



Quaternary Resource Investigations, LLC  
13588 Florida Boulevard  
Baton Rouge, LA 70820  
Telephone: 225-292-1400  
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# BORING NUMBER 13-B139

PAGE 1 OF 3

**CLIENT** USACE-Galveston District **PROJECT NAME** Sabine Neches Placement Area 8  
**PROJECT NUMBER** W912HY-13-D-0001-DY05 **PROJECT LOCATION** Port Arthur, TX  
**DATE STARTED** 1/23/2014 7:15:00 AM **COMPLETED** 1/23/2014 4:20:00 PM **GROUND ELEVATION** 18.3334 ft **HOLE SIZE** 8.25 inches  
**DRILLING CONTRACTOR** QRI **NORTHING** 13867161.35 ft **EASTING** 3572779.471 ft  
**DRILLING METHOD** Hollow Stem Auger **DRILLING RIG MAKE/MODEL** Mobile B57 on Gemco Articulated Platform  
**LOGGED BY** Pete Herold **TOTAL DEPTH** 80 ft **GROUND WATER LEVEL** ▽ AT TIME OF DRILLING 66.90 ft / Elev -48.57 ft  
**WEATHER** cloudy, light wind to windy, 50s to 40s **▽ 15 MINUTES AFTER DRILLING** 63.70 ft / Elev -45.37 ft

COPY OF PEGGY LAKE GEOTECH BH - PEGGY LAKE TEMPLATE.GDT - 7/15/14 13:09 - C:\USERS\PUBLIC\DOCUMENTS\BENTLEY\GINT\PROJECTS\SABINE NECHES PA 8 FINAL EDITED.GPJ

| GRAPHIC LOG | USCS SYMBOL | MATERIAL DESCRIPTION                                                               | DEPTH (ft) | SAMPLE TYPE | RECOVERY (in) | SPT BLOW COUNTS (N VALUE) | POCKET PEN. (tsf) | FIELD TORVANE (tsf) | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | ATTERBERG LIMITS |               |                  | MINUS #200 SIEVE CONTENT (%) | COMPRESSIVE STRENGTH (tsf) | FAILURE STRAIN (%) | CONFINING PRESSURE (psi) |
|-------------|-------------|------------------------------------------------------------------------------------|------------|-------------|---------------|---------------------------|-------------------|---------------------|--------------------|----------------------|------------------|---------------|------------------|------------------------------|----------------------------|--------------------|--------------------------|
|             |             |                                                                                    | 0          |             |               |                           |                   |                     |                    |                      | LIQUID LIMIT     | PLASTIC LIMIT | PLASTICITY INDEX |                              |                            |                    |                          |
|             | CH          | Fat CLAY, dark gray, very stiff, with sand seams 0'-68' and shell fragments 0'-80' |            | ST          | 16            |                           | 4.4               |                     | 98                 | 26                   |                  |               |                  |                              |                            |                    |                          |
|             |             | with cracks 2'-33'                                                                 |            | ST          | 5             |                           | 3.5               |                     |                    | 22                   |                  |               |                  |                              |                            |                    |                          |
|             |             | less sand, soft                                                                    | 5          | ST          | 10            |                           | 1.5               |                     | 81                 | 39                   | 83               | 26            | 57               | 65                           | 0.30                       | 6                  |                          |
|             |             | firm                                                                               |            | ST          | 18            |                           | 1.1               |                     |                    | 51                   |                  |               |                  |                              |                            |                    |                          |
|             |             |                                                                                    | 10         | ST          | 17            |                           | 1.2               |                     |                    | 31                   |                  |               |                  |                              |                            |                    |                          |
|             |             | trace organics                                                                     |            | NR          |               |                           |                   |                     |                    |                      |                  |               |                  |                              |                            |                    |                          |
|             |             |                                                                                    | 15         | ST          | 19            |                           | 0.9               |                     | 64                 | 59                   | 98               | 27            | 71               | 92                           |                            |                    |                          |
|             |             |                                                                                    |            | NR          |               |                           |                   |                     |                    |                      |                  |               |                  |                              |                            |                    |                          |
|             |             | increased sand                                                                     |            | SS          | 13            | 1-2-2 (4)                 | 1.1               |                     |                    | 27                   |                  |               |                  |                              |                            |                    |                          |
|             |             | soft                                                                               | 20         | ST          | 19            |                           | 1.0               |                     | 82                 | 42                   |                  |               |                  | 60                           | 0.31                       | 9                  |                          |
|             |             | firm                                                                               |            | NR          |               |                           |                   |                     |                    |                      |                  |               |                  |                              |                            |                    |                          |
|             |             |                                                                                    | 25         | ST          | 18            |                           | 1.7               |                     |                    | 37                   |                  |               |                  |                              |                            |                    |                          |
|             |             |                                                                                    |            | NR          |               |                           |                   |                     |                    |                      |                  |               |                  |                              |                            |                    |                          |
|             |             | less sand                                                                          |            | ST          | 17            |                           | 1.6               |                     | 78                 | 42                   | 86               | 21            | 65               | 92                           | 0.65                       | 5                  | 24                       |
|             |             |                                                                                    | 30         | NR          |               |                           |                   |                     |                    |                      |                  |               |                  |                              |                            |                    |                          |
| stiff       |             | ST                                                                                 | 17         |             | 2.1           |                           |                   | 47                  |                    |                      |                  |               |                  |                              |                            |                    |                          |
|             | 35          |                                                                                    |            |             |               |                           |                   |                     |                    |                      |                  |               |                  |                              |                            |                    |                          |

