



## Aptim Environmental & Infrastructure, LLC

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### Legend for Geotechnical Data

#### Grain Size Scale for Sediments

| Unified Soil Classification System (USCS)<br>(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 1/2                      | -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

| <u>Descriptive Term</u> | <u>Range of Proportions</u> |
|-------------------------|-----------------------------|
| 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 soil, 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<br>OF 1 SHEETS                                                                                    |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|------------------|-----------------------------------------------------------------------------------------------------------|--|
| <b>1. PROJECT</b><br>TX GLO Region 1 Recon Geotechnical Sand Search<br>Jefferson, Chambers, Galveston and Brazoria Co.  |               |          |                                                                                                                                                                                                                                                                                                                                                                                              | <b>9. SIZE AND TYPE OF BIT</b> 3.0 In.                                        |                  |                                                                                                           |  |
| <b>2. BORING DESIGNATION</b><br>TXGLO1-VC-23-074                                                                                                                                                         |               |          |                                                                                                                                                                                                                                                                                                                                                                                              | <b>10. COORDINATE SYSTEM/DATUM</b><br>Texas State Plane South                 |                  | <b>HORIZONTAL</b><br>NAD 1983                                                                             |  |
| <b>3. DRILLING AGENCY</b><br>APTIM                                                                                                                                                                       |               |          |                                                                                                                                                                                                                                                                                                                                                                                              | <b>11. MANUFACTURER'S DESIGNATION OF DRILL</b><br>APTIM SEAS VC-700 Vibracore |                  | <b>VERTICAL</b><br>NAVD88                                                                                 |  |
| <b>4. NAME OF DRILLER</b><br>APTIM                                                                                                                                                                       |               |          |                                                                                                                                                                                                                                                                                                                                                                                              | <b>12. TOTAL SAMPLES</b>                                                      |                  |                                                                                                           |  |
| <b>5. DIRECTION OF BORING</b><br><input checked="" type="checkbox"/> VERTICAL<br><input type="checkbox"/> INCLINED                                                                                       |               |          |                                                                                                                                                                                                                                                                                                                                                                                              | <b>13. TOTAL NUMBER CORE BOXES</b>                                            |                  | <b>14. ELEVATION GROUND WATER</b>                                                                         |  |
| <b>6. THICKNESS OF OVERBURDEN</b> 0.0 Ft.                                                                                                                                                                |               |          |                                                                                                                                                                                                                                                                                                                                                                                              | <b>15. DATE BORING</b>                                                        |                  | <b>STARTED</b> 10-16-23                                                                                   |  |
| <b>7. DEPTH DRILLED INTO ROCK</b> 0.0 Ft.                                                                                                                                                                |               |          |                                                                                                                                                                                                                                                                                                                                                                                              | <b>16. ELEVATION TOP OF BORING</b> -35.1 Ft.                                  |                  | <b>COMPLETED</b> 10-16-23                                                                                 |  |
| <b>8. TOTAL DEPTH OF BORING</b> 19.0 Ft.                                                                                                                                                                 |               |          |                                                                                                                                                                                                                                                                                                                                                                                              | <b>17. TOTAL RECOVERY FOR BORING</b> 18 Ft.                                   |                  |                                                                                                           |  |
|                                                                                                                                                                                                          |               |          |                                                                                                                                                                                                                                                                                                                                                                                              | <b>18. SIGNATURE AND TITLE OF INSPECTOR</b><br>SM                             |                  |                                                                                                           |  |
| ELEV.<br>(ft)                                                                                                                                                                                            | DEPTH<br>(ft) | LEGEND   | CLASSIFICATION OF MATERIALS<br>Depths and elevations based on measured values                                                                                                                                                                                                                                                                                                                | %<br>REC.                                                                     | BOX OR<br>SAMPLE | REMARKS<br>The USCS classification system defines silt as the percent passing the No.200 (0.075 mm) sieve |  |
