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Legend for Geotechnical Data

Grain Size Scale for Sediments

Unified Soil Classification System (USCS) (ASTM D2487/2488)		APTIM Standard Sieve Stack		
		Sieve Number	Size (phi)	Size (mm)
Gravel	Coarse Gravel	3/4	-4.25	19.03
	Fine Gravel	5/8	-4.00	16.00
		7/16	-3.50	11.20
		5/16	-3.00	8.00
		3 ½	-2.50	5.60
		4	-2.25	4.75
Sand	Coarse Sand	5	-2.00	4.00
		7	-1.50	2.80
		10	-1.00	2.00
	Medium Sand	14	-0.50	1.40
		18	0.00	1.00
		25	0.50	0.71
		35	1.00	0.50
	Fine Sand	45	1.50	0.36
		60	2.00	0.25
		80	2.50	0.18
		120	3.00	0.13
		170	3.50	0.09
		200	3.75	0.08
Fines	Silt/Clay	230	4.00	0.06

Proportional Definition of Descriptive Terms

Descriptive Term	Range of Proportions
Sandy, gravelly, etc.	35 % to 50 %
Some	20 % to 35 %
Little	10 % to 20 %
Trace	1 % to 10 %

Consistency of Cohesive Soils

Description	Consistency Index	Approximate Undrained Shear Strength (kPa)	Field Identification
Hard		Over 300	Indented with difficulty by thumbnail, brittle.
Very Stiff	>1	150-300	Readily indented by thumbnail, still very tough.
Stiff	0.75-1	75-150	Readily indented by thumb but penetrated only with difficulty. Cannot be moulded in the fingers.
Firm	0.5-0.75	40-75	Can be penetrated several centimeters by thumb with moderate effort and moulded in fingers by strong pressure.
Soft	< 0.5	20-40	Easily penetrated several centimeters by thumb, easily moulded.
Very Soft		Less than 20	Easily penetrated several centimeters by fist, exudes between fingers when squeezed in fist.

Source: Engineering Properties of Soils and Rocks, Fourth Edition by Fred G. Bell

USCS Classifications

Refers to the Army Corps of Engineers Unified Soils Classification System. Class types
are defined primarily by grain size, sorting and percent of material passing the #200 sieve.
Classification of materials on the core logs based on visual field examinations are identified on
the core logs under the Classification of Materials Description.   Classifications based on
laboratory sieve analyses are identified on the core logs in the Legend and under Remarks.

GW		Well graded gravels or gravel-sand mixtures, little or no fines	ML	Inorganic silts and very fine sands, rock flour, sandy silts or clayey silts with slight plasticity
GP		Poorly graded gravels or gravel-sand mixtures, w/ little or no fines	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soild, elastic silts
GM		Silty gravels, gravel-sand-silt mixtures	OL	Organic silts and organic silt-clays of low plasticity
GC		Clayey gravels, gravel-sand-clay mixtures	OH	Organic clays of medium to high plasticity, organic silts
SW		Well graded sands or gravelly sands, little or no fines	CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
SP		Poorly graded sands or gravelly sands, little or no fines	CH	Inorganic clays of high plasticity, fat clays
SM		Silty sands, sand-silt mixtures	PT	Peat and other highly organic soils
SC		Clayey sands, sand-clay mixtures	SP-SM	Poorly-graded silty sand
SW-SM		Well-graded silty sand	SM-SC	Silty clayey sand
GW-GM		Well-graded silty gravel	ML-CL	Inorganic silty lean clay
GM-GC		Clayey silty gravel		

Note: Information is after ACOE Atlantic Division Manual # 1110-1-1 titled *Engineering and Design
Geotechnical Manual for Surface and Subsurface Investigations*

