Geotechnical Investigation Data Report

Island Road Marsh Creation/Nourishment (TE-117)
Terrebonne Parish, Louisiana

for

Louisiana Coastal Protection & Restoration Authority

February 1, 2017

GeoEngineers
Earth Science + Technology

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File No. 16715-040-01

February 1, 2017

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Louisiana Coastal Protection and Restoration Authority
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INTRODUCTION AND PROJECT UNDERSTANDING

GeoEngineers, Inc. (GeoEngineers) is pleased to present this Geotechnical Investigation Data Report for Phase II of the Island Road Marsh Creation and Nourishment (TE-117) project to Louisiana Coastal Protection and Restoration Authority (CPRA). The project is located in southeast Terrebonne Parish approximately 10 miles southeast of Montegut, Louisiana, southwest of the Pointe-aux-Chênes marina on Louisiana Highway 665, immediately east-northeast of the Isle de Jean Charles marina on Island Road, and south of a dual pipeline canal servitude locally called the "Twin Pipelines". A project vicinity map is shown on Figure 1.

GeoEngineers' services were performed under contract between Louisiana Department of Natural Resources (LDNR)/Coastal Protection and Restoration Authority (CPRA) and GeoEngineers (LDNR Contract No. 2503-14-26 "Geotechnical Services for Coastal Restoration Projects", dated December 9, 2013). Our services were authorized by the Notice to Proceed document dated June 29, 2016, for Contract No. 2503-14-26 Task 12.

FIELD EXPLORATION

Field exploration for Phase II of the TE-117 project included performing 19 CPT soundings (C-19 through C-37) and drilling nine soil borings (B-8 through B-16). Field exploration locations are shown on Figure 2.

Prior to our geotechnical field exploration, exploration locations were surveyed and staked in the field by Lonnie G. Harper and Associates (LGH). LGH performed a magnetometer survey around each proposed exploration point before placing the location stake. Several locations, including soil borings B-9 and B-10 and CPT soundings C-19, and C-25, were moved to avoid magnetic anomalies in the vicinity of the proposed locations. A copy of LGH's survey report is included in Appendix D.

CPT soundings were completed between August 3, 2016 and August 6, 2016 in general accordance applicable ASTM standards, adapted to an airboat-mounted hydraulic ram for a marsh area. CPT data was collected using Geoprobe/Geotech A.B. equipment. A summary of CPT sounding locations, including completion depth, is shown on Figure 2. At a few locations, CPT soundings were terminated prematurely due to probe refusal in sand layers. Data was collected and stored by GeoEngineers' field representative at the time of field work then transferred to GeoEngineers' office for processing after completion of field activities. Logs of the CPT soundings can be found in Appendix A. CPT sounding locations elevations, and depths are shown in the table below.

TABLE 1. CPT SOUNDING LOCATION SUMMARY

CPT	Depth (ft)	Mudline Elevation (NAVD 88)	Latitude	Longitude
C-19	40'	-1.7	N29°24'13.7"	W90°28'45.9"
C-20	30'	-0.9	N29°24'06.4"	W90°28'27.0"
C-21	30'	-1.9	N29°24'02.7"	W90°28'45.7"
C-22	30'	-0.9	N29°23'58.6"	W90°28'54.6"
C-23	30'	-0.5	N29°23'59.5"	W90°28'37.6"
C-24	30'	-0.9	N29°24'00.6"	W90°28'28.6"
C-25	40'	-2	N29°23'47.9"	W90°28'59.4"

CPT	Depth (ft)	Mudline Elevation (NAVD 88)	Latitude	Longitude
C-26	40'	-0.7	N29°23'48.7"	W90°28'34.9"
C-27	39.9'*	-1.9	N29°23'57.4"	W90°28'19.8"
C-28	30'	-1.8	N29°23'48.1"	W90°28'20.2"
C-29	28.5'*	-2	N29°23'37.7"	W90°28'40.7"
C-30	30'	-2	N29°23'34.7"	W90°29'00.8"
C-31	30'	0.4	N29°23'21.7"	W90°28'54.0"
C-32	22.5'*	-1.4	N29°23'22.2"	W90°28'36.2"
C-33	30'	-0.6	N29°23'15.0"	W90°28'47.4"
C-34	12.4'*	-2.2	N29°23'05.1"	W90°28'44.4"
C-35	30'	-1	N29°23'07.7"	W90°28'34.7"
C-36	30'	-0.6	N29°23'41.1"	W90°28'26.9"
C-37	21.7'*	-1.1	N29°23'22.4"	W90°28'44.5"

Field crews encountered a small pocket of marsh gas while extracting the CPT probe from C-21. Gas pockets were also encountered at C-1, C-3, and C-11 during our Phase I investigation in 2015. The site may contain additional gas pockets not uncovered by our investigations.

The soil borings were completed between August 2, 2016 and August 6, 2016 using a drill rig mounted to a single-engine airboat. Sampling was conducted in general accordance with applicable ASTM standards, including collecting undisturbed-type cohesive and semi-cohesive samples with a 3-inch outside diameter (O.D.) steel Shelby tube sampler. Cohesionless grab samples were generally collected by pushing a 2-inch O.D. split barrel spoon sampler into the soil. Section 4.5.1 of the Scope of Services document for the Island Road Project states that "Split spoon sampling shall be conducted in sands." During our field investigation, the split spoon was hydraulically pushed without performing a Standard Penetration Test because the single-engine airboat used during field exploration was not equipped with a cathead. We do not expect the lack of SPT data to affect our results, since a conservative value for the friction angle of the encountered sands will be assumed, not calculated from SPT N values.

Immediately upon retrieval from the subsurface, each sample was examined by our field engineer and classified using visual and manual identification methods. Undisturbed cohesive samples in Shelby tubes were examined at the bottom end of the sample for field classification, capped and labeled and stored upright with the bottom down to reduce the likelihood of sample disturbance during transport to the GeoEngineers soil mechanics laboratory in Baton Rouge, Louisiana. Logs of soil borings are included in Appendix B. Soil boring locations are shown in the table below.

TABLE 2. BORING LOCATION SUMMARY

Boring	Depth (ft)	Mudline Elevation (NAVD 88)	Latitude	Longitude
B-8	60'	-1.6	N29°24'08.9"	W90°28'37.6"
B-9	40'	-1.7	N29°24'13.7"	W90°28'45.9"
B-10	40'	-2	N29°23'47.9"	W90°28'59.4"
B-11	60'	-1.1	N29°23'48.9"	W90°28'46.6"
B-12	60'	-0.1	N29°23'49.7"	W90°28'26.7"
B-13	30'	-0.6	N29°23'41.1"	W90°28'26.9"
B-14	30'	-1.4	N29°23'38.7"	W90°28'50.2"
B-15	30'	-1.4	N29°23'22.2"	W90°28'36.2"
B-16	60'	-1.6	N29°23'14.2"	W90°28'40.0"

LABORATORY TESTING

Intact soft to medium semi-cohesive and cohesive samples were subjected to laboratory miniature vane (mini vane) shear testing prior to extrusion. Upon extrusion, each sample was examined to confirm or modify field classifications. Representative soil samples were selected for laboratory testing consisting of moisture content, dry unit weight, unconsolidated undrained compression, organic content, fiber content, grain size analysis, consolidation testing and Atterberg limits. Laboratory test results are presented on the soil boring logs in Appendix B and lab data summary tables and figures in Appendix C.

CPT SOUNDING RESULTS

CPT sounding data were processed using Dataforensics' Rapid CPT, an add-in to the soil information database and presentation software gINT. Soil types were identified using the Robertson and Campanella (1986) cone tip pressure (q_t) versus friction ratio (FR) non-normalized soil behavior type (SBT) correlation. This correlation generally provides a reasonable estimate of soil types as we observed them in our soil borings; however, published correlations do not always accurately reflect in-situ materials, especially for organic soils and sand/clay/silt mixtures. The Robertson and Campanella correlation was chosen because the results were reasonably consistent with our soil borings, and because it relies on measurements that are consistent for each sounding. In our previous study, the correlation we selected relied on pore pressures, which were too variable to provide consistent and reliable estimates of soil behavior in our present soundings. Shear strengths based on CPT tip pressure will be provided under separate cover and in our Geotechnical Engineering Report (GER).

SITE CONDITIONS

A detailed site description will be provided in our GER, as directed in CPRA's May 2016 Scope of Services document. At the time of our visit, the site surface was a mix of degraded marsh and open water areas. Subsurface conditions are shown by our soil boring and CPT sounding logs, and general trends in soil distribution can be identified from the subsurface profiles shown on Figures 3a through 3h. Further discussion of site subsurface conditions will be included in our GER.

LIMITATIONS

The information presented in this report is based on field explorations completed for this study and judgments made by GeoEngineers. This report is specific to this site and should not be used other than for the design of Phase II of the Island Road Marsh Creation and Nourishment (TE-117) project located in Terrebonne Parish, Louisiana. We have provided the requested information for the geotechnical investigation data report in this document.

Within the limitations of scope, schedule, and budget, our services have been executed in accordance with generally accepted practices in the field of geotechnical engineering in this area at the time this report was prepared. No warranty or other conditions expressed or implied should be understood.

Please refer to Appendix E titled "Report Limitations and Guidelines for Use" for additional information pertaining to use of this report.

FIGURES

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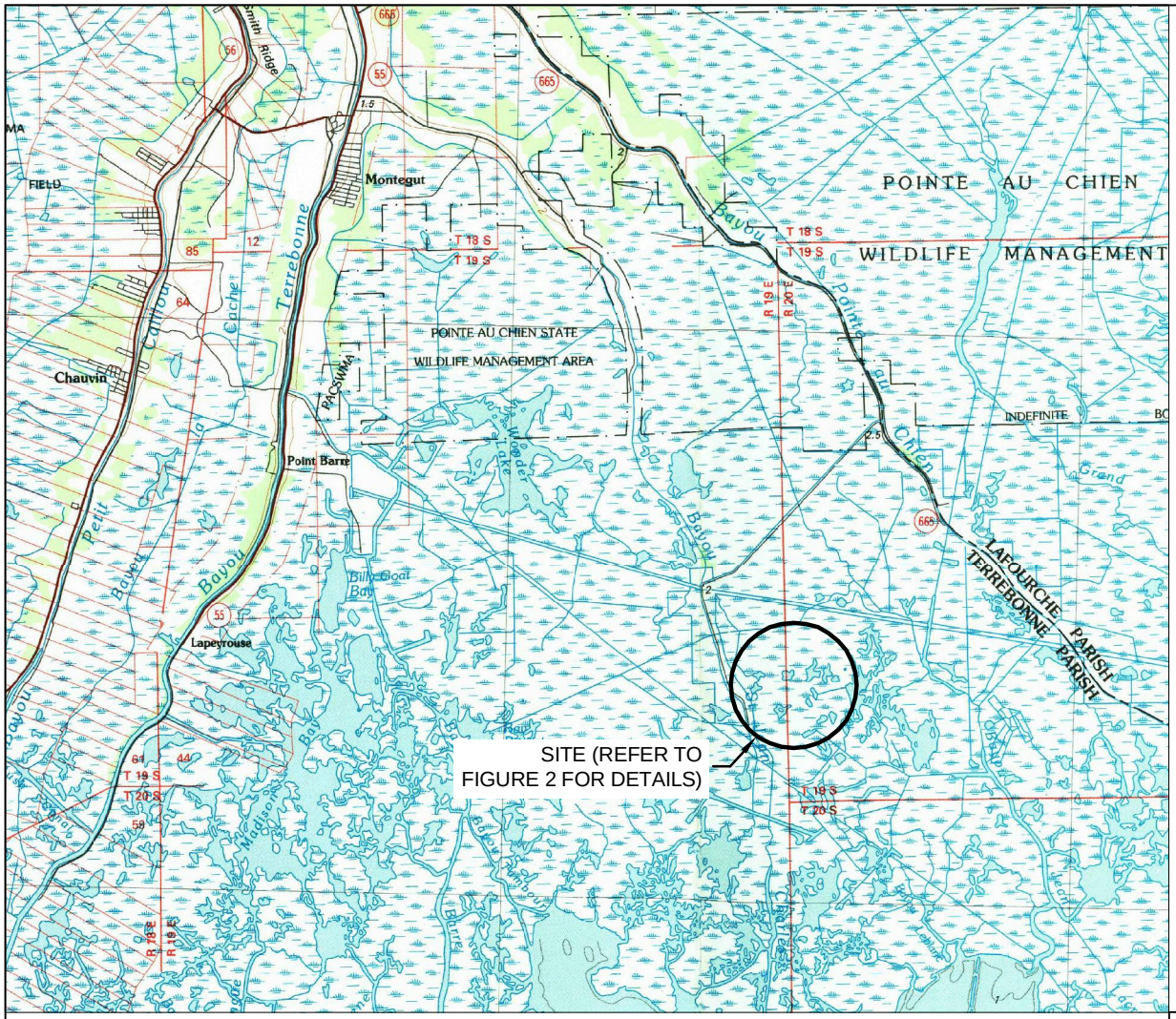

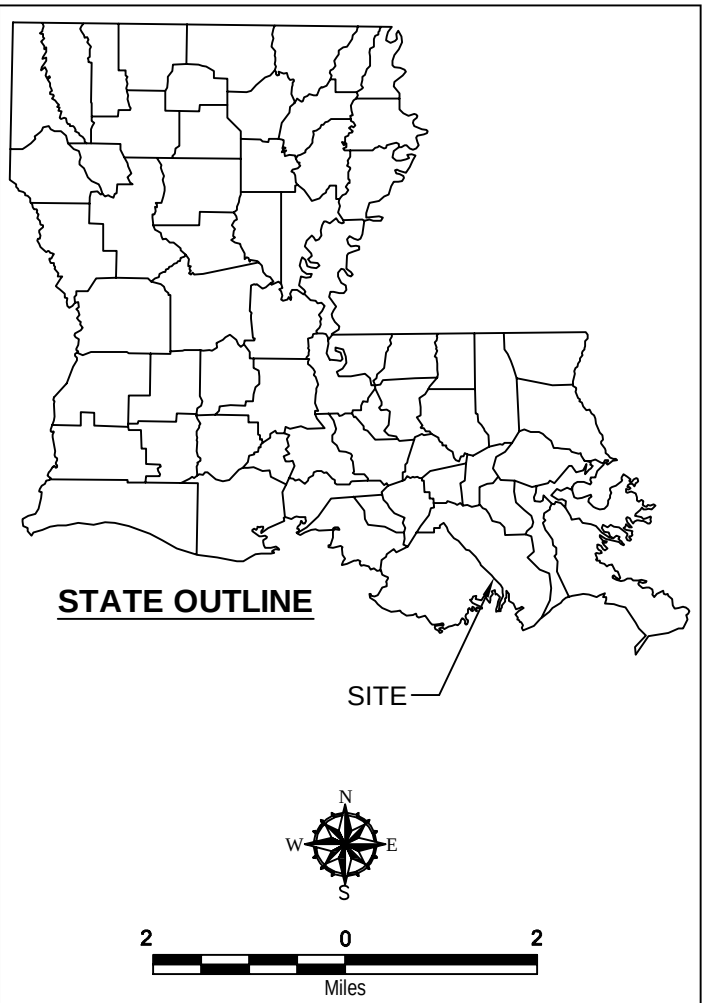

Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. can not guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Reference: Topographic image was taken from USGS, 100K Template, Quad: Terrebonne Bay, Dated: 1983

VICINITY MAP

Island Road Marsh Creation
and Nourishment (TE-117)
Terrebonne Parish, Louisiana

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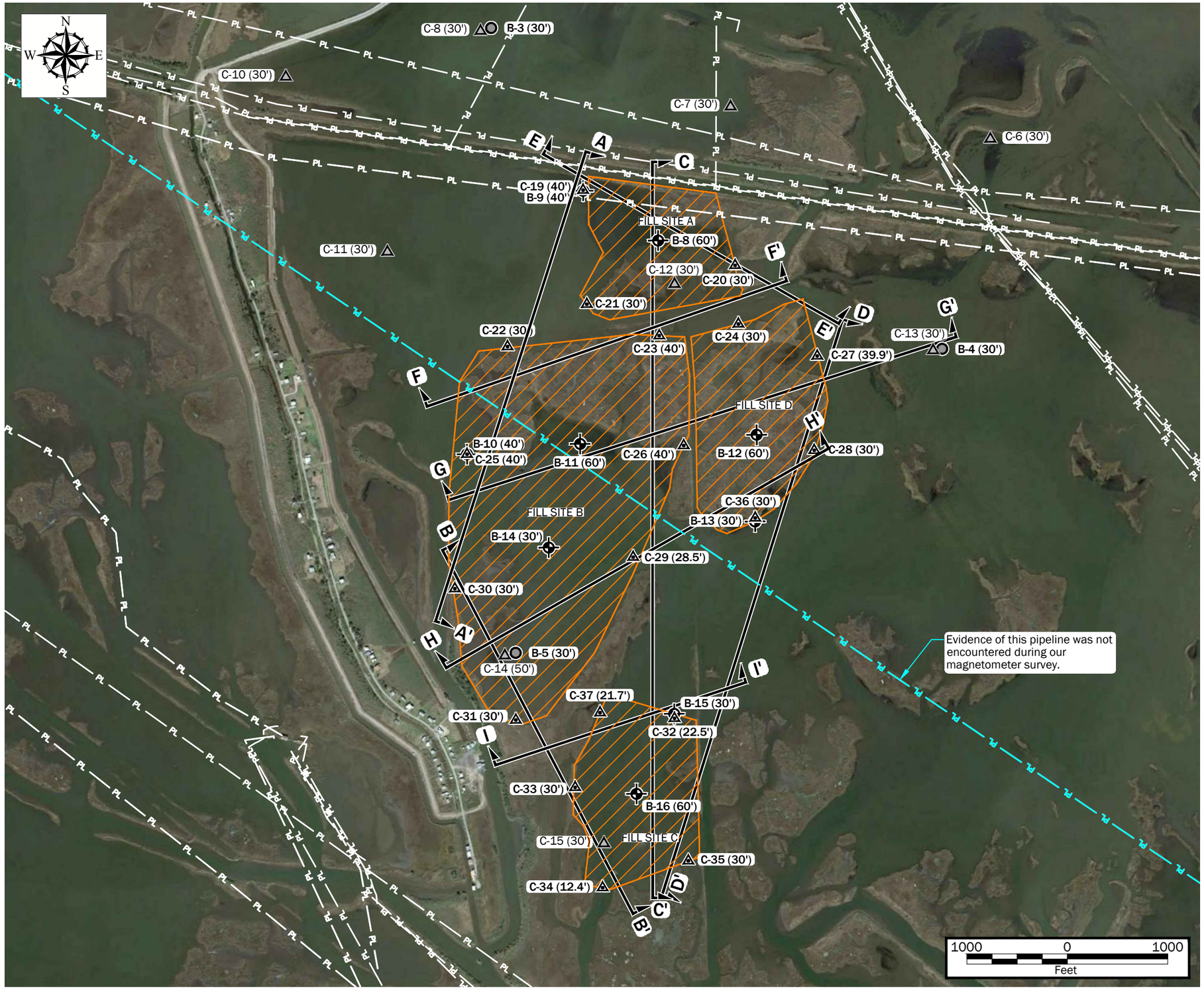
Figure 1



Legend

- B-8 — Phase II Boring Location
- C-19 — Phase II CPT Location
- B-1 — Phase I Boring Location
- C-1 — Phase I CPT Location
- Proposed Marsh Creation Area
- PL — Pipeline Locations
- A / A' — Cross Section (refer to Figures 3a to 3c)

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Data Source:

1. Aerial was taken from Google Earth Pro., Imagery Dated 1/25/2015
2. Pipeline routes were provided by CPRA, Island Road Marsh Creation, State Project Number: TE-117, Sheet 2, Dated July 2014
3. Refer to the July 15, 2015 Geotechnical Data Report, Island Road Marsh Creation and Nourishment (TE-117), Terrebonne Parish, Louisiana, for CPT and soil boring logs/data for B-3, B-4, B-5, C-6, C-7, C-8, C-13, C-14 and C-15

Site Plan

Island Road Marsh Creation and Nourishment (TE-117)
Phase II
Terrebonne Parish, Louisiana

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Figure 2

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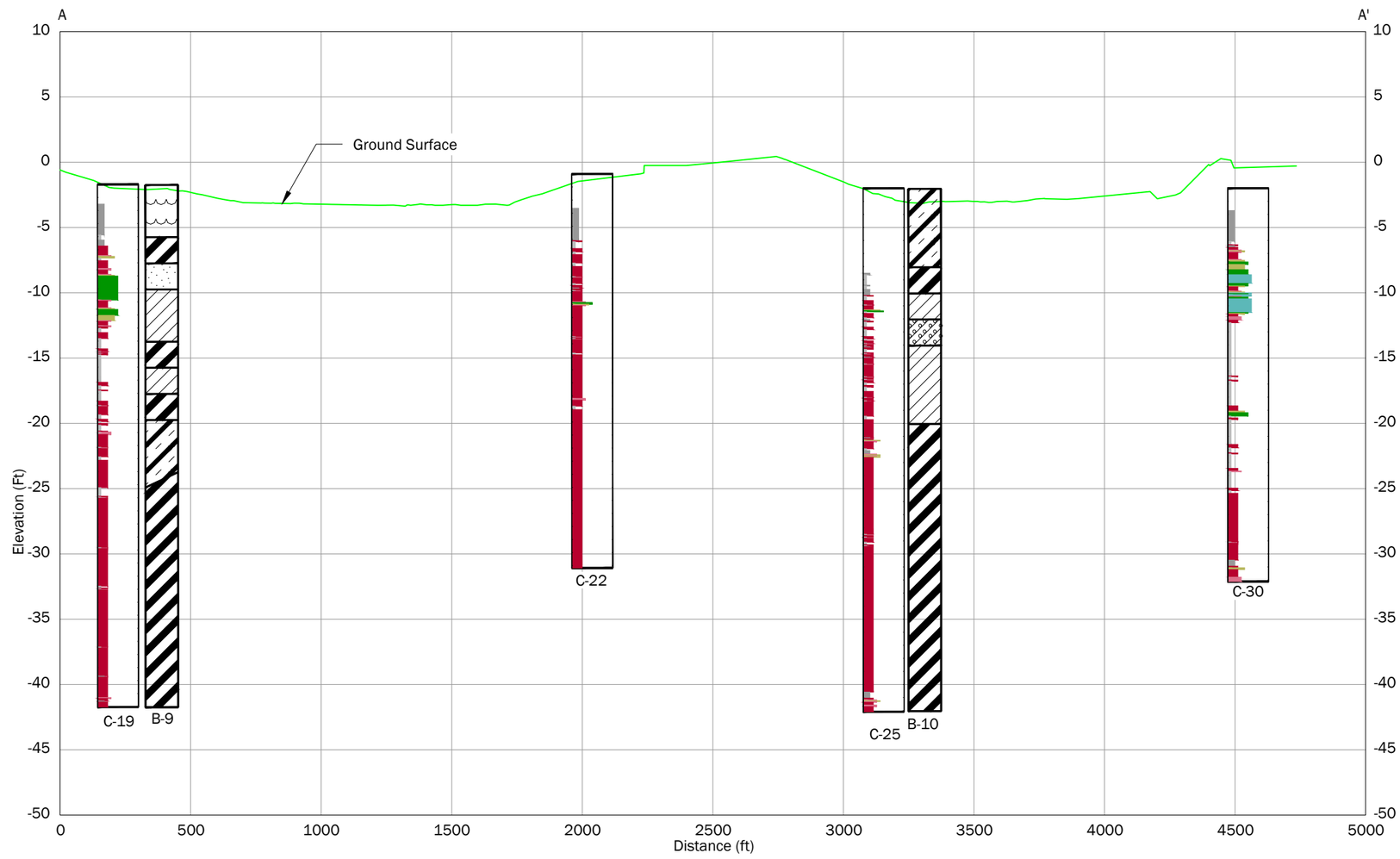

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Data Source:

1. Survey information was taken from CPRA, TE-117 Fill Site Survey, Dated: 9/12/2016
2. CPT and Boring Elevations were provided by Lonnie G. Harper & Associates Inc., Boring & CPT Locations, Project # 2016-53, Dated 7/25/2016

CPT Legend

- 1 - Sensitive, Fine Grained Soils
- 2 - Organic Soils, Peats
- 3 - Clay
- 4 - Clays & Silty Clays
- 5 - Clayey Silt & Silty Clays
- 6 - Sandy Silts & Clayey Silts
- 7 - Silty Sands & Sandy Silts
- 8 - Sands & Silty Sands
- 9 - Sands

Boring Legend

- PT Peat
- CH Clay
- CL Silty Clay
- SC-SM Silty Clayey Sand
- ML Silt
- SP Sand
- SC Clayey Sand
- OH Organic Clay
- SM Silty Sand

Subsurface Profile A-A'

Island Road Marsh Creation and Nourishment (TE-117)
Phase II
Terrebonne Parish, Louisiana

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Figure 3a

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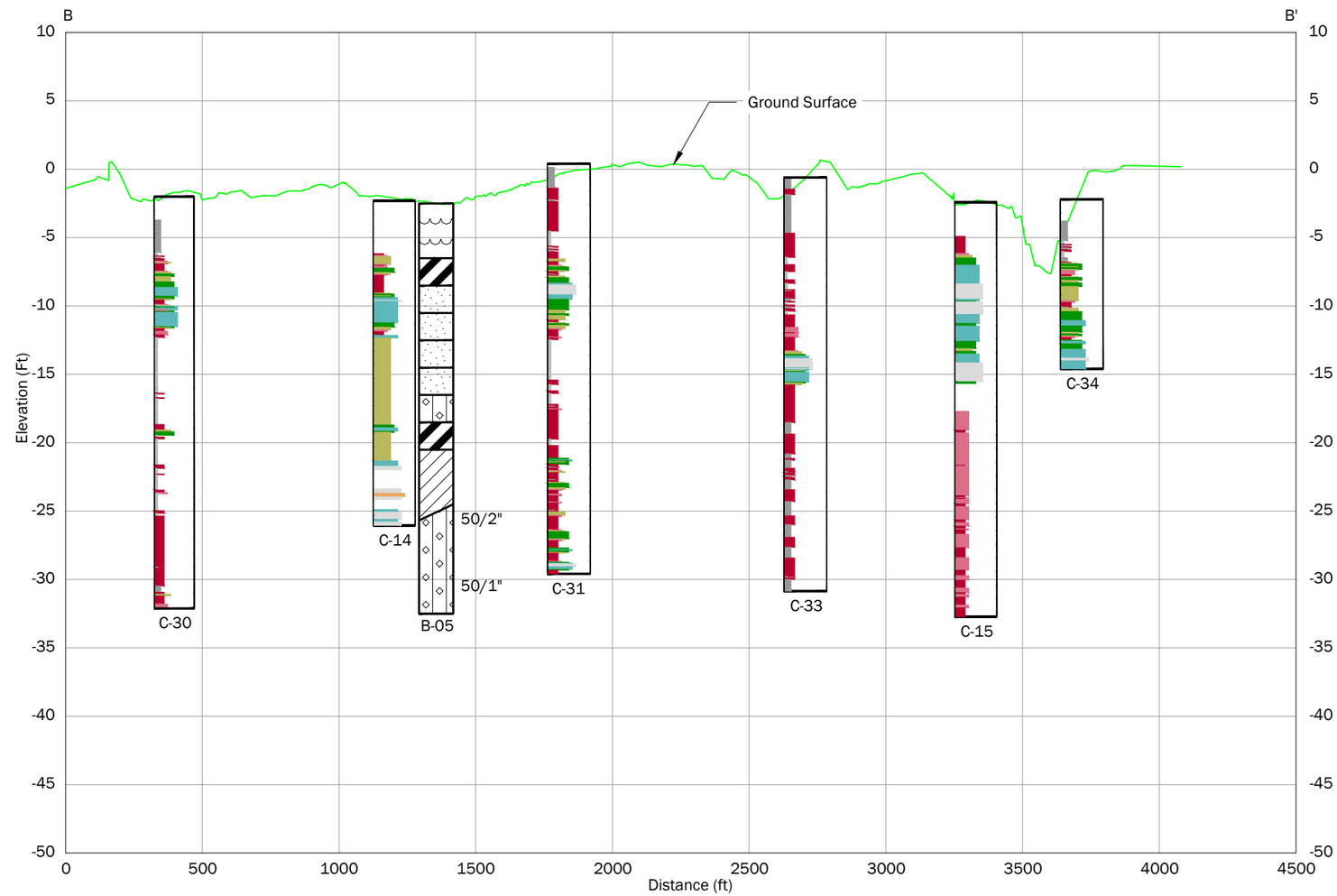

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CPT Legend

- 1 - Sensitive, Fine Grained Soils
- 2 - Organic Soils, Peats
- 3 - Clay
- 4 - Clays & Silty Clays
- 5 - Clayey Silt & Silty Clays
- 6 - Sandy Silts & Clayey Silts
- 7 - Silty Sands & Sandy Silts
- 8 - Sands & Silty Sands
- 9 - Sands

Boring Legend

- PT Peat
- CH Clay
- CL Silty Clay
- SC-SM Silty Clayey Sand
- ML Silt
- SP Sand
- SC Clayey Sand
- OH Organic Clay
- SM Silty Sand

Subsurface Profile B-B'

Island Road Marsh Creation and Nourishment (TE-117)
Phase II
Terrebonne Parish, Louisiana

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Figure 3b

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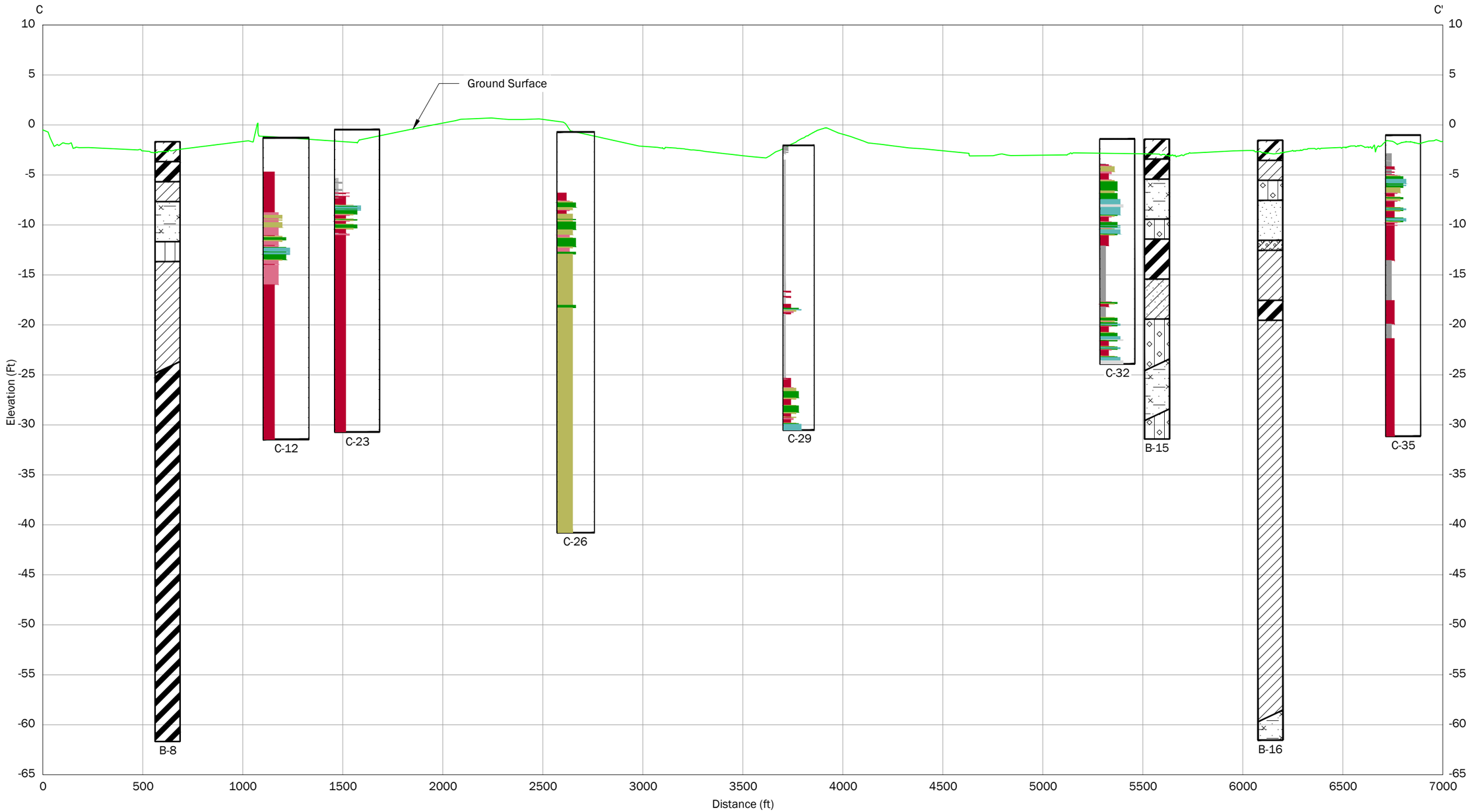

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CPT Legend

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- 3 - Clay
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- 6 - Sandy Silts & Clayey Silts
- 7 - Silty Sands & Sandy Silts
- 8 - Sands & Silty Sands
- 9 - Sands

Boring Legend

- PT Peat
- CH Clay
- CL Silty Clay
- SC-SM Silty Clayey Sand
- ML Silt
- SP Sand
- SC Clayey Sand
- OH Organic Clay
- SM Silty Sand

Subsurface Profile C-C'

Island Road Marsh Creation and Nourishment (TE-117)
Phase II
Terrebonne Parish, Louisiana

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Figure 3c

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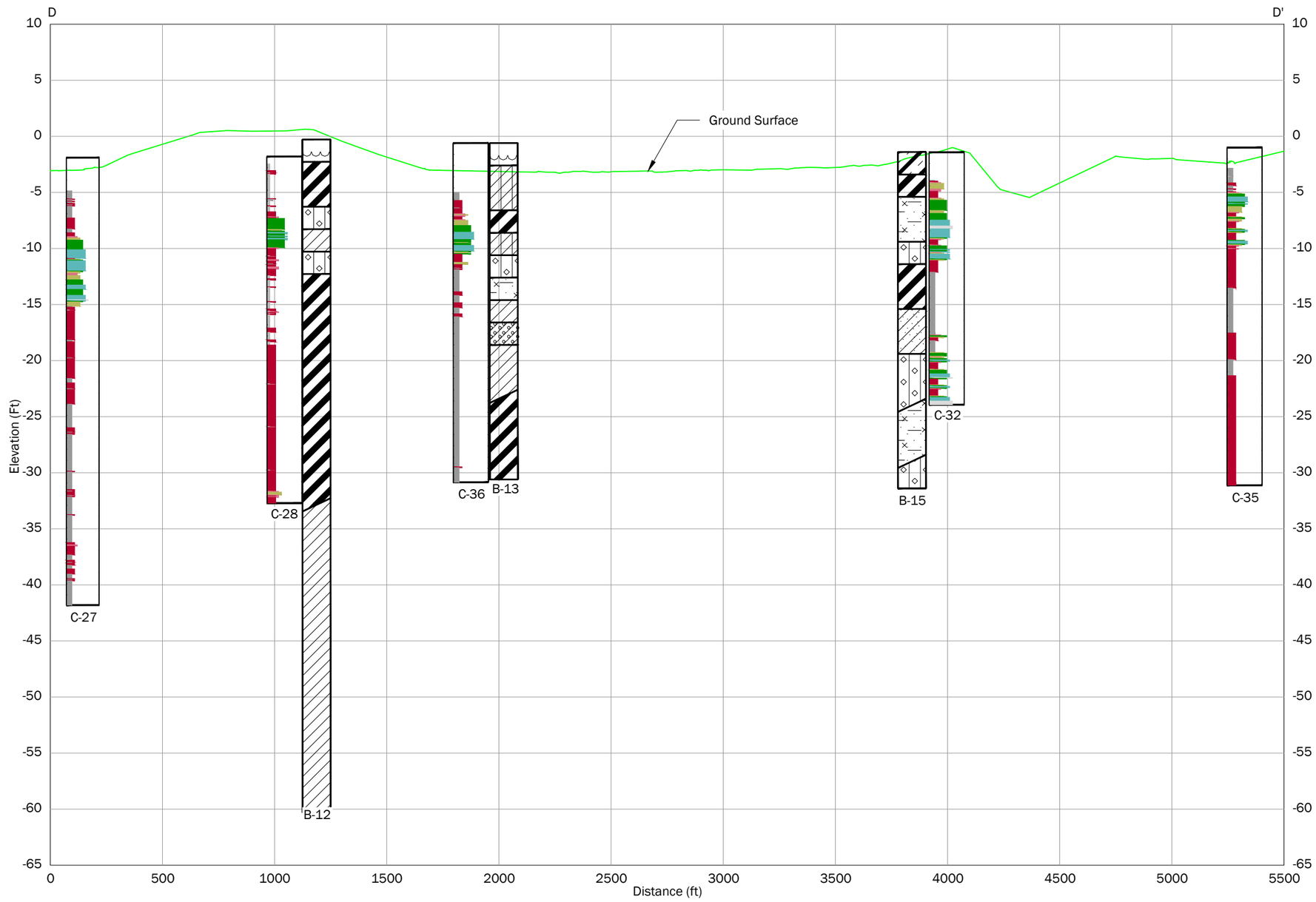

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CPT Legend

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2 - Organic Soils, Peats
3 - Clay
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5 - Clayey Silt & Silty Clays
6 - Sandy Silts & Clayey Silts
7 - Silty Sands & Sandy Silts
8 - Sands & Silty Sands
9 - Sands

Boring Legend

PT Peat
CH Clay
CL Silty Clay
SC-SM Silty Clayey Sand
SP-SC Sand with Clay
SP Sand
SC Clayey Sand
OH Organic Clay
SM Silty Sand

Subsurface Profile D-D'

Island Road Marsh Creation and Nourishment (TE-117)
Phase II
Terrebonne Parish, Louisiana

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Figure 3d

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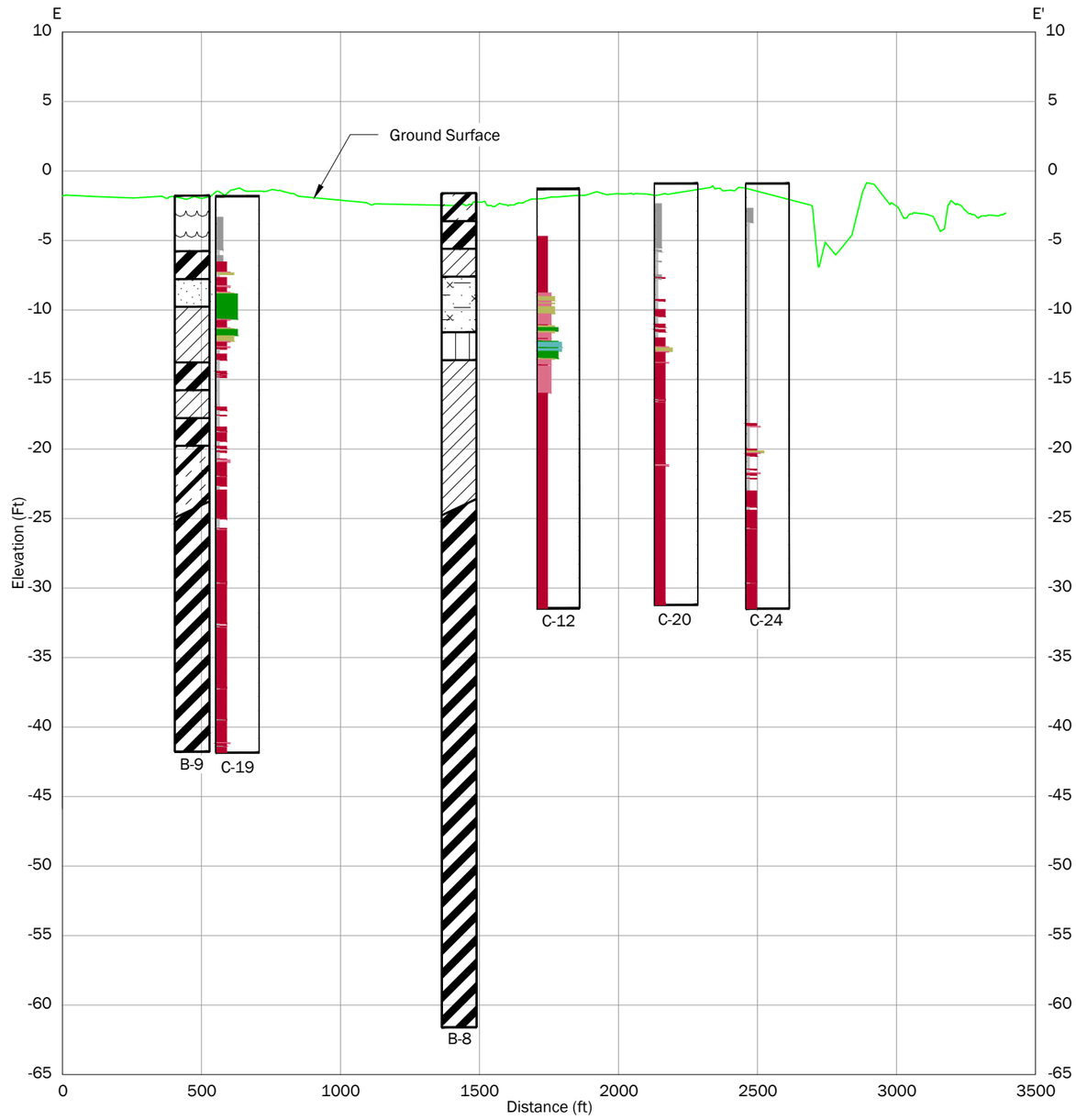

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CPT Legend

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- 7 - Silty Sands & Sandy Silts
- 8 - Sands & Silty Sands
- 9 - Sands

Boring Legend

- PT Peat
- CH Clay
- CL Silty Clay
- SC-SM Silty Clayey Sand
- SP Sand
- OH Organic Clay
- ML Silt

Subsurface Profile E-E'

Island Road Marsh Creation and Nourishment (TE-117)
Phase II
Terrebonne Parish, Louisiana

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Figure 3e

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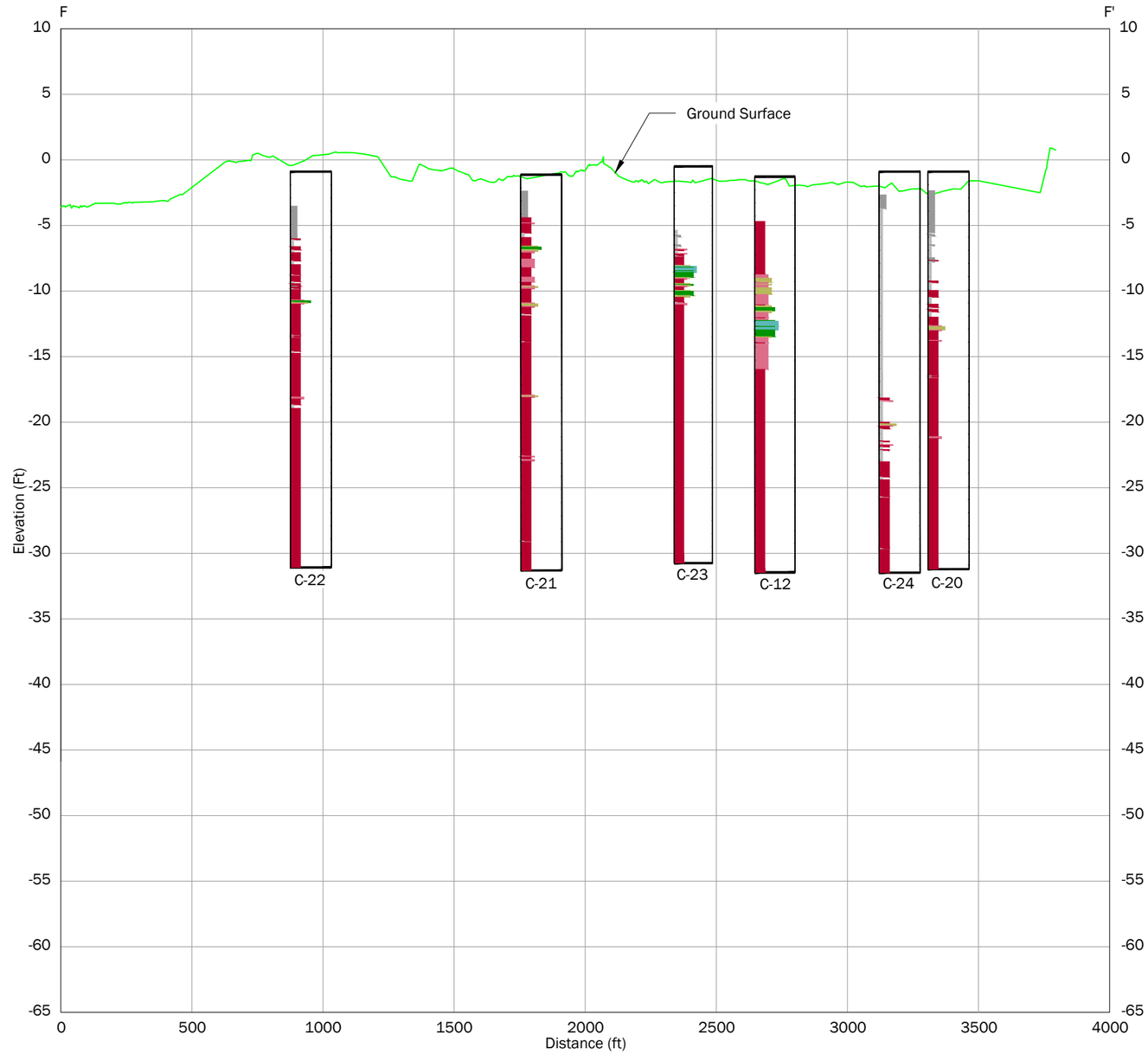

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Boring Legend

- PT Peat
- CH Clay
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- SC-SM Silty Clayey Sand
- SP-SM Sand with Silt
- SP Sand
- SC Clayey Sand
- OH Organic Clay
- SM Silty Sand

Subsurface Profile F-F'

Island Road Marsh Creation and Nourishment (TE-117)
Phase II
Terrebonne Parish, Louisiana

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Figure 3f

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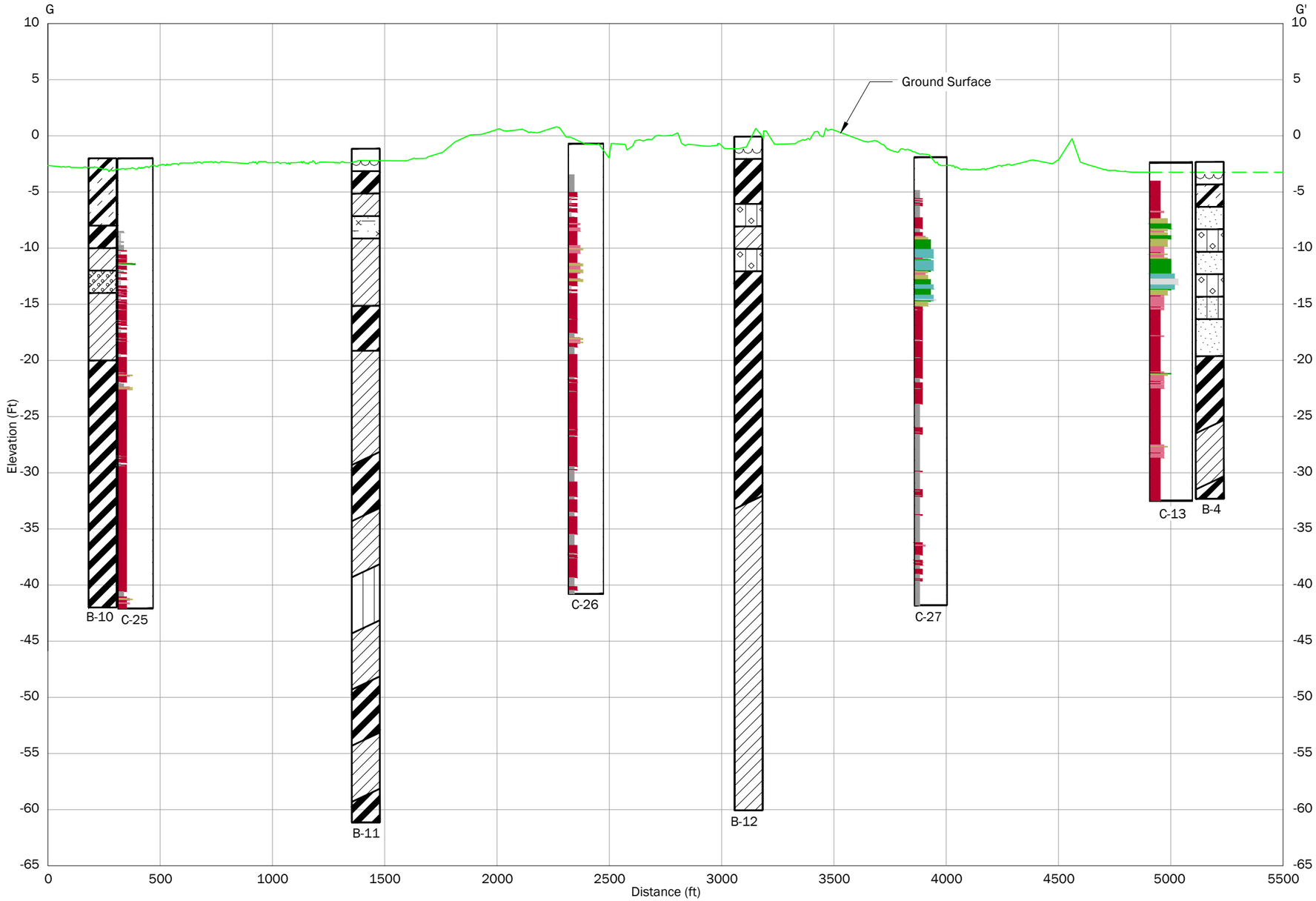

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- 9 - Sands

Boring Legend

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- SC-SM Silty Clayey Sand
- ML Silt
- SP Sand
- SC Clayey Sand
- OH Organic Clay
- SM Silty Sand
- SP-SM Sand with Silt

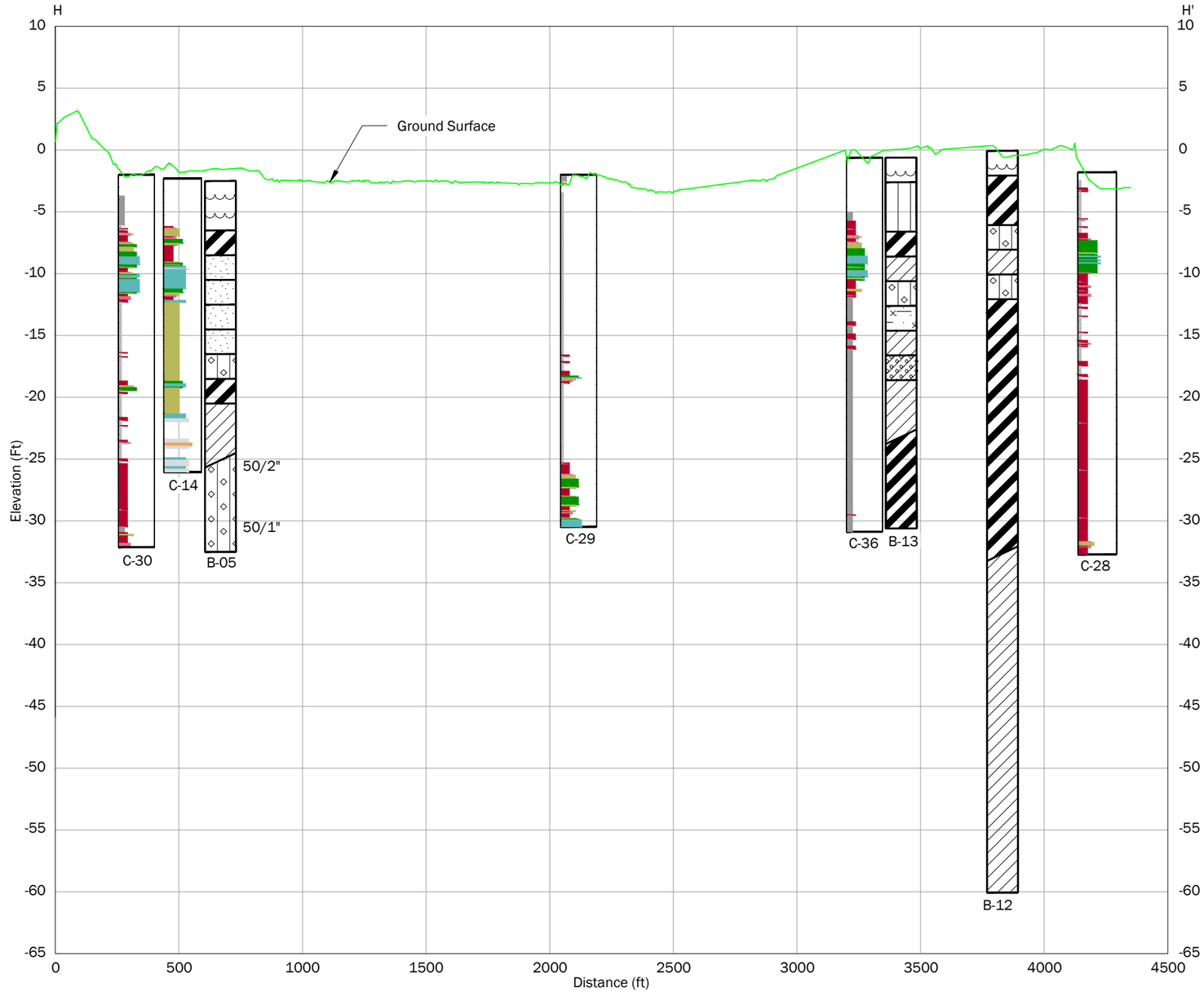
Subsurface Profile G-G'

Island Road Marsh Creation and Nourishment (TE-117)
Phase II
Terrebonne Parish, Louisiana

GEOENGINEERS

Figure 3g

P:\16\16715040\01\CAD\Working\BoringLocationPlan.dwg TAB:Section G-G' Date Exported: 01/31/17 - 17:27 by kcook



Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source:

1. Survey information was taken from CPRA, TE-117 Fill Site Survey, Dated: 9/12/2016
2. CPT and Boring Elevations were provided by Lonnie G. Harper & Associates Inc., Boring & CPT Locations, Project # 2016-53, Dated 7/25/2016

CPT Legend

- 1 - Sensitive, Fine Grained Soils
- 2 - Organic Soils, Peats
- 3 - Clay
- 4 - Clays & Silty Clays
- 5 - Clayey Silt & Silty Clays
- 6 - Sandy Silts & Clayey Silts
- 7 - Silty Sands & Sandy Silts
- 8 - Sands & Silty Sands
- 9 - Sands

Boring Legend

- PT Peat
- CH Clay
- CL Silty Clay
- SC-SM Silty Clayey Sand
- ML Silt
- SP Sand
- SC Clayey Sand
- OH Organic Clay
- SM Silty Sand

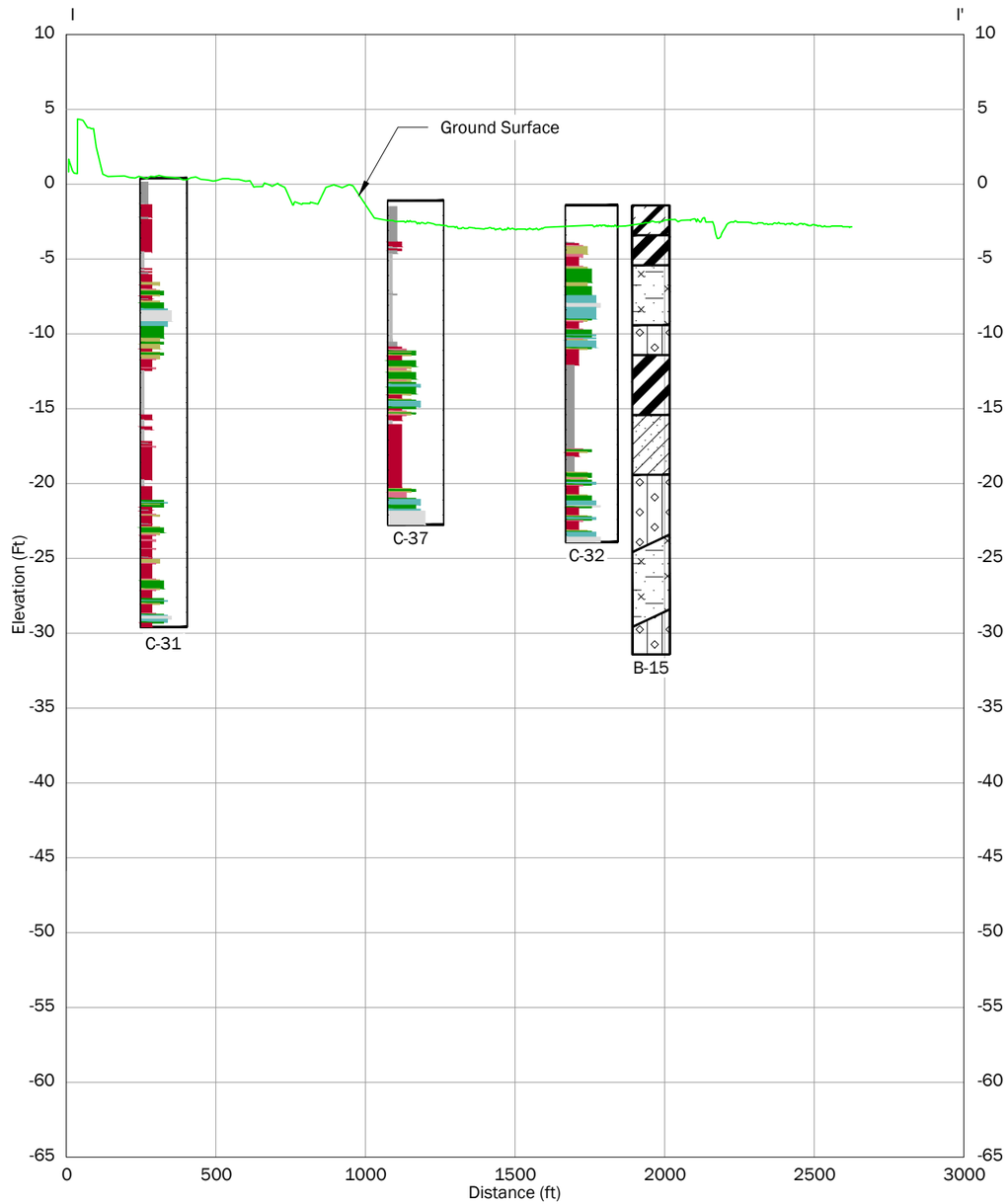
Subsurface Profile H-H'

Island Road Marsh Creation and Nourishment (TE-117)
Phase II
Terrebonne Parish, Louisiana

GEOENGINEERS

Figure 3h

P:\16\16715040\01\CAD\Working\BoringLocationPlan.dwg TAB:Section H-H' Date Exported: 01/31/17 - 17:27 by kcook



Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source:

1. Survey information was taken from CPRA, TE-117 Fill Site Survey, Dated: 9/12/2016
2. CPT and Boring Elevations were provided by Lonnie G. Harper & Associates Inc., Boring & CPT Locations, Project # 2016-53, Dated 7/25/2016

CPT Legend

- 1 - Sensitive, Fine Grained Soils
- 2 - Organic Soils, Peats
- 3 - Clay
- 4 - Clays & Silty Clays
- 5 - Clayey Silt & Silty Clays
- 6 - Sandy Silts & Clayey Silts
- 7 - Silty Sands & Sandy Silts
- 8 - Sands & Silty Sands
- 9 - Sands

Boring Legend

- PT Peat
- CH Clay
- CL Silty Clay
- SC-SM Silty Clayey Sand
- ML Silt
- SP Sand
- SC Clayey Sand
- OH Organic Clay
- SM Silty Sand
- SP-SC Sand with Clay

Subsurface Profile I-I'

Island Road Marsh Creation and Nourishment (TE-117)
Phase II
Terrebonne Parish, Louisiana

GEOENGINEERS

Figure 3i

P:\16\16715040\01\CAD\Working\BoringLocationPlan.dwg TAB:Section I-I' Date Exported: 01/31/17 - 17:27 by kcook

APPENDICES

GeoEngineers

APPENDIX A
Logs of CPT Soundings

Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish (Louisiana)

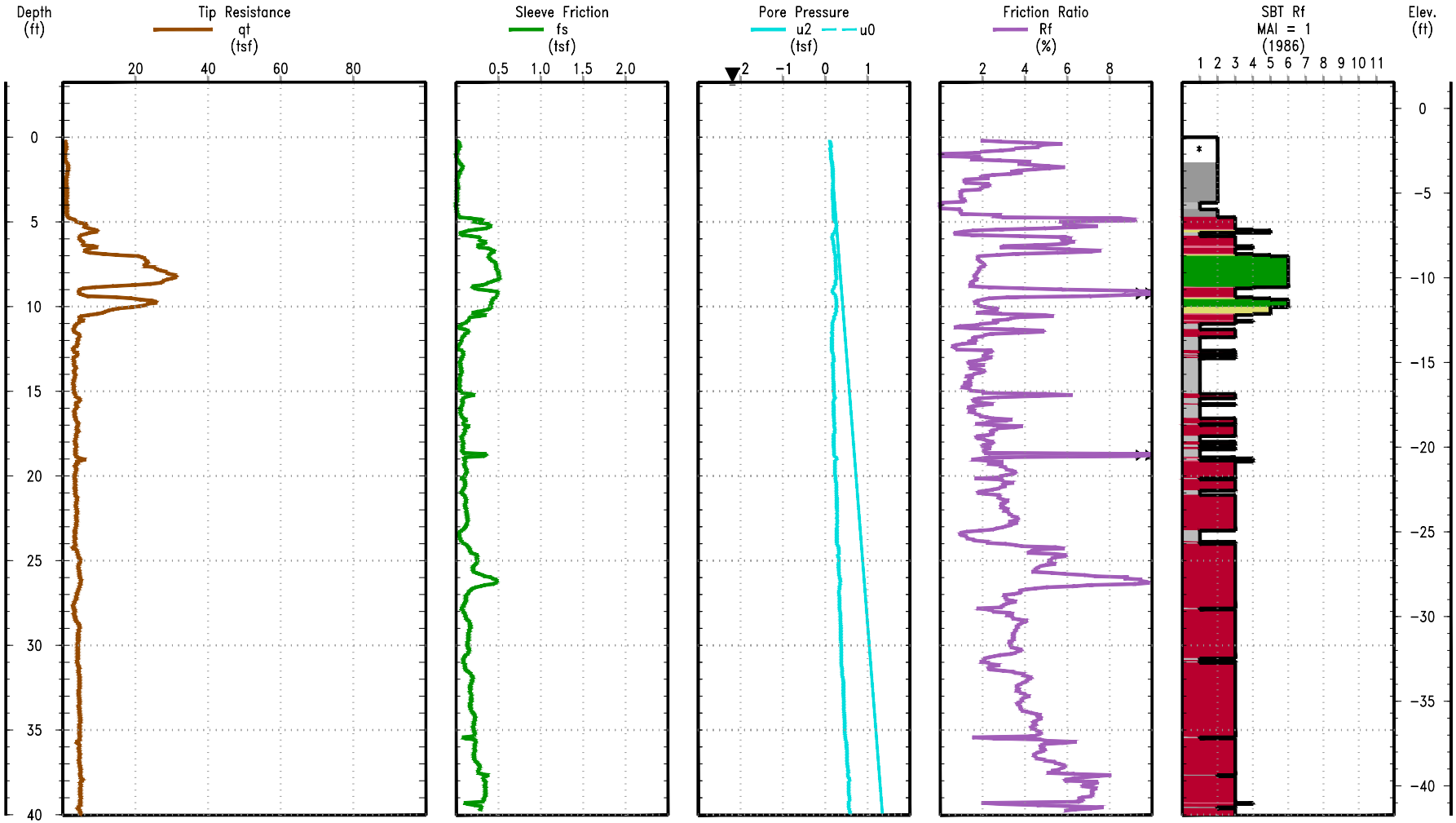
Cone Penetration Test

C-19

Project #: 16715-040-01
Date: Aug. 4, 2016

Latitude: 29.40381
Longitude: -90.47943

Elevation: -1.7
Filename: C-19.cpt



*Estimated soil type based on experience from boring logs.

CPT-19	Island Road Marsh Creation and Nourishment (TE-117) Phase II Terrebonne Parish, Louisiana	GeoEngineers	Figure A-1

Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish (Louisiana)

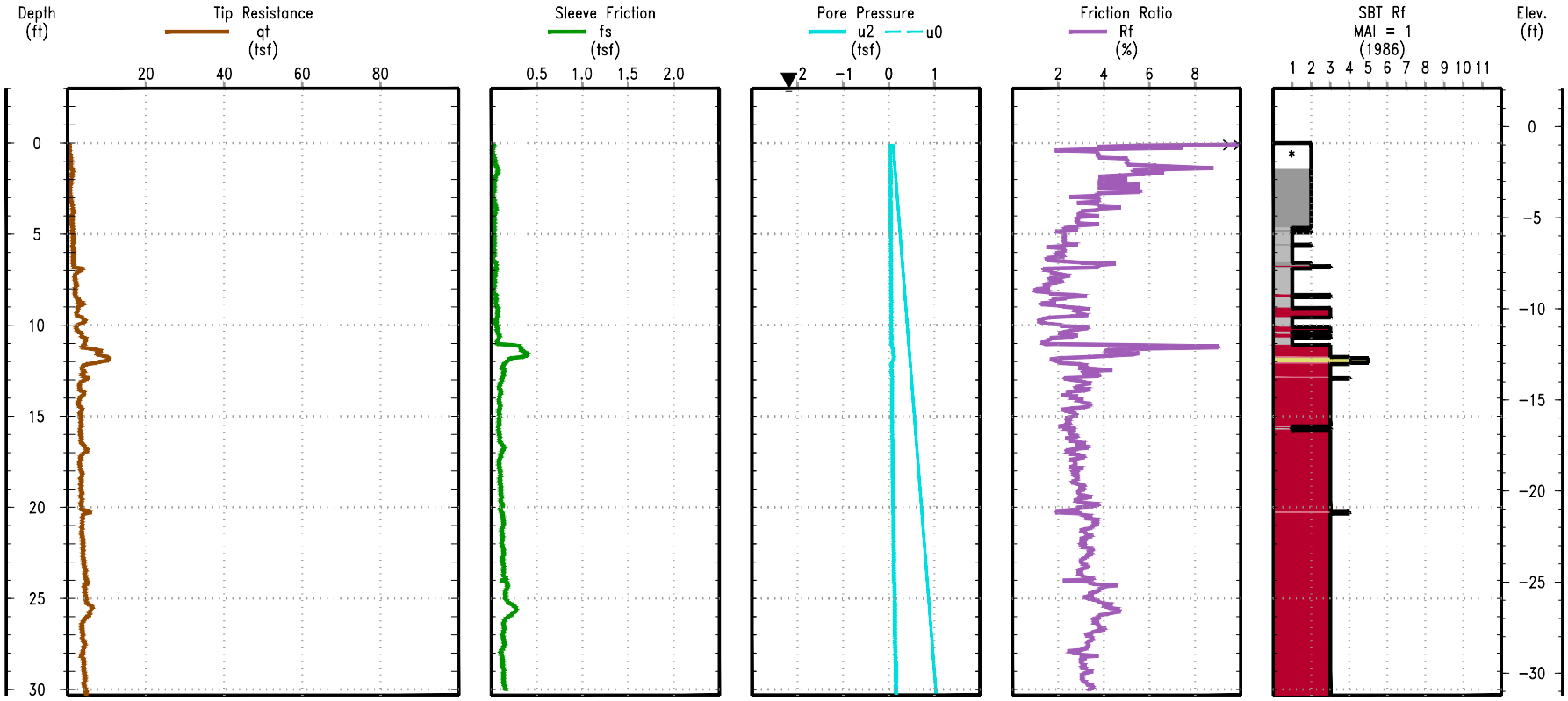
Cone Penetration Test

C-20

Project #: 16715-040-01
Date: Aug. 3, 2016

Latitude: 29.40177
Longitude: -90.47418

Elevation: -0.9
Filename: C-20a.cpt



1 - Sensitive, Fine Grained Soils
2 - Organic Soils, Peats
3 - Clay
4 - Clays & Silty Clays
5 - Clayey Silt & Silty Clays
6 - Sandy Silts & Clayey Silts
7 - Silty Sands & Sandy Silts
8 - Sands & Silty Sands
9 - Sands

*Estimated soil type based on experience from boring logs.

CPT-20	Island Road Marsh Creation and Nourishment (TE-117) Phase II Terrebonne Parish, Louisiana	GEOENGINEERS	Figure A-2

Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish (Louisiana)

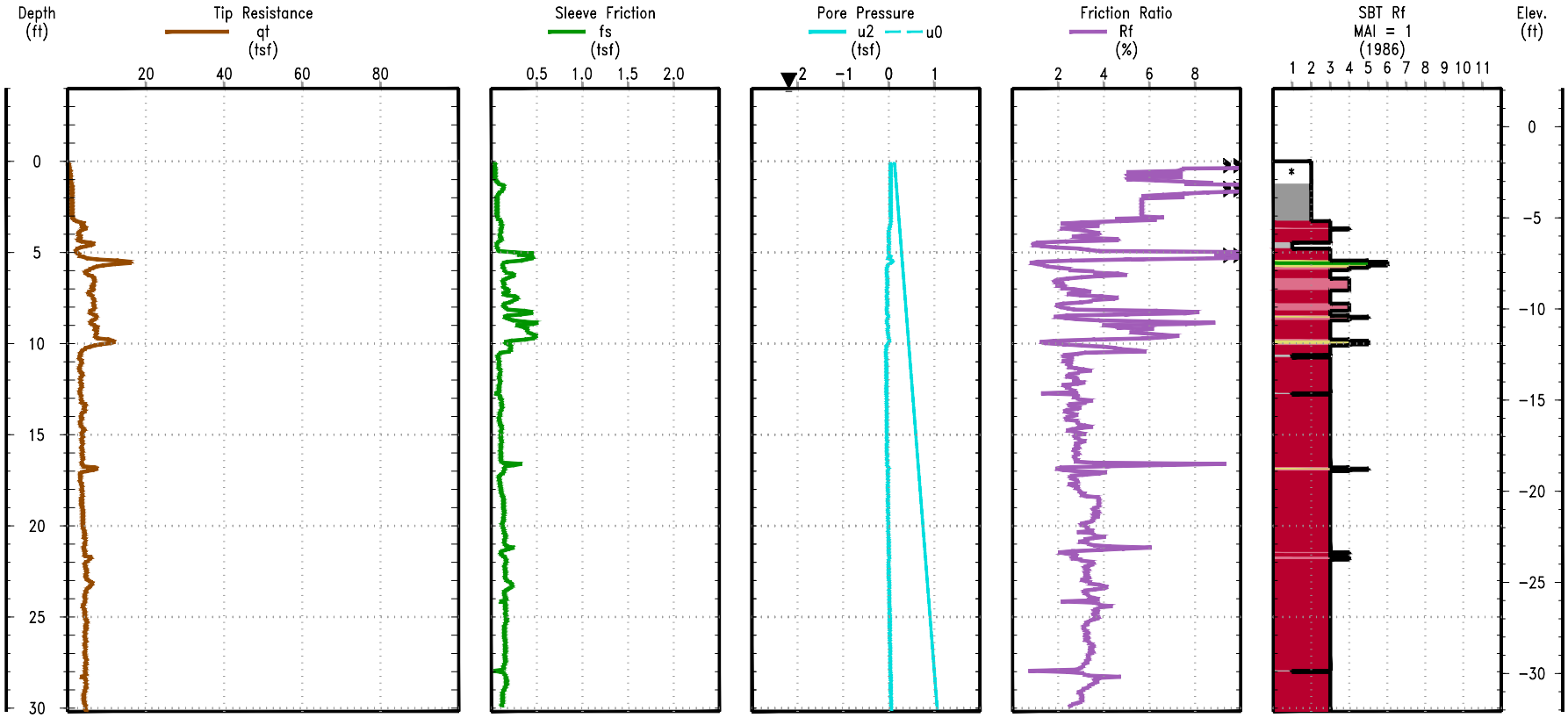
Cone Penetration Test

C-21

Project #: 16715-040-01
Date: Aug. 3, 2016

Latitude: 29.40074
Longitude: -90.47935

Elevation: -1.9
Filename: C-21.cpt



1 - Sensitive, Fine Grained Soils
2 - Organic Soils, Peats
3 - Clay
4 - Clays & Silty Clays
5 - Clayey Silt & Silty Clays
6 - Sandy Silts & Clayey Silts
7 - Silty Sands & Sandy Silts
8 - Sands & Silty Sands
9 - Sands

*Estimated soil type based on experience from boring logs.

CPT-21	Island Road Marsh Creation and Nourishment (TE-117) Phase II Terrebonne Parish, Louisiana	GeoEngineers	Figure A-3

Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish (Louisiana)

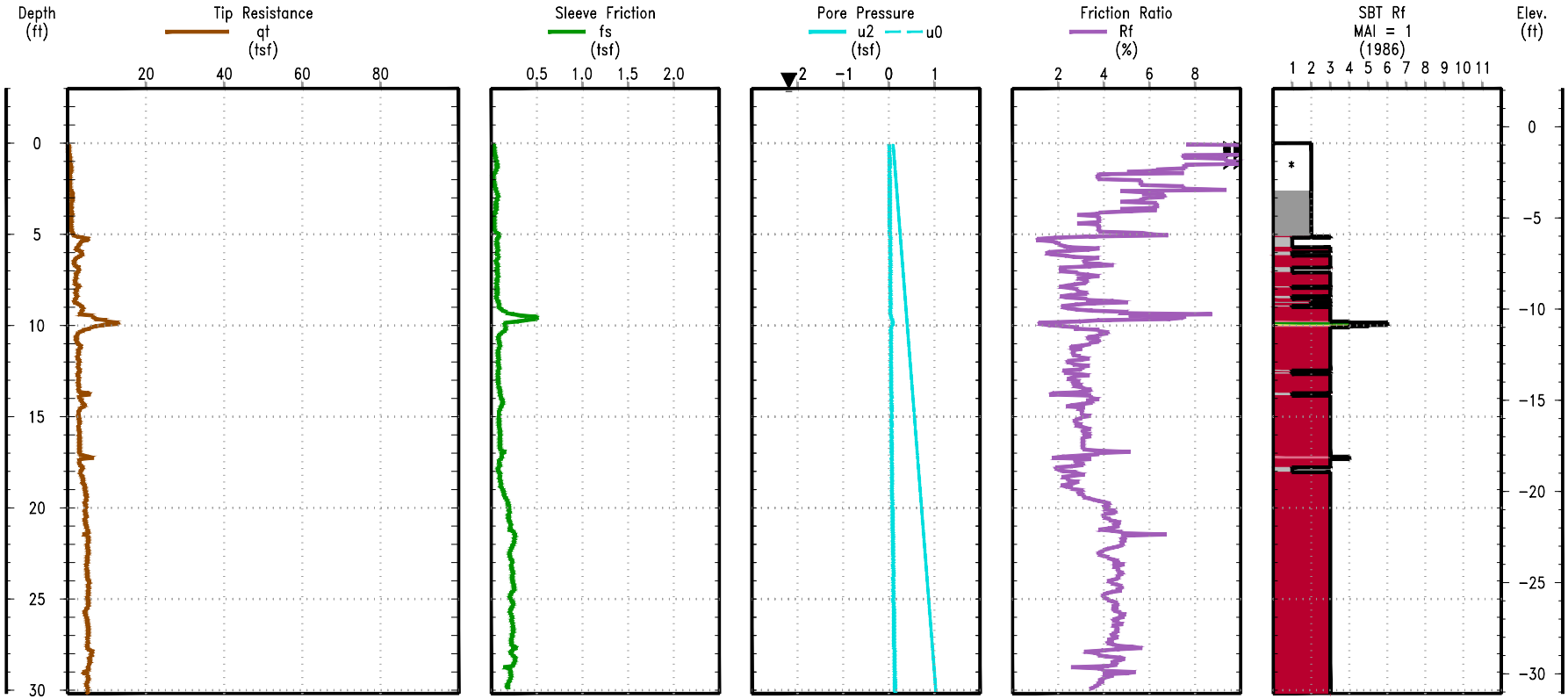
Cone Penetration Test

C-22

Project #: 16715-040-01
Date: Aug. 3, 2016

Latitude: 29.3996
Longitude: -90.48184

Elevation: -0.9
Filename: C-22.cpt



1 - Sensitive, Fine Grained Soils
2 - Organic Soils, Peats
3 - Clay
4 - Clays & Silty Clays
5 - Clayey Silt & Silty Clays
6 - Sandy Silts & Clayey Silts
7 - Silty Sands & Sandy Silts
8 - Sands & Silty Sands
9 - Sands

*Estimated soil type based on experience from boring logs.

CPT-22	Island Road Marsh Creation and Nourishment (TE-117) Phase II Terrebonne Parish, Louisiana	GeoEngineers	Figure A-4

P:\16\16715040\01\CAD\Working\CPTs\1671504001_FA-5_CPT_Log_C-23.dwg TAB:CPT-23 Date Exported: 01/16/17 - 15:25 by ncomeaux

Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish (Louisiana)

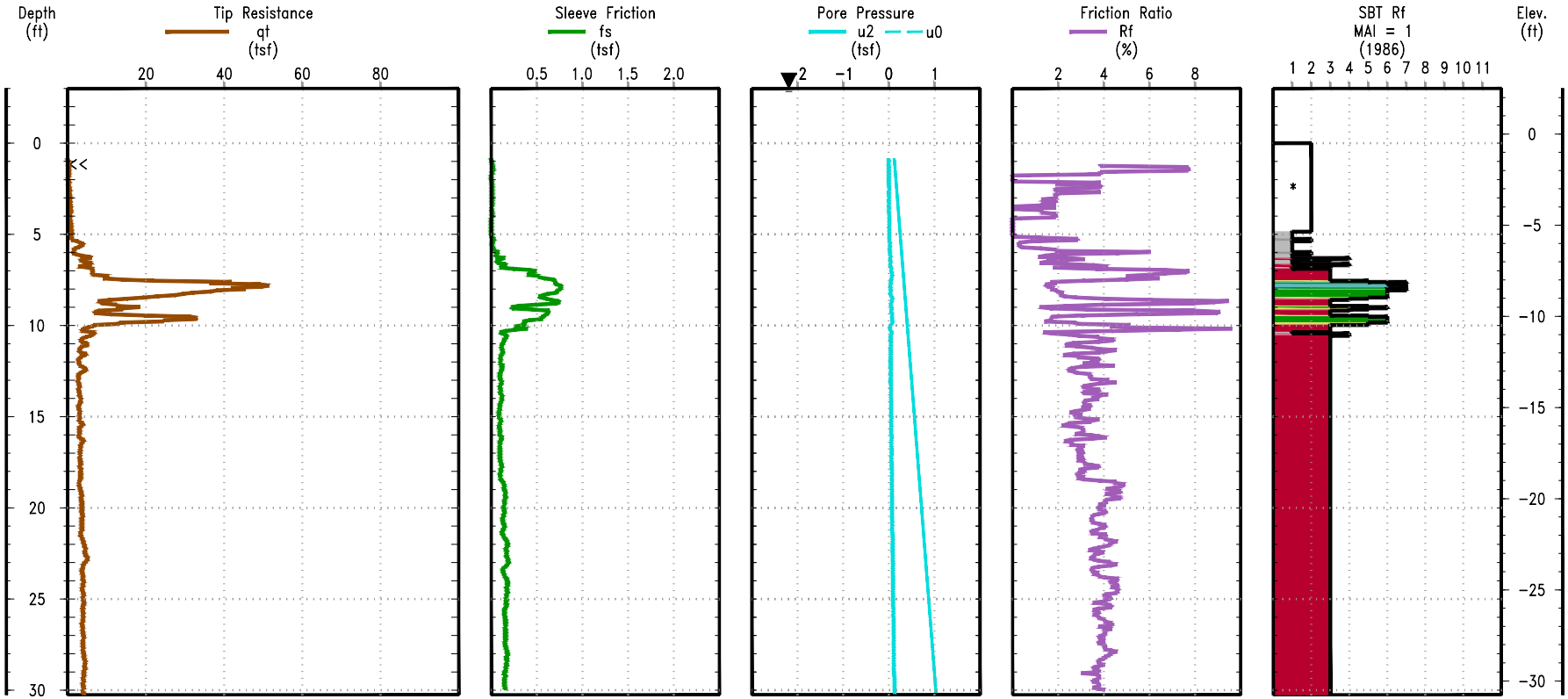
Cone Penetration Test

C-23

Project #: 16715-040-01
Date: Aug. 3, 2016

Latitude: 29.39986
Longitude: -90.4771

Elevation: -0.5
Filename: C-23.cpt



1 - Sensitive, Fine Grained Soils
2 - Organic Soils, Peats
3 - Clay
4 - Clays & Silty Clays
5 - Clayey Silt & Silty Clays
6 - Sandy Silts & Clayey Silts
7 - Silty Sands & Sandy Silts
8 - Sands & Silty Sands
9 - Sands

*Estimated soil type based on experience from boring logs.

CPT-23	Island Road Marsh Creation and Nourishment (TE-117) Phase II Terrebonne Parish, Louisiana	GeoEngineers	Figure A-5

Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish (Louisiana)

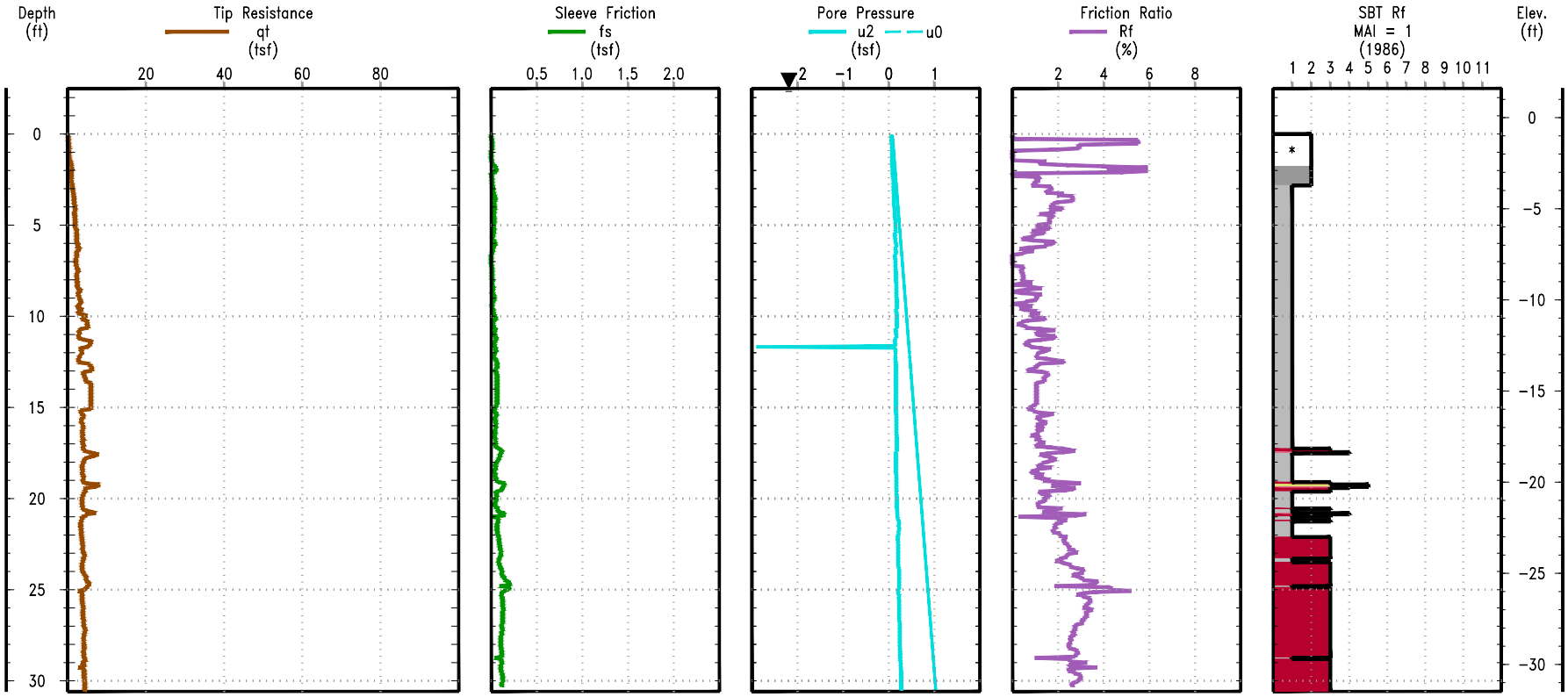
Cone Penetration Test

C-24

Project #: 16715-040-01
Date: Aug. 3, 2016

Latitude: 29.40017
Longitude: -90.47461

Elevation: -0.9
Filename: C-24.cpt



1 - Sensitive, Fine Grained Soils
2 - Organic Soils, Peats
3 - Clay
4 - Clays & Silty Clays
5 - Clayey Silt & Silty Clays
6 - Sandy Silts & Clayey Silts
7 - Silty Sands & Sandy Silts
8 - Sands & Silty Sands
9 - Sands

*Estimated soil type based on experience from boring logs.

CPT-24	Island Road Marsh Creation and Nourishment (TE-117) Phase II Terrebonne Parish, Louisiana	GeoEngineers	Figure A-6

P:\16\16715040\01\CAD\Working\CPTs\1671504001_FA-7_CPT_Log_C-25.dwg TAB:CPT-25 Date Exported: 01/16/17 - 15:26 by ncomeaux

Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish (Louisiana)

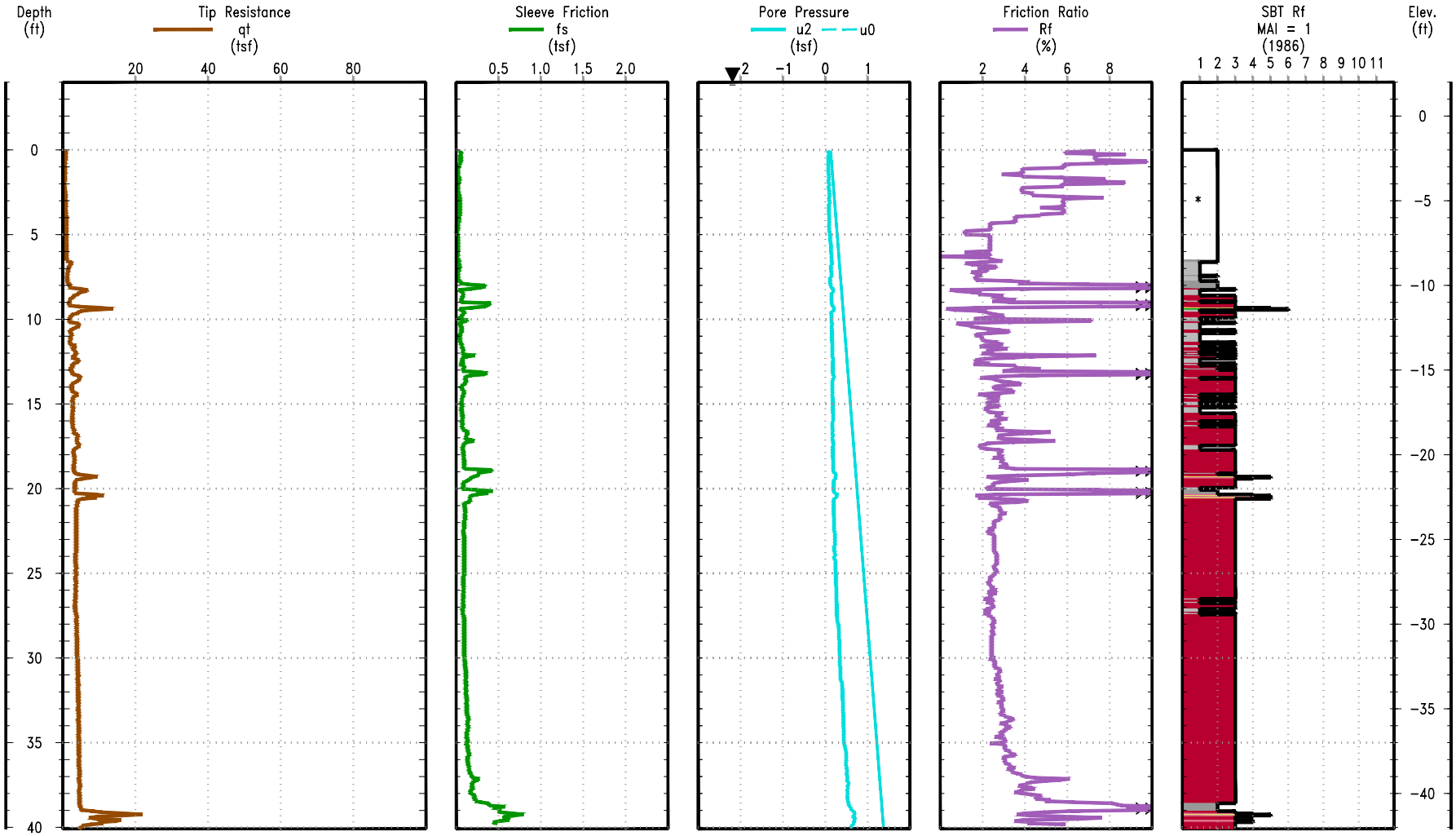
Cone Penetration Test

C-25

Project #: 16715-040-01
Date: Aug. 4, 2016

Latitude: 29.39665
Longitude: -90.48315

Elevation: -2
Filename: C-25.cpt



*Estimated soil type based on experience from boring logs.

CPT-25	Island Road Marsh Creation and Nourishment (TE-117) Phase II Terrebonne Parish, Louisiana	GeoEngineers	Figure A-7

Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish (Louisiana)

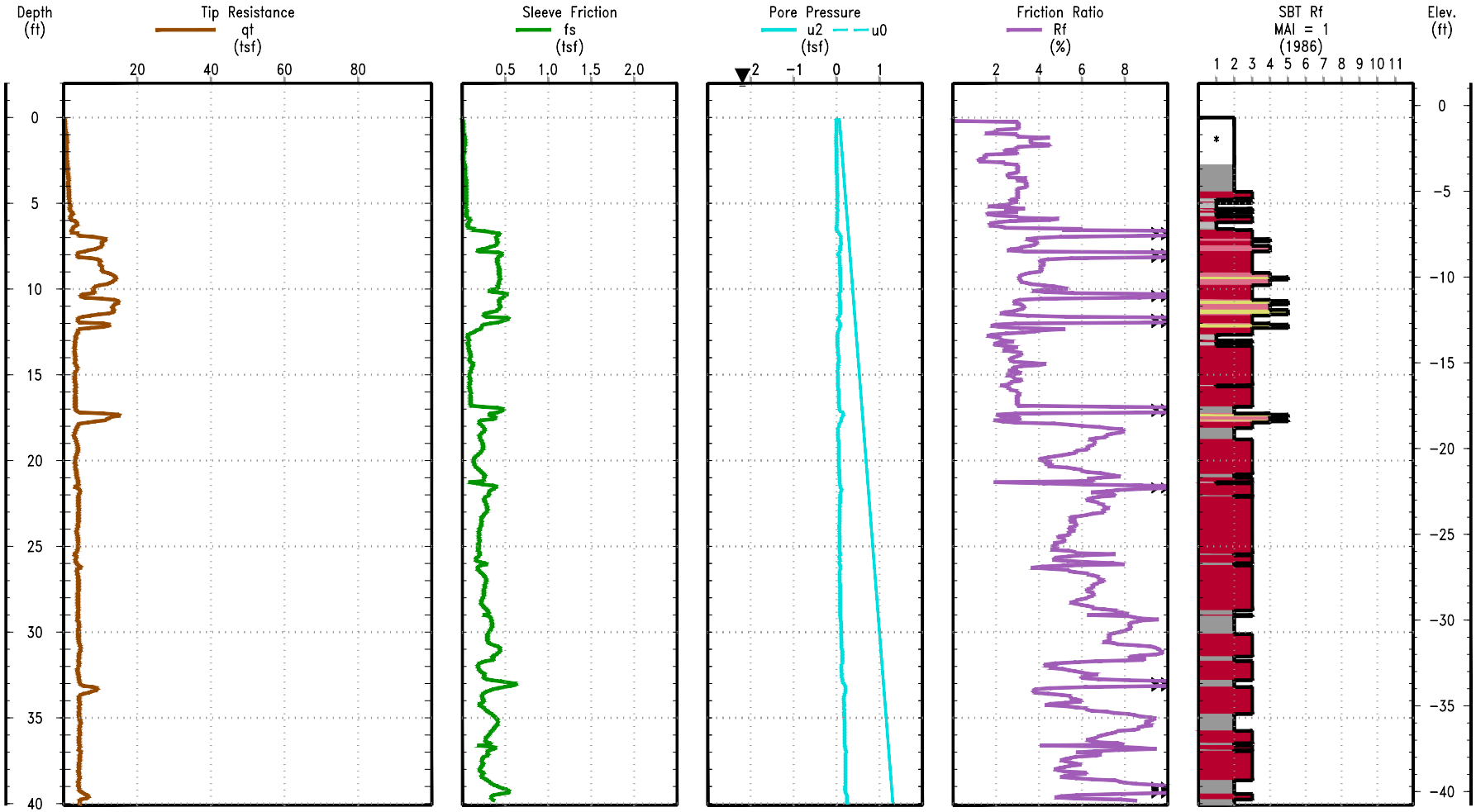
Cone Penetration Test

C-26

Project #: 16715-040-01
Date: Aug. 4, 2016

Latitude: 29.39685
Longitude: -90.47636

Elevation: -0.7
Filename: C-26a.cpt



1 - Sensitive, Fine Grained Soils
2 - Organic Soils, Peats
3 - Clay
4 - Clays & Silty Clays
5 - Clayey Silt & Silty Clays
6 - Sandy Silts & Clayey Silts
7 - Silty Sands & Sandy Silts
8 - Sands & Silty Sands
9 - Sands

*Estimated soil type based on experience from boring logs.

CPT-26	Island Road Marsh Creation and Nourishment (TE-117) Phase II Terrebonne Parish, Louisiana	GeoEngineers	Figure A-8

P:\16\16715040\01\CAD\Working\CPTs\1671504001_FA-9_CPT_Log_C-27.dwg TAB:CPT-27 Date Exported: 01/16/17 - 15:27 by ncomeaux

Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish (Louisiana)

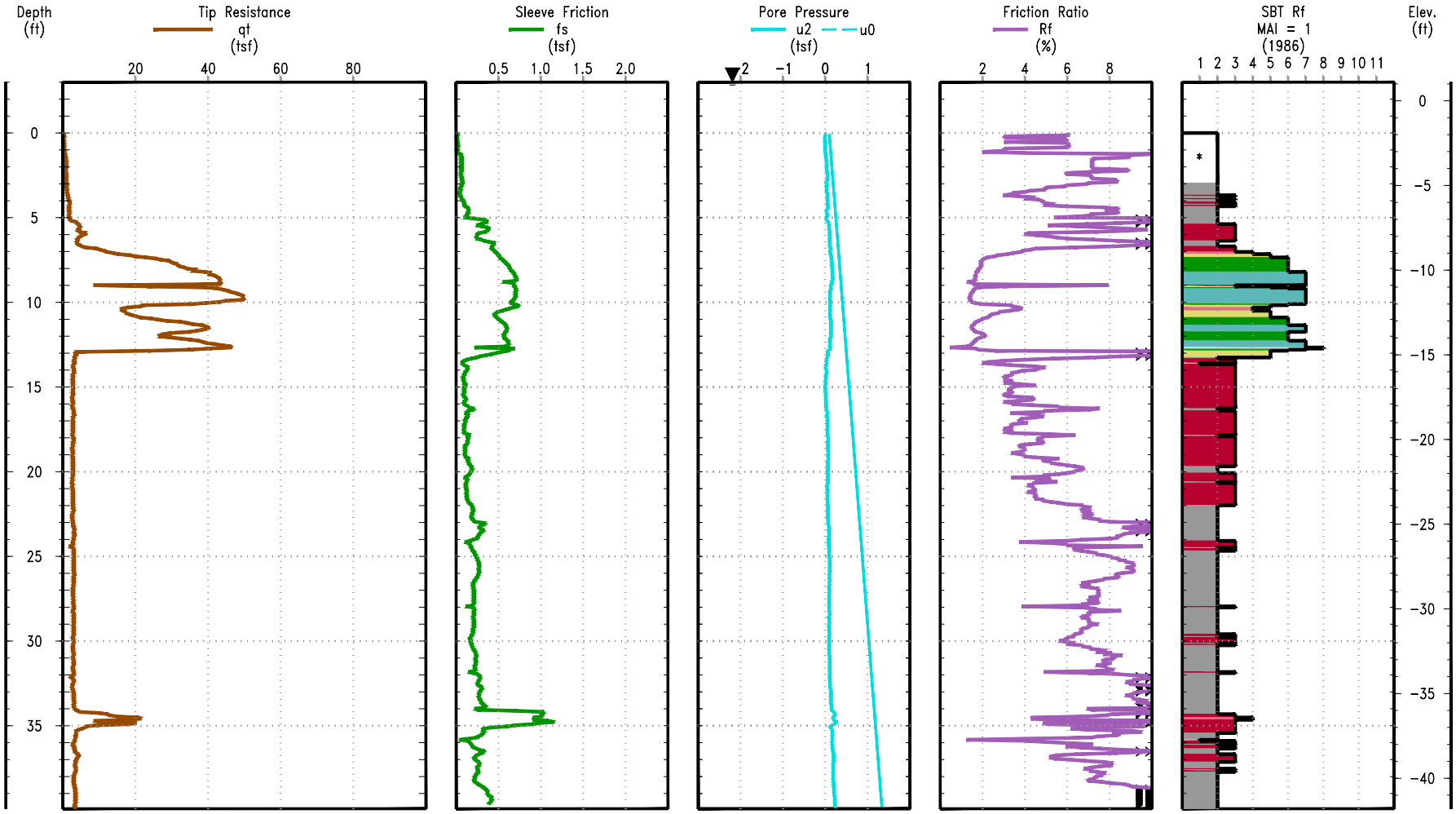
Cone Penetration Test

C-27

Project #: 16715-040-01
Date: Aug. 4, 2016

Latitude: 29.39928
Longitude: -90.47216

Elevation: -1.9
Filename: C-27.cpt



*Estimated soil type based on experience from boring logs.

CPT-28	Island Road Marsh Creation and Nourishment (TE-117) Phase II Terrebonne Parish, Louisiana	GeoEngineers	Figure A-9

Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish (Louisiana)

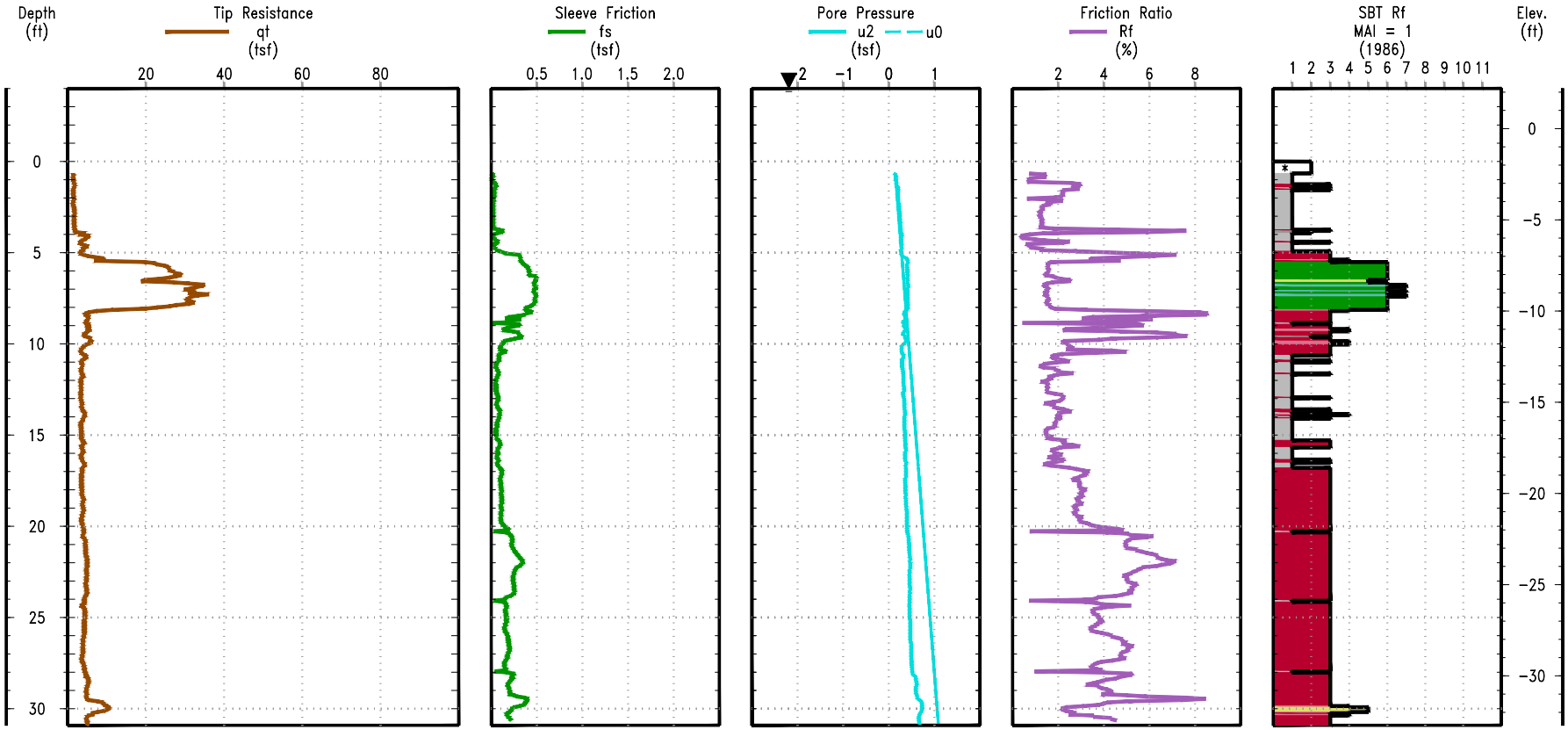
Cone Penetration Test

C-28

Project #: 16715-040-01
Date: Aug. 4, 2016

Latitude: 29.39669
Longitude: -90.47228

Elevation: -1.8
Filename: C-28.cpt



1 - Sensitive, Fine Grained Soils
2 - Organic Soils, Peats
3 - Clay
4 - Clays & Silty Clays
5 - Clayey Silt & Silty Clays
6 - Sandy Silts & Clayey Silts
7 - Silty Sands & Sandy Silts
8 - Sands & Silty Sands
9 - Sands

*Estimated soil type based on experience from boring logs.

CPT-28	Island Road Marsh Creation and Nourishment (TE-117) Phase II Terrebonne Parish, Louisiana	GeoEngineers	Figure A-10

Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish (Louisiana)

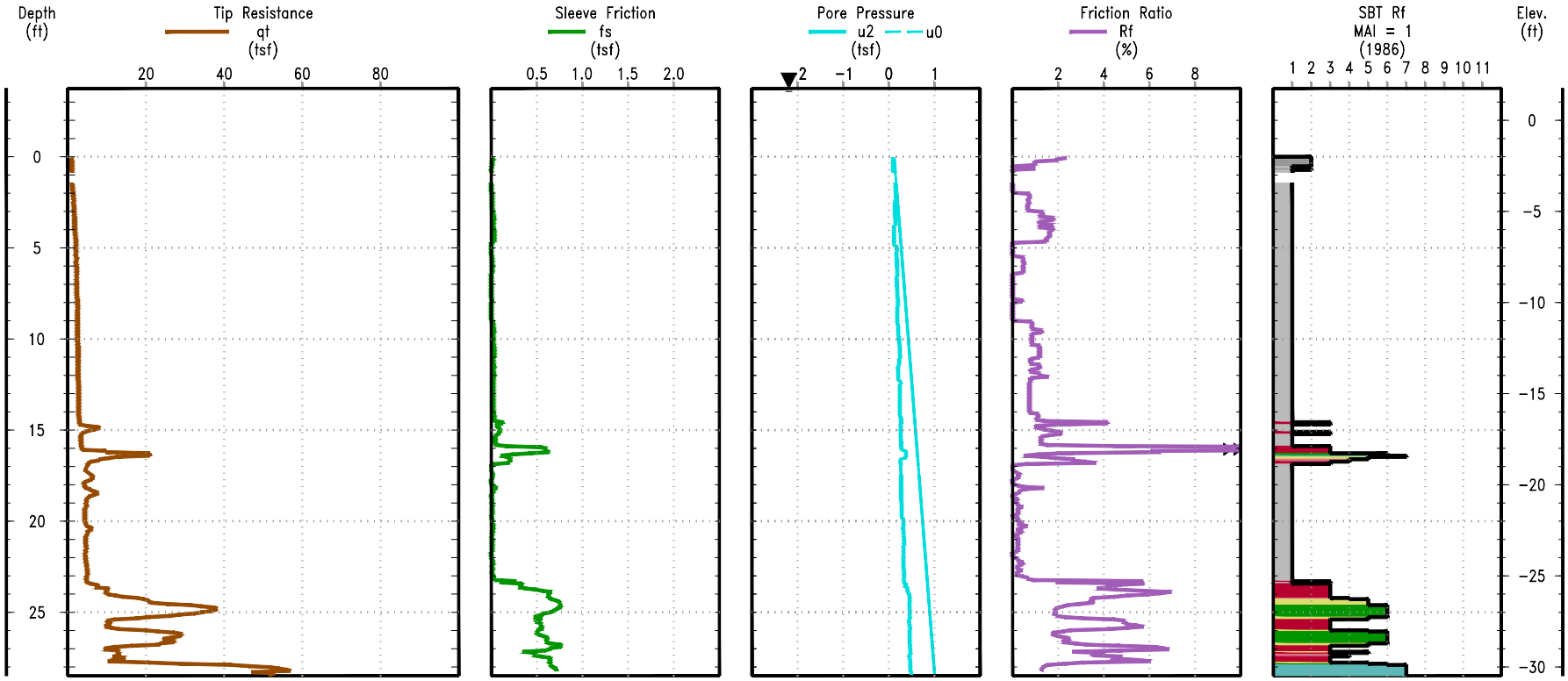
Cone Penetration Test

C-29

Project #: 16715-040-01
Date: Aug. 4, 2016

Latitude: 29.3938
Longitude: -90.47796

Elevation: -2
Filename: C-29a.cpt



1 - Sensitive, Fine Grained Soils
2 - Organic Soils, Peats
3 - Clay
4 - Clays & Silty Clays
5 - Clayey Silt & Silty Clays
6 - Sandy Silts & Clayey Silts
7 - Silty Sands & Sandy Silts
8 - Sands & Silty Sands
9 - Sands

CPT-29	Island Road Marsh Creation and Nourishment (TE-117) Phase II Terrebonne Parish, Louisiana	GeoEngineers	Figure A-11

Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish (Louisiana)

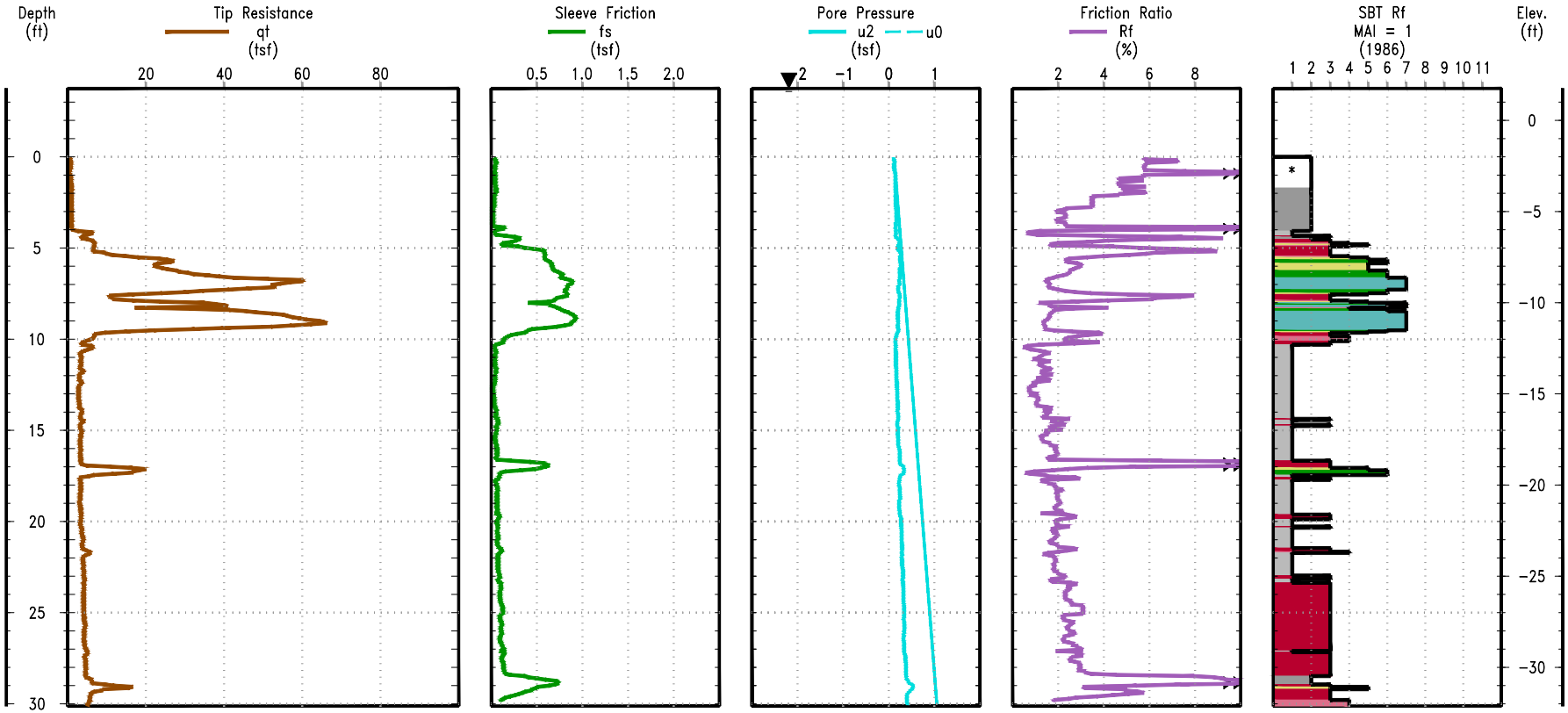
Cone Penetration Test

C-30

Project #: 16715-040-01
Date: Aug. 4, 2016

Latitude: 29.39298
Longitude: -90.48355

Elevation: -2
Filename: C-30.cpt



1 - Sensitive, Fine Grained Soils
2 - Organic Soils, Peats
3 - Clay
4 - Clays & Silty Clays
5 - Clayey Silt & Silty Clays
6 - Sandy Silts & Clayey Silts
7 - Silty Sands & Sandy Silts
8 - Sands & Silty Sands
9 - Sands

*Estimated soil type based on experience from boring logs.

CPT-30	Island Road Marsh Creation and Nourishment (TE-117) Phase II Terrebonne Parish, Louisiana	GeoEngineers	Figure A-12

Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish (Louisiana)

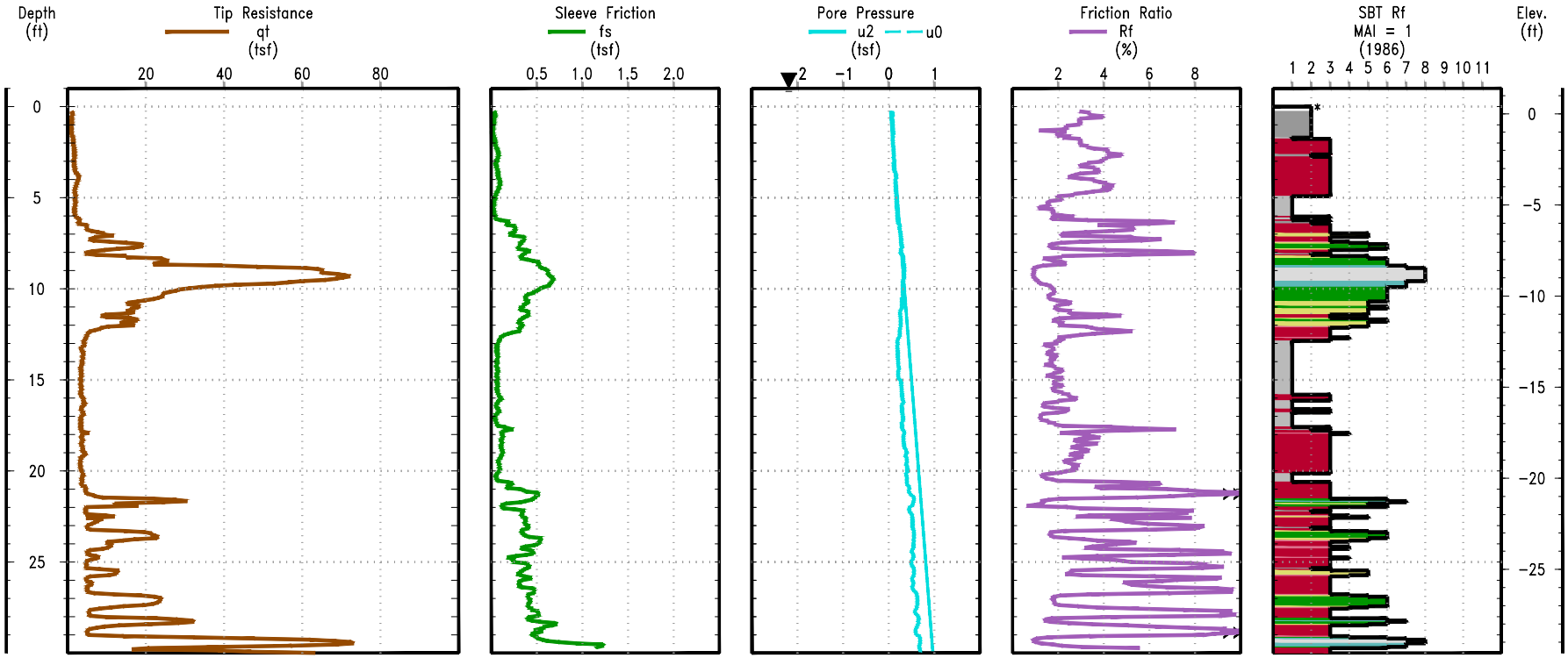
Cone Penetration Test

C-31

Project #: 16715-040-01
Date: Aug. 5, 2016

Latitude: 29.38937
Longitude: -90.48167

Elevation: 0.4
Filename: C-31.cpt



1 - Sensitive, Fine Grained Soils
2 - Organic Soils, Peats
3 - Clay
4 - Clays & Silty Clays
5 - Clayey Silt & Silty Clays
6 - Sandy Silts & Clayey Silts
7 - Silty Sands & Sandy Silts
8 - Sands & Silty Sands
9 - Sands

*Estimated soil type based on experience from boring logs.

CPT-31	Island Road Marsh Creation and Nourishment (TE-117) Phase II Terrebonne Parish, Louisiana	GeoEngineers	Figure A-13

Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish (Louisiana)

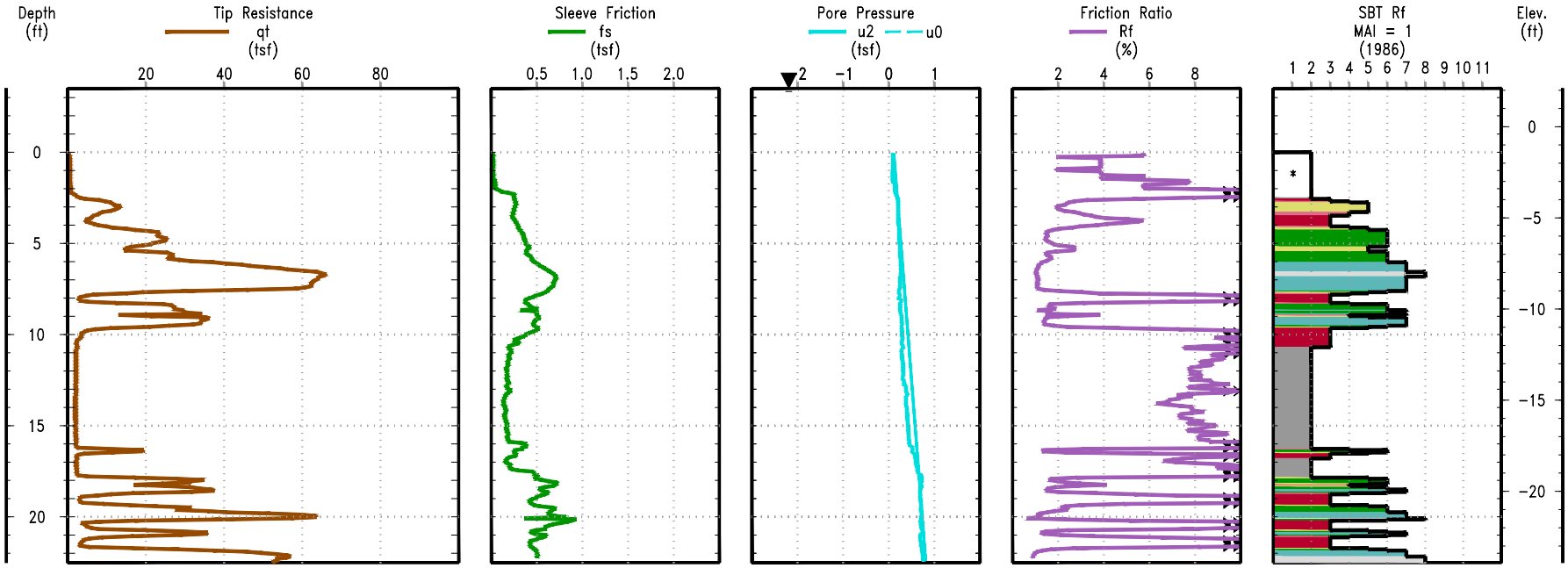
Cone Penetration Test

C-32

Project #: 16715-040-01
Date: Aug. 6, 2016

Latitude: 29.3895
Longitude: -90.47671

Elevation: -1.4
Filename: C-32a.cpt



1 - Sensitive, Fine Grained Soils
2 - Organic Soils, Peats
3 - Clay
4 - Clays & Silty Clays
5 - Clayey Silt & Silty Clays
6 - Sandy Silts & Clayey Silts
7 - Silty Sands & Sandy Silts
8 - Sands & Silty Sands
9 - Sands

*Estimated soil type based on experience from boring logs.

CPT-32	Island Road Marsh Creation and Nourishment (TE-117) Phase II Terrebonne Parish, Louisiana	GeoEngineers	Figure A-14

Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish (Louisiana)

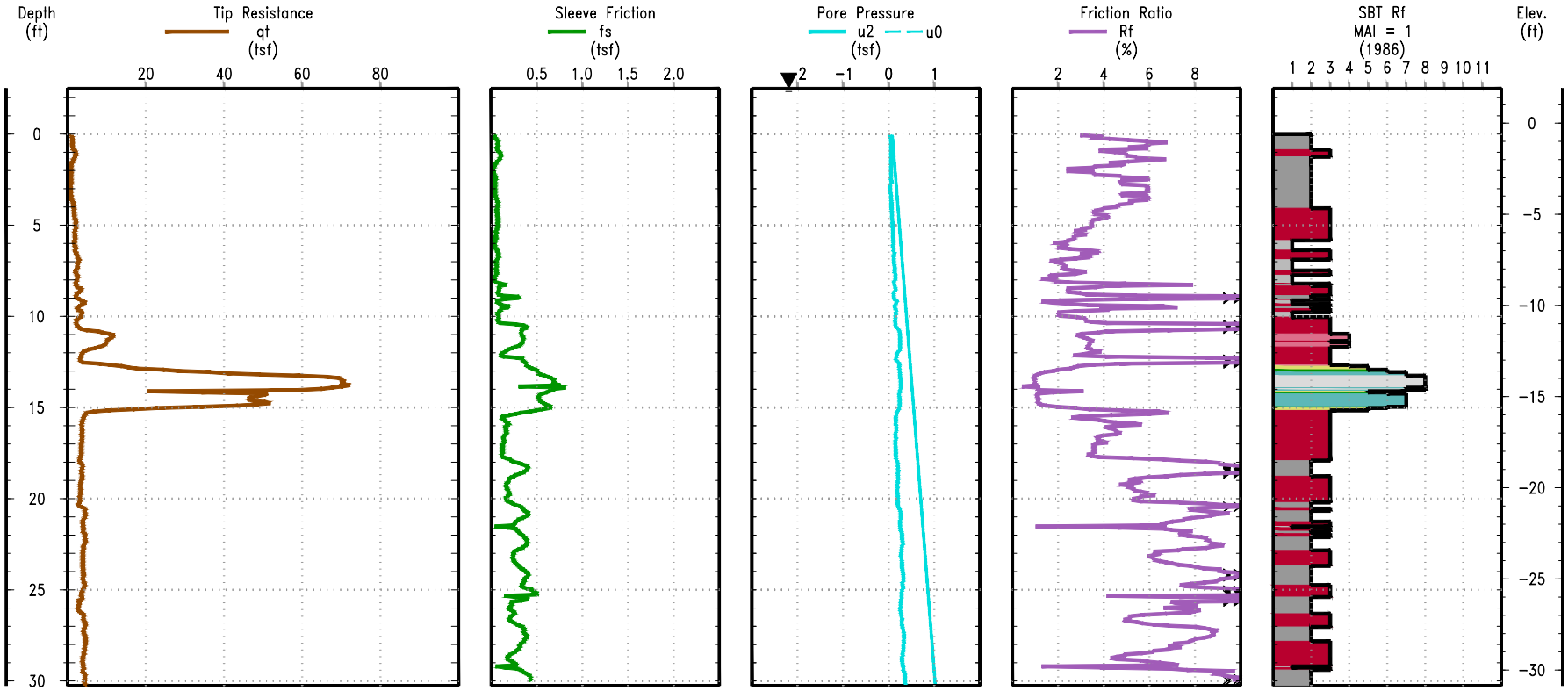
Cone Penetration Test

C-33

Project #: 16715-040-01
Date: Aug. 5, 2016

Latitude: 29.38751
Longitude: -90.47983

Elevation: -0.6
Filename: C-33.cpt



1 - Sensitive, Fine Grained Soils
2 - Organic Soils, Peats
3 - Clay
4 - Clays & Silty Clays
5 - Clayey Silt & Silty Clays
6 - Sandy Silts & Clayey Silts
7 - Silty Sands & Sandy Silts
8 - Sands & Silty Sands
9 - Sands

CPT-33	Island Road Marsh Creation and Nourishment (TE-117) Phase II Terrebonne Parish, Louisiana	GeoEngineers	Figure A-15

Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish (Louisiana)

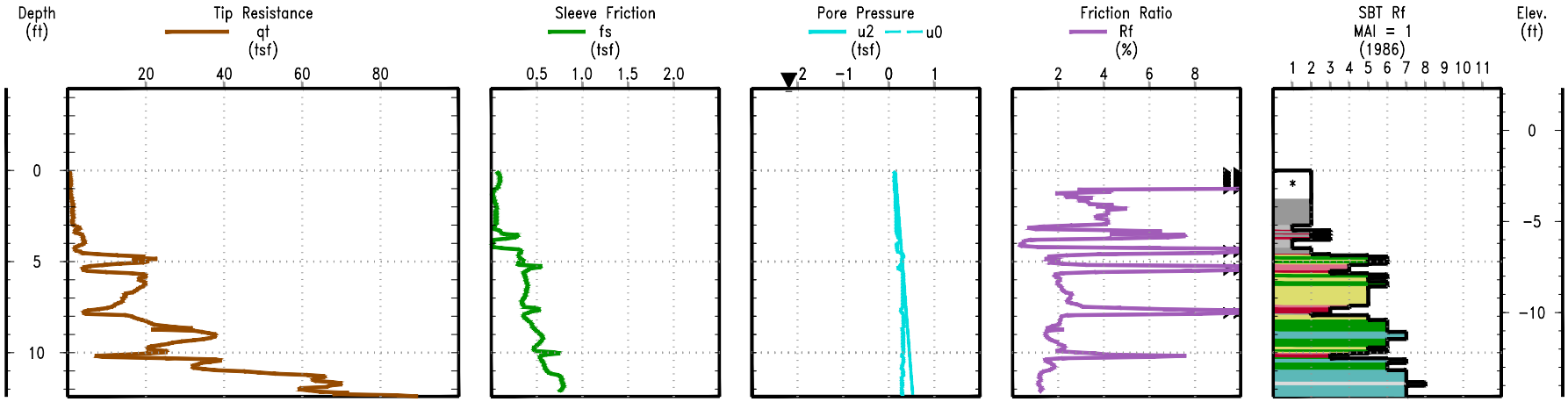
Cone Penetration Test

C-34

Project #: 16715-040-01
Date: Aug. 5, 2016

Latitude: 29.38476
Longitude: -90.47899

Elevation: -2.2
Filename: C-34a.cpt



1 - Sensitive, Fine Grained Soils
2 - Organic Soils, Peats
3 - Clay
4 - Clays & Silty Clays
5 - Clayey Silt & Silty Clays
6 - Sandy Silts & Clayey Silts
7 - Silty Sands & Sandy Silts
8 - Sands & Silty Sands
9 - Sands

*Estimated soil type based on experience from boring logs.

CPT-34	Island Road Marsh Creation and Nourishment (TE-117) Phase II Terrebonne Parish, Louisiana	GeoEngineers	Figure A-16

Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish (Louisiana)

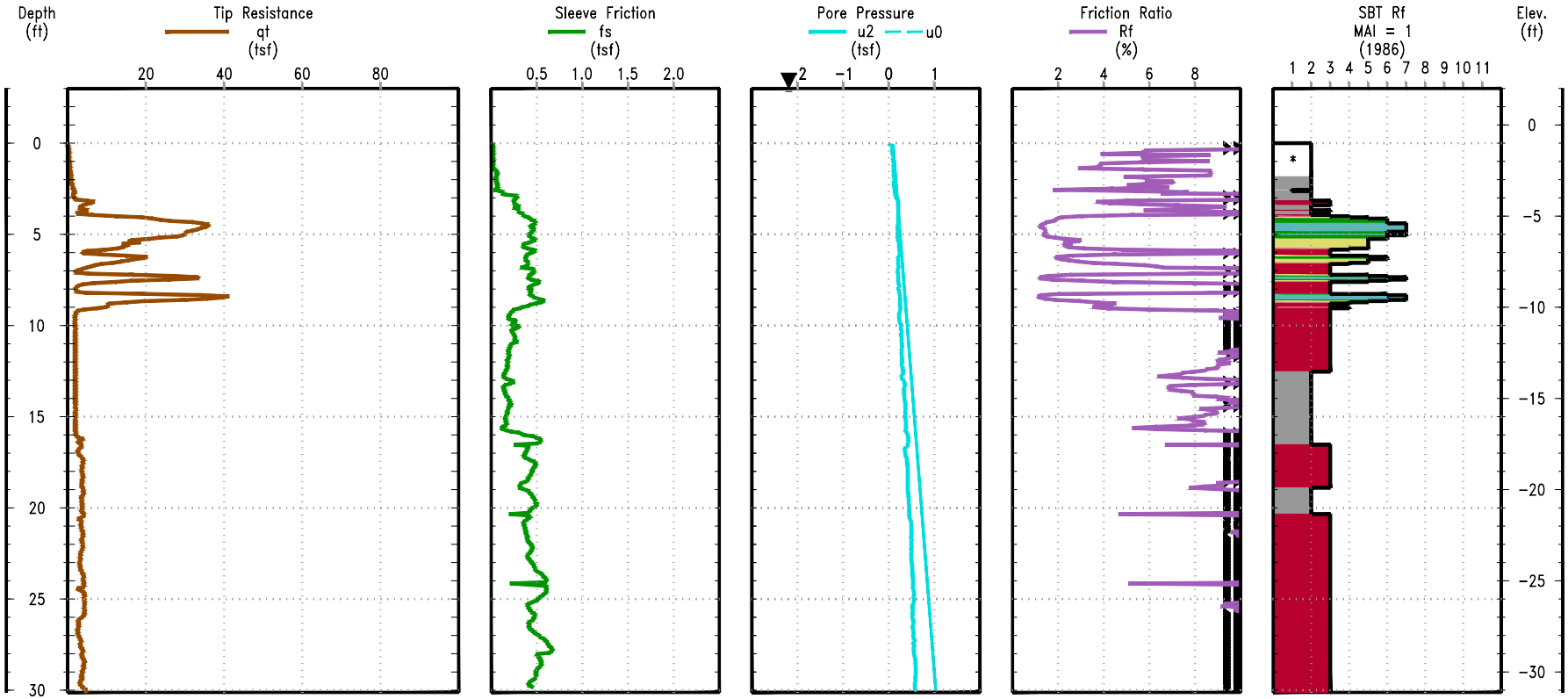
Cone Penetration Test

C-35

Project #: 16715-040-01
Date: Aug. 6, 2016

Latitude: 29.38548
Longitude: -90.47631

Elevation: -1
Filename: C-35.cpt



1 - Sensitive, Fine Grained Soils
2 - Organic Soils, Peats
3 - Clay
4 - Clays & Silty Clays
5 - Clayey Silt & Silty Clays
6 - Sandy Silts & Clayey Silts
7 - Silty Sands & Sandy Silts
8 - Sands & Silty Sands
9 - Sands

*Estimated soil type based on experience from boring logs.

CPT-35	Island Road Marsh Creation and Nourishment (TE-117) Phase II Terrebonne Parish, Louisiana	GeoEngineers	Figure A-17

Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish (Louisiana)

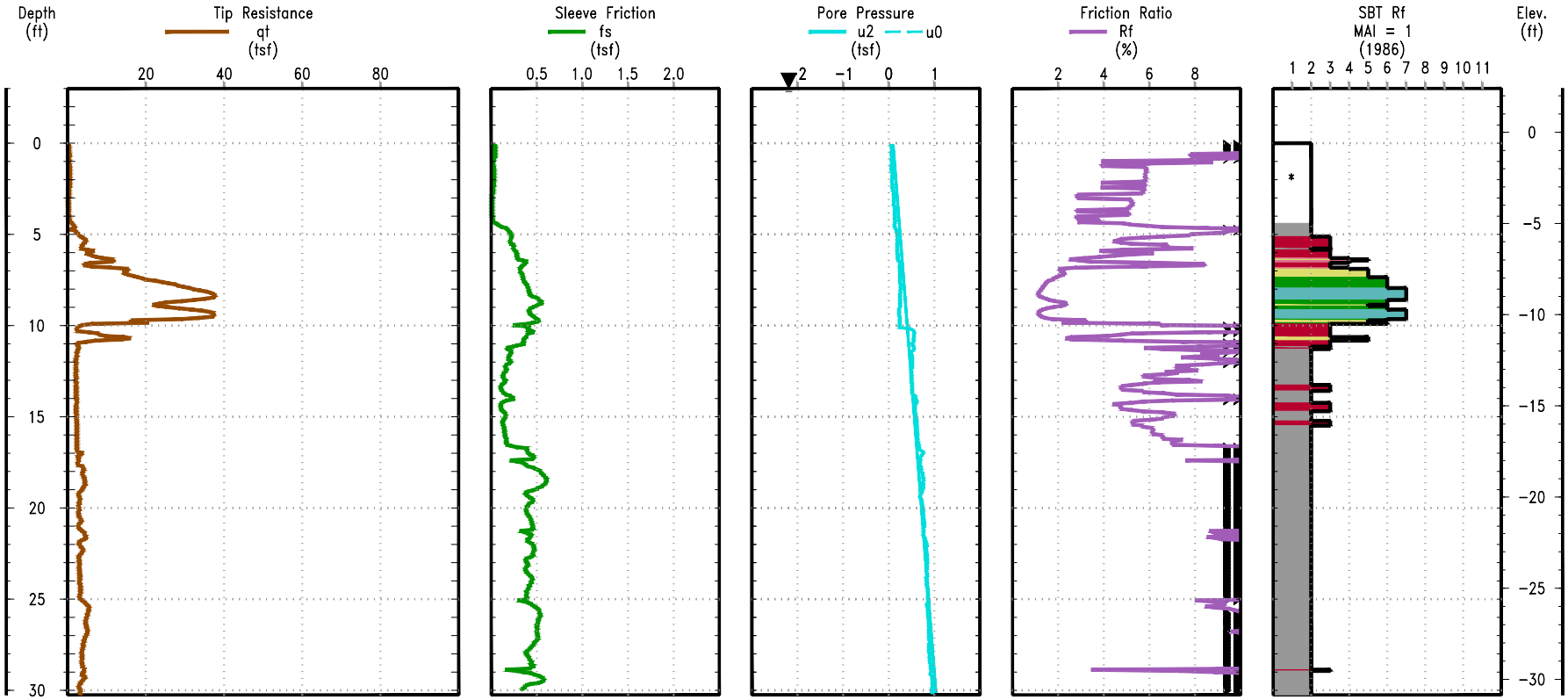
Cone Penetration Test

C-36

Project #: 16715-040-01
Date: Aug. 6, 2016

Latitude: 29.39475
Longitude: -90.47413

Elevation: -0.6
Filename: C-36.cpt



1 - Sensitive, Fine Grained Soils
2 - Organic Soils, Peats
3 - Clay
4 - Clays & Silty Clays
5 - Clayey Silt & Silty Clays
6 - Sandy Silts & Clayey Silts
7 - Silty Sands & Sandy Silts
8 - Sands & Silty Sands
9 - Sands

*Estimated soil type based on experience from boring logs.

CPT-36	Island Road Marsh Creation and Nourishment (TE-117) Phase II Terrebonne Parish, Louisiana	GeoEngineers	Figure A-18

Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish (Louisiana)

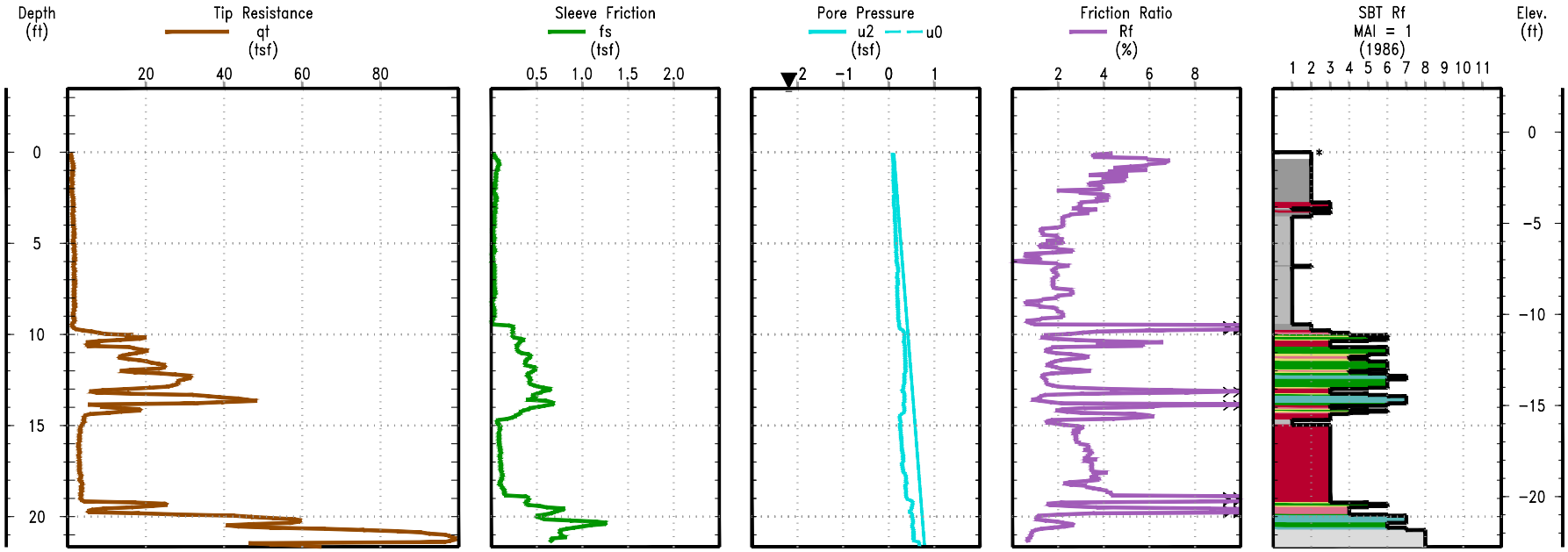
Cone Penetration Test

C-37

Project #: 16715-040-01
Date: Aug. 5, 2016

Latitude: 29.38955
Longitude: -90.47903

Elevation: -1.1
Filename: C-37.cpt



1 - Sensitive, Fine Grained Soils
2 - Organic Soils, Peats
3 - Clay
4 - Clays & Silty Clays
5 - Clayey Silt & Silty Clays
6 - Sandy Silts & Clayey Silts
7 - Silty Sands & Sandy Silts
8 - Sands & Silty Sands
9 - Sands

*Estimated soil type based on experience from boring logs.

CPT-37	Island Road Marsh Creation and Nourishment (TE-117) Phase II Terrebonne Parish, Louisiana	GeoEngineers	Figure A-19

APPENDIX B
Logs of Soil Borings

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS MORE THAN 50% RETAINED ON NO. 200 SIEVE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS
				SP	POORLY-GRADED SANDS, GRAVELLY SAND
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% PASSING NO. 200 SIEVE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS, ROCK FLOUR, CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS AND SILTS OF MEDIUM TO HIGH PLASTICITY
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: Multiple symbols are used to indicate borderline or dual soil classifications

ADDITIONAL MATERIAL SYMBOLS

SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
	CC	Cement Concrete
	AC	Asphalt Concrete
	CR	Crushed Rock/ Quarry Spalls
	TS	Topsoil/ Forest Duff/Sod

Groundwater Contact

Measured groundwater level in exploration, well, or piezometer

Groundwater observed at time of exploration

Perched water observed at time of exploration

Graphic Log Contact

Distinct contact between soil strata

Approximate contact between soil strata

Material Description Contact

Contact between geologic units

Contact between soil of the same geologic unit

Laboratory / Field Tests

%F	Percent fines
%G	Percent gravel
AL	Atterberg limits
CA	Chemical analysis
CP	Laboratory compaction test
CS	Consolidation test
DS	Direct shear
HA	Hydrometer analysis
MC	Moisture content
MD	Moisture content and dry density
OC	Organic content
PM	Permeability or hydraulic conductivity
PI	Plasticity index
PP	Pocket penetrometer
PPM	Parts per million
SA	Sieve analysis
TX	Triaxial compression
UC	Unconfined compression
VS	Vane shear

Sampler Symbol Descriptions

Standard Penetration Test (SPT)

Shelby tube

Piston

Direct-Push

Bulk or grab

Blowcount is recorded for driven samplers as the number of blows required to advance sampler 12 inches (or distance noted). See exploration log for hammer weight and drop.

A "P" indicates sampler pushed using the weight of the drill rig.

A "WOH" indicates sampler pushed using the weight of the hammer.

Sheen Classification

NS	No Visible Sheen
SS	Slight Sheen
MS	Moderate Sheen
HS	Heavy Sheen
NT	Not Tested

NOTE: The reader must refer to the discussion in the report text and the logs of explorations for a proper understanding of subsurface conditions. Descriptions on the logs apply only at the specific exploration locations and at the time the explorations were made; they are not warranted to be representative of subsurface conditions at other locations or times.

KEY TO EXPLORATION LOGS

GEOENGINEERS

FIGURE B-1

Rev. 02/16

Drilled	Start 8/6/2016	End 8/6/2016	Total Depth (ft) 60	Logged By DNR / Checked By JMP	Driller Specialized Environmental Resources, LLC	Drilling Method Wet Rotary
Mudline Elevation (ft) Vertical Datum	-1.6		Hammer Data	N/A	Drilling Equipment	Airboat Mounted Drill Rig
Latitude / Longitude	N29° 24' 08.88" / W90° 28' 37.58"		System Datum	Geographic / NAD83 (feet)/NAVD88 Geoid 12A	Groundwater: Date Measured	Depth to Water (ft): N/A; Elevation (ft)

Notes: See Figure A-1 for explanation of symbols. Cement-bentonite grout backfilled full depth.

Elevation (feet)	Depth (feet)	Interval	Recovered (in)	Blows/foot or Pocket Pen (TSF)	Collected Sample	Sample Name	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Water Content, %	Dry Density, (pcf)	Shear Strength (KSF)	Confining Pressure (PSI)	Strain, %	Liquid Limit (LL), %	Plasticity Index (PI), %	Minivane Shear Strength (KSF)	Passing No. 200 Sieve, %
										Water surface elevation at 1.9 feet									
										Mudline at Elevation -1.6 feet									
0	0		20			1			OH	Very soft dark gray organic clay with peat (Organic Content = 12%) (Fiber Content = 13.9%)	262							0.11	
			15			2			CH	Very soft dark gray clay and organic matter (Specific Gravity = 2.677)	51	68.7	0.07	5	3	55	35	0.15	
	5		26			3			CL	Stiff dark gray silty clay with sand	30	94.3	1.72	5	7			0.34	74
			27			4			SC-SM	Dark gray silty, clayey sand	29								46
			25			5				Dark gray silty, clayey sand	26								
	10					6			ML	Gray silt									
						7			CL	Soft dark gray clay with silt	55					49	29		
	15		26			8				Soft dark gray sandy clay with organic matter	31	91.3	0.35	5	11			0.28	
			26			9				Soft dark gray silty clay with organic matter	34	83.3						0.41	
			28			10				Soft dark gray silty clay	30	93	0.30	5	15			0.44	
	20								CH										
			28			11				Soft to medium dark gray clay with peat pockets and wood (Organic Content = 6%)	114	41.2	0.32	6.1	11	122	88	0.74	
	25																		
			27			12				Medium dark gray clay with organic matter	96	47						0.64	
	30																		

*Remolded sample used for strength testing.

