LAKE PONTCHARTRAIN AND VICINITY MITIGATION

BAYOU SAUVAGE FLOOD SIDE

INTERMEDIATE MARSH RESTORATION

ORLEANS PARISH, LOUISIANA

GEOTECHNICAL REPORT

December 2013

Lake Pontchartrain and Vicinity Mitigation	
Bayou Sauvage Flood Side Intermediate Marsh Restoration	
Orleans Parish, Louisiana	
December 2013	
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BAYOU SAUVAGE FLOOD SIDE INTERMEDIATE MARSH RESTORATION

ORLEANS PARISH, LOUISIANA

December 2013

INTRODUCTION

The LPV - Bayou Sauvage Flood Side Intermediate marsh restoration project is located in New Orleans East, about fifteen minutes from the French Quarter. Bayou Sauvage is the largest urban national wildlife refuge. It was established in 1990 and consists of over 24,000 acres of fresh and brackish marshes and coastal hardwood forests. The majority of this refuge is contained within the Hurricane and Storm Damage Risk Reduction System.

PROJECT DESCRIPTION

This construction effort will result in the creation of 327 acres of brackish marsh BSFS-4 and BSFS-5 where open water currently exists. Borrow material for construction of these acres will be obtained from Lake Pontchartrain, adjacent to the project footprint, but approximately 2,000 feet offshore. Two (2) 200-foot wide access corridors are provided between the borrow site and the shoreline to accommodate dredge pipeline. The earthen retention dikes required for containment of dredged materials of BSFS-4 and BSFS-5 will also be constructed. See Plate 1 for the project plan. The datum for all elevations in the report is NAVD 88 (2004.65).

PROJECT BORDERS

The project is bordered on the north by Lake Pontchartrain, on the west by Highway 11, and on the east and the south by Chef Menteur Highway.

GEOTECHNICAL INVESTIGATIONS AND ANALYSES

In order to determine the physical characteristics and behavior of the soils associated with Lake Pontchartrain and Vicinity Mitigation at Bayou Sauvage Flood Side Marsh, geotechnical investigations and analyses were performed. FFEBJV, LLC was tasked to collect soil borings and perform laboratory tests to determine soil characteristics. The geotechnical branch of the New Orleans district analyzed stability of the earthen retention dikes with berms, and estimated settlement of the created marshes BSFS-4 and BSFS-5.

Field Investigation

A total of eleven subsurface borings were advanced in the project area during the periods of July 2012 and June 2013 at the locations shown in Plate 1. Five undisturbed-type soil borings BSFR-12U, BSFR-13U, and BSFS-1U thru BSFS-3U were advanced to depths 30’, 40’, and 60’, and six general-type soil borings BSFR-1G thru BSFR-6G to 25’ (Plates 2 thru 12). The undisturbed-type soil borings were advanced along the alignments of the retention dikes. The general-type soil borings (BSFR-1G thru BSFR-6G) were performed in the borrow area in Lake Pontchartrain to be used as fill material for the marsh. Each soil boring was visually classified. Undisturbed soil borings (BSFR-12U, BSFR-13U, and

BSFS-1U thru BSFS-3U) were visually classified and tested in the laboratory for strength and compressibility .

Laboratory Testing

The following tests were performed on the soil samples: 3-point unconsolidated-undrained triaxial shear, unconfined compression, consolidation, liquid and plastic limits, sieve analysis, classification, water content, and specific gravity. Detailed results of this testing can be found on soil boring logs plates 2 to 12 and Appendix B.

Subsurface Evaluation

BSFS-4

The project area is located in the northeastern portion of the Mississippi River deltaic plain. Specifically, it is located near the shoreline of Lake Pontchartrain, north of Bayou Sauvage, east of Highway 11, south of Irish Bayou, in the Bayou Sauvage Wildlife Refuge. Dominant physiographic features in the vicinity include Bayou Savage and its associated natural levees, Lake Pontchartrain, Chef Menteur Pass, ponds, and marsh. This is an area of low relief averaging near sea level. See Plate 13.

The surface and shallow subsurface is overlain by marsh deposits which consist of interbedded peat and very soft to medium, organic, fat clay. Marsh deposits are approximately 8 feet thick and range in elevation from the surface to approximately -10 feet. Interdistributary deposits underlie marsh deposits. Interdistributary deposits consist of very soft to soft and occasionally medium, fat clay interbedded with occasional lenses of silt and very soft lean clay. These deposits average 8 feet thick. Bay-sound deposits underlie interdistributary deposits and consist of interbedded, very soft to medium, fat and lean clays with occasional shells, shell fragments, and lenses of silt and silty sand. Bay-sound deposits average 14 feet thick and range from approximately -17 to -31 feet in elevation. Pleistocene deposits underlie bay-sound deposits and consist of interbedded, stiff, oxidized, fat and lean clays, silt, and silty sand. The surface of the Pleistocene deposits averages -31 feet in elevation and these deposits extend to an unknown depth.

Ground water is at or near the surface. Coarse sediments in Pleistocene deposits may be hydraulically connected to Lake Pontchartrain.

BSFS-5

The project area is located in the northeastern portion of the Mississippi River deltaic plain. Specifically, it is located near the shoreline of Lake Pontchartrain, north of Bayou Sauvage, in the Bayou Sauvage Wildlife Refuge. Dominant physiographic features in the vicinity include Bayou Savage and its associated natural levees, Lake Pontchartrain, Chef Menteur Pass, ponds, and marsh. This is an area of low relief averaging near sea level. See Plate 14.

The surface and shallow subsurface is overlain by marsh deposits which consist of interbedded peat and very soft to medium, organic, fat clay. Marsh deposits are approximately 10 feet thick and range in elevation from +0.2 to -10 feet. Interdistributary deposits underlie marsh deposits. Interdistributary deposits consist of very soft to soft and occasionally medium, fat clay interbedded with occasional lenses of silt and very soft lean clay. Interdistributary deposits average 5 feet thick and range in elevation from -9 to -15 feet. Nearshore gulf deposits underlie interdistributary deposits and consist of interbedded sand, silty sand, and silt with occasional shells, shell fragments, and lenses of very soft to

soft fat and lean clays. Nearshore gulf deposits are 5 to 9 feet thick and range in elevation from -14 to -24 feet. Nearshore gulf deposits overlie Pleistocene deposits which consist of interbedded, stiff, oxidized, fat and lean clays, silt, sand, and silty sand. The surface of the Pleistocene deposits range in elevation from -20 to -24 feet and these deposits extend to an unknown depth.

Ground water is at or near the surface. Nearshore gulf and Pleistocene deposits are hydraulically connected to Lake Pontchartrain.

SETTLEMENT ANALYSIS

The primary purpose of the settlement analysis was to develop an estimated settlement curve showing the anticipated settlement over time.

Settlement for primary consolidation of the foundation due to the weight of the marsh was analyzed using Rocscience's SETTLE3D. Analyses can be found in Appendix A. Settlement parameters were developed using actual consolidation test results and correlations where consolidation tests were not available. The estimates of the foundation settlement depend on the soil thickness, compression index, initial void ratio, coefficient of consolidation, initial and increase in overburden stress.

Shrinkage of the dredged material above the water surface elevation was estimated to be 25%. Consolidation of the dredged material below the water surface elevation was estimated to be 10%. Time rate of shrinkage and consolidation was based on a standard curve for hydraulic fill.

Material from Lake Pontchartrain will be excavated and pumped to the areas BSFS-4 and BSFS-5 to create marsh. The borrow area in Lake Pontchartrain is 184 acres. Acreages of BSFS-4 and BSFS-5 are 48.8 and 277.8 respectively. Since there was no unit weight lab testing for the general borings BSFR-1G thru BSFR-6G, the unit weight of the borrow material from Lake Pontchartrain was based upon unit weights of similar soil type, water content and atterberg limits and 100 pcf was used. Consolidation was estimated with a water surface elevation of 0.

Foundation stratifications for the two areas are shown in plates 15 and 19. Settlement curves for the areas with different initial fill elevations are shown in Appendix A.

SLOPE STABILITY ANALYSIS

Slope stability was analyzed by the Spencer Method, which by solving force and moment equilibrium equations for the entire soil mass, finds the factor of safety. The computer program, Slope/W, which is part of the GeoStudio suite of geotechnical software, was used in this analysis. Slope/W is a numerical analysis program with the limit equilibrium method, which describes dividing a larger body into smaller slices.

Slope stability analysis was performed on the earthen retention dikes for the areas BSFS-4 and BSFS-5. The slope stability of the dikes has the driving force induced by the soil weight. In response to the driving force, the subsurface soils have a resistant force in the form of shear strength, which attempts to keep the slope from sliding. Both the driving forces and the resisting forces are dependent on the geometry of the cross section. The computer program Slope/W developed by GeoStudio is a software product that computes factors of safety against potential failure by the Spencer method which analyzes slices of various slip surfaces with the limit equilibrium of the forces and moments. Both Entry/exit and block potential failure surfaces were analyzed. For each dike, stability analyses of the extreme

construction, construction and operation cases were performed. The extreme case has the slurry material to the top of the dikes; it assumes that the slurry material does not have any cohesion as it is being pumped into the marsh creation area. The construction case analyzes stability where in-situ material is excavated inside the marsh creation area to construct the retention dikes. The operation case analyzes the dredged material on the side of the marsh creation. The required minimum factor of safety is 1.2 for the extreme construction and construction cases, and 1.3 for the operation case. The results of the slope stability analyses are shown below:

Summary Table of Factors of Safety of Stability Analyses

Slip Surface type	Plate number	Factor of Safety
BSFS-4 Earthen Dike - Extreme Construction Case - Required FOS 1.2		
Block	16	1.26
Entry Exit	Does Not Control	1.26
BSFS-4 Earthen Dike - Construction Case - Required FOS 1.2		
Block	17	1.22
Entry Exit	Does Not Control	1.29
BSFS-4 Earthen Dike - Operation Case - Required FOS 1.3		
Block	18	1.37
Entry Exit	Does Not Control	1.37
BSFS-5 Earthen Dike - Extreme Construction Case - Required FOS 1.2		
Block	20	1.32
Entry Exit	Does Not Control	1.32
BSFS-5 Earthen Dike - Construction Case - Required FOS 1.2		
Block	21	1.37
Entry Exit	Does Not Control	1.37
BSFS-5 Earthen Dike - Operation Case - Required FOS 1.3		
Block	22	1.21
Entry Exit	Does Not Control	1.21

The dredged material is excavated from Lake Pontchartrain and placed inside the marsh creation area, with assumed properties for unit weight of 100 pcf and for cohesion of 100 psf. The earthen dikes are constructed from material excavated inside the marsh creation area, with assumed properties of 100 pcf unit weight and 200 psf cohesion. The dikes were designed with a water surface elevation of 0. For the construction of the containment dikes for Site 4, the material at the dike borrow pit from the ground surface to El -6 shall be discarded. For the construction of the containment dikes for Site 5, the material at the dike borrow pit from the ground surface to El -9 shall be discarded. The material to elevation -15.0 will then be used to construct the dikes.

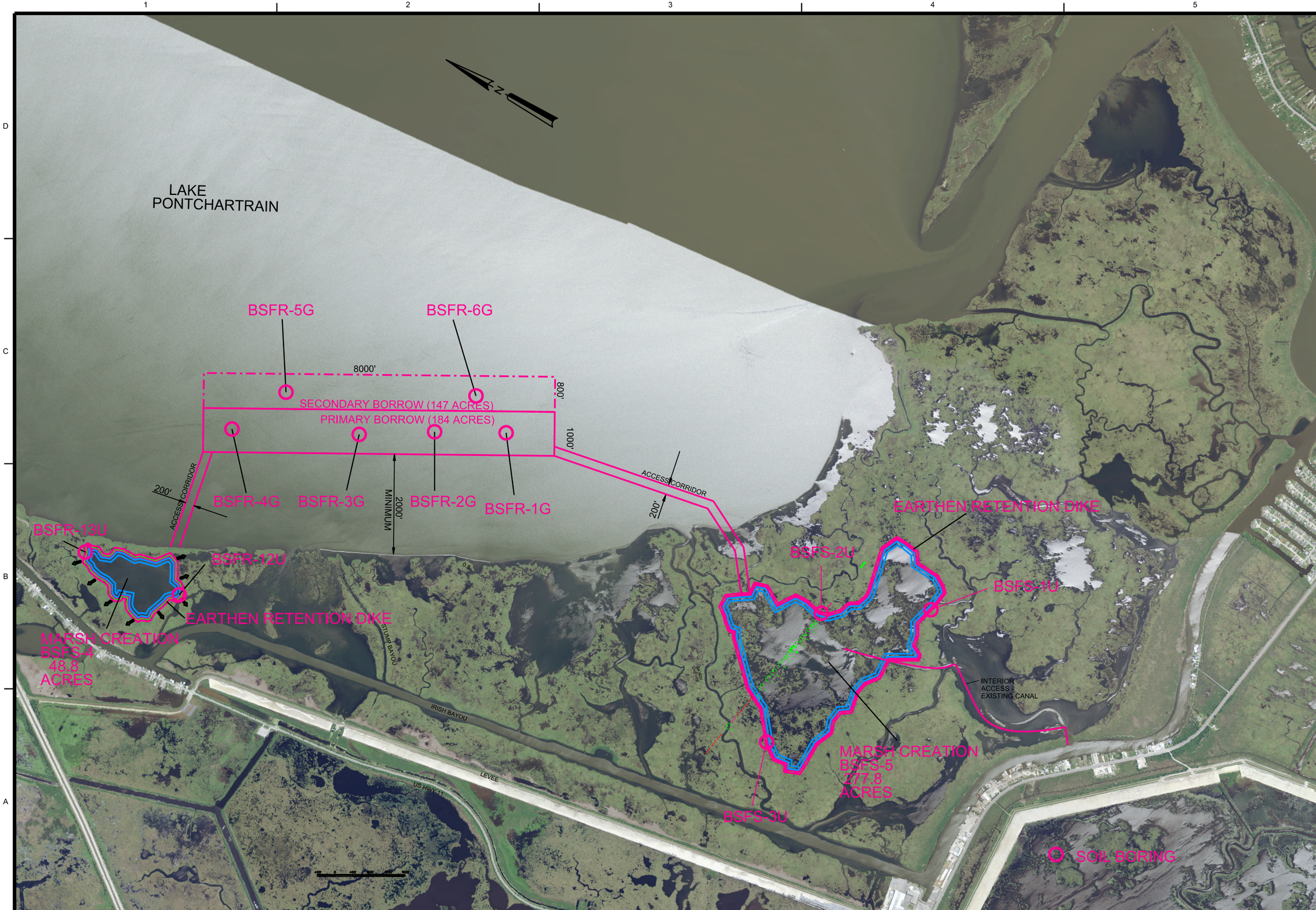
BSFS-4 Earthen Dike

The foundation stratification was developed from borings BSFR-12U and BSFR-13U which consists of strata of low-cohesion clay. The dike is 5’ wide at the crest, and has crest at elevation +4.5, with 1V on

4H side slopes. The dredged material is placed at elevation +3.5. From recent survey data, the ground surface in the slope stability analyses is assumed to be at approximately elevation -2.5 (marsh creation) and outside -1.0 (existing marsh). To meet the required factors of safety, berms at elevation +2.5 and 20' long must be constructed. The distance from the dike centerline to top of the borrow pit excavation is 85'; the borrow pit excavation slope is 1V on 3H; the bottom of excavation is at elevation -15.0.

BSFS-5 Earthen Dike

The foundation stratification was developed from borings BSFS-1U thru BSFS-3U which consist of strata of silt, sand and low-cohesion clay. The dike is 5' wide at the crest, with an assumed top elevation of +5.0, and 1V on 4H side slopes. The dredged material is placed at elevation +4.0 which gives an assumed 1 foot of freeboard. From recent survey data, the ground surface in the slope stability analyses is assumed to be at approximately elevation -2.0 (marsh creation) and outside 0 (existing marsh). To meet the required factors of safety, berms at elevation +2.5 and 20' long must be constructed. The distance from the dike centerline to top of the borrow pit excavation is 68'; the borrow pit excavation slope is 1V on 3H; the bottom of excavation is at elevation -15.0.



US Army Corps of Engineers®
NEW ORLEANS DISTRICT

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

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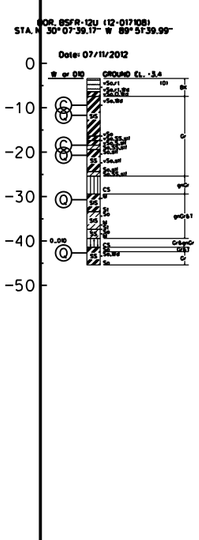
DWN BY: KJO
CKD BY: RWB
SUBMITTED BY: KEITH O'CAR
DATE: 04-15-2013
SOLICITATION NO.:
CONTRACT NO.:
FILE NUMBER:
PLOT DATE: 04-15-2013
PLOT SCALE: AS NOTED
SIZE: ANSI D
FILE NAME: BayouSauvage_Nourishment.dgn

U.S. ARMY CORPS OF ENGINEERS
NEW ORLEANS DISTRICT
NEW ORLEANS, LOUISIANA

HSDDRS, LPV MITIGATION
BAYOU SAUVAGE FLOODSIDE
INTERMEDIATE MARSH RESTORATION
ORLEANS PARISH, LA
PROJECT PLAN

PLATE 1

ELEVATIONS IN FEET - N.A.V.D.



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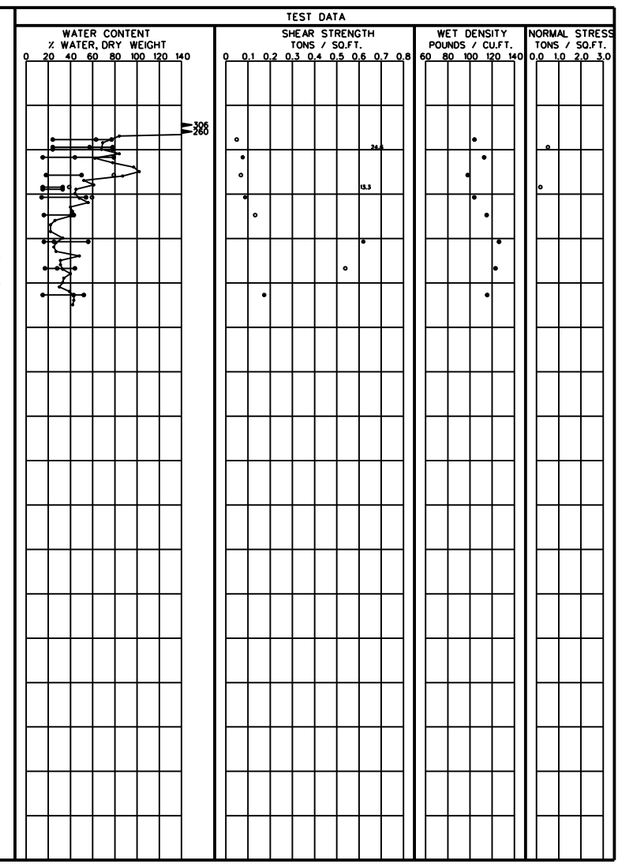

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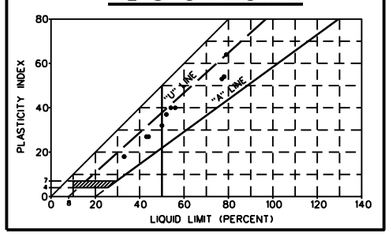

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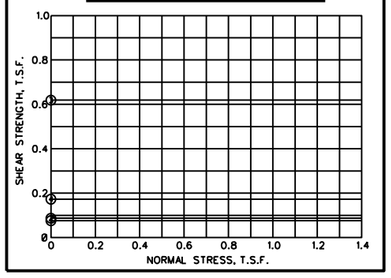

TABULAR TEST DATA

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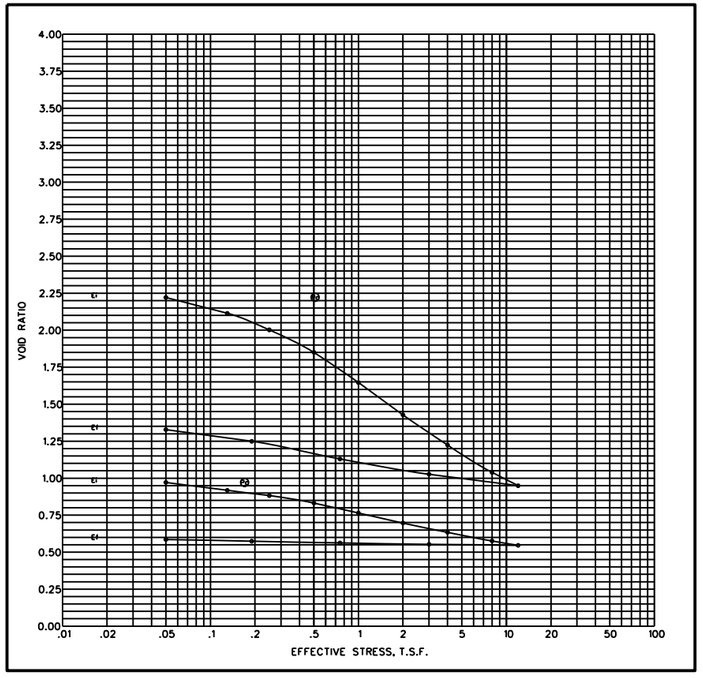
3	-30.7	O	0.0	0.619	CH
4	-42.7	O	0.0	0.173	CH
5	-9.4	C	0.0	0.000	CH
6	-18.4	C	0.0	0.000	CL



NOTES

- ○ - (UC) UNCONFINED COMPRESSION TEST
- ■ - (Q) UNCONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ▲ - (R) CONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ◻ - (S) CONSOLIDATED - DRAINED DIRECT SHEAR TEST
- ω_P ω_N ω_L ATTERBERG LIMITS

BORING WAS TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER.
FOR SOIL BORING LEGEND SEE PLATE A.
FOR LOCATION OF BORINGS SEE PLATE
FOR DETAILED TEST DATA SEE

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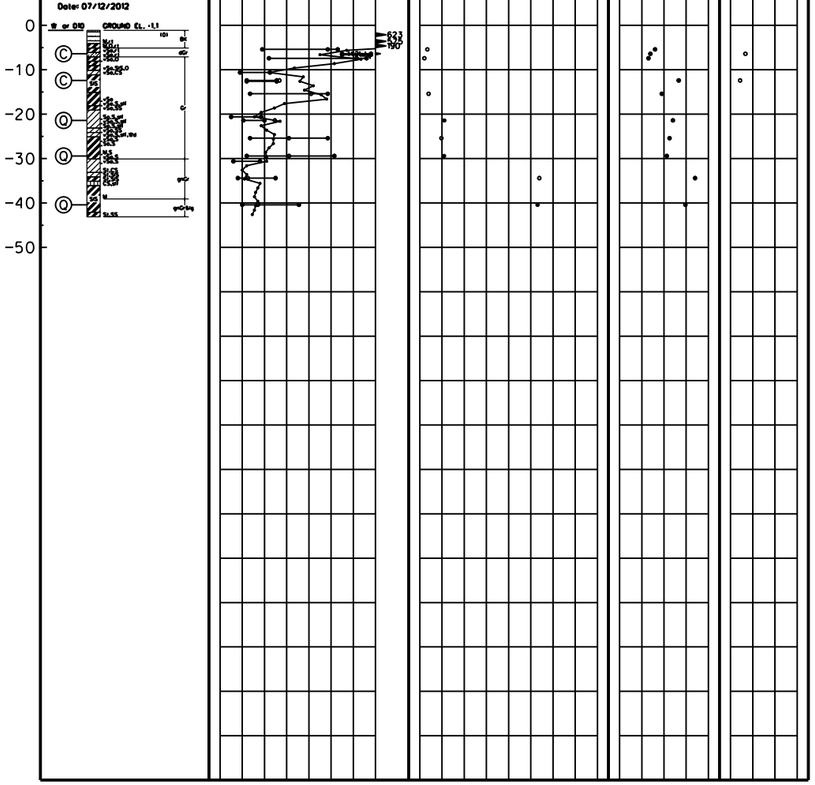
INTERMEDIATE WATER DISTRIBUTION
ORLEANS PARISH, LA

SOIL BORING BSFR-12U

PLATE 2



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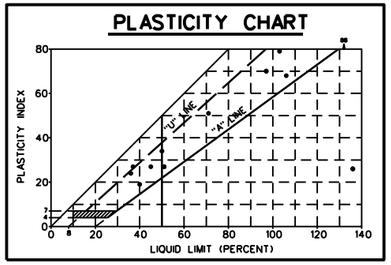

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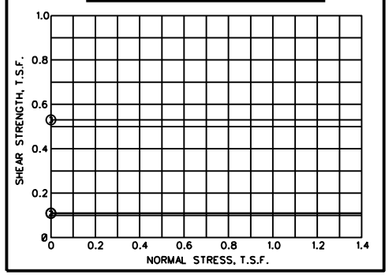

