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<td><strong>N 29° 39' 02&quot;</strong></td>
<td><strong>W 92° 54' 25&quot;</strong></td>
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<td>B-3</td>
<td><strong>N 29° 38' 52&quot;</strong></td>
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<td><strong>N 29° 38' 50&quot;</strong></td>
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<td>B-5</td>
<td><strong>N 29° 38' 39&quot;</strong></td>
<td><strong>W 92° 27' 40&quot;</strong></td>
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<td>B-5</td>
<td><strong>N 29° 38' 16&quot;</strong></td>
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<td><strong>N 29° 38' 16&quot;</strong></td>
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<td><strong>N 29° 38' 17&quot;</strong></td>
<td><strong>W 92° 28' 17&quot;</strong></td>
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<td>B-9</td>
<td><strong>N 29° 38' 18&quot;</strong></td>
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<tr>
<td>B-12</td>
<td><strong>N 29° 38' 32&quot;</strong></td>
<td><strong>W 92° 30' 55&quot;</strong></td>
</tr>
</tbody>
</table>

These coordinates were obtained with a hand held GPS and should be within 25 meters of the "true" position according to the manufacturer.

Should you have any further questions, please call.

Very truly yours,

BILLY R. PROCHASKA, P.E.
President

SOILS AND FOUNDATION ENGINEERS, INC.

11519 CLOVERLAND AVENUE • BATON ROUGE, LOUISIANA 70809 • PHONE (225) 751-1727 • FAX (225) 752-1467
LAFAYETTE, LOUISIANA • PHONE (337) 839-1323
SOILS AND FOUNDATION ENGINEERS, INC.
11519 Cloverland Avenue
Baton Rouge, Louisiana 70809-4287

Phone (225) 751-1727
Fax (225) 752-1467

<table>
<thead>
<tr>
<th>Company Name</th>
<th>From</th>
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<tbody>
<tr>
<td>AUCOIN &amp; ASSOCIATES</td>
<td>Billy R. Prochaska, P.E.</td>
</tr>
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<table>
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<tr>
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<th>Date</th>
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<td>MR. DARL AUCOIN, P.E., P.L.S.</td>
<td>4/5/01</td>
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<td>Baton Rouge, LOUISIANA</td>
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<tr>
<td>1-337-457-7365</td>
<td>(225) 751-1727</td>
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☐ FYI ☐ As Requested ☐ For Your Use ☐ For Approval ☐ Original Will Follow

Total Pages, including cover: 6

REFERENCE:
SOILS AND FOUNDATION ENGINEERS, INC.
GEOTECHNICAL CONSULTANTS

April 5, 2001

Fax No. 337-457-7366

Mr. Karl Aucoin, P.E., P.L.S.
Aucoin Associates
P.O. Box 968
Eunice, Louisiana 70535

Re: Supplemental Analyses
Pecan Island Terraces
DNR Project 2511-00-03
SFE Job No. 00-154

Dear Karl;

We have conducted the additional work you requested. The results are attached on Figures 4 and 5. The section was modified to a six foot “V” ditch, 20 foot berm and ten foot crest at elevation +4. The cut slope was 1(V):3(H) and the fill slope was 1(V):4(H). The +4 crest was to check the crest required to accommodate the estimated settlement.

As you can see the factors of safety for both the overall stability and the bearing capacity are lower than previously reported. As you know a factor of safety of 1.0 indicates incipient failure.

As we previously discussed a small test section should be constructed to see if the in-situ soils may have higher strength than measured due to sample disturbance.

This transmittal should be attached to and become a part of our original report.

If we can be of further assistance, please call.

Very truly yours,

SOILS AND FOUNDATION ENGINEERS, INC.

Billy R. Prochaska, P.E.

BRP/mip

Enclosures: Figures 4 and 5
REPORT OF GEOTECHNICAL SERVICES
PECAN ISLAND TERRACES
VERMILLION PARISH, LOUISIANA
DNR PROJECT NO. 2511-00-03

FOR

AUCCON & ASSOCIATES
EUNICE, LOUISIANA

SOILS AND FOUNDATION ENGINEERS, INC.
GEOTECHNICAL CONSULTANTS
Baton Rouge, Louisiana
Lafayette, Louisiana
Aucoin & Associates  
433 North C.C. Duson Street  
P.O. Box 968  
Eunice, Louisiana 70535

Attn: Karl Aucoin, P.E.