DRILLING LOG	DIVISION	INSTALLATION		SHEET 1
				OF 1 SHEETS

1. PROJECT
TX GLO Region 1 Recon Geotechnical Sand Search
Jefferson, Chambers, Galveston and Brazoria Co.
APTIM

9. SIZE AND TYPE OF BIT   3.0 In.

10. COORDINATE SYSTEM/DATUM	HORIZONTAL	VERTICAL
Texas State Plane South	NAD 1983	NAVD88

2. BORING DESIGNATION   TXGLO1-VC-23-008
LOCATION COORDINATES (ft)   X = 3,552,974   Y = 13,809,525

11. MANUFACTURER'S DESIGNATION OF DRILL
APTIM SEAS VC-700 Vibracore
☐ AUTO HAMMER
☐ MANUAL HAMMER

3. DRILLING AGENCY   APTIM
CONTRACTOR FILE NO.

12. TOTAL SAMPLES	DISTURBED	UNDISTURBED (UD)
	0	4

4. NAME OF DRILLER   APTIM

13. TOTAL NUMBER CORE BOXES

14. ELEVATION GROUND WATER

5. DIRECTION OF BORING
☒ VERTICAL
☐ INCLINED
DEG. FROM VERTICAL
BEARING

15. DATE BORING	STARTED	COMPLETED
	10-06-23	10-06-23

6. THICKNESS OF OVERBURDEN   0.0 Ft.

16. ELEVATION TOP OF BORING   -21.9 Ft.

7. DEPTH DRILLED INTO ROCK   0.0 Ft.

17. TOTAL RECOVERY FOR BORING   19.2 Ft.

8. TOTAL DEPTH OF BORING   19.1 Ft.

18. SIGNATURE AND TITLE OF INSPECTOR   SF

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS The USCS classification system defines silt as the percent passing the No.200 (0.075 mm) sieve
-21.9	0.0					
-26.8	4.9		LEAN CLAY, very soft, trace shell hash, trace silt, silt distributed in laminae, shell hash distributed between 3.8' & 4.9', dark gray (2.5Y-4/1), (CL).			
-29.7	7.8		LEAN CLAY, hard, some silt, trace organics, trace sand, fine grained, quartz, color is mottled brown (10YR-5/3) and light olive brown (2.5Y-5/3), (CL).		T1	Sample #T1, Depth = 7.1' Ave. Field Vane (tsf): 0.56
					T2	Sample #T2, Depth = 8.1' Ave. Field Vane (tsf): 0.92
-35.7	13.8		FAT CLAY, hard, little sand, fine grained, quartz, little silt, trace organics, yellowish brown (10YR-5/4), (CH).		T3	Sample #T3, Depth = 10.2' Ave. Field Vane (tsf): 0.82
-41.1	19.2		Sandy FAT CLAY, hard, trace organics, trace rock fragments, sand component is fine grained quartz, rock fragments are fragments of partially lithified clay up to 0.25", wavy bedding throughout layer, expansion from 19.1' to 19.2', Bit sample from 18.7' to 19.2', color is mottled yellowish brown (10YR-5/6) and brown (10YR-5/3), (CH).		T4	Sample #T4, Depth = 16.0' Ave. Field Vane (tsf): 0.82
			End of Boring			

REGION1_RECON_GEOTECH.GPJ 3/25/24

Depth scale (right margin): 0, 5, 10, 15, 20, 25

SAJ FORM 1836
JUN 04
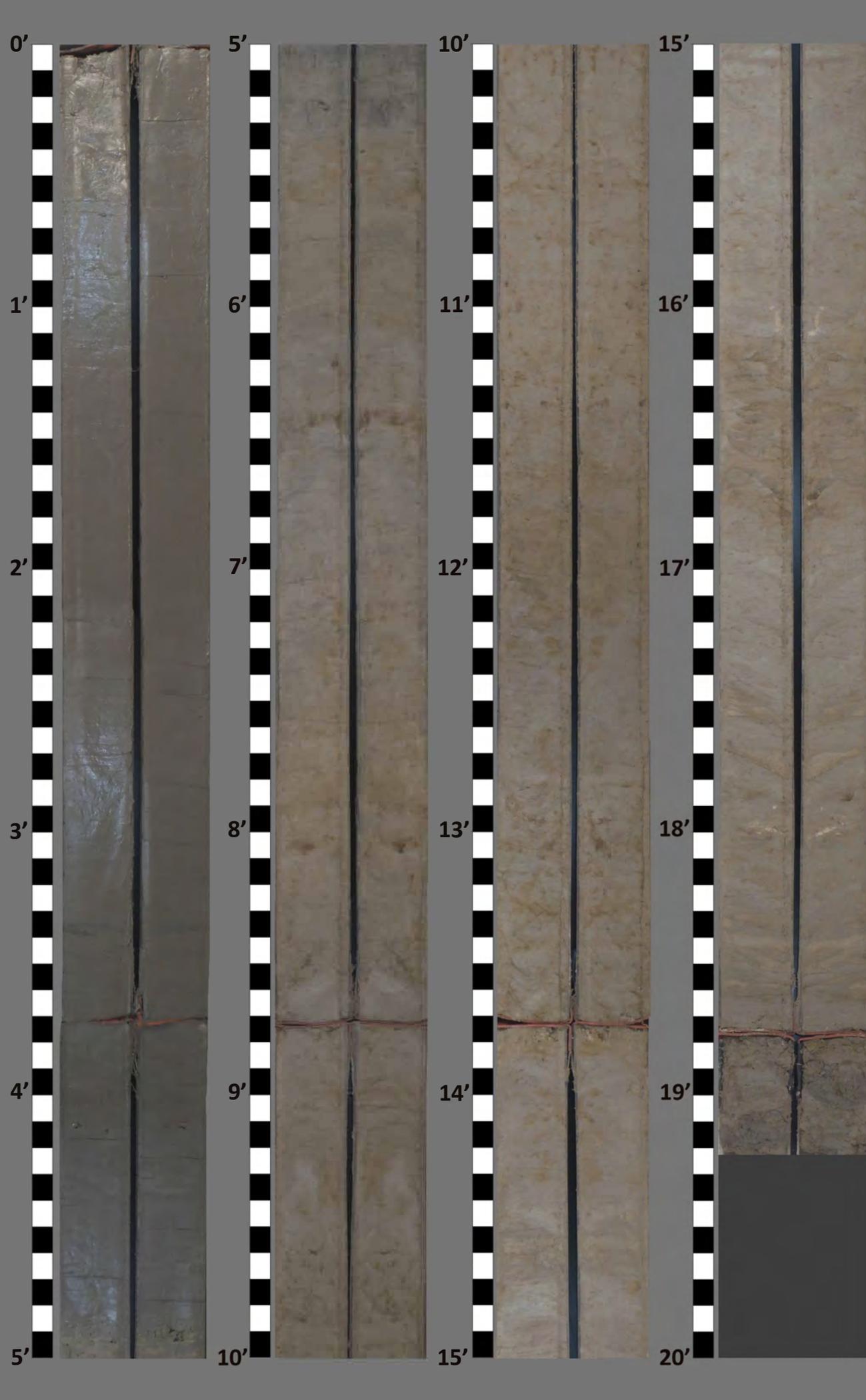
Texas General
Land Office