TABULAR TEST DATA

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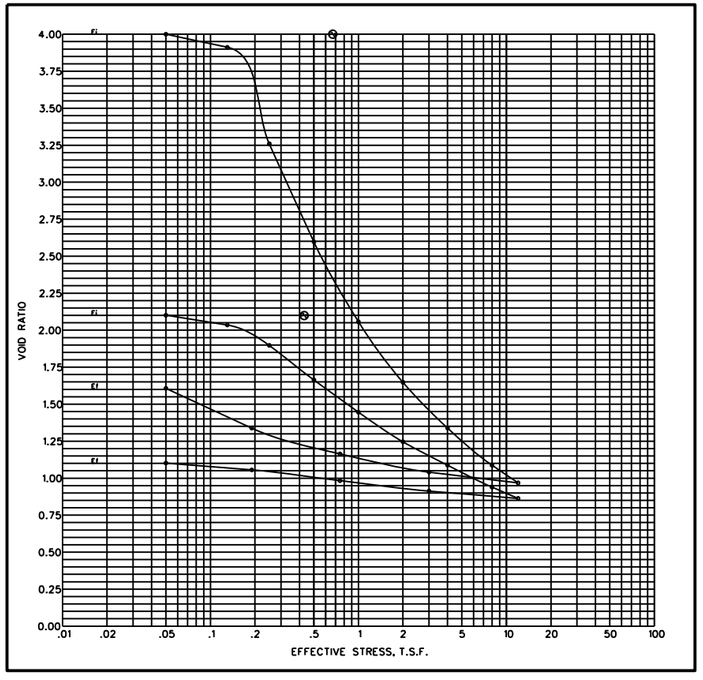
2	-29.4	O	0.0	0.109	CH
3	-40.4	O	0.0	0.530	CH
4	-6.4	C	0.0	0.000	OH
5	-12.4	C	0.0	0.000	CH



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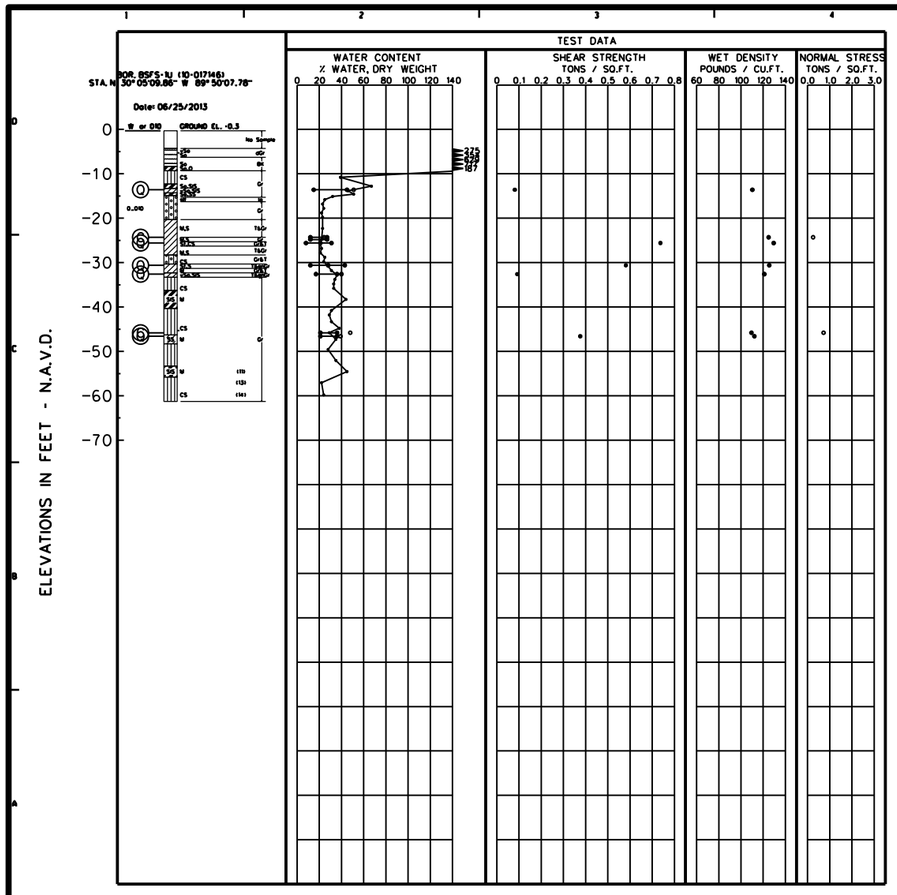
LPV MITIGATION
BAYOU SAUVAGE FLOOD SIDE
INTERMEDIATE MARSH RESTORATION
ORLEANS PARISH, LOUISIANA

SOIL BORING BSFR-13U

PLATE 3



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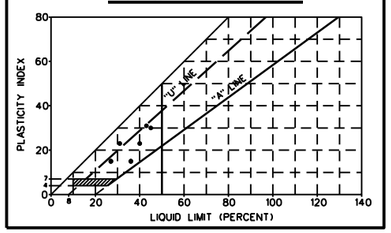

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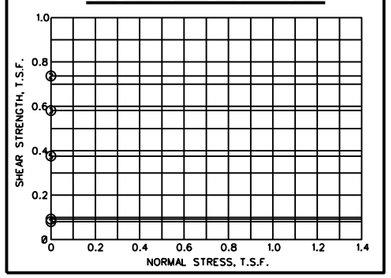

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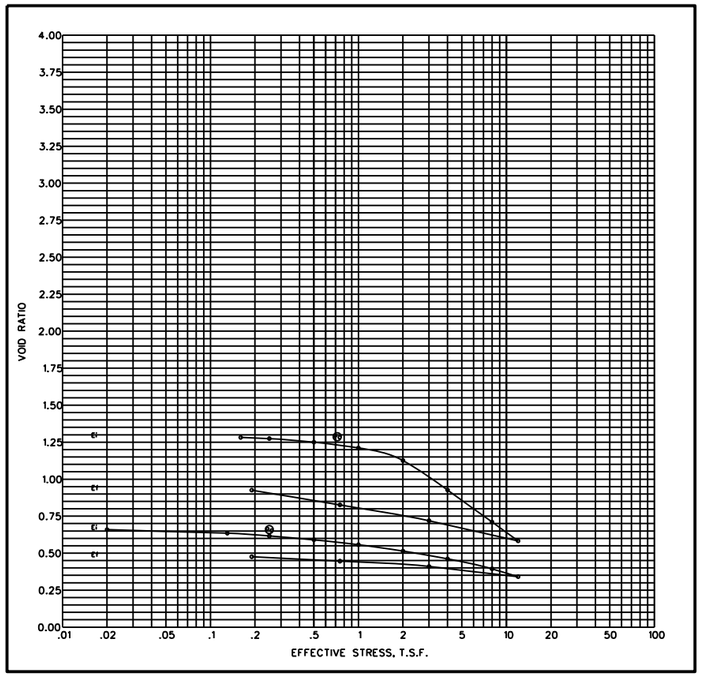
3	-30.6	O	0.0	0.581	CL
4	-32.6	O	0.0	0.092	CL
5	-46.6	O	0.0	0.376	CL
6	-24.3	C	0.0	0.000	CL
7	-45.8	C	0.0	0.000	CL



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FOR SOIL BORING LEGEND SEE PLATE A.
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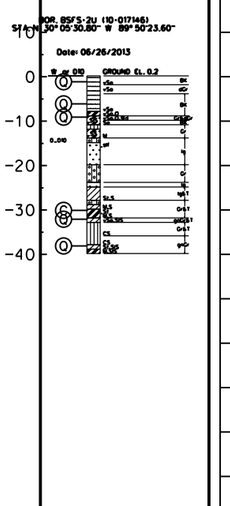
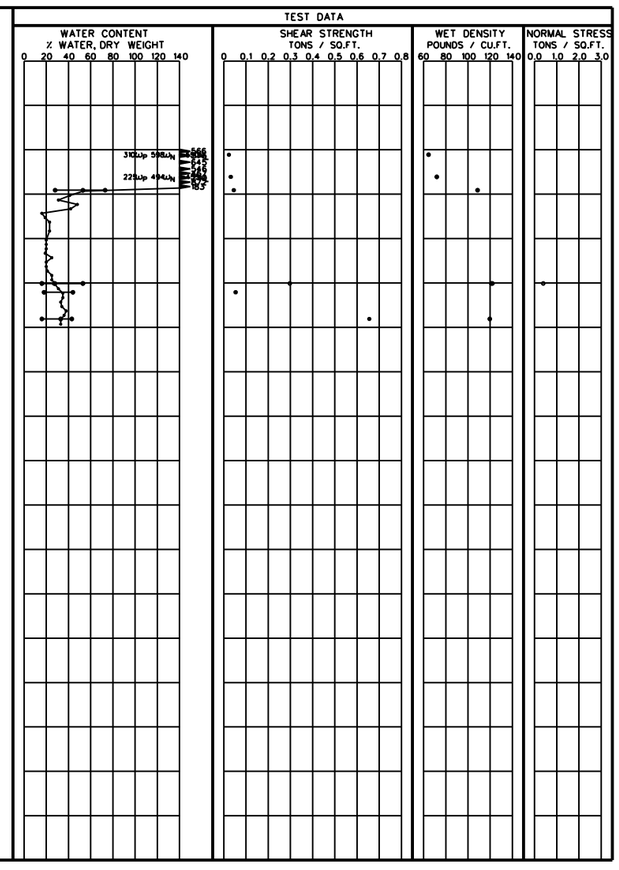
MISSISSIPPI VALLEY DIVISION

LPV MITIGATION
BAYOU DUPONT FLOOD SOD
INTERNATIONAL RIVERFRONT DISTRICT
ORLEANS PARISH, LA

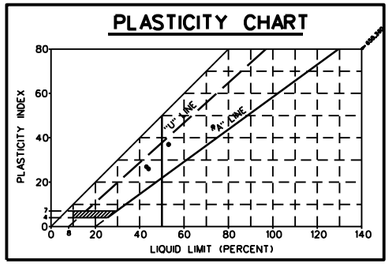
SOIL BORING BSFS-1U

PLATE
4





PLASTICITY CHART



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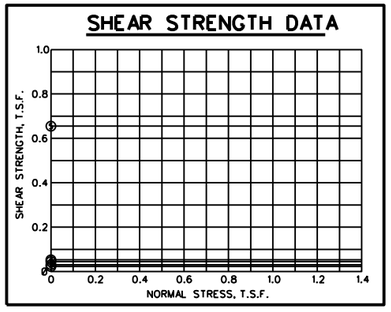

TABULAR TEST DATA

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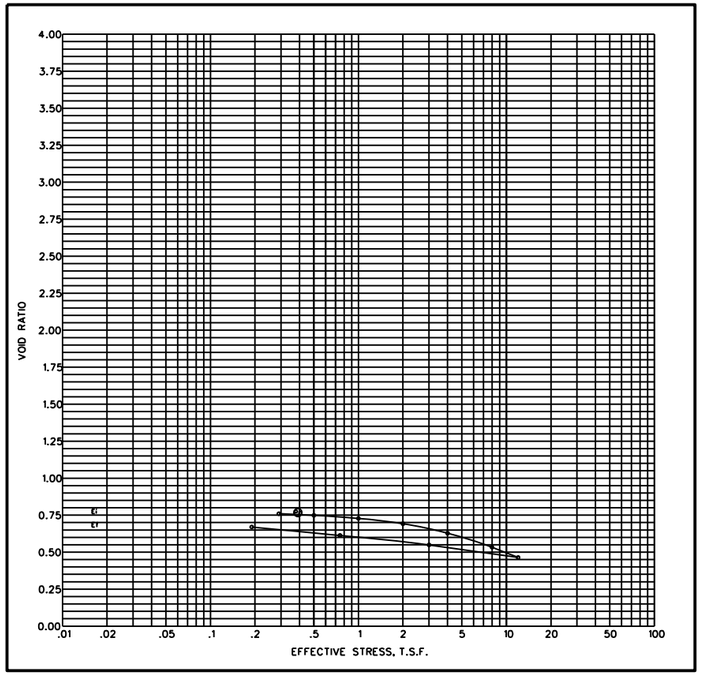
2	-6.1	Q	0.0	0.031	PT
3	-9.1	Q	0.0	0.045	CH
4	-32.1	Q	0.0	0.053	CL
5	-38.1	Q	0.0	0.655	CL
6	-30.1	C	0.0	0.000	CH



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FOR SOIL BORING LEGEND SEE PLATE A.
FOR LOCATION OF BORINGS SEE PLATE
FOR DETAILED TEST DATA SEE

U.S. ARMY CORPS OF ENGINEERS NEW ORLEANS DISTRICT

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MISSISSIPPI VALLEY DIVISION

LPV MITIGATION
BAYOU SAUVAGE FLOOD SIDE
INTERMEDIATE MARSH RESTORATION
ORLEANS PARISH, LA

SOIL BORING BSFS-2U

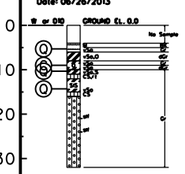
PLATE
5

ELEVATIONS IN FEET - N.A.V.D.

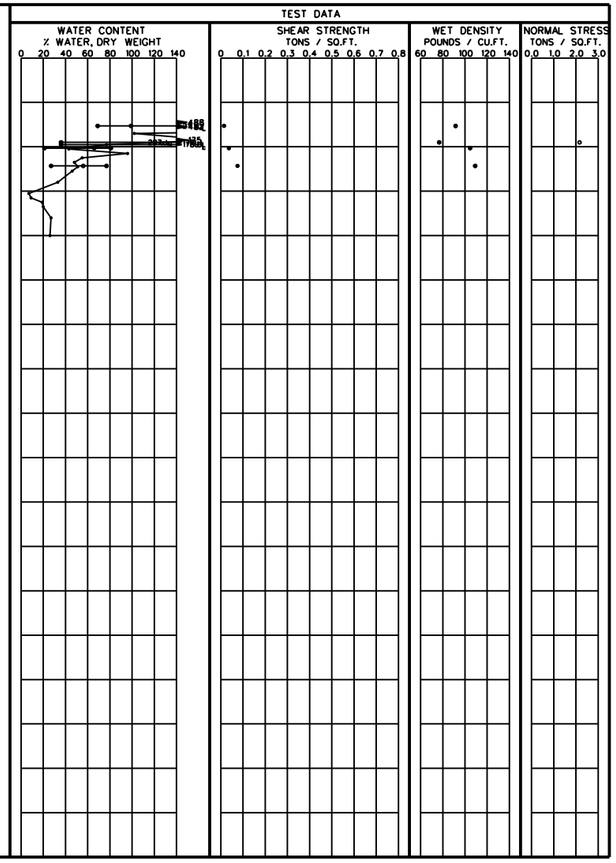
BOR. BSFS-3U (10-017146)
STA. N 30° 05'27.44" W 89° 50'58.83"

Date: 06/26/2013

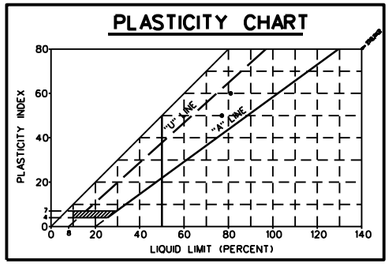
W or DID | GROUND EL. 0.0



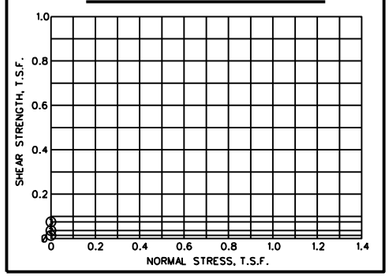
TEST DATA



PLASTICITY CHART



SHEAR STRENGTH DATA



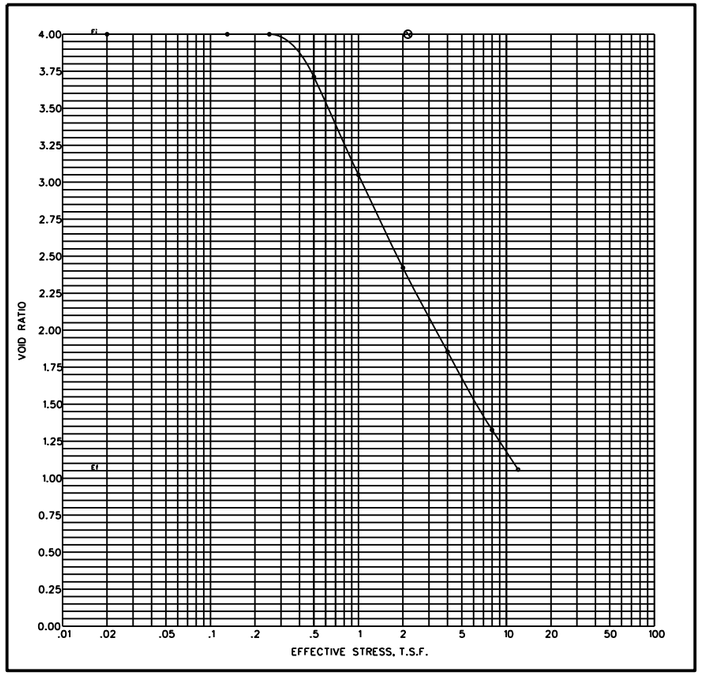
NOTES

- ○ - (UC) UNCONFINED COMPRESSION TEST
- ■ - (Q) UNCONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ▲ - (R) CONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ◻ - (S) CONSOLIDATED - DRAINED DIRECT SHEAR TEST
- ω_P ω_N ω_L ATTERBERG LIMITS

BORING WAS TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER.
FOR SOIL BORING LEGEND SEE PLATE A.
FOR LOCATION OF BORINGS SEE PLATE
FOR DETAILED TEST DATA SEE

TABULAR TEST DATA

ENVELOPE NO.	EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1	-5.3	Q	0.0	0.014	PT
2	-10.3	Q	0.0	0.036	CH
3	-14.3	Q	0.0	0.075	CH
4	-9.0	C	0.0	0.000	CH



U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MISSISSIPPI VALLEY DIVISION

LPV MITIGATION
BAYOU SAUVAGE FLOOD SIDE
INTERMEDIATE MARSH RESTORATION
ORLEANS PARISH, LA

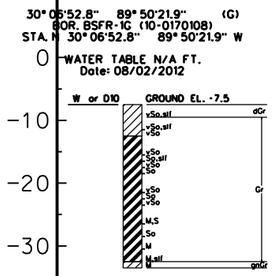
SOIL BORING BSFS-3U

PLATE
6

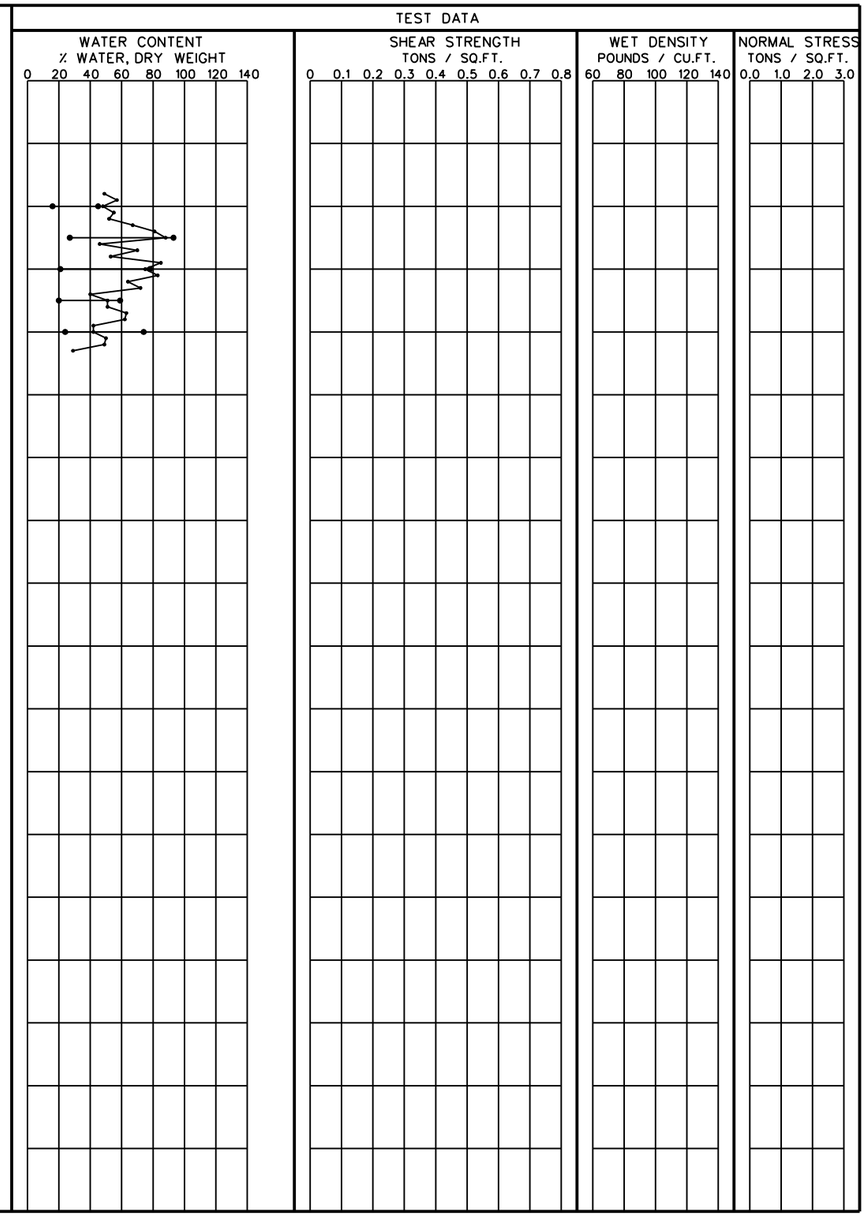
ELEVATIONS IN FEET - N.A.V.D.

30° 06'52.8" 89° 50'21.9" (G)
BOR. BSFR-1G (10-0170108)
STA. N 30° 06'52.8" 89° 50'21.9" W

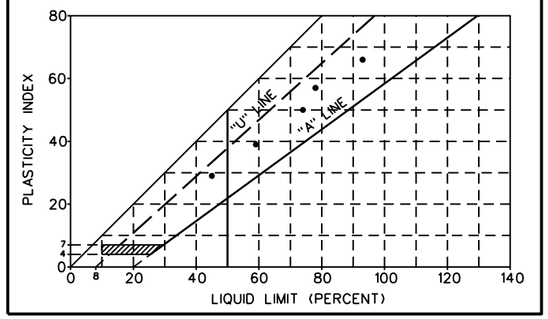
WATER TABLE N/A FT.
Date: 08/02/2012



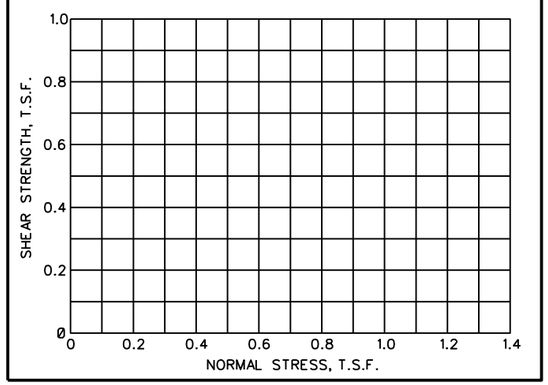
TEST DATA



PLASTICITY CHART



SHEAR STRENGTH DATA



TABULAR TEST DATA

ENVELOPE		TYPE	STRENGTH		CLASS
NO.	EL.		Φ	C - TSF	

NOTES

- ○ - (UC) UNCONFINED COMPRESSION TEST
- ■ - (Q) UNCONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ▲ - (R) CONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ⊡ - (S) CONSOLIDATED - DRAINED DIRECT SHEAR TEST

ω_P —— ω_N —— ω_L ATTERBERG LIMITS

BORING WAS TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER.
FOR SOIL BORING LEGEND SEE PLATE A.
FOR LOCATION OF BORINGS SEE PLATE
FOR DETAILED TEST DATA SEE

US ARMY CORPS OF ENGINEERS
NEW ORLEANS DISTRICT

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MISSISSIPPI VALLEY DIVISION

DESIGNED BY | DRAWN BY | SUBMITTED BY | CHECKED BY | DATE | SUBMITTED BY | CONTRACT NO. | FILE NAME | FILE NO. | PLOT SCALE | PLOT DATE

LPV MITIGATION
BAYOU SAUVAGE FLOOD SIDE
INTERMEDIATE MARSH RESTORATION
ORLEANS PARISH, LA

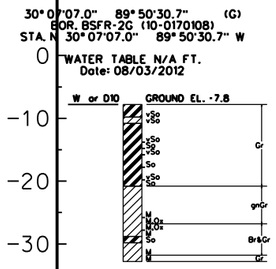
SOIL BORING BSFR-1G

PLATE
7

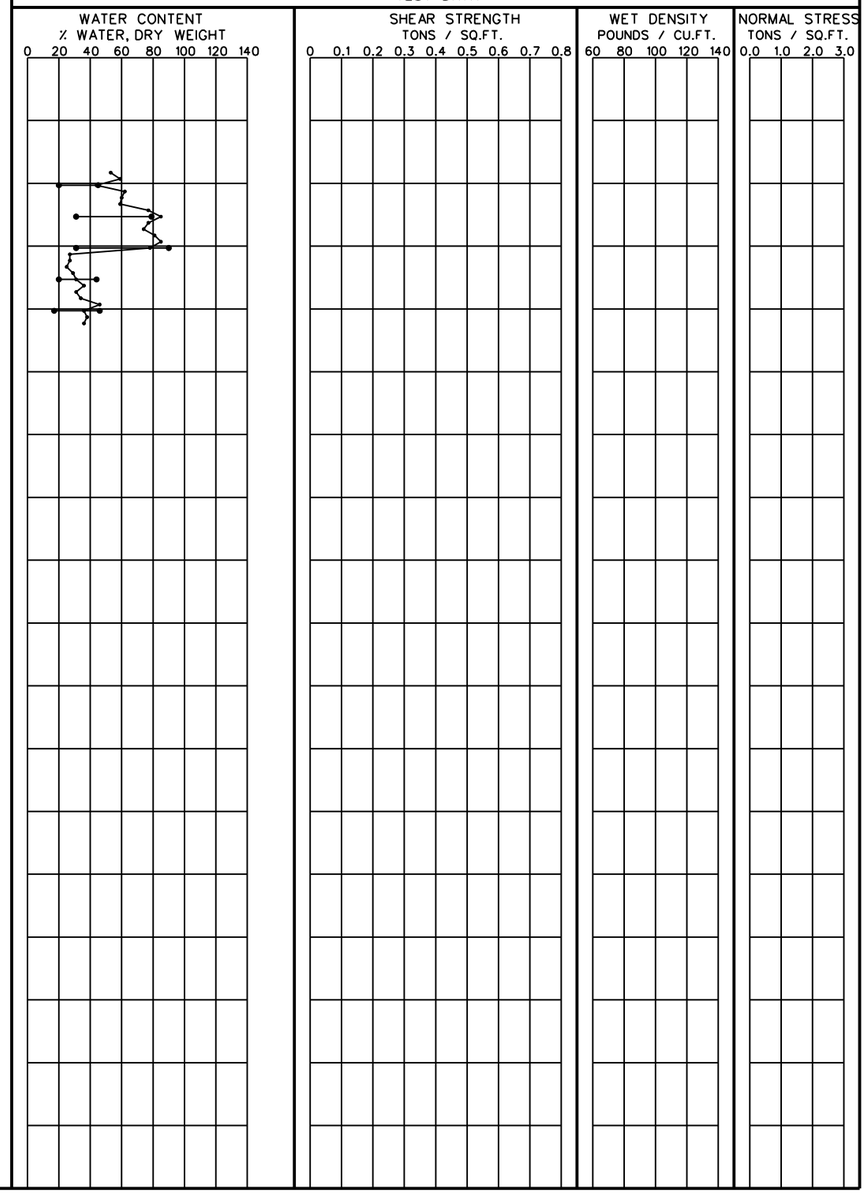
ELEVATIONS IN FEET - N.A.V.D.