Log of Boring B-8

GeoEngineers

Project: Island Road Marsh Creation and Nourishment (TE-117)

Project Location: Terrebonne Parish, Louisiana

Project Number: 16715-040-01

Figure B-2

Sheet 1 of 2

Baton Rouge: Date:2/1/17 Path:P:\16\16715\040\GINT\16715040001.GPJ DBTemplate/LibTemplate:GEOENGINEERS8.GDT/GEI8_GEOTECH_LAB

Elevation (feet)	Depth (feet)	FIELD DATA: Interval	Recovered (in)	Blows/foot or Pocket Pen (TSF)	Collected Sample	Sample Name	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	LABORATORY DATA: Water Content, %	Dry Density, (pcf)	Shear Strength (KSF)	Confining Pressure (PSI)	Strain, %	Liquid Limit (LL), %	Plasticity Index (PI), %	Minivane Shear Strength (KSF)	Passing No. 200 Sieve, %
35	35					13				Medium dark gray clay	63					108	80		
40	40					14				Medium dark gray clay with organic matter									
45	45		26			15				Medium dark gray clay	43	77.2	0.59	11.2	9			0.52	
50	50		29			16				Medium dark gray clay	44							0.88	
55	55		20			17				Soft to medium dark gray clay with roots	45	77.7	0.51	15.2	15			0.46	
60	60		26			18				Medium dark gray clay with calcareous nodules	49							0.96	

*Remolded sample used for strength testing.

Log of Boring B-8 (continued)

GEOENGINEERS

Project: Island Road Marsh Creation and Nourishment (TE-117)

Project Location: Terrebonne Parish, Louisiana

Project Number: 16715-040-01

Figure B-2

Sheet 2 of 2

Baton Rouge: Date:2/1/17 Path:P:\16\16715040GINT\16715040001.GPJ DBTemplate/LibTemplate:GEOENGINEERS8.GDT/GEI8_GEOTECH_LAB

Drilled	Start 8/6/2016	End 8/6/2016	Total Depth (ft) 40	Logged By DNR / Checked By JMP	Driller Specialized Environmental Resources, LLC	Drilling Method Wet Rotary
Mudline Elevation (ft) Vertical Datum	-1.7		Hammer Data	N/A	Drilling Equipment	Airboat Mounted Drill Rig
Latitude / Longitude	N29° 24' 13.71" / W90° 28' 45.94"		System Datum	Geographic / NAD83 (feet)/NAVD88 Geoid 12A	Groundwater: Date Measured	Depth to Water (ft): N/A; Elevation (ft)

Notes: See Figure A-1 for explanation of symbols. Cement-bentonite grout backfilled full depth.

Elevation (feet)	Depth (feet)	Interval	Recovered (in)	Blows/foot or Pocket Pen (TSF)	Collected Sample	Sample Name	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Water Content, %	Dry Density, (pcf)	Shear Strength (KSF)	Confining Pressure (PSI)	Strain, %	Liquid Limit (LL), %	Plasticity Index (PI), %	Minivane Shear Strength (KSF)	Passing No. 200 Sieve, %
										Water surface elevation at 2.1 feet									
0										Mudline at Elevation at -1.7 feet									
	0		15			1			PT	Very soft black peat (Organic Content = 15.3%) (Fiber Content = 24%)	411	14.1	0.09	5	15				
-5			25			2				Very soft black peat	411	14.1	0.03	5	10			0.18	
	5		26			3			CH	Very soft gray clay with organic matter	52	70.7	0.07	5	8			0.13	
			28			4			CL	Gray sandy clay with sand layers	35								
-10			26			5				Very soft gray clay with silt lenses	41	79.8	0.21	5	9	42	18	0.28	
	10		30			6				Very soft gray clay with silt seams and shells	47	74.7	0.18	5	14			0.26	
-15			30			7				Very soft gray clay with silt pockets	65	62.9	0.21	5	11	49	28	0.23	
	15		28			8				Soft gray clay with silt pockets and shell fragments	40	81.6						0.33	
			28			9			CH	Soft gray clay with organic matter	61	65.2	0.25	5	11			0.27	
-20			24			10			OH	Soft to medium dark gray organic clay with wood (Organic Content = 9.8%)	146	32.5	0.56	5	4	240	163	0.35	
	20																		
									CH										
-25			27			11				Soft gray clay with organic matter and wood	75	57	0.39	5	14			0.49	
	25																		
-30			26			12				Medium gray clay with organic matter and wood	78	52.4						0.68	
	30																		

*Remolded sample used for strength testing.

Log of Boring B-9

GEOENGINEERS

Project: Island Road Marsh Creation and Nourishment (TE-117)

Project Location: Terrebonne Parish, Louisiana

Project Number: 16715-040-01

Figure B-3

Baton Rouge: Date:2/1/17 Path:P:\16\16715040G\INT\16715040G1.GPJ DBTemplate/LibTemplate:GEOENGINEERS8.GDT/GEI8_GEOTECH_LAB

Elevation (feet)	Depth (feet)	FIELD DATA: Interval	Recovered (in)	Blows/foot or Pocket Pen (TSF)	Collected Sample	Sample Name	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	LABORATORY DATA: Water Content, %	Dry Density, (pcf)	Shear Strength (KSF)	Confining Pressure (PSI)	Strain, %	Liquid Limit (LL), %	Plasticity Index (PI), %	Minivane Shear Strength (KSF)	Passing No. 200 Sieve, %
-35			28			13				Soft to medium gray clay with organic matter and wood	116	39.2	0.34	7.7	13	158	110	0.63	
	35																		
-40			30			14				Medium gray clay with organic matter	53							0.57	
	40																		

*Remolded sample used for strength testing.

Log of Boring B-9 (continued)

GeoEngineers

Project: Island Road Marsh Creation and Nourishment (TE-117)

Project Location: Terrebonne Parish, Louisiana

Project Number: 16715-040-01

Figure B-3

Sheet 2 of 2

Baton Rouge: Date:2/1/17 Path:P:\16\16715040\GINT\1671504001.GPJ DBTemplate/LibTemplate:GEOENGINEERS8.GDT/GEI8_GEOTECH_LAB

Drilled	Start 8/4/2016	End 8/4/2016	Total Depth (ft) 40	Logged By DNR / Checked By JMP	Driller Specialized Environmental Resources, LLC	Drilling Method Wet Rotary
Mudline Elevation (ft) Vertical Datum	-2.0		Hammer Data	N/A	Drilling Equipment	Airboat Mounted Drill Rig
Latitude / Longitude	N29° 23' 47.93" / W90° 29' 59.35"		System Datum	Geographic / NAD83 (feet)/NAVD88 Geoid 12A	Groundwater: Date Measured	Depth to Water (ft): N/A; Elevation (ft)

Notes: See Figure A-1 for explanation of symbols. Cement-bentonite grout backfilled full depth.

Elevation (feet)	Depth (feet)	Interval	Recovered (in)	Blows/foot or Pocket Pen (TSF)	Collected Sample	Sample Name	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Water Content, %	Dry Density, (pcf)	Shear Strength (KSF)	Confining Pressure (PSI)	Strain, %	Liquid Limit (LL), %	Plasticity Index (PI), %	Minivane Shear Strength (KSF)	Passing No. 200 Sieve, %
										Water surface elevation at 2.7 feet									
0										Mudline at Elevation -2.0 feet									
	0					1			PT	Very soft black peat (Organic Content = 32.0%) (Fiber Content = 42.5%)	443	13.6	0.06	5	14				
-5			26			2			OH	Very soft dark gray and black organic clay with peat pockets and lenses	317	16.9	0.04	5	13	275	223		
	5		30			3				Very soft dark gray and black organic clay with peat pockets and lenses (Organic Content = 6.1%) (Specific Gravity = 2.550)	213	26.2	0.12	5	7	213	169	0.13	
-10						4			CH	Very soft gray clay with organic matter	111	42	0.10	5	7			0.09	
			26			5			CL	Very soft gray clay with sand seams and organic matter	62	64.2	0.05	5	9	42	24	0.13	
	10		27			6			SC	Gray clayey sand with 1-inch clay layer at bottom	34	79.3	1.37	5	2			0.14	
-15			27			7			CL	Very soft gray silty clay with sand	53	67.7	0.06	5	8	29	12		81
			26			8				Very soft gray silty clay with silt seams and lenses	51	68.9	0.18	5	4	38	14	0.09	
	15		27			9				Soft gray silty clay with sand lenses	53							0.26	
-20			26			10			CH	Very soft to soft gray clay with sand lenses and mica	85	51.8	0.21	5	4			0.33	
	20																		
-25										No sample recovered									
	25																		
-30			22			11				Very soft to soft brown clay with silt pockets and shell fragments	80	54.3	0.22	6.1	7	98	71	0.31	
	30																		

*Remolded sample used for strength testing.

Log of Boring B-10

GEOENGINEERS

Project: Island Road Marsh Creation and Nourishment (TE-117)

Project Location: Terrebonne Parish, Louisiana

Project Number: 16715-040-01

Figure B-4

Sheet 1 of 2

Baton Rouge: Date:2/1/17 Path:P:\16\16715040\GINT\16715040001.GPJ DBTemplate/LibTemplate:GEOENGINEERS8.GDT/GEI8_GEOTECH_LAB

Elevation (feet)	Depth (feet)	FIELD DATA: Interval	Recovered (in)	Blows/foot or Pocket Pen (TSF)	Collected Sample	Sample Name	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	LABORATORY DATA: Water Content, %	Dry Density, (pcf)	Shear Strength (KSF)	Confining Pressure (PSI)	Strain, %	Liquid Limit (LL), %	Plasticity Index (PI), %	Minivane Shear Strength (KSF)	Passing No. 200 Sieve, %
35	35		25			12				Soft brown clay	89							0.36	
40	40		20			13				Very soft to soft brown clay with silt pockets	48	73.2	0.23	9.3	5			0.37	

*Remolded sample used for strength testing.

Log of Boring B-10 (continued)

GEOENGINEERS

Project: Island Road Marsh Creation and Nourishment (TE-117)

Project Location: Terrebonne Parish, Louisiana

Project Number: 16715-040-01

Figure B-4

Sheet 2 of 2

Baton Rouge: Date:2/1/17 Path:P:\16\16715\040\GINT\16715040001.GPJ DBTemplate\LibTemplate:GEOENGINEERS8.GDT/GEI8_GEOTECH_LAB

Drilled	Start 8/5/2016	End 8/5/2016	Total Depth (ft) 60	Logged By DNR / Checked By JMP	Driller Specialized Environmental Resources, LLC	Drilling Method Wet Rotary
Mudline Elevation (ft) Vertical Datum	-1.1		Hammer Data	N/A	Drilling Equipment	Airboat Mounted Drill Rig
Latitude / Longitude	N29° 23' 48.90" / W90° 28' 46.55"		System Datum	Geographic / NAD83 (feet)/NAVD88 Geoid 12A	Groundwater: Date Measured	Depth to Water (ft): N/A; Elevation (ft)

Notes: See Figure A-1 for explanation of symbols. Cement-bentonite grout backfilled full depth.

Elevation (feet)	Depth (feet)	Interval	Recovered (in)	Blows/foot or Pocket Pen (TSF)	Collected Sample	Sample Name	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Water Content, %	Dry Density, (pcf)	Shear Strength (KSF)	Confining Pressure (PSI)	Strain, %	Liquid Limit (LL), %	Plasticity Index (PI), %	Minivane Shear Strength (KSF)	Passing No. 200 Sieve, %
										Water surface elevation at 2.2 feet									
0										Mudline at Elevation -1.1 feet									
	0		26			1			PT	Soft black peat (Organic Content = 21.6%) (Fiber Content = 40.3%)	257	20.7						0.16	
			24			2			CH	Very soft gray clay with organic matter	92	49.7	0.10	5	9	81	58	0.09	
-5	5		25			3			CL	Very soft gray silty clay	35	85.4	0.12	5	11				
			24			4			SC-SM	Gray silty, clayey sand	28								47
-10			26			5			CL	Very soft gray silty clay	36	86.2	0.16	5	15	40	20	0.12	
	10		20			6				Very soft gray silty clay with silt pockets	55	67.7	0.11	5	11			0.17	
			25			7				Very soft gray clay with silt	39					43	21	0.20	
-15			26			8			CH	Very soft gray clay with silt pockets	51	67	0.21	5	5				
	15		20			9				Medium gray clay	33	90.6						0.72	
-20			22			10			CL	Soft gray clay with silt lenses and pockets	38	82.6	0.34	5	15	46	26	1.10	
	20																		
-25			28			11				Medium gray clay with silt lenses	32	90.1	0.50	5	11			0.71	
	25																		
									CH										
-30			27			12				Medium gray clay	37	87.3						0.58	
	30																		

*Remolded sample used for strength testing.

Log of Boring B-11

GEOENGINEERS

Project: Island Road Marsh Creation and Nourishment (TE-117)

Project Location: Terrebonne Parish, Louisiana

Project Number: 16715-040-01

Figure B-5

Sheet 1 of 2

Baton Rouge: Date:2/1/17 Path:P:\16\16715040\GINT\16715040001.GPJ DBTemplate/LibTemplate:GEOENGINEERS8.GDT/GEI8_GEOTECH_LAB

Elevation (feet)	Depth (feet)	Interval	Recovered (in)	Blows/foot or Pocket Pen (TSF)	Collected Sample	Sample Name	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Water Content, %	Dry Density, (pcf)	Shear Strength (KSF)	Confining Pressure (PSI)	Strain, %	Liquid Limit (LL), %	Plasticity Index (PI), %	Minivane Shear Strength (KSF)	Passing No. 200 Sieve, %
									CL										
-35	35		20			13				Soft gray silty clay	31	93.8	0.40	7.7	14			0.29	
									ML										
-40	40		28			14				Gray silt (Organic Content = 1.9%) (Specific Gravity = 2.705)	37	86.4				33	9	0.54	
									CL										
-45	45		28			15				Medium gray silty clay	40	80.2	0.60	11.2	13			0.53	
									CH										
-50	50					16				Medium gray clay with silt lenses	41	83.6						0.72	
									CL										
-55	55		26			17				Very soft to soft gray silty clay	36	85.6	0.45	15.2	15			0.13	
									CH										
-60	60		29			18				Stiff gray clay with silt pockets	47							1.12	

*Remolded sample used for strength testing.

Log of Boring B-11 (continued)

GEOENGINEERS

Project: Island Road Marsh Creation and Nourishment (TE-117)

Project Location: Terrebonne Parish, Louisiana

Project Number: 16715-040-01

Figure B-5

Sheet 2 of 2

Baton Rouge: Date:2/1/17 Path:P:\16\16715040G\INT\16715040G1.GPJ DBTemplate/LibTemplate:GEOENGINEERS8.GDT/GEI8_GEOTECH_LAB

Drilled	Start 8/6/2016	End 8/6/2016	Total Depth (ft) 60	Logged By DNR / Checked By JMP	Driller Specialized Environmental Resources, LLC	Drilling Method Wet Rotary
Mudline Elevation (ft) Vertical Datum	-0.1		Hammer Data	N/A	Drilling Equipment	Airboat Mounted Drill Rig
Latitude / Longitude	N29° 23' 49.67" / W90° 28' 26.66"		System Datum	Geographic / NAD83 (feet)/NAVD88 Geoid 12A	Groundwater: Date Measured	Depth to Water (ft): N/A; Elevation (ft)

Notes: See Figure A-1 for explanation of symbols. Cement-bentonite grout backfilled full depth.

Elevation (feet)	Depth (feet)	Interval	Recovered (in)	Blows/foot or Pocket Pen (TSF)	Collected Sample	Sample Name	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Water Content, %	Dry Density, (pcf)	Shear Strength (KSF)	Confining Pressure (PSI)	Strain, %	Liquid Limit (LL), %	Plasticity Index (PI), %	Minivane Shear Strength (KSF)	Passing No. 200 Sieve, %
										Water surface elevation at 1.1 feet Mudline elevation at -0.1 feet									
0	0		15			1			PT	Very soft black and dark brown peat (Organic Content = 17.8%) (Fiber Content = 69.2%)	220							0.09	
			24			2			CH	Very soft to soft gray clay with organic matter	63	60	0.16	5	6			0.28	
-5	5		25			3				Very soft gray clay with silty sand pockets	52	72.2	0.10	5	12	53	35	0.18	
			26			4			SM	Gray silty sand	35	87.8	1.01	5	12			0.10	
			26			5			CL	Very soft gray sandy clay with sand layer at bottom	23	94.4						0.23	
-10	10					6			SM	Gray silty sand	32								
			27			7			CH	Very soft to soft gray clay with shell fragments (Specific Gravity = 2.744)	59	63.4	0.23	5	9	85	60	0.39	90
-15	15		26			9				Very soft to medium gray clay	60	65	0.22	5	6	74	52	0.52	
			27			10				Soft to medium gray clay with shell fragments, organic traces and silty sand pockets	62	63.5	0.25	5	11			0.50	
			28			11				Medium gray clay with organic matter (Organic Content = 5.7%)	54					98	72	0.51	
-20	20																		
			29			12				Soft gray clay	70	58.5	0.23	5	13			0.42	
-25	25																		
			29			13				Soft gray clay	47	73.9				73	52	0.40	
-30	30																		
									CL										
			26			14				Soft to medium gray silty clay with calcareous	33	87.4	0.50	7.7	15			0.31	

*Remolded sample used for strength testing.

Log of Boring B-12

GEOENGINEERS

Project: Island Road Marsh Creation and Nourishment (TE-117)

Project Location: Terrebonne Parish, Louisiana

Project Number: 16715-040-01

Figure B-6

Sheet 1 of 2

Baton Rouge: Date:2/1/17 Path:P:\16\16715040G\NT\16715040G1.GPJ DBTemplate/LibTemplate:GEOENGINEERS8.GDT/GEI8_GEOTECH_LAB

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	Blows/foot or Pocket Pen (TSF)	Collected Sample	Sample Name	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	LABORATORY DATA: Water Content, %	Dry Density, (pcf)	Shear Strength (KSF)	Confining Pressure (PSI)	Strain, %	Liquid Limit (LL), %	Plasticity Index (PI), %	Minivane Shear Strength (KSF)	Passing No. 200 Sieve, %
									nodules									
-35	35																	
		28			15				Soft gray clay with silt	30	92						0.37	
-40	40																	
		28			16				Soft gray silty clay	33	89.8	0.29	11.2	15			0.47	
-45	45																	
		28			17				Soft gray silty clay	31							0.36	
-50	50																	
		29			18				Soft gray silty clay	32	90.3	0.45	15.2	15			0.49	
-55	55																	
		28			19				Soft to medium gray silty clay with concretions	35							0.61	
-60	60																	

*Remolded sample used for strength testing.

Log of Boring B-12 (continued)

GEOENGINEERS

Project: Island Road Marsh Creation and Nourishment (TE-117)

Project Location: Terrebonne Parish, Louisiana

Project Number: 16715-040-01

Figure B-6

Sheet 2 of 2

Baton Rouge: Date:2/1/17 Path:P:\16\16715040G\INT\1671504001.GPJ DBTemplate/LibTemplate:GEOENGINEERS8.GDT/GEI8_GEOTECH_LAB

Drilled	Start 8/4/2016	End 8/4/2016	Total Depth (ft) 30	Logged By DNR / Checked By JMP	Driller Specialized Environmental Resources, LLC	Drilling Method Wet Rotary
Mudline Elevation (ft) Vertical Datum	-0.6		Hammer Data	N/A	Drilling Equipment	Airboat Mounted Drill Rig
Latitude / Longitude	N29° 23' 41.14" / W90° 28' 26.90"		System Datum	Geographic / NAD83 (feet)/NAVD88 Geoid 12A	Groundwater: Date Measured	Depth to Water (ft): N/A; Elevation (ft)

Notes: See Figure A-1 for explanation of symbols. Cement-bentonite grout backfilled full depth.

Elevation (feet)	Depth (feet)	Interval	Recovered (in)	Blows/foot or Pocket Pen (TSF)	Collected Sample	Sample Name	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Water Content, %	Dry Density, (pcf)	Shear Strength (KSF)	Confining Pressure (PSI)	Strain, %	Liquid Limit (LL), %	Plasticity Index (PI), %	Minivane Shear Strength (KSF)	Passing No. 200 Sieve, %
										Water surface elevation at 2.5 feet									
										Mudline at Elevation -0.6 feet									
0	0					1			PT	Very soft black peat with organic clay (Organic Content = 26.3%) (Fiber Content = 80.0%)	743	8.7	0.03	5	7			0.10	
						2			ML	Gray sandy silt with clay pockets	24								61
-5	5					3				Very soft dark gray sandy silt with clay pockets	31							0.07	62
						4			CH	Soft gray clay	35					54	36		
-10						5			CL	Soft dark gray silty clay with sand	29	96.9							78
	10					6			SM	Gray silty sand									
						7			SC-SM	Gray silty clayey sand	27								22
-15						8			CL	Gray clay with silt	52					43	24		
	15					9			SC	Gray clayey sand	30								
-20						10			CL	Soft gray clay with silt seams (Specific Gravity = 2.604)	53	70.8	0.25	5	5	47	26	0.33	
	20								CH										
-25						11				Medium gray clay	36	85.5	0.50	5	3	53	35	0.73	
	25																		
-30						12				Medium to stiff gray clay with silt seams and organics	39	82.6	0.64	6.1	14			1.00	
	30																		

*Remolded sample used for strength testing.

Log of Boring B-13

GEOENGINEERS

Project: Island Road Marsh Creation and Nourishment (TE-117)

Project Location: Terrebonne Parish, Louisiana

Project Number: 16715-040-01

Figure B-7

Sheet 1 of 1

Baton Rouge: Date:2/1/17 Path:P:\16\16715040G\INT\16715040G1.GPJ DBTemplate/LibTemplate:GEOENGINEERS8.GDT/GEI8_GEOTECH_LAB

Drilled	Start 8/4/2016	End 8/4/2016	Total Depth (ft) 30	Logged By DNR / Checked By JMP	Driller Specialized Environmental Resources, LLC	Drilling Method Wet Rotary
Mudline Elevation (ft) Vertical Datum	-1.4		Hammer Data	N/A	Drilling Equipment	Airboat Mounted Drill Rig
Latitude / Longitude	N29° 23' 38.70" / W90° 28' 50.16"		System Datum	Geographic / NAD83 (feet)/NAVD88 Geoid 12A	Groundwater: Date Measured	Depth to Water (ft): N/A; Elevation (ft)

Notes: See Figure A-1 for explanation of symbols. Cement-bentonite grout backfilled full depth.

Depth (feet)	Interval	Recovered (in)	Blows/foot or Pocket Pen (TSF)	Collected Sample	Sample Name	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Water Content, %	Dry Density, (pcf)	Shear Strength (KSF)	Confining Pressure (PSI)	Strain, %	Liquid Limit (LL), %	Plasticity Index (PI), %	Minivane Shear Strength (KSF)	Passing No. 200 Sieve, %
									Water surface elevation at 2.3 feet									
									Mudline elevation at -1.4 feet									
0		26			1			PT	Very soft black peat	1006								
					2				Very soft black peat	290	19	0.15	5	10			0.24	
		25			3				Very soft black peat (Organic Content = 11.3%) (Fiber Content = 56.3%)	219	23.4				199	155	0.12	
		26			4			CH	Very soft dark gray clay with roots	72	58.4	0.06	5	7	66	44	0.12	
5		25			5			SC	Dark gray clayey sand	26	98.4	2.36	5	14			0.19	
		24			6			CL	Very soft dark gray silty clay with sand	35	84.4	0.14	5	12	33	16		83
10		15			7				Very soft dark gray silty clay	43	79.2	0.16	5	12			0.21	
		26			8				Very soft dark gray clay with silt	58	64.8				47	24	0.12	
15		26			9				Very soft dark gray clay with silty sand lenses and mica	70	58.9	0.20	5	6			0.15	
		26			10				Very soft dark gray silty clay (Specific Gravity = 2.630)	35	87.4	0.19	5	12	38	20	0.10	
					11				Very soft brown silty clay	38	83.3	0.24	5	12			0.20	
20								SP-SC										
25		14			12				Gray sand with clay	27								
30		15			13				Brown sand with clay	28								

*Remolded sample used for strength testing.

Log of Boring B-14

GEOENGINEERS

Project: Island Road Marsh Creation and Nourishment (TE-117)

Project Location: Terrebonne Parish, Louisiana

Project Number: 16715-040-01

Figure B-8

Sheet 1 of 1

Baton Rouge: Date:2/1/17 Path:P:\16\16715040\GINT\16715040G1.GPJ DBTemplate/LibTemplate:GEOENGINEERS8.GDT/GEI8_GEOTECH_LAB

Drilled	Start 8/4/2016	End 8/4/2016	Total Depth (ft) 30	Logged By DNR / Checked By JMP	Driller Specialized Environmental Resources, LLC	Drilling Method Wet Rotary
Mudline Elevation (ft) Vertical Datum	-1.4		Hammer Data	N/A	Drilling Equipment	Airboat Mounted Drill Rig
Latitude / Longitude	N29° 23' 22.21" / W90° 28' 36.17"		System Datum	Geographic NAD83 (feet)/NAVD88 Geoid 12A	Groundwater: Date Measured / Depth to Water (ft) / Elevation (ft)	N/A

Notes: See Figure A-1 for explanation of symbols. Cement-bentonite grout backfilled full depth.

Depth (feet)	Interval	Recovered (in)	Blows/foot or Pocket Pen (TSF)	Collected Sample	Sample Name	Water Level	Group Classification	MATERIAL DESCRIPTION	Water Content, %	Dry Density, (pcf)	Shear Strength (KSF)	Confining Pressure (PSI)	Strain, %	Liquid Limit (LL), %	Plasticity Index (PI), %	Minivane Shear Strength (KSF)	Passing No. 200 Sieve, %
								Water surface elevation at 1.7 feet									
								Mudline at Elevation -1.4 feet									
0		18	0		1		OH	Very soft dark gray organic clay with peat pockets	179	28.7	0.04	5	7	130	96	0.13	
		15	0		2		CH	Very soft dark gray clay (Organic Content = 2.7%) (Fiber Content = 0.8%)	70	59.4				63	42		
5					3		SC-SM	Dark gray silty clayey sand	26								50
		8	0.5		4			Gray silty clayey sand	25								
		8	0.5		5		SM	Gray silty sand	23								15
10		34	0.25		6		CH	Very soft gray clay with silt lenses (Organic Content = 2.1%) (Specific Gravity = 2.688)	52	70.1	0.15	5	14	81	59	0.26	
		36	0.25		7			Very soft dark gray clay with silt lenses	72	58.2	0.12	5	14	59	38	0.58	
		26	0.25		8		SP-SC	Gray sand with sandy clay layer	28	91						0.37	
15		18			9			Gray sand with silty clay and shell fragments	27								6
		18			10		SM	Gray sand with silt									
20							SC-SM										
		18			11			Gray silty clayey sand with shell fragments	21								18
25							SM										
		18			12			Gray sand with silt									
30																	

*Remolded sample used for strength testing.

Log of Boring B-15

GEOENGINEERS

Project: Island Road Marsh Creation and Nourishment (TE-117)

Project Location: Terrebonne Parish, Louisiana

Project Number: 16715-040-01

Figure B-9

Sheet 1 of 1

Baton Rouge: Date:2/1/17 Path:P:\16\16715040\GINT\16715040G1.GPJ DBTemplate/LibTemplate:GEOENGINEERS8.GDT/GEI8_GEOTECH_LAB

Drilled	Start 8/2/2016	End 8/3/2016	Total Depth (ft)	60	Logged By / Checked By	DNR / JMP	Driller	Specialized Environmental Resources, LLC	Drilling Method	Wet Rotary
Mudline Elevation (ft) Vertical Datum	-1.6		Hammer Data	N/A	Drilling Equipment	Airboat Mounted Drill Rig				
Latitude / Longitude	N29° 23' 14.2" / W90° 28' 40.0"		System Datum	Geographic / NAD83 (feet)/NAVD88 Geoid 12A	Groundwater	Date Measured	Depth to Water (ft)	Elevation (ft)		
Notes:	See Figure A-1 for explanation of symbols. Cement-bentonite grout backfilled full depth.						N/A			

Elevation (feet)	Depth (feet)	Interval	Recovered (in)	Blows/foot or Pocket Pen (TSF)	Collected Sample	Sample Name	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Water Content, %	Dry Density, (pcf)	Shear Strength (KSF)	Confining Pressure (PSI)	Strain, %	Liquid Limit (LL), %	Plasticity Index (PI), %	Minivane Shear Strength (KSF)	Passing No. 200 Sieve, %
										Water surface elevation at 2.1 feet									
0										Mudline Elevation at -1.6 feet									
	0		22.5			1			CH	Very soft dark gray clay with organic matter (Organic Content = 7.8%) (Fiber Content = 12.1%)	117	41.8				115	84	0.21	
-5			22			2			CL	Very soft dark gray silty clay	35	88	0.23	5	8				
			14			3			SM	Dark gray silty sand	33								
	5		14			4				Dark gray silty sand	24								17
-10			11			5			SP-SM	Dark gray sand with silt	23								6
	10		12			6				Gray sand with clayey silt and silt lenses									
			21			7			CL	Very soft gray silty clay	28							0.16	
-15						8				Very soft to soft dark gray clay with silt and shells	51	72.2	0.22	5	11	49	29	0.26	
			16			9				Soft dark gray silty clay with silt lenses	50	68.9	0.26	5	4				
	15		22			10			CH	Soft dark gray clay with shell fragments	73	57.4				84	59		
-20			14			11			CL	Very soft dark gray clay with silt and shell fragments	48	75.4	0.14	5	15				
	20																		
-25			19.5			12				Soft to medium dark gray silty clay and organic matter	41	76.5	0.33	5	9			0.70	
	25																		
-30			4			13				Very soft dark gray clay with silt and organic matter (Specific Gravity = 2.601)	55	68.2				49	29	0.09	
	30																		

*Remolded sample used for strength testing.

Log of Boring B-16

GEOENGINEERS

Project: Island Road Marsh Creation and Nourishment (TE-117)

Project Location: Terrebonne Parish, Louisiana

Project Number: 16715-040-01

Figure B-10

Sheet 1 of 2

Baton Rouge: Date:2/1/17 Path:P:\16\16715040G\INT\16715040001.GPJ DBTemplate/LibTemplate:GEOENGINEERS8.GDT/GEI8_GEOTECH_LAB

Elevation (feet)	Depth (feet)	Interval	Recovered (in)	Blows/foot or Pocket Pen (TSF)	Collected Sample	Sample Name	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Water Content, %	Dry Density, (pcf)	Shear Strength (KSF)	Confining Pressure (PSI)	Strain, %	Liquid Limit (LL), %	Plasticity Index (PI), %	Minivane Shear Strength (KSF)	Passing No. 200 Sieve, %
35	35		18			14				Medium dark gray silty clay	31	93.2	0.86	7.7	15			0.87	
40	40		16			15				Medium dark gray clay with silt, wood, calcareous nodules, and shells	73								
45	45		13			16				Medium dark gray silty clay	43								
50	50		20			17				Medium dark gray silty clay with wood	42	76.9	0.76	13.2	13	33	10		
55	55									No sample recovered									
60	60					18			SC-SM	Dark gray silty, clayey sand with shell fragments	20								33

*Remolded sample used for strength testing.

Log of Boring B-16 (continued)

GEOENGINEERS

Project: Island Road Marsh Creation and Nourishment (TE-117)

Project Location: Terrebonne Parish, Louisiana

Project Number: 16715-040-01

Figure B-10

Sheet 2 of 2

Baton Rouge: Date:2/1/17 Path:P:\16\16715040G\INT\16715040G1.GPJ DBTemplate\LibTemplate:GEOENGINEERS8.GDT/GEI8_GEOTECH_LAB

APPENDIX C
Laboratory Testing Results

Soil Boring ID	Depth Interval (ft)	D2488 Visual Description	Test Type	D2216 Moisture %	D2166/D2850 Unit Weight (PCF) Wet	D2166/D2850 Unit Weight (PCF) Dry	D4318 Atterberg Limits LL	D4318 Atterberg Limits PL	D4318 Atterberg Limits PI	D422/D1140 /D6913 %<#200 Sieve	D2166/D2850 Shear Strength (PSF)	D2166/D2850 Remolded Strength (PSF)	D2166/D2850 Failure Strain %	D2166/D2850 Confining Pressure (PSI)	D2166/D2850 Type Failure	D4648 Mini Vane Shear Strength (PSF)	Comments
B-8	0.0 - 2.0	Very soft dark gray organic clay with peat (OH)	FIB MC UDW	261.9	86.3	23.9										106	Organic Content = 12.0%; Fiber Content = 13.9%
B-8	2.0 - 4.0	Very soft dark gray clay and organic matter (CH)	UU AL CONS SG MC	51.4	104.0	68.7	55	20	35		74		2.7	5.0	B	145	Specific Gravity = 2.677
B-8	4.0 - 6.0	Stiff dark gray silty clay with sand (CL)	UU SV MC	30.1	122.7	94.3				74.4	1724		6.8	5.0	B	338	
B-8	6.0 - 8.0	Dark gray silty, clayey sand (SC-SM)	SV MC	29.3						46.3							
B-8	8.0 - 10.0	Dark Gray silty, clayey sand (SC-SM)	MC	26.0													
B-8	12.0 - 14.0	Dark gray clay with silt (CL)	AL MC	54.7			49	20	29								
B-8	14.0 - 16.0	Soft dark gray sandy clay with organic matter (CL)	UU MC	31.3	119.9	91.3					351		11.1	5.0	B	276	
B-8	16.0 - 18.0	Soft dark gray silty clay with organic matter (CL)	MC UDW	34.2	111.8	83.3										412	
B-8	18.0 - 20.0	Soft dark gray silty clay (CL)	UU MC	30.3	121.1	93.0					304		14.6	5.0	B	440	
B-8	23.0 - 25.0	Soft to medium dark gray clay with peat pockets and wood (CH)	UU AL MC	113.7	88.1	41.2	122	34	88		322		10.7	6.1	B	741	Organic Content = 6.0%
B-8	28.0 - 30.0	Medium Dark gray clay with organic matter (CH)	MC UDW	96.0	92.0	46.9										638	
B-8	33.0 - 35.0	Dark gray clay (CH)	AL MC	63.4			108	28	80								
B-8	43.0 - 45.0	Medium dark gray clay (CH)	UU MC	42.5	110.0	77.2					592		9.3	11.2	MS	519	
B-8	48.0 - 50.0	Medium dark gray clay (CH)	MC	44.1												880	
B-8	53.0 - 55.0	Soft to medium dark gray clay with roots (CH)	UU MC	45.2	112.9	77.7					514		14.8	15.2	MS	456	
B-8	58.0 - 60.0	Medium dark gray clay with calcareous nodules (CH)	MC	49.1												963	

Disclaimer: The results presented relate only to those samples tested.
Note: ASTM standard identification numbers shown above each test description.

Multiple Shear = MS Vertical Shear = VS Angle Shear = AS
Slickensided = SLS Bulge = B Crumble = C

Technical Responsibility: Karen Allen
Title: QAM
Date: 1/23/17

Summary of Lab Results
Project No.: 16715-040-01

Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, LA

GEOENGINEERS

Figure C-1

Soil Boring ID	Depth Interval (ft)	D2488 Visual Description	Test Type	D2216 Moisture %	D2166/D2850 Unit Weight (PCF) Wet	D2166/D2850 Unit Weight (PCF) Dry	D4318 Atterberg Limits LL	D4318 Atterberg Limits PL	D4318 Atterberg Limits PI	D422/D1140 /D6913 %<#200 Sieve	D2166/D2850 Shear Strength (PSF)	D2166/D2850 Remolded Strength (PSF)	D2166/D2850 Failure Strain %	D2166/D2850 Confining Pressure (PSI)	D2166/D2850 Type Failure	D4648 Mini Vane Shear Strength (PSF)	Comments
B-9	0.0 - 2.0	Very soft black peat (PT)	UU FIB MC	411.0	72.2	14.1					94		14.4	5.0	B		Organic Content = 15.3%; Fiber Content = 24.0%
B-9	2.0 - 4.0	Very soft black peat (PT)	UU MC	411.0	71.8	14.1					26		9.6	5.0	B	176	
B-9	4.0 - 6.0	Very soft gray clay with organic matter (CH)	UU MC	52.0	107.5	70.7					74		7.8	5.0	B	133	
B-9	6.0 - 8.0	Gray sandy clay with sand layers (CL)	MC UDW	35.3	127.1	93.9											
B-9	8.0 - 10.0	Very soft gray clay with silt lenses (CL)	UU AL MC	40.6	112.2	79.8	42	24	18		214		8.8	5.0	B	284	
B-9	10.0 - 12.0	Very soft gray clay with silt seams and shells (CL)	UU MC	47.4	110.1	74.7					181		13.6	5.0	B	263	
B-9	12.0 - 14.0	Very soft gray clay with silt pockets (CL)	UU AL MC	64.5	103.5	62.9	49	21	28		206		11.3	5.0	B	225	
B-9	14.0 - 16.0	Soft gray clay with silt pockets and shell fragments (CL)	MC UDW	40.4	114.6	81.6										333	
B-9	16.0 - 18.0	Soft gray clay with organic matter (CH)	UU MC	60.7	104.8	65.2					252		10.8	5.0	MS	274	
B-9	18.0 - 20.0	Soft to medium dark gray organic clay with wood (OH)	UU AL MC	146.2	80.1	32.5	240	77	163		557		4.1	5.0	MS	346	Organic Content = 9.8%
B-9	23.0 - 25.0	Soft gray clay with organic matter and wood (CH)	UU MC	74.9	99.7	57.0					388		14.3	5.0	MS	494	
B-9	28.0 - 30.0	Medium gray clay with organic matter and wood (CH)	MC UDW	78.0	93.3	52.4										675	
B-9	33.0 - 35.0	Soft to medium gray clay with organic matter and wood (CH)	UU AL MC	116.1	84.8	39.2	158	48	110		344		12.8	7.7	B	626	
B-9	38.0 - 40.0	Medium gray clay with organic matter (CH)	MC	53.4												567	

Disclaimer: The results presented relate only to those samples tested.
Note: ASTM standard identification numbers shown above each test description.

Multiple Shear = MS Vertical Shear = VS Angle Shear = AS
Slickensided = SLS Bulge = B Crumble = C

Technical Responsibility: Karen Allen
Title: QAM
Date: 1/23/17

Summary of Lab Results
Project No.: 16715-040-01

Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, LA

GEOENGINEERS

Figure C-2

Soil Boring ID	Depth Interval (ft)	D2488 Visual Description	Test Type	D2216 Moisture %	D2166/D2850 Unit Weight (PCF) Wet	D2166/D2850 Unit Weight (PCF) Dry	D4318 Atterberg Limits LL	D4318 Atterberg Limits PL	D4318 Atterberg Limits PI	D422/D1140 /D6913 %<#200 Sieve	D2166/D2850 Shear Strength (PSF)	D2166/D2850 Remolded Strength (PSF)	D2166/D2850 Failure Strain %	D2166/D2850 Confining Pressure (PSI)	D2166/D2850 Type Failure	D4648 Mini Vane Shear Strength (PSF)	Comments
B-10	0.0 - 2.0	Very soft black peat (PT)	UU FIB MC	443.3	73.9	13.6					61		13.6	5.0	B		Organic Content = 32.0%; Fiber Content = 42.5%
B-10	2.0 - 4.0	Very soft dark gray and black organic clay with peat pockets and lenses (OH)	UU AL MC	316.6	70.6	16.9	275	52	223		44		12.8	5.0	B		
B-10	4.0 - 6.0	Very soft dark gray and black organic clay with peat pockets and lenses (OH)	UU AL CONS SG MC	212.9	81.9	26.2	213	44	169		123		7.3	5.0	B	125	Organic Content = 6.1% / Specific Gravity = 2.550
B-10	4.0 - 6.0	Very soft dark gray and black organic clay with peat pockets and lenses (OH)		282.0	76.0	19.9											
B-10	6.0 - 8.0	Very soft gray clay with organic matter (CH)	UU MC	110.6	88.5	42.0					99		7.1	5.0	B	92	
B-10	8.0 - 10.0	Very soft gray clay with sand seams and organic matter (CL)	UU AL MC	61.9	103.9	64.2	42	18	24		49		8.8	5.0	B	129	
B-10	10.0 - 12.0	Gray clayey sand with 1" clay layer at bottom (SC)	UU MC	33.9	106.2	79.3					1372		1.7	5.0	B	139	Mini Vane result taken at bottom in clay portion
B-10	12.0 - 14.0	Very soft gray silty clay with sand (CL)	UU AL SV MC	52.5	103.2	67.7	29	17	12	80.6	63		7.8	5.0	B		
B-10	14.0 - 16.0	Very soft gray silty clay with silt seams and lenses (CL)	UU AL MC	51.3	104.2	68.9	38	24	14		178		4.4	5.0	MS	94	
B-10	16.0 - 18.0	Soft gray silty clay with sand lenses (CL)	MC	53.0												260	
B-10	18.0 - 20.0	Very soft to soft gray clay with sand lenses and mica (CH)	UU MC	84.8	95.7	51.8					212		3.6	5.0	MS	327	
B-10	28.0 - 30.0	Very soft to soft brown clay with silt pockets and shell fragments (CH)	UU AL MC	79.6	97.4	54.3	98	27	71		216		7.3	6.1	MS	309	
B-10	33.0 - 35.0	Soft brown clay (CH)	MC	89.1												358	
B-10	38.0 - 40.0	Very soft to soft brown clay with silt pockets (CH)	UU MC	47.8	108.1	73.2					225		5.3	9.3	MS	366	

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Technical Responsibility: Karen Allen
Title: QAM
Date: 1/23/17

Summary of Lab Results
Project No.: 16715-040-01

Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, LA

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Figure C-3

Soil Boring ID	Depth Interval (ft)	D2488 Visual Description	Test Type	D2216 Moisture %	D2166/D2850 Unit Weight (PCF) Wet	D2166/D2850 Unit Weight (PCF) Dry	D4318 Atterberg Limits LL	D4318 Atterberg Limits PL	D4318 Atterberg Limits PI	D422/D1140 /D6913 %<#200 Sieve	D2166/D2850 Shear Strength (PSF)	D2166/D2850 Remolded Strength (PSF)	D2166/D2850 Failure Strain %	D2166/D2850 Confining Pressure (PSI)	D2166/D2850 Type Failure	D4648 Mini Vane Shear Strength (PSF)	Comments
B-11	0.0 - 2.0	Soft black peat (PT)	FIB MC UDW	257.4	74.2	20.7										158	Organic Content = 21.6%; Fiber Content = 40.3%
B-11	2.0 - 4.0	Very soft gray clay with organic matter (CH)	UU AL MC	92.0	95.4	49.7	81	23	58		101		8.8	5.0	B	88	
B-11	4.0 - 6.0	Very soft gray silty clay (CL)	UU MC	34.5	114.9	85.4					122		11.3	5.0	B		
B-11	6.0 - 8.0	Gray silty, clayey sand (SC-SM)	SV MC	28.2						47.4							
B-11	8.0 - 10.0	Very soft gray silty clay (CL)	UU AL MC	35.7	117.0	86.2	40	20	20		162		14.8	5.0	S	115	
B-11	10.0 - 12.0	Very soft gray silty clay with silt pockets (CL)	UU MC	55.4	105.2	67.7					105		10.6	5.0	MS	170	
B-11	12.0 - 14.0	Very soft gray clay with silt (CL)	AL MC	39.4			43	22	21							200	
B-11	14.0 - 16.0	Very soft gray clay with silt pockets (CH)	UU MC	51.3	101.4	67.0					214		4.8	5.0	MS		
B-11	16.0 - 18.0	Medium gray clay (CH)	MC UDW	33.4	120.9	90.6										724	
B-11	18.0 - 20.0	Soft gray clay with silt lenses and pockets (CL)	UU AL MC	37.7	113.7	82.6	46	20	26		336		14.8	5.0	MS	1097	
B-11	23.0 - 25.0	Medium gray clay with silt lenses (CL)	UU MC	32.2	119.1	90.1					503		11.1	5.0	B	712	
B-11	28.0 - 30.0	Medium gray clay (CH)	MC UDW	36.8	119.4	87.3										576	
B-11	33.0 - 35.0	Soft gray silty clay (CL)	UU MC	31.2	123.1	93.8					397		13.6	7.7	B	288	
B-11	38.0 - 40.0	Gray silt (ML)	AL CONS SG MC	36.7	118.1	86.4	33	24	9							535	Organic Content = 1.9%; Specific Gravity = 2.705
B-11	43.0 - 45.0	Medium gray silty clay (CL)	UU MC	40.3	112.5	80.2					597		13.1	11.2	MS	531	
B-11	48.0 - 50.0	Medium gray clay with silt lenses (CH)	MC UDW	40.5	117.4	83.6										716	
B-11	53.0 - 55.0	Very soft to soft gray silty clay (CL)	UU MC	35.5	116.0	85.6					449		14.6	15.2	B	129	
B-11	58.0 - 60.0	Stiff gray clay with silt pockets (CH)	MC	46.7												1116	

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Technical Responsibility: Karen Allen
Title: QAm
Date: 1/23/17

Summary of Lab Results
Project No.: 16715-040-01

Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, LA

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Figure C-4

Soil Boring ID	Depth Interval (ft)	D2488 Visual Description	Test Type	D2216 Moisture %	D2166/D2850 Unit Weight (PCF) Wet	D2166/D2850 Unit Weight (PCF) Dry	D4318 Atterberg Limits LL	D4318 Atterberg Limits PL	D4318 Atterberg Limits PI	D422/D1140 /D6913 %<#200 Sieve	D2166/D2850 Shear Strength (PSF)	D2166/D2850 Remolded Strength (PSF)	D2166/D2850 Failure Strain %	D2166/D2850 Confining Pressure (PSI)	D2166/D2850 Type Failure	D4648 Mini Vane Shear Strength (PSF)	Comments
B-12	0.0 - 2.0	Very soft black and dark brown peat (PT)	FIB MC	220.2												94	Organic Content = 17.8% Fiber Content = 69.2%
B-12	2.0 - 4.0	Very soft to soft gray clay with organic matter (CH)	UU MC	63.3	98.0	60.0					159		6.1	5.0		278	
B-12	4.0 - 6.0	Very soft gray clay with silty sand pockets (CH)	UU AL MC	51.6	109.5	72.2	53	18	35		104		11.8	5.0		184	
B-12	6.0 - 8.0	Gray silty sand (SM)	UU AL MC	34.9	118.4	87.8	NP	NP	NP		1007		11.8	5.0		104	
B-12	8.0 - 10.0	Very soft gray sandy clay with sand layer at bottom (CL)	UDW	22.5	115.6	94.4										230	
B-12	10.0 - 12.0	Gray silty sand (SM)	MC	31.9													
B-12	12.0 - 14.0	Very soft to soft gray clay with shell fragments (CH)	~~UU -200~~ AL CONS ~~SG MC~~	59.0	100.8	63.4	85	25	60	90.1	227		9.3	5.0		387	Specific Gravity = 2.744
B-12	12.0 - 14.0	Very soft to soft gray clay with shell fragments (CH)		57.6	102.6	65.1											Specific Gravity = 2.744
B-12	14.0 - 16.0	Very soft to medium gray clay (CH)	UU AL MC	60.2	104.1	65.0	74	22	52		222		5.6	5.0		516	
B-12	16.0 - 18.0	Soft to medium gray clay with shell fragments, organic traces and silty sand pockets (CH)	UU MC	62.3	103.1	63.5					249		10.8	5.0		504	
B-12	18.0 - 20.0	Medium gray clay with organic matter (CH)	AL MC	54.3			98	26	72							506	Organic Content = 5.7%
B-12	23.0 - 25.0	Soft gray clay (CH)	UU MC	70.1	99.5	58.5					231		13.3	5.0		420	
B-12	28.0 - 30.0	Soft gray clay (CH)	AL UDW	46.7	108.4	73.9	73	21	52							395	
B-12	33.0 - 35.0	Soft to medium gray silty clay with calcareous nodules (CL)	UU MC	32.5	115.8	87.4					497		14.8	7.7		305	
B-12	38.0 - 40.0	Soft gray clay with silt (CL)	UDW	30.2	119.9	92.0										366	
B-12	43.0 - 45.0	Soft gray silty clay (CL)	UU MC	32.8	119.3	89.8					287		14.8	11.2		473	
B-12	48.0 - 50.0	Soft gray silty clay (CL)	MC	30.5												358	

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Technical Responsibility: Karen Allen
Title: QAM
Date: 1/23/17

Summary of Lab Results
Project No.: 16715-040-01

Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, LA

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Figure C-5

Soil Boring ID	Depth Interval (ft)	D2488	Test Type	D2216	D2166/D2850		D4318			D422/D1140 /D6913	D2166/D2850					D4648	Comments
		Visual Description		Moisture %	Unit Weight (PCF)		Atterberg Limits			%<#200 Sieve	Shear Strength (PSF)	Remolded Strength (PSF)	Failure Strain %	Confining Pressure (PSI)	Type Failure	Mini Vane Shear Strength (PSF)	
					Wet	Dry	LL	PL	PI								
B-12	53.0 - 55.0	Soft gray silty clay (CL)	UU MC	31.7	118.9	90.3					450		14.8	15.2		494	
B-12	58.0 - 60.0	Soft to medium gray silty clay with concretions (CL)	MC	34.7												613	

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Technical Responsibility: Aaron Allen
Title: QAM
Date: 1/23/17

Summary of Lab Results
Project No.: 16715-040-01

Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, LA

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Figure C-6

Soil Boring ID	Depth Interval (ft)	D2488 Visual Description	Test Type	D2216 Moisture %	D2166/D2850 Unit Weight (PCF) Wet	D2166/D2850 Unit Weight (PCF) Dry	D4318 Atterberg Limits LL	D4318 Atterberg Limits PL	D4318 Atterberg Limits PI	D422/D1140 /D6913 %<#200 Sieve	D2166/D2850 Shear Strength (PSF)	D2166/D2850 Remolded Strength (PSF)	D2166/D2850 Failure Strain %	D2166/D2850 Confining Pressure (PSI)	D2166/D2850 Type Failure	D4648 Mini Vane Shear Strength (PSF)	Comments
B-13	0.0 - 2.0	Very soft black peat with organic clay layer (PT)	UU FIB MC	742.9	73.5	8.7					28		6.5	5.0	B	104	Organic Content = 26.3% Fiber Content = 80%
B-13	2.0 - 4.0	Gray sandy silt with clay pockets (ML)	SV MC	24.1						60.8							
B-13	4.0 - 6.0	Dark gray sandy silt with clay pockets (ML)	SV MC	31.0						62.4						65	
B-13	6.0 - 8.0	Gray clay (CH)	AL MC	35.3			54	18	36								
B-13	8.0 - 10.0	Dark gray silty clay with sand (CL)	SV MC UDW	29.0	125.0	96.9				78.5							
B-13	12.0 - 14.0	Gray silty, clayey sand (SC-SM)	SV MC	26.8						22.3							
B-13	14.0 - 16.0	Gray clay with silt (CL)	AL MC	51.5			43	19	24								
B-13	16.0 - 18.0	Gray clayey sand (SC)	MC	29.8													
B-13	18.0 - 20.0	Soft gray clay with silt seams (CL)	UU AL CONS SG MC	53.2	108.4	70.8	47	21	26		254		4.9	5.0	B	327	Specific Gravity = 2.604
B-13	18.0 - 20.0	Soft gray clay with silt seams (CL)		55.6	97.2	62.5											
B-13	23.0 - 25.0	Medium gray clay (CH)	UU AL MC	36.2	116.5	85.5	53	18	35		496		3.3	5.0	B	728	
B-13	28.0 - 30.0	Medium to stiff gray clay with silt seams and organics (CH)	UU MC	38.5	114.4	82.6					644		14.3	6.1	MS	1000	

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Title: QAM
Date: 1/23/17

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Project No.: 16715-040-01

Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, LA

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Figure C-7

Soil Boring ID	Depth Interval (ft)	D2488 Visual Description	Test Type	D2216 Moisture %	D2166/D2850 Unit Weight (PCF) Wet	D2166/D2850 Unit Weight (PCF) Dry	D4318 Atterberg Limits LL	D4318 Atterberg Limits PL	D4318 Atterberg Limits PI	D422/D1140 /D6913 %<#200 Sieve	D2166/D2850 Shear Strength (PSF)	D2166/D2850 Remolded Strength (PSF)	D2166/D2850 Failure Strain %	D2166/D2850 Confining Pressure (PSI)	D2166/D2850 Type Failure	D4648 Mini Vane Shear Strength (PSF)	Comments
B-14	0.0 - 1.0	Black peat (PT)	MC	1005.9													
B-14	1.0 - 2.0	Very soft black peat (PT)	UU MC	290.0	74.0	19.0					146		10.3	5.0	MS	243	
B-14	2.0 - 4.0	Very soft black peat (PT)	AL FIB MC UDW	218.9	74.6	23.4	199	44	155							123	Fiber Content = 56.3%; Organic Content = 11.3%
B-14	4.0 - 6.0	Very soft dark gray clay with roots (CH)	UU AL MC	71.5	100.2	58.4	66	22	44		60		7.3	5.0	MS	115	
B-14	6.0 - 8.0	Dark gray clayey sand (SC)	UU MC	26.3	124.2	98.4					2357		13.8	5.0	B	188	
B-14	8.0 - 10.0	Very soft dark gray silty clay with sand (CL)	UU AL SV MC	35.3	114.2	84.4	33	17	16	83.3	141		11.8	5.0	B		
B-14	10.0 - 12.0	Very soft dark gray silty clay (CL)	UU MC	43.2	113.4	79.2					163		11.5	5.0	MS	213	
B-14	12.0 - 14.0	Very soft dark gray clay with silt (CL)	AL MC UDW	58.4	102.7	64.8	47	23	24							123	
B-14	14.0 - 16.0	Very soft dark gray clay with silty sand lenses and mica (CL)	UU MC	69.6	99.9	58.9					204		5.6	5.0	MS	147	
B-14	16.0 - 18.0	Very soft dark gray silty clay (CL)	UU AL CONS SG MC	34.7	117.7	87.4	38	18	20		188		11.6	5.0	MS	100	Specific Gravity = 2.630
B-14	18.0 - 20.0	Very soft brown silty clay (CL)	UU MC	38.1	115.0	83.3					240		11.6	5.0	B	203	
B-14	23.0 - 25.0	Gray sand with clay (SP-SC)	AL MC UDW	26.5			NP	NP	NP								NP
B-14	28.0 - 30.0	Brown sand with clay (SP-SC)	MC	28.4													

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Title: QAM
Date: 1/23/17

Summary of Lab Results
Project No.: 16715-040-01

Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, LA

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Figure C-8

Soil Boring ID	Depth Interval (ft)	D2488 Visual Description	Test Type	D2216 Moisture %	D2166/D2850 Unit Weight (PCF) Wet	D2166/D2850 Unit Weight (PCF) Dry	D4318 Atterberg Limits LL	D4318 Atterberg Limits PL	D4318 Atterberg Limits PI	D422/D1140 /D6913 %<#200 Sieve	D2166/D2850 Shear Strength (PSF)	D2166/D2850 Remolded Strength (PSF)	D2166/D2850 Failure Strain %	D2166/D2850 Confining Pressure (PSI)	D2166/D2850 Type Failure	D4648 Mini Vane Shear Strength (PSF)	Comments
B-15	0.0 - 2.0	Very soft dark gray organic clay with peat pockets (OH)	UU AL MC	179.2	80.1	28.7	130	34	96		45		7.3	5.0	B	133	
B-15	2.0 - 4.0	Dark gray clay (CH)	AL FIB MC UDW	69.8	100.9	59.4	63	21	42								Organic Content = 2.7%; Fiber Content = 0.8%
B-15	4.0 - 6.0	Dark gray silty, clayey sand (SC-SM)	SV MC	26.4						49.8							
B-15	6.0 - 8.0	Gray silty, clayey sand (SC-SM)	MC	24.5													
B-15	8.0 - 10.0	Gray silty sand (SM)	SV MC	23.1						14.7							
B-15	10.0 - 12.0	Very soft gray clay with silt lenses (CH)	UU AL CONS SG MC	51.6	106.2	70.0	81	22	59		153		13.6	5.0	B	258	Organic Content = 2.1%; Specific Gravity = 2.688
B-15	12.0 - 14.0	Very soft dark gray clay with silt lenses (CH)	UU AL MC	72.0	100.1	58.2	59	21	38		123		14.1	5.0	B	576	
B-15	14.0 - 16.0	Gray sand with sandy clay layer (SP-SC)	MC UDW	28.2	116.7	91.0										368	
B-15	16.0 - 18.0	Gray sand with silty clay and shell fragments (SP-SC)	SV MC	26.5						6.1							
B-15	23.0 - 25.0	Gray silty, clayey sand with shell fragments (SC-SM)	SV MC	21.4						18.2							

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Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, LA

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Figure C-9

Soil Boring ID	Depth Interval (ft)	D2488 Visual Description	Test Type	D2216 Moisture %	D2166/D2850 Unit Weight (PCF) Wet	D2166/D2850 Unit Weight (PCF) Dry	D4318 Atterberg Limits LL	D4318 Atterberg Limits PL	D4318 Atterberg Limits PI	D422/D1140 /D6913 %<#200 Sieve	D2166/D2850 Shear Strength (PSF)	D2166/D2850 Remolded Strength (PSF)	D2166/D2850 Failure Strain %	D2166/D2850 Confining Pressure (PSI)	D2166/D2850 Type Failure	D4648 Mini Vane Shear Strength (PSF)	Comments
B-16	0.0 - 2.0	Very soft dark gray clay with organic matter (CH)	AL FIB MC UDW	116.9	90.6	41.8	115	31	84							207	Organic Content = 7.8%; Fiber Content = 12.1%
B-16	2.0 - 4.0	Very soft dark gray silty clay (CL)	UU MC	34.8	118.6	88.0					225		8.1	5.0	B		
B-16	4.0 - 6.0	Dark gray silty sand (SM)	UU AL MC	33.2			20	20	NP								
B-16	6.0 - 8.0	Dark gray silty sand (SM)	SV	23.9						17.2							
B-16	8.0 - 10.0	Dark gray sand with silt (SP-SM)	SV	22.9						5.5							
B-16	11.0 - 12.0	Very soft gray silty clay (CL)	MC	28.1												164	
B-16	12.0 - 14.0	Very soft to soft dark gray clay with silt and shells (CL)	UU AL MC	51.1	109.1	72.2	49	20	29		223		11.3	5.0	B	263	
B-16	14.0 - 16.0	Soft dark gray silty clay with silt lenses (CL)	UU MC	49.6	103.1	68.9					260		4.1	5.0	MS		
B-16	16.0 - 18.0	Dark gray clay with shell fragments (CH)	AL MC UDW	72.9	99.2	57.4	84	25	59								
B-16	18.0 - 20.0	Very soft dark gray clay with silt and shell fragments (CL)	UU MC	47.5	111.1	75.4					136		14.6	5.0	MS		
B-16	23.0 - 25.0	Soft to medium dark gray silty clay with organic matter (CL)	UU MC	41.1	107.9	76.5					331		8.6	5.0	MS	701	
B-16	28.0 - 30.0	Very soft dark gray clay with silt and organic matter (CL)	AL SG MC UDW	55.3	105.9	68.2	49	20	29							91	Specific Gravity = 2.601
B-16	33.0 - 35.0	Medium dark gray silty clay (CL)	UU MC	31.2	122.3	93.2					863		14.6	7.7	MS	873	
B-16	38.0 - 40.0	Dark gray clay with silt, wood, calcareous nodules and shells (CL)	MC	72.8													
B-16	43.0 - 45.0	Dark gray silty clay (CL)	MC	43.0													
B-16	48.0 - 50.0	Medium dark gray silty clay with wood (CL)	UU AL	42.1	109.2	76.9	33	23	10		759		13.1	13.2	MS		
B-16	58.0 - 60.0	Dark gray silty, clayey sand with shell fragments (SC-SM)	-200	19.7						32.8							

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Summary of Lab Results
Project No.: 16715-040-01

Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, LA

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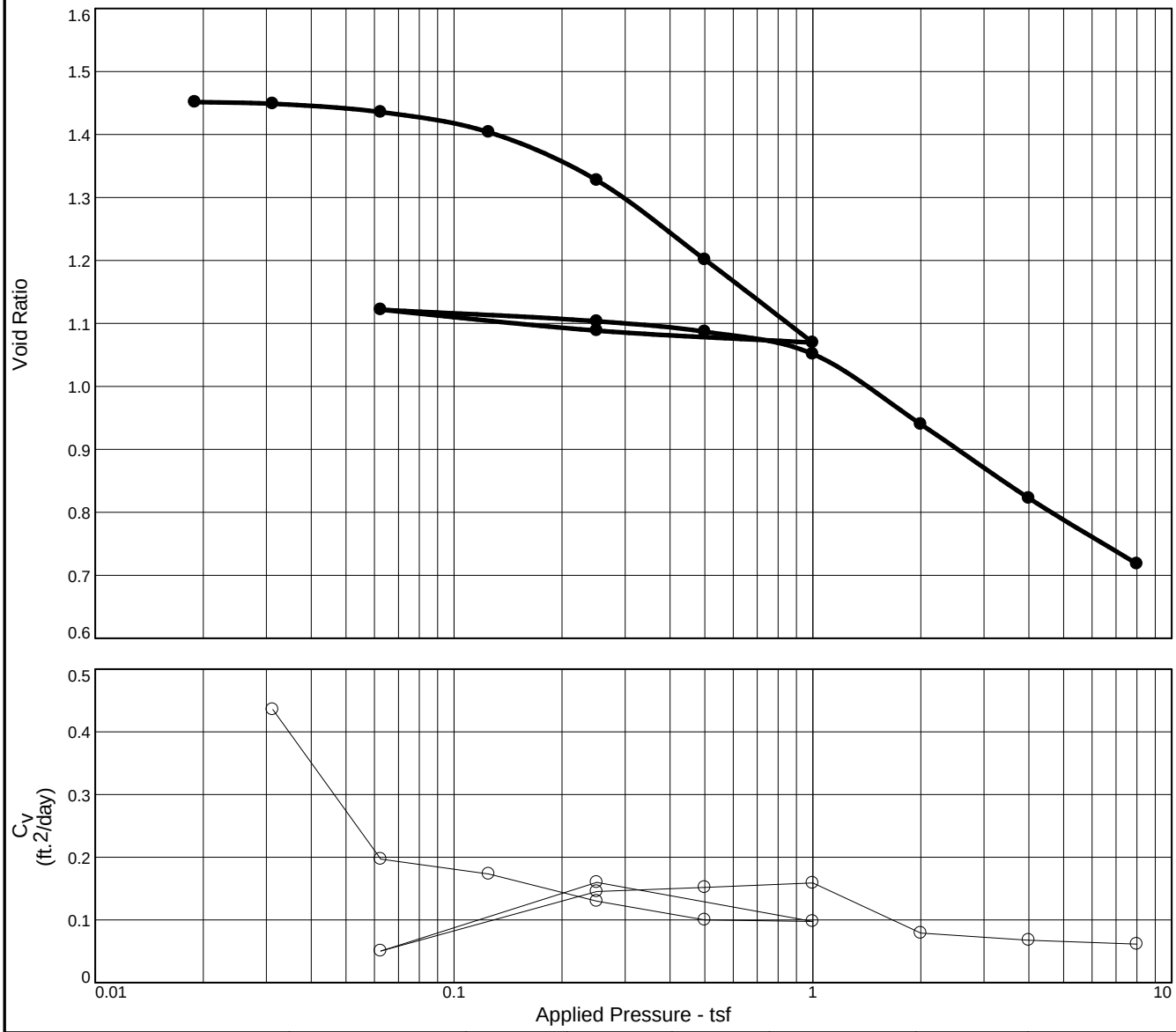
Figure C-10

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture							
103.1 %	55.9 %	68.2	55	35	2.677	0.2	0.43	1.451

MATERIAL DESCRIPTION	USCS	AASHTO
Very soft dark gray clay with organic matter	CH	

Project No. 16715-040-01 **Client:** CPRA

Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, LA

Source of Sample: B-8 **Depth:** 2'-4'

Remarks:
Cv T90

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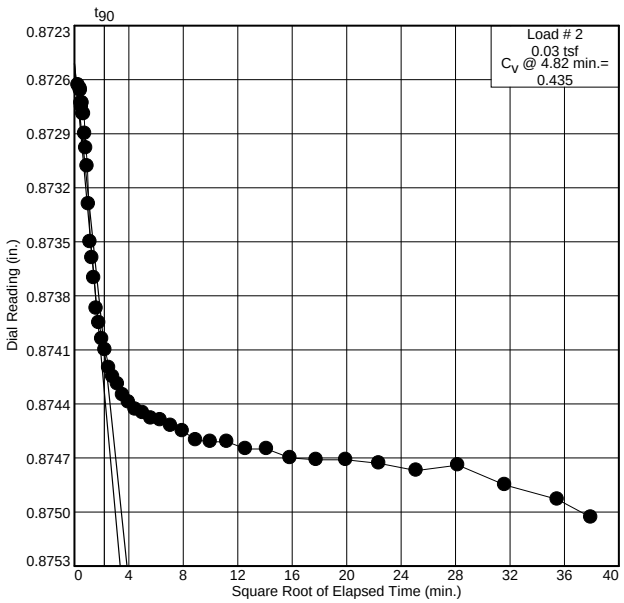
Figure

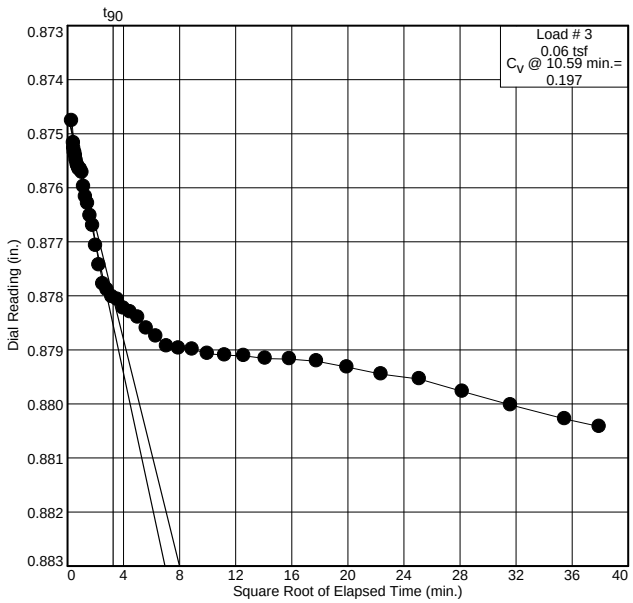
Tested By: SLC **Checked By:** JMP

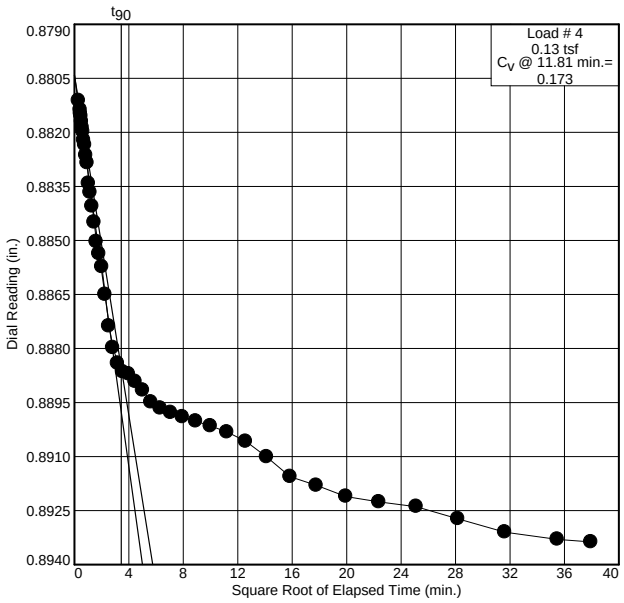
Dial Reading vs. Time

Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-8 Depth: 2'-4'







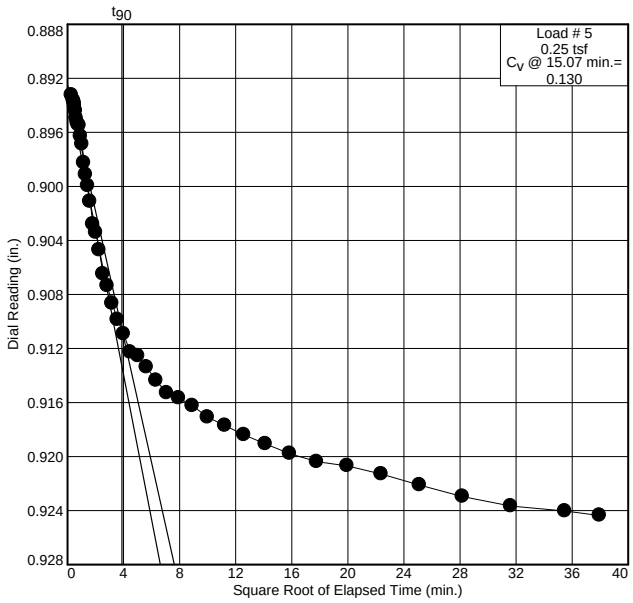


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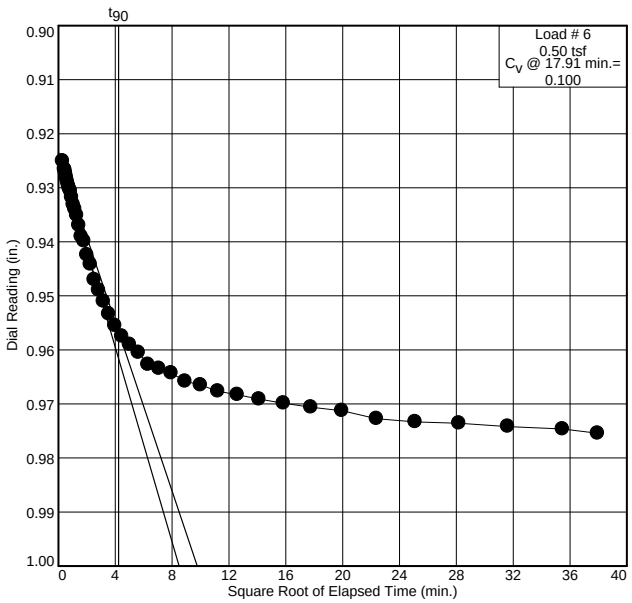
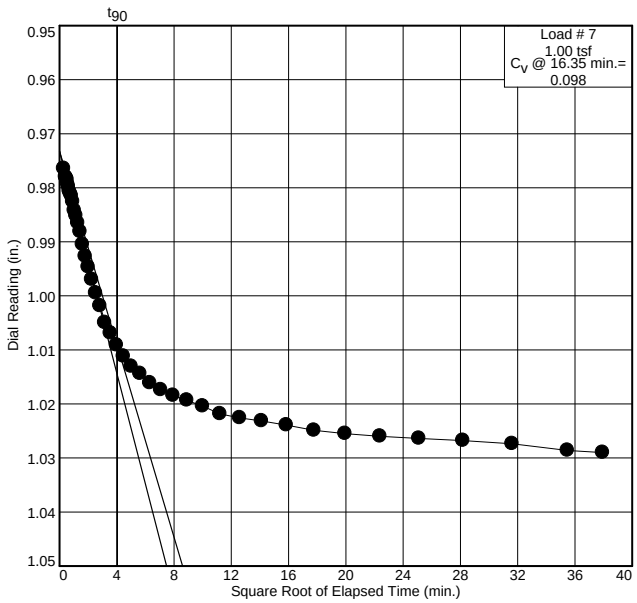
Figure

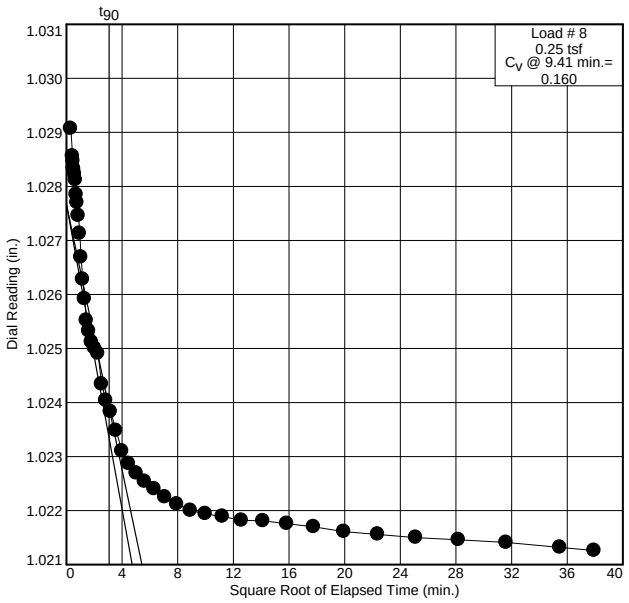
Dial Reading vs. Time

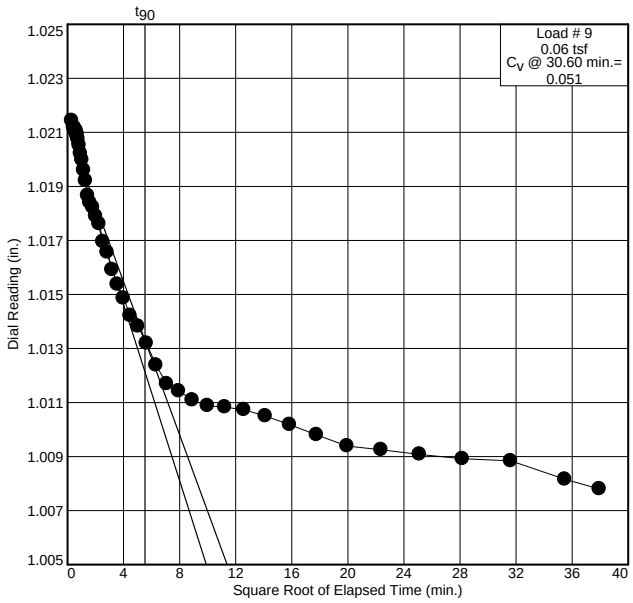
Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-8 Depth: 2'-4'









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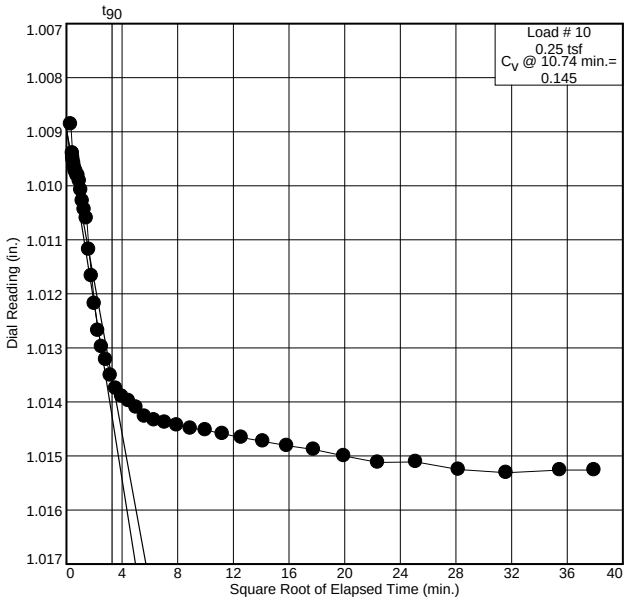

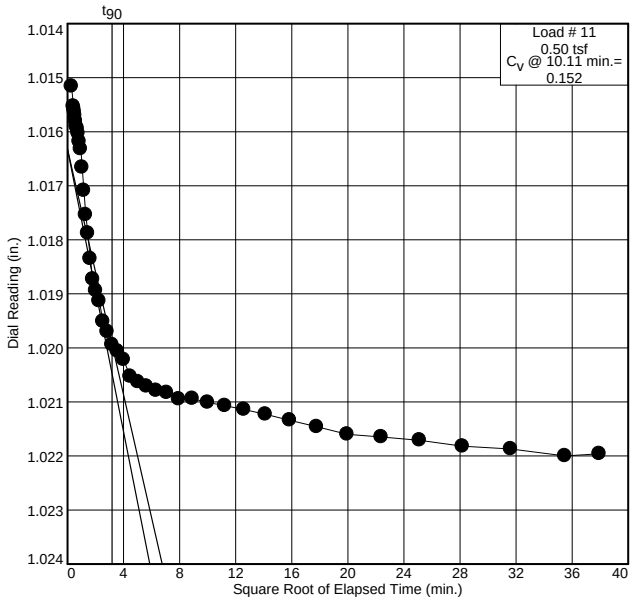

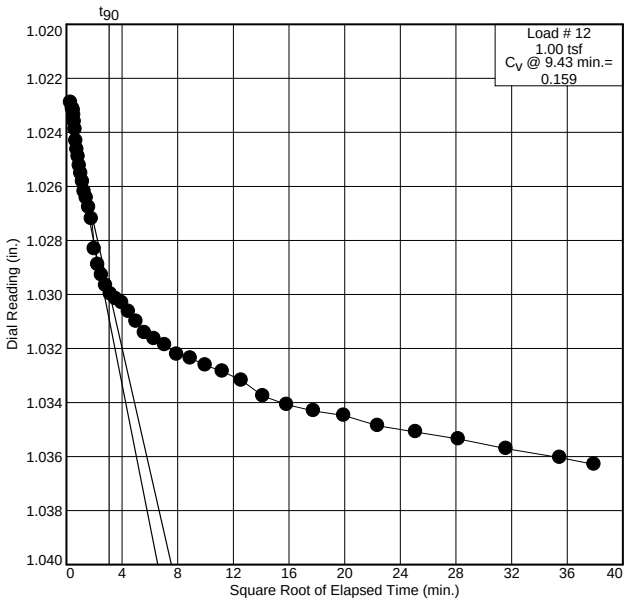

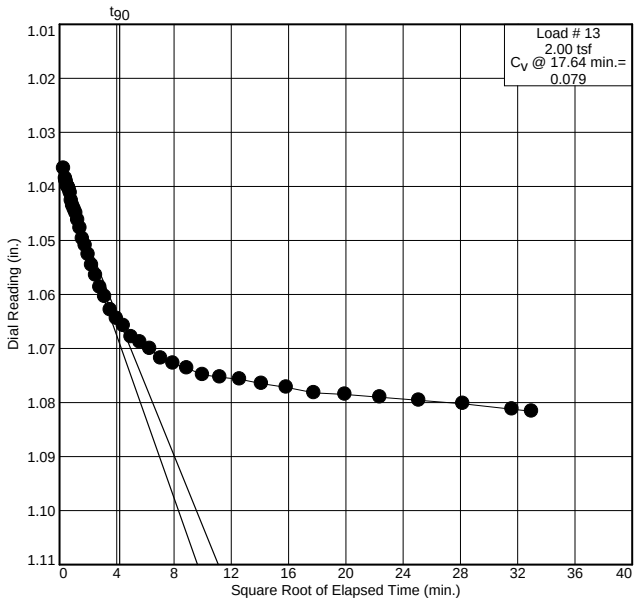

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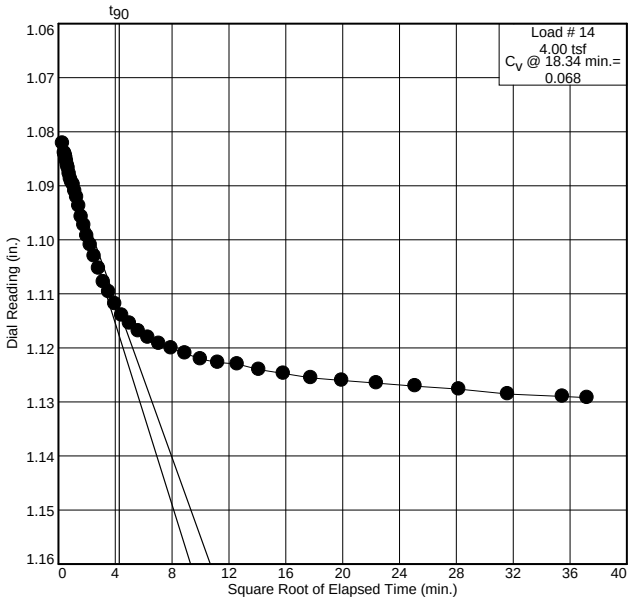
Source of Sample: B-8 Depth: 2'-4'



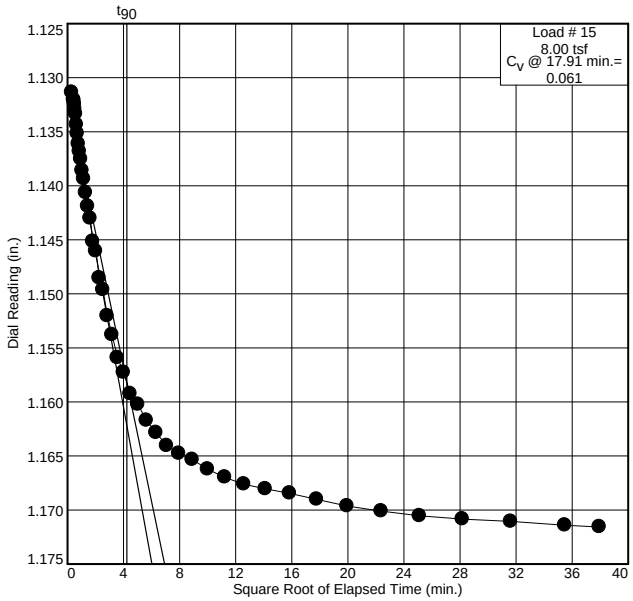


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Figure

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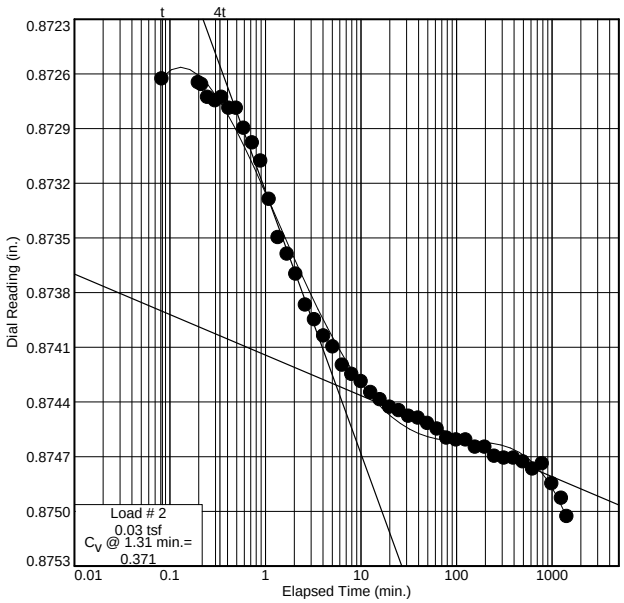
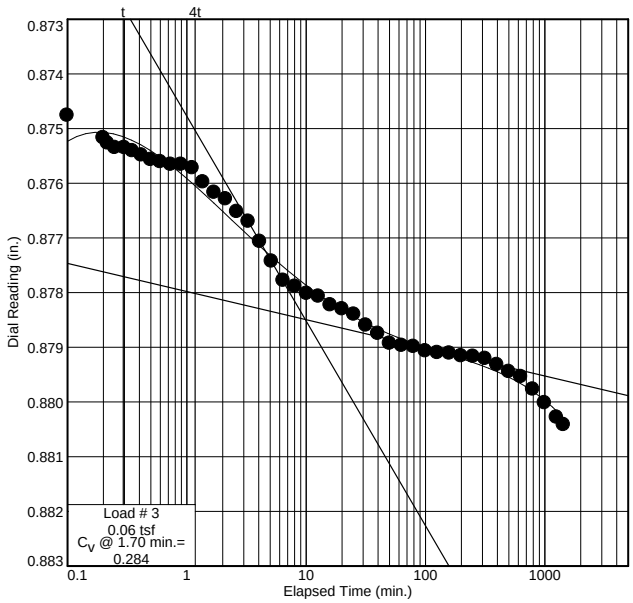
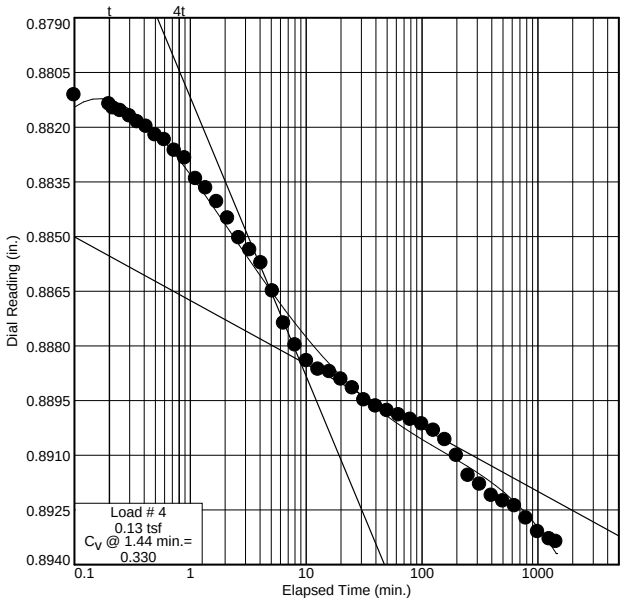
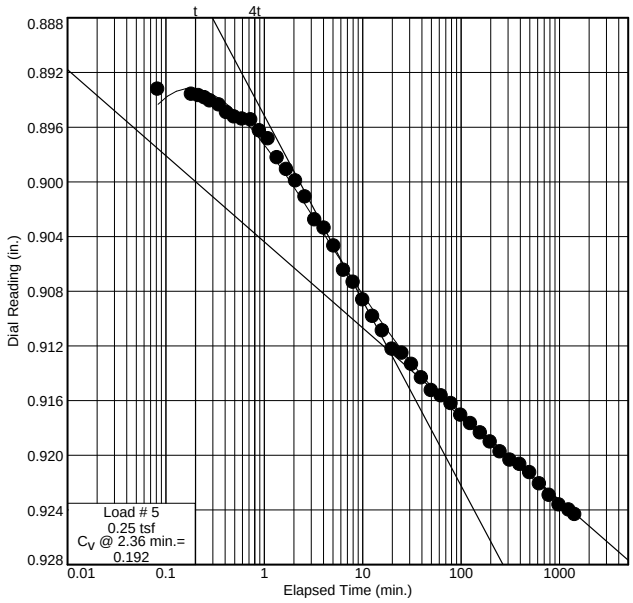
Source of Sample: B-8 Depth: 2'-4'









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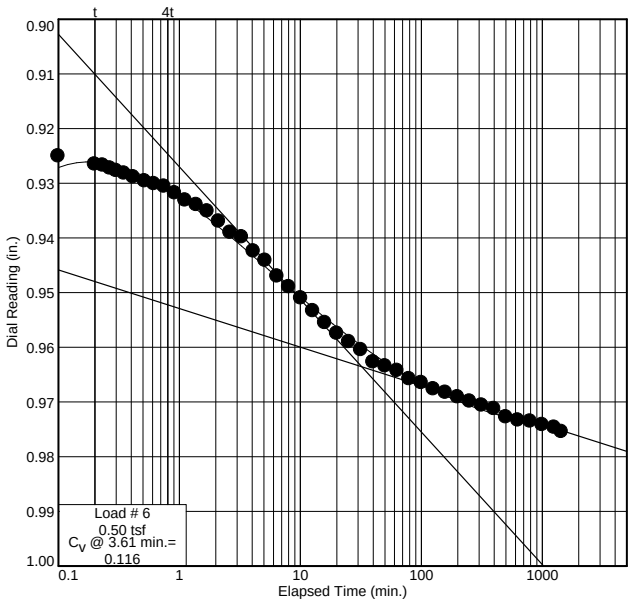
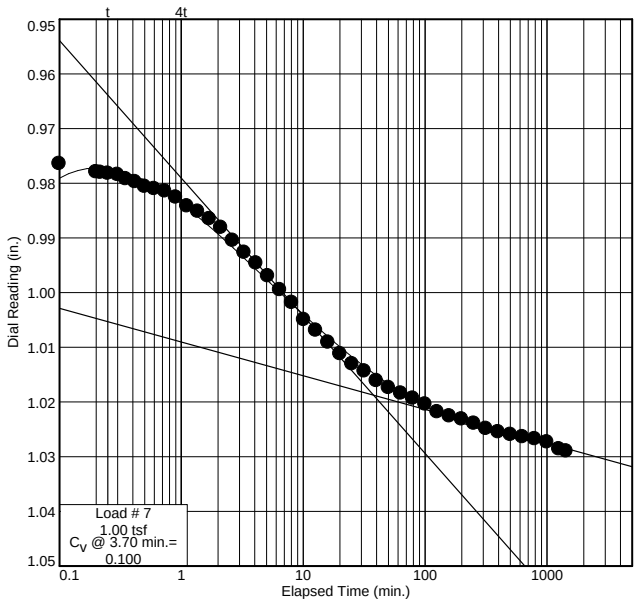
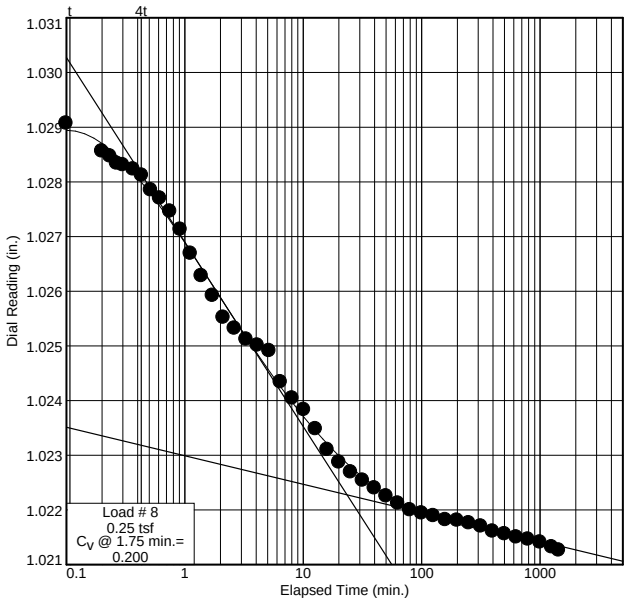
Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-8 Depth: 2'-4'







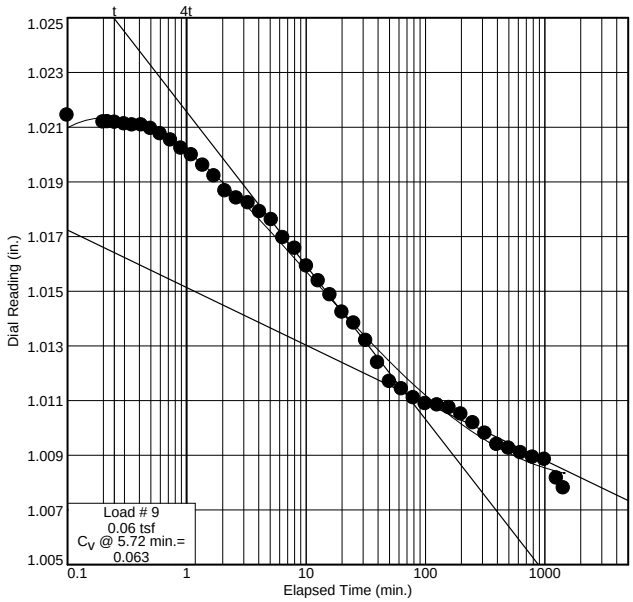


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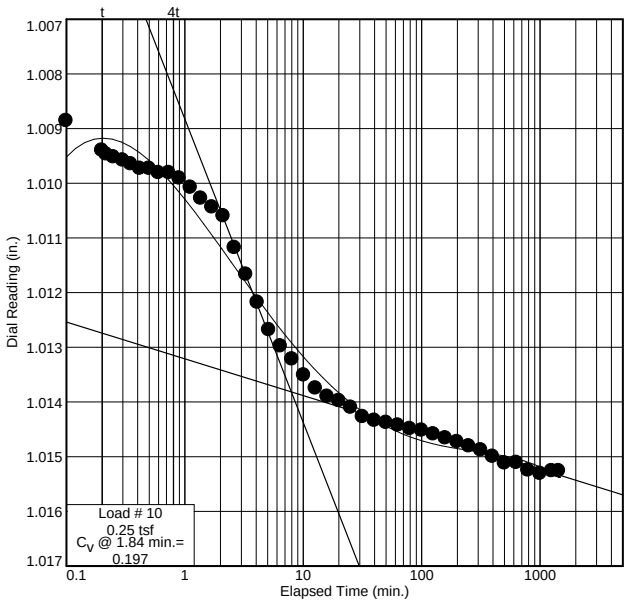
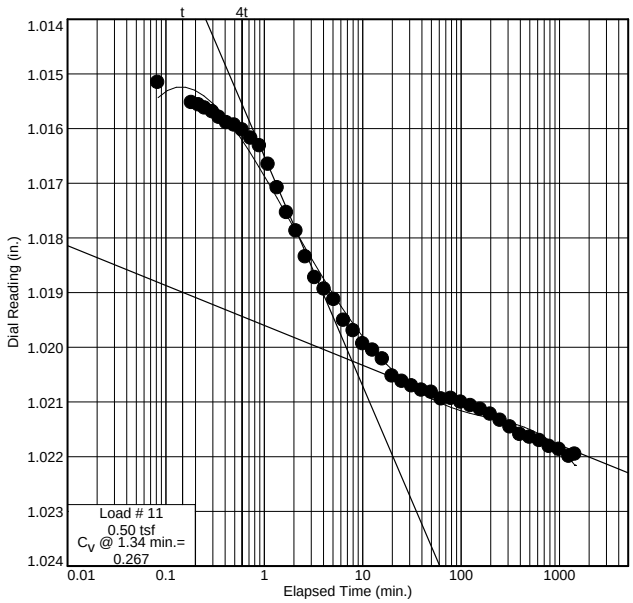
Figure

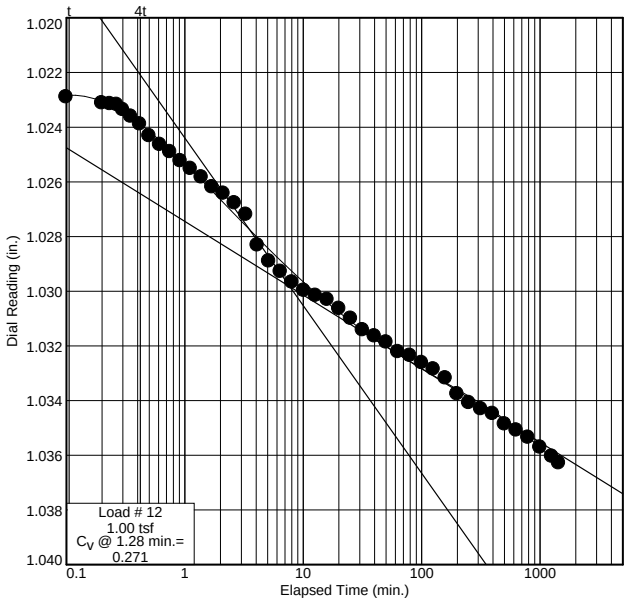
Dial Reading vs. Time

Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-8 Depth: 2'-4'







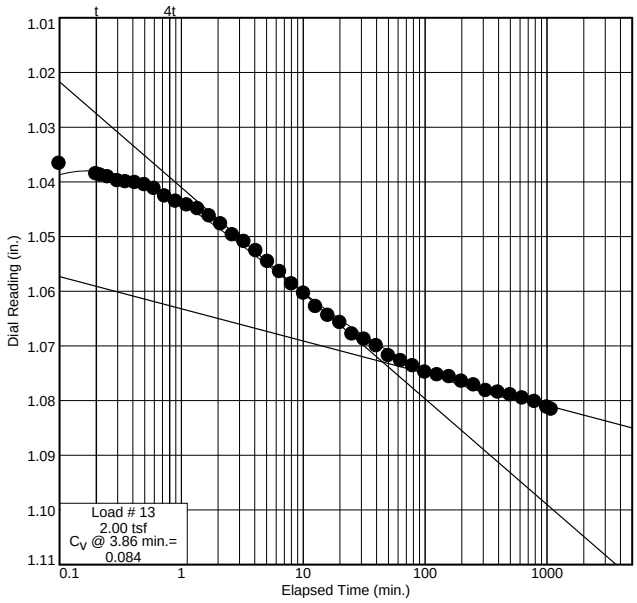


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Figure

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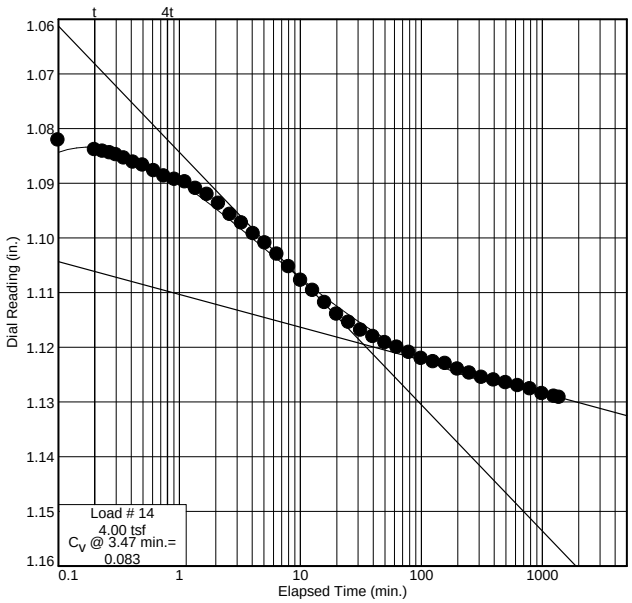
Source of Sample: B-8 Depth: 2'-4'



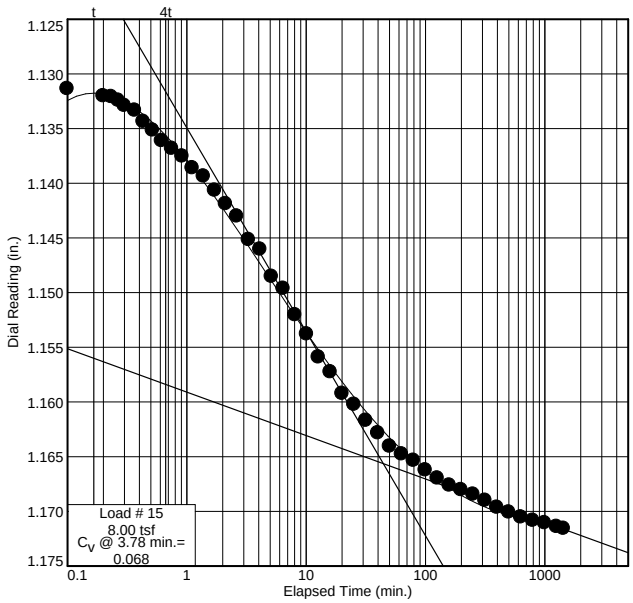


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Figure

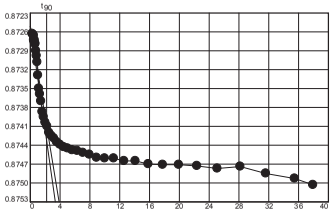
Pressure: 37.93 psf — **TEST READINGS** — **Load No. 1**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.87398	16	2.4667	0.87393	31	79.4333	0.87399
2	0.0333	0.87393	17	3.1333	0.87395	32	100.0000	0.87396
3	0.0667	0.87394	18	3.9500	0.87396	33	125.9000	0.87394
4	0.1000	0.87395	19	4.9833	0.87396	34	158.5000	0.87394
5	0.1500	0.87394	20	6.2833	0.87395	35	199.5333	0.87384
6	0.2000	0.87395	21	7.9167	0.87394	36	251.2000	0.87375
7	0.2667	0.87395	22	9.9667	0.87395	37	316.2500	0.87372
8	0.3500	0.87393	23	12.5667	0.87394	38	398.1333	0.87368
9	0.4500	0.87396	24	15.8333	0.87396	39	501.2167	0.87364
10	0.5833	0.87392	25	19.9333	0.87395	40	630.9833	0.87358
11	0.7500	0.87396	26	25.1000	0.87397	41	794.3500	0.87365
12	0.9500	0.87394	27	31.6167	0.87397	42	1000.0333	0.87377
13	1.2167	0.87395	28	39.8000	0.87399	43	1258.9667	0.87393
14	1.5500	0.87393	29	50.1167	0.87400	44	1440.0833	0.87393
15	1.9500	0.87394	30	63.0833	0.87400			

Void Ratio = 1.452 **Swell =** 0.0%

Pressure: 62.50 psf — **TEST READINGS** — **Load No. 2**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.87263	21	6.4333	0.87420
2	0.0833	0.87263	22	8.0667	0.87425
3	0.2000	0.87265	23	10.1167	0.87429
4	0.2167	0.87266	24	12.7167	0.87435
5	0.2500	0.87273	25	15.9667	0.87439
6	0.3000	0.87275	26	20.0833	0.87443
7	0.3500	0.87273	27	25.2500	0.87445
8	0.4167	0.87279	28	31.7500	0.87448
9	0.5000	0.87279	29	39.9333	0.87449
10	0.6000	0.87290	30	50.2500	0.87452
11	0.7333	0.87298	31	63.2333	0.87455
12	0.9000	0.87308	32	79.5667	0.87460
13	1.1000	0.87329	33	100.1333	0.87461
14	1.3667	0.87350	34	126.0333	0.87461
15	1.7000	0.87359	35	158.6333	0.87465
16	2.1000	0.87370	36	199.6667	0.87465
17	2.6333	0.87387	37	251.3333	0.87470
18	3.2833	0.87395	38	316.3667	0.87471
19	4.1000	0.87404	39	398.2500	0.87471
20	5.1333	0.87410	40	501.3333	0.87473



CONSOLIDATION TEST DATA

9/15/2016

Client: CPRA
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, LA
Project Number: 16715-040-01
Location: B-8
Depth: 2'-4'
Material Description: Very soft dark gray clay with organic matter
Liquid Limit: 55 **Plasticity Index:** 35
USCS: CH
Testing Remarks: Cv T90
Tested by: SLC **Checked by:** JMP

Test Specimen Data

NATURAL MOISTURE		VOID RATIO		AFTER TEST	
Wet w+t	= 221.93 g.	Spec. Gr.	= 2.677	Wet w+t	= 139.88 g.
Dry w+t	= 157.07 g.	Est. Ht. Solids	= 0.406 in.	Dry w+t	= 114.86 g.
Tare Wt.	= 41.08 g.	Init. V.R.	= 1.451	Tare Wt.	= 27.31 g.
Moisture	= 55.9 %	Init. Sat.	= 103.1 %	Moisture	= 28.6 %
				Dry Wt.	= 87.55 g.

UNIT WEIGHT		TEST START	
Height	= 0.995 in.	Height	= 0.995 in.
Diameter	= 2.498 in.	Diameter	= 2.498 in.
Weight	= 136.06 g.		
Dry Dens.	= 68.2 pcf		

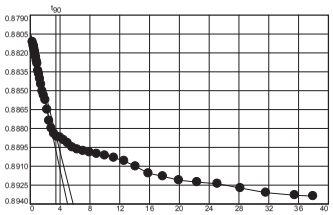
End-Of-Load Summary

Pressure (psf)	Final Dial (in.)	Deformation (in.)	C_v (ft.2/day)	C_α	Void Ratio	% Strain
start	0.87398	0.00000			1.451	
37.93	0.87393	-0.00005		0.000	1.452	0.0 Swell
62.50	0.87503	0.00105	0.435		1.449	0.1 Comprs.
125.00	0.88042	0.00644	0.197		1.436	0.6 Comprs.
250.00	0.89337	0.01939	0.173		1.404	1.9 Comprs.
500.00	0.92436	0.05038	0.130		1.327	5.1 Comprs.
1000.00	0.97544	0.10146	0.100		1.201	10.2 Comprs.
2000.00	1.02900	0.15502	0.098		1.069	15.6 Comprs.
500.00	1.02126	0.14728	0.160		1.089	14.8 Comprs.
125.00	1.00780	0.13382	0.051		1.122	13.4 Comprs.
500.00	1.01526	0.14128	0.145		1.103	14.2 Comprs.
1000.00	1.02196	0.14798	0.152		1.087	14.9 Comprs.
2000.00	1.03629	0.16231	0.159		1.052	16.3 Comprs.
4000.00	1.08162	0.20764	0.079		0.940	20.9 Comprs.
8000.00	1.12922	0.25524	0.068		0.823	25.7 Comprs.
16000.00	1.17157	0.29759	0.061		0.718	29.9 Comprs.

Compression index (C_c), tsf = 0.43 **Preconsolidation pressure (P_p), tsf =** 0.2 **Void ratio at P_p (e_m) =** 1.364
Recompression index (C_r) = 0.14

Pressure: 250.00 psf — **TEST READINGS** — **Load No. 4**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.87969	24	12.7167	0.88865
2	0.1000	0.88112	25	15.9833	0.88871
3	0.2000	0.88137	26	20.0833	0.88892
4	0.2167	0.88148	27	25.2500	0.88916
5	0.2500	0.88155	28	31.7500	0.88949
6	0.3000	0.88170	29	39.9500	0.88966
7	0.3500	0.88186	30	50.2500	0.88978
8	0.4167	0.88198	31	63.2333	0.88990
9	0.5000	0.88222	32	79.5667	0.89002
10	0.6000	0.88235	33	100.1333	0.89015
11	0.7333	0.88264	34	126.0333	0.89032
12	0.9000	0.88285	35	158.6333	0.89058
13	1.1167	0.88342	36	199.6667	0.89101
14	1.3667	0.88367	37	251.3333	0.89156
15	1.7000	0.88405	38	316.3667	0.89180
16	2.1167	0.88450	39	398.2500	0.89211
17	2.6333	0.88504	40	501.3333	0.89226
18	3.2833	0.88537	41	631.1000	0.89239
19	4.1000	0.88573	42	794.4833	0.89273
20	5.1333	0.88650	43	1000.1667	0.89310
21	6.4333	0.88738	44	1259.0833	0.89330
22	8.0667	0.88798	45	1440.3167	0.89337
23	10.1333	0.88841			

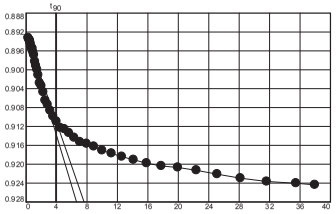


Void Ratio = 1.404 **Compression =** 1.9%

D_0 = 0.8804 **D_{90} =** 0.8886 **D_{100} =** 0.8895 **C_v at 11.81 min. =** 0.173 ft.^{2}/day

Pressure: 500.00 psf — **TEST READINGS** — **Load No. 5**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.89121	12	0.9000	0.89628
2	0.0833	0.89324	13	1.1000	0.89688
3	0.1833	0.89361	14	1.3667	0.89825
4	0.2167	0.89371	15	1.7000	0.89912
5	0.2500	0.89386	16	2.1000	0.89995
6	0.2833	0.89410	17	2.6167	0.90112
7	0.3500	0.89440	18	3.2833	0.90280
8	0.4167	0.89495	19	4.1000	0.90340
9	0.5000	0.89528	20	5.1333	0.90471
10	0.6000	0.89543	21	6.4333	0.90649
11	0.7333	0.89549	22	8.0667	0.90736



Pressure: 62.50 psf — **TEST READINGS (continued)** — **Load No. 2**

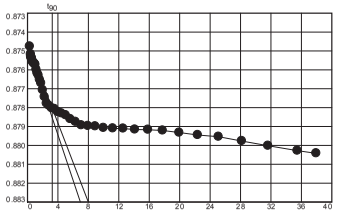
No.	Elapsed Time	Dial Reading
41	631.1000	0.87477
42	794.4833	0.87474
43	1000.1500	0.87485
44	1259.0833	0.87493
45	1440.4333	0.87503

Void Ratio = 1.449 **Compression =** 0.1%

D_0 = 0.8725 **D_{90} =** 0.8741 **D_{100} =** 0.8743 **C_v at 4.82 min. =** 0.435 ft.^{2}/day

Pressure: 125.00 psf — **TEST READINGS** — **Load No. 3**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.87401	24	12.7167	0.87807
2	0.1000	0.87476	25	15.9833	0.87823
3	0.2000	0.87517	26	20.0833	0.87830
4	0.2167	0.87527	27	25.2500	0.87840
5	0.2500	0.87535	28	31.7500	0.87860
6	0.3000	0.87535	29	39.9500	0.87875
7	0.3500	0.87541	30	50.2500	0.87893
8	0.4167	0.87549	31	63.2333	0.87897
9	0.5000	0.87557	32	79.5667	0.87899
10	0.6000	0.87561	33	100.1333	0.87907
11	0.7333	0.87566	34	126.0333	0.87910
12	0.9000	0.87566	35	158.6333	0.87911
13	1.1167	0.87572	36	199.6667	0.87916
14	1.3667	0.87598	37	251.3333	0.87917
15	1.7000	0.87617	38	316.3833	0.87921
16	2.1167	0.87629	39	398.2667	0.87932
17	2.6333	0.87652	40	501.3500	0.87945
18	3.2833	0.87670	41	631.1167	0.87954
19	4.1000	0.87707	42	794.4833	0.87977
20	5.1333	0.87743	43	1000.1667	0.88002
21	6.4333	0.87778	44	1259.1000	0.88028
22	8.0667	0.87789	45	1440.3833	0.88042
23	10.1333	0.87802			

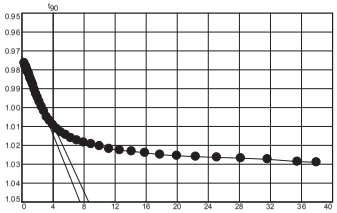


Void Ratio = 1.436 **Compression =** 0.6%

D_0 = 0.8746 **D_{90} =** 0.8780 **D_{100} =** 0.8784 **C_v at 10.59 min. =** 0.197 ft.^{2}/day

Pressure: 2000.00 psf — **TEST READINGS** — **Load No. 7**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.97282	24	12.7167	1.00691
2	0.1000	0.97644	25	15.9833	1.00912
3	0.2000	0.97797	26	20.0833	1.01119
4	0.2167	0.97806	27	25.2500	1.01306
5	0.2500	0.97822	28	31.7667	1.01439
6	0.3000	0.97845	29	39.9500	1.01613
7	0.3500	0.97924	30	50.2667	1.01739
8	0.4167	0.97974	31	63.2333	1.01845
9	0.5000	0.98061	32	79.5833	1.01935
10	0.6000	0.98102	33	100.1500	1.02042
11	0.7333	0.98148	34	126.0333	1.02185
12	0.9000	0.98257	35	158.6333	1.02260
13	1.1167	0.98419	36	199.6833	1.02316
14	1.3667	0.98516	37	251.3333	1.02392
15	1.7000	0.98653	38	316.3833	1.02489
16	2.1167	0.98812	39	398.2667	1.02550
17	2.6333	0.99049	40	501.3500	1.02599
18	3.2833	0.99269	41	631.1167	1.02640
19	4.1000	0.99464	42	794.5000	1.02678
20	5.1333	0.99699	43	1000.1667	1.02737
21	6.4333	0.99949	44	1259.1000	1.02860
22	8.0667	1.00186	45	1440.2833	1.02900
23	10.1333	1.00496			

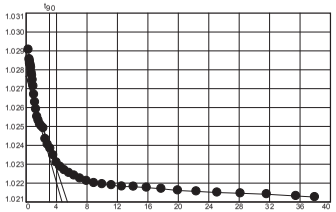


Void Ratio = 1.069 **Compression =** 15.6%

D_0 = 0.9732 D_{90} = 1.0093 D_{100} = 1.0133 C_v **at 16.35 min. =** 0.098 ft.^{2}/day

Pressure: 500.00 psf — **TEST READINGS** — **Load No. 8**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	1.03165	12	0.9167	1.02713
2	0.1000	1.02907	13	1.1167	1.02669
3	0.2000	1.02856	14	1.3833	1.02628
4	0.2333	1.02847	15	1.7167	1.02592
5	0.2667	1.02834	16	2.1167	1.02552
6	0.3000	1.02831	17	2.6333	1.02532
7	0.3667	1.02823	18	3.3000	1.02512
8	0.4333	1.02812	19	4.1167	1.02501
9	0.5167	1.02785	20	5.1500	1.02491
10	0.6167	1.02770	21	6.4333	1.02434
11	0.7500	1.02746	22	8.0833	1.02404



Pressure: 500.00 psf — **TEST READINGS (continued)** — **Load No. 5**

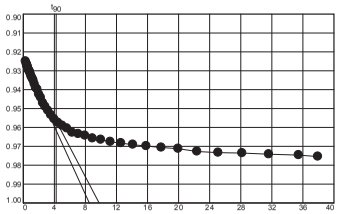
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
23	10.1167	0.90866	33	100.1333	0.91709	43	1000.1667	0.92366
24	12.7167	0.90986	34	126.0333	0.91770	44	1259.1000	0.92403
25	15.9833	0.91092	35	158.6333	0.91839	45	1440.4667	0.92436
26	20.0833	0.91227	36	199.6667	0.91906			
27	25.2500	0.91255	37	251.3333	0.91978			
28	31.7500	0.91338	38	316.3833	0.92038			
29	39.9500	0.91436	39	398.2667	0.92069			
30	50.2500	0.91529	40	501.3500	0.92129			
31	63.2333	0.91567	41	631.1167	0.92211			
32	79.5667	0.91624	42	794.5000	0.92296			

Void Ratio = 1.327 **Compression =** 5.1%

D_0 = 0.8925 D_{90} = 0.9106 D_{100} = 0.9126 C_v **at 15.07 min. =** 0.130 ft.^{2}/day

Pressure: 1000.00 psf — **TEST READINGS** — **Load No. 6**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.92306	24	12.7167	0.95337
2	0.1000	0.92505	25	15.9833	0.95553
3	0.2000	0.92653	26	20.0833	0.95748
4	0.2333	0.92673	27	25.2667	0.95903
5	0.2667	0.92726	28	31.7667	0.96048
6	0.3000	0.92769	29	39.9500	0.96273
7	0.3500	0.92821	30	50.2667	0.96346
8	0.4167	0.92886	31	63.2500	0.96429
9	0.5167	0.92961	32	79.5833	0.96581
10	0.6167	0.93012	33	100.1500	0.96650
11	0.7500	0.93059	34	126.0500	0.96765
12	0.9167	0.93179	35	158.6500	0.96830
13	1.1167	0.93310	36	199.6833	0.96912
14	1.3833	0.93394	37	251.3500	0.96988
15	1.7000	0.93511	38	316.3833	0.97062
16	2.1167	0.93698	39	398.2667	0.97126
17	2.6333	0.93902	40	501.3500	0.97275
18	3.2833	0.93985	41	631.1333	0.97334
19	4.1000	0.94244	42	794.5000	0.97357
20	5.1333	0.94415	43	1000.1667	0.97419
21	6.4333	0.94703	44	1259.1000	0.97465
22	8.0667	0.94897	45	1440.5000	0.97544
23	10.1333	0.95101			

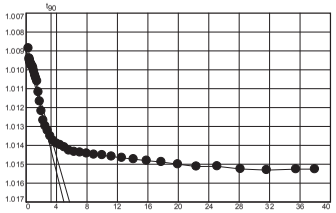


Void Ratio = 1.201 **Compression =** 10.2%

D_0 = 0.9235 D_{90} = 0.9565 D_{100} = 0.9601 C_v **at 17.91 min. =** 0.100 ft.^{2}/day

Pressure: 500.00 psf — **TEST READINGS** — **Load No. 10**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	1.00674	24	12.7167	1.01375
2	0.1000	1.00886	25	15.9833	1.01390
3	0.2000	1.00940	26	20.0833	1.01398
4	0.2167	1.00947	27	25.2500	1.01410
5	0.2500	1.00952	28	31.7667	1.01427
6	0.3000	1.00958	29	39.9500	1.01434
7	0.3500	1.00965	30	50.2667	1.01438
8	0.4167	1.00973	31	63.2333	1.01443
9	0.5000	1.00973	32	79.5667	1.01449
10	0.6000	1.00981	33	100.1500	1.01452
11	0.7333	1.00981	34	126.0333	1.01459
12	0.9000	1.00991	35	158.6333	1.01466
13	1.1167	1.01008	36	199.6833	1.01473
14	1.3667	1.01028	37	251.3500	1.01481
15	1.7000	1.01044	38	316.3833	1.01488
16	2.1167	1.01060	39	398.2667	1.01500
17	2.6333	1.01118	40	501.3500	1.01512
18	3.2833	1.01167	41	631.1167	1.01511
19	4.1000	1.01218	42	794.4833	1.01525
20	5.1333	1.01268	43	1000.1667	1.01531
21	6.4333	1.01298	44	1259.1000	1.01526
22	8.0667	1.01322	45	1440.3333	1.01526
23	10.1333	1.01351			

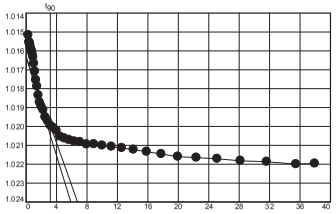


Void Ratio = 1.103 **Compression =** 14.2%

D_0 = 1.0090 **D_{90} =** 1.0136 **D_{100} =** 1.0141 **C_v at 10.74 min. =** 0.145 ft.^{2}/day

Pressure: 1000.00 psf — **TEST READINGS** — **Load No. 11**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	1.01408	12	0.9000	1.01632
2	0.0833	1.01516	13	1.1000	1.01666
3	0.1833	1.01553	14	1.3667	1.01709
4	0.2167	1.01557	15	1.7000	1.01754
5	0.2500	1.01563	16	2.1167	1.01788
6	0.3000	1.01570	17	2.6333	1.01835
7	0.3500	1.01580	18	3.2833	1.01873
8	0.4167	1.01590	19	4.1000	1.01894
9	0.5000	1.01594	20	5.1333	1.01913
10	0.6000	1.01603	21	6.4333	1.01951
11	0.7333	1.01618	22	8.0667	1.01970



Pressure: 500.00 psf — **TEST READINGS (continued)** — **Load No. 8**

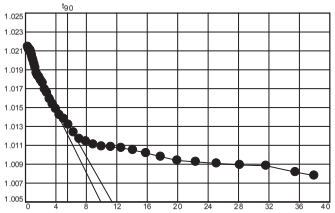
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
23	10.1333	1.02383	33	100.1500	1.02194	43	1000.1667	1.02141
24	12.7333	1.02348	34	126.0500	1.02189	44	1259.1000	1.02132
25	15.9833	1.02310	35	158.6500	1.02182	45	1440.4000	1.02126
26	20.1000	1.02287	36	199.6833	1.02181			
27	25.2667	1.02269	37	251.3500	1.02176			
28	31.7667	1.02254	38	316.3833	1.02170			
29	39.9500	1.02240	39	398.2667	1.02161			
30	50.2667	1.02225	40	501.3500	1.02156			
31	63.2500	1.02212	41	631.1333	1.02150			
32	79.5833	1.02200	42	794.5000	1.02146			

Void Ratio = 1.089 **Compression =** 14.8%

D_0 = 1.0277 **D_{90} =** 1.0239 **D_{100} =** 1.0235 **C_v at 9.41 min. =** 0.160 ft.^{2}/day

Pressure: 125.00 psf — **TEST READINGS** — **Load No. 9**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	1.02269	24	12.7000	1.01537
2	0.1000	1.02143	25	15.9667	1.01486
3	0.2000	1.02118	26	20.0833	1.01422
4	0.2167	1.02119	27	25.2500	1.01382
5	0.2500	1.02117	28	31.7500	1.01319
6	0.3000	1.02111	29	39.9333	1.01238
7	0.3500	1.02107	30	50.2500	1.01169
8	0.4167	1.02107	31	63.2167	1.01142
9	0.5000	1.02094	32	79.5667	1.01109
10	0.6000	1.02075	33	100.1333	1.01088
11	0.7333	1.02052	34	126.0333	1.01083
12	0.9000	1.02022	35	158.6167	1.01073
13	1.1000	1.01998	36	199.6667	1.01050
14	1.3667	1.01960	37	251.3333	1.01018
15	1.7000	1.01921	38	316.3667	1.00980
16	2.1000	1.01866	39	398.2500	1.00939
17	2.6167	1.01840	40	501.3333	1.00925
18	3.2833	1.01822	41	631.1167	1.00908
19	4.1000	1.01790	42	794.4833	1.00892
20	5.1333	1.01761	43	1000.1500	1.00884
21	6.4167	1.01695	44	1259.0833	1.00816
22	8.0667	1.01656	45	1440.3667	1.00780
23	10.1167	1.01591			

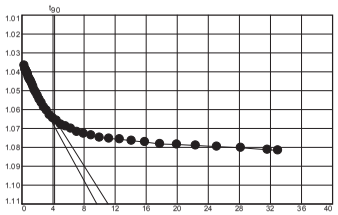


Void Ratio = 1.122 **Compression =** 13.4%

D_0 = 1.0211 **D_{90} =** 1.0133 **D_{100} =** 1.0124 **C_v at 30.60 min. =** 0.051 ft.^{2}/day

Pressure: 4000.00 psf — **TEST READINGS** — **Load No. 13**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	1.03374	23	10.1333	1.06042
2	0.1000	1.03666	24	12.7167	1.06287
3	0.2000	1.03855	25	15.9833	1.06448
4	0.2167	1.03883	26	20.0833	1.06578
5	0.2500	1.03913	27	25.2667	1.06788
6	0.3000	1.03982	28	31.7667	1.06883
7	0.3500	1.04002	29	39.9500	1.07004
8	0.4167	1.04020	30	50.2667	1.07181
9	0.5000	1.04058	31	63.2500	1.07276
10	0.6000	1.04124	32	79.5833	1.07366
11	0.7333	1.04264	33	100.1500	1.07486
12	0.9000	1.04360	34	126.0500	1.07533
13	1.1167	1.04429	35	158.6333	1.07569
14	1.3667	1.04496	36	199.6833	1.07651
15	1.7000	1.04627	37	251.3500	1.07719
16	2.1167	1.04774	38	316.3833	1.07821
17	2.6333	1.04972	39	398.2667	1.07850
18	3.2833	1.05095	40	501.3500	1.07901
19	4.1000	1.05264	41	631.1167	1.07960
20	5.1333	1.05460	42	794.5000	1.08022
21	6.4333	1.05645	43	1000.1667	1.08124
22	8.0667	1.05870	44	1088.2000	1.08162

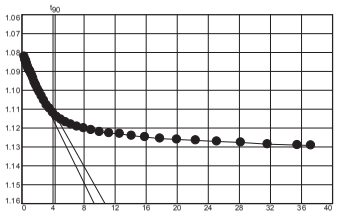


Void Ratio = 0.940 **Compression =** 20.9%

D_0 = 1.0376 **D_{90} =** 1.0650 **D_{100} =** 1.0681 **C_V at 17.64 min. =** 0.079 ft.^{2}/day

Pressure: 8000.00 psf — **TEST READINGS** — **Load No. 14**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	1.07858	13	1.1167	1.08982
2	0.1000	1.08217	14	1.3667	1.09100
3	0.2000	1.08392	15	1.7000	1.09211
4	0.2333	1.08420	16	2.1167	1.09373
5	0.2667	1.08450	17	2.6333	1.09575
6	0.3000	1.08481	18	3.2833	1.09732
7	0.3500	1.08544	19	4.1000	1.09928
8	0.4167	1.08620	20	5.1333	1.10096
9	0.5000	1.08672	21	6.4333	1.10303
10	0.6167	1.08776	22	8.0667	1.10532
11	0.7500	1.08874	23	10.1167	1.10780
12	0.9167	1.08934	24	12.7167	1.10964



Pressure: 1000.00 psf — **TEST READINGS (continued)** — **Load No. 11**

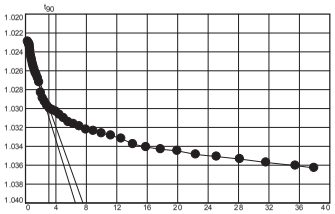
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
23	10.1333	1.01994	33	100.1500	1.02101	43	1000.1667	1.02187
24	12.7167	1.02006	34	126.0500	1.02107	44	1259.1000	1.02200
25	15.9833	1.02022	35	158.6500	1.02114	45	1440.1333	1.02196
26	20.0833	1.02053	36	199.6833	1.02123			
27	25.2500	1.02063	37	251.3500	1.02134			
28	31.7500	1.02071	38	316.3833	1.02146			
29	39.9500	1.02079	39	398.2667	1.02160			
30	50.2667	1.02083	40	501.3500	1.02165			
31	63.2333	1.02095	41	631.1167	1.02171			
32	79.5833	1.02094	42	794.5000	1.02182			

Void Ratio = 1.087 **Compression =** 14.9%

D_0 = 1.0163 **D_{90} =** 1.0199 **D_{100} =** 1.0203 **C_V at 10.11 min. =** 0.152 ft.^{2}/day

Pressure: 2000.00 psf — **TEST READINGS** — **Load No. 12**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	1.01997	24	12.7167	1.03016
2	0.1000	1.02290	25	15.9833	1.03031
3	0.2000	1.02312	26	20.0833	1.03064
4	0.2333	1.02315	27	25.2500	1.03100
5	0.2667	1.02318	28	31.7667	1.03142
6	0.3000	1.02336	29	39.9500	1.03164
7	0.3500	1.02361	30	50.2667	1.03187
8	0.4167	1.02389	31	63.2500	1.03222
9	0.5000	1.02432	32	79.5833	1.03236
10	0.6167	1.02464	33	100.1500	1.03262
11	0.7500	1.02490	34	126.0500	1.03285
12	0.9167	1.02524	35	158.6333	1.03318
13	1.1167	1.02552	36	199.6833	1.03376
14	1.3833	1.02583	37	251.3500	1.03408
15	1.7000	1.02619	38	316.3833	1.03431
16	2.1167	1.02643	39	398.2667	1.03448
17	2.6333	1.02678	40	501.3500	1.03486
18	3.2833	1.02720	41	631.1333	1.03509
19	4.1167	1.02832	42	794.5000	1.03535
20	5.1333	1.02890	43	1000.1833	1.03571
21	6.4333	1.02928	44	1259.1000	1.03604
22	8.0667	1.02967	45	1440.2167	1.03629
23	10.1333	1.02998			



Void Ratio = 1.052 **Compression =** 16.3%

D_0 = 1.0229 **D_{90} =** 1.0299 **D_{100} =** 1.0306 **C_V at 9.43 min. =** 0.159 ft.^{2}/day

Pressure: 8000.00 psf — **TEST READINGS (continued)** — **Load No. 14**

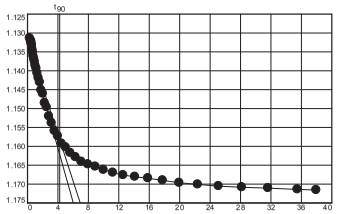
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
25	15.9667	1.11187	35	158.6333	1.12300	45	1385.2667	1.12922
26	20.0833	1.11399	36	199.6667	1.12403			
27	25.2500	1.11548	37	251.3333	1.12475			
28	31.7500	1.11690	38	316.3833	1.12556			
29	39.9500	1.11808	39	398.2667	1.12603			
30	50.2500	1.11921	40	501.3500	1.12653			
31	63.2333	1.12004	41	631.1167	1.12708			
32	79.5667	1.12099	42	794.4833	1.12764			
33	100.1333	1.12207	43	1000.1667	1.12854			
34	126.0333	1.12270	44	1259.1000	1.12900			

Void Ratio = 0.823 **Compression =** 25.7%

D_0 = 1.0818 D_{90} = 1.1131 D_{100} = 1.1166 **C_V at 18.34 min. =** 0.068 ft.^{2}/day

Pressure: 16000.00 psf — **TEST READINGS** — **Load No. 15**

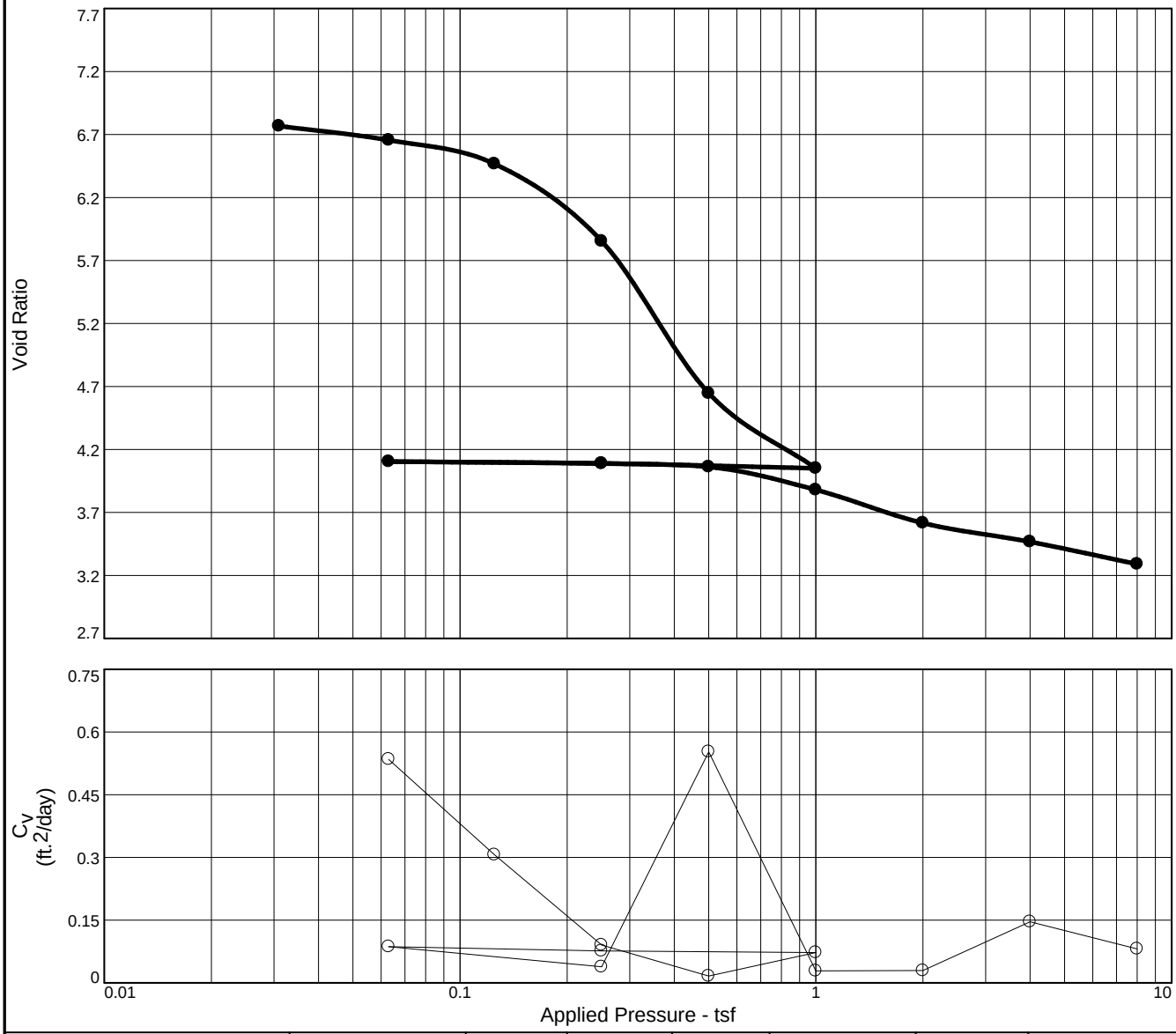
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	1.12610	24	12.7333	1.15591
2	0.1000	1.13137	25	15.9833	1.15727
3	0.2000	1.13203	26	20.1000	1.15924
4	0.2333	1.13211	27	25.2667	1.16023
5	0.2667	1.13243	28	31.7667	1.16171
6	0.3000	1.13290	29	39.9500	1.16284
7	0.3667	1.13335	30	50.2667	1.16406
8	0.4333	1.13436	31	63.2500	1.16477
9	0.5167	1.13516	32	79.5833	1.16535
10	0.6167	1.13613	33	100.1500	1.16623
11	0.7500	1.13682	34	126.0500	1.16698
12	0.9167	1.13754	35	158.6500	1.16762
13	1.1167	1.13860	36	199.6833	1.16805
14	1.3833	1.13936	37	251.3500	1.16846
15	1.7167	1.14065	38	316.3833	1.16902
16	2.1167	1.14189	39	398.2667	1.16964
17	2.6333	1.14302	40	501.3500	1.17010
18	3.3000	1.14516	41	631.1333	1.17054
19	4.1167	1.14605	42	794.5000	1.17084
20	5.1500	1.14853	43	1000.1833	1.17106
21	6.4333	1.14963	44	1259.1000	1.17141
22	8.0833	1.15204	45	1440.3000	1.17157
23	10.1333	1.15380			



Void Ratio = 0.718 **Compression =** 29.9%

D_0 = 1.1319 D_{90} = 1.1582 D_{100} = 1.1611 **C_V at 17.91 min. =** 0.061 ft.^{2}/day

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture							
102.7 %	282.0 %	19.9	213	169	2.550	0.2	4.07	7.001

MATERIAL DESCRIPTION	USCS	AASHTO
Very soft dark gray and black organic clay with peat pockets and lenses	(OH)	

Project No. 16715-040-01 **Client:** CPRA

Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

Source of Sample: B-10 **Depth:** 4' - 6'

Remarks:
Cv at t90
Organic Content = 6.1%

GEOENGINEERS

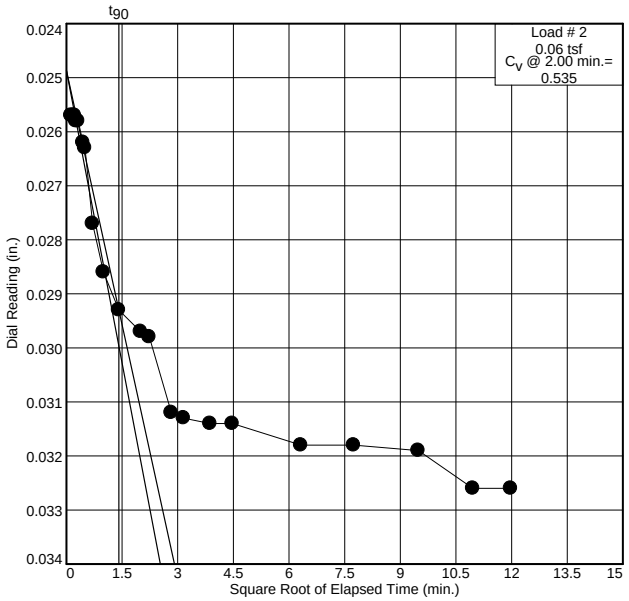
Figure

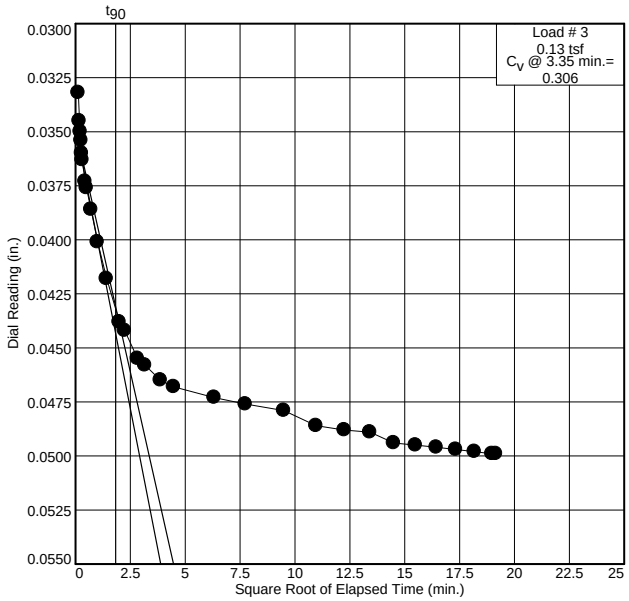
Tested By: SLC **Checked By:** KLA/JMP

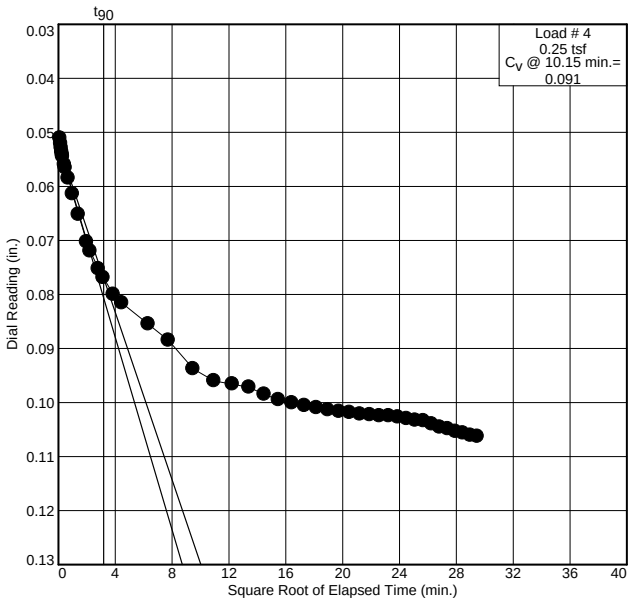
Dial Reading vs. Time

Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-10 Depth: 4' - 6'







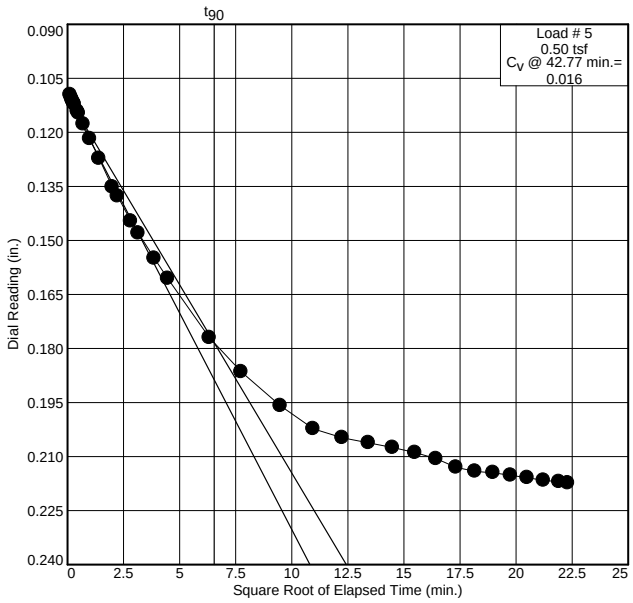


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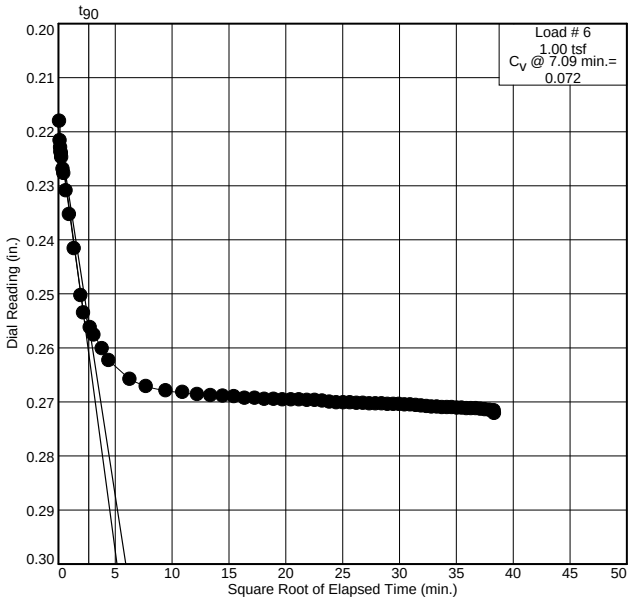
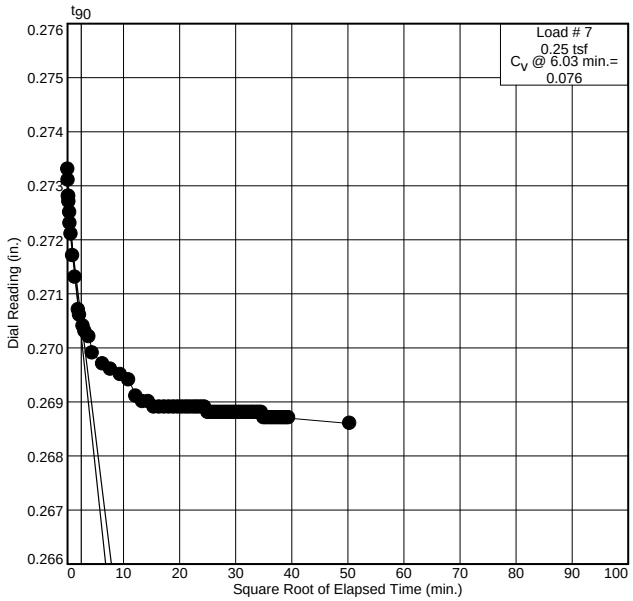
Figure

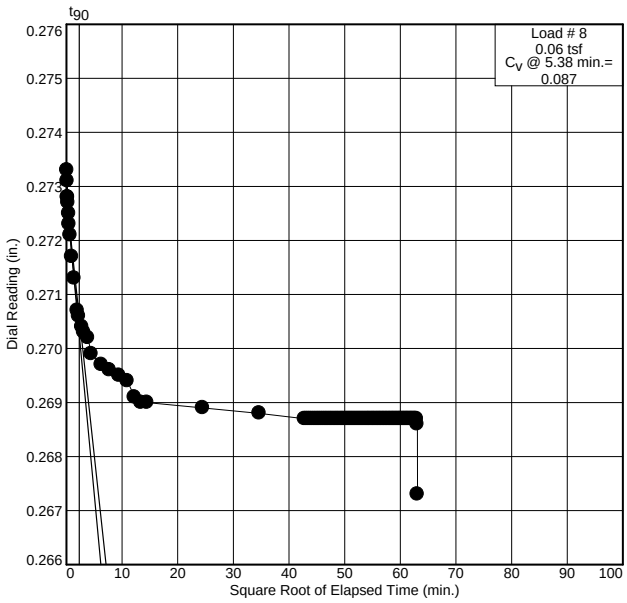
Dial Reading vs. Time

Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-10 Depth: 4' - 6'







