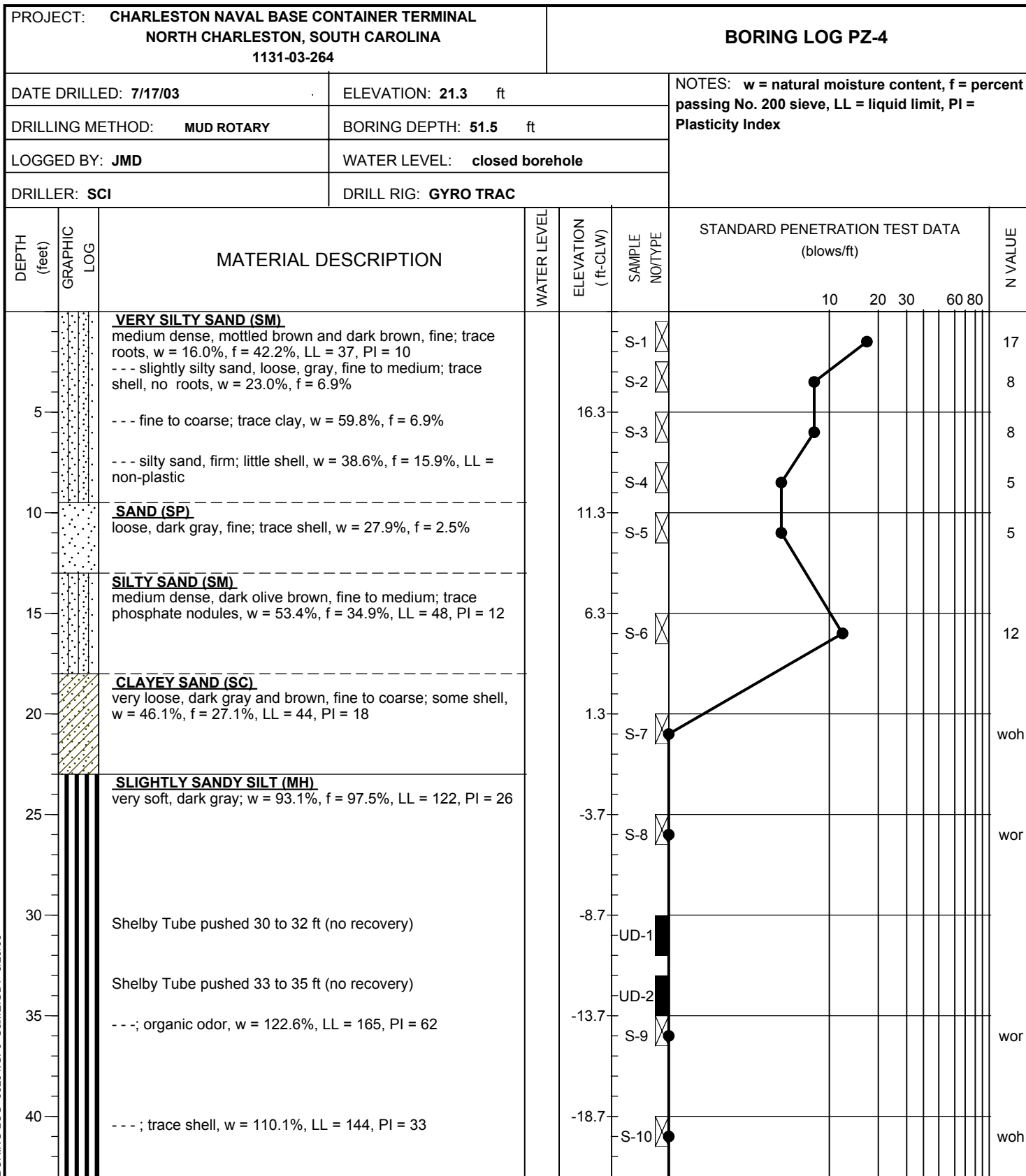
1. BORING AND SAMPLING IS IN ACCORDANCE WITH ASTM D-1586.
2. PENETRATION (N-VALUE) IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.



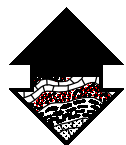
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2. PENETRATION (N-VALUE) IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.



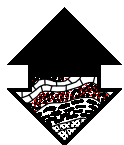
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PROJECT: CHARLESTON NAVAL BASE CONTAINER TERMINAL NORTH CHARLESTON, SOUTH CAROLINA 1131-03-264				BORING LOG PZ-4							
DATE DRILLED: 7/17/03		ELEVATION: 21.3 ft			NOTES: w = natural moisture content, f = percent passing No. 200 sieve, LL = liquid limit, PI = Plasticity Index						
DRILLING METHOD: MUD ROTARY		BORING DEPTH: 51.5 ft									
LOGGED BY: JMD		WATER LEVEL: closed borehole									
DRILLER: SCI		DRILL RIG: GYRO TRAC									
DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (ft-CLW)	SAMPLE NO/TYPE	STANDARD PENETRATION TEST DATA (blows/ft)					N VALUE
						10	20	30	60	80	
45		Shelby Tube pushed 45 to 47 ft (13 in. recovered); w = 78.3%, LL = 155, PI = 95		-23.7	UD-3						
50		- - -sandy silt; w = 92.8%, f = 78.8%, LL = 97, PI = 24		-28.7	S-11						woh
		<u>BORING TERMINATED AT 51.5 FEET</u>									
		<u>PIEZOMETER PUSHED TO A DEPTH OF 54 FEET</u>									

1. BORING AND SAMPLING IS IN ACCORDANCE WITH ASTM D-1586.
2. PENETRATION (N-VALUE) IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.



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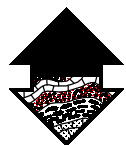
ENGINEERING • TESTING
ENVIRONMENTAL SERVICES

620 Wando Park Boulevard
Mt. Pleasant, SC

PROJECT: CHARLESTON NAVAL BASE CONTAINER TERMINAL NORTH CHARLESTON, SOUTH CAROLINA 1131-03-264				BORING LOG PZ-5							
DATE DRILLED: 7/21/03		ELEVATION: 21.3 ft		NOTES: w = natural moisture content, f = percent passing No. 200 sieve, LL = liquid limit, PI = Plasticity Index							
DRILLING METHOD: MUD ROTARY		BORING DEPTH: 36.5 ft									
LOGGED BY: JMD		WATER LEVEL: closed borehole									
DRILLER: SCI		DRILL RIG: GYRO TRAC									
DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (ft-CLW)	SAMPLE NO/TYPE	STANDARD PENETRATION TEST DATA (blows/ft)					N VALUE
						10	20	30	60	80	
5				16.3							
10				11.3							
15				6.3							
20		Drilled out 0 to 30 ft		1.3							
25				-3.7							
30		Shelby Tube pushed 30 to 32 ft (no recovery)		-8.7	UD-1						
		Shelby Tube pushed 32 to 34 ft (22 in. recovered); w = 93.5%, LL = 139, PI = 95			UD-2						
35		<u>SLIGHTLY SANDY SILT (MH)</u> very soft, gray; organic odor, trace marsh grass and shell, w = 122.6%, f = 93.3%, LL = 168, PI = 53 <u>BORING TERMINATED AT 36.5 FEET</u> <u>PIEZOMETER PUSHED TO A DEPTH OF 40 FEET</u>		-13.7	S-1						wor

BORING LOG 03264.GPJ S&ME.GDT 8/26/03

1. BORING AND SAMPLING IS IN ACCORDANCE WITH ASTM D-1586.
2. PENETRATION (N-VALUE) IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.



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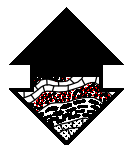
620 Wando Park Boulevard
Mt. Pleasant, SC

PROJECT: CHARLESTON NAVAL BASE CONTAINER TERMINAL NORTH CHARLESTON, SOUTH CAROLINA 1131-03-264				BORING LOG PZ-6			
DATE DRILLED: 7/21/03		ELEVATION: 21.3 ft		NOTES: w = natural moisture content, f = percent passing No. 200 sieve, LL = liquid limit, PI = Plasticity Index			
DRILLING METHOD: MUD ROTARY		BORING DEPTH: 25.5 ft					
LOGGED BY: JMD		WATER LEVEL: closed borehole					
DRILLER: SCI		DRILL RIG: GYRO TRAC					

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (ft-CLW)	SAMPLE NO/TYPE	STANDARD PENETRATION TEST DATA (blows/ft)					N VALUE
						10	20	30	60	80	
5		Drilled out 0 to 24 ft		16.3							
10				11.3							
15				6.3							
20				1.3							
25			<u>SLIGHTLY SANDY SILT (MH)</u> very soft, very dark gray and gray; trace marsh grass, w = 121.9%, f = 96.7%, LL = 182, PI = 99 <u>BORING TERMINATED AT 25.5 FEET</u> <u>PIEZOMETER PUSHED TO A DEPTH OF 29 FEET</u>		-3.7	S-1	●				

BORING LOG 03264.GPJ S&ME.GDT 8/26/03

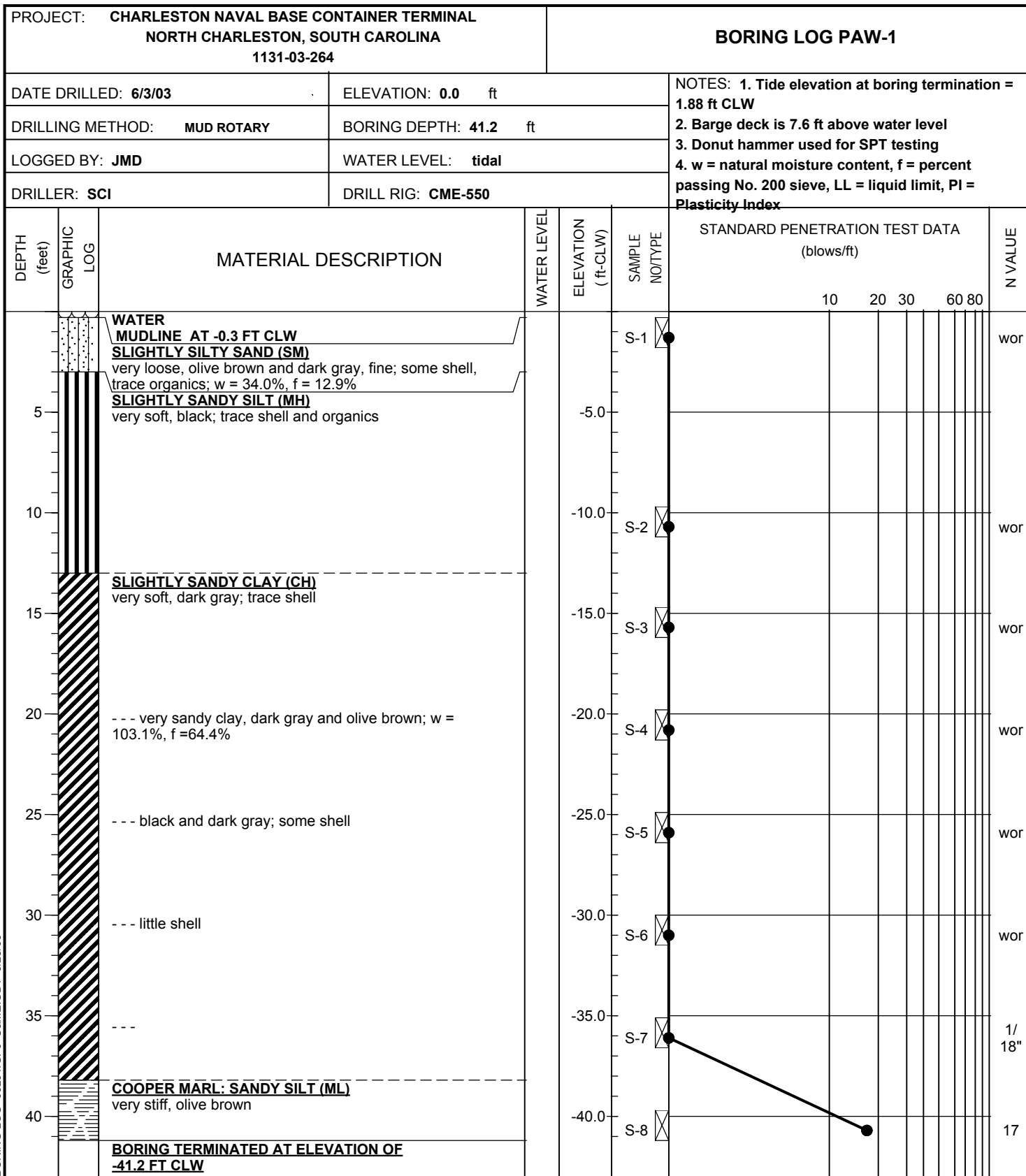
1. BORING AND SAMPLING IS IN ACCORDANCE WITH ASTM D-1586.
2. PENETRATION (N-VALUE) IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.



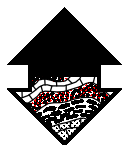
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1. BORING AND SAMPLING IS IN ACCORDANCE WITH ASTM D-1586.
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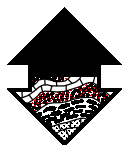


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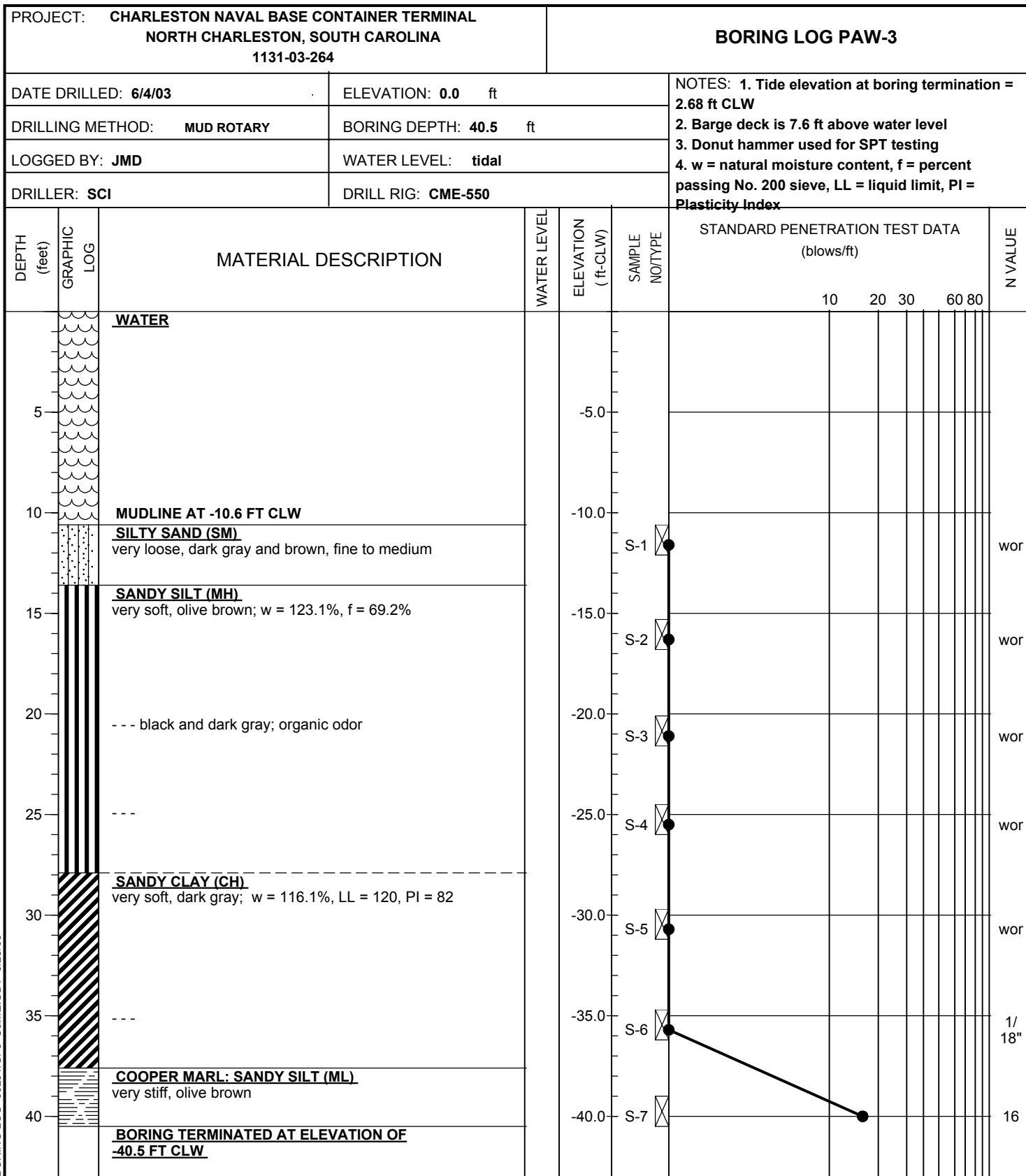
PROJECT: CHARLESTON NAVAL BASE CONTAINER TERMINAL NORTH CHARLESTON, SOUTH CAROLINA 1131-03-264				BORING LOG PAW-2							
DATE DRILLED: 6/9/03		ELEVATION: 0.0 ft			NOTES: 1. Tide elevation at boring termination = 0.79 ft CLW 2. Barge deck is 7.6 ft above water level 3. Donut hammer used for SPT testing 4. w = natural moisture content, f = percent passing No. 200 sieve, LL = liquid limit, PI = Plasticity Index						
DRILLING METHOD: MUD ROTARY		BORING DEPTH: 37.6 ft									
LOGGED BY: JMD		WATER LEVEL: tidal									
DRILLER: SCI		DRILL RIG: CME-550									
DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (ft-CLW)	SAMPLE NO/TYPE	STANDARD PENETRATION TEST DATA (blows/ft)					N VALUE
						10	20	30	60	80	
5		WATER									
		MUDLINE AT -6.4 FT CLW									
		SANDY SILT (MH) very soft, dark gray; organic odor			S-1						wor
10		Shelby Tube pushed -12.9 to -14.9 ft CLW (no recovery)			UD-1						
		---			S-2						wor
15		Shelby Tube pushed -17.8 to -19.8 ft CLW (no recovery)			UD-2						
20		SLIGHTLY SANDY CLAY (CH) very soft, dark gray; w = 140.1%, LL = 182 , PI = 120			S-3						wor
		Shelby Tube pushed -22.4 to -24.4 ft CLW (no recovery)			UD-3						
25		SANDY SILT (MH) very soft, dark gray; trace marsh grass and organics			S-4						wor
		Shelby Tube pushed -26.9 to -28.9 ft CLW (19 in. recovered); w = 179.9%, LL = 181 , PI = 99			UD-4						
30		SANDY CLAY (CH) very soft, dark gray			S-5						wor
		Shelby Tube pushed -31.5 to - 33.5 ft CLW (24 in. recovered); w = 144.2%, LL = 101, PI = 59			UD-5						
35		--- slightly sandy clay; no organics, silty sand (SM) last 6 in.			S-6						1
		COOPER MARL: SANDY SILT (ML) stiff, olive brown			S-7						12
		BORING TERMINATED AT ELEVATION OF -37.6 FT CLW									

1. BORING AND SAMPLING IS IN ACCORDANCE WITH ASTM D-1586.
2. PENETRATION (N-VALUE) IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

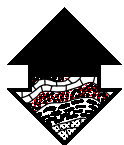


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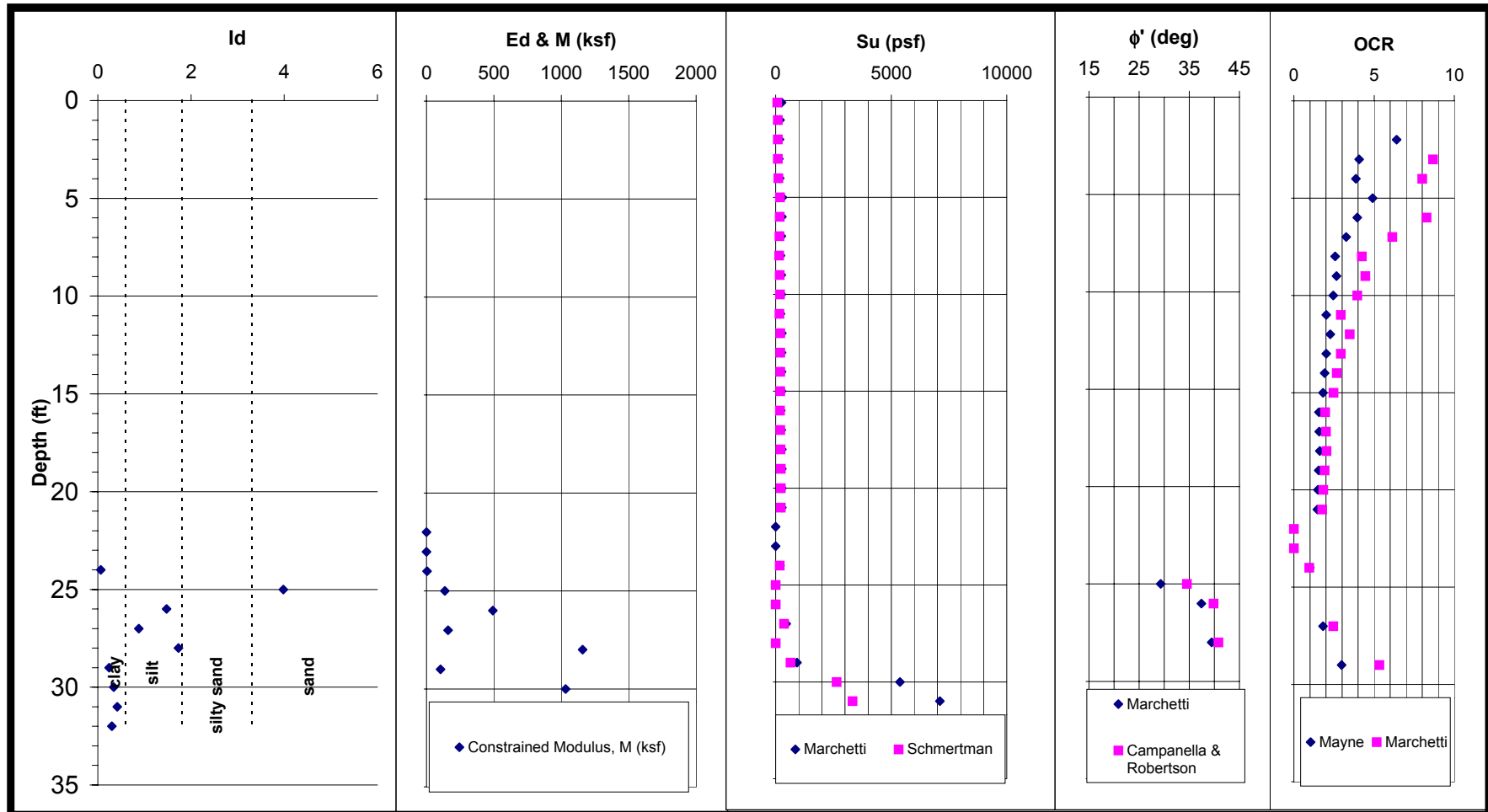
DILATOMETER TEST RESULTS

Test ID: PAW-4

Site: Charleston Naval Base Container Terminal

Location: N. Charleston, SC

Project No.: 1131-03-264





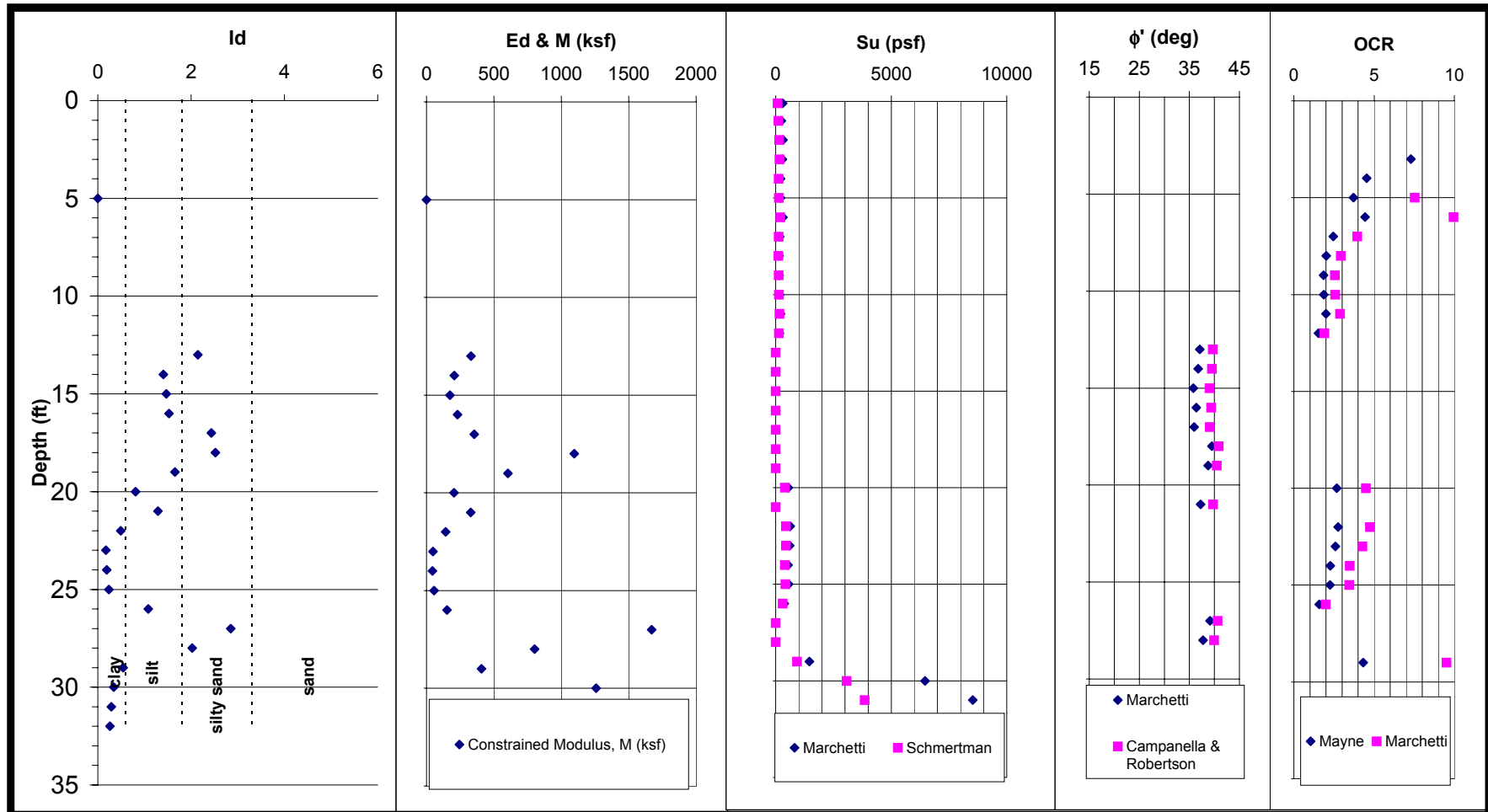
DILATOMETER TEST RESULTS

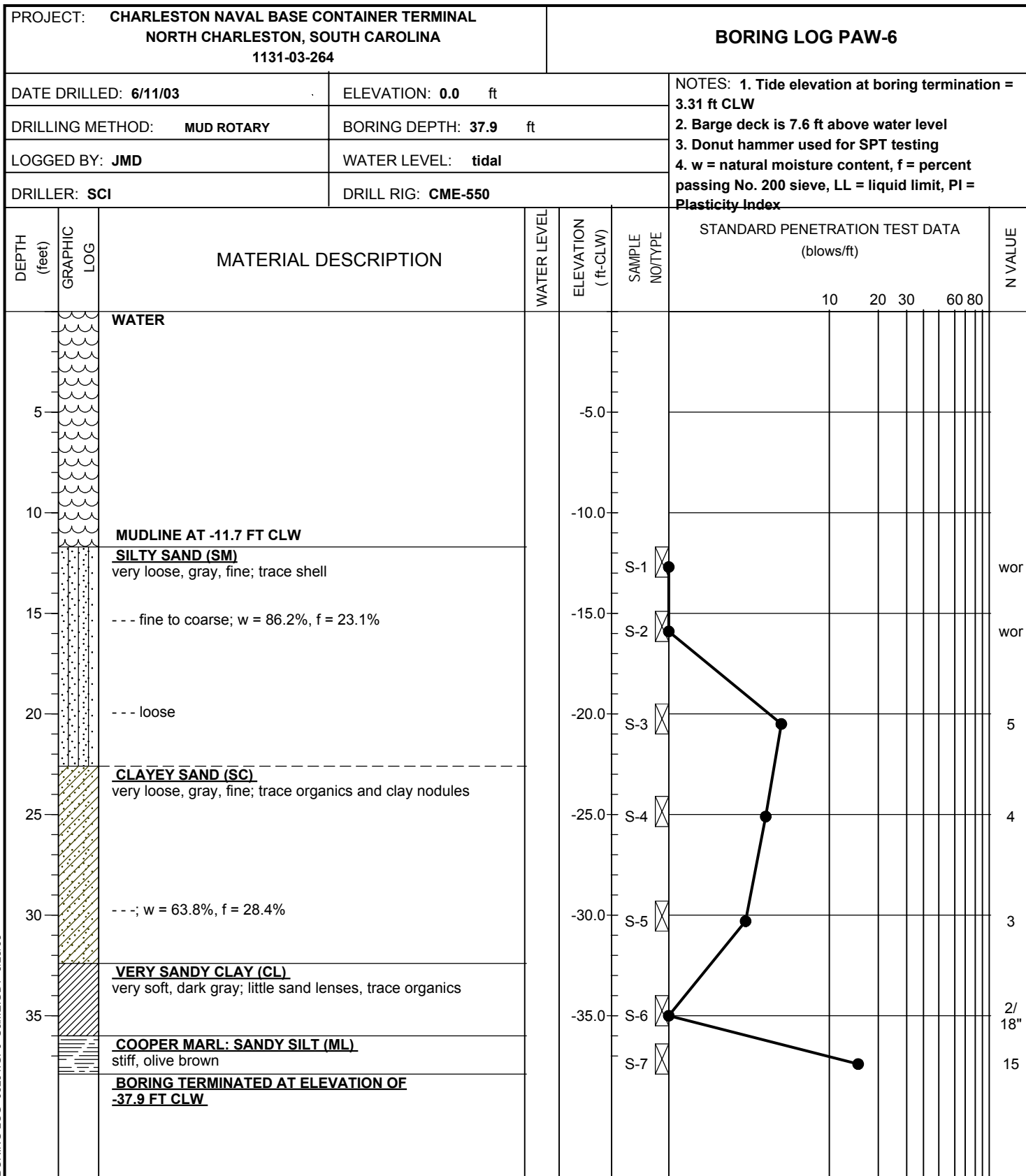
Test ID: PAW-5

Site: Charleston Naval Base Container Terminal

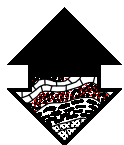
Location: N. Charleston, SC

Project No.: 1131-03-264





1. BORING AND SAMPLING IS IN ACCORDANCE WITH ASTM D-1586.
2. PENETRATION (N-VALUE) IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

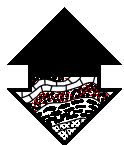


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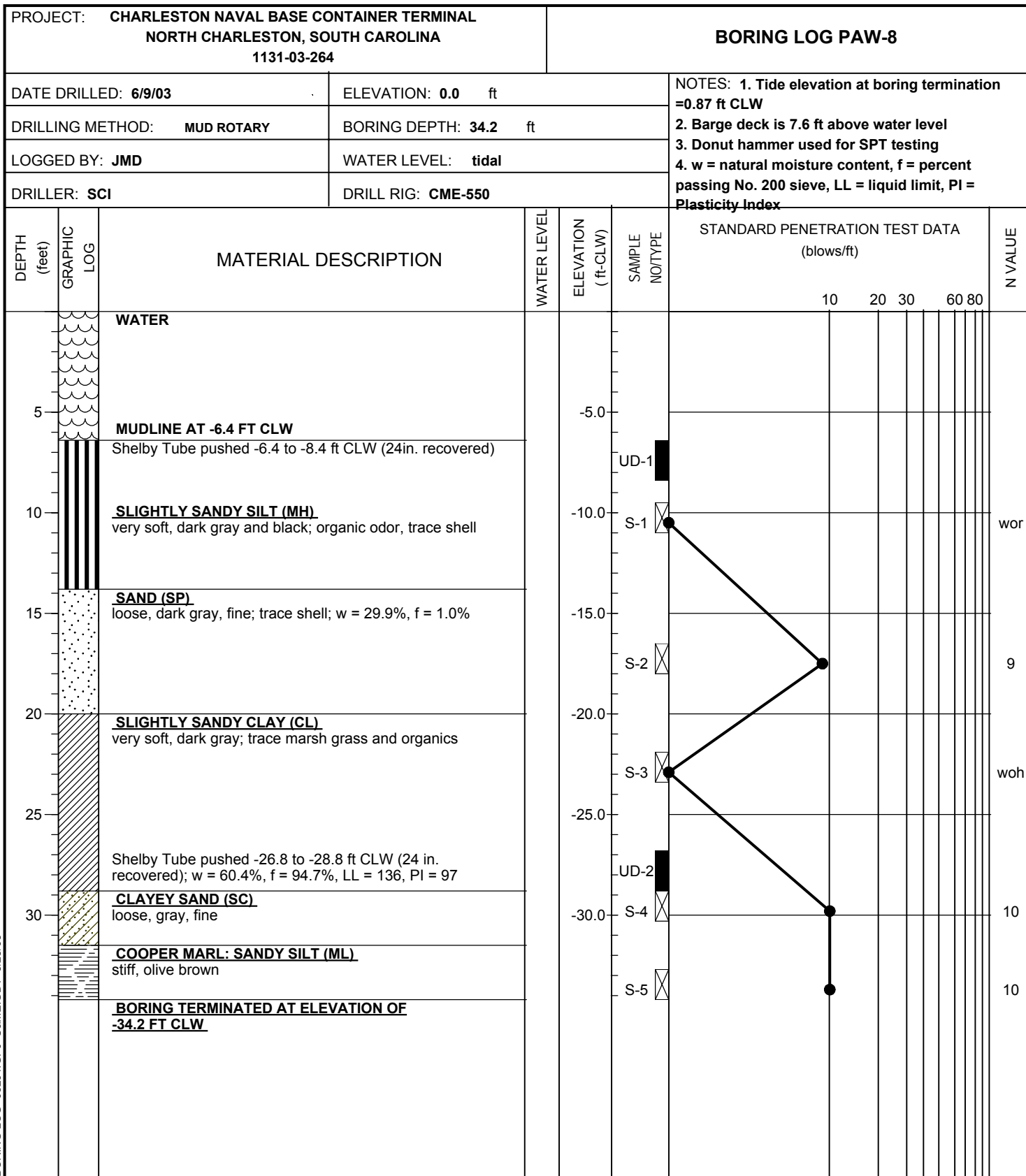
PROJECT: CHARLESTON NAVAL BASE CONTAINER TERMINAL NORTH CHARLESTON, SOUTH CAROLINA 1131-03-264			BORING LOG PAW-7								
DATE DRILLED: 6/9/03		ELEVATION: 0.0 ft			NOTES: 1. Tide elevation at boring termination = 3.56 ft CLW 2. Barge deck is 7.6 ft above water level 3. Donut hammer used for SPT testing 4. w = natural moisture content, f = percent passing No. 200 sieve, LL = liquid limit, PI = Plasticity Index						
DRILLING METHOD: MUD ROTARY		BORING DEPTH: 34.3 ft									
LOGGED BY: JMD		WATER LEVEL: tidal									
DRILLER: SCI		DRILL RIG: CME-550									
DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (ft-CLW)	SAMPLE NO/TYPE	STANDARD PENETRATION TEST DATA (blows/ft)					N VALUE
						10	20	30	60	80	
		WATER									
5		MUDLINE AT -5.2 FT CLW		-5.0	S-1						wor
		SLIGHTLY SANDY CLAY (CH) very soft, dark gray and black; organic odor, w = 199.8%, LL = 190, PI = 133									
10		Shelby Tube pushed -9.8 to -11.8 ft CLW (23 in. recovered); w = 144.6%, f = 94.6%, LL= 153, PI = 114		-10.0	UD-1						
		--- --- very sandy clay		-15.0	S-2 S-3						wor wor
15		Shelby Tube pushed -18.0 to -20.0 ft CLW (24 in. recovered); w = 183.0%, LL = 206, PI = 86		-20.0	UD-2						
20		VERY SANDY SILT (MH) very soft, dark gray			S-4						wor
25		SLIGHTLY CLAYEY SAND (SC) very loose, gray, fine; trace shell, w = 48.0%, f = 13.5%		-25.0	S-5						1/ 18"
		VERY SANDY CLAY WITH SHELL (CL) stiff, grayish green		-30.0	S-6						10
30		COOPER MARL: SANDY SILT (ML) very stiff, olive brown			S-7						19
		BORING TERMINATED AT ELEVATION OF -34.3 FT CLW									

1. BORING AND SAMPLING IS IN ACCORDANCE WITH ASTM D-1586.
2. PENETRATION (N-VALUE) IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

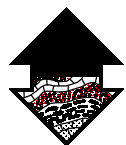


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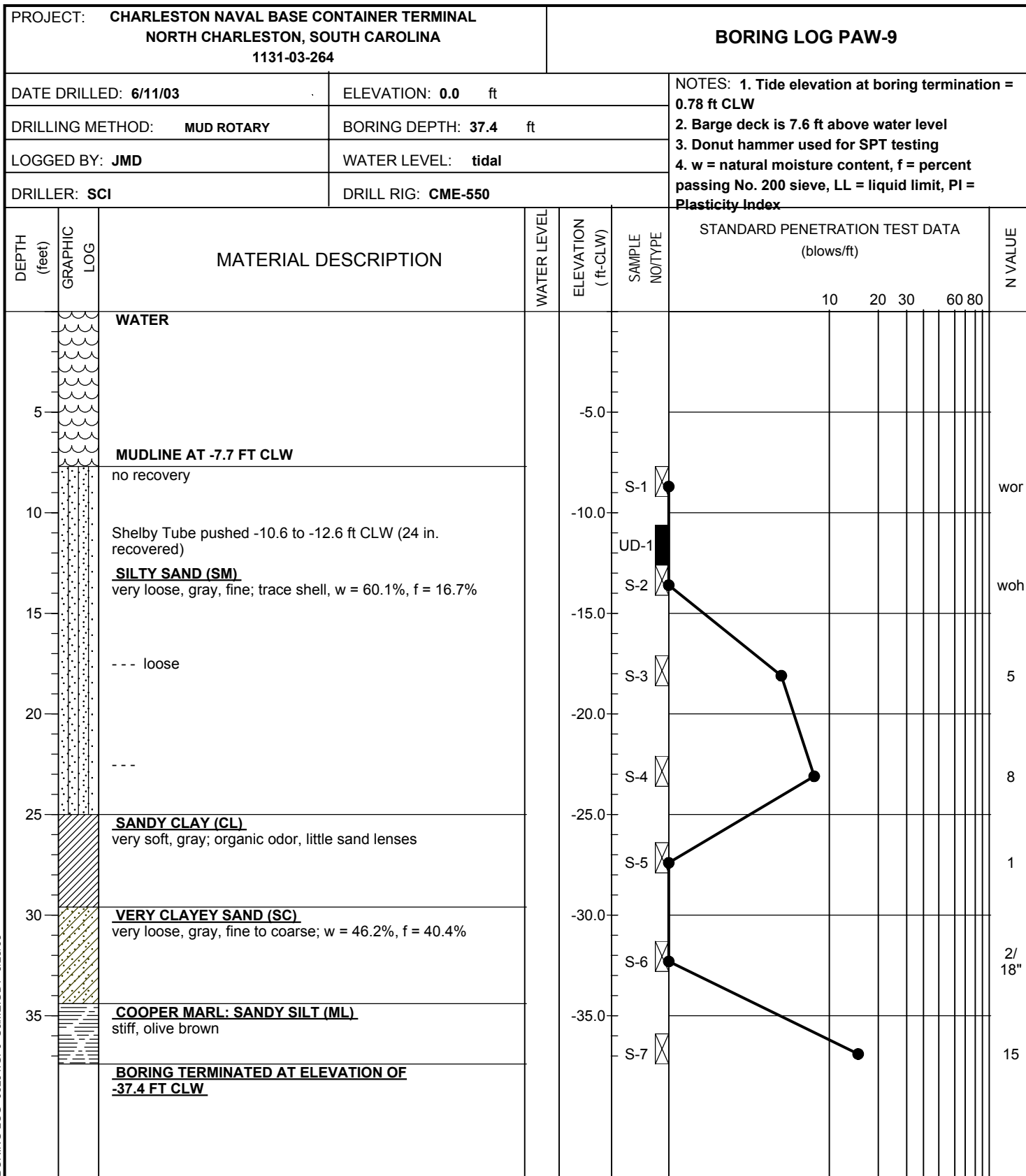


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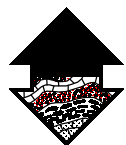


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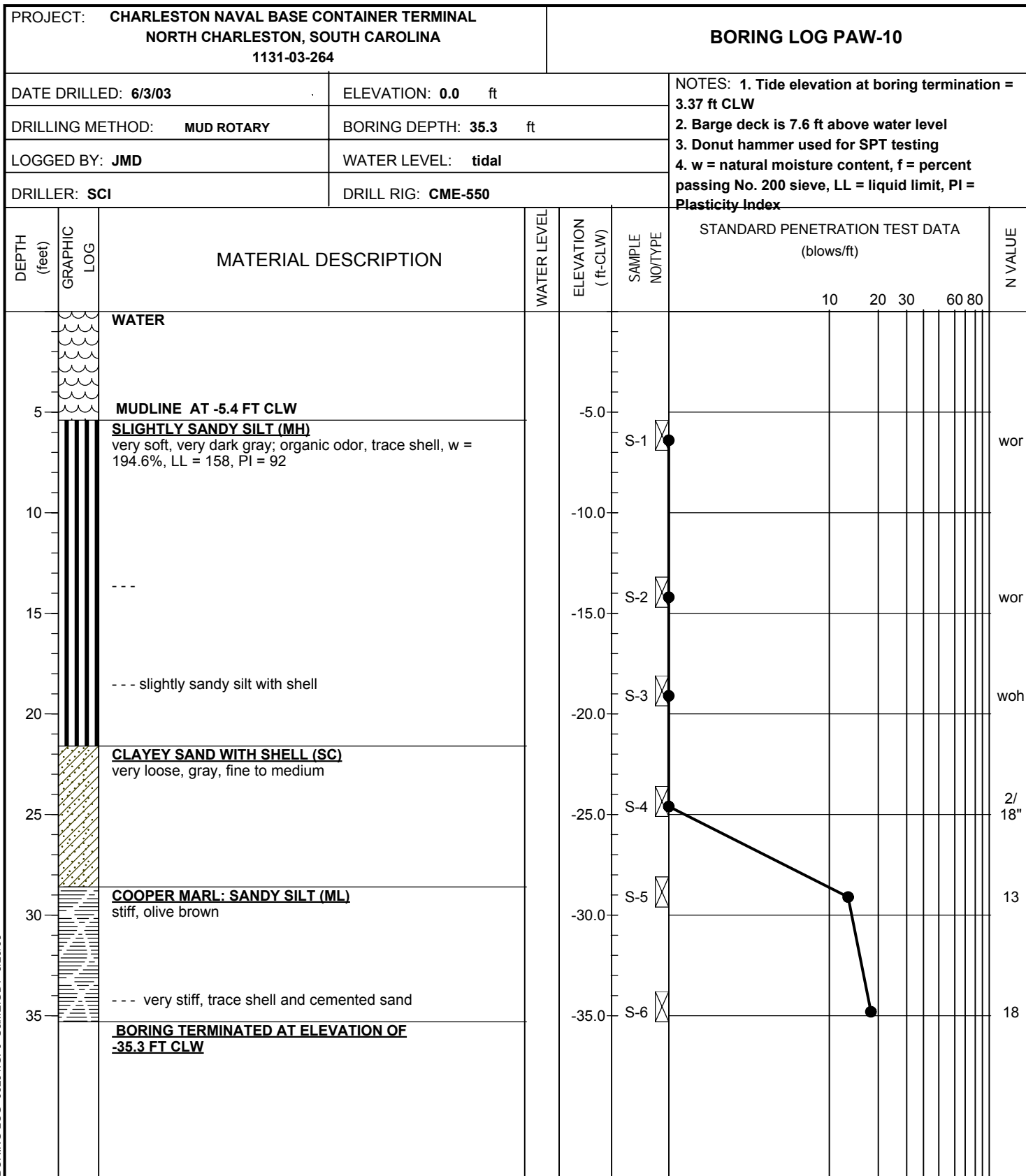


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2. PENETRATION (N-VALUE) IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

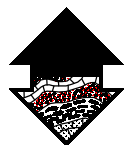


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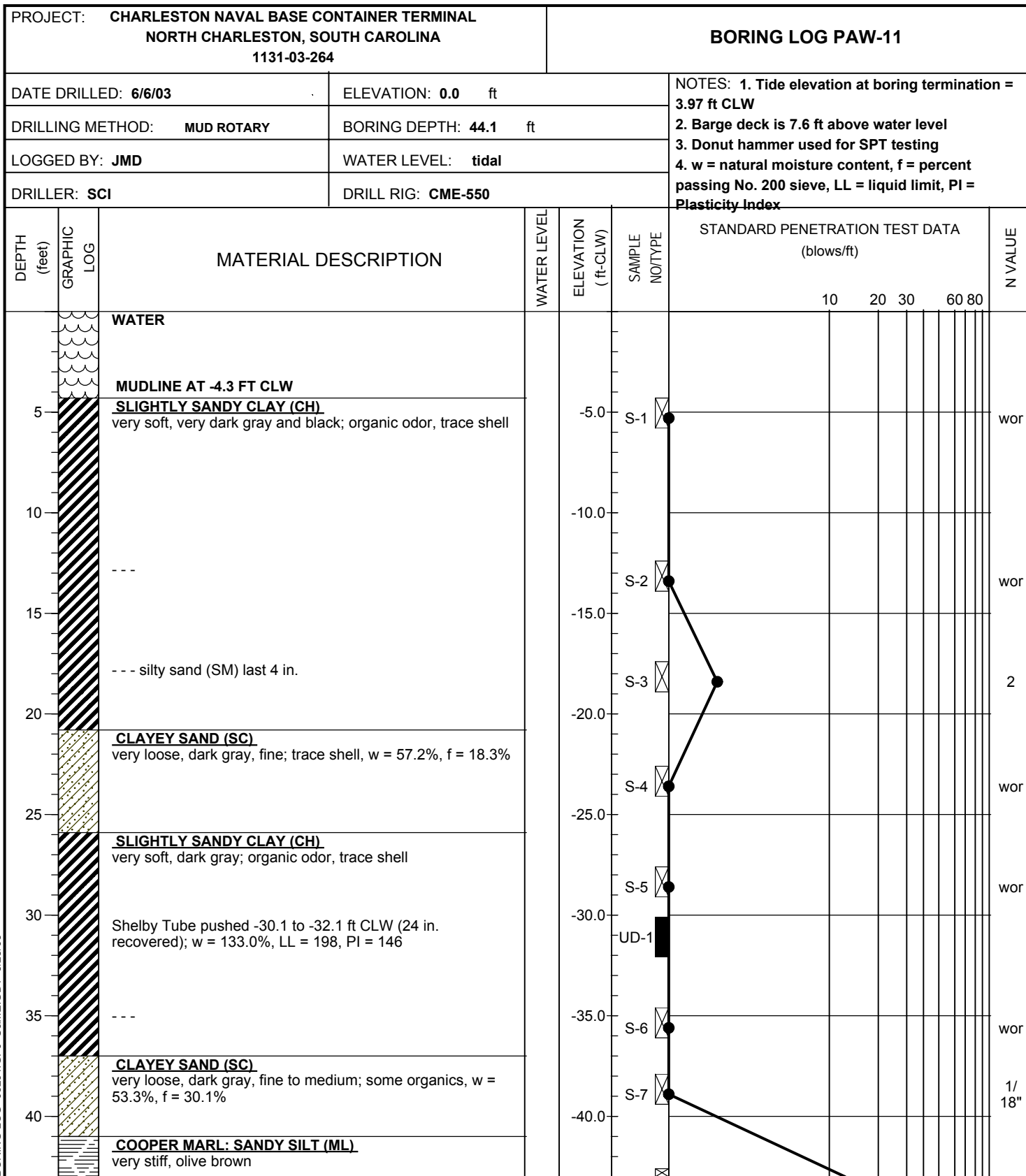


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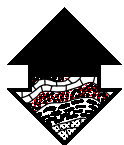


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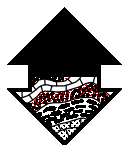


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PROJECT: CHARLESTON NAVAL BASE CONTAINER TERMINAL NORTH CHARLESTON, SOUTH CAROLINA 1131-03-264				BORING LOG PAW-11			
DATE DRILLED: 6/6/03		ELEVATION: 0.0 ft		NOTES: 1. Tide elevation at boring termination = 3.97 ft CLW 2. Barge deck is 7.6 ft above water level 3. Donut hammer used for SPT testing 4. w = natural moisture content, f = percent passing No. 200 sieve, LL = liquid limit, PI = Plasticity Index			
DRILLING METHOD: MUD ROTARY		BORING DEPTH: 44.1 ft					
LOGGED BY: JMD		WATER LEVEL: tidal					
DRILLER: SCI		DRILL RIG: CME-550					
DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (ft-CLW)	SAMPLE NOTYPE	STANDARD PENETRATION TEST DATA (blows/ft)	N VALUE
		<u>BORING TERMINATED AT ELEVATION OF -44.1 FT CLW</u>			S-8 <input checked="" type="checkbox"/>	<div style="display: flex; justify-content: space-around; font-size: small;"> 1020306080 </div> <div style="position: relative; height: 100px;"> <div style="position: absolute; top: 0; left: 0; width: 100%; height: 100%; border: 1px solid black;"></div> <div style="position: absolute; top: 15%; left: 10%; width: 10px; height: 10px; background-color: black; border-radius: 50%;"></div> </div>	18

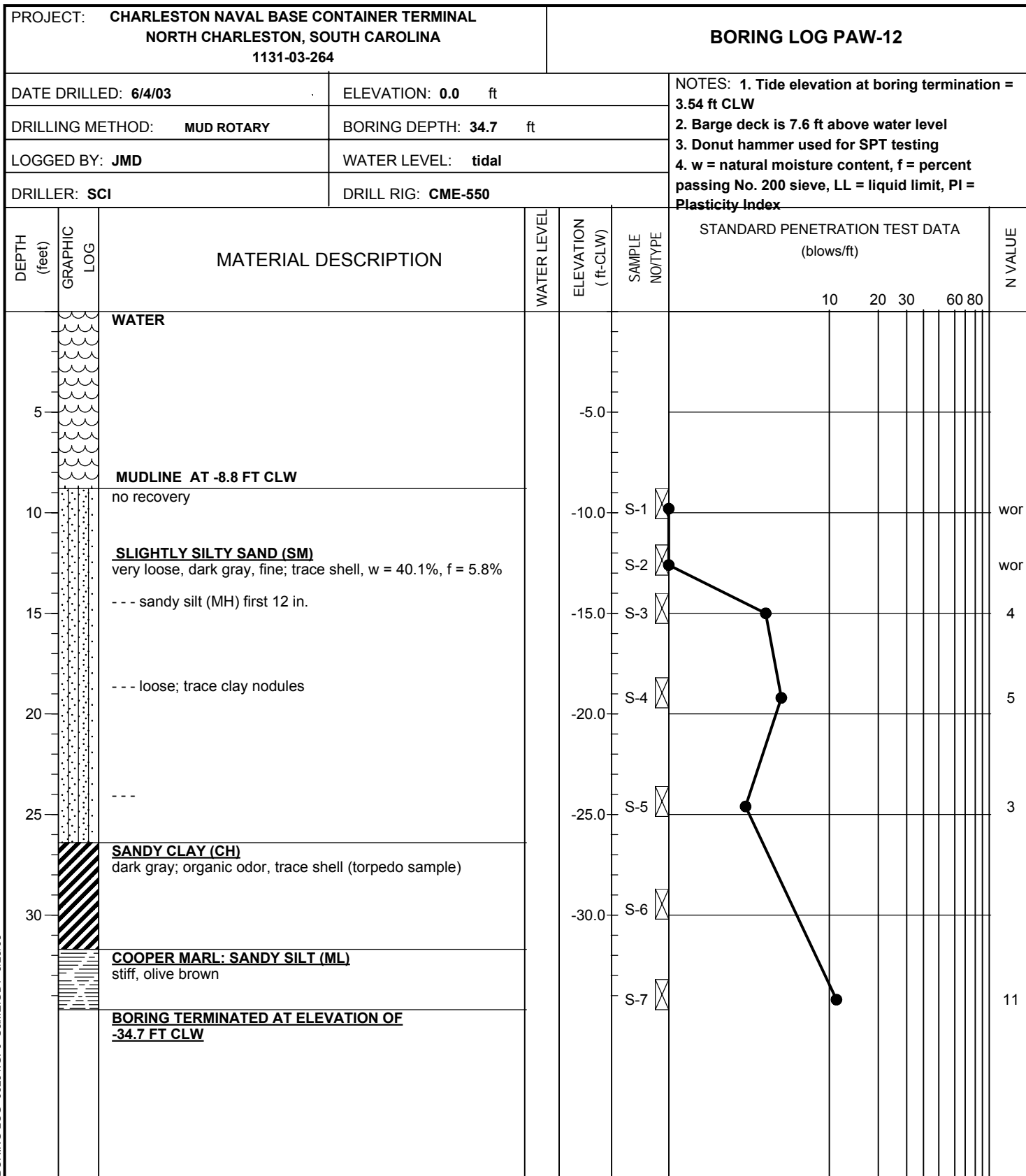
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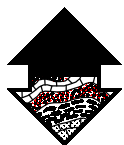
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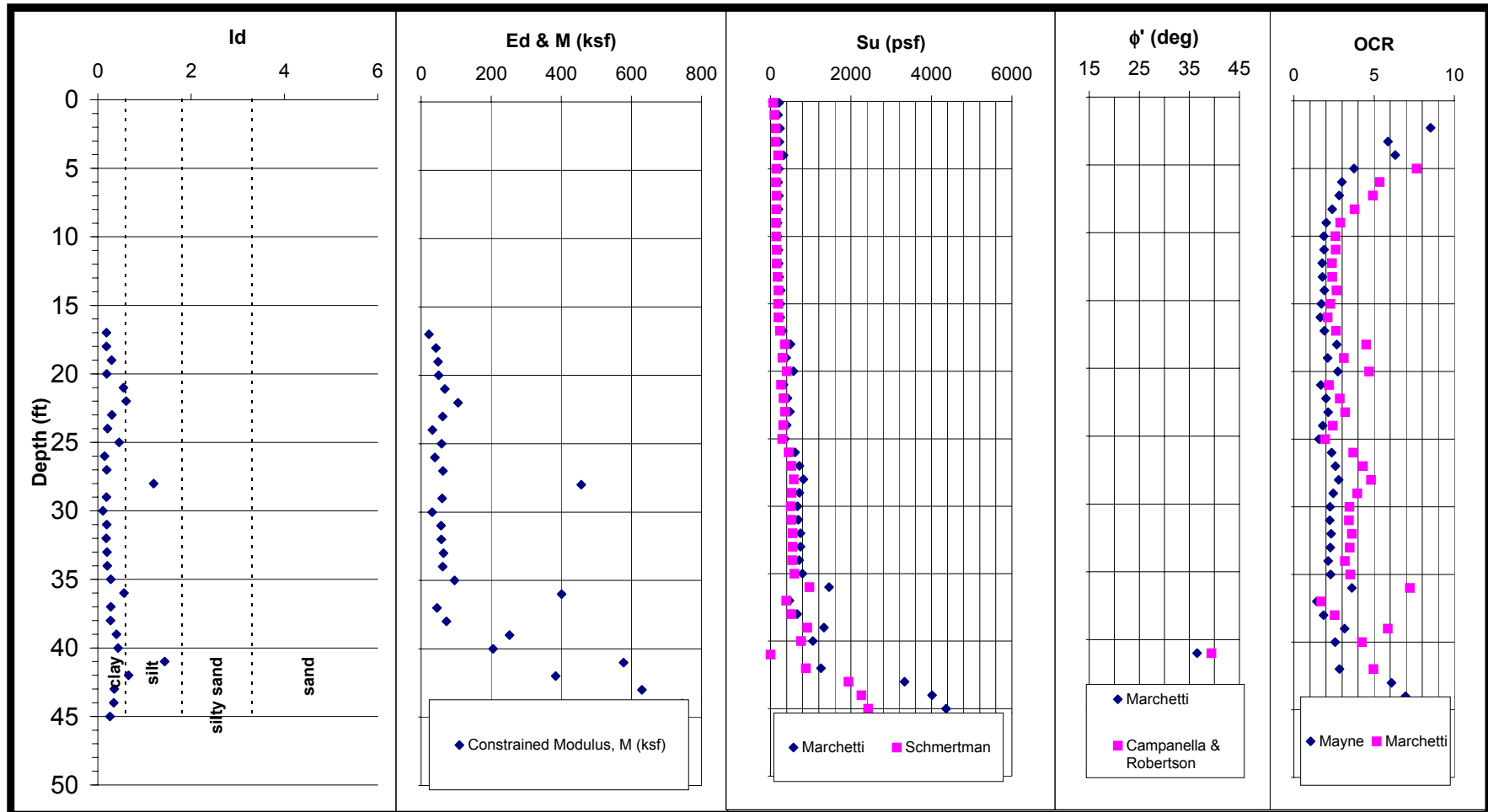
DILATOMETER TEST RESULTS

Test ID: PAW-13

Site: Charleston Naval Base Container Terminal

Location: N. Charleston, SC

Project No.: 1131-03-264





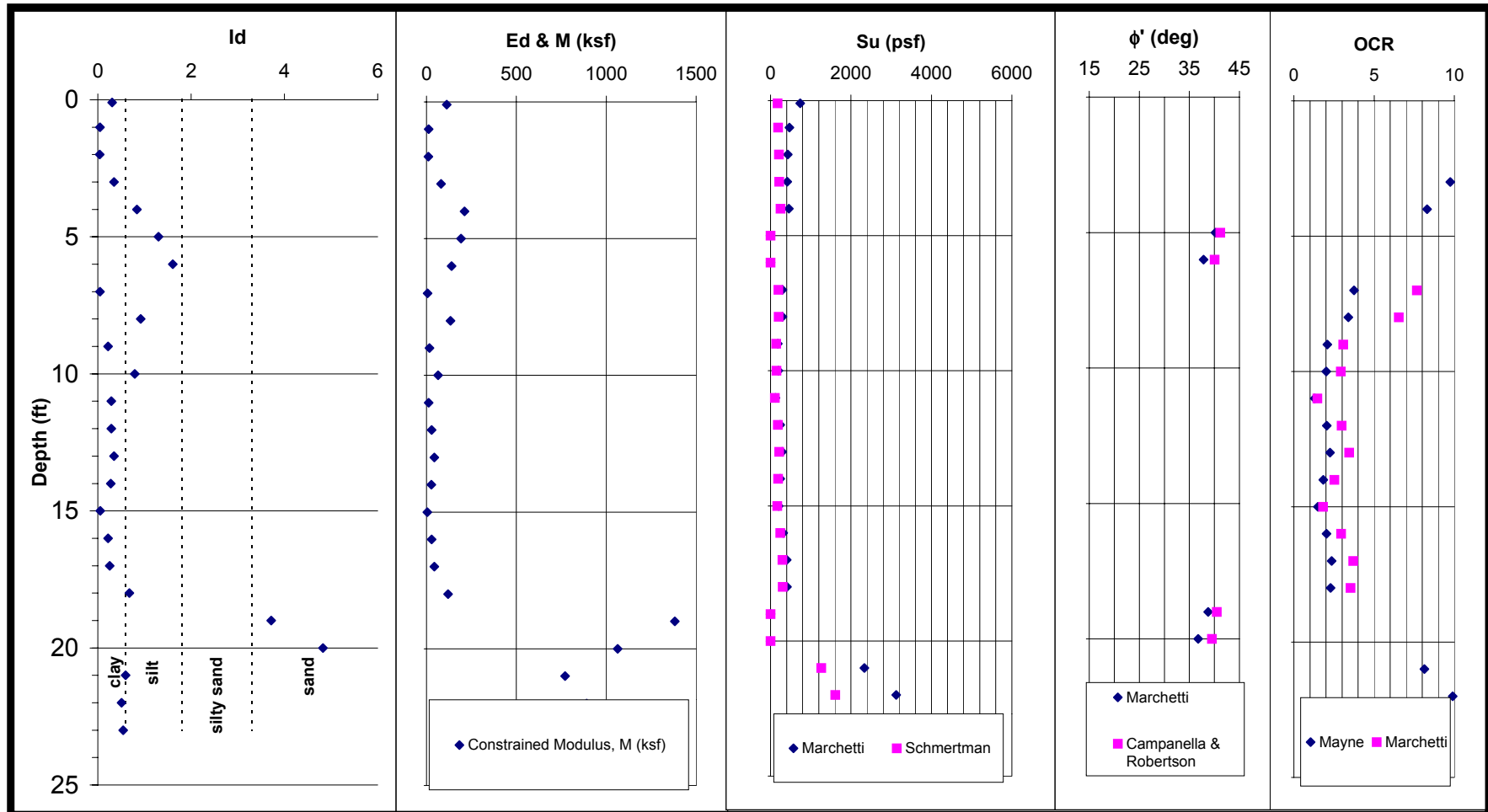
DILATOMETER TEST RESULTS

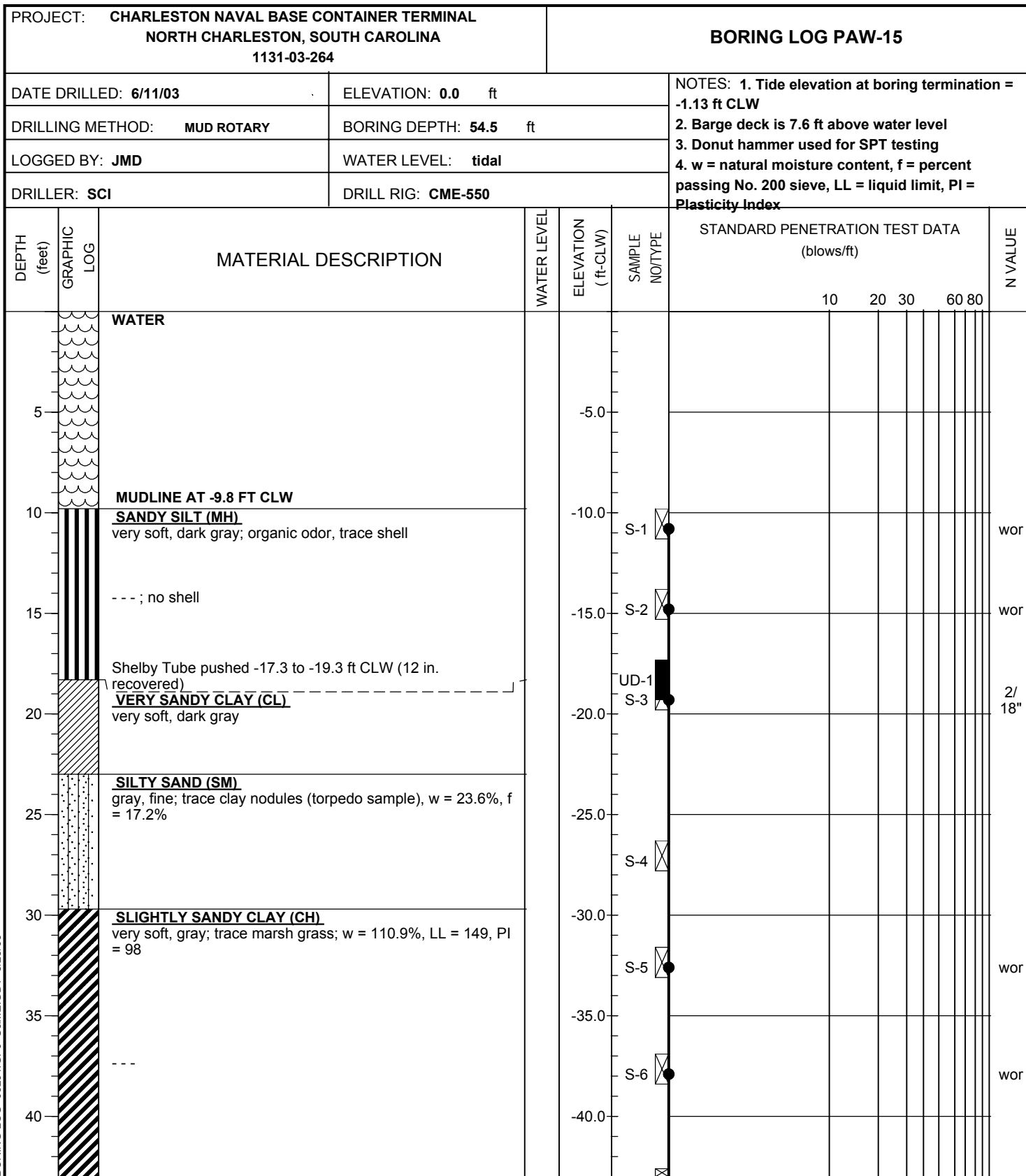
Test ID: PAW-14

Site: Charleston Naval Base Container Terminal

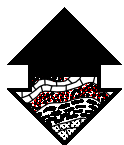
Location: N. Charleston, SC

Project No.: 1131-03-264





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2. PENETRATION (N-VALUE) IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.



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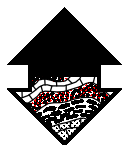
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PROJECT: CHARLESTON NAVAL BASE CONTAINER TERMINAL NORTH CHARLESTON, SOUTH CAROLINA 1131-03-264				BORING LOG PAW-15			
DATE DRILLED: 6/11/03		ELEVATION: 0.0 ft		NOTES: 1. Tide elevation at boring termination = -1.13 ft CLW 2. Barge deck is 7.6 ft above water level 3. Donut hammer used for SPT testing 4. w = natural moisture content, f = percent passing No. 200 sieve, LL = liquid limit, PI = Plasticity Index			
DRILLING METHOD: MUD ROTARY		BORING DEPTH: 54.5 ft					
LOGGED BY: JMD		WATER LEVEL: tidal					
DRILLER: SCI		DRILL RIG: CME-550					

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (ft-CLW)	SAMPLE NO/TYPE	STANDARD PENETRATION TEST DATA (blows/ft)						N VALUE	
						10	20	30	60	80			
45	---	--- Shelby Tube pushed -46.1 to -48.1 ft CLW (24 in. recovered); w = 102.2%, f = 83.7%, LL = 124, PI = 89 --- very sandy clay; little wood and organics		-45.0	S-7	●							1
50	X	<u>COOPER MARL: VERY SANDY SILT (ML)</u> stiff, olive brown		-50.0	UD-2	●							2
	X	<u>BORING TERMINATED AT ELEVATION OF -54.5 FT CLW</u>			S-8	●							13
					S-9	●							

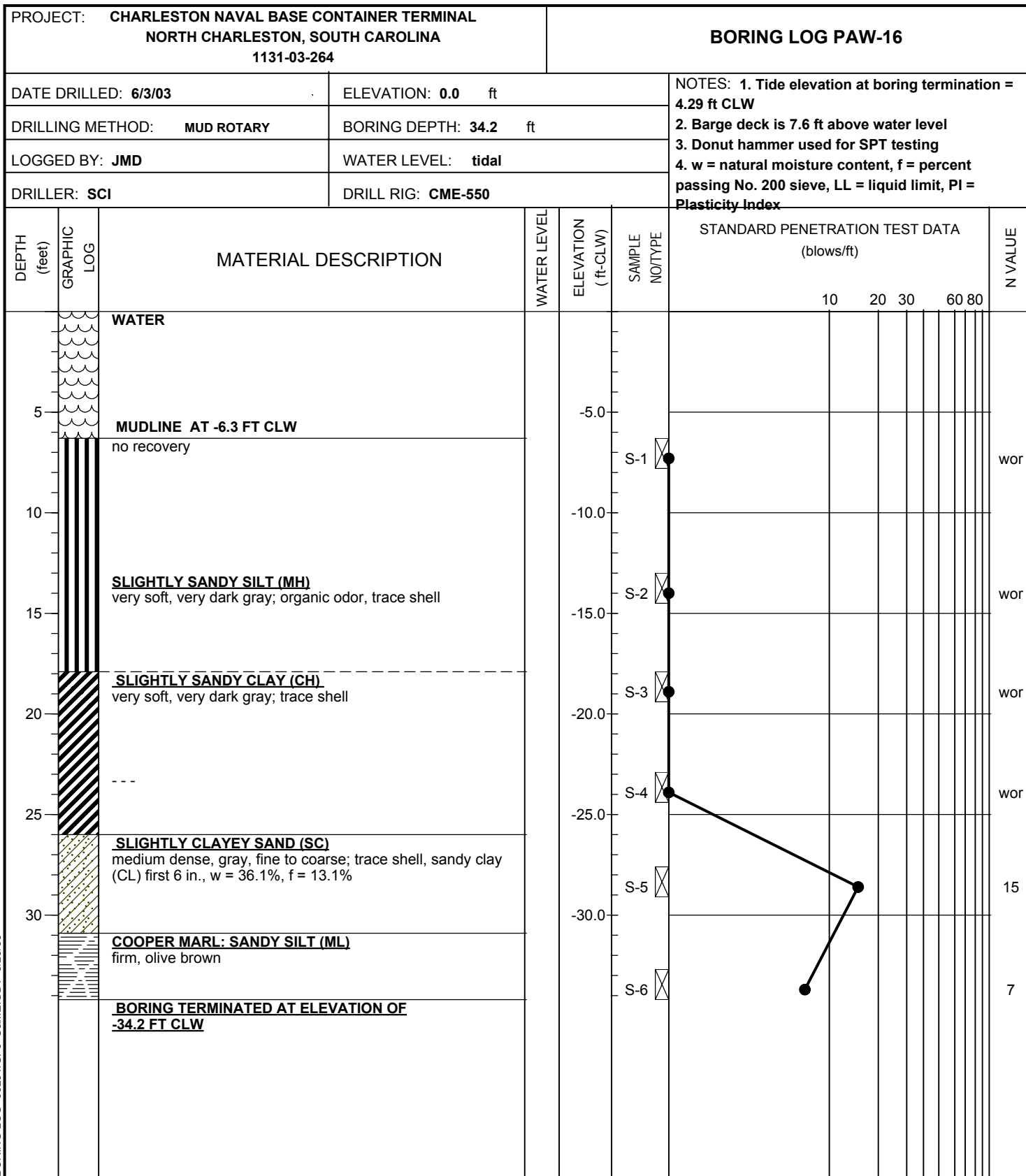
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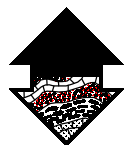
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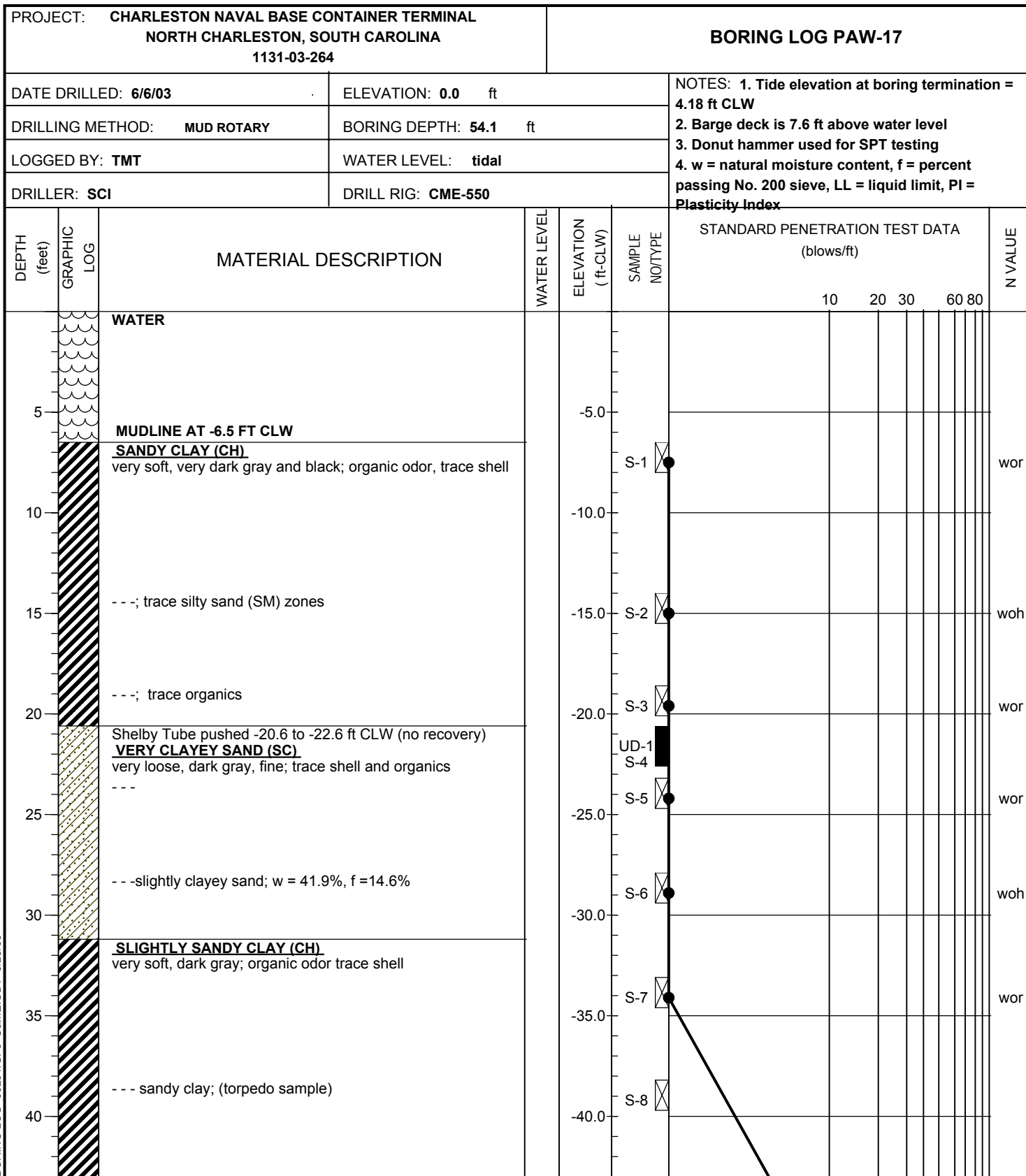


1. BORING AND SAMPLING IS IN ACCORDANCE WITH ASTM D-1586.
2. PENETRATION (N-VALUE) IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

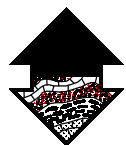


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






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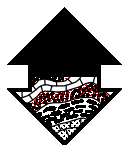


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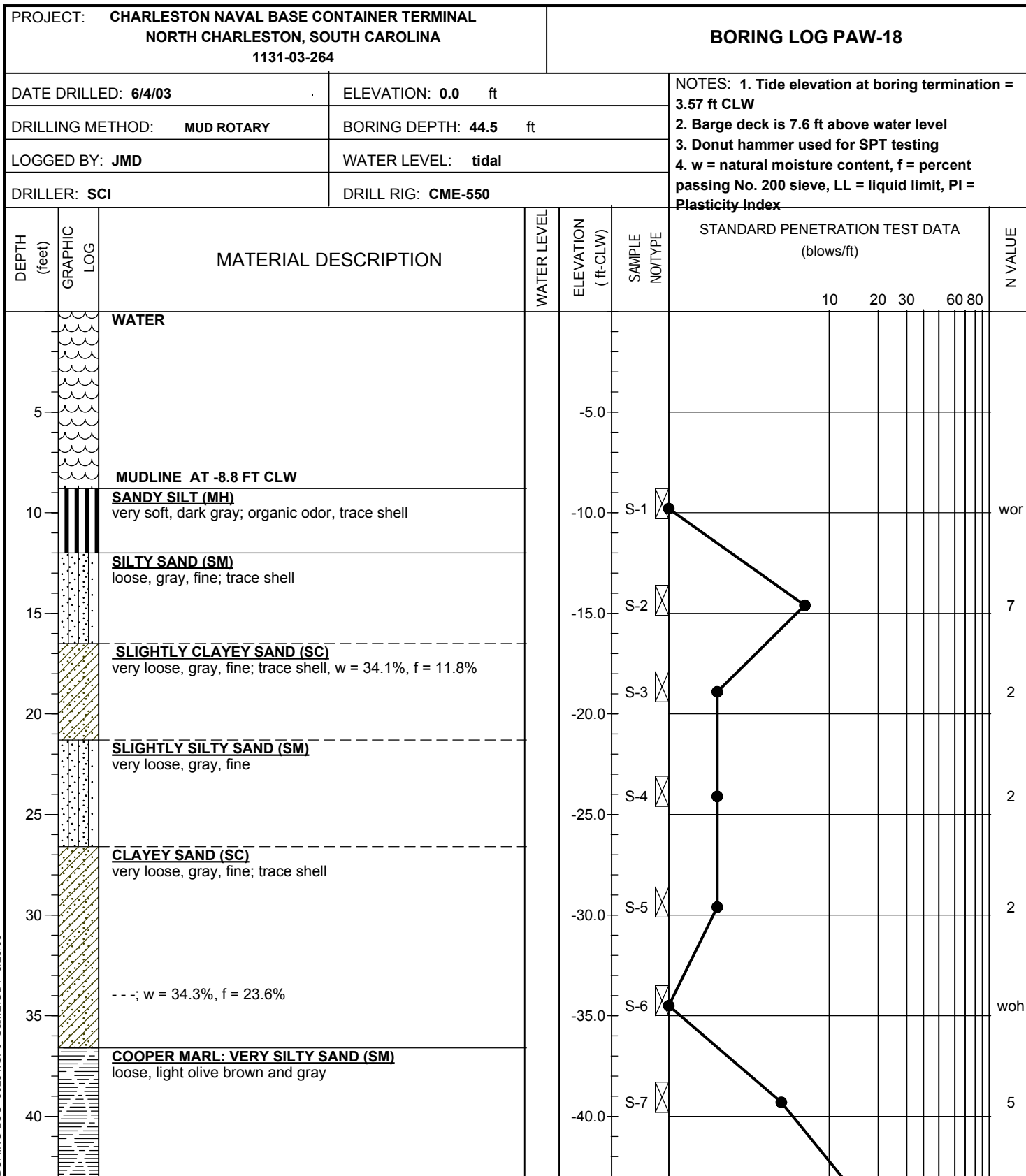
PROJECT: CHARLESTON NAVAL BASE CONTAINER TERMINAL NORTH CHARLESTON, SOUTH CAROLINA 1131-03-264				BORING LOG PAW-17								
DATE DRILLED: 6/6/03		ELEVATION: 0.0 ft		NOTES: 1. Tide elevation at boring termination = 4.18 ft CLW 2. Barge deck is 7.6 ft above water level 3. Donut hammer used for SPT testing 4. w = natural moisture content, f = percent passing No. 200 sieve, LL = liquid limit, PI = Plasticity Index								
DRILLING METHOD: MUD ROTARY		BORING DEPTH: 54.1 ft										
LOGGED BY: TMT		WATER LEVEL: tidal										
DRILLER: SCI		DRILL RIG: CME-550										
DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (ft-CLW)	SAMPLE NO/TYPE	STANDARD PENETRATION TEST DATA (blows/ft)						N VALUE
						10	20	30	60	80		
45		--- firm; trace silty sand zones		-45.0	S-9 							7
		COOPER MARL: SANDY SILT (ML) firm, light olive brown			S-10 							6
50		--- very stiff		-50.0								
		BORING TERMINATED AT ELEVATION OF -54.1 FT CLW			S-11 							16

1. BORING AND SAMPLING IS IN ACCORDANCE WITH ASTM D-1586.
2. PENETRATION (N-VALUE) IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

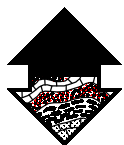


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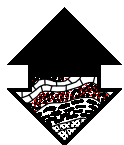
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PROJECT: CHARLESTON NAVAL BASE CONTAINER TERMINAL NORTH CHARLESTON, SOUTH CAROLINA 1131-03-264				BORING LOG PAW-18			
DATE DRILLED: 6/4/03		ELEVATION: 0.0 ft		NOTES: 1. Tide elevation at boring termination = 3.57 ft CLW 2. Barge deck is 7.6 ft above water level 3. Donut hammer used for SPT testing 4. w = natural moisture content, f = percent passing No. 200 sieve, LL = liquid limit, PI = Plasticity Index			
DRILLING METHOD: MUD ROTARY		BORING DEPTH: 44.5 ft					
LOGGED BY: JMD		WATER LEVEL: tidal					
DRILLER: SCI		DRILL RIG: CME-550					
DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (ft-CLW)	SAMPLE NO/TYPE	STANDARD PENETRATION TEST DATA (blows/ft)	N VALUE
		--- medium dense; trace gravel <u>BORING TERMINATED AT ELEVATION OF -44.5 FT CLW</u>			S-8 <input checked="" type="checkbox"/>	<div style="display: flex; justify-content: space-between; padding: 0 10px;"> 1020306080 </div> 	15

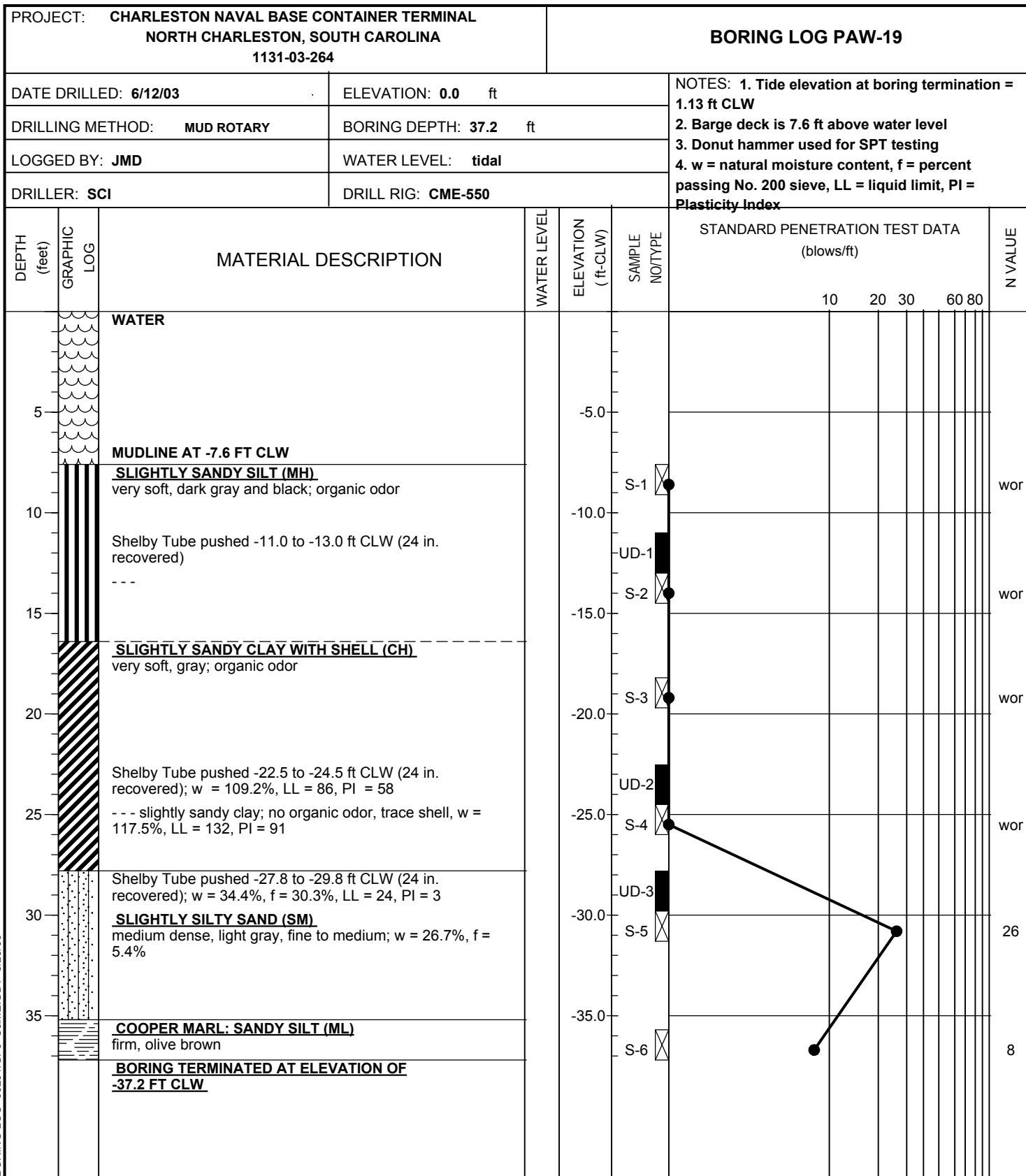
1. BORING AND SAMPLING IS IN ACCORDANCE WITH ASTM D-1586.
2. PENETRATION (N-VALUE) IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.



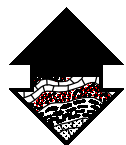
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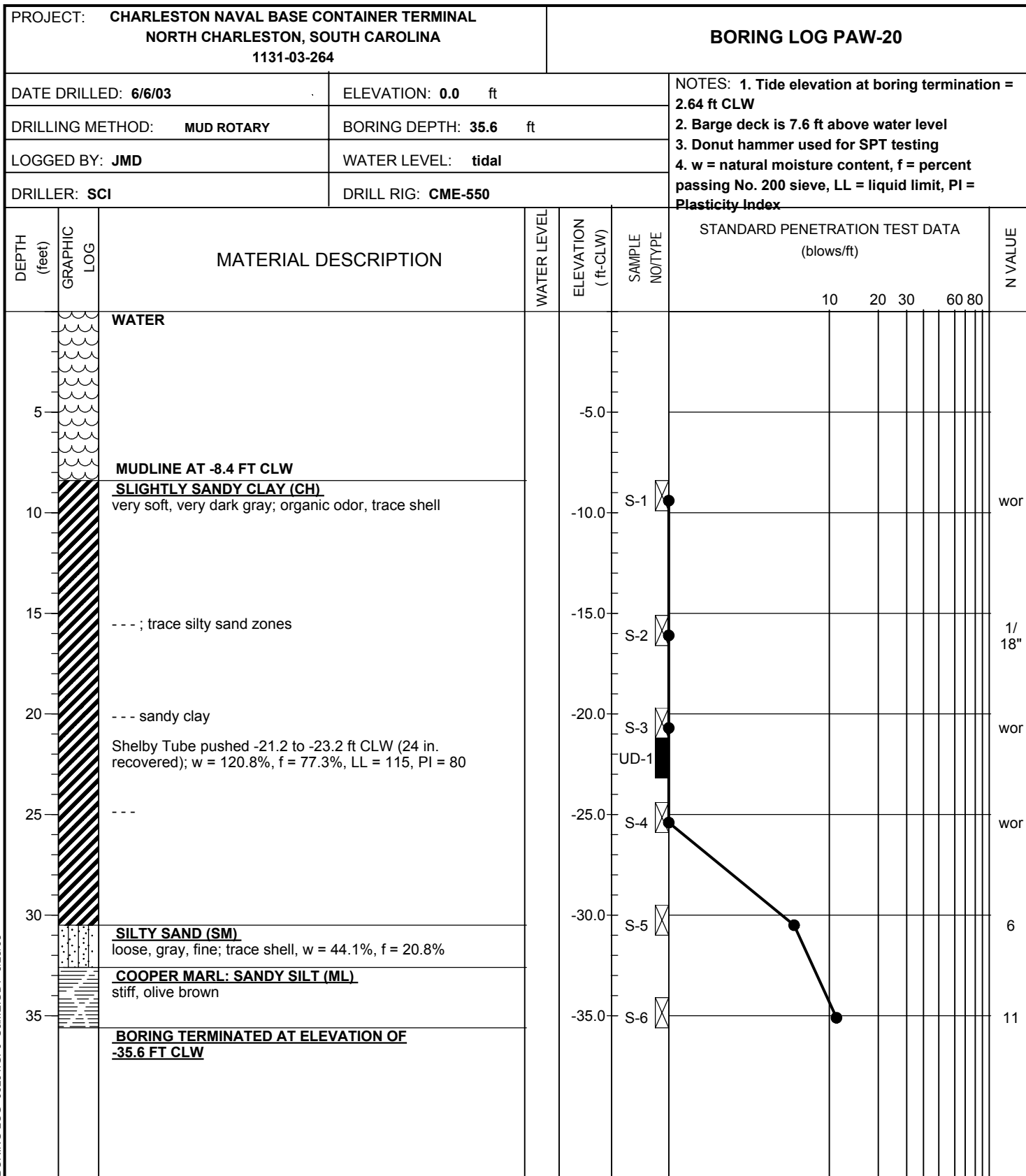


1. BORING AND SAMPLING IS IN ACCORDANCE WITH ASTM D-1586.
2. PENETRATION (N-VALUE) IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

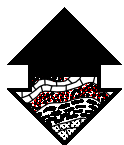


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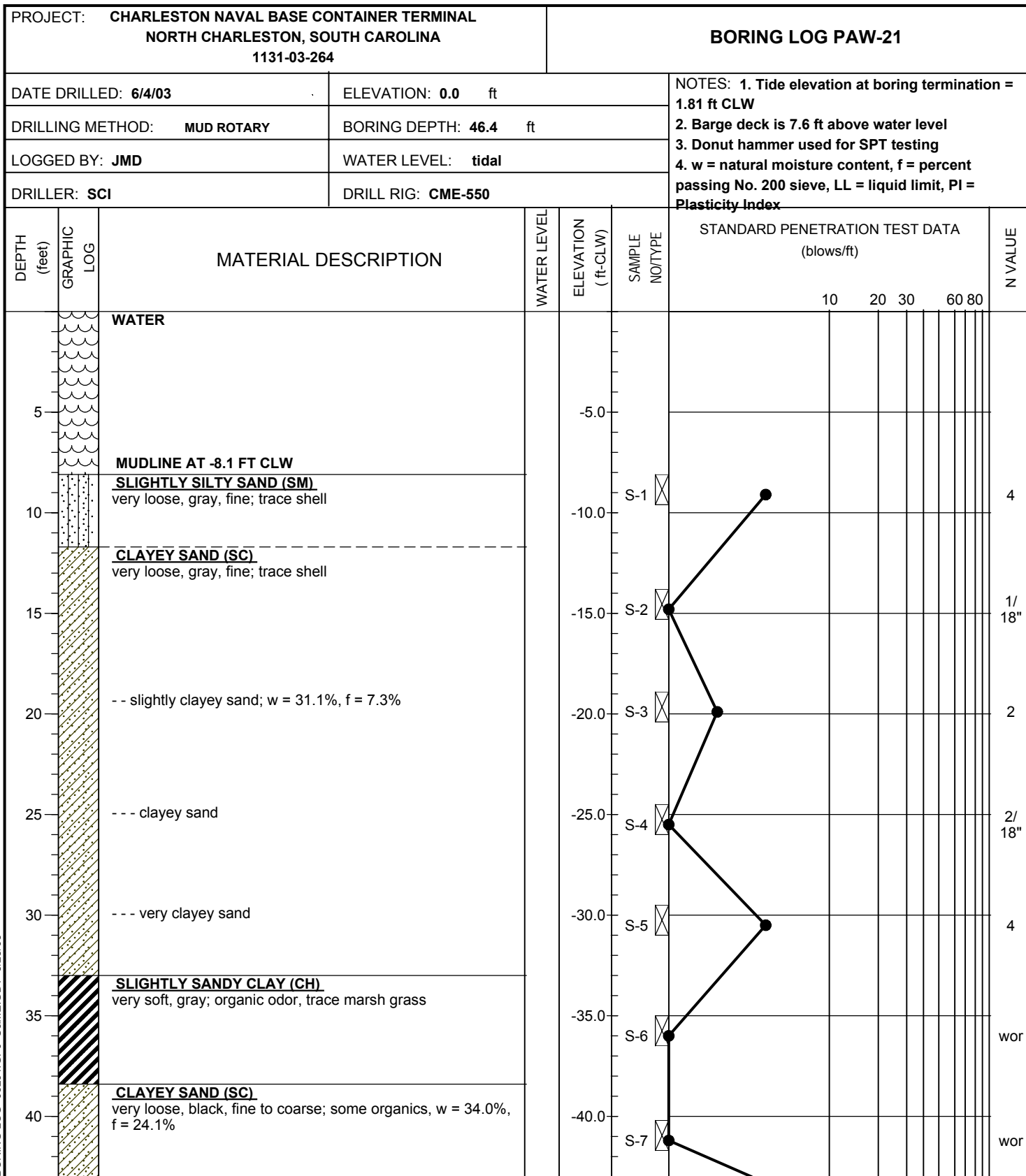


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 2. PENETRATION (N-VALUE) IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

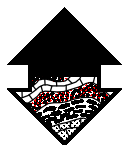


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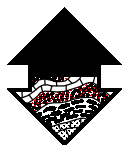


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PROJECT: CHARLESTON NAVAL BASE CONTAINER TERMINAL NORTH CHARLESTON, SOUTH CAROLINA 1131-03-264				BORING LOG PAW-21			
DATE DRILLED: 6/4/03		ELEVATION: 0.0 ft		NOTES: 1. Tide elevation at boring termination = 1.81 ft CLW 2. Barge deck is 7.6 ft above water level 3. Donut hammer used for SPT testing 4. w = natural moisture content, f = percent passing No. 200 sieve, LL = liquid limit, PI = Plasticity Index			
DRILLING METHOD: MUD ROTARY		BORING DEPTH: 46.4 ft					
LOGGED BY: JMD		WATER LEVEL: tidal					
DRILLER: SCI		DRILL RIG: CME-550					
DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (ft-CLW)	SAMPLE NO/TYPE	STANDARD PENETRATION TEST DATA (blows/ft)	N VALUE
45		<u>COOPER MARL: SANDY CLAY (CL)</u> very stiff, olive brown <u>BORING TERMINATED AT ELEVATION OF -46.4 FT CLW</u>		-45.0	S-8		22

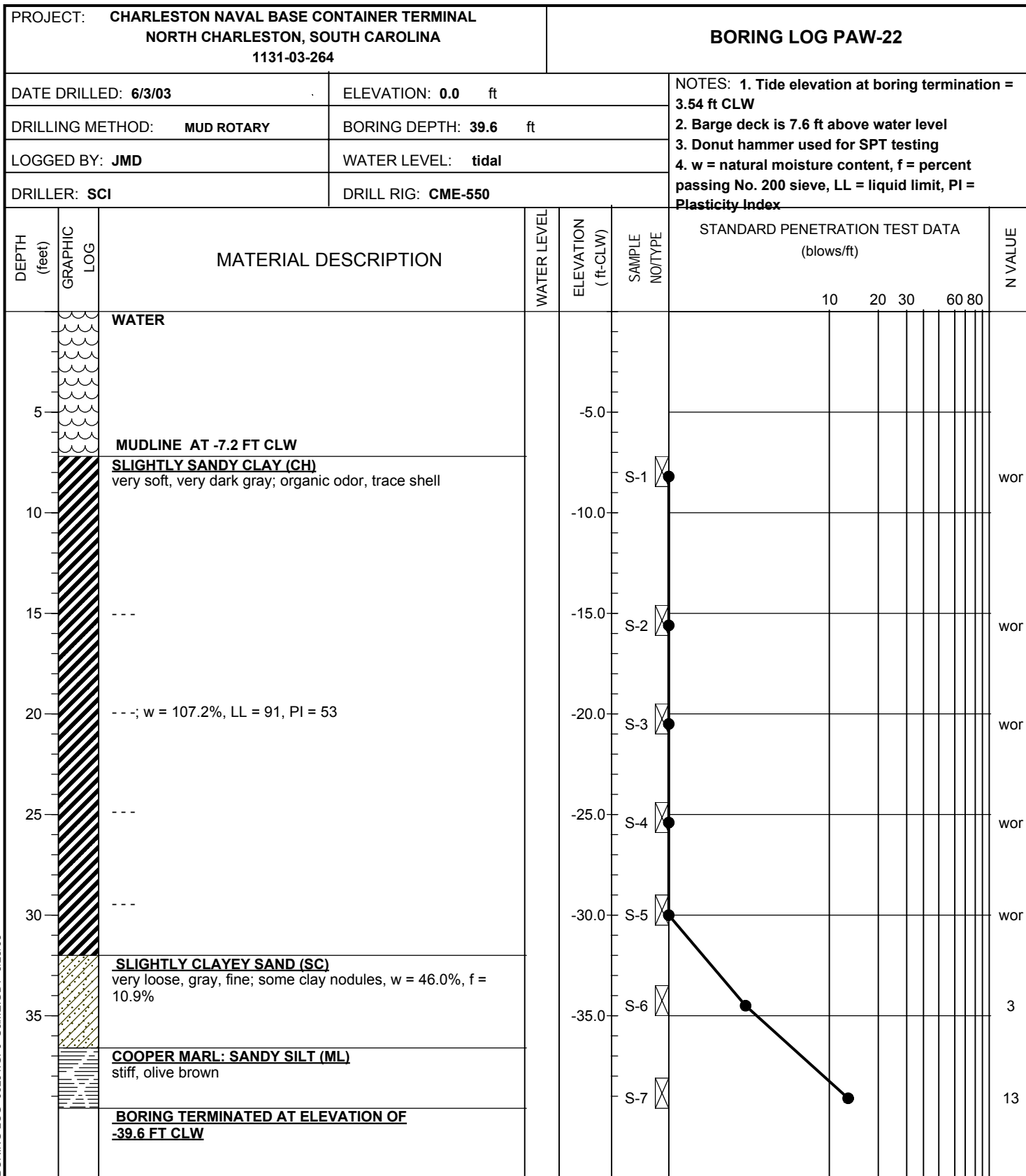
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2. PENETRATION (N-VALUE) IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.



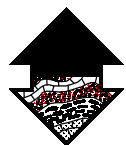
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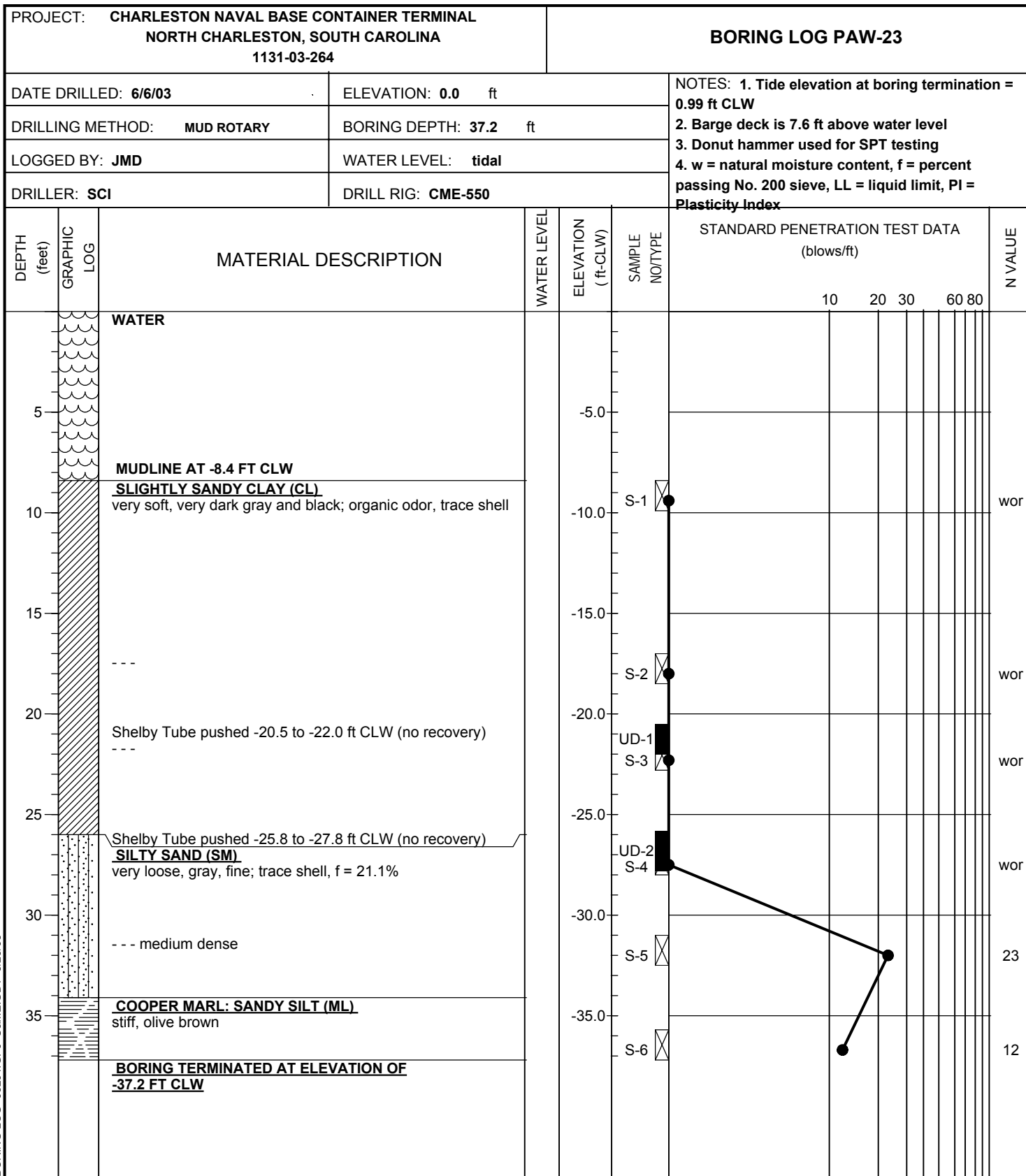


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 2. PENETRATION (N-VALUE) IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

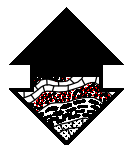


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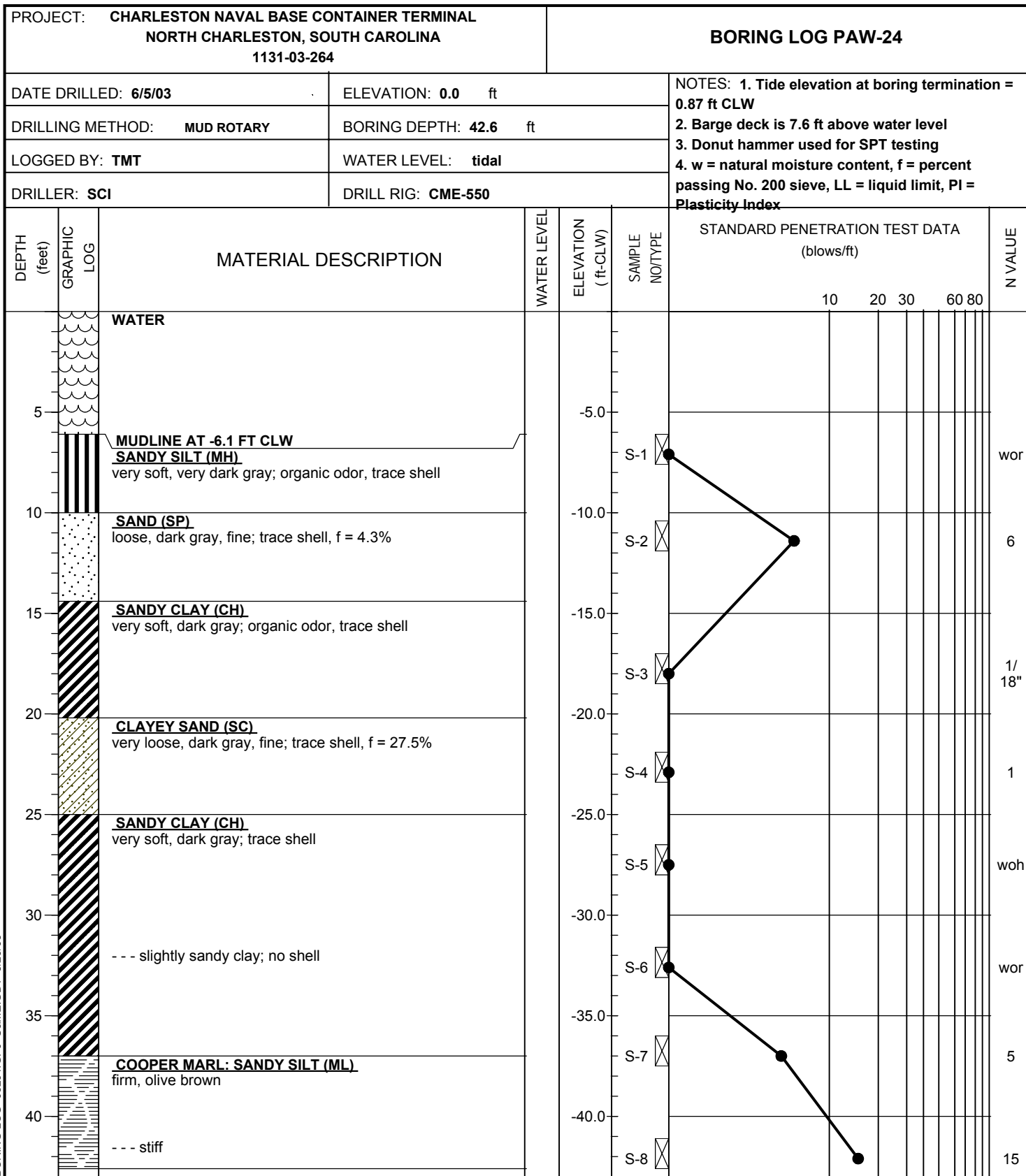


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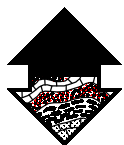


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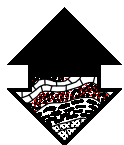
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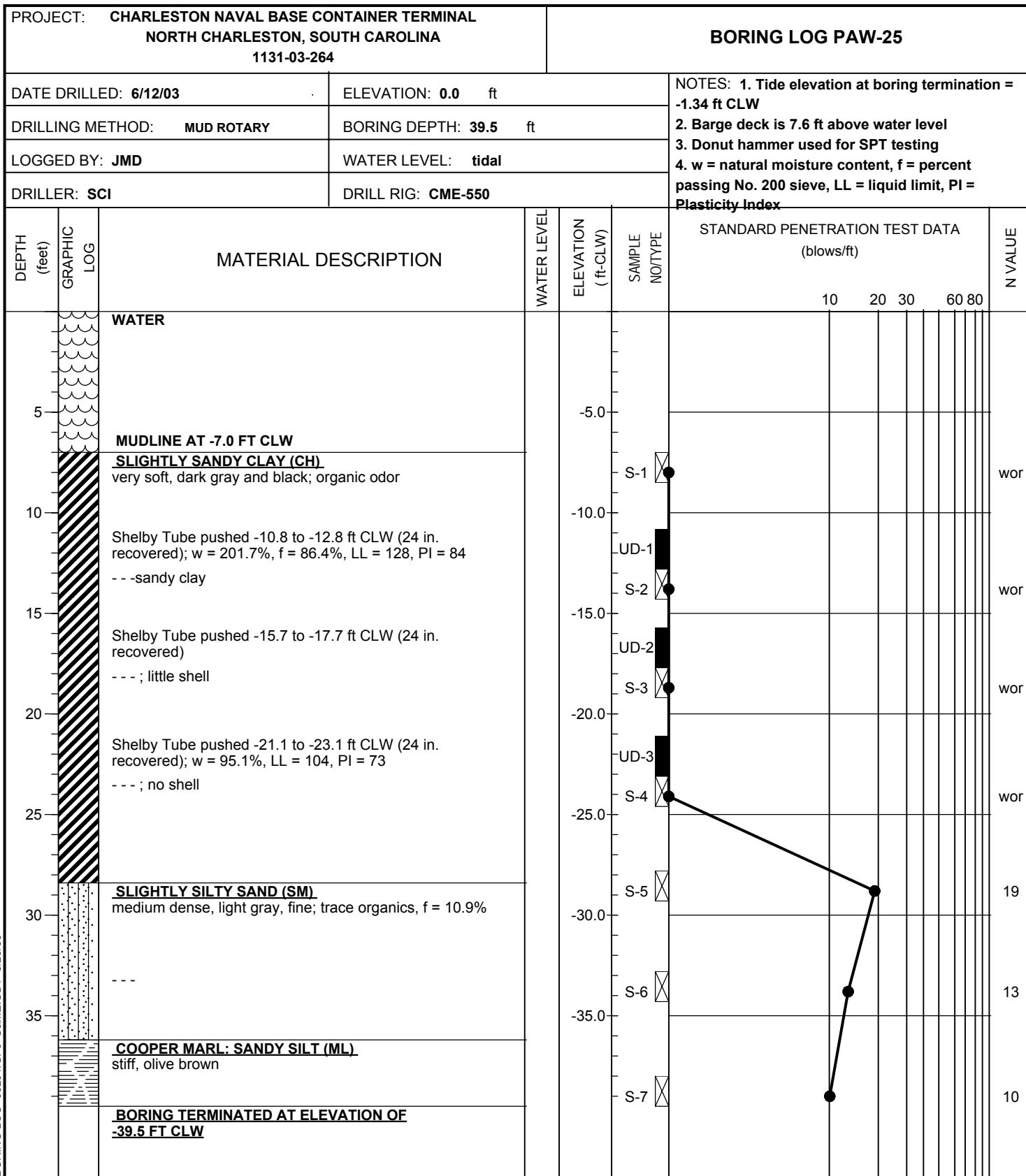
PROJECT: CHARLESTON NAVAL BASE CONTAINER TERMINAL NORTH CHARLESTON, SOUTH CAROLINA 1131-03-264				BORING LOG PAW-24								
DATE DRILLED: 6/5/03		ELEVATION: 0.0 ft			NOTES: 1. Tide elevation at boring termination = 0.87 ft CLW 2. Barge deck is 7.6 ft above water level 3. Donut hammer used for SPT testing 4. w = natural moisture content, f = percent passing No. 200 sieve, LL = liquid limit, PI = Plasticity Index							
DRILLING METHOD: MUD ROTARY		BORING DEPTH: 42.6 ft										
LOGGED BY: TMT		WATER LEVEL: tidal										
DRILLER: SCI		DRILL RIG: CME-550										
DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (ft-CLW)	SAMPLE NO/TYPE	STANDARD PENETRATION TEST DATA (blows/ft)						N VALUE
						10	20	30	60	80		
		<u>BORING TERMINATED AT ELEVATION OF -42.6 FT CLW</u>										

1. BORING AND SAMPLING IS IN ACCORDANCE WITH ASTM D-1586.
2. PENETRATION (N-VALUE) IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

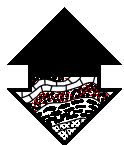


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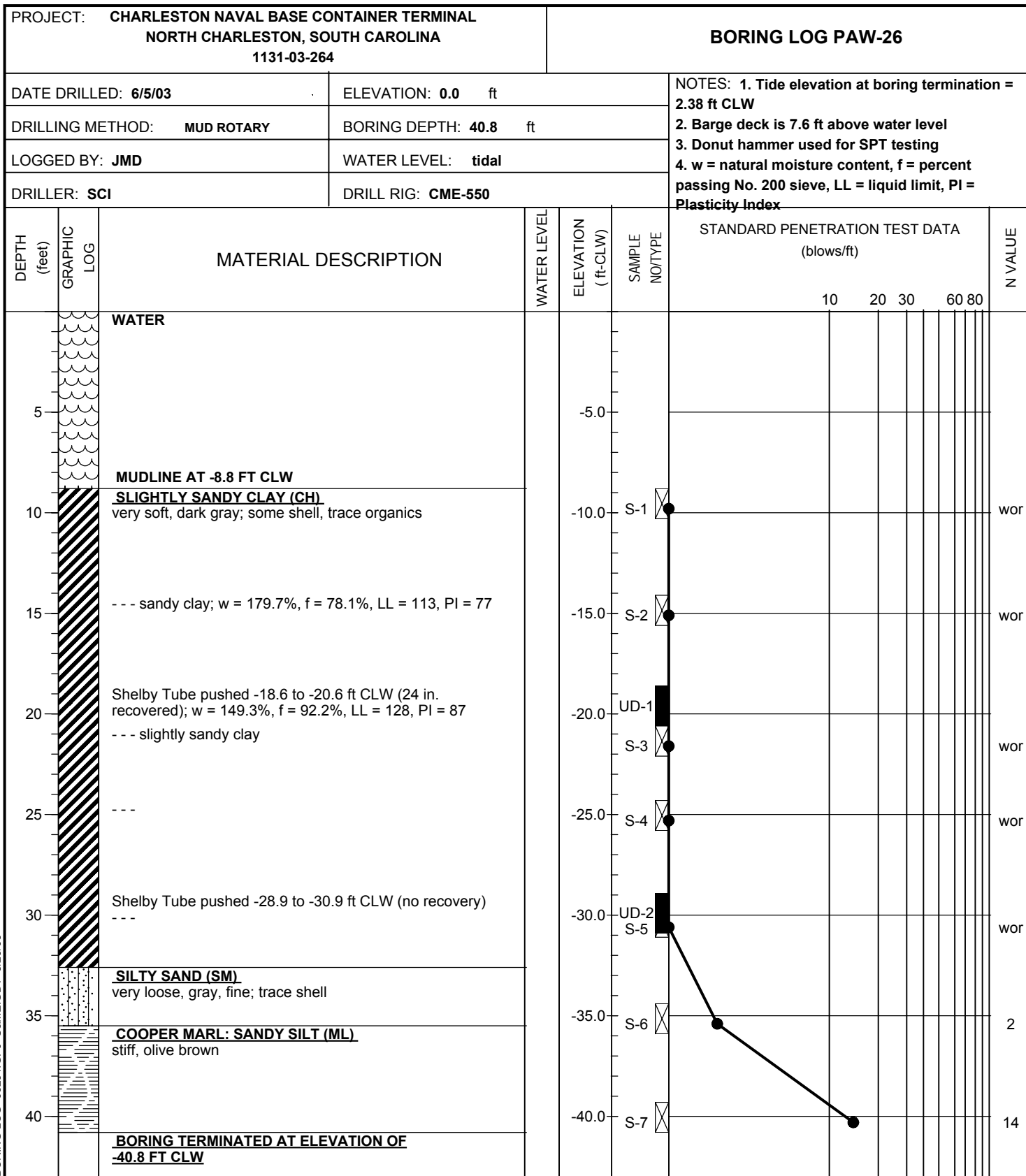
1. BORING AND SAMPLING IS IN ACCORDANCE WITH ASTM D-1586.
2. PENETRATION (N-VALUE) IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.



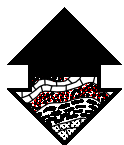
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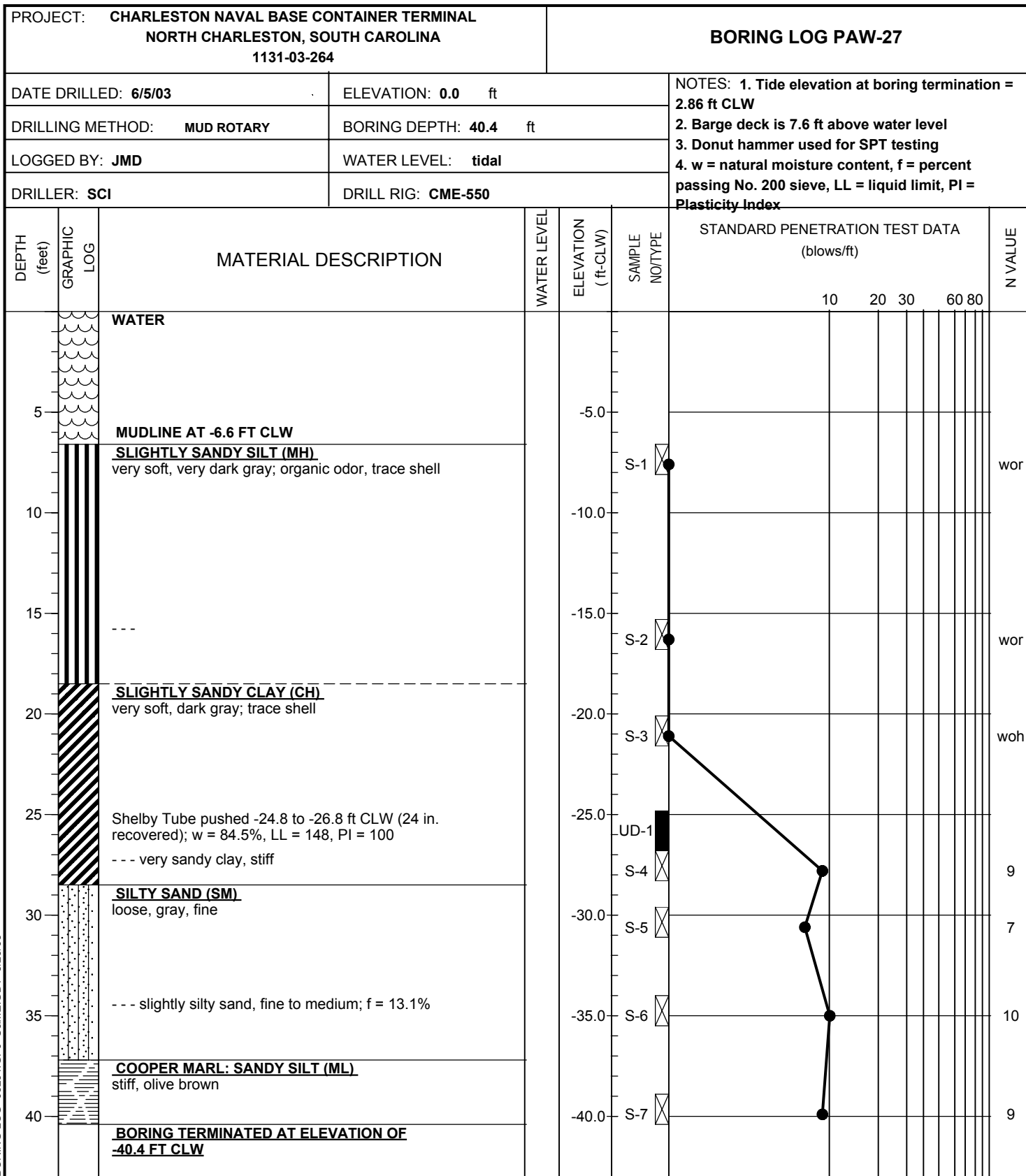


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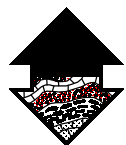


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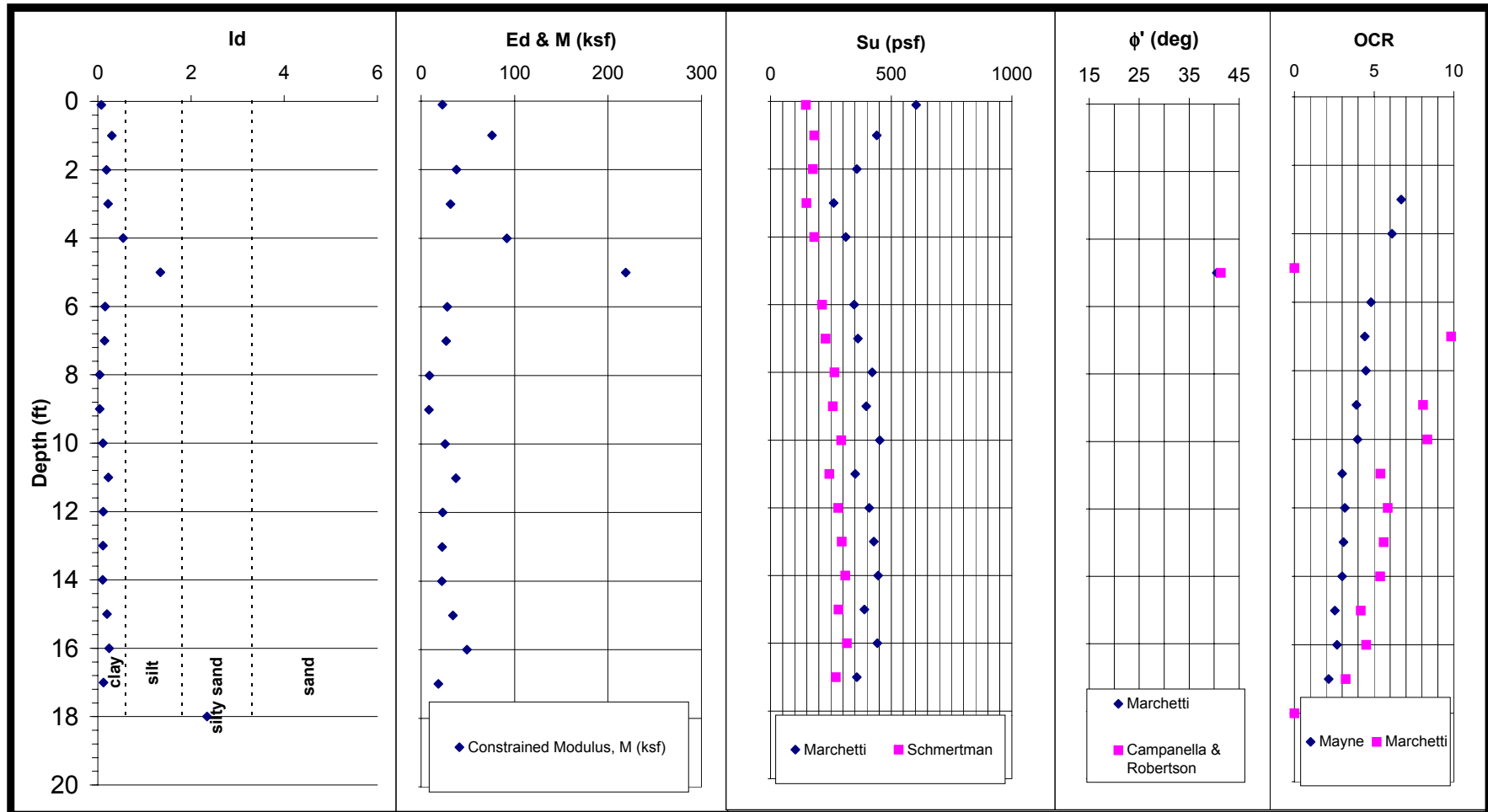
DILATOMETER TEST RESULTS

Test ID: PAW-28

Site: Charleston Naval Base Container Terminal

Location: N. Charleston, SC

Project No.: 1131-03-264





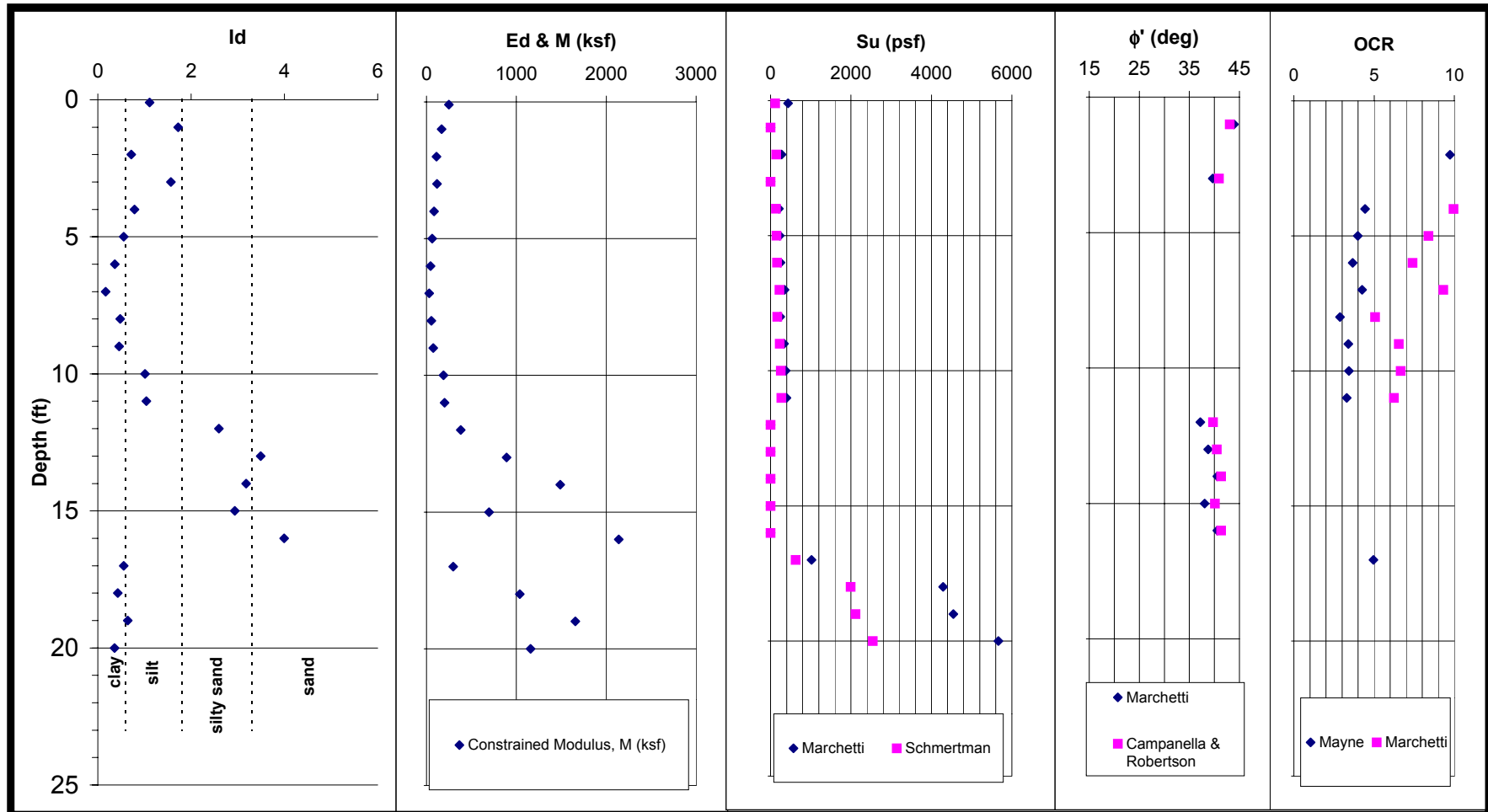
DILATOMETER TEST RESULTS

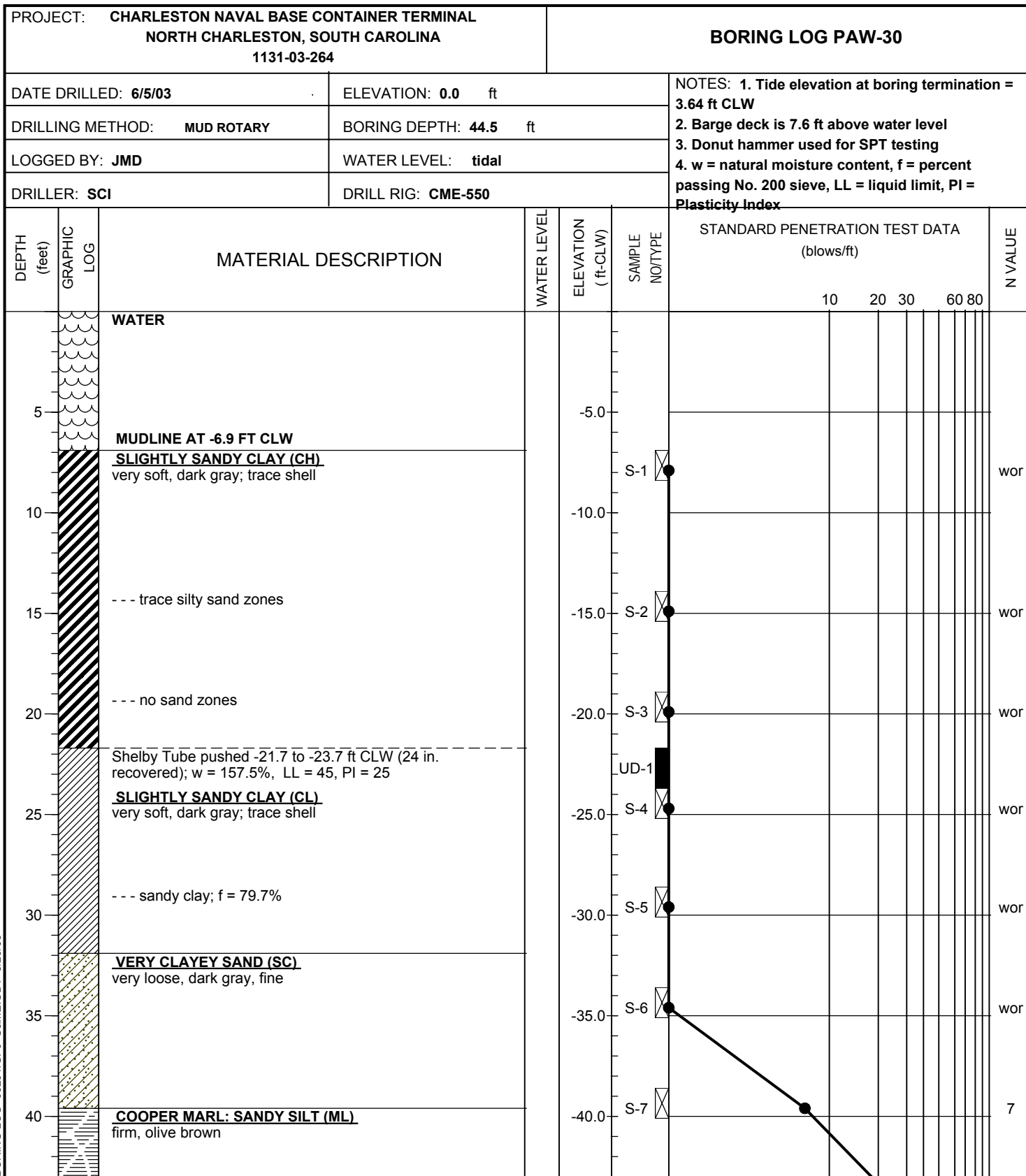
Test ID: PAW-29

Site: Charleston Naval Base Container Terminal

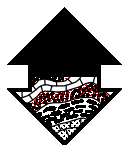
Location: N. Charleston, SC

Project No.: 1131-03-264







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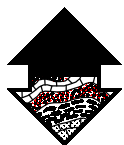
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PROJECT: CHARLESTON NAVAL BASE CONTAINER TERMINAL NORTH CHARLESTON, SOUTH CAROLINA 1131-03-264				BORING LOG PAW-30			
DATE DRILLED: 6/5/03		ELEVATION: 0.0 ft		NOTES: 1. Tide elevation at boring termination = 3.64 ft CLW 2. Barge deck is 7.6 ft above water level 3. Donut hammer used for SPT testing 4. w = natural moisture content, f = percent passing No. 200 sieve, LL = liquid limit, PI = Plasticity Index			
DRILLING METHOD: MUD ROTARY		BORING DEPTH: 44.5 ft					
LOGGED BY: JMD		WATER LEVEL: tidal					
DRILLER: SCI		DRILL RIG: CME-550					
DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (ft-CLW)	SAMPLE NO/TYPE	STANDARD PENETRATION TEST DATA (blows/ft)	N VALUE
		--- very stiff <u>BORING TERMINATED AT ELEVATION OF -44.5 FT CLW</u>			S-8 <input checked="" type="checkbox"/>	<div style="display: flex; justify-content: space-around; font-size: small;"> 1020306080 </div> 	24

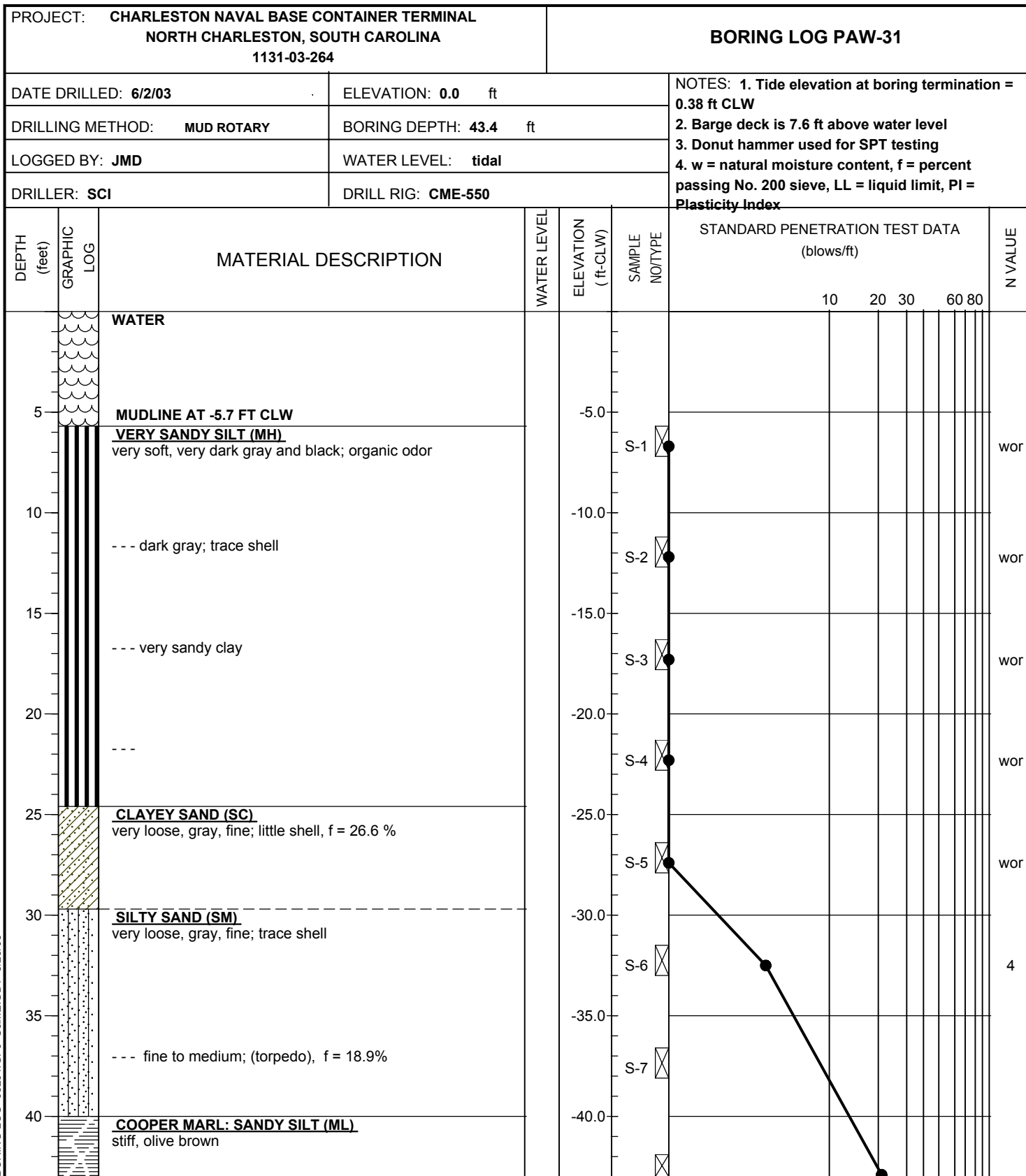
1. BORING AND SAMPLING IS IN ACCORDANCE WITH ASTM D-1586.
2. PENETRATION (N-VALUE) IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.



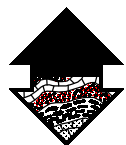
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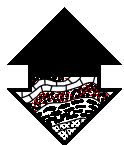


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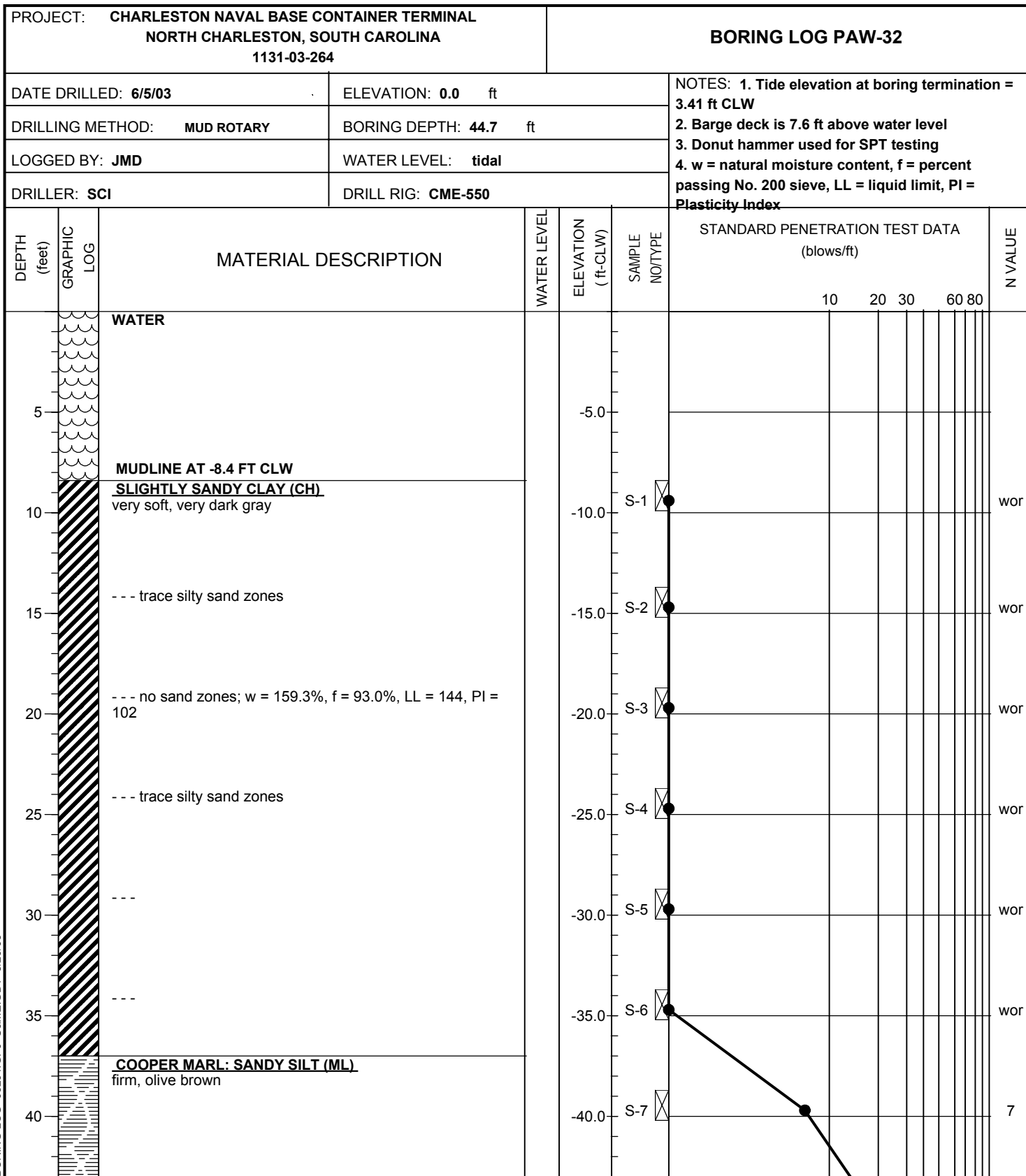
PROJECT: CHARLESTON NAVAL BASE CONTAINER TERMINAL NORTH CHARLESTON, SOUTH CAROLINA 1131-03-264				BORING LOG PAW-31									
DATE DRILLED: 6/2/03		ELEVATION: 0.0 ft			NOTES: 1. Tide elevation at boring termination = 0.38 ft CLW 2. Barge deck is 7.6 ft above water level 3. Donut hammer used for SPT testing 4. w = natural moisture content, f = percent passing No. 200 sieve, LL = liquid limit, PI = Plasticity Index								
DRILLING METHOD: MUD ROTARY		BORING DEPTH: 43.4 ft											
LOGGED BY: JMD		WATER LEVEL: tidal											
DRILLER: SCI		DRILL RIG: CME-550											
DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (ft-CLW)	SAMPLE NO/TYPE	STANDARD PENETRATION TEST DATA (blows/ft)						N VALUE	
						10	20	30	60	80			
		<u>BORING TERMINATED AT ELEVATION OF -43.4 FT CLW</u>			S-8								21

1. BORING AND SAMPLING IS IN ACCORDANCE WITH ASTM D-1586.
 2. PENETRATION (N-VALUE) IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

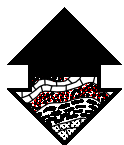


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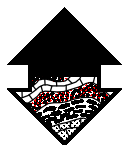
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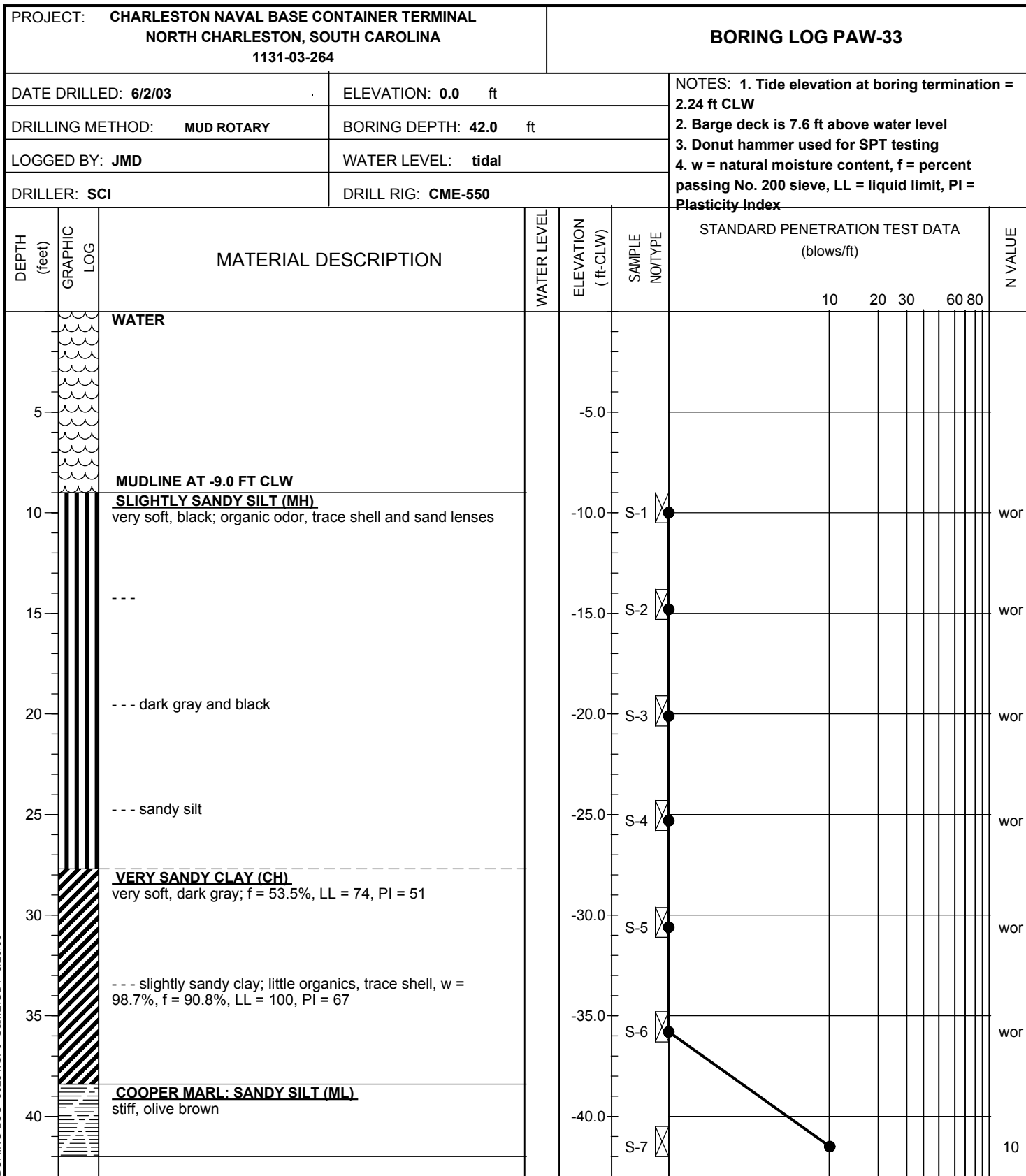
PROJECT: CHARLESTON NAVAL BASE CONTAINER TERMINAL NORTH CHARLESTON, SOUTH CAROLINA 1131-03-264				BORING LOG PAW-32			
DATE DRILLED: 6/5/03		ELEVATION: 0.0 ft		NOTES: 1. Tide elevation at boring termination = 3.41 ft CLW 2. Barge deck is 7.6 ft above water level 3. Donut hammer used for SPT testing 4. w = natural moisture content, f = percent passing No. 200 sieve, LL = liquid limit, PI = Plasticity Index			
DRILLING METHOD: MUD ROTARY		BORING DEPTH: 44.7 ft					
LOGGED BY: JMD		WATER LEVEL: tidal					
DRILLER: SCI		DRILL RIG: CME-550					
DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (ft-CLW)	SAMPLE NO/TYPE	STANDARD PENETRATION TEST DATA (blows/ft)	N VALUE
		--- very stiff <u>BORING TERMINATED AT ELEVATION OF -44.7 FT CLW</u>			S-8 	<div style="display: flex; justify-content: space-around; font-size: small;"> 1020306080 </div> 	17

1. BORING AND SAMPLING IS IN ACCORDANCE WITH ASTM D-1586.
2. PENETRATION (N-VALUE) IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

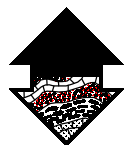


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1. BORING AND SAMPLING IS IN ACCORDANCE WITH ASTM D-1586.
2. PENETRATION (N-VALUE) IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

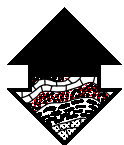


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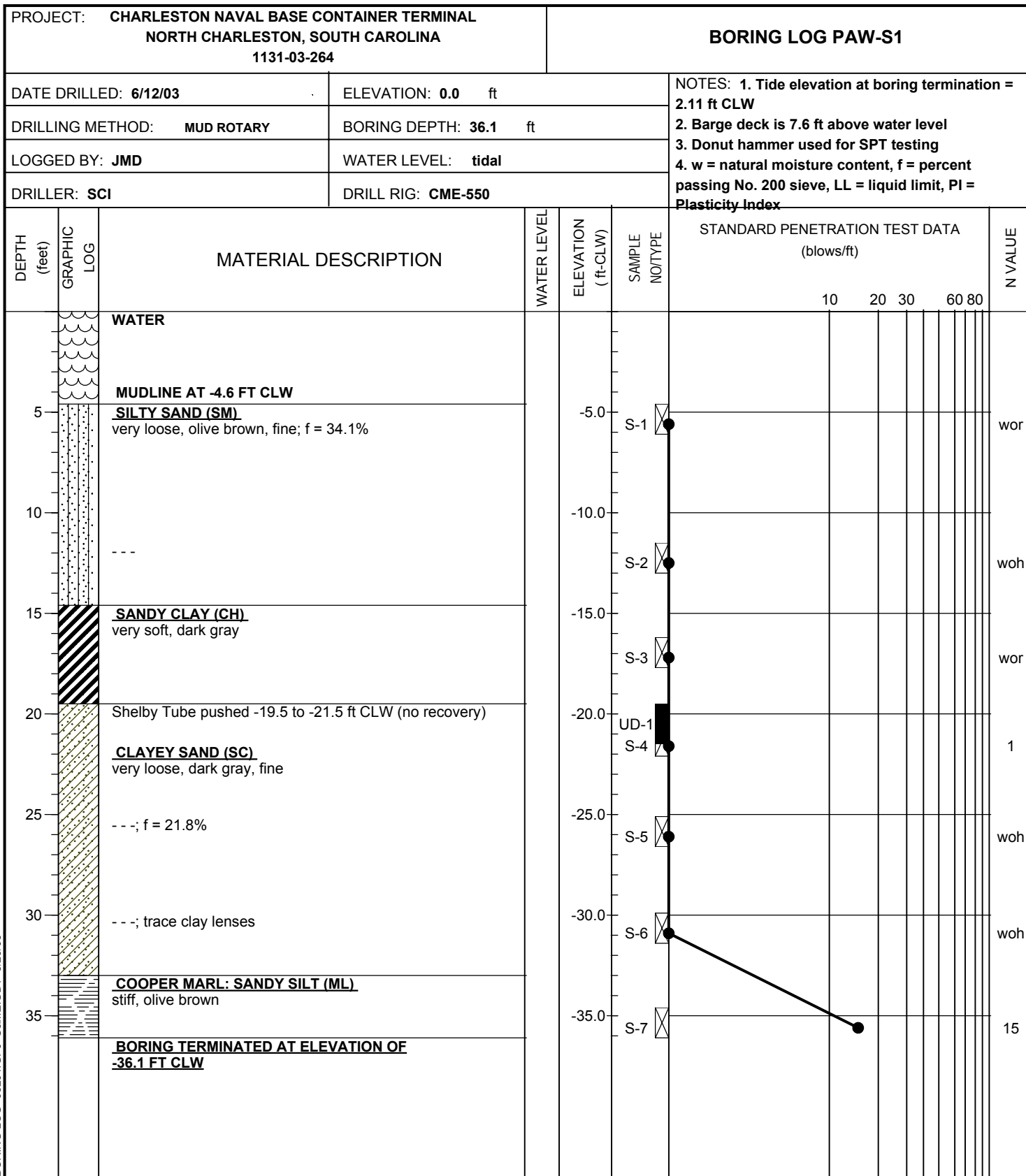
PROJECT: CHARLESTON NAVAL BASE CONTAINER TERMINAL NORTH CHARLESTON, SOUTH CAROLINA 1131-03-264				BORING LOG PAW-33								
DATE DRILLED: 6/2/03		ELEVATION: 0.0 ft			NOTES: 1. Tide elevation at boring termination = 2.24 ft CLW 2. Barge deck is 7.6 ft above water level 3. Donut hammer used for SPT testing 4. w = natural moisture content, f = percent passing No. 200 sieve, LL = liquid limit, PI = Plasticity Index							
DRILLING METHOD: MUD ROTARY		BORING DEPTH: 42.0 ft										
LOGGED BY: JMD		WATER LEVEL: tidal										
DRILLER: SCI		DRILL RIG: CME-550										
DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (ft-CLW)	SAMPLE NO/TYPE	STANDARD PENETRATION TEST DATA (blows/ft)						N VALUE
						10	20	30	60	80		
		<u>BORING TERMINATED AT ELEVATION OF -42.0 FT CLW</u>										

1. BORING AND SAMPLING IS IN ACCORDANCE WITH ASTM D-1586.
 2. PENETRATION (N-VALUE) IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

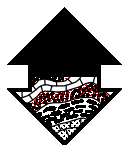


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1. BORING AND SAMPLING IS IN ACCORDANCE WITH ASTM D-1586.
 2. PENETRATION (N-VALUE) IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

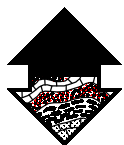


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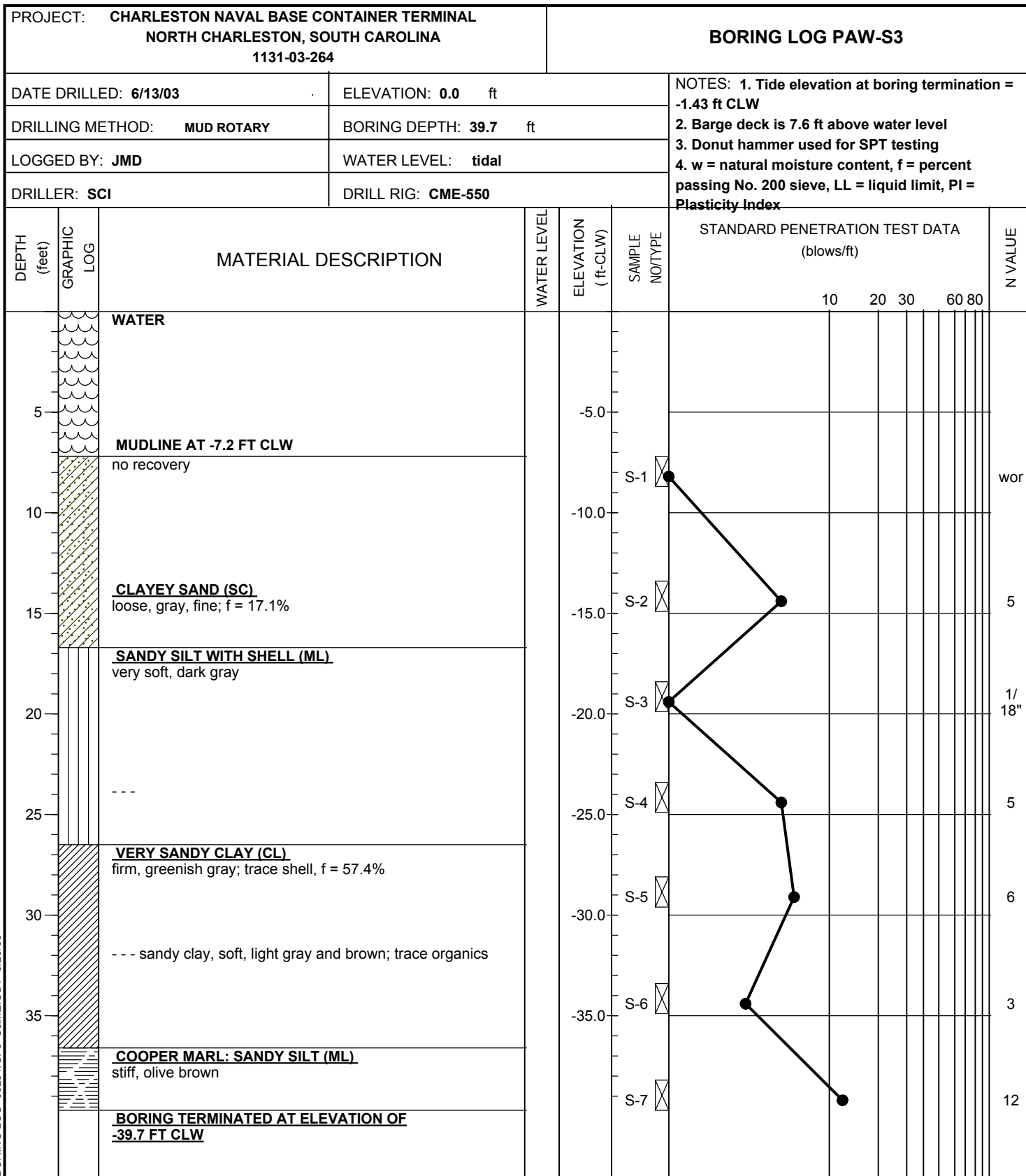
PROJECT: CHARLESTON NAVAL BASE CONTAINER TERMINAL NORTH CHARLESTON, SOUTH CAROLINA 1131-03-264				BORING LOG PAW-S2										
DATE DRILLED: 6/16/03		ELEVATION: 0.0 ft			NOTES: 1. Tide elevation at boring termination = 4.39 ft CLW 2. Barge deck is 7.6 ft above water level 3. Donut hammer used for SPT testing 4. w = natural moisture content, f = percent passing No. 200 sieve, LL = liquid limit, PI = Plasticity Index									
DRILLING METHOD: MUD ROTARY		BORING DEPTH: 33.7 ft												
LOGGED BY: JMD		WATER LEVEL: tidal												
DRILLER: SCI		DRILL RIG: CME-550												
DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (ft-CLW)	SAMPLE NO/TYPE	STANDARD PENETRATION TEST DATA (blows/ft)					N VALUE			
						10	20	30	60	80				
5		WATER												
		MUDLINE AT -6.3 FT CLW no recovery		-5.0	S-1						wor			
10				-10.0										
15		SLIGHTLY SANDY SILT (MH) very soft, dark gray; trace organics		-15.0	S-2						wor			
		Shelby Tube pushed -16.1 to -18.1 ft CLW (24 in. recovered)			UD-1									
20		VERY CLAYEY SAND (SC) very loose, gray, fine; trace organics, silty sand (SM) last 3 in., f = 43.8%		-20.0	S-3						wor			
25		VERY SILTY SAND (SM) very loose, light gray, fine to coarse; gravelly sand (GM) first 4 in., f = 41.8%		-25.0	S-4						wor			
30		COOPER MARL: SANDY SILT (ML) stiff, olive brown		-30.0	S-5						2/18"			
		BORING TERMINATED AT ELEVATION OF -33.7 FT CLW			S-6						12			

1. BORING AND SAMPLING IS IN ACCORDANCE WITH ASTM D-1586.
2. PENETRATION (N-VALUE) IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

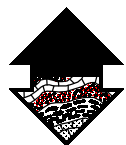


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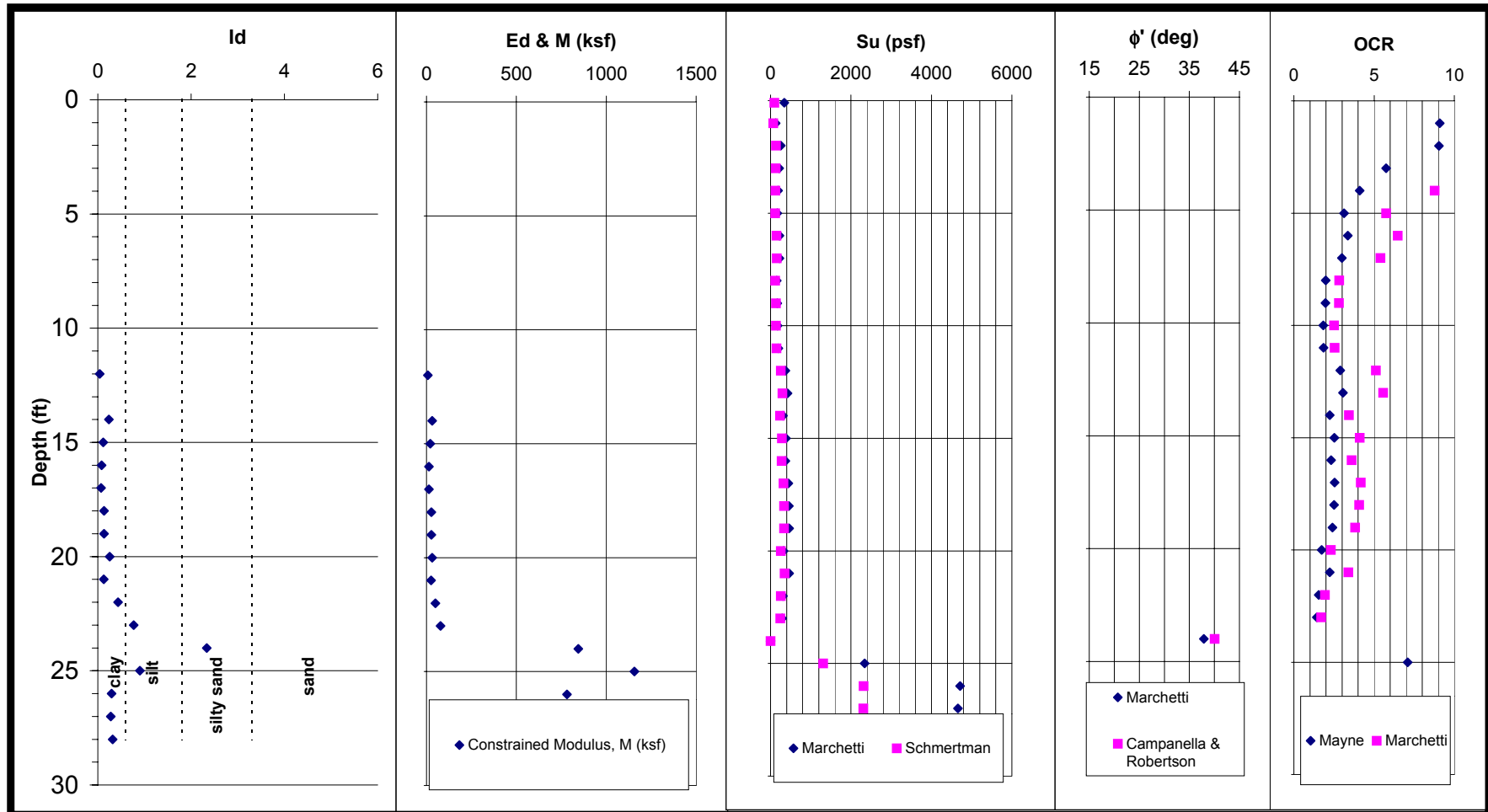
DILATOMETER TEST RESULTS

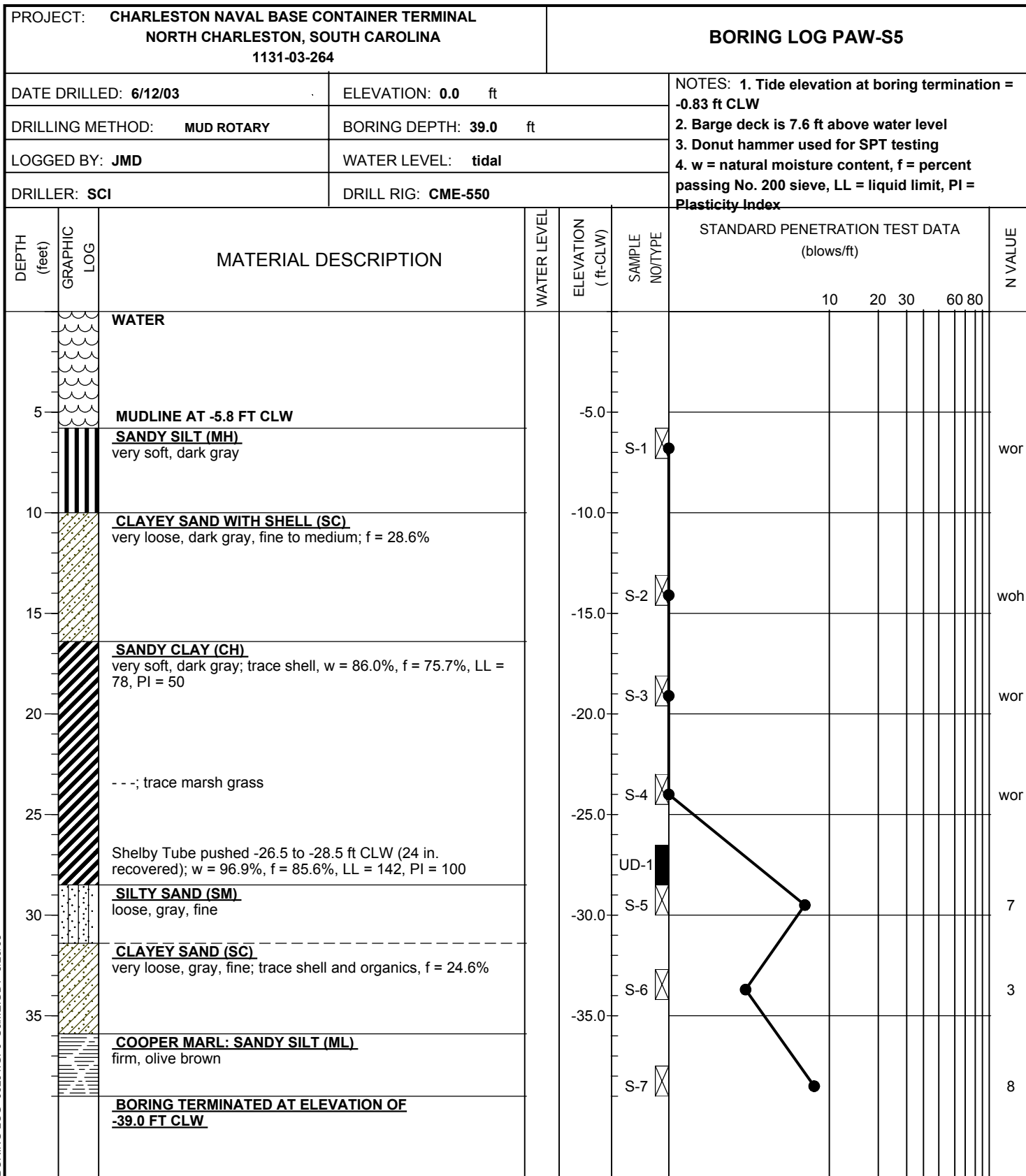
Test ID: PAW-S4

Site: Charleston Naval Base Container Terminal

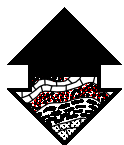
Location: N. Charleston, SC

Project No.: 1131-03-264



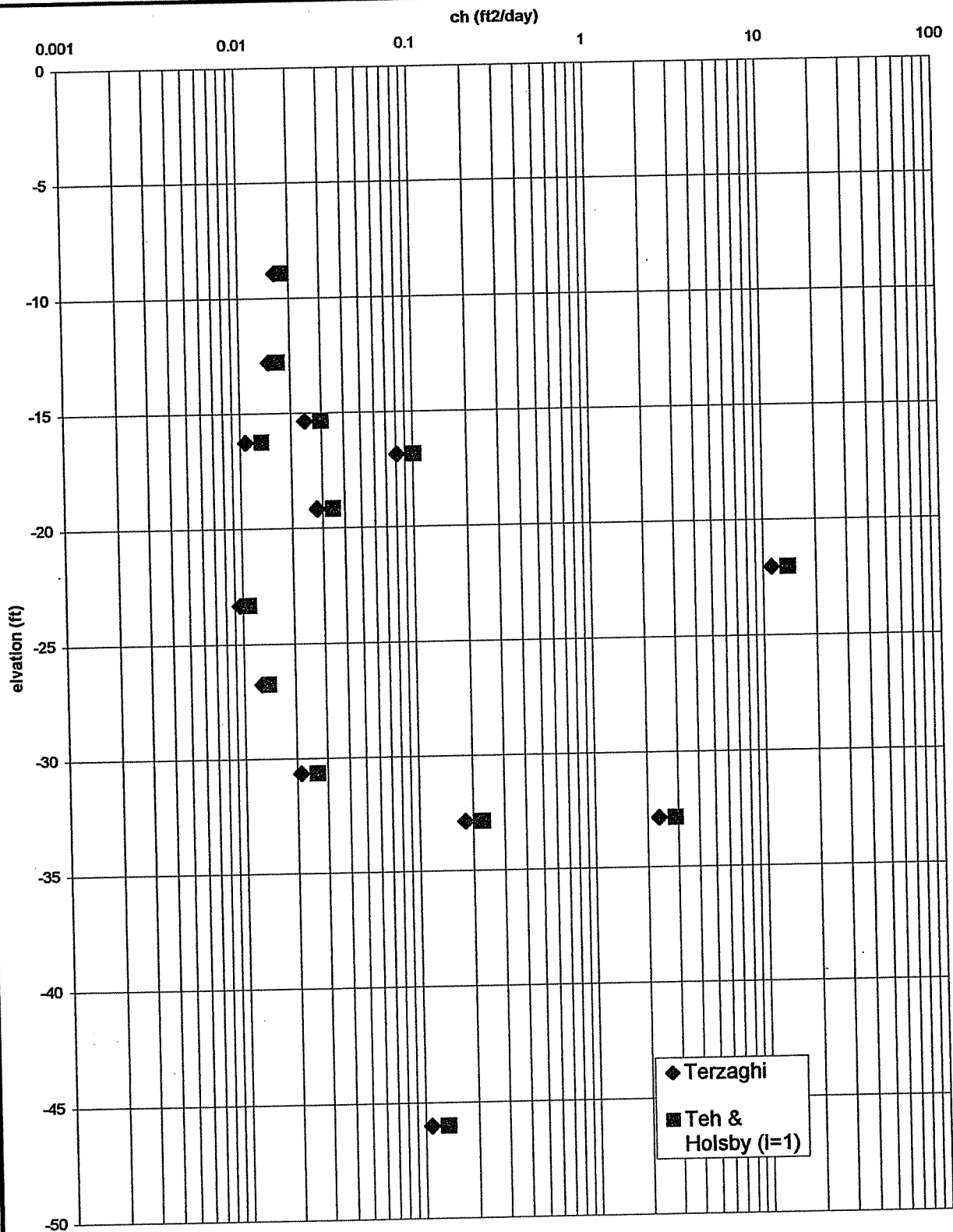


1. BORING AND SAMPLING IS IN ACCORDANCE WITH ASTM D-1586.
 2. PENETRATION (N-VALUE) IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.



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620 Wando Park Boulevard
 Mt. Pleasant, SC



Proj. No. 1131-03-264

AUGUST 2003



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HORIZONTAL COEFFICIENT OF CONSOLIDATION
ESTIMATED FROM DISSIPATION TESTS
CHAS. NAVAL BASE CONTAINER TERMINAL
NORTH CHARLESTON, SC

CPTU – PORE PRESSURE DISSIPATION TEST RESULTS



Test ID: PAL-1, 44ft

Site: Chas. Naval Base Container Terminal

Location: N. Charleston, SC

Project: 1131-03-264

Client: SCSPA

Date: 6/20/03

Cone Id: 2437.102, 15cm²

Interpretation Assumptions:

GWT (ft): 3

Depth (ft): 44

Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)
0.3830000	29.43461	45.35900	23.06114	99.35000	21.13042		
1.051000	29.04865	46.35000	23.00613	100.3400	21.18543		
1.711000	28.82831	47.33900	22.95082	110.3410	21.13042		
2.381000	28.49735	48.32400	23.06114	120.3330	21.13042		
2.845000	28.52293	49.36900	23.06114	130.3330	21.02010		
3.343000	28.46762	50.35900	23.00613	140.3240	21.07511		
3.835000	28.35730	51.34800	23.00613	150.3780	20.90978		
4.330000	28.19197	52.33900	23.06114	160.3720	20.96479		
4.826000	28.13666	53.32300	22.73018	170.3710	20.46821		
5.375000	28.19197	54.36800	22.78549	180.4680	20.68885		
5.870000	27.97134	55.35700	22.67517	190.3630	20.63384		
6.365000	27.86102	56.34800	22.67517	200.3630	20.35789		
6.854000	27.80571	57.33300	22.50955	210.3540	20.24758		
7.351000	27.69539	58.37800	22.45424	220.3530	20.57853		
7.846000	27.58507	59.36700	22.39923	230.3510	20.24758		
8.339000	27.47475	60.35600	22.17859	240.3440	20.13726		
8.836000	27.36444	61.34200	22.39923	250.3440	20.35789		
9.329000	27.25412	62.33200	22.45424	260.3370	20.30288		
9.880000	27.03348	63.37800	22.17859	270.3360	20.02694		
10.37400	26.92287	64.36500	22.06827	280.3340	20.35789		
11.35900	26.92287	65.35100	22.34392	290.3270	20.35789		
12.34800	26.75754	66.34200	22.17859	300.3260	20.02694		
13.34000	26.59191	67.33100	22.12328	310.3740	20.02694		
14.33000	26.37128	68.37600	22.17859	320.3730	20.19257		
15.36800	26.20595	69.36100	21.95795	330.3660	19.97193		
16.35800	25.98501	70.35100	21.84764	340.3660	20.19257		
17.34900	25.76438	71.34100	21.90265	350.3630	20.52352		
18.33800	25.59905	72.33000	21.95795	360.3570	20.41320		
19.32400	25.43342	73.37000	21.79233	370.3560	20.24758		
20.36700	25.32310	74.35900	22.01296	380.3480	20.35789		
21.35700	25.21279	75.35000	22.01296	390.3470	20.35789		
22.34900	25.21279	76.34000	22.01296	400.3450	20.24758		
23.33700	25.10247	77.33000	21.79233	410.3410	20.30288		
24.37700	24.99215	78.36900	21.95795	420.3370	20.30288		
25.36900	24.77151	79.35800	21.95795	430.3310	20.30288		
26.35700	24.60589	80.35000	21.95795	440.3290	20.19257		
27.34600	24.55088	81.33800	21.79233	450.3290	20.41320		
28.33200	24.16461	82.32400	21.79233	460.3760	20.13726		
29.37800	24.27493	83.36800	21.73732	470.3750	20.30288		
30.36500	24.16461	84.35900	21.62670	480.3700	20.19257		
31.35600	24.05430	85.34800	21.84764	490.3670	20.41320		
32.34200	23.99899	86.33200	21.95795	500.3610	20.30288		
33.33100	23.94398	87.37800	21.46137	510.3590	20.46821		
34.37600	23.72334	88.36700	21.46137	520.3610	20.24758		
35.36500	23.55772	89.35900	21.57169	530.3510	20.35789		
36.35200	23.77835	90.34200	21.40607	540.3490	20.13726		
37.33900	23.61302	91.33300	21.51638	550.3440	20.35789		
38.33100	23.39209	92.37700	21.24074	560.3410	20.30288		
39.37600	23.06114	93.36700	21.40607				
40.35900	23.11644	94.35100	21.18543				
41.35000	23.00613	95.34200	21.13042				
42.33900	23.11644	96.33100	21.13042				
43.33000	22.89581	97.37600	21.35106				
44.36900	22.84050	98.36000	21.18543				

CPTU - PORE PRESSURE DISSIPATION TEST RESULTS



Test ID: PAL-1, 44ft

Site: Chas. Naval Base Container Terminal

Location: N. Charleston, SC

Project: 1131-03-264

Client: SCSPA

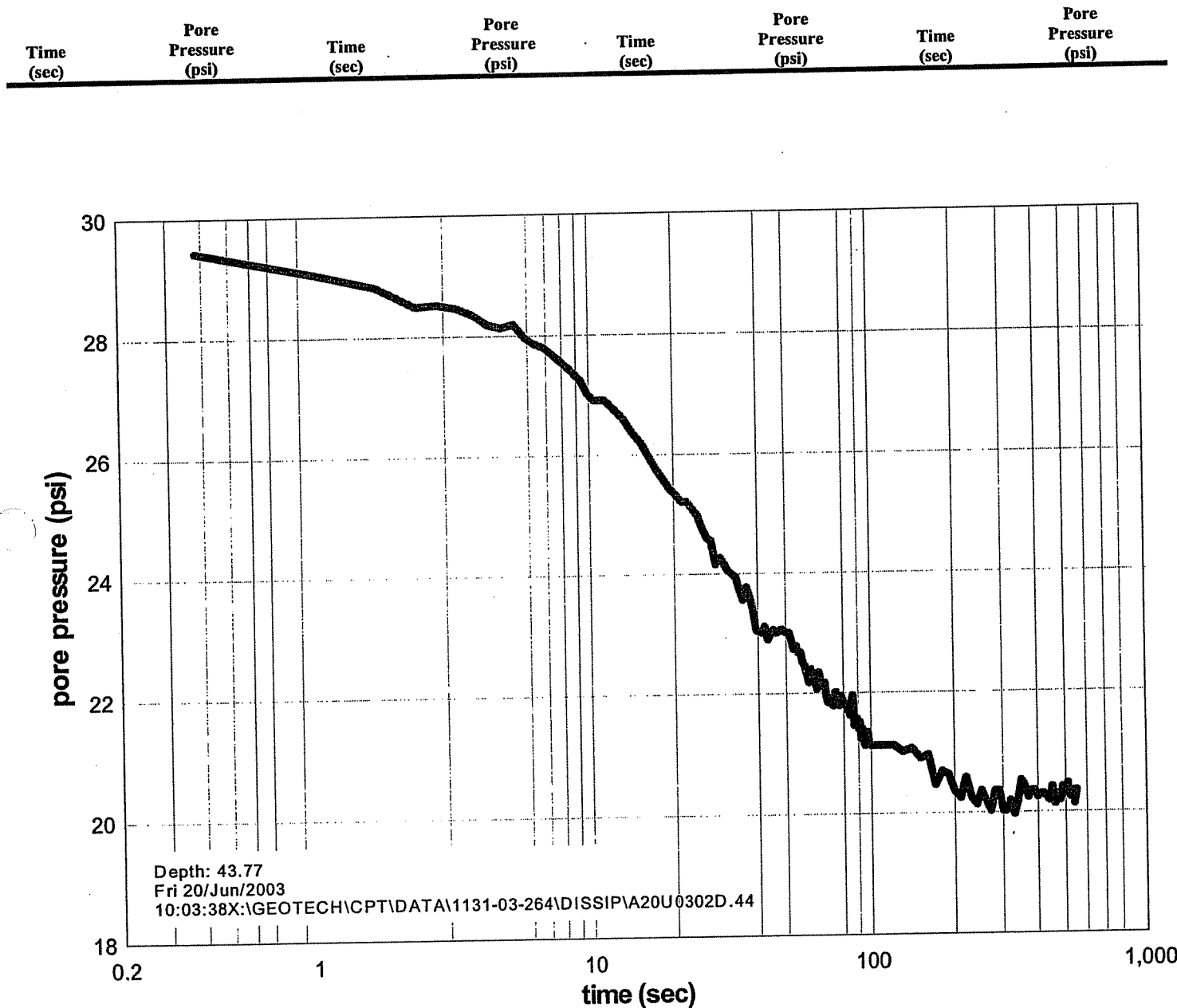
Date: 6/20/03

Cone Id: 2437.102, 15cm²

Interpretation Assumptions:

GWT (ft): 3

Depth (ft): 44



CPTU – PORE PRESSURE DISSIPATION TEST RESULTS



Test ID: PAL-1, 57ft

Site: Chas. Naval Base Container Terminal

Location: N. Charleston, SC

Project: 1131-03-264

Client: SCSA

Date: 6/20/03

Cone Id: 2437.102, 15cm²

Interpretation Assumptions:

GWT (ft): 3

Depth (ft): 57

Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)
0.447000	44.64990	45.42300	43.00880	99.41600	41.41082	630.3820	35.18424
1.109000	44.53958	46.40800	43.11882	100.4010	41.19048	640.3740	34.74356
1.771000	44.48457	47.39900	43.11882	110.3990	40.74951	650.4270	34.96390
2.438000	44.48457	48.38700	42.95349	120.3970	41.02516	660.4210	34.79857
2.909000	44.38614	49.37800	43.00880	130.3910	40.47416	670.4190	34.57823
3.405000	44.38614	50.42300	42.95349	140.3900	40.19851	680.4180	34.63324
3.901000	44.38614	51.40800	42.84347	150.3830	40.14350	690.4120	34.46792
4.394000	44.38614	52.39900	42.73315	160.3820	39.92316	700.4110	34.63324
4.885000	44.44115	53.38600	42.78817	170.3800	40.03318	710.4040	34.46792
5.379000	44.55147	54.37900	42.62284	180.4290	39.37217	720.4030	34.52322
5.874000	44.66179	55.41700	42.51282	190.4270	39.48219	730.4000	34.46792
6.425000	44.33113	56.40800	42.45781	200.4220	39.37217	740.3940	34.46792
6.919000	44.33113	57.39700	42.62284	210.4210	39.31686	750.3920	34.08225
7.414000	44.44115	58.38600	42.45781	220.4170	39.09652	760.3860	34.35789
7.909000	44.38614	59.42700	42.62284	230.4110	39.04151	770.3860	34.13756
8.403000	44.22081	60.41700	42.51282	240.4090	38.87618	780.3830	34.19257
8.899000	44.22081	61.40600	42.51282	250.4030	38.60054	790.3760	34.19257
9.391000	44.44115	62.39600	42.34749	260.4020	38.21487	800.4300	34.13756
9.883000	44.44115	63.38100	42.56783	270.3950	38.04954	810.4230	33.97223
10.37900	44.55147	64.42700	42.29248	280.3950	38.26988	820.4240	33.97223
11.42500	44.22081	65.41500	42.34749	290.3920	37.82920	830.4150	33.97223
12.41300	44.27612	66.40500	42.23717	300.3860	37.82920	840.4140	33.75189
13.39900	44.44115	67.39000	42.45781	310.3850	37.71888	850.4140	33.69658
14.38700	44.27612	68.38000	42.56783	320.3770	37.38852	860.4060	33.69658
15.37800	44.22081	69.42400	42.23717	330.3750	37.60886	870.4040	33.64157
16.42500	44.00048	70.41400	42.12715	340.4300	37.49854	880.3980	33.53125
17.40700	44.16580	71.40100	42.23717	350.4240	37.11288	890.3960	33.75189
18.39800	44.16580	72.39000	42.34749	360.4220	37.11288	900.3950	33.47624
19.38700	44.11079	73.38100	42.29248	370.4160	36.94755	910.3890	33.36592
20.37800	44.05549	74.42600	42.12715	380.4130	37.00256	920.3870	33.36592
21.42200	43.83515	75.40800	42.07184	390.4120	36.94755	930.3810	33.36592
22.40700	44.05549	76.39900	42.18216	400.4040	36.61689	940.3790	33.42123
23.39700	43.94547	77.38900	42.07184	410.4040	36.72721	950.3770	33.14558
24.38700	43.89045	78.37800	41.96182	420.3980	36.45156	960.4260	33.25590
25.43100	43.78014	79.42500	42.07184	430.3960	36.56188	970.4240	33.09057
26.41600	43.89045	80.40800	41.96182	440.3920	36.17621	980.4190	33.03556
27.40600	43.78014	81.39900	42.07184	450.3880	36.39655	990.4170	33.20089
28.39600	43.66982	82.38700	42.01683	460.3860	36.17621	1000.410	32.92525
29.38600	43.66982	83.37800	41.85150	470.3790	36.39655	1100.374	32.75992
30.42600	43.66982	84.41800	41.85150	480.3790	36.06589	1200.396	32.37425
31.41700	43.61481	85.40700	41.90681	490.4280	36.28623	1300.414	32.04359
32.40600	43.50449	86.39700	41.79649	500.4250	36.01088	1400.379	31.76824
33.39600	43.55980	87.38800	41.85150	510.4250	36.23122	1500.399	31.27226
34.38100	43.61481	88.42700	41.74148	520.4170	36.01088	1600.420	30.88659
35.42800	43.28415	89.41600	41.79649	530.4160	35.95587	1700.384	30.88659
36.41400	43.17413	90.40700	41.79649	540.4090	35.73553	1800.404	30.50092
37.40600	43.22914	91.39600	41.79649	550.4090	35.73553	1900.418	30.22528
38.38900	43.50449	92.38200	41.68617	560.4060	35.40488	2000.384	30.28029
39.38000	43.44948	93.42800	41.57615	570.4000	35.45989	2100.405	29.89462
40.42400	43.22914	94.41700	41.35581	580.3990	35.18424	2200.425	29.72929
41.41400	43.11882	95.40700	41.35581	590.3920	35.51490	2300.388	29.72929
42.39900	43.39447	96.39100	41.68617	600.3900	35.12923	2400.409	29.39893
43.39000	43.39447	97.38100	41.74148	610.3830	35.01921	2500.429	29.39893
44.37800	43.33916	98.42500	41.46583	620.3830	35.18424	2600.394	29.12328

CPTU – PORE PRESSURE DISSIPATION TEST RESULTS



Test ID: PAL-1, 57ft

Site: Chas. Naval Base Container Terminal

Location: N. Charleston, SC

Project: 1131-03-264

Client: SCSPA

Date: 6/20/03

Cone Id: 2437.102, 15cm²

Interpretation Assumptions:

GWT (ft): 3

Depth (ft): 57

Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)
2700.414	29.01296						
2800.372	28.84764						
2900.393	28.95795						
3000.413	28.68260						
3100.380	28.57229						
3200.399	28.62730						
3300.417	28.29664						
3400.383	28.40696						
3500.402	28.24163						
3600.422	28.13161						
3700.382	27.91097						
3800.403	28.18662						
3900.422	28.07630						
4000.387	27.80095						
4100.408	27.69063						
4200.428	27.74564						
4300.392	27.80095						
4400.412	27.63562						
4500.432	27.52530						
4600.391	27.41528						
4700.413	27.35998						

CPTU – PORE PRESSURE DISSIPATION TEST RESULTS

Test ID: PAL-1, 57ft

Date: 6/20/03

Site: Chas. Naval Base Container Terminal

Cone Id: 2437, 15cm²

Location: N. Charleston, SC

Project: 1131-03-264

Client: SCSPA

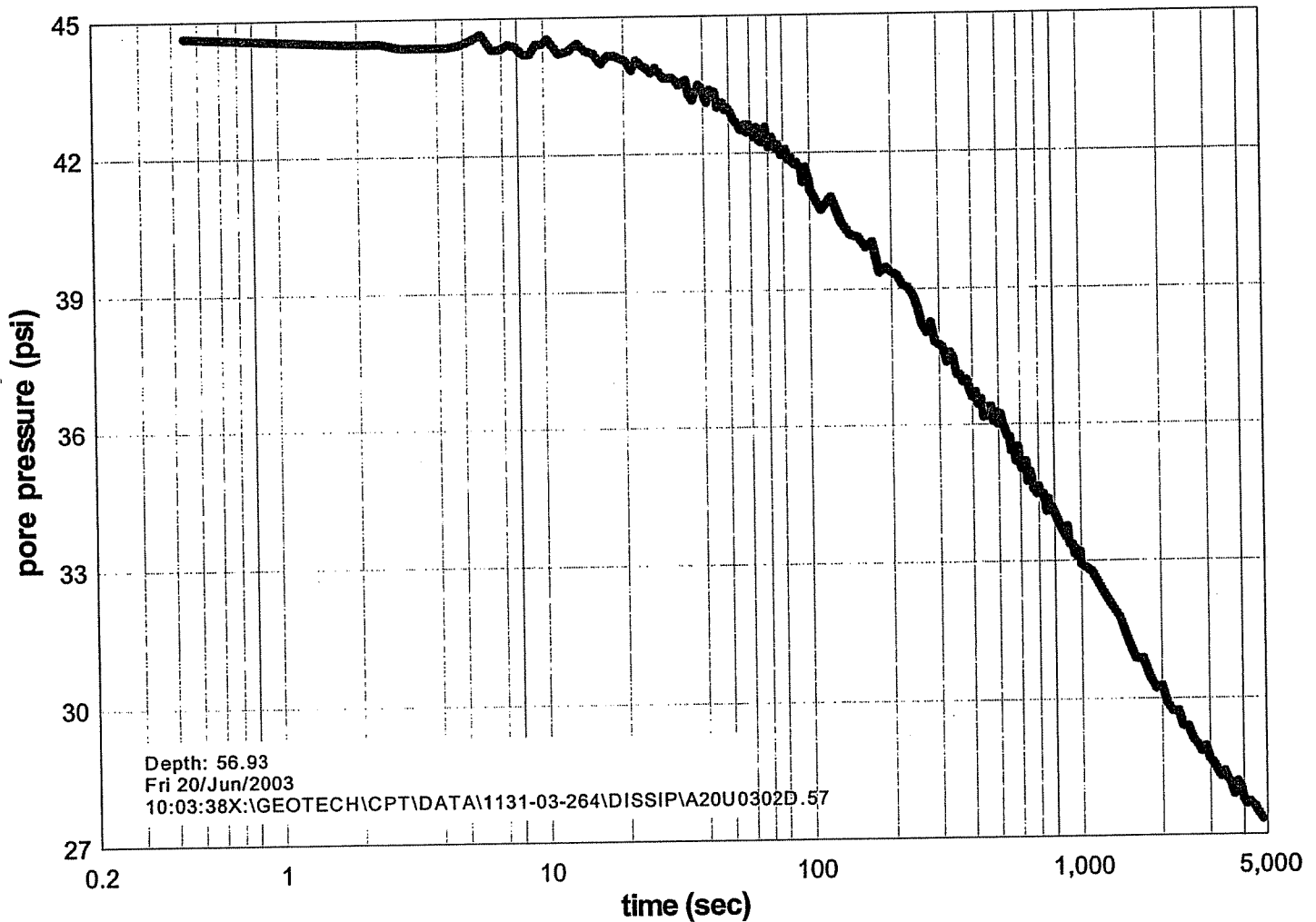
Interpretation Assumptions:

GWT (ft): 3

Depth (ft): 57



Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)
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CPTU - PORE PRESSURE DISSIPATION TEST RESULTS



Test ID: PAL-3, 27ft

Site: Chas. Naval Base Container Terminal

Location: N. Charleston, SC

Project: 1131-03-264

Client: SCSPA

Date: June 22, 2003

Cone Id: 2930.102, 10cm²

Interpretation Assumptions:

GWT (ft): 1.5

Depth (ft): 27

Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)
0.806000	22.21768	52.81100	21.43773	160.8510	20.55409	700.8250	18.78628
1.635000	22.26966	53.85600	21.38575	170.8490	20.50185	710.8220	18.78628
2.510000	22.16570	54.84600	21.43773	180.8440	20.44987	720.8160	18.78628
3.348000	22.32164	55.83600	21.38575	190.8410	20.39789	730.8190	18.78628
4.230000	22.26966	56.82000	21.38575	200.8400	20.39789	740.8700	18.73430
5.031000	22.32164	57.81000	21.38575	210.8330	20.34591	750.8670	18.68232
5.915000	22.16570	58.85600	21.38575	220.8310	20.29393	760.8600	18.73430
6.736000	22.11372	59.84500	21.38575	230.8250	20.24195	770.8530	18.63034
7.616000	22.21768	60.83000	21.38575	240.8230	20.18997	780.8560	18.63034
8.447000	22.32164	61.82000	21.33377	250.8230	20.18997	790.8600	18.63034
9.312000	22.16570	62.86600	21.33377	260.8170	20.13799	800.8490	18.63034
10.14600	22.21768	63.85400	21.33377	270.8170	20.08602	810.8440	18.57836
11.12900	22.26966	64.84000	21.28179	280.8630	20.08602	820.8360	18.57836
12.12100	22.21768	65.82900	21.28179	290.8610	20.08602	830.8370	18.52639
13.11200	22.26966	66.81900	21.28179	300.8540	19.98206	840.8340	18.52639
14.10200	22.11372	67.86500	21.28179	310.8530	19.93008	850.8420	18.52639
15.13900	22.21768	68.85000	21.22982	320.8530	19.93008	860.8230	18.47441
16.12800	22.21768	69.83900	21.28179	330.8450	19.87810	870.8180	18.47441
17.12100	22.16570	70.82800	21.28179	340.8430	19.82612	880.8210	18.42216
18.11000	22.11372	71.82000	21.28179	350.8360	19.82612	890.8160	18.42216
19.09100	22.06174	72.86000	21.17784	360.8350	19.82612	900.8650	18.42216
20.13300	22.06174	73.84800	21.17784	370.8340	19.77414	910.8620	18.37018
21.12000	21.95778	74.83900	21.22982	380.8310	19.77414	920.8560	18.37018
22.11400	21.90580	75.82800	21.17784	390.8270	19.72216	930.8540	18.31821
23.10200	21.95778	76.81700	21.17784	400.8190	19.67018	940.8500	18.31821
24.08700	21.90580	77.85700	21.22982	410.8170	19.61821	950.8580	18.31821
25.13400	21.85383	78.84700	21.17784	420.8240	19.56623	960.8400	18.26623
26.11800	21.90580	79.83800	21.17784	430.8240	19.56623	970.8380	18.26623
27.11400	21.85383	80.82600	21.22982	440.8750	19.51425	980.8400	18.21425
28.10300	21.69789	81.81200	21.12586	450.8570	19.46201	990.8410	18.21425
29.10100	21.74987	82.85600	21.12586	460.8710	19.46201	1000.841	18.21425
30.14000	21.69789	83.84700	21.17784	470.8490	19.41003	1100.865	18.00633
31.13800	21.64591	84.83700	21.12586	480.8530	19.41003	1200.808	17.85040
32.11700	21.64591	85.82300	21.07388	490.8460	19.35805	1300.830	17.69446
33.11500	21.69789	86.81100	21.07388	500.8390	19.35805	1401.133	17.53852
34.14900	21.74987	87.85600	21.07388	510.8410	19.30607	1500.813	17.38232
35.14900	21.69789	88.84600	21.12586	520.8320	19.25409	1600.834	17.17441
36.12500	21.69789	89.83300	21.07388	530.8320	19.25409	1700.852	17.07045
37.11400	21.64591	90.82000	21.07388	540.8300	19.25409	1800.820	16.91451
38.09700	21.64591	91.86600	21.02190	550.8210	19.20211	1901.122	16.81055
39.14000	21.59367	92.85500	21.07388	560.8200	19.20211	2000.857	16.70660
40.12300	21.59367	93.84200	21.02190	570.8390	19.15013	2100.818	16.65462
40.84200	21.59367	94.83000	21.02190	580.8140	19.15013	2201.114	16.49868
41.82800	21.59367	95.82000	21.02190	590.8660	19.09815	2300.857	16.49868
42.82100	21.59367	96.86500	21.02190	600.8610	19.04617	2400.823	16.39472
43.85700	21.48971	97.84900	21.02190	610.8650	19.04617	2500.842	16.18654
44.85100	21.54169	98.84000	20.96992	620.8550	18.99420	2600.862	16.08259
45.83700	21.48971	99.82900	21.02190	630.8520	18.99420	2700.827	15.87467
46.82900	21.48971	100.8190	20.96992	640.8480	18.94222		
47.81700	21.38575	110.8140	20.91794	650.8420	18.94222		
48.85700	21.43773	120.8110	20.86596	660.8400	18.94222		
49.84700	21.43773	130.8600	20.76201	670.8400	18.89024		
50.83900	21.43773	140.8580	20.65805	680.8430	18.89024		
51.82600	21.43773	150.8570	20.65805	690.8280	18.89024		

CPTU – PORE PRESSURE DISSIPATION TEST RESULTS



Test ID: PAL-3, 27ft

Site: Chas. Naval Base Container Terminal

Location: N. Charleston, SC

Project: 1131-03-264

Client: SCSPA

Date: June 22, 2003

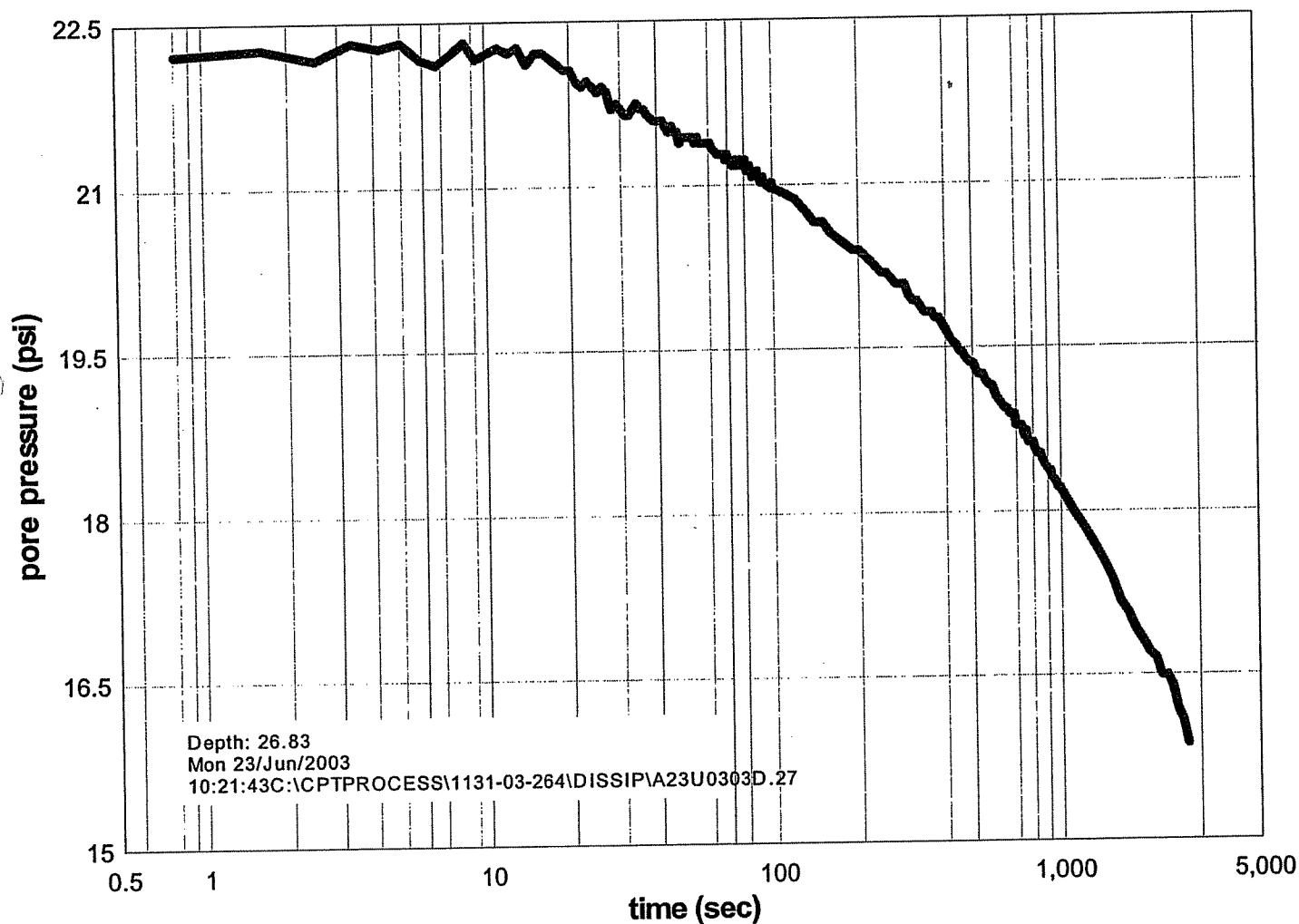
Cone Id: 2930.102, 10cm²

Interpretation Assumptions:

GWT (ft): 1.5

Depth (ft): 27

Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)
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CPTU – PORE PRESSURE DISSIPATION TEST RESULTS

Test ID: PAL-11, 20ft

Date: 6/18/03

Site: Chas. Naval Base Container Terminal

Cone Id: 2437.102, 15cm²

Location: N. Charleston, SC

Project: 1131-03-264

Client: SCSPA

Interpretation Assumptions:

