

LOG OF BORING BW-2

PROJECT: Oliver Point and Oliver Reef Restoration Project

CLIENT: Matagorda County, TX

ELEVATION (FT) DEPTH (FT)	SAMPLE TYPE	SYMBOL	COORDINATES: N 28° 38' 31.30" W 96° 14' 07.90"	(P) POCKET PEN (tsf) (T) TORVANE (tsf)	STD. PENETRATION TEST BLOWCOUNT	N ₆₀	MOISTURE CONTENT (%)	DRY UNIT WEIGHT (pcf)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	COMPRESSIVE STRENGTH (tsf)	FAILURE STRAIN (%)	CONFINING PRESSURE (psi)	PASSING #200 SIEVE (%)	OTHER TESTS PERFORMED
			SURFACE ELEVATION:												
			DRILLING METHOD: Dry Augered: to Wash Bored: 0' to 30'												
			MATERIAL DESCRIPTION												
0			Firm gray LEAN CLAY w/ SILT (CL) w/ sand pockets & shell fragments	(P)2.50	3/6" 3/6" 5/6"		30	95	67	40	1.79	4 *	5		
			Firm tan & reddishbrown FAT CLAY (CH) w/ silt pockets, ferrous & calcareous nodules stiff @ 3'-5'												
5			Medium dense light brown SILTY SAND (SM) w/ clay pockets		8/6" 10/6" 8/6" 5/6" 5/6" 8/6"		26							24	
10															
15			Stiff tan & reddishbrown SANDY LEAN CLAY (CL) w/ sand & silt pockets		5/6" 6/6" 9/6"		26		0	NP					
			Medium dense light brown SILTY SAND (SM) w/ shell fragments & clay pockets												
20			Stiff tan & reddishbrown FAT CLAY (CH) w/ ferrous nodules & sand pockets	(P)3.25	5/6" 6/6" 6/6"		21	107	42	22	1.99	15	7		
			Very stiff tan & reddishbrown SANDY LEAN CLAY (CL) w/ ferrous nodules, sand & silt pockets												
25			-w/ calcareous nodules @ 23'-25'	(P)3.75											
30			Medium dense reddishbrown SILTY SAND (SM) w/ clay pockets		12/6" 10/6" 12/6"		23							40	
			Bottom @ 30'												
35															

COMPLETION DEPTH: 30 ft
DATE BORING STARTED: 10/4/2022
DATE BORING COMPLETED: 10/4/2022
LOGGER: Charlie H.
PROJECT NO.: 21.14.259

NOTES: Water Depth at 3.3' @ 11:35am.
Boring backfilled with soil cuttings.
SPT Hammer Type: Safety Hammer Drilling Equipment: Air Boat Rig

SUMMARY OF LABORATORY TESTS

Project No. 21.14.259

Client: Matagorda County, TX

Project: Oliver Point and Oliver Reef Restoration Project

Boring No.	Sample No.	Depth (ft)	Pocket Pen. (tsf)	Torvane (tsf)	Soil Description	USCS	Water Content (%)	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plast. Index	Finer than #200 Sieve (%)	pH	Lab Vane Shear (tsf)	Uc/UU. Compr. (tsf)	Failure Strain (%)	Conf. Pres. (psi)	Failure Type
BW-1																		
		0																
		0.5																
		3	1.50			CL	22.4	110.9	38	17	21	63.4		0.33	0.66			
		6.5			Reddish-brown SILTY SAND	SM	24.2					25.6						
		9.5																
		10																
		12	3.00		Reddish-brown LEAN CLAY with SAND; calcareous	CL	16.2	115.1	34	17	17				2.13	14.6	6.0	Bulge
		15	3.25			CH	30.6	95.5										
		16																
		18.5																
		19																
		23.5			Reddish-brown SILTY SAND	SM	22.1					33.3						
		28.5																
		30																
BW-2																		
		0																
		0.5																
		1																
		3	3.00		Reddish-brown FAT CLAY; calcareous	CH	29.9	95.3	67	27	40				1.79	4.4	5.0	Slickensided
		6.5																
		9.5			Reddish-brown SILTY SAND	SM	25.6					23.7						
		12.5				SC-SM	26.2		NV	NP	NP							
		13																
		15.5				CH	22.1					90.1						
		18	3.00		Reddish-brown LEAN CLAY with SAND	CL	21.1	107.4	42	20	22				1.99	14.6	7.0	Bulge
		23																
		27																
		28.5				SM	23.1					40.2						
		30																
BW-3																		
		0																
		0.5																
		3.5				OL	62.6		49	26	23	77.4						
		6.5																
		9	2.50			SC	15.9	117.0				47.9						