30° 07'07.0" 89° 50'30.7" (G)
BOR. BSFR-2G (10-0170108)
STA. N 30° 07'07.0" 89° 50'30.7" W

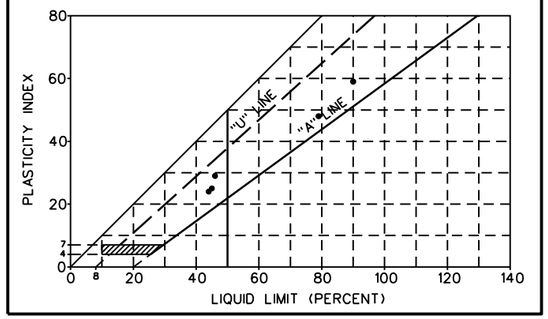
WATER TABLE N/A FT.
Date: 08/03/2012



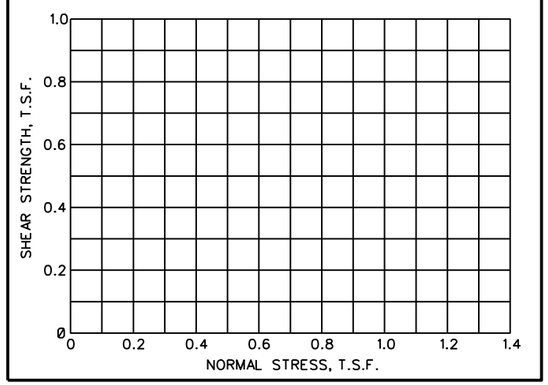
TEST DATA



PLASTICITY CHART



SHEAR STRENGTH DATA



TABULAR TEST DATA

ENVELOPE		TYPE	STRENGTH		CLASS
NO.	EL.		Φ	C - TSF	

NOTES

- ○ - (UC) UNCONFINED COMPRESSION TEST
- ■ - (Q) UNCONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ▲ - (R) CONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ⊡ - (S) CONSOLIDATED - DRAINED DIRECT SHEAR TEST
- ω_P ω_N ω_L ATTERBERG LIMITS

BORING WAS TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER.
FOR SOIL BORING LEGEND SEE PLATE A.
FOR LOCATION OF BORINGS SEE PLATE
FOR DETAILED TEST DATA SEE

US ARMY CORPS OF ENGINEERS
NEW ORLEANS DISTRICT

MARK	DESCRIPTION	DATE	APPR.
MARK	DESCRIPTION	DATE	APPR.

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MISSISSIPPI VALLEY DIVISION

DESIGNED BY | DRAWN BY | SUBMITTED BY | CHECKED BY | DATE | SCALE | FILE NUMBER

LPV MITIGATION
BAYOU SAUVAGE FLOOD SIDE
INTERMEDIATE MARSH RESTORATION
ORLEANS PARISH, LA

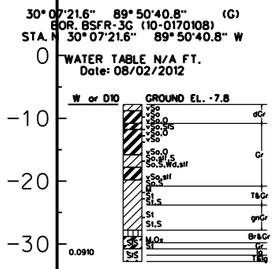
SOIL BORING BSFR-2G

PLATE
8

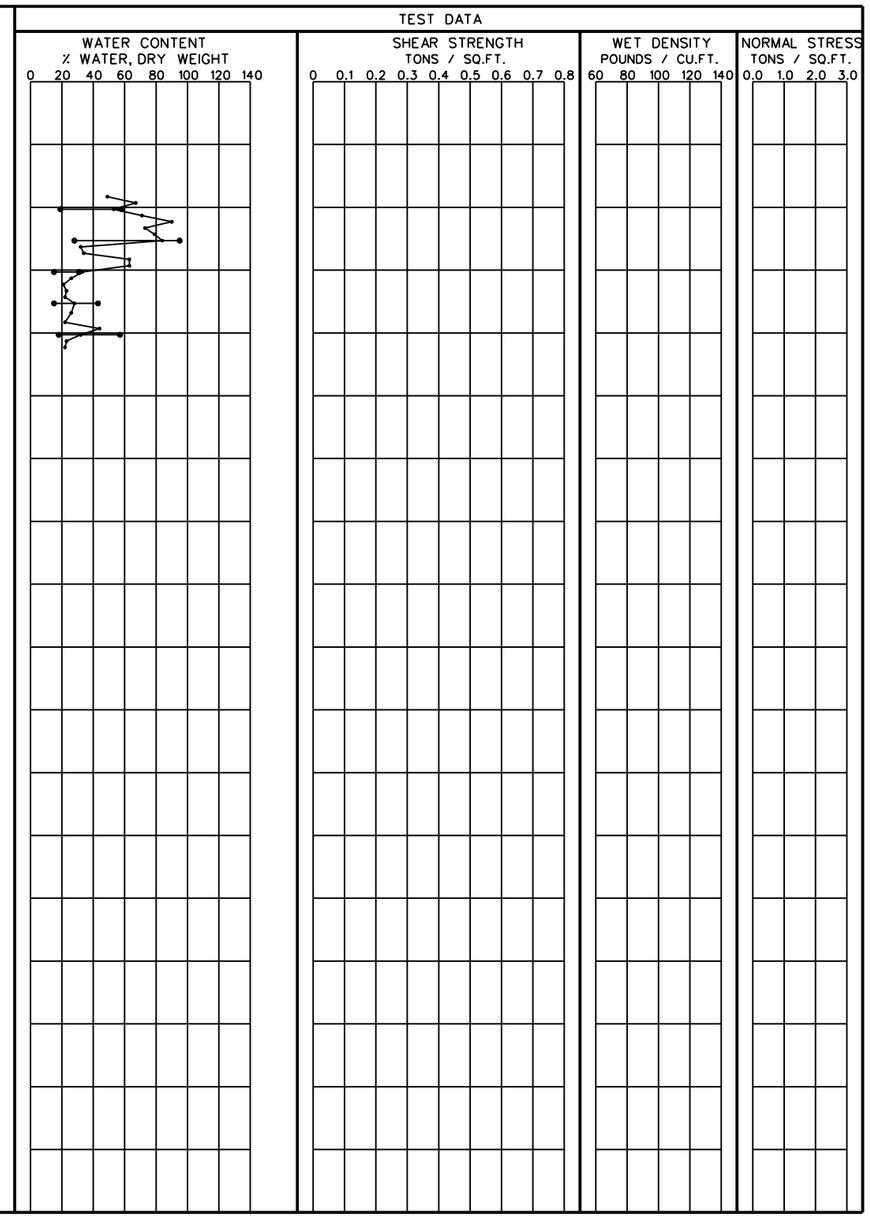
ELEVATIONS IN FEET - N.A.V.D.

30° 07'21.6" 89° 50'40.8" (G)
BOR. BSFR-3G (10-0170108)
STA. N 30° 07'21.6" 89° 50'40.8" W

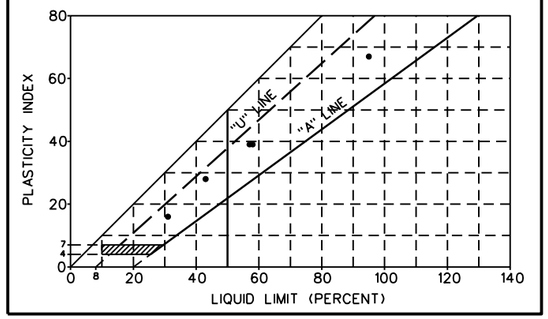
WATER TABLE N/A FT.
Date: 08/02/2012



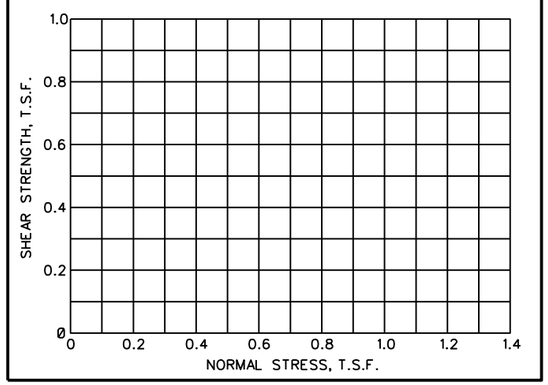
TEST DATA



PLASTICITY CHART



SHEAR STRENGTH DATA



TABULAR TEST DATA

ENVELOPE		TYPE	STRENGTH		CLASS
NO.	EL.		Φ	C - TSF	

NOTES

- ○ - (UC) UNCONFINED COMPRESSION TEST
- ■ - (Q) UNCONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ▲ - (R) CONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ⊡ - (S) CONSOLIDATED - DRAINED DIRECT SHEAR TEST

ω_P —●— ω_N —○— ω_L —●— ATTERBERG LIMITS

BORING WAS TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER.
FOR SOIL BORING LEGEND SEE PLATE A.
FOR LOCATION OF BORINGS SEE PLATE
FOR DETAILED TEST DATA SEE

US ARMY CORPS OF ENGINEERS
NEW ORLEANS DISTRICT

DATE	DESCRIPTION	INITIAL

DATE	DESCRIPTION	INITIAL

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MISSISSIPPI VALLEY DIVISION

DESIGNED BY | DRAWN BY | SUBMITTED BY | CHECKED BY | DATE | SCALE | SUBMITTED BY | CONTRACT NO. | FILE NUMBER | FILE NAME | PLOT DATE | PLOT SCALE

LPV MITIGATION
BAYOU SAUVAGE FLOOD SIDE
INTERMEDIATE MARSH RESTORATION
ORLEANS PARISH, LA

SOIL BORING BSFR-3G

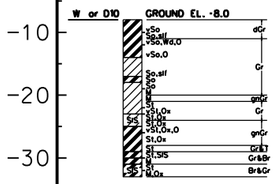
PLATE
9

ELEVATIONS IN FEET - N.A.V.D.

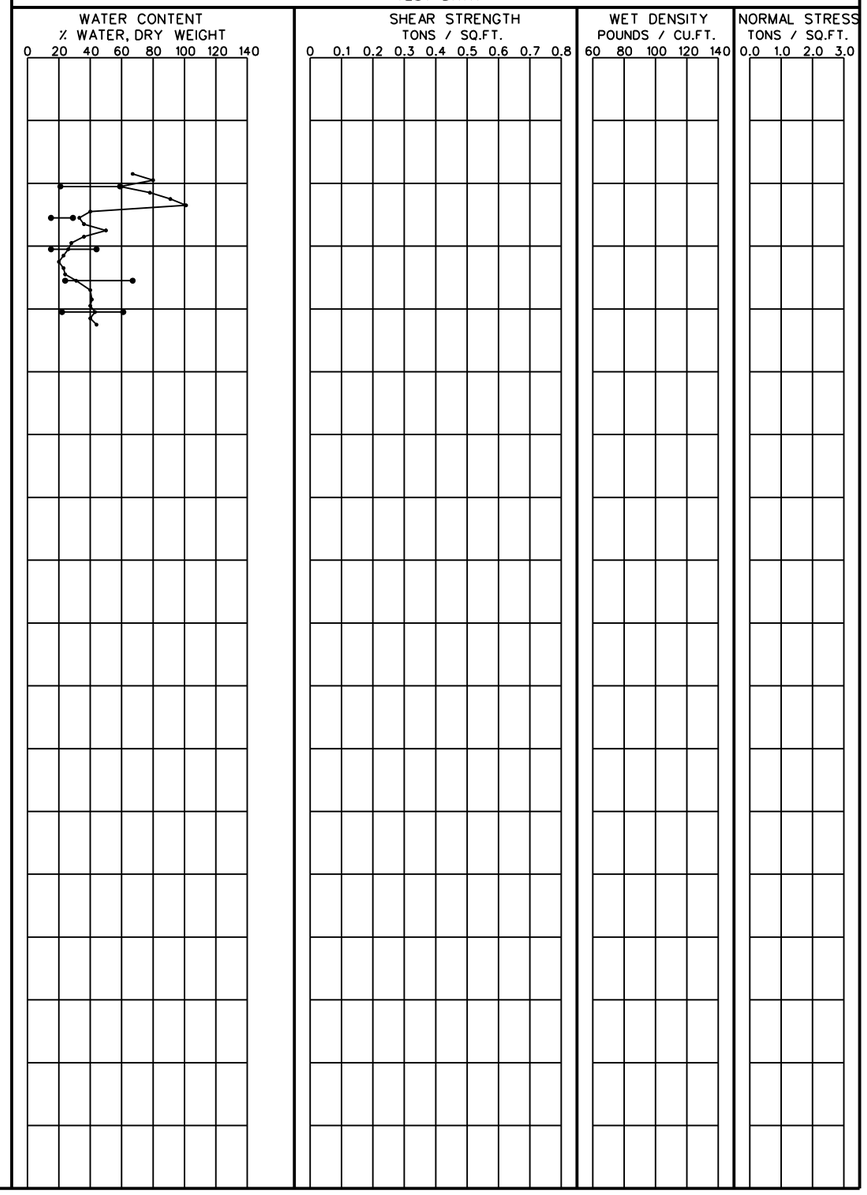
30° 07'47.2" 89° 50'55.7" (G)
BOR. BSFR-4G (10-0170108)
STA. N 30° 07'47.2" 89° 50'55.7" W

WATER TABLE N/A FT.
Date: 08/02/2012

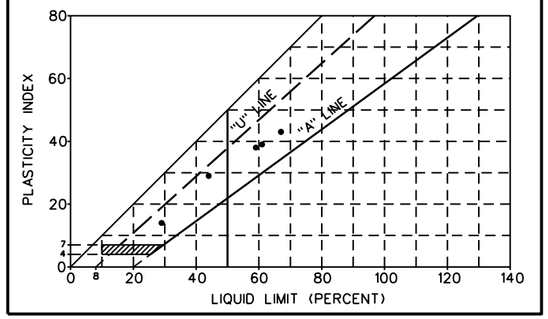
W or D10 GROUND EL. -8.0



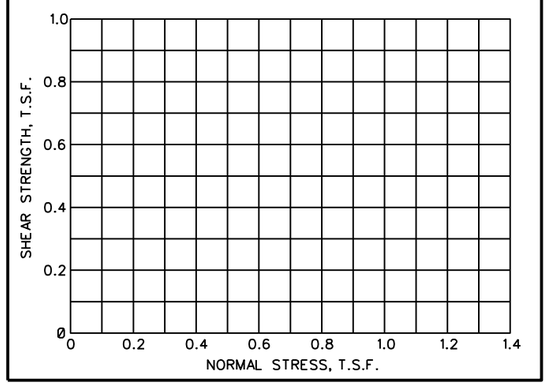
TEST DATA



PLASTICITY CHART



SHEAR STRENGTH DATA



TABULAR TEST DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS

NOTES

- ○ - (UC) UNCONFINED COMPRESSION TEST
- ■ - (Q) UNCONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ▲ - (R) CONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ⊡ - (S) CONSOLIDATED - DRAINED DIRECT SHEAR TEST
- ω_P ●——○ ω_N ——● ω_L ATTERBERG LIMITS

BORING WAS TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER.
FOR SOIL BORING LEGEND SEE PLATE A.
FOR LOCATION OF BORINGS SEE PLATE
FOR DETAILED TEST DATA SEE

US ARMY CORPS OF ENGINEERS
NEW ORLEANS DISTRICT

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MISSISSIPPI VALLEY DIVISION

LPV MITIGATION
BAYOU SAUVAGE FLOOD SIDE
INTERMEDIATE MARSH RESTORATION
ORLEANS PARISH, LA

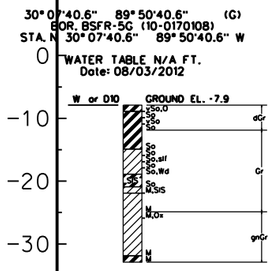
SOIL BORING BSFR-4G

PLATE
10

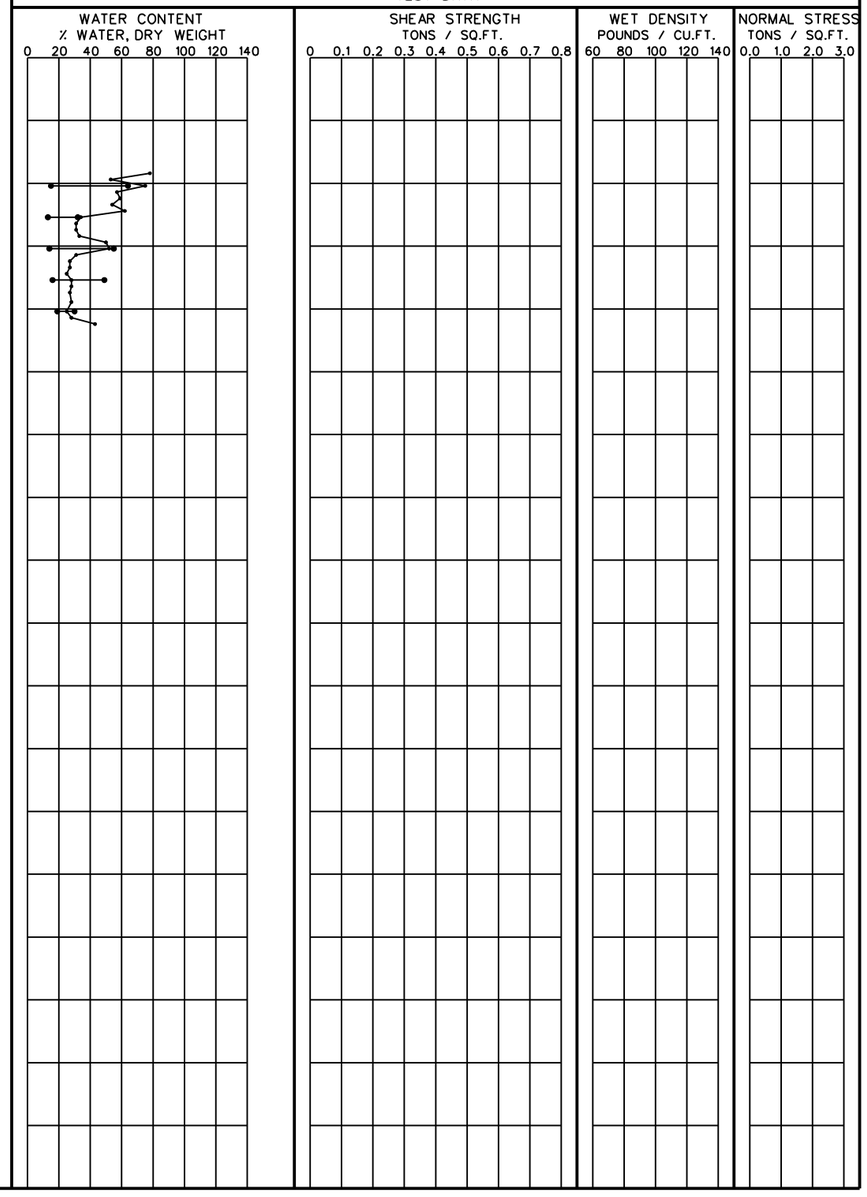
ELEVATIONS IN FEET - N.A.V.D.

30° 07'40.6" 89° 50'40.6" (G)
BOR. BSFR-5G (10-0170108)
STA. N 30° 07'40.6" 89° 50'40.6" W

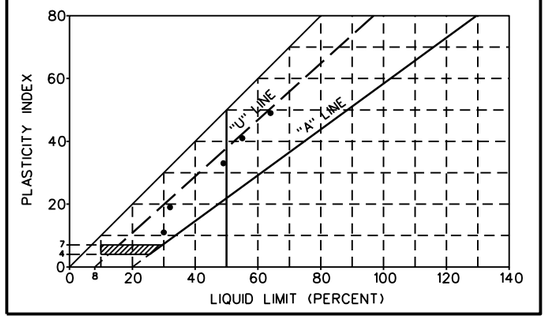
WATER TABLE N/A FT.
Date: 08/03/2012



TEST DATA



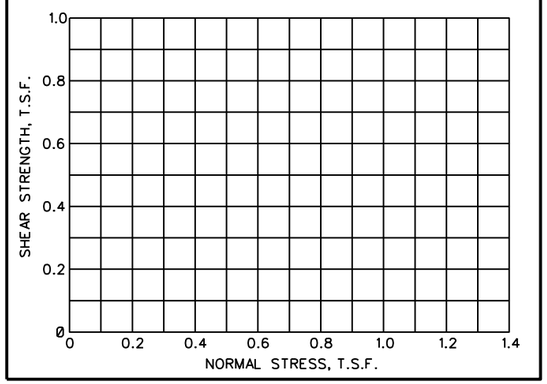
PLASTICITY CHART



TABULAR TEST DATA

ENVELOPE		TYPE	STRENGTH		CLASS
NO.	EL.		Φ	C - TSF	

SHEAR STRENGTH DATA



NOTES

- ○ - (UC) UNCONFINED COMPRESSION TEST
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- ▲ - (R) CONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ⊡ - (S) CONSOLIDATED - DRAINED DIRECT SHEAR TEST
- ω_P —●— ω_N —○— ω_L —●— ATTERBERG LIMITS

BORING WAS TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER.
FOR SOIL BORING LEGEND SEE PLATE A.
FOR LOCATION OF BORINGS SEE PLATE
FOR DETAILED TEST DATA SEE

US ARMY CORPS OF ENGINEERS
NEW ORLEANS DISTRICT

MARK	DESCRIPTION	APPD.	DATE

MARK	DESCRIPTION	APPD.	DATE

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MISSISSIPPI VALLEY DIVISION

DESIGNED BY | DRAWN BY | SUBMITTED BY | CHECKED BY | DATE | SUBMITTED BY | CONTRACT NO. | FILE NUMBER | FILE NAME | PLOT SCALE | PLOT DATE

LPV MITIGATION
BAYOU SAUVAGE FLOOD SIDE
INTERMEDIATE MARSH RESTORATION
ORLEANS PARISH, LA

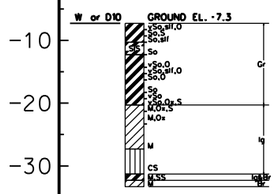
SOIL BORING BSFR-5G

PLATE
11

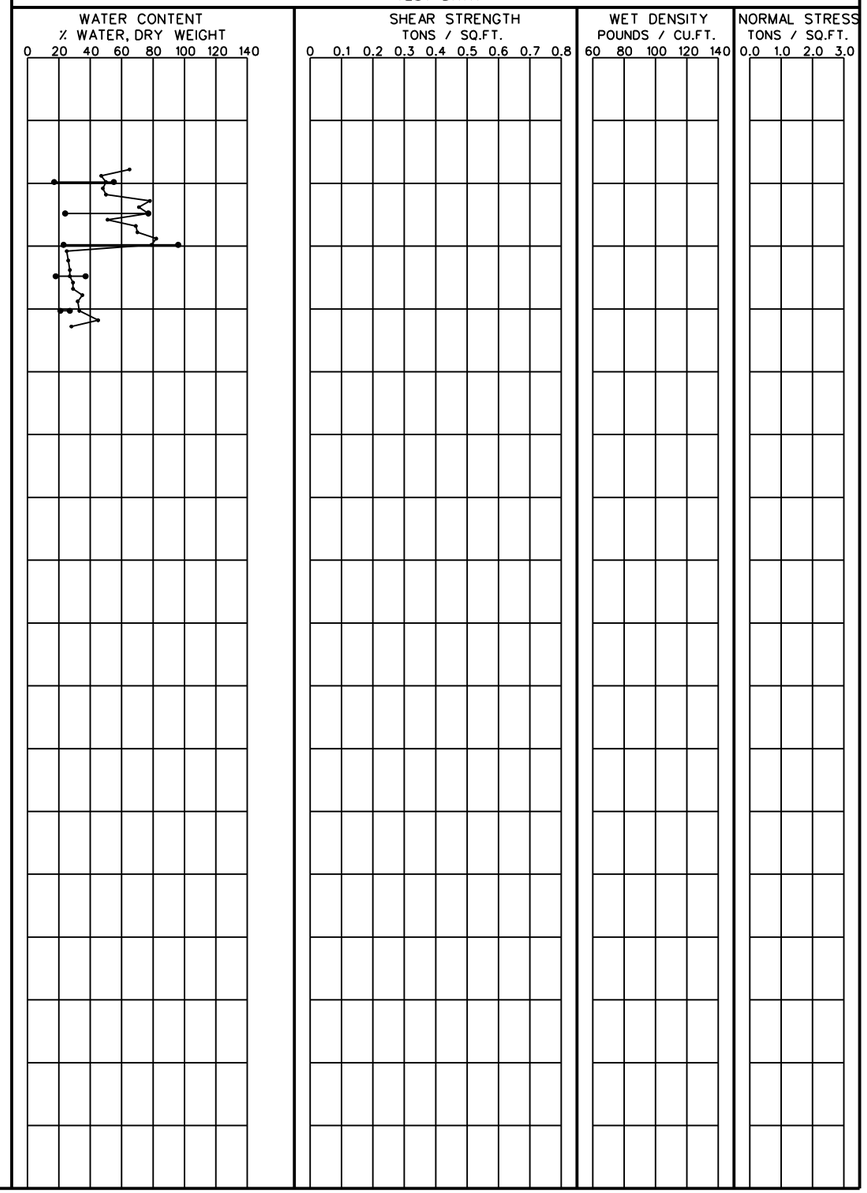
ELEVATIONS IN FEET - N.A.V.D.