Re: Report of Geotechnical Services  
Pecan Island Terraces  
Vermilion Parish  
SFE Job No. 00-154  
DNR Project No. 2511-00-03

Gentlemen:

Please find herein the results of the work authorized by your contract.

SITE CONDITIONS

The project area is located south of LA 82 in the Pecan Island Community in Vermilion Parish, Louisiana.

The area was previously surrounded by a levee and drained by a system of canals and a pump station. At the present time the levees on the south side have been degraded or eroded and the area is now flooded. The general elevation within the project area is 1.0 to 1.5 feet below sea level.

At the time of this field work the wind was from the south and the average depth of water was approximately 2 feet.

SUBSURFACE STRATIGRAPHY

At the mudline, the borings encountered approximately one foot of very soft organic clay underlain by very soft to soft clay. This material had silty fine sand/sandy silt lenses and shell fragments. In Borings B-7 and B-12 the soils in the zone between approximate elevations -12 and -16 were extremely weak, shear strength of 30 to 50 PSF.

Below approximate elevation -20 the soils contained increasing amounts of sand and shell with Borings B-5 and B-9 terminating in silty fine sand and shell fragments. In Boring B-1 the last foot was soft organic clay.
Idealized Subsoil Profiles have been developed and are presented on Figure 2 to assist in visualizing the stratigraphy. Details of the stratigraphy and laboratory testing are shown on the boring logs in Appendix A.

**PROPOSED CONSTRUCTION**

The proposed terraces must have heights sufficient to minimize over-topping by normal wave action. In addition, sufficient width will have to be incorporated into the design to allow for the erosion that will occur until vegetation is established or the slopes will have to be provided with erosion protection.

In the analyses presented herein, we have assumed that embankments will be constructed using a bucket dredge. It is our opinion that this will result in less impact on the water quality and will require handling less material.

If a suction dredge were used, the materials would be slurried and the embankment slopes would be 1(V):20(H) or flatter. The dredge water would cause serious impact on the water quality.

A suction dredge does have the advantage of being able to place the material a long distance away from the borrow source. However, at this site a channel would have to be developed to get this equipment on the site.

**HEIGHT**

Since the construction will be in a limited depth of water, we estimate the embankments should stand two or more feet above normal high tide.

**Allowance For Settlement.** Based on the consolidation tests conducted, the settlements under the center of a 4.5 foot high embankment (with unit weight of 85 PCF) will be approximately 1.25 feet. Settlements will also occur within the embankment materials since no compactive effort is anticipated to consolidate the fill.

**STABILITY OF EMBANKMENTS**

Conventional (limit equilibrium) slope stability analyses were conducted to determine the stability of cut and fill slopes. Bearing capacity, as manifested in mud waves, must also be considered. In the crudest form, neglecting the side slopes and shear strength of the fill, the maximum height of fill is equal to 5.2 times the shear strength divided by the weight of fill.

Cut slopes of 1(V):2(H) eight feet high have a calculated factor of safety of 1.5 or greater based on the analyses by the Janbu Method of Generalized Slices assuming and Rankine failure surface. This steep slope is possible since the cut will be fully submerged. In our analyses, we have assumed the
fill would be placed on a 1(V):4(H) slope and limited to a height of 4.5 feet as the bearing capacity, embankment failure, has a factor of safety very near 1.0.

While the computer analyses indicate the 4.5 foot maximum height of fill, past experience indicates the terraces can be constructed somewhat higher if necessary since localized failure will not endanger life or property. The writer observed construction of levees in excess of five high on the north side of the cheniere in 1960.

The modes of failure analyses are shown on Figure 3 along with the range of safety factors calculated.

Due to the extremely weak soils in the area of Borings B-7 and B-12, it may be advisable to layout the terraces so construction will not occur in these general areas.

**STAGED CONSTRUCTION**

Due to the magnitude of settlement in both the natural soils (between one and 1.5 feet) and the fill, as well as the limited bearing capacity of the natural soils, it may be necessary to construct the embankments in stages. The initial lift can be placed 3 to 4 feet thick with the berm 40 feet wide and still have an adequate factor of safety against general shear failure (slope stability analyses).

Based on the consolidation tests, the very soft organic materials will require up to 5 years to reach 90% of primary consolidation. If additional fill were placed at that time, the factor of safety at the end of placement should be in excess of 1.00 against shear failure.