GWT (ft): 4

Depth (ft): 20

Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)
0.409000	25.78489	47.03000	24.98799	120.0300	24.21517	669.9970	22.39328
1.072000	25.78489	48.02000	24.98799	130.0230	24.38079	679.9950	22.22765
1.787000	25.83990	49.01000	25.04329	140.0210	24.04954	690.0430	22.33797
2.457000	25.89521	50.00000	24.87767	150.0150	24.04954	700.0420	22.39328
2.927000	25.81612	51.04000	24.98799	160.0140	23.93922	710.0360	22.33797
3.424000	26.03705	52.03000	24.82236	170.0120	24.04954	720.0340	22.39328
4.062000	25.98174	53.02100	24.98799	180.0050	24.04954	730.0330	22.33797
4.523000	25.76111	54.00900	24.87767	190.0050	23.82861	740.0270	22.06203
5.012000	25.92673	54.99400	25.04329	199.9980	23.71829	750.0240	22.00672
5.506000	25.70580	56.03900	24.98799	209.9960	23.82861	760.0180	22.17235
6.002000	25.81612	57.02900	24.76735	219.9940	23.71829	770.0180	21.95141
6.496000	25.92673	58.01900	24.98799	230.0430	23.55266	780.0150	22.11704
7.046000	25.76111	59.00400	24.87767	240.0420	23.49735	790.0080	21.84109
7.541000	25.87142	59.99400	24.93298	250.0350	23.60797	800.0080	22.17235
8.035000	25.76111	61.03900	24.98799	260.0330	23.55266	810.0010	22.11704
8.532000	25.65049	62.02700	24.71204	270.0270	23.49735	819.9990	21.84109
9.022000	25.65049	63.01300	24.82236	280.0250	23.33173	829.9920	21.84109
9.516000	25.70580	64.00400	24.76735	290.0240	23.60797	840.0460	21.95141
10.01100	25.81612	64.99200	24.93298	300.0190	23.22141	850.0450	21.78579
11.00100	25.54017	66.03700	24.87767	310.0160	23.27672	860.0380	21.84109
12.04600	25.48486	67.02200	24.82236	320.0100	23.22141	870.0370	21.73078
13.03000	25.59548	68.01300	24.76735	330.0080	23.11109	880.0290	21.95141
14.02100	25.65049	69.00100	24.65674	340.0060	23.33173	890.0290	21.95141
15.00900	25.54017	70.04800	24.60172	349.9990	23.22141	900.0280	21.95141
16.00000	25.48486	71.03100	24.71204	360.0000	23.05578	910.0200	21.73078
17.04500	25.48486	72.02100	24.76735	369.9920	23.16610	920.0190	21.67547
18.03000	25.42985	73.01100	24.82236	380.0460	23.11109	930.0120	21.50984
19.02000	25.65049	74.00200	24.54642	390.0440	23.11109	940.0110	21.73078
20.01000	25.31924	75.04700	24.49111	400.0380	22.94547	950.0090	21.50984
20.99900	25.54017	76.03000	24.76735	410.0370	22.83485	960.0030	21.50984
22.03900	25.42985	77.02100	24.54642	420.0310	22.83485	970.0010	21.62016
23.02900	25.37455	78.01100	24.71204	430.0280	22.83485	979.9950	21.45453
24.02000	25.42985	79.00100	24.54642	440.0260	22.89016	989.9930	21.45453
25.00800	25.26423	80.04100	24.54642	450.0210	22.77984	1000.041	21.50984
25.99300	25.20892	81.03000	24.76735	460.0180	22.77984	1100.007	21.39952
27.03800	25.15361	82.02100	24.49111	470.0120	22.72453	1200.027	21.34422
28.02800	25.42985	83.00900	24.65674	480.0100	22.77984	1299.993	21.06827
29.01800	25.15361	83.99500	24.49111	490.0040	22.83485	1400.012	20.84734
30.00400	25.26423	85.04000	24.54642	500.0020	22.66922	1500.031	20.57139
30.99300	25.26423	86.03000	24.65674	510.0010	22.72453	1599.996	20.62640
32.03700	25.20892	87.01900	24.54642	519.9960	22.50360	1700.016	20.24014
33.02700	25.37455	88.00300	24.71204	529.9940	22.72453	1800.037	20.40577
34.01200	25.37455	88.99400	24.43610	540.0410	22.50360	1899.997	20.35046
35.00300	25.09860	90.03900	24.54642	550.0400	22.50360	2000.018	20.18483
35.99300	25.26423	91.02800	24.54642	560.0380	22.55891	2100.036	19.90889
37.03700	25.20892	92.01300	24.43610	570.0310	22.55891	2200.003	19.90889
38.02200	25.09860	93.00300	24.60172	580.0310	22.66922	2300.021	19.79828
39.01200	25.26423	93.99300	24.54642	590.0240	22.44859	2400.041	19.85358
40.00100	25.04329	95.03800	24.60172	600.0220	22.61421	2500.005	19.74326
41.04600	24.98799	96.02300	24.60172	610.0200	22.39328	2600.025	19.35671
42.03200	25.15361	97.01300	24.43610	620.0140	22.39328	2700.047	19.30140
43.02100	25.04329	98.00300	24.43610	630.0120	22.28296	2800.006	19.41201
44.01000	25.15361	98.99300	24.49111	640.0060	22.39328	2900.026	19.35671
45.00100	24.93298	100.0330	24.54642	650.0050	22.28296	3000.054	19.13577
46.04600	24.93298	110.0310	24.32548	659.9990	22.61421	3100.021	18.85983

CPTU – PORE PRESSURE DISSIPATION TEST RESULTS



Test ID: PAL-11, 20ft

Date: 6/18/03

Site: Chas. Naval Base Container Terminal

Cone Id: 2437.102, 15cm²

Location: N. Charleston, SC

Project: 1131-03-264

Client: SCSPA

Interpretation Assumptions:

GWT (ft): 4

Depth (ft): 20

Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)
3200.037	18.85983						
3299.995	18.69420						
3400.016	18.80452						
3500.035	18.47327						
3600.000	18.58388						

CPTU – PORE PRESSURE DISSIPATION TEST RESULTS

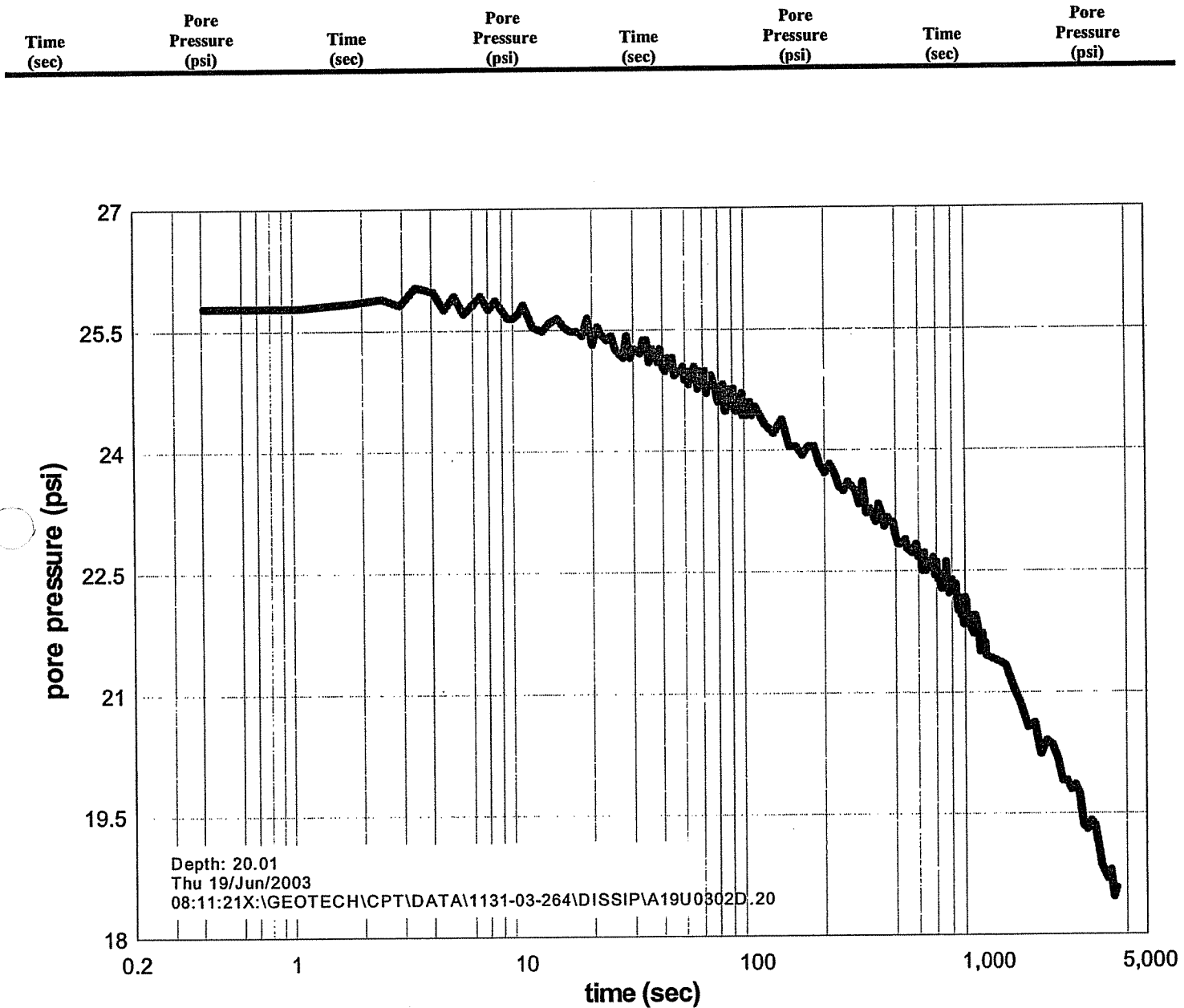


Test ID: PAL-11, 20ft
Site: Chas. Naval Base Container Terminal
Location: N. Charleston, SC
Project: 1131-03-264
Client: SCSPA

Date: 6/18/03
Cone Id: 2437.102, 15cm²

Interpretation Assumptions:

GWT (ft): 4
Depth (ft): 20



CPTU - PORE PRESSURE DISSIPATION TEST RESULTS



Test ID: PAL-12, 35ft

Site: Chas. Naval Base Container Terminal

Location: N. Charleston, SC

Project: 1131-03-264

Client: SCSA

Date: 6/18/03

Cone Id: 2437.102, 15cm²

Interpretation Assumptions:

GWT (ft): 4

Depth (ft): 35

Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)
0.380000	40.47244	45.35600	38.79506	99.34900	37.63776	630.3670	33.11829
1.047000	40.47244	46.34700	38.74005	100.3370	37.63776	640.3670	33.06328
1.706000	40.30740	47.33500	38.68475	110.3380	37.36212	650.3610	33.11829
2.377000	40.52774	48.38100	38.90538	120.3290	37.41713	660.3580	33.17330
2.847000	40.44835	49.36500	38.51942	130.3270	37.08647	670.3570	32.89795
3.338000	40.66899	50.35600	38.51942	140.3760	37.14148	680.3510	32.84264
3.831000	40.72400	51.34400	38.46441	150.3750	37.08647	690.3480	32.78763
4.327000	40.66899	52.33400	38.46441	160.3730	36.81082	700.3430	33.06328
4.878000	40.44835	53.37600	38.40910	170.3670	36.86613	710.3400	32.51198
5.372000	40.39334	54.36400	38.40910	180.3660	36.53547	720.3390	32.84264
5.866000	40.33833	55.35600	38.29908	190.3580	36.59048	730.3320	32.89795
6.361000	40.33833	56.34300	38.35409	200.3570	36.25983	740.3320	32.84264
6.856000	40.33833	57.32900	38.62974	210.3570	36.37015	750.3240	32.73232
7.348000	40.50366	58.37400	38.35409	220.3500	36.09450	760.3770	32.40167
7.841000	40.50366	59.36300	38.29908	230.3480	36.03919	770.3710	32.51198
8.336000	40.44835	60.35300	38.35409	240.3410	35.98418	780.3720	32.45697
8.832000	40.33833	61.33900	38.46441	250.3410	35.70853	790.3690	32.34665
9.326000	40.39334	62.32800	38.40910	260.3340	35.70853	800.3620	32.45697
9.876000	40.28302	63.37300	38.29908	270.3320	35.37788	810.3610	32.45697
10.371000	40.22801	64.36300	38.29908	280.3300	35.54321	820.3540	32.34665
11.357000	40.17300	65.34800	38.35409	290.3230	35.32287	830.3520	32.29164
12.346000	40.11769	66.33700	38.29908	300.3770	35.21255	840.3510	32.45697
13.335000	40.00767	67.32800	38.24377	310.3710	35.04722	850.3440	32.34665
14.381000	40.00767	68.37300	38.29908	320.3700	35.15754	860.3440	32.29164
15.370000	39.84234	69.36200	38.29908	330.3680	34.99221	870.3360	32.40167
16.355000	39.84234	70.34700	38.13375	340.3610	34.99221	880.3360	32.07101
17.346000	39.84234	71.33700	38.07844	350.3590	34.77157	890.3340	32.29164
18.335000	39.84234	72.32800	38.07844	360.3530	34.82688	900.3270	32.07101
19.380000	39.73202	73.37100	38.24377	370.3510	34.49622	910.3820	32.23634
20.364000	39.56670	74.35700	38.02343	380.3510	34.71656	920.3770	31.90568
21.354000	39.51139	75.34600	37.96842	390.3450	34.60624	930.3720	32.07101
22.343000	39.73202	76.33500	37.96842	400.3420	34.27559	940.3660	32.18133
23.334000	39.56670	77.38100	38.18876	410.3360	34.16557	950.3650	31.74035
24.374000	39.56670	78.36600	37.85810	420.3340	34.38591	960.3630	31.90568
25.364000	39.56670	79.35600	37.85810	430.3290	34.05525	970.3560	31.90568
26.354000	39.18073	80.34500	37.85810	440.3260	34.22058	980.3550	31.79566
27.343000	39.18073	81.33500	37.80309	450.3790	34.16557	990.3490	31.79566
28.330000	39.56670	82.37600	37.80309	460.3740	33.99994	1000.347	31.63003
29.374000	39.12572	83.36500	37.80309	470.3710	33.99994	1100.366	31.35468
30.363000	39.29105	84.35500	37.74778	480.3650	33.99994	1200.331	31.29938
31.353000	39.01540	85.34400	37.80309	490.3630	33.66928	1300.351	31.02403
32.337000	39.29105	86.33200	37.96842	500.3620	33.88992	1400.372	30.69337
33.327000	39.40137	87.37500	37.80309	510.3550	33.72459	1500.332	30.47273
34.373000	39.18073	88.36400	37.80309	520.3540	33.77960	1600.352	30.08707
35.362000	38.90538	89.35700	37.80309	530.3480	33.72459	1700.372	30.08707
36.347000	39.12572	90.33800	37.91311	540.3460	33.50395	1800.336	29.59108
37.336000	39.29105	91.32900	37.91311	550.3440	33.55926	1900.356	29.53577
38.327000	39.18073	92.37300	37.80309	560.3380	33.55926	2000.376	29.15010
39.372000	39.07071	93.36400	37.80309	570.3370	33.28362	2100.340	29.15010
40.356000	39.07071	94.34800	37.85810	580.3300	33.33863	2200.361	28.65412
41.346000	39.01540	95.33800	37.80309	590.3300	33.28362	2300.381	28.54380
42.336000	38.96039	96.32800	37.85810	600.3790	33.22861	2400.340	28.48879
43.326000	39.01540	97.37400	37.80309	610.3750	33.22861	2500.361	28.26815
44.372000	38.90538	98.36200	37.74778	620.3740	33.22861	2600.326	28.04781

CPTU – PORE PRESSURE DISSIPATION TEST RESULTS



S&ME

Test ID: PAL-12, 35ft

Site: Chas. Naval Base Container Terminal

Location: N. Charleston, SC

Project: 1131-03-264

Client: SCSPA

Date: 6/18/03

Cone Id: 2437.102, 15cm²

Interpretation Assumptions:

GWT (ft): 4

Depth (ft): 35

Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)
2700.346	27.93750						
2800.365	27.60684						
2900.335	27.55183						
3000.371	27.22087						
3100.390	27.22087						
3200.352	26.78020						
3300.356	26.94552						
3400.369	26.50455						
3500.335	26.33922						
3600.355	26.28421						

CPTU – PORE PRESSURE DISSIPATION TEST RESULTS



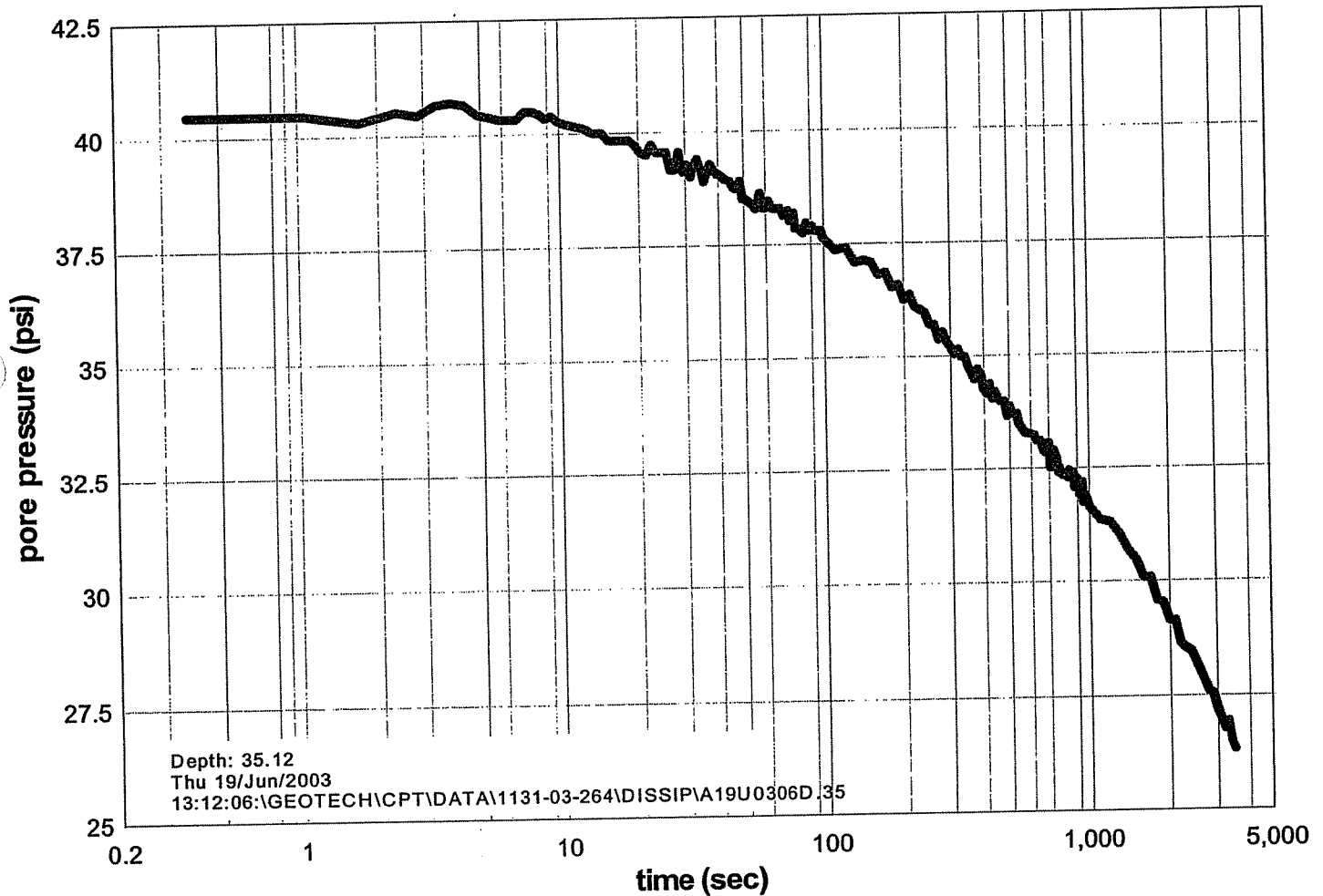
Test ID: PAL-12, 35ft
 Site: Chas. Naval Base Container Terminal
 Location: N. Charleston, SC
 Project: 1131-03-264
 Client: SCSPA

Date: 6/18/03
 Cone Id: 2437.102, 15cm²

Interpretation Assumptions:

GWT (ft): 4
 Depth (ft): 35

Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)
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CPTU – PORE PRESSURE DISSIPATION TEST RESULTS



Test ID: PAL-15, 40ft
 Site: Chas. Naval Base Container Terminal
 Location: N. Charleston, SC
 Project: 1131-03-264
 Client: SCSPA

Date: 6/20/03
 Cone Id: 2437.102, 10cm²

Interpretation Assumptions:

GWT (ft): 3
 Depth (ft): 40

Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)
0.730000	41.56340	46.09600	39.90219	110.1420	38.76024	660.1090	35.23042
1.224000	41.51142	47.14100	39.85047	120.1360	38.60456	670.1070	35.17844
1.719000	41.56340	48.13100	39.74652	130.1340	38.50087	680.1020	35.17844
2.214000	41.51142	49.12000	39.79850	140.1320	38.39691	690.0990	35.12673
2.710000	41.51142	50.10500	39.74652	150.1260	38.34493	700.0980	35.07475
3.150000	41.51142	51.09500	39.69480	160.1240	38.13728	710.1460	35.07475
3.644000	41.51142	52.14000	39.74652	170.1190	38.08557	720.1440	35.07475
4.243000	41.51142	53.13100	39.74652	180.1160	37.98161	730.1380	34.97079
4.737000	41.40773	54.11500	39.74652	190.1150	37.82594	740.1390	35.02277
5.232000	41.40773	55.10400	39.64282	200.1080	37.82594	750.1370	34.91908
5.727000	41.40773	56.09600	39.64282	210.1060	37.72224	760.1290	34.81512
6.222000	41.40773	57.14100	39.64282	220.0990	37.61828	770.1270	34.81512
6.718000	41.40773	58.12400	39.64282	230.0980	37.51459	780.1200	34.71142
7.211000	41.35575	59.11400	39.64282	240.0920	37.51459	790.1190	34.65945
7.707000	41.25206	60.10300	39.53887	250.1450	37.35865	800.1130	34.60747
8.142000	41.25206	61.15000	39.53887	260.1460	37.30694	810.1110	34.55575
8.637000	41.35575	62.13400	39.48715	270.1390	37.20298	820.1110	34.55575
9.132000	41.25206	63.12400	39.53887	280.1370	37.20298	830.1030	34.50377
9.627000	41.20008	64.11300	39.53887	290.1290	37.04731	840.1010	34.50377
10.12300	41.25206	65.10300	39.43517	300.1280	36.99533	850.0950	34.45179
11.11100	41.04441	66.14400	39.38319	310.1270	36.94361	860.1510	34.39982
12.09600	40.99243	67.13300	39.43517	320.1200	36.78768	870.1470	34.34810
13.14200	40.99243	68.12300	39.43517	330.1200	36.73596	880.1400	34.34810
14.13200	40.94045	69.11200	39.38319	340.1110	36.68398	890.1410	34.29612
15.12100	40.83675	70.09700	39.33121	350.1100	36.73596	900.1320	34.24414
16.10500	40.83675	71.14300	39.43517	360.1090	36.58003	910.1310	34.29612
17.09500	40.73280	72.13200	39.38319	370.1020	36.58003	920.1290	34.19216
18.14100	40.83675	73.12300	39.38319	380.1010	36.58003	930.1230	34.19216
19.13000	40.73280	74.11300	39.27950	390.0940	36.47633	940.1210	34.08847
20.12000	40.68108	75.09600	39.27950	400.1500	36.42435	950.1150	34.14045
21.10400	40.57712	76.14300	39.33121	410.1410	36.37237	960.1150	34.08847
22.09500	40.57712	77.13100	39.22752	420.1400	36.21670	970.1070	33.98451
23.14100	40.52515	78.12300	39.17554	430.1380	36.21670	980.1050	34.03649
24.12900	40.47343	79.10600	39.12356	440.1320	36.16472	990.1060	33.98451
25.11400	40.42145	80.09600	39.17554	450.1300	36.11301	1000.097	33.93280
26.10400	40.42145	81.14100	39.17554	460.1240	35.95734	1100.120	33.67317
27.15000	40.42145	82.13100	39.17554	470.1240	35.95734	1200.139	33.36182
28.13900	40.36947	83.11500	39.17554	480.1200	35.85338	1300.102	33.05021
29.12400	40.31749	84.10500	39.07185	490.1140	35.95734	1400.122	32.73887
30.11300	40.31749	85.09500	39.12356	500.1130	35.90536	1500.142	32.58319
31.10500	40.31749	86.14000	39.07185	510.1060	35.85338	1600.107	32.32356
32.15100	40.16182	87.12500	39.07185	520.1080	35.64573	1700.124	32.01222
33.13300	40.21380	88.11500	39.01987	530.1030	35.85338	1800.143	31.80456
34.12500	40.16182	89.10400	39.01987	540.0980	35.74968	1900.106	31.59691
35.11400	40.10984	90.15100	39.07185	550.0950	35.80140	2000.126	31.38926
36.10300	40.10984	91.13400	38.96789	560.1440	35.49005	2100.146	31.23332
37.14300	40.16182	92.12500	39.01987	570.1420	35.49005	2200.113	31.02594
38.13400	40.05813	93.11300	38.96789	580.1360	35.38609	2300.133	30.76631
39.12200	40.00615	94.10300	38.96789	590.1340	35.38609	2400.096	30.61063
40.11200	40.05813	95.14700	38.96789	600.1320	35.28240	2500.119	30.45470
41.09700	40.00615	96.13500	38.91591	610.1280	35.28240	2600.131	30.29902
42.14300	39.95417	97.12400	38.86420	620.1250	35.28240	2700.098	30.14335
43.13100	39.95417	98.11200	38.91591	630.1180	35.28240	2800.117	30.03939
44.12200	39.90219	99.10100	38.86420	640.1190	35.28240	2900.135	29.83201
45.11000	39.85047	100.1450	38.81222	650.1150	35.23042	3000.100	29.46842

CPTU – PORE PRESSURE DISSIPATION TEST RESULTS

Test ID: PAL-15, 40ft

Date: 6/20/03

Site: Chas. Naval Base Container Terminal **Cone Id:** 2437.102, 10cm²

Location: N. Charleston, SC

Project: 1131-03-264

Client: SCSPA

Interpretation Assumptions:

GWT (ft): 3

Depth (ft): 40

Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)
3100.120	29.46842						
3200.139	29.46842						
3300.105	29.52040						
3400.125	29.31274						
3500.140	29.10509						
3600.105	29.05311						
3700.124	28.89744						
3800.149	28.79375						
3900.109	28.68979						
4000.129	28.53412						
4100.150	28.32646						

CPTU - PORE PRESSURE DISSIPATION TEST RESULTS



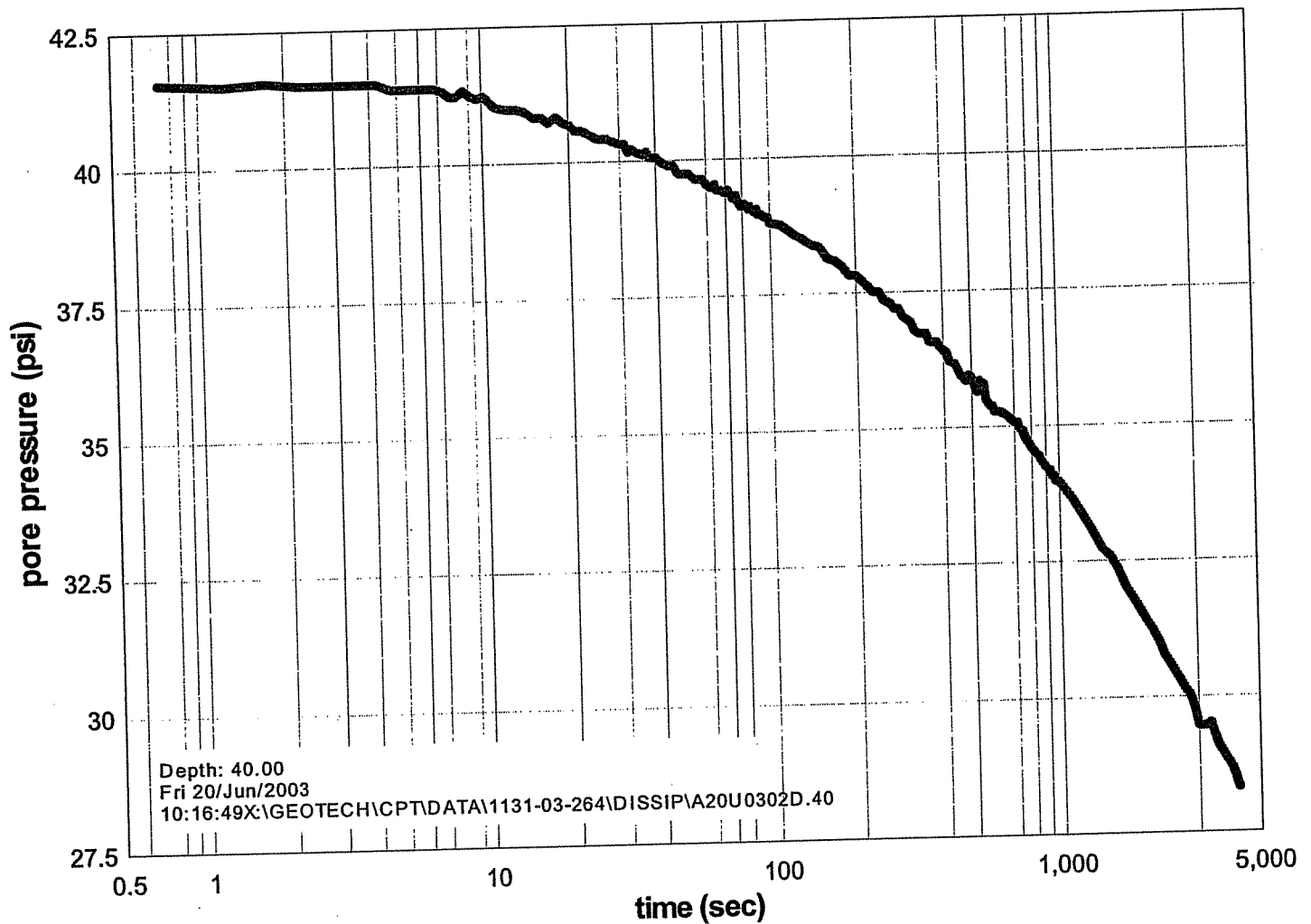
Test ID: PAL-15, 40ft
Site: Chas. Naval Base Container Terminal
Location: N. Charleston, SC
Project: 1131-03-264
Client: SCSPA

Date: 6/20/03
Cone Id: 2437.102, 15cm²

Interpretation Assumptions:

GWT (ft): 3
Depth (ft): 40

Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)
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CPTU – PORE PRESSURE DISSIPATION TEST RESULTS



Test ID: PAL-16, 27ft

Site: Chas. Naval Base Container Terminal

Location: N. Charleston, SC

Project: 1131-03-264

Client: SCSPA

Date: 6/23/03

Cone Id: 2437.102, 15cm²

Interpretation Assumptions:

GWT (ft): 4

Depth (ft): 27

Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)
0.414000	31.16610	45.44500	33.46197	99.43600	32.85596	630.4020	29.66001
1.080000	31.33143	46.43400	33.29664	100.4270	32.63533	640.4550	29.54969
1.796000	31.71680	47.42600	33.29664	110.4250	32.63533	650.4490	29.49468
2.463000	31.55177	48.41400	33.46197	120.4190	32.47000	660.4470	29.60500
2.937000	31.91900	49.39900	33.24163	130.4180	32.24966	670.4450	29.54969
3.426000	32.02932	50.44500	33.18632	140.4110	32.41499	680.4390	29.27434
3.921000	32.08433	51.43300	33.29664	150.4090	32.24966	690.4370	29.27434
4.415000	32.13964	52.42300	33.46197	160.4190	31.97431	700.4320	29.49468
4.912000	32.19465	53.41000	33.18632	170.4010	32.13964	710.4290	29.21903
5.405000	32.24966	54.45400	33.24163	180.4550	31.97431	720.4280	29.21903
5.957000	32.30467	55.44300	33.35165	190.4490	31.86399	730.4210	29.05400
6.451000	32.47000	56.43300	33.35165	200.4460	31.69866	740.4210	29.27434
6.944000	32.52530	57.41800	33.35165	210.4450	31.58864	750.4140	29.16402
7.435000	32.52530	58.40900	33.35165	220.4380	31.75367	760.4120	28.94368
7.930000	32.63533	59.45300	33.40696	230.4370	31.42331	770.4100	29.16402
8.426000	32.74564	60.44100	33.18632	240.4310	31.42331	780.4040	28.83336
8.920000	32.63533	61.42800	33.35165	250.4280	31.31299	790.4030	28.94368
9.415000	32.85596	62.41700	33.18632	260.4240	31.25798	800.4510	28.88867
9.910000	32.69063	63.40700	33.18632	270.4210	31.31299	810.4490	28.94368
10.40500	32.96598	64.45400	33.07630	280.4200	31.14767	820.4430	28.88867
11.45100	33.07630	65.43600	33.24163	290.4130	31.14767	830.4410	28.72334
12.43400	32.85596	66.42700	33.07630	300.4130	31.20268	840.4410	28.88867
13.42400	32.96598	67.41500	33.24163	310.4040	30.92733	850.4340	28.83336
14.41600	33.07630	68.40700	33.18632	320.4030	30.92733	860.4320	28.88867
15.40400	33.29664	69.45000	33.24163	330.4580	30.81701	870.4260	28.88867
16.44300	33.29664	70.43500	33.18632	340.4500	30.92733	880.4240	28.77835
17.43400	33.24163	71.42600	33.18632	350.4500	30.87232	890.4230	28.83336
18.42300	33.18632	72.41500	32.96598	360.4420	30.65168	900.4160	28.77835
19.41300	33.29664	73.40600	33.13131	370.4400	30.76200	910.4140	28.44770
20.45400	33.40696	74.44600	33.13131	380.4390	30.54166	920.4080	28.77835
21.44300	33.51698	75.43700	32.91097	390.4330	30.59667	930.4070	28.50300
22.43300	33.46197	76.42500	33.07630	400.4320	30.48635	940.4050	28.66803
23.42300	33.35165	77.41400	33.07630	410.4250	30.43134	950.4540	28.72334
24.40800	33.51698	78.40000	33.07630	420.4230	30.26601	960.4530	28.39269
25.45300	33.51698	79.44600	33.07630	430.4170	30.26601	970.4450	28.50300
26.44200	33.51698	80.43400	32.96598	440.4150	30.26601	980.4450	28.50300
27.43300	33.40696	81.42500	32.85596	450.4130	30.32132	990.4370	28.55801
28.41700	33.62730	82.40900	32.85596	460.4070	30.15599	1000.435	28.61302
29.42400	33.51698	83.45400	32.85596	470.4070	30.04567	1100.456	28.06203
30.45100	33.57229	84.44300	32.91097	480.3990	30.15599	1200.421	28.06203
31.44300	33.40696	85.43400	32.96598	490.4530	29.99066	1300.441	27.84169
32.42700	33.57229	86.41900	33.02099	500.4520	30.04567	1400.407	27.67636
33.41600	33.51698	87.40900	32.85596	510.4620	29.88034	1500.422	27.45602
34.40600	33.29664	88.45300	32.85596	520.4430	29.93536	1600.440	27.23568
35.45300	33.46197	89.44300	32.80065	530.4370	29.77032	1700.408	26.90503
36.43600	33.51698	90.42700	32.74564	540.4350	29.77032	1800.425	26.73970
37.42600	33.51698	91.41700	32.91097	550.4340	29.77032	1900.445	26.57437
38.41400	33.29664	92.40800	32.80065	560.4270	29.71502	2000.410	26.46405
39.40500	33.35165	93.45200	32.80065	570.4270	29.66001	2100.429	26.40904
40.45100	33.29664	94.43800	32.74564	580.4190	29.82533	2200.449	25.96836
41.43500	33.51698	95.42800	32.69063	590.4170	29.71502	2300.414	26.13339
42.42500	33.29664	96.41800	32.80065	600.4120	29.66001	2400.429	25.85804
43.41500	33.29664	97.40700	32.80065	610.4100	29.60500	2500.449	25.69271
44.40500	33.46197	98.45200	32.74564	620.4080	29.49468	2600.415	25.47238

CPTU – PORE PRESSURE DISSIPATION TEST RESULTS



Test ID: PAL-16, 27ft
Site: Chas. Naval Base Container Terminal
Location: N. Charleston, SC
Project: 1131-03-264
Client: SCSPA

Date: 6/23/03
Cone Id: 2437.102, 15cm²

Interpretation Assumptions:

GWT (ft): 4
Depth (ft): 27

Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)
2700.434	25.58240						
2800.455	25.19673						
2900.431	25.19673						
3000.450	25.14172						
3100.430	24.86607						
3200.457	24.86607						
3300.440	24.81106						
3400.404	24.48040						
3500.425	24.42539						
3600.444	24.53571						
3700.408	24.20506						
3800.428	24.14975						
3900.448	24.20506						
4000.415	23.92941						
4100.435	24.03973						
4200.449	23.92941						

CPTU – PORE PRESSURE DISSIPATION TEST RESULTS



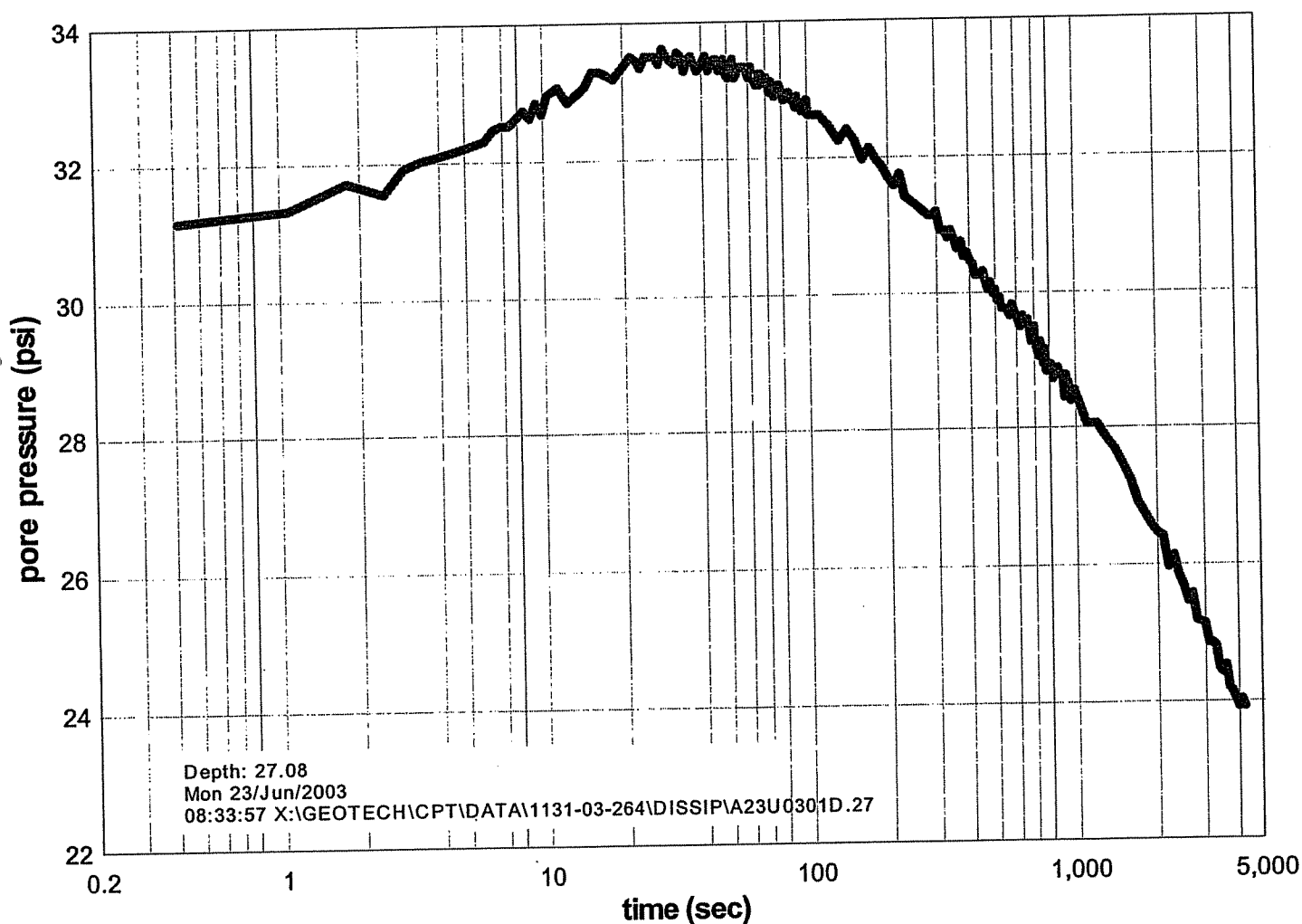
Test ID: PAL-16, 27ft
 Site: Chas. Naval Base Container Terminal
 Location: N. Charleston, SC
 Project: 1131-03-264
 Client: SCSPA

Date: 6/23/03
 Cone Id: 2437.102, 15cm²

Interpretation Assumptions:

GWT (ft): 4
 Depth (ft): 27

Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)
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CPTU – PORE PRESSURE DISSIPATION TEST RESULTS

Test ID: PAL-20, 25ft

Date: June 17, 2003

Site: Chas. Naval Base Container Terminal Cone Id: 2930.102, 10cm²

Location: N. Charleston, SC

Project: 1131-03-264

Client: SCSPA

Interpretation Assumptions:

GWT (ft): 4
Depth (ft): 25



Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)
0.852000	25.01385	53.02700	24.23496	161.0210	23.14446	700.9880	21.48272
1.737000	25.06583	54.03100	24.23496	171.0130	23.14446	711.0480	21.48272
2.620000	25.06583	55.01100	24.23496	181.0160	23.09248	721.0330	21.48272
3.461000	25.11781	56.01200	24.23496	191.0030	23.09248	731.0380	21.43074
4.322000	25.11781	56.98200	24.18298	201.0080	22.98879	741.0280	21.43074
5.150000	25.11781	58.04300	24.18298	210.9960	23.04050	751.0300	21.37876
5.918000	25.06583	59.01800	24.18298	221.0140	22.93681	761.0210	21.32678
6.747000	25.06583	60.02200	24.18298	231.0020	22.88483	771.0230	21.32678
7.613000	25.11781	61.00300	24.13100	240.9910	22.88483	781.0160	21.32678
8.430000	25.11781	62.05700	24.13100	251.0470	22.83285	791.0170	21.27507
9.219000	25.11781	63.03300	24.13100	261.0320	22.78087	801.0130	21.27507
10.03400	25.01385	64.03100	24.13100	271.0360	22.62520	811.0180	21.27507
11.02700	25.06583	65.01600	24.13100	281.0250	22.67718	820.9990	21.22309
12.02500	25.06583	65.99900	24.13100	291.0310	22.52124	831.0060	21.22309
13.01100	25.01385	67.04100	24.07929	301.0220	22.41728	840.9900	21.22309
14.04000	25.01385	68.03500	24.07929	311.0230	22.46926	850.9980	21.17111
15.02400	25.01385	69.02700	24.07929	321.0250	22.36557	860.9890	21.17111
16.01100	25.01385	70.00700	24.07929	331.0310	22.52124	871.0430	21.17111
16.99800	24.96214	70.99000	24.07929	341.0200	22.41728	881.0340	21.11913
17.99000	24.91016	72.03300	24.02731	351.0160	22.52124	891.0350	21.06715
19.03300	24.85818	73.02400	24.02731	360.9990	22.36557	901.0350	21.01517
01800	24.85818	74.01200	23.97533	371.0030	22.41728	911.0350	21.01517
01100	24.85818	74.99900	23.97533	380.9890	22.36557	921.0350	20.96346
21.99900	24.80620	75.99000	24.02731	390.9940	22.31359	931.0300	21.01517
22.99800	24.80620	77.03500	23.97533	400.9840	22.41728	941.0110	20.96346
24.03600	24.75422	78.02100	23.92335	411.0420	22.36557	951.0170	20.91148
25.02300	24.70251	79.01000	23.97533	420.7610	22.36557	961.0040	20.85950
26.02700	24.75422	80.00500	23.92335	430.7560	22.36557	971.0080	20.91148
27.00500	24.70251	80.99400	23.92335	440.7530	22.26161	981.0010	20.85950
28.00100	24.70251	82.03500	23.92335	450.7460	22.05396	991.0000	20.85950
29.04200	24.65053	83.04000	23.92335	460.7440	22.10594	1000.992	20.85950
30.03600	24.65053	84.01900	23.92335	470.7430	22.05396	1101.014	20.65185
31.01900	24.65053	85.00700	23.97533	480.7360	22.05396	1201.032	20.49591
32.00800	24.59855	85.99200	23.87137	490.7350	22.05396	1301.003	20.39222
33.04300	24.59855	87.04600	23.92335	500.7300	21.89802	1401.019	20.23628
34.02400	24.49459	88.02500	23.81966	510.7270	21.84631	1501.052	20.08061
35.01700	24.49459	89.02000	23.81966	520.7250	21.95000	1601.003	19.92467
36.00400	24.49459	89.99500	23.81966	530.7180	21.95000	1701.014	19.82098
36.99000	24.49459	90.98400	23.81966	540.7170	21.79433	1801.040	19.66504
38.03700	24.49459	92.03600	23.76768	550.7100	21.84631	1901.009	19.56135
39.02400	24.44261	93.01500	23.76768	560.7650	21.84631	2001.029	19.45739
40.02600	24.44261	94.00700	23.76768	570.7640	21.79433	2101.043	19.35343
40.99900	24.44261	95.05100	23.81966	580.7570	21.74235	2201.006	19.24974
42.00600	24.39090	96.03900	23.76768	590.7550	21.74235	2301.041	19.14578
43.04000	24.39090	97.03400	23.71570	600.7480	21.69037	2401.003	19.09380
44.03500	24.39090	98.02500	23.71570	611.0210	21.69037	2501.010	18.99011
45.01800	24.33892	99.01200	23.71570	621.0180	21.63839	2601.023	18.88615
46.01800	24.28694	99.99800	23.71570	631.0110	21.63839	2700.991	18.83417
46.99800	24.33892	101.0560	23.71570	640.7390	21.58641	2801.018	18.67850
48.06000	24.33892	111.0430	23.66372	651.0100	21.58641	2901.050	18.62652
49.02700	24.28694	121.0500	23.56003	661.0030	21.58641	3001.006	18.57454
50.02900	24.28694	131.0300	23.40409	671.0040	21.58641	3101.007	18.47058
51.00400	24.28694	141.0300	23.35211	680.9940	21.53470	3201.028	18.41887
52.00500	24.23496	151.0190	23.30013	691.0120	21.53470	3301.003	18.31491

CPTU – PORE PRESSURE DISSIPATION TEST RESULTS



Test ID: PAL-20, 25ft
Site: Chas. Naval Base Container Terminal
Location: N. Charleston, SC
Project: 1131-03-264
Client: SCSPA

Date: June 17, 2003
Cone Id: 2930.102, 10cm²

Interpretation Assumptions:

GWT (ft): 4
Depth (ft): 25

Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)
3401.022	18.26293						
3501.041	18.15897						
3601.014	18.10726						
3701.017	18.05528						
3801.046	17.95132						
3901.012	17.84763						
4001.026	17.84763						
4100.710	17.79565						
4201.006	17.74367						
4301.040	17.69169						
4400.716	17.63971						
4501.013	17.53602						
4601.029	17.48404						
4700.993	17.43206						
4800.741	17.38008						
4900.756	17.27639						
5001.012	17.27639						
5101.013	17.17243						
5201.033	17.12045						
5300.725	17.06847						
5401.026	17.01649						
5501.047	16.96478						
5600.729	16.96478						
5700.748	16.86082						
5800.763	16.86082						
5900.728	16.91280						
6001.033	16.80884						
6100.995	16.75686						
6201.007	16.75686						
6300.753	16.75686						
6400.719	16.60119						
6500.740	16.65317						
6600.759	16.60119						
6700.732	16.49723						
6801.018	16.54921						
6900.758	16.44525						
7000.723	16.39354						

CPTU - PORE PRESSURE DISSIPATION TEST RESULTS

Test ID: PAL-20, 25ft

Date: June 17, 2003

Site: Chas. Naval Base Container Terminal

Cone Id: 2930.102, 10cm²

Location: N. Charleston, SC

Project: 1131-03-264

Client: SCSPA

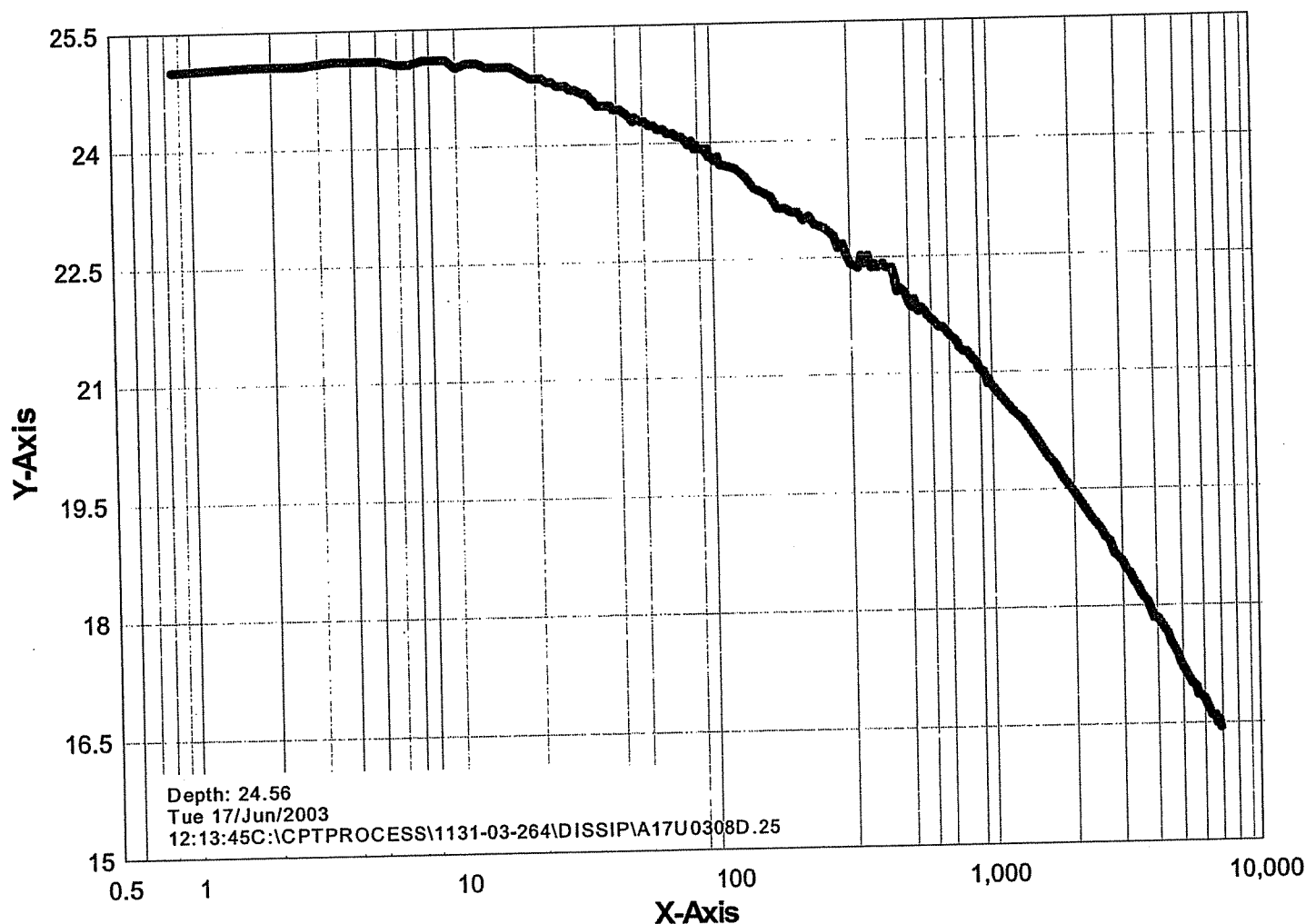
Interpretation Assumptions:

GWT (ft): 4

Depth (ft): 25



Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)
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CPTU - PORE PRESSURE DISSIPATION TEST RESULTS



Test ID: PAL-27, 30ft
 Site: Chas. Naval Base Container Terminal
 Location: N. Charleston, SC
 Project: 1131-03-264
 Client: SCSPA

Date: 6/18/03
 Cone Id: 2437.102, 15cm²

Interpretation Assumptions:

GWT (ft): 4
 Depth (ft): 30

Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)
0.669000	32.32691	47.12400	30.47588	120.1230	28.37954	670.0900	23.41433
1.331000	32.21689	48.11200	30.36557	130.1160	28.15891	680.0890	23.41433
1.990000	32.10657	49.10300	30.14493	140.1150	27.82795	690.0810	23.24900
2.659000	32.21689	50.08900	30.25525	150.1080	27.77264	700.0810	23.30401
3.130000	32.13095	51.07700	30.31056	160.1060	27.44169	710.1290	23.24900
3.627000	32.07594	52.12300	30.20024	170.1040	27.22105	720.1270	23.19370
4.121000	32.02064	53.11300	30.20024	180.0980	27.11073	730.1210	23.13869
4.609000	32.24127	54.09700	30.20024	190.0970	26.89010	740.1190	23.19370
5.105000	32.07594	55.08700	29.97960	200.0900	26.89010	750.1190	22.97306
5.599000	32.07594	56.13300	29.86899	210.0900	26.66946	760.1110	23.08338
6.095000	32.02064	57.12200	29.86899	220.0820	26.77978	770.1090	22.86274
6.590000	31.91032	58.11100	29.92429	230.0810	26.77978	780.1030	22.97306
7.084000	31.85531	59.09700	29.86899	240.1340	26.28320	790.1010	22.75242
7.579000	31.85531	60.08700	29.75867	250.1280	26.55914	800.0990	22.64211
8.129000	32.02064	61.13200	29.81398	260.1280	26.17288	810.0930	22.58680
8.619000	31.80000	62.12000	29.70366	270.1190	26.06256	820.0920	22.69712
9.113000	31.74469	63.10600	29.92429	280.1180	26.00726	830.0850	22.58680
9.609000	31.80000	64.09500	29.81398	290.1170	25.84193	840.0840	22.75242
10.103000	31.80000	65.08500	29.75867	300.1110	25.78662	850.0820	22.64211
11.094000	31.80000	66.13000	29.81398	310.1090	25.67630	860.1310	22.42147
12.084000	31.85531	67.11600	29.53803	320.1030	25.67630	870.1290	22.58680
13.124000	31.68968	68.10500	29.59334	330.1010	25.51067	880.1220	22.47648
14.113000	31.57936	69.09400	29.75867	340.0990	25.34535	890.1220	22.58680
15.103000	31.46905	70.08500	29.64835	350.0920	25.29004	900.1150	22.31115
16.094000	31.52406	71.12600	29.53803	360.0910	25.23503	910.1130	22.31115
17.078000	31.57936	72.11400	29.42771	370.0850	25.17972	920.1130	22.42147
18.122000	31.57936	73.10400	29.37270	380.0830	25.12471	930.1050	22.31115
19.112000	31.52406	74.09400	29.42771	390.0770	24.84877	940.1040	22.20083
20.102000	31.30342	75.07900	29.42771	400.1310	24.90407	950.0970	22.36616
21.087000	31.41374	76.12400	29.53803	410.1280	24.79376	960.0960	22.09022
22.076000	31.41374	77.11500	29.42771	420.1220	24.79376	970.0950	22.31115
23.123000	31.35873	78.10500	29.20708	430.1210	24.73845	980.0870	22.14552
24.111000	31.35873	79.08800	29.42771	440.1150	24.68314	990.0860	22.20083
25.096000	31.02777	80.07900	29.42771	450.1120	24.62813	1000.081	22.14552
26.086000	30.97247	81.12400	29.37270	460.1110	24.57282	1100.100	21.64894
27.132000	30.91745	82.11200	29.37270	470.1050	24.29718	1200.120	21.48362
28.121000	30.86215	83.09700	29.20708	480.1040	24.18686	1300.084	21.42831
29.111000	30.91745	84.08700	29.15207	490.0980	24.35219	1400.105	21.20767
30.096000	30.86215	85.13300	29.04145	500.0950	24.24187	1500.124	20.93173
31.085000	30.75183	86.12200	29.09676	510.0930	24.18686	1600.089	20.82141
32.131000	30.80684	87.11200	29.20708	520.0870	24.24187	1700.110	20.38014
33.120000	30.69652	88.09800	28.98644	530.0860	24.18686	1800.125	20.32483
34.106000	30.86215	89.08700	28.87612	540.0800	23.91091	1900.088	20.21451
35.095000	30.80684	90.13100	28.93113	550.1320	23.96622	2000.108	19.93886
36.085000	30.64151	91.12100	28.82081	560.1260	23.96622	2100.129	19.77324
37.130000	30.75183	92.10600	29.09676	570.1250	23.91091	2200.094	19.77324
38.116000	30.53119	93.09600	28.93113	580.1230	23.85590	2300.114	19.38698
39.104000	30.53119	94.08700	28.82081	590.1180	23.74529	2400.133	19.38698
40.094000	30.58620	95.13000	28.87612	600.1150	23.69028	2500.098	19.27666
41.084000	30.64151	96.11500	28.87612	610.1090	23.57996	2600.118	19.05602
42.125000	30.53119	97.10600	28.93113	620.1070	23.41433	2700.080	18.83539
43.113000	30.42087	98.09700	28.93113	630.1060	23.41433	2800.100	18.78037
44.105000	30.31056	99.08500	28.82081	640.0990	23.57996	2900.127	18.61475
45.092000	30.25525	100.1260	28.60018	650.0970	23.46964	3000.083	18.50443
46.078000	30.36557	110.1240	28.60018	660.0910	23.52465	3100.104	18.44912

CPTU - PORE PRESSURE DISSIPATION TEST RESULTS



Test ID: PAL-27, 30ft

Date: 6/18/03

Site: Chas. Naval Base Container Terminal

Cone Id: 2437.102, 15cm²

Location: N. Charleston, SC

Project: 1131-03-264

Client: SCSPA

Interpretation Assumptions:

GWT (ft): 4

Depth (ft): 30

Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)
3200.123	18.39411						
3300.087	18.28379						
3400.109	18.33880						
3500.127	18.17348						
3600.087	18.17348						

CPTU - PORE PRESSURE DISSIPATION TEST RESULTS

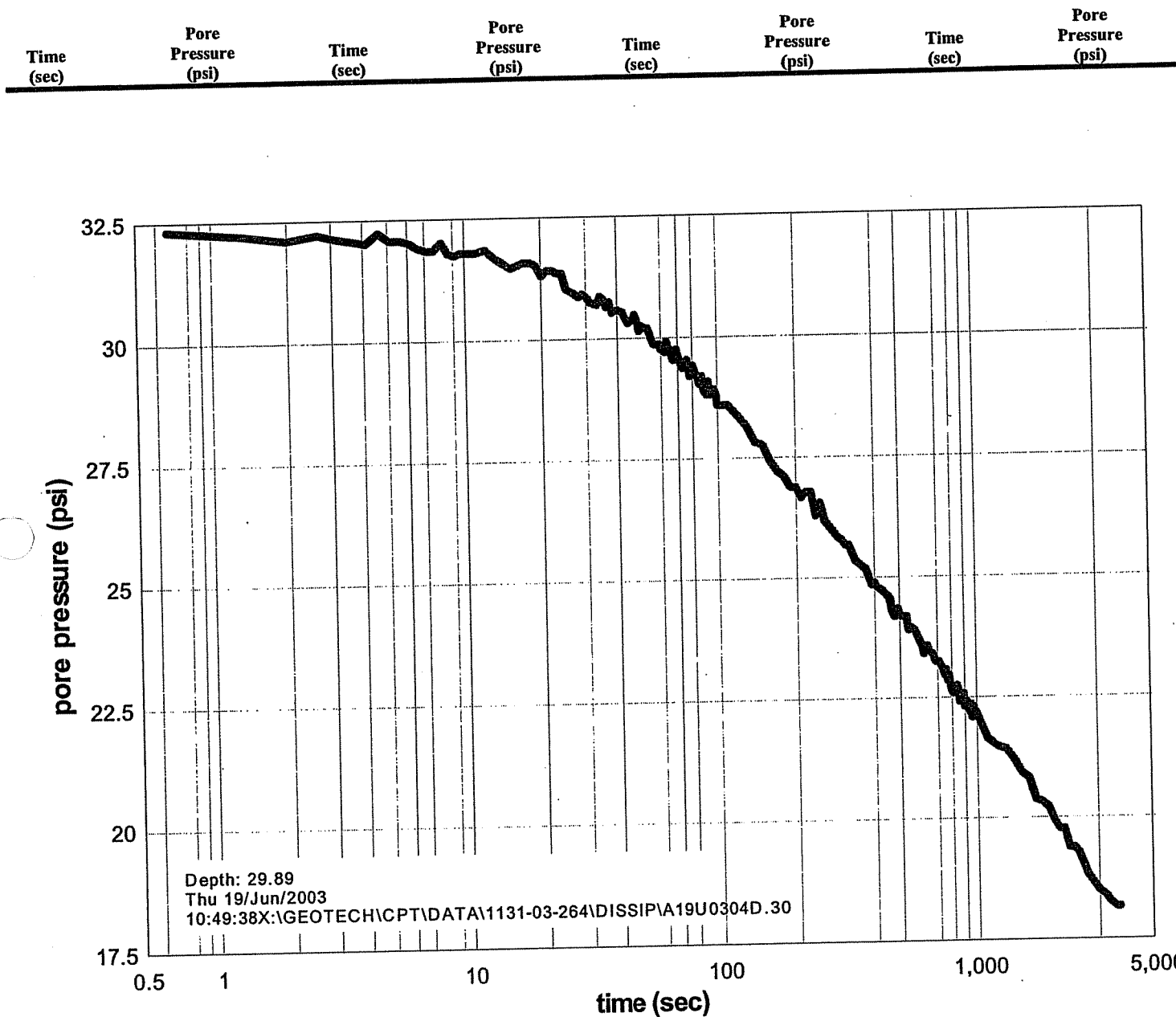


Test ID: PAL-27, 30ft
Site: Chas. Naval Base Container Terminal
Location: N. Charleston, SC
Project: 1131-03-264
Client: SCSPA

Date: 6/18/03
Cone Id: 2437.102, 15cm²

Interpretation Assumptions:

GWT (ft): 4
Depth (ft): 30



CPTU – PORE PRESSURE DISSIPATION TEST RESULTS



Test ID: PAL-39, 40ft
 Site: Chas. Naval Base Container Terminal
 Location: N. Charleston, SC
 Project: 1131-03-264
 Client: SCSPA

Date: June 17, 2003
 Cone Id: 2930.102, 10cm²

Interpretation Assumptions:

GWT (ft): 2
 Depth (ft): 40

Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)
0.3810000	36.74377	44.32100	39.34166	98.31500	38.25063	620.3250	33.57464
1.043000	36.74377	45.31200	39.23770	99.30300	38.25063	630.3260	33.57464
1.537000	36.89971	46.30500	39.23770	100.2920	38.25063	640.3220	33.52266
2.032000	37.00367	47.29100	39.28968	110.2870	38.04272	650.3150	33.47069
2.523000	37.10763	48.33100	39.28968	120.2850	37.93876	660.3140	33.41871
3.019000	37.21158	49.32000	39.23770	130.3380	37.67913	670.3070	33.36673
3.513000	37.31528	50.31100	39.18573	140.3340	37.52319	680.3060	33.31475
4.008000	37.41923	51.30200	39.13375	150.3310	37.36726	690.3040	33.21106
4.502000	37.57517	52.28500	39.13375	160.3270	37.21158	700.3000	33.15908
4.997000	37.67913	53.33000	39.08177	170.3230	37.10763	714.7760	-147.8011
5.437000	37.78309	54.32000	39.03005	180.3210	37.05565	724.6830	-147.8011
5.931000	37.83507	55.31200	39.03005	190.3150	36.95169	734.6040	-147.8011
6.422000	37.99074	56.29400	39.03005	200.3130	36.79575	742.4570	-147.8011
6.917000	38.09470	57.28400	39.03005	210.3080	36.64008		
7.412000	38.14668	58.32900	38.97807	220.3050	36.43216		
7.907000	38.30261	59.31900	38.97807	230.2990	36.43216		
8.402000	38.30261	60.30500	38.92609	240.2970	36.27623		
8.896000	38.40657	61.29300	38.92609	250.2960	36.32821		
9.338000	38.51026	62.28400	38.92609	260.2890	36.12055		
9.831000	38.51026	63.32900	38.87412	270.2900	36.27623		
10.32600	38.51026	64.31800	38.92609	280.2830	36.01660		
10.82100	38.71818	65.30400	38.87412	290.3340	35.96462		
11.31600	38.77016	66.29300	38.82214	300.3330	35.86066		
11.81100	38.87412	67.33900	38.77016	310.3270	35.75670		
12.30600	39.03005	68.32800	38.82214	320.3250	35.65274		
12.80100	39.08177	69.31300	38.77016	330.3190	35.60077		
13.29600	39.13375	70.30300	38.77016	340.3170	35.54879		
13.79100	39.23770	71.29200	38.77016	350.3170	35.44509		
14.28600	39.28968	72.33800	38.71818	360.3090	35.39311		
14.78100	39.28968	73.32400	38.71818	370.3070	35.34113		
15.27600	39.39364	74.31200	38.71818	380.3010	35.18520		
15.77100	39.39364	75.30200	38.61422	390.3020	35.13322		
16.26600	39.39364	76.29300	38.61422	400.2930	35.02926		
16.76100	39.49760	77.33400	38.61422	410.2910	34.92557		
17.25600	39.49760	78.32100	38.56224	420.2910	34.87359		
17.75100	39.44562	79.31200	38.51026	430.2830	34.82161		
18.24600	39.49760	80.30100	38.61422	440.3360	34.71765		
18.74100	39.54958	81.28600	38.56224	450.3300	34.61369		
19.23600	39.60156	82.33100	38.61422	460.3290	34.61369		
19.73100	39.49760	83.32000	38.51026	470.3270	34.50974		
20.22600	39.49760	84.31100	38.56224	480.3210	34.45776		
20.72100	39.49760	85.29500	38.45828	490.3210	34.40578		
21.21600	39.49760	86.28500	38.45828	500.3130	34.35406		
21.71100	39.54958	87.33100	38.40657	510.3110	34.30208		
22.20600	39.44562	88.31900	38.45828	520.3100	34.19813		
22.70100	39.39364	89.30600	38.40657	530.3040	34.14615		
23.19600	39.44562	90.29400	38.40657	540.3020	34.04219		
23.69100	39.39364	91.28400	38.40657	550.2950	33.99021		
24.18600	39.44562	92.33000	38.40657	560.2950	33.99021		
24.68100	39.39364	93.31900	38.35459	570.2920	33.88625		
25.17600	39.39364	94.30600	38.30261	580.2850	33.83427		
25.67100	39.34166	95.29300	38.35459	590.2840	33.78256		
26.16600	39.34166	96.28300	38.25063	600.3320	33.73058		
26.66100	39.34166	97.32900	38.30261	610.3310	33.62662		

CPTU – PORE PRESSURE DISSIPATION TEST RESULTS

Test ID: PAL-39, 40ft

Date: June 17, 2003

Site: Chas. Naval Base Container Terminal

Cone Id: 2930.102, 10cm²

Location: N. Charleston, SC

Project: 1131-03-264

Client: SCSA

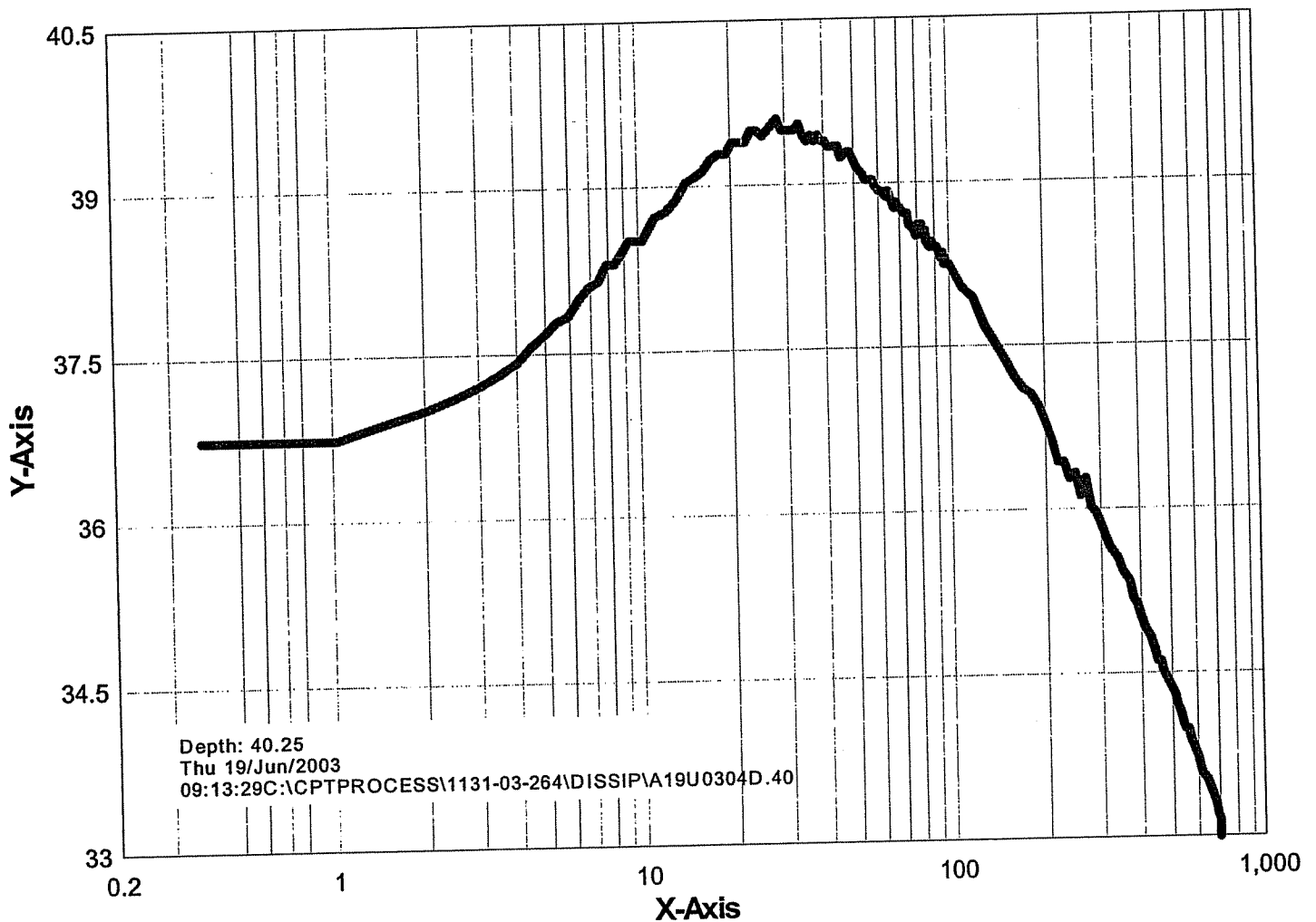
Interpretation Assumptions:

GWT (ft): 2

Depth (ft): 40



Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)
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CPTU - PORE PRESSURE DISSIPATION TEST RESULTS



Test ID: PAL-45, 33ft
 Site: Chas. Naval Base Container Terminal
 Location: N. Charleston, SC
 Project: 1131-03-264
 Client: SCSPA

Date: June 17, 2003
 Cone Id: 2930.102, 10cm²

Interpretation Assumptions:

GWT (ft): 6
 Depth (ft): 33

Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)
0.798000	14.93309	53.03600	11.55367				
1.649000	14.56923	54.01500	11.44971				
2.506000	14.30934	55.00800	11.50169				
3.328000	13.94522	55.99600	11.50169				
4.197000	13.73731	56.99900	11.50169				
5.033000	13.42544	58.02600	11.44971				
5.924000	13.16528	59.02200	11.44971				
6.741000	12.95736	60.00500	11.39773				
7.605000	12.85340	61.01100	11.55367				
8.432000	12.69747	61.98700	11.50169				
9.204000	12.54153	63.04500	11.44971				
10.04200	12.38559	64.01900	11.50169				
11.02200	12.33361	65.02400	11.55367				
12.02200	12.22966	65.99400	11.50169				
12.99200	12.12544	67.05700	11.50169				
14.05600	12.07346	68.03400	11.50169				
15.01800	11.86554	69.04100	11.50169				
16.01700	11.96950	70.00900	11.44971				
16.99400	11.81356	71.01700	11.50169				
17.98700	11.86554	72.05500	11.50169				
19.03400	11.76158	73.02200	11.50169				
20.02400	11.76158						
21.00500	11.76158						
21.99400	11.70960						
22.99600	11.65763						
24.04000	11.70960						
25.02000	11.65763						
26.01400	11.65763						
27.00200	11.60565						
27.99500	11.60565						
29.04400	11.60565						
30.04700	11.55367						
31.03900	11.55367						
32.00100	11.55367						
32.98700	11.50169						
34.03300	11.50169						
35.06900	11.50169						
36.00000	11.50169						
36.99000	11.44971						
38.03700	11.50169						
39.02600	11.44971						
40.01500	11.50169						
41.00100	11.39773						
41.99600	11.50169						
43.04600	11.50169						
44.02800	11.50169						
45.03200	11.50169						
46.00300	11.50169						
46.99600	11.50169						
48.04200	11.50169						
49.02800	11.50169						
50.01400	11.50169						
51.00300	11.50169						
51.98500	11.50169						

CPTU – PORE PRESSURE DISSIPATION TEST RESULTS

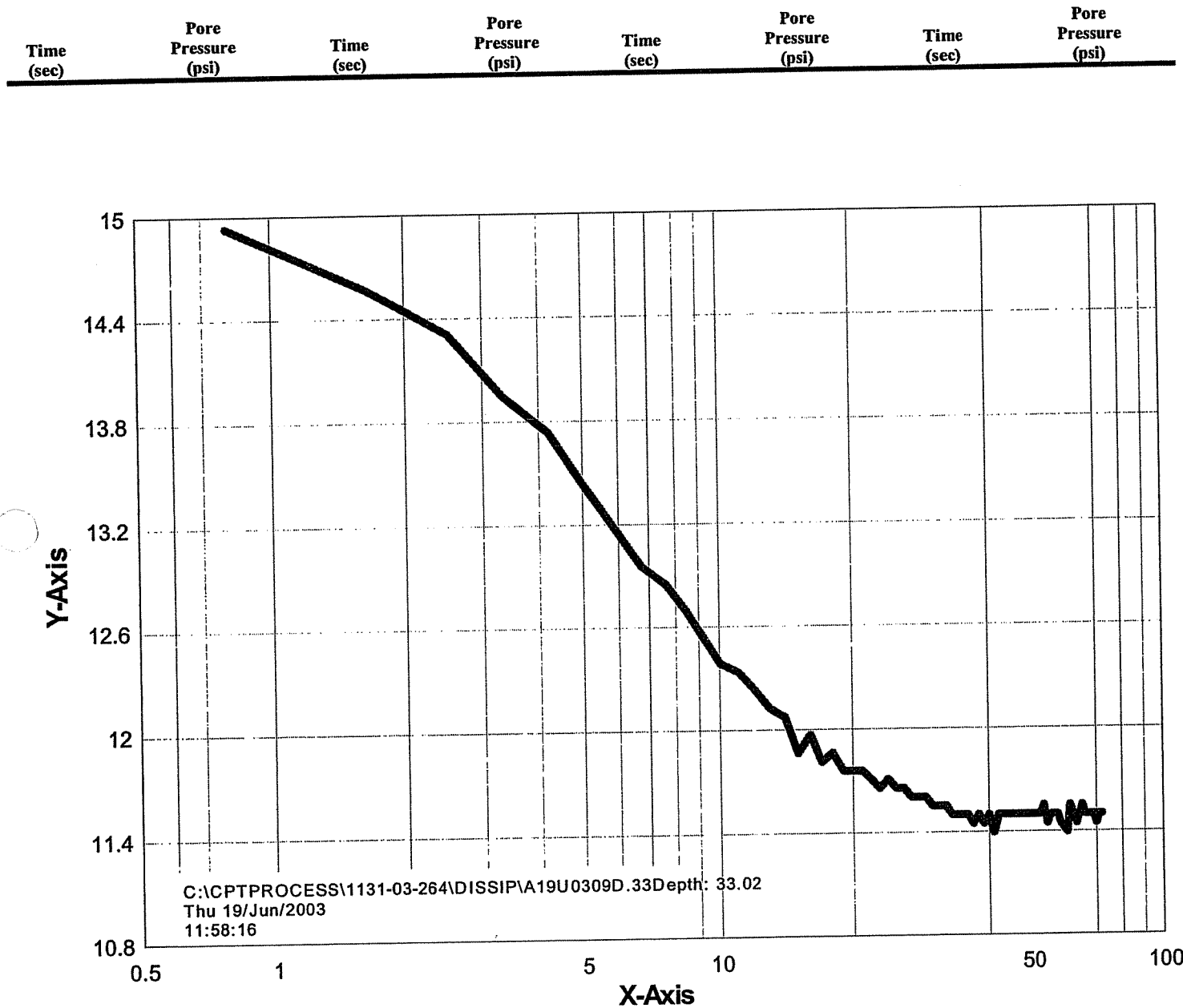


Test ID: PAL-45, 33ft
Site: Chas. Naval Base Container Terminal
Location: N. Charleston, SC
Project: 1131-03-264
Client: SCSPA

Date: June 17, 2003
Cone Id: 2930.102, 10cm²

Interpretation Assumptions:

GWT (ft): 6
Depth (ft): 33



CPTU – PORE PRESSURE DISSIPATION TEST RESULTS



Test ID: PAL-45, 34ft
 Site: Chas. Naval Base Container Terminal
 Location: N. Charleston, SC
 Project: 1131-03-264
 Client: SCSPA

Date: June 17, 2003
 Cone Id: 2930.102, 10cm²

Interpretation Assumptions:

GWT (ft): 6
 Depth (ft): 34

Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)
1.183000	30.21066	53.09700	30.57530	170.1290	30.05446	709.8290	28.12807
2.010000	30.21066	54.12800	30.67926	180.1300	29.95050	719.8220	28.12807
2.830000	30.21066	55.12700	30.67926	190.1220	29.84628	729.8200	28.12807
3.595000	30.21066	56.10200	30.62728	200.1400	29.89826	739.8150	28.07609
4.421000	30.21066	57.10900	30.67926	210.1250	29.79430	749.8120	28.02412
5.198000	30.26290	58.08700	30.62728	220.1190	29.84628	760.0880	28.02412
6.014000	30.26290	59.14400	30.67926	230.1080	29.74206	769.8060	27.97187
6.897000	30.26290	60.11800	30.62728	240.1110	29.48190	779.8580	27.91989
7.711000	30.26290	61.11000	30.62728	250.1050	29.63810	789.8510	27.97187
8.505000	30.26290	62.09700	30.62728	260.1050	29.58612	800.1340	27.91989
9.314000	30.31488	63.09200	30.62728	270.0940	29.48190	809.8480	27.86792
10.12700	30.31488	64.12900	30.62728	280.0990	29.63810	820.1200	27.86792
11.11700	30.26290	65.11600	30.67926	290.0860	29.32570	830.1150	27.86792
12.10600	30.36686	66.10900	30.67926	299.8120	29.27372	840.1250	27.81567
13.09500	30.41910	67.08900	30.57530	310.1010	29.37768	850.1080	27.81567
14.09300	30.31488	68.13300	30.62728	320.1450	29.42992	860.1100	27.76369
15.12600	30.36686	69.11800	30.62728	330.1340	29.48190	870.1110	27.76369
16.11500	30.36686	70.10600	30.62728	339.8490	29.53388	880.1070	27.76369
17.10600	30.41910	71.09700	30.67926	350.1250	29.48190	890.0940	27.71172
18.10000	30.41910	72.08500	30.62728	360.1150	29.16950	900.0970	27.71172
19.09000	30.52306	73.12900	30.62728	370.1210	29.27372	910.0830	27.65947
20.13300	30.47108	74.11900	30.57530	380.1080	29.37768	920.0870	27.65947
21.12300	30.41910	75.11000	30.62728	390.1140	29.27372	930.1430	27.60749
22.11300	30.47108	76.10400	30.57530	400.1030	29.01330	940.1290	27.60749
23.09900	30.47108	77.09100	30.57530	410.1160	29.22148	950.1330	27.55551
24.09000	30.47108	78.13500	30.57530	420.1080	29.22148	960.1350	27.55551
25.13500	30.57530	79.12700	30.57530	430.0990	29.11752	970.1350	27.55551
26.12200	30.47108	80.11800	30.57530	440.0900	29.16950	980.1300	27.55551
27.11300	30.57530	81.10000	30.57530	450.0900	28.96132	990.1340	27.50327
28.08900	30.47108	82.10500	30.57530	460.0830	28.90908	1000.108	27.39931
29.08400	30.47108	83.13700	30.57530	470.1420	29.01330	1100.144	27.19087
30.12600	30.52306	84.12500	30.57530	480.1290	28.96132	1200.099	26.87847
31.11000	30.52306	85.11100	30.57530	489.8530	29.01330	1300.120	26.77451
32.10300	30.52306	86.09100	30.52306	499.8450	28.85710	1399.854	26.61831
33.09700	30.57530	87.08300	30.52306	510.1280	28.90908	1500.094	26.41013
34.08200	30.57530	88.12900	30.52306	520.1340	28.80512	1600.115	26.25393
35.13100	30.57530	89.10700	30.57530	530.1080	28.80512	1700.087	26.04549
36.10700	30.57530	90.11000	30.47108	540.1160	28.70090	1800.118	25.94153
37.11500	30.57530	91.09000	30.52306	550.1030	28.64892	1900.140	25.78533
38.09600	30.62728	92.09300	30.52306	559.8280	28.64892	2000.083	25.57689
39.13700	30.62728	93.12100	30.47108	569.8200	28.59668	2100.099	25.47293
40.12500	30.57530	94.11700	30.52306	579.8180	28.54470	2200.128	25.31673
41.11900	30.62728	95.11000	30.52306	589.8170	28.54470	2300.091	25.16053
42.10900	30.67926	96.10400	30.52306	599.8100	28.38850	2400.110	25.05631
43.09200	30.57530	97.13900	30.47108	610.0920	28.33652	2500.139	24.90011
44.13300	30.62728	98.13800	30.52306	620.0920	28.33652	2600.092	24.79588
45.12800	30.67926	99.11800	30.52306	629.8570	28.38850	2700.115	24.63968
46.11600	30.67926	100.1170	30.47108	640.1490	28.33652	2800.139	24.48348
47.11400	30.62728	110.0940	30.41910	649.8470	28.28427	2900.102	24.43150
48.08300	30.67926	120.1020	30.41910	659.8450	28.23230	3000.110	24.32728
49.13800	30.62728	130.0920	30.31488	669.8390	28.23230	3100.130	24.22332
50.11600	30.62728	140.0900	30.31488	679.8380	28.18032	3200.100	24.01515
51.11900	30.67926	150.0840	30.21066	689.8310	28.18032	3300.136	23.96290
52.09100	30.62728	160.1410	30.15868	699.8310	28.18032	3400.152	23.85894

CPTU – PORE PRESSURE DISSIPATION TEST RESULTS



Test ID: PAL-45, 34ft
Site: Chas. Naval Base Container Terminal
Location: N. Charleston, SC
Project: 1131-03-264
Client: SCSPA

Date: June 17, 2003
Cone Id: 2930.102, 10cm²

Interpretation Assumptions:

GWT (ft): 6
Depth (ft): 34

Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)
3500.098	23.75472						
3600.119	23.65050						
3700.088	23.44232						
3800.104	23.39034						
3901.075	23.28612						
4000.083	23.23414						
4100.103	23.07794						
4200.129	23.07794						
4300.105	23.02570						
4400.128	22.97372						
4500.138	22.86950						
4600.104	22.76554						
4700.121	22.71330						
4800.136	22.50512						
4900.102	22.45314						
5000.112	22.60934						
5100.133	22.45314						
5200.103	22.40090						
5300.124	22.45314						
5400.091	22.19272						
5500.103	22.14074						
5600.122	22.03652						

CPTU – PORE PRESSURE DISSIPATION TEST RESULTS

Test ID: PAL-45, 33ft

Date: June 17, 2003

Site: Chas. Naval Base Container Terminal

Cone Id: 2930.102, 10cm²

Location: N. Charleston, SC

Project: 1131-03-264

Client: SCSPA

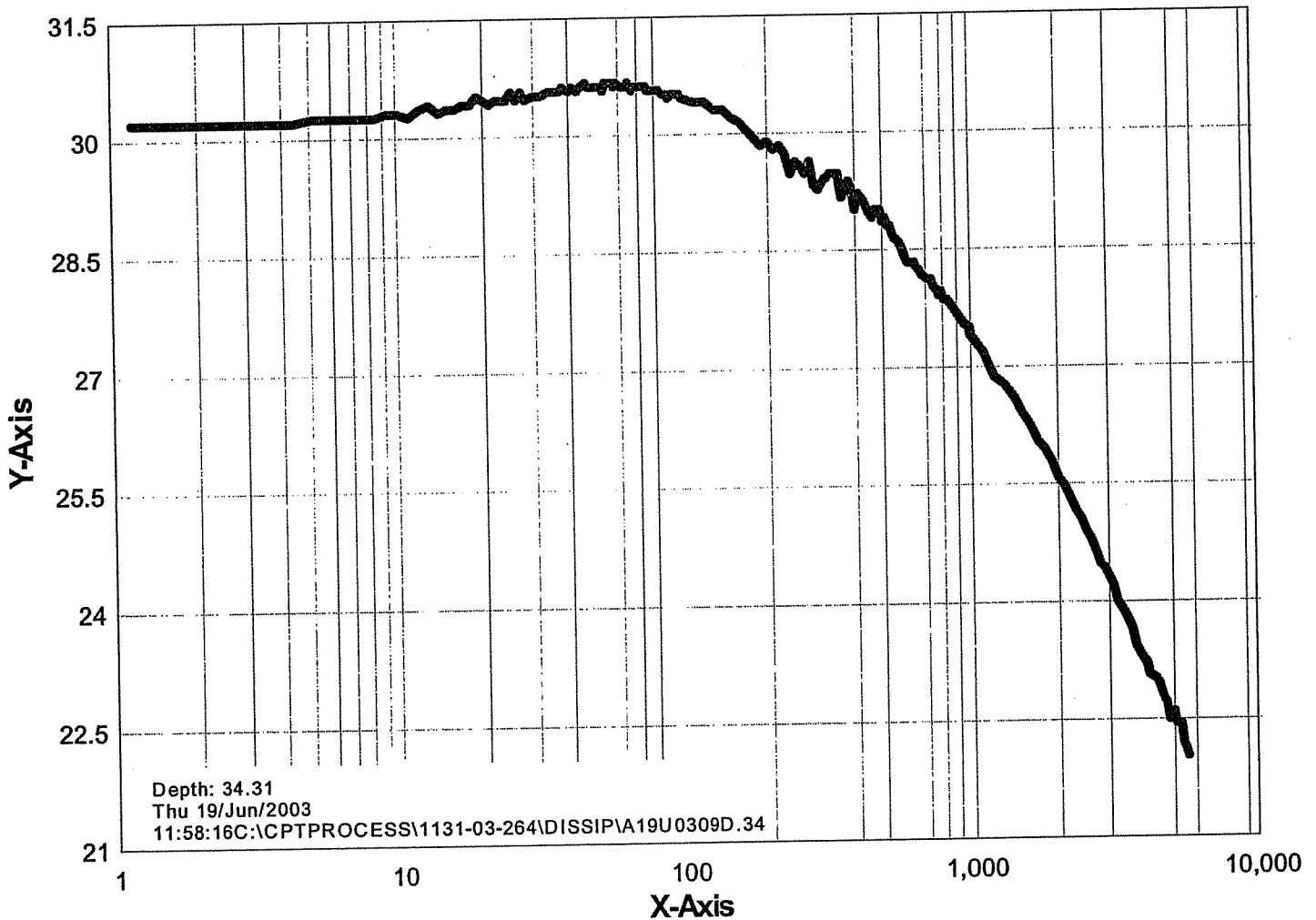
Interpretation Assumptions:

GWT (ft): 6

Depth (ft): 33



Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)
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CPTU – PORE PRESSURE DISSIPATION TEST RESULTS

Test ID: PAL-49, 40ft

Date: 6/23/03

Site: Chas. Naval Base Container Terminal

Cone Id: 2930.102, 10cm²

Location: N. Charleston, SC

Project: 1131-03-264

Client: SCSA

Interpretation Assumptions:

GWT (ft): 4

Depth (ft): 40



Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)
0.393000	68.34404	45.42300	60.12370	99.41600	54.88284		
1.060000	68.28903	46.41300	60.06869	100.4060	54.93785		
1.722000	68.23372	47.40400	60.06869	110.4030	53.94499		
2.388000	68.01308	48.39300	60.01338	120.3990	53.33809		
2.916000	67.84746	49.43300	59.73744	130.3970	52.40024		
3.405000	67.73684	50.42400	59.57211	140.3890	51.84835		
3.900000	67.57151	51.41300	59.40648	150.3880	51.07612		
4.395000	67.35088	52.40200	59.35147	160.4430	50.57954		
4.891000	67.24056	53.38900	59.29616	170.4360	49.97264		
5.439000	67.24056	54.43500	59.24115	180.4330	49.42105		
5.936000	67.07493	55.42100	59.07553	190.4280	48.75914		
6.429000	66.90931	56.41200	58.85489	200.4250	48.20726		
6.924000	66.68867	57.39700	58.96521	210.4200	47.71067		
7.414000	66.79899	58.38700	58.79958	220.4170	47.26940		
7.910000	66.68867	59.43100	58.68927	230.4170	46.55219		
8.404000	66.52334	60.42100	58.57895	240.4090	46.27654		
8.899000	66.41302	61.40700	58.30330	250.4080	45.55932		
9.394000	66.35772	62.39500	58.30330	260.4020	45.28338		
9.889000	66.19239	63.38600	58.24799	270.4000	44.62147		
10.43900	66.08177	64.43100	58.08237	280.3990	44.40083		
11.42500	65.64050	65.41600	57.91704	290.3920	43.84894		
12.41300	65.53018	66.40500	57.69640	300.3900	43.57330		
13.40300	65.41986	67.39500	57.69640	310.3840	42.85608		
14.39500	65.25453	68.44000	57.53078	320.4370	42.52513		
15.43400	65.03360	69.42500	57.64109	330.4360	42.13886		
16.42300	64.75795	70.41500	57.47577	340.4300	41.86292		
17.41300	64.48201	71.40400	57.31014	350.4280	41.47666		
18.40200	64.31638	72.39400	57.08950	360.4210	41.03539		
19.39300	64.26137	73.43900	57.14451	370.4200	40.92507		
20.43200	64.15106	74.42600	57.08950	380.4130	40.53880		
21.42200	63.87511	75.41500	57.03420	390.4120	40.04252		
22.41200	63.65448	76.40300	56.92388	400.4110	39.54594		
23.40200	63.37853	77.39300	56.70324	410.4040	39.15968		
24.38700	63.48885	78.43400	56.59292				
25.43200	63.15789	79.42400	56.59292				
26.42100	63.15789	80.41300	56.59292				
27.41100	62.82694	81.40300	56.48260				
28.39600	62.55100	82.38900	56.15165				
29.38600	62.60630	83.43300	55.98602				
30.43100	62.16503	84.42300	55.98602				
31.42000	62.38567	85.41400	55.98602				
32.40700	61.99941	86.39700	55.93101				
33.39700	61.72376	87.38800	55.76539				
34.44000	61.66845	88.43200	55.71038				
35.43000	61.61314	89.42200	55.65507				
36.41700	61.61314	90.40700	55.71038				
37.40500	61.44781	91.39600	55.54475				
38.39600	61.17187	92.38800	55.32412				
39.44000	61.11686	93.43300	55.37913				
40.42400	60.89622	94.41600	55.32412				
41.41700	60.84092	95.40700	55.26881				
42.40400	60.78561	96.39600	55.04817				
43.39400	60.56497	97.44200	55.04817				
44.43900	60.56497	98.42500	55.04817				

CPTU – PORE PRESSURE DISSIPATION TEST RESULTS



Test ID: PAL-49, 40ft

Site: Chas. Naval Base-Container Terminal

Location: N. Charleston, SC

Project: 1131-03-264

Client: SCSPA

Date: 6/23/03

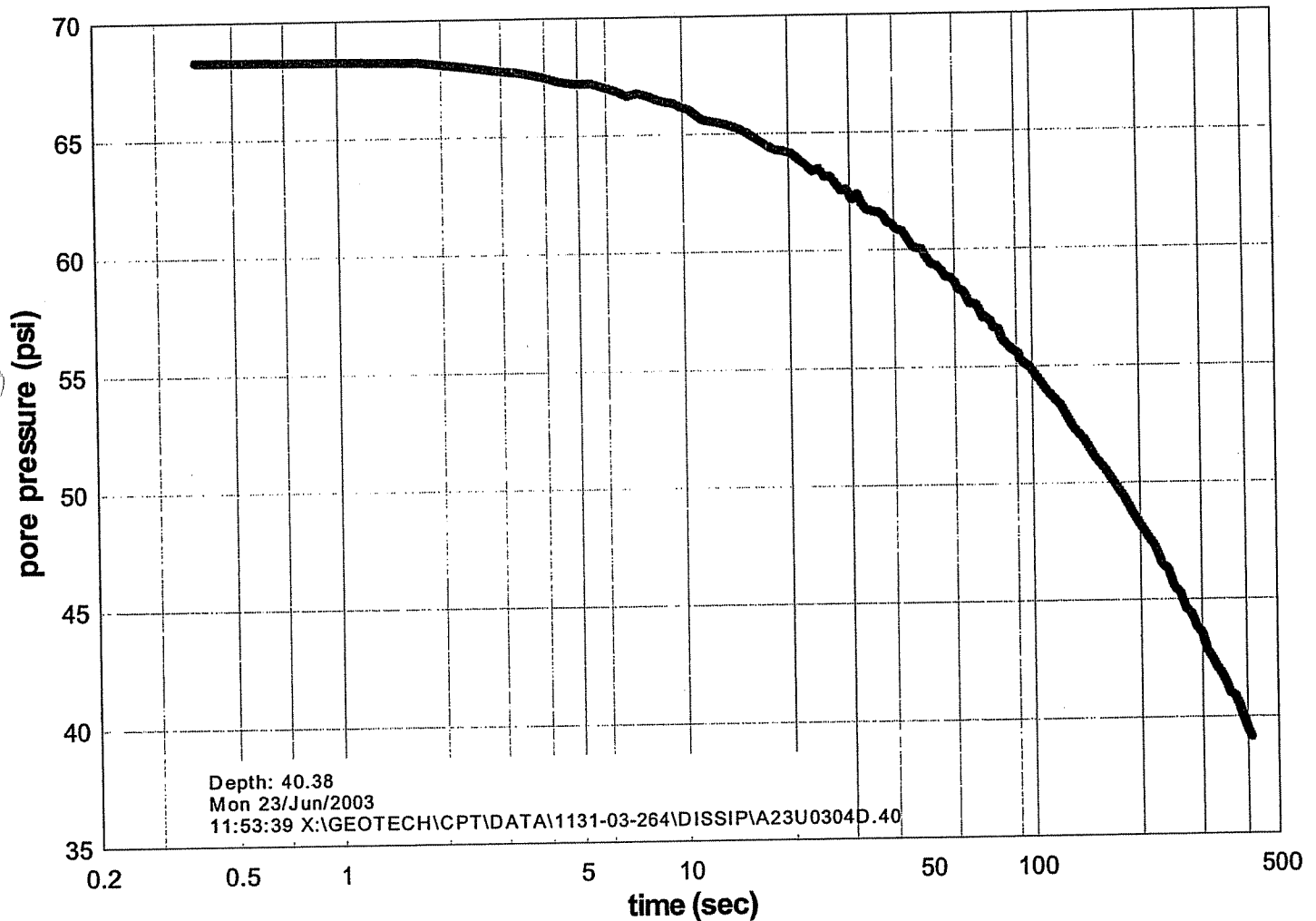
Cone Id: 2930.102, 10cm²

Interpretation Assumptions:

GWT (ft): 4

Depth (ft): 40

Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)
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CPTU – PORE PRESSURE DISSIPATION TEST RESULTS

Test ID: PAL-51, 23ft

Date: 6/18/03

Site: Chas. Naval Base Container Terminal

Cone Id: 2437.102, 15cm²

Location: N. Charleston, SC

Project: 1131-03-264

Client: SCSPA

Interpretation Assumptions:

GWT (ft): 4

Depth (ft): 23

Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)
0.419000	25.52626	46.44000	23.99399	110.4260	22.94582	660.4540	20.02284
1.085000	25.63657	47.42900	23.99399	120.4240	23.05614	670.4460	20.13315
1.801000	25.36093	48.41500	24.21463	130.4230	22.89081	680.4450	20.02284
2.474000	25.47125	49.45900	23.93869	140.4160	22.61517	690.4430	19.74689
2.937000	25.48314	50.44900	23.99399	150.4150	22.72548	700.4370	19.74689
3.432000	25.31751	51.43900	23.93869	160.4640	22.44954	710.4340	20.18817
3.926000	25.53815	52.42300	24.04900	170.4620	22.61517	720.4290	20.07785
4.421000	25.42783	53.41500	23.99399	180.4600	22.50485	730.4280	19.91252
4.917000	25.26250	54.46200	24.04900	190.4540	22.22890	740.4250	20.07785
5.475000	25.26250	55.44800	24.04900	200.4520	22.28421	750.4200	20.13315
5.988000	25.48314	56.43400	24.04900	210.4450	22.06357	760.4170	20.13315
6.456000	25.37282	57.42400	23.77336	220.4450	22.22890	770.4120	19.69188
6.946000	25.42783	58.41300	23.82837	230.4420	21.95326	780.4640	19.63657
7.443000	25.31751	59.45800	23.77336	240.4360	22.11858	790.4630	19.69188
7.936000	25.26250	60.44800	23.71805	250.4350	22.00827	800.4560	19.85721
8.431000	25.42783	61.43300	23.93869	260.4280	22.00827	810.4540	19.74689
8.927000	25.20720	62.42200	23.88368	270.4260	21.89795	820.4500	19.63657
9.420000	25.26250	63.41200	23.88368	280.4200	21.84294	830.4470	19.63657
9.915000	25.37282	64.45800	23.82837	290.4190	21.56699	840.4400	19.58156
10.466000	25.37282	65.44100	23.60773	300.4170	21.73262	850.4390	19.47125
11.452000	25.20720	66.43300	23.60773	310.4100	21.62230	860.4370	19.47125
12.440000	25.26250	67.42100	23.60773	320.4640	21.40167	870.4310	19.52626
13.429000	25.09688	68.46600	23.55272	330.4580	21.62230	880.4290	19.30562
14.421000	24.93155	69.45000	23.77336	340.4560	21.40167	890.4240	19.47125
15.461000	25.04187	70.44100	23.60773	350.4550	21.34636	900.4210	19.25061
16.449000	25.09688	71.43100	23.49741	360.4480	21.29135	910.4200	19.30562
17.440000	24.98656	72.42100	23.49741	370.4460	21.12572	920.4130	19.19530
18.430000	24.82123	73.46000	23.55272	380.4410	21.29135	930.4670	19.41594
19.414000	24.98656	74.45000	23.71805	390.4380	21.23604	940.4600	19.30562
20.461000	24.87654	75.44100	23.60773	400.4370	21.34636	950.4590	19.19530
21.450000	24.98656	76.43000	23.44240	410.4300	21.12572	960.4580	19.58156
22.439000	24.93155	77.41600	23.66304	420.4280	21.07071	970.4510	19.47125
23.425000	24.87654	78.46000	23.49741	430.4220	21.01540	980.4490	19.08498
24.413000	24.87654	79.45000	23.60773	440.4220	21.12572	990.4430	19.08498
25.458000	24.54558	80.44100	23.49741	450.4180	20.96039	1000.441	19.19530
26.448000	24.60059	81.42300	23.55272	460.4130	20.96039	1100.462	18.75433
27.433000	24.65590	82.41400	23.49741	470.4670	20.85007	1200.426	18.53369
28.422000	24.49028	83.46100	23.55272	480.4590	20.51912	1300.447	18.58870
29.412000	24.49028	84.44900	23.44240	490.4590	20.57443	1400.461	18.47838
30.457000	24.60059	85.44000	23.27678	500.4520	20.40880	1500.426	18.25775
31.447000	24.43527	86.42300	23.49741	510.4500	20.57443	1600.446	18.03711
32.433000	24.60059	87.41400	23.22177	520.4500	20.57443	1700.411	17.76146
33.421000	24.60059	88.45900	23.27678	530.4420	20.68475	1800.432	17.81647
34.413000	24.49028	89.44800	23.22177	540.4410	20.40880	1900.451	17.65114
35.457000	24.26964	90.43300	23.27678	550.4340	20.35379	2000.415	17.43051
36.442000	24.37996	91.42300	23.22177	560.4340	20.57443	2100.435	17.48552
37.432000	24.26964	92.41400	23.38709	570.4310	20.35379	2200.455	17.15456
38.420000	24.21463	93.45800	23.33208	580.4240	20.35379	2300.416	16.98924
39.466000	24.26964	94.44300	23.16646	590.4230	20.40880	2400.435	16.98924
40.450000	24.15932	95.43200	23.27678	600.4180	20.24347	2500.455	16.87892
41.441000	24.10431	96.42200	23.38709	610.4170	20.13315	2600.420	16.76860
42.430000	24.10431	97.46800	23.33208	620.4140	19.96753	2700.439	16.49295
43.420000	24.10431	98.45300	23.27678	630.4620	20.13315	2800.461	16.49295
44.460000	24.04900	99.44200	23.33208	640.4600	19.96753	2900.426	16.43764
45.450000	23.99399	100.4320	23.11145	650.4550	20.13315	3000.457	16.16200

CPTU - PORE PRESSURE DISSIPATION TEST RESULTS

Test ID: PAL-51, 23ft

Date: 6/18/03

Site: Chas. Naval Base Container Terminal

Cone Id: 2437.102, 15cm²

Location: N. Charleston, SC

Project: 1131-03-264

Client: SCSPA

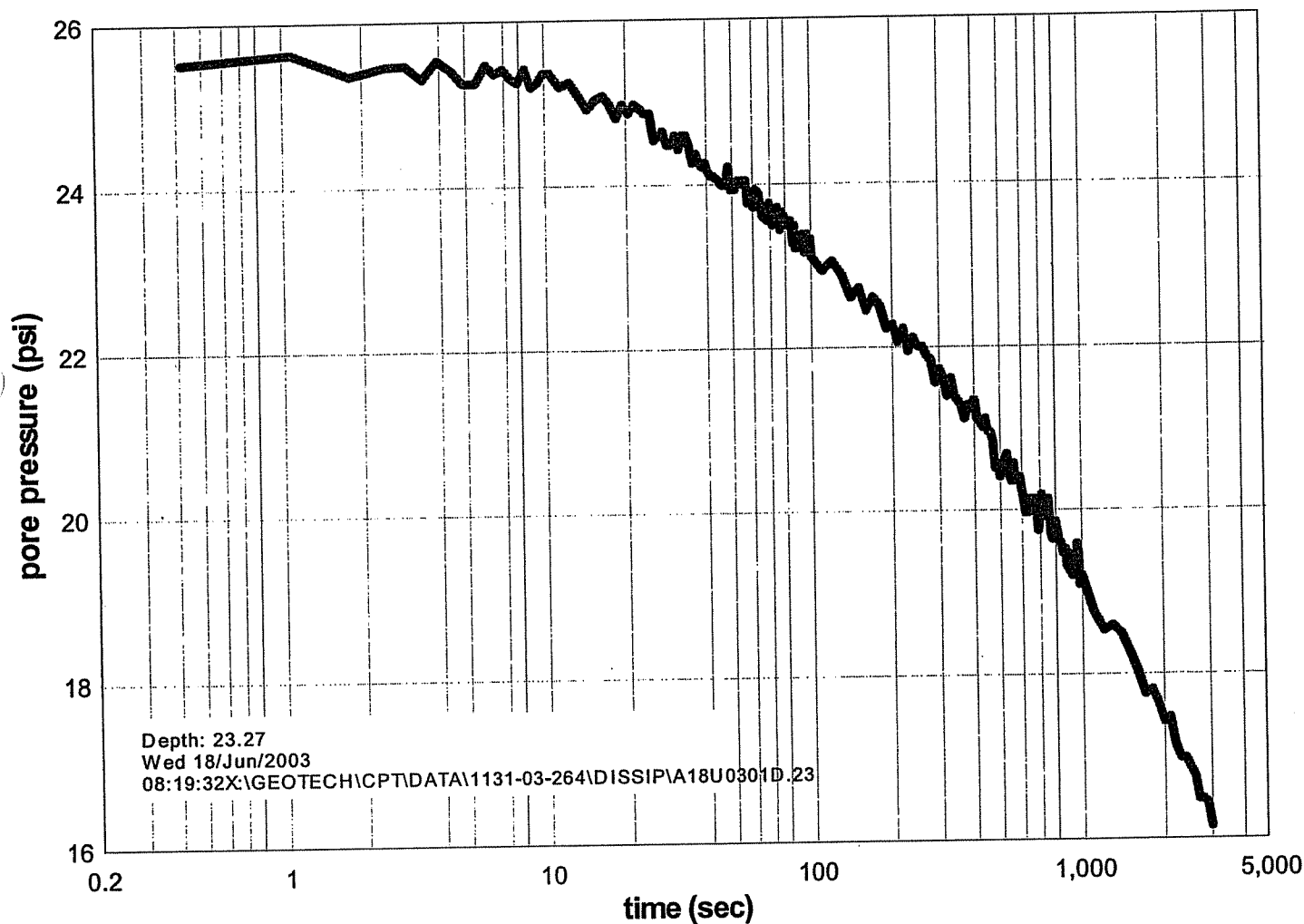
Interpretation Assumptions:

GWT (ft): 4

Depth (ft): 23



Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)
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CPTU – PORE PRESSURE DISSIPATION TEST RESULTS

Test ID: PAL-56, 34 ft

Date: 6/18/03

Site: Chas. Naval Base Container Terminal

Cone Id: 2437.102, 15cm²

Location: N. Charleston, SC

Project: 1131-03-264

Client: SCSPA

Interpretation Assumptions:

GWT (ft): 4

Depth (ft): 23

Pore Pressure (psi)

Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)
0.7130000	36.52168	47.05600	34.22194	120.0560	33.22849	670.0230	31.35189
1.373000	36.35575	48.04700	34.00101	130.0500	33.00755	680.0220	31.40690
2.040000	36.46637	49.03700	33.94600	140.0470	33.06286	690.0700	31.57252
2.568000	36.09854	50.02700	34.22194	150.0410	32.89723	700.0690	31.51722
3.063000	36.15385	51.06600	33.89069	160.0400	33.00755	710.0620	31.24127
3.558000	35.87791	52.05600	33.94600	170.0390	32.95254	720.0600	31.40690
4.054000	36.09854	53.04700	34.05632	180.0310	32.67630	730.0580	31.40690
4.550000	35.76729	54.03500	33.94600	190.0310	32.78692	740.0510	31.07565
5.038000	35.76729	55.02100	34.11163	200.0230	32.51097	750.0520	31.24127
5.534000	35.93292	56.06700	34.00101	210.0220	32.73161	760.0450	31.24127
6.029000	35.71228	57.05500	33.83568	220.0190	32.40036	770.0430	31.07565
6.523000	35.82260	58.04500	33.94600	230.0700	32.73161	780.0410	31.13095
7.017000	35.71228	59.02900	33.83568	240.0670	32.40036	790.0340	31.24127
7.567000	35.82260	60.01900	34.00101	250.0610	32.34535	800.0330	31.18626
8.062000	35.49135	61.06600	33.94600	260.0600	32.45566	810.0260	31.07565
8.557000	35.71228	62.05400	33.78037	270.0580	32.56598	820.0260	31.13095
9.047000	35.65697	63.03900	33.83568	280.0520	32.40036	830.0230	31.18626
9.541000	35.49135	64.02800	33.72507	290.0520	32.45566	840.0180	30.96533
10.03800	35.43634	65.01800	33.78037	300.0430	32.17972	850.0700	31.13095
11.02700	35.27071	66.06400	33.89069	310.0410	32.12441	860.0640	30.91032
12.07300	35.38103	67.04800	33.67006	320.0360	32.34535	870.0620	30.96533
13.05600	35.21540	68.03800	33.78037	330.0350	32.29004	880.0560	31.02064
14.04700	35.38103	69.02800	33.67006	340.0320	32.06940	890.0560	30.79970
15.03600	35.27071	70.01800	33.78037	350.0260	32.29004	900.0520	30.79970
16.02600	34.99477	71.06300	33.83568	360.0240	32.12441	910.0460	30.91032
17.07100	35.10508	72.04800	33.50443	370.0180	32.29004	920.0460	30.79970
18.05600	35.04978	73.03800	33.83568	380.0160	32.01409	930.0380	30.85501
19.04600	35.10508	74.02800	33.55944	390.0690	31.95879	940.0360	30.74469
20.03600	34.93946	75.07300	33.50443	400.0640	32.17972	950.0350	30.96533
21.02500	34.71882	76.06200	33.67006	410.0620	31.90378	960.0290	30.91032
22.06500	34.77383	77.04700	33.44912	420.0550	32.01409	970.0270	30.79970
23.05600	34.88415	78.03700	33.72507	430.0540	32.01409	980.0210	30.63408
24.04600	34.82914	79.02700	33.50443	440.0530	31.95879	990.0190	30.57907
25.03400	34.66351	80.06600	33.67006	450.0450	32.06940	1000.073	30.74469
26.01900	34.77383	81.05600	33.61475	460.0440	31.79346	1100.032	30.46875
27.06400	34.77383	82.04700	33.50443	470.0390	31.90378	1200.054	30.24781
28.05400	34.71882	83.03500	33.61475	480.0360	31.84847	1300.018	30.30312
29.04500	34.49789	84.02100	33.61475	490.0290	31.73815	1400.037	30.08219
30.02900	34.66351	85.06500	33.67006	500.0290	31.90378	1500.059	29.86155
31.01900	34.49789	86.05600	33.33880	510.0280	31.90378	1600.022	29.80624
32.06400	34.55320	87.04600	33.61475	520.0200	31.84847	1700.043	29.64062
33.05300	34.38757	88.03000	33.39411	530.0180	31.84847	1800.063	29.19905
34.03900	34.55320	89.02000	33.55944	540.0680	31.68284	1900.027	29.14404
35.02900	34.38757	90.06400	33.50443	550.0670	31.62783	2000.041	29.14404
36.01800	34.33226	91.05400	33.28350	560.0650	31.79346		
37.06200	34.22194	92.04100	33.28350	570.0570	31.57252		
38.04900	34.27725	93.02900	33.39411	580.0570	31.62783		
39.03700	34.11163	94.02000	33.39411	590.0490	31.79346		
40.02700	34.27725	95.06500	33.28350	600.0480	31.68284		
41.07300	34.27725	96.05000	33.44912	610.0470	31.46221		
42.06200	34.33226	97.04200	33.22849	620.0410	31.68284		
43.04700	34.11163	98.03000	33.50443	630.0380	31.62783		
44.03700	34.33226	99.02000	33.17318	640.0320	31.51722		
45.02800	34.05632	100.0640	33.17318	650.0300	31.62783		
46.07200	34.11163	110.0570	33.28350	660.0240	31.62783		

CPTU – PORE PRESSURE DISSIPATION TEST RESULTS



Test ID: PAL-56, 34ft

Date: 6/18/03

Site: Chas. Naval Base Container Terminal

Cone Id: 2437.102, 15cm²

Location: N. Charleston, SC

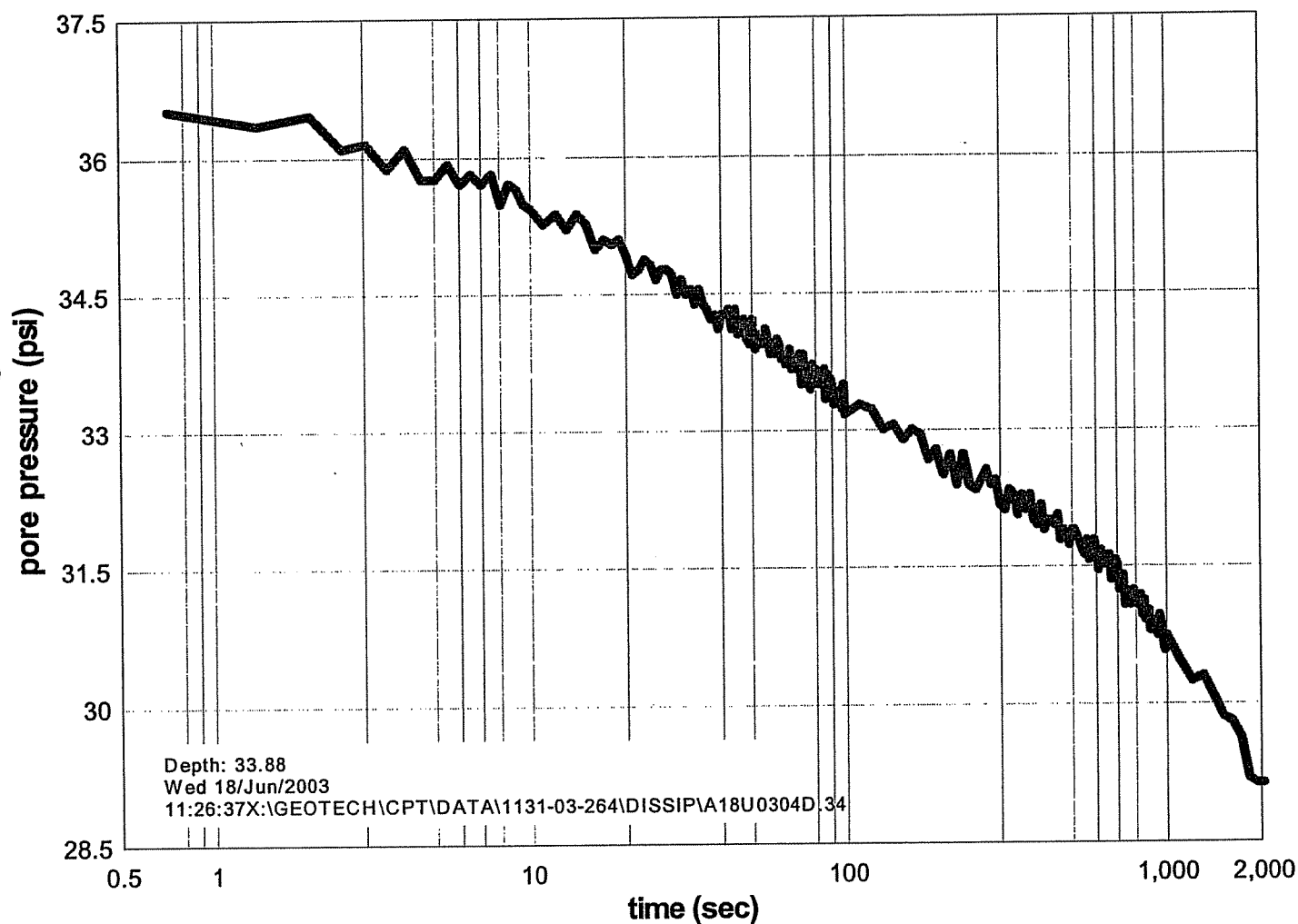
Project: 1131-03-264

Client: SCSPA

Interpretation Assumptions:

GWT (ft): 4
Depth (ft): 34

Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)
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CPTU – PORE PRESSURE DISSIPATION TEST RESULTS

Test ID: PAL-58, 13ft

Date: July 15, 2003

Site: Chas. Naval Base Container Terminal

Cone Id: 2930.102, 10cm²

Location: N. Charleston, SC

Project: 1131-03-264

Client: SCSA

Interpretation Assumptions:

GWT (ft): 3

Depth (ft): 12



Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)
0.383000	-1.892902	44.32100	-1.736702	98.31500	-1.684723		
1.046000	-1.944881	45.31100	-1.632744	99.30300	-1.736702		
1.593000	-1.840923	46.30100	-1.684723	100.2930	-1.736702		
2.084000	-1.684723	47.29100	-1.632744	110.2870	-1.788945		
2.522000	-1.632744	48.33200	-1.788945	120.2860	-1.684723		
3.018000	-1.684723	49.32000	-1.840923	130.3390	-1.684723		
3.513000	-1.632744	50.31100	-1.736702	140.3340	-1.684723		
4.008000	-1.736702	51.30200	-1.736702	150.3300	-1.684723		
4.502000	-1.528786	52.28600	-1.788945	160.3240	-1.684723		
4.998000	-1.684723	53.33000	-1.684723	170.3230	-1.788945		
5.437000	-1.684723	54.31900	-1.788945	180.3160	-1.736702		
5.932000	-1.632744	55.31200	-1.840923	190.3160	-1.684723		
6.422000	-1.684723	56.29500	-1.788945	200.3130	-1.632744		
6.916000	-1.632744	57.28500	-1.736702	210.3090	-1.632744		
7.412000	-1.684723	58.33000	-1.684723	220.3050	-1.632744		
7.908000	-1.632744	59.31900	-1.632744	230.2980	-1.632744		
8.402000	-1.632744	60.30500	-1.632744	240.2970	-1.684723		
8.896000	-1.684723	61.29400	-1.632744	250.2960	-1.788945		
9.339000	-1.684723	62.28500	-1.632744	260.2890	-1.632744		
9.831000	-1.580765	63.32800	-1.788945	270.2880	-1.580765		
10.32100	-1.580765	64.31300	-1.840923	280.2830	-1.632744		
10.31100	-1.684723	65.30400	-1.788945	290.3350	-1.736702		
10.30300	-1.684723	66.29300	-1.736702	300.3330	-1.632744		
13.29200	-1.684723	67.33900	-1.788945				
14.33700	-1.580765	68.32200	-1.684723				
15.32000	-1.580765	69.31200	-1.736702				
16.31200	-1.632744	70.30300	-1.736702				
17.30300	-1.632744	71.29300	-1.840923				
18.29100	-1.684723	72.33800	-1.684723				
19.33100	-1.684723	73.32300	-1.684723				
20.31900	-1.632744	74.31600	-1.684723				
21.31000	-1.632744	75.30100	-1.684723				
22.30000	-1.580765	76.29400	-1.736702				
23.28500	-1.632744	77.33500	-1.840923				
24.33000	-1.684723	78.32100	-1.736702				
25.31800	-1.736702	79.31200	-1.788945				
26.30900	-1.788945	80.30100	-1.736702				
27.29400	-1.736702	81.28600	-1.788945				
28.28500	-1.736702	82.33100	-1.684723				
29.33000	-1.580765	83.32000	-1.788945				
30.32000	-1.580765	84.31100	-1.788945				
31.30400	-1.632744	85.29500	-1.736702				
32.29300	-1.684723	86.28500	-1.788945				
33.28500	-1.632744	87.33000	-1.684723				
34.33000	-1.684723	88.31900	-1.684723				
35.31200	-1.736702	89.30500	-1.684723				
36.30300	-1.736702	90.29400	-1.684723				
37.29200	-1.736702	91.28500	-1.736702				
38.33800	-1.736702	92.33000	-1.736702				
39.32200	-1.684723	93.31300	-1.840923				
40.31200	-1.736702	94.30600	-1.788945				
41.30200	-1.736702	95.29400	-1.684723				
42.29200	-1.788945	96.28400	-1.684723				
43.33700	-1.632744	97.32300	-1.684723				

CPTU – PORE PRESSURE DISSIPATION TEST RESULTS



Test ID: PAL-58, 12ft

Date: July 15, 2003

Site: Chas. Naval Base Container Terminal Cone Id: 2930.102, 10cm²

Location: N. Charleston, SC

Project: 1131-03-264

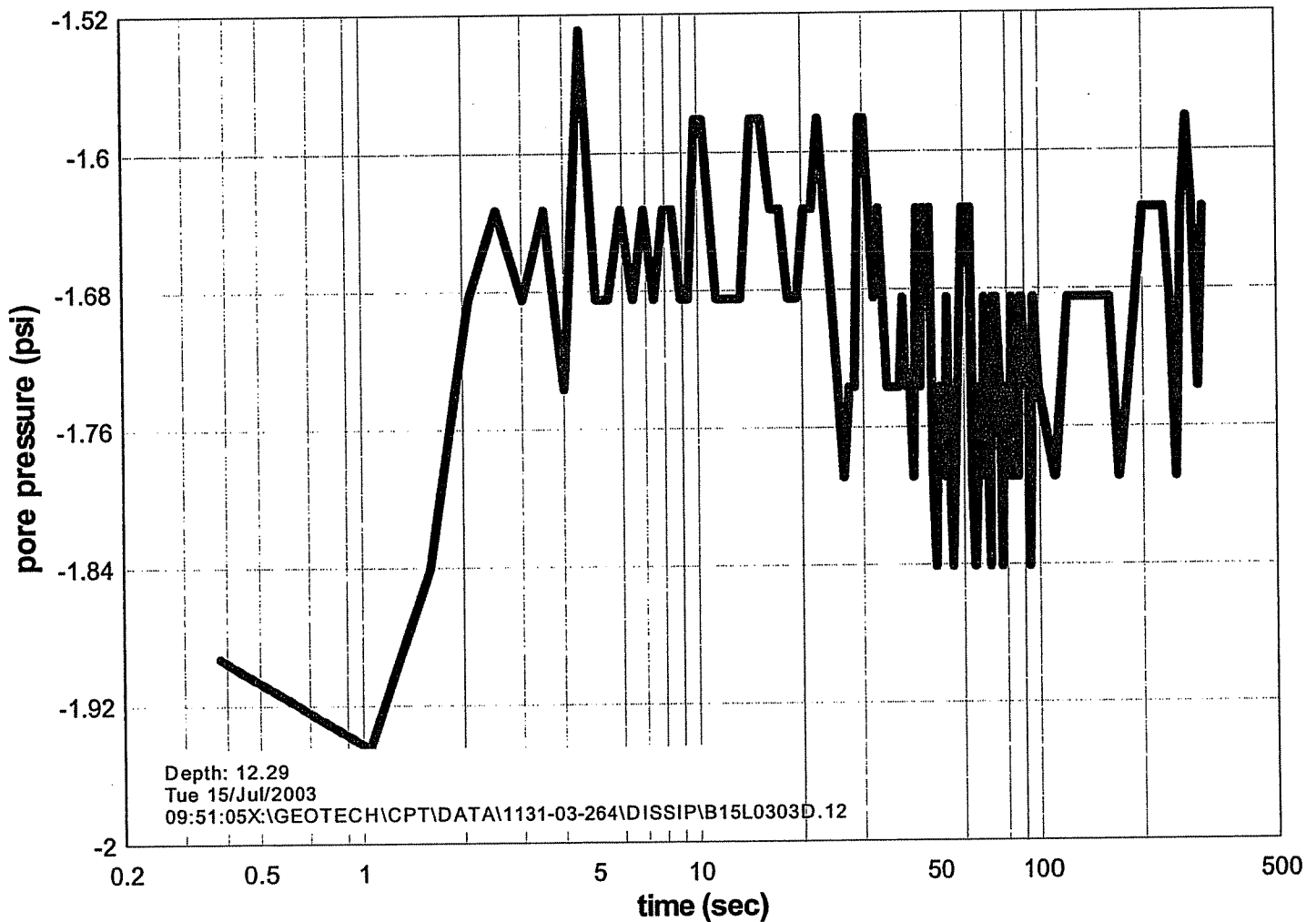
Client: SCSPA

Interpretation Assumptions:

GWT (ft): 3

Depth (ft): 12

Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)
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CPTU – PORE PRESSURE DISSIPATION TEST RESULTS



Test ID: PAL-59, 38ft

Date: July 15, 2003

Site: Chas. Naval Base Container Terminal

Cone Id: 2930.102, 10cm²

Location: N. Charleston, SC

Project: 1131-03-264

Client: SCSA

Interpretation Assumptions:

GWT (ft): 3

Depth (ft): 38

Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)
1.131000	13.43361	53.02000	13.12174	161.0110	13.17372		
2.000000	13.38164	54.01200	13.17372	171.0000	13.17372		
2.825000	13.43361	54.99700	13.17372	181.0040	13.12174		
3.595000	13.43361	56.00300	13.17372	190.9930	13.12174		
4.411000	13.38164	56.98100	13.17372	201.0080	13.12174		
5.202000	13.38164	58.03000	13.17372	210.9850	13.12174		
6.005000	13.43361	59.01400	13.17372	221.0040	13.12174		
6.773000	13.38164	60.00300	13.17372	230.9810	13.06976		
7.604000	13.32966	60.98800	13.17372	240.9840	13.06976		
8.429000	13.38164	61.98200	13.12174	250.9720	13.12174		
9.211000	13.38164	63.02700	13.22570	261.0300	13.17372		
10.01100	13.27768	64.00800	13.17372	271.0180	13.06976		
11.00200	13.27768	65.00100	13.17372	281.0210	13.12174		
11.99400	13.32966	65.98100	13.12174	291.0150	13.17372		
12.97900	13.27768	66.97200	13.12174	301.0140	13.12174		
14.01900	13.27768	68.00900	13.22570				
15.00800	13.27768	68.99700	13.17372				
16.00300	13.27768	69.99400	13.17372				
16.98800	13.27768	70.97900	13.17372				
17.98300	13.27768	72.01800	13.17372				
19.02400	13.27768	73.00900	13.17372				
20.01400	13.27768	74.00100	13.17372				
21.00900	13.27768	74.99700	13.17372				
21.99600	13.22570	75.98900	13.12174				
22.98100	13.27768	77.02600	13.12174				
24.02500	13.22570	78.02000	13.17372				
25.01100	13.27768	79.01000	13.12174				
26.00900	13.22570	79.99500	13.12174				
26.98700	13.27768	80.98500	13.12174				
27.98300	13.22570	82.02800	13.12174				
29.01600	13.22570	83.02200	13.12174				
30.00600	13.22570	84.00900	13.06976				
30.99500	13.22570	84.98500	13.12174				
31.98300	13.22570	85.97500	13.06976				
32.97500	13.17372	87.02200	13.12174				
34.02000	13.22570	88.00600	13.12174				
34.99800	13.22570	88.99200	13.17372				
35.99500	13.17372	89.98200	13.12174				
36.98500	13.17372	90.98500	13.12174				
37.97900	13.17372	92.01800	13.12174				
39.01600	13.17372	93.00300	13.12174				
40.01500	13.22570	93.99400	13.12174				
41.00500	13.12174	95.00300	13.12174				
41.99800	13.17372	95.98200	13.12174				
43.03000	13.12174	97.02300	13.12174				
44.01800	13.17372	98.00900	13.12174				
45.00900	13.17372	99.01600	13.12174				
46.00800	13.17372	99.98700	13.17372				
46.97500	13.17372	100.9900	13.12174				
48.03200	13.12174	111.0320	13.12174				
49.00700	13.12174	121.0240	13.17372				
50.01200	13.17372	131.0130	13.12174				
50.98700	13.22570	141.0170	13.17372				
51.98900	13.12174	151.0050	13.17372				

CPTU - PORE PRESSURE DISSIPATION TEST RESULTS



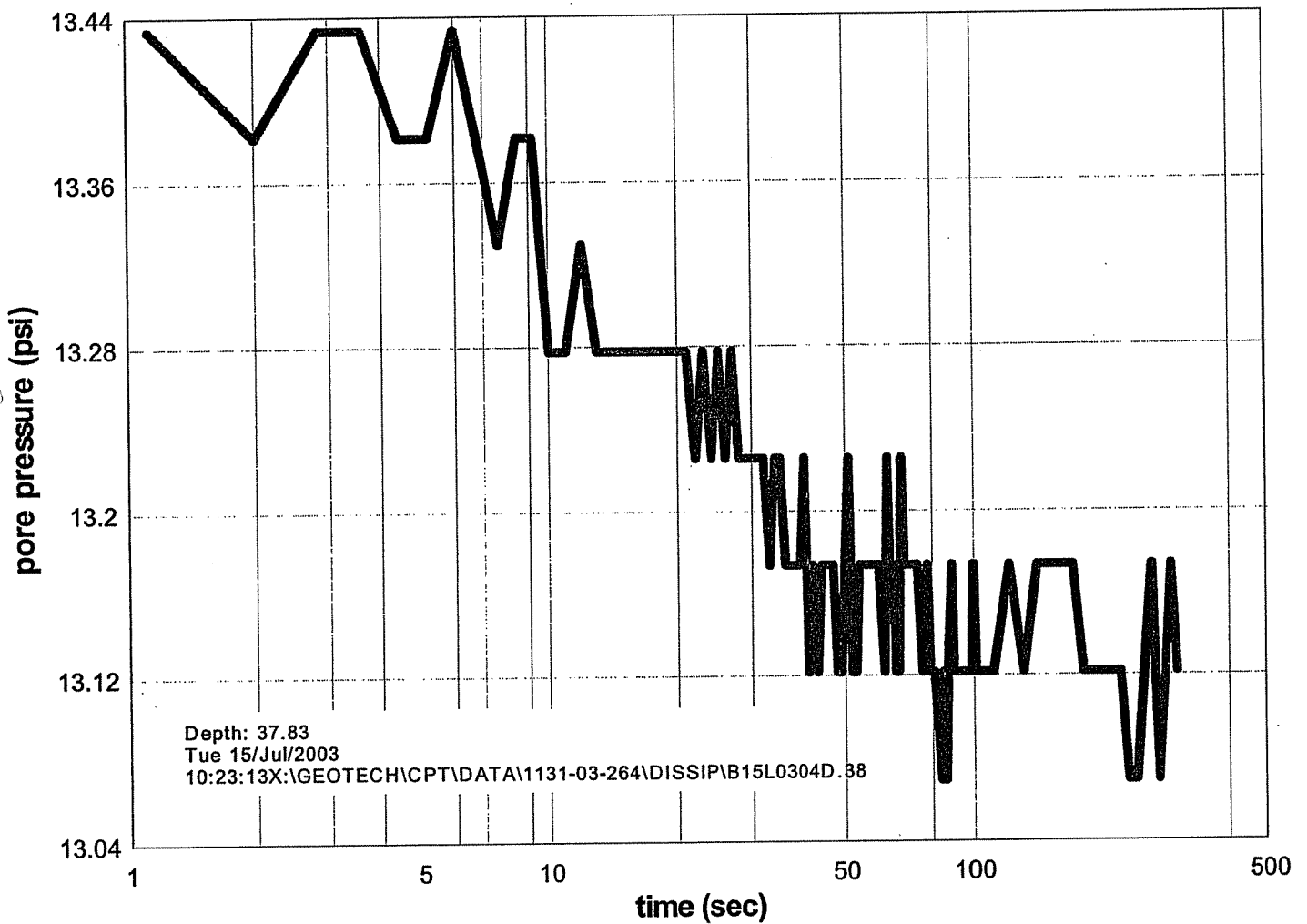
Test ID: PAL-59, 38ft
 Site: Chas. Naval Base Container Terminal
 Location: N. Charleston, SC
 Project: 1131-03-264
 Client: SCSPA

Date: July 15, 2003
 Cone Id: 2930.102, 10cm²

Interpretation Assumptions:

GWT (ft): 3
 Depth (ft): 38

Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)
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CPTU – PORE PRESSURE DISSIPATION TEST RESULTS



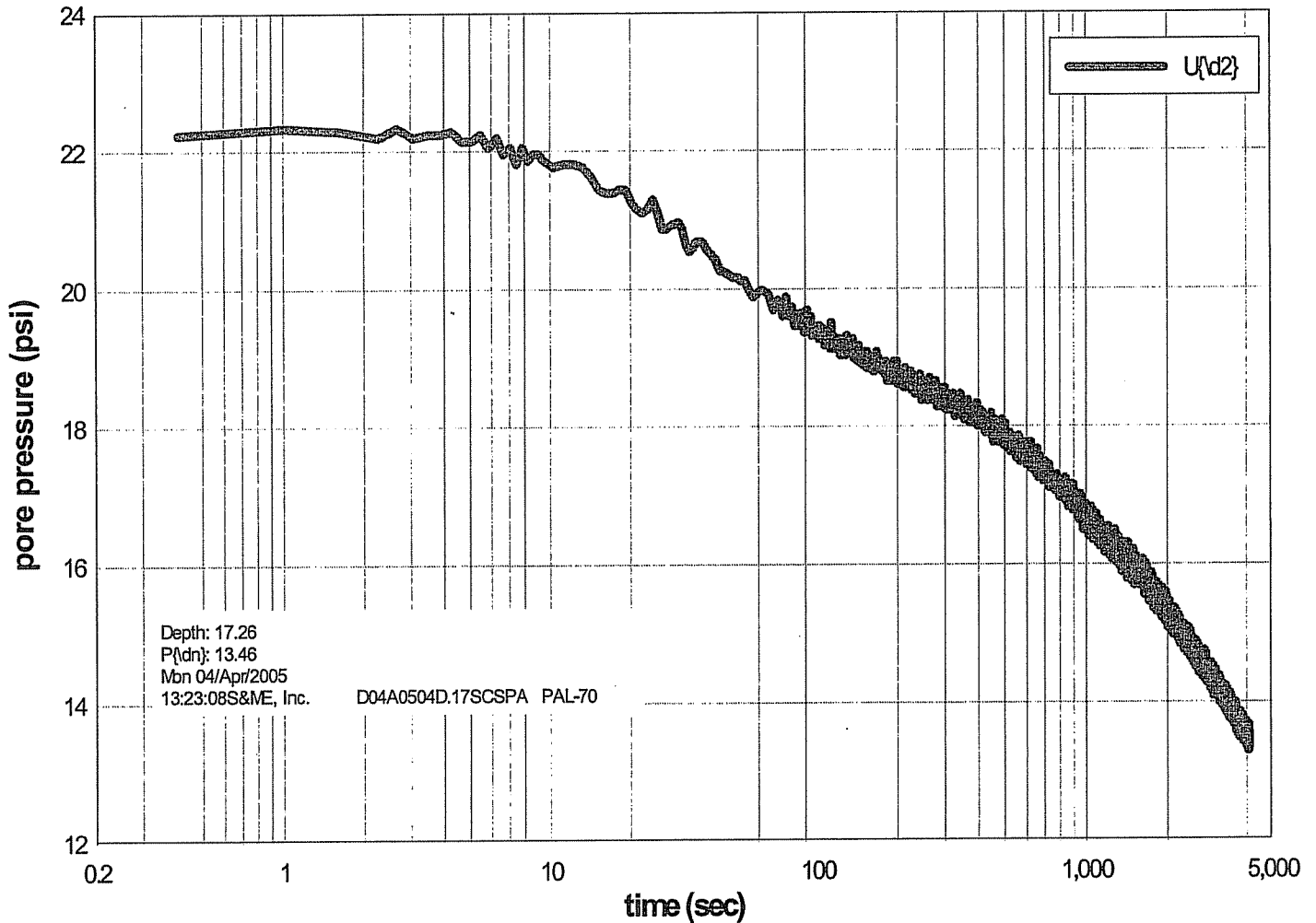
Test ID: PAL-70, 17ft
 Site: Chas. Naval Base Container Terminal
 Location: N. Charleston, SC
 Project: 1131-03-264
 Client: SCSPA

Date: 4/5/2005
 Cone Id: 2437.103, 15cm²

Interpretation Assumptions:

GWT (ft): 3
 Depth (ft): 17

Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)
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CPTU – PORE PRESSURE DISSIPATION TEST RESULTS



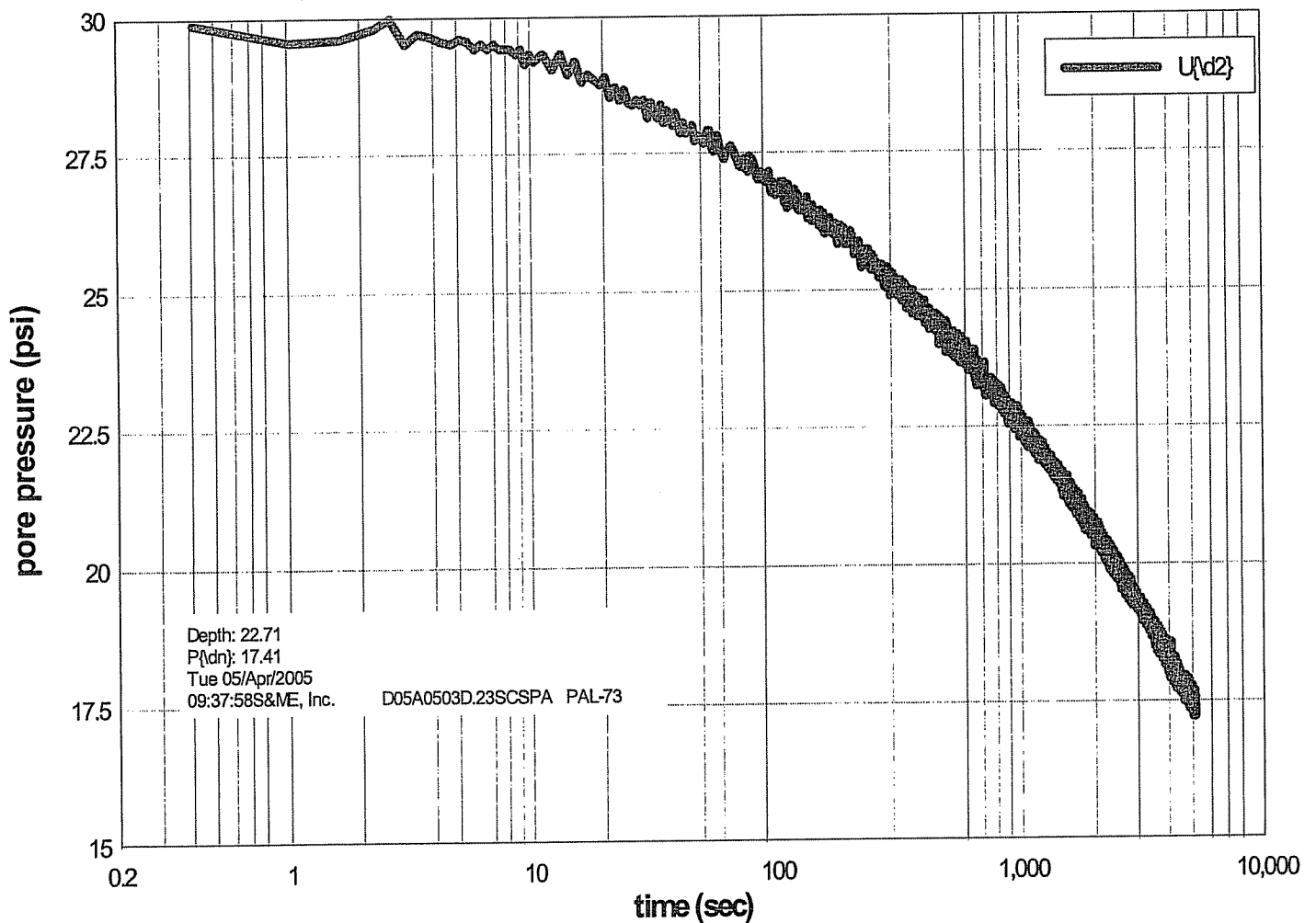
Test ID: PAL-73, 23ft
 Site: Chas. Naval Base Container Terminal
 Location: N. Charleston, SC
 Project: 1131-03-264
 Client: SCSPA

Date: 4/5/2005
 Cone Id: 2437.103, 15cm²

Interpretation Assumptions:

GWT (ft): 2
 Depth (ft): 23

Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)
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CPTU – PORE PRESSURE DISSIPATION TEST RESULTS



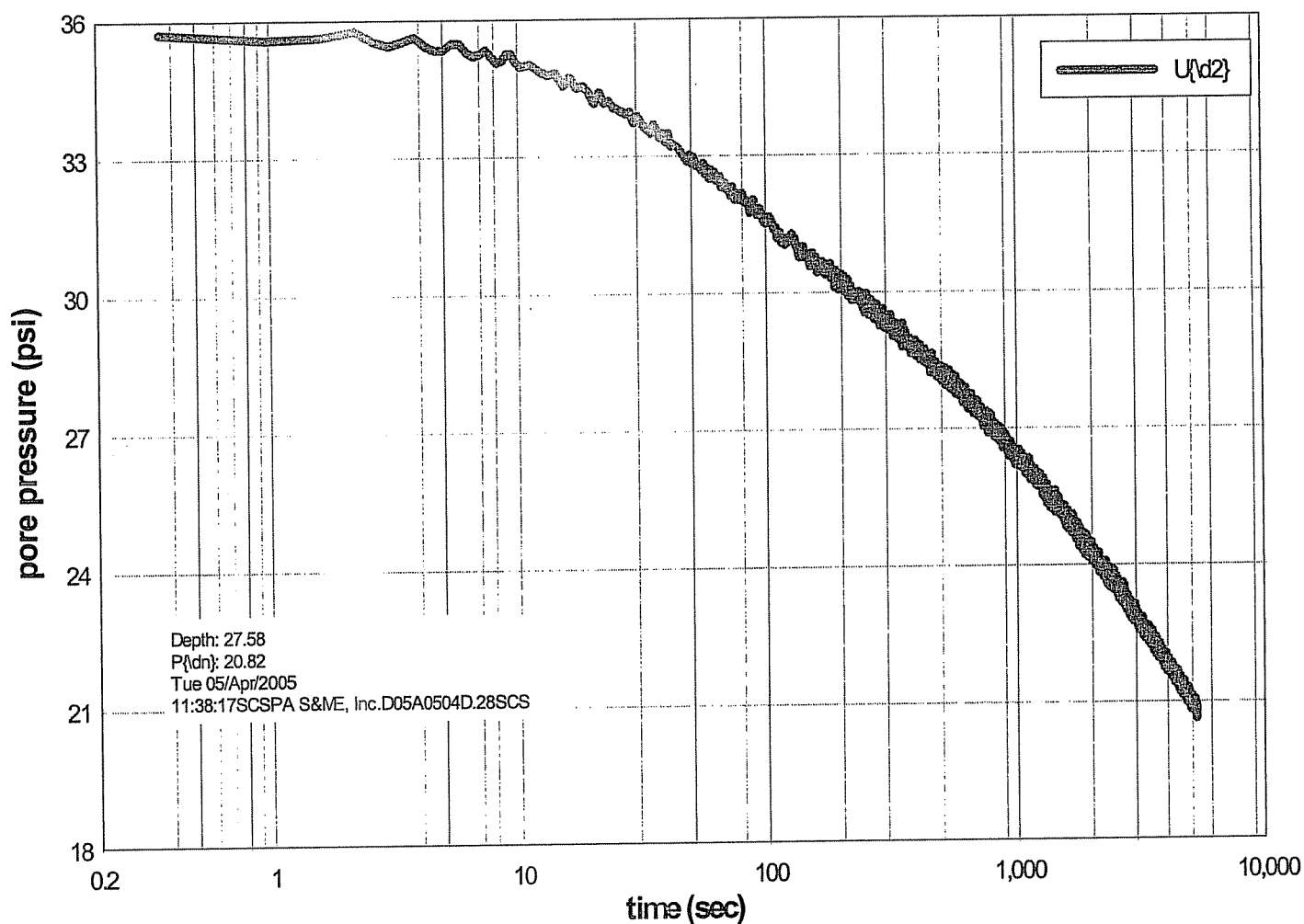
Test ID: PAL-74, 28ft
Site: Chas. Naval Base Container Terminal
Location: N. Charleston, SC
Project: 1131-03-264
Client: SCSPA

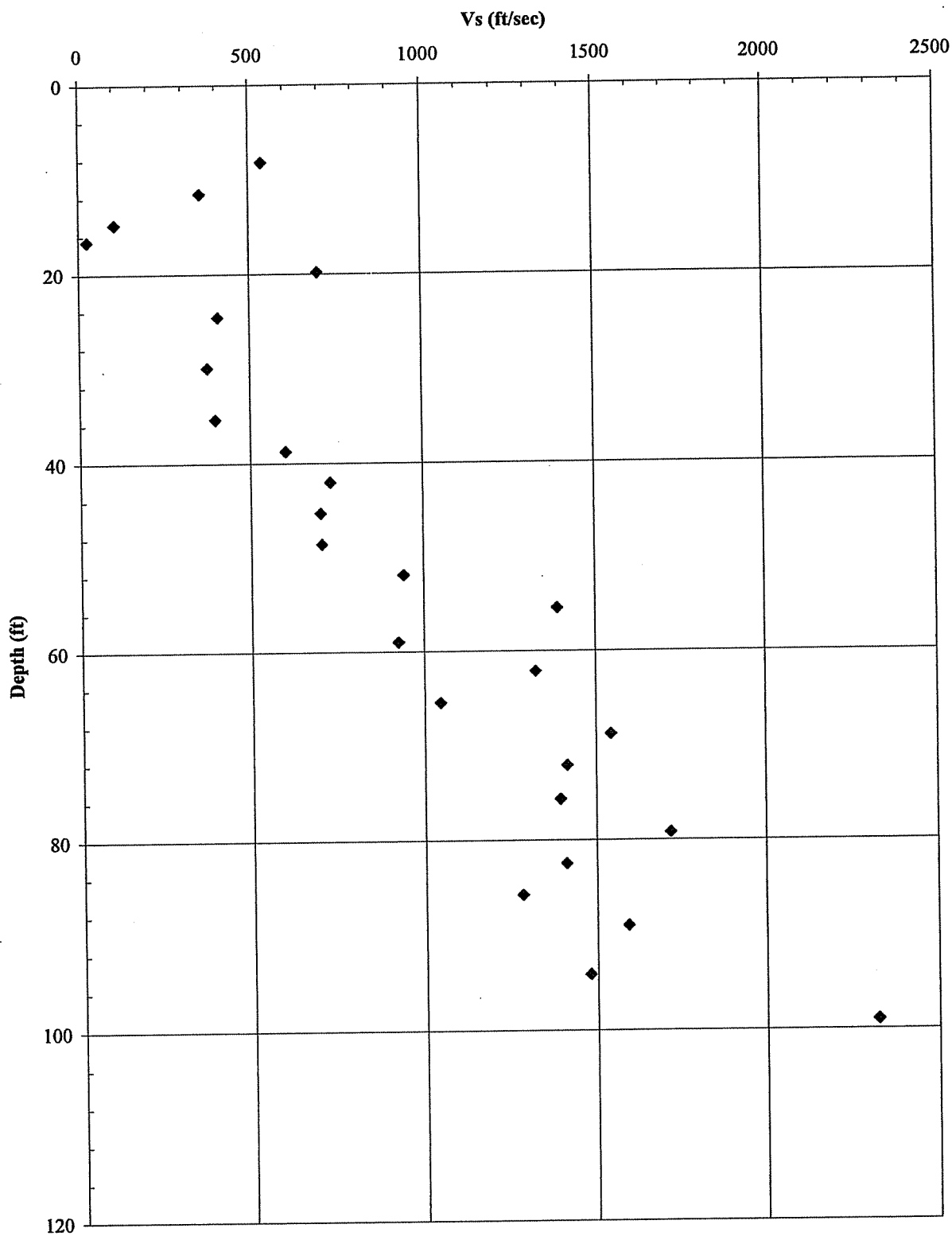
Date: 4/5/2005
Cone Id: 2437.103, 15cm²

Interpretation Assumptions:

GWT (ft): 3
Depth (ft): 28

Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)	Time (sec)	Pore Pressure (psi)
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Note: Statigraphy represents soil conditions encountered in sounding PAL-53

Project No.: 1131-03-264

Date: August 2003



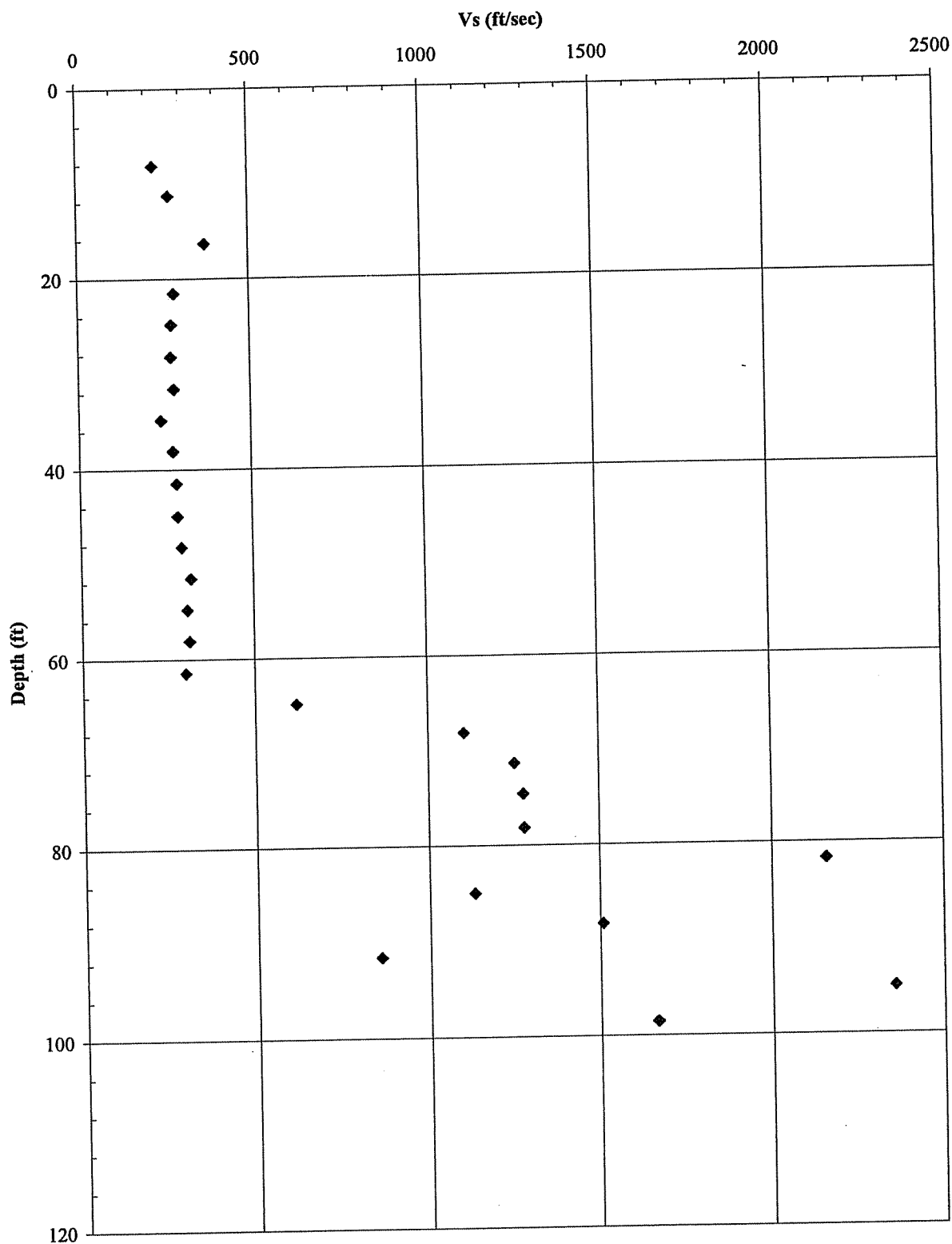
S&ME

SHEAR WAVE VELOCITY MEASUREMENTS

Charleston Naval Base Container Terminal
Former Charleston Navy Base
North Charleston, South Carolina

Figure
No.

3



Note: Statigraphy represents soil conditions encountered in sounding PAL-8

Project No.: 1131-03-264

Date: August 2003



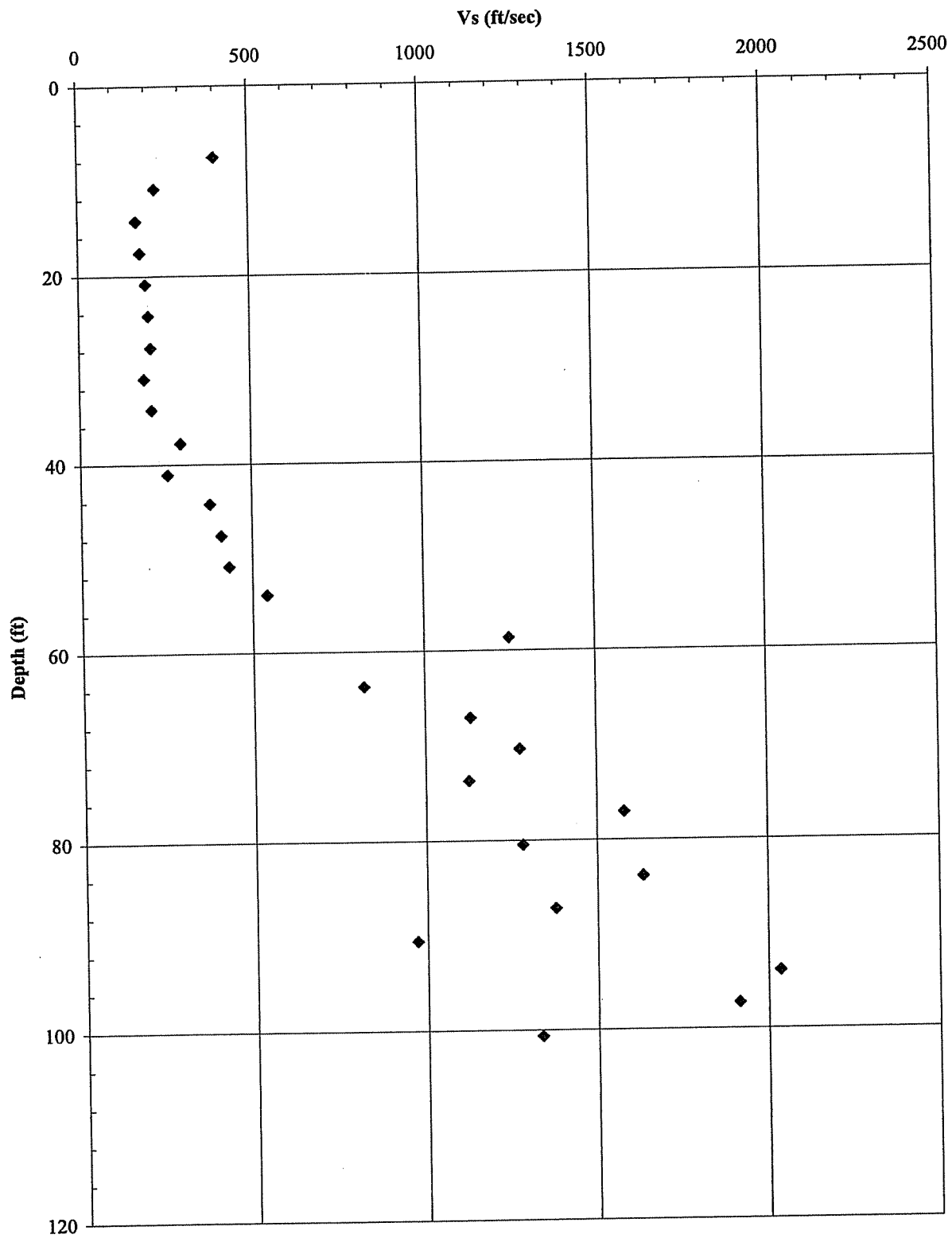
S&ME

SHEAR WAVE VELOCITY MEASUREMENTS

Charleston Naval Base Container Terminal
Former Charleston Navy Base
North Charleston, South Carolina

Figure
No.

1



Note: Statigraphy represents soil conditions encountered in sounding PAL-29

Project No.: 1131-03-264

Date: August 2003



S&ME

SHEAR WAVE VELOCITY MEASUREMENTS

Charleston Naval Base Container Terminal
Former Charleston Navy Base
North Charleston, South Carolina

Figure
No.

2



620 Wando Park Blvd.
Mt. Pleasant, SC
Tel.: (843) 884-0005
Fax: (843) 881-6149

PIEZOMETER INSTALLATION LOG

PZ-1

Charleston Naval Base Container Terminal
North Charleston, South Carolina
S&ME Project No. 1131-03-264

Installation Date: 7/11/03

Serial Number: 03-5355

Northing: 366801 (ft, NAD 83)

Easting: 2325881 (ft, NAD 83)

Ground Surface Elev.: 12.62 (ft, CLW)

Field Zero Readings

Gage: 8886 digits
Temperature: 30.3 °C
Time: 11:26
Barometric Pressure: 1018 mbar

Borehole Data

Drill Method: Mud Rotary
Depth: 45 ft
Backfill following installation:
Bentonite

Piezometer Readings During Pushing

Tip Depth (ft)	Gage digit	Temp. °C	Time
47	7111	21.6	12:17:00
48	7007	21.0	12:19:00
49	7056	20.7	12:21:00
50	7572	20.5	12:23:00
50	7547	20.4	12:23:15
50	7672	20.4	12:23:30
50	7847	20.4	12:24:00
50	8043	20.3	12:26:00
50	8104	20.2	12:31:00
50	8110	20.2	12:33:00
50	8134	20.4	13:58:00

Final Tip Depth: 50.0 ft

Notes:

**S&ME**

620 Wando Park Blvd.
Mt. Pleasant, SC
Tel.: (843) 884-0005
Fax: (843) 881-6149

PIEZOMETER INSTALLATION LOG**PZ-2**

Charleston Naval Base Container Terminal
North Charleston, South Carolina
S&ME Project No. 1131-03-264

Installation Date: 7/15/03

Serial Number: 03-5352

Northing: 366799 (ft, NAD 83)

Easting: 2325873 (ft, NAD 83)

Ground Surface Elev.: 12.62 (ft, CLW)

Field Zero Readings

Gage:	8999	digits
Temperature:	24.6	°C
Time:	9:37	
Barometric Pressure:	1020	mbar

Borehole Data

Drill Method: Mud Rotary

Depth: 32 ft

Backfill following installation:
Bentonite**Piezometer Readings During Pushing**

Tip Depth (ft)	Gage digit	Temp. °C	Time
34	7766	22.3	10:00:00
35	7712	22.1	10:02:00
36	7686	21.8	10:04:00
37	7589	21.1	10:06:00
37	7515	21	10:06:15
37	7530	21	10:06:30
37	7559	20.8	10:07:00
37	7631	20.5	10:09:00
37	7722	20.3	10:14:00
37	7749	20.1	10:16:00
37	8255	20.1	15:24:00
Final Tip Depth: 37.0 ft			

Notes:



620 Wando Park Blvd.
Mt. Pleasant, SC
Tel.: (843) 884-0005
Fax: (843) 881-6149

PIEZOMETER INSTALLATION LOG

PZ-3

Charleston Naval Base Container Terminal
North Charleston, South Carolina
S&ME Project No. 1131-03-264

Installation Date: 7/10/03

Serial Number: 03-5350

Northing: 366791 (ft, NAD 83)

Easting: 2325879 (ft, NAD 83)

Ground Surface Elev.: 12.62 (ft, CLW)

Field Zero Readings

Gage: 8875 digits
Temperature: 31.7 °C
Time: 12:08
Barometric Pressure: 1017 mbar

Borehole Data

Drill Method: Mud Rotary

Depth: 20 ft

Backfill following installation:
Bentonite

Piezometer Readings During Pushing

Tip Depth (ft)	Gage digit	Temp. °C	Time
22.8	8593	21.7	14:16:00
23.8	8551	21.1	14:17:00
24.8	8533	20.8	14:19:00
25	8517	20.7	14:20:00
25	8510	20.6	14:20:15
25	8505	20.6	14:20:30
25	8497	20.5	14:21:00
25	8473	20.3	14:23:00
25	8425	20.1	14:28:00
25	8408	20.1	14:30:00
25	8236	20.1	15:31:00

Final Tip Depth: 24.8 ft

Notes:



620 Wando Park Blvd.
Mt. Pleasant, SC
Tel.: (843) 884-0005
Fax: (843) 881-6149

PIEZOMETER INSTALLATION LOG

PZ-4

Charleston Naval Base Container Terminal
North Charleston, South Carolina
S&ME Project No. 1131-03-264

Installation Date: 7/18/03

Serial Number: 03-5353

Northing: 368593 (ft, NAD 83)

Easting: 2326266 (ft, NAD 83)

Ground Surface Elev.: 21.30 (ft, CLW)

Field Zero Readings

Gage: 9188 digits
Temperature: 29.2 °C
Time: 9:35
Barometric Pressure: 1020 mbar

Borehole Data

Drill Method: Mud Rotary

Depth: 49 ft

Backfill following installation:
Bentonite

Piezometer Readings During Pushing

Tip Depth (ft)	Gage digit	Temp. °C	Time
53.7	6706	22.9	9:57:00
54.0	6737	22.1	10:00:00
55.0	6734	22.3	10:01:00
56	6543	21.4	10:03:00
56	6506	21.1	10:05:00
56	6587	20.8	10:08:00
56	6541	20.7	10:14:00
56	6651	20.7	10:19:00
56	6969	20.6	10:39:00
56	7604	20.5	12:40:00

Final Tip Depth: 56.0 ft

Notes:

**S&ME**

620 Wando Park Blvd.
Mt. Pleasant, SC
Tel.: (843) 884-0005
Fax: (843) 881-6149

**PIEZOMETER INSTALLATION LOG
PZ-5**

**Charleston Naval Base Container Terminal
North Charleston, South Carolina
S&ME Project No. 1131-03-264**

Installation Date: 7/21/03

Serial Number: 03-5351

Northing: 368592 (ft, NAD 83)

Easting: 2326274 (ft, NAD 83)

Ground Surface Elev.: 21.30 (ft, CLW)

Field Zero Readings

Gage: 8733 digits
Temperature: 31.0 °C
Time: 10:27
Barometric Pressure: 1016 mbar

Borehole Data

Drill Method: Mud Rotary

Depth: 35 ft

Backfill following installation:
Bentonite

Piezometer Readings During Pushing

Tip Depth (ft)	Gage digit	Temp. °C	Time
37.0	7284	23.9	10:41:00
38.0	7295	23.6	10:42:00
39.0	7245	22.9	10:43:00
40.0	7242	22.6	10:44:00
40.0	6991	22.5	10:44:15
40.0	6987	22.4	10:44:30
40.0	7011	22.2	10:45:00
40.0	7099	21.7	10:47:00
40.0	7218	21.3	10:52:00
40.0	7250	21.3	10:54:00

Final Tip Depth: 40.0 ft

Notes:



620 Wando Park Blvd.
Mt. Pleasant, SC
Tel.: (843) 884-0005
Fax: (843) 881-6149

PIEZOMETER INSTALLATION LOG

PZ-6

Charleston Naval Base Container Terminal
North Charleston, South Carolina
S&ME Project No. 1131-03-264

Installation Date: 7/21/03

Serial Number: 03-5354

Northing: 368584 (ft, NAD 83)

Easting: 2326269 (ft, NAD 83)

Ground Surface Elev.: 21.30 (ft, CLW)

Field Zero Readings

Gage: 9022 digits
Temperature: 34.7 °C
Time: 13:26
Barometric Pressure: 1016 mbar

Borehole Data

Drill Method: Mud Rotary
Depth: 24 ft
Backfill following installation:
Bentonite

Piezometer Readings During Pushing

Tip Depth (ft)	Gage digit	Temp. °C	Time
26.0	8255	25.6	13:38:00
27.0	7854	25.1	13:38:00
28.0	7852	24.6	13:39:00
29.0	7916	23.8	13:40:00
29.0	7729	23.6	13:40:15
29.0	7726	23.4	13:40:30
29.0	7735	23	13:41:00
29.0	7767	22	13:43:00
29.0	7822	21.3	13:48:00
29.0	7840	21.2	13:50:00

Final Tip Depth: 29.0 ft

Notes:



48 Spencer St. Lebanon, N.H. 03766 USA

Vibrating Wire Pressure Transducer Calibration Report

Type: SDate of Calibration: June 11, 2003Serial Number: 03-5350Temperature: 23.8 °CPressure Range: 700 kPa†Barometric Pressure: 990.4 mbarCal. Std. Cntrl. #(s): 511, 506, 216, 468, 524, 529, 402, 428Technician: YQB

Applied Pressure (kPa)	Gage Reading 1st Cycle	Gage Reading 2nd Cycle	Average Gage Reading	Calculated Pressure (Linear)	Error Linear (%FS)	Calculated Pressure (Polynomial)	Error Polynomial (%FS)
0.0	8899	8899	8899	0.274	0.04	0.212	0.03
140.0	8099	8099	8099	139.8	-0.03	139.8	-0.03
280.0	7297	7298	7298	279.5	-0.06	279.7	-0.04
420.0	6490	6491	6491	420.3	0.04	420.4	0.06
560.0	5687	5688	5688	560.3	0.04	560.4	0.06
700.0	4887	4888	4888	699.8	-0.03	699.8	-0.02

(kPa) Linear Gage Factor (G): 0.1744 (kPa/ digit)Regression Zero: 8901

Polynomial Gage Factors:

A: -2.905E-08B: -0.1740C: 1550.8Thermal Factor (K): -0.05563 (kPa/ °C)(psi) Linear Gage Factor (G): 0.02529 (psi/ digit)

Polynomial Gage Factors:

A: -4.2134E-09B: -0.02523C: 224.92Thermal Factor (K): -0.00807 (psi/ °C)

Calculated Pressures:

$$\text{Linear, } P = G(R_0 - R_1) + K(T_1 - T_0) - (S_1 - S_0)^{**}$$

$$\text{Polynomial, } P = AR_1^2 + BR_1 + C + K(T_1 - T_0) - (S_1 - S_0)^{**}$$

***Barometric compensation is not required with vented and differential pressure transducers.*

Factory Zero Reading:

GK-401 Pos. B or F(R₀): 8879Temp(T₀): 22.9 °C†Baro(S₀): 989.7 mbarDate: June 19, 2003

*Initial zero readings must be established in the field following the procedures described in the Instruction Manual. If the Polynomial equation is used the field value of C must be calculated by plugging the initial zero reading into the polynomial equation with the value of P set to zero.

The above instrument was found to be in tolerance in all operating ranges.

The above named instrument has been calibrated by comparison with standards traceable to the NIST, in compliance with ANSI Z540-1.

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48 Spencer St. Lebanon, N.H. 03766 USA

Vibrating Wire Pressure Transducer Calibration Report

Type: SDate of Calibration: June 11, 2003Serial Number: 03-5351Temperature: 23.8 °CPressure Range: 700 kPa†Barometric Pressure: 990.4 mbarCal. Std. Cntrl. #(s): 511, 506, 216, 468, 524, 529, 402, 428Technician: KOB

Applied Pressure (kPa)	Gage Reading 1st Cycle	Gage Reading 2nd Cycle	Average Gage Reading	Calculated Pressure (Linear)	Error Linear (%FS)	Calculated Pressure (Polynomial)	Error Polynomial (%FS)
0.0	8754	8755	8755	0.229	0.03	0.259	0.04
140.0	7955	7956	7956	139.7	-0.04	139.8	-0.03
280.0	7152	7153	7153	279.9	-0.02	280.0	0.00
420.0	6349	6350	6350	420.1	0.01	420.2	0.03
560.0	5547	5547	5547	560.2	0.02	560.2	0.03
700.0	4747	4746	4747	699.9	-0.01	699.8	-0.03

(kPa) Linear Gage Factor (G): 0.1746 (kPa/ digit) Regression Zero: 8756Polynomial Gage Factors: A: -2.661E-08 B: -0.1742 C: 1527.4Thermal Factor (K): -0.00165 (kPa/ °C)(psi) Linear Gage Factor (G): 0.02532 (psi/ digit)Polynomial Gage Factors: A: -3.85944E-09 B: -0.02527 C: 221.53Thermal Factor (K): -0.00024 (psi/ °C)

Calculated Pressures:

$$\text{Linear, } P = G(R_0 - R_1) + K(T_1 - T_0) - (S_1 - S_0)^{**}$$

$$\text{Polynomial, } P = AR_1^2 + BR_1 + C + K(T_1 - T_0) - (S_1 - S_0)^{**}$$

***Barometric compensation is not required with vented and differential pressure transducers.*

Factory Zero Reading:

GK-401 Pos. B or F(R₀): 8739 Temp(T₀): 23.2 °C †Baro(S₀): 989.7 mbar Date: June 19, 2003

*Initial zero readings must be established in the field following the procedures described in the Instruction Manual. If the Polynomial equation is used the field value of C must be calculated by plugging the initial zero reading into the polynomial equation with the value of P set to zero.

The above instrument was found to be in tolerance in all operating ranges.

The above named instrument has been calibrated by comparison with standards traceable to the NIST, in compliance with ANSI Z540-1.

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48 Spencer St. Lebanon, N.H. 03766 USA

Vibrating Wire Pressure Transducer Calibration Report

Type: SDate of Calibration: June 11, 2003Serial Number: 03-5352Temperature: 23.8 °CPressure Range: 700 kPa†Barometric Pressure: 990.4 mbarCal. Std. Cntrl. #(s): 511, 506, 216, 468, 524, 529, 402, 428Technician: KOB

Applied Pressure (kPa)	Gage Reading 1st Cycle	Gage Reading 2nd Cycle	Average Gage Reading	Calculated Pressure (Linear)	Error Linear (%FS)	Calculated Pressure (Polynomial)	Error Polynomial (%FS)
0.0	9021	9020	9021	0.606	0.09	0.023	0.00
140.0	8228	8228	8228	139.7	-0.04	139.8	-0.03
280.0	7431	7432	7432	279.5	-0.06	280.0	0.00
420.0	6633	6633	6633	419.7	-0.04	420.1	0.02
560.0	5834	5834	5834	560.0	0.00	560.1	0.01
700.0	5034	5034	5034	700.4	0.06	699.9	-0.01

(kPa) Linear Gage Factor (G): 0.1755 (kPa/ digit) Regression Zero: 9024Polynomial Gage Factors: A: -2.341E-07 B: -0.1723 C: 1573.0Thermal Factor (K): -0.05588 (kPa/ °C)(psi) Linear Gage Factor (G): 0.02546 (psi/ digit)Polynomial Gage Factors: A: -3.39507E-08 B: -0.02498 C: 228.14Thermal Factor (K): -0.00811 (psi/ °C)

Calculated Pressures:

$$\text{Linear, } P = G(R_0 - R_1) + K(T_1 - T_0) - (S_1 - S_0)^{**}$$

$$\text{Polynomial, } P = AR_1^2 + BR_1 + C + K(T_1 - T_0) - (S_1 - S_0)^{**}$$

***Barometric compensation is not required with vented and differential pressure transducers.*

Factory Zero Reading:

GK-401 Pos. B or F(R₀): 9006 Temp(T₀): 23.1 °C †Baro(S₀): 989.7 mbar Date: June 19, 2003

*Initial zero readings must be established in the field following the procedures described in the Instruction Manual. If the Polynomial equation is used the field value of C must be calculated by plugging the initial zero reading into the polynomial equation with the value of P set to zero.

The above instrument was found to be in tolerance in all operating ranges.

The above named instrument has been calibrated by comparison with standards traceable to the NIST, in compliance with ANSI Z540-1.

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48 Spencer St. Lebanon, N.H. 03766 USA

Vibrating Wire Pressure Transducer Calibration Report

Type: SDate of Calibration: June 11, 2003Serial Number: 03-5353Temperature: 23.8 °CPressure Range: 700 kPa†Barometric Pressure: 990.4 mbarCal. Std. Cntrl. #(s): 511, 506, 216, 468, 524, 529, 402, 428Technician: KOB

Applied Pressure (kPa)	Gage Reading 1st Cycle	Gage Reading 2nd Cycle	Average Gage Reading	Calculated Pressure (Linear)	Error Linear (%FS)	Calculated Pressure (Polynomial)	Error Polynomial (%FS)
0.0	9202	9202	9202	1.150	0.16	0.063	0.01
140.0	8390	8390	8390	139.7	-0.05	139.9	-0.02
280.0	7572	7573	7573	279.1	-0.12	280.1	0.01
420.0	6752	6752	6752	419.1	-0.13	420.0	0.00
560.0	5927	5927	5927	559.9	-0.02	560.1	0.01
700.0	5099	5100	5100	701.0	0.15	700.0	0.00

(kPa) Linear Gage Factor (G): 0.1706 (kPa/ digit)Regression Zero: 9209Polynomial Gage Factors: A: -4.863E-07 B: -0.1636 C: 1547.1Thermal Factor (K): -0.08939 (kPa/ °C)(psi) Linear Gage Factor (G): 0.02474 (psi/ digit)Polynomial Gage Factors: A: -7.05311E-08 B: -0.02373 C: 224.39Thermal Factor (K): -0.01297 (psi/ °C)

Calculated Pressures:

$$\text{Linear, } P = G(R_0 - R_1) + K(T_1 - T_0) - (S_1 - S_0)^{**}$$

$$\text{Polynomial, } P = AR_1^2 + BR_1 + C + K(T_1 - T_0) - (S_1 - S_0)^{**}$$

***Barometric compensation is not required with vented and differential pressure transducers.*

Factory Zero Reading:

GK-401 Pos. B or F(R₀): 9195 Temp(T₀): 22.8 °C †Baro(S₀): 989.7 mbar Date: June 19, 2003

*Initial zero readings must be established in the field following the procedures described in the Instruction Manual. If the Polynomial equation is used the field value of C must be calculated by plugging the initial zero reading into the polynomial equation with the value of P set to zero.

The above instrument was found to be in tolerance in all operating ranges.

The above named instrument has been calibrated by comparison with standards traceable to the NIST, in compliance with ANSI Z540-1.

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Vibrating Wire Pressure Transducer Calibration Report

Type: SDate of Calibration: June 11, 2003Serial Number: 03-5354Temperature: 23.8 °CPressure Range: 700 kPa†Barometric Pressure: 990.4 mbarCal. Std. Cntrl. #(s): 511, 506, 216, 468, 524, 529, 402, 428Technician: KOB

Applied Pressure (kPa)	Gage Reading 1st Cycle	Gage Reading 2nd Cycle	Average Gage Reading	Calculated Pressure (Linear)	Error Linear (%FS)	Calculated Pressure (Polynomial)	Error Polynomial (%FS)
0.0	9040	9040	9040	1.698	0.24	-0.018	0.00
140.0	8198	8198	8198	139.7	-0.04	140.1	0.01
280.0	7351	7351	7351	278.6	-0.21	279.9	-0.01
420.0	6497	6496	6497	418.6	-0.20	420.0	-0.01
560.0	5636	5637	5637	559.6	-0.06	560.1	0.01
700.0	4769	4770	4770	701.7	0.25	700.1	0.01

(kPa) Linear Gage Factor (G): 0.1639 (kPa/ digit)Regression Zero: 9050

Polynomial Gage Factors:

A: -7.103E-07B: -0.1541C: 1451.2Thermal Factor (K): -0.03531 (kPa/ °C)(psi) Linear Gage Factor (G): 0.02377 (psi/ digit)

Polynomial Gage Factors:

A: -1.03023E-07B: -0.02235C: 210.48Thermal Factor (K): -0.00512 (psi/ °C)

Calculated Pressures:

Linear, $P = G(R_0 - R_1) + K(T_1 - T_0) - (S_1 - S_0)^{**}$ Polynomial, $P = AR_1^2 + BR_1 + C + K(T_1 - T_0) - (S_1 - S_0)^{**}$ ***Barometric compensation is not required with vented and differential pressure transducers.*

Factory Zero Reading:

GK-401 Pos. B or F(R₀): 9029Temp(T₀): 22.8 °C†Baro(S₀): 989.7 mbarDate: June 19, 2003

*Initial zero readings must be established in the field following the procedures described in the Instruction Manual. If the Polynomial equation is used the field value of C must be calculated by plugging the initial zero reading into the polynomial equation with the value of P set to zero.

The above instrument was found to be in tolerance in all operating ranges.

The above named instrument has been calibrated by comparison with standards traceable to the NIST, in compliance with ANSI Z540-1.

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48 Spencer St. Lebanon, N.H. 03766 USA

Vibrating Wire Pressure Transducer Calibration Report

Type: SDate of Calibration: June 11, 2003Serial Number: 03-5355Temperature: 23.8 °CPressure Range: 700 kPa†Barometric Pressure: 990.4 mbarCal. Std. Cntrl. #(s): 511, 506, 216, 468, 524, 529, 402, 428Technician: KOB

Applied Pressure (kPa)	Gage Reading 1st Cycle	Gage Reading 2nd Cycle	Average Gage Reading	Calculated Pressure (Linear)	Error Linear (%FS)	Calculated Pressure (Polynomial)	Error Polynomial (%FS)
0.0	8906	8906	8906	0.750	0.11	-0.024	0.00
140.0	8137	8136	8137	140.0	0.00	140.0	0.01
280.0	7367	7367	7367	279.2	-0.11	279.8	-0.02
420.0	6592	6593	6593	419.3	-0.09	420.1	0.01
560.0	5815	5815	5815	560.0	0.00	560.2	0.03
700.0	5038	5037	5038	700.7	0.10	699.8	-0.02

(kPa) Linear Gage Factor (G): 0.1809 (kPa/ digit) Regression Zero: 8910Polynomial Gage Factors: A: -3.886E-07 B: -0.1755 C: 1593.9Thermal Factor (K): -0.09492 (kPa/ °C)(psi) Linear Gage Factor (G): 0.02624 (psi/ digit)Polynomial Gage Factors: A: -5.63579E-08 B: -0.02546 C: 231.18Thermal Factor (K): -0.01377 (psi/ °C)

Calculated Pressures:

$$\text{Linear, } P = G(R_0 - R_1) + K(T_1 - T_0) - (S_1 - S_0)^{**}$$

$$\text{Polynomial, } P = AR_1^2 + BR_1 + C + K(T_1 - T_0) - (S_1 - S_0)^{**}$$

***Barometric compensation is not required with vented and differential pressure transducers.*

Factory Zero Reading:

GK-401 Pos. B or F(R₀): 8894 Temp(T₀): 22.9 °C †Baro(S₀): 989.7 mbar Date: June 19, 2003

*Initial zero readings must be established in the field following the procedures described in the Instruction Manual. If the Polynomial equation is used the field value of C must be calculated by plugging the initial zero reading into the polynomial equation with the value of P set to zero.

The above instrument was found to be in tolerance in all operating ranges.

The above named instrument has been calibrated by comparison with standards traceable to the NIST, in compliance with ANSI Z540-1.

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FIELD TESTING PROCEDURES

Cone Penetrometer Test (CPT) Sounding

The cone penetrometer test soundings (ASTM D 5778) were performed by hydraulically pushing an electronically instrumented cone penetrometer through the soil at a constant rate. As the cone penetrometer tip was advanced through the soil, continuous readings of point stress, sleeve friction and pore water pressure were recorded and stored in the on-site computers. Using theoretical and empirical relationships, the CPT data was used to determine soil stratigraphy and estimate soil properties such as preconsolidation stress, friction angle and undrained shear strength. Seismic shear wave velocity measurements were also made within the soundings.

Soil Test Boring (STB)

All boring and sampling operations were conducted in accordance with ASTM Designation D 1586. Initially, the borings were advanced by either mechanically augering or wash boring through the soils. Where necessary, a drilling fluid was used below the water table to stabilize the side and bottom of the drill hole. At regular intervals soil samples were obtained with a standard 1.4-inch I.D., 2-inch O.D., split-barrel sampler. The sampler was first seated 6 inches to penetrate any loose cuttings and then driven an additional foot with blows of a 140 pound hammer falling 30 inches. The number of hammer blows required to drive the sampler the final foot is designated the "Standard Penetration Resistance." The penetration resistance, when properly evaluated, is an index to the soil strength.

Dilatometer Testing (DMT) Sounding

A dilatometer test consists of pushing a flat blade located at the end of a series of rods. Once at the testing depth, a circular steel membrane located on one side of the blade is expanded horizontally into the soil. The pressure within the membrane is recorded at three specific moments during the test. The blade is then advanced to the next testing depth. A series of single dilatometer tests is referred to as a DMT sounding. The flat dilatometer blade is a stainless steel blade (typically 240 mm long and 94 mm wide) with an expandable circular steel membrane (typically 60 mm diameter) mounted flush on one face. The blade is also fitted with a three position electric switch which indicates three phases in the membrane expansion. Push rods are used to transfer the thrust from the pushing equipment to the blade. A pneumatic-electrical cable made of a spring-temper stainless steel wire enclosed within nylon tubing transmits gas pressure and maintains electrical continuity from the control unit to the blade. The control unit monitors and controls the pressures at each test depth. A compressed gas tank supplies the required pressure to the blade. Dry nitrogen is the best suited gas for this purpose. Pressure measurements were made at approximately 1-ft intervals. The pressure measurements consisted of determining the lateral pressure required to expand the membrane into the surrounding soil. The DMT data can be correlated to various soil properties, including undrained shear strength, friction angle and stiffness moduli.

APPENDIX II LABORATORY TESTING

SOIL DATA SUMMARY

SOIL GRADATION TEST CURVES

CONSOLIDATION TEST DATA SHEETS

TRIAXIAL STRENGTH TEST DATA SHEETS

LABORATORY TESTING PROCEDURES



SOIL DATA SUMMARY

CHARLESTON NAVAL BASE CONTAINER TERMINAL

NORTH CHARLESTON, SOUTH CAROLINA

S&ME, INC. PROJECT NO. 1131-03-264

BORING NUMBER	SAMPLE NUMBER	SAMPLE DEPTH		SAMPLE ELEVATION		STANDARD PENETRATION RESISTANCE	CLASSIFICATION	NATURAL MOISTURE CONTENT	PERCENT PASSING NO. 200 SIEVE	ATTERBERG LIMITS		ORGANIC CONTENT	SPECIFIC GRAVITY	UNIT WEIGHT		CU TRIAXIAL DATA			COMPRESSION INDEX	COMPRESSION RATIO	INITIAL VOID RATIO
		(ft)		(CLW, ft)		N	USCS ¹	w (%)	f (%)	LL	PI	(%)	G _s	wet (lb/ft ³)	dry (lb/ft ³)	c (lb/ft ²)	φ (deg)	φ' (deg)	C _c	C _c	e _s
PAL-57	1	0.0	-1.5	17.1	-15.6	12	CH	34.5													
	2	2.5	-4.0	14.6	-13.1	11	CH	37.0		90	53										
	3	5.0	-6.5	12.1	-10.6	8	CH	46.1													
	4	7.5	-9.0	9.6	-8.1	20	SM	24.3	23.2	28	5										
	5	10.0	-11.5	7.1	-5.6	4	CH	52.1		87	50										
	6	15.0	-16.5	2.1	-0.6	2/18"	SM	29.9													
	7	20.0	-21.5	-2.9	-4.4	wor	SC	50.3	36.6	50	30										
	8	25.0	-26.5	-7.9	-9.4	2	SM	35.7	18.6												
	UD-1	30.0	-32.0	-12.9	-14.9		CH	107.0		158	105		2.35								
	9	32.0	-33.5	-14.9	-16.4	woh	CH	150.3													
	10	35.0	-36.5	-17.9	-19.4	wor	CH	112.1		137	98										
	11	40.0	-41.5	-22.9	-24.4	wor	CH	55.5													
	12	45.0	-46.5	-27.9	-29.4	wor	CH	50.3		113	74										
	13	50.0	-51.5	-32.9	-34.4	wor	CH	74.9	89.8	84	56										
UD-3	53.0	-55.0	-35.9	-37.9			CH	70.6		121	81	14.2	2.53	93.2	54.6						
	14	55.0	-56.5	-37.9	-39.4	woh	CH	95.8													
	15	60.0	-61.5	-42.9	-44.4	woh	CH	88.9													
	16	65.0	-66.5	-47.9	-49.4	2	CH	58.3	57.1	56	37										
	17	70.0	-71.5	-52.9	-54.4	3	SC	55.2	47.0	38	19										
PAL-60	1	0.0	-1.5	13.5	-12.0	3	MH	54.1		118	68										
	2	2.5	-4.0	11.0	-9.5	4	MH	49.2													
	3	5.0	-6.5	8.5	-7.0	woh	CH	130.8		122	85										
	4	7.5	-9.0	6.0	-4.5	woh	CH	126.9													
	5	10.0	-11.5	3.5	-2.0	woh	CH	119.3	96.4	138	98										
	UD-1	15.0	-17.0	-1.5	-3.5		CH	87.4		133	90		2.70	99.5	53.1				0.71	0.21	2.42
	6	17.0	-18.5	-3.5	-5.0	woh	CH	115.3													
	7	20.0	-21.5	-6.5	-8.0	woh	CH	105.9													
	8	25.0	-26.5	-11.5	-13.0	woh	CH	110.4	99.2	158	111										



SOIL DATA SUMMARY
CHARLESTON NAVAL BASE CONTAINER TERMINAL
NORTH CHARLESTON, SOUTH CAROLINA
S&ME, INC. PROJECT NO. 1131-03-264

BORING NUMBER	SAMPLE NUMBER	SAMPLE DEPTH		SAMPLE ELEVATION		STANDARD PENETRATION RESISTANCE	CLASSIFICATION	NATURAL MOISTURE CONTENT	PERCENT PASSING NO. 200 SIEVE	ATTERBERG LIMITS		ORGANIC CONTENT	SPECIFIC GRAVITY	UNIT WEIGHT		CU TRIAXIAL DATA			COMPRESSION INDEX	COMPRESSION RATIO	INITIAL VOID RATIO
		(ft)		(CLW, ft)		N	USCS ¹	w (%)	f (%)	LL	PI	(%)	G _s	wet (lb/ft ³)	dry (lb/ft ³)	c (lb/ft ²)	φ (deg)	φ' (deg)	C _c	C _c	e _s
	9	30.0	-31.5	-16.5	-18.0	woh	CH	112.3													
	UD-2	35.0	-37.0	-21.5	-23.5		CH	111.8		115	73	8.1		87.9	41.5	200	11.0	30.0			
	10	37.0	-38.5	-23.5	-25.0	woh	CH	59.2	54.7	64	43										
	11	40.0	-41.5	-26.5	-28.0	wor	SC	57.0	42.4	44	23										
	12	45.0	-46.5	-31.5	-33.0	wor	SC	63.3													
	13	50.0	-51.5	-36.5	-38.0	5	SC	52.6	34.4												
PAL-62	1	0.0	-1.5	14.3	-12.8	3	CL	44.6													
	2	2.5	-4.0	11.8	-10.3	6	CL	55.6													
	3	5.0	-6.5	9.3	-7.8	5	CH	69.3	99.1	121	77										
	4	7.5	-9.0	6.8	-5.3	woh	CH	112.5													
	5	10.0	-11.5	4.3	-2.8	woh	CH	124.8		159	112										
	UD-1	15.0	-17.0	-0.7	-2.7		CH			110	74										
	6	17.0	-18.5	-2.7	-4.2	wor	CH	138.2		134	90										
	7	20.0	-21.5	-5.7	-7.2	2	CH	90.7	72.1												
	8	25.0	-26.5	-10.7	-12.2	wor	CH	133.2		158	113										
	UD-2	30.0	-32.0	-15.7	-17.7		CH	142.1		91	58	8.1		83.8	34.6	260	8.6	26.0			
	9	32.0	-33.5	-17.7	-19.2	wor	CH	120.9	94.7	150	106										
	10	35.0	-36.5	-20.7	-22.2	wor	CH	122.2													
	11	40.0	-41.5	-25.7	-27.2	wor	CH	85.6	82.7												
	12	45.0	-46.5	-30.7	-32.2	wor	SC	57.8	44.4	38	21										
	13	50.0	-51.5	-35.7	-37.2	wor	CH	87.5													
	14	55.0	-56.5	-40.7	-42.2	wor	CH	87.0		86	58										
	15	60.0	-61.5	-45.7	-47.2	woh	CH	96.5	95.3												
PAL-64	1	0.0	-1.5	14.4	-12.9	3	SC	53.2	43.9												
	2	2.5	-4.0	11.9	-10.4	2/18"	SM	47.1	47.2												
	3	5.0	-6.5	9.4	-7.9	8	SM	17.0	41.1												
	4	7.5	-9.0	6.9	-5.4	10	SM	28.1		88	48										



SOIL DATA SUMMARY
CHARLESTON NAVAL BASE CONTAINER TERMINAL
NORTH CHARLESTON, SOUTH CAROLINA
S&ME, INC. PROJECT NO. 1131-03-264

BORING NUMBER	SAMPLE NUMBER	SAMPLE DEPTH		SAMPLE ELEVATION		STANDARD PENETRATION RESISTANCE	CLASSIFICATION	NATURAL MOISTURE CONTENT	PERCENT PASSING NO. 200 SIEVE	ATTERBERG LIMITS		ORGANIC CONTENT	SPECIFIC GRAVITY	UNIT WEIGHT		CU TRIAXIAL DATA			COMPRESSION INDEX	COMPRESSION RATIO	INITIAL VOID RATIO
		(ft)		(CLW, ft)		N	USCS ¹	w (%)	f (%)	LL	PI	(%)	G _s	wet (lb/ft ³)	dry (lb/ft ³)	c (lb/ft ²)	φ (deg)	φ' (deg)	C _c	C _c	e _s
	5	10.0	-11.5	4.4	-2.9	15	SP	31.9	4.1												
	6	15.0	-16.5	-0.6	-2.1	woh	CH	125.5	83.4	138	88										
	7	20.0	-21.5	-5.6	-7.1	1	CH	106.7													
	8	27.0	-28.5	-12.6	-14.1	woh	MH	107.5	93.4	144	90										
	UD-2	30.0	-32.0	-15.6	-17.6		MH	142.3		162	89	13.6	2.56	85.1	35.1				1.45	0.32	3.55
	9	32.0	-33.5	-17.6	-19.1	woh	MH	129.7													
	10	35.0	-36.5	-20.6	-22.1	wor	CH	96.0		108	75										
	11	40.0	-41.5	-25.6	-27.1	wor	SC	55.1	21.2	43	NP										
	12	45.0	-46.5	-30.6	-32.1	woh	SC	55.1	30.8	52	25										
	UD-3	50.0	-52.0	-35.6	-37.6		CH	69.1		112	79	7.2	2.71	101.6	60.1				1.71	0.44	2.90
	13	52.0	-53.5	-37.6	-39.1	woh	MH	87.2	74.6	124	47										
	14	55.0	-56.5	-40.6	-42.1	wor	CH	73.1	55.0	56	41										
PAL-65	1	0.0	-1.5	14.7	-13.2	7	SC	19.8	32.8												
	2	2.5	-4.0	12.2	-10.7	2/18"	SC	36.5	16.5												
	3	5.0	-6.5	9.7	-8.2	2	SC	44.6	20.2	NP	NP										
	4	7.5	-9.0	7.2	-5.7	18	SC	38.4	5.3												
	5	10.0	-11.5	4.7	-3.2	6	CL	21.6	50.1												
	6	15.0	-16.5	-0.3	-1.8	woh	CL	47.5													
	7	20.0	-21.5	-5.3	-6.8	woh	CH	104.3		145	100										
	8	25.0	-26.5	-10.3	-11.8	woh	MH	125.1		98	31										
	UD-1	30.0	-32.0	-15.3	-17.3		CH	105.6		143	97	12.8	2.55	90.9	44.2				1.31	0.35	2.73
	9	32.0	-33.5	-17.3	-18.8	woh	CH	70.7	75.6	98	31										
	10	35.0	-36.5	-20.3	-21.8	wor	CH	111.4													
	11	40.0	-41.5	-25.3	-26.8	wor	CL	59.1	58.8	49	27										
	12	45.0	-46.5	-30.3	-31.8	wor	SC	56.4	28.3	43	17										
	13	50.0	-51.5	-35.3	-36.8	woh	SM	39.2	13.1	32	5										
	14	57.0	-58.5	-42.3	-43.8	woh	SM	52.9													
	15	60.0	-61.5	-45.3	-46.8	wor	CH	71.5	82.2	137	97										



SOIL DATA SUMMARY

CHARLESTON NAVAL BASE CONTAINER TERMINAL

NORTH CHARLESTON, SOUTH CAROLINA

S&ME, INC. PROJECT NO. 1131-03-264

BORING NUMBER	SAMPLE NUMBER	SAMPLE DEPTH		SAMPLE ELEVATION		STANDARD PENETRATION RESISTANCE	CLASSIFICATION	NATURAL MOISTURE CONTENT	PERCENT PASSING NO. 200 SIEVE	ATTERBERG LIMITS		ORGANIC CONTENT	SPECIFIC GRAVITY	UNIT WEIGHT		CU TRIAXIAL DATA			COMPRESSION INDEX	COMPRESSION RATIO	INITIAL VOID RATIO
		(ft)		(CLW, ft)		N	USCS ¹	w (%)	f (%)	LL	PI	(%)	Gs	wet (lb/ft ³)	dry (lb/ft ³)	c (lb/ft ²)	φ (deg)	φ' (deg)	C _c	C _c	e _s
	UD-3	62.0	-64.0	-47.3	-49.3		MH	97.6		146	93		2.67	85.4	43.2				1.28	0.33	2.86
	16	64.0	-65.5	-49.3	-50.8	woh	MH	97.3													
	17	69.0	-70.5	-54.3	-55.8	9	SC	39.4	19.5	NP	NP										
PAL-66	1	0.0	-1.5	9.2	-7.7	11	SC	33.2	7.6												
	2	2.5	-4.0	6.7	-5.2	8	CL	30.9	51.2	50	23										
	3	5.0	-6.5	4.2	-2.7	6	SC	43.5	11.3	29	NP										
	4	7.5	-9.0	1.7	-0.2	woh	CH	83.2													
	5	10.0	-11.5	-0.8	-2.3	woh	SC	61.0	44.3												
	UD-1	15.0	-17.0	-5.8	-7.8		CH	117.2		150	106		2.58	91.6	42.1	360	9.0	31.0	1.30	0.32	3.08
	6	17.0	-18.5	-7.8	-9.3	wor	MH	123.8		178	69										
	7	20.0	-21.5	-10.8	-12.3	wor	MH	105.7	97.3												
	8	25.0	-26.5	-15.8	-17.3	wor	MH	67.0		62	16										
	9	30.0	-31.5	-20.8	-22.3	wor	MH	61.2													
	UD-2	32.0	-34.0	-22.8	-24.8		CH	90.5		109	75	5.5				288	11.0	34.0	1.03	0.30	2.39
	10	34.0	-35.5	-24.8	-26.3	wor	MH	64.9	83.1	104	59										
	11	35.5	-37.0	-26.3	-27.8	wor	CH	71.1													
	12	40.0	-41.5	-30.8	-32.3	15	SP	29.8	3.7												
	13	45.0	-46.5	-35.8	-37.3	5	SM	24.1	1.0												
	14	50.0	-51.5	-40.8	-42.3	25	SM	14.8	9.7												
PZ-1	1	0.0	-1.5	12.6	-11.1	1	MH	65.6	97.8	124	73										
	2	2.5	-4.0	10.1	-8.6	3	MH	102.8													
	3	5.0	-6.5	7.6	-6.1	1	MH	126.8		169	52										
	4	7.5	-9.0	5.1	-3.6	3	MH	77.2	92.3	115	53										
	5	10.0	-11.5	2.6	-1.1	2	MH	79.3													
	6	15.0	-16.5	-2.4	-3.9	10	SC	36.1	8.8	NP	NP										
	7	20.0	-21.5	-7.4	-8.9	wor	MH	107.7		160	71										
	UD-1	25.0	-27.0	-12.4	-14.4		CH	121.4		91	59	8.1		84.0	38.0	400	8.8	24.0	2.06	0.40	4.10



SOIL DATA SUMMARY
CHARLESTON NAVAL BASE CONTAINER TERMINAL
NORTH CHARLESTON, SOUTH CAROLINA
S&ME, INC. PROJECT NO. 1131-03-264

BORING NUMBER	SAMPLE NUMBER	SAMPLE DEPTH		SAMPLE ELEVATION			STANDARD PENETRATION RESISTANCE	CLASSIFICATION	NATURAL MOISTURE CONTENT	PERCENT PASSING NO. 200 SIEVE	ATTERBERG LIMITS		ORGANIC CONTENT	SPECIFIC GRAVITY	UNIT WEIGHT		CU TRIAXIAL DATA			COMPRESSION INDEX	COMPRESSION RATIO	INITIAL VOID RATIO
		(ft)	(CLW, ft)			N	USCS ¹	w (%)	f (%)	LL	PI	(%)	Gs	wet (lb/ft ³)	dry (lb/ft ³)	c (lb/ft ²)	φ (deg)	φ' (deg)	C _c	C _{c'}	e _o	
	8	27.0	-28.5	-14.4	-15.9	woh	CH	135.0	97.6													
	9	30.0	-31.5	-17.4	-18.9	wor	MH	127.2		153	87											
	10	35.0	-36.5	-22.4	-23.9	wor	MH	108.8	94.0													
	11	40.0	-41.5	-27.4	-28.9	wor	MH	108.1														
	UD-2	42.0	-44.0	-29.4	-31.4		CH	70.3		75	47		2.71	102.1	60.0				1.10	0.32	2.45	
	12	45.0	-46.5	-32.4	-33.9	wor	MH	106.9	96.7	160	104											
PZ-2	1	32.0	-33.5	-19.4	-46.1	wor	MH	122.2	98.4	152	85											
PZ-3	1	20.0	-21.5	-7.4	-8.9	wor	MH	108.6	94.4	169	100											
PZ-4	1	0.0	-1.5	21.3	-19.8	17	SM	16.0	42.2	37	10											
	2	2.5	-4.0	18.8	-17.3	8	SM	23.0	6.9													
	3	5.0	-6.5	16.3	-14.8	8	SM	59.8	6.9													
	4	7.5	-9.0	13.8	-12.3	5	SM	38.6	15.9	40	NP											
	5	10.0	-11.5	11.3	-9.8	5	SP	27.9	2.5	NP	NP											
	6	15.0	-16.5	6.3	-4.8	12	SM	53.4	34.9	48	12											
	7	20.0	-21.5	1.3	-0.2	woh	SC	46.1	27.1	44	18											
	8	25.0	-26.5	-3.7	-5.2	wor	MH	93.1	97.5	122	26											
	9	35.0	-36.5	-13.7	-15.2	wor	MH	122.6		165	62											
	10	40.0	-41.5	-18.7	-20.2	woh	MH	110.1		144	33											
	UD-3	45.0	-47.0	-23.7	-25.7		MH	78.3		155	95		2.61	92.7	52.0				0.70	0.22	2.14	
	11	49.0	-50.5	-27.7	-29.2	woh	MH	92.8	78.8	97	24											
PZ-5	UD-1	32.0	-34.0	-10.7	-12.7		CH	93.5		139	95	15.5	2.61	90.2	46.6				1.26	0.33	2.85	
	1	35.0	-36.5	-13.7	-15.2	wor	MH	122.6	93.3	168	53											
PZ-6	1	24.0	-25.5	-2.7	-4.2	woh	MH	121.9	96.7	182	99											



SOIL DATA SUMMARY
CHARLESTON NAVAL BASE CONTAINER TERMINAL
NORTH CHARLESTON, SOUTH CAROLINA
S&ME, INC. PROJECT NO. 1131-03-264

BORING NUMBER	SAMPLE NUMBER	SAMPLE DEPTH		SAMPLE ELEVATION		STANDARD PENETRATION RESISTANCE	CLASSIFICATION	NATURAL MOISTURE CONTENT	PERCENT PASSING NO. 200 SIEVE	ATTERBERG LIMITS		ORGANIC CONTENT	SPECIFIC GRAVITY	UNIT WEIGHT		CU TRIAXIAL DATA			COMPRESSION INDEX	COMPRESSION RATIO	INITIAL VOID RATIO
		(ft)		(CLW, ft)		N	USCS ¹	w (%)	f (%)	LL	PI	(%)	G _s	wet (lb/ft ³)	dry (lb/ft ³)	c (lb/ft ²)	φ (deg)	φ' (deg)	C _e	C _{e'}	e _o
PAW-1	1			-0.3	-1.8	wor	SM	34.0	12.9												
	4			-19.8	-21.3	wor	CH	103.1	64.4												
PAW-2	3			-20.1	-21.6	wor	CH	140.1		182	120										
	UD-4			-26.9	-28.9		MH	179.9		181	99		2.58	79.2	28.3				1.38	0.22	5.37
	UD-5			-31.5	-33.5		CH	144.2		101	59		2.36	82.4	33.7	230	6.6	37.0			
PAW-3	2			-15.3	-16.8	wor	MH	123.1	69.2												
	5			-29.7	-31.2	wor	CH	116.1		120	82										
PAW-6	2			-14.9	-16.4	wor	SM	86.2	23.1												
	5			-29.3	-30.8	3	SC	63.8	28.4												
PAW-7	1			-5.2	-6.7	wor	CH	200.0		190	133										
	UD-1			-9.8	-11.8		CH	144.6	94.6	153	114			82.3	33.7						
	UD-2			-18.0	-20.0		MH	183.0		206	86		2.70	77.8	27.5				1.37	0.22	5.13
	5			-24.0	-25.5	1/18"	SC	48.0	13.5												
PAW-8	2			-16.5	-18.0	9	SM	29.9	1.0												
	UD-2			-26.8	-28.8		CL	60.4	94.7	136	97	6.3	2.61	103.3	64.4				1.75	0.41	3.25
PAW-9	2			-12.6	-14.1	woh	SM	60.1	16.7												
	6			-31.3	-32.8	2/18"	SC	46.2	40.4												
PAW-10	1			-5.4	-6.9	wor	MH	194.6		158	92										
PAW-11	4			-22.6	-24.1	wor	SC	57.2	18.3												
	UD-1			-30.1	-32.1		CH	133.0		198	146		2.66	85.5	36.7				1.09	0.24	3.51
	7			-37.9	-39.4	1/18"	SC	53.3	30.1												
PAW-12	2			-11.6	-13.1	wor	SM	40.1	5.8												



SOIL DATA SUMMARY

CHARLESTON NAVAL BASE CONTAINER TERMINAL

NORTH CHARLESTON, SOUTH CAROLINA

S&ME, INC. PROJECT NO. 1131-03-264

BORING NUMBER	SAMPLE NUMBER	SAMPLE DEPTH		SAMPLE ELEVATION		STANDARD PENETRATION RESISTANCE	CLASSIFICATION	NATURAL MOISTURE CONTENT	PERCENT PASSING NO. 200 SIEVE	ATTERBERG LIMITS		ORGANIC CONTENT	SPECIFIC GRAVITY	UNIT WEIGHT		CU TRIAXIAL DATA			COMPRESSION INDEX	COMPRESSION RATIO	INITIAL VOID RATIO
		(ft)		(CLW, ft)		N	USCS ¹	w (%)	f (%)	LL	PI	(%)	G _s	wet (lb/ft ³)	dry (lb/ft ³)	c (lb/ft ²)	φ (deg)	φ' (deg)	C _c	C _c '	e _o
PAW-15	4			-26.3	-27.8	torpedo	SM	23.6	17.2												
	5			-31.6	-33.1	wor	CH	110.9		149	98										
	UD-2			-46.1	-48.1		CH	102.2	83.7	124	89			94.2	46.6						
PAW-16	5			-27.6	-29.1	15	SC	36.1	13.1												
PAW-17	6			-27.9	-29.4	woh	SC	41.9	14.6												
PAW-18	3			-17.9	-19.4	2	SC	34.1	11.8												
	6			-33.5	-35.0	woh	SC	34.3	23.6												
	7			-38.3	-39.8	5	SM														
PAW-19	UD-2			-22.5	-24.5		CH	109.2		86	58			89.4	42.8	90	10.9	29.0			
	4			-24.5	-26.0	wor	CH	117.5		132	91										
	UD-3			-27.8	-29.8		SM	34.4	30.3	24	3			121.9	90.7						
	5			-29.8	-31.3	26	SM	26.7	5.4												
PAW-20	UD-1			-21.2	-23.2		CH	120.8	77.3	115	80	5.7	2.58	95.6	43.3				0.80	0.22	2.57
	5			-29.5	-31.0	6	SM	44.1	20.8												
PAW-21	3			-18.9	-20.4	2	SC	31.1	7.3												
	7			-40.2	-41.7	wor	SC	34.0	24.1												
PAW-22	3			-19.5	-21.0	wor	CH	107.2		91	53										
	6			-33.5	-35.0	3	SC	46.0	10.9												
PAW-23	4			-26.5	-28.0	wor	SM		21.1												
PAW-24	2			-15.4	-16.9	6	SP		4.3												
	4			-21.9	-23.4	1	SC		27.5												



SOIL DATA SUMMARY

CHARLESTON NAVAL BASE CONTAINER TERMINAL

NORTH CHARLESTON, SOUTH CAROLINA

S&ME, INC. PROJECT NO. 1131-03-264

BORING NUMBER	SAMPLE NUMBER	SAMPLE DEPTH	SAMPLE ELEVATION	STANDARD PENETRATION RESISTANCE	CLASSIFICATION	NATURAL MOISTURE CONTENT	PERCENT PASSING NO. 200 SIEVE	ATTERBERG LIMITS		ORGANIC CONTENT	SPECIFIC GRAVITY	UNIT WEIGHT		CU TRIAXIAL DATA			COMPRESSION INDEX	COMPRESSION RATIO	INITIAL VOID RATIO
		(ft)	(CLW, ft)	N	USCS ¹	w (%)	f (%)	LL	PI	(%)	G _s	wet (lb/ft ³)	dry (lb/ft ³)	c (lb/ft ²)	φ (deg)	φ' (deg)	C _c	C _c	e _s
PAW-25	UD-1		-10.8	-12.8	CH	201.7	86.4	128	84	8.3	2.68	87.0	28.8				1.27	0.24	4.24
	UD-3		-21.1	-23.1	CH	95.1		104	73		2.58	96.6	49.5				0.69	0.21	2.34
	5		-27.8	-29.3	19 SM		10.9												
PAW-26	2		-14.1	-15.6	wor CH	179.7	78.1	113	77										
	UD-1		-19.0	-21.0	CH	149.3	92.2	128	87		2.57	82.1	32.9				1.06	0.24	3.50
PAW-27	UD-1		-24.8	-26.8	CH	84.5		148	100		2.56	96.6	52.4				0.84	0.27	2.16
	6		-34.0	-35.5	10 SM		13.1												
PAW-30	UD-1		-21.7	-23.7	CL	157.5		45	25			83.6		220	1.6	30.5			
	5		-28.6	-30.1	wor CL		79.7												
PAW-31	5		-26.4	-27.9	wor SC		26.6												
	7		-36.6	-38.1	torpedo SM		18.9												
PAW-32	3		-18.7	-20.2	wor CH	159.3	93.0	144	102										
PAW-33	5		-29.6	-31.1	wor CH		53.5	74	51										
	6		-34.8	-36.3	wor CH	98.7	90.8	100	67										
PAW-S1	1		-4.6	-6.1	wor SM		34.1												
	5		-25.1	-26.6	woh SC		21.8												
PAW-S2	3		-18.1	-19.6	wor SC		43.8												
	5		-27.4	-28.9	2/18" SM		41.8												
PAW-S3	2		-13.4	-14.9	5 SC		17.1												
	5		-28.1	-29.6	6 CL		57.4												



SOIL DATA SUMMARY

CHARLESTON NAVAL BASE CONTAINER TERMINAL

NORTH CHARLESTON, SOUTH CAROLINA

S&ME, INC. PROJECT NO. 1131-03-264

BORING NUMBER	SAMPLE NUMBER	SAMPLE DEPTH		SAMPLE ELEVATION		STANDARD PENETRATION RESISTANCE	CLASSIFICATION	NATURAL MOISTURE CONTENT	PERCENT PASSING NO. 200 SIEVE	ATTERBERG LIMITS		ORGANIC CONTENT	SPECIFIC GRAVITY	UNIT WEIGHT		CU TRIAXIAL DATA			COMPRESSION INDEX	COMPRESSION RATIO	INITIAL VOID RATIO
		(ft)		(CLW, ft)		N	USCS ¹	w (%)	f (%)	LL	PI	(%)	Gs	wet (lb/ft ³)	dry (lb/ft ³)	c (lb/ft ²)	ϕ (deg)	ϕ' (deg)	C _c	C _{c'}	e _s
PAW-S5	2			-13.1	-14.6	woh	SC		28.6												
	3			-18.1	-19.6	wor	CH	86.0	75.7	78	50										
	UD-1			-26.5	-28.5		CH	96.9	85.6	142	100	10.0	2.61	97.4	49.5				1.20	0.29	3.11
	6			-32.7	-34.2	3	SC		24.6												

Materials Testing Report	Soil Consultants, Inc. P.O. Drawer 698, Charleston, S.C.	Tabulated Dry Sieve Data Sheet
Client:	S&ME, Inc.	Date: 8/13/03
Project and State:	Charleston Naval Base Container Terminal, North Charleston, South Carolina	SCI No. 03-03100
Sample Location:	PAL-57, S-4 @ 7.5'	

DRY SIEVE ANALYSIS (ASTM D 422 w/o Hydrometer)
% Passing

<i>Sieve Size</i>	<i>Particle Size</i>	<i>% Passing</i>
2-in.	50-mm	100.0%
1 1/2-in.	37.5-mm	100.0%
1-in.	25-mm	100.0%
3/4-in.	19-mm	100.0%
1/2-in.	12.5-mm	100.0%
3/8-in.	9.5-mm	100.0%
No. 4	4.75-mm	100.0%
No. 10	2-mm	99.4%
No. 20	0.85-mm	96.0%
No. 40	0.42-mm	89.2%
No. 60	0.25-mm	80.1%
No. 80	0.18-mm	55.9%
No. 140	0.106-mm	29.3%
No. 200	0.075-mm	25.4%
Wash No. 200, % Passing:		23.2

As requested, a Wash 200 (ASTM D1140) was conducted prior to the Dry Sieve Analysis.