| -35.1                                                                                                                                                                                                    | 0.0           |          |                                                                                                                                                                                                                                                                                                                                                                                              |                                                                               |                  |                                                                                                           |  |
| -35.9                                                                                                                                                                                                    | 0.8           |          | LEAN CLAY, very soft, trace shell hash, trace silt, trace whole shell, shell hash and silt distributed in laminae, 0.4" whole bivalve @ 0.1', dark gray (2.5Y-4/1), (CL).                                                                                                                                                                                                                    |                                                                               | T1               | Sample #T1, Depth = 0.5' Ave. Field Vane (tsf): 0.00                                                      |  |
| -36.9                                                                                                                                                                                                    | 1.8           |          | Sandy SILT, trace shell hash, sand component is very fine grained quartz, very dark greenish gray (10Y-3/1), (ML).                                                                                                                                                                                                                                                                           |                                                                               | 1                | Sample #1, Depth = 1.4' Mean (mm): 0.09, Phi Sorting: 0.75 Fines (230): 26.18% Fines (200): 54.39% (ML)   |  |
| -39.1                                                                                                                                                                                                    | 4.0           |          | FAT CLAY, hard, little silt, trace sand, fine grained, quartz, silt typically distributed in laminae, silt decreases with depth in layer, sand and silt distributed in silty sand pockets typically up to 0.75", oxidation throughout layer, 1.5" silty sand pocket @ 2.2', possible bioturbation between 3.4' & 3.7', color is mottled brown (7.5YR-5/4) and greenish gray (5GY-6/1), (CH). |                                                                               | T2               | Sample #T2, Depth = 3.0' Ave. Field Vane (tsf): 0.36                                                      |  |
| -42.5                                                                                                                                                                                                    | 7.4           |          | FAT CLAY, hard, trace organics, trace rock fragments, trace sand, fine grained, quartz, trace silt, silt distributed in laminae, silt and sand increase with depth in layer, rock fragments typically up to 0.5", (1.5" x 2.0") rock fragment @ 4.7', 1.5" rock fragment @ 6.3', color is mottled grayish brown (2.5Y-5/2) and brown (7.5YR-5/4), (CH).                                      |                                                                               | T3               | Sample #T3, Depth = 5.5' Ave. Field Vane (tsf): 0.59                                                      |  |
| -43.7                                                                                                                                                                                                    | 8.6           |          | FAT CLAY, hard, little silt, trace rock fragments, rock fragments typically up to 0.5", (0.5" x 0.75") rock fragment @ 7.6', possible bioturbation between 8.1' & 8.3', color is mottled brown (7.5YR-5/4) and light brownish gray (2.5Y-6/2), (CH).                                                                                                                                         |                                                                               | T4               | Sample #T4, Depth = 8.2' Ave. Field Vane (tsf): 0.36                                                      |  |
| -46.9                                                                                                                                                                                                    | 11.8          |          | Sandy SILT, trace clay, trace rock fragments, sand component is fine grained quartz, (2.0" x 2.75") clay pocket @ 10.3', 1.5" rock fragment @ 10.8', 1.5" clay pocket @ 11.1', strong brown (7.5YR-4/6), (ML).                                                                                                                                                                               |                                                                               | 2                | Sample #2, Depth = 9.6' Mean (mm): 0.09, Phi Sorting: 0.44 Fines (230): 45.06% Fines (200): 58.32% (ML)   |  |
| -53.1                                                                                                                                                                                                    | 18.0          |          | FAT CLAY, hard, trace rock fragments, (0.5" x 0.75") rock fragments @ 12.5' and 15.6', Bit sample from 17.8' to 18.0', reddish brown (5YR-4/3), (CH).                                                                                                                                                                                                                                        |                                                                               | T5               | Sample #T5, Depth = 14.0' Ave. Field Vane (tsf): 0.82                                                     |  |
| -54.1                                                                                                                                                                                                    | 19.0          |          | No recovery.                                                                                                                                                                                                                                                                                                                                                                                 |                                                                               |                  |                                                                                                           |  |
|                                                                                                                                                                                                          |               |          | End of Boring                                                                                                                                                                                                                                                                                                                                                                                |                                                                               |                  |                                                                                                           |  |