**CONCLUSIONS**

Due to the low shear strengths and high compatibility, a staged construction technique may be required to construct the embankments higher than elevation +3 on the existing soils.

Four and one half feet of material can be placed and allowed to settle and to consolidate the existing soils. After a period of time, the strength of the fill and the native soils should be determined. Based on those strengths a second lift could be placed after the shear strength of the terrace and underlying soils have been determined.

If this were a land site piezometers and settlement plates could be used to monitor the consolidation and strength gain process. At this site, the plates and piezometers cannot be protected from the elements nor can the elevations be easily determined. Therefore, future sampling and laboratory testing or some reliable means of in situ strength testing is envisioned to determine the strength gains.
LIMITATIONS

These interpretations and analyses are based on site conditions, surface and subsurface, as determined by the limited number of widely spaced borings. The assumption has been made that the exploratory borings in relation to area of construction, and depth of borings, are representative of subsurface conditions throughout the project area.

The recommendations presented in this report are dependent on construction methods and procedures. Sound engineering judgement must be followed when applying the recommendations to designs, plans and also at the time of construction monitoring. If during future exploration or construction, subsurface conditions are found to vary considerably from those discussed herein, SOILS AND FOUNDATION ENGINEERS, INC. should be notified. Review and/or revision as necessary, of pertinent interpretations, and analyses and recommendations and design plans can then be undertaken.

Should you have any questions concerning these analyses please call.

It has been a pleasure seeing you on this project and we look forward to serving you in the future.

Very truly yours,

SOILS AND FOUNDATION ENGINEERS, INC.

Billy R. Prochaska, P.E.

BRF:tdw

7 copies transmitted
APPENDIX A
APPENDIX A

SUBSURFACE EXPLORATION AND LABORATORY TESTING PROGRAM

SUBSURFACE EXPLORATION

General. Ten (10) exploratory soil test borings were drilled on the site during the period of February 13 and 14, 2001. The approximate locations of the borings are shown on Figure 1.

Sampling. Samples were obtained continuously in the upper reaches and then on 3 to 5 foot centers using conventional drilling methods. The total footage drilled was 252 lineal feet. Detailed logs of the borings are attached.

Undisturbed samples were recovered from the various cohesive materials with a 3 inch diameter thin walled Shelby tube (ASTM D-1587). Penetrometer readings were made as a relative measure of the soil’s strength. The tubes were then wrapped and sealed to preserve their natural characteristics during transportation to the laboratory for physical testing.

Disturbed samples of the soils were obtained by pushing the slit spoon of Standard Penetration Test (ASTM D-1586). These samples were placed in plastic bags to transport to the laboratory.

LABORATORY TESTING PROGRAM

Soil mechanics laboratory tests were performed on selected samples representative of the various strata to define their physical characteristics. Thirty-eight (38) Shelby tube samples were extruded in the laboratory.

Undrained Strength Tests. Compressive strength determinations were made on samples from the various strata to determine the undrained strength of the soils.

Unconfined Compression. Twenty-nine (29) unconfined compression tests (ASTM D-2166) were conducted on the clay soils.

Unconsolidated–Undrained Triaxial Compression. Five (5) unconsolidated-undrained triaxial compression (ASTM D-2850) tests were conducted to determine the strength under in situ confining pressures.

Classification Tests. These tests are performed to classify the subsoils more accurately than attained by field methods.

Atterberg Limits Determination. Thirty-one (31) Atterberg Liquid and Plastic Limit determinations (ASTM D-4318) were made.
**Individual Dry Density Test.** One (1) individual dry density determination (applicable portions of ASTM D-2166 was made.

**Individual Moisture Content.** Nine (9) individual moisture content determinations (ASTM D-2216) were made.

**Mechanical analysis.** One (1) sample was subjected to gradation wet sieve analysis to determine the percentage passing the #200 sieve.

**Consolidation Test.** Four (4) consolidation tests (ASTM D-2435) were conducted to determine the compressibility characteristics of the soils. These test results are shown on figures A-1 through A-4.

The results of the laboratory tests are presented in the appropriate columns of the Boring Logs and on Figures A-1 through A-4.
BORING LOG

PROJECT FOR

DRILLER
RIG

DEPTH
(SAMPLE)

STANDARD PENETRATION
(BLOWS/FT.)