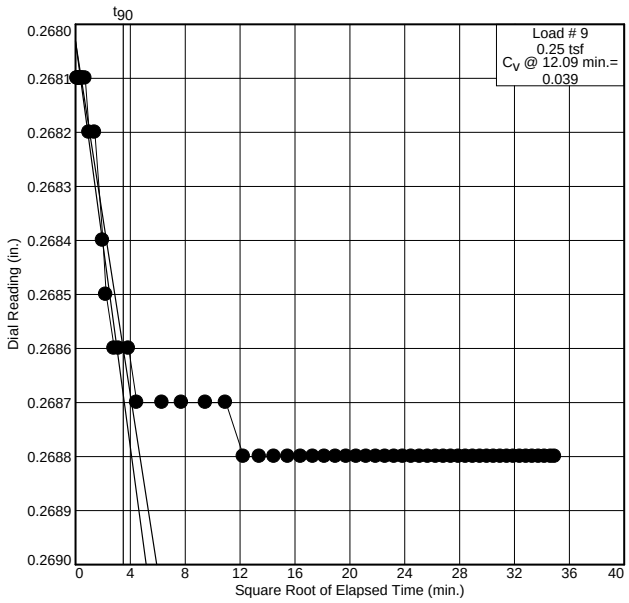


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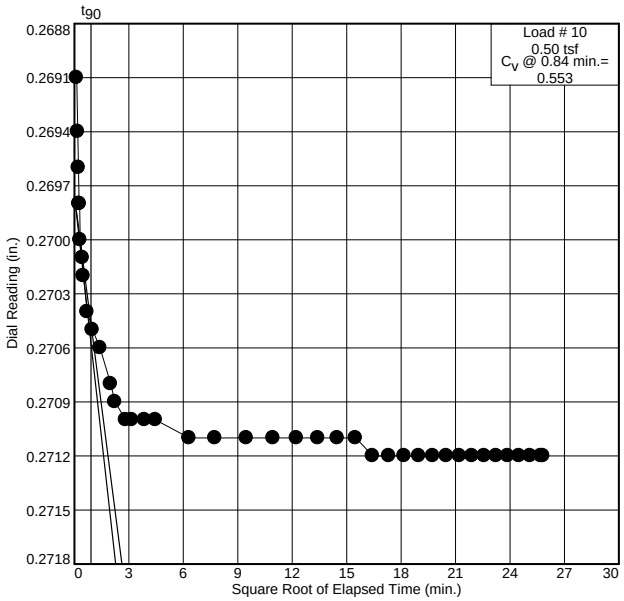
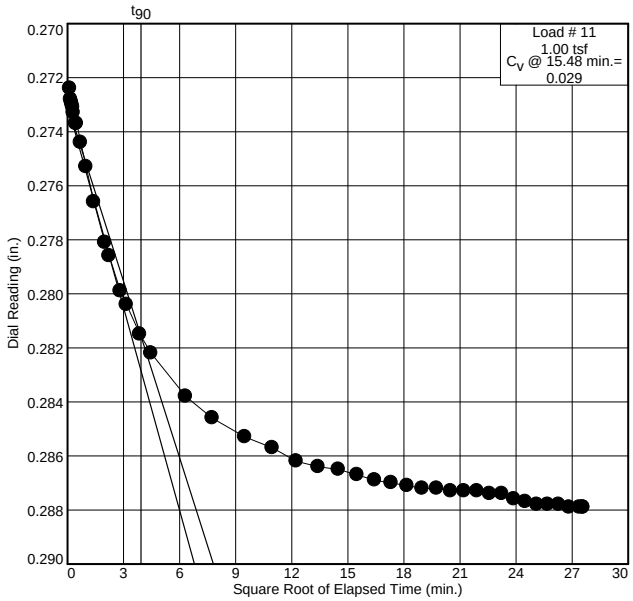
Figure

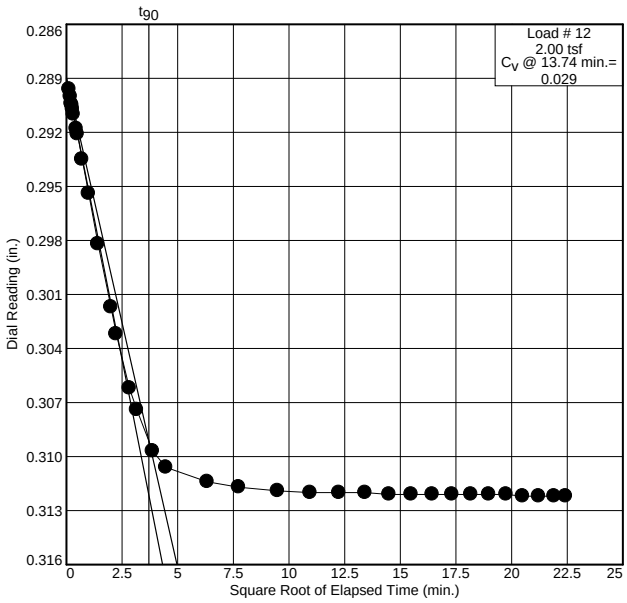
Dial Reading vs. Time

Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-10 Depth: 4' - 6'







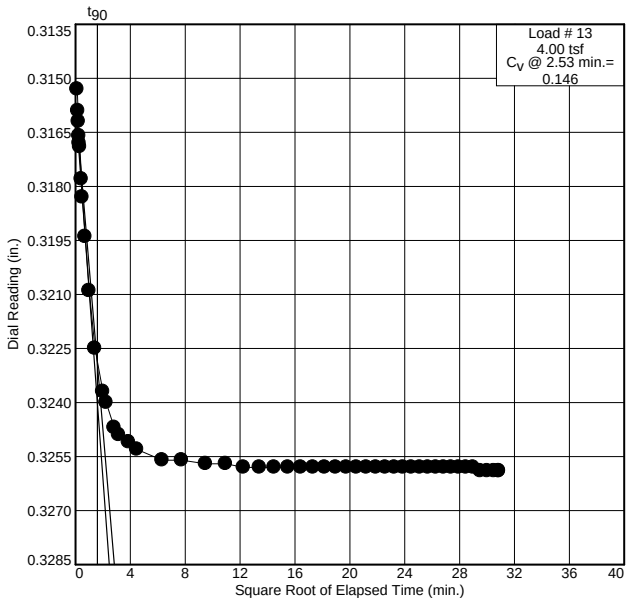


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Figure

Dial Reading vs. Time

Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-10 Depth: 4' - 6'

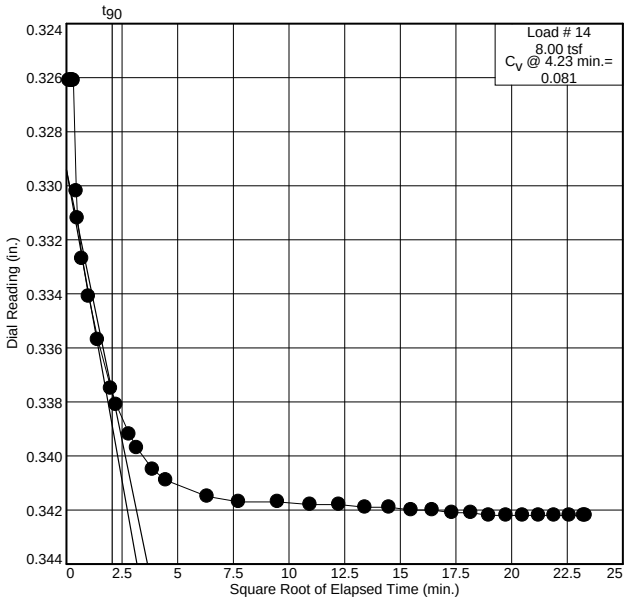

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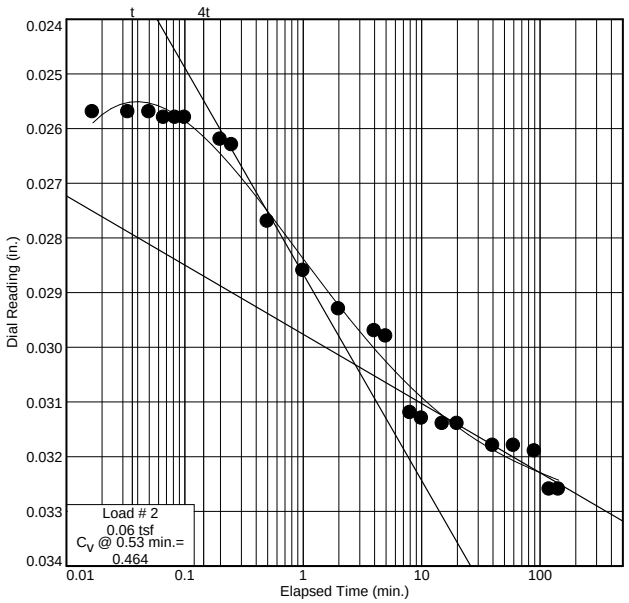
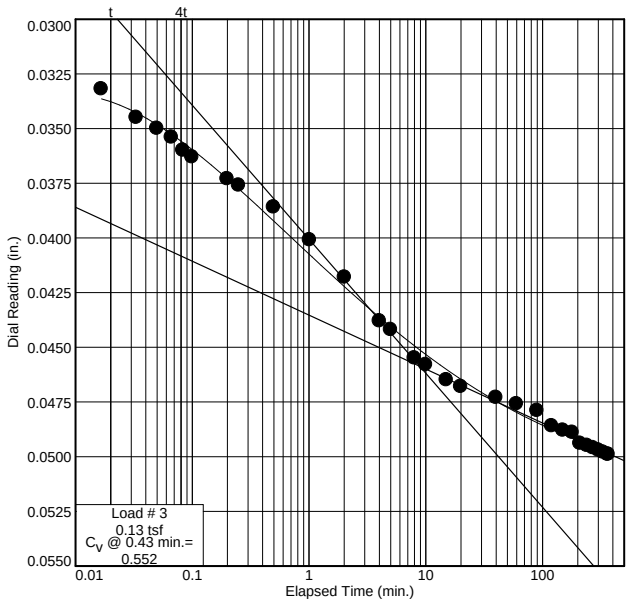
Figure

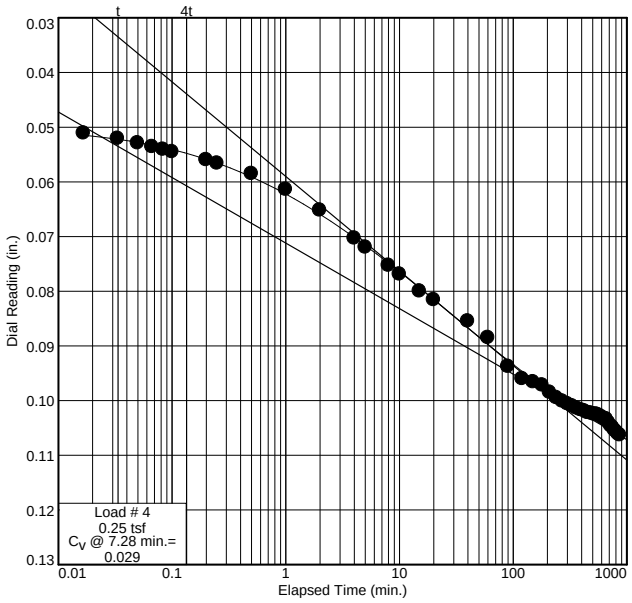
Dial Reading vs. Time

Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-10 Depth: 4' - 6'







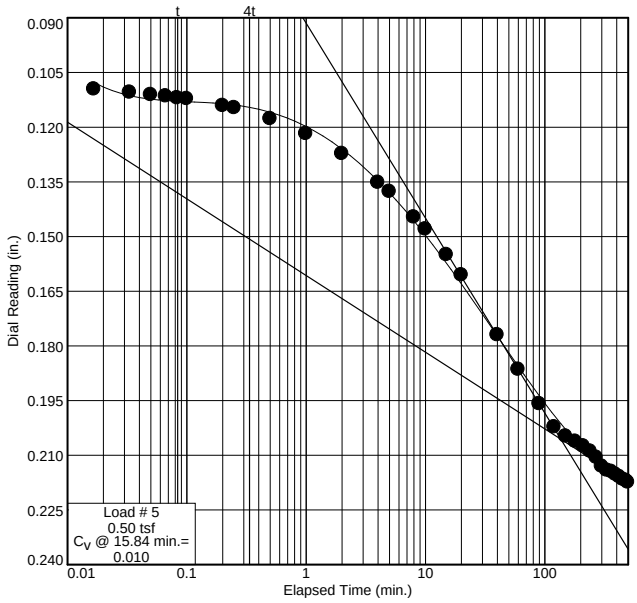


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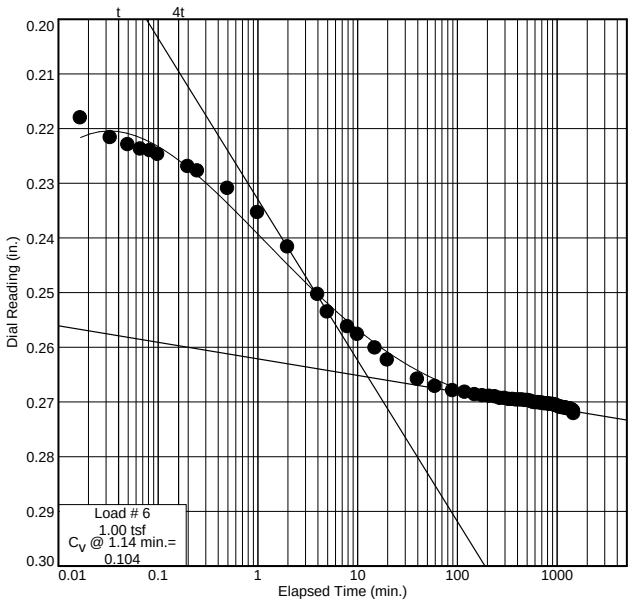
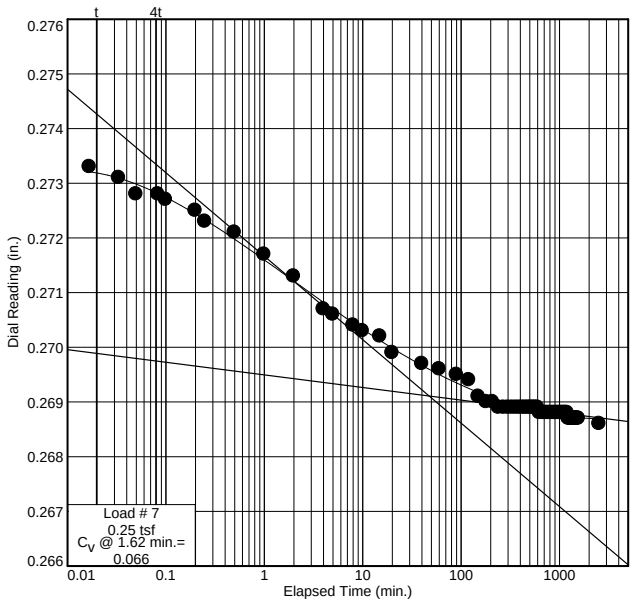
Figure

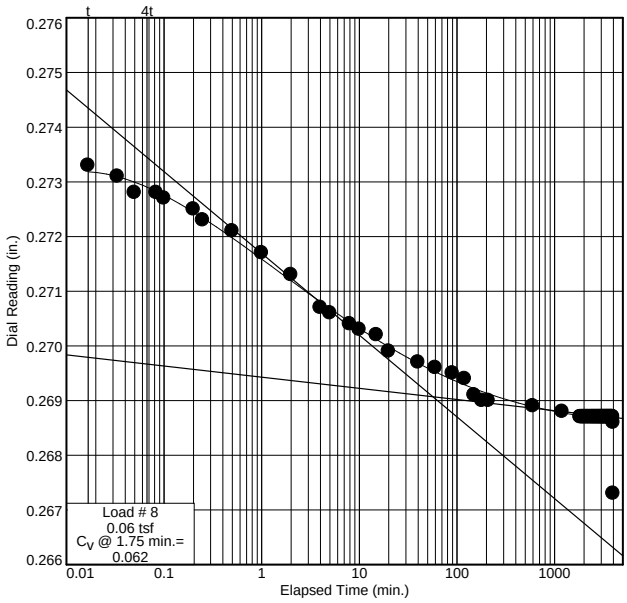
Dial Reading vs. Time

Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-10 Depth: 4' - 6'







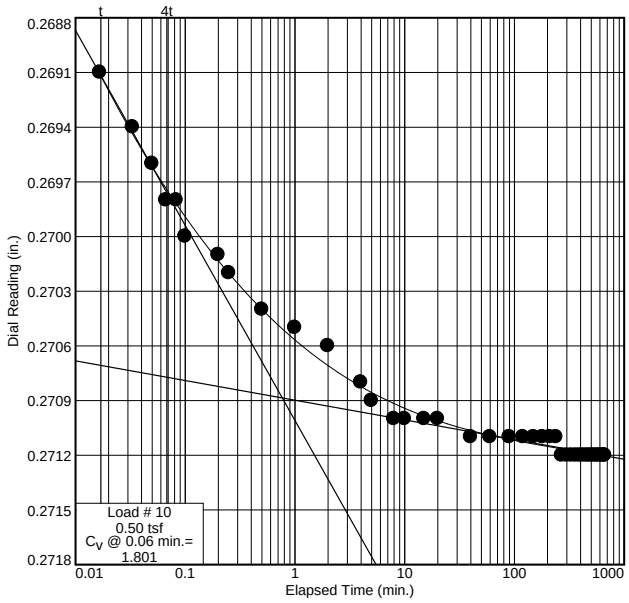


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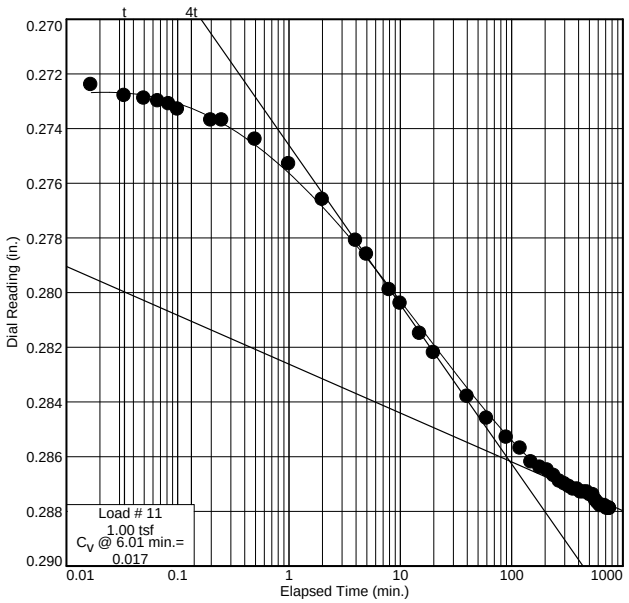
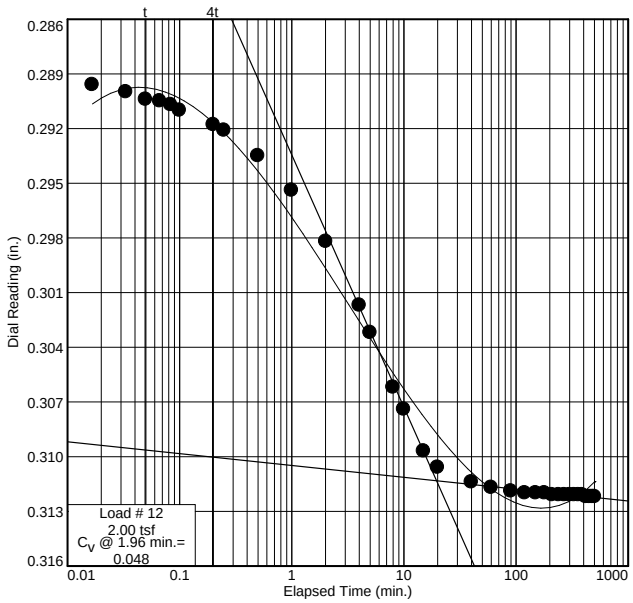
Figure

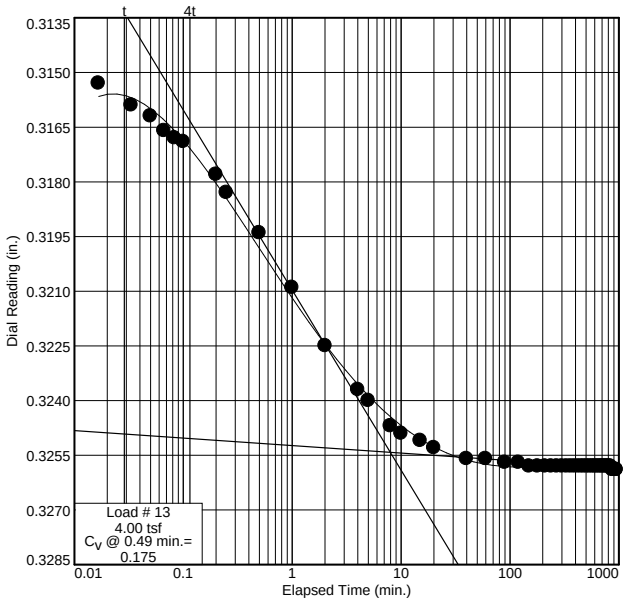
Dial Reading vs. Time

Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-10 Depth: 4' - 6'







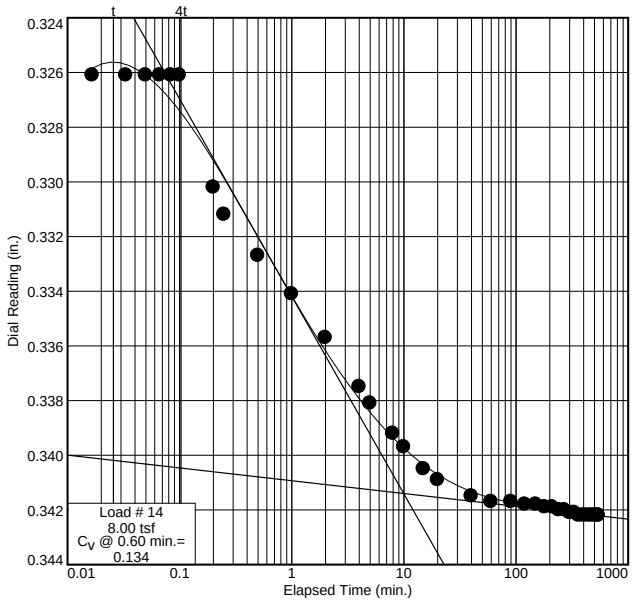


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Figure

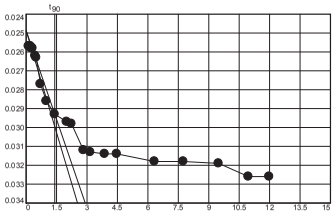
Pressure: 0.03 tsf — **TEST READINGS** — **Load No. 1**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.0008	19	39.9667	0.0208	37	569.9167	0.0222
2	0.0167	0.0118	20	59.9667	0.0211	38	599.9000	0.0222
3	0.0333	0.0150	21	89.9833	0.0212	39	629.9000	0.0222
4	0.0500	0.0151	22	119.9667	0.0218	40	659.9000	0.0222
5	0.0667	0.0151	23	149.9500	0.0218	41	689.9000	0.0222
6	0.0833	0.0152	24	179.9500	0.0218	42	719.8833	0.0222
7	0.1000	0.0152	25	209.9667	0.0218	43	749.9000	0.0222
8	0.2000	0.0168	26	239.9500	0.0220	44	779.9000	0.0222
9	0.2500	0.0176	27	269.9333	0.0220	45	809.8833	0.0222
10	0.5000	0.0178	28	299.9333	0.0220	46	839.8667	0.0222
11	0.9833	0.0183	29	329.9500	0.0220	47	869.8833	0.0222
12	1.9833	0.0185	30	359.9333	0.0220	48	899.8833	0.0222
13	3.9833	0.0188	31	389.9167	0.0221	49	929.8667	0.0222
14	4.9833	0.0190	32	419.9167	0.0222	50	959.8667	0.0222
15	7.9833	0.0194	33	449.9333	0.0222	51	989.8667	0.0222
16	9.9833	0.0194	34	479.9167	0.0222	52	1019.8667	0.0222
17	14.9833	0.0197	35	509.9000	0.0222	53	1030.8000	0.0223
18	19.9833	0.0197	36	539.9167	0.0222			

Void Ratio = 6.767 **Compression =** 2.9%

Pressure: 0.06 tsf — **TEST READINGS** — **Load No. 2**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.0223	13	4.0000	0.0297
2	0.0167	0.0257	14	5.0000	0.0298
3	0.0333	0.0257	15	8.0000	0.0312
4	0.0500	0.0257	16	10.0000	0.0313
5	0.0667	0.0258	17	15.0167	0.0314
6	0.0833	0.0258	18	20.0167	0.0314
7	0.1000	0.0258	19	40.0167	0.0318
8	0.2000	0.0262	20	60.0333	0.0318
9	0.2500	0.0263	21	90.0333	0.0319
10	0.5000	0.0277	22	120.0500	0.0326
11	1.0000	0.0286	23	143.5667	0.0326
12	2.0000	0.0293			



Void Ratio = 6.655 **Compression =** 4.3%

D_0 = 0.0249 **D_{90} =** 0.0293 **D_{100} =** 0.0298 **C_v at 2.00 min. =** 0.535 ft.^{2}/day

CONSOLIDATION TEST DATA

9/15/2016

Client: CPRA
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana
Project Number: 16715-040-01
Location: B-10
Depth: 4' - 6'
Material Description: Very soft dark gray and black organic clay with peat pockets and lenses
Liquid Limit: 213 **Plasticity Index:** 169
USCS: (OH)
Testing Remarks: Cv at t90
Organic Content = 6.1%
Tested by: SLC **Checked by:** KLA/JMP

Test Specimen Data

NATURAL MOISTURE		VOID RATIO		AFTER TEST	
Wet w+t =	149.30 g.	Spec. Gr. =	2.550	Wet w+t =	69.72 g.
Dry w+t =	69.02 g.	Est. Ht. Solids =	0.092 in.	Dry w+t =	42.37 g.
Tare Wt. =	40.55 g.	Init. V.R. =	7.001	Tare Wt. =	22.59 g.
Moisture =	282.0 %	Init. Sat. =	102.7 %	Moisture =	138.3 %
UNIT WEIGHT		**TEST START**		Dry Wt. =	19.78 g.
Height =	0.736 in.	Height =	0.736 in.		
Diameter =	2.498 in.	Diameter =	2.498 in.		
Weight =	71.96 g.				
Dry Dens. =	19.9 pcf				

End-Of-Load Summary

Pressure (tsf)	Final Dial (in.)	Deformation (in.)	C_v (ft.^{2}/day)	C_α	Void Ratio	% Strain
start	0.00080	0.00000			7.001	
0.03	0.02230	0.02150		0.007	6.767	2.9 Comprs.
0.06	0.03260	0.03180	0.535		6.655	4.3 Comprs.
0.13	0.04990	0.04910	0.306		6.467	6.7 Comprs.
0.25	0.10630	0.10550	0.091		5.854	14.3 Comprs.
0.50	0.21740	0.21660	0.016		4.646	29.4 Comprs.
1.00	0.27220	0.27140	0.072		4.051	36.9 Comprs.
0.25	0.26860	0.26780	0.076		4.090	36.4 Comprs.
0.06	0.26730	0.26650	0.087		4.104	36.2 Comprs.
0.25	0.26880	0.26800	0.039		4.088	36.4 Comprs.
0.50	0.27120	0.27040	0.553		4.062	36.7 Comprs.
1.00	0.28790	0.28710	0.029		3.880	39.0 Comprs.
2.00	0.31220	0.31140	0.029		3.616	42.3 Comprs.
4.00	0.32590	0.32510	0.146		3.467	44.2 Comprs.
8.00	0.34220	0.34140	0.081		3.290	46.4 Comprs.

Compression index (C_c), tsf = 4.07 **Preconsolidation pressure (P_p), tsf =** 0.2 **Void ratio at P_p (e_m) =** 6.195
Recompression index (C_r) = 0.40

Pressure: 0.25 tsf — **TEST READINGS (continued)** — **Load No. 4**

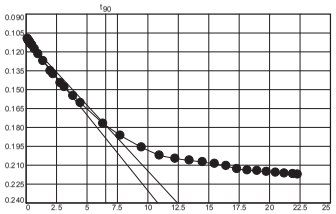
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
37	570.7333	0.1027	47	869.5167	0.1063
38	600.7667	0.1030			
39	630.8000	0.1033			
40	660.8500	0.1034			
41	690.8833	0.1040			
42	720.9167	0.1046			
43	750.9667	0.1049			
44	781.0000	0.1054			
45	811.0333	0.1057			
46	841.0667	0.1061			

Void Ratio = 5.854 **Compression =** 14.3%

D_0 = 0.0523 D_{90} = 0.0770 D_{100} = 0.0797 **C_v at 10.15 min. =** 0.091 ft.^{2}/day

Pressure: 0.50 tsf — **TEST READINGS** — **Load No. 5**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.1063	19	40.0500	0.1770
2	0.0167	0.1096	20	60.0667	0.1865
3	0.0333	0.1105	21	90.1167	0.1959
4	0.0500	0.1111	22	120.1500	0.2023
5	0.0667	0.1115	23	150.1833	0.2048
6	0.0833	0.1120	24	180.2167	0.2062
7	0.1000	0.1122	25	210.2667	0.2075
8	0.2000	0.1141	26	240.3000	0.2089
9	0.2500	0.1147	27	270.3333	0.2106
10	0.5000	0.1177	28	300.3833	0.2130
11	1.0000	0.1218	29	330.4167	0.2141
12	2.0000	0.1273	30	360.4500	0.2145
13	4.0000	0.1352	31	390.4833	0.2152
14	5.0000	0.1377	32	420.5333	0.2159
15	8.0000	0.1447	33	450.5667	0.2166
16	10.0000	0.1480	34	480.6000	0.2170
17	15.0167	0.1550	35	497.7000	0.2174
18	20.0167	0.1606			

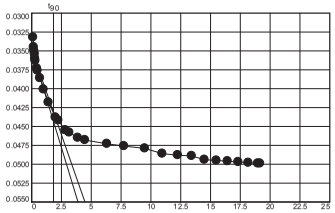


Void Ratio = 4.646 **Compression =** 29.4%

D_0 = 0.1101 D_{90} = 0.1784 D_{100} = 0.1860 **C_v at 42.77 min. =** 0.016 ft.^{2}/day

Pressure: 0.13 tsf — **TEST READINGS** — **Load No. 3**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.0326	17	15.0333	0.0465
2	0.0167	0.0332	18	20.0333	0.0468
3	0.0333	0.0345	19	40.0667	0.0473
4	0.0500	0.0350	20	60.0833	0.0476
5	0.0667	0.0354	21	90.1167	0.0479
6	0.0833	0.0360	22	120.1667	0.0486
7	0.1000	0.0363	23	150.2000	0.0488
8	0.2000	0.0373	24	180.2333	0.0489
9	0.2500	0.0376	25	210.2833	0.0494
10	0.5000	0.0386	26	240.3167	0.0495
11	1.0167	0.0401	27	270.3500	0.0496
12	2.0167	0.0418	28	300.4000	0.0497
13	4.0167	0.0438	29	330.4333	0.0498
14	5.0167	0.0442	30	360.4667	0.0499
15	8.0167	0.0455	31	367.0667	0.0499
16	10.0167	0.0458			

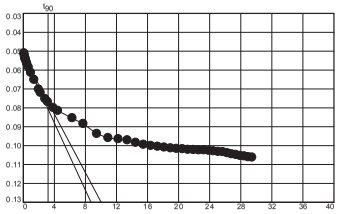


Void Ratio = 6.467 **Compression =** 6.7%

D_0 = 0.0348 D_{90} = 0.0432 D_{100} = 0.0441 **C_v at 3.35 min. =** 0.306 ft.^{2}/day

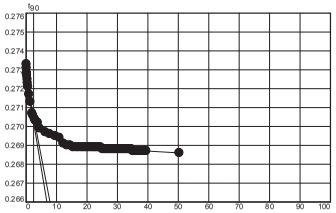
Pressure: 0.25 tsf — **TEST READINGS** — **Load No. 4**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.0499	19	40.0500	0.0855
2	0.0167	0.0511	20	60.0833	0.0885
3	0.0333	0.0521	21	90.1167	0.0938
4	0.0500	0.0529	22	120.1500	0.0960
5	0.0667	0.0536	23	150.2000	0.0966
6	0.0833	0.0541	24	180.2333	0.0972
7	0.1000	0.0545	25	210.2667	0.0985
8	0.2000	0.0560	26	240.3167	0.0995
9	0.2500	0.0566	27	270.3500	0.1001
10	0.5000	0.0585	28	300.3833	0.1006
11	1.0000	0.0614	29	330.4167	0.1010
12	2.0000	0.0652	30	360.4667	0.1014
13	4.0167	0.0703	31	390.5000	0.1017
14	5.0167	0.0720	32	420.5333	0.1019
15	8.0167	0.0753	33	450.5667	0.1022
16	10.0167	0.0769	34	480.6167	0.1023
17	15.0167	0.0800	35	510.6500	0.1025
18	20.0333	0.0816	36	540.6833	0.1025



Pressure: 0.25 tsf — **TEST READINGS** — **Load No. 7**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.2722	36	570.7167	0.2689
2	0.0167	0.2733	37	600.7500	0.2689
3	0.0333	0.2731	38	630.7833	0.2688
4	0.0500	0.2728	39	660.8333	0.2688
5	0.0833	0.2728	40	690.8667	0.2688
6	0.1000	0.2727	41	720.9000	0.2688
7	0.2000	0.2725	42	750.9500	0.2688
8	0.2500	0.2723	43	780.9833	0.2688
9	0.5000	0.2721	44	811.0167	0.2688
10	1.0000	0.2717	45	841.0667	0.2688
11	2.0000	0.2713	46	871.1000	0.2688
12	4.0000	0.2707	47	901.1333	0.2688
13	5.0000	0.2706	48	931.1667	0.2688
14	8.0000	0.2704	49	961.2167	0.2688
15	10.0000	0.2703	50	991.2500	0.2688
16	15.0167	0.2702	51	1021.2833	0.2688
17	20.0167	0.2699	52	1051.3333	0.2688
18	40.0500	0.2697	53	1081.3667	0.2688
19	60.0667	0.2696	54	1111.4000	0.2688
20	90.1000	0.2695	55	1141.4333	0.2688
21	120.1333	0.2694	56	1171.4833	0.2688
22	150.1833	0.2691	57	1201.5167	0.2688
23	180.2167	0.2690	58	1231.5500	0.2687
24	210.2500	0.2690	59	1261.5833	0.2687
25	240.3000	0.2689	60	1291.6333	0.2687
26	270.3333	0.2689	61	1321.6667	0.2687
27	300.3667	0.2689	62	1351.7000	0.2687
28	330.4000	0.2689	63	1381.7500	0.2687
29	360.4500	0.2689	64	1411.7833	0.2687
30	390.4833	0.2689	65	1441.8167	0.2687
31	420.5167	0.2689	66	1471.8667	0.2687
32	450.5667	0.2689	67	1501.9000	0.2687
33	480.6000	0.2689	68	1531.9333	0.2687
34	510.6333	0.2689	69	1561.9667	0.2687
35	540.6667	0.2689	70	2537.4833	0.2686



Void Ratio = 4.090 **Compression =** 36.4%

D_0 = 0.2726 D_{90} = 0.2705 D_{100} = 0.2703 C_v **at 6.03 min. =** 0.076 ft.^{2}/day

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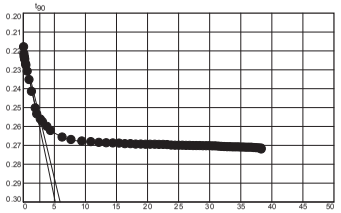
Pressure: 1.00 tsf — **TEST READINGS** — **Load No. 6**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.2174	35	510.6333	0.2698
2	0.0167	0.2181	36	540.6833	0.2699
3	0.0333	0.2217	37	570.7167	0.2701
4	0.0500	0.2230	38	600.7500	0.2702
5	0.0667	0.2238	39	630.7833	0.2702
6	0.0833	0.2241	40	660.8333	0.2702
7	0.1000	0.2248	41	690.8667	0.2703
8	0.2000	0.2270	42	720.9000	0.2703
9	0.2500	0.2278	43	750.9333	0.2704
10	0.5000	0.2310	44	780.9833	0.2704
11	1.0000	0.2354	45	811.0167	0.2704
12	2.0000	0.2417	46	841.0500	0.2705
13	4.0000	0.2504	47	871.1000	0.2705
14	5.0000	0.2536	48	901.1333	0.2705
15	8.0000	0.2563	49	931.1667	0.2706
16	10.0000	0.2577	50	961.2167	0.2706
17	15.0167	0.2602	51	991.2500	0.2707
18	20.0167	0.2624	52	1021.2833	0.2708
19	40.0333	0.2659	53	1051.3333	0.2709
20	60.0667	0.2672	54	1081.3667	0.2710
21	90.1000	0.2680	55	1111.4000	0.2710
22	120.1500	0.2683	56	1141.4333	0.2711
23	150.1833	0.2687	57	1171.4833	0.2711
24	180.2167	0.2689	58	1201.5167	0.2711
25	210.2500	0.2690	59	1231.5500	0.2712
26	240.3000	0.2691	60	1261.6000	0.2712
27	270.3333	0.2694	61	1291.6333	0.2713
28	300.3667	0.2694	62	1321.6667	0.2713
29	330.4167	0.2696	63	1351.7000	0.2713
30	360.4500	0.2696	64	1381.7333	0.2714
31	390.4833	0.2697	65	1411.7833	0.2715
32	420.5167	0.2697	66	1441.8167	0.2716
33	450.5667	0.2697	67	1471.8667	0.2717
34	480.6000	0.2698	68	1473.9667	0.2722



Void Ratio = 4.051 **Compression =** 36.9%

D_0 = 0.2193 D_{90} = 0.2555 D_{100} = 0.2596 C_v **at 7.09 min. =** 0.072 ft.^{2}/day

GeoEngineers, Inc.

Pressure: 0.06 tsf — **TEST READINGS (continued)** — **Load No. 8**

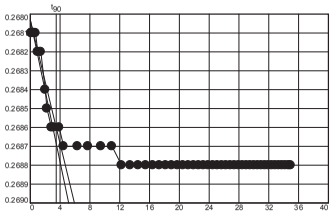
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
81	3454.3833	0.2687	91	3754.7667	0.2687
82	3484.4167	0.2687	92	3784.8000	0.2687
83	3514.4500	0.2687	93	3814.8333	0.2687
84	3544.5000	0.2687	94	3844.8833	0.2687
85	3574.5333	0.2687	95	3874.9167	0.2687
86	3604.5667	0.2687	96	3904.9500	0.2687
87	3634.6167	0.2687	97	3934.9833	0.2687
88	3664.6500	0.2687	98	3965.0333	0.2687
89	3694.6833	0.2687	99	3977.4833	0.2686
90	3724.7167	0.2687	100	3982.1833	0.2673

Void Ratio = 4.104 **Compression =** 36.2%

D_0 = 0.2728 D_{90} = 0.2706 D_{100} = 0.2703 C_v **at 5.38 min. =** 0.087 ft.^{2}/day

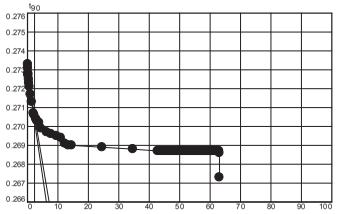
Pressure: 0.25 tsf — **TEST READINGS** — **Load No. 9**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.2673	25	210.2667	0.2688
2	0.0167	0.2681	26	240.3000	0.2688
3	0.0333	0.2681	27	270.3333	0.2688
4	0.0500	0.2681	28	300.3833	0.2688
5	0.0667	0.2681	29	330.4167	0.2688
6	0.0833	0.2681	30	360.4500	0.2688
7	0.1000	0.2681	31	390.4833	0.2688
8	0.2000	0.2681	32	420.5333	0.2688
9	0.2500	0.2681	33	450.5667	0.2688
10	0.5000	0.2681	34	480.6000	0.2688
11	1.0000	0.2682	35	510.6500	0.2688
12	2.0000	0.2682	36	540.6833	0.2688
13	4.0000	0.2684	37	570.7167	0.2688
14	5.0000	0.2685	38	600.7500	0.2688
15	8.0167	0.2686	39	630.8000	0.2688
16	10.0167	0.2686	40	660.8333	0.2688
17	15.0167	0.2686	41	690.8833	0.2688
18	20.0167	0.2687	42	720.9167	0.2688
19	40.0500	0.2687	43	750.9500	0.2688
20	60.0667	0.2687	44	780.9833	0.2688
21	90.1167	0.2687	45	811.0167	0.2688
22	120.1500	0.2687	46	841.0667	0.2688
23	150.1833	0.2688	47	871.1000	0.2688
24	180.2167	0.2688	48	901.1500	0.2688



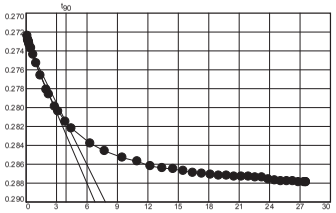
Pressure: 0.06 tsf — **TEST READINGS** — **Load No. 8**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.2686	41	2252.8500	0.2687
2	0.0167	0.2733	42	2282.8833	0.2687
3	0.0333	0.2731	43	2312.9167	0.2687
4	0.0500	0.2728	44	2342.9667	0.2687
5	0.0833	0.2728	45	2373.0000	0.2687
6	0.1000	0.2727	46	2403.0500	0.2687
7	0.2000	0.2725	47	2433.0833	0.2687
8	0.2500	0.2723	48	2463.1167	0.2687
9	0.5000	0.2721	49	2493.1500	0.2687
10	1.0000	0.2717	50	2523.2000	0.2687
11	2.0000	0.2713	51	2553.2333	0.2687
12	4.0000	0.2707	52	2583.2667	0.2687
13	5.0000	0.2706	53	2613.3167	0.2687
14	8.0000	0.2704	54	2643.3500	0.2687
15	10.0000	0.2703	55	2673.3833	0.2687
16	15.0167	0.2702	56	2703.4167	0.2687
17	20.0167	0.2699	57	2733.4667	0.2687
18	40.0500	0.2697	58	2763.5000	0.2687
19	60.0667	0.2696	59	2793.5333	0.2687
20	90.1000	0.2695	60	2823.5833	0.2687
21	120.1333	0.2694	61	2853.6167	0.2687
22	150.1833	0.2691	62	2883.6500	0.2687
23	180.2167	0.2690	63	2913.6833	0.2687
24	210.2500	0.2690	64	2943.7333	0.2687
25	600.7500	0.2689	65	2973.7667	0.2687
26	1201.5167	0.2688	66	3003.8167	0.2687
27	1832.3167	0.2687	67	3033.8500	0.2687
28	1862.3500	0.2687	68	3063.8833	0.2687
29	1892.3833	0.2687	69	3093.9167	0.2687
30	1922.4333	0.2687	70	3123.9667	0.2687
31	1952.4667	0.2687	71	3154.0000	0.2687
32	1982.5000	0.2687	72	3184.0333	0.2687
33	2012.5500	0.2687	73	3214.0833	0.2687
34	2042.5833	0.2687	74	3244.1167	0.2687
35	2072.6167	0.2687	75	3274.1500	0.2687
36	2102.6500	0.2687	76	3304.1833	0.2687
37	2132.7000	0.2687	77	3334.2333	0.2687
38	2162.7333	0.2687	78	3364.2667	0.2687
39	2192.7833	0.2687	79	3394.3000	0.2687
40	2222.8167	0.2687	80	3424.3500	0.2687



Pressure: 1.00 tsf — **TEST READINGS** — **Load No. 11**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.2712	24	180.2333	0.2864
2	0.0167	0.2724	25	210.2667	0.2865
3	0.0333	0.2728	26	240.3000	0.2867
4	0.0500	0.2729	27	270.3500	0.2869
5	0.0667	0.2730	28	300.3833	0.2870
6	0.0833	0.2731	29	330.4167	0.2871
7	0.1000	0.2733	30	360.4667	0.2872
8	0.2000	0.2737	31	390.5000	0.2872
9	0.2500	0.2737	32	420.5333	0.2873
10	0.5000	0.2744	33	450.5667	0.2873
11	1.0000	0.2753	34	480.6167	0.2873
12	2.0000	0.2766	35	510.6500	0.2874
13	4.0000	0.2781	36	540.6833	0.2874
14	5.0000	0.2786	37	570.7333	0.2876
15	8.0167	0.2799	38	600.7667	0.2877
16	10.0167	0.2804	39	630.8000	0.2878
17	15.0167	0.2815	40	660.8333	0.2878
18	20.0167	0.2822	41	690.8833	0.2878
19	40.0500	0.2838	42	720.9167	0.2879
20	60.0667	0.2846	43	750.9500	0.2879
21	90.1167	0.2853	44	760.7333	0.2879
22	120.1500	0.2857	45	760.7667	0.2879
23	150.1833	0.2862			

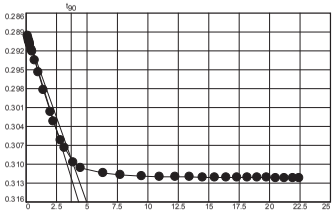


Void Ratio = 3.880 **Compression =** 39.0%

D_0 = 0.2730 D_{90} = 0.2816 D_{100} = 0.2825 C_v **at 15.48 min. =** 0.029 ft.^{2}/day

Pressure: 2.00 tsf — **TEST READINGS** — **Load No. 12**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.2879	12	2.0167	0.2982
2	0.0167	0.2896	13	4.0167	0.3017
3	0.0333	0.2900	14	5.0167	0.3032
4	0.0500	0.2904	15	8.0167	0.3062
5	0.0667	0.2905	16	10.0167	0.3074
6	0.0833	0.2907	17	15.0333	0.3097
7	0.1000	0.2910	18	20.0333	0.3106
8	0.2000	0.2918	19	40.0667	0.3114
9	0.2500	0.2921	20	60.0833	0.3117
10	0.5000	0.2935	21	90.1167	0.3119
11	1.0000	0.2954	22	120.1500	0.3120



Pressure: 0.25 tsf — **TEST READINGS (continued)** — **Load No. 9**

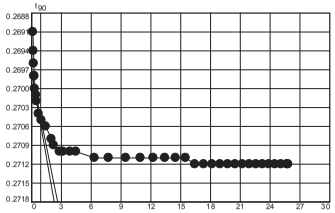
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
49	931.1833	0.2688	59	1220.8333	0.2688
50	961.2167	0.2688			
51	991.2500	0.2688			
52	1021.3000	0.2688			
53	1051.3333	0.2688			
54	1081.3667	0.2688			
55	1111.4167	0.2688			
56	1141.4500	0.2688			
57	1171.4833	0.2688			
58	1201.5167	0.2688			

Void Ratio = 4.088 **Compression =** 36.4%

D_0 = 0.2680 D_{90} = 0.2686 D_{100} = 0.2687 C_v **at 12.09 min. =** 0.039 ft.^{2}/day

Pressure: 0.50 tsf — **TEST READINGS** — **Load No. 10**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.2688	22	120.1500	0.2711
2	0.0167	0.2691	23	150.1833	0.2711
3	0.0333	0.2694	24	180.2333	0.2711
4	0.0500	0.2696	25	210.2667	0.2711
5	0.0667	0.2698	26	240.3000	0.2711
6	0.0833	0.2698	27	270.3333	0.2712
7	0.1000	0.2700	28	300.3833	0.2712
8	0.2000	0.2701	29	330.4167	0.2712
9	0.2500	0.2702	30	360.4500	0.2712
10	0.5000	0.2704	31	390.5000	0.2712
11	1.0000	0.2705	32	420.5333	0.2712
12	2.0000	0.2706	33	450.5667	0.2712
13	4.0000	0.2708	34	480.6000	0.2712
14	5.0000	0.2709	35	510.6500	0.2712
15	8.0000	0.2710	36	540.6833	0.2712
16	10.0167	0.2710	37	570.7167	0.2712
17	15.0167	0.2710	38	600.7500	0.2712
18	20.0167	0.2710	39	630.8000	0.2712
19	40.0500	0.2711	40	660.8333	0.2712
20	60.0667	0.2711	41	667.0333	0.2712
21	90.1167	0.2711			



Void Ratio = 4.062 **Compression =** 36.7%

D_0 = 0.2698 D_{90} = 0.2705 D_{100} = 0.2706 C_v **at 0.84 min. =** 0.553 ft.^{2}/day

Pressure: 4.00 tsf — **TEST READINGS (continued)** — **Load No. 13**

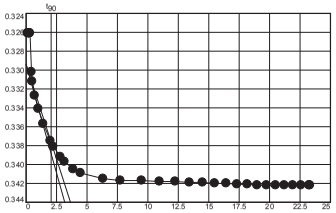
No.	Elapsed Time	Dial Reading
49	931.1833	0.3259
50	952.0000	0.3259
51	952.0333	0.3259

Void Ratio = 3.467 **Compression =** 44.2%

D_0 = 0.3158 D_{90} = 0.3229 D_{100} = 0.3236 C_v **at 2.53 min. =** 0.146 ft.^{2}/day

Pressure: 8.00 tsf — **TEST READINGS** — **Load No. 14**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.3259	20	60.0667	0.3417
2	0.0167	0.3261	21	90.1167	0.3417
3	0.0333	0.3261	22	120.1500	0.3418
4	0.0500	0.3261	23	150.1833	0.3418
5	0.0667	0.3261	24	180.2333	0.3419
6	0.0833	0.3261	25	210.2667	0.3419
7	0.1000	0.3261	26	240.3000	0.3420
8	0.2000	0.3302	27	270.3333	0.3420
9	0.2500	0.3312	28	300.3833	0.3421
10	0.5000	0.3327	29	330.4167	0.3421
11	1.0000	0.3341	30	360.4500	0.3422
12	2.0000	0.3357	31	390.5000	0.3422
13	4.0000	0.3375	32	420.5333	0.3422
14	5.0000	0.3381	33	450.5667	0.3422
15	8.0000	0.3392	34	480.6167	0.3422
16	10.0167	0.3397	35	510.6500	0.3422
17	15.0167	0.3405	36	540.6833	0.3422
18	20.0167	0.3409	37	543.8167	0.3422
19	40.0500	0.3415			



Void Ratio = 3.290 **Compression =** 46.4%

D_0 = 0.3294 D_{90} = 0.3376 D_{100} = 0.3386 C_v **at 4.23 min. =** 0.081 ft.^{2}/day

Pressure: 2.00 tsf — **TEST READINGS (continued)** — **Load No. 12**

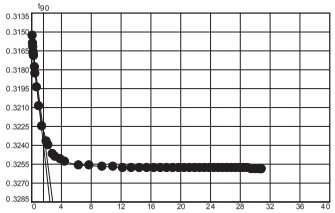
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
23	150.2000	0.3120	33	450.5833	0.3122
24	180.2333	0.3120	34	480.6167	0.3122
25	210.2667	0.3121	35	503.1000	0.3122
26	240.3167	0.3121			
27	270.3500	0.3121			
28	300.3833	0.3121			
29	330.4333	0.3121			
30	360.4667	0.3121			
31	390.5000	0.3121			
32	420.5500	0.3122			

Void Ratio = 3.616 **Compression =** 42.3%

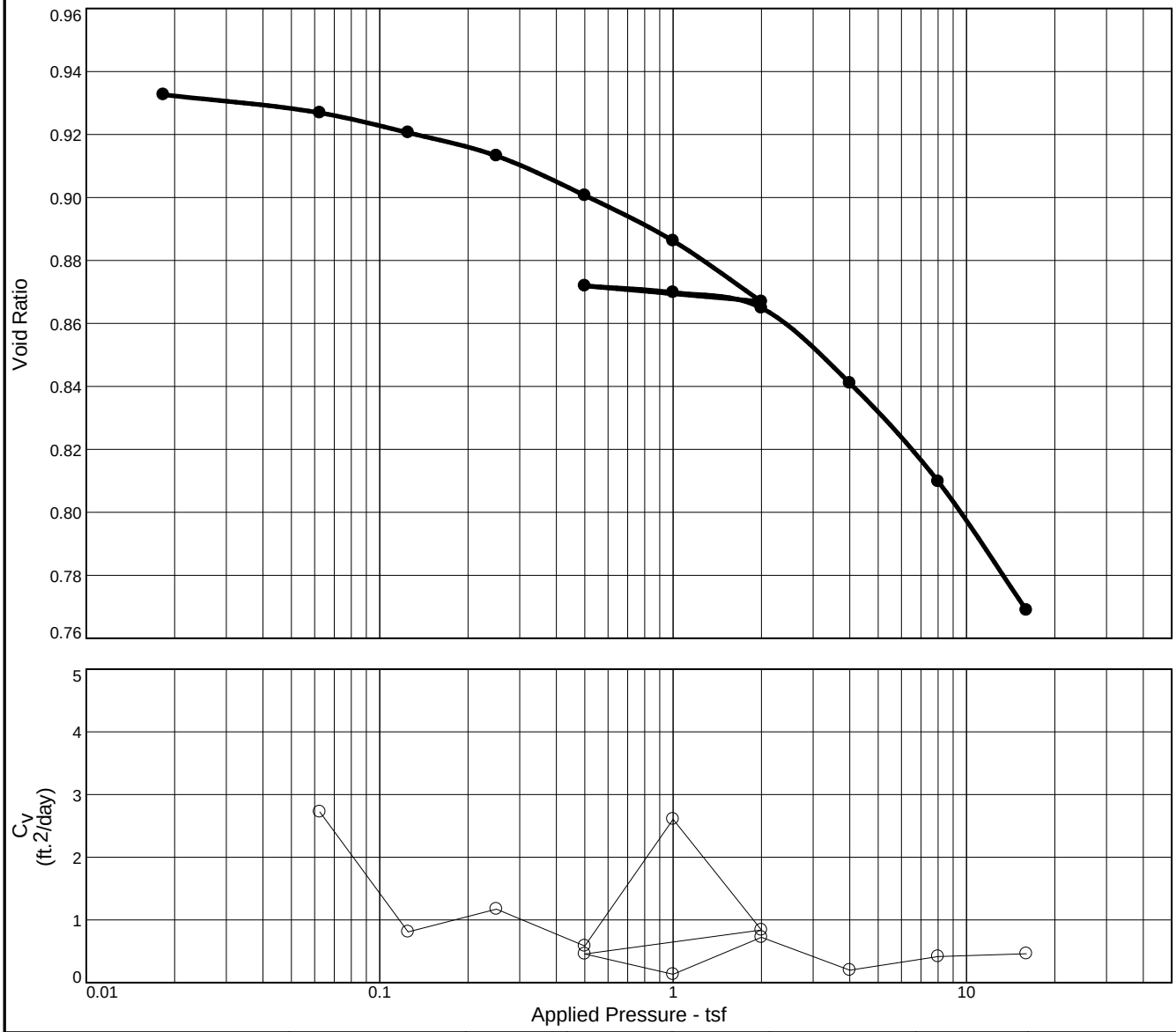
D_0 = 0.2890 D_{90} = 0.3091 D_{100} = 0.3114 C_v **at 13.74 min. =** 0.029 ft.^{2}/day

Pressure: 4.00 tsf — **TEST READINGS** — **Load No. 13**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.3122	25	210.2667	0.3258
2	0.0167	0.3153	26	240.3167	0.3258
3	0.0333	0.3159	27	270.3500	0.3258
4	0.0500	0.3162	28	300.3833	0.3258
5	0.0667	0.3166	29	330.4333	0.3258
6	0.0833	0.3168	30	360.4667	0.3258
7	0.1000	0.3169	31	390.5000	0.3258
8	0.2000	0.3178	32	420.5333	0.3258
9	0.2500	0.3183	33	450.5833	0.3258
10	0.5000	0.3194	34	480.6167	0.3258
11	1.0000	0.3209	35	510.6500	0.3258
12	2.0167	0.3225	36	540.7000	0.3258
13	4.0167	0.3237	37	570.7333	0.3258
14	5.0167	0.3240	38	600.7667	0.3258
15	8.0167	0.3247	39	630.8000	0.3258
16	10.0167	0.3249	40	660.8500	0.3258
17	15.0333	0.3251	41	690.8833	0.3258
18	20.0333	0.3253	42	720.9167	0.3258
19	40.0500	0.3256	43	750.9667	0.3258
20	60.0833	0.3256	44	781.0000	0.3258
21	90.1167	0.3257	45	811.0333	0.3258
22	120.1667	0.3257	46	841.0667	0.3258
23	150.2000	0.3258	47	871.1167	0.3259
24	180.2333	0.3258	48	901.1500	0.3259



CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture							
106.5 %	36.7 %	87.4	33	9	2.705	1.4	0.12	0.932

MATERIAL DESCRIPTION	USCS	AASHTO
Gray silt	(ML)	

Project No. 16715-040-01 **Client:** CPRA

Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, LA

Source of Sample: B-11 **Depth:** 38' - 40'

Remarks:
Cv at t90

GEOENGINEERS

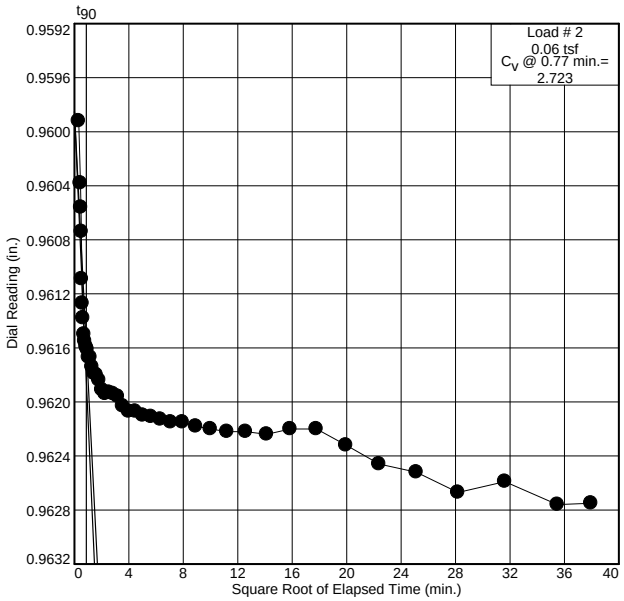
Figure

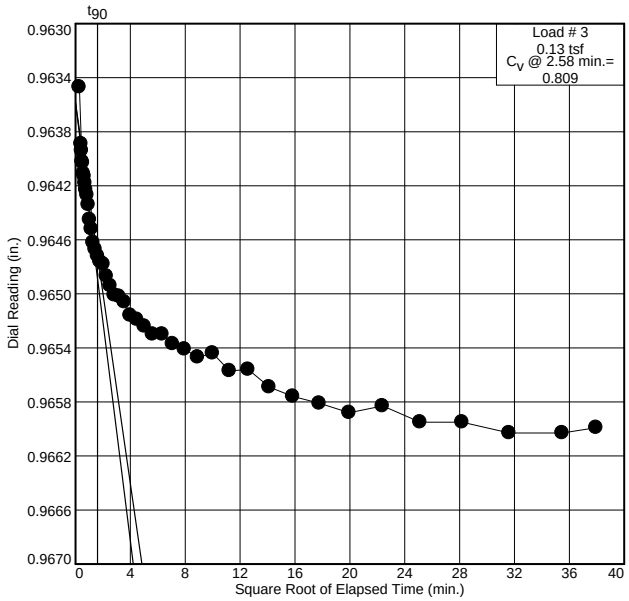
Tested By: SLC **Checked By:** KLA/JMP

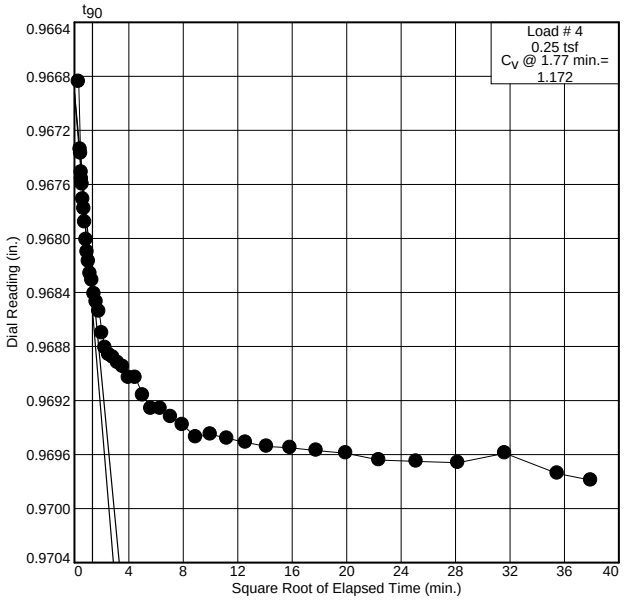
Dial Reading vs. Time

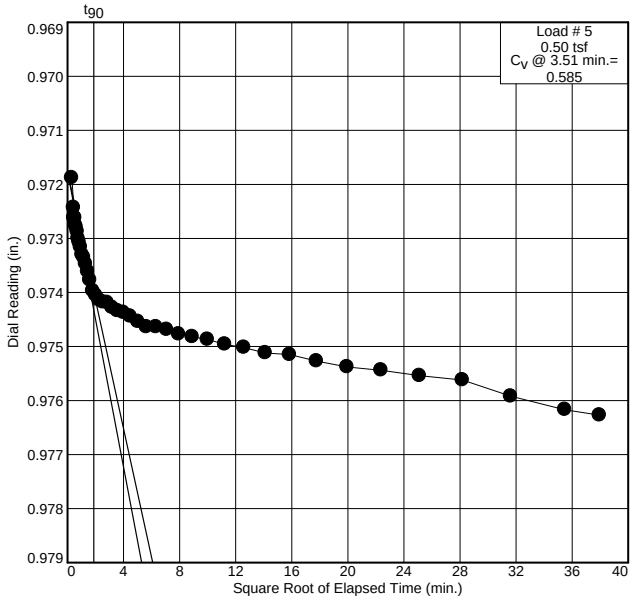
Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-11 Depth: 38' - 40'









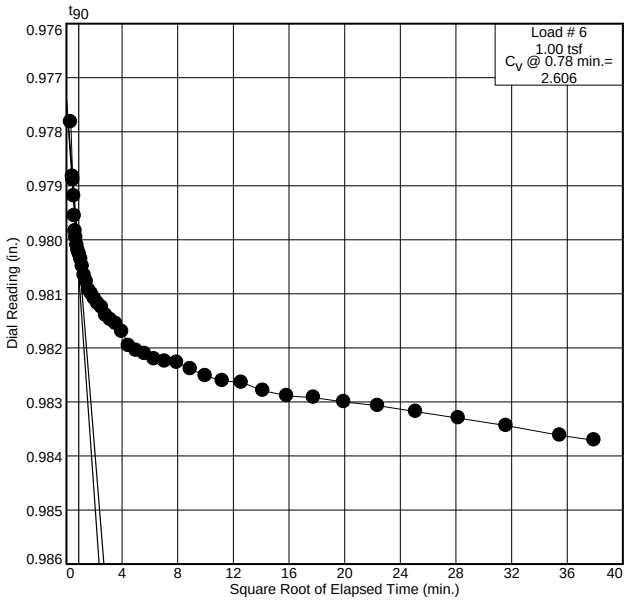
GEOENGINEERS

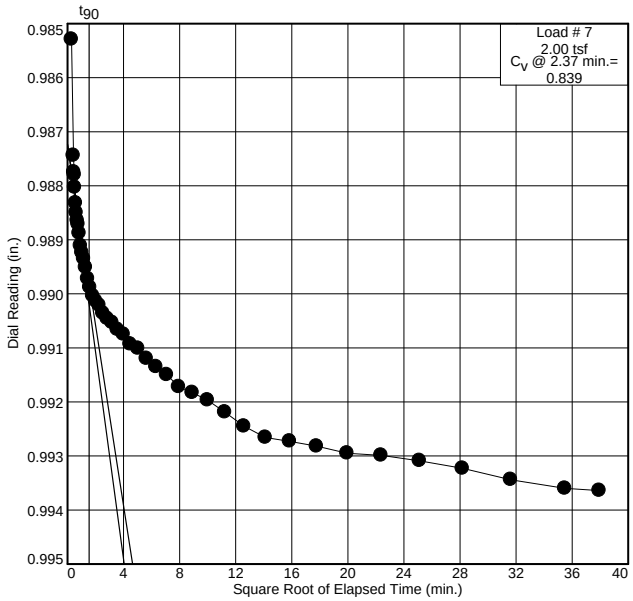
Figure

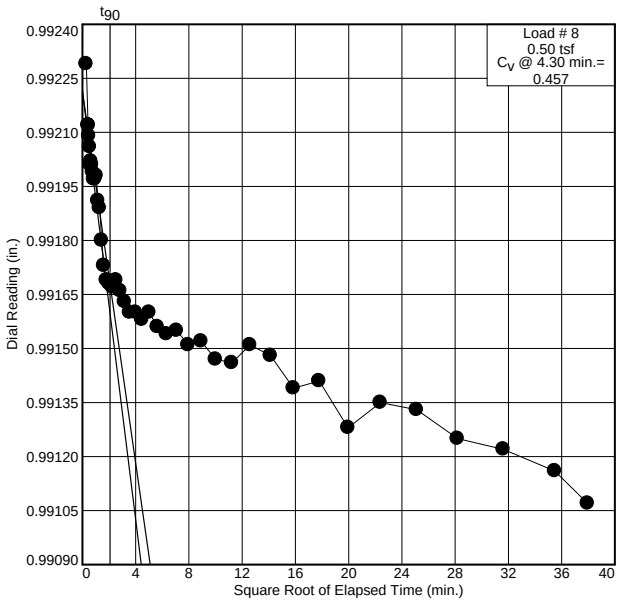
Dial Reading vs. Time

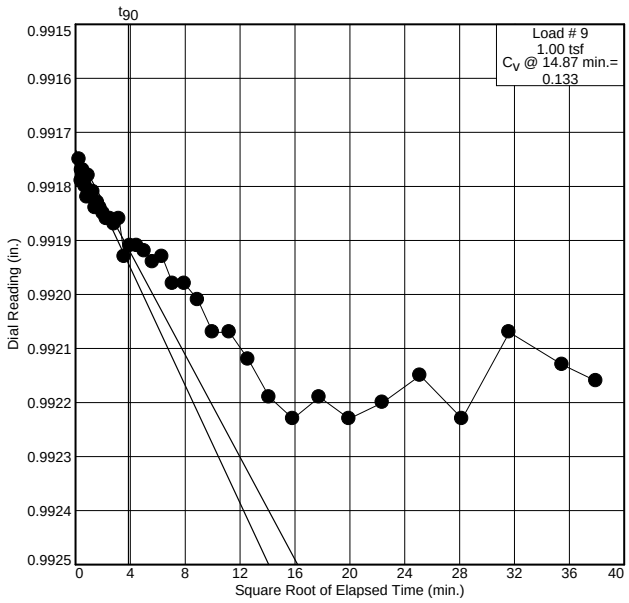
Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-11 Depth: 38' - 40'









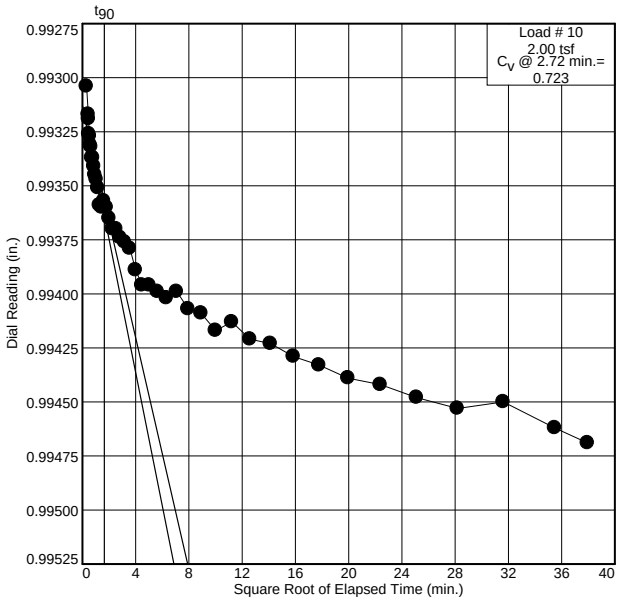
GEOENGINEERS

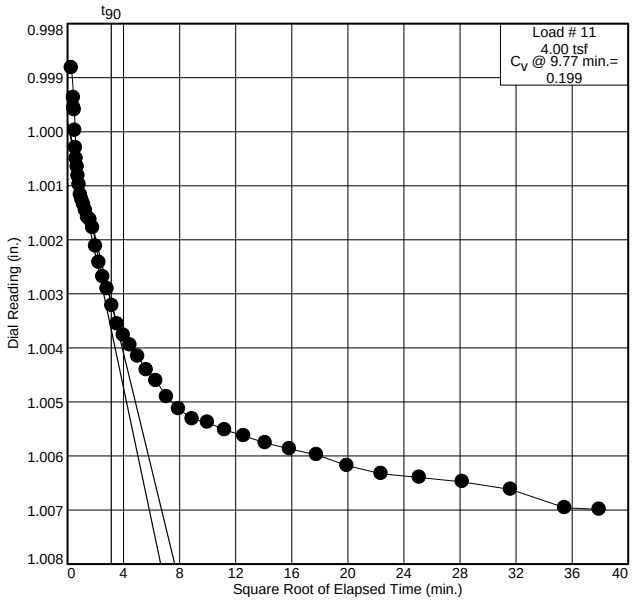
Figure

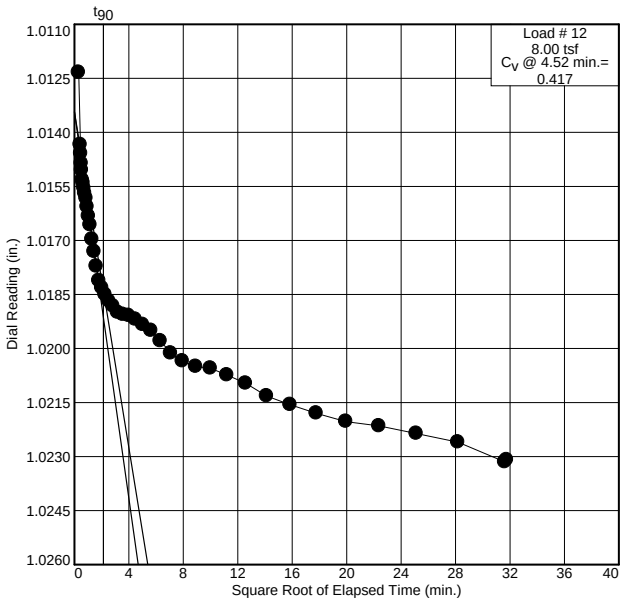
Dial Reading vs. Time

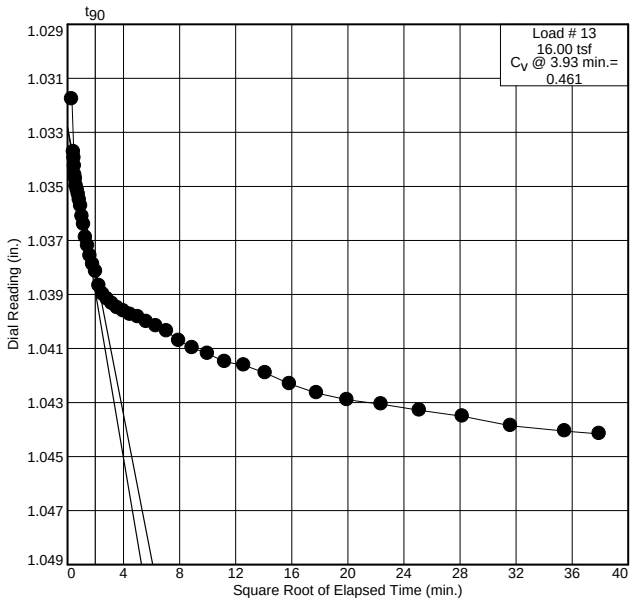
Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-11 Depth: 38' - 40'









GEOENGINEERS

Figure

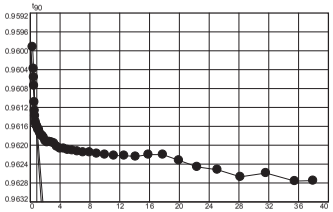
Pressure: 36.64 psf — **TEST READINGS** — **Load No. 1**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.95993	16	2.4667	0.95993	31	79.4167	0.95995
2	0.0333	0.95993	17	3.1167	0.95992	32	99.9833	0.95997
3	0.0667	0.95992	18	3.9333	0.95991	33	125.8667	0.95991
4	0.1000	0.95993	19	4.9667	0.95991	34	158.4833	0.95987
5	0.1500	0.95994	20	6.2667	0.95987	35	199.5167	0.95986
6	0.2000	0.95993	21	7.9000	0.95989	36	251.1833	0.95980
7	0.2667	0.95994	22	9.9667	0.95988	37	316.2167	0.95968
8	0.3500	0.95992	23	12.5500	0.95988	38	398.1000	0.95960
9	0.4500	0.95994	24	15.8167	0.95989	39	501.1833	0.95956
10	0.5833	0.95993	25	19.9167	0.95990	40	630.9667	0.95953
11	0.7500	0.95993	26	25.0833	0.95991	41	794.3333	0.95971
12	0.9500	0.95993	27	31.6000	0.95993	42	1000.0167	0.95968
13	1.2167	0.95989	28	39.7833	0.95992	43	1258.9333	0.95977
14	1.5333	0.95993	29	50.1000	0.95993	44	1440.2333	0.95977
15	1.9500	0.95992	30	63.0833	0.95992			

Void Ratio = 0.933 **Swell =** 0.0%

Pressure: 125.00 psf — **TEST READINGS** — **Load No. 2**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.95986	21	6.4333	0.96193
2	0.1000	0.95992	22	8.0667	0.96194
3	0.2000	0.96038	23	10.1333	0.96196
4	0.2333	0.96056	24	12.7167	0.96203
5	0.2667	0.96074	25	15.9833	0.96207
6	0.3000	0.96109	26	20.0833	0.96207
7	0.3500	0.96127	27	25.2500	0.96210
8	0.4167	0.96138	28	31.7667	0.96211
9	0.5167	0.96150	29	39.9500	0.96213
10	0.6167	0.96155	30	50.2667	0.96215
11	0.7500	0.96159	31	63.2333	0.96215
12	0.9167	0.96161	32	79.5833	0.96218
13	1.1167	0.96167	33	100.1500	0.96220
14	1.3833	0.96167	34	126.0333	0.96222
15	1.7000	0.96174	35	158.6333	0.96222
16	2.1167	0.96179	36	199.6833	0.96224
17	2.6333	0.96180	37	251.3333	0.96220
18	3.2833	0.96184	38	316.3833	0.96220
19	4.1167	0.96191	39	398.2667	0.96232
20	5.1333	0.96194	40	501.3500	0.96246



CONSOLIDATION TEST DATA

9/15/2016

Client: CPRA
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, LA
Project Number: 16715-040-01
Location: B-11
Depth: 38' - 40'
Material Description: Gray silt
Liquid Limit: 33 **Plasticity Index:** 9
USCS: (ML)
Testing Remarks: Cv at t90
Tested by: SLC **Checked by:** KLA/JMP

Test Specimen Data

NATURAL MOISTURE		VOID RATIO		AFTER TEST	
Wet w+t	= 182.77 g.	Spec. Gr.	= 2.705	Wet w+t	= 165.50 g.
Dry w+t	= 144.58 g.	Est. Ht. Solids	= 0.515 in.	Dry w+t	= 133.67 g.
Tare Wt.	= 40.56 g.	Init. V.R.	= 0.932	Tare Wt.	= 22.48 g.
Moisture	= 36.7 %	Init. Sat.	= 106.5 %	Moisture	= 28.6 %

UNIT WEIGHT		TEST START			
Height	= 0.996 in.	Height	= 0.996 in.	Dry Wt.	= 111.19 g.
Diameter	= 2.496 in.	Diameter	= 2.496 in.		
Weight	= 152.84 g.				
Dry Dens.	= 87.4 pcf				

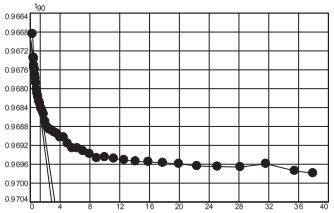
End-Of-Load Summary

Pressure (psf)	Final Dial (in.)	Deformation (in.)	C_v (ft.2/day)	C_α	Void Ratio	% Strain
start	0.95993	0.00000			0.932	
36.64	0.95977	-0.00016			0.933	0.0 Swell
125.00	0.96275	0.00282	2.723		0.927	0.3 Comprs.
250.00	0.96599	0.00606	0.809		0.921	0.6 Comprs.
500.00	0.96979	0.00986	1.172		0.913	1.0 Comprs.
1000.00	0.97627	0.01634	0.585		0.901	1.6 Comprs.
2000.00	0.98371	0.02378	2.606		0.886	2.4 Comprs.
4000.00	0.99364	0.03371	0.839		0.867	3.4 Comprs.
1000.00	0.99107	0.03114	0.457		0.872	3.1 Comprs.
2000.00	0.99216	0.03223	0.133		0.870	3.2 Comprs.
4000.00	0.99469	0.03476	0.723		0.865	3.5 Comprs.
8000.00	1.00699	0.04706	0.199		0.841	4.7 Comprs.
16000.00	1.02309	0.06316	0.417		0.810	6.3 Comprs.
32000.00	1.04416	0.08423	0.461		0.769	8.5 Comprs.

Compression index (C_c), tsf = 0.12 **Preconsolidation pressure (P_p), tsf =** 1.4 **Void ratio at P_p (e_m) =** 0.878
Recompression index (C_r) = 0.03

Pressure: 500.00 psf — **TEST READINGS** — **Load No. 4**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.96445	24	12.7333	0.96895
2	0.1000	0.96684	25	15.9833	0.96903
3	0.2000	0.96734	26	20.0833	0.96903
4	0.2333	0.96737	27	25.2500	0.96916
5	0.2667	0.96751	28	31.7667	0.96926
6	0.3000	0.96756	29	39.9500	0.96926
7	0.3500	0.96760	30	50.2667	0.96932
8	0.4167	0.96771	31	63.2500	0.96938
9	0.5167	0.96778	32	79.5833	0.96947
10	0.6167	0.96788	33	100.1500	0.96945
11	0.7500	0.96801	34	126.0500	0.96948
12	0.9167	0.96810	35	158.6500	0.96951
13	1.1167	0.96817	36	199.6833	0.96954
14	1.3833	0.96826	37	251.3500	0.96955
15	1.7000	0.96831	38	316.3833	0.96957
16	2.1167	0.96841	39	398.2667	0.96959
17	2.6333	0.96847	40	501.3500	0.96964
18	3.2833	0.96854	41	631.1167	0.96965
19	4.1167	0.96870	42	794.5000	0.96966
20	5.1333	0.96881	43	1000.1667	0.96959
21	6.4333	0.96886	44	1259.1000	0.96974
22	8.0833	0.96888	45	1440.1167	0.96979
23	10.1333	0.96892			

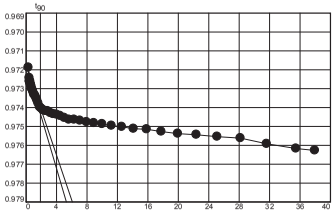


Void Ratio = 0.913 **Compression =** 1.0%

D_0 = 0.9669 D_{90} = 0.9683 D_{100} = 0.9685 C_v **at 1.77 min. =** 1.172 ft.^{2}/day

Pressure: 1000.00 psf — **TEST READINGS** — **Load No. 5**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.96806	12	0.9000	0.97316
2	0.1000	0.97188	13	1.1167	0.97330
3	0.2000	0.97243	14	1.3667	0.97335
4	0.2167	0.97262	15	1.7000	0.97347
5	0.2500	0.97261	16	2.1000	0.97361
6	0.3000	0.97262	17	2.6167	0.97377
7	0.3500	0.97276	18	3.2833	0.97397
8	0.4167	0.97279	19	4.1000	0.97405
9	0.5000	0.97287	20	5.1333	0.97414
10	0.6000	0.97300	21	6.4333	0.97418
11	0.7333	0.97307	22	8.0667	0.97419



Pressure: 125.00 psf — **TEST READINGS (continued)** — **Load No. 2**

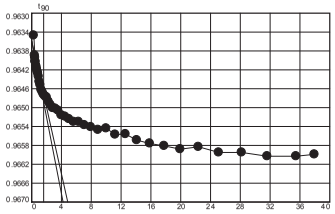
No.	Elapsed Time	Dial Reading
41	631.1167	0.96252
42	794.5000	0.96267
43	1000.1667	0.96259
44	1259.1000	0.96276
45	1440.4500	0.96275

Void Ratio = 0.927 **Compression =** 0.3%

D_0 = 0.9599 D_{90} = 0.9616 D_{100} = 0.9618 C_v **at 0.77 min. =** 2.723 ft.^{2}/day

Pressure: 250.00 psf — **TEST READINGS** — **Load No. 3**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.96192	24	12.7167	0.96506
2	0.0833	0.96347	25	15.9667	0.96516
3	0.1833	0.96389	26	20.0833	0.96519
4	0.2167	0.96394	27	25.2500	0.96524
5	0.2500	0.96402	28	31.7500	0.96530
6	0.2833	0.96403	29	39.9500	0.96530
7	0.3500	0.96411	30	50.2500	0.96537
8	0.4167	0.96413	31	63.2333	0.96541
9	0.5000	0.96418	32	79.5667	0.96547
10	0.6000	0.96423	33	100.1333	0.96544
11	0.7333	0.96427	34	126.0333	0.96557
12	0.9000	0.96434	35	158.6333	0.96556
13	1.1000	0.96445	36	199.6667	0.96569
14	1.3667	0.96452	37	251.3333	0.96576
15	1.6833	0.96462	38	316.3833	0.96581
16	2.1000	0.96467	39	398.2667	0.96588
17	2.6167	0.96472	40	501.3500	0.96583
18	3.2667	0.96476	41	631.1167	0.96595
19	4.1000	0.96478	42	794.5000	0.96595
20	5.1333	0.96487	43	1000.1667	0.96603
21	6.4167	0.96494	44	1259.1000	0.96603
22	8.0667	0.96501	45	1440.4333	0.96599
23	10.1167	0.96502			

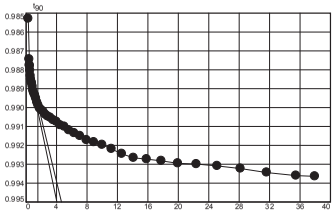


Void Ratio = 0.921 **Compression =** 0.6%

D_0 = 0.9636 D_{90} = 0.9647 D_{100} = 0.9648 C_v **at 2.58 min. =** 0.809 ft.^{2}/day

Pressure: 4000.00 psf — **TEST READINGS** — **Load No. 7**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.98050	24	12.7167	0.99066
2	0.0833	0.98529	25	15.9667	0.99075
3	0.1833	0.98744	26	20.0833	0.99093
4	0.2167	0.98775	27	25.2500	0.99101
5	0.2500	0.98780	28	31.7500	0.99120
6	0.2833	0.98803	29	39.9333	0.99135
7	0.3500	0.98832	30	50.2500	0.99150
8	0.4167	0.98850	31	63.2167	0.99172
9	0.5000	0.98864	32	79.5667	0.99183
10	0.6000	0.98871	33	100.1333	0.99197
11	0.7333	0.98888	34	126.0333	0.99219
12	0.9000	0.98911	35	158.6167	0.99245
13	1.1000	0.98924	36	199.6667	0.99266
14	1.3667	0.98935	37	251.3333	0.99273
15	1.6833	0.98951	38	316.3667	0.99282
16	2.1000	0.98972	39	398.2500	0.99295
17	2.6167	0.98988	40	501.3333	0.99299
18	3.2833	0.99004	41	631.1167	0.99309
19	4.1000	0.99013	42	794.4833	0.99323
20	5.1333	0.99021	43	1000.1500	0.99344
21	6.4333	0.99036	44	1259.0833	0.99360
22	8.0667	0.99046	45	1440.2500	0.99364
23	10.1167	0.99053			

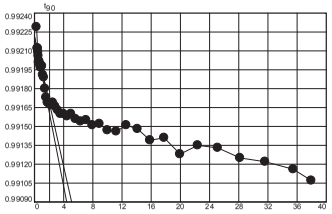


Void Ratio = 0.867 **Compression =** 3.4%

D_0 = 0.9872 D_{90} = 0.9898 D_{100} = 0.9901 **C_v at 2.37 min. =** 0.839 ft.^{2}/day

Pressure: 1000.00 psf — **TEST READINGS** — **Load No. 8**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.99681	12	0.9000	0.99197
2	0.0833	0.99229	13	1.1000	0.99198
3	0.1833	0.99212	14	1.3667	0.99191
4	0.2167	0.99212	15	1.7000	0.99189
5	0.2500	0.99209	16	2.1000	0.99180
6	0.3000	0.99206	17	2.6167	0.99173
7	0.3500	0.99201	18	3.2833	0.99169
8	0.4167	0.99202	19	4.1000	0.99168
9	0.5000	0.99201	20	5.1333	0.99167
10	0.6000	0.99199	21	6.4333	0.99169
11	0.7333	0.99197	22	8.0667	0.99166



Pressure: 1000.00 psf — **TEST READINGS (continued)** — **Load No. 5**

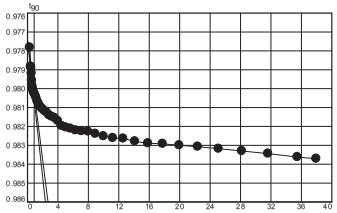
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
23	10.1167	0.97428	33	100.1333	0.97487	43	1000.1667	0.97592
24	12.7167	0.97434	34	126.0333	0.97496	44	1259.0833	0.97617
25	15.9667	0.97437	35	158.6333	0.97502	45	1440.4833	0.97627
26	20.0833	0.97444	36	199.6667	0.97512			
27	25.2500	0.97454	37	251.3333	0.97515			
28	31.7500	0.97464	38	316.3667	0.97527			
29	39.9333	0.97464	39	398.2500	0.97538			
30	50.2500	0.97469	40	501.3333	0.97544			
31	63.2333	0.97477	41	631.1167	0.97554			
32	79.5667	0.97482	42	794.4833	0.97562			

Void Ratio = 0.901 **Compression =** 1.6%

D_0 = 0.9718 D_{90} = 0.9740 D_{100} = 0.9742 **C_v at 3.51 min. =** 0.585 ft.^{2}/day

Pressure: 2000.00 psf — **TEST READINGS** — **Load No. 6**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.97337	24	12.7167	0.98155
2	0.1000	0.97782	25	15.9833	0.98170
3	0.2000	0.97883	26	20.0833	0.98196
4	0.2167	0.97884	27	25.2500	0.98205
5	0.2500	0.97889	28	31.7667	0.98211
6	0.3000	0.97919	29	39.9500	0.98221
7	0.3500	0.97956	30	50.2667	0.98225
8	0.4167	0.97984	31	63.2333	0.98227
9	0.5000	0.97996	32	79.5833	0.98239
10	0.6000	0.98010	33	100.1500	0.98252
11	0.7333	0.98020	34	126.0500	0.98261
12	0.9000	0.98027	35	158.6333	0.98264
13	1.1167	0.98036	36	199.6833	0.98279
14	1.3667	0.98049	37	251.3500	0.98289
15	1.7000	0.98066	38	316.3833	0.98292
16	2.1167	0.98077	39	398.2667	0.98300
17	2.6333	0.98093	40	501.3500	0.98307
18	3.2833	0.98100	41	631.1167	0.98318
19	4.1000	0.98109	42	794.5000	0.98330
20	5.1333	0.98118	43	1000.1667	0.98344
21	6.4333	0.98125	44	1259.1000	0.98362
22	8.0667	0.98140	45	1440.4000	0.98371
23	10.1333	0.98148			

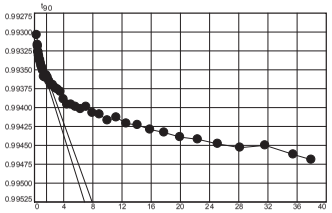


Void Ratio = 0.886 **Compression =** 2.4%

D_0 = 0.9774 D_{90} = 0.9802 D_{100} = 0.9805 **C_v at 0.78 min. =** 2.606 ft.^{2}/day

Pressure: 4000.00 psf — **TEST READINGS** — **Load No. 10**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.99027	24	12.7167	0.99379
2	0.1000	0.99304	25	15.9833	0.99389
3	0.2000	0.99317	26	20.0833	0.99396
4	0.2167	0.99319	27	25.2500	0.99396
5	0.2500	0.99326	28	31.7667	0.99399
6	0.3000	0.99327	29	39.9500	0.99402
7	0.3500	0.99331	30	50.2667	0.99399
8	0.4167	0.99332	31	63.2333	0.99407
9	0.5000	0.99337	32	79.5833	0.99409
10	0.6167	0.99337	33	100.1500	0.99417
11	0.7500	0.99341	34	126.0500	0.99413
12	0.9000	0.99345	35	158.6333	0.99421
13	1.1167	0.99347	36	199.6833	0.99423
14	1.3667	0.99351	37	251.3500	0.99429
15	1.7000	0.99359	38	316.3833	0.99433
16	2.1167	0.99360	39	398.2667	0.99439
17	2.6333	0.99357	40	501.3500	0.99442
18	3.2833	0.99360	41	631.1167	0.99448
19	4.1000	0.99365	42	794.5000	0.99453
20	5.1333	0.99370	43	1000.1667	0.99450
21	6.4333	0.99370	44	1259.1000	0.99462
22	8.0667	0.99374	45	1440.2667	0.99469
23	10.1333	0.99376			

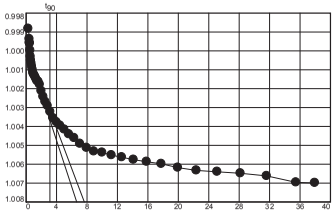


Void Ratio = 0.865 **Compression =** 3.5%

D_0 = 0.9931 **D_{90} =** 0.9936 **D_{100} =** 0.9936 **C_v at 2.72 min. =** 0.723 ft.^{2}/day

Pressure: 8000.00 psf — **TEST READINGS** — **Load No. 11**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.99120	12	0.9000	1.00117
2	0.0833	0.99882	13	1.1000	1.00126
3	0.2000	0.99937	14	1.3667	1.00135
4	0.2167	0.99956	15	1.7000	1.00146
5	0.2500	0.99960	16	2.1000	1.00159
6	0.3000	0.99998	17	2.6333	1.00163
7	0.3500	1.00030	18	3.2833	1.00178
8	0.4167	1.00050	19	4.1000	1.00212
9	0.5000	1.00065	20	5.1333	1.00242
10	0.6000	1.00082	21	6.4333	1.00269
11	0.7333	1.00098	22	8.0667	1.00291



Pressure: 1000.00 psf — **TEST READINGS (continued)** — **Load No. 8**

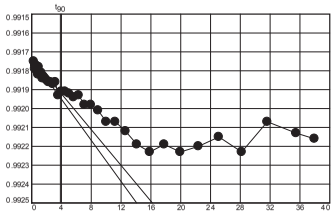
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
23	10.1167	0.99163	33	100.1500	0.99147	43	1000.1667	0.99122
24	12.7167	0.99160	34	126.0333	0.99146	44	1259.1000	0.99116
25	15.9833	0.99160	35	158.6333	0.99151	45	1440.1667	0.99107
26	20.0833	0.99158	36	199.6833	0.99148			
27	25.2500	0.99160	37	251.3500	0.99139			
28	31.7667	0.99156	38	316.3833	0.99141			
29	39.9500	0.99154	39	398.2667	0.99128			
30	50.2500	0.99155	40	501.3500	0.99135			
31	63.2333	0.99151	41	631.1167	0.99133			
32	79.5833	0.99152	42	794.5000	0.99125			

Void Ratio = 0.872 **Compression =** 3.1%

D_0 = 0.9922 **D_{90} =** 0.9917 **D_{100} =** 0.9916 **C_v at 4.30 min. =** 0.457 ft.^{2}/day

Pressure: 2000.00 psf — **TEST READINGS** — **Load No. 9**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.98964	24	12.7000	0.99193
2	0.0833	0.99175	25	15.9667	0.99191
3	0.2000	0.99179	26	20.0833	0.99191
4	0.2167	0.99177	27	25.2500	0.99192
5	0.2500	0.99177	28	31.7500	0.99194
6	0.3000	0.99177	29	39.9333	0.99193
7	0.3500	0.99179	30	50.2500	0.99198
8	0.4167	0.99179	31	63.2333	0.99198
9	0.5000	0.99180	32	79.5667	0.99201
10	0.6000	0.99178	33	100.1333	0.99207
11	0.7333	0.99182	34	126.0333	0.99207
12	0.9000	0.99178	35	158.6333	0.99212
13	1.1000	0.99181	36	199.6667	0.99219
14	1.3667	0.99182	37	251.3333	0.99223
15	1.6833	0.99181	38	316.3667	0.99219
16	2.1000	0.99184	39	398.2500	0.99223
17	2.6167	0.99183	40	501.3333	0.99220
18	3.2667	0.99184	41	631.1167	0.99215
19	4.1000	0.99185	42	794.4833	0.99223
20	5.1167	0.99186	43	1000.1667	0.99207
21	6.4167	0.99186	44	1259.0833	0.99213
22	8.0500	0.99187	45	1440.0167	0.99216
23	10.1167	0.99186			

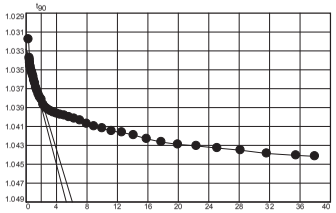


Void Ratio = 0.870 **Compression =** 3.2%

D_0 = 0.9917 **D_{90} =** 0.9919 **D_{100} =** 0.9919 **C_v at 14.87 min. =** 0.133 ft.^{2}/day

Pressure: 32000.00 psf — **TEST READINGS** — **Load No. 13**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	1.01913	24	12.7333	1.03950
2	0.1000	1.03177	25	15.9833	1.03962
3	0.2000	1.03372	26	20.1000	1.03974
4	0.2333	1.03395	27	25.2667	1.03983
5	0.2667	1.03425	28	31.7667	1.04001
6	0.3000	1.03458	29	39.9500	1.04017
7	0.3500	1.03472	30	50.2667	1.04036
8	0.4167	1.03498	31	63.2500	1.04071
9	0.5167	1.03513	32	79.5833	1.04098
10	0.6167	1.03529	33	100.1500	1.04119
11	0.7500	1.03550	34	126.0500	1.04149
12	0.9167	1.03573	35	158.6500	1.04162
13	1.1167	1.03611	36	199.6833	1.04191
14	1.3833	1.03641	37	251.3500	1.04231
15	1.7000	1.03689	38	316.3833	1.04265
16	2.1167	1.03720	39	398.2833	1.04290
17	2.6333	1.03757	40	501.3667	1.04306
18	3.2833	1.03789	41	631.1333	1.04329
19	4.1167	1.03815	42	794.5000	1.04351
20	5.1333	1.03868	43	1000.1833	1.04386
21	6.4333	1.03899	44	1259.1167	1.04406
22	8.0667	1.03917	45	1440.3833	1.04416
23	10.1333	1.03934			



Void Ratio = 0.769 **Compression =** 8.5%

D_0 = 1.0328 D_{90} = 1.0381 D_{100} = 1.0387 C_v **at 3.93 min. =** 0.461 ft.^{2}/day

Pressure: 8000.00 psf — **TEST READINGS (continued)** — **Load No. 11**

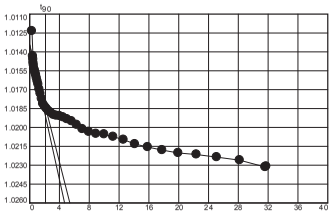
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
23	10.1333	1.00322	33	100.1500	1.00538	43	1000.1667	1.00662
24	12.7167	1.00356	34	126.0333	1.00552	44	1259.1000	1.00696
25	15.9833	1.00377	35	158.6333	1.00563	45	1440.3000	1.00699
26	20.0833	1.00395	36	199.6667	1.00576			
27	25.2500	1.00416	37	251.3333	1.00587			
28	31.7500	1.00441	38	316.3833	1.00598			
29	39.9500	1.00461	39	398.2667	1.00618			
30	50.2500	1.00491	40	501.3500	1.00633			
31	63.2333	1.00513	41	631.1167	1.00640			
32	79.5667	1.00532	42	794.5000	1.00648			

Void Ratio = 0.841 **Compression =** 4.7%

D_0 = 0.9998 D_{90} = 1.0032 D_{100} = 1.0035 C_v **at 9.77 min. =** 0.199 ft.^{2}/day

Pressure: 16000.00 psf — **TEST READINGS** — **Load No. 12**

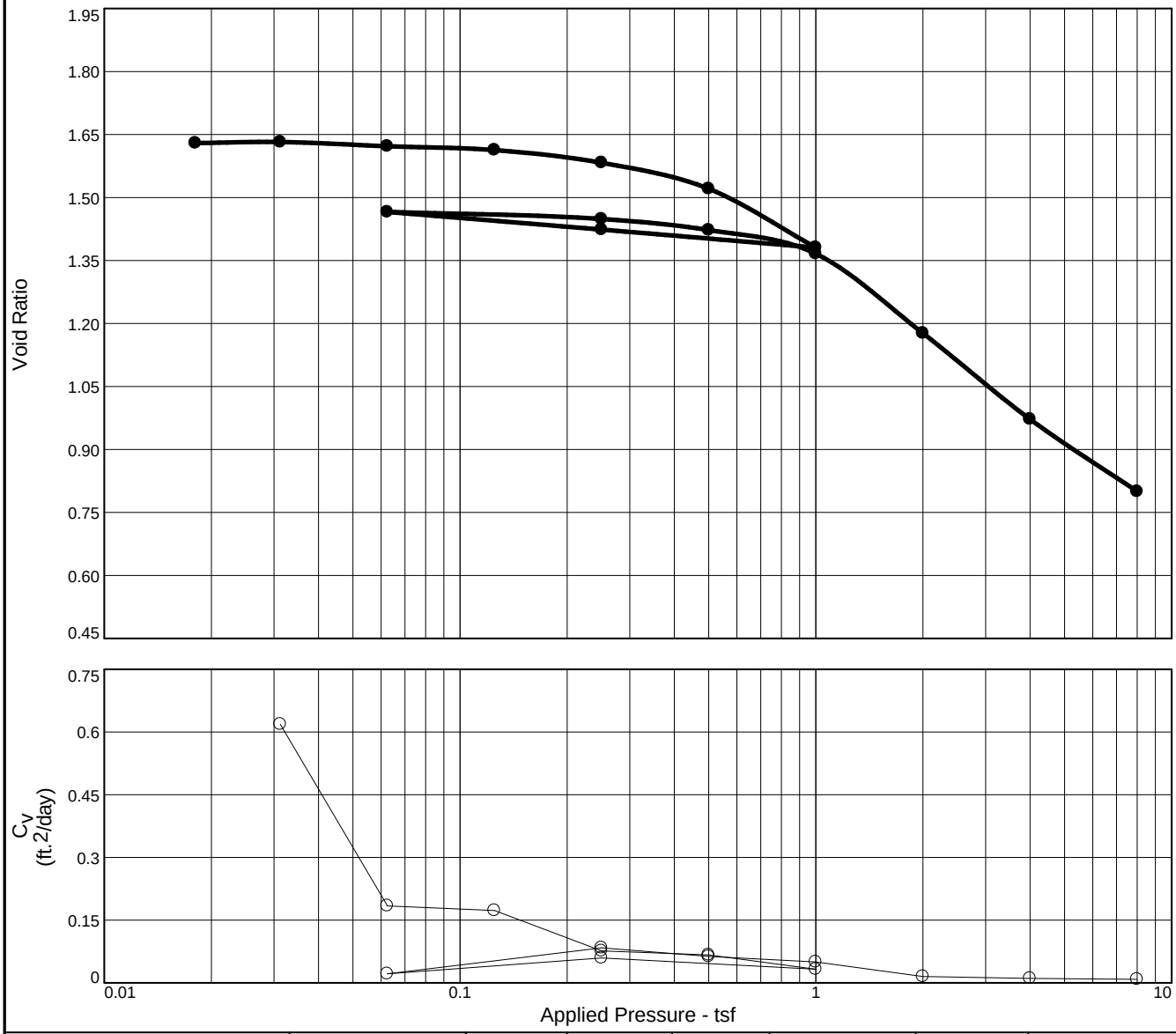
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	1.00291	23	10.1333	1.01900
2	0.1000	1.01234	24	12.7333	1.01906
3	0.2000	1.01434	25	15.9833	1.01909
4	0.2333	1.01459	26	20.1000	1.01919
5	0.2667	1.01486	27	25.2667	1.01934
6	0.3000	1.01505	28	31.7667	1.01950
7	0.3667	1.01532	29	39.9500	1.01979
8	0.4333	1.01540	30	50.2667	1.02013
9	0.5167	1.01555	31	63.2500	1.02035
10	0.6167	1.01569	32	79.5833	1.02050
11	0.7500	1.01583	33	100.1500	1.02055
12	0.9167	1.01607	34	126.0500	1.02074
13	1.1167	1.01633	35	158.6500	1.02097
14	1.3833	1.01657	36	199.6833	1.02132
15	1.7167	1.01697	37	251.3500	1.02156
16	2.1167	1.01731	38	316.4000	1.02180
17	2.6333	1.01772	39	398.2833	1.02203
18	3.3000	1.01812	40	501.3667	1.02215
19	4.1167	1.01832	41	631.1333	1.02236
20	5.1500	1.01850	42	794.5000	1.02260
21	6.4500	1.01868	43	1000.1833	1.02315
22	8.0833	1.01882	44	1008.7333	1.02309



Void Ratio = 0.810 **Compression =** 6.3%

D_0 = 1.0134 D_{90} = 1.0184 D_{100} = 1.0189 C_v **at 4.52 min. =** 0.417 ft.^{2}/day

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture							
96.9 %	57.6 %	65.1	85	60	2.744	0.7	0.68	1.629

MATERIAL DESCRIPTION	USCS	AASHTO
Very soft gray clay with shell fragments	CH	

Project No. 16715-040-01 **Client:** CPRA

Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, LA

Source of Sample: B-12 **Depth:** 12'-14'

Remarks:
Cv T90

GEOENGINEERS

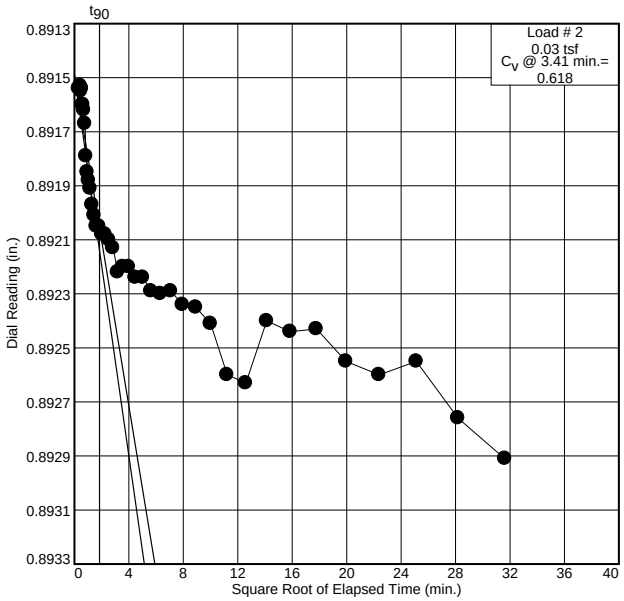
Figure

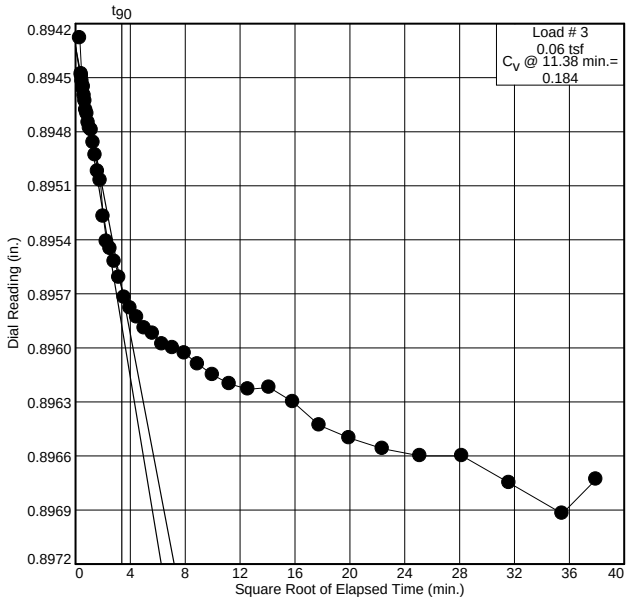
Tested By: SLC **Checked By:** JMP

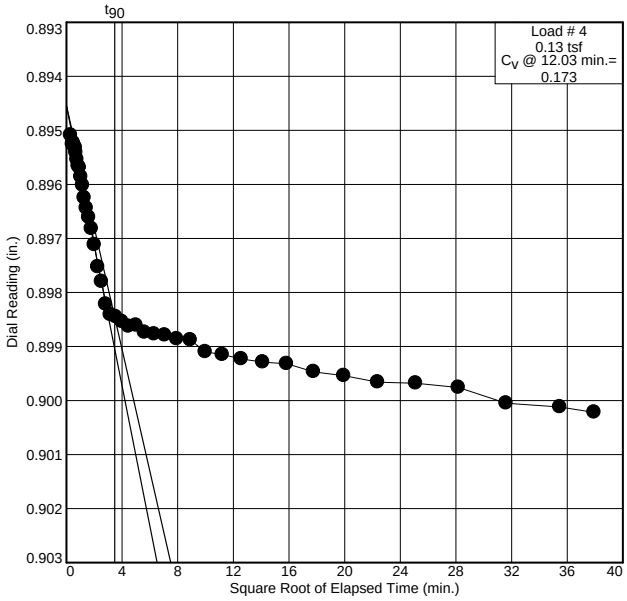
Dial Reading vs. Time

Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-12 Depth: 12'-14'







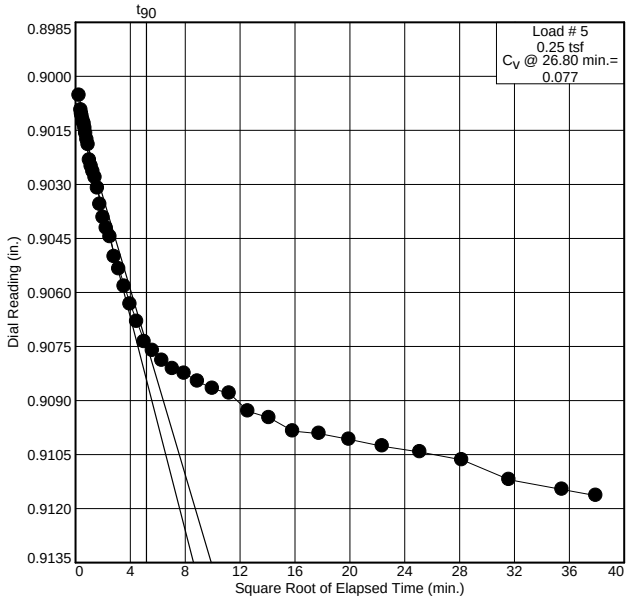


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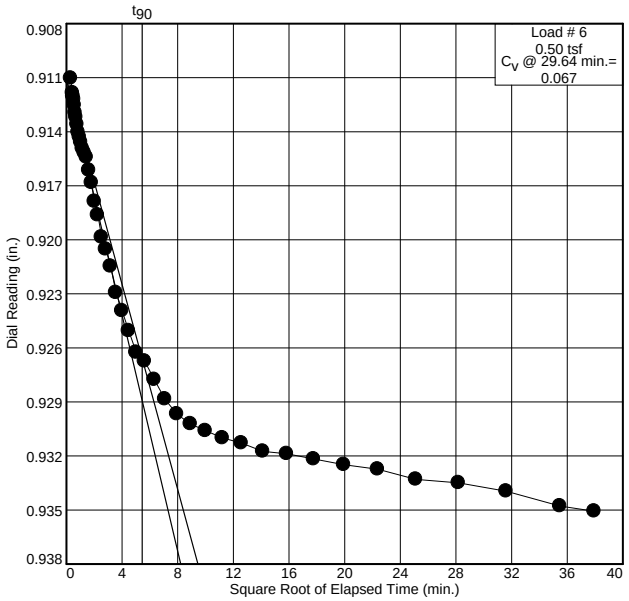
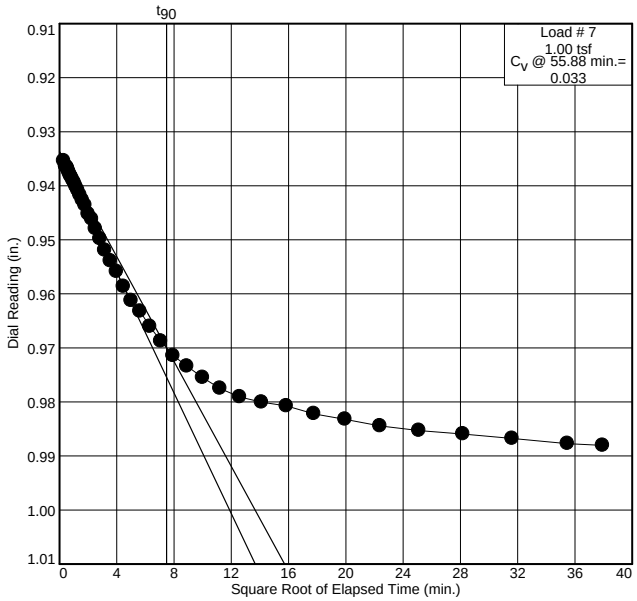
Figure

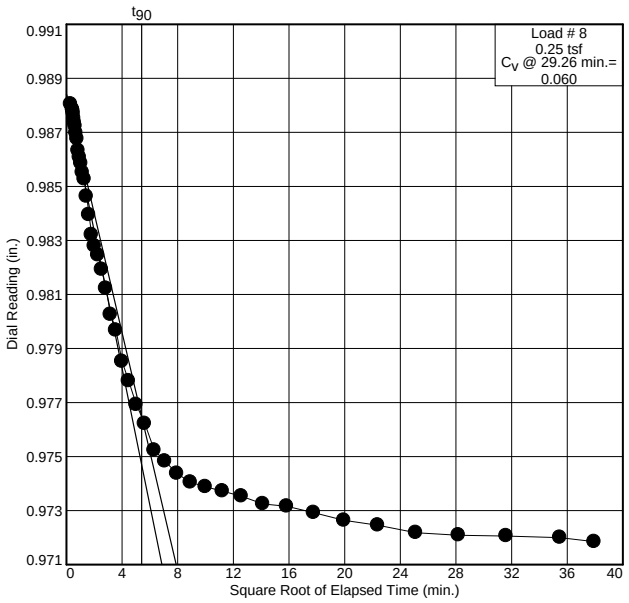
Dial Reading vs. Time

Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-12 Depth: 12'-14'







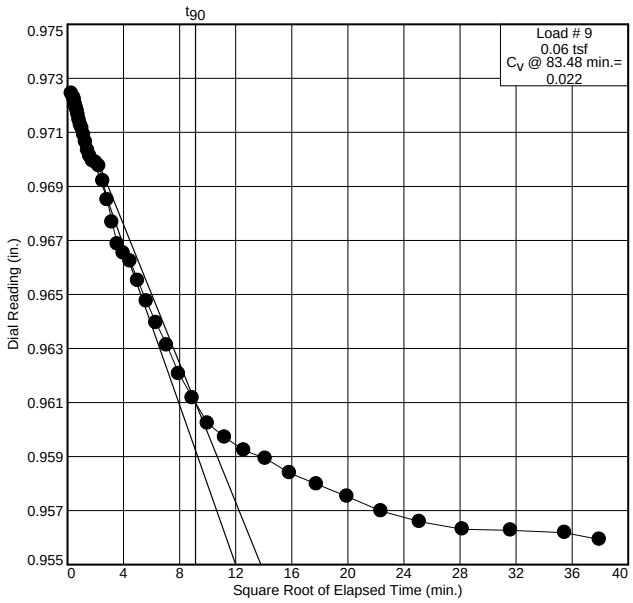


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Figure

Dial Reading vs. Time

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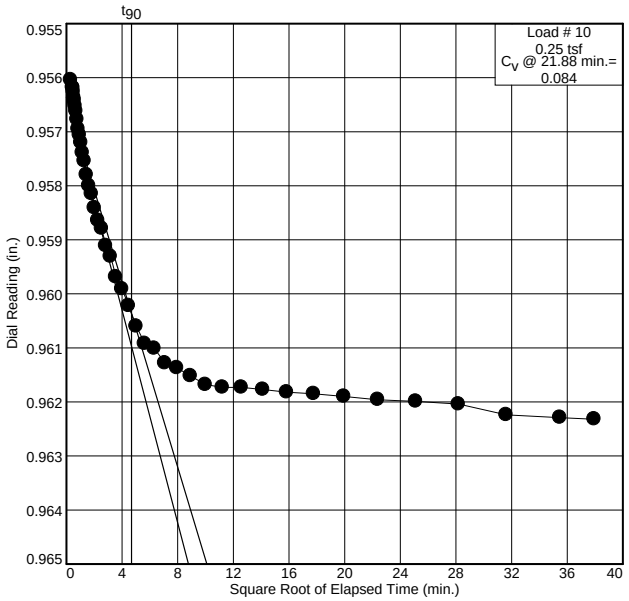
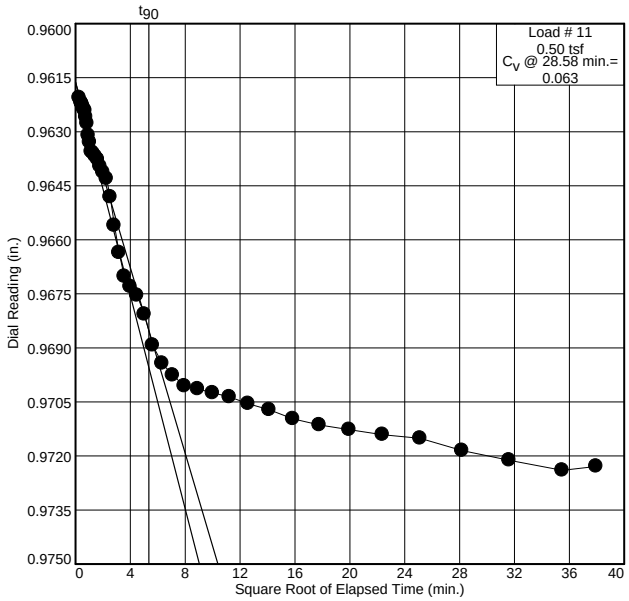
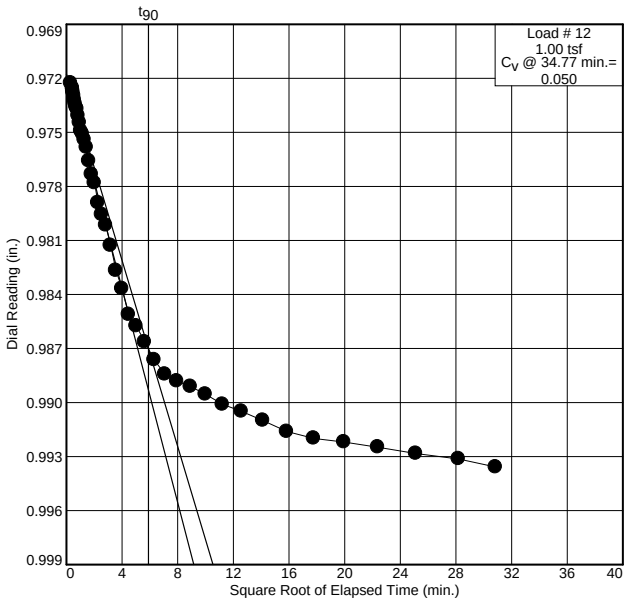
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-12 Depth: 12'-14'







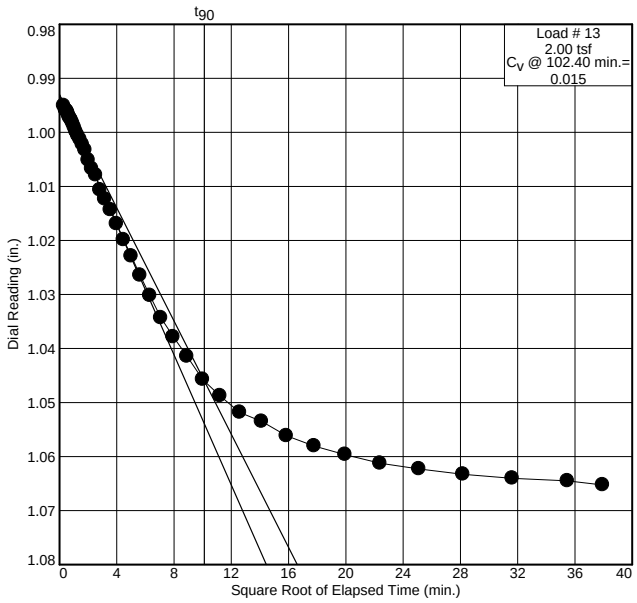


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Figure

Dial Reading vs. Time

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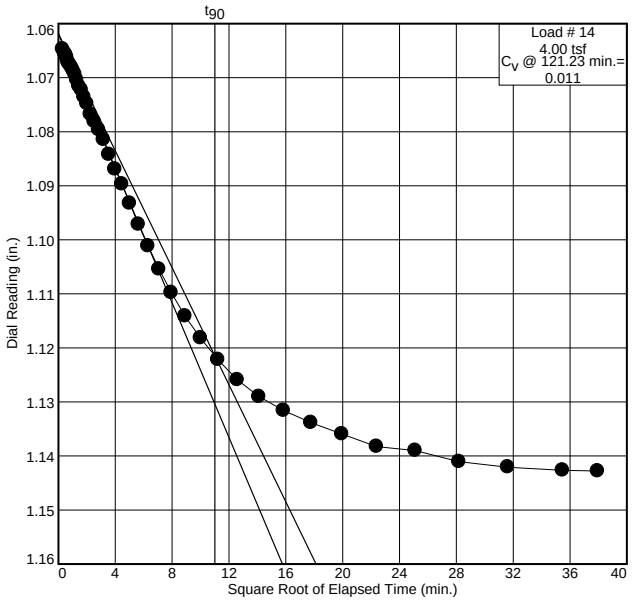

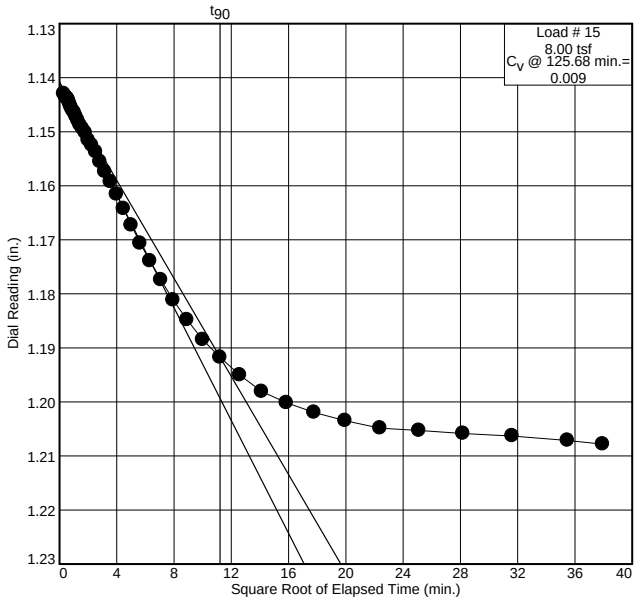

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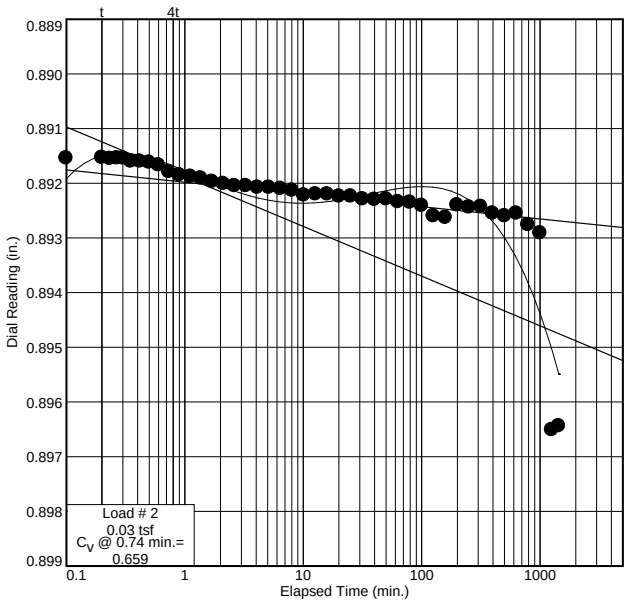
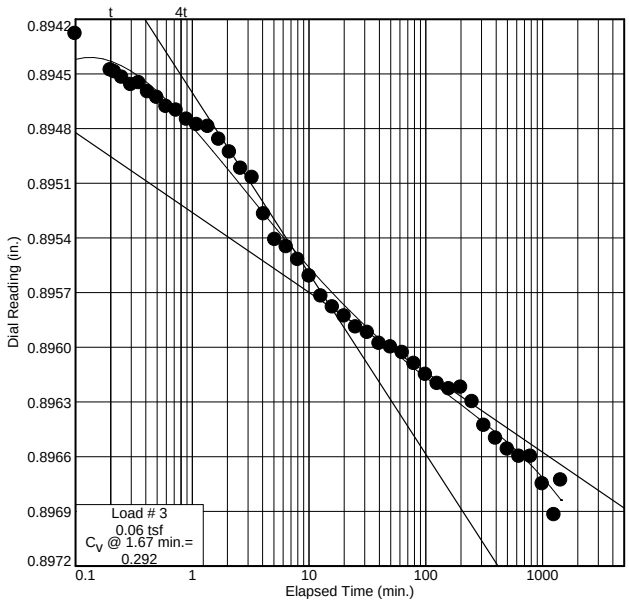
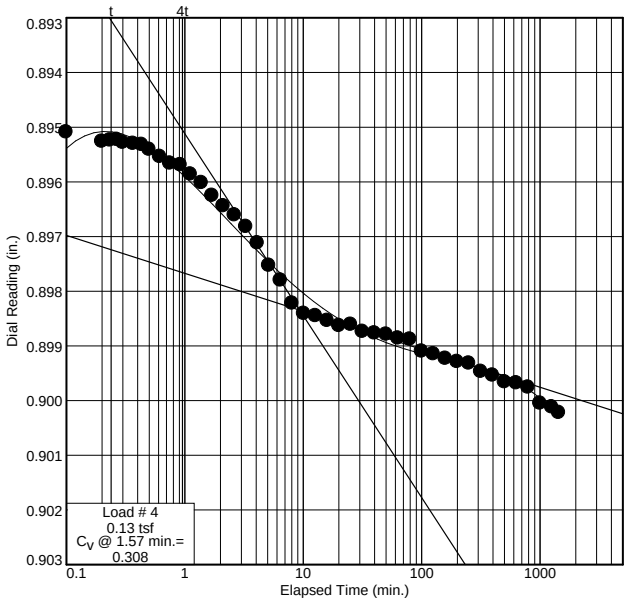
Source of Sample: B-12 Depth: 12'-14'







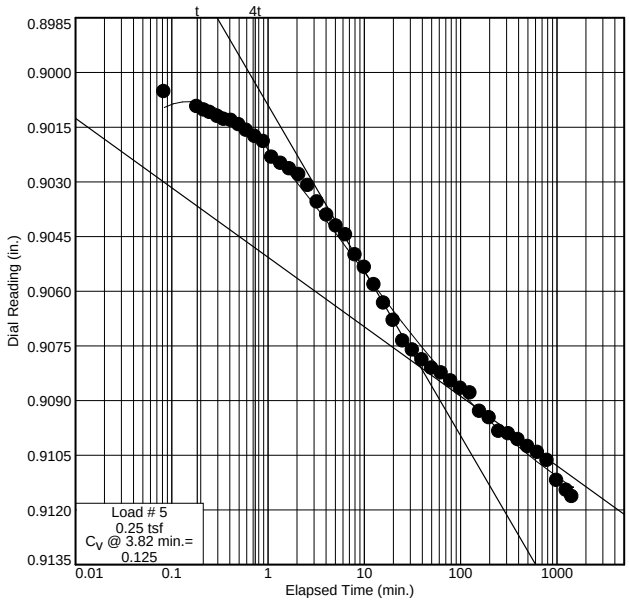


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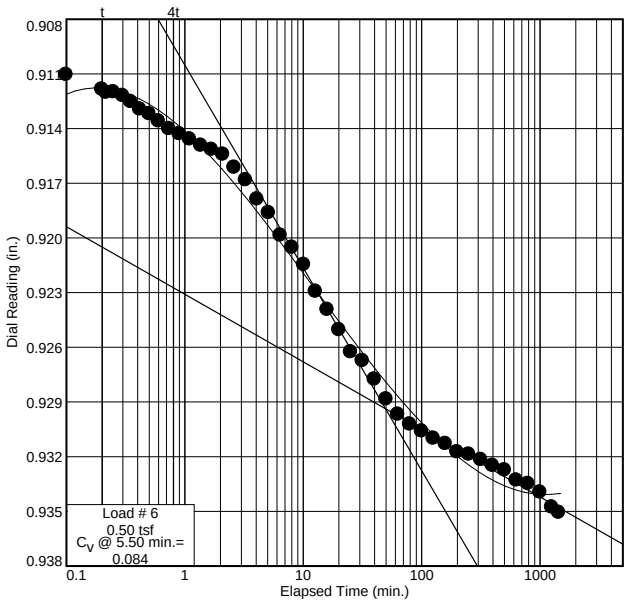
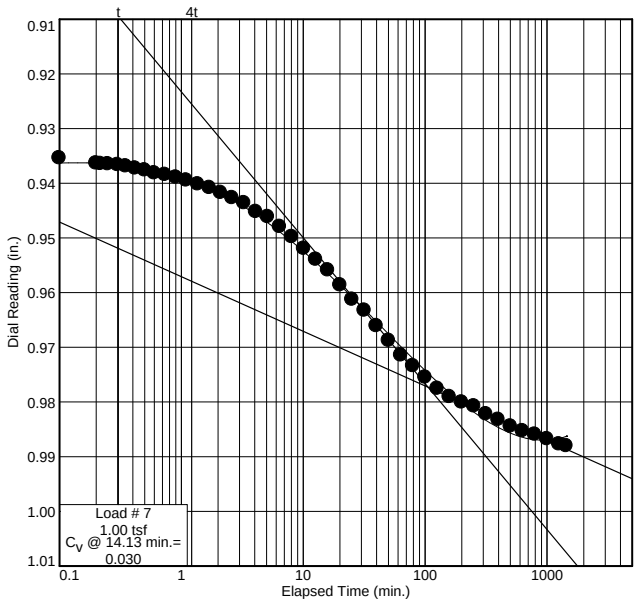
Figure

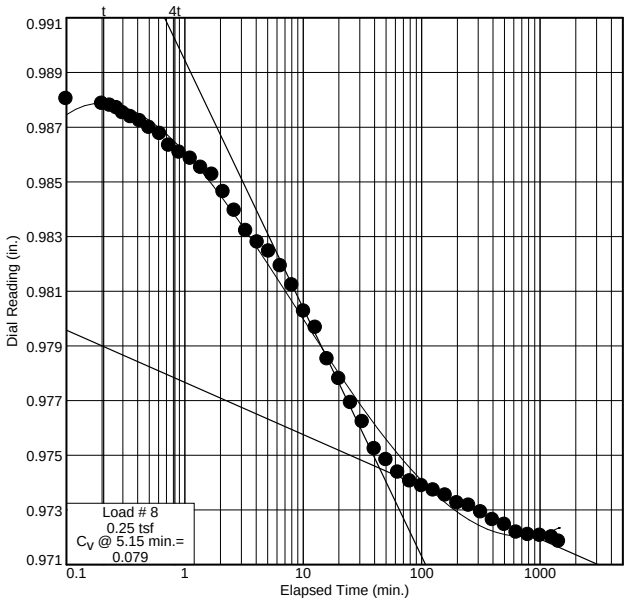
Dial Reading vs. Time

Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-12 Depth: 12'-14'







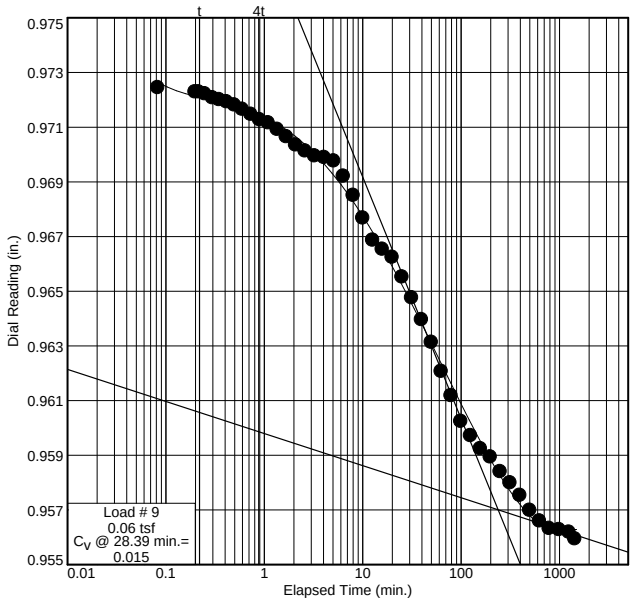


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Figure

Dial Reading vs. Time

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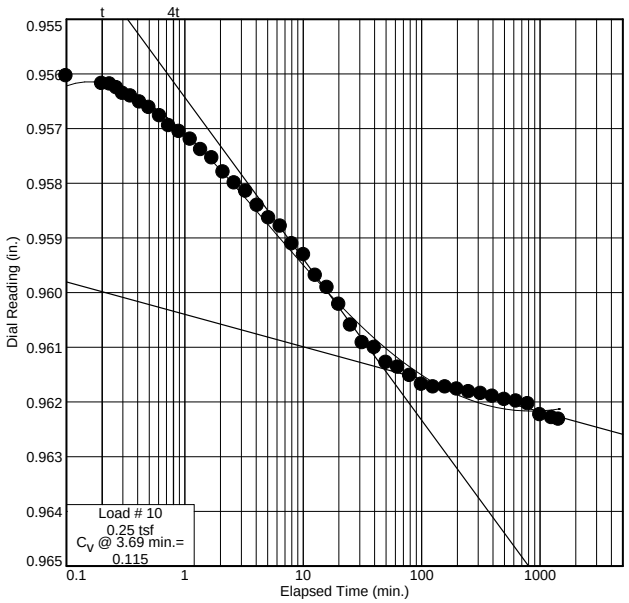
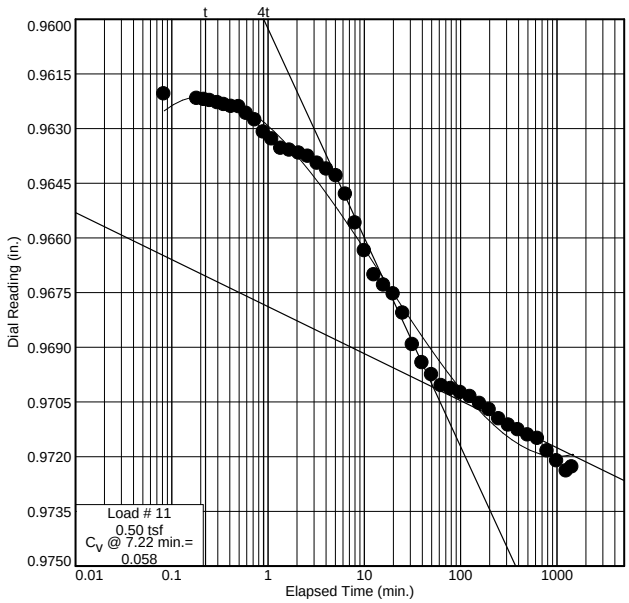
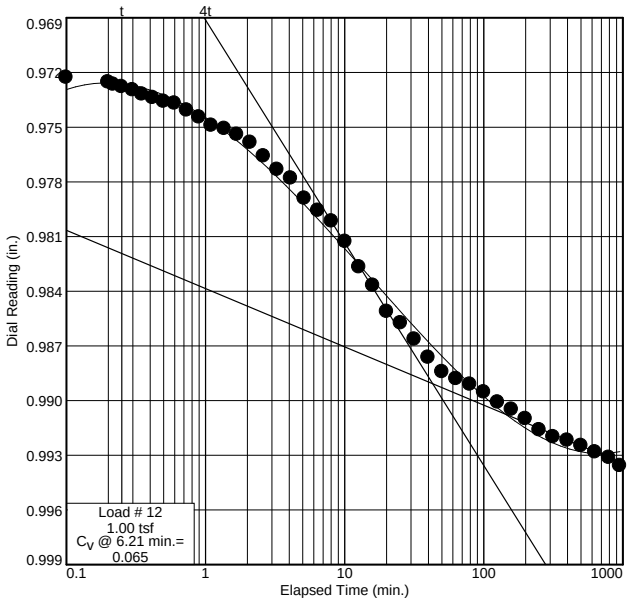
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-12 Depth: 12'-14'







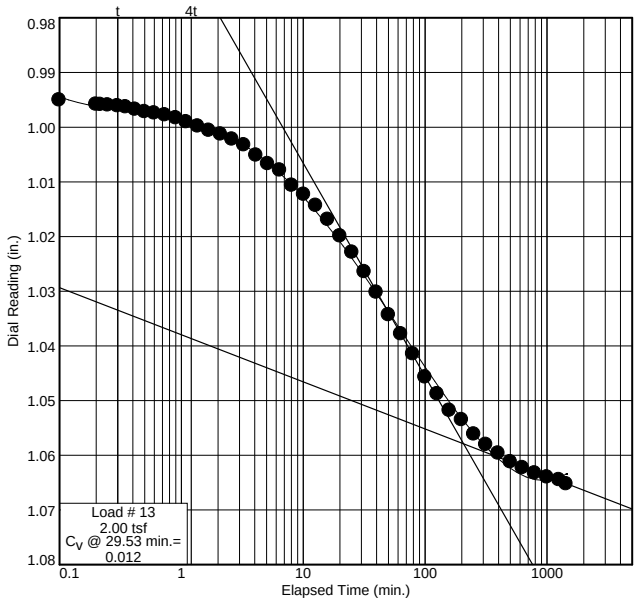


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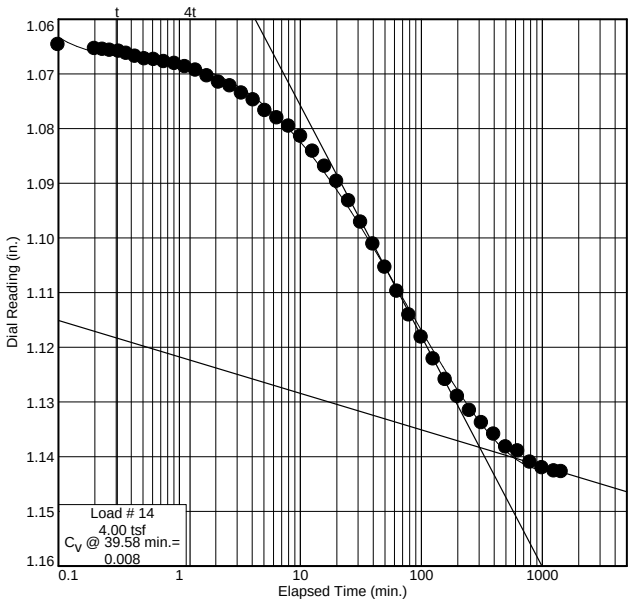
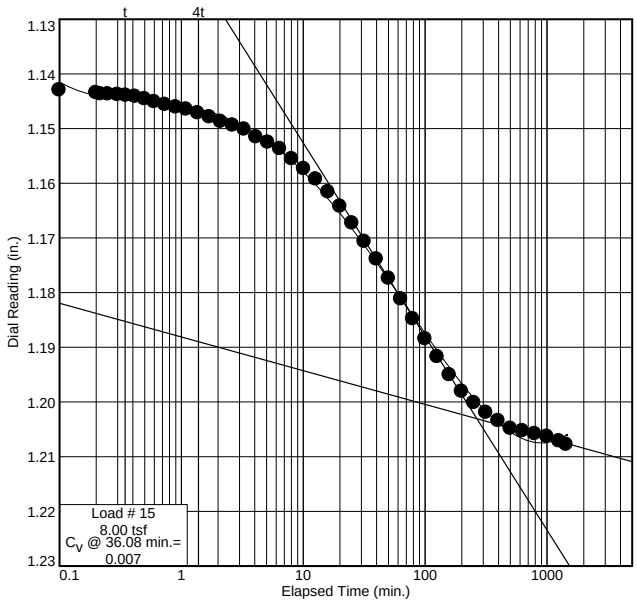
Figure

Dial Reading vs. Time

Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-12 Depth: 12'-14'





GeoEngineers

Figure

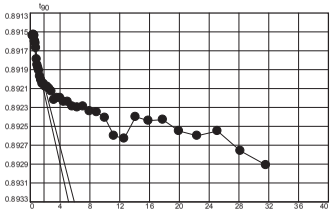
Pressure: 36.08 psf — **TEST READINGS** — **Load No. 1**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.89399	16	2.4667	0.89399	31	79.4000	0.89402
2	0.0333	0.89401	17	3.1167	0.89401	32	99.9667	0.89400
3	0.0667	0.89402	18	3.9333	0.89401	33	125.8667	0.89401
4	0.1000	0.89402	19	4.9667	0.89401	34	158.4667	0.89398
5	0.1333	0.89399	20	6.2667	0.89401	35	199.5000	0.89388
6	0.2000	0.89400	21	7.9000	0.89399	36	251.1667	0.89381
7	0.2667	0.89398	22	9.9500	0.89401	37	316.2000	0.89379
8	0.3500	0.89401	23	12.5500	0.89401	38	398.0833	0.89373
9	0.4500	0.89402	24	15.8000	0.89403	39	501.1667	0.89367
10	0.5833	0.89400	25	19.9167	0.89401	40	630.9333	0.89364
11	0.7333	0.89401	26	25.0833	0.89406	41	794.3000	0.89362
12	0.9500	0.89400	27	31.5833	0.89404	42	999.9833	0.89374
13	1.2000	0.89401	28	39.7667	0.89405	43	1258.9000	0.89389
14	1.5333	0.89399	29	50.0833	0.89406	44	1440.2833	0.89389
15	1.9500	0.89400	30	63.0667	0.89403			

Void Ratio = 1.630 **Swell =** 0.0%

Pressure: 62.50 psf — **TEST READINGS** — **Load No. 2**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.89154	21	6.4333	0.89210
2	0.1000	0.89154	22	8.0667	0.89213
3	0.2000	0.89153	23	10.1333	0.89222
4	0.2333	0.89155	24	12.7167	0.89220
5	0.2667	0.89154	25	15.9833	0.89220
6	0.3000	0.89154	26	20.0833	0.89224
7	0.3500	0.89160	27	25.2500	0.89224
8	0.4167	0.89160	28	31.7500	0.89229
9	0.5000	0.89162	29	39.9500	0.89230
10	0.6000	0.89167	30	50.2500	0.89229
11	0.7333	0.89179	31	63.2333	0.89234
12	0.9000	0.89185	32	79.5667	0.89235
13	1.1167	0.89188	33	100.1333	0.89241
14	1.3667	0.89191	34	126.0333	0.89260
15	1.7000	0.89197	35	158.6333	0.89263
16	2.1167	0.89201	36	199.6667	0.89240
17	2.6333	0.89205	37	251.3333	0.89244
18	3.2833	0.89205	38	316.3667	0.89243
19	4.1000	0.89208	39	398.2500	0.89255
20	5.1333	0.89208	40	501.3333	0.89260



CONSOLIDATION TEST DATA

9/15/2016

Client: CPRA
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, LA
Project Number: 16715-040-01
Location: B-12
Depth: 12'-14'
Material Description: Very soft gray clay with shell fragments
Liquid Limit: 85 **Plasticity Index:** 60
USCS: CH
Testing Remarks: Cv T90
Tested by: SLC **Checked by:** JMP

Test Specimen Data

NATURAL MOISTURE		VOID RATIO		AFTER TEST	
Wet w+t	= 163.41 g.	Spec. Gr.	= 2.744	Wet w+t	= 125.48 g.
Dry w+t	= 118.50 g.	Est. Ht. Solids	= 0.378 in.	Dry w+t	= 98.51 g.
Tare Wt.	= 40.47 g.	Init. V.R.	= 1.629	Tare Wt.	= 18.38 g.
Moisture	= 57.6 %	Init. Sat.	= 96.9 %	Moisture	= 33.7 %
				Dry Wt.	= 80.13 g.

UNIT WEIGHT		TEST START	
Height	= 0.995 in.	Height	= 0.995 in.
Diameter	= 2.496 in.	Diameter	= 2.496 in.
Weight	= 131.18 g.		
Dry Dens.	= 65.1 pcf		

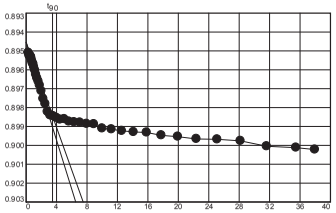
End-Of-Load Summary

Pressure (psf)	Final Dial (in.)	Deformation (in.)	C_v (ft.2/day)	C_α	Void Ratio	% Strain
start	0.89399	0.00000			1.629	
36.08	0.89389	-0.00010		0.000	1.630	0.0 Swell
62.50	0.89291	-0.00108	0.618		1.632	0.1 Swell
125.00	0.89673	0.00274	0.184		1.622	0.3 Comprs.
250.00	0.90022	0.00623	0.173		1.613	0.6 Comprs.
500.00	0.91164	0.01765	0.077		1.583	1.8 Comprs.
1000.00	0.93507	0.04108	0.067		1.521	4.1 Comprs.
2000.00	0.98805	0.09406	0.033		1.381	9.5 Comprs.
500.00	0.97185	0.07786	0.060		1.424	7.8 Comprs.
125.00	0.95593	0.06194	0.022		1.466	6.2 Comprs.
500.00	0.96232	0.06833	0.084		1.449	6.9 Comprs.
1000.00	0.97229	0.07830	0.063		1.422	7.9 Comprs.
2000.00	0.99358	0.09959	0.050		1.366	10.0 Comprs.
4000.00	1.06526	0.17127	0.015		1.177	17.2 Comprs.
8000.00	1.14279	0.24880	0.011		0.972	25.0 Comprs.
16000.00	1.20781	0.31382	0.009		0.800	31.5 Comprs.