Respectfully Submitted:


SOIL CONSULTANTS, INC

88

89

90

Materials Testing Report	Soil Consultants, Inc. P.O. Drawer 698, Charleston, S.C.	Tabulated Dry Sieve Data Sheet
Client:	S&ME, Inc.	Date: 8/13/03
Project and State:	Charleston Naval Base Container Terminal, North Charleston, South Carolina	SCI No. 03-03100
Sample Location:	PAL-57, S-7 @ 20'	

DRY SIEVE ANALYSIS (ASTM D 422 w/o Hydrometer)
% Passing

<i>Sieve Size</i>	<i>Particle Size</i>	<i>% Passing</i>
2-in.	50-mm	100.0%
1 1/2-in.	37.5-mm	100.0%
1-in.	25-mm	100.0%
3/4-in.	19-mm	100.0%
1/2-in.	12.5-mm	100.0%
3/8-in.	9.5-mm	100.0%
No. 4	4.75-mm	99.6%
No. 10	2-mm	98.9%
No. 20	0.85-mm	96.9%
No. 40	0.42-mm	87.9%
No. 60	0.25-mm	59.4%
No. 80	0.18-mm	43.4%
No. 140	0.106-mm	37.9%
No. 200	0.075-mm	36.9%
Wash No. 200, % Passing:		36.6

As requested, a Wash 200 (ASTM D1140) was conducted prior to the Dry Sieve Analysis.

Respectfully Submitted:


SOIL CONSULTANTS, INC

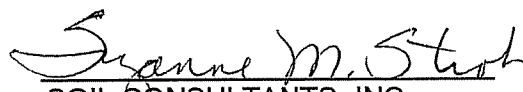
Materials Testing Report	Soil Consultants, Inc. P.O. Drawer 698, Charleston, S.C.	Tabulated Dry Sieve Data Sheet
Client: S&ME, Inc.	Date: 8/13/03	
Project and State: Charleston Naval Base Container Terminal, North Charleston, South Carolina	SCI No. 03-03100	
Sample Location: PAL-60, S-11 @ 40'		

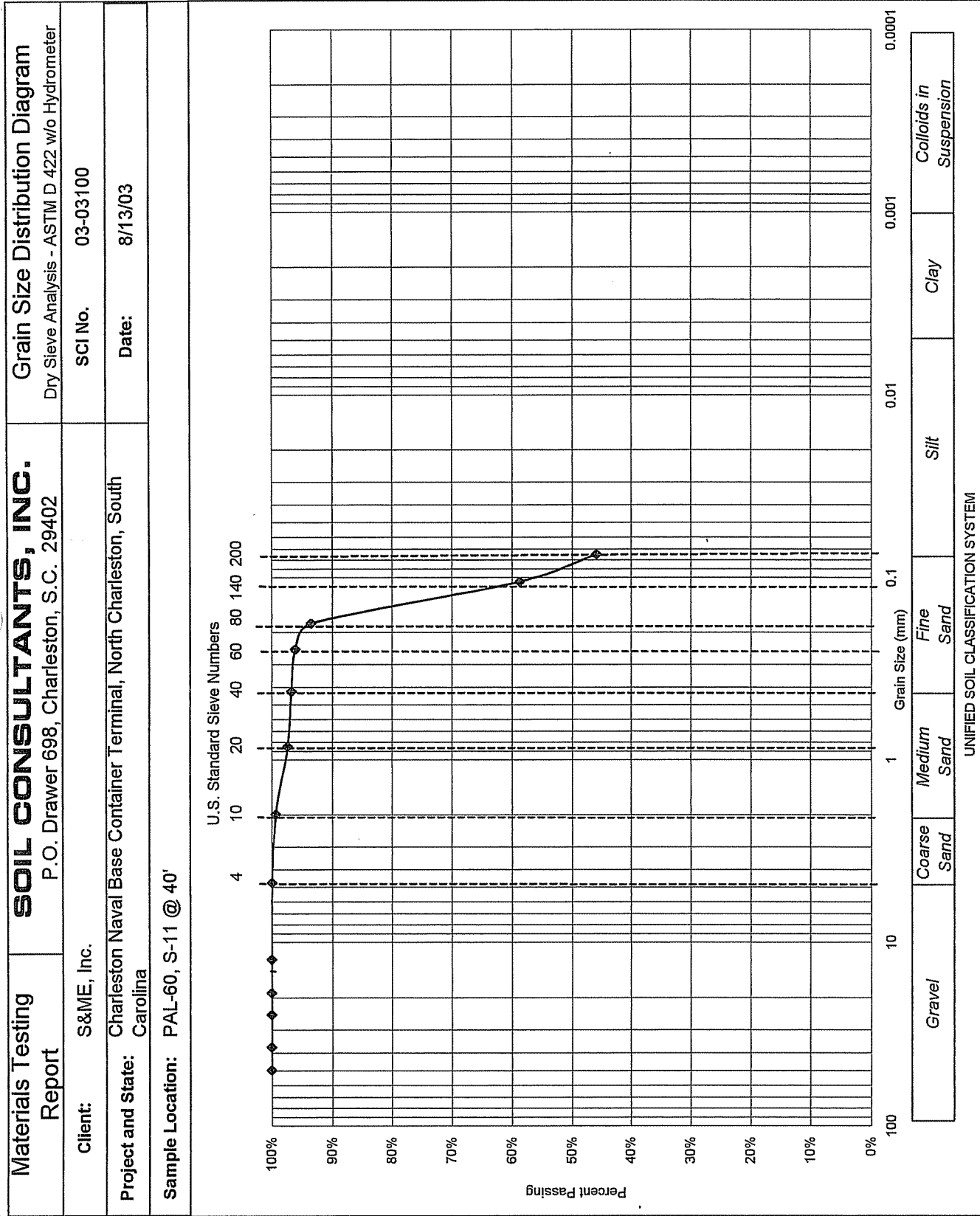
DRY SIEVE ANALYSIS (ASTM D 422 w/o Hydrometer)
% Passing

<i>Sieve Size</i>	<i>Particle Size</i>	<i>% Passing</i>
2-in.	50-mm	100.0%
1 1/2-in.	37.5-mm	100.0%
1-in.	25-mm	100.0%
3/4-in.	19-mm	100.0%
1/2-in.	12.5-mm	100.0%
3/8-in.	9.5-mm	100.0%
No. 4	4.75-mm	99.9%
No. 10	2-mm	99.3%
No. 20	0.85-mm	97.3%
No. 40	0.42-mm	96.7%
No. 60	0.25-mm	96.0%
No. 80	0.18-mm	93.4%
No. 140	0.106-mm	58.6%
No. 200	0.075-mm	45.8%
Wash No. 200, % Passing:		42.4

As requested, a Wash 200 (ASTM D1140) was conducted prior to the Dry Sieve Analysis.

Respectfully Submitted:


 SOIL CONSULTANTS, INC



As requested, a Wash 200 (ASTM D1140) was conducted prior to the Dry Sieve Analysis.

Respectfully Submitted:

Suzanne M. Stark

Materials Testing Report	Soil Consultants, Inc. P.O. Drawer 698, Charleston, S.C.	Tabulated Dry Sieve Data Sheet
Client:	S&ME, Inc.	Date: 8/13/03
Project and State:	Charleston Naval Base Container Terminal, North Charleston, South Carolina	SCI No. 03-03100
Sample Location:	PAL-62, S-12 @ 45'	

DRY SIEVE ANALYSIS (ASTM D 422 w/o Hydrometer)
% Passing

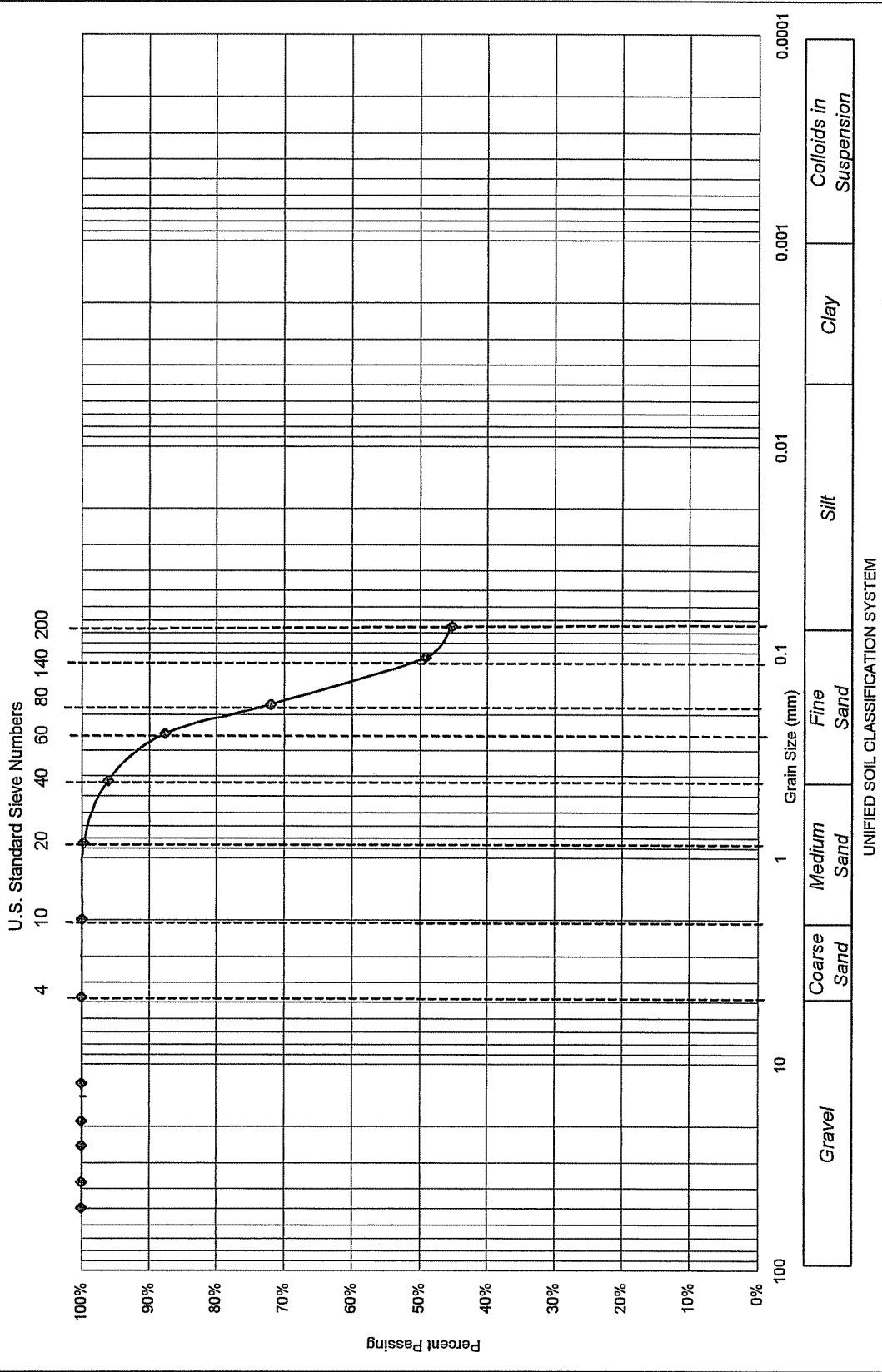
<i>Sieve Size</i>	<i>Particle Size</i>	<i>% Passing</i>
2-in.	50-mm	100.0%
1 1/2-in.	37.5-mm	100.0%
1-in.	25-mm	100.0%
3/4-in.	19-mm	100.0%
1/2-in.	12.5-mm	100.0%
3/8-in.	9.5-mm	100.0%
No. 4	4.75-mm	100.0%
No. 10	2-mm	100.0%
No. 20	0.85-mm	99.7%
No. 40	0.42-mm	96.0%
No. 60	0.25-mm	87.6%
No. 80	0.18-mm	71.9%
No. 140	0.106-mm	49.1%
No. 200	0.075-mm	45.2%
Wash No. 200, % Passing:		44.4

As requested, a Wash 200 (ASTM D1140) was conducted prior to the Dry Sieve Analysis.

Respectfully Submitted:


 SOIL CONSULTANTS, INC

Materials Testing Report	SOIL CONSULTANTS, INC. P.O. Drawer 698, Charleston, S.C. 29402	Grain Size Distribution Diagram Dry Sieve Analysis - ASTM D 422 w/o Hydrometer
Client: S&ME, Inc.	SCI No. 03-03100	
Project and State: Charleston Naval Base Container Terminal, North Charleston, South Carolina	Date: 8/13/03	
Sample Location: PAL-62, S-12 @ 45'		



As requested, a Wash 200 (ASTM D1140) was conducted prior to the Dry Sieve Analysis.

Respectfully Submitted:

Suzanne M. Stark

Particle Size Analysis of Soils



ASTM D 422

Project #: 1131-03-264
 Project Name: Charleston Naval Base Container Terminal
 Client Name: SCSPA

Test Date(s): 7/29/03
 Report Date: August 13, 2003

Boring #: PAL-64 Sample #: S-1 Sample Date: 07/16/03
 Location: N. Charleston, SC Depth: 0 ft
 Sample Description: Mottled Brown and Gray Very Clayey Sand (SC)
 % Moisture Content: Cu = D₆₀/D₁₀: 1.0 Cc = (D₃₀)² / (D₁₀ × D₆₀): 1.0
 Liquid Limit: not tested Plastic Limit: not tested Plastic Index: not tested Specific Gravity: not tested

Particle Size Analysis / Without Hydrometer Analysis			Moisture Content		Natural
				Tare #	xx
	Tare Number	x	A	Tare Weight	1.73
A	Tare Weight	9.1	B	Wet Weight + Tare Wt.	29.77
B	Total Sample Dry Wt. + Tare Wt.	115.5	C	Dry Weight + Tare Wt.	20.03
C	Total Sample Dry Weight (B-A)	106.4	D	Water Wt. (B-C)	9.74
D	Total Sample Wt. After #200 Wash	59.7	E	Dry Wt. (C-A)	18.30
E	Percent Passing #200 (1-D/C) × 100	43.9%	Moisture Content (100 × D/E) (%)		53.2%
Sieve Size (mm)	Sieve Size	Retained Weight	Percent Retained		Percent Passing Total Sample
37.50	1.5"	0.0	0.0%		100.0%
25.00	1.0"	0.00	0.0%		100.0%
19.00	3/4"	0.00	0.0%		100.0%
12.50	1/2"	0.00	0.0%		100.0%
9.50	3/8"	3.55	3.3%		96.7%
4.75	#4	4.13	3.9%		96.1%
2.00	#10	5.08	4.8%		95.2%
0.85	#20	6.80	6.4%		93.6%
0.43	#40	11.24	10.6%		89.4%
0.25	#60	18.70	17.6%		82.4%
0.15	#100	37.01	34.8%		65.2%
0.075	#200	59.67	56.1%		43.9%
Notes:	Maximum Particle Size:	0.375 in.	Gravel	< 75 mm and > 4.75 mm (#4)	3.9%
	D10	0.1	Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	0.9%
	D30	0.1	Medium Sand	< 2.00 mm and > 0.425 mm (#40)	5.8%
	D/60	0.1	Fine Sand	< 0.425 mm and > 0.075 mm (#200)	45.5%
			% Silt and Clay	< 0.075 mm	43.9%
			Description of Sand & Gravel		
			Rounded <input type="checkbox"/> Angular <input type="checkbox"/>		
			Hard & Durable <input type="checkbox"/> Soft <input type="checkbox"/> Weathered & Friable <input type="checkbox"/>		

ASTM D 422: Particle Size Analysis of Soils

Hydrometer portion of test method not utilized.

ASTM D 421: Dry Preparation of Soil Samples

ASTM D 2216: Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass

ASTM D 4318: Liquid Limit, Plastic Limit, & Plastic Index of Soils

ASTM D 2487: Classification of Soils for Engineering Purposes (Unified Soil Classification System)

ASTM D 854: Specific Gravity of Soils

Technician / Certification #:

Technical Responsibility:

Position:

Laboratory Manager



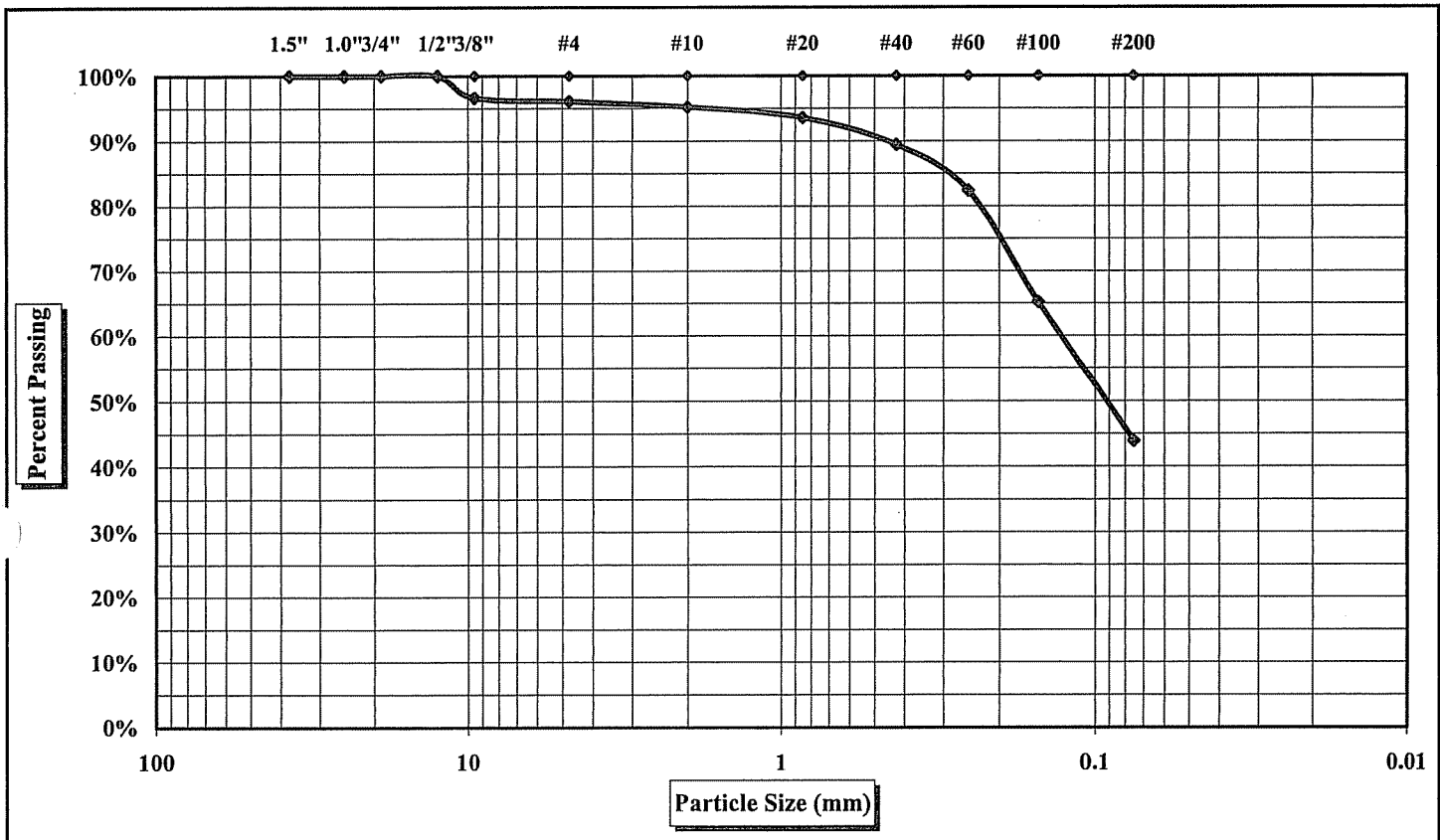
Particle Size Analysis of Soils

ASTM D 422

S&ME Project #: 1131-03-264
 Project Name: Charleston Naval Base Container Terminal
 Client Name: SCSPA

Report Date: August 13, 2003
 Test Date(s): 37831

Boring #: PAL-64 Sample #: S-1 Sample Date: July 16, 2003
 Location: N. Charleston, SC Depth: 0 ft
 Sample Description: Mottled Brown and Gray Very Clayey Sand (SC)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Moisture Content	53.2%	Gravel	4%	Liquid Limit	not tested
Silt & Clay (% Passing #200)	43.9%	Coarse Sand	1%	Plastic Limit	not tested
Maximum Particle Size	0.375 in.	Medium Sand	6%	Plastic Index	not tested
Specific Gravity	not tested	Fine Sand	46%		

Description of Sand & Gravel Particles:

Rounded ☐ Angular ☐ Hard & Durable ☐ Soft ☐ Weathered & Friable ☐

References:

ASTM D 422: Particle Size Analysis of Soils
 ASTM D 421: Dry Preparation of Soil Samples
 ASTM D 2216: Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
 ASTM D 4318: Liquid Limit, Plastic Limit, & Plastic Index of Soils
 ASTM D 2487: Classification of Soils for Engineering Purposes (Unified Soil Classification System)
 ASTM D 854: Specific Gravity of Soils

Technical Responsibility: _____

Laboratory Manager

Particle Size Analysis of Soils



ASTM D 422

Project #: 1131-03-264 Test Date(s): 7/31/03
 Project Name: Charleston Naval Base Container Terminal Report Date: August 13, 2003
 Client Name: SCSPA

Boring #: PAL-64 Sample #: S-3 Sample Date: 07/16/03
 Location: N. Charleston, SC Depth: 5 ft

Sample Description: Brown and Gray Very Silty Sand (SM)

% Moisture Content: Cu = D₆₀/D₁₀: Cc = (D₃₀)² / (D₁₀ × D₆₀):
 Liquid Limit: not tested Plastic Limit: not tested Plastic Index: not tested Specific Gravity: not tested

Particle Size Analysis / Without Hydrometer Analysis			Moisture Content		Natural
				Tare #	xx
	Tare Number	x	A	Tare Weight	1.82
A	Tare Weight	9.2	B	Wet Weight + Tare Wt.	49.19
B	Total Sample Dry Wt. + Tare Wt.	232.4	C	Dry Weight + Tare Wt.	42.30
C	Total Sample Dry Weight (B-A)	223.2	D	Water Wt. (B-C)	6.89
D	Total Sample Wt. After #200 Wash	131.5	E	Dry Wt.(C-A)	40.48
E	Percent Passing #200 (1-D/C)x100	41.1%	Moisture Content (100 x D/E) (%)		17.0%

Sieve Size (mm)	Sieve Size	Retained Weight	Percent Retained	Percent Passing Total Sample
37.50	1.5"	0.0	0.0%	100.0%
25.00	1.0"	0.00	0.0%	100.0%
19.00	3/4"	0.00	0.0%	100.0%
12.50	1/2"	0.00	0.0%	100.0%
9.50	3/8"	0.00	0.0%	100.0%
4.75	#4	0.16	0.1%	99.9%
2.00	#10	4.12	1.8%	98.2%
0.85	#20	25.51	11.4%	88.6%
0.43	#40	81.78	36.6%	63.4%
0.25	#60	111.76	50.1%	49.9%
0.15	#100	125.78	56.4%	43.6%
0.075	#200	131.46	58.9%	41.1%

Notes:	Maximum Particle Size:	0.187 in.	Gravel	< 75 mm and > 4.75 mm (#4)	0.1%
	D10		Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	1.8%
	D30		Medium Sand	< 2.00 mm and > 0.425 mm (#40)	34.8%
	D/60		Fine Sand	< 0.425 mm and > 0.075 mm (#200)	22.3%
			% Silt and Clay	< 0.075 mm	41.1%
			Description of Sand & Gravel	Rounded <input type="checkbox"/> Angular <input type="checkbox"/>	
			Hard & Durable <input type="checkbox"/> Soft <input type="checkbox"/> Weathered & Friable <input type="checkbox"/>		

ASTM D 422: Particle Size Analysis of Soils

Hydrometer portion of test method not utilized.

ASTM D 421: Dry Preparation of Soil Samples

ASTM D 2216: Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass

ASTM D 4318: Liquid Limit, Plastic Limit, & Plastic Index of Soils

ASTM D 2487: Classification of Soils for Engineering Purposes (Unified Soil Classification System)

ASTM D 854: Specific Gravity of Soils

Technician / Certification #:

Technical Responsibility:

Position:

Laboratory Manager

Particle Size Analysis of Soils

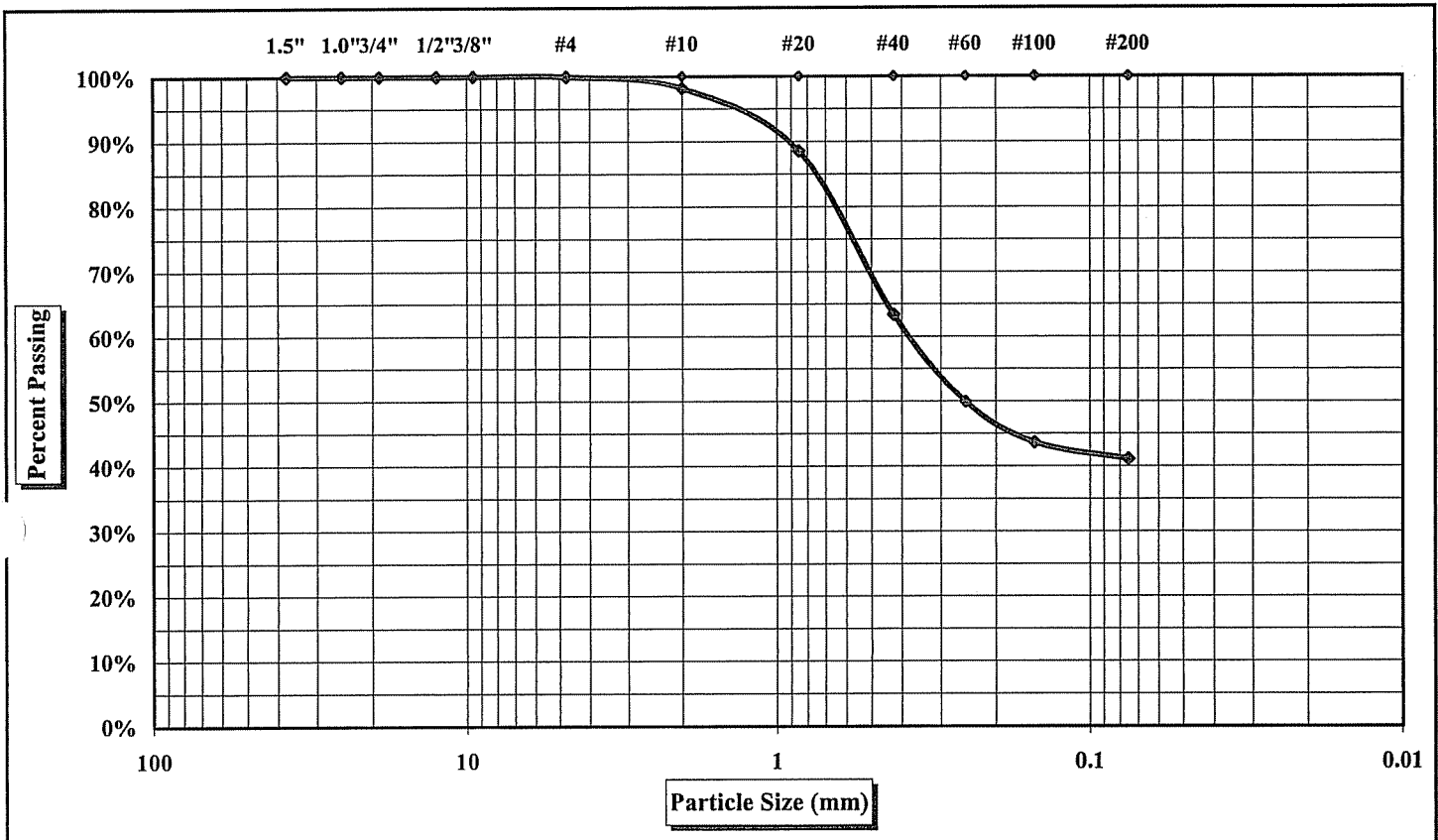
ASTM D 422



S&ME Project #: 1131-03-264
 Project Name: Charleston Naval Base Container Terminal
 Client Name: SCSPA

Report Date: August 13, 2003
 Test Date(s): 37833

Boring #: PAL-64 Sample #: S-3 Sample Date: July 16, 2003
 Location: N. Charleston, SC Depth: 5 ft
 Sample Description: Brown and Gray Very Silty Sand (SM)



Particle Size Analysis of Soils



ASTM D 422

Project #: 1131-03-264

Test Date(s): 7/31/03

Project Name: Charleston Naval Base Container Terminal

Report Date: August 13, 2003

Client Name: SCSPA

Boring #: PAL-64

Sample #: S-11

Sample Date: 07/16/03

Location: N. Charleston, SC

Depth: 40 ft

Sample Description: Gray Clayey Sand (SC)

% Moisture Content:

Cu = D₆₀/D₁₀:Cc = (D₃₀)² / (D₁₀ × D₆₀):

Liquid Limit: NP

Plastic Limit: NP

Plastic Index:

NP

Specific Gravity: not tested

Particle Size Analysis / Without Hydrometer Analysis				Moisture Content	Natural
				Tare #	xx
	Tare Number	x	A	Tare Weight	1.77
A	Tare Weight	9.2	B	Wet Weight + Tare Wt.	44.98
B	Total Sample Dry Wt. + Tare Wt.	143.1	C	Dry Weight + Tare Wt.	29.63
C	Total Sample Dry Weight (B-A)	133.9	D	Water Wt. (B-C)	15.35
D	Total Sample Wt. After #200 Wash	105.5	E	Dry Wt.(C-A)	27.86
E	Percent Passing #200 (1-D/C)x100	21.2%	Moisture Content (100 x D/E) (%)		55.1%
Sieve Size (mm)	Sieve Size	Retained Weight	Percent Retained	Percent Passing Total Sample	
37.50	1.5"	0.0	0.0%	100.0%	
25.00	1.0"	0.00	0.0%	100.0%	
19.00	3/4"	0.00	0.0%	100.0%	
12.50	1/2"	0.00	0.0%	100.0%	
9.50	3/8"	0.00	0.0%	100.0%	
4.75	#4	1.57	1.2%	98.8%	
2.00	#10	2.99	2.2%	97.8%	
0.85	#20	4.13	3.1%	96.9%	
0.43	#40	10.00	7.5%	92.5%	
0.25	#60	20.16	15.1%	84.9%	
0.15	#100	31.05	23.2%	76.8%	
0.075	#200	105.52	78.8%	21.2%	
Notes:	Maximum Particle Size:	0.187 in.	Gravel	< 75 mm and > 4.75 mm (#4)	1.2%
	D10		Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	1.1%
	D30		Medium Sand	< 2.00 mm and > 0.425 mm (#40)	5.2%
	D/60		Fine Sand	< 0.425 mm and > 0.075 mm (#200)	71.3%
			% Silt and Clay	< 0.075 mm	21.2%
			Description of Sand & Gravel		
			Rounded <input type="checkbox"/> Angular <input type="checkbox"/>		
			Hard & Durable <input type="checkbox"/> Soft <input type="checkbox"/> Weathered & Friable <input type="checkbox"/>		

Hydrometer portion of test method not utilized.

ASTM D 422: Particle Size Analysis of Soils

ASTM D 421: Dry Preparation of Soil Samples

ASTM D 2216: Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass

ASTM D 4318: Liquid Limit, Plastic Limit, & Plastic Index of Soils

ASTM D 2487: Classification of Soils for Engineering Purposes (Unified Soil Classification System)

ASTM D 854: Specific Gravity of Soils

Technician / Certification #:

Technical Responsibility:

Position:

Laboratory Manager



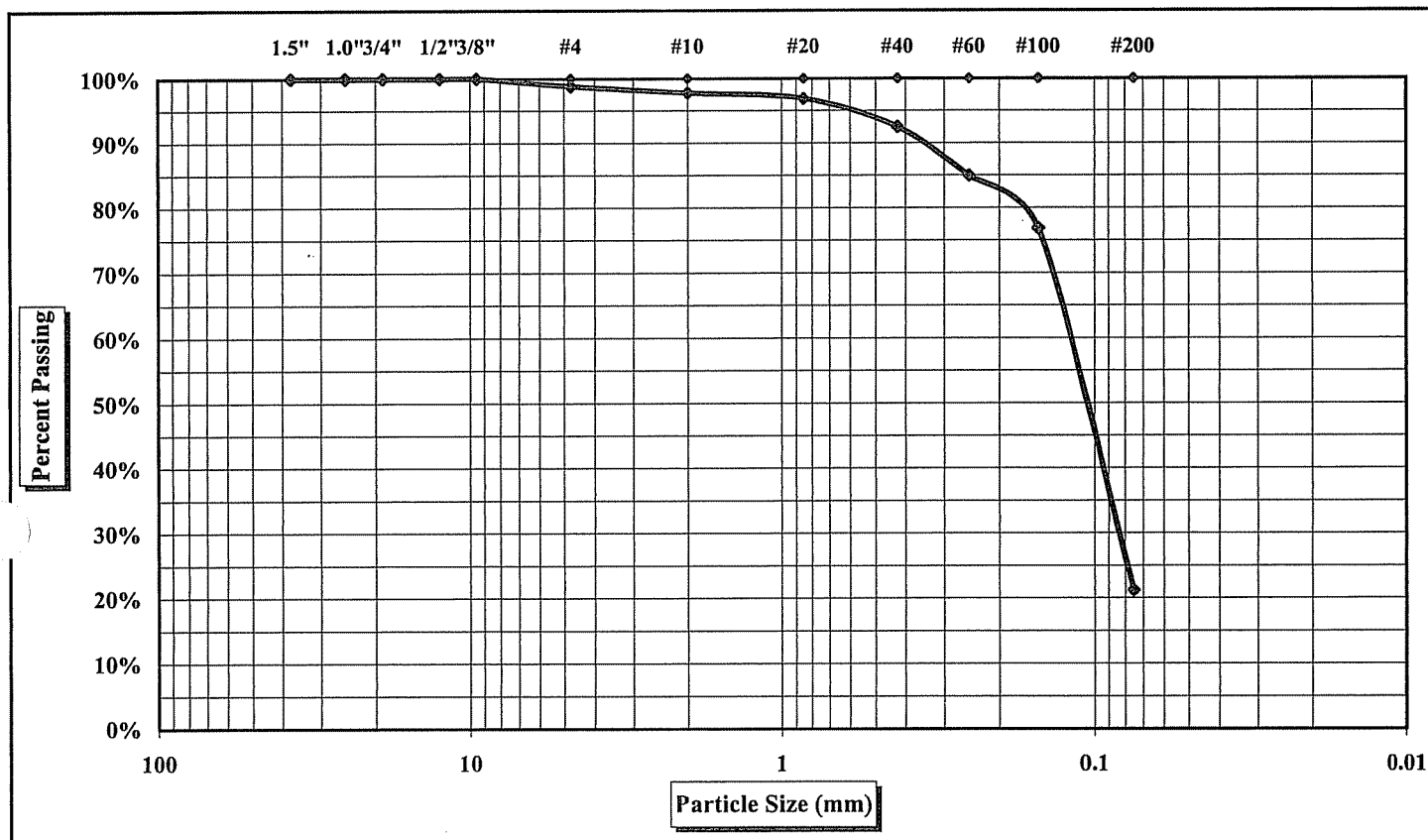
Particle Size Analysis of Soils

ASTM D 422

S&ME Project #: 1131-03-264
 Project Name: Charleston Naval Base Container Terminal
 Client Name: SCSPA

Report Date: August 13, 2003
 Test Date(s): 37833

Boring #: PAL-64 Sample #: S-11 Sample Date: July 16, 2003
 Location: N. Charleston, SC Depth: 40 ft
 Sample Description: Gray Clayey Sand (SC)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Moisture Content	55.1%	Gravel	1%	Liquid Limit	NP
Silt & Clay (% Passing #200)	21.2%	Coarse Sand	1%	Plastic Limit	NP
Maximum Particle Size	0.187 in.	Medium Sand	5%	Plastic Index	NP
Specific Gravity	not tested	Fine Sand	71%		

Description of Sand & Gravel Particles:

Rounded ☐ Angular ☐ Hard & Durable ☐ Soft ☐ Weathered & Friable ☐

References: ASTM D 422: Particle Size Analysis of Soils

ASTM D 421: Dry Preparation of Soil Samples

ASTM D 2216: Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass

ASTM D 4318: Liquid Limit, Plastic Limit, & Plastic Index of Soils

ASTM D 2487: Classification of Soils for Engineering Purposes (Unified Soil Classification System)

ASTM D 854: Specific Gravity of Soils

Technical Responsibility: _____

Laboratory Manager

Particle Size Analysis of Soils



ASTM D 422

Project #: 1131-03-264 Test Date(s): 7/31/03
 Project Name: Charleston Naval Base Container Terminal Report Date: August 13, 2003
 Client Name: SCSPA

Boring #: PAL-64 Sample #: S-12 Sample Date: 07/16/03
 Location: N. Charleston, SC Depth: 45 ft

Sample Description: Gray Clayey Sand (SC)

% Moisture Content: Cu = D₆₀/D₁₀: Cc = (D₃₀)² / (D₁₀x D₆₀):
 Liquid Limit: 52 Plastic Limit: 27 Plastic Index: 25 Specific Gravity: not tested

Particle Size Analysis / Without Hydrometer Analysis			Moisture Content		Natural
			Tare #		xx
	Tare Number	x	A	Tare Weight	1.78
A	Tare Weight	9.2	B	Wet Weight + Tare Wt.	52.06
B	Total Sample Dry Wt. + Tare Wt.	129.3	C	Dry Weight + Tare Wt.	34.20
C	Total Sample Dry Weight (B-A)	120.1	D	Water Wt. (B-C)	17.86
D	Total Sample Wt. After #200 Wash	83.1	E	Dry Wt.(C-A)	32.42
E	Percent Passing #200 (1-D/C)x100	30.8%	Moisture Content (100 x D/E) (%)		55.1%

Sieve Size (mm)	Sieve Size	Retained Weight	Percent Retained	Percent Passing Total Sample
37.50	1.5"	0.0	0.0%	100.0%
25.00	1.0"	0.00	0.0%	100.0%
19.00	3/4"	0.00	0.0%	100.0%
12.50	1/2"	0.00	0.0%	100.0%
9.50	3/8"	0.00	0.0%	100.0%
4.75	#4	0.04	0.0%	100.0%
2.00	#10	0.23	0.2%	99.8%
0.85	#20	0.47	0.4%	99.6%
0.43	#40	1.22	1.0%	99.0%
0.25	#60	2.23	1.9%	98.1%
0.15	#100	58.43	48.6%	51.4%
0.075	#200	83.13	69.2%	30.8%

Notes:	Maximum Particle Size:	0.187 in.	Gravel	< 75 mm and > 4.75 mm (#4)	0.0%
	D10		Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	0.2%
	D30		Medium Sand	< 2.00 mm and > 0.425 mm (#40)	0.8%
	D/60		Fine Sand	< 0.425 mm and > 0.075 mm (#200)	68.2%
			% Silt and Clay	< 0.075 mm	30.8%
			Description of Sand & Gravel		
			Rounded <input type="checkbox"/> Angular <input type="checkbox"/>		
			Hard & Durable <input type="checkbox"/> Soft <input type="checkbox"/> Weathered & Friable <input type="checkbox"/>		

ASTM D 422: Particle Size Analysis of Soils

Hydrometer portion of test method not utilized.

ASTM D 421: Dry Preparation of Soil Samples

ASTM D 2216: Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass

ASTM D 4318: Liquid Limit, Plastic Limit, & Plastic Index of Soils

ASTM D 2487: Classification of Soils for Engineering Purposes (Unified Soil Classification System)

ASTM D 854: Specific Gravity of Soils

Technician / Certification #:

Technical Responsibility:

Position:

Laboratory Manager



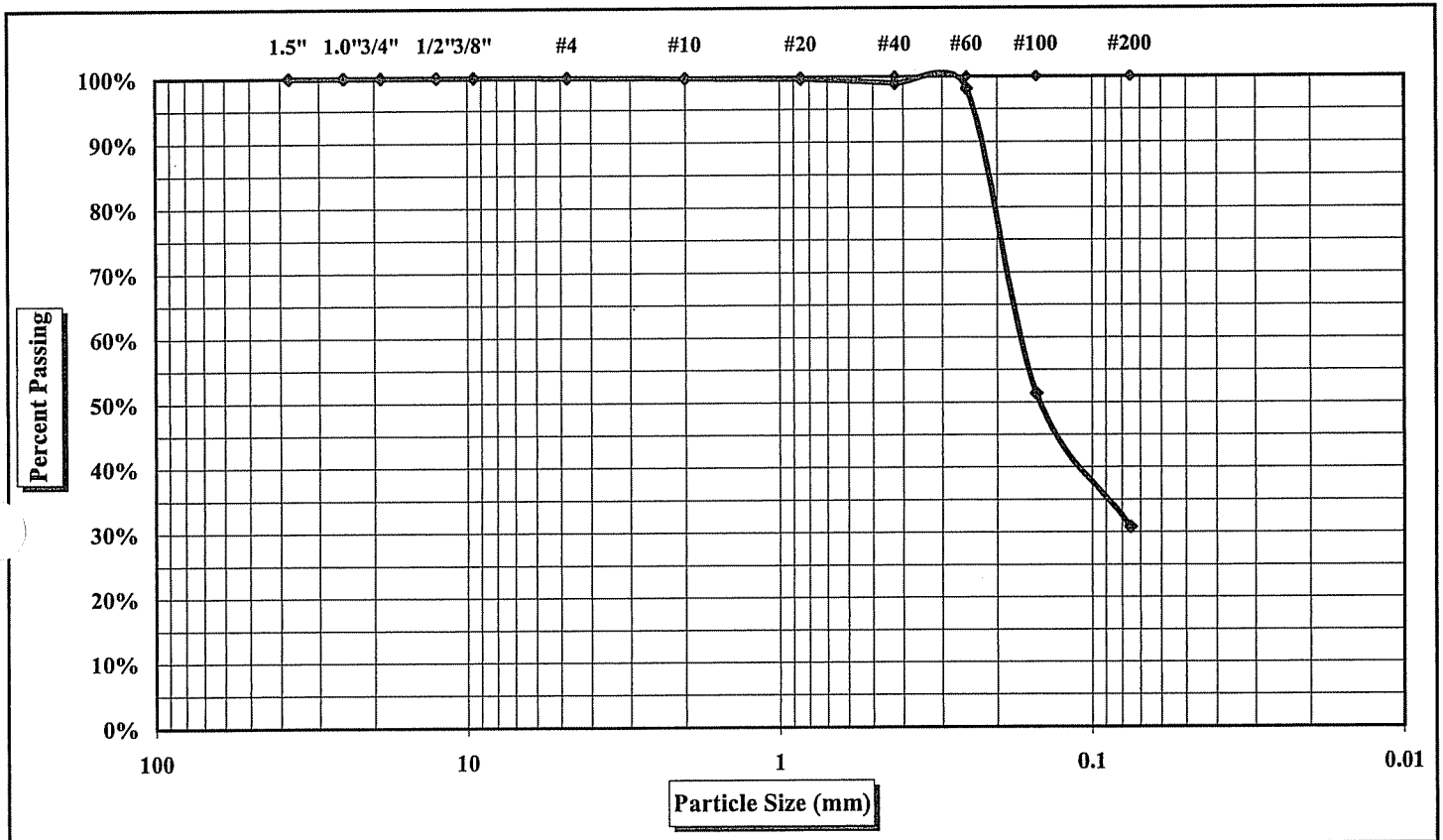
Particle Size Analysis of Soils

ASTM D 422

S&ME Project #: 1131-03-264
 Project Name: Charleston Naval Base Container Terminal
 Client Name: SCSPA

Report Date: August 13, 2003
 Test Date(s): 37833

Boring #: PAL-64 Sample #: S-12 Sample Date: July 16, 2003
 Location: N. Charleston, SC Depth: 45 ft
 Sample Description: Gray Clayey Sand (SC)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Moisture Content	55.1%	Gravel	0%	Liquid Limit	52
Silt & Clay (% Passing #200)	30.8%	Coarse Sand	0%	Plastic Limit	27
Maximum Particle Size	0.187 in.	Medium Sand	1%	Plastic Index	25
Specific Gravity	not tested	Fine Sand	68%		

Description of Sand & Gravel Particles:

Rounded ☐ Angular ☐ Hard & Durable ☐ Soft ☐ Weathered & Friable ☐

References: ASTM D 422: Particle Size Analysis of Soils

ASTM D 421: Dry Preparation of Soil Samples

ASTM D 2216: Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass

ASTM D 4318: Liquid Limit, Plastic Limit, & Plastic Index of Soils

ASTM D 2487: Classification of Soils for Engineering Purposes (Unified Soil Classification System)

ASTM D 854: Specific Gravity of Soils

Technical Responsibility: _____

Laboratory Manager

Particle Size Analysis of Soils



ASTM D 422

Project #: 1131-03-264

Test Date(s): 8/9/03

Project Name: Charleston Naval Base Container Terminal

Report Date: August 13, 2003

Client Name: SCSPA

Boring #: PAL-65

Sample #: S-2

Sample Date: 07/22/03

Location: N. Charleston, SC

Depth: 2.5 ft

Sample Description: Brown and Dark Brown Clayey Sand (SC)

% Moisture Content: $C_u = D_{60}/D_{10}$: $C_c = (D_{30})^2 / (D_{10} \times D_{60})$:

Liquid Limit: not teste Plastic Limit: not testec Plastic Index: not tested Specific Gravity: not tested

Particle Size Analysis / Without Hydrometer Analysis				Moisture Content	Natural
				Tare #	xx
	Tare Number	x	A	Tare Weight	1.75
A	Tare Weight	9.1	B	Wet Weight + Tare Wt.	42.61
B	Total Sample Dry Wt. + Tare Wt.	46.3	C	Dry Weight + Tare Wt.	31.68
C	Total Sample Dry Weight (B-A)	37.2	D	Water Wt. (B-C)	10.93
D	Total Sample Wt. After #200 Wash	31.1	E	Dry Wt.(C-A)	29.93
E	Percent Passing #200 (1-D/C)x100	16.5%	Moisture Content (100 x D/E) (%)		36.5%
Sieve Size (mm)	Sieve Size	Retained Weight	Percent Retained	Percent Passing Total Sample	
37.50	1.5"	0.0	0.0%	100.0%	
25.00	1.0"	0.00	0.0%	100.0%	
19.00	3/4"	0.00	0.0%	100.0%	
12.50	1/2"	0.00	0.0%	100.0%	
9.50	3/8"	0.00	0.0%	100.0%	
4.75	#4	0.27	0.7%	99.3%	
2.00	#10	0.58	1.6%	98.4%	
0.85	#20	0.91	2.4%	97.6%	
0.43	#40	1.70	4.6%	95.4%	
0.25	#60	3.50	9.4%	90.6%	
0.15	#100	16.49	44.3%	55.7%	
0.075	#200	31.05	83.5%	16.5%	
Notes:	Maximum Particle Size:	0.187 in.	Gravel	< 75 mm and > 4.75 mm (#4)	0.7%
	D10		Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	0.8%
	D30		Medium Sand	< 2.00 mm and > 0.425 mm (#40)	3.0%
	D/60		Fine Sand	< 0.425 mm and > 0.075 mm (#200)	78.9%
			% Silt and Clay	< 0.075 mm	16.5%
			Description of Sand & Gravel		
			Rounded <input type="checkbox"/> Angular <input type="checkbox"/>		
			Hard & Durable <input type="checkbox"/> Soft <input type="checkbox"/> Weathered & Friable <input type="checkbox"/>		

Hydrometer portion of test method not utilized.

ASTM D 422: Particle Size Analysis of Soils

ASTM D 421: Dry Preparation of Soil Samples

ASTM D 2216: Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass

ASTM D 4318: Liquid Limit, Plastic Limit, & Plastic Index of Soils

ASTM D 2487: Classification of Soils for Engineering Purposes (Unified Soil Classification System)

ASTM D 854: Specific Gravity of Soils

Technician / Certification #:

Technical Responsibility:

Position:

Laboratory Manager

Particle Size Analysis of Soils

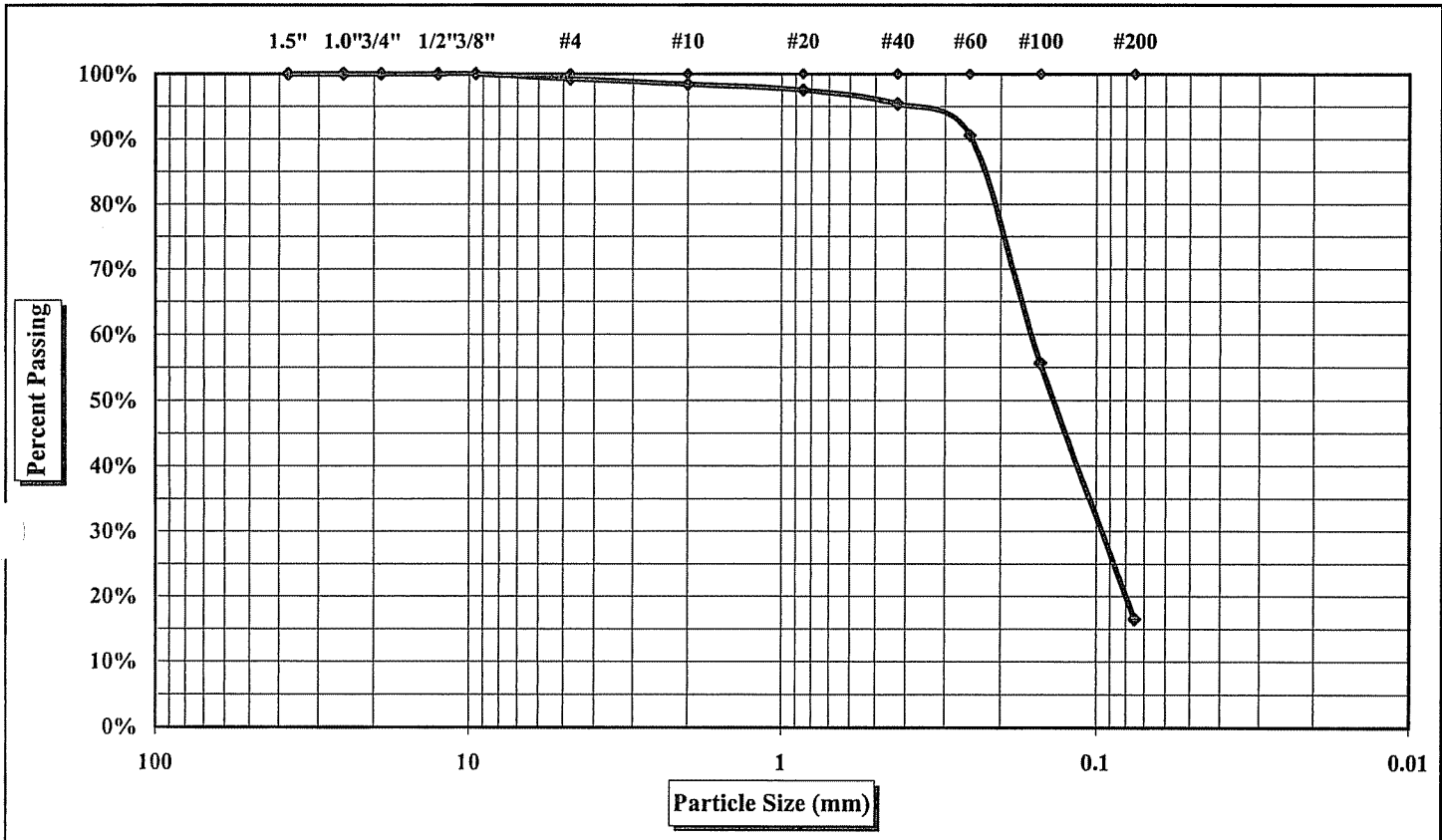
ASTM D 422



S&ME Project #: 1131-03-264
 Project Name: Charleston Naval Base Container Terminal
 Client Name: SCSPA

Report Date: August 13, 2003
 Test Date(s): 37842

Boring #: PAL-65 Sample #: S-2 Sample Date: July 22, 2003
 Location: N. Charleston, SC Depth: 2.5 ft
 Sample Description: Brown and Dark Brown Clayey Sand (SC)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Moisture Content	36.5%	Gravel	1%	Liquid Limit	not tested
Silt & Clay (% Passing #200)	16.5%	Coarse Sand	1%	Plastic Limit	not tested
Maximum Particle Size	0.187 in.	Medium Sand	3%	Plastic Index	not tested
Specific Gravity	not tested	Fine Sand	79%		

Description of Sand & Gravel Particles:

Rounded ☐ Angular ☐ Hard & Durable ☐ Soft ☐ Weathered & Friable ☐

References: ASTM D 422: Particle Size Analysis of Soils

ASTM D 421: Dry Preparation of Soil Samples

ASTM D 2216: Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass

ASTM D 4318: Liquid Limit, Plastic Limit, & Plastic Index of Soils

ASTM D 2487: Classification of Soils for Engineering Purposes (Unified Soil Classification System)

ASTM D 854: Specific Gravity of Soils

Technical Responsibility:

Laboratory Manager

Particle Size Analysis of Soils



ASTM D 422

Project #: 1131-03-264

Test Date(s): 8/9/03

Project Name: Charleston Naval Base Container Terminal

Report Date: August 13, 2003

Client Name: SCSPA

Boring #: PAL-65

Sample #: S-12

Sample Date: 07/22/03

Location: N. Charleston, SC

Depth: 45 ft

Sample Description: Gray Clayey Sand (SC)

% Moisture Content:

Cu = D₆₀/D₁₀:Cc = (D₃₀)² / (D₁₀ x D₆₀):

Liquid Limit: 43

Plastic Limit: 26

Plastic Index: 17

Specific Gravity: not tested

Particle Size Analysis / Without Hydrometer Analysis			Moisture Content		Natural
			Tare #		xx
	Tare Number	x	A	Tare Weight	1.73
A	Tare Weight	9.1	B	Wet Weight + Tare Wt.	29.00
B	Total Sample Dry Wt. + Tare Wt.	45.8	C	Dry Weight + Tare Wt.	19.17
C	Total Sample Dry Weight (B-A)	36.7	D	Water Wt. (B-C)	9.83
D	Total Sample Wt. After #200 Wash	26.3	E	Dry Wt.(C-A)	17.44
E	Percent Passing #200 (1-D/C)x100	28.3%	Moisture Content (100 x D/E) (%)		56.4%
Sieve Size (mm)	Sieve Size	Retained Weight	Percent Retained		Percent Passing Total Sample
37.50	1.5"	0.0	0.0%		100.0%
25.00	1.0"	0.00	0.0%		100.0%
19.00	3/4"	0.00	0.0%		100.0%
12.50	1/2"	0.00	0.0%		100.0%
9.50	3/8"	0.00	0.0%		100.0%
4.75	#4	0.05	0.1%		99.9%
2.00	#10	0.46	1.3%		98.7%
0.85	#20	1.35	3.7%		96.3%
0.43	#40	1.63	4.4%		95.6%
0.25	#60	1.87	5.1%		94.9%
0.15	#100	10.24	27.9%		72.1%
0.075	#200	26.30	71.7%		28.3%
Notes:	Maximum Particle Size:	0.187 in.	Gravel	< 75 mm and > 4.75 mm (#4)	0.1%
	D10		Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	1.1%
	D30		Medium Sand	< 2.00 mm and > 0.425 mm (#40)	3.2%
	D/60		Fine Sand	< 0.425 mm and > 0.075 mm (#200)	67.3%
			% Silt and Clay	< 0.075 mm	28.3%
			Description of Sand & Gravel		
			Rounded <input type="checkbox"/>		Angular <input type="checkbox"/>
			Hard & Durable <input type="checkbox"/>		Soft <input type="checkbox"/>
			Weathered & Friable <input type="checkbox"/>		

Hydrometer portion of test method not utilized.

ASTM D 422: Particle Size Analysis of Soils

ASTM D 421: Dry Preparation of Soil Samples

ASTM D 2216: Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass

ASTM D 4318: Liquid Limit, Plastic Limit, & Plastic Index of Soils

ASTM D 2487: Classification of Soils for Engineering Purposes (Unified Soil Classification System)

ASTM D 854: Specific Gravity of Soils

Technician / Certification #:

Technical Responsibility:

Position:

Laboratory Manager

Particle Size Analysis of Soils

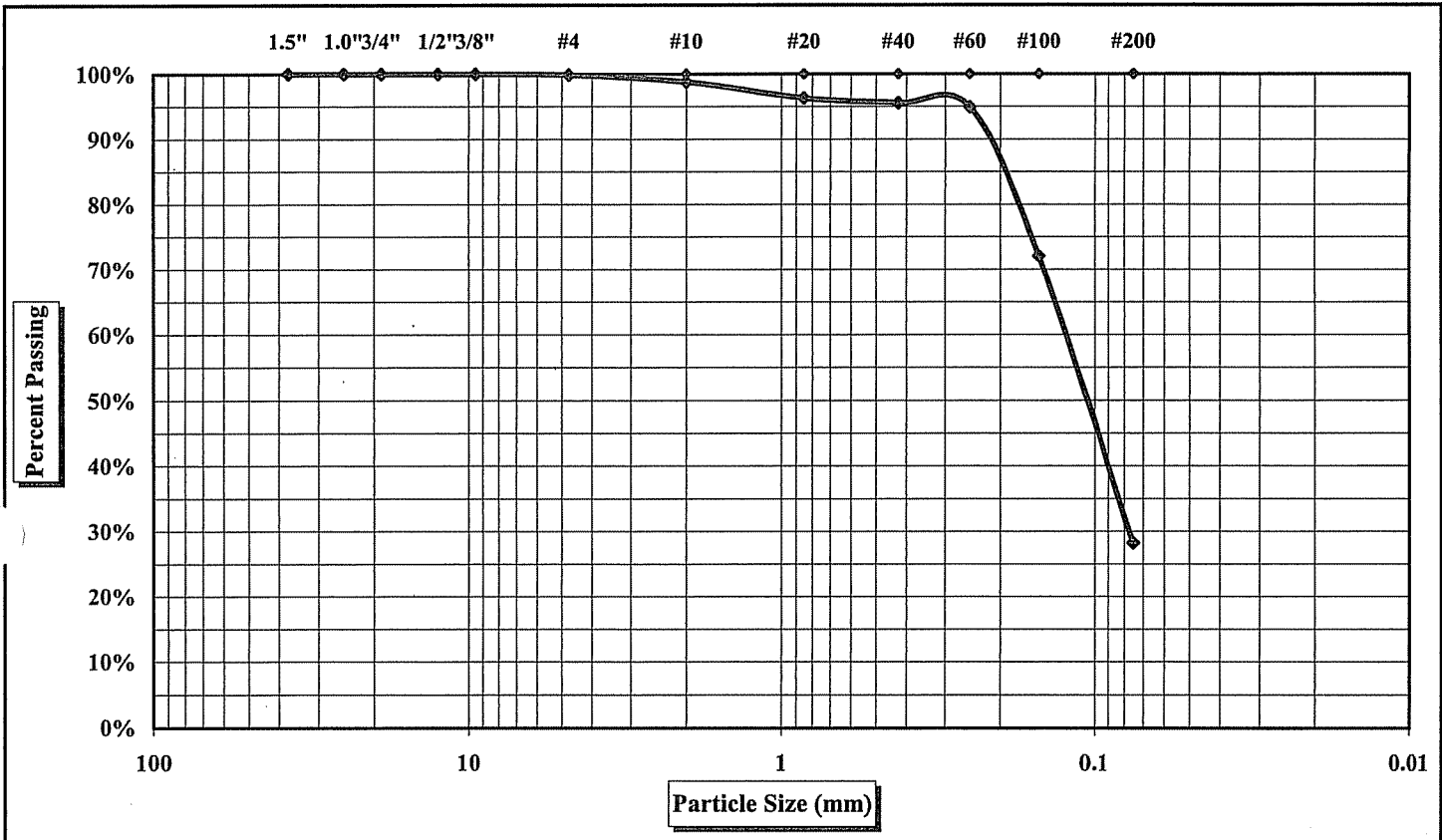
ASTM D 422



S&ME Project #: 1131-03-264
 Project Name: Charleston Naval Base Container Terminal
 Client Name: SCSPA

Report Date: August 13, 2003
 Test Date(s): 37842

Boring #: PAL-65 Sample #: S-12 Sample Date: July 22, 2003
 Location: N. Charleston, SC Depth: 45 ft
 Sample Description: Gray Clayey Sand (SC)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Moisture Content	56.4%	Gravel	0%	Liquid Limit	43
Silt & Clay (% Passing #200)	28.3%	Coarse Sand	1%	Plastic Limit	26
Maximum Particle Size	0.187 in.	Medium Sand	3%	Plastic Index	17
Specific Gravity	not tested	Fine Sand	67%		

Description of Sand & Gravel Particles:

Rounded ☐ Angular ☐ Hard & Durable ☐ Soft ☐ Weathered & Friable ☐

References: ASTM D 422: Particle Size Analysis of Soils

ASTM D 421: Dry Preparation of Soil Samples

ASTM D 2216: Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass

ASTM D 4318: Liquid Limit, Plastic Limit, & Plastic Index of Soils

ASTM D 2487: Classification of Soils for Engineering Purposes (Unified Soil Classification System)

ASTM D 854: Specific Gravity of Soils

Technical Responsibility:

Laboratory Manager

Particle Size Analysis of Soils



ASTM D 422

Project #: 1131-03-264
 Project Name: Charleston Naval Base Container Terminal
 Client Name: SCSPA

Test Date(s): 8/9/03
 Report Date: August 13, 2003

Boring #: PAL-65 Sample #: S-13 Sample Date: 07/22/03
 Location: N. Charleston, SC Depth: 50 ft
 Sample Description: Gray Slightly Silty Sand (SM)
 % Moisture Content: Cu = D₆₀/D₁₀: Cc = (D₃₀)² / (D₁₀x D₆₀):
 Liquid Limit: 32 Plastic Limit: 27 Plastic Index: 5 Specific Gravity: not tested

Particle Size Analysis / Without Hydrometer Analysis				Moisture Content	Natural
				Tare #	xx
	Tare Number	x	A	Tare Weight	1.73
A	Tare Weight	9.1	B	Wet Weight + Tare Wt.	32.89
B	Total Sample Dry Wt. + Tare Wt.	43.5	C	Dry Weight + Tare Wt.	24.11
C	Total Sample Dry Weight (B-A)	34.3	D	Water Wt. (B-C)	8.78
D	Total Sample Wt. After #200 Wash	29.8	E	Dry Wt.(C-A)	22.38
E	Percent Passing #200 (1-D/C)x100	13.1%		Moisture Content (100 x D/E) (%)	39.2%
Sieve Size (mm)	Sieve Size	Retained Weight	Percent Retained	Percent Passing Total Sample	
37.50	1.5"	0.0	0.0%	100.0%	
25.00	1.0"	0.00	0.0%	100.0%	
19.00	3/4"	0.00	0.0%	100.0%	
12.50	1/2"	0.00	0.0%	100.0%	
9.50	3/8"	0.00	0.0%	100.0%	
4.75	#4	0.00	0.0%	100.0%	
2.00	#10	0.00	0.0%	100.0%	
0.85	#20	0.08	0.2%	99.8%	
0.43	#40	0.15	0.4%	99.6%	
0.25	#60	0.38	1.1%	98.9%	
0.15	#100	12.30	35.8%	64.2%	
0.075	#200	29.82	86.9%	13.1%	
Notes:	Maximum Particle Size:	0.033 in.	Gravel	< 75 mm and > 4.75 mm (#4)	0.0%
	D10		Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	0.0%
	D30		Medium Sand	< 2.00 mm and > 0.425 mm (#40)	0.4%
	D/60		Fine Sand	< 0.425 mm and > 0.075 mm (#200)	86.5%
			% Silt and Clay	< 0.075 mm	13.1%
			Description of Sand & Gravel	Rounded <input type="checkbox"/> Angular <input type="checkbox"/>	
			Hard & Durable <input type="checkbox"/> Soft <input type="checkbox"/> Weathered & Friable <input type="checkbox"/>		

ASTM D 422: Particle Size Analysis of Soils

Hydrometer portion of test method not utilized.

ASTM D 421: Dry Preparation of Soil Samples

ASTM D 2216: Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass

ASTM D 4318: Liquid Limit, Plastic Limit, & Plastic Index of Soils

ASTM D 2487: Classification of Soils for Engineering Purposes (Unified Soil Classification System)

ASTM D 854: Specific Gravity of Soils

Technician / Certification #:

Technical Responsibility:

Position:

Laboratory Manager

Particle Size Analysis of Soils

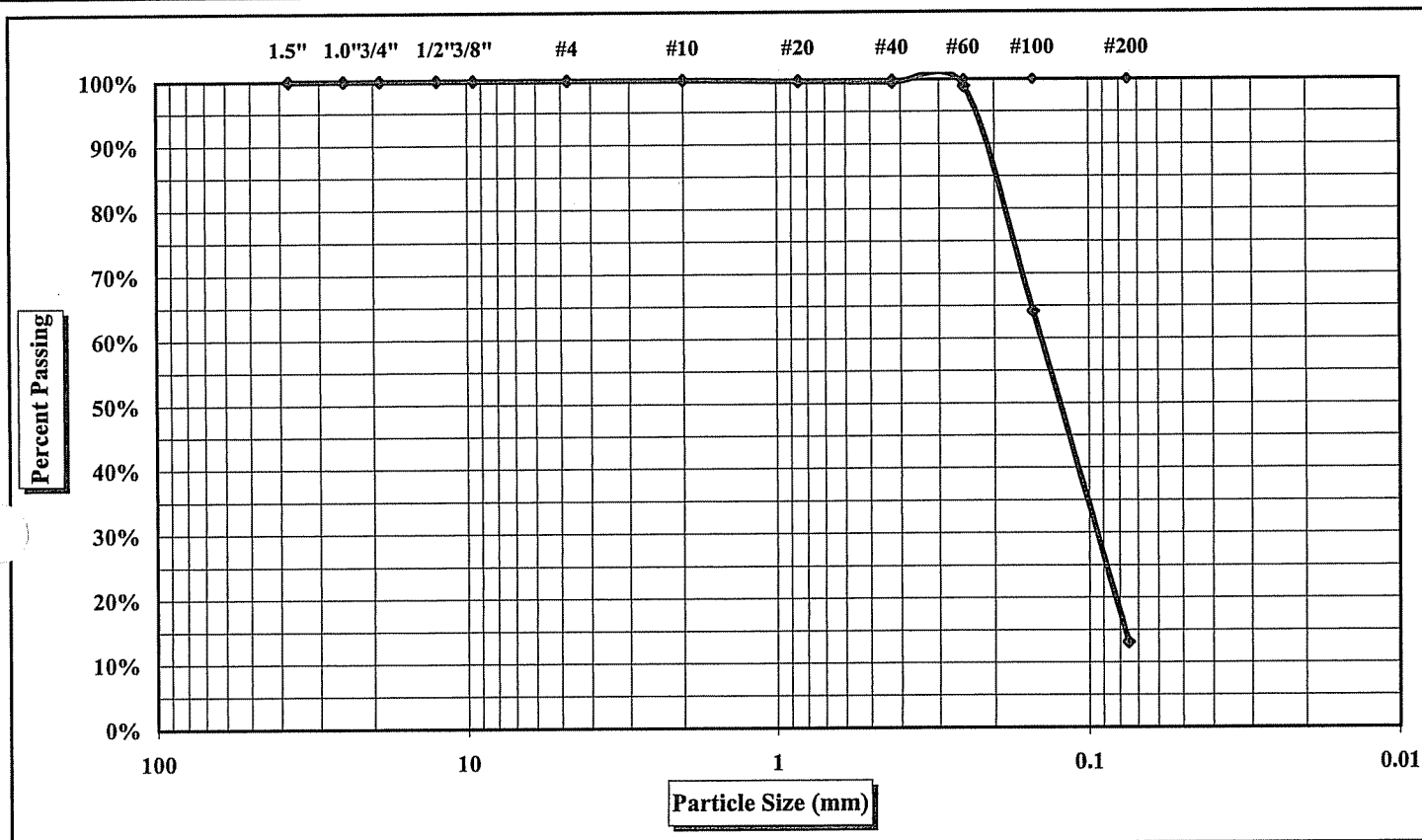
ASTM D 422



S&ME Project #: 1131-03-264
 Project Name: Charleston Naval Base Container Terminal
 Client Name: SCSPA

Report Date: August 13, 2003
 Test Date(s): 37842

Boring #: PAL-65 Sample #: S-13 Sample Date: July 22, 2003
 Location: N. Charleston, SC Depth: 50 ft
 Sample Description: Gray Slightly Silty Sand (SM)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Moisture Content	39.2%	Gravel	0%	Liquid Limit	32
Silt & Clay (% Passing #200)	13.1%	Coarse Sand	0%	Plastic Limit	27
Maximum Particle Size	0.033 in.	Medium Sand	0%	Plastic Index	5
Specific Gravity	not tested	Fine Sand	86%		

Description of Sand & Gravel Particles:

Rounded ☐ Angular ☐ Hard & Durable ☐ Soft ☐ Weathered & Friable ☐

References: ASTM D 422: Particle Size Analysis of Soils

ASTM D 421: Dry Preparation of Soil Samples

ASTM D 2216: Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass

ASTM D 4318: Liquid Limit, Plastic Limit, & Plastic Index of Soils

ASTM D 2487: Classification of Soils for Engineering Purposes (Unified Soil Classification System)

ASTM D 854: Specific Gravity of Soils

Technical Responsibility: -

Laboratory Manager

Particle Size Analysis of Soils



ASTM D 422

Project #: 1131-03-264
 Project Name: Charleston Naval Base Container Terminal
 Client Name: SCSPA

Test Date(s): 8/9/03
 Report Date: August 13, 2003

Boring #: PAL-65 Sample #: S-17 Sample Date: 07/22/03
 Location: N. Charleston, SC Depth: 69 ft
 Sample Description: Gray Clayey Sand (SC)
 % Moisture Content: Cu = D₆₀/D₁₀: Cc = (D₃₀)² / (D₁₀x D₆₀):
 Liquid Limit: NP Plastic Limit: NP Plastic Index: NP Specific Gravity: not tested

Particle Size Analysis / Without Hydrometer Analysis				Moisture Content	Natural
				Tare #	xx
	Tare Number	x	A	Tare Weight	2.02
A	Tare Weight	8.4	B	Wet Weight + Tare Wt.	45.21
B	Total Sample Dry Wt. + Tare Wt.	136.9	C	Dry Weight + Tare Wt.	33.01
C	Total Sample Dry Weight (B-A)	128.5	D	Water Wt. (B-C)	12.20
D	Total Sample Wt. After #200 Wash	103.4	E	Dry Wt.(C-A)	30.99
E	Percent Passing #200 (1-D/C)x100	19.5%	Moisture Content (100 x D/E) (%)		39.4%
Sieve Size (mm)	Sieve Size	Retained Weight	Percent Retained	Percent Passing Total Sample	
37.50	1.5"	0.0	0.0%	100.0%	
25.00	1.0"	0.00	0.0%	100.0%	
19.00	3/4"	0.00	0.0%	100.0%	
12.50	1/2"	0.00	0.0%	100.0%	
9.50	3/8"	0.00	0.0%	100.0%	
4.75	#4	0.84	0.7%	99.3%	
2.00	#10	5.04	3.9%	96.1%	
0.85	#20	23.01	17.9%	82.1%	
0.43	#40	73.37	57.1%	42.9%	
0.25	#60	93.36	72.7%	27.3%	
0.15	#100	100.31	78.1%	21.9%	
0.075	#200	103.44	80.5%	19.5%	
Notes:	Maximum Particle Size:	0.187 in.	Gravel	< 75 mm and > 4.75 mm (#4)	0.7%
	D10		Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	3.3%
	D30		Medium Sand	< 2.00 mm and > 0.425 mm (#40)	53.2%
	D/60		Fine Sand	< 0.425 mm and > 0.075 mm (#200)	23.4%
			% Silt and Clay	< 0.075 mm	19.5%
			Description of Sand & Gravel	Rounded <input type="checkbox"/> Angular <input type="checkbox"/>	
			Hard & Durable <input type="checkbox"/> Soft <input type="checkbox"/> Weathered & Friable <input type="checkbox"/>		

Hydrometer portion of test method not utilized.

ASTM D 422: Particle Size Analysis of Soils

ASTM D 421: Dry Preparation of Soil Samples

ASTM D 2216: Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass

^ASTM D 4318: Liquid Limit, Plastic Limit, & Plastic Index of Soils

^ASTM D 2487: Classification of Soils for Engineering Purposes (Unified Soil Classification System)

ASTM D 854: Specific Gravity of Soils

Technician / Certification #:

Technical Responsibility:

Position:

Laboratory Manager

Particle Size Analysis of Soils

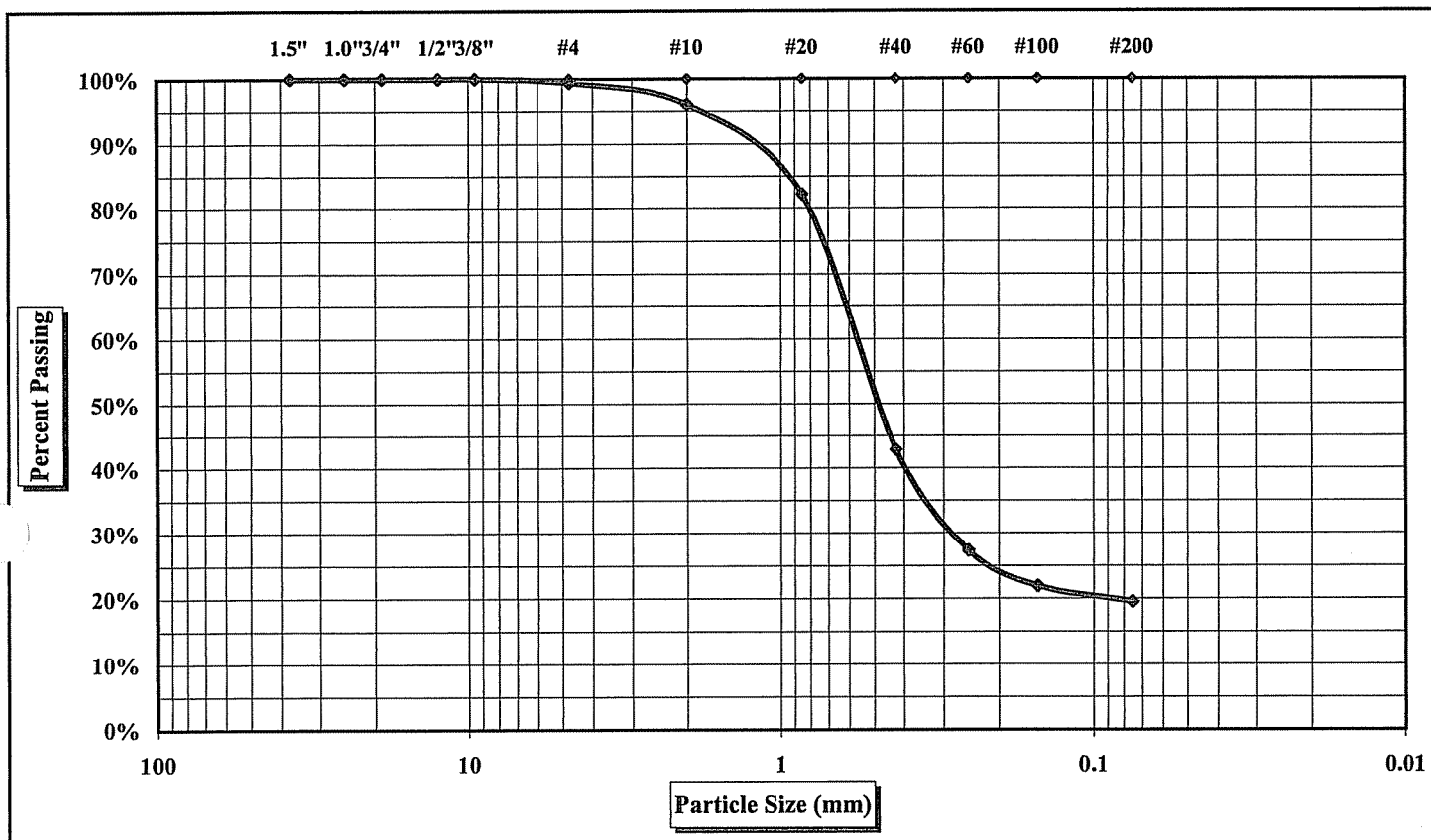
ASTM D 422



S&ME Project #: 1131-03-264
 Project Name: Charleston Naval Base Container Terminal
 Client Name: SCSPA

Report Date: August 13, 2003
 Test Date(s): 37842

Boring #: PAL-65 Sample #: S-17 Sample Date: July 22, 2003
 Location: N. Charleston, SC Depth: 69 ft
 Sample Description: Gray Clayey Sand (SC)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Moisture Content	39.4%	Gravel	1%	Liquid Limit	NP
Silt & Clay (% Passing #200)	19.5%	Coarse Sand	3%	Plastic Limit	NP
Maximum Particle Size	0.187 in.	Medium Sand	53%	Plastic Index	NP
Specific Gravity	not tested	Fine Sand	23%		

Description of Sand & Gravel Particles:

Rounded ☐ Angular ☐ Hard & Durable ☐ Soft ☐ Weathered & Friable ☐

References: ASTM D 422: Particle Size Analysis of Soils

ASTM D 421: Dry Preparation of Soil Samples

ASTM D 2216: Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass

ASTM D 4318: Liquid Limit, Plastic Limit, & Plastic Index of Soils

ASTM D 2487: Classification of Soils for Engineering Purposes (Unified Soil Classification System)

ASTM D 854: Specific Gravity of Soils

Technical Responsibility: -

Laboratory Manager

Particle Size Analysis of Soils



ASTM D 422

Project #: 1131-03-264 Test Date(s): 8/9/03
 Project Name: Charleston Naval Base Container Terminal Report Date: August 13, 2003
 Client Name: SCSPA

Boring #: PAL-66 Sample #: S-3 Sample Date: 07/17/03
 Location: N. Charleston, SC Depth: 5 ft
 Sample Description: Gray Slightly Clayey Sand (SC)
 % Moisture Content: Cu = D₆₀/D₁₀: Cc = (D₃₀)² / (D₁₀ × D₆₀):
 Liquid Limit: NP Plastic Limit: NP Plastic Index: NP Specific Gravity: not tested

Particle Size Analysis / Without Hydrometer Analysis				Moisture Content	Natural
				Tare #	xx
	Tare Number	x	A	Tare Weight	1.90
A	Tare Weight	9.5	B	Wet Weight + Tare Wt.	24.30
B	Total Sample Dry Wt. + Tare Wt.	44.9	C	Dry Weight + Tare Wt.	17.51
C	Total Sample Dry Weight (B-A)	35.5	D	Water Wt. (B-C)	6.79
D	Total Sample Wt. After #200 Wash	31.5	E	Dry Wt.(C-A)	15.61
E	Percent Passing #200 (1-D/C) × 100	11.3%	Moisture Content (100 × D/E) (%)		43.5%
Sieve Size (mm)	Sieve Size	Retained Weight	Percent Retained	Percent Passing Total Sample	
37.50	1.5"	0.0	0.0%	100.0%	
25.00	1.0"	0.00	0.0%	100.0%	
19.00	3/4"	0.00	0.0%	100.0%	
12.50	1/2"	0.00	0.0%	100.0%	
9.50	3/8"	0.90	2.5%	97.5%	
4.75	#4	1.43	4.0%	96.0%	
2.00	#10	1.82	5.1%	94.9%	
0.85	#20	2.66	7.5%	92.5%	
0.43	#40	7.45	21.0%	79.0%	
0.25	#60	11.52	32.5%	67.5%	
0.15	#100	22.87	64.5%	35.5%	
0.075	#200	31.47	88.7%	11.3%	
Notes:	Maximum Particle Size:	0.375 in.	Gravel	< 75 mm and > 4.75 mm (#4)	4.0%
	D10		Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	1.1%
	D30		Medium Sand	< 2.00 mm and > 0.425 mm (#40)	15.9%
	D/60		Fine Sand	< 0.425 mm and > 0.075 mm (#200)	67.7%
			% Silt and Clay	< 0.075 mm	11.3%
			Description of Sand & Gravel Rounded <input type="checkbox"/> Angular <input type="checkbox"/>		
			Hard & Durable <input type="checkbox"/> Soft <input type="checkbox"/> Weathered & Friable <input type="checkbox"/>		

ASTM D 422: Particle Size Analysis of Soils

Hydrometer portion of test method not utilized.

ASTM D 421: Dry Preparation of Soil Samples

ASTM D 2216: Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass

ASTM D 4318: Liquid Limit, Plastic Limit, & Plastic Index of Soils

ASTM D 2487: Classification of Soils for Engineering Purposes (Unified Soil Classification System)

ASTM D 854: Specific Gravity of Soils

Technician / Certification #:

Technical Responsibility:

Position:

Laboratory Manager

Particle Size Analysis of Soils

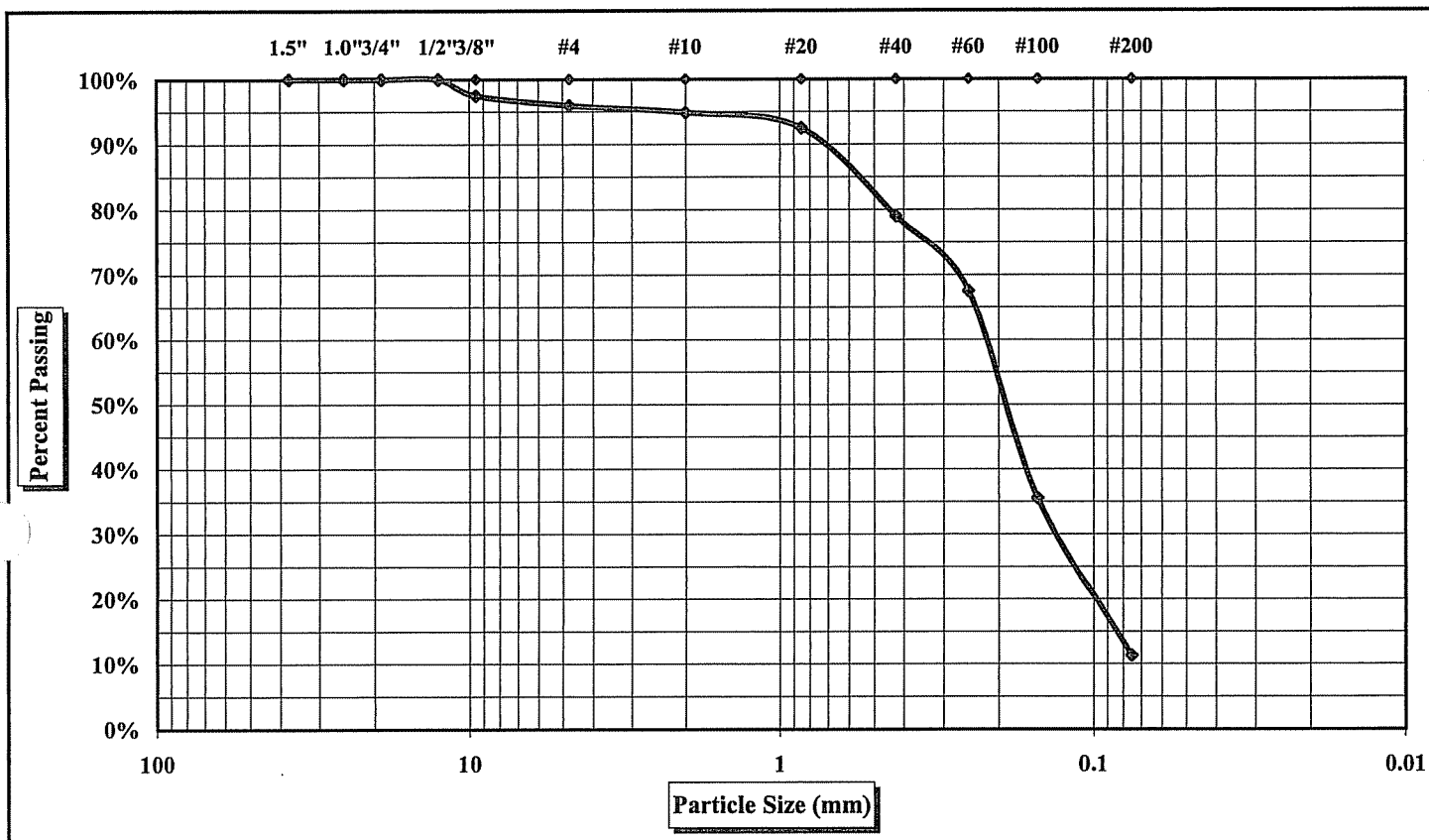
ASTM D 422



S&ME Project #: 1131-03-264
 Project Name: Charleston Naval Base Container Terminal
 Client Name: SCSPA

Report Date: August 13, 2003
 Test Date(s): 37842

Boring #: PAL-66 Sample #: S-3 Sample Date: July 17, 2003
 Location: N. Charleston, SC Depth: 5 ft
 Sample Description: Gray Slightly Clayey Sand (SC)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Moisture Content	43.5%	Gravel	4%	Liquid Limit	NP
Silt & Clay (% Passing #200)	11.3%	Coarse Sand	1%	Plastic Limit	NP
Maximum Particle Size	0.375 in.	Medium Sand	16%	Plastic Index	NP
Specific Gravity	not tested	Fine Sand	68%		

Description of Sand & Gravel Particles:

Rounded ☐ Angular ☐ Hard & Durable ☐ Soft ☐ Weathered & Friable ☐

References: ASTM D 422: Particle Size Analysis of Soils

ASTM D 421: Dry Preparation of Soil Samples

ASTM D 2216: Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass

ASTM D 4318: Liquid Limit, Plastic Limit, & Plastic Index of Soils

ASTM D 2487: Classification of Soils for Engineering Purposes (Unified Soil Classification System)

ASTM D 854: Specific Gravity of Soils

Technical Responsibility: _____

Laboratory Manager

Particle Size Analysis of Soils



ASTM D 422

Project #: 1131-03-264

Test Date(s): 7/31/03

Project Name: Charleston Naval Base Container Terminal

Report Date: August 13, 2003

Client Name: SCSPA

Boring #: PZ-1

Sample #: S-6

Sample Date: 07/11/03

Location: N. Charleston, SC

Depth: 15 ft

Sample Description: Gray Slightly Clayey Sand (SC)

% Moisture Content:

Cu = D₆₀/D₁₀:Cc = (D₃₀)² / (D₁₀ x D₆₀):

Liquid Limit: NP

Plastic Limit: NP

Plastic Index: NP

Specific Gravity: not tested

Particle Size Analysis / Without Hydrometer Analysis			Moisture Content		Natural
			Tare #		xx
	Tare Number	x	A	Tare Weight	1.84
A	Tare Weight	9.2	B	Wet Weight + Tare Wt.	38.26
B	Total Sample Dry Wt. + Tare Wt.	118.1	C	Dry Weight + Tare Wt.	28.61
C	Total Sample Dry Weight (B-A)	108.9	D	Water Wt. (B-C)	9.65
D	Total Sample Wt. After #200 Wash	99.3	E	Dry Wt.(C-A)	26.77
E	Percent Passing #200 (1-D/C)x100	8.8%	Moisture Content (100 x D/E) (%)		36.0%

Sieve Size (mm)	Sieve Size	Retained Weight	Percent Retained	Percent Passing Total Sample
37.50	1.5"	0.0	0.0%	100.0%
25.00	1.0"	0.00	0.0%	100.0%
19.00	3/4"	0.00	0.0%	100.0%
12.50	1/2"	0.00	0.0%	100.0%
9.50	3/8"	0.00	0.0%	100.0%
4.75	#4	0.00	0.0%	100.0%
2.00	#10	0.27	0.2%	99.8%
0.85	#20	0.57	0.5%	99.5%
0.43	#40	1.48	1.4%	98.6%
0.25	#60	4.35	4.0%	96.0%
0.15	#100	85.32	78.3%	21.7%
0.075	#200	99.32	91.2%	8.8%

Notes:	Maximum Particle Size:	0.079 in.	Gravel	< 75 mm and > 4.75 mm (#4)	0.0%
	D10		Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	0.2%
	D30		Medium Sand	< 2.00 mm and > 0.425 mm (#40)	1.1%
	D/60		Fine Sand	< 0.425 mm and > 0.075 mm (#200)	89.8%
			% Silt and Clay	< 0.075 mm	8.8%
			Description of Sand & Gravel	Rounded <input type="checkbox"/> Angular <input type="checkbox"/>	
			Hard & Durable <input type="checkbox"/> Soft <input type="checkbox"/> Weathered & Friable <input type="checkbox"/>		

ASTM D 422: Particle Size Analysis of Soils

Hydrometer portion of test method not utilized.

ASTM D 421: Dry Preparation of Soil Samples

ASTM D 2216: Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass

ASTM D 4318: Liquid Limit, Plastic Limit, & Plastic Index of Soils

ASTM D 2487: Classification of Soils for Engineering Purposes (Unified Soil Classification System)

ASTM D 854: Specific Gravity of Soils

Technician / Certification #:

Technical Responsibility:

Position:

Laboratory Manager



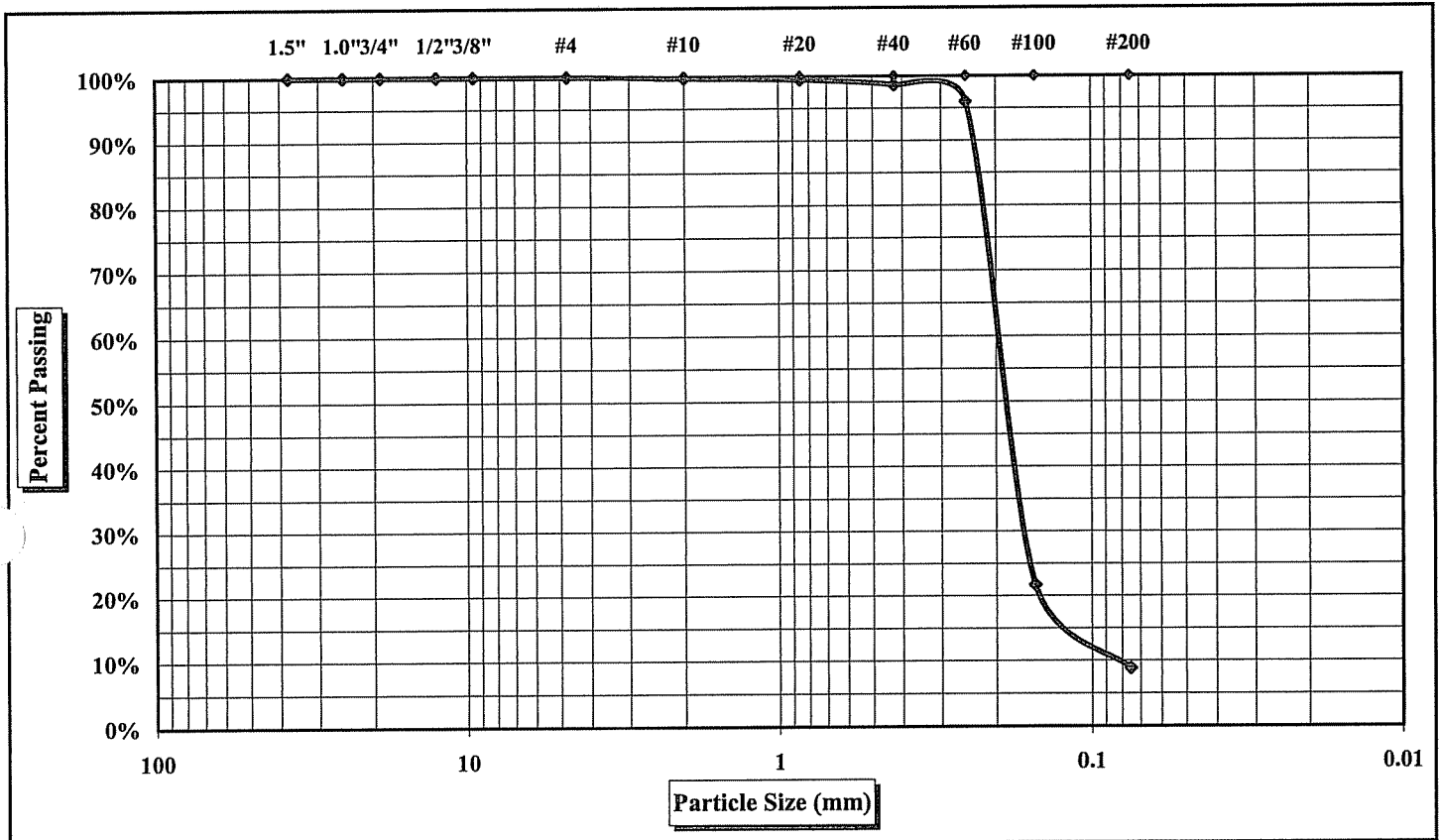
Particle Size Analysis of Soils

ASTM D 422

S&ME Project #: 1131-03-264
 Project Name: Charleston Naval Base Container Terminal
 Client Name: SCSPA

Report Date: August 13, 2003
 Test Date(s): 37833

Boring #: PZ-1 Sample #: S-6 Sample Date: July 11, 2003
 Location: N. Charleston, SC Depth: 15 ft
 Sample Description: Gray Slightly Clayey Sand (SC)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Moisture Content	36.0%	Gravel	0%	Liquid Limit	NP
Silt & Clay (% Passing #200)	8.8%	Coarse Sand	0%	Plastic Limit	NP
Maximum Particle Size	0.079 in.	Medium Sand	1%	Plastic Index	NP
Specific Gravity	not tested	Fine Sand	90%		

Description of Sand & Gravel Particles:

Rounded ☐ Angular ☐ Hard & Durable ☐ Soft ☐ Weathered & Friable ☐

References: ASTM D 422: Particle Size Analysis of Soils

ASTM D 421: Dry Preparation of Soil Samples

ASTM D 2216: Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass

ASTM D 4318: Liquid Limit, Plastic Limit, & Plastic Index of Soils

ASTM D 2487: Classification of Soils for Engineering Purposes (Unified Soil Classification System)

ASTM D 854: Specific Gravity of Soils

Technical Responsibility: -

Laboratory Manager

Particle Size Analysis of Soils



ASTM D 422

Project #: 1131-03-264
 Project Name: Charleston Naval Base Container Terminal
 Client Name: SCSPA

Test Date(s): 7/31/03
 Report Date: August 13, 2003

Boring #: PZ-4 Sample #: S-5 Sample Date: 07/17/03
 Location: N. Charleston, SC Depth: 10 ft

Sample Description: Dark Gray Sand (SP)

% Moisture Content: Cu = D₆₀/D₁₀: Cc = (D₃₀)² / (D₁₀ × D₆₀):
 Liquid Limit: not tested Plastic Limit: not tested Plastic Index: not tested Specific Gravity: not tested

Particle Size Analysis / Without Hydrometer Analysis			Moisture Content		Natural
			Tare #		xx
	Tare Number	x	A	Tare Weight	1.89
A	Tare Weight	9.0	B	Wet Weight + Tare Wt.	62.60
B	Total Sample Dry Wt. + Tare Wt.	127.9	C	Dry Weight + Tare Wt.	49.35
C	Total Sample Dry Weight (B-A)	118.9	D	Water Wt. (B-C)	13.25
D	Total Sample Wt. After #200 Wash	116.0	E	Dry Wt. (C-A)	47.46
E	Percent Passing #200 (1-D/C) × 100	2.5%	Moisture Content (100 × D/E) (%)		27.9%
Sieve Size (mm)	Sieve Size	Retained Weight	Percent Retained	Percent Passing Total Sample	
37.50	1.5"	0.0	0.0%	100.0%	
25.00	1.0"	0.00	0.0%	100.0%	
19.00	3/4"	0.00	0.0%	100.0%	
12.50	1/2"	0.00	0.0%	100.0%	
9.50	3/8"	0.00	0.0%	100.0%	
4.75	#4	0.67	0.6%	99.4%	
2.00	#10	5.53	4.6%	95.4%	
0.85	#20	22.32	18.8%	81.2%	
0.43	#40	56.17	47.2%	52.8%	
0.25	#60	76.83	64.6%	35.4%	
0.15	#100	105.82	89.0%	11.0%	
0.075	#200	115.97	97.5%	2.5%	
Notes:	Maximum Particle Size:	0.187 in.	Gravel	< 75 mm and > 4.75 mm (#4)	0.6%
	D10		Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	4.1%
	D30		Medium Sand	< 2.00 mm and > 0.425 mm (#40)	42.6%
	D/60		Fine Sand	< 0.425 mm and > 0.075 mm (#200)	50.3%
			% Silt and Clay	< 0.075 mm	2.5%
			Description of Sand & Gravel Rounded <input type="checkbox"/> Angular <input type="checkbox"/>		
			Hard & Durable <input type="checkbox"/> Soft <input type="checkbox"/> Weathered & Friable <input type="checkbox"/>		

ASTM D 422: Particle Size Analysis of Soils

Hydrometer portion of test method not utilized.

ASTM D 421: Dry Preparation of Soil Samples

ASTM D 2216: Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass

ASTM D 4318: Liquid Limit, Plastic Limit, & Plastic Index of Soils

ASTM D 2487: Classification of Soils for Engineering Purposes (Unified Soil Classification System)

ASTM D 854: Specific Gravity of Soils

Technician / Certification #:

Technical Responsibility:

Position:

Laboratory Manager



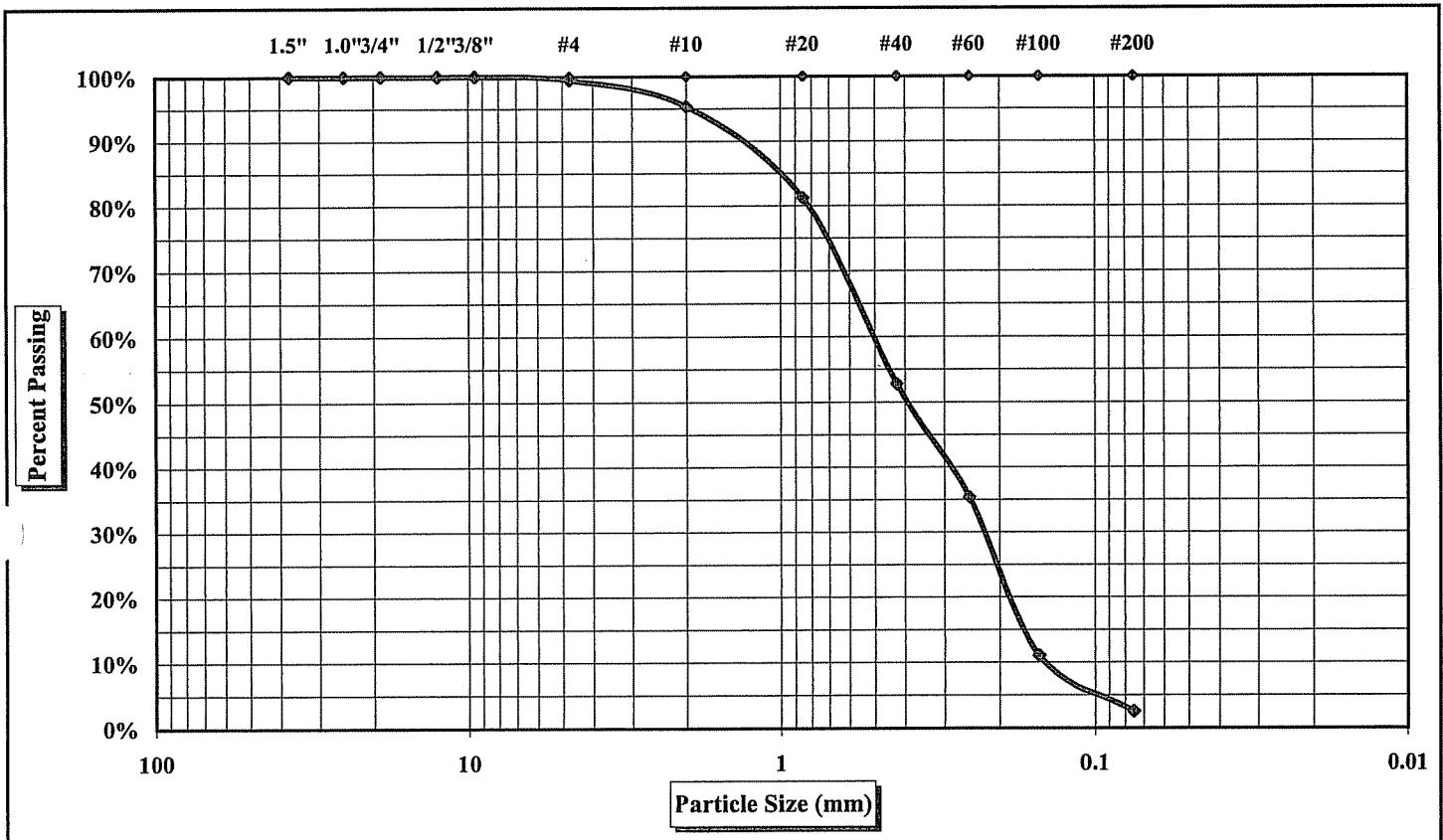
Particle Size Analysis of Soils

ASTM D 422

S&ME Project #: 1131-03-264
 Project Name: Charleston Naval Base Container Terminal
 Client Name: SCSPA

Report Date: August 13, 2003
 Test Date(s): 37833

Boring #: PZ-4 Sample #: S-5 Sample Date: July 17, 2003
 Location: N. Charleston, SC Depth: 10 ft
 Sample Description: Dark Gray Sand (SP)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Moisture Content	27.9%	Gravel	1%	Liquid Limit	not tested
Silt & Clay (% Passing #200)	2.5%	Coarse Sand	4%	Plastic Limit	not tested
Maximum Particle Size	0.187 in.	Medium Sand	43%	Plastic Index	not tested
Specific Gravity	not tested	Fine Sand	50%		

Description of Sand & Gravel Particles:

Rounded ☐ Angular ☐ Hard & Durable ☐ Soft ☐ Weathered & Friable ☐

References: ASTM D 422: Particle Size Analysis of Soils

ASTM D 421: Dry Preparation of Soil Samples

ASTM D 2216: Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass

ASTM D 4318: Liquid Limit, Plastic Limit, & Plastic Index of Soils

ASTM D 2487: Classification of Soils for Engineering Purposes (Unified Soil Classification System)

ASTM D 854: Specific Gravity of Soils

Technical Responsibility: _____

Laboratory Manager

Particle Size Analysis of Soils



ASTM D 422

Project #: 1131-03-264
 Project Name: Charleston Naval Base Container Terminal
 Client Name: SCSPA

Test Date(s): 7/1/03
 Report Date: August 13, 2003

Boring #: PAW-6 Sample #: S-2 Sample Date: 06/11/03
 Location: N. Charleston, SC Elevation: (-14.9 ft CLW)
 Sample Description: Gray Silty Sand (SM)
 % Moisture Content: $C_u = D_{60}/D_{10}$: $C_c = (D_{30})^2 / (D_{10} \times D_{60})$:
 Liquid Limit: not tested Plastic Limit: not tested Plastic Index: not tested Specific Gravity: not tested

Particle Size Analysis / Without Hydrometer Analysis			Moisture Content		Natural
			Tare #		xx
	Tare Number	x	A	Tare Weight	1.75
A	Tare Weight	9.5	B	Wet Weight + Tare Wt.	34.88
B	Total Sample Dry Wt. + Tare Wt.	75.0	C	Dry Weight + Tare Wt.	19.54
C	Total Sample Dry Weight (B-A)	65.6	D	Water Wt. (B-C)	15.34
D	Total Sample Wt. After #200 Wash	50.4	E	Dry Wt.(C-A)	17.79
E	Percent Passing #200 (1-D/C)x100	23.1%	Moisture Content (100 x D/E) (%)		86.2%

Sieve Size (mm)	Sieve Size	Retained Weight	Percent Retained	Percent Passing Total Sample
37.50	1.5"	0.0	0.0%	100.0%
25.00	1.0"	0.00	0.0%	100.0%
19.00	3/4"	0.00	0.0%	100.0%
12.50	1/2"	0.00	0.0%	100.0%
9.50	3/8"	0.00	0.0%	100.0%
4.75	#4	0.43	0.7%	99.3%
2.00	#10	0.82	1.3%	98.7%
0.85	#20	1.28	2.0%	98.0%
0.43	#40	2.15	3.3%	96.7%
0.25	#60	5.23	8.0%	92.0%
0.15	#100	39.56	60.3%	39.7%
0.075	#200	50.45	77.0%	23.0%

Notes:	Maximum Particle Size:	0.187 in.	Gravel	< 75 mm and > 4.75 mm (#4)	0.7%
	D10		Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	0.6%
	D30		Medium Sand	< 2.00 mm and > 0.425 mm (#40)	2.0%
	D/60		Fine Sand	< 0.425 mm and > 0.075 mm (#200)	73.7%
			% Silt and Clay	< 0.075 mm	23.0%
			Description of Sand & Gravel Rounded <input type="checkbox"/> Angular <input type="checkbox"/>		
			Hard & Durable <input type="checkbox"/> Soft <input type="checkbox"/> Weathered & Friable <input type="checkbox"/>		

ASTM D 422: Particle Size Analysis of Soils

Hydrometer portion of test method not utilized.

ASTM D 421: Dry Preparation of Soil Samples

ASTM D 2216: Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass

ASTM D 4318: Liquid Limit, Plastic Limit, & Plastic Index of Soils

ASTM D 2487: Classification of Soils for Engineering Purposes (Unified Soil Classification System)

ASTM D 854: Specific Gravity of Soils

Technician / Certification #:

Technical Responsibility:

Position:

Laboratory Manager



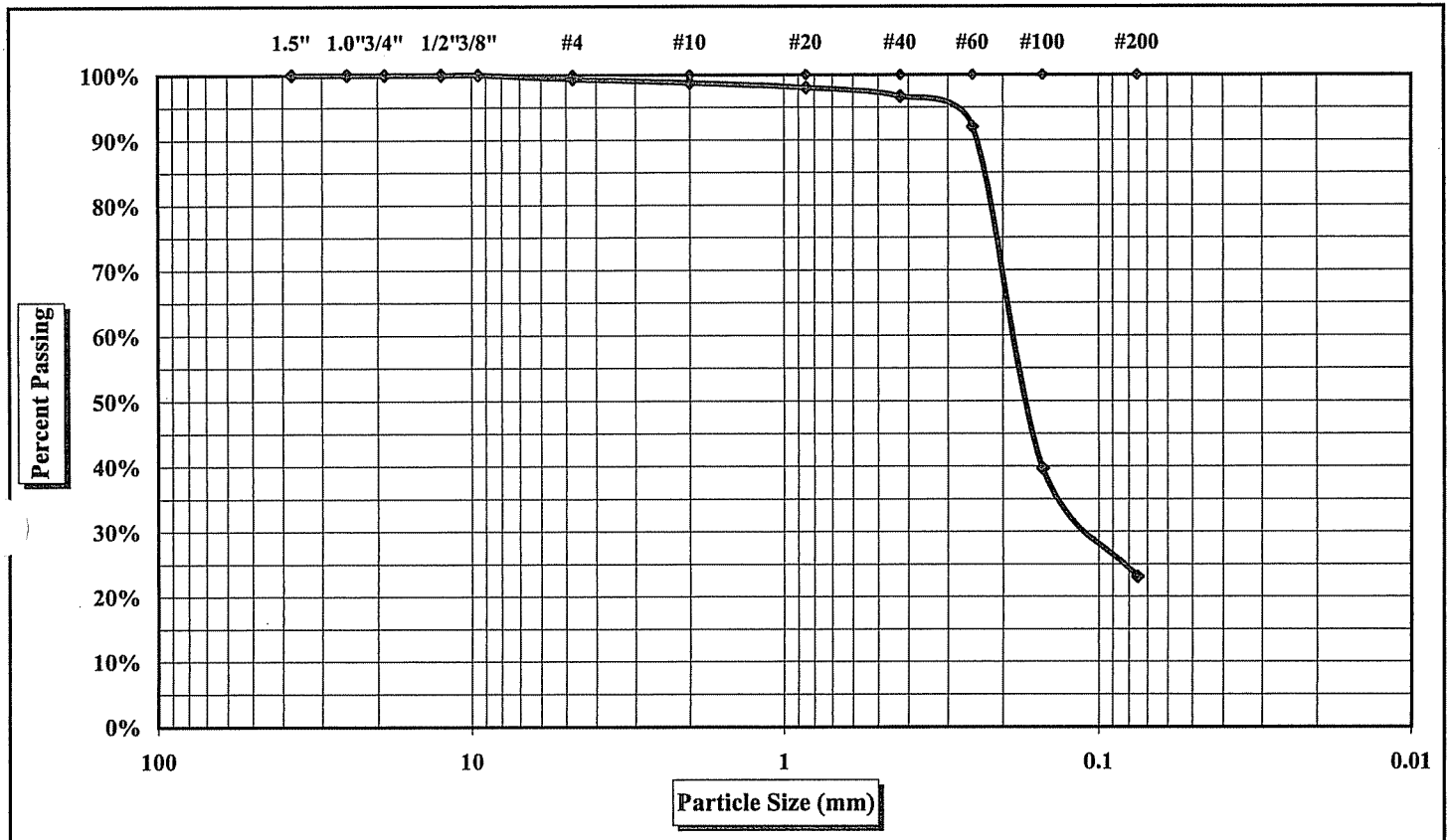
Particle Size Analysis of Soils

ASTM D 422

S&ME Project #: 1131-03-264
 Project Name: Charleston Naval Base Container Terminal
 Client Name: SCSPA

Report Date: August 13, 2003
 Test Date(s): 37803

Boring #: PAW-6 Sample #: S-2 Sample Date: June 11, 2003
 Location: N. Charleston, SC Elevation: (-14.9 ft CLW)
 Sample Description: Gray Silty Sand (SM)



Particle Size Analysis of Soils



ASTM D 422

Project #: 1131-03-264

Test Date(s): 7/1/03

Project Name: Charleston Naval Base Container Terminal

Report Date: August 13, 2003

Client Name: SCSPA

Boring #: PAW-9

Sample #: S-6

Sample Date: 06/11/03

Location: N. Charleston, SC

Elevation: (-31.3 ft CLW)

Sample Description: Gray Very Clayey Sand (SC)

% Moisture Content:

Cu = D₆₀/D₁₀:Cc = (D₃₀)² / (D₁₀x D₆₀):

Liquid Limit: not teste

Plastic Limit: not teste

Plastic Index: not tested

Specific Gravity: not tested

Particle Size Analysis / Without Hydrometer Analysis			Moisture Content		Natural
				Tare #	xx
	Tare Number	x	A	Tare Weight	1.77
A	Tare Weight	9.2	B	Wet Weight + Tare Wt.	67.38
B	Total Sample Dry Wt. + Tare Wt.	215.8	C	Dry Weight + Tare Wt.	46.65
C	Total Sample Dry Weight (B-A)	206.7	D	Water Wt. (B-C)	20.73
D	Total Sample Wt. After #200 Wash	123.1	E	Dry Wt.(C-A)	44.88
E	Percent Passing #200 (1-D/C)x100	40.4%	Moisture Content (100 x D/E) (%)		46.2%

Sieve Size (mm)	Sieve Size	Retained Weight	Percent Retained	Percent Passing Total Sample
37.50	1.5"	0.0	0.0%	100.0%
25.00	1.0"	0.00	0.0%	100.0%
19.00	3/4"	0.00	0.0%	100.0%
12.50	1/2"	0.00	0.0%	100.0%
9.50	3/8"	0.00	0.0%	100.0%
4.75	#4	1.15	0.6%	99.4%
2.00	#10	2.00	1.0%	99.0%
0.85	#20	3.14	1.5%	98.5%
0.43	#40	7.16	3.5%	96.5%
0.25	#60	26.25	12.7%	87.3%
0.15	#100	111.28	53.8%	46.2%
0.075	#200	123.16	59.6%	40.4%

Notes:	Maximum Particle Size:	0.187 in.	Gravel	< 75 mm and > 4.75 mm (#4)	0.6%
	D10		Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	0.4%
	D30		Medium Sand	< 2.00 mm and > 0.425 mm (#40)	2.5%
	D/60		Fine Sand	< 0.425 mm and > 0.075 mm (#200)	56.1%
			% Silt and Clay	< 0.075 mm	40.4%
			Description of Sand & Gravel		
			Rounded <input type="checkbox"/> Angular <input type="checkbox"/>		
			Hard & Durable <input type="checkbox"/> Soft <input type="checkbox"/> Weathered & Friable <input type="checkbox"/>		

ASTM D 422: Particle Size Analysis of Soils

Hydrometer portion of test method not utilized.

ASTM D 421: Dry Preparation of Soil Samples

ASTM D 2216: Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass

ASTM D 4318: Liquid Limit, Plastic Limit, & Plastic Index of Soils

ASTM D 2487: Classification of Soils for Engineering Purposes (Unified Soil Classification System)

ASTM D 854: Specific Gravity of Soils

Technician / Certification #:

Technical Responsibility:

Position:

Laboratory Manager

Particle Size Analysis of Soils

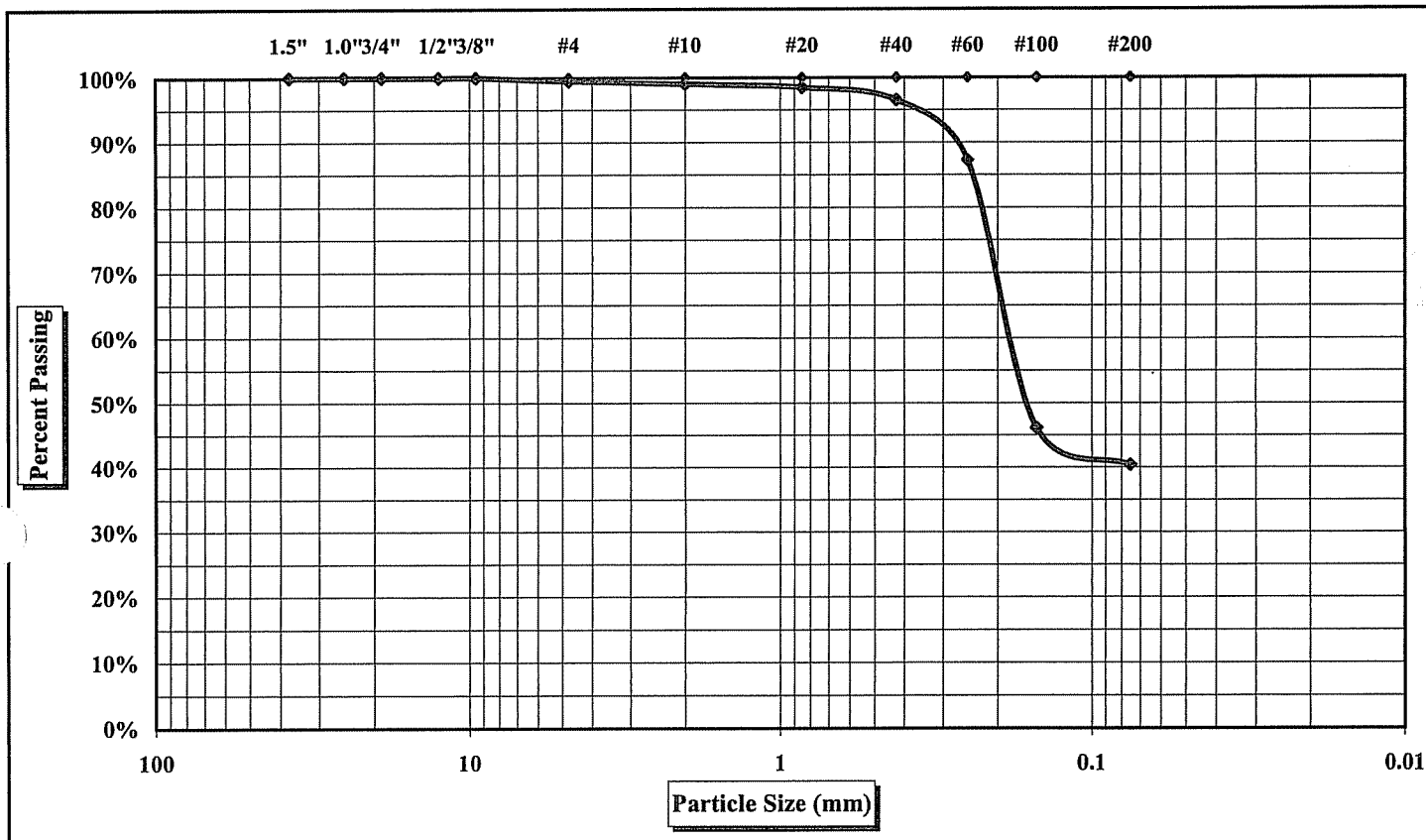
ASTM D 422



S&ME Project #: 1131-03-264
 Project Name: Charleston Naval Base Container Terminal
 Client Name: SCSPA

Report Date: August 13, 2003
 Test Date(s): 37803

Boring #: PAW-9 Sample #: S-6 Sample Date: June 11, 2003
 Location: N. Charleston, SC Elevation: (-31.3 ft CLW)
 Sample Description: Gray Very Clayey Sand (SC)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Moisture Content	46.2%	Gravel	1%	Liquid Limit	not tested
Silt & Clay (% Passing #200)	40.4%	Coarse Sand	0%	Plastic Limit	not tested
Maximum Particle Size	0.187 in.	Medium Sand	2%	Plastic Index	not tested
Specific Gravity	not tested	Fine Sand	56%		

Description of Sand & Gravel Particles:

Rounded ☐ Angular ☐ Hard & Durable ☐ Soft ☐ Weathered & Friable ☐

References: ASTM D 422: Particle Size Analysis of Soils

ASTM D 421: Dry Preparation of Soil Samples

ASTM D 2216: Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass

ASTM D 4318: Liquid Limit, Plastic Limit, & Plastic Index of Soils

ASTM D 2487: Classification of Soils for Engineering Purposes (Unified Soil Classification System)

ASTM D 854: Specific Gravity of Soils

Technical Responsibility: _____

Laboratory Manager

Particle Size Analysis of Soils

ASTM D 422



Project #: 1131-03-264

Test Date(s): 7/1/03

Object Name: Charleston Naval Base Container Terminal

Report Date: August 13, 2003

Client Name: SCSPA

Boring #: PAW-16

Sample #: S-5

Sample Date: 06/03/03

Location: N. Charleston, SC

Elevation: (-27.6 ft CLW)

Sample Description: Gray Slightly Clayey Sand (SC)

% Moisture Content:

Cu = D60/D10:

Cc = (D30)² / (D10 x D60):

Liquid Limit: not tested Plastic Limit: not tested Plastic Index: not tested Specific Gravity: not tested

Particle Size Analysis / Without Hydrometer Analysis			Moisture Content		Natural
				Tare #	xx
	Tare Number	x	A	Tare Weight	1.77
A	Tare Weight	9.2	B	Wet Weight + Tare Wt.	48.41
B	Total Sample Dry Wt. + Tare Wt.	238.8	C	Dry Weight + Tare Wt.	36.03
C	Total Sample Dry Weight (B-A)	229.6	D	Water Wt. (B-C)	12.38
D	Total Sample Wt. After #200 Wash	199.5	E	Dry Wt.(C-A)	34.26
E	Percent Passing #200 (1-D/C)x100	13.1%	Moisture Content (100 x D/E) (%)		36.1%

Sieve Size (mm)	Sieve Size	Retained Weight	Percent Retained	Percent Passing Total Sample
37.50	1.5"	0.0	0.0%	100.0%
25.00	1.0"	0.00	0.0%	100.0%
19.00	3/4"	0.00	0.0%	100.0%
12.50	1/2"	0.00	0.0%	100.0%
9.50	3/8"	0.00	0.0%	100.0%
4.75	#4	0.01	0.0%	100.0%
2.00	#10	0.09	0.0%	100.0%
0.85	#20	0.22	0.1%	99.9%
0.43	#40	0.50	0.2%	99.8%
0.25	#60	1.11	0.5%	99.5%
0.15	#100	82.20	35.8%	64.2%
0.075	#200	199.49	86.9%	13.1%

Notes:	Maximum Particle Size:	0.187 in.	Gravel	< 75 mm and > 4.75 mm (#4)	0.0%
	D10		Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	0.0%
	D30		Medium Sand	< 2.00 mm and > 0.425 mm (#40)	0.2%
	D/60		Fine Sand	< 0.425 mm and > 0.075 mm (#200)	86.7%
			% Silt and Clay	< 0.075 mm	13.1%
			Description of Sand & Gravel	Rounded <input type="checkbox"/> Angular <input type="checkbox"/>	
			Hard & Durable <input type="checkbox"/> Soft <input type="checkbox"/> Weathered & Friable <input type="checkbox"/>		

ASTM D 422: Particle Size Analysis of Soils

Hydrometer portion of test method not utilized.

ASTM D 421: Dry Preparation of Soil Samples

ASTM D 2216: Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass

ASTM D 4318: Liquid Limit, Plastic Limit, & Plastic Index of Soils

ASTM D 2487: Classification of Soils for Engineering Purposes (Unified Soil Classification System)

ASTM D 854: Specific Gravity of Soils

Technician / Certification #:

Technical Responsibility:

Position:

Laboratory Manager

Particle Size Analysis of Soils

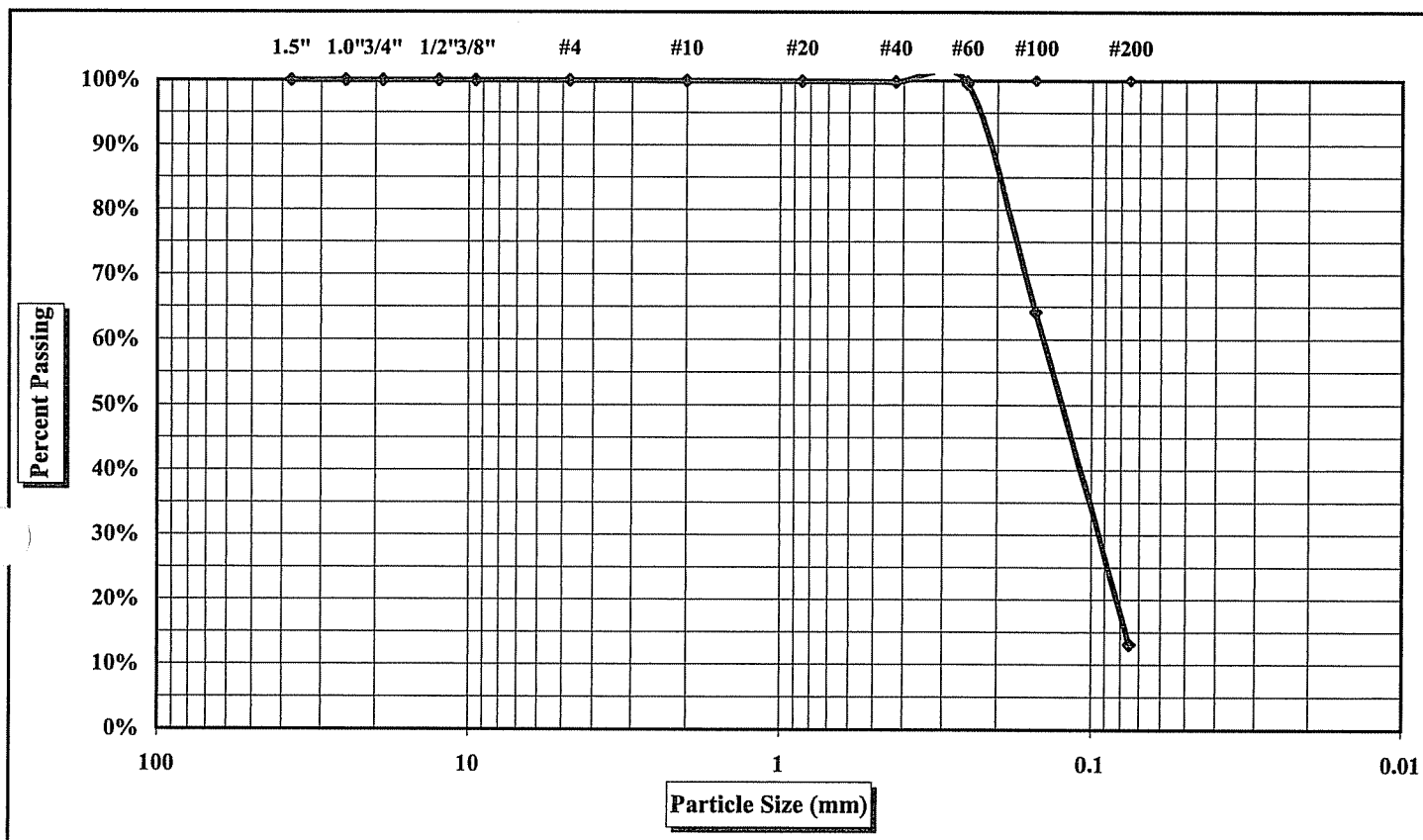
ASTM D 422



S&ME Project #: 1131-03-264
 Project Name: Charleston Naval Base Container Terminal
 Client Name: SCSPA

Report Date: August 13, 2003
 Test Date(s): 37803

Boring #: PAW-16 Sample #: S-5 Sample Date: June 3, 2003
 Location: N. Charleston, SC Elevation: (-27.6 ft CLW)
 Sample Description: Gray Slightly Clayey Sand (SC)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Moisture Content	36.1%	Gravel	0%	Liquid Limit	not tested
Silt & Clay (% Passing #200)	13.1%	Coarse Sand	0%	Plastic Limit	not tested
Maximum Particle Size	0.187 in.	Medium Sand	0%	Plastic Index	not tested
Specific Gravity	not tested	Fine Sand	87%		

Description of Sand & Gravel Particles:

Rounded ☐ Angular ☐ Hard & Durable ☐ Soft ☐ Weathered & Friable ☐

References: ASTM D 422: Particle Size Analysis of Soils

ASTM D 421: Dry Preparation of Soil Samples

ASTM D 2216: Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass

ASTM D 4318: Liquid Limit, Plastic Limit, & Plastic Index of Soils

ASTM D 2487: Classification of Soils for Engineering Purposes (Unified Soil Classification System)

ASTM D 854: Specific Gravity of Soils

Technical Responsibility: _____

Laboratory Manager

Materials Testing Report	Soil Consultants, Inc. P.O. Drawer 698, Charleston, S.C.	Tabulated Dry Sieve Data Sheet
Client:	S & ME, Inc.	Date: 7/18/03
Project and State:	Charleston Naval Base Container Terminal, North Charleston, South Carolina	
Sample Location:	PAW-19 @ -27.8	SCI No. 03100

DRY SIEVE ANALYSIS (ASTM D 422 w/o Hydrometer)
% Passing

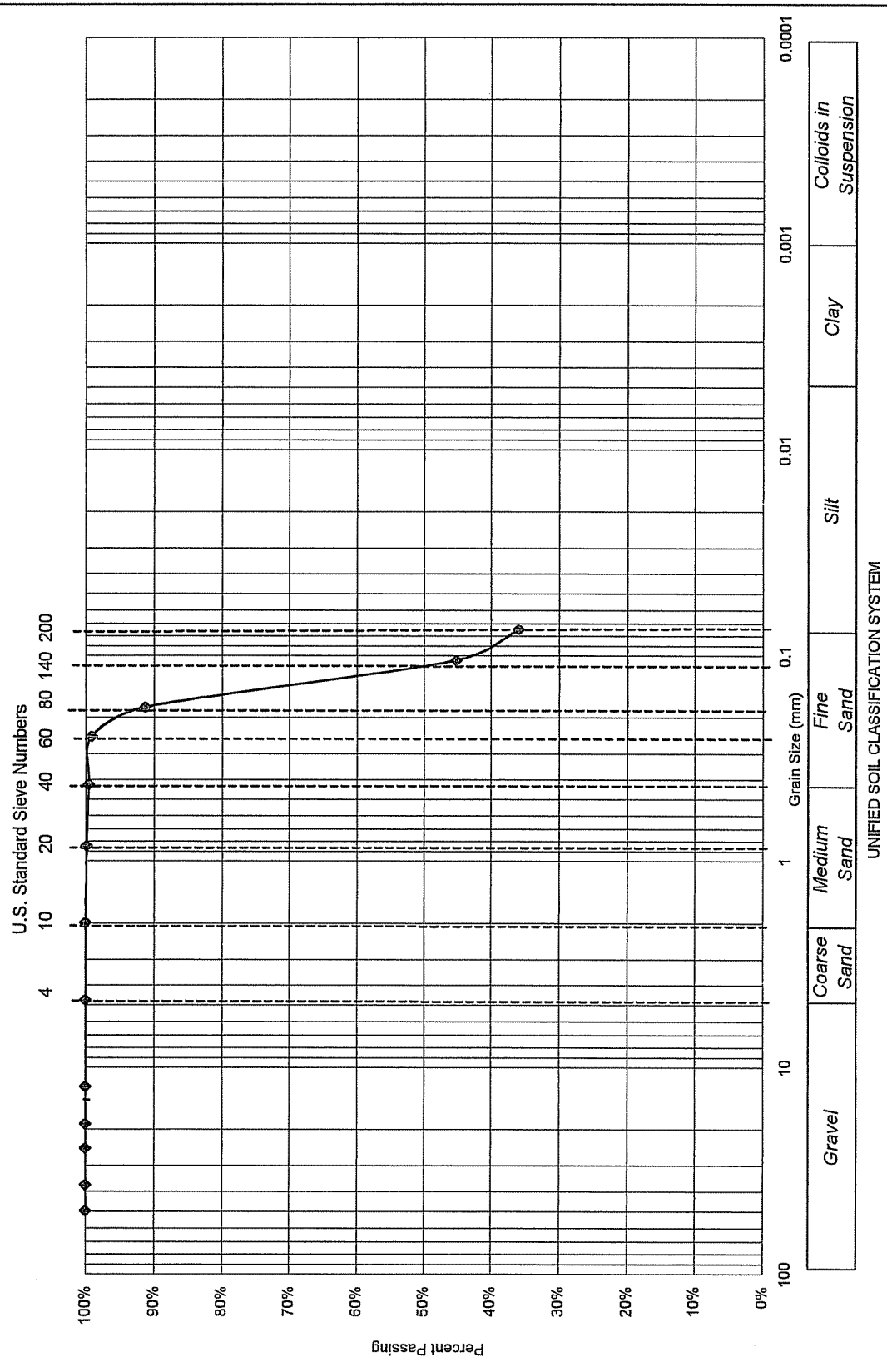
<i>Sieve Size</i>	<i>Particle Size</i>	<i>% Passing</i>
2-in.	50-mm	100.0%
1 1/2-in.	37.5-mm	100.0%
1-in.	25-mm	100.0%
3/4-in.	19-mm	100.0%
1/2-in.	12.5-mm	100.0%
3/8-in.	9.5-mm	100.0%
No. 4	4.75-mm	100.0%
No. 10	2-mm	100.0%
No. 20	0.85-mm	99.8%
No. 40	0.42-mm	99.5%
No. 60	0.25-mm	99.2%
No. 80	0.18-mm	91.3%
No. 140	0.106-mm	45.1%
No. 200	0.075-mm	35.9%
Wash No. 200, % Passing:		30.3

As requested, a Wash 200 (ASTM D1140) was conducted prior to the Dry Sieve Analysis.

Respectfully Submitted:


 SOIL CONSULTANTS, INC

Materials Testing Report	SOIL CONSULTANTS, INC. P.O. Drawer 698, Charleston, S.C. 29402		Grain Size Distribution Diagram Dry Sieve Analysis - ASTM D 422 w/o Hydrometer	
	Client: S & ME, Inc.	SCI No. 03100	Date: 7/18/03	
Project and State: Charleston Naval Base Container Terminal, North Charleston, South Carolina		Sample Location: PAW-19 @ -27.8		



As requested, a Wash 200 (ASTM D1140) was conducted prior to the Dry Sieve Analysis.

Respectfully Submitted:

Sydney M. Star

Particle Size Analysis of Soils

ASTM D 422



Project #: 1131-03-264

Test Date(s): 7/1/03

Project Name: Charleston Naval Base Container Terminal

Report Date: August 13, 2003

Client Name: SCSA

Boring #: PAW-21

Sample #: S-7

Sample Date: 06/04/03

Location: N. Charleston, SC

Elevation: (-40.2 ft CLW)

Sample Description: Black Clayey Sand (SC)

% Moisture Content:

Cu = D₆₀/D₁₀:Cc = (D₃₀)² / (D₁₀ x D₆₀):

Liquid Limit: not tested Plastic Limit: not tested Plastic Index: not tested Specific Gravity: not tested

Particle Size Analysis / Without Hydrometer Analysis			Moisture Content		Natural
				Tare #	xx
	Tare Number	x	A	Tare Weight	1.80
A	Tare Weight	9.3	B	Wet Weight + Tare Wt.	69.73
B	Total Sample Dry Wt. + Tare Wt.	242.3	C	Dry Weight + Tare Wt.	52.50
C	Total Sample Dry Weight (B-A)	233.0	D	Water Wt. (B-C)	17.23
D	Total Sample Wt. After #200 Wash	176.9	E	Dry Wt. (C-A)	50.70
E	Percent Passing #200 (1-D/C)x100	24.1%	Moisture Content (100 x D/E) (%)		34.0%

Sieve Size (mm)	Sieve Size	Retained Weight	Percent Retained	Percent Passing Total Sample
37.50	1.5"	0.0	0.0%	100.0%
25.00	1.0"	0.00	0.0%	100.0%
19.00	3/4"	0.00	0.0%	100.0%
12.50	1/2"	0.00	0.0%	100.0%
9.50	3/8"	0.00	0.0%	100.0%
4.75	#4	3.05	1.3%	98.7%
2.00	#10	4.16	1.8%	98.2%
0.85	#20	4.64	2.0%	98.0%
0.43	#40	6.01	2.6%	97.4%
0.25	#60	8.52	3.7%	96.3%
0.15	#100	74.69	32.1%	67.9%
0.075	#200	176.90	75.9%	24.1%

Notes:	Maximum Particle Size:	0.187 in.	Gravel	< 75 mm and > 4.75 mm (#4)	1.3%
	D10		Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	0.5%
	D30		Medium Sand	< 2.00 mm and > 0.425 mm (#40)	0.8%
	D/60		Fine Sand	< 0.425 mm and > 0.075 mm (#200)	73.3%
			% Silt and Clay	< 0.075 mm	24.1%
			Description of Sand & Gravel	Rounded <input type="checkbox"/> Angular <input type="checkbox"/>	
			Hard & Durable <input type="checkbox"/> Soft <input type="checkbox"/> Weathered & Friable <input type="checkbox"/>		

ASTM D 422: Particle Size Analysis of Soils

Hydrometer portion of test method not utilized.

ASTM D 421: Dry Preparation of Soil Samples

ASTM D 2216: Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass

ASTM D 4318: Liquid Limit, Plastic Limit, & Plastic Index of Soils

ASTM D 2487: Classification of Soils for Engineering Purposes (Unified Soil Classification System)

ASTM D 854: Specific Gravity of Soils

Technician / Certification #:

Technical Responsibility:

Position:

Laboratory Manager



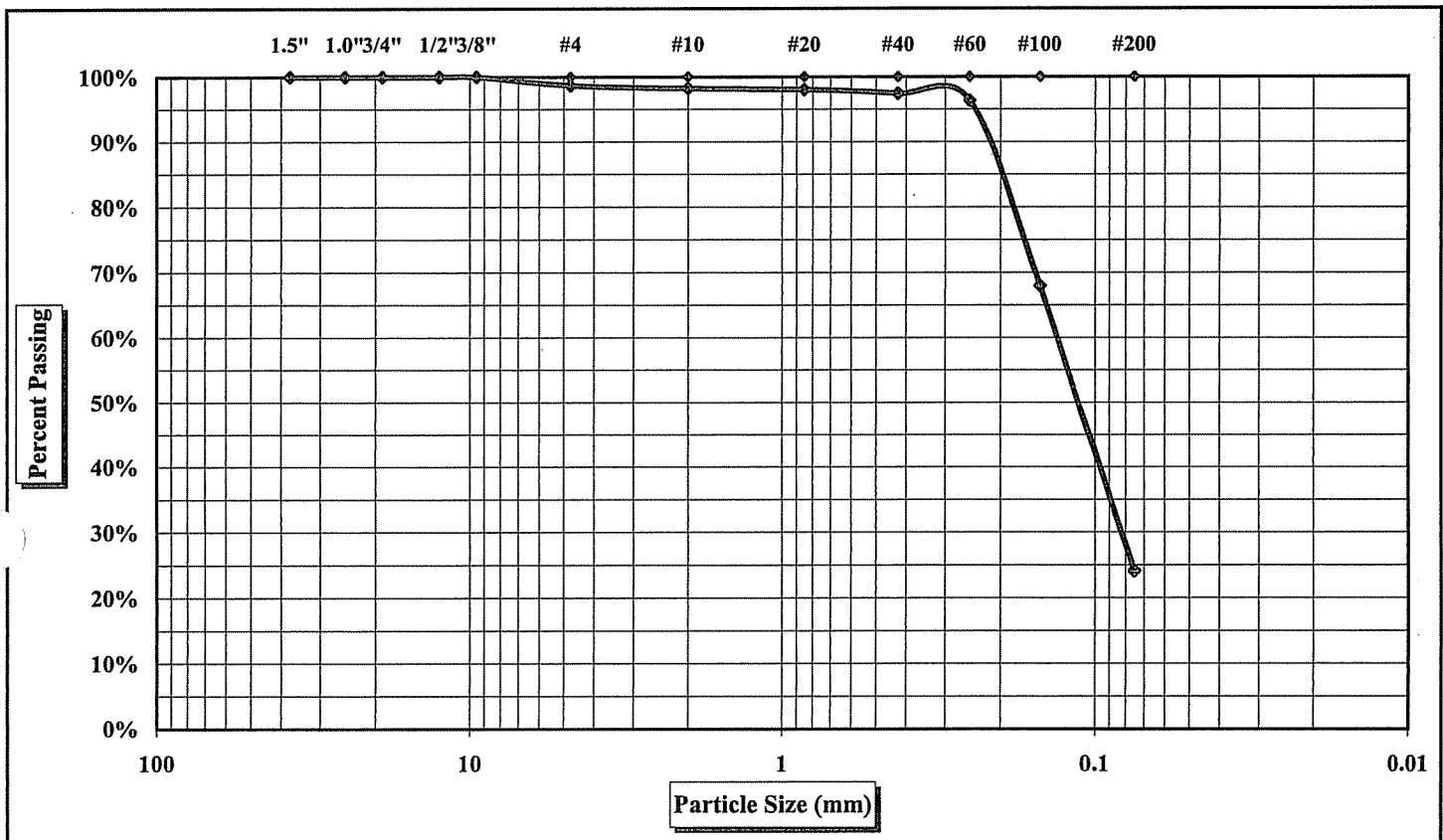
Particle Size Analysis of Soils

ASTM D 422

S&ME Project #: 1131-03-264
 Project Name: Charleston Naval Base Container Terminal
 Client Name: SCSPA

Report Date: August 13, 2003
 Test Date(s): 37803

Boring #: PAW-21 Sample #: S-7 Sample Date: June 4, 2003
 Location: N. Charleston, SC Elevation: (-40.2 ft CLW)
 Sample Description: Black Clayey Sand (SC)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 mm and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Moisture Content	34.0%	Gravel	1%	Liquid Limit	not tested
Silt & Clay (% Passing #200)	24.1%	Coarse Sand	0%	Plastic Limit	not tested
Maximum Particle Size	0.187 in.	Medium Sand	1%	Plastic Index	not tested
Specific Gravity	not tested	Fine Sand	73%		

Description of Sand & Gravel Particles:

Rounded ☐ Angular ☐ Hard & Durable ☐ Soft ☐ Weathered & Friable ☐

References:

ASTM D 422: Particle Size Analysis of Soils
 ASTM D 421: Dry Preparation of Soil Samples
 ASTM D 2216: Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
 ASTM D 4318: Liquid Limit, Plastic Limit, & Plastic Index of Soils
 ASTM D 2487: Classification of Soils for Engineering Purposes (Unified Soil Classification System)
 ASTM D 854: Specific Gravity of Soils

Technical Responsibility: -

Laboratory Manager

Materials Testing Report	Soil Consultants, Inc. P.O. Drawer 698, Charleston, S.C.	Tabulated Dry Sieve Data Sheet
Client:	S & ME, Inc.	Date: 7/18/03
Project and State:	Charleston Naval Base Container Terminal, North Charleston, South Carolina	
Sample Location:	PAW-27, S-6 @ -34.0	SCI No. 03100

DRY SIEVE ANALYSIS (ASTM D 422 w/o Hydrometer)
% Passing

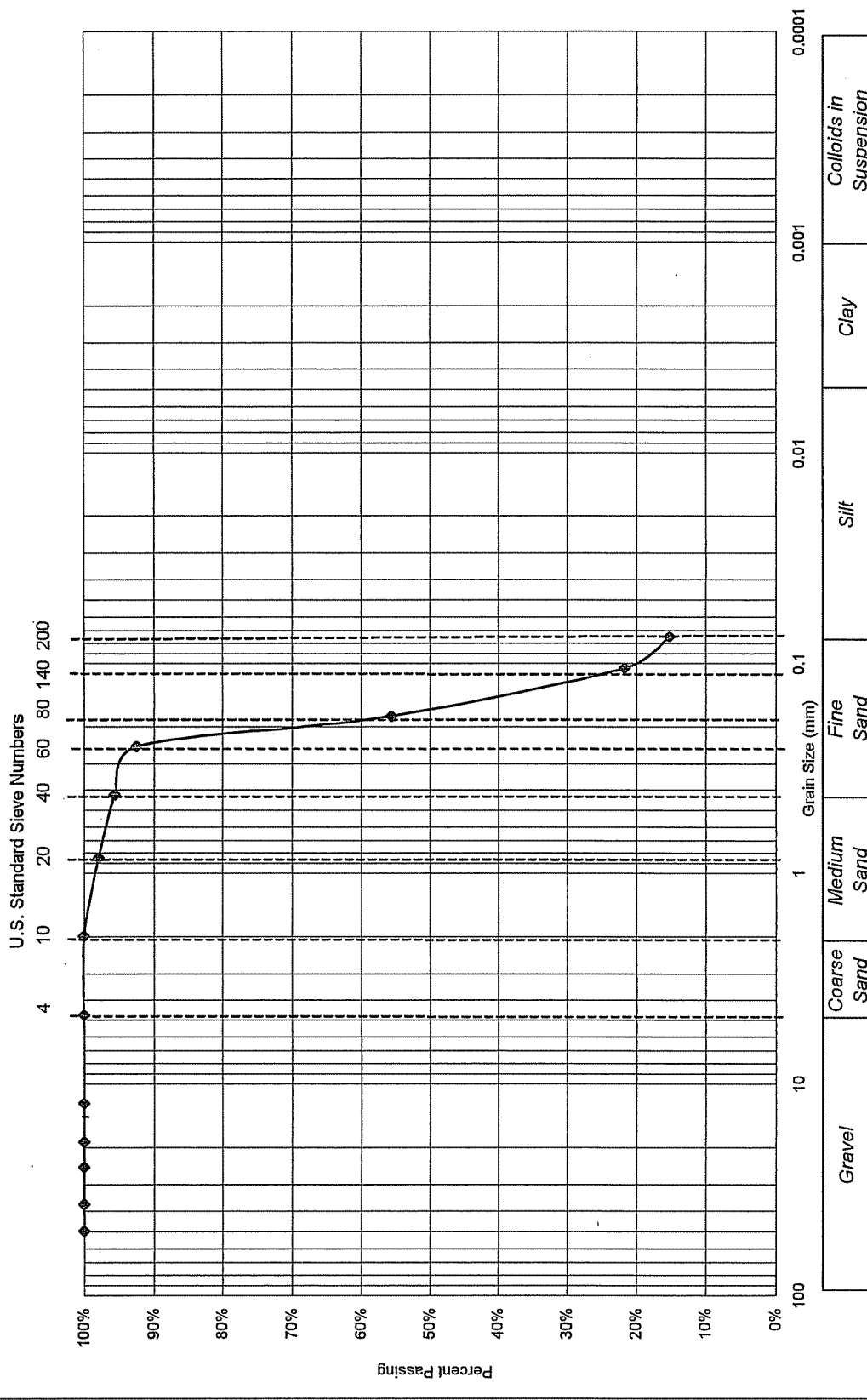
<i>Sieve Size</i>	<i>Particle Size</i>	<i>% Passing</i>
2-in.	50-mm	100.0%
1 1/2-in.	37.5-mm	100.0%
1-in.	25-mm	100.0%
3/4-in.	19-mm	100.0%
1/2-in.	12.5-mm	100.0%
3/8-in.	9.5-mm	100.0%
No. 4	4.75-mm	100.0%
No. 10	2-mm	100.0%
No. 20	0.85-mm	97.8%
No. 40	0.42-mm	95.5%
No. 60	0.25-mm	92.5%
No. 80	0.18-mm	55.5%
No. 140	0.106-mm	21.6%
No. 200	0.075-mm	15.1%
Wash No. 200, % Passing:		11.4

As requested, a Wash 200 (ASTM D1140) was conducted prior to the Dry Sieve Analysis.

Respectfully Submitted:


 SOIL CONSULTANTS, INC

Materials Testing Report	SOIL CONSULTANTS, INC. P.O. Drawer 698, Charleston, S.C. 29402		Grain Size Distribution Diagram Dry Sieve Analysis - ASTM D 422 w/o Hydrometer	
	Client: S & ME, Inc.	SCI No. 03100	Date: 7/18/03	
	Project and State: Charleston Naval Base Container Terminal, North Charleston, South Carolina			
Sample Location: PAW-27, S-6 @ -34.0				



UNIFIED SOIL CLASSIFICATION SYSTEM

As requested, a Wash 200 (ASTM D1140) was conducted prior to the Dry Sieve Analysis..

Respectfully Submitted:

Suparna M. Saha

Materials Testing Report	Soil Consultants, Inc. P.O. Drawer 698, Charleston, S.C.	Tabulated Dry Sieve Data Sheet
Client:	S & ME, Inc.	Date: 7/18/03
Project and State:	Charleston Naval Base Container Terminal, North Charleston, South Carolina	
Sample Location:	PAW-33, S-5 @ -29.5	SCI No. 03100

DRY SIEVE ANALYSIS (ASTM D 422 w/o Hydrometer)
% Passing

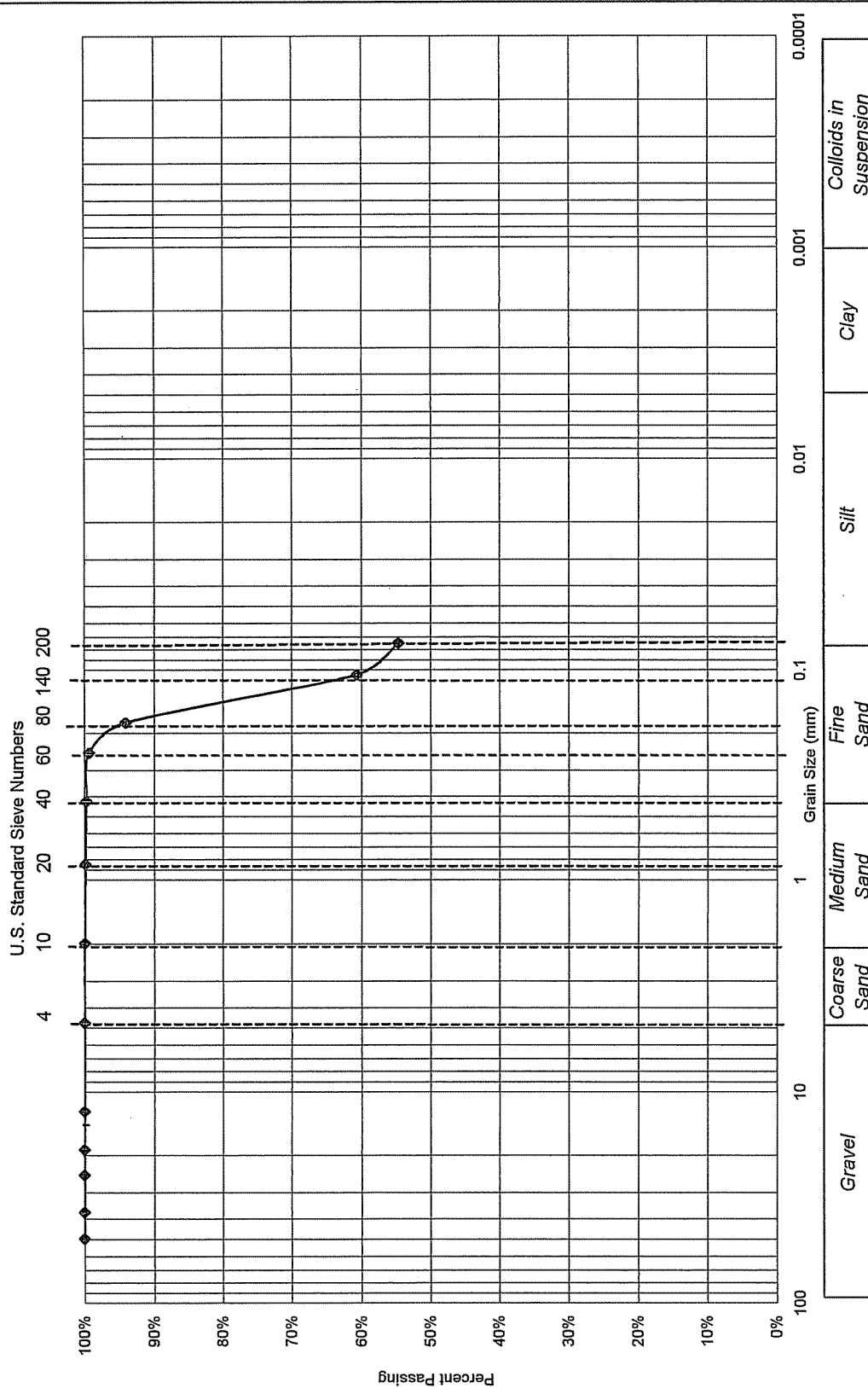
<i>Sieve Size</i>	<i>Particle Size</i>	<i>% Passing</i>
2-in.	50-mm	100.0%
1 1/2-in.	37.5-mm	100.0%
1-in.	25-mm	100.0%
3/4-in.	19-mm	100.0%
1/2-in.	12.5-mm	100.0%
3/8-in.	9.5-mm	100.0%
No. 4	4.75-mm	100.0%
No. 10	2-mm	100.0%
No. 20	0.85-mm	99.9%
No. 40	0.42-mm	99.7%
No. 60	0.25-mm	99.3%
No. 80	0.18-mm	94.1%
No. 140	0.106-mm	60.6%
No. 200	0.075-mm	54.6%
Wash No. 200, % Passing:		53.5

As requested, a Wash 200 (ASTM D1140) was conducted prior to the Dry Sieve Analysis.

Respectfully Submitted:


 SOIL CONSULTANTS, INC

Materials Testing Report	SOIL CONSULTANTS, INC. P.O. Drawer 698, Charleston, S.C. 29402		Grain Size Distribution Diagram Dry Sieve Analysis - ASTM D 422 w/o Hydrometer	
	Client: S & ME, Inc.	SCI No. 03100	Date: 7/18/03	
Project and State: Charleston Naval Base Container Terminal, North Charleston, South Carolina		Sample Location: PAW-33, S-5 @ -29.5		



UNIFIED SOIL CLASSIFICATION SYSTEM

As requested, a Wash 200 (ASTM D1140) was conducted prior to the Dry Sieve Analysis.

Respectfully Submitted:

Signature

Materials Testing Report	Soil Consultants, Inc. P.O. Drawer 698, Charleston, S.C.	Tabulated Dry Sieve Data Sheet
Client:	S & ME, Inc.	Date: 7/18/03
Project and State:	Charleston Naval Base Container Terminal, North Charleston, South Carolina	
Sample Location:	PAW-S2, S-5 @ -27.4	SCI No. 03100

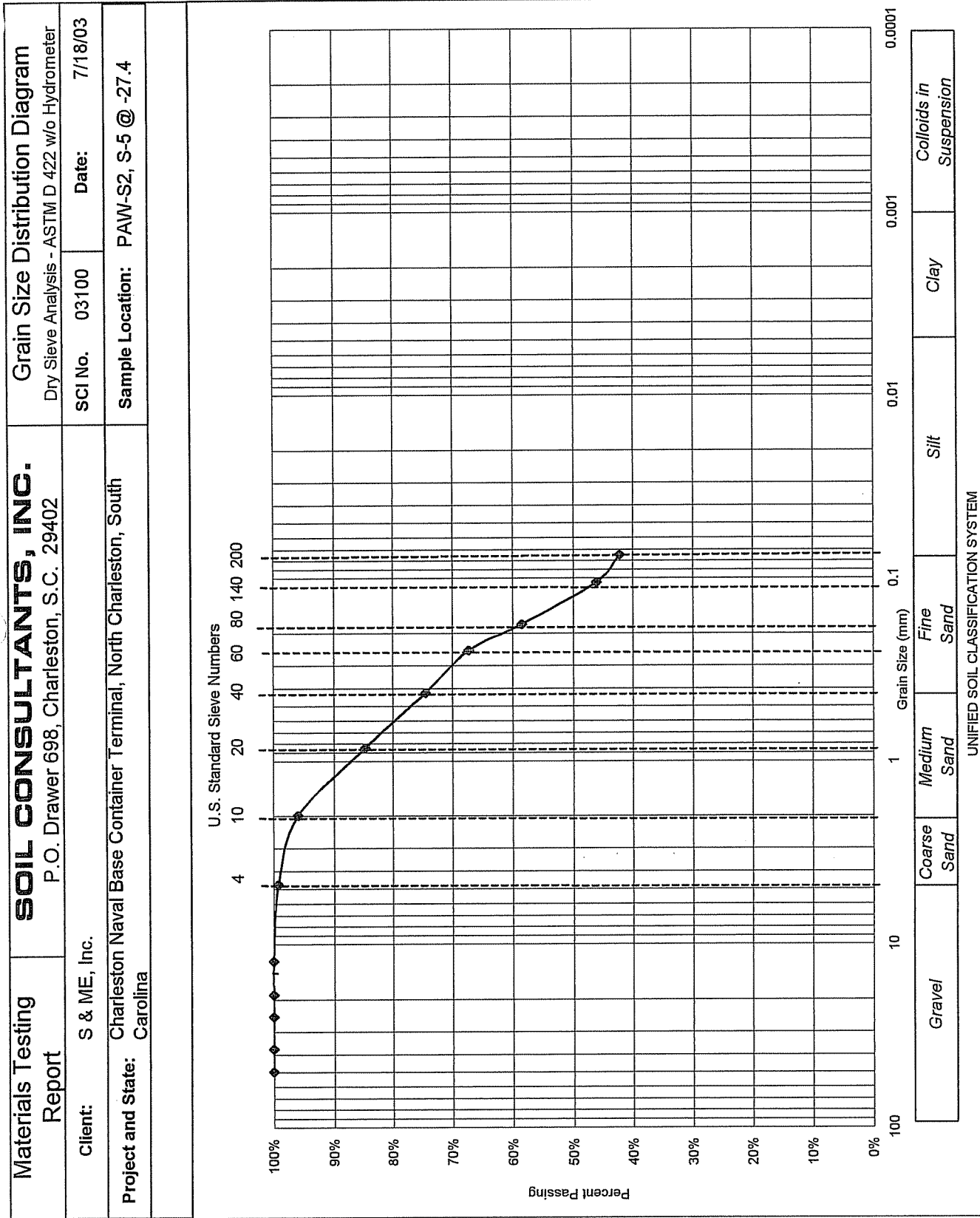
DRY SIEVE ANALYSIS (ASTM D 422 w/o Hydrometer)
% Passing

<i>Sieve Size</i>	<i>Particle Size</i>	<i>% Passing</i>
2-in.	50-mm	100.0%
1 1/2-in.	37.5-mm	100.0%
1-in.	25-mm	100.0%
3/4-in.	19-mm	100.0%
1/2-in.	12.5-mm	100.0%
3/8-in.	9.5-mm	100.0%
No. 4	4.75-mm	99.2%
No. 10	2-mm	96.0%
No. 20	0.85-mm	84.7%
No. 40	0.42-mm	74.5%
No. 60	0.25-mm	67.2%
No. 80	0.18-mm	58.4%
No. 140	0.106-mm	46.0%
No. 200	0.075-mm	42.2%
Wash No. 200, % Passing:		41.8

As requested, a Wash 200 (ASTM D1140) was conducted prior to the Dry Sieve Analysis.

Respectfully Submitted:


 SOIL CONSULTANTS, INC



As requested, a Wash 200 (ASTM D1140) was conducted prior to the Dry Sieve Analysis..

Respectfully Submitted:

Signature

Materials Testing Report	Soil Consultants, Inc. P.O. Drawer 698, Charleston, S.C.	Tabulated Dry Sieve Data Sheet
Client:	S & ME, Inc.	Date: 7/18/03
Project and State:	Charleston Naval Base Container Terminal, North Charleston, South Carolina	
Sample Location:	PAW-S5, S-6 @ -32.7	SCI No. 03100

DRY SIEVE ANALYSIS (ASTM D 422 w/o Hydrometer)
% Passing

<i>Sieve Size</i>	<i>Particle Size</i>	<i>% Passing</i>
2-in.	50-mm	100.0%
1 1/2-in.	37.5-mm	100.0%
1-in.	25-mm	100.0%
3/4-in.	19-mm	100.0%
1/2-in.	12.5-mm	100.0%
3/8-in.	9.5-mm	100.0%
No. 4	4.75-mm	100.0%
No. 10	2-mm	100.0%
No. 20	0.85-mm	100.0%
No. 40	0.42-mm	100.0%
No. 60	0.25-mm	99.6%
No. 80	0.18-mm	81.2%
No. 140	0.106-mm	36.2%
No. 200	0.075-mm	28.0%
Wash No. 200, % Passing:		24.6

As requested, a Wash 200 (ASTM D1140) was conducted prior to the Dry Sieve Analysis.

Respectfully Submitted:


 SOIL CONSULTANTS, INC

12

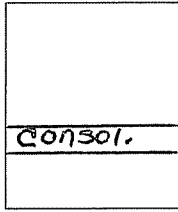
13

14

Oedometer Settlement Tests

Sample details

Sketch showing specimen location in original Sample



Depth 15'
Description: Gray inorganic clay with slight sand lens content.

Type Undisturbed
Height H_0 (in) 1
Diameter D_0 (in) 2.5
Weight W_0 (gr) 120.03
Bulk Density ρ (PCF) 93.15
Particle Density ρ_s 2.7
(measured)

Initial Conditions

Settlement Channel consol #3
Moisture Content w_0 % 89.0
Dry Density ρ_d (PCF) 49.30
Voids Ratio e_0 2.4177
Deg of Saturation S_0 % 99.4
Swelling Pressure S_s (TSF)

Final Conditions

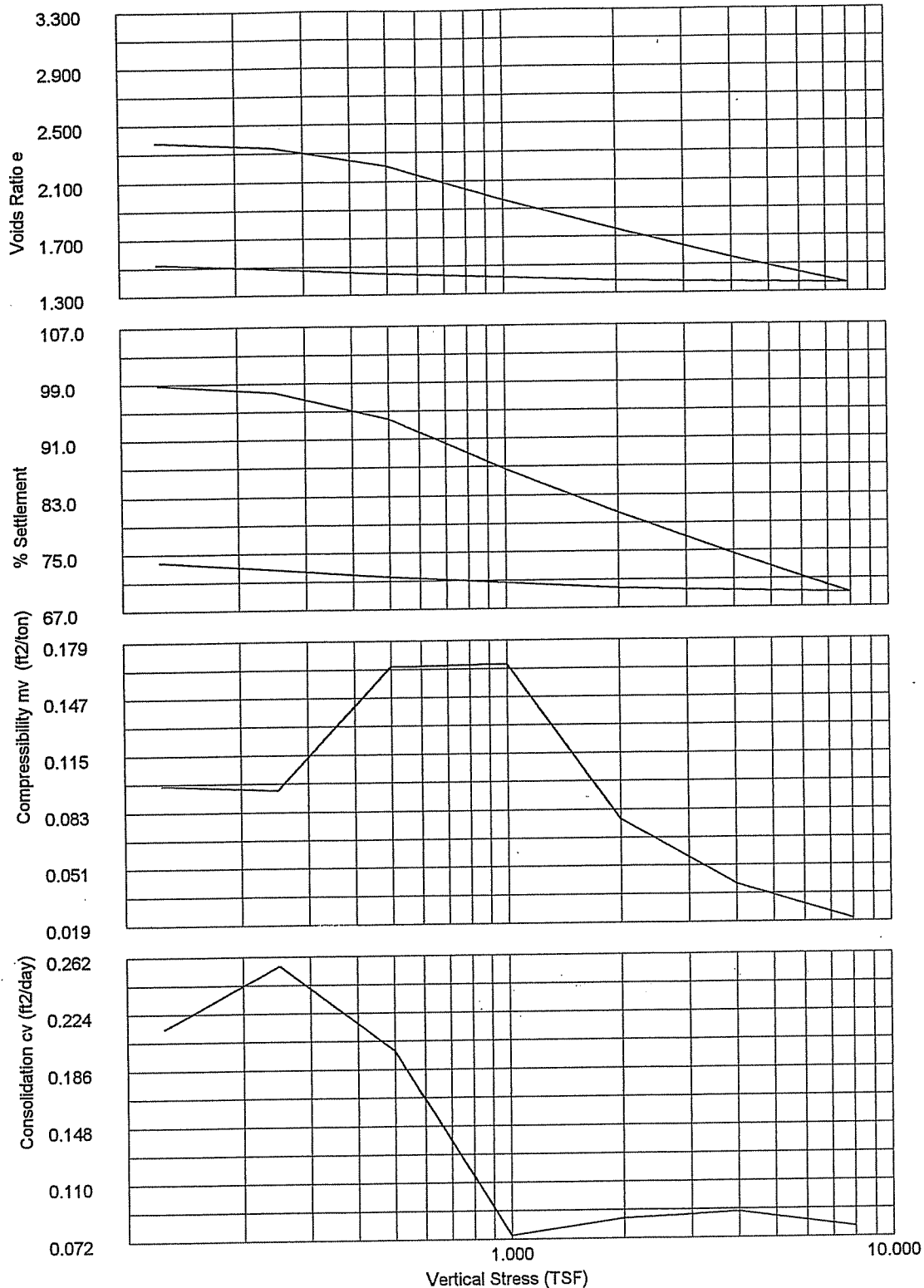
Moisture Content w_f % 58.0
Dry Density ρ_d (PCF) 66.84
Voids Ratio e_f 1.5205
Deg of Saturation S_f % 100.00
Settlement: (in) 0.262
Compression Index C_c

Notes: Atterberg Limits- LL: 133 PL: 43 PI: 90

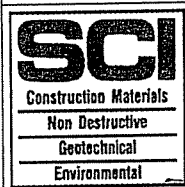
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #3
			Date of Test:	7/24/2003
	Site Reference:	Charleston Naval Base Container	Sample:	UD-1
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAL-60
Operator:		Checked:	Approved:	
Suzanne M. Stark		Archey Chubb	N. B. 1/6	

Oedometer Settlement Tests



Soil Consultants, Inc.



ASTM D2435-96

Test name: Consol #3
Date of Test: 7/24/2003

Site Reference: Charleston Naval Base Container
Jobfile: C:\WINCLISP\CNB.JOB

Sample: UD-1
Borehole: PAL-60

Operator:

Checked:

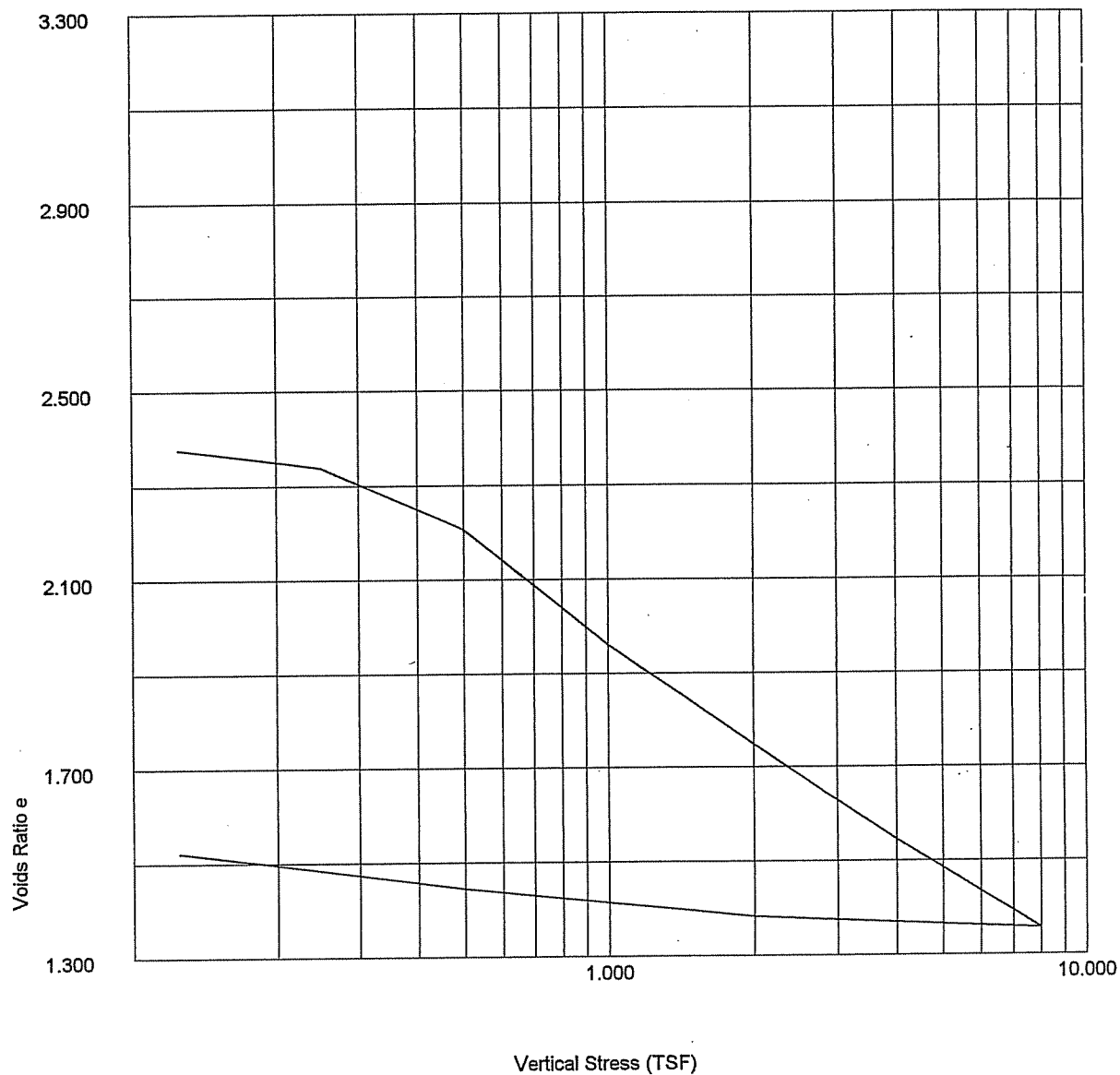
Approved:

Shannon M. Stroh

Candace Chubb

[Signature]

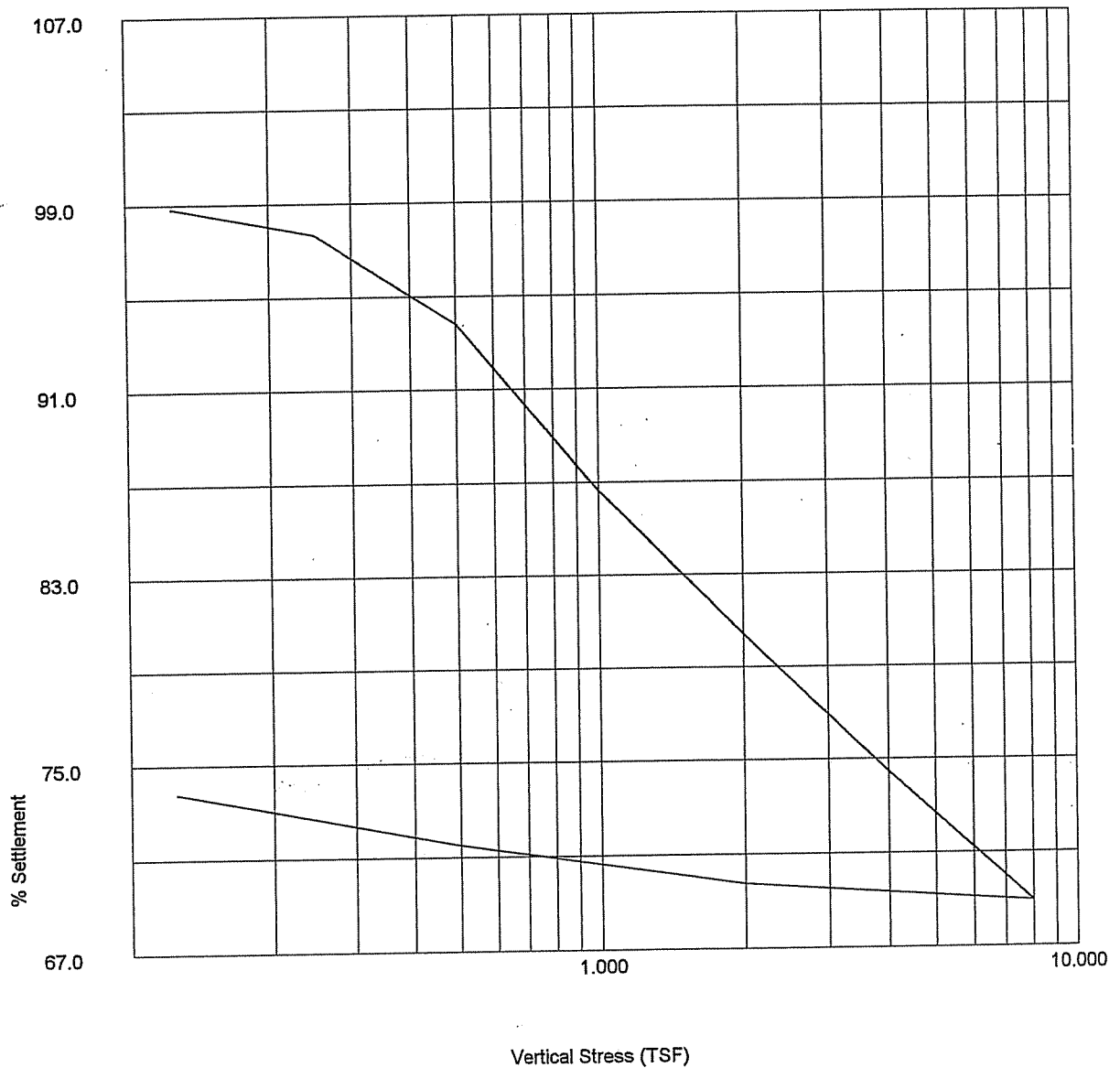
Oedometer Settlement Tests



Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #3
			Date of Test:	7/24/2003
	Site Reference:	Charleston Naval Base Container	Sample:	UD-1
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	Operator:	Suzanne M. Stroh	Checked:	Quincy Chubb

Oedometer Settlement Tests



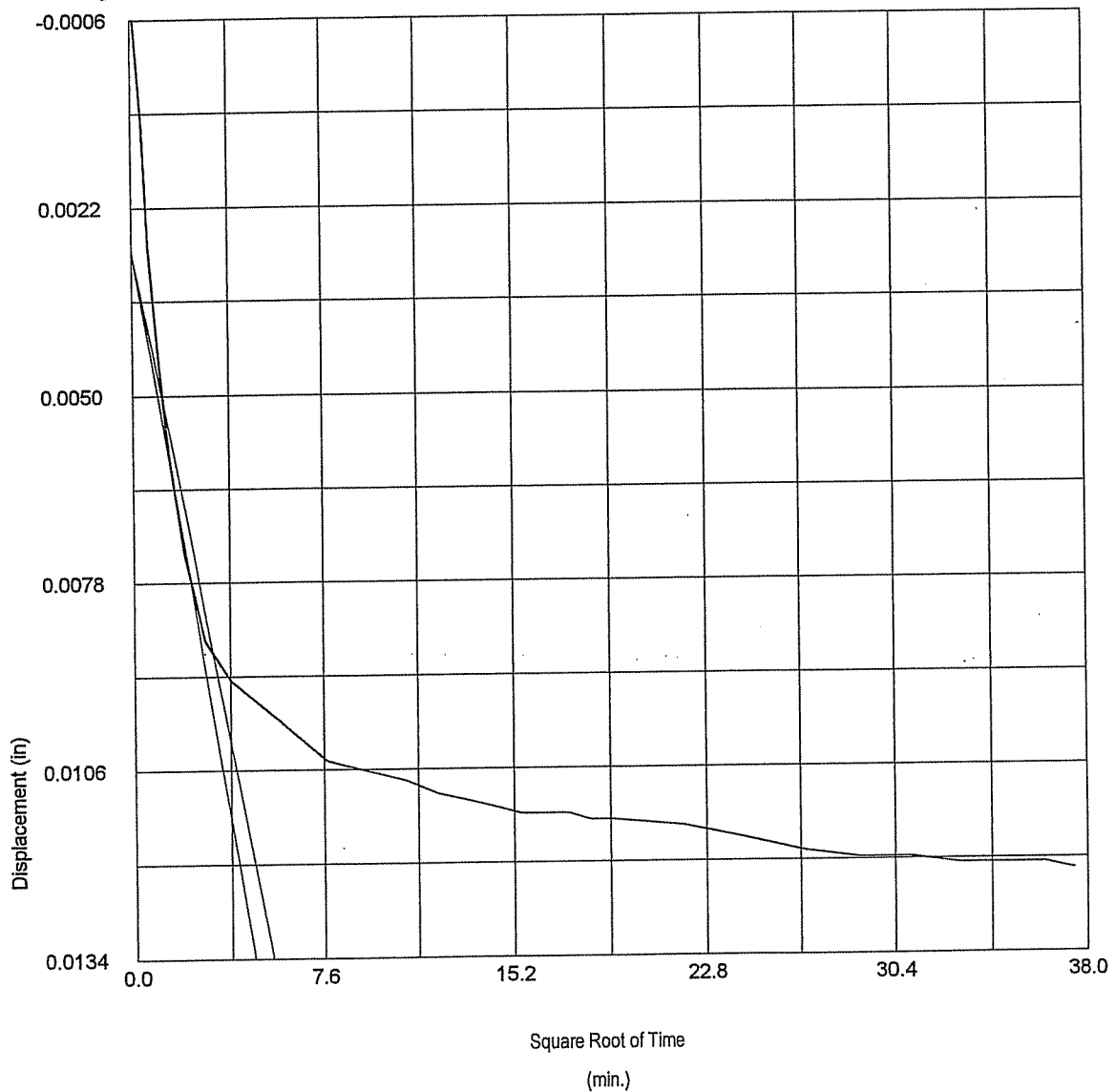
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #3	
			Date of Test:	7/24/2003	
	Site Reference:	Charleston Naval Base Container	Sample:	UD-1	
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAL-60	
	Operator:	Suzanne M. Stroh	Checked:	Candace Chubb	Approved:

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	0.125
Initial Temp oC	20.0
Correction (in)	0.0007
Displacement (in)	0.0128
Voids Ratio e_0	2.3763
Final Temp oC	
t_{90} (mins)	9.8
c_v (ft ² /day)	0.214
m_v (ft ² /ton)	0.098
Sec Compression C_{sec}	



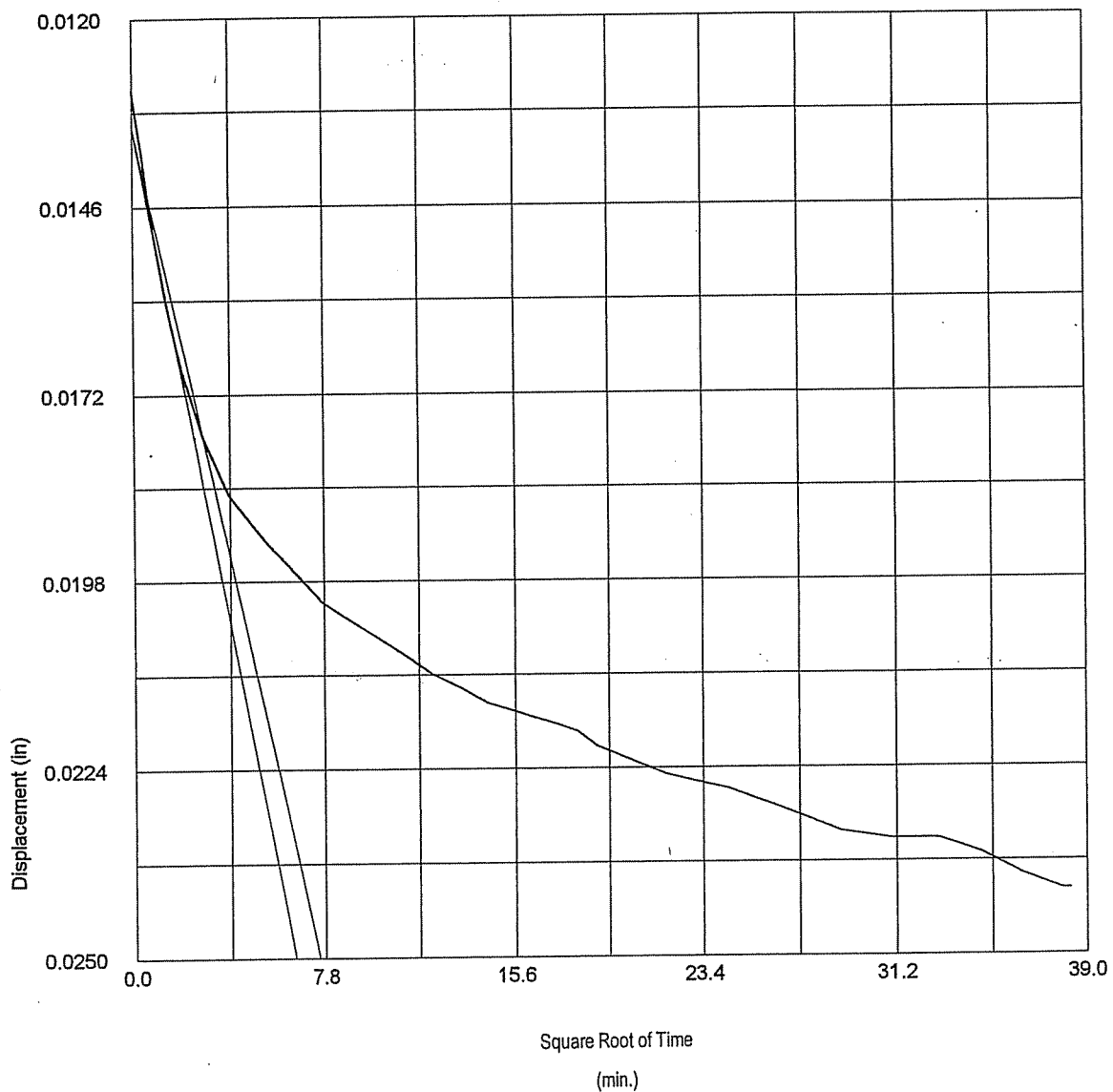
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96	Test name	Consol #3	
		Date of Test:	7/24/2003	
	Site Reference:	Charleston Naval Base Container	Sample:	UD-1
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAL-60
	Operator:	Checked:	Approved:	
	Shanne M. Stork	Clifford Chubb	N. M. Stork	

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	0.250
Initial Temp oC	20.0
Correction (in)	0.001
Displacement (in)	0.0111
Voids Ratio e_0	2.3367
Final Temp oC	8.0
t_{90} (mins)	0.256
c_v (ft ² /day)	0.095
m_v (ft ² /ton)	
Sec Compression C_{sec}	



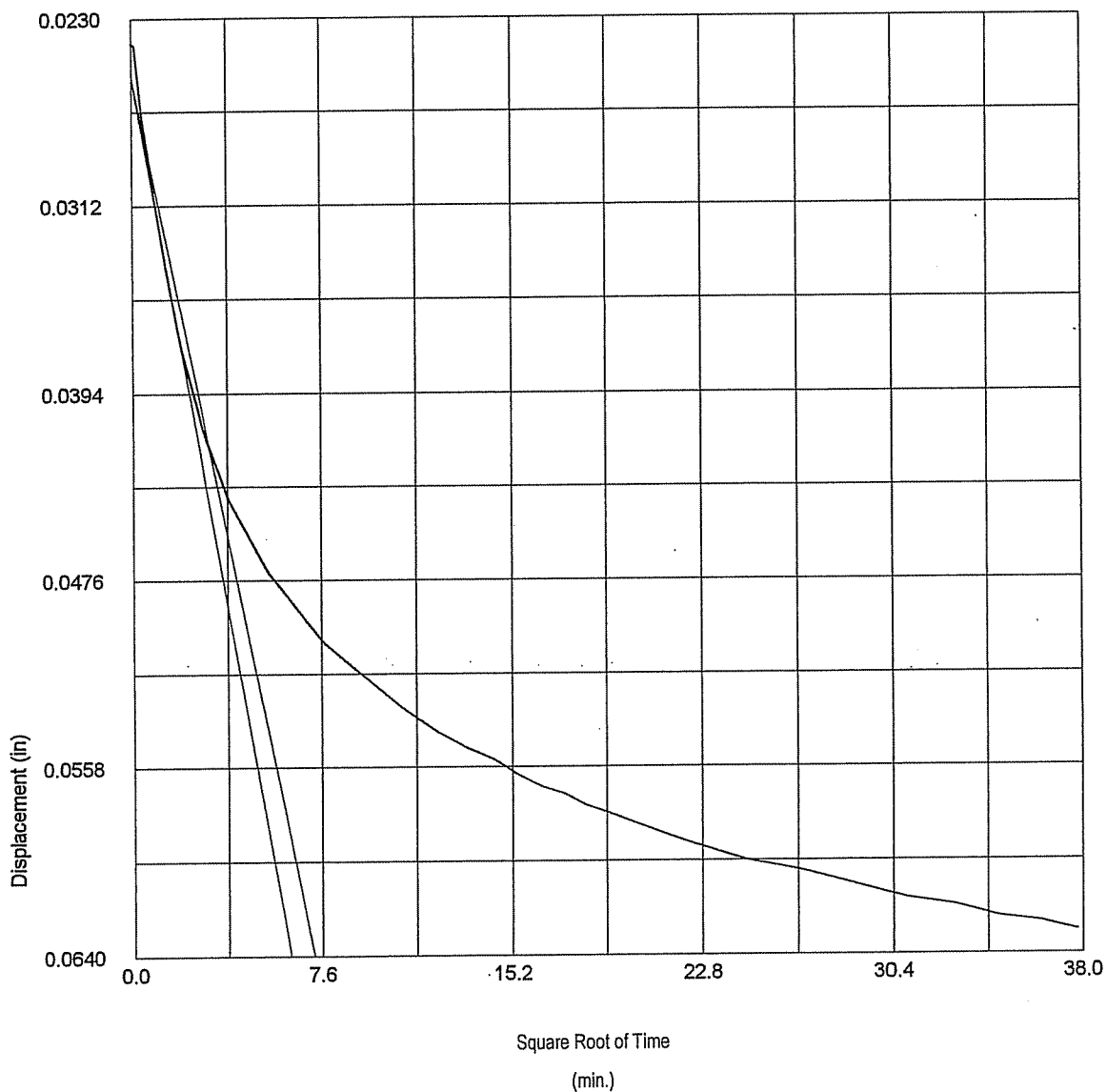
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96	Test name	Consol #3	
		Date of Test:	7/24/2003	
	Site Reference:	Charleston Naval Base Container	Sample:	UD-1
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAL-60
	Operator:	Jeanne M. Stroh	Checked:	Andrew Chubb
		Approved:	[Signature]	

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	0.500
Initial Temp oC	20.0
Correction (in)	0.0014
Displacement (in)	0.0389
Voids Ratio e_0	2.2051
Final Temp oC	
t_{90} (mins)	9.8
c_v (ft ² /day)	0.198
m_v (ft ² /ton)	0.164
Sec Compression C_{sec}	



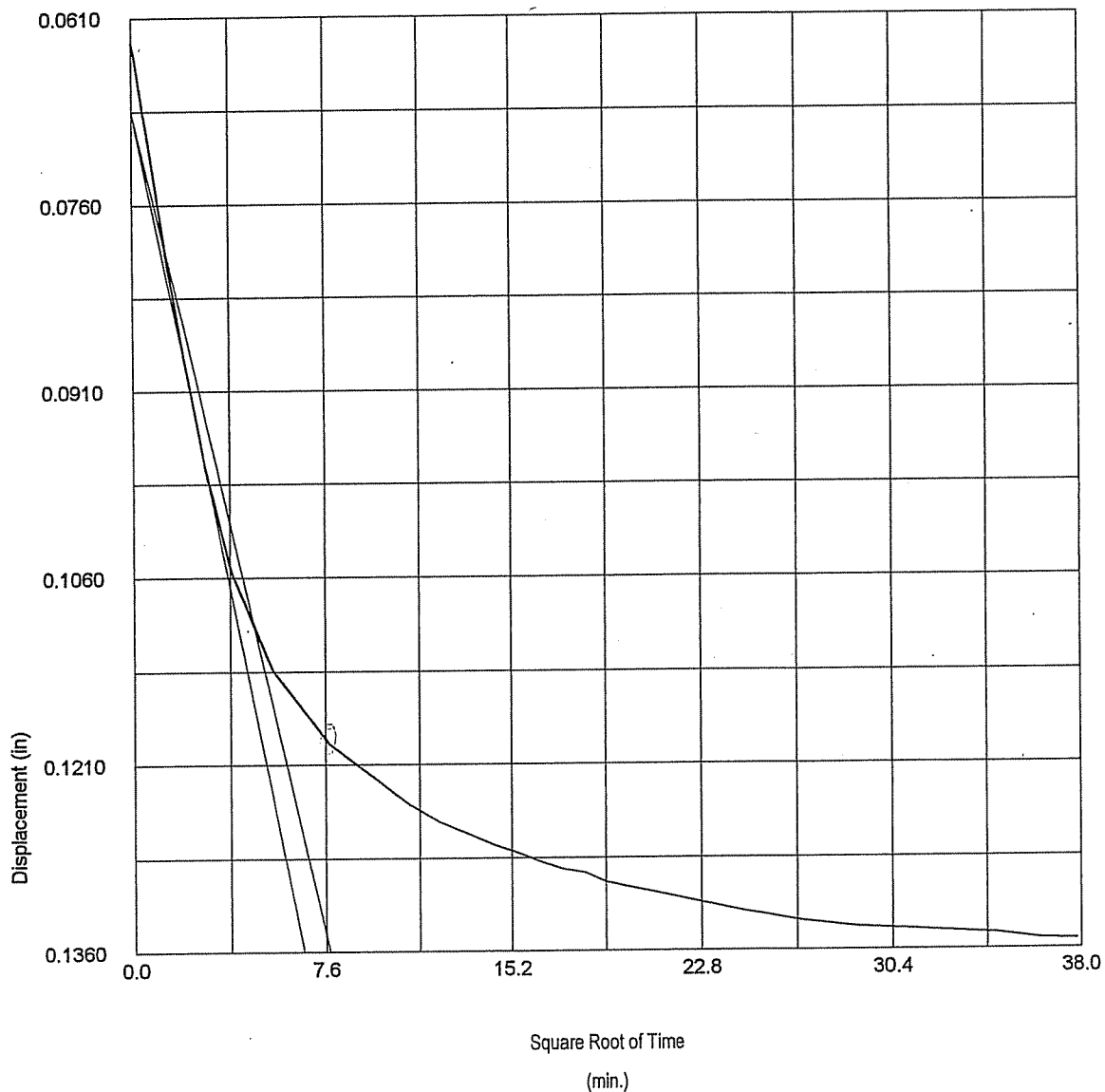
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96	Test name	Consol #3
	Site Reference: Charleston Naval Base Container	Date of Test:	7/24/2003
	Jobfile: C:\WINCLISP\CNB.JOB	Sample:	UD-1
	Operator: <i>Shanne M. Stroth</i>	Borehole:	PAL-60
	Checked: <i>Audley Chubb</i>	Approved: <i>[Signature]</i>	

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	1.000
Initial Temp oC	20.0
Correction (in)	0.0021
Displacement (in)	0.0723
Voids Ratio e_0	1.9604
Final Temp oC	
t_{90} (mins)	23.3
c_v (ft ² /day)	0.074
m_v (ft ² /ton)	0.165
Sec Compression C_{sec}	



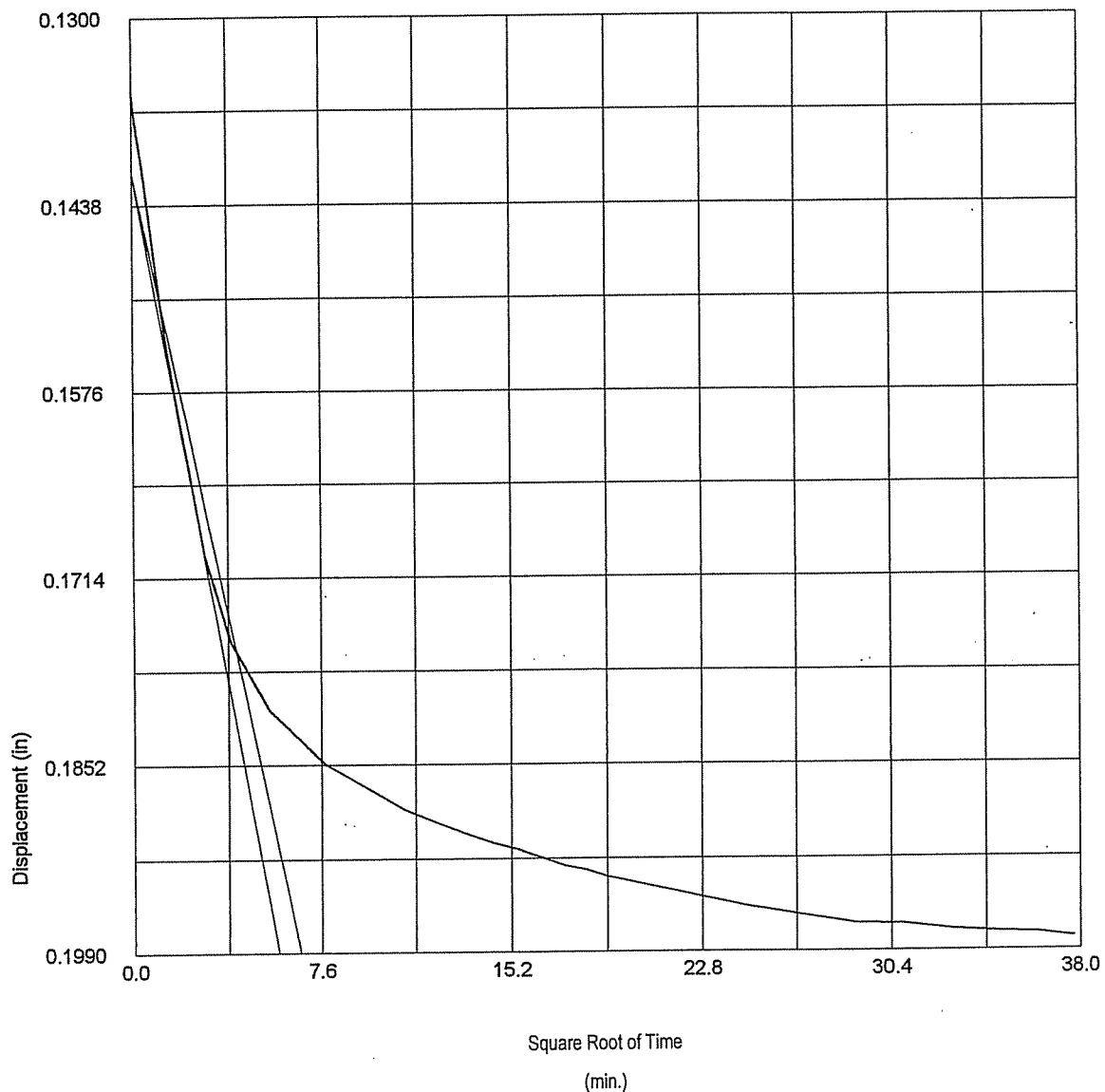
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #3
			Date of Test:	7/24/2003
	Site Reference:	Charleston Naval Base Container	Sample:	UD-1
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAL-60
	Operator:	Shanne M. Jark	Checked:	Audrey Chubb
		Approved:	N. B. [Signature]	

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	2.000
Initial Temp oC	20.0
Correction (in)	0.0028
Displacement (in)	0.0628
Voids Ratio e_0	1.7481
Final Temp oC	
t_{90} (mins)	17.4
c_v (ft ² /day)	0.085
m_v (ft ² /ton)	0.077
Sec Compression C_{sec}	



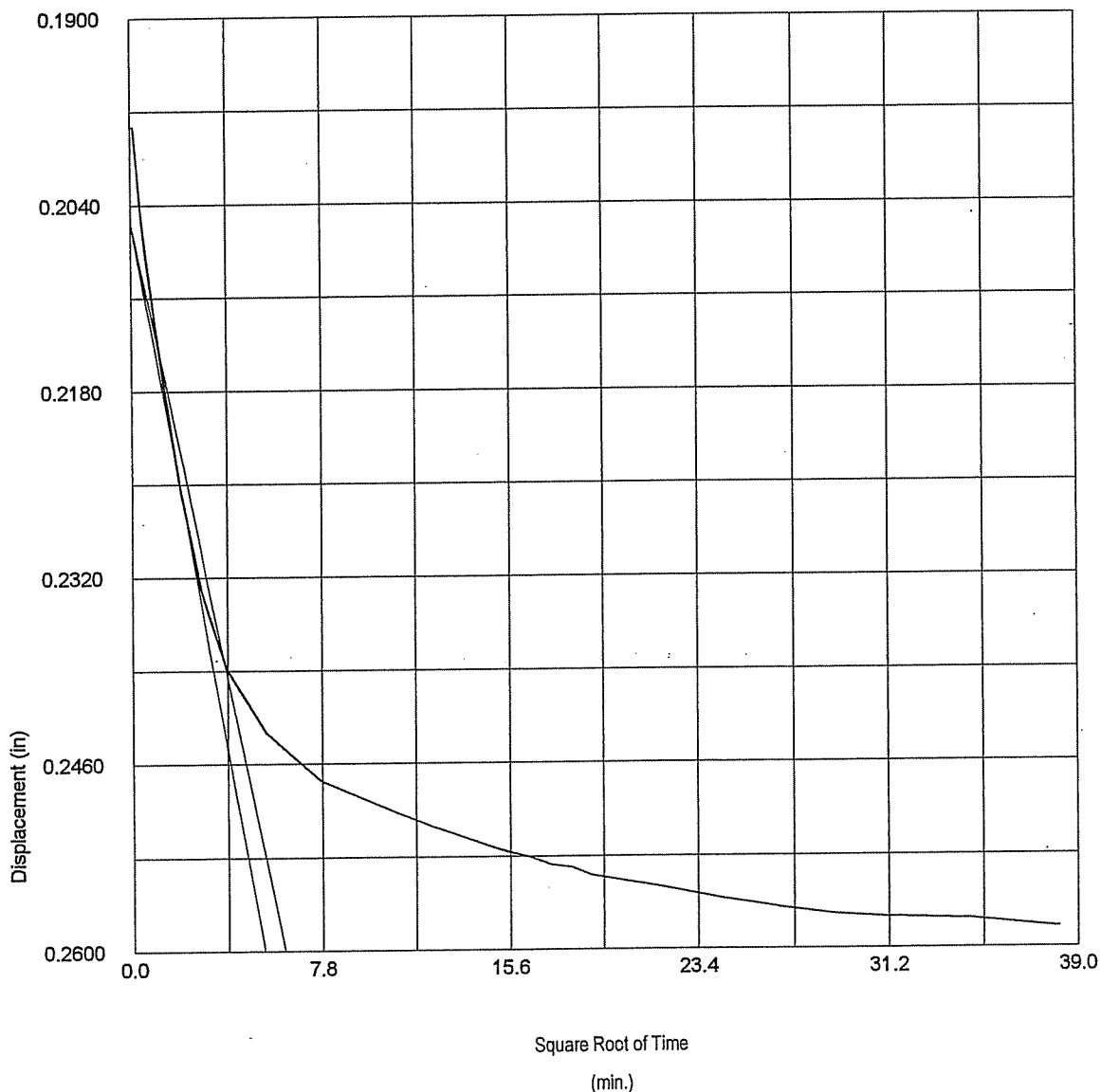
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #3
			Date of Test:	7/24/2003
	Site Reference:	Charleston Naval Base Container	Sample:	UD-1
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAL-60
Operator:		Checked:	Approved:	
<i>Garnett M. Stroh</i>		<i>Audrey Chubb</i>	<i>N. M. Stroh</i>	

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	4.000
Initial Temp oC	20.0
Correction (in)	0.0037
Displacement (in)	0.0604
Voids Ratio e_0	1.5448
Final Temp oC	
t_{90} (mins)	14.3
c_v (ft ² /day)	0.089
m_v (ft ² /ton)	0.04
Sec Compression C_{sec}	



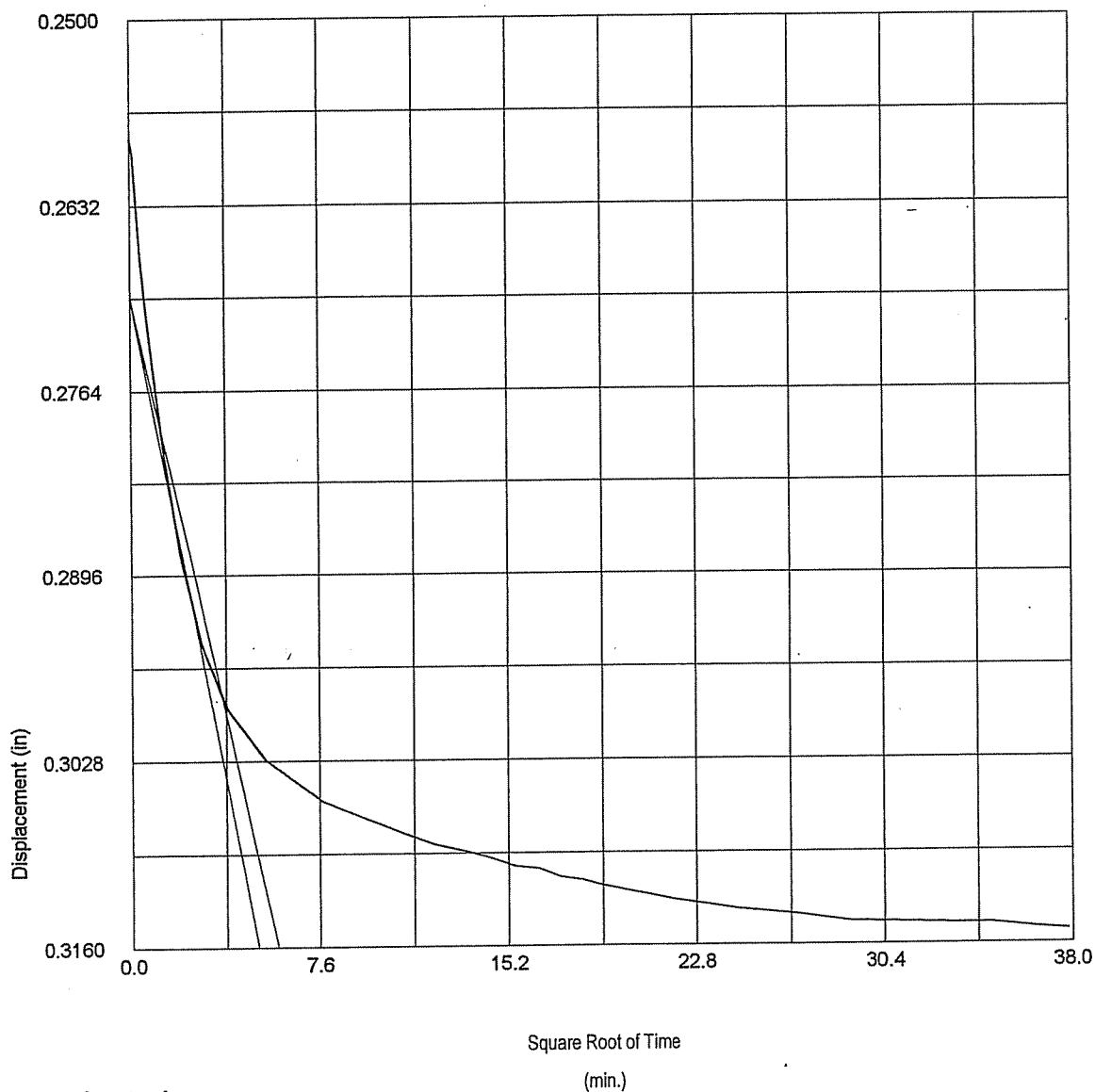
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #3
			Date of Test:	7/24/2003
	Site Reference:	Charleston Naval Base Container	Sample:	UD-1
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAL-60
Operator:		Checked:	Approved:	
<i>Garrett M. Stroh</i>		<i>Andrew Chubb</i>	<i>N. H. H. H.</i>	

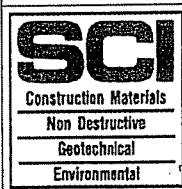
Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	8.000
Initial Temp oC	20.0
Correction (in)	0.0049
Displacement (in)	0.0566
Voids Ratio e_0	1.3555
Final Temp oC	
t_{90} (mins)	13.9
c_v (ft ² /day)	0.078
m_v (ft ² /ton)	0.02
Sec Compression C_{sec}	



Soil Consultants, Inc.