REGION 1 RECON GEOTECH GPJ 3/25/24



Texas General  
Land Office

Texas GLO  
Region 1  
Geotechnical  
Reconnaissance  
Survey

TXGLO1-VC-23-074

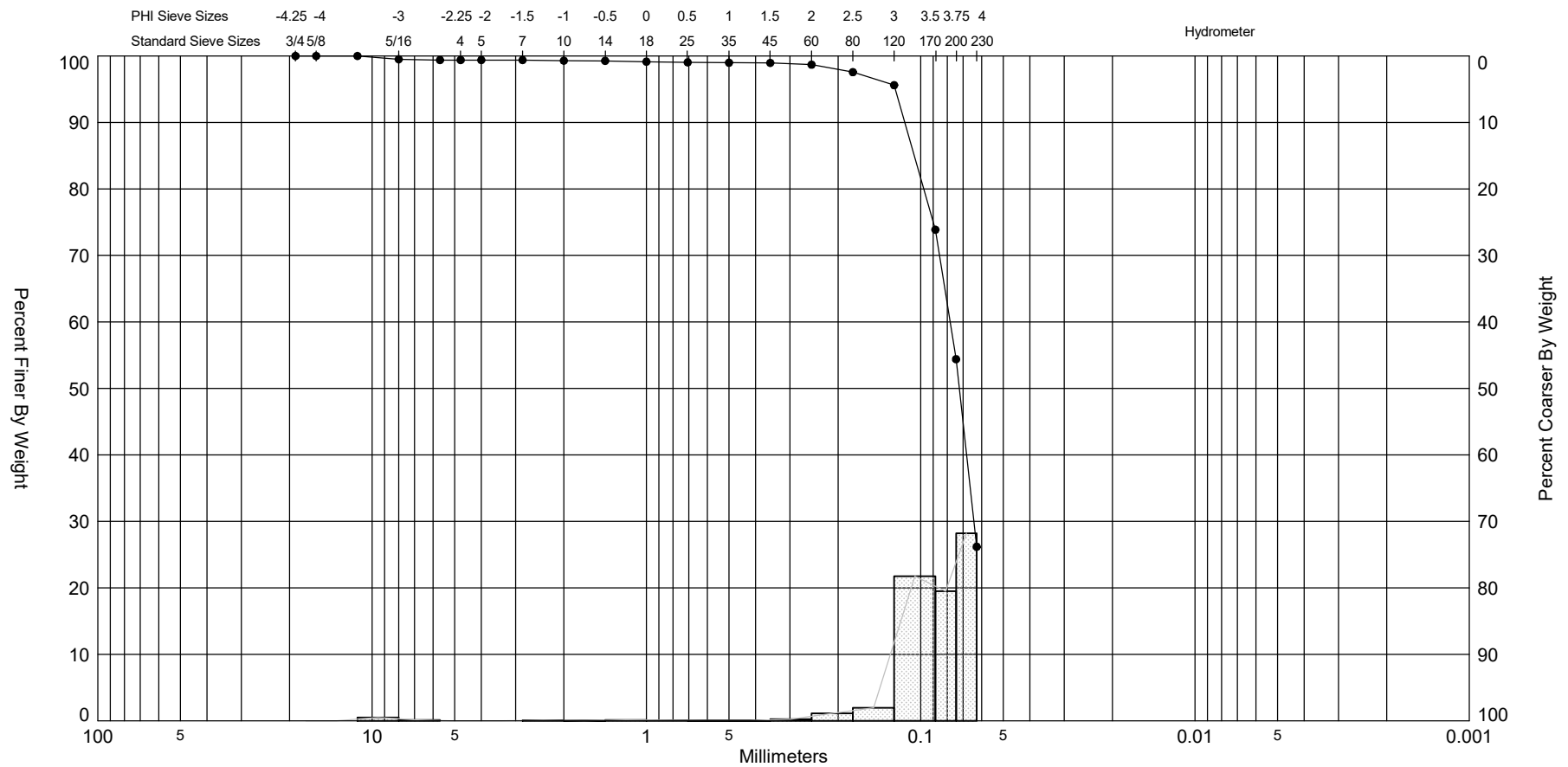
Date Collected: 10/16/23  
Top Elev. (ft NAVD88): -35.1  
Bottom Elev. (ft NAVD88): -53.1  
Core Length (ft): 18.0