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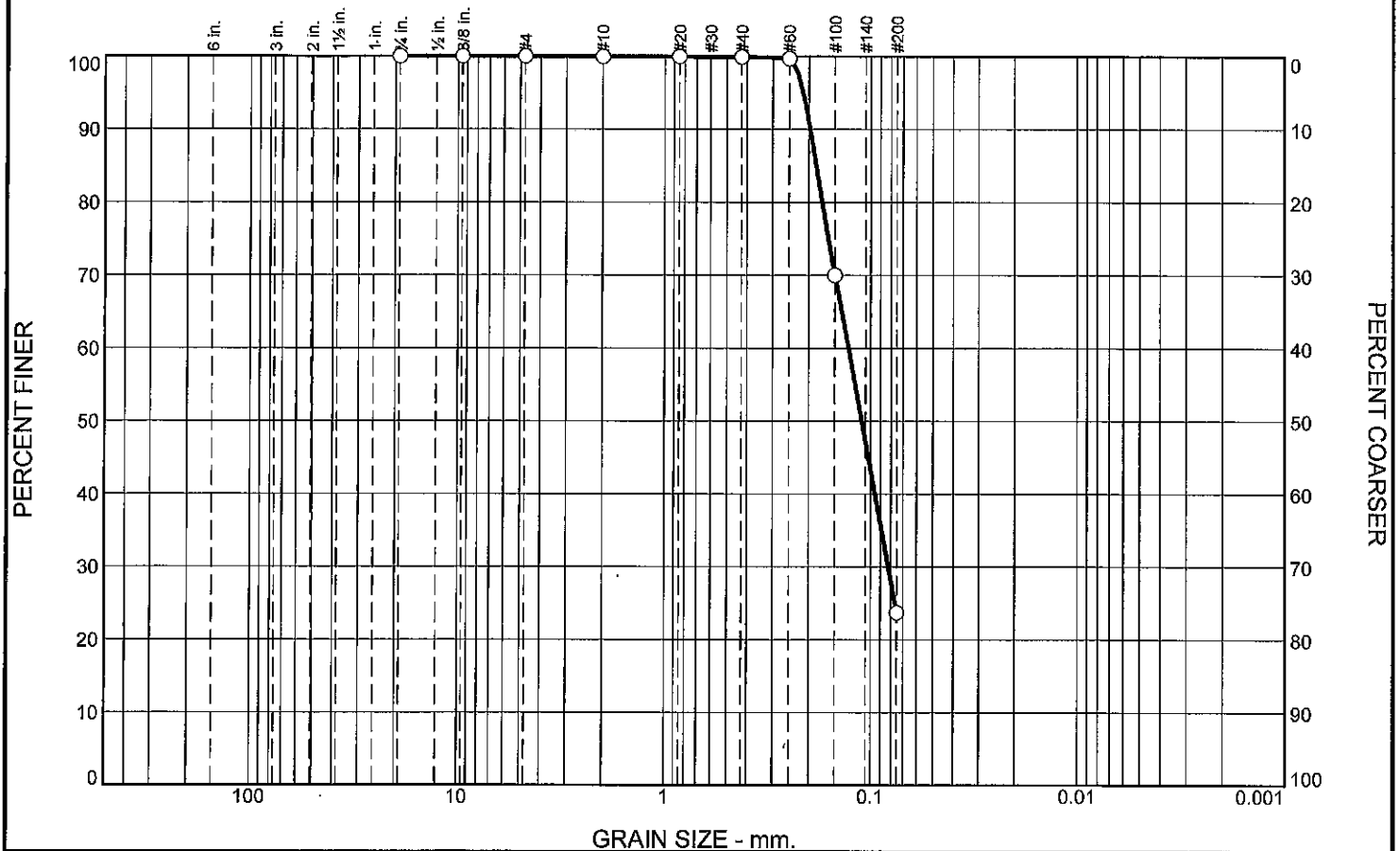
TOLUNAY-WONG



ENGINEERS, INC.