Compression index (C_c), tsf = 0.68 **Preconsolidation pressure (P_p), tsf =** 0.7 **Void ratio at P_p (e_m) =** 1.472
Recompression index (C_r) = 0.23

Pressure: 250.00 psf — **TEST READINGS** — **Load No. 4**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.89479	24	12.7167	0.89845
2	0.1000	0.89509	25	15.9833	0.89854
3	0.2000	0.89526	26	20.0833	0.89863
4	0.2333	0.89524	27	25.2500	0.89861
5	0.2667	0.89523	28	31.7500	0.89874
6	0.3000	0.89528	29	39.9500	0.89877
7	0.3667	0.89530	30	50.2500	0.89879
8	0.4333	0.89532	31	63.2333	0.89886
9	0.5000	0.89541	32	79.5667	0.89888
10	0.6167	0.89554	33	100.1333	0.89910
11	0.7500	0.89566	34	126.0333	0.89915
12	0.9167	0.89569	35	158.6333	0.89923
13	1.1167	0.89586	36	199.6667	0.89929
14	1.3833	0.89602	37	251.3333	0.89932
15	1.7000	0.89625	38	316.3667	0.89947
16	2.1167	0.89644	39	398.2500	0.89954
17	2.6333	0.89661	40	501.3333	0.89966
18	3.2833	0.89682	41	631.1000	0.89968
19	4.1000	0.89712	42	794.4667	0.89976
20	5.1333	0.89753	43	1000.1500	0.90005
21	6.4333	0.89780	44	1259.0667	0.90012
22	8.0667	0.89822	45	1440.4333	0.90022
23	10.1333	0.89841			

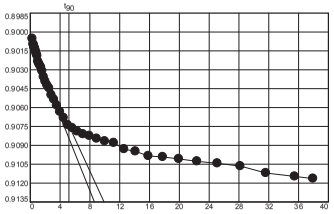


Void Ratio = 1.613 **Compression =** 0.6%

D_0 = 0.8945 **D_{90} =** 0.8984 **D_{100} =** 0.8989 **C_v at 12.03 min. =** 0.173 ft.^{2}/day

Pressure: 500.00 psf — **TEST READINGS** — **Load No. 5**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.89939	12	0.9000	0.90190
2	0.0833	0.90053	13	1.1000	0.90233
3	0.1833	0.90094	14	1.3667	0.90250
4	0.2167	0.90104	15	1.6833	0.90265
5	0.2500	0.90110	16	2.1000	0.90281
6	0.3000	0.90121	17	2.6167	0.90311
7	0.3500	0.90129	18	3.2667	0.90356
8	0.4167	0.90132	19	4.1000	0.90392
9	0.5000	0.90144	20	5.1333	0.90422
10	0.6000	0.90159	21	6.4333	0.90446
11	0.7333	0.90176	22	8.0667	0.90501



Pressure: 62.50 psf — **TEST READINGS (continued)** — **Load No. 2**

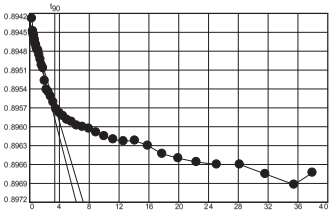
No.	Elapsed Time	Dial Reading
41	631.1000	0.89255
42	794.4833	0.89276
43	1000.1500	0.89291

Void Ratio = 1.632 **Swell =** 0.1%

D_0 = 0.8915 **D_{90} =** 0.8921 **D_{100} =** 0.8921 **C_v at 3.41 min. =** 0.618 ft.^{2}/day

Pressure: 125.00 psf — **TEST READINGS** — **Load No. 3**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.89291	24	12.7167	0.89572
2	0.1000	0.89428	25	15.9667	0.89578
3	0.2000	0.89448	26	20.0833	0.89583
4	0.2167	0.89449	27	25.2500	0.89589
5	0.2500	0.89452	28	31.7500	0.89592
6	0.3000	0.89456	29	39.9333	0.89598
7	0.3500	0.89455	30	50.2500	0.89600
8	0.4167	0.89460	31	63.2333	0.89603
9	0.5000	0.89463	32	79.5667	0.89609
10	0.6000	0.89468	33	100.1333	0.89615
11	0.7333	0.89470	34	126.0333	0.89620
12	0.9000	0.89475	35	158.6333	0.89623
13	1.1000	0.89478	36	199.6667	0.89622
14	1.3667	0.89479	37	251.3333	0.89630
15	1.7000	0.89486	38	316.3667	0.89643
16	2.1000	0.89493	39	398.2500	0.89650
17	2.6167	0.89502	40	501.3333	0.89656
18	3.2833	0.89507	41	631.1000	0.89660
19	4.1000	0.89527	42	794.4667	0.89660
20	5.1333	0.89541	43	1000.1500	0.89675
21	6.4333	0.89545	44	1259.0667	0.89692
22	8.0667	0.89552	45	1440.0167	0.89673
23	10.1167	0.89561			

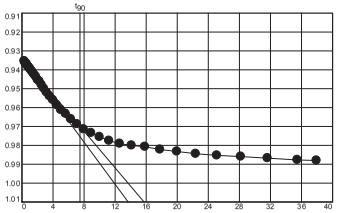


Void Ratio = 1.622 **Compression =** 0.3%

D_0 = 0.8943 **D_{90} =** 0.8957 **D_{100} =** 0.8958 **C_v at 11.38 min. =** 0.184 ft.^{2}/day

Pressure: 2000.00 psf — **TEST READINGS** — **Load No. 7**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.93279	24	12.7000	0.95393
2	0.1000	0.93539	25	15.9667	0.95591
3	0.2000	0.93633	26	20.0667	0.95865
4	0.2167	0.93645	27	25.2333	0.96125
5	0.2500	0.93651	28	31.7500	0.96326
6	0.3000	0.93662	29	39.9333	0.96608
7	0.3500	0.93687	30	50.2500	0.96877
8	0.4167	0.93728	31	63.2167	0.97146
9	0.5000	0.93762	32	79.5667	0.97341
10	0.6000	0.93813	33	100.1333	0.97551
11	0.7333	0.93844	34	126.0167	0.97753
12	0.9000	0.93894	35	158.6167	0.97908
13	1.1000	0.93945	36	199.6667	0.98006
14	1.3667	0.94017	37	251.3333	0.98075
15	1.7000	0.94082	38	316.3667	0.98221
16	2.1000	0.94173	39	398.2500	0.98323
17	2.6167	0.94267	40	501.3333	0.98445
18	3.2667	0.94359	41	631.1000	0.98531
19	4.0833	0.94522	42	794.4667	0.98594
20	5.1167	0.94615	43	1000.1500	0.98677
21	6.4167	0.94795	44	1259.0667	0.98772
22	8.0667	0.94982	45	1440.0167	0.98805
23	10.1167	0.95194			

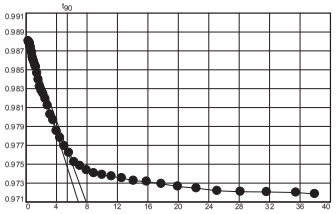


Void Ratio = 1.381 **Compression =** 9.5%

D_0 = 0.9337 **D_{90} =** 0.9700 **D_{100} =** 0.9740 **C_v at 55.88 min. =** 0.033 ft.^{2}/day

Pressure: 500.00 psf — **TEST READINGS** — **Load No. 8**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.99064	12	0.9000	0.98608
2	0.1000	0.98804	13	1.1167	0.98585
3	0.2000	0.98786	14	1.3667	0.98552
4	0.2333	0.98779	15	1.7000	0.98527
5	0.2667	0.98770	16	2.1167	0.98463
6	0.3000	0.98752	17	2.6333	0.98395
7	0.3500	0.98737	18	3.2833	0.98321
8	0.4167	0.98723	19	4.1000	0.98279
9	0.5000	0.98698	20	5.1333	0.98246
10	0.6167	0.98676	21	6.4333	0.98192
11	0.7333	0.98633	22	8.0667	0.98122



Pressure: 500.00 psf — **TEST READINGS (continued)** — **Load No. 5**

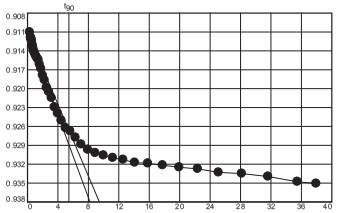
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
23	10.1167	0.90535	33	100.1333	0.90867	43	1000.1500	0.91120
24	12.7167	0.90583	34	126.0167	0.90880	44	1259.0667	0.91147
25	15.9667	0.90633	35	158.6167	0.90930	45	1440.1000	0.91164
26	20.0833	0.90681	36	199.6667	0.90948			
27	25.2500	0.90737	37	251.3333	0.90985			
28	31.7500	0.90762	38	316.3667	0.90992			
29	39.9333	0.90789	39	398.2500	0.91008			
30	50.2500	0.90812	40	501.3333	0.91027			
31	63.2167	0.90825	41	631.1000	0.91043			
32	79.5667	0.90847	42	794.4667	0.91065			

Void Ratio = 1.583 **Compression =** 1.8%

D_0 = 0.9008 **D_{90} =** 0.9074 **D_{100} =** 0.9082 **C_v at 26.80 min. =** 0.077 ft.^{2}/day

Pressure: 1000.00 psf — **TEST READINGS** — **Load No. 6**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.90910	24	12.7000	0.92294
2	0.1000	0.91104	25	15.9667	0.92394
3	0.2000	0.91185	26	20.0667	0.92505
4	0.2167	0.91202	27	25.2333	0.92626
5	0.2500	0.91200	28	31.7333	0.92674
6	0.3000	0.91220	29	39.9333	0.92776
7	0.3500	0.91253	30	50.2333	0.92885
8	0.4167	0.91294	31	63.2167	0.92968
9	0.5000	0.91319	32	79.5500	0.93022
10	0.6000	0.91359	33	100.1167	0.93060
11	0.7333	0.91402	34	126.0167	0.93100
12	0.9000	0.91429	35	158.6167	0.93129
13	1.1000	0.91458	36	199.6500	0.93175
14	1.3667	0.91493	37	251.3167	0.93188
15	1.6833	0.91516	38	316.3500	0.93217
16	2.1000	0.91542	39	398.2333	0.93249
17	2.6167	0.91614	40	501.3167	0.93274
18	3.2667	0.91683	41	631.0833	0.93330
19	4.0833	0.91788	42	794.4667	0.93349
20	5.1167	0.91863	43	1000.1333	0.93396
21	6.4167	0.91986	44	1259.0667	0.93478
22	8.0500	0.92053	45	1440.4000	0.93507
23	10.1167	0.92147			

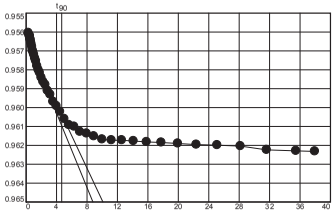


Void Ratio = 1.521 **Compression =** 4.1%

D_0 = 0.9111 **D_{90} =** 0.9266 **D_{100} =** 0.9283 **C_v at 29.64 min. =** 0.067 ft.^{2}/day

Pressure: 500.00 psf — **TEST READINGS** — **Load No. 10**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.95548	24	12.7167	0.95969
2	0.1000	0.95604	25	15.9833	0.95991
3	0.2000	0.95618	26	20.0833	0.96022
4	0.2333	0.95619	27	25.2500	0.96060
5	0.2667	0.95626	28	31.7500	0.96092
6	0.3000	0.95636	29	39.9500	0.96101
7	0.3500	0.95641	30	50.2500	0.96128
8	0.4167	0.95652	31	63.2333	0.96137
9	0.5000	0.95662	32	79.5667	0.96152
10	0.6167	0.95677	33	100.1333	0.96168
11	0.7333	0.95695	34	126.0333	0.96173
12	0.9000	0.95706	35	158.6333	0.96173
13	1.1167	0.95720	36	199.6667	0.96177
14	1.3667	0.95739	37	251.3333	0.96182
15	1.7000	0.95754	38	316.3667	0.96185
16	2.1167	0.95780	39	398.2500	0.96190
17	2.6333	0.95800	40	501.3333	0.96196
18	3.2833	0.95815	41	631.1000	0.96199
19	4.1000	0.95841	42	794.4667	0.96204
20	5.1333	0.95864	43	1000.1500	0.96224
21	6.4333	0.95879	44	1259.0833	0.96229
22	8.0667	0.95911	45	1440.2667	0.96232
23	10.1333	0.95931			

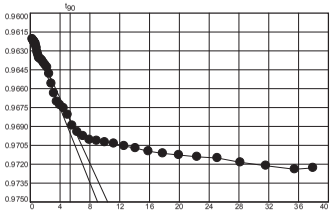


Void Ratio = 1.449 **Compression =** 6.9%

D_0 = 0.9564 D_{90} = 0.9604 D_{100} = 0.9608 C_v **at 21.88 min. =** 0.084 ft.^{2}/day

Pressure: 1000.00 psf — **TEST READINGS** — **Load No. 11**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.96011	12	0.9000	0.96310
2	0.0833	0.96206	13	1.1000	0.96329
3	0.1833	0.96218	14	1.3667	0.96355
4	0.2167	0.96221	15	1.6833	0.96360
5	0.2500	0.96224	16	2.1000	0.96368
6	0.3000	0.96230	17	2.6167	0.96377
7	0.3500	0.96235	18	3.2667	0.96396
8	0.4167	0.96240	19	4.0833	0.96412
9	0.5000	0.96241	20	5.1167	0.96430
10	0.6000	0.96259	21	6.4167	0.96481
11	0.7333	0.96277	22	8.0500	0.96560



Pressure: 500.00 psf — **TEST READINGS (continued)** — **Load No. 8**

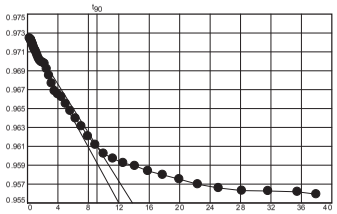
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
23	10.1333	0.98026	33	100.1333	0.97388	43	1000.1500	0.97206
24	12.7167	0.97967	34	126.0333	0.97372	44	1259.0833	0.97200
25	15.9833	0.97852	35	158.6333	0.97353	45	1440.4667	0.97185
26	20.0833	0.97780	36	199.6667	0.97325			
27	25.2500	0.97692	37	251.3333	0.97316			
28	31.7500	0.97622	38	316.3667	0.97292			
29	39.9500	0.97523	39	398.2500	0.97264			
30	50.2500	0.97483	40	501.3333	0.97246			
31	63.2333	0.97437	41	631.1000	0.97218			
32	79.5667	0.97405	42	794.4667	0.97209			

Void Ratio = 1.424 **Compression =** 7.8%

D_0 = 0.9884 D_{90} = 0.9765 D_{100} = 0.9752 C_v **at 29.26 min. =** 0.060 ft.^{2}/day

Pressure: 125.00 psf — **TEST READINGS** — **Load No. 9**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.97339	24	12.7000	0.96686
2	0.0833	0.97244	25	15.9667	0.96653
3	0.2000	0.97228	26	20.0667	0.96623
4	0.2167	0.97228	27	25.2333	0.96551
5	0.2500	0.97221	28	31.7500	0.96475
6	0.3000	0.97207	29	39.9333	0.96395
7	0.3500	0.97200	30	50.2500	0.96312
8	0.4167	0.97192	31	63.2167	0.96206
9	0.5000	0.97180	32	79.5667	0.96117
10	0.6000	0.97165	33	100.1333	0.96023
11	0.7333	0.97146	34	126.0167	0.95971
12	0.9000	0.97127	35	158.6167	0.95923
13	1.1000	0.97115	36	199.6500	0.95893
14	1.3667	0.97091	37	251.3167	0.95839
15	1.6833	0.97064	38	316.3667	0.95798
16	2.1000	0.97034	39	398.2500	0.95752
17	2.6167	0.97012	40	501.3333	0.95698
18	3.2667	0.96994	41	631.1000	0.95659
19	4.0833	0.96988	42	794.4667	0.95631
20	5.1167	0.96975	43	1000.1500	0.95627
21	6.4167	0.96920	44	1259.0667	0.95618
22	8.0500	0.96850	45	1440.4667	0.95593
23	10.1167	0.96767			

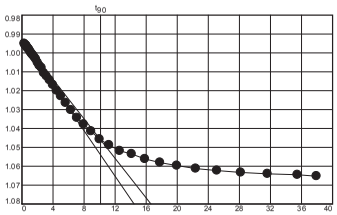


Void Ratio = 1.466 **Compression =** 6.2%

D_0 = 0.9727 D_{90} = 0.9610 D_{100} = 0.9597 C_v **at 83.48 min. =** 0.022 ft.^{2}/day

Pressure: 4000.00 psf — **TEST READINGS** — **Load No. 13**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.99133	24	12.7167	1.01435
2	0.1000	0.99508	25	15.9667	1.01693
3	0.2000	0.99586	26	20.0833	1.01991
4	0.2167	0.99591	27	25.2500	1.02291
5	0.2500	0.99599	28	31.7500	1.02648
6	0.3000	0.99614	29	39.9333	1.03022
7	0.3500	0.99635	30	50.2500	1.03434
8	0.4167	0.99676	31	63.2333	1.03785
9	0.5000	0.99720	32	79.5667	1.04149
10	0.6000	0.99745	33	100.1333	1.04574
11	0.7333	0.99781	34	126.0333	1.04879
12	0.9000	0.99833	35	158.6333	1.05184
13	1.1000	0.99908	36	199.7667	1.05352
14	1.3667	0.99985	37	251.4333	1.05616
15	1.6833	1.00061	38	316.4667	1.05806
16	2.1000	1.00130	39	398.3500	1.05965
17	2.6167	1.00222	40	501.4333	1.06124
18	3.2667	1.00328	41	631.2000	1.06230
19	4.1000	1.00514	42	794.5833	1.06329
20	5.1333	1.00672	43	1000.2500	1.06402
21	6.4333	1.00789	44	1259.1833	1.06450
22	8.0667	1.01066	45	1440.0167	1.06526
23	10.1167	1.01234			

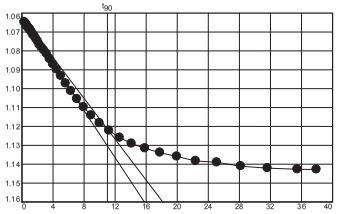


Void Ratio = 1.177 **Compression =** 17.2%

D_0 = 0.9930 D_{90} = 1.0460 D_{100} = 1.0519 C_v **at 102.40 min. =** 0.015 ft.^{2}/day

Pressure: 8000.00 psf — **TEST READINGS** — **Load No. 14**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	1.06111	12	0.9167	1.06816
2	0.1000	1.06471	13	1.1167	1.06873
3	0.2000	1.06540	14	1.3667	1.06935
4	0.2333	1.06557	15	1.7000	1.07042
5	0.2667	1.06574	16	2.1167	1.07157
6	0.3167	1.06589	17	2.6333	1.07224
7	0.3667	1.06632	18	3.2833	1.07355
8	0.4333	1.06683	19	4.1000	1.07481
9	0.5167	1.06730	20	5.1333	1.07676
10	0.6167	1.06743	21	6.4333	1.07809
11	0.7500	1.06780	22	8.0667	1.07962



Pressure: 1000.00 psf — **TEST READINGS (continued)** — **Load No. 11**

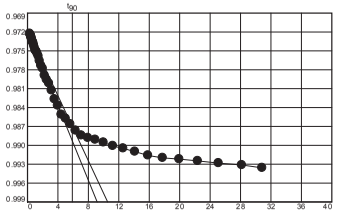
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
23	10.1167	0.96636	33	100.1333	0.97025	43	1000.1333	0.97212
24	12.7000	0.96702	34	126.0167	0.97036	44	1259.0667	0.97240
25	15.9667	0.96730	35	158.6167	0.97055	45	1440.2000	0.97229
26	20.0667	0.96754	36	199.6500	0.97072			
27	25.2333	0.96807	37	251.3167	0.97097			
28	31.7333	0.96893	38	316.3667	0.97114			
29	39.9333	0.96943	39	398.2500	0.97127			
30	50.2333	0.96976	40	501.3333	0.97141			
31	63.2167	0.97006	41	631.1000	0.97151			
32	79.5667	0.97014	42	794.4667	0.97185			

Void Ratio = 1.422 **Compression =** 7.9%

D_0 = 0.9616 D_{90} = 0.9685 D_{100} = 0.9693 C_v **at 28.58 min. =** 0.063 ft.^{2}/day

Pressure: 2000.00 psf — **TEST READINGS** — **Load No. 12**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.97069	23	10.1167	0.98128
2	0.1000	0.97227	24	12.7167	0.98268
3	0.2000	0.97253	25	15.9667	0.98368
4	0.2167	0.97266	26	20.0833	0.98512
5	0.2500	0.97279	27	25.2500	0.98575
6	0.3000	0.97296	28	31.7500	0.98664
7	0.3500	0.97319	29	39.9333	0.98764
8	0.4167	0.97339	30	50.2500	0.98843
9	0.5000	0.97359	31	63.2333	0.98881
10	0.6000	0.97370	32	79.5667	0.98911
11	0.7333	0.97407	33	100.1333	0.98954
12	0.9000	0.97446	34	126.0333	0.99010
13	1.1000	0.97491	35	158.6333	0.99049
14	1.3667	0.97508	36	199.6667	0.99100
15	1.6833	0.97541	37	251.3333	0.99161
16	2.1000	0.97584	38	316.3667	0.99199
17	2.6167	0.97659	39	398.2500	0.99219
18	3.2833	0.97733	40	501.3333	0.99248
19	4.1000	0.97781	41	631.1000	0.99283
20	5.1333	0.97891	42	794.4833	0.99313
21	6.4333	0.97957	43	951.8000	0.99358
22	8.0667	0.98016			



Void Ratio = 1.366 **Compression =** 10.0%

D_0 = 0.9718 D_{90} = 0.9870 D_{100} = 0.9887 C_v **at 34.77 min. =** 0.050 ft.^{2}/day

Pressure: 8000.00 psf — **TEST READINGS (continued)** — **Load No. 14**

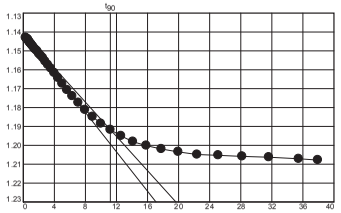
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
23	10.1333	1.08147	33	100.1500	1.11820	43	1000.1667	1.14208
24	12.7167	1.08421	34	126.0333	1.12219	44	1259.0833	1.14267
25	15.9833	1.08695	35	158.6333	1.12592	45	1440.2500	1.14279
26	20.0833	1.08972	36	199.6667	1.12904			
27	25.2500	1.09325	37	251.3333	1.13160			
28	31.7500	1.09717	38	316.3833	1.13385			
29	39.9500	1.10117	39	398.2667	1.13594			
30	50.2500	1.10543	40	501.3500	1.13826			
31	63.2333	1.10978	41	631.1167	1.13900			
32	79.5667	1.11415	42	794.4833	1.14106			

Void Ratio = 0.972 **Compression =** 25.0%

D_0 = 1.0619 D_{90} = 1.1215 D_{100} = 1.1281 C_V **at 121.23 min. =** 0.011 ft.^{2}/day

Pressure: 16000.00 psf — **TEST READINGS** — **Load No. 15**

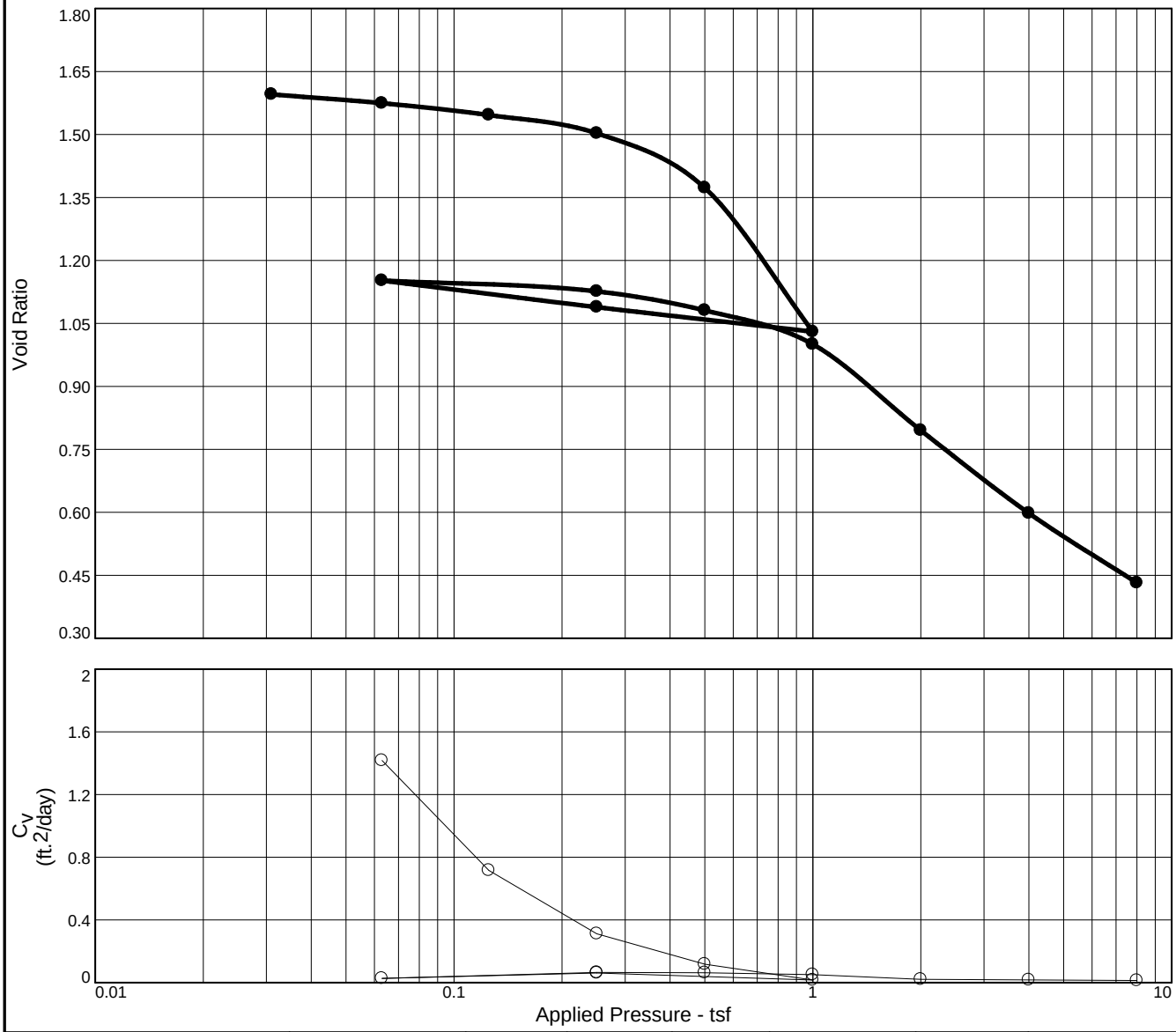
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	1.13875	24	12.7167	1.15927
2	0.1000	1.14298	25	15.9833	1.16160
3	0.2000	1.14347	26	20.0833	1.16426
4	0.2167	1.14369	27	25.2500	1.16730
5	0.2500	1.14372	28	31.7500	1.17068
6	0.3000	1.14380	29	39.9500	1.17391
7	0.3500	1.14395	30	50.2500	1.17742
8	0.4167	1.14416	31	63.2333	1.18119
9	0.5000	1.14460	32	79.5833	1.18484
10	0.6000	1.14513	33	100.1500	1.18850
11	0.7333	1.14564	34	126.0333	1.19176
12	0.9000	1.14611	35	158.6333	1.19505
13	1.1000	1.14649	36	199.6667	1.19808
14	1.3667	1.14717	37	251.3333	1.20016
15	1.7000	1.14790	38	316.3833	1.20196
16	2.1000	1.14875	39	398.2667	1.20347
17	2.6333	1.14943	40	501.3500	1.20487
18	3.2833	1.15017	41	631.1167	1.20529
19	4.1000	1.15156	42	794.4833	1.20585
20	5.1333	1.15252	43	1000.1667	1.20631
21	6.4333	1.15373	44	1259.1000	1.20714
22	8.0667	1.15556	45	1440.1167	1.20781
23	10.1167	1.15738			



Void Ratio = 0.800 **Compression =** 31.5%

D_0 = 1.1409 D_{90} = 1.1917 D_{100} = 1.1974 C_V **at 125.68 min. =** 0.009 ft.^{2}/day

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture							
90.5 %	55.6 %	62.5	47	26	2.604	0.5	1.16	1.601

MATERIAL DESCRIPTION	USCS	AASHTO
Soft gray clay with silt seams	(CL)	

Project No. 16715-040-01 **Client:** CPRA

Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

Source of Sample: B-13 **Depth:** 18' - 20'

Remarks:
Cv at T90

GEOENGINEERS

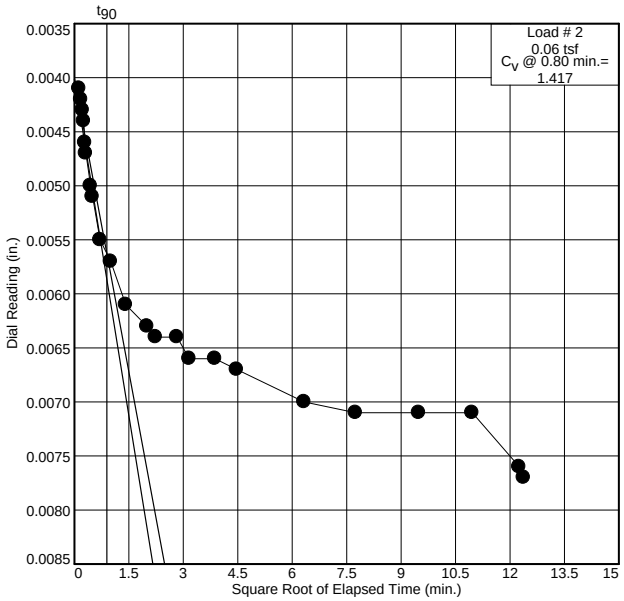
Figure

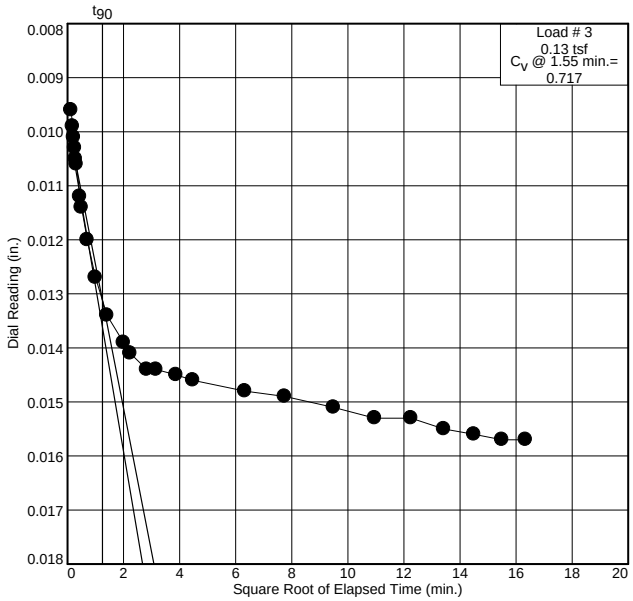
Tested By: SLC **Checked By:** KLA/JMP

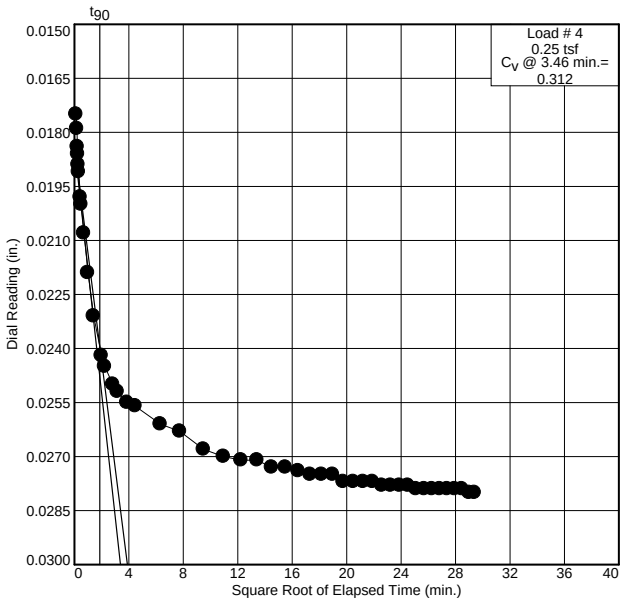
Dial Reading vs. Time

Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-13 Depth: 18' - 20'







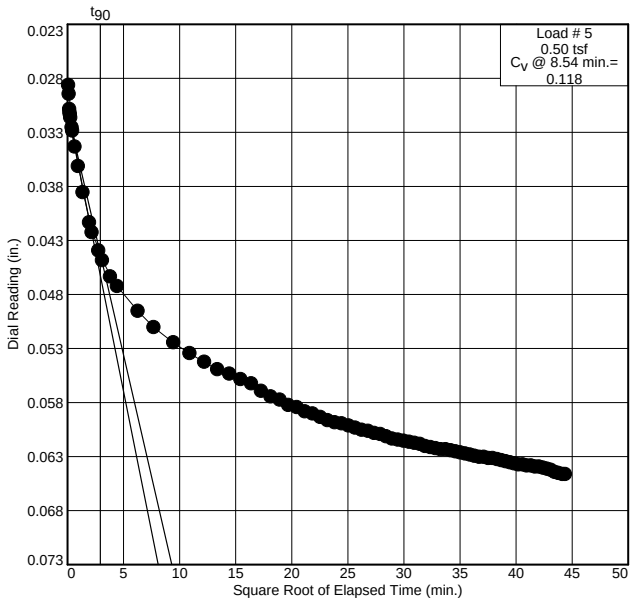


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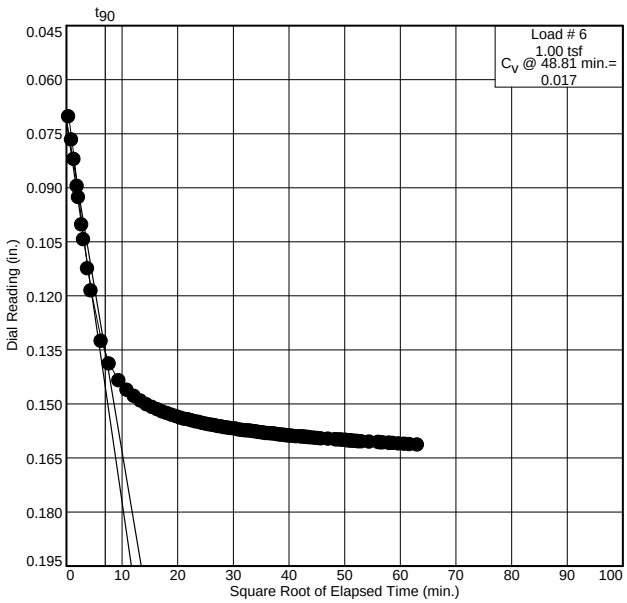
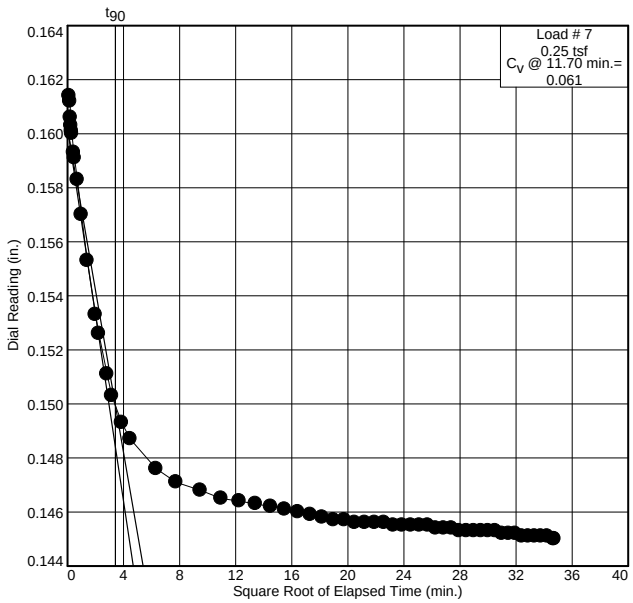
Figure

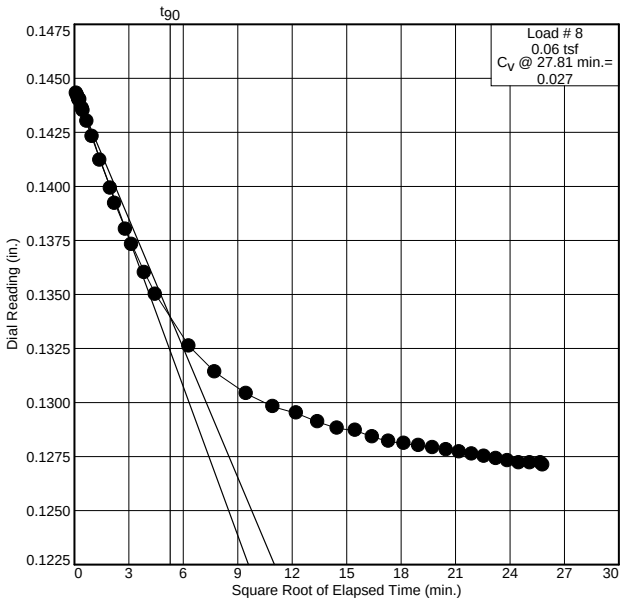
Dial Reading vs. Time

Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-13 Depth: 18' - 20'







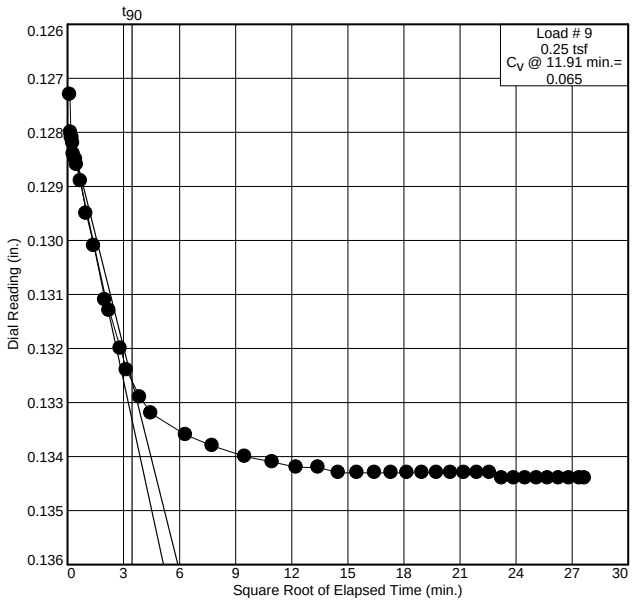


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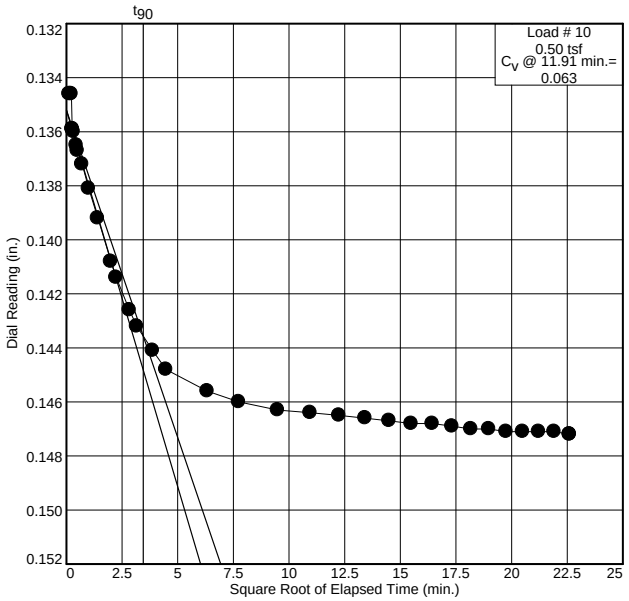
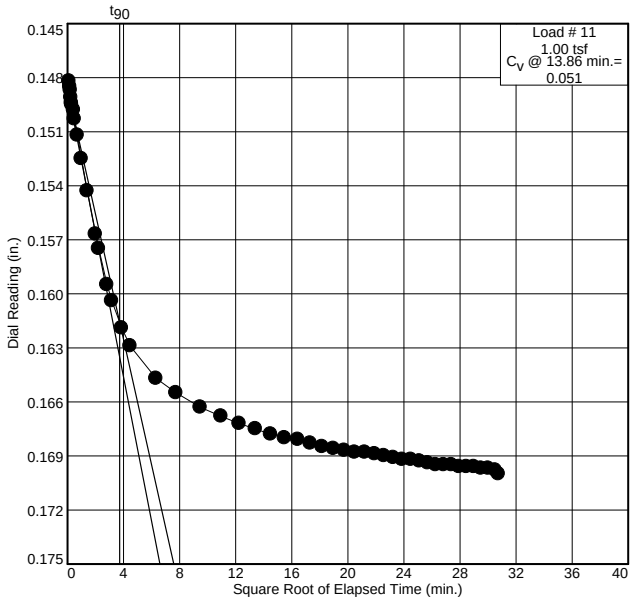
Figure

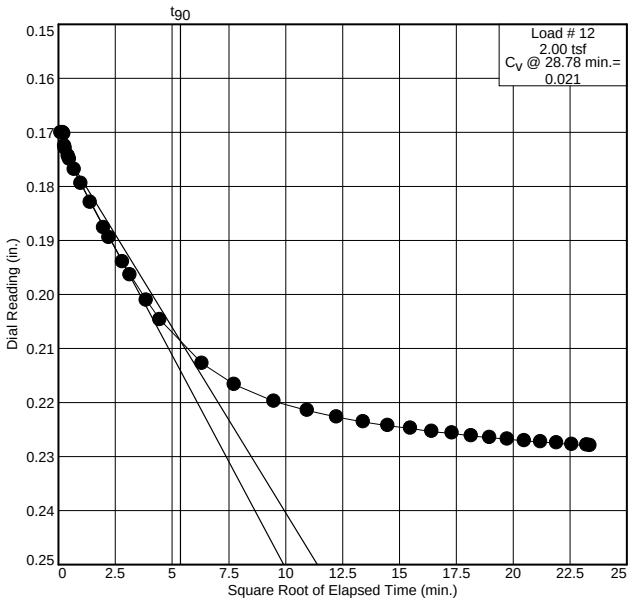
Dial Reading vs. Time

Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-13 Depth: 18' - 20'







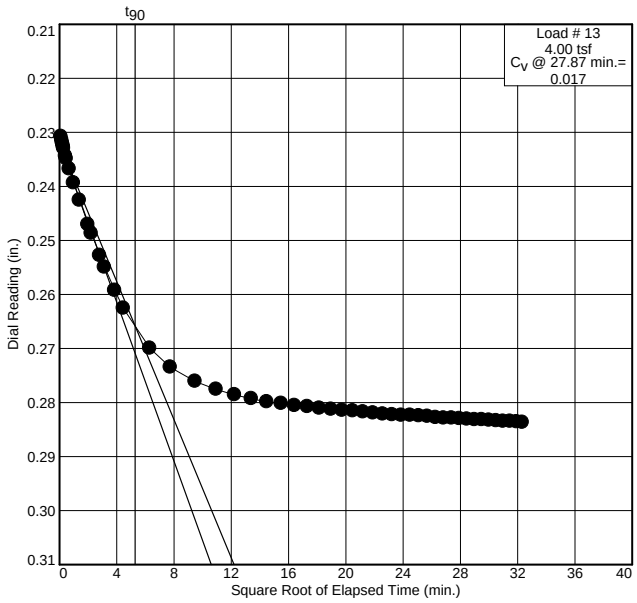


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Figure

Dial Reading vs. Time

Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-13 Depth: 18' - 20'

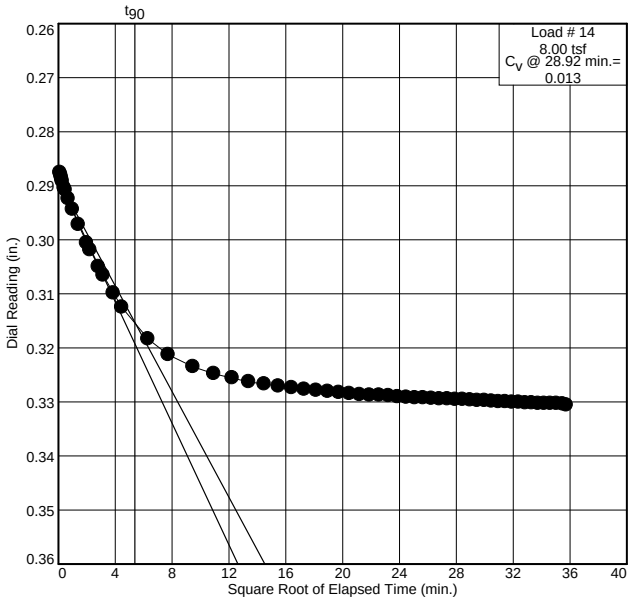

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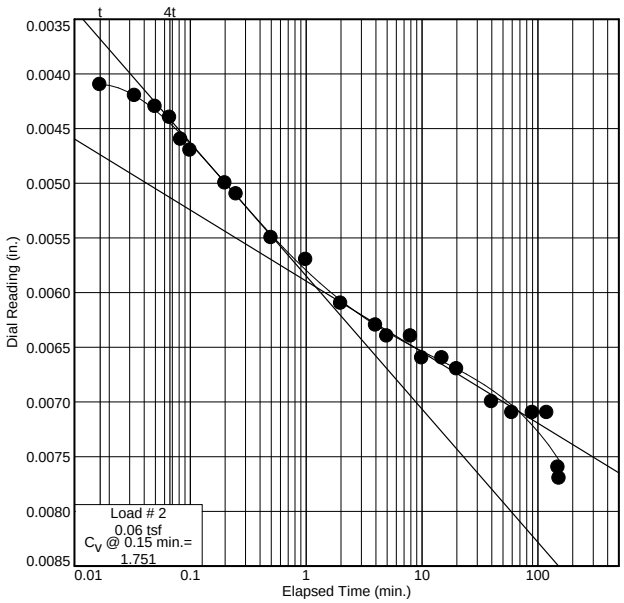
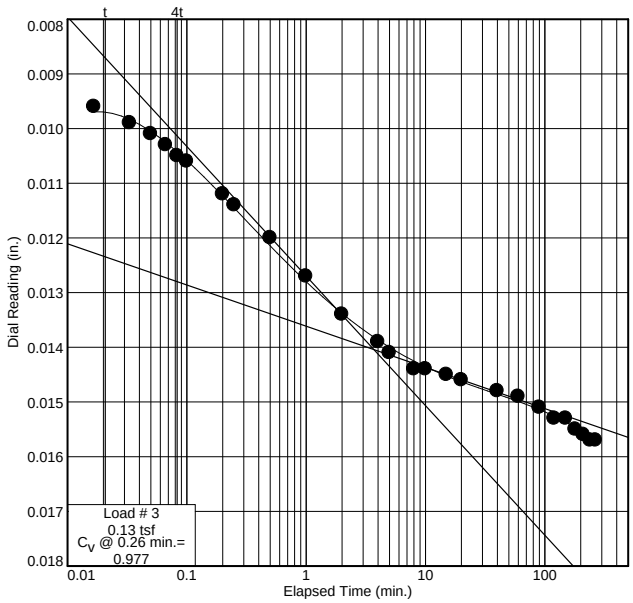
Figure

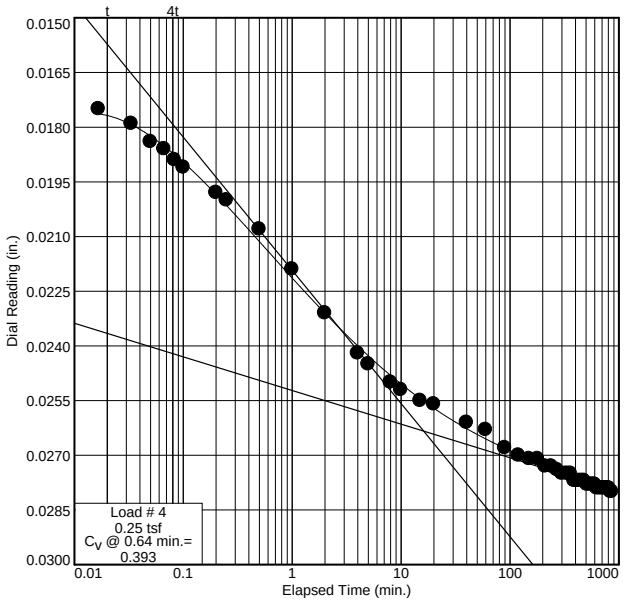
Dial Reading vs. Time

Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-13 Depth: 18' - 20'







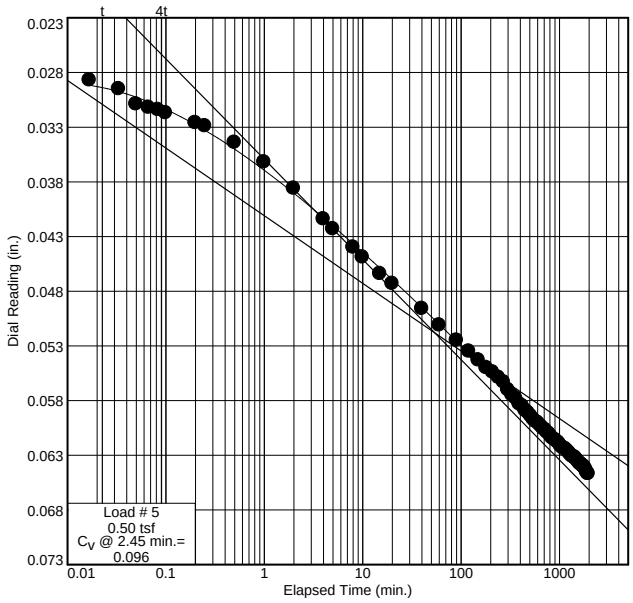


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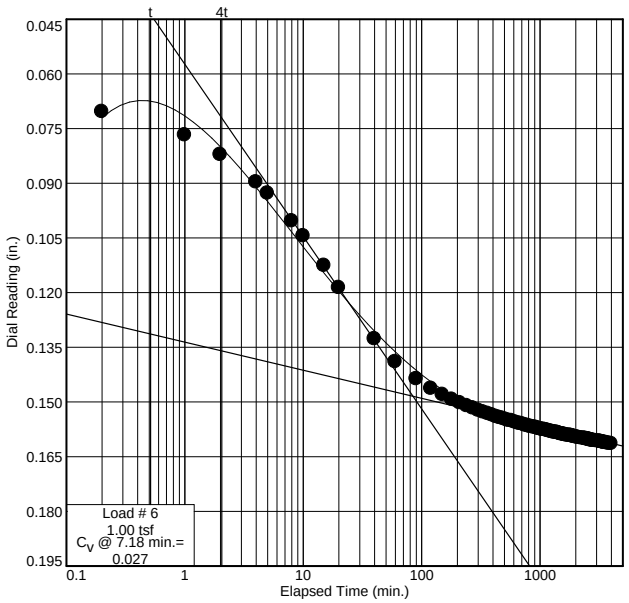
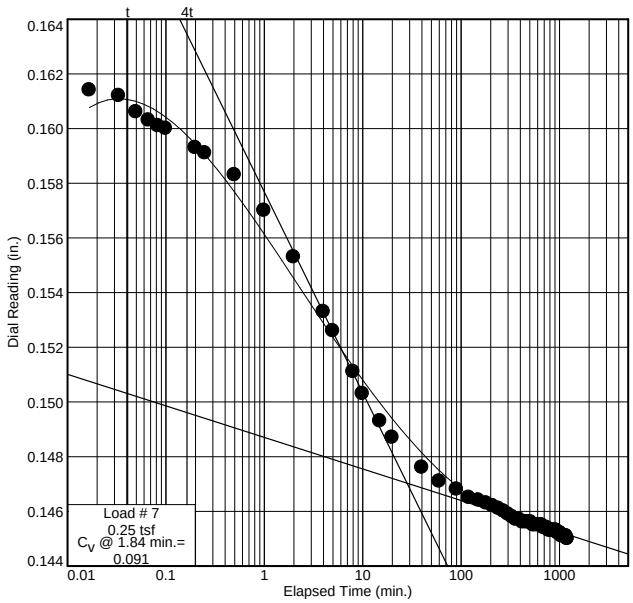
Figure

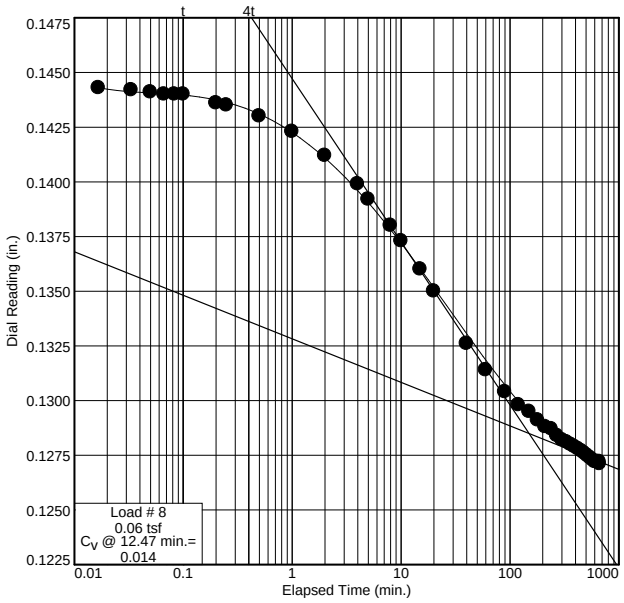
Dial Reading vs. Time

Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-13 Depth: 18' - 20'







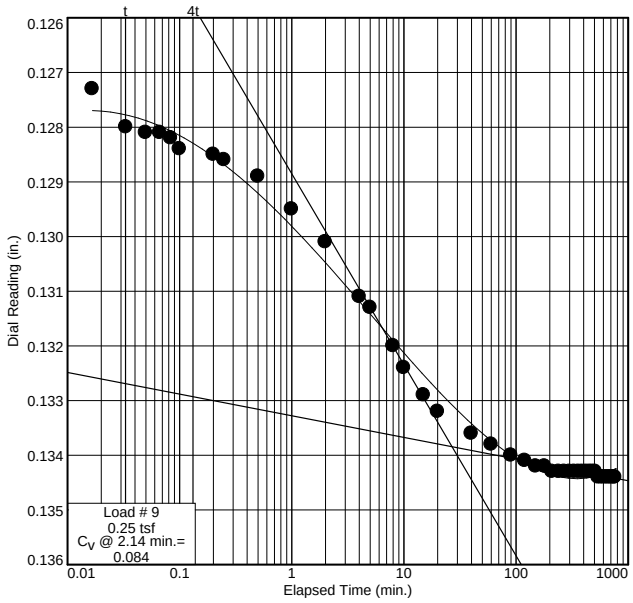


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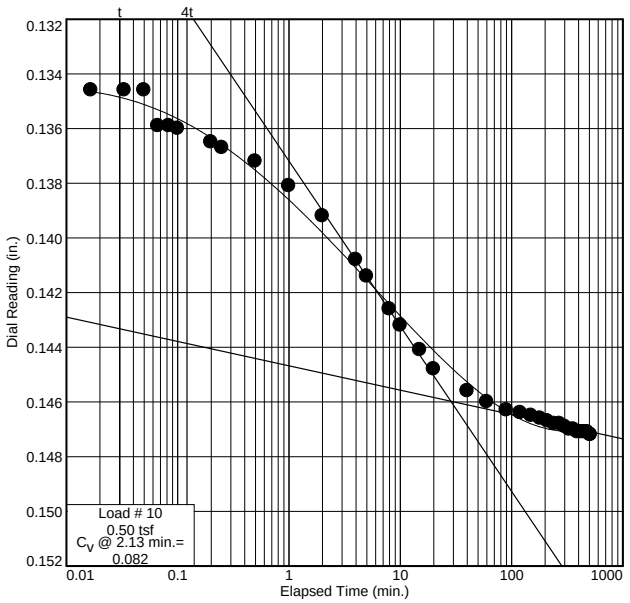
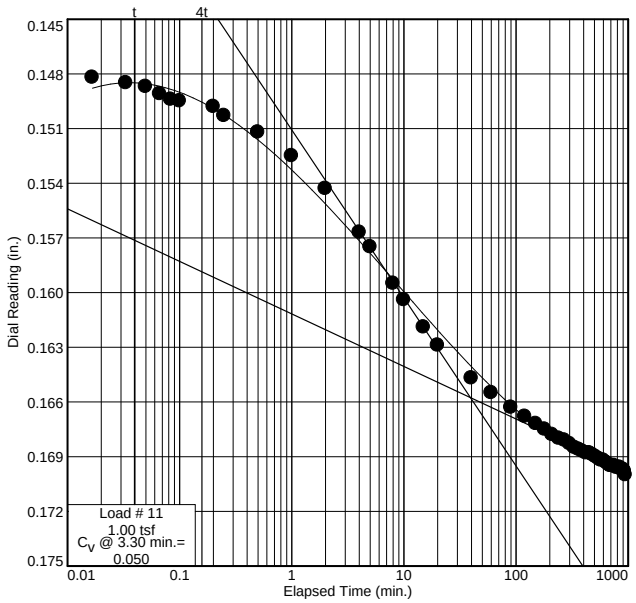
Figure

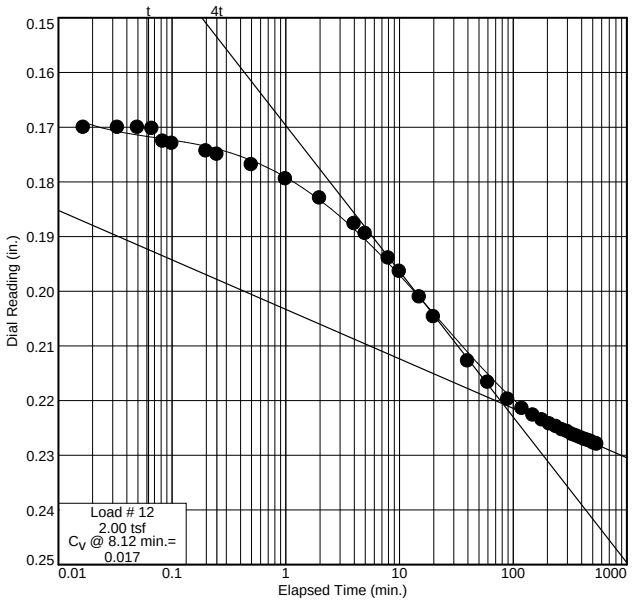
Dial Reading vs. Time

Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-13 Depth: 18' - 20'







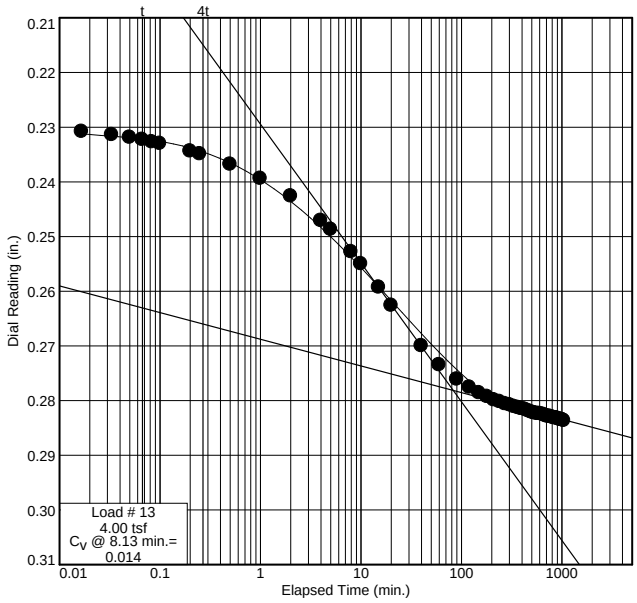


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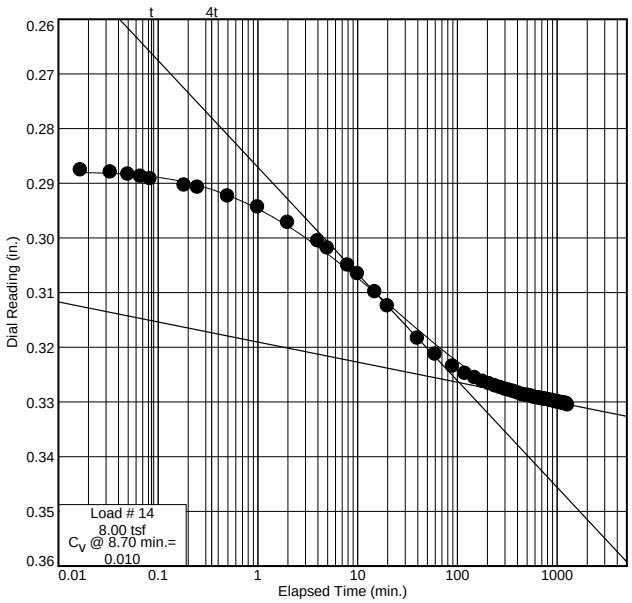
Figure

Dial Reading vs. Time

Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-13 Depth: 18' - 20'



GeoEngineers

Figure

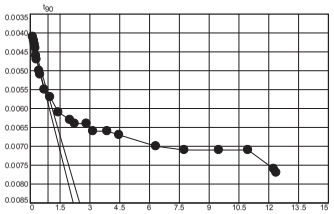
Pressure: 0.03 tsf — **TEST READINGS** — **Load No. 1**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.0003	11	1.0000	0.0017
2	0.0167	0.0014	12	2.0000	0.0017
3	0.0333	0.0015	13	4.0000	0.0018
4	0.0500	0.0016	14	5.0000	0.0018
5	0.0667	0.0016	15	8.0000	0.0018
6	0.0833	0.0016	16	10.0000	0.0018
7	0.1000	0.0016	17	15.0000	0.0018
8	0.2000	0.0016	18	19.2333	0.0018
9	0.2500	0.0016	19	19.2667	0.0018
10	0.5000	0.0017			

Void Ratio = 1.595 **Compression =** 0.2%

Pressure: 0.06 tsf — **TEST READINGS** — **Load No. 2**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.0018	13	4.0000	0.0063
2	0.0167	0.0041	14	5.0000	0.0064
3	0.0333	0.0042	15	8.0000	0.0064
4	0.0500	0.0043	16	10.0000	0.0066
5	0.0667	0.0044	17	15.0000	0.0066
6	0.0833	0.0046	18	20.0167	0.0067
7	0.1000	0.0047	19	40.0333	0.0070
8	0.2000	0.0050	20	60.0500	0.0071
9	0.2500	0.0051	21	90.1000	0.0071
10	0.5000	0.0055	22	120.1333	0.0071
11	1.0000	0.0057	23	150.1667	0.0076
12	2.0000	0.0061	24	153.1667	0.0077



Void Ratio = 1.575 **Compression =** 1.0%

D_0 = 0.0040 **D_{90} =** 0.0056 **D_{100} =** 0.0058 **C_v at 0.80 min. =** 1.417 ft.^{2}/day

CONSOLIDATION TEST DATA

9/15/2016

Client: CPRA
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana
Project Number: 16715-040-01
Location: B-13
Depth: 18' - 20'
Material Description: Soft gray clay with silt seams
Liquid Limit: 47 **Plasticity Index:** 26
USCS: (CL)
Testing Remarks: Cv at T90
Tested by: SLC **Checked by:** KLA/JMP

Test Specimen Data

NATURAL MOISTURE		VOID RATIO		AFTER TEST	
Wet w+t =	217.66 g.	Spec. Gr. =	2.604	Wet w+t =	89.98 g.
Dry w+t =	154.46 g.	Est. Ht. Solids =	0.283 in.	Dry w+t =	71.23 g.
Tare Wt. =	40.80 g.	Init. V.R. =	1.601	Tare Wt. =	22.49 g.
Moisture =	55.6 %	Init. Sat. =	90.5 %	Moisture =	38.5 %
				Dry Wt. =	48.74 g.

UNIT WEIGHT		TEST START	
Height =	0.735 in.	Height =	0.735 in.
Diameter =	2.502 in.	Diameter =	2.502 in.
Weight =	92.26 g.		
Dry Dens. =	62.5 pcf		

End-Of-Load Summary

Pressure (tsf)	Final Dial (in.)	Deformation (in.)	C_v (ft.^{2}/day)	C_α	Void Ratio	% Strain
start	0.00030	0.00000			1.601	
0.03	0.00180	0.00150		0.000	1.595	0.2 Comprs.
0.06	0.00770	0.00740	1.417		1.575	1.0 Comprs.
0.13	0.01570	0.01540	0.717		1.546	2.1 Comprs.
0.25	0.02800	0.02770	0.312		1.503	3.8 Comprs.
0.50	0.06470	0.06440	0.118		1.373	8.8 Comprs.
1.00	0.16150	0.16120	0.017		1.030	21.9 Comprs.
0.25	0.14500	0.14470	0.061		1.089	19.7 Comprs.
0.06	0.12710	0.12680	0.027		1.152	17.3 Comprs.
0.25	0.13440	0.13410	0.065		1.126	18.2 Comprs.
0.50	0.14720	0.14690	0.063		1.081	20.0 Comprs.
1.00	0.17000	0.16970	0.051		1.000	23.1 Comprs.
2.00	0.22800	0.22770	0.021		0.795	31.0 Comprs.
4.00	0.28370	0.28340	0.017		0.598	38.6 Comprs.
8.00	0.33060	0.33030	0.013		0.432	44.9 Comprs.

Compression index (C_c), tsf = 1.16 **Preconsolidation pressure (P_p), tsf =** 0.5 **Void ratio at P_p (e_m) =** 1.364
Recompression index (C_r) = 0.29

Pressure: 0.25 tsf — **TEST READINGS (continued)** — **Load No. 4**

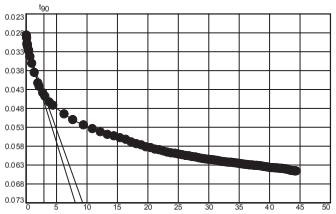
No.	Elapsed Time	Dial Reading
41	690.8667	0.0279
42	720.9000	0.0279
43	750.9500	0.0279
44	780.9833	0.0279
45	811.0167	0.0279
46	841.0667	0.0280
47	863.8833	0.0280

Void Ratio = 1.503 **Compression =** 3.8%

D_0 = 0.0184 D_{90} = 0.0239 D_{100} = 0.0246 C_v **at 3.46 min. =** 0.312 ft.^{2}/day

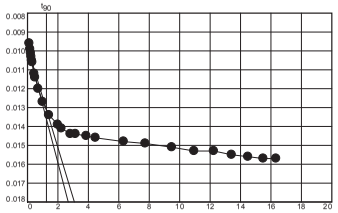
Pressure: 0.50 tsf — **TEST READINGS** — **Load No. 5**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.0280	28	300.3833	0.0570
2	0.0167	0.0287	29	330.4167	0.0575
3	0.0333	0.0295	30	360.4500	0.0578
4	0.0500	0.0309	31	390.4833	0.0583
5	0.0667	0.0312	32	420.5333	0.0585
6	0.0833	0.0314	33	450.5667	0.0589
7	0.1000	0.0317	34	480.6000	0.0591
8	0.2000	0.0326	35	510.6333	0.0594
9	0.2500	0.0329	36	540.6833	0.0597
10	0.5000	0.0344	37	570.7167	0.0599
11	1.0000	0.0362	38	600.7500	0.0600
12	2.0000	0.0386	39	630.8000	0.0602
13	4.0000	0.0414	40	660.8333	0.0604
14	5.0000	0.0423	41	690.8667	0.0606
15	8.0000	0.0440	42	720.9000	0.0607
16	10.0000	0.0449	43	750.9500	0.0609
17	15.0167	0.0464	44	780.9833	0.0610
18	20.0167	0.0473	45	811.0167	0.0612
19	40.0500	0.0496	46	841.0500	0.0614
20	60.0667	0.0511	47	871.1000	0.0615
21	90.1167	0.0525	48	901.1333	0.0616
22	120.1500	0.0535	49	931.1667	0.0617
23	150.1833	0.0543	50	961.2167	0.0618
24	180.2167	0.0550	51	991.2500	0.0619
25	210.2667	0.0554	52	1021.2833	0.0621
26	240.3000	0.0559	53	1051.3167	0.0622
27	270.3333	0.0563	54	1081.3667	0.0623



Pressure: 0.13 tsf — **TEST READINGS** — **Load No. 3**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.0077	15	8.0167	0.0144
2	0.0167	0.0096	16	10.0167	0.0144
3	0.0333	0.0099	17	15.0167	0.0145
4	0.0500	0.0101	18	20.0167	0.0146
5	0.0667	0.0103	19	40.0500	0.0148
6	0.0833	0.0105	20	60.0833	0.0149
7	0.1000	0.0106	21	90.1167	0.0151
8	0.2000	0.0112	22	120.1500	0.0153
9	0.2500	0.0114	23	150.1833	0.0153
10	0.5000	0.0120	24	180.2333	0.0155
11	1.0000	0.0127	25	210.2667	0.0156
12	2.0000	0.0134	26	240.3000	0.0157
13	4.0000	0.0139	27	267.0333	0.0157
14	5.0000	0.0141			

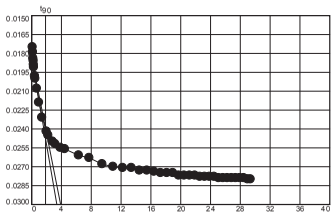


Void Ratio = 1.546 **Compression =** 2.1%

D_0 = 0.0098 D_{90} = 0.0131 D_{100} = 0.0135 C_v **at 1.55 min. =** 0.717 ft.^{2}/day

Pressure: 0.25 tsf — **TEST READINGS** — **Load No. 4**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.0157	21	90.1000	0.0268
2	0.0167	0.0175	22	120.1500	0.0270
3	0.0333	0.0179	23	150.1833	0.0271
4	0.0500	0.0184	24	180.2167	0.0271
5	0.0667	0.0186	25	210.2667	0.0273
6	0.0833	0.0189	26	240.3000	0.0273
7	0.1000	0.0191	27	270.3333	0.0274
8	0.2000	0.0198	28	300.3667	0.0275
9	0.2500	0.0200	29	330.4167	0.0275
10	0.5000	0.0208	30	360.4500	0.0275
11	1.0000	0.0219	31	390.4833	0.0277
12	2.0000	0.0231	32	420.5333	0.0277
13	4.0000	0.0242	33	450.5667	0.0277
14	5.0000	0.0245	34	480.6000	0.0277
15	8.0000	0.0250	35	510.6333	0.0278
16	10.0000	0.0252	36	540.6833	0.0278
17	15.0167	0.0255	37	570.7167	0.0278
18	20.0167	0.0256	38	600.7500	0.0278
19	40.0500	0.0261	39	630.8000	0.0279
20	60.0667	0.0263	40	660.8333	0.0279



Pressure: 1.00 tsf — **TEST READINGS (continued)** — **Load No. 6**

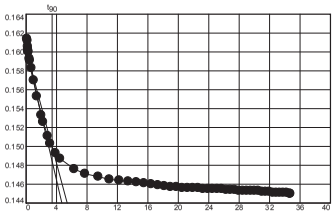
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
49	1171.4833	0.1579	67	1772.2500	0.1592	85	2643.3500	0.1604
50	1201.5167	0.1580	68	1802.2833	0.1593	86	2673.3833	0.1605
51	1231.5667	0.1581	69	1832.3167	0.1593	87	2733.4667	0.1605
52	1261.6000	0.1582	70	1862.3667	0.1594	88	2763.5167	0.1606
53	1291.6333	0.1583	71	1892.4000	0.1594	89	2823.5833	0.1606
54	1321.6667	0.1583	72	1922.4333	0.1595	90	2973.7833	0.1607
55	1351.7167	0.1584	73	1982.5167	0.1596	91	3154.0000	0.1608
56	1381.7500	0.1584	74	2042.6000	0.1597	92	3184.0500	0.1609
57	1411.7833	0.1585	75	2102.6667	0.1598	93	3244.1167	0.1609
58	1441.8333	0.1586	76	2222.8167	0.1599	94	3364.2667	0.1610
59	1471.8667	0.1587	77	2342.9667	0.1600	95	3394.3167	0.1611
60	1501.9000	0.1588	78	2373.0167	0.1601	96	3454.3833	0.1611
61	1531.9333	0.1588	79	2433.0833	0.1601	97	3574.5333	0.1612
62	1561.9833	0.1589	80	2463.1167	0.1602	98	3694.6833	0.1613
63	1592.0167	0.1590	81	2523.2000	0.1602	99	3814.8500	0.1614
64	1622.0500	0.1590	82	2553.2333	0.1603	100	3988.0667	0.1615
65	1652.1000	0.1591	83	2583.2833	0.1603			
66	1712.1667	0.1592	84	2613.3167	0.1604			

Void Ratio = 1.030 **Compression =** 21.9%

D_0 = 0.0713 D_{90} = 0.1356 D_{100} = 0.1428 C_V **at 48.81 min. =** 0.017 ft.^{2}/day

Pressure: 0.25 tsf — **TEST READINGS** — **Load No. 7**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.1615	17	15.0167	0.1493
2	0.0167	0.1614	18	20.0167	0.1487
3	0.0333	0.1612	19	40.0500	0.1476
4	0.0500	0.1606	20	60.0667	0.1471
5	0.0667	0.1603	21	90.1000	0.1468
6	0.0833	0.1601	22	120.1333	0.1465
7	0.1000	0.1600	23	150.1833	0.1464
8	0.2000	0.1593	24	180.2167	0.1463
9	0.2500	0.1591	25	210.2667	0.1462
10	0.5000	0.1583	26	240.3000	0.1461
11	1.0000	0.1570	27	270.3333	0.1460
12	2.0000	0.1553	28	300.3667	0.1459
13	4.0000	0.1533	29	330.4000	0.1458
14	5.0000	0.1526	30	360.4500	0.1457
15	8.0000	0.1511	31	390.4833	0.1457
16	10.0000	0.1503	32	420.5333	0.1456



Pressure: 0.50 tsf — **TEST READINGS (continued)** — **Load No. 5**

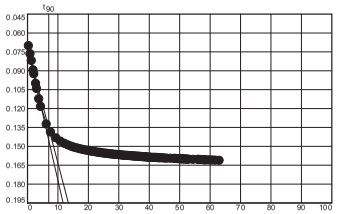
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
55	1111.4000	0.0624	65	1411.7833	0.0632	75	1712.1667	0.0639
56	1141.4333	0.0624	66	1441.8167	0.0632	76	1742.2000	0.0640
57	1171.4833	0.0625	67	1471.8500	0.0633	77	1772.2333	0.0640
58	1201.5167	0.0626	68	1501.9000	0.0634	78	1802.2833	0.0641
59	1231.5500	0.0627	69	1531.9333	0.0635	79	1832.3167	0.0642
60	1261.5833	0.0628	70	1561.9667	0.0636	80	1862.3500	0.0643
61	1291.6333	0.0629	71	1592.0167	0.0637	81	1892.3833	0.0645
62	1321.6667	0.0630	72	1622.0500	0.0638	82	1922.4333	0.0646
63	1351.7000	0.0631	73	1652.0833	0.0638	83	1952.4667	0.0647
64	1381.7333	0.0631	74	1682.1333	0.0639	84	1973.5833	0.0647

Void Ratio = 1.373 **Compression =** 8.8%

D_0 = 0.0311 D_{90} = 0.0443 D_{100} = 0.0457 C_V **at 8.54 min. =** 0.118 ft.^{2}/day

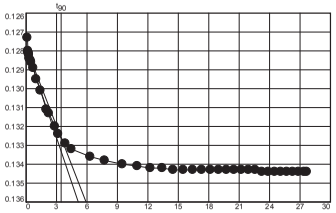
Pressure: 1.00 tsf — **TEST READINGS** — **Load No. 6**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.0647	25	450.5667	0.1543
2	0.2000	0.0704	26	480.6000	0.1545
3	1.0000	0.0768	27	510.6333	0.1548
4	2.0000	0.0822	28	540.6833	0.1551
5	4.0000	0.0897	29	570.7167	0.1552
6	5.0000	0.0928	30	600.7667	0.1555
7	8.0167	0.1004	31	630.8000	0.1557
8	10.0167	0.1045	32	660.8333	0.1559
9	15.0167	0.1126	33	690.8667	0.1560
10	20.0167	0.1187	34	720.9000	0.1562
11	40.0500	0.1327	35	750.9500	0.1564
12	60.0667	0.1390	36	780.9833	0.1565
13	90.1167	0.1437	37	811.0333	0.1567
14	120.1500	0.1463	38	841.0667	0.1568
15	150.1833	0.1480	39	871.1000	0.1569
16	180.2167	0.1493	40	901.1333	0.1570
17	210.2667	0.1503	41	931.1833	0.1571
18	240.3000	0.1511	42	961.2167	0.1573
19	270.3333	0.1517	43	991.2500	0.1574
20	300.3667	0.1523	44	1021.3000	0.1575
21	330.4167	0.1528	45	1051.3333	0.1576
22	360.4500	0.1532	46	1081.3667	0.1576
23	390.5000	0.1536	47	1111.4000	0.1577
24	420.5333	0.1540	48	1141.4500	0.1578



Pressure: 0.25 tsf — **TEST READINGS** — **Load No. 9**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.1271	23	150.2000	0.1342
2	0.0167	0.1273	24	180.2333	0.1342
3	0.0333	0.1280	25	210.2667	0.1343
4	0.0500	0.1281	26	240.3167	0.1343
5	0.0667	0.1281	27	270.3500	0.1343
6	0.0833	0.1282	28	300.3833	0.1343
7	0.1000	0.1284	29	330.4167	0.1343
8	0.2000	0.1285	30	360.4667	0.1343
9	0.2500	0.1286	31	390.5000	0.1343
10	0.5000	0.1289	32	420.5333	0.1343
11	1.0000	0.1295	33	450.5833	0.1343
12	2.0000	0.1301	34	480.6167	0.1343
13	4.0167	0.1311	35	510.6500	0.1343
14	5.0167	0.1313	36	540.6833	0.1344
15	8.0167	0.1320	37	570.7333	0.1344
16	10.0167	0.1324	38	600.7667	0.1344
17	15.0167	0.1329	39	630.8000	0.1344
18	20.0333	0.1332	40	660.8500	0.1344
19	40.0500	0.1336	41	690.8833	0.1344
20	60.0833	0.1338	42	720.9167	0.1344
21	90.1167	0.1340	43	750.9667	0.1344
22	120.1500	0.1341	44	765.6667	0.1344

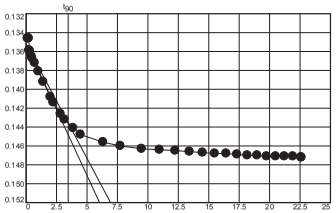


Void Ratio = 1.126 **Compression =** 18.2%

D_0 = 0.1278 D_{90} = 0.1326 D_{100} = 0.1331 C_v **at 11.91 min. =** 0.065 ft.^{2}/day

Pressure: 0.50 tsf — **TEST READINGS** — **Load No. 10**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.1344	13	4.0000	0.1408
2	0.0167	0.1346	14	5.0167	0.1414
3	0.0333	0.1346	15	8.0167	0.1426
4	0.0500	0.1346	16	10.0167	0.1432
5	0.0667	0.1359	17	15.0167	0.1441
6	0.0833	0.1359	18	20.0333	0.1448
7	0.1000	0.1360	19	40.0500	0.1456
8	0.2000	0.1365	20	60.0833	0.1460
9	0.2500	0.1367	21	90.1167	0.1463
10	0.5000	0.1372	22	120.1500	0.1464
11	1.0000	0.1381	23	150.2000	0.1465
12	2.0000	0.1392	24	180.2333	0.1466



Pressure: 0.25 tsf — **TEST READINGS (continued)** — **Load No. 7**

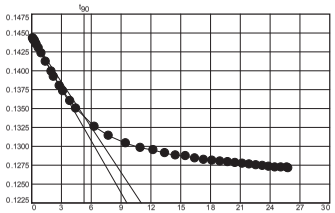
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
33	450.5667	0.1456	43	750.9500	0.1454	53	1051.3333	0.1451
34	480.6000	0.1456	44	780.9833	0.1453	54	1081.3667	0.1451
35	510.6333	0.1456	45	811.0167	0.1453	55	1111.4000	0.1451
36	540.6833	0.1455	46	841.0667	0.1453	56	1141.4333	0.1451
37	570.7167	0.1455	47	871.1000	0.1453	57	1171.4667	0.1451
38	600.7500	0.1455	48	901.1333	0.1453	58	1201.5167	0.1450
39	630.8000	0.1455	49	931.1833	0.1453	59	1205.6500	0.1450
40	660.8333	0.1455	50	961.2167	0.1452			
41	690.8667	0.1454	51	991.2500	0.1452			
42	720.9000	0.1454	52	1021.2833	0.1452			

Void Ratio = 1.089 **Compression =** 19.7%

D_0 = 0.1602 D_{90} = 0.1499 D_{100} = 0.1488 C_v **at 11.70 min. =** 0.061 ft.^{2}/day

Pressure: 0.06 tsf — **TEST READINGS** — **Load No. 8**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.1450	22	120.1500	0.1298
2	0.0167	0.1443	23	150.1833	0.1295
3	0.0333	0.1442	24	180.2333	0.1291
4	0.0500	0.1441	25	210.2667	0.1288
5	0.0667	0.1440	26	240.3000	0.1287
6	0.0833	0.1440	27	270.3333	0.1284
7	0.1000	0.1440	28	300.3833	0.1282
8	0.2000	0.1436	29	330.4167	0.1281
9	0.2500	0.1435	30	360.4500	0.1280
10	0.5000	0.1430	31	390.5000	0.1279
11	1.0000	0.1423	32	420.5333	0.1278
12	2.0000	0.1412	33	450.5667	0.1277
13	4.0000	0.1399	34	480.6000	0.1276
14	5.0000	0.1392	35	510.6500	0.1275
15	8.0000	0.1380	36	540.6833	0.1274
16	10.0167	0.1373	37	570.7167	0.1273
17	15.0167	0.1360	38	600.7500	0.1272
18	20.0167	0.1350	39	630.8000	0.1272
19	40.0500	0.1326	40	660.8333	0.1272
20	60.0667	0.1314	41	667.1833	0.1271
21	90.1167	0.1304			



Void Ratio = 1.152 **Compression =** 17.3%

D_0 = 0.1445 D_{90} = 0.1340 D_{100} = 0.1328 C_v **at 27.81 min. =** 0.027 ft.^{2}/day

Pressure: 1.00 tsf — **TEST READINGS (continued)** — **Load No. 11**

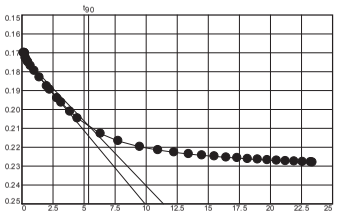
No.	Elapsed Time	Dial Reading
49	931.1833	0.1698
50	945.4833	0.1700

Void Ratio = 1.000 **Compression =** 23.1%

D_0 = 0.1486 D_{90} = 0.1616 D_{100} = 0.1630 C_v **at 13.86 min. =** 0.051 ft.^{2}/day

Pressure: 2.00 tsf — **TEST READINGS** — **Load No. 12**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.1700	20	60.0833	0.2167
2	0.0167	0.1701	21	90.1167	0.2198
3	0.0333	0.1701	22	120.1500	0.2215
4	0.0500	0.1701	23	150.2000	0.2227
5	0.0667	0.1703	24	180.2333	0.2236
6	0.0833	0.1726	25	210.2667	0.2243
7	0.1000	0.1730	26	240.3000	0.2248
8	0.2000	0.1744	27	270.3500	0.2254
9	0.2500	0.1750	28	300.3833	0.2257
10	0.5000	0.1769	29	330.4167	0.2262
11	1.0000	0.1795	30	360.4667	0.2265
12	2.0000	0.1830	31	390.5000	0.2268
13	4.0167	0.1877	32	420.5333	0.2271
14	5.0167	0.1895	33	450.5833	0.2273
15	8.0167	0.1940	34	480.6167	0.2275
16	10.0167	0.1964	35	510.6500	0.2278
17	15.0167	0.2011	36	540.7000	0.2279
18	20.0333	0.2047	37	547.0167	0.2280
19	40.0500	0.2128			



Void Ratio = 0.795 **Compression =** 31.0%

D_0 = 0.1717 D_{90} = 0.2086 D_{100} = 0.2127 C_v **at 28.78 min. =** 0.021 ft.^{2}/day

Pressure: 0.50 tsf — **TEST READINGS (continued)** — **Load No. 10**

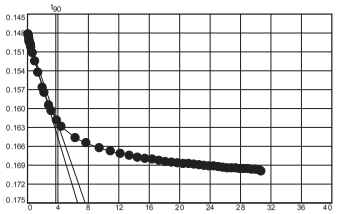
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
25	210.2667	0.1467	35	510.6500	0.1472
26	240.3167	0.1468	36	511.5833	0.1472
27	270.3500	0.1468			
28	300.3833	0.1469			
29	330.4167	0.1470			
30	360.4667	0.1470			
31	390.5000	0.1471			
32	420.5333	0.1471			
33	450.5833	0.1471			
34	480.6167	0.1471			

Void Ratio = 1.081 **Compression =** 20.0%

D_0 = 0.1352 D_{90} = 0.1436 D_{100} = 0.1445 C_v **at 11.91 min. =** 0.063 ft.^{2}/day

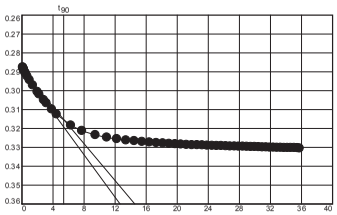
Pressure: 1.00 tsf — **TEST READINGS** — **Load No. 11**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.1472	25	210.2667	0.1678
2	0.0167	0.1482	26	240.3167	0.1680
3	0.0333	0.1485	27	270.3500	0.1681
4	0.0500	0.1487	28	300.3833	0.1683
5	0.0667	0.1491	29	330.4167	0.1685
6	0.0833	0.1494	30	360.4667	0.1686
7	0.1000	0.1495	31	390.5000	0.1687
8	0.2000	0.1498	32	420.5333	0.1688
9	0.2500	0.1503	33	450.5833	0.1688
10	0.5000	0.1512	34	480.6167	0.1689
11	1.0000	0.1525	35	510.6500	0.1690
12	2.0000	0.1543	36	540.6833	0.1691
13	4.0167	0.1567	37	570.7333	0.1692
14	5.0167	0.1575	38	600.7667	0.1692
15	8.0167	0.1595	39	630.8000	0.1693
16	10.0167	0.1604	40	660.8500	0.1694
17	15.0167	0.1619	41	690.8833	0.1695
18	20.0333	0.1629	42	720.9167	0.1695
19	40.0500	0.1647	43	750.9500	0.1695
20	60.0833	0.1655	44	781.0000	0.1696
21	90.1167	0.1663	45	811.0333	0.1696
22	120.1500	0.1668	46	841.0667	0.1696
23	150.2000	0.1672	47	871.1000	0.1697
24	180.2333	0.1675	48	901.1500	0.1697



Pressure: 8.00 tsf — **TEST READINGS** — **Load No. 14**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.2837	31	419.9333	0.3285
2	0.0167	0.2876	32	449.9333	0.3287
3	0.0333	0.2880	33	479.9167	0.3288
4	0.0500	0.2884	34	509.9167	0.3288
5	0.0667	0.2888	35	539.9167	0.3289
6	0.0833	0.2892	36	569.9167	0.3291
7	0.1833	0.2904	37	599.9000	0.3292
8	0.2500	0.2908	38	629.9000	0.3293
9	0.5000	0.2924	39	659.9000	0.3293
10	1.0000	0.2944	40	689.9000	0.3294
11	2.0000	0.2972	41	719.8833	0.3295
12	4.0000	0.3006	42	749.8833	0.3295
13	5.0000	0.3019	43	779.8833	0.3296
14	8.0000	0.3050	44	809.8667	0.3296
15	10.0000	0.3066	45	839.8667	0.3297
16	15.0000	0.3099	46	869.8667	0.3298
17	20.0000	0.3125	47	899.8667	0.3298
18	40.0000	0.3184	48	929.8500	0.3299
19	59.9833	0.3213	49	959.8500	0.3300
20	89.9833	0.3235	50	989.8500	0.3300
21	119.9833	0.3248	51	1019.8333	0.3301
22	149.9667	0.3256	52	1049.8333	0.3301
23	179.9667	0.3263	53	1079.8333	0.3302
24	209.9667	0.3267	54	1109.8333	0.3302
25	239.9667	0.3271	55	1139.8167	0.3303
26	269.9500	0.3274	56	1169.8167	0.3303
27	299.9500	0.3277	57	1199.8167	0.3303
28	329.9500	0.3279	58	1229.8000	0.3303
29	359.9333	0.3281	59	1259.8000	0.3304
30	389.9333	0.3283	60	1278.9667	0.3306

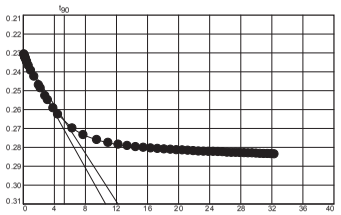


Void Ratio = 0.432 **Compression =** 44.9%

D_0 = 0.2890 **D_{90} =** 0.3154 **D_{100} =** 0.3183 **C_V at 28.92 min. =** 0.013 ft.^{2}/day

Pressure: 4.00 tsf — **TEST READINGS** — **Load No. 13**

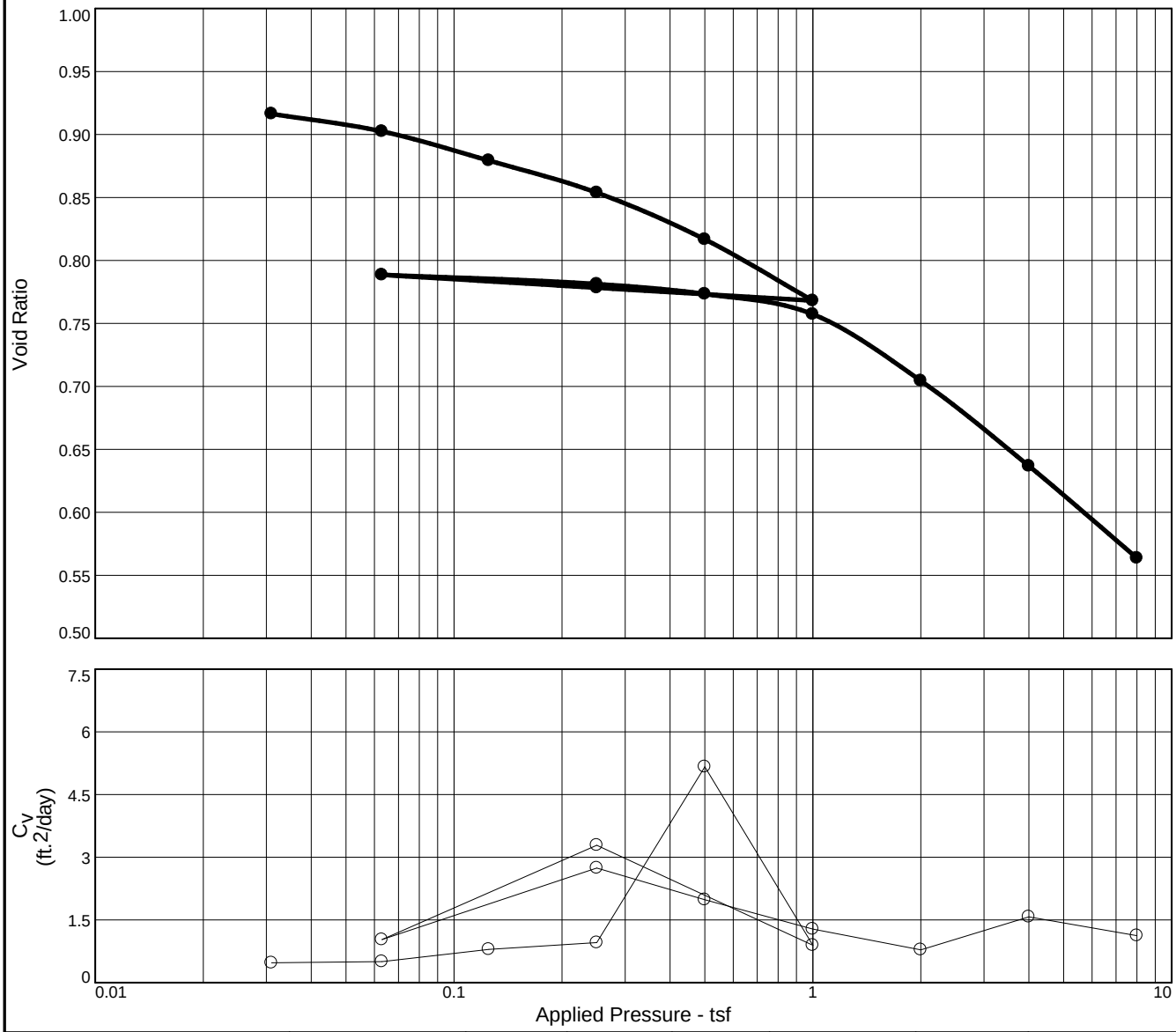
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.2280	28	300.3833	0.2808
2	0.0167	0.2308	29	330.4167	0.2811
3	0.0333	0.2314	30	360.4500	0.2813
4	0.0500	0.2319	31	390.5000	0.2815
5	0.0667	0.2323	32	420.5333	0.2816
6	0.0833	0.2327	33	450.5667	0.2818
7	0.1000	0.2330	34	480.6167	0.2820
8	0.2000	0.2344	35	510.6500	0.2822
9	0.2500	0.2349	36	540.6833	0.2823
10	0.5000	0.2368	37	570.7167	0.2824
11	1.0000	0.2394	38	600.7667	0.2824
12	2.0000	0.2426	39	630.8000	0.2825
13	4.0000	0.2471	40	660.8333	0.2826
14	5.0000	0.2487	41	690.8833	0.2828
15	8.0000	0.2528	42	720.9167	0.2829
16	10.0167	0.2550	43	750.9500	0.2829
17	15.0167	0.2593	44	781.0000	0.2830
18	20.0167	0.2626	45	811.0333	0.2831
19	40.0500	0.2700	46	841.0667	0.2832
20	60.0833	0.2735	47	871.1000	0.2832
21	90.1167	0.2761	48	901.1500	0.2833
22	120.1500	0.2776	49	931.1833	0.2834
23	150.1833	0.2786	50	961.2167	0.2835
24	180.2333	0.2793	51	991.2667	0.2835
25	210.2667	0.2799	52	1021.3000	0.2836
26	240.3000	0.2802	53	1046.1667	0.2837
27	270.3500	0.2806			



Void Ratio = 0.598 **Compression =** 38.6%

D_0 = 0.2321 **D_{90} =** 0.2658 **D_{100} =** 0.2696 **C_V at 27.87 min. =** 0.017 ft.^{2}/day

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture							
111.3 %	39.2 %	85.3	38	20	2.630	0.5	0.23	0.925

MATERIAL DESCRIPTION	USCS	AASHTO
Very soft dark gray silty clay	(CL)	

Project No. 16715-040-01 **Client:** CPRA

Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

Source of Sample: B-14 **Depth:** 16' - 18'

Remarks:
Cv at t90

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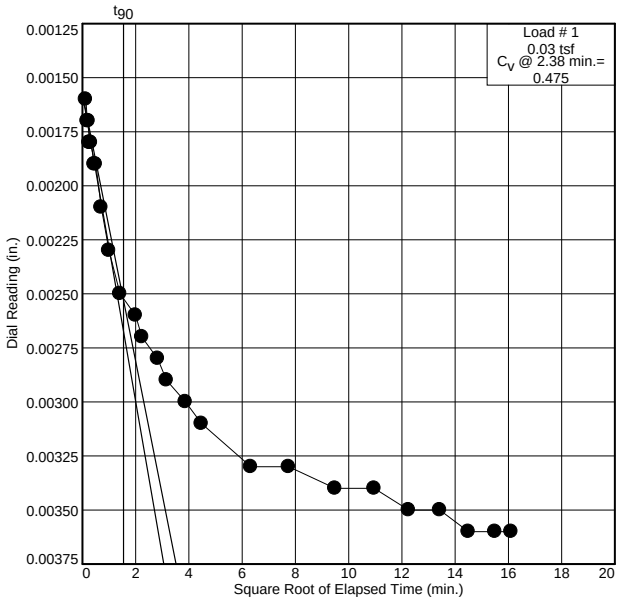
Figure

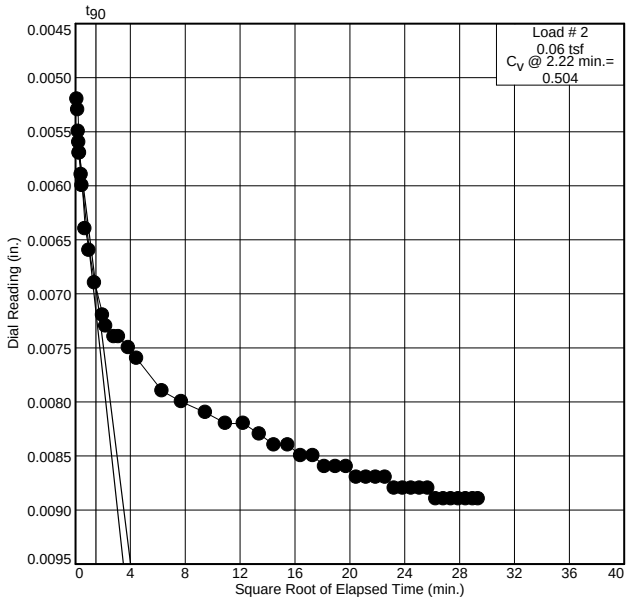
Tested By: SLC **Checked By:** KLA/JMP

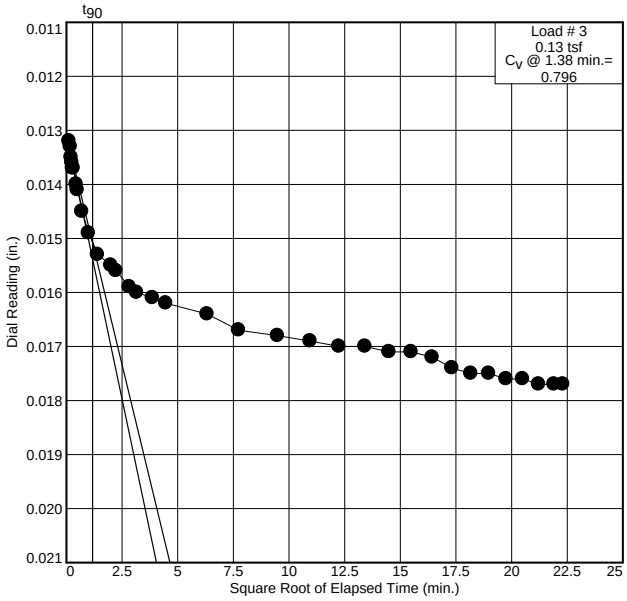
Dial Reading vs. Time

Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-14 Depth: 16' - 18'







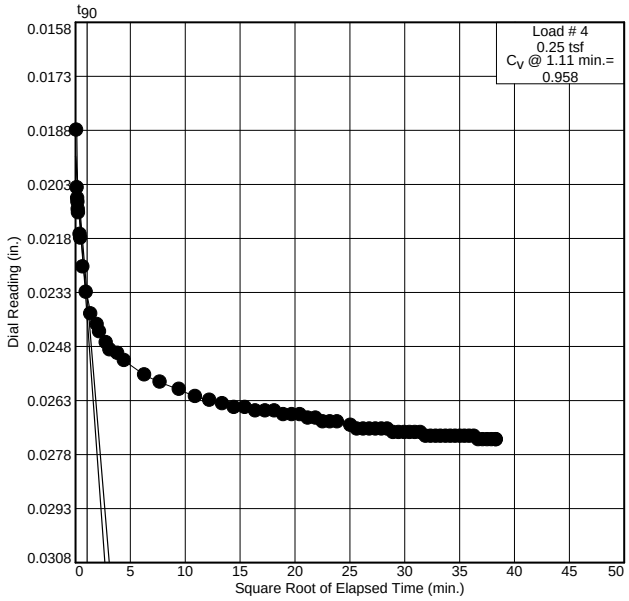


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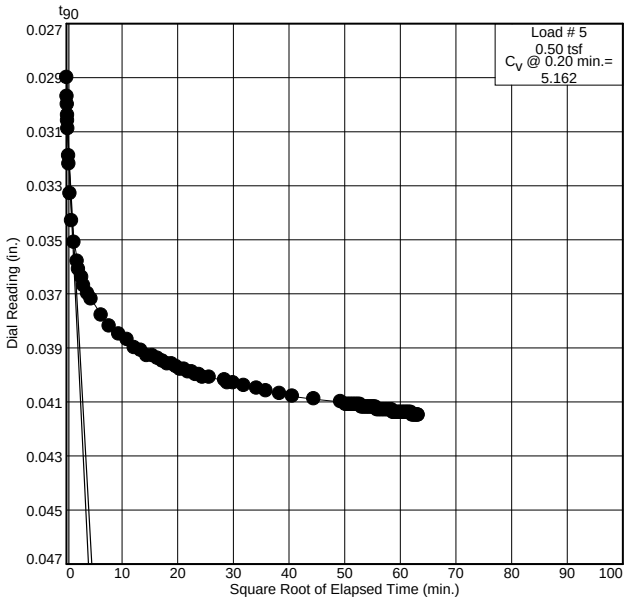
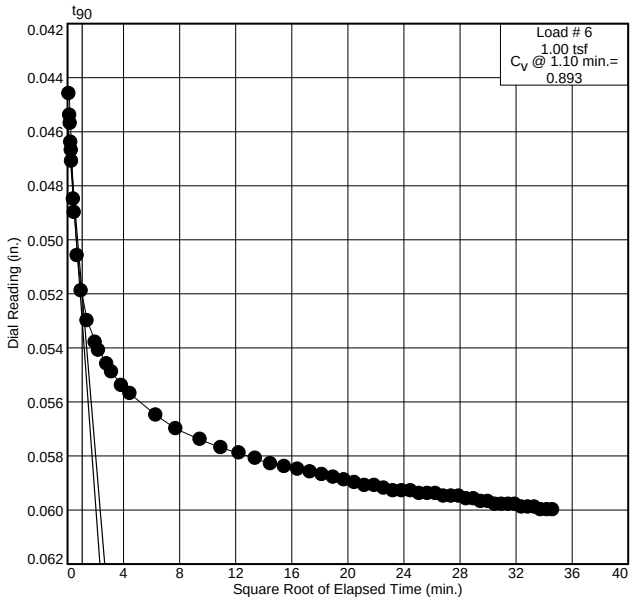
Figure

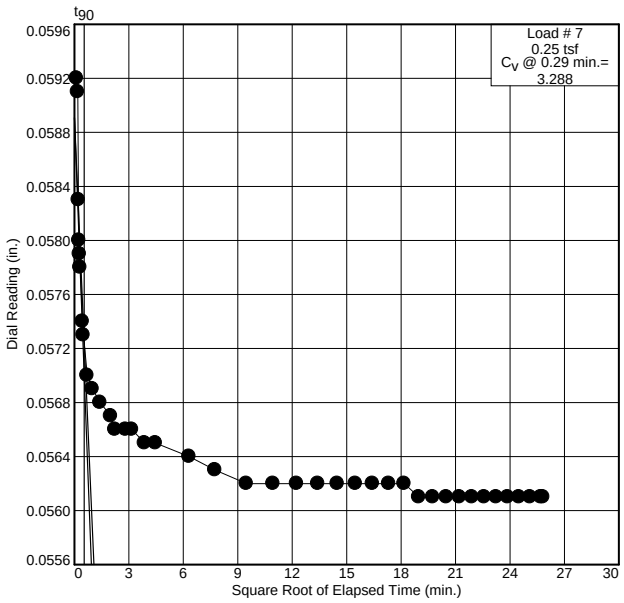
Dial Reading vs. Time

Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-14 Depth: 16' - 18'







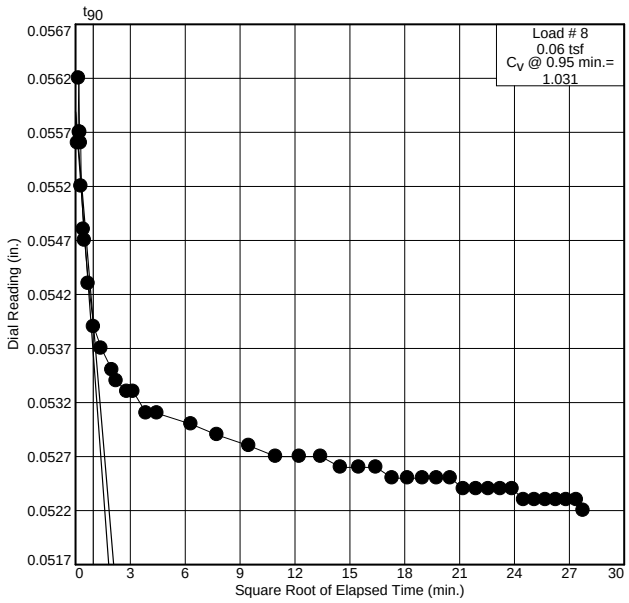


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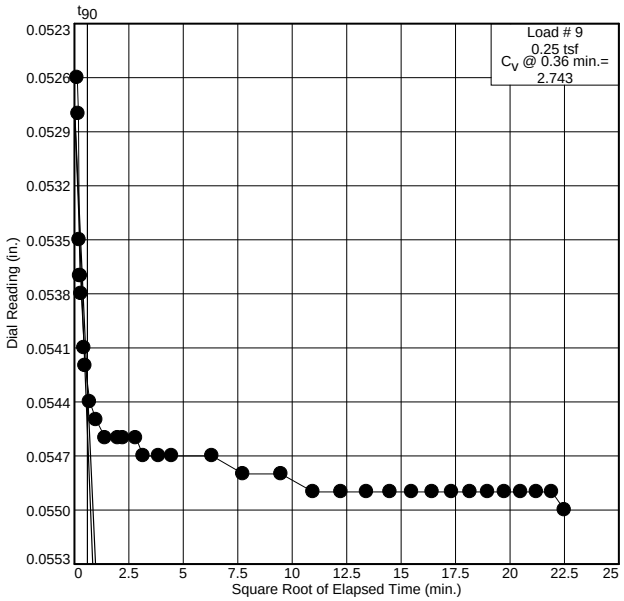
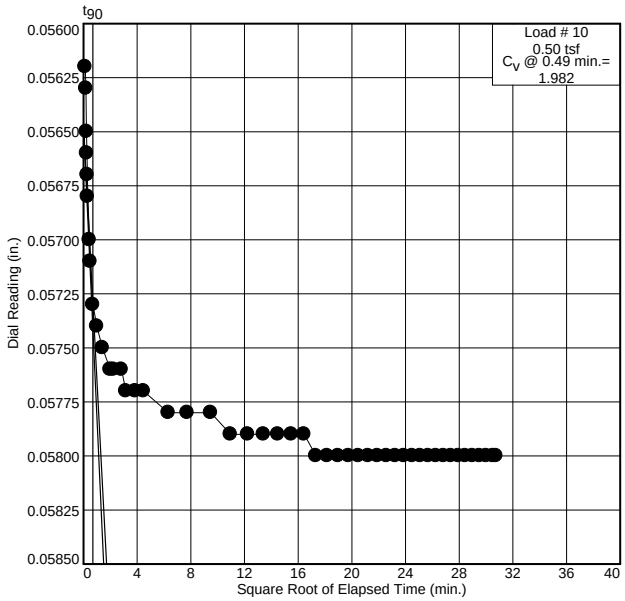
Figure

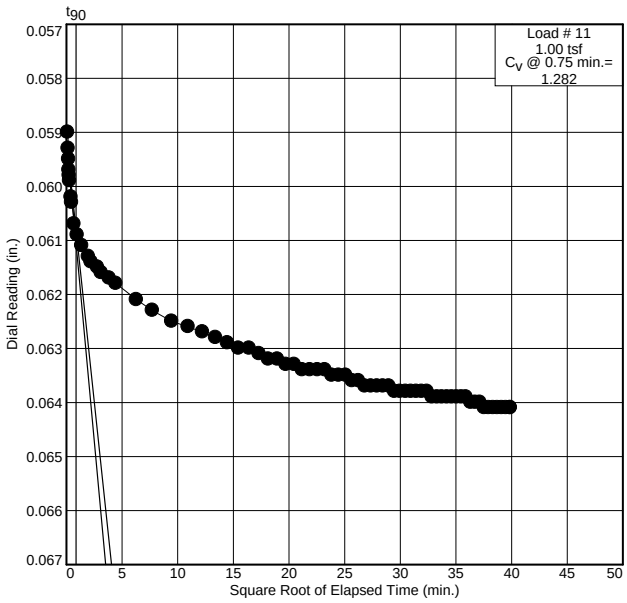
Dial Reading vs. Time

Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-14 Depth: 16' - 18'







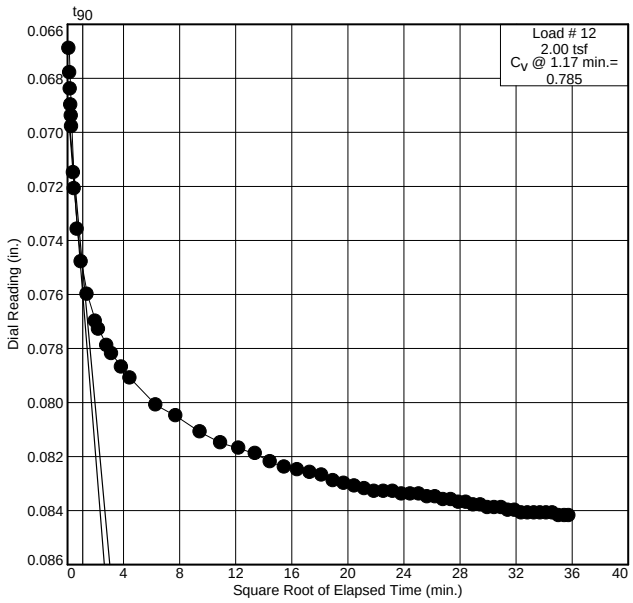


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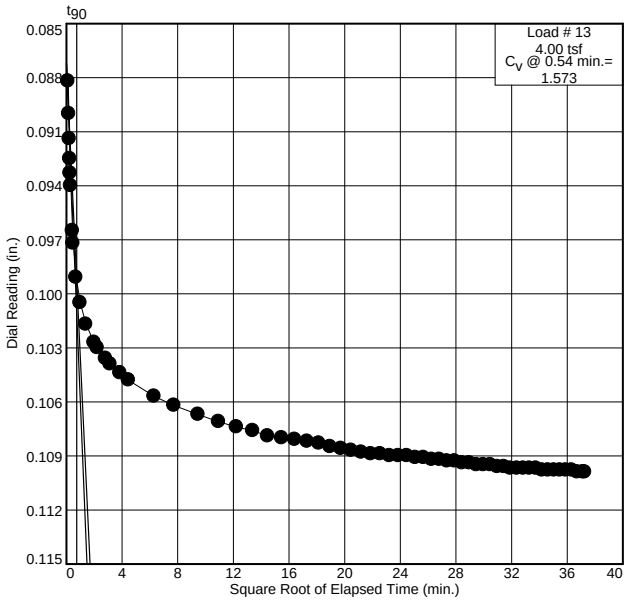
Figure

Dial Reading vs. Time

Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-14 Depth: 16' - 18'



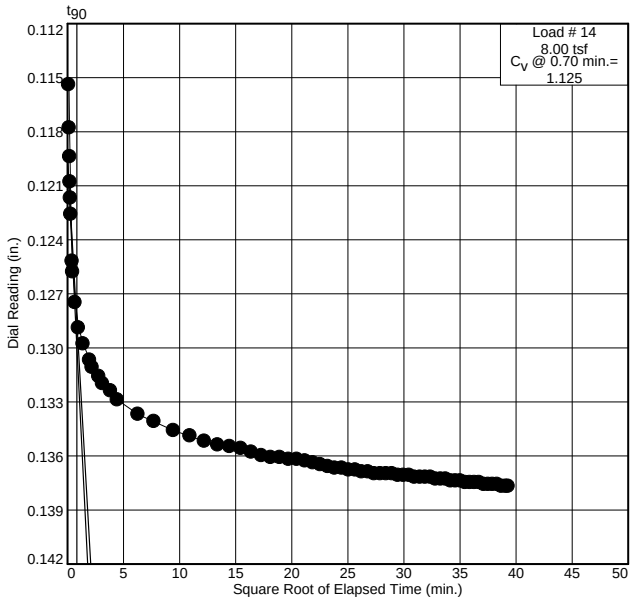


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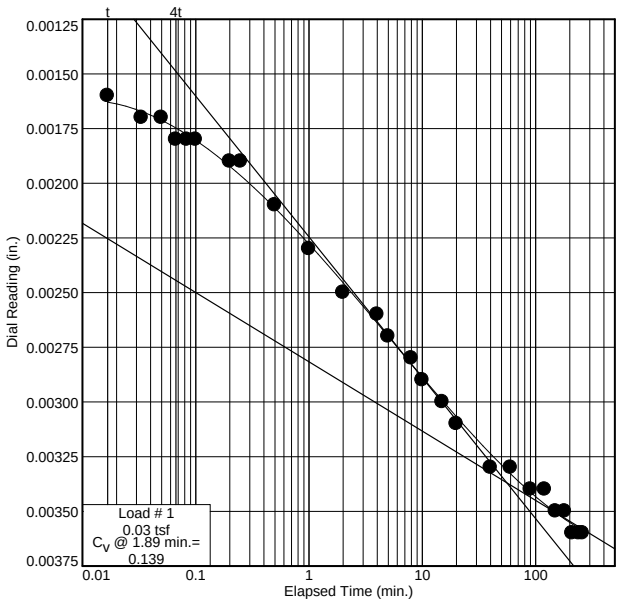
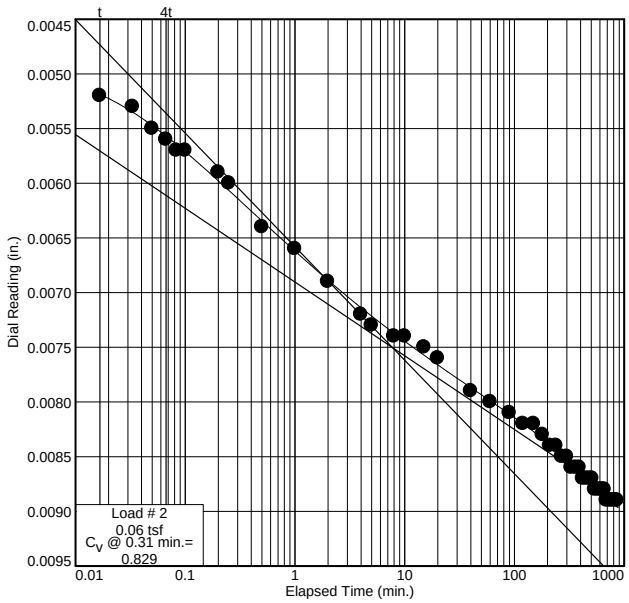
Figure

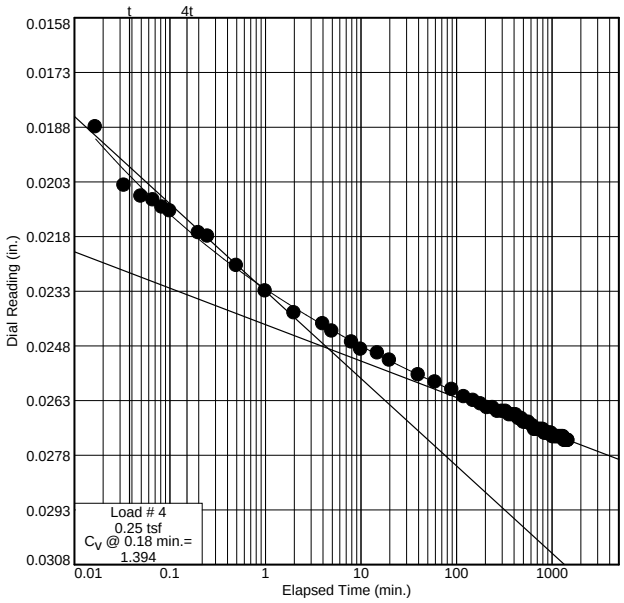
Dial Reading vs. Time

Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-14 Depth: 16' - 18'







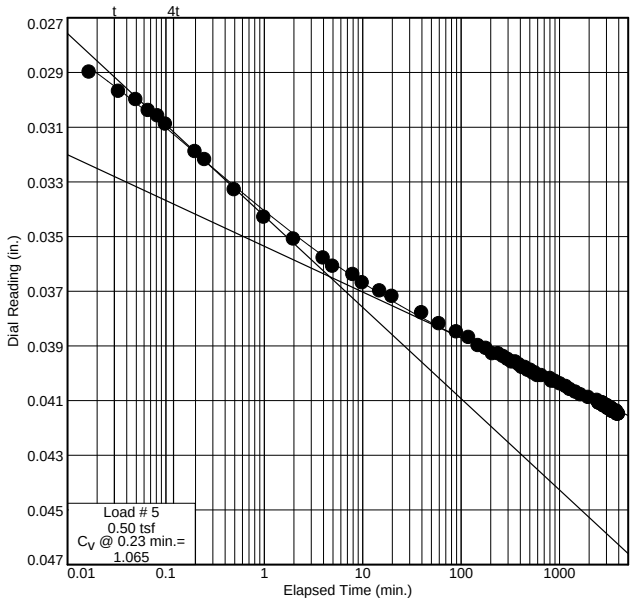


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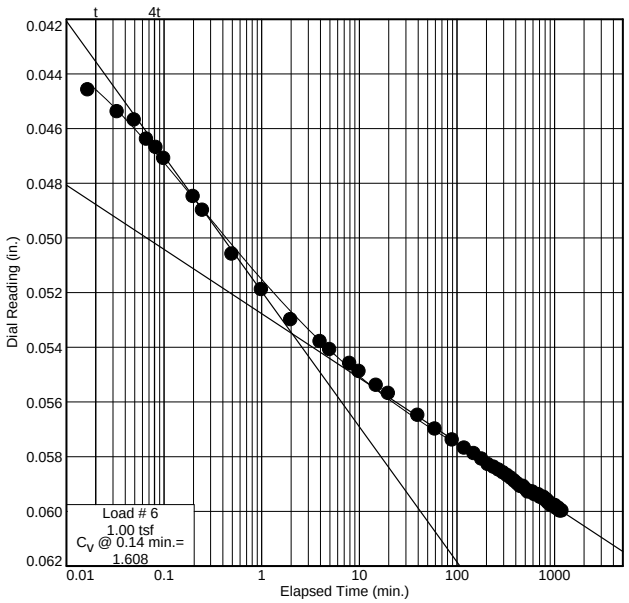
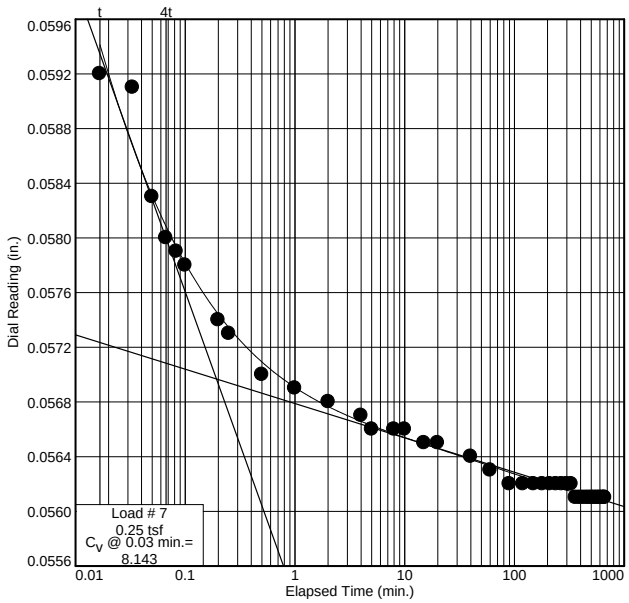
Figure

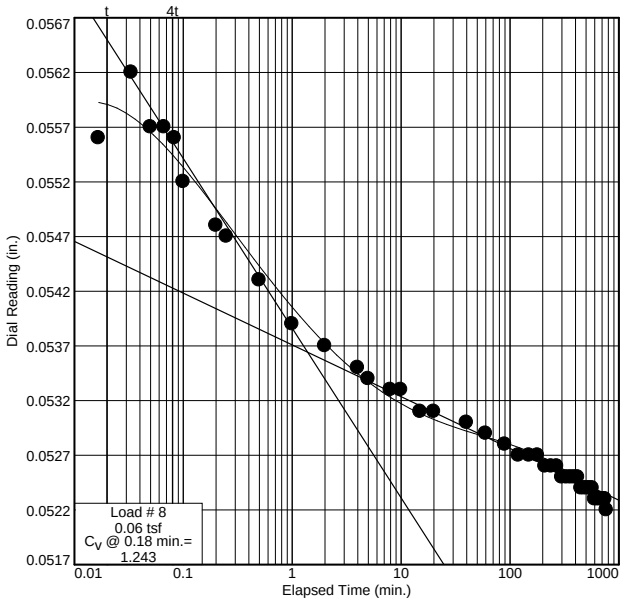
Dial Reading vs. Time

Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-14 Depth: 16' - 18'







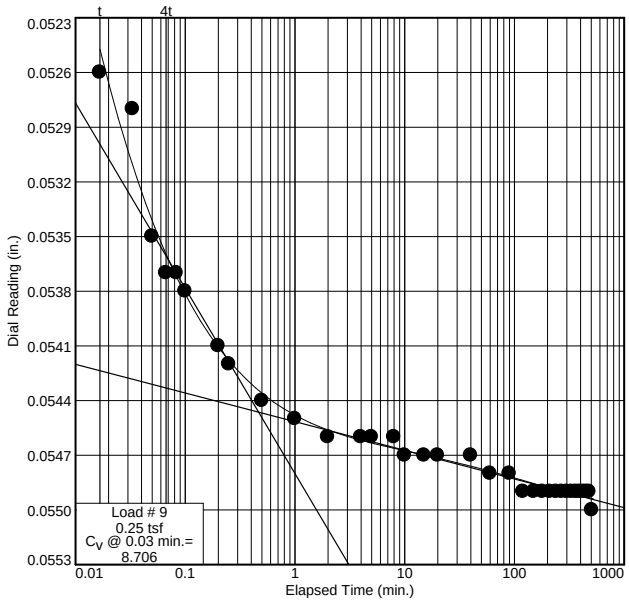


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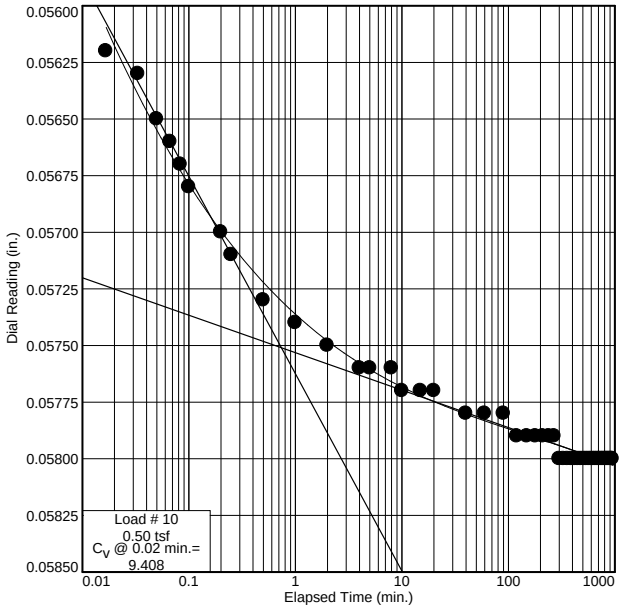
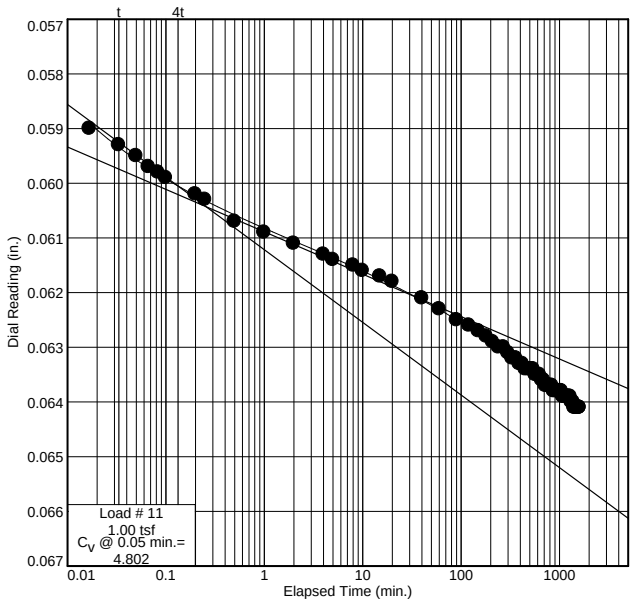
Figure

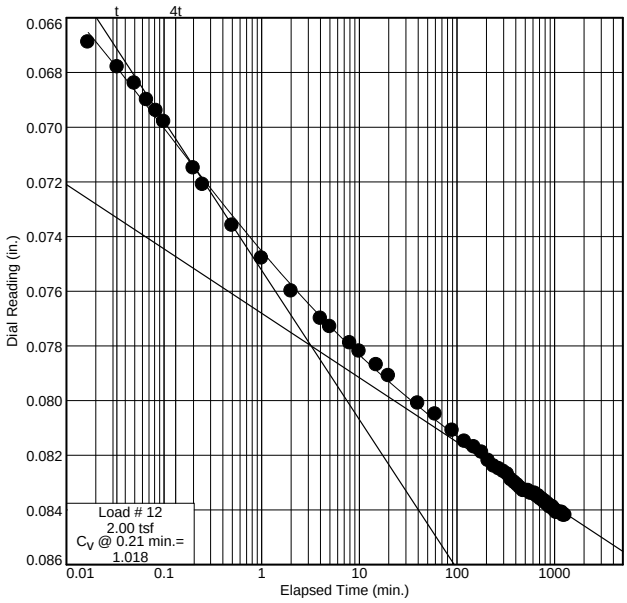
Dial Reading vs. Time

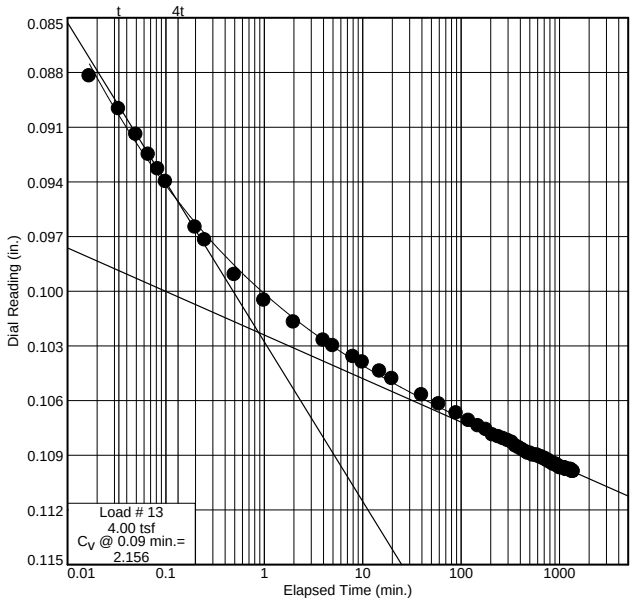
Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-14 Depth: 16' - 18'









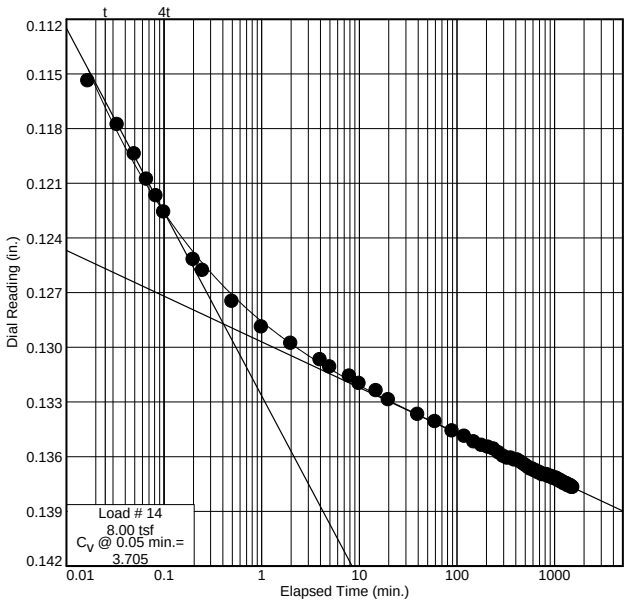
GEOENGINEERS

Figure

Dial Reading vs. Time

Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-14 Depth: 16' - 18'

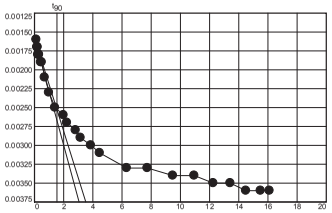


GeoEngineers

Figure

Pressure: 0.03 tsf — **TEST READINGS** — **Load No. 1**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.0003	15	8.0000	0.0028
2	0.0167	0.0016	16	10.0000	0.0029
3	0.0333	0.0017	17	15.0167	0.0030
4	0.0500	0.0017	18	20.0167	0.0031
5	0.0667	0.0018	19	40.0500	0.0033
6	0.0833	0.0018	20	60.0667	0.0033
7	0.1000	0.0018	21	90.1000	0.0034
8	0.2000	0.0019	22	120.1500	0.0034
9	0.2500	0.0019	23	150.1833	0.0035
10	0.5000	0.0021	24	180.2167	0.0035
11	1.0000	0.0023	25	210.2667	0.0036
12	2.0000	0.0025	26	240.3000	0.0036
13	4.0000	0.0026	27	259.4333	0.0036
14	5.0000	0.0027			

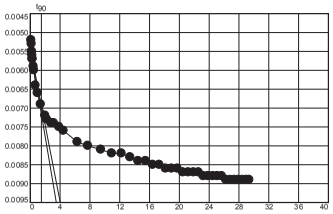


Void Ratio = 0.916 **Compression =** 0.5%

D_0 = 0.0016 **D_{90} =** 0.0025 **D_{100} =** 0.0026 **C_v at 2.38 min. =** 0.475 ft.^{2}/day

Pressure: 0.06 tsf — **TEST READINGS** — **Load No. 2**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.0036	21	90.1167	0.0081
2	0.0167	0.0052	22	120.1500	0.0082
3	0.0333	0.0053	23	150.1833	0.0082
4	0.0500	0.0055	24	180.2333	0.0083
5	0.0667	0.0056	25	210.2667	0.0084
6	0.0833	0.0057	26	240.3000	0.0084
7	0.1000	0.0057	27	270.3500	0.0085
8	0.2000	0.0059	28	300.3833	0.0085
9	0.2500	0.0060	29	330.4167	0.0086
10	0.5000	0.0064	30	360.4500	0.0086
11	1.0000	0.0066	31	390.5000	0.0086
12	2.0000	0.0069	32	420.5333	0.0087
13	4.0000	0.0072	33	450.5667	0.0087
14	5.0000	0.0073	34	480.6000	0.0087
15	8.0000	0.0074	35	510.6500	0.0087
16	10.0167	0.0074	36	540.6833	0.0088
17	15.0167	0.0075	37	570.7167	0.0088
18	20.0167	0.0076	38	600.7667	0.0088
19	40.0500	0.0079	39	630.8000	0.0088
20	60.0833	0.0080	40	660.8333	0.0088



CONSOLIDATION TEST DATA

9/15/2016

Client: CPRA
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana
Project Number: 16715-040-01
Location: B-14
Depth: 16' - 18'
Material Description: Very soft dark gray silty clay
Liquid Limit: 38 **Plasticity Index:** 20
USCS: (CL)
Testing Remarks: Cv at t90
Tested by: SLC **Checked by:** KLA/JMP

Test Specimen Data

NATURAL MOISTURE		VOID RATIO		AFTER TEST	
Wet w+t	= 204.52 g.	Spec. Gr.	= 2.630	Wet w+t	= 118.12 g.
Dry w+t	= 158.45 g.	Est. Ht. Solids	= 0.380 in.	Dry w+t	= 97.17 g.
Tare Wt.	= 40.79 g.	Init. V.R.	= 0.925	Tare Wt.	= 19.37 g.
Moisture	= 39.2 %	Init. Sat.	= 111.3 %	Moisture	= 26.9 %
				Dry Wt.	= 77.80 g.

UNIT WEIGHT		TEST START	
Height	= 0.732 in.	Height	= 0.732 in.
Diameter	= 2.503 in.	Diameter	= 2.503 in.
Weight	= 112.21 g.		
Dry Dens.	= 85.3 pcf		

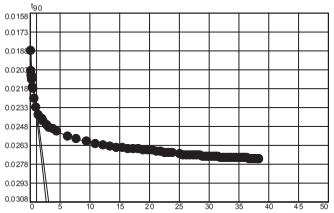
End-Of-Load Summary

Pressure (tsf)	Final Dial (in.)	Deformation (in.)	C_v (ft.^{2}/day)	C_α	Void Ratio	% Strain
start	0.00030	0.00000			0.925	
0.03	0.00360	0.00330	0.475		0.916	0.5 Comprs.
0.06	0.00890	0.00860	0.504		0.902	1.2 Comprs.
0.13	0.01770	0.01740	0.796		0.879	2.4 Comprs.
0.25	0.02740	0.02710	0.958		0.854	3.7 Comprs.
0.50	0.04150	0.04120	5.162		0.817	5.6 Comprs.
1.00	0.06000	0.05970	0.893		0.768	8.2 Comprs.
0.25	0.05610	0.05580	3.288		0.778	7.6 Comprs.
0.06	0.05220	0.05190	1.031		0.789	7.1 Comprs.
0.25	0.05500	0.05470	2.743		0.781	7.5 Comprs.
0.50	0.05800	0.05770	1.982		0.773	7.9 Comprs.
1.00	0.06410	0.06380	1.282		0.757	8.7 Comprs.
2.00	0.08420	0.08390	0.785		0.704	11.5 Comprs.
4.00	0.10990	0.10960	1.573		0.637	15.0 Comprs.
8.00	0.13770	0.13740	1.125		0.564	18.8 Comprs.