REGION1\_RECON\_GEOTECH.GPJ 3/6/24

|                                                                                |                                  |                                                           |                                |                                                                                                                                                                                     |                            |                                        |                 |
|--------------------------------------------------------------------------------|----------------------------------|-----------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|----------------------------------------|-----------------|
| <b>Granularmetric Report</b><br>Depths and elevations based on measured values |                                  |                                                           |                                | <br><b>APTIM</b><br>6401 Congress Avenue, Suite 140<br>Boca Raton, FL 33487<br>ph (561) 391-8102 |                            |                                        |                 |
| Project Name: TX GLO Region 1 Recon Geotechnical Sand Search                   |                                  |                                                           |                                |                                                                                                                                                                                     |                            |                                        |                 |
| Sample Name: TXGLO1-VC-23-074 #1                                               |                                  |                                                           |                                |                                                                                                                                                                                     |                            |                                        |                 |
| Analysis Date: 02-07-24                                                        |                                  |                                                           |                                |                                                                                                                                                                                     |                            |                                        |                 |
| Analyzed By: MS                                                                |                                  |                                                           |                                |                                                                                                                                                                                     |                            |                                        |                 |
| Easting (ft):<br><b>3,235,534</b>                                              |                                  | Northing (ft):<br><b>13,608,823</b>                       |                                | Coordinate System:<br><b>Texas State Plane South</b>                                                                                                                                |                            | Elevation (ft):<br><b>-36.5 NAVD88</b> |                 |
| USCS:<br><b>ML</b>                                                             |                                  | Munsell: Wet - 10Y-3/1<br>Dry - 5Y-4/1<br>Washed - 5Y-6/1 |                                | Comments:                                                                                                                                                                           |                            |                                        |                 |
| Dry Weight (g):<br><b>104.30</b>                                               | Wash Weight (g):<br><b>84.08</b> | Pan Retained (g):<br><b>7.08</b>                          | Sieve Loss (%):<br><b>0.02</b> | Fines (%):<br>#200 - 54.39<br>#230 - 26.18                                                                                                                                          | Organics (%):              | Carbonates (%):                        | Shell Hash (%): |
| <b>Sieve Number</b>                                                            | <b>Sieve Size (Phi)</b>          | <b>Sieve Size (Millimeters)</b>                           | <b>Grams Retained</b>          | <b>% Weight Retained</b>                                                                                                                                                            | <b>Cum. Grams Retained</b> | <b>C. % Weight Retained</b>            |                 |
| 3/4"                                                                           | -4.25                            | 19.03                                                     | 0.00                           | 0.00                                                                                                                                                                                | 0.00                       | 0.00                                   |                 |
| 5/8"                                                                           | -4.00                            | 16.00                                                     | 0.00                           | 0.00                                                                                                                                                                                | 0.00                       | 0.00                                   |                 |
| 7/16"                                                                          | -3.50                            | 11.31                                                     | 0.00                           | 0.00                                                                                                                                                                                | 0.00                       | 0.00                                   |                 |
| 5/16"                                                                          | -3.00                            | 8.00                                                      | 0.51                           | 0.49                                                                                                                                                                                | 0.51                       | 0.49                                   |                 |
| 3.5                                                                            | -2.50                            | 5.66                                                      | 0.12                           | 0.12                                                                                                                                                                                | 0.63                       | 0.61                                   |                 |
| 4                                                                              | -2.25                            | 4.76                                                      | 0.00                           | 0.00                                                                                                                                                                                | 0.63                       | 0.61                                   |                 |
| 5                                                                              | -2.00                            | 4.00                                                      | 0.00                           | 0.00                                                                                                                                                                                | 0.63                       | 0.61                                   |                 |
| 7                                                                              | -1.50                            | 2.83                                                      | 0.00                           | 0.00                                                                                                                                                                                | 0.63                       | 0.61                                   |                 |
| 10                                                                             | -1.00                            | 2.00                                                      | 0.10                           | 0.10                                                                                                                                                                                | 0.73                       | 0.71                                   |                 |
| 14                                                                             | -0.50                            | 1.41                                                      | 0.02                           | 0.02                                                                                                                                                                                | 0.75                       | 0.73                                   |                 |
| 18                                                                             | 0.00                             | 1.00                                                      | 0.14                           | 0.13                                                                                                                                                                                | 0.89                       | 0.86                                   |                 |
| 25                                                                             | 0.50                             | 0.71                                                      | 0.09                           | 0.09                                                                                                                                                                                | 0.98                       | 0.95                                   |                 |
| 35                                                                             | 1.00                             | 0.50                                                      | 0.06                           | 0.06                                                                                                                                                                                | 1.04                       | 1.01                                   |                 |
| 45                                                                             | 1.50                             | 0.35                                                      | 0.03                           | 0.03                                                                                                                                                                                | 1.07                       | 1.04                                   |                 |
| 60                                                                             | 2.00                             | 0.25                                                      | 0.28                           | 0.27                                                                                                                                                                                | 1.35                       | 1.31                                   |                 |
| 80                                                                             | 2.50                             | 0.18                                                      | 1.17                           | 1.12                                                                                                                                                                                | 2.52                       | 2.43                                   |                 |
| 120                                                                            | 3.00                             | 0.13                                                      | 2.04                           | 1.96                                                                                                                                                                                | 4.56                       | 4.39                                   |                 |
| 170                                                                            | 3.50                             | 0.09                                                      | 22.68                          | 21.74                                                                                                                                                                               | 27.24                      | 26.13                                  |                 |
| 200                                                                            | 3.75                             | 0.07                                                      | 20.32                          | 19.48                                                                                                                                                                               | 47.56                      | 45.61                                  |                 |
| 230                                                                            | 4.00                             | 0.06                                                      | 29.42                          | 28.21                                                                                                                                                                               | 76.98                      | 73.82                                  |                 |
|                                                                                |                                  |                                                           |                                |                                                                                                                                                                                     |                            |                                        |                 |
| <b>Phi 5</b>                                                                   | <b>Phi 16</b>                    | <b>Phi 25</b>                                             | <b>Phi 50</b>                  | <b>Phi 75</b>                                                                                                                                                                       | <b>Phi 84</b>              | <b>Phi 95</b>                          |                 |
|                                                                                |                                  |                                                           | 3.79                           | 3.47                                                                                                                                                                                | 3.27                       | 3.01                                   |                 |
| <b>Moment</b>                                                                  | <b>Mean Phi</b>                  | <b>Mean mm</b>                                            | <b>Sorting</b>                 | <b>Skewness</b>                                                                                                                                                                     | <b>Kurtosis</b>            |                                        |                 |
| <b>Statistics</b>                                                              | 3.48                             | 0.09                                                      | 0.75                           | -6.41                                                                                                                                                                               | 53.61                      |                                        |                 |