ASTM D422 Sieve Analysis

ASTM D422 & D1140



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.1	76.2	23.7	

Test Results (ASTM D422 & D1140)				
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)	Pct. of Fines
3/4	100.0			
3/8	100.0			
#4	100.0			
#10	100.0			
#20	100.0			
#40	99.9			
#60	99.7			
#100	70.0			
#200	23.7			

* (no specification provided)

Material Description
 Reddish-brown SILTY SAND

Atterberg Limits
 PL= LL= PI=

Classification
 USCS= SM AASHTO=

Test Remarks

Source of Sample: BW-2

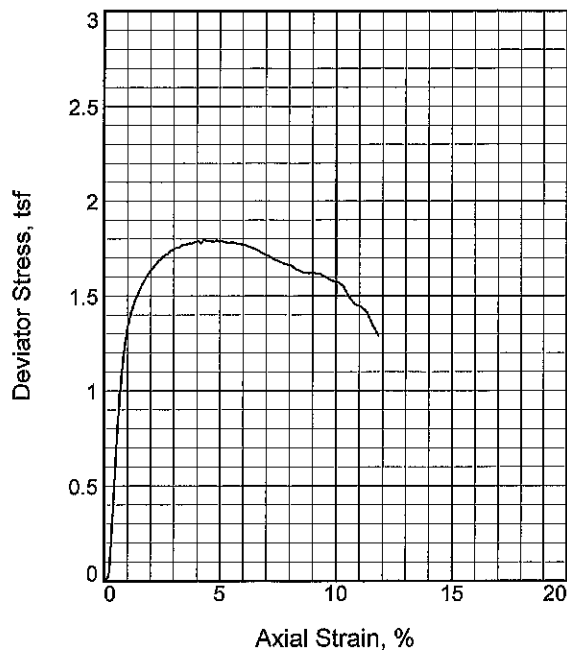
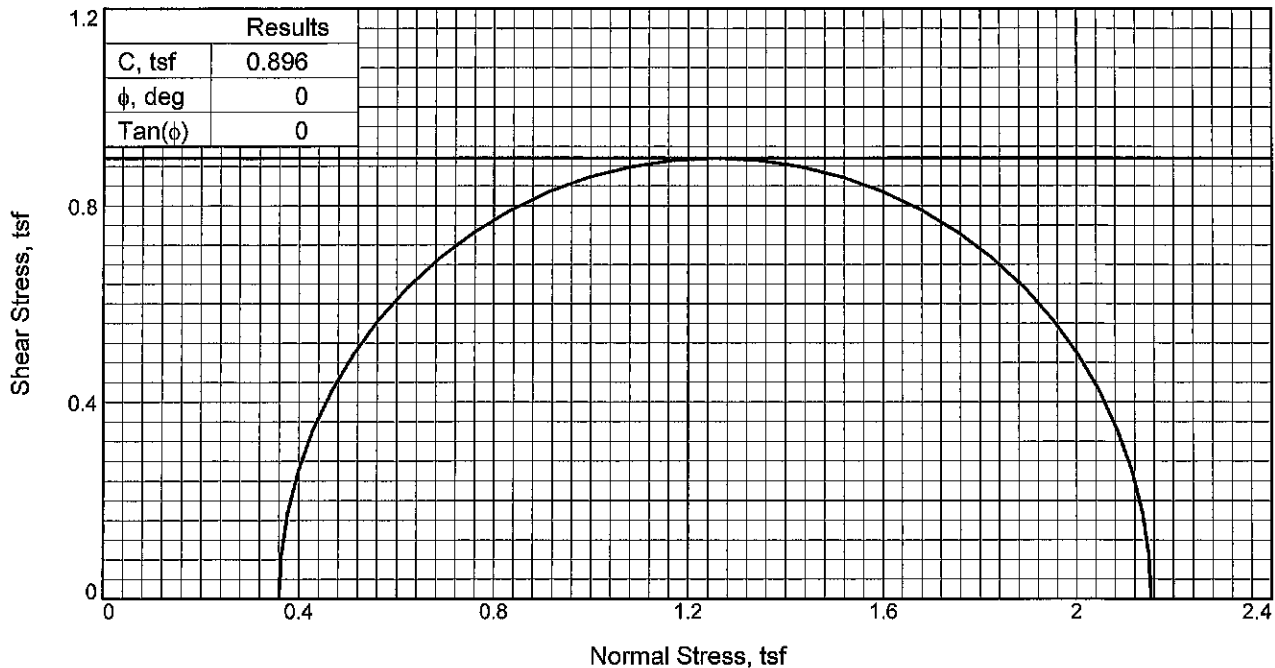
Depth: 9.5