30° 07'02.8" 89° 50'17.3" (G)
BOR. BSFR-6G (10-0170108)
STA. N 30° 07'02.8" 89° 50'17.3" W

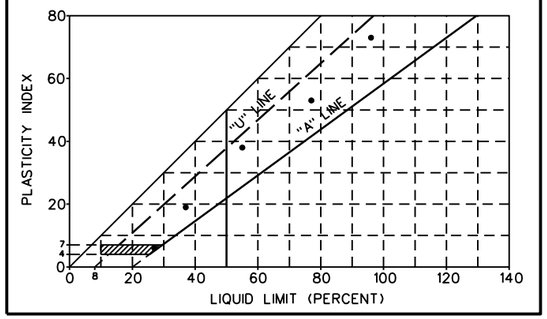
WATER TABLE N/A FT.
Date: 08/02/2012



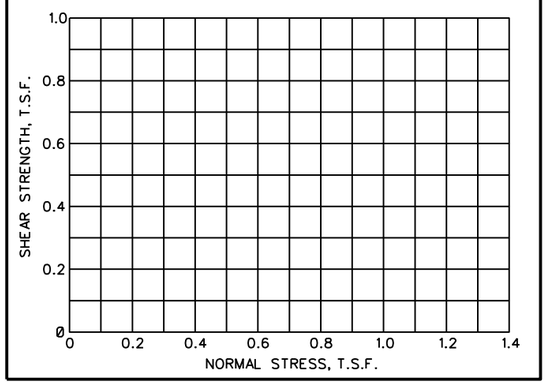
TEST DATA



PLASTICITY CHART



SHEAR STRENGTH DATA



TABULAR TEST DATA

ENVELOPE		TYPE	STRENGTH		CLASS
NO.	EL.		Φ	c - TSF	

NOTES

- ○ - (UC) UNCONFINED COMPRESSION TEST
- ■ - (Q) UNCONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ▲ - (R) CONSOLIDATED - UNDRAINED TRIAXIAL SHEAR TEST
- ⊡ - (S) CONSOLIDATED - DRAINED DIRECT SHEAR TEST
- ω_P ω_N ω_L ATTERBERG LIMITS

BORING WAS TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER.
FOR SOIL BORING LEGEND SEE PLATE A.
FOR LOCATION OF BORINGS SEE PLATE
FOR DETAILED TEST DATA SEE

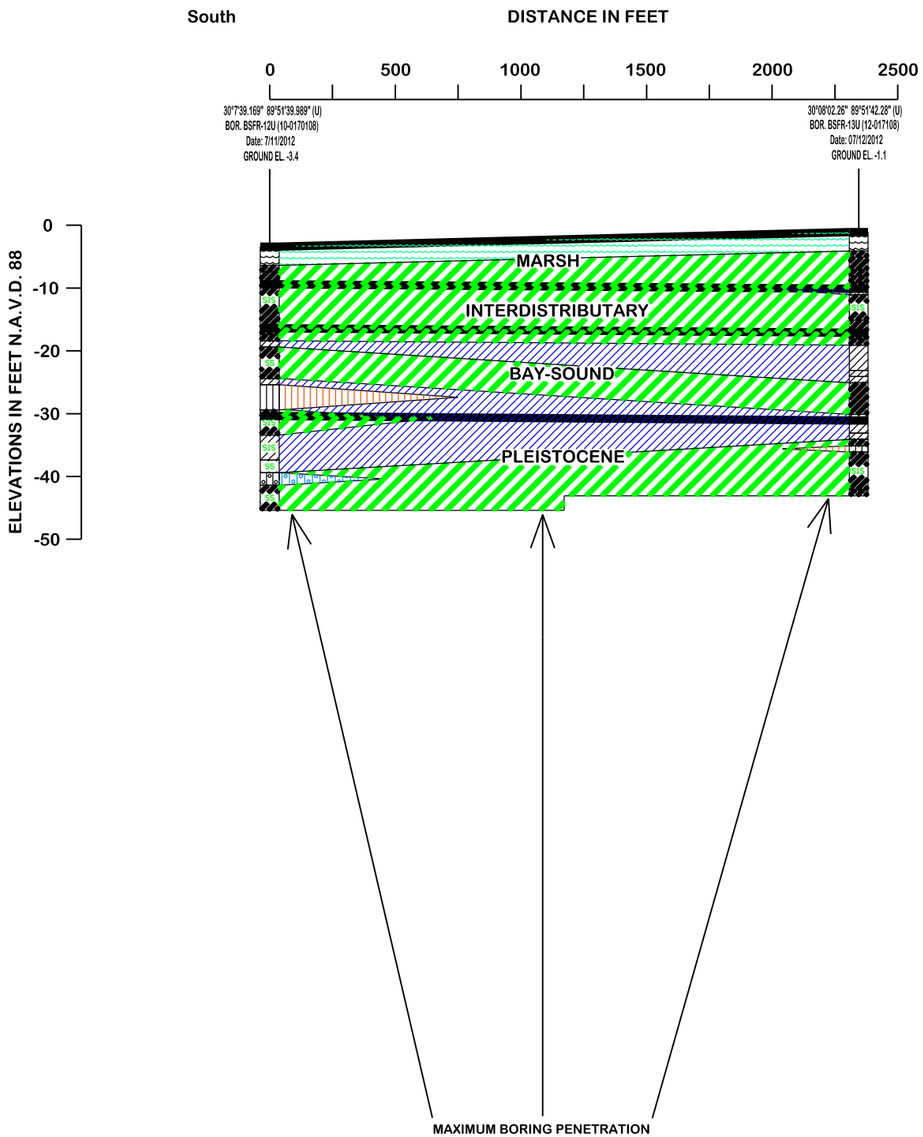
US ARMY CORPS OF ENGINEERS
NEW ORLEANS DISTRICT

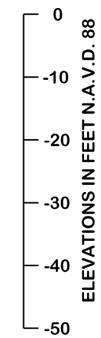
U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
MISSISSIPPI VALLEY DIVISION

LPV MITIGATION
BAYOU SAUVAGE FLOOD SIDE
INTERMEDIATE MARSH RESTORATION
ORLEANS PARISH, LA

SOIL BORING BSFR-6G

PLATE
12





MARSH - PREDOMINANTLY ORGANIC CLAYS, FAT CLAYS, AND PEATS WITH OCCASIONAL SAND AND SILT LAYERS

INTERDISTRIBUTARY - INTERBEDDED LAYERS OF FAT AND LEAN CLAYS, SILTS, SILTY SANDS, AND SANDS

BAY-SOUND - PREDOMINANTLY CLAYS WITH SOME SILTS, SILTY SANDS, AND SHELLS

PLEISTOCENE - STIFF TO VERY STIFF OXIDIZED CLAYS INTERBEDDED WITH LAYERS AND LENSES OF SILTS AND SANDS

HORIZONTAL SCALE IN FEET

250 125 0 250 500 750

LAKE PONTCHARTRAIN AND VICINITY
BAYOU SAUVAGE

SOIL AND GEOLOGIC PROFILE BSFS-4

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: T. CREASY	PLOT SCALE: 1 : 10	PLOT DATE:	CADD FILE: bayou-...2012.dgn
DRAWN BY: T. CREASY			FILE NO.
CHECKED BY: D. BRITSCH	DATE: 14 December 2012		

PLATE 13

DISTANCE IN FEET

W E SE

0 500 1,000 1,500 2,000 2,500 3,000 3,500 4,000 4,500 5,000 5,500 6,000

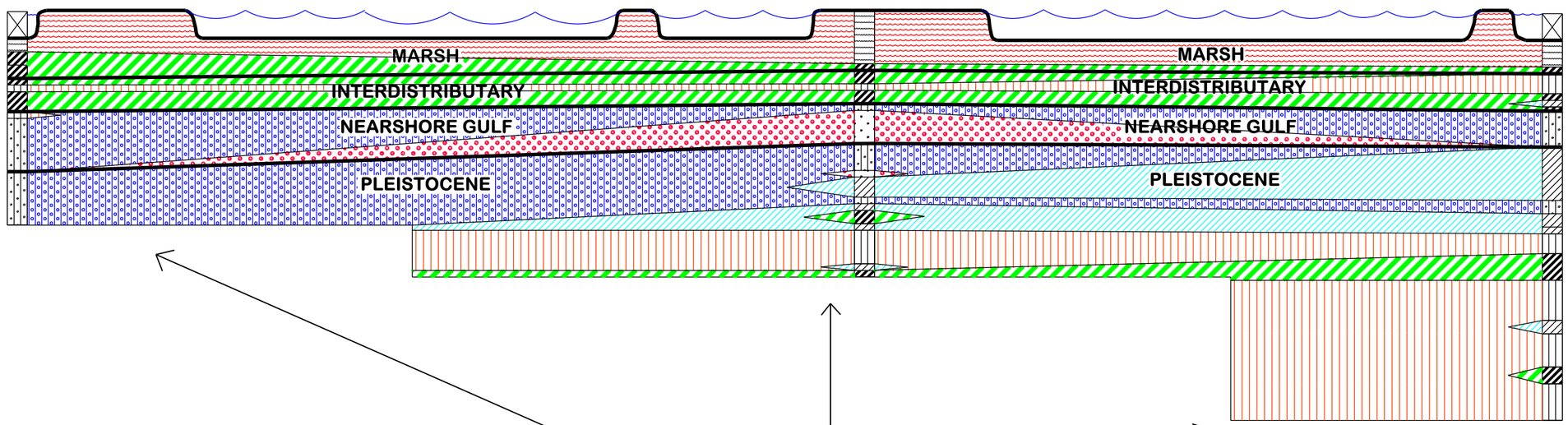
BOR. BSFS-3U 10-017146 (U)
30°5'27.44" -89°50'58.83"
STA N 30°5'27.44" W 89°50'58.83"
DATE: 6/26/2013
GROUND ELEV. 0.0

BOR. BSFS-2U 10-017146 (U)
30°5'30.8" -89°50'23.6"
STA N 30°5'30.8" W 89°50'23.6"
DATE: 6/26/2013
GROUND ELEV. 0.2

BOR. BSFS-1U 10-017146 (U)
30°5'9.86" -89°50'7.78"
STA N 30°5'9.86" W 89°50'7.78"
DATE: 6/25/2013
GROUND ELEV. -0.3

ELEVATIONS IN FEET N.A.V.D. 88

10 0 −10 −20 −30 −40 −50 −60 −70



MAXIMUM BORING PENETRATION

CH - Fat Clay
CL - Lean Clay
ML - Silt, Low Plasticity
Pt - Peat
SM - Silty Sand
SP - Sand, Poorly Graded

MARSH - PREDOMINANTLY ORGANIC CLAYS, FAT CLAYS, AND PEATS WITH OCCASIONAL SAND AND SILT LAYERS

INTERDISTRIBUTARY - INTERBEDDED LAYERS OF FAT AND LEAN CLAYS, SILTS, SILTY SANDS, AND SANDS

NEARSHORE GULF - PREDOMINANTLY SAND AND SILTY SAND WITH SHELL FRAGMENTS

PLEISTOCENE - STIFF TO VERY STIFF OXIDIZED CLAYS INTERBEDDED WITH LAYERS AND LENSES OF SILTS AND SANDS

0 125 0 250 500 750
Horizontal Scale in Feet

US ARMY CORPS OF ENGINEERS

Revisions

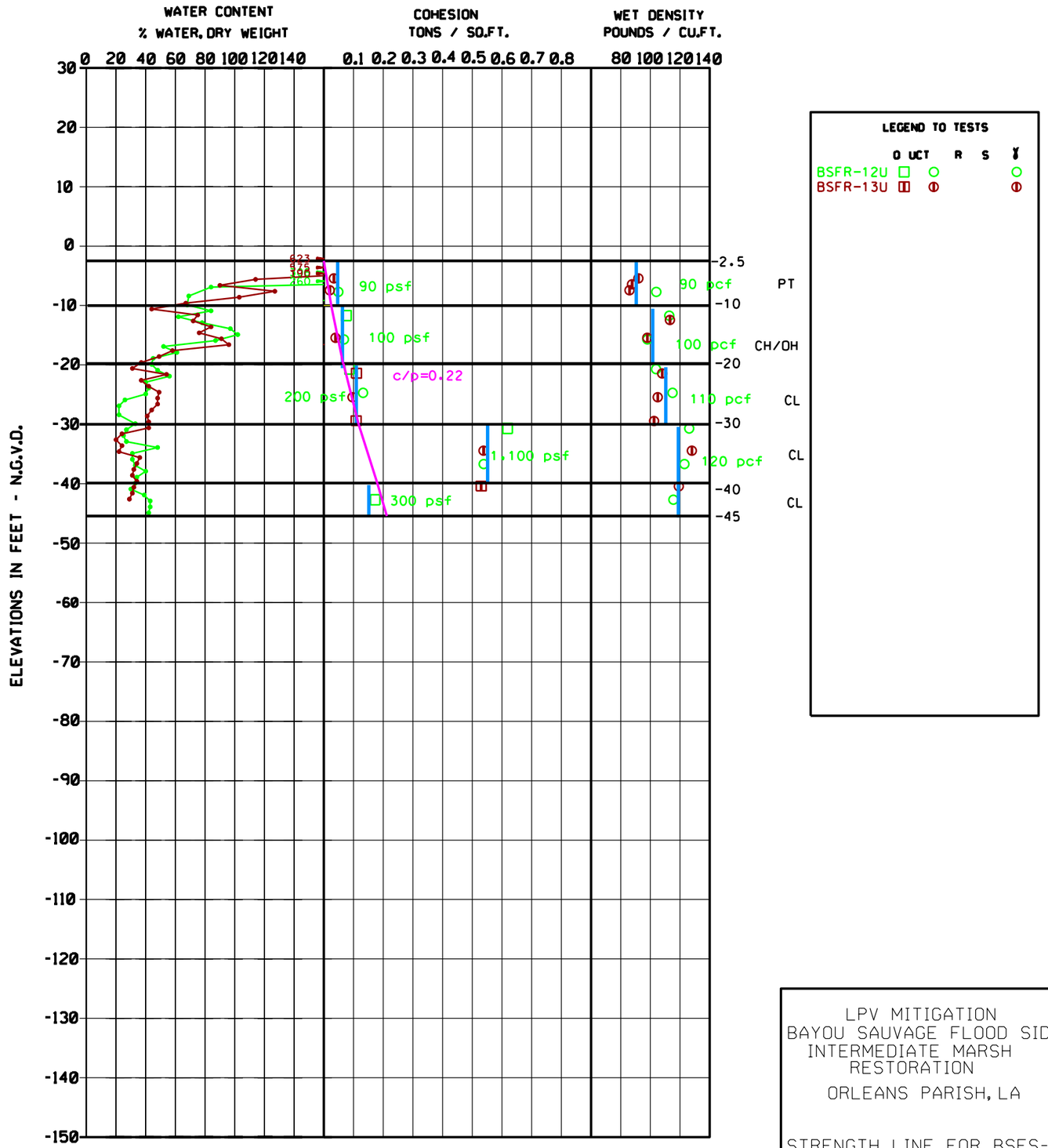
Symbol	Description	Date	Appr.

Designed by: STEVEN B. SAVAGE
Date: 10-23-2013
Drawn by:
Scale: 2:5
Checked by: DEL BRITSCH
Drawing code:
Project Engineer / Architect:
Date:

NEW ORLEANS DISTRICT
U.S. ARMY CORPS OF ENGINEERS

BAYOU SAUVAGE FLOODSIDE
ORLEANS PARISH, LA
SOIL AND GEOLOGIC PROFILE
BSFS-5

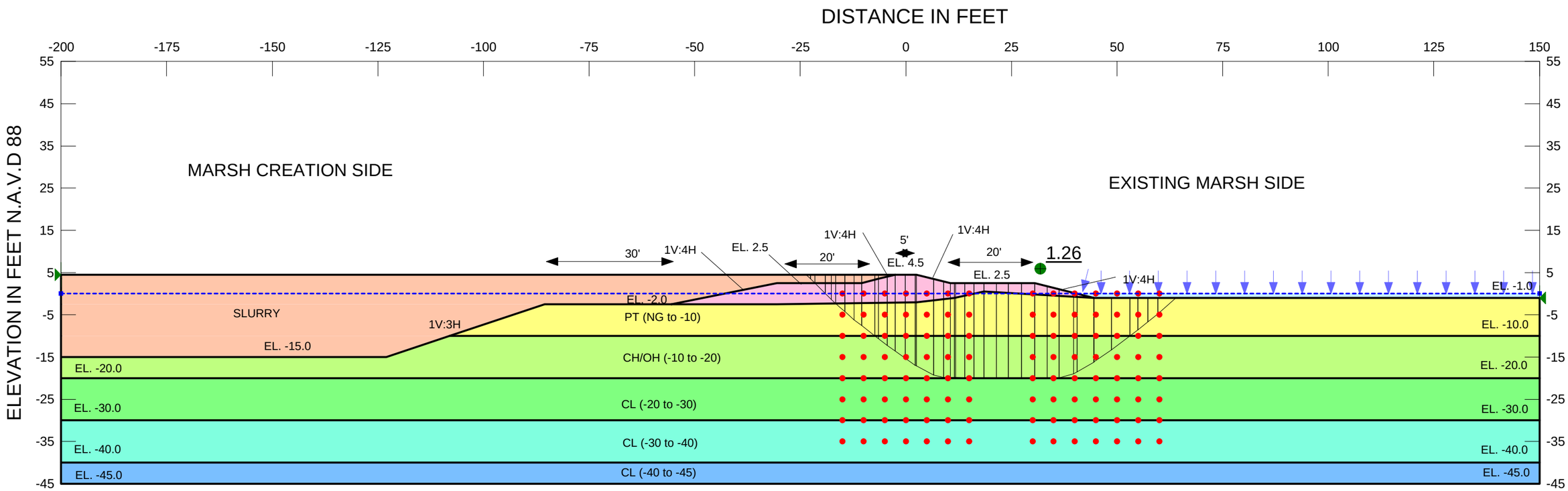
PLATE 14



LPV MITIGATION
BAYOU SAUVAGE FLOOD SIDE
INTERMEDIATE MARSH
RESTORATION

ORLEANS PARISH, LA

STRENGTH LINE FOR BSFS-4



Name: SLURRY Model: Undrained (Phi=0) Unit Weight: 100 pcf Cohesion: 1 psf Piezometric Line: 1
Name: FILL Model: Undrained (Phi=0) Unit Weight: 100 pcf Cohesion: 200 psf Piezometric Line: 1
Name: PT (NG to -10) Model: Undrained (Phi=0) Unit Weight: 90 pcf Cohesion: 90 psf Piezometric Line: 1
Name: OH (-10 to -20) Model: Undrained (Phi=0) Unit Weight: 100 pcf Cohesion: 100 psf Piezometric Line: 1
Name: CL (-20 to -30) Model: Undrained (Phi=0) Unit Weight: 110 pcf Cohesion: 200 psf Piezometric Line: 1
Name: CL (-30 to -40) Model: Undrained (Phi=0) Unit Weight: 120 pcf Cohesion: 1100 psf Piezometric Line: 1
Name: CL (-40 to -45) Model: Undrained (Phi=0) Unit Weight: 120 pcf Cohesion: 300 psf Piezometric Line: 1

GENERAL NOTES

CLASSIFICATION STRATIFICATION SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATE 15.

SHEAR STRENGTHS BETWEEN VERTICALS WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

US Army Corps of Engineers
New Orleans District

LPV MITIGATION
BAYOU SAUVAGE FLOOD SIDE
ORLEANS PARISH, LA
BSFS-4 EARTHEN DIKE

EXTREME CONSTRUCTION CASE

Last Edited By: Chaisson, Kathryn MVN
File Name: BSFS-4.gsz
Directory: G:\F&MHOME\CHAISSON\Bayou Sauvage FS\BSFS-4\

Extreme_nc

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File Information

Revision Number: 79
Last Edited By: Chaisson, Kathryn MVN
Date: 11/19/2013
Time: 1:15:40 PM
File Name: BSFS-4.gsz
Directory: G:\F&MHOME\CHAISSON\Bayou Sauvage FS\BSFS-4\
Last Solved Date: 11/19/2013
Last Solved Time: 1:16:10 PM

Project Settings

Length(L) Units: feet
Time(t) Units: Seconds
Force(F) Units: lbf
Pressure(p) Units: psf
Strength Units: psf
Unit Weight of Water: 62.4 pcf
View: 2D

Analysis Settings

Extreme_nc

Kind: SLOPE/W
Method: Spencer
Settings
- Apply Phreatic Correction: No
- PWP Conditions Source: Piezometric Line
- Use Staged Rapid Drawdown: No

Slip Surface
- Direction of movement: Left to Right
- Use Passive Mode: No
- Slip Surface Option: Block
- Critical slip surfaces saved: 1
- Optimize Critical Slip Surface Location: Yes
- Tension Crack
  - Tension Crack Option: Search for Tension Crack
  - Percentage Wet: 1
  - Tension Crack Fluid Unit Weight: 62.4 pcf

FOS Distribution
- FOS Calculation Option: Constant

Restrict Block Crossing: Yes
Advanced
- Number of Slices: 30
- Optimization Tolerance: 0.01
- Minimum Slip Surface Depth: 0.1 ft
- Optimization Maximum Iterations: 4000
- Optimization Convergence Tolerance: 1e-007
- Starting Optimization Points: 8
- Ending Optimization Points: 16
- Complete Passes per Insertion: 1
- Driving Side Maximum Convex Angle: 5 °
- Resisting Side Maximum Convex Angle: 1 °

Materials

SLURRY

Model: Undrained (Phi=0)
Unit Weight: 100 pcf
Cohesion: 1 psf
Pore Water Pressure
- Piezometric Line: 1

FILL

Model: Undrained (Phi=0)
Unit Weight: 100 pcf
Cohesion: 200 psf
Pore Water Pressure
- Piezometric Line: 1

PT (NG to -10)

Model: Undrained (Phi=0)
Unit Weight: 90 pcf
Cohesion: 90 psf
Pore Water Pressure
- Piezometric Line: 1

OH (-10 to -20)

Model: Undrained (Phi=0)
Unit Weight: 100 pcf
Cohesion: 100 psf
Pore Water Pressure
- Piezometric Line: 1

CL (-20 to -30)

Model: Undrained (Phi=0)
Unit Weight: 110 pcf
Cohesion: 200 psf
Pore Water Pressure
- Piezometric Line: 1

CL (-30 to -40)

Model: Undrained (Phi=0)
Unit Weight: 120 pcf
Cohesion: 1100 psf
Pore Water Pressure
- Piezometric Line: 1

CL (-40 to -45)

Model: Undrained (Phi=0)
Unit Weight: 120 pcf
Cohesion: 300 psf
Pore Water Pressure
- Piezometric Line: 1

Slip Surface Limits

Left Coordinate: (-200, 4.5) ft
Right Coordinate: (150, -1) ft

Slip Surface Block

Left Grid
- Upper Left: (-15, 0) ft
- Lower Left: (-15, -35) ft
- Lower Right: (15, -35) ft
- X Increments: 6
- Y Increments: 7
- Starting Angle: 125 °
- Ending Angle: 145 °
- Angle Increments: 4

Right Grid
- Upper Left: (30, 0) ft
- Lower Left: (30, -35) ft
- Lower Right: (60, -35) ft
- X Increments: 6
- Y Increments: 7
- Starting Angle: 25 °
- Ending Angle: 45 °
- Angle Increments: 4

Piezometric Lines

Piezometric Line 1

Coordinates

	X (ft)	Y (ft)
	-200	0
	150	0

Regions

	Material	Points	Area (ft²)
Region 1	CL (-20 to -30)	11,12,14,13	3500
Region 2	CL (-30 to -40)	13,14,16,15	3500
Region 3	CL (-40 to -45)	15,16,18,17	1750
Region 4	FILL	24,23,22,31,8,9,19,20,21,5,4,3,2	347.5
Region 5	OH (-10 to -20)	27,26,28,10,12,11	3077.5
Region 6	PT (NG to -10)	28,25,24,2,3,4,5,21,7,10	2100.375
Region 7	SLURRY	27,26,28,29	422.5
Region 8	SLURRY	29,1,25,28	774.375
Region 9	SLURRY	1,30,31,22,23,24,25	976.5
Region 10	SLURRY	31,8,32,30	195.5