SAMPLE

DRILL METHOD:

STRAIN.

INITIAL WATER LEVEL:

MATERIAL CLASSIFICATION

DESCRIPTION OF STRATA AS FOLLOWS:

STRENGTH (OR CONSISTENCY), COLOR, MINOR CONSTITUENT,
MAJOR CONSTITUENT, ADDITIONAL OBSERVATIONS.

FIELD EVALUATION OF SHEAR STRENGTH/RELATIVE DENSITY:

STANDARD PENETRATION TEST (ASTM D-1586) IN BLOWS/FT.
POCKET PENETROMETER READINGS IN TONS/SQ. FT.

GRAPHICAL PRESENTATION OF MATERIAL TYPE:

- Clay
- Silt
- Sand
- Gravel or Shell

LABORATORY INFORMATION

AS DETERMINED BY UNCONFINED COMPRESSION (ASTM D-2166 OR UNDRAINED TRIAxIAL (ASTMD-2850), IF NOTED.

DETERMINED USING APPLICABLE PORTIONS OF ASTM D-2165 AND ASTM D-2216.

DETERMINED USING ASTM D-4216 OR D-4959.

DETERMINED USING ASTM D-4318. PROVIDES DATA FOR APPLICATION OF UNIFIED CLASSIFICATION SYSTEM (UCS).

COMMENTS:

- Shelby Tube Sample
- Split-spoon Sample
- Auger Sample
- Sealed in Tube
- No Recovery

SAMPLE RECOVERY METHOD.
### BORING LOG

**PROJECT**
Pecan Island Terraces  
Vermillion Parish  
Acouin & Associates, Inc.  
Eunice, LA

**FOR**

---

**BORING**
E-1

**JOB NO.**
00-154

**DATE**
02/14/01

**TECHNICIAN**
BRP

**DRILLER**
RJ

**RIG**
AIRBOAT

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<table>
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<th>DEPTH (FEET)</th>
<th>SAMPLE</th>
<th>Standard Penetration (Blows/ft.) or Penetrometer (TSF)</th>
<th>Drill Method: Wet Rotary - Full Depth</th>
<th>Initial Water Level</th>
<th>Compressive Strength (TSF)</th>
<th>Moisture Content (%)</th>
<th>Dry Unit Weight (pcf)</th>
<th>Atterberg LL</th>
<th>PI</th>
<th>MATERIAL CLASSIFICATION</th>
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|              |        |                                                      |                                     |                    | F5 F                     | 135                  | 38                   |              |   | 3.3' DECK TO MUDDINE  
1.8' WATER |
| 0.12         |        | 0.20 (1)                                             |                                      |                    |                          |                      |                      |              |   | VERY SOFT BLACK ORGANIC CLAY (OH) |
|              |        | 495b                                                 |                                      |                    |                          |                      |                      |              |   |                        |
| 0.09         |        | 0.16 (4)                                             |                                      |                    |                          |                      |                      |              |   | VERY SOFT GRAY CLAY  
with organic traces |
|              |        | 375a                                                 |                                      |                    |                          |                      |                      |              |   |                        |
| 0.15         |        | 0.23 (5)                                             |                                      |                    |                          |                      |                      |              |   | --with silt lenses |
|              |        | 493a                                                 |                                      |                    |                          |                      |                      |              |   |                        |
| 0.18         |        | 0.22 (7.5)                                           |                                      |                    |                          |                      |                      |              |   | --with silty sand lenses |
|              |        | 446b                                                 |                                      |                    |                          |                      |                      |              |   |                        |
| 0.28         |        | 0.43                                                 |                                      |                    |                          |                      |                      |              |   | SOFT DARK BROWN ORGANIC CLAY (OH) |
|              |        | Bi0                                                  |                                      |                    |                          |                      |                      |              |   |                        |

**COMMENTS:**
- Shelby Tube Sample
- Sealed in Tube
- Silt-spoon Sample
- No Recovery
- Auger Sample

---

Bottom 25' Below Deck  
( ) = Confining Pressure (PSI) in  
UU Triaxial test
BORING LOG

PROJECT
Pecan Island Terraces
Vermilion Parish

FOR
Aucan & Associates, Inc.
Eunice, LA

DATE
02/14/01

TECHNICIAN
BRP

DRILLER
RJ

RIG
AIRBOAT

BORING B-2

JOE NO.
00-154

DEPTH (FEET)