ASTM D2435-96

Test name Consol #3

Date of Test: 7/24/2003

Site Reference: Charleston Naval Base Container

Jobfile: C:\WINCLISP\CNB.JOB

Sample: UD-1

Borehole: PAL-60

Operator:

Checked:

Approved:

Janne M. Tush

Curley Chubb

N. B. S. 76

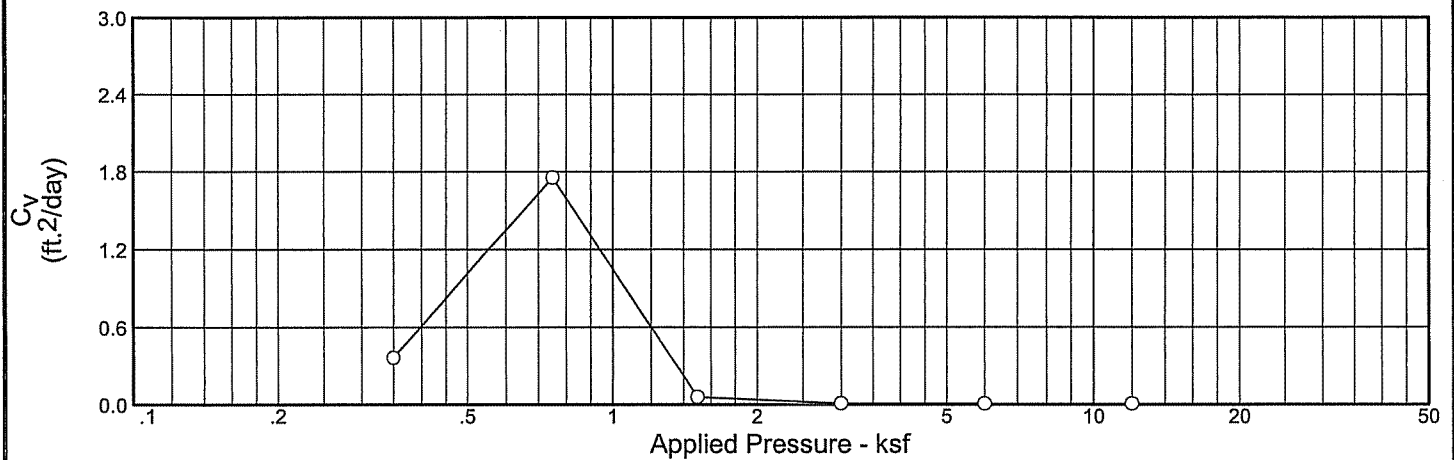
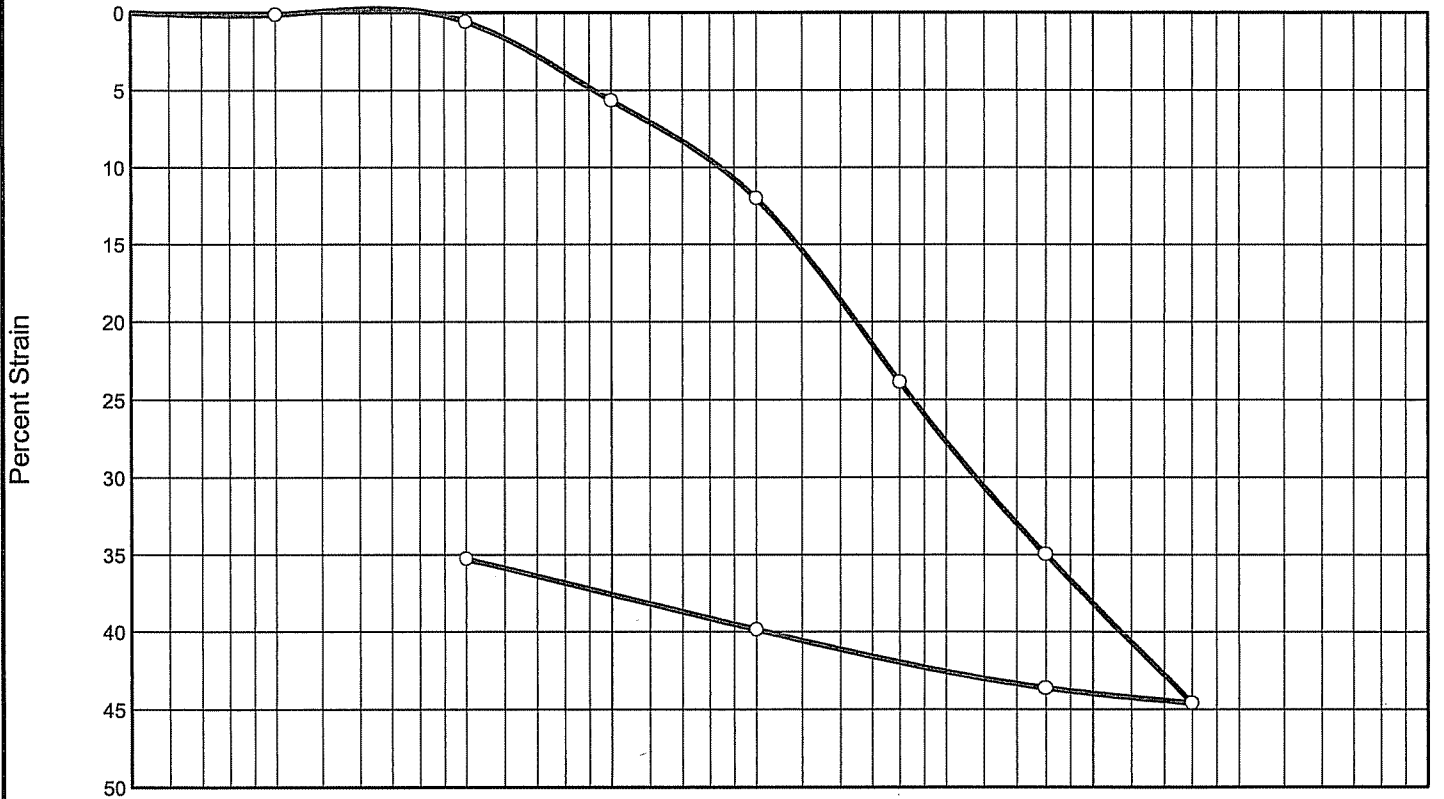
Oedometer Settlement Tests

Stress (TSF)	Initial Temp. oC	Settlement Total (in)	Cal Corr. (in)	Final Temp. oC	Voids Ratio e_f	t_{90} (mins)	Secondary Compr C_{sec}	c_v (ft ² /day)	m_v (ft ² /ton)
0.125	20.0	0.0121	0.0007	20.0	2.3763	9.8		0.214	0.098
0.250	20.0	0.0237	0.001	20.0	2.3367	8.0		0.256	0.095
0.500	20.0	0.0622	0.0014	20.0	2.2051	9.8		0.198	0.164
1.000	20.0	0.1338	0.0021	20.0	1.9604	23.3		0.074	0.165
2.000	20.0	0.1959	0.0028	20.0	1.7481	17.4		0.085	0.077
4.000	20.0	0.2554	0.0037	20.0	1.5448	14.3		0.089	0.040
8.000	20.0	0.3108	0.0049	20.0	1.3555	13.9		0.078	0.020
2.000	20.0	0.3030	0.0033	20.0	1.3821				0.002
0.500	20.0	0.2850	0.0023	20.0	1.4436				0.017
0.125	20.0	0.2625	0.0014	20.0	1.5205				0.081

Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #3
			Date of Test:	7/24/2003
	Site Reference:	Charleston Naval Base Container	Sample:	UD-1
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAL-60
Operator:		Checked:	Approved:	
<i>Janne M. Frost</i>		<i>Audrey Chubb</i>	<i>N. M. [Signature]</i>	

CONSOLIDATION TEST REPORT



Natural Saturation	Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (ksf)	P _c (ksf)	C _c	C _r	Initial Void Ratio
100.0 %	35.1	162	89	2.56		0.70	1.45	0.15	3.551

MATERIAL DESCRIPTION	USCS	AASHTO
Gray, Slightly Sandy Silt	MH	

Project No. 1131-03-264 Client: SCSPA Project: Charleston Navy Base Container Terminal North Charleston, SC Source: PAL-64 Sample No.: UD-2 Elev./Depth: 30 to 32ft <div style="text-align: center;"> CONSOLIDATION TEST REPORT S & ME, Inc. </div>	Remarks: <div style="text-align: right;">Plate</div>
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Dial Reading vs. Time

Project No.: 1131-03-264

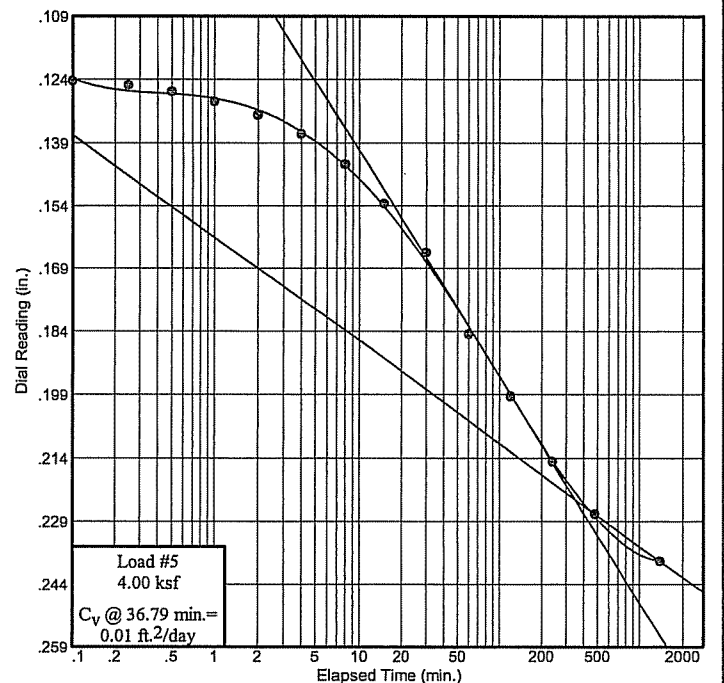
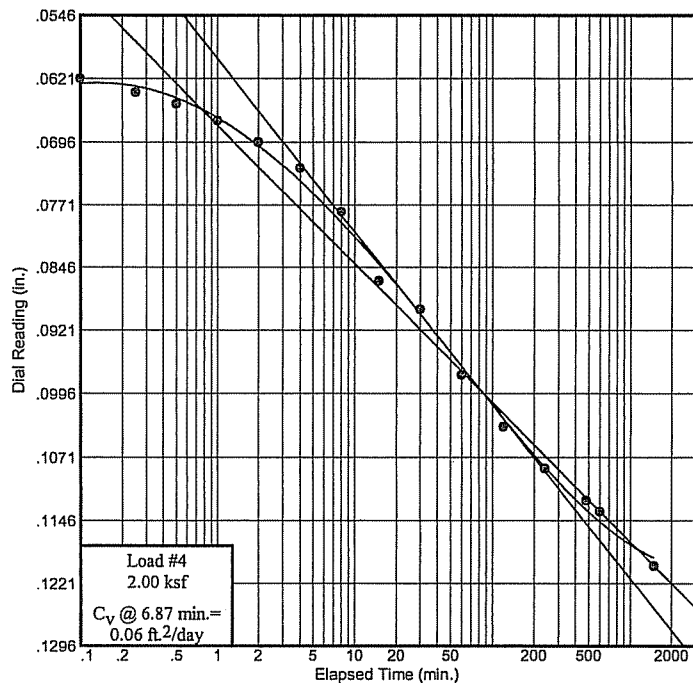
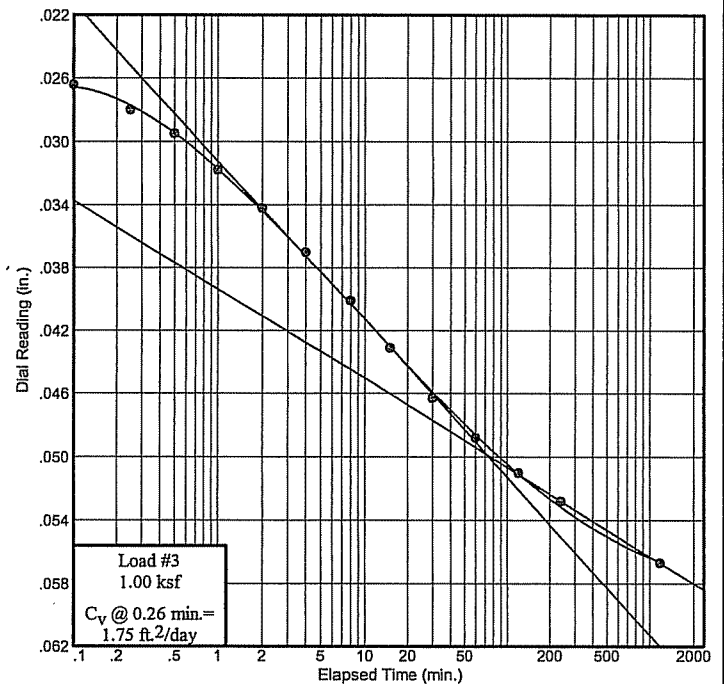
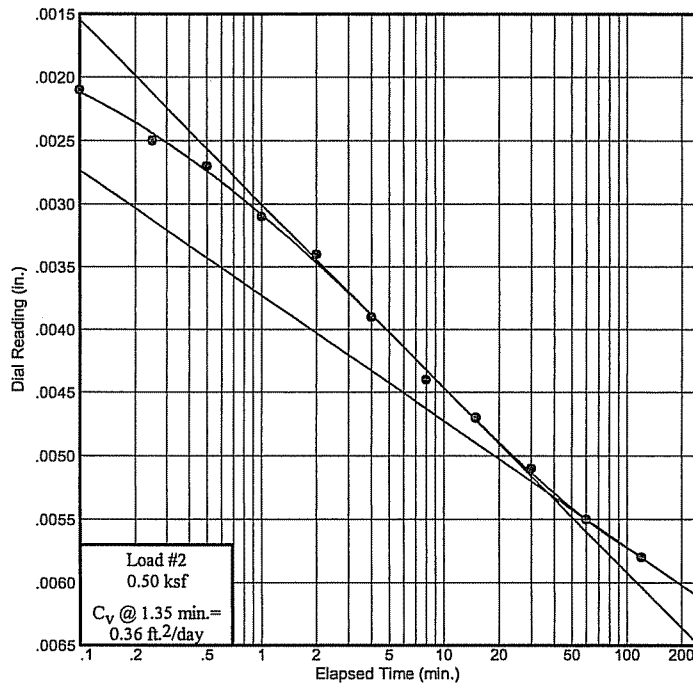
Project: Charleston Navy Base Container Terminal

North Charleston, SC

Source: PAL-64

Sample No.: UD-2

Elev./Depth: 30 to 32ft



Dial Reading vs. Time

S & ME, Inc.

Plate

Dial Reading vs. Time

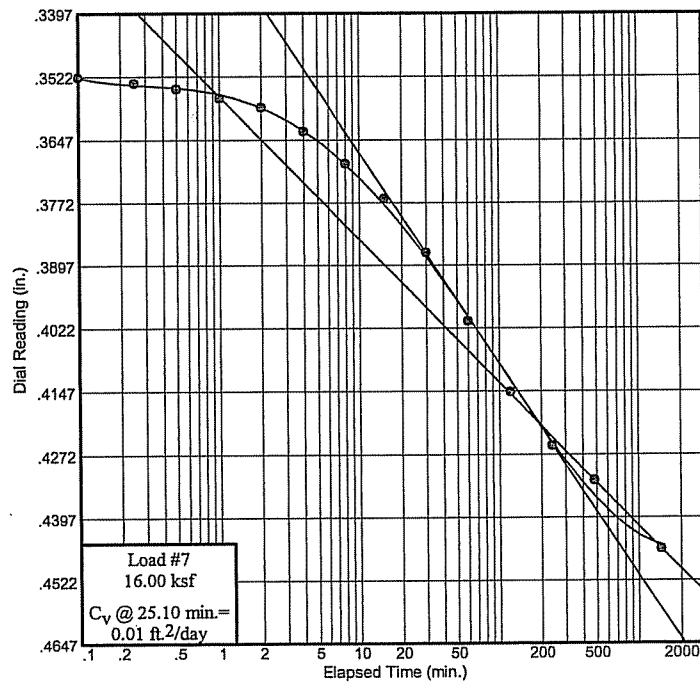
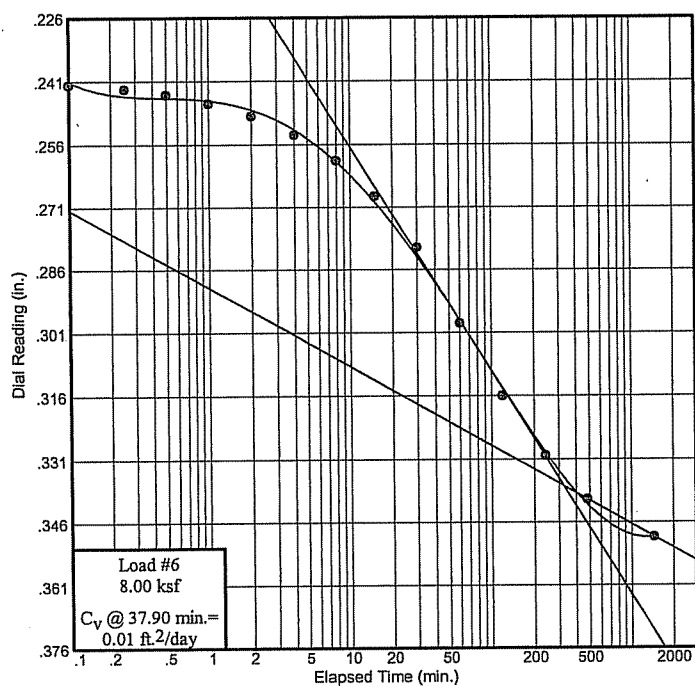
Project No.: 1131-03-264

Project: Charleston Navy Base Container Terminal
North Charleston, SC

Source: PAL-64

Sample No.: UD-2

Elev./Depth: 30 to 32ft



Dial Reading vs. Time

S & ME, Inc.

Plate

CONSOLIDATION TEST DATA

Client: SCSPA
Project: Charleston Navy Base Container Terminal
North Charleston, SC
Project Number: 1131-03-264

Sample Data

Source: PAL-64
Sample No.: UD-2
Elev. or Depth: 30 to 32ft **Sample Length (in./cm.):**
Location:
Description: Gray, Slightly Sandy Silt
Liquid Limit: 162 **Plasticity Index:** 89
USCS: MH **AASHTO:** **Figure No.:**
Testing Remarks:

Test Specimen Data

TOTAL SAMPLE		BEFORE TEST		AFTER TEST	
Wet w+t	= 70.23 g.	Consolidometer #	= 3	Wet w+t	= 91.72 g.
Dry w+t	= 30.04 g.			Dry w+t	= 51.49 g.
Tare Wt.	= 1.80 g.	Spec. Gravity	= 2.56	Tare Wt.	= .00 g.
Height	= 4.25 in.	Height	= 1.00 in.		
Diameter	= 2.87 in.	Diameter	= 2.87 in.		
Weight	= 614.64 g.	Defl. Table	= n/a		
Moisture	= 142.3 %	Ht. Solids	= 0.2197 in.	Moisture	= 78.1 %
Den.	= 85.1 pcf	Dry Wt.	= 59.71 g.*	Dry Wt.	= 51.49 g.
Den.	= 35.1 pcf	Void Ratio	= 3.551	Void Ratio	= 1.947
		Saturation	= 100.0 %		

* Initial dry weight used in calculations

End-of-Load Summary

Pressure (ksf)	Final Dial (in.)	Machine Defl. (in.)	C_v (ft. ² /day)	C_α	Void Ratio	% Compression /Swell
start	0.00000				3.551	
0.20	0.00120	0.00000			3.546	0.1 Compr.
0.50	0.00580	0.00000	0.36	0.001	3.525	0.6 Compr.
1.00	0.05670	0.00000	1.75	0.006	3.293	5.7 Compr.
2.00	0.12000	0.00000	0.06	0.018	3.005	12.0 Compr.
4.00	0.23850	0.00000	0.01	0.028	2.466	23.9 Compr.
8.00	0.34950	0.00000	0.01	0.025	1.961	35.0 Compr.
16.00	0.44590	0.00000	0.01	0.044	1.522	44.6 Compr.
8.00	0.43620	0.00000			1.566	43.6 Compr.
2.00	0.39860	0.00000			1.737	39.9 Compr.
0.50	0.35260	0.00000			1.947	35.3 Compr.

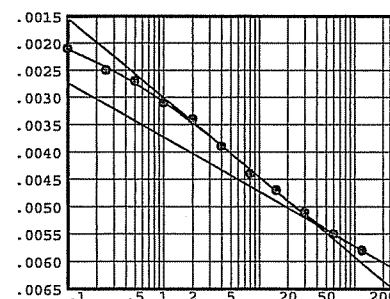
$C_c = 1.45$ $P_c = 0.70$ ksf $C_r = 0.15$

Pressure: 0.50 ksf

TEST READINGS

Load No. 2

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.00120	11	60.00	0.00550
2	0.10	0.00210	12	120.00	0.00580
3	0.25	0.00250			
4	0.50	0.00270			
5	1.00	0.00310			
6	2.00	0.00340			
7	4.00	0.00390			
8	8.00	0.00440			
9	15.00	0.00470			
10	30.00	0.00510			



Void Ratio = 3.525 Compression = 0.6 %

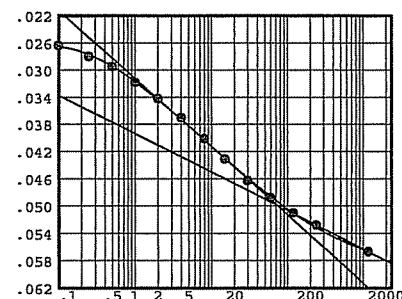
 $D_0 = 0.00120$ $D_{50} = 0.00324$ $D_{100} = 0.00529$ C_v at 1.3 min. = 0.36 ft.²/day $C_\alpha = 0.001$

Pressure: 1.00 ksf

TEST READINGS

Load No. 3

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.00580	11	60.00	0.04880
2	0.10	0.02640	12	120.00	0.05100
3	0.25	0.02800	13	240.00	0.05280
4	0.50	0.02950	14	1177.00	0.05670
5	1.00	0.03180			
6	2.00	0.03420			
7	4.00	0.03700			
8	8.00	0.04010			
9	15.00	0.04310			
10	30.00	0.04630			



Void Ratio = 3.293 Compression = 5.7 %

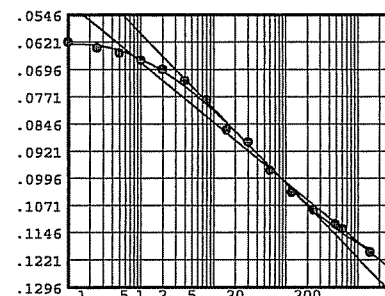
 $D_0 = 0.00580$ $D_{50} = 0.02783$ $D_{100} = 0.04986$ C_v at 0.3 min. = 1.75 ft.²/day $C_\alpha = 0.006$

Pressure: 2.00 ksf

TEST READINGS

Load No. 4

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.05670	11	60.00	0.09740
2	0.10	0.06210	12	120.00	0.10350
3	0.25	0.06370	13	240.00	0.10840
4	0.50	0.06510	14	480.00	0.11220
5	1.00	0.06710	15	600.00	0.11350
6	2.00	0.06960	16	1485.00	0.12000
7	4.00	0.07270			
8	8.00	0.07790			
9	15.00	0.08620			
10	30.00	0.08960			



Void Ratio = 3.005 Compression = 12.0 %

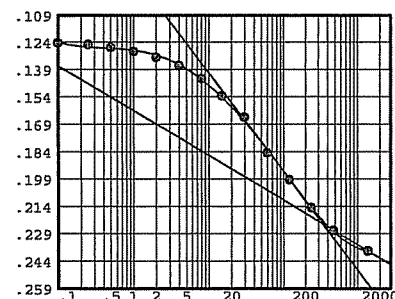
 $D_0 = 0.05670$ $D_{50} = 0.07806$ $D_{100} = 0.09942$ C_v at 6.9 min. = 0.06 ft.²/day $C_\alpha = 0.018$

Pressure: 4.00 ksf

TEST READINGS

Load No. 5

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.12000	11	60.00	0.18470
2	0.10	0.12440	12	120.00	0.19940
3	0.25	0.12540	13	240.00	0.21480
4	0.50	0.12690	14	480.00	0.22720
5	1.00	0.12920	15	1390.00	0.23850
6	2.00	0.13240			
7	4.00	0.13690			
8	8.00	0.14410			
9	15.00	0.15350			
10	30.00	0.16520			



Void Ratio = 2.466 Compression = 23.9 %

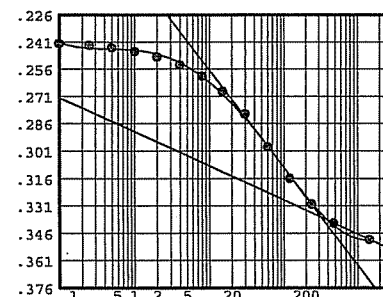
 $D_0 = 0.12000$ $D_{50} = 0.17185$ $D_{100} = 0.22370$ C_v at 36.8 min. = 0.01 ft.²/day $C_\alpha = 0.028$

Pressure: 8.00 ksf

TEST READINGS

Load No. 6

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.23850	11	60.00	0.29880
2	0.10	0.24190	12	120.00	0.31600
3	0.25	0.24290	13	240.00	0.33010
4	0.50	0.24420	14	480.00	0.34050
5	1.00	0.24630	15	1455.00	0.34950
6	2.00	0.24930			
7	4.00	0.25370			
8	8.00	0.25990			
9	15.00	0.26840			
10	30.00	0.28070			



Void Ratio = 1.961 Compression = 35.0 %

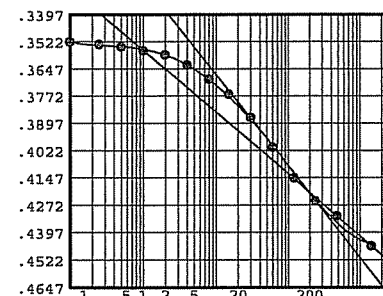
 $D_0 = 0.23850$ $D_{50} = 0.28793$ $D_{100} = 0.33735$ C_v at 37.9 min. = 0.01 ft.²/day $C_\alpha = 0.025$

Pressure: 16.00 ksf

TEST READINGS

Load No. 7

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.34950	11	60.00	0.40080
2	0.10	0.35230	12	120.00	0.41480
3	0.25	0.35350	13	240.00	0.42540
4	0.50	0.35460	14	480.00	0.43230
5	1.00	0.35640	15	1445.00	0.44590
6	2.00	0.35830			
7	4.00	0.36300			
8	8.00	0.36940			
9	15.00	0.37640			
10	30.00	0.38710			



Void Ratio = 1.522 Compression = 44.6 %

 $D_0 = 0.34950$ $D_{50} = 0.38518$ $D_{100} = 0.42085$ C_v at 25.1 min. = 0.01 ft.²/day $C_\alpha = 0.044$

Pressure: 8.00 ksf**TEST READINGS****Load No. 8**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.44590	11	60.00	0.43800
2	0.10	0.44440	12	120.00	0.43740
3	0.25	0.44410	13	240.00	0.43690
4	0.50	0.44380	14	480.00	0.43660
5	1.00	0.44340	15	1390.00	0.43620
6	2.00	0.44300			
7	4.00	0.44270			
8	8.00	0.44130			
9	15.00	0.44000			
10	30.00	0.43880			

Void Ratio = 1.566 Compression = 43.6 %

Pressure: 2.00 ksf**TEST READINGS****Load No. 9**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.43620	11	60.00	0.41640
2	0.10	0.43440	12	120.00	0.41030
3	0.25	0.43410	13	240.00	0.40620
4	0.50	0.43360	14	480.00	0.40260
5	1.00	0.43300	15	1440.00	0.39860
6	2.00	0.43220			
7	4.00	0.43100			
8	8.00	0.42780			
9	15.00	0.42510			
10	30.00	0.42140			

Void Ratio = 1.737 Compression = 39.9 %

Pressure: 0.50 ksf**TEST READINGS****Load No. 10**

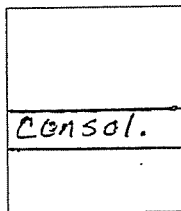
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.39860	11	60.00	0.38450
2	0.10	0.39790	12	120.00	0.37970
3	0.25	0.39750	13	240.00	0.37390
4	0.50	0.39710	14	480.00	0.36460
5	1.00	0.39680	15	1620.00	0.35260
6	2.00	0.39620			
7	4.00	0.39570			
8	8.00	0.39430			
9	15.00	0.39270			
10	30.00	0.38950			

Void Ratio = 1.947 Compression = 35.3 %

Oedometer Settlement Tests

Sample details

Sketch showing specimen location in original Sample



Depth 50'
Description: Gray inorganic clay with slight sand & shell content.

Type Undisturbed
Height H_0 (in) 1
Diameter D_0 (in) 2.5
Weight W_0 (gr) 112.19
Bulk Density ρ (PCF) 87.07
Particle Density ρ_s 2.71
(measured)

Initial Conditions

Settlement Channel consol #1
Moisture Content w_0 % 100.6
Dry Density ρ_d (PCF) 43.41
Voids Ratio e_0 2.8959
Deg of Saturation S_0 % 94.1
Swelling Pressure S_s (TSF)

Final Conditions

Moisture Content w_f % 75.1
Dry Density ρ_d (PCF) 60.26
Voids Ratio e_f 1.8062
Deg of Saturation S_f % 100.00
Settlement: (in) 0.28
Compression Index C_c

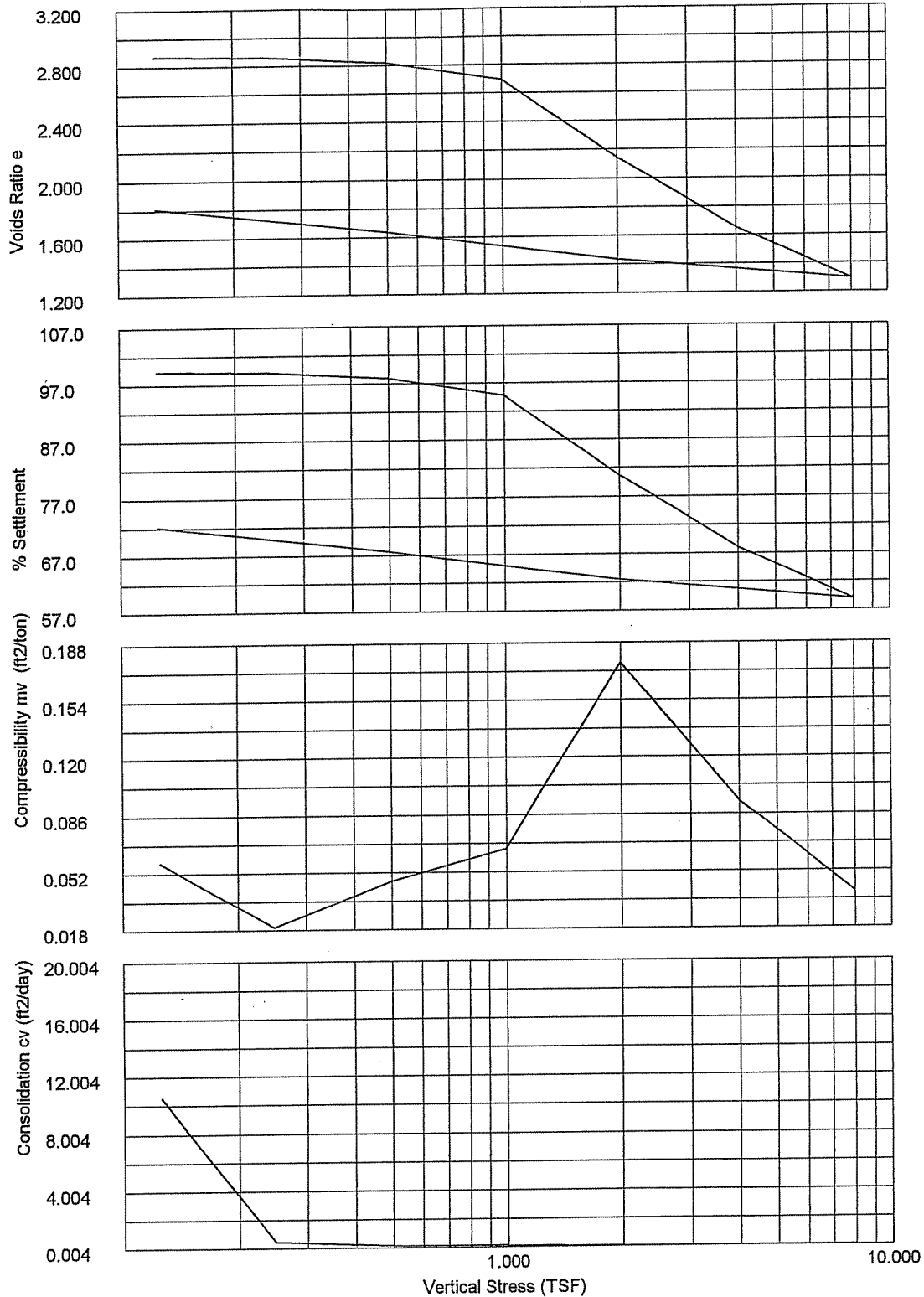
Notes:

Atterberg Limits- LL: 112 PL: 33 PI: 79. Less than 24 hr.
loading increment was conducted on loads of 0.125, & 0.25 tsf, due to swell.

Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #1
			Date of Test:	7/24/2003
	Site Reference:	Charleston Naval Base Container	Sample:	UD-3
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAL-64
Operator:		Checked:	Approved:	
James M. Stolt		Dail F. Hall	N. B. H. 76	

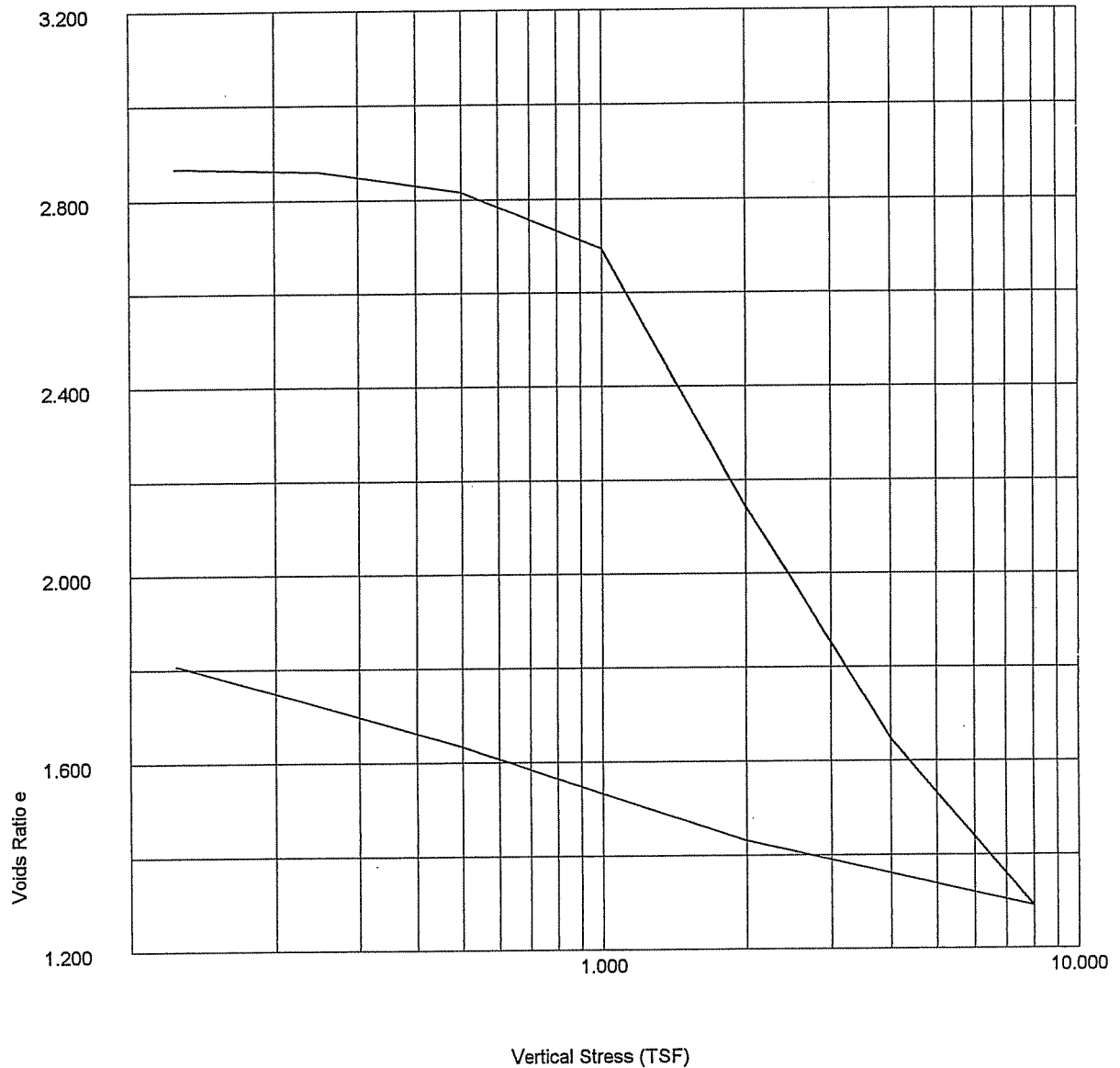
Oedometer Settlement Tests



Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #1
			Date of Test:	7/24/2003
	Site Reference:	Charleston Naval Base Container	Sample:	UD-3
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAL-64
	Operator:	Shannon M. Stork	Checked:	Dail J. Hall

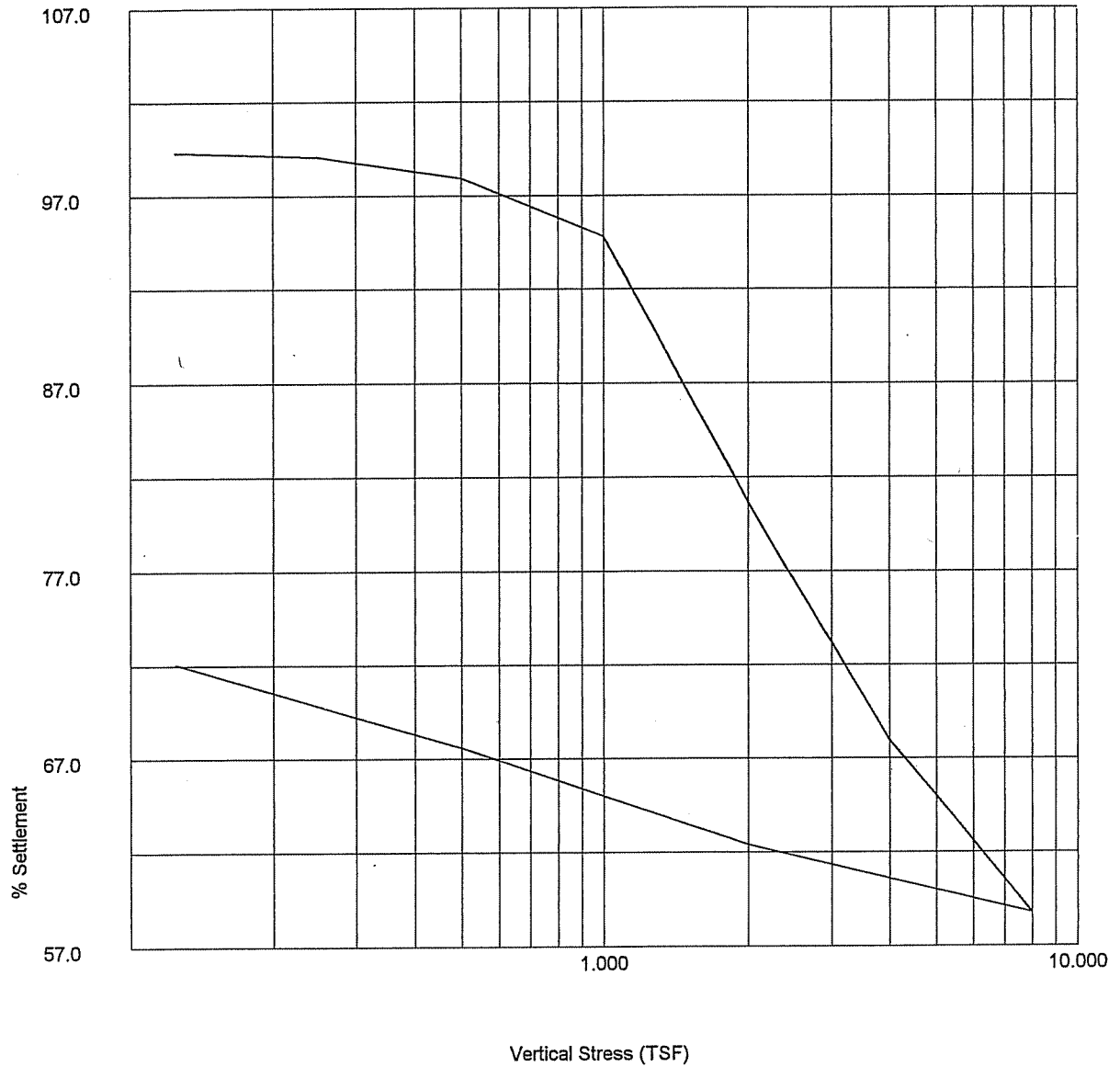
Oedometer Settlement Tests



Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #1
			Date of Test:	7/24/2003
	Site Reference:	Charleston Naval Base Container	Sample:	UD-3
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAL-64
	Operator:	Janne M. Stolt	Checked:	Dail J Hal
			Approved:	[Signature]

Oedometer Settlement Tests



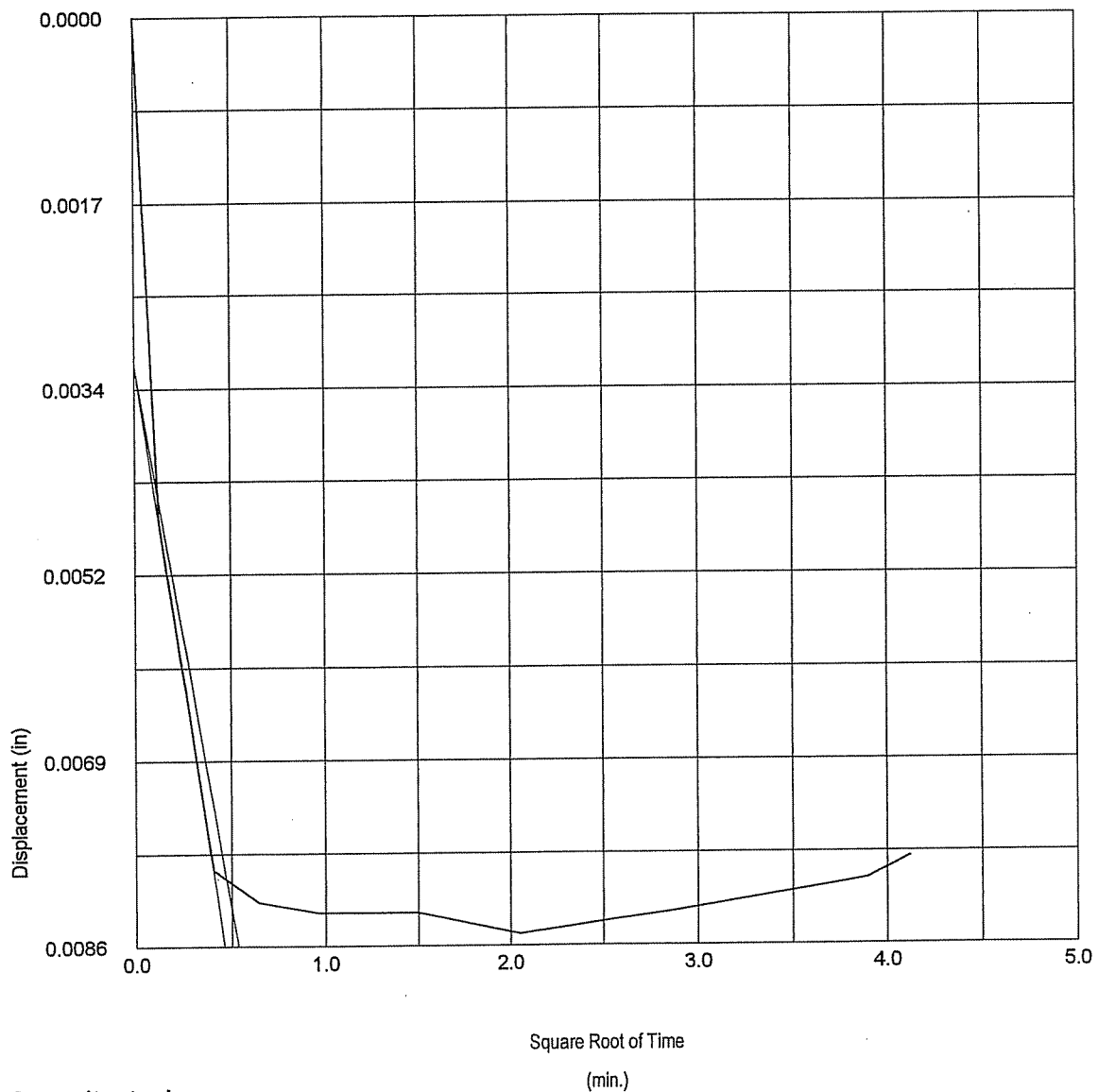
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #1
			Date of Test:	7/24/2003
	Site Reference:	Charleston Naval Base Container	Sample:	UD-3
	Jobfile:	C:WINCLISPICNB.JOB	Borehole:	PAL-64
	Operator:	Jeanne M. Stolt	Checked:	Dail J Hal

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	0.125
Initial Temp oC	20.0
Correction (in)	0.0006
Displacement (in)	0.0078
Voids Ratio e_0	2.8678
Final Temp oC	0.2
t_{90} (mins)	10.524
c_v (ft ² /day)	0.058
m_v (ft ² /ton)	
Sec Compression C_{sec}	



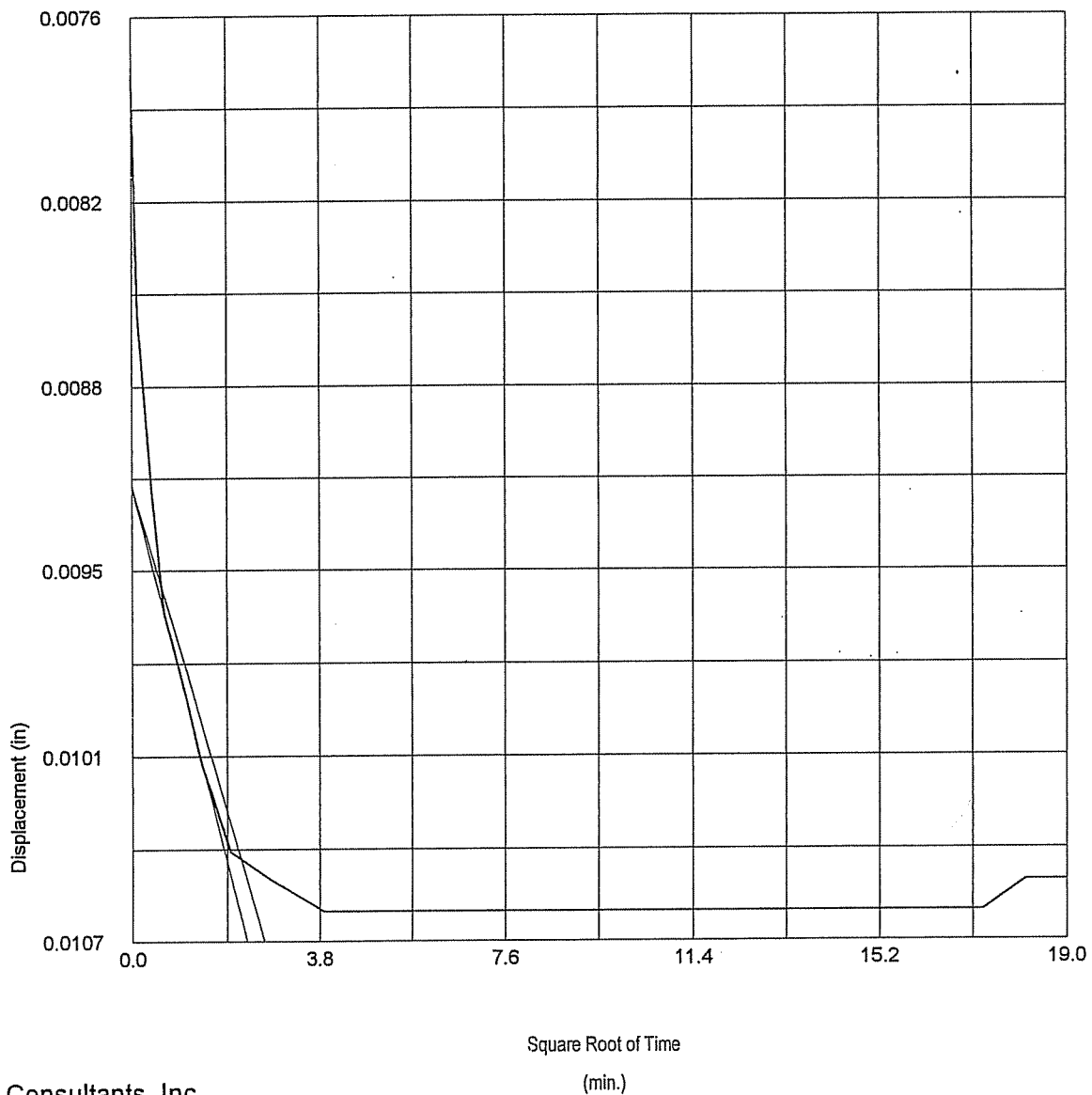
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #1	
			Date of Test:	7/24/2003	
	Site Reference:	Charleston Naval Base Container	Sample:	UD-3	
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAL-64	
	Operator:	Shanne M. Stolt	Checked:	David J. Hal	Approved:

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	0.250
Initial Temp oC	20.0
Correction (in)	0.0009
Displacement (in)	0.0027
Voids Ratio e_0	2.8585
Final Temp oC	
t_{90} (mins)	4.8
c_v (ft ² /day)	0.434
m_v (ft ² /ton)	0.019
Sec Compression C_{sec}	



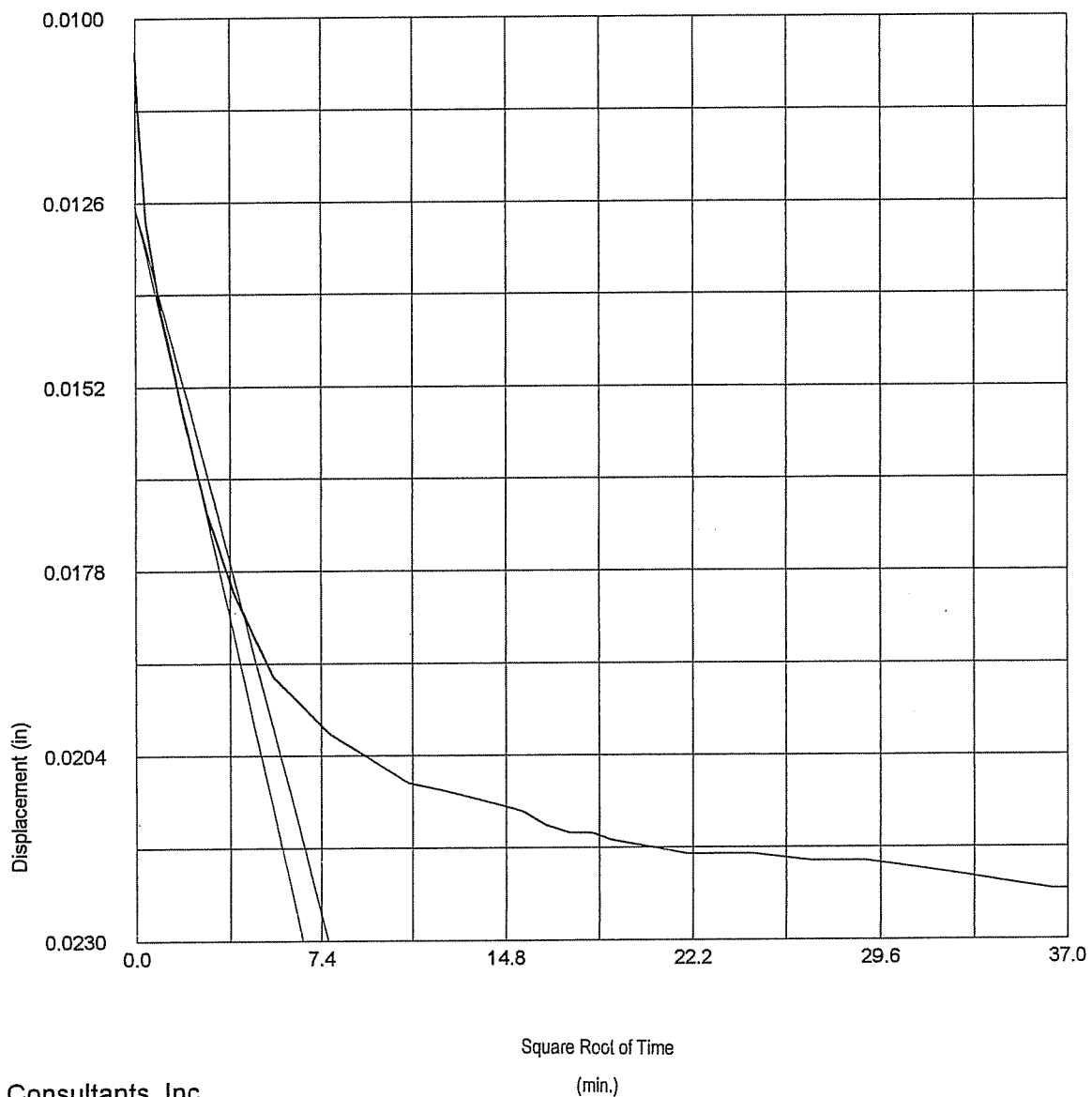
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96	Test name	Consol #1
		Date of Test:	7/24/2003
	Site Reference: Charleston Naval Base Container	Sample:	UD-3
	Jobfile: C:\WINCLISP\CNB.JOB	Borehole:	PAL-64
	Operator: <i>Jeanne M. Stark</i>	Checked: <i>Dail J. Hall</i>	Approved: <i>[Signature]</i>

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	0.500
Initial Temp °C	20.0
Correction (in)	0.0013
Displacement (in)	0.0118
Voids Ratio e_0	2.8141
Final Temp °C	17.9
t_{90} (mins)	0.115
c_v (ft ² /day)	0.047
m_v (ft ² /ton)	
Sec Compression C_{sec}	



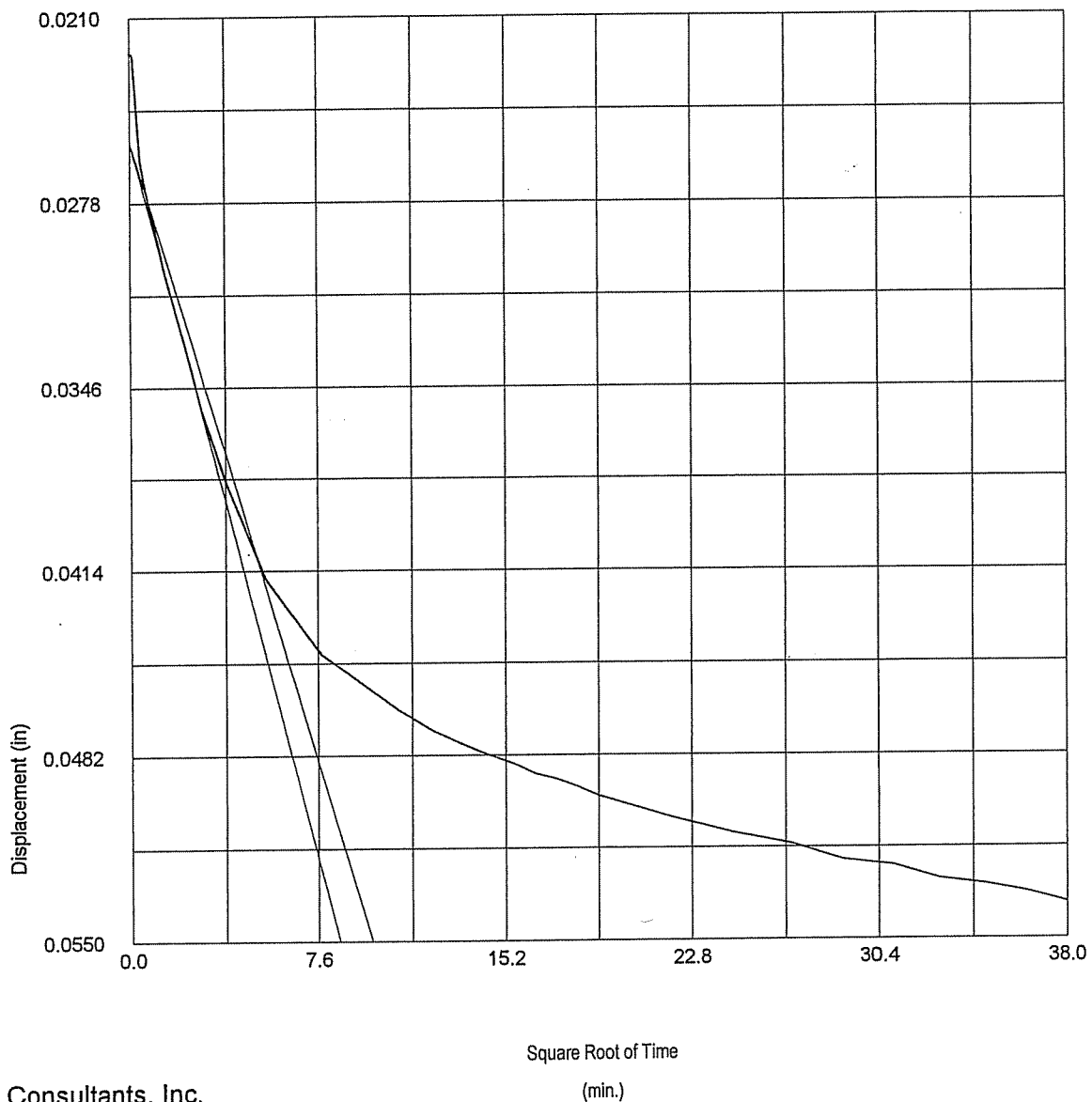
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96	Test name	Consol #1
		Date of Test:	7/24/2003
	Site Reference: Charleston Naval Base Container	Sample:	UD-3
	Jobfile: C:\WINCLISP\CNB.JOB	Borehole:	PAL-64
	Operator: <i>Jeanne M. Stot</i>	Checked: <i>David J. Hall</i>	Approved: <i>[Signature]</i>

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	1.000
Initial Temp oC	20.0
Correction (in)	0.0017
Displacement (in)	0.0314
Voids Ratio e_0	2.6933
Final Temp oC	
t_{90} (mins)	25.7
c_v (ft ² /day)	0.077
m_v (ft ² /ton)	0.065
Sec Compression C_{sec}	



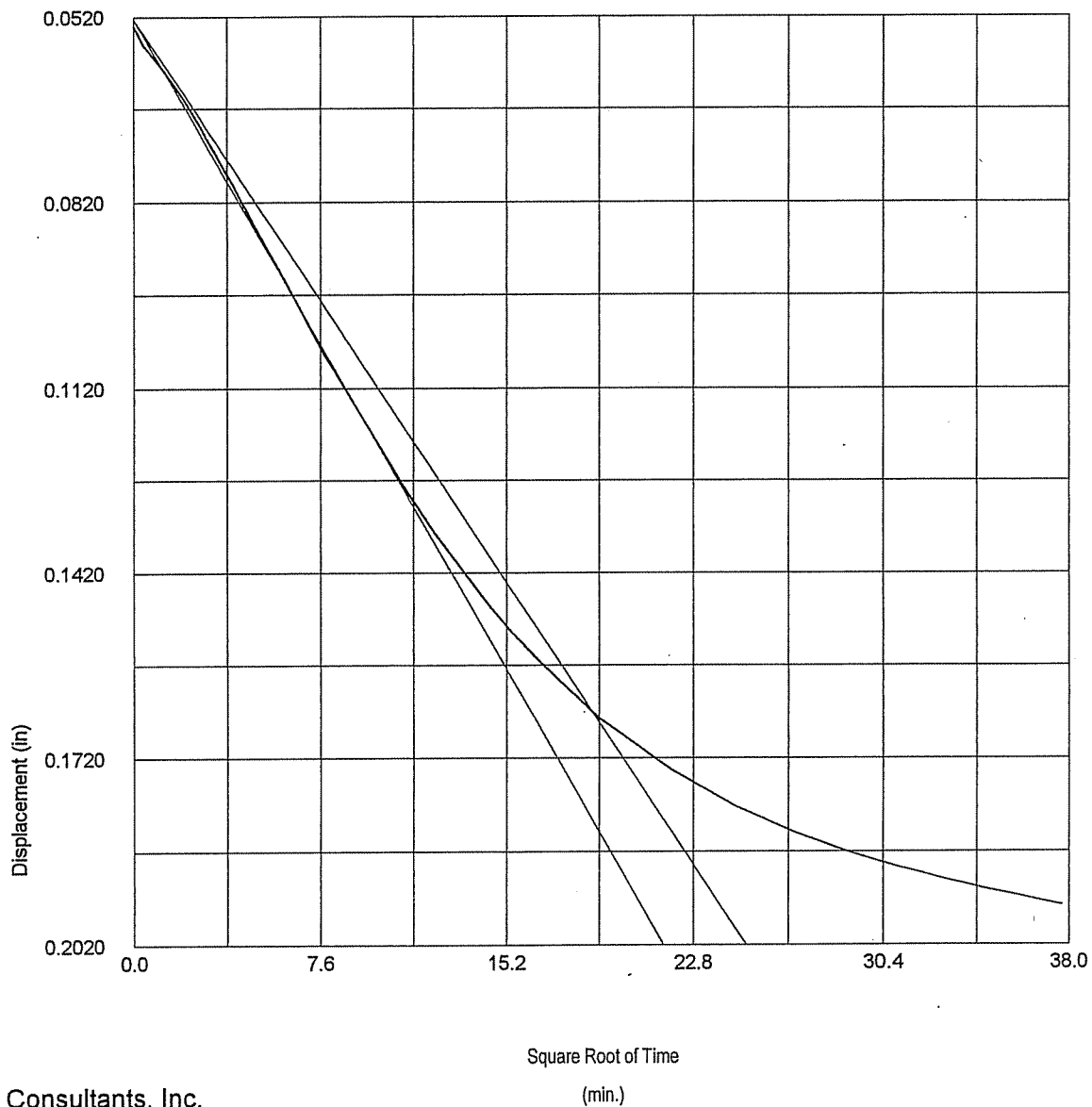
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SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #1
			Date of Test:	7/24/2003
	Site Reference:	Charleston Naval Base Container	Sample:	UD-3
	Jobfile:	C:WINCLISPICNB.JOB	Borehole:	PAL-64
	Operator:	Jennette M. Sturges	Checked:	David J. Hall
		Approved:	Robert J. Hall	

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	2.000
Initial Temp oC	20.0
Correction (in)	0.0021
Displacement (in)	0.142
Voids Ratio e_0	2.1417
Final Temp oC	
t_{90} (mins)	349.5
c_v (ft ² /day)	0.005
m_v (ft ² /ton)	0.176
Sec Compression C_{sec}	



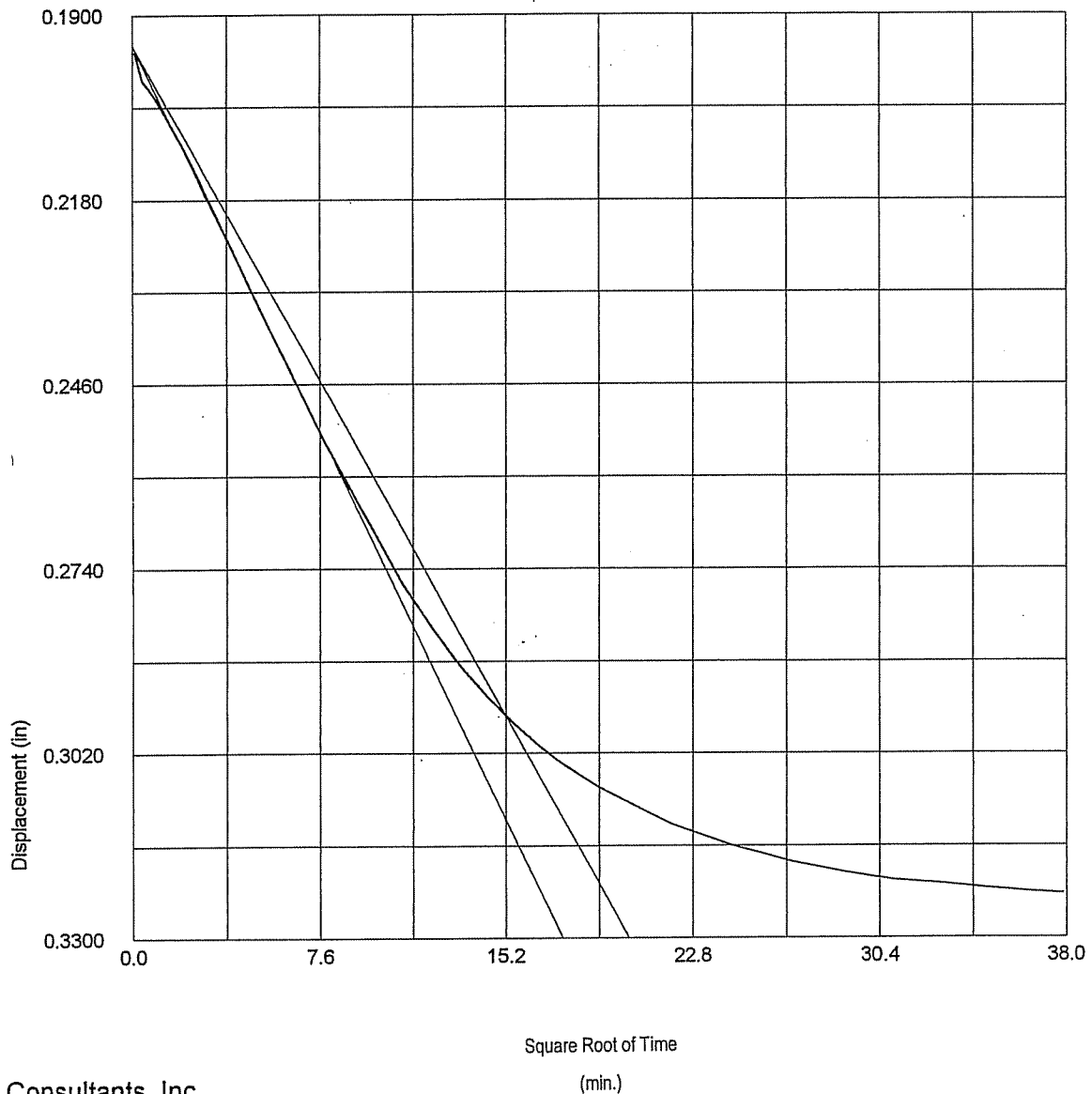
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96	Test name	Consol #1	
		Date of Test:	7/24/2003	
	Site Reference:	Charleston Naval Base Container	Sample:	UD-3
	Jobfile:	C:WINCLISPICNB.JOB	Borehole:	PAL-64
	Operator:	Jeanne M. St...	Checked:	Daily Hel
		Approved:	W. G. ...	

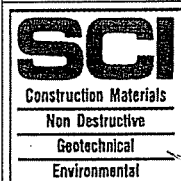
Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	4.000
Initial Temp oC	20.0
Correction (in)	0.003
Displacement (in)	0.1278
Voids Ratio e_0	1.6473
Final Temp oC	
t_{90} (mins)	232.5
c_v (ft ² /day)	0.005
m_v (ft ² /ton)	0.093
Sec Compression C_{sec}	



Soil Consultants, Inc.



ASTM D2435-96

Site Reference: Charleston Naval Base Container
Jobfile: C:WINCLISPICNB.JOB

Test name: Consol #1
Date of Test: 7/24/2003

Sample: UD-3
Borehole: PAL-64

Operator:

Checked:

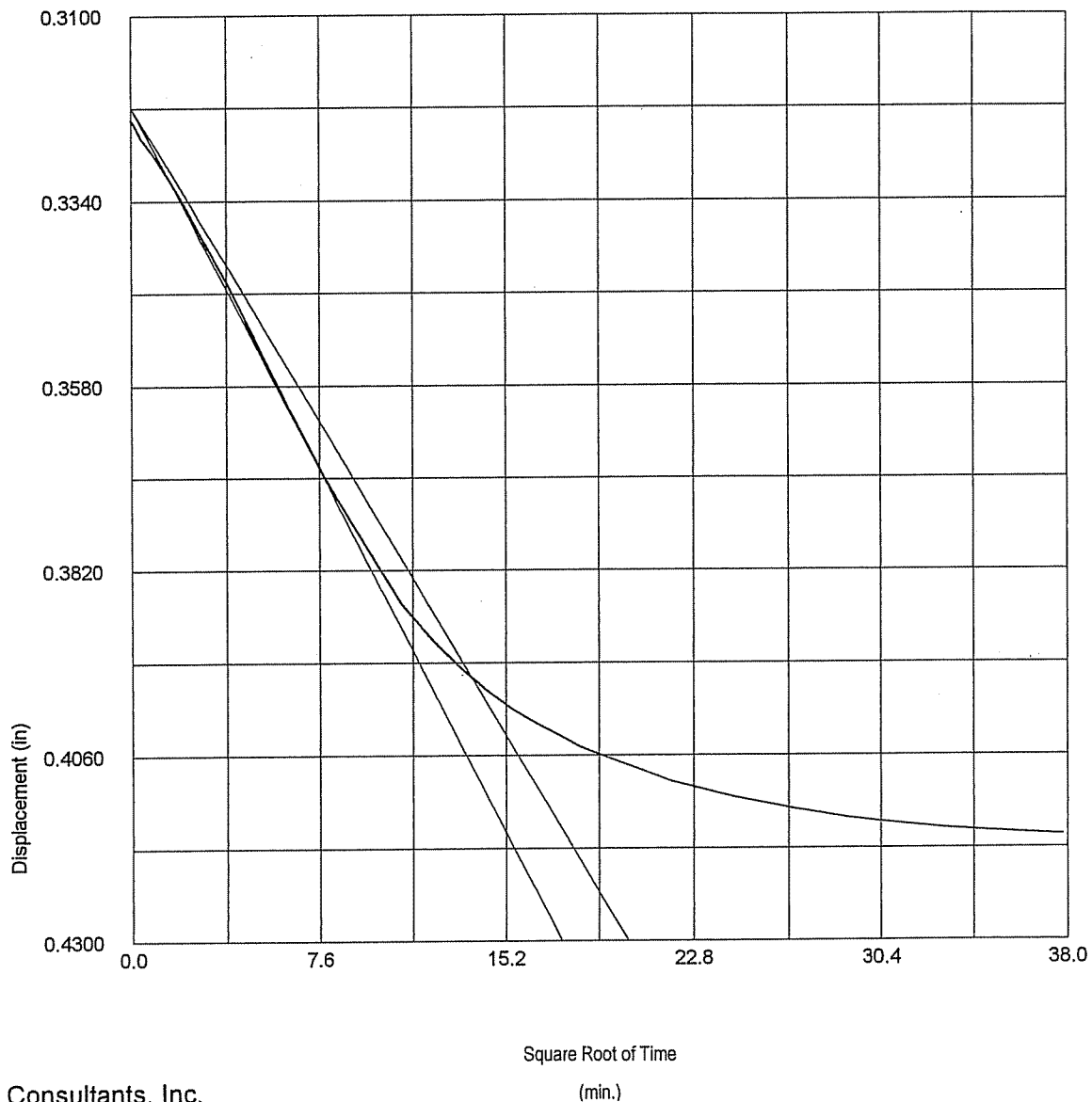
Approved:

James M. Sturges *David J. Hall* *11/20/03*

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	8.000
Initial Temp oC	20.0
Correction (in)	0.0041
Displacement (in)	0.093
Voids Ratio e_0	1.2892
Final Temp oC	
t_{90} (mins)	190.1
c_v (ft ² /day)	0.004
m_v (ft ² /ton)	0.039
Sec Compression C_{sec}	



Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96	Test name	Consol #1	
		Date of Test:	7/24/2003	
	Site Reference:	Charleston Naval Base Container	Sample:	UD-3
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAL-64
	Operator:	<i>Jenne M. St...</i>	Checked:	<i>Deil J Hal</i>
		Approved:	<i>N. H. St...</i>	

Oedometer Settlement Tests

Stress (TSF)	Initial Temp. oC	Settlement Total (in)	Cal Corr. (in)	Final Temp. oC	Voids Ratio e_r	t_{90} (mins)	Secondary Compr C_{sec}	c_v (ft ² /day)	m_v (ft ² /ton)
0.125	20.0	0.0072	0.0006	20.0	2.8678	0.2		10.524	0.058
0.250	20.0	0.0096	0.0009	20.0	2.8585	4.8		0.434	0.019
0.500	20.0	0.0210	0.0013	20.0	2.8141	17.9		0.115	0.047
1.000	20.0	0.0520	0.0017	20.0	2.6933	25.7		0.077	0.065
2.000	20.0	0.1936	0.0021	20.0	2.1417	349.5		0.005	0.176
4.000	20.0	0.3205	0.003	20.0	1.6473	232.5		0.005	0.093
8.000	20.0	0.4124	0.0041	20.0	1.2892	190.1		0.004	0.039
2.000	20.0	0.3764	0.0025	20.0	1.4295				0.010
0.500	20.0	0.3242	0.0018	20.0	1.6328				0.051
0.125	20.0	0.2797	0.0014	20.0	1.8062				0.165

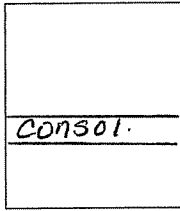
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #1
			Date of Test:	7/24/2003
	Site Reference:	Charleston Naval Base Container	Sample:	UD-3
	Jobfile:	C:WINCLISP\CNB.JOB	Borehole:	PAL-64
	Operator:	Jeanne McSto	Checked:	Dail = Hal
			Approved:	W. Stetson

Oedometer Settlement Tests

Sample details

Sketch showing specimen location in original Sample



Depth 30'
Description: Gray clay with slight sand and peat content.

Type Undisturbed
Height H_0 (in) 1
Diameter D_0 (in) 2.5
Weight W_0 (gr) 112.06
Bulk Density ρ (PCF) 86.97
Particle Density ρ_s 2.55
(measured)

Initial Conditions

Settlement Channel consol #5
Moisture Content w_0 % 103.9
Dry Density ρ_d (PCF) 42.65
Voids Ratio e_0 2.7310
Deg of Saturation S_0 % 97.0
Swelling Pressure S_s (TSF)

Final Conditions

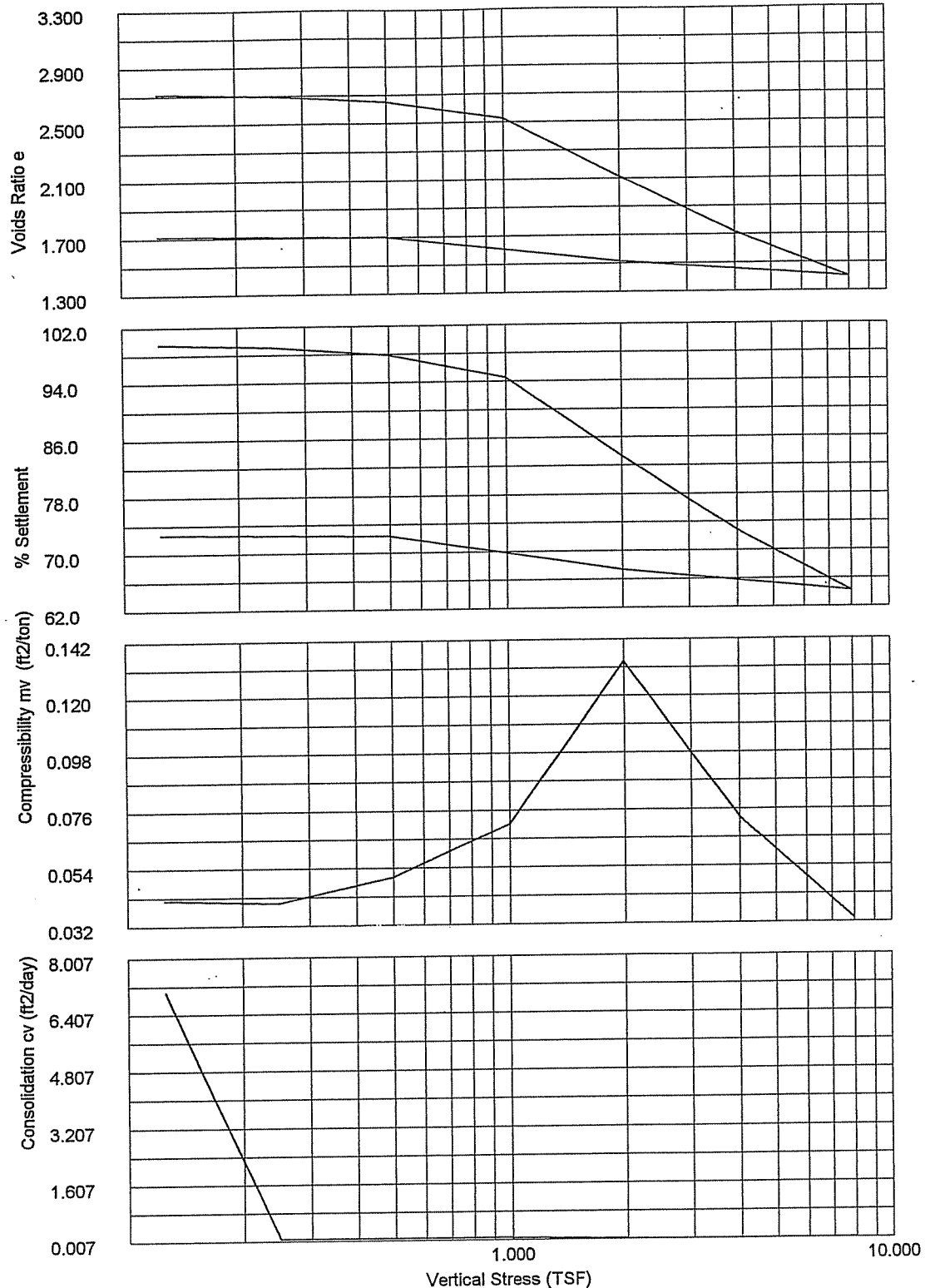
Moisture Content w_f % 76.1
Dry Density ρ_d (PCF) 58.71
Voids Ratio e_f 1.7102
Deg of Saturation S_f % 100.00
Settlement: (in) 0.274
Compression Index C_c

Notes: Atterberg Limits- LL: 143 PL: 47 PI: 97. Less than 24 hr.
loading increment was conducted on load of 0.125 tsf, due to swell.

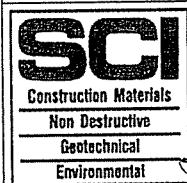
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #5
			Date of Test:	7/24/2003
	Site Reference:	Charleston Naval Base Container	Sample:	UD-1
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAL-65
Operator:		Checked:	Approved:	
Dianne M. Stolt		Chickie Chubb	N. H. H. H.	

Oedometer Settlement Tests



Soil Consultants, Inc.



ASTM D2435-96

Test name: Consol #5
Date of Test: 7/24/2003

Site Reference: Charleston Naval Base Container
Jobfile: C:\WINCLISP\CNB.JOB

Sample: UD-1
Borehole: PAL-65

Operator:

Checked:

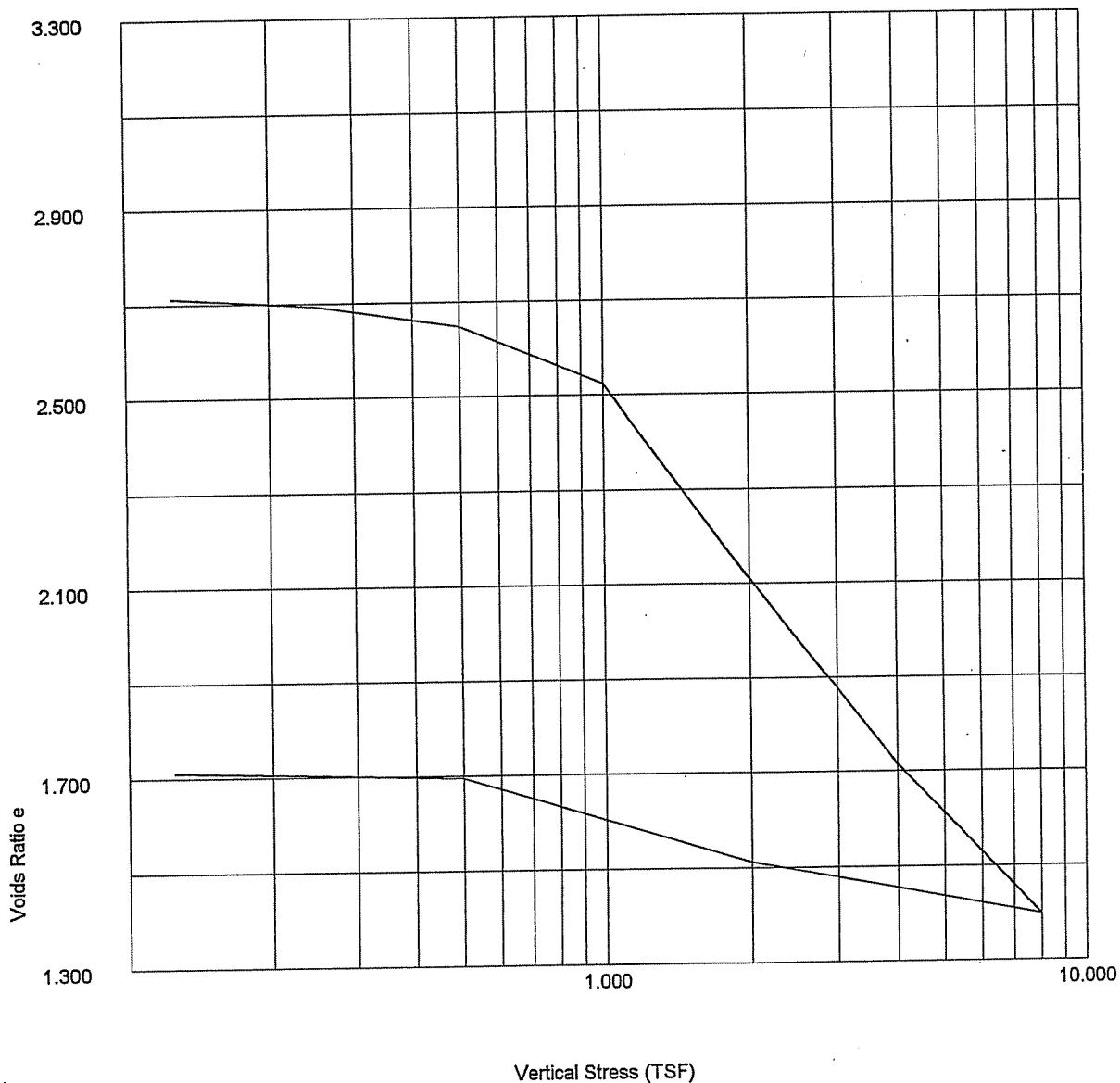
Approved:

Sanne M. Stroh

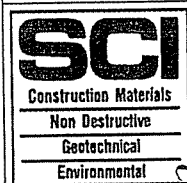
Audrey Chubb

N. M. Stroh

Oedometer Settlement Tests



Soil Consultants, Inc.



ASTM D2435-96

Test name: Consol #5
Date of Test: 7/24/2003

Site Reference: Charleston Naval Base Container
Jobfile: C:\WINCLISP\CNB.JOB

Sample: UD-1
Borehole: PAL-65

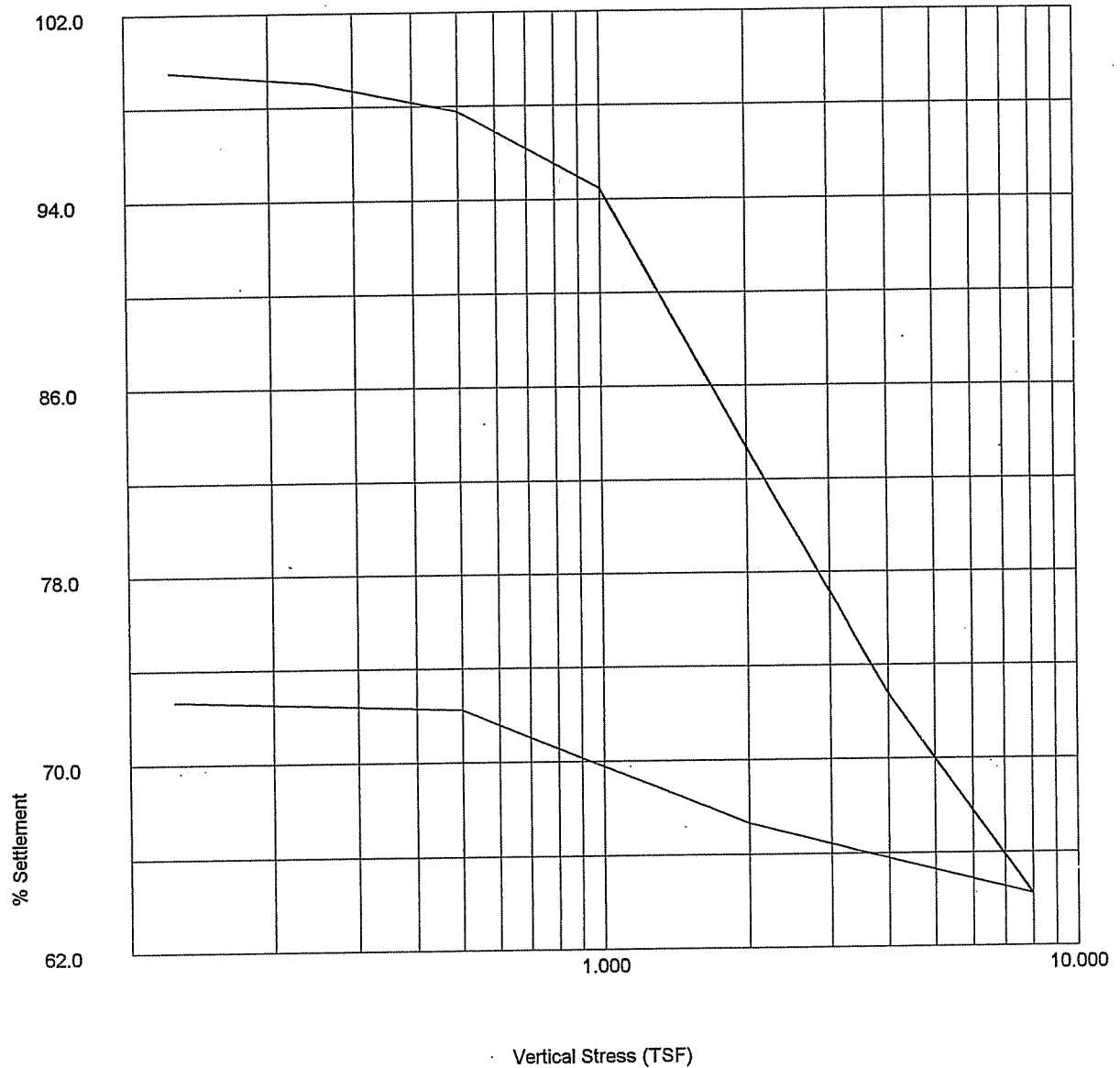
Operator:

Checked:

Approved:

Sydney M. Stroh *Anthony Chubb* *N. Stroh*

Oedometer Settlement Tests



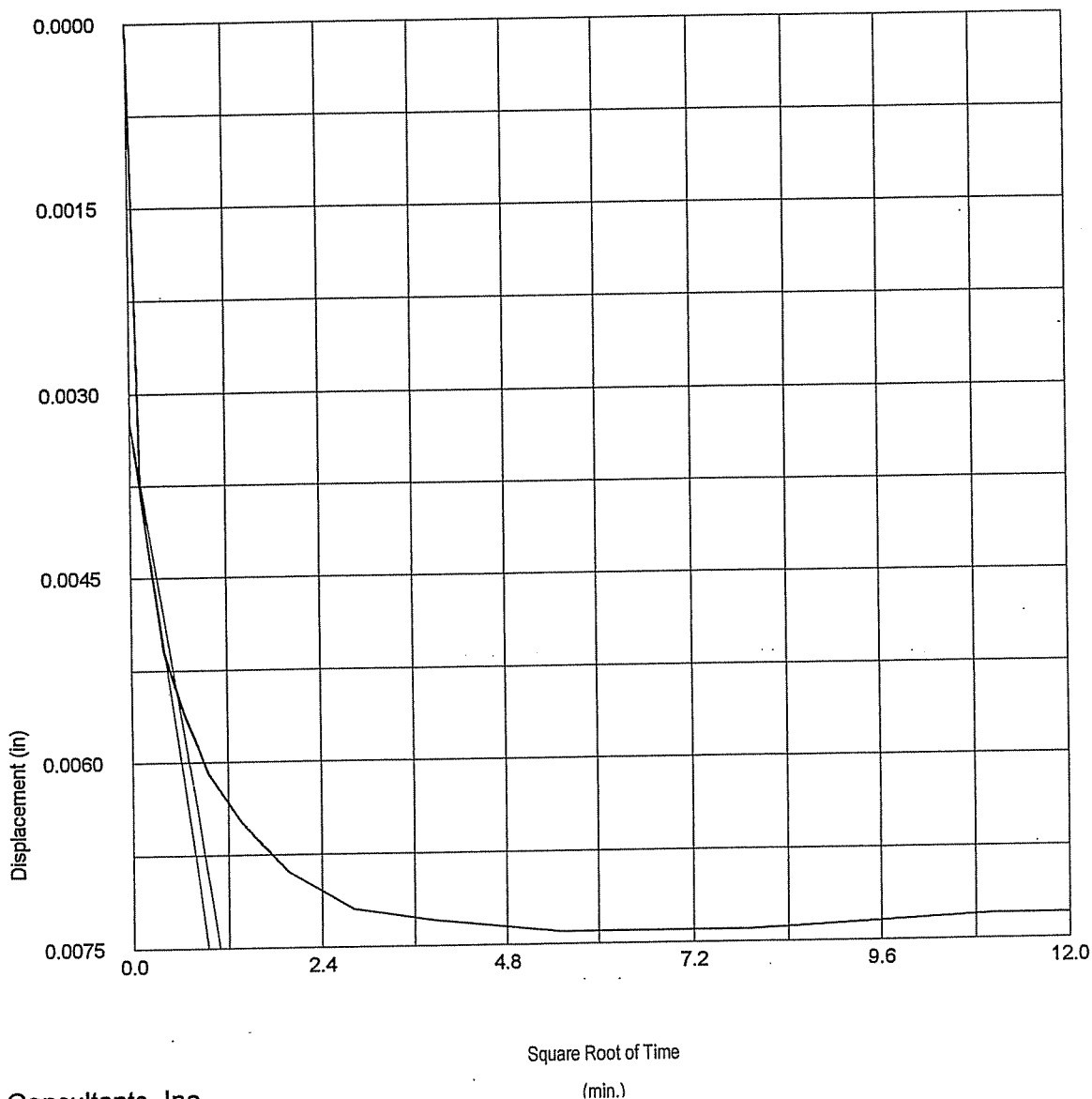
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #5
			Date of Test:	7/24/2003
	Site Reference:	Charleston Naval Base Container	Sample:	UD-1
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAL-65
	Operator:	<i>Gene M. Stot</i>	Checked:	<i>Audrey Chubb</i>
				<i>N. B. Stot</i>

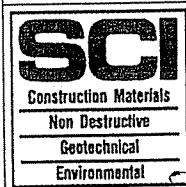
Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	0.125
Initial Temp oC	20.0
Correction (in)	0.0021
Displacement (in)	0.0073
Voids Ratio e_0	2.7116
Final Temp oC	0.3
t_{90} (mins)	7.03
c_v (ft ² /day)	0.042
m_v (ft ² /ton)	
Sec Compression C_{sec}	



Soil Consultants, Inc.



ASTM D2435-96

Site Reference: Charleston Naval Base Container
Jobfile: C:\WINCLISP\CNB.JOB

Operator:

Checked:

Test name: Consol #5
Date of Test: 7/24/2003

Sample: UD-1
Borehole: PAL-65

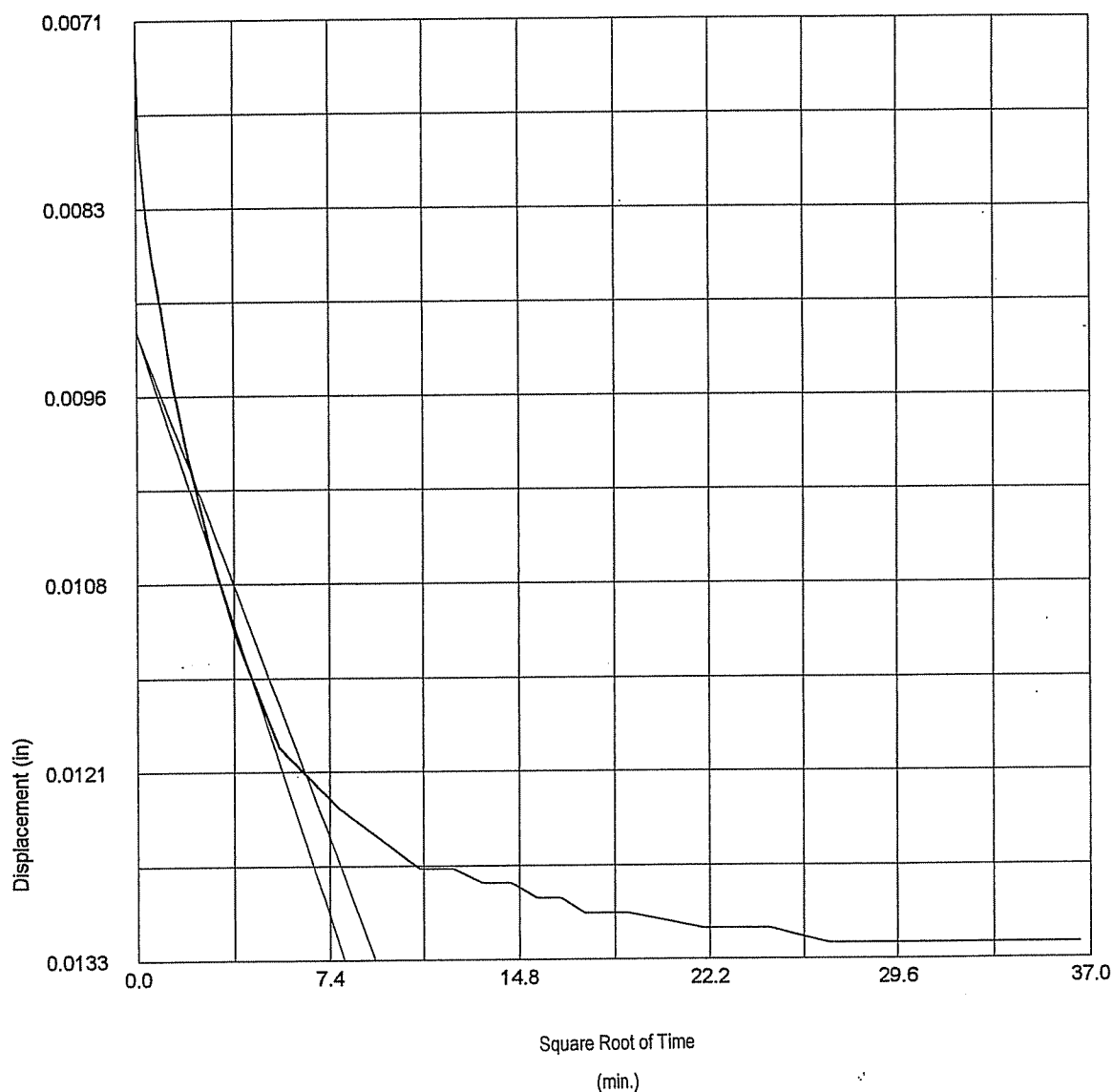
Approved:

Spencer M. Stroh *Claydon Chubb* *N. Stroh*

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	0.250
Initial Temp oC	20.0
Correction (in)	0.003
Displacement (in)	0.0059
Voids Ratio e_0	2.6930
Final Temp oC	
t_{90} (mins)	41.9
c_v (ft ² /day)	0.05
m_v (ft ² /ton)	0.04
Sec Compression C_{sec}	



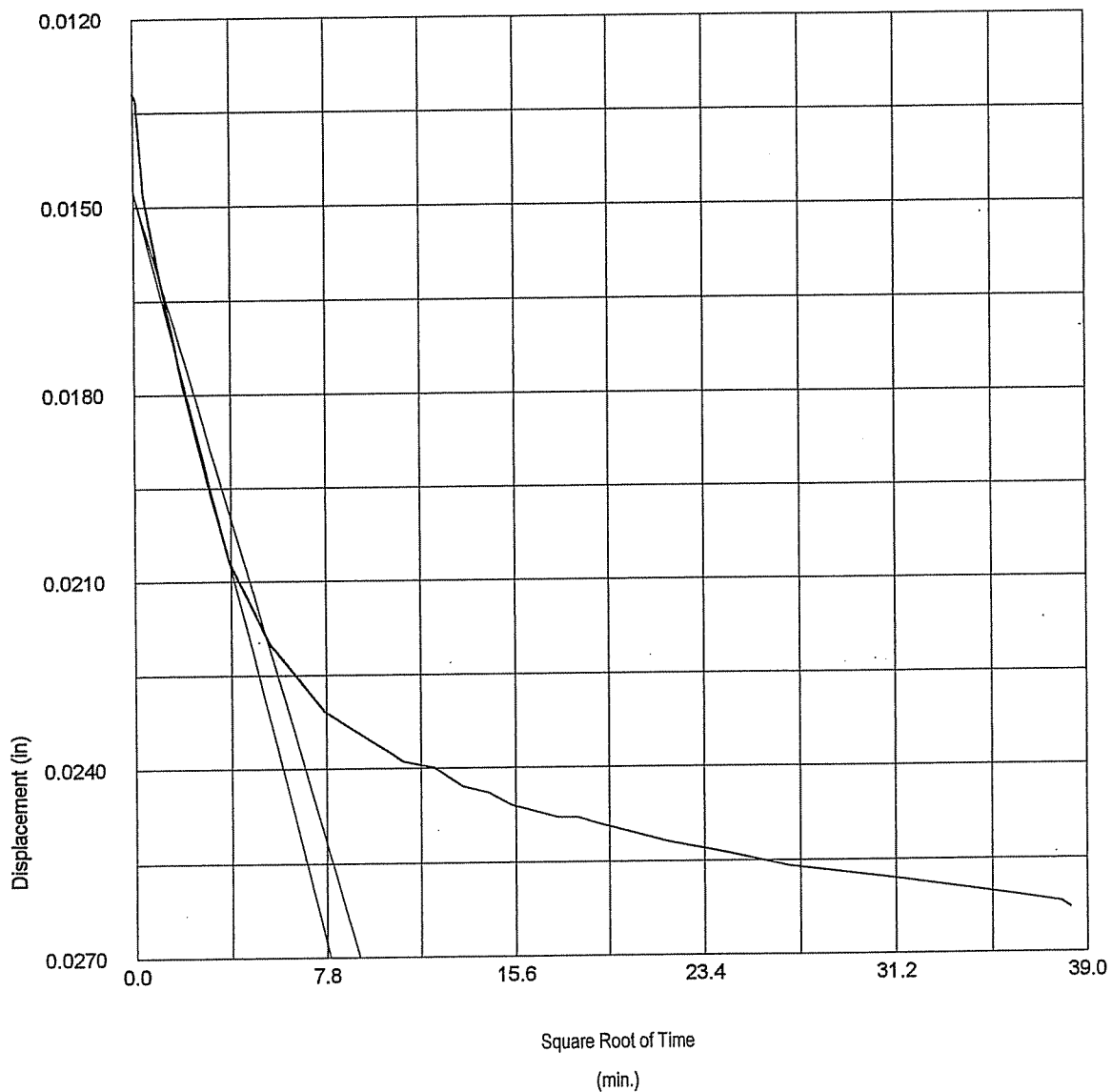
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #5
			Date of Test:	7/24/2003
	Site Reference: Charleston Naval Base Container		Sample:	UD-1
	Jobfile: C:\WINCLISP\CNB.JOB		Borehole:	PAL-65
Operator: <i>Syanne M. Stolt</i>		Checked: <i>Clifford Chubb</i>	Approved: <i>N. H. [Signature]</i>	

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	0.500
Initial Temp oC	20.0
Correction (in)	0.0038
Displacement (in)	0.0131
Voids Ratio e_0	2.6471
Final Temp oC	
t_{90} (mins)	29.3
c_v (ft ² /day)	0.07
m_v (ft ² /ton)	0.05
Sec Compression C_{sec}	



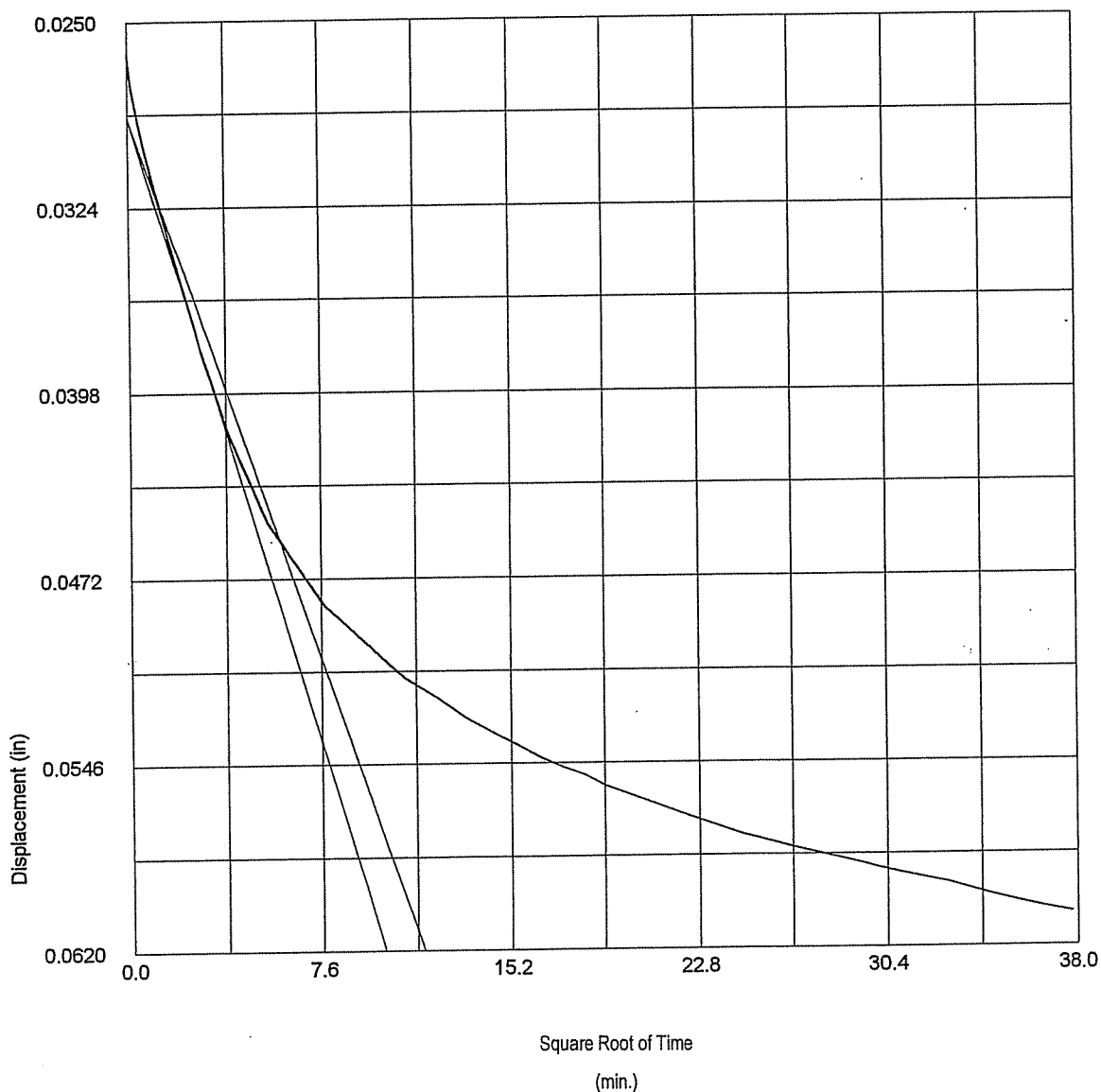
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96	Test name	Consol #5
		Date of Test:	7/24/2003
	Site Reference: Charleston Naval Base Container	Sample:	UD-1
	Jobfile: C:\WINCLISP\CNB.JOB	Borehole:	PAL-65
	Operator: <i>Spencer M. Stroh</i>	Checked: <i>Claydon Chubb</i>	Approved: <i>R. Stroh</i>

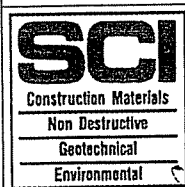
Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	1.000
Initial Temp oC	20.0
Correction (in)	0.005
Displacement (in)	0.0344
Voids Ratio e_0	2.5232
Final Temp oC	
t_{90} (mins)	35.5
c_v (ft ² /day)	0.055
m_v (ft ² /ton)	0.07
Sec Compression C_{sec}	



Soil Consultants, Inc.



ASTM D2435-96

Site Reference: Charleston Naval Base Container
Jobfile: C:\WINCLISP\CNB.JOB

Operator:

Checked:

Test name: Consol #5
Date of Test: 7/24/2003

Sample: UD-1
Borehole: PAL-65

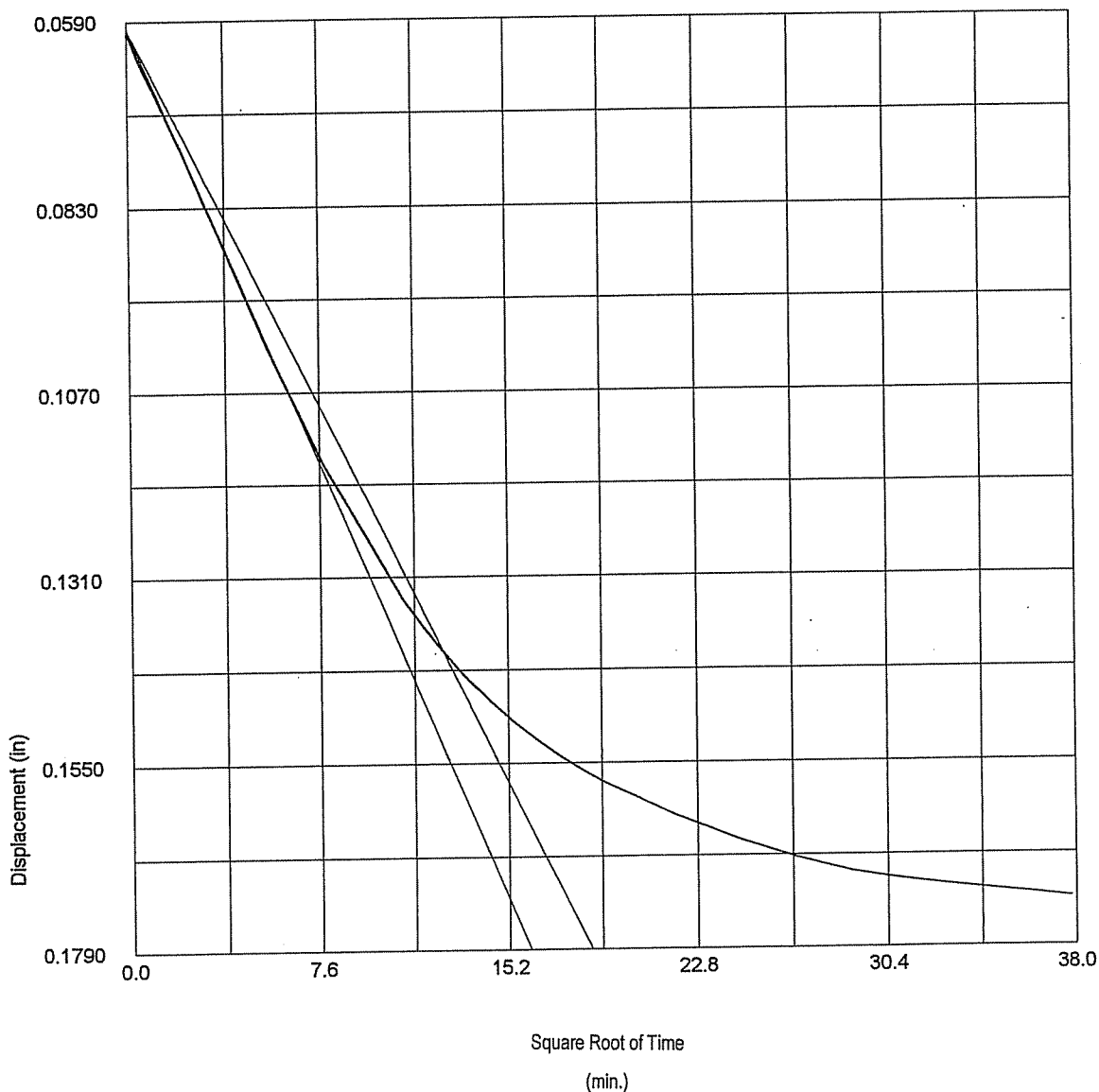
Approved:

Signature: J. M. Stroh
Signature: Andrew Clark
Signature: R. B. 7/6

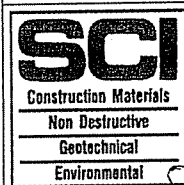
Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	2.000
Initial Temp oC	20.0
Correction (in)	0.0062
Displacement (in)	0.1121
Voids Ratio e_0	2.1094
Final Temp oC	
t_{90} (mins)	159.1
c_v (ft ² /day)	0.011
m_v (ft ² /ton)	0.133
Sec Compression C_{sec}	



Soil Consultants, Inc.



ASTM D2435-96

Site Reference: Charleston Naval Base Container
Jobfile: C:\WINCLISP\CNB.JOB

Operator:

Janne M. Stroh

Checked:

Dudley Chubb

Test name: Consol #5
Date of Test: 7/24/2003

Sample: UD-1
Borehole: PAL-65

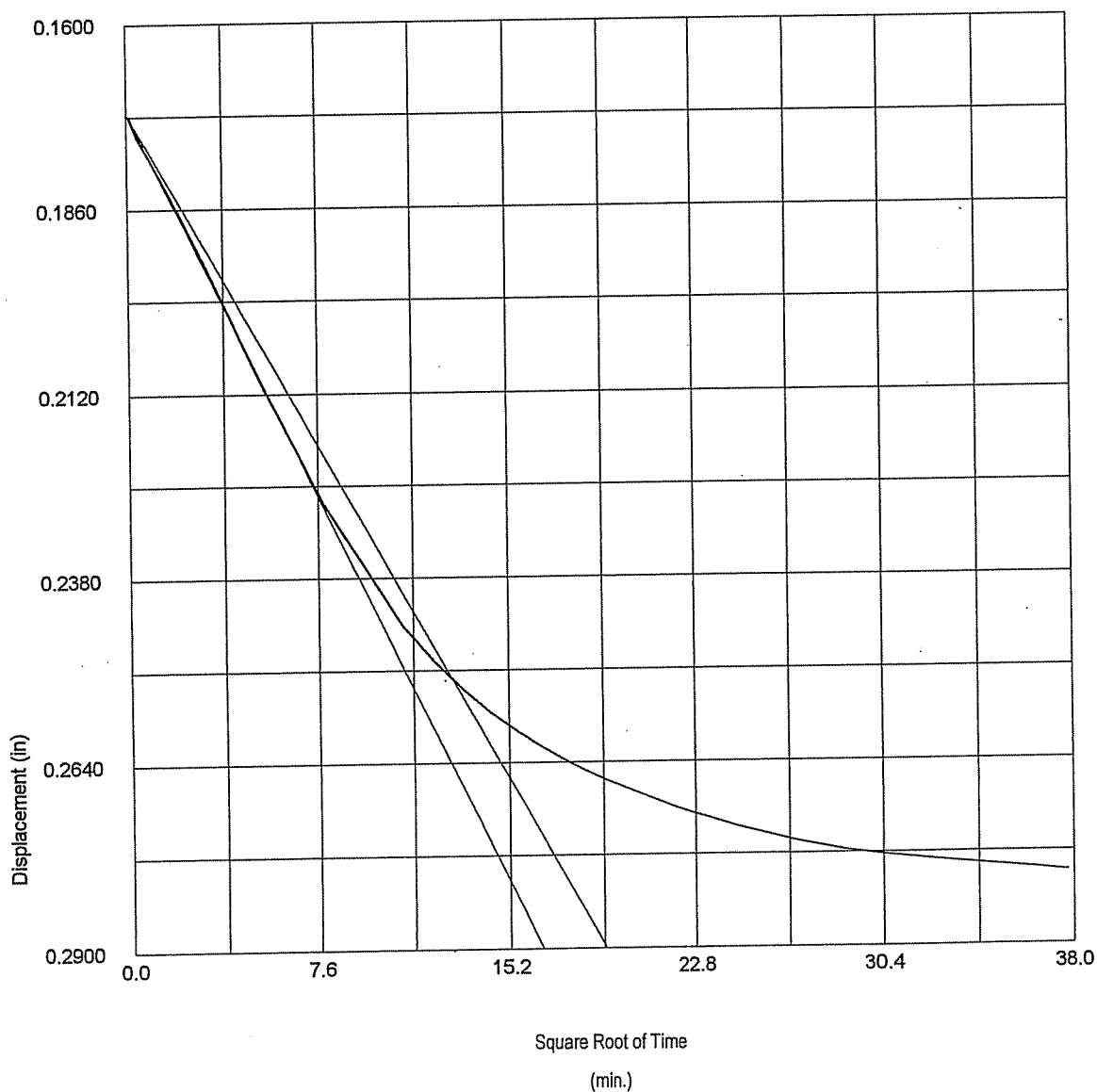
Approved:

N. H. Stroh

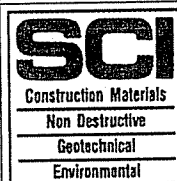
Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	4.000
Initial Temp oC	20.0
Correction (in)	0.0075
Displacement (in)	0.1071
Voids Ratio e_0	1.7147
Final Temp oC	
t_{90} (mins)	169.5
c_v (ft ² /day)	0.008
m_v (ft ² /ton)	0.073
Sec Compression C_{sec}	



Soil Consultants, Inc.



ASTM D2435-96

Site Reference: Charleston Naval Base Container
Jobfile: C:\WINCLISP\CNB.JOB

Operator:

Spencer M. Stark

Checked:

Claydon Chubb

Test name: Consol #5
Date of Test: 7/24/2003

Sample: UD-1
Borehole: PAL-65

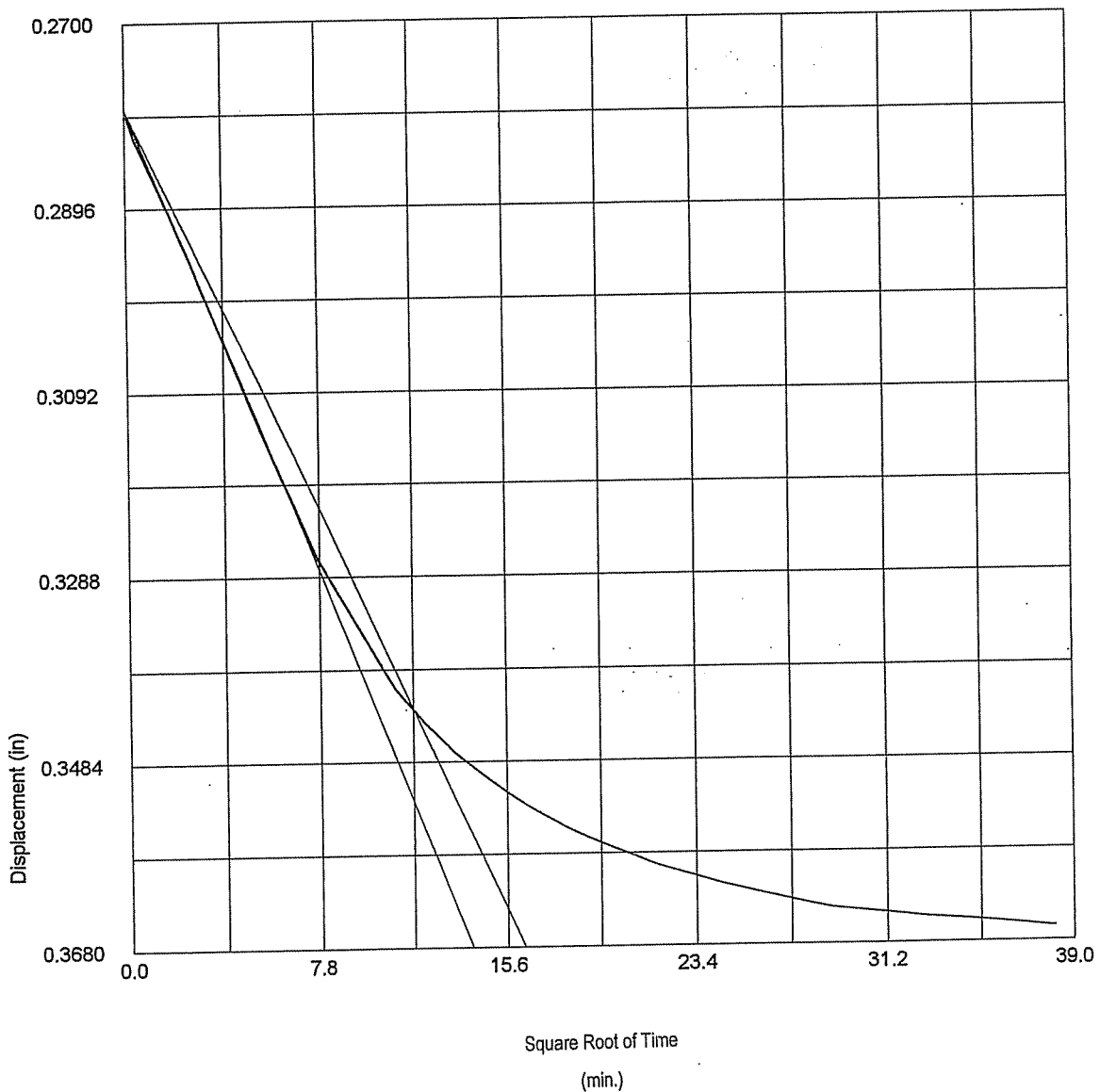
Approved:

N. M. Stark

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	8.000
Initial Temp oC	20.0
Correction (in)	0.0088
Displacement (in)	0.0867
Voids Ratio e_0	1.3961
Final Temp oC	
t_{90} (mins)	137.8
c_v (ft ² /day)	0.007
m_v (ft ² /ton)	0.033
Sec Compression C_{sec}	



Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96	Test name	Consol #5	
		Date of Test:	7/24/2003	
	Site Reference:	Charleston Naval Base Container	Sample:	UD-1
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAL-65
	Operator:	Checked:	Approved:	
	<i>James M. Stolt</i>	<i>Anthony Chubb</i>	<i>N. K. Stolt</i>	

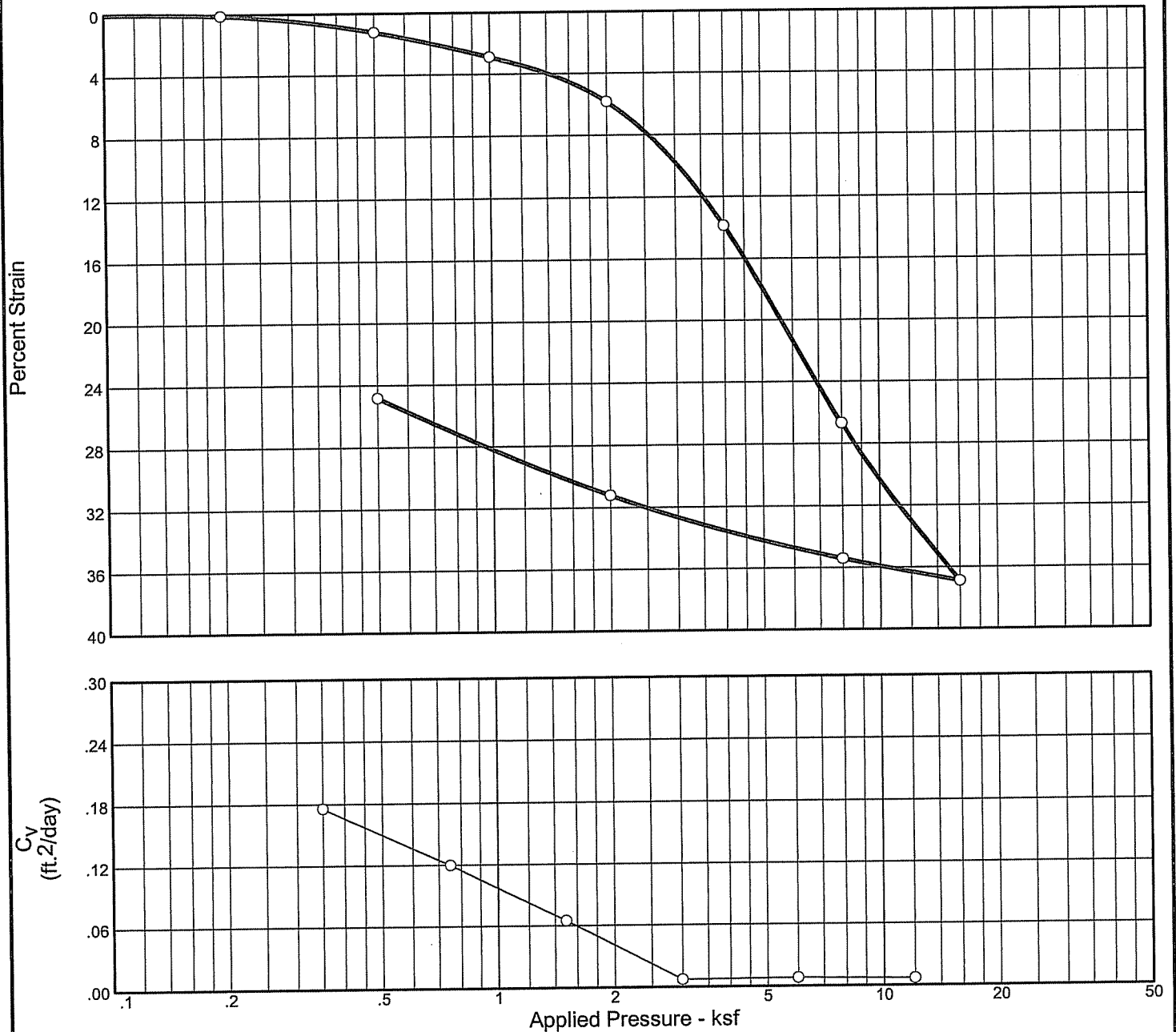
Oedometer Settlement Tests

Stress (TSF)	Initial Temp. oC	Settlement Total (in)	Cal Corr. (in)	Final Temp. oC	Voids Ratio e_f	t_{90} (mins)	Secondary Compr C_{sec}	c_v (ft ² /day)	m_v (ft ² /ton)
0.125	20.0	0.0052	0.0021	20.0	2.7116	0.3		7.030	0.042
0.250	20.0	0.0102	0.003	20.0	2.6930	41.9		0.050	0.040
0.500	20.0	0.0225	0.0038	20.0	2.6471	29.3		0.070	0.050
1.000	20.0	0.0557	0.005	20.0	2.5232	35.5		0.055	0.070
2.000	20.0	0.1666	0.0062	20.0	2.1094	159.1		0.011	0.133
4.000	20.0	0.2724	0.0075	20.0	1.7147	169.5		0.008	0.073
8.000	20.0	0.3578	0.0088	20.0	1.3961	137.8		0.007	0.033
2.000	20.0	0.3271	0.0079	20.0	1.5106				0.008
0.500	20.0	0.2779	0.0069	20.0	1.6942				0.045
0.125	20.0	0.2736	0.0063	20.0	1.7102				0.016

Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #5
			Date of Test:	7/24/2003
	Site Reference: Charleston Naval Base Container		Sample:	UD-1
	Jobfile: C:\WINCLISP\CNB.JOB		Borehole:	PAL-65
Operator: <i>Gene M. Stroh</i>		Checked: <i>Audrey Chubb</i>	Approved: <i>[Signature]</i>	

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (ksf)	P_c (ksf)	C_c	C_r	Initial Void Ratio
Saturation	Moisture									
91.2 %	97.6 %	43.2	146	93	2.67		1.77	1.28	0.16	2.856

MATERIAL DESCRIPTION								USCS	AASHTO
Dark gray, Sandy Silt								MH	

Project No. 1131-03-264		Client: SCSPA	
Project: Charleston Navy Base Container Terminal North Charleston, SC			
Source: PAL-65	Sample No.: UD-3	Elev./Depth: 62 to 64 ft	
CONSOLIDATION TEST REPORT			
S & ME, Inc.			

Remarks:
Plate

Dial Reading vs. Time

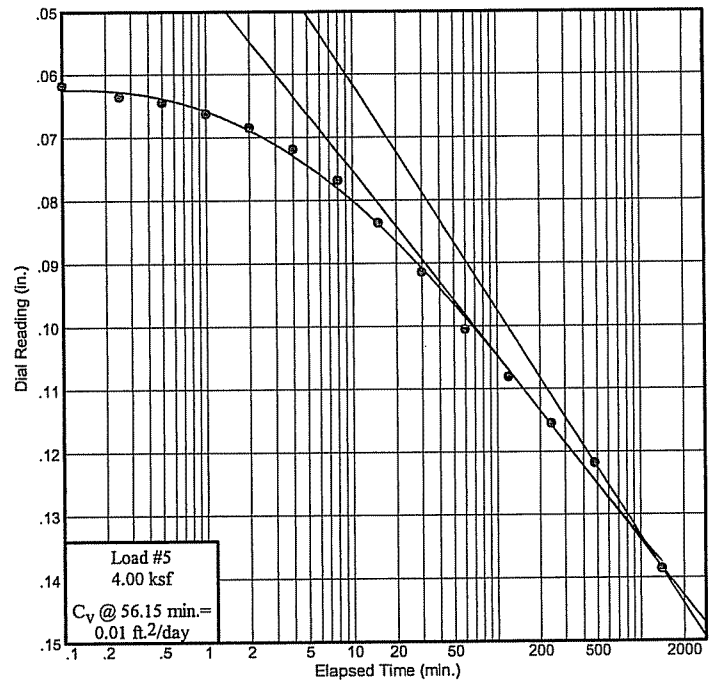
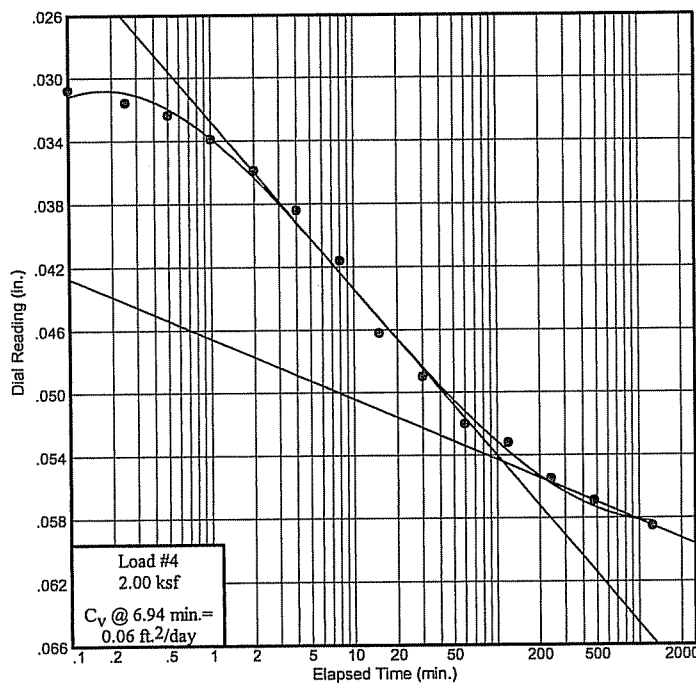
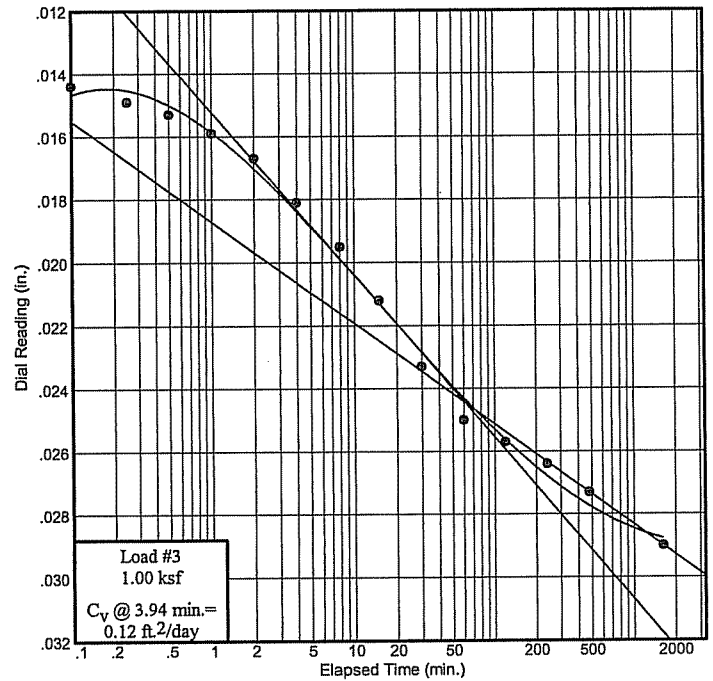
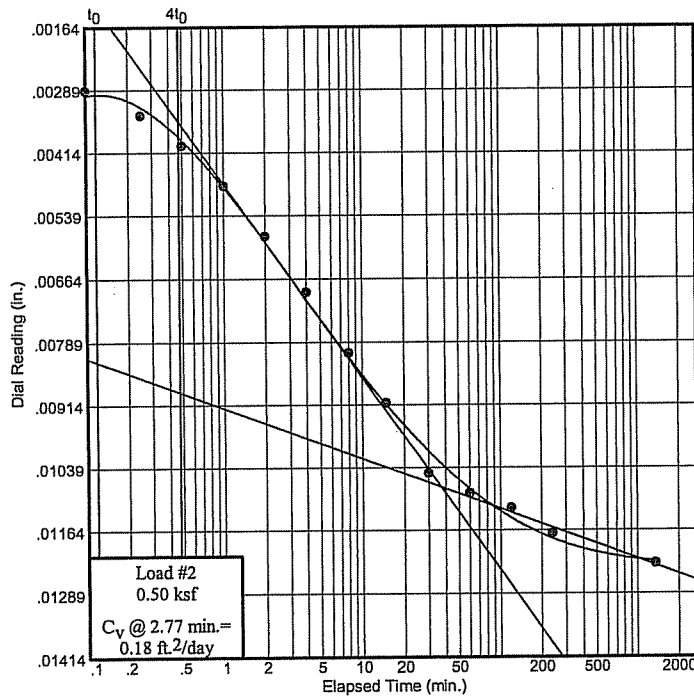
Project No.: 1131-03-264

Project: Charleston Navy Base Container Terminal
North Charleston, SC

Source: PAL-65

Sample No.: UD-3

Elev./Depth: 62 to 64 ft



Dial Reading vs. Time
S & ME, Inc.

Plate

Dial Reading vs. Time

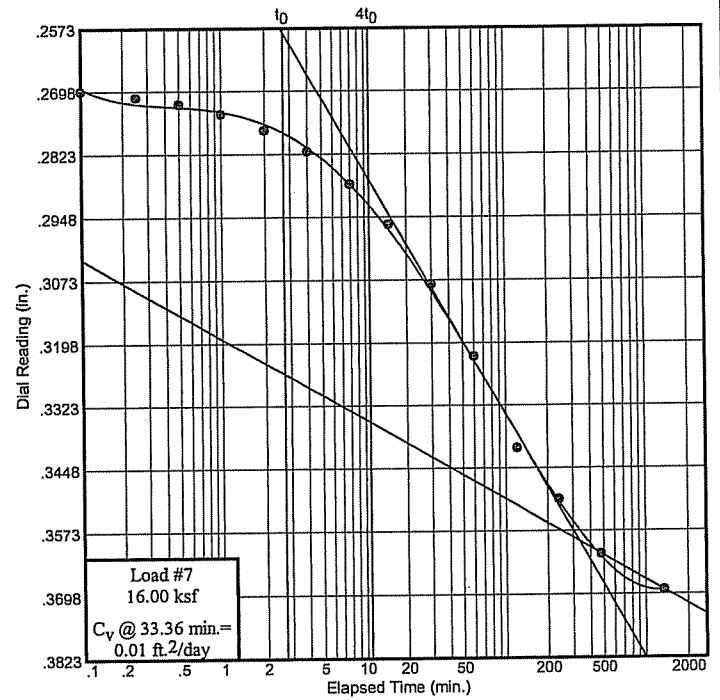
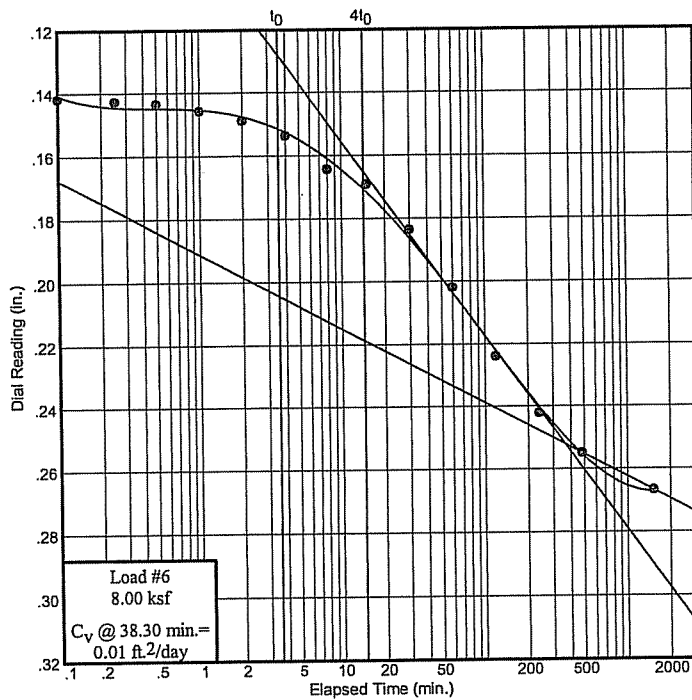
Project No.: 1131-03-264

Project: Charleston Navy Base Container Terminal
North Charleston, SC

Source: PAL-65

Sample No.: UD-3

Elev./Depth: 62 to 64 ft



Dial Reading vs. Time

S & ME, Inc.

Plate

CONSOLIDATION TEST DATA

Client: SCSPA**Project:** Charleston Navy Base Container Terminal
North Charleston, SC**Project Number:** 1131-03-264

Sample Data

Source: PAL-65**Sample No.:** UD-3**Elev. or Depth:** 62 to 64 ft**Sample Length (in./cm.):****Location:****Description:** Dark gray, Sandy Silt**Liquid Limit:** 146**Plasticity Index:** 93**USCS:** MH**AASHTO:****Figure No.:****Testing Remarks:**

Test Specimen Data

TOTAL SAMPLE	BEFORE TEST	AFTER TEST
Wet w+t = 54.20 g.	Consolidometer # = 3	Wet w+t = 222.68 g.
Dry w+t = 28.29 g.		Dry w+t = 188.44 g.
Tare Wt. = 1.74 g.	Spec. Gravity = 2.67	Tare Wt. = 120.15 g.
Height = 4.52 in.	Height = 1.00 in.	
Diameter = 3.01 in.	Diameter = 3.01 in.	
Weight = 719.44 g.	Defl. Table = n/a	
Moisture = 97.6 %	Ht. Solids = 0.2593 in.	Moisture = 50.1 %
Den. = 85.4 pcf	Dry Wt. = 80.52 g.*	Dry Wt. = 68.29 g.
Dry Den. = 43.2 pcf	Void Ratio = 2.856	Void Ratio = 1.898
	Saturation = 91.2 %	

* Initial dry weight used in calculations

End-of-Load Summary

Pressure (ksf)	Final Dial (in.)	Machine Defl. (in.)	C_v (ft. ² /day)	C_α	Void Ratio	% Compression /Swell
start	0.00000				2.856	
0.20	0.00100	0.00000			2.853	0.1 Compr.
0.50	0.01230	0.00000	0.18	0.001	2.809	1.2 Compr.
1.00	0.02900	0.00000	0.12	0.003	2.745	2.9 Compr.
2.00	0.05850	0.00000	0.06	0.004	2.631	5.9 Compr.
4.00	0.13860	0.00000	0.01	0.038	2.322	13.9 Compr.
8.00	0.26680	0.00000	0.01	0.028	1.827	26.7 Compr.
16.00	0.36900	0.00000	0.01	0.022	1.433	36.9 Compr.
8.00	0.35410	0.00000			1.491	35.4 Compr.
2.00	0.31210	0.00000			1.653	31.2 Compr.
0.50	0.24840	0.00000			1.898	24.8 Compr.

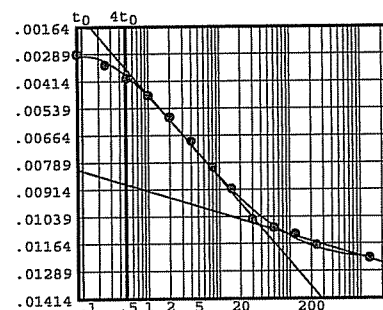
 $C_c = 1.28$ $P_c = 1.77$ ksf $C_r = 0.16$

Pressure: 0.50 ksf

TEST READINGS

Load No. 2

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.00100	11	60.00	0.01090
2	0.10	0.00290	12	120.00	0.01120
3	0.25	0.00340	13	240.00	0.01170
4	0.50	0.00400	14	1356.00	0.01230
5	1.00	0.00480			
6	2.00	0.00580			
7	4.00	0.00690			
8	8.00	0.00810			
9	15.00	0.00910			
10	30.00	0.01050			



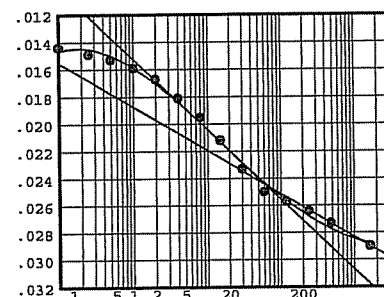
Void Ratio = 2.809 Compression = 1.2 %
 $D_0 = 0.00213$ $D_{50} = 0.00645$ $D_{100} = 0.01078$
 C_v at 2.8 min. = 0.18 ft.²/day $C_\alpha = 0.001$

Pressure: 1.00 ksf

TEST READINGS

Load No. 3

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.01230	11	60.00	0.02500
2	0.10	0.01440	12	120.00	0.02570
3	0.25	0.01490	13	240.00	0.02640
4	0.50	0.01530	14	480.00	0.02730
5	1.00	0.01590	15	1630.00	0.02900
6	2.00	0.01670			
7	4.00	0.01810			
8	8.00	0.01950			
9	15.00	0.02120			
10	30.00	0.02330			



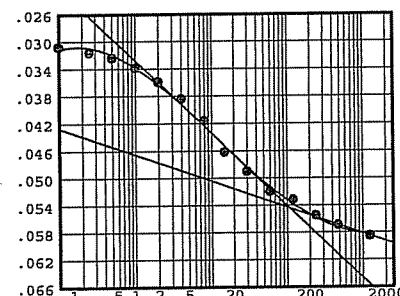
Void Ratio = 2.745 Compression = 2.9 %
 $D_0 = 0.01230$ $D_{50} = 0.01836$ $D_{100} = 0.02443$
 C_v at 3.9 min. = 0.12 ft.²/day $C_\alpha = 0.003$

Pressure: 2.00 ksf

TEST READINGS

Load No. 4

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.02900	11	60.00	0.05200
2	0.10	0.03080	12	120.00	0.05320
3	0.25	0.03160	13	240.00	0.05550
4	0.50	0.03240	14	480.00	0.05690
5	1.00	0.03390	15	1248.00	0.05850
6	2.00	0.03590			
7	4.00	0.03840			
8	8.00	0.04160			
9	15.00	0.04620			
10	30.00	0.04900			



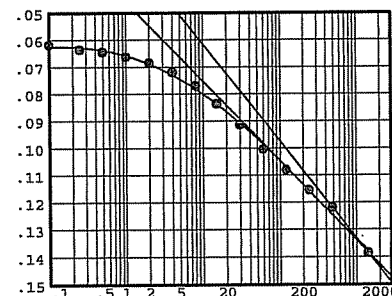
Void Ratio = 2.631 Compression = 5.9 %
 $D_0 = 0.02900$ $D_{50} = 0.04171$ $D_{100} = 0.05443$
 C_v at 6.9 min. = 0.06 ft.²/day $C_\alpha = 0.004$

Pressure: 4.00 ksf

TEST READINGS

Load No. 5

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.05850	11	60.00	0.10050
2	0.10	0.06180	12	120.00	0.10810
3	0.25	0.06360	13	240.00	0.11550
4	0.50	0.06450	14	480.00	0.12180
5	1.00	0.06630	15	1412.00	0.13860
6	2.00	0.06850			
7	4.00	0.07190			
8	8.00	0.07690			
9	15.00	0.08360			
10	30.00	0.09140			



Void Ratio = 2.322 Compression = 13.9 %

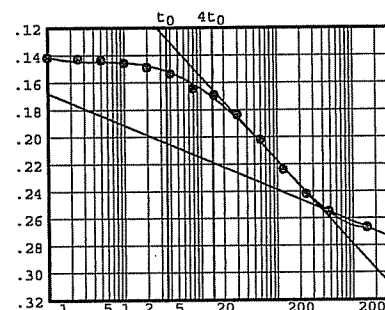
 $D_0 = 0.05850$ $D_{50} = 0.09781$ $D_{100} = 0.13713$ C_v at 56.1 min. = 0.01 ft.²/day $C_\alpha = 0.038$

Pressure: 8.00 ksf

TEST READINGS

Load No. 6

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.13860	11	60.00	0.20190
2	0.10	0.14180	12	120.00	0.22390
3	0.25	0.14280	13	240.00	0.24210
4	0.50	0.14360	14	480.00	0.25490
5	1.00	0.14580	15	1525.00	0.26680
6	2.00	0.14890			
7	4.00	0.15370			
8	8.00	0.16440			
9	15.00	0.16920			
10	30.00	0.18360			



Void Ratio = 1.827 Compression = 26.7 %

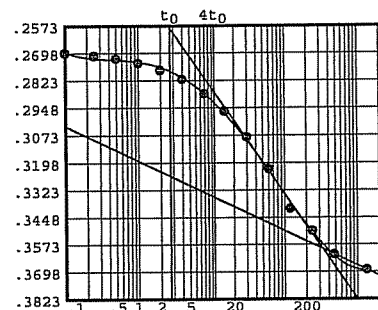
 $D_0 = 0.13248$ $D_{50} = 0.19231$ $D_{100} = 0.25214$ C_v at 38.3 min. = 0.01 ft.²/day $C_\alpha = 0.028$

Pressure: 16.00 ksf

TEST READINGS

Load No. 7

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.26680	11	60.00	0.32250
2	0.10	0.26980	12	120.00	0.34080
3	0.25	0.27110	13	240.00	0.35100
4	0.50	0.27240	14	480.00	0.36180
5	1.00	0.27440	15	1356.00	0.36900
6	2.00	0.27760			
7	4.00	0.28180			
8	8.00	0.28830			
9	15.00	0.29630			
10	30.00	0.30810			



Void Ratio = 1.433 Compression = 36.9 %

 $D_0 = 0.26378$ $D_{50} = 0.31152$ $D_{100} = 0.35927$ C_v at 33.4 min. = 0.01 ft.²/day $C_\alpha = 0.022$

Pressure: 8.00 ksf

TEST READINGS

Load No. 8

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.36900	11	60.00	0.35650
2	0.10	0.36770	12	120.00	0.35550
3	0.25	0.36730	13	240.00	0.35490
4	0.50	0.36700	14	480.00	0.35450
5	1.00	0.36640	15	1430.00	0.35410
6	2.00	0.36560			
7	4.00	0.36430			
8	8.00	0.36270			
9	15.00	0.36070			
10	30.00	0.35850			

Void Ratio = 1.491 Compression = 35.4 %

Pressure: 2.00 ksf

TEST READINGS

Load No. 9

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.35410	11	60.00	0.32600
2	0.10	0.35220	12	120.00	0.31890
3	0.25	0.35180	13	240.00	0.31210
4	0.50	0.35110			
5	1.00	0.35030			
6	2.00	0.34850			
7	4.00	0.34630			
8	8.00	0.34240			
9	15.00	0.33890			
10	30.00	0.33120			

Void Ratio = 1.653 Compression = 31.2 %

Pressure: 0.50 ksf

TEST READINGS

Load No. 10

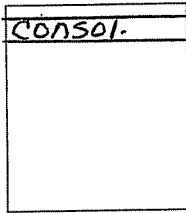
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.31210	11	60.00	0.28950
2	0.10	0.31120	12	120.00	0.27310
3	0.25	0.31100	13	240.00	0.26780
4	0.50	0.31070	14	370.00	0.26270
5	1.00	0.31010	15	1385.00	0.24840
6	2.00	0.30940			
7	4.00	0.30850			
8	8.00	0.30620			
9	15.00	0.30320			
10	30.00	0.29800			

Void Ratio = 1.898 Compression = 24.8 %

Oedometer Settlement Tests

Sample details

Sketch showing specimen location in original Sample



Depth 15'
Description: Gray inorganic clay with slight sand and peat content.

Type Undisturbed
Height H_0 (in) 1
Diameter D_0 (in) 2.5
Weight W_0 (gr) 108.64
Bulk Density ρ (PCF) 84.31
Particle Density ρ_s 2.58 (measured)

Initial Conditions

Settlement Channel consol #4
Moisture Content w_0 % 113.6
Dry Density ρ_d (PCF) 39.47
Voids Ratio e_0 3.0786
Deg of Saturation S_0 % 95.2
Swelling Pressure S_s (TSF)

Final Conditions

Moisture Content w_f % 70.5
Dry Density ρ_d (PCF) 57.52
Voids Ratio e_f 1.7987
Deg of Saturation S_f % 100.00
Settlement: (in) 0.314

Compression Index C_c

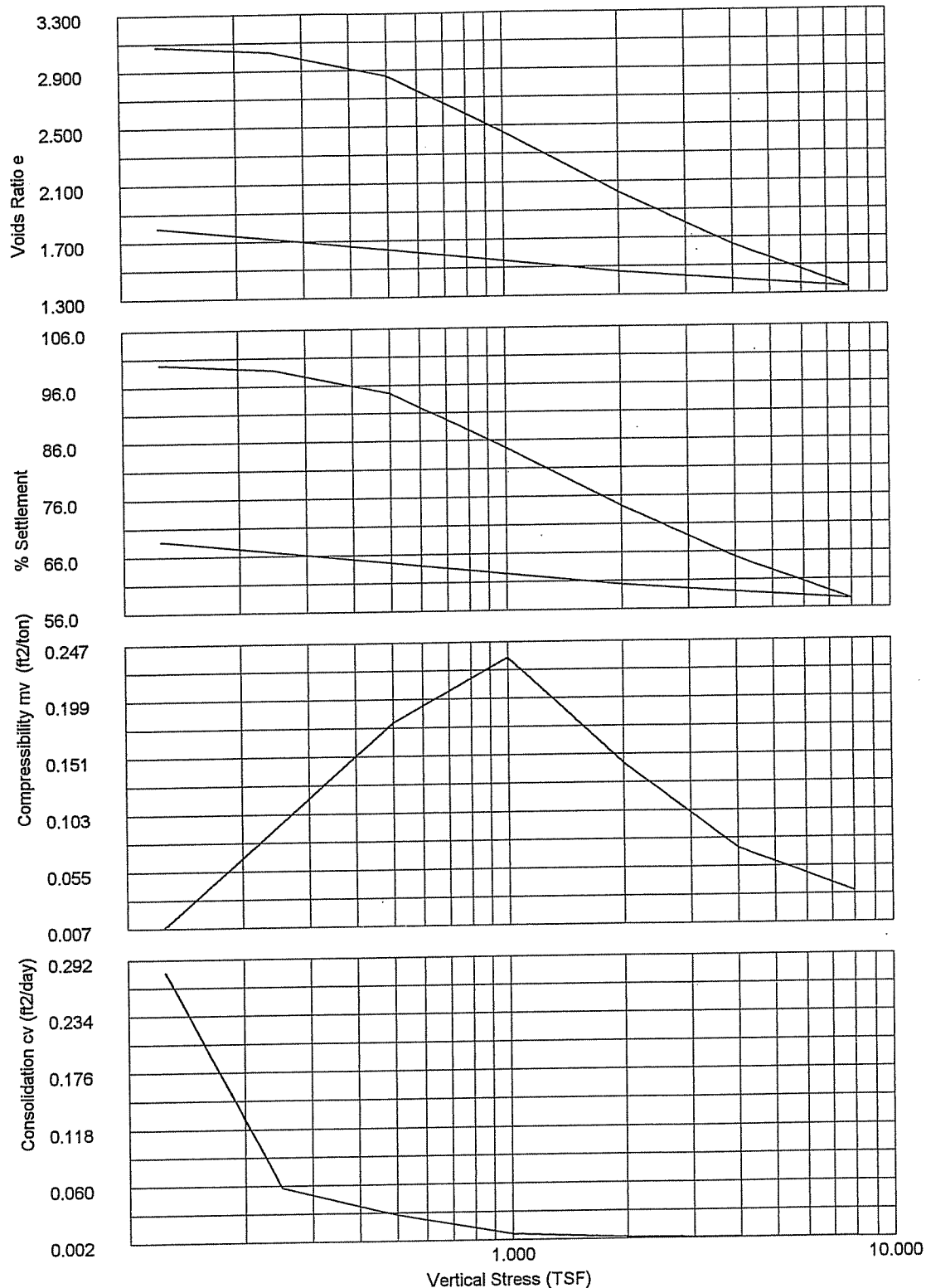
Notes:

Atterberg Limits- LL: 150 PL: 44 PI: 106

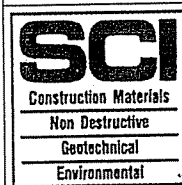
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #4
			Date of Test:	7/24/2003
	Site Reference:	Charleston Naval Base Container	Sample:	UD-1
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAL-66
Operator: <i>Spencer M. Stroh</i>		Checked: <i>Andrew Chubb</i>	Approved: <i>[Signature]</i>	

Oedometer Settlement Tests



Soil Consultants, Inc.



ASTM D2435-96

Site Reference: Charleston Naval Base Container
Jobfile: C:\WINCLISP\CNB.JOB

Operator: *Jeanne M. Strick*

Checked:

Audrey Chubb

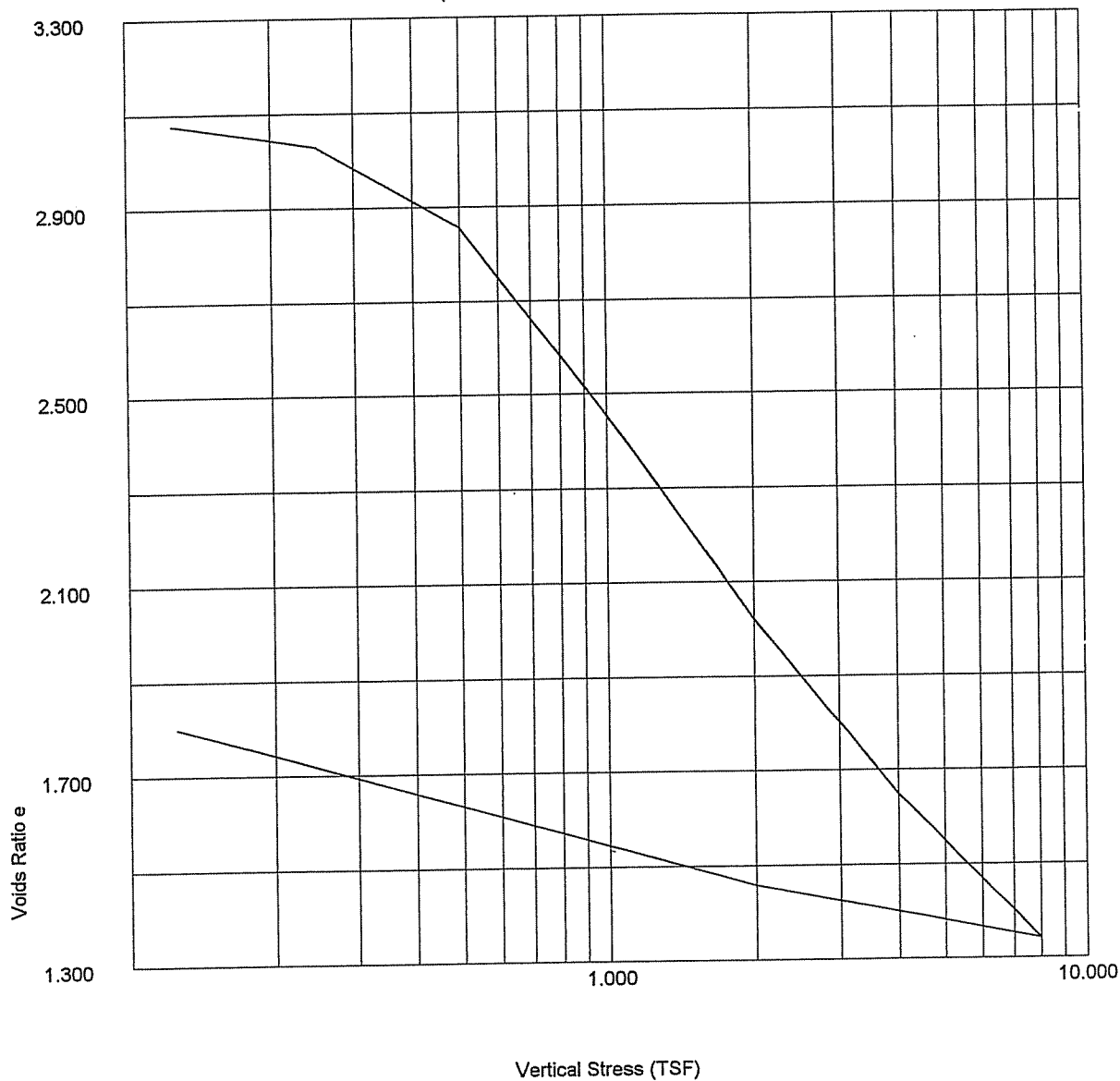
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Date of Test: 7/24/2003

Sample: UD-1
Borehole: PAL-66

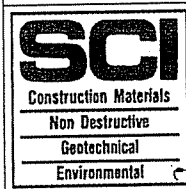
Approved:

N. M. 4/6

Oedometer Settlement Tests



Soil Consultants, Inc.



ASTM D2435-96

Test name: Consol #4
Date of Test: 7/24/2003

Site Reference: Charleston Naval Base Container
Jobfile: C:\WINCLISP\CNB.JOB

Sample: UD-1
Borehole: PAL-66

Operator:

Checked:

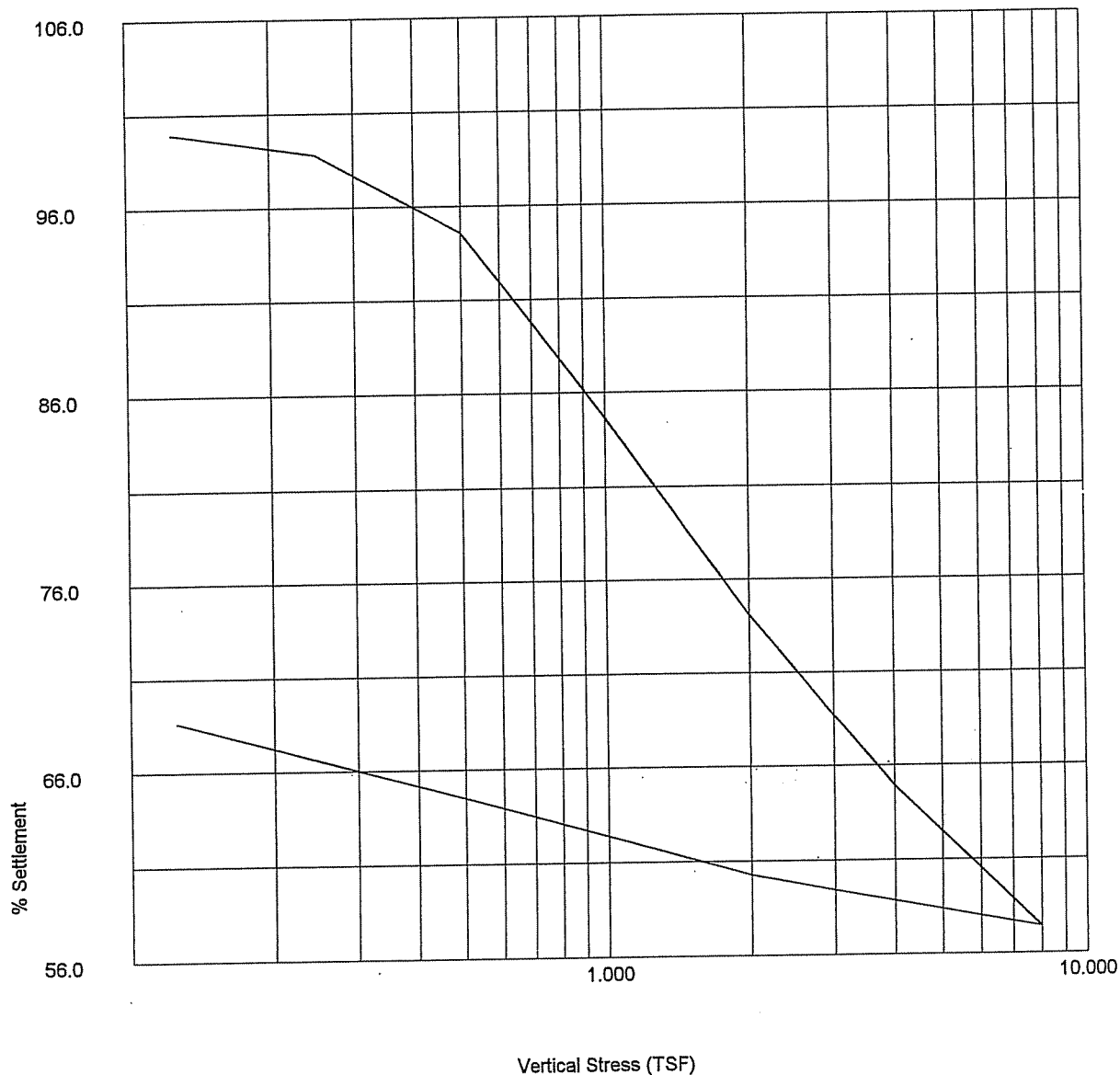
Approved:

James M. Stroh

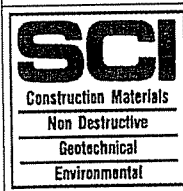
Candace Chubb

[Signature]

Oedometer Settlement Tests



Soil Consultants, Inc.



ASTM D2435-96

Test name: Consol #4

Date of Test: 7/24/2003

Site Reference: Charleston Naval Base Container

Jobfile: C:\WINCLISP\CNB.JOB

Sample: UD-1

Borehole: PAL-66

Operator:

Checked:

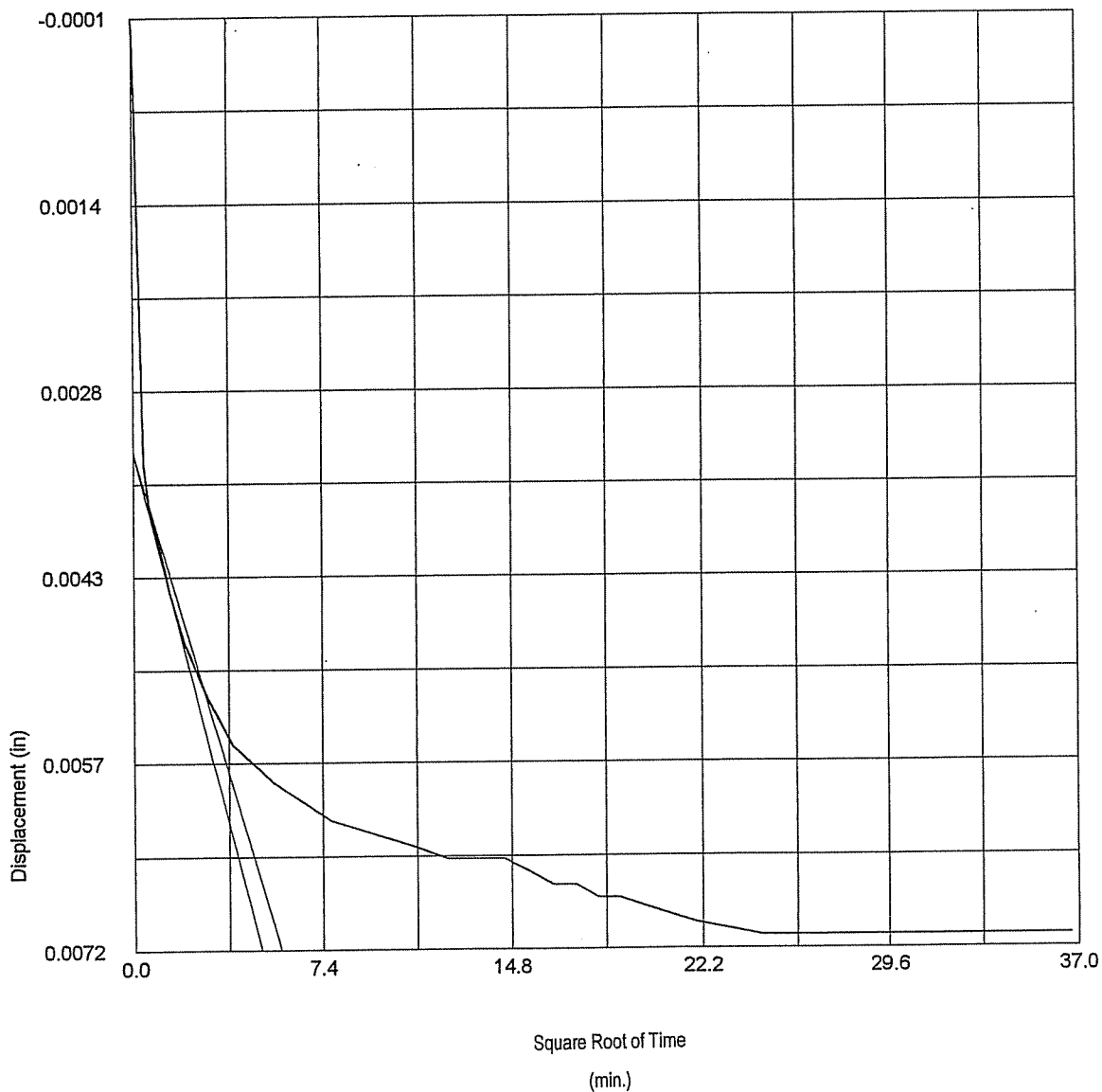
Approved:

S. M. Stolt *Audrey Chubb* *N. M. D. 206*

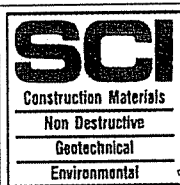
Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	0.125
Initial Temp oC	20.0
Correction (in)	0.0063
Displacement (in)	0.0072
Voids Ratio e_0	3.0749
Final Temp oC	
t_{90} (mins)	7.6
c_v (ft ² /day)	0.279
m_v (ft ² /ton)	0.007
Sec Compression C_{sec}	



Soil Consultants, Inc.



ASTM D2435-96

Site Reference: Charleston Naval Base Container
Jobfile: C:\WINCLISP\CNB.JOB

Operator:

Spencer M. Stroh

Checked:

Audrey Chubb

Test name: Consol #4
Date of Test: 7/24/2003

Sample: UD-1
Borehole: PAL-66

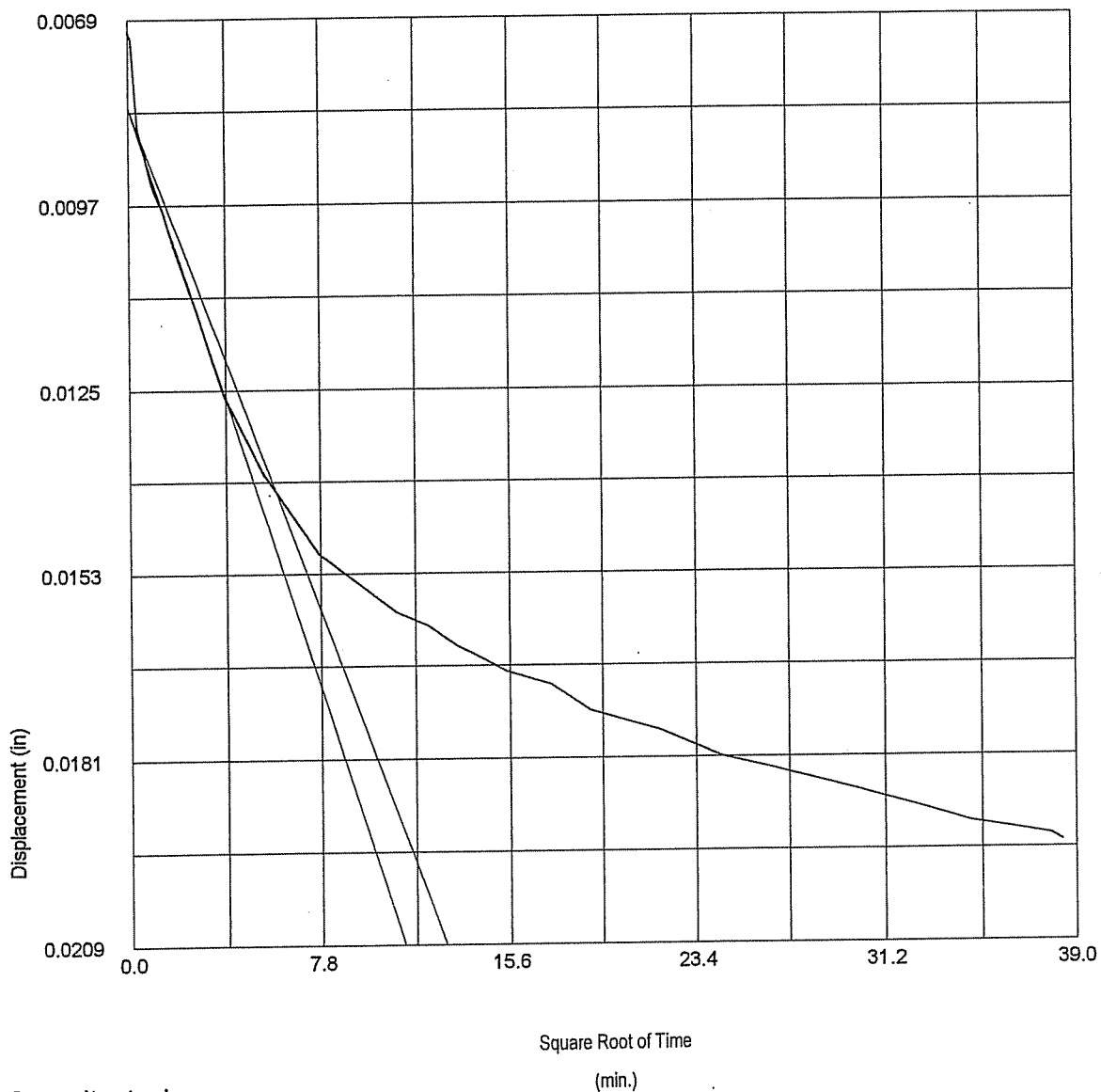
Approved:

N. M. Stroh

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	0.250
Initial Temp oC	20.0
Correction (in)	0.0072
Displacement (in)	0.0123
Voids Ratio e_0	3.0284
Final Temp oC	
t_{90} (mins)	36.4
c_v (ft ² /day)	0.057
m_v (ft ² /ton)	0.092
Sec Compression C_{sec}	



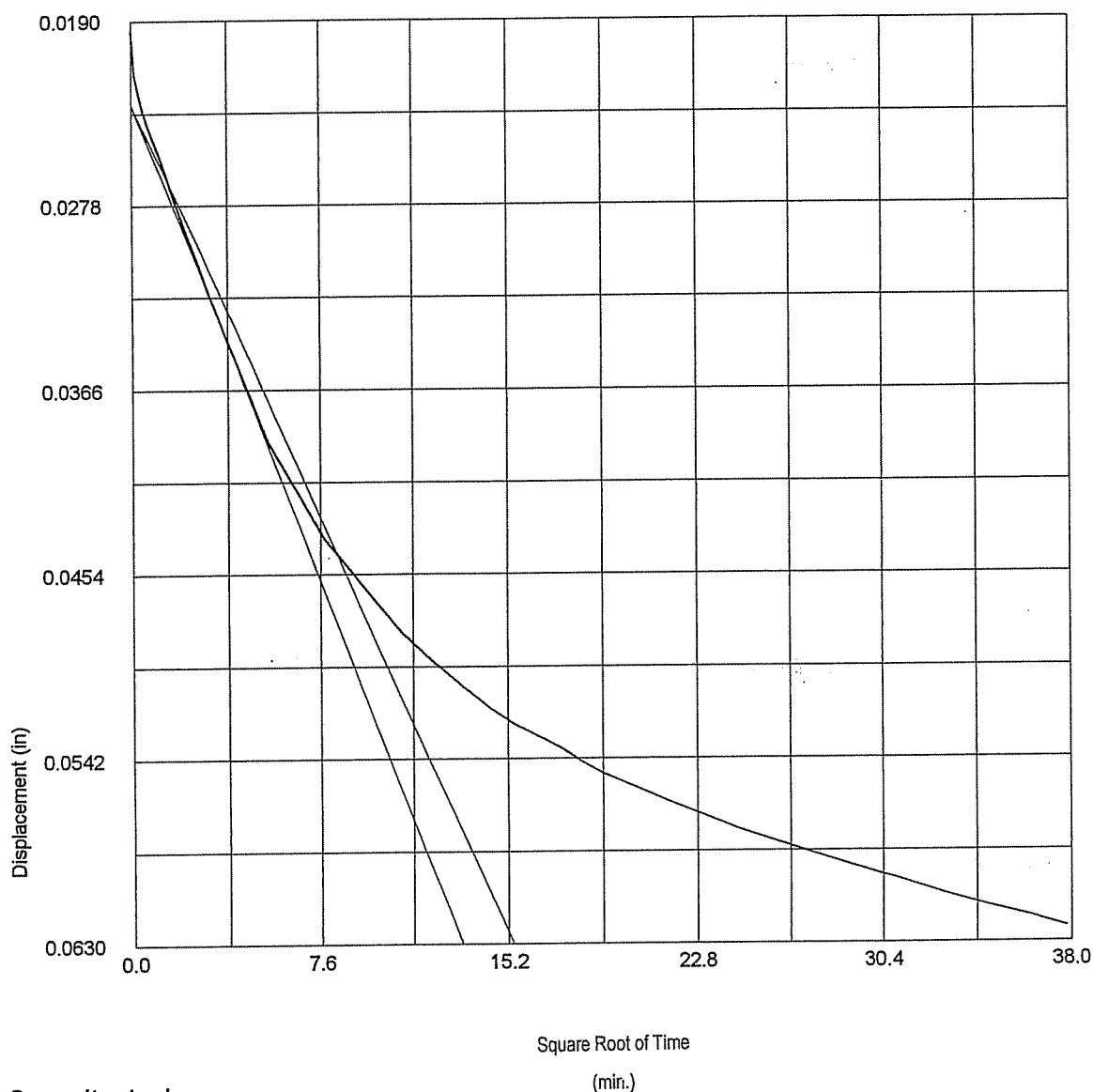
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #4
			Date of Test:	7/24/2003
	Site Reference:	Charleston Naval Base Container	Sample:	UD-1
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAL-66
	Operator:	Shanne M. Stut	Checked:	Andrew Chubb
		Approved:	N. M. Stut	

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	0.500
Initial Temp oC	20.0
Correction (in)	0.0078
Displacement (in)	0.0429
Voids Ratio e_0	2.8559
Final Temp oC	
t_{90} (mins)	69.1
c_v (ft ² /day)	0.029
m_v (ft ² /ton)	0.179
Sec Compression C_{sec}	



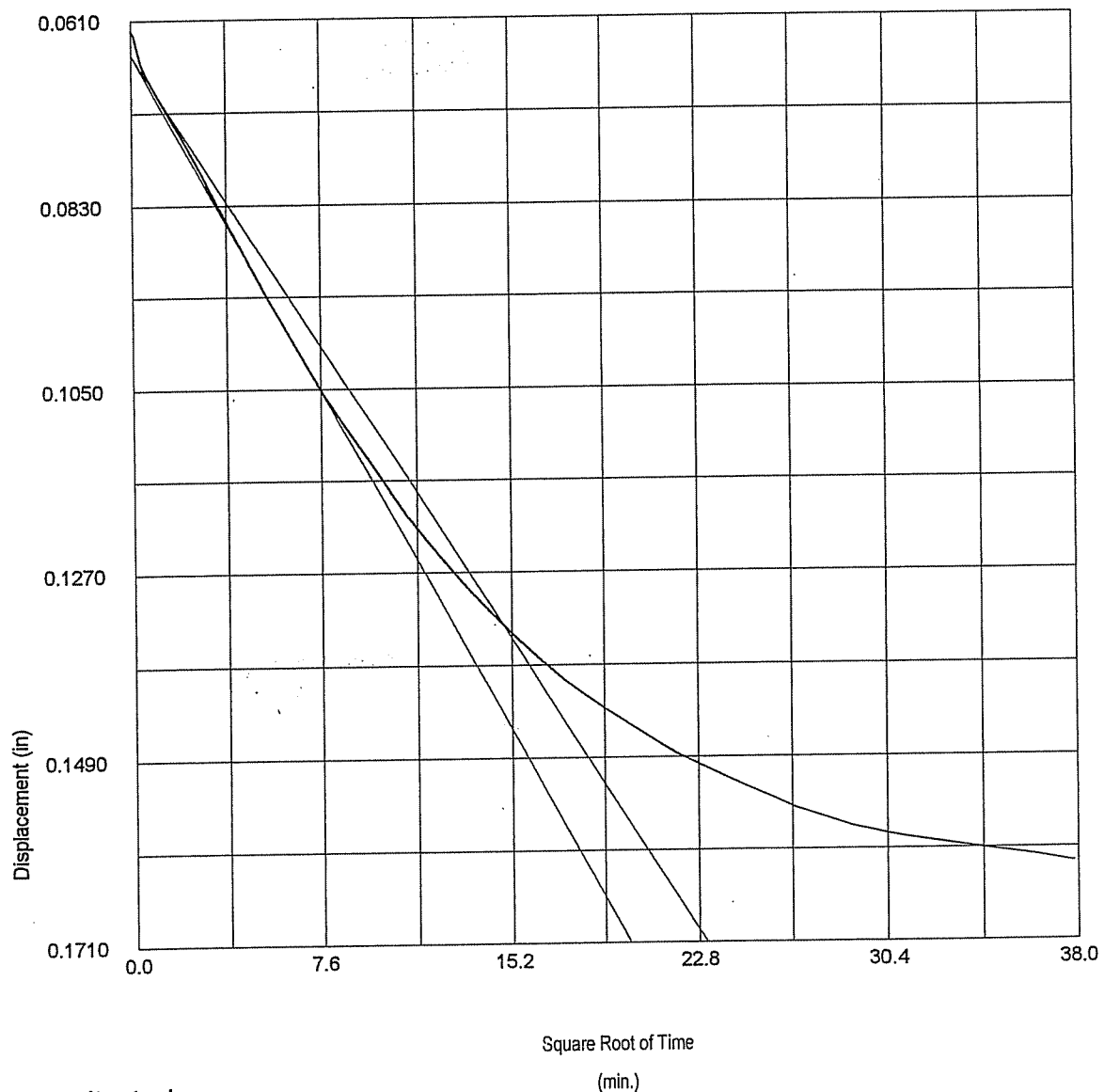
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #4
			Date of Test:	7/24/2003
	Site Reference:	Charleston Naval Base Container	Sample:	UD-1
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAL-66
Operator:		Checked:	Approved:	
<i>James M. Stroh</i>		<i>Claydon Chubb</i>	<i>N. H. H. 76</i>	

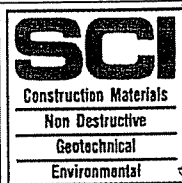
Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	1.000
Initial Temp oC	20.0
Correction (in)	0.0086
Displacement (in)	0.0995
Voids Ratio e_0	2.4533
Final Temp oC	
t_{90} (mins)	221.5
c_v (ft ² /day)	0.008
m_v (ft ² /ton)	0.233
Sec Compression C_{sec}	



Soil Consultants, Inc.



ASTM D2435-96

Site Reference: Charleston Naval Base Container
Jobfile: C:\WINCLISP\CNB.JOB

Operator:

Checked:

Test name: Consol #4
Date of Test: 7/24/2003

Sample: UD-1
Borehole: PAL-66

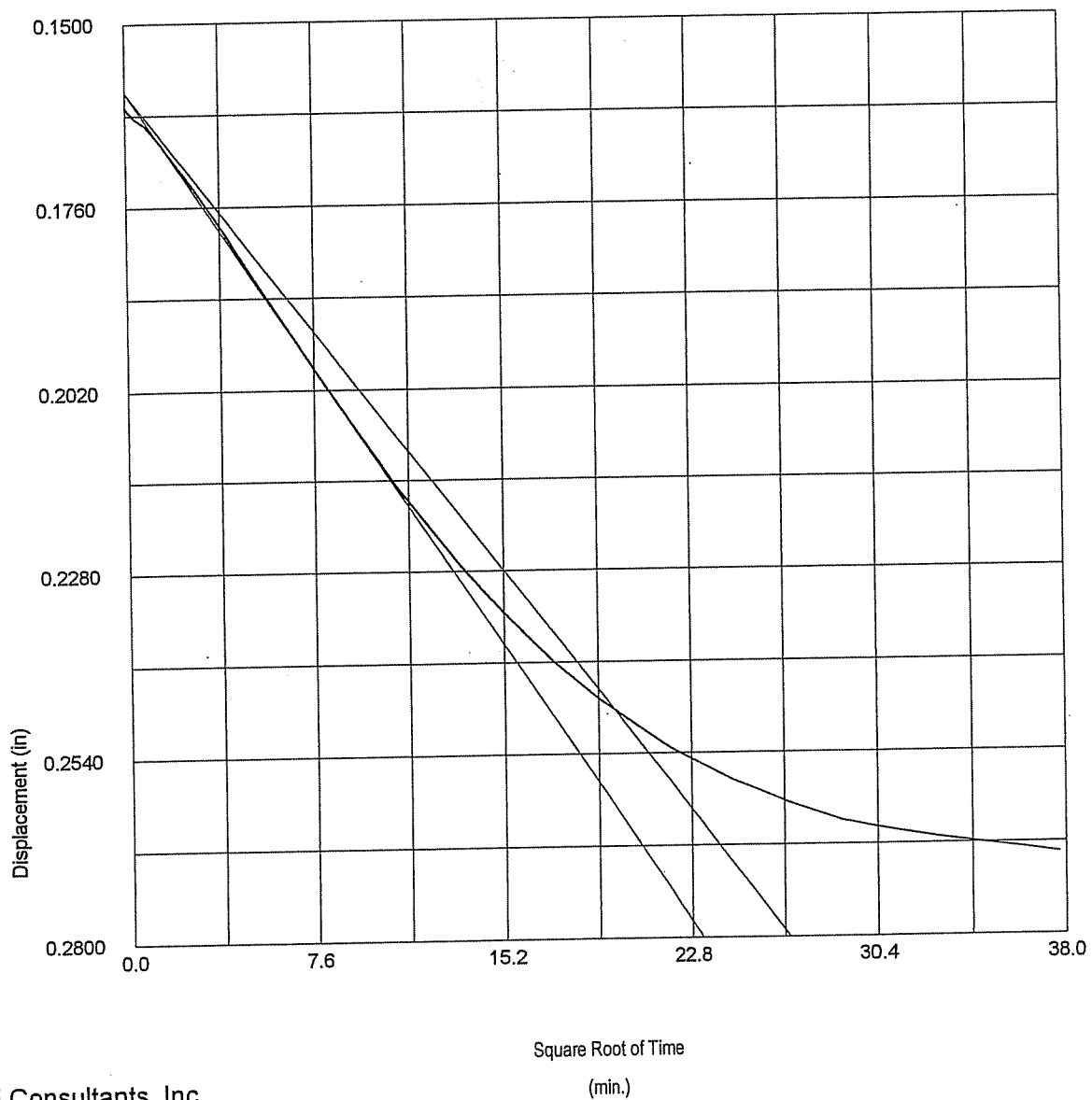
Approved:

Signature: Spencer M. Stark *Signature: [illegible]* *Signature: [illegible]*

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	2.000
Initial Temp °C	20.0
Correction (in)	0.0094
Displacement (in)	0.1068
Voids Ratio e_0	2.0210
Final Temp °C	
t_{90} (mins)	388.5
c_v (ft ² /day)	0.003
m_v (ft ² /ton)	0.143
Sec Compression C_{sec}	



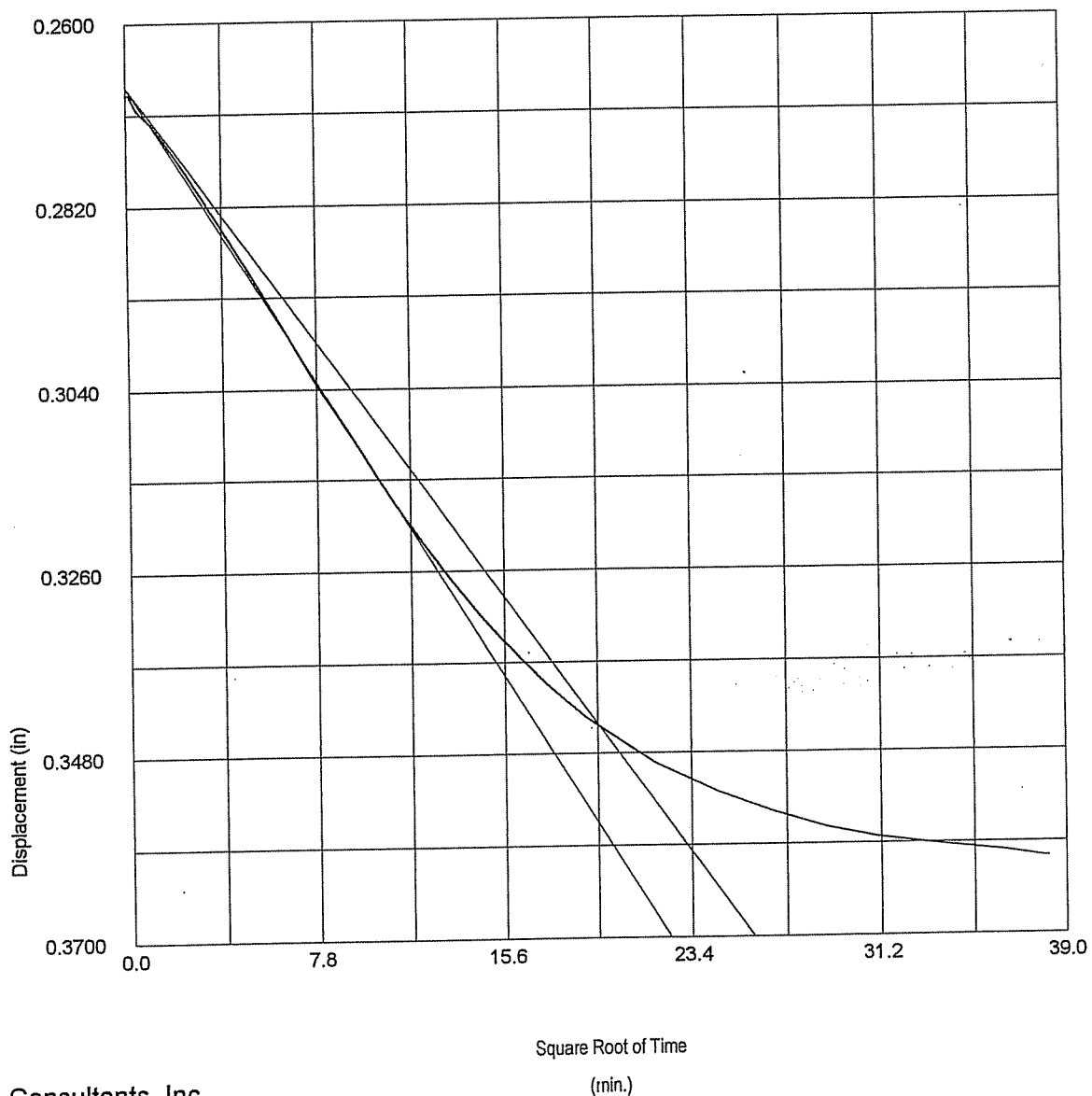
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96	Test name: Consol #4
	Site Reference: Charleston Naval Base Container	Date of Test: 7/24/2003
	Jobfile: C:\WINCLISP\CNB.JOB	Sample: UD-1
	Operator: <i>Ganne M. Stroh</i>	Borehole: PAL-66
Checked: <i>Andrew Chubb</i>		Approved: <i>N. Smith</i>

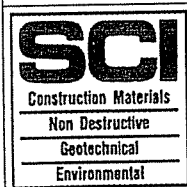
Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	4.000
Initial Temp oC	20.0
Correction (in)	0.0102
Displacement (in)	0.0923
Voids Ratio e_0	1.6478
Final Temp oC	
t_{90} (mins)	384.3
c_v (ft ² /day)	0.003
m_v (ft ² /ton)	0.07
Sec Compression C_{sec}	



Soil Consultants, Inc.