Points

	X (ft)	Y (ft)
Point 1	-200	-2.5
Point 2	-30.5	-2.5
Point 3	2.5	-2
Point 4	11.5	-1
Point 5	18.5	0.5
Point 6	43	-1
Point 7	150	-1
Point 8	-2.5	4.5
Point 9	2.5	4.5
Point 10	150	-10
Point 11	-200	-20

Point 12	150	-20
Point 13	-200	-30
Point 14	150	-30
Point 15	-200	-40
Point 16	150	-40
Point 17	-200	-45
Point 18	150	-45
Point 19	10.5	2.5
Point 20	30.5	2.5
Point 21	44.5	-1
Point 22	-10.5	2.5
Point 23	-30.5	2.5
Point 24	-55.5	-2.5
Point 25	-85.5	-2.5
Point 26	-123	-15
Point 27	-200	-15
Point 28	-108	-10
Point 29	-200	-10
Point 30	-200	3.5
Point 31	-6.5	3.5
Point 32	-200	4.5

Critical Slip Surfaces

	Slip Surface	FOS	Center (ft)	Radius (ft)	Entry (ft)	Exit (ft)
1	Optimized	1.26	(21.717, 5.875)	38.4194	(-23.6097, 4.5)	(63.9203, -1)
2	5718	1.29	(21.717, 5.875)	39.315	(-24.198, 4.5)	(67.1348, -1)

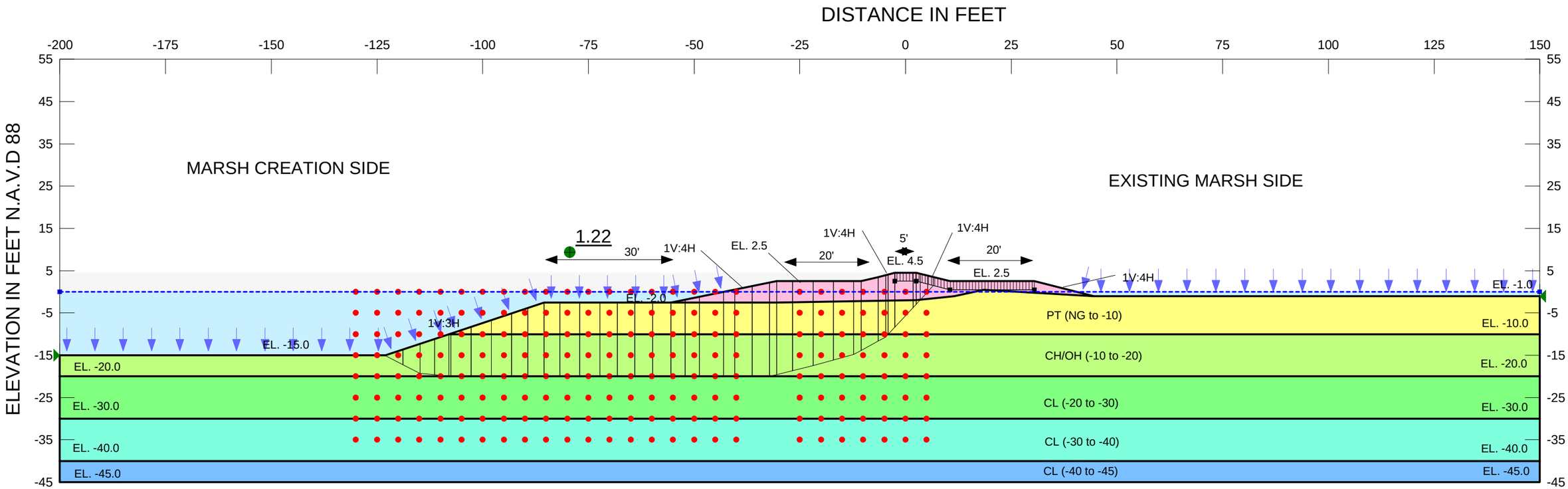
Slices of Slip Surface: Optimized

	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength (psf)
1	Optimized	-23.102405	4	-249.59795	47.970933	0	1
2	Optimized	-22.08781	3	-187.20022	145.39816	0	1
3	Optimized	-20.312265	1.25	-77.999611	168.42401	0	200
4	Optimized	-18.351825	-0.68224	42.571789	356.67268	0	200
5	Optimized	-17.13871	-1.827072	114.0068	484.52709	0	200
6	Optimized	-15.52161	-3.263108	203.61953	688.53156	0	90
7	Optimized	-13.329245	-5.209996	325.10504	859.33431	0	90
8	Optimized	-11.36653	-6.857686	427.9178	1014.4866	0	90
9	Optimized	-8.914039	-8.765966	547.00024	1182.3556	0	90
10	Optimized	-6.914039	-10.322165	644.1046	1316.5921	0	100
11	Optimized	-5.45069	-11.460795	715.1359	1427.9026	0	100
12	Optimized	-3.45069	-12.95238	808.2208	1581.7938	0	100
13	Optimized	-1.311615	-14.471415	903.02219	1730.541	0	100
14	Optimized	1.065155	-16.159245	1008.3359	1895.8183	0	100
15	Optimized	2.37677	-17.066745	1064.9491	2010.0801	0	100
16	Optimized	4.555925	-18.1912	1135.1214	2068.0165	0	100
17	Optimized	7.769615	-19.52456	1218.3459	2154.7008	0	100
18	Optimized	9.71369	-19.820015	1236.7706	2161.7743	0	100
19	Optimized	11	-19.857585	1239.0722	2144.4864	0	100
20	Optimized	11.63549	-19.876145	1240.264	2145.4432	0	100
21	Optimized	12.8699	-19.888635	1241.0426	2146.9942	0	100
22	Optimized	15.067745	-19.905705	1242.1346	2143.9913	0	100
23	Optimized	17.333335	-19.9233	1243.2052	2140.9066	0	100
24	Optimized	19.944445	-19.94358	1244.4894	2141.2431	0	100
25	Optimized	22.833335	-19.96602	1245.874	2145.1545	0	100
26	Optimized	25.816095	-19.989185	1247.3328	2149.1359	0	100
27	Optimized	28.927205	-19.98918	1247.3293	2153.1427	0	100
28	Optimized	31.95409	-19.96618	1245.9	2116.1802	0	100
29	Optimized	34.862265	-19.94408	1244.5246	2042.9405	0	100
30	Optimized	38.0244	-19.441185	1213.139	1952.3138	0	100
31	Optimized	40.116225	-18.72891	1168.7299	1866.3527	0	100
32	Optimized	42.5	-17.35974	1083.2559	1700.0975	0	100
33	Optimized	44.5146	-16.202615	1011.0522	1564.4196	0	100
34	Optimized	46.5832	-14.74845	920.31189	1432.2134	0	100
35	Optimized	50.824605	-11.651335	727.04897	1122.2346	0	100
36	Optimized	53.9748	-9.27316	578.64945	880.59495	0	90
37	Optimized	56.116765	-7.615865	475.24559	731.52602	0	90
38	Optimized	58.475115	-5.754955	359.10551	560.42829	0	90
39	Optimized	61.787315	-2.91225	181.72933	307.78092	0	90

Slices of Slip Surface: 5718

	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength (psf)
1	5718	-23.602085	4	-249.60083	48.278486	0	1
2	5718	-22.410335	3	-187.19901	146.06704	0	1
3	5718	-20.324765	1.25	-78.000982	194.8289	0	200
4	5718	-17.47525	-1.141026	71.20076	428.64672	0	200
5	5718	-14.71157	-3.460028	215.90577	711.30986	0	90
6	5718	-11.903855	-5.81598	362.926	918.22842	0	90
7	5718	-8.708768	-8.496978	530.21709	1153.7076	0	90
8	5718	-6.708768	-10.175175	634.92745	1296.6779	0	100
9	5718	-4.5	-12.02855	750.58952	1477.5849	0	100
10	5718	-1.25	-14.755625	920.75484	1743.7624	0	100
11	5718	1.25	-16.853375	1051.6565	1948.5414	0	100
12	5718	3.75	-18.951125	1182.5582	2121.5756	0	100
13	5718	6.375	-20	1248	2270.9091	0	100

14	5718	9.125	-20	1248	2199.1273	0	100
15	5718	11	-20	1248	2162.7	0	100
16	5718	12.666665	-20	1248.0002	2159.6146	0	100
17	5718	15	-20	1248.0002	2154.6003	0	100
18	5718	17.333335	-20	1248.0002	2149.586	0	100
19	5718	19.944445	-20	1247.9884	2147.9191	0	100
20	5718	22.833335	-20	1247.9884	2149.5807	0	100
21	5718	25.722225	-20	1247.9884	2151.2768	0	100
22	5718	28.833335	-20	1248.0001	2153.0702	0	100
23	5718	32.083335	-20	1247.9999	2115.3471	0	100
24	5718	35.25	-20	1247.9999	2038.0103	0	100
25	5718	38.416665	-20	1247.9999	1960.6735	0	100
26	5718	40.25	-19.82495	1237.0834	1990.2118	0	100
27	5718	42.5	-18.249485	1138.7648	1805.616	0	100
28	5718	46.130245	-15.707555	980.1456	1528.3418	0	100
29	5718	49.39074	-13.42453	837.69499	1295.6222	0	100
30	5718	52.651235	-11.14151	695.21926	1062.9277	0	100
31	5718	55.888145	-8.875	553.79446	837.65109	0	90
32	5718	59.10148	-6.625	413.40843	631.24003	0	90
33	5718	62.314815	-4.375	272.99691	424.85447	0	90
34	5718	65.528145	-2.125	132.60068	218.44851	0	90



Name: FILL Model: Undrained (Phi=0) Unit Weight: 100 pcf Cohesion: 200 psf Piezometric Line: 1
Name: PT (NG to -10) Model: Undrained (Phi=0) Unit Weight: 90 pcf Cohesion: 90 psf Piezometric Line: 1
Name: OH (-10 to -20) Model: Undrained (Phi=0) Unit Weight: 100 pcf Cohesion: 100 psf Piezometric Line: 1
Name: CL (-20 to -30) Model: Undrained (Phi=0) Unit Weight: 110 pcf Cohesion: 200 psf Piezometric Line: 1
Name: CL (-30 to -40) Model: Undrained (Phi=0) Unit Weight: 120 pcf Cohesion: 1100 psf Piezometric Line: 1
Name: CL (-40 to -45) Model: Undrained (Phi=0) Unit Weight: 120 pcf Cohesion: 300 psf Piezometric Line: 1

GENERAL NOTES

CLASSIFICATION STRATIFICATION SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATE 15.

SHEAR STRENGTHS BETWEEN VERTICALS WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

US Army Corps of Engineers
New Orleans District

LPV MITIGATION
BAYOU SAUVAGE FLOOD SIDE
ORLEANS PARISH, LA
BSFS-4 EARTHEN DIKE

CONSTRUCTION CASE

Last Edited By: Chaisson, Kathryn MVN
File Name: BSFS-4.gsz
Directory: G:\F&MHOME\CHAISSON\Bayou Sauvage FS\BSFS-4\

Construction_nc

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File Information

Revision Number: 75
Last Edited By: Chaisson, Kathryn MVN
Date: 11/19/2013
Time: 12:51:44 PM
File Name: BSFS-4.gsz
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Last Solved Date: 11/19/2013
Last Solved Time: 12:52:22 PM

Project Settings

Length(L) Units: feet
Time(t) Units: Seconds
Force(F) Units: lbf
Pressure(p) Units: psf
Strength Units: psf
Unit Weight of Water: 62.4 pcf
View: 2D

Analysis Settings

Construction_nc

Kind: SLOPE/W
Method: Spencer
Settings
- Apply Phreatic Correction: No
- PWP Conditions Source: Piezometric Line
- Use Staged Rapid Drawdown: No

Slip Surface
- Direction of movement: Right to Left
- Use Passive Mode: No
- Slip Surface Option: Block
- Critical slip surfaces saved: 1
- Optimize Critical Slip Surface Location: Yes
- Tension Crack
  - Tension Crack Option: Tension Crack Line
  - Percentage Wet: 1
  - Tension Crack Fluid Unit Weight: 62.4 pcf

FOS Distribution
- FOS Calculation Option: Constant

Restrict Block Crossing: Yes
Advanced
- Number of Slices: 30
- Optimization Tolerance: 0.01
- Minimum Slip Surface Depth: 0.1 ft
- Optimization Maximum Iterations: 4000
- Optimization Convergence Tolerance: 1e-007
- Starting Optimization Points: 8
- Ending Optimization Points: 16
- Complete Passes per Insertion: 1
- Driving Side Maximum Convex Angle: 5 °
- Resisting Side Maximum Convex Angle: 1 °

Materials

FILL

Model: Undrained (Phi=0)
Unit Weight: 100 pcf
Cohesion: 200 psf
Pore Water Pressure
- Piezometric Line: 1

PT (NG to -10)

Model: Undrained (Phi=0)
Unit Weight: 90 pcf
Cohesion: 90 psf
Pore Water Pressure
- Piezometric Line: 1

OH (-10 to -20)

Model: Undrained (Phi=0)
Unit Weight: 100 pcf
Cohesion: 100 psf
Pore Water Pressure
- Piezometric Line: 1

CL (-20 to -30)

Model: Undrained (Phi=0)
Unit Weight: 110 pcf
Cohesion: 200 psf
Pore Water Pressure
- Piezometric Line: 1

CL (-30 to -40)

Model: Undrained (Phi=0)
Unit Weight: 120 pcf
Cohesion: 1100 psf
Pore Water Pressure
- Piezometric Line: 1

CL (-40 to -45)

Model: Undrained (Phi=0)
Unit Weight: 120 pcf
Cohesion: 300 psf
Pore Water Pressure
- Piezometric Line: 1

Slip Surface Limits

Left Coordinate: (-200, -15) ft
Right Coordinate: (150, -1) ft

Slip Surface Block

Left Grid
- Upper Left: (-130, 0) ft
- Lower Left: (-130, -35) ft
- Lower Right: (-40, -35) ft
- X Increments: 18
- Y Increments: 7
- Starting Angle: 145 °
- Ending Angle: 165 °
- Angle Increments: 4

Right Grid
- Upper Left: (-25, 0) ft
- Lower Left: (-25, -35) ft
- Lower Right: (5, -35) ft
- X Increments: 6
- Y Increments: 7
- Starting Angle: 35 °
- Ending Angle: 55 °
- Angle Increments: 4

Piezometric Lines

Piezometric Line 1

Coordinates

	X (ft)	Y (ft)
	-200	0
	150	0

Tension Crack Line

	X (ft)	Y (ft)
	-2.5	2.5
	2.5	2.5
	10.5	0.5
	30.5	0.5

Regions

	Material	Points	Area (ft²)
Region 1	CL (-20 to -30)	11,12,14,13	3500
Region 2	CL (-30 to -40)	13,14,16,15	3500
Region 3	CL (-40 to -45)	15,16,18,17	1750
Region 4	FILL	24,23,22,31,8,9,19,20,21,5,4,3,2	347.5
Region 5	OH (-10 to -20)	27,26,28,10,12,11	3077.5
Region 6	PT (NG to -10)	28,25,24,2,3,4,5,21,7,10	2100.375
Region 7		27,26,28,29	422.5
Region 8		29,1,25,28	774.375
Region 9		1,30,31,22,23,24,25	976.5
Region 10		31,8,32,30	195.5

Points

	X (ft)	Y (ft)
Point 1	-200	-2.5
Point 2	-30.5	-2.5
Point 3	2.5	-2
Point 4	11.5	-1
Point 5	18.5	0.5
Point 6	43	-1
Point 7	150	-1
Point 8	-2.5	4.5
Point 9	2.5	4.5

Point 10	150	-10
Point 11	-200	-20
Point 12	150	-20
Point 13	-200	-30
Point 14	150	-30
Point 15	-200	-40
Point 16	150	-40
Point 17	-200	-45
Point 18	150	-45
Point 19	10.5	2.5
Point 20	30.5	2.5
Point 21	44.5	-1
Point 22	-10.5	2.5
Point 23	-30.5	2.5
Point 24	-55.5	-2.5
Point 25	-85.5	-2.5
Point 26	-123	-15
Point 27	-200	-15
Point 28	-108	-10
Point 29	-200	-10
Point 30	-200	3.5
Point 31	-6.5	3.5
Point 32	-200	4.5

Critical Slip Surfaces

	Slip Surface	FOS	Center (ft)	Radius (ft)	Entry (ft)	Exit (ft)
1	Optimized	1.22	(-57.923, 4.375)	53.66733	(6.58128, 3.47968)	(-123.132, -15)
2	13878	1.28	(-57.923, 4.375)	54.105	(10.5, 2.5)	(-123.66, -15)

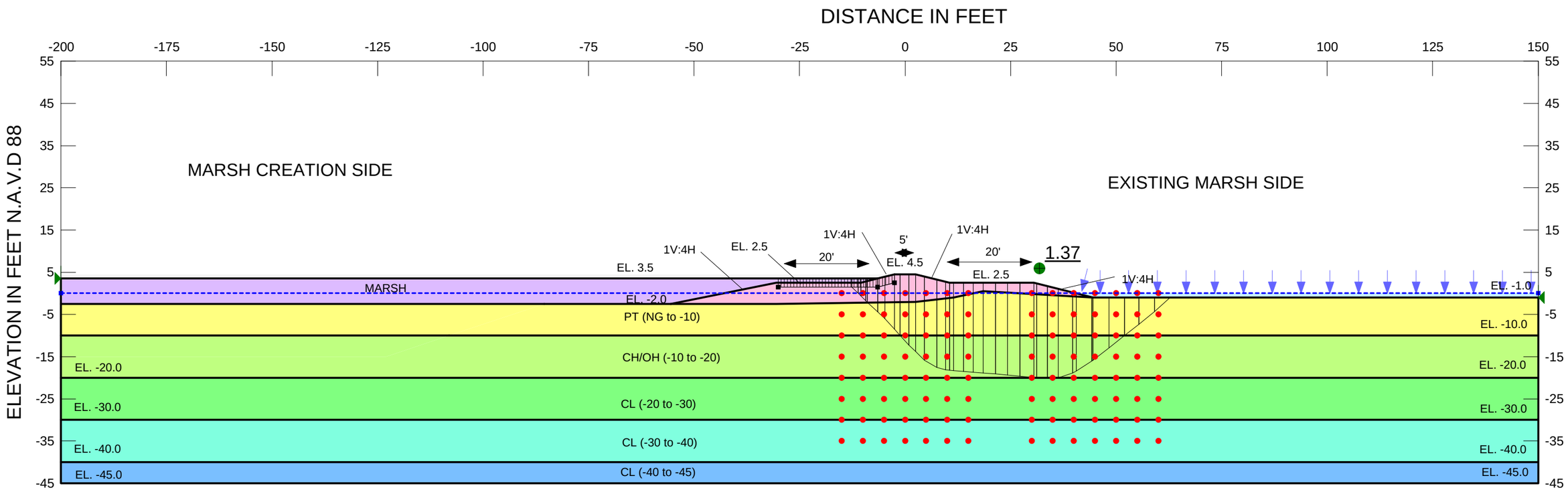
Slices of Slip Surface: **Optimized**

	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strengt	Cohesive Strengt
1	Optimized	-123.06615	-15.03424	938.16428	1005.9098	0	100
2	Optimized	-120.9465	-16.131605	1006.6215	1156.3152	0	100
3	Optimized	-116.8395	-18.257855	1139.2982	1424.8038	0	100
4	Optimized	-113.0895	-19.47057	1214.9516	1532.8183	0	100
5	Optimized	-109.6965	-19.769745	1233.6237	1604.571	0	100
6	Optimized	-107.77535	-19.93914	1244.2045	1644.4545	0	100
7	Optimized	-105.1505	-19.96579	1245.8668	1657.9546	0	100
8	Optimized	-100.35009	-19.979475	1246.7209	1702.1798	0	100
9	Optimized	-95.549665	-19.99316	1247.575	1746.3841	0	100
10	Optimized	-91.237095	-20	1248.0097	1785.1456	0	100
11	Optimized	-87.412365	-20	1248.0097	1819.2657	0	100
12	Optimized	-83.63594	-20	1248.0017	1834.2757	0	100
13	Optimized	-79.393645	-20	1248.0053	1834.2805	0	100
14	Optimized	-74.637175	-20	1248.0053	1834.2805	0	100
15	Optimized	-70.20833	-20	1247.996	1834.2613	0	100
16	Optimized	-66.107115	-20	1247.996	1834.2613	0	100
17	Optimized	-61.917385	-20	1248.0088	1834.2759	0	100
18	Optimized	-57.63913	-20	1248.0088	1834.2759	0	100
19	Optimize	-53.817655	-20	1247.9883	1847.9832	0	100
20	Optimized	-50.45296	-20	1247.9883	1872.9484	0	100
21	Optimized	-45.885305	-19.999885	1247.9963	1906.9041	0	100
22	Optimized	-41.69405	-19.999715	1247.9804	1954.3627	0	100
23	Optimized	-38.323425	-19.99958	1247.9673	2021.7443	0	100
24	Optimized	-34.19407	-19.999415	1247.9673	2104.3238	0	100
25	Optimized	-31.314695	-19.803745	1235.732	2102.6003	0	100
26	Optimized	-28.59117	-19.149905	1194.9417	2053.6747	0	100
27	Optimized	-24.2752	-18.04225	1125.8432	1938.6146	0	100
28	Optimized	-19.460925	-16.743445	1044.7826	1809.383	0	100
29	Optimized	-14.64665	-15.44464	963.74215	1680.1714	0	100
30	Optimized	-11.369755	-14.31792	893.43716	1528.7411	0	100
31	Optimized	-8.5	-12.743	795.1526	1423.1261	0	100
32	Optimized	-5.591405	-11.146765	695.56207	1337.6231	0	100
33	Optimized	-4.3815975	-10.324065	644.22147	1219.167	0	100
34	Optimized	-3.2901925	-9.1498575	570.96504	1148.9088	0	90
35	Optimized	-0.36659	-6.0044475	374.67627	895.93934	0	90
36	Optimized	2.13341	-3.314082	206.8011	663.18844	0	90
37	Optimized	2.9753425	-2.406676	150.17954	572.91588	0	90
38	Optimize	4.329526	-0.947184	59.105401	314.94503	0	200
39	Optimized	5.894824	0.73984	-46.165942	112.1773	0	200

Slices of Slip Surface: **13878**

	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength (psf)
1	13878	-123.33015	-15.1906	947.89359	1025.6223	0	100
2	13878	-121	-16.5359	1031.8477	1200.3979	0	100
3	13878	-117	-18.8453	1175.9543	1486.6842	0	100
4	13878	-113.25	-20	1248	1570.4571	0	100
5	13878	-109.75	-20	1248	1613.4	0	100
6	13878	-105.75	-20	1248	1654.9778	0	100
7	13878	-101.25	-20	1248	1695.2	0	100
8	13878	-96.75	-20	1248	1735.4222	0	100
9	13878	-92.25	-20	1248	1775.6222	0	100
10	13878	-87.75	-20	1248	1815.8444	0	100
11	13878	-83.357145	-20	1248.0067	1833.9768	0	100
12	13878	-79.07143	-20	1248.0067	1833.9768	0	100
13	13878	-74.785715	-20	1248.0067	1833.9768	0	100
14	13878	-70.5	-20	1248.0067	1833.9768	0	100
15	13878	-66.214285	-20	1248.0067	1833.9768	0	100
16	13878	-61.92857	-20	1248.0067	1833.9768	0	100
17	13878	-57.642855	-20	1248.0067	1833.9768	0	100
18	13878	-53.416665	-20	1247.9999	1850.6159	0	100
19	13878	-49.25	-20	1247.9999	1881.5758	0	100
20	13878	-45.083335	-20	1247.9999	1912.5118	0	100
21	13878	-40.916665	-20	1247.9999	1969.6318	0	100
22	13878	-36.75	-20	1247.9999	2052.9598	0	100
23	13878	-32.583335	-20	1247.9999	2136.3118	0	100
24	13878	-28	-20	1248	2177.6	0	100
25	13878	-23	-20	1248	2176.8	0	100
26	13878	-18	-20	1248	2176	0	100
27	13878	-13	-20	1248	2175.4	0	100
28	13878	-10.25	-20	1248	2181.2	0	100

29	13878	-8.25	-18.25	1138.8057	1905.3297	0	100
30	13878	-4.5	-14.5	904.7962	1633.841	0	100
31	13878	-1.25	-11.25	701.98731	1368.4496	0	100
32	13878	1.25	-8.75	545.99956	1146.5029	0	90
33	13878	5.59375	-4.40625	274.94599	691.88473	0	90
34	13878	9.34375	-0.65625	40.950244	187.21497	0	200
35	13878	10.25	0.25	-15.600189	68.941495	0	200



Name: FILL Model: Undrained (Phi=0) Unit Weight: 100 pcf Cohesion: 200 psf Piezometric Line: 1
Name: PT (NG to -10) Model: Undrained (Phi=0) Unit Weight: 90 pcf Cohesion: 90 psf Piezometric Line: 1
Name: OH (-10 to -20) Model: Undrained (Phi=0) Unit Weight: 100 pcf Cohesion: 100 psf Piezometric Line: 1
Name: CL (-20 to -30) Model: Undrained (Phi=0) Unit Weight: 110 pcf Cohesion: 200 psf Piezometric Line: 1
Name: CL (-30 to -40) Model: Undrained (Phi=0) Unit Weight: 120 pcf Cohesion: 1100 psf Piezometric Line: 1
Name: CL (-40 to -45) Model: Undrained (Phi=0) Unit Weight: 120 pcf Cohesion: 300 psf Piezometric Line: 1
Name: MARSH Model: Undrained (Phi=0) Unit Weight: 100 pcf Cohesion: 100 psf Piezometric Line: 1

GENERAL NOTES

CLASSIFICATION STRATIFICATION SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATE 15.