Compression index (C_c), tsf = 0.23 **Preconsolidation pressure (P_p), tsf =** 0.5 **Void ratio at P_p (e_m) =** 0.812
Recompression index (C_r) = 0.07

Pressure: 0.25 tsf — **TEST READINGS** — **Load No. 4**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.0177	35	510.6500	0.0269
2	0.0167	0.0188	36	540.6833	0.0269
3	0.0333	0.0204	37	570.7167	0.0269
4	0.0500	0.0207	38	630.8000	0.0270
5	0.0667	0.0208	39	660.8333	0.0271
6	0.0833	0.0210	40	690.8833	0.0271
7	0.1000	0.0211	41	720.9167	0.0271
8	0.2000	0.0217	42	750.9500	0.0271
9	0.2500	0.0218	43	780.9833	0.0271
10	0.5000	0.0226	44	811.0333	0.0271
11	1.0000	0.0233	45	841.0667	0.0272
12	2.0000	0.0239	46	871.1000	0.0272
13	4.0000	0.0242	47	901.1333	0.0272
14	5.0000	0.0244	48	931.1833	0.0272
15	8.0167	0.0247	49	961.2167	0.0272
16	10.0167	0.0249	50	991.2500	0.0272
17	15.0167	0.0250	51	1021.3000	0.0273
18	20.0333	0.0252	52	1051.3333	0.0273
19	40.0500	0.0256	53	1081.3667	0.0273
20	60.0833	0.0258	54	1111.4000	0.0273
21	90.1167	0.0260	55	1141.4500	0.0273
22	120.1500	0.0262	56	1171.4833	0.0273
23	150.1833	0.0263	57	1201.5167	0.0273
24	180.2333	0.0264	58	1231.5667	0.0273
25	210.2667	0.0265	59	1261.6000	0.0273
26	240.3000	0.0265	60	1291.6333	0.0273
27	270.3333	0.0266	61	1321.6833	0.0273
28	300.3833	0.0266	62	1351.7167	0.0274
29	330.4167	0.0266	63	1381.7500	0.0274
30	360.4500	0.0267	64	1411.7833	0.0274
31	390.5000	0.0267	65	1441.8333	0.0274
32	420.5333	0.0267	66	1471.8667	0.0274
33	450.5667	0.0268	67	1473.3333	0.0274
34	480.6167	0.0268			



Void Ratio = 0.854 **Compression =** 3.7%

D_0 = 0.0195 D_{90} = 0.0234 D_{100} = 0.0238 C_v **at 1.11 min. =** 0.958 ft.^{2}/day

Pressure: 0.06 tsf — **TEST READINGS (continued)** — **Load No. 2**

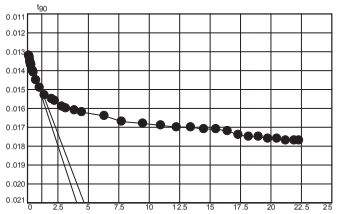
No.	Elapsed Time	Dial Reading
41	690.8667	0.0089
42	720.9167	0.0089
43	750.9500	0.0089
44	780.9833	0.0089
45	811.0333	0.0089
46	841.0667	0.0089
47	863.8333	0.0089

Void Ratio = 0.902 **Compression =** 1.2%

D_0 = 0.0054 D_{90} = 0.0069 D_{100} = 0.0071 C_v **at 2.22 min. =** 0.504 ft.^{2}/day

Pressure: 0.13 tsf — **TEST READINGS** — **Load No. 3**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.0089	19	40.0500	0.0164
2	0.0167	0.0132	20	60.0833	0.0167
3	0.0333	0.0133	21	90.1167	0.0168
4	0.0500	0.0135	22	120.1667	0.0169
5	0.0667	0.0136	23	150.2000	0.0170
6	0.0833	0.0137	24	180.2333	0.0170
7	0.1000	0.0137	25	210.2667	0.0171
8	0.2000	0.0140	26	240.3167	0.0171
9	0.2500	0.0141	27	270.3500	0.0172
10	0.5000	0.0145	28	300.3833	0.0174
11	1.0000	0.0149	29	330.4333	0.0175
12	2.0000	0.0153	30	360.4667	0.0175
13	4.0167	0.0155	31	390.5000	0.0176
14	5.0167	0.0156	32	420.5333	0.0176
15	8.0167	0.0159	33	450.5833	0.0177
16	10.0167	0.0160	34	480.6167	0.0177
17	15.0167	0.0161	35	497.9833	0.0177
18	20.0333	0.0162			



Void Ratio = 0.879 **Compression =** 2.4%

D_0 = 0.0131 D_{90} = 0.0151 D_{100} = 0.0153 C_v **at 1.38 min. =** 0.796 ft.^{2}/day

Pressure: 0.50 tsf — **TEST READINGS (continued)** — **Load No. 5**

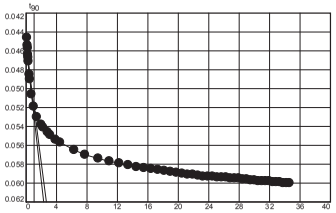
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
81	3454.3833	0.0414	91	3754.7667	0.0414
82	3484.4167	0.0414	92	3784.8000	0.0414
83	3514.4500	0.0414	93	3814.8333	0.0414
84	3544.5000	0.0414	94	3844.8833	0.0414
85	3574.5333	0.0414	95	3874.9167	0.0415
86	3604.5833	0.0414	96	3904.9500	0.0415
87	3634.6167	0.0414	97	3934.9833	0.0415
88	3664.6500	0.0414	98	3965.0333	0.0415
89	3694.6833	0.0414	99	3995.0667	0.0415
90	3724.7167	0.0414	100	4004.5833	0.0415

Void Ratio = 0.817 **Compression =** 5.6%

D_0 = 0.0303 **D_{90} =** 0.0319 **D_{100} =** 0.0321 **C_v at 0.20 min. =** 5.162 ft.^{2}/day

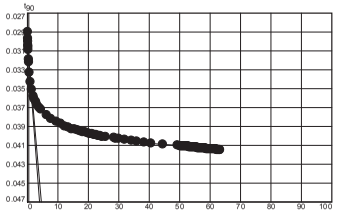
Pressure: 1.00 tsf — **TEST READINGS** — **Load No. 6**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.0415	25	210.2667	0.0583
2	0.0167	0.0446	26	240.3000	0.0584
3	0.0333	0.0454	27	270.3500	0.0585
4	0.0500	0.0457	28	300.3833	0.0586
5	0.0667	0.0464	29	330.4167	0.0587
6	0.0833	0.0467	30	360.4500	0.0588
7	0.1000	0.0471	31	390.5000	0.0589
8	0.2000	0.0485	32	420.5333	0.0590
9	0.2500	0.0490	33	450.5667	0.0591
10	0.5000	0.0506	34	480.6167	0.0591
11	1.0000	0.0519	35	510.6500	0.0592
12	2.0000	0.0530	36	540.6833	0.0593
13	4.0000	0.0538	37	570.7167	0.0593
14	5.0000	0.0541	38	600.7667	0.0593
15	8.0167	0.0546	39	630.8000	0.0594
16	10.0167	0.0549	40	660.8333	0.0594
17	15.0167	0.0554	41	690.8833	0.0594
18	20.0333	0.0557	42	720.9167	0.0595
19	40.0500	0.0565	43	750.9500	0.0595
20	60.0833	0.0570	44	780.9833	0.0595
21	90.1167	0.0574	45	811.0333	0.0596
22	120.1500	0.0577	46	841.0667	0.0596
23	150.1833	0.0579	47	871.1000	0.0597
24	180.2333	0.0581	48	901.1500	0.0597



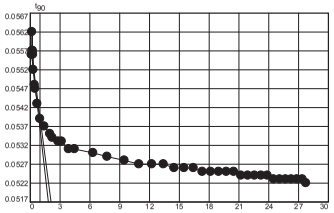
Pressure: 0.50 tsf — **TEST READINGS** — **Load No. 5**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.0274	41	841.0667	0.0403
2	0.0167	0.0290	42	901.1333	0.0403
3	0.0333	0.0297	43	1021.2833	0.0404
4	0.0500	0.0300	44	1171.4833	0.0405
5	0.0667	0.0304	45	1291.6333	0.0406
6	0.0833	0.0306	46	1471.8667	0.0407
7	0.1000	0.0309	47	1652.0833	0.0408
8	0.2000	0.0319	48	1982.5167	0.0409
9	0.2500	0.0322	49	2433.0833	0.0410
10	0.5000	0.0333	50	2523.2000	0.0411
11	1.0000	0.0343	51	2553.2333	0.0411
12	2.0000	0.0351	52	2583.2667	0.0411
13	4.0000	0.0358	53	2613.3167	0.0411
14	5.0000	0.0361	54	2643.3500	0.0411
15	8.0000	0.0364	55	2673.3833	0.0411
16	10.0000	0.0367	56	2703.4167	0.0411
17	15.0167	0.0370	57	2733.4667	0.0411
18	20.0167	0.0372	58	2763.5000	0.0411
19	40.0500	0.0378	59	2793.5500	0.0411
20	60.0667	0.0382	60	2823.5833	0.0412
21	90.1000	0.0385	61	2853.6167	0.0412
22	120.1333	0.0387	62	2883.6500	0.0412
23	150.1833	0.0390	63	2913.7000	0.0412
24	180.2167	0.0391	64	2943.7333	0.0412
25	210.2667	0.0393	65	2973.7667	0.0412
26	240.3000	0.0393	66	3003.8167	0.0412
27	270.3333	0.0394	67	3033.8500	0.0412
28	300.3667	0.0395	68	3063.8833	0.0412
29	330.4000	0.0396	69	3093.9167	0.0412
30	360.4500	0.0396	70	3123.9667	0.0413
31	390.4833	0.0397	71	3154.0000	0.0413
32	420.5333	0.0398	72	3184.0333	0.0413
33	450.5667	0.0398	73	3214.0833	0.0413
34	480.6000	0.0399	74	3244.1167	0.0413
35	510.6333	0.0399	75	3274.1500	0.0413
36	540.6833	0.0400	76	3304.1833	0.0413
37	570.7167	0.0400	77	3334.2333	0.0413
38	600.7500	0.0401	78	3364.2667	0.0413
39	660.8333	0.0401	79	3394.3000	0.0413
40	811.0167	0.0402	80	3424.3500	0.0413



Pressure: 0.06 tsf — **TEST READINGS** — **Load No. 8**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.0561	23	150.1833	0.0527
2	0.0167	0.0556	24	180.2167	0.0527
3	0.0333	0.0562	25	210.2500	0.0526
4	0.0500	0.0557	26	240.3000	0.0526
5	0.0667	0.0557	27	270.3333	0.0526
6	0.0833	0.0556	28	300.3667	0.0525
7	0.1000	0.0552	29	330.4167	0.0525
8	0.2000	0.0548	30	360.4500	0.0525
9	0.2500	0.0547	31	390.4833	0.0525
10	0.5000	0.0543	32	420.5333	0.0525
11	1.0000	0.0539	33	450.5667	0.0524
12	2.0000	0.0537	34	480.6000	0.0524
13	4.0000	0.0535	35	510.6500	0.0524
14	5.0000	0.0534	36	540.6833	0.0524
15	8.0000	0.0533	37	570.7167	0.0524
16	10.0000	0.0533	38	600.7500	0.0523
17	15.0167	0.0531	39	630.8000	0.0523
18	20.0167	0.0531	40	660.8333	0.0523
19	40.0500	0.0530	41	690.8667	0.0523
20	60.0667	0.0529	42	720.9167	0.0523
21	90.1000	0.0528	43	750.9500	0.0523
22	120.1500	0.0527	44	770.7167	0.0522

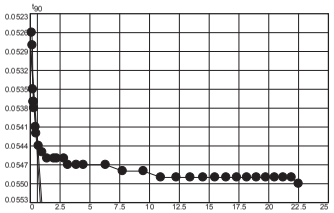


Void Ratio = 0.789 **Compression =** 7.1%

D_0 = 0.0559 **D_{90} =** 0.0539 **D_{100} =** 0.0537 **C_v at 0.95 min. =** 1.031 ft.^{2}/day

Pressure: 0.25 tsf — **TEST READINGS** — **Load No. 9**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.0522	13	4.0000	0.0546
2	0.0167	0.0526	14	5.0000	0.0546
3	0.0333	0.0528	15	8.0000	0.0546
4	0.0500	0.0535	16	10.0000	0.0547
5	0.0667	0.0537	17	15.0167	0.0547
6	0.0833	0.0537	18	20.0167	0.0547
7	0.1000	0.0538	19	40.0500	0.0547
8	0.2000	0.0541	20	60.0667	0.0548
9	0.2500	0.0542	21	90.1167	0.0548
10	0.5000	0.0544	22	120.1500	0.0549
11	1.0000	0.0545	23	150.1833	0.0549
12	2.0000	0.0546	24	180.2167	0.0549



Pressure: 1.00 tsf — **TEST READINGS (continued)** — **Load No. 6**

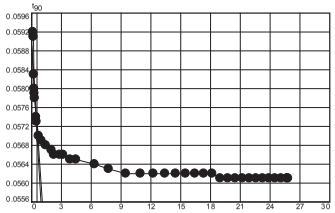
No.	Elapsed Time	Dial Reading
49	931.1833	0.0598
50	961.2167	0.0598
51	991.2500	0.0598
52	1021.3000	0.0598
53	1051.3333	0.0599
54	1081.3667	0.0599
55	1111.4167	0.0599
56	1141.4500	0.0600
57	1171.4833	0.0600
58	1198.8167	0.0600

Void Ratio = 0.768 **Compression =** 8.2%

D_0 = 0.0455 **D_{90} =** 0.0520 **D_{100} =** 0.0528 **C_v at 1.10 min. =** 0.893 ft.^{2}/day

Pressure: 0.25 tsf — **TEST READINGS** — **Load No. 7**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.0600	22	120.1500	0.0562
2	0.0167	0.0592	23	150.2000	0.0562
3	0.0333	0.0591	24	180.2333	0.0562
4	0.0500	0.0583	25	210.2667	0.0562
5	0.0667	0.0580	26	240.3167	0.0562
6	0.0833	0.0579	27	270.3500	0.0562
7	0.1000	0.0578	28	300.3833	0.0562
8	0.2000	0.0574	29	330.4333	0.0562
9	0.2500	0.0573	30	360.4667	0.0561
10	0.5000	0.0570	31	390.5000	0.0561
11	1.0000	0.0569	32	420.5333	0.0561
12	2.0167	0.0568	33	450.5833	0.0561
13	4.0167	0.0567	34	480.6167	0.0561
14	5.0167	0.0566	35	510.6500	0.0561
15	8.0167	0.0566	36	540.7000	0.0561
16	10.0167	0.0566	37	570.7333	0.0561
17	15.0333	0.0565	38	600.7667	0.0561
18	20.0333	0.0565	39	630.8000	0.0561
19	40.0667	0.0564	40	660.8500	0.0561
20	60.0833	0.0563	41	666.6000	0.0561
21	90.1167	0.0562			



Void Ratio = 0.778 **Compression =** 7.6%

D_0 = 0.0589 **D_{90} =** 0.0572 **D_{100} =** 0.0571 **C_v at 0.29 min. =** 3.288 ft.^{2}/day

Pressure: 0.50 tsf — **TEST READINGS (continued)** — **Load No. 10**

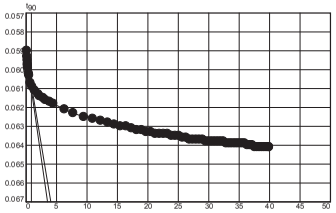
No.	Elapsed Time	Dial Reading
49	931.1833	0.0580
50	946.3167	0.0580

Void Ratio = 0.773 **Compression =** 7.9%

D_0 = 0.0565 D_{90} = 0.0573 D_{100} = 0.0574 **C_v at 0.49 min. =** 1.982 ft.^{2}/day

Pressure: 1.00 tsf — **TEST READINGS** — **Load No. 11**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.0580	33	450.5667	0.0634
2	0.0167	0.0590	34	480.6000	0.0634
3	0.0333	0.0593	35	510.6500	0.0634
4	0.0500	0.0595	36	540.6833	0.0634
5	0.0667	0.0597	37	570.7167	0.0635
6	0.0833	0.0598	38	600.7667	0.0635
7	0.1000	0.0599	39	630.8000	0.0635
8	0.2000	0.0602	40	660.8333	0.0636
9	0.2500	0.0603	41	690.8667	0.0636
10	0.5000	0.0607	42	720.9167	0.0637
11	1.0000	0.0609	43	750.9500	0.0637
12	2.0000	0.0611	44	780.9833	0.0637
13	4.0000	0.0613	45	811.0333	0.0637
14	5.0000	0.0614	46	841.0667	0.0637
15	8.0000	0.0615	47	871.1000	0.0638
16	10.0000	0.0616	48	901.1333	0.0638
17	15.0167	0.0617	49	931.1833	0.0638
18	20.0167	0.0618	50	961.2167	0.0638
19	40.0333	0.0621	51	991.2500	0.0638
20	60.0667	0.0623	52	1021.3000	0.0638
21	90.1000	0.0625	53	1051.3333	0.0638
22	120.1500	0.0626	54	1081.3667	0.0639
23	150.1833	0.0627	55	1111.4000	0.0639
24	180.2167	0.0628	56	1141.4500	0.0639
25	210.2667	0.0629	57	1171.4833	0.0639
26	240.3000	0.0630	58	1201.5167	0.0639
27	270.3333	0.0630	59	1231.5667	0.0639
28	300.3667	0.0631	60	1261.6000	0.0639
29	330.4167	0.0632	61	1291.6333	0.0639
30	360.4500	0.0632	62	1321.6667	0.0640
31	390.4833	0.0633	63	1351.7167	0.0640
32	420.5333	0.0633	64	1381.7500	0.0640



Pressure: 0.25 tsf — **TEST READINGS (continued)** — **Load No. 9**

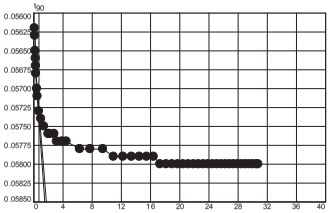
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
25	210.2667	0.0549	35	506.5500	0.0550
26	240.3000	0.0549			
27	270.3333	0.0549			
28	300.3833	0.0549			
29	330.4167	0.0549			
30	360.4500	0.0549			
31	390.5000	0.0549			
32	420.5333	0.0549			
33	450.5667	0.0549			
34	480.6000	0.0549			

Void Ratio = 0.781 **Compression =** 7.5%

D_0 = 0.0528 D_{90} = 0.0543 D_{100} = 0.0545 **C_v at 0.36 min. =** 2.743 ft.^{2}/day

Pressure: 0.50 tsf — **TEST READINGS** — **Load No. 10**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.0550	25	210.2667	0.0579
2	0.0167	0.0562	26	240.3167	0.0579
3	0.0333	0.0563	27	270.3500	0.0579
4	0.0500	0.0565	28	300.3833	0.0580
5	0.0667	0.0566	29	330.4167	0.0580
6	0.0833	0.0567	30	360.4667	0.0580
7	0.1000	0.0568	31	390.5000	0.0580
8	0.2000	0.0570	32	420.5333	0.0580
9	0.2500	0.0571	33	450.5833	0.0580
10	0.5000	0.0573	34	480.6167	0.0580
11	1.0000	0.0574	35	510.6500	0.0580
12	2.0000	0.0575	36	540.6833	0.0580
13	4.0167	0.0576	37	570.7333	0.0580
14	5.0167	0.0576	38	600.7667	0.0580
15	8.0167	0.0576	39	630.8000	0.0580
16	10.0167	0.0577	40	660.8500	0.0580
17	15.0167	0.0577	41	690.8833	0.0580
18	20.0333	0.0577	42	720.9167	0.0580
19	40.0500	0.0578	43	750.9500	0.0580
20	60.0833	0.0578	44	781.0000	0.0580
21	90.1167	0.0578	45	811.0333	0.0580
22	120.1667	0.0579	46	841.0667	0.0580
23	150.2000	0.0579	47	871.1167	0.0580
24	180.2333	0.0579	48	901.1500	0.0580



Pressure: 2.00 tsf — **TEST READINGS (continued)** — **Load No. 12**

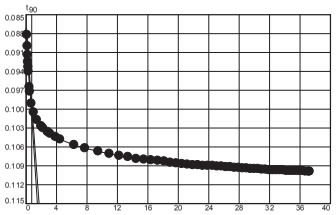
No.	Elapsed Time	Dial Reading
53	1049.8500	0.0841
54	1079.8500	0.0841
55	1109.8500	0.0841
56	1139.8500	0.0841
57	1169.8333	0.0841
58	1199.8333	0.0841
59	1229.8333	0.0842
60	1259.8333	0.0842
61	1281.3667	0.0842

Void Ratio = 0.704 **Compression =** 11.5%

D_0 = 0.0689 D_{90} = 0.0750 D_{100} = 0.0757 C_v **at 1.17 min. =** 0.785 ft.^{2}/day

Pressure: 4.00 tsf — **TEST READINGS** — **Load No. 13**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.0842	26	239.9667	0.1080
2	0.0167	0.0882	27	269.9667	0.1081
3	0.0333	0.0900	28	299.9667	0.1082
4	0.0500	0.0914	29	329.9500	0.1083
5	0.0667	0.0925	30	359.9500	0.1085
6	0.0833	0.0933	31	389.9500	0.1086
7	0.1000	0.0940	32	419.9333	0.1087
8	0.2000	0.0965	33	449.9333	0.1088
9	0.2500	0.0972	34	479.9333	0.1089
10	0.5000	0.0991	35	509.9333	0.1089
11	1.0000	0.1005	36	539.9167	0.1090
12	2.0000	0.1017	37	569.9167	0.1090
13	4.0000	0.1027	38	599.9167	0.1090
14	5.0000	0.1030	39	629.9167	0.1091
15	8.0000	0.1036	40	659.9000	0.1091
16	10.0000	0.1039	41	689.9000	0.1092
17	15.0000	0.1044	42	719.9000	0.1092
18	20.0000	0.1048	43	749.9000	0.1093
19	40.0000	0.1057	44	779.8833	0.1093
20	60.0000	0.1062	45	809.8833	0.1094
21	89.9833	0.1067	46	839.8833	0.1094
22	119.9833	0.1071	47	869.8833	0.1095
23	149.9833	0.1074	48	899.8667	0.1095
24	179.9667	0.1076	49	929.8667	0.1095
25	209.9667	0.1079	50	959.8667	0.1096



Pressure: 1.00 tsf — **TEST READINGS (continued)** — **Load No. 11**

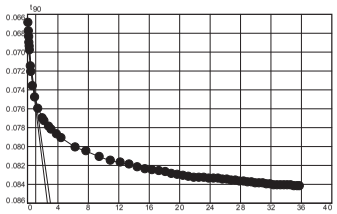
No.	Elapsed Time	Dial Reading
65	1411.7833	0.0641
66	1441.8333	0.0641
67	1471.8667	0.0641
68	1501.9000	0.0641
69	1531.9500	0.0641
70	1561.9833	0.0641
71	1592.0167	0.0641
72	1592.2500	0.0641

Void Ratio = 0.757 **Compression =** 8.7%

D_0 = 0.0591 D_{90} = 0.0608 D_{100} = 0.0610 C_v **at 0.75 min. =** 1.282 ft.^{2}/day

Pressure: 2.00 tsf — **TEST READINGS** — **Load No. 12**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.0641	27	269.9833	0.0825
2	0.0167	0.0669	28	299.9833	0.0826
3	0.0333	0.0678	29	329.9667	0.0827
4	0.0500	0.0684	30	359.9667	0.0829
5	0.0667	0.0690	31	389.9667	0.0830
6	0.0833	0.0694	32	419.9500	0.0831
7	0.1000	0.0698	33	449.9500	0.0832
8	0.2000	0.0715	34	479.9500	0.0833
9	0.2500	0.0721	35	509.9333	0.0833
10	0.5000	0.0736	36	539.9333	0.0833
11	1.0000	0.0748	37	569.9333	0.0834
12	2.0167	0.0760	38	599.9333	0.0834
13	4.0167	0.0770	39	629.9167	0.0834
14	5.0167	0.0773	40	659.9167	0.0835
15	8.0167	0.0779	41	689.9167	0.0835
16	10.0167	0.0782	42	719.9000	0.0836
17	15.0167	0.0787	43	749.9000	0.0836
18	20.0167	0.0791	44	779.9000	0.0837
19	40.0167	0.0801	45	809.9000	0.0837
20	60.0167	0.0805	46	839.8833	0.0838
21	90.0000	0.0811	47	869.8833	0.0838
22	120.0000	0.0815	48	899.8833	0.0839
23	150.0000	0.0817	49	929.8667	0.0839
24	179.9833	0.0819	50	959.8667	0.0839
25	209.9833	0.0822	51	989.8667	0.0840
26	239.9833	0.0824	52	1019.8667	0.0840



Pressure: 8.00 tsf — **TEST READINGS (continued)** — **Load No. 14**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
49	929.9167	0.1371	59	1229.8833	0.1374	69	1529.8667	0.1377
50	959.9000	0.1372	60	1259.8833	0.1375	70	1546.3667	0.1377
51	989.9000	0.1372	61	1289.8833	0.1375			
52	1019.9000	0.1372	62	1319.8833	0.1375			
53	1049.9000	0.1372	63	1349.8833	0.1375			
54	1079.9000	0.1373	64	1379.8667	0.1376			
55	1109.9000	0.1373	65	1409.8667	0.1376			
56	1139.9000	0.1373	66	1439.8667	0.1376			
57	1169.8833	0.1374	67	1469.8667	0.1376			
58	1199.8833	0.1374	68	1499.8667	0.1377			

Void Ratio = 0.564 **Compression =** 18.8%

D_0 = 0.1195 D_{90} = 0.1281 D_{100} = 0.1291 C_v **at 0.70 min. =** 1.125 ft.^{2}/day

Pressure: 4.00 tsf — **TEST READINGS (continued)** — **Load No. 13**

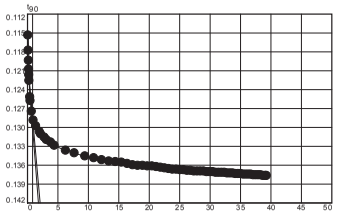
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
51	989.8500	0.1096	61	1289.8167	0.1098
52	1019.8500	0.1097	62	1319.8167	0.1098
53	1049.8500	0.1097	63	1349.8000	0.1099
54	1079.8500	0.1097	64	1379.8000	0.1099
55	1109.8333	0.1097	65	1389.5833	0.1099
56	1139.8333	0.1097			
57	1169.8333	0.1098			
58	1199.8333	0.1098			
59	1229.8167	0.1098			
60	1259.8167	0.1098			

Void Ratio = 0.637 **Compression =** 15.0%

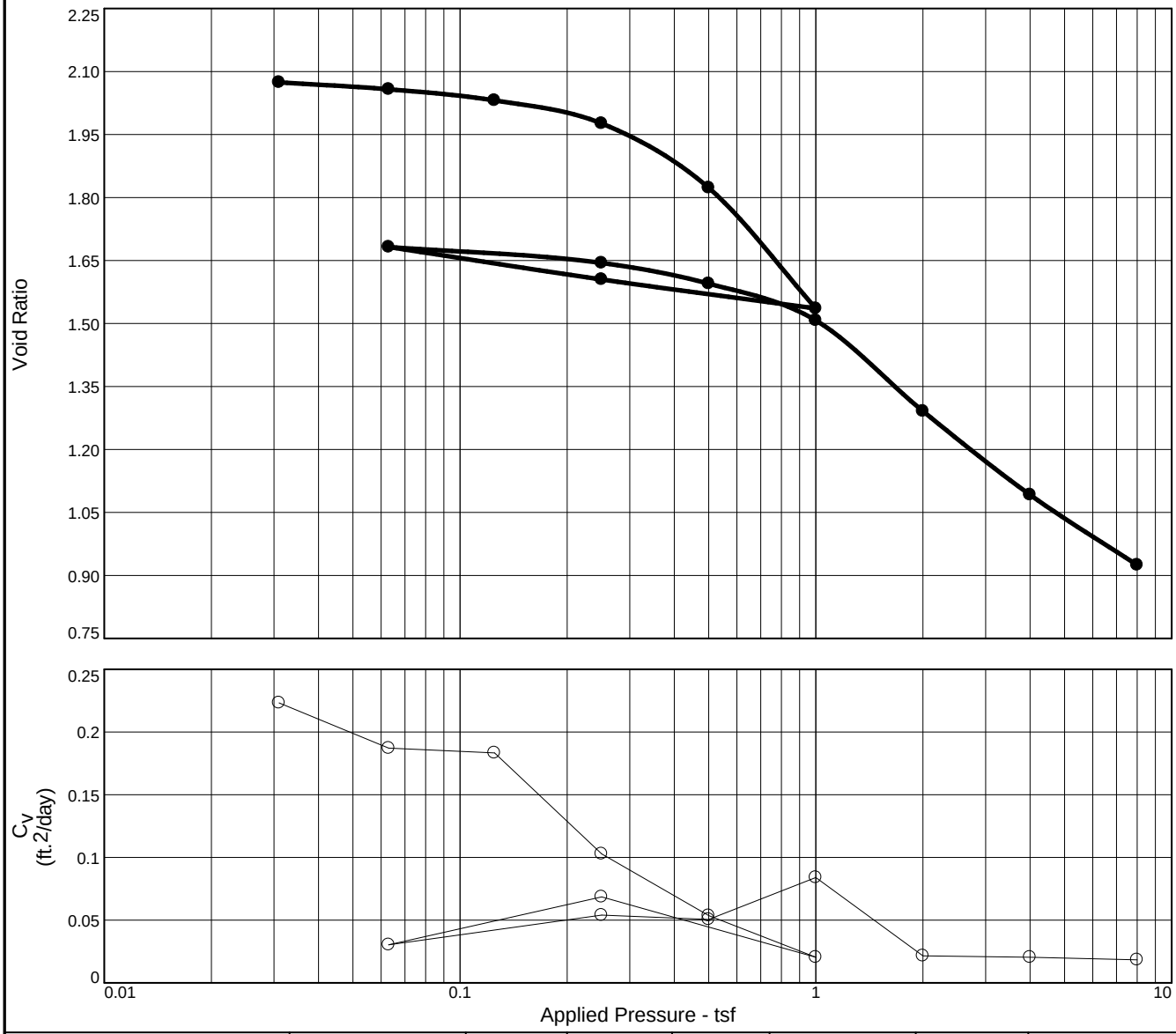
D_0 = 0.0872 D_{90} = 0.0992 D_{100} = 0.1006 C_v **at 0.54 min. =** 1.573 ft.^{2}/day

Pressure: 8.00 tsf — **TEST READINGS** — **Load No. 14**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.1099	25	209.9667	0.1355
2	0.0167	0.1154	26	239.9667	0.1356
3	0.0333	0.1178	27	269.9667	0.1358
4	0.0500	0.1194	28	299.9667	0.1360
5	0.0667	0.1208	29	329.9500	0.1361
6	0.0833	0.1217	30	359.9500	0.1361
7	0.1000	0.1226	31	389.9500	0.1362
8	0.2000	0.1252	32	419.9500	0.1362
9	0.2500	0.1258	33	449.9500	0.1363
10	0.5000	0.1275	34	479.9500	0.1364
11	1.0000	0.1289	35	509.9500	0.1365
12	2.0000	0.1298	36	539.9500	0.1366
13	4.0000	0.1307	37	569.9333	0.1367
14	5.0000	0.1311	38	599.9333	0.1367
15	8.0000	0.1316	39	629.9333	0.1368
16	10.0000	0.1320	40	659.9333	0.1368
17	15.0000	0.1324	41	689.9333	0.1369
18	20.0000	0.1329	42	719.9333	0.1369
19	40.0000	0.1337	43	749.9333	0.1370
20	60.0000	0.1341	44	779.9167	0.1370
21	89.9833	0.1346	45	809.9167	0.1370
22	119.9833	0.1349	46	839.9167	0.1370
23	149.9833	0.1352	47	869.9167	0.1371
24	179.9833	0.1354	48	899.9167	0.1371



CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture							
112.6 %	87.0 %	54.5	81	59	2.688	0.4	0.94	2.078

MATERIAL DESCRIPTION	USCS	AASHTO
Very soft gray clay with silt lenses	(CH)	

Project No. 16715-040-01 **Client:** CPRA

Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

Source of Sample: B-15 **Depth:** 10' - 12'

Remarks:
% Organic = 2.1
Cv at t90

GEOENGINEERS

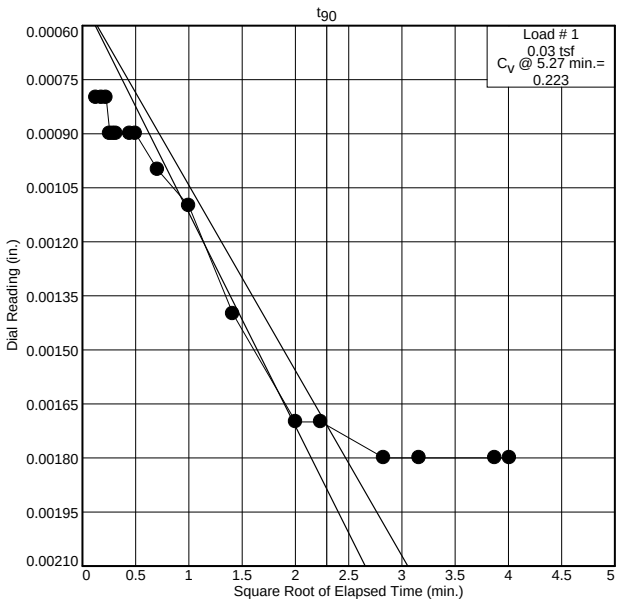
Figure

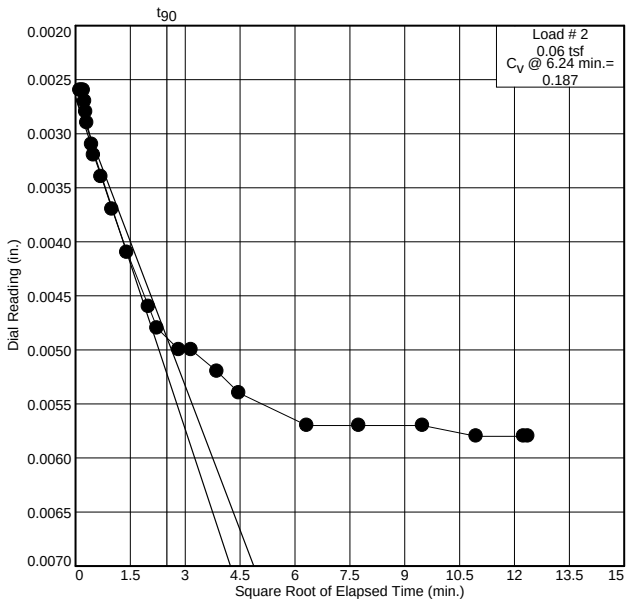
Tested By: SLC **Checked By:** KLA/JMP

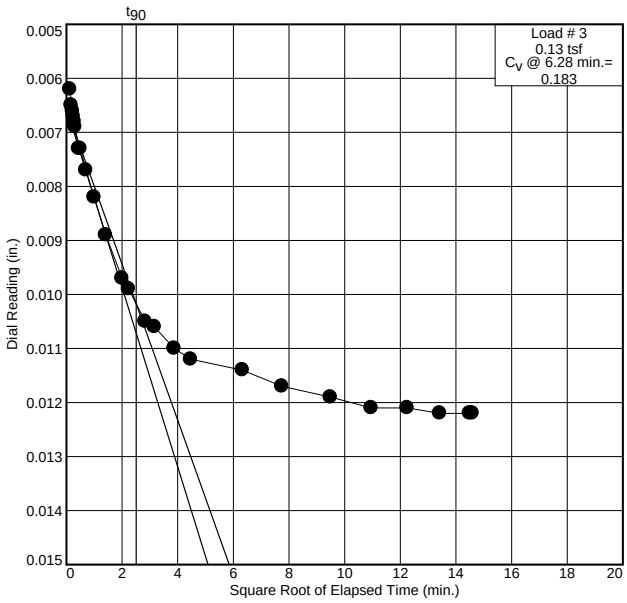
Dial Reading vs. Time

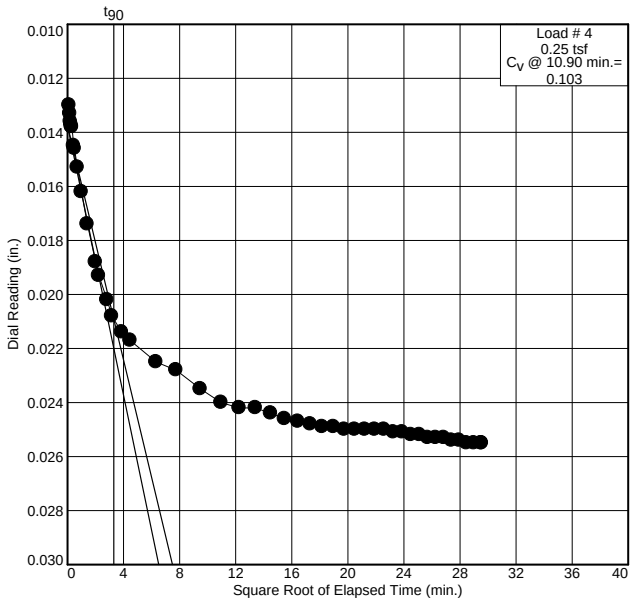
Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-15 Depth: 10' - 12'









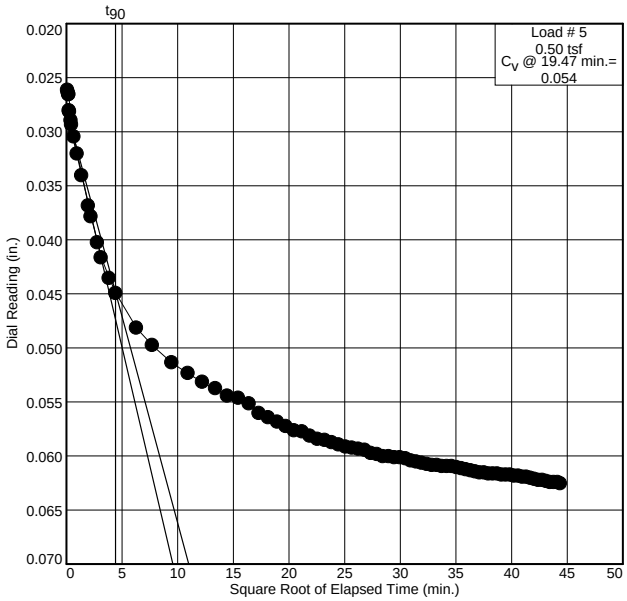
GEOENGINEERS

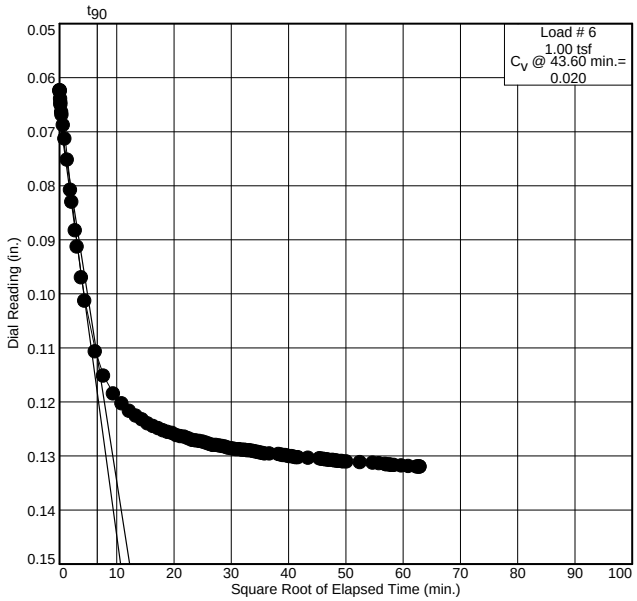
Figure

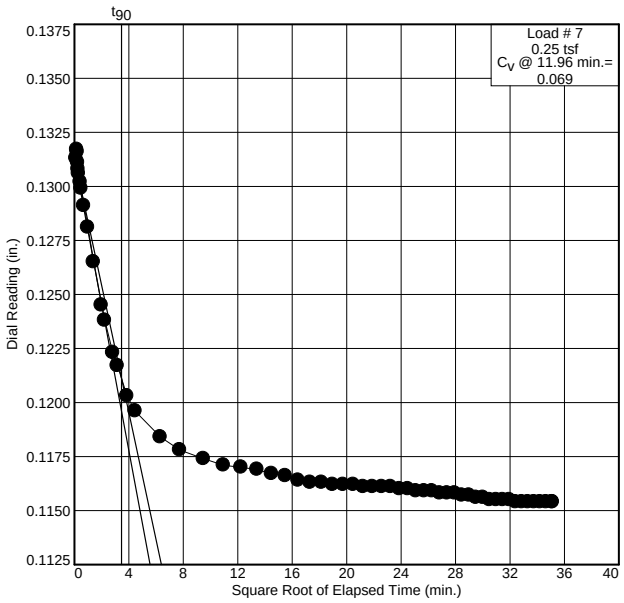
Dial Reading vs. Time

Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-15 Depth: 10' - 12'







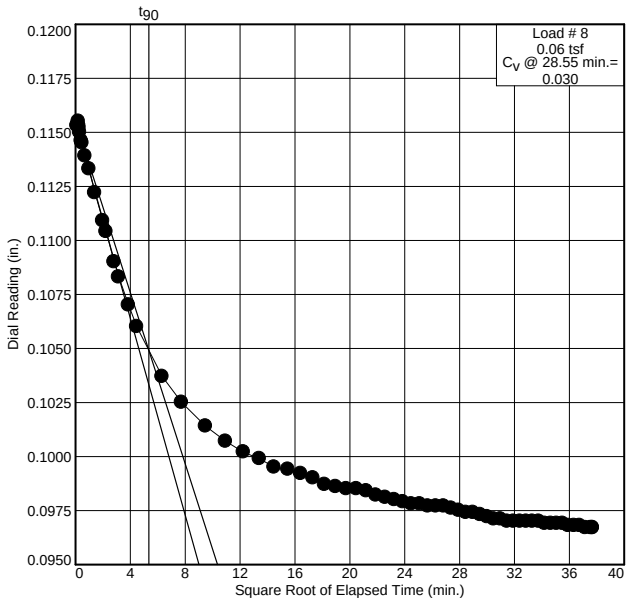


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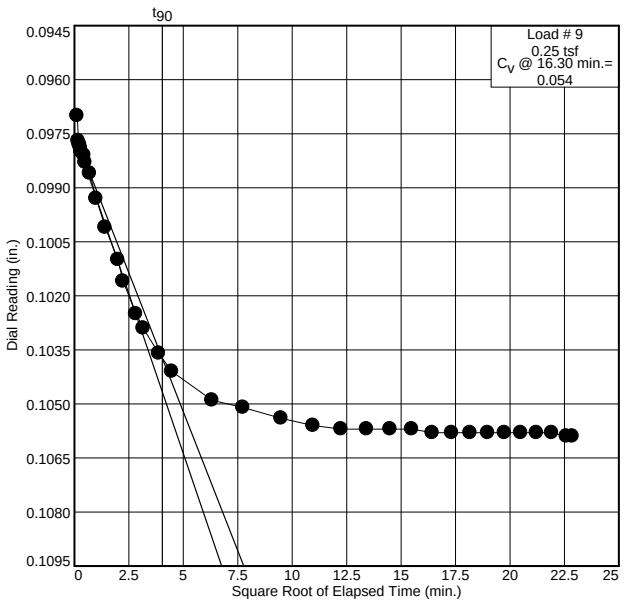
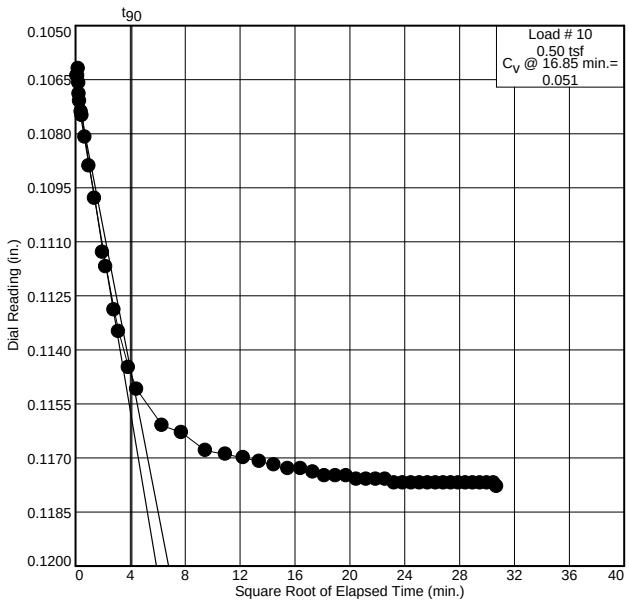
Figure

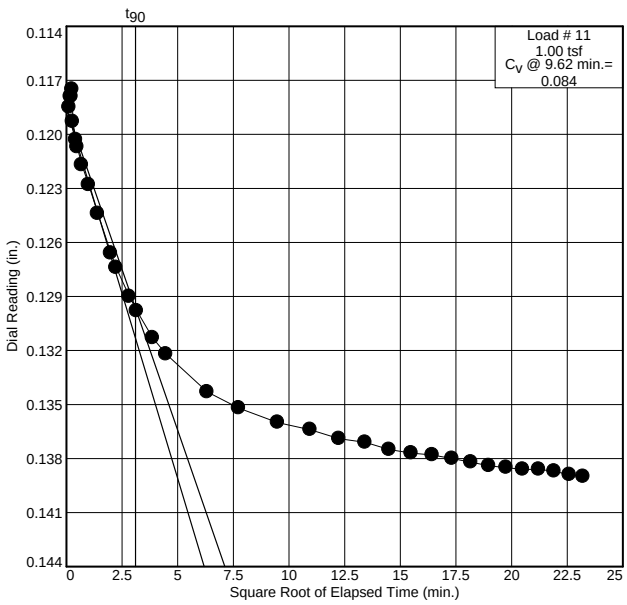
Dial Reading vs. Time

Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-15 Depth: 10' - 12'







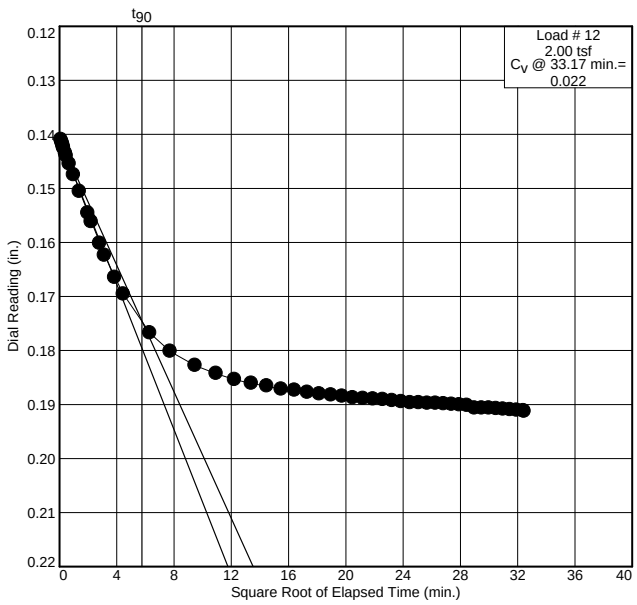


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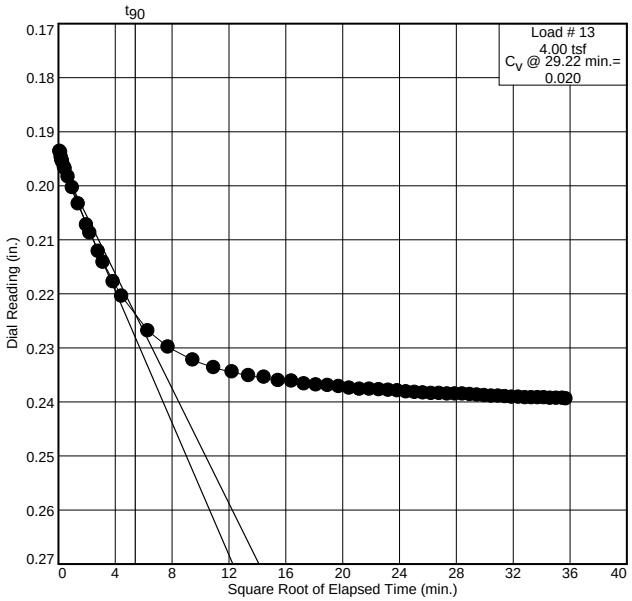
Figure

Dial Reading vs. Time

Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-15 Depth: 10' - 12'



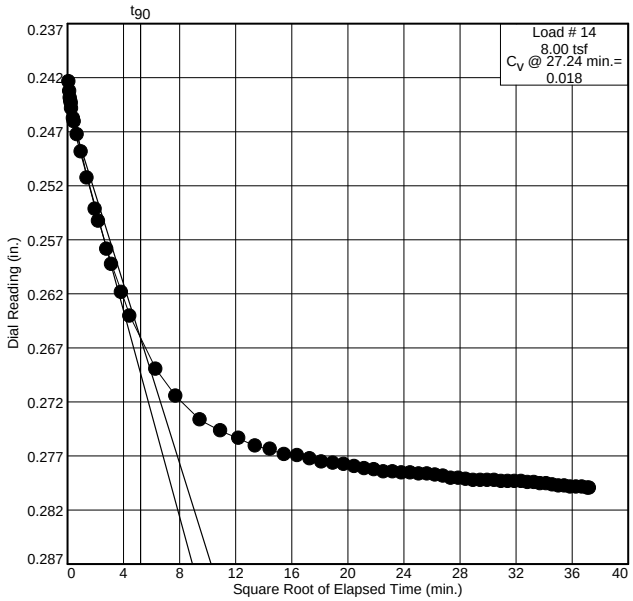


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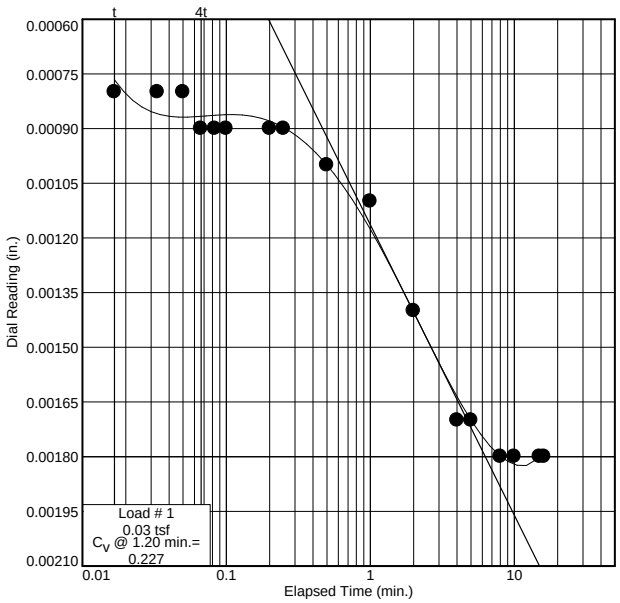
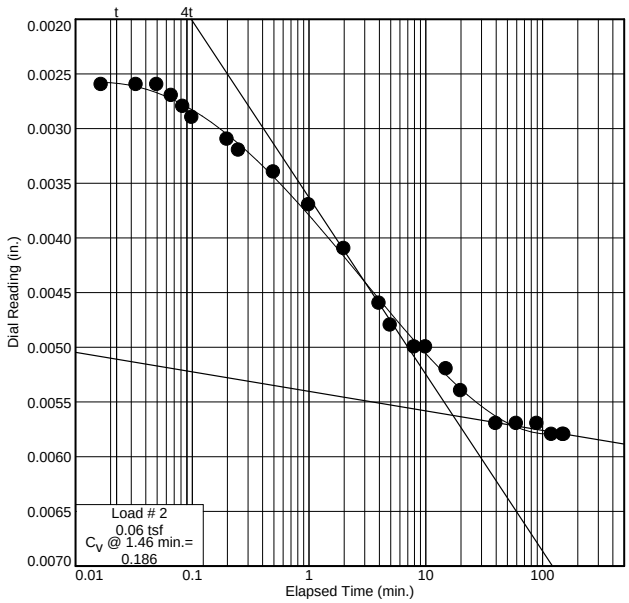
Figure

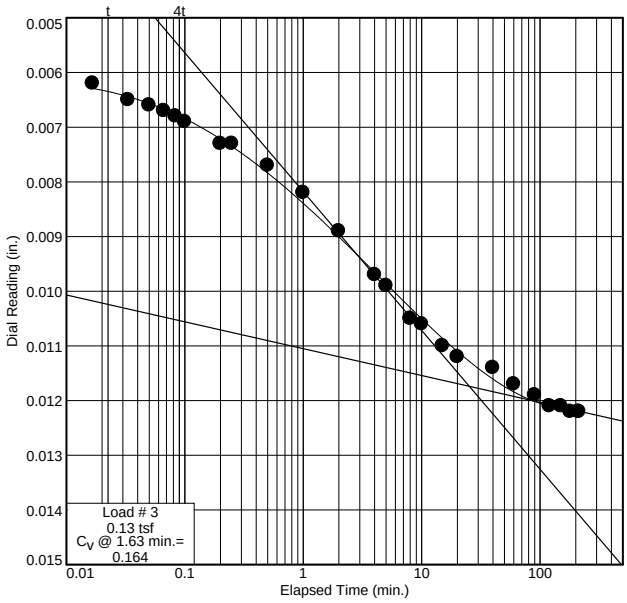
Dial Reading vs. Time

Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-15 Depth: 10' - 12'







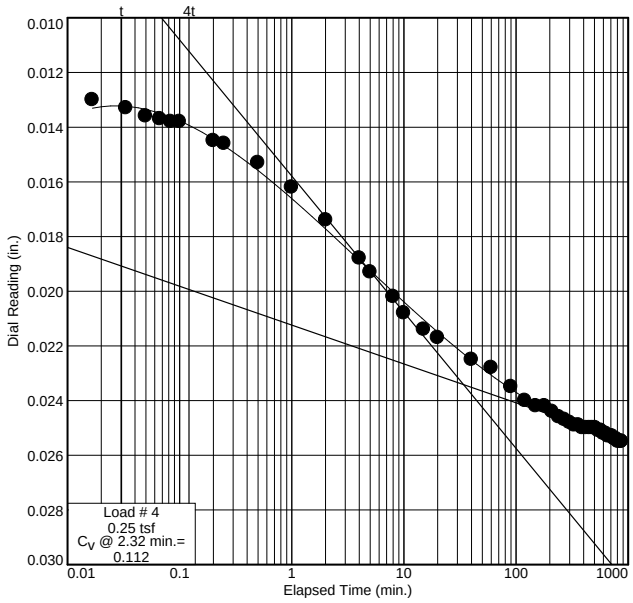


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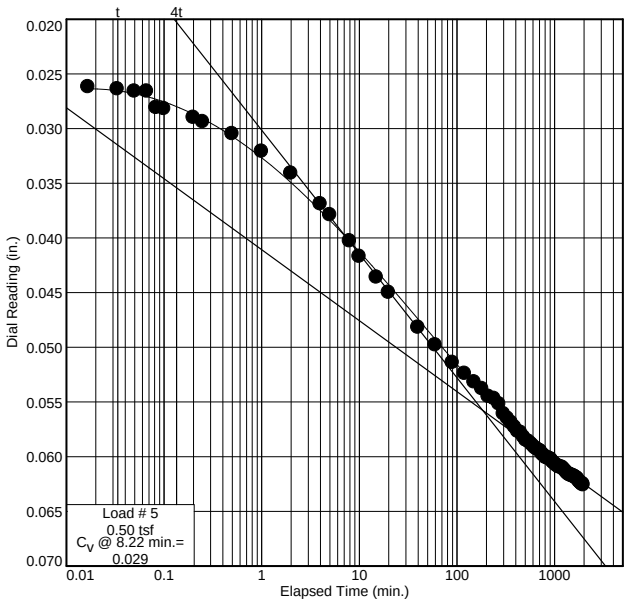
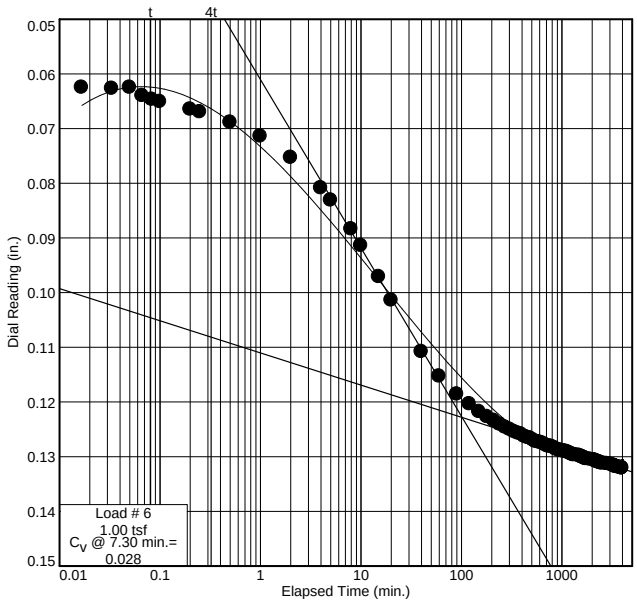
Figure

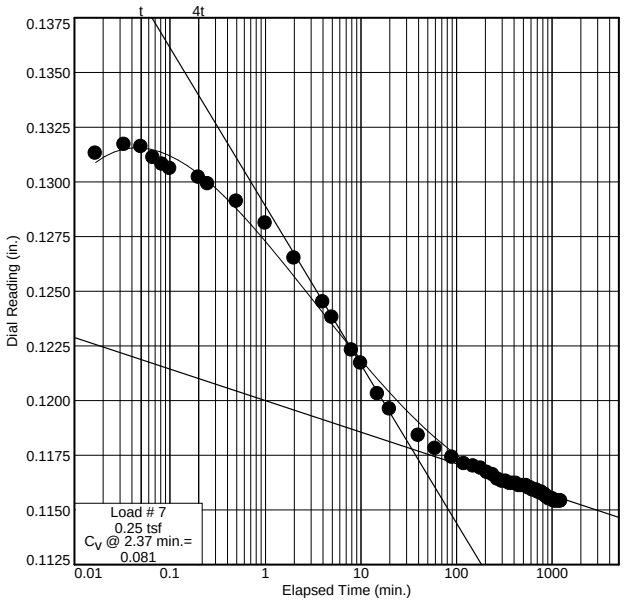
Dial Reading vs. Time

Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-15 Depth: 10' - 12'







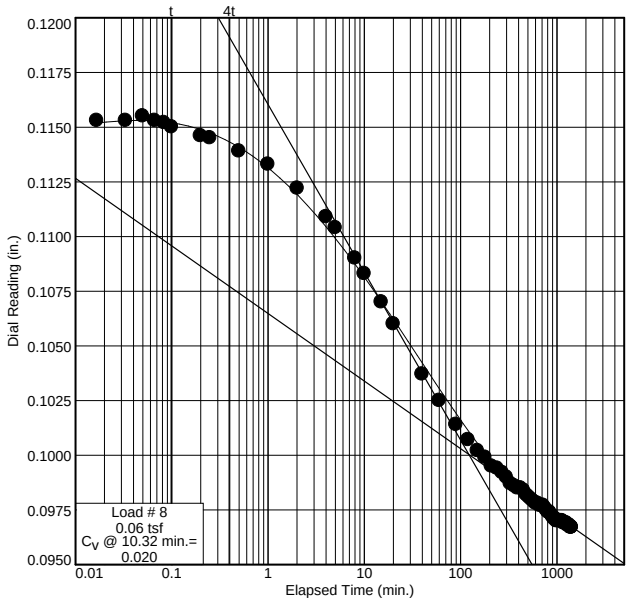


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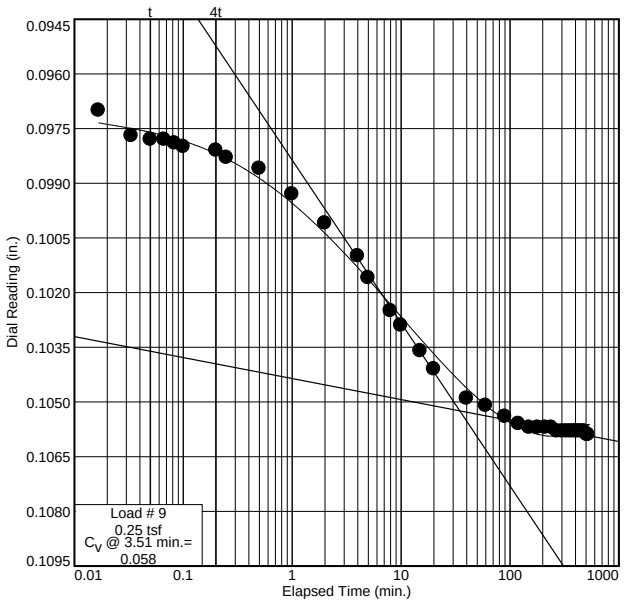
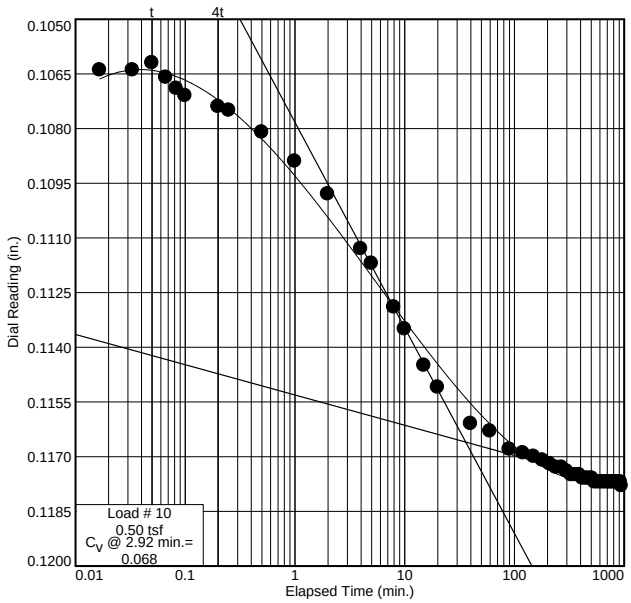
Figure

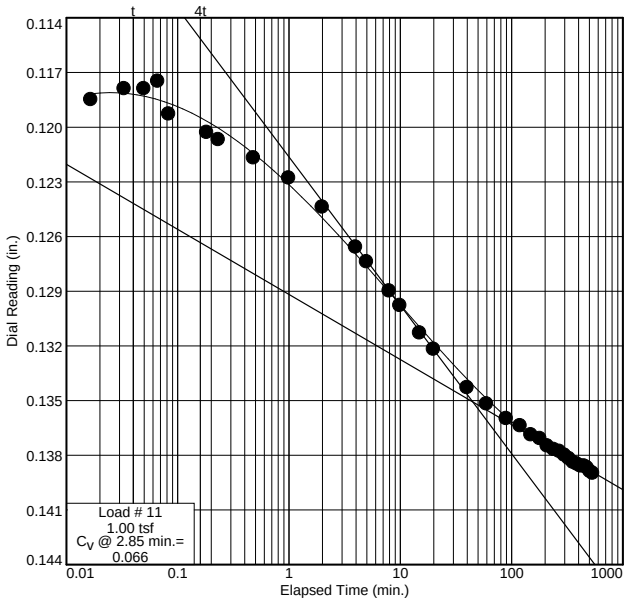
Dial Reading vs. Time

Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-15 Depth: 10' - 12'







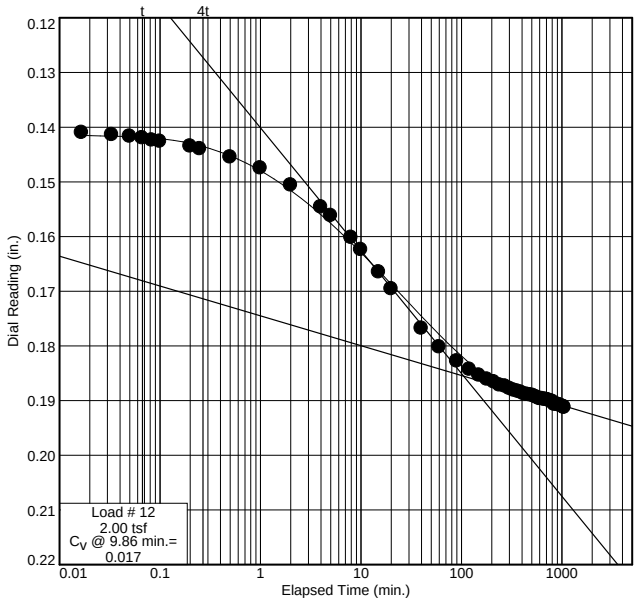


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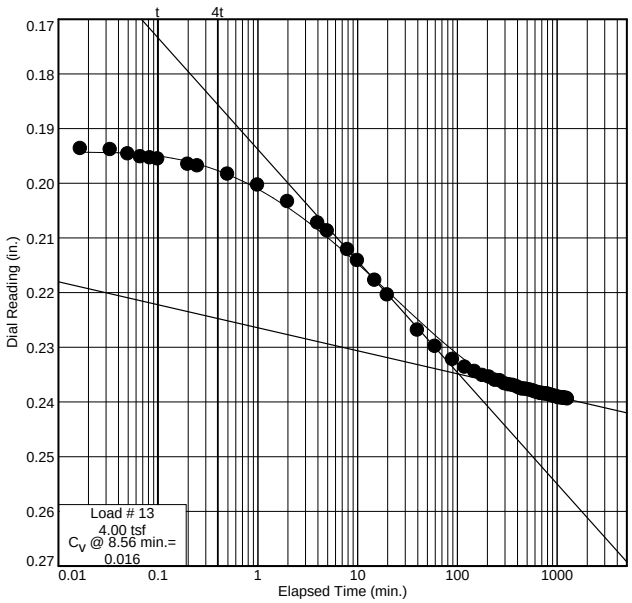
Figure

Dial Reading vs. Time

Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-15 Depth: 10' - 12'



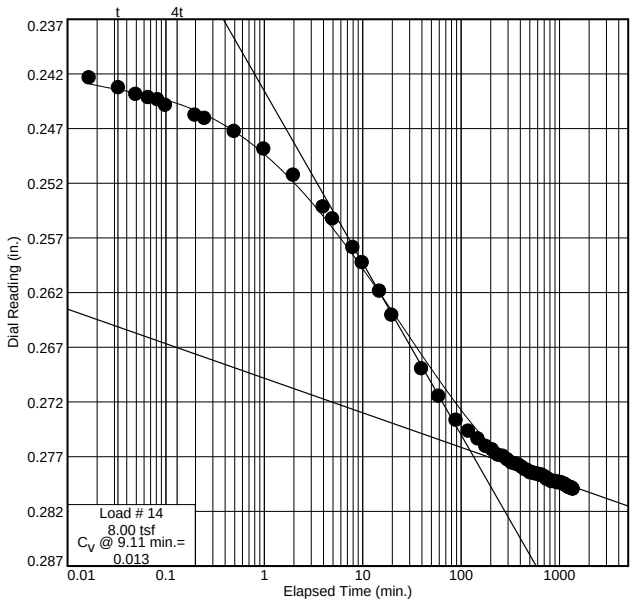


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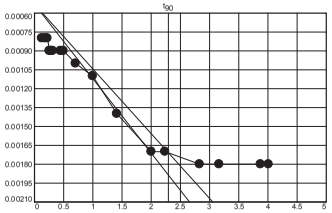
Figure

Pressure: 0.03 tsf — **TEST READINGS** — **Load No. 1**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.0008	11	1.0000	0.0011
2	0.0167	0.0008	12	2.0000	0.0014
3	0.0333	0.0008	13	4.0167	0.0017
4	0.0500	0.0008	14	5.0167	0.0017
5	0.0667	0.0009	15	8.0167	0.0018
6	0.0833	0.0009	16	10.0167	0.0018
7	0.1000	0.0009	17	15.0167	0.0018
8	0.2000	0.0009	18	16.1000	0.0018
9	0.2500	0.0009			
10	0.5000	0.0010			

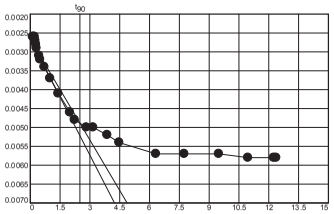


Void Ratio = 2.074 **Compression =** 0.1%

D_0 = 0.0005 **D_{90} =** 0.0017 **D_{100} =** 0.0018 **C_v at 5.27 min. =** 0.223 ft.^{2}/day

Pressure: 0.06 tsf — **TEST READINGS** — **Load No. 2**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.0018	13	4.0000	0.0046
2	0.0167	0.0026	14	5.0000	0.0048
3	0.0333	0.0026	15	8.0167	0.0050
4	0.0500	0.0026	16	10.0167	0.0050
5	0.0667	0.0027	17	15.0167	0.0052
6	0.0833	0.0028	18	20.0333	0.0054
7	0.1000	0.0029	19	40.0500	0.0057
8	0.2000	0.0031	20	60.0833	0.0057
9	0.2500	0.0032	21	90.1167	0.0057
10	0.5000	0.0034	22	120.1500	0.0058
11	1.0000	0.0037	23	150.2000	0.0058
12	2.0000	0.0041	24	153.1667	0.0058



Void Ratio = 2.058 **Compression =** 0.7%

D_0 = 0.0027 **D_{90} =** 0.0049 **D_{100} =** 0.0051 **C_v at 6.24 min. =** 0.187 ft.^{2}/day

CONSOLIDATION TEST DATA

9/15/2016

Client: CPRA
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana
Project Number: 16715-040-01
Location: B-15
Depth: 10' - 12'
Material Description: Very soft gray clay with silt lenses
Liquid Limit: 81 **Plasticity Index:** 59
USCS: (CH)
Testing Remarks: % Organic = 2.1
Cv at t90
Tested by: SLC **Checked by:** KLA/JMP

Test Specimen Data

NATURAL MOISTURE		VOID RATIO		AFTER TEST	
Wet w+t	= 183.60 g.	Spec. Gr.	= 2.688	Wet w+t	= 101.57 g.
Dry w+t	= 117.03 g.	Est. Ht. Solids	= 0.242 in.	Dry w+t	= 82.62 g.
Tare Wt.	= 40.54 g.	Init. V.R.	= 2.078	Tare Wt.	= 27.34 g.
Moisture	= 87.0 %	Init. Sat.	= 112.6 %	Moisture	= 34.3 %
				Dry Wt.	= 55.28 g.

UNIT WEIGHT		TEST START	
Height	= 0.745 in.	Height	= 0.745 in.
Diameter	= 2.500 in.	Diameter	= 2.500 in.
Weight	= 97.87 g.		
Dry Dens.	= 54.5 pcf		

End-Of-Load Summary

Pressure (tsf)	Final Dial (in.)	Deformation (in.)	C_v (ft.^{2}/day)	C_α	Void Ratio	% Strain
start	0.00080	0.00000			2.078	
0.03	0.00180	0.00100	0.223		2.074	0.1 Comprs.
0.06	0.00580	0.00500	0.187		2.058	0.7 Comprs.
0.13	0.01220	0.01140	0.183		2.031	1.5 Comprs.
0.25	0.02550	0.02470	0.103		1.976	3.3 Comprs.
0.50	0.06260	0.06180	0.054		1.823	8.3 Comprs.
1.00	0.13210	0.13130	0.020		1.536	17.6 Comprs.
0.25	0.11540	0.11460	0.069		1.605	15.4 Comprs.
0.06	0.09670	0.09590	0.030		1.682	12.9 Comprs.
0.25	0.10590	0.10510	0.054		1.644	14.1 Comprs.
0.50	0.11780	0.11700	0.051		1.595	15.7 Comprs.
1.00	0.13900	0.13820	0.084		1.507	18.6 Comprs.
2.00	0.19130	0.19050	0.022		1.291	25.6 Comprs.
4.00	0.23950	0.23870	0.020		1.092	32.0 Comprs.
8.00	0.28000	0.27920	0.018		0.925	37.5 Comprs.

Compression index (C_c), tsf = 0.94 **Preconsolidation pressure (P_p), tsf =** 0.4 **Void ratio at P_p (e_m) =** 1.906
Recompression index (C_r) = 0.31

Pressure: 0.25 tsf — **TEST READINGS (continued)** — **Load No. 4**

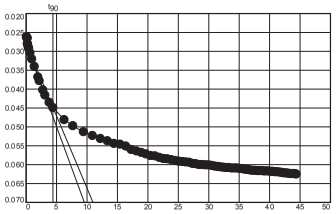
No.	Elapsed Time	Dial Reading
43	750.9667	0.0254
44	781.0000	0.0254
45	811.0333	0.0255
46	841.0667	0.0255
47	871.1167	0.0255
48	873.8000	0.0255

Void Ratio = 1.976 **Compression =** 3.3%

D_0 = 0.0138 **D_{90} =** 0.0209 **D_{100} =** 0.0217 **C_v at 10.90 min. =** 0.103 ft.^{2}/day

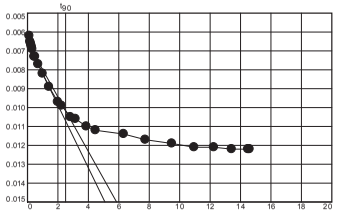
Pressure: 0.50 tsf — **TEST READINGS** — **Load No. 5**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.0255	29	330.4167	0.0565
2	0.0167	0.0262	30	360.4500	0.0569
3	0.0333	0.0264	31	390.4833	0.0573
4	0.0500	0.0266	32	420.5333	0.0577
5	0.0667	0.0266	33	450.5667	0.0578
6	0.0833	0.0281	34	480.6000	0.0582
7	0.1000	0.0282	35	510.6333	0.0585
8	0.2000	0.0290	36	540.6833	0.0586
9	0.2500	0.0294	37	570.7167	0.0588
10	0.5000	0.0305	38	600.7500	0.0590
11	1.0000	0.0321	39	630.8000	0.0592
12	2.0000	0.0341	40	660.8333	0.0593
13	4.0000	0.0369	41	690.8667	0.0594
14	5.0000	0.0379	42	720.9000	0.0595
15	8.0000	0.0403	43	750.9500	0.0598
16	10.0000	0.0417	44	780.9833	0.0599
17	15.0167	0.0436	45	811.0167	0.0601
18	20.0167	0.0450	46	841.0667	0.0601
19	40.0500	0.0482	47	871.1000	0.0602
20	60.0667	0.0498	48	901.1333	0.0602
21	90.1167	0.0514	49	931.1667	0.0603
22	120.1500	0.0524	50	961.2167	0.0605
23	150.1833	0.0532	51	991.2500	0.0606
24	180.2167	0.0538	52	1021.2833	0.0607
25	210.2667	0.0545	53	1051.3333	0.0608
26	240.3000	0.0547	54	1081.3667	0.0609
27	270.3333	0.0552	55	1111.4000	0.0609
28	300.3833	0.0561	56	1141.4333	0.0610



Pressure: 0.13 tsf — **TEST READINGS** — **Load No. 3**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.0058	14	5.0167	0.0099
2	0.0167	0.0062	15	8.0167	0.0105
3	0.0333	0.0065	16	10.0167	0.0106
4	0.0500	0.0066	17	15.0167	0.0110
5	0.0667	0.0067	18	20.0333	0.0112
6	0.0833	0.0068	19	40.0500	0.0114
7	0.1000	0.0069	20	60.0833	0.0117
8	0.2000	0.0073	21	90.1167	0.0119
9	0.2500	0.0073	22	120.1500	0.0121
10	0.5000	0.0077	23	150.2000	0.0121
11	1.0000	0.0082	24	180.2333	0.0122
12	2.0000	0.0089	25	210.2667	0.0122
13	4.0167	0.0097	26	213.0000	0.0122

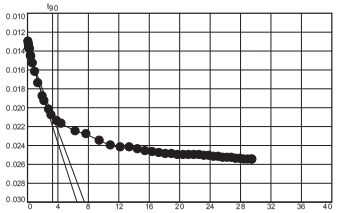


Void Ratio = 2.031 **Compression =** 1.5%

D_0 = 0.0066 **D_{90} =** 0.0102 **D_{100} =** 0.0106 **C_v at 6.28 min. =** 0.183 ft.^{2}/day

Pressure: 0.25 tsf — **TEST READINGS** — **Load No. 4**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.0122	22	120.1667	0.0240
2	0.0167	0.0130	23	150.2000	0.0242
3	0.0333	0.0133	24	180.2333	0.0242
4	0.0500	0.0136	25	210.2667	0.0244
5	0.0667	0.0137	26	240.3167	0.0246
6	0.0833	0.0138	27	270.3500	0.0247
7	0.1000	0.0138	28	300.3833	0.0248
8	0.2000	0.0145	29	330.4333	0.0249
9	0.2500	0.0146	30	360.4667	0.0249
10	0.5000	0.0153	31	390.5000	0.0250
11	1.0000	0.0162	32	420.5333	0.0250
12	2.0167	0.0174	33	450.5833	0.0250
13	4.0167	0.0188	34	480.6167	0.0250
14	5.0167	0.0193	35	510.6500	0.0250
15	8.0167	0.0202	36	540.7000	0.0251
16	10.0167	0.0208	37	570.7333	0.0251
17	15.0333	0.0214	38	600.7667	0.0252
18	20.0333	0.0217	39	630.8000	0.0252
19	40.0667	0.0225	40	660.8500	0.0253
20	60.0833	0.0228	41	690.8833	0.0253
21	90.1167	0.0235	42	720.9167	0.0253



Pressure: 1.00 tsf — **TEST READINGS (continued)** — **Load No. 6**

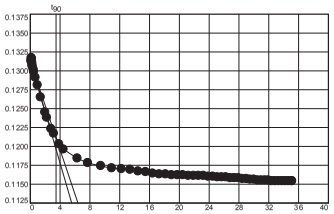
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
49	931.1667	0.1288	67	1592.0167	0.1301	85	2463.1167	0.1312
50	961.2167	0.1289	68	1622.0500	0.1302	86	2523.2000	0.1312
51	991.2500	0.1289	69	1652.0833	0.1302	87	2763.5000	0.1313
52	1021.2833	0.1290	70	1682.1333	0.1303	88	3003.8167	0.1314
53	1051.3333	0.1290	71	1712.1667	0.1304	89	3123.9667	0.1315
54	1081.3667	0.1291	72	1742.2000	0.1304	90	3244.1167	0.1316
55	1111.4000	0.1291	73	1892.3833	0.1305	91	3274.1500	0.1317
56	1141.4333	0.1292	74	2072.6167	0.1306	92	3334.2333	0.1317
57	1171.4833	0.1293	75	2102.6500	0.1307	93	3364.2667	0.1318
58	1201.5167	0.1294	76	2132.7000	0.1307	94	3424.3500	0.1318
59	1231.5500	0.1295	77	2162.7333	0.1308	95	3574.5333	0.1319
60	1261.6000	0.1296	78	2192.7833	0.1308	96	3724.7167	0.1320
61	1291.6333	0.1297	79	2222.8167	0.1309	97	3904.9500	0.1321
62	1351.7000	0.1297	80	2282.8833	0.1309	98	3934.9833	0.1321
63	1471.8667	0.1298	81	2312.9167	0.1310	99	3965.0333	0.1321
64	1501.9000	0.1299	82	2342.9667	0.1310	100	3970.3833	0.1321
65	1531.9333	0.1300	83	2373.0000	0.1311			
66	1561.9667	0.1300	84	2433.0833	0.1311			

Void Ratio = 1.536 **Compression =** 17.6%

D_0 = 0.0669 D_{90} = 0.1117 D_{100} = 0.1166 C_v **at 43.60 min. =** 0.020 ft.^{2}/day

Pressure: 0.25 tsf — **TEST READINGS** — **Load No. 7**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.1321	17	15.0167	0.1203
2	0.0167	0.1313	18	20.0167	0.1196
3	0.0333	0.1317	19	40.0500	0.1184
4	0.0500	0.1316	20	60.0667	0.1178
5	0.0667	0.1311	21	90.1167	0.1174
6	0.0833	0.1308	22	120.1500	0.1171
7	0.1000	0.1306	23	150.1833	0.1170
8	0.2000	0.1302	24	180.2167	0.1169
9	0.2500	0.1299	25	210.2667	0.1167
10	0.5000	0.1291	26	240.3000	0.1166
11	1.0000	0.1281	27	270.3333	0.1164
12	2.0000	0.1265	28	300.3833	0.1163
13	4.0000	0.1245	29	330.4167	0.1163
14	5.0000	0.1238	30	360.4500	0.1162
15	8.0000	0.1223	31	390.4833	0.1162
16	10.0167	0.1217	32	420.5333	0.1162



Pressure: 0.50 tsf — **TEST READINGS (continued)** — **Load No. 5**

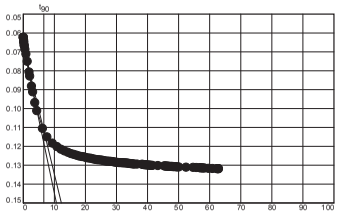
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
57	1171.4833	0.0610	67	1471.8500	0.0617	77	1772.2500	0.0622
58	1201.5167	0.0610	68	1501.9000	0.0617	78	1802.2833	0.0623
59	1231.5500	0.0611	69	1531.9333	0.0618	79	1832.3167	0.0623
60	1261.5833	0.0612	70	1561.9667	0.0618	80	1862.3500	0.0624
61	1291.6333	0.0613	71	1592.0167	0.0618	81	1892.3833	0.0625
62	1321.6667	0.0614	72	1622.0500	0.0619	82	1922.4333	0.0625
63	1351.7000	0.0615	73	1652.0833	0.0619	83	1952.4667	0.0625
64	1381.7500	0.0616	74	1682.1333	0.0620	84	1973.4500	0.0626
65	1411.7833	0.0616	75	1712.1667	0.0620			
66	1441.8167	0.0617	76	1742.2000	0.0621			

Void Ratio = 1.823 **Compression =** 8.3%

D_0 = 0.0280 D_{90} = 0.0449 D_{100} = 0.0467 C_v **at 19.47 min. =** 0.054 ft.^{2}/day

Pressure: 1.00 tsf — **TEST READINGS** — **Load No. 6**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.0626	25	210.2500	0.1234
2	0.0167	0.0625	26	240.3000	0.1241
3	0.0333	0.0627	27	270.3333	0.1246
4	0.0500	0.0625	28	300.3667	0.1250
5	0.0667	0.0640	29	330.4000	0.1254
6	0.0833	0.0647	30	360.4500	0.1257
7	0.1000	0.0651	31	390.4833	0.1259
8	0.2000	0.0665	32	420.5167	0.1263
9	0.2500	0.0670	33	450.5667	0.1265
10	0.5000	0.0689	34	480.6000	0.1266
11	1.0000	0.0714	35	510.6333	0.1269
12	2.0000	0.0753	36	540.6667	0.1272
13	4.0000	0.0809	37	570.7167	0.1273
14	5.0000	0.0831	38	600.7500	0.1274
15	8.0000	0.0884	39	630.7833	0.1275
16	10.0000	0.0914	40	660.8333	0.1277
17	15.0167	0.0971	41	690.8667	0.1279
18	20.0167	0.1014	42	720.9000	0.1281
19	40.0500	0.1108	43	750.9500	0.1281
20	60.0667	0.1153	44	780.9833	0.1282
21	90.1000	0.1186	45	811.0167	0.1283
22	120.1333	0.1204	46	841.0667	0.1284
23	150.1833	0.1218	47	871.1000	0.1286
24	180.2167	0.1227	48	901.1333	0.1287



Pressure: 0.06 tsf — **TEST READINGS (continued)** — **Load No. 8**

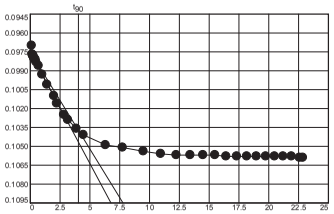
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
49	931.1833	0.0971	59	1231.5667	0.0969
50	961.2333	0.0971	60	1261.6167	0.0969
51	991.2667	0.0970	61	1291.6500	0.0968
52	1021.3000	0.0970	62	1321.6833	0.0968
53	1051.3500	0.0970	63	1351.7167	0.0968
54	1081.3833	0.0970	64	1381.7667	0.0967
55	1111.4167	0.0970	65	1411.8000	0.0967
56	1141.4500	0.0970	66	1421.5167	0.0967
57	1171.5000	0.0969	67	1421.5833	0.0967
58	1201.5333	0.0969			

Void Ratio = 1.682 **Compression =** 12.9%

D_0 = 0.1155 D_{90} = 0.1049 D_{100} = 0.1037 C_v **at 28.55 min. =** 0.030 ft.^{2}/day

Pressure: 0.25 tsf — **TEST READINGS** — **Load No. 9**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.0967	19	40.0500	0.1049
2	0.0167	0.0970	20	60.0667	0.1051
3	0.0333	0.0977	21	90.1167	0.1054
4	0.0500	0.0978	22	120.1500	0.1056
5	0.0667	0.0978	23	150.1833	0.1057
6	0.0833	0.0979	24	180.2167	0.1057
7	0.1000	0.0980	25	210.2667	0.1057
8	0.2000	0.0981	26	240.3000	0.1057
9	0.2500	0.0983	27	270.3333	0.1058
10	0.5000	0.0986	28	300.3833	0.1058
11	1.0000	0.0993	29	330.4167	0.1058
12	2.0000	0.1001	30	360.4500	0.1058
13	4.0000	0.1010	31	390.5000	0.1058
14	5.0000	0.1016	32	420.5333	0.1058
15	8.0000	0.1025	33	450.5667	0.1058
16	10.0000	0.1029	34	480.6000	0.1058
17	15.0167	0.1036	35	510.6500	0.1059
18	20.0167	0.1041	36	522.9667	0.1059



Void Ratio = 1.644 **Compression =** 14.1%

D_0 = 0.0975 D_{90} = 0.1037 D_{100} = 0.1044 C_v **at 16.30 min. =** 0.054 ft.^{2}/day

Pressure: 0.25 tsf — **TEST READINGS (continued)** — **Load No. 7**

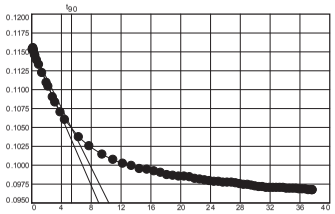
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
33	450.5667	0.1161	43	750.9500	0.1158	53	1051.3333	0.1154
34	480.6000	0.1161	44	780.9833	0.1158	54	1081.3667	0.1154
35	510.6500	0.1161	45	811.0167	0.1157	55	1111.4167	0.1154
36	540.6833	0.1161	46	841.0667	0.1157	56	1141.4500	0.1154
37	570.7167	0.1160	47	871.1000	0.1156	57	1171.4833	0.1154
38	600.7500	0.1160	48	901.1500	0.1156	58	1201.5167	0.1154
39	630.8000	0.1159	49	931.1833	0.1155	59	1231.5667	0.1154
40	660.8333	0.1159	50	961.2167	0.1155	60	1234.9000	0.1154
41	690.8833	0.1159	51	991.2500	0.1155			
42	720.9167	0.1158	52	1021.2833	0.1155			

Void Ratio = 1.605 **Compression =** 15.4%

D_0 = 0.1313 D_{90} = 0.1211 D_{100} = 0.1200 C_v **at 11.96 min. =** 0.069 ft.^{2}/day

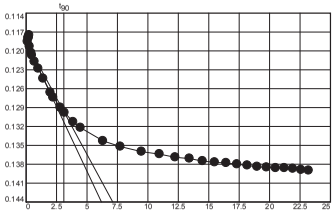
Pressure: 0.06 tsf — **TEST READINGS** — **Load No. 8**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.1154	25	210.2667	0.0995
2	0.0167	0.1153	26	240.3167	0.0994
3	0.0333	0.1153	27	270.3500	0.0992
4	0.0500	0.1155	28	300.3833	0.0990
5	0.0667	0.1153	29	330.4167	0.0987
6	0.0833	0.1152	30	360.4667	0.0986
7	0.1000	0.1150	31	390.5000	0.0985
8	0.2000	0.1146	32	420.5333	0.0985
9	0.2500	0.1145	33	450.5833	0.0984
10	0.5000	0.1139	34	480.6167	0.0982
11	1.0000	0.1133	35	510.6500	0.0981
12	2.0167	0.1122	36	540.7000	0.0980
13	4.0167	0.1109	37	570.7333	0.0979
14	5.0167	0.1104	38	600.7667	0.0978
15	8.0167	0.1090	39	630.8000	0.0978
16	10.0167	0.1083	40	660.8500	0.0977
17	15.0333	0.1070	41	690.8833	0.0977
18	20.0333	0.1060	42	720.9167	0.0977
19	40.0500	0.1037	43	750.9500	0.0976
20	60.0833	0.1025	44	781.0000	0.0975
21	90.1167	0.1014	45	811.0333	0.0974
22	120.1500	0.1007	46	841.0667	0.0974
23	150.2000	0.1002	47	871.1167	0.0973
24	180.2333	0.0999	48	901.1500	0.0972



Pressure: 1.00 tsf — **TEST READINGS** — **Load No. 11**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.1178	19	60.0667	0.1352
2	0.0167	0.1185	20	90.1000	0.1360
3	0.0333	0.1179	21	120.1500	0.1364
4	0.0500	0.1179	22	150.1833	0.1369
5	0.0667	0.1175	23	180.2167	0.1371
6	0.0833	0.1193	24	210.2500	0.1375
7	0.1833	0.1203	25	240.3000	0.1377
8	0.2333	0.1207	26	270.3333	0.1378
9	0.4833	0.1217	27	300.3667	0.1380
10	1.0000	0.1228	28	330.4167	0.1382
11	2.0000	0.1244	29	360.4500	0.1384
12	4.0000	0.1266	30	390.4833	0.1385
13	5.0000	0.1274	31	420.5333	0.1386
14	8.0000	0.1290	32	450.5667	0.1386
15	10.0000	0.1298	33	480.6000	0.1387
16	15.0167	0.1313	34	510.6500	0.1389
17	20.0167	0.1322	35	539.1000	0.1390
18	40.0333	0.1343			

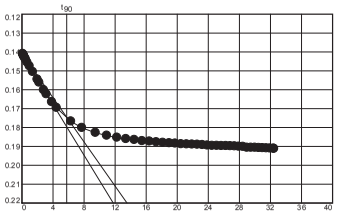


Void Ratio = 1.507 **Compression =** 18.6%

D_0 = 0.1186 D_{90} = 0.1297 D_{100} = 0.1309 C_v **at 9.62 min. =** 0.084 ft.^{2}/day

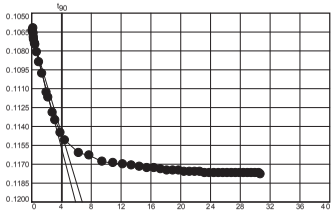
Pressure: 2.00 tsf — **TEST READINGS** — **Load No. 12**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.1390	17	15.0167	0.1665
2	0.0167	0.1410	18	20.0167	0.1696
3	0.0333	0.1414	19	40.0500	0.1768
4	0.0500	0.1417	20	60.0667	0.1802
5	0.0667	0.1420	21	90.1167	0.1828
6	0.0833	0.1424	22	120.1500	0.1843
7	0.1000	0.1426	23	150.1833	0.1854
8	0.2000	0.1435	24	180.2333	0.1861
9	0.2500	0.1440	25	210.2667	0.1866
10	0.5000	0.1455	26	240.3000	0.1872
11	1.0000	0.1475	27	270.3333	0.1874
12	2.0000	0.1506	28	300.3833	0.1878
13	4.0000	0.1546	29	330.4167	0.1881
14	5.0000	0.1562	30	360.4500	0.1883
15	8.0000	0.1602	31	390.5000	0.1885
16	10.0000	0.1624	32	420.5333	0.1888



Pressure: 0.50 tsf — **TEST READINGS** — **Load No. 10**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.1059	26	240.3000	0.1173
2	0.0167	0.1064	27	270.3333	0.1173
3	0.0333	0.1064	28	300.3667	0.1174
4	0.0500	0.1062	29	330.4167	0.1175
5	0.0667	0.1066	30	360.4500	0.1175
6	0.0833	0.1069	31	390.4833	0.1175
7	0.1000	0.1071	32	420.5333	0.1176
8	0.2000	0.1074	33	450.5667	0.1176
9	0.2500	0.1075	34	480.6000	0.1176
10	0.5000	0.1081	35	510.6333	0.1176
11	1.0000	0.1089	36	540.6833	0.1177
12	2.0000	0.1098	37	570.7167	0.1177
13	4.0000	0.1113	38	600.7500	0.1177
14	5.0000	0.1117	39	630.8000	0.1177
15	8.0000	0.1129	40	660.8333	0.1177
16	10.0000	0.1135	41	690.8667	0.1177
17	15.0167	0.1145	42	720.9000	0.1177
18	20.0167	0.1151	43	750.9500	0.1177
19	40.0333	0.1161	44	780.9833	0.1177
20	60.0667	0.1163	45	811.0167	0.1177
21	90.1000	0.1168	46	841.0667	0.1177
22	120.1500	0.1169	47	871.1000	0.1177
23	150.1833	0.1170	48	901.1333	0.1177
24	180.2167	0.1171	49	931.1667	0.1177
25	210.2667	0.1172	50	943.5833	0.1178



Void Ratio = 1.595 **Compression =** 15.7%

D_0 = 0.1067 D_{90} = 0.1147 D_{100} = 0.1156 C_v **at 16.85 min. =** 0.051 ft.^{2}/day

Pressure: 4.00 tsf — **TEST READINGS (continued)** — **Load No. 13**

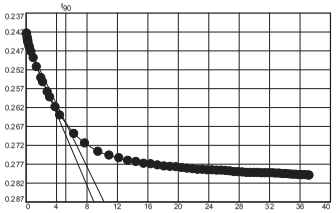
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
49	929.8500	0.2390	59	1229.8167	0.2394
50	959.8500	0.2390	60	1259.8000	0.2394
51	989.8500	0.2391	61	1277.4667	0.2395
52	1019.8500	0.2392			
53	1049.8333	0.2392			
54	1079.8333	0.2393			
55	1109.8333	0.2393			
56	1139.8167	0.2393			
57	1169.8167	0.2393			
58	1199.8167	0.2394			

Void Ratio = 1.092 **Compression =** 32.0%

D_0 = 0.1950 D_{90} = 0.2237 D_{100} = 0.2269 C_v **at 29.22 min. =** 0.020 ft.^{2}/day

Pressure: 8.00 tsf — **TEST READINGS** — **Load No. 14**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.2395	25	209.9667	0.2764
2	0.0167	0.2424	26	239.9667	0.2769
3	0.0333	0.2433	27	269.9667	0.2770
4	0.0500	0.2439	28	299.9667	0.2773
5	0.0667	0.2442	29	329.9500	0.2776
6	0.0833	0.2444	30	359.9500	0.2777
7	0.1000	0.2449	31	389.9500	0.2778
8	0.2000	0.2458	32	419.9500	0.2780
9	0.2500	0.2461	33	449.9333	0.2782
10	0.5000	0.2473	34	479.9333	0.2783
11	1.0000	0.2489	35	509.9333	0.2785
12	2.0000	0.2513	36	539.9167	0.2785
13	4.0000	0.2542	37	569.9167	0.2786
14	5.0000	0.2553	38	599.9167	0.2786
15	8.0000	0.2579	39	629.9167	0.2787
16	10.0000	0.2593	40	659.9167	0.2787
17	15.0000	0.2619	41	689.9000	0.2788
18	20.0000	0.2641	42	719.9000	0.2789
19	40.0000	0.2690	43	749.9000	0.2791
20	60.0000	0.2715	44	779.9000	0.2791
21	89.9833	0.2737	45	809.8833	0.2792
22	119.9833	0.2747	46	839.8833	0.2793
23	149.9833	0.2754	47	869.8833	0.2793
24	179.9833	0.2761	48	899.8667	0.2793



Pressure: 2.00 tsf — **TEST READINGS (continued)** — **Load No. 12**

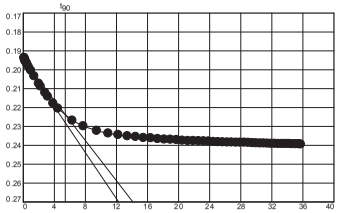
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
33	450.5667	0.1889	43	750.9500	0.1900	53	1051.3333	0.1912
34	480.6000	0.1890	44	780.9833	0.1901	54	1054.3333	0.1913
35	510.6500	0.1891	45	811.0333	0.1902			
36	540.6833	0.1893	46	841.0667	0.1907			
37	570.7167	0.1895	47	871.1000	0.1907			
38	600.7667	0.1897	48	901.1500	0.1907			
39	630.8000	0.1897	49	931.1833	0.1908			
40	660.8333	0.1898	50	961.2167	0.1909			
41	690.8833	0.1898	51	991.2500	0.1910			
42	720.9167	0.1899	52	1021.3000	0.1911			

Void Ratio = 1.291 **Compression =** 25.6%

D_0 = 0.1408 D_{90} = 0.1746 D_{100} = 0.1783 C_v **at 33.17 min. =** 0.022 ft.^{2}/day

Pressure: 4.00 tsf — **TEST READINGS** — **Load No. 13**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.1913	25	209.9667	0.2355
2	0.0167	0.1937	26	239.9667	0.2361
3	0.0333	0.1939	27	269.9667	0.2362
4	0.0500	0.1947	28	299.9500	0.2367
5	0.0667	0.1952	29	329.9500	0.2369
6	0.0833	0.1954	30	359.9500	0.2370
7	0.1000	0.1956	31	389.9333	0.2372
8	0.2000	0.1966	32	419.9333	0.2375
9	0.2500	0.1969	33	449.9333	0.2377
10	0.5000	0.1984	34	479.9333	0.2377
11	1.0000	0.2004	35	509.9167	0.2378
12	2.0000	0.2034	36	539.9167	0.2379
13	4.0000	0.2073	37	569.9167	0.2380
14	5.0000	0.2088	38	599.9000	0.2382
15	8.0000	0.2122	39	629.9000	0.2383
16	10.0000	0.2142	40	659.9000	0.2384
17	15.0000	0.2178	41	689.9000	0.2385
18	20.0000	0.2205	42	719.8833	0.2385
19	40.0000	0.2269	43	749.8833	0.2386
20	59.9833	0.2299	44	779.8833	0.2386
21	89.9833	0.2323	45	809.8833	0.2386
22	119.9833	0.2337	46	839.8667	0.2387
23	149.9833	0.2345	47	869.8667	0.2388
24	179.9667	0.2352	48	899.8667	0.2389



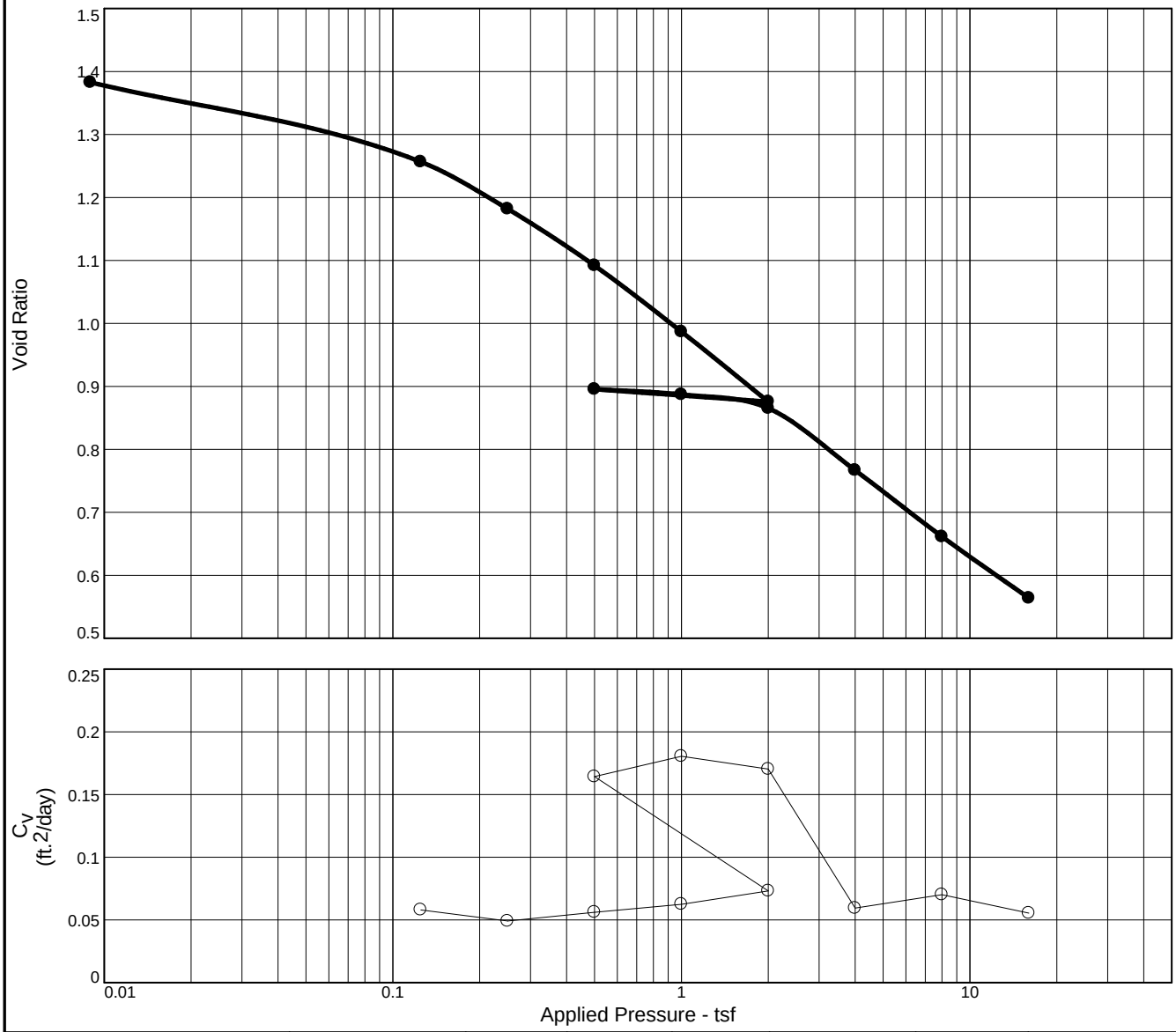
Pressure: 8.00 tsf	TEST READINGS (continued)	Load No. 14

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
49	929.8667	0.2793	59	1229.8333	0.2798
50	959.8667	0.2794	60	1259.8167	0.2798
51	989.8667	0.2794	61	1289.8167	0.2799
52	1019.8500	0.2794	62	1319.8167	0.2799
53	1049.8500	0.2794	63	1349.8000	0.2799
54	1079.8500	0.2795	64	1379.8000	0.2800
55	1109.8500	0.2795	65	1388.1667	0.2800
56	1139.8333	0.2796			
57	1169.8333	0.2796			
58	1199.8333	0.2797			

Void Ratio = 0.925 **Compression =** 37.5%

D_0 = 0.2445 D_{90} = 0.2661 D_{100} = 0.2685 C_v **at 27.24 min. =** 0.018 $ft.^2$/day

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture							
104.0 %	55.3 %	68.2	49	29	2.601	0.2	0.36	1.382

MATERIAL DESCRIPTION	USCS	AASHTO
Very soft gray clay with silt and organic matter	(CL)	

Project No. 16715-040-01 **Client:** CPRA

Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, LA

Source of Sample: B-16 **Depth:** 28' - 30'

Remarks:
Cv at t90

GEOENGINEERS

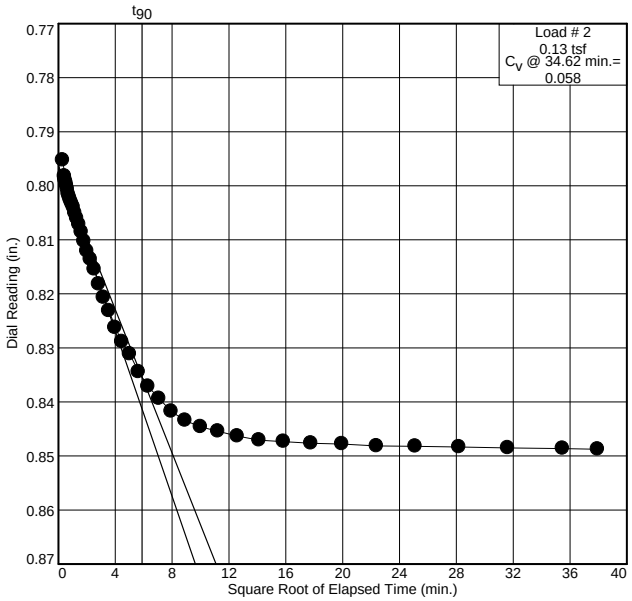
Figure

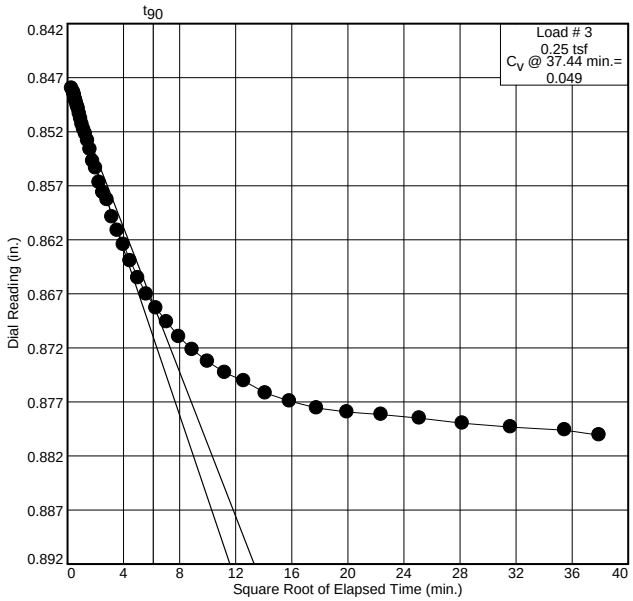
Tested By: SLC **Checked By:** KLA/JMP

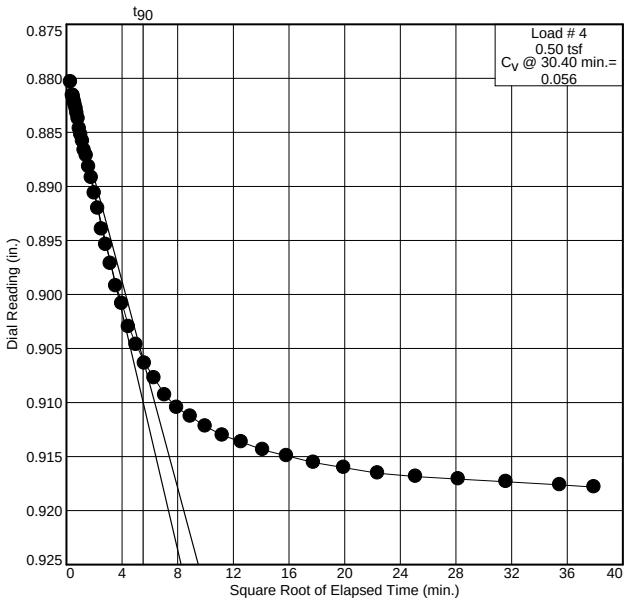
Dial Reading vs. Time

Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-16 Depth: 28' - 30'







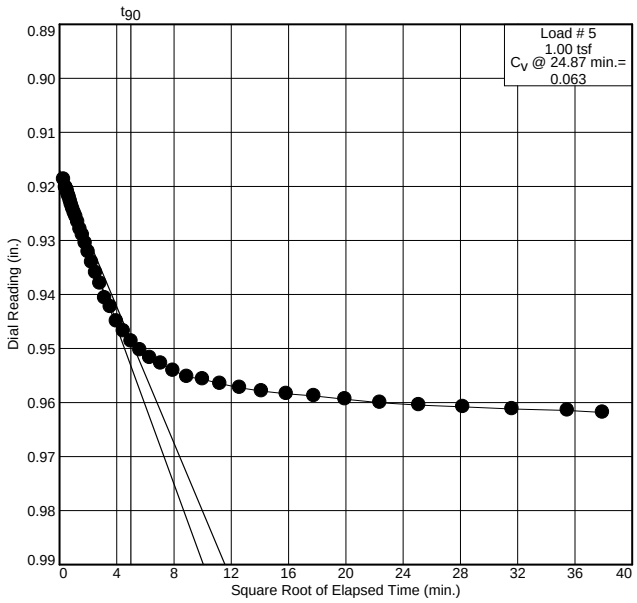


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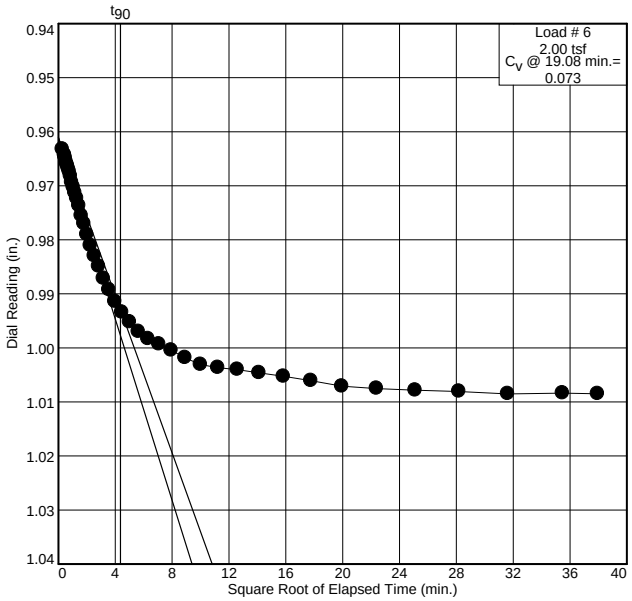
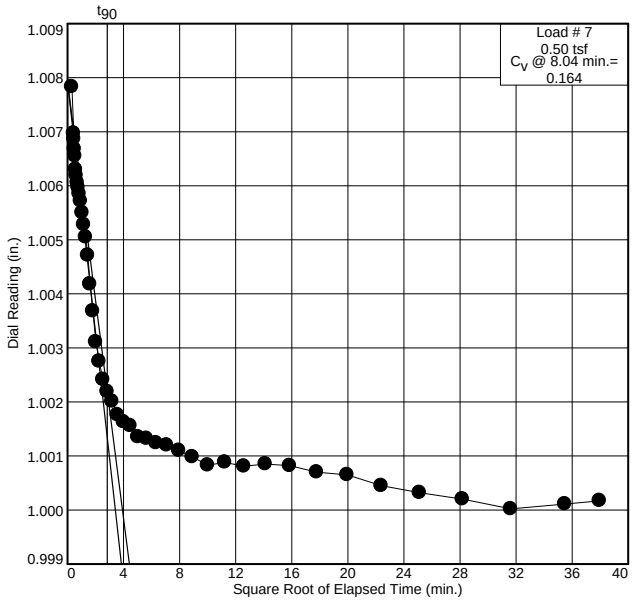
Figure

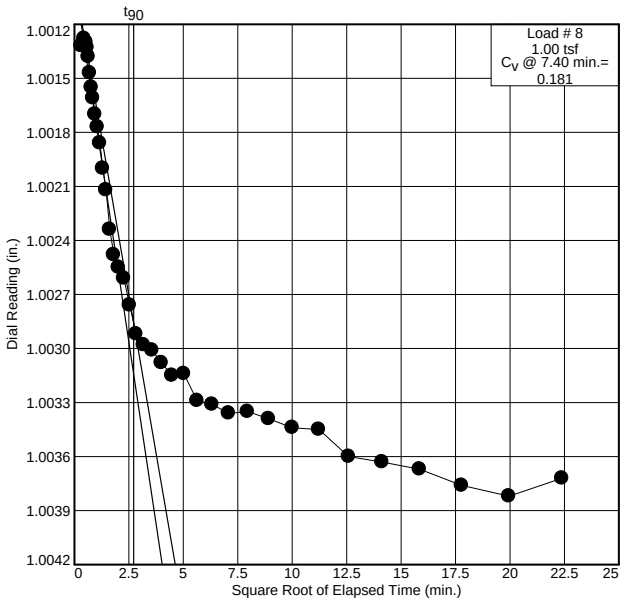
Dial Reading vs. Time

Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-16 Depth: 28' - 30'







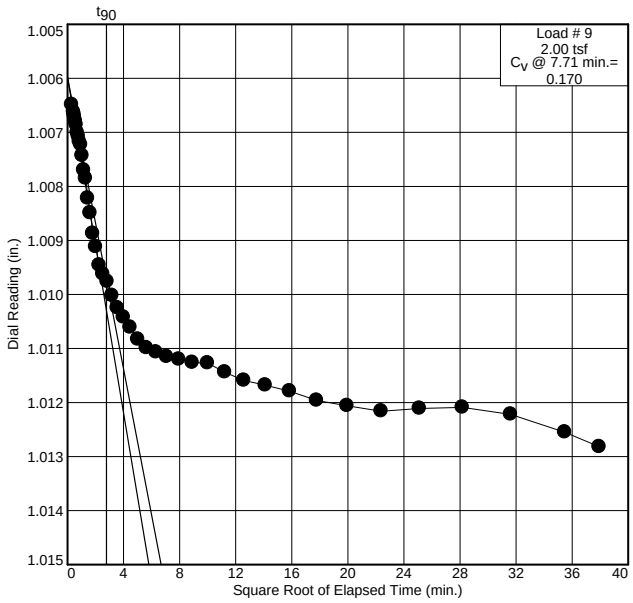


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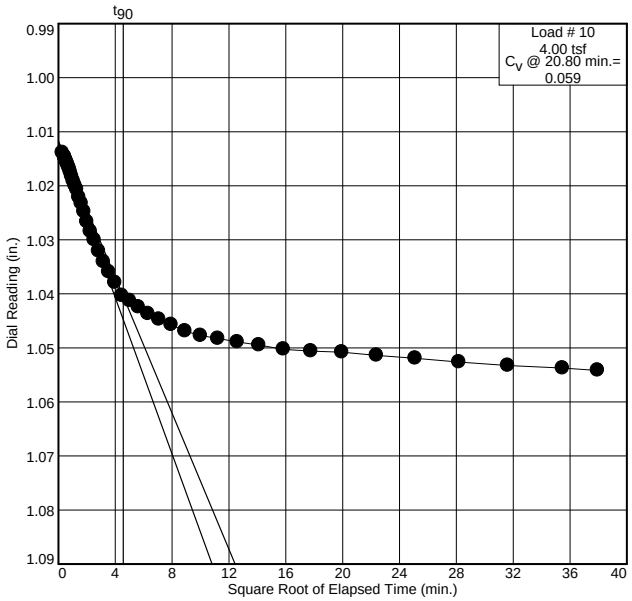
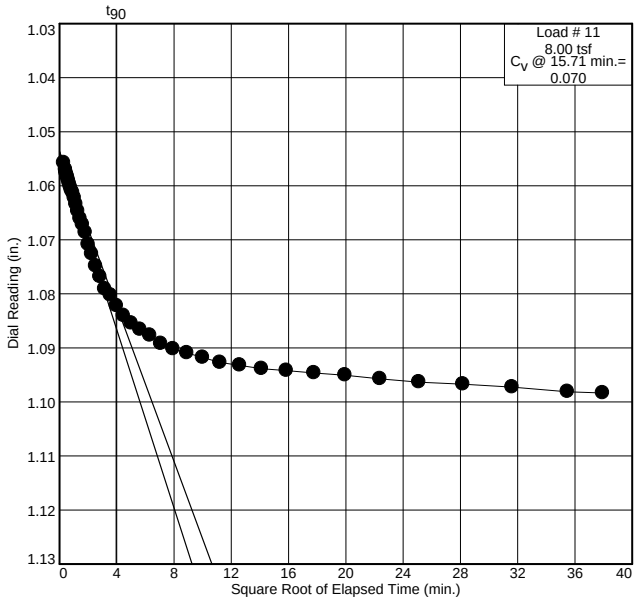
Figure

Dial Reading vs. Time

Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-16 Depth: 28' - 30'





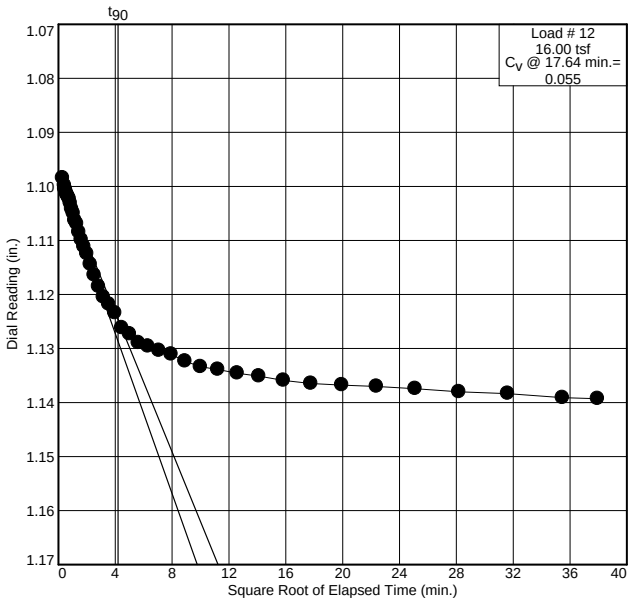


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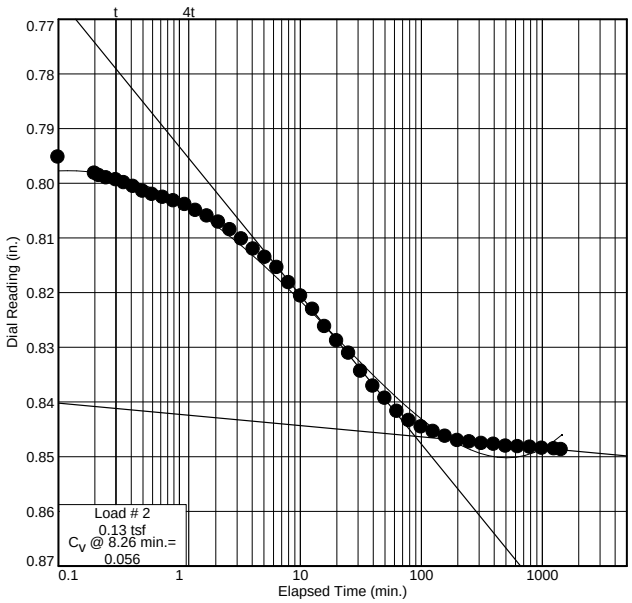
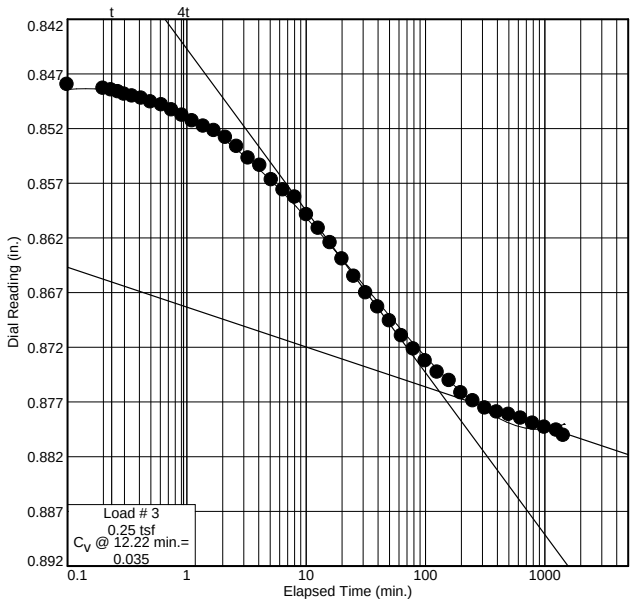
Figure

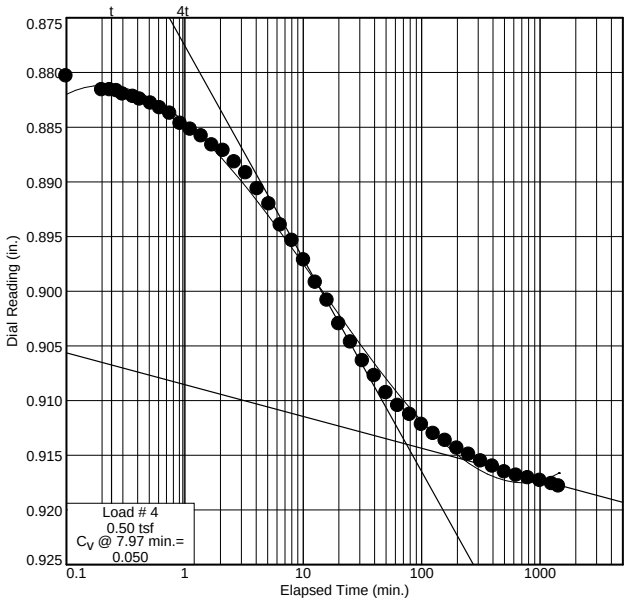
Dial Reading vs. Time

Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-16 Depth: 28' - 30'







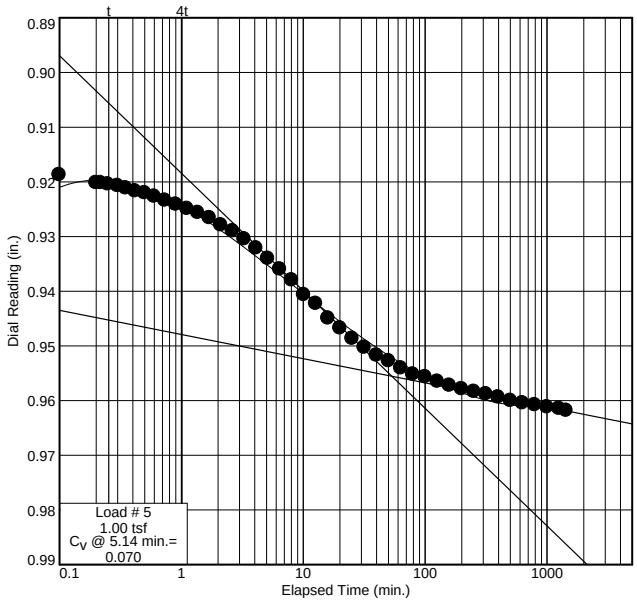


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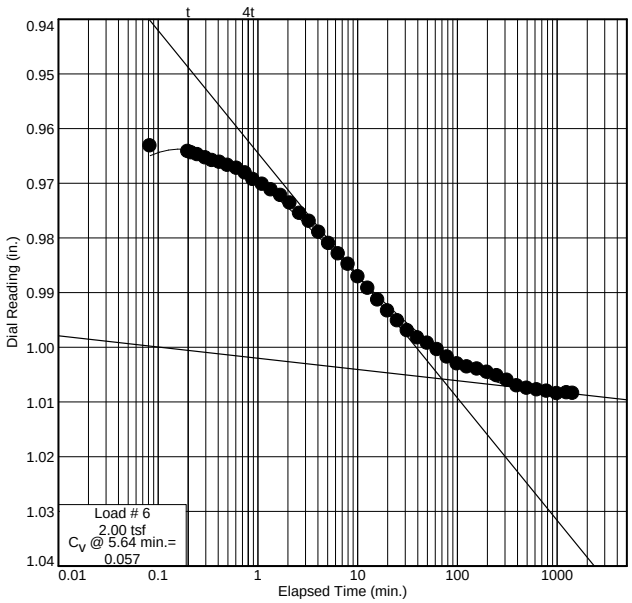
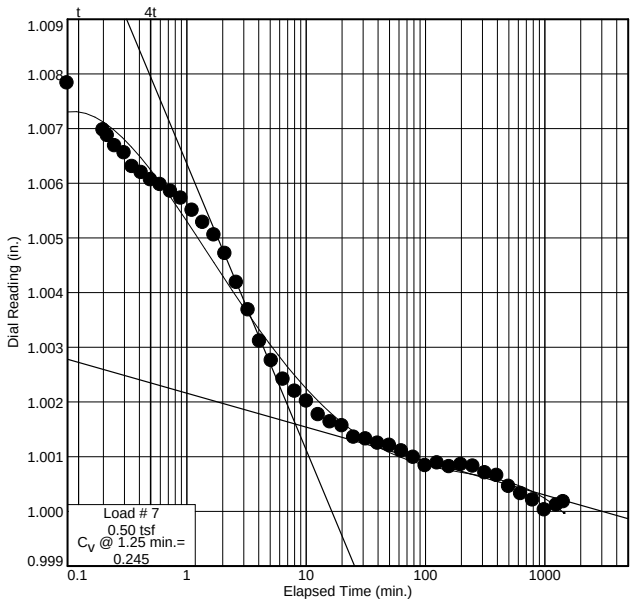
Figure

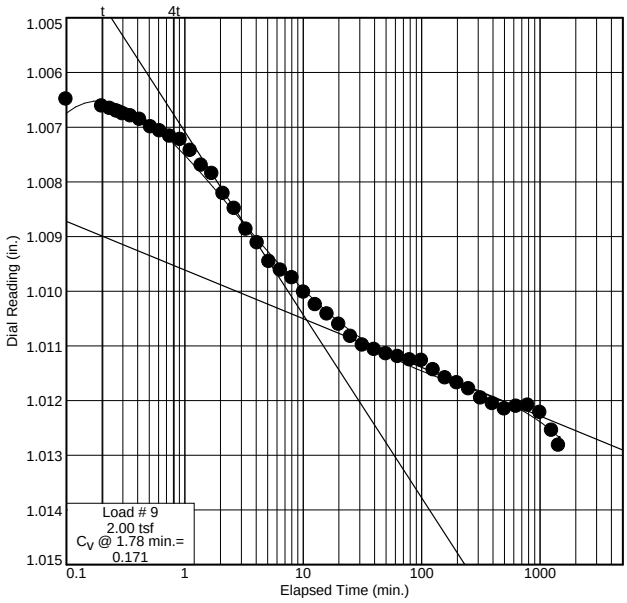
Dial Reading vs. Time

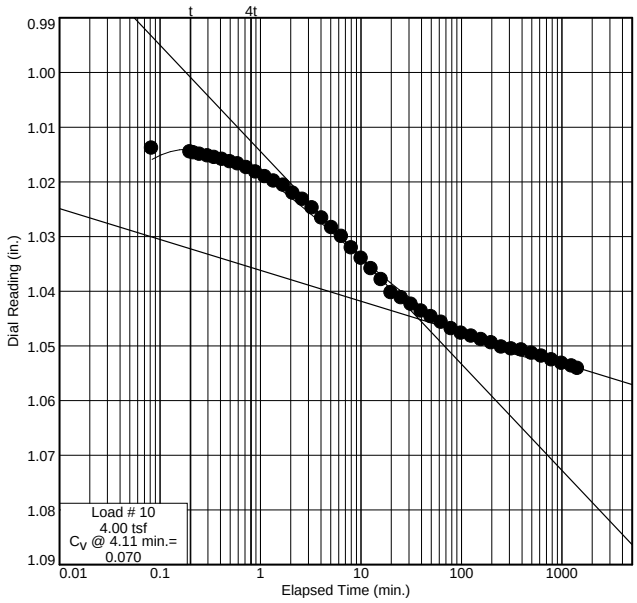
Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-16 Depth: 28' - 30'









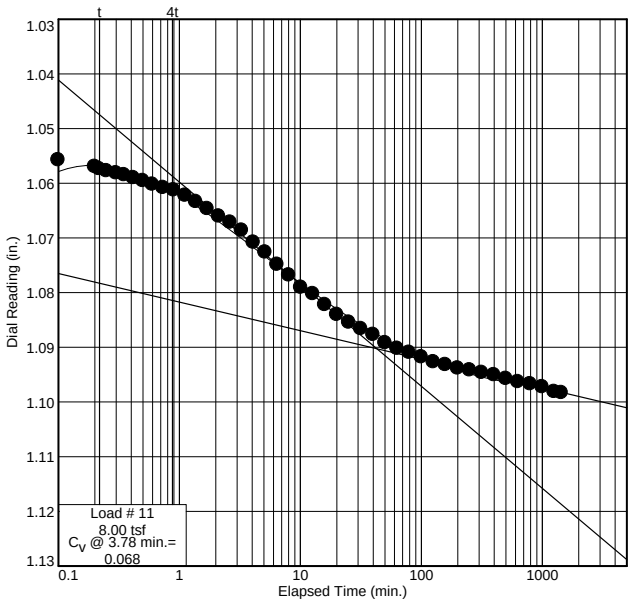
GEOENGINEERS

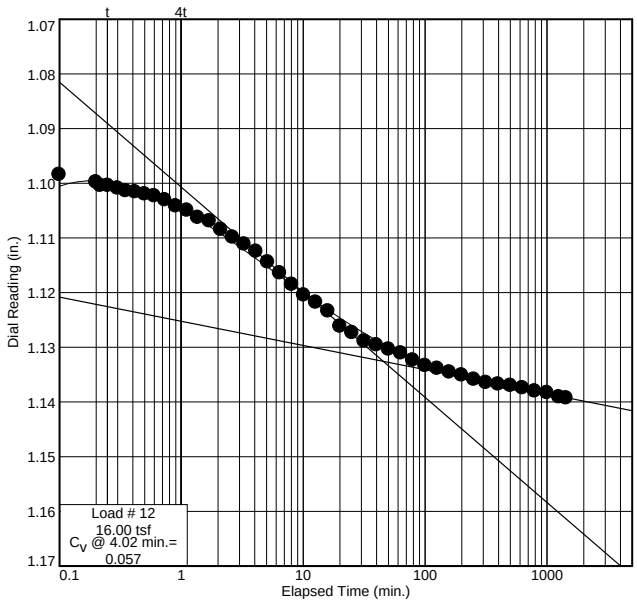
Figure

Dial Reading vs. Time

Project No.: 16715-040-01
Project: Island Road Marsh Creation and Nourishment (TE-117)

Source of Sample: B-16 Depth: 28' - 30'





GeoEngineers

Figure

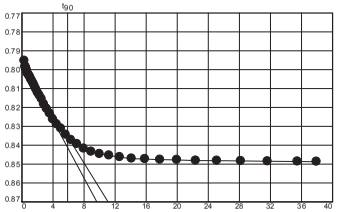
Pressure: 17.91 psf — **TEST READINGS** — **Load No. 1**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.79609	16	2.4500	0.79618	31	79.4000	0.79614
2	0.0333	0.79610	17	3.1167	0.79617	32	99.9667	0.79613
3	0.0500	0.79611	18	3.9333	0.79614	33	125.8667	0.79615
4	0.0833	0.79610	19	4.9667	0.79620	34	158.4500	0.79608
5	0.1333	0.79607	20	6.2667	0.79618	35	199.5000	0.79612
6	0.1833	0.79610	21	7.9000	0.79618	36	251.1667	0.79609
7	0.2500	0.79616	22	9.9500	0.79617	37	316.2000	0.79609
8	0.3333	0.79616	23	12.5500	0.79617	38	398.0833	0.79597
9	0.4333	0.79617	24	15.8000	0.79617	39	501.1667	0.79604
10	0.5667	0.79616	25	19.9167	0.79619	40	630.9333	0.79606
11	0.7333	0.79617	26	25.0833	0.79617	41	794.3167	0.79592
12	0.9500	0.79617	27	31.5833	0.79617	42	999.9833	0.79601
13	1.2000	0.79616	28	39.7667	0.79616	43	1258.9167	0.79610
14	1.5333	0.79617	29	50.0833	0.79618	44	1440.2333	0.79579
15	1.9333	0.79620	30	63.0667	0.79618			

Void Ratio = 1.383 **Swell =** 0.0%

Pressure: 250.00 psf — **TEST READINGS** — **Load No. 2**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.79483	21	6.4333	0.81545
2	0.1000	0.79525	22	8.0667	0.81822
3	0.2000	0.79822	23	10.1333	0.82069
4	0.2167	0.79863	24	12.7167	0.82313
5	0.2500	0.79909	25	15.9833	0.82626
6	0.3000	0.79943	26	20.0833	0.82886
7	0.3500	0.79995	27	25.2500	0.83114
8	0.4167	0.80062	28	31.7500	0.83443
9	0.5000	0.80150	29	39.9500	0.83714
10	0.6000	0.80208	30	50.2500	0.83938
11	0.7333	0.80265	31	63.2333	0.84177
12	0.9000	0.80325	32	79.5833	0.84345
13	1.1167	0.80397	33	100.1500	0.84461
14	1.3667	0.80503	34	126.0500	0.84543
15	1.7000	0.80603	35	158.6500	0.84632
16	2.1167	0.80717	36	199.6833	0.84709
17	2.6333	0.80856	37	251.3500	0.84735
18	3.2833	0.81025	38	316.3833	0.84765
19	4.1000	0.81209	39	398.2667	0.84779
20	5.1333	0.81360	40	501.3500	0.84815



CONSOLIDATION TEST DATA

9/15/2016

Client: CPRA
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, LA
Project Number: 16715-040-01
Location: B-16
Depth: 28' - 30'
Material Description: Very soft gray clay with silt and organic matter
Liquid Limit: 49 **Plasticity Index:** 29
USCS: (CL)
Testing Remarks: Cv at t90
Tested by: SLC **Checked by:** KLA/JMP

Test Specimen Data

NATURAL MOISTURE		VOID RATIO		AFTER TEST	
Wet w+t	= 228.27 g.	Spec. Gr.	= 2.601	Wet w+t	= 133.53 g.
Dry w+t	= 161.59 g.	Est. Ht. Solids	= 0.419 in.	Dry w+t	= 106.31 g.
Tare Wt.	= 40.93 g.	Init. V.R.	= 1.382	Tare Wt.	= 22.58 g.
Moisture	= 55.3 %	Init. Sat.	= 104.0 %	Moisture	= 32.5 %

UNIT WEIGHT		TEST START			
Height	= 0.999 in.	Height	= 0.999 in.	Dry Wt.	= 83.73 g.
Diameter	= 2.500 in.	Diameter	= 2.500 in.		
Weight	= 136.23 g.				
Dry Dens.	= 68.2 pcf				

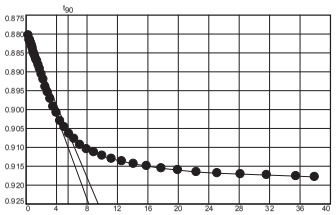
End-Of-Load Summary

Pressure (psf)	Final Dial (in.)	Deformation (in.)	C_v (ft.2/day)	C_α	Void Ratio	% Strain
start	0.79609	0.00000			1.382	
17.91	0.79579	-0.00030			1.383	0.0 Swell
250.00	0.84875	0.05266	0.058		1.257	5.3 Comprs.
500.00	0.88008	0.08399	0.049		1.182	8.4 Comprs.
1000.00	0.91783	0.12174	0.056		1.092	12.2 Comprs.
2000.00	0.96184	0.16575	0.063		0.987	16.6 Comprs.
4000.00	1.00849	0.21240	0.073		0.876	21.3 Comprs.
1000.00	1.00017	0.20408	0.164		0.896	20.4 Comprs.
2000.00	1.00372	0.20763	0.181		0.887	20.8 Comprs.
4000.00	1.01282	0.21673	0.170		0.865	21.7 Comprs.
8000.00	1.05417	0.25808	0.059		0.767	25.8 Comprs.
16000.00	1.09835	0.30226	0.070		0.661	30.3 Comprs.
32000.00	1.13929	0.34320	0.055		0.564	34.4 Comprs.