Texas GLO
Region 1
Geotechnical
Reconnaissance
Survey

TXGLO1-VC-23-008

Date Collected: 10/6/23
Top Elev. (ft NAVD88): -21.9
Bottom Elev. (ft NAVD88): -41.1
Core Length (ft): 19.2

APTIM

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Mini Vane Shear Test Results

CORE ID	SAMPLE DEPTH (ft)	TORVANE (kg/cm²)	TORVANE (tsf)	TORVANE (kpa)	DESCRIPTION[1]
TXGLO1-VC-23-001	No Torvane Conducted				
TXGLO1-VC-23-002	3.0	1.5	0.15	147.10	Stiff
	6.0	1.0	0.10	98.07	Stiff
TXGLO1-VC-23-003	10.3	4.5	0.46	441.30	Hard
	13.4	5.5	0.56	539.37	Hard
	16.3	2.5	0.26	245.17	Very Stiff
TXGLO1-VC-23-004	9.1	3.0	0.31	294.20	Very Stiff
	11.9	5.0	0.51	490.33	Hard
	14.1	6.0	0.61	588.40	Hard
TXGLO1-VC-23-005	4.8	6.0	0.61	588.40	Hard
	7.5	5.0	0.51	490.33	Hard
	13.5	5.5	0.56	539.37	Hard
	16.5	3.5	0.36	343.23	Hard
TXGLO1-VC-23-006	No Torvane Conducted				
TXGLO1-VC-23-007	9.0	5.5	0.56	539.37	Hard
	15.1	1.5	0.15	147.10	Stiff
TXGLO1-VC-23-008	7.1	5.5	0.56	539.37	Hard
	8.1	9.0	0.92	882.60	Hard
	10.2	8.0	0.82	784.53	Hard
	16.0	8.0	0.82	784.53	Hard
TXGLO1-VC-23-009	No Torvane Conducted				
TXGLO1-VC-23-010	8.0	7.0	0.72	686.47	Hard
	10.0	8.5	0.87	833.57	Hard
	12.5	9.5	0.97	931.63	Hard
TXGLO1-VC-23-011	4.4	5.5	0.56	539.37	Hard
	16.0	6.5	0.67	637.43	Hard
TXGLO1-VC-23-012	0.8	0.0	0.00	0.00	Very Soft
	2.6	1.0	0.10	98.07	Stiff
TXGLO1-VC-23-013	3.0	2.5	0.26	245.17	Very Stiff
	6.4	3.0	0.31	294.20	Very Stiff
	13.7	8.0	0.82	784.53	Hard
TXGLO1-VC-23-014	0.8	0.0	0.00	0.00	Very Soft
	1.9	2.0	0.20	196.13	Very Stiff
	5.0	2.5	0.26	245.17	Very Stiff
	10.0	2.8	0.28	269.68	Very Stiff
	18.0	3.0	0.31	294.20	Very Stiff
TXGLO1-VC-23-015	No Torvane Conducted				
TXGLO1-VC-23-016	2.4	7.0	0.72	686.47	Hard
	5.5	7.5	0.77	735.50	Hard