SHEAR STRENGTHS BETWEEN VERTICALS WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

US Army Corps of Engineers
New Orleans District

LPV MITIGATION
BAYOU SAUVAGE FLOOD SIDE
ORLEANS PARISH, LA
BSFS-4 EARTHEN DIKE

OPERATION CASE

Last Edited By: Chaisson, Kathryn MVN
File Name: BSFS-4.gsz
Directory: G:\F&MHOME\CHAISSON\Bayou Sauvage FS\BSFS-4\

Operation_nc

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File Information

Revision Number: 82
Last Edited By: Chaisson, Kathryn MVN
Date: 11/19/2013
Time: 1:21:39 PM
File Name: BSFS-4.gsz
Directory: G:\F&MHOME\CHAISSON\Bayou Sauvage FS\BSFS-4\
Last Solved Date: 11/19/2013
Last Solved Time: 1:22:20 PM

Project Settings

Length(L) Units: feet
Time(t) Units: Seconds
Force(F) Units: lbf
Pressure(p) Units: psf
Strength Units: psf
Unit Weight of Water: 62.4 pcf
View: 2D

Analysis Settings

Operation_nc

Kind: SLOPE/W
Method: Spencer
Settings
- Apply Phreatic Correction: No
- PWP Conditions Source: Piezometric Line
- Use Staged Rapid Drawdown: No

Slip Surface
- Direction of movement: Left to Right
- Use Passive Mode: No
- Slip Surface Option: Block
- Critical slip surfaces saved: 1
- Optimize Critical Slip Surface Location: Yes
- Tension Crack
  - Tension Crack Option: Tension Crack Line
  - Percentage Wet: 1
  - Tension Crack Fluid Unit Weight: 62.4 pcf

FOS Distribution
- FOS Calculation Option: Constant

Restrict Block Crossing: Yes
Advanced
- Number of Slices: 30
- Optimization Tolerance: 0.01
- Minimum Slip Surface Depth: 0.1 ft
- Optimization Maximum Iterations: 4000
- Optimization Convergence Tolerance: 1e-007
- Starting Optimization Points: 8
- Ending Optimization Points: 16
- Complete Passes per Insertion: 1
- Driving Side Maximum Convex Angle: 5 °
- Resisting Side Maximum Convex Angle: 1 °

Materials

FILL

Model: Undrained (Phi=0)
Unit Weight: 100 pcf
Cohesion: 200 psf
Pore Water Pressure
- Piezometric Line: 1

PT (NG to -10)

Model: Undrained (Phi=0)
Unit Weight: 90 pcf
Cohesion: 90 psf
Pore Water Pressure
- Piezometric Line: 1

OH (-10 to -20)

Model: Undrained (Phi=0)
Unit Weight: 100 pcf
Cohesion: 100 psf
Pore Water Pressure
- Piezometric Line: 1

CL (-20 to -30)

Model: Undrained (Phi=0)
Unit Weight: 110 pcf
Cohesion: 200 psf
Pore Water Pressure
- Piezometric Line: 1

CL (-30 to -40)

Model: Undrained (Phi=0)
Unit Weight: 120 pcf
Cohesion: 1100 psf
Pore Water Pressure
- Piezometric Line: 1

CL (-40 to -45)

Model: Undrained (Phi=0)
Unit Weight: 120 pcf
Cohesion: 300 psf
Pore Water Pressure
- Piezometric Line: 1

MARSH

Model: Undrained (Phi=0)
Unit Weight: 100 pcf
Cohesion: 100 psf
Pore Water Pressure
- Piezometric Line: 1

Slip Surface Limits

Left Coordinate: (-200, 3.5) ft
Right Coordinate: (150, -1) ft

Slip Surface Block

Left Grid
- Upper Left: (-15, 0) ft
- Lower Left: (-15, -35) ft
- Lower Right: (15, -35) ft
- X Increments: 6
- Y Increments: 7
- Starting Angle: 125 °
- Ending Angle: 145 °
- Angle Increments: 4

Right Grid
- Upper Left: (30, 0) ft
- Lower Left: (30, -35) ft
- Lower Right: (60, -35) ft
- X Increments: 6
- Y Increments: 7
- Starting Angle: 25 °
- Ending Angle: 45 °
- Angle Increments: 4

Piezometric Lines

Piezometric Line 1

Coordinates

	X (ft)	Y (ft)
	-200	0
	150	0

Tension Crack Line

	X (ft)	Y (ft)
	-30.1	1.5
	-6.5	1.5
	-2.5	2.5

Regions

	Material	Points	Area (ft²)
Region 1	CL (-20 to -30)	11,12,14,13	3500
Region 2	CL (-30 to -40)	13,14,16,15	3500
Region 3	CL (-40 to -45)	15,16,18,17	1750
Region 4	FILL	24,23,22,31,8,9,19,20,21,5,4,3,2	347.5
Region 5	OH (-10 to -20)	27,26,28,10,12,11	3077.5
Region 6	PT (NG to -10)	28,25,24,2,3,4,5,21,7,10	2100.375
Region 7	OH (-10 to -20)	27,26,28,29	422.5
Region 8	PT (NG to -10)	29,1,25,28	774.375
Region 9	MARSH	1,30,31,22,23,24,25	976.5
Region 10		31,8,32,30	195.5

Points

	X (ft)	Y (ft)
Point 1	-200	-2.5
Point 2	-30.5	-2.5
Point 3	2.5	-2
Point 4	11.5	-1

Point 5	18.5	0.5
Point 6	43	-1
Point 7	150	-1
Point 8	-2.5	4.5
Point 9	2.5	4.5
Point 10	150	-10
Point 11	-200	-20
Point 12	150	-20
Point 13	-200	-30
Point 14	150	-30
Point 15	-200	-40
Point 16	150	-40
Point 17	-200	-45
Point 18	150	-45
Point 19	10.5	2.5
Point 20	30.5	2.5
Point 21	44.5	-1
Point 22	-10.5	2.5
Point 23	-30.5	2.5
Point 24	-55.5	-2.5
Point 25	-85.5	-2.5
Point 26	-123	-15
Point 27	-200	-15
Point 28	-108	-10
Point 29	-200	-10
Point 30	-200	3.5
Point 31	-6.5	3.5
Point 32	-200	4.5

Critical Slip Surfaces

	Slip Surface	FOS	Center (ft)	Radius (ft)	Entry (ft)	Exit (ft)
1	Optimized	1.37	(23.57, 2.125)	32.53098	(-12.6462, 3.5)	(62.7851, -1)
2	5894	1.44	(23.57, 2.125)	33.543	(-15.6227, 3.5)	(62.6433, -1)

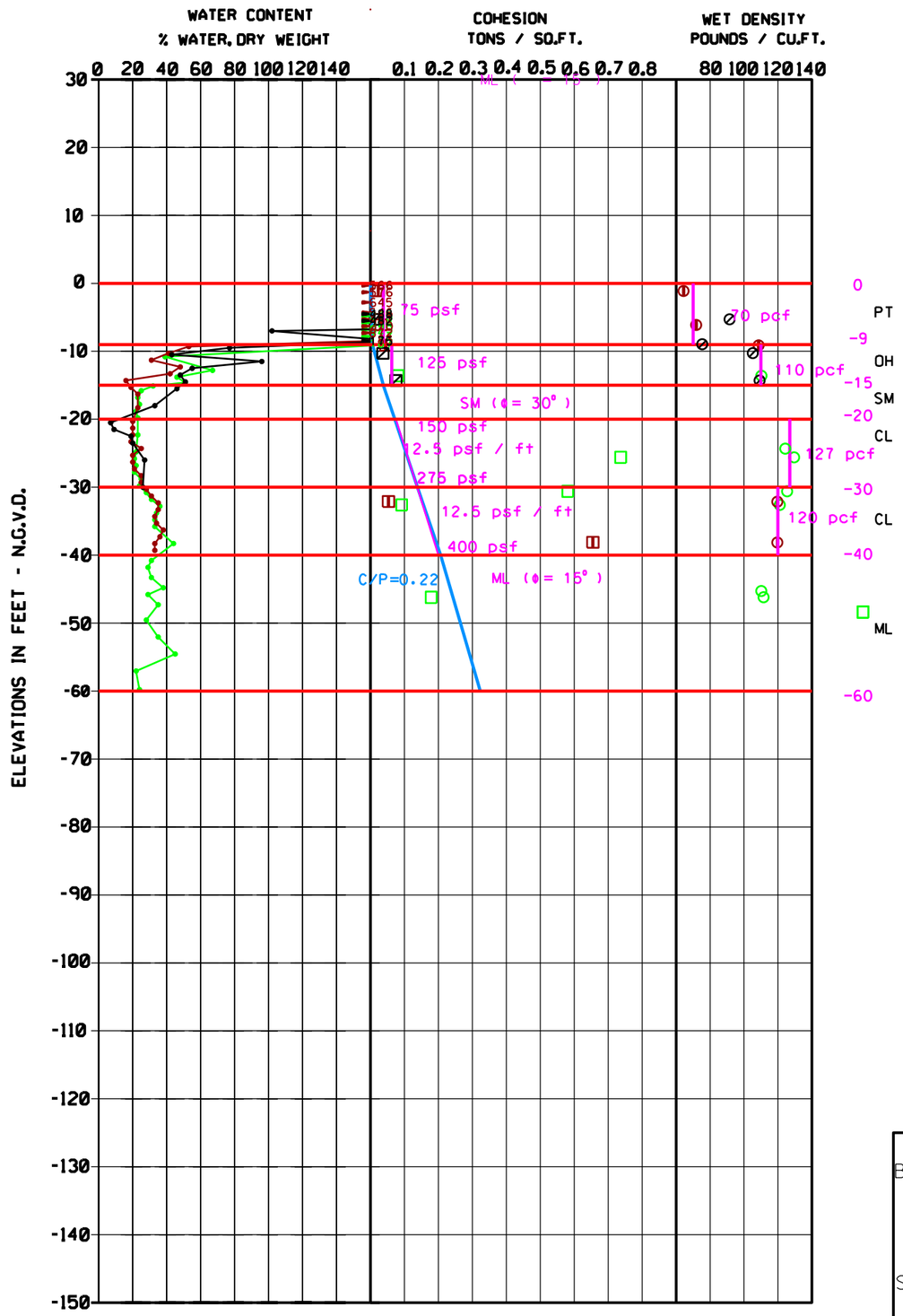
Slices of Slip Surface: Optimized

	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength (psf)
1	Optimized	-11.89124	0.75	-46.799787	128.54601	0	200
2	Optimized	-10.81814	-0.3160517	19.721508	234.62217	0	200
3	Optimized	-9.937095	-1.1913117	74.339158	320.18078	0	200
4	Optimized	-9.1462555	-1.9617625	122.41406	405.60667	0	200
5	Optimized	-7.7091605	-3.293618	205.52133	595.84323	0	90
6	Optimized	-5.63349	-5.2172855	325.55931	786.21955	0	90
7	Optimized	-3.63349	-7.2680425	453.52268	1000.4491	0	90
8	Optimized	-1.825806	-9.2578725	577.67379	1202.4232	0	90
9	Optimized	-0.110006	-11.14656	695.55736	1371.4575	0	100
10	Optimized	1.7158	-13.053785	814.54595	1571.1062	0	100
11	Optimized	3.552155	-14.835025	925.6982	1718.3303	0	100
12	Optimized	6.04207	-16.688545	1041.3689	1880.5244	0	100
13	Optimized	8.556565	-17.83366	1112.8163	1962.5814	0	100
14	Optimized	10.06665	-18.18171	1134.5393	1982.4857	0	100
15	Optimized	11	-18.25899	1139.401	1978.3302	0	100
16	Optimized	12.666665	-18.39699	1147.9859	1989.0079	0	100
17	Optimized	15	-18.59019	1160.0304	2003.3161	0	100
18	Optimized	17.333335	-18.783385	1172.0749	2017.6243	0	100
19	Optimized	19.947655	-18.999845	1185.5909	2037.5407	0	100
20	Optimized	22.842965	-19.239575	1200.564	2063.1498	0	100
21	Optimized	25.728645	-19.49309	1216.3651	2088.877	0	100
22	Optimized	28.833335	-19.781645	1234.3702	2119.4558	0	100
23	Optimized	30.83577	-19.967755	1245.9926	2130.8231	0	100
24	Optimized	32.45456	-19.99801	1247.8732	2105.769	0	100
25	Optimized	35.020605	-19.996105	1247.7563	2042.9096	0	100
26	Optimized	38.01457	-19.46355	1214.513	1953.1447	0	100
27	Optimized	40.112755	-18.68823	1166.1936	1860.752	0	100
28	Optimized	42.37995	-17.261325	1077.0984	1689.6473	0	100
29	Optimized	44.37995	-15.98412	997.39781	1559.3481	0	100
30	Optimized	46.38571	-14.41322	899.37534	1397.9103	0	100
31	Optimized	50.1557	-11.46817	715.61024	1097.5495	0	100
32	Optimized	53.73509	-8.679225	541.57513	821.01822	0	90
33	Optimized	57.275875	-5.817985	363.05114	563.21179	0	90
34	Optimized	60.953345	-2.63876	164.65834	275.85118	0	90

Slices of Slip Surface: 5894

	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength (psf)
1	5894	-14.728885	0.75	-46.799218	156.66018	0	200
2	5894	-12.51959	-1.103819	68.878067	340.02286	0	200
3	5894	-10.852055	-2.503048	156.18744	535.42831	0	90
4	5894	-9.5	-3.6375575	226.98276	635.31886	0	90
5	5894	-7.5	-5.3157565	331.70485	783.08881	0	90
6	5894	-5.5	-6.9939555	436.41545	955.33387	0	90
7	5894	-3.5	-8.672155	541.13371	1152.0924	0	90
8	5894	-2.208768	-9.7556275	608.75688	1272.0016	0	90
9	5894	-0.813152	-10.92669	681.81298	1378.6433	0	100
10	5894	1.395616	-12.780065	797.47737	1559.9953	0	100
11	5894	3.75	-14.75562	920.75484	1721.4858	0	100

			5				
12	5894	6.25	-16.853375	1051.6565	1863.1121	0	100
13	5894	8.75	-18.951125	1182.5582	2004.7691	0	100
14	5894	10.25	-20	1248	2169.4	0	100
15	5894	11	-20	1248	2162.2	0	100
16	5894	12.666665	-20	1248.0002	2159.186	0	100
17	5894	15	-20	1248.0002	2154.1717	0	100
18	5894	17.333335	-20	1248.0002	2149.1574	0	100
19	5894	19.944445	-20	1247.9884	2147.5038	0	100
20	5894	22.833335	-20	1247.9884	2149.1653	0	100
21	5894	25.722225	-20	1247.9884	2150.8268	0	100
22	5894	28.833335	-20	1248.0001	2152.6202	0	100
23	5894	31.6875	-20	1248	2124.5895	0	100
24	5894	34.0625	-20	1248	2066.5684	0	100
25	5894	36.4375	-20	1248	2008.5895	0	100
26	5894	38.8125	-20	1248	1950.5684	0	100
27	5894	40.25	-19.790225	1234.9097	1993.0946	0	100
28	5894	41.5	-18.74135	1169.4433	1870.91	0	100
29	5894	43.5	-17.06315	1064.725	1681.812	0	100
30	5894	45.736255	-15.18671	947.65982	1481.0225	0	100
31	5894	48.208765	-13.112025	818.18421	1269.2885	0	100
32	5894	50.68128	-11.03734	688.73959	1057.5545	0	100
33	5894	53.25826	-8.875	553.79717	842.22308	0	90
34	5894	55.939705	-6.625	413.41238	635.55975	0	90
35	5894	58.62115	-4.375	272.99901	428.89641	0	90
36	5894	61.302595	-2.125	132.59993	222.22165	0	90

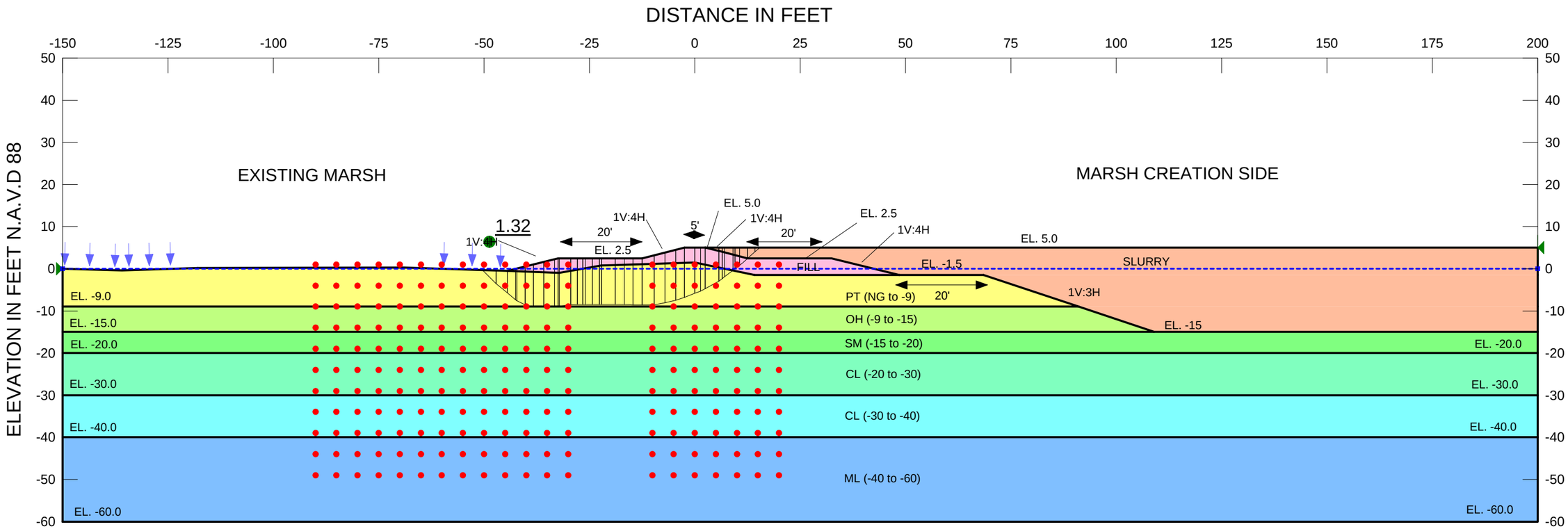


LEGEND TO TESTS

	O UCT	R	S	ϒ
BSFS-1U	□			○
BSFS-2U	◫			◑
BSFS-3U	◪			⊘

LPV MITIGATION
BAYOU SAUVAGE FLOOD SIDE
INTERMEDIATE MARSH
RESTORATION
ORLEANS PARISH, LA

STRENGTH LINE FOR BSFS-5



Name: PT (NG to -9) Model: Undrained (Phi=0) Unit Weight: 70 pcf Cohesion: 75 psf Piezometric Line: 1
Name: OH (-9 to -15) Model: Undrained (Phi=0) Unit Weight: 110 pcf Cohesion: 125 psf Piezometric Line: 1
Name: SM (-15 to -20) Model: Mohr-Coulomb Unit Weight: 132 pcf Cohesion: 0 psf Phi: 30 ° Piezometric Line: 1
Name: CL (-20 to -30) Model: S=f(depth) Unit Weight: 127 pcf C-Top of Layer: 150 psf C-Rate of Change: 12.5 psf/ft Limiting C: 275 psf Piezometric Line: 1
Name: CL (-30 to -40) Model: S=f(depth) Unit Weight: 120 pcf C-Top of Layer: 275 psf C-Rate of Change: 12.5 psf/ft Limiting C: 400 psf Piezometric Line: 1
Name: ML (-40 to -60) Model: Mohr-Coulomb Unit Weight: 117 pcf Cohesion: 0 psf Phi: 15 ° Piezometric Line: 1
Name: FILL Model: Undrained (Phi=0) Unit Weight: 100 pcf Cohesion: 200 psf Piezometric Line: 1
Name: SLURRY Model: Undrained (Phi=0) Unit Weight: 100 pcf Cohesion: 1 psf Piezometric Line: 1

GENERAL NOTES

CLASSIFICATION STRATIFICATION SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATE 19

SHEAR STRENGTHS BETWEEN VERTICALS WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

US Army Corps of Engineers
New Orleans District

LPV MITIGATION
BAYOU SAUVAGE FLOOD SIDE
ORLEANS PARISH, LA
BSFS-5 EARTHEN DIKE

EXTREME CONSTRUCTION CASE

Last Edited By: Chaisson, Kathryn MVN
File Name: BSFS-5_1U & 2U.gsz
Directory: G:\F&MHOME\CHAISSON\Bayou Sauvage FS\

Extreme_nc

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File Information

Revision Number: 78
Last Edited By: Chaisson, Kathryn MVN
Date: 11/19/2013
Time: 11:12:51 AM
File Name: BSFS-5_1U & 2U.gsz
Directory: G:\F&MHOME\CHAISSON\Bayou Sauvage FS\
Last Solved Date: 11/19/2013
Last Solved Time: 11:14:27 AM

Project Settings

Length(L) Units: feet
Time(t) Units: Seconds
Force(F) Units: lbf
Pressure(p) Units: psf
Strength Units: psf
Unit Weight of Water: 62.4 pcf
View: 2D

Analysis Settings

Extreme_nc

Kind: SLOPE/W
Method: Spencer
Settings
- Apply Phreatic Correction: No
- PWP Conditions Source: Piezometric Line
- Use Staged Rapid Drawdown: No

Slip Surface
- Direction of movement: Right to Left
- Use Passive Mode: No
- Slip Surface Option: Block
- Critical slip surfaces saved: 1
- Optimize Critical Slip Surface Location: Yes
- Tension Crack
  - Tension Crack Option: Search for Tension Crack
  - Percentage Wet: 1
  - Tension Crack Fluid Unit Weight: 62.4 pcf

FOS Distribution
- FOS Calculation Option: Constant

Restrict Block Crossing: Yes
Advanced
- Number of Slices: 30
- Optimization Tolerance: 0.01
- Minimum Slip Surface Depth: 0.1 ft
- Optimization Maximum Iterations: 4000
- Optimization Convergence Tolerance: 1e-007
- Starting Optimization Points: 8
- Ending Optimization Points: 16
- Complete Passes per Insertion: 1
- Driving Side Maximum Convex Angle: 5 °
- Resisting Side Maximum Convex Angle: 1 °

Materials

PT (NG to -9)

Model: Undrained (Phi=0)
Unit Weight: 70 pcf
Cohesion: 75 psf
Pore Water Pressure
- Piezometric Line: 1

OH (-9 to -15)

Model: Undrained (Phi=0)
Unit Weight: 110 pcf
Cohesion: 125 psf
Pore Water Pressure
- Piezometric Line: 1

SM (-15 to -20)

Model: Mohr-Coulomb
Unit Weight: 132 pcf
Cohesion: 0 psf
Phi: 30 °
Phi-B: 0 °
Pore Water Pressure
- Piezometric Line: 1

CL (-20 to -30)

Model: S=f(depth)
Unit Weight: 127 pcf
C-Top of Layer: 150 psf
C-Rate of Change: 12.5 psf/ft
Limiting C: 275 psf
Pore Water Pressure
- Piezometric Line: 1

CL (-30 to -40)

Model: S=f(depth)
Unit Weight: 120 pcf
C-Top of Layer: 275 psf
C-Rate of Change: 12.5 psf/ft
Limiting C: 400 psf
Pore Water Pressure
- Piezometric Line: 1

ML (-40 to -60)

Model: Mohr-Coulomb
Unit Weight: 117 pcf
Cohesion: 0 psf
Phi: 15 °
Phi-B: 0 °
Pore Water Pressure
- Piezometric Line: 1

FILL

Model: Undrained (Phi=0)
Unit Weight: 100 pcf
Cohesion: 200 psf
Pore Water Pressure
- Piezometric Line: 1

SLURRY

Model: Undrained (Phi=0)
Unit Weight: 100 pcf
Cohesion: 1 psf
Pore Water Pressure
- Piezometric Line: 1

Slip Surface Limits

Left Coordinate: (-150, 0) ft
Right Coordinate: (200, 5) ft

Slip Surface Block

Left Grid
- Upper Left: (-90, 1) ft
- Lower Left: (-90, -49) ft
- Lower Right: (-30, -49) ft
- X Increments: 12
- Y Increments: 10
- Starting Angle: 145 °
- Ending Angle: 165 °
- Angle Increments: 4

Right Grid
- Upper Left: (-10, 1) ft
- Lower Left: (-10, -49) ft
- Lower Right: (20, -49) ft
- X Increments: 6
- Y Increments: 10
- Starting Angle: 35 °
- Ending Angle: 55 °
- Angle Increments: 4