SAMPLE

Standard Penetration (Bows/Ft.) or Penetrometer (TFI)

Drill Method
Wet Rotary - Full Depth

Initial Water Level

Compressive Strength (PSI)

Moisture Content (%)

Dry Unit Weight (pcf)

Atterberg Limits
LL %
PI %

1.5' DECK TO MUCLINE
2.0' WATER

3.5' DECK TO MUCLINE
2.0' WATER

very soft black organic clay
(DH)

very soft gray clay

Push Split Spoon

No Recovery

0.03

0.12

2.00

107

43

126

6

37

33

12

0.01

0.18

320

119

40

0.14

0.24

4.0

78

56

Push Split Spoon

COMMENTS:

Shelby Tube Sample
Sealed in Tube

Split-spoon Sample
No Recovery

Auger Sample

SOILS AND FOUNDATION ENGINEERS, INC.
**BORING LOG**

**PROJECT**  
Pecan Island Terraces  
Vermilion Parish  
Aucoin & Associates, Inc.  
Eunice, LA

**FOR**

**DEPTH (FEET) | SAMPLE | Standard Penetration (Blows/Ft.) or Penetrometer (TSF) | Drill Method | Wet Rotary – Full Depth | Initial Water Level | Compressive Strength (TSF) | Moisture Content (%) | Dry Unit Weight (pcf) | Atterberg LL | PI | Soil Type | MATERIAL CLASSIFICATION |
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**COMMENTS:**

- Shelby Tube Sample
- Sealed in Tube
- Split-spoon Sample
- No Recovery
- Auger Sample

**SOILS AND FOUNDATION ENGINEERS, INC.**

**BORING**  
E-3

**JOB NO.**  
00-154

**DATE**  
02/13/01

**TECHNICIAN**  
BPP

**DRILLER**  
Ru

**RIG**  
AIRBOAT

**Bottom 24' Below Deck**

( ) = Confining Pressure (PSI) in UU Triaxial test
**BORING LOG**

**PROJECT**: Pecan Island Terraces
**Location**: Vermillion Parish
**For**: Aucoin & Associates, Inc.
**Eunice, LA**

**BORE NO.**: 5-4
**JOB NO.**: 00-154
**DATE**: 02/13/01
**TECHNICIAN**: BRP
**DRILLER**: RJ
**RIG**: AIRBOAT

<table>
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<th>Initial Water Level</th>
<th>Compressive Strength (TSF)</th>
<th>Moisture Content (%)</th>
<th>Dry Unit Weight (pcf)</th>
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<td>Bottom 24' Below Deck</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**COMMENTS:**
- Shelby Tube Sample
- Sealed in Tube
- Split-spoon Sample
- No Recovery
- Auger Sample

SOILS AND FOUNDATION ENGINEERS, INC.
<table>
<thead>
<tr>
<th>DEPTH (FEET)</th>
<th>SAMPLE</th>
<th>Standard Penetration (Blows/FT) or Penetrometer (TSF)</th>
<th>Drill Method: Wet Rotary - Full Depth</th>
<th>Initial Water Level</th>
<th>Compressive Strength (TFI)</th>
<th>Moisture Content (%)</th>
<th>Dry Unit Weight (pcf)</th>
<th>Atterberg LL</th>
<th>PI</th>
<th>MATERIAL CLASSIFICATION</th>
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<tbody>
<tr>
<td>0.25</td>
<td>0.22</td>
<td>69</td>
<td>54</td>
<td>114</td>
<td>6.3</td>
<td>VERY SOFT BLACK ORGANIC CLAY</td>
<td>(OH)</td>
<td></td>
<td></td>
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<tr>
<td>0.11</td>
<td>0.11</td>
<td>117</td>
<td>41</td>
<td>125</td>
<td>5.9</td>
<td>VERY SOFT GRAY CLAY</td>
<td>(CH)</td>
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<td>0.31</td>
<td>75</td>
<td>55</td>
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<td>SOFT GRAY CLAY</td>
<td>(CH)</td>
<td></td>
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<td></td>
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<tr>
<td>Pushed Split Spoon</td>
<td></td>
<td>33</td>
<td>116</td>
<td></td>
<td></td>
<td>LOOSE SILTY SAND AND SHELL</td>
<td>(CH-SH)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Bottom 25' Below Deck</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