ASTM D2435-96

Test name: Consol #4
Date of Test: 7/24/2003

Site Reference: Charleston Naval Base Container
Jobfile: C:\WINCLISP\CNB.JOB

Sample: UD-1
Borehole: PAL-66

Operator:

Checked:

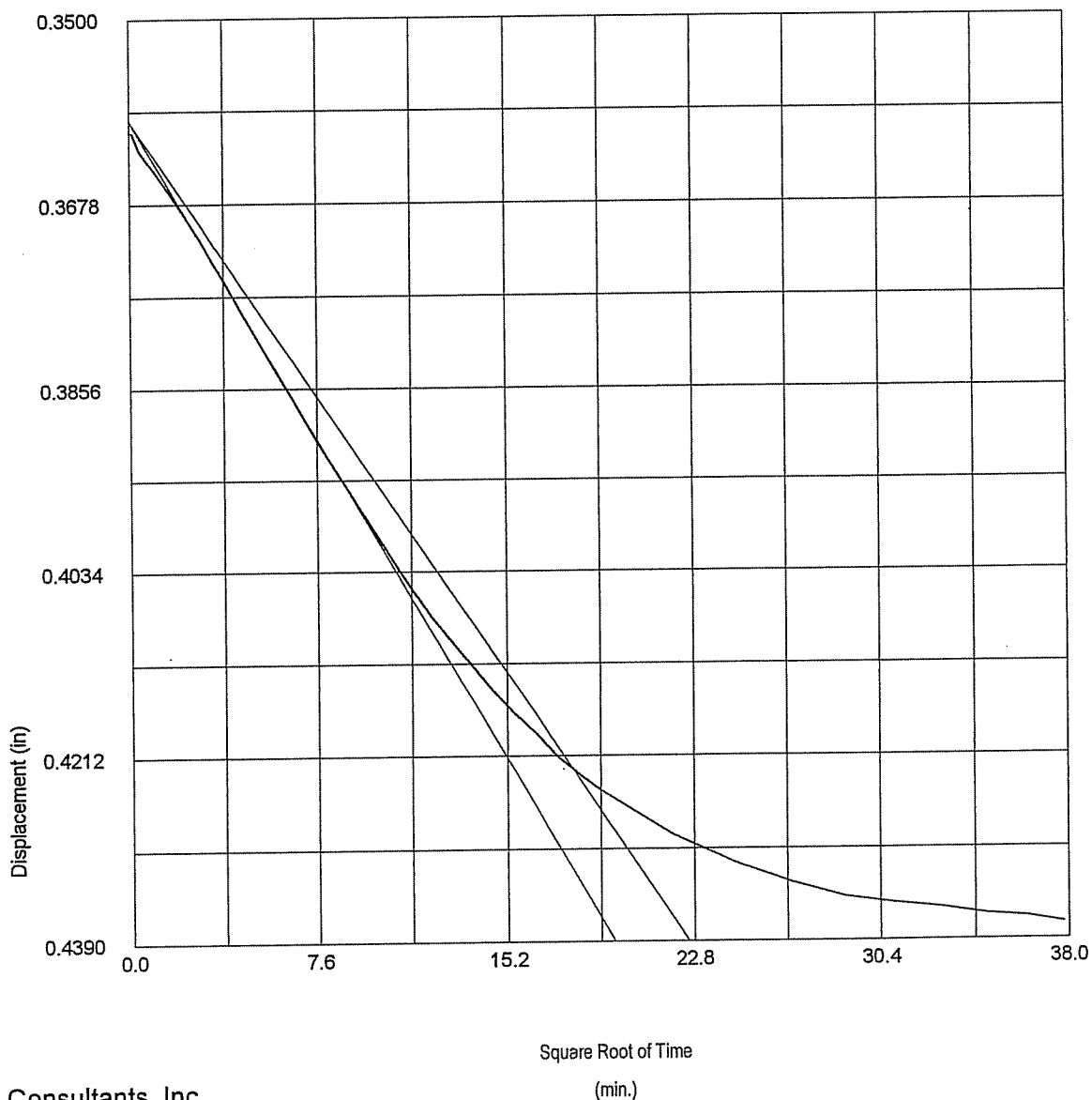
Approved:

Suzanne M. Stolt *Richard Chubb* *N. K. Kato*

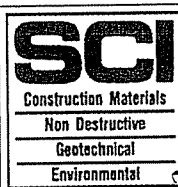
Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	8.000
Initial Temp oC	20.0
Correction (in)	0.0113
Displacement (in)	0.0766
Voids Ratio e_0	1.3399
Final Temp oC	
t_{90} (mins)	317.0
c_v (ft ² /day)	0.003
m_v (ft ² /ton)	0.033
Sec Compression C_{sec}	



Soil Consultants, Inc.



ASTM D2435-96

Site Reference: Charleston Naval Base Container
Jobfile: C:\WINCLISP\CNB.JOB

Operator:

Checked:

Test name: Consol #4
Date of Test: 7/24/2003

Sample: UD-1
Borehole: PAL-66

Approved:

Signatures:
Operator: *James M. Stolt*
Checked: *Audrey Chubb*
Approved: *N. Motta*

Oedometer Settlement Tests

Stress (TSF)	Initial Temp. oC	Settlement Total (in)	Cal Corr. (in)	Final Temp. oC	Voids Ratio e_f	t_{90} (mins)	Secondary Compr C_{sec}	c_v (ft ² /day)	m_v (ft ² /ton)
0.125	20.0	0.0009	0.0063	20.0	3.0749	7.6		0.279	0.007
0.250	20.0	0.0123	0.0072	20.0	3.0284	36.4		0.057	0.092
0.500	20.0	0.0546	0.0078	20.0	2.8559	69.1		0.029	0.179
1.000	20.0	0.1533	0.0086	20.0	2.4533	221.5		0.008	0.233
2.000	20.0	0.2593	0.0094	20.0	2.0210	388.5		0.003	0.143
4.000	20.0	0.3508	0.0102	20.0	1.6478	384.3		0.003	0.070
8.000	20.0	0.4263	0.0113	20.0	1.3399	317.0		0.003	0.033
2.000	20.0	0.3977	0.0104	20.0	1.4565				0.008
0.500	20.0	0.3551	0.0097	20.0	1.6303				0.044
0.125	20.0	0.3138	0.0094	20.0	1.7987				0.160

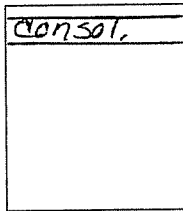
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #4
			Date of Test:	7/24/2003
	Site Reference: Charleston Naval Base Container		Sample:	UD-1
	Jobfile: C:\WINCLISP\CNB.JOB		Borehole:	PAL-66
Operator: Suzanne M. Stolt		Checked: Audrey Chubb	Approved: R. Stoltz	

Oedometer Settlement Tests

Sample details

Sketch showing specimen location in original Sample



Depth 32'-34'
Description: Gray inorganic clay with slight sand and peat content.

Type Undisturbed
Height H_0 (in) 1
Diameter D_0 (in) 2.5
Weight W_0 (gr) 118.44
Bulk Density ρ (PCF) 91.92
Particle Density ρ_s 2.7
(measured)

Initial Conditions

Settlement Channel consol #1
Moisture Content w_0 % 85.1
Dry Density ρ_d (PCF) 49.67
Voids Ratio e_0 2.3923
Deg of Saturation S_0 % 96.0
Swelling Pressure S_s (TSF)

Final Conditions

Moisture Content w_f % 50.3
Dry Density ρ_d (PCF) 73.01
Voids Ratio e_f 1.3078
Deg of Saturation S_f % 100.00
Settlement: (in) 0.32
Compression Index C_c

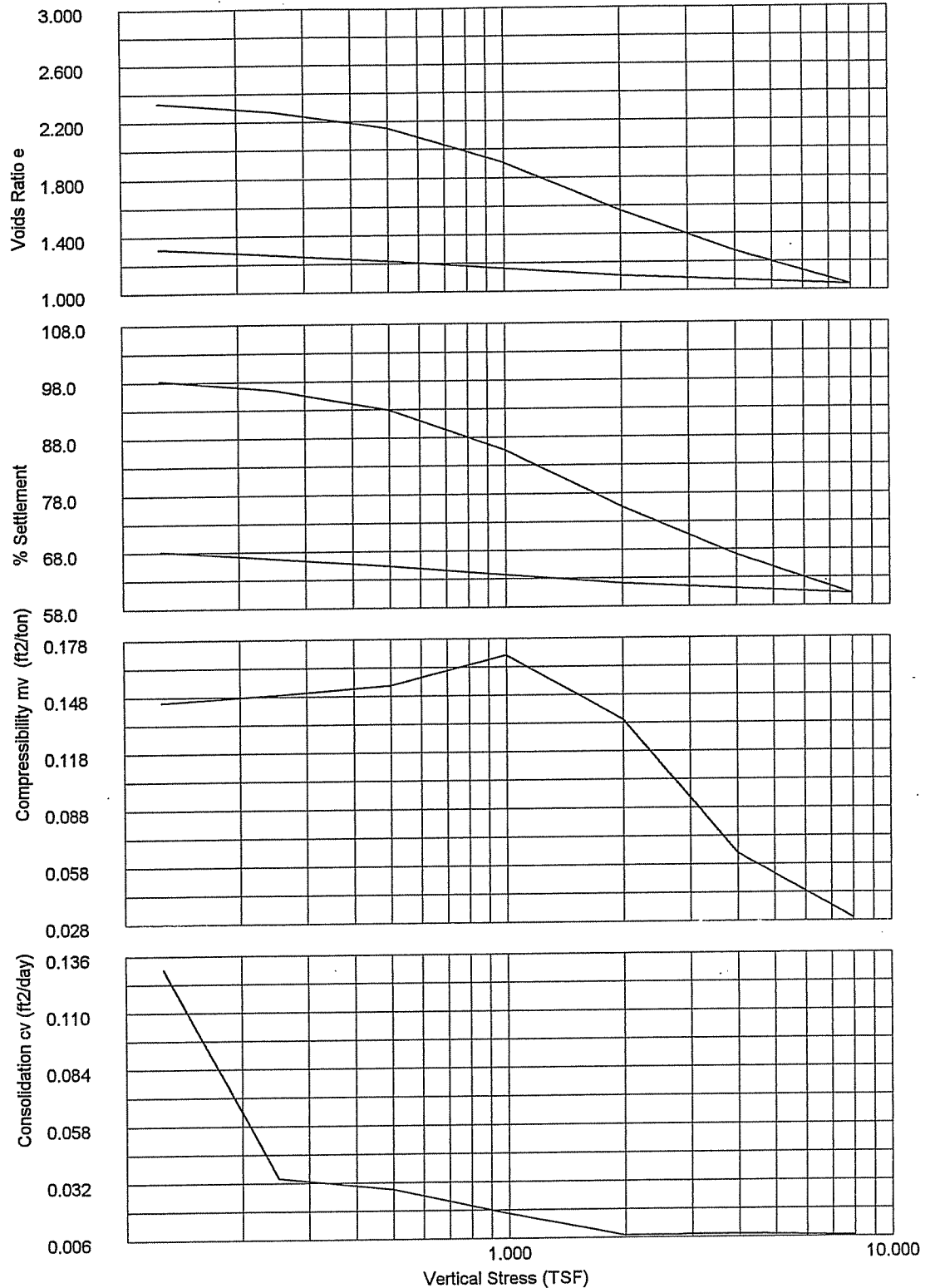
Notes:

Atterberg Limits- LL:109 PL: 33 PI: 75

Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #1
			Date of Test:	8/1/2003
	Site Reference:	Charleston Naval Base Container	Sample:	UD-2
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAL-66
	Operator:	Spencer M. Sturt	Checked:	David J. Hall
		Approved:	W. J. Hall	

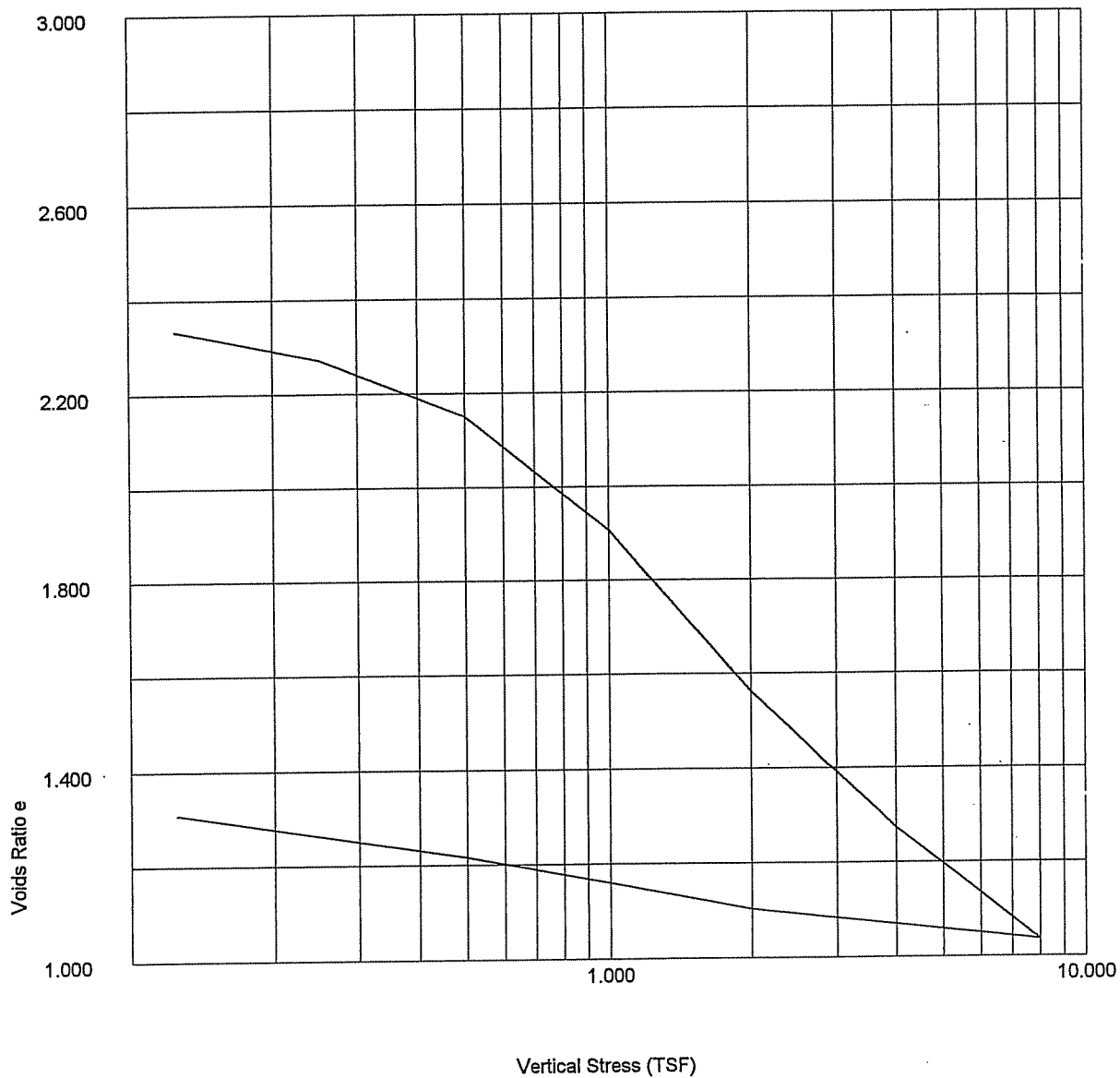
Oedometer Settlement Tests



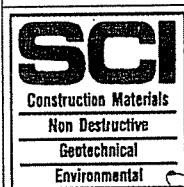
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #1
			Date of Test:	8/1/2003
	Site Reference:	Charleston Naval Base Container	Sample:	UD-2
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAL-66
Operator:	Spanne M. Stroh	Checked:	Dail J. Hel	Approved:

Oedometer Settlement Tests



Soil Consultants, Inc.



ASTM D2435-96

Test name: Consol #1
Date of Test: 8/1/2003

Site Reference: Charleston Naval Base Container
Jobfile: C:\WINCLISP\CNB.JOB

Sample: UD-2
Borehole: PAL-66

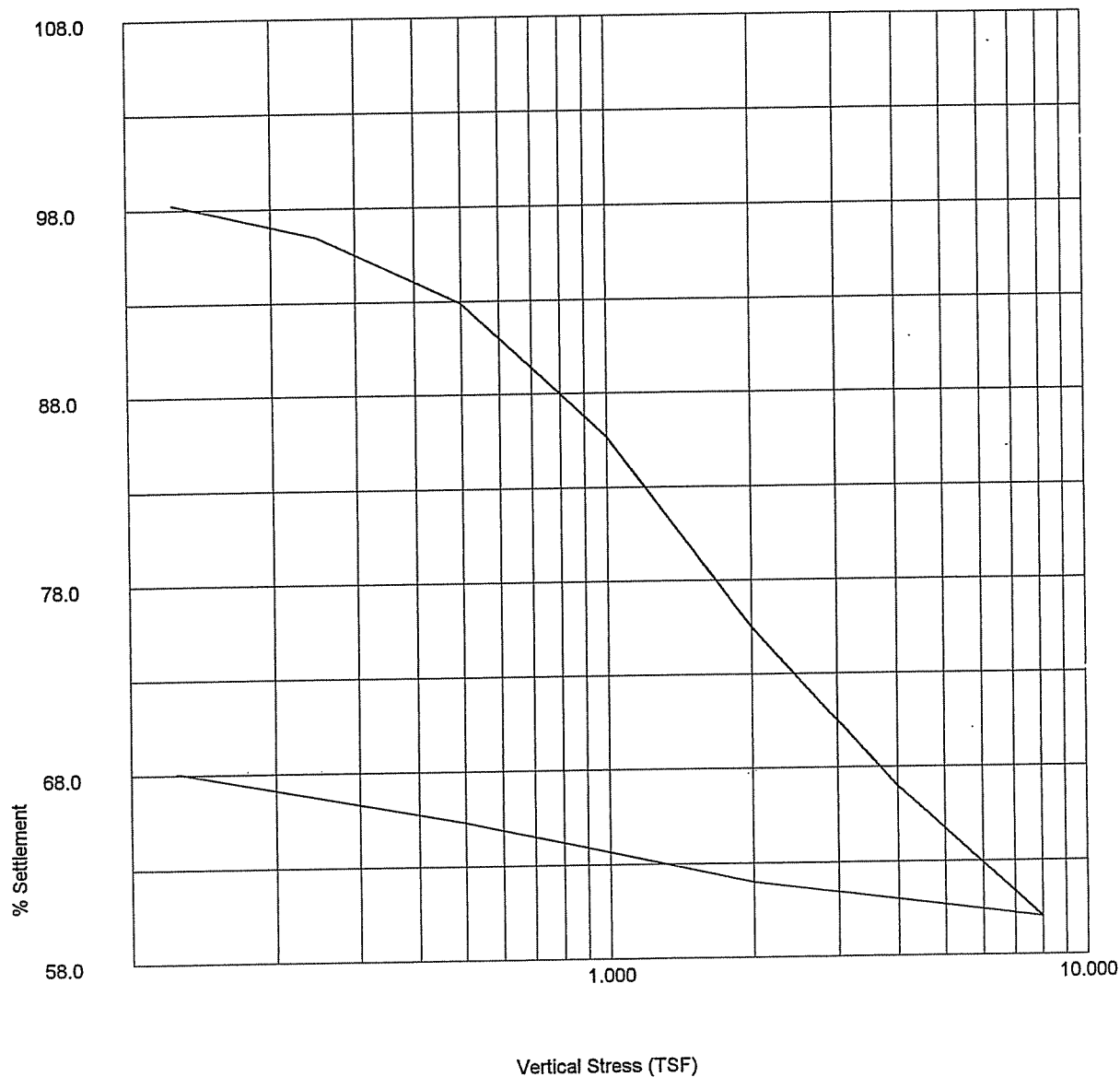
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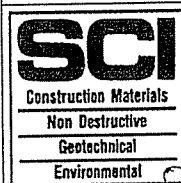
Approved:

Signature: Suzanne M. Sturges
Signature: [illegible]
Signature: [illegible]

Oedometer Settlement Tests



Soil Consultants, Inc.



ASTM D2435-96

Test name: Consol #1
Date of Test: 8/1/2003

Site Reference: Charleston Naval Base Container
Jobfile: C:\WINCLISP\CNB.JOB

Sample: UD-2
Borehole: PAL-66

Operator:

Checked:

Approved:

Shannon M. Sturh

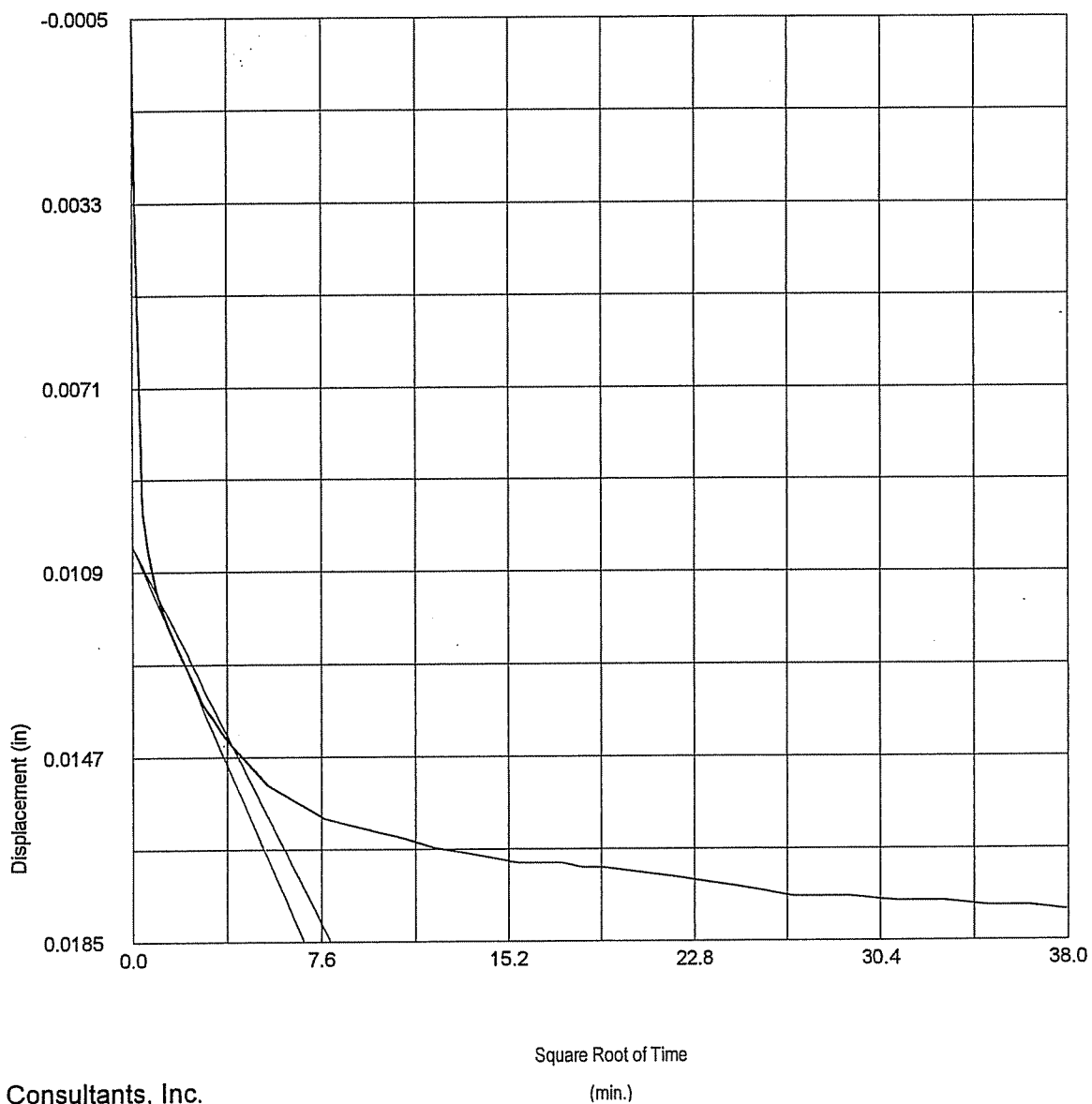
Dail

[Signature]

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	0.125
Initial Temp oC	20.0
Correction (in)	0.0006
Displacement (in)	0.0184
Voids Ratio e_0	2.3319
Final Temp oC	
t_{90} (mins)	16.1
c_v (ft ² /day)	0.129
m_v (ft ² /ton)	0.145
Sec Compression C_{sec}	



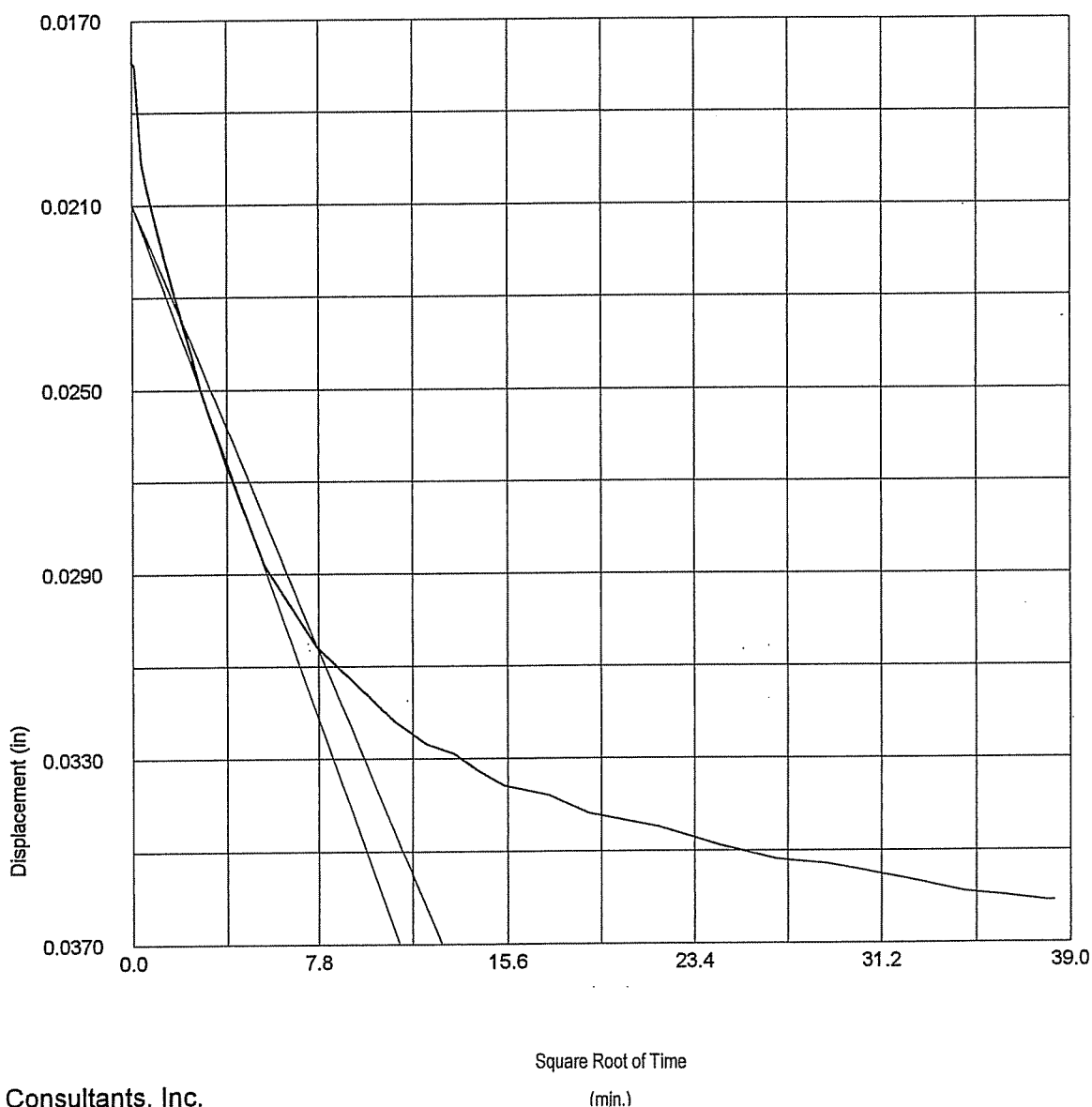
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96	Test name	Consol #1
	Site Reference: Charleston Naval Base Container	Date of Test:	8/1/2003
	Jobfile: C:WINCLISP\CNB.JOB	Sample:	UD-2
	Operator:	Borehole:	PAL-66
<i>Shayne M. Smith</i>		Checked: <i>Dail J Hal</i>	Approved: <i>N. H. Smith</i>

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	0.250
Initial Temp oC	20.0
Correction (in)	0.0009
Displacement (in)	0.0182
Voids Ratio e_0	2.2712
Final Temp oC	
t_{90} (mins)	59.9
c_v (ft ² /day)	0.034
m_v (ft ² /ton)	0.149
Sec Compression C_{sec}	



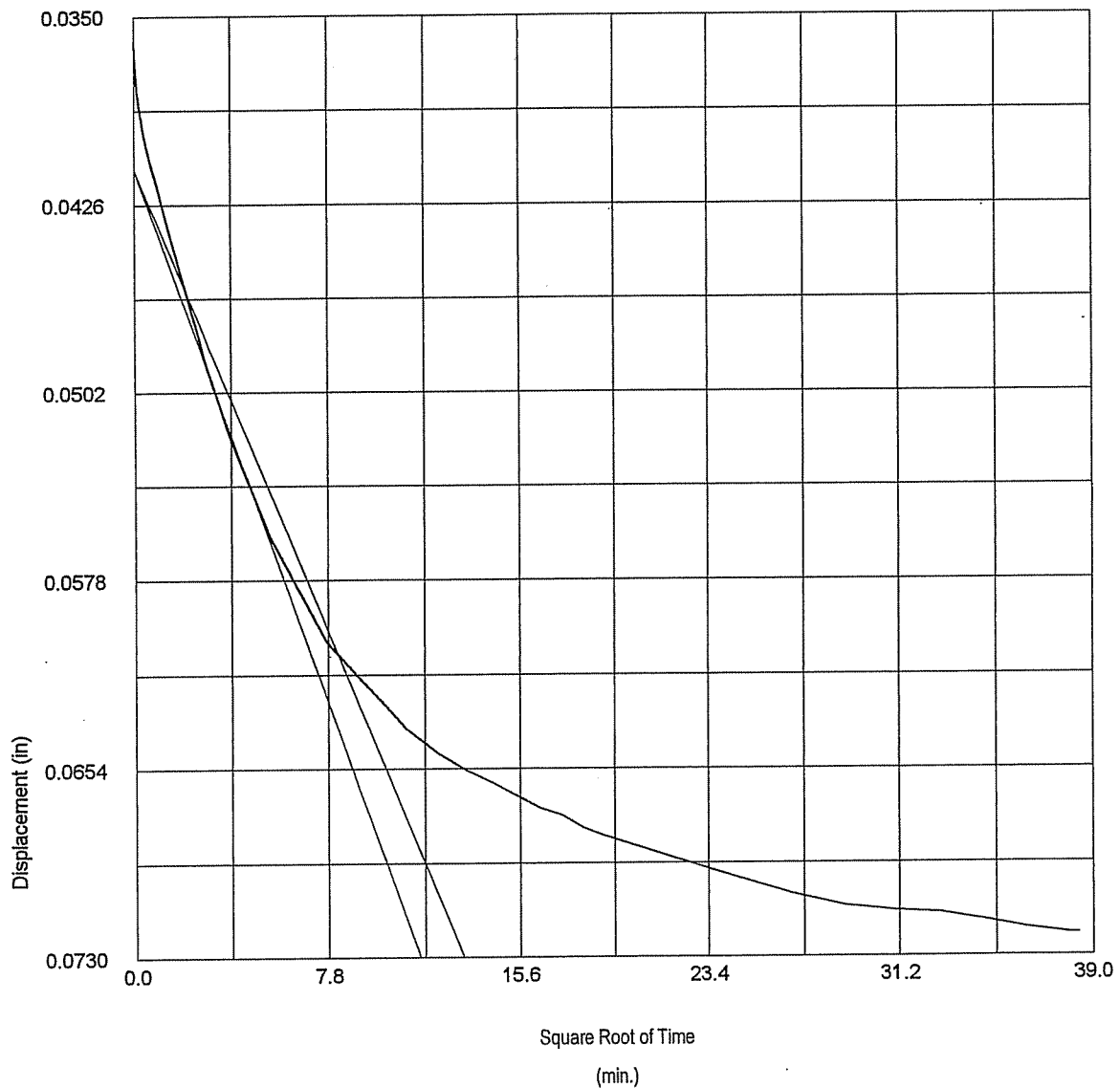
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96	Test name	Consol #1
	Site Reference: Charleston Naval Base Container	Date of Test:	8/1/2003
	Jobfile: C:\WINCLISP\CNB.JOB	Sample:	UD-2
	Operator:	Borehole:	PAL-66
	Operator: <i>Shanne M. Stroh</i> Checked: <i>Dail & Hal</i> Approved: <i>R. H. Stroh</i>		

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	0.500
Initial Temp oC	20.0
Correction (in)	0.0013
Displacement (in)	0.036
Voids Ratio e_0	2.1504
Final Temp oC	
t_{90} (mins)	67.2
c_v (ft ² /day)	0.028
m_v (ft ² /ton)	0.153
Sec Compression C_{sec}	



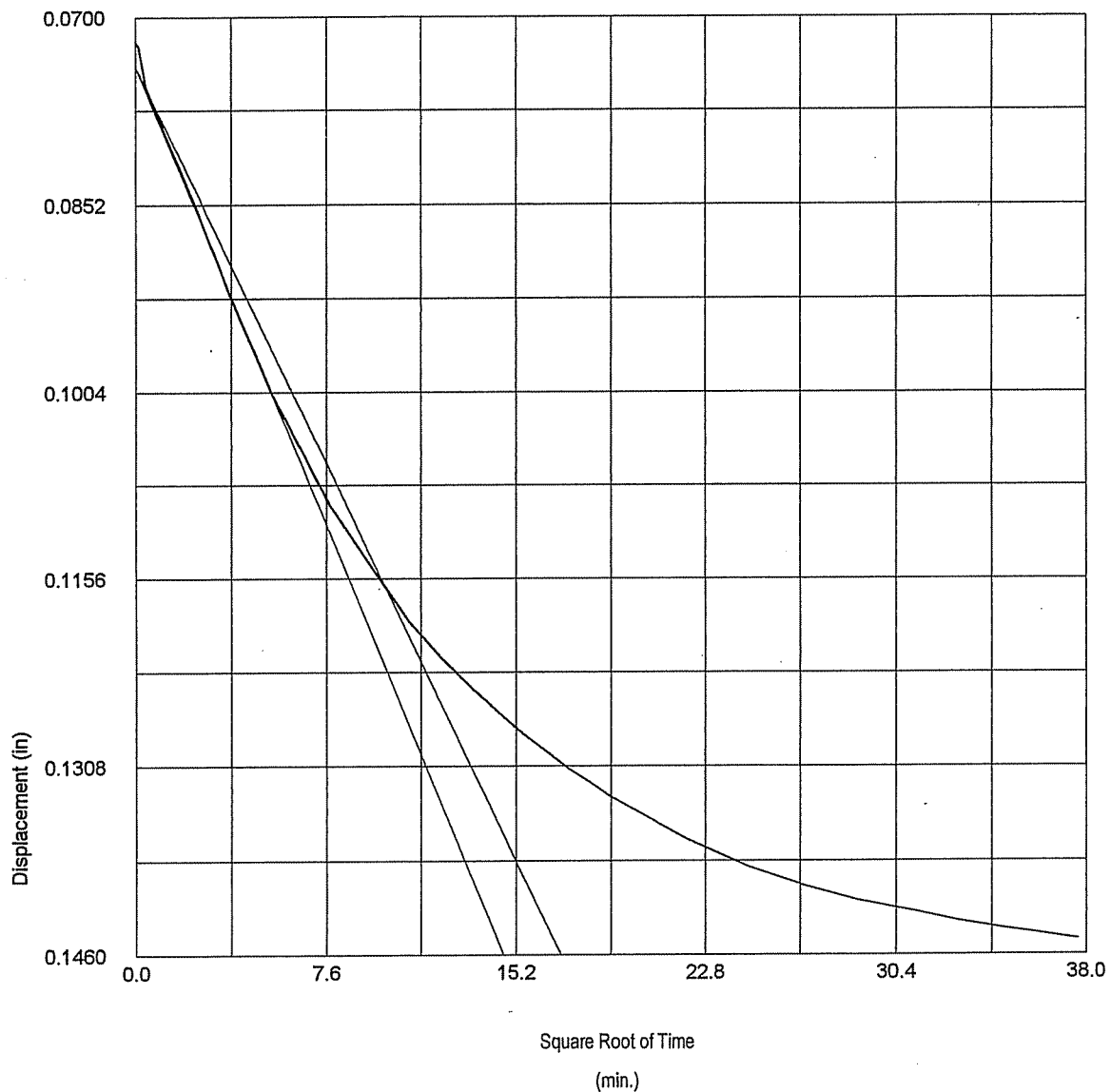
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #1
			Date of Test:	8/1/2003
	Site Reference:	Charleston Naval Base Container	Sample:	UD-2
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAL-66
Operator:		Checked:	Approved:	
<i>Suzanne M. Stur</i>		<i>David J. Hall</i>		<i>N. Stur</i>

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	1.000
Initial Temp oC	20.0
Correction (in)	0.0017
Displacement (in)	0.0727
Voids Ratio e_0	1.9052
Final Temp oC	
t_{90} (mins)	101.2
c_v (ft ² /day)	0.017
m_v (ft ² /ton)	0.169
Sec Compression C_{sec}	



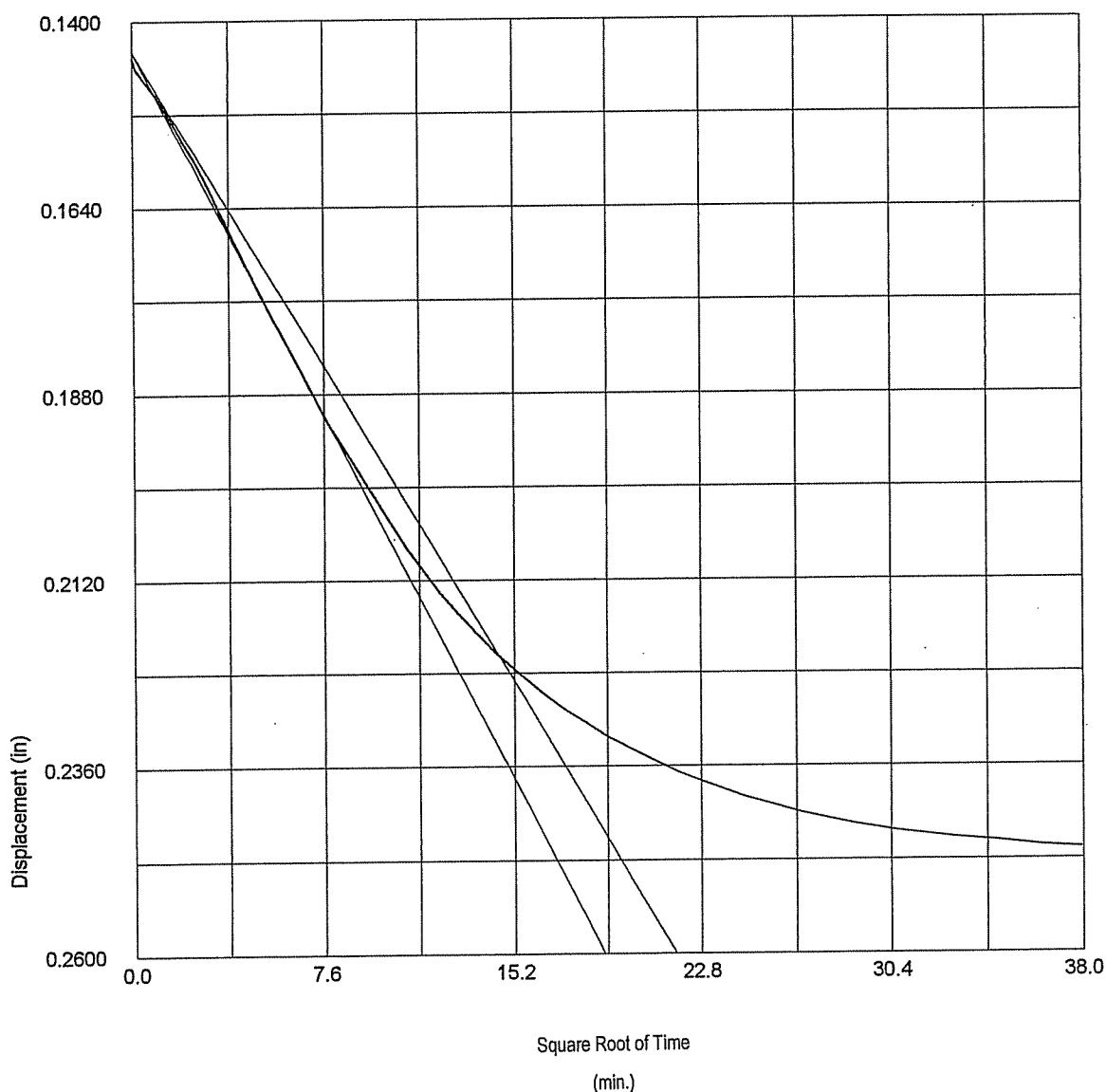
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96	Test name	Consol #1	
		Date of Test:	8/1/2003	
	Site Reference:	Charleston Naval Base Container	Sample:	UD-2
	Jobfile:	C:WINCLISP\CNB.JOB	Borehole:	PAL-66
	Operator:	Checked:	Approved:	
	<i>Janner M. Stork</i>	<i>Dail J Hal</i>	<i>11/10/03</i>	

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	2.000
Initial Temp oC	20.0
Correction (in)	0.0021
Displacement (in)	0.1019
Voids Ratio e_0	1.5608
Final Temp oC	
t_{90} (mins)	214.3
c_v (ft ² /day)	0.006
m_v (ft ² /ton)	0.134
Sec Compression C_{sec}	



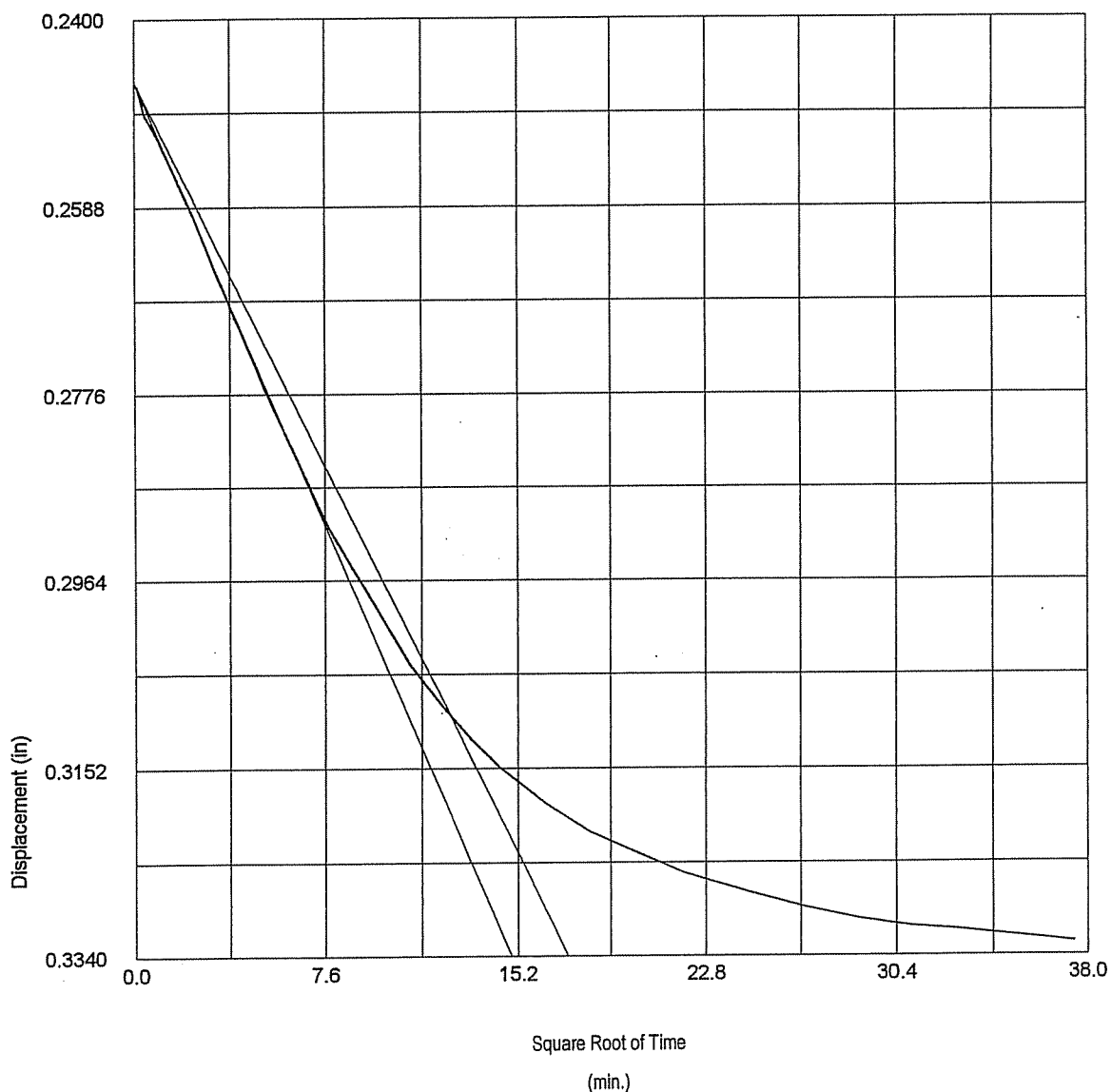
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96	Test name: Consol #1
	Site Reference: Charleston Naval Base Container	Date of Test: 8/1/2003
	Jobfile: C:\WINCLISP\CNB.JOB	Sample: UD-2
	Operator: <i>Shanne M. Starb</i>	Borehole: PAL-66
	Checked: <i>David J. Hall</i>	Approved: <i>[Signature]</i>

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	4.000
Initial Temp oC	20.0
Correction (in)	0.003
Displacement (in)	0.086
Voids Ratio e_0	1.2722
Final Temp oC	
t_{90} (mins)	156.0
c_v (ft ² /day)	0.007
m_v (ft ² /ton)	0.064
Sec Compression C_{sec}	



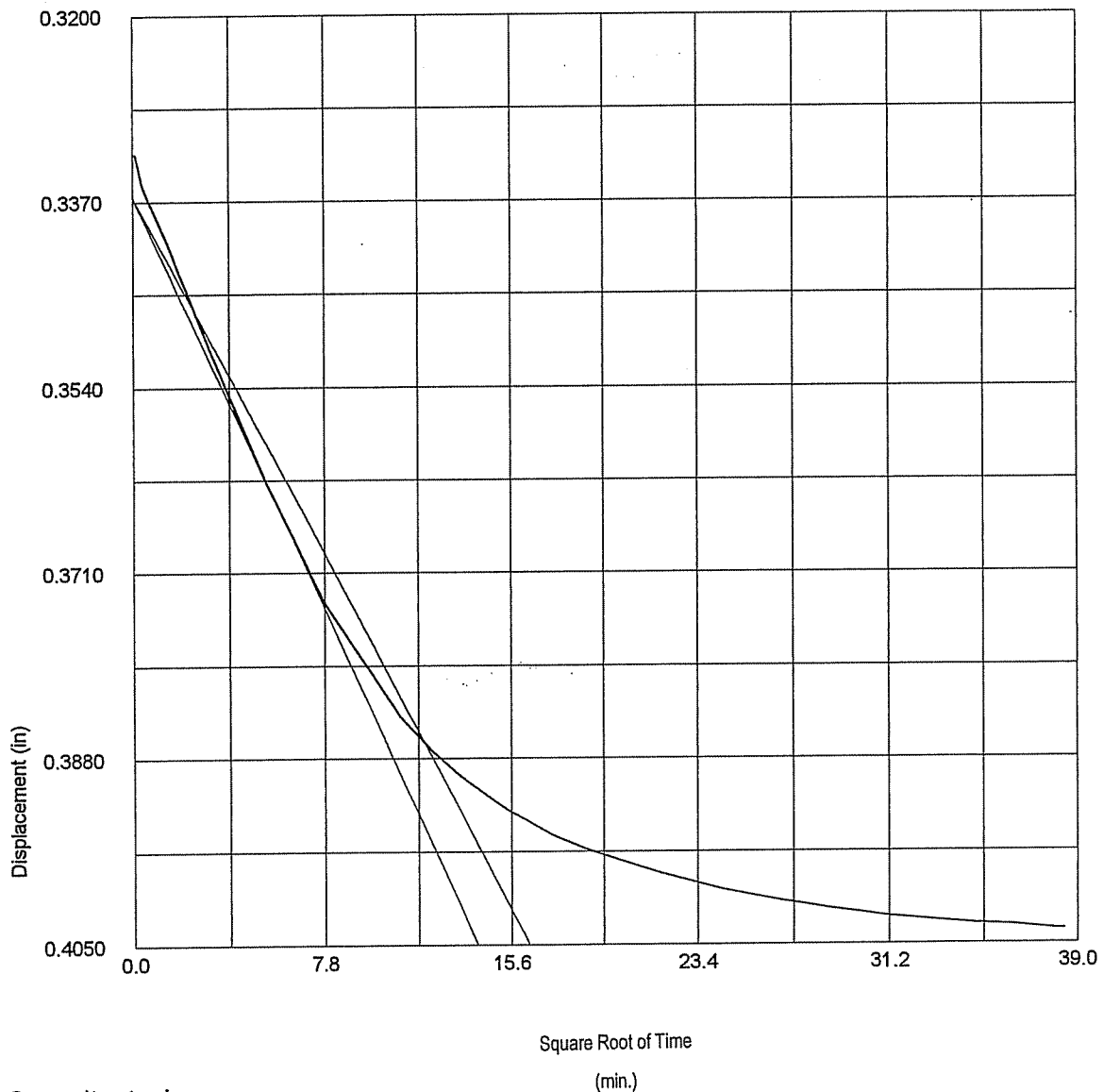
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96	Test name	Consol #1
	Site Reference: Charleston Naval Base Container	Date of Test:	8/1/2003
	Jobfile: C:\WINCLISP\CNB.JOB	Sample:	UD-2
	Operator: J. M. Stroh	Borehole:	PAL-66
	Checked: Dail J. Nel	Approved: N. H. Stroh	

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	8.000
Initial Temp oC	20.0
Correction (in)	0.0041
Displacement (in)	0.0711
Voids Ratio e_0	1.0347
Final Temp oC	
t_{90} (mins)	144.7
c_v (ft ² /day)	0.006
m_v (ft ² /ton)	0.029
Sec Compression C_{sec}	



Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96	Test name	Consol #1	
		Date of Test:	8/1/2003	
	Site Reference:	Charleston Naval Base Container	Sample:	UD-2
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAL-66
	Operator:	Suzanne M. Stork	Checked:	Dail - Hal
		Approved:	N. G. G. 7/6	

Oedometer Settlement Tests

Stress (TSF)	Initial Temp. oC	Settlement Total (in)	Cal Corr. (in)	Final Temp. oC	Voids Ratio e_r	t_{90} (mins)	Secondary Compr C_{sec}	c_v (ft ² /day)	m_v (ft ² /ton)
0.125	20.0	0.0178	0.0006	20.0	2.3319	16.1		0.129	0.145
0.250	20.0	0.0357	0.0009	20.0	2.2712	59.9		0.034	0.149
0.500	20.0	0.0713	0.0013	20.0	2.1504	67.2		0.028	0.153
1.000	20.0	0.1436	0.0017	20.0	1.9052	101.2		0.017	0.169
2.000	20.0	0.2451	0.0021	20.0	1.5608	214.3		0.006	0.134
4.000	20.0	0.3302	0.003	20.0	1.2722	156.0		0.007	0.064
8.000	20.0	0.4002	0.0041	20.0	1.0347	144.7		0.006	0.029
2.000	20.0	0.3806	0.0025	20.0	1.1012				0.005
0.500	20.0	0.3472	0.0018	20.0	1.2145				0.034
0.125	20.0	0.3197	0.0014	20.0	1.3078				0.108

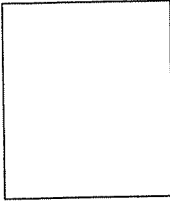
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #1
			Date of Test:	8/1/2003
	Site Reference:	Charleston Naval Base Container	Sample:	UD-2
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAL-66
Operator:		Checked:	Approved:	
<i>Spencer M. Stolt</i>		<i>Dail = Hal</i>		

Oedometer Settlement Tests

Sample details

Sketch showing specimen location in original Sample



Depth 25' - 27'

Description:

Type UD Tube
 Height H_0 (in) 0.747
 Diameter D_0 (in) 2.498
 Weight W_0 (gr) 73.03
 Bulk Density ρ (PCF) 75.99
 Particle Density ρ_s 2.265 (measured)

Initial Conditions

Settlement Channel 003078012
 Moisture Content w_0 % 174.0
 Dry Density ρ_d (PCF) 27.74
 Voids Ratio e_0 4.0950
 Deg of Saturation S_0 % 96.2
 Swelling Pressure S_s (TSF)

Final Conditions

Moisture Content w_r % 128.4
 Dry Density ρ_d (PCF) 41.03
 Voids Ratio e_f 2.4444
 Deg of Saturation S_f % 100.00
 Settlement: (in) 0.242
 Compression Index C_c

Notes:

S&ME

ASTM D2435-96		Test name	Consol
		Date of Test:	7/18/2003
Site Reference:	Charleston Naval Base Container	Sample:	PZ-1
Jobfile:	C:\WINCLISP\JOBFILES\11313264.JC	Borehole:	UD Tube PZ-1
Operator:		Checked:	Approved:

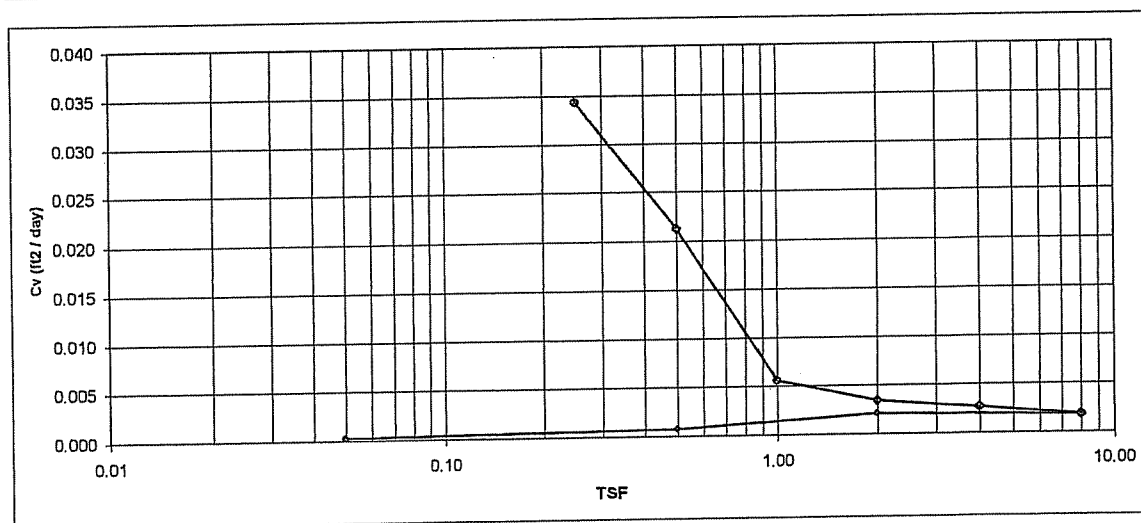
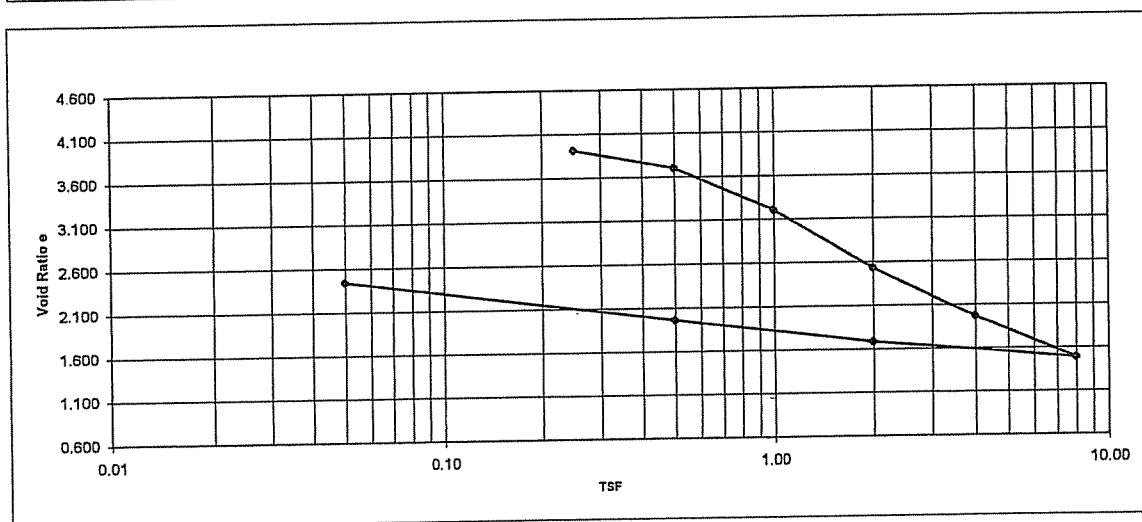
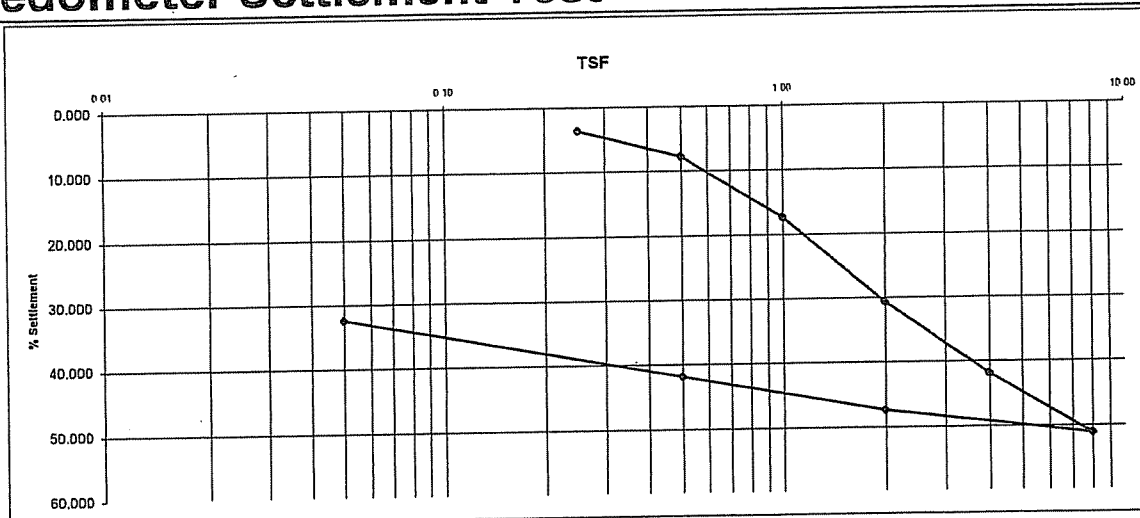
Odeometer Settlement Tests

Stress (TSF)	Final Change In Height (in)	Final Height (in)	Void Height (in)	Void Ratio	Strain (%)	t50 (mins)	Cv (ft2/day)
0.250	0.0272	0.7198	0.5732	3.9095	3.6412	8	0.0344
0.500	0.0583	0.6887	0.5421	3.6974	7.8046	12	0.0213
1.000	0.1299	0.6171	0.4705	3.2090	17.3896	42	0.0056
2.000	0.2291	0.5179	0.3713	2.5324	30.6693	55	0.0034
4.000	0.3128	0.4342	0.2876	1.9615	41.8742	50	0.0026
8.000	0.3825	0.3645	0.2179	1.4861	51.2048	51	0.0018
2.000	0.3542	0.3928	0.2462	1.6792	47.4163	31	0.0021
0.500	0.3131	0.4339	0.2873	1.9595	41.9143	103	0.0007
0.050	0.2427	0.5043	0.3577	2.4397	32.4900	400	0.0002

S&ME

ASTM D2435-96		Test name:	Consol
		Date of Test:	7/18/03
Site Reference:	Charleston Naval Base Container	Sample:	PZ-1
Jobfile	C:\WINCLISP\JOBFILES\11313264.JOB	Borehole:	UD Tube PZ-1
Operator:		Checked:	Approved:

Oedometer Settlement Test



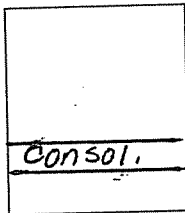
S&ME

ASTM D2435-96		Test name	Consol
		Date of Test:	7/18/03
Site Reference:	Charleston Naval Base Container	Sample:	PZ-1
Jobfile:	C:\WINCLISP\JOBFILES\11313264.JOB	Borehole:	UD Tube PZ-1
Operator:	Checked:	Approved:	

Oedometer Settlement Tests

Sample details

Sketch showing specimen location in original Sample



Depth: 42'
Description: Gray inorganic clay with slight sand and peat content.

Type: Undisturbed
Height H_0 (in): 1
Diameter D_0 (in): 2.5
Weight W_0 (gr): 117.23
Bulk Density ρ (PCF): 90.98
Particle Density ρ_s : 2.71 (measured)

Initial Conditions

Settlement Channel: consol #2
Moisture Content w_0 %: 85.8
Dry Density ρ_d (PCF): 48.95
Voids Ratio e_0 : 2.4544
Deg of Saturation S_0 %: 94.8
Swelling Pressure S_s (TSF):

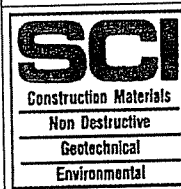
Final Conditions

Moisture Content w_f %: 58.3
Dry Density ρ_d (PCF): 72.52
Voids Ratio e_f : 1.3317
Deg of Saturation S_f %: 100.00
Settlement (in): 0.325
Compression Index C_c :

Notes:

Atterberg Limits- LL: 75 PL: 27 PI: 47

Soil Consultants, Inc.



ASTM D2435-96

Test name: Consol #2
Date of Test: 7/24/2003

Site Reference: Charleston Naval Base Container
Jobfile: C:\WINCLISP\CNB.JOB

Sample: T-2
Borehole: PZ-1

Operator:

Checked:

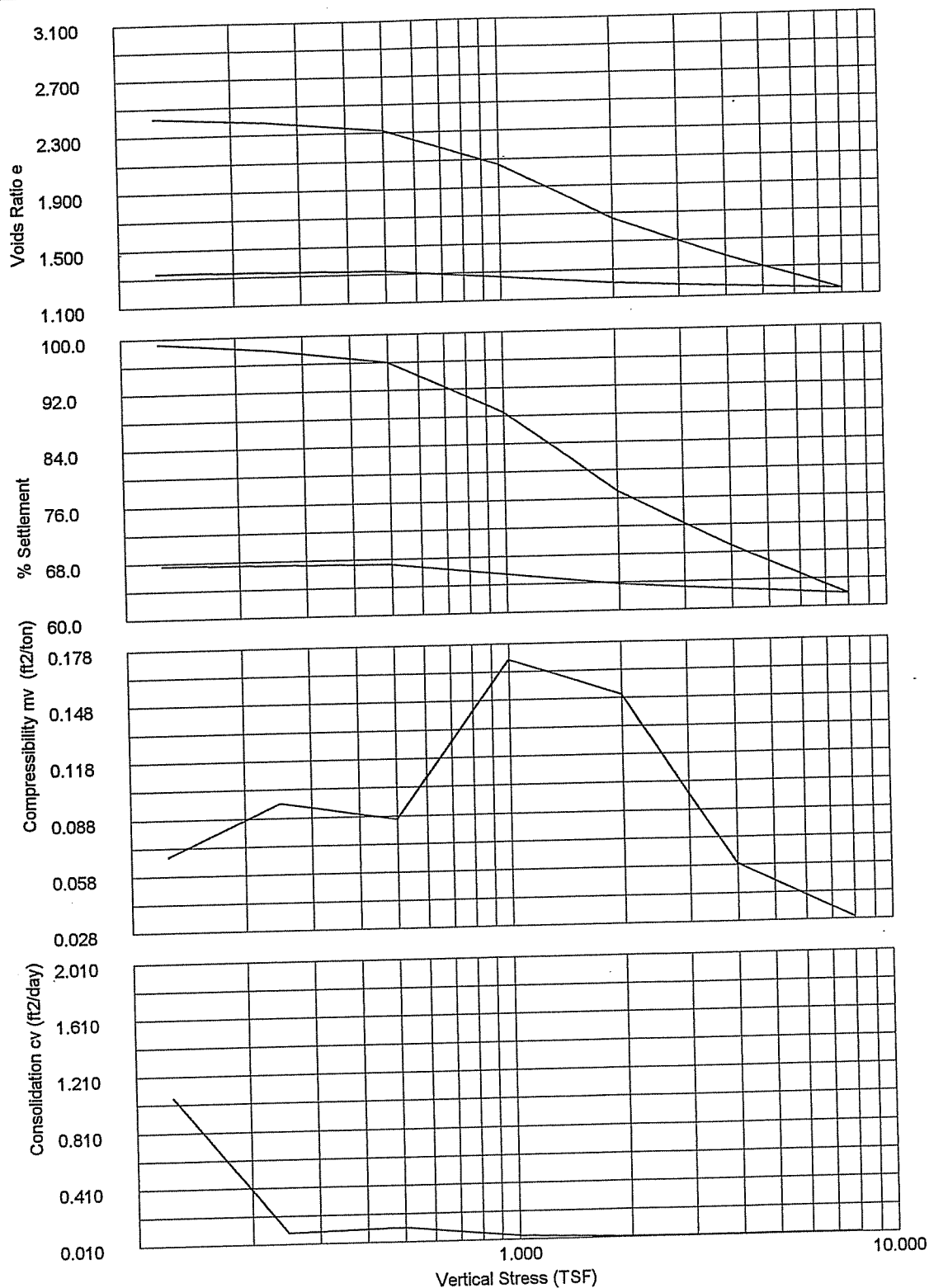
Approved:

Janne M. Stroh

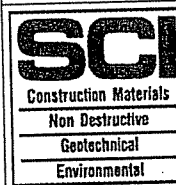
Cluey Chubb

N. M. Stroh

Oedometer Settlement Tests



Soil Consultants, Inc.



ASTM D2435-96

Test name: Consol #2
Date of Test: 7/24/2003

Site Reference: Charleston Naval Base Container
Jobfile: C:\WINCLISP\CNB.JOB

Sample: T-2
Borehole: PZ-1

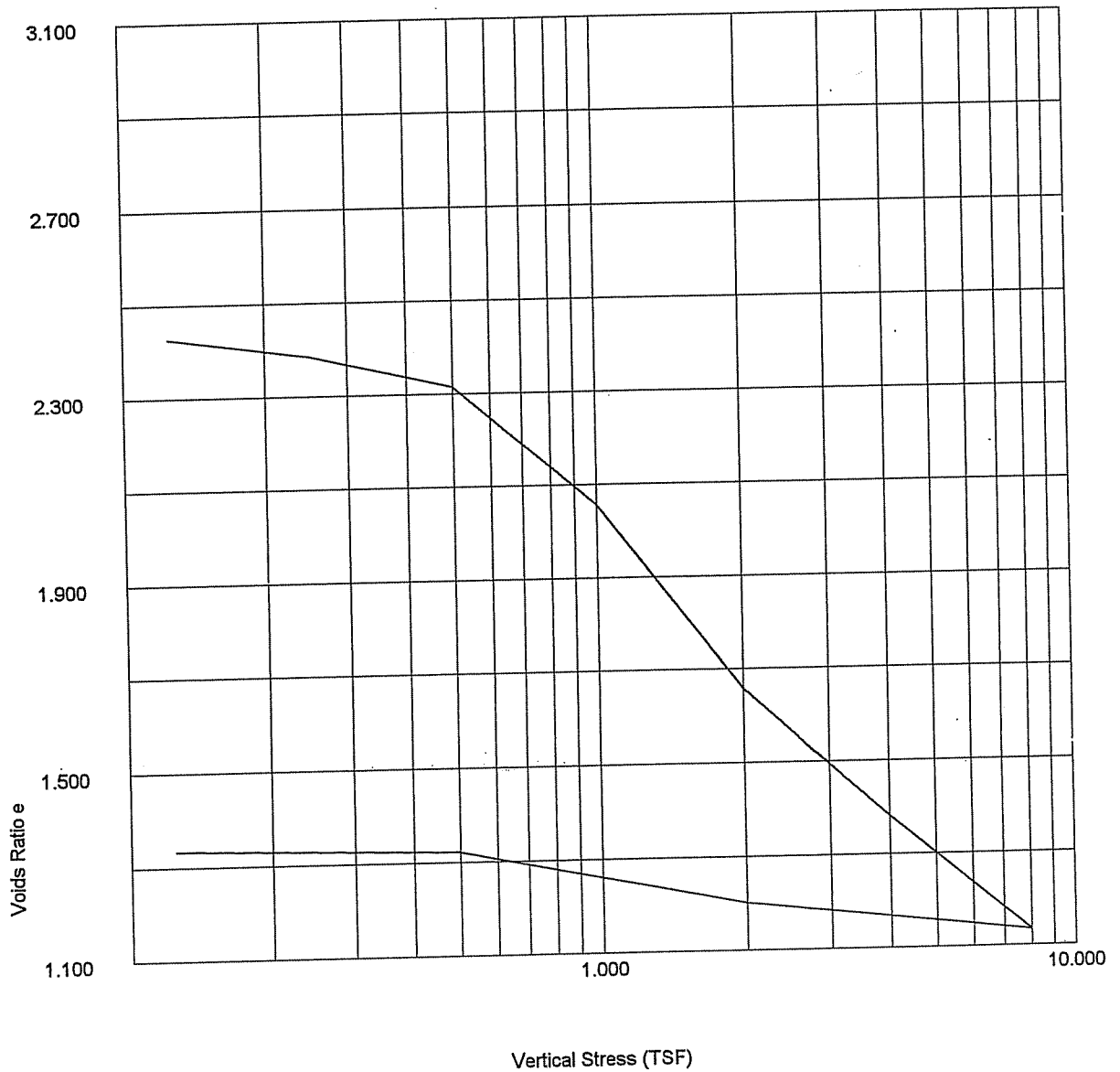
Operator:

Checked:

Approved:

Signature: Spence M. Stark
Signature: Cheeky Chubb
Signature: N. H. 7/26

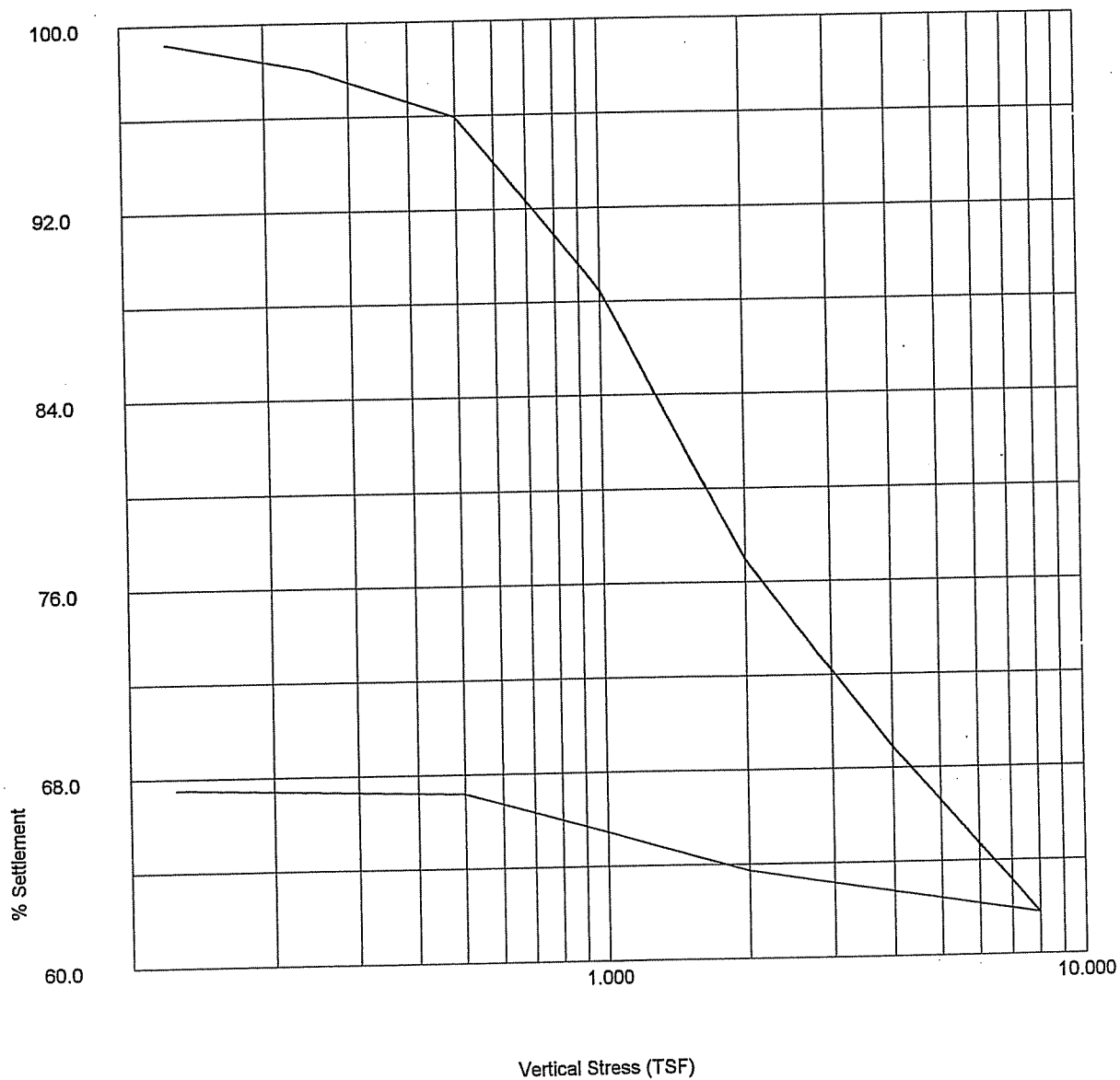
Oedometer Settlement Tests



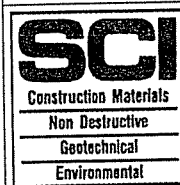
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #2
			Date of Test:	7/24/2003
	Site Reference:	Charleston Naval Base Container	Sample:	T-2
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PZ-1
	Operator:	<i>Janne M. Fish</i>	Checked:	<i>Candace Chubb</i>
<i>N. M. B. W.</i>				

Oedometer Settlement Tests



Soil Consultants, Inc.



ASTM D2435-96

Test name: Consol #2

Date of Test: 7/24/2003

Site Reference: Charleston Naval Base Container

Jobfile: C:\WINCLISP\CNB.JOB

Sample: T-2

Borehole: PZ-1

Operator:

Checked:

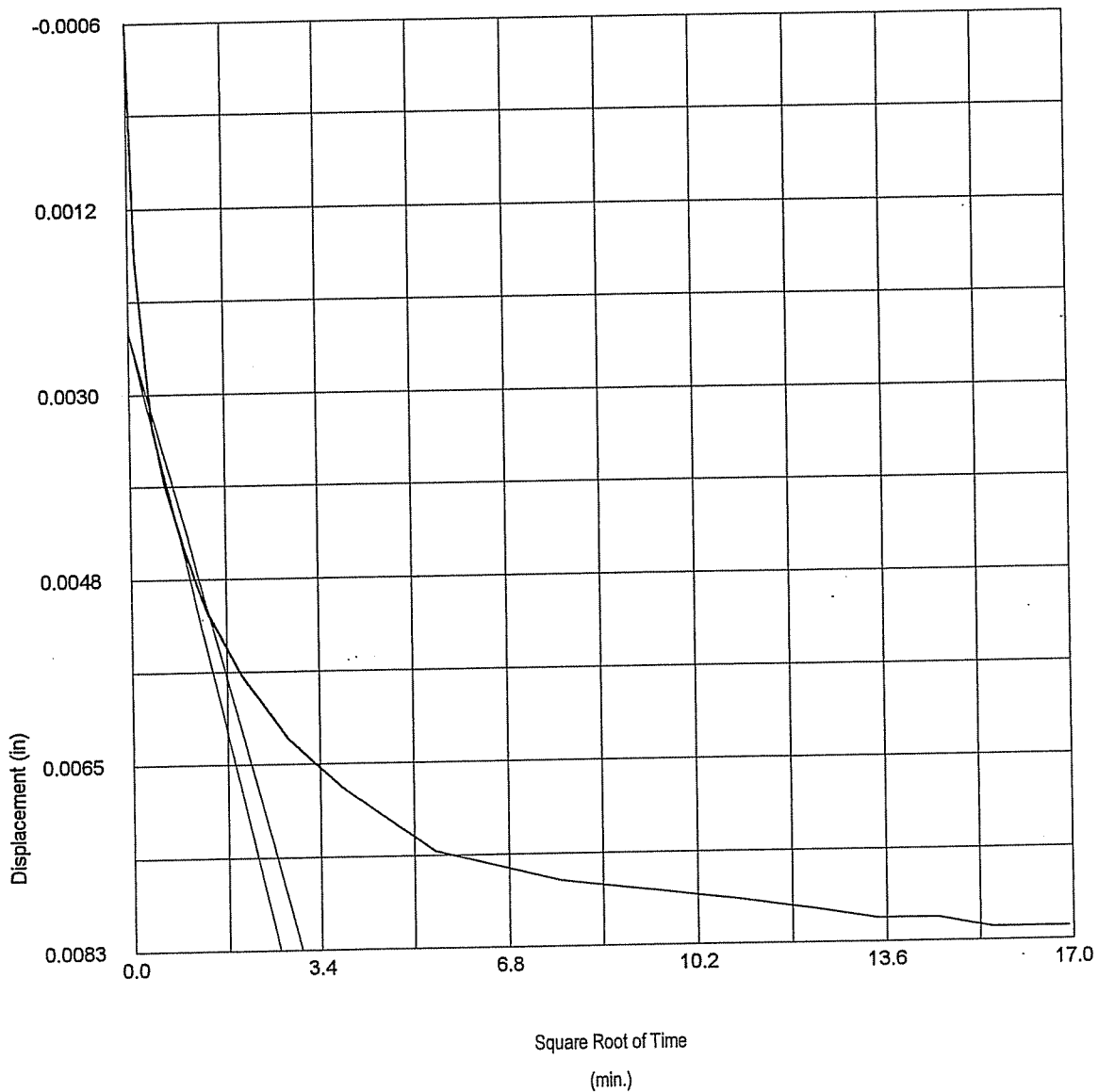
Approved:

Signature: Suzanne M. Smith
Signature: Audrey Chubb
Signature: N. H. 7/6

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	0.125
Initial Temp oC	20.0
Correction (in)	0.0004
Displacement (in)	0.0088
Voids Ratio e_0	2.4253
Final Temp oC	
t_{90} (mins)	2.0
c_v (ft ² /day)	1.051
m_v (ft ² /ton)	0.068
Sec Compression C_{sec}	



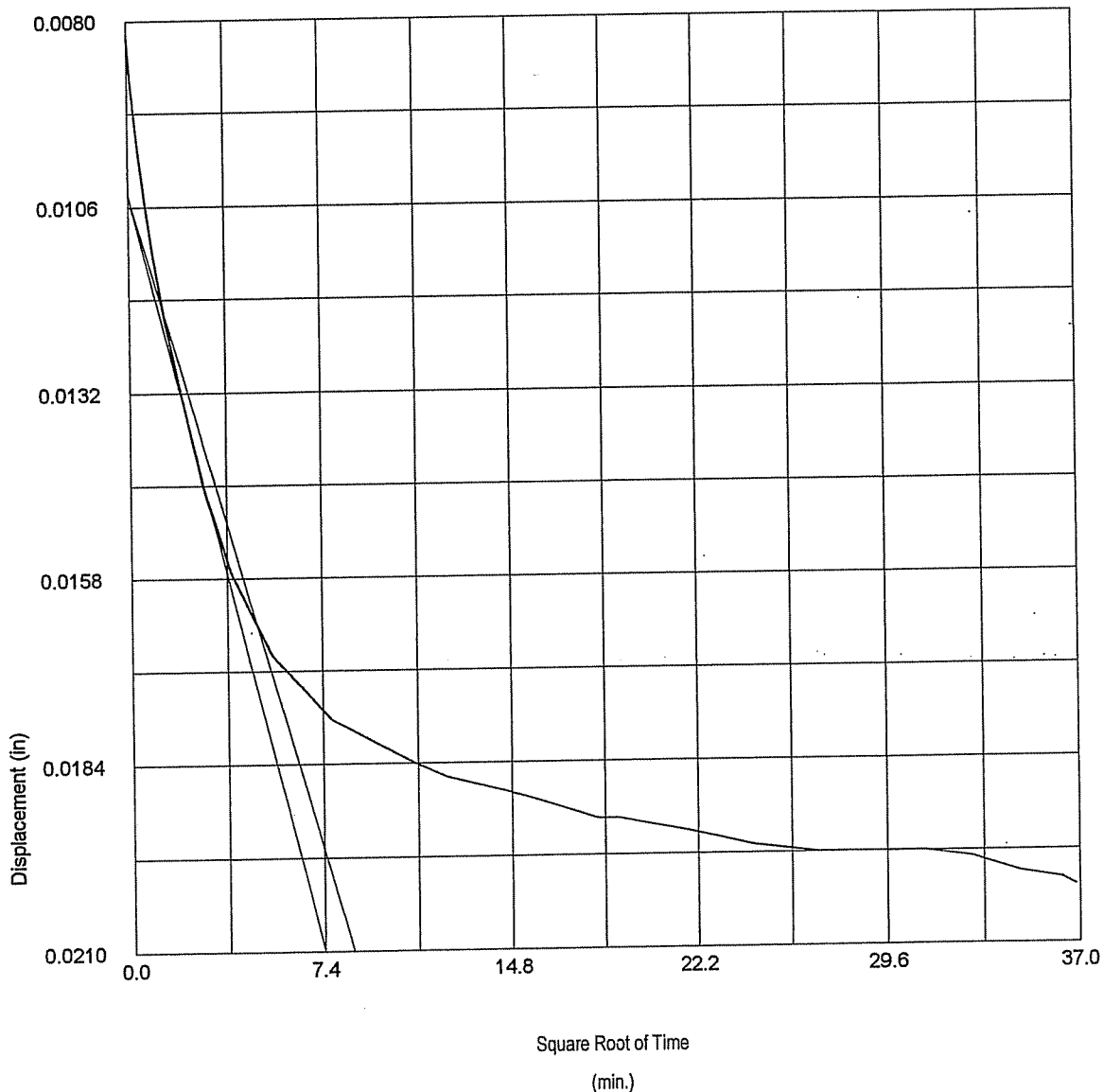
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #2
			Date of Test:	7/24/2003
	Site Reference:	Charleston Naval Base Container	Sample:	T-2
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PZ-1
Operator:	Garrett M. Stroth	Checked:	Anthony Chubb	Approved:

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	0.250
Initial Temp oC	20.0
Correction (in)	0.0007
Displacement (in)	0.012
Voids Ratio e_0	2.3849
Final Temp oC	
t_{90} (mins)	24.8
c_v (ft ² /day)	0.083
m_v (ft ² /ton)	0.096
Sec Compression C_{sec}	



Soil Consultants, Inc.



Non Destructive
Geotechnical
Environmental

ASTM D2435-96

Site Reference: Charleston Naval Base Container
Jobfile: C:WINCLISP\CNB.JOB

Operator:

Checked:

Test name

Consol #2

Date of Test:

7/24/2002

Sample:

T-2

Borehole:

PZ-1

Approved:

Spencer M. Stroh

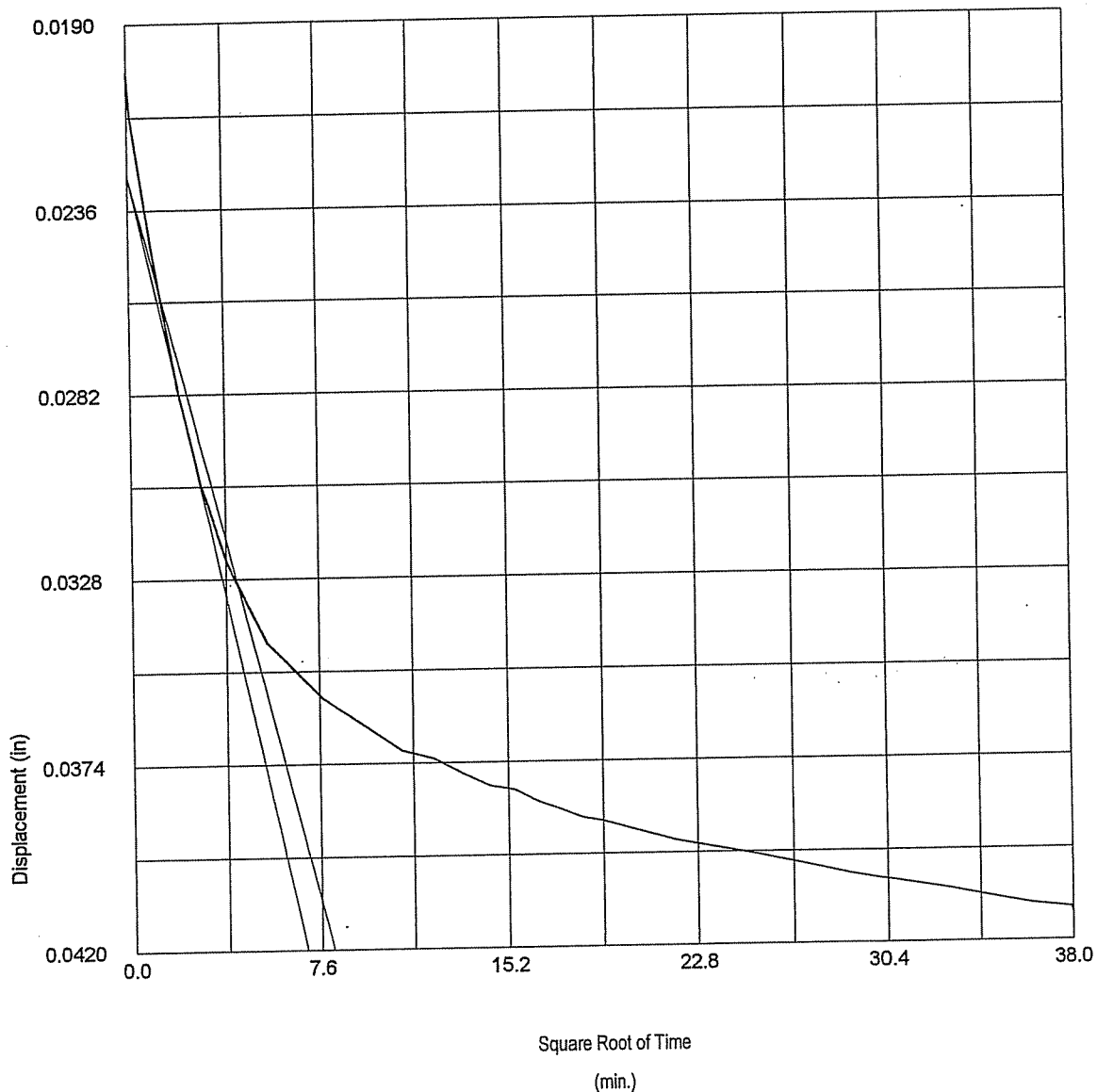
Anthony Chubb

R. M. Stroh

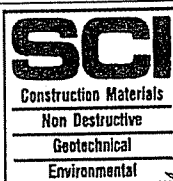
Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	0.500
Initial Temp oC	20.0
Correction (in)	0.0012
Displacement (in)	0.0211
Voids Ratio e_0	2.3138
Final Temp oC	18.5
t_{90} (mins)	0.108
c_v (ft ² /day)	0.086
m_v (ft ² /ton)	
Sec Compression C_{sec}	



Soil Consultants, Inc.



ASTM D2435-96

Test name Consol #2
Date of Test: 7/24/2003

Site Reference: Charleston Naval Base Container
Jobfile: C:\WINCLISP\CNB.JOB

Sample: T-2
Borehole: PZ-1

Operator:

Checked:

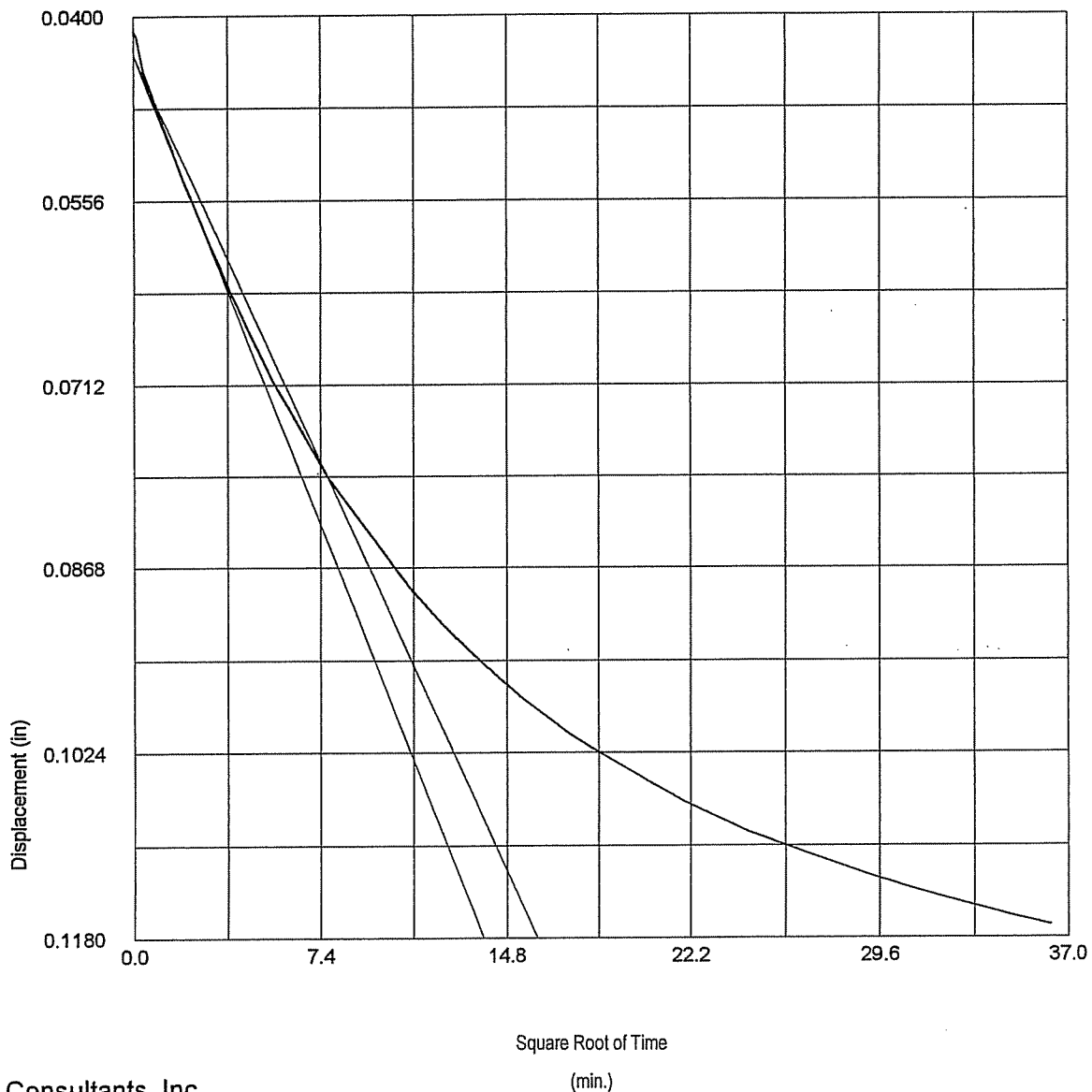
Approved:

Shannon M. Stork *Clayton Chubb* *R. Stork*

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	1.000
Initial Temp oC	20.0
Correction (in)	0.0021
Displacement (in)	0.0757
Voids Ratio e_0	2.0554
Final Temp oC	---
t_{90} (mins)	58.1
c_v (ft ² /day)	0.031
m_v (ft ² /ton)	0.169
Sec Compression C_{sec}	



Soil Consultants, Inc.



ASTM D2435-96

Test name Consol #2

Date of Test: 7/24/2003

Site Reference: Charleston Naval Base Container

Jobfile: C:WINCLISPCNB.JOB

Sample: T-2

Borehole: PZ-1

Operator:

Checked:

Approved:

Shanne M. Stolt

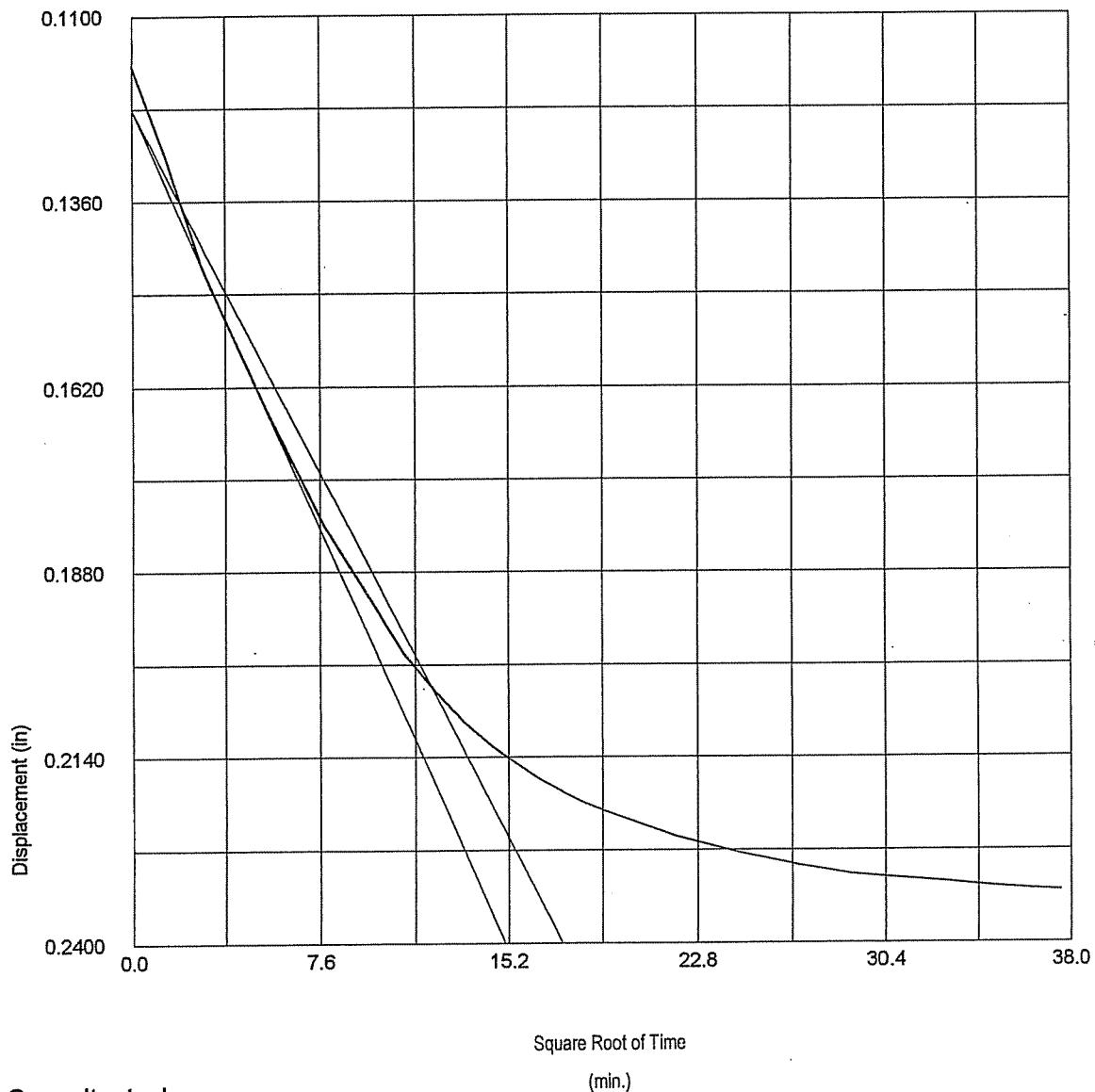
Audrey Chubb

N. P. [Signature]

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	2.000
Initial Temp oC	20.0
Correction (in)	0.0029
Displacement (in)	0.1159
Voids Ratio e_0	1.6578
Final Temp oC	
t_{90} (mins)	147.0
c_v (ft ² /day)	0.01
m_v (ft ² /ton)	0.15
Sec Compression C_{sec}	



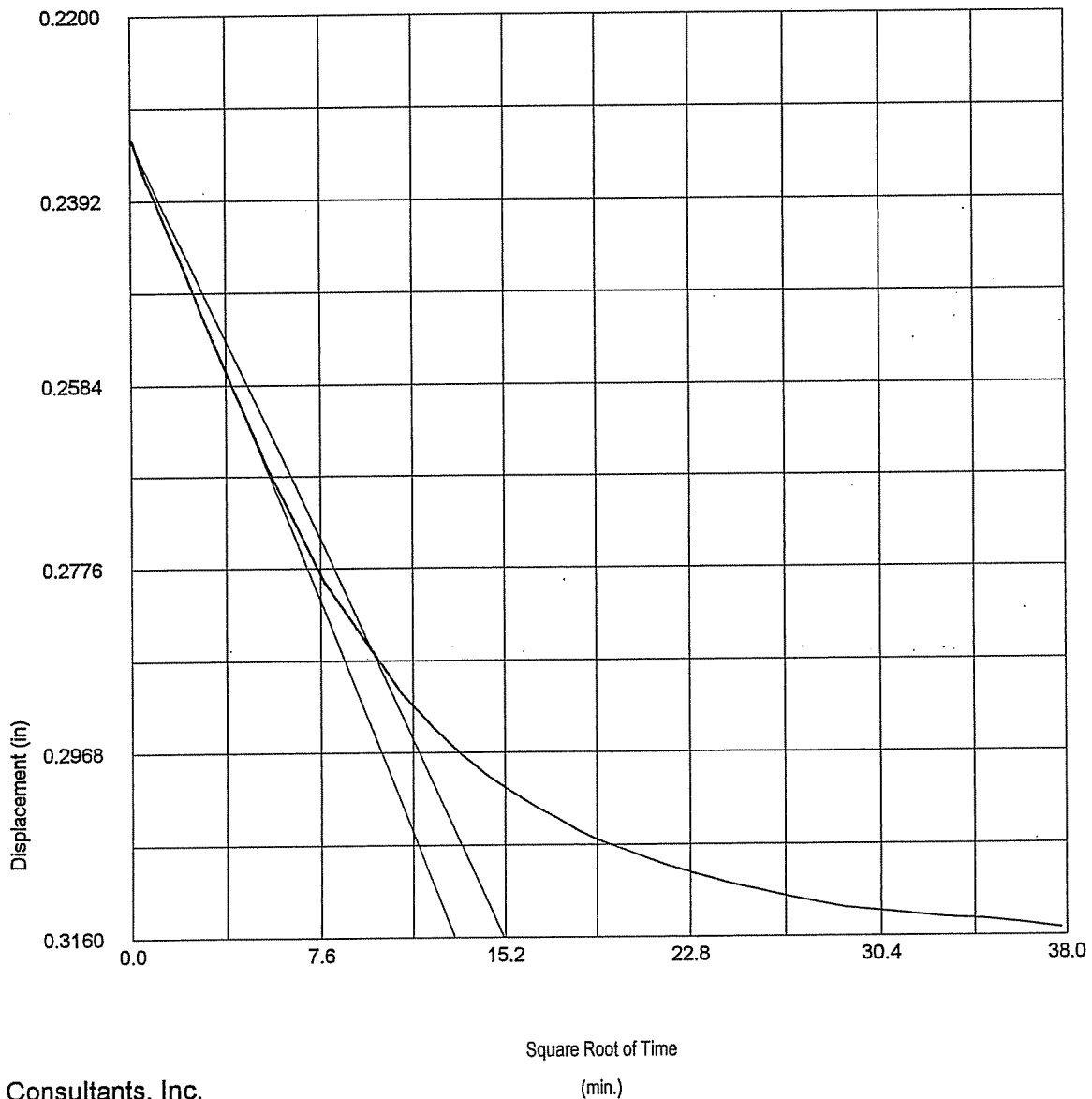
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #2
			Date of Test:	7/24/2003
	Site Reference:	Charleston Naval Base Container	Sample:	T-2
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PZ-1
Operator:		Checked:	Approved:	
<i>Spencer M. Stolt</i>		<i>Clayton Chubb</i>	<i>N. H. Stolt</i>	

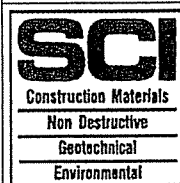
Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	4.000
Initial Temp oC	20.0
Correction (in)	0.0047
Displacement (in)	0.0824
Voids Ratio e_0	1.3794
Final Temp oC	
t_{90} (mins)	97.9
c_v (ft ² /day)	0.012
m_v (ft ² /ton)	0.059
Sec Compression C_{sec}	



Soil Consultants, Inc.



ASTM D2435-96

Site Reference: Charleston Naval Base Container
Jobfile: C:\WINCLISP\CNB.JOB

Operator:

Spencer M. Stoo

Checked:

Audrey Chubb

Test name: Consol #2
Date of Test: 7/24/2003

Sample: T-2
Borehole: PZ-1

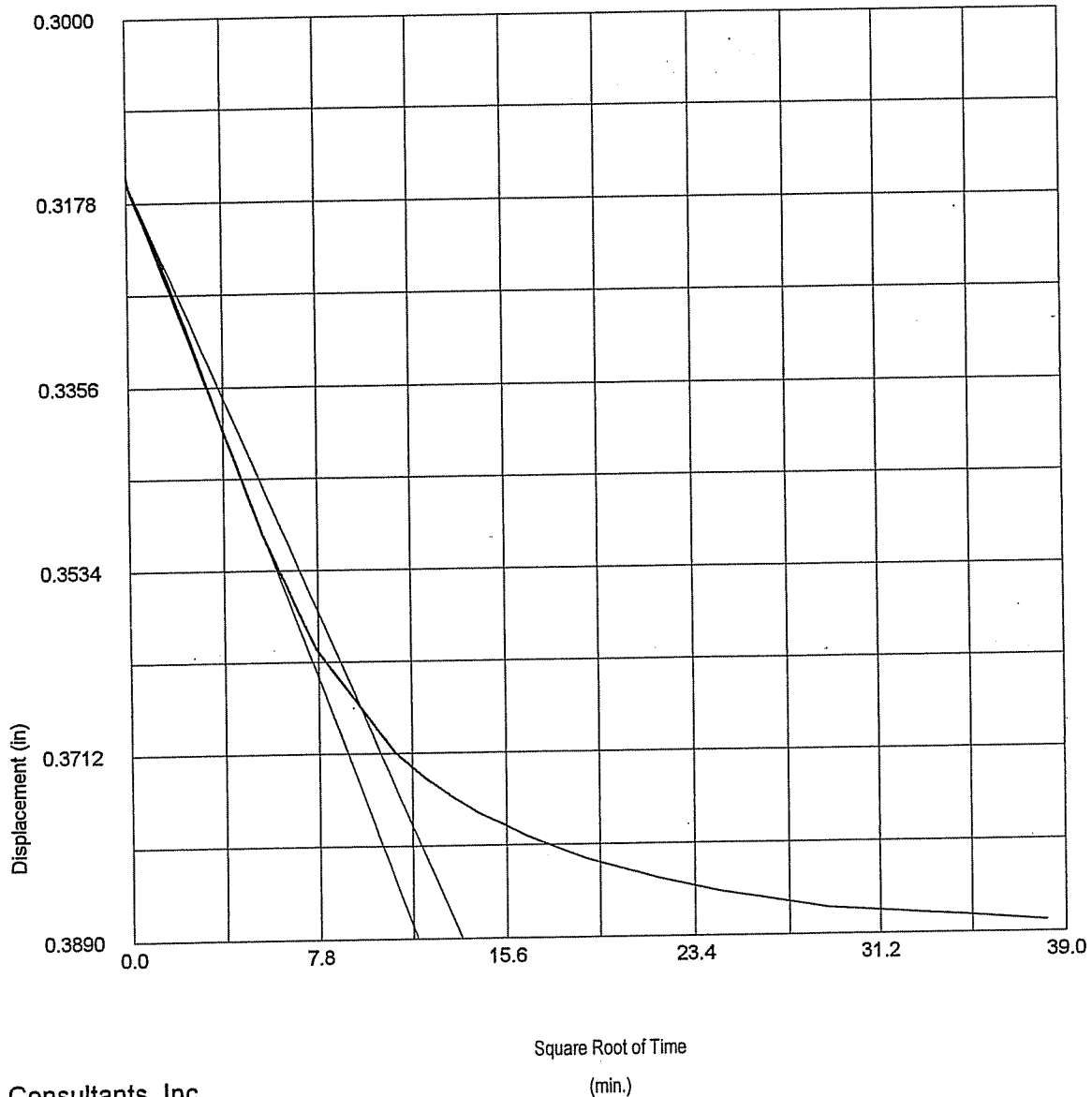
Approved:

R. M. Stoo

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	8.000
Initial Temp oC	20.0
Correction (in)	0.0058
Displacement (in)	0.0726
Voids Ratio e_0	1.1324
Final Temp oC	91.6
t_{90} (mins)	0.01
c_v (ft ² /day)	0.029
m_v (ft ² /ton)	
Sec Compression C_{sec}	



Soil Consultants, Inc.



ASTM D2435-96

Test name Consol #2

Date of Test: 7/24/2003

Site Reference: Charleston Naval Base Container

Jobfile: C:\WINCLISP\CNB.JOB

Sample: T-2

Borehole: PZ-1

Operator:

Checked:

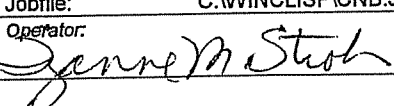
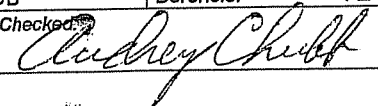
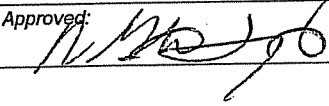
Approved:

Spencer M. Stolt *Audrey Chubb* *[Signature]*

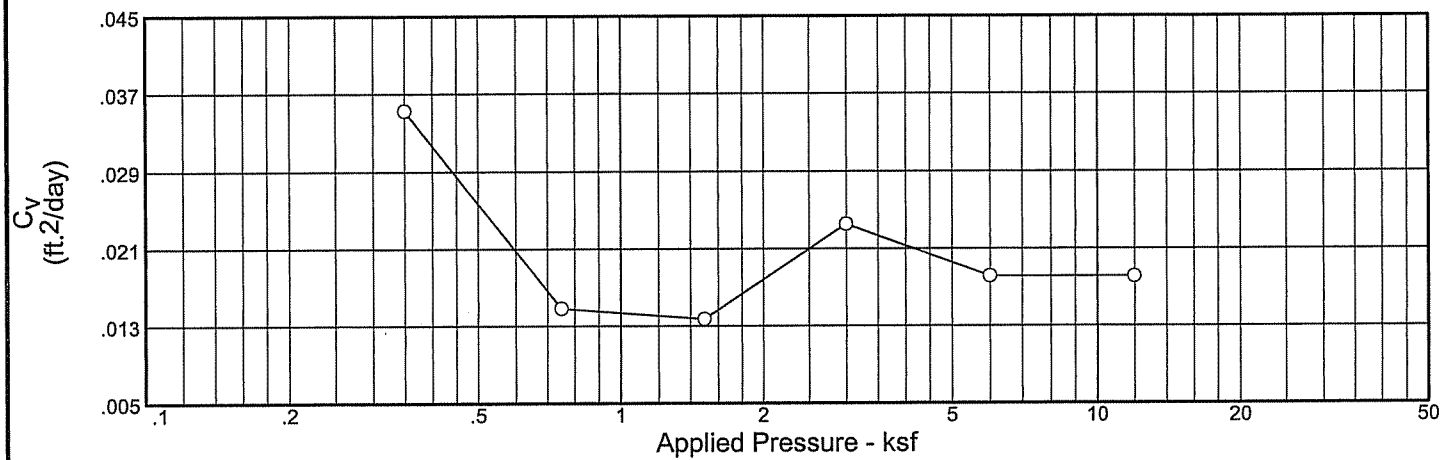
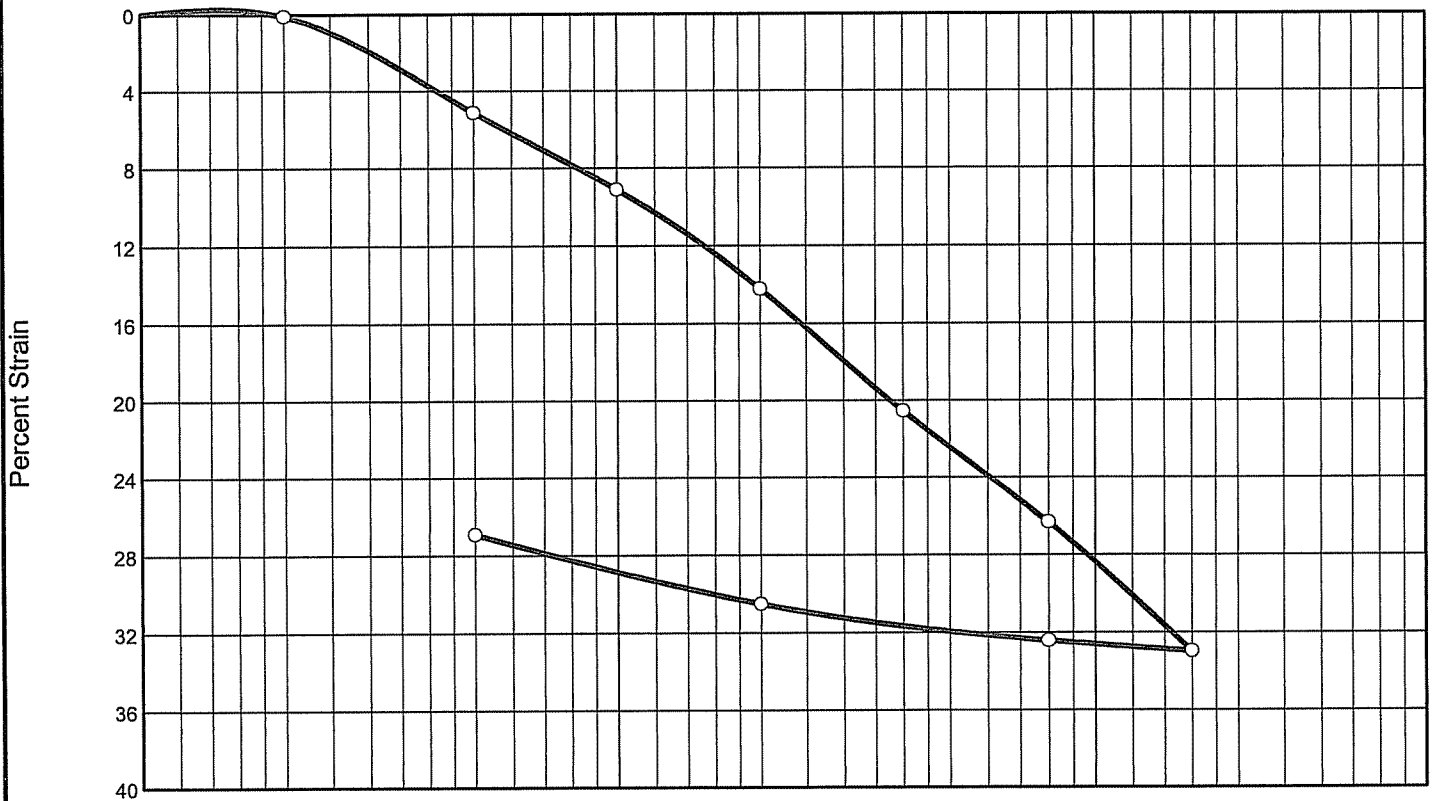
Oedometer Settlement Tests

Stress (TSF)	Initial Temp. oC	Settlement Total (in)	Cal Corr. (in)	Final Temp. oC	Voids Ratio e_f	t_{90} (mins)	Secondary Compr C_{sec}	c_v (ft ² /day)	m_v (ft ² /ton)
0.125	20.0	0.0084	0.0004	20.0	2.4253	2.0		1.051	0.068
0.250	20.0	0.0201	0.0007	20.0	2.3849	24.8		0.083	0.096
0.500	20.0	0.0407	0.0012	20.0	2.3138	18.5		0.108	0.086
1.000	20.0	0.1155	0.0021	20.0	2.0554	58.1		0.031	0.169
2.000	20.0	0.2306	0.0029	20.0	1.6578	147.0		0.010	0.150
4.000	20.0	0.3112	0.0047	20.0	1.3794	97.9		0.012	0.059
8.000	20.0	0.3827	0.0058	20.0	1.1324	91.6		0.010	0.029
2.000	20.0	0.3630	0.0041	20.0	1.2004				0.005
0.500	20.0	0.3284	0.0027	20.0	1.3200				0.034
0.125	20.0	0.3250	0.0022	20.0	1.3317				0.013

Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #2
			Date of Test:	7/24/2003
	Site Reference:	Charleston Naval Base Container	Sample:	T-2
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PZ-1
Operator:		Checked:	Approved:	
				

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (ksf)	P_c (ksf)	C_c	C_r	Initial Void Ratio
Saturation	Moisture									
95.8 %	78.3 %	52.0	155	95	2.61		2.63	0.70	0.05	2.135

MATERIAL DESCRIPTION								USCS	AASHTO
Dark gray, slightly Sandy Silt								MH	

Project No. 1131-03-264 **Client:** SCSPA

Project: Charleston Navy Base Container Terminal
North Charleston, SC

Source: PZ-4

Sample No.: UD-3

Elev./Depth: 45 to 47 ft

Remarks:

CONSOLIDATION TEST REPORT

S & ME, Inc.

Plate

Dial Reading vs. Time

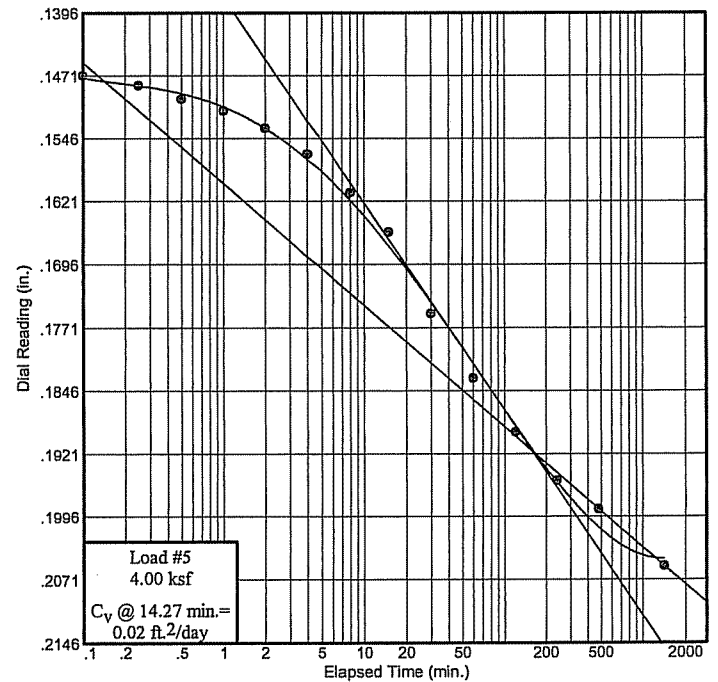
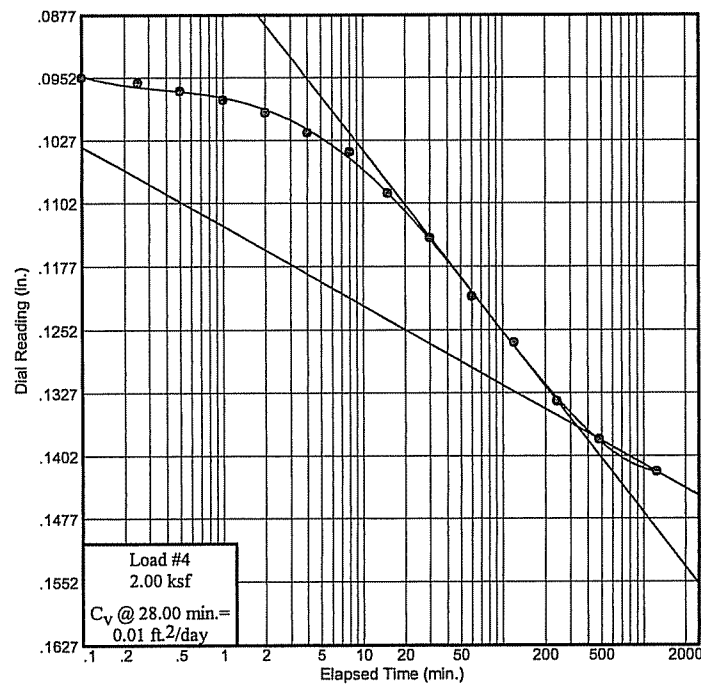
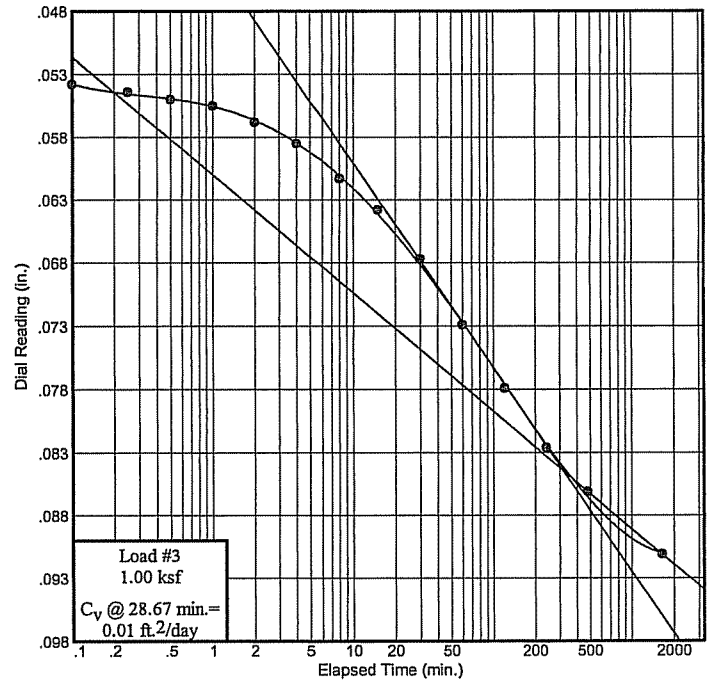
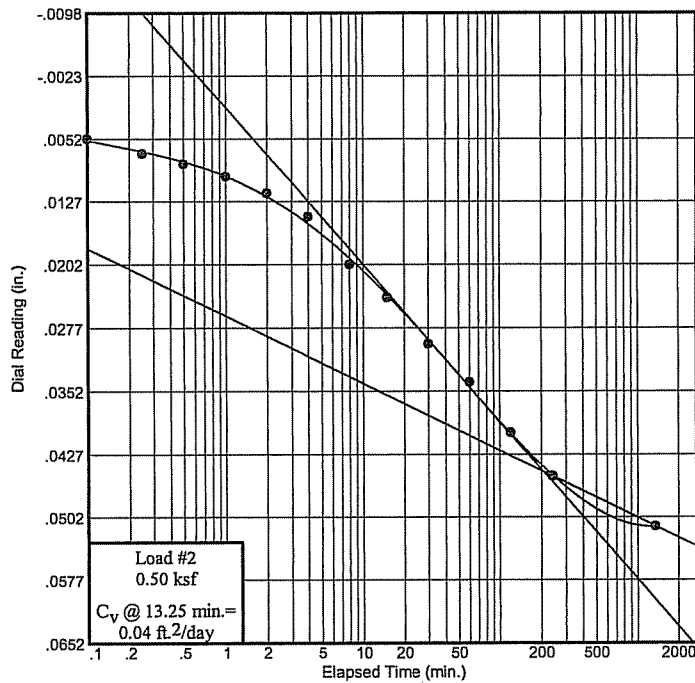
Project No.: 1131-03-264

Project: Charleston Navy Base Container Terminal
North Charleston, SC

Source: PZ-4

Sample No.: UD-3

Elev./Depth: 45 to 47 ft



Dial Reading vs. Time

S & ME, Inc.

Plate

Dial Reading vs. Time

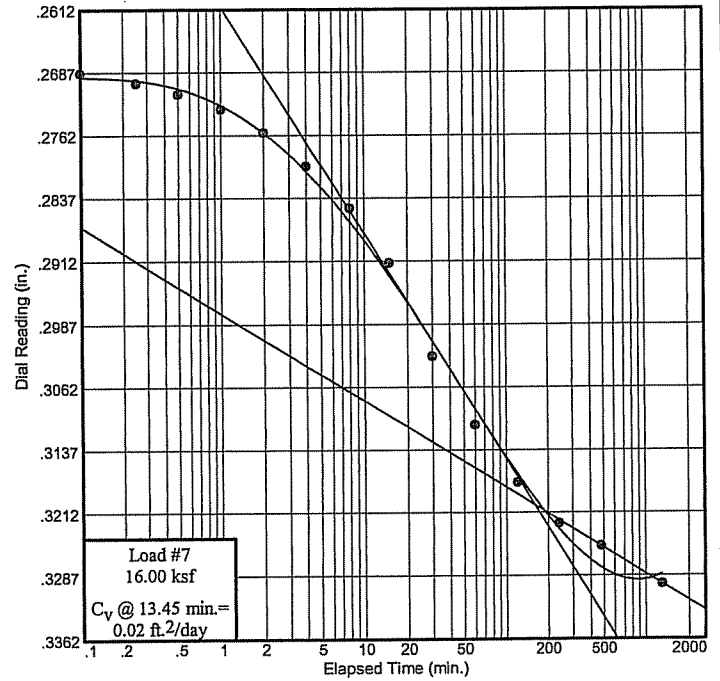
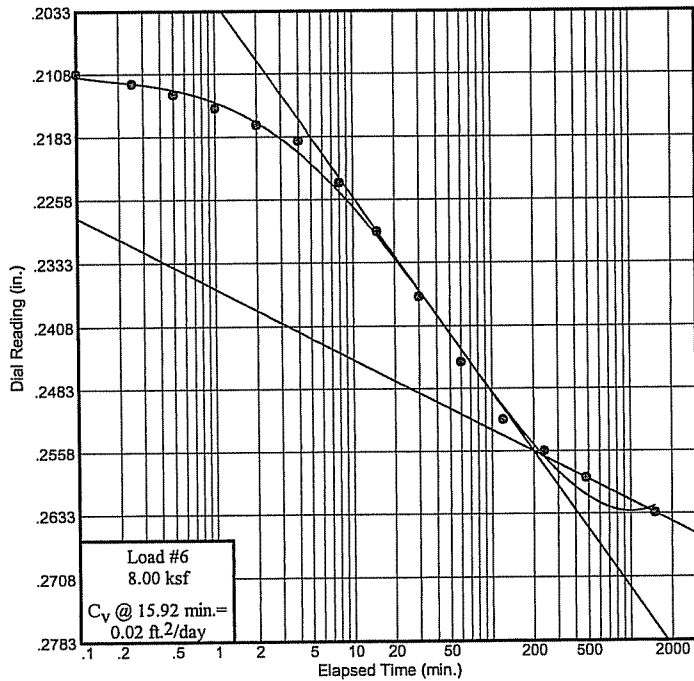
Project No.: 1131-03-264

Project: Charleston Navy Base Container Terminal
North Charleston, SC

Source: PZ-4

Sample No.: UD-3

Elev./Depth: 45 to 47 ft



Dial Reading vs. Time

S & ME, Inc.

Plate

CONSOLIDATION TEST DATA

Client: SCSPA
Project: Charleston Navy Base Container Terminal
 North Charleston, SC
Project Number: 1131-03-264

Sample Data

Source: PZ-4
Sample No.: UD-3
Elev. or Depth: 45 to 47 ft Sample Length (in./cm.):
Location:
Description: Dark gray, slightly Sandy Silt
Liquid Limit: 155 Plasticity Index: 95
USCS: MH AASHTO: Figure No.:
Testing Remarks:

Test Specimen Data

TOTAL SAMPLE	BEFORE TEST	AFTER TEST
Wet w+t = 92.52 g.	Consolidometer # = 2	Wet w+t = 222.18 g.
Dry w+t = 52.64 g.		Dry w+t = 186.06 g.
Tare Wt. = 1.73 g.	Spec. Gravity = 2.61	Tare Wt. = 119.95 g.
Height = 5.41 in.	Height = 1.00 in.	
Diameter = 2.87 in.	Diameter = 2.87 in.	
Weight = 848.95 g.	Defl. Table = n/a	
Moisture = 78.3 %	Ht. Solids = 0.3190 in.	Moisture = 54.6 %
Den. = 92.7 pcf	Dry Wt. = 87.94 g.*	Dry Wt. = 66.11 g.
Dry Den. = 52.0 pcf	Void Ratio = 2.135	Void Ratio = 1.291
	Saturation = 95.8 %	

* Initial dry weight used in calculations

End-of-Load Summary

Pressure (ksf)	Final Dial (in.)	Machine Defl. (in.)	C_v (ft. ² /day)	C_α	Void Ratio	% Compression /Swell
start	0.00000				2.135	
0.20	0.00100	0.00000			2.132	0.1 Compr.
0.50	0.05130	0.00000	0.04	0.008	1.974	5.1 Compr.
1.00	0.09110	0.00000	0.01	0.010	1.850	9.1 Compr.
2.00	0.14210	0.00000	0.01	0.010	1.690	14.2 Compr.
4.00	0.20550	0.00000	0.02	0.017	1.491	20.6 Compr.
8.00	0.26320	0.00000	0.02	0.011	1.310	26.3 Compr.
16.00	0.32970	0.00000	0.02	0.014	1.102	33.0 Compr.
8.00	0.32420	0.00000			1.119	32.4 Compr.
2.00	0.30520	0.00000			1.178	30.5 Compr.
0.50	0.26920	0.00000			1.291	26.9 Compr.

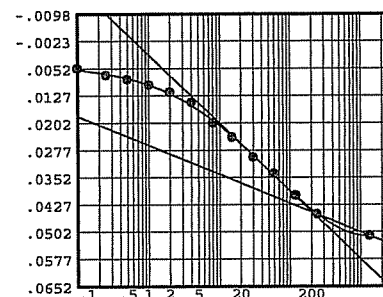
$C_c = 0.70$ $P_c = 2.63$ ksf $C_r = 0.05$

Pressure: 0.50 ksf

TEST READINGS

Load No. 2

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.00100	11	60.00	0.03410
2	0.10	0.00520	12	120.00	0.04010
3	0.25	0.00700	13	240.00	0.04530
4	0.50	0.00820	14	1355.00	0.05130
5	1.00	0.00970			
6	2.00	0.01170			
7	4.00	0.01450			
8	8.00	0.02020			
9	15.00	0.02410			
10	30.00	0.02960			



Void Ratio = 1.974 Compression = 5.1 %

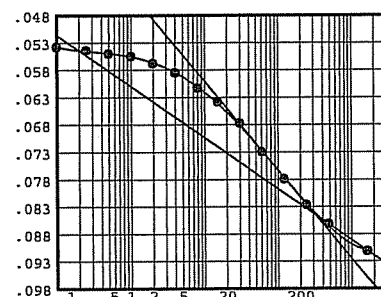
 $D_0 = 0.00100$ $D_{50} = 0.02290$ $D_{100} = 0.04479$ C_v at 13.2 min. = 0.04 ft.²/day $C_\alpha = 0.008$

Pressure: 1.00 ksf

TEST READINGS

Load No. 3

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.05130	11	60.00	0.07290
2	0.10	0.05380	12	120.00	0.07790
3	0.25	0.05440	13	240.00	0.08260
4	0.50	0.05500	14	480.00	0.08610
5	1.00	0.05550	15	1640.00	0.09110
6	2.00	0.05680			
7	4.00	0.05850			
8	8.00	0.06130			
9	15.00	0.06380			
10	30.00	0.06770			



Void Ratio = 1.850 Compression = 9.1 %

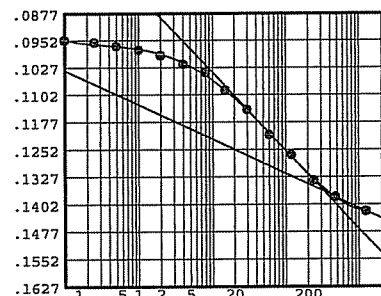
 $D_0 = 0.05130$ $D_{50} = 0.06786$ $D_{100} = 0.08441$ C_v at 28.7 min. = 0.01 ft.²/day $C_\alpha = 0.010$

Pressure: 2.00 ksf

TEST READINGS

Load No. 4

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.09110	11	60.00	0.12120
2	0.10	0.09520	12	120.00	0.12670
3	0.25	0.09580	13	240.00	0.13370
4	0.50	0.09680	14	480.00	0.13820
5	1.00	0.09790	15	1244.00	0.14210
6	2.00	0.09940			
7	4.00	0.10180			
8	8.00	0.10410			
9	15.00	0.10900			
10	30.00	0.11430			



Void Ratio = 1.690 Compression = 14.2 %

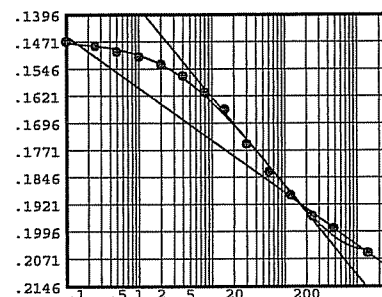
 $D_0 = 0.09110$ $D_{50} = 0.11391$ $D_{100} = 0.13673$ C_v at 28.0 min. = 0.01 ft.²/day $C_\alpha = 0.010$

Pressure: 4.00 ksf

TEST READINGS

Load No. 5

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.14210	11	60.00	0.18310
2	0.10	0.14710	12	120.00	0.18950
3	0.25	0.14830	13	240.00	0.19530
4	0.50	0.14990	14	480.00	0.19870
5	1.00	0.15130	15	1419.00	0.20550
6	2.00	0.15340			
7	4.00	0.15650			
8	8.00	0.16110			
9	15.00	0.16580			
10	30.00	0.17540			



Void Ratio = 1.491 Compression = 20.6 %

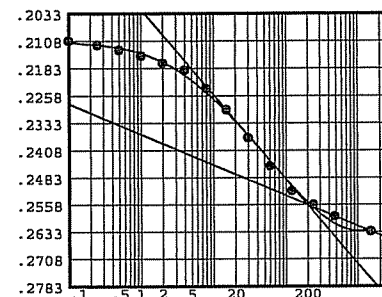
 $D_0 = 0.14210$ $D_{50} = 0.16692$ $D_{100} = 0.19174$ C_v at 14.3 min. = 0.02 ft.²/day $C_\alpha = 0.017$

Pressure: 8.00 ksf

TEST READINGS

Load No. 6

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.20550	11	60.00	0.24510
2	0.10	0.21080	12	120.00	0.25200
3	0.25	0.21200	13	240.00	0.25580
4	0.50	0.21330	14	480.00	0.25900
5	1.00	0.21490	15	1510.00	0.26320
6	2.00	0.21690			
7	4.00	0.21880			
8	8.00	0.22380			
9	15.00	0.22960			
10	30.00	0.23730			



Void Ratio = 1.310 Compression = 26.3 %

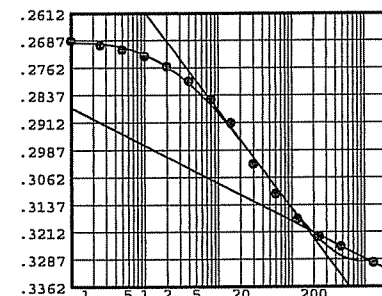
 $D_0 = 0.20550$ $D_{50} = 0.23065$ $D_{100} = 0.25580$ C_v at 15.9 min. = 0.02 ft.²/day $C_\alpha = 0.011$

Pressure: 16.00 ksf

TEST READINGS

Load No. 7

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.26320	11	60.00	0.31070
2	0.10	0.26880	12	120.00	0.31760
3	0.25	0.27000	13	240.00	0.32250
4	0.50	0.27130	14	480.00	0.32520
5	1.00	0.27310	15	1307.00	0.32970
6	2.00	0.27590			
7	4.00	0.27990			
8	8.00	0.28490			
9	15.00	0.29140			
10	30.00	0.30250			



Void Ratio = 1.102 Compression = 33.0 %

 $D_0 = 0.26320$ $D_{50} = 0.29173$ $D_{100} = 0.32027$ C_v at 13.5 min. = 0.02 ft.²/day $C_\alpha = 0.014$

Pressure: 8.00 ksf

TEST READINGS

Load No. 8

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.32970	11	60.00	0.32480
2	0.10	0.32830	12	120.00	0.32460
3	0.25	0.32790	13	240.00	0.32440
4	0.50	0.32760	14	480.00	0.32430
5	1.00	0.32740	15	1420.00	0.32420
6	2.00	0.32710			
7	4.00	0.32650			
8	8.00	0.32580			
9	15.00	0.32530			
10	30.00	0.32490			

Void Ratio = 1.119 Compression = 32.4 %

Pressure: 2.00 ksf

TEST READINGS

Load No. 9

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.32420	11	60.00	0.30920
2	0.10	0.32130	12	120.00	0.30700
3	0.25	0.32090	13	240.00	0.30520
4	0.50	0.32030			
5	1.00	0.31930			
6	2.00	0.31850			
7	4.00	0.31790			
8	8.00	0.31610			
9	15.00	0.31450			
10	30.00	0.31170			

Void Ratio = 1.178 Compression = 30.5 %

Pressure: 0.50 ksf

TEST READINGS

Load No. 10

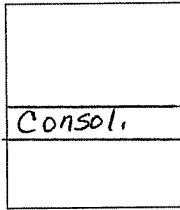
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.30520	11	60.00	0.29080
2	0.10	0.30400	12	120.00	0.28260
3	0.25	0.30370	13	240.00	0.27980
4	0.50	0.30350	14	365.00	0.27720
5	1.00	0.30310	15	1380.00	0.26920
6	2.00	0.30240			
7	4.00	0.30150			
8	8.00	0.29970			
9	15.00	0.29800			
10	30.00	0.29540			

Void Ratio = 1.291 Compression = 26.9 %

Oedometer Settlement Tests

Sample details

Sketch showing specimen location in original Sample



Depth 32'
Description: Gray clay with slight sand and peat content.

Type Undisturbed
Height H_0 (in) 1
Diameter D_0 (in) 2.5
Weight W_0 (gr) 111.95
Bulk Density ρ (PCF) 86.88
Particle Density ρ_s 2.61
(measured)

Initial Conditions

Settlement Channel consol #6
Moisture Content w_0 % 105.3
Dry Density ρ_d (PCF) 42.31
Voids Ratio e_0 2.8490
Deg of Saturation S_0 % 96.5
Swelling Pressure S_s (TSF)

Final Conditions

Moisture Content w_f % 72.8
Dry Density ρ_d (PCF) 59.82
Voids Ratio e_f 1.7228
Deg of Saturation S_f % 100.00
Settlement: (in) 0.293

Compression Index C_c

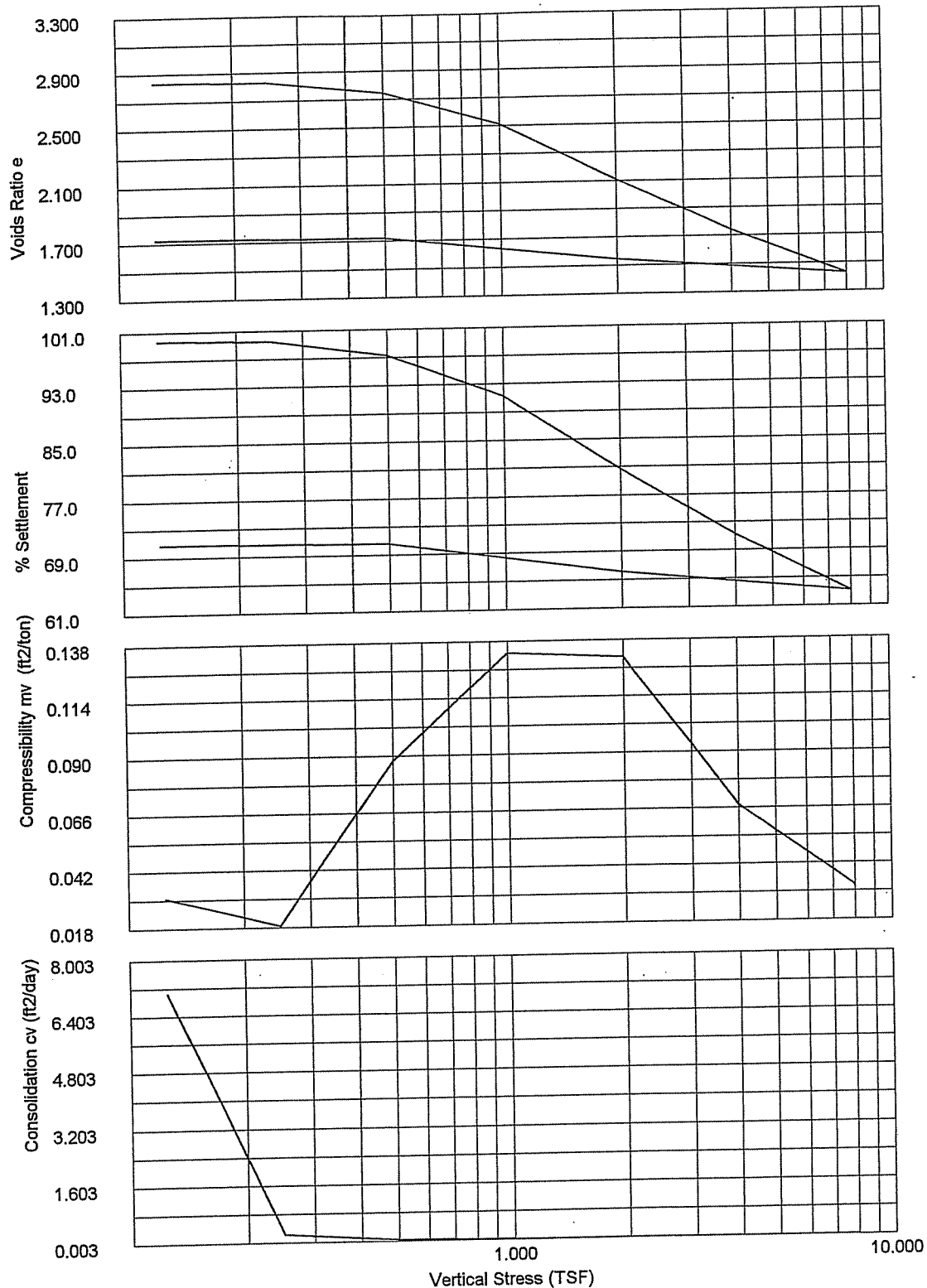
Notes:

Atterberg Limits- LL: 139 PL: 43 PI: 95. Less than 24 hr.
loading increment was conducted on load of 0.125 tsf, due to swell.

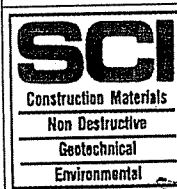
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #6
			Date of Test:	7/24/2003
	Site Reference:	Charleston Naval Base Container	Sample:	UD-1
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PZ-5
Operator:		Checked:	Approved:	
<i>Syenne M. Stork</i>		<i>Audrey Chubb</i>	<i>N. P. Stork</i>	

Oedometer Settlement Tests



Soil Consultants, Inc.



ASTM D2435-96

Test name: Consol #6
Date of Test: 7/24/2003

Site Reference: Charleston Naval Base Container
Jobfile: C:\WINCLISP\CNB.JOB

Sample: UD-1
Borehole: PZ-5

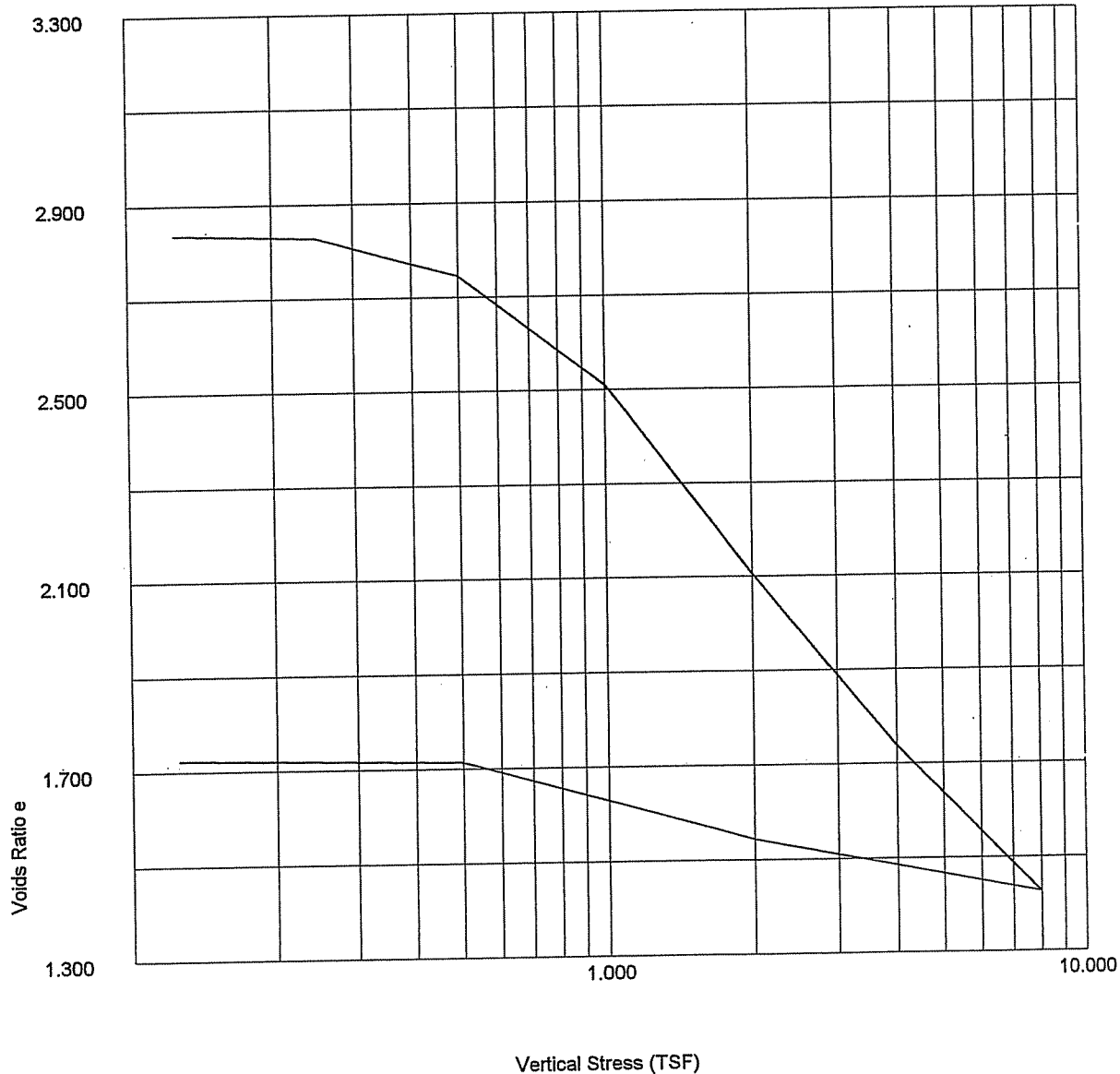
Operator:

Checked:

Approved:

Signatures: Operator: *Spencer M. Stork*, Checked: *Audrey Chubb*, Approved: *[Signature]*

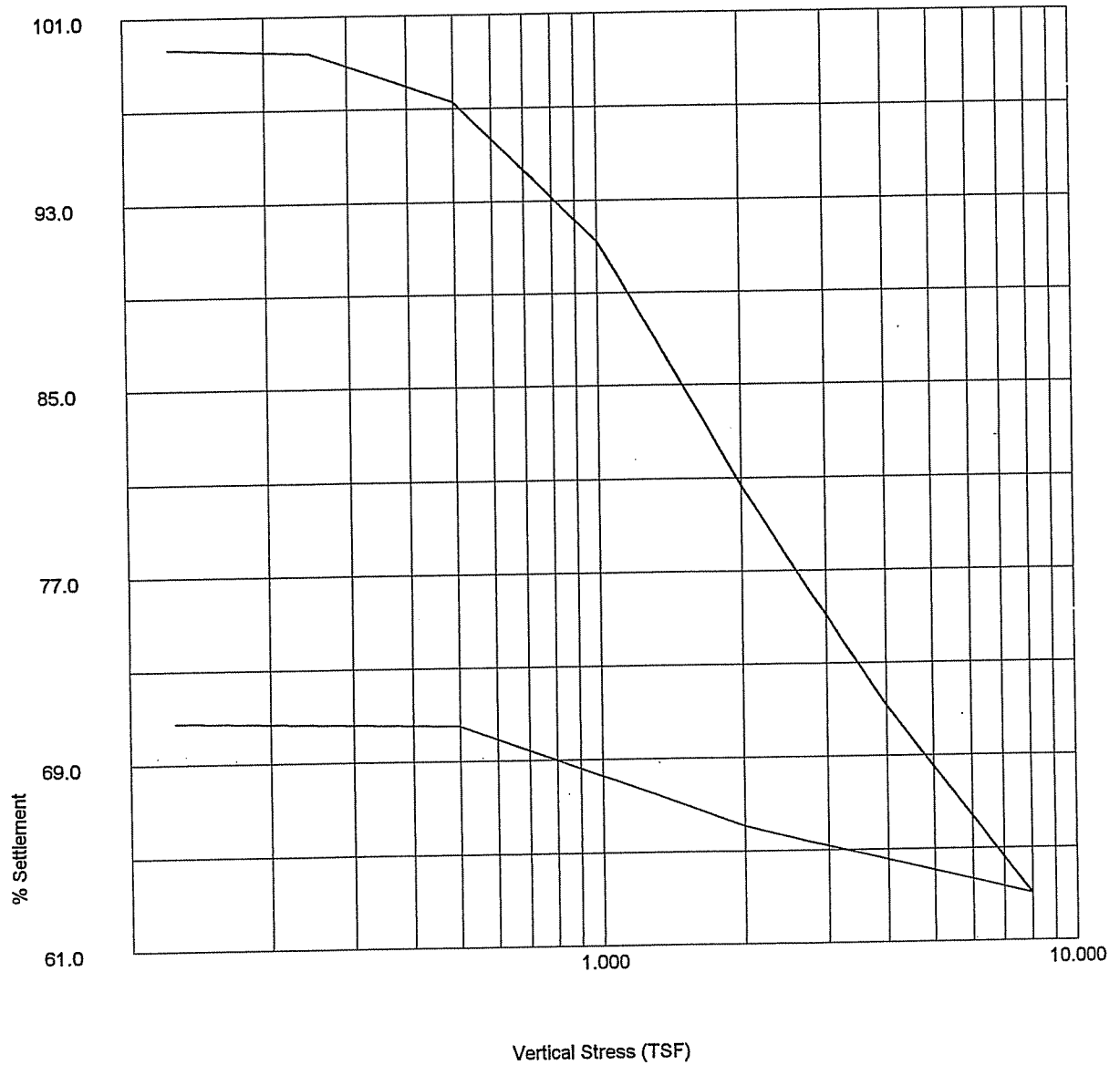
Oedometer Settlement Tests



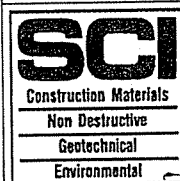
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #6
			Date of Test:	7/24/2003
	Site Reference:	Charleston Naval Base Container	Sample:	UD-1
	Jobfile:	C:WINCLISPICNB.JOB	Borehole:	PZ-5
	Operator:	<i>Spencer M. Stark</i>	Checked:	<i>Audrey Chubb</i>
			Approved:	<i>[Signature]</i>

Oedometer Settlement Tests



Soil Consultants, Inc.



ASTM D2435-96

Test name: Consol #6
Date of Test: 7/24/2003

Site Reference: Charleston Naval Base Container
Jobfile: C:\WINCLISP\CNB.JOB

Sample: UD-1
Borehole: PZ-5

Operator: *Janne M. Stark*

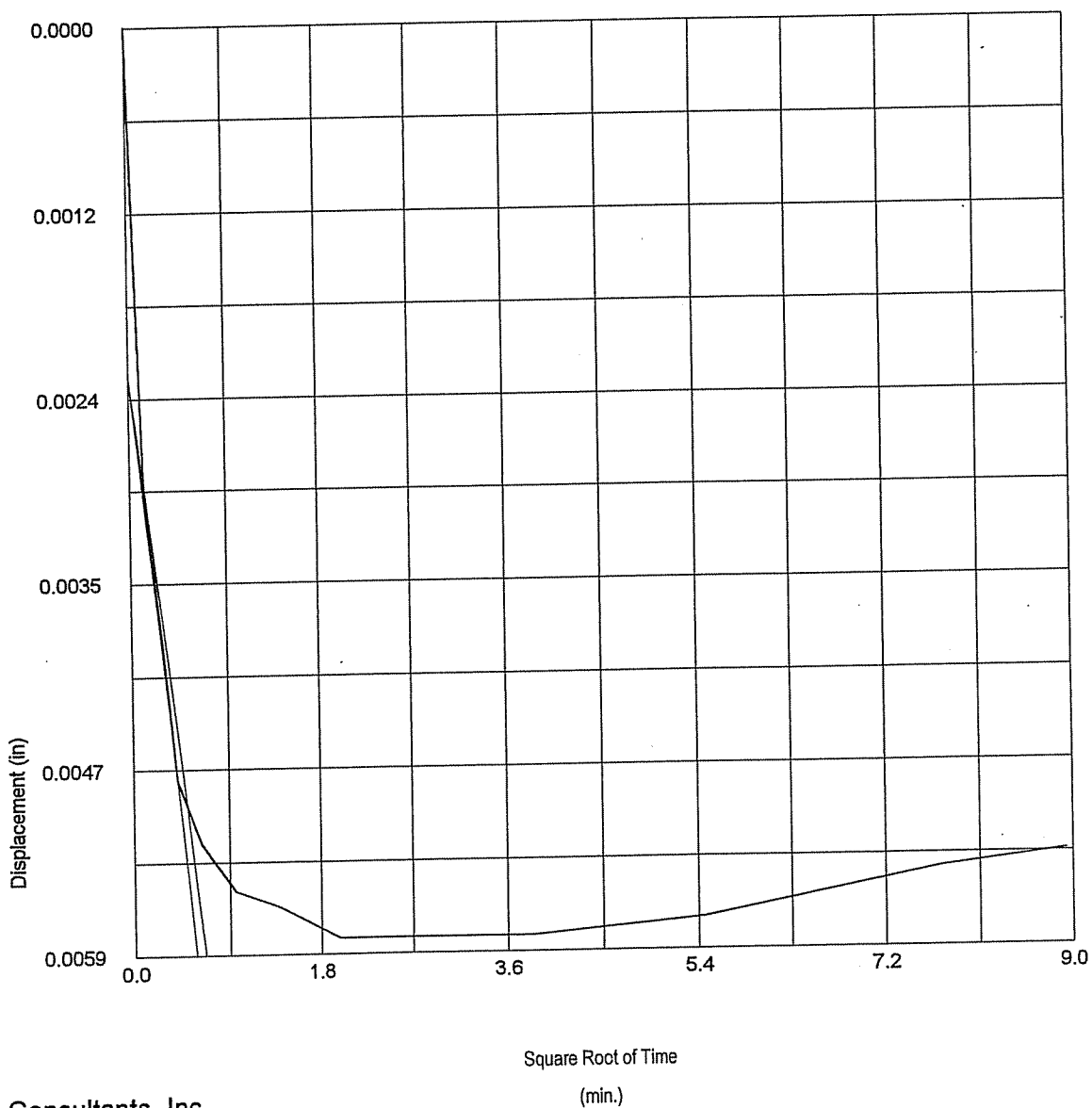
Checked: *Audrey Chubb*

Approved: *[Signature]*

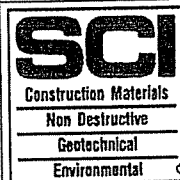
Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	0.125
Initial Temp oC	20.0
Correction (in)	0.0015
Displacement (in)	0.0053
Voids Ratio e_0	2.8343
Final Temp oC	
t_{90} (mins)	0.3
c_v (ft ² /day)	7.04
m_v (ft ² /ton)	0.031
Sec Compression C_{sec}	



Soil Consultants, Inc.



ASTM D2435-96

Site Reference: Charleston Naval Base Container
 Jobfile: C:\WINCLISP\CNB.JOB
 Operator: *Spencer M. Stutz*

Test name: Consol #6
 Date of Test: 7/24/2003
 Sample: UD-1
 Borehole: PZ-5

Checked:

Approved:

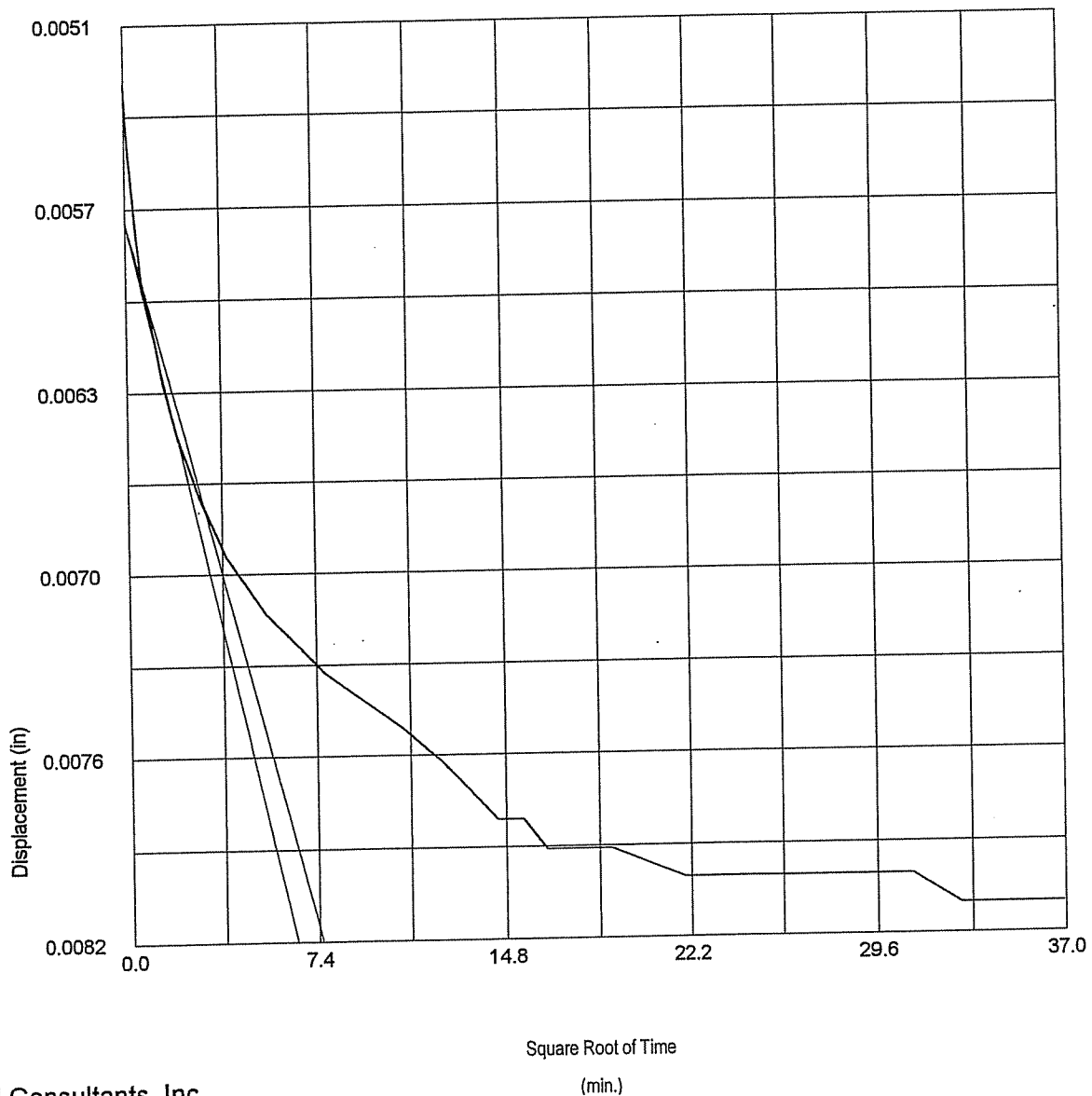
Audrey Chubb

N. M. Stutz

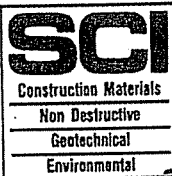
Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	0.250
Initial Temp oC	20.0
Correction (in)	0.002
Displacement (in)	0.0028
Voids Ratio e_0	2.8255
Final Temp oC	
t_{90} (mins)	9.5
c_v (ft ² /day)	0.221
m_v (ft ² /ton)	0.019
Sec Compression C_{sec}	



Soil Consultants, Inc.



ASTM D2435-96

Site Reference: Charleston Naval Base Container
Jobfile: C:WINCLISP\CNB.JOB

Operator:

Checked:

Test name: Consol #6
Date of Test: 7/24/2003

Sample: UD-1
Borehole: PZ-5

Approved:

Shannon M. Stroh

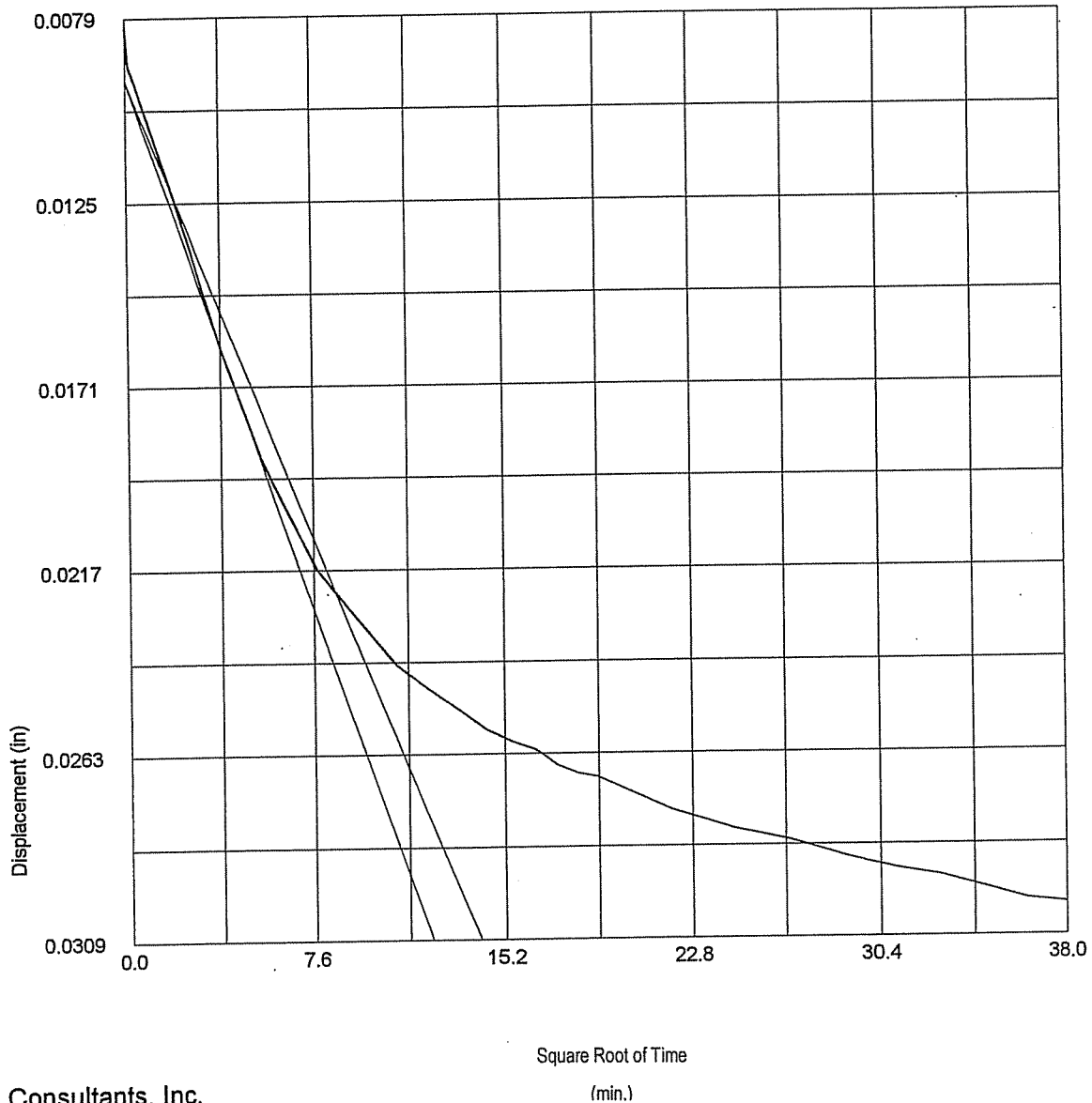
Audrey Chubb

N. M. Stroh

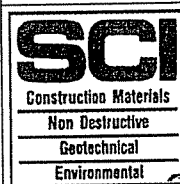
Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	0.500
Initial Temp oC	20.0
Correction (in)	0.0027
Displacement (in)	0.022
Voids Ratio e_0	2.7435
Final Temp oC	
t_{90} (mins)	71.8
c_v (ft ² /day)	0.029
m_v (ft ² /ton)	0.088
Sec Compression C_{sec}	



Soil Consultants, Inc.



ASTM D2435-96

Site Reference: Charleston Naval Base Container
Jobfile: C:WINCLISP\CNB.JOB

Operator:

Operator: *Byanne M. Stolt*

Checked:

Checked: *Audrey Chubb*

Test name: Consol #6
Date of Test: 7/24/2003

Sample: UD-1
Borehole: PZ-5

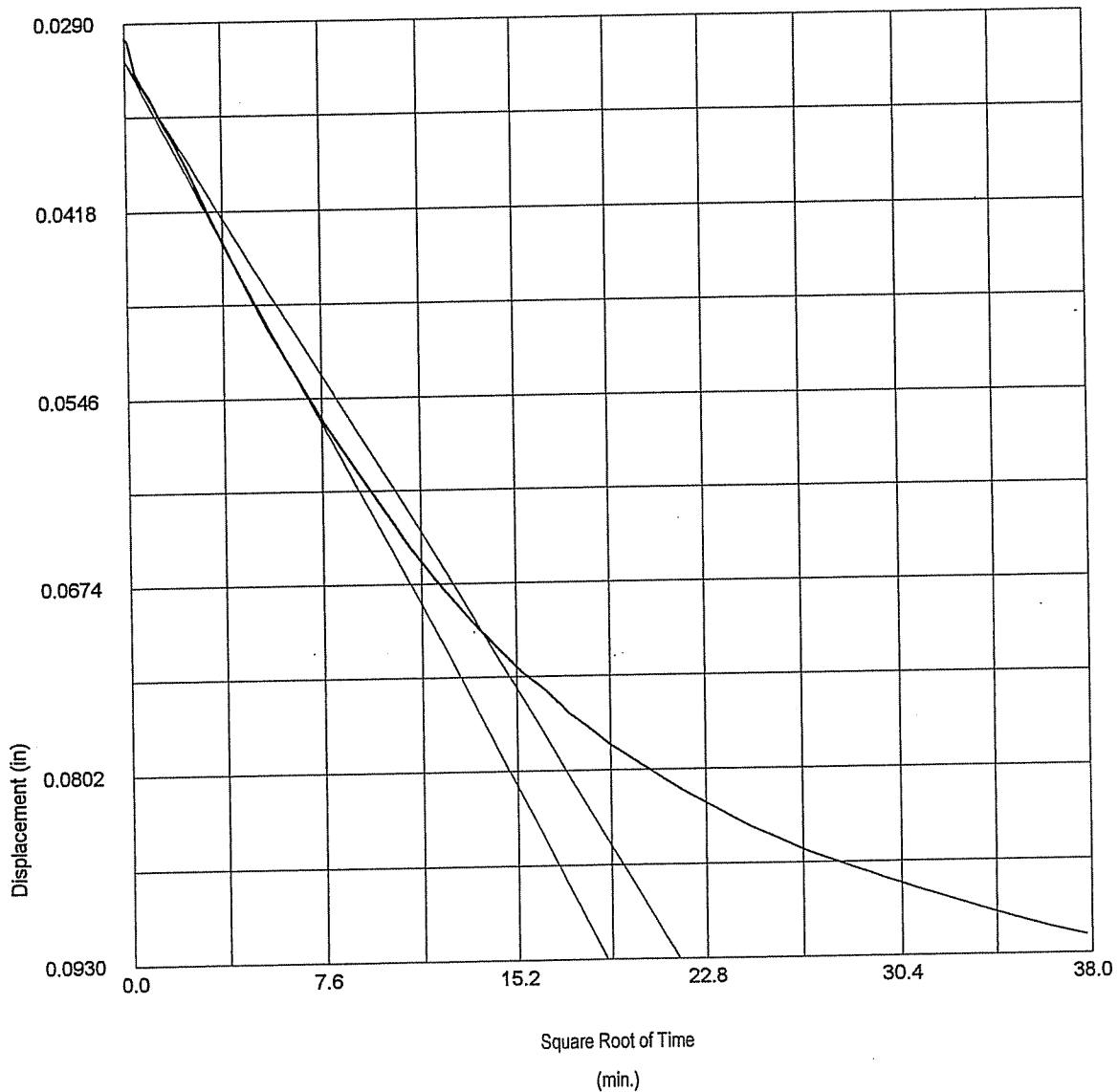
Approved:

Approved: *N. Stolt*

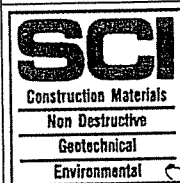
Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	1.000
Initial Temp oC	20.0
Correction (in)	0.0038
Displacement (in)	0.0617
Voids Ratio e_0	2.5103
Final Temp oC	
t_{90} (mins)	192.4
c_v (ft ² /day)	0.01
m_v (ft ² /ton)	0.133
Sec Compression C_{sec}	



Soil Consultants, Inc.



ASTM D2435-96

Test name: Consol #6
Date of Test: 7/24/2003

Site Reference: Charleston Naval Base Container
Jobfile: C:\WINCLISP\CNB.JOB

Sample: UD-1
Borehole: PZ-5

Operator:

Checked:

Approved:

S. M. Stroh

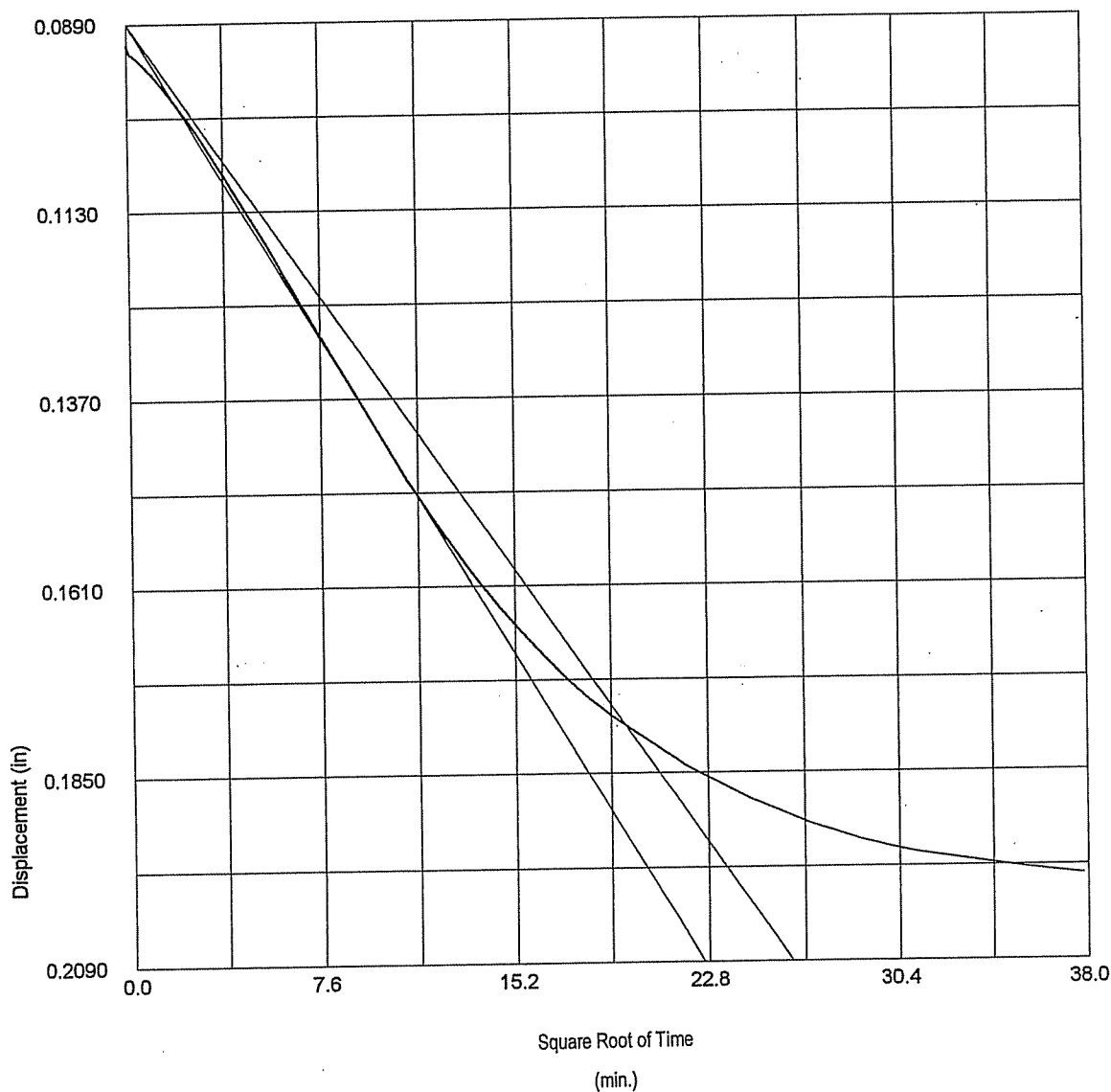
Andrew Chubb

N. H. Stroh

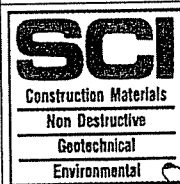
Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	2.000
Initial Temp oC	20.0
Correction (in)	0.005
Displacement (in)	0.1065
Voids Ratio e_0	2.1050
Final Temp oC	
t_{90} (mins)	383.7
c_v (ft ² /day)	0.004
m_v (ft ² /ton)	0.131
Sec Compression C_{sec}	



Soil Consultants, Inc.



ASTM D2435-96

Site Reference: Charleston Naval Base Container
Jobfile: C:\WINCLISP\CNB.JOB

Operator:

Checked:

Test name: Consol #6
Date of Test: 7/24/2003

Sample: UD-1
Borehole: PZ-5

Approved:

James M. Stroh

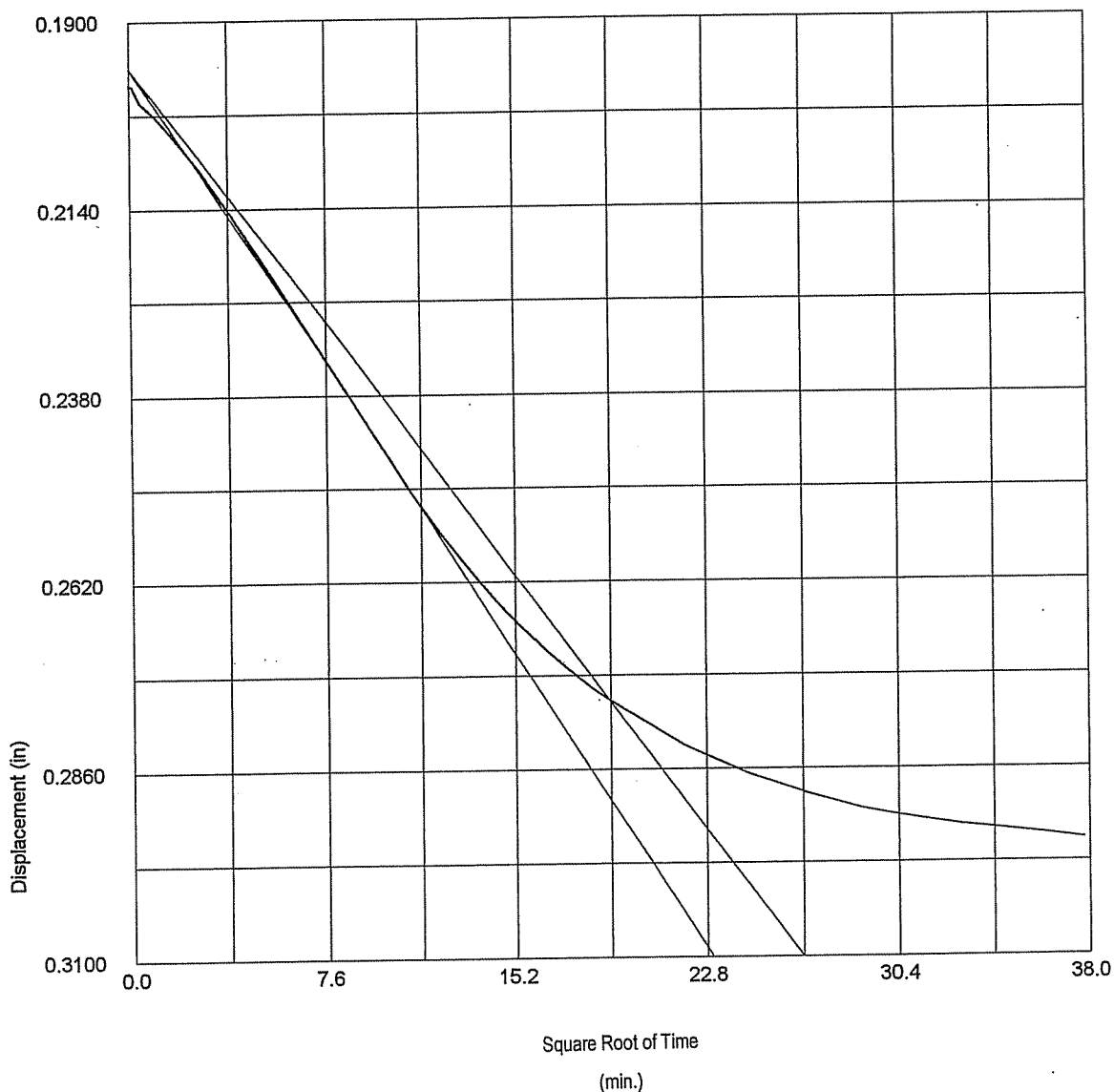
Audrey Chubb

R. H. 7/26/03

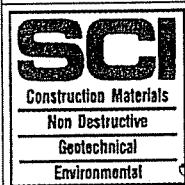
Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	4.000
Initial Temp oC	20.0
Correction (in)	0.0066
Displacement (in)	0.0969
Voids Ratio e_0	1.7382
Final Temp oC	
t_{90} (mins)	357.2
c_v (ft ² /day)	0.003
m_v (ft ² /ton)	0.067
Sec Compression C_{sec}	



Soil Consultants, Inc.



ASTM D2435-96

Test name: Consol #6
Date of Test: 7/24/2003

Site Reference: Charleston Naval Base Container
Jobfile: C:\WINCLISP\CNB.JOB

Sample: UD-1
Borehole: PZ-5

Operator:

Checked:

Approved:

James M. Stroh

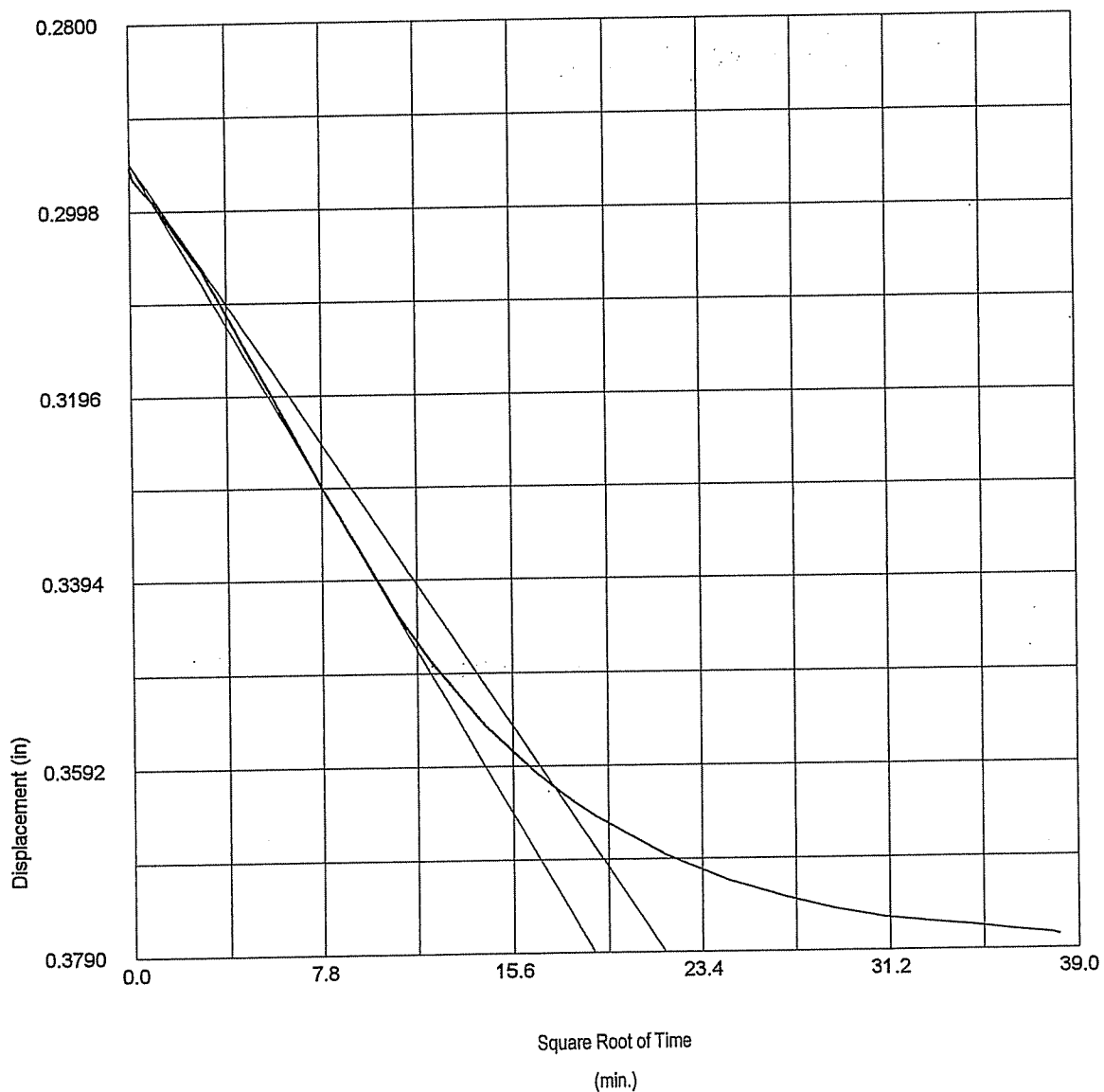
Audrey Chubb

N. Y. 296

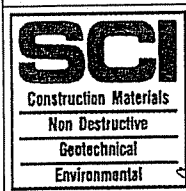
Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	8.000
Initial Temp oC	20.0
Correction (in)	0.0078
Displacement (in)	0.0824
Voids Ratio e_0	1.4256
Final Temp oC	
t_{90} (mins)	302.7
c_v (ft ² /day)	0.003
m_v (ft ² /ton)	0.032
Sec Compression C_{sec}	



Soil Consultants, Inc.



ASTM D2435-96

Test name Consol #6
Date of Test: 7/24/2003

Site Reference: Charleston Naval Base Container
Jobfile: C:\WINCLISP\CNB.JOB

Sample: UD-1
Borehole: PZ-5

Operator:

Checked:

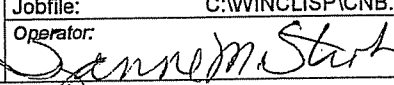
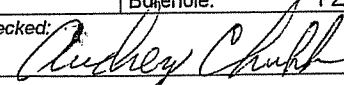
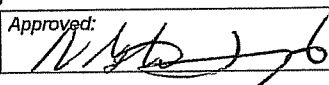
Approved:

James M. Stolt *Audrey Chubb* *D. Stoltz*

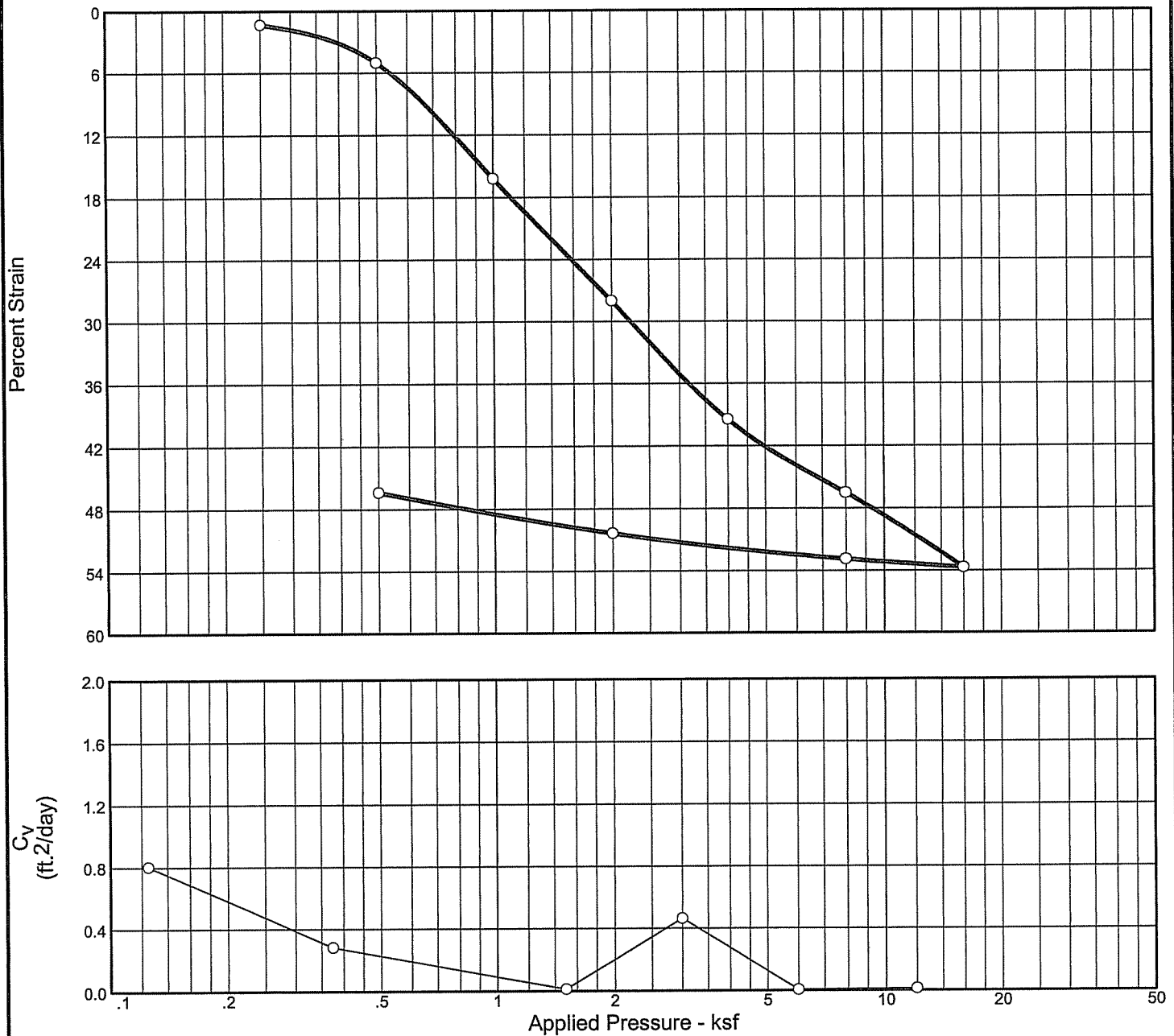
Oedometer Settlement Tests

Stress (TSF)	Initial Temp. oC	Settlement Total (in)	Cal Corr. (in)	Final Temp. oC	Voids Ratio e_f	t_{90} (mins)	Secondary Compr C_{sec}	c_v (ft ² /day)	m_v (ft ² /ton)
0.125	20.0	0.0038	0.0015	20.0	2.8343	0.3		7.040	0.031
0.250	20.0	0.0061	0.002	20.0	2.8255	9.5		0.221	0.019
0.500	20.0	0.0274	0.0027	20.0	2.7435	71.8		0.029	0.088
1.000	20.0	0.0880	0.0038	20.0	2.5103	192.4		0.010	0.133
2.000	20.0	0.1933	0.005	20.0	2.1050	383.7		0.004	0.131
4.000	20.0	0.2886	0.0066	20.0	1.7382	357.2		0.003	0.067
8.000	20.0	0.3698	0.0078	20.0	1.4256	302.7		0.003	0.032
2.000	20.0	0.3396	0.0065	20.0	1.5419				0.008
0.500	20.0	0.2952	0.0058	20.0	1.7128				0.042
0.125	20.0	0.2926	0.0054	20.0	1.7228				0.010

Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #6
			Date of Test:	7/24/2003
	Site Reference:	Charleston Naval Base Container	Sample:	UD-1
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PZ-5
Operator:		Checked:	Approved:	
				

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (ksf)	P_c (ksf)	C_c	C_r	Initial Void Ratio
Saturation	Moisture									
99.0 %	179.9 %	28.3	181	99	2.58		0.04	1.38	0.26	4.691

MATERIAL DESCRIPTION								USCS	AASHTO
Dark gray, Sandy Silt								MH	

Project No. 1131-03-264 **Client:** SCSPA
Project: Charleston Navy Base Container Terminal
 North Charleston, SC
Source: PAW-2 **Sample No.:** UD-4 **Elev./Depth:** -26.9to-28.9 CLW

CONSOLIDATION TEST REPORT

S & ME, Inc.

Remarks:

Plate

Dial Reading vs. Time

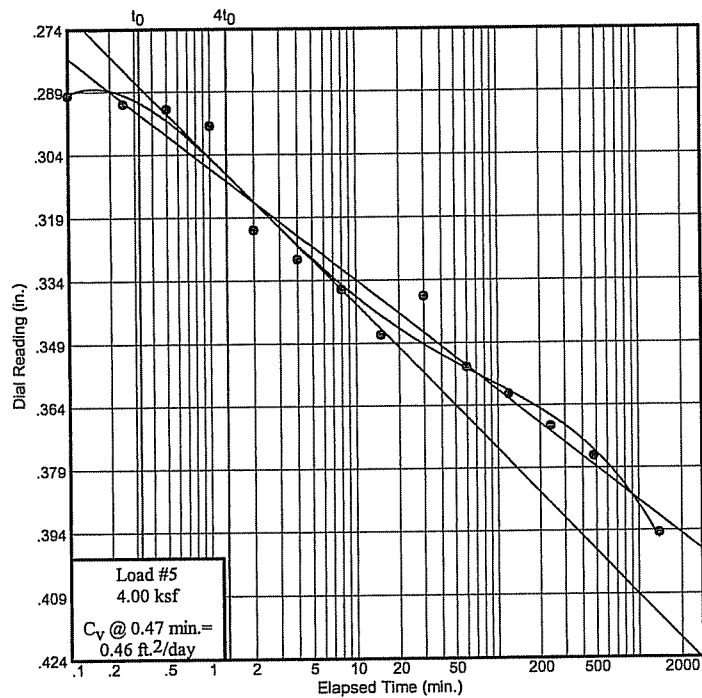
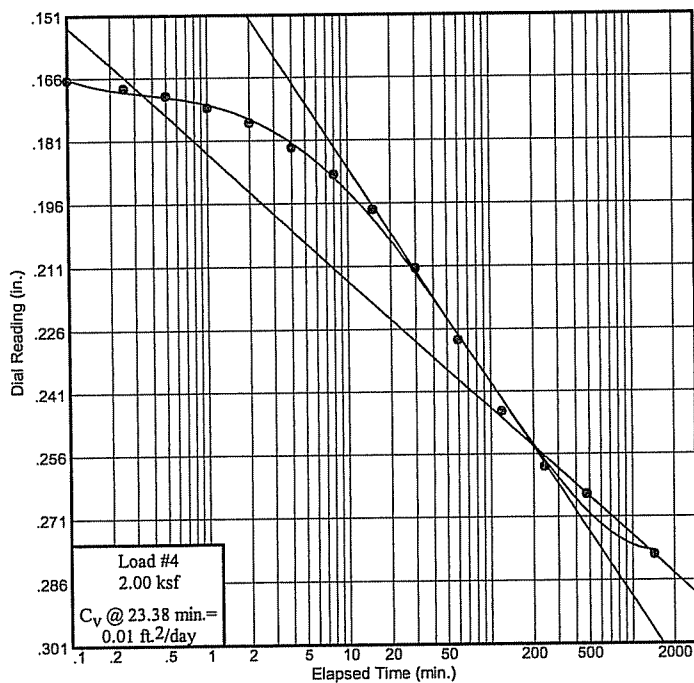
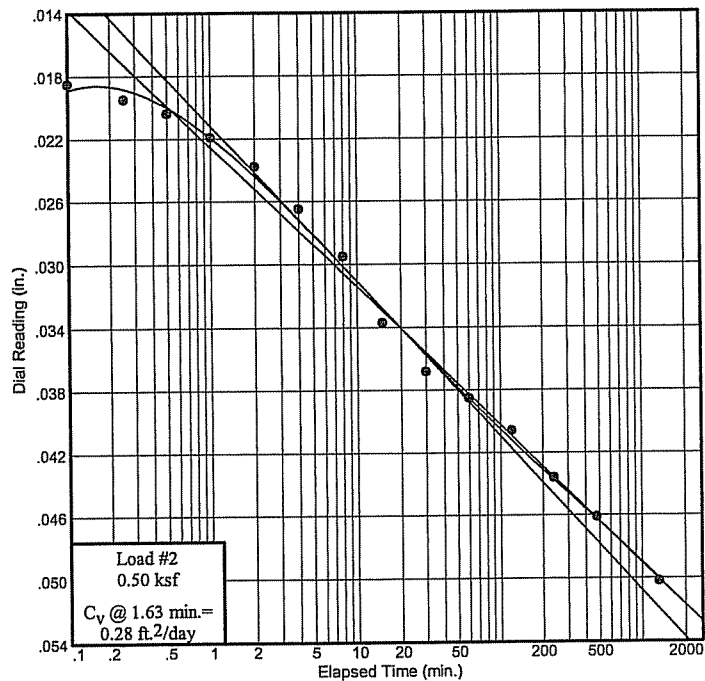
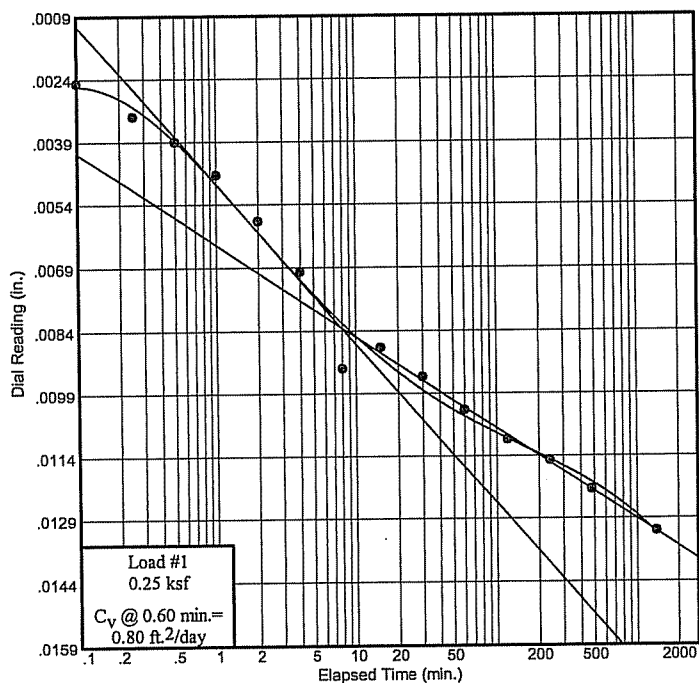
Project No.: 1131-03-264

Project: Charleston Navy Base Container Terminal
North Charleston, SC

Source: PAW-2

Sample No.: UD-4

Elev./Depth: -26.9to-28.9 CLW



Dial Reading vs. Time

S & ME, Inc.