Compression index (C_c), tsf = 0.36 **Preconsolidation pressure (P_p), tsf =** 0.2 **Void ratio at P_p (e_m) =** 1.196
Recompression index (C_r) = 0.14

Pressure: 1000.00 psf — **TEST READINGS** — **Load No. 4**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.87822	24	12.7333	0.89921
2	0.1000	0.88034	25	15.9833	0.90084
3	0.2000	0.88160	26	20.0833	0.90300
4	0.2333	0.88160	27	25.2500	0.90466
5	0.2667	0.88169	28	31.7667	0.90638
6	0.3000	0.88199	29	39.9500	0.90774
7	0.3667	0.88222	30	50.2667	0.90931
8	0.4167	0.88246	31	63.2333	0.91048
9	0.5167	0.88282	32	79.5667	0.91129
10	0.6167	0.88325	33	100.1333	0.91221
11	0.7500	0.88375	34	126.0333	0.91303
12	0.9167	0.88467	35	158.6333	0.91366
13	1.1167	0.88522	36	199.6667	0.91438
14	1.3833	0.88583	37	251.3333	0.91494
15	1.7000	0.88665	38	316.3833	0.91555
16	2.1167	0.88715	39	398.2667	0.91602
17	2.6333	0.88820	40	501.3500	0.91654
18	3.2833	0.88920	41	631.1167	0.91685
19	4.1167	0.89064	42	794.4833	0.91708
20	5.1500	0.89203	43	1000.1667	0.91733
21	6.4333	0.89396	44	1259.1000	0.91762
22	8.0833	0.89539	45	1440.0500	0.91783
23	10.1333	0.89715			

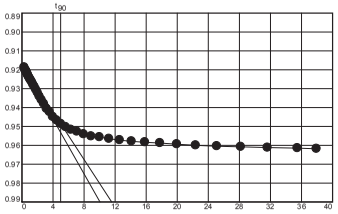


Void Ratio = 1.092 **Compression =** 12.2%

D_0 = 0.8797 D_{90} = 0.9060 D_{100} = 0.9090 C_v **at 30.40 min. =** 0.056 ft.^{2}/day

Pressure: 2000.00 psf — **TEST READINGS** — **Load No. 5**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.91573	12	0.9000	0.92414
2	0.1000	0.91870	13	1.1167	0.92493
3	0.2000	0.92016	14	1.3667	0.92563
4	0.2167	0.92019	15	1.7000	0.92659
5	0.2500	0.92044	16	2.1167	0.92791
6	0.3000	0.92070	17	2.6333	0.92899
7	0.3500	0.92116	18	3.2833	0.93049
8	0.4167	0.92167	19	4.1000	0.93211
9	0.5000	0.92202	20	5.1333	0.93403
10	0.6000	0.92268	21	6.4333	0.93598
11	0.7333	0.92338	22	8.0667	0.93796



Pressure: 250.00 psf — **TEST READINGS (continued)** — **Load No. 2**

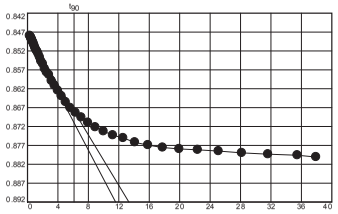
No.	Elapsed Time	Dial Reading
41	631.1333	0.84821
42	794.5000	0.84834
43	1000.1833	0.84851
44	1259.1167	0.84863
45	1440.3167	0.84875

Void Ratio = 1.257 **Compression =** 5.3%

D_0 = 0.7963 D_{90} = 0.8354 D_{100} = 0.8398 C_v **at 34.62 min. =** 0.058 ft.^{2}/day

Pressure: 500.00 psf — **TEST READINGS** — **Load No. 3**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.84701	24	12.7333	0.86114
2	0.1000	0.84799	25	15.9833	0.86246
3	0.2000	0.84834	26	20.1000	0.86395
4	0.2333	0.84850	27	25.2667	0.86553
5	0.2667	0.84867	28	31.7667	0.86705
6	0.3000	0.84888	29	39.9667	0.86833
7	0.3500	0.84905	30	50.2667	0.86960
8	0.4167	0.84925	31	63.2500	0.87098
9	0.5000	0.84959	32	79.5833	0.87218
10	0.6167	0.84986	33	100.1500	0.87326
11	0.7500	0.85033	34	126.0500	0.87430
12	0.9167	0.85080	35	158.6500	0.87506
13	1.1167	0.85132	36	199.6833	0.87619
14	1.3833	0.85180	37	251.3500	0.87693
15	1.7000	0.85221	38	316.4000	0.87757
16	2.1167	0.85282	39	398.2833	0.87794
17	2.6333	0.85365	40	501.3667	0.87817
18	3.2833	0.85472	41	631.1333	0.87851
19	4.1167	0.85538	42	794.5167	0.87898
20	5.1500	0.85670	43	1000.1833	0.87933
21	6.4500	0.85764	44	1259.1167	0.87961
22	8.0833	0.85830	45	1440.0167	0.88008
23	10.1333	0.85990			

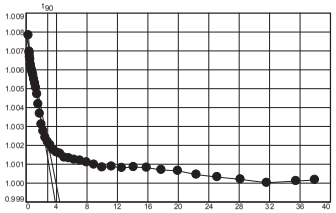


Void Ratio = 1.182 **Compression =** 8.4%

D_0 = 0.8475 D_{90} = 0.8680 D_{100} = 0.8702 C_v **at 37.44 min. =** 0.049 ft.^{2}/day

Pressure: 1000.00 psf — **TEST READINGS** — **Load No. 7**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	1.01095	24	12.7167	1.00176
2	0.1000	1.00783	25	15.9833	1.00163
3	0.2000	1.00697	26	20.0833	1.00156
4	0.2167	1.00687	27	25.2500	1.00135
5	0.2500	1.00668	28	31.7667	1.00132
6	0.3000	1.00655	29	39.9500	1.00124
7	0.3500	1.00630	30	50.2667	1.00120
8	0.4167	1.00619	31	63.2500	1.00110
9	0.5000	1.00606	32	79.5833	1.00098
10	0.6000	1.00597	33	100.1500	1.00083
11	0.7333	1.00585	34	126.0333	1.00088
12	0.9000	1.00572	35	158.6333	1.00081
13	1.1167	1.00550	36	199.6667	1.00085
14	1.3667	1.00528	37	251.3333	1.00082
15	1.7000	1.00505	38	316.3833	1.00070
16	2.1000	1.00471	39	398.2667	1.00065
17	2.6167	1.00418	40	501.3500	1.00045
18	3.2833	1.00368	41	631.1167	1.00032
19	4.1000	1.00311	42	794.5000	1.00020
20	5.1333	1.00275	43	1000.1667	1.00002
21	6.4333	1.00241	44	1259.1000	1.00011
22	8.0667	1.00219	45	1440.5000	1.00017
23	10.1333	1.00201			

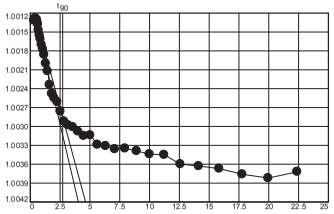


Void Ratio = 0.896 **Compression =** 20.4%

D_0 = 1.0079 D_{90} = 1.0022 D_{100} = 1.0016 C_v **at 8.04 min. =** 0.164 ft.^{2}/day

Pressure: 2000.00 psf — **TEST READINGS** — **Load No. 8**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.99897	12	0.9000	1.00170
2	0.1000	1.00132	13	1.1167	1.00177
3	0.2000	1.00128	14	1.3667	1.00186
4	0.2167	1.00132	15	1.7000	1.00200
5	0.2500	1.00130	16	2.1167	1.00212
6	0.3000	1.00130	17	2.6333	1.00234
7	0.3500	1.00133	18	3.2833	1.00248
8	0.4167	1.00138	19	4.1167	1.00255
9	0.5000	1.00147	20	5.1500	1.00261
10	0.6167	1.00155	21	6.4333	1.00276
11	0.7333	1.00161	22	8.0667	1.00292



Pressure: 2000.00 psf — **TEST READINGS (continued)** — **Load No. 5**

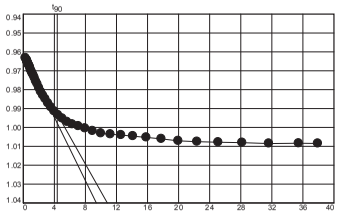
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
23	10.1333	0.94067	33	100.1500	0.95568	43	1000.1833	0.96119
24	12.7167	0.94229	34	126.0500	0.95651	44	1259.1167	0.96146
25	15.9833	0.94494	35	158.6500	0.95726	45	1440.0000	0.96184
26	20.0833	0.94676	36	199.6833	0.95788			
27	25.2667	0.94867	37	251.3500	0.95838			
28	31.7667	0.95029	38	316.3833	0.95878			
29	39.9500	0.95172	39	398.2667	0.95938			
30	50.2667	0.95275	40	501.3500	0.96002			
31	63.2500	0.95408	41	631.1333	0.96047			
32	79.5833	0.95521	42	794.5000	0.96080			

Void Ratio = 0.987 **Compression =** 16.6%

D_0 = 0.9170 D_{90} = 0.9485 D_{100} = 0.9520 C_v **at 24.87 min. =** 0.063 ft.^{2}/day

Pressure: 4000.00 psf — **TEST READINGS** — **Load No. 6**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	0.95897	24	12.7333	0.98927
2	0.0833	0.96323	25	15.9833	0.99140
3	0.2000	0.96424	26	20.0833	0.99342
4	0.2167	0.96448	27	25.2500	0.99523
5	0.2500	0.96484	28	31.7667	0.99700
6	0.3000	0.96541	29	39.9500	0.99834
7	0.3500	0.96592	30	50.2667	0.99932
8	0.4167	0.96622	31	63.2500	1.00046
9	0.5000	0.96676	32	79.5833	1.00185
10	0.6167	0.96734	33	100.1500	1.00309
11	0.7500	0.96817	34	126.0500	1.00365
12	0.9000	0.96935	35	158.6500	1.00402
13	1.1167	0.97024	36	199.6833	1.00462
14	1.3667	0.97127	37	251.3500	1.00527
15	1.7000	0.97231	38	316.4000	1.00607
16	2.1167	0.97368	39	398.2667	1.00710
17	2.6333	0.97555	40	501.3500	1.00753
18	3.2833	0.97702	41	631.1167	1.00784
19	4.1000	0.97903	42	794.5000	1.00807
20	5.1500	0.98105	43	1000.1667	1.00851
21	6.4500	0.98296	44	1259.1000	1.00837
22	8.0833	0.98489	45	1440.1833	1.00849
23	10.1333	0.98715			

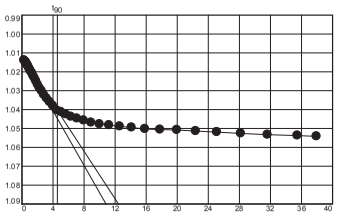


Void Ratio = 0.876 **Compression =** 21.3%

D_0 = 0.9611 D_{90} = 0.9929 D_{100} = 0.9965 C_v **at 19.08 min. =** 0.073 ft.^{2}/day

Pressure: 8000.00 psf — **TEST READINGS** — **Load No. 10**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	1.00859	24	12.7167	1.03595
2	0.0833	1.01390	25	15.9833	1.03792
3	0.2000	1.01456	26	20.0833	1.04032
4	0.2167	1.01474	27	25.2500	1.04125
5	0.2500	1.01500	28	31.7667	1.04244
6	0.3000	1.01530	29	39.9500	1.04370
7	0.3500	1.01559	30	50.2500	1.04472
8	0.4167	1.01592	31	63.2333	1.04573
9	0.5000	1.01637	32	79.5667	1.04689
10	0.6000	1.01678	33	100.1333	1.04772
11	0.7333	1.01744	34	126.0333	1.04826
12	0.9000	1.01825	35	158.6333	1.04890
13	1.1167	1.01911	36	199.6667	1.04949
14	1.3667	1.01991	37	251.3333	1.05027
15	1.7000	1.02067	38	316.3833	1.05060
16	2.1167	1.02213	39	398.2667	1.05080
17	2.6333	1.02326	40	501.3333	1.05138
18	3.2833	1.02479	41	631.1167	1.05192
19	4.1000	1.02665	42	794.4833	1.05262
20	5.1333	1.02843	43	1000.1667	1.05326
21	6.4333	1.03004	44	1259.0833	1.05374
22	8.0667	1.03211	45	1440.1333	1.05417
23	10.1333	1.03405			

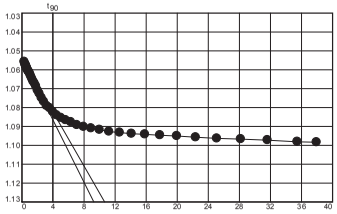


Void Ratio = 0.767 **Compression =** 25.8%

D_0 = 1.0118 **D_{90} =** 1.0405 **D_{100} =** 1.0436 **C_v at 20.80 min. =** 0.059 ft.^{2}/day

Pressure: 16000.00 psf — **TEST READINGS** — **Load No. 11**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	1.04987	12	0.9000	1.06129
2	0.1000	1.05574	13	1.1167	1.06223
3	0.2000	1.05699	14	1.3667	1.06339
4	0.2167	1.05736	15	1.7000	1.06470
5	0.2500	1.05776	16	2.1167	1.06606
6	0.3000	1.05815	17	2.6333	1.06715
7	0.3500	1.05850	18	3.2833	1.06864
8	0.4167	1.05903	19	4.1000	1.07084
9	0.5000	1.05954	20	5.1333	1.07261
10	0.6000	1.06022	21	6.4333	1.07487
11	0.7333	1.06084	22	8.0667	1.07681



Pressure: 2000.00 psf — **TEST READINGS (continued)** — **Load No. 8**

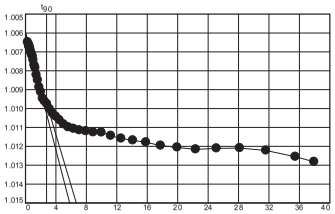
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
23	10.1333	1.00298	33	100.1500	1.00344
24	12.7333	1.00301	34	126.0500	1.00345
25	15.9833	1.00308	35	158.6333	1.00360
26	20.1000	1.00315	36	199.6833	1.00363
27	25.2667	1.00314	37	251.3500	1.00367
28	31.7667	1.00329	38	316.3833	1.00376
29	39.9500	1.00331	39	398.2667	1.00382
30	50.2667	1.00336	40	501.3500	1.00372
31	63.2500	1.00335			
32	79.5833	1.00339			

Void Ratio = 0.887 **Compression =** 20.8%

D_0 = 1.0009 **D_{90} =** 1.0029 **D_{100} =** 1.0031 **C_v at 7.40 min. =** 0.181 ft.^{2}/day

Pressure: 4000.00 psf — **TEST READINGS** — **Load No. 9**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	1.00372	24	12.7333	1.01025
2	0.1000	1.00649	25	15.9833	1.01042
3	0.2000	1.00662	26	20.1000	1.01061
4	0.2333	1.00666	27	25.2667	1.01083
5	0.2667	1.00671	28	31.7667	1.01099
6	0.3000	1.00676	29	39.9667	1.01107
7	0.3500	1.00680	30	50.2667	1.01115
8	0.4167	1.00686	31	63.2500	1.01120
9	0.5167	1.00700	32	79.5833	1.01126
10	0.6167	1.00707	33	100.1500	1.01127
11	0.7500	1.00717	34	126.0500	1.01144
12	0.9167	1.00723	35	158.6500	1.01159
13	1.1167	1.00743	36	199.6833	1.01168
14	1.3833	1.00770	37	251.3500	1.01179
15	1.7000	1.00785	38	316.4000	1.01196
16	2.1167	1.00822	39	398.2667	1.01206
17	2.6333	1.00849	40	501.3500	1.01216
18	3.3000	1.00887	41	631.1333	1.01211
19	4.1167	1.00912	42	794.5000	1.01209
20	5.1500	1.00946	43	1000.1667	1.01222
21	6.4500	1.00962	44	1259.1000	1.01255
22	8.0833	1.00976	45	1440.1500	1.01282
23	10.1333	1.01002			



Void Ratio = 0.865 **Compression =** 21.7%

D_0 = 1.0060 **D_{90} =** 1.0097 **D_{100} =** 1.0101 **C_v at 7.71 min. =** 0.170 ft.^{2}/day

Pressure: 16000.00 psf — **TEST READINGS (continued)** — **Load No. 11**

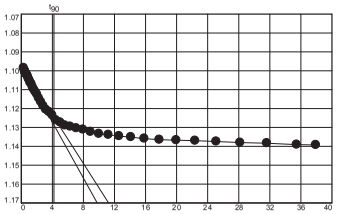
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
23	10.1333	1.07908	33	100.1500	1.09178	43	1000.1667	1.09726
24	12.7167	1.08023	34	126.0333	1.09270	44	1259.0833	1.09812
25	15.9833	1.08223	35	158.6333	1.09323	45	1440.4667	1.09835
26	20.0833	1.08404	36	199.6833	1.09385			
27	25.2500	1.08544	37	251.3500	1.09420			
28	31.7667	1.08662	38	316.3833	1.09465			
29	39.9500	1.08768	39	398.2667	1.09506			
30	50.2500	1.08921	40	501.3500	1.09573			
31	63.2333	1.09022	41	631.1167	1.09634			
32	79.5667	1.09095	42	794.4833	1.09673			

Void Ratio = 0.661 **Compression =** 30.3%

D_0 = 1.0537 D_{90} = 1.0821 D_{100} = 1.0852 C_v **at 15.71 min. =** 0.070 ft.^{2}/day

Pressure: 32000.00 psf — **TEST READINGS** — **Load No. 12**

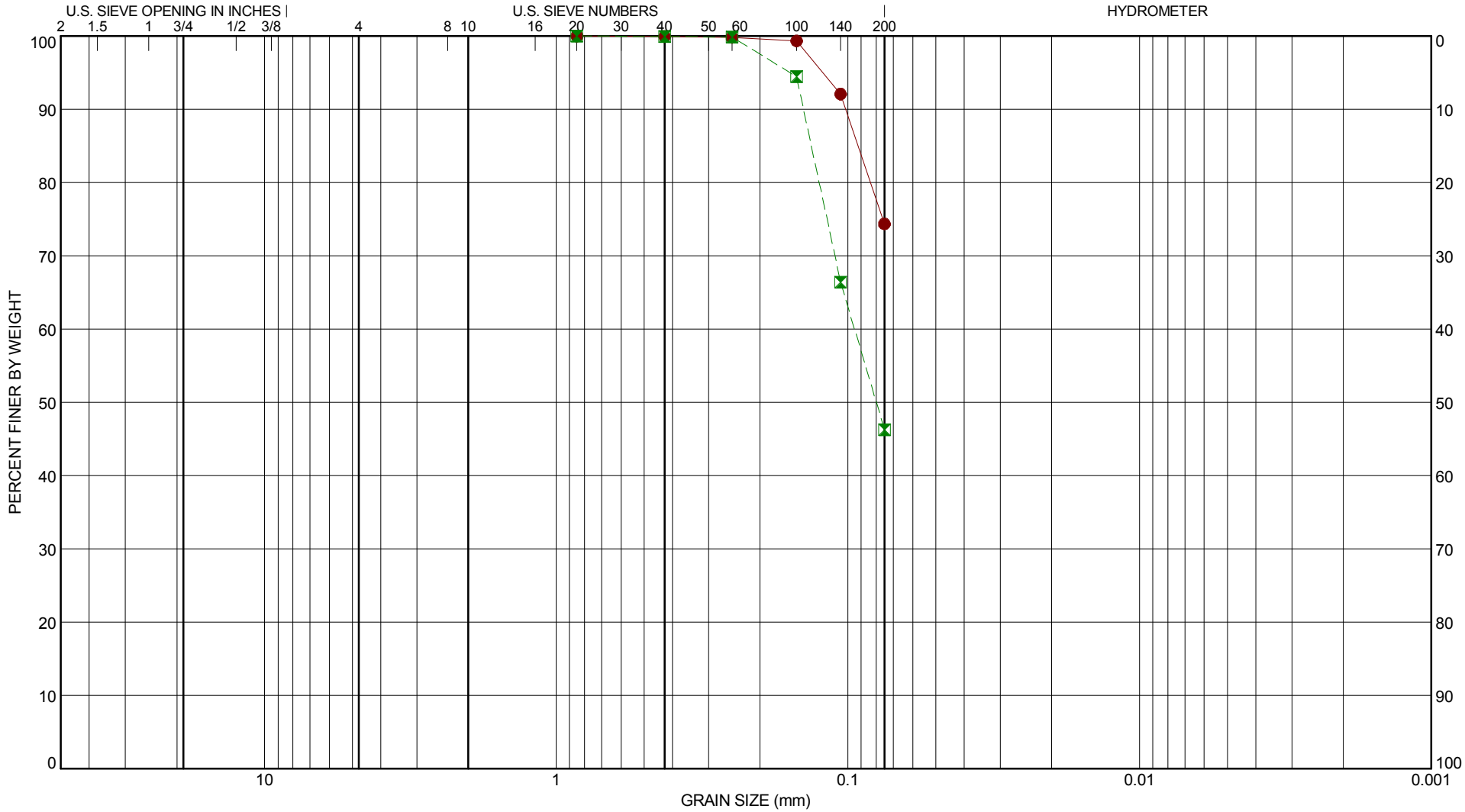
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.0000	1.09242	24	12.7167	1.12178
2	0.1000	1.09846	25	15.9833	1.12343
3	0.2000	1.09981	26	20.0833	1.12619
4	0.2167	1.10046	27	25.2500	1.12734
5	0.2500	1.10045	28	31.7667	1.12894
6	0.3000	1.10092	29	39.9500	1.12958
7	0.3500	1.10143	30	50.2667	1.13038
8	0.4167	1.10162	31	63.2333	1.13109
9	0.5000	1.10198	32	79.5833	1.13236
10	0.6000	1.10232	33	100.1500	1.13338
11	0.7333	1.10309	34	126.0333	1.13389
12	0.9000	1.10420	35	158.6333	1.13458
13	1.1167	1.10496	36	199.6667	1.13513
14	1.3667	1.10631	37	251.3333	1.13591
15	1.7000	1.10692	38	316.3833	1.13648
16	2.1167	1.10848	39	398.2500	1.13677
17	2.6333	1.10988	40	501.3333	1.13702
18	3.2833	1.11116	41	631.1167	1.13744
19	4.1000	1.11247	42	794.4833	1.13802
20	5.1333	1.11442	43	1000.1500	1.13835
21	6.4333	1.11642	44	1259.0833	1.13910
22	8.0667	1.11855	45	1440.1333	1.13929
23	10.1167	1.12049			



Void Ratio = 0.564 **Compression =** 34.4%

D_0 = 1.0976 D_{90} = 1.1246 D_{100} = 1.1276 C_v **at 17.64 min. =** 0.055 ft.^{2}/day

	Soil Boring ID	Depth (ft)	Classification	%Gravel	%Sand	%Silt	%Clay	D90	D60	D50	D30	D10	Cc	Cu	LL	PL	PI
●	B-8	4.0	Stiff dark gray silty clay with sand (CL)	0.0	25.6	74.4		0.102									
⊠	B-8	6.0	Dark gray silty, clayey sand (SC-SM)	0.0	53.7	46.3		0.142	0.095	0.08							



GRAVEL		SAND			SILT OR CLAY
coarse	fine	coarse	medium	fine	

Tested By:	Date Tested:	GRAIN SIZE DISTRIBUTION	Island Road Marsh Creation and Nourishment (TE-117)
KTK	8/23/2016	ASTM D422/D1140/D6913/T88	Terrebonne Parish, LA
Reviewed By:	Date Reviewed:	Project No.: 16715-040-01	GEOENGINEERS
Justin Ator	9/7/2016		

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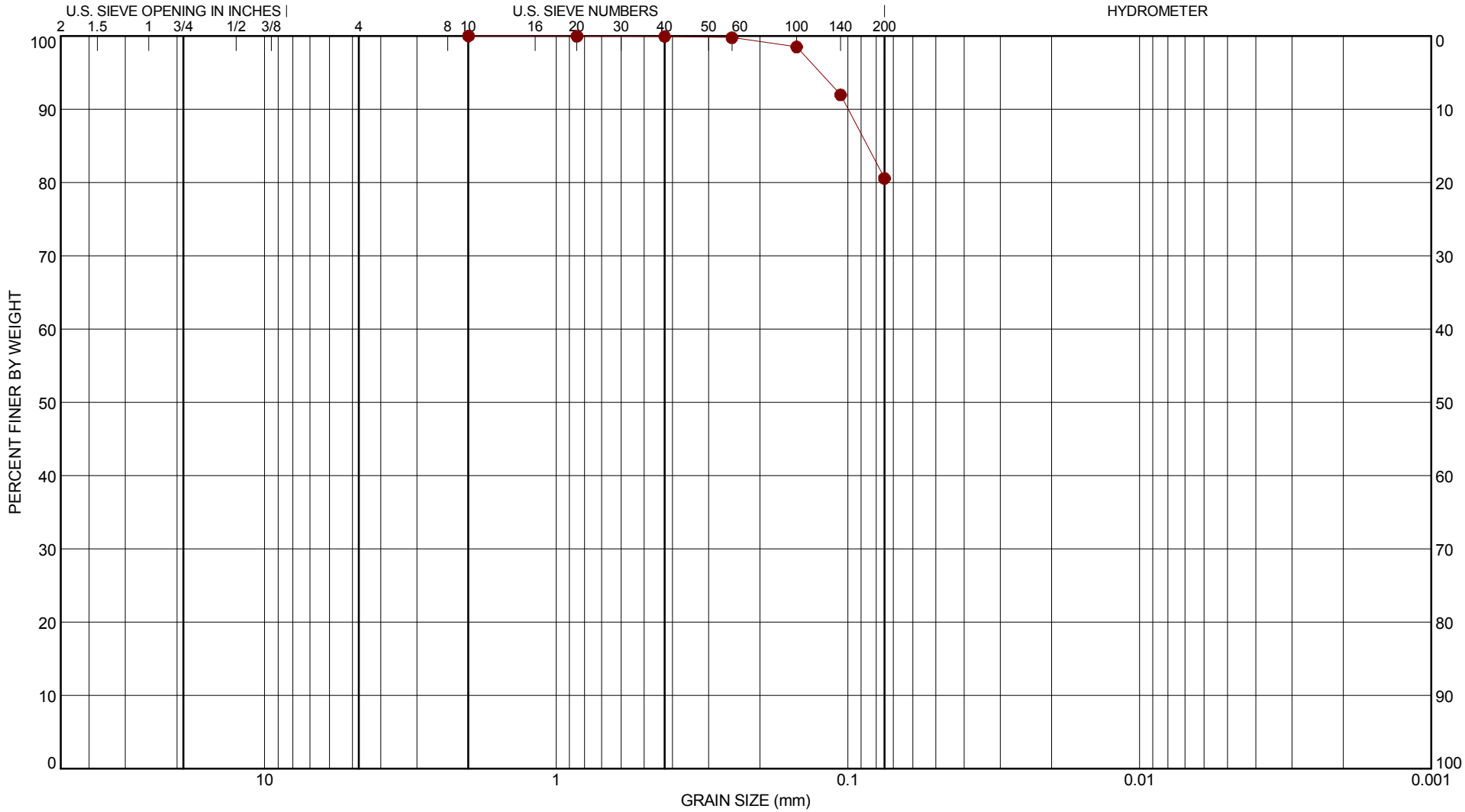
GEI - GRAIN SIZE - GEO TEMPLATE WITH LAB.GDT - 9/14/16 10:56 - P:\16\16715040\01\LAB\GINT LAB\16715-040-01 BR LAB.GPJ

Soil Boring ID	Depth (ft)	Classification	%Gravel	%Sand	%Silt	%Clay	D90	D60	D50	D30	D10	Cc	Cu	LL	PL	PI
B-10	12.0	Very soft gray silty clay with sand (CL)	0.0	19.4	80.6		0.1							29	17	12



GRAVEL		SAND			SILT OR CLAY
coarse	fine	coarse	medium	fine	

Tested By:	Date Tested:	GRAIN SIZE DISTRIBUTION	Island Road Marsh Creation and Nourishment (TE-117)
CLP	8/11/2016	ASTM D422/D1140/D6913/T88	Terrebonne Parish, LA
Reviewed By: Karen Allen	Date Reviewed: 8/31/2016	Project No.: 16715-040-01	GEOENGINEERS

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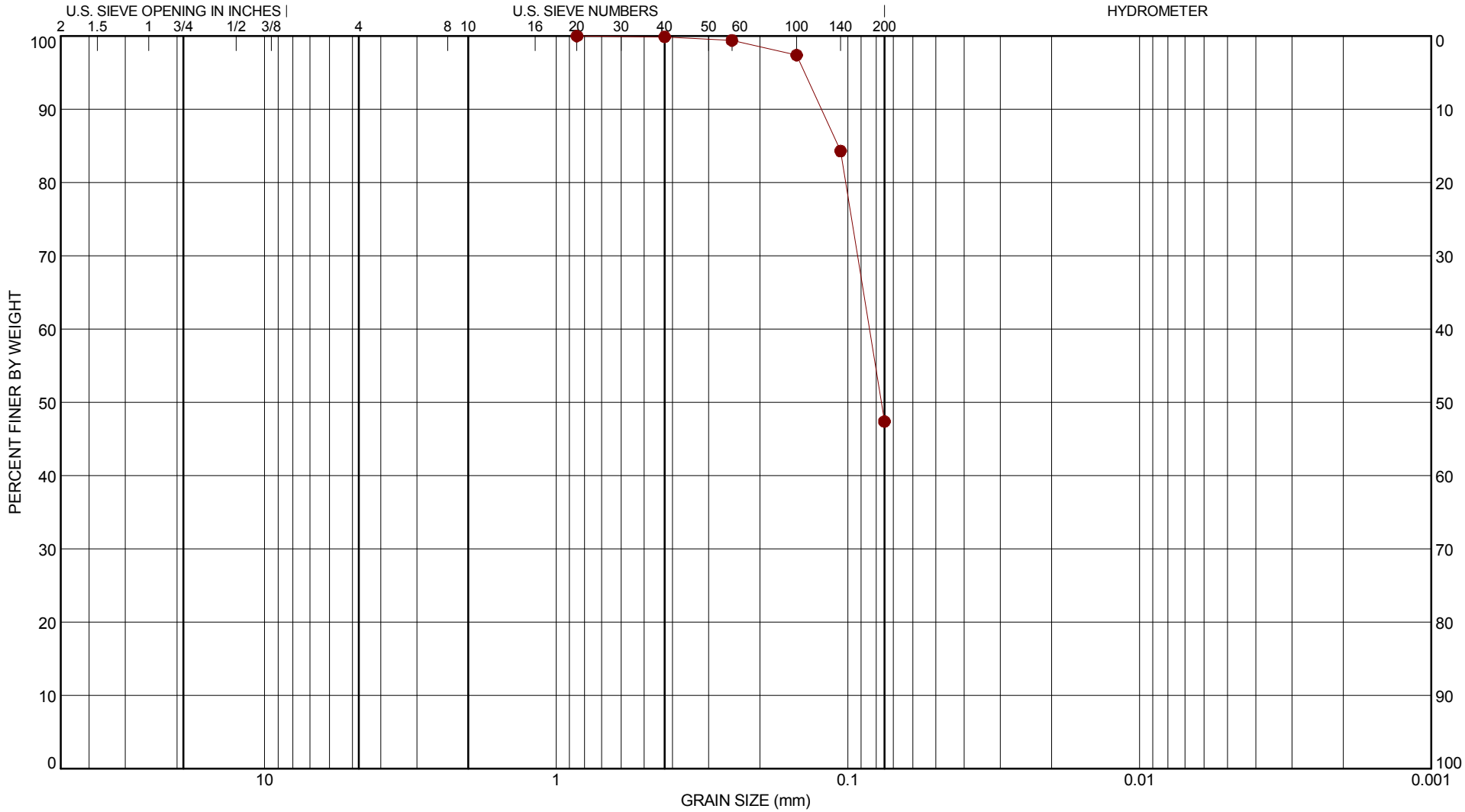
GEI - GRAIN SIZE - GEO TEMPLATE WITH LAB.GDT - 9/14/16 10:54 - P:\16\16715040\01\LAB\GINT LAB\16715-040-01 BR LAB.GPJ

Soil Boring ID	Depth (ft)	Classification	%Gravel	%Sand	%Silt	%Clay	D90	D60	D50	D30	D10	Cc	Cu	LL	PL	PI
B-11	6.0	Gray silty, clayey sand (SC-SM)	0.0	52.6	47.4		0.123	0.084	0.077							



GRAVEL		SAND			SILT OR CLAY
coarse	fine	coarse	medium	fine	

Tested By:	Date Tested:	GRAIN SIZE DISTRIBUTION	Island Road Marsh Creation and Nourishment (TE-117)
SRT/KTK	8/23/2016	ASTM D422/D1140/D6913/T88	Terrebonne Parish, LA
Reviewed By: Karen Allen	Date Reviewed: 9/1/2016	Project No.: 16715-040-01	GEOENGINEERS

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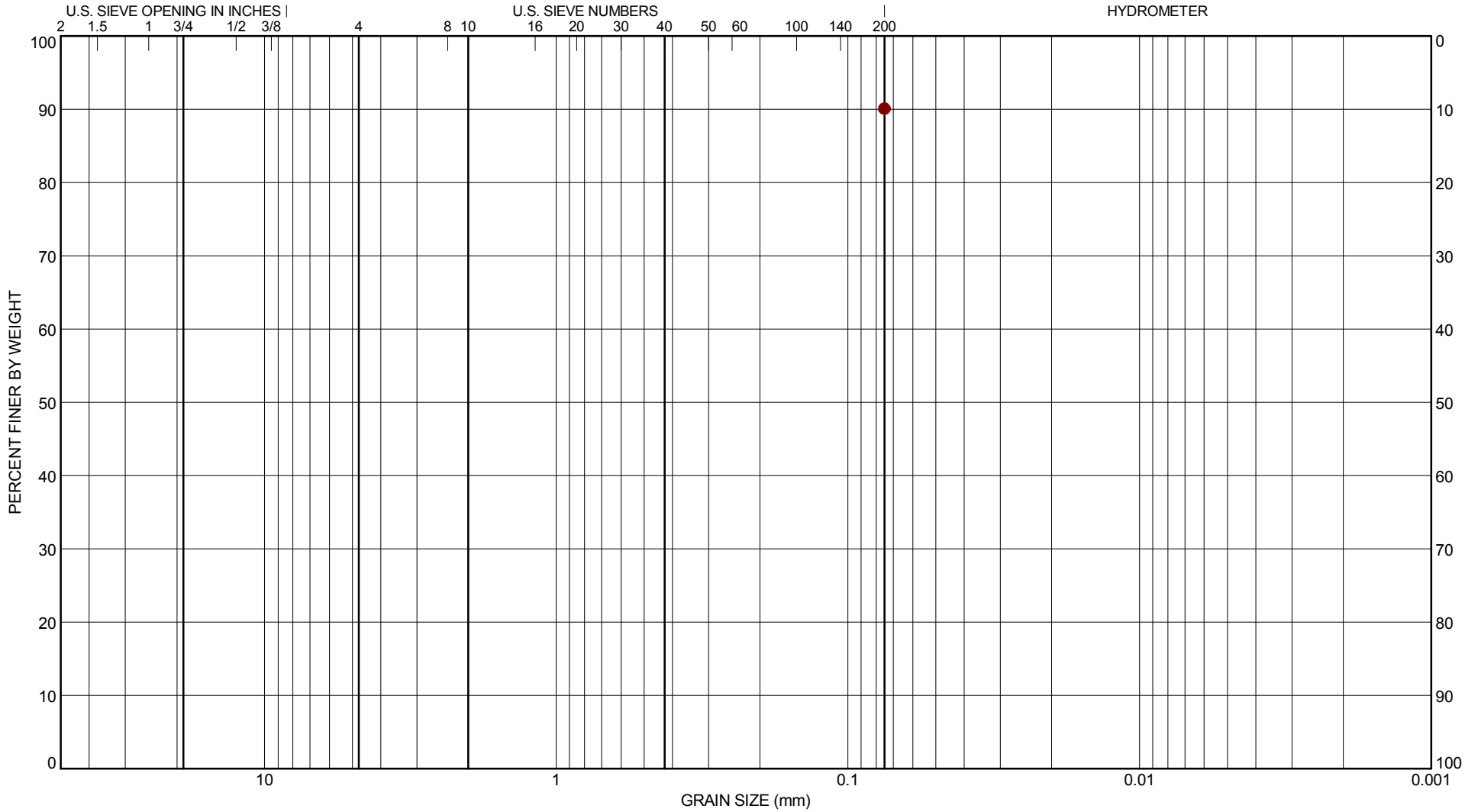
GEI - GRAIN SIZE - GEO TEMPLATE WITH LAB.GDT - 9/14/16 10:55 - P:\16\16715040\01\LAB\GINT LAB\16715-040-01 BR LAB.GPJ

Soil Boring ID	Depth (ft)	Classification	%Gravel	%Sand	%Silt	%Clay	D90	D60	D50	D30	D10	Cc	Cu	LL	PL	PI
● B-12	12.0	Very soft to soft gray clay with shell fragments (CH)			90.1									85	25	60



GRAVEL		SAND			SILT OR CLAY
coarse	fine	coarse	medium	fine	

Tested By:	Date Tested:	GRAIN SIZE DISTRIBUTION	Island Road Marsh Creation and Nourishment (TE-117)
CLP	8/23/2016	ASTM D422/D1140/D6913/T88	Terrebonne Parish, LA
Reviewed By: KLA	Date Reviewed: 8/31/2016	Project No.: 16715-040-01	GEOENGINEERS

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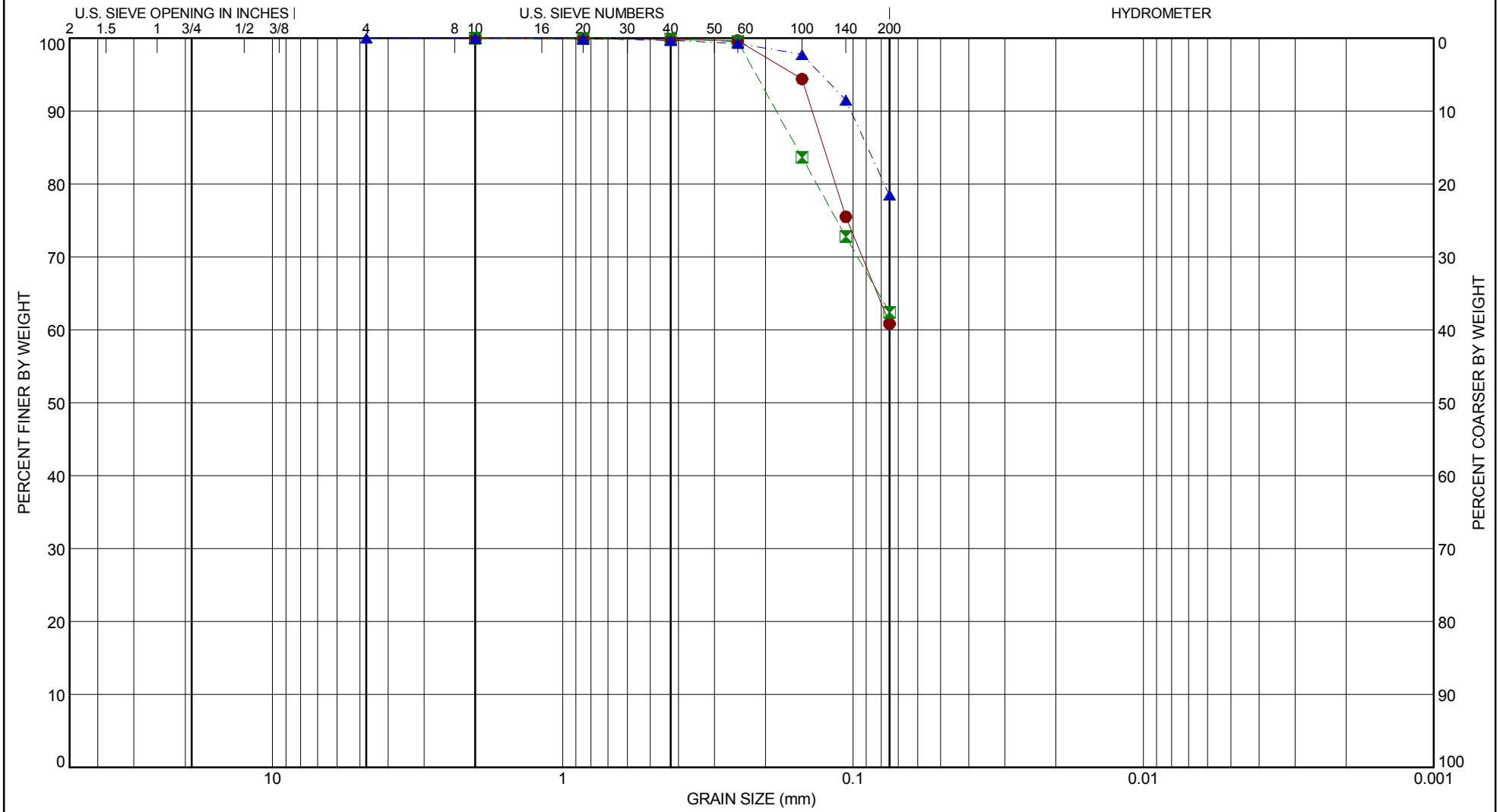
GEI - GRAIN SIZE - GEO TEMPLATE WITH LAB.GDT - 9/14/16 10:55 - P:\16\16715040\01\LAB\GINT LAB\16715-040-01 BR LAB.GPJ

	Soil Boring ID	Depth (ft)	Classification	%Gravel	%Sand	%Silt	%Clay	D90	D60	D50	D30	D10	Cc	Cu	LL	PL	PI
●	B-13	2.0	Gray sandy silt with clay pockets (ML)	0.0	39.2	60.8		0.138									
⊠	B-13	4.0	Dark gray sandy silt with clay pockets (ML)	0.0	37.6	62.4		0.184									
▲	B-13	8.0	Dark gray silty clay with sand (CL)	0.0	21.5	78.5		0.102									



GRAVEL		SAND			SILT OR CLAY
coarse	fine	coarse	medium	fine	

Tested By:	Date Tested:	GRAIN SIZE DISTRIBUTION	Island Road Marsh Creation and Nourishment (TE-117)
CLP	8/11/2016	ASTM D422/D1140/D6913/T88	Terrebonne Parish, LA
Reviewed By:	Date Reviewed:	Project No.: 16715-040-01	GEOENGINEERS
Justin Ator	8/29/2016		

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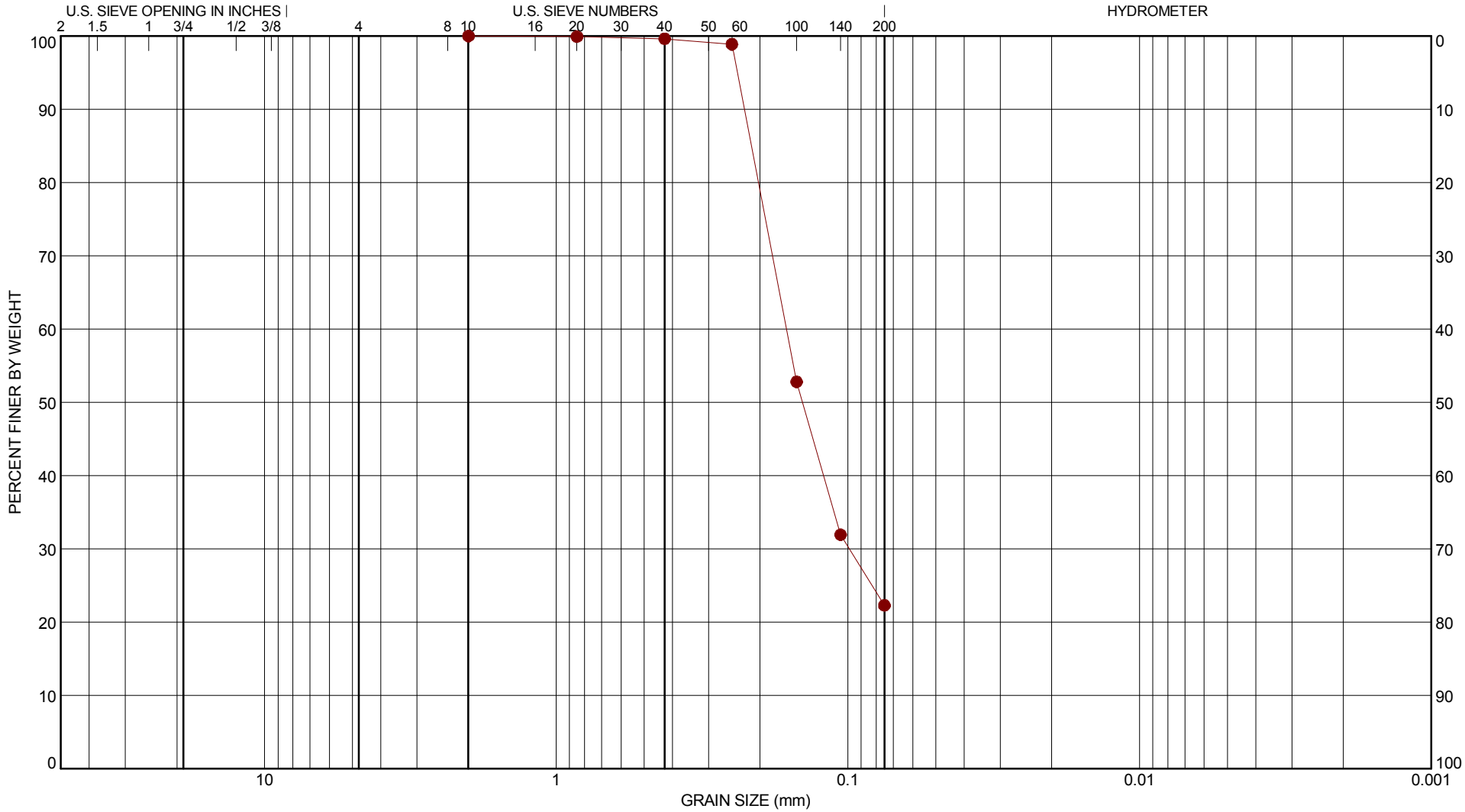
GEI - GRAIN SIZE - GEO TEMPLATE WITH LAB.GDT - 9/14/16 10:55 - P:\16\1671504001\LAB\GINT LAB\16715-040-01 BR LAB.GPJ

Soil Boring ID	Depth (ft)	Classification	%Gravel	%Sand	%Silt	%Clay	D90	D60	D50	D30	D10	Cc	Cu	LL	PL	PI
● B-13	12.0	Gray silty, clayey sand (SC-SM)	0.0	77.7	22.3		0.227	0.162	0.143	0.099						



GRAVEL		SAND			SILT OR CLAY
coarse	fine	coarse	medium	fine	

Tested By:	Date Tested:	GRAIN SIZE DISTRIBUTION	Island Road Marsh Creation and Nourishment (TE-117)
CLP	8/11/2016	ASTM D422/D1140/D6913/T88	Terrebonne Parish, LA
Reviewed By: Justin Ator	Date Reviewed: 8/29/2016	Project No.: 16715-040-01	GEOENGINEERS

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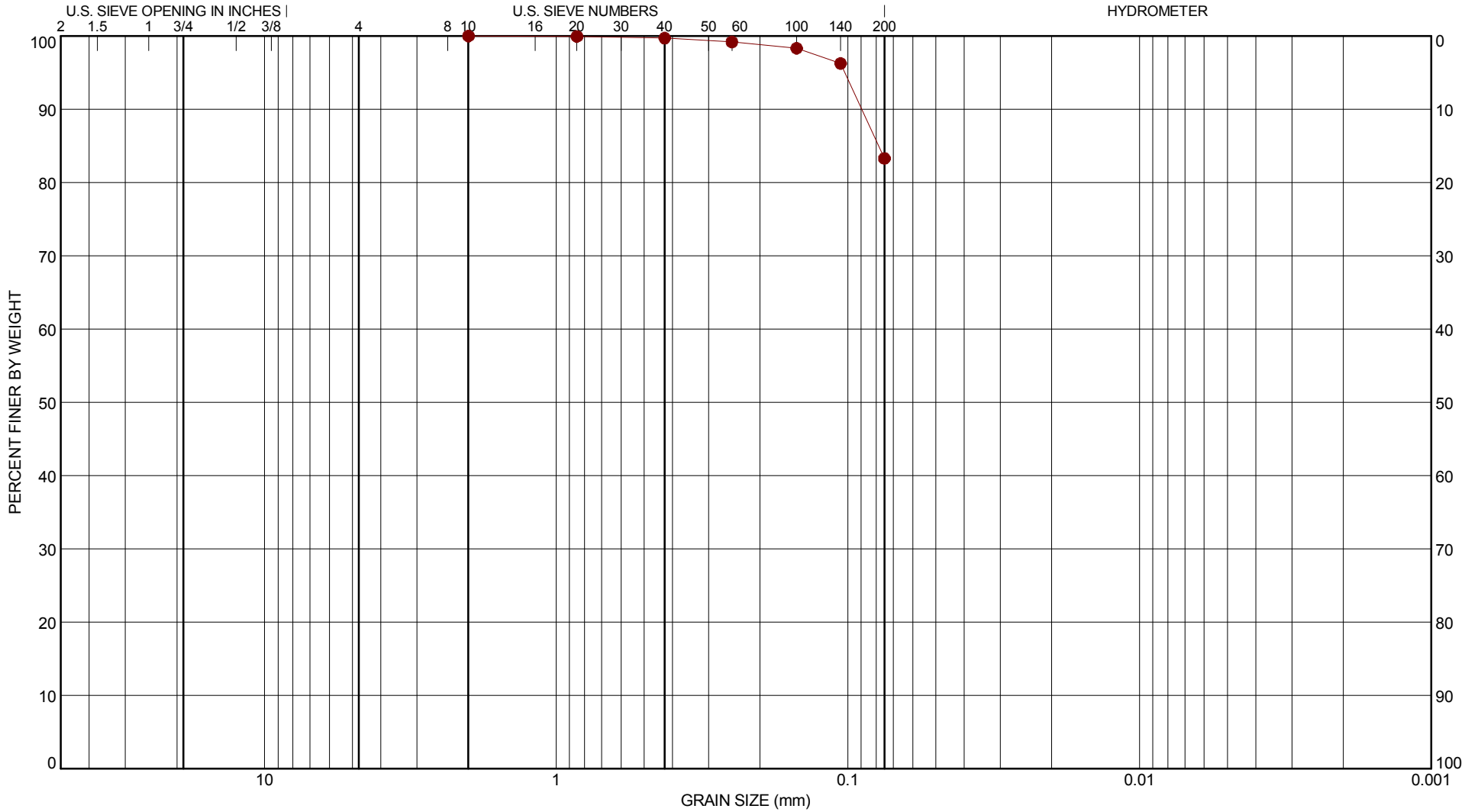
GEI - GRAIN SIZE - GEO TEMPLATE WITH LAB.GDT - 9/14/16 10:55 - P:\16\1671504001\LAB\GINT LAB\16715-040-01 BR LAB.GPJ

Soil Boring ID	Depth (ft)	Classification	%Gravel	%Sand	%Silt	%Clay	D90	D60	D50	D30	D10	Cc	Cu	LL	PL	PI
B-14	8.0	Very soft dark gray gray silty clay with sand (CL)	0.0	16.7	83.3		0.09							33	17	16



GRAVEL		SAND			SILT OR CLAY
coarse	fine	coarse	medium	fine	

Tested By:	Date Tested:	GRAIN SIZE DISTRIBUTION	Island Road Marsh Creation and Nourishment (TE-117)
Kyle Kilfian	8/11/2016	ASTM D422/D1140/D6913/T88	Terrebonne Parish, LA
Reviewed By:	Date Reviewed:	Project No.: 16715-040-01	GEOENGINEERS
Cathy Perkins	9/9/2016		

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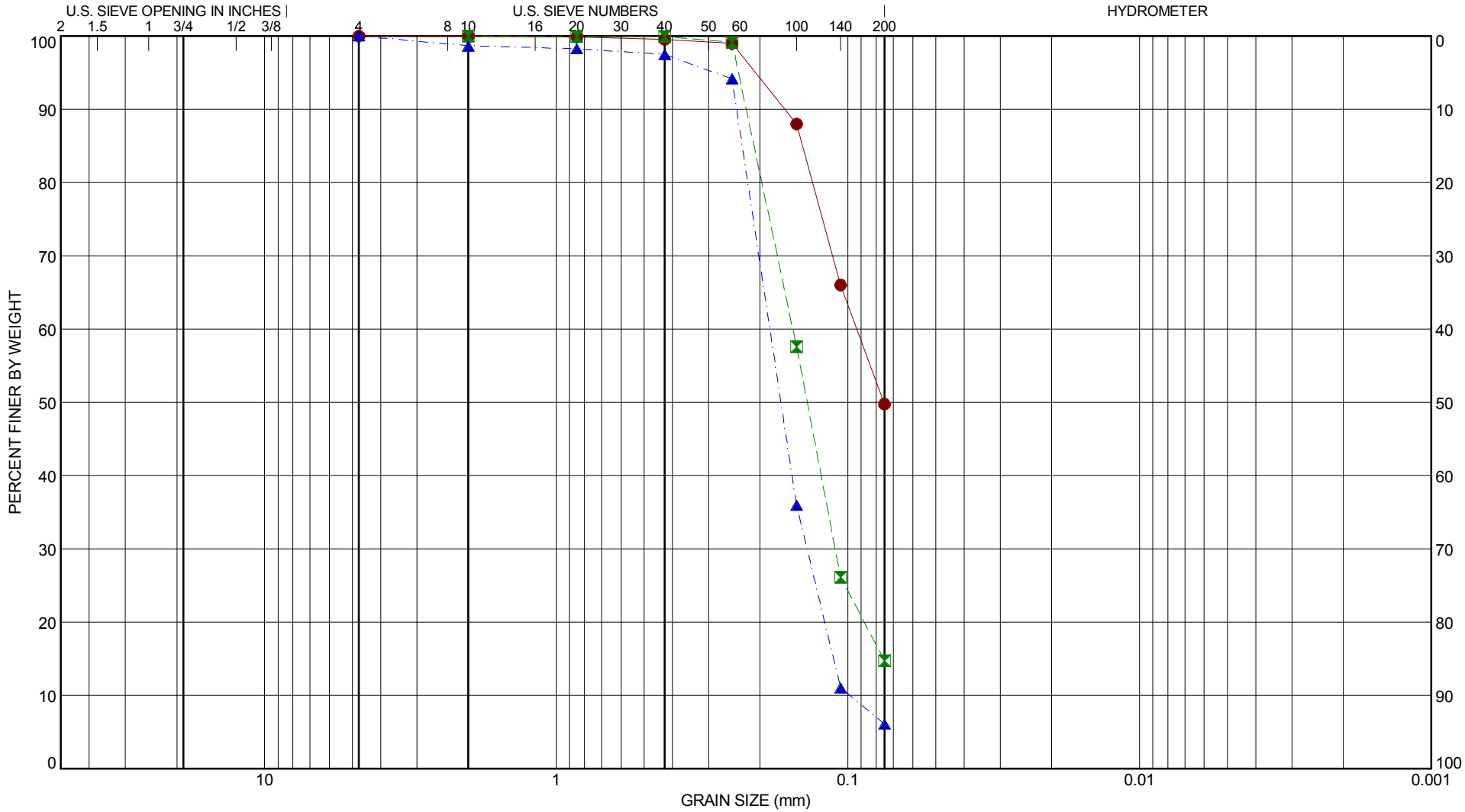
GEI - GRAIN SIZE - GEO TEMPLATE WITH LAB.GDT - 9/14/16 12:14 - P:\16\16715040\01\LAB\GINT LAB\16715-040-01 BR LAB.GPJ

Soil Boring ID	Depth (ft)	Classification	%Gravel	%Sand	%Silt	%Clay	D90	D60	D50	D30	D10	Cc	Cu	LL	PL	PI
B-15	4.0	Dark gray silty, clayey sand (SC-SM)	0.0	50.2	49.8		0.165	0.093	0.075							
B-15	8.0	Gray silty sand (SM)	0.0	85.3	14.7		0.223	0.154	0.138	0.111						
B-15	16.0	Gray sand with silty clay and shell fragments (SP-SC)	0.0	93.9	6.1		0.241	0.185	0.17	0.138	0.099	1.04	1.88			



GRAVEL		SAND			SILT OR CLAY
coarse	fine	coarse	medium	fine	

Tested By:	Date Tested:	GRAIN SIZE DISTRIBUTION	Island Road Marsh Creation and Nourishment (TE-117)
CLP	8/12/2016	ASTM D422/D1140/D6913/T88	Terrebonne Parish, LA
Reviewed By: Justin Ator	Date Reviewed: 8/30/2016	Project No.: 16715-040-01	GEOENGINEERS

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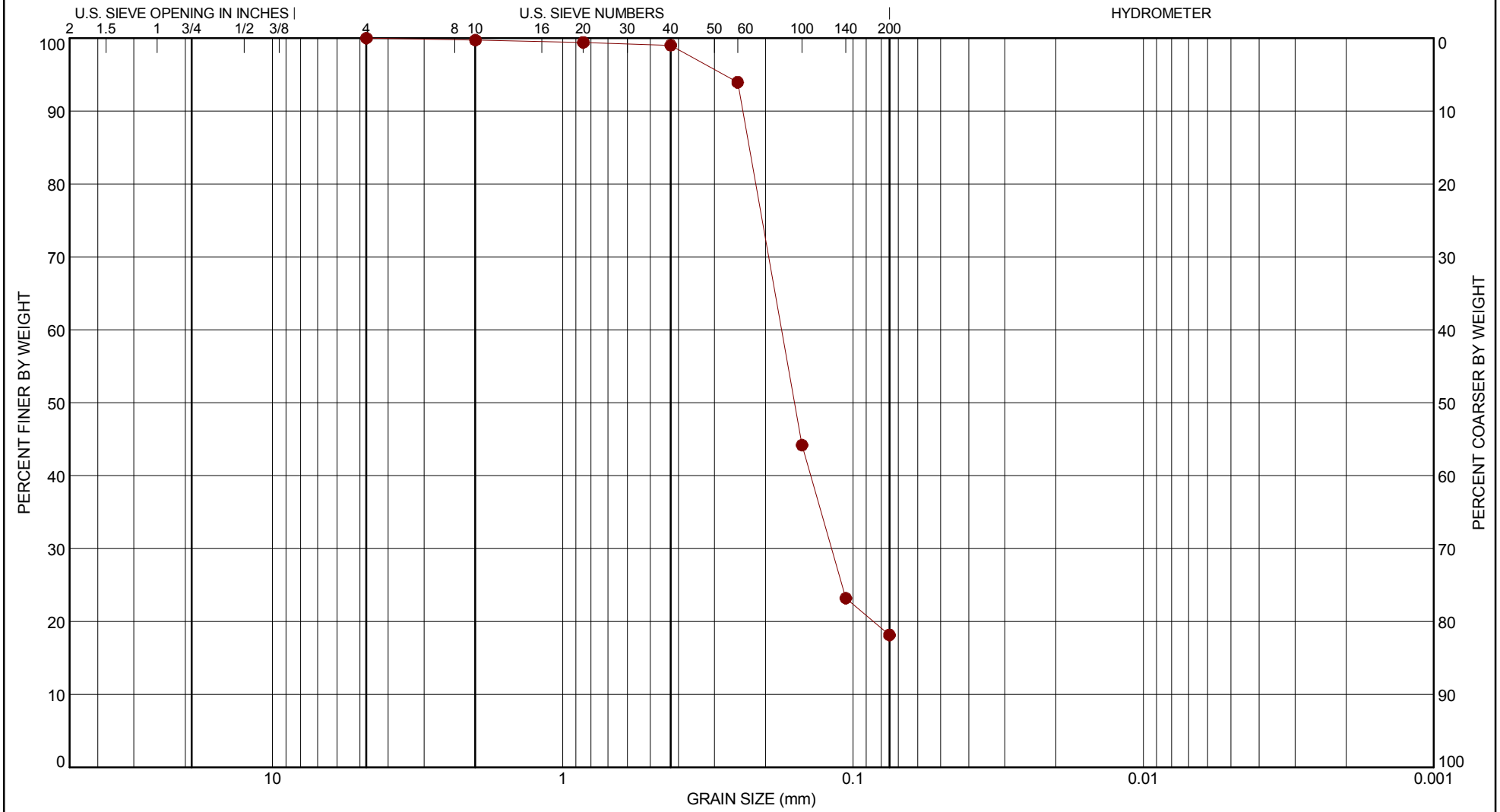
GEI - GRAIN SIZE - GEO TEMPLATE WITH LAB.GDT - 9/14/16 10:56 - P:\16\1671504001\LAB\GINT LAB\16715-040-01 BR LAB.GPJ

Soil Boring ID	Depth (ft)	Classification	%Gravel	%Sand	%Silt	%Clay	D90	D60	D50	D30	D10	Cc	Cu	LL	PL	PI
● B-15	23.0	Gray silty, clayey sand with shell fragments (SC-SM)	0.0	81.8	18.2		0.24	0.176	0.159	0.119						



GRAVEL		SAND			SILT OR CLAY
coarse	fine	coarse	medium	fine	

Tested By:	Date Tested:	GRAIN SIZE DISTRIBUTION	Island Road Marsh Creation and Nourishment (TE-117)
CLP	8/12/2016	ASTM D422/D1140/D6913/T88	Terrebonne Parish, LA
Reviewed By:	Date Reviewed:	Project No.: 16715-040-01	GEOENGINEERS
Justin Ator	8/30/2016		

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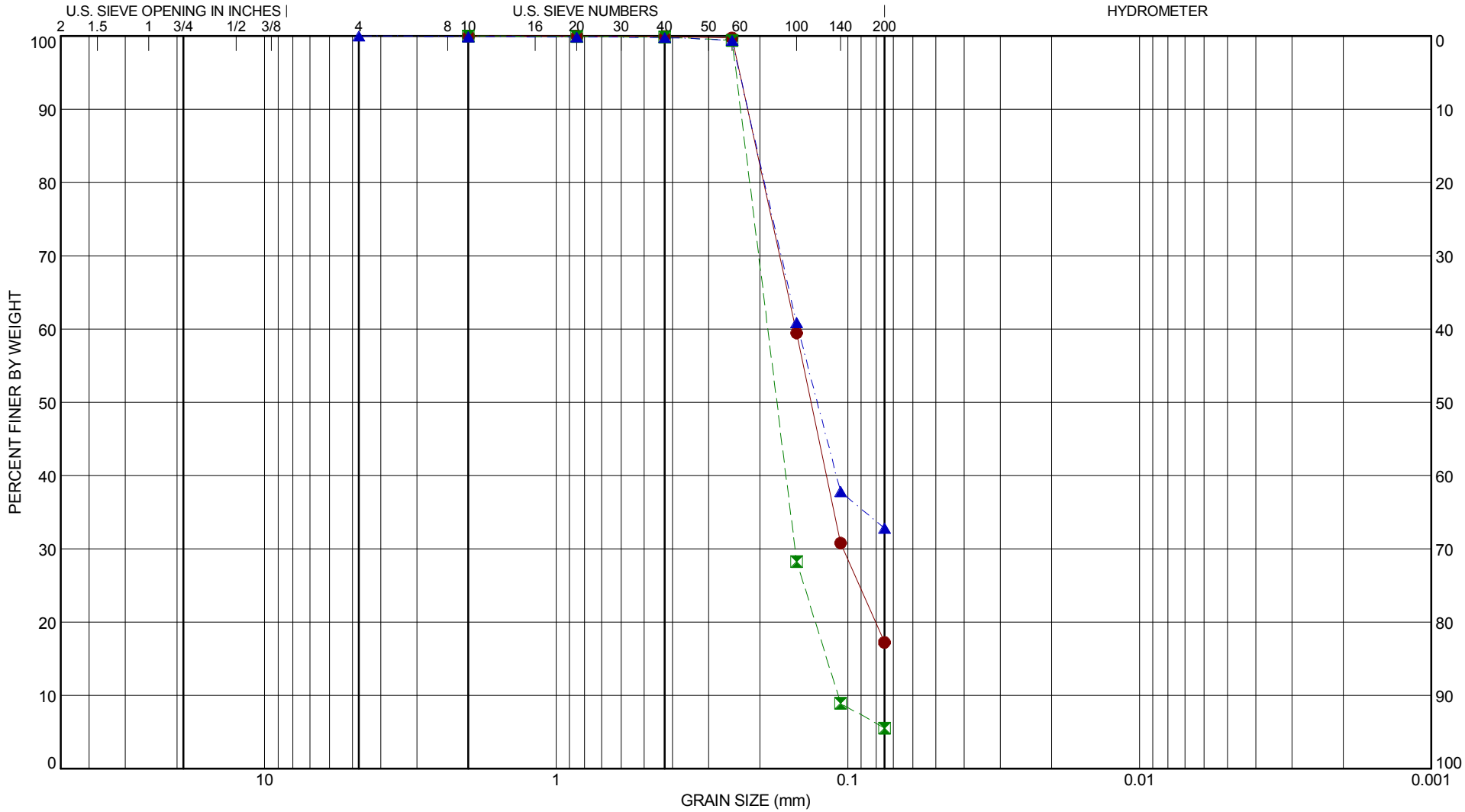
GEI - GRAIN SIZE - GEO TEMPLATE WITH LAB.GDT - 9/14/16 10:56 - P:\16\1671504001\LAB\GINT LAB\16715-040-01 BR LAB.GPJ

Soil Boring ID	Depth (ft)	Classification	%Gravel	%Sand	%Silt	%Clay	D90	D60	D50	D30	D10	Cc	Cu	LL	PL	PI
B-16	6.0	Dark gray silty sand (SM)	0.0	82.8	17.2		0.221	0.151	0.134	0.104						
B-16	8.0	Dark gray sand with silt (SP-SM)	0.0	94.5	5.5		0.234	0.188	0.175	0.152	0.108	1.13	1.74			
B-16	58.0	Dark gray silty, clayey sand with shell fragments (SC-SM)	0.0	67.2	32.8		0.221	0.148	0.127							



GRAVEL		SAND			SILT OR CLAY
coarse	fine	coarse	medium	fine	

Tested By:	Date Tested:	GRAIN SIZE DISTRIBUTION	Island Road Marsh Creation and Nourishment (TE-117)
Kyle Kilfian	8/23/2016	ASTM D422/D1140/D6913/T88	Terrebonne Parish, LA
Reviewed By:	Date Reviewed:	Project No.: 16715-040-01	GEOENGINEERS
Cathy Perkins	9/8/2016		

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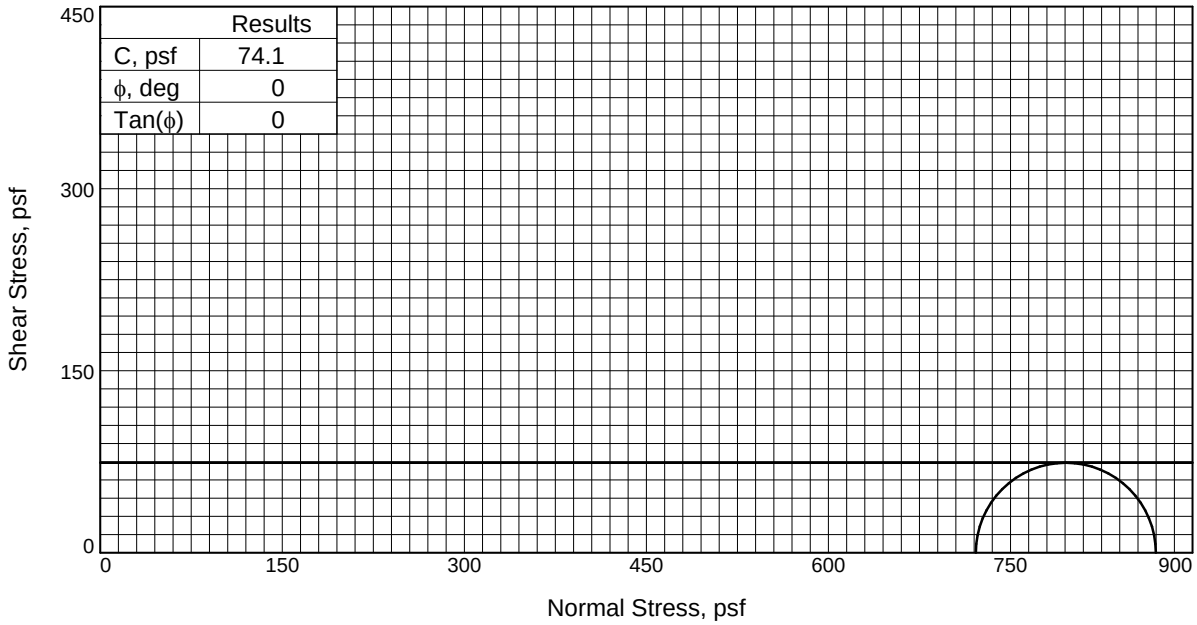
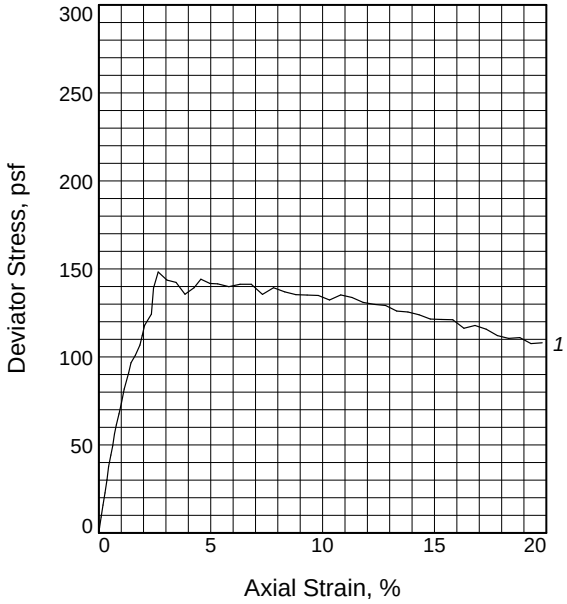
GEI - GRAIN SIZE - GEO TEMPLATE WITH LAB.GDT - 9/14/16 10:56 - P:\16\1671504001\LAB\GINT LAB\16715-040-01 BR LAB.GPJ





Sample No.		1
Initial	Water Content, %	51.4
	Dry Density, pcf	68.7
	Saturation, %	96.2
	Void Ratio	1.4319
	Diameter, in.	2.817
	Height, in.	6.055
At Test	Water Content, %	51.4
	Dry Density, pcf	68.7
	Saturation, %	96.2
	Void Ratio	1.4319
	Diameter, in.	2.817
	Height, in.	6.055
Strain rate, in./min.		1.000
Back Pressure, psi		0.000
Cell Pressure, psi		5.010
Fail. Stress, psf		148.3
Strain, %		2.7
Ult. Stress, psf		121.5
Strain, %		14.8
σ_1 Failure, psf		869.7
σ_3 Failure, psf		721.4

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Very soft dark gray clay with organic matter (CH)

LL= 55 **PL=** 20 **PI=** 35

Specific Gravity= 2.677

Remarks: Point of failure selected after membrane correction was applied.

Figure _____

Client: CPRA

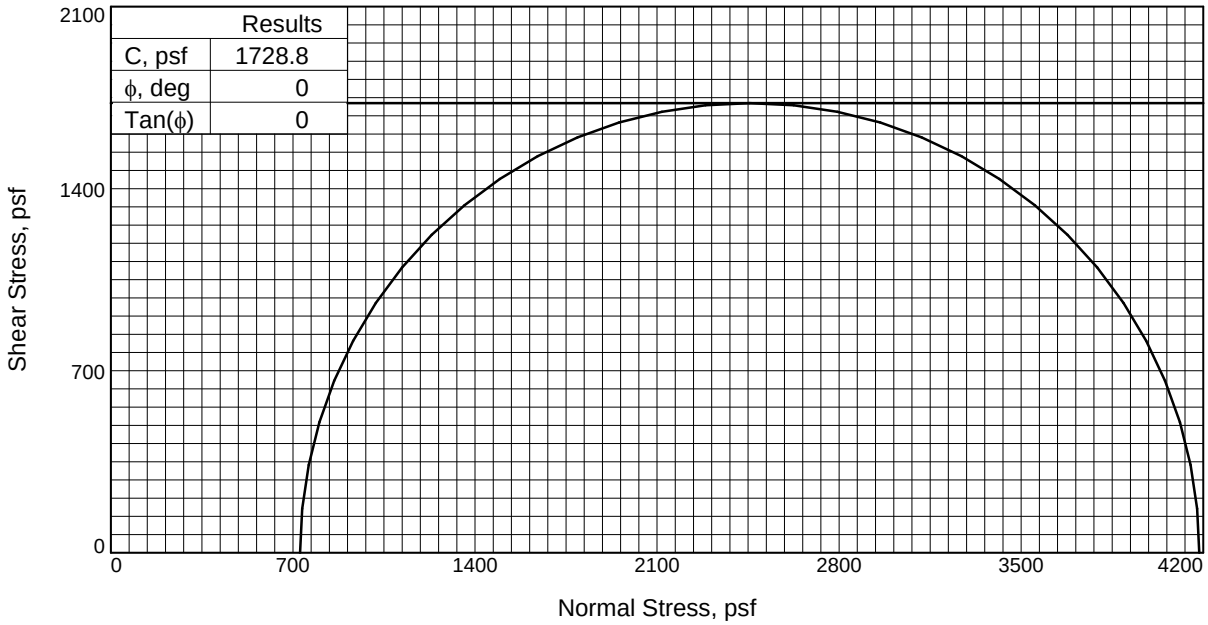
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

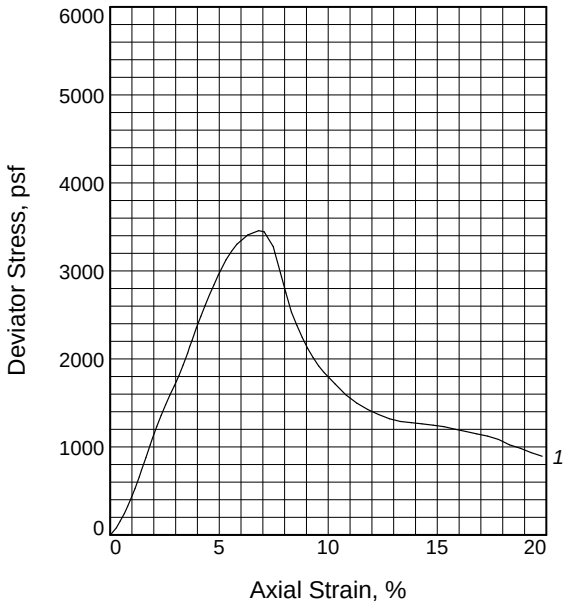
Source of Sample: B-8 **Depth:** 2' - 4'

Proj. No.: 16715-040-01 **Date Sampled:** 8/18/16

GeoEngineers

Tested By: CLP **Checked By:** JSA/KLA





Sample No.		1
Initial	Water Content, %	30.1
	Dry Density, pcf	94.4
	Saturation, %	104.2
	Void Ratio	0.7731
	Diameter, in.	2.858
	Height, in.	5.945
At Test	Water Content, %	30.1
	Dry Density, pcf	94.4
	Saturation, %	104.2
	Void Ratio	0.7731
	Diameter, in.	2.858
	Height, in.	5.945
Strain rate, in./min.		1.000
Back Pressure, psi		0.000
Cell Pressure, psi		5.050
Fail. Stress, psf		3457.5
Strain, %		6.8
Ult. Stress, psf		1248.0
Strain, %		14.8
σ_1 Failure, psf		4184.7
σ_3 Failure, psf		727.2

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Stiff dark gray silty clay with sand (CL)

Assumed Specific Gravity= 2.68

Remarks: %-200 = 74.0

Figure _____

Client: CPRA

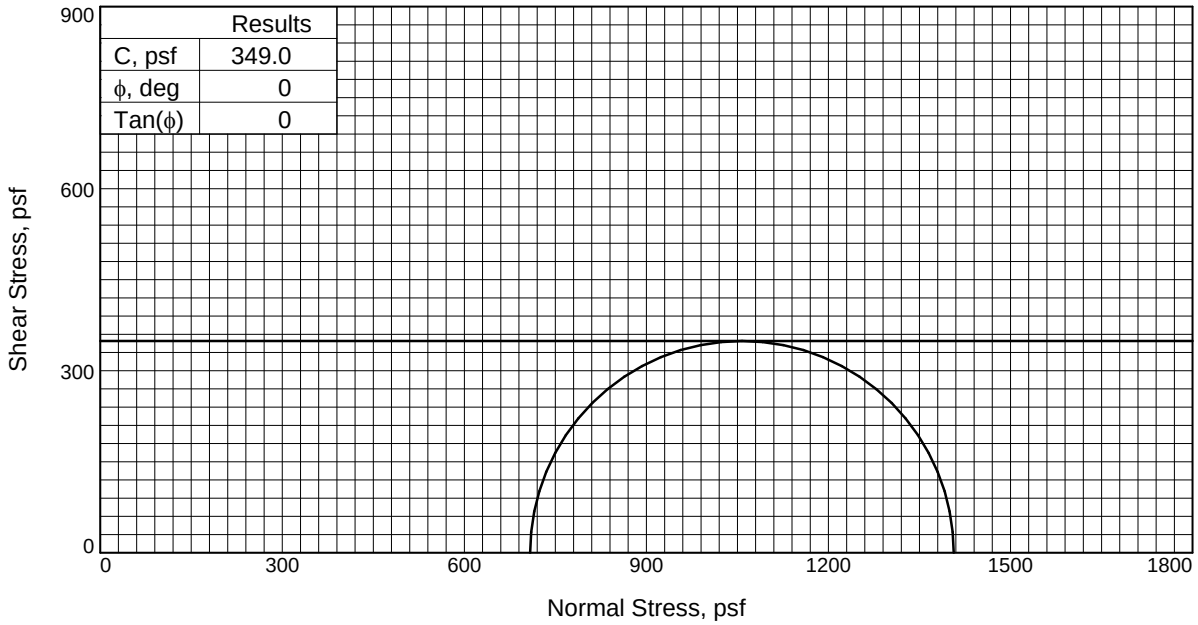
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

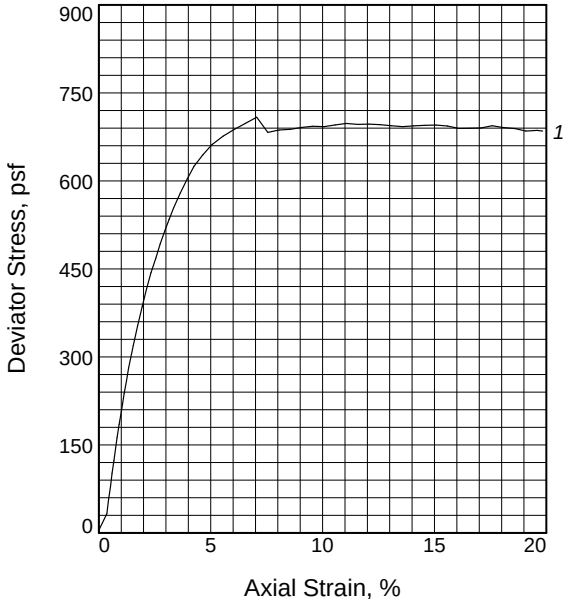
Source of Sample: B-8 **Depth:** 4' - 6'

Proj. No.: 16715-040-01 **Date Sampled:** 8/18/16

GeoEngineers

Tested By: CLP **Checked By:** JSA/KLA





Sample No.		1
Initial	Water Content, %	31.3
	Dry Density, pcf	91.3
	Saturation, %	100.8
	Void Ratio	0.8318
	Diameter, in.	2.798
	Height, in.	5.973
At Test	Water Content, %	31.3
	Dry Density, pcf	91.3
	Saturation, %	100.8
	Void Ratio	0.8318
	Diameter, in.	2.798
	Height, in.	5.973
Strain rate, in./min.		1.000
Back Pressure, psi		0.000
Cell Pressure, psi		4.920
Fail. Stress, psf		698.0
Strain, %		11.1
Ult. Stress, psf		694.8
Strain, %		14.6
σ_1 Failure, psf		1406.4
σ_3 Failure, psf		708.5

Type of Test: Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Soft dark gray sandy clay with organic matter (CL)

Assumed Specific Gravity= 2.68

Remarks: Point of failure selected after membrane correction was applied.

Client: CPRA

Project: Island Road Marsh Creation and Nourishment (TE-117) Terrebonne Parish, Louisiana

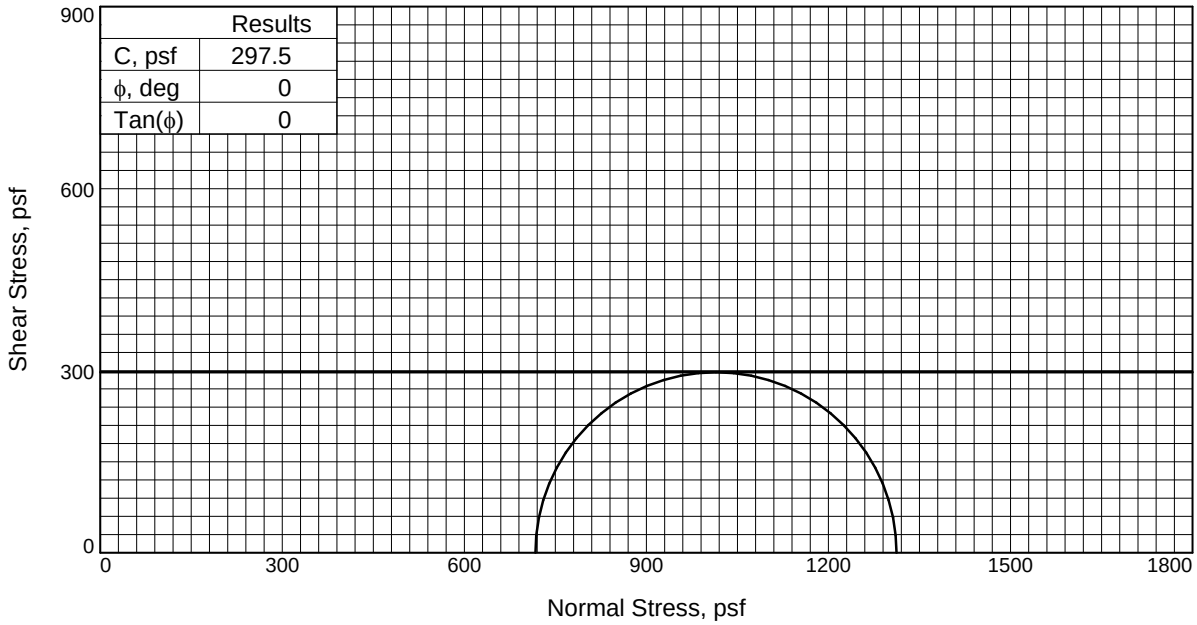
Source of Sample: B-8 **Depth:** 14' - 16'

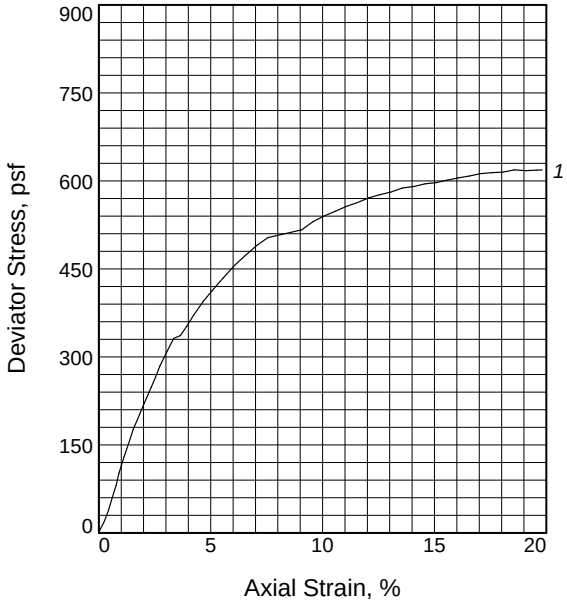
Proj. No.: 16715-040-01 **Date Sampled:** 8/18/16

GeoEngineers

Figure _____

Tested By: CLP **Checked By:** JSA/KLA





Sample No.		1
Initial	Water Content, %	30.3
	Dry Density, pcf	93.0
	Saturation, %	101.7
	Void Ratio	0.7988
	Diameter, in.	2.836
	Height, in.	5.915
At Test	Water Content, %	30.3
	Dry Density, pcf	93.0
	Saturation, %	101.7
	Void Ratio	0.7988
	Diameter, in.	2.836
	Height, in.	5.915
Strain rate, in./min.		1.000
Back Pressure, psi		0.000
Cell Pressure, psi		4.980
Fail. Stress, psf		595.0
Strain, %		14.6
Ult. Stress, psf		595.0
Strain, %		14.6
σ_1 Failure, psf		1312.1
σ_3 Failure, psf		717.1

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: Soft dark gray silty clay (CL)

Assumed Specific Gravity= 2.68
Remarks:

Client: CPRA

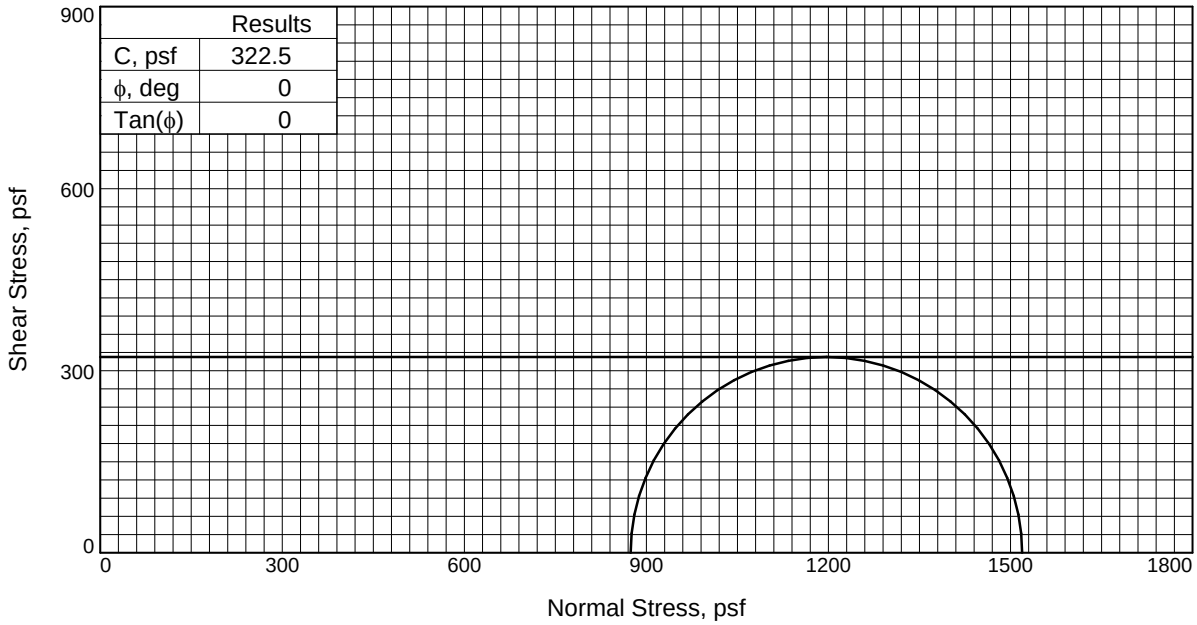
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana
Source of Sample: B-8 **Depth:** 18' - 20'

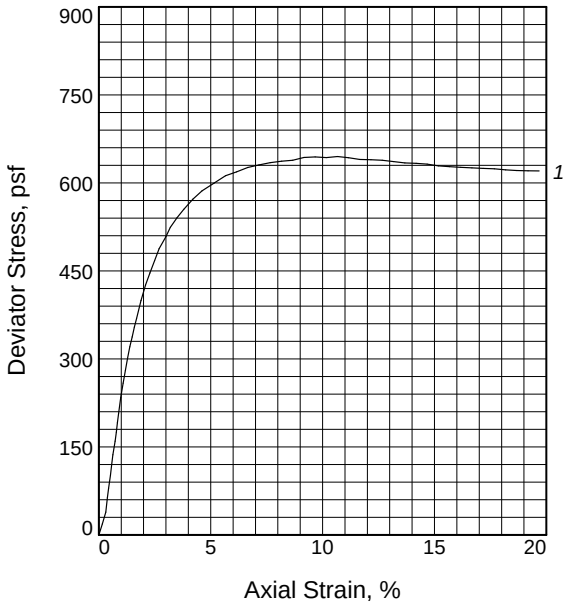
Proj. No.: 16715-040-01 **Date Sampled:** 8/18/16

GeoEngineers

Figure _____

Tested By: CLP **Checked By:** JSA/KLA





Sample No.		1
Initial	Water Content, %	113.7
	Dry Density, pcf	41.3
	Saturation, %	99.5
	Void Ratio	3.0855
	Diameter, in.	2.827
	Height, in.	6.029
At Test	Water Content, %	113.7
	Dry Density, pcf	41.3
	Saturation, %	99.5
	Void Ratio	3.0855
	Diameter, in.	2.827
	Height, in.	6.029
Strain rate, in./min.		1.000
Back Pressure, psi		0.000
Cell Pressure, psi		6.070
Fail. Stress, psf		645.1
Strain, %		10.7
Ult. Stress, psf		632.0
Strain, %		14.7
σ_1 Failure, psf		1519.1
σ_3 Failure, psf		874.1

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Soft to medium dark gray clay with peat pockets and wood (CH)

LL= 122 **PL=** 34 **PI=** 88

Assumed Specific Gravity= 2.70

Remarks: Organic Content = 6.0%

Figure _____

Client: CPRA

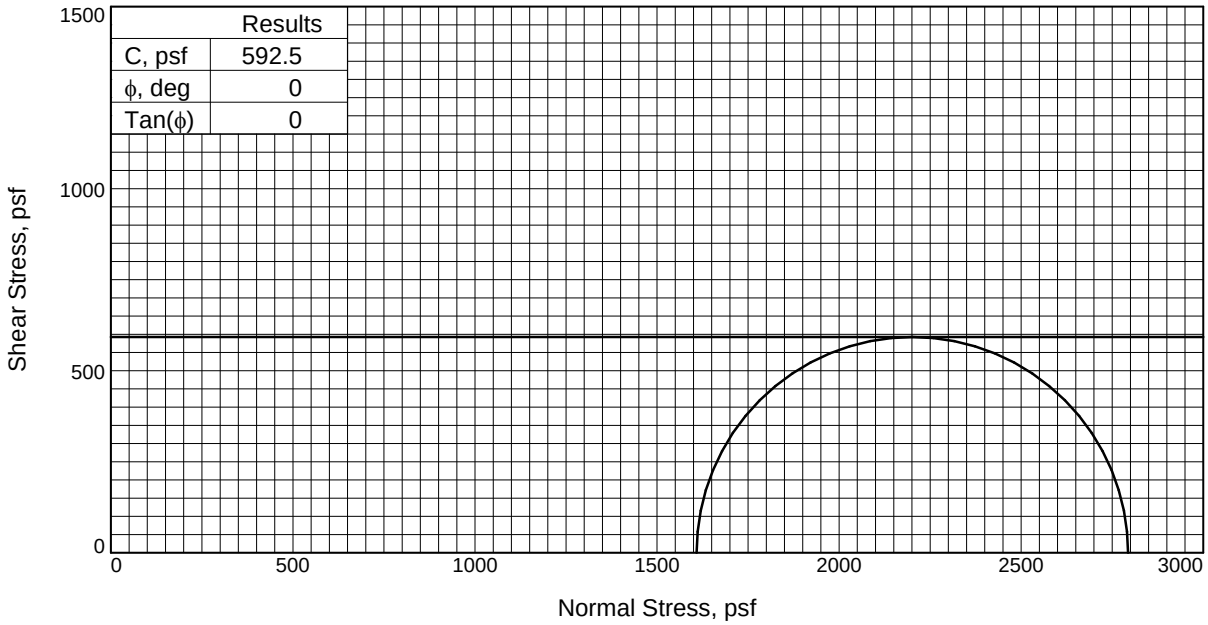
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

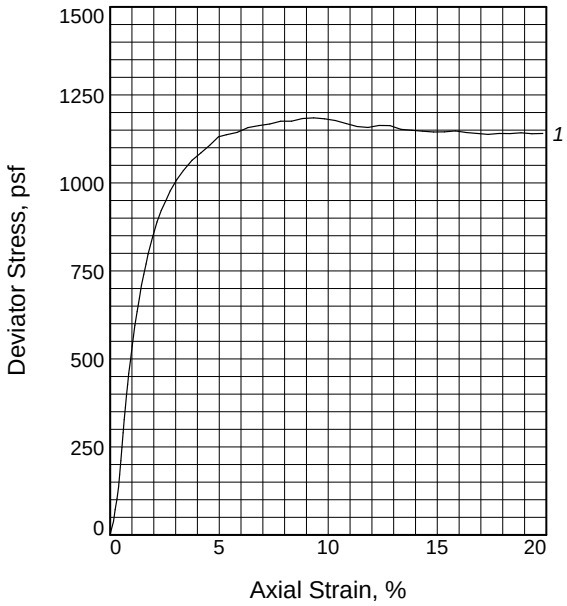
Source of Sample: B-8 **Depth:** 23' - 25'

Proj. No.: 16715-040-01 **Date Sampled:** 8/18/16

GeoEngineers

Tested By: CLP **Checked By:** JSA/KLA





Sample No.		1
Initial	Water Content, %	42.5
	Dry Density, pcf	77.2
	Saturation, %	97.1
	Void Ratio	1.1835
	Diameter, in.	2.844
	Height, in.	6.068
At Test	Water Content, %	42.5
	Dry Density, pcf	77.2
	Saturation, %	97.1
	Void Ratio	1.1835
	Diameter, in.	2.844
	Height, in.	6.068
Strain rate, in./min.		1.000
Back Pressure, psi		0.000
Cell Pressure, psi		11.170
Fail. Stress, psf		1185.0
Strain, %		9.3
Ult. Stress, psf		1144.8
Strain, %		14.8
σ_1 Failure, psf		2793.5
σ_3 Failure, psf		1608.5

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Medium dark gray clay (CH)

Assumed Specific Gravity= 2.70

Remarks:

Figure _____

Client: CPRA

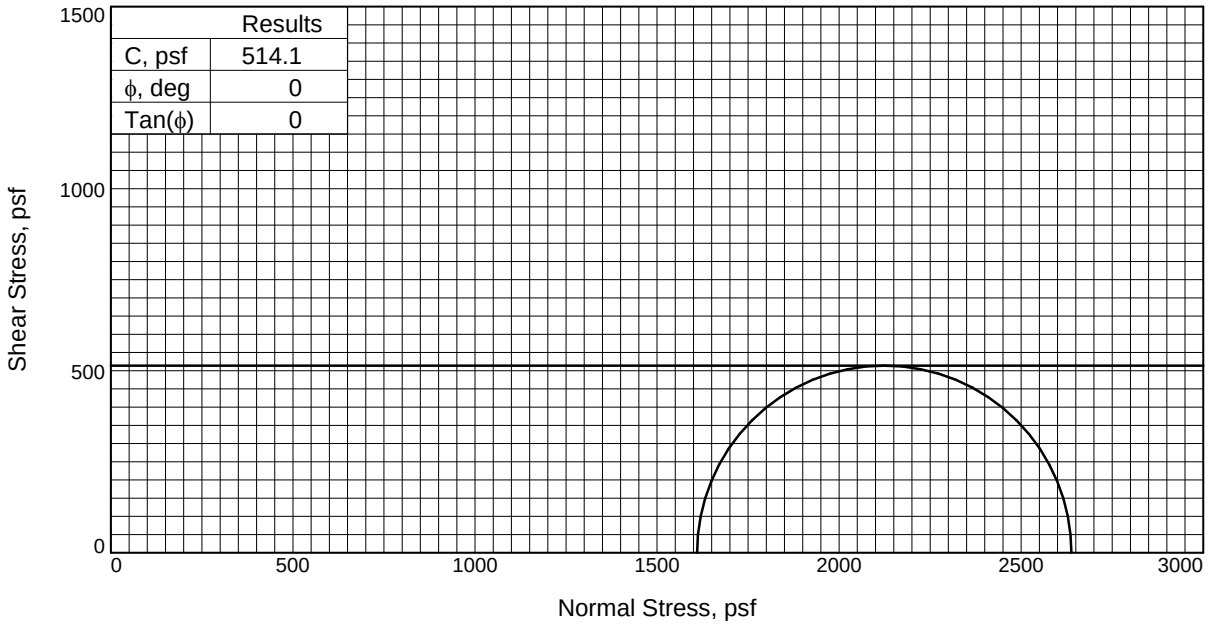
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

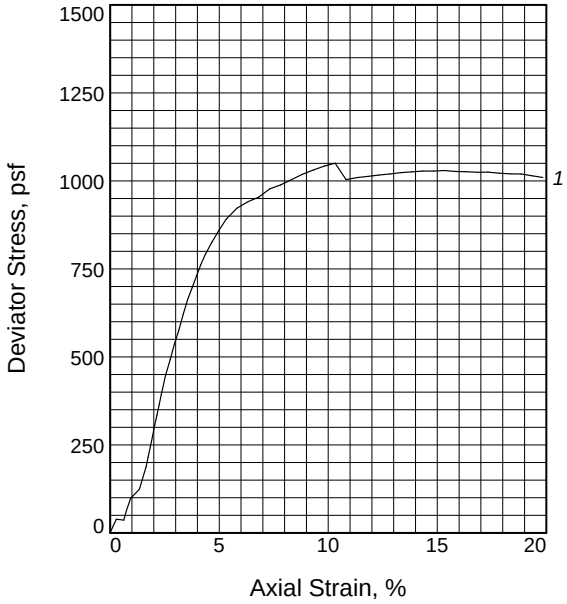
Source of Sample: B-8 **Depth:** 43' - 45'

Proj. No.: 16715-040-01 **Date Sampled:** 8/18/16

GeoEngineers

Tested By: CLP **Checked By:** JSA/KLA





Sample No.		1
Initial	Water Content, %	45.2
	Dry Density, pcf	77.7
	Saturation, %	104.4
	Void Ratio	1.1688
	Diameter, in.	2.825
	Height, in.	6.045
At Test	Water Content, %	45.2
	Dry Density, pcf	77.7
	Saturation, %	104.4
	Void Ratio	1.1688
	Diameter, in.	2.825
	Height, in.	6.045
Strain rate, in./min.		1.000
Back Pressure, psi		0.000
Cell Pressure, psi		11.180
Fail. Stress, psf		1028.1
Strain, %		14.8
Ult. Stress, psf		1028.1
Strain, %		14.8
σ_1 Failure, psf		2638.0
σ_3 Failure, psf		1609.9

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Soft to medium dark gray clay with roots (CH)

Assumed Specific Gravity= 2.70

Remarks: VOIDS IN SIDE
Point of failure selected after membrane correction was applied.

Figure _____

Client: CPRA

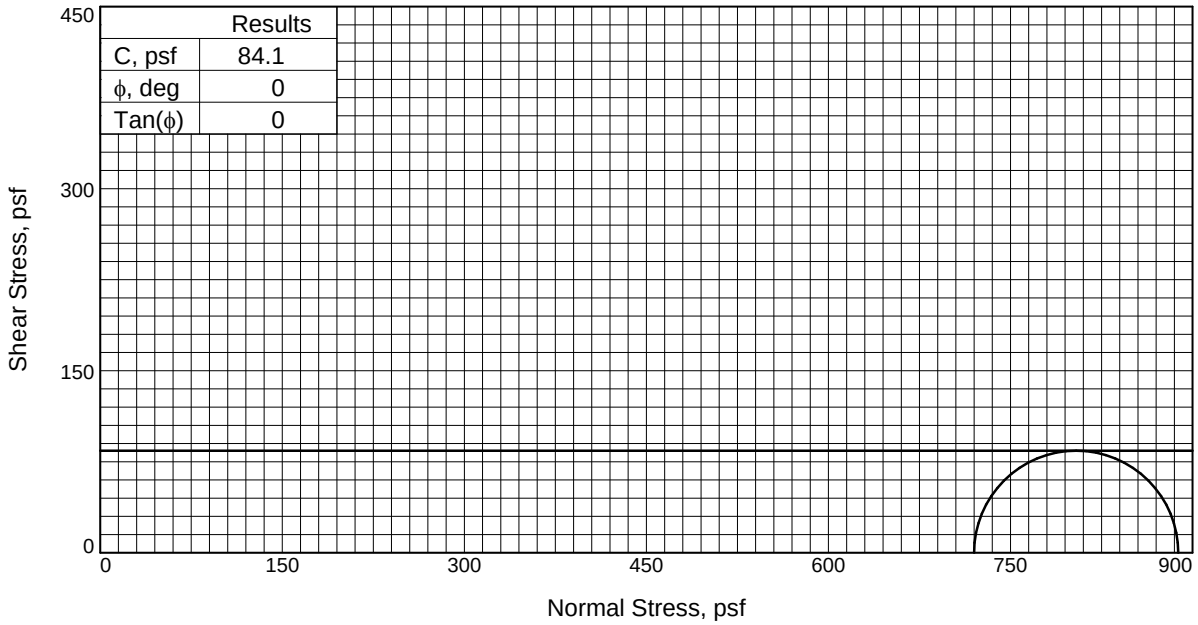
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

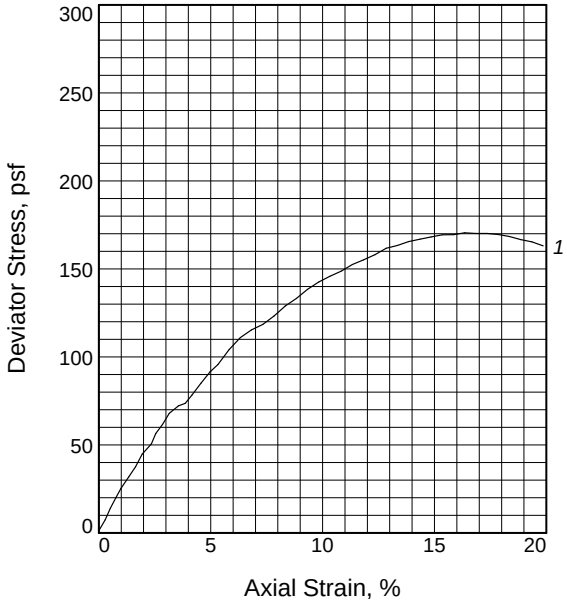
Source of Sample: B-8 **Depth:** 53' - 55'

Proj. No.: 16715-040-01 **Date Sampled:** 8/18/16

GeoEngineers

Tested By: CLP **Checked By:** JSA/KLA





Sample No.		1
Initial	Water Content, %	411.0
	Dry Density, pcf	14.1
	Saturation, %	104.0
	Void Ratio	8.4933
	Diameter, in.	2.786
	Height, in.	5.538
At Test	Water Content, %	411.0
	Dry Density, pcf	14.1
	Saturation, %	104.0
	Void Ratio	8.4933
	Diameter, in.	2.786
	Height, in.	5.538
Strain rate, in./min.		0.999
Back Pressure, psi		0.000
Cell Pressure, psi		5.000
Fail. Stress, psf		168.2
Strain, %		14.9
Ult. Stress, psf		168.2
Strain, %		14.9
σ_1 Failure, psf		888.2
σ_3 Failure, psf		720.0

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Very soft black peat (PT)

Assumed Specific Gravity= 2.15

Remarks:
Organic Content = 15.3%
Fiber Content = 24.0%

Figure _____

Client: CPRA

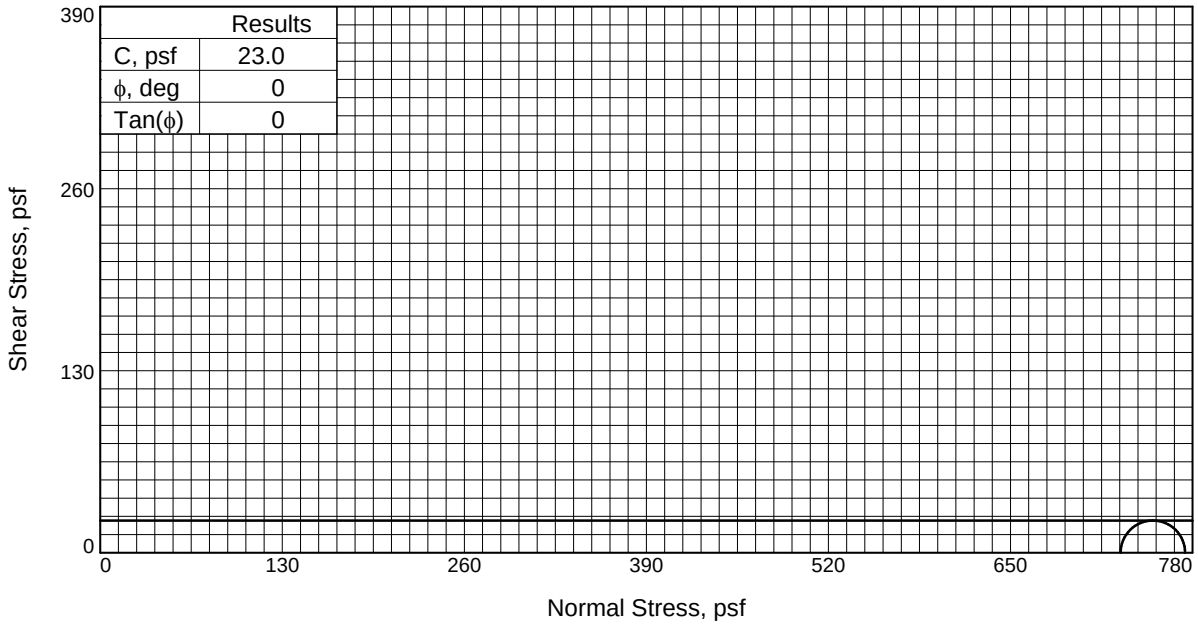
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

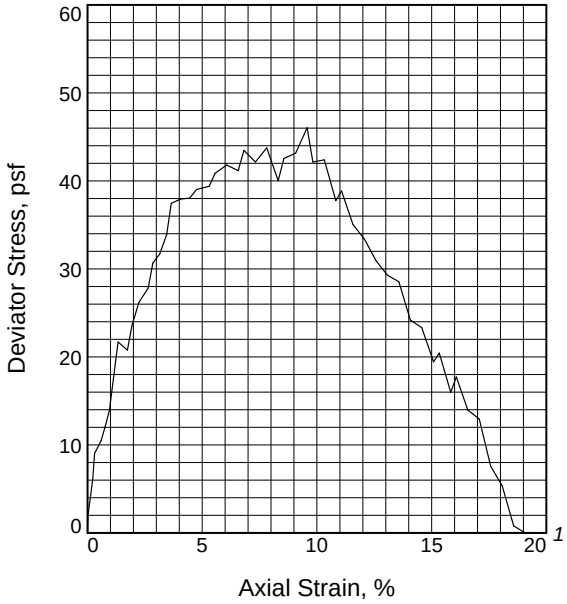
Source of Sample: B-9 **Depth:** 0' - 2'

Proj. No.: 16715-040-01 **Date Sampled:** 8/18/16

GEOENGINEERS

Tested By: TRC **Checked By:** JSA/KLA





Sample No.		1
Initial	Water Content, %	411.0
	Dry Density, pcf	14.1
	Saturation, %	103.4
	Void Ratio	8.5474
	Diameter, in.	2.850
	Height, in.	5.569
At Test	Water Content, %	411.0
	Dry Density, pcf	14.1
	Saturation, %	103.4
	Void Ratio	8.5474
	Diameter, in.	2.850
	Height, in.	5.569
Strain rate, in./min.		1.001
Back Pressure, psi		0.000
Cell Pressure, psi		5.060
Fail. Stress, psf		46.1
Strain, %		9.6
Ult. Stress, psf		23.3
Strain, %		14.6
σ_1 Failure, psf		774.7
σ_3 Failure, psf		728.6

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Very soft black peat (PT)

Assumed Specific Gravity= 2.15

Remarks:

Figure _____

Client: CPRA

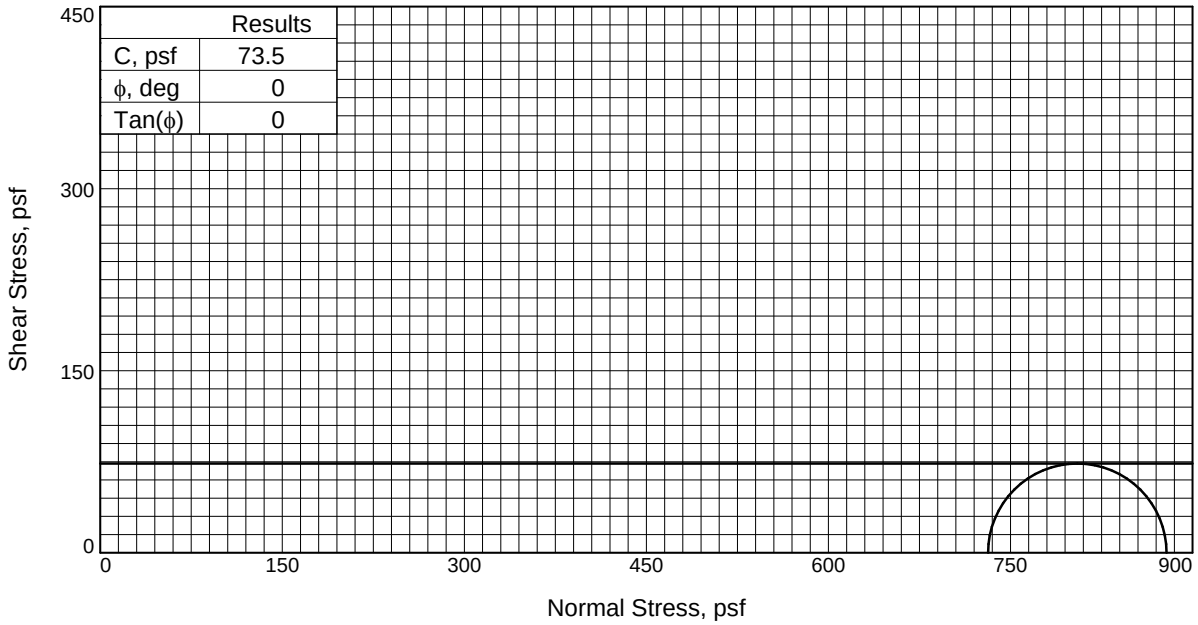
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

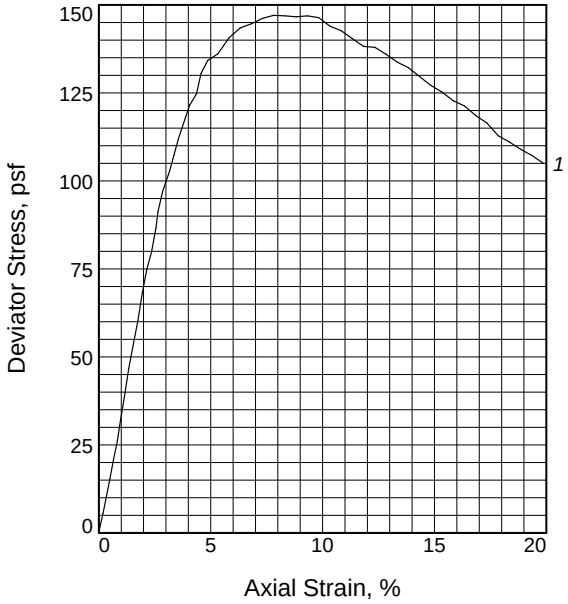
Source of Sample: B-9 **Depth:** 2' - 4'

Proj. No.: 16715-040-01 **Date Sampled:** 8/18/16

GEOENGINEERS

Tested By: TRC **Checked By:** JSA/KLA





Sample No.		1
Initial	Water Content, %	52.0
	Dry Density, pcf	70.8
	Saturation, %	101.6
	Void Ratio	1.3819
	Diameter, in.	2.743
	Height, in.	5.697
At Test	Water Content, %	52.0
	Dry Density, pcf	70.8
	Saturation, %	101.6
	Void Ratio	1.3819
	Diameter, in.	2.743
	Height, in.	5.697
Strain rate, in./min.		1.000
Back Pressure, psi		0.000
Cell Pressure, psi		5.080
Fail. Stress, psf		147.0
Strain, %		7.8
Ult. Stress, psf		127.2
Strain, %		14.8
σ_1 Failure, psf		878.6
σ_3 Failure, psf		731.5

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Very soft gray clay with organic matter (CH)

Assumed Specific Gravity= 2.70

Remarks:

Client: CPRA

Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

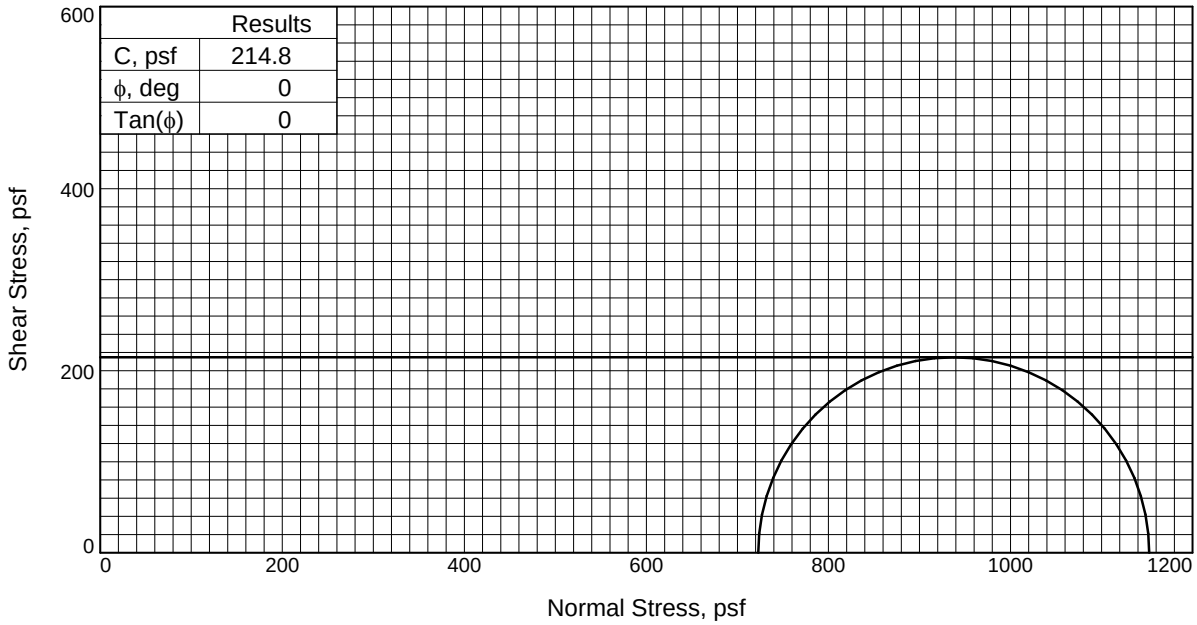
Source of Sample: B-9 **Depth:** 4' - 6'

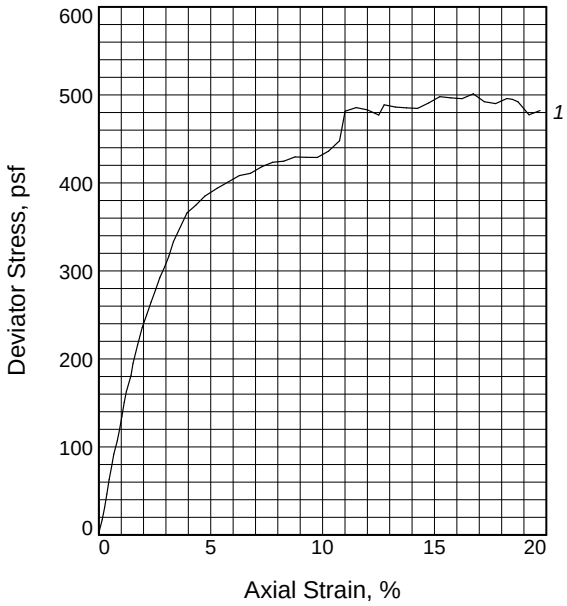
Proj. No.: 16715-040-01 **Date Sampled:** 8/18/16

GeoEngineers

Figure _____

Tested By: TRC **Checked By:** JSA/KLA





Sample No.		1
Initial	Water Content, %	40.6
	Dry Density, pcf	79.9
	Saturation, %	99.3
	Void Ratio	1.0948
	Diameter, in.	2.782
	Height, in.	5.850
At Test	Water Content, %	40.6
	Dry Density, pcf	79.9
	Saturation, %	99.3
	Void Ratio	1.0948
	Diameter, in.	2.782
	Height, in.	5.850
Strain rate, in./min.		0.994
Back Pressure, psi		0.000
Cell Pressure, psi		5.020
Fail. Stress, psf		429.5
Strain, %		8.8
Ult. Stress, psf		490.9
Strain, %		14.7
σ_1 Failure, psf		1152.4
σ_3 Failure, psf		722.9

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Very soft gray clay with silt lenses (CL)

LL= 42 **PL=** 24 **PI=** 18

Assumed Specific Gravity= 2.68

Remarks:

Figure _____

Client: CPRA

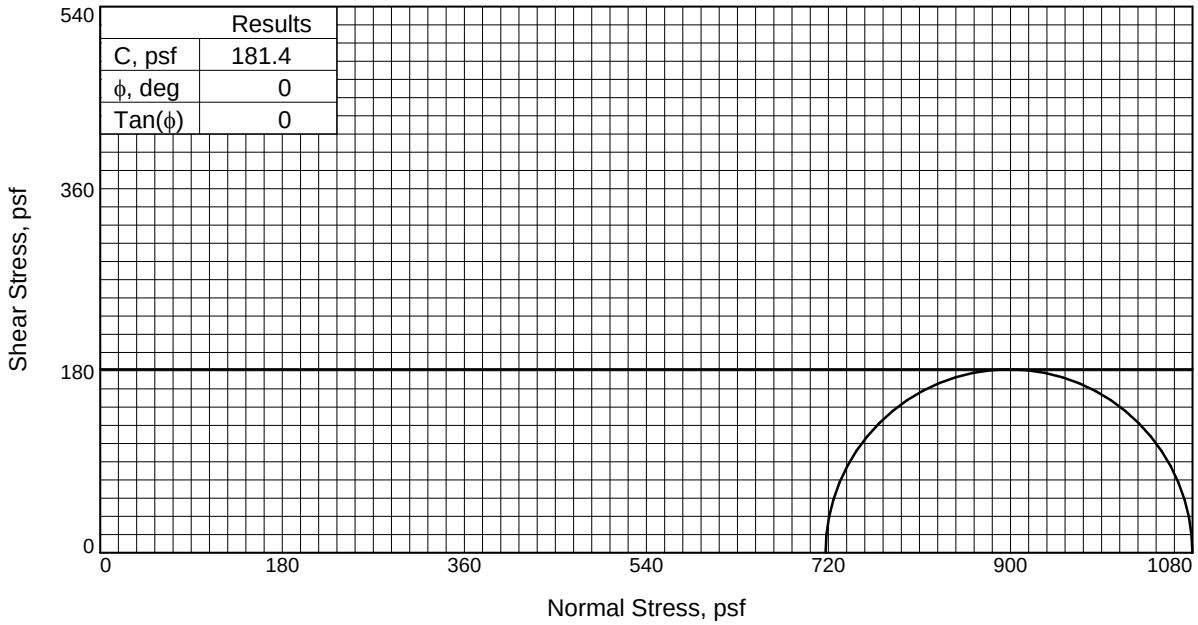
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

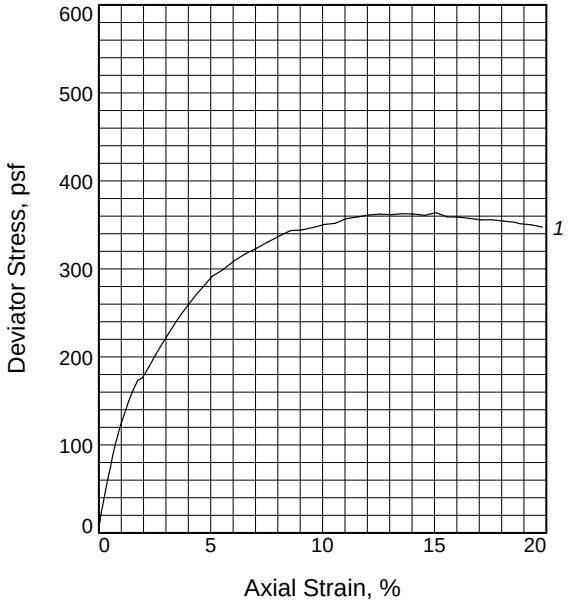
Source of Sample: B-9 **Depth:** 8' - 10'

Proj. No.: 16715-040-01 **Date Sampled:** 8/18/16

GeoEngineers

Tested By: TRC **Checked By:** JSA/KLA





Sample No.		1
Initial	Water Content, %	47.4
	Dry Density, pcf	74.7
	Saturation, %	101.9
	Void Ratio	1.2558
	Diameter, in.	2.822
	Height, in.	5.729
At Test	Water Content, %	47.4
	Dry Density, pcf	74.7
	Saturation, %	101.9
	Void Ratio	1.2558
	Diameter, in.	2.822
	Height, in.	5.729
Strain rate, in./min.		1.001
Back Pressure, psi		0.000
Cell Pressure, psi		4.980
Fail. Stress, psf		362.7
Strain, %		13.6
Ult. Stress, psf		360.9
Strain, %		14.6
σ_1 Failure, psf		1079.9
σ_3 Failure, psf		717.1

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Very soft gray clay with silt seams and shells (CL)

Assumed Specific Gravity= 2.70

Remarks:

Client: CPRA

Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

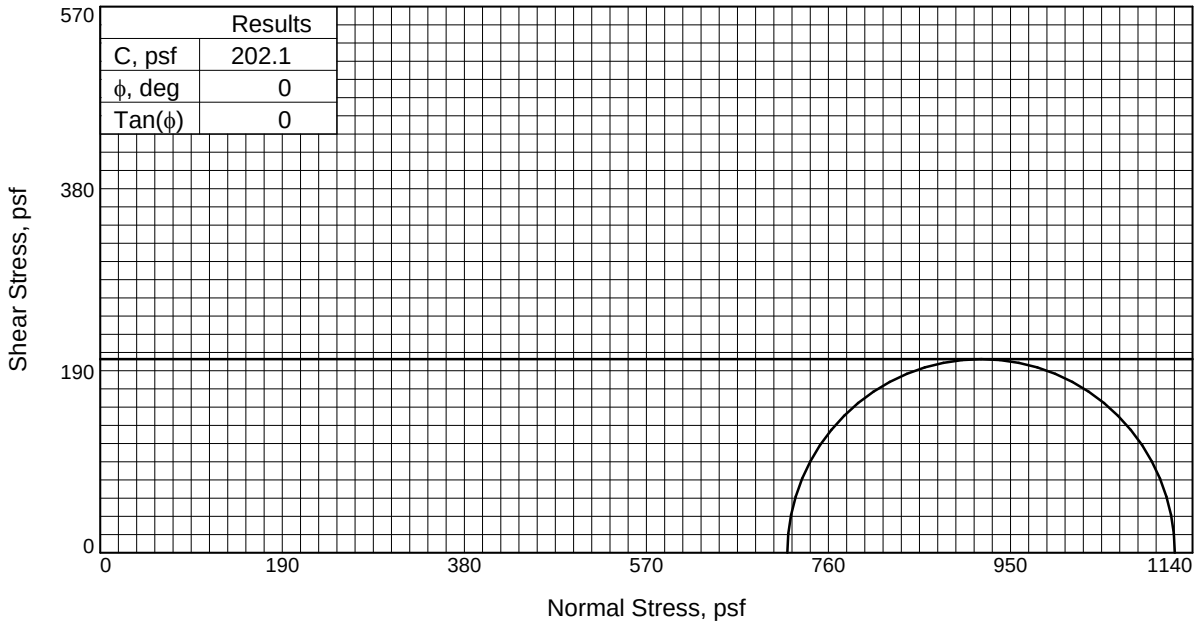
Source of Sample: B-9 **Depth:** 10' - 12'

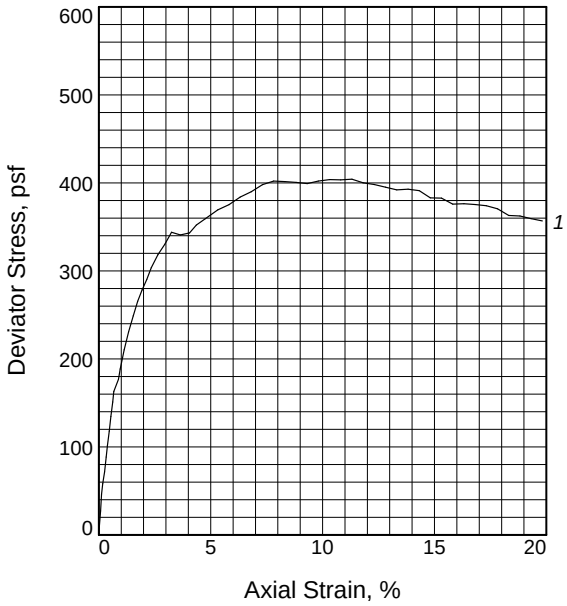
Proj. No.: 16715-040-01 **Date Sampled:** 8/18/16

GeoEngineers

Figure _____

Tested By: TRC **Checked By:** JSA/KLA





Sample No.		1
Initial	Water Content, %	64.5
	Dry Density, pcf	62.9
	Saturation, %	103.8
	Void Ratio	1.6780
	Diameter, in.	2.800
	Height, in.	5.827
At Test	Water Content, %	64.5
	Dry Density, pcf	62.9
	Saturation, %	103.8
	Void Ratio	1.6780
	Diameter, in.	2.800
	Height, in.	5.827
Strain rate, in./min.		1.000
Back Pressure, psi		0.000
Cell Pressure, psi		4.980
Fail. Stress, psf		404.3
Strain, %		11.3
Ult. Stress, psf		383.1
Strain, %		14.8
σ_1 Failure, psf		1121.4
σ_3 Failure, psf		717.1

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Very soft gray clay with silt pockets (CL)

LL= 49 **PL=** 21 **PI=** 28

Assumed Specific Gravity= 2.70

Remarks:

Figure _____

Client: CPRA

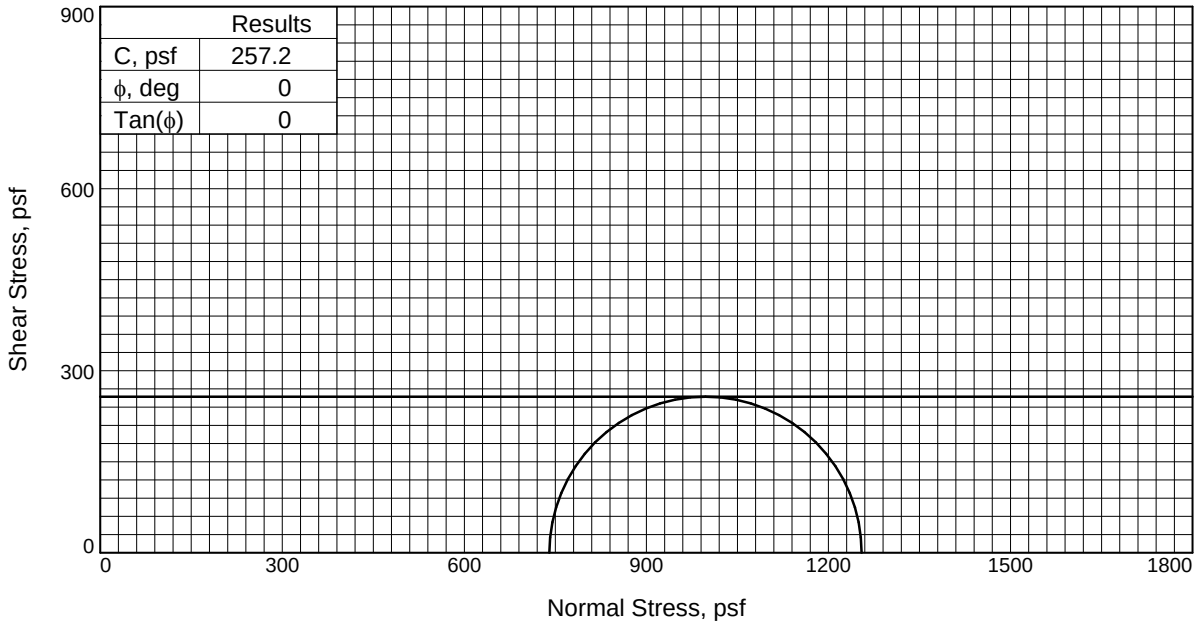
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

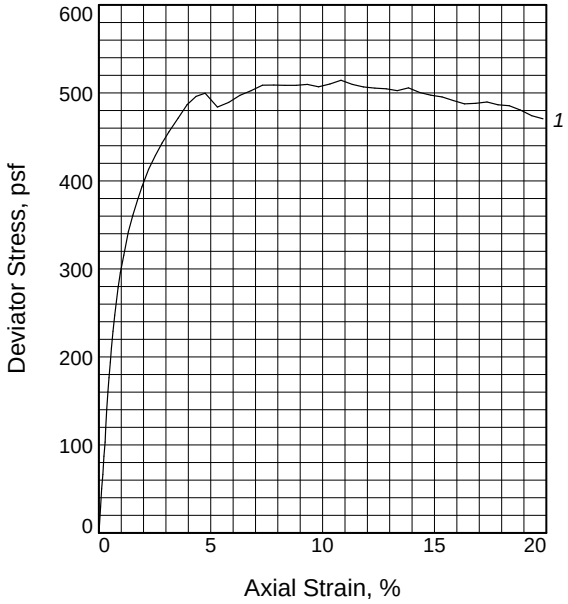
Source of Sample: B-9 **Depth:** 12' - 14'

Proj. No.: 16715-040-01 **Date Sampled:** 8/18/16

GeoEngineers

Tested By: TRC **Checked By:** JSA/KLA





Sample No.		1
Initial	Water Content, %	60.7
	Dry Density, pcf	65.2
	Saturation, %	103.4
	Void Ratio	1.5842
	Diameter, in.	2.830
	Height, in.	5.830
At Test	Water Content, %	60.7
	Dry Density, pcf	65.2
	Saturation, %	103.4
	Void Ratio	1.5842
	Diameter, in.	2.830
	Height, in.	5.830
Strain rate, in./min.		1.000
Back Pressure, psi		0.000
Cell Pressure, psi		5.140
Fail. Stress, psf		514.5
Strain, %		10.8
Ult. Stress, psf		497.5
Strain, %		14.8
σ_1 Failure, psf		1254.6
σ_3 Failure, psf		740.2

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Soft gray clay with organic matter (CH)

Assumed Specific Gravity= 2.70

Remarks:
Point of failure selected after membrane correction was applied.

Figure _____

Client: CPRA

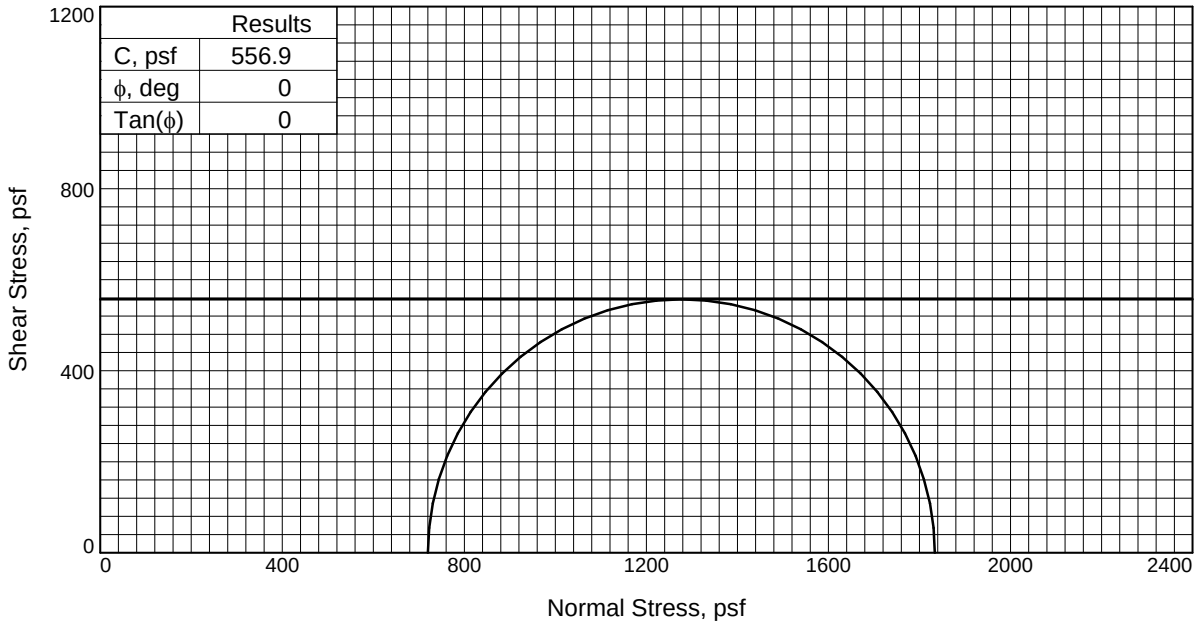
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

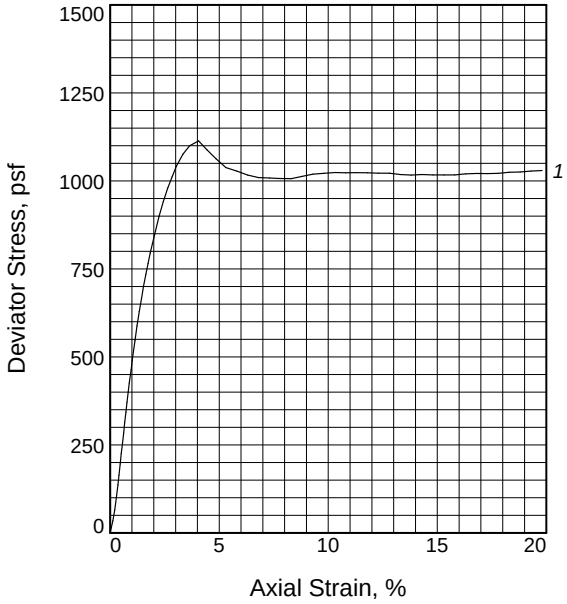
Source of Sample: B-9 **Depth:** 16' - 18'

Proj. No.: 16715-040-01 **Date Sampled:** 8/19/16

GEOENGINEERS

Tested By: TRC **Checked By:** JSA/KLA





Sample No.		1
Initial	Water Content, %	146.2
	Dry Density, pcf	32.5
	Saturation, %	96.7
	Void Ratio	3.7196
	Diameter, in.	2.794
	Height, in.	5.843
At Test	Water Content, %	146.2
	Dry Density, pcf	32.5
	Saturation, %	96.7
	Void Ratio	3.7196
	Diameter, in.	2.794
	Height, in.	5.843
Strain rate, in./min.		1.000
Back Pressure, psi		0.000
Cell Pressure, psi		5.000
Fail. Stress, psf		1113.7
Strain, %		4.1
Ult. Stress, psf		1017.1
Strain, %		14.8
σ_1 Failure, psf		1833.7
σ_3 Failure, psf		720.0

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Soft to medium dark gray organic clay with wood (OH)

LL= 240 **PL=** 77 **PI=** 163

Assumed Specific Gravity= 2.46

Remarks:
Organic Content = 9.8%

Figure _____

Client: CPRA

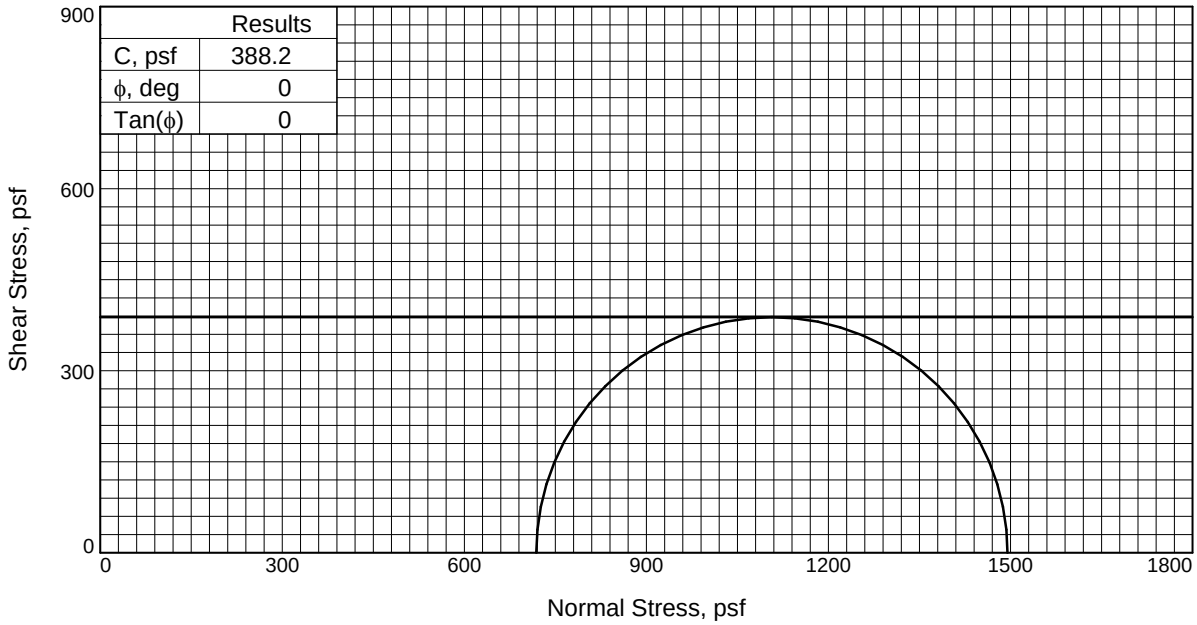
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

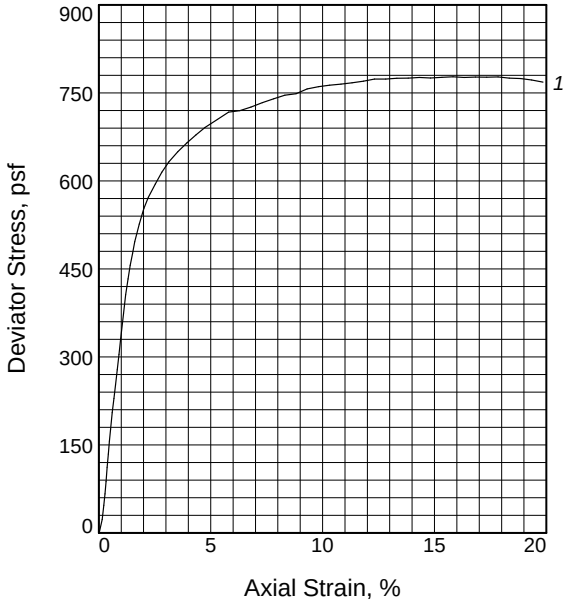
Source of Sample: B-9 **Depth:** 18' - 20'

Proj. No.: 16715-040-01 **Date Sampled:** 8/19/16

GeoEngineers

Tested By: TRC **Checked By:** JSA/KLA





Sample No.		1
Initial	Water Content, %	74.9
	Dry Density, pcf	57.0
	Saturation, %	103.4
	Void Ratio	1.9562
	Diameter, in.	2.797
	Height, in.	5.774
At Test	Water Content, %	74.9
	Dry Density, pcf	57.0
	Saturation, %	103.4
	Void Ratio	1.9562
	Diameter, in.	2.797
	Height, in.	5.774
Strain rate, in./min.		0.999
Back Pressure, psi		0.000
Cell Pressure, psi		4.990
Fail. Stress, psf		776.4
Strain, %		14.3
Ult. Stress, psf		775.4
Strain, %		14.8
σ_1 Failure, psf		1495.0
σ_3 Failure, psf		718.6

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Soft gray clay with organic matter and wood (CH)

Assumed Specific Gravity= 2.70

Remarks:

Client: CPRA

Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

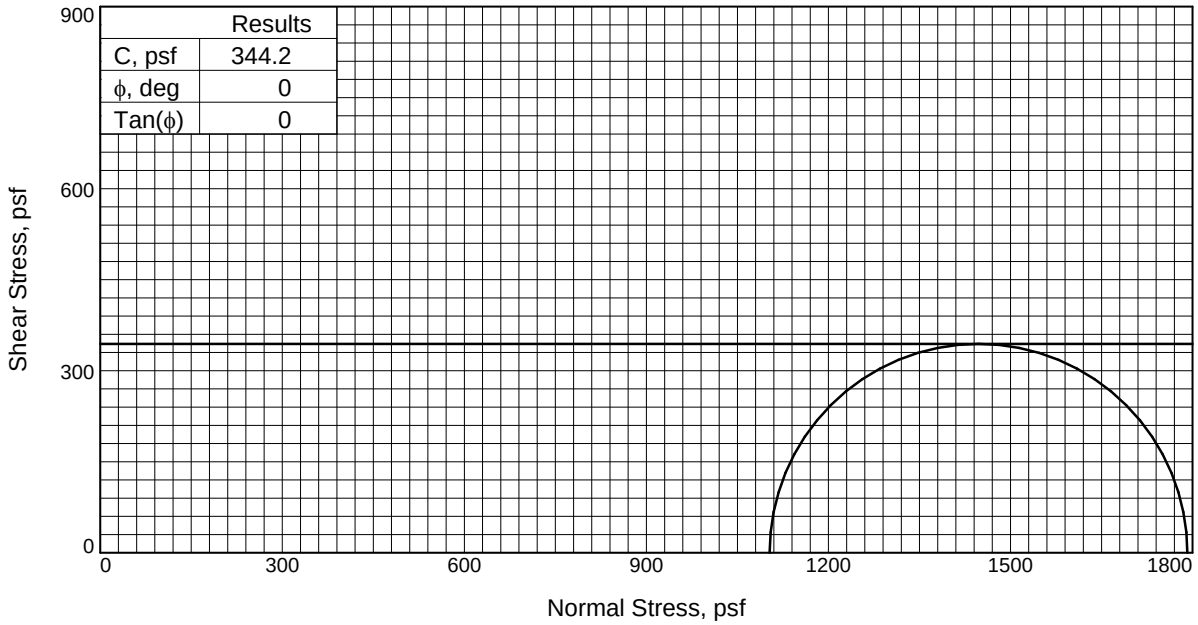
Source of Sample: B-9 **Depth:** 23' - 25'

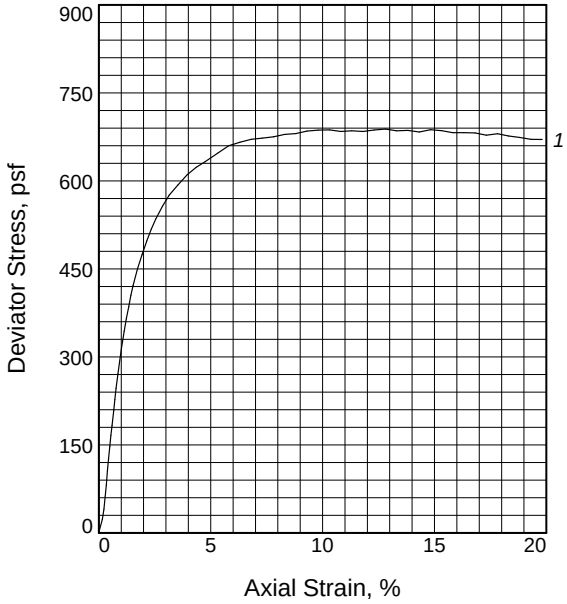
Proj. No.: 16715-040-01 **Date Sampled:** 8/19/16

GeoEngineers

Figure _____

Tested By: TRC **Checked By:** JSA/KLA





Sample No.		1
Initial	Water Content, %	116.1
	Dry Density, pcf	39.2
	Saturation, %	95.1
	Void Ratio	3.2960
	Diameter, in.	2.801
	Height, in.	5.912
At Test	Water Content, %	116.1
	Dry Density, pcf	39.2
	Saturation, %	95.1
	Void Ratio	3.2960
	Diameter, in.	2.801
	Height, in.	5.912
Strain rate, in./min.		0.999
Back Pressure, psi		0.000
Cell Pressure, psi		7.660
Fail. Stress, psf		688.4
Strain, %		12.8
Ult. Stress, psf		687.4
Strain, %		14.8
σ_1 Failure, psf		1791.4
σ_3 Failure, psf		1103.0

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Soft to medium gray clay with organic matter and wood (CH)

LL= 158 **PL=** 48 **PI=** 110

Assumed Specific Gravity= 2.70

Remarks:

Client: CPRA

Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

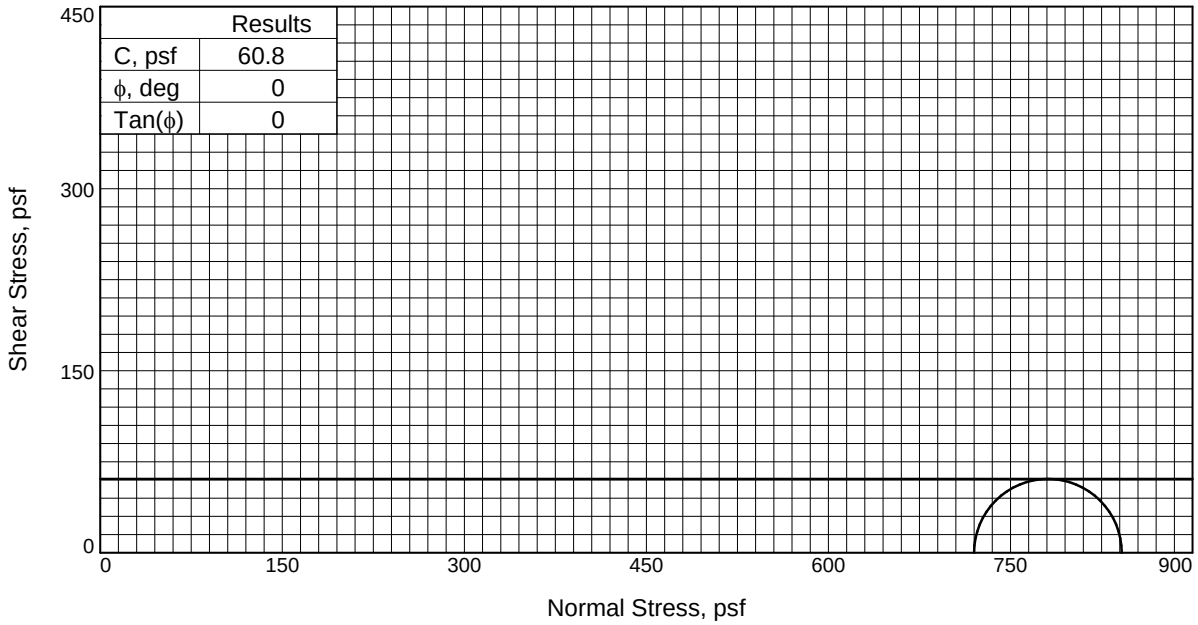
Source of Sample: B-9 **Depth:** 33' - 35'

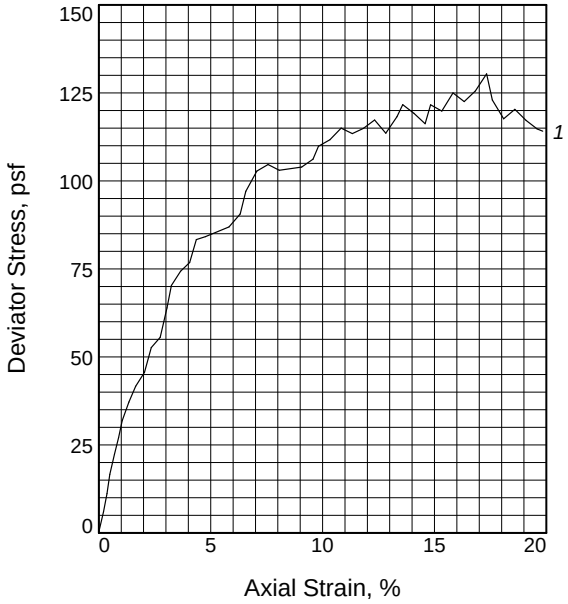
Proj. No.: 16715-040-01 **Date Sampled:** 8/19/16

GeoEngineers

Figure _____

Tested By: TRC **Checked By:** JSA





Sample No.		1
Initial	Water Content, %	443.2
	Dry Density, pcf	13.6
	Saturation, %	107.5
	Void Ratio	8.8652
	Diameter, in.	2.731
	Height, in.	5.700
At Test	Water Content, %	443.2
	Dry Density, pcf	13.6
	Saturation, %	107.5
	Void Ratio	8.8652
	Diameter, in.	2.731
	Height, in.	5.700
Strain rate, in./min.		1.000
Back Pressure, psi		0.000
Cell Pressure, psi		5.000
Fail. Stress, psf		121.7
Strain, %		13.6
Ult. Stress, psf		121.6
Strain, %		14.8
σ_1 Failure, psf		841.7
σ_3 Failure, psf		720.0

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Very soft black peat (PT)

Assumed Specific Gravity= 2.15

Remarks:
Organic Content = 32.0%
Fiber Content = 42.5%

Figure _____

Client: CPRA

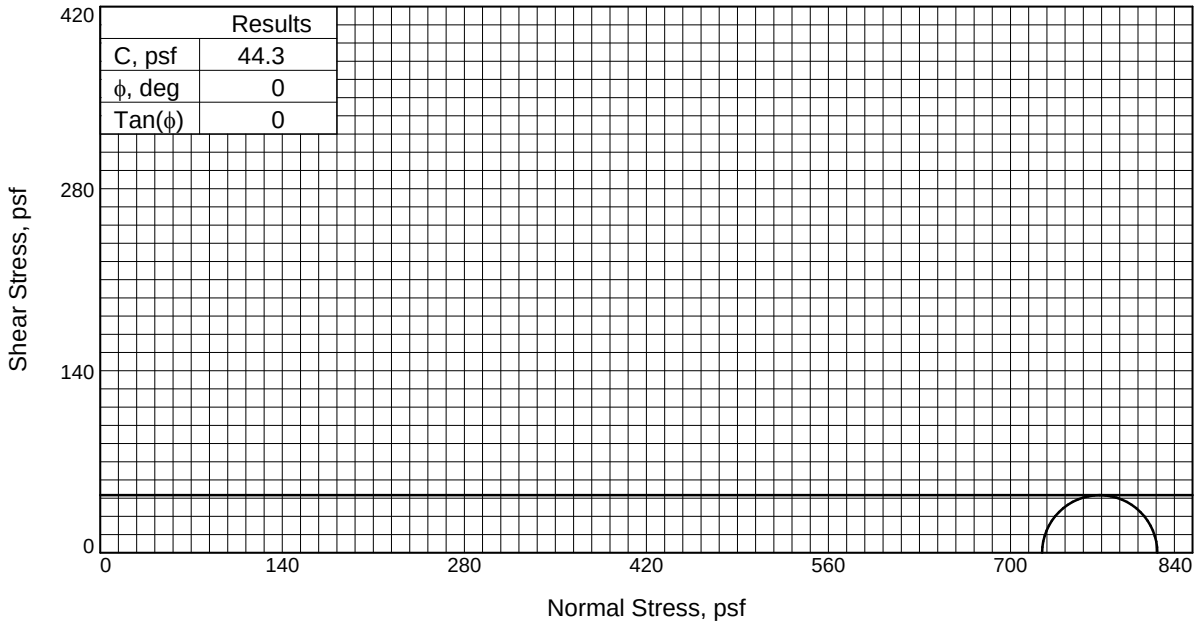
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

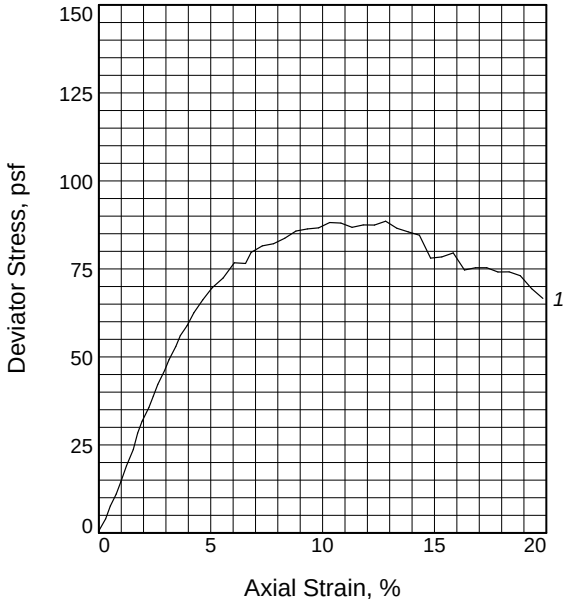
Source of Sample: B-10 **Depth:** 0' - 2'

Proj. No.: 16715-040-01 **Date Sampled:** 8/12/16

GEOENGINEERS

Tested By: TRC **Checked By:** JSA/KLA





Sample No.		1
Initial	Water Content, %	326.8
	Dry Density, pcf	16.5
	Saturation, %	99.9
	Void Ratio	6.5452
	Diameter, in.	2.832
	Height, in.	5.748
At Test	Water Content, %	326.8
	Dry Density, pcf	16.5
	Saturation, %	99.9
	Void Ratio	6.5452
	Diameter, in.	2.832
	Height, in.	5.748
Strain rate, in./min.		0.999
Back Pressure, psi		0.000
Cell Pressure, psi		5.030
Fail. Stress, psf		88.6
Strain, %		12.8
Ult. Stress, psf		78.1
Strain, %		14.8
σ_1 Failure, psf		812.9
σ_3 Failure, psf		724.3

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Very soft dark gray and black organic clay with peat pockets and lenses (OH)

LL= 275 **PL=** 52 **PI=** 223

Assumed Specific Gravity= 2.00

Remarks:

Figure _____

Client: CPRA

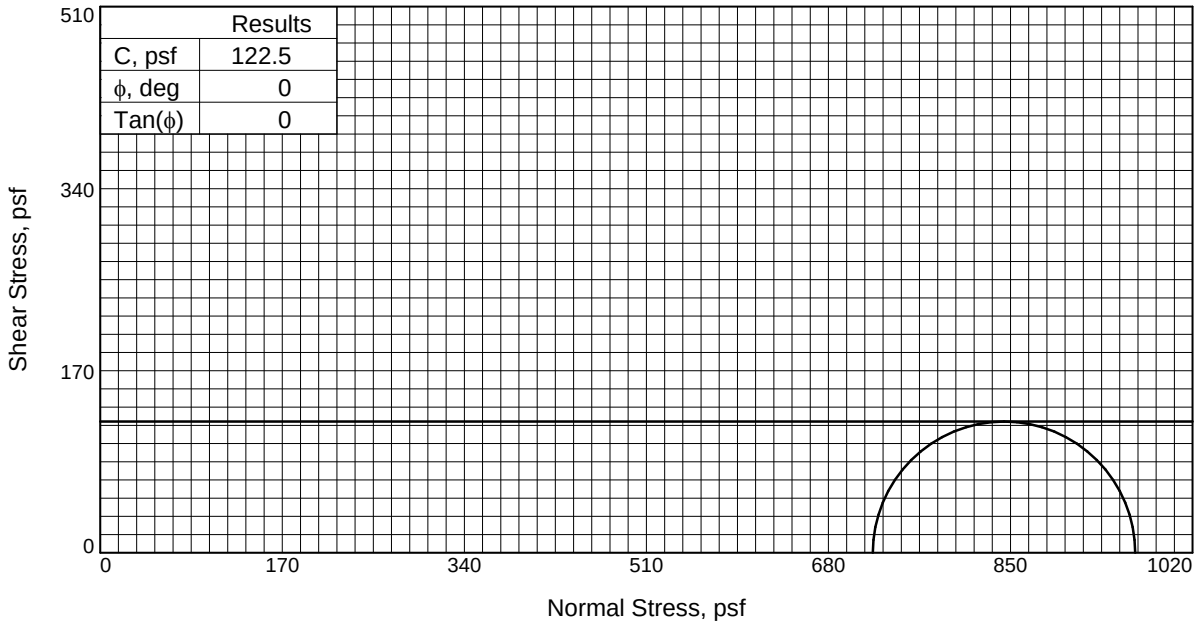
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

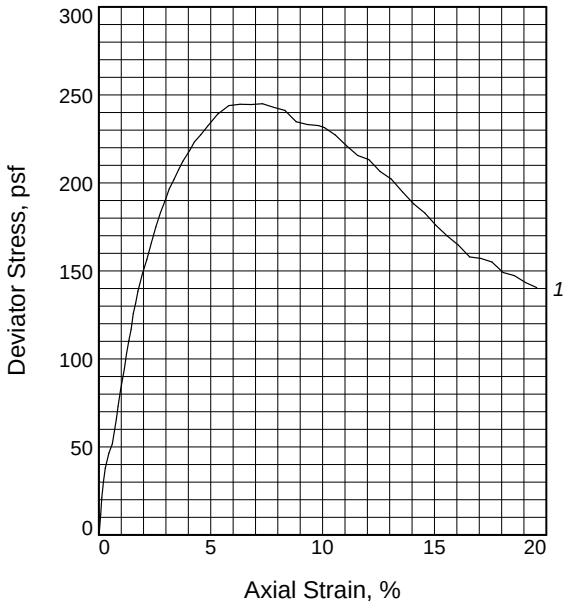
Source of Sample: B-10 **Depth:** 2' - 4'

Proj. No.: 16715-040-01 **Date Sampled:** 8/10/16

GeoEngineers

Tested By: CLP/SRT **Checked By:** JSA





Sample No.		1
Initial	Water Content, %	212.9
	Dry Density, pcf	26.2
	Saturation, %	106.9
	Void Ratio	5.0782
	Diameter, in.	2.782
	Height, in.	5.679
At Test	Water Content, %	212.9
	Dry Density, pcf	26.2
	Saturation, %	106.9
	Void Ratio	5.0782
	Diameter, in.	2.782
	Height, in.	5.679
Strain rate, in./min.		1.000
Back Pressure, psi		0.000
Cell Pressure, psi		5.010
Fail. Stress, psf		245.0
Strain, %		7.3
Ult. Stress, psf		182.9
Strain, %		14.6
σ_1 Failure, psf		966.5
σ_3 Failure, psf		721.4

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Very soft dark gray and black organic clay with peat pockets and lenses

LL= 213 **PL=** 44 **PI=** 169

Specific Gravity= 2.55

Remarks:
Organic Content = 6.1%

Figure _____

Client: CPRA

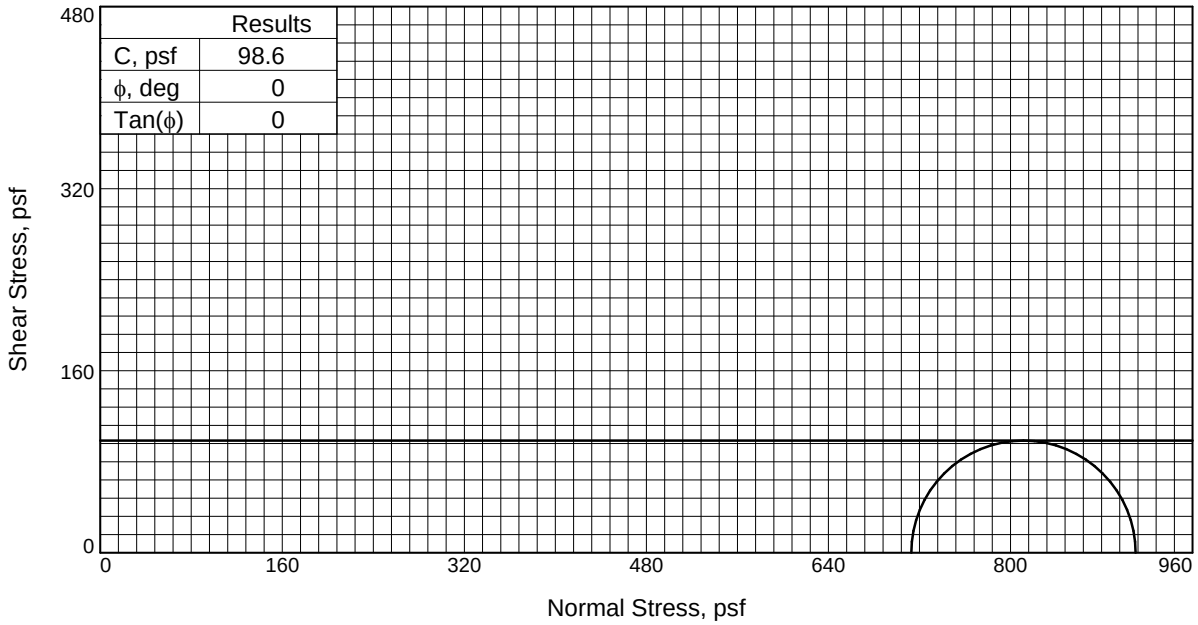
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

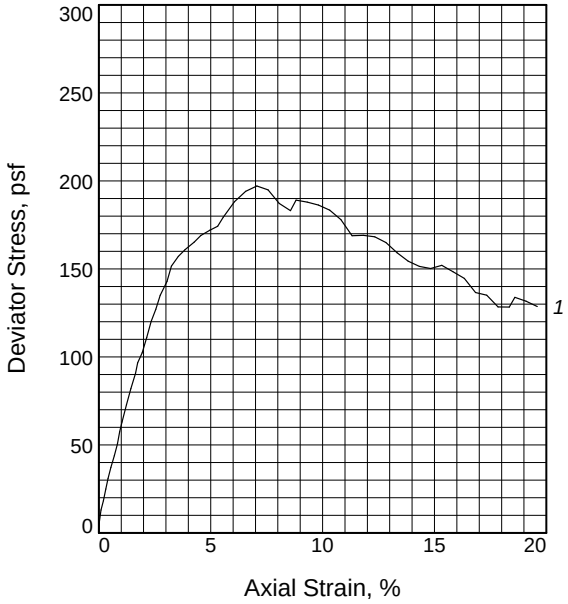
Source of Sample: B-10 **Depth:** 4' - 6'

Proj. No.: 16715-040-01 **Date Sampled:** 8/10/16

GeoEngineers

Tested By: CLP **Checked By:** JSA/KLA





Sample No.		1
Initial	Water Content, %	110.6
	Dry Density, pcf	42.0
	Saturation, %	99.2
	Void Ratio	3.0101
	Diameter, in.	2.822
	Height, in.	5.758
At Test	Water Content, %	110.6
	Dry Density, pcf	42.0
	Saturation, %	99.2
	Void Ratio	3.0101
	Diameter, in.	2.822
	Height, in.	5.758
Strain rate, in./min.		1.000
Back Pressure, psi		0.000
Cell Pressure, psi		4.950
Fail. Stress, psf		197.1
Strain, %		7.1
Ult. Stress, psf		150.3
Strain, %		14.8
σ_1 Failure, psf		909.9
σ_3 Failure, psf		712.8

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Very soft gray clay with organic matter (CH)

Assumed Specific Gravity= 2.70

Remarks:

Client: CPRA

Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

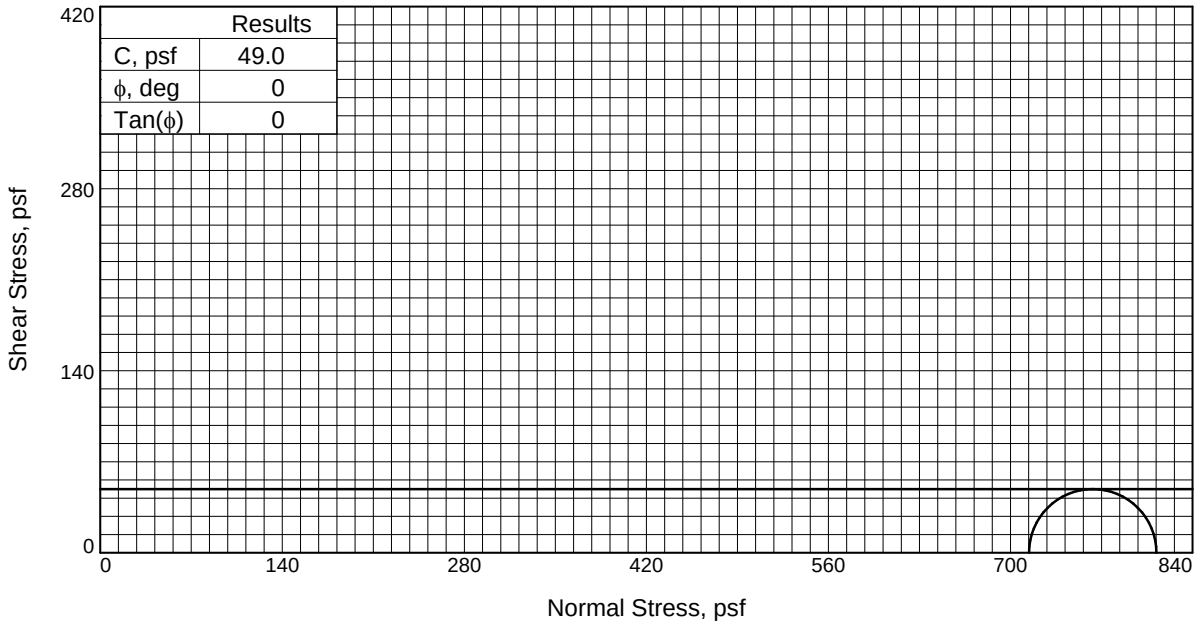
Source of Sample: B-10 **Depth:** 6' - 8'

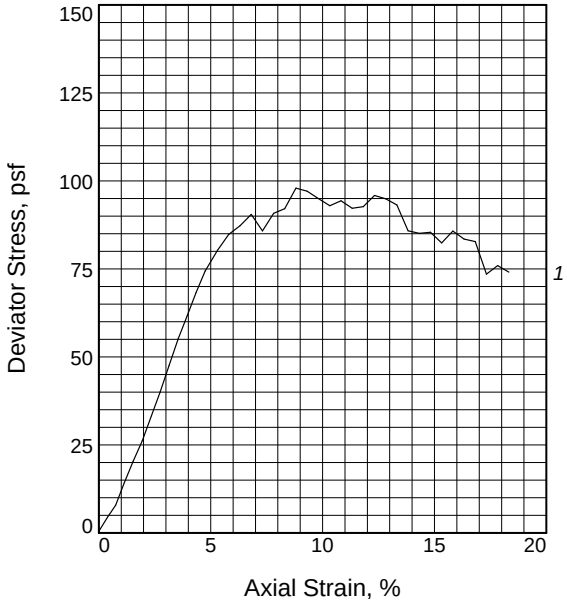
Proj. No.: 16715-040-01 **Date Sampled:** 8/10/16

GEOENGINEERS

Figure _____

Tested By: CLP/SRT **Checked By:** JSA





Sample No.		1
Initial	Water Content, %	44.6
	Dry Density, pcf	71.9
	Saturation, %	90.0
	Void Ratio	1.3272
	Diameter, in.	2.830
	Height, in.	5.674
At Test	Water Content, %	44.6
	Dry Density, pcf	71.9
	Saturation, %	90.0
	Void Ratio	1.3272
	Diameter, in.	2.830
	Height, in.	5.674
Strain rate, in./min.		0.860
Back Pressure, psi		0.000
Cell Pressure, psi		4.960
Fail. Stress, psf		98.0
Strain, %		8.8
Ult. Stress, psf		85.4
Strain, %		14.8
σ_1 Failure, psf		812.2
σ_3 Failure, psf		714.2

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Very soft gray clay with sand seams and organic matter (CL)

LL= 42 **PL=** 18 **PI=** 24

Assumed Specific Gravity= 2.68

Remarks:

Figure _____

Client: CPRA

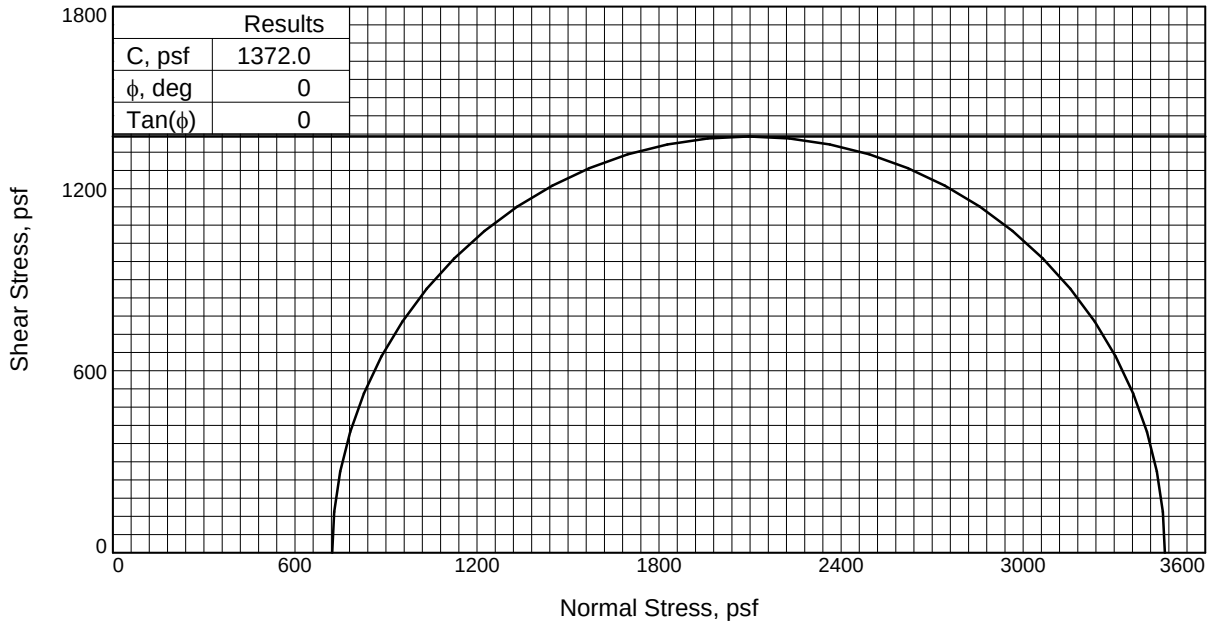
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

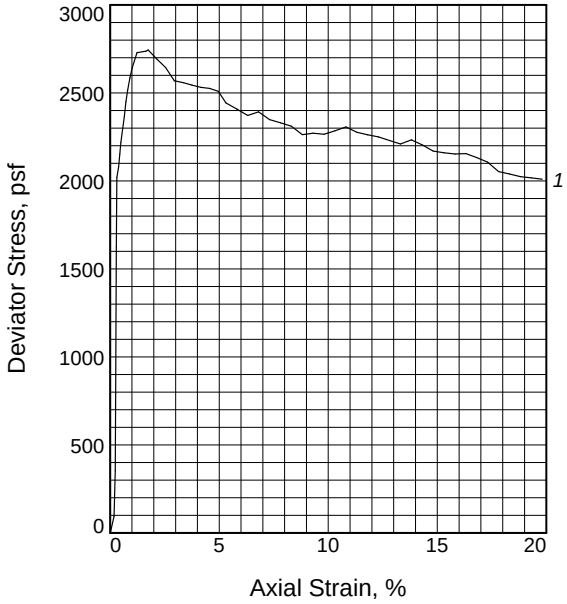
Source of Sample: B-10 **Depth:** 8' - 10'

Proj. No.: 16715-040-01 **Date Sampled:** 8/10/16

GeoEngineers

Tested By: CLP **Checked By:** JSA/KLA





Sample No.		1
Initial	Water Content, %	33.9
	Dry Density, pcf	79.3
	Saturation, %	82.8
	Void Ratio	1.0856
	Diameter, in.	2.931
	Height, in.	5.690
At Test	Water Content, %	33.9
	Dry Density, pcf	79.3
	Saturation, %	82.8
	Void Ratio	1.0856
	Diameter, in.	2.931
	Height, in.	5.690
Strain rate, in./min.		0.999
Back Pressure, psi		0.000
Cell Pressure, psi		5.020
Fail. Stress, psf		2744.1
Strain, %		1.7
Ult. Stress, psf		2170.2
Strain, %		14.8
σ_1 Failure, psf		3467.0
σ_3 Failure, psf		722.9

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Gray clayey sand with 1" clay layer at bottom (SC)

Assumed Specific Gravity= 2.65

Remarks: Slumping under own weight.