COMMENTS:
- Shelby Tube Sample
- Sealed in Tube
- Split-spoon Sample
- No Recovery
- Auger Sample

SOILS AND FOUNDATION ENGINEERS, INC.
**BORING LOG**

**PROJECT**
Pecan Island Terraces
Vermilion Parish, LA

**FOR**
Aucoin & Associates, Inc.
Eunice, LA

**BOURING**
B-6

**JOB NO.**
00-154

**DATE**
02/14/01

**TECHNICIAN**
BRP

**DRILLER**
Ru

**RIG**
AJPBOAT

<table>
<thead>
<tr>
<th>DEPTH (FEET)</th>
<th>SAMPLE</th>
<th>Standard Penetration (Blows/FL) or Penetrometer (TSF)</th>
<th>Drill Method: Wet Rotary - Full Depth</th>
<th>Initial Water Level:</th>
<th>MATERIAL CLASSIFICATION</th>
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<tbody>
<tr>
<td></td>
<td>0.12</td>
<td>0.20</td>
<td>PSF</td>
<td></td>
<td>4' DECK TO MUCLINE</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2.5' WATER</td>
</tr>
<tr>
<td></td>
<td>0.08</td>
<td>0.08</td>
<td>121</td>
<td>39</td>
<td>VERY SOFT BLACK ORGANIC CLAY (OH)</td>
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<tr>
<td></td>
<td></td>
<td>140</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.08</td>
<td>0.14</td>
<td>120</td>
<td>39</td>
<td>VERY SOFT GRAY CLAY</td>
</tr>
<tr>
<td></td>
<td></td>
<td>280</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>--WITH SILT LENSES</td>
</tr>
<tr>
<td></td>
<td>0.11</td>
<td>0.11</td>
<td>90</td>
<td>51</td>
<td>--WITH SHELL FRAGMENTS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>227</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**COMMENTS:**
- Pushed Split Spoon

Bottom 26' Below Deck
# Boring Log

**Project:** Pecan Island Terraces  
**Location:** Vermillion Parish, LA  
**For:** Aucoin & Associates, Inc.  
**Job No.:** 00-154  
**Date:** 02/14/01  
**Technician:** BRP

### Drilling Information
- **Drill Method:** Wet Rotary - Full Depth  
- **Initial Water Level:**
  - 4' Deck to Mudline  
  - 2.5' Water

<table>
<thead>
<tr>
<th>Depth (feet)</th>
<th>Sample</th>
<th>Standard Penetration (Blows/ft) or Penetrometer (TSF)</th>
<th>Compressive Strength (PSI)</th>
<th>Moisture Content (%)</th>
<th>Dry Unit Weight (PCF)</th>
<th>Atterberg Limits</th>
<th>Symbol</th>
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<tbody>
<tr>
<td>0.08</td>
<td></td>
<td>0.12 2400</td>
<td></td>
<td>88</td>
<td>50</td>
<td>155 115</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>No</td>
<td>Sample (1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.08</td>
<td></td>
<td>0.05 150</td>
<td></td>
<td>149</td>
<td>35</td>
<td>141 96</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Pushed</td>
<td>Split Spoon</td>
<td></td>
<td>69</td>
<td>55</td>
<td>74 50</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**MATERIAL CLASSIFICATION**
- **4' Deck to Mudline**  
- **2.5' Water**
- **Very Soft Black Organic Clay**
- **Very Soft Gray Clay**
- **Extremely Soft**  
  - with silty sand lenses
- **Soft Gray Clay**  
  - with shell and sand layers