Sample Date:

**Tolunay-Wong
Engineers, Inc.
Houston, Texas**

Client: Matagorda County, TX
Project: Oliver Point and Oliver Reef Restoration Project
Project No: 21.14.259

Figure



Sample No.		1
Initial	Water Content, %	29.9
	Dry Density, pcf	95.3
	Saturation, %	98.2
	Void Ratio	0.8679
	Diameter, in.	2.75
	Height, in.	5.91
At Test	Water Content, %	28.6
	Dry Density, pcf	95.3
	Saturation, %	94.0
	Void Ratio	0.8679
	Diameter, in.	2.75
	Height, in.	5.91
Strain rate, %/min.		1.00
Back Pressure, psi		0.00
Cell Pressure, psi		5.00
Fail. Stress, tsf		1.79
Strain, %		4.4
Ult. Stress, tsf		
Strain, %		
σ_1 Failure, tsf		2.15
σ_3 Failure, tsf		0.36

Type of Test:

Unconsolidated Undrained

Sample Type: Undisturbed

Description: Reddish-brown FAT CLAY;
calcareous

LL= 67 PL= 27 PI= 40

Assumed Specific Gravity= 2.85

Remarks:

Test method: ASTM D2850

Failure type: Slickensided

Client: Matagorda County, TX

Project: Oliver Point and Oliver Reef Restoration Project

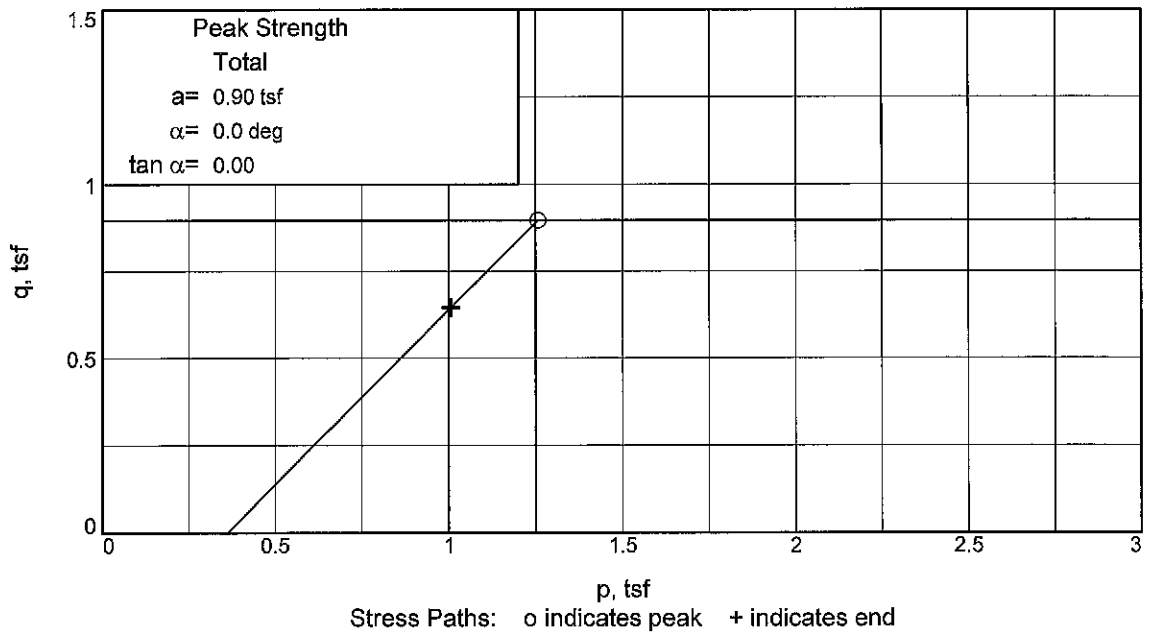
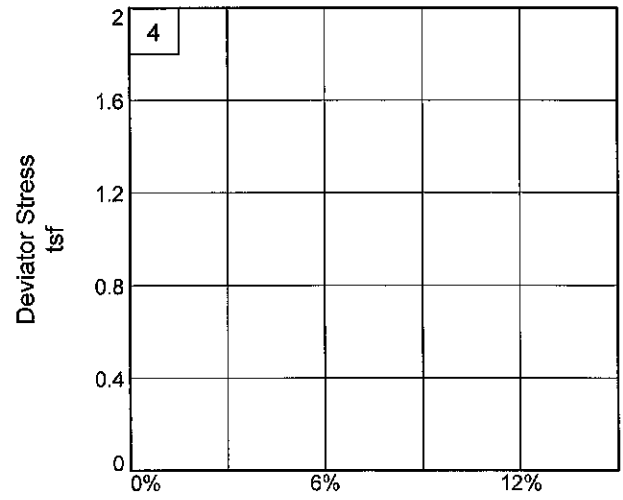
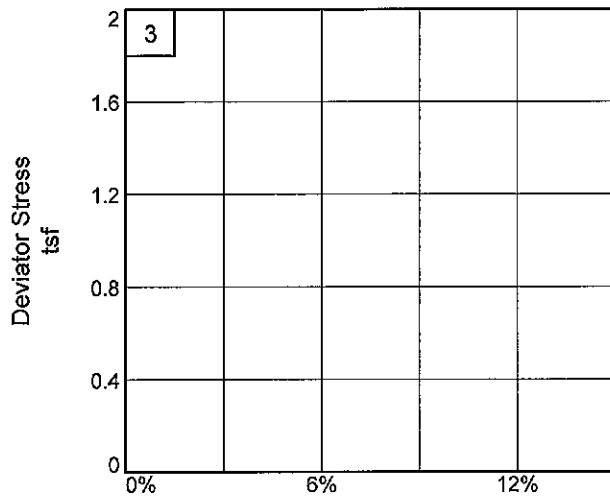
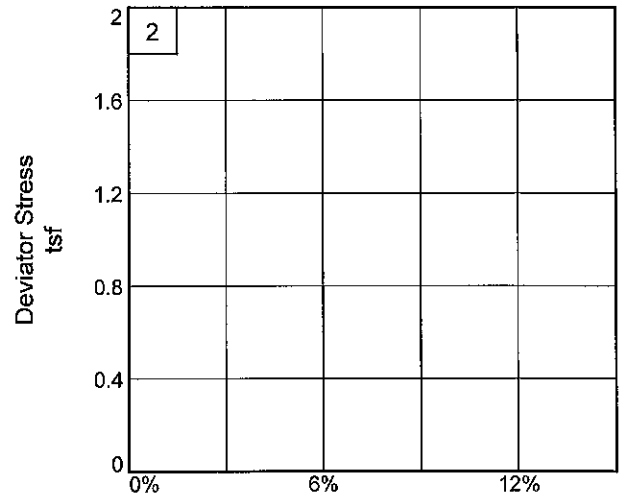
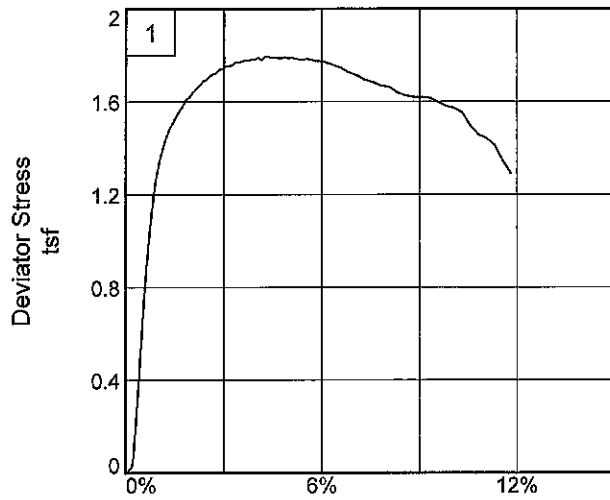
Source of Sample: BW-2 **Depth:** 3