| Granularmetric Report                                        |                  |                                                                   |                 | <br><b>APTIM</b><br>6401 Congress Avenue, Suite 140<br>Boca Raton, FL 33487<br>ph (561) 391-8102 |                     |                      |                 |
|--------------------------------------------------------------|------------------|-------------------------------------------------------------------|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------------------|-----------------|
| Depths and elevations based on measured values               |                  |                                                                   |                 |                                                                                                                                                                                     |                     |                      |                 |
| Project Name: TX GLO Region 1 Recon Geotechnical Sand Search |                  |                                                                   |                 |                                                                                                                                                                                     |                     |                      |                 |
| Sample Name: TXGLO1-VC-23-074 #2                             |                  |                                                                   |                 |                                                                                                                                                                                     |                     |                      |                 |
| Analysis Date: 02-08-24                                      |                  |                                                                   |                 |                                                                                                                                                                                     |                     |                      |                 |
| Analyzed By: MS                                              |                  |                                                                   |                 |                                                                                                                                                                                     |                     |                      |                 |
| Easting (ft):                                                |                  | Northing (ft):                                                    |                 | Coordinate System:                                                                                                                                                                  |                     | Elevation (ft):      |                 |
| 3,235,534                                                    |                  | 13,608,823                                                        |                 | Texas State Plane South                                                                                                                                                             |                     | -44.7 NAVD88         |                 |
| USCS:                                                        |                  | Munsell: Wet - 7.5YR-4/6<br>Dry - 7.5YR-5/6<br>Washed - 7.5YR-7/3 |                 | Comments:                                                                                                                                                                           |                     |                      |                 |
| ML                                                           |                  |                                                                   |                 |                                                                                                                                                                                     |                     |                      |                 |
| Dry Weight (g):                                              | Wash Weight (g): | Pan Retained (g):                                                 | Sieve Loss (%): | Fines (%):                                                                                                                                                                          | Organics (%):       | Carbonates (%):      | Shell Hash (%): |
| 107.96                                                       | 74.08            | 14.71                                                             | 0.05            | #200 - 58.32<br>#230 - 45.06                                                                                                                                                        |                     |                      |                 |
| Sieve Number                                                 | Sieve Size (Phi) | Sieve Size (Millimeters)                                          | Grams Retained  | % Weight Retained                                                                                                                                                                   | Cum. Grams Retained | C. % Weight Retained |                 |
| 3/4"                                                         | -4.25            | 19.03                                                             | 0.00            | 0.00                                                                                                                                                                                | 0.00                | 0.00                 |                 |
| 5/8"                                                         | -4.00            | 16.00                                                             | 0.00            | 0.00                                                                                                                                                                                | 0.00                | 0.00                 |                 |
| 7/16"                                                        | -3.50            | 11.31                                                             | 0.00            | 0.00                                                                                                                                                                                | 0.00                | 0.00                 |                 |
| 5/16"                                                        | -3.00            | 8.00                                                              | 0.00            | 0.00                                                                                                                                                                                | 0.00                | 0.00                 |                 |
| 3.5                                                          | -2.50            | 5.66                                                              | 0.00            | 0.00                                                                                                                                                                                | 0.00                | 0.00                 |                 |
| 4                                                            | -2.25            | 4.76                                                              | 0.00            | 0.00                                                                                                                                                                                | 0.00                | 0.00                 |                 |
| 5                                                            | -2.00            | 4.00                                                              | 0.00            | 0.00                                                                                                                                                                                | 0.00                | 0.00                 |                 |
| 7                                                            | -1.50            | 2.83                                                              | 0.00            | 0.00                                                                                                                                                                                | 0.00                | 0.00                 |                 |
| 10                                                           | -1.00            | 2.00                                                              | 0.00            | 0.00                                                                                                                                                                                | 0.00                | 0.00                 |                 |
| 14                                                           | -0.50            | 1.41                                                              | 0.20            | 0.19                                                                                                                                                                                | 0.20                | 0.19                 |                 |
| 18                                                           | 0.00             | 1.00                                                              | 0.09            | 0.08                                                                                                                                                                                | 0.29                | 0.27                 |                 |
| 25                                                           | 0.50             | 0.71                                                              | 0.12            | 0.11                                                                                                                                                                                | 0.41                | 0.38                 |                 |
| 35                                                           | 1.00             | 0.50                                                              | 0.08            | 0.07                                                                                                                                                                                | 0.49                | 0.45                 |                 |
| 45                                                           | 1.50             | 0.35                                                              | 0.06            | 0.06                                                                                                                                                                                | 0.55                | 0.51                 |                 |
| 60                                                           | 2.00             | 0.25                                                              | 0.03            | 0.03                                                                                                                                                                                | 0.58                | 0.54                 |                 |
| 80                                                           | 2.50             | 0.18                                                              | 0.06            | 0.06                                                                                                                                                                                | 0.64                | 0.60                 |                 |
| 120                                                          | 3.00             | 0.13                                                              | 0.53            | 0.49                                                                                                                                                                                | 1.17                | 1.09                 |                 |
| 170                                                          | 3.50             | 0.09                                                              | 25.44           | 23.56                                                                                                                                                                               | 26.61               | 24.65                |                 |
| 200                                                          | 3.75             | 0.07                                                              | 18.39           | 17.03                                                                                                                                                                               | 45.00               | 41.68                |                 |
| 230                                                          | 4.00             | 0.06                                                              | 14.32           | 13.26                                                                                                                                                                               | 59.32               | 54.94                |                 |
|                                                              |                  |                                                                   |                 |                                                                                                                                                                                     |                     |                      |                 |
| Phi 5                                                        | Phi 16           | Phi 25                                                            | Phi 50          | Phi 75                                                                                                                                                                              | Phi 84              | Phi 95               |                 |
|                                                              |                  |                                                                   | 3.91            | 3.51                                                                                                                                                                                | 3.32                | 3.08                 |                 |
| Moment                                                       | Mean Phi         | Mean mm                                                           | Sorting         | Skewness                                                                                                                                                                            | Kurtosis            |                      |                 |
| Statistics                                                   | 3.48             | 0.09                                                              | 0.44            | -5.2                                                                                                                                                                                | 46.27               |                      |                 |

