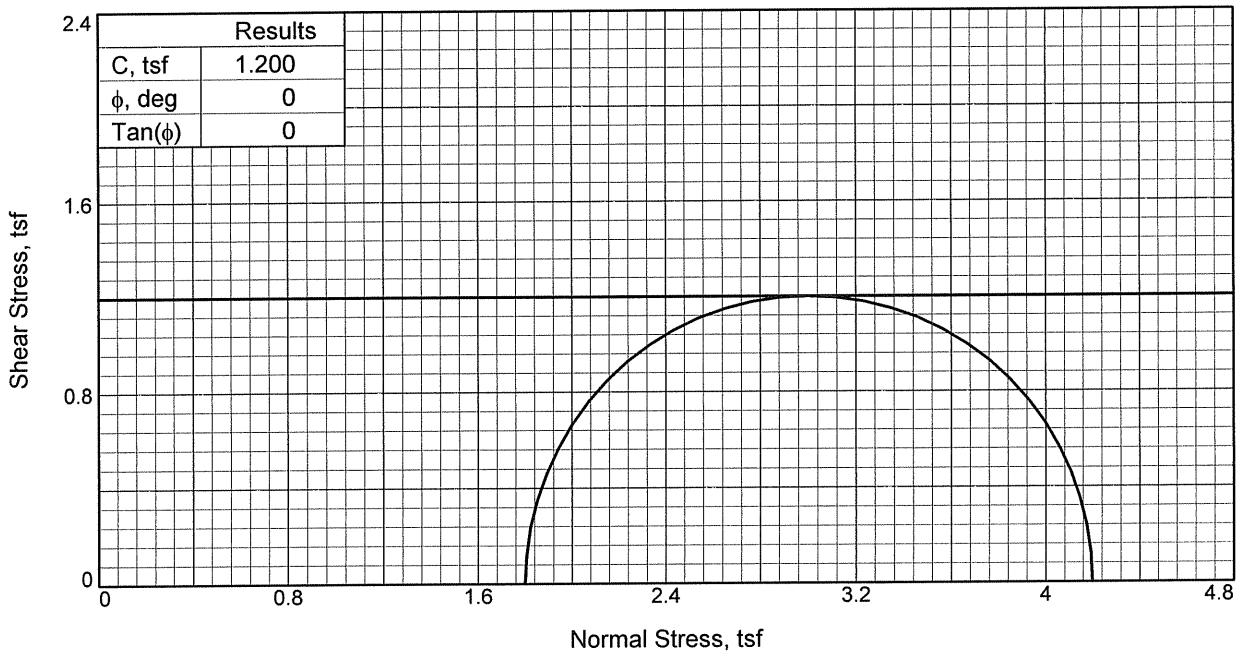
Project No.: 03.14.859.054

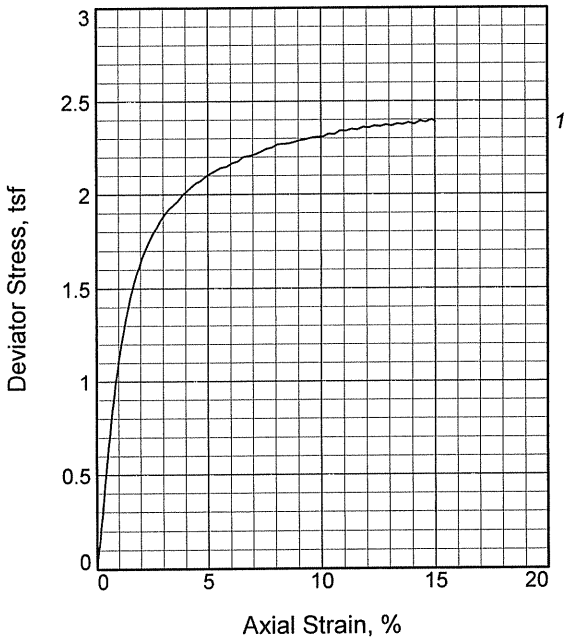
Client: United States Army Corps of Engineers

Project: Beltway 8 PA Lab Testing
Contract No. DACW64-03-D-0008, Delivery Order No. 0054