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CLIENT USACE-Galveston District

PROJECT NAME Sabine Neches Placement Area 8

PROJECT NUMBER W912HY-13-D-0001-DY05

PROJECT LOCATION Port Arthur, TX

| GRAPHIC LOG | USCS SYMBOL | MATERIAL DESCRIPTION                                                                           | DEPTH (ft) | SAMPLE TYPE | RECOVERY (in) | SPT BLOW COUNTS (N VALUE) | POCKET PEN. (tsf) | FIELD TORVANE (tsf) | DRY UNIT WT. (pcf) | MOISTURE CONTENT (%) | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | MINUS #200 SIEVE CONTENT (%) | COMPRESSIVE STRENGTH (tsf) | FAILURE STRAIN (%) | CONFINING PRESSURE (psi) |
|-------------|-------------|------------------------------------------------------------------------------------------------|------------|-------------|---------------|---------------------------|-------------------|---------------------|--------------------|----------------------|--------------|---------------|------------------|------------------------------|----------------------------|--------------------|--------------------------|
|             | CH          | Fat CLAY, dark gray, very stiff, with sand seams 0'-68' and shell fragments 0'-80' (continued) | 35         | ○ NR        |               |                           |                   |                     |                    |                      |              |               |                  |                              |                            |                    |                          |
|             |             | with cracks 38'-68'                                                                            | 40         | ■ ST        | 18            |                           | 1.6               |                     | 61                 | 71                   |              |               |                  |                              |                            |                    |                          |
|             |             | organic odor 43'-53', firm                                                                     | 45         | ■ ST        | 17            |                           | 1.2               |                     |                    | 48                   |              |               |                  |                              |                            |                    |                          |
|             |             | very soft                                                                                      | 50         | ■ ST        | 19            |                           | 0.8               |                     | 59                 | 72                   |              |               |                  | 98                           | 0.22                       | 1                  | 41                       |
|             |             | firm                                                                                           | 55         | ■ ST        | 19            |                           | 1.2               |                     |                    | 68                   |              |               |                  |                              |                            |                    |                          |
|             |             | dark gray                                                                                      | 60         | ■ ST        | 19            |                           | 0.9               |                     |                    | 70                   |              |               |                  |                              |                            |                    |                          |
|             |             | very soft                                                                                      |            | ■ ST        | 18            |                           | 0.5               | 1.4                 | 58                 | 71                   | 104          | 27            | 77               | 98                           | 0.21                       | 11                 |                          |
|             |             | firm                                                                                           | 65         | ■ ST        | 19            |                           | 1.0               |                     |                    | 66                   |              |               |                  |                              |                            |                    |                          |
|             |             |                                                                                                | 70         | ■ ST        | 18            |                           | 1.4               |                     | 67                 | 54                   |              |               |                  |                              |                            |                    |                          |
|             |             |                                                                                                |            | ■ ST        | 19            |                           | 1.2               |                     |                    | 52                   |              |               |                  |                              |                            |                    |                          |
|             |             |                                                                                                |            | ○ NR        |               |                           |                   |                     |                    |                      |              |               |                  |                              |                            |                    |                          |
|             |             |                                                                                                | 75         | ■ ST        | 20            |                           | 1.1               |                     |                    |                      |              |               |                  |                              |                            |                    |                          |

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|-------------|-------------|------------------------------------------------------------------------------------------------|------------|-------------|---------------|---------------------------|-------------------|---------------------|--------------------|----------------------|------------------|---------------|------------------|------------------------------|----------------------------|--------------------|--------------------------|
|             |             |                                                                                                |            |             |               |                           |                   |                     |                    |                      | LIQUID LIMIT     | PLASTIC LIMIT | PLASTICITY INDEX |                              |                            |                    |                          |
|             | CH          | Fat CLAY, dark gray, very stiff, with sand seams 0'-68' and shell fragments 0'-80' (continued) | 75         | ○ NR        |               |                           |                   |                     |                    |                      |                  |               |                  |                              |                            |                    |                          |
|             |             | greenish gray, very stiff                                                                      | 80         | ■ ST        | 15            |                           | 3.1               |                     |                    | 20                   |                  |               |                  |                              |                            |                    |                          |

Bottom of borehole at 80.0 feet.