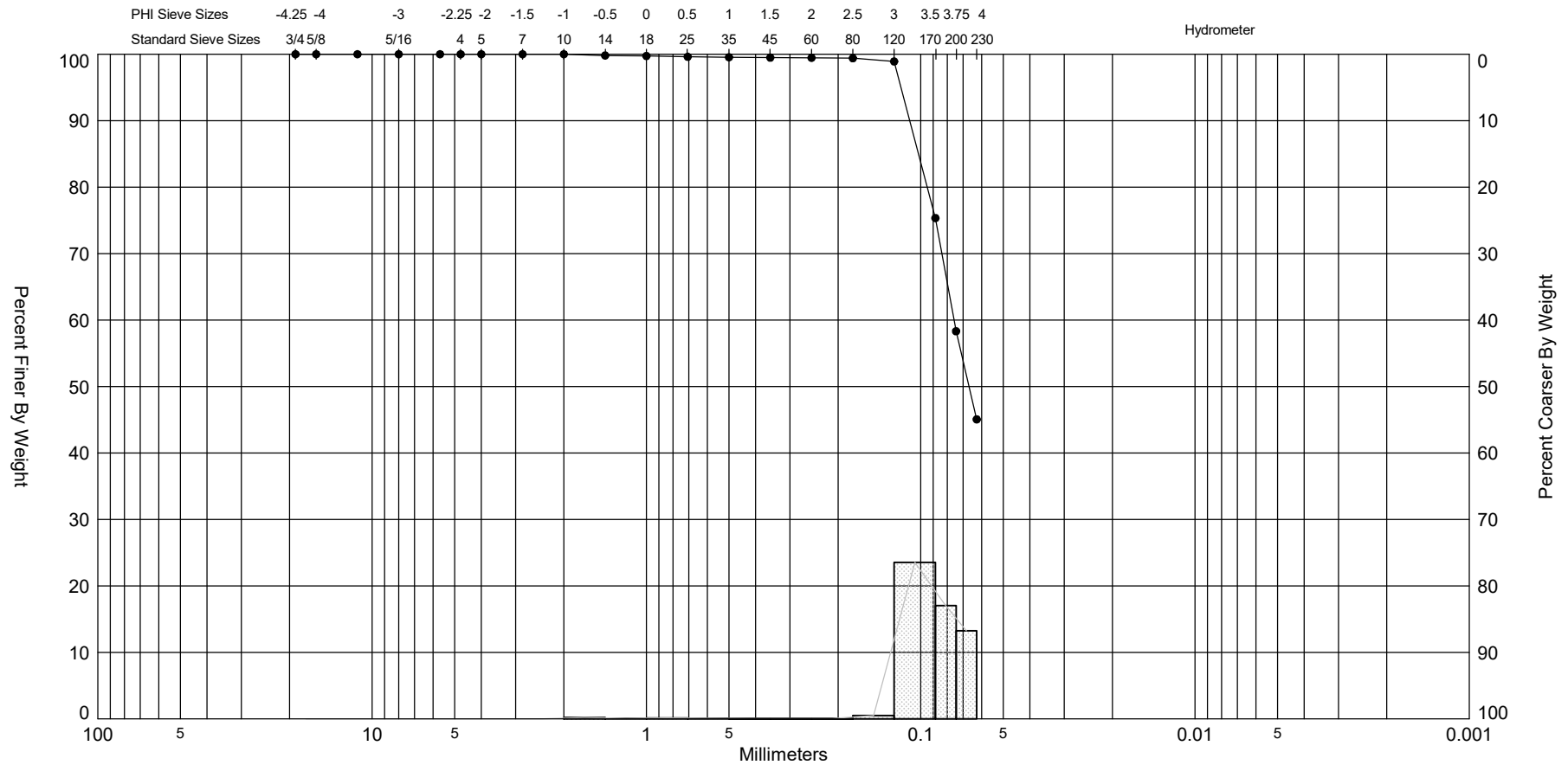
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| Gravel |      | Sand   |        |      | Silt and Clay |
|--------|------|--------|--------|------|---------------|
| Coarse | Fine | Coarse | Medium | Fine |               |