Boring No.	Sample No.	Soil Description	USCS	Water Content (%)	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plast. Index	Finer than #200 Sieve (%)	Uc/UU. Compr. (tsf)	Cell Press. (psi)	Failure Strain (%)	Failure Type
06-01													
	2	Gray and tan LEAN CLAY; traces of ferrous nodules and roots	CL	19.8		35	18	17	86.0				
	4	Gray and tan LEAN CLAY with SAND; few calcareous nodules and traces of ferrous nodules	CL	19.0		48	17	31	83.6				
	6	Gray and tan SANDY FAT CLAY; traces of ferrous nodules	CH	20.1									
	8	Gray and tan FAT CLAY; few ferrous nodules and traces of calcareous nodules	CH	32.8									
	10	Gray and tan FAT CLAY; traces of ferrous nodules	CH	35.1									
06-02													
	2	Gray and tan FAT CLAY; traces of ferrous nodules	CH	31.1									
	3	Gray and tan FAT CLAY; traces of ferrous and calcareous nodules	CH	23.7		59	20	39	90.5				
	4	Gray and tan FAT CLAY; few ferrrous and calcareous nodules	CH	21.3									
	5	Tan and gray FAT CLAY; traces of calcareous nodules and slickensides	CH	24.2	101.9	63	22	41	96.9	1.57	13	7.8	Bulge/45 degree
	6	Gray and tan FAT CLAY; traces of ferrous and calcareous nodules	CH	22.6									
	7	Gray and tan FAT CLAY; traces of ferrous and calcareous nodules	CH	27.9									
	9	Gray and tan FAT CLAY; traces of ferrous nodules	CH	26.4									
06-03													
	4	Gray and tan FAT CLAY; few calcareous nodules and traces of ferrous nodules	CH	22.3	105.8	61	20	41	89.6	2.40	25	14.9	Bulge
	6	Gray and tan FAT CLAY; few ferrous and calcareous nodules	CH	19.6									
	8	Gray and tan FAT CLAY; traces of ferrous nodules	CH	29.1									
	10	Gray and tan FAT CLAY; traces of ferrous and calcareous nodules	CH	36.2		83	28	55	98.2				
06-04													
	2	Dark gray and tan FAT CLAY; traces of ferrous nodules and roots	CH	22.0									
	3	Gray and tan FAT CLAY; traces of ferrous nodules and roots	CH	24.1									
	4	Gray and tan FAT CLAY; traces of ferrous and calcareous nodules	CH	22.2									
	5	Gray and tan FAT CLAY; traces of ferrous and calcareous nodules	CH	22.6		57	18	39	89.1				
	6	Gray and tan FAT CLAY; traces of ferrous nodules	CH	23.9									

Our letters and reports are for the exclusive use of the CLIENT. This document shall not be reproduced, except in full, without our prior written approval.





Sample No.		1
Initial	Water Content, %	22.3
	Dry Density, pcf	105.7
	Saturation, %	98.5
	Void Ratio	0.6235
	Diameter, in.	2.84
	Height, in.	5.90
At Test	Water Content, %	22.3
	Dry Density, pcf	105.7
	Saturation, %	98.5
	Void Ratio	0.6235
	Diameter, in.	2.84
	Height, in.	5.90
Strain rate, %/min.		1.00
Back Pressure, psi		0.00
Cell Pressure, psi		25.00
Fail. Stress, tsf		2.40
Strain, %		14.9
Ult. Stress, tsf		2.39
Strain, %		
σ_1 Failure, tsf		4.20
σ_3 Failure, tsf		1.80

Type of Test:
Unconsolidated Undrained

Sample Type: Undisturbed

Description: Gray and tan FAT CLAY; few calcareous nodules and traces of ferrous nodules

LL= 61 **PL=** 20 **PI=** 41

Assumed Specific Gravity= 2.75

Remarks:
Failure Type: Bulge
Test Method: ASTM D 2850

Client: United States Army Corps of Engineers

Project: Beltway 8 PA Lab Testing
Contract No. DACW64-03-D-0008, Delivery Order No. 0054

Source of Sample: 06-03

Sample Number: 4

Proj. No.: 03.14.859.054 **Date Sampled:** 10/5/06

TRIAXIAL SHEAR TEST REPORT

Tolunay-Wong Engineers, Inc.