**Comments:**
- (CL) Bottom 26' Below Deck
- (CH) Drilled Through Sample Zone
## BORING LOG

**PROJECT**
Pecan Island Terraces  
Vermilion Parish, LA  
Aucoin & Associates, Inc.  
Eunice, LA

**JOB NO.**
00-154

**DATE**
02/14/01

**TECHNICIAN**
BRP

**DRILLER**
RJ

**RIG**
AIRBOAT

---

<table>
<thead>
<tr>
<th>DEPTH (FEET)</th>
<th>SAMPLE</th>
<th>Standard Penetration (Blows/Flt.) or Penetrometer (TSF)</th>
<th>Compressive Strength (TSF)</th>
<th>Moisture Content (%)</th>
<th>Dry Unit Weight (pcf)</th>
<th>Atterberg LL</th>
<th>PI</th>
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<tbody>
<tr>
<td>25</td>
<td>0.25</td>
<td>0.12, 0.12</td>
<td>87</td>
<td>53</td>
<td></td>
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<tr>
<td>-15</td>
<td>0.09</td>
<td>0.07, 0.07</td>
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<td>35</td>
<td>142</td>
<td>92</td>
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<tr>
<td>-20</td>
<td>0.08</td>
<td>0.09, 0.09</td>
<td>107</td>
<td>54</td>
<td>132</td>
<td>98</td>
<td></td>
</tr>
</tbody>
</table>

**COMMENTS:**
- Pushed Split Spoon
- 21

**MATERIAL CLASSIFICATION**

- **3.5' DECK TO MUDBASE**  
  **2' WATER**

- **VERY SOFT BLACK ORGANIC CLAY**  
  **(O-H)**

- **VERY SOFT GRAY CLAY**

- **LOOSE GRAY SILTY SAND AND SHELL**  
  **(SP)**

**Bottom 25.5' Below Deck**

*15% Passing No. 200 sieve*
**BORING LOG**

**PROJECT**  Pecan Island Terraces  
Vermillion Parish, LA  
Aucoin & Associates, Inc.  
Eunice, LA

**BORING**  B-II  
**JOB NO.**  00-154  
**DATE**  02/14/01  
**TECHNICIAN**  BRP

**DRILLER**  RJ  
**RIG**  AIRBOAT

<table>
<thead>
<tr>
<th>DEPTH (FEET)</th>
<th>SAMPLE</th>
<th>Standard Penetration (Bombs/Flt.) or Penetrometer (TF)</th>
<th>Compressive Strength (TF)</th>
<th>Moisture Content (%)</th>
<th>Dry Unit Weight (CCF)</th>
<th>Atterberg Limits</th>
<th>Remarks</th>
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<tbody>
<tr>
<td>-5</td>
<td>No Recovery (1)</td>
<td>100</td>
<td>129</td>
<td>33</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>-10</td>
<td>0.11</td>
<td>0.09</td>
<td>130</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>-15</td>
<td>0.12</td>
<td>0.12</td>
<td>123</td>
<td>39</td>
<td>28</td>
<td>66</td>
<td>--soft</td>
</tr>
<tr>
<td>-20</td>
<td>0.13</td>
<td>0.14</td>
<td>109</td>
<td>43</td>
<td>64</td>
<td>59</td>
<td>--with silty sand lenses</td>
</tr>
<tr>
<td>-25</td>
<td>Pushed Split Spoon</td>
<td>60</td>
<td>52</td>
<td>34</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**COMMENTS:**
- Shelby Tube Sample
- Sealed in Tube
- Split-spoon Sample
- No Recovery
- Auger Sample

**MATERIAL CLASSIFICATION**

- 3.75' DECK TO MUDLINE
- 2.3' WATER
- BLACK ORGANIC CLAY SMEAR ON SHELBY TUBE
- EXTREMELY SOFT GRAY CLAY
- SOFT GRAY CLAY with shell fragment and sand layers
- Bottom 26' Below Deck
- (1) Very soft bottom, spuds penetrated very easily

**SOILS AND FOUNDATION ENGINEERS, INC.**
**BORING LOG**

**PROJECT**  
Pecan Island Terraces  
Vermilion Parish, LA

**FOR**  
Aucoin & Associates  
Eunice, LA

**BORING**  
E-12

**JOB NO.**  
00-154

**DATE**  
02/14/01

**TECHNICIAN**  
BRP

**DRILLER**  
RJ

**RIG**  
AIRBOAT

---

**Initial Water Level**

- **Depth (Feet):**
  - 0.05
  - 0.08
  - 0.09
  - 0.11

**Standard Penetration Test (B/Ft.):**
- 0.13
- 0.08
- 0.03
- 0.10

**Sample:**
- Pushed Split Spoon

**Compressive Strength (TSF):**
- 120
- 145
- 145
- 87

**Moisture Content (%):**
- 41
- 35
- 35
- 50

**Dry Unit Weight (pcf):**
- 151
- 140
- 125
- 65

**Atterberg LL PI:**
- 109
- 100
- 95
- 34

**Material Classification:**
- **3.5' Deck to Mudline**
- **2' Water**

- **Very Soft Black Organic Clay**
  - (OH)