Proj. No.: 21.14.259

Date Sampled: 11/1/22

TRIAXIAL SHEAR TEST REPORT
Tolunay-Wong Engineers, Inc.
Houston, Texas

Figure _____



Client: Matagorda County, TX

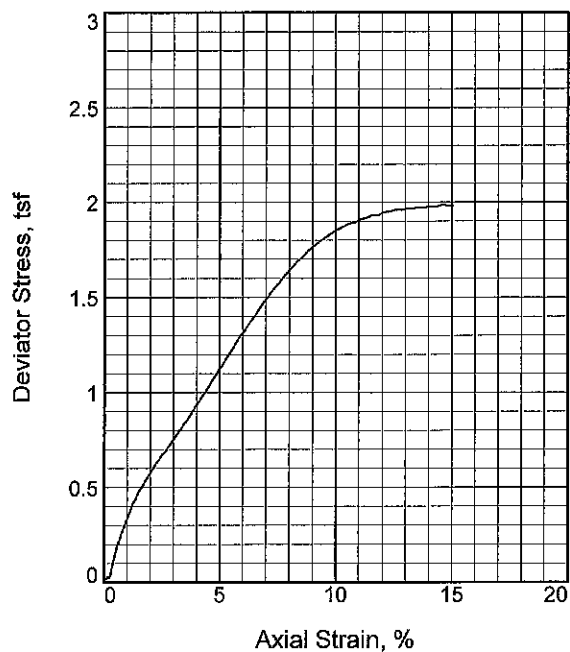
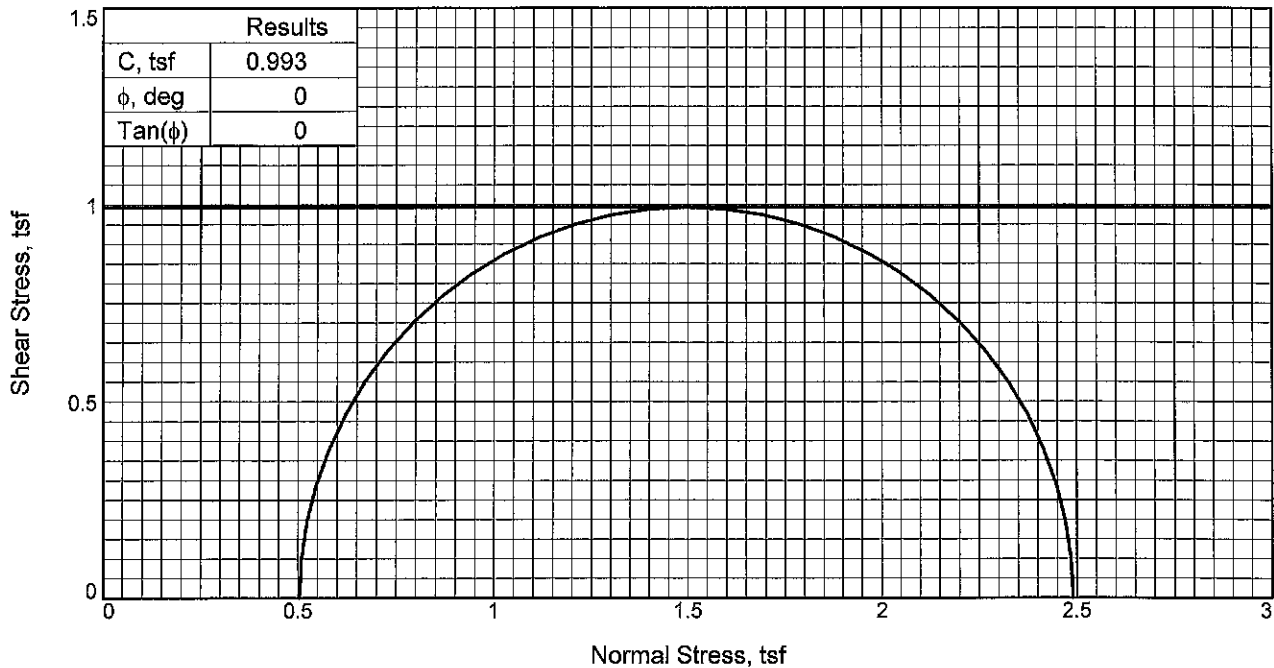
Project: Oliver Point and Oliver Reef Restoration Project

Source of Sample: BW-2 **Depth:** 3

Project No.: 21.14.259

Figure _____

TOLUNAY-WONG ENGINEERS, INC.