Piezometric Lines

Piezometric Line 1

Coordinates

	X (ft)	Y (ft)
	-150	0
	200	0

Regions

	Material	Points	Area (ft²)
Region 1	ML (-40 to -60)	10,12,13,11	7000
Region 2	CL (-30 to -40)	12,14,15,13	3500
Region 3	CL (-20 to -30)	14,16,17,15	3500
Region 4	SM (-15 to -20)	16,18,28,19,17	1750
Region 5	OH (-9 to -15)	18,20,27,28	1500
Region 6	PT (NG to -9)	20,1,2,3,4,33,5,6,25,7,8,24,26,27	1989.745
Region 7	FILL	23,22,34,29,30,24,8,7,25,6,5,33,32,31	256.285
Region 8	SLURRY	27,21,19,28	600
Region 9	SLURRY	26,9,21,27	901.875
Region 10	SLURRY	34,29,30,24,26,9,35	923.75
Region 11	SLURRY	22,34,35,36	195.5

Points

	X (ft)	Y (ft)
Point 1	-150	0
Point 2	-135.9	-0.4
Point 3	-117.9	0.2
Point 4	-69	0.3
Point 5	-32.2	-1
Point 6	-22.1	0.8
Point 7	0	1.5
Point 8	14.2	-1.5
Point 9	200	-1.5
Point 10	-150	-60
Point 11	200	-60
Point 12	-150	-40
Point 13	200	-40
Point 14	-150	-30
Point 15	200	-30
Point 16	-150	-20
Point 17	200	-20
Point 18	-150	-15
Point 19	200	-15
Point 20	-150	-9
Point 21	200	-9
Point 22	2.5	5
Point 23	-2.5	5
Point 24	48.5	-1.5
Point 25	-18.9	0.9
Point 26	68.5	-1.5
Point 27	91	-9
Point 28	109	-15
Point 29	12.5	2.5
Point 30	32.5	2.5
Point 31	-12.5	2.5
Point 32	-32.5	2.5
Point 33	-44.5	-0.5
Point 34	6.5	4
Point 35	200	4
Point 36	200	5

Critical Slip Surfaces

	Slip Surface	FOS	Center (ft)	Radius (ft)	Entry (ft)	Exit (ft)
1	Optimized	1.32	(-19.064, 6.31)	27.15006	(15.4738, 5)	(-50.4082, -0.307078)
2	6306	1.34	(-19.064, 6.31)	28.035	(14.9941, 5)	(-52.5129, -0.238353)

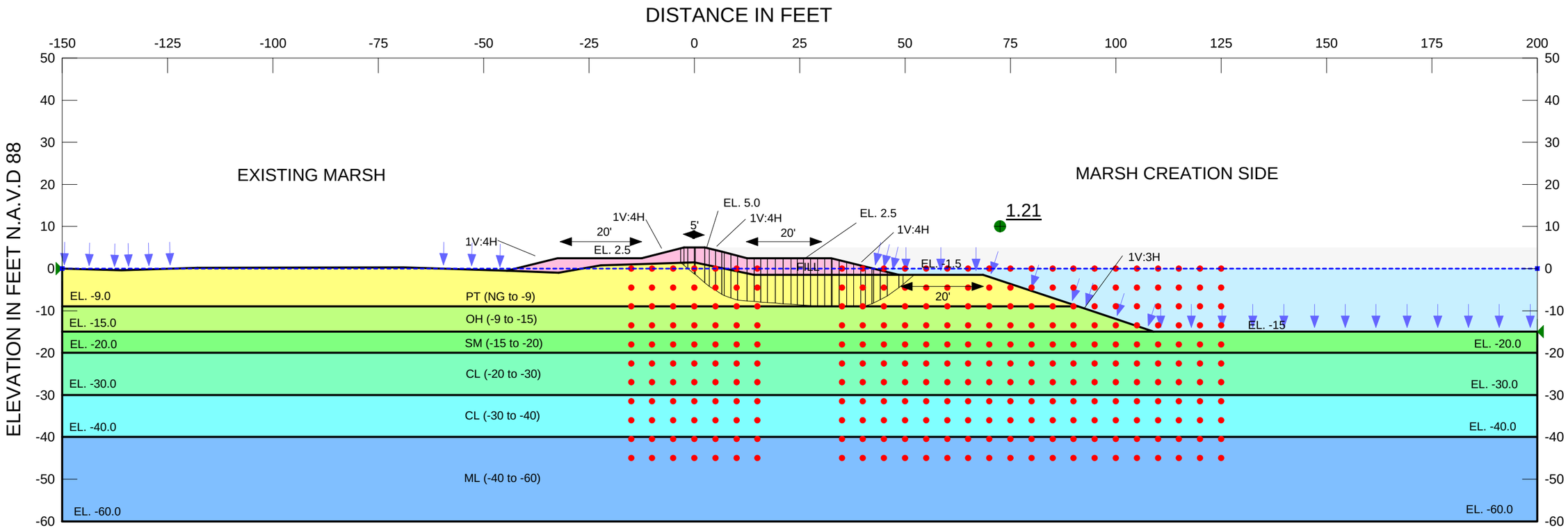
Slices of Slip Surface: Optimized

	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength (psf)
1	Optimized	-48.766	-1.9341591	120.69068	203.22241	0	75
2	Optimized	-45.811885	-4.6326305	289.07682	387.85834	0	75
3	Optimized	-43.5	-6.520701	406.89778	537.32814	0	75
4	Optimized	-42.35506	-7.4557505	465.22924	620.73316	0	75
5	Optimized	-41.240795	-8.06221	503.09806	665.08458	0	75
6	Optimized	-39.286805	-8.77199	547.35278	740.90037	0	75
7	Optimized	-37.041965	-8.9948525	561.27103	793.42123	0	75
8	Optimized	-34.521615	-8.9971975	561.42974	859.68185	0	75
9	Optimized	-32.88072	-8.956897	558.90472	888.23668	0	75
10	Optimized	-32.35	-8.8990835	555.31494	894.30956	0	75
11	Optimized	-30.80978	-8.7313015	544.81981	875.43727	0	75
12	Optimized	-28.63535	-8.53366	532.49903	855.30306	0	75
13	Optimized	-27.220015	-8.4767255	528.94646	848.12355	0	75
14	Optimized	-26.29928	-8.4610655	527.96232	842.11587	0	75
15	Optimized	-25.161975	-8.455225	527.60535	837.26752	0	75
16	Optimized	-23.46658	-8.453395	527.49328	828.06613	0	75
17	Optimized	-22.35944	-8.4551245	527.60899	823.42308	0	75
18	Optimized	-20.5	-8.474078	528.78507	821.86362	0	75
19	Optimized	-17.833335	-8.5012595	530.45686	821.25427	0	75
20	Optimized	-15.7	-8.523005	531.81616	820.73867	0	75
21	Optimized	-13.566665	-8.5447505	533.17547	820.22308	0	75
22	Optimized	-11.09282	-8.5699665	534.76525	854.85694	0	75
23	Optimized	-8.3973475	-8.318685	519.085	879.28195	0	75
24	Optimized	-5.8207625	-7.787435	485.93898	903.76135	0	75
25	Optimized	-3.516235	-7.143034	445.72303	896.42518	0	75
26	Optimized	-1.25	-6.298352	393.02716	861.27895	0	75
27	Optimized	0.66688	-5.583883	348.4348	815.23457	0	75
28	Optimized	1.91688	-5.019562	313.22243	767.88168	0	75
29	Optimized	4.1145	-3.829557	238.96436	700.54237	0	75
30	Optimized	6.1145	-2.6592665	165.93712	613.34295	0	75
31	Optimized	6.8	-2.132839	133.08486	582.16034	0	75
32	Optimized	8.071419	-1.1564569	72.162007	524.32472	0	75
33	Optimized	9.3100825	-0.2052294	12.806309	395.63146	0	200
34	Optimized	10.104734	0.40502	-25.272941	337.09284	0	200
35	Optimized	11.56607	1.6182635	-100.98037	205.45846	0	200
36	Optimized	13.409125	3.2132435	-200.50554	169.93877	0	1
37	Optimized	14.896015	4.5	-280.80267	47.132653	0	1

Slices of Slip Surface: 6306

	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength (psf)
1	6306	-51.511315	-0.9396927	58.638435	110.14948	0	75
2	6306	-49.50808	-2.342371	146.16264	211.67903	0	75
3	6306	-47.504845	-3.745049	233.69093	313.20448	0	75
4	6306	-45.501615	-5.147727	321.21922	414.72176	0	75
5	6306	-43.5	-6.5492735	408.67498	527.73874	0	75
6	6306	-41.25	-8.1247405	506.98966	687.26867	0	75
7	6306	-38.75	-9	561.6	748.8	0	75
8	6306	-36.25	-9	561.6	814.36	0	75
9	6306	-33.75	-9	561.6	879.88	0	75
10	6306	-32.35	-9	561.6	912.83333	0	75
11	6306	-30.79722	-9	561.59991	905.52461	0	75
12	6306	-27.991665	-9	561.59991	890.51867	0	75
13	6306	-25.466665	-9	561.60902	877.01007	0	75
14	6306	-23.22222	-9	561.60902	865.02492	0	75
15	6306	-20.5	-9	561.59375	857.53125	0	75
16	6306	-17.833335	-9	561.60946	855.00013	0	75

17	6306	-15.7	-9	561.60946	852.98451	0	75
18	6306	-13.566665	-9	561.60946	850.96888	0	75
19	6306	-11.25	-9	561.6	880	0	75
20	6306	-8.75	-9	561.6	940.12	0	75
21	6306	-6.25	-9	561.6	1000.24	0	75
22	6306	-3.75	-8.1247405	506.98966	924.8228	0	75
23	6306	-1.25	-6.3742215	397.74753	834.55223	0	75
24	6306	1.25	-4.6237025	288.5185	722.98371	0	75
25	6306	3.5	-3.0482355	190.21121	630.46042	0	75
26	6306	5.5	-1.6478206	102.82407	548.21755	0	75
27	6306	6.8	-0.73755105	46.022689	494.7678	0	75
28	6306	7.38936	-0.3248768	20.27215	470.52562	0	75
29	6306	7.766026	-0.0611324	3.8146556	394.55888	0	200
30	6306	8.816718	0.67457	-42.093314	323.6734	0	200
31	6306	10.743492	2.0237105	-126.27994	193.68196	0	200
32	6306	12.6364	3.3491405	-208.98638	158.59594	0	1
33	6306	14.279995	4.5	-280.80005	47.710656	0	1



Name: PT (NG to -9) Model: Undrained (Phi=0) Unit Weight: 70 pcf Cohesion: 75 psf Piezometric Line: 1
Name: OH (-9 to -15) Model: Undrained (Phi=0) Unit Weight: 110 pcf Cohesion: 125 psf Piezometric Line: 1
Name: SM (-15 to -20) Model: Mohr-Coulomb Unit Weight: 132 pcf Cohesion: 0 psf Phi: 30 ° Piezometric Line: 1
Name: CL (-20 to -30) Model: S=f(depth) Unit Weight: 127 pcf C-Top of Layer: 150 psf C-Rate of Change: 12.5 psf/ft Limiting C: 275 psf Piezometric Line: 1
Name: CL (-30 to -40) Model: S=f(depth) Unit Weight: 120 pcf C-Top of Layer: 275 psf C-Rate of Change: 12.5 psf/ft Limiting C: 400 psf Piezometric Line: 1
Name: ML (-40 to -60) Model: Mohr-Coulomb Unit Weight: 117 pcf Cohesion: 0 psf Phi: 15 ° Piezometric Line: 1
Name: FILL Model: Undrained (Phi=0) Unit Weight: 100 pcf Cohesion: 200 psf Piezometric Line: 1

GENERAL NOTES

CLASSIFICATION STRATIFICATION SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATE 19

SHEAR STRENGTHS BETWEEN VERTICALS WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

US Army Corps of Engineers
New Orleans District

LPV MITIGATION
BAYOU SAUVAGE FLOOD SIDE
ORLEANS PARISH, LA
BSFS-5 EARTHEN DIKE

CONSTRUCTION CASE

Last Edited By: Chaisson, Kathryn MVN
File Name: BSFS-5_1U & 2U.gsz
Directory: G:\F&MHOME\CHAISSON\Bayou Sauvage FS\

Construction_nc

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File Information

Revision Number: 77
Last Edited By: Chaisson, Kathryn MVN
Date: 11/19/2013
Time: 10:56:53 AM
File Name: BSFS-5_1U & 2U.gsz
Directory: G:\F&MHOME\CHAISSON\Bayou Sauvage FS\
Last Solved Date: 11/19/2013
Last Solved Time: 10:59:30 AM

Project Settings

Length(L) Units: feet
Time(t) Units: Seconds
Force(F) Units: lbf
Pressure(p) Units: psf
Strength Units: psf
Unit Weight of Water: 62.4 pcf
View: 2D

Analysis Settings

Construction_nc

Kind: SLOPE/W
Method: Spencer
Settings
- Apply Phreatic Correction: No
- PWP Conditions Source: Piezometric Line
- Use Staged Rapid Drawdown: No

Slip Surface
- Direction of movement: Left to Right
- Use Passive Mode: No
- Slip Surface Option: Block
- Critical slip surfaces saved: 1
- Optimize Critical Slip Surface Location: Yes
- Tension Crack
  - Tension Crack Option: Search for Tension Crack
  - Percentage Wet: 1
  - Tension Crack Fluid Unit Weight: 62.4 pcf

FOS Distribution
- FOS Calculation Option: Constant

Restrict Block Crossing: Yes
Advanced
- Number of Slices: 30
- Optimization Tolerance: 0.01
- Minimum Slip Surface Depth: 0.1 ft
- Optimization Maximum Iterations: 4000
- Optimization Convergence Tolerance: 1e-007
- Starting Optimization Points: 8
- Ending Optimization Points: 16
- Complete Passes per Insertion: 1
- Driving Side Maximum Convex Angle: 5 °
- Resisting Side Maximum Convex Angle: 1 °

Materials

PT (NG to -9)

Model: Undrained (Phi=0)
Unit Weight: 70 pcf
Cohesion: 75 psf
Pore Water Pressure
- Piezometric Line: 1

OH (-9 to -15)

Model: Undrained (Phi=0)
Unit Weight: 110 pcf
Cohesion: 125 psf
Pore Water Pressure
- Piezometric Line: 1

SM (-15 to -20)

Model: Mohr-Coulomb
Unit Weight: 132 pcf
Cohesion: 0 psf
Phi: 30 °
Phi-B: 0 °
Pore Water Pressure
- Piezometric Line: 1

CL (-20 to -30)

Model: S=f(depth)
Unit Weight: 127 pcf
C-Top of Layer: 150 psf
C-Rate of Change: 12.5 psf/ft
Limiting C: 275 psf
Pore Water Pressure
- Piezometric Line: 1

CL (-30 to -40)

Model: S=f(depth)
Unit Weight: 120 pcf
C-Top of Layer: 275 psf
C-Rate of Change: 12.5 psf/ft
Limiting C: 400 psf
Pore Water Pressure
- Piezometric Line: 1

ML (-40 to -60)

Model: Mohr-Coulomb
Unit Weight: 117 pcf
Cohesion: 0 psf
Phi: 15 °
Phi-B: 0 °
Pore Water Pressure
- Piezometric Line: 1

FILL

Model: Undrained (Phi=0)
Unit Weight: 100 pcf
Cohesion: 200 psf
Pore Water Pressure
- Piezometric Line: 1

Slip Surface Limits

Left Coordinate: (-150, 0) ft
Right Coordinate: (200, -15) ft

Slip Surface Block

Left Grid
- Upper Left: (-15, 0) ft
- Lower Left: (-15, -45) ft
- Lower Right: (15, -45) ft
- X Increments: 6
- Y Increments: 10
- Starting Angle: 125 °
- Ending Angle: 145 °
- Angle Increments: 4

Right Grid
- Upper Left: (35, 0) ft
- Lower Left: (35, -45) ft
- Lower Right: (125, -45) ft
- X Increments: 18
- Y Increments: 10
- Starting Angle: 25 °
- Ending Angle: 45 °
- Angle Increments: 4

Piezometric Lines

Piezometric Line 1

Coordinates

	X (ft)	Y (ft)
	-150	0
	200	0

Regions

	Material	Points	Area (ft²)
Region 1	ML (-40 to -60)	10,12,13,11	7000
Region 2	CL (-30 to -40)	12,14,15,13	3500
Region 3	CL (-20 to -30)	14,16,17,15	3500
Region 4	SM (-15 to -20)	16,18,28,19,17	1750
Region 5	OH (-9 to -15)	18,20,27,28	1500
Region 6	PT (NG to -9)	20,1,2,3,4,33,5,6,25,7,8,24,26,27	1989.745
Region 7	FILL	23,22,34,29,30,24,8,7,25,6,5,33,32,31	256.285
Region 8		27,21,19,28	600
Region 9		26,9,21,27	901.875
Region 10		34,29,30,24,26,9,35	923.75
Region 11		22,34,35,36	195.5

Points

	X (ft)	Y (ft)
Point 1	-150	0
Point 2	-135.9	-0.4
Point 3	-117.9	0.2
Point 4	-69	0.3
Point 5	-32.2	-1

Point 6	-22.1	0.8
Point 7	0	1.5
Point 8	14.2	-1.5
Point 9	200	-1.5
Point 10	-150	-60
Point 11	200	-60
Point 12	-150	-40
Point 13	200	-40
Point 14	-150	-30
Point 15	200	-30
Point 16	-150	-20
Point 17	200	-20
Point 18	-150	-15
Point 19	200	-15
Point 20	-150	-9
Point 21	200	-9
Point 22	2.5	5
Point 23	-2.5	5
Point 24	48.5	-1.5
Point 25	-18.9	0.9
Point 26	68.5	-1.5
Point 27	91	-9
Point 28	109	-15
Point 29	12.5	2.5
Point 30	32.5	2.5
Point 31	-12.5	2.5
Point 32	-32.5	2.5
Point 33	-44.5	-0.5
Point 34	6.5	4
Point 35	200	4
Point 36	200	5

Critical Slip Surfaces

	Slip Surface	FOS	Center (ft)	Radius (ft)	Entry (ft)	Exit (ft)
1	Optimized	1.21	(24.687, 3.927)	22.10426	(-3.24472, 4.81382)	(52.1509, -1.5)
2	9317	1.35	(24.687, 3.927)	23.545	(-4.112, 4.597)	(52.9904, -1.5)

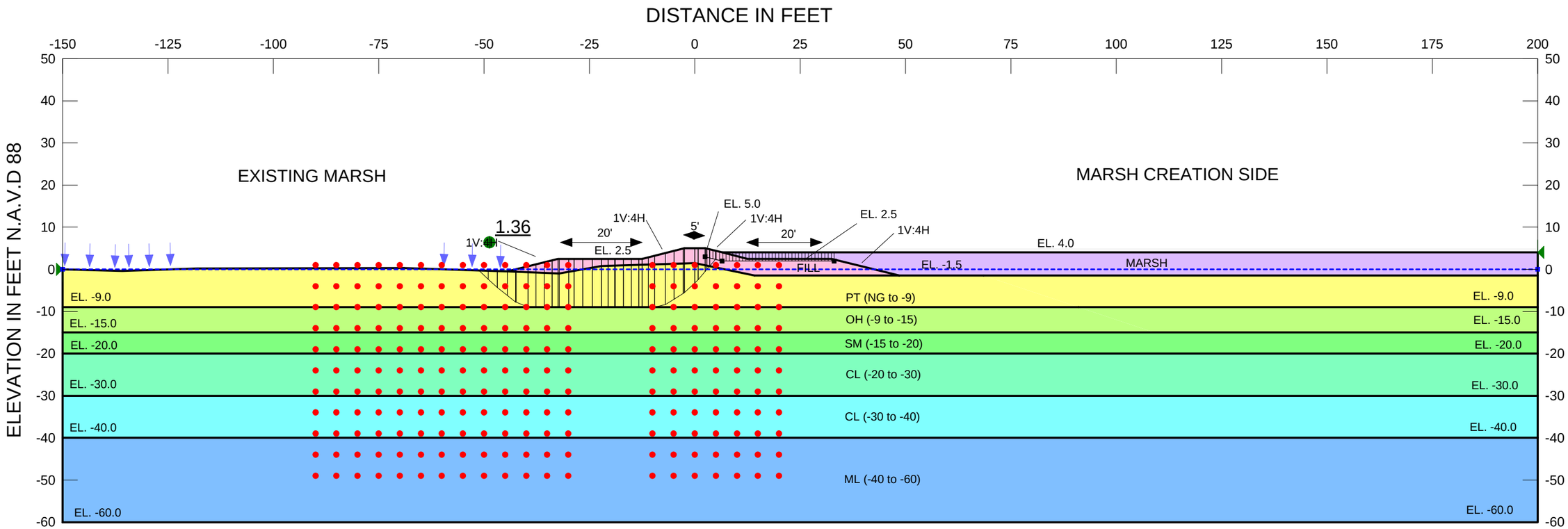
Slices of Slip Surface: Optimized

	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength (psf)
1	Optimized	-2.8723615	1.0930798	-68.207801	273.67591	0	75
2	Optimized	-2.0165475	0.39458325	-24.621937	361.50901	0	75
3	Optimized	-0.7665475	-0.6256395	39.039713	427.79149	0	75
4	Optimized	0.077435	-1.3144795	82.02392	473.07447	0	75
5	Optimized	1.327435	-2.362256	147.40613	547.51128	0	75
6	Optimized	3.034395	-3.795551	236.84386	639.65899	0	75
7	Optimized	4.3015925	-4.6974775	293.12073	700.47915	0	75
8	Optimized	5.7671975	-5.6038925	349.68249	735.00695	0	75
9	Optimized	6.77651	-6.22811	388.62735	758.81528	0	75
10	Optimized	7.8653425	-6.669748	416.19122	802.01631	0	75
11	Optimized	9.4664975	-7.203178	449.47577	809.18147	0	75
12	Optimized	11.377665	-7.566338	472.12803	828.35395	0	75
13	Optimized	13.35	-7.742702	483.14285	825.17813	0	75
14	Optimized	14.992955	-7.8896135	492.31179	840.70082	0	75
15	Optimiz	16.57887	-8.0314245	501.16094	850.56113	0	75
	ed						
16	Optimized	18.29449	-8.1591435	509.1307	862.92972	0	75
17	Optimized	20.139815	-8.27277	516.22172	870.82666	0	75
18	Optimized	21.98514	-8.3863965	523.31273	878.77768	0	75
19	Optimized	23.66378	-8.4960175	530.15263	885.36914	0	75
20	Optimized	25.175735	-8.6016325	536.74391	892.69279	0	75
21	Optimized	26.752745	-8.6965555	542.66706	901.69812	0	75
22	Optimized	28.394815	-8.7807865	547.92179	907.53671	0	75
23	Optimized	30.03689	-8.8650175	553.17653	913.43613	0	75
24	Optimized	31.678965	-8.949248	558.43127	919.33554	0	75
25	Optimized	32.58087	-8.9955115	561.31856	920.51625	0	75
26	Optimized	33.51519	-8.9972475	561.42583	904.26878	0	75
27	Optimized	35.22209	-8.9924225	561.12705	861.26695	0	75
28	Optimized	36.928985	-8.9875975	560.82826	818.26512	0	75
29	Optimized	38.63588	-8.9827725	560.52361	775.2047	0	75
30	Optimized	39.999305	-8.91182	556.09647	751.55473	0	75
31	Optimized	41.32838	-8.59161	536.11836	715.31852	0	75
32	Optimized	42.32374	-8.251264	514.8765	688.00557	0	75
33	Optimized	43.313825	-7.753156	483.79741	639.50894	0	75
34	Optimiz	44.94147	-6.934292	432.70036	564.59221	0	75
	ed						
35	Optimized	47.127645	-5.510337	343.8338	463.98227	0	75
36	Optimized	49.01224	-4.117137	256.90978	345.87179	0	75
37	Optimized	50.837675	-2.61923	163.43923	244.59233	0	75

Slices of Slip Surface: 9317

	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength (psf)
1	9317	-3.3059995	2.165059	-135.0986	137.09925	0	200
2	9317	-1.6128912	0.7443725	-46.449233	341.90573	0	75
3	9317	-0.36289115	-0.30450185	19.000645	411.42382	0	75
4	9317	1.25	-1.6578784	103.45278	508.53098	0	75
5	9317	3.5	-3.5458525	221.26041	623.75159	0	75
6	9317	5.5	-5.2240515	325.9825	699.81979	0	75
7	9317	6.8	-6.314881	394.05325	749.26804	0	75
8	9317	7.825	-7.1749585	447.71854	788.23314	0	75
9	9317	9.275	-8.391653	523.64145	843.38832	0	75
10	9317	11.25	-9	561.6	941.12	0	75
11	9317	13.35	-9	561.6	923.17647	0	75
12	9317	15.115	-9	561.5847	928.57923	0	75
13	9317	16.945	-9	561.5847	928.57923	0	75
14	9317	18.775	-9	561.5847	928.57923	0	75
15	9317	20.605	-9	561.5847	928.57923	0	75
16	9317	22.435	-9	561.5847	928.57923	0	75
17	9317	24.265	-9	561.5847	928.57923	0	75
18	9317	26.095	-9	561.5847	928.57923	0	75
19	9317	27.925	-9	561.5847	928.57923	0	75
20	9317	29.755	-9	561.5847	928.57923	0	75
21	9317	31.585	-9	561.5847	928.57923	0	75
22	9317	33.4375	-9	561.6	905.12	0	75
23	9317	35.3125	-9	561.6	858.24	0	75
24	9317	37.1875	-9	561.6	811.36	0	75

25	9317	39.0625	-9	561.6	764.48	0	75
26	9317	41.25	-8.278312	516.56689	717.96979	0	75
27	9317	43.5	-6.979274	435.52419	581.57938	0	75
28	9317	45.5	-5.8245735	363.45355	478.65226	0	75
29	9317	47.5	-4.669873	291.40024	375.73379	0	75
30	9317	49.622595	-3.444392	214.92963	275.60411	0	75
31	9317	51.867785	-2.1481305	134.04317	181.38315	0	75