Plate

Dial Reading vs. Time

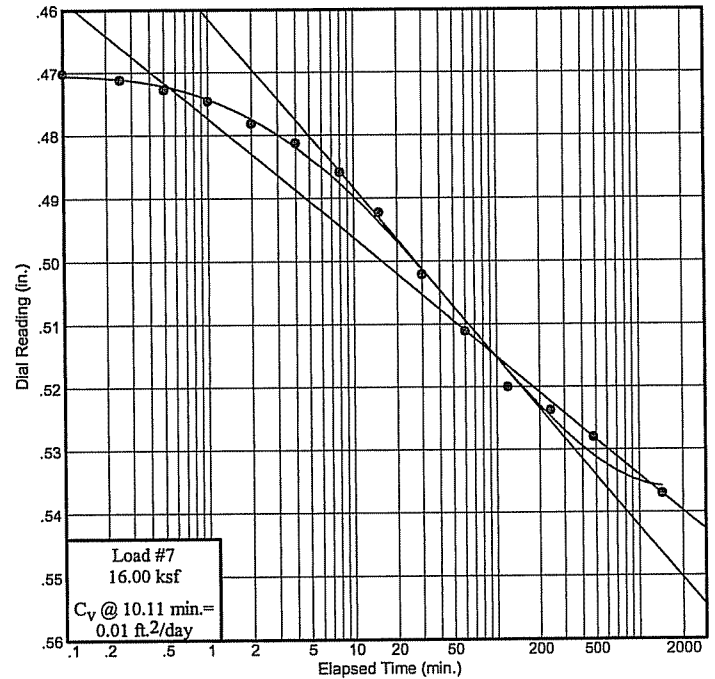
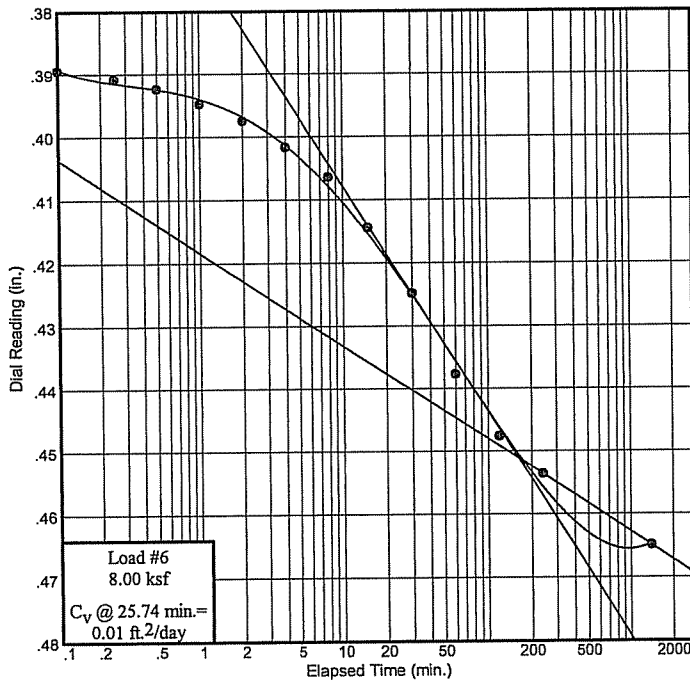
Project No.: 1131-03-264

Project: Charleston Navy Base Container Terminal
North Charleston, SC

Source: PAW-2

Sample No.: UD-4

Elev./Depth: -26.9to-28.9 CLW



Dial Reading vs. Time

S & ME, Inc.

Plate

CONSOLIDATION TEST DATA

Client: SCSPA
 Project: Charleston Navy Base Container Terminal
 North Charleston, SC
 Project Number: 1131-03-264

Sample Data

Source: PAW-2
 Sample No.: UD-4
 Elev. or Depth: -26.9to-28.9 CLW Sample Length (in./cm.):
 Location:
 Description: Dark gray, Sandy Silt
 Liquid Limit: 181 Plasticity Index: 99
 USCS: MH AASHTO: Figure No.:
 Testing Remarks:

Test Specimen Data

TOTAL SAMPLE	BEFORE TEST	AFTER TEST
Wet w+t = 219.82 g.	Consolidometer # = 1	Wet w+t = 69.95 g.
Dry w+t = 84.40 g.		Dry w+t = 45.54 g.
Tare Wt. = 9.14 g.	Spec. Gravity = 2.58	Tare Wt. = .00 g.
Height = 2.45 in.	Height = 1.00 in.	
Diameter = 2.87 in.	Diameter = 2.87 in.	
Weight = 330.51 g.	Defl. Table = n/a	
Moisture = 179.9 %	Ht. Solids = 0.1757 in.	Moisture = 53.6 %
Den. = 79.2 pcf	Dry Wt. = 48.11 g.*	Dry Wt. = 45.54 g.
Dry Den. = 28.3 pcf	Void Ratio = 4.691	Void Ratio = 2.051
	Saturation = 99.0 %	

* Initial dry weight used in calculations

End-of-Load Summary

Pressure (ksf)	Final Dial (in.)	Machine Defl. (in.)	C_v (ft. ² /day)	C_α	Void Ratio	% Compression /Swell
start	0.00000				4.691	
0.25	0.01320	0.00000	0.80	0.002	4.616	1.3 Compr.
0.50	0.05020	0.00000	0.28	0.009	4.405	5.0 Compr.
1.00	0.16190	0.00000		0.047	3.769	16.2 Compr.
2.00	0.28000	0.00000	0.01	0.036	3.097	28.0 Compr.
4.00	0.39450	0.00000	0.46	0.037	2.446	39.5 Compr.
8.00	0.46490	0.00000	0.01	0.024	2.045	46.5 Compr.
16.00	0.53700	0.00000	0.01	0.035	1.635	53.7 Compr.
8.00	0.52880	0.00000			1.681	52.9 Compr.
2.00	0.50360	0.00000			1.825	50.4 Compr.
0.50	0.46380	0.00000			2.051	46.4 Compr.

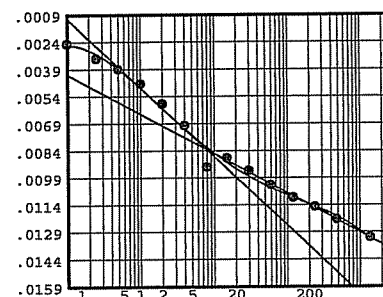
$C_c = 1.38$ $P_c = 0.04$ ksf $C_r = 0.26$

Pressure: 0.25 ksf

TEST READINGS

Load No. 1

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.00000	11	60.00	0.01030
2	0.10	0.00250	12	120.00	0.01100
3	0.25	0.00330	13	240.00	0.01150
4	0.50	0.00390	14	480.00	0.01220
5	1.00	0.00470	15	1382.00	0.01320
6	2.00	0.00580			
7	4.00	0.00700			
8	8.00	0.00930			
9	15.00	0.00880			
10	30.00	0.00950			



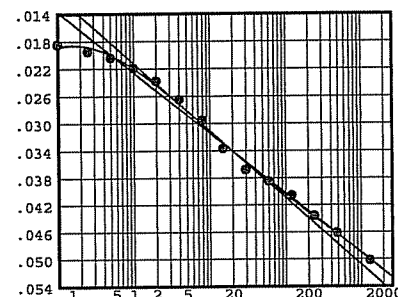
Void Ratio = 4.616 Compression = 1.3 %
 $D_0 = 0.00000$ $D_{50} = 0.00416$ $D_{100} = 0.00831$
 C_v at 0.6 min. = 0.80 ft.²/day $C_\alpha = 0.002$

Pressure: 0.50 ksf

TEST READINGS

Load No. 2

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.01320	11	60.00	0.03850
2	0.10	0.01850	12	120.00	0.04060
3	0.25	0.01950	13	240.00	0.04360
4	0.50	0.02040	14	480.00	0.04610
5	1.00	0.02190	15	1314.00	0.05020
6	2.00	0.02380			
7	4.00	0.02650			
8	8.00	0.02950			
9	15.00	0.03370			
10	30.00	0.03680			



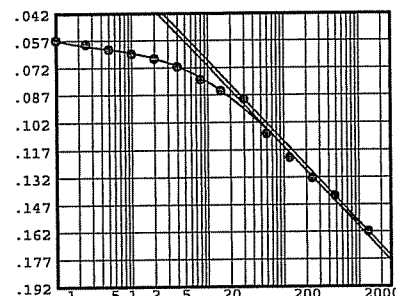
Void Ratio = 4.405 Compression = 5.0 %
 $D_0 = 0.01320$ $D_{50} = 0.02364$ $D_{100} = 0.03407$
 C_v at 1.6 min. = 0.28 ft.²/day $C_\alpha = 0.009$

Pressure: 1.00 ksf

TEST READINGS

Load No. 3

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.05020	11	60.00	0.10820
2	0.10	0.05700	12	120.00	0.12120
3	0.25	0.05910	13	240.00	0.13250
4	0.50	0.06190	14	480.00	0.14220
5	1.00	0.06440	15	1339.00	0.16190
6	2.00	0.06710			
7	4.00	0.07150			
8	8.00	0.07850			
9	15.00	0.08470			
10	30.00	0.08930			



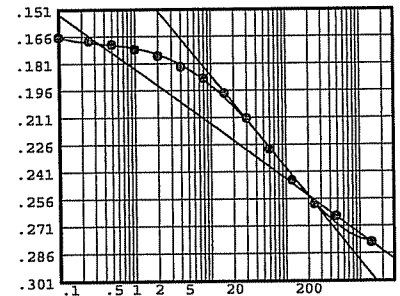
Void Ratio = 3.769 Compression = 16.2 %

Pressure: 2.00 ksf

TEST READINGS

Load No. 4

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.16190	11	60.00	0.22860
2	0.10	0.16650	12	120.00	0.24570
3	0.25	0.16850	13	240.00	0.25900
4	0.50	0.17040	14	480.00	0.26560
5	1.00	0.17320	15	1430.00	0.28000
6	2.00	0.17680			
7	4.00	0.18280			
8	8.00	0.18920			
9	15.00	0.19750			
10	30.00	0.21140			



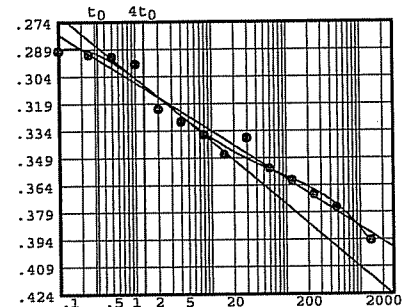
Void Ratio = 3.097 Compression = 28.0 %
 $D_0 = 0.16190$ $D_{50} = 0.20789$ $D_{100} = 0.25389$
 C_v at 23.4 min. = 0.01 ft.²/day $C_\alpha = 0.036$

Pressure: 4.00 ksf

TEST READINGS

Load No. 5

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.28000	11	60.00	0.35480
2	0.10	0.29000	12	120.00	0.36130
3	0.25	0.29200	13	240.00	0.36900
4	0.50	0.29320	14	480.00	0.37620
5	1.00	0.29720	15	1391.00	0.39450
6	2.00	0.32200			
7	4.00	0.32900			
8	8.00	0.33610			
9	15.00	0.34700			
10	30.00	0.33780			



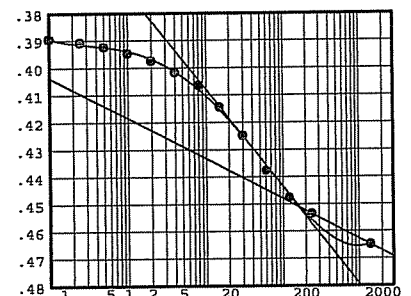
Void Ratio = 2.446 Compression = 39.5 %
 $D_0 = 0.27450$ $D_{50} = 0.29509$ $D_{100} = 0.31568$
 C_v at 0.5 min. = 0.46 ft.²/day $C_\alpha = 0.037$

Pressure: 8.00 ksf

TEST READINGS

Load No. 6

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.39450	11	60.00	0.43770
2	0.10	0.38950	12	120.00	0.44760
3	0.25	0.39080	13	240.00	0.45360
4	0.50	0.39240	14	1397.00	0.46490
5	1.00	0.39480			
6	2.00	0.39750			
7	4.00	0.40170			
8	8.00	0.40640			
9	15.00	0.41440			
10	30.00	0.42480			



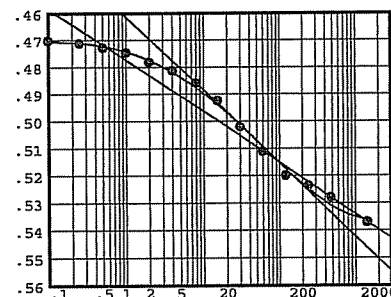
Void Ratio = 2.045 Compression = 46.5 %
 $D_0 = 0.39450$ $D_{50} = 0.42280$ $D_{100} = 0.45110$
 C_v at 25.7 min. = 0.01 ft.²/day $C_\alpha = 0.024$

Pressure: 16.00 ksf

TEST READINGS

Load No. 7

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.46490	11	60.00	0.51110
2	0.10	0.47020	12	120.00	0.52000
3	0.25	0.47120	13	240.00	0.52370
4	0.50	0.47280	14	480.00	0.52800
5	1.00	0.47460	15	1437.00	0.53700
6	2.00	0.47820			
7	4.00	0.48130			
8	8.00	0.48590			
9	15.00	0.49230			
10	30.00	0.50210			



Void Ratio = 1.635 Compression = 53.7 %

 $D_0 = 0.46490$ $D_{50} = 0.48983$ $D_{100} = 0.51476$ C_v at 10.1 min. = 0.01 ft.²/day $C_\alpha = 0.035$

Pressure: 8.00 ksf

TEST READINGS

Load No. 8

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.53700	11	60.00	0.53030
2	0.10	0.53480	12	120.00	0.52990
3	0.25	0.53460	13	240.00	0.52960
4	0.50	0.53430	14	480.00	0.52930
5	1.00	0.53400	15	1419.00	0.52880
6	2.00	0.53370			
7	4.00	0.53290			
8	8.00	0.53220			
9	15.00	0.53160			
10	30.00	0.53090			

Void Ratio = 1.681 Compression = 52.9 %

Pressure: 2.00 ksf

TEST READINGS

Load No. 9

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.52880	11	60.00	0.51060
2	0.10	0.52750	12	120.00	0.50700
3	0.25	0.52680	13	240.00	0.50420
4	0.50	0.52610	14	286.00	0.50360
5	1.00	0.52560			
6	2.00	0.52500			
7	4.00	0.52330			
8	8.00	0.52070			
9	15.00	0.51830			
10	30.00	0.51460			

Void Ratio = 1.825 Compression = 50.4 %

Pressure: 0.50 ksf

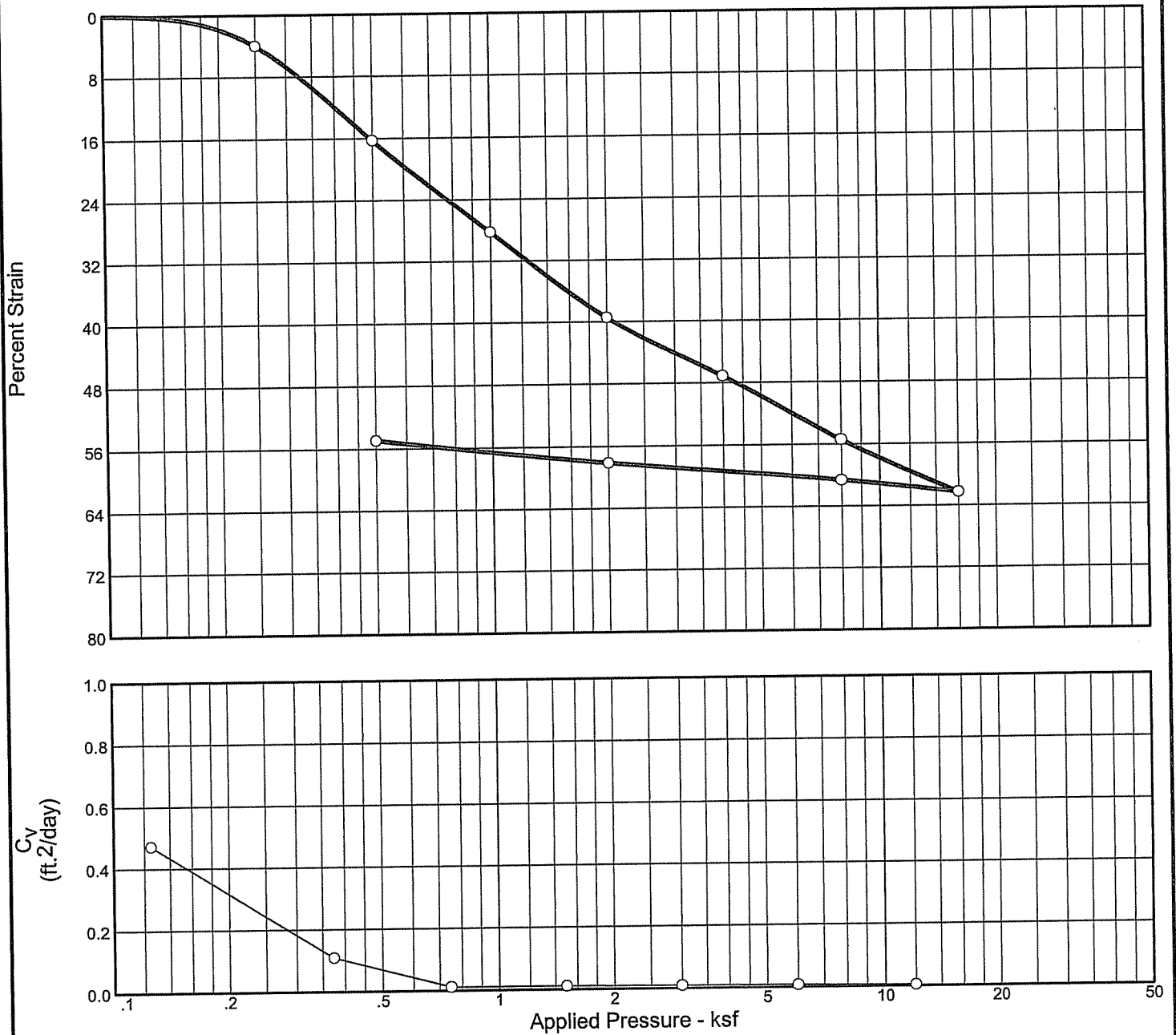
TEST READINGS

Load No. 10

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.50360	11	60.00	0.48680
2	0.10	0.50230	12	120.00	0.48050
3	0.25	0.50170	13	240.00	0.47590
4	0.50	0.50130	14	1125.00	0.46380
5	1.00	0.50090			
6	2.00	0.50040			
7	4.00	0.49950			
8	8.00	0.49780			
9	15.00	0.49560			
10	30.00	0.49270			

Void Ratio = 2.051 Compression = 46.4 %

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (ksf)	P_c (ksf)	C_c	C_r	Initial Void Ratio
Saturation	Moisture									
96.3 %	183.0 %	27.5	206	86	2.70		0.83	1.37	0.20	5.129

MATERIAL DESCRIPTION								USCS	AASHTO
Dark gray, very Sandy Silt								MH	

Project No. 1131-03-264 Client: SCSPA Project: Charleston Navy Base Container Terminal North Charleston, SC Source: PAW-7 Sample No.: UD-2 Elev./Depth: -18 to -20 ft CLW			Remarks: <div style="text-align: right; padding-top: 20px;">Plate</div>
CONSOLIDATION TEST REPORT <div style="font-size: 1.5em; font-weight: bold; margin-top: 10px;">S & ME, Inc.</div>			

Dial Reading vs. Time

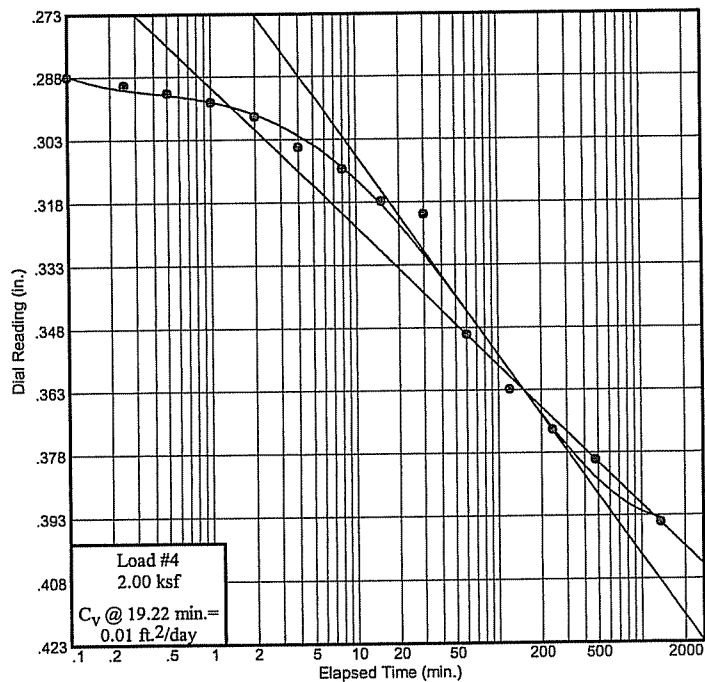
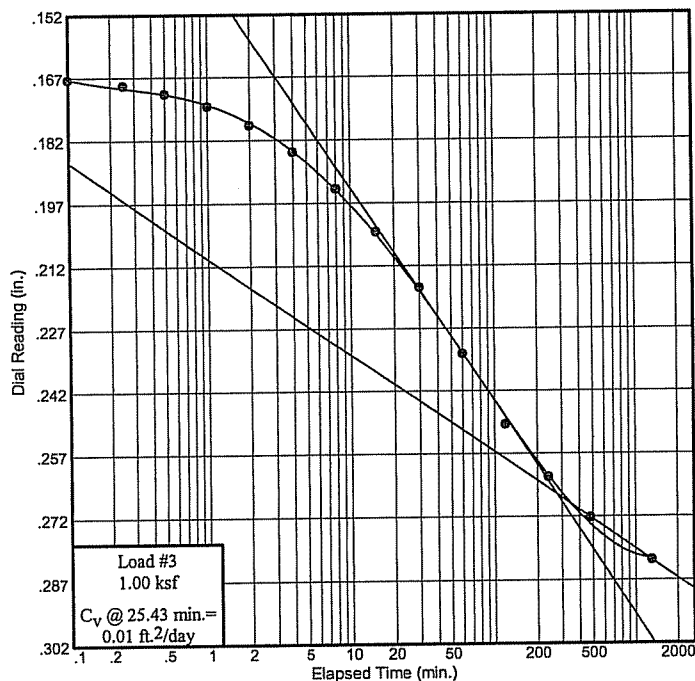
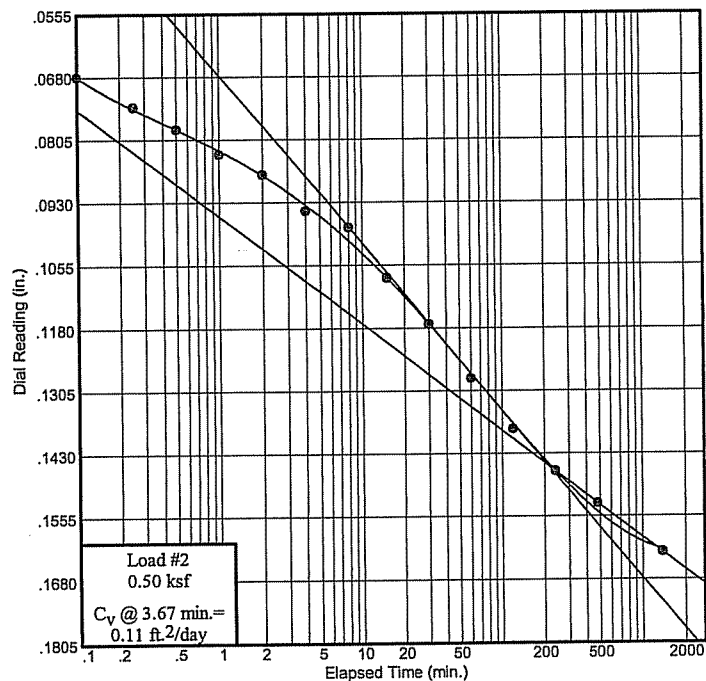
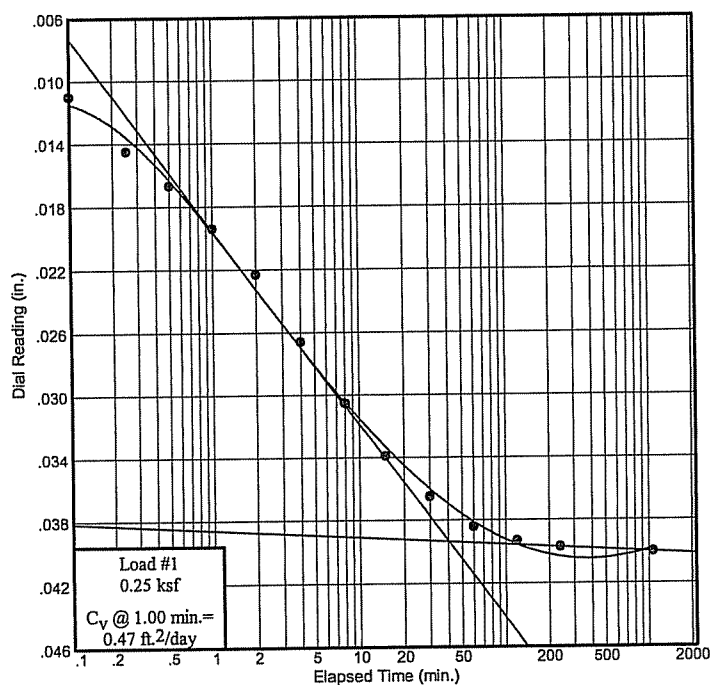
Project No.: 1131-03-264

Project: Charleston Navy Base Container Terminal
North Charleston, SC

Source: PAW-7

Sample No.: UD-2

Elev./Depth: -18 to -20 ft CLW



Dial Reading vs. Time

S & ME, Inc.

Plate

Dial Reading vs. Time

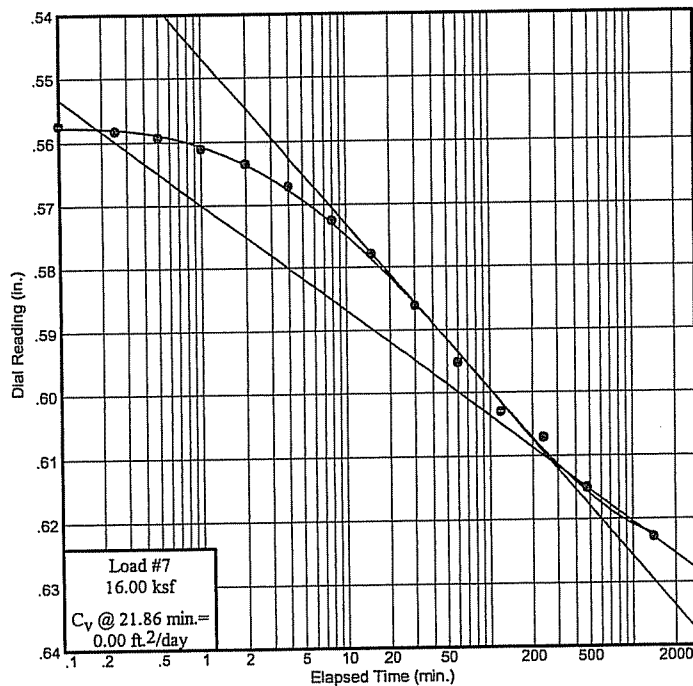
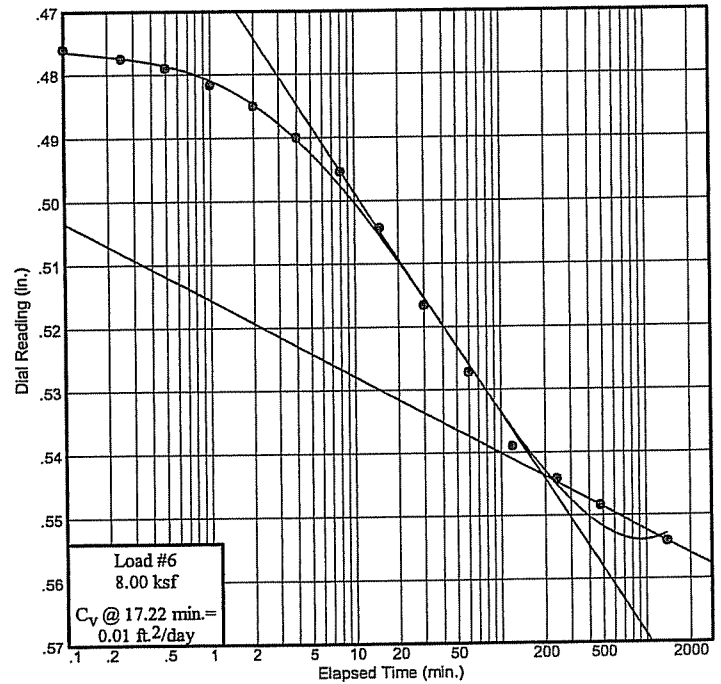
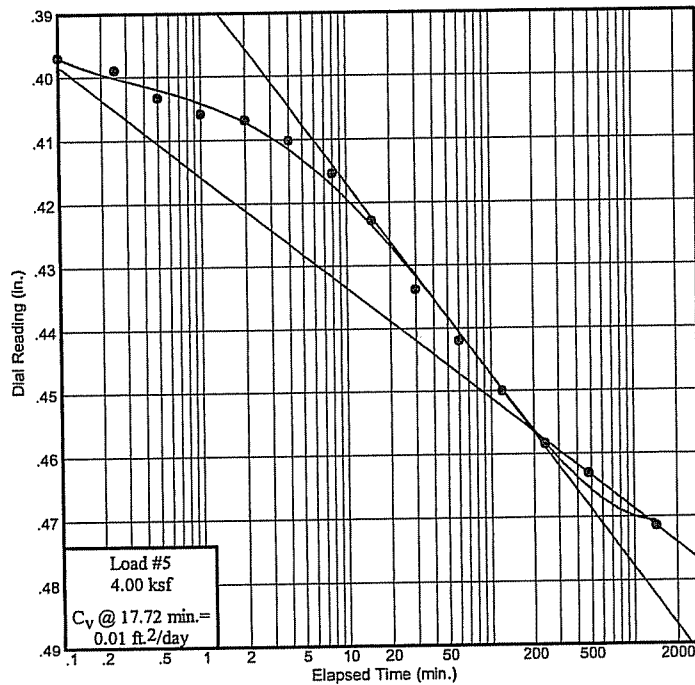
Project No.: 1131-03-264

Project: Charleston Navy Base Container Terminal
North Charleston, SC

Source: PAW-7

Sample No.: UD-2

Elev./Depth: -18 to -20 ft CLW



Dial Reading vs. Time

S & ME, Inc.

Plate

CONSOLIDATION TEST DATA

Client: SCSPA**Project:** Charleston Navy Base Container Terminal
North Charleston, SC**Project Number:** 1131-03-264

Sample Data

Source: PAW-7**Sample No.:** UD-2**Elev. or Depth:** -18 to -20 ft CLW**Sample Length (in./cm.):****Location:****Description:** Dark gray, very Sandy Silt**Liquid Limit:** 206**Plasticity Index:** 86**USCS:** MH**AASHTO:****Figure No.:****Testing Remarks:**

Test Specimen Data

TOTAL SAMPLE	BEFORE TEST	AFTER TEST
Wet w+t = 252.71 g.	Consolidometer # = 2	Wet w+t = 71.22 g.
Dry w+t = 95.14 g.		Dry w+t = 43.67 g.
Tare Wt. = 9.04 g.	Spec. Gravity = 2.70	Tare Wt. = 9.87 g.
Height = 4.85 in.	Height = 1.00 in.	
Diameter = 2.87 in.	Diameter = 2.87 in.	
Weight = 641.96 g.	Defl. Table = n/a	
Moisture = 183.0 %	Ht. Solids = 0.1632 in.	Moisture = 81.5 %
Den. = 77.8 pcf	Dry Wt. = 46.80 g.*	Dry Wt. = 33.80 g.
Den. = 27.5 pcf	Void Ratio = 5.129	Void Ratio = 1.763
	Saturation = 96.3 %	

* Initial dry weight used in calculations

End-of-Load Summary

Pressure (ksf)	Final Dial (in.)	Machine Defl. (in.)	C_v (ft. ² /day)	C_α	Void Ratio	% Compression /Swell
start	0.00000				5.129	
0.25	0.04000	0.00000	0.47	0.000	4.884	4.0 Compr.
0.50	0.16260	0.00000	0.11	0.022	4.132	16.3 Compr.
1.00	0.28230	0.00000	0.01	0.028	3.399	28.2 Compr.
2.00	0.39460	0.00000	0.01	0.046	2.711	39.5 Compr.
4.00	0.47140	0.00000	0.01	0.029	2.240	47.1 Compr.
8.00	0.55410	0.00000	0.01	0.023	1.733	55.4 Compr.
16.00	0.62280	0.00000	0.00	0.038	1.312	62.3 Compr.
8.00	0.60620	0.00000			1.414	60.6 Compr.
2.00	0.58120	0.00000			1.567	58.1 Compr.
0.50	0.54920	0.00000			1.763	54.9 Compr.

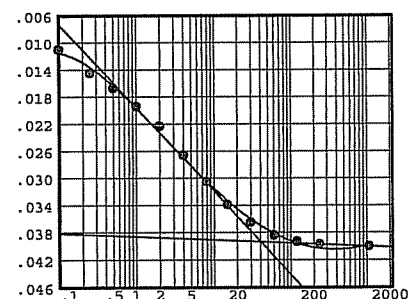
 $C_c = 1.37$ $P_c = 0.83$ ksf $C_r = 0.20$

Pressure: 0.25 ksf

TEST READINGS

Load No. 1

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.00000	11	60.00	0.03840
2	0.10	0.01100	12	120.00	0.03930
3	0.25	0.01450	13	240.00	0.03970
4	0.50	0.01670	14	1075.00	0.04000
5	1.00	0.01940			
6	2.00	0.02230			
7	4.00	0.02660			
8	8.00	0.03050			
9	15.00	0.03390			
10	30.00	0.03650			



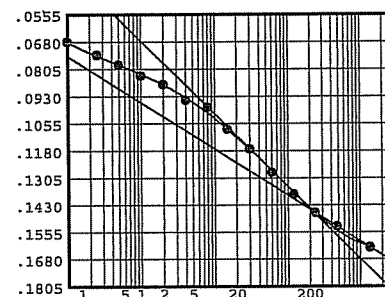
Void Ratio = 4.884 Compression = 4.0 %
 $D_0 = 0.00000$ $D_{50} = 0.01967$ $D_{100} = 0.03934$
 C_v at 1.0 min. = 0.47 ft.²/day $C_\alpha = 0.000$

Pressure: 0.50 ksf

TEST READINGS

Load No. 2

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.04000	11	60.00	0.12800
2	0.10	0.06800	12	120.00	0.13810
3	0.25	0.07400	13	240.00	0.14650
4	0.50	0.07850	14	480.00	0.15290
5	1.00	0.08350	15	1370.00	0.16260
6	2.00	0.08750			
7	4.00	0.09470			
8	8.00	0.09800			
9	15.00	0.10800			
10	30.00	0.11720			



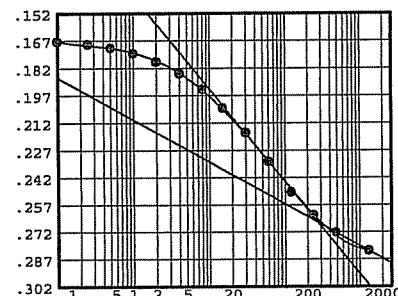
Void Ratio = 4.132 Compression = 16.3 %
 $D_0 = 0.04000$ $D_{50} = 0.09273$ $D_{100} = 0.14546$
 C_v at 3.7 min. = 0.11 ft.²/day $C_\alpha = 0.022$

Pressure: 1.00 ksf

TEST READINGS

Load No. 3

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.16260	11	60.00	0.23310
2	0.10	0.16750	12	120.00	0.25000
3	0.25	0.16900	13	240.00	0.26260
4	0.50	0.17100	14	480.00	0.27220
5	1.00	0.17400	15	1314.00	0.28230
6	2.00	0.17850			
7	4.00	0.18490			
8	8.00	0.19360			
9	15.00	0.20380			
10	30.00	0.21720			



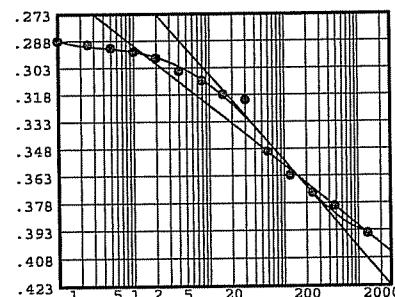
Void Ratio = 3.399 Compression = 28.2 %
 $D_0 = 0.16260$ $D_{50} = 0.21465$ $D_{100} = 0.26669$
 C_v at 25.4 min. = 0.01 ft.²/day $C_\alpha = 0.028$

Pressure: 2.00 ksf

TEST READINGS

Load No. 4

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.28230	11	60.00	0.34960
2	0.10	0.28810	12	120.00	0.36280
3	0.25	0.29010	13	240.00	0.37250
4	0.50	0.29200	14	480.00	0.37970
5	1.00	0.29410	15	1348.00	0.39460
6	2.00	0.29760			
7	4.00	0.30490			
8	8.00	0.31010			
9	15.00	0.31780			
10	30.00	0.32090			



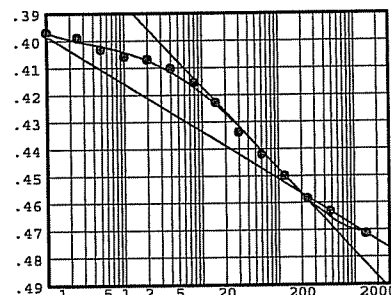
Void Ratio = 2.711 Compression = 39.5 %
 $D_0 = 0.28230$ $D_{50} = 0.32255$ $D_{100} = 0.36281$
 C_v at 19.2 min. = 0.01 ft.²/day $C_\alpha = 0.046$

Pressure: 4.00 ksf

TEST READINGS

Load No. 5

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.39460	11	60.00	0.44200
2	0.10	0.39700	12	120.00	0.45000
3	0.25	0.39900	13	240.00	0.45840
4	0.50	0.40330	14	480.00	0.46310
5	1.00	0.40590	15	1422.00	0.47140
6	2.00	0.40690			
7	4.00	0.41020			
8	8.00	0.41540			
9	15.00	0.42280			
10	30.00	0.43380			



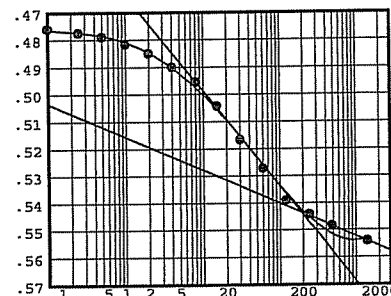
Void Ratio = 2.240 Compression = 47.1 %
 $D_0 = 0.39460$ $D_{50} = 0.42543$ $D_{100} = 0.45625$
 C_v at 17.7 min. = 0.01 ft.²/day $C_\alpha = 0.029$

Pressure: 8.00 ksf

TEST READINGS

Load No. 6

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.47140	11	60.00	0.52720
2	0.10	0.47600	12	120.00	0.53900
3	0.25	0.47750	13	240.00	0.54420
4	0.50	0.47900	14	480.00	0.54840
5	1.00	0.48170	15	1403.00	0.55410
6	2.00	0.48500			
7	4.00	0.49000			
8	8.00	0.49540			
9	15.00	0.50430			
10	30.00	0.51660			



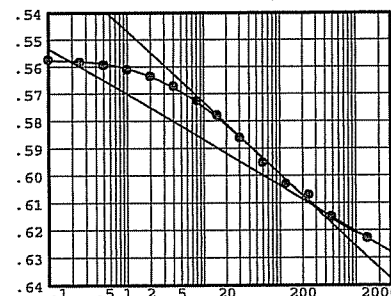
Void Ratio = 1.733 Compression = 55.4 %
 $D_0 = 0.47140$ $D_{50} = 0.50744$ $D_{100} = 0.54349$
 C_v at 17.2 min. = 0.01 ft.²/day $C_\alpha = 0.023$

Pressure: 16.00 ksf

TEST READINGS

Load No. 7

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.55410	11	60.00	0.59520
2	0.10	0.55740	12	120.00	0.60300
3	0.25	0.55830	13	240.00	0.60710
4	0.50	0.55930	14	480.00	0.61500
5	1.00	0.56110	15	1401.00	0.62280
6	2.00	0.56350			
7	4.00	0.56710			
8	8.00	0.57250			
9	15.00	0.57790			
10	30.00	0.58610			



Void Ratio = 1.312 Compression = 62.3 %

 $D_0 = 0.55410$ $D_{50} = 0.58249$ $D_{100} = 0.61089$ C_v at 21.9 min. = 0.00 ft.²/day $C_\alpha = 0.038$

Pressure: 8.00 ksf

TEST READINGS

Load No. 8

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.62280	11	60.00	0.60750
2	0.10	0.61450	12	120.00	0.60720
3	0.25	0.61330	13	240.00	0.60690
4	0.50	0.61280	14	480.00	0.60660
5	1.00	0.61230	15	1441.00	0.60620
6	2.00	0.61180			
7	4.00	0.61090			
8	8.00	0.61000			
9	15.00	0.60910			
10	30.00	0.60820			

Void Ratio = 1.414 Compression = 60.6 %

Pressure: 2.00 ksf

TEST READINGS

Load No. 9

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.60620	11	60.00	0.58970
2	0.10	0.60380	12	120.00	0.58710
3	0.25	0.60300	13	240.00	0.58510
4	0.50	0.60260	14	1423.00	0.58120
5	1.00	0.60220			
6	2.00	0.60110			
7	4.00	0.59980			
8	8.00	0.59800			
9	15.00	0.59570			
10	30.00	0.59320			

Void Ratio = 1.567 Compression = 58.1 %

Pressure: 0.50 ksf

TEST READINGS

Load No. 10

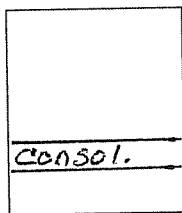
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.58120	11	60.00	0.56850
2	0.10	0.57980	12	120.00	0.56410
3	0.25	0.57960	13	240.00	0.55900
4	0.50	0.57930	14	480.00	0.55450
5	1.00	0.57910	15	1405.00	0.54920
6	2.00	0.57870			
7	4.00	0.57780			
8	8.00	0.57660			
9	15.00	0.57510			
10	30.00	0.57230			

Void Ratio = 1.763 Compression = 54.9 %

Oedometer Settlement Tests

Sample details

Sketch showing specimen location in original Sample



Depth Elev. -26.8
Description: Gray inorganic clay with slight sand content.

Type Undisturbed
Height H_0 (in) 1
Diameter D_0 (in) 2.5
Weight W_0 (gr) 107.5
Bulk Density ρ (PCF) 83.43
Particle Density ρ_s 2.61 (measured)

Initial Conditions

Settlement Channel consol #1
Moisture Content w_0 % 117.5
Dry Density ρ_d (PCF) 38.35
Voids Ratio e_0 3.2464
Deg of Saturation S_0 % 94.5
Swelling Pressure S_s (TSF)

Final Conditions

Moisture Content w_f % 78.0
Dry Density ρ_d (PCF) 63.87
Voids Ratio e_f 1.5499
Deg of Saturation S_f % 100.00
Settlement: (in) 0.40
Compression Index C_c

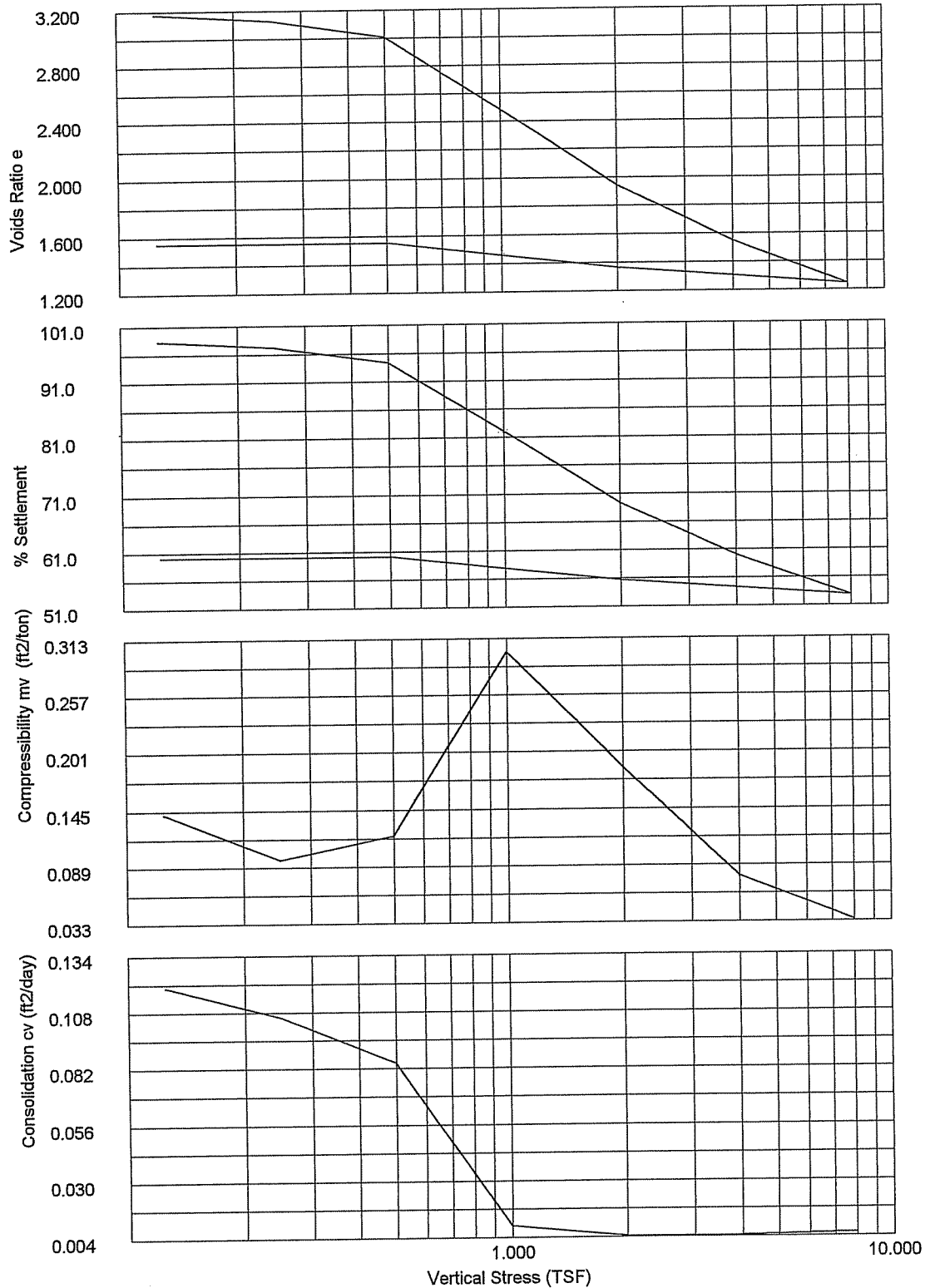
Notes:

Atterberg Limits- LL: 136 PL: 38 PI: 97, Wash 200: 94.7% passing.

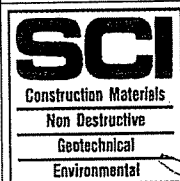
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol. #1
			Date of Test:	7/7/2003
	Site Reference: Charleston Naval Base Container		Sample:	UD-2
	Jobfile: C:WINCLISP\CNB.JOB		Borehole:	PAW-8
Operator: <i>General M. Stur</i>		Checked: <i>David T. Hal</i>	Approved: <i>[Signature]</i>	

Oedometer Settlement Tests



Soil Consultants, Inc.



ASTM D2435-96

Test name Consol. #1

Date of Test: 7/7/2003

Site Reference: Charleston Naval Base Container

Sample: UD-2

Jobfile: C:\WINCLISP\CNB.JOB

Borehole: PAW-8

Operator:

Checked:

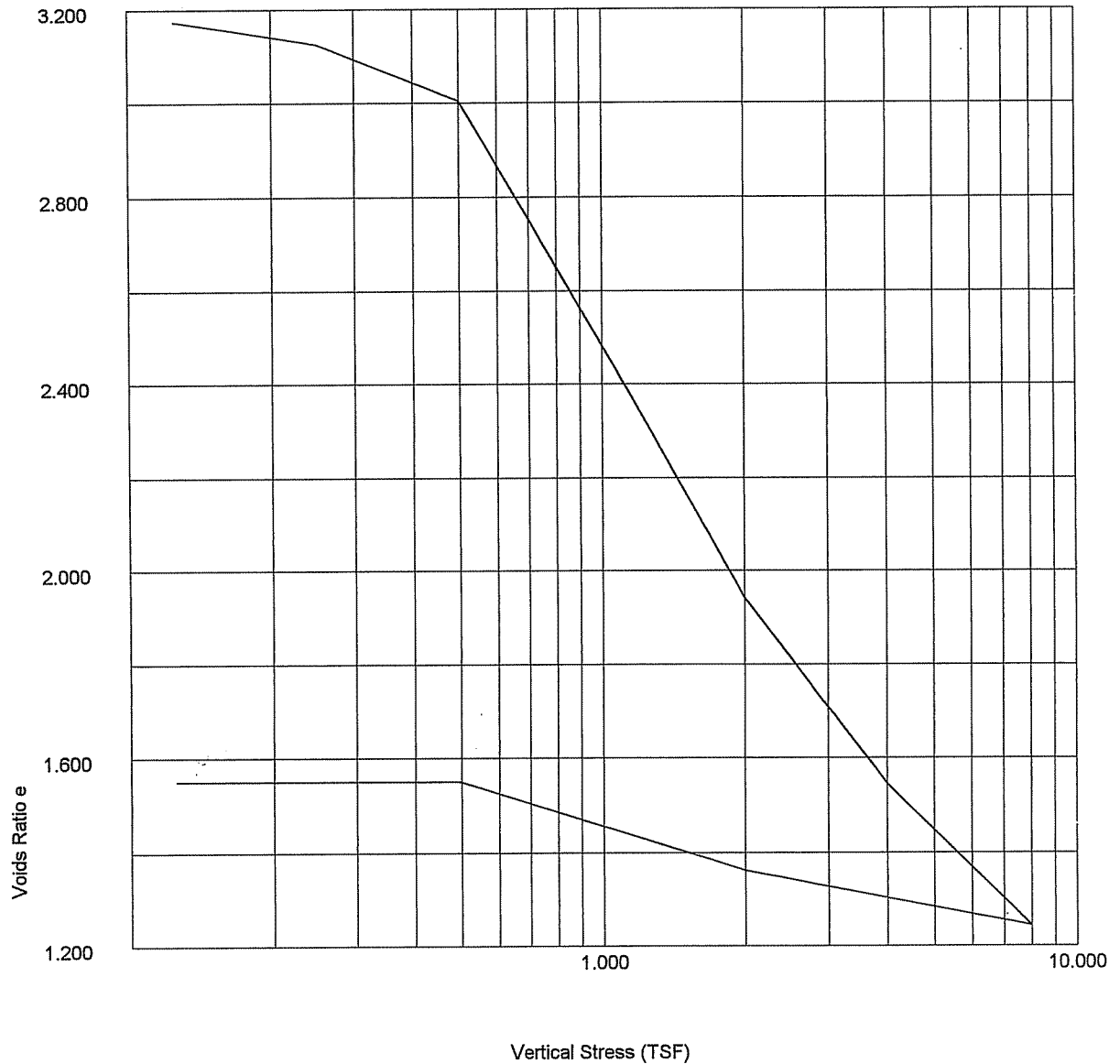
Approved:

[Signature]

[Signature]

[Signature]

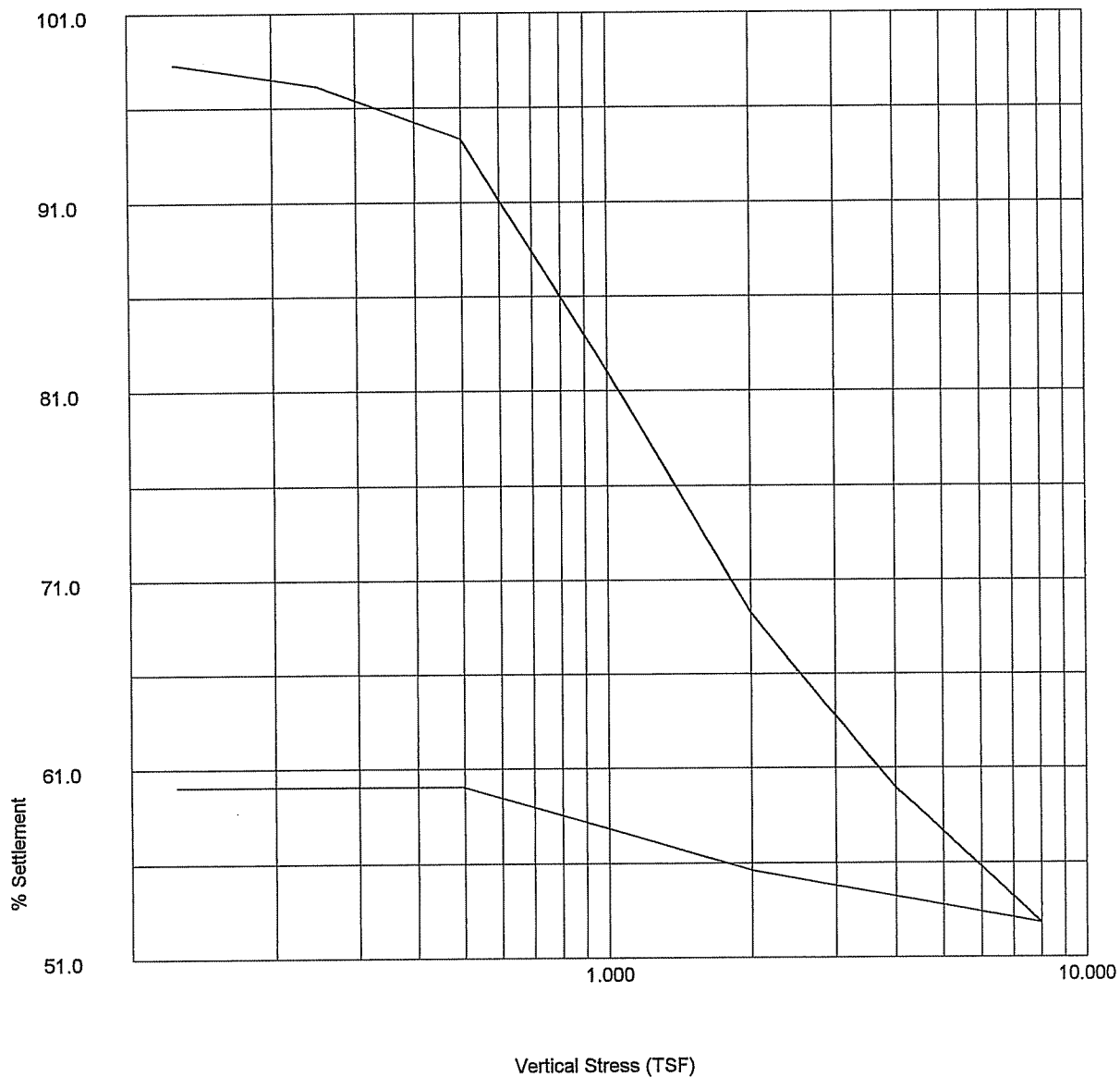
Oedometer Settlement Tests



Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol. #1
			Date of Test:	7/7/2003
	Site Reference:	Charleston Naval Base Container	Sample:	UD-2
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAW-8
	Operator:	Spencer M. Stur	Checked:	Bail - Kel
		Approved:	N. Stur	

Oedometer Settlement Tests



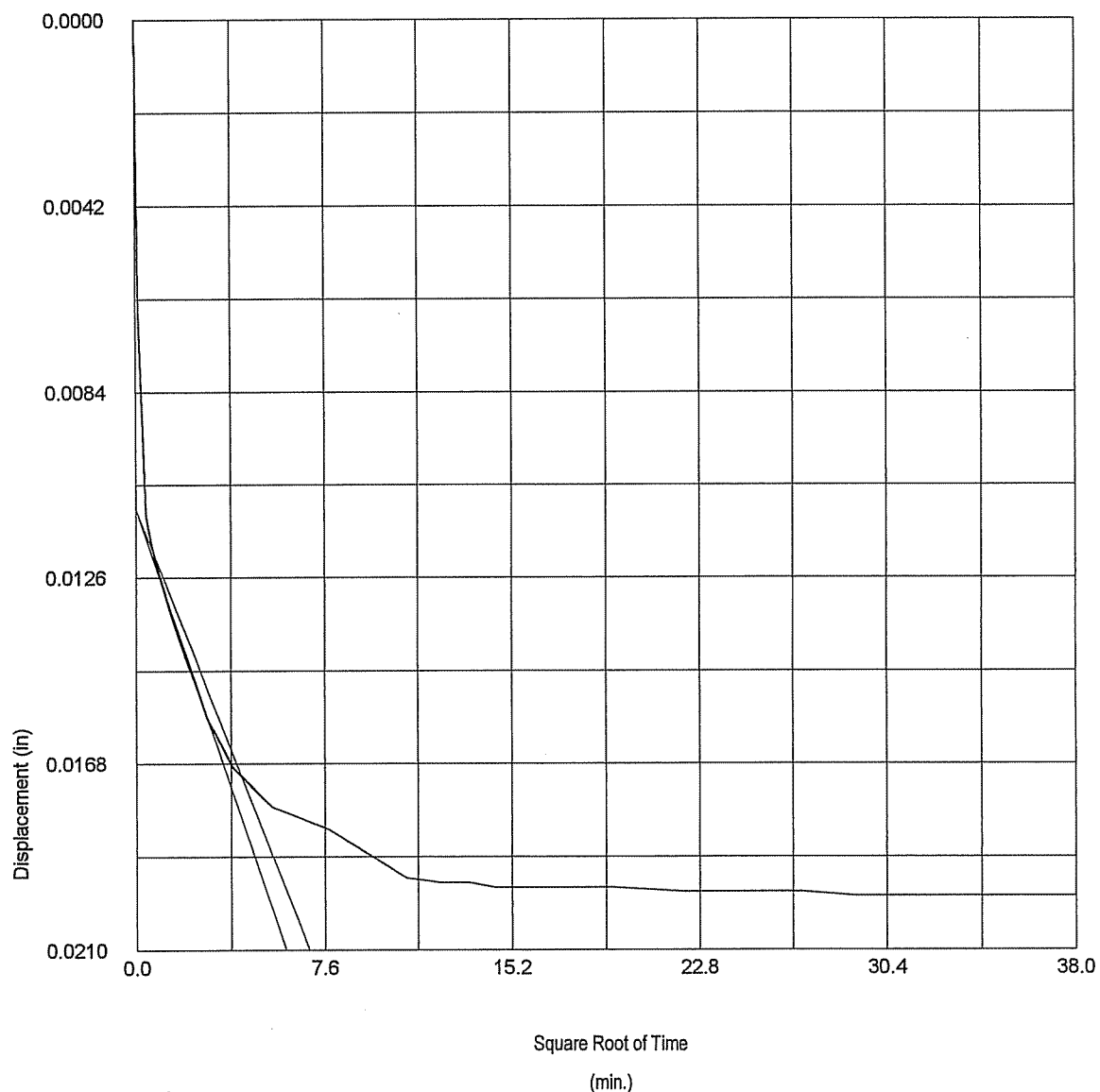
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol. #1
			Date of Test:	7/7/2003
	Site Reference:	Charleston Naval Base Container	Sample:	UD-2
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAW-8
	Operator:	<i>Syenne M. Stur</i>	Checked:	<i>Dail & Hal</i>
		Approved:	<i>[Signature]</i>	

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	0.125
Initial Temp oC	20.0
Correction (in)	0.0025
Displacement (in)	0.0198
Voids Ratio e_0	3.1729
Final Temp oC	
t_{90} (mins)	17.4
c_v (ft ² /day)	0.12
m_v (ft ² /ton)	0.141
Sec Compression C_{sec}	



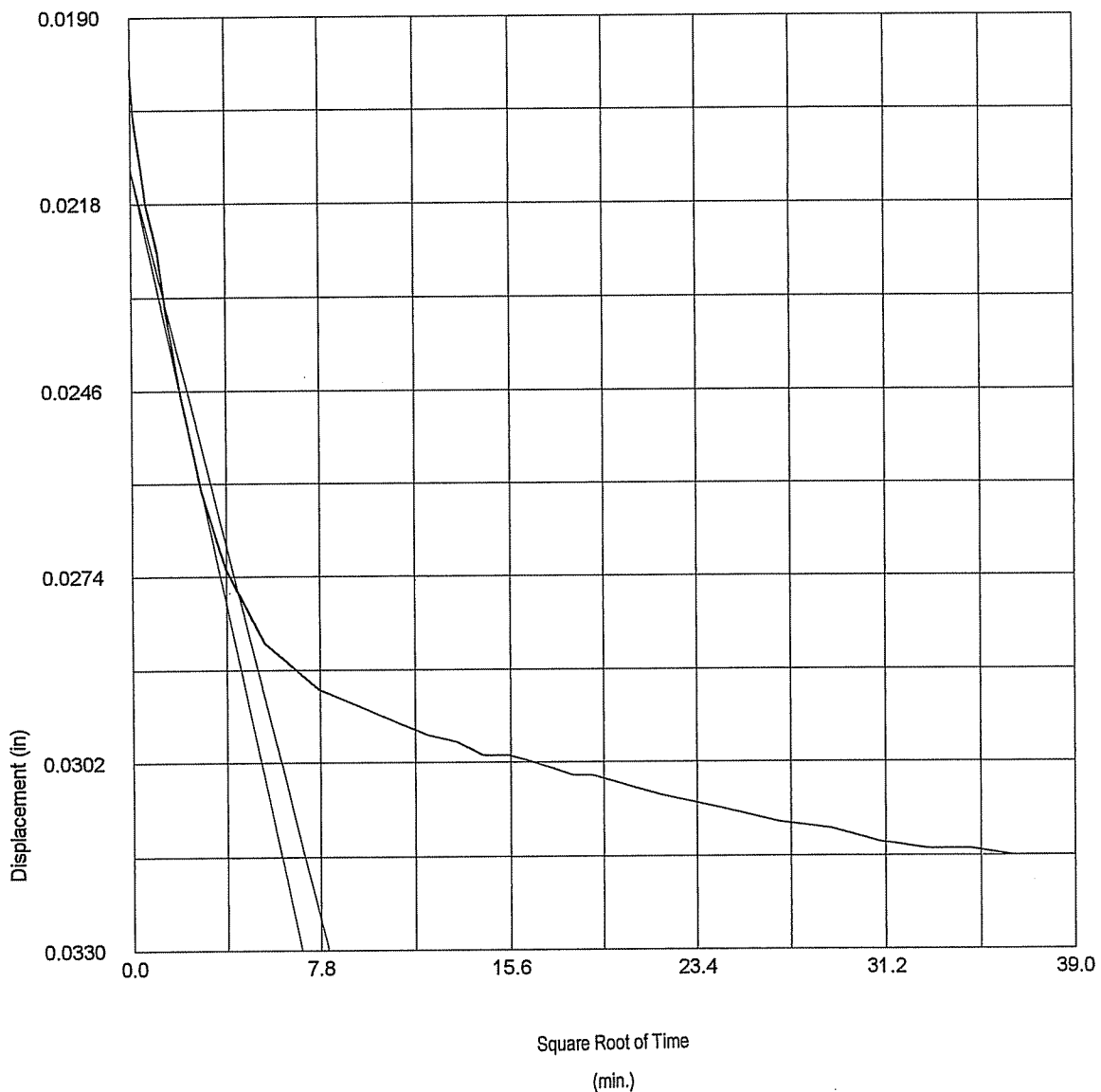
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol. #1
			Date of Test:	7/7/2003
	Site Reference:	Charleston Naval Base Container	Sample:	UD-2
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAW-8
	Operator:	Shanne McStu	Checked:	Dail J. Hall
		Approved:	N. K. H. 26	

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	0.250
Initial Temp oC	20.0
Correction (in)	0.0027
Displacement (in)	0.0118
Voids Ratio e_0	3.1237
Final Temp oC	
t_{90} (mins)	19.1
c_v (ft ² /day)	0.106
m_v (ft ² /ton)	0.096
Sec Compression C_{sec}	



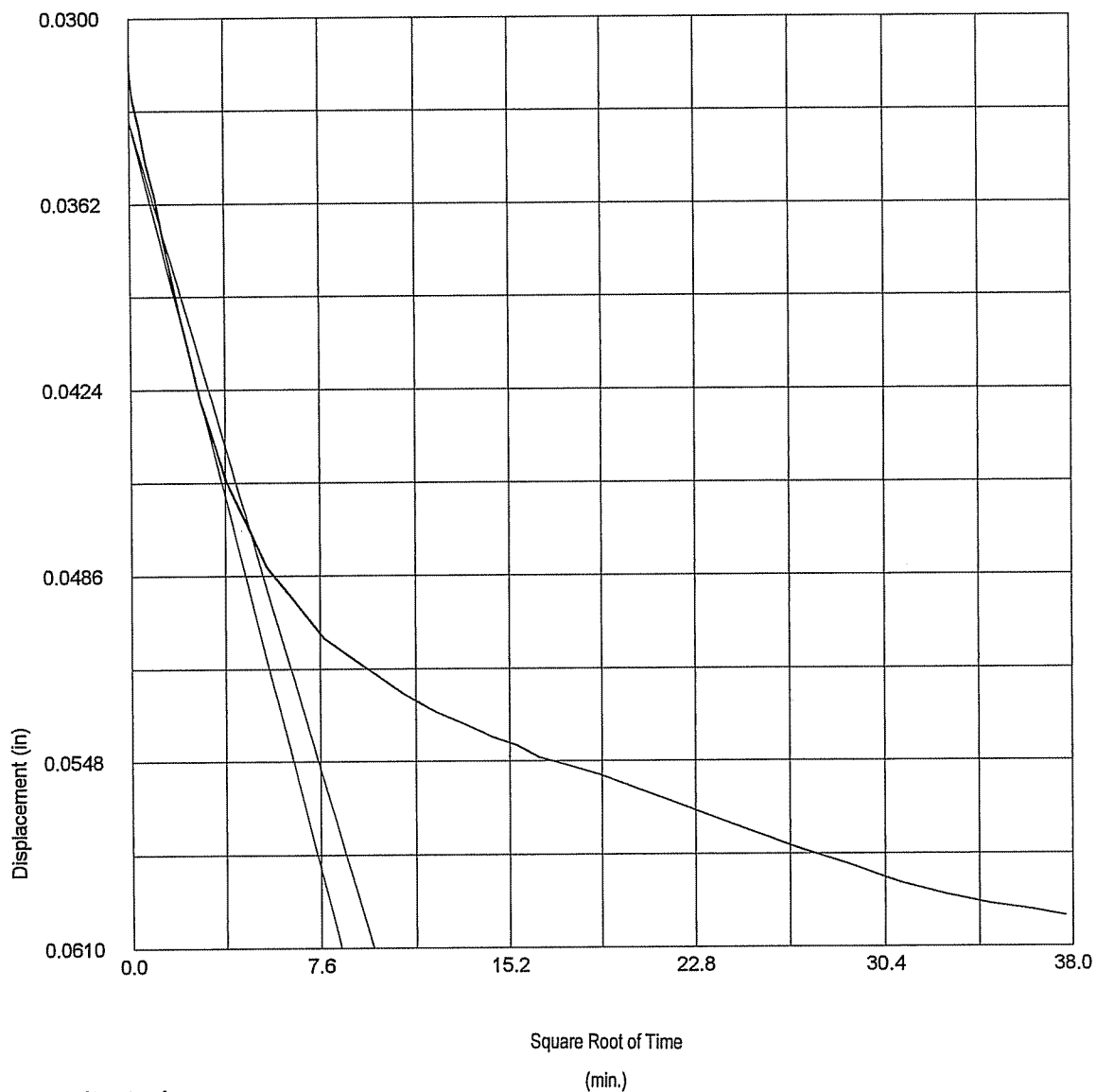
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96	Test name	Consol. #1
		Date of Test:	7/7/2003
	Site Reference: Charleston Naval Base Container	Sample:	UD-2
	Jobfile: C:\WINCLISP\CNB.JOB	Borehole:	PAW-8
	Operator: <i>Seann M. Stur</i>	Checked: <i>Dail T. Hall</i>	Approved: <i>[Signature]</i>

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	0.500
Initial Temp oC	20.0
Correction (in)	0.0031
Displacement (in)	0.0284
Void Ratio e_0	3.0048
Final Temp oC	
t_{90} (mins)	22.9
c_v (ft ² /day)	0.085
m_v (ft ² /ton)	0.119
Sec Compression C_{sec}	



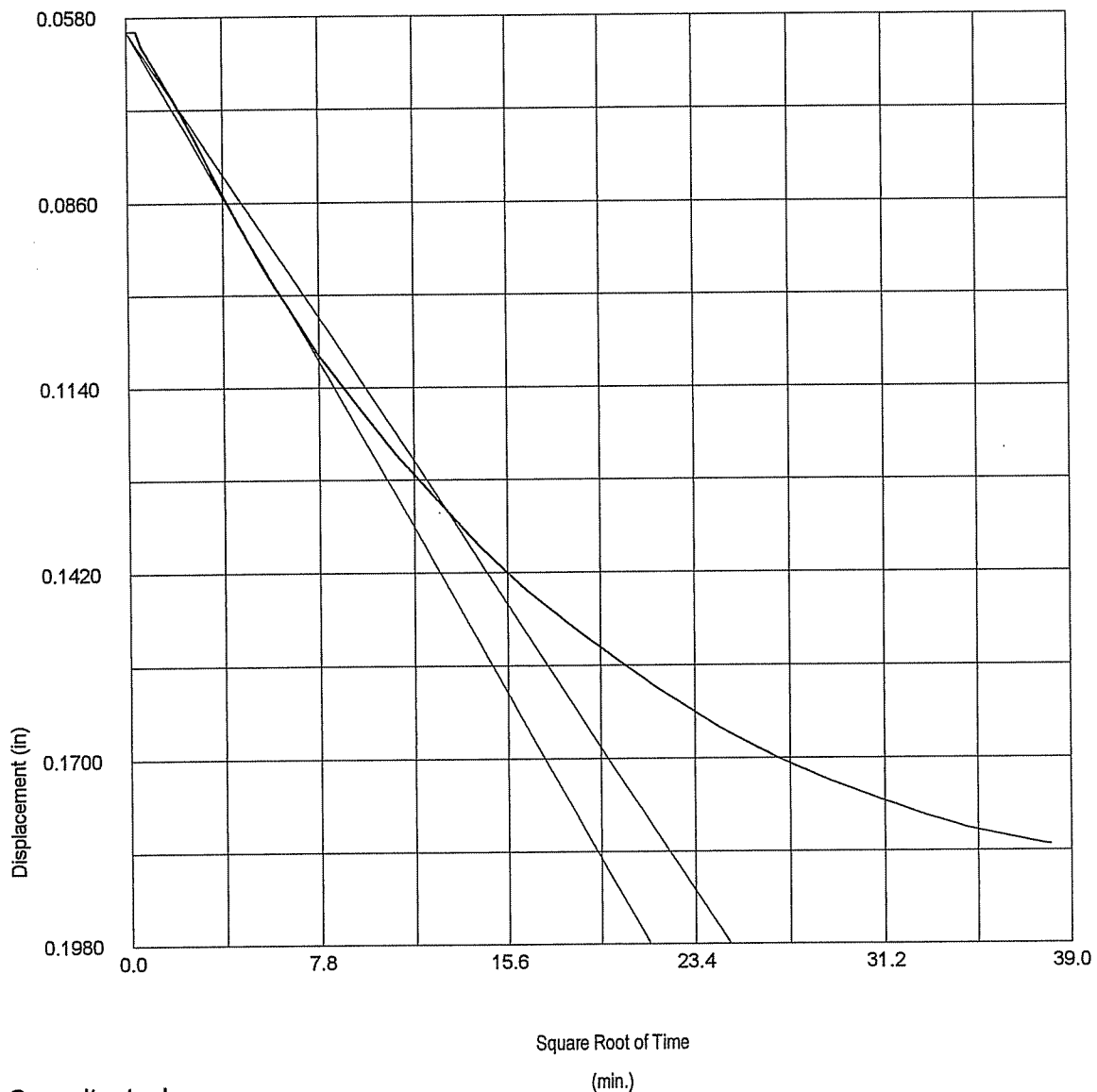
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol. #1
			Date of Test:	7/7/2003
	Site Reference: Charleston Naval Base Container		Sample:	UD-2
	Jobfile: C:\WINCLISP\CNB.JOB		Borehole:	PAW-8
	Operator:	Checked:	Approved:	
<i>James M. Shurtliff</i>		<i>David T. Hall</i>		<i>PAW-8</i>

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	1.000
Initial Temp oC	20.0
Correction (in)	0.0036
Displacement (in)	0.123
Voids Ratio e_0	2.4837
Final Temp oC	
t_{90} (mins)	171.9
c_v (ft ² /day)	0.01
m_v (ft ² /ton)	0.299
Sec Compression C_{sec}	



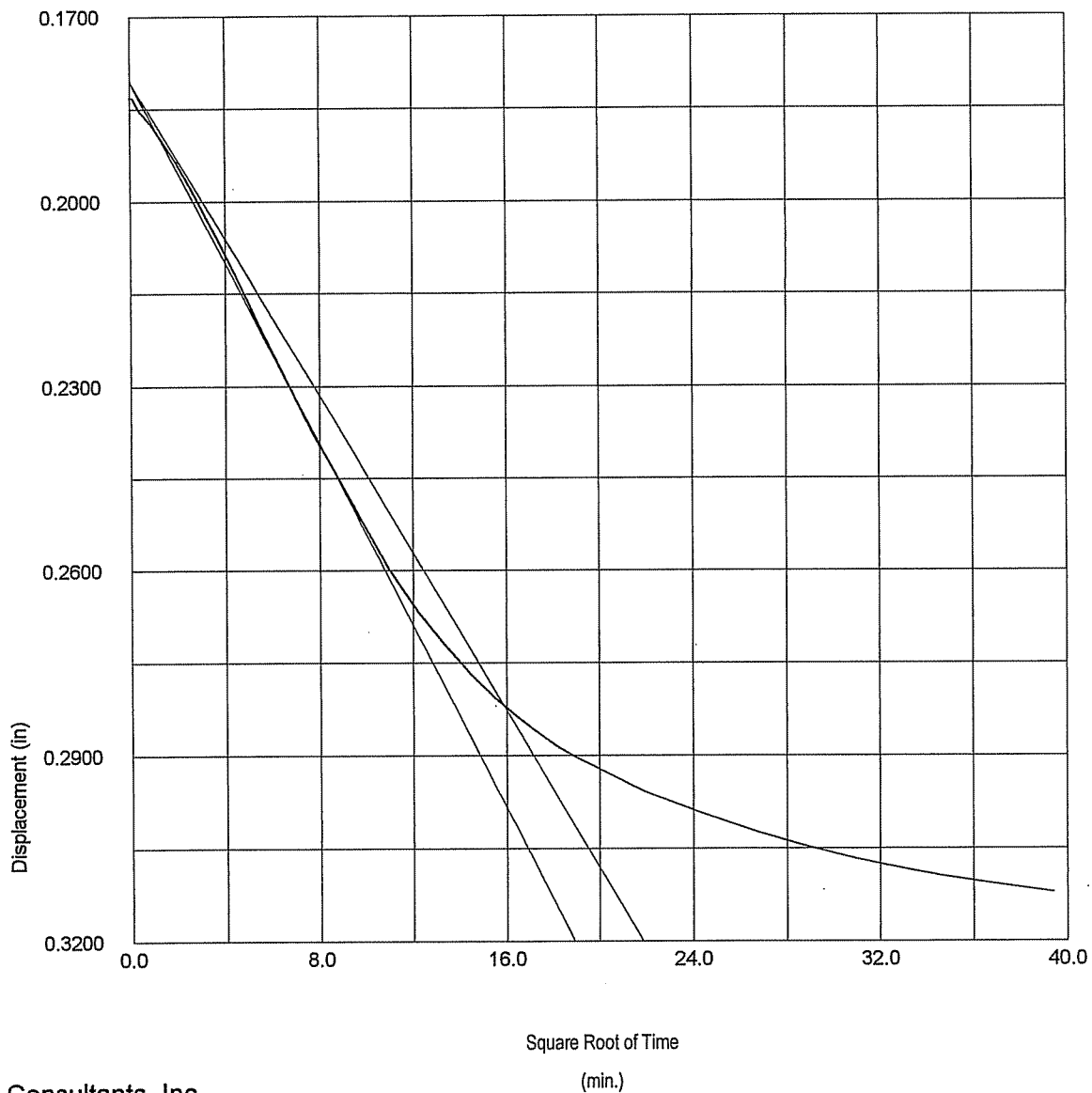
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96	Test name	Consol. #1
		Date of Test:	7/7/2003
	Site Reference: Charleston Naval Base Container	Sample:	UD-2
	Jobfile: C:\WINCLISP\CNB.JOB	Borehole:	PAW-8
Operator: <i>Janne M. Stur</i>	Checked: <i>Dail T. Hall</i>	Approved: <i>N. Stur</i>	

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	2.000
Initial Temp oC	20.0
Correction (in)	0.0046
Displacement (in)	0.129
Voids Ratio e_0	1.9402
Final Temp oC	
t_{90} (mins)	252.2
c_v (ft ² /day)	0.005
m_v (ft ² /ton)	0.185
Sec Compression C_{sec}	



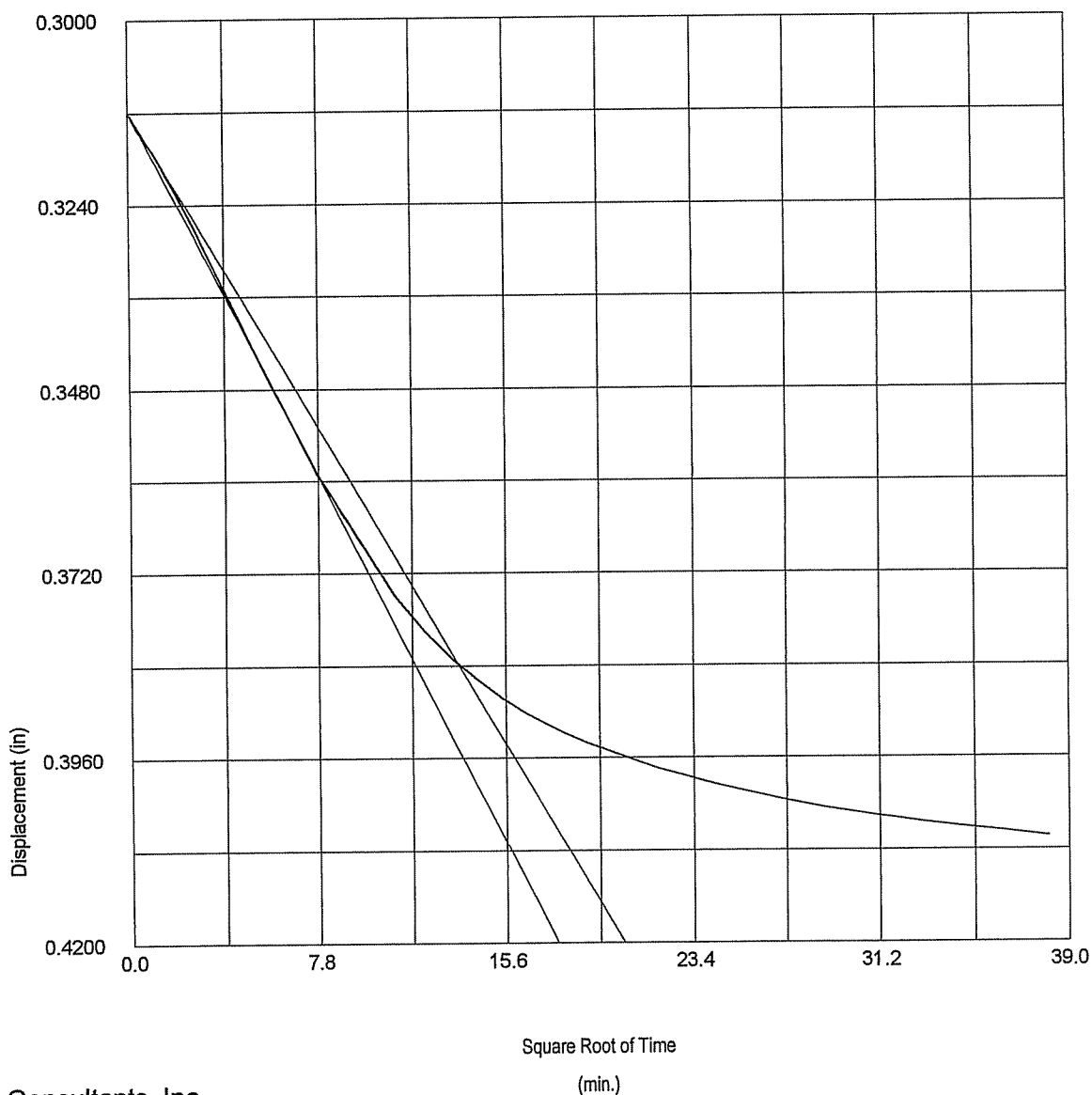
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96	Test name	Consol. #1
	Site Reference: Charleston Naval Base Container	Date of Test:	7/7/2003
	Jobfile: C:\WINCLISP\CNB.JOB	Sample:	UD-2
	Operator: <i>Janne M. St...</i>	Borehole:	PAW-8
	Checked: <i>David T. Hal</i>	Approved: <i>R. M. St...</i>	

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	4.000
Initial Temp oC	20.0
Correction (in)	0.0058
Displacement (in)	0.0942
Voids Ratio e_0	1.5453
Final Temp oC	
t_{90} (mins)	188.7
c_v (ft ² /day)	0.005
m_v (ft ² /ton)	0.078
Sec Compression C_{sec}	



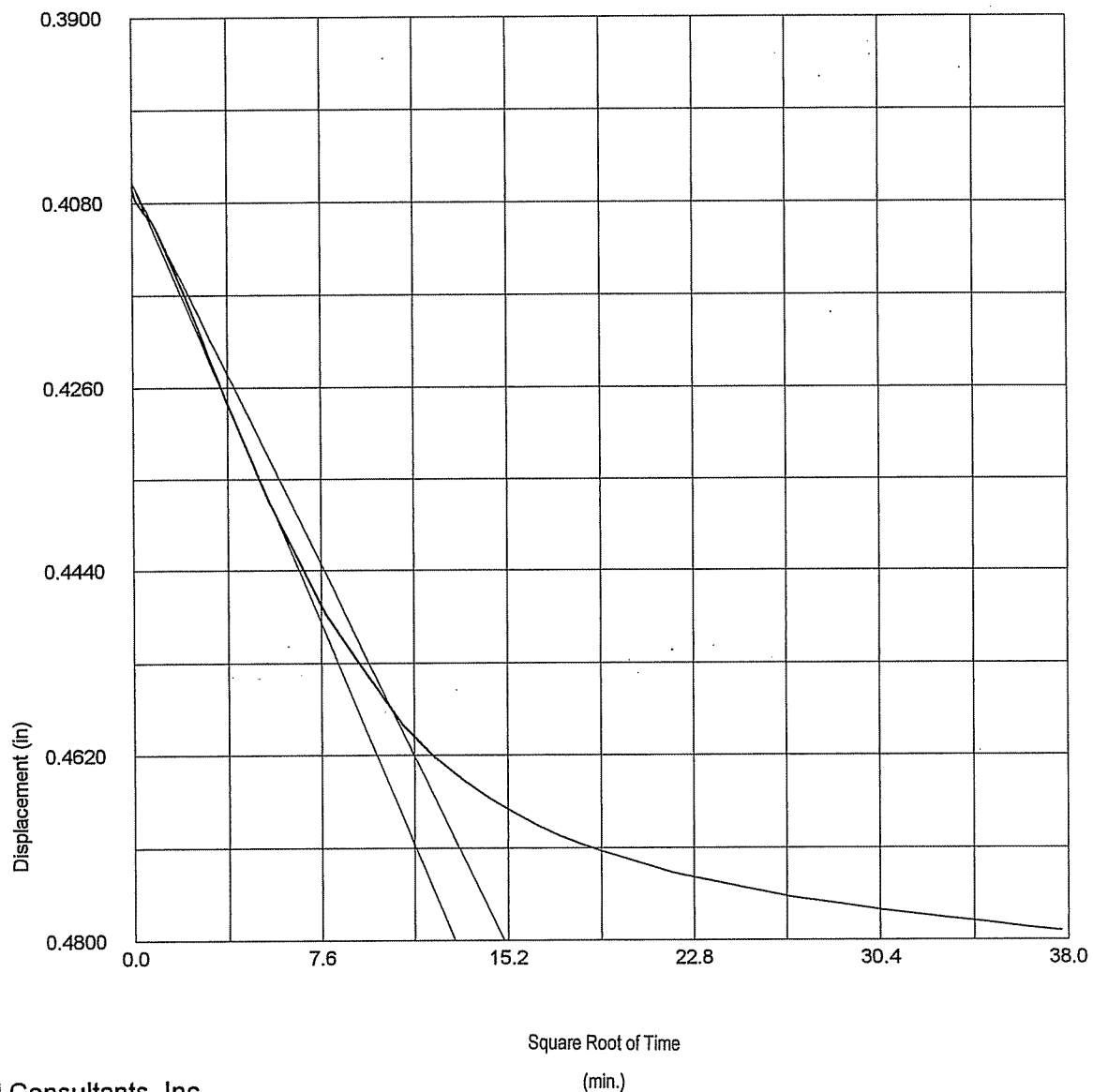
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96	Test name	Consol. #1	
		Date of Test:	7/7/2003	
	Site Reference:	Charleston Naval Base Container	Sample:	UD-2
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAW-8
	Operator:	Spencer M. St. Clair	Checked:	David J. Hel
		Approved:	11/10/03	

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	8.000
Initial Temp oC	20.0
Correction (in)	0.0072
Displacement (in)	0.0728
Voids Ratio e_0	1.2421
Final Temp oC	
t_{90} (mins)	111.2
c_v (ft ² /day)	0.006
m_v (ft ² /ton)	0.034
Sec Compression C_{sec}	



Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96	Test name	Consol. #1	
		Date of Test:	7/7/2003	
	Site Reference:	Charleston Naval Base Container	Sample:	UD-2
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAW-8
	Operator:	Ganne M. Sturdivant	Checked:	J. Hel
		Approved:	[Signature]	

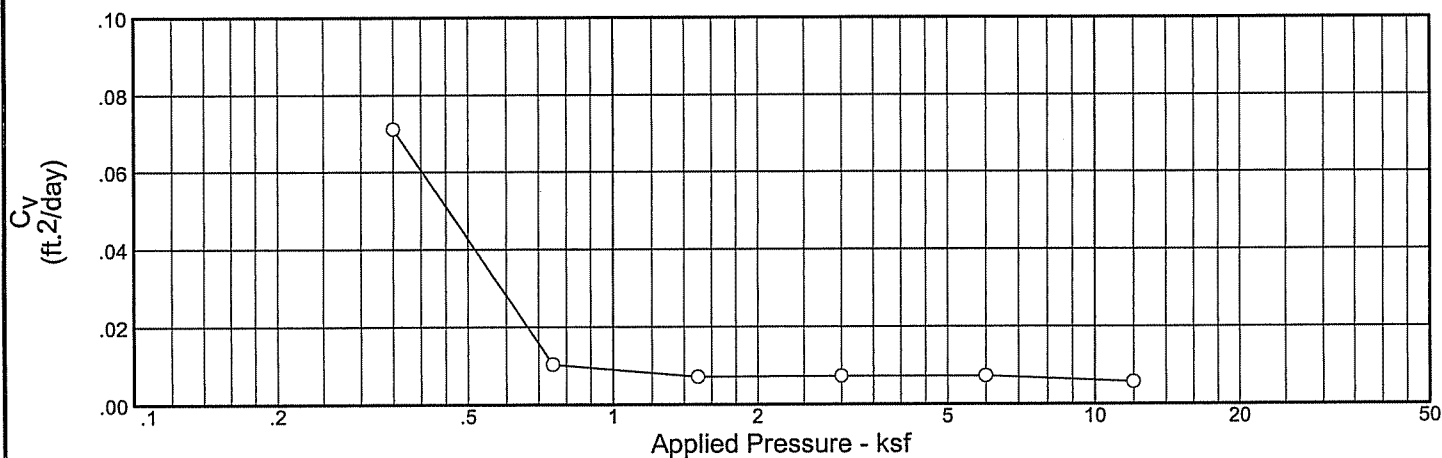
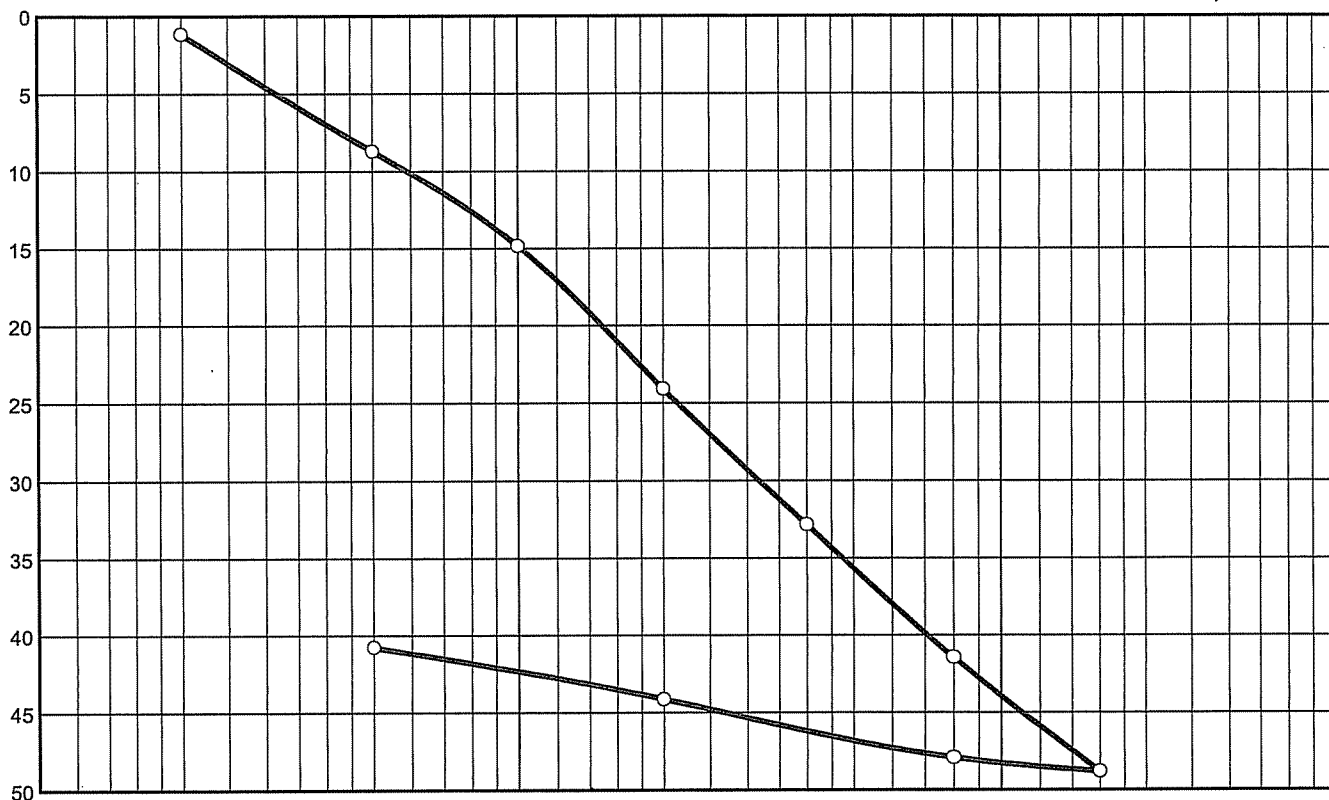
Oedometer Settlement Tests

Stress (TSF)	Initial Temp. oC	Settlement Total (in)	Cal Corr. (in)	Final Temp. oC	Voids Ratio e_f	t_{90} (mins)	Secondary Compr C_{sec}	c_v (ft ² /day)	m_v (ft ² /ton)
0.125	20.0	0.0173	0.0025	20.0	3.1729	17.4		0.120	0.141
0.250	20.0	0.0289	0.0027	20.0	3.1237	19.1		0.106	0.096
0.500	20.0	0.0569	0.0031	20.0	3.0048	22.9		0.085	0.119
1.000	20.0	0.1796	0.0036	20.0	2.4837	171.9		0.010	0.299
2.000	20.0	0.3076	0.0046	20.0	1.9402	252.2		0.005	0.185
4.000	20.0	0.4006	0.0058	20.0	1.5453	188.7		0.005	0.078
8.000	20.0	0.4720	0.0072	20.0	1.2421	111.2		0.006	0.034
2.000	20.0	0.4441	0.0046	20.0	1.3606				0.008
0.500	20.0	0.3998	0.0038	20.0	1.5487				0.049
0.125	20.0	0.3995	0.0029	20.0	1.5499				0.001

Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol. #1
			Date of Test:	7/7/2003
	Site Reference: Charleston Naval Base Container		Sample:	UD-2
	Jobfile: C:\WINCLISP\CNB.JOB		Borehole:	PAW-8
Operator: <i>Jeanne H. St...</i>		Checked: <i>Dail J. Hall</i>	Approved: <i>[Signature]</i>	

Percent Strain



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (ksf)	P _c (ksf)	C _c	C _r	Initial Void Ratio
Saturation	Moisture									
100.0 %	133.0 %	36.7	198	146	2.66		0.37	1.10	0.22	3.525

MATERIAL DESCRIPTION	USCS	AASHTO
Dark gray, slightly Sandy Clay	CH	

Project No. 1131-03-264	Client: SCSPA
Project: Charleston Navy Base Container Terminal North Charleston, SC	
Source: PAW-11	Sample No.: UD-1
Elev./Depth: -30.1to-32.1 CLW	

CONSOLIDATION TEST REPORT

S & ME, Inc.

Remarks:

Plate

Dial Reading vs. Time

Project No.: 1131-03-264

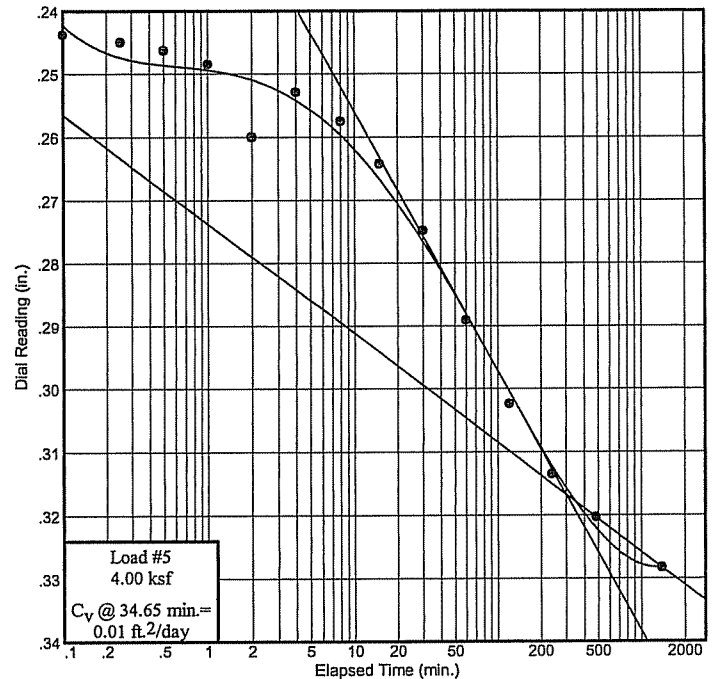
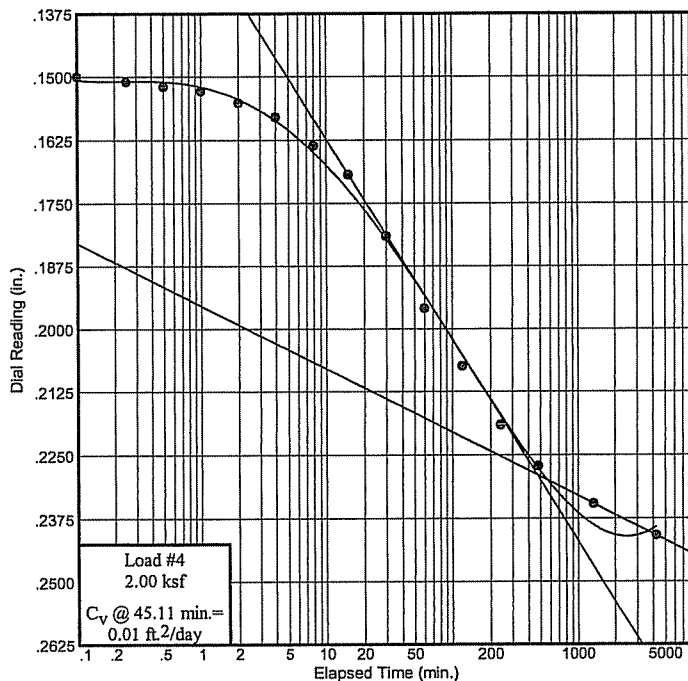
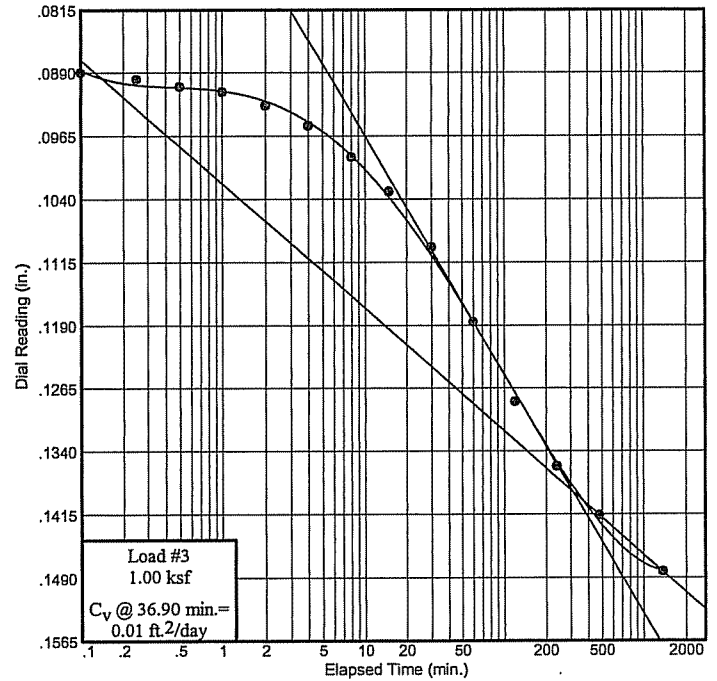
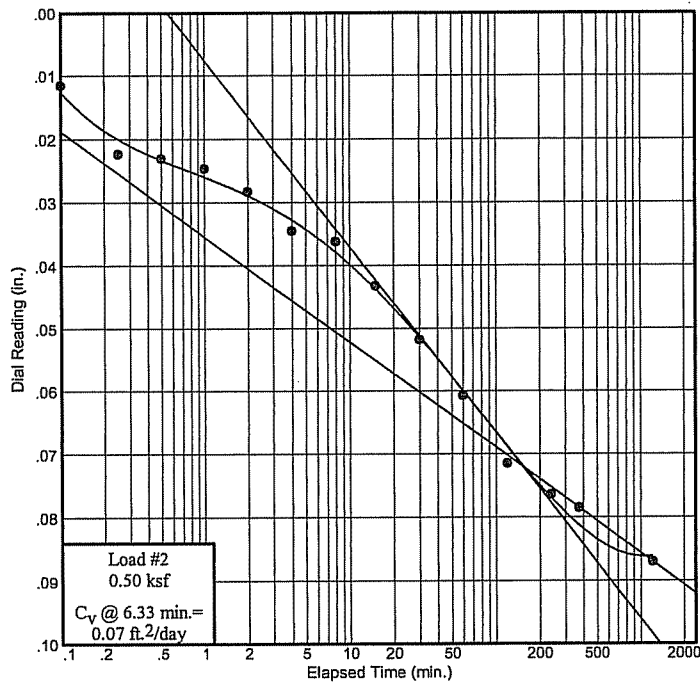
Project: Charleston Navy Base Container Terminal

North Charleston, SC

Source: PAW-11

Sample No.: UD-1

Elev./Depth: -30.1to-32.1 CLW



Dial Reading vs. Time
S & ME, Inc.

Plate

Dial Reading vs. Time

Project No.: 1131-03-264

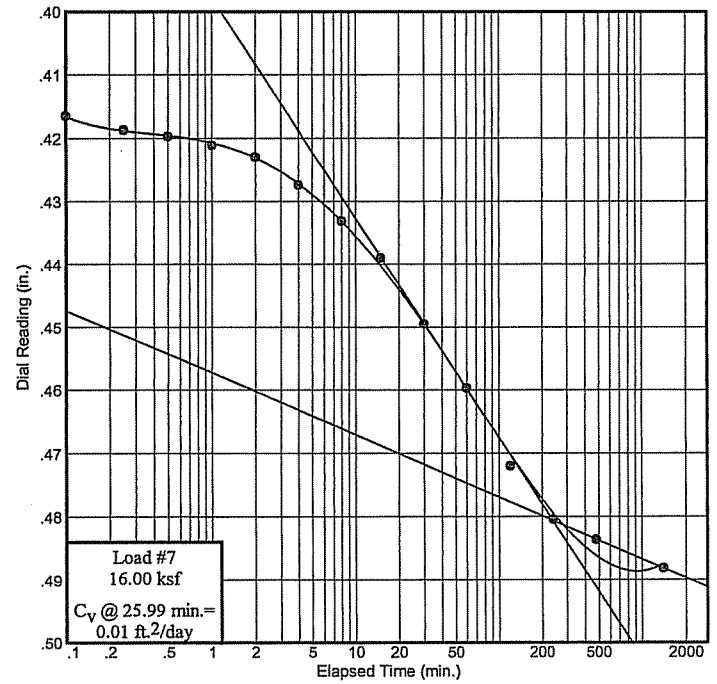
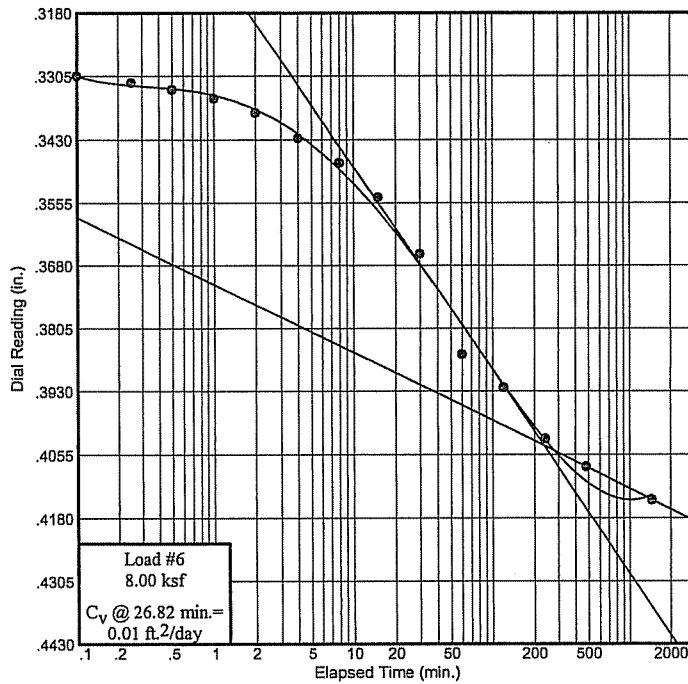
Project: Charleston Navy Base Container Terminal

North Charleston, SC

Source: PAW-11

Sample No.: UD-1

Elev./Depth: -30.1to-32.1 CLW



Dial Reading vs. Time

S & ME, Inc.

Plate

CONSOLIDATION TEST DATA

Client: SCSPA
Project: Charleston Navy Base Container Terminal
 North Charleston, SC
Project Number: 1131-03-264

Sample Data

Source: PAW-11
Sample No.: UD-1
Elev. or Depth: -30.1to-32.1 CLW **Sample Length (in./cm.):**
Location:
Description: Dark gray, slightly Sandy Clay
Liquid Limit: 198 **Plasticity Index:** 146
USCS: CH **AASHTO:** **Figure No.:**
Testing Remarks:

Test Specimen Data

TOTAL SAMPLE	BEFORE TEST	AFTER TEST
Wet w+t = 303.85 g.	Consolidometer # = 1	Wet w+t = 200.05 g.
Dry w+t = 135.68 g.		Dry w+t = 166.27 g.
Tare Wt. = 9.19 g.	Spec. Gravity = 2.66	Tare Wt. = 110.46 g.
Height = 4.51 in.	Height = 1.00 in.	
Diameter = 2.87 in.	Diameter = 2.87 in.	
Weight = 652.70 g.	Defl. Table = n/a	
Moisture = 133.0 %	Ht. Solids = 0.2210 in.	Moisture = 60.5 %
W Den. = 85.5 pcf	Dry Wt. = 62.10 g.*	Dry Wt. = 55.81 g.
1 Den. = 36.7 pcf	Void Ratio = 3.525	Void Ratio = 1.680
	Saturation = 100.0 %	

* Initial dry weight used in calculations

End-of-Load Summary

Pressure (ksf)	Final Dial (in.)	Machine Defl. (in.)	C_v (ft. ² /day)	C_α	Void Ratio	% Compression /Swell
start	0.00000				3.525	
0.20	0.01160	0.00000			3.473	1.2 Compr.
0.50	0.08700	0.00000	0.07	0.017	3.132	8.7 Compr.
1.00	0.14830	0.00000	0.01	0.016	2.854	14.8 Compr.
2.00	0.24090	0.00000	0.01	0.015	2.435	24.1 Compr.
4.00	0.32830	0.00000	0.01	0.023	2.040	32.8 Compr.
8.00	0.41440	0.00000	0.01	0.020	1.650	41.4 Compr.
16.00	0.48820	0.00000	0.01	0.017	1.316	48.8 Compr.
8.00	0.47920	0.00000			1.357	47.9 Compr.
2.00	0.44140	0.00000			1.528	44.1 Compr.
0.50	0.40780	0.00000			1.680	40.8 Compr.

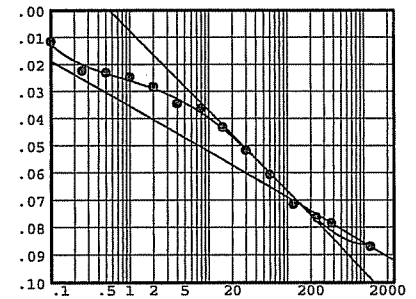
$C_c = 1.10$ $P_c = 0.37$ ksf $C_r = 0.22$

Pressure: 0.50 ksf

TEST READINGS

Load No. 2

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.00000	11	60.00	0.06070
2	0.10	0.01160	12	120.00	0.07150
3	0.25	0.02240	13	240.00	0.07640
4	0.50	0.02310	14	375.00	0.07850
5	1.00	0.02470	15	1210.00	0.08700
6	2.00	0.02830			
7	4.00	0.03450			
8	8.00	0.03620			
9	15.00	0.04320			
10	30.00	0.05180			



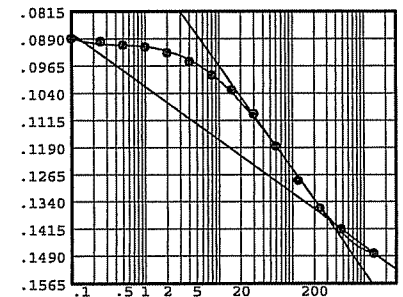
Void Ratio = 3.132 Compression = 8.7 %
 $D_0 = 0.00000$ $D_{50} = 0.03600$ $D_{100} = 0.07199$
 C_v at 6.3 min. = 0.07 ft.²/day $C_\alpha = 0.017$

Pressure: 1.00 ksf

TEST READINGS

Load No. 3

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.08700	11	60.00	0.11860
2	0.10	0.08900	12	120.00	0.12810
3	0.25	0.08980	13	240.00	0.13580
4	0.50	0.09070	14	480.00	0.14160
5	1.00	0.09130	15	1370.00	0.14830
6	2.00	0.09290			
7	4.00	0.09530			
8	8.00	0.09900			
9	15.00	0.10310			
10	30.00	0.10970			



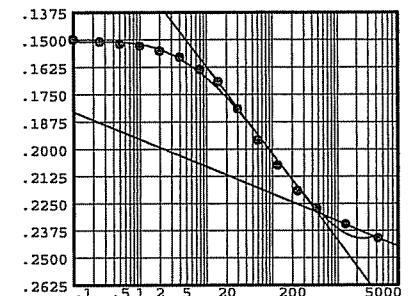
Void Ratio = 2.854 Compression = 14.8 %
 $D_0 = 0.08700$ $D_{50} = 0.11292$ $D_{100} = 0.13884$
 C_v at 36.9 min. = 0.01 ft.²/day $C_\alpha = 0.016$

Pressure: 2.00 ksf

TEST READINGS

Load No. 4

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.14830	11	60.00	0.19590
2	0.10	0.15000	12	120.00	0.20740
3	0.25	0.15100	13	240.00	0.21910
4	0.50	0.15200	14	480.00	0.22720
5	1.00	0.15290	15	1333.00	0.23460
6	2.00	0.15520	16	4244.00	0.24090
7	4.00	0.15800			
8	8.00	0.16360			
9	15.00	0.16930			
10	30.00	0.18150			



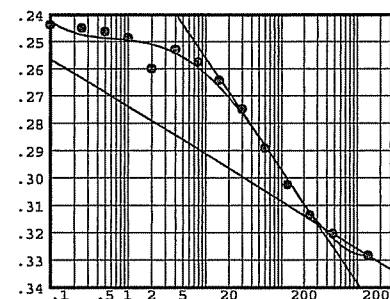
Void Ratio = 2.435 Compression = 24.1 %
 $D_0 = 0.14830$ $D_{50} = 0.18863$ $D_{100} = 0.22895$
 C_v at 45.1 min. = 0.01 ft.²/day $C_\alpha = 0.015$

Pressure: 4.00 ksf

TEST READINGS

Load No. 5

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.24090	11	60.00	0.28910
2	0.10	0.24380	12	120.00	0.30240
3	0.25	0.24500	13	240.00	0.31350
4	0.50	0.24630	14	480.00	0.32030
5	1.00	0.24850	15	1388.00	0.32830
6	2.00	0.26000			
7	4.00	0.25290			
8	8.00	0.25750			
9	15.00	0.26420			
10	30.00	0.27480			



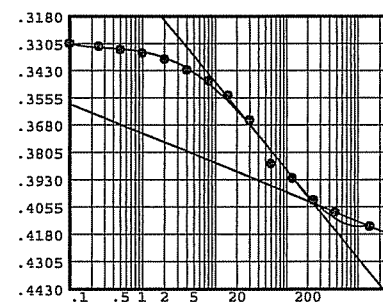
Void Ratio = 2.040 Compression = 32.8 %
 $D_0 = 0.24090$ $D_{50} = 0.27882$ $D_{100} = 0.31674$
 C_v at 34.7 min. = 0.01 ft.²/day $C_\alpha = 0.023$

Pressure: 8.00 ksf

TEST READINGS

Load No. 6

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.32830	11	60.00	0.38570
2	0.10	0.33050	12	120.00	0.39230
3	0.25	0.33180	13	240.00	0.40240
4	0.50	0.33320	14	480.00	0.40790
5	1.00	0.33490	15	1460.00	0.41440
6	2.00	0.33770			
7	4.00	0.34270			
8	8.00	0.34760			
9	15.00	0.35440			
10	30.00	0.36570			



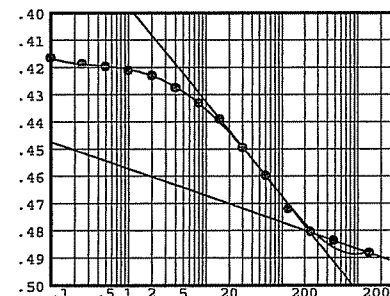
Void Ratio = 1.650 Compression = 41.4 %
 $D_0 = 0.32830$ $D_{50} = 0.36603$ $D_{100} = 0.40375$
 C_v at 26.8 min. = 0.01 ft.²/day $C_\alpha = 0.020$

Pressure: 16.00 ksf

TEST READINGS

Load No. 7

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.41440	11	60.00	0.45970
2	0.10	0.41650	12	120.00	0.47200
3	0.25	0.41870	13	240.00	0.48040
4	0.50	0.41970	14	480.00	0.48360
5	1.00	0.42110	15	1410.00	0.48820
6	2.00	0.42300			
7	4.00	0.42740			
8	8.00	0.43310			
9	15.00	0.43900			
10	30.00	0.44950			



Void Ratio = 1.316 Compression = 48.8 %
 $D_0 = 0.41440$ $D_{50} = 0.44749$ $D_{100} = 0.48059$
 C_v at 26.0 min. = 0.01 ft.²/day $C_\alpha = 0.017$

Pressure: 8.00 ksf**TEST READINGS****Load No. 8**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.48820	11	60.00	0.48020
2	0.10	0.48720	12	120.00	0.48000
3	0.25	0.48650	13	240.00	0.47920
4	0.50	0.48630	14	300.00	0.47920
5	1.00	0.48600			
6	2.00	0.48560			
7	4.00	0.48490			
8	8.00	0.48400			
9	15.00	0.48220			
10	30.00	0.48090			

Void Ratio = 1.357 Compression = 47.9 %

Pressure: 2.00 ksf**TEST READINGS****Load No. 9**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.47920	11	60.00	0.45450
2	0.10	0.47670	12	120.00	0.44970
3	0.25	0.47570	13	240.00	0.44610
4	0.50	0.47530	14	1190.00	0.44140
5	1.00	0.47430			
6	2.00	0.47320			
7	4.00	0.47210			
8	8.00	0.46990			
9	15.00	0.46610			
10	30.00	0.45980			

Void Ratio = 1.528 Compression = 44.1 %

Pressure: 0.50 ksf**TEST READINGS****Load No. 10**

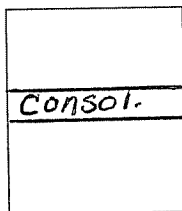
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.44140	11	60.00	0.42290
2	0.10	0.44030	12	120.00	0.42100
3	0.25	0.44020	13	240.00	0.41320
4	0.50	0.43990	14	480.00	0.40780
5	1.00	0.43960			
6	2.00	0.43920			
7	4.00	0.43860			
8	8.00	0.43660			
9	15.00	0.43440			
10	30.00	0.43230			

Void Ratio = 1.680 Compression = 40.8 %

Oedometer Settlement Tests

Sample details

Sketch showing specimen location in original Sample



Depth Elev. -21.2
Description: Gray clay with slight sand and peat lenses.

Type Undisturbed
Height H_0 (in) 1
Diameter D_0 (in) 2.5
Weight W_0 (gr) 117.32
Bulk Density ρ (PCF) 91.05
Particle Density ρ_s 2.58
(measured)

Initial Conditions

Settlement Channel consol #2
Moisture Content w_0 % 101.8
Dry Density ρ_d (PCF) 45.13
Voids Ratio e_0 2.5674
Deg of Saturation S_0 % 100.0
Swelling Pressure S_s (TSF)

Final Conditions

Moisture Content w_f % 48.5
Dry Density ρ_d (PCF) 72.37
Voids Ratio e_f 1.2246
Deg of Saturation S_f % 100.00
Settlement: (in) 0.376
Compression Index C_c

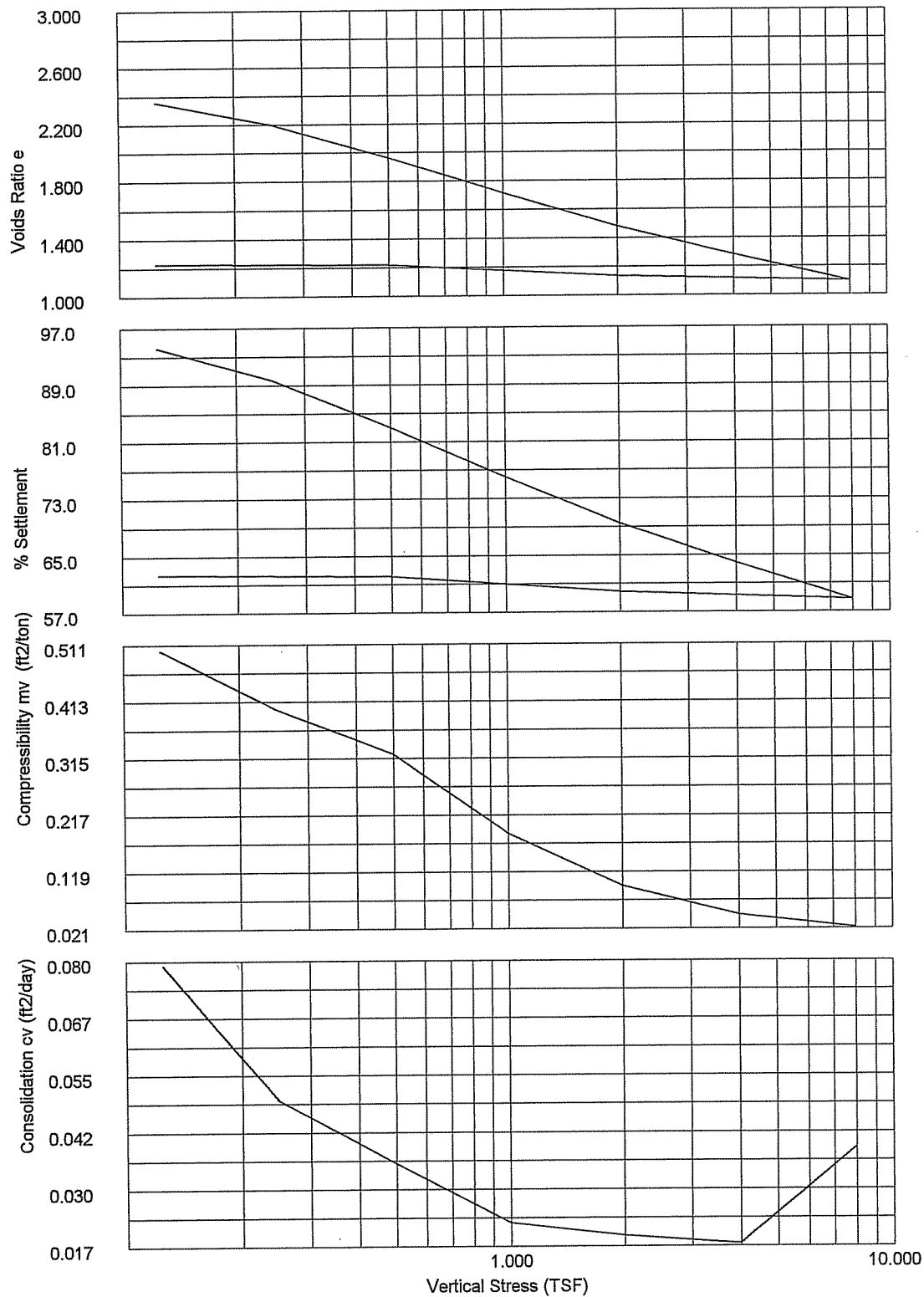
Notes:

Atterberg Limits- LL: 115 PL: 34 PI: 80, Wash 200: 77.3% passing.

Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol. #2
			Date of Test:	6/23/2003
	Site Reference:	Charleston Naval Base Container	Sample:	UD-1
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAW-20
Operator: <i>Jeanne M. Stroh</i>		Checked: <i>Dail - Hal</i>	Approved: <i>[Signature]</i>	

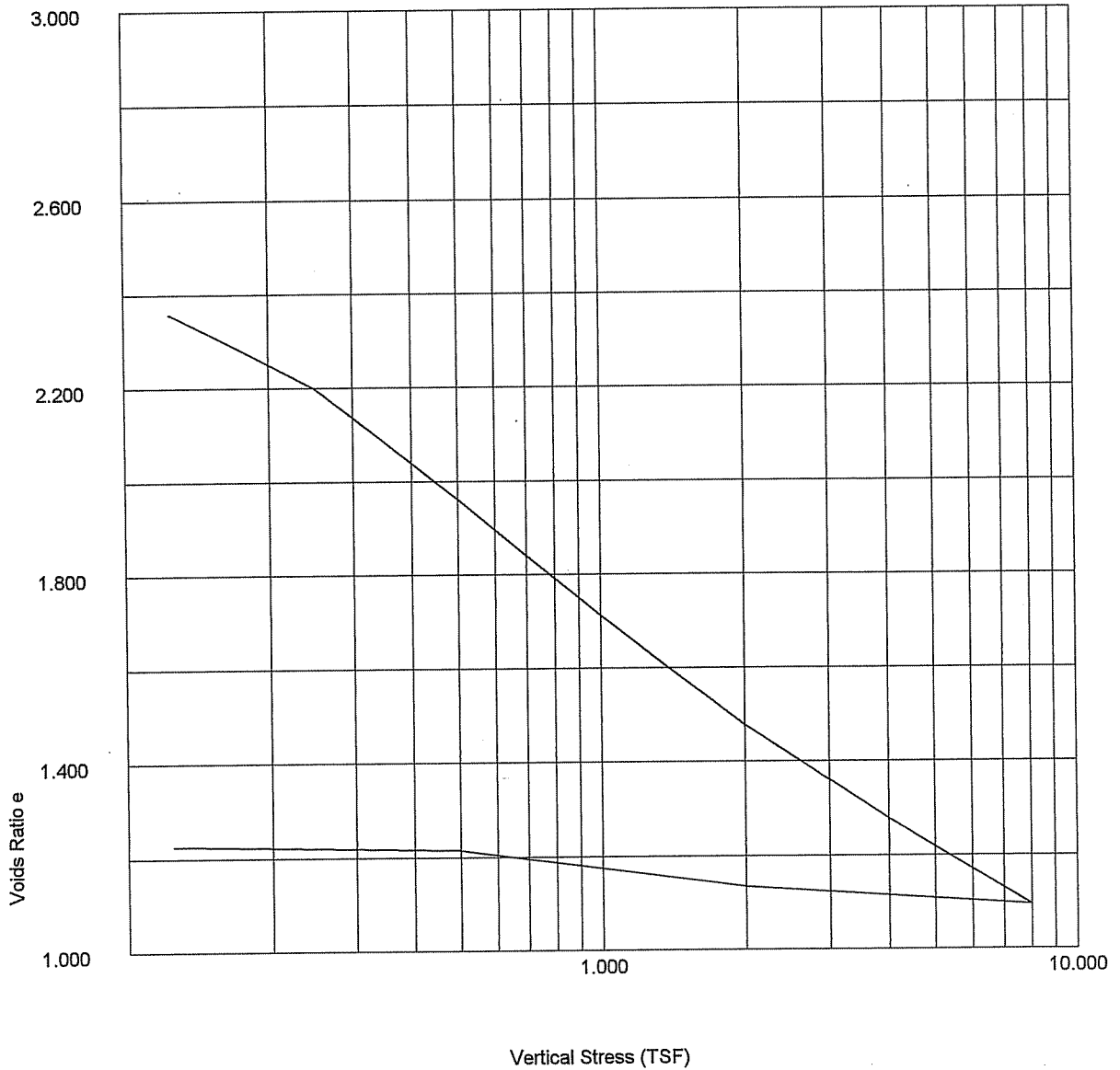
Oedometer Settlement Tests



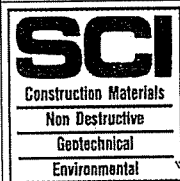
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol. #2
			Date of Test:	6/23/2003
	Site Reference:	Charleston Naval Base Container	Sample:	UD-1
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAW-20
Operator:		Checked:	Approved:	
<i>Spencer M. Stewart</i>		<i>David L. Kel</i>	<i>10/10/03</i>	

Oedometer Settlement Tests



Soil Consultants, Inc.



ASTM D2435-96

Test name Consol. #2

Date of Test: 6/23/2003

Site Reference: Charleston Naval Base Container
Jobfile: C:\WINCLISP\CNB.JOB

Sample: UD-1
Borehole: PAW-20

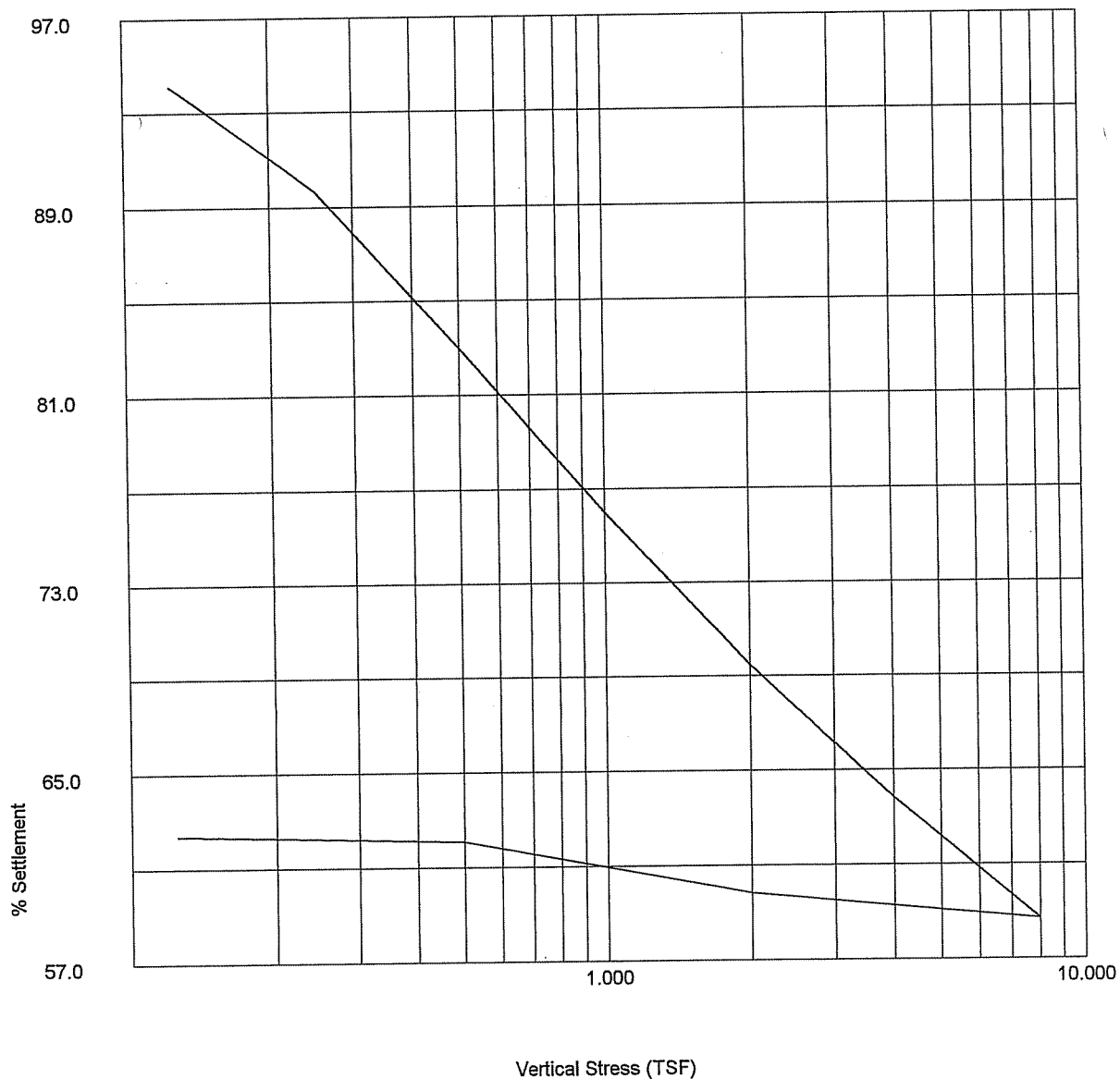
Operator:

Checked:

Approved:

Janne M. Stur *Dail* *Rel* *W. Stur*

Oedometer Settlement Tests



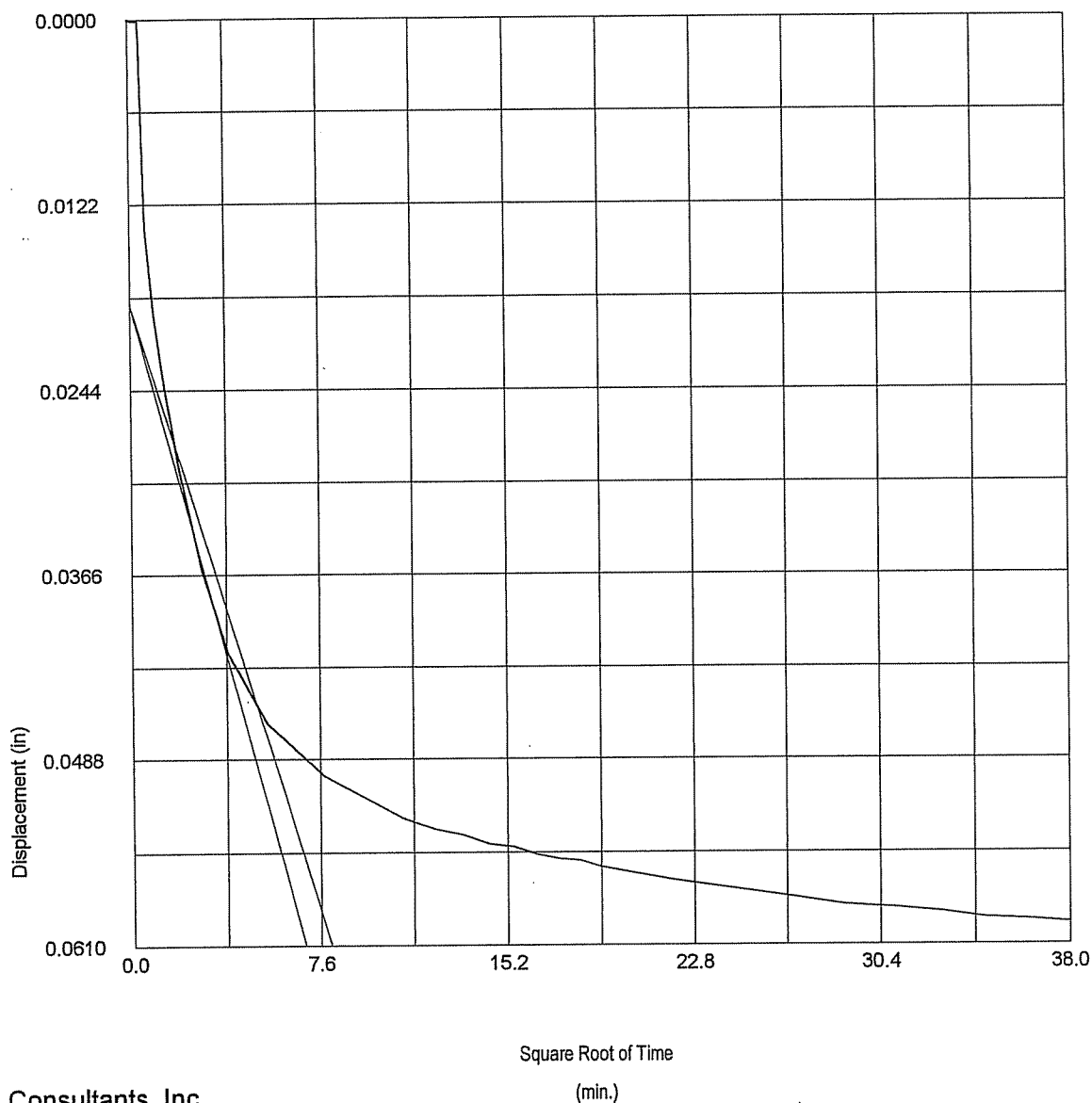
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol. #2
			Date of Test:	6/23/2003
	Site Reference:	Charleston Naval Base Container	Sample:	UD-1
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAW-20
	Operator:	<i>Shermi M. St...</i>	Checked:	<i>Dail J. Al</i>
		Approved:	<i>[Signature]</i>	

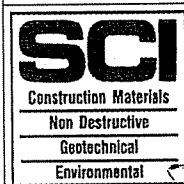
Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	0.125
Initial Temp oC	20.0
Correction (in)	0.0008
Displacement (in)	0.0596
Voids Ratio e_0	2.3576
Final Temp oC	
t_{90} (mins)	25.3
c_v (ft ² /day)	0.079
m_v (ft ² /ton)	0.5
Sec Compression C_{sec}	



Soil Consultants, Inc.



ASTM D2435-96

Test name Consol. #2

Date of Test: 6/23/2003

Site Reference: Charleston Naval Base Container

Jobfile: C:\WINCLISP\CNB.JOB

Sample: UD-1

Borehole: PAW-20

Operator:

Checked:

Approved:

Jeanne M. St...

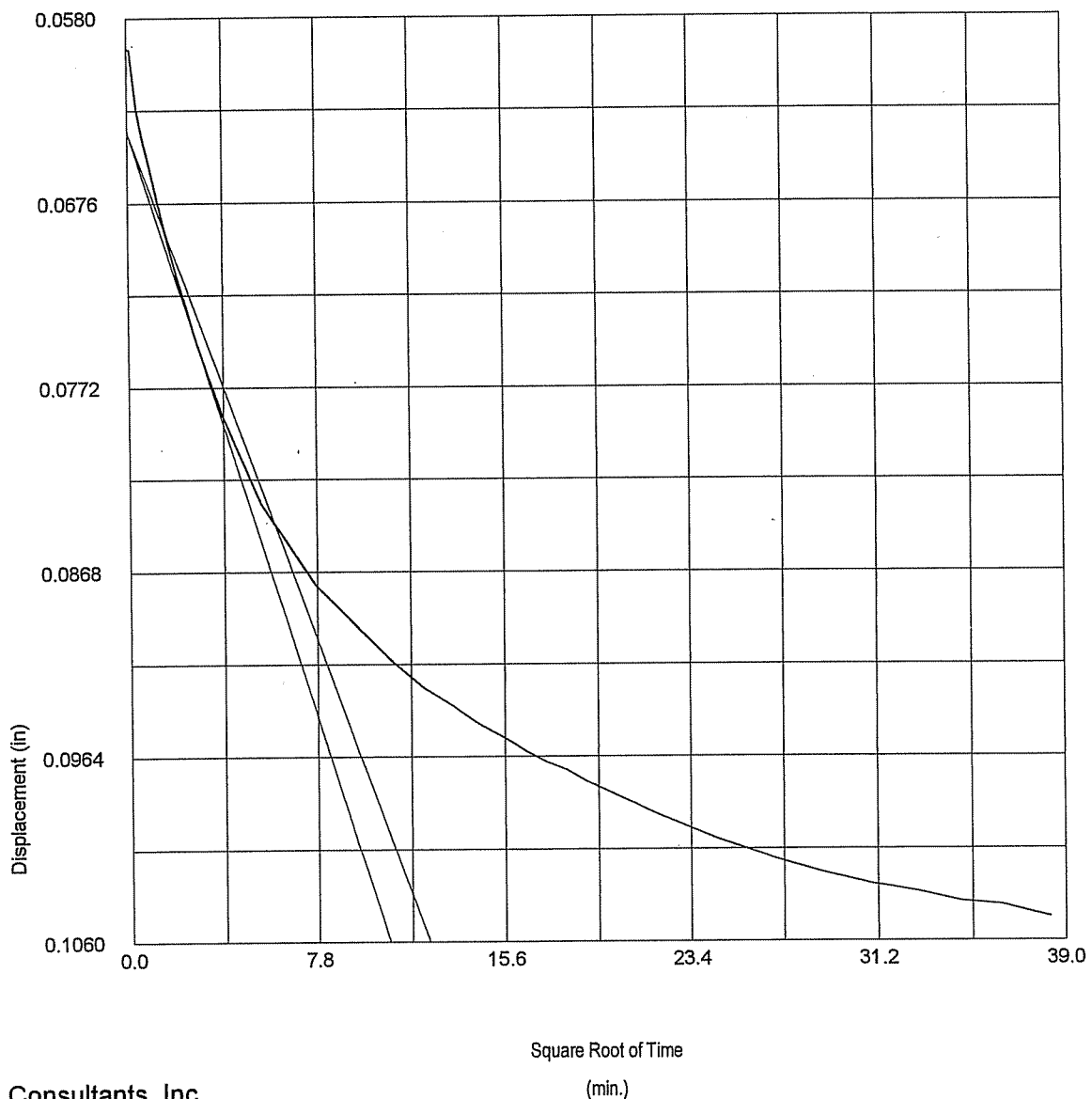
Dail - Hal

10/10/20

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	0.250
Initial Temp oC	20.0
Correction (in)	0.0013
Displacement (in)	0.0452
Voids Ratio e_0	2.1981
Final Temp oC	
t_{90} (mins)	36.4
c_v (ft ² /day)	0.049
m_v (ft ² /ton)	0.399
Sec Compression C_{sec}	



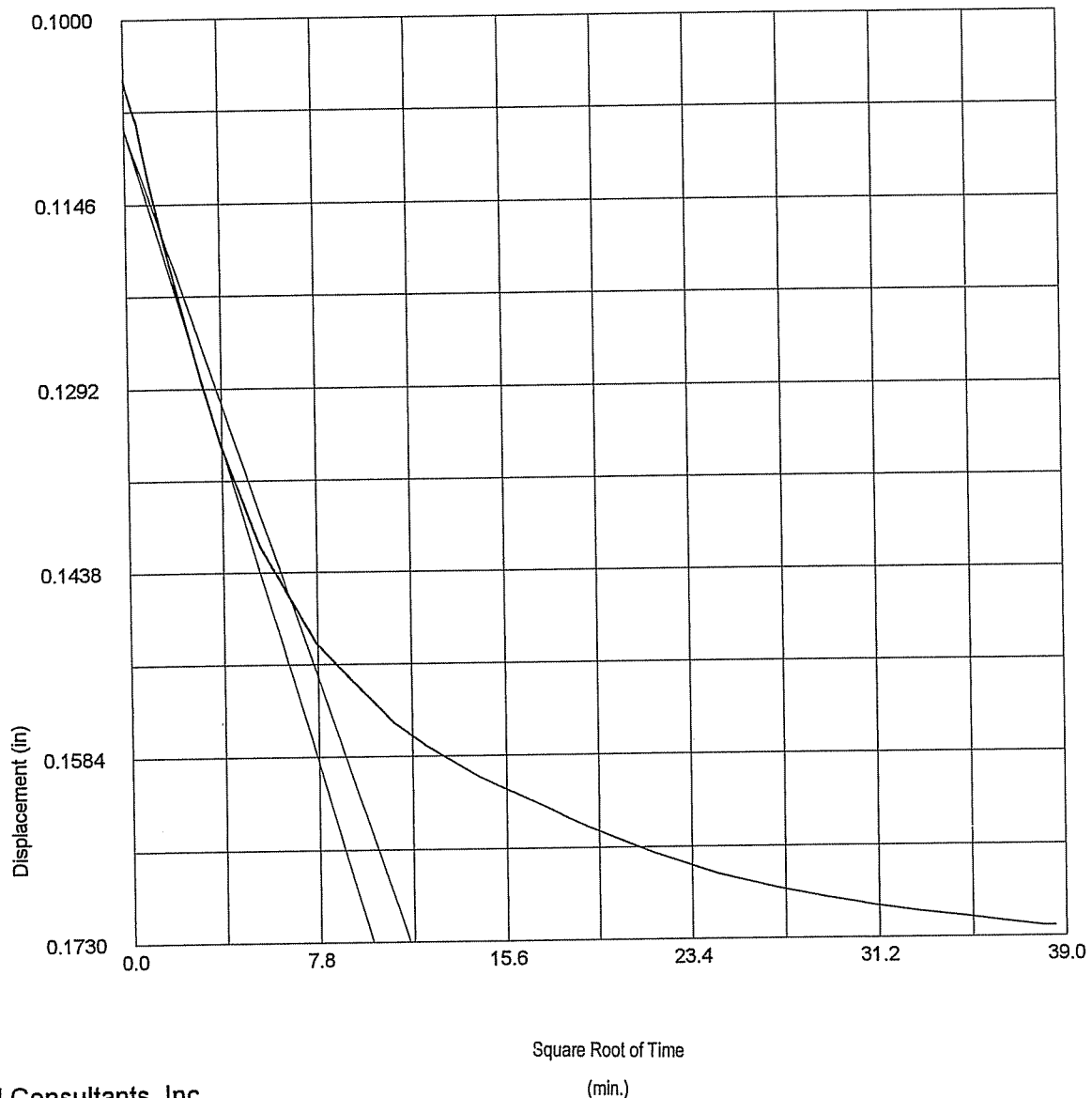
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96	Test name	Consol. #2	
		Date of Test:	6/23/2003	
	Site Reference:	Charleston Naval Base Container	Sample:	UD-1
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAW-20
	Operator:	Ganni M. Ste...	Checked:	David J. Hall
		Approved:	[Signature]	

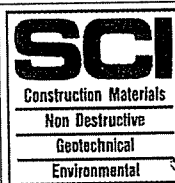
Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	0.500
Initial Temp oC	20.0
Correction (in)	0.002
Displacement (in)	0.0674
Voids Ratio e_0	1.9602
Final Temp oC	44.9
t_{90} (mins)	0.035
c_v (ft ² /day)	0.322
m_v (ft ² /ton)	
Sec Compression C_{sec}	



Soil Consultants, Inc.



ASTM D2435-96

Site Reference: Charleston Naval Base Container
Jobfile: C:\WINCLISP\CNB.JOB

Operator:

Jeanne M. Frost

Checked:

Dail T. Hall

Test name: Consol. #2
Date of Test: 6/23/2003

Sample: UD-1
Borehole: PAW-20

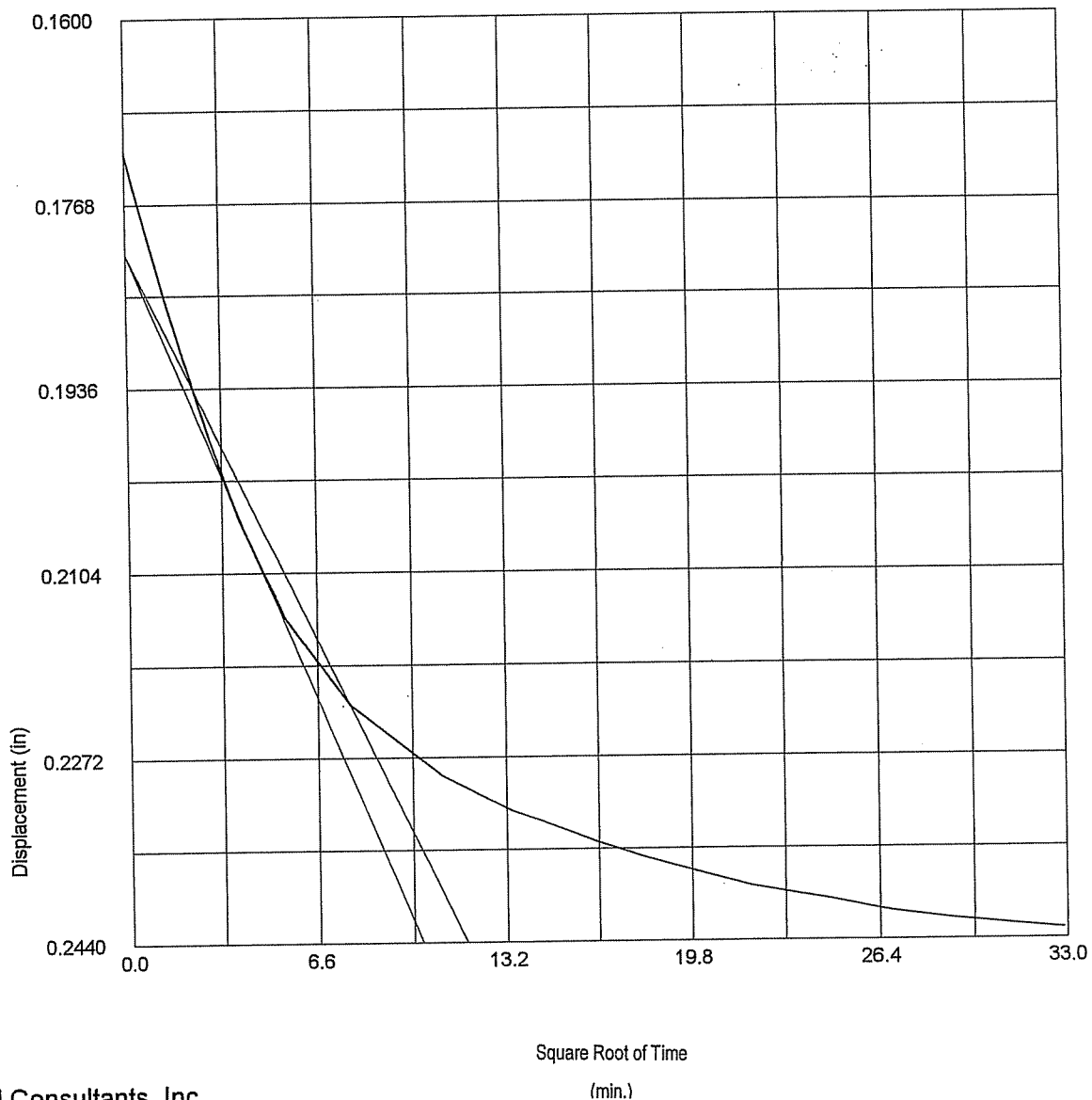
Approved:

Robert L. Goff

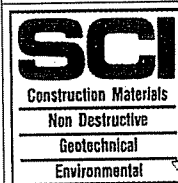
Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	1.000
Initial Temp oC	20.0
Correction (in)	0.0029
Displacement (in)	0.0709
Voids Ratio e_0	1.7105
Final Temp oC	60.6
t_{90} (mins)	0.022
c_v (ft ² /day)	0.184
m_v (ft ² /ton)	
Sec Compression C_{sec}	



Soil Consultants, Inc.



ASTM D2435-96

Test name Consol. #2

Date of Test: 6/23/2003

Site Reference: Charleston Naval Base Container

Jobfile: C:\WINCLISP\CNB.JOB

Sample: UD-1

Borehole: PAW-20

Operator:

Checked:

Approved:

James M. St...

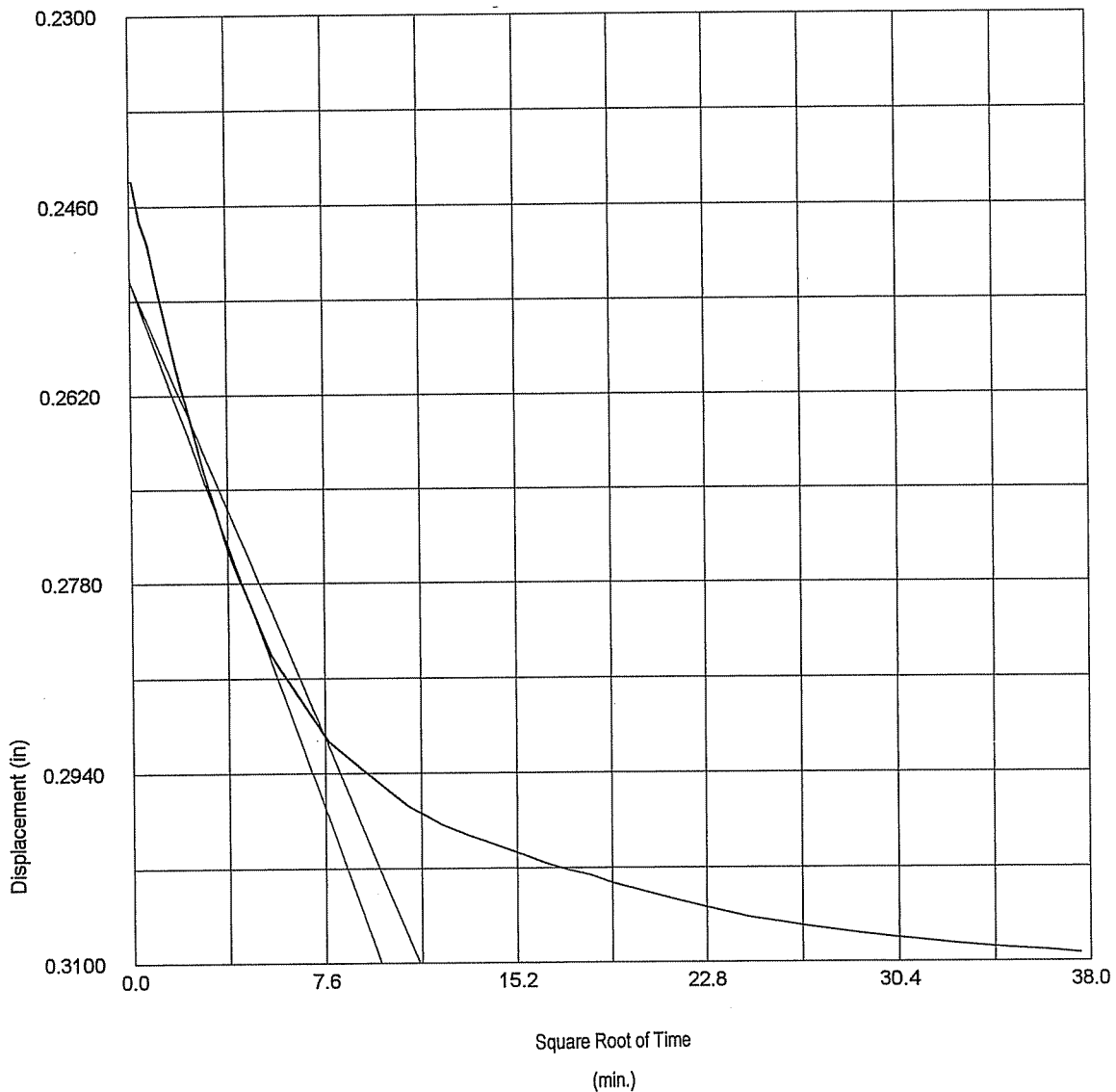
Dail J Hal

[Signature]

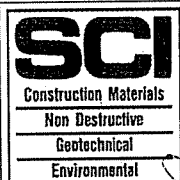
Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	2.000
Initial Temp oC	20.0
Correction (in)	0.0039
Displacement (in)	0.0655
Voids Ratio e_0	1.4775
Final Temp oC	
t_{90} (mins)	58.1
c_v (ft ² /day)	0.019
m_v (ft ² /ton)	0.094
Sec Compression C_{sec}	



Soil Consultants, Inc.



ASTM D2435-96

Test name Consol. #2

Date of Test: 6/23/2003

Site Reference: Charleston Naval Base Container

Jobfile: C:\WINCLISP\CNB.JOB

Sample: UD-1

Borehole: PAW-20

Operator:

Checked:

Approved:

James M. Shaw

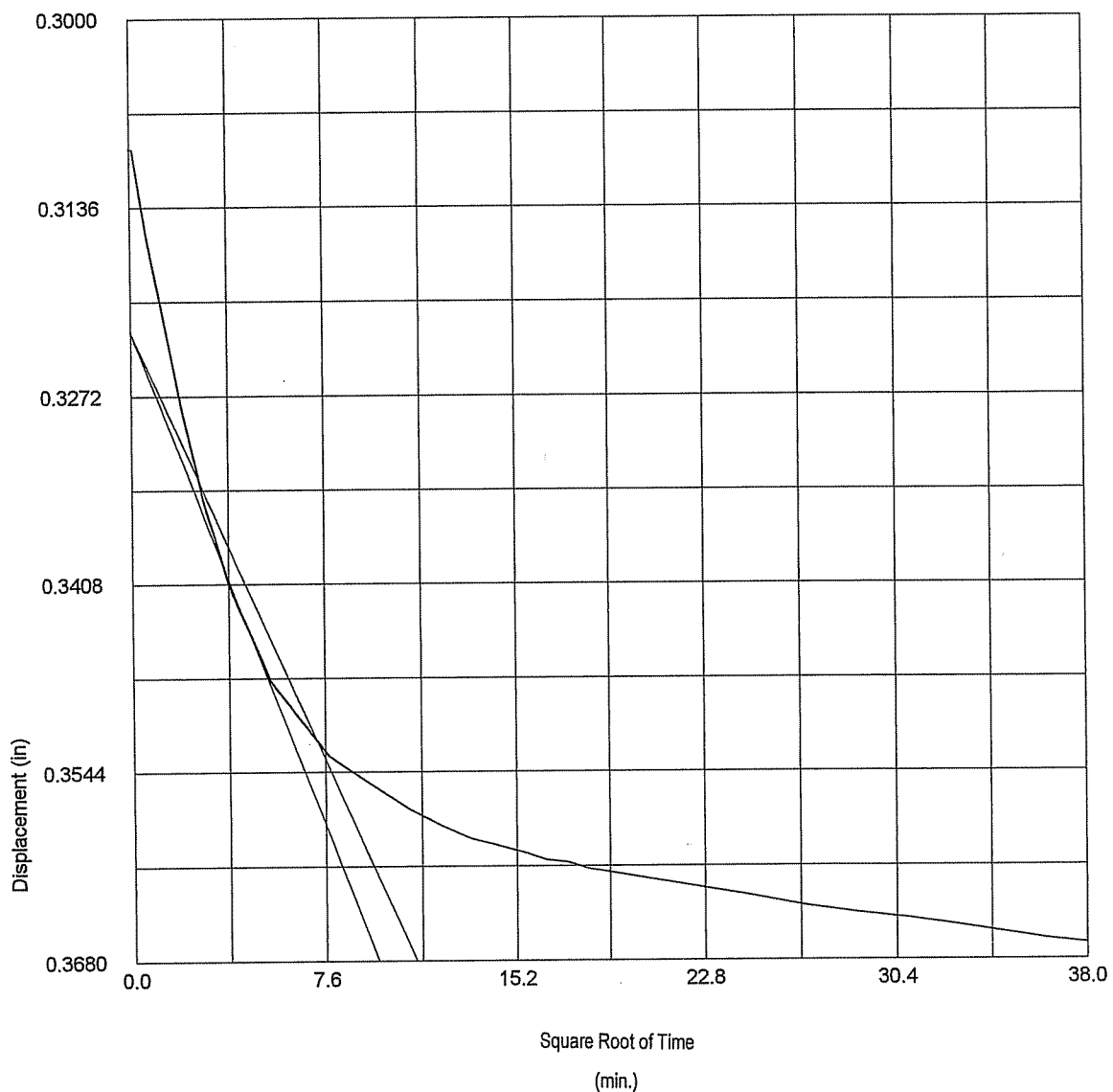
Deil T. Hall

R. Shaw

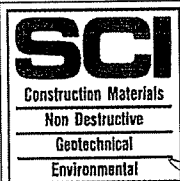
Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	4.000
Initial Temp oC	20.0
Correction (in)	0.0053
Displacement (in)	0.0575
Voids Ratio e_0	1.2774
Final Temp oC	
t_{90} (mins)	53.9
c_v (ft ² /day)	0.017
m_v (ft ² /ton)	0.044
Sec Compression C_{sec}	



Soil Consultants, Inc.



ASTM D2435-96

Test name: Consol. #2
Date of Test: 6/23/2003

Site Reference: Charleston Naval Base Container
Jobfile: C:\WINCLISP\CNB.JOB

Sample: UD-1
Borehole: PAW-20

Operator:

Checked:

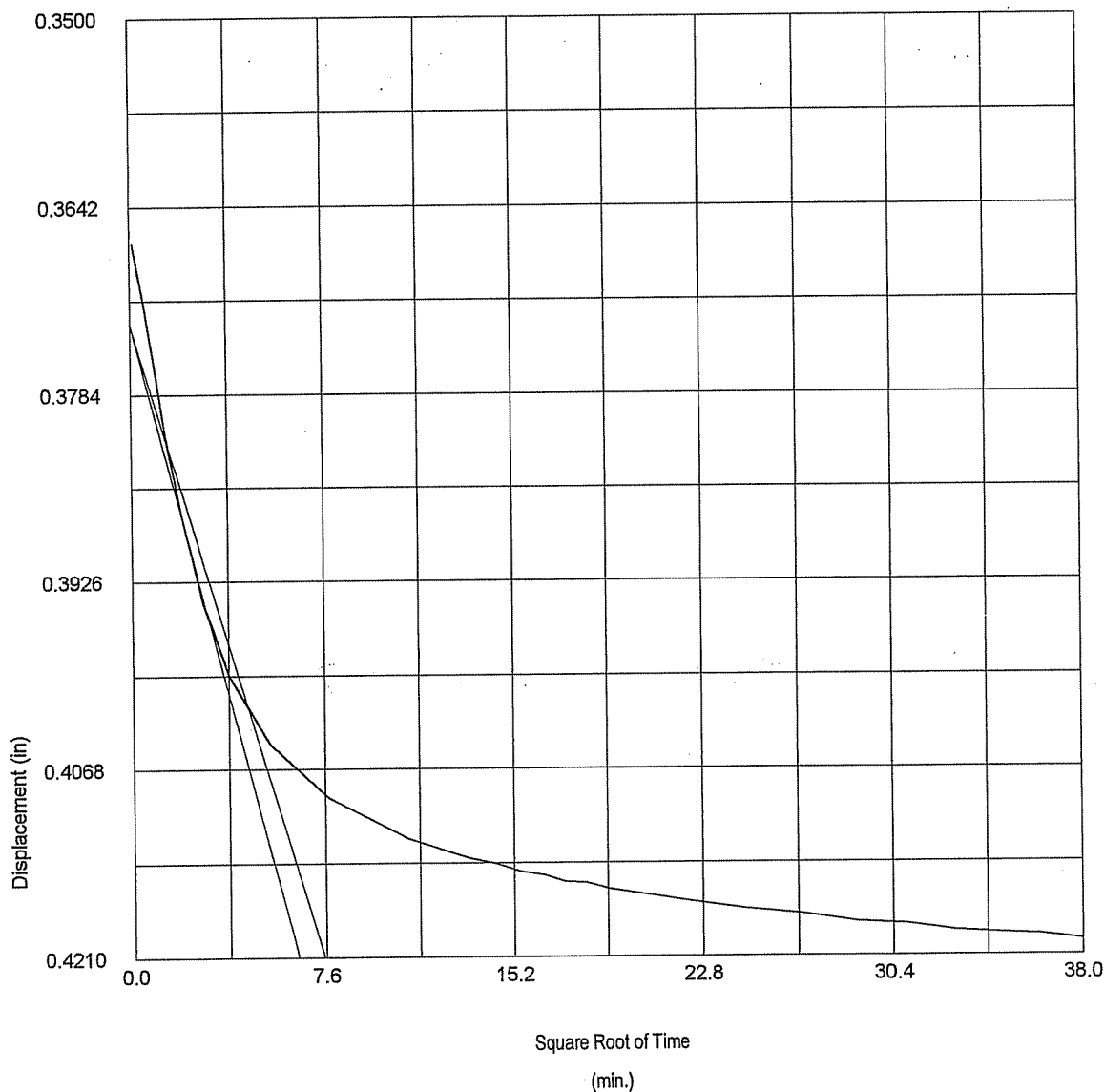
Approved:

James M. Strickland *Dail* *Hal* *W. H. H. H.*

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	8.000
Initial Temp oC	20.0
Correction (in)	0.0067
Displacement (in)	0.0529
Voids Ratio e_0	1.0933
Final Temp oC	
t_{90} (mins)	20.6
c_v (ft ² /day)	0.039
m_v (ft ² /ton)	0.022
Sec Compression C_{sec}	



Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96	Test name	Consol. #2
		Date of Test:	6/23/2003
	Site Reference: Charleston Naval Base Container	Sample:	UD-1
	Jobfile: C:\WINCLISP\CNB.JOB	Borehole:	PAW-20
	Operator: <i>Spencer M. Smith</i>	Checked: <i>Darl H. Hel</i>	Approved: <i>[Signature]</i>

Oedometer Settlement Tests

Stress (TSF)	Initial Temp. oC	Settlement Total (in)	Cal Corr. (in)	Final Temp. oC	Voids Ratio e_f	t_{90} (mins)	Secondary Compr C_{sec}	c_v (ft ² /day)	m_v (ft ² /ton)
0.125	20.0	0.0588	0.0008	20.0	2.3576	25.3		0.079	0.500
0.250	20.0	0.1035	0.0013	20.0	2.1981	36.4		0.049	0.399
0.500	20.0	0.1702	0.002	20.0	1.9602	44.9		0.035	0.322
1.000	20.0	0.2402	0.0029	20.0	1.7105	60.6		0.022	0.184
2.000	20.0	0.3055	0.0039	20.0	1.4775	58.1		0.019	0.094
4.000	20.0	0.3616	0.0053	20.0	1.2774	53.9		0.017	0.044
8.000	20.0	0.4132	0.0067	20.0	1.0933	20.6		0.039	0.022
2.000	20.0	0.4019	0.0039	20.0	1.1336				0.003
0.500	20.0	0.3796	0.002	20.0	1.2132				0.024
0.125	20.0	0.3764	0.0008	20.0	1.2246				0.014

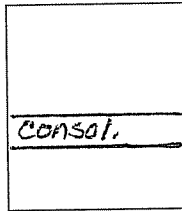
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol. #2
			Date of Test:	6/23/2003
	Site Reference:	Charleston Naval Base Container	Sample:	UD-1
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAW-20
Operator:		Checked:	Approved:	
<i>Janne M. Str</i>		<i>Dail</i>	<i>Not to go</i>	

Oedometer Settlement Tests

Sample details

Sketch showing specimen location in original Sample



Depth Elev. -10.8
Description: Gray inorganic clay with slight sand content.

Type Undisturbed
Height H_0 (in) 1
Diameter D_0 (in) 2.5
Weight W_0 (gr) 105.47
Bulk Density ρ (PCF) 81.85
Particle Density ρ_s 2.68
(measured)

Initial Conditions

Settlement Channel consol #2
Moisture Content w_0 % 156.6
Dry Density ρ_d (PCF) 31.90
Voids Ratio e_0 4.2421
Deg of Saturation S_0 % 98.9
Swelling Pressure S_s (TSF)

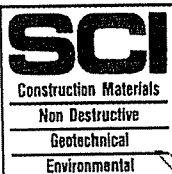
Final Conditions

Moisture Content w_f % 62.3
Dry Density ρ_d (PCF) 64.79
Voids Ratio e_f 1.5812
Deg of Saturation S_f % 100.00
Settlement: (in) 0.508
Compression Index C_c

Notes:

Atterberg Limits- LL:128 PL: 44 PI: 84, Wash 200: 86.4% passing.

Soil Consultants, Inc.



ASTM D2435-96

Test name Consol #2

Date of Test: 7/7/2003

Site Reference: Charleston Naval Base Container

Sample: UD-1

Jobfile: C:WINCLISP\CNB.JOB

Borehole: PAW-25

Operator:

Checked:

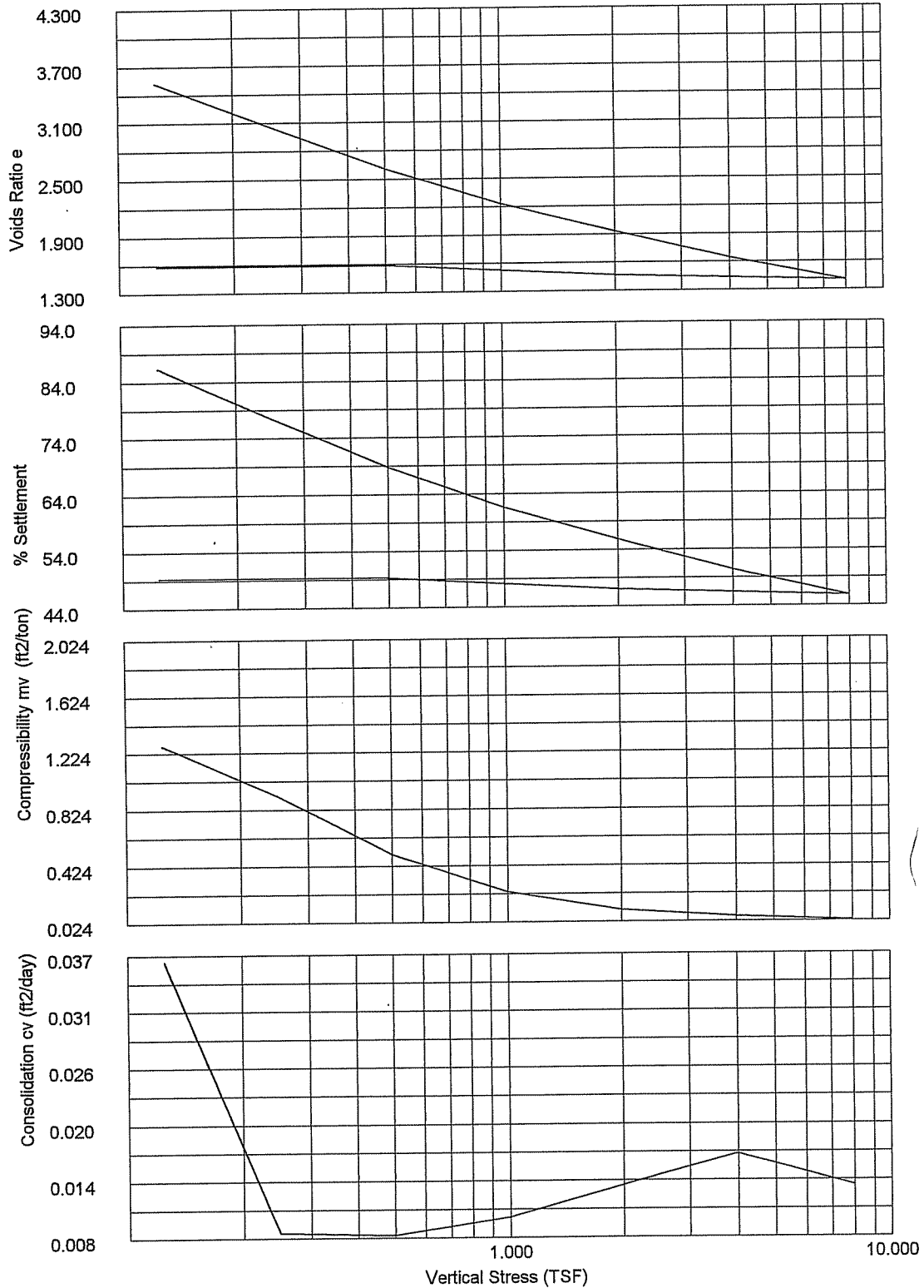
Approved:

Jeanne M. St...

Dail = Hel

R. M. St...

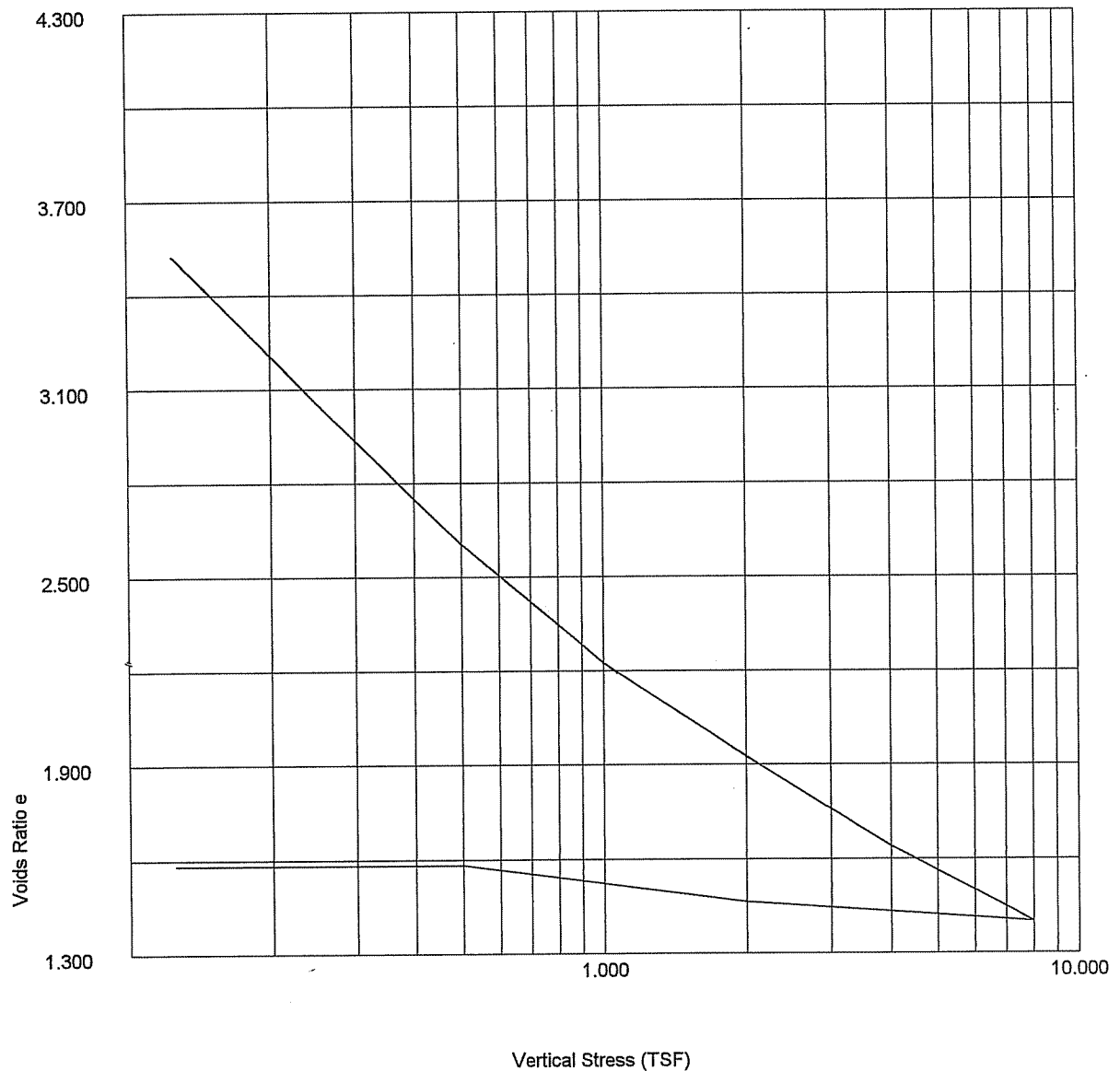
Oedometer Settlement Tests



Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #2
			Date of Test:	7/7/2003
	Site Reference:	Charleston Naval Base Container	Sample:	UD-1
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAW-25
Operator:		Checked:	Approved:	
<i>Ganne M. St...</i>		<i>Deil - Hal</i>	<i>N. H. 2/96</i>	

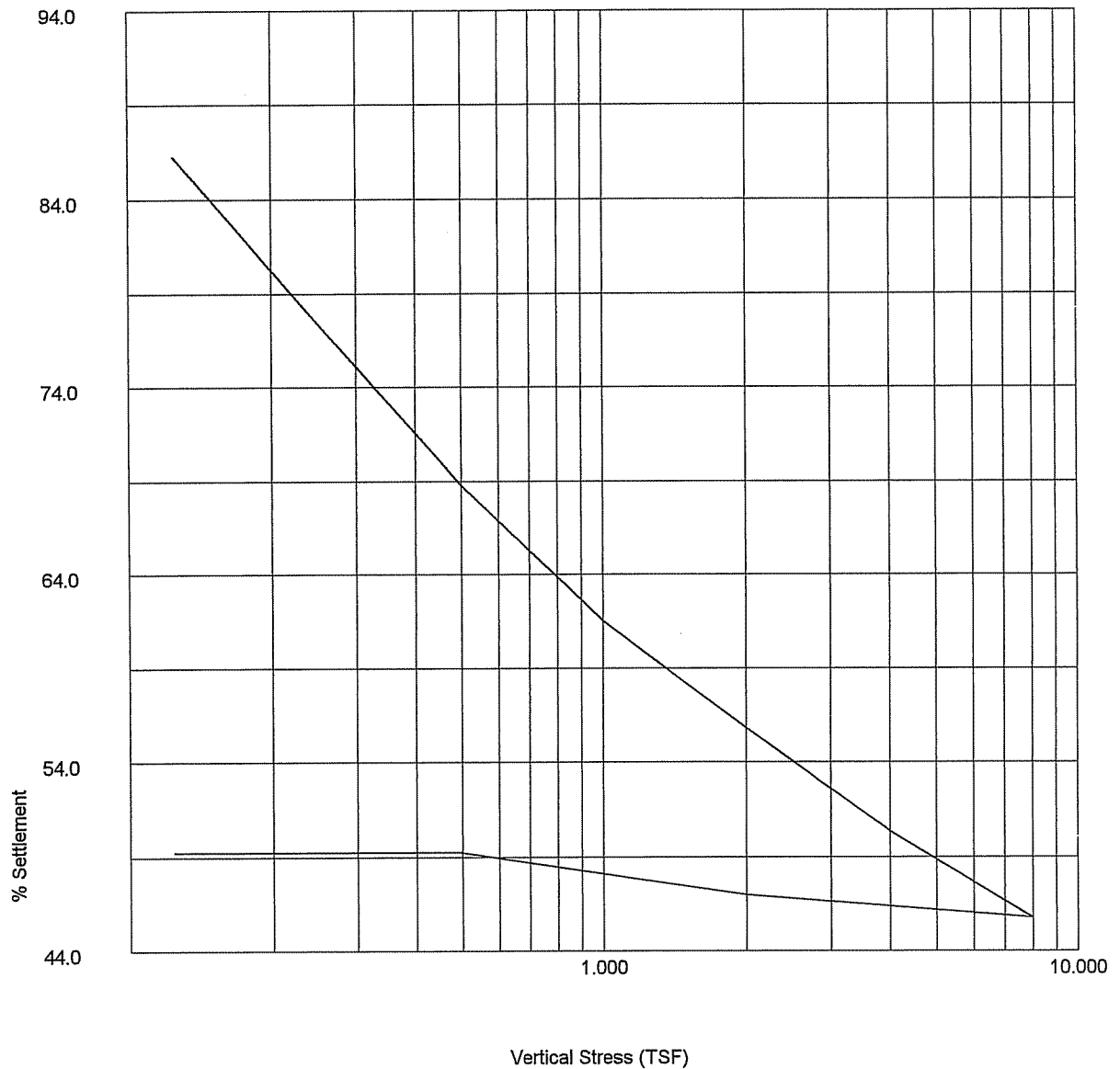
Oedometer Settlement Tests



Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #2
			Date of Test:	7/7/2003
	Site Reference:	Charleston Naval Base Container	Sample:	UD-1
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAW-25
	Operator:	<i>Ganne M. Sta</i>	Checked:	<i>Deil T. Hal</i>
		Approved:	<i>N. B. J. 6</i>	

Oedometer Settlement Tests



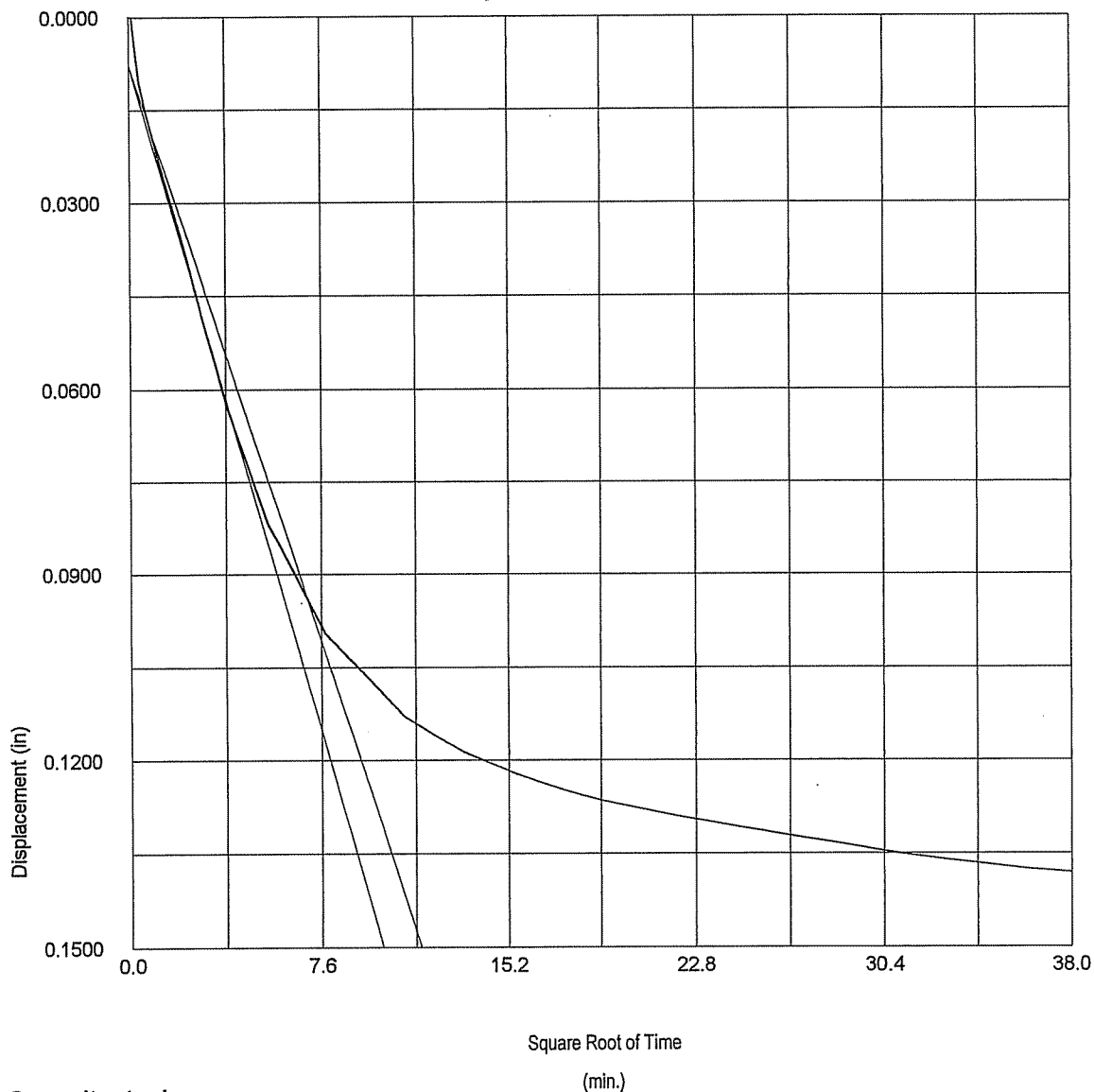
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #2	
			Date of Test:	7/7/2003	
	Site Reference:	Charleston Naval Base Container	Sample:	UD-1	
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAW-25	
	Operator:	<i>James M. Ste...</i>	Checked:	<i>David L. Hel...</i>	Approved:

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	0.125
Initial Temp oC	20.0
Correction (in)	0.0008
Displacement (in)	0.1382
Voids Ratio e_0	3.5218
Final Temp oC	
t_{90} (mins)	50.4
c_v (ft ² /day)	0.036
m_v (ft ² /ton)	1.274
Sec Compression C_{sec}	



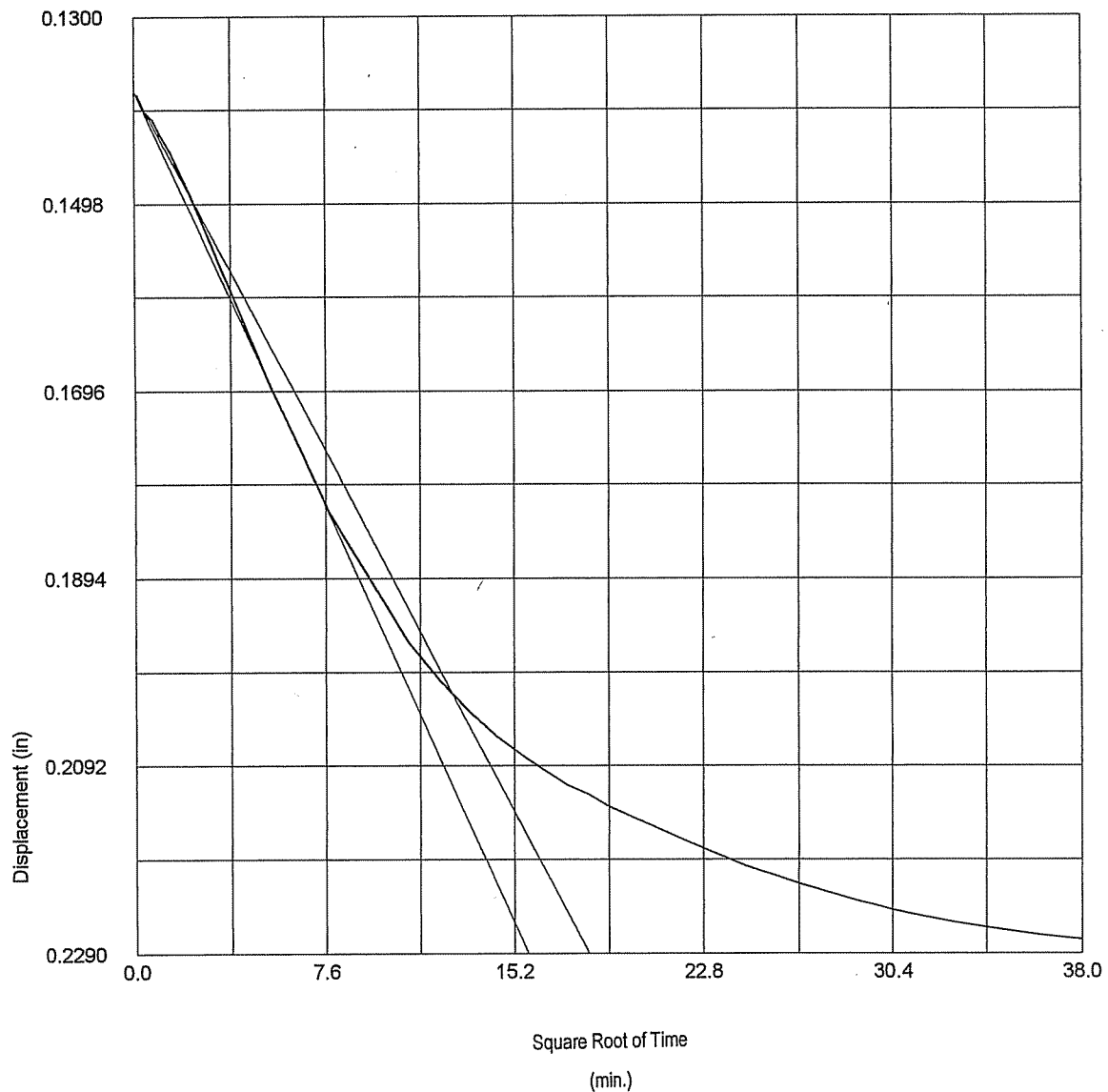
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #2
			Date of Test:	7/7/2003
	Site Reference:	Charleston Naval Base Container	Sample:	UD-1
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAW-25
	Operator:	<i>James M. Sta</i>	Checked:	<i>Dail T. Hal</i>
		Approved:	<i>N. G. G. G.</i>	

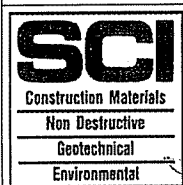
Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	0.250
Initial Temp oC	20.0
Correction (in)	0.0013
Displacement (in)	0.0894
Voids Ratio e_0	3.0558
Final Temp oC	
t_{90} (mins)	163.2
c_v (ft ² /day)	0.009
m_v (ft ² /ton)	0.919
Sec Compression C_{sec}	



Soil Consultants, Inc.