| Sample                                                                              | Symbol                                                                              | Elev. (ft) | USCS | % Fines                      | % Organics | % Carbonates                                                                          | Median | Mean | Skew  | Kurt  | Sort | Sample Information |                                                |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------|------|------------------------------|------------|---------------------------------------------------------------------------------------|--------|------|-------|-------|------|--------------------|------------------------------------------------|
| TXGLO1-VC-23-074 #1                                                                 |  | -36.5      | ML   | #200 - 54.39<br>#230 - 26.18 |            |                                                                                       | 3.79   | 3.48 | -6.41 | 53.61 | 0.75 | Project Name:      | TX GLO Region 1 Recon Geotechnical Sand Search |
| Comments:                                                                           |                                                                                     |            |      |                              |            |                                                                                       |        |      |       |       |      | Analysis Date:     | 02-07-24                                       |
| Depths and elevations based on measured values                                      |                                                                                     |            |      |                              |            |                                                                                       |        |      |       |       |      | Analyzed By:       | MS                                             |
|  |                                                                                     |            |      |                              |            | APTIM<br>6401 Congress Avenue, Suite 140<br>Boca Raton, FL 33487<br>ph (561) 391-8102 |        |      |       |       |      | Easting (X, ft):   | 3,235,534                                      |
|                                                                                     |                                                                                     |            |      |                              |            |                                                                                       |        |      |       |       |      | Northing (Y, ft):  | 13,608,823                                     |
|                                                                                     |                                                                                     |            |      |                              |            |                                                                                       |        |      |       |       |      | Horizontal Datum:  | NAD 1983                                       |
|                                                                                     |                                                                                     |            |      |                              |            |                                                                                       |        |      |       |       |      | Vertical Datum:    | NAVD88                                         |