- **Very Soft Gray Clay**
  - --extremely soft

- **--with silty sand lenses**

- **--with sand layers**
  - (CH)

**Comments:**
- Shelby Tube Sample
- Sealed in Tube
- Split-spoon Sample
- No Recovery
- Auger Sample

**Bottom 24.5' Below Deck**

---

**SOILS AND FOUNDATION ENGINEERS, INC.**
### CONSOLIDATION TEST REPORT

#### TEST RESULTS

<table>
<thead>
<tr>
<th>Natural Saturation</th>
<th>Natural Moisture</th>
<th>Dry Dens. (pcf)</th>
<th>LL</th>
<th>PI</th>
<th>Sp.Gr.</th>
<th>Precons. (tsf)</th>
<th>Cc</th>
<th>e0</th>
</tr>
</thead>
<tbody>
<tr>
<td>98.1 %</td>
<td>107.0 %</td>
<td>42.3</td>
<td>125</td>
<td>96</td>
<td>2.600</td>
<td></td>
<td></td>
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</table>

**Compression Index** = 1.12

**MATERIAL DESCRIPTION**

SOFT BLACK CLAY W/ORG BECOMING GRAY CLAY

**Class:** OH-CH

**Remarks:**

BORING B-2

DEPTH 3.5-5.5

**Project No.:** 00-154

**Project:** PECAN ISLAND TERRACES

**Location:** VERMILION PARISH, LOUISIANA

**Date:** 3/36/01

---

Fig. No. A-1

---

SOILS AND FOUNDATION ENGINEERS, INC.
CONSOLIDATION TEST REPORT

<table>
<thead>
<tr>
<th>Natural Saturation</th>
<th>Natural Moisture</th>
<th>Dry Dens. (pcf)</th>
<th>LL</th>
<th>PI</th>
<th>Sp.Gr.</th>
<th>Precons. (tsf)</th>
<th>Cc</th>
<th>eo</th>
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</thead>
<tbody>
<tr>
<td>100.8 %</td>
<td>118.6 %</td>
<td>40.5</td>
<td>88</td>
<td>66</td>
<td>2.750</td>
<td>0.29</td>
<td>1.78</td>
<td>3.2367</td>
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TEST RESULTS

- Compression Index = 1.78

MATERIAL DESCRIPTION

- Class: CH
- Remarks: BORING B-4
- Depth: 11'-13'

Project No.: 00-154
Project: PECAN ISLAND TERRACES
Location: VERMILION PARISH, LOUISIANA

Date: 3/26/01

CONSOLIDATION TEST REPORT
SOILS AND FOUNDATION ENGINEERS, INC.

Fig. No. A-2
CONsolidation Test Report

Natural Saturation | Natural Moisture | Dry Dens. (pcf) | LL | PI | Sp.Gr. | Precons. (tsf) | Cc | e0
--- | --- | --- | --- | --- | --- | --- | --- | ---
89.9 % | 133.4 % | 33.4 | 127 | 97 | 2.600 | 0.27 | 1.99 | 3.8554

Test Results

Compression Index = 1.99

Material Description

Very soft gray clay
W/Silt lenses

Class: CH

Remarks:

BoRInG B-6
DePth 14-16'

Consolidation Test Report
Soils and Foundation Engineers, Inc.

Fig. No. A-3
CONSOLIDATION TEST REPORT

Natural Saturation | Natural Moisture | Dry Dens. (pcf) | LL | PI | Sp.Gr. | Precons. (tsf) | Cc | e_0
--- | --- | --- | --- | --- | --- | --- | --- | ---
98.3 % | 107.0 % | 42.4 | 138 | 98 | 2.600 | 0.42 | 1.77 | 2.8275

TEST RESULTS
Compression Index = 1.77

MATERIAL DESCRIPTION
VERY SOFT GRAY CLAY W/SILTY SAND LENSES
Class: CH
Remarks:
BORING B-9
DEPTH 18.5-20.5'

Project No.: 00-154
Project: PECAN ISLAND TERRACES
Location: VERMILION PARISH, LOUISIANA
Date: 3/23/01

CONSOLIDATION TEST REPORT
SOILS AND FOUNDATION ENGINEERS, INC.