ASTM D2435-96

Test name Consol #2

Date of Test: 7/7/2003

Site Reference: Charleston Naval Base Container

Sample: UD-1

Job File: C:\WINCLIP\CNB.JOB

Borehole: PAW-25

Operator:

Checked:

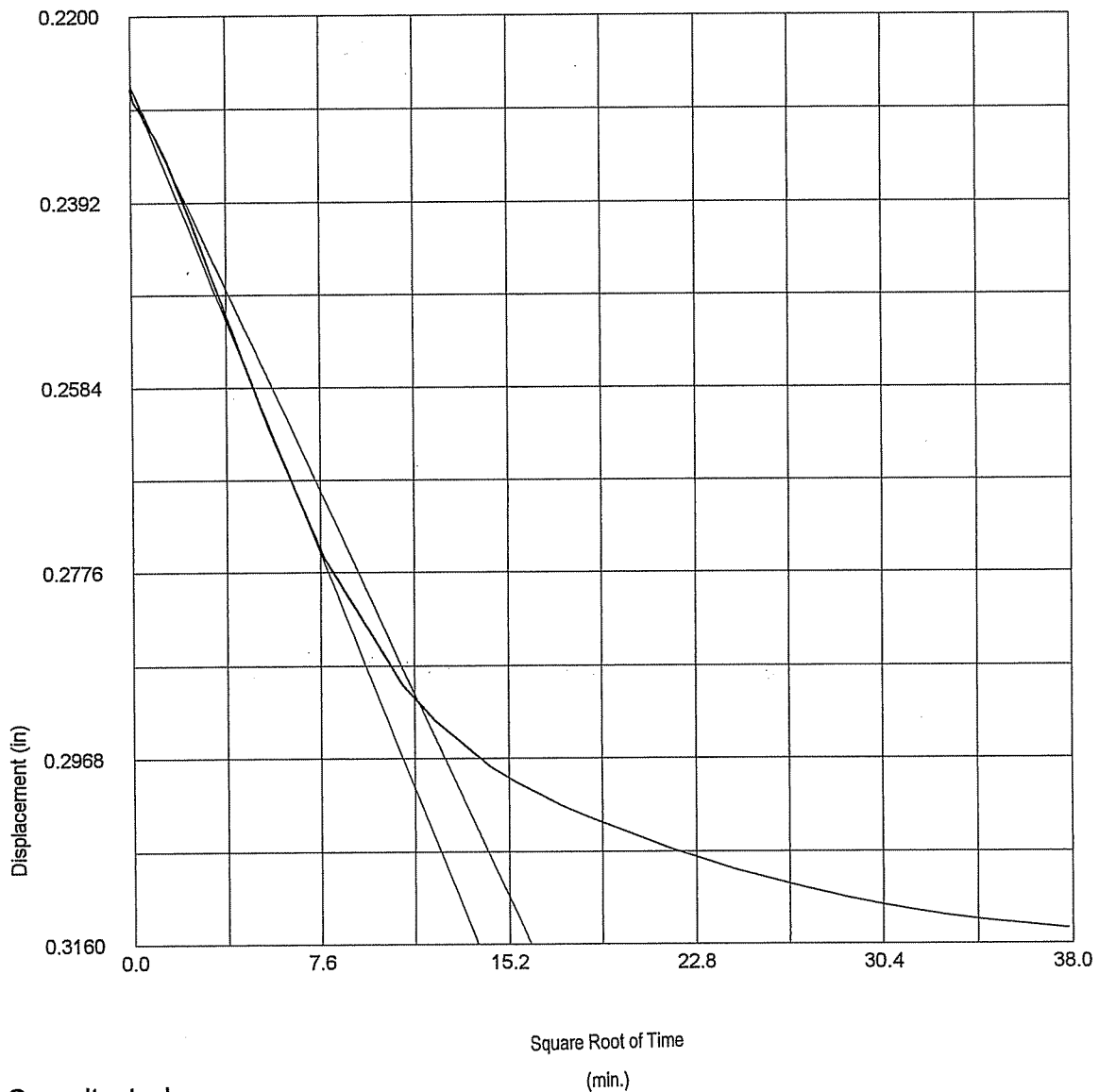
Approved:

Janne M. Sturges *Del T. Hol* *N. B. J. go*

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	0.500
Initial Temp oC	20.0
Correction (in)	0.002
Displacement (in)	0.0869
Voids Ratio e_0	2.6039
Final Temp oC	
t_{90} (mins)	134.5
c_v (ft ² /day)	0.008
m_v (ft ² /ton)	0.502
Sec Compression C_{sec}	



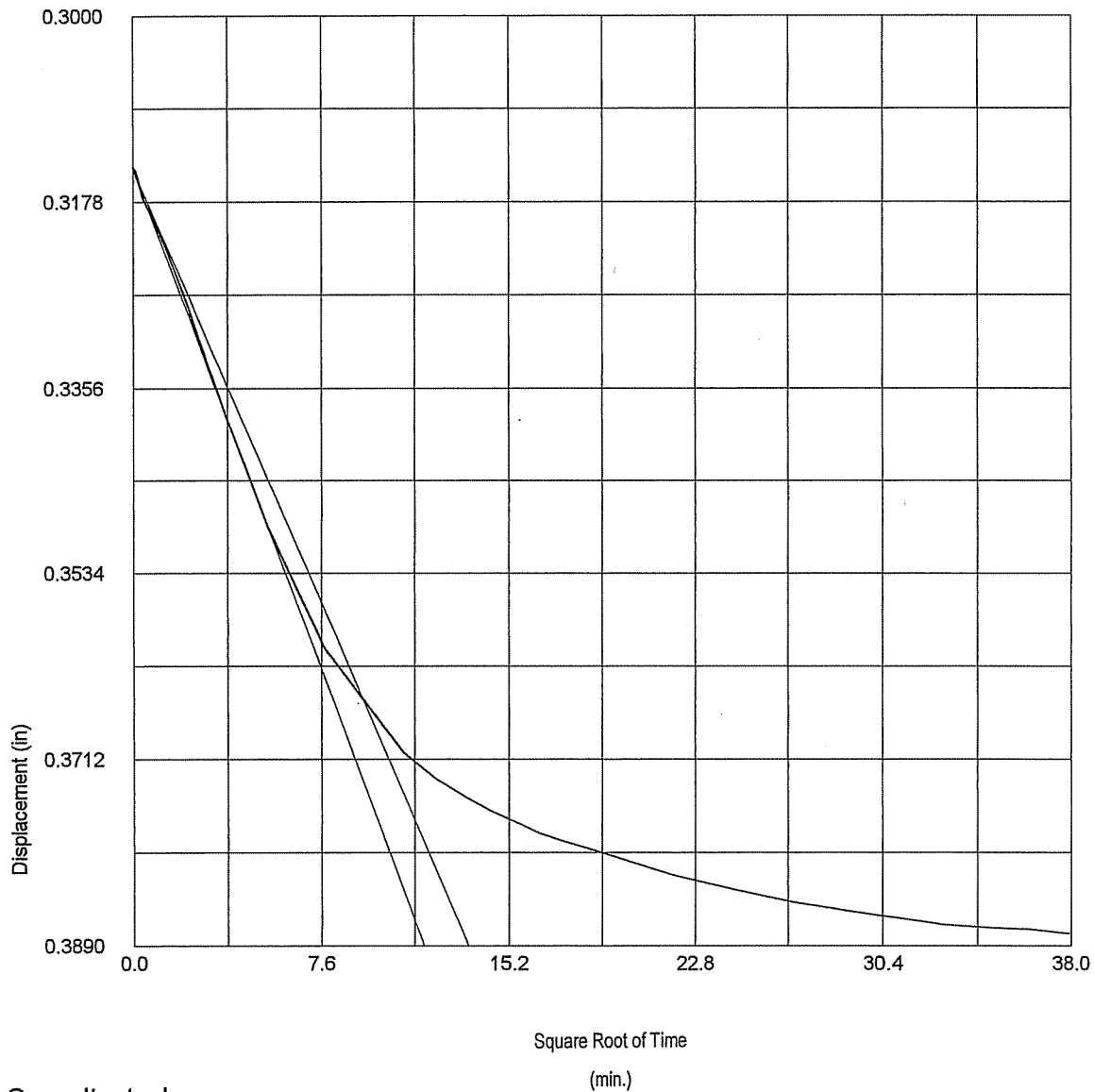
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #2
			Date of Test:	7/7/2003
	Site Reference: Charleston Naval Base Container		Sample:	UD-1
	Jobfile: C:\WINCLISP\CNB.JOB		Borehole:	PAW-25
	Operator: <i>Jenne Mota</i>		Checked: <i>David J. Kel</i>	Approved: <i>11/20/2003</i>

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	1.000
Initial Temp oC	20.0
Correction (in)	0.0029
Displacement (in)	0.0734
Voids Ratio e_0	2.2239
Final Temp oC	
t_{90} (mins)	87.8
c_v (ft ² /day)	0.01
m_v (ft ² /ton)	0.236
Sec Compression C_{sec}	



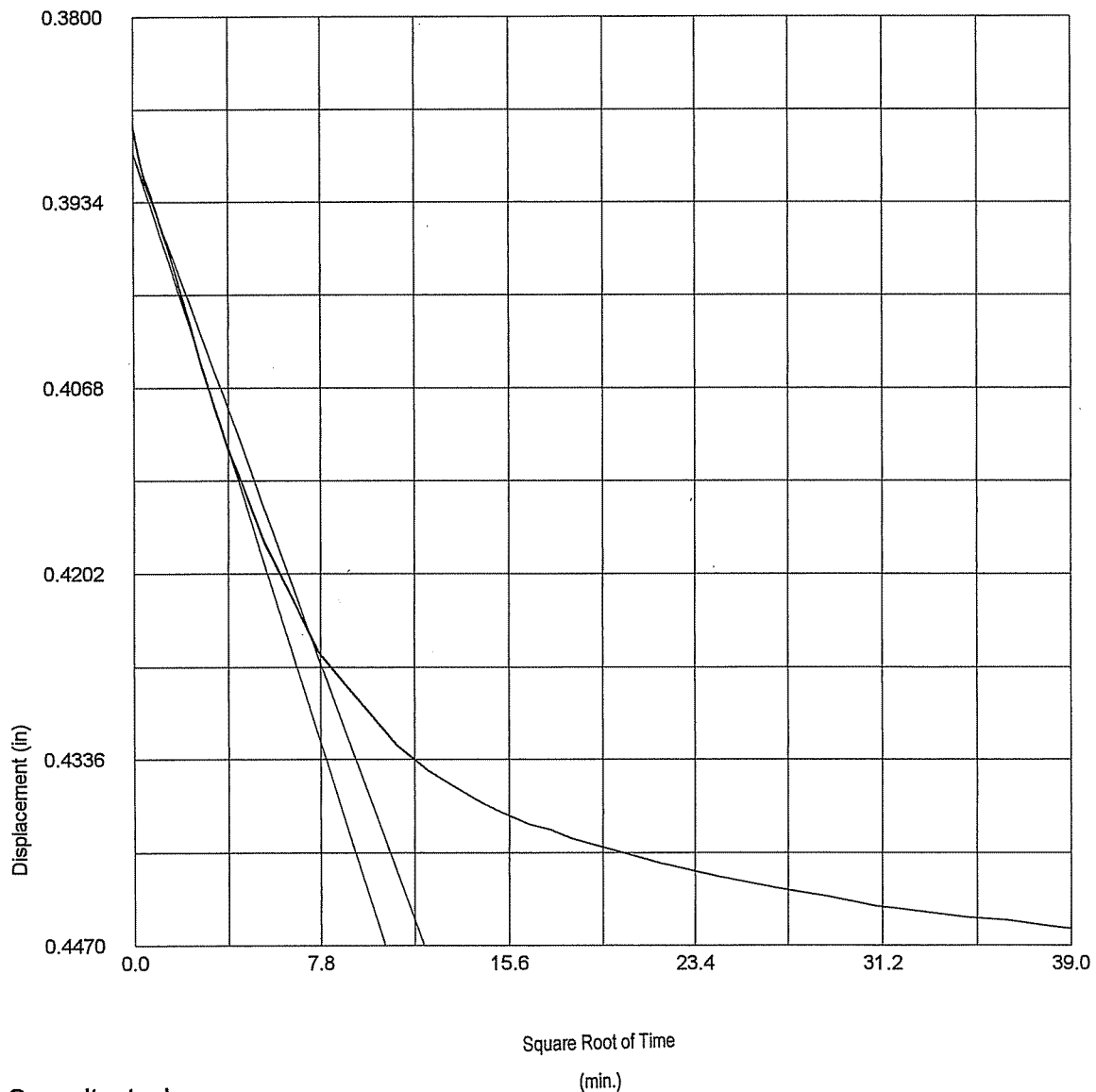
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #2
			Date of Test:	7/7/2003
	Site Reference:	Charleston Naval Base Container	Sample:	UD-1
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAW-25
	Operator:	<i>Jenne M. St...</i>	Checked:	<i>Bill J. Hall</i>
		Approved:	<i>[Signature]</i>	

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	2.000
Initial Temp oC	20.0
Correction (in)	0.0039
Displacement (in)	0.0579
Voids Ratio e_0	1.9256
Final Temp oC	
t_{90} (mins)	54.3
c_v (ft ² /day)	0.013
m_v (ft ² /ton)	0.102
Sec Compression C_{sec}	



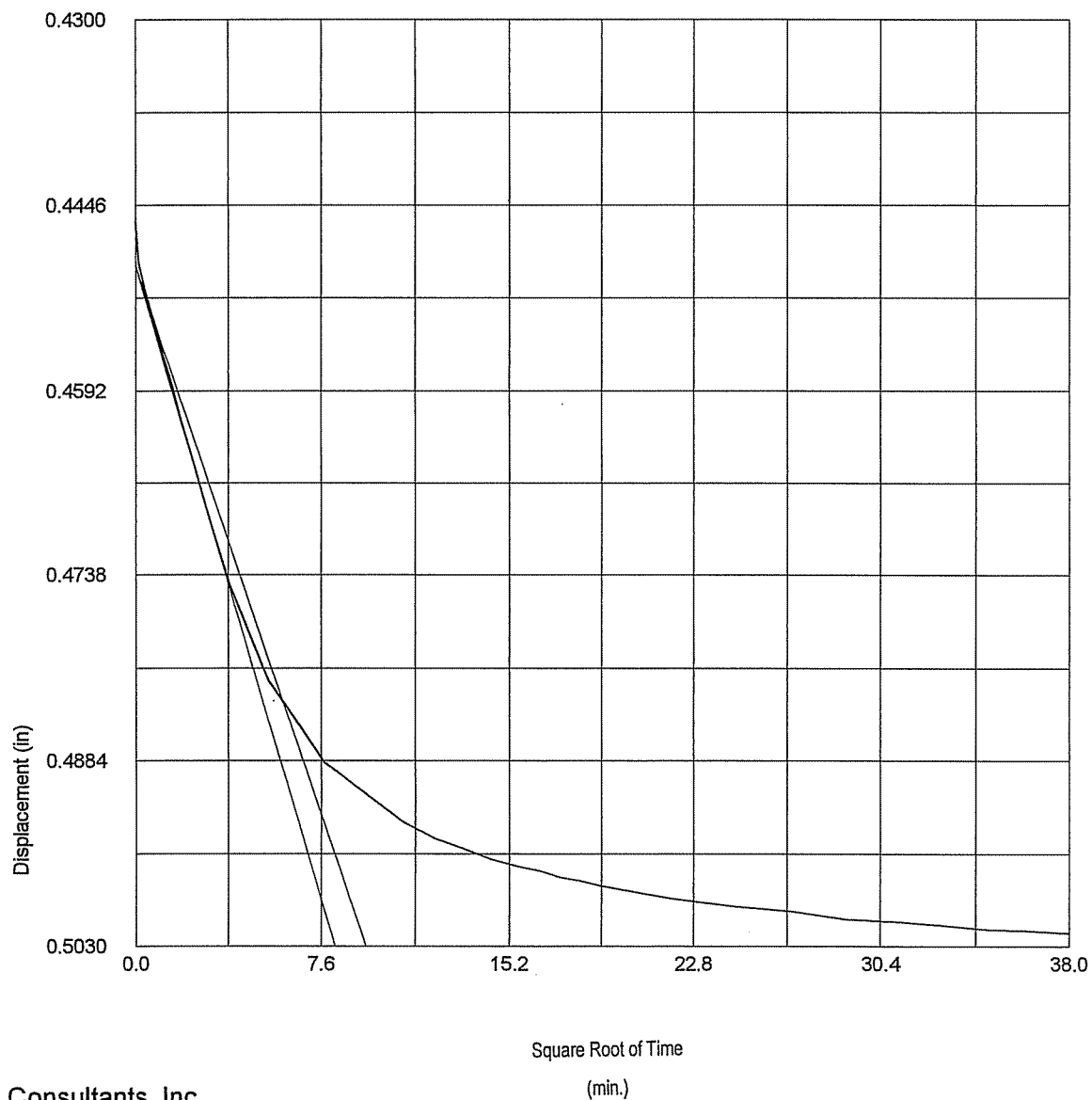
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96	Test name	Consol #2	
		Date of Test:	7/7/2003	
	Site Reference:	Charleston Naval Base Container	Sample:	UD-1
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAW-25
	Operator:	Jeanne M. B. Dil	Checked:	T. Hal
		Approved:	[Signature]	

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	4.000
Initial Temp oC	20.0
Correction (in)	0.0053
Displacement (in)	0.0562
Voids Ratio e_0	1.6383
Final Temp oC	
t_{90} (mins)	36.0
c_v (ft ² /day)	0.017
m_v (ft ² /ton)	0.054
Sec Compression C_{sec}	



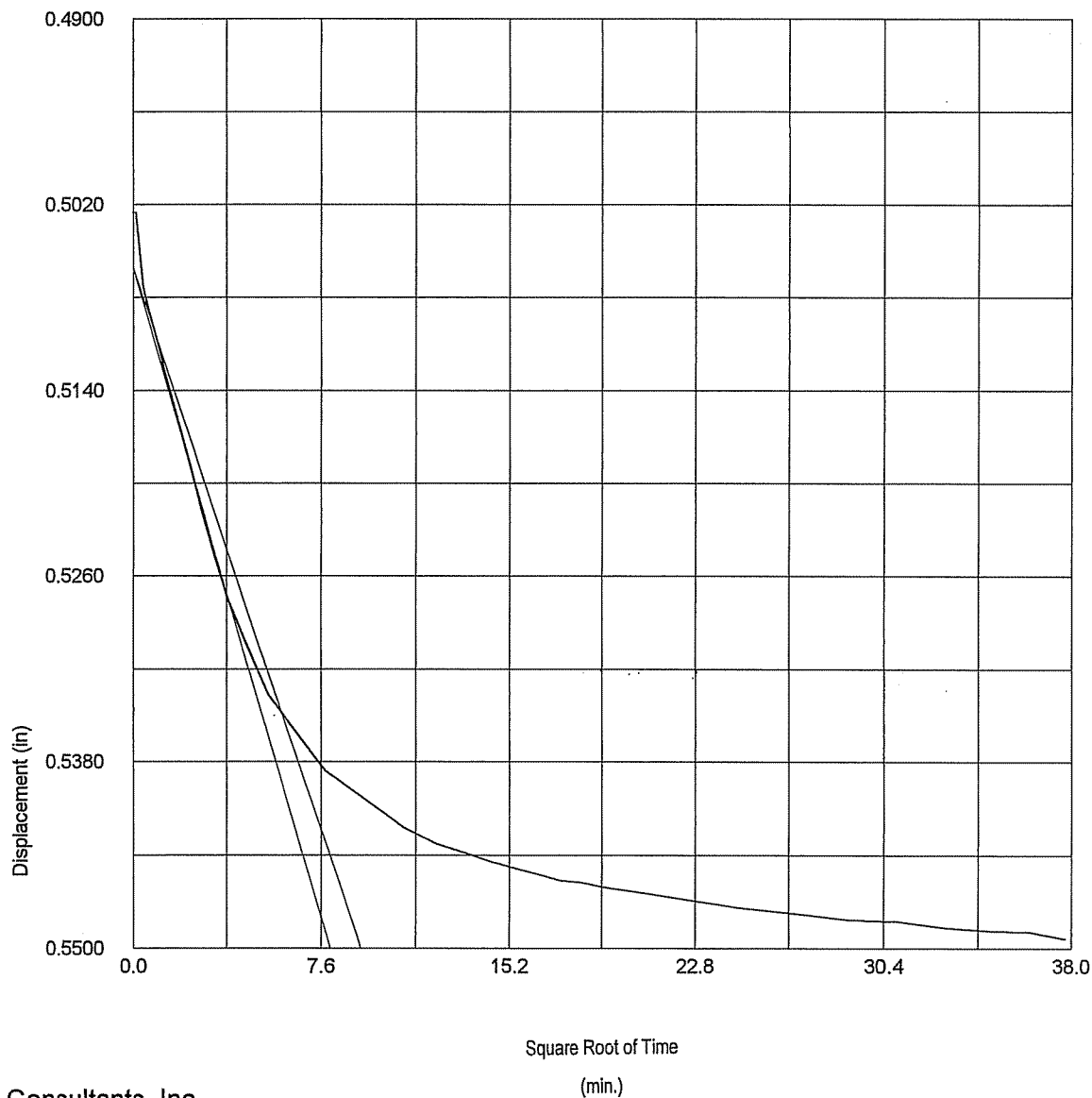
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96	Test name	Consol #2
		Date of Test:	7/7/2003
	Site Reference: Charleston Naval Base Container	Sample:	UD-1
	Jobfile: C:\WINCLISP\CNB.JOB	Borehole:	PAW-25
	Operator: <i>James M. Stone</i>	Checked: <i>Deil T. Hel</i>	Approved: <i>James M. Stone</i>

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	8.000
Initial Temp oC	20.0
Correction (in)	0.0067
Displacement (in)	0.0469
Voids Ratio e_0	1.3972
Final Temp oC	
t_{90} (mins)	36.5
c_v (ft ² /day)	0.013
m_v (ft ² /ton)	0.025
Sec Compression C_{sec}	



Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96	Test name: Consol #2
	Site Reference: Charleston Naval Base Container	Date of Test: 7/7/2003
	Jobfile: C:\WINCLISP\CNB.JOB	Sample: UD-1
	Operator: <i>Jeanne M. St...</i>	Borehole: PAW-25
	Checked: <i>Dail J. Herl</i>	Approved: <i>M. St...</i>

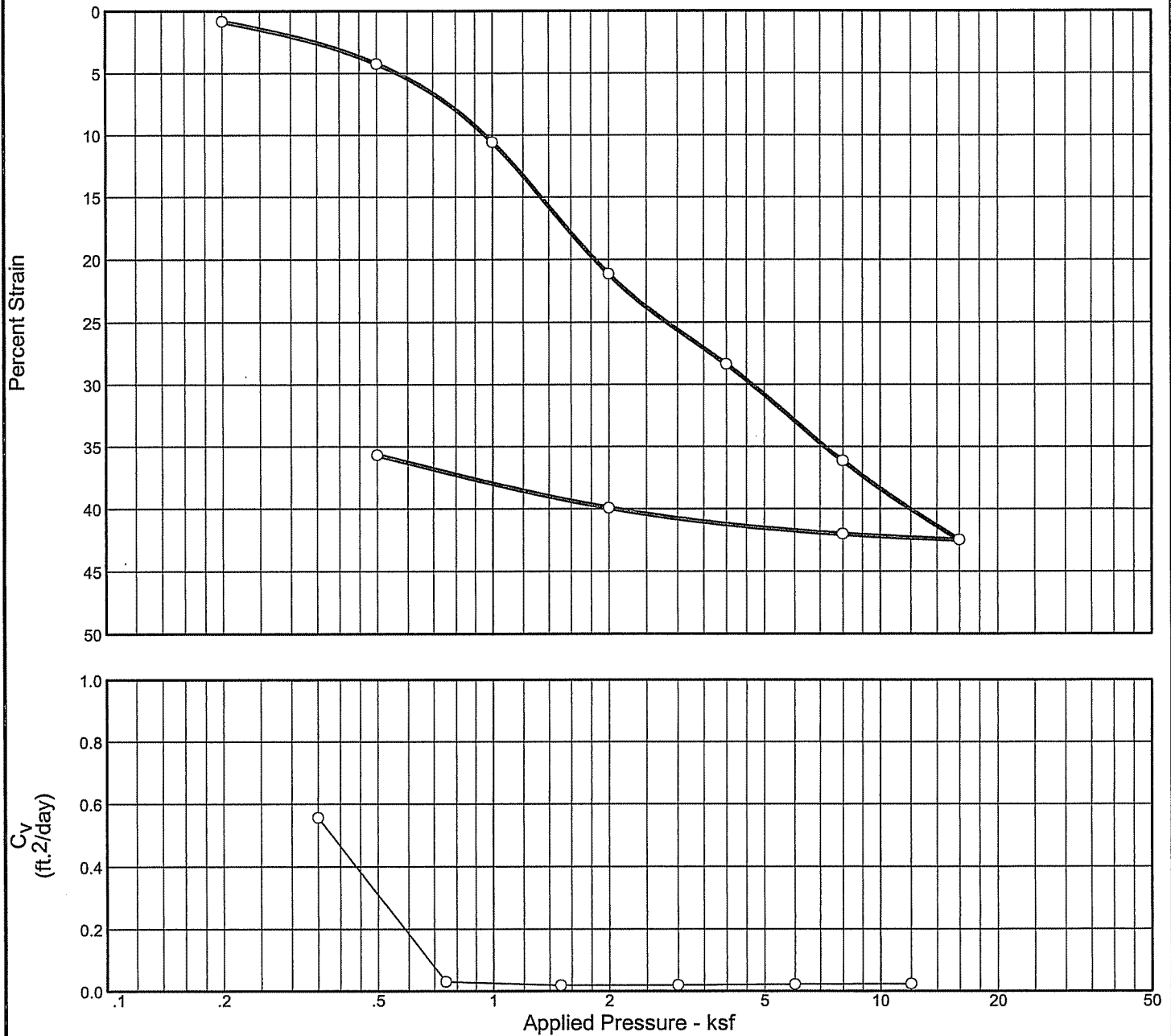
Oedometer Settlement Tests

Stress (TSF)	Initial Temp. oC	Settlement Total (in)	Cal Corr. (in)	Final Temp. oC	Voids Ratio e_f	t_{90} (mins)	Secondary Compr C_{sec}	c_v (ft ² /day)	m_v (ft ² /ton)
0.125	20.0	0.1374	0.0008	20.0	3.5218	50.4		0.036	1.274
0.250	20.0	0.2263	0.0013	20.0	3.0558	163.2		0.009	0.919
0.500	20.0	0.3125	0.002	20.0	2.6039	134.5		0.008	0.502
1.000	20.0	0.3850	0.0029	20.0	2.2239	87.8		0.010	0.236
2.000	20.0	0.4419	0.0039	20.0	1.9256	54.3		0.013	0.102
4.000	20.0	0.4967	0.0053	20.0	1.6383	36.0		0.017	0.054
8.000	20.0	0.5427	0.0067	20.0	1.3972	36.5		0.013	0.025
2.000	20.0	0.5306	0.0039	20.0	1.4606				0.004
0.500	20.0	0.5078	0.002	20.0	1.5801				0.031
0.125	20.0	0.5076	0.0008	20.0	1.5812				0.001

Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #2
			Date of Test:	7/7/2003
	Site Reference:	Charleston Naval Base Container	Sample:	UD-1
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAW-25
	Operator:	<i>Garrett Stue</i>	Checked:	<i>Neil Hal</i>

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (ksf)	P _c (ksf)	C _c	C _r	Initial Void Ratio
Saturation	Moisture									
100.0 %	95.1 %	49.5	104	73	2.58		0.61	0.67	0.13	2.251

MATERIAL DESCRIPTION								USCS	AASHTO
Dark gray and black, Sandy Clay								CH	

Project No. 1131-03-264 Client: SCSPA Project: Charleston Navy Base Container Terminal North Charleston, SC Source: PAW-25 Sample No.: UD-3 Elev./Depth: -21.1 to -23.1 CLW	Remarks:
CONSOLIDATION TEST REPORT S & ME, Inc.	
Plate	

Dial Reading vs. Time

Project No.: 1131-03-264

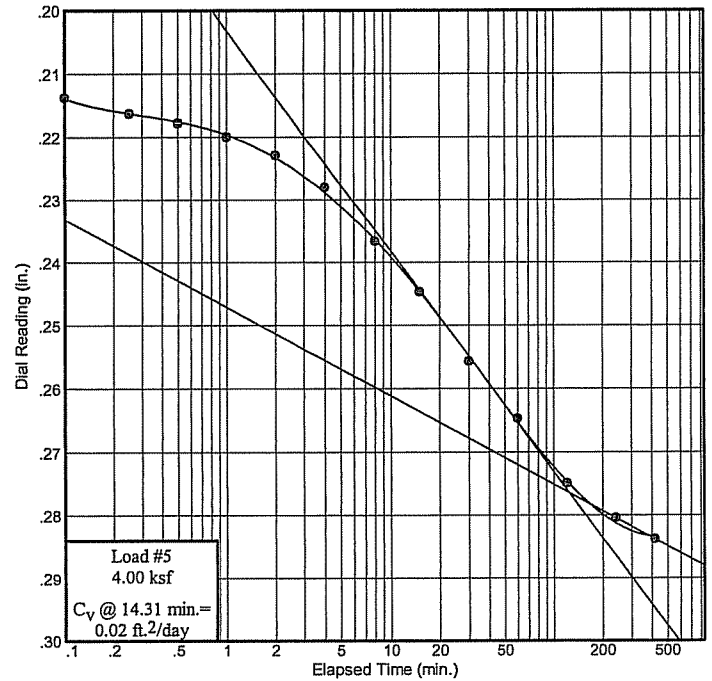
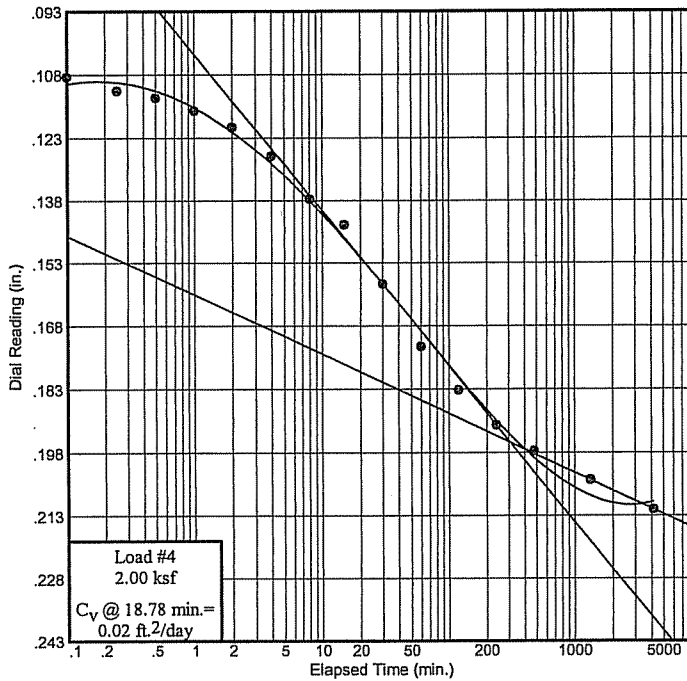
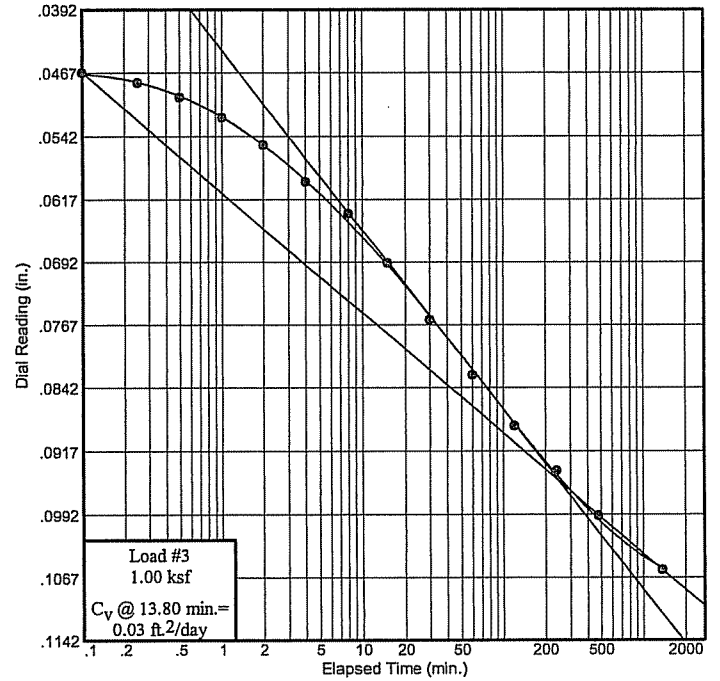
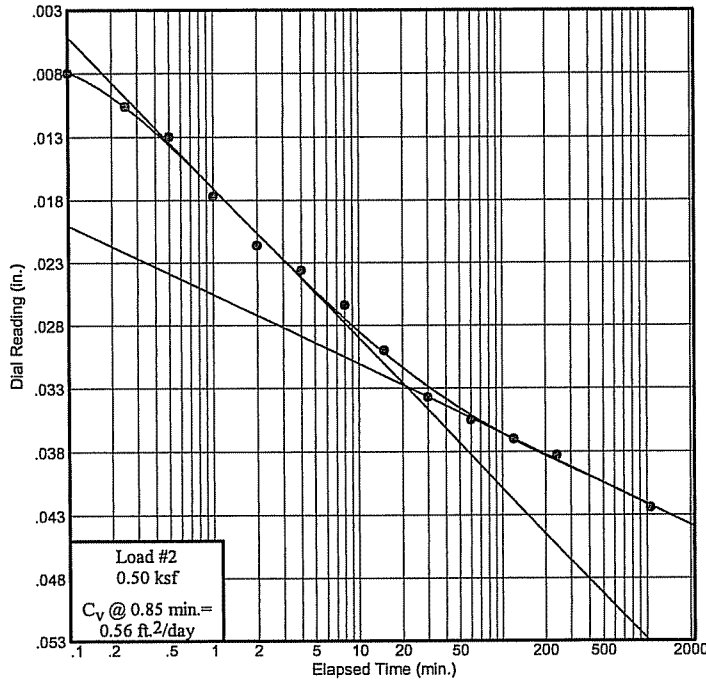
Project: Charleston Navy Base Container Terminal

North Charleston, SC

Source: PAW-25

Sample No.: UD-3

Elev./Depth: -21.1to-23.1 CLW



Dial Reading vs. Time

S & ME, Inc.

Plate

Dial Reading vs. Time

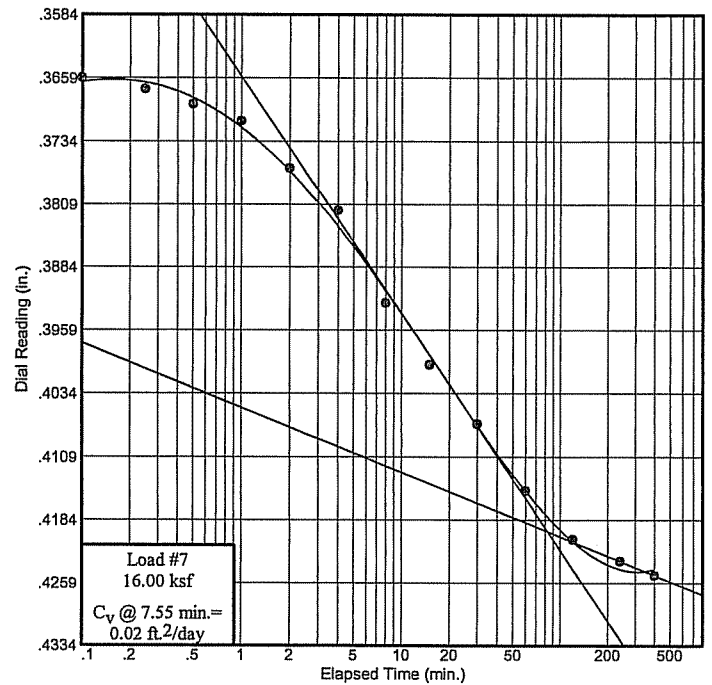
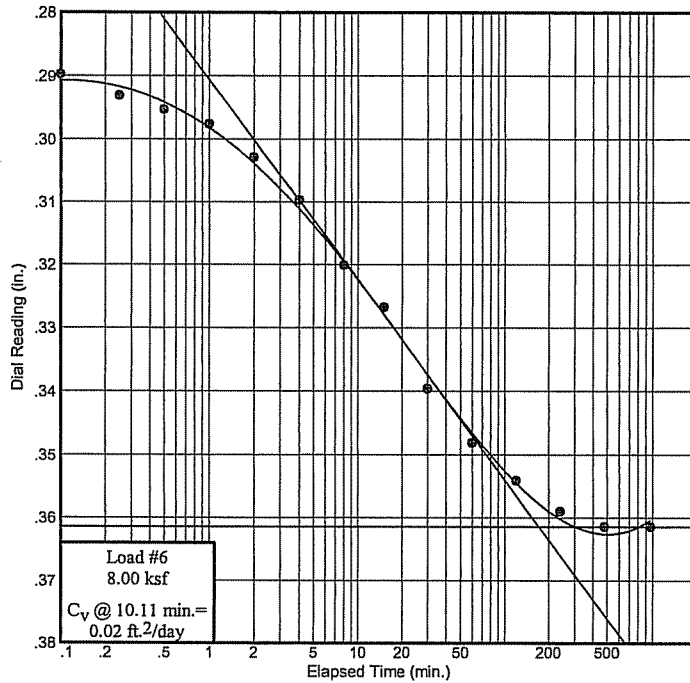
Project No.: 1131-03-264

Project: Charleston Navy Base Container Terminal
North Charleston, SC

Source: PAW-25

Sample No.: UD-3

Elev./Depth: -21.1to-23.1 CLW



Dial Reading vs. Time

S & ME, Inc.

Plate

CONSOLIDATION TEST DATA

Client: SCSPA
 Project: Charleston Navy Base Container Terminal
 North Charleston, SC
 Project Number: 1131-03-264

Sample Data

Source: PAW-25
 Sample No.: UD-3
 Elev. or Depth: -21.1to-23.1 CLW Sample Length (in./cm.):
 Location:
 Description: Dark gray and black, Sandy Clay
 Liquid Limit: 104 Plasticity Index: 73
 USCS: CH AASHTO: Figure No.:
 Testing Remarks:

Test Specimen Data

TOTAL SAMPLE	BEFORE TEST	AFTER TEST
Wet w+t = 60.48 g.	Consolidometer # = 3	Wet w+t = 219.26 g.
Dry w+t = 31.85 g.		Dry w+t = 187.10 g.
Tare Wt. = 1.73 g.	Spec. Gravity = 2.58	Tare Wt. = 120.29 g.
Height = 4.38 in.	Height = 1.00 in.	
Diameter = 2.88 in.	Diameter = 2.88 in.	
Weight = 722.40 g.	Defl. Table = Reference Set (inches/tsf)	
Moisture = 95.1 %	Ht. Solids = 0.3076 in.	Moisture = 48.1 %
Den. = 96.6 pcf	Dry Wt. = 84.65 g.*	Dry Wt. = 66.81 g.
Den. = 49.5 pcf	Void Ratio = 2.251	Void Ratio = 1.091
	Saturation = 100.0 %	

* Initial dry weight used in calculations

End-of-Load Summary

Pressure (ksf)	Final Dial (in.)	Machine Defl. (in.)	C_v (ft. ² /day)	C_α	Void Ratio	% Compression /Swell
start	0.00000				2.251	
0.20	0.00840	0.00000			2.224	0.8 Compr.
0.50	0.04280	0.00040	0.56	0.006	2.113	4.2 Compr.
1.00	0.10660	0.00080	0.03	0.015	1.907	10.6 Compr.
2.00	0.21310	0.00160	0.02	0.016	1.564	21.2 Compr.
4.00	0.28620	0.00240	0.02	0.018	1.329	28.4 Compr.
8.00	0.36140	0.00000	0.02	0.000	1.076	36.1 Compr.
16.00	0.42500	0.00000	0.02	0.012	0.869	42.5 Compr.
8.00	0.42030	0.00000			0.885	42.0 Compr.
2.00	0.40090	0.00160			0.953	39.9 Compr.
0.50	0.35720	0.00040			1.091	35.7 Compr.

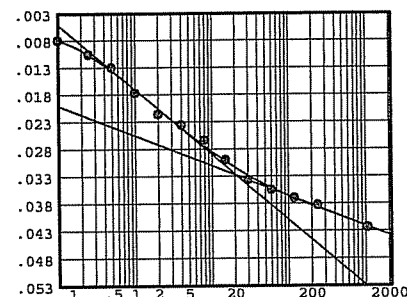
$C_c = 0.67$ $P_c = 0.61$ ksf $C_r = 0.13$

Pressure: 0.50 ksf

TEST READINGS

Load No. 2

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.00000	11	60.00	0.03590
2	0.10	0.00840	12	120.00	0.03740
3	0.25	0.01100	13	240.00	0.03870
4	0.50	0.01340	14	1065.00	0.04280
5	1.00	0.01810			
6	2.00	0.02200			
7	4.00	0.02400			
8	8.00	0.02680			
9	15.00	0.03040			
10	30.00	0.03410			



Void Ratio = 2.113 Compression = 4.2 %

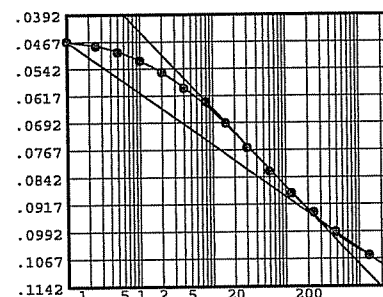
 $D_0 = -0.00040$ $D_{50} = 0.01622$ $D_{100} = 0.03285$ C_v at 0.8 min. = 0.56 ft.²/day $C_\alpha = 0.006$

Pressure: 1.00 ksf

TEST READINGS

Load No. 3

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.04280	11	60.00	0.08350
2	0.10	0.04750	12	120.00	0.08950
3	0.25	0.04870	13	240.00	0.09480
4	0.50	0.05040	14	480.00	0.10010
5	1.00	0.05280	15	1366.00	0.10660
6	2.00	0.05600			
7	4.00	0.06040			
8	8.00	0.06420			
9	15.00	0.07010			
10	30.00	0.07690			



Void Ratio = 1.907 Compression = 10.6 %

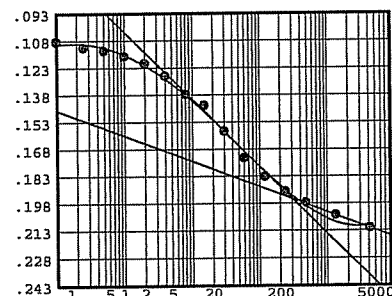
 $D_0 = 0.04240$ $D_{50} = 0.06881$ $D_{100} = 0.09521$ C_v at 13.8 min. = 0.03 ft.²/day $C_\alpha = 0.015$

Pressure: 2.00 ksf

TEST READINGS

Load No. 4

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.10660	11	60.00	0.17450
2	0.10	0.11010	12	120.00	0.18480
3	0.25	0.11340	13	240.00	0.19310
4	0.50	0.11510	14	480.00	0.19920
5	1.00	0.11820	15	1328.00	0.20610
6	2.00	0.12210	16	4177.00	0.21310
7	4.00	0.12900			
8	8.00	0.13920			
9	15.00	0.14540			
10	30.00	0.15960			



Void Ratio = 1.564 Compression = 21.2 %

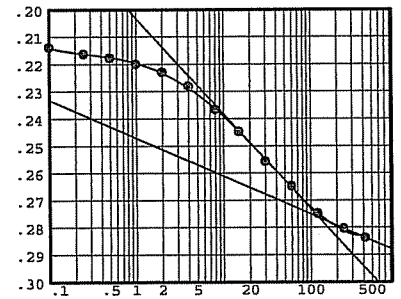
 $D_0 = 0.10580$ $D_{50} = 0.15068$ $D_{100} = 0.19556$ C_v at 18.8 min. = 0.02 ft.²/day $C_\alpha = 0.016$

Pressure: 4.00 ksf

TEST READINGS

Load No. 5

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.21310	11	60.00	0.26710
2	0.10	0.21620	12	120.00	0.27730
3	0.25	0.21870	13	240.00	0.28280
4	0.50	0.22020	14	420.00	0.28620
5	1.00	0.22240			
6	2.00	0.22530			
7	4.00	0.23040			
8	8.00	0.23900			
9	15.00	0.24710			
10	30.00	0.25810			



Void Ratio = 1.329 Compression = 28.4 %

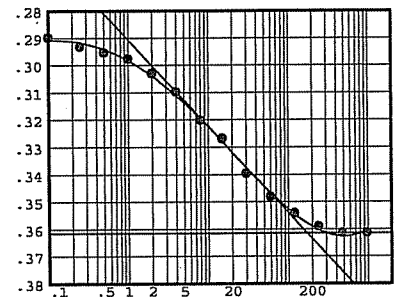
 $D_0 = 0.21150$ $D_{50} = 0.24395$ $D_{100} = 0.27641$ C_v at 14.3 min. = 0.02 ft.²/day $C_\alpha = 0.018$

Pressure: 8.00 ksf

TEST READINGS

Load No. 6

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.28620	11	60.00	0.34810
2	0.10	0.28980	12	120.00	0.35410
3	0.25	0.29310	13	240.00	0.35900
4	0.50	0.29530	14	480.00	0.36140
5	1.00	0.29760	15	971.00	0.36140
6	2.00	0.30290			
7	4.00	0.30970			
8	8.00	0.32010			
9	15.00	0.32680			
10	30.00	0.33960			



Void Ratio = 1.076 Compression = 36.1 %

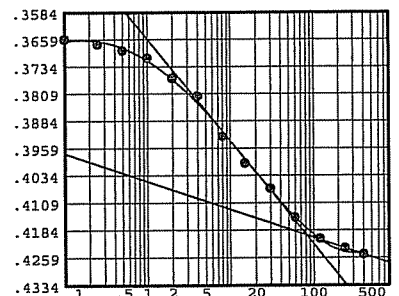
 $D_0 = 0.28380$ $D_{50} = 0.32260$ $D_{100} = 0.36140$ C_v at 10.1 min. = 0.02 ft.²/day $C_\alpha = 0.000$

Pressure: 16.00 ksf

TEST READINGS

Load No. 7

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.36140	11	60.00	0.41490
2	0.10	0.36590	12	120.00	0.42070
3	0.25	0.36720	13	240.00	0.42330
4	0.50	0.36900	14	400.00	0.42500
5	1.00	0.37100			
6	2.00	0.37660			
7	4.00	0.38160			
8	8.00	0.39270			
9	15.00	0.40000			
10	30.00	0.40700			



Void Ratio = 0.869 Compression = 42.5 %

 $D_0 = 0.36140$ $D_{50} = 0.39058$ $D_{100} = 0.41977$ C_v at 7.5 min. = 0.02 ft.²/day $C_\alpha = 0.012$

Pressure: 8.00 ksf

TEST READINGS

Load No. 8

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.42500	11	60.00	0.42050
2	0.10	0.42330	12	120.00	0.42040
3	0.25	0.42290	13	1070.00	0.42030
4	0.50	0.42260			
5	1.00	0.42240			
6	2.00	0.42200			
7	4.00	0.42160			
8	8.00	0.42120			
9	15.00	0.42090			
10	30.00	0.42070			

Void Ratio = 0.885 Compression = 42.0 %

Pressure: 2.00 ksf

TEST READINGS

Load No. 9

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.42030	11	60.00	0.40350
2	0.10	0.41700	12	120.00	0.40190
3	0.25	0.41610	13	240.00	0.40100
4	0.50	0.41550	14	300.00	0.40090
5	1.00	0.41440			
6	2.00	0.41350			
7	4.00	0.41150			
8	8.00	0.40970			
9	15.00	0.40780			
10	30.00	0.40540			

Void Ratio = 0.953 Compression = 39.9 %

Pressure: 0.50 ksf

TEST READINGS

Load No. 10

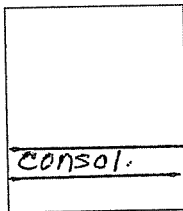
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.40090	11	60.00	0.37610
2	0.10	0.39910	12	120.00	0.37080
3	0.25	0.39850	13	240.00	0.36560
4	0.50	0.39790	14	1110.00	0.35720
5	1.00	0.39710			
6	2.00	0.39600			
7	4.00	0.39400			
8	8.00	0.39000			
9	15.00	0.38680			
10	30.00	0.38330			

Void Ratio = 1.091 Compression = 35.7 %

Oedometer Settlement Tests

Sample details

Sketch showing specimen location in original Sample



Depth: Elev. -19.0
Description: Gray inorganic clay with slight sand content.

Type: Undisturbed
Height H_0 (in): 1
Diameter D_0 (in): 2.5
Weight W_0 (gr): 104.05
Bulk Density ρ (PCF): 80.75
Particle Density ρ_s : 2.57 (measured)

Initial Conditions

Settlement Channel: consol #1
Moisture Content w_0 %: 126.5
Dry Density ρ_d (PCF): 35.66
Voids Ratio e_0 : 3.4974
Deg of Saturation S_0 %: 92.9
Swelling Pressure S_s (TSF):

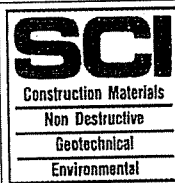
Final Conditions

Moisture Content w_f %: 58.1
Dry Density ρ_d (PCF): 75.35
Voids Ratio e_f : 1.1282
Deg of Saturation S_f %: 100.00
Settlement: (in): 0.527
Compression Index C_c :

Notes:

Atterberg Limits- LL: 128 PL: 41 PI: 87, Wash 200: 92.2% passing.

Soil Consultants, Inc.



ASTM D2435-96

Test name: Consol. #1

Date of Test: 6/23/2003

Site Reference: Charleston Naval Base Container
Jobfile: C:\WINCLISP\CNB.JOB

Sample: UD-1
Borehole: PAW-26

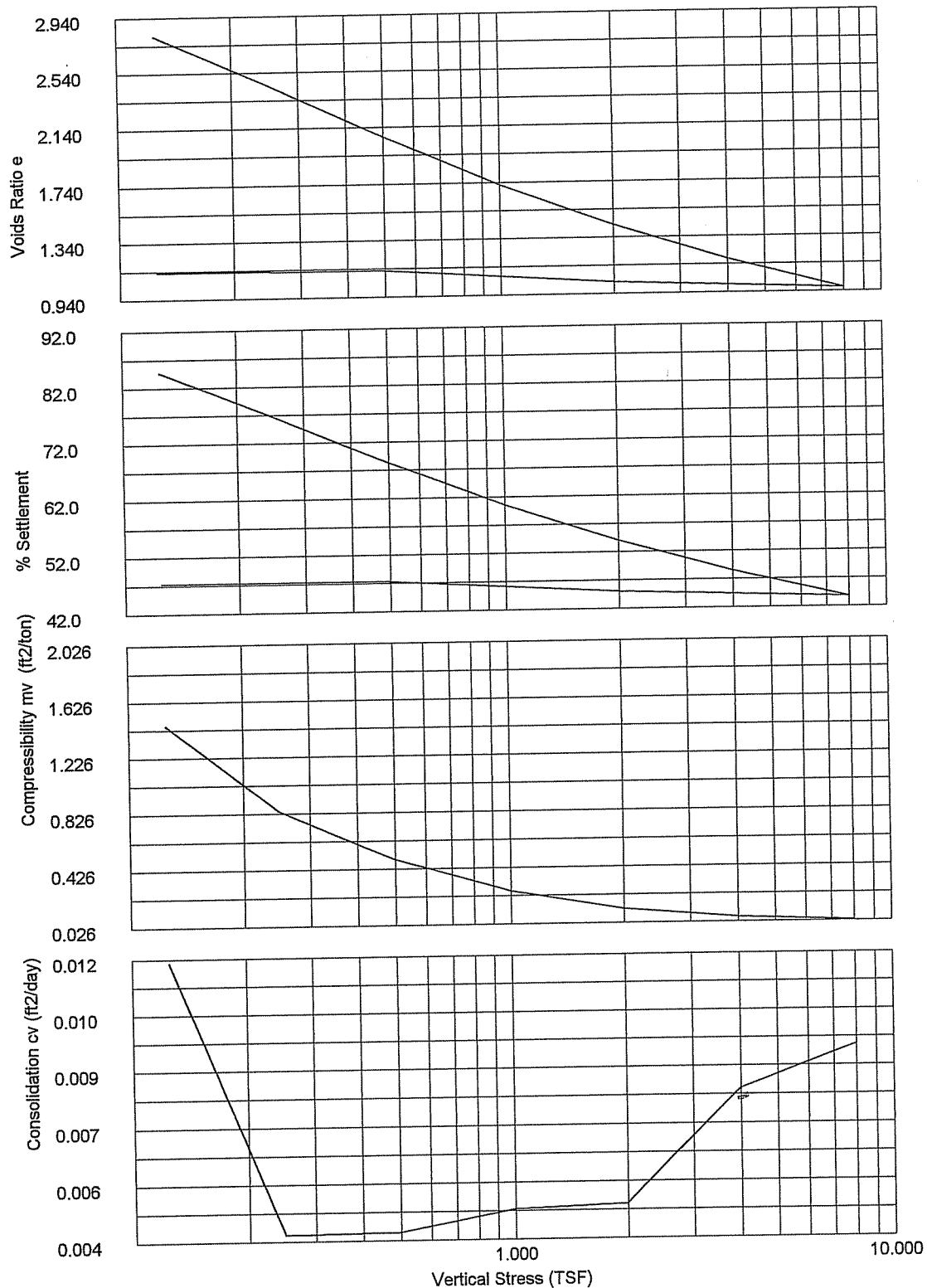
Operator:

Checked:

Approved:

Spencer M. Stroh *David J. Hal* *R. B. [Signature]*

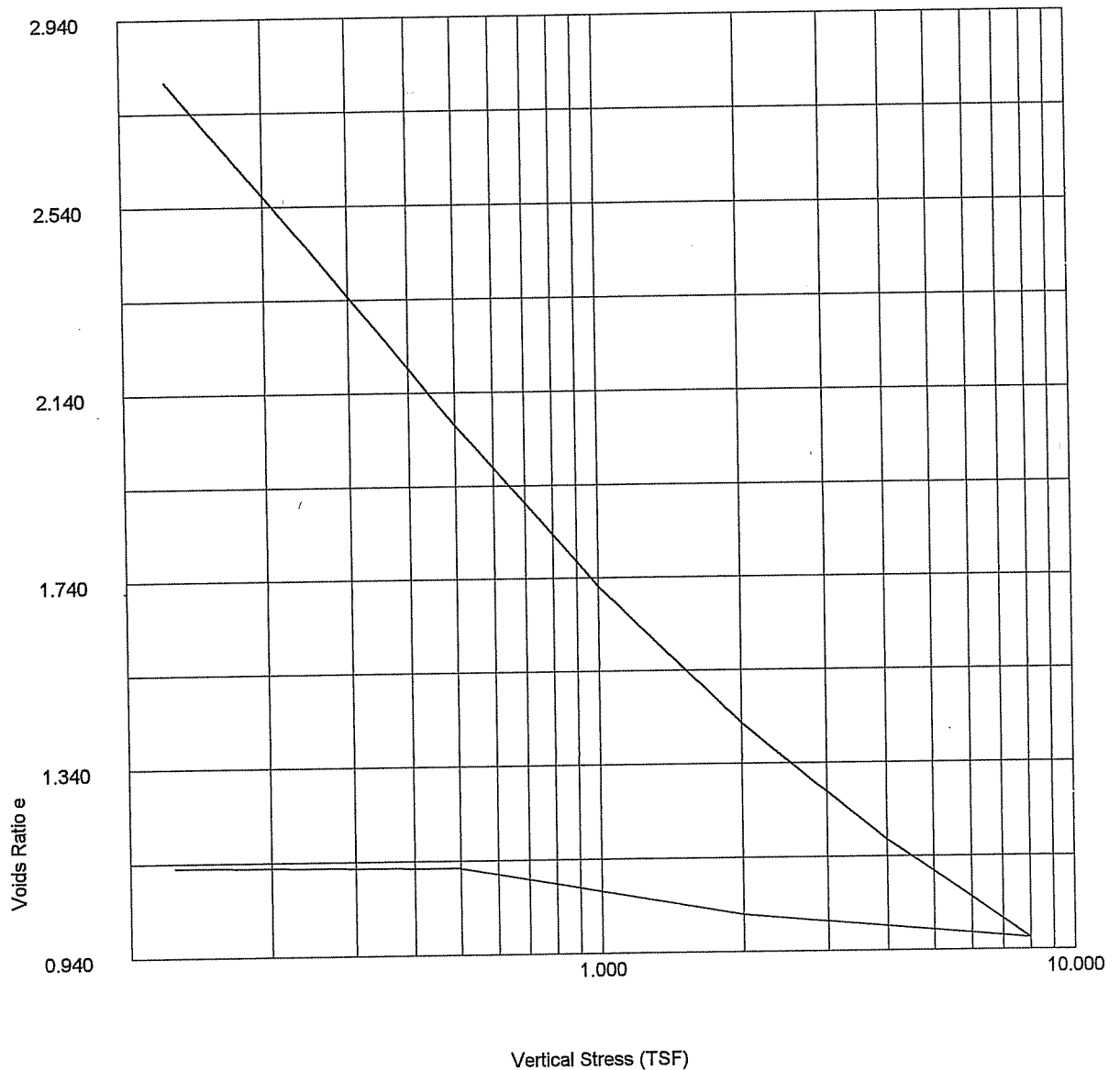
Oedometer Settlement Tests



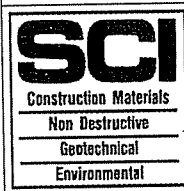
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol. #1
			Date of Test:	6/23/2003
	Site Reference:	Charleston Naval Base Container	Sample:	UD-1
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAW-26
Operator:		Checked:	Approved:	
<i>Gennett M. Star</i>		<i>Dail - Neal</i>		<i>W. Star</i>

Oedometer Settlement Tests



Soil Consultants, Inc.



ASTM D2435-96

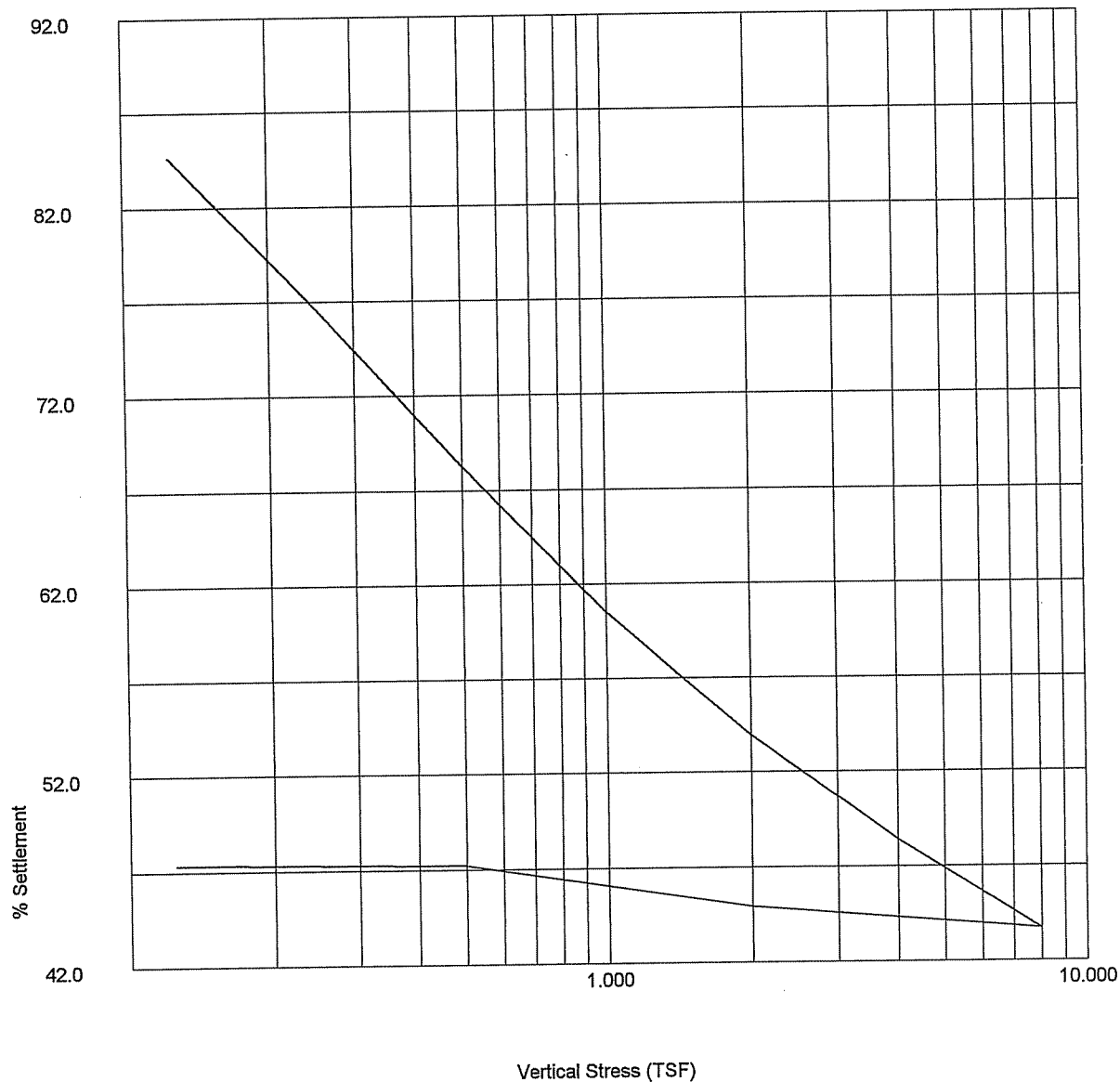
Test name: Consol. #1
Date of Test: 6/23/2003

Site Reference: Charleston Naval Base Container
Jobfile: C:\WINCLISP\CNB.JOB

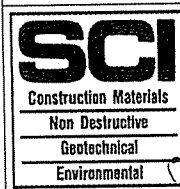
Sample: UD-1
Borehole: PAW-26

Operator: *Jennette M. Stewart* Checked: *Dail J. Kel* Approved: *[Signature]*

Oedometer Settlement Tests



Soil Consultants, Inc.



ASTM D2435-96

Test name: Consol. #1
Date of Test: 6/23/2003

Site Reference: Charleston Naval Base Container
Jobfile: C:\WINCLISP\CNB.JOB

Sample: UD-1
Borehole: PAW-26

Operator:

Checked:

Approved:

James M. Sho

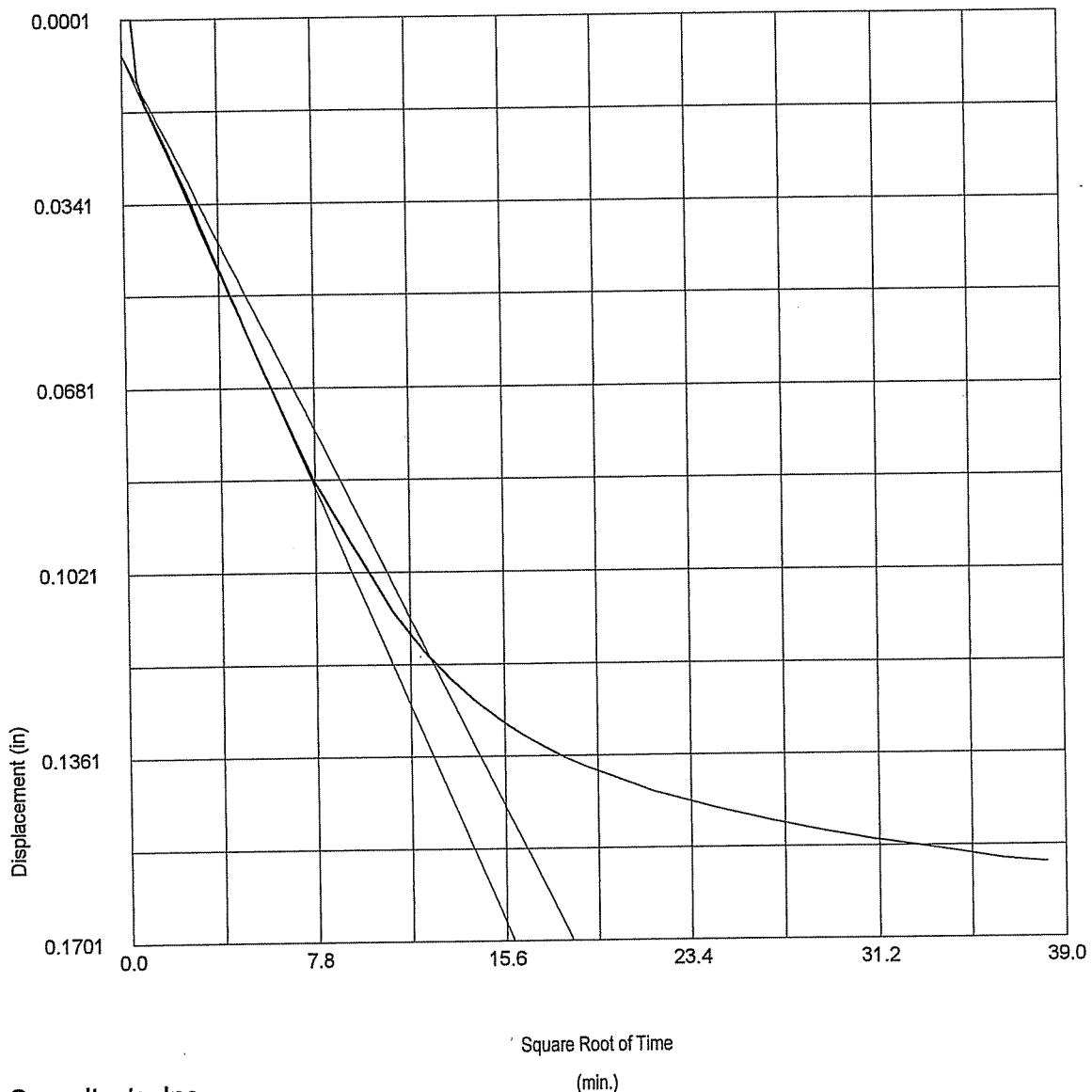
Dail T. Hall

[Signature]

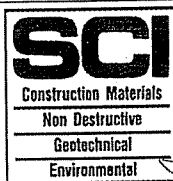
Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	0.125
Initial Temp oC	20.0
Correction (in)	0.0025
Displacement (in)	0.1564
Voids Ratio e_0	2.8053
Final Temp oC	
t_{90} (mins)	155.9
c_v (ft ² /day)	0.012
m_v (ft ² /ton)	1.455
Sec Compression C_{sec}	



Soil Consultants, Inc.



ASTM D2435-96

Test name: Consol. #1
Date of Test: 6/23/2003

Site Reference: Charleston Naval Base Container
Jobfile: C:\WINCLISP\CNB.JOB

Sample: UD-1
Borehole: PAW-26

Operator:

Checked:

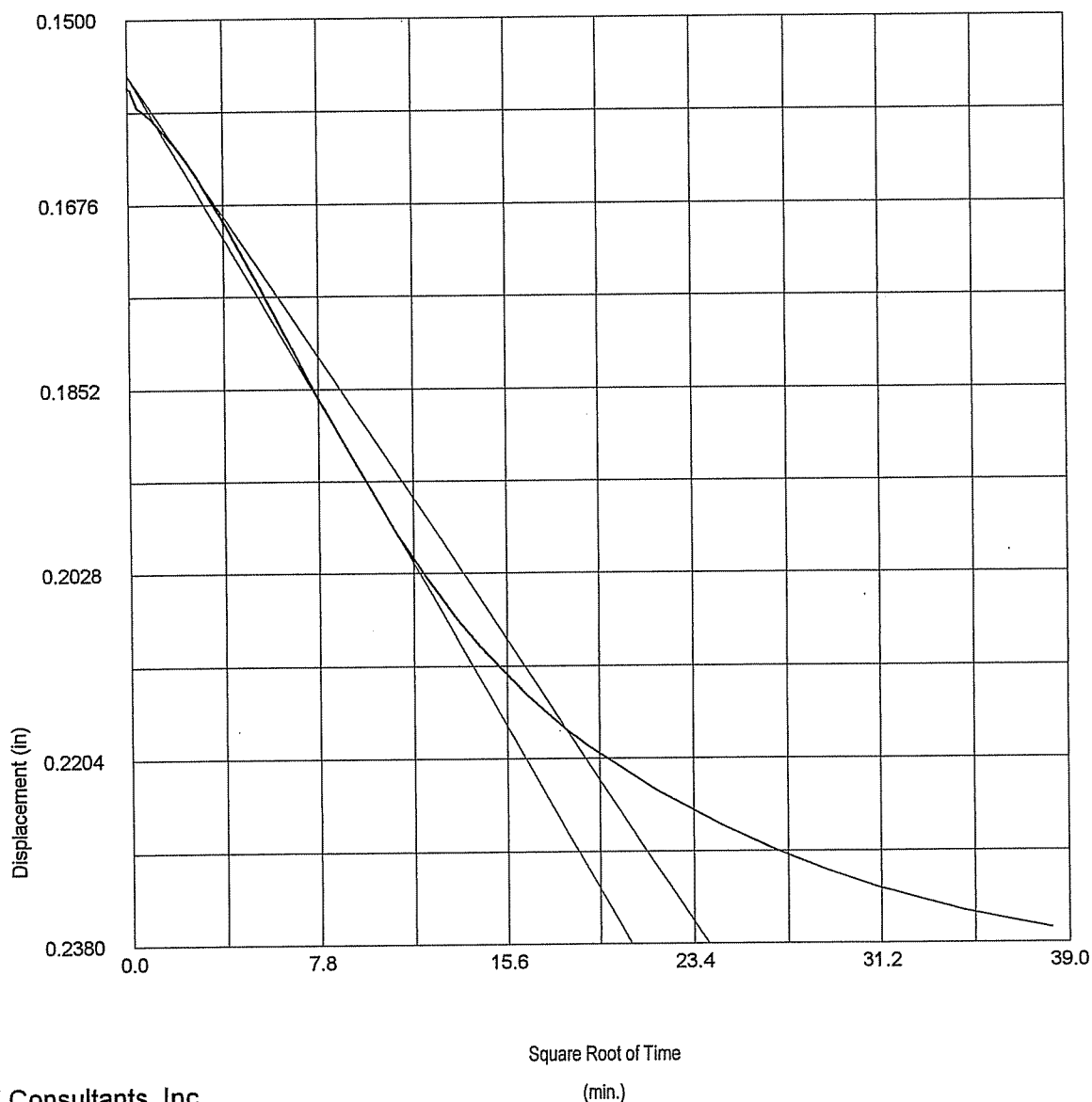
Approved:

James M. Strickland *Dail = Hal* *11/23/03*

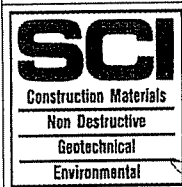
Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	0.250
Initial Temp oC	20.0
Correction (in)	0.0027
Displacement (in)	0.0802
Voids Ratio e_0	2.4455
Final Temp oC	
t_{90} (mins)	330.8
c_v (ft ² /day)	0.004
m_v (ft ² /ton)	0.835
Sec Compression C_{sec}	



Soil Consultants, Inc.



ASTM D2435-96

Test name Consol. #1

Date of Test: 6/23/2003

Site Reference: Charleston Naval Base Container

Jobfile: C:\WINCLISP\CNB.JOB

Sample: UD-1

Borehole: PAW-26

Operator: *Ganne M. Stur*

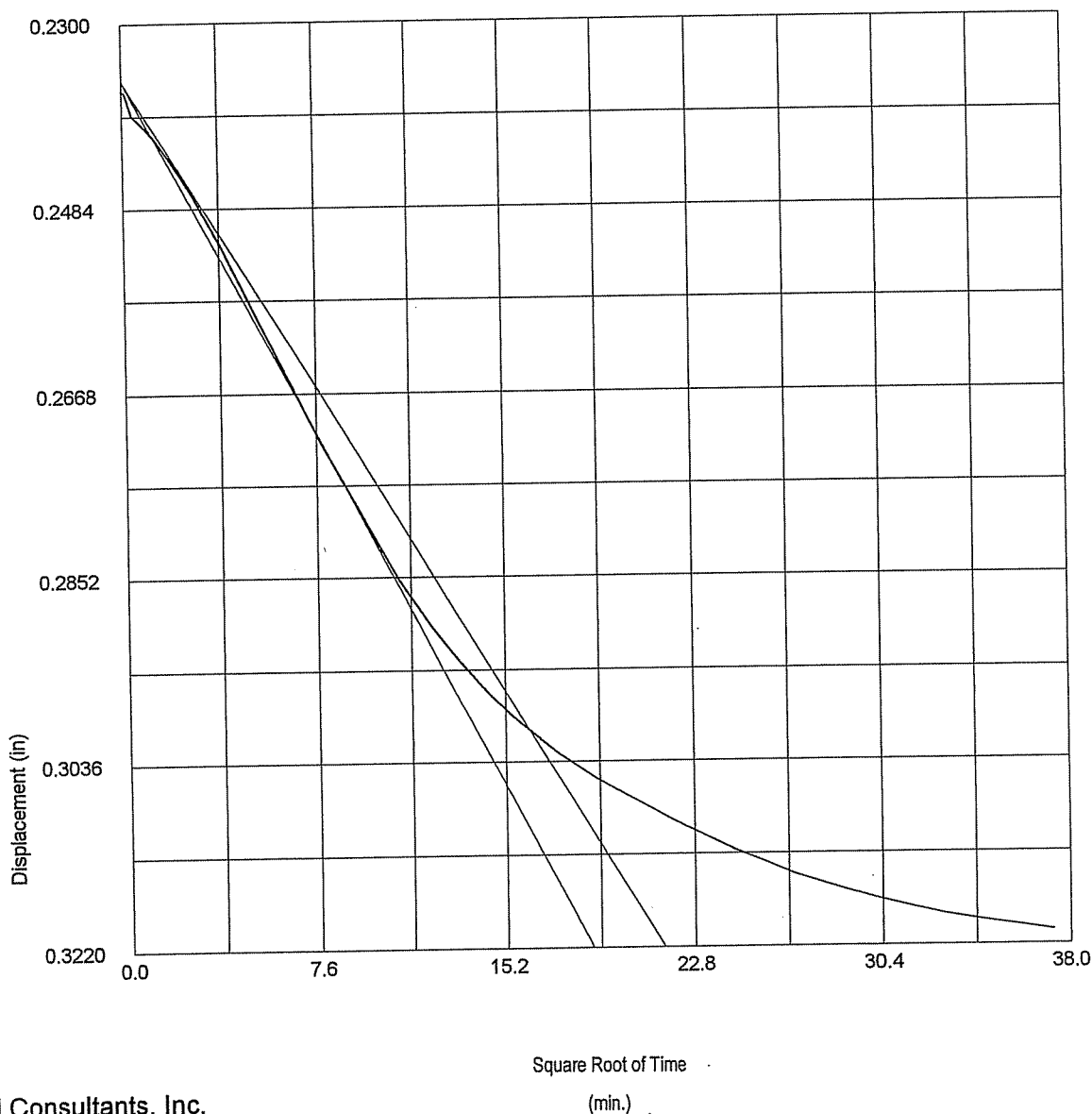
Checked: *Dail*

Approved: *Heal*

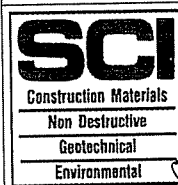
Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	0.500
Initial Temp oC	20.0
Correction (in)	0.0031
Displacement (in)	0.084
Voids Ratio e_0	2.0695
Final Temp oC	
t_{90} (mins)	264.5
c_v (ft ² /day)	0.004
m_v (ft ² /ton)	0.49
Sec Compression C_{sec}	



Soil Consultants, Inc.



ASTM D2435-96

Test name: Consol. #1
Date of Test: 6/23/2003

Site Reference: Charleston Naval Base Container
Jobfile: C:\WINCLISP\CNB.JOB

Sample: UD-1
Borehole: PAW-26

Operator:

Checked:

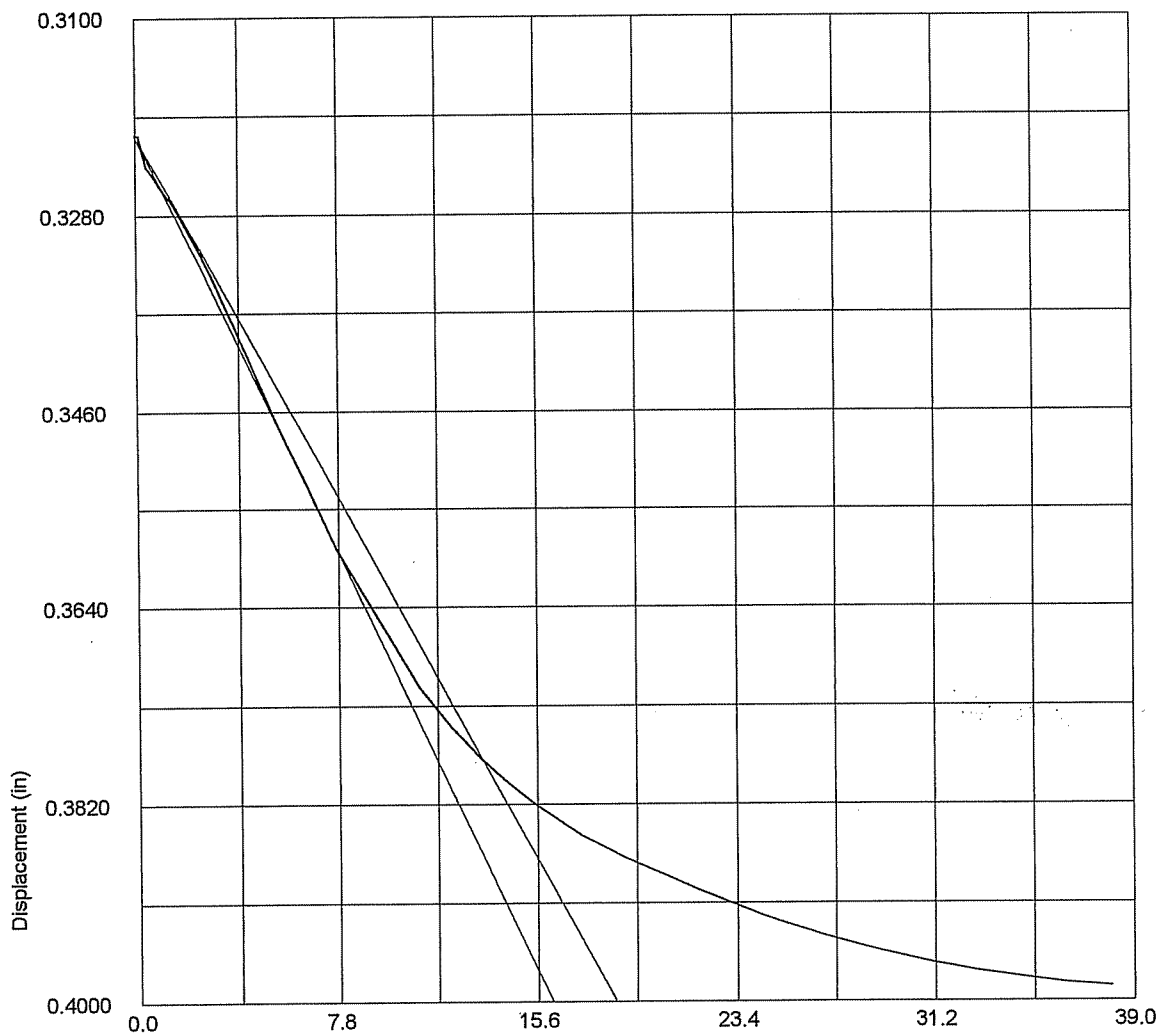
Approved:

James M. Shindler *Neil* *11/26/03*

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	1.000
Initial Temp oC	20.0
Correction (in)	0.0036
Displacement (in)	0.078
Voids Ratio e_0	1.7210
Final Temp oC	
t_{90} (mins)	183.0
c_v (ft ² /day)	0.005
m_v (ft ² /ton)	0.256
Sec Compression C_{sec}	



Square Root of Time

(min.)

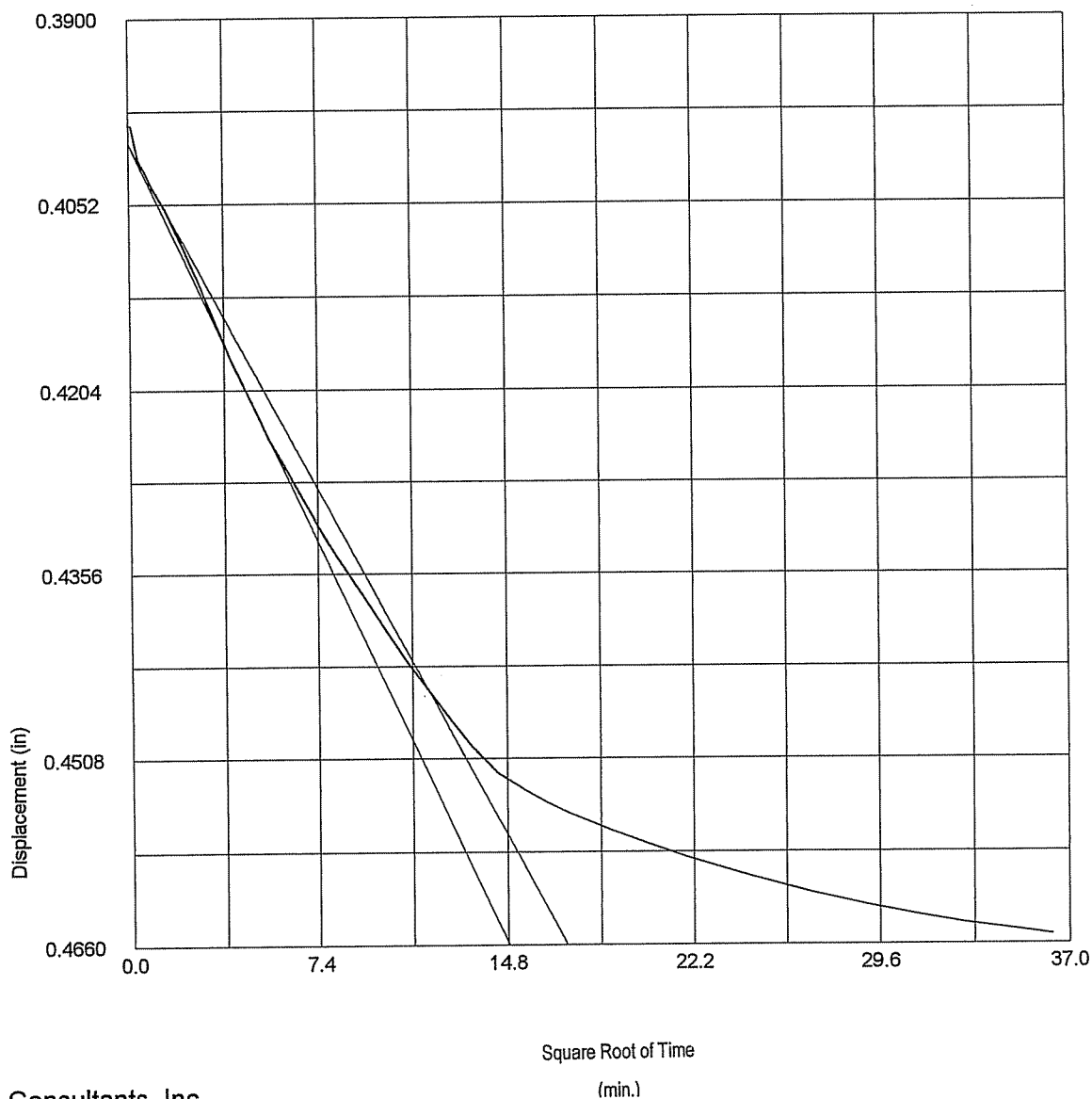
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol. #1
			Date of Test:	6/23/2003
	Site Reference: Charleston Naval Base Container		Sample:	UD-1
	Jobfile: C:\WINCLISP\CNB.JOB		Borehole:	PAW-26
Operator: <i>Shanne M. Stewart</i>		Checked: <i>Dail T. Hol</i>	Approved: <i>[Signature]</i>	

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	2.000
Initial Temp oC	20.0
Correction (in)	0.0046
Displacement (in)	0.0666
Voids Ratio e_0	1.4259
Final Temp oC	
t_{90} (mins)	141.3
c_v (ft ² /day)	0.005
m_v (ft ² /ton)	0.122
Sec Compression C_{sec}	



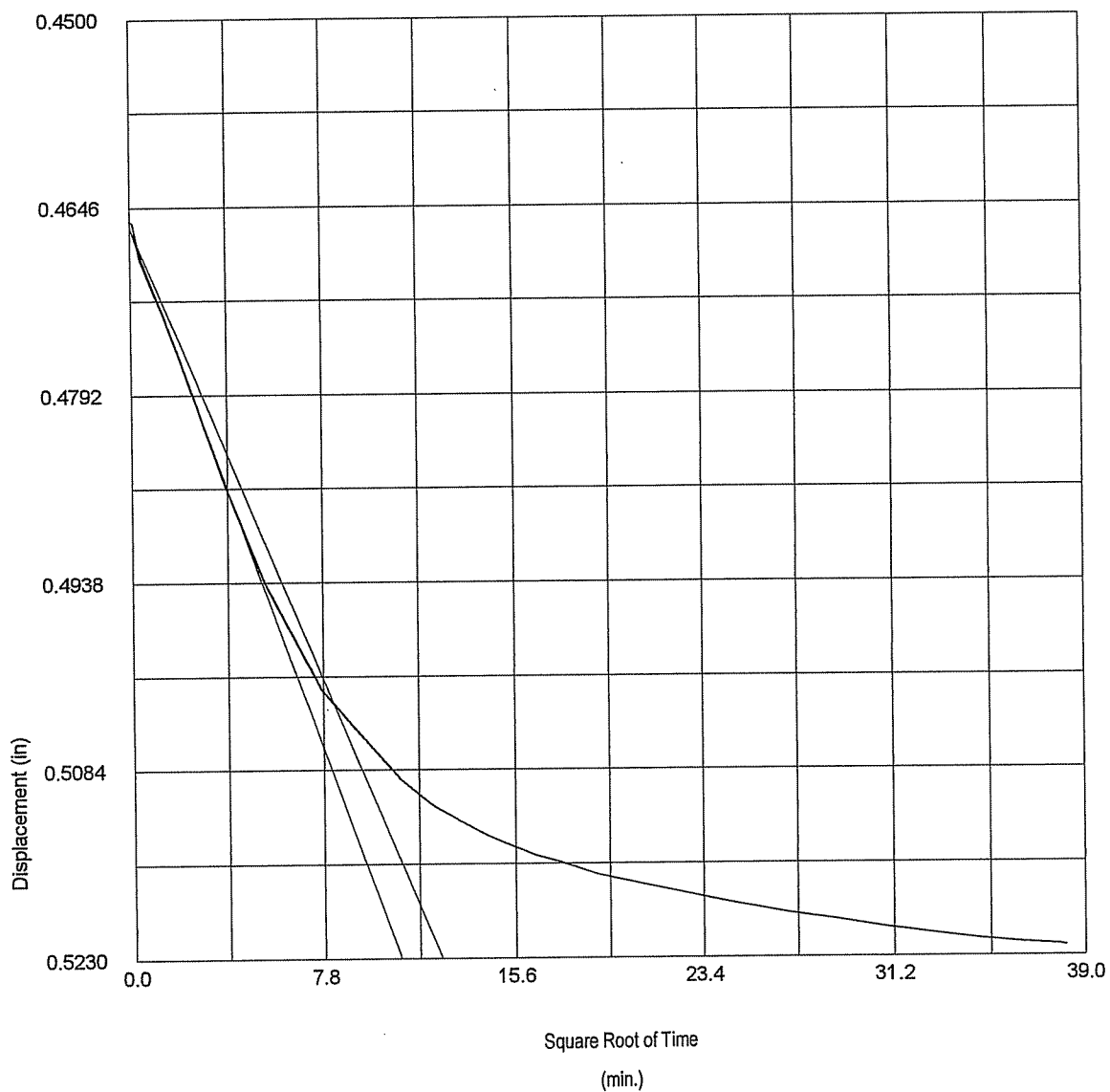
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96	Test name	Consol. #1
	Site Reference: Charleston Naval Base Container	Date of Test:	6/23/2003
	Jobfile: C:\WINCLISP\CNB.JOB	Sample:	UD-1
	Operator: <i>Gene M. St...</i>	Borehole:	PAW-26
	Checked: <i>Dee J. Hall</i>	Approved: <i>N. St...</i>	

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	4.000
Initial Temp oC	20.0
Correction (in)	0.0058
Displacement (in)	0.0566
Voids Ratio e_0	1.1750
Final Temp oC	
t_{90} (mins)	69.3
c_v (ft ² /day)	0.008
m_v (ft ² /ton)	0.058
Sec Compression C_{sec}	



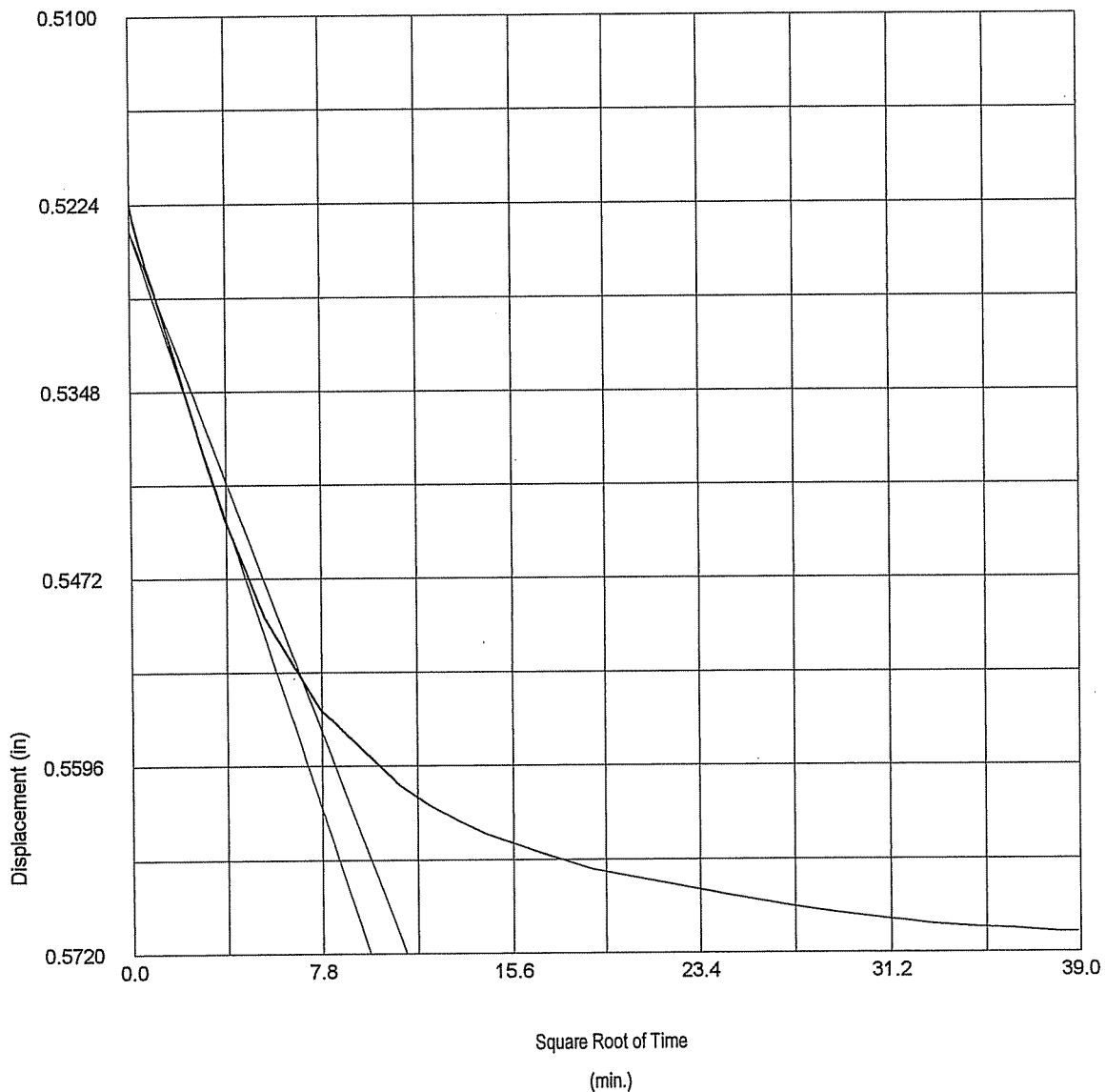
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol. #1
			Date of Test:	6/23/2003
	Site Reference:	Charleston Naval Base Container	Sample:	UD-1
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAW-26
	Operator:	<i>Janne M. Stur</i>	Checked:	<i>Deil T. Hel</i>

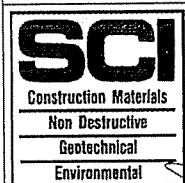
Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	8.000
Initial Temp oC	20.0
Correction (in)	0.0072
Displacement (in)	0.0484
Voids Ratio e_0	0.9636
Final Temp oC	
t_{90} (mins)	48.9
c_v (ft ² /day)	0.009
m_v (ft ² /ton)	0.027
Sec Compression C_{sec}	



Soil Consultants, Inc.



ASTM D2435-96

Test name Consol. #1
Date of Test: 6/23/2003

Site Reference: Charleston Naval Base Container
Jobfile: C:\WINCLISP\CNB.JOB

Sample: UD-1
Borehole: PAW-26

Operator:

Checked:

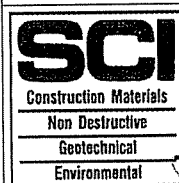
Approved:

Jeanne M. Stur *Dail & Hal* *W. H. Stur*

Oedometer Settlement Tests

Stress (TSF)	Initial Temp. oC	Settlement Total (in)	Cal Corr. (in)	Final Temp. oC	Voids Ratio e_f	t_{90} (mins)	Secondary Compr C_{sec}	c_v (ft ² /day)	m_v (ft ² /ton)
0.125	20.0	0.1539	0.0025	20.0	2.8053	155.9		0.012	1.455
0.250	20.0	0.2339	0.0027	20.0	2.4455	330.8		0.004	0.835
0.500	20.0	0.3175	0.0031	20.0	2.0695	264.5		0.004	0.490
1.000	20.0	0.3950	0.0036	20.0	1.7210	183.0		0.005	0.256
2.000	20.0	0.4606	0.0046	20.0	1.4259	141.3		0.005	0.122
4.000	20.0	0.5164	0.0058	20.0	1.1750	69.3		0.008	0.058
8.000	20.0	0.5634	0.0072	20.0	0.9636	48.9		0.009	0.027
2.000	20.0	0.5512	0.0046	20.0	1.0185				0.005
0.500	20.0	0.5282	0.0038	20.0	1.1219				0.032
0.125	20.0	0.5268	0.0029	20.0	1.1282				0.008

Soil Consultants, Inc.



ASTM D2435-96

Test name Consol. #1
Date of Test: 6/23/2003

Site Reference: Charleston Naval Base Container
Jobfile: C:\WINCLISP\CNB.JOB

Sample: UD-1
Borehole: PAW-26

Operator:

Checked:

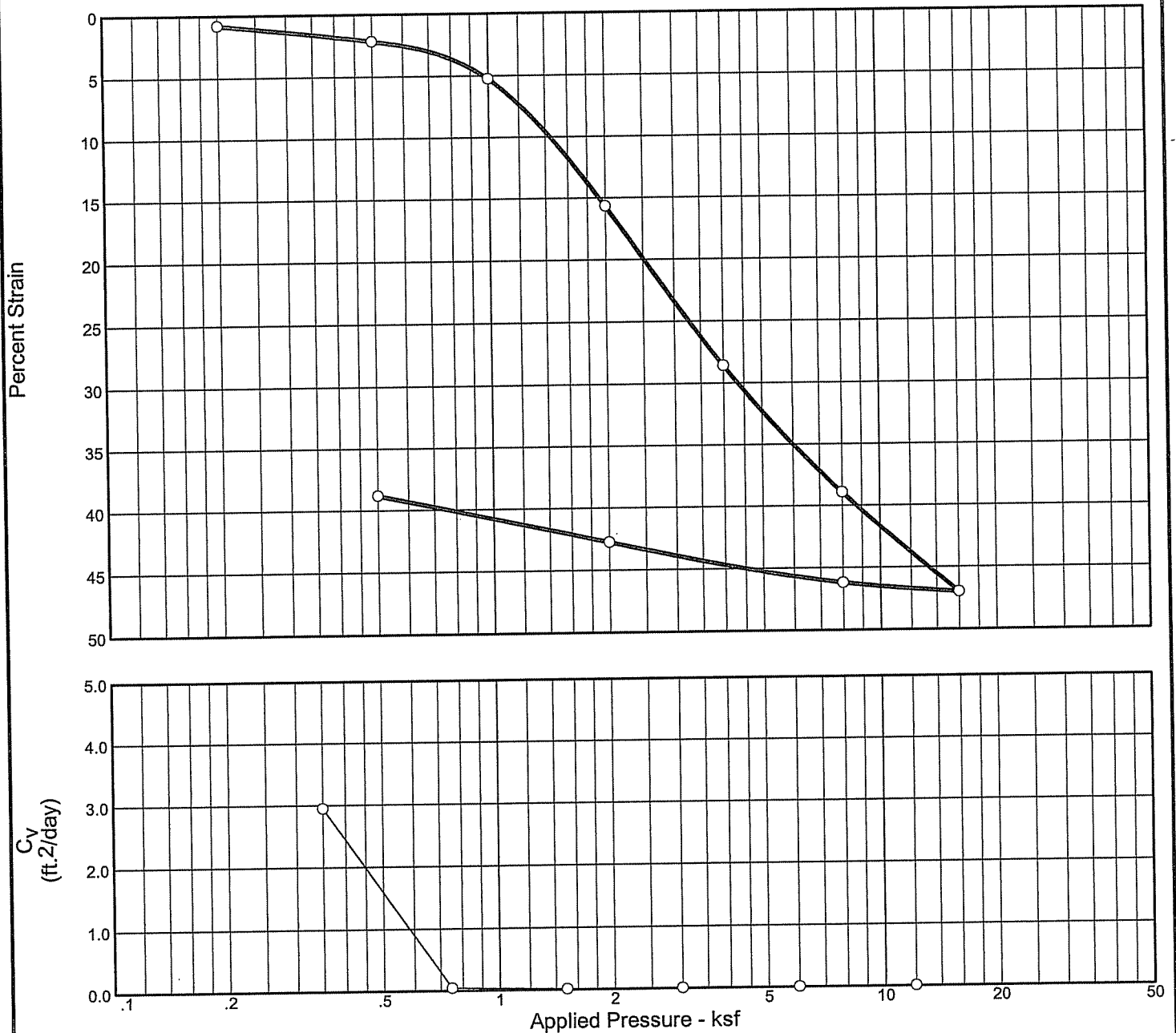
Approved:

Garrett M. St...

Dail J Hall

N. H. H. H.

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (ksf)	P_c (ksf)	C_c	C_r	Initial Void Ratio
Saturation	Moisture									
100.0 %	84.5 %	52.4	148	100	2.56		0.23	0.81	0.15	2.051

MATERIAL DESCRIPTION								USCS	AASHTO
Dark gray, very Sandy Clay								CH	

Project No. 1131-03-264 **Client:** SCSA
Project: Charleston Navy Base Container Terminal
 North Charleston, SC
Source: PAW-27 **Sample No.:** UD-1 **Elev./Depth:** -24.8to-26.8 CLW
CONSOLIDATION TEST REPORT
S & ME, Inc.

Remarks:

Plate

Dial Reading vs. Time

Project No.: 1131-03-264

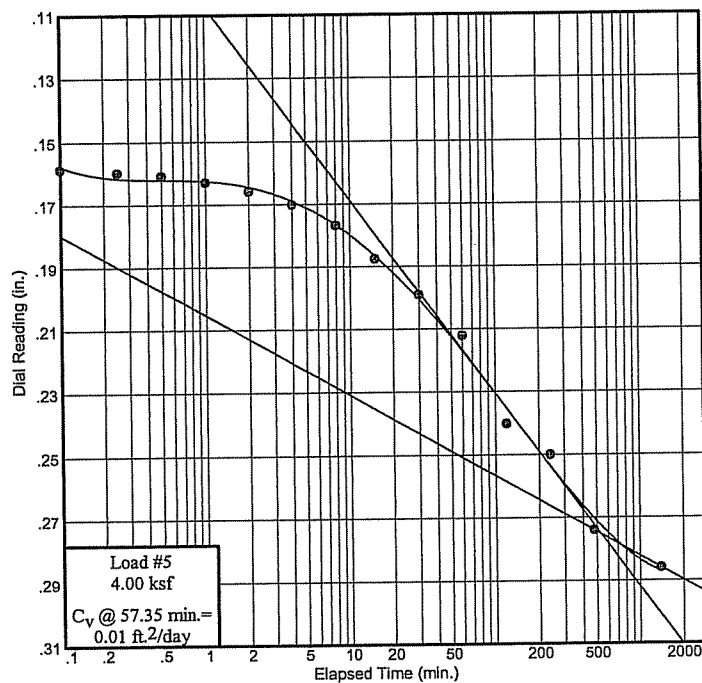
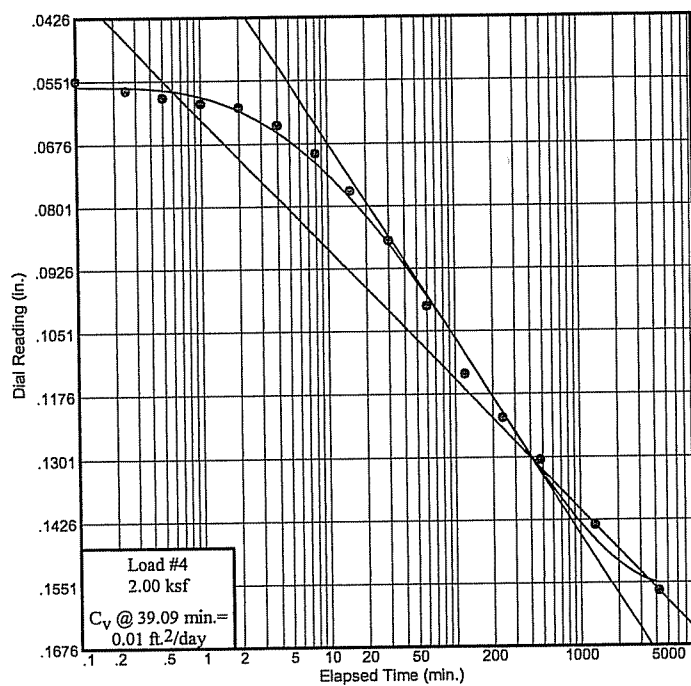
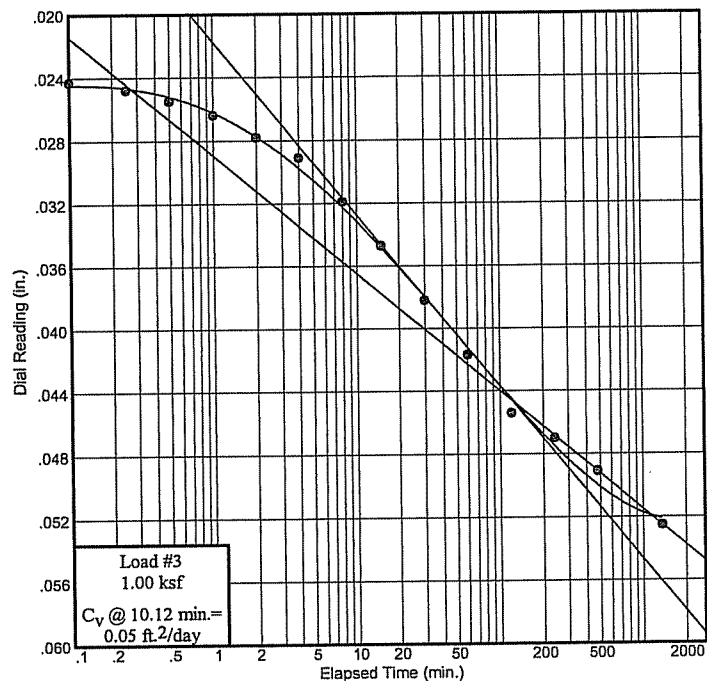
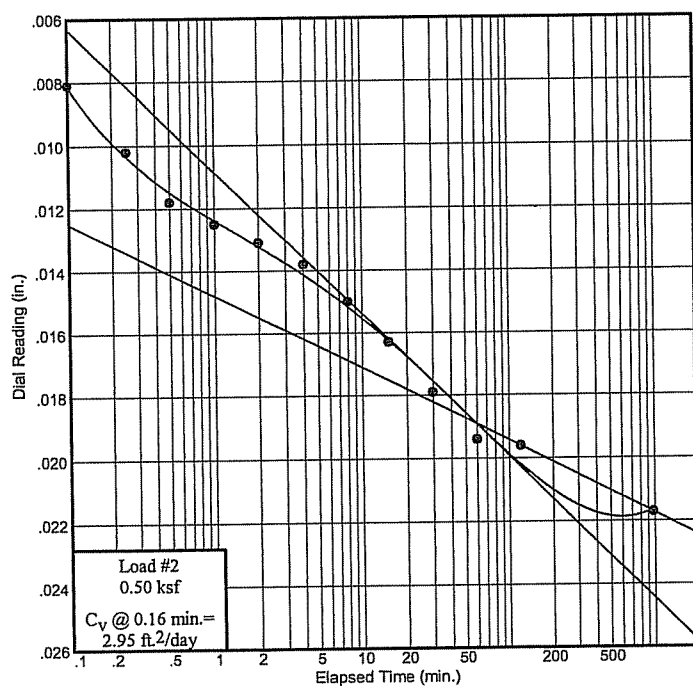
Project: Charleston Navy Base Container Terminal

North Charleston, SC

Source: PAW-27

Sample No.: UD-1

Elev./Depth: -24.8to-26.8 CLW



Dial Reading vs. Time

S & ME, Inc.

Plate

Dial Reading vs. Time

Project No.: 1131-03-264

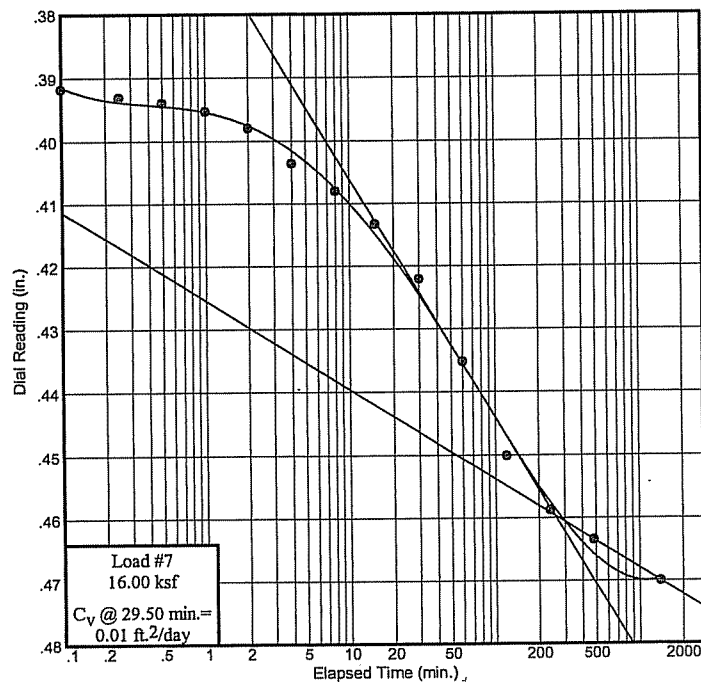
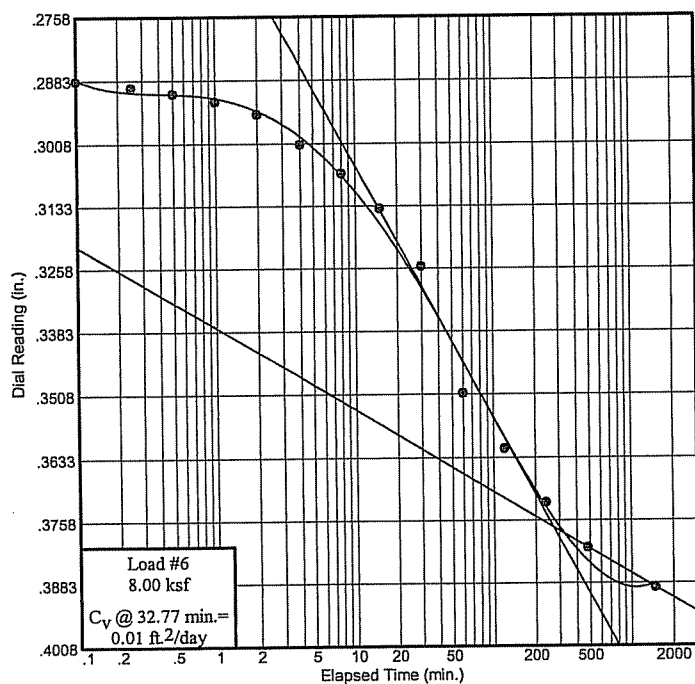
Project: Charleston Navy Base Container Terminal

North Charleston, SC

Source: PAW-27

Sample No.: UD-1

Elev./Depth: -24.8to-26.8 CLW



Dial Reading vs. Time

S & ME, Inc.

Plate

CONSOLIDATION TEST DATA

Client: SCSPA
 Project: Charleston Navy Base Container Terminal
 North Charleston, SC
 Project Number: 1131-03-264

Sample Data

Source: PAW-27
 Sample No.: UD-1
 Elev. or Depth: -24.8to-26.8 CLW Sample Length (in./cm.):
 Location:
 Description: Dark gray, very Sandy Clay
 Liquid Limit: 148 Plasticity Index: 100
 USCS: CH AASHTO: Figure No.:
 Testing Remarks:

Test Specimen Data

TOTAL SAMPLE	BEFORE TEST	AFTER TEST
Wet w+t = 58.75 g.	Consolidometer # = 2	Wet w+t = 219.26 g.
Dry w+t = 31.85 g.		Dry w+t = 187.10 g.
Tare Wt. = .00 g.	Spec. Gravity = 2.56	Tare Wt. = 120.29 g.
Height = 4.38 in.	Height = 1.00 in.	
Diameter = 2.88 in.	Diameter = 2.88 in.	
Weight = 722.40 g.	Defl. Table = n/a	
Moisture = 84.5 %	Ht. Solids = 0.3278 in.	Moisture = 48.1 %
Den. = 96.6 pcf	Dry Wt. = 89.52 g.*	Dry Wt. = 66.81 g.
Den. = 52.4 pcf	Void Ratio = 2.051	Void Ratio = 0.866
	Saturation = 100.0 %	

* Initial dry weight used in calculations

End-of-Load Summary

Pressure (ksf)	Final Dial (in.)	Machine Defl. (in.)	C_v (ft. ² /day)	C_α	Void Ratio	% Compression /Swell
start	0.00000				2.051	
0.20	0.00810	0.00000			2.026	0.8 Compr.
0.50	0.02170	0.00000	2.95	0.002	1.985	2.2 Compr.
1.00	0.05250	0.00000	0.05	0.008	1.891	5.3 Compr.
2.00	0.15670	0.00000	0.01	0.027	1.573	15.7 Compr.
4.00	0.28590	0.00000	0.01	0.030	1.179	28.6 Compr.
8.00	0.38920	0.00000	0.01	0.023	0.863	38.9 Compr.
16.00	0.47000	0.00000	0.01	0.023	0.617	47.0 Compr.
8.00	0.46200	0.00000			0.641	46.2 Compr.
2.00	0.42760	0.00000			0.746	42.8 Compr.
0.50	0.38820	0.00000			0.866	38.8 Compr.

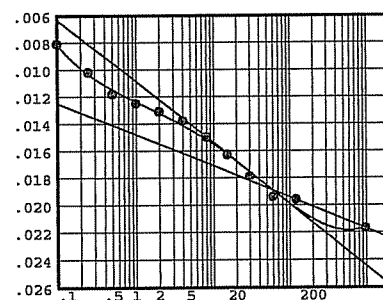
$C_c = 0.81$ $P_c = 0.23$ ksf $C_r = 0.15$

Pressure: 0.50 ksf

TEST READINGS

Load No. 2

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.00000	11	60.00	0.01940
2	0.10	0.00810	12	120.00	0.01960
3	0.25	0.01020	13	975.00	0.02170
4	0.50	0.01180			
5	1.00	0.01250			
6	2.00	0.01310			
7	4.00	0.01380			
8	8.00	0.01500			
9	15.00	0.01630			
10	30.00	0.01790			



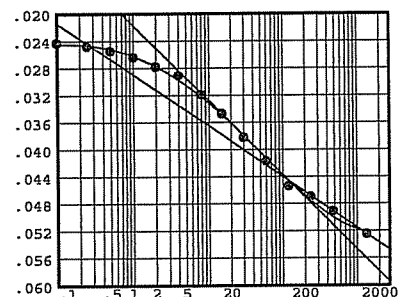
Void Ratio = 1.985 Compression = 2.2 %
 $D_0 = 0.00000$ $D_{50} = 0.00945$ $D_{100} = 0.01890$
 C_v at 0.2 min. = 2.95 ft.²/day $C_\alpha = 0.002$

Pressure: 1.00 ksf

TEST READINGS

Load No. 3

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.02170	11	60.00	0.04170
2	0.10	0.02430	12	120.00	0.04540
3	0.25	0.02480	13	240.00	0.04700
4	0.50	0.02550	14	480.00	0.04910
5	1.00	0.02640	15	1360.00	0.05250
6	2.00	0.02780			
7	4.00	0.02910			
8	8.00	0.03190			
9	15.00	0.03470			
10	30.00	0.03820			



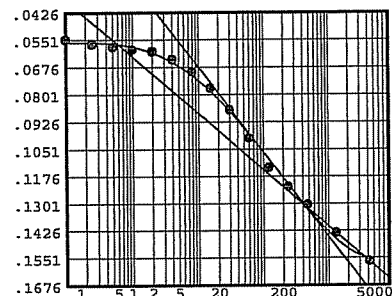
Void Ratio = 1.891 Compression = 5.3 %
 $D_0 = 0.02170$ $D_{50} = 0.03317$ $D_{100} = 0.04463$
 C_v at 10.1 min. = 0.05 ft.²/day $C_\alpha = 0.008$

Pressure: 2.00 ksf

TEST READINGS

Load No. 4

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.05250	11	60.00	0.10010
2	0.10	0.05510	12	120.00	0.11360
3	0.25	0.05700	13	240.00	0.12230
4	0.50	0.05840	14	480.00	0.13060
5	1.00	0.05960	15	1320.00	0.14360
6	2.00	0.06040	16	4232.00	0.15670
7	4.00	0.06400			
8	8.00	0.06960			
9	15.00	0.07710			
10	30.00	0.08700			



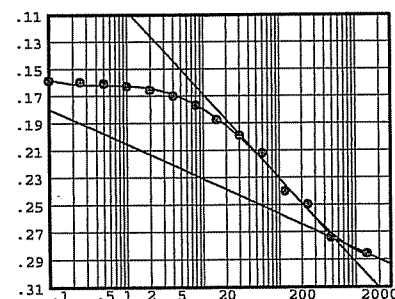
Void Ratio = 1.573 Compression = 15.7 %
 $D_0 = 0.05250$ $D_{50} = 0.09156$ $D_{100} = 0.13063$
 C_v at 39.1 min. = 0.01 ft.²/day $C_\alpha = 0.027$

Pressure: 4.00 ksf

TEST READINGS

Load No. 5

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.15670	11	60.00	0.21220
2	0.10	0.15870	12	120.00	0.24020
3	0.25	0.15990	13	240.00	0.25000
4	0.50	0.16090	14	480.00	0.27400
5	1.00	0.16290	15	1400.00	0.28590
6	2.00	0.16580			
7	4.00	0.17010			
8	8.00	0.17680			
9	15.00	0.18750			
10	30.00	0.19910			



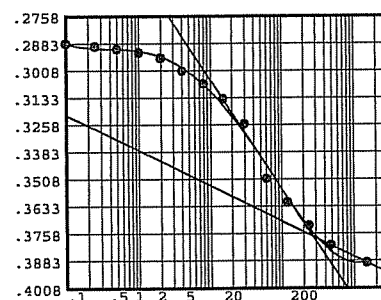
Void Ratio = 1.179 Compression = 28.6 %
 $D_0 = 0.15670$ $D_{50} = 0.21592$ $D_{100} = 0.27513$
 C_v at 57.3 min. = 0.01 ft.²/day $C_\alpha = 0.030$

Pressure: 8.00 ksf

TEST READINGS

Load No. 6

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.28590	11	60.00	0.35060
2	0.10	0.28840	12	120.00	0.36150
3	0.25	0.28970	13	240.00	0.37220
4	0.50	0.29090	14	480.00	0.38120
5	1.00	0.29250	15	1490.00	0.38920
6	2.00	0.29500			
7	4.00	0.30100			
8	8.00	0.30680			
9	15.00	0.31380			
10	30.00	0.32540			



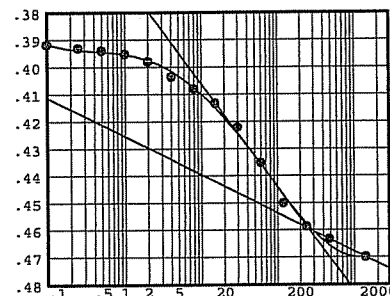
Void Ratio = 0.863 Compression = 38.9 %
 $D_0 = 0.28590$ $D_{50} = 0.33153$ $D_{100} = 0.37716$
 C_v at 32.8 min. = 0.01 ft.²/day $C_\alpha = 0.023$

Pressure: 16.00 ksf

TEST READINGS

Load No. 7

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.38920	11	60.00	0.43520
2	0.10	0.39180	12	120.00	0.45010
3	0.25	0.39310	13	240.00	0.45870
4	0.50	0.39400	14	480.00	0.46340
5	1.00	0.39530	15	1405.00	0.47000
6	2.00	0.39800			
7	4.00	0.40360			
8	8.00	0.40800			
9	15.00	0.41330			
10	30.00	0.42210			



Void Ratio = 0.617 Compression = 47.0 %
 $D_0 = 0.38920$ $D_{50} = 0.42437$ $D_{100} = 0.45954$
 C_v at 29.5 min. = 0.01 ft.²/day $C_\alpha = 0.023$

Pressure: 8.00 ksf

TEST READINGS

Load No. 8

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.47000	11	60.00	0.46350
2	0.10	0.47000	12	120.00	0.46300
3	0.25	0.46990	13	240.00	0.46210
4	0.50	0.46990	14	300.00	0.46200
5	1.00	0.46970			
6	2.00	0.46910			
7	4.00	0.46830			
8	8.00	0.46770			
9	15.00	0.46660			
10	30.00	0.46500			

Void Ratio = 0.641 Compression = 46.2 %

Pressure: 2.00 ksf

TEST READINGS

Load No. 9

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.46200	11	60.00	0.44680
2	0.10	0.45980	12	120.00	0.43960
3	0.25	0.45930	13	240.00	0.43450
4	0.50	0.45890	14	1195.00	0.42760
5	1.00	0.45840			
6	2.00	0.45740			
7	4.00	0.45600			
8	8.00	0.45360			
9	15.00	0.45280			
10	30.00	0.45210			

Void Ratio = 0.746 Compression = 42.8 %

Pressure: 0.50 ksf

TEST READINGS

Load No. 10

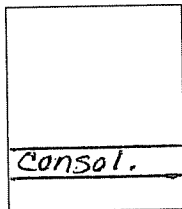
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.42760	11	60.00	0.41830
2	0.10	0.42690	12	120.00	0.40550
3	0.25	0.42650	13	240.00	0.39600
4	0.50	0.42610	14	480.00	0.38820
5	1.00	0.42570			
6	2.00	0.42520			
7	4.00	0.42420			
8	8.00	0.42420			
9	15.00	0.41990			
10	30.00	0.41890			

Void Ratio = 0.866 Compression = 38.8 %

Oedometer Settlement Tests

Sample details

Sketch showing specimen location in original Sample



Depth Elev. -26.5
Description: Gray inorganic clay with slight sand & peat content.

Type Undisturbed
Height H_0 (in) 1
Diameter D_0 (in) 2.5
Weight W_0 (gr) 110.52
Bulk Density ρ (PCF) 85.77
Particle Density ρ_s 2.61
(measured)

Initial Conditions

Settlement Channel consol #6
Moisture Content w_0 % 116.6
Dry Density ρ_d (PCF) 39.60
Voids Ratio e_0 3.1127
Deg of Saturation S_0 % 97.8
Swelling Pressure S_s (TSF)

Final Conditions

Moisture Content w_f % 69.0
Dry Density ρ_d (PCF) 66.86
Voids Ratio e_f 1.4360
Deg of Saturation S_f % 100.00
Settlement: (in) 0.408
Compression Index C_c

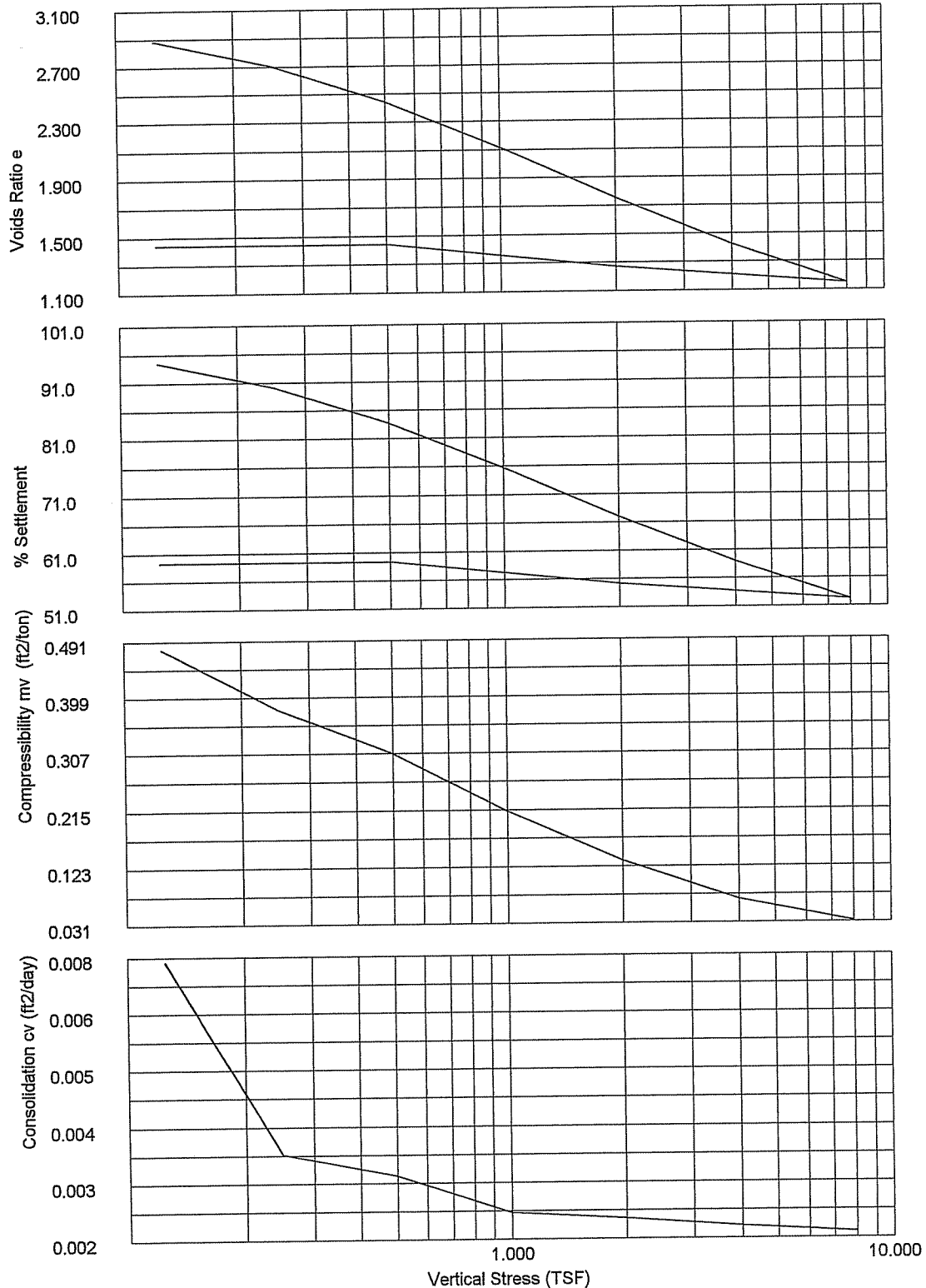
Notes:

Atterberg Limits- LL: 142 PL: 42 PI: 100, Wash 200: 85.6% passing.

Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #6
			Date of Test:	7/7/2003
	Site Reference:	Charleston Naval Base Container	Sample:	UD-1
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAW-S5
Operator: <i>Sanne M. Star</i>		Checked: <i>Dail J. Kel</i>	Approved: <i>N. K. Star</i>	

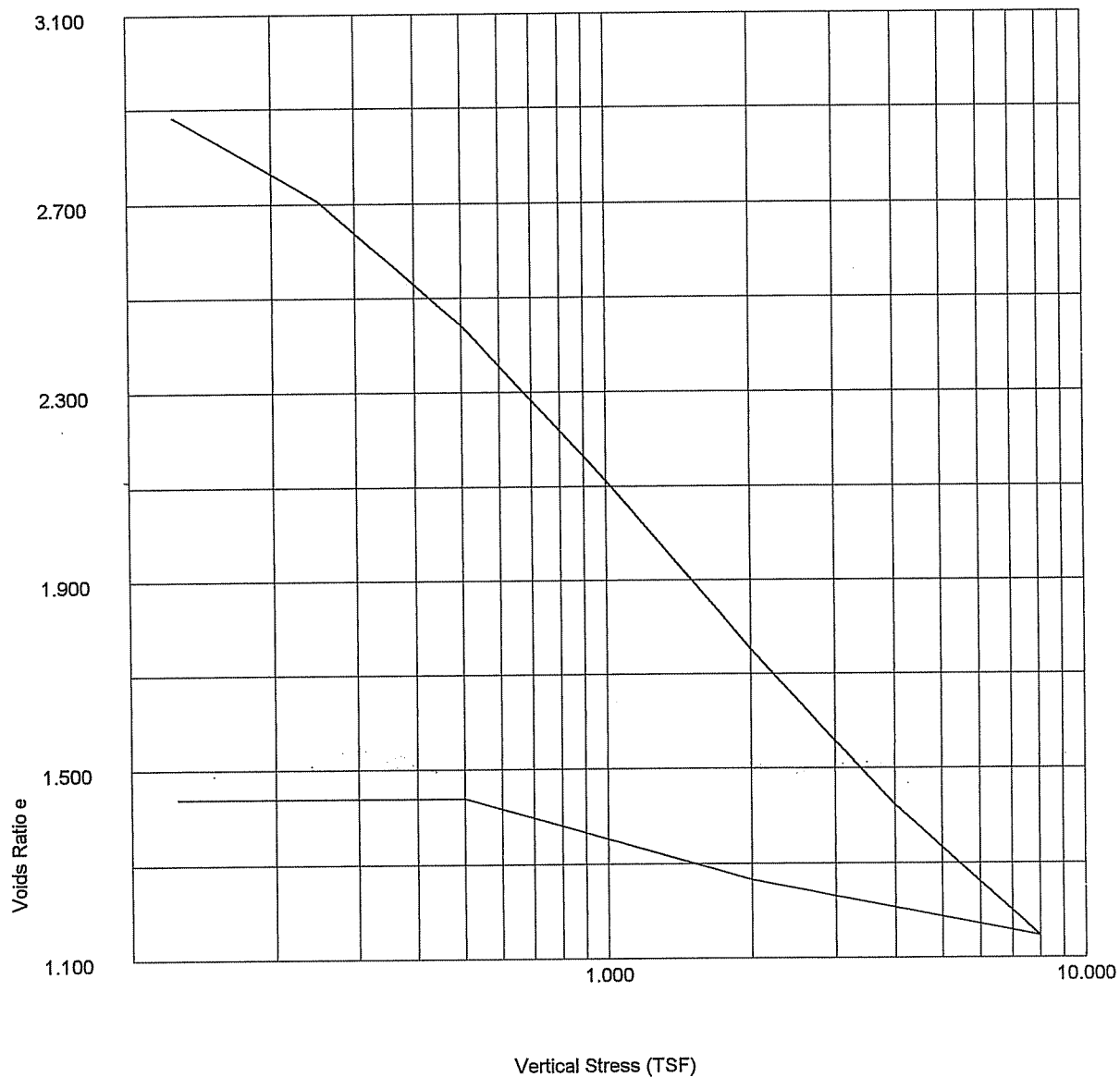
Oedometer Settlement Tests



Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #6
			Date of Test:	7/7/2003
	Site Reference:	Charleston Naval Base Container	Sample:	UD-1
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAW-S5
	Operator:	Spanner M. Smith	Checked:	[Signature]
			Approved:	[Signature]

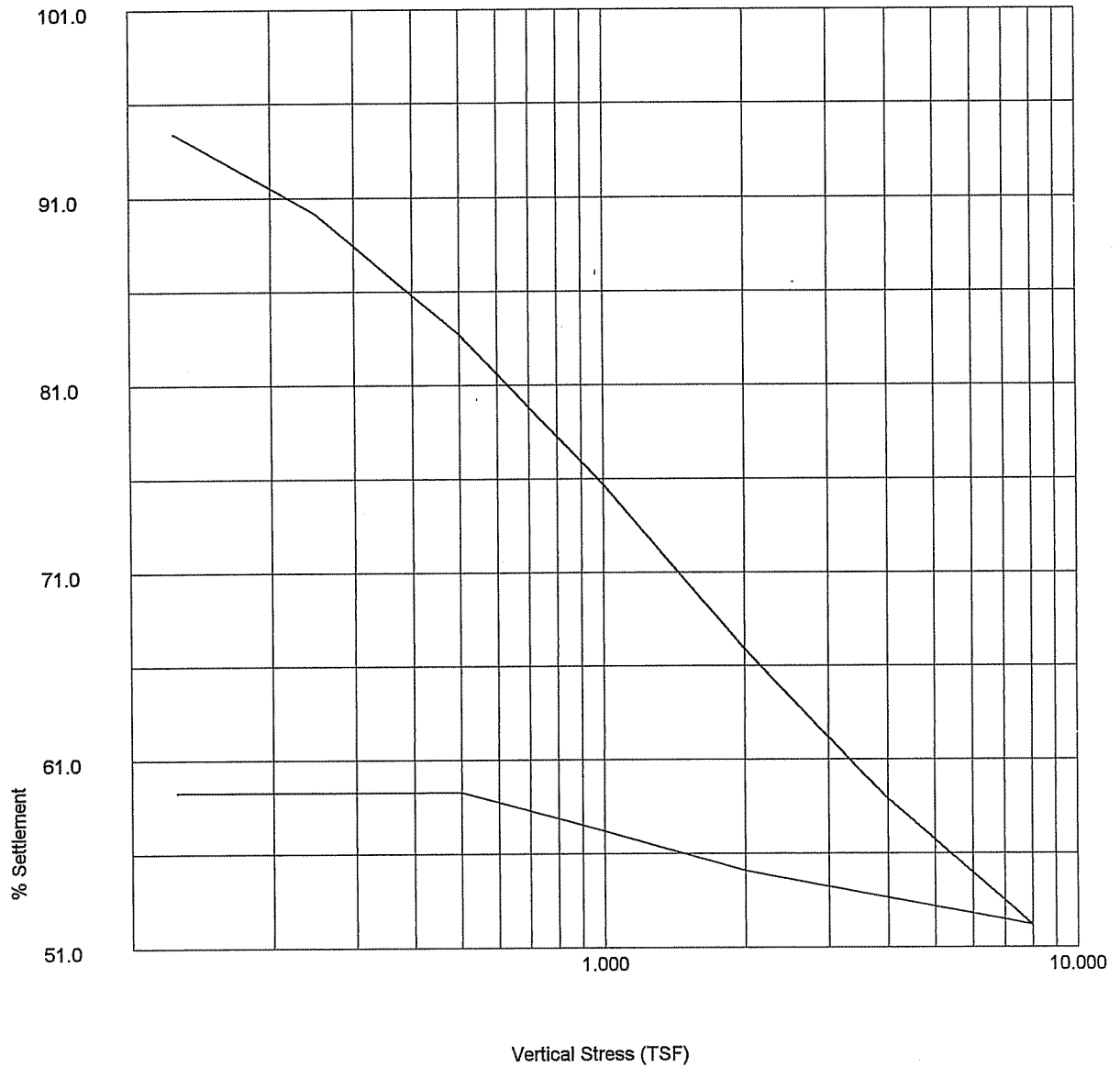
Oedometer Settlement Tests



Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #6	
			Date of Test:	7/7/2003	
	Site Reference:	Charleston Naval Base Container	Sample:	UD-1	
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAW-S5	
	Operator:	<i>Sergio M. Str</i>	Checked:	<i>Dail J. Hall</i>	Approved:

Oedometer Settlement Tests



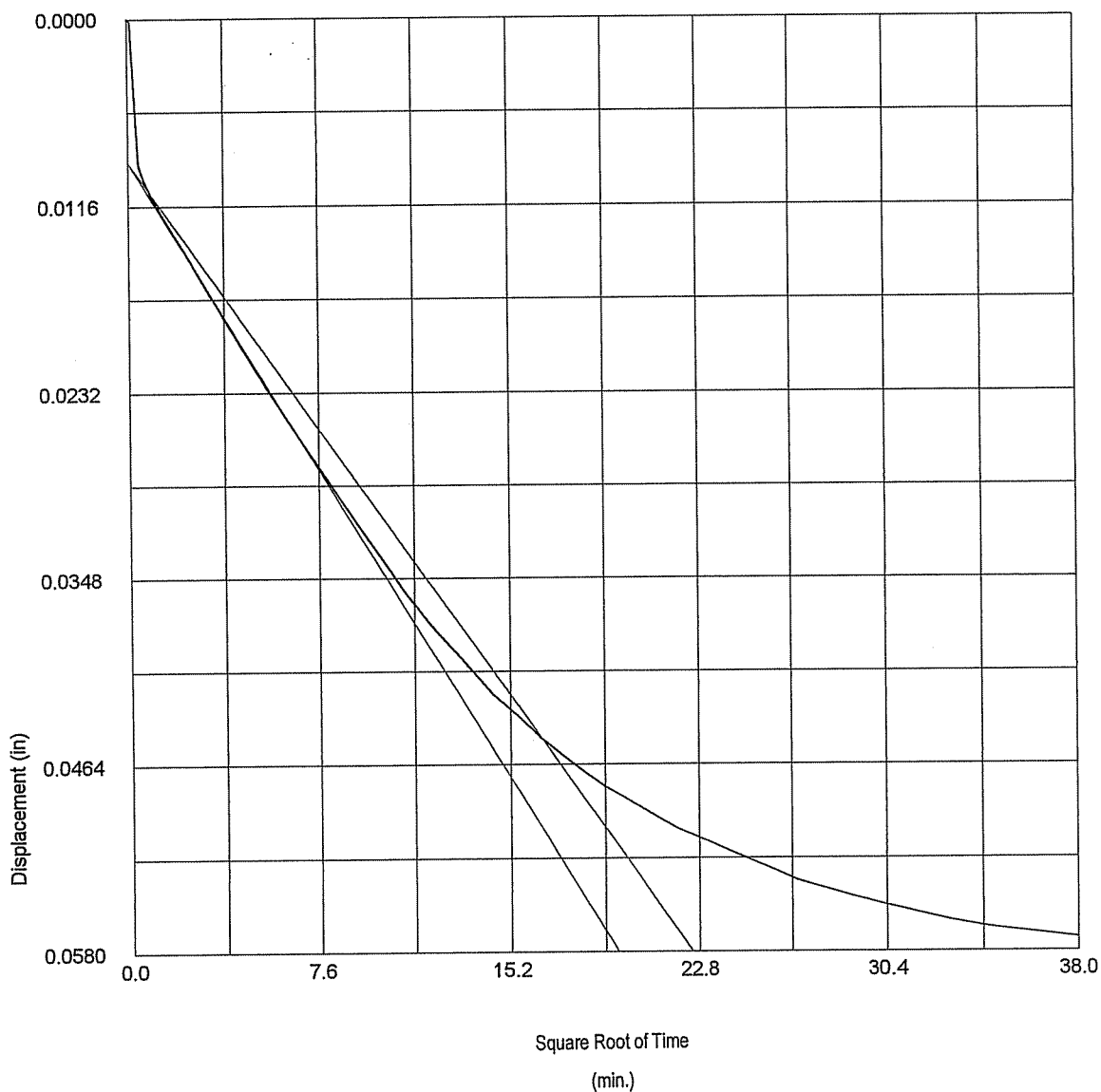
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #6
			Date of Test:	7/7/2003
	Site Reference:	Charleston Naval Base Container	Sample:	UD-1
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAW-S5
	Operator:	<i>James M. Strickland</i>	Checked:	<i>David T. Hall</i>
		Approved:	<i>N. Y. G. G. G.</i>	

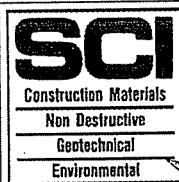
Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	0.125
Initial Temp oC	20.0
Correction (in)	0.0009
Displacement (in)	0.0572
Voids Ratio e_0	2.8812
Final Temp oC	
t_{90} (mins)	271.1
c_v (ft ² /day)	0.007
m_v (ft ² /ton)	0.477
Sec Compression C_{sec}	



Soil Consultants, Inc.



ASTM D2435-96

Test name Consol #6

Date of Test: 7/7/2003

Site Reference: Charleston Naval Base Container

Jobfile: C:\WINCLISP\CNB.JOB

Sample: UD-1

Borehole: PAW-S5

Operator:

Checked:

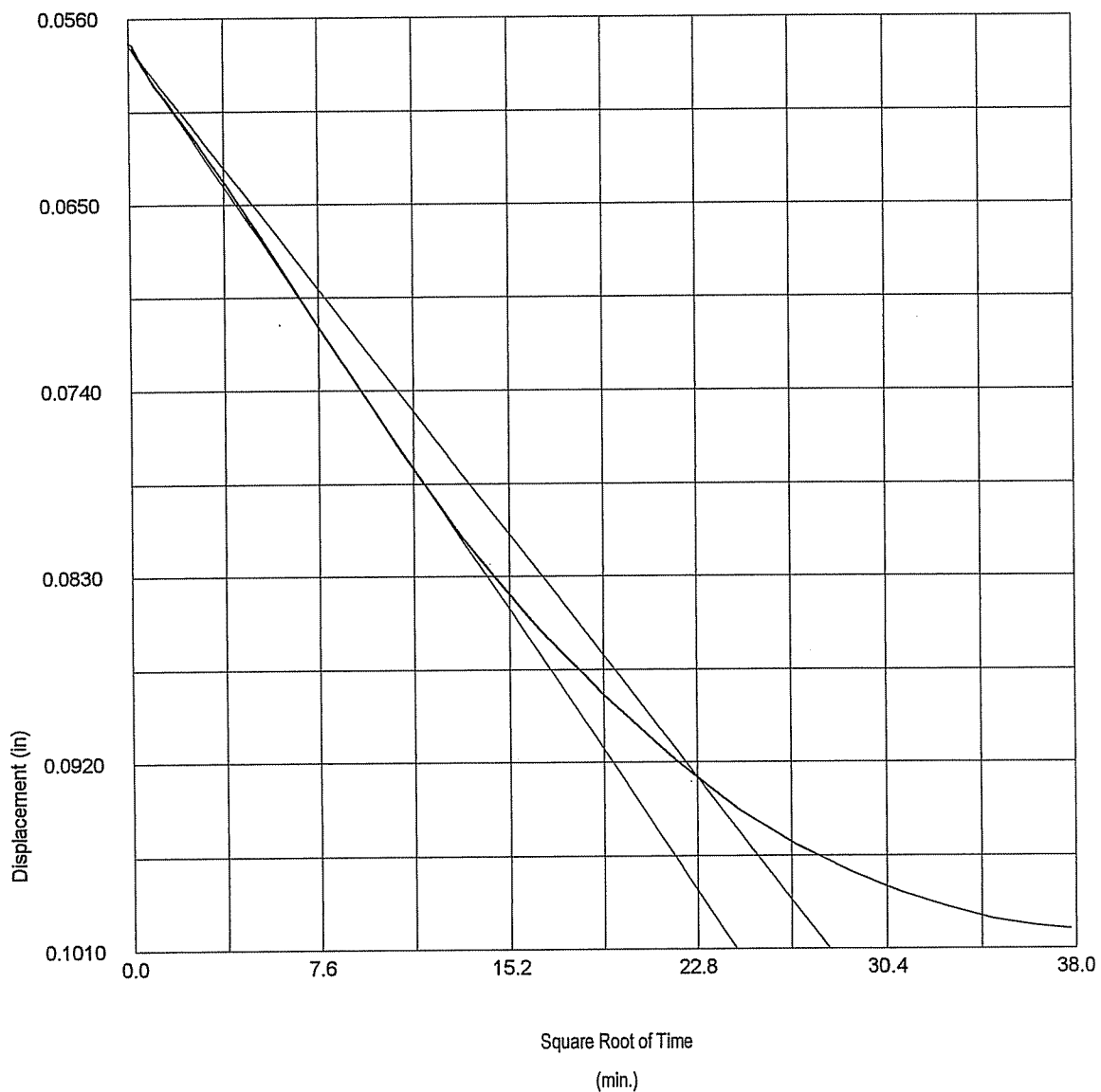
Approved:

James M. St. John *Neil J. Hall* *11/26/03*

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	0.250
Initial Temp oC	20.0
Correction (in)	0.0012
Displacement (in)	0.0429
Voids Ratio e_0	2.7060
Final Temp oC	
t_{90} (mins)	523.2
c_v (ft ² /day)	0.003
m_v (ft ² /ton)	0.378
Sec Compression C_{sec}	



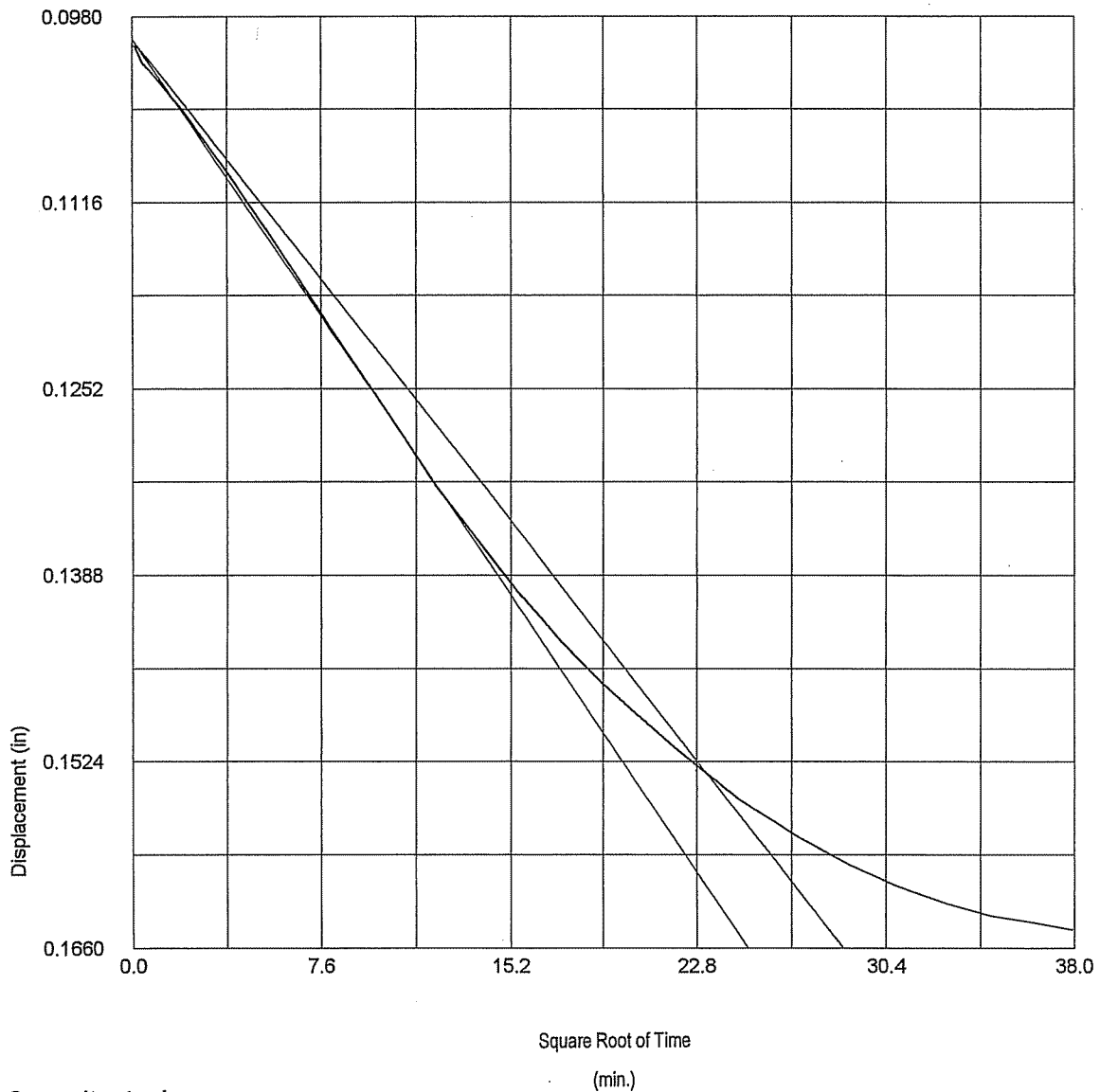
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #6
			Date of Test:	7/7/2003
	Site Reference:	Charleston Naval Base Container	Sample:	UD-1
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAW-S5
	Operator:	<i>Spencer</i>	Checked:	<i>Neil</i>
			Approved:	<i>Neil</i>

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	0.500
Initial Temp oC	20.0
Correction (in)	0.0016
Displacement (in)	0.0646
Voids Ratio e_0	2.4419
Final Temp oC	
t_{90} (mins)	534.4
c_v (ft ² /day)	0.003
m_v (ft ² /ton)	0.307
Sec Compression C_{sec}	



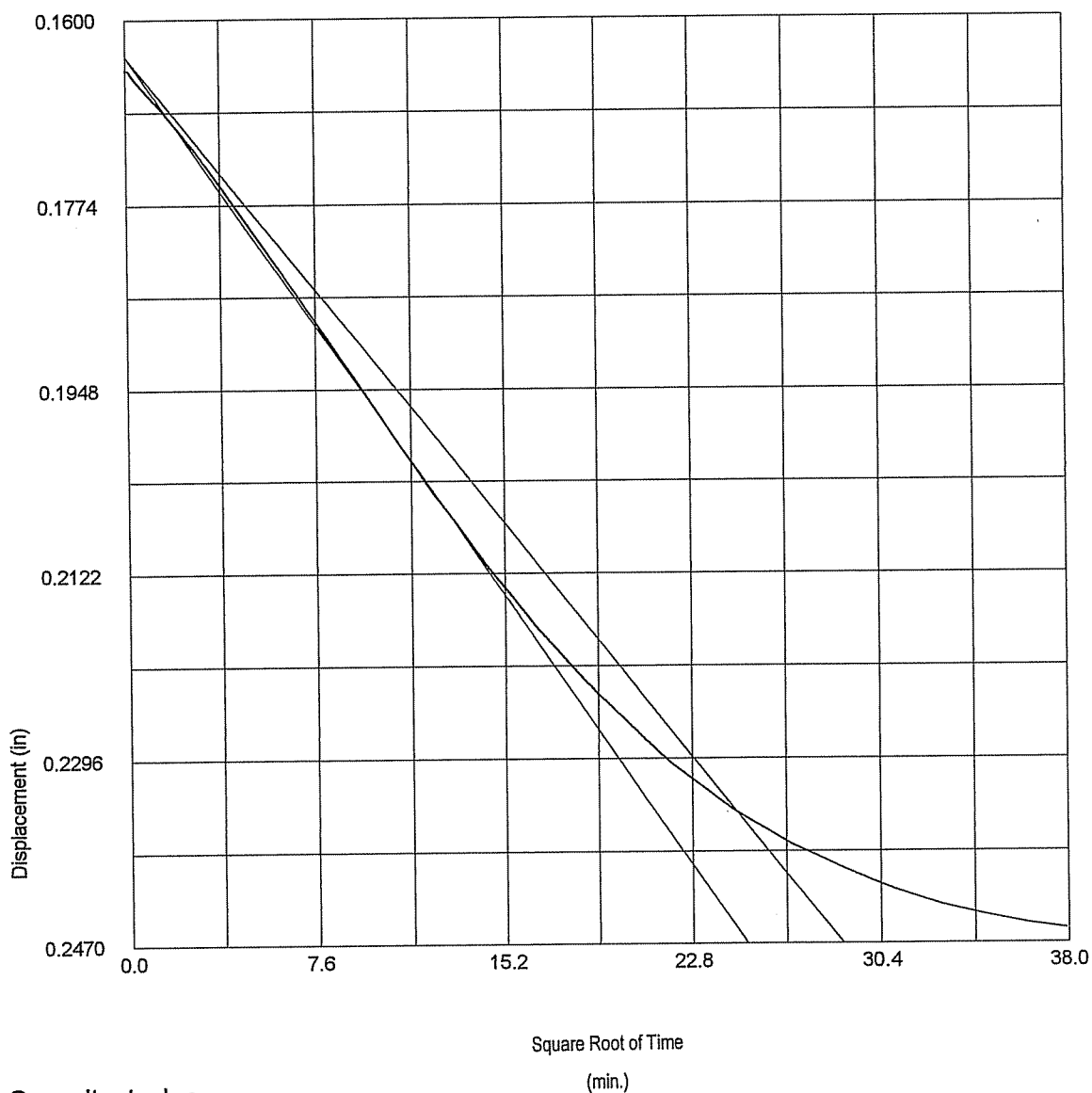
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #6
			Date of Test:	7/7/2003
	Site Reference:	Charleston Naval Base Container	Sample:	UD-1
	Jobfile:	C:WINCLISP\CNB.JOB	Borehole:	PAW-S5
	Operator:	<i>Spanner</i>	Checked:	<i>Dail</i>

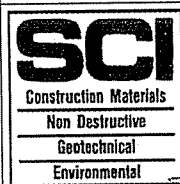
Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	1.000
Initial Temp oC	20.0
Correction (in)	0.0023
Displacement (in)	0.081
Voids Ratio e_0	2.1117
Final Temp oC	
t_{90} (mins)	602.0
c_v (ft ² /day)	0.002
m_v (ft ² /ton)	0.212
Sec Compression C_{sec}	



Soil Consultants, Inc.



ASTM D2435-96

Test name Consol #6

Date of Test: 7/7/2003

Site Reference: Charleston Naval Base Container

Sample: UD-1

Jobfile: C:\WINCLISP\CNB.JOB

Borehole: PAW-S5

Operator:

Checked:

Approved:

James M. Smith

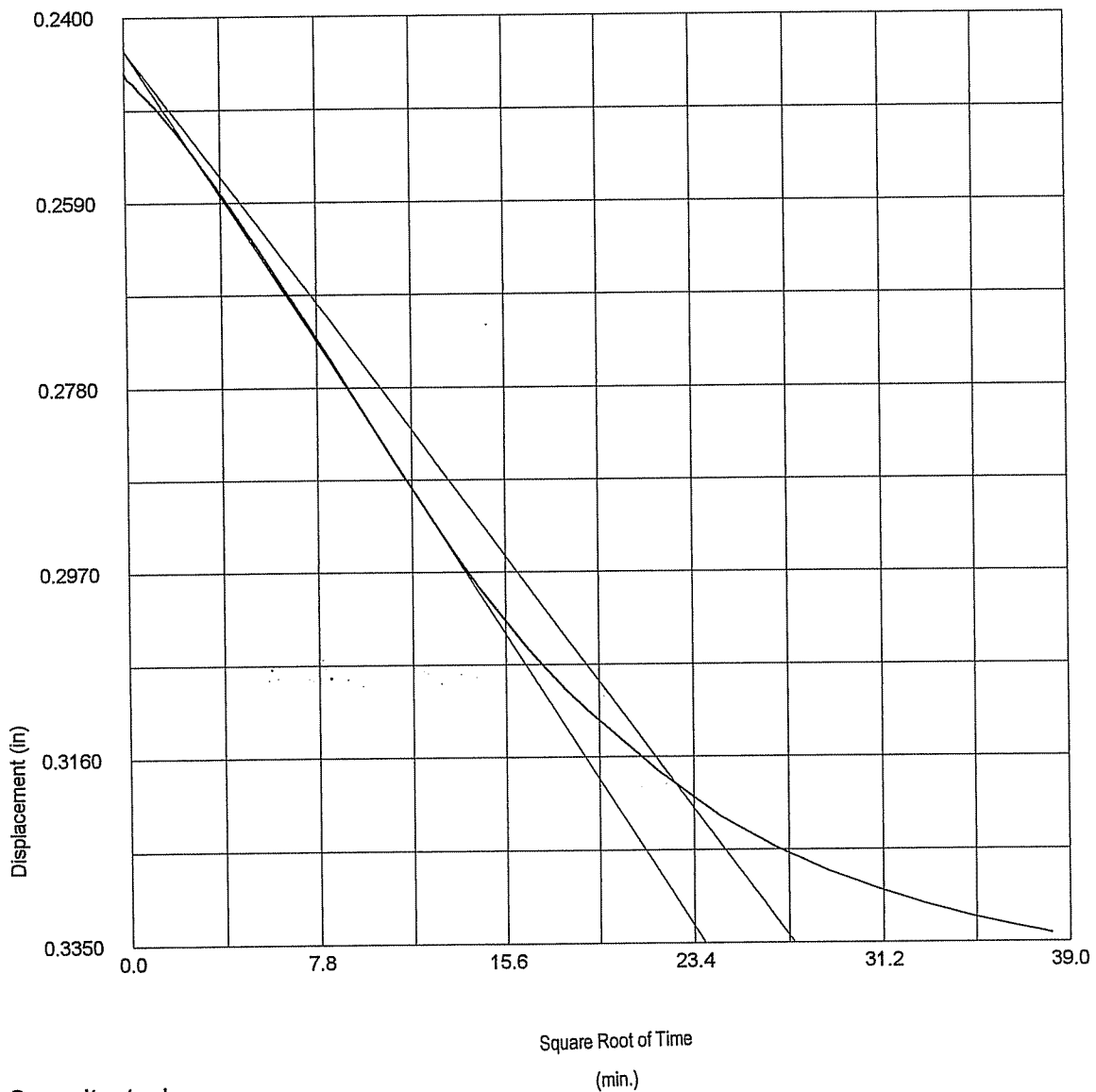
Bill T. Hall

N. J. Smith

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	2.000
Initial Temp oC	20.0
Correction (in)	0.0031
Displacement (in)	0.0885
Voids Ratio e_0	1.7510
Final Temp oC	
t_{90} (mins)	512.7
c_v (ft ² /day)	0.002
m_v (ft ² /ton)	0.131
Sec Compression C_{sec}	



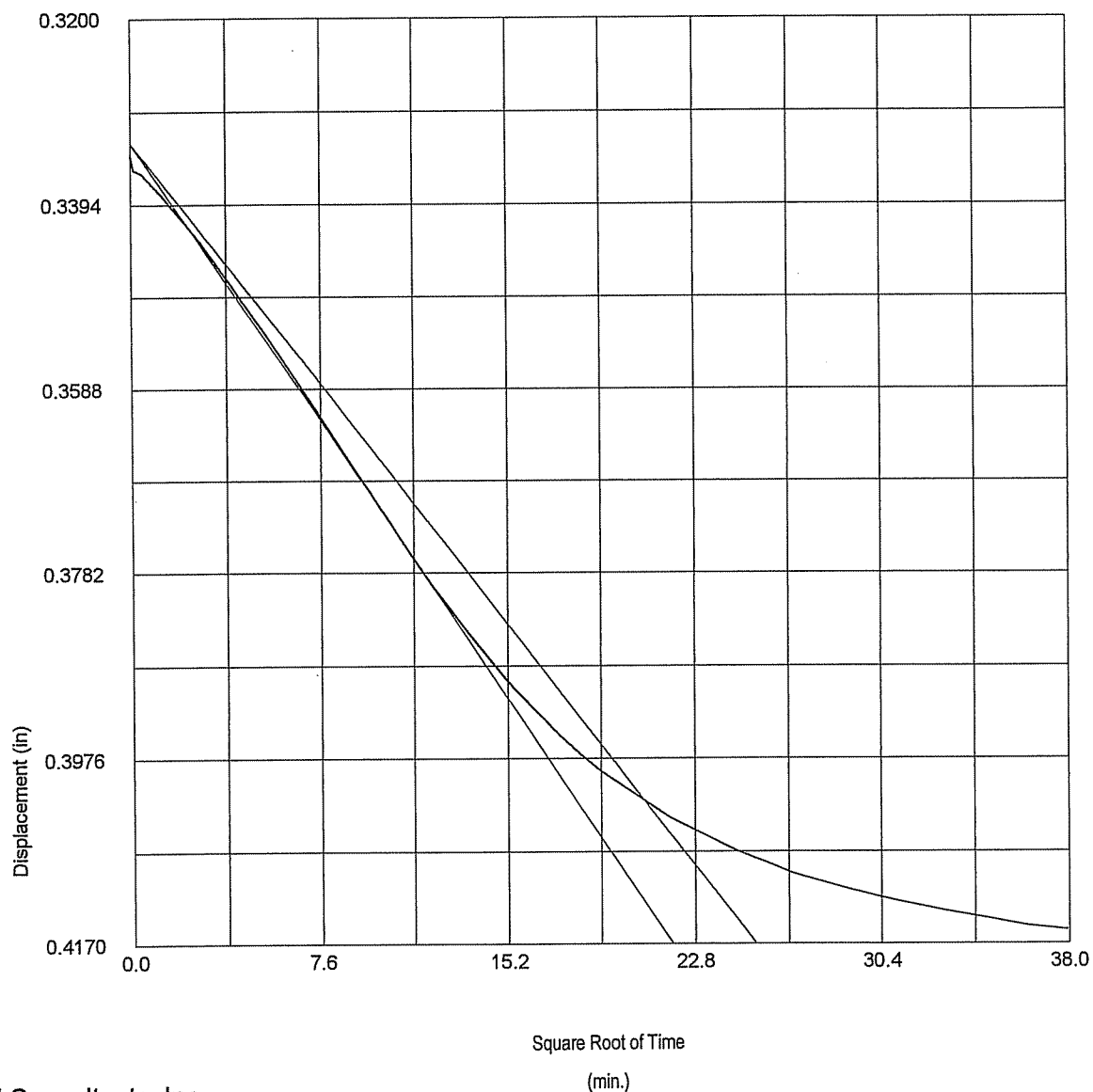
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96	Test name	Consol #6	
		Date of Test:	7/7/2003	
	Site Reference:	Charleston Naval Base Container	Sample:	UD-1
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAW-S5
	Operator:	<i>James W. Dail</i>	Checked:	<i>Hel</i>
		Approved:	<i>11/26/03</i>	

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	4.000
Initial Temp oC	20.0
Correction (in)	0.0044
Displacement (in)	0.0815
Voids Ratio e_0	1.4212
Final Temp oC	
t_{90} (mins)	431.1
c_v (ft ² /day)	0.002
m_v (ft ² /ton)	0.068
Sec Compression C_{sec}	



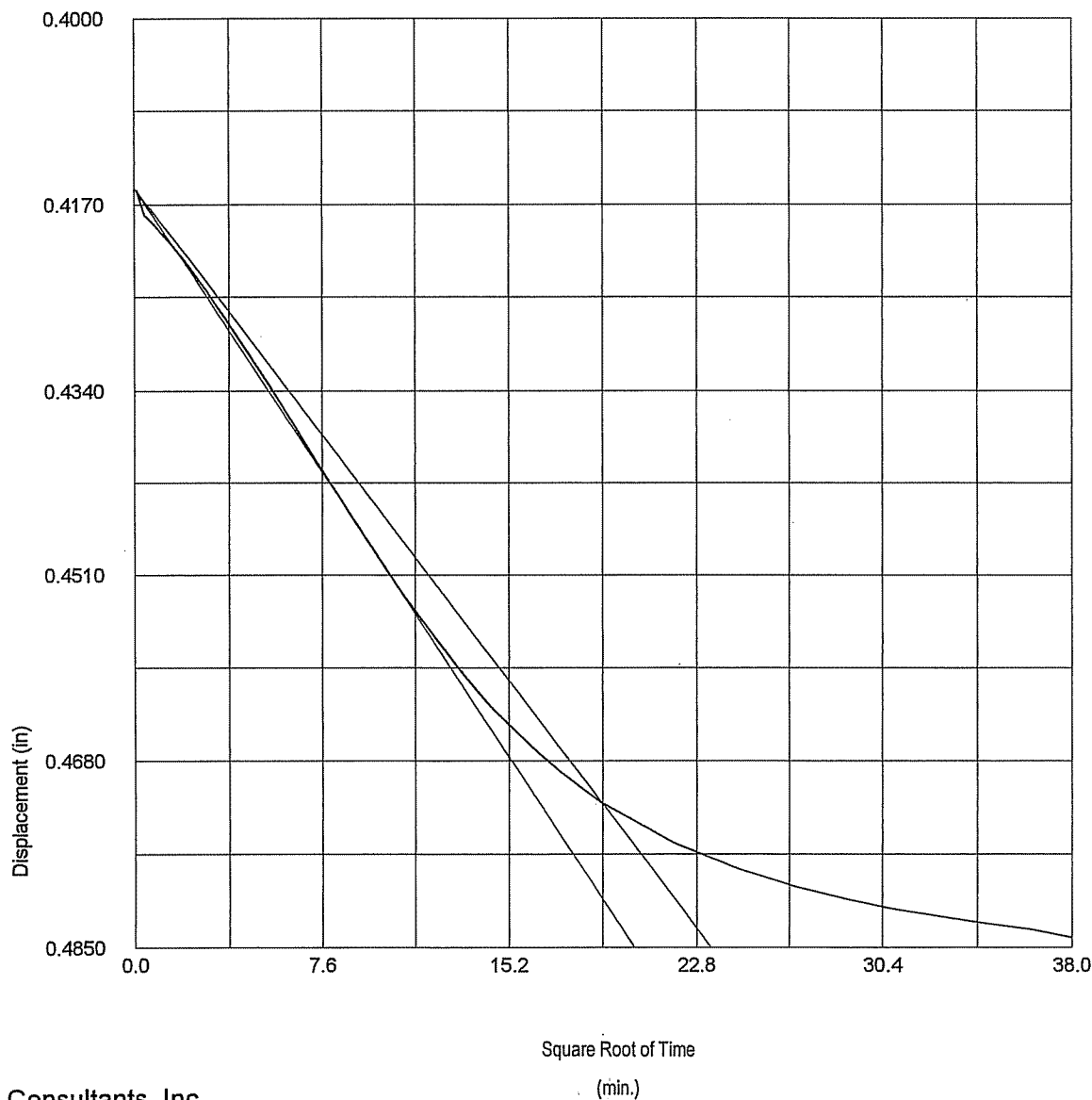
Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96	Test name	Consol #6
	Site Reference: Charleston Naval Base Container	Date of Test:	7/7/2003
	Jobfile: C:\WINCLISP\CNB.JOB	Sample:	UD-1
	Operator: <i>Samuel S. Taylor</i>	Borehole:	PAW-S5
	Checked: <i>Hal</i>	Approved: <i>[Signature]</i>	

Oedometer Settlement Tests

Settlement Stage Results

Vertical Stress (TSF)	8.000
Initial Temp oC	20.0
Correction (in)	0.0058
Displacement (in)	0.0684
Voids Ratio e_0	1.1456
Final Temp oC	
t_{90} (mins)	361.8
c_v (ft ² /day)	0.002
m_v (ft ² /ton)	0.032
Sec Compression C_{sec}	



Soil Consultants, Inc.

SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #6
			Date of Test:	7/7/2003
	Site Reference:	Charleston Naval Base Container	Sample:	UD-1
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAW-S5
	Operator:	<i>James M. Stewart</i>	Checked:	<i>David J. Hall</i>
		Approved:	<i>11/2/2003</i>	

Oedometer Settlement Tests

Stress (TSF)	Initial Temp. oC	Settlement Total (in)	Cal Corr. (in)	Final Temp. oC	Voids Ratio e_f	t_{90} (mins)	Secondary Compr C_{sec}	c_v (ft ² /day)	m_v (ft ² /ton)
0.125	20.0	0.0563	0.0009	20.0	2.8812	271.1		0.007	0.477
0.250	20.0	0.0989	0.0012	20.0	2.7060	523.2		0.003	0.378
0.500	20.0	0.1631	0.0016	20.0	2.4419	534.4		0.003	0.307
1.000	20.0	0.2434	0.0023	20.0	2.1117	602.0		0.002	0.212
2.000	20.0	0.3311	0.0031	20.0	1.7510	512.7		0.002	0.131
4.000	20.0	0.4113	0.0044	20.0	1.4212	431.1		0.002	0.068
8.000	20.0	0.4783	0.0058	20.0	1.1456	361.8		0.002	0.032
2.000	20.0	0.4494	0.0033	20.0	1.2645				0.009
0.500	20.0	0.4073	0.0018	20.0	1.4376				0.047
0.125	20.0	0.4077	0.001	20.0	1.4360				-0.002

Soil Consultants, Inc.

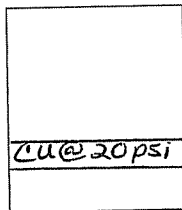
SCI Construction Materials Non Destructive Geotechnical Environmental	ASTM D2435-96		Test name	Consol #6
			Date of Test:	7/7/2003
	Site Reference:	Charleston Naval Base Container	Sample:	UD-1
	Jobfile:	C:\WINCLISP\CNB.JOB	Borehole:	PAW-S5
Operator:		Checked:	Approved:	
James M. Ostrander		David L. Hall	M. G. H. 7/6	

Effective Stress Triaxial Compression

Consolidated Undrained

Sample details

Sketch showing specimen location in original Sample



Depth 15'
Description: Gray inorganic clay with slight sand lens content.

Type Undisturbed
Height H_0 (in) 5.6
Diameter D_0 (in) 2.8
Weight W_0 (gr) 770.57
Bulk Density ρ (PCF) 85.13
Particle Density ρ_s 2.7
(measured)

Initial Conditions

Cell Pressure σ_3 (lb/in²) 37.0
Pore Pressure u (lb/in²) 17.0
Machine Speed d_r (in/min) 0.0003
No. of Membranes 1
Total Thickness (mm) 0.012
Strain Channel strain
Load Channel load 1,000 l
Pore P. Channel 94552
Volume Channel
Moisture Content w_0 % 117.4
Dry Density ρ_{d0} (PCF) 39.16
Voids Ratio e_0 3.30
Deg of Saturation S_0 % 95.98
Final B Value 0.99

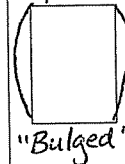
Final Conditions

Moisture Content w_f % 93.1
Dry Density ρ_d (PCF) 102.64
Voids Ratio e_f 0.64
Deg of Saturation S_f % 100.00
Failure Criteria Mx Dev Stress
Axial Strain ϵ_f % 10.3
Corr Dev Stress $(\sigma_1 - \sigma_3)_f$ (lb/in²) 15.0
Minor Stress σ_{3f} (lb/in²) 3.4
Major Stress σ_{1f} (lb/in²) 18.4
Stress Ratio $(\sigma_1/\sigma_3)_f$ 5.4

Notes: Atterberg Limits- LL: 133 PL: 43 PI: 90

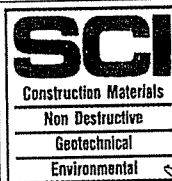
Failure Sketch

Sp 1



Surface Inclination

Soil Consultants, Inc.



Test Method: ASTM D4767-95

Test name CU @ 20 PSI (SS, MS)

Date of Test: 7/30/200

Site Reference: Charleston Naval Base Container

Sample: UD-1

Jobfile: C:\WINCLISP\CNB.JOB

Borehole: PAL-60

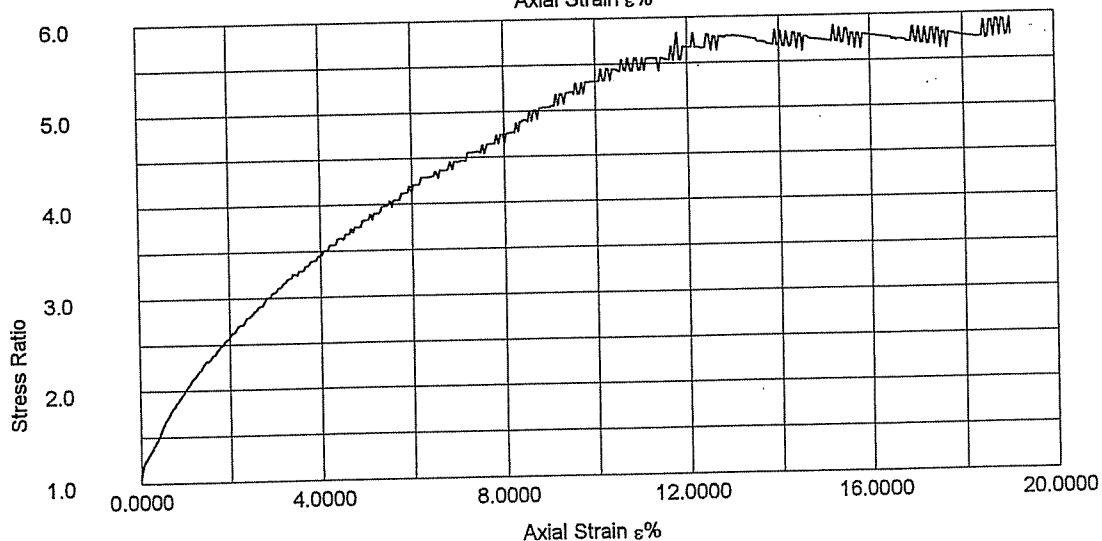
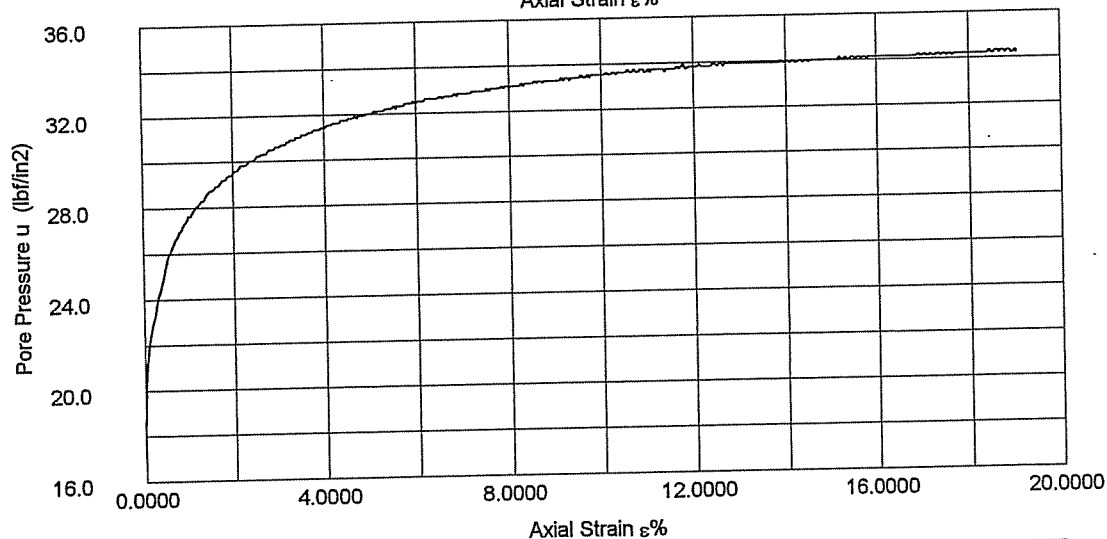
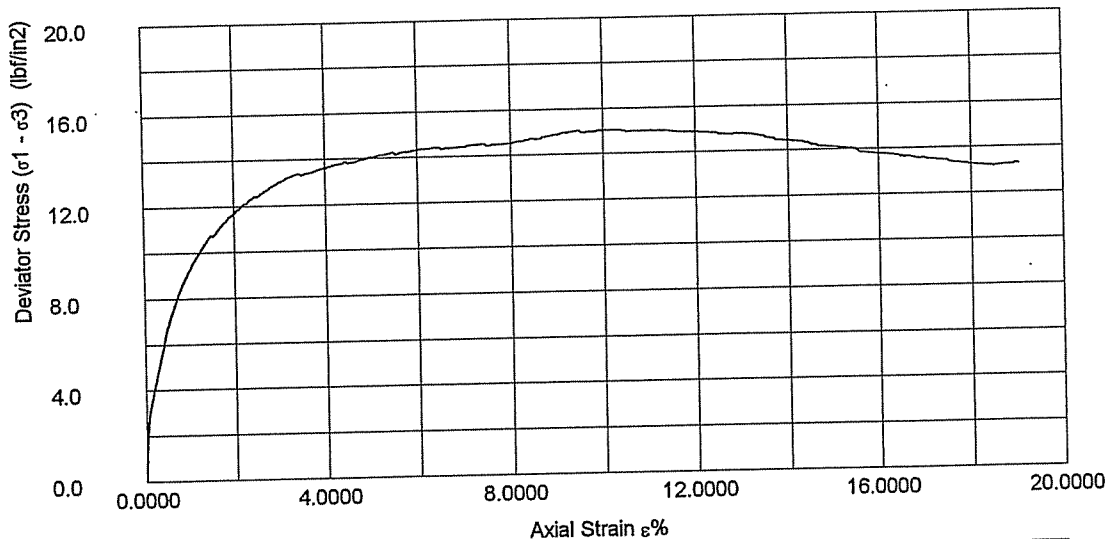
Operator: *James M. Stroh*

Checked: *Anthony Chubb*

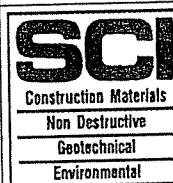
Approved: *N. H. Stroh*

Effective Stress Triaxial Compression

Consolidated Undrained



Soil Consultants, Inc.



Test Method: ASTM D4767-95

Test name: CU @ 20 PSI (SS, MS)

Date of Test: 7/30/200

Site Reference: Charleston Naval Base Container

Jobfile: C:\WINCLISP\CNB.JOB

Sample: UD-1

Borehole: PAL-60

Operator:

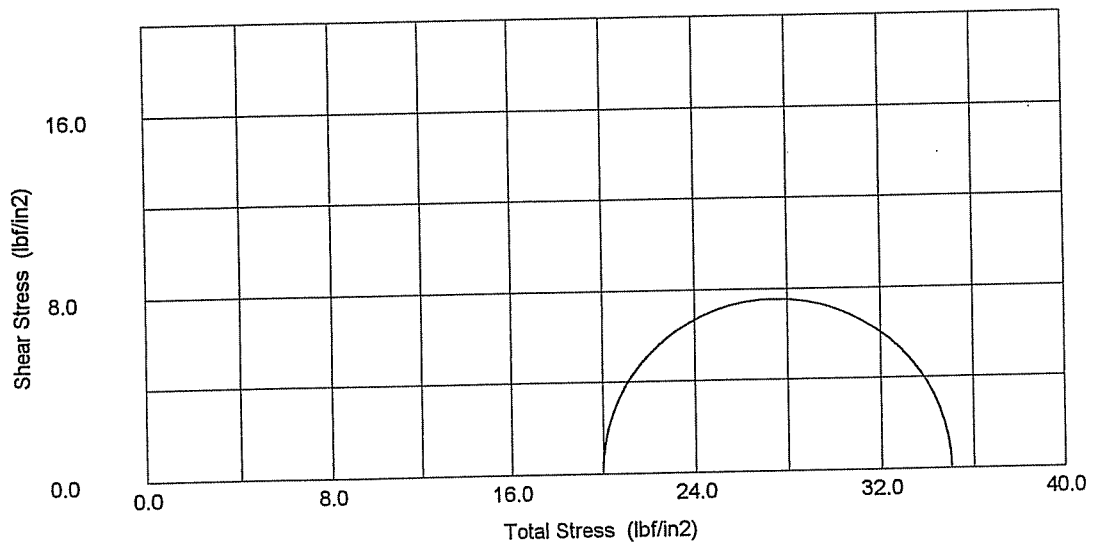
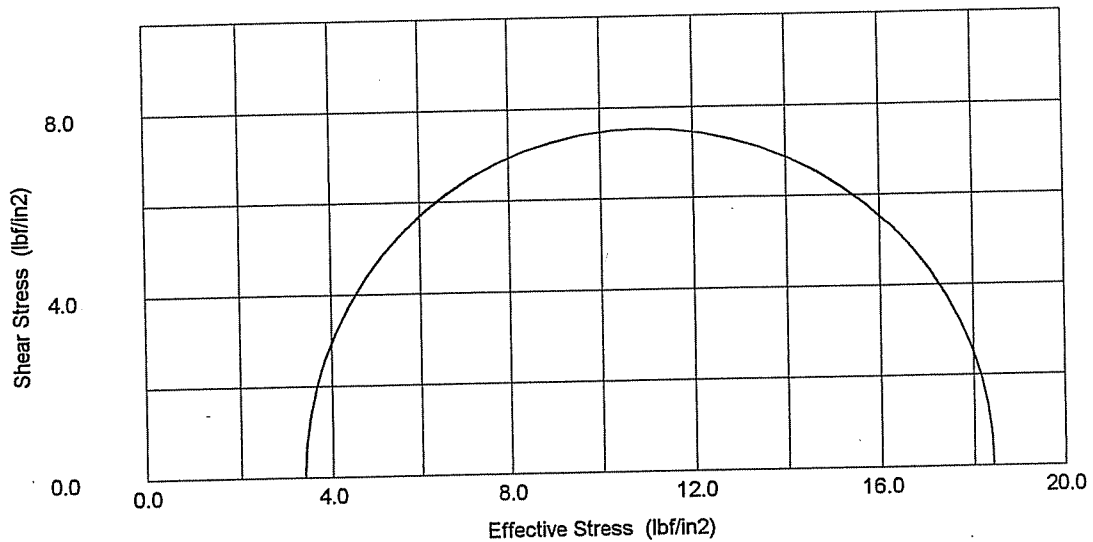
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Approved:

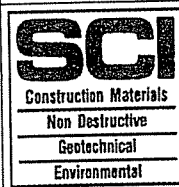
Signature of Operator: Spence M. Stroh
Signature of Checked: Audrey Chubb
Signature of Approved: N. M. Stroh

Effective Stress Triaxial Compression

Consolidated Undrained



Soil Consultants, Inc.



Test Method: ASTM D4767-95

Test name: CU @ 20 PSI (SS, MS)

Date of Test: 7/30/200

Site Reference: Charleston Naval Base Container
Jobfile: C:\WINCLISP\CNB.JOB

Sample: UD-1
Borehole: PAL-60

Operator:

Checked:

Approved:

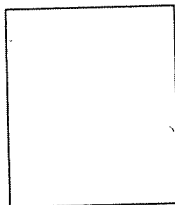
Sanne M. Stroh *Quincy Chubb* *N. Stroh*

Effective Stress Triaxial Compression

Consolidated Undrained

Sample details

Sketch showing specimen location in original Sample



Depth 35' - 37'
Description:

	Specimen 1	Specimen 2	Specimen 3
Type	UD Tube	UD Tube	UD Tube
Height H_0 (in)	5.59	5.597	5.595
Diameter D_0 (in)	2.845	2.851	2.845
Weight W_0 (gr)	806.57	815.4	843.42
Bulk Density ρ (PCF)	86.47	86.94	90.34
Particle Density ρ_s	2.409	2.409	2.409
	(measured)	(measured)	(measured)

Initial Conditions

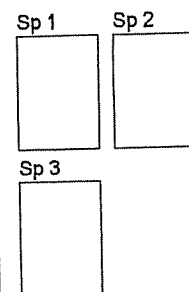
	Specimen 1	Specimen 2	Specimen 3
Cell Pressure σ_3 (lb/in ²)	75.4	85.3	95.3
Pore Pressure u (lb/in ²)	60.4	60.3	60.3
Machine Speed d_f (in/min)	0.004	0.004	0.004
No. of Membranes	1	1	1
Total Thickness (mm)	0	0	0
Strain Channel	14421	14421	14487
Load Channel	985724	985724	1003054
Pore P. Channel	#3	#2	#1
Volume Channel	KW Volume Ch	KW Volume Ch	KW Volume Ch
Moisture Content w_0 %	118.5	106.9	110.0
Dry Density ρ_{d0} (PCF)	39.57	42.01	43.02
Voids Ratio e_0	2.80	2.58	2.49
Deg of Saturation S_0 %	100.00	99.93	100.00
Final B Value			

Final Conditions

	Specimen 1	Specimen 2	Specimen 3
Moisture Content w_f %	99.6	88.4	62.0
Dry Density ρ_d (PCF)	44.12	47.92	58.43
Voids Ratio e_f	2.41	2.14	1.57
Deg of Saturation S_f %	99.62	99.68	94.93
Failure Criteria	Mx Dev Stress	Mx Dev Stress	Mx Dev Stress
Axial Strain ϵ_f %	7.4	7.1	8.8
Corr Dev Stress $(\sigma_1 - \sigma_3)_f$ (lb/in ²)	8.3	16.4	20.0
Minor Stress σ_{3f} (lb/in ²)	3.6	6.8	10.1
Major Stress σ_{1f} (lb/in ²)	11.9	23.2	30.1
Stress Ratio $(\sigma_1/\sigma_3)_f$	3.3	3.4	3.0

Notes:

Failure Sketch



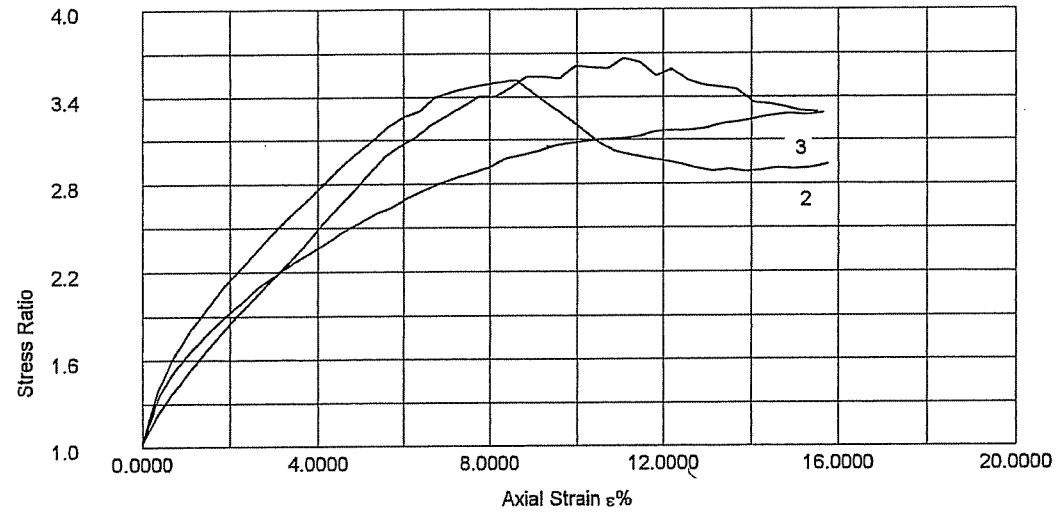
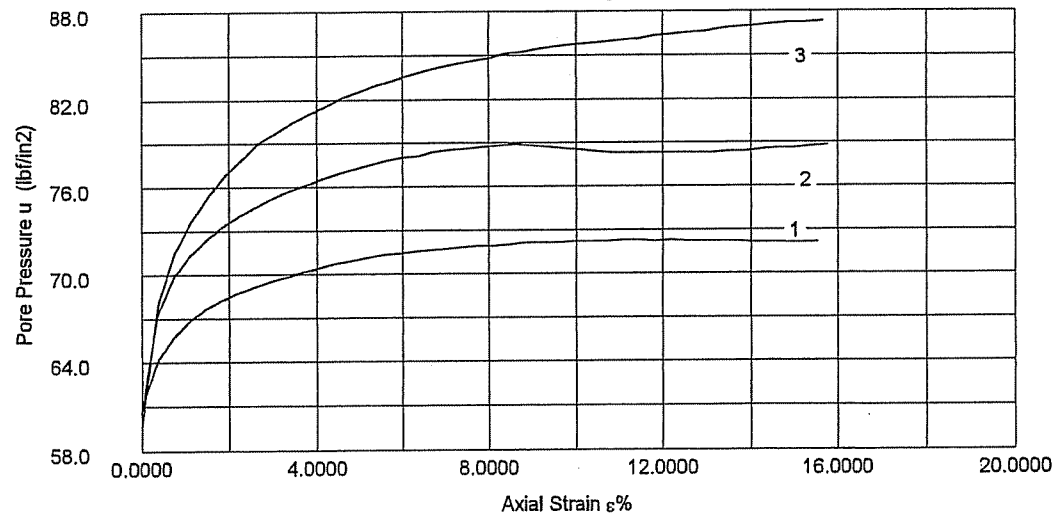
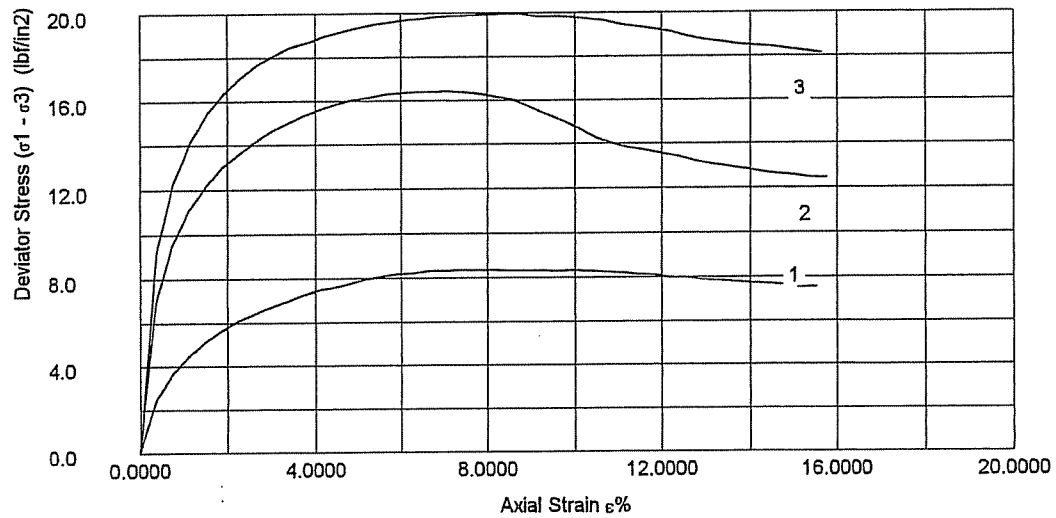
Surface Inclination

S&ME

	Test Method: ASTM D4767-95		Test name CU w/PP (SS, MS)	
			Date of Test: 7/25/200	
	Site Reference: Charleston Naval Base Container		Sample: PAL 60	
	Jobfile: C:\WINCLISP\JOBFILES\11313264.JC		Borehole: UD Tube PAL 60	
Operator:		Checked:		Approved:

Effective Stress Triaxial Compression

Consolidated Undrained

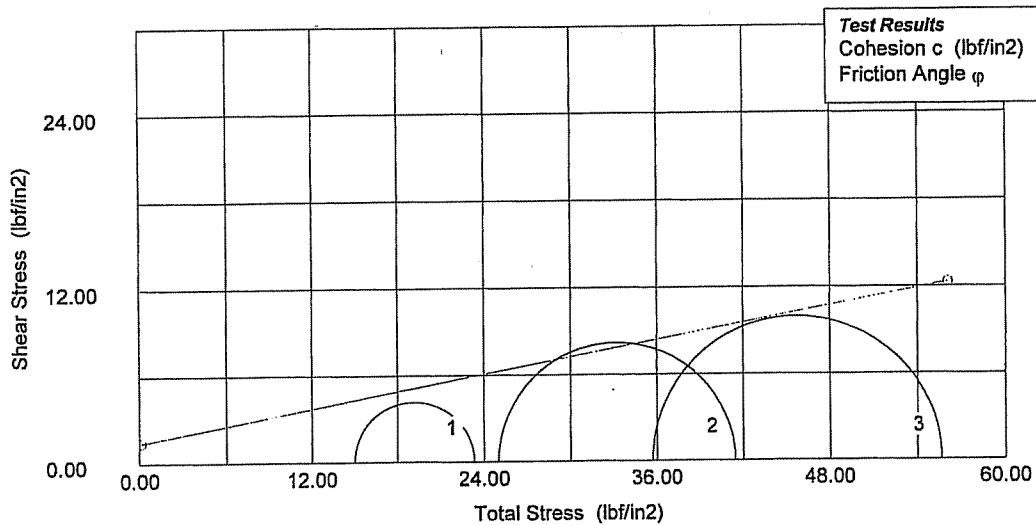
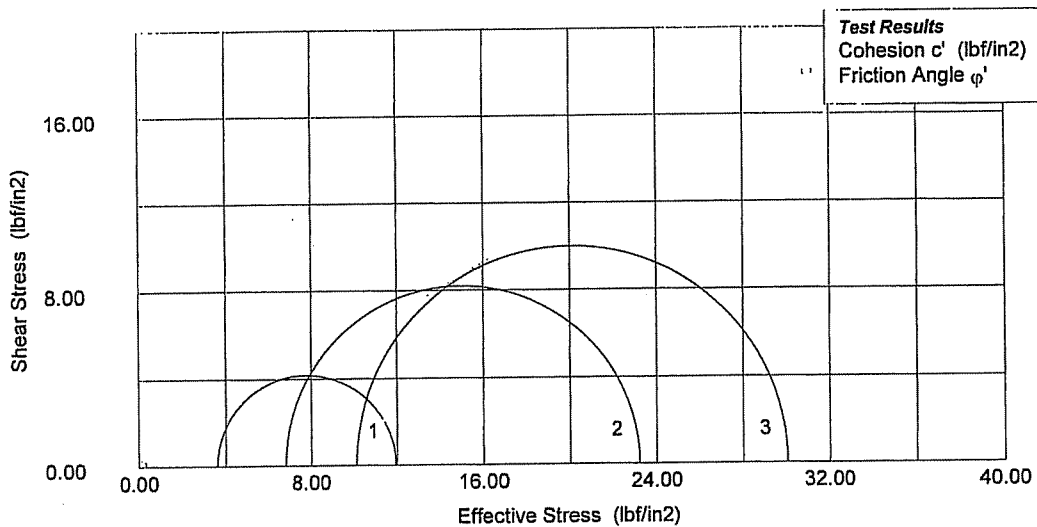


S&ME

Test Method: ASTM D4767-95		Test name	CU w/PP (SS, MS)
		Date of Test:	7/25/200
Site Reference:	Charleston Naval Base Container	Sample:	PAL 60
Jobfile:	C:\WINCLISP\JOBFILES\11313264.JC	Borehole:	UD Tube PAL 60
Operator:		Checked:	Approved:

Effective Stress Triaxial Compression

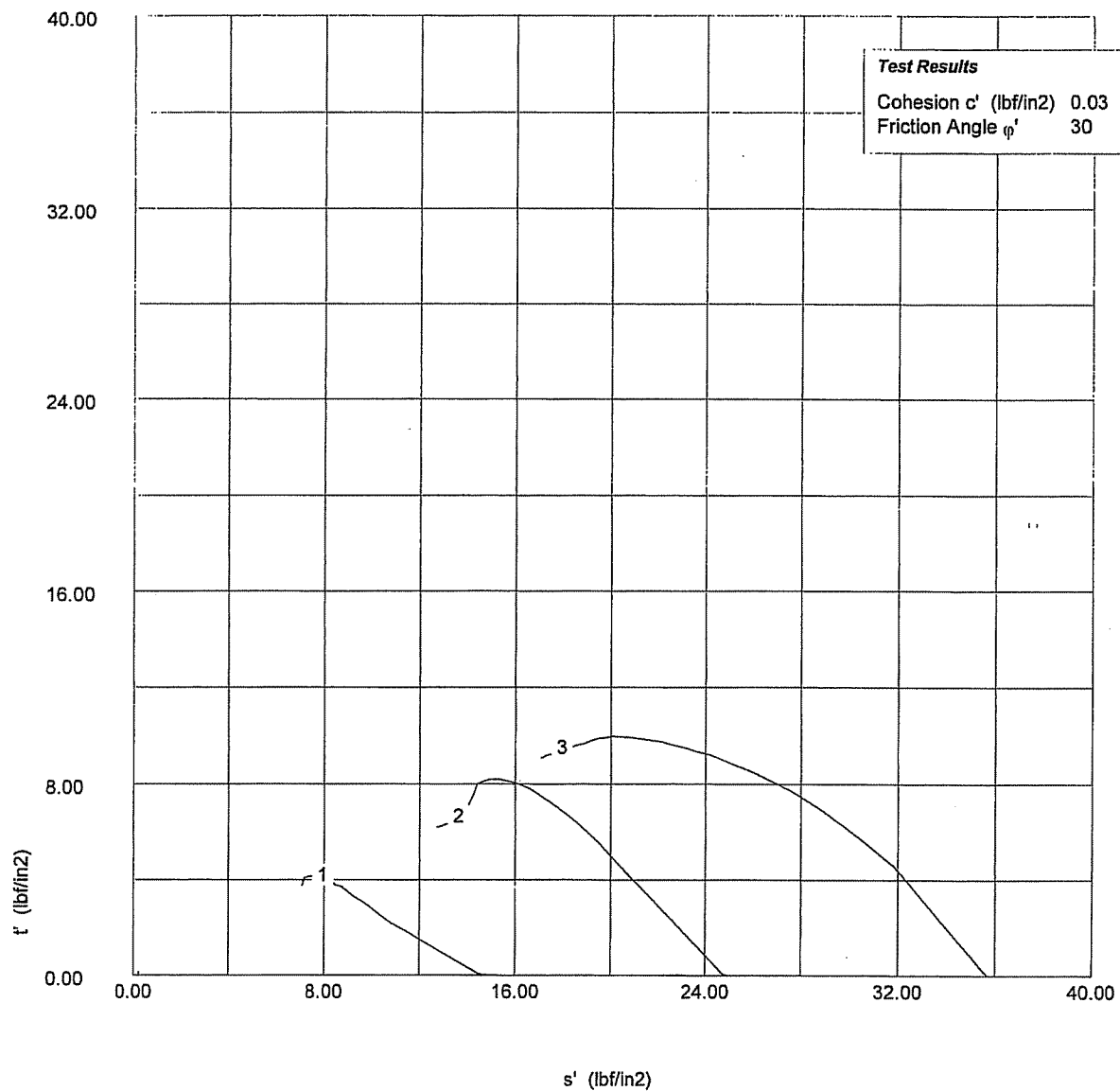
Consolidated Undrained



	Test Method: ASTM D4767-95		Test name CU w/PP (SS, MS)	
			Date of Test: 7/25/200	
	Site Reference: Charleston Naval Base Container		Sample: PAL 60	
	Jobfile: C:\WINCLISP\JOBFILES\11313264..J		Borehole: UD Tube PAL 60	
Operator:		Checked:		Approved:

Effective Stress Triaxial Compression

Consolidated Undrained



	Test Method: ASTM D4767-95		Test name	CU w/PP (SS, MS)
			Date of Test:	7/25/200
	Site Reference:	Charleston Naval Base Container	Sample:	PAL 60
	Jobfile:	C:\WINCLISP\JOBFILES\11313264.J	Borehole:	UD Tube PAL 60
	Operator:		Checked:	Approved:

Effective Stress Triaxial Compression

Page 1 / 5

Consolidated Undrained Shear (Specimen 1)

No.	Strain (divs)	Strain ε%	Load (divs)	Load (lbs)	Pore Prs (divs)	Pore Prs (lb/in ²)	D. Stress ($\sigma_1 - \sigma_3$) _m (lb/in ²)	D. Stress ($\sigma_1 - \sigma_3$) _c (lb/in ²)	Minor Str σ_3 (lb/in ²)	Major Str σ_1 (lb/in ²)	Ratio σ_1/σ_3
1	6	0.00	424	0.0	604	60.4	0.0	0.0	15.00	15.00	1.00
2	7	0.02	433	0.9	610	61.0	0.2	0.2	14.40	14.55	1.01
3	7	0.02	433	0.9	610	61.0	0.2	0.2	14.40	14.55	1.01
4	7	0.02	433	0.9	610	61.0	0.2	0.2	14.40	14.55	1.01
5	27	0.39	573	14.9	642	64.2	2.5	2.5	11.20	13.69	1.22
6	47	0.76	642	21.8	657	65.7	3.6	3.6	9.70	13.33	1.37
7	67	1.13	691	26.7	668	66.8	4.4	4.4	8.60	13.03	1.52
8	87	1.50	731	30.7	676	67.6	5.1	5.1	7.80	12.88	1.65
9	107	1.87	764	34.0	682	68.2	5.6	5.6	7.20	12.80	1.78
10	127	2.24	793	36.9	687	68.7	6.1	6.1	6.70	12.76	1.90
11	147	2.60	813	38.9	691	69.1	6.4	6.4	6.30	12.66	2.01
12	167	2.97	833	40.9	695	69.5	6.7	6.7	5.90	12.57	2.13
13	187	3.34	851	42.7	698	69.8	6.9	6.9	5.60	12.53	2.24
14	207	3.71	869	44.5	701	70.1	7.2	7.2	5.30	12.50	2.36
15	227	4.08	887	46.3	704	70.4	7.5	7.5	5.00	12.46	2.49
16	247	4.45	896	47.2	707	70.7	7.6	7.6	4.70	12.27	2.61
17	267	4.82	909	48.5	709	70.9	7.8	7.8	4.50	12.25	2.72
18	287	5.19	922	49.8	711	71.1	7.9	7.9	4.30	12.23	2.84
19	307	5.56	931	50.7	713	71.3	8.0	8.0	4.10	12.14	2.96
20	327	5.93	940	51.6	714	71.4	8.2	8.2	4.00	12.15	3.04
21	347	6.30	944	52.0	715	71.5	8.2	8.2	3.90	12.08	3.10
22	367	6.67	953	52.9	716	71.6	8.3	8.3	3.80	12.09	3.18
23	387	7.04	956	53.2	717	71.7	8.3	8.3	3.70	12.01	3.24
24	407	7.41	960	53.6	718	71.8	8.3	8.3	3.60	11.94	3.32
25	427	7.78	962	53.8	719	71.9	8.3	8.3	3.50	11.83	3.38
26	447	8.15	964	54.0	719	71.9	8.3	8.3	3.50	11.83	3.38
27	467	8.52	964	54.0	720	72.0	8.3	8.3	3.40	11.70	3.44
28	487	8.89	967	54.3	721	72.1	8.3	8.3	3.30	11.61	3.52
29	507	9.26	969	54.5	721	72.1	8.3	8.3	3.30	11.61	3.52
30	527	9.63	969	54.5	721	72.1	8.3	8.3	3.30	11.57	3.51
31	547	9.99	973	54.9	722	72.2	8.3	8.3	3.20	11.50	3.59
32	567	10.36	973	54.9	722	72.2	8.3	8.3	3.20	11.47	3.58
33	587	10.73	973	54.9	722	72.2	8.2	8.2	3.20	11.43	3.57
34	607	11.10	973	54.9	723	72.3	8.2	8.2	3.10	11.30	3.64
35	627	11.47	969	54.5	723	72.3	8.1	8.1	3.10	11.20	3.61
36	647	11.84	969	54.5	722	72.2	8.1	8.1	3.20	11.27	3.52
37	667	12.21	964	54.0	723	72.3	8.0	8.0	3.10	11.06	3.57
38	687	12.58	967	54.3	722	72.2	8.0	8.0	3.20	11.17	3.49
39	707	12.95	962	53.8	722	72.2	7.9	7.9	3.20	11.07	3.46
40	727	13.32	962	53.8	722	72.2	7.8	7.8	3.20	11.03	3.45
41	747	13.69	960	53.6	722	72.2	7.8	7.8	3.20	10.97	3.43
42	767	14.06	958	53.4	721	72.1	7.7	7.7	3.30	11.01	3.34
43	787	14.43	958	53.4	721	72.1	7.7	7.7	3.30	10.97	3.33
44	807	14.80	956	53.2	721	72.1	7.6	7.6	3.30	10.91	3.31
45	827	15.17	951	52.7	721	72.1	7.5	7.5	3.30	10.81	3.28
46	847	15.54	953	52.9	721	72.1	7.5	7.5	3.30	10.80	3.27

S&ME

Test Method: ASTM D4767-95		Test name: CU w/PP (SS, MS) Shear (Specimen 1)	
		Date of Test: 7/25/200	
Site Reference: Charleston Naval Base Container		Sample: PAL 60	
Jobfile: C:\WINCLISP\JOBFILES\11313264.J		Borehole: UD Tube PAL 60	
Operator:	Checked:	Approved:	

Effective Stress Triaxial Compression

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Consolidated Undrained Shear (Specimen 2)

No.	Strain (divs)	Strain ε%	Load (divs)	Load (lbs)	Pore Prs (divs)	Pore Prs (lb/in ²)	D. Stress ($\sigma_1 - \sigma_3$) _m (lb/in ²)	D. Stress ($\sigma_1 - \sigma_3$) _c (lb/in ²)	Minor Str σ_3 (lb/in ²)	Major Str σ_1 (lb/in ²)	Ratio σ_1'/σ_3'
1	8	0.00	257	0.0	603	60.3	0.0	0.0	25.00	25.00	1.00
2	8	0.00	264	0.7	606	60.6	0.1	0.1	24.70	24.82	1.00
3	8	0.00	264	0.7	606	60.6	0.1	0.1	24.70	24.82	1.00
4	8	0.00	264	0.7	606	60.6	0.1	0.1	24.70	24.82	1.00
5	28	0.38	660	40.3	673	67.3	7.0	7.0	18.00	24.96	1.39
6	48	0.75	809	55.2	698	69.8	9.5	9.5	15.50	25.00	1.61
7	68	1.13	902	64.5	713	71.3	11.1	11.1	14.00	25.05	1.79
8	88	1.50	967	71.0	724	72.4	12.1	12.1	12.90	25.02	1.94
9	108	1.88	1020	76.3	733	73.3	13.0	13.0	12.00	24.98	2.08
10	128	2.25	1058	80.1	740	74.0	13.6	13.6	11.30	24.87	2.20
11	148	2.63	1093	83.6	746	74.6	14.1	14.1	10.70	24.81	2.32
12	168	3.00	1125	86.8	752	75.2	14.6	14.6	10.10	24.69	2.44
13	188	3.38	1151	89.4	757	75.7	15.0	15.0	9.60	24.57	2.56
14	208	3.75	1174	91.7	761	76.1	15.3	15.3	9.20	24.50	2.66
15	228	4.13	1196	93.9	765	76.5	15.6	15.6	8.80	24.40	2.77
16	248	4.50	1214	95.7	769	76.9	15.8	15.8	8.40	24.24	2.89
17	268	4.88	1229	97.2	772	77.2	16.0	16.0	8.10	24.12	2.98
18	288	5.26	1240	98.3	775	77.5	16.1	16.1	7.80	23.94	3.07
19	308	5.63	1251	99.4	778	77.8	16.3	16.3	7.50	23.76	3.17
20	328	6.01	1260	100.3	780	78.0	16.3	16.3	7.30	23.64	3.24
21	348	6.38	1267	101.0	781	78.1	16.4	16.4	7.20	23.59	3.28
22	368	6.76	1271	101.4	784	78.4	16.4	16.4	6.90	23.29	3.37
23	388	7.13	1276	101.9	785	78.5	16.4	16.4	6.80	23.20	3.41
24	408	7.51	1278	102.1	786	78.6	16.4	16.4	6.70	23.07	3.44
25	428	7.88	1276	101.9	787	78.7	16.3	16.3	6.60	22.87	3.46
26	448	8.26	1271	101.4	788	78.8	16.1	16.1	6.50	22.62	3.48
27	468	8.63	1267	101.0	789	78.9	16.0	16.0	6.40	22.39	3.50
28	488	9.01	1251	99.4	788	78.8	15.7	15.7	6.50	22.18	3.41
29	508	9.38	1234	97.7	787	78.7	15.3	15.3	6.60	21.94	3.32
30	528	9.76	1218	96.1	786	78.6	15.0	15.0	6.70	21.73	3.24
31	548	10.14	1198	94.1	785	78.5	14.7	14.7	6.80	21.46	3.16
32	568	10.51	1176	91.9	784	78.4	14.3	14.3	6.90	21.15	3.07
33	588	10.89	1165	90.8	783	78.3	14.0	14.0	7.00	21.02	3.00
34	608	11.26	1156	89.9	783	78.3	13.8	13.8	7.00	20.83	2.98
35	628	11.64	1151	89.4	783	78.3	13.7	13.7	7.00	20.69	2.96
36	648	12.01	1147	89.0	783	78.3	13.6	13.6	7.00	20.57	2.94
37	668	12.39	1140	88.3	783	78.3	13.4	13.4	7.00	20.41	2.92
38	688	12.76	1131	87.4	783	78.3	13.2	13.2	7.00	20.21	2.89
39	708	13.14	1125	86.8	783	78.3	13.1	13.1	7.00	20.07	2.87
40	728	13.51	1122	86.5	784	78.4	13.0	13.0	6.90	19.87	2.88
41	748	13.89	1118	86.1	784	78.4	12.9	12.9	6.90	19.75	2.86
42	768	14.26	1113	85.6	785	78.5	12.7	12.7	6.80	19.52	2.87
43	788	14.64	1111	85.4	786	78.6	12.6	12.6	6.70	19.33	2.89
44	808	15.02	1111	85.4	786	78.6	12.6	12.6	6.70	19.28	2.88
45	828	15.39	1107	85.0	787	78.7	12.5	12.5	6.60	19.06	2.89
46	848	15.77	1109	85.2	788	78.8	12.4	12.4	6.50	18.94	2.91

S&ME

Test Method: ASTM D4767-95		Test name: CU w/PP (SS, MS) Shear (Specimen 2)	
Date of Test: 7/25/200		Sample: PAL 60	
Site Reference: Charleston Naval Base Container		UD Tube PAL 60	
Jobfile: C:\WINCLISP\JOBFILES\11313264.J		Borehole:	
Operator:		Checked:	
		Approved:	

Effective Stress Triaxial Compression

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Consolidated Undrained Shear (Specimen 3)

No.	Strain (divs)	Strain %	Load (divs)	Load (lbs)	Pore Prs (divs)	Pore Prs (lb/in ²)	D. Stress $(\sigma_1 - \sigma_3)_m$ (lb/in ²)	D. Stress $(\sigma_1 - \sigma_3)_c$ (lb/in ²)	Minor Str σ_3 (lb/in ²)	Major Str σ_1 (lb/in ²)	Ratio σ_1/σ_3
1	2	0.00	333	0.0	596	59.6	0.0	0.0	35.70	35.70	1.00
2	3	0.02	344	1.1	598	59.8	0.2	0.2	35.50	35.70	1.01
3	3	0.02	344	1.1	598	59.8	0.2	0.2	35.50	35.70	1.01
4	3	0.02	344	1.1	598	59.8	0.2	0.2	35.50	35.70	1.01
5	23	0.40	848	51.5	681	68.1	9.2	9.2	27.20	36.43	1.34
6	43	0.78	1021	68.8	715	71.5	12.3	12.3	23.80	36.08	1.52
7	63	1.16	1127	79.4	737	73.7	14.1	14.1	21.60	35.72	1.65
8	83	1.54	1203	87.0	754	75.4	15.4	15.4	19.90	35.31	1.77
9	103	1.93	1258	92.5	768	76.8	16.3	16.3	18.50	34.82	1.88
10	123	2.31	1303	97.0	779	77.9	17.1	17.1	17.40	34.45	1.98
11	143	2.69	1341	100.8	790	79.0	17.7	17.7	16.30	33.95	2.08
12	163	3.07	1369	103.6	797	79.7	18.1	18.1	15.60	33.67	2.16
13	183	3.45	1396	106.3	804	80.4	18.5	18.5	14.90	33.37	2.24
14	203	3.83	1412	107.9	810	81.0	18.7	18.7	14.30	32.97	2.31
15	223	4.22	1432	109.9	815	81.5	18.9	18.9	13.80	32.74	2.37
16	243	4.60	1449	111.6	821	82.1	19.2	19.2	13.20	32.36	2.45
17	263	4.98	1463	113.0	825	82.5	19.3	19.3	12.80	32.12	2.51
18	283	5.36	1478	114.5	829	82.9	19.5	19.5	12.40	31.90	2.57
19	303	5.74	1487	115.4	832	83.2	19.6	19.6	12.10	31.67	2.62
20	323	6.12	1498	116.5	836	83.6	19.7	19.7	11.70	31.38	2.68
21	343	6.50	1507	117.4	839	83.9	19.8	19.8	11.40	31.15	2.73
22	363	6.89	1516	118.3	842	84.2	19.8	19.8	11.10	30.92	2.79
23	383	7.27	1523	119.0	844	84.4	19.9	19.9	10.90	30.76	2.82
24	403	7.65	1529	119.6	846	84.6	19.9	19.9	10.70	30.58	2.86
25	423	8.03	1536	120.3	848	84.8	19.9	19.9	10.50	30.41	2.90
26	443	8.41	1543	121.0	851	85.1	19.9	19.9	10.20	30.14	2.96
27	463	8.79	1549	121.6	852	85.2	20.0	20.0	10.10	30.06	2.98
28	483	9.17	1547	121.4	854	85.4	19.8	19.8	9.90	29.74	3.00
29	503	9.56	1551	121.8	856	85.6	19.8	19.8	9.70	29.52	3.04
30	523	9.94	1554	122.1	857	85.7	19.8	19.8	9.60	29.39	3.06
31	543	10.32	1554	122.1	858	85.8	19.7	19.7	9.50	29.20	3.07
32	563	10.70	1554	122.1	859	85.9	19.6	19.6	9.40	29.02	3.09
33	583	11.08	1549	121.6	860	86.0	19.5	19.5	9.30	28.76	3.09
34	603	11.46	1547	121.4	861	86.1	19.3	19.3	9.20	28.54	3.10
35	623	11.84	1545	121.2	863	86.3	19.2	19.2	9.00	28.23	3.14
36	643	12.23	1543	121.0	864	86.4	19.1	19.1	8.90	28.01	3.15
37	663	12.61	1534	120.1	865	86.5	18.9	18.9	8.80	27.69	3.15
38	683	12.99	1531	119.8	866	86.6	18.8	18.8	8.70	27.46	3.16
39	703	13.37	1529	119.6	868	86.8	18.6	18.6	8.50	27.14	3.19
40	723	13.75	1527	119.4	869	86.9	18.5	18.5	8.40	26.93	3.21
41	743	14.13	1529	119.6	870	87.0	18.5	18.5	8.30	26.78	3.23
42	763	14.51	1531	119.8	871	87.1	18.4	18.4	8.20	26.63	3.25
43	783	14.90	1529	119.6	872	87.2	18.3	18.3	8.10	26.42	3.26
44	803	15.28	1529	119.6	872	87.2	18.2	18.2	8.10	26.33	3.25
45	823	15.66	1527	119.4	873	87.3	18.1	18.1	8.00	26.12	3.27

S&ME

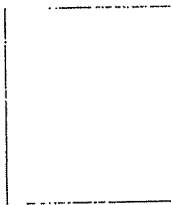
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		Date of Test: 7/25/200	
Site Reference:	Charleston Naval Base Container	Sample:	PAL 60
Jobfile:	C:\WINCLISP\JOBFILES\11313264.J	Borehole:	UD Tube PAL 60
Operator:	Checked:	Approved:	

Effective Stress Triaxial Compression

Consolidated Undrained

Sample details

Sketch showing specimen location in original Sample



Depth 30' - 32'

Description:

	Specimen 1	Specimen 2	Specimen 3
Type	UD Tube	UD Tube	UD Tube
Height H_0 (in)	5.612	5.615	5.622
Diameter D_0 (in)	2.822	2.829	2.815
Weight W_0 (gr)	771.43	777.67	768.71
Bulk Density ρ (PCF)	83.72	83.94	83.69
Particle Density ρ_s	2.504	2.504	2.504
	(measured)	(measured)	(measured)

Initial Conditions

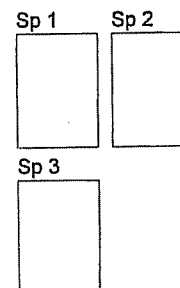
	Specimen 1	Specimen 2	Specimen 3
Cell Pressure σ_3 (lb/in ²)	93.00	102.30	110.70
Pore Pressure u (lb/in ²)	83.00	82.30	80.70
Machine Speed d_f (in/min)	0.004	0.004	0.004
No. of Membranes	1	1	1
Total Thickness (mm)	0	0	0
Strain Channel	14421	14421	14487
Load Channel	985724	985724	1003054
Pore P. Channel	#5	#6	#4
Volume Channel	KW Volume Ch	KW Volume Ch	KW Volume Ch
Moisture Content w_0 %	146	139	141
Dry Density ρ_{d0} (PCF)	34.07	35.06	34.72
Voids Ratio e_0	3.59	3.46	3.50
Deg of Saturation S_0 %	100.00	100.00	100.00
Final B Value			