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## Mini Vane Shear Test Results

| CORE ID          | SAMPLE DEPTH<br>(ft) | TORVANE<br>(kg/cm <sup>2</sup> ) | TORVANE<br>(tsf) | TORVANE<br>(kpa) | DESCRIPTION <sup>1</sup> |
|------------------|----------------------|----------------------------------|------------------|------------------|--------------------------|
| TXGLO1-VC-23-071 | 2.0                  | 0.3                              | 0.03             | 24.52            | Soft                     |
|                  | 5.0                  | 0.5                              | 0.05             | 49.03            | Firm                     |
|                  | 6.4                  | 2.5                              | 0.26             | 245.17           | Very Stiff               |
|                  | 7.4                  | 5.0                              | 0.51             | 490.33           | Hard                     |
|                  | 8.2                  | 4.3                              | 0.44             | 416.78           | Hard                     |
|                  | 9.0                  | 3.5                              | 0.36             | 343.23           | Hard                     |
|                  | 9.8                  | 3.0                              | 0.31             | 294.20           | Very Stiff               |
|                  | 11.0                 | 2.0                              | 0.20             | 196.13           | Very Stiff               |
|                  | 12.4                 | 3.0                              | 0.31             | 294.20           | Very Stiff               |
|                  | 14.4                 | 2.3                              | 0.23             | 220.65           | Very Stiff               |
|                  | 16.3                 | 3.0                              | 0.31             | 294.20           | Very Stiff               |
|                  | 17.2                 | 7.0                              | 0.72             | 686.47           | Hard                     |
| TXGLO1-VC-23-072 | 2.5                  | 0.0                              | 0.00             | 0.00             | Very Soft                |
|                  | 7.5                  | 4.3                              | 0.44             | 416.78           | Hard                     |
|                  | 11.3                 | 5.0                              | 0.51             | 490.33           | Hard                     |
|                  | 14.5                 | 3.0                              | 0.31             | 294.20           | Very Stiff               |
| TXGLO1-VC-23-073 | 9.2                  | 5.0                              | 0.51             | 490.33           | Hard                     |
| TXGLO1-VC-23-074 | 0.5                  | 0.0                              | 0.00             | 0.00             | Very Soft                |
|                  | 3.0                  | 3.5                              | 0.36             | 343.23           | Hard                     |
|                  | 5.5                  | 5.8                              | 0.59             | 563.88           | Hard                     |
|                  | 8.2                  | 3.5                              | 0.36             | 343.23           | Hard                     |
|                  | 14.0                 | 8.0                              | 0.82             | 784.53           | Hard                     |
| TXGLO1-VC-23-075 | 1.6                  | 0.8                              | 0.08             | 73.55            | Firm                     |
|                  | 13.4                 | 0.5                              | 0.05             | 49.03            | Firm                     |
|                  | 15.9                 | 4.0                              | 0.41             | 392.27           | Hard                     |
|                  | 17.1                 | 2.5                              | 0.26             | 245.17           | Very Stiff               |
| TXGLO1-VC-23-076 | 0.8                  | 0.3                              | 0.03             | 24.52            | Soft                     |
|                  | 2.0                  | 0.5                              | 0.05             | 49.03            | Firm                     |
|                  | 3.6                  | 1.0                              | 0.10             | 98.07            | Stiff                    |
|                  | 6.5                  | 2.0                              | 0.20             | 196.13           | Very Stiff               |
|                  | 13.4                 | 5.0                              | 0.51             | 490.33           | Hard                     |
| TXGLO1-VC-23-077 | 6.7                  | 5.0                              | 0.51             | 490.33           | Hard                     |
|                  | 12.6                 | 4.0                              | 0.41             | 392.27           | Hard                     |
|                  | 17.0                 | 7.0                              | 0.72             | 686.47           | Hard                     |
| TXGLO1-VC-23-078 | 3.0                  | 2.0                              | 0.20             | 196.13           | Very Stiff               |
|                  | 6.7                  | 4.5                              | 0.46             | 441.30           | Hard                     |
|                  | 10.6                 | 3.0                              | 0.31             | 294.20           | Very Stiff               |
|                  | 13.7                 | 4.0                              | 0.41             | 392.27           | Hard                     |
|                  | 16.5                 | 5.5                              | 0.56             | 539.37           | Hard                     |
| TXGLO1-VC-23-079 | 0.5                  | 0.0                              | 0.00             | 0.00             | Very Soft                |
|                  | 1.2                  | 1.0                              | 0.10             | 98.07            | Stiff                    |
|                  | 3.5                  | 3.5                              | 0.36             | 343.23           | Hard                     |
|                  | 12.1                 | 4.0                              | 0.41             | 392.27           | Hard                     |
| TXGLO1-VC-23-080 | 0.1                  | 0.0                              | 0.00             | 0.00             | Very Soft                |