Client: CPRA

Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

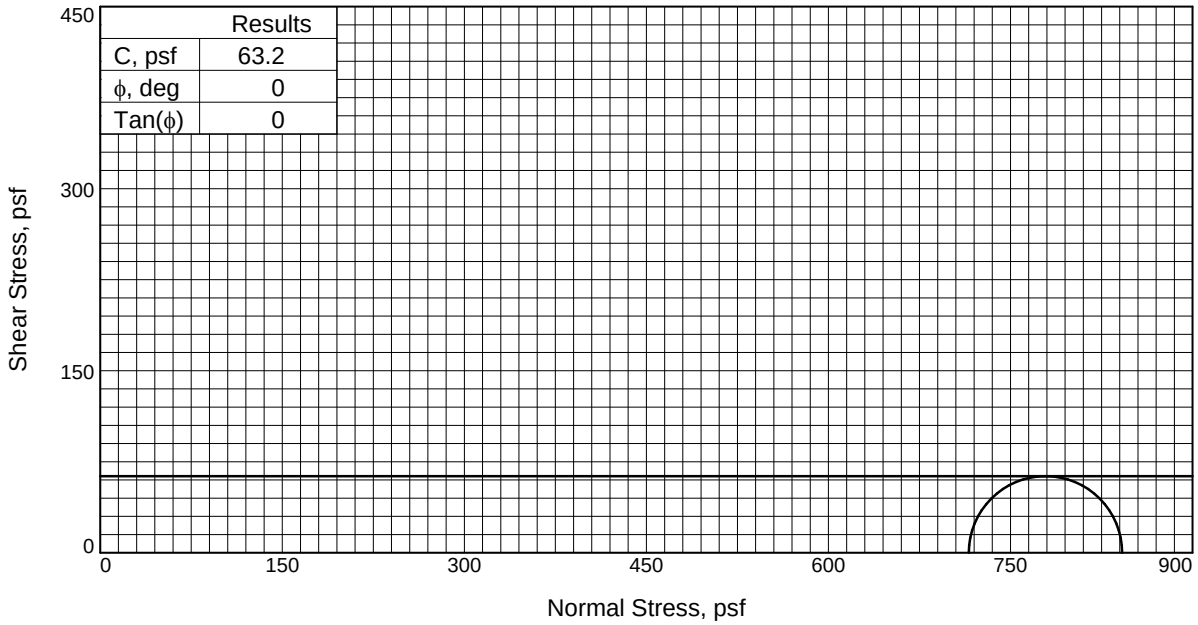
Source of Sample: B-10 **Depth:** 10' - 12'

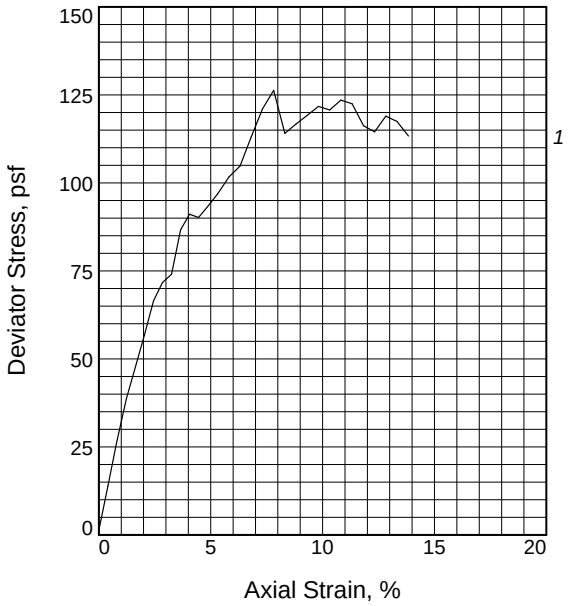
Proj. No.: 16715-040-01 **Date Sampled:** 8/10/16

GeoEngineers

Figure _____

Tested By: CLP **Checked By:** JSA





Sample No.		1
Initial	Water Content, %	52.5
	Dry Density, pcf	67.7
	Saturation, %	95.6
	Void Ratio	1.4724
	Diameter, in.	2.946
	Height, in.	5.437
At Test	Water Content, %	52.5
	Dry Density, pcf	67.7
	Saturation, %	95.6
	Void Ratio	1.4724
	Diameter, in.	2.946
	Height, in.	5.437
Strain rate, in./min.		0.592
Back Pressure, psi		0.000
Cell Pressure, psi		4.970
Fail. Stress, psf		126.3
Strain, %		7.8
Ult. Stress, psf		113.3
Strain, %		13.8
σ_1 Failure, psf		842.0
σ_3 Failure, psf		715.7

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Very soft gray silty clay with sand (CL)

LL= 29 **PL=** 17 **PI=** 12

Assumed Specific Gravity= 2.68

Remarks: %-200 = 81.0
Slumping under own weight.

Figure _____

Client: CPRA

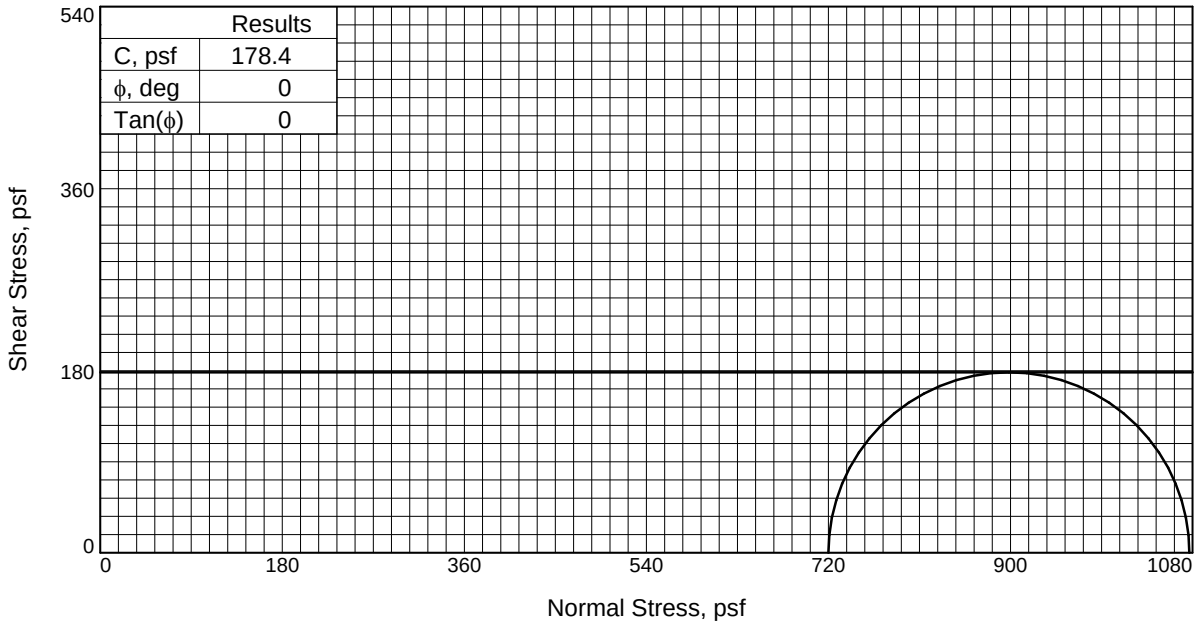
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

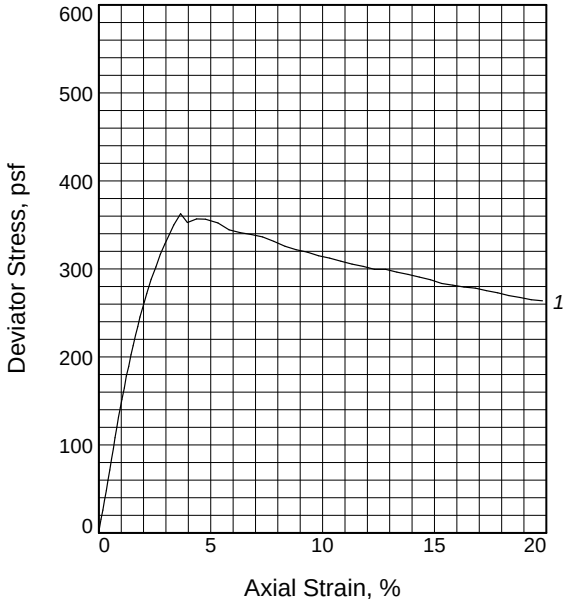
Source of Sample: B-10 **Depth:** 12' - 14'

Proj. No.: 16715-040-01 **Date Sampled:** 8/10/16

GeoEngineers

Tested By: CLP/SRT **Checked By:** JSA





Sample No.		1
Initial	Water Content, %	51.3
	Dry Density, pcf	68.9
	Saturation, %	96.3
	Void Ratio	1.4281
	Diameter, in.	2.790
	Height, in.	6.050
At Test	Water Content, %	51.3
	Dry Density, pcf	68.9
	Saturation, %	96.3
	Void Ratio	1.4281
	Diameter, in.	2.790
	Height, in.	6.050
Strain rate, in./min.		1.000
Back Pressure, psi		0.000
Cell Pressure, psi		5.000
Fail. Stress, psf		356.9
Strain, %		4.4
Ult. Stress, psf		287.7
Strain, %		14.8
σ_1 Failure, psf		1076.9
σ_3 Failure, psf		720.0

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Very soft gray silty clay with silt seams and lenses (CL)

LL= 38 **PL=** 24 **PI=** 14

Assumed Specific Gravity= 2.68

Remarks:
Point of failure selected after membrane correction was applied.

Figure _____

Client: CPRA

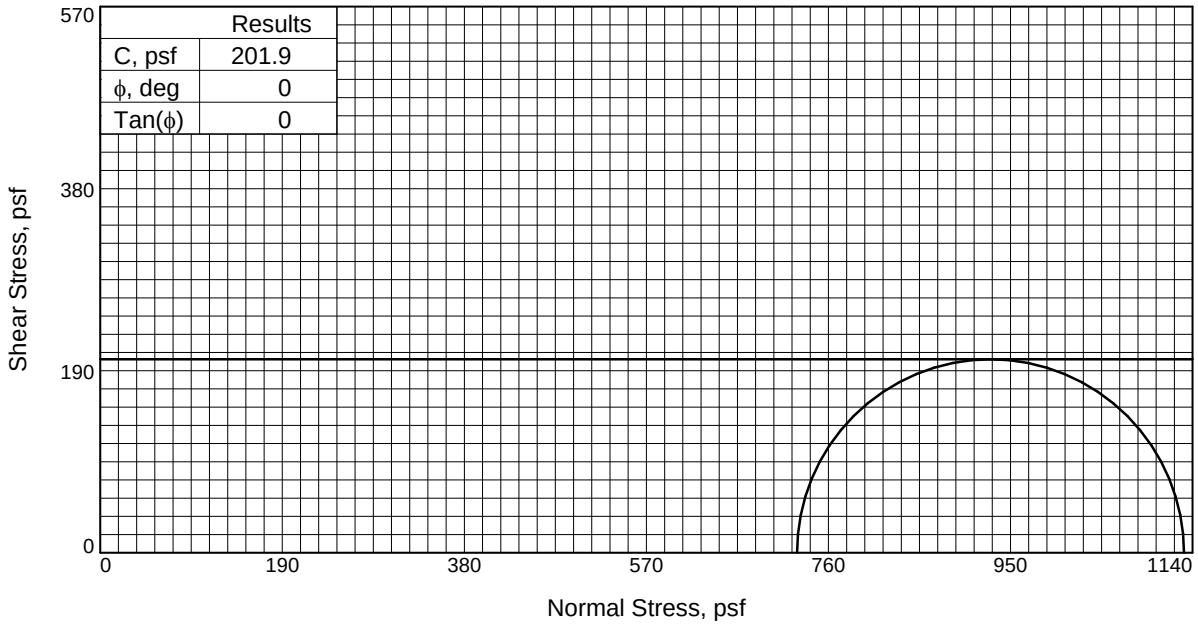
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

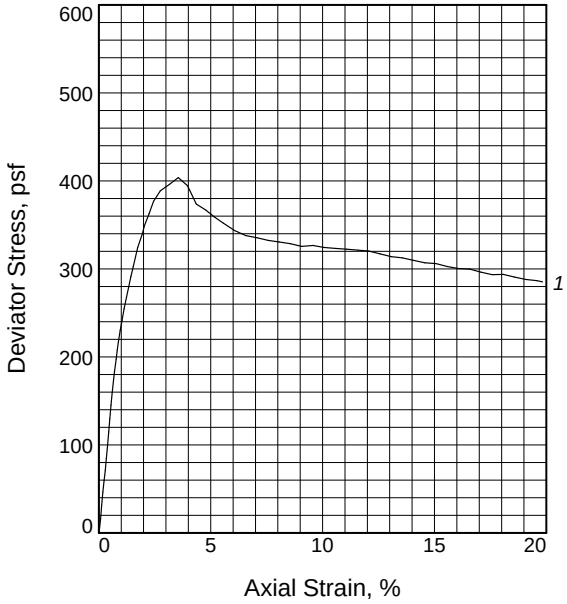
Source of Sample: B-10 **Depth:** 14' - 16'

Proj. No.: 16715-040-01 **Date Sampled:** 8/10/16

GeoEngineers

Tested By: CLP/SRT **Checked By:** JSA





Sample No.		1
Initial	Water Content, %	84.8
	Dry Density, pcf	51.8
	Saturation, %	101.6
	Void Ratio	2.2516
	Diameter, in.	2.855
	Height, in.	6.016
At Test	Water Content, %	84.8
	Dry Density, pcf	51.8
	Saturation, %	101.6
	Void Ratio	2.2516
	Diameter, in.	2.855
	Height, in.	6.016
Strain rate, in./min.		1.000
Back Pressure, psi		0.000
Cell Pressure, psi		5.050
Fail. Stress, psf		403.8
Strain, %		3.6
Ult. Stress, psf		307.0
Strain, %		14.6
σ_1 Failure, psf		1131.0
σ_3 Failure, psf		727.2

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Very soft to soft gray clay with sand lenses and mica (CH)

Assumed Specific Gravity= 2.70

Remarks:

Client: CPRA

Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

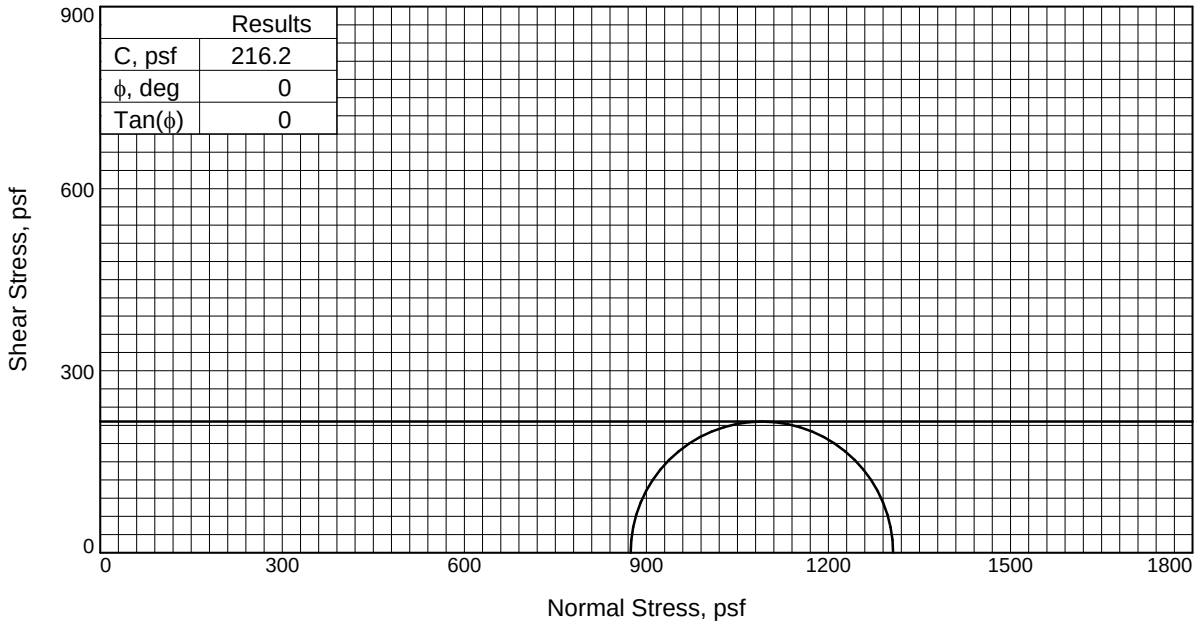
Source of Sample: B-10 **Depth:** 18' - 20'

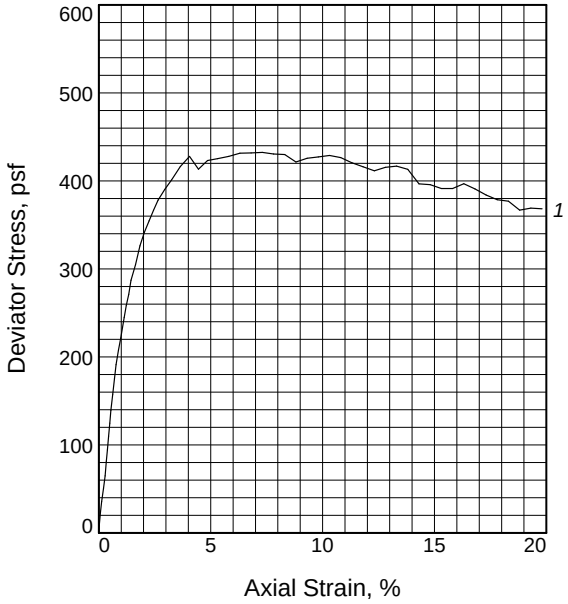
Proj. No.: 16715-040-01 **Date Sampled:** 8/10/16

GeoEngineers

Figure _____

Tested By: SRT **Checked By:** JSA





Sample No.		1
Initial	Water Content, %	79.6
	Dry Density, pcf	54.3
	Saturation, %	102.1
	Void Ratio	2.1065
	Diameter, in.	2.815
	Height, in.	5.767
At Test	Water Content, %	79.6
	Dry Density, pcf	54.3
	Saturation, %	102.1
	Void Ratio	2.1065
	Diameter, in.	2.815
	Height, in.	5.767
Strain rate, in./min.		1.000
Back Pressure, psi		0.000
Cell Pressure, psi		6.070
Fail. Stress, psf		432.5
Strain, %		7.3
Ult. Stress, psf		395.7
Strain, %		14.8
σ_1 Failure, psf		1306.6
σ_3 Failure, psf		874.1

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Very soft to soft brown clay with silt pockets and shell fragments (CH)

LL= 98 **PL=** 27 **PI=** 71

Assumed Specific Gravity= 2.70

Remarks:
Point of failure selected after membrane correction was applied.

Figure _____

Client: CPRA

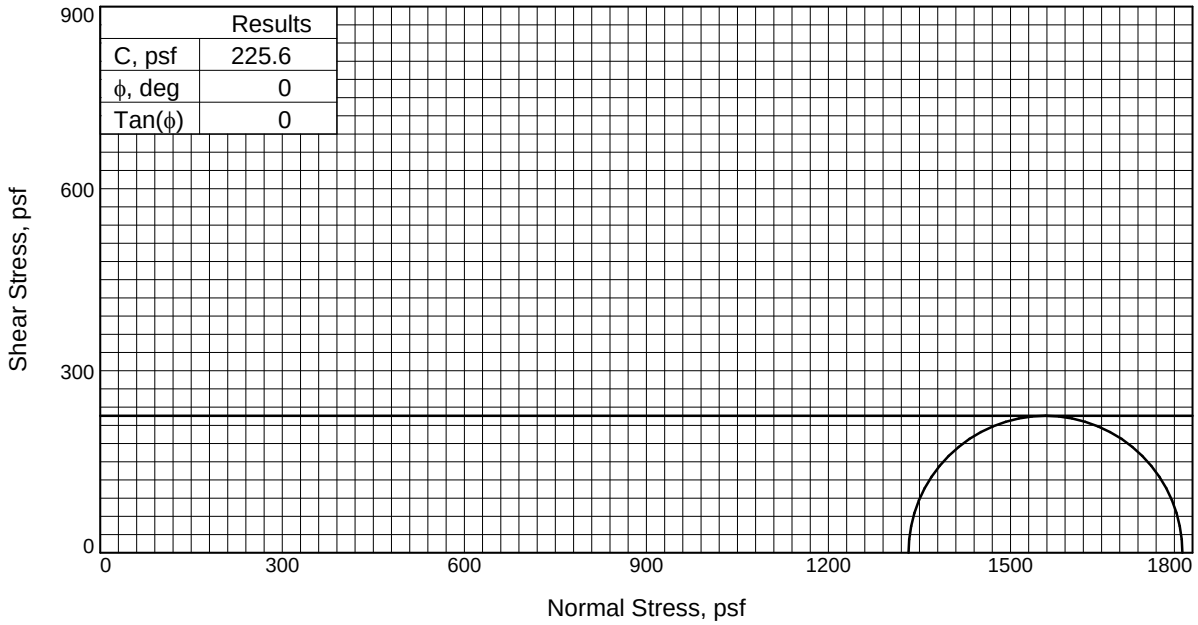
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

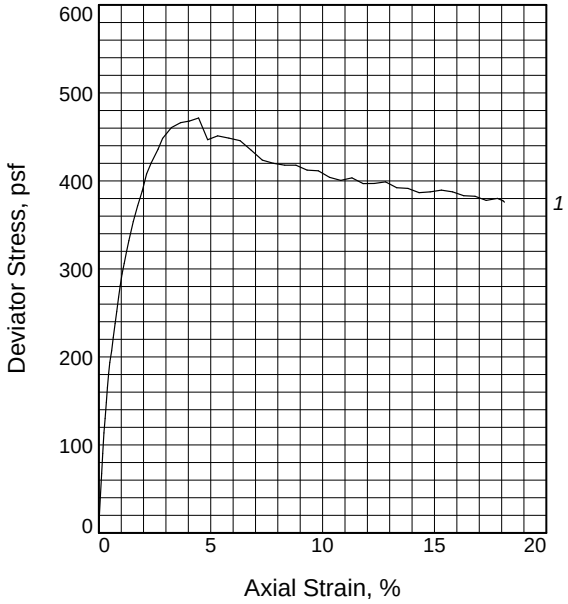
Source of Sample: B-10 **Depth:** 28' - 30'

Proj. No.: 16715-040-01 **Date Sampled:** 8/10/16

GeoEngineers

Tested By: CLP **Checked By:** JSA





Sample No.		1
Initial	Water Content, %	47.8
	Dry Density, pcf	73.2
	Saturation, %	99.1
	Void Ratio	1.3026
	Diameter, in.	2.810
	Height, in.	6.041
At Test	Water Content, %	47.8
	Dry Density, pcf	73.2
	Saturation, %	99.1
	Void Ratio	1.3026
	Diameter, in.	2.810
	Height, in.	6.041
Strain rate, in./min.		1.000
Back Pressure, psi		0.000
Cell Pressure, psi		9.250
Fail. Stress, psf		451.3
Strain, %		5.3
Ult. Stress, psf		387.6
Strain, %		14.8
σ_1 Failure, psf		1783.3
σ_3 Failure, psf		1332.0

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Very soft to soft brown clay with silt pockets (CH)

Assumed Specific Gravity= 2.70

Remarks:
Point of failure selected after membrane correction was applied.

Figure _____

Client: CPRA

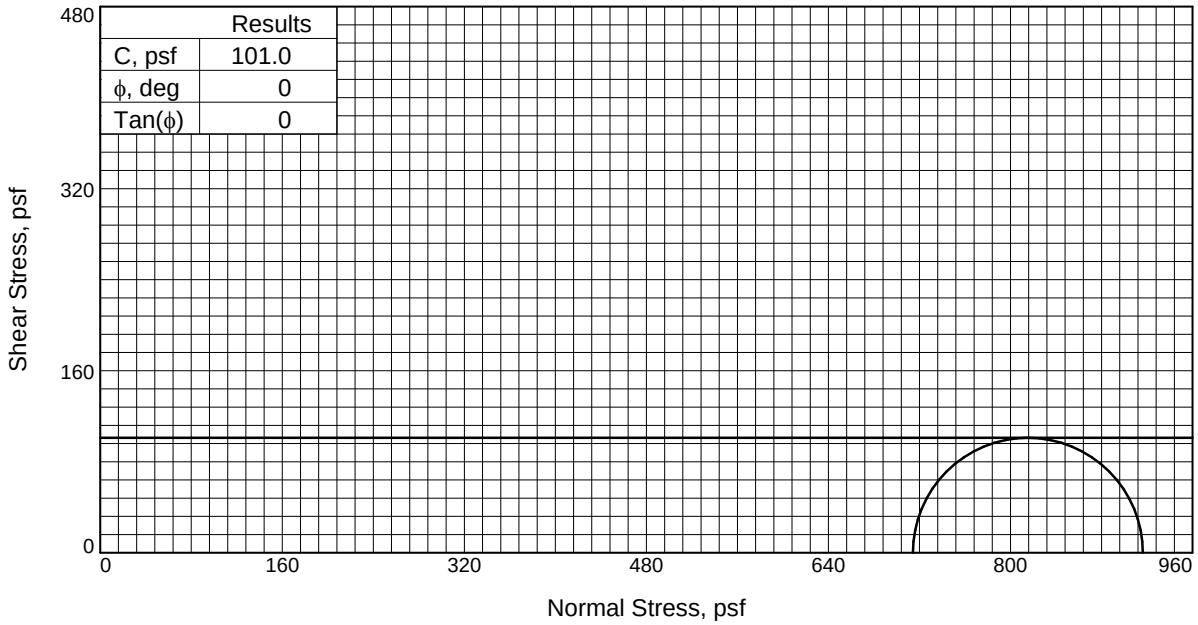
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

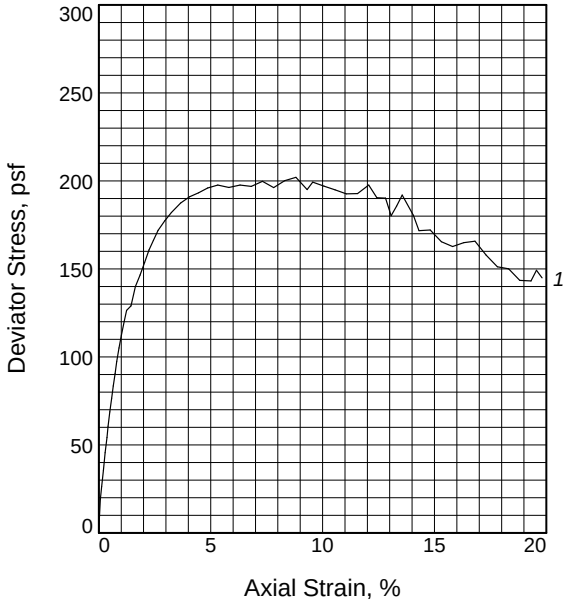
Source of Sample: B-10 **Depth:** 38' - 40'

Proj. No.: 16715-040-01 **Date Sampled:** 8/10/16

GEOENGINEERS

Tested By: CLP **Checked By:** JSA





Sample No.		1
Initial	Water Content, %	92.0
	Dry Density, pcf	49.7
	Saturation, %	103.8
	Void Ratio	2.3922
	Diameter, in.	2.732
	Height, in.	6.002
At Test	Water Content, %	92.0
	Dry Density, pcf	49.7
	Saturation, %	103.8
	Void Ratio	2.3922
	Diameter, in.	2.732
	Height, in.	6.002
Strain rate, in./min.		0.999
Back Pressure, psi		0.000
Cell Pressure, psi		4.960
Fail. Stress, psf		202.0
Strain, %		8.8
Ult. Stress, psf		172.2
Strain, %		14.8
σ_1 Failure, psf		916.3
σ_3 Failure, psf		714.2

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Very soft gray clay with organic matter (CH)

LL= 81 **PL=** 23 **PI=** 58

Assumed Specific Gravity= 2.70

Remarks:

Client: CPRA

Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

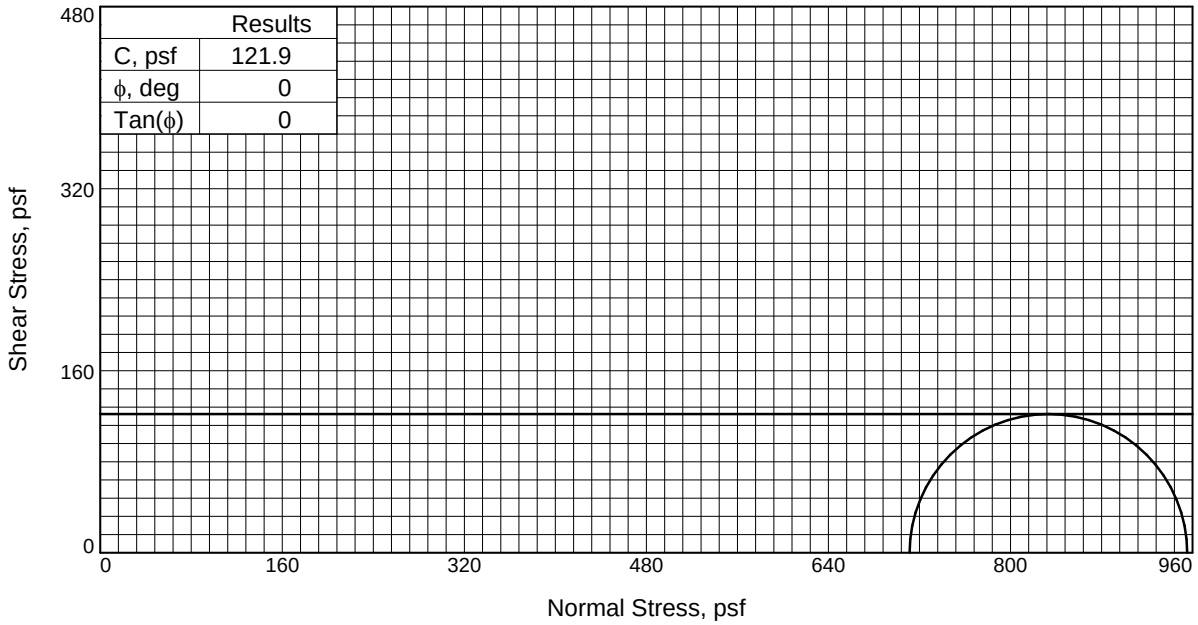
Source of Sample: B-11 **Depth:** 2' - 4'

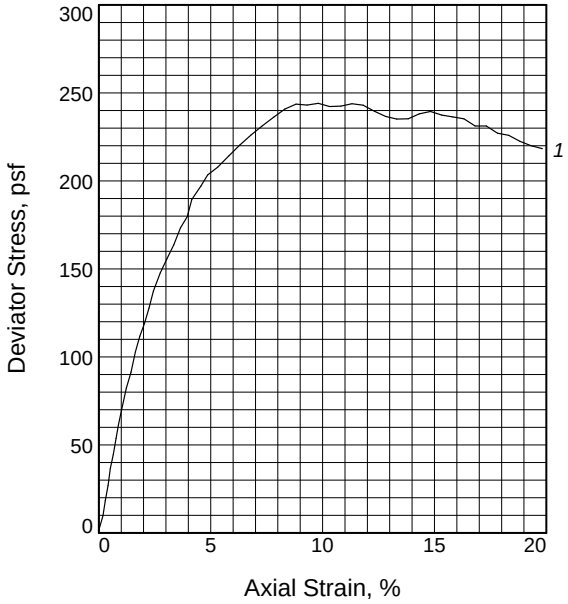
Proj. No.: 16715-040-01 **Date Sampled:** 8/20/16

GEOENGINEERS

Figure _____

Tested By: SRT **Checked By:** KLA





Sample No.		1
Initial	Water Content, %	34.5
	Dry Density, pcf	85.4
	Saturation, %	96.4
	Void Ratio	0.9591
	Diameter, in.	2.855
	Height, in.	5.970
At Test	Water Content, %	34.5
	Dry Density, pcf	85.4
	Saturation, %	96.4
	Void Ratio	0.9591
	Diameter, in.	2.855
	Height, in.	5.970
Strain rate, in./min.		1.000
Back Pressure, psi		0.000
Cell Pressure, psi		4.940
Fail. Stress, psf		243.9
Strain, %		11.3
Ult. Stress, psf		239.5
Strain, %		14.8
σ_1 Failure, psf		955.2
σ_3 Failure, psf		711.4

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Very soft gray silty clay (CL)

Assumed Specific Gravity= 2.68

Remarks:
Sample slumping under own weight.

Figure _____

Client: CPRA

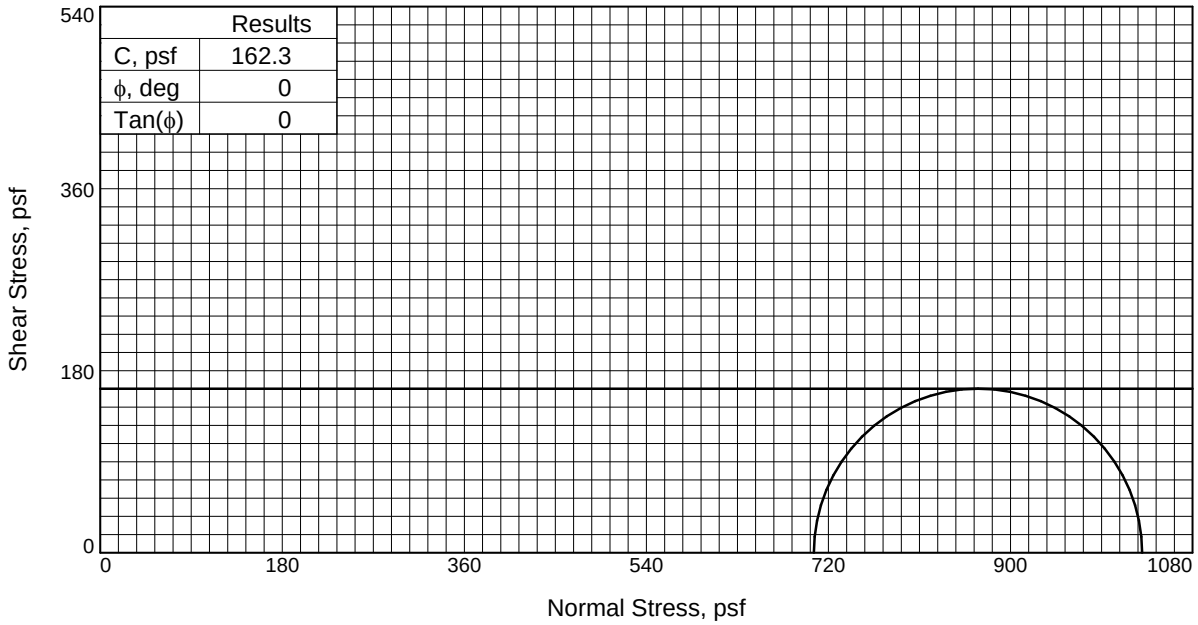
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

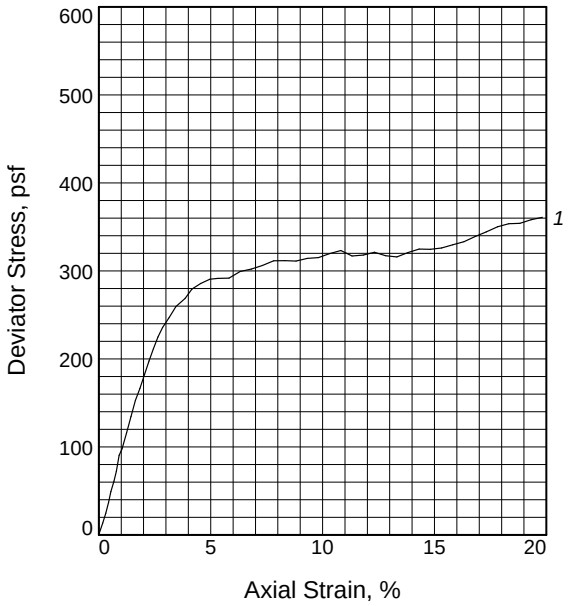
Source of Sample: B-11 **Depth:** 4' - 6'

Proj. No.: 16715-040-01 **Date Sampled:** 8/20/16

GeoEngineers

Tested By: SRT **Checked By:** KLA





Sample No.		1
Initial	Water Content, %	35.7
	Dry Density, pcf	86.2
	Saturation, %	101.6
	Void Ratio	0.9414
	Diameter, in.	2.781
	Height, in.	5.924
At Test	Water Content, %	35.7
	Dry Density, pcf	86.2
	Saturation, %	101.6
	Void Ratio	0.9414
	Diameter, in.	2.781
	Height, in.	5.924
Strain rate, in./min.		1.000
Back Pressure, psi		0.000
Cell Pressure, psi		4.900
Fail. Stress, psf		324.5
Strain, %		14.8
Ult. Stress, psf		324.5
Strain, %		14.8
σ_1 Failure, psf		1030.1
σ_3 Failure, psf		705.6

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: Very soft gray silty clay (CL)

LL= 40 **PL=** 20 **PI=** 20
Assumed Specific Gravity= 2.68
Remarks:

Client: CPRA

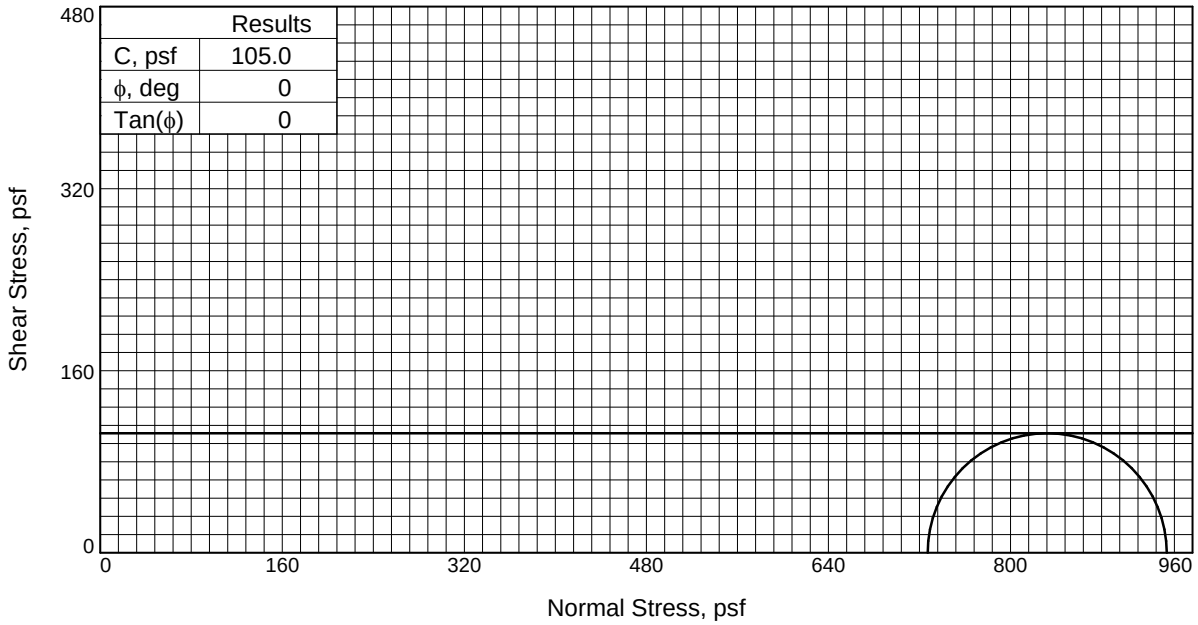
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana
Source of Sample: B-11 **Depth:** 8' - 10'

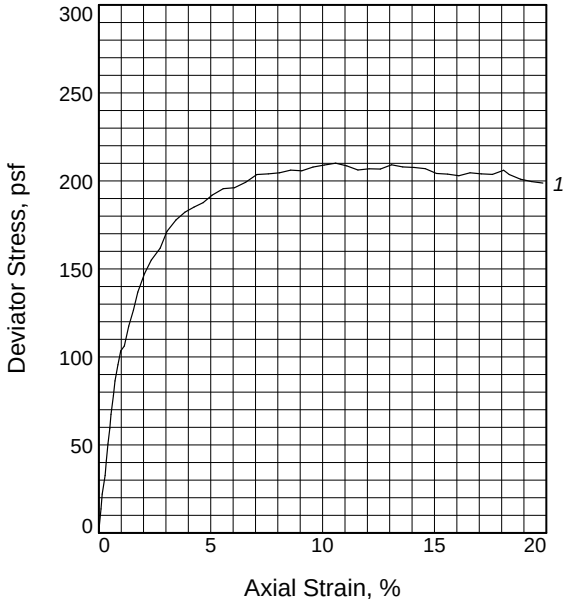
Proj. No.: 16715-040-01 **Date Sampled:** 8/20/16

GeoEngineers

Figure _____

Tested By: SRT **Checked By:** KLA





Sample No.		1
Initial	Water Content, %	55.4
	Dry Density, pcf	67.7
	Saturation, %	100.8
	Void Ratio	1.4728
	Diameter, in.	2.781
	Height, in.	6.030
At Test	Water Content, %	55.4
	Dry Density, pcf	67.7
	Saturation, %	100.8
	Void Ratio	1.4728
	Diameter, in.	2.781
	Height, in.	6.030
Strain rate, in./min.		1.000
Back Pressure, psi		0.000
Cell Pressure, psi		5.050
Fail. Stress, psf		210.1
Strain, %		10.6
Ult. Stress, psf		207.0
Strain, %		14.6
σ_1 Failure, psf		937.3
σ_3 Failure, psf		727.2

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Very soft gray silty clay with silt pockets (CL)

Assumed Specific Gravity= 2.68

Remarks:

Figure _____

Client: CPRA

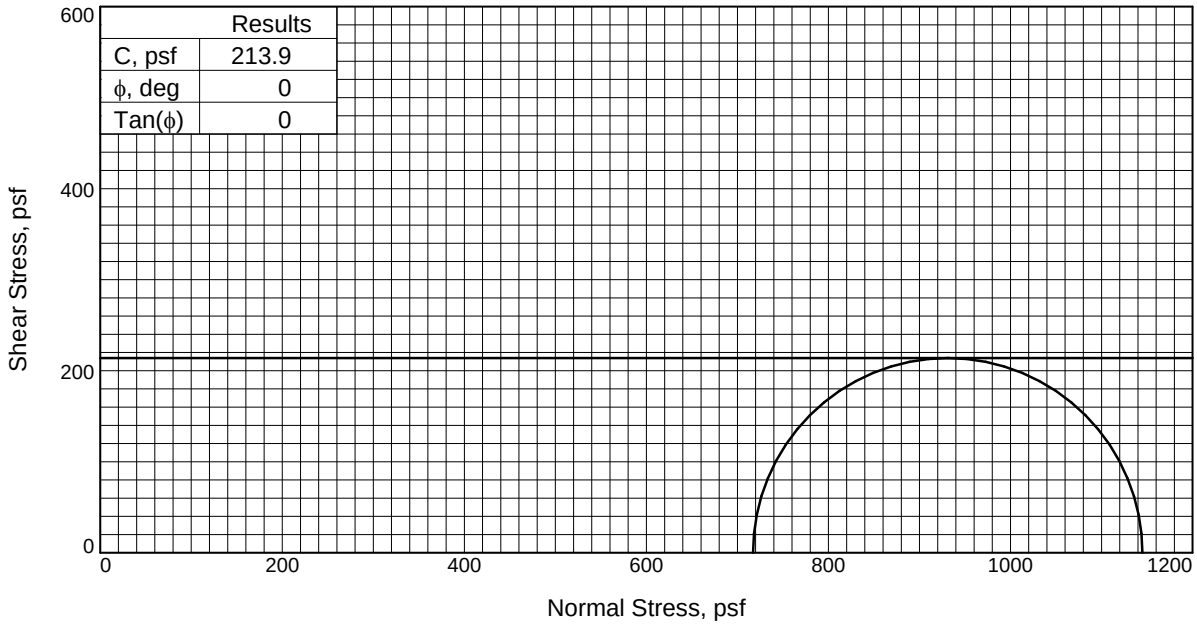
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

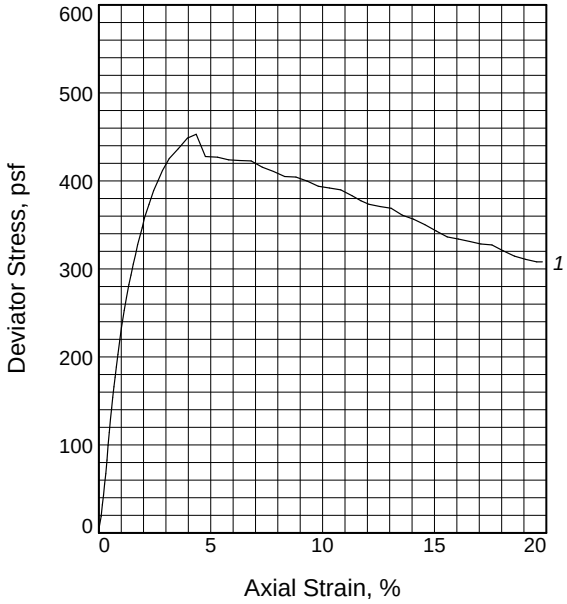
Source of Sample: B-11 **Depth:** 10' - 12'

Proj. No.: 16715-040-01 **Date Sampled:** 8/20/16

GeoEngineers

Tested By: SRT **Checked By:** KLA





Sample No.		1
Initial	Water Content, %	51.3
	Dry Density, pcf	67.0
	Saturation, %	91.3
	Void Ratio	1.5173
	Diameter, in.	2.787
	Height, in.	6.003
At Test	Water Content, %	51.3
	Dry Density, pcf	67.0
	Saturation, %	91.3
	Void Ratio	1.5173
	Diameter, in.	2.787
	Height, in.	6.003
Strain rate, in./min.		1.000
Back Pressure, psi		0.000
Cell Pressure, psi		4.980
Fail. Stress, psf		427.7
Strain, %		4.8
Ult. Stress, psf		350.3
Strain, %		14.6
σ_1 Failure, psf		1144.8
σ_3 Failure, psf		717.1

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Very soft gray clay with silt pockets (CH)

Assumed Specific Gravity= 2.70

Remarks:
Point of failure selected after membrane correction was applied.

Figure _____

Client: CPRA

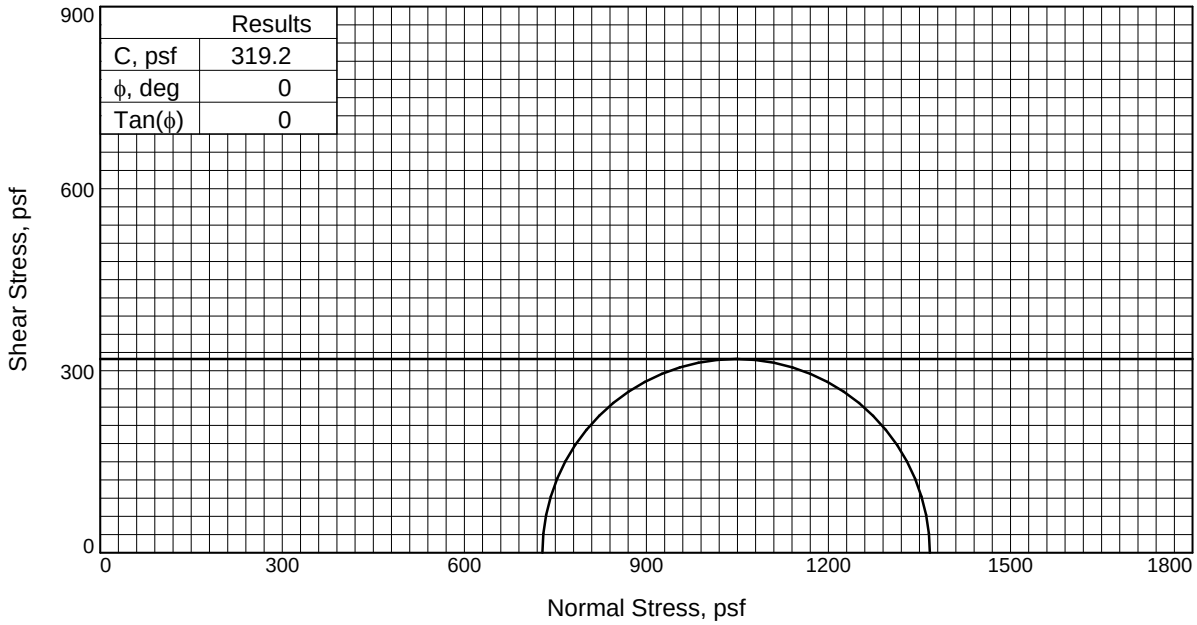
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

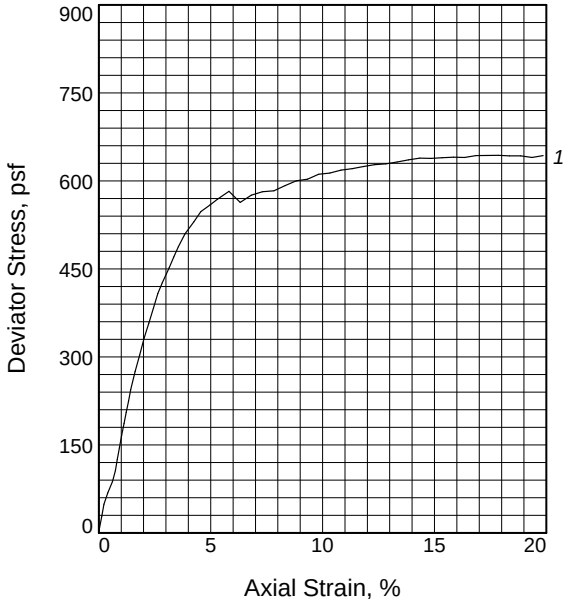
Source of Sample: B-11 **Depth:** 14' - 16'

Proj. No.: 16715-040-01 **Date Sampled:** 8/20/16

GeoEngineers

Tested By: SRT **Checked By:** KLA





Sample No.		1
Initial	Water Content, %	37.7
	Dry Density, pcf	82.6
	Saturation, %	97.8
	Void Ratio	1.0408
	Diameter, in.	2.850
	Height, in.	6.011
At Test	Water Content, %	37.7
	Dry Density, pcf	82.6
	Saturation, %	97.8
	Void Ratio	1.0408
	Diameter, in.	2.850
	Height, in.	6.011
Strain rate, in./min.		1.000
Back Pressure, psi		0.000
Cell Pressure, psi		5.060
Fail. Stress, psf		638.5
Strain, %		14.8
Ult. Stress, psf		638.5
Strain, %		14.8
σ_1 Failure, psf		1367.1
σ_3 Failure, psf		728.6

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Soft gray clay with silt lenses and pockets (CL)

LL= 46 **PL=** 20 **PI=** 26

Assumed Specific Gravity= 2.70

Remarks:
Point of failure selected after membrane correction was applied.

Figure _____

Client: CPRA

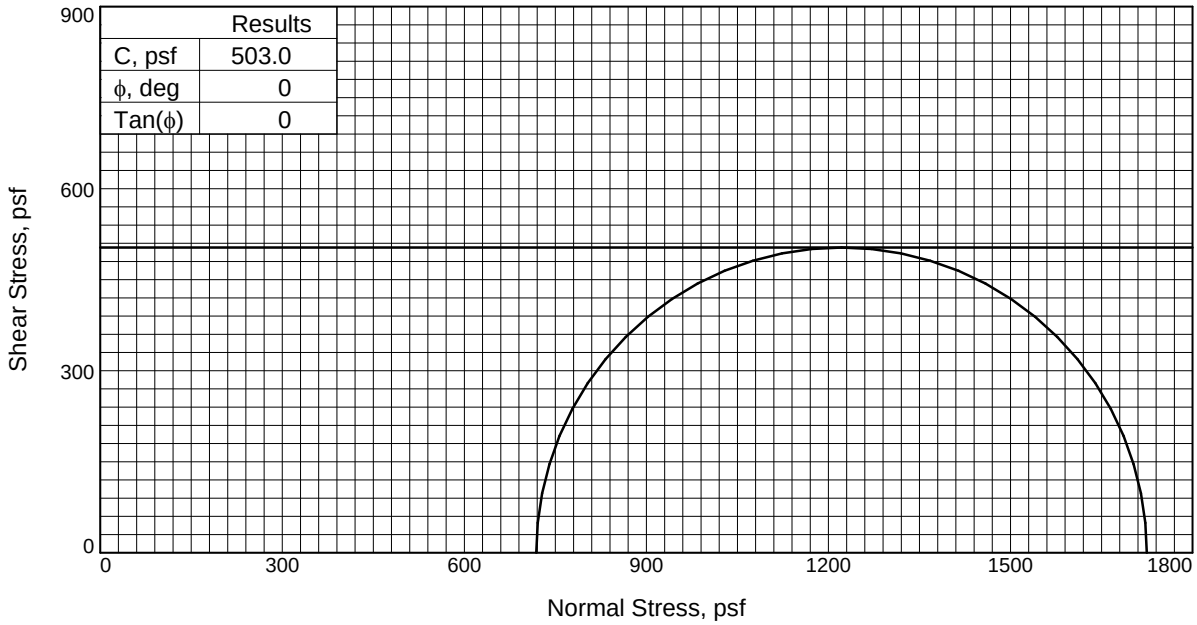
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

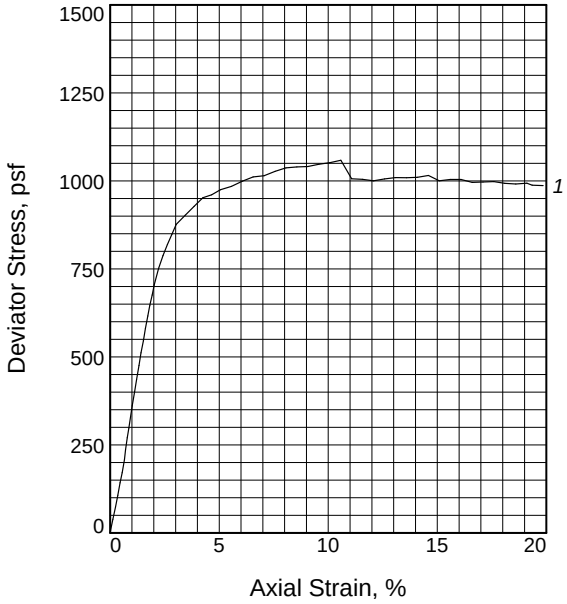
Source of Sample: B-11 **Depth:** 18' - 20'

Proj. No.: 16715-040-01 **Date Sampled:** 8/21/16

GEOENGINEERS

Tested By: SRT **Checked By:** KLA





Sample No.		1
Initial	Water Content, %	32.2
	Dry Density, pcf	90.1
	Saturation, %	100.7
	Void Ratio	0.8567
	Diameter, in.	2.778
	Height, in.	6.059
At Test	Water Content, %	32.2
	Dry Density, pcf	90.1
	Saturation, %	100.7
	Void Ratio	0.8567
	Diameter, in.	2.778
	Height, in.	6.059
Strain rate, in./min.		0.999
Back Pressure, psi		0.000
Cell Pressure, psi		4.990
Fail. Stress, psf		1006.0
Strain, %		11.1
Ult. Stress, psf		1015.5
Strain, %		14.6
σ_1 Failure, psf		1724.6
σ_3 Failure, psf		718.6

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Medium gray clay with silt lenses (CL)

Assumed Specific Gravity= 2.68

Remarks:
Point of failure selected after membrane correction was applied.

Figure _____

Client: CPRA

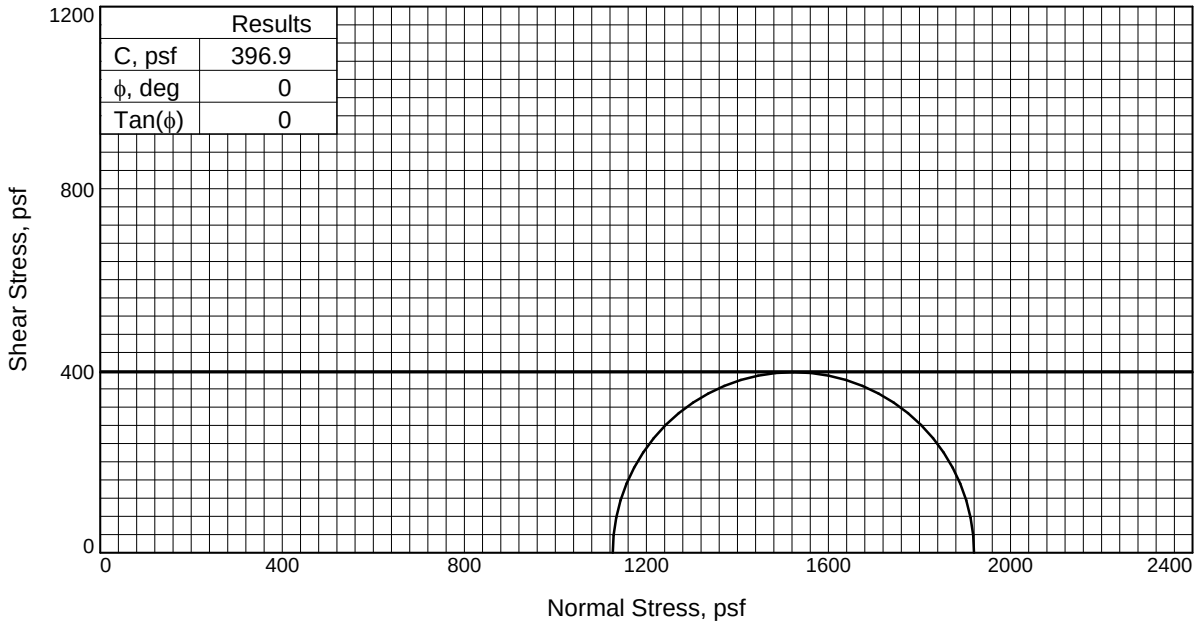
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

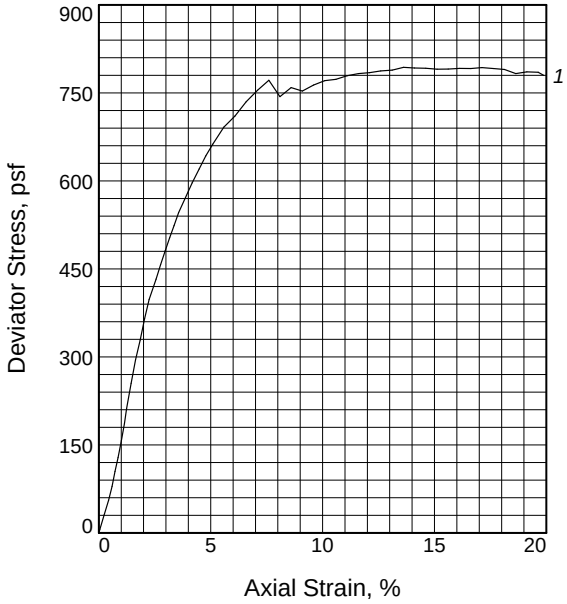
Source of Sample: B-11 **Depth:** 23' - 25'

Proj. No.: 16715-040-01 **Date Sampled:** 8/21/16

GeoEngineers

Tested By: SRT **Checked By:** KLA





Sample No.		1
Initial	Water Content, %	31.2
	Dry Density, pcf	93.8
	Saturation, %	106.6
	Void Ratio	0.7844
	Diameter, in.	2.758
	Height, in.	6.016
At Test	Water Content, %	31.2
	Dry Density, pcf	93.8
	Saturation, %	106.6
	Void Ratio	0.7844
	Diameter, in.	2.758
	Height, in.	6.016
Strain rate, in./min.		1.000
Back Pressure, psi		0.000
Cell Pressure, psi		7.820
Fail. Stress, psf		793.8
Strain, %		13.6
Ult. Stress, psf		792.2
Strain, %		14.6
σ_1 Failure, psf		1919.8
σ_3 Failure, psf		1126.1

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Soft gray silty clay (CL)

Assumed Specific Gravity= 2.68

Remarks:
Point of failure selected after membrane correction was applied.

Figure _____

Client: CPRA

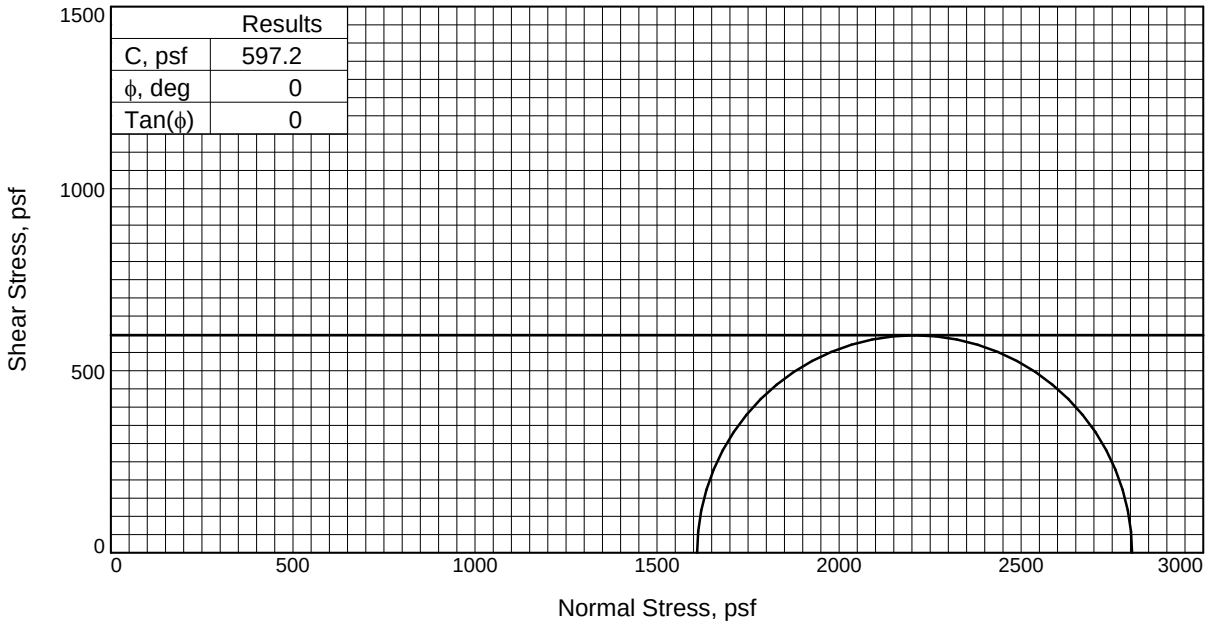
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

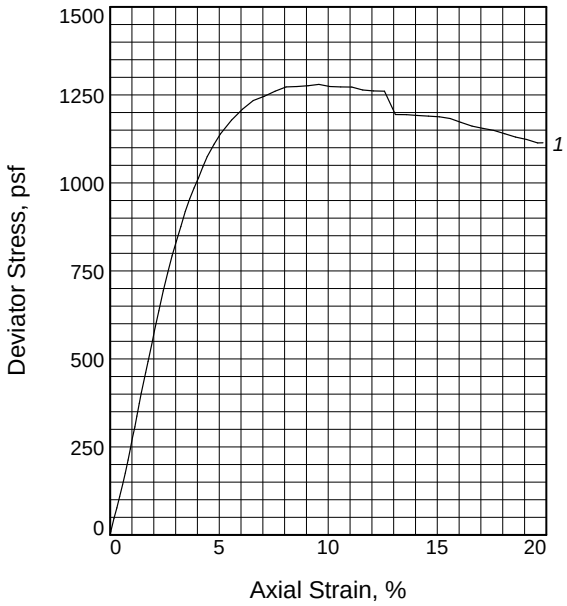
Source of Sample: B-11 **Depth:** 33' - 35'

Proj. No.: 16715-040-01 **Date Sampled:** 8/21/16

GEOENGINEERS

Tested By: SRT **Checked By:** KLA





Sample No.		1
Initial	Water Content, %	40.3
	Dry Density, pcf	80.2
	Saturation, %	99.5
	Void Ratio	1.0860
	Diameter, in.	2.855
	Height, in.	6.005
At Test	Water Content, %	40.3
	Dry Density, pcf	80.2
	Saturation, %	99.5
	Void Ratio	1.0860
	Diameter, in.	2.855
	Height, in.	6.005
Strain rate, in./min.		0.999
Back Pressure, psi		0.000
Cell Pressure, psi		11.180
Fail. Stress, psf		1194.5
Strain, %		13.1
Ult. Stress, psf		1189.7
Strain, %		14.6
σ_1 Failure, psf		2804.4
σ_3 Failure, psf		1609.9

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Medium gray silty clay (CL)

Assumed Specific Gravity= 2.68

Remarks:
Point of failure selected after membrane correction was applied.

Figure _____

Client: CPRA

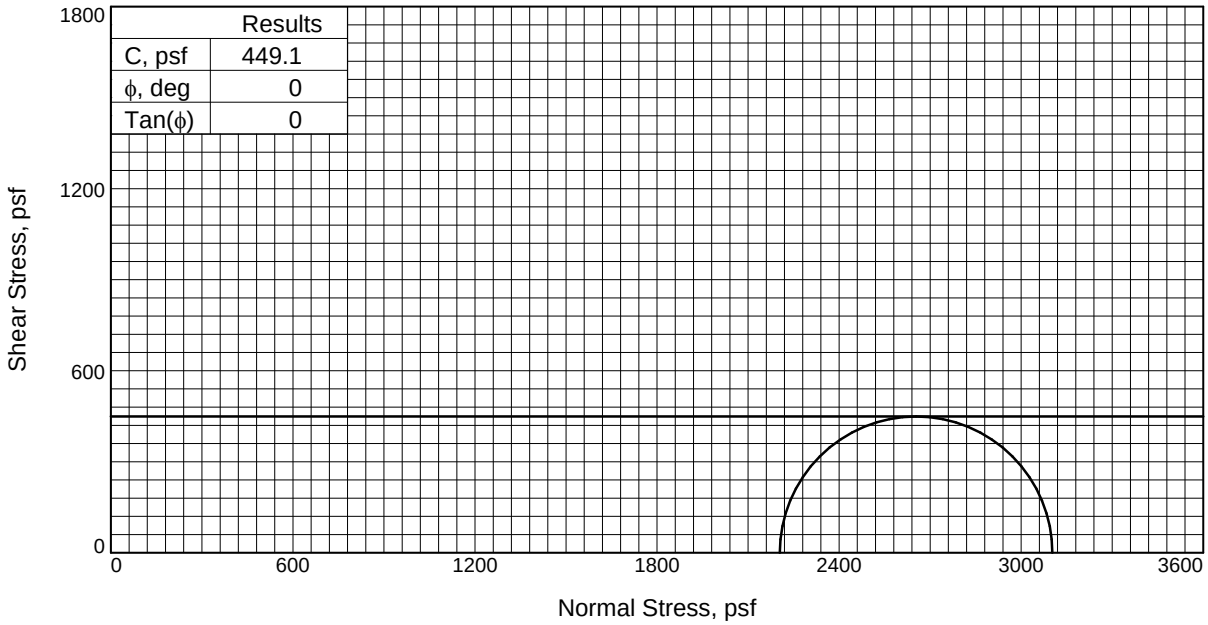
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

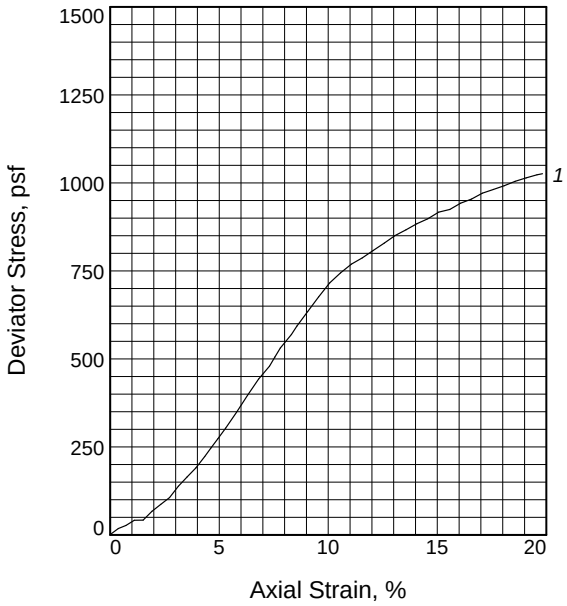
Source of Sample: B-11 **Depth:** 43' - 45'

Proj. No.: 16715-040-01 **Date Sampled:** 8/21/16

GeoEngineers

Tested By: SRT **Checked By:** KLA





Sample No.		1
Initial	Water Content, %	35.5
	Dry Density, pcf	85.6
	Saturation, %	99.7
	Void Ratio	0.9550
	Diameter, in.	2.855
	Height, in.	5.950
At Test	Water Content, %	35.5
	Dry Density, pcf	85.6
	Saturation, %	99.7
	Void Ratio	0.9550
	Diameter, in.	2.855
	Height, in.	5.950
Strain rate, in./min.		0.999
Back Pressure, psi		0.000
Cell Pressure, psi		15.310
Fail. Stress, psf		898.2
Strain, %		14.6
Ult. Stress, psf		898.2
Strain, %		14.6
σ_1 Failure, psf		3102.8
σ_3 Failure, psf		2204.6

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Very soft to soft gray silty clay (CL)

Assumed Specific Gravity= 2.68

Remarks:

Figure _____

Client: CPRA

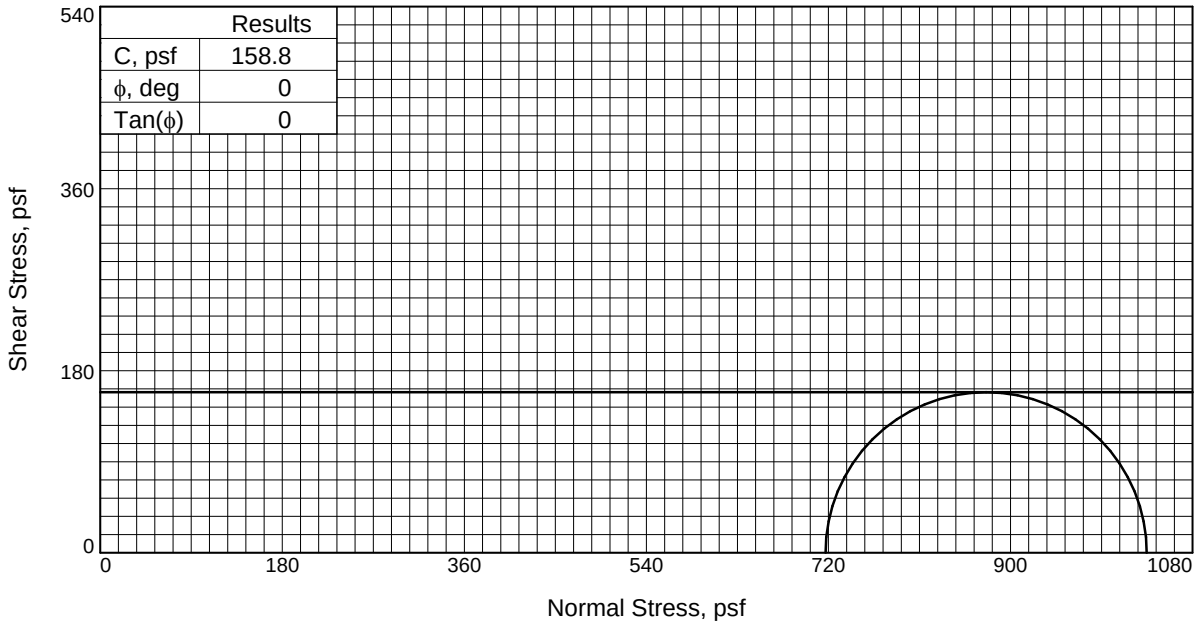
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

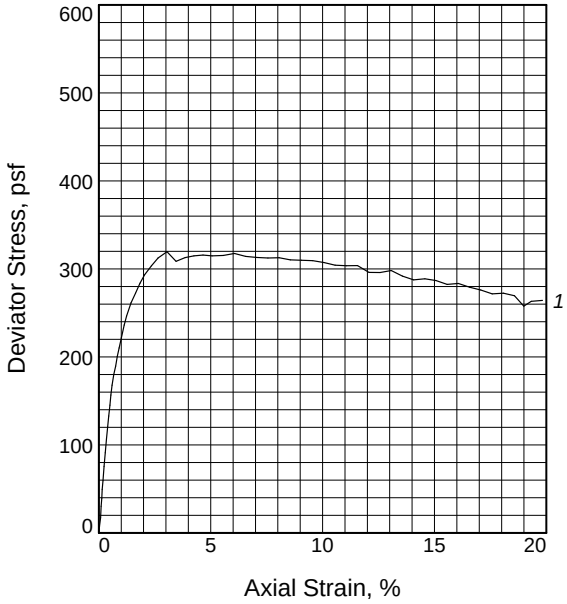
Source of Sample: B-11 **Depth:** 53' - 55'

Proj. No.: 16715-040-01 **Date Sampled:** 8/21/16

GEOENGINEERS

Tested By: SRT **Checked By:** KLA





Sample No.		1
Initial	Water Content, %	63.3
	Dry Density, pcf	63.0
	Saturation, %	102.0
	Void Ratio	1.6751
	Diameter, in.	2.784
	Height, in.	5.739
At Test	Water Content, %	63.3
	Dry Density, pcf	63.0
	Saturation, %	102.0
	Void Ratio	1.6751
	Diameter, in.	2.784
	Height, in.	5.739
Strain rate, in./min.		1.000
Back Pressure, psi		0.000
Cell Pressure, psi		4.980
Fail. Stress, psf		317.6
Strain, %		6.1
Ult. Stress, psf		288.8
Strain, %		14.6
σ_1 Failure, psf		1034.7
σ_3 Failure, psf		717.1

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Very soft to soft gray clay with organic matter (CH)

Assumed Specific Gravity= 2.70

Remarks:
Point of failure selected after membrane correction was applied.

Figure _____

Client: CPRA

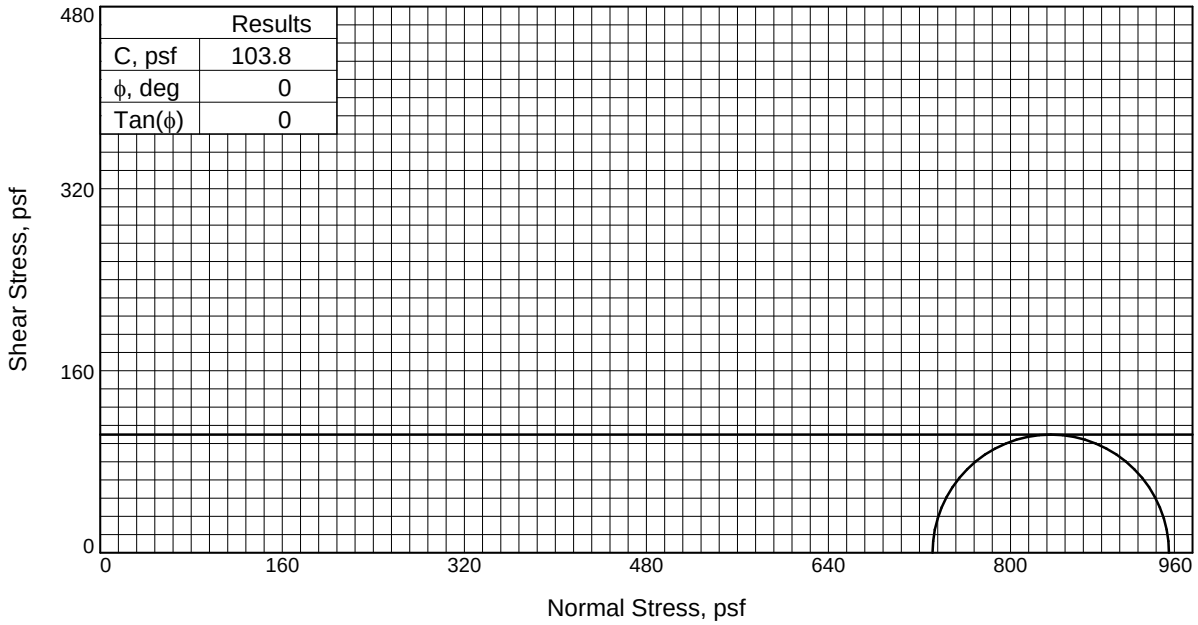
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

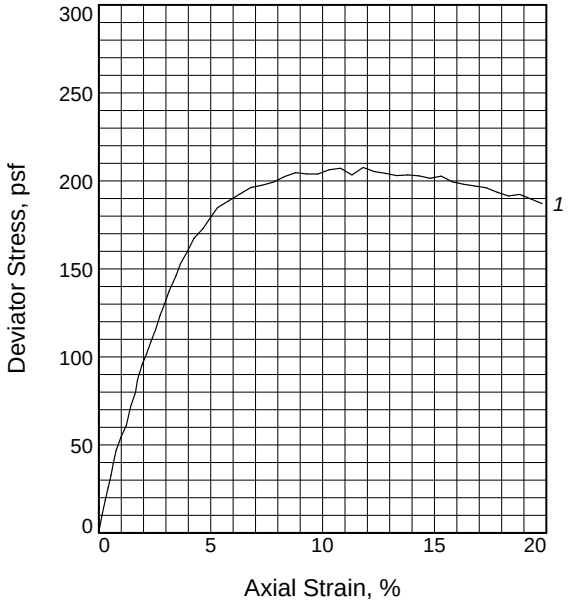
Source of Sample: B-12 **Depth:** 2' - 4'

Proj. No.: 16715-040-01 **Date Sampled:** 8/20/16

GeoEngineers

Tested By: TRC **Checked By:** KLA





Sample No.		1
Initial	Water Content, %	51.6
	Dry Density, pcf	72.2
	Saturation, %	104.2
	Void Ratio	1.3358
	Diameter, in.	2.782
	Height, in.	5.624
At Test	Water Content, %	51.6
	Dry Density, pcf	72.2
	Saturation, %	104.2
	Void Ratio	1.3358
	Diameter, in.	2.782
	Height, in.	5.624
Strain rate, in./min.		1.000
Back Pressure, psi		0.000
Cell Pressure, psi		5.080
Fail. Stress, psf		207.7
Strain, %		11.8
Ult. Stress, psf		201.5
Strain, %		14.8
σ_1 Failure, psf		939.2
σ_3 Failure, psf		731.5

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Very soft gray clay with silty sand pockets (CH)

LL= 53 **PL=** 18 **PI=** 35

Assumed Specific Gravity= 2.70

Remarks:

Client: CPRA

Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

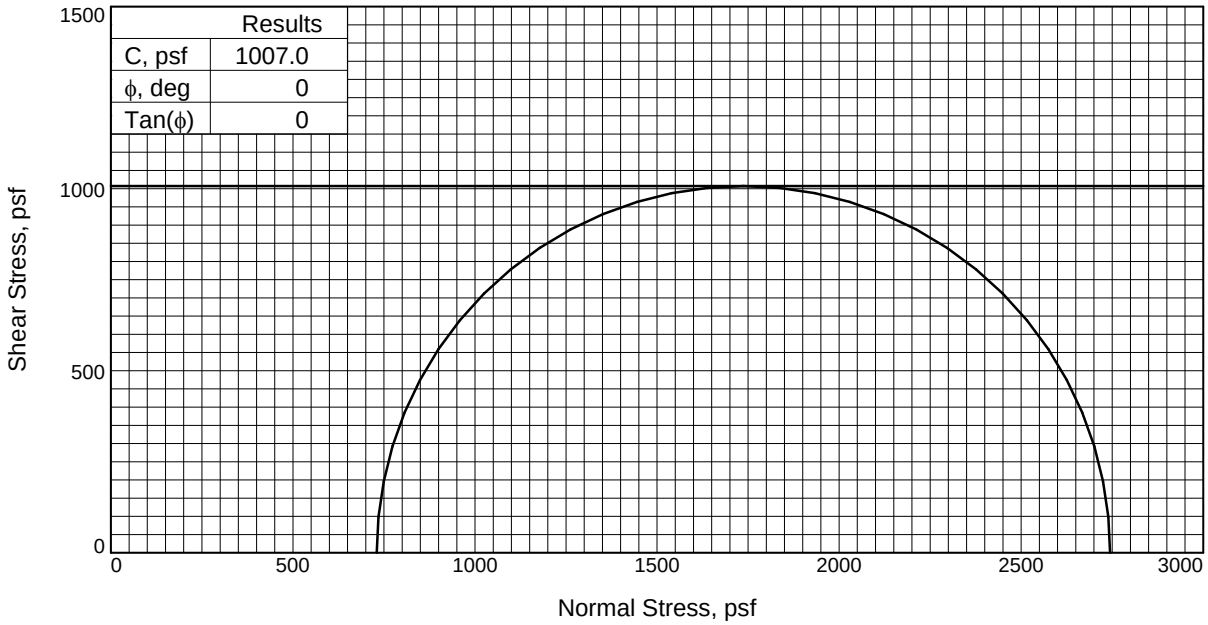
Source of Sample: B-12 **Depth:** 4' - 6'

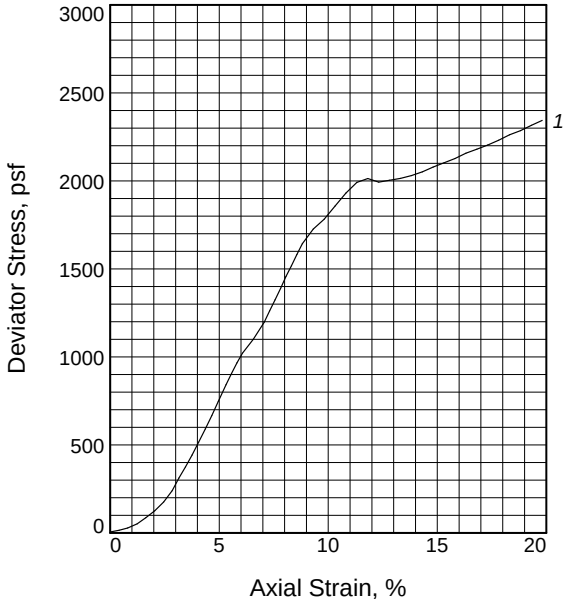
Proj. No.: 16715-040-01 **Date Sampled:** 8/20/16

GeoEngineers

Figure _____

Tested By: TRC **Checked By:** KLA





Sample No.		1
Initial	Water Content, %	34.9
	Dry Density, pcf	87.8
	Saturation, %	103.3
	Void Ratio	0.9054
	Diameter, in.	2.807
	Height, in.	5.460
At Test	Water Content, %	34.9
	Dry Density, pcf	87.8
	Saturation, %	103.3
	Void Ratio	0.9054
	Diameter, in.	2.807
	Height, in.	5.460
Strain rate, in./min.		1.000
Back Pressure, psi		0.000
Cell Pressure, psi		5.070
Fail. Stress, psf		2014.1
Strain, %		11.8
Ult. Stress, psf		2079.0
Strain, %		14.8
σ_1 Failure, psf		2744.1
σ_3 Failure, psf		730.1

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Gray silty sand (SM)

LL= NP **PI=** NP

Assumed Specific Gravity= 2.68

Remarks:
Point of failure selected after membrane correction was applied.

Figure _____

Client: CPRA

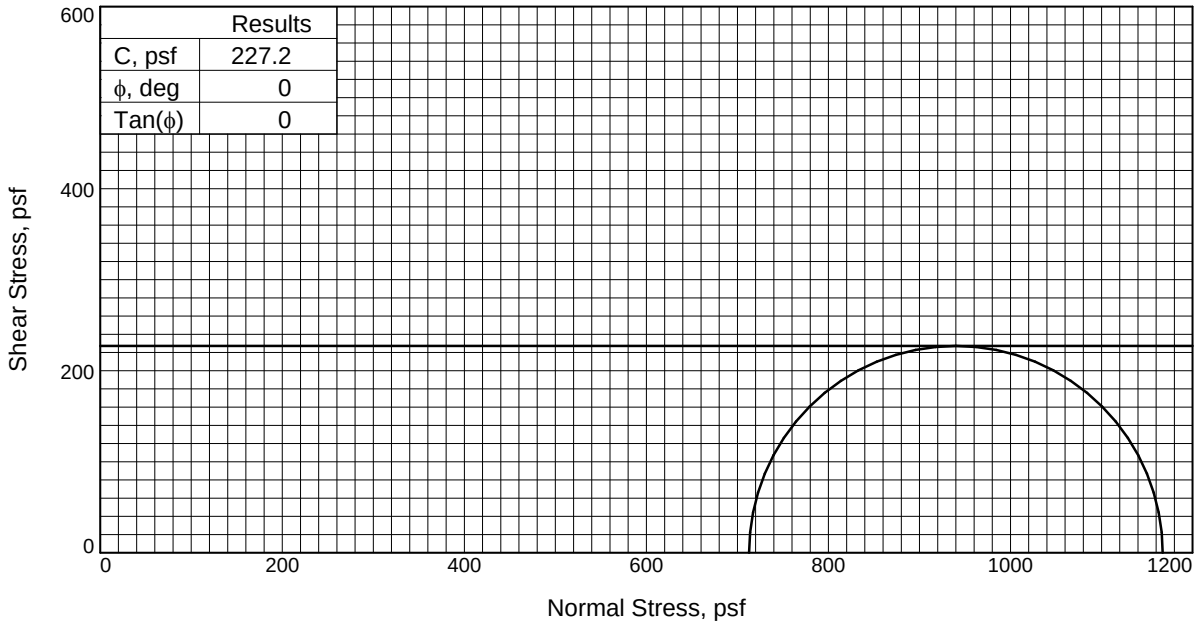
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

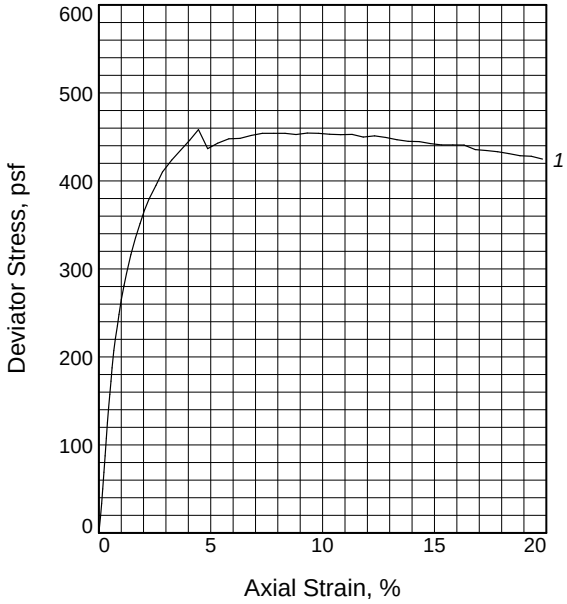
Source of Sample: B-12 **Depth:** 6' - 8'

Proj. No.: 16715-040-01 **Date Sampled:** 8/20/16

GeoEngineers

Tested By: TRC **Checked By:** KLA





Sample No.		1
Initial	Water Content, %	59.0
	Dry Density, pcf	63.4
	Saturation, %	95.2
	Void Ratio	1.7021
	Diameter, in.	2.826
	Height, in.	5.942
At Test	Water Content, %	59.0
	Dry Density, pcf	63.4
	Saturation, %	95.2
	Void Ratio	1.7021
	Diameter, in.	2.826
	Height, in.	5.942
Strain rate, in./min.		1.000
Back Pressure, psi		0.000
Cell Pressure, psi		4.950
Fail. Stress, psf		454.4
Strain, %		9.3
Ult. Stress, psf		442.5
Strain, %		14.8
σ_1 Failure, psf		1167.2
σ_3 Failure, psf		712.8

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Very soft to soft gray clay with shell fragments (CH)

LL= 85 **PL=** 25 **PI=** 60

Specific Gravity= 2.744

Remarks: %-200 = 90.0
Point of failure selected after membrane correction was applied.

Figure _____

Client: CPRA

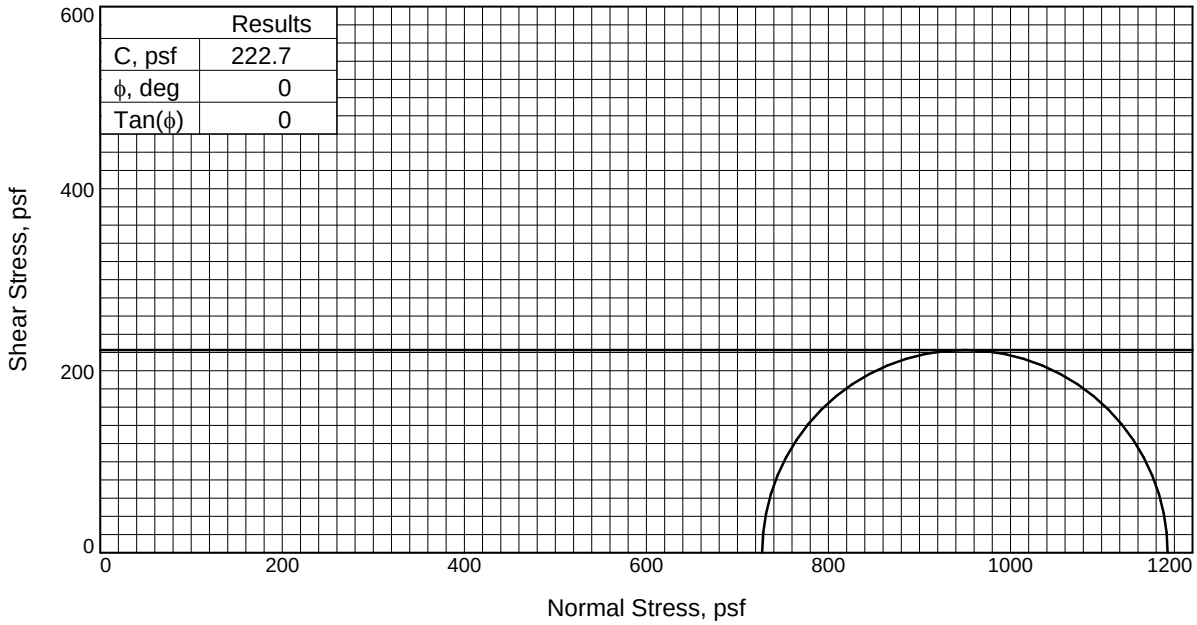
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

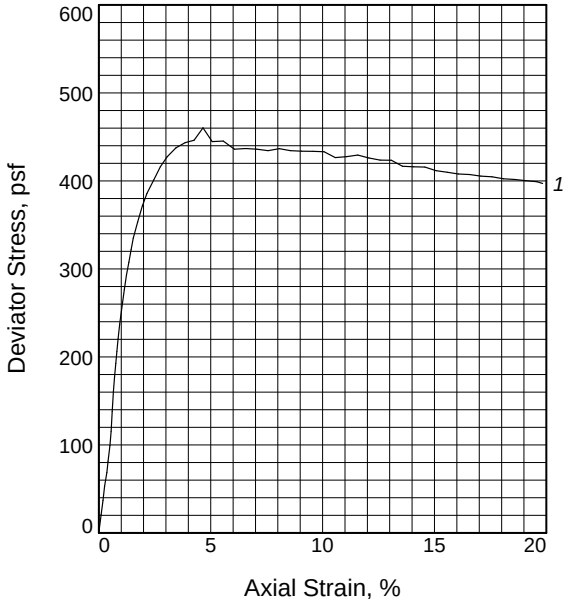
Source of Sample: B-12 **Depth:** 12' - 14'

Proj. No.: 16715-040-01 **Date Sampled:** 8/20/16

GEOENGINEERS

Tested By: TRC **Checked By:** KLA





Sample No.		1
Initial	Water Content, %	60.2
	Dry Density, pcf	65.0
	Saturation, %	102.1
	Void Ratio	1.5916
	Diameter, in.	2.850
	Height, in.	6.010
At Test	Water Content, %	60.2
	Dry Density, pcf	65.0
	Saturation, %	102.1
	Void Ratio	1.5916
	Diameter, in.	2.850
	Height, in.	6.010
Strain rate, in./min.		1.001
Back Pressure, psi		0.000
Cell Pressure, psi		5.050
Fail. Stress, psf		445.4
Strain, %		5.6
Ult. Stress, psf		415.8
Strain, %		14.6
σ_1 Failure, psf		1172.6
σ_3 Failure, psf		727.2

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Very soft to medium gray clay (CH)

LL= 74 **PL=** 22 **PI=** 52

Assumed Specific Gravity= 2.70

Remarks:
Point of failure selected after membrane correction was applied.

Figure _____

Client: CPRA

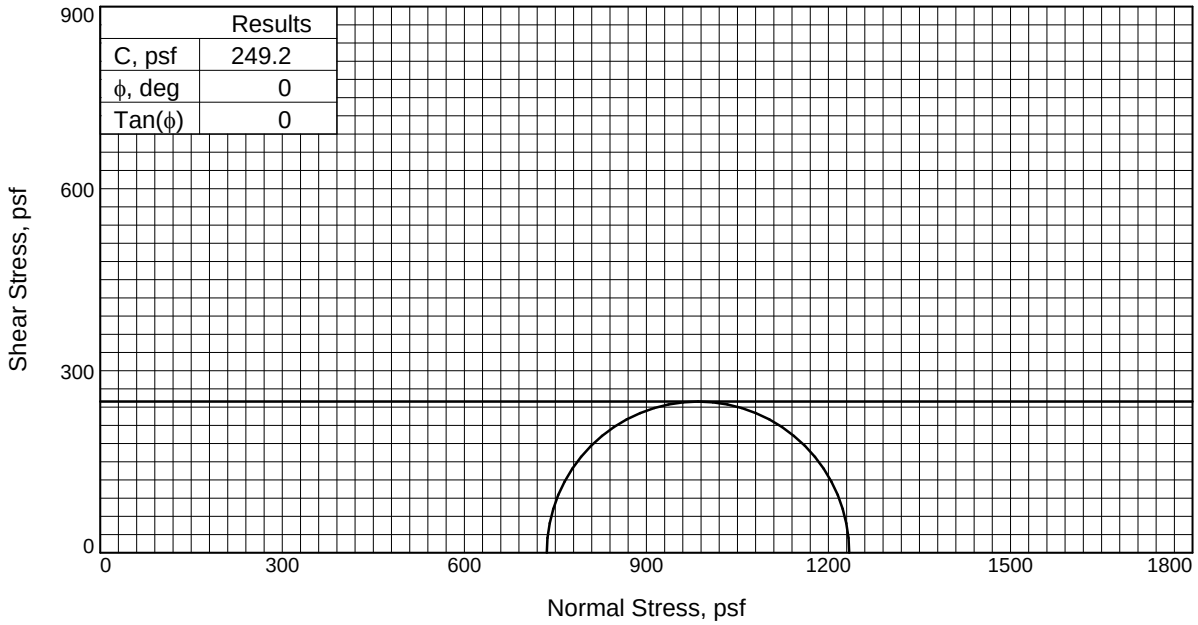
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

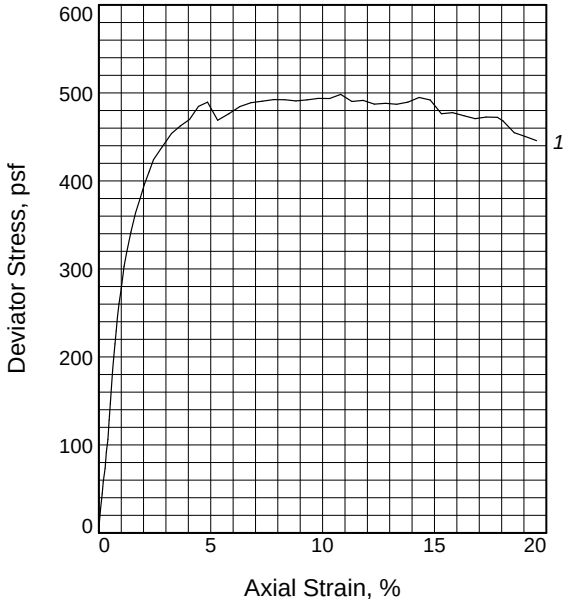
Source of Sample: B-12 **Depth:** 14' - 16'

Proj. No.: 16715-040-01 **Date Sampled:** 8/20/16

GeoEngineers

Tested By: TRC **Checked By:** KLA





Sample No.		1
Initial	Water Content, %	62.3
	Dry Density, pcf	63.5
	Saturation, %	101.7
	Void Ratio	1.6526
	Diameter, in.	2.851
	Height, in.	5.961
At Test	Water Content, %	62.3
	Dry Density, pcf	63.5
	Saturation, %	101.7
	Void Ratio	1.6526
	Diameter, in.	2.851
	Height, in.	5.961
Strain rate, in./min.		1.000
Back Pressure, psi		0.000
Cell Pressure, psi		5.110
Fail. Stress, psf		498.4
Strain, %		10.8
Ult. Stress, psf		492.0
Strain, %		14.8
σ_1 Failure, psf		1234.2
σ_3 Failure, psf		735.8

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Soft to medium gray clay with shell fragments, organic traces and silty sand pockets (CH)

Assumed Specific Gravity= 2.70

Remarks:
Point of failure selected after membrane correction was applied.

Figure _____

Client: CPRA

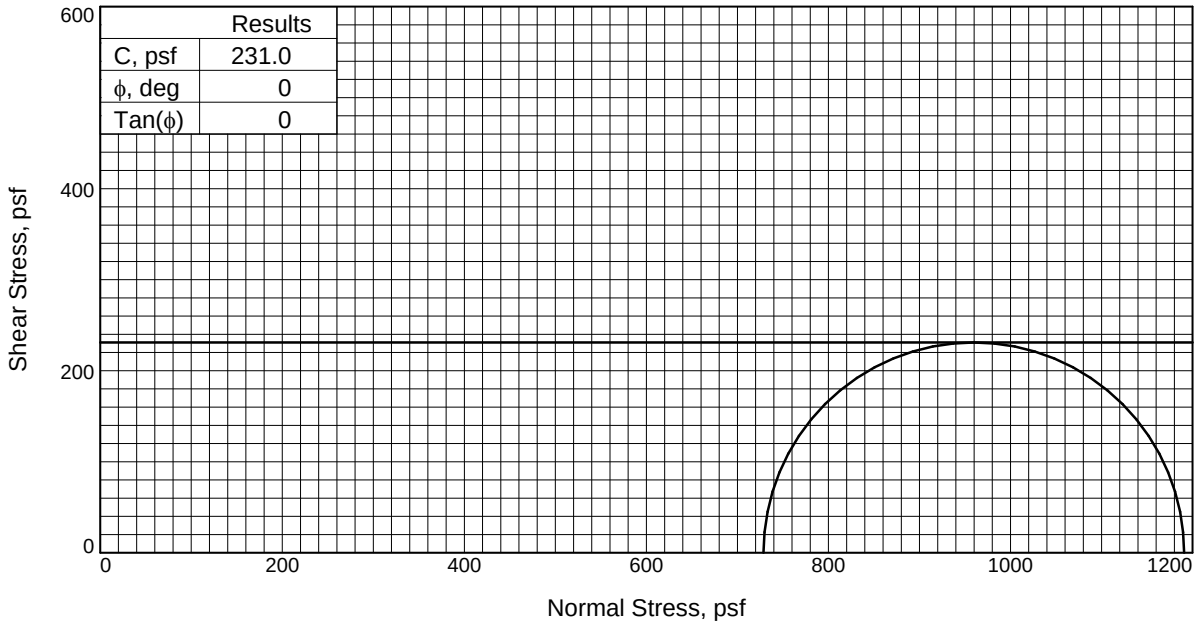
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

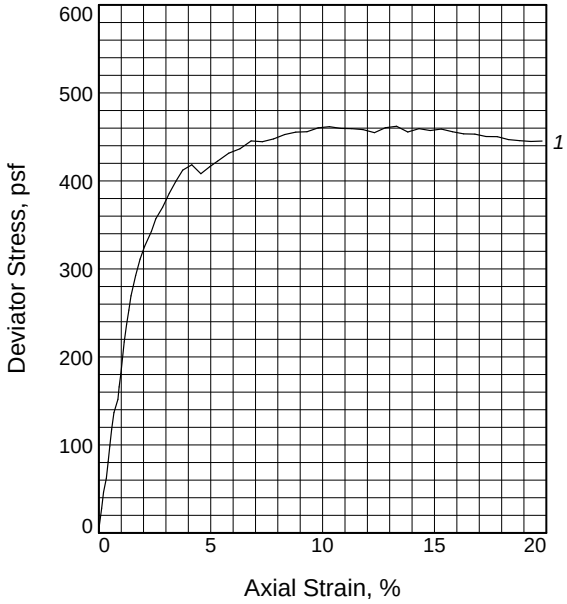
Source of Sample: B-12 **Depth:** 16' - 18'

Proj. No.: 16715-040-01 **Date Sampled:** 8/20/16

GeoEngineers

Tested By: TRC **Checked By:** KLA





Sample No.		1
Initial	Water Content, %	70.1
	Dry Density, pcf	58.5
	Saturation, %	100.7
	Void Ratio	1.8794
	Diameter, in.	2.858
	Height, in.	5.857
At Test	Water Content, %	70.1
	Dry Density, pcf	58.5
	Saturation, %	100.7
	Void Ratio	1.8794
	Diameter, in.	2.858
	Height, in.	5.857
Strain rate, in./min.		0.999
Back Pressure, psi		0.000
Cell Pressure, psi		5.060
Fail. Stress, psf		462.1
Strain, %		13.3
Ult. Stress, psf		459.0
Strain, %		15.3
σ_1 Failure, psf		1190.7
σ_3 Failure, psf		728.6

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Soft gray clay (CH)

Assumed Specific Gravity= 2.70

Remarks:
Point of failure selected after membrane correction was applied.

Figure _____

Client: CPRA

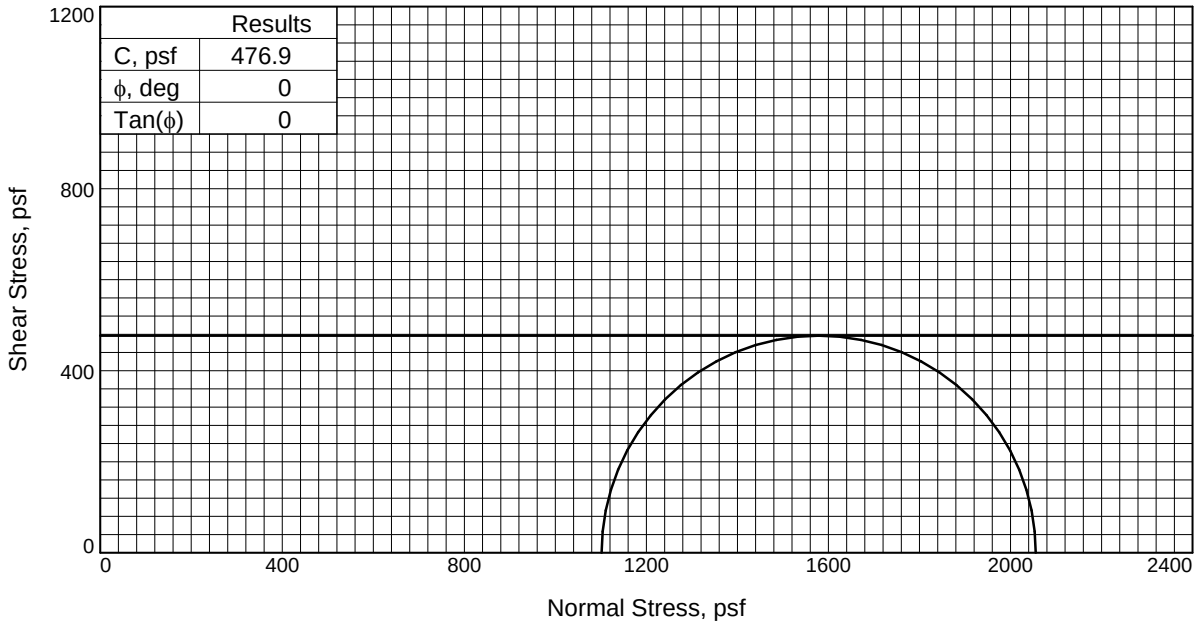
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

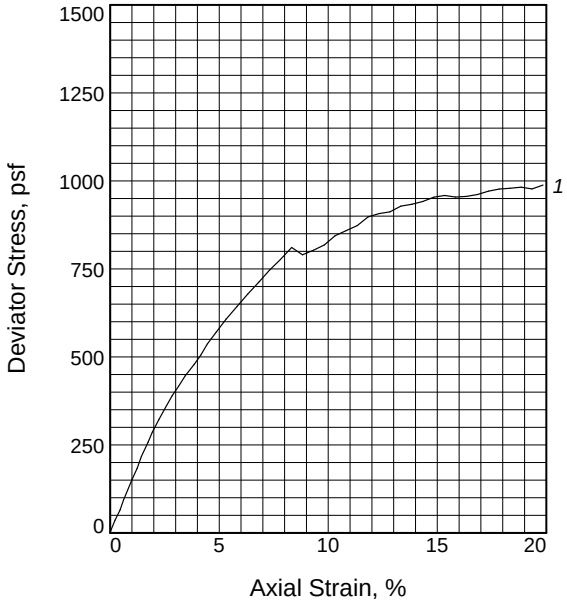
Source of Sample: B-12 **Depth:** 23' - 25'

Proj. No.: 16715-040-01 **Date Sampled:** 8/20/16

GEOENGINEERS

Tested By: TRC **Checked By:** KLA





Sample No.		1
Initial	Water Content, %	32.5
	Dry Density, pcf	87.4
	Saturation, %	95.3
	Void Ratio	0.9148
	Diameter, in.	2.870
	Height, in.	5.936
At Test	Water Content, %	32.5
	Dry Density, pcf	87.4
	Saturation, %	95.3
	Void Ratio	0.9148
	Diameter, in.	2.870
	Height, in.	5.936
Strain rate, in./min.		0.999
Back Pressure, psi		0.000
Cell Pressure, psi		7.650
Fail. Stress, psf		953.9
Strain, %		14.8
Ult. Stress, psf		953.9
Strain, %		14.8
σ_1 Failure, psf		2055.5
σ_3 Failure, psf		1101.6

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Soft to medium gray silty clay with calcareous nodules (CL)

Assumed Specific Gravity= 2.68

Remarks:
Point of failure selected after membrane correction was applied.

Figure _____

Client: CPRA

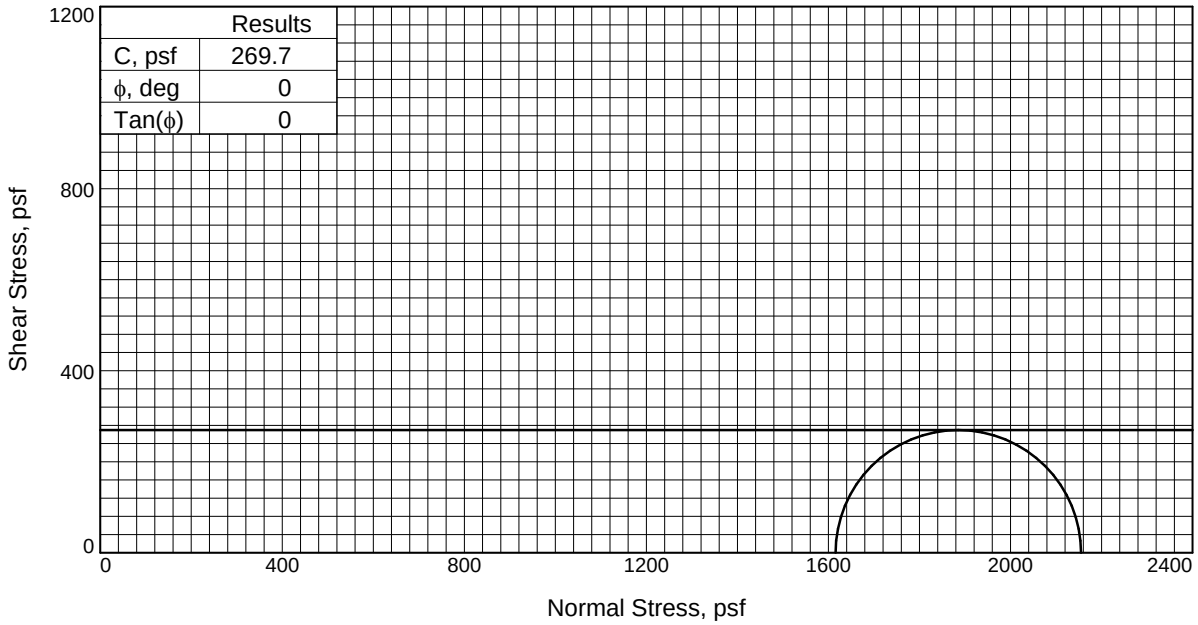
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

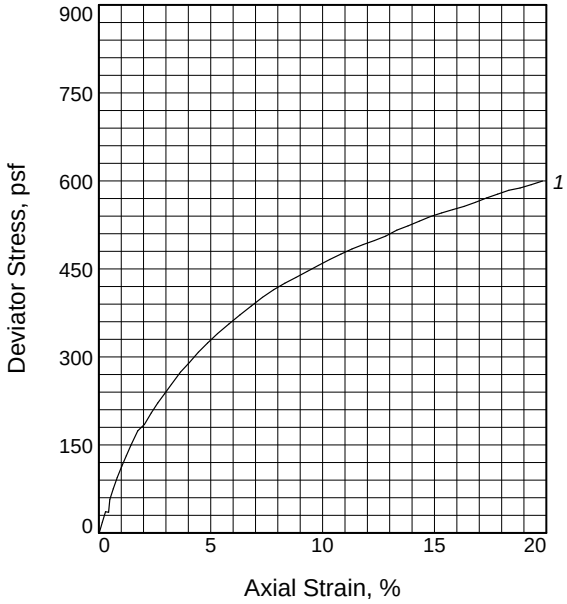
Source of Sample: B-12 **Depth:** 33' - 35'

Proj. No.: 16715-040-01 **Date Sampled:** 8/20/16

GeoEngineers

Tested By: TRC **Checked By:** KLA





Sample No.		1
Initial	Water Content, %	32.8
	Dry Density, pcf	89.8
	Saturation, %	101.9
	Void Ratio	0.8640
	Diameter, in.	2.870
	Height, in.	5.813
At Test	Water Content, %	32.8
	Dry Density, pcf	89.8
	Saturation, %	101.9
	Void Ratio	0.8640
	Diameter, in.	2.870
	Height, in.	5.813
Strain rate, in./min.		1.000
Back Pressure, psi		0.000
Cell Pressure, psi		11.220
Fail. Stress, psf		539.3
Strain, %		14.8
Ult. Stress, psf		539.3
Strain, %		14.8
σ_1 Failure, psf		2155.0
σ_3 Failure, psf		1615.7

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Soft gray silty clay (CL)

Assumed Specific Gravity= 2.68

Remarks:

Client: CPRA

Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

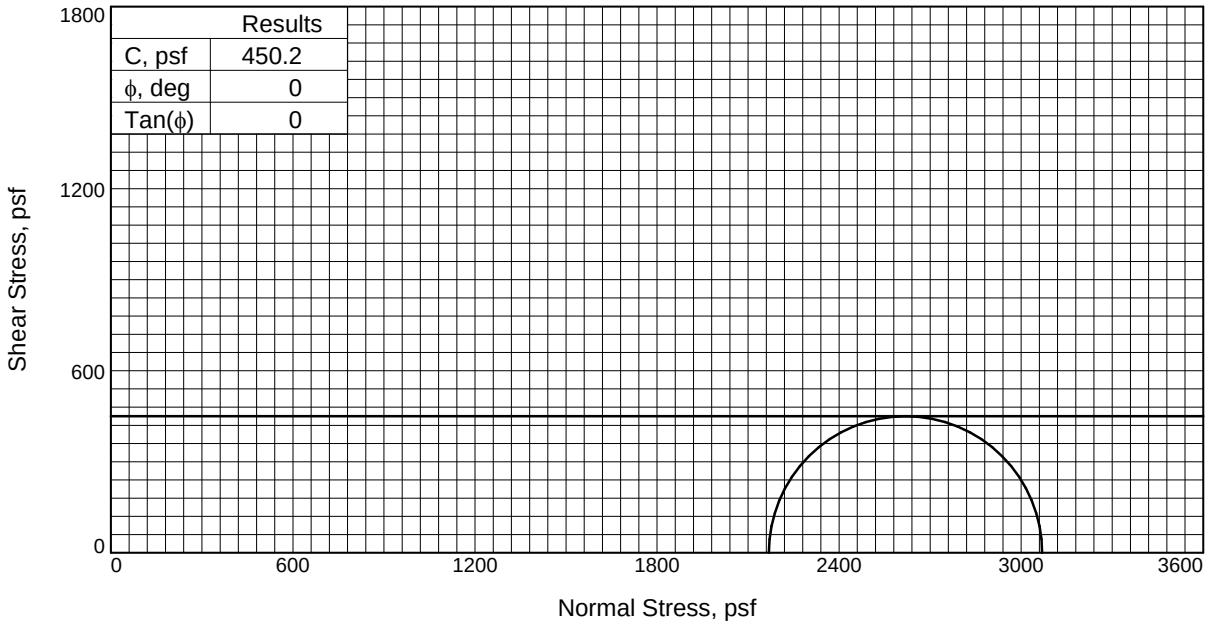
Source of Sample: B-12 **Depth:** 43' - 45'

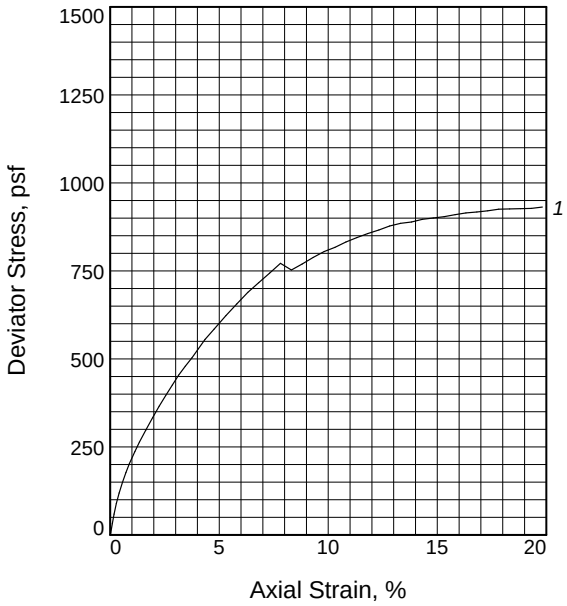
Proj. No.: 16715-040-01 **Date Sampled:** 8/20/16

GeoEngineers

Figure _____

Tested By: TRC **Checked By:** KLA





Sample No.		1
Initial	Water Content, %	31.7
	Dry Density, pcf	90.3
	Saturation, %	99.6
	Void Ratio	0.8535
	Diameter, in.	2.870
	Height, in.	5.786
At Test	Water Content, %	31.7
	Dry Density, pcf	90.3
	Saturation, %	99.6
	Void Ratio	0.8535
	Diameter, in.	2.870
	Height, in.	5.786
Strain rate, in./min.		1.000
Back Pressure, psi		0.000
Cell Pressure, psi		15.060
Fail. Stress, psf		900.4
Strain, %		14.8
Ult. Stress, psf		900.4
Strain, %		14.8
σ_1 Failure, psf		3069.1
σ_3 Failure, psf		2168.6

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Soft gray silty clay (CL)

Assumed Specific Gravity= 2.68

Remarks:
Point of failure selected after membrane correction was applied.

Figure _____

Client: CPRA

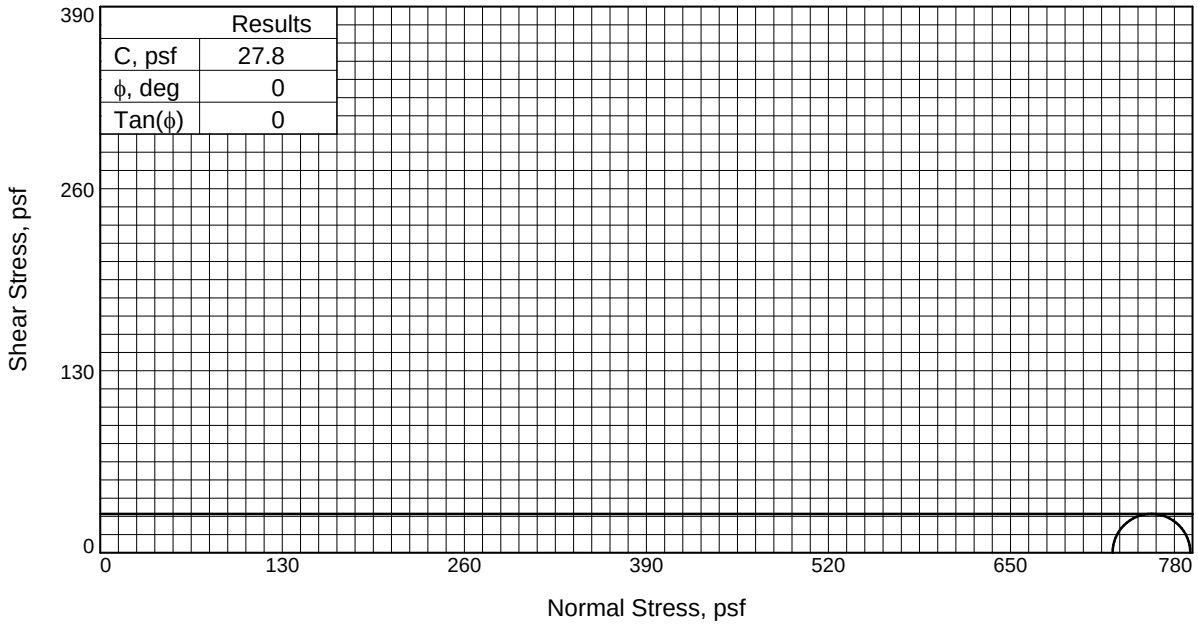
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

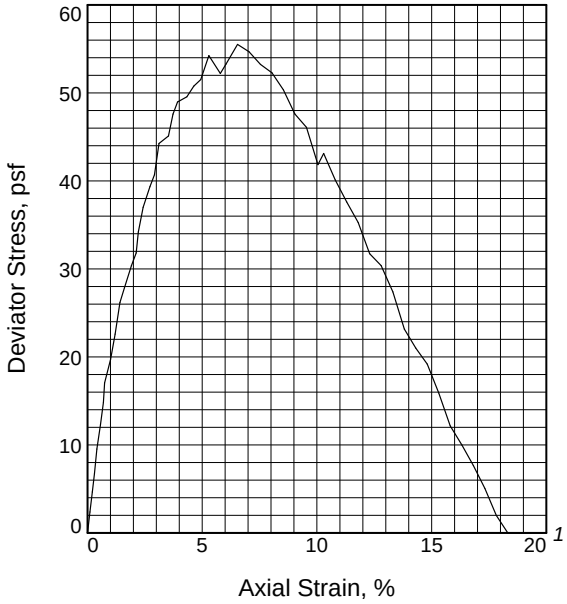
Source of Sample: B-12 **Depth:** 53' - 55'

Proj. No.: 16715-040-01 **Date Sampled:** 8/20/16

GEOENGINEERS

Tested By: TRC **Checked By:** KLA





Sample No.		1
Initial	Water Content, %	742.9
	Dry Density, pcf	7.8
	Saturation, %	98.8
	Void Ratio	16.1648
	Diameter, in.	2.857
	Height, in.	5.764
At Test	Water Content, %	742.9
	Dry Density, pcf	7.8
	Saturation, %	98.8
	Void Ratio	16.1648
	Diameter, in.	2.857
	Height, in.	5.764
Strain rate, in./min.		1.000
Back Pressure, psi		0.000
Cell Pressure, psi		5.020
Fail. Stress, psf		55.5
Strain, %		6.5
Ult. Stress, psf		19.2
Strain, %		14.8
σ_1 Failure, psf		778.4
σ_3 Failure, psf		722.9

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Very soft black peat with organic clay layer (PT)

Assumed Specific Gravity= 2.15

Remarks:
Point of failure selected after membrane correction was applied.

Figure _____

Client: CPRA

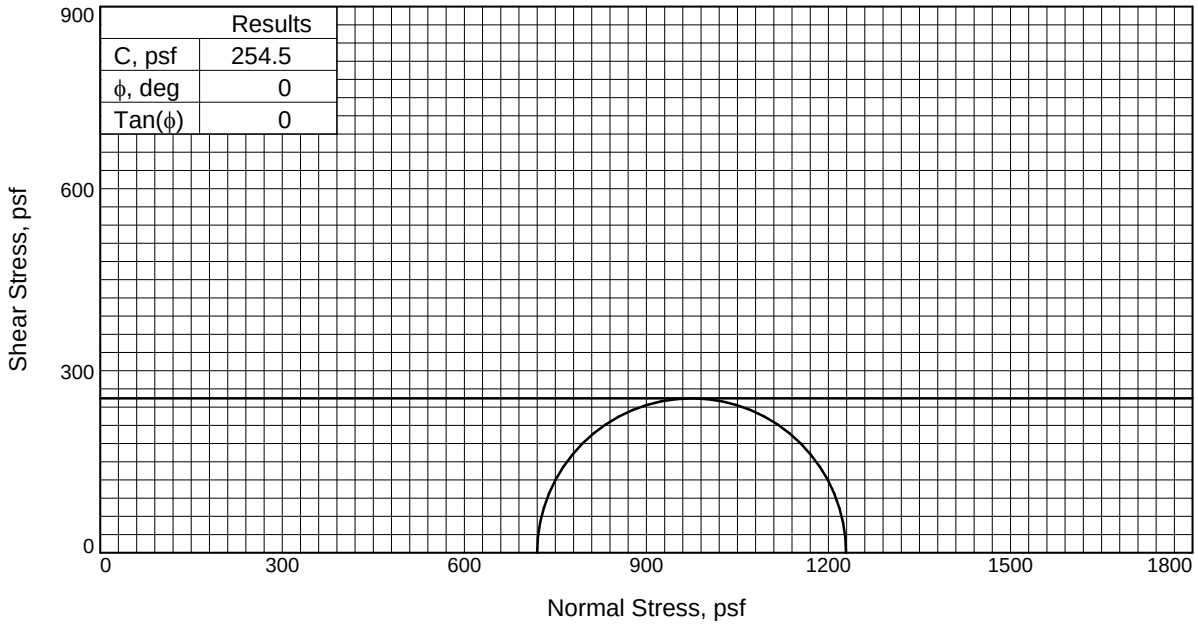
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

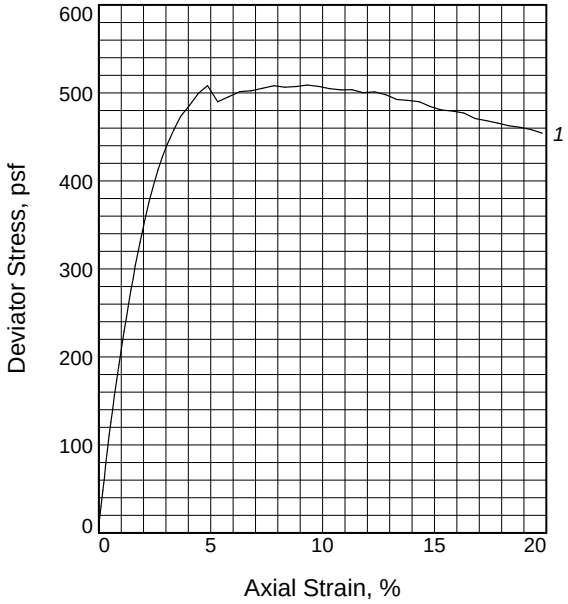
Source of Sample: B-13 **Depth:** 0' - 2'

Proj. No.: 16715-040-01 **Date Sampled:** 8/11/16

GEOENGINEERS

Tested By: TRC **Checked By:** JSA





Sample No.		1
Initial	Water Content, %	53.2
	Dry Density, pcf	70.8
	Saturation, %	106.9
	Void Ratio	1.2963
	Diameter, in.	2.801
	Height, in.	6.038
At Test	Water Content, %	53.2
	Dry Density, pcf	70.8
	Saturation, %	106.9
	Void Ratio	1.2963
	Diameter, in.	2.801
	Height, in.	6.038
Strain rate, in./min.		0.999
Back Pressure, psi		0.000
Cell Pressure, psi		5.000
Fail. Stress, psf		509.0
Strain, %		9.3
Ult. Stress, psf		484.6
Strain, %		14.8
σ_1 Failure, psf		1229.0
σ_3 Failure, psf		720.0

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: Soft gray clay with silt seams

LL= 47 **PL=** 21 **PI=** 26
Specific Gravity= 2.604
Remarks:
Point of failure selected after membrane correction was applied.