Sample No.		1
Initial	Water Content, %	21.1
	Dry Density, pcf	107.5
	Saturation, %	97.0
	Void Ratio	0.5976
	Diameter, in.	2.78
	Height, in.	5.89
At Test	Water Content, %	20.9
	Dry Density, pcf	107.5
	Saturation, %	96.1
	Void Ratio	0.5976
	Diameter, in.	2.78
	Height, in.	5.89
Strain rate, %/min.		1.00
Back Pressure, psi		0.00
Cell Pressure, psi		7.00
Fail. Stress, tsf		1.99
Strain, %		14.6
Ult. Stress, tsf		
Strain, %		
σ_1 Failure, tsf		2.49
σ_3 Failure, tsf		0.50

Type of Test:

Unconsolidated Undrained

Sample Type: Undisturbed

Description: Reddish-brown LEAN CLAY with SAND

LL= 42 PL= 20 PI= 22

Assumed Specific Gravity= 2.75

Remarks:

Test method: ASTM D2850

Failure type: Bulge

Client: Matagorda County, TX

Project: Oliver Point and Oliver Reef Restoration Project

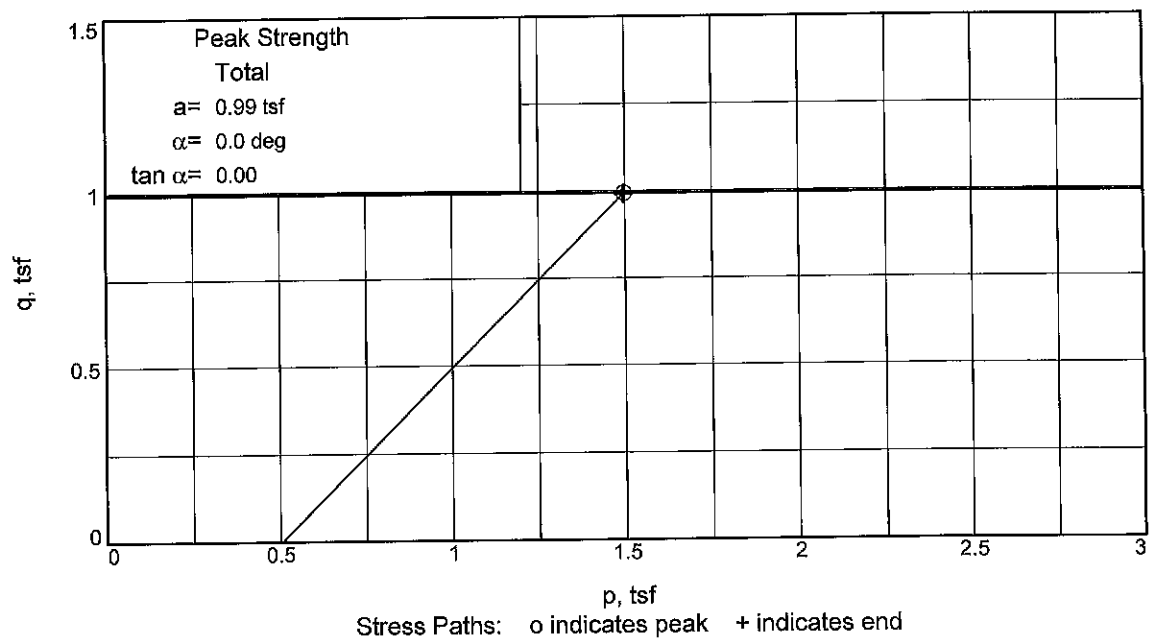
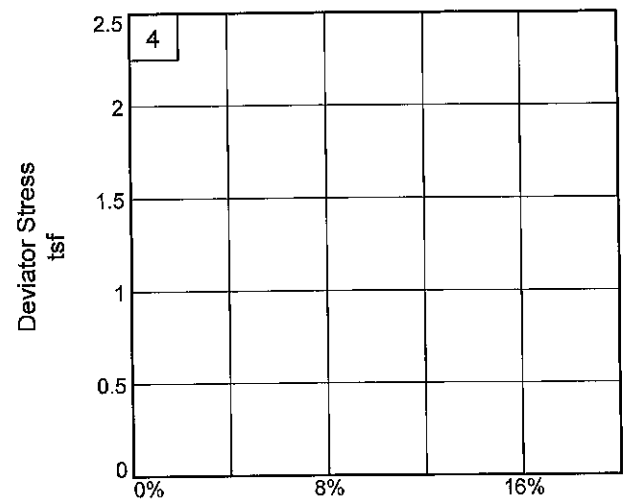
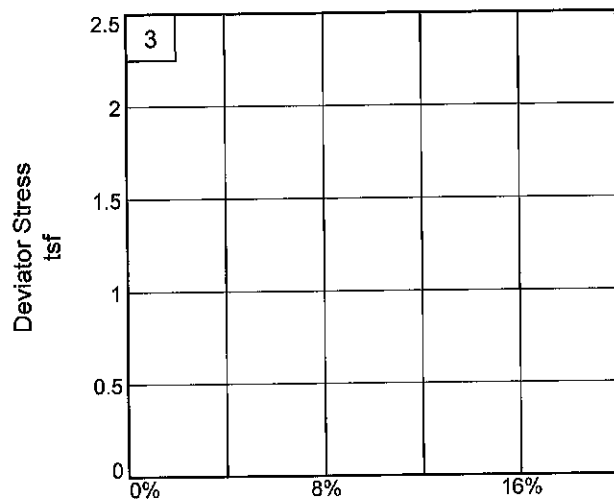
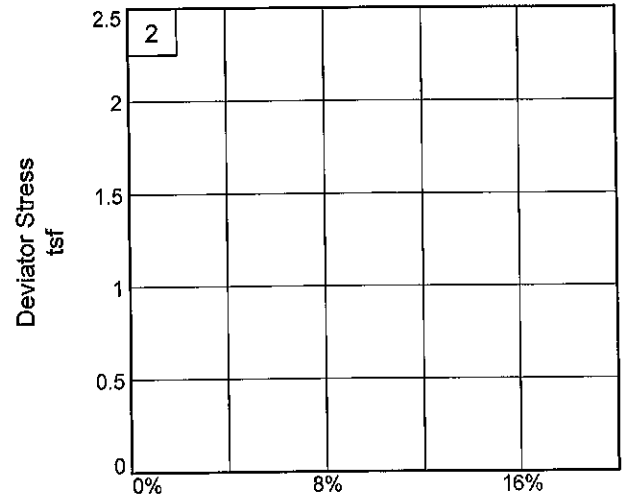
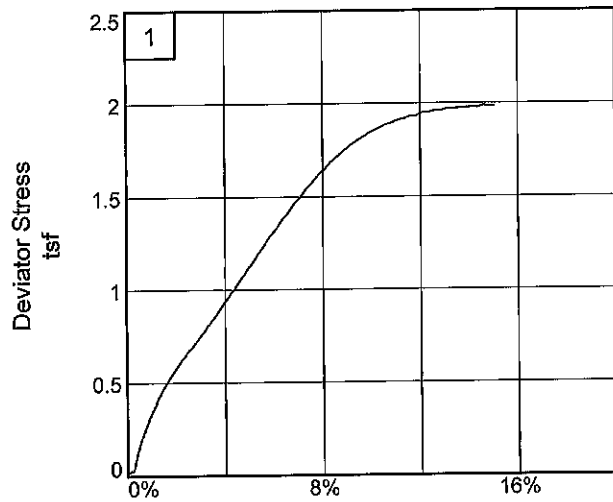
Source of Sample: BW-2 **Depth:** 18

Proj. No.: 21.14.259

Date Sampled: 11/1/22

TRIAXIAL SHEAR TEST REPORT
Tolunay-Wong Engineers, Inc.
Houston, Texas

Figure _____



Client: Matagorda County, TX

Project: Oliver Point and Oliver Reef Restoration Project

Source of Sample: BW-2

Depth: 18

Project No.: 21.14.259

Figure _____

TOLUNAY-WONG ENGINEERS, INC.