Final Conditions

	Specimen 1	Specimen 2	Specimen 3
Moisture Content w_f %	107	80	92
Dry Density ρ_d (PCF)	608222.90	687639.40	634300.70
Voids Ratio e_f	-1.00	-1.00	-1.00
Deg of Saturation S_f %	-268.92	-200.81	-231.27
Failure Criteria			
Axial Strain ϵ_f %	8.8	6.3	8.6
Corr Dev Stress $(\sigma_1 - \sigma_3)_f$ (lb/in ²)	7.7	10.2	14.9
Minor Stress σ_{3f} (lb/in ²)	2.6	7.2	9.4
Major Stress σ_{1f} (lb/in ²)	10.3	17.4	24.3
Stress Ratio $(\sigma_1/\sigma_3)_f$	4.0	2.4	2.6

Notes:

Failure Sketch

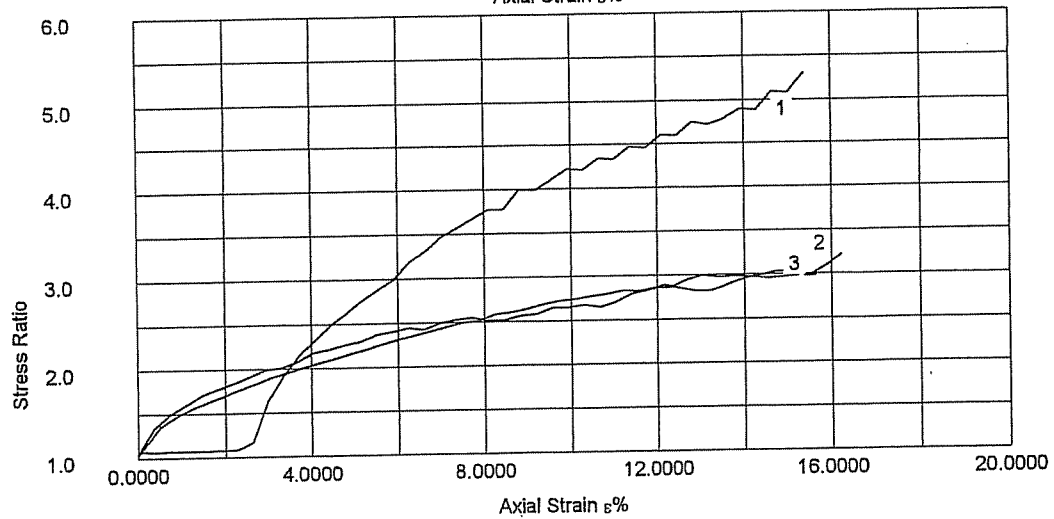
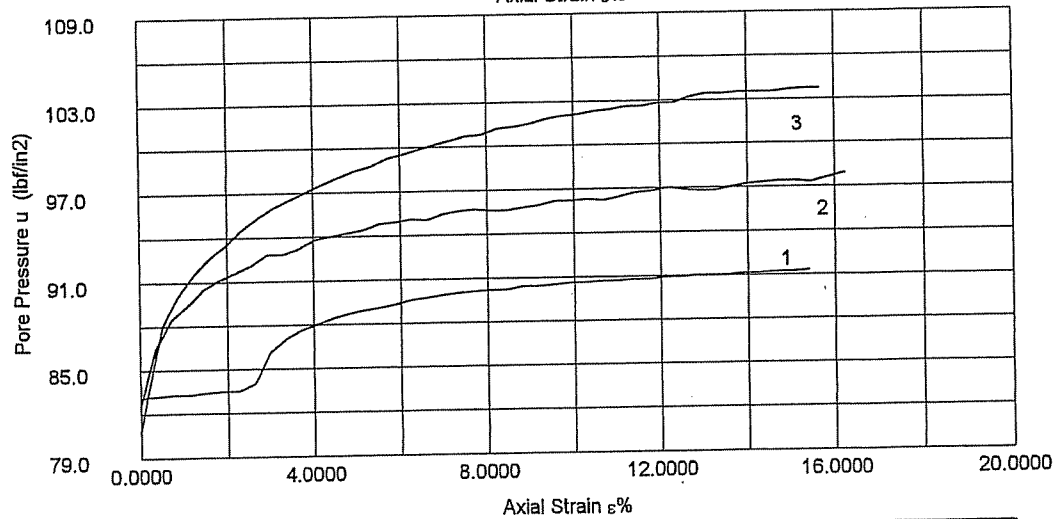
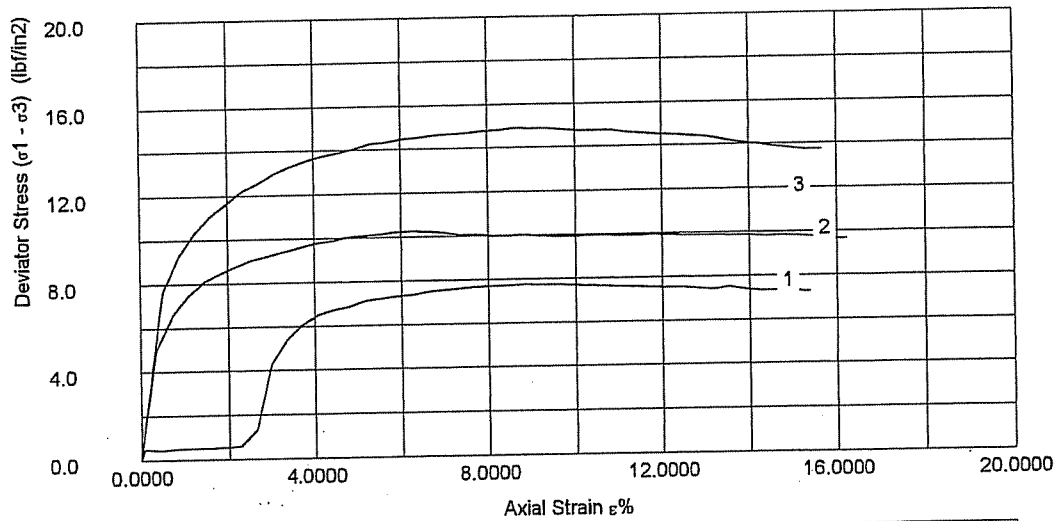


Surface Inclination

Test Method: ASTM D4767-95	Test name: CU w/PP (SS, MS)
Date of Test: 7/16/200	
Site Reference: Charleston Naval Base Container	Sample: PAL 62
Jobfile: C:\WINCLISP\JOBFILES\11313264.J	Borehole: UD Tube PAL 62
Operator:	Checked:
	Approved:

Effective Stress Triaxial Compression

Consolidated Undrained

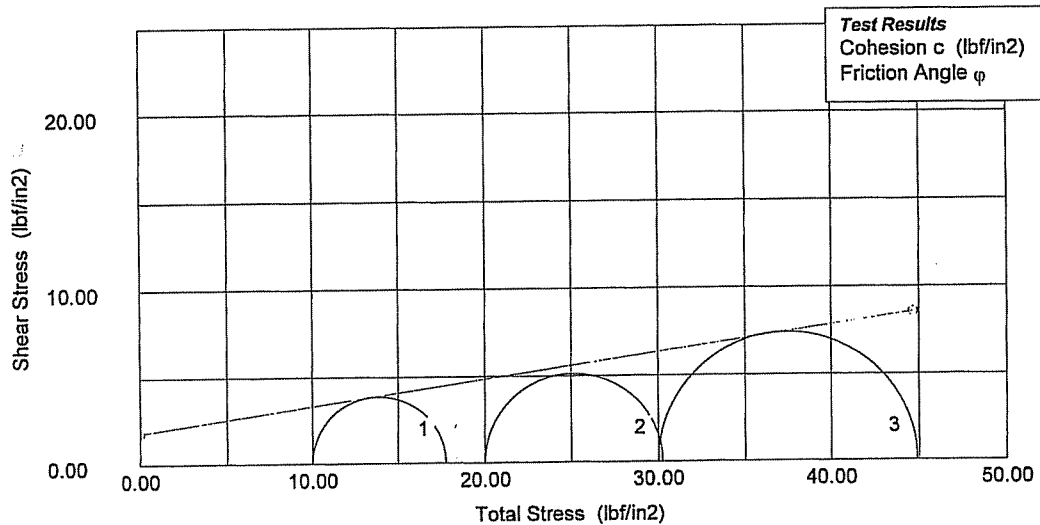
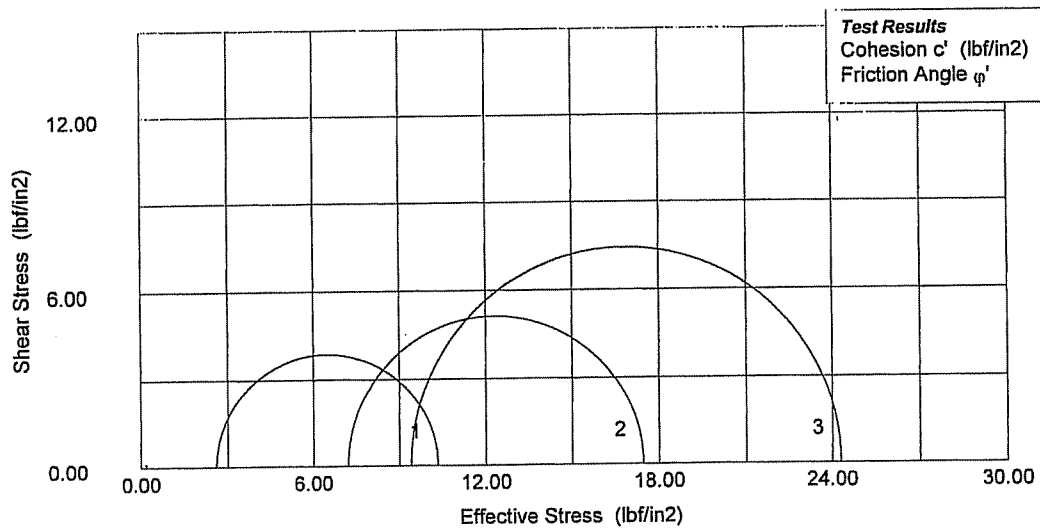


S&ME

	Test Method: ASTM D4767-95		Test name		CU w/PP (SS, MS)			
			Date of Test:		7/16/200			
	Site Reference:		Charleston Naval Base Container		Sample:		PAL 62	
	Jobfile:		C:\WINCLISP\JOBFILES\11313264.J		Borehole:		UD Tube PAL 62	
	Operator:		Checked:		Approved:			

Effective Stress Triaxial Compression

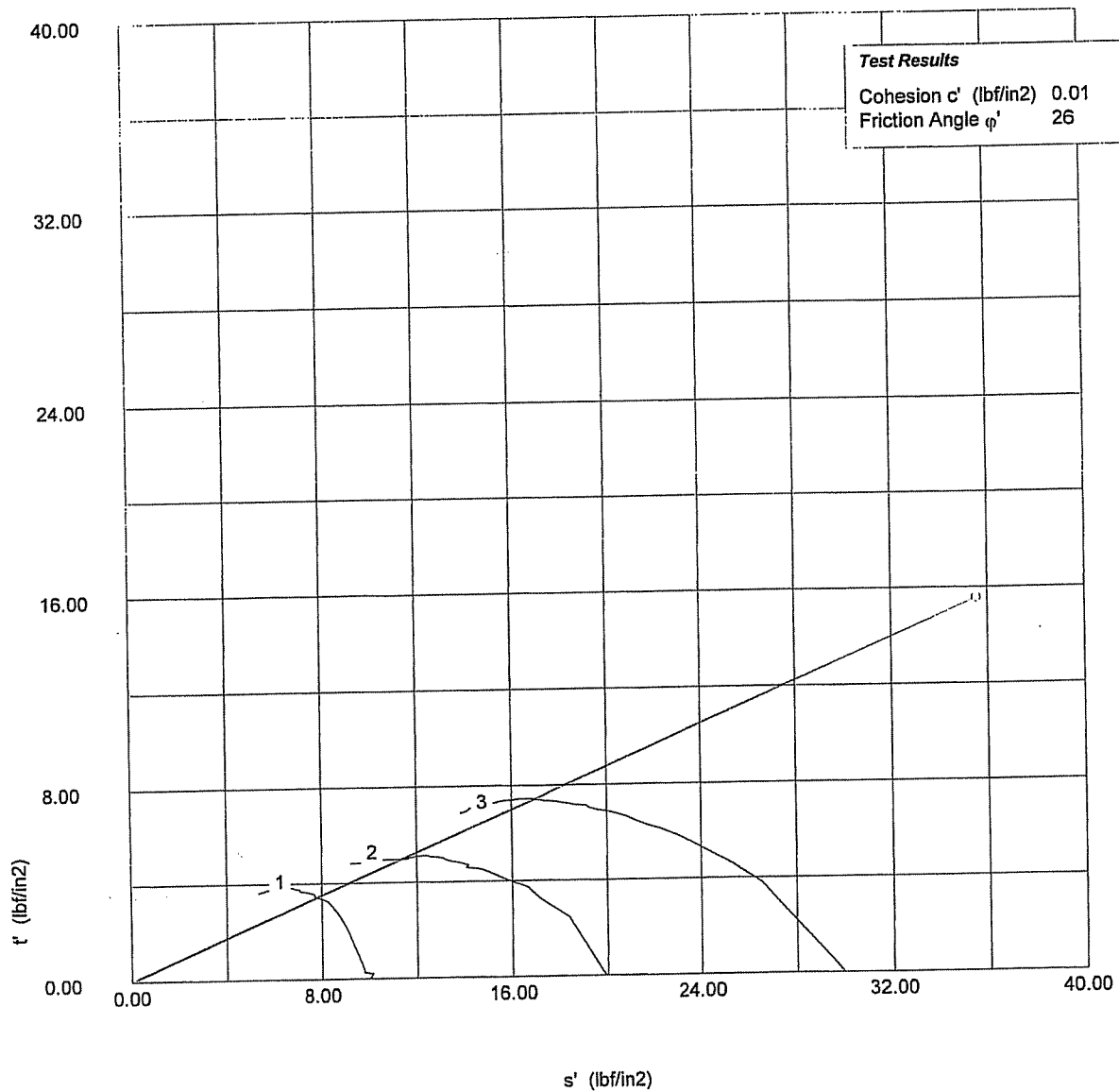
Consolidated Undrained



	Test Method: ASTM D4767-95		Test name CU w/PP (SS, MS)	
			Date of Test: 7/16/200	
	Site Reference: Charleston Naval Base Container		Sample: PAL 62	
	Jobfile: C:\WINCLIS\PUJOBFILES\11313264.J		Borehole: UD Tube PAL 62	
Operator:		Checked:		Approved:

Effective Stress Triaxial Compression

Consolidated Undrained



	Test Method: ASTM D4767-95		Test name: CU w/PP (SS, MS)	
			Date of Test: 7/16/200	
	Site Reference: Charleston Naval Base Container		Sample: PAL 62	
	Jobfile: C:\WINCLISP\JOBFILES\11313264.J		Borehole: UD Tube PAL 62	
Operator:		Checked:		Approved:

Effective Stress Triaxial Compression

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Consolidated Undrained Shear (Specimen 1)

No.	Strain (divs)	Strain ε%	Load (divs)	Load (lbs)	Pore Prs (divs)	Pore Prs (lb/in ²)	D. Stress (σ ₁ - σ ₃) _m (lb/in ²)	D. Stress (σ ₁ - σ ₃) _c (lb/in ²)	Minor Str σ ₃ (lb/in ²)	Major Str σ ₁ (lb/in ²)	Ratio σ ₁ /σ ₃
1	0	0.00	162	0.0	830	83.0	0.0	0.0	10.00	10.00	1.00
2	0	0.00	162	0.0	830	83.0	0.0	0.0	10.00	10.00	1.00
3	0	0.00	162	0.0	830	83.0	0.0	0.0	10.00	10.00	1.00
4	5	0.09	191	2.9	831	83.1	0.5	0.5	9.90	10.38	1.05
5	25	0.46	188	2.6	832	83.2	0.4	0.4	9.80	10.23	1.04
6	45	0.82	191	2.9	833	83.3	0.5	0.5	9.70	10.18	1.05
7	65	1.18	193	3.1	833	83.3	0.5	0.5	9.70	10.21	1.05
8	85	1.55	193	3.1	834	83.4	0.5	0.5	9.60	10.11	1.05
9	105	1.91	195	3.3	835	83.5	0.5	0.5	9.50	10.04	1.06
10	125	2.28	197	3.5	835	83.5	0.6	0.6	9.50	10.07	1.06
11	145	2.64	242	8.0	840	84.0	1.3	1.3	9.00	10.30	1.14
12	165	3.01	424	26.2	861	86.1	4.3	4.3	6.90	11.15	1.62
13	185	3.37	495	33.3	870	87.0	5.4	5.4	6.00	11.39	1.90
14	205	3.74	538	37.6	876	87.6	6.1	6.1	5.40	11.46	2.12
15	225	4.10	566	40.4	880	88.0	6.5	6.5	5.00	11.48	2.30
16	245	4.47	582	42.0	884	88.4	6.7	6.7	4.60	11.32	2.46
17	265	4.83	593	43.1	887	88.7	6.9	6.9	4.30	11.17	2.60
18	285	5.19	611	44.9	889	88.9	7.1	7.1	4.10	11.22	2.74
19	305	5.56	618	45.6	891	89.1	7.2	7.2	3.90	11.11	2.85
20	325	5.92	624	46.2	893	89.3	7.3	7.3	3.70	10.97	2.97
21	345	6.29	631	46.9	896	89.6	7.4	7.4	3.40	10.76	3.16
22	365	6.65	642	48.0	897	89.7	7.5	7.5	3.30	10.80	3.27
23	385	7.02	647	48.5	899	89.9	7.5	7.5	3.10	10.65	3.43
24	405	7.38	653	49.1	900	90.0	7.6	7.6	3.00	10.61	3.54
25	425	7.75	658	49.6	901	90.1	7.7	7.7	2.90	10.56	3.64
26	445	8.11	662	50.0	902	90.2	7.7	7.7	2.80	10.49	3.75
27	465	8.48	664	50.2	902	90.2	7.7	7.7	2.80	10.49	3.75
28	485	8.84	669	50.7	904	90.4	7.7	7.7	2.60	10.34	3.98
29	505	9.20	669	50.7	904	90.4	7.7	7.7	2.60	10.30	3.96
30	525	9.57	671	50.9	905	90.5	7.7	7.7	2.50	10.20	4.08
31	545	9.93	671	50.9	906	90.6	7.7	7.7	2.40	10.07	4.20
32	565	10.30	671	50.9	906	90.6	7.6	7.6	2.40	10.04	4.18
33	585	10.66	673	51.1	907	90.7	7.6	7.6	2.30	9.94	4.32
34	605	11.03	673	51.1	907	90.7	7.6	7.6	2.30	9.91	4.31
35	625	11.39	673	51.1	908	90.8	7.6	7.6	2.20	9.78	4.44
36	645	11.76	673	51.1	908	90.8	7.5	7.5	2.20	9.75	4.43
37	665	12.12	673	51.1	909	90.9	7.5	7.5	2.10	9.62	4.58
38	685	12.49	675	51.3	909	90.9	7.5	7.5	2.10	9.61	4.58
39	705	12.85	673	51.1	910	91.0	7.5	7.5	2.00	9.45	4.73
40	725	13.21	671	50.9	910	91.0	7.4	7.4	2.00	9.39	4.70
41	745	13.58	682	52.0	910	91.0	7.5	7.5	2.00	9.52	4.76
42	765	13.94	673	51.1	911	91.1	7.4	7.4	1.90	9.26	4.87
43	785	14.31	673	51.1	911	91.1	7.3	7.3	1.90	9.23	4.86
44	805	14.67	675	51.3	912	91.2	7.3	7.3	1.80	9.13	5.07
45	825	15.04	675	51.3	912	91.2	7.3	7.3	1.80	9.09	5.05
46	845	15.40	675	51.3	913	91.3	7.3	7.3	1.70	8.96	5.27

S&ME

Test Method: ASTM D4767-95		Test name: CU w/PP (SS, MS) Shear (Specimen 1)	
Date of Test:		7/16/200	
Site Reference:	Charleston Naval Base Container	Sample:	PAL 62
Jobfile:	C:\WINCLISPUOFILES\11313264.J	Borehole:	UD Tube PAL 62
Operator:		Checked:	Approved:

Effective Stress Triaxial Compression

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Consolidated Undrained Shear (Specimen 2)

No.	Strain (divs)	Strain $\epsilon\%$	Load (divs)	Load (lbs)	Pore Prs (divs)	Pore Prs (lb/in ²)	D. Stress $(\sigma_1 - \sigma_3)_m$ (lb/in ²)	D. Stress $(\sigma_1 - \sigma_3)_c$ (lb/in ²)	Minor Str σ_3' (lb/in ²)	Major Str σ_1 (lb/in ²)	Ratio σ_1'/σ_3
1	8	0.00	200	0.0	823	82.3	0.0	0.0	20.00	20.00	1.00
2	8	0.00	209	0.9	825	82.5	0.2	0.2	19.80	19.95	1.01
3	8	0.00	209	0.9	825	82.5	0.2	0.2	19.80	19.95	1.01
4	8	0.00	209	0.9	825	82.5	0.2	0.2	19.80	19.95	1.01
5	28	0.37	491	29.1	864	86.4	5.0	5.0	15.90	20.85	1.31
6	48	0.74	584	38.4	884	88.4	6.5	6.5	13.90	20.41	1.47
7	68	1.11	642	44.2	894	89.4	7.5	7.5	12.90	20.37	1.58
8	88	1.48	680	48.0	905	90.5	8.1	8.1	11.80	19.88	1.68
9	108	1.84	704	50.4	911	91.1	8.5	8.5	11.20	19.65	1.75
10	128	2.21	724	52.4	916	91.6	8.8	8.8	10.70	19.45	1.82
11	148	2.58	744	54.4	921	92.1	9.1	9.1	10.20	19.25	1.89
12	168	2.95	755	55.5	928	92.8	9.2	9.2	9.50	18.70	1.97
13	188	3.32	769	56.9	928	92.8	9.4	9.4	9.50	18.90	1.99
14	208	3.69	782	58.2	932	93.2	9.6	9.6	9.10	18.68	2.05
15	228	4.06	796	59.6	938	93.8	9.8	9.8	8.50	18.27	2.15
16	248	4.43	804	60.4	940	94.0	9.9	9.9	8.30	18.16	2.19
17	268	4.80	816	61.6	942	94.2	10.0	10.0	8.10	18.12	2.24
18	288	5.16	822	62.2	944	94.4	10.1	10.1	7.90	17.98	2.28
19	308	5.53	829	62.9	948	94.8	10.2	10.2	7.50	17.65	2.35
20	328	5.90	836	63.6	949	94.9	10.2	10.2	7.40	17.62	2.38
21	348	6.27	840	64.0	951	95.1	10.2	10.2	7.20	17.45	2.42
22	368	6.64	842	64.2	950	95.0	10.2	10.2	7.30	17.54	2.40
23	388	7.01	840	64.0	954	95.4	10.2	10.2	6.90	17.07	2.47
24	408	7.38	836	63.6	956	95.6	10.1	10.1	6.70	16.76	2.50
25	428	7.75	838	63.8	957	95.7	10.1	10.1	6.60	16.65	2.52
26	448	8.11	836	63.6	956	95.6	10.0	10.0	6.70	16.68	2.49
27	468	8.48	838	63.8	956	95.6	10.0	10.0	6.70	16.67	2.49
28	488	8.85	842	64.2	958	95.8	10.0	10.0	6.50	16.50	2.54
29	508	9.22	842	64.2	959	95.9	10.0	10.0	6.40	16.36	2.56
30	528	9.59	842	64.2	962	96.2	9.9	9.9	6.10	16.02	2.63
31	548	9.96	844	64.4	962	96.2	9.9	9.9	6.10	16.01	2.62
32	568	10.33	849	64.9	963	96.3	9.9	9.9	6.00	15.94	2.66
33	588	10.70	851	65.1	962	96.2	9.9	9.9	6.10	16.03	2.63
34	608	11.07	853	65.3	964	96.4	9.9	9.9	5.90	15.82	2.68
35	628	11.43	856	65.6	967	96.7	9.9	9.9	5.60	15.52	2.77
36	648	11.80	860	66.0	968	96.8	9.9	9.9	5.50	15.44	2.81
37	668	12.17	860	66.0	970	97.0	9.9	9.9	5.30	15.20	2.87
38	688	12.54	862	66.2	969	96.9	9.9	9.9	5.40	15.29	2.83
39	708	12.91	864	66.4	968	96.8	9.9	9.9	5.50	15.38	2.80
40	728	13.28	867	66.7	968	96.8	9.9	9.9	5.50	15.38	2.80
41	748	13.65	869	66.9	970	97.0	9.9	9.9	5.30	15.17	2.86
42	768	14.02	871	67.1	972	97.2	9.9	9.9	5.10	14.96	2.93
43	788	14.39	871	67.1	973	97.3	9.8	9.8	5.00	14.81	2.96
44	808	14.75	876	67.6	974	97.4	9.8	9.8	4.90	14.74	3.01
45	828	15.12	876	67.6	974	97.4	9.8	9.8	4.90	14.70	3.00
46	848	15.49	876	67.6	973	97.3	9.8	9.8	5.00	14.76	2.95

S&ME

	Test Method: ASTM D4767-95		Test name: CU w/PP (SS, MS) Shear (Specimen 2)	
			Date of Test: 7/16/200	
	Site Reference: Charleston Naval Base Container		Sample: PAL 62	
	Jobfile: C:\WINCLISP\JOBFILES\11313264.JC		Borehole: UD Tube PAL 62	
Operator:		Checked:		Approved:

Effective Stress Triaxial Compression

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Consolidated Undrained Shear (Specimen 3)

No.	Strain (divs)	Strain ε%	Load (divs)	Load (lbs)	Pore Prs (divs)	Pore Prs (lb/in ²)	D. Stress (σ ₁ - σ ₃) _m (lb/in ²)	D. Stress (σ ₁ - σ ₃) _c (lb/in ²)	Minor Str σ ₃ (lb/in ²)	Major Str σ ₁ (lb/in ²)	Ratio σ ₁ /σ ₃
1	2	0.00	213	0.0	807	80.7	0.0	0.0	30.00	30.00	1.00
2	2	0.00	213	0.0	807	80.7	0.0	0.0	30.00	30.00	1.00
3	2	0.00	213	0.0	807	80.7	0.0	0.0	30.00	30.00	1.00
4	30	0.52	654	44.1	880	88.0	7.6	7.6	22.70	30.32	1.34
5	50	0.89	748	53.5	900	90.0	9.2	9.2	20.70	29.91	1.44
6	70	1.26	812	59.9	915	91.5	10.3	10.3	19.20	29.47	1.54
7	90	1.63	859	64.6	926	92.6	11.0	11.0	18.10	29.14	1.61
8	110	2.00	896	68.3	935	93.5	11.6	11.6	17.20	28.83	1.68
9	130	2.37	932	71.9	945	94.5	12.2	12.2	16.20	28.39	1.75
10	150	2.73	956	74.3	953	95.3	12.6	12.6	15.40	27.95	1.82
11	170	3.10	983	77.0	960	96.0	13.0	13.0	14.70	27.66	1.88
12	190	3.47	1005	79.2	965	96.5	13.3	13.3	14.20	27.48	1.94
13	210	3.84	1023	81.0	970	97.0	13.5	13.5	13.70	27.23	1.99
14	230	4.21	1039	82.6	975	97.5	13.7	13.7	13.20	26.94	2.04
15	250	4.58	1050	83.7	980	98.0	13.9	13.9	12.70	26.57	2.09
16	270	4.95	1063	85.0	984	98.4	14.0	14.0	12.30	26.33	2.14
17	290	5.32	1081	86.8	987	98.7	14.3	14.3	12.00	26.27	2.19
18	310	5.69	1087	87.4	992	99.2	14.3	14.3	11.50	25.82	2.24
19	330	6.06	1099	88.6	995	99.5	14.5	14.5	11.20	25.66	2.29
20	350	6.43	1107	89.4	998	99.8	14.5	14.5	10.90	25.43	2.33
21	370	6.80	1116	90.3	1001	100.1	14.6	14.6	10.60	25.22	2.38
22	390	7.17	1123	91.0	1004	100.4	14.7	14.7	10.30	24.97	2.42
23	410	7.54	1127	91.4	1007	100.7	14.7	14.7	10.00	24.68	2.47
24	430	7.91	1136	92.3	1008	100.8	14.8	14.8	9.90	24.66	2.49
25	450	8.28	1143	93.0	1012	101.2	14.8	14.8	9.50	24.32	2.56
26	470	8.65	1152	93.9	1013	101.3	14.9	14.9	9.40	24.30	2.58
27	490	9.02	1154	94.1	1015	101.5	14.9	14.9	9.20	24.07	2.62
28	510	9.39	1158	94.5	1018	101.8	14.9	14.9	8.90	23.77	2.67
29	530	9.76	1158	94.5	1020	102.0	14.8	14.8	8.70	23.51	2.70
30	550	10.13	1158	94.5	1021	102.1	14.8	14.8	8.60	23.35	2.72
31	570	10.50	1161	94.8	1023	102.3	14.7	14.7	8.40	23.14	2.75
32	590	10.87	1165	95.2	1024	102.4	14.7	14.7	8.30	23.04	2.78
33	610	11.24	1163	95.0	1026	102.6	14.6	14.6	8.10	22.75	2.81
34	630	11.60	1163	95.0	1026	102.6	14.6	14.6	8.10	22.68	2.80
35	650	11.97	1163	95.0	1028	102.8	14.5	14.5	7.90	22.42	2.84
36	670	12.34	1165	95.2	1028	102.8	14.5	14.5	7.90	22.39	2.83
37	690	12.71	1165	95.2	1032	103.2	14.4	14.4	7.50	21.93	2.92
38	710	13.08	1165	95.2	1034	103.4	14.4	14.4	7.30	21.67	2.97
39	730	13.45	1161	94.8	1034	103.4	14.2	14.2	7.30	21.55	2.95
40	750	13.82	1154	94.1	1035	103.5	14.1	14.1	7.20	21.28	2.96
41	770	14.19	1154	94.1	1035	103.5	14.0	14.0	7.20	21.22	2.95
42	790	14.56	1150	93.7	1035	103.5	13.9	13.9	7.20	21.10	2.93
43	810	14.93	1147	93.4	1036	103.6	13.8	13.8	7.10	20.90	2.94
44	830	15.30	1147	93.4	1037	103.7	13.7	13.7	7.00	20.74	2.96
45	850	15.67	1150	93.7	1037	103.7	13.7	13.7	7.00	20.72	2.96

S&ME

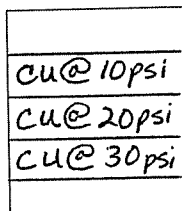
Test Method: ASTM D4767-95		Test name: CU w/PP (SS, MS) Shear (Specimen 3)	
Date of Test: 7/16/200		Sample: PAL 62	
Site Reference: Charleston Naval Base Container		UD Tube PAL 62	
Jobfile: C:\WINCLISP\JOBFILES\11313264.JC		Borehole:	
Operator:		Checked:	
		Approved:	

Effective Stress Triaxial Compression

Consolidated Undrained

Sample details

Sketch showing specimen location in original Sample



Depth: 15'
Description: Gray inorganic clay with slight sand and peat content.

	Specimen 1	Specimen 2	Specimen 3
Type	Undisturbed	Undisturbed	Undisturbed
Height H_0 (in)	5.6	5.6	5.6
Diameter D_0 (in)	2.8	2.8	2.8
Weight W_0 (gr)	782.05	780.87	783.54
Bulk Density ρ (PCF)	86.40	86.27	86.56
Particle Density ρ_s	2.58	2.58	2.58
	(measured)	(measured)	(measured)

Initial Conditions

	Specimen 1	Specimen 2	Specimen 3
Cell Pressure σ_3 (lbf/in ²)	37.0	47.0	57.0
Pore Pressure u (lbf/in ²)	27.0	27.0	27.0
Machine Speed d_r (in/min)	0.0003	0.0003	0.0003
No. of Membranes	1	1	1
Total Thickness (mm)	0.012	0.012	0.012
Strain Channel	strain	strain	strain
Load Channel	load 1,000 l	load 1,000 l	load 1,000 l
Pore P. Channel	94552	94552	94552
Volume Channel			
Moisture Content w_0 %	116.6	117.5	117.6
Dry Density ρ_{d0} (PCF)	39.89	39.67	39.78
Voids Ratio e_0	3.04	3.06	3.05
Deg of Saturation S_0 %	99.09	99.10	99.58
Final B Value	0.99	0.98	0.99

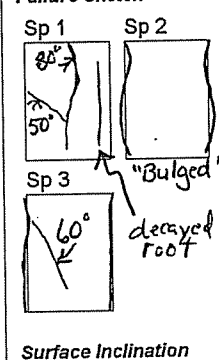
Final Conditions

	Specimen 1	Specimen 2	Specimen 3
Moisture Content w_f %	103.5	104.9	104.9
Dry Density ρ_d (PCF)	105.42	99.01	97.74
Voids Ratio e_f	0.53	0.63	0.65
Deg of Saturation S_f %	100.00	100.00	100.00
Failure Criteria	Mx Dev Stress	Mx Dev Stress	Mx Dev Stress
Axial Strain ϵ_f %	3.2	11.4	7.1
Corr Dev Stress $(\sigma_1 - \sigma_3)_f$ (lbf/in ²)	4.1	15.3	15.4
Minor Stress σ_{3f} (lbf/in ²)	0.1	3.8	5.3
Major Stress σ_{1f} (lbf/in ²)	4.2	19.1	20.7
Stress Ratio $(\sigma_1/\sigma_3)_f$	42.3	5.0	3.9

Notes:

Atterberg Limits- LL: 150 PL: 44 PI: 106. CU-1 contained a decayed root. Lightning struck during the running of CU-1.

Failure Sketch

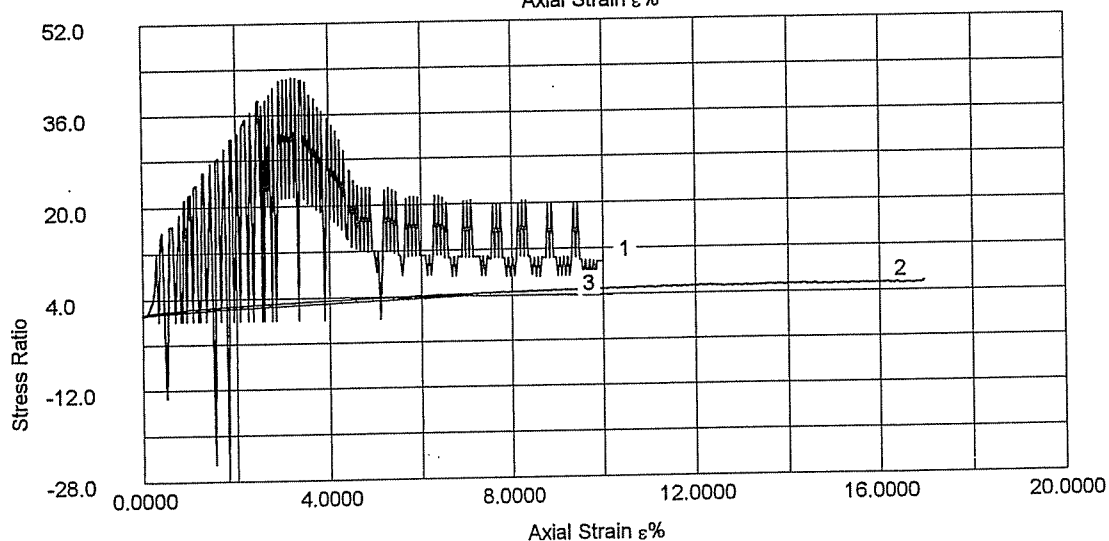
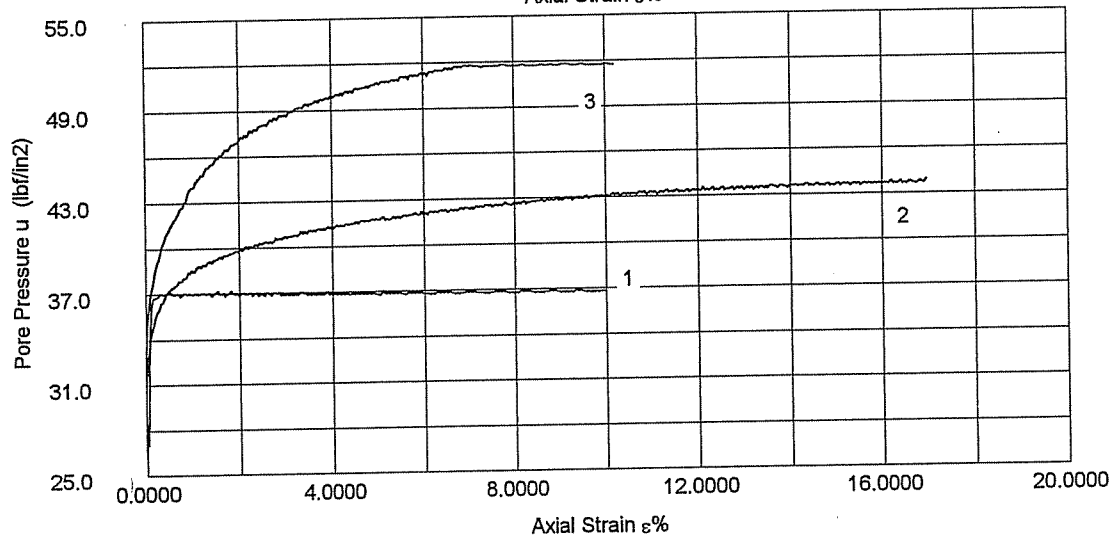
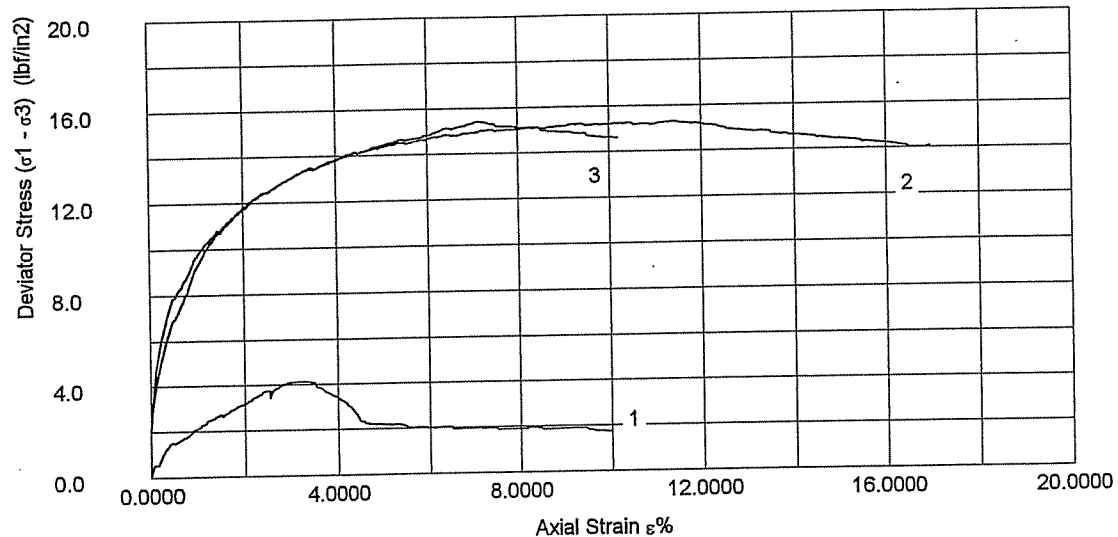


Soil Consultants, Inc.

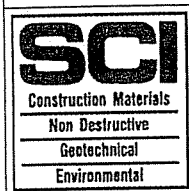
SCI Construction Materials Non Destructive Geotechnical Environmental	Test Method: ASTM D4767-95		Test name: CU (SS, MS)	
	Date of Test: 7/31/200			
	Site Reference: Charleston Naval Base Container		Sample: UD-1	
	Jobfile: C:\WINCLISP\CNB.JOB		Borehole: PAL-66	
Operator: <i>Janne M. Stron</i>		Checked: <i>Chadley Chubb</i>		Approved: <i>N. H. H. / 7/31/00</i>

Effective Stress Triaxial Compression

Consolidated Undrained



Soil Consultants, Inc.



Test Method: ASTM D4767-95

Test name: CU (SS, MS)
Date of Test: 7/31/200

Site Reference: Charleston Naval Base Container
Jobfile: C:\WINCLISP\CNB.JOB

Sample: UD-1
Borehole: PAL-66

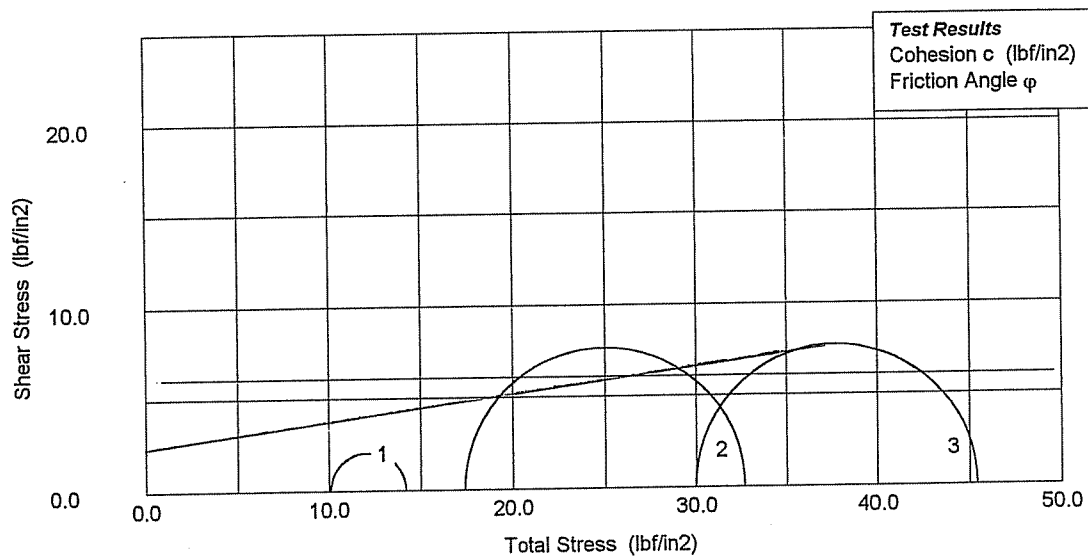
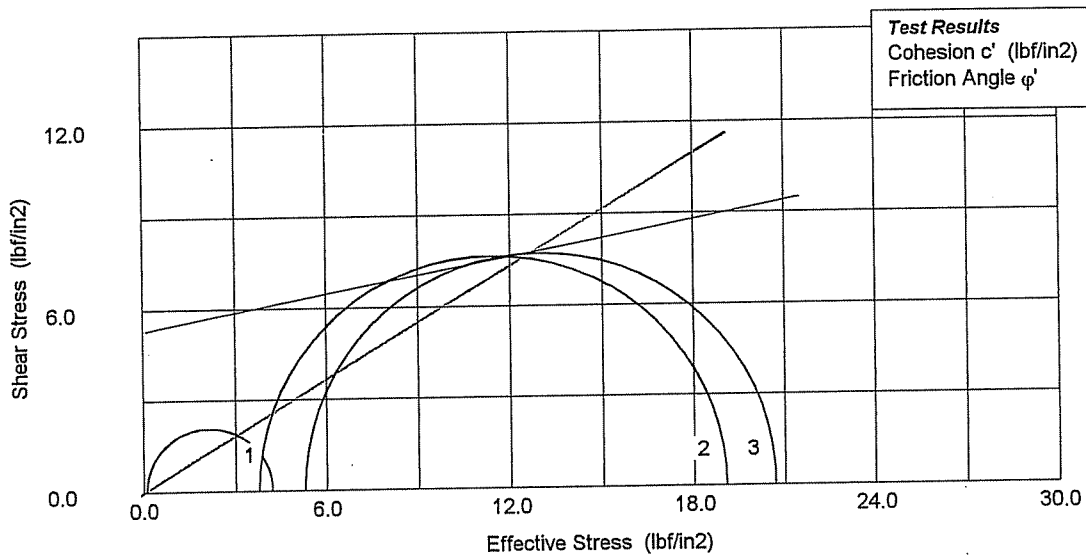
Operator: *Sanne M. Stroh*

Checked: *Cluey Chubb*

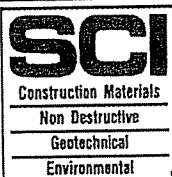
Approved: *[Signature]*

Effective Stress Triaxial Compression

Consolidated Undrained



Soil Consultants, Inc.



Test Method: ASTM D4767-95

Test name CU (SS, MS)

Date of Test: 7/31/200

Site Reference: Charleston Naval Base Container

Jobfile: C:\WINCLISP\CNB.JOB

Sample: UD-1

Borehole: PAL-66

Operator:

Checked:

Approved:

Garrett M. Strub

Clayton Chitt

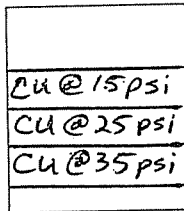
N. M. D. 7/31/00

Effective Stress Triaxial Compression

Consolidated Undrained

Sample details

Sketch showing specimen location in original Sample



Depth: 32'-34'
Description: Gray inorganic clay with slight sand and peat content.

	Specimen 1	Specimen 2	Specimen 3
Type	Undisturbed	Undisturbed	Undisturbed
Height H_0 (in)	5.6	5.6	5.6
Diameter D_0 (in)	2.8	2.8	2.8
Weight W_0 (gr)	812.72	840.42	827.34
Bulk Density ρ (PCF)	89.79	92.85	91.40
Particle Density ρ_s	2.7	2.7	2.7
	(measured)	(measured)	(measured)

Initial Conditions

	Specimen 1	Specimen 2	Specimen 3
Cell Pressure σ_3 (lb/in ²)	32.0	42.0	62.0
Pore Pressure u (lb/in ²)	17.0	17.0	27.0
Machine Speed d_r (in/min)	0.0003	0.0003	0.0003
No. of Membranes	1	1	1
Total Thickness (mm)	0.012	0.012	0.012
Strain Channel	strain	strain	strain
Load Channel	load 1,000 l	load 1,000 l	load 1,000 l
Pore P. Channel	94552	94552	94552
Volume Channel			
Moisture Content w_0 %	102.0	98.0	93.4
Dry Density ρ_{d0} (PCF)	44.46	46.89	47.27
Voids Ratio e_0	2.79	2.59	2.56
Deg of Saturation S_0 %	98.69	100.00	98.31
Final B Value	0.99	0.98	0.95

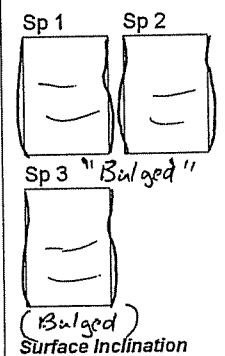
Final Conditions

	Specimen 1	Specimen 2	Specimen 3
Moisture Content w_f %	76.3	71.6	65.5
Dry Density ρ_d (PCF)	77.93	109.15	122.46
Voids Ratio e_f	1.16	0.54	0.38
Deg of Saturation S_f %	100.00	100.00	100.00
Failure Criteria	Mx Dev Stress	Mx Dev Stress	Mx Dev Stress
Axial Strain ϵ_f %	5.4	8.4	8.2
Corr Dev Stress $(\sigma_1 - \sigma_3)_f$ (lb/in ²)	9.9	13.1	18.5
Minor Stress σ_{3f} (lb/in ²)	3.9	4.8	5.6
Major Stress σ_{1f} (lb/in ²)	13.8	17.9	24.1
Stress Ratio $(\sigma_1/\sigma_3)_f$	3.5	3.7	4.3

Notes:

Atterberg Limits- LL: 109 PL: 33 PI: 75

Failure Sketch



Soil Consultants, Inc.

SCI

Construction Materials
Non Destructive
Geotechnical
Environmental

Test Method: ASTM D4767-95

Test name: CU (SS, MS)

Date of Test: 8/5/2003

Site Reference: Charleston Naval Base Container

Sample: UD-2
Borehole: PAL-66

Jobfile: C:WINCLISPICNB.JOB

Operator:

Checked:

Approved:

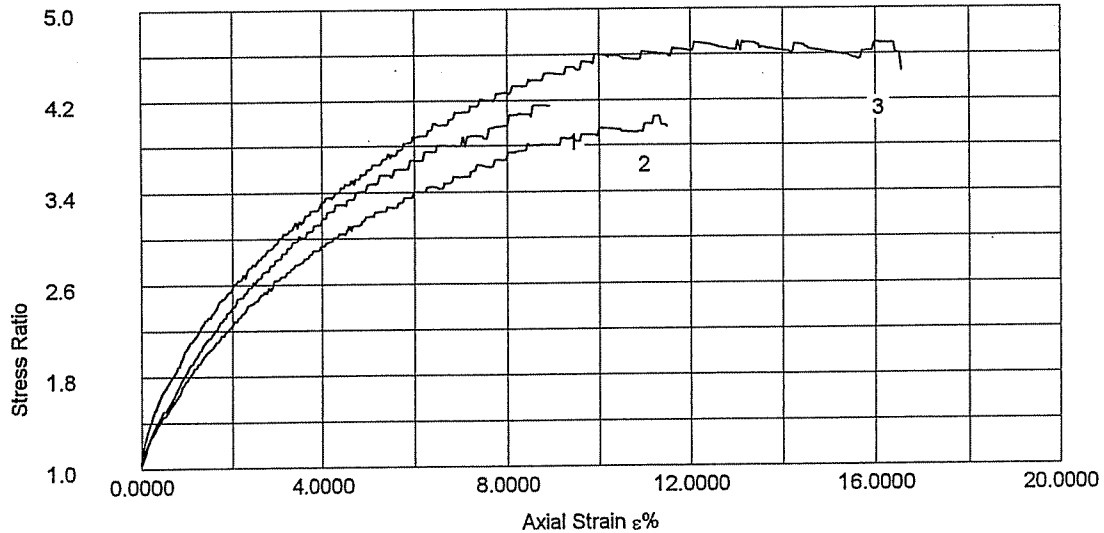
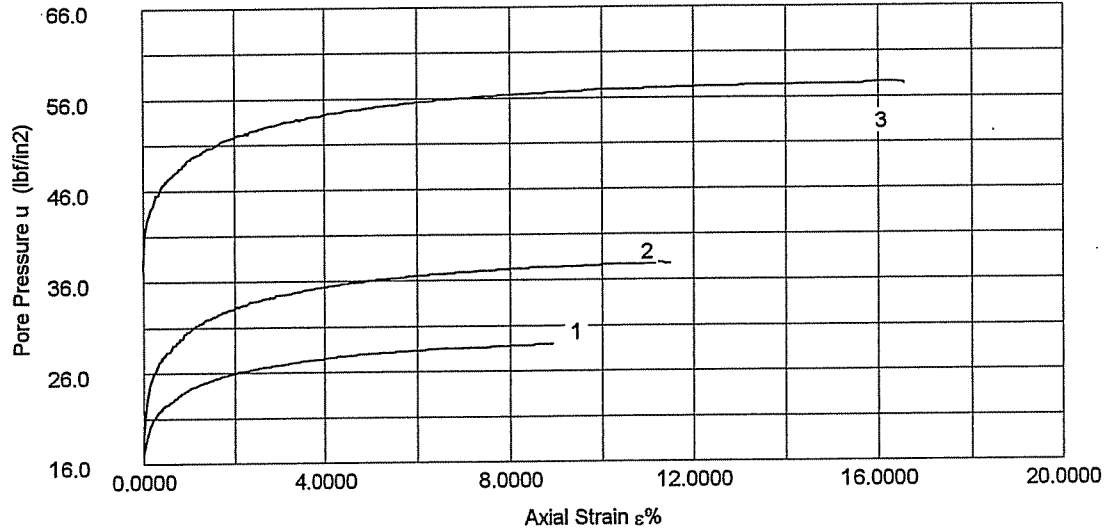
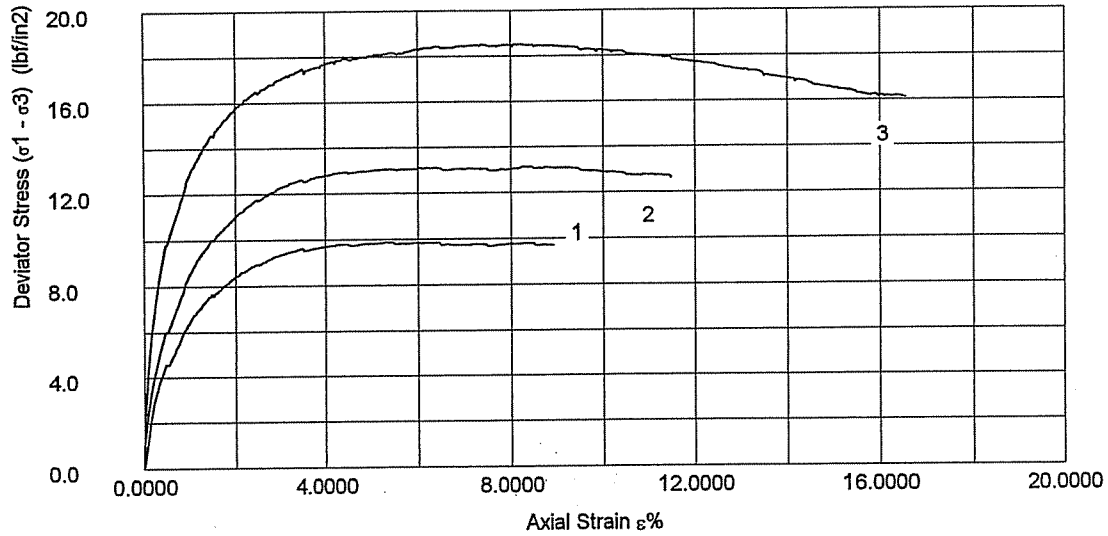
Janne M. Sturges

Dail

10/20/03

Effective Stress Triaxial Compression

Consolidated Undrained

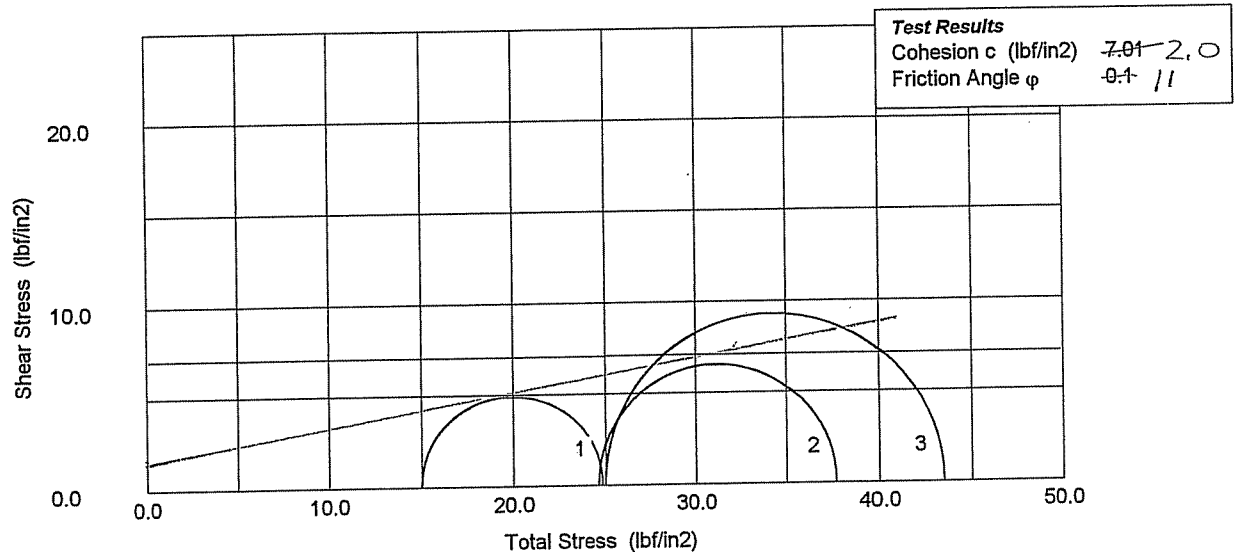
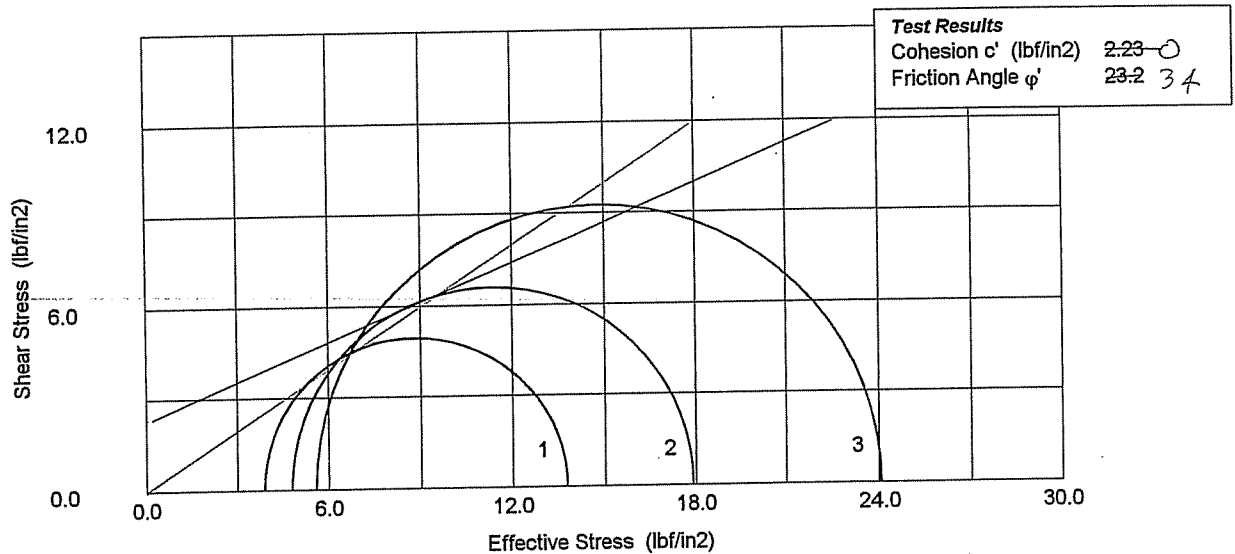


Soil Consultants, Inc.

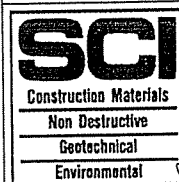
SCI Construction Materials Non Destructive Geotechnical Environmental	Test Method: ASTM D4767-95		Test name: CU (SS, MS)	
			Date of Test: 8/5/2003	
	Site Reference: Charleston Naval Base Container		Sample: UD-2	
	Jobfile: C:\WINCLISP\CNB.JOB		Borehole: PAL-66	
	Operator: Syannem. Shuk		Checked: [Signature]	
		Approved: [Signature]		

Effective Stress Triaxial Compression

Consolidated Undrained



Soil Consultants, Inc.



Test Method: ASTM D4767-95

Test name CU (SS, MS)

Date of Test: 8/5/2003

Site Reference: Charleston Naval Base Container

Sample: UD-2

Jobfile: C:\WINCLISP\CNB.JOB

Borehole: PAL-66

Operator:

Checked:

Approved:

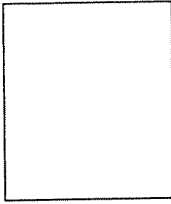
James M. Stoltz *Dail* *Hal* *R. Stoltz*

Effective Stress Triaxial Compression

Consolidated Undrained

Sample details

Sketch showing specimen location in original Sample



Depth 25' - 27'

Description:

	Specimen 1	Specimen 2	Specimen 3
Type	UD Tube	UD Tube	UD Tube
Height H_0 (in)	5.58	5.591	5.597
Diameter D_0 (in)	2.826	2.828	2.822
Weight W_0 (gr)	836.18	767.67	713.34
Bulk Density ρ (PCF)	91.01	83.27	77.63
Particle Density ρ_s	2.265	2.265	2.265
	(measured)	(measured)	(measured)

Initial Conditions

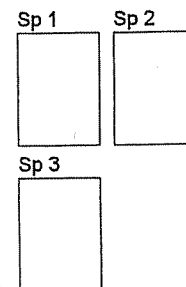
	Specimen 1	Specimen 2	Specimen 3
Cell Pressure σ_3 (lb/in ²)	80.7	93.1	101.8
Pore Pressure u (lb/in ²)	70.7	73.1	71.8
Machine Speed d_r (in/min)	0.004	0.004	0.004
No. of Membranes	1	1	1
Total Thickness (mm)	0	0	0
Strain Channel	14487	14421	14421
Load Channel	1003054	985724	985724
Pore P. Channel	#4	#5	#6
Volume Channel	KW Volume Ch	KW Volume Ch	KW Volume Ch
Moisture Content w_0 %	113.4	127.8	123.0
Dry Density ρ_{d0} (PCF)	42.66	36.55	34.81
Voids Ratio e_0	2.31	2.87	3.06
Deg of Saturation S_0 %	100.00	100.00	91.04
Final B Value			

Final Conditions

	Specimen 1	Specimen 2	Specimen 3
Moisture Content w_f %	95.5	113.6	134.1
Dry Density ρ_d (PCF)	46.66	40.62	34.26
Voids Ratio e_f	2.03	2.48	3.13
Deg of Saturation S_f %	100.00	100.00	97.18
Failure Criteria	Mx Dev Stress	Mx Dev Stress	Mx Dev Stress
Axial Strain ϵ_f %	15.2	8.0	7.2
Corr Dev Stress $(\sigma_1 - \sigma_3)_f$ (lb/in ²)	4.4	9.5	11.6
Minor Stress σ_{3f} (lb/in ²)	2.7	5.4	9.1
Major Stress σ_{1f} (lb/in ²)	7.1	14.9	20.7
Stress Ratio $(\sigma_1/\sigma_3)_f$	2.6	2.8	2.3

Notes:

Failure Sketch



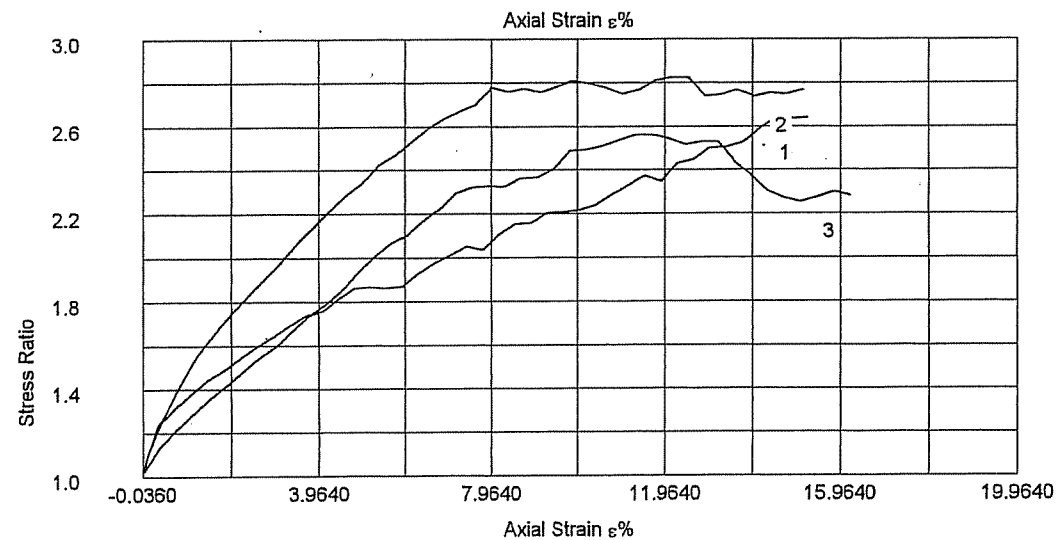
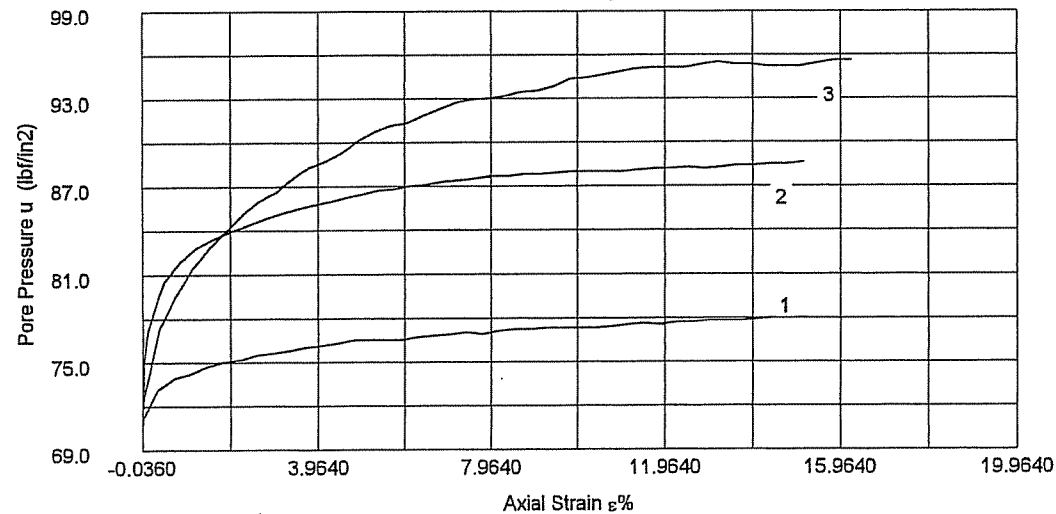
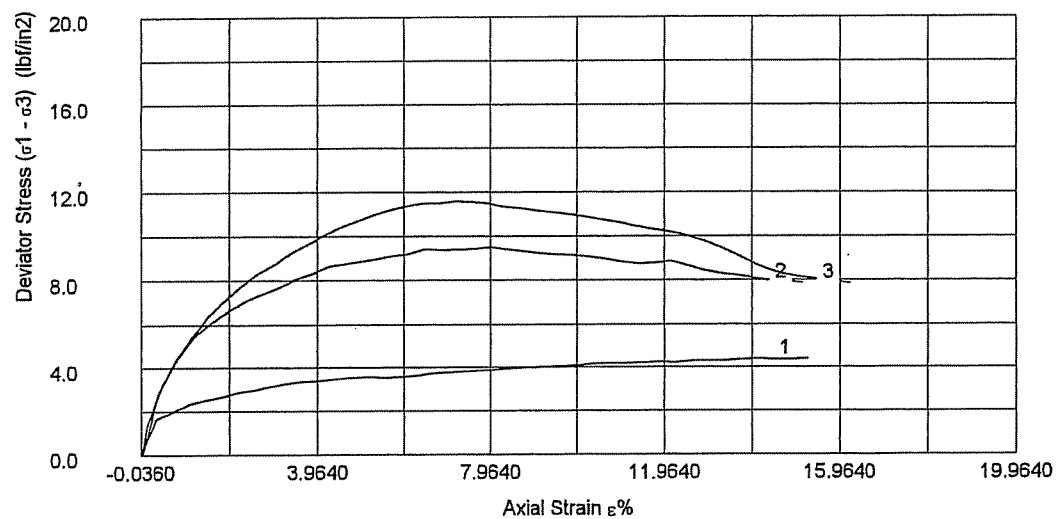
Surface Inclination

S&ME

	Test Method: ASTM D4767-95		Test name CU w/PP (SS, MS)	
			Date of Test: 7/24/200	
	Site Reference: Charleston Naval Base Container		Sample: PZ-1	
	Jobfile: C:\WINCLISP\JOBFILES\11313264.J		Borehole: UD Tube PZ-1	
Operator:		Checked:		Approved:

Effective Stress Triaxial Compression

Consolidated Undrained

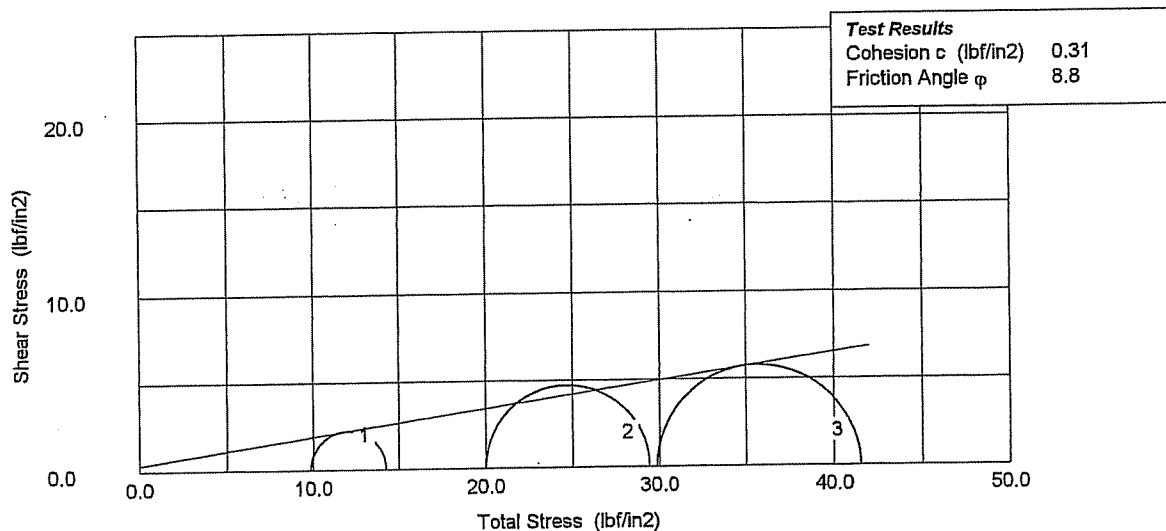
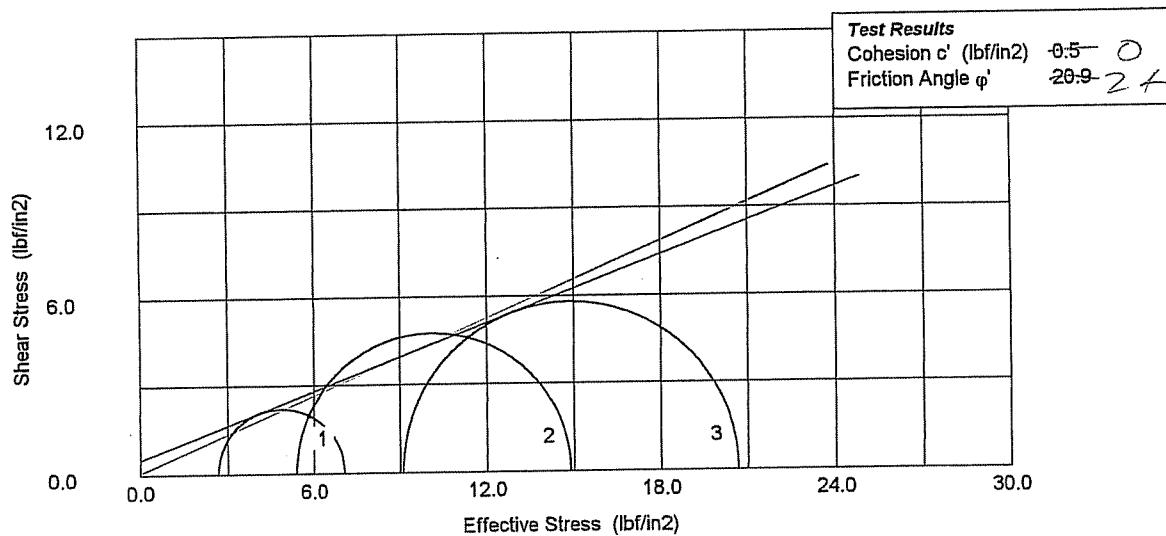


S&ME

Test Method: ASTM D4767-95		Test name: CU w/PP (SS, MS)	
Site Reference: Charleston Naval Base Container		Date of Test: 7/24/200	
Jobfile: C:\WINCLISP\JOBFILES\11313264.JC		Sample: PZ-1	
Operator:		Borehole: UD Tube PZ-1	
Checked:		Approved:	

Effective Stress Triaxial Compression

Consolidated Undrained

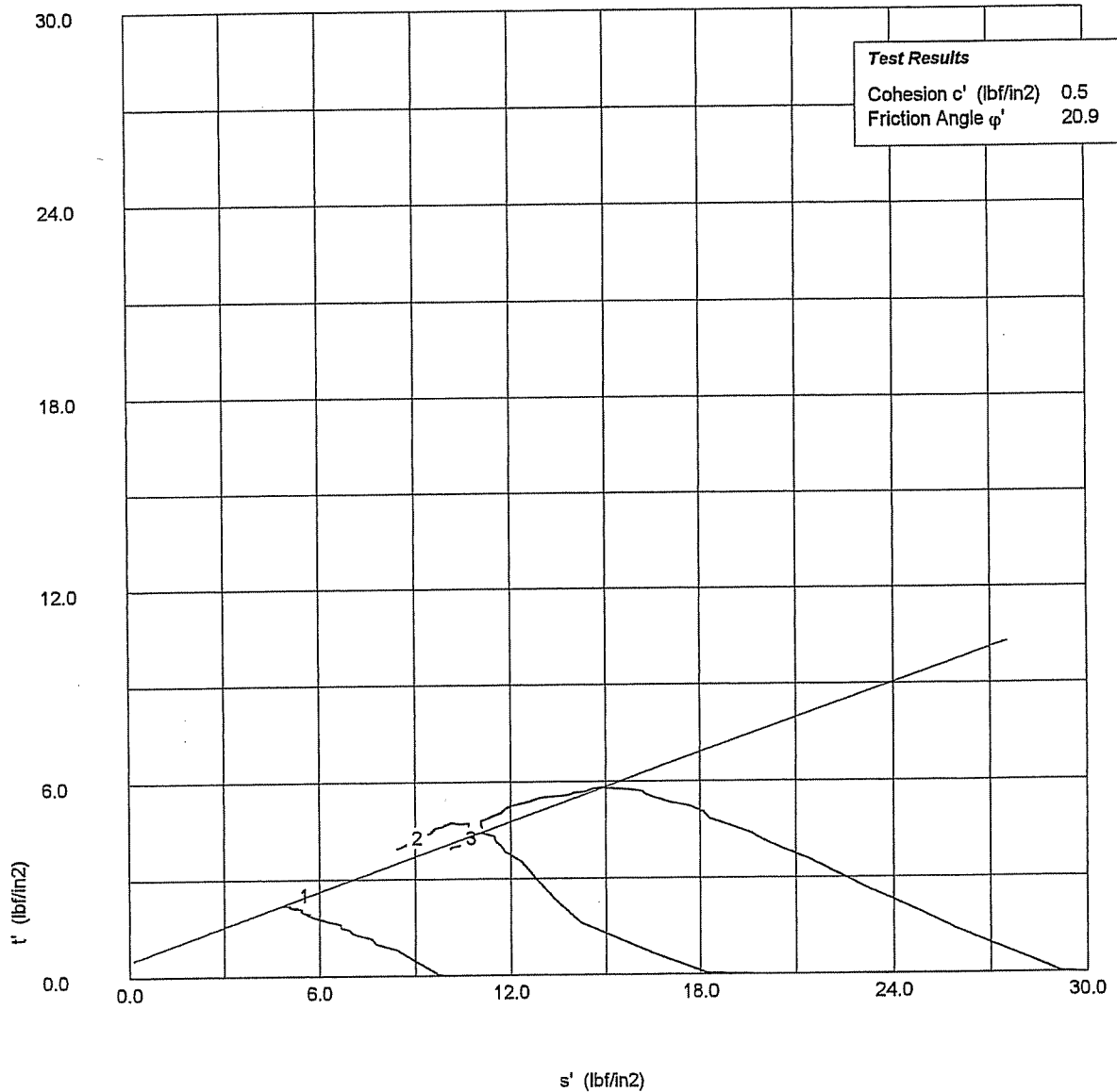


S&ME

	Test Method: ASTM D4767-95		Test name: CU w/PP (SS, MS)	
			Date of Test: 7/24/200	
	Site Reference: Charleston Naval Base Container		Sample: PZ-1	
	Jobfile: C:\WINCLISP\JOBFILES\11313264.J		Borehole: UD Tube PZ-1	
Operator:		Checked:		Approved:

Effective Stress Triaxial Compression

Consolidated Undrained



S&ME

	Test Method: ASTM D4767-95		Test name: CU w/PP (SS, MS)	
			Date of Test: 7/24/200	
	Site Reference: Charleston Naval Base Container		Sample: PZ-1	
	Jobfile: C:\WINCLISP\JOBFILES\11313264.J		Borehole: UD Tube PZ-1	
Operator:		Checked:		Approved:

Effective Stress Triaxial Compression

Page 1 / 4

Consolidated Undrained Shear (Specimen 1)

No.	Strain (divs)	Strain ε%	Load (divs)	Load (lbs)	Pore Prs (divs)	Pore Prs (lb/in ²)	D. Stress (σ ₁ - σ ₃) _m (lb/in ²)	D. Stress (σ ₁ - σ ₃) _c (lb/in ²)	Minor Str σ ₃ ' (lb/in ²)	Major Str σ ₁ ' (lb/in ²)	Ratio σ ₁ '/σ ₃ '
1	5	0.00	284	0.0	708	70.8	0.0	0.0	9.90	9.90	1.00
2	3	-0.04	288	0.4	710	71.0	0.1	0.1	9.70	9.77	1.01
3	3	-0.04	288	0.4	710	71.0	0.1	0.1	9.70	9.77	1.01
4	3	-0.04	288	0.4	710	71.0	0.1	0.1	9.70	9.77	1.01
5	23	0.34	379	9.5	731	73.1	1.6	1.6	7.60	9.23	1.21
6	43	0.71	399	11.5	739	73.9	2.0	2.0	6.80	8.77	1.29
7	63	1.08	419	13.5	742	74.2	2.3	2.3	6.50	8.80	1.35
8	83	1.45	432	14.8	747	74.7	2.5	2.5	6.00	8.52	1.42
9	103	1.83	441	15.7	750	75.0	2.7	2.7	5.70	8.36	1.47
10	123	2.20	455	17.1	752	75.2	2.9	2.9	5.50	8.38	1.52
11	143	2.57	461	17.7	755	75.5	3.0	3.0	5.20	8.17	1.57
12	163	2.94	472	18.8	756	75.6	3.1	3.1	5.10	8.25	1.62
13	183	3.32	481	19.7	758	75.8	3.3	3.3	4.90	8.19	1.67
14	203	3.69	486	20.2	760	76.0	3.4	3.4	4.70	8.06	1.71
15	223	4.06	488	20.4	761	76.1	3.4	3.4	4.60	7.98	1.73
16	243	4.43	495	21.1	763	76.3	3.5	3.5	4.40	7.88	1.79
17	263	4.81	499	21.5	765	76.5	3.5	3.5	4.20	7.73	1.84
18	283	5.18	501	21.7	765	76.5	3.5	3.5	4.20	7.75	1.85
19	303	5.55	501	21.7	765	76.5	3.5	3.5	4.20	7.74	1.84
20	323	5.92	503	21.9	765	76.5	3.6	3.6	4.20	7.75	1.85
21	343	6.30	508	22.4	767	76.7	3.6	3.6	4.00	7.62	1.91
22	363	6.67	515	23.1	768	76.8	3.7	3.7	3.90	7.62	1.95
23	383	7.04	519	23.5	769	76.9	3.8	3.8	3.80	7.57	1.99
24	403	7.41	523	23.9	770	77.0	3.8	3.8	3.70	7.52	2.03
25	423	7.79	526	24.2	769	76.9	3.8	3.8	3.80	7.65	2.01
26	443	8.16	530	24.6	771	77.1	3.9	3.9	3.60	7.50	2.08
27	463	8.53	535	25.1	772	77.2	4.0	4.0	3.50	7.46	2.13
28	483	8.90	537	25.3	772	77.2	4.0	4.0	3.50	7.48	2.14
29	503	9.28	541	25.7	773	77.3	4.0	4.0	3.40	7.42	2.18
30	523	9.65	543	25.9	773	77.3	4.0	4.0	3.40	7.44	2.19
31	543	10.02	546	26.2	773	77.3	4.1	4.1	3.40	7.47	2.20
32	563	10.39	552	26.8	773	77.3	4.1	4.1	3.40	7.54	2.22
33	583	10.77	555	27.1	774	77.4	4.2	4.2	3.30	7.47	2.26
34	603	11.14	557	27.3	775	77.5	4.2	4.2	3.20	7.38	2.31
35	623	11.51	559	27.5	776	77.6	4.2	4.2	3.10	7.30	2.35
36	643	11.88	563	27.9	775	77.5	4.2	4.2	3.20	7.44	2.33
37	663	12.26	563	27.9	777	77.7	4.2	4.2	3.00	7.22	2.41
38	683	12.63	568	28.4	777	77.7	4.3	4.3	3.00	7.28	2.43
39	703	13.00	570	28.6	778	77.8	4.3	4.3	2.90	7.19	2.48
40	723	13.37	572	28.8	778	77.8	4.3	4.3	2.90	7.20	2.48
41	743	13.75	577	29.3	778	77.8	4.4	4.4	2.90	7.26	2.50
42	763	14.12	579	29.5	779	77.9	4.4	4.4	2.80	7.17	2.56
43	783	14.49	579	29.5	780	78.0	4.4	4.4	2.70	7.05	2.61
44	803	14.86	581	29.7	780	78.0	4.4	4.4	2.70	7.06	2.62
45	823	15.24	583	29.9	780	78.0	4.4	4.4	2.70	7.07	2.62

S&ME

Test Method: ASTM D4767-95		Test name: CU w/PP (SS, MS) Shear (Specimen 1)	
Date of Test: 7/24/200		Sample: PZ-1	
Site Reference: Charleston Naval Base Container	Jobfile: C:\WINCLIS\JOBFILES\11313264.J	Borehole: UD Tube PZ-1	
Operator:	Checked:	Approved:	

Effective Stress Triaxial Compression

Page 2 / 4

Consolidated Undrained Shear (Specimen 2)

No.	Strain (divs)	Strain ε%	Load (divs)	Load (lbs)	Pore Prs (divs)	Pore Prs (lb/in ²)	D. Stress (σ ₁ - σ ₃) _m (lb/in ²)	D. Stress (σ ₁ - σ ₃) _c (lb/in ²)	Minor Str σ ₃ (lb/in ²)	Major Str σ ₁ (lb/in ²)	Ratio σ ₁ /σ ₃
1	0	0.00	320	0.0	731	73.1	0.0	0.0	20.00	20.00	1.00
2	0	0.00	324	0.4	749	74.9	0.1	0.1	18.20	18.27	1.00
3	0	0.00	324	0.4	749	74.9	0.1	0.1	18.20	18.27	1.00
4	5	0.09	391	7.1	771	77.1	1.3	1.3	16.00	17.25	1.08
5	25	0.47	504	18.4	805	80.5	3.2	3.2	12.60	15.83	1.26
6	45	0.85	580	26.0	819	81.9	4.6	4.6	11.20	15.75	1.41
7	65	1.22	635	31.5	828	82.8	5.5	5.5	10.30	15.79	1.53
8	85	1.60	671	35.1	834	83.4	6.1	6.1	9.70	15.80	1.63
9	105	1.98	704	38.4	839	83.9	6.6	6.6	9.20	15.85	1.72
10	125	2.35	729	40.9	843	84.3	7.1	7.1	8.80	15.85	1.80
11	145	2.73	749	42.9	847	84.7	7.4	7.4	8.40	15.77	1.88
12	165	3.10	767	44.7	851	85.1	7.6	7.6	8.00	15.65	1.96
13	185	3.48	791	47.1	854	85.4	8.0	8.0	7.70	15.73	2.04
14	205	3.86	807	48.7	857	85.7	8.3	8.3	7.40	15.67	2.12
15	225	4.23	829	50.9	859	85.9	8.6	8.6	7.20	15.81	2.20
16	245	4.61	838	51.8	862	86.2	8.7	8.7	6.90	15.63	2.26
17	265	4.99	847	52.7	864	86.4	8.8	8.8	6.70	15.54	2.32
18	285	5.36	856	53.6	867	86.7	9.0	9.0	6.40	15.36	2.40
19	305	5.74	867	54.7	868	86.8	9.1	9.1	6.30	15.41	2.45
20	325	6.11	873	55.3	870	87.0	9.2	9.2	6.10	15.27	2.50
21	345	6.49	889	56.9	871	87.1	9.4	9.4	6.00	15.40	2.57
22	365	6.87	889	56.9	873	87.3	9.4	9.4	5.80	15.16	2.61
23	385	7.24	893	57.3	874	87.4	9.4	9.4	5.70	15.09	2.65
24	405	7.62	896	57.6	875	87.5	9.4	9.4	5.60	15.00	2.68
25	425	8.00	904	58.4	877	87.7	9.5	9.5	5.40	14.89	2.76
26	445	8.37	900	58.0	877	87.7	9.4	9.4	5.40	14.78	2.74
27	465	8.75	896	57.6	878	87.8	9.3	9.3	5.30	14.58	2.75
28	485	9.12	893	57.3	878	87.8	9.2	9.2	5.30	14.50	2.73
29	505	9.50	893	57.3	879	87.9	9.2	9.2	5.20	14.36	2.76
30	525	9.88	893	57.3	880	88.0	9.1	9.1	5.10	14.22	2.79
31	545	10.25	891	57.1	880	88.0	9.0	9.0	5.10	14.15	2.77
32	565	10.63	887	56.7	880	88.0	8.9	8.9	5.10	14.05	2.75
33	585	11.01	880	56.0	880	88.0	8.8	8.8	5.10	13.90	2.73
34	605	11.38	878	55.8	881	88.1	8.7	8.7	5.00	13.73	2.75
35	625	11.76	882	56.2	882	88.2	8.8	8.8	4.90	13.66	2.79
36	645	12.13	889	56.9	882	88.2	8.8	8.8	4.90	13.73	2.80
37	665	12.51	880	56.0	883	88.3	8.7	8.7	4.80	13.45	2.80
38	685	12.89	867	54.7	882	88.2	8.4	8.4	4.90	13.31	2.72
39	705	13.26	860	54.0	883	88.3	8.3	8.3	4.80	13.07	2.72
40	725	13.64	858	53.8	884	88.4	8.2	8.2	4.70	12.90	2.75
41	745	14.01	851	53.1	884	88.4	8.1	8.1	4.70	12.76	2.72
42	765	14.39	847	52.7	885	88.5	8.0	8.0	4.60	12.57	2.73
43	785	14.77	847	52.7	885	88.5	7.9	7.9	4.60	12.53	2.72
44	805	15.14	844	52.4	886	88.6	7.9	7.9	4.50	12.35	2.74

S&ME

	Test Method: ASTM D4767-95		Test name: CU w/PP (SS, MS) Shear (Specimen 2)	
			Date of Test: 7/24/200	
	Site Reference: Charleston Naval Base Container		Sample: PZ-1	
	Jobfile: C:\WINCLISP\JOBFILES\11313264.JC		Borehole: UD Tube PZ-1	
Operator:		Checked:		Approved:

Effective Stress Triaxial Compression

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Consolidated Undrained Shear (Specimen 3)

No.	Strain (divs)	Strain ε%	Load (divs)	Load (lbs)	Pore Prs (divs)	Pore Prs (lb/in ²)	D. Stress ($\sigma_1 - \sigma_3$) _m (lb/in ²)	D. Stress ($\sigma_1 - \sigma_3$) _c (lb/in ²)	Minor Str σ_3 (lb/in ²)	Major Str σ_1 (lb/in ²)	Ratio σ_1'/σ_3
1	7	0.00	329	0.0	719	71.9	0.0	0.0	29.90	29.90	1.00
2	7	0.00	331	0.2	726	72.6	0.0	0.0	29.20	29.24	1.00
3	7	0.00	331	0.2	726	72.6	0.0	0.0	29.20	29.24	1.00
4	7	0.00	331	0.2	726	72.6	0.0	0.0	29.20	29.24	1.00
5	27	0.38	486	15.7	773	77.3	2.8	2.8	24.50	27.30	1.11
6	47	0.75	571	24.2	796	79.6	4.3	4.3	22.20	26.49	1.19
7	67	1.13	635	30.6	814	81.4	5.4	5.4	20.40	25.81	1.27
8	87	1.51	691	36.2	828	82.8	6.4	6.4	19.00	25.37	1.34
9	107	1.89	733	40.4	839	83.9	7.1	7.1	17.90	24.98	1.40
10	127	2.26	773	44.4	851	85.1	7.8	7.8	16.70	24.46	1.46
11	147	2.64	807	47.8	860	86.0	8.3	8.3	15.80	24.12	1.53
12	167	3.02	833	50.4	866	86.6	8.7	8.7	15.20	23.94	1.57
13	187	3.39	864	53.5	875	87.5	9.2	9.2	14.30	23.54	1.65
14	207	3.77	889	56.0	883	88.3	9.6	9.6	13.50	23.13	1.71
15	227	4.15	916	58.7	887	88.7	10.1	10.1	13.10	23.16	1.77
16	247	4.53	940	61.1	893	89.3	10.4	10.4	12.50	22.93	1.83
17	267	4.90	958	62.9	901	90.1	10.7	10.7	11.70	22.39	1.91
18	287	5.28	976	64.7	907	90.7	11.0	11.0	11.10	22.05	1.99
19	307	5.66	993	66.4	911	91.1	11.2	11.2	10.70	21.90	2.05
20	327	6.04	1005	67.6	913	91.3	11.4	11.4	10.50	21.85	2.08
21	347	6.41	1016	68.7	918	91.8	11.5	11.5	10.00	21.49	2.15
22	367	6.79	1020	69.1	922	92.2	11.5	11.5	9.60	21.11	2.20
23	387	7.17	1027	69.8	927	92.7	11.6	11.6	9.10	20.68	2.27
24	407	7.54	1029	70.0	929	92.9	11.6	11.6	8.90	20.47	2.30
25	427	7.92	1027	69.8	930	93.0	11.5	11.5	8.80	20.29	2.31
26	447	8.30	1020	69.1	931	93.1	11.3	11.3	8.70	20.02	2.30
27	467	8.68	1020	69.1	934	93.4	11.3	11.3	8.40	19.68	2.34
28	487	9.05	1016	68.7	935	93.5	11.2	11.2	8.30	19.47	2.35
29	507	9.43	1013	68.4	938	93.8	11.1	11.1	8.00	19.07	2.38
30	527	9.81	1011	68.2	943	94.3	11.0	11.0	7.50	18.49	2.47
31	547	10.18	1007	67.8	944	94.4	10.9	10.9	7.40	18.28	2.47
32	567	10.56	1000	67.1	946	94.6	10.7	10.7	7.20	17.93	2.49
33	587	10.94	996	66.7	948	94.8	10.6	10.6	7.00	17.62	2.52
34	607	11.32	989	66.0	950	95.0	10.5	10.5	6.80	17.26	2.54
35	627	11.69	982	65.3	951	95.1	10.3	10.3	6.70	17.01	2.54
36	647	12.07	978	64.9	951	95.1	10.2	10.2	6.70	16.90	2.52
37	667	12.45	969	64.0	951	95.1	10.0	10.0	6.70	16.71	2.49
38	687	12.83	958	62.9	953	95.3	9.8	9.8	6.50	16.30	2.51
39	707	13.20	942	61.3	955	95.5	9.5	9.5	6.30	15.81	2.51
40	727	13.58	924	59.5	953	95.3	9.2	9.2	6.50	15.69	2.41
41	747	13.96	900	57.1	953	95.3	8.8	8.8	6.50	15.28	2.35
42	767	14.33	882	55.3	952	95.2	8.5	8.5	6.60	15.07	2.28
43	787	14.71	871	54.2	952	95.2	8.3	8.3	6.60	14.86	2.25
44	807	15.09	864	53.5	952	95.2	8.1	8.1	6.60	14.72	2.23
45	827	15.47	860	53.1	954	95.4	8.0	8.0	6.40	14.42	2.25
46	847	15.84	856	52.7	956	95.6	7.9	7.9	6.20	14.13	2.28

S&ME

Test Method: ASTM D4767-95		Test name: CU w/PP (SS, MS) Shear (Specimen 3)	
		Date of Test: 7/24/200	
Site Reference:	Charleston Naval Base Container	Sample:	PZ-1
Jobfile:	C:\WINCLISP\JOBFILES\11313264.J	Borehole:	UD Tube PZ-1
Operator:		Checked:	Approved:

TRIAXIAL COMPRESSION TEST
CU with Pore Pressures

7-18-2003
4:49 pm

Project and Sample Data

Date: 7/15/03
Client: SOUTH CAROLINA PORTS AUTHORITY
Project: CHARLESTON NAVAL BASE CONTAINER TERMINAL
Sample location: PAW2/UD5
Sample description: BLACK GRAY SILTY CLAY
Remarks:

Fig no.: PAW2 2nd page Fig no. (if applicable): PAW2
Type of sample: UNDISTURBED
Specific gravity= 2.36 LL= 101 PL= 42 PI= 59
Test method: Corps of Eng. - uniform strain

Specimen Parameters for Specimen No. 1

Specimen Parameter	Initial	Saturated	Consolidated	Final
Wt. moist soil and tare:	157.550			510.300
Wt. dry soil and tare:	112.620			263.390
Wt. of tare:	81.370			73.430
Weight, gms:	804.1			
Diameter, in:	2.863	2.863	2.753	
Area, in ² :	6.438	6.438	5.952	
Height, in:	5.875	5.875	5.653	
Net decrease in height, in:		0.000	0.222	
Net decrease in water volume, cc:				
Moisture:	143.8	145.5	124.8	130.0
Wet density, pcf:	81.0	81.6	84.0	
Dry density, pcf:	33.2	33.2	37.3	
Void ratio:	3.4344	3.4344	2.9448	
% Saturation:	98.8	100.0	100.0	

Test Readings Data for Specimen No. 1

Deformation dial constant= 0.001 in per input unit
Actual loads entered
Consolidation cell pressure = 85.00 psi = 12.24 ksf
Consolidation back pressure = 80.00 psi = 11.52 ksf
Consolidation effective confining stress = 0.72 ksf
Strain rate, in/min = 0.0040
FAIL. STRESS = 0.71 ksf at reading no. 20
ULT. STRESS = not selected

Test Readings Data for Specimen No. 1

No.	Def.	Def.	Load	Load	Strain	Deviator	Effective Stresses			Pore	P ksf	Q ksf
	Dial	in	Dial	lbs	%	Stress	Minor	Major	1:3	Pres.		
	Units		Units			ksf	ksf	ksf	Ratio	psi		
✓	0.0	0.000	19	0	0.0	0.00	0.68	0.68	1.00	80.30	0.68	0.00
1	10.0	0.010	23	4	0.2	0.10	0.63	0.73	1.15	80.60	0.68	0.05
2	20.0	0.020	26	7	0.4	0.17	0.59	0.76	1.29	80.90	0.67	0.08
3	30.0	0.030	27	8	0.5	0.19	0.56	0.75	1.34	81.10	0.66	0.10
4	40.0	0.040	29	10	0.7	0.24	0.53	0.77	1.45	81.30	0.65	0.12
5	50.0	0.050	31	12	0.9	0.29	0.48	0.76	1.61	81.70	0.62	0.14
6	60.0	0.060	34	15	1.1	0.36	0.43	0.79	1.83	82.00	0.61	0.18
7	70.0	0.070	36	17	1.2	0.41	0.40	0.81	2.01	82.20	0.61	0.20
8	80.0	0.080	36	17	1.4	0.41	0.37	0.78	2.08	82.40	0.58	0.20
9	90.0	0.090	38	19	1.6	0.45	0.37	0.83	2.21	82.40	0.60	0.23
10	100.0	0.100	39	20	1.8	0.48	0.39	0.86	2.22	82.30	0.63	0.24
11	120.0	0.120	41	22	2.1	0.52	0.24	0.77	3.13	83.30	0.51	0.26
12	140.0	0.140	43	24	2.5	0.57	0.22	0.78	3.62	83.50	0.50	0.28
13	160.0	0.160	44	25	2.8	0.59	0.20	0.79	3.92	83.60	0.50	0.29
14	180.0	0.180	46	27	3.2	0.63	0.24	0.88	3.58	83.30	0.56	0.32
15	200.0	0.200	47	28	3.5	0.65	0.16	0.81	5.13	83.90	0.49	0.33
16	220.0	0.220	47	28	3.9	0.65	0.14	0.80	5.52	84.00	0.47	0.33
17	240.0	0.240	48	29	4.2	0.67	0.16	0.83	5.24	83.90	0.49	0.34
18	260.0	0.260	48	29	4.6	0.67	0.19	0.86	4.58	83.70	0.52	0.33
19	280.0	0.280	49	30	5.0	0.69	0.12	0.81	6.99	84.20	0.46	0.34
20	300.0	0.300	50	31	5.3	0.71	0.12	0.83	7.17	84.20	0.47	0.36
21	320.0	0.320	50	31	5.7	0.71	0.13	0.84	6.46	84.10	0.48	0.35
22	340.0	0.340	50	31	6.0	0.70	0.17	0.88	5.08	83.80	0.53	0.35
23	360.0	0.360	50	31	6.4	0.70	0.23	0.93	4.05	83.40	0.58	0.35
	380.0	0.380	50	31	6.7	0.70	0.09	0.79	9.10	84.40	0.44	0.35
	400.0	0.400	50	31	7.1	0.70	0.12	0.81	7.05	84.20	0.46	0.35
26	420.0	0.420	50	31	7.4	0.69	0.13	0.82	6.36	84.10	0.48	0.35
27	440.0	0.440	50	31	7.8	0.69	0.09	0.78	9.01	84.40	0.43	0.35
28	460.0	0.460	50	31	8.1	0.69	0.09	0.78	8.97	84.40	0.43	0.34
29	480.0	0.480	50	31	8.5	0.69	0.10	0.79	7.81	84.30	0.44	0.34
30	500.0	0.500	50	31	8.8	0.68	0.09	0.77	8.91	84.40	0.43	0.34
31	520.0	0.520	50	31	9.2	0.68	0.07	0.75	10.46	84.50	0.41	0.34
32	540.0	0.540	50	31	9.6	0.68	0.09	0.76	8.85	84.40	0.43	0.34
33	560.0	0.560	50	31	9.9	0.68	0.12	0.79	6.87	84.20	0.45	0.34
34	580.0	0.580	49	30	10.3	0.65	0.09	0.74	8.54	84.40	0.41	0.33
35	600.0	0.600	49	30	10.6	0.65	0.07	0.72	10.01	84.50	0.40	0.32
36	620.0	0.620	49	30	11.0	0.65	0.07	0.72	9.98	84.50	0.40	0.32
37	640.0	0.640	48	29	11.3	0.62	0.12	0.74	6.40	84.20	0.43	0.31
38	660.0	0.660	49	30	11.7	0.64	0.09	0.73	8.42	84.40	0.41	0.32
39	680.0	0.680	48	29	12.0	0.62	0.07	0.69	9.57	84.50	0.38	0.31
40	700.0	0.700	49	30	12.4	0.64	0.09	0.72	8.36	84.40	0.40	0.32
41	720.0	0.720	49	30	12.7	0.63	0.09	0.72	8.33	84.40	0.40	0.32
42	740.0	0.740	49	30	13.1	0.63	0.09	0.72	8.30	84.40	0.40	0.32
43	760.0	0.760	49	30	13.4	0.63	0.09	0.71	8.27	84.40	0.40	0.31
44	780.0	0.780	49	30	13.8	0.63	0.07	0.70	9.69	84.50	0.38	0.31
45	800.0	0.800	48	29	14.2	0.60	0.09	0.69	7.97	84.40	0.39	0.30
46	820.0	0.820	50	31	14.5	0.64	0.10	0.74	7.36	84.30	0.42	0.32
47	840.0	0.840	50	31	14.9	0.64	0.10	0.74	7.34	84.30	0.42	0.32
48	860.0	0.860	51	32	15.2	0.66	0.09	0.74	8.60	84.40	0.41	0.33
49	880.0	0.880	51	32	15.6	0.65	0.09	0.74	8.57	84.40	0.41	0.33
	900.0	0.900	51	32	15.9	0.65	0.10	0.75	7.46	84.30	0.43	0.33
51	920.0	0.920	50	31	16.3	0.63	0.10	0.73	7.23	84.30	0.41	0.31

Specimen Parameters for Specimen No. 2

Specimen Parameter	Initial	Saturated	Consolidated	Final
moist soil and tare:	157.550			657.000
dry soil and tare:	112.620			400.020
Wt. of tare:	81.370			154.420
Weight, gms:	845.8			
Diameter, in:	2.860	2.860	2.759	
Area, in ² :	6.424	6.424	5.978	
Height, in:	6.125	6.125	5.912	
Net decrease in height, in:		0.000	0.213	
Net decrease in water volume, cc:				
% Moisture:	143.8	143.5	124.6	104.6
Wet density, pcf:	81.9	81.8	84.0	
Dry density, pcf:	33.6	33.6	37.4	
Void ratio:	3.3860	3.3860	2.9394	
% Saturation:	100.2	100.0	100.0	

Test Readings Data for Specimen No. 2

Deformation dial constant= 0.001 in per input unit
 Actual loads entered
 Consolidation cell pressure = 95.00 psi = 13.68 ksf
 Consolidation back pressure = 80.00 psi = 11.52 ksf
 Consolidation effective confining stress = 2.16 ksf
 Strain rate, in/min = 0.0040
 FAIL. STRESS = 1.09 ksf at reading no. 31
 ULT. STRESS = not selected

Def.	Def.	Load	Load	Strain	Deviator	Effective Stresses			Pore	P ksf	Q ksf	
Dial	in	Dial	lbs	%	Stress	Minor	Major	1:3	Pres.			
Units		Units			ksf	ksf	ksf	Ratio	psi			
0	0.0	0.000	25	0	0.0	0.00	1.81	1.81	1.00	82.40	1.81	0.00
1	10.0	0.010	29	4	0.2	0.09	1.66	1.74	1.05	83.50	1.70	0.04
2	20.0	0.020	32	7	0.3	0.16	1.61	1.77	1.10	83.80	1.69	0.08
3	30.0	0.030	35	10	0.5	0.23	1.50	1.73	1.15	84.60	1.61	0.12
4	40.0	0.040	41	16	0.7	0.37	1.43	1.80	1.26	85.10	1.61	0.19
5	50.0	0.050	45	20	0.8	0.47	1.28	1.75	1.37	86.10	1.52	0.23
6	60.0	0.060	50	25	1.0	0.59	1.21	1.80	1.48	86.60	1.50	0.29
7	70.0	0.070	52	27	1.2	0.63	1.15	1.79	1.55	87.00	1.47	0.32
8	80.0	0.080	54	29	1.4	0.68	1.12	1.80	1.61	87.20	1.46	0.34
9	90.0	0.090	56	31	1.5	0.73	1.11	1.83	1.65	87.30	1.47	0.36
10	100.0	0.100	57	32	1.7	0.75	0.95	1.70	1.79	88.40	1.32	0.37
11	120.0	0.120	61	36	2.0	0.84	0.88	1.72	1.96	88.90	1.30	0.42
12	140.0	0.140	62	37	2.4	0.86	0.84	1.70	2.03	89.20	1.27	0.43
13	160.0	0.160	62	37	2.7	0.86	0.84	1.69	2.03	89.20	1.26	0.43
14	180.0	0.180	63	38	3.0	0.88	0.75	1.63	2.17	89.80	1.19	0.44
15	200.0	0.200	67	42	3.4	0.97	0.68	1.65	2.43	90.30	1.16	0.48
16	220.0	0.220	68	43	3.7	0.99	0.66	1.65	2.49	90.40	1.16	0.49
17	240.0	0.240	68	43	4.1	0.98	0.65	1.63	2.52	90.50	1.14	0.49
18	260.0	0.260	69	44	4.4	1.00	0.63	1.64	2.58	90.60	1.14	0.50
19	280.0	0.280	69	44	4.7	1.00	0.59	1.59	2.69	90.90	1.09	0.50
20	300.0	0.300	71	46	5.1	1.04	0.56	1.60	2.86	91.10	1.08	0.52
	320.0	0.320	71	46	5.4	1.04	0.56	1.60	2.85	91.10	1.08	0.52
22	340.0	0.340	70	45	5.8	1.01	0.60	1.62	2.67	90.80	1.11	0.51

Test Readings Data for Specimen No. 2

No.	Def.	Def.	Load	Load	Strain	Deviator	Effective Stresses			Pore	P ksf	Q ksf
	Dial	in	Dial	lbs	%	Stress	Minor	Major	1:3	Pres.		
	Units		Units			ksf	ksf	ksf	Ratio	psi		
24	360.0	0.360	70	45	6.1	1.01	0.55	1.56	2.84	91.20	1.05	0.50
25	380.0	0.380	71	46	6.4	1.03	0.53	1.56	2.93	91.30	1.05	0.51
26	400.0	0.400	71	46	6.8	1.02	0.49	1.51	3.09	91.60	1.00	0.51
27	420.0	0.420	72	47	7.1	1.04	0.53	1.58	2.96	91.30	1.05	0.52
28	440.0	0.440	72	47	7.4	1.04	0.52	1.56	3.00	91.40	1.04	0.52
29	460.0	0.460	73	48	7.8	1.06	0.43	1.49	3.45	92.00	0.96	0.53
30	480.0	0.480	72	47	8.1	1.03	0.40	1.43	3.56	92.20	0.92	0.52
31	500.0	0.500	74	49	8.5	1.07	0.40	1.47	3.66	92.20	0.94	0.54
32	520.0	0.520	75	50	8.8	1.09	0.45	1.54	3.44	91.90	0.99	0.54
33	540.0	0.540	73	48	9.1	1.04	0.37	1.42	3.78	92.40	0.90	0.52
34	560.0	0.560	72	47	9.5	1.02	0.36	1.38	3.82	92.50	0.87	0.51
35	580.0	0.580	72	47	9.8	1.01	0.36	1.37	3.81	92.50	0.87	0.51
36	600.0	0.600	73	48	10.1	1.03	0.40	1.43	3.56	92.20	0.92	0.52
37	620.0	0.620	74	49	10.5	1.05	0.46	1.51	3.27	91.80	0.98	0.52
38	640.0	0.640	74	49	10.8	1.04	0.43	1.48	3.42	92.00	0.95	0.52
39	660.0	0.660	75	50	11.2	1.06	0.42	1.48	3.54	92.10	0.95	0.53
40	680.0	0.680	75	50	11.5	1.06	0.40	1.46	3.62	92.20	0.93	0.53
41	700.0	0.700	75	50	11.8	1.05	0.43	1.49	3.44	92.00	0.96	0.53
42	720.0	0.720	75	50	12.2	1.05	0.42	1.47	3.51	92.10	0.94	0.52
43	740.0	0.740	75	50	12.5	1.05	0.37	1.42	3.79	92.40	0.90	0.52
44	760.0	0.760	75	50	12.9	1.04	0.37	1.42	3.78	92.40	0.90	0.52
45	780.0	0.780	74	49	13.2	1.02	0.42	1.43	3.43	92.10	0.93	0.51
46	800.0	0.800	74	49	13.5	1.01	0.39	1.40	3.60	92.30	0.89	0.51
47	820.0	0.820	74	49	13.9	1.01	0.37	1.38	3.69	92.40	0.88	0.50
48	840.0	0.840	75	50	14.2	1.03	0.37	1.40	3.74	92.40	0.89	0.51
49	860.0	0.860	75	50	14.5	1.02	0.36	1.38	3.84	92.50	0.87	0.51
50	880.0	0.880	74	49	14.9	1.00	0.37	1.37	3.66	92.40	0.87	0.50
51	900.0	0.900	74	49	15.2	0.99	0.42	1.41	3.38	92.10	0.91	0.50
52	920.0	0.920	73	48	15.6	0.97	0.39	1.36	3.49	92.30	0.87	0.48

Specimen Parameters for Specimen No. 3

Specimen Parameter	Initial	Saturated	Consolidated	Final
moist soil and tare:	186.360			676.600
dry soil and tare:	125.340			425.500
Wt. of tare:	81.590			153.600
Weight, gms:	786.1			
Diameter, in:	2.859	2.859	2.747	
Area, in ² :	6.420	6.420	5.928	
Height, in:	5.688	5.688	5.470	
Net decrease in height, in:		0.000	0.218	
Net decrease in water volume, cc:				
% Moisture:	139.5	139.9	119.5	92.4
Wet density, pcf:	82.0	82.2	84.7	
Dry density, pcf:	34.2	34.2	38.6	
Void ratio:	3.3020	3.3020	2.8207	
% Saturation:	99.7	100.0	100.0	

Test Readings Data for Specimen No. 3

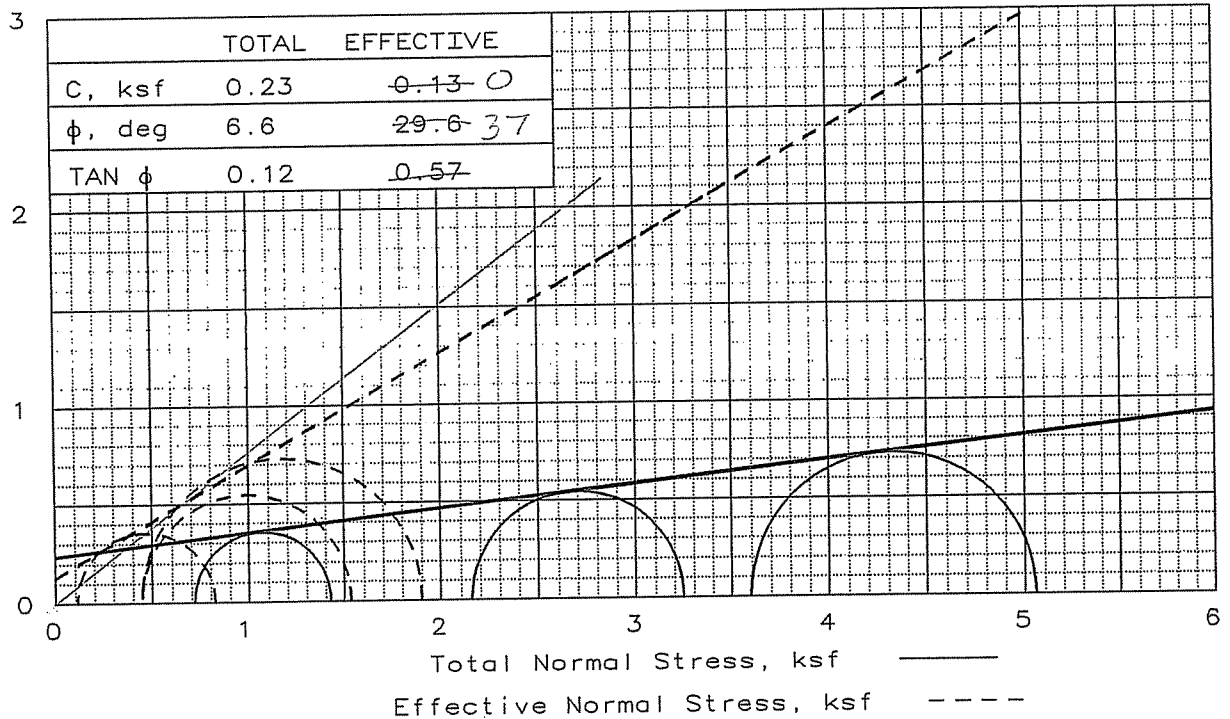
Deformation dial constant= 0.001 in per input unit
 Actual loads entered
 Consolidation cell pressure = 105.00 psi = 15.12 ksf
 Consolidation back pressure = 80.00 psi = 11.52 ksf
 Consolidation effective confining stress = 3.60 ksf
 Strain rate, in/min = 0.0040
 FAIL. STRESS = 1.46 ksf at reading no. 26
 ULT. STRESS = not selected

	Def.	Def.	Load	Load	Strain	Deviator	Effective Stresses			Pore	P ksf	Q ksf
	Dial	in	Dial	lbs	%	Stress	Minor	Major	1:3	Pres.		
	Units		Units			ksf	ksf	ksf	Ratio	psi		
0	0.0	0.000	21	0	0.0	0.00	1.68	1.68	1.00	93.30	1.68	0.00
1	10.0	0.010	50	29	0.2	0.70	1.44	2.14	1.49	95.00	1.79	0.35
2	20.0	0.020	58	37	0.4	0.90	1.25	2.15	1.71	96.30	1.70	0.45
3	30.0	0.030	63	42	0.5	1.01	1.15	2.17	1.88	97.00	1.66	0.51
4	40.0	0.040	68	47	0.7	1.13	1.05	2.18	2.08	97.70	1.62	0.57
5	50.0	0.050	70	49	0.9	1.18	1.01	2.19	2.17	98.00	1.60	0.59
6	60.0	0.060	72	51	1.1	1.23	0.94	2.16	2.31	98.50	1.55	0.61
7	70.0	0.070	75	54	1.3	1.29	0.85	2.14	2.52	99.10	1.50	0.65
8	80.0	0.080	75	54	1.5	1.29	0.81	2.10	2.60	99.40	1.45	0.65
9	90.0	0.090	76	55	1.6	1.31	0.76	2.08	2.72	99.70	1.42	0.66
10	100.0	0.100	75	54	1.8	1.29	0.73	2.02	2.75	99.90	1.38	0.64
11	120.0	0.120	77	56	2.2	1.33	0.72	2.05	2.85	100.00	1.39	0.67
12	140.0	0.140	79	58	2.6	1.37	0.63	2.01	3.17	100.60	1.32	0.69
13	160.0	0.160	80	59	2.9	1.39	0.66	2.05	3.10	100.40	1.36	0.70
14	180.0	0.180	80	59	3.3	1.39	0.65	2.03	3.14	100.50	1.34	0.69
15	200.0	0.200	82	61	3.7	1.43	0.59	2.02	3.42	100.90	1.30	0.71
16	220.0	0.220	82	61	4.0	1.42	0.52	1.94	3.74	101.40	1.23	0.71
17	240.0	0.240	83	62	4.4	1.44	0.50	1.94	3.86	101.50	1.22	0.72
18	260.0	0.260	84	63	4.8	1.46	0.52	1.98	3.81	101.40	1.25	0.73
19	280.0	0.280	84	63	5.1	1.45	0.46	1.91	4.15	101.80	1.19	0.73
20	300.0	0.300	84	63	5.5	1.45	0.43	1.88	4.35	102.00	1.16	0.72
	320.0	0.320	84	63	5.8	1.44	0.42	1.86	4.45	102.10	1.14	0.72
22	340.0	0.340	83	62	6.2	1.41	0.43	1.84	4.27	102.00	1.14	0.71

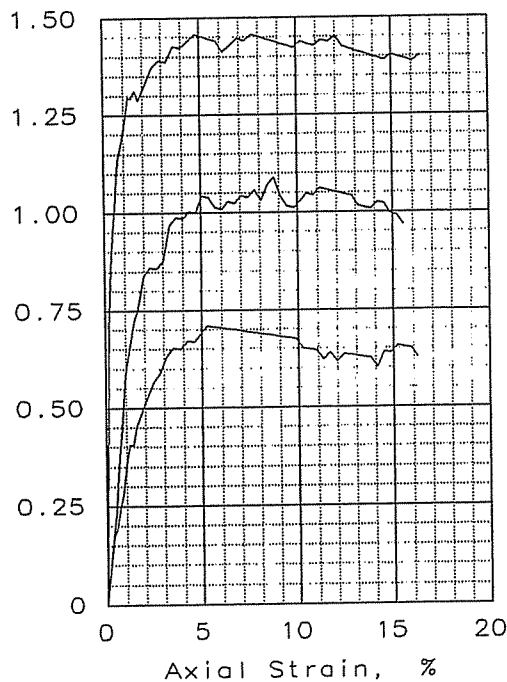
Test Readings Data for Specimen No. 3

No.	Def.	Def.	Load	Load	Strain	Deviator	Effective Stresses			Pore	P ksf	Q ksf
	Dial	in	Dial	lbs	%	Stress	Minor	Major	1:3	Pres.		
	Units		Units			ksf	ksf	ksf	Ratio	psi		
24	360.0	0.360	84	63	6.6	1.43	0.42	1.85	4.42	102.10	1.13	0.71
25	380.0	0.380	85	64	6.9	1.45	0.43	1.88	4.35	102.00	1.16	0.72
26	400.0	0.400	85	64	7.3	1.44	0.46	1.90	4.13	101.80	1.18	0.72
27	420.0	0.420	86	65	7.7	1.46	0.45	1.90	4.27	101.90	1.18	0.73
28	440.0	0.440	86	65	8.0	1.45	0.50	1.96	3.88	101.50	1.23	0.73
29	460.0	0.460	86	65	8.4	1.45	0.52	1.96	3.79	101.40	1.24	0.72
30	480.0	0.480	86	65	8.8	1.44	0.55	1.99	3.63	101.20	1.27	0.72
31	500.0	0.500	86	65	9.1	1.43	0.53	1.97	3.69	101.30	1.25	0.72
32	520.0	0.520	86	65	9.5	1.43	0.53	1.96	3.68	101.30	1.25	0.71
33	540.0	0.540	86	65	9.9	1.42	0.50	1.93	3.82	101.50	1.22	0.71
34	560.0	0.560	87	66	10.2	1.44	0.49	1.93	3.94	101.60	1.21	0.72
35	580.0	0.580	87	66	10.6	1.43	0.50	1.94	3.84	101.50	1.22	0.72
36	600.0	0.600	87	66	11.0	1.43	0.46	1.89	4.10	101.80	1.17	0.71
37	620.0	0.620	88	67	11.3	1.44	0.46	1.90	4.13	101.80	1.18	0.72
38	640.0	0.640	88	67	11.7	1.44	0.43	1.87	4.33	102.00	1.15	0.72
39	660.0	0.660	89	68	12.1	1.45	0.45	1.90	4.25	101.90	1.17	0.73
40	680.0	0.680	88	67	12.4	1.43	0.43	1.86	4.30	102.00	1.14	0.71
41	700.0	0.700	88	67	12.8	1.42	0.52	1.94	3.74	101.40	1.23	0.71
42	720.0	0.720	88	67	13.2	1.41	0.59	2.00	3.39	100.90	1.30	0.71
43	740.0	0.740	88	67	13.5	1.41	0.62	2.03	3.27	100.70	1.32	0.70
44	760.0	0.760	88	67	13.9	1.40	0.56	1.96	3.50	101.10	1.26	0.70
45	780.0	0.780	88	67	14.3	1.40	0.53	1.93	3.62	101.30	1.23	0.70
46	800.0	0.800	88	67	14.6	1.39	0.56	1.95	3.47	101.10	1.26	0.69
47	820.0	0.820	89	68	15.0	1.40	0.58	1.98	3.44	101.00	1.28	0.70
48	840.0	0.840	89	68	15.4	1.40	0.52	1.92	3.70	101.40	1.22	0.70
49	860.0	0.860	89	68	15.7	1.39	0.55	1.94	3.54	101.20	1.24	0.70
50	880.0	0.880	89	68	16.1	1.39	0.58	1.96	3.41	101.00	1.27	0.69
51	900.0	0.900	90	69	16.5	1.40	0.53	1.93	3.63	101.30	1.23	0.70

Shear Stress, ksf



Deviator Stress, ksf



TYPE OF TEST:

CU with Pore Pressures

SAMPLE TYPE: UNDISTURBED

DESCRIPTION: BLACK GRAY SILTY CLAY

LL= 101 PL= 42 PI= 59

SPECIFIC GRAVITY= 2.36

REMARKS:

Fig. No.: PAW2

SAMPLE NO.:		1	2	3
INITIAL	WATER CONTENT, %	143.8	143.8	139.5
	DRY DENSITY, pcf	33.2	33.6	34.2
	SATURATION, %	98.8	100.2	99.7
	VOID RATIO	3.434	3.386	3.302
	DIAMETER, in	2.86	2.86	2.86
	HEIGHT, in	5.88	6.13	5.69
AT TEST	WATER CONTENT, %	124.8	124.6	119.5
	DRY DENSITY, pcf	37.3	37.4	38.6
	SATURATION, %	100.0	100.0	100.0
	VOID RATIO	2.945	2.939	2.821
	DIAMETER, in	2.75	2.76	2.75
	HEIGHT, in	5.65	5.91	5.47
Strain rate, in/min		0.0040	0.0040	0.0040
EFF CELL PRESSURE, ksf		0.72	2.16	3.60
FAIL. STRESS, ksf		0.71	1.09	1.46
TOTAL PORE PR., ksf		12.12	13.23	14.67
STRAIN, %		5.3	8.8	7.7
ULT. STRESS, ksf				
TOTAL PORE PR., ksf				
STRAIN, %				
$\bar{\sigma}_1$ FAILURE, ksf		0.83	1.54	1.90
$\bar{\sigma}_3$ FAILURE, ksf		0.12	0.45	0.45

CLIENT: SOUTH CAROLINA PORTS AUTHORITY

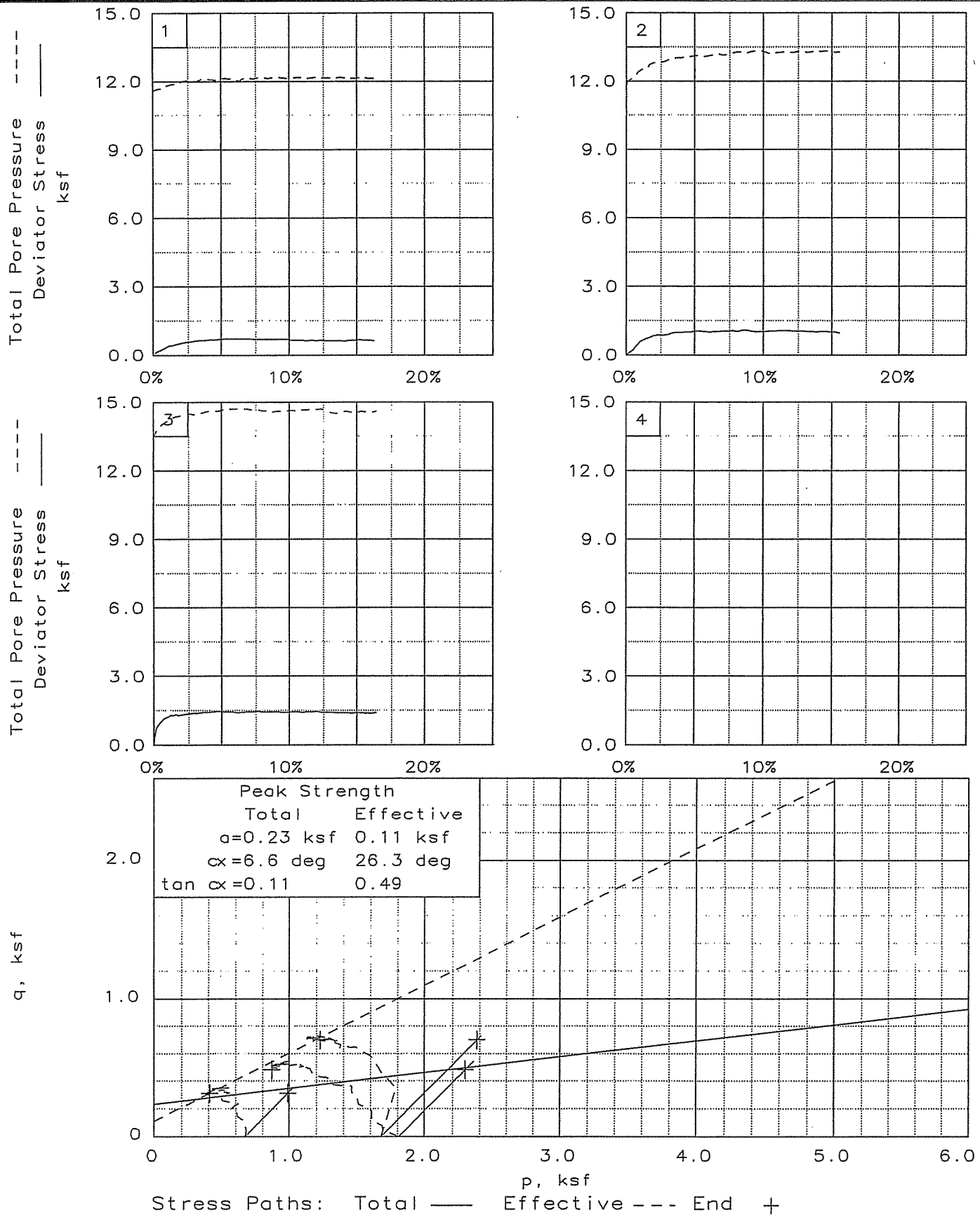
PROJECT: CHARLESTON NAVAL BASE CONTAINER
TERMINAL

SAMPLE LOCATION: PAW2/UD5

PROJ. NO.: 1131-03-264 DATE: 7/15/03

TRIAXIAL SHEAR TEST REPORT

S & ME, INC.



Client: SOUTH CAROLINA PORTS AUTHORITY

Project: CHARLESTON NAVAL BASE CONTAINER TERMINAL

Location: PAW2/UD5

File: CHARLES

Project No.: 1131-03-264

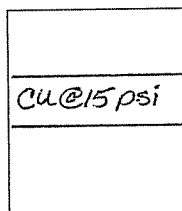
Fig. No.: PAW2

Effective Stress Triaxial Compression

Consolidated Undrained

Sample details

Sketch showing specimen location in original Sample



Depth: Elev. -46.1
Description: Gray inorganic clay with decayed root content.

Type: Undisturbed
Height H_0 (in): 5.6
Diameter D_0 (in): 2.8
Weight W_0 (gr): 820.12
Bulk Density ρ (PCF): 90.61
Particle Density ρ_s : 2.61 (assumed)

Initial Conditions

Cell Pressure σ_3 (lb/in²): 52.0
Pore Pressure u (lb/in²): 37.0
Machine Speed d_r (in/min): 0.0003
No. of Membranes: 1
Total Thickness (mm): 0.012
Strain Channel: strain
Load Channel: load 1,000 l
Pore P. Channel: 94552
Volume Channel:
Moisture Content w_0 %: 90.8
Dry Density ρ_{d0} (PCF): 47.48
Voids Ratio e_0 : 2.43
Deg of Saturation S_0 %: 97.55
Final B Value: 0.96

Final Conditions

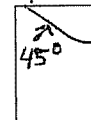
Moisture Content w_f %: 86.7
Dry Density ρ_d (PCF): 60.88
Voids Ratio e_f : 1.67
Deg of Saturation S_f %: 100.00
Failure Criteria: Mx Dev Stress
Axial Strain ϵ_f %: 4.4
Corr Dev Stress $(\sigma_1 - \sigma_3)_f$ (lb/in²): 12.5
Minor Stress σ_{3f} (lb/in²): 7.6
Major Stress σ_{1f} (lb/in²): 20.1
Stress Ratio $(\sigma_1/\sigma_3)_f$: 2.7

Notes:

Atterberg Limits- LL:124 PL: 35 PI: 89, Wash 200: 83.7% passing.

Failure Sketch

Sp 1



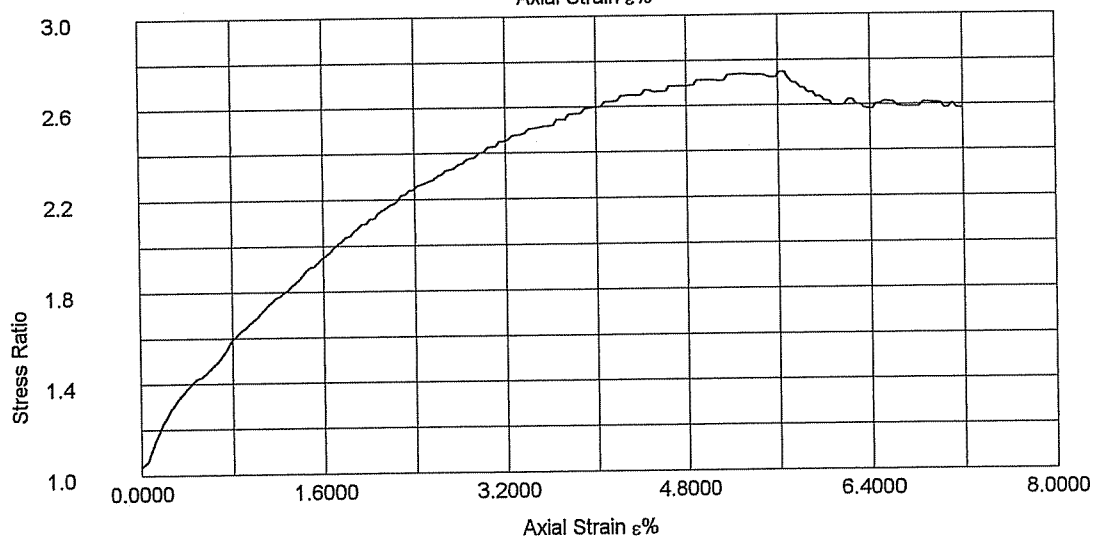
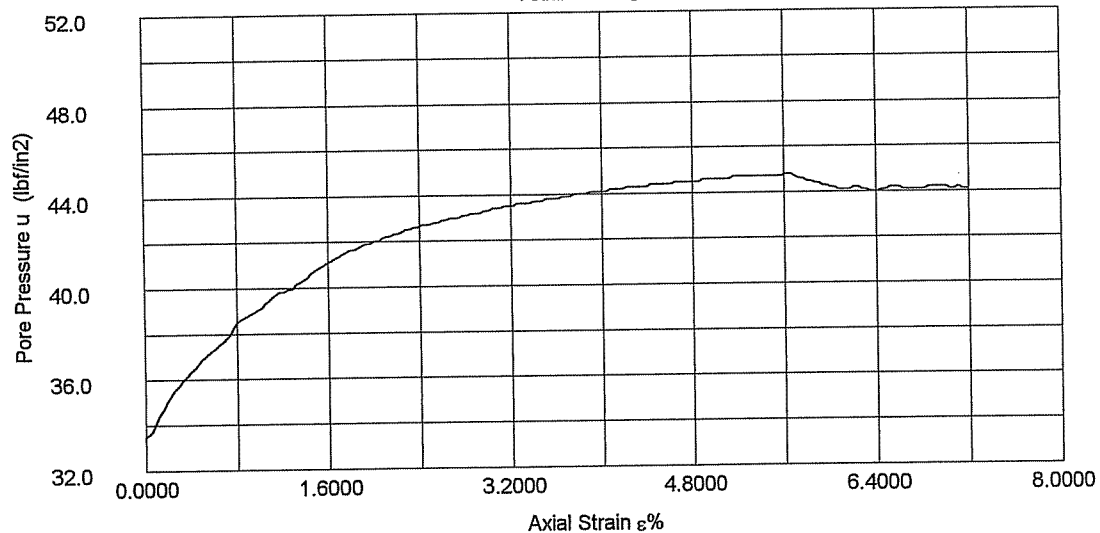
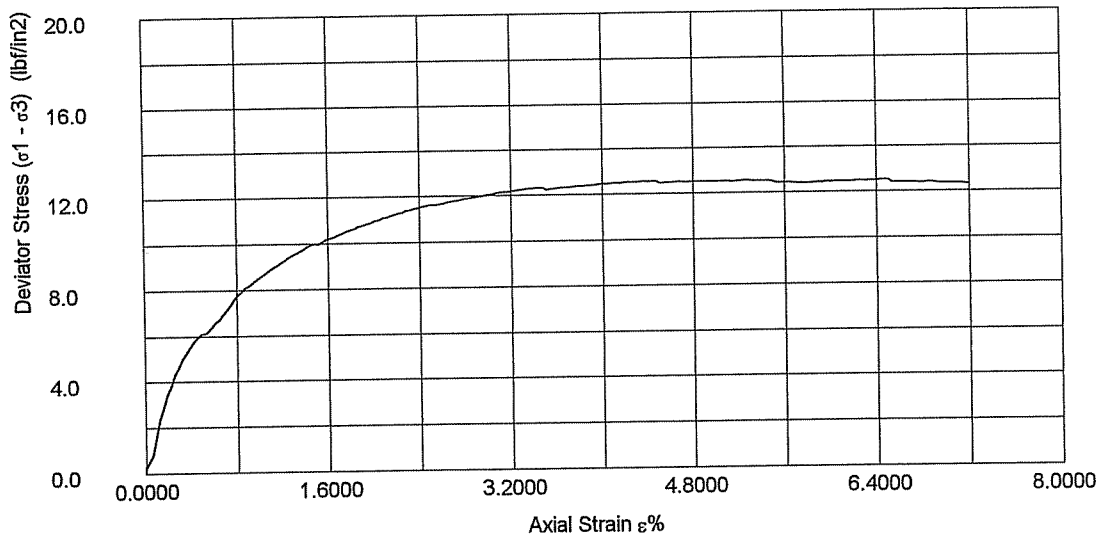
Surface Inclination

Soil Consultants, Inc.

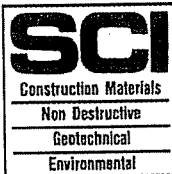
SCI Construction Materials Non Destructive Geotechnical Environmental	Test Method: ASTM D4767-95	Test name: CU @ 15 psi (SS, MS)
	Site Reference: Charleston Naval Base Container	Date of Test: 7/10/200
	Jobfile: C:\WINCLISPCNB.JOB	Sample: UD-2
	Operator: <i>Suzanne M. St...</i>	Borehole: PAW-15
	Checked: <i>Del T. Kel</i>	Approved: <i>[Signature]</i>

Effective Stress Triaxial Compression

Consolidated Undrained



Soil Consultants, Inc.



Test Method: ASTM D4767-95

Test name CU @ 15 psi (SS, MS)

Date of Test: 7/10/200

Site Reference: Charleston Naval Base Container

Sample: UD-2

Jobfile: C:\WINCLISP\CNB.JOB

Borehole: PAW-15

Operator:

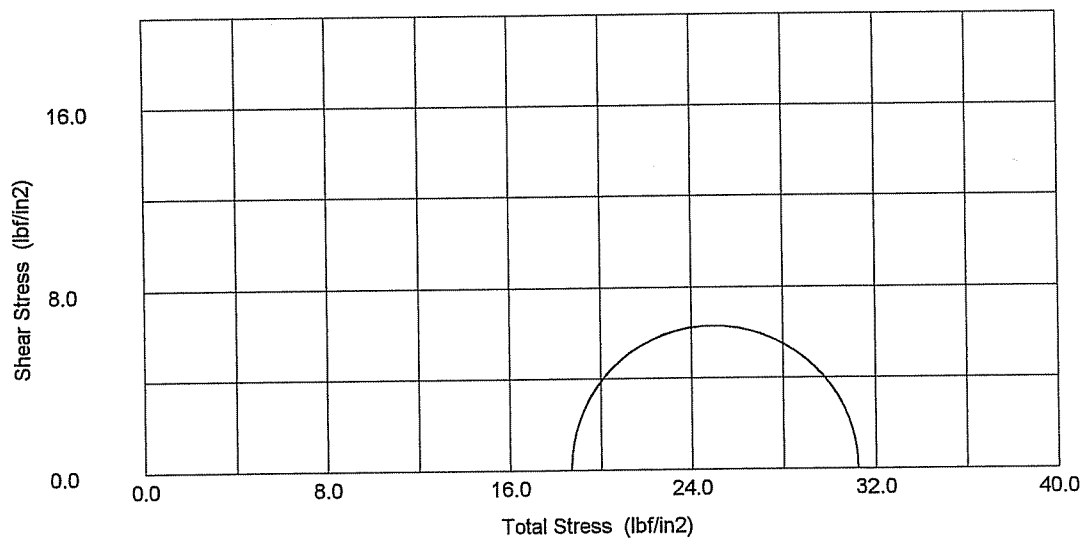
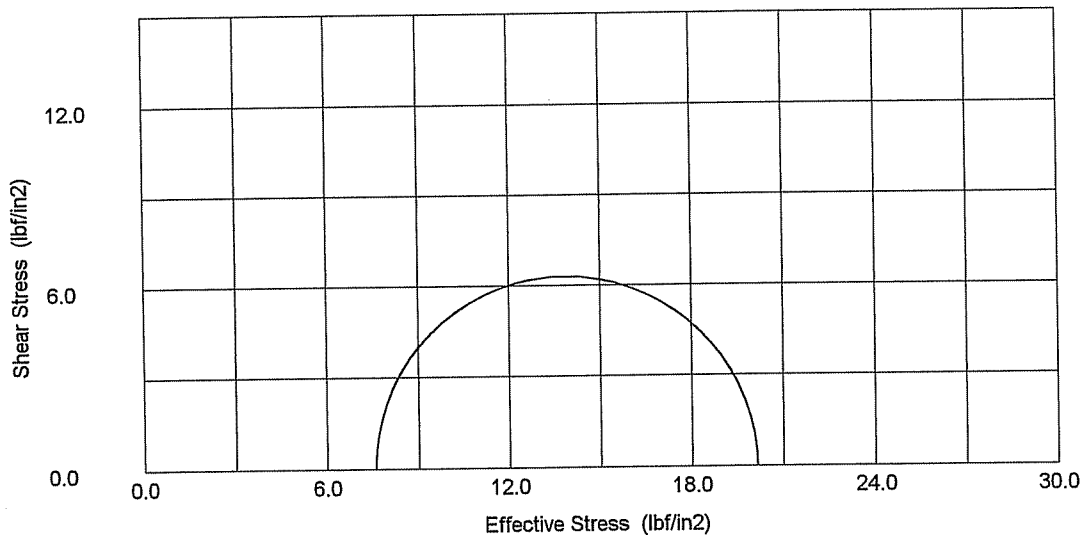
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Approved:

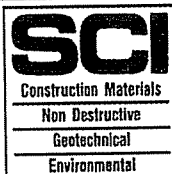
Signature: Suzanne M. Sturges
Signature: David J. Kel
Signature: [illegible]

Effective Stress Triaxial Compression

Consolidated Undrained



Soil Consultants, Inc.



Test Method: ASTM D4767-95

Test name: CU @ 15 psi (SS, MS)

Date of Test: 7/10/200

Site Reference: Charleston Naval Base Container

Sample: UD-2

Jobfile: C:\WINCLISP\CNB.JOB

Borehole: PAW-15

Operator:

Checked:

Approved:

Suzanne M. Stow

Dail J. Hall

K. Stow

TRIAXIAL COMPRESSION TEST
CU with Pore Pressures

7-17-2003
1:13 pm

Project and Sample Data

Date: 7/15/03
Client: SOUTH CAROLINA PORTS AUTHORITY
Project: CHARLESTON NAVAL BASE CONTAINER TERMINAL
Sample location: PAW19/UD2
Sample description: BLACK GRAY SILTY CLAY
Remarks:

Fig no.: PAW19 2nd page Fig no. (if applicable): PAW19
Type of sample: UNDISTURBED
Specific gravity= 2.54 LL= 86 PL= 28 PI= 58
Test method: Corps of Eng. - uniform strain

Specimen Parameters for Specimen No. 1

Specimen Parameter	Initial	Saturated	Consolidated	Final
Wt. moist soil and tare:	140.060			568.500
Wt. dry soil and tare:	117.440			343.550
Wt. of tare:	82.200			70.530
Weight, gms:	915.1			
Diameter, in:	2.852	2.852	2.764	
Area, in ² :	6.388	6.388	6.000	
Height, in:	6.000	6.000	5.818	
Net decrease in height, in:		0.000	0.183	
Net decrease in water volume, cc:				
Moisture:	64.2	73.3	63.3	82.4
Net density, pcf:	91.0	96.0	99.3	
Dry density, pcf:	55.4	55.4	60.8	
Void ratio:	1.8625	1.8625	1.6066	
% Saturation:	87.5	100.0	100.0	

Test Readings Data for Specimen No. 1

Deformation dial constant= 0.001 in per input unit
Actual loads entered
Consolidation cell pressure = 85.00 psi = 12.24 ksf
Consolidation back pressure = 80.00 psi = 11.52 ksf
Consolidation effective confining stress = 0.72 ksf
Strain rate, in/min = 0.0040
FAIL. STRESS = 0.60 ksf at reading no. 35
ULT. STRESS = not selected

Test Readings Data for Specimen No. 1

No.	Def.	Def.	Load	Load	Strain	Deviator	Effective Stresses			Pore	P ksf	Q ksf
	Dial	in	Dial	lbs	%	Stress	Minor	Major	1:3	Pres.		
	Units		Units			ksf	ksf	ksf	Ratio	psi		
	0.0	0.000	19	0	0.0	0.00	0.62	0.62	1.00	80.70	0.62	0.00
1	10.0	0.010	29	10	0.2	0.24	0.52	0.76	1.46	81.40	0.64	0.12
2	20.0	0.020	31	12	0.3	0.29	0.48	0.76	1.60	81.70	0.62	0.14
3	30.0	0.030	33	14	0.5	0.33	0.43	0.77	1.77	82.00	0.60	0.17
4	40.0	0.040	34	15	0.7	0.36	0.42	0.78	1.86	82.10	0.60	0.18
5	50.0	0.050	36	17	0.9	0.40	0.40	0.81	2.00	82.20	0.61	0.20
6	60.0	0.060	36	17	1.0	0.40	0.36	0.76	2.12	82.50	0.56	0.20
7	70.0	0.070	36	17	1.2	0.40	0.33	0.73	2.22	82.70	0.53	0.20
8	80.0	0.080	37	18	1.4	0.43	0.30	0.73	2.41	82.90	0.52	0.21
9	90.0	0.090	37	18	1.5	0.43	0.29	0.71	2.48	83.00	0.50	0.21
10	100.0	0.100	38	19	1.7	0.45	0.27	0.72	2.64	83.10	0.50	0.22
11	120.0	0.120	39	20	2.1	0.47	0.27	0.74	2.72	83.10	0.51	0.24
12	140.0	0.140	40	21	2.4	0.49	0.26	0.75	2.90	83.20	0.51	0.25
13	160.0	0.160	41	22	2.8	0.51	0.22	0.73	3.38	83.50	0.47	0.26
14	180.0	0.180	42	23	3.1	0.53	0.20	0.74	3.65	83.60	0.47	0.27
15	200.0	0.200	42	23	3.4	0.53	0.22	0.75	3.47	83.50	0.48	0.27
16	220.0	0.220	43	24	3.8	0.55	0.19	0.74	3.96	83.70	0.46	0.28
17	240.0	0.240	43	24	4.1	0.55	0.17	0.73	4.20	83.80	0.45	0.28
18	260.0	0.260	43	24	4.5	0.55	0.17	0.72	4.18	83.80	0.45	0.28
19	280.0	0.280	44	25	4.8	0.57	0.16	0.73	4.61	83.90	0.44	0.29
20	300.0	0.300	44	25	5.2	0.57	0.16	0.73	4.59	83.90	0.44	0.28
21	320.0	0.320	44	25	5.5	0.57	0.16	0.73	4.58	83.90	0.44	0.28
22	340.0	0.340	45	26	5.8	0.59	0.16	0.75	4.71	83.90	0.45	0.29
23	360.0	0.360	45	26	6.2	0.59	0.17	0.76	4.39	83.80	0.47	0.29
24	380.0	0.380	45	26	6.5	0.58	0.16	0.74	4.68	83.90	0.45	0.29
	400.0	0.400	45	26	6.9	0.58	0.13	0.71	5.48	84.10	0.42	0.29
	420.0	0.420	46	27	7.2	0.60	0.16	0.76	4.80	83.90	0.46	0.30
27	440.0	0.440	46	27	7.6	0.60	0.16	0.76	4.78	83.90	0.46	0.30
28	460.0	0.460	45	26	7.9	0.57	0.14	0.72	4.99	84.00	0.43	0.29
29	480.0	0.480	46	27	8.3	0.59	0.13	0.72	5.59	84.10	0.43	0.30
30	500.0	0.500	46	27	8.6	0.59	0.12	0.71	6.14	84.20	0.41	0.30
31	520.0	0.520	45	26	8.9	0.57	0.14	0.71	4.95	84.00	0.43	0.28
32	540.0	0.540	46	27	9.3	0.59	0.12	0.70	6.10	84.20	0.41	0.29
33	560.0	0.560	46	27	9.6	0.59	0.12	0.70	6.08	84.20	0.41	0.29
34	580.0	0.580	46	27	10.0	0.58	0.12	0.70	6.06	84.20	0.41	0.29
35	600.0	0.600	47	28	10.3	0.60	0.14	0.75	5.19	84.00	0.45	0.30
36	620.0	0.620	47	28	10.7	0.60	0.13	0.73	5.63	84.10	0.43	0.30
37	640.0	0.640	47	28	11.0	0.60	0.10	0.70	6.93	84.30	0.40	0.30
38	660.0	0.660	47	28	11.3	0.60	0.12	0.71	6.17	84.20	0.41	0.30
39	680.0	0.680	46	27	11.7	0.57	0.14	0.72	4.97	84.00	0.43	0.29
40	700.0	0.700	46	27	12.0	0.57	0.12	0.69	5.95	84.20	0.40	0.29
41	720.0	0.720	47	28	12.4	0.59	0.12	0.70	6.11	84.20	0.41	0.29
42	740.0	0.740	47	28	12.7	0.59	0.10	0.69	6.82	84.30	0.39	0.29
43	760.0	0.760	47	28	13.1	0.58	0.13	0.71	5.51	84.10	0.42	0.29
44	780.0	0.780	47	28	13.4	0.58	0.10	0.68	6.77	84.30	0.39	0.29
45	800.0	0.800	47	28	13.8	0.58	0.10	0.68	6.75	84.30	0.39	0.29
46	820.0	0.820	47	28	14.1	0.58	0.10	0.68	6.73	84.30	0.39	0.29
47	840.0	0.840	47	28	14.4	0.57	0.12	0.69	5.99	84.20	0.40	0.29
48	860.0	0.860	47	28	14.8	0.57	0.10	0.67	6.68	84.30	0.39	0.29
49	880.0	0.880	47	28	15.1	0.57	0.10	0.67	6.66	84.30	0.39	0.29
	900.0	0.900	47	28	15.5	0.57	0.12	0.68	5.93	84.20	0.40	0.28

Specimen Parameters for Specimen No. 2

Specimen Parameter	Initial	Saturated	Consolidated	Final
Wt. moist soil and tare:	140.060			741.400
dry soil and tare:	117.440			526.000
Wt. of tare:	82.200			154.210
Weight, gms:	1011.0			
Diameter, in:	2.864	2.864	2.673	
Area, in ² :	6.442	6.442	5.613	
Height, in:	6.063	6.063	5.673	
Net decrease in height, in:		0.000	0.390	
Net decrease in water volume, cc:				
% Moisture:	64.2	64.6	45.4	57.9
Wet density, pcf:	98.6	98.8	107.1	
Dry density, pcf:	60.1	60.1	73.7	
Void ratio:	1.6403	1.6403	1.1523	
% Saturation:	99.4	100.0	100.0	

Test Readings Data for Specimen No. 2

Deformation dial constant= 0.001 in per input unit
 Actual loads entered
 Consolidation cell pressure = 95.00 psi = 13.68 ksf
 Consolidation back pressure = 80.00 psi = 11.52 ksf
 Consolidation effective confining stress = 2.16 ksf
 Strain rate, in/min = 0.0040
 FAIL. STRESS = 1.10 ksf at reading no. 31
 ULT. STRESS = not selected

	Def.	Def.	Load	Load	Strain	Deviator	Effective Stresses			Pore	P ksf	Q ksf
	Dial	in	Dial	lbs	%	Stress	Minor	Major	1:3	Pres.		
	Units		Units			ksf	ksf	ksf	Ratio	psi		
0	0.0	0.000	28	0	0.0	0.00	1.89	1.89	1.00	81.90	1.89	0.00
1	10.0	0.010	48	20	0.2	0.51	1.61	2.13	1.32	83.80	1.87	0.26
2	20.0	0.020	54	26	0.4	0.66	1.45	2.12	1.46	84.90	1.79	0.33
3	30.0	0.030	57	29	0.5	0.74	1.35	2.09	1.55	85.60	1.72	0.37
4	40.0	0.040	61	33	0.7	0.84	1.27	2.11	1.66	86.20	1.69	0.42
5	50.0	0.050	62	34	0.9	0.86	1.20	2.06	1.72	86.70	1.63	0.43
6	60.0	0.060	64	36	1.1	0.91	1.15	2.07	1.79	87.00	1.61	0.46
7	70.0	0.070	64	36	1.2	0.91	1.11	2.02	1.82	87.30	1.56	0.46
8	80.0	0.080	65	37	1.4	0.94	1.04	1.97	1.90	87.80	1.50	0.47
9	90.0	0.090	66	38	1.6	0.96	0.99	1.95	1.97	88.10	1.47	0.48
10	100.0	0.100	68	40	1.8	1.01	0.96	1.97	2.04	88.30	1.47	0.50
11	120.0	0.120	69	41	2.1	1.03	0.92	1.95	2.12	88.60	1.44	0.51
12	140.0	0.140	70	42	2.5	1.05	0.89	1.94	2.18	88.80	1.42	0.53
13	160.0	0.160	71	43	2.8	1.07	0.84	1.91	2.28	89.20	1.37	0.54
14	180.0	0.180	71	43	3.2	1.07	0.79	1.86	2.35	89.50	1.33	0.53
15	200.0	0.200	71	43	3.5	1.06	0.79	1.86	2.34	89.50	1.32	0.53
16	220.0	0.220	71	43	3.9	1.06	0.81	1.87	2.31	89.40	1.34	0.53
17	240.0	0.240	71	43	4.2	1.06	0.72	1.78	2.47	90.00	1.25	0.53
18	260.0	0.260	71	43	4.6	1.05	0.69	1.74	2.52	90.20	1.22	0.53
19	280.0	0.280	71	43	4.9	1.05	0.68	1.73	2.55	90.30	1.20	0.52
20	300.0	0.300	72	44	5.3	1.07	0.69	1.76	2.55	90.20	1.23	0.53
21	320.0	0.320	73	45	5.6	1.09	0.65	1.74	2.68	90.50	1.19	0.54
22	340.0	0.340	73	45	6.0	1.09	0.66	1.75	2.64	90.40	1.21	0.54

Test Readings Data for Specimen No. 2

No.	Def.	Def.	Load	Load	Strain	Deviator	Effective Stresses			Pore	P ksf	Q ksf
	Dial	in	Dial	lbs	%	Stress	Minor	Major	1:3	Pres.		
	Units		Units			ksf	ksf	ksf	Ratio	psi		
	360.0	0.360	73	45	6.3	1.08	0.63	1.71	2.71	90.60	1.17	0.54
24	380.0	0.380	73	45	6.7	1.08	0.66	1.74	2.63	90.40	1.20	0.54
25	400.0	0.400	73	45	7.1	1.07	0.59	1.66	2.82	90.90	1.13	0.54
26	420.0	0.420	73	45	7.4	1.07	0.58	1.65	2.86	91.00	1.11	0.53
27	440.0	0.440	74	46	7.8	1.09	0.59	1.68	2.84	90.90	1.13	0.54
28	460.0	0.460	73	45	8.1	1.06	0.63	1.69	2.67	90.60	1.16	0.53
29	480.0	0.480	74	46	8.5	1.08	0.55	1.63	2.97	91.20	1.09	0.54
30	500.0	0.500	74	46	8.8	1.08	0.55	1.62	2.97	91.20	1.09	0.54
31	520.0	0.520	75	47	9.2	1.10	0.58	1.67	2.90	91.00	1.12	0.55
32	540.0	0.540	75	47	9.5	1.09	0.52	1.61	3.10	91.40	1.06	0.55
33	560.0	0.560	75	47	9.9	1.09	0.52	1.61	3.10	91.40	1.06	0.54
34	580.0	0.580	75	47	10.2	1.08	0.52	1.60	3.09	91.40	1.06	0.54
35	600.0	0.600	75	47	10.6	1.08	0.55	1.63	2.97	91.20	1.09	0.54
36	620.0	0.620	75	47	10.9	1.07	0.50	1.58	3.13	91.50	1.04	0.54
37	640.0	0.640	75	47	11.3	1.07	0.50	1.57	3.12	91.50	1.04	0.53
38	660.0	0.660	75	47	11.6	1.07	0.50	1.57	3.11	91.50	1.04	0.53
39	680.0	0.680	75	47	12.0	1.06	0.53	1.59	2.99	91.30	1.06	0.53
40	700.0	0.700	75	47	12.3	1.06	0.49	1.55	3.16	91.60	1.02	0.53
41	720.0	0.720	75	47	12.7	1.05	0.48	1.53	3.22	91.70	1.00	0.53
42	740.0	0.740	75	47	13.0	1.05	0.49	1.54	3.14	91.60	1.01	0.52
43	760.0	0.760	75	47	13.4	1.04	0.53	1.58	2.96	91.30	1.05	0.52
44	780.0	0.780	75	47	13.8	1.04	0.52	1.56	3.01	91.40	1.04	0.52
45	800.0	0.800	75	47	14.1	1.04	0.48	1.51	3.18	91.70	0.99	0.52
46	820.0	0.820	75	47	14.5	1.03	0.50	1.54	3.05	91.50	1.02	0.52
47	840.0	0.840	75	47	14.8	1.03	0.52	1.55	2.98	91.40	1.03	0.51
	860.0	0.860	76	48	15.2	1.04	0.52	1.56	3.02	91.40	1.04	0.52
	880.0	0.880	76	48	15.5	1.04	0.52	1.56	3.01	91.40	1.04	0.52
50	900.0	0.900	76	48	15.9	1.04	0.50	1.54	3.06	91.50	1.02	0.52

Specimen Parameters for Specimen No. 3

Specimen Parameter	Initial	Saturated	Consolidated	Final
Wt. moist soil and tare:	118.120			660.400
dry soil and tare:	98.890			470.900
Wt. of tare:	81.390			154.420
Weight, gms:	918.5			
Diameter, in:	2.860	2.860	2.672	
Area, in ² :	6.424	6.424	5.606	
Height, in:	6.125	6.125	5.735	
Net decrease in height, in:		0.000	0.390	
Net decrease in water volume, cc:				
% Moisture:	109.9	108.0	81.0	59.9
Wet density, pcf:	88.9	88.1	93.9	
Dry density, pcf:	42.4	42.4	51.9	
Void ratio:	2.7425	2.7425	2.0575	
% Saturation:	101.8	100.0	100.0	

Test Readings Data for Specimen No. 3

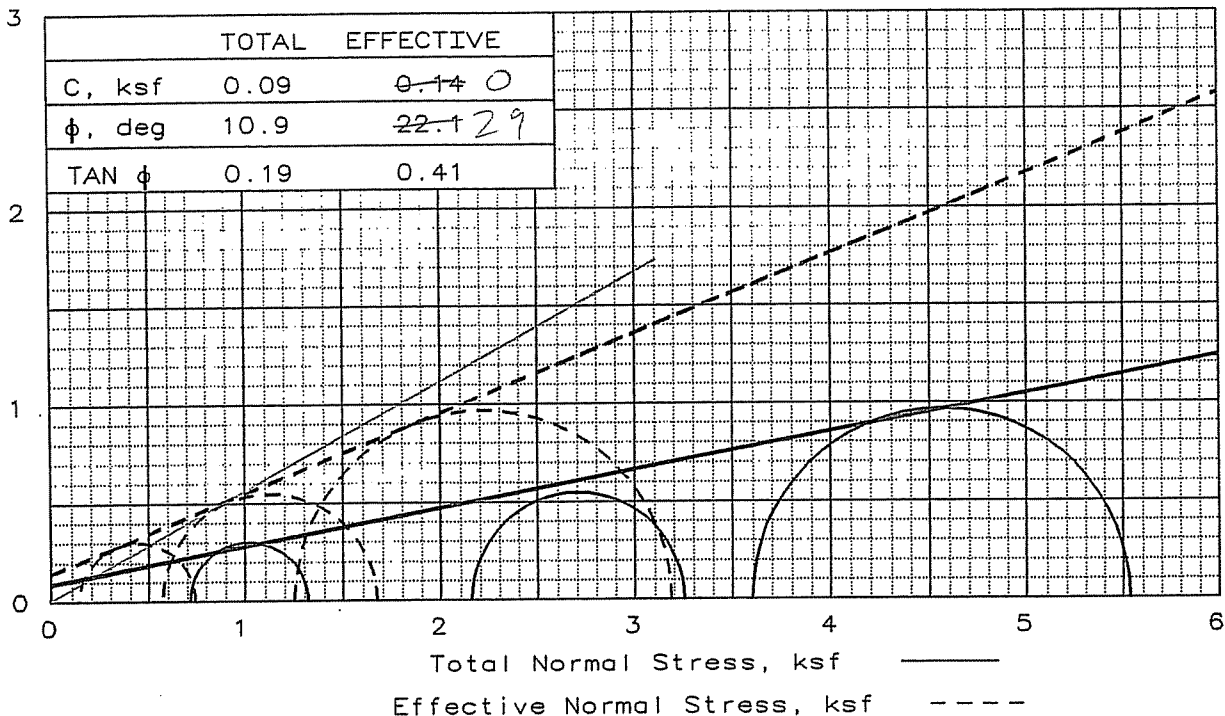
Deformation dial constant= 0.001 in per input unit
 Actual loads entered
 Consolidation cell pressure = 105.00 psi = 15.12 ksf
 Consolidation back pressure = 80.00 psi = 11.52 ksf
 Consolidation effective confining stress = 3.60 ksf
 Strain rate, in/min = 0.0040
 FAIL. STRESS = 1.94 ksf at reading no. 25
 ULT. STRESS = not selected

	Def.	Def.	Load	Load	Strain	Deviator	Effective Stresses			Pore	P ksf	Q ksf
	Dial	in	Dial	lbs	%	Stress	Minor	Major	1:3	Pres.		
	Units		Units			ksf	ksf	ksf	Ratio	psi		
0	0.0	0.000	22	0	0.0	0.00	3.27	3.27	1.00	82.30	3.27	0.00
1	10.0	0.010	50	28	0.2	0.72	3.05	3.77	1.24	83.80	3.41	0.36
2	20.0	0.020	61	39	0.3	1.00	2.87	3.86	1.35	85.10	3.36	0.50
3	30.0	0.030	70	48	0.5	1.23	2.66	3.89	1.46	86.50	3.28	0.61
4	40.0	0.040	74	52	0.7	1.33	2.58	3.90	1.51	87.10	3.24	0.66
5	50.0	0.050	77	55	0.9	1.40	2.45	3.85	1.57	88.00	3.15	0.70
6	60.0	0.060	80	58	1.0	1.47	2.36	3.84	1.62	88.60	3.10	0.74
7	70.0	0.070	82	60	1.2	1.52	2.25	3.77	1.68	89.40	3.01	0.76
8	80.0	0.080	84	62	1.4	1.57	2.20	3.77	1.71	89.70	2.99	0.79
9	90.0	0.090	86	64	1.6	1.62	2.15	3.76	1.75	90.10	2.95	0.81
10	100.0	0.100	86	64	1.7	1.62	2.15	3.76	1.75	90.10	2.95	0.81
11	120.0	0.120	88	66	2.1	1.66	2.09	3.75	1.80	90.50	2.92	0.83
12	140.0	0.140	91	69	2.4	1.73	1.93	3.66	1.90	91.60	2.79	0.86
13	160.0	0.160	93	71	2.8	1.77	1.84	3.62	1.96	92.20	2.73	0.89
14	180.0	0.180	94	72	3.1	1.79	1.76	3.55	2.02	92.80	2.65	0.90
15	200.0	0.200	96	74	3.5	1.83	1.71	3.55	2.07	93.10	2.63	0.92
16	220.0	0.220	96	74	3.8	1.83	1.63	3.46	2.12	93.70	2.54	0.91
17	240.0	0.240	97	75	4.2	1.85	1.57	3.42	2.18	94.10	2.49	0.92
18	260.0	0.260	98	76	4.5	1.86	1.53	3.39	2.22	94.40	2.46	0.93
19	280.0	0.280	98	76	4.9	1.86	1.51	3.37	2.23	94.50	2.44	0.93
20	300.0	0.300	99	77	5.2	1.87	1.43	3.30	2.31	95.10	2.36	0.94
21	320.0	0.320	100	78	5.6	1.89	1.38	3.27	2.37	95.40	2.33	0.95
22	340.0	0.340	101	79	5.9	1.91	1.35	3.26	2.41	95.60	2.31	0.95

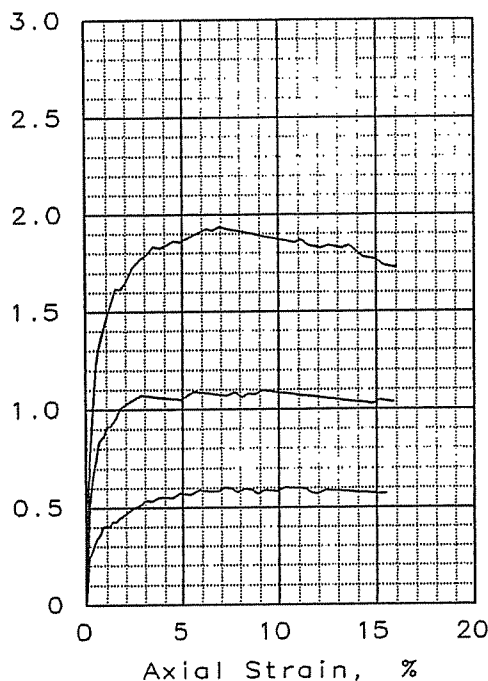
Test Readings Data for Specimen No. 3

No.	Def. Dial Units	Def. in	Load Dial Units	Load lbs	Strain %	Deviator Stress ksf	Effective Stresses			Pore Pres. psi	P ksf	Q ksf
							Minor ksf	Major ksf	1:3 Ratio			
	360.0	0.360	102	80	6.3	1.93	1.34	3.27	2.44	95.70	2.30	0.96
24	380.0	0.380	102	80	6.6	1.92	1.28	3.20	2.50	96.10	2.24	0.96
25	400.0	0.400	103	81	7.0	1.94	1.25	3.19	2.55	96.30	2.22	0.97
26	420.0	0.420	103	81	7.3	1.93	1.24	3.17	2.56	96.40	2.20	0.96
27	440.0	0.440	103	81	7.7	1.92	1.25	3.17	2.53	96.30	2.21	0.96
28	460.0	0.460	103	81	8.0	1.91	1.18	3.09	2.62	96.80	2.14	0.96
29	480.0	0.480	103	81	8.4	1.91	1.17	3.07	2.63	96.90	2.12	0.95
30	500.0	0.500	103	81	8.7	1.90	1.15	3.05	2.65	97.00	2.10	0.95
31	520.0	0.520	103	81	9.1	1.89	1.14	3.03	2.66	97.10	2.08	0.95
32	540.0	0.540	103	81	9.4	1.88	1.09	2.98	2.72	97.40	2.04	0.94
33	560.0	0.560	103	81	9.8	1.88	1.09	2.97	2.72	97.40	2.03	0.94
34	580.0	0.580	103	81	10.1	1.87	1.09	2.96	2.71	97.40	2.03	0.94
35	600.0	0.600	103	81	10.5	1.86	1.05	2.91	2.77	97.70	1.98	0.93
36	620.0	0.620	103	81	10.8	1.86	1.04	2.89	2.79	97.80	1.96	0.93
37	640.0	0.640	104	82	11.2	1.87	1.02	2.89	2.83	97.90	1.96	0.94
38	660.0	0.660	103	81	11.5	1.84	1.04	2.88	2.78	97.80	1.96	0.92
39	680.0	0.680	103	81	11.9	1.83	0.99	2.83	2.85	98.10	1.91	0.92
40	700.0	0.700	103	81	12.2	1.83	0.98	2.81	2.87	98.20	1.89	0.91
41	720.0	0.720	104	82	12.6	1.84	0.98	2.82	2.88	98.20	1.90	0.92
42	740.0	0.740	104	82	12.9	1.83	0.99	2.83	2.85	98.10	1.91	0.92
43	760.0	0.760	104	82	13.3	1.83	0.95	2.78	2.92	98.40	1.86	0.91
44	780.0	0.780	105	83	13.6	1.84	0.94	2.78	2.97	98.50	1.86	0.92
45	800.0	0.800	104	82	14.0	1.81	0.94	2.75	2.94	98.50	1.84	0.91
46	820.0	0.820	103	81	14.3	1.78	0.95	2.73	2.88	98.40	1.84	0.89
47	840.0	0.840	103	81	14.6	1.78	0.91	2.68	2.96	98.70	1.80	0.89
	860.0	0.860	103	81	15.0	1.77	0.91	2.68	2.95	98.70	1.79	0.88
	880.0	0.880	102	80	15.3	1.74	0.89	2.63	2.95	98.80	1.76	0.87
50	900.0	0.900	102	80	15.7	1.73	0.92	2.65	2.88	98.60	1.79	0.87
51	920.0	0.920	102	80	16.0	1.73	0.88	2.60	2.96	98.90	1.74	0.86

Shear Stress, ksf



Deviator Stress, ksf



TYPE OF TEST:

CU with Pore Pressures

SAMPLE TYPE: UNDISTURBED

DESCRIPTION: BLACK GRAY SILTY CLAY

LL= 86 PL= 28 PI= 58

SPECIFIC GRAVITY= 2.54

REMARKS:

SAMPLE NO.:		1	2	3
INITIAL	WATER CONTENT, %	64.2	64.2	109.9
	DRY DENSITY, pcf	55.4	60.1	42.4
	SATURATION, %	87.5	99.4	101.8
	VOID RATIO	1.863	1.640	2.743
	DIAMETER, in	2.85	2.86	2.86
	HEIGHT, in	6.00	6.06	6.13
AT TEST	WATER CONTENT, %	63.3	45.4	81.0
	DRY DENSITY, pcf	60.8	73.7	51.9
	SATURATION, %	100.0	100.0	100.0
	VOID RATIO	1.607	1.152	2.057
	DIAMETER, in	2.76	2.67	2.67
	HEIGHT, in	5.82	5.67	5.73
Strain rate, in/min		0.0040	0.0040	0.0040
EFF CELL PRESSURE, ksf		0.72	2.16	3.60
FAIL. STRESS, ksf		0.60	1.10	1.94
TOTAL PORE PR., ksf		12.10	13.10	13.87
STRAIN, %		10.3	9.2	7.0
ULT. STRESS, ksf				
TOTAL PORE PR., ksf				
STRAIN, %				
$\bar{\sigma}_1$ FAILURE, ksf		0.75	1.67	3.19
$\bar{\sigma}_3$ FAILURE, ksf		0.14	0.58	1.25

CLIENT: SOUTH CAROLINA PORTS AUTHORITY

PROJECT: CHARLESTON NAVAL BASE CONTAINER TERMINAL

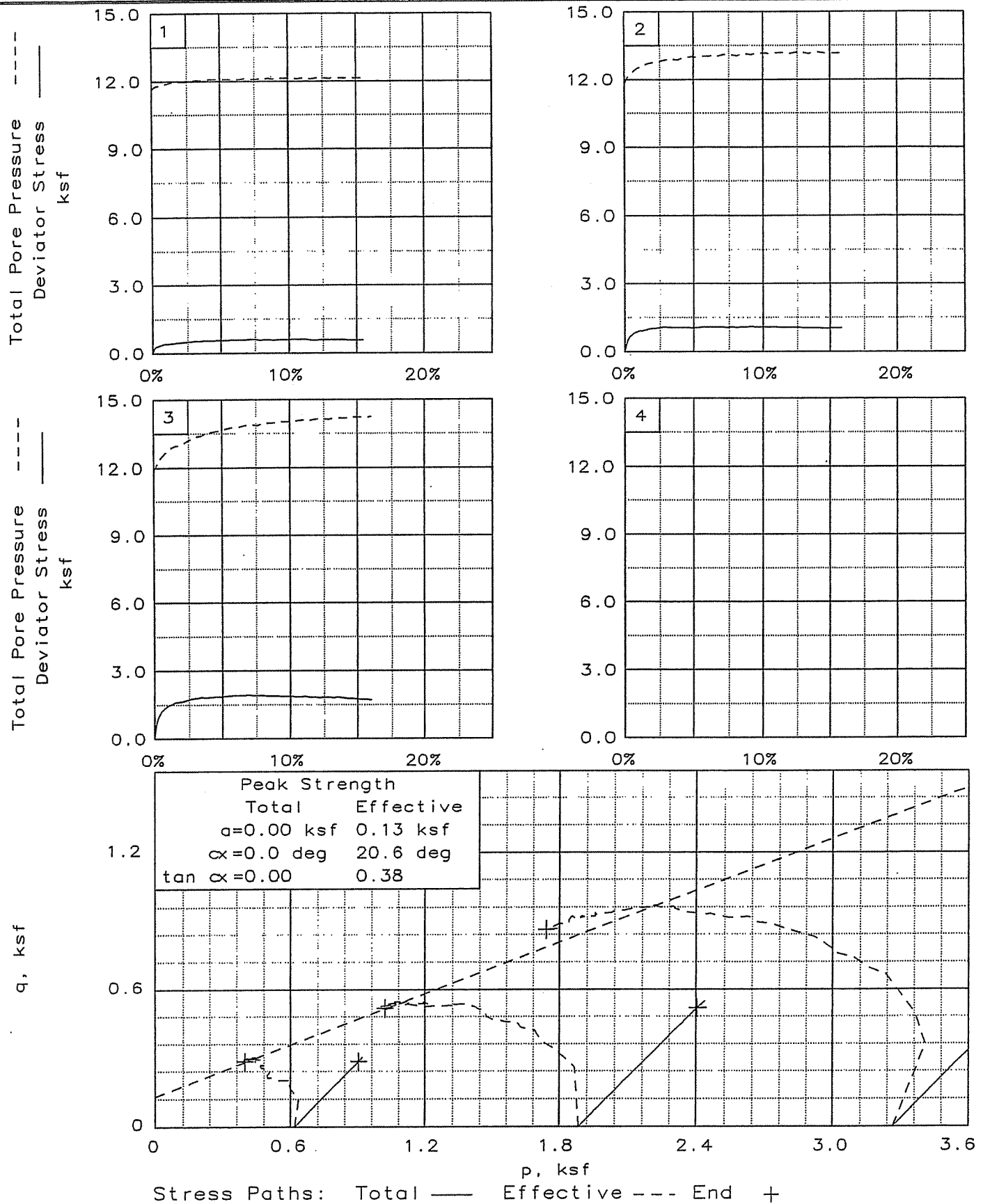
SAMPLE LOCATION: PAW19/UD2

PROJ. NO.: 1131-03-264 DATE: 7/15/03

TRIAXIAL SHEAR TEST REPORT

S & ME, INC.

Fig. No.: PAW19



Client: SOUTH CAROLINA PORTS AUTHORITY

Project: CHARLESTON NAVAL BASE CONTAINER TERMINAL

Location: PAW19/UD2

File: CHARLES2

Project No.: 1131-03-264

Fig. No.: PAW19

TRIAXIAL COMPRESSION TEST
CU with Pore Pressures

7-17-2003
1:17 pm

Project and Sample Data

Date: 7/15/03
Client: SOUTH CAROLINA STATE PORTS AUTHORITY
Project: CHARLESTON NAVAL BASE CONTAINER TERMINAL
Sample location: PAW30/UD1
Sample description: BLACK GRAY SANDY SILTY CLAY
Remarks:

Fig no.: PAW30 2nd page Fig no. (if applicable): PAW30
Type of sample: UNDISTURBED
Specific gravity= 2.60 LL= 45 PL= 20 PI= 25
Test method: Corps of Eng. - uniform strain

Specimen Parameters for Specimen No. 1

Specimen Parameter	Initial	Saturated	Consolidated	Final
Wt. moist soil and tare:	143.780			759.100
Wt. dry soil and tare:	105.760			451.100
Wt. of tare:	81.620			154.360
Weight, gms:	792.5			
Diameter, in:	2.859	2.859	2.768	
Area, in ² :	6.420	6.420	6.016	
Height, in:	5.625	5.625	5.448	
Net decrease in height, in:		0.000	0.177	
Net decrease in water volume, cc:				
Moisture:	157.5	153.8	136.1	103.8
wet density, pcf:	83.6	82.4	84.4	
Dry density, pcf:	32.5	32.5	35.8	
Void ratio:	3.9991	3.9991	3.5376	
% Saturation:	102.4	100.0	100.0	

Test Readings Data for Specimen No. 1

Deformation dial constant= 0.001 in per input unit
Actual loads entered
Consolidation cell pressure = 85.00 psi = 12.24 ksf
Consolidation back pressure = 80.00 psi = 11.52 ksf
Consolidation effective confining stress = 0.72 ksf
Strain rate, in/min = 0.0040
FAIL. STRESS = 0.49 ksf at reading no. 36
ULT. STRESS = not selected

Test Readings Data for Specimen No. 1

No.	Def.	Def.	Load	Load	Strain	Deviator	Effective Stresses			Pore	P ksf	Q ksf
	Dial	in	Dial	lbs	%	Stress	Minor	Major	1:3	Pres.		
	Units		Units			ksf	ksf	ksf	Ratio	psi		
	0.0	0.000	20	0	0.0	0.00	0.78	0.78	1.00	79.60	0.78	0.00
1	10.0	0.010	25	5	0.2	0.12	0.59	0.71	1.20	80.90	0.65	0.06
2	20.0	0.020	29	9	0.4	0.21	0.52	0.73	1.41	81.40	0.63	0.11
3	30.0	0.030	32	12	0.6	0.29	0.45	0.73	1.64	81.90	0.59	0.14
4	40.0	0.040	34	14	0.7	0.33	0.42	0.75	1.80	82.10	0.58	0.17
5	50.0	0.050	36	16	0.9	0.38	0.40	0.78	1.94	82.20	0.59	0.19
6	60.0	0.060	36	16	1.1	0.38	0.40	0.78	1.94	82.20	0.59	0.19
7	70.0	0.070	36	16	1.3	0.38	0.33	0.71	2.14	82.70	0.52	0.19
8	80.0	0.080	36	16	1.5	0.38	0.30	0.68	2.25	82.90	0.49	0.19
9	90.0	0.090	36	16	1.7	0.38	0.29	0.66	2.31	83.00	0.48	0.19
10	100.0	0.100	37	17	1.8	0.40	0.27	0.67	2.46	83.10	0.47	0.20
11	120.0	0.120	37	17	2.2	0.40	0.26	0.66	2.54	83.20	0.46	0.20
12	140.0	0.140	37	17	2.6	0.40	0.30	0.70	2.31	82.90	0.50	0.20
13	160.0	0.160	37	17	2.9	0.39	0.27	0.67	2.44	83.10	0.47	0.20
14	180.0	0.180	39	19	3.3	0.44	0.27	0.71	2.61	83.10	0.49	0.22
15	200.0	0.200	38	18	3.7	0.42	0.23	0.65	2.80	83.40	0.44	0.21
16	220.0	0.220	40	20	4.0	0.46	0.29	0.75	2.60	83.00	0.52	0.23
17	240.0	0.240	40	20	4.4	0.46	0.19	0.64	3.44	83.70	0.42	0.23
18	260.0	0.260	40	20	4.8	0.46	0.19	0.64	3.44	83.70	0.42	0.23
19	280.0	0.280	39	19	5.1	0.43	0.22	0.65	3.00	83.50	0.43	0.22
20	300.0	0.300	39	19	5.5	0.43	0.24	0.67	2.76	83.30	0.46	0.21
21	320.0	0.320	40	20	5.9	0.45	0.16	0.61	3.84	83.90	0.38	0.23
22	340.0	0.340	40	20	6.2	0.45	0.16	0.61	3.83	83.90	0.38	0.22
23	360.0	0.360	40	20	6.6	0.45	0.17	0.62	3.59	83.80	0.40	0.22
24	380.0	0.380	40	20	7.0	0.45	0.16	0.60	3.81	83.90	0.38	0.22
	400.0	0.400	41	21	7.3	0.47	0.14	0.61	4.23	84.00	0.38	0.23
	420.0	0.420	42	22	7.7	0.49	0.14	0.63	4.37	84.00	0.39	0.24
27	440.0	0.440	42	22	8.1	0.48	0.20	0.69	3.40	83.60	0.44	0.24
28	460.0	0.460	42	22	8.4	0.48	0.14	0.63	4.35	84.00	0.39	0.24
29	480.0	0.480	41	21	8.8	0.46	0.14	0.60	4.18	84.00	0.37	0.23
30	500.0	0.500	41	21	9.2	0.46	0.14	0.60	4.17	84.00	0.37	0.23
31	520.0	0.520	41	21	9.5	0.45	0.20	0.66	3.26	83.60	0.43	0.23
32	540.0	0.540	41	21	9.9	0.45	0.13	0.58	4.49	84.10	0.36	0.23
33	560.0	0.560	41	21	10.3	0.45	0.13	0.58	4.48	84.10	0.36	0.23
34	580.0	0.580	41	21	10.6	0.45	0.12	0.56	4.90	84.20	0.34	0.22
35	600.0	0.600	42	22	11.0	0.47	0.14	0.61	4.25	84.00	0.38	0.23
36	620.0	0.620	43	23	11.4	0.49	0.13	0.62	4.76	84.10	0.37	0.24
37	640.0	0.640	43	23	11.7	0.49	0.13	0.62	4.75	84.10	0.37	0.24
38	660.0	0.660	43	23	12.1	0.48	0.14	0.63	4.36	84.00	0.39	0.24
39	680.0	0.680	42	22	12.5	0.46	0.17	0.63	3.67	83.80	0.40	0.23
40	700.0	0.700	42	22	12.8	0.46	0.13	0.59	4.54	84.10	0.36	0.23
41	720.0	0.720	42	22	13.2	0.46	0.14	0.60	4.17	84.00	0.37	0.23
42	740.0	0.740	42	22	13.6	0.46	0.14	0.60	4.16	84.00	0.37	0.23
43	760.0	0.760	41	21	13.9	0.43	0.13	0.56	4.34	84.10	0.35	0.22
44	780.0	0.780	42	22	14.3	0.45	0.13	0.58	4.48	84.10	0.36	0.23
45	800.0	0.800	42	22	14.7	0.45	0.14	0.59	4.12	84.00	0.37	0.22
46	820.0	0.820	43	23	15.1	0.47	0.14	0.61	4.25	84.00	0.38	0.23
47	840.0	0.840	43	23	15.4	0.47	0.19	0.65	3.49	83.70	0.42	0.23
48	860.0	0.860	43	23	15.8	0.46	0.13	0.59	4.58	84.10	0.36	0.23
49	880.0	0.880	43	23	16.2	0.46	0.13	0.59	4.56	84.10	0.36	0.23
	900.0	0.900	44	24	16.5	0.48	0.19	0.67	3.56	83.70	0.43	0.24

Specimen Parameters for Specimen No. 2

Specimen Parameter	Initial	Saturated	Consolidated	Final
W+ moist soil and tare:	131.840			738.000
dry soil and tare:	103.680			467.200
Wt. of tare:	81.390			153.480
Weight, gms:	824.2			
Diameter, in:	2.858	2.858	2.697	
Area, in ² :	6.415	6.415	5.712	
Height, in:	5.938	5.938	5.613	
Net decrease in height, in:		0.000	0.325	
Net decrease in water volume, cc:				
% Moisture:	126.3	133.0	105.8	86.3
Wet density, pcf:	82.4	84.8	89.1	
Dry density, pcf:	36.4	36.4	43.3	
Void ratio:	3.4571	3.4571	2.7513	
% Saturation:	95.0	100.0	100.0	

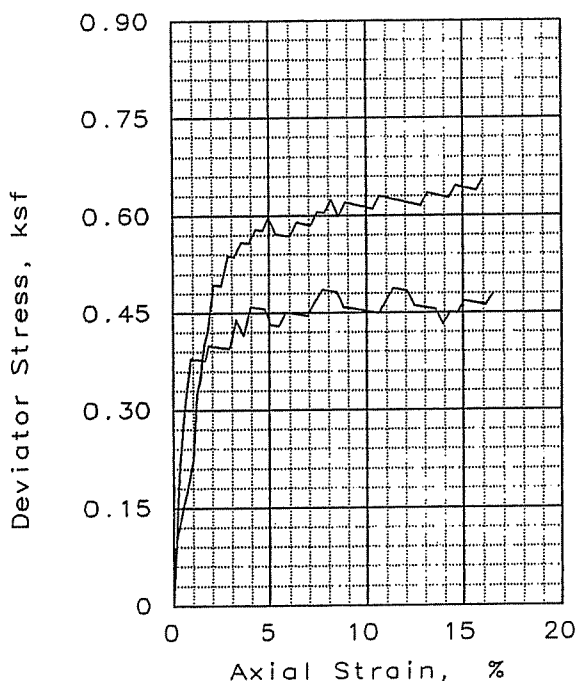
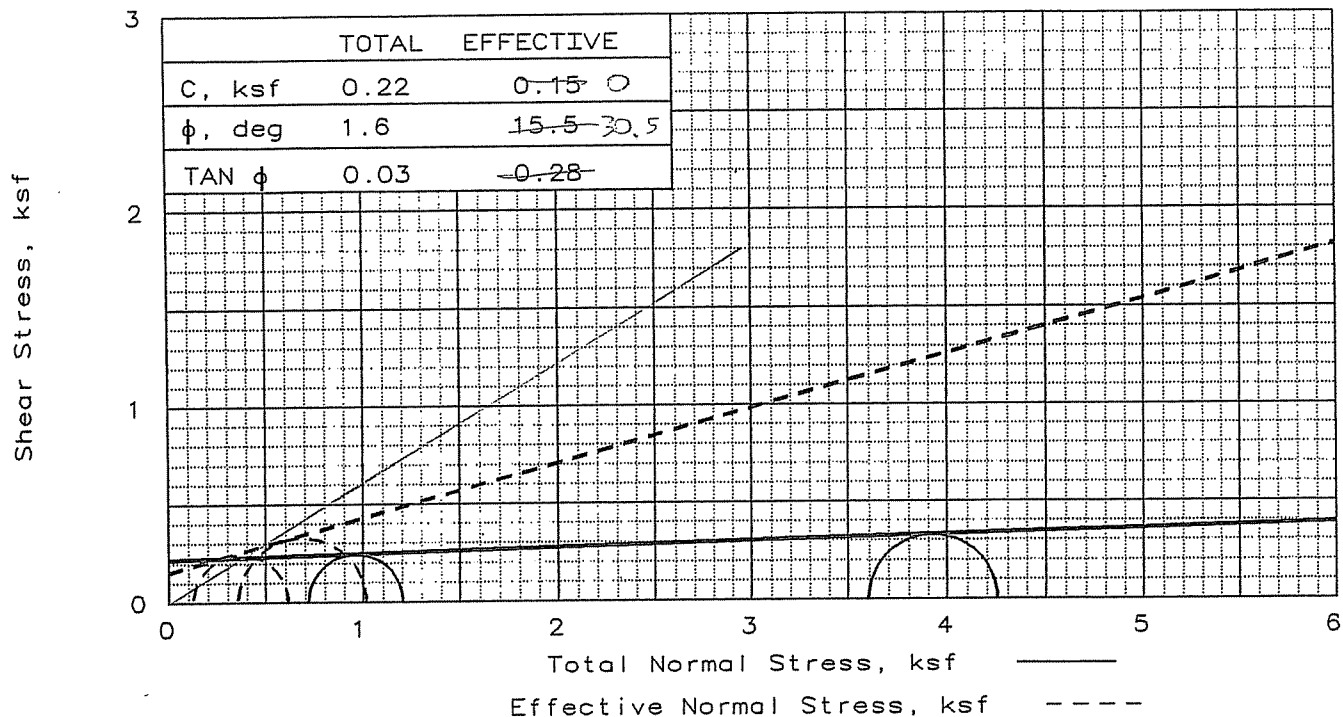
Test Readings Data for Specimen No. 2

Deformation dial constant= 0.001 in per input unit
 Actual loads entered
 Consolidation cell pressure = 105.00 psi = 15.12 ksf
 Consolidation back pressure = 80.00 psi = 11.52 ksf
 Consolidation effective confining stress = 3.60 ksf
 Strain rate, in/min = 0.0040
 FAIL. STRESS = 0.66 ksf at reading no. 50
 ULT. STRESS = not selected

Def.	Def.	Load	Load	Strain	Deviator	Effective Stresses			Pore	P ksf	Q ksf	
Dial	in	Dial	lbs	%	Stress	Minor	Major	1:3	Pres.			
Units		Units			ksf	ksf	ksf	Ratio	psi			
0	0.0	0.000	23	0	0.0	0.00	1.25	1.25	1.00	96.30	1.25	0.00
1	10.0	0.010	27	4	0.2	0.10	1.08	1.18	1.09	97.50	1.13	0.05
2	20.0	0.020	28	5	0.4	0.13	1.04	1.16	1.12	97.80	1.10	0.06
3	30.0	0.030	29	6	0.5	0.15	1.01	1.16	1.15	98.00	1.08	0.08
4	40.0	0.040	30	7	0.7	0.18	0.98	1.15	1.18	98.20	1.07	0.09
5	50.0	0.050	31	8	0.9	0.20	0.95	1.15	1.21	98.40	1.05	0.10
6	60.0	0.060	32	9	1.1	0.22	0.89	1.12	1.25	98.80	1.01	0.11
7	70.0	0.070	36	13	1.2	0.32	0.82	1.14	1.39	99.30	0.98	0.16
8	80.0	0.080	37	14	1.4	0.35	0.79	1.14	1.44	99.50	0.97	0.17
9	90.0	0.090	39	16	1.6	0.40	0.78	1.17	1.51	99.60	0.98	0.20
10	100.0	0.100	40	17	1.8	0.42	0.76	1.18	1.55	99.70	0.97	0.21
11	120.0	0.120	43	20	2.1	0.49	0.68	1.17	1.73	100.30	0.92	0.25
12	140.0	0.140	43	20	2.5	0.49	0.63	1.13	1.78	100.60	0.88	0.25
13	160.0	0.160	45	22	2.9	0.54	0.62	1.16	1.87	100.70	0.89	0.27
14	180.0	0.180	45	22	3.2	0.54	0.65	1.18	1.83	100.50	0.92	0.27
15	200.0	0.200	46	23	3.6	0.56	0.59	1.15	1.95	100.90	0.87	0.28
16	220.0	0.220	46	23	3.9	0.56	0.56	1.12	1.99	101.10	0.84	0.28
17	240.0	0.240	47	24	4.3	0.58	0.55	1.13	2.06	101.20	0.84	0.29
18	260.0	0.260	47	24	4.6	0.58	0.58	1.15	2.00	101.00	0.86	0.29
19	280.0	0.280	48	25	5.0	0.60	0.50	1.10	2.19	101.50	0.80	0.30
20	300.0	0.300	47	24	5.3	0.57	0.50	1.08	2.14	101.50	0.79	0.29
	320.0	0.320	47	24	5.7	0.57	0.49	1.06	2.17	101.60	0.77	0.29
	340.0	0.340	47	24	6.1	0.57	0.55	1.12	2.04	101.20	0.83	0.28

Test Readings Data for Specimen No. 2

No.	Def. Dial Units	Def. in	Load Dial Units	Load lbs	Strain %	Deviator Stress ksf	Effective Stresses			Pore Pres. psi	P ksf	Q ksf
							Minor ksf	Major ksf	1:3 Ratio			
	360.0	0.360	48	25	6.4	0.59	0.46	1.05	2.28	101.80	0.76	0.29
24	380.0	0.380	48	25	6.8	0.59	0.46	1.05	2.28	101.80	0.75	0.29
25	400.0	0.400	48	25	7.1	0.59	0.46	1.05	2.27	101.80	0.75	0.29
26	420.0	0.420	49	26	7.5	0.61	0.52	1.12	2.17	101.40	0.82	0.30
27	440.0	0.440	49	26	7.8	0.60	0.45	1.05	2.35	101.90	0.75	0.30
28	460.0	0.460	50	27	8.2	0.62	0.43	1.06	2.45	102.00	0.74	0.31
29	480.0	0.480	49	26	8.6	0.60	0.46	1.06	2.30	101.80	0.76	0.30
30	500.0	0.500	50	27	8.9	0.62	0.45	1.07	2.39	101.90	0.76	0.31
31	520.0	0.520	50	27	9.3	0.62	0.42	1.04	2.48	102.10	0.73	0.31
32	540.0	0.540	50	27	9.6	0.62	0.40	1.02	2.53	102.20	0.71	0.31
33	560.0	0.560	50	27	10.0	0.61	0.40	1.02	2.52	102.20	0.71	0.31
34	580.0	0.580	50	27	10.3	0.61	0.48	1.09	2.28	101.70	0.78	0.31
35	600.0	0.600	51	28	10.7	0.63	0.48	1.11	2.33	101.70	0.79	0.32
36	620.0	0.620	51	28	11.0	0.63	0.45	1.07	2.41	101.90	0.76	0.31
37	640.0	0.640	51	28	11.4	0.63	0.45	1.07	2.40	101.90	0.76	0.31
38	660.0	0.660	51	28	11.8	0.62	0.48	1.10	2.31	101.70	0.79	0.31
39	680.0	0.680	51	28	12.1	0.62	0.37	0.99	2.66	102.40	0.68	0.31
40	700.0	0.700	51	28	12.5	0.62	0.37	0.99	2.65	102.40	0.68	0.31
41	720.0	0.720	51	28	12.8	0.62	0.40	1.02	2.53	102.20	0.71	0.31
42	740.0	0.740	52	29	13.2	0.63	0.43	1.07	2.47	102.00	0.75	0.32
43	760.0	0.760	52	29	13.5	0.63	0.36	0.99	2.76	102.50	0.68	0.32
44	780.0	0.780	52	29	13.9	0.63	0.37	1.00	2.68	102.40	0.69	0.31
45	800.0	0.800	52	29	14.3	0.63	0.42	1.04	2.50	102.10	0.73	0.31
46	820.0	0.820	53	30	14.6	0.65	0.36	1.01	2.79	102.50	0.68	0.32
47	840.0	0.840	53	30	15.0	0.64	0.35	0.99	2.86	102.60	0.67	0.32
	860.0	0.860	53	30	15.3	0.64	0.36	1.00	2.78	102.50	0.68	0.32
	880.0	0.880	53	30	15.7	0.64	0.37	1.01	2.70	102.40	0.69	0.32
50	900.0	0.900	54	31	16.0	0.66	0.36	1.02	2.82	102.50	0.69	0.33



TYPE OF TEST:

CU with Pore Pressures

SAMPLE TYPE: UNDISTURBED

DESCRIPTION: BLACK GRAY SANDY
SILTY CLAY

LL= 45 PL= 20 PI= 25

SPECIFIC GRAVITY= 2.6

REMARKS:

SAMPLE NO.:		1	2
INITIAL	WATER CONTENT, %	157.5	126.3
	DRY DENSITY, pcf	32.5	36.4
	SATURATION, %	102.4	95.0
	VOID RATIO	3.999	3.457
	DIAMETER, in	2.86	2.86
	HEIGHT, in	5.63	5.94
AT TEST	WATER CONTENT, %	136.1	105.8
	DRY DENSITY, pcf	35.8	43.3
	SATURATION, %	100.0	100.0
	VOID RATIO	3.538	2.751
	DIAMETER, in	2.77	2.70
	HEIGHT, in	5.45	5.61
Strain rate, in/min		0.0040	0.0040
EFF CELL PRESSURE, ksf		0.72	3.60
FAIL. STRESS, ksf		0.49	0.66
TOTAL PORE PR., ksf		12.11	14.76
STRAIN, %		11.4	16.0
ULT. STRESS, ksf			
TOTAL PORE PR., ksf			
STRAIN, %			
$\bar{\sigma}_1$ FAILURE, ksf		0.62	1.02
$\bar{\sigma}_3$ FAILURE, ksf		0.13	0.36

CLIENT: SOUTH CAROLINA STATE PORTS

AUTHORITY

PROJECT: CHARLESTON NAVAL BASE CONTAINER
TERMINAL

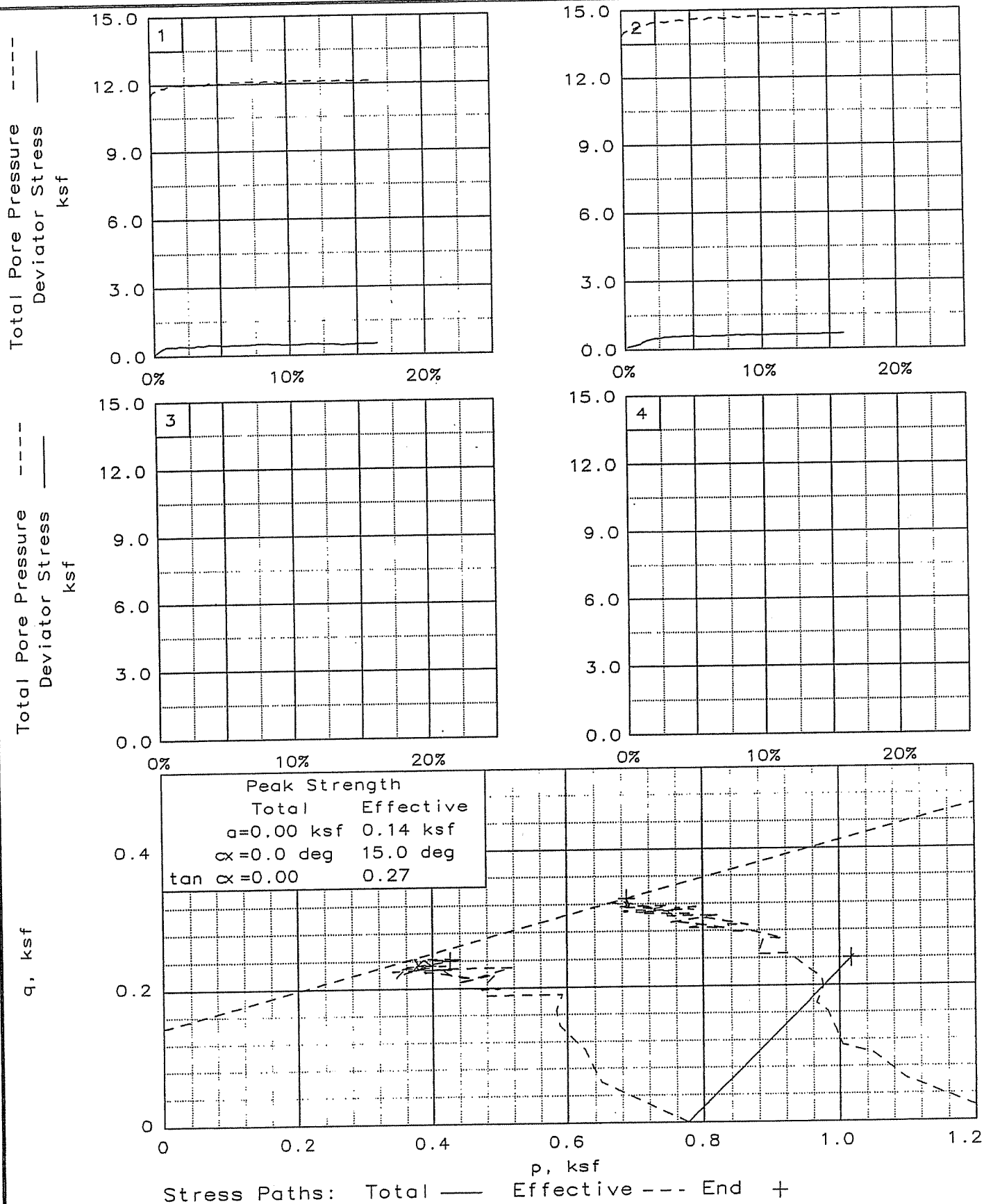
SAMPLE LOCATION: PAW30/UD1

PROJ. NO.: 1131-03-264 DATE: 7/15/03

TRIAxIAL SHEAR TEST REPORT

S & ME, INC.

Fig. No.: PAW30



Client: SOUTH CAROLINA STATE PORTS AUTHORITY
 Project: CHARLESTON NAVAL BASE CONTAINER TERMINAL
 Location: PAW30/UD1
 File: CHARLES3

Project No.: 1131-03-264

Fig. No.: PAW30

LABORATORY TESTING PROCEDURES

Grain Size Tests (ASTM D 1140 and ASTM D 422)

Grain size tests were performed to determine the soil particle size distribution. The amount of material finer than the #200 sieve was determined by washing the sample over that particular size sieve. The grain size distribution of the soil retained on the #200 sieve was then determined by passing the retained portion through a standard set of nested sieves.

Atterberg Limits Test (ASTM D 4318)

Atterberg Limits tests were performed to determine the soil plasticity characteristics. The soil plasticity index (PI) is representative of this characteristic and is bracketed by the liquid limit (LL) and the plastic limit (PL). The liquid limit is the moisture content at which the soil will flow as a heavy viscous fluid. The plastic limit is the moisture content at which the soil begins to lose its plasticity. The difference between the liquid limit and plastic limit is the plasticity index.

Natural Moisture Content Test (ASTM D 2216)

Moisture content tests were conducted to determine the ratio, expressed as a percentage, of the weight of water in a given amount of soil to the weight of the solid particles.

Triaxial Test

Soil shear strength parameters of cohesion and internal friction are typically used in geotechnical engineering analyses of slope stability, bearing capacity, and lateral earth pressure.

The triaxial shear test is performed by preparing a cylindrical soil specimen which is covered by a thin membrane. The soil sample is encased inside a triaxial cell beneath an axial loading piston. To simulate lateral confinement, a hydrostatic pressure is applied to the sample by pressurizing the triaxial cell. Following, the application of confining pressure, shear stresses are created in the sample by application of a vertical load through the piston. To obtain Mohr's envelope, several triaxial tests are performed on specimens of the same soil using different cell pressures.

There are three conditions under which triaxial shear tests are performed: unconsolidated-undrained, consolidated-undrained, and consolidated-drained. Each of these three loading conditions are used to simulate the effect of pore water pressure created by site-specific loading conditions. For this project, the tests were performed under consolidated-undrained conditions.

Consolidation Tests

Consolidation is a process of soil mass volume change caused by load application. The change in soil volume is accomplished by a relief in hydrostatic pore pressure within the soil mass as the soil mass drains and adjusts to a new loading condition.

For each consolidation test, a section of undisturbed sample is extruded from a sampling tube. The sample is then trimmed in to a disc 2.4 inches in diameter and 1 inch thick. The disc is confined in a stainless steel ring between porous plates and subjected to incrementally increasing vertical loads. The resulting deformations are measured with a micrometer dial gauge.