Figure _____

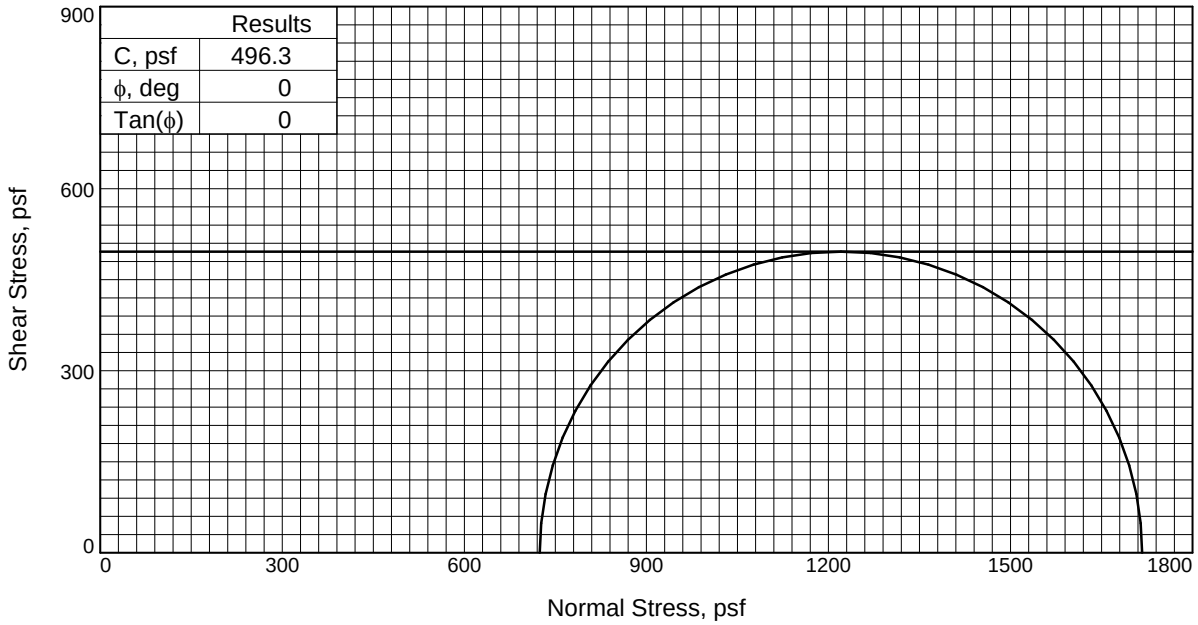
Client: CPRA

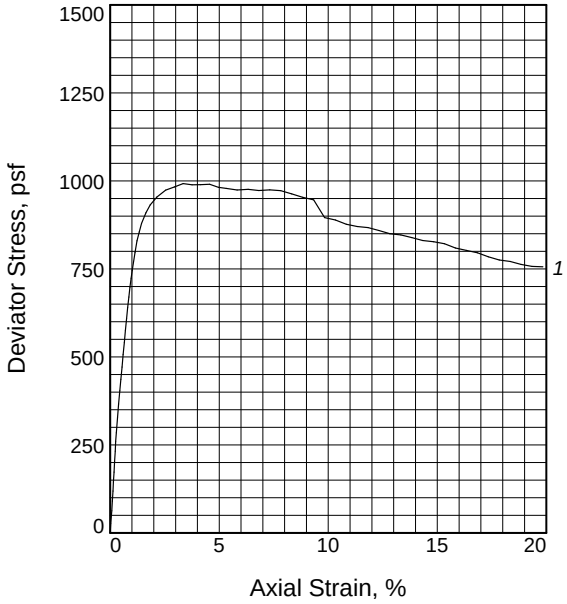
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana
Source of Sample: B-13 **Depth:** 18' - 20'

Proj. No.: 16715-040-01 **Date Sampled:** 8/11/16

GEOENGINEERS

Tested By: TRC **Checked By:** JSA





Sample No.		1
Initial	Water Content, %	36.2
	Dry Density, pcf	85.5
	Saturation, %	100.6
	Void Ratio	0.9713
	Diameter, in.	2.854
	Height, in.	6.042
At Test	Water Content, %	36.2
	Dry Density, pcf	85.5
	Saturation, %	100.6
	Void Ratio	0.9713
	Diameter, in.	2.854
	Height, in.	6.042
Strain rate, in./min.		0.999
Back Pressure, psi		0.000
Cell Pressure, psi		5.030
Fail. Stress, psf		992.6
Strain, %		3.3
Ult. Stress, psf		827.5
Strain, %		14.8
σ_1 Failure, psf		1716.9
σ_3 Failure, psf		724.3

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: Medium gray clay (CH)

LL= 53 **PL=** 18 **PI=** 35
Assumed Specific Gravity= 2.70
Remarks:

Client: CPRA

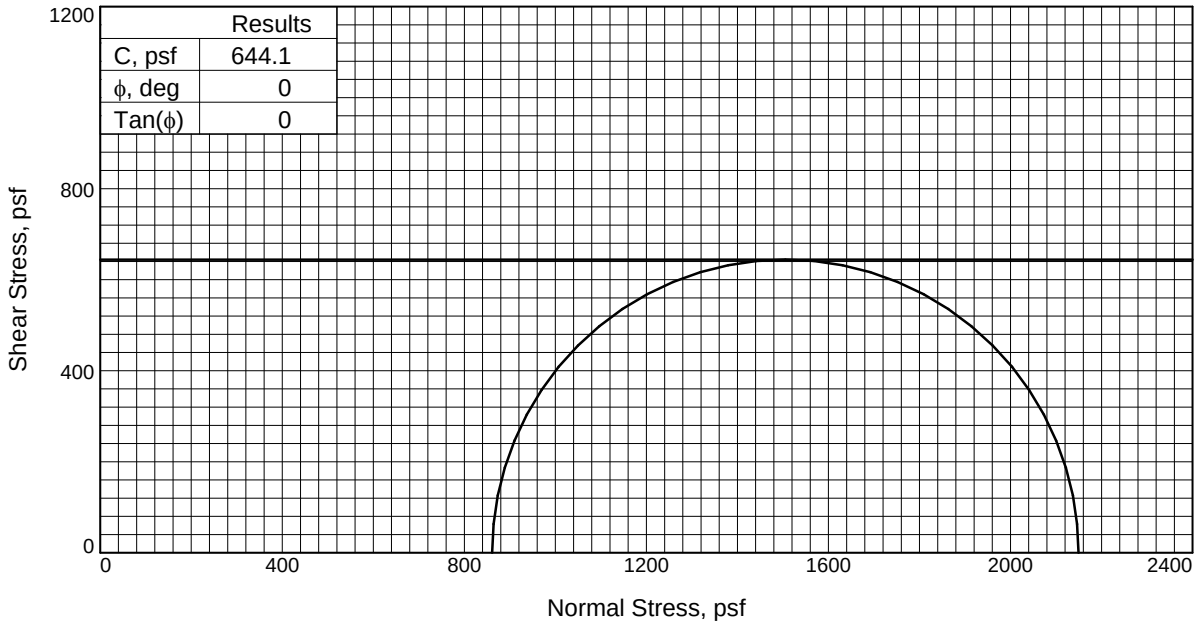
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana
Source of Sample: B-13 **Depth:** 23' - 25'

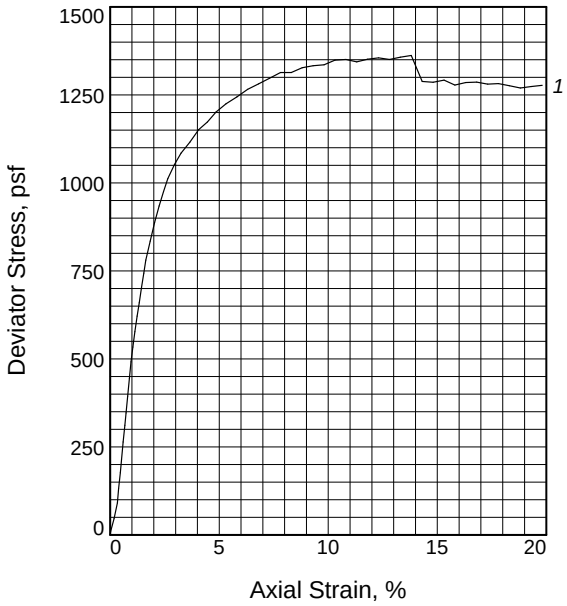
Proj. No.: 16715-040-01 **Date Sampled:** 8/11/16

GeoEngineers

Figure _____

Tested By: CLP **Checked By:** JSA





Sample No.		1
Initial	Water Content, %	38.5
	Dry Density, pcf	82.5
	Saturation, %	99.6
	Void Ratio	1.0434
	Diameter, in.	2.839
	Height, in.	6.069
At Test	Water Content, %	38.5
	Dry Density, pcf	82.5
	Saturation, %	99.6
	Void Ratio	1.0434
	Diameter, in.	2.839
	Height, in.	6.069
Strain rate, in./min.		1.000
Back Pressure, psi		0.000
Cell Pressure, psi		5.980
Fail. Stress, psf		1288.3
Strain, %		14.3
Ult. Stress, psf		1285.9
Strain, %		14.8
σ_1 Failure, psf		2149.4
σ_3 Failure, psf		861.1

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Medium to stiff gray clay with silt seams and organics (CH)

Assumed Specific Gravity= 2.70

Remarks:
Point of failure selected after membrane correction was applied.

Figure _____

Client: CPRA

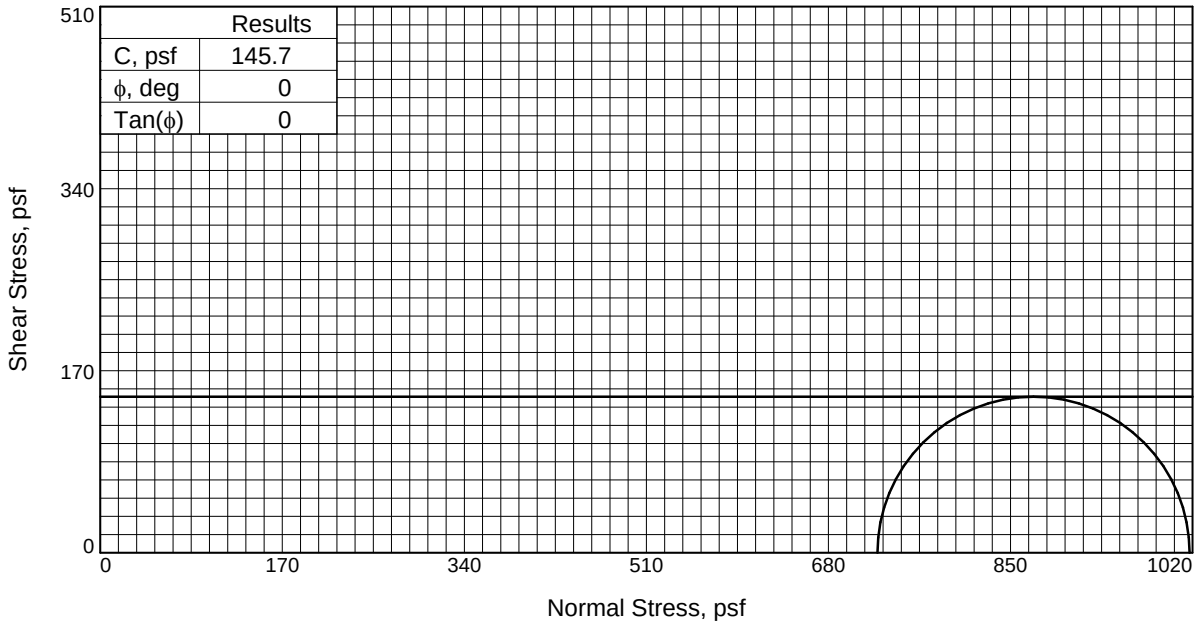
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

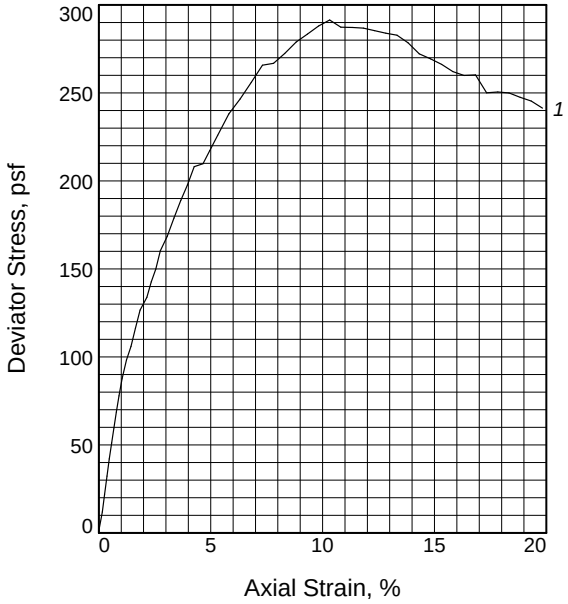
Source of Sample: B-13 **Depth:** 28' - 30'

Proj. No.: 16715-040-01 **Date Sampled:** 8/11/16

GeoEngineers

Tested By: CLP **Checked By:** JSA/KLA





Sample No.		1
Initial	Water Content, %	290.0
	Dry Density, pcf	19.0
	Saturation, %	102.7
	Void Ratio	6.0710
	Diameter, in.	2.791
	Height, in.	6.014
At Test	Water Content, %	290.0
	Dry Density, pcf	19.0
	Saturation, %	102.7
	Void Ratio	6.0710
	Diameter, in.	2.791
	Height, in.	6.014
Strain rate, in./min.		1.000
Back Pressure, psi		0.000
Cell Pressure, psi		5.040
Fail. Stress, psf		291.5
Strain, %		10.3
Ult. Stress, psf		269.4
Strain, %		14.8
σ_1 Failure, psf		1017.2
σ_3 Failure, psf		725.8

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Very soft black peat (PT)

Assumed Specific Gravity= 2.15

Remarks:

Client: CPRA

Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

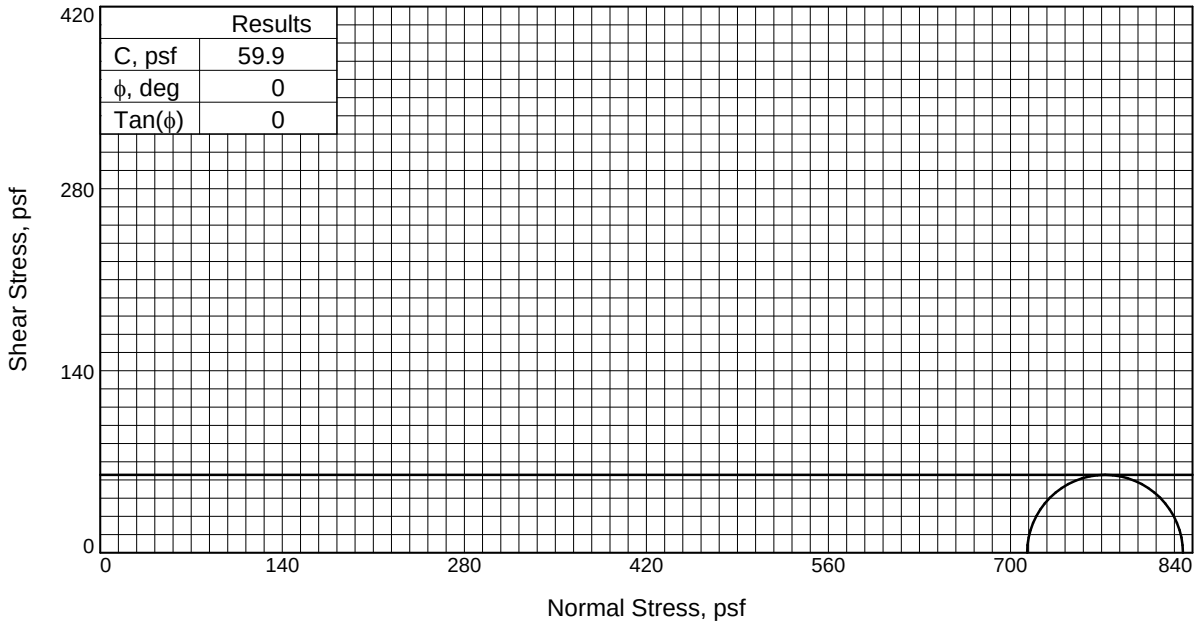
Source of Sample: B-14 **Depth:** 1' - 2'

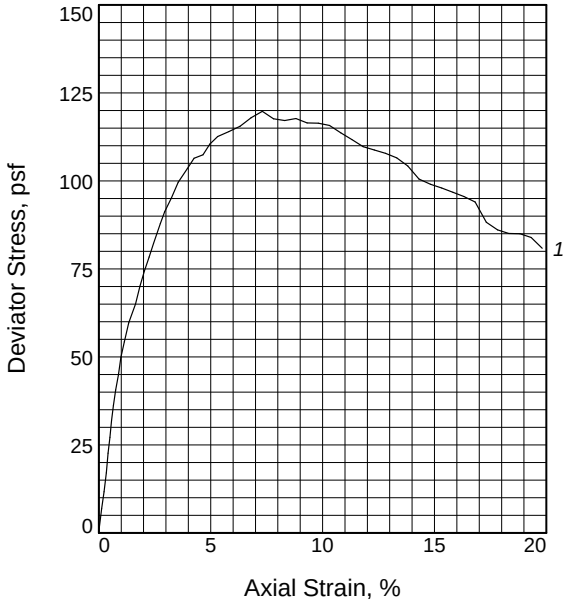
Proj. No.: 16715-040-01 **Date Sampled:** 8/11/16

GeoEngineers

Figure _____

Tested By: SRT **Checked By:** JSA





Sample No.		1
Initial	Water Content, %	71.5
	Dry Density, pcf	58.5
	Saturation, %	102.5
	Void Ratio	1.8835
	Diameter, in.	2.760
	Height, in.	5.998
At Test	Water Content, %	71.5
	Dry Density, pcf	58.5
	Saturation, %	102.5
	Void Ratio	1.8835
	Diameter, in.	2.760
	Height, in.	5.998
Strain rate, in./min.		0.999
Back Pressure, psi		0.000
Cell Pressure, psi		4.950
Fail. Stress, psf		119.8
Strain, %		7.3
Ult. Stress, psf		99.1
Strain, %		14.8
σ_1 Failure, psf		832.6
σ_3 Failure, psf		712.8

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Very soft dark gray clay with roots (CH)

LL= 66 **PL=** 22 **PI=** 44

Assumed Specific Gravity= 2.70

Remarks:

Figure _____

Client: CPRA

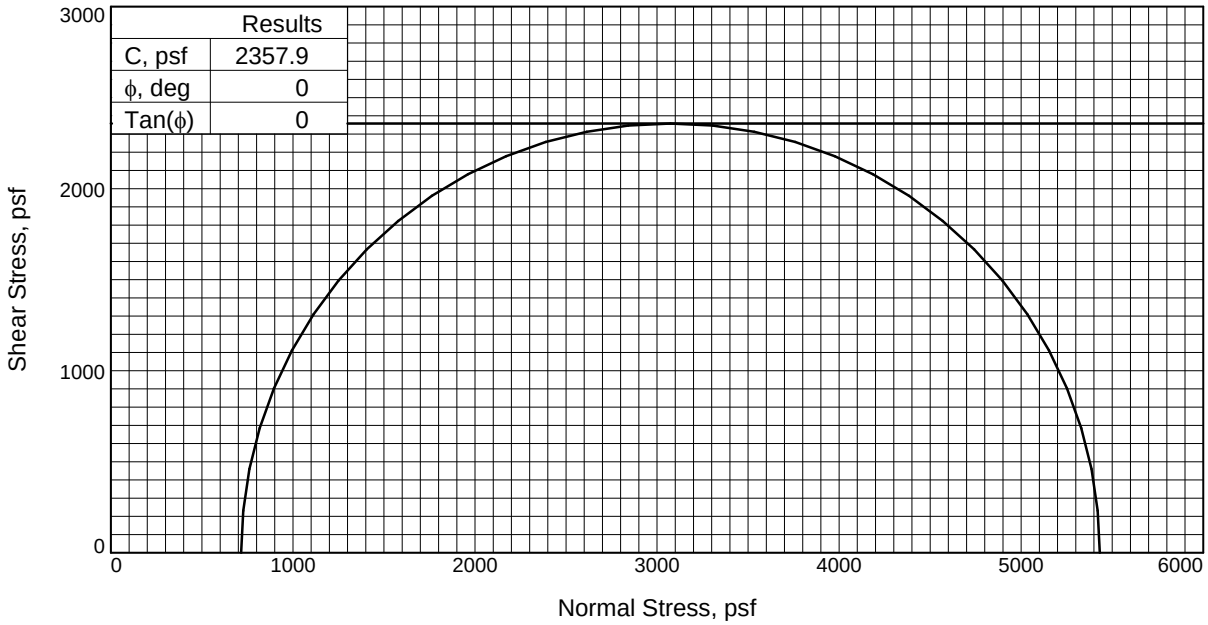
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

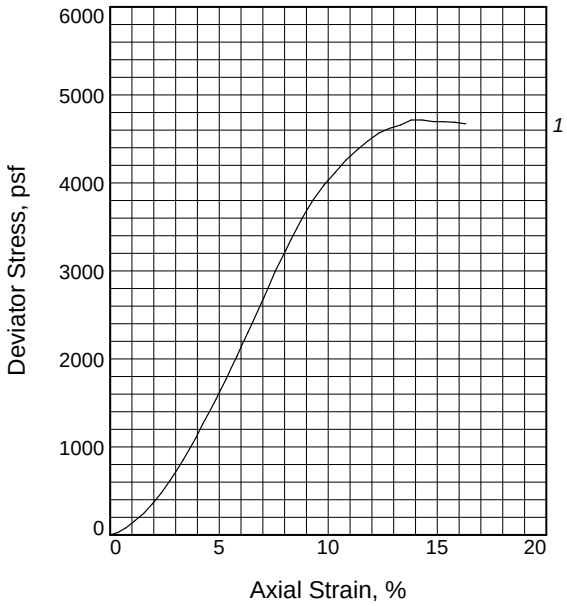
Source of Sample: B-14 **Depth:** 4' - 6'

Proj. No.: 16715-040-01 **Date Sampled:** 8/11/16

GeoEngineers

Tested By: SRT **Checked By:** JSA





Sample No.		1
Initial	Water Content, %	26.3
	Dry Density, pcf	98.4
	Saturation, %	100.6
	Void Ratio	0.7002
	Diameter, in.	2.850
	Height, in.	5.907
At Test	Water Content, %	26.3
	Dry Density, pcf	98.4
	Saturation, %	100.6
	Void Ratio	0.7002
	Diameter, in.	2.850
	Height, in.	5.907
Strain rate, in./min.		0.816
Back Pressure, psi		0.000
Cell Pressure, psi		4.970
Fail. Stress, psf		4715.9
Strain, %		13.8
Ult. Stress, psf		4697.8
Strain, %		14.8
σ_1 Failure, psf		5431.5
σ_3 Failure, psf		715.7

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Dark gray clayey sand (SC)

Assumed Specific Gravity= 2.68

Remarks:

Figure _____

Client: CPRA

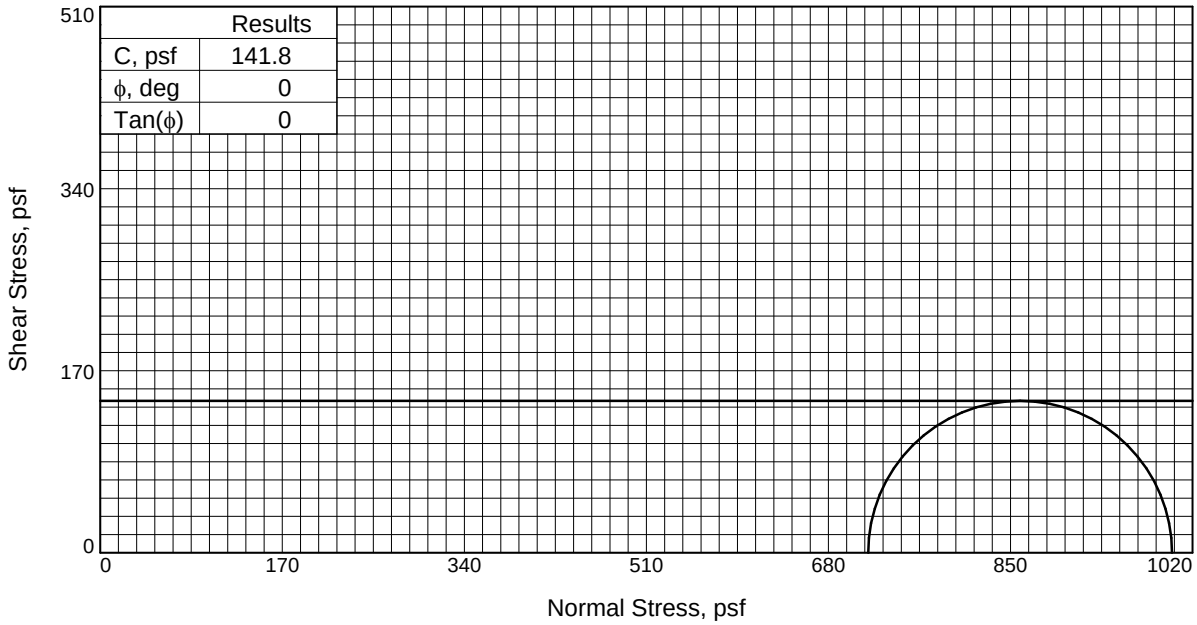
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

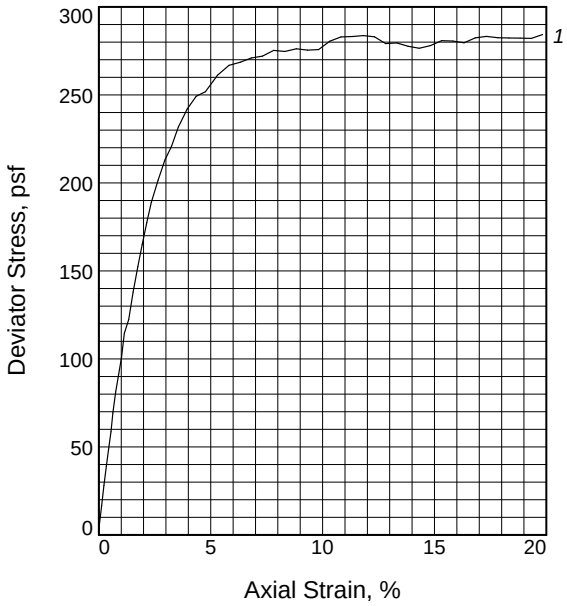
Source of Sample: B-14 **Depth:** 6' - 8'

Proj. No.: 16715-040-01 **Date Sampled:** 8/11/16

GeoEngineers

Tested By: SRT **Checked By:** JSA





Sample No.		1
Initial	Water Content, %	35.3
	Dry Density, pcf	84.5
	Saturation, %	96.5
	Void Ratio	0.9806
	Diameter, in.	2.784
	Height, in.	5.965
At Test	Water Content, %	35.3
	Dry Density, pcf	84.5
	Saturation, %	96.5
	Void Ratio	0.9806
	Diameter, in.	2.784
	Height, in.	5.965
Strain rate, in./min.		1.000
Back Pressure, psi		0.000
Cell Pressure, psi		4.980
Fail. Stress, psf		283.7
Strain, %		11.8
Ult. Stress, psf		278.0
Strain, %		14.8
σ_1 Failure, psf		1000.8
σ_3 Failure, psf		717.1

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Very soft dark gray silty clay with sand (CL)

LL= 33 **PL=** 17 **PI=** 16

Assumed Specific Gravity= 2.68

Remarks: % -200 = 83.0

Client: CPRA

Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

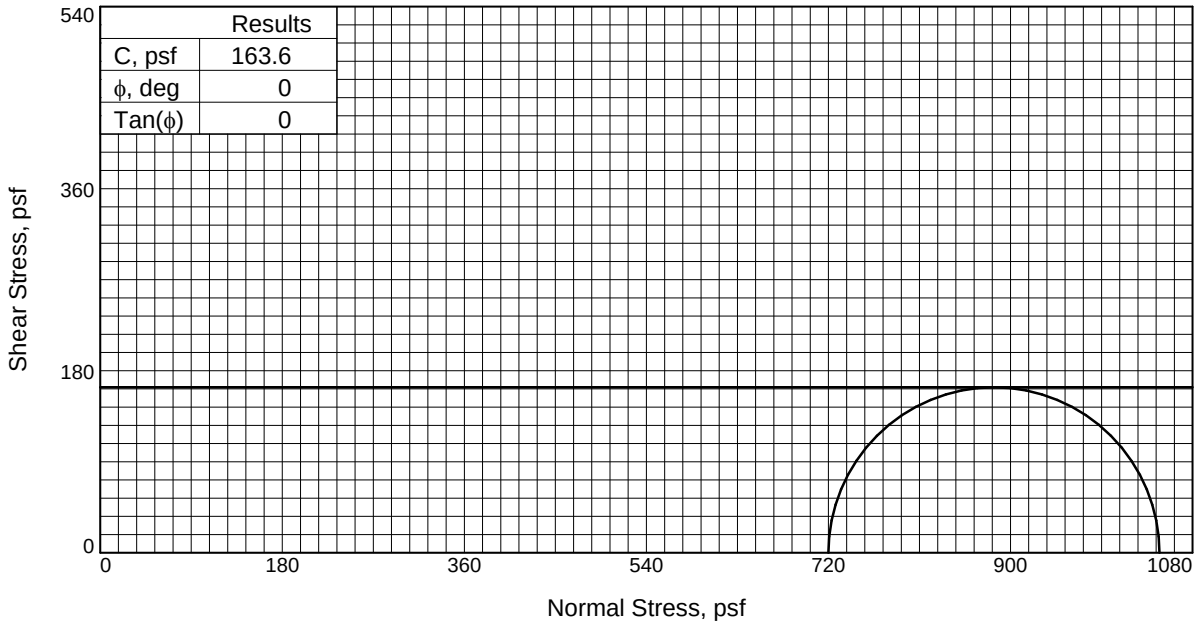
Source of Sample: B-14 **Depth:** 8' - 10'

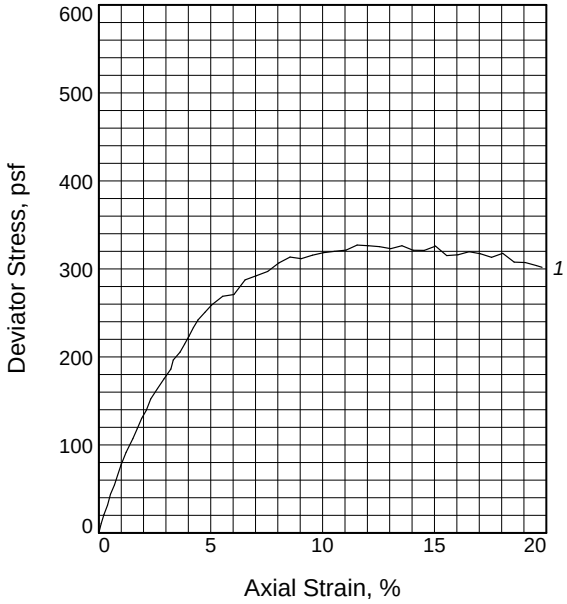
Proj. No.: 16715-040-01 **Date Sampled:** 8/11/16

GeoEngineers

Figure _____

Tested By: SRT **Checked By:** JSA





Sample No.		1
Initial	Water Content, %	43.2
	Dry Density, pcf	79.2
	Saturation, %	104.0
	Void Ratio	1.1135
	Diameter, in.	2.770
	Height, in.	5.997
At Test	Water Content, %	43.2
	Dry Density, pcf	79.2
	Saturation, %	104.0
	Void Ratio	1.1135
	Diameter, in.	2.770
	Height, in.	5.997
Strain rate, in./min.		1.000
Back Pressure, psi		0.000
Cell Pressure, psi		5.000
Fail. Stress, psf		327.2
Strain, %		11.5
Ult. Stress, psf		325.9
Strain, %		15.0
σ_1 Failure, psf		1047.2
σ_3 Failure, psf		720.0

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Very soft dark gray silty clay (CL)

Assumed Specific Gravity= 2.68

Remarks:

Client: CPRA

Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

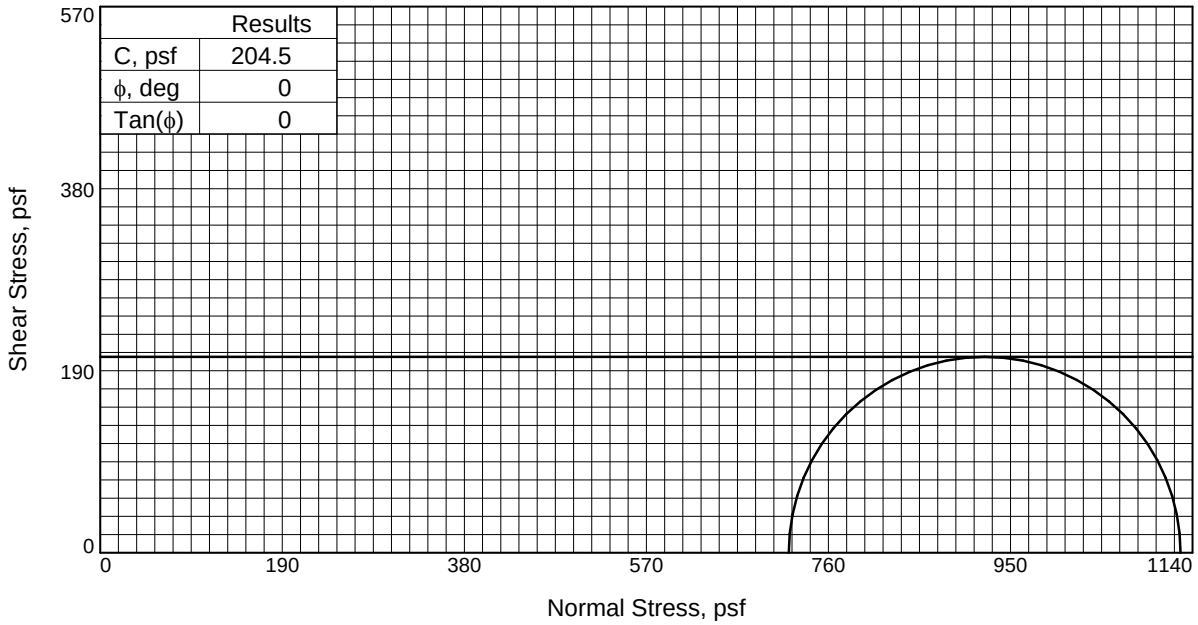
Source of Sample: B-14 **Depth:** 10' - 12'

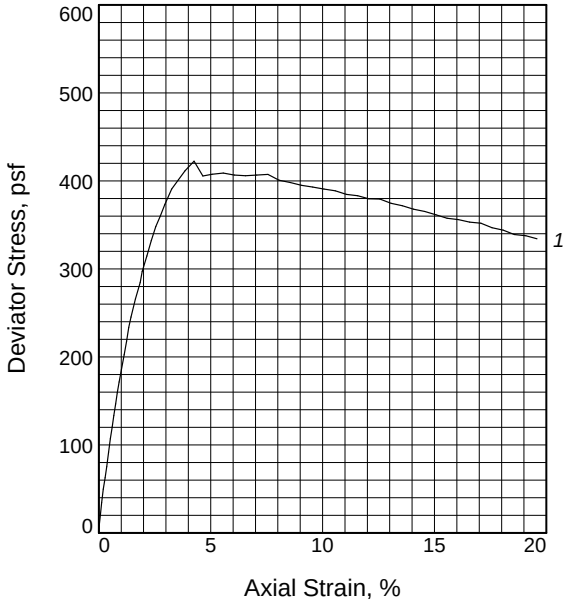
Proj. No.: 16715-040-01 **Date Sampled:** 8/11/16

GeoEngineers

Figure _____

Tested By: SRT **Checked By:** JSA





Sample No.		1
Initial	Water Content, %	69.6
	Dry Density, pcf	58.9
	Saturation, %	101.0
	Void Ratio	1.8608
	Diameter, in.	2.792
	Height, in.	6.045
At Test	Water Content, %	69.6
	Dry Density, pcf	58.9
	Saturation, %	101.0
	Void Ratio	1.8608
	Diameter, in.	2.792
	Height, in.	6.045
Strain rate, in./min.		1.001
Back Pressure, psi		0.000
Cell Pressure, psi		4.990
Fail. Stress, psf		408.9
Strain, %		5.6
Ult. Stress, psf		365.4
Strain, %		14.6
σ_1 Failure, psf		1127.5
σ_3 Failure, psf		718.6

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Very soft dark gray clay with silty sand lenses and mica (CH)

Assumed Specific Gravity= 2.70

Remarks:
Point of failure selected after membrane correction was applied.

Figure _____

Client: CPRA

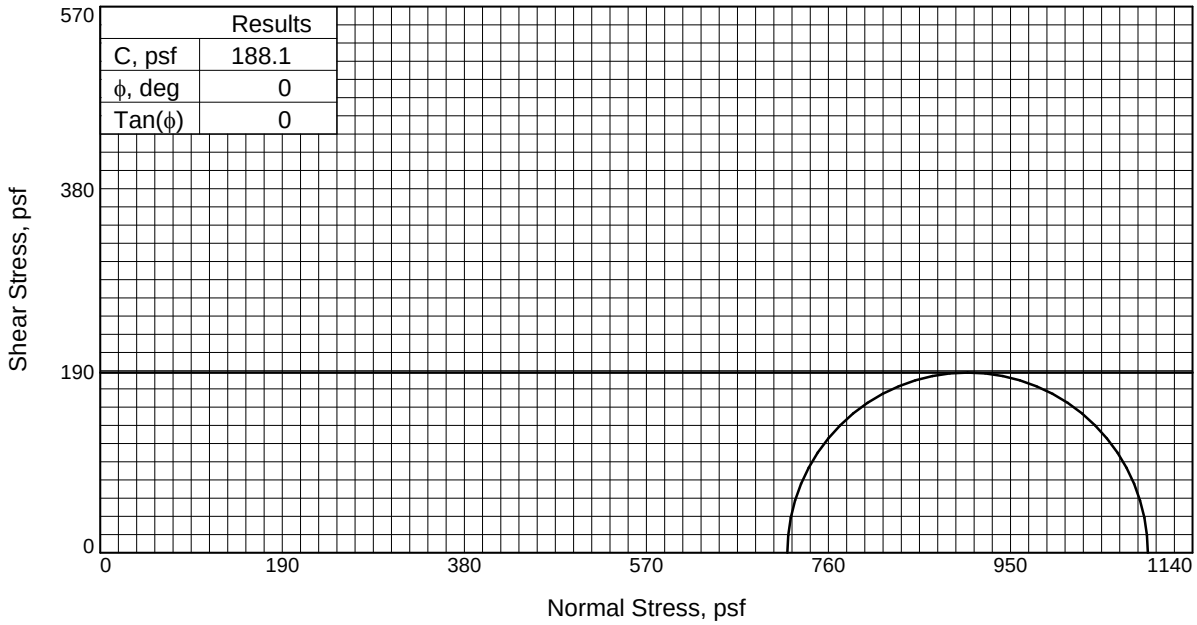
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

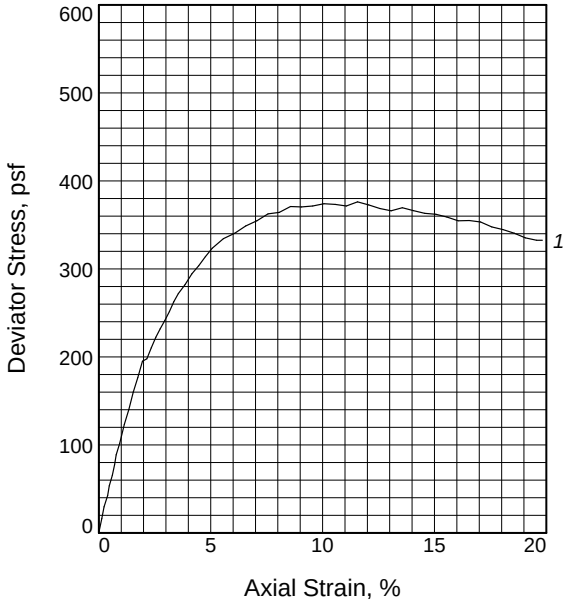
Source of Sample: B-14 **Depth:** 14' - 16'

Proj. No.: 16715-040-01 **Date Sampled:** 8/11/16

GEOENGINEERS

Tested By: SRT **Checked By:** JSA





Sample No.		1
Initial	Water Content, %	34.7
	Dry Density, pcf	87.4
	Saturation, %	103.9
	Void Ratio	0.8776
	Diameter, in.	2.779
	Height, in.	6.000
At Test	Water Content, %	34.7
	Dry Density, pcf	87.4
	Saturation, %	103.9
	Void Ratio	0.8776
	Diameter, in.	2.779
	Height, in.	6.000
Strain rate, in./min.		1.000
Back Pressure, psi		0.000
Cell Pressure, psi		4.980
Fail. Stress, psf		376.2
Strain, %		11.6
Ult. Stress, psf		363.2
Strain, %		14.6
σ_1 Failure, psf		1093.3
σ_3 Failure, psf		717.1

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: Very soft dark gray silty clay

LL= 38 **PL=** 18 **PI=** 20
Specific Gravity= 2.630
Remarks:

Client: CPRA

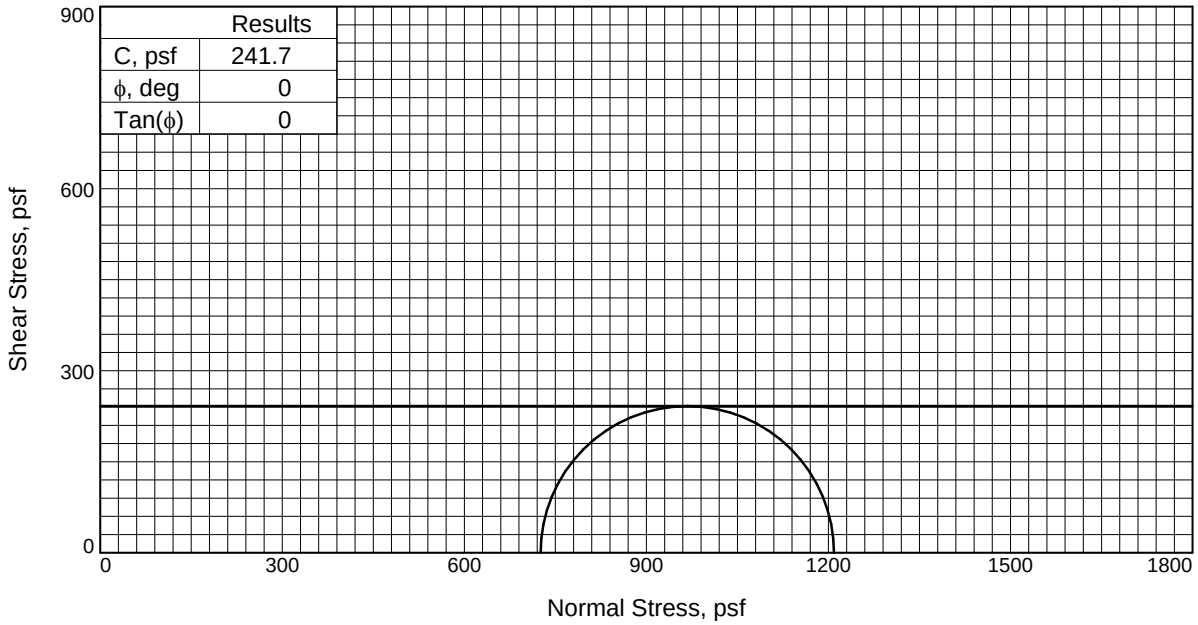
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana
Source of Sample: B-14 **Depth:** 16' - 18'

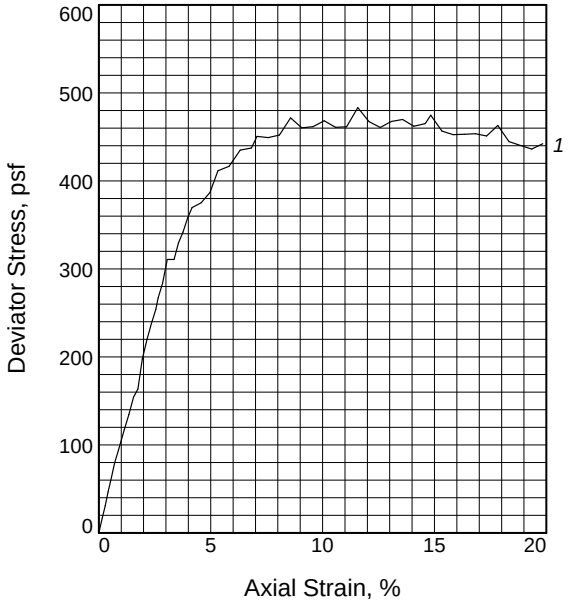
Proj. No.: 16715-040-01 **Date Sampled:**

GeoEngineers

Figure _____

Tested By: SLC **Checked By:** KLA





Sample No.		1
Initial	Water Content, %	38.1
	Dry Density, pcf	83.3
	Saturation, %	101.2
	Void Ratio	1.0092
	Diameter, in.	2.796
	Height, in.	6.026
At Test	Water Content, %	38.1
	Dry Density, pcf	83.3
	Saturation, %	101.2
	Void Ratio	1.0092
	Diameter, in.	2.796
	Height, in.	6.026
Strain rate, in./min.		1.000
Back Pressure, psi		0.000
Cell Pressure, psi		5.040
Fail. Stress, psf		483.3
Strain, %		11.6
Ult. Stress, psf		474.8
Strain, %		14.8
σ_1 Failure, psf		1209.1
σ_3 Failure, psf		725.8

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Very soft brown silty clay (CL)

Assumed Specific Gravity= 2.68

Remarks:

Client: CPRA

Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

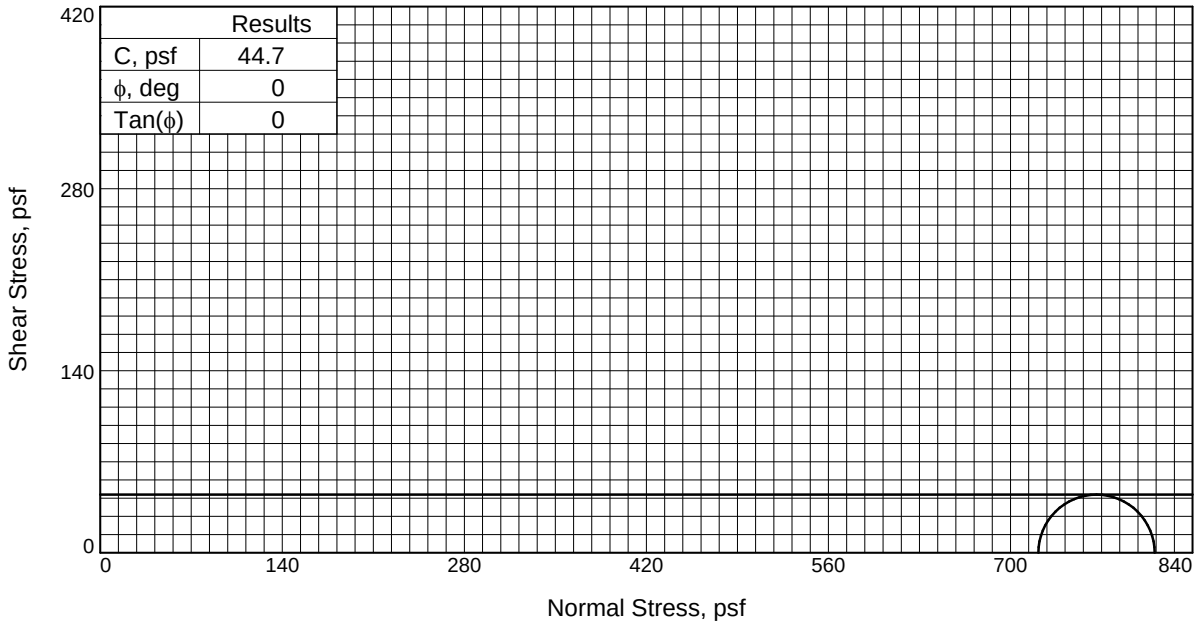
Source of Sample: B-14 **Depth:** 18' - 20'

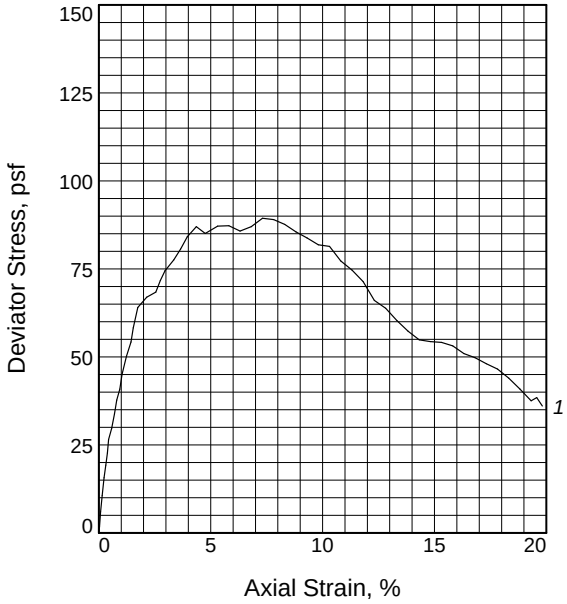
Proj. No.: 16715-040-01 **Date Sampled:** 8/12/16

GeoEngineers

Figure _____

Tested By: SRT **Checked By:** JSA





Sample No.		1
Initial	Water Content, %	179.2
	Dry Density, pcf	28.7
	Saturation, %	101.3
	Void Ratio	4.3511
	Diameter, in.	2.812
	Height, in.	5.944
At Test	Water Content, %	179.2
	Dry Density, pcf	28.7
	Saturation, %	101.3
	Void Ratio	4.3511
	Diameter, in.	2.812
	Height, in.	5.944
Strain rate, in./min.		1.000
Back Pressure, psi		0.000
Cell Pressure, psi		5.010
Fail. Stress, psf		89.4
Strain, %		7.3
Ult. Stress, psf		54.4
Strain, %		14.8
σ_1 Failure, psf		810.8
σ_3 Failure, psf		721.4

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Very soft dark gray organic clay with peat pockets (OH)

LL= 130 **PL=** 34 **PI=** 96

Assumed Specific Gravity= 2.46

Remarks:

Figure _____

Client: CPRA

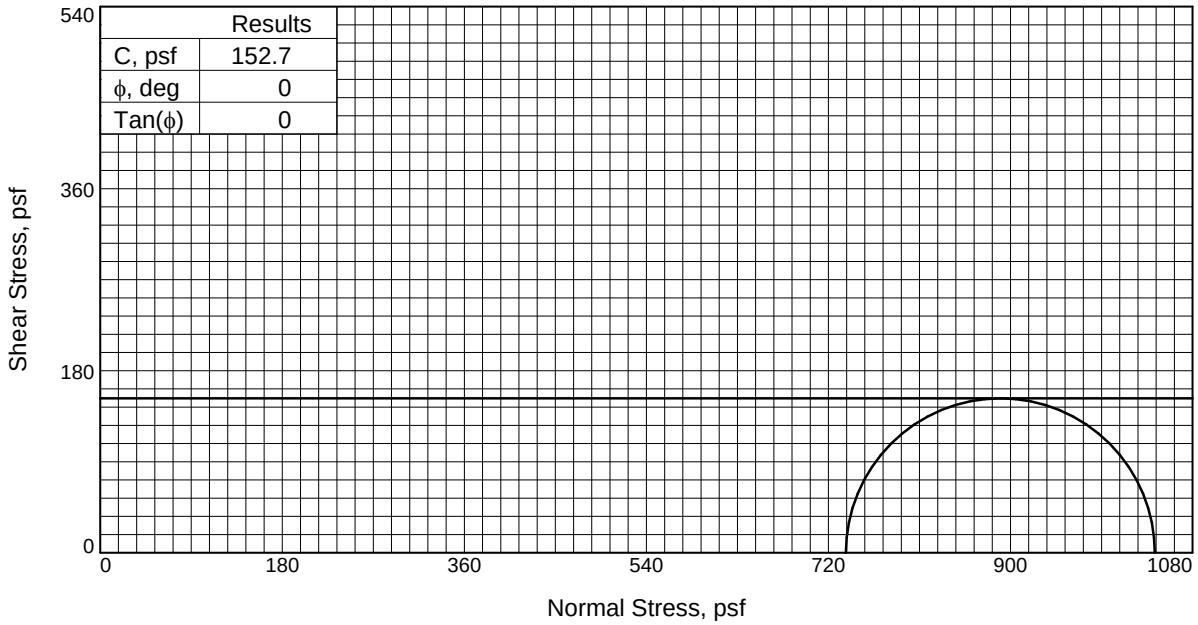
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

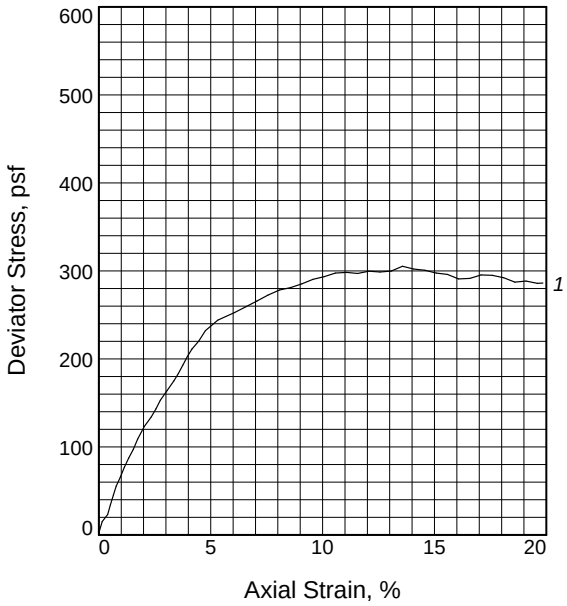
Source of Sample: B-15 **Depth:** 0' - 2'

Proj. No.: 16715-040-01 **Date Sampled:** 8/11/16

GeoEngineers

Tested By: CLP **Checked By:** JSA





Sample No.		1
Initial	Water Content, %	51.6
	Dry Density, pcf	70.1
	Saturation, %	99.5
	Void Ratio	1.3946
	Diameter, in.	2.816
	Height, in.	5.964
At Test	Water Content, %	51.6
	Dry Density, pcf	70.1
	Saturation, %	99.5
	Void Ratio	1.3946
	Diameter, in.	2.816
	Height, in.	5.964
Strain rate, in./min.		0.999
Back Pressure, psi		0.000
Cell Pressure, psi		5.120
Fail. Stress, psf		305.4
Strain, %		13.6
Ult. Stress, psf		300.8
Strain, %		14.6
σ_1 Failure, psf		1042.6
σ_3 Failure, psf		737.3

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Very soft gray clay with silt lenses

LL= 81 **PL=** 22 **PI=** 59

Specific Gravity= 2.688

Remarks: % Organic = 2.0

Client: CPRA

Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

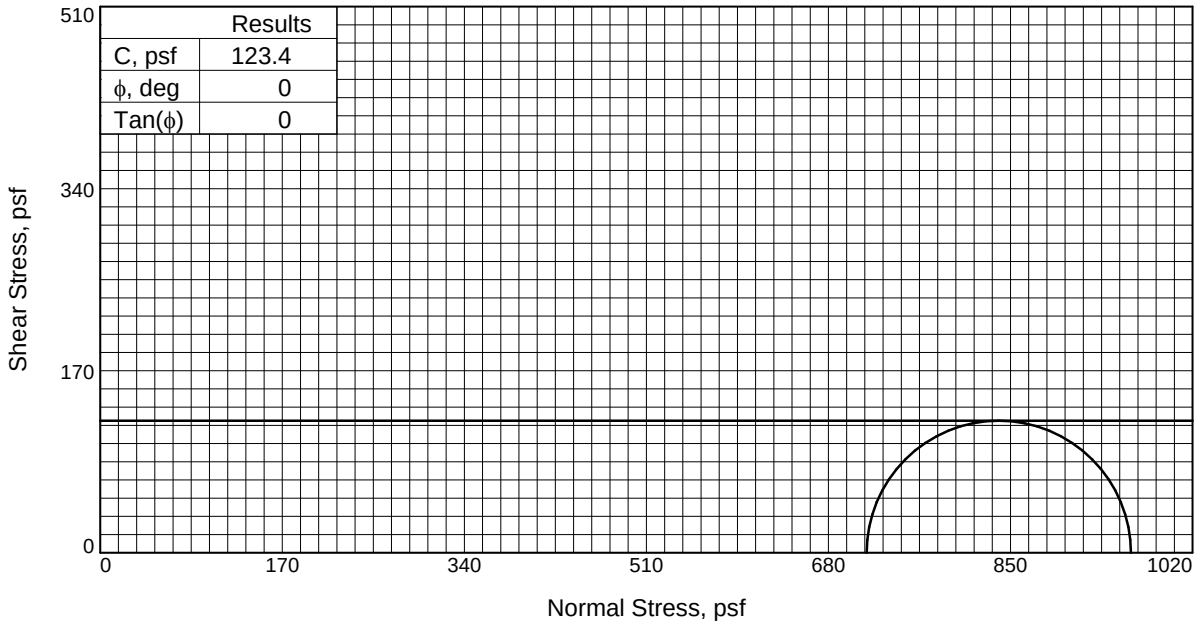
Source of Sample: B-15 **Depth:** 10' - 12'

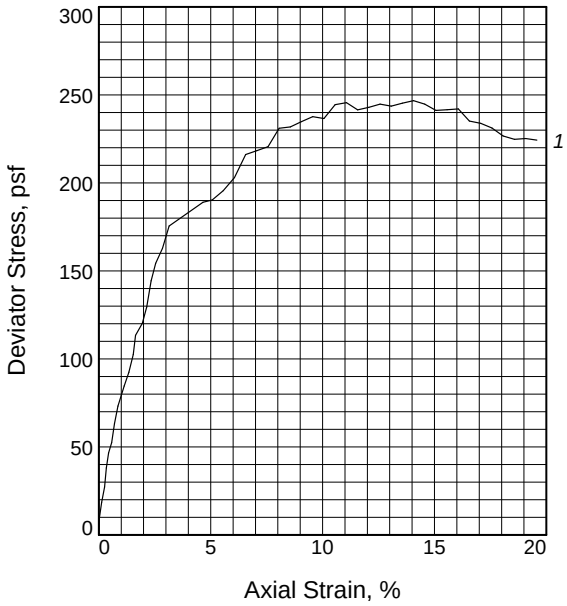
Proj. No.: 16715-040-01 **Date Sampled:** 8/11/12

GeoEngineers

Figure _____

Tested By: CLP **Checked By:** JSA





Sample No.		1
Initial	Water Content, %	72.0
	Dry Density, pcf	58.3
	Saturation, %	102.7
	Void Ratio	1.8926
	Diameter, in.	2.859
	Height, in.	5.947
At Test	Water Content, %	72.0
	Dry Density, pcf	58.3
	Saturation, %	102.7
	Void Ratio	1.8926
	Diameter, in.	2.859
	Height, in.	5.947
Strain rate, in./min.		1.000
Back Pressure, psi		0.000
Cell Pressure, psi		4.970
Fail. Stress, psf		246.7
Strain, %		14.1
Ult. Stress, psf		244.8
Strain, %		14.6
σ_1 Failure, psf		962.4
σ_3 Failure, psf		715.7

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Very soft dark gray clay with silt lenses (CH)

LL= 59 **PL=** 21 **PI=** 38

Assumed Specific Gravity= 2.70

Remarks:

Figure _____

Client: CPRA

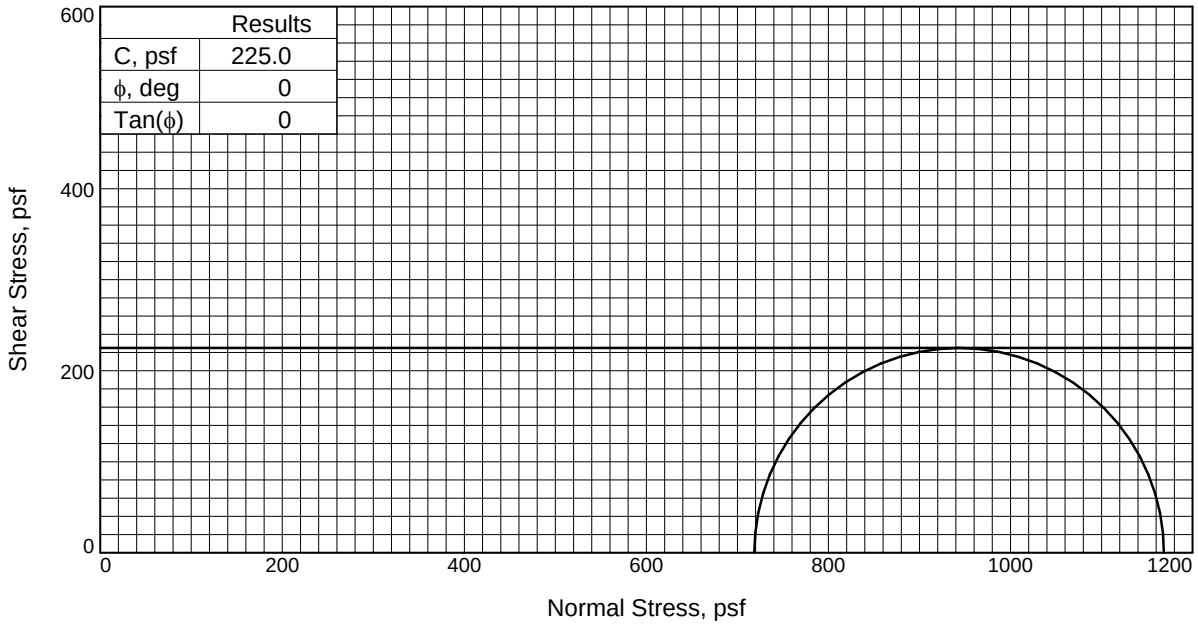
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

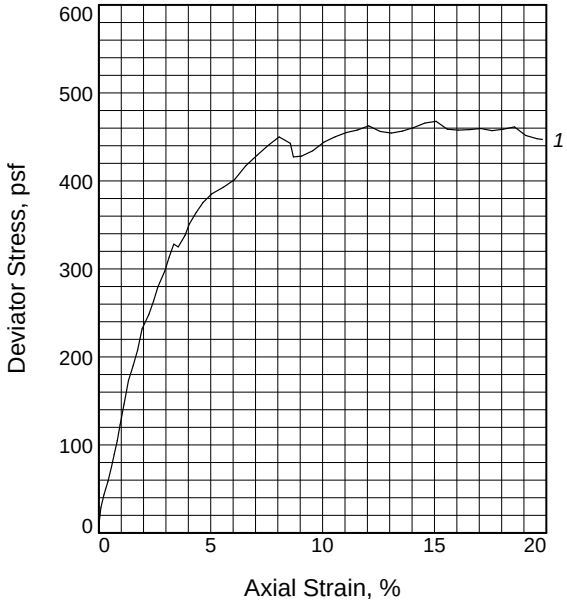
Source of Sample: B-15 **Depth:** 12' - 14'

Proj. No.: 16715-040-01 **Date Sampled:** 8/11/16

GEOENGINEERS

Tested By: CLP **Checked By:** JSA





Sample No.		1
Initial	Water Content, %	34.8
	Dry Density, pcf	88.0
	Saturation, %	103.6
	Void Ratio	0.9009
	Diameter, in.	2.826
	Height, in.	5.729
At Test	Water Content, %	34.8
	Dry Density, pcf	88.0
	Saturation, %	103.6
	Void Ratio	0.9009
	Diameter, in.	2.826
	Height, in.	5.729
Strain rate, in./min.		1.000
Back Pressure, psi		0.000
Cell Pressure, psi		4.990
Fail. Stress, psf		450.0
Strain, %		8.1
Ult. Stress, psf		465.8
Strain, %		14.6
σ_1 Failure, psf		1168.5
σ_3 Failure, psf		718.6

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Very soft dark gray silty clay (CL)

Assumed Specific Gravity= 2.68

Remarks:

Client: CPRA

Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

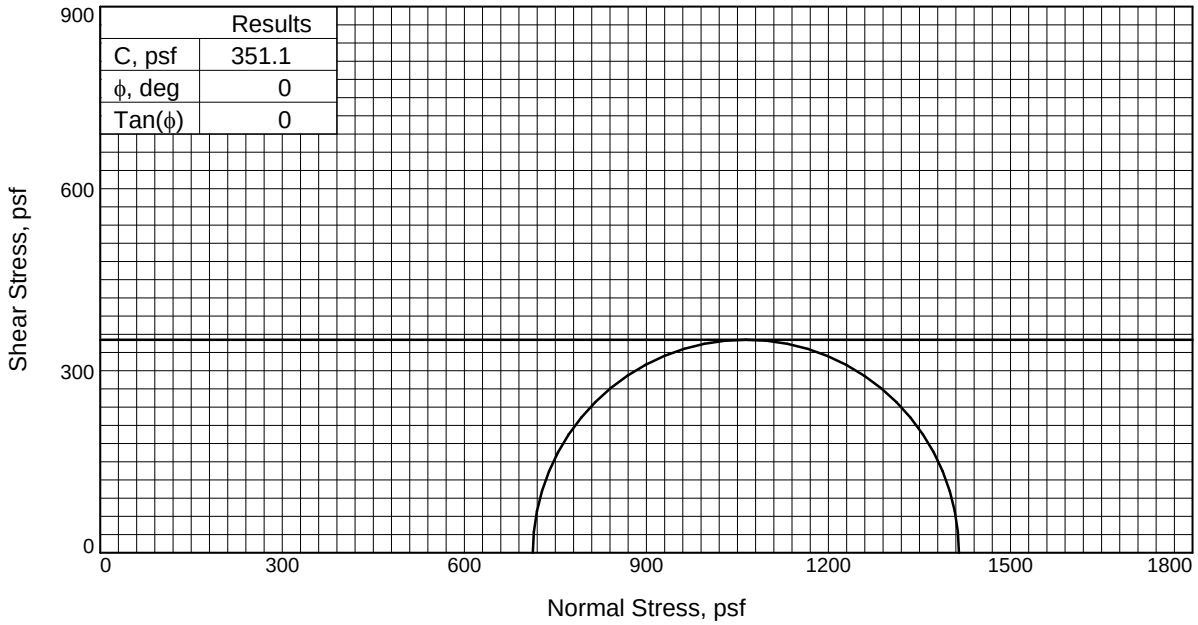
Source of Sample: B-16 **Depth:** 2' - 4'

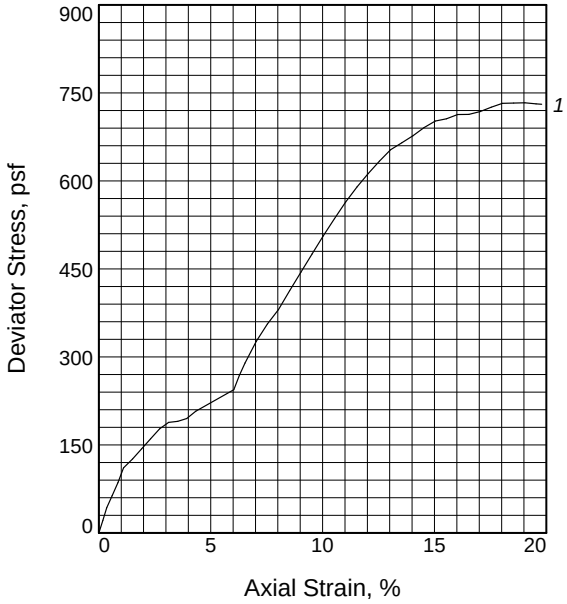
Proj. No.: 16715-040-01 **Date Sampled:** 8/12/16

GeoEngineers

Figure _____

Tested By: TRC **Checked By:** JSA/KLA





Sample No.		1
Initial	Water Content, %	33.2
	Dry Density, pcf	93.5
	Saturation, %	112.6
	Void Ratio	0.7901
	Diameter, in.	2.877
	Height, in.	5.395
At Test	Water Content, %	33.2
	Dry Density, pcf	93.5
	Saturation, %	112.6
	Void Ratio	0.7901
	Diameter, in.	2.877
	Height, in.	5.395
Strain rate, in./min.		1.000
Back Pressure, psi		0.000
Cell Pressure, psi		4.950
Fail. Stress, psf		702.1
Strain, %		15.0
Ult. Stress, psf		702.1
Strain, %		15.0
σ_1 Failure, psf		1414.9
σ_3 Failure, psf		712.8

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: Dark gray silty sand (SM)

LL= 20 **PL=** 20 **PI=** 0
Assumed Specific Gravity= 2.68
Remarks:

Client: CPRA

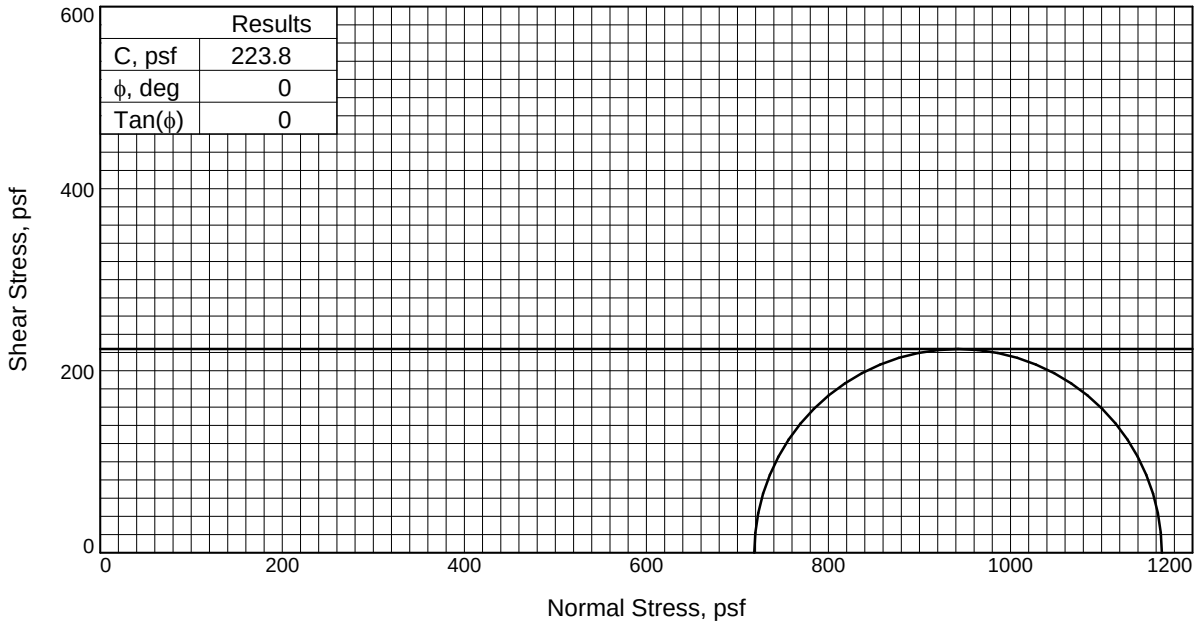
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana
Source of Sample: B-16 **Depth:** 4' - 6'

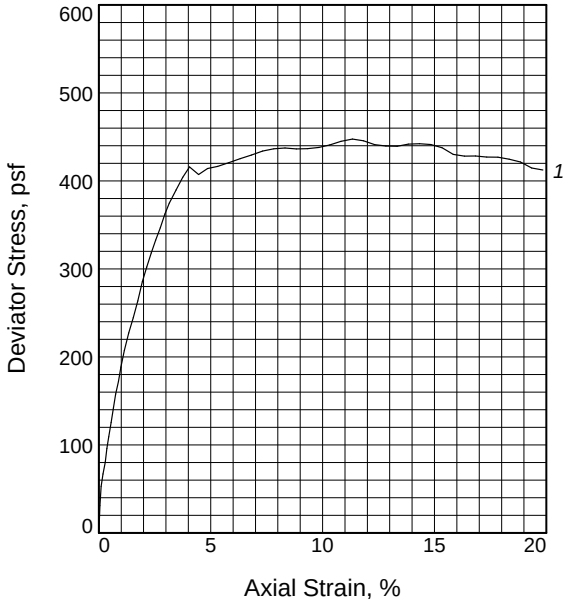
Proj. No.: 16715-040-01 **Date Sampled:** 8/12/16

GeoEngineers

Figure _____

Tested By: TRC **Checked By:** JSA/KLA





Sample No.		1
Initial	Water Content, %	51.1
	Dry Density, pcf	72.2
	Saturation, %	103.3
	Void Ratio	1.3360
	Diameter, in.	2.809
	Height, in.	5.799
At Test	Water Content, %	51.1
	Dry Density, pcf	72.2
	Saturation, %	103.3
	Void Ratio	1.3360
	Diameter, in.	2.809
	Height, in.	5.799
Strain rate, in./min.		1.000
Back Pressure, psi		0.000
Cell Pressure, psi		4.990
Fail. Stress, psf		447.6
Strain, %		11.3
Ult. Stress, psf		441.4
Strain, %		14.8
σ_1 Failure, psf		1166.2
σ_3 Failure, psf		718.6

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Very soft to soft dark gray clay with silt and shells (CL)

LL= 49 **PL=** 20 **PI=** 29

Assumed Specific Gravity= 2.70

Remarks:

Figure _____

Client: CPRA

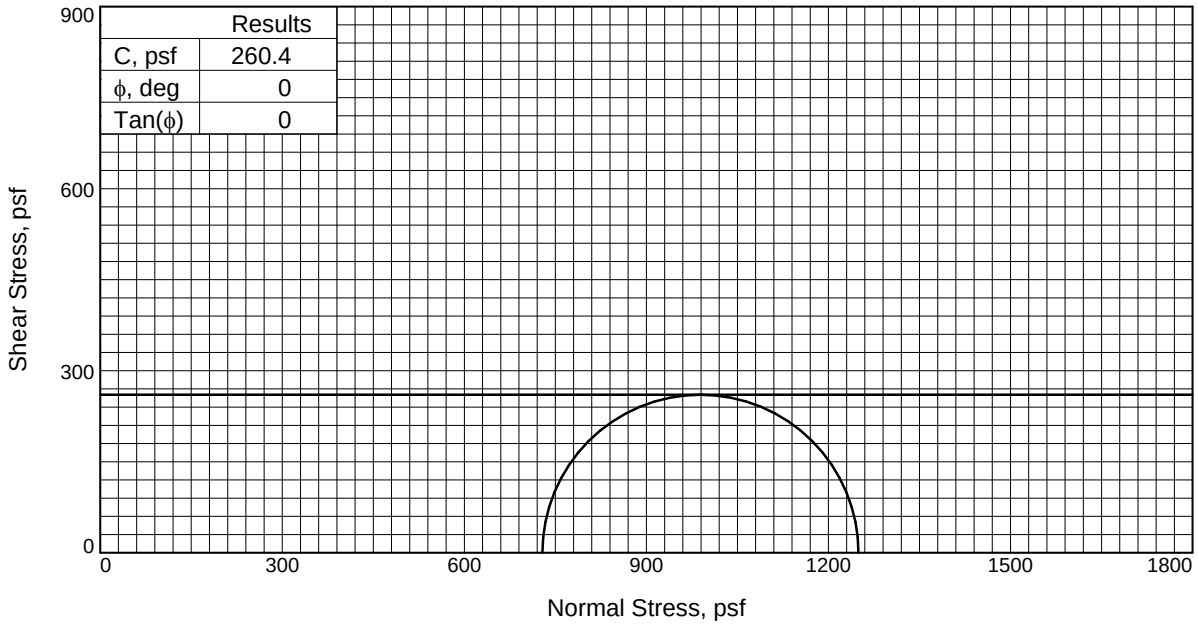
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

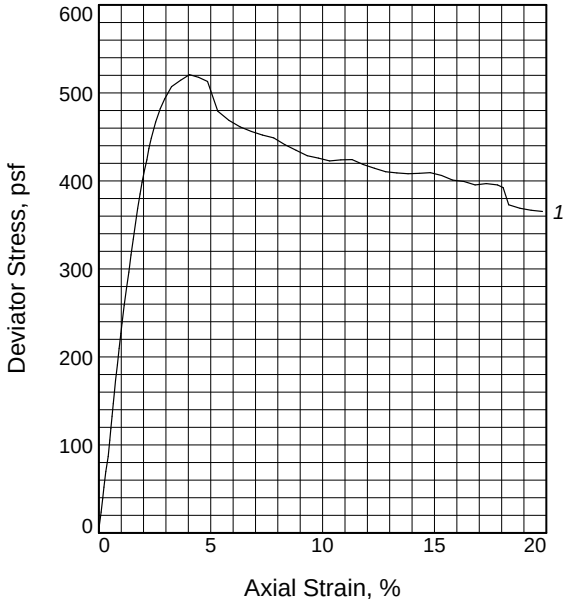
Source of Sample: B-16 **Depth:** 12' - 14'

Proj. No.: 16715-040-01 **Date Sampled:** 8/12/16

GeoEngineers

Tested By: TRC **Checked By:** CLP/KLA





Sample No.		1
Initial	Water Content, %	49.6
	Dry Density, pcf	69.0
	Saturation, %	93.2
	Void Ratio	1.4256
	Diameter, in.	2.846
	Height, in.	5.788
At Test	Water Content, %	49.6
	Dry Density, pcf	69.0
	Saturation, %	93.2
	Void Ratio	1.4256
	Diameter, in.	2.846
	Height, in.	5.788
Strain rate, in./min.		0.999
Back Pressure, psi		0.000
Cell Pressure, psi		5.060
Fail. Stress, psf		520.8
Strain, %		4.1
Ult. Stress, psf		409.5
Strain, %		14.8
σ_1 Failure, psf		1249.4
σ_3 Failure, psf		728.6

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Soft dark gray silty clay with silt lenses (CL)

Assumed Specific Gravity= 2.68

Remarks:

Client: CPRA

Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

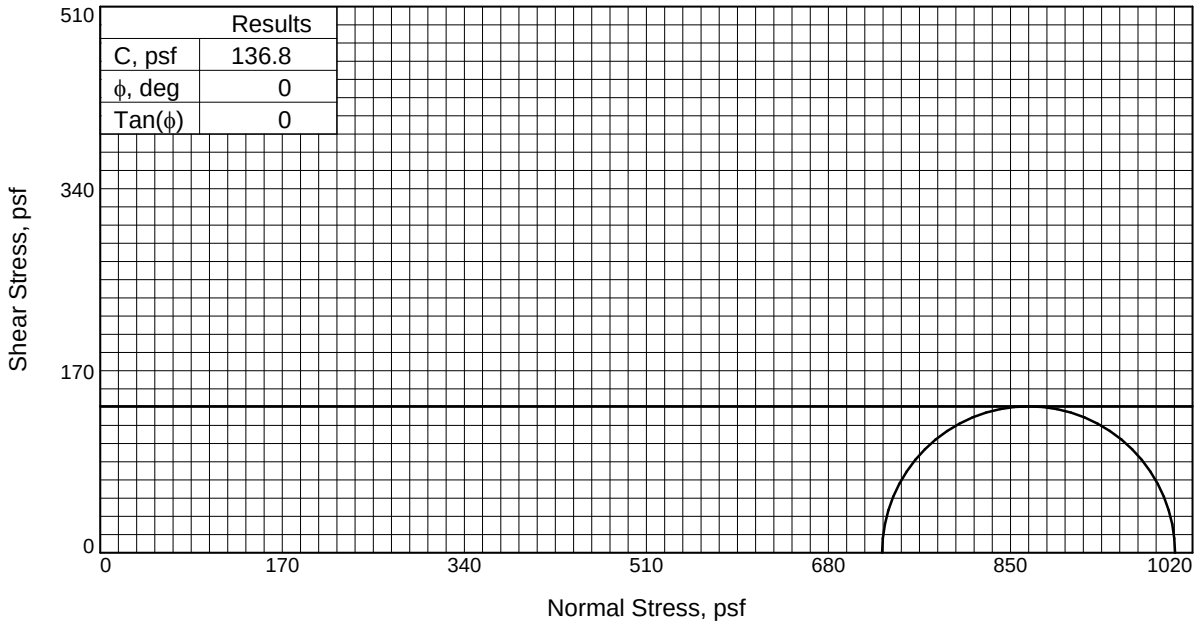
Source of Sample: B-16 **Depth:** 14' - 16'

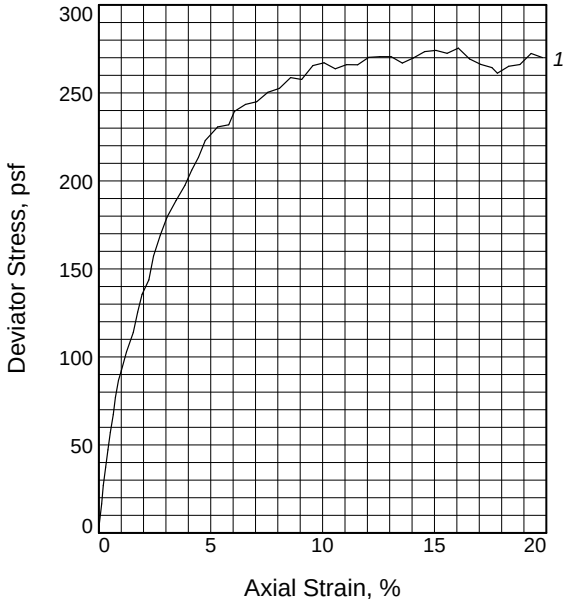
Proj. No.: 16715-040-01 **Date Sampled:** 8/12/16

GeoEngineers

Figure _____

Tested By: TRC **Checked By:** CLP/KLA





Sample No.		1
Initial	Water Content, %	47.5
	Dry Density, pcf	75.4
	Saturation, %	103.8
	Void Ratio	1.2365
	Diameter, in.	2.837
	Height, in.	5.701
At Test	Water Content, %	47.5
	Dry Density, pcf	75.4
	Saturation, %	103.8
	Void Ratio	1.2365
	Diameter, in.	2.837
	Height, in.	5.701
Strain rate, in./min.		0.999
Back Pressure, psi		0.000
Cell Pressure, psi		5.070
Fail. Stress, psf		273.5
Strain, %		14.6
Ult. Stress, psf		273.5
Strain, %		14.6
σ_1 Failure, psf		1003.6
σ_3 Failure, psf		730.1

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Very soft dark gray clay with silt and shell fragments (CL)

Assumed Specific Gravity= 2.70

Remarks:

Client: CPRA

Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

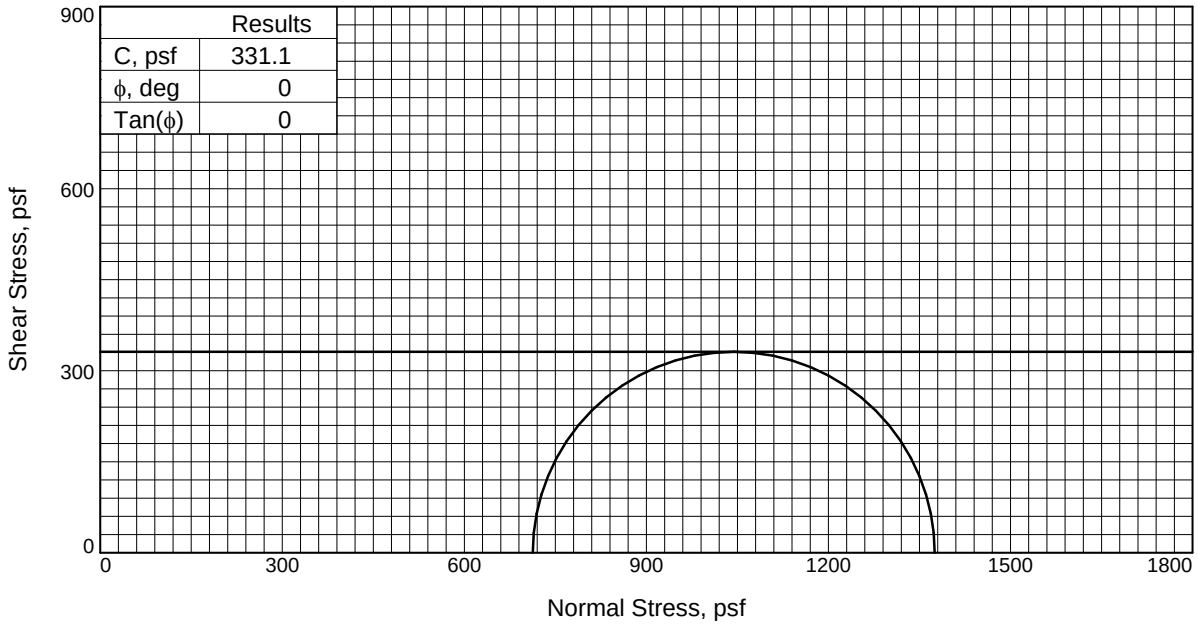
Source of Sample: B-16 **Depth:** 18' - 20'

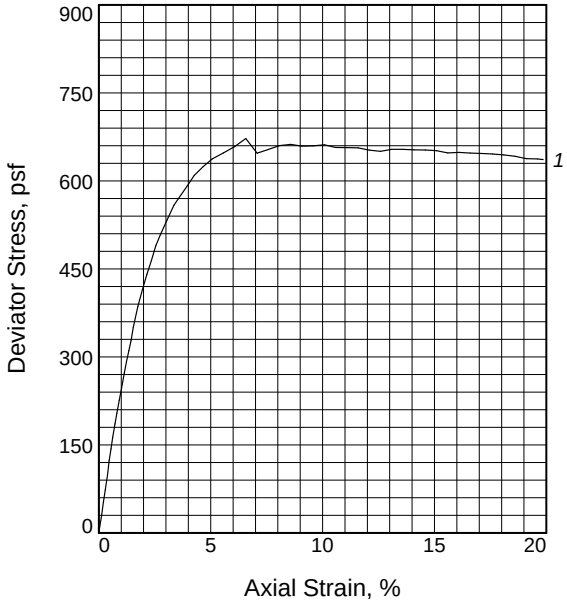
Proj. No.: 16715-040-01 **Date Sampled:** 8/12/16

GeoEngineers

Figure _____

Tested By: TRC **Checked By:** JSA/KLA





Sample No.		1
Initial	Water Content, %	41.1
	Dry Density, pcf	76.5
	Saturation, %	92.8
	Void Ratio	1.1874
	Diameter, in.	2.834
	Height, in.	5.901
At Test	Water Content, %	41.1
	Dry Density, pcf	76.5
	Saturation, %	92.8
	Void Ratio	1.1874
	Diameter, in.	2.834
	Height, in.	5.901
Strain rate, in./min.		1.000
Back Pressure, psi		0.000
Cell Pressure, psi		4.950
Fail. Stress, psf		662.2
Strain, %		8.6
Ult. Stress, psf		652.7
Strain, %		14.6
σ_1 Failure, psf		1375.0
σ_3 Failure, psf		712.8

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Soft to medium dark gray silty clay with organic matter (CL)

Assumed Specific Gravity= 2.68

Remarks:
Point of failure selected after membrane correction was applied.

Figure _____

Client: CPRA

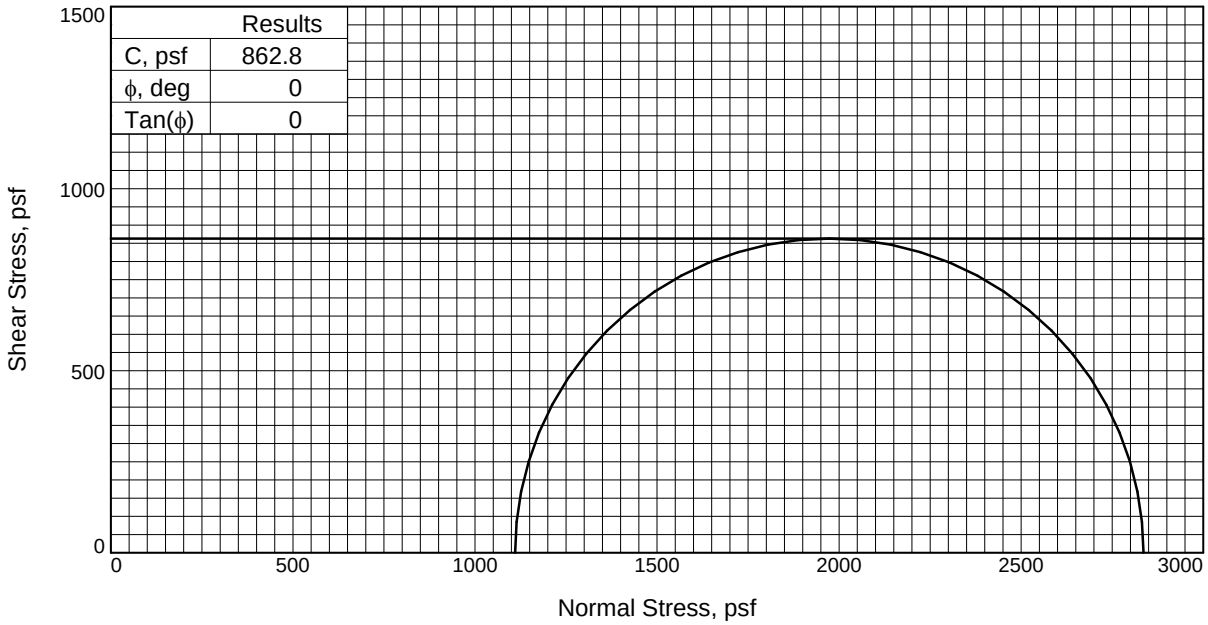
Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

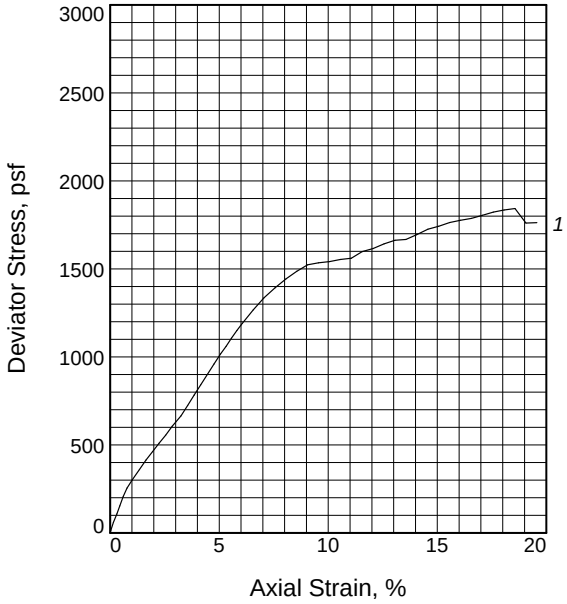
Source of Sample: B-16 **Depth:** 23' - 25'

Proj. No.: 16715-040-01 **Date Sampled:** 8/12/16

GeoEngineers

Tested By: TRC **Checked By:** JSA/KLA





Sample No.		1
Initial	Water Content, %	31.2
	Dry Density, pcf	93.2
	Saturation, %	104.2
	Void Ratio	0.8084
	Diameter, in.	2.831
	Height, in.	5.758
At Test	Water Content, %	31.2
	Dry Density, pcf	93.2
	Saturation, %	104.2
	Void Ratio	0.8084
	Diameter, in.	2.831
	Height, in.	5.758
Strain rate, in./min.		1.000
Back Pressure, psi		0.000
Cell Pressure, psi		7.710
Fail. Stress, psf		1725.7
Strain, %		14.6
Ult. Stress, psf		1725.7
Strain, %		14.6
σ_1 Failure, psf		2835.9
σ_3 Failure, psf		1110.2

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Medium dark gray silty clay (CL)

Assumed Specific Gravity= 2.70

Remarks:

Client: CPRA

Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

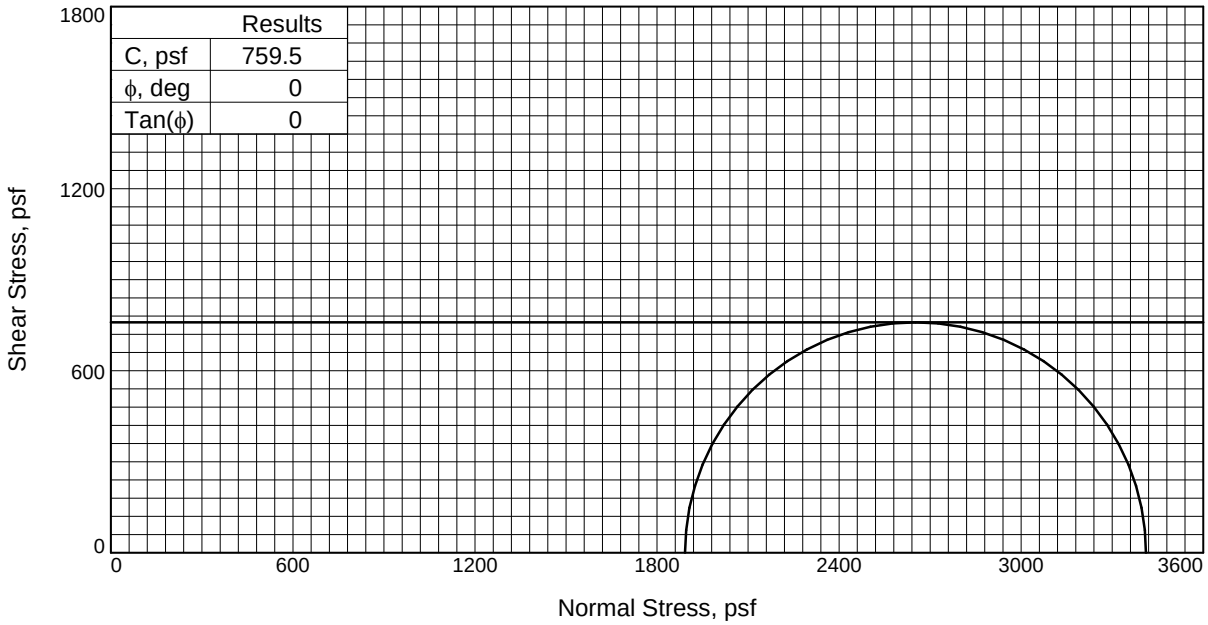
Source of Sample: B-16 **Depth:** 33' - 35'

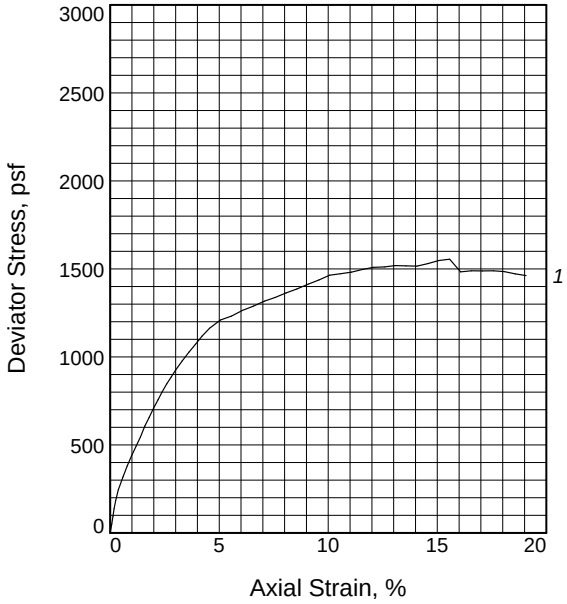
Proj. No.: 16715-040-01 **Date Sampled:** 8/12/16

GeoEngineers

Figure _____

Tested By: TRC **Checked By:** JSA/KLA





Sample No.		1
Initial	Water Content, %	42.1
	Dry Density, pcf	76.9
	Saturation, %	95.9
	Void Ratio	1.1757
	Diameter, in.	2.835
	Height, in.	5.892
At Test	Water Content, %	42.1
	Dry Density, pcf	76.9
	Saturation, %	95.9
	Void Ratio	1.1757
	Diameter, in.	2.835
	Height, in.	5.892
Strain rate, in./min.		0.999
Back Pressure, psi		0.000
Cell Pressure, psi		13.140
Fail. Stress, psf		1519.1
Strain, %		13.1
Ult. Stress, psf		1530.4
Strain, %		14.6
σ_1 Failure, psf		3411.2
σ_3 Failure, psf		1892.2

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: Medium dark gray silty clay with wood (CL)

LL= 33 **PL=** 23 **PI=** 10

Assumed Specific Gravity= 2.68

Remarks:

Figure _____

Client: CPRA

Project: Island Road Marsh Creation and Nourishment (TE-117)
Terrebonne Parish, Louisiana

Source of Sample: B-16 **Depth:** 48' - 50'

Proj. No.: 16715-040-01 **Date Sampled:** 8/12/16

GeoEngineers

Tested By: TRC **Checked By:** JSA/KLA

MINIATURE VANE TEST

ASTM D4648

Date Extruded:	**8/8/2016**						
Project Name:	**Island Road Marsh Creation**						
Project No.	**16715-040-01**						
Boring No.	B-8	B-8	B-8	B-8	B-8	B-8	B-8
Sample No.							
Penetration, ft	0-2	2-4	4-6	6-8	8-10	14-16	16-18
Test Type: U/R	U	U	U	U	U	U	U
Pen. (P) /Torvane (T) (tsf)	0.2	0.25	0.45	0.35	0.4	0.3	0.4
Spring No.	1	1	1			1	2
Vane Diameter, (in)	0.5	0.5	0.5			0.5	0.5
Vane Height, (in)	1	1	1			1	1
Start Point (deg)	0	0	0			0	0
Stop Point (deg)	52	71	165			135	100
Spring Rotation, deg.	52	71	165			135	100
Spring Constant	0.0074979	0.0074979	0.0074979			0.0074979	0.0150864
Tare No.	411	213	131	423	27	509	163
Wet Soil + Tare	155.03	143.14	148.65	156.01	159.56	154.08	162.62
Dry Soil + Tare	54.4	97.3	112.97	129.25	126.86	117.67	129.33
Tare	27.34	18.33	19.13	27.29	13.54	22.52	19.4
Mass of Dry Soil	27.06	78.97	93.84	101.96	113.32	95.15	109.93
Mass of Water	100.63	45.84	35.68	26.76	32.7	36.41	33.29
Water Content	**371.9**	**58.0**	**38.0**	**26.2**	**28.9**	**38.3**	**30.3**
Cohesive Strength, (ksf)	**0.106**	**0.145**	**0.338**			**0.276**	**0.412**

Remarks:

Tested By: TRC/DAS/SRT	Computed By: SLC	Checked By:
Date: 8/8/16	Date: 8/9/16	Date:

ASTM D 4648-00

MINIATURE VANE TEST

ASTM D4648

Date Extruded:	**8/8/2016**						
Project Name:	**Island Road Marsh Creation**						
Project No.	**16715-040-01**						
Boring No.	B-8	B-8	B-8	B-8	B-8	B-8	B-8
Sample No.							
Penetration, ft	18-20	23-25	28-30	43-45	48-50	53-55	58-60
Test Type: U/R	U	U	U	U	U	U	U
Pen. (P) /Torvane (T) (tsf)	0.5	0.6	0.6	0.6	0.8	0.5	0.7
Spring No.	2	2	2	2	3	2	3
Vane Diameter, (in)	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Vane Height, (in)	1	1	1	1	1	1	1
Start Point (deg)	0	0	0	0	0	0	0
Stop Point (deg)	107	180	155	126	138	113	151
Spring Rotation, deg.	107	180	155	126	138	113	151
Spring Constant	0.0150864	0.0150864	0.0150864	0.0150864	0.0233705	0.0150864	0.0233705
Tare No.	18	311	310	405	162	518	122
Wet Soil + Tare	165.14	166.43	91.04	171.19	130.7	163.46	126.28
Dry Soil + Tare	123.51	117.89	56.46	122.54	96.24	119.4	91.07
Tare	13.41	18.3	18.09	27.33	19.31	22.45	19.29
Mass of Dry Soil	110.1	99.59	38.37	95.21	76.93	96.95	71.78
Mass of Water	41.63	48.54	34.58	48.65	34.46	44.06	35.21
Water Content	**37.8**	**48.7**	**90.1**	**51.1**	**44.8**	**45.4**	**49.1**
Cohesive Strength, (ksf)	**0.440**	**0.741**	**0.638**	**0.519**	**0.880**	**0.465**	**0.963**

Remarks:

Tested By: TRC/DAS/SRT	Computed By: SLC	Checked By:
Date: 8/8/16	Date: 8/9/16	Date:

ASTM D 4648-00

MINIATURE VANE TEST

ASTM D4648

Date Extruded:	**8/9/2016**						
Project Name:	**Island Road Marsh Creation**						
Project No.	**16715-040-01**						
Boring No.	B-9	B-9	B-9	B-9	B-9	B-9	B-9
Sample No.							
Penetration, ft	0-2	2-4	4-6	6-8	8-10	10-12	12-14
Test Type: U/R	U	U	U	U	U	U	U
Material Description	**Vso Bk Peat**	**Vso D G Org Cl w/ pt**	**Vso G Cl w/ org mat**	**Fm G ClSa w/ si & 4" sa lyr**	**Vso G Cl w/ si & si lns**	**Vso G Cl w/ si lns**	**Vso G Cl w/ si pkts**
Pen. (P) /Torvane (T) (tsf)	0.01	0.02	0.08	0.03	0.1	0.09	0.06
Spring No.		1	1		2	2	1
Vane Diameter, (in)		0.5	0.5		0.5	0.5	0.5
Vane Height, (in)		1	1		1	1	1
Start Point (deg)		0	0		0	0	0
Stop Point (deg)		86	65		69	64	110
Spring Rotation, deg.		86	65		69	64	110
Spring Constant		0.0074979	0.0074979		0.0150864	0.0150864	0.0074979
Tare No.	407	408	164	531	517	165	107
Wet Soil + Tare	124.65	116.3	124.48	154.03	130.15	115.78	123.02
Dry Soil + Tare	46.78	44.9	74.61	119.7	99.09	76.46	78.37
Tare	27.33	27.34	19.4	22.56	22.53	19.22	19.22
Mass of Dry Soil	19.45	17.56	55.21	97.14	76.56	57.24	59.15
Mass of Water	77.87	71.4	49.87	34.33	31.06	39.32	44.65
Water Content	**400.4**	**406.6**	**90.3**	**35.3**	**40.6**	**68.7**	**75.5**
Cohesive Strength, (ksf)		**0.176**	**0.133**		**0.284**	**0.263**	**0.225**

Remarks: 12-14: Sheared to 180, switched to Spring 2 and re-ran

Tested By: DNR/LKH	Computed By: SLC	Checked By:
Date: 8/10/16	Date: 8/11/16	Date:

ASTM D 4648-00

MINIATURE VANE TEST

ASTM D4648

Date Extruded:	**8/9/2016**						
Project Name:	**Island Road Marsh Creation**						
Project No.	**16715-040-01**						
Boring No.	B-9	B-9	B-9	B-9	B-9	B-9	B-9
Sample No.							
Penetration, ft	14-16	16-18	18-20	23-25	28-30	33-35	38-40
Test Type: U/R	U	U	U	U	U	U	U
Material Description							
Pen. (P) /Torvane (T) (tsf)	0.14	0.11	0.09	0.14	0.11	0.13	0.09
Spring No.	1	1	2	2	2	2	3
Vane Diameter, (in)	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Vane Height, (in)	1	1	1	1	1	1	1
Start Point (deg)	0	0	0	0	0	0	0
Stop Point (deg)	163	134	84	120	164	152	89
Spring Rotation, deg.	163	134	84	120	164	152	89
Spring Constant	0.0074979	0.0074979	0.0150864	0.0150864	0.0150864	0.0150864	0.0233705
Tare No.	538	539	536	142	114	401	581
Wet Soil + Tare	162.83	145.15	132.92	107.02	136.16	164.75	118.5
Dry Soil + Tare	121.79	97.6	80.65	70.78	80.62	104.54	101.91
Tare	22.58	22.55	22.56	19.16	19.22	27.29	22.5
Mass of Dry Soil	99.21	75.05	58.09	51.62	61.4	77.25	79.41
Mass of Water	41.04	47.55	52.27	36.24	55.54	60.21	16.59
Water Content	**41.4**	**63.4**	**90.0**	**70.2**	**90.5**	**77.9**	**20.9**
Cohesive Strength, (ksf)	**0.333**	**0.274**	**0.346**	**0.494**	**0.675**	**0.626**	**0.567**

Remarks:

Tested By: DNR/LKH	Computed By: SLC	Checked By:
Date: 8/10/16	Date: 8/11/16	Date:

ASTM D 4648-00

MINIATURE VANE TEST

ASTM D4648

Date Extruded:	**8/6/2016**						
Project Name:	**Island Road Marsh Creation**						
Project No.	**16715-040-01**						
Boring No.	B-10	B-10	B-10	B-10	B-10	B-10	B-10
Sample No.							
Penetration, ft	0-2	2-4	4-6	6-8	8-10	10-12	12-14
Test Type: U/R	U	U	U	U	U	U	U
Pen. (P) /Torvane (T) (tsf)	Slump	0.01	0.01	0.04	0.02	0.05	0.04
Spring No.		Slump	1	1	1	1	Slump
Vane Diameter, (in)			0.5	0.5	0.5	0.5	
Vane Height, (in)			1	1	1	1	
Start Point (deg)			0	0	0	0	
Stop Point (deg)			61	45	63	68	
Spring Rotation, deg.			61	45	63	68	
Spring Constant		OT AVAILAB	0.0074979	0.0074979	0.0074979	0.0074979	OT AVAILABI
Tare No.	569	585	586	573	565	577	581
Wet Soil + Tare	102.35	118.75	106.78	118.75	110.73	167.45	130.18
Dry Soil + Tare	27.96	38.79	58.73	73.34	78.02	119.99	80.4
Tare	18.62	18.58	18.71	18.46	18.51	18.65	18.59
Mass of Dry Soil	9.34	20.21	40.02	54.88	59.51	101.34	61.81
Mass of Water	74.39	79.96	48.05	45.41	32.71	47.46	49.78
Water Content	**796.5**	**395.6**	**120.1**	**82.7**	**55.0**	**46.8**	**80.5**
Cohesive Strength, (ksf)			**0.125**	**0.092**	**0.129**	**0.139**	

Remarks:

Tested By: HJF/DAS	Computed By: SLC	Checked By:
Date: 8/6/16	Date: 8/8/16	Date:

ASTM D 4648-00

MINIATURE VANE TEST

ASTM D4648

Date Extruded:	**8/6/2016**						
Project Name:	**Island Road Marsh Creation**						
Project No.	**16715-040-01**						
Boring No.	B-10	B-10	B-10	B-10	B-10	B-10	
Sample No.							
Penetration, ft	14-16	16-18	18-20	28-30	33-35	38-40	
Test Type: U/R	U	U	U	U	U	U	
Pen. (P) /Torvane (T) (tsf)	0.06	0.07	0.06	0.09	0.08	0.09	
Spring No.	1	1	1	2	2	2	
Vane Diameter, (in)	0.5	0.5	0.5	0.5	0.5	0.5	
Vane Height, (in)	1	1	1	1	1	1	
Start Point (deg)	0	0	0	0	0	0	
Stop Point (deg)	46	127	160	75	87	89	
Spring Rotation, deg.	46	127	160	75	87	89	
Spring Constant	0.0074979	0.0074979	0.0074979	0.0150864	0.0150864	0.0150864	
Tare No.	564	584	572	580	568	576	
Wet Soil + Tare	116.55	124.4	125.2	128.43	110.13	137.66	
Dry Soil + Tare	73.91	87.89	80.68	78.93	67.48	99.39	
Tare	18.85	18.65	18.84	18.65	18.58	18.6	
Mass of Dry Soil	55.06	69.24	61.84	60.28	48.9	80.79	
Mass of Water	42.64	36.51	44.52	49.5	42.65	38.27	
Water Content	**77.4**	**52.7**	**72.0**	**82.1**	**87.2**	**47.4**	
Cohesive Strength, (ksf)	**0.094**	**0.260**	**0.327**	**0.309**	**0.358**	**0.366**	

Remarks:

Tested By: HJF/DAS	Computed By: SLC	Checked By:
Date: 8/6/16	Date: 8/8/16	Date:

ASTM D 4648-00

MINIATURE VANE TEST

ASTM D4648

Date Extruded:	**8/10/2016**						
Project Name:	**Island Road Marsh Creation**						
Project No.	**16715-040-01**						
Boring No.	B-11	B-11	B-11	B-11	B-11	B-11	B-11
Sample No.							
Penetration, ft	0-2	2-4	4-6	6-8	8-10	10-12	12-14
Test Type: U/R	U	U	U	U	U	U	U
Pen. (P) /Torvane (T) (tsf)	0.05	0.03	N/A	0.1	0.09	0.08	0.06
Spring No.	1	1			2	1	1
Vane Diameter, (in)	0.5	0.5			0.5	0.5	0.5
Vane Height, (in)	1	1			1	1	1
Start Point (deg)	104	0			0	0	0
Stop Point (deg)	181	43			28	83	98
Spring Rotation, deg.	77	43			28	83	98
Spring Constant	0.0074979	0.0074979			0.0150864	0.0074979	0.0074979
Tare No.	559	7	565	566	161	160	137
Wet Soil + Tare	140.55	128.21	143.03	178.58	150.78	167.32	155.35
Dry Soil + Tare	54.56	53.85	108.51	142.55	119.12	114.26	93.29
Tare	22.6	13.53	22.62	22.6	19.36	19.32	19.08
Mass of Dry Soil	31.96	40.32	85.89	119.95	99.76	94.94	74.21
Mass of Water	85.99	74.36	34.52	36.03	31.66	53.06	62.06
Water Content	**269.1**	**184.4**	**40.2**	**30.0**	**31.7**	**55.9**	**83.6**
Cohesive Strength, (ksf)	**0.158**	**0.088**			**0.115**	**0.170**	**0.200**

Remarks: 4-6 slumped into barrel

Tested By: DNR/LKH	Computed By: SLC	Checked By: KLA
Date: 8/9/16	Date: 8/11/16	Date: 9/1/16

ASTM D 4648-00

MINIATURE VANE TEST

ASTM D4648

Date Extruded:	**8/10/2016**						
Project Name:	**Island Road Marsh Creation**						
Project No.	**16715-040-01**						
Boring No.	B-11	B-11	B-11	B-11	B-11	B-11	B-11
Sample No.							
Penetration, ft	14-16	16-18	18-20	23-25	28-30	33-35	38-40
Test Type: U/R	U	U	U	U	U	U	U
Pen. (P) /Torvane (T) (tsf)	0.35	0.6	0.67	0.4	0.45	0.45	0.45
Spring No.		2	3	2	2	2	2
Vane Diameter, (in)		0.5	0.5	0.5	0.5	0.5	0.5
Vane Height, (in)		1	1	1	1	1	1
Start Point (deg)		0	0	0	0	0	0
Stop Point (deg)		176	172	173	140	70	130
Spring Rotation, deg.		176	172	173	140	70	130
Spring Constant		0.0150864	0.0233705	0.0150864	0.0150864	0.0150864	0.0150864
Tare No.	412	504	508	143	120	535	400
Wet Soil + Tare	169.41	195.4	141.59	158.97	183.05	156.84	152.62
Dry Soil + Tare	121.24	141.26	101.83	122.17	142.15	123.04	122.77
Tare	27.27	22.57	22.51	19.27	19.3	18.71	27.24
Mass of Dry Soil	93.97	118.69	79.32	102.9	122.85	104.33	95.53
Mass of Water	48.17	54.14	39.76	36.8	40.9	33.8	29.85
Water Content	**51.3**	**45.6**	**50.1**	**35.8**	**33.3**	**32.4**	**31.2**
Cohesive Strength, (ksf)		**0.724**	**1.097**	**0.712**	**0.576**	**0.288**	**0.535**

Remarks:

Tested By: DNR/LKH	Computed By: SLC	Checked By: KLA
Date: 8/10/16	Date: 8/11/16	Date: 9/1/16

ASTM D 4648-00

MINIATURE VANE TEST

ASTM D4648

Date Extruded:	**8/10/2016**						
Project Name:	**Island Road Marsh Creation**						
Project No.	**16715-040-01**						
Boring No.	B-11	B-11	B-11	B-11			
Sample No.							
Penetration, ft	43-45	48-50	53-55	58-60			
Test Type: U/R	U	U	U				
Pen. (P) /Torvane (T) (tsf)	0.45	0.6	0.07	0.55			
Spring No.	2	2	1	4			
Vane Diameter, (in)	0.5	0.5	0.5	0.5			
Vane Height, (in)	1	1	1	1			
Start Point (deg)	0	0	0	0			
Stop Point (deg)	129	174	63	116			
Spring Rotation, deg.	129	174	63	116			
Spring Constant	0.0150864	0.0150864	0.0074979	0.0352597			
Tare No.	564	124	571	A-19			
Wet Soil + Tare	182.59	137.7	159.91	157.44			
Dry Soil + Tare	140.44	103.51	123.31	116.87			
Tare	22.56	19.33	18.61	18.53			
Mass of Dry Soil	117.88	84.18	104.7	98.34			
Mass of Water	42.15	34.19	36.6	40.57			
Water Content	**35.8**	**40.6**	**35.0**	**41.3**			
Cohesive Strength, (ksf)	**0.531**	**0.716**	**0.129**	**1.116**			

Remarks:

58-60 maxed to 18 spring 2 & 3 - reran with spring 4

Tested By: DNR/LKH	Computed By: SLC	Checked By: KLA
Date: 8/10/16	Date: 8/11/16	Date: 9/1/16

ASTM D 4648-00

MINIATURE VANE TEST

ASTM D4648

Date Extruded:	**8/10/2016**						
Project Name:	**Island Road Marsh Creation**						
Project No.	**16715-040-01**						
Boring No.	B-12	B-12	B-12	B-12	B-12	B-12	B-12
Sample No.							
Penetration, ft	0-2	2-4	4-6	6-8	8-10	12-14	14-16
Test Type: U/R	U	U	U	U	U	U	U
Pen. (P) /Torvane (T) (tsf)	0.02	0.05	0.05	0.04	0.07	0.08	0.14
Spring No.	1	1	1	1	1	2	3
Vane Diameter, (in)	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Vane Height, (in)	1	1	1	1	1	1	1
Start Point (deg)	0	0	0	0	0	0	0
Stop Point (deg)	46	136	90	51	11	94	81
Spring Rotation, deg.	46	136	90	51	11	94	81
Spring Constant	0.0074979	0.0074979	0.0074979	0.0074979	0.0074979	0.0150864	0.0233705
Tare No.	A-1	S-34	S-48	546	511	581	569
Wet Soil + Tare	130.25	157.5	164.64	152.79	151	145.57	164.28
Dry Soil + Tare	53.52	94.55	121.31	118.08	119.74	101.91	104.61
Tare	18.68	18.55	18.48	18.7	18.76	18.61	18.62
Mass of Dry Soil	34.84	76	102.83	99.38	100.98	83.3	85.99
Mass of Water	76.73	62.95	43.33	34.71	31.26	43.66	59.67
Water Content	**220.2**	**82.8**	**42.1**	**34.9**	**31.0**	**52.4**	**69.4**
Cohesive Strength, (ksf)	**0.094**	**0.278**	**0.184**	**0.104**	**0.023**	**0.387**	**0.516**

Remarks: 12-14: Sheared to 180 (MAXED), switched to Spring 2 and re-ran

Tested By: DNR/LKH	Computed By: SLC	Checked By: KLA
Date: 8/10/16	Date: 8/11/16	Date: 8/31/16

ASTM D 4648-00

MINIATURE VANE TEST

ASTM D4648

Date Extruded:	**8/10/2016**						
Project Name:	**Island Road Marsh Creation**						
Project No.	**16715-040-01**						
Boring No.	B-12	B-12	B-12	B-12	B-12	B-12	B-12
Sample No.							
Penetration, ft	16-18	18-20	23-25	28-30	33-35	38-40	43-45
Test Type: U/R	U	U	U	U	U	U	U
Pen. (P) /Torvane (T) (tsf)	0.14	0.11	0.09	0.14	0.11	0.13	0.09
Spring No.	3	2	2	3	2	2	2
Vane Diameter, (in)	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Vane Height, (in)	1	1	1	1	1	1	1
Start Point (deg)	0	0	0	0	0	0	0
Stop Point (deg)	79	123	102	62	74	89	115
Spring Rotation, deg.	79	123	102	62	74	89	115
Spring Constant	0.0233705	0.0150864	0.0150864	0.0233705	0.0150864	0.0150864	0.0150864
Tare No.	A-16	584	S-32	A-10	572	A-72	542
Wet Soil + Tare	139.65	151.15	169.25	151.01	172.11	133.01	196.31
Dry Soil + Tare	94.88	104.53	106.92	108.86	131.17	98.59	151.97
Tare	18.66	18.63	18.49	18.63	18.81	18.71	18.69
Mass of Dry Soil	76.22	85.9	88.43	90.23	112.36	79.88	133.28
Mass of Water	44.77	46.62	62.33	42.15	40.94	34.42	44.34
Water Content	**58.7**	**54.3**	**70.5**	**46.7**	**36.4**	**43.1**	**33.3**
Cohesive Strength, (ksf)	**0.504**	**0.506**	**0.420**	**0.395**	**0.305**	**0.366**	**0.473**

Remarks:

Tested By: DNR/LKH	Computed By: SLC	Checked By: KLA
Date: 8/10/16	Date: 8/11/16	Date: 8/31/16

ASTM D 4648-00

MINIATURE VANE TEST

ASTM D4648

Date Extruded:	**8/10/2016**						
Project Name:	**Island Road Marsh Creation**						
Project No.	**16715-040-01**						
Boring No.	B-12	B-12	B-12				
Sample No.							
Penetration, ft	48-50	53-55	58-60				
Test Type: U/R	U	U	U				
Pen. (P) /Torvane (T) (tsf)	0.09	0.11	0.12				
Spring No.	2	2	2				
Vane Diameter, (in)	0.5	0.5	0.5				
Vane Height, (in)	1	1	1				
Start Point (deg)	0	0	0				
Stop Point (deg)	87	120	149				
Spring Rotation, deg.	87	120	149				
Spring Constant	0.0150864	0.0150864	0.0150864				
Tare No.	585	517	573				
Wet Soil + Tare	136.7	182.62	156.73				
Dry Soil + Tare	109.1	142.62	121.12				
Tare	18.63	18.48	18.45				
Mass of Dry Soil	90.47	124.14	102.67				
Mass of Water	27.6	40	35.61				
Water Content	**30.5**	**32.2**	**34.7**				
Cohesive Strength, (ksf)	**0.358**	**0.494**	**0.613**				

Remarks:

Tested By: DNR/LKH	Computed By: SLC	Checked By: KLA
Date: 8/10/16	Date: 8/11/16	Date: 8/31/16

ASTM D 4648-00

MINIATURE VANE TEST

ASTM D4648

Date Extruded:	**8/7/2016**						
Project Name:	**Island Road Marsh Creation**						
Project No.	**16715-040-01**						
Boring No.	B-13	B-13	B-13	B-13	B-13	B-13	
Sample No.							
Penetration, ft	0-2	4-6	8-10	18-20	23-25	28-30	
Test Type: U/R	U	U	U	U	U	U	
Pen. (P) /Torvane (T) (tsf)	0.04	0.02	0.08	0.1	0.1	0.18	
Spring No.	1	1	Sand	1	2	4	
Vane Diameter, (in)	0.5	0.5		0.5	0.5	0.5	
Vane Height, (in)	1	1		1	1	1	
Start Point (deg)	0	0		0	0	0	
Stop Point (deg)	51	32		160	177	104	
Spring Rotation, deg.	51	32		160	177	104	
Spring Constant	0.0074979	0.0074979	OT AVAILAB	0.0074979	0.0150864	0.0352597	
Tare No.	563	575	571	579	583	567	
Wet Soil + Tare	106.97	138.12	166.23	122.28	138.8	126.35	
Dry Soil + Tare	32.04	105.4	135.23	92.34	106.2	95.96	
Tare	18.48	18.57	18.58	18.73	18.59	18.53	
Mass of Dry Soil	13.56	86.83	116.65	73.61	87.61	77.43	
Mass of Water	74.93	32.72	31	29.94	32.6	30.39	
Water Content	**552.6**	**37.7**	**26.6**	**40.7**	**37.2**	**39.2**	
Cohesive Strength, (ksf)	**0.104**	**0.065**		**0.327**	**0.728**	**1.000**	

Remarks:

Tested By: HJF/DAS	Computed By: SLC	Checked By:
Date: 8/7/16	Date: 8/8/16	Date:

ASTM D 4648-00

MINIATURE VANE TEST

ASTM D4648

Date Extruded:	**8/6/2016**						
Project Name:	**Island Road Marsh Creation**						
Project No.	**16715-040-01**						
Boring No.	B-14	B-14	B-14	B-14	B-14	B-14	B-14
Sample No.							
Penetration, ft	0-1	1-2	2-4	4-6	6-8	8-10	10-12
Test Type: U/R	U	U	U	U	U	U	U
Pen. (P) /Torvane (T) (tsf)			0.2	0.3	0.4	Sand	
Spring No.		1	1	1	1		1
Vane Diameter, (in)		0.5	0.5	0.5	0.5		0.5
Vane Height, (in)		1	1	1	1		1
Start Point (deg)		0	0	0	0		0
Stop Point (deg)		119	60	56	92		104
Spring Rotation, deg.		119	60	56	92		104
Spring Constant		0.0074979	0.0074979	0.0074979	0.0074979		0.0074979
Tare No.	205	331	121	218	15	199	196
Wet Soil + Tare	100.48	103.11	92.46	148.37	151.69	147.15	119.36
Dry Soil + Tare	30.11	39.78	42.43	91.34	111.82	114.12	88.56
Tare	18.21	18.19	19.22	18.34	13.44	19.34	19.38
Mass of Dry Soil	11.9	21.59	23.21	73	98.38	94.78	69.18
Mass of Water	70.37	63.33	50.03	57.03	39.87	33.03	30.8
Water Content	**591.3**	**293.3**	**215.6**	**78.1**	**40.5**	**34.8**	**44.5**
Cohesive Strength, (ksf)		**0.243**	**0.123**	**0.115**	**0.188**		**0.213**

Remarks:

Tested By: HJF/DAS	Computed By: SLC	Checked By:
Date: 8/6/16	Date: 8/8/16	Date:

ASTM D 4648-00

MINIATURE VANE TEST

ASTM D4648

Date Extruded:	**8/6/2016**						
Project Name:	**Island Road Marsh Creation**						
Project No.	**16715-040-01**						
Boring No.	B-14	B-14	B-14	B-14	B-14	B-14	
Sample No.							
Penetration, ft	12-14	14-16	16-18	18-20	23-25	28-30	
Test Type: U/R	U	U	U	U	U	U	
Pen. (P) /Torvane (T) (tsf)	0.25 (T)	0.35 (T)	0.3 (T)	0.45 (T)	Slump	Slump	
Spring No.	1	1	1	1			
Vane Diameter, (in)	0.5	0.5	0.5	0.5			
Vane Height, (in)	1	1	1	1			
Start Point (deg)	0	0	0	0			
Stop Point (deg)	60	72	49	99			
Spring Rotation, deg.	60	72	49	99			
Spring Constant	0.0074979	0.0074979	0.0074979	0.0074979			
Tare No.	213	33	212	557	530	22	
Wet Soil + Tare	104.99	154.03	144.89	140.74	135.13	132.12	
Dry Soil + Tare	73.03	94.74	111.67	105.73	110.44	104.53	
Tare	18.33	13.43	18.24	22.59	22.56	13.5	
Mass of Dry Soil	54.7	81.31	93.43	83.14	87.88	91.03	
Mass of Water	31.96	59.29	33.22	35.01	24.69	27.59	
Water Content	**58.4**	**72.9**	**35.6**	**42.1**	**28.1**	**30.3**	
Cohesive Strength, (ksf)	**0.123**	**0.147**	**0.100**	**0.203**			

Remarks:

Tested By: HJF/DAS	Computed By: SLC	Checked By:
Date: 8/6/16	Date: 8/8/16	Date:

ASTM D 4648-00

MINIATURE VANE TEST

ASTM D4648

Date Extruded:	**8/7/2016**						
Project Name:	**Island Road Marsh Creation**						
Project No.	**16715-040-01**						
Boring No.	B-15	B-15	B-15	B-15	B-15	B-15	B-15
Sample No.							
Penetration, ft	0-2	2-4	6-8	8-10	10-12	12-14	14-16
Test Type: U/R	U	U	U	U	U	U	U
Pen. (P) /Torvane (T) (tsf)	0.06	0.06		0.08	0.07	0.13	0.08
Spring No.	1				1	2	1
Vane Diameter, (in)	0.5				0.5	0.5	0.5
Vane Height, (in)	1				1	1	1
Start Point (deg)	0				0	0	0
Stop Point (deg)	65				126	140	180
Spring Rotation, deg.	65				126	140	180
Spring Constant	0.0074979				0.0074979	0.0150864	0.0074979
Tare No.	A-19	A-15	S-34	A-10	A-1	754	A-4
Wet Soil + Tare	148.11	168.3	106.64	166.53	114.49	145.24	140.42
Dry Soil + Tare	64.7	114.99	89.47	136.9	68.11	92.25	117.55
Tare	18.53	18.6	18.55	18.65	18.68	18.64	18.68
Mass of Dry Soil	46.17	96.39	70.92	118.25	49.43	73.61	98.87
Mass of Water	83.41	53.31	17.17	29.63	46.38	52.99	22.87
Water Content	**180.7**	**55.3**	**24.2**	**25.1**	**93.8**	**72.0**	**23.1**
Cohesive Strength, (ksf)	**0.133**				**0.258**	**0.576**	**0.368**

Remarks:

Tested By: HJF/DAS	Computed By: SLC	Checked By:
Date: 8/7/16	Date: 8/8/16	Date:

ASTM D 4648-00

MINIATURE VANE TEST

ASTM D4648

Date Extruded:	**8/5/2016**						
Project Name:	**Island Road Marsh Creation**						
Project No.	**16715-040-01**						
Boring No.	B-16	B-16	B-16	B-16	B-16	B-16	B-16
Sample No.							
Penetration, ft	0-2	2-4	4-6	6-8	8-10	10-12	12-14
Test Type: U/R	U	U	U	U	U	U	U
Pen. (P) /Torvane (T) (tsf)	0.03 (T)	NA	NA	NA	NA	0/1.0 (P) 0.06 (T)	0.175
Spring No.	1					1	2
Vane Diameter, (in)	0.5					0.5	0.5
Vane Height, (in)	1					1	1
Start Point (deg)	0					0	0
Stop Point (deg)	101					80	64
Spring Rotation, deg.	101					80	64
Spring Constant	0.0074979					0.0074979	0.0150864
Tare No.	562	513	111	30	120	160	107
Wet Soil + Tare	146.03	169.34	171.89	86.27	143.24	129.06	121.57
Dry Soil + Tare	101.52	119.42	135.64	69.77	119.08	104.98	75.16
Tare	22.61	22.52	19.27	13.47	19.3	19.32	19.22
Mass of Dry Soil	78.91	96.9	116.37	56.3	99.78	85.66	55.94
Mass of Water	44.51	49.92	36.25	16.5	24.16	24.08	46.41
Water Content	**56.4**	**51.5**	**31.2**	**29.3**	**24.2**	**28.1**	**83.0**
Cohesive Strength, (ksf)	**0.207**					**0.164**	**0.263**

Remarks:

Tested By: KTK/HF	Computed By: SLC	Checked By:
Date: 8/5/16	Date: 8/7/16	Date:

ASTM D 4648-00

MINIATURE VANE TEST

ASTM D4648

Date Extruded:	**8/5/2016**						
Project Name:	**Island Road Marsh Creation**						
Project No.	**16715-040-01**						
Boring No.	B-16	B-16	B-16	B-16	B-16	B-16	B-16
Sample No.							
Penetration, ft	14-16	16-18	18-20	23-25	28-30	33-35	38-40
Test Type: U/R	U	U	U	U	U	U	U
Pen. (P) /Torvane (T) (tsf)	NA	NA	NA	0 (P) 0.13 (T)	0 (P) 0.08 (T)	0.5 (P) 0.25 (T)	NA
Spring No.				3	2	3	
Vane Diameter, (in)				0.5	0.5	0.5	
Vane Height, (in)				1	1	1	
Start Point (deg)				0	0	0	
Stop Point (deg)				110	22	137	
Spring Rotation, deg.				110	22	137	
Spring Constant				0.0233705	0.0150864	0.0233705	
Tare No.	402	124	144	566	556	565	407
Wet Soil + Tare	145.11	141.39	105.74	118.08	122.94	125.77	124.33
Dry Soil + Tare	107.53	91.57	74.79	89.89	82.68	96.3	101.13
Tare	27.37	19.35	19.33	22.63	22.61	22.61	27.34
Mass of Dry Soil	80.16	72.22	55.46	67.26	60.07	73.69	73.79
Mass of Water	37.58	49.82	30.95	28.19	40.26	29.47	23.2
Water Content	**46.9**	**69.0**	**55.8**	**41.9**	**67.0**	**40.0**	**31.4**
Cohesive Strength, (ksf)				**0.701**	**0.091**	**0.873**	

Remarks:

Tested By: KTK/HF	Computed By: SLC	Checked By:
Date: 8/5/16	Date: 8/7/16	Date:

ASTM D 4648-00

MINIATURE VANE TEST

ASTM D4648

Date Extruded:	**8/5/2016**						
Project Name:	**Island Road Marsh Creation**						
Project No.	**16715-040-01**						
Boring No.	B-16	B-16					
Sample No.							
Penetration, ft	43-45	48-50					
Test Type: U/R	U	U					
Pen. (P) /Torvane (T) (tsf)	NA	0 (P) 0.15 (T)					
Spring No.							
Vane Diameter, (in)							
Vane Height, (in)							
Start Point (deg)							
Stop Point (deg)							
Spring Rotation, deg.							
Spring Constant							
Tare No.	582	517					
Wet Soil + Tare	158.18	158.72					
Dry Soil + Tare	117.14	119.45					
Tare	22.46	22.5					
Mass of Dry Soil	94.68	96.95					
Mass of Water	41.04	39.27					
Water Content	**43.3**	**40.5**					
Cohesive Strength, (ksf)							

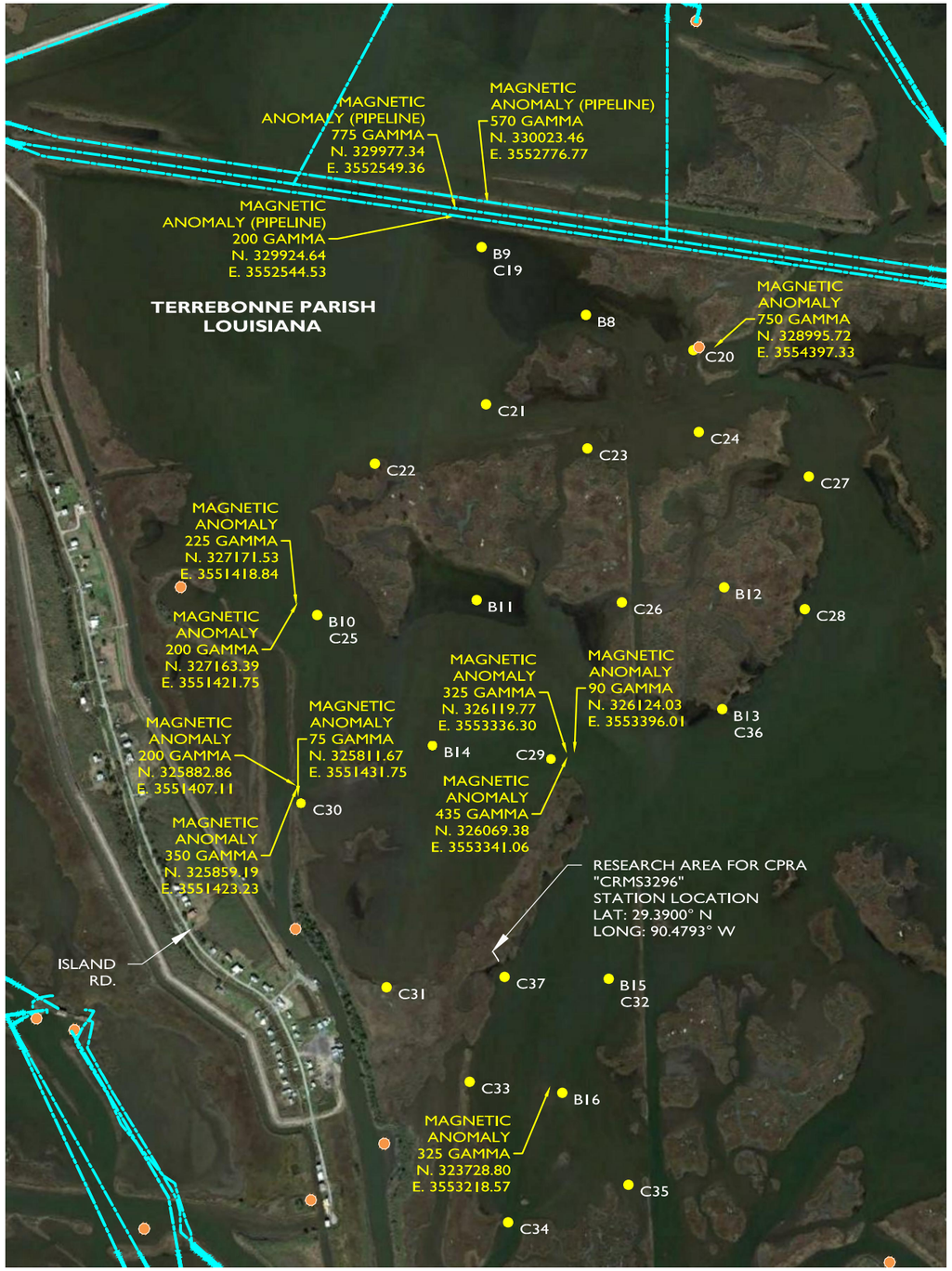
Remarks:

Tested By: KTK/HF	Computed By: SLC	Checked By:
Date: 8/5/16	Date: 8/7/16	Date:

ASTM D 4648-00

APPENDIX D

Lonnie G. Harper & Associates, Inc. Survey Report



1 BORING & CPT LOCATIONS

SCALE: 1" = 1,000'

POINT NUMBER	NORTHING (US Survey Feet)	EASTING (US Survey Feet)	LATTITUDE (North)	LONGITUDE (West)	WATER BOTTOM ELEVATION (ft, NAVD88)	WATER DEPTH (ft)
B-8	329217.92	3553477.58	29.40247	90.47711	-1.6	3.5
B-9	329699.75	3552735.17	29.40381	90.47943	-1.7	3.4
B-10	327087.11	3551567.96	29.39665	90.48315	-2.0	4.2
B-11	327193.55	3552699.88	29.39692	90.47960	-1.1	2.9
B-12	327283.99	3554458.09	29.39713	90.47407	-0.1	1.7
B-13	326418.55	3554445.20	29.39475	90.47413	-0.6	2.4
B-14	326161.23	3552387.13	29.39409	90.48060	-1.4	3.1
B-15	324503.84	3553638.36	29.38950	90.47671	-1.4	3.1
B-16	323694.34	3553308.84	29.38728	90.47777	-1.6	3.1
C-19	329699.75	3552735.17	29.40381	90.47943	-1.7	3.4
C-20	328969.53	3554239.90	29.40177	90.47418	-0.9	2.7
C-21	328583.90	3552767.15	29.40074	90.47935	-1.9	3.6
C-22	328162.11	3551977.14	29.39960	90.48184	-0.9	2.6
C-23	328270.41	3553487.07	29.39986	90.47710	-0.5	2.3
C-24	328387.03	3554278.67	29.40017	90.47461	-0.9	2.6
C-25	327087.11	3551567.96	29.39665	90.48315	-2.0	4.2
C-26	327176.93	3553732.05	29.39685	90.47636	-0.7	1.9
C-27	328071.13	3555060.76	29.39928	90.47216	-1.9	3.4
C-28	327129.55	3555031.41	29.39669	90.47228	-1.8	3.5
C-29	326065.13	3553228.49	29.39380	90.47796	-2.0	3.6
C-30	325751.24	3551452.72	29.39298	90.48355	-2.0	3.5
C-31	324443.47	3552059.81	29.38937	90.48167	0.4	1.2
C-32	324503.84	3553638.36	29.38950	90.47671	-1.4	3.1
C-33	323772.44	3552650.95	29.38751	90.47983	-0.6	2.3
C-34	322774.09	3552924.37	29.38476	90.47899	-2.2	3.7
C-35	323041.75	3553778.10	29.38548	90.47631	-1.0	2.8
C-36	326418.55	3554445.20	29.39475	90.47413	-0.6	2.4
C-37	324517.32	3552898.64	29.38955	90.47903	-1.1	2.8
TOP OF WATER ELEVATION OBSERVED DURING FIELD SURVEY WAS +1.65 FT, NAVD 88.						

DENOTES THE LOCATION OF A PERMITTED OIL &GAS WELL FROM SONRIS.COM

DENOTES THE LOCATION OF A PERMITTED OIL & GAS PIPELINE FROM SONRIS.COM

GENERAL NOTES

1. ALL DISTANCES AND ELEVATIONS ARE EXPRESSED IN TERMS OF FEET UNLESS OTHERWISE DENOTED.
2. THIS SURVEY IS REFERENCED TO THE NATIONAL GEODETIC NAD 83 HORIZONTAL DATUM LOUISIANA LAMBERT SOUTH ZONE-1702, ALL COORDINATES ARE EXPRESSED IN FEET, AND WERE DERIVED BY RECENT GPS OBSERVATIONS.
3. THIS SURVEY IS REFERENCED TO THE NATIONAL GEODETIC NAVD 88 VERTICAL DATUM, ALL ELEVATIONS ARE EXPRESSED IN FEET, AND WERE DERIVED BY RECENT GPS OBSERVATIONS.
4. ALL COORDINATE CONVERSIONS FROM NAD 83 TO WGS84 LAT. & LONG. WERE PERFORMED USING NGS NADCON UTILITY SOFTWARE.
5. NO EASEMENTS OR UNDERGROUND STRUCTURES WERE DETERMINED OR LOCATED DURING THIS SURVEY.
6. THIS SURVEY IS REFERENCED TO CPRA SURVEY CONTROL MONUMENT "TE10-SM-08". THE POINT IS MARKED BY A TWO-INCH DIAMETER DISK SET IN CONCRETE, HAVING COORDINATES NORTHING=334370.45, EASTING = 3562994.41, ELEV. = 1.26.

NORTH ARROW

REVISION DATE	REVISED BY	DESCRIPTION
09/06/2016	C.L.W.	ADDED MAGNETIC ANOMALIES TO DWG
09/27/2016	C.L.W.	CORRECTED COORDINATES FOR C19

LONNIE G. HARPER & ASSOCIATES, INC.
CIVIL ENGINEERING AND LAND SURVEYING
2746 HWY. NO. 384, BELL CITY, LOUISIANA 70630
PHONE: (337) 905-1079 FAX: (337) 905-1076

BORING & CPT LOCATIONS

GEOENGINEERS, INC.
TE-117 ISLAND ROAD PROJECT
TERREBONNE PARISH, LOUISIANA

SEAL

STATE OF LOUISIANA
LONNIE G. HARPER
REG. NO. 4326
REGISTERED
07/25/2016
LAND SURVEYOR

DRAWN BY C.L.W.	DATE 07/25/2016
DESIGNED BY C.L.W.	HOR. SCALE 1" = 1,000'
APPROVED BY L.G.H.	VERT. SCALE N.A.
PROJECT NO. 2016-53	SHEET 01 OF 01

APPENDIX E
Report Limitations and Guidelines for Use

APPENDIX E
REPORT LIMITATIONS AND GUIDELINES FOR USE

This appendix provides information to help you manage your risks with respect to the use of this report.

Geotechnical Services Are Performed for Specific Purposes, Persons and Projects

This report has been prepared for Louisiana Coastal Protection and Restoration Authority (CPRA) and their authorized agents and regulatory agencies. The information contained herein is not applicable to other sites.

GeoEngineers structures our services to meet the specific needs of our clients. No party other than CPRA, may rely on the product of our services unless we agree to such reliance in advance and in writing. This is to provide our firm with reasonable protection against open-ended liability claims by third parties with whom there would otherwise be no contractual limits to their actions. Within the limitations of scope, schedule and budget, our services have been executed in accordance with our Agreement with the Client and generally accepted geotechnical practices in this area at the time this report was prepared. Use of this report is not recommended for any purpose or project except the one originally contemplated.

A Geotechnical Engineering or Geologic Report Is Based on a Unique Set of Project-Specific Factors

This report has been prepared for Phase II of the Island Road Marsh Creation and Nourishment (TE-117) project located in Terrebonne Parish, Louisiana. GeoEngineers considered a number of unique, project-specific factors when establishing the scope of services for this project and report. Unless GeoEngineers specifically indicates otherwise, it is important not to rely on this report if it was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

For example, changes that can affect the applicability of this report include those that affect:

- the function of the proposed structure;
- elevation, configuration, location, orientation or weight of the proposed structure;
- composition of the design team; or
- project ownership.

If important changes are made after the date of this report, we recommend that GeoEngineers be given the opportunity to review our interpretations and recommendations. Based on that review, we can provide written modifications or confirmation, as appropriate.

Subsurface Conditions Can Change

This geotechnical or geologic report is based on conditions that existed at the time the study was performed. The findings and conclusions of this report may be affected by the passage of time, by man-made events such as construction on or adjacent to the site, or by natural events such as floods, earthquakes, slope instability or groundwater fluctuations. If more than a few months have passed since issuance of our report or work product,

or if any of the described events may have occurred, please contact GeoEngineers before applying this report for its intended purpose so that we may evaluate whether changed conditions affect the continued reliability or applicability of our conclusions and recommendations.

Most Geotechnical and Geologic Findings Are Professional Opinions

Our interpretations of subsurface conditions are based on field observations from widely spaced sampling locations at the site. Site exploration identifies the specific subsurface conditions only at those points where subsurface tests are conducted or samples are taken. GeoEngineers reviewed field and laboratory data and then applied our professional judgment to render an informed opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ, sometimes significantly, from those indicated in this report. Our report, conclusions and interpretations should not be construed as a warranty of the subsurface conditions.

Geotechnical Engineering Report Recommendations Are Not Final

The construction recommendations included in this report are preliminary and should not be considered final. GeoEngineers' recommendations can be finalized only by observing actual subsurface conditions revealed during construction. GeoEngineers is unable to assume responsibility for the recommendations in this report without performing construction observation.

We recommend that you allow sufficient monitoring, testing and consultation during construction by GeoEngineers to confirm that the conditions encountered are consistent with those indicated by the explorations, to provide recommendations for design changes if the conditions revealed during the work differ from those anticipated, and to evaluate whether earthwork activities are completed in accordance with our recommendations. Retaining GeoEngineers for construction observation for this project is the most effective method of managing the risks associated with unanticipated conditions.

A Geotechnical Engineering or Geologic Report Could Be Subject to Misinterpretation

Misinterpretation of this report by members of the design team or by contractors can result in costly problems. GeoEngineers can help reduce the risks of misinterpretation by conferring with appropriate members of the design team after submitting the report, reviewing pertinent elements of the design team's plans and specifications, participating in pre-bid and preconstruction conferences, and providing construction observation.

Do Not Redraw the Exploration Logs

Geotechnical engineers and geologists prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. The logs included in a geotechnical engineering or geologic report should never be redrawn for inclusion in architectural or other design drawings. Photographic or electronic reproduction is acceptable, but separating logs from the report can create a risk of misinterpretation.

Give Contractors a Complete Report and Guidance

To help prevent costly problems associated with unanticipated subsurface conditions, we recommend giving contractors the complete geotechnical engineering or geologic report, but preface it with a clearly written letter of transmittal. In that letter, advise contractors that the report's accuracy is limited. In addition, encourage them to confer with GeoEngineers and/or to conduct additional study to obtain the specific types of information they need or prefer.

Contractors Are Responsible for Site Safety on Their Own Construction Projects

Our geotechnical recommendations are not intended to direct the contractor's procedures, methods, schedule or management of the work site. The contractor is solely responsible for job site safety and for managing construction operations to minimize risks to on-site personnel and adjacent properties.

Read These Provisions Closely

It is important to recognize that the geoscience practices (geotechnical engineering, geology and environmental science) are less exact than other engineering and natural science disciplines. Without this understanding, there may be expectations that could lead to disappointments, claims and disputes. GeoEngineers includes these explanatory "limitations" provisions in our reports to help reduce such risks. Please confer with GeoEngineers if you need to know more how these "Report Limitations and Guidelines for Use" apply to your project or site.

Biological Pollutants

GeoEngineers' Scope of Work specifically excludes the investigation, detection, prevention or assessment of the presence of Biological Pollutants. Accordingly, this report does not include any interpretations, recommendations, findings or conclusions regarding the detecting, assessing, preventing or abating of Biological Pollutants, and no conclusions or inferences should be drawn regarding Biological Pollutants as they may relate to this project. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria and viruses, and/or any of their byproducts.

A Client that desires these specialized services is advised to obtain them from a consultant who offers services in this specialized field.

Have we delivered World Class Client Service?

Please let us know by visiting **www.geoengineers.com/feedback**.

GeoEngineers