Name: PT (NG to -9) Model: Undrained (Phi=0) Unit Weight: 70 pcf Cohesion: 75 psf Piezometric Line: 1
Name: OH (-9 to -15) Model: Undrained (Phi=0) Unit Weight: 110 pcf Cohesion: 125 psf Piezometric Line: 1
Name: SM (-15 to -20) Model: Mohr-Coulomb Unit Weight: 132 pcf Cohesion: 0 psf Phi: 30 ° Piezometric Line: 1
Name: CL (-20 to -30) Model: S=f(depth) Unit Weight: 127 pcf C-Top of Layer: 150 psf C-Rate of Change: 12.5 psf/ft Limiting C: 275 psf Piezometric Line: 1
Name: CL (-30 to -40) Model: S=f(depth) Unit Weight: 120 pcf C-Top of Layer: 275 psf C-Rate of Change: 12.5 psf/ft Limiting C: 400 psf Piezometric Line: 1
Name: ML (-40 to -60) Model: Mohr-Coulomb Unit Weight: 117 pcf Cohesion: 0 psf Phi: 15 ° Piezometric Line: 1
Name: MARSH Model: Undrained (Phi=0) Unit Weight: 100 pcf Cohesion: 100 psf Piezometric Line: 1
Name: FILL Model: Undrained (Phi=0) Unit Weight: 100 pcf Cohesion: 200 psf Piezometric Line: 1

GENERAL NOTES

CLASSIFICATION STRATIFICATION SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATE 19

SHEAR STRENGTHS BETWEEN VERTICALS WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

US Army Corps of Engineers
New Orleans District

LPV MITIGATION
BAYOU SAUVAGE FLOOD SIDE
ORLEANS PARISH, LA
BSFS-5 EARTHEN DIKE

OPERATION CASE

Last Edited By: Chaisson, Kathryn MVN
File Name: BSFS-5_1U & 2U.gsz
Directory: G:\F&MHOME\CHAISSON\Bayou Sauvage FS\

Operation_nc

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File Information

Revision Number: 77
Last Edited By: Chaisson, Kathryn MVN
Date: 11/19/2013
Time: 10:56:53 AM
File Name: BSFS-5_1U & 2U.gsz
Directory: G:\F&MHOME\CHAISSON\Bayou Sauvage FS\
Last Solved Date: 11/19/2013
Last Solved Time: 11:02:30 AM

Project Settings

Length(L) Units: feet
Time(t) Units: Seconds
Force(F) Units: lbf
Pressure(p) Units: psf
Strength Units: psf
Unit Weight of Water: 62.4 pcf
View: 2D

Analysis Settings

Operation_nc

Kind: SLOPE/W
Method: Spencer
Settings
- Apply Phreatic Correction: No
- PWP Conditions Source: Piezometric Line
- Use Staged Rapid Drawdown: No

Slip Surface
- Direction of movement: Right to Left
- Use Passive Mode: No
- Slip Surface Option: Block
- Critical slip surfaces saved: 1
- Optimize Critical Slip Surface Location: Yes
- Tension Crack
  - Tension Crack Option: Tension Crack Line
  - Percentage Wet: 1
  - Tension Crack Fluid Unit Weight: 62.4 pcf

FOS Distribution
- FOS Calculation Option: Constant

Restrict Block Crossing: Yes
Advanced
- Number of Slices: 30
- Optimization Tolerance: 0.01
- Minimum Slip Surface Depth: 0.1 ft
- Optimization Maximum Iterations: 4000
- Optimization Convergence Tolerance: 1e-007
- Starting Optimization Points: 8
- Ending Optimization Points: 16
- Complete Passes per Insertion: 1
- Driving Side Maximum Convex Angle: 5 °
- Resisting Side Maximum Convex Angle: 1 °

Materials

PT (NG to -9)

Model: Undrained (Phi=0)
Unit Weight: 70 pcf
Cohesion: 75 psf
Pore Water Pressure
- Piezometric Line: 1

OH (-9 to -15)

Model: Undrained (Phi=0)
Unit Weight: 110 pcf
Cohesion: 125 psf
Pore Water Pressure
- Piezometric Line: 1

SM (-15 to -20)

Model: Mohr-Coulomb
Unit Weight: 132 pcf
Cohesion: 0 psf
Phi: 30 °
Phi-B: 0 °
Pore Water Pressure
- Piezometric Line: 1

CL (-20 to -30)

Model: S=f(depth)
Unit Weight: 127 pcf
C-Top of Layer: 150 psf
C-Rate of Change: 12.5 psf/ft
Limiting C: 275 psf
Pore Water Pressure
- Piezometric Line: 1

CL (-30 to -40)

Model: S=f(depth)
Unit Weight: 120 pcf
C-Top of Layer: 275 psf
C-Rate of Change: 12.5 psf/ft
Limiting C: 400 psf
Pore Water Pressure
- Piezometric Line: 1

ML (-40 to -60)

Model: Mohr-Coulomb
Unit Weight: 117 pcf
Cohesion: 0 psf
Phi: 15 °
Phi-B: 0 °
Pore Water Pressure
- Piezometric Line: 1

MARSH

Model: Undrained (Phi=0)
Unit Weight: 100 pcf
Cohesion: 100 psf
Pore Water Pressure
- Piezometric Line: 1

FILL

Model: Undrained (Phi=0)
Unit Weight: 100 pcf
Cohesion: 200 psf
Pore Water Pressure
- Piezometric Line: 1

Slip Surface Limits

Left Coordinate: (-150, 0) ft
Right Coordinate: (200, 4) ft

Slip Surface Block

Left Grid
- Upper Left: (-90, 1) ft
- Lower Left: (-90, -49) ft
- Lower Right: (-30, -49) ft
- X Increments: 12
- Y Increments: 10
- Starting Angle: 145 °
- Ending Angle: 165 °
- Angle Increments: 4

Right Grid
- Upper Left: (-10, 1) ft
- Lower Left: (-10, -49) ft
- Lower Right: (20, -49) ft
- X Increments: 6
- Y Increments: 10
- Starting Angle: 35 °
- Ending Angle: 55 °
- Angle Increments: 4

Piezometric Lines

Piezometric Line 1

Coordinates

	X (ft)	Y (ft)
	-150	0
	200	0

Tension Crack Line

	X (ft)	Y (ft)
	2.5	3
	6.5	2
	33.1	2

Regions

	Material	Points	Area (ft²)
Region 1	ML (-40 to -60)	10,12,13,11	7000
Region 2	CL (-30 to -40)	12,14,15,13	3500
Region 3	CL (-20 to -30)	14,16,17,15	3500
Region 4	SM (-15 to -20)	16,18,28,19,17	1750
Region 5	OH (-9 to -15)	18,20,27,28	1500
Region 6	PT (NG to -9)	20,1,2,3,4,33,5,6,25,7,8,24,26,27	1989.745
Region 7	FILL	23,22,34,29,30,24,8,7,25,6,5,33,32,31	256.285

Region 8	OH (-9 to -15)	27,21,19,28	600
Region 9	PT (NG to -9)	26,9,21,27	901.875
Region 10	MARSH	34,29,30,24,26,9,35	923.75
Region 11		22,34,35,36	195.5

Points

	X (ft)	Y (ft)
Point 1	-150	0
Point 2	-135.9	-0.4
Point 3	-117.9	0.2
Point 4	-69	0.3
Point 5	-32.2	-1
Point 6	-22.1	0.8
Point 7	0	1.5
Point 8	14.2	-1.5
Point 9	200	-1.5
Point 10	-150	-60
Point 11	200	-60
Point 12	-150	-40
Point 13	200	-40
Point 14	-150	-30
Point 15	200	-30
Point 16	-150	-20
Point 17	200	-20
Point 18	-150	-15
Point 19	200	-15
Point 20	-150	-9
Point 21	200	-9
Point 22	2.5	5
Point 23	-2.5	5
Point 24	48.5	-1.5
Point 25	-18.9	0.9
Point 26	68.5	-1.5
Point 27	91	-9
Point 28	109	-15
Point 29	12.5	2.5
Point 30	32.5	2.5
Point 31	-12.5	2.5
Point 32	-32.5	2.5
Point 33	-44.5	-0.5
Point 34	6.5	4
Point 35	200	4
Point 36	200	5

Critical Slip Surfaces

	Slip Surface	FOS	Center (ft)	Radius (ft)	Entry (ft)	Exit (ft)
1	Optimized	1.36	(-23.276, 2.685)	22.97171	(4.91192, 4.39702)	(-51.1347, -0.283358)
2	6308	1.40	(-23.276, 2.685)	23.503	(6.1, 4.1)	(-52.5129, -0.238353)

Slices of Slip Surface: Optimized

	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength (psf)
1	Optimized	-50.07456	-1.306716	81.539425	153.51632	0	75
2	Optimized	-47.954355	-3.353432	209.25251	304.3383	0	75
3	Optimized	-45.697125	-5.2905435	330.13149	430.14437	0	75
4	Optimized	-43.5	-6.967587	434.77086	563.78322	0	75
5	Optimized	-42.444095	-7.7735485	485.06638	635.10999	0	75
6	Optimized	-40.9917	-8.380165	522.92056	684.26866	0	75
7	Optimized	-38.639415	-8.9523785	558.62298	749.24215	0	75
8	Optimize	-36.72782	-8.968915	559.66919	800.50636	0	75
	d						
9	Optimized	-34.816225	-8.9854515	560.7154	851.82289	0	75
10	Optimized	-33.180215	-8.9752395	560.05737	890.27225	0	75
11	Optimized	-32.35	-8.9526835	558.66052	906.69876	0	75
12	Optimized	-31.043015	-8.917174	556.41379	898.21084	0	75
13	Optimized	-29.26493	-8.88184	554.22371	888.4066	0	75
14	Optimized	-27.61636	-8.877498	553.93318	879.92794	0	75
15	Optimized	-25.466665	-8.876573	553.90085	868.36612	0	75
16	Optimized	-23.22222	-8.875607	553.8563	856.29187	0	75
17	Optimized	-21.325155	-8.8747905	553.78639	849.522	0	75
18	Optimized	-19.77546	-8.8741235	553.74767	848.03784	0	75
19	Optimized	-18.950305	-8.874285	553.75496	848.31372	0	75
20	Optimized	-17.912695	-8.88449	554.41192	848.0254	0	75
21	Optimized	-16.00453	-8.9114975	556.06525	848.99976	0	75
22	Optimized	-14.162805	-8.9460925	558.23675	849.70549	0	75
23	Optimized	-12.87097	-8.9627005	559.27605	847.51988	0	75
24	Optimized	-11.75715	-8.960631	559.14271	864.91042	0	75
25	Optimized	-10.27145	-8.9578705	558.96771	900.38184	0	75
26	Optimized	-8.281615	-8.68094	541.71024	905.74766	0	75
27	Optimize	-5.9605625	-7.73792	482.85188	855.07327	0	75
	d						
28	Optimized	-3.8124275	-6.40298	399.54293	814.70381	0	75
29	Optimized	-2.61918	-5.62572	351.05053	761.59173	0	75
30	Optimized	-1.25	-4.364418	272.33926	679.17858	0	75
31	Optimized	0.40052	-2.843943	177.46307	579.21567	0	75
32	Optimized	1.65052	-1.4599799	91.101992	473.37828	0	75
33	Optimized	2.6862075	-0.22248995	13.88329	393.92774	0	75
34	Optimized	3.2055075	0.397995	-24.834775	343.49409	0	75
35	Optimized	4.2252615	1.5965045	-99.623626	120.95258	0	200

Slices of Slip Surface: 6308

	Slip Surface	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength (psf)
1	6308	-51.511315	-0.9396927	58.638435	107.82684	0	75
2	6308	-49.50808	-2.342371	146.16264	209.25416	0	75
3	6308	-47.504845	-3.745049	233.69093	310.68148	0	75
4	6308	-45.501615	-5.147727	321.21922	412.10471	0	75
5	6308	-43.5	-6.5492735	408.67498	524.99458	0	75
6	6308	-41.25	-8.1247405	506.98966	684.35249	0	75
7	6308	-39.0625	-9	561.6	740.37333	0	75
8	6308	-37.1875	-9	561.6	789.54667	0	75
9	6308	-35.3125	-9	561.6	838.72	0	75
10	6308	-33.4375	-9	561.6	887.89333	0	75
11	6308	-32.35	-9	561.6	912.63333	0	75
12	6308	-31.264815	-9	561.60011	907.7883	0	75
13	6308	-29.394445	-9	561.60011	897.79028	0	75
14	6308	-27.524075	-9	561.60011	887.79226	0	75
15	6308	-25.466665	-9	561.60902	876.83186	0	75

16	6308	-23.22222	-9	561.60902	864.80215	0	75
17	6308	-21.3	-9	561.6	858.0625	0	75
18	6308	-19.7	-9	561.6	856.5625	0	75
19	6308	-17.833335	-9	561.60946	854.81263	0	75
20	6308	-15.7	-9	561.60946	852.75013	0	75
21	6308	-13.566665	-9	561.60946	850.73451	0	75
22	6308	-11.5625	-9	561.6	872.26667	0	75
23	6308	-9.6875	-9	561.6	917.33333	0	75
24	6308	-7.8125	-9	561.6	962.45333	0	75
25	6308	-5.9375	-9	561.6	1007.52	0	75
26	6308	-3.75	-7.75	483.60446	873.24857	0	75
27	6308	-1.25	-5.25	327.58842	734.42937	0	75
28	6308	1.25	-2.75	171.60067	574.59496	0	75
29	6308	3.25	-0.75	46.800106	435.84183	0	75
30	6308	4.270349	0.27034885	-16.870199	349.90623	0	75
31	6308	5.320349	1.3203489	-82.387608	150.55873	0	200

BAYOU SAUVAGE FLOOD SIDE, ITR

11-15-2013

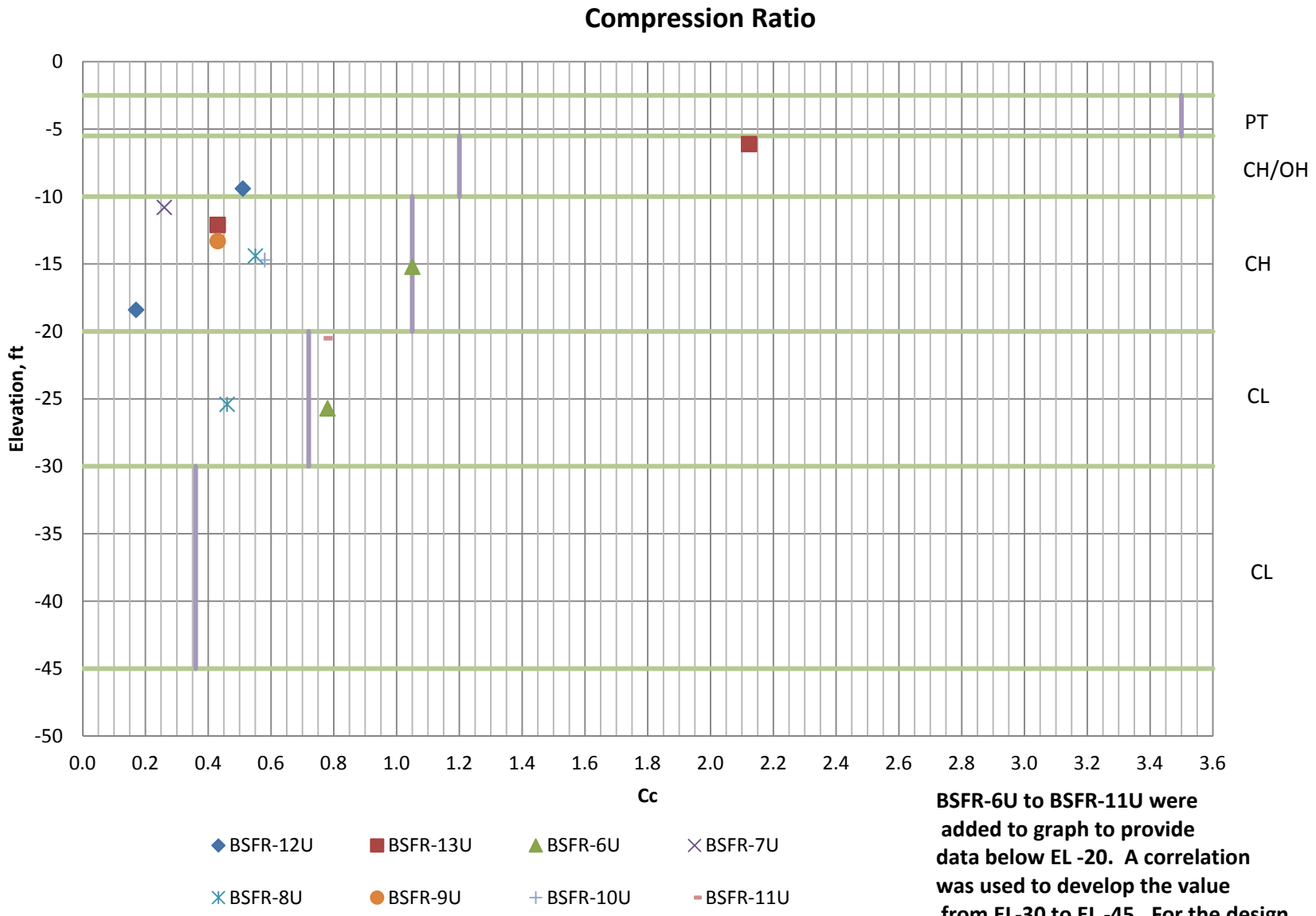
Both settlement graphs for BSFS-4 have the x axis named "years." It should be "days."

Concur, X-axis for both graphs will be changed to "days".

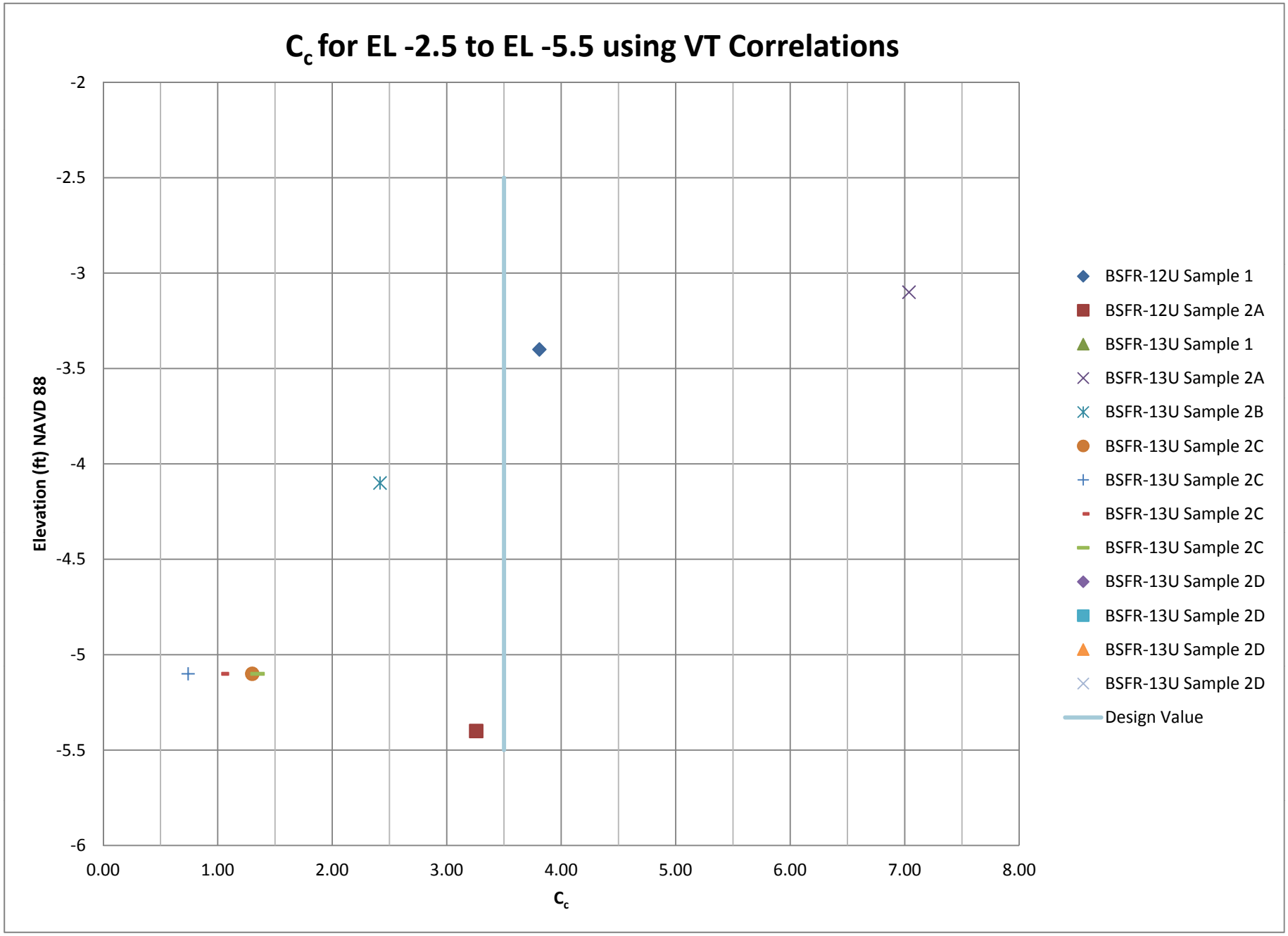
APPENDIX A

SETTLEMENT ESTIMATE

SETTLEMENT ESTIMATE FOR BSFS-4



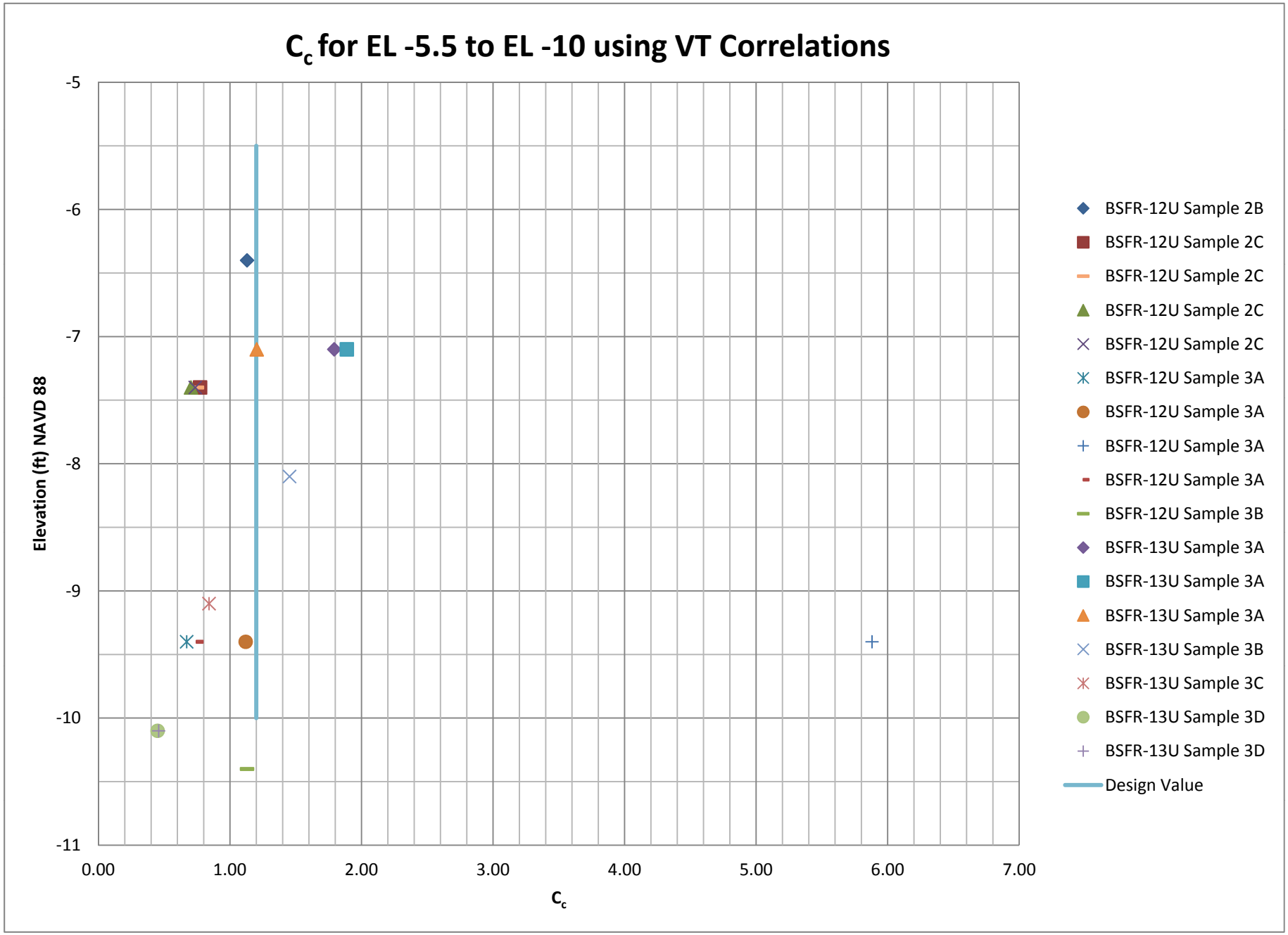
BSFR-6U to BSFR-11U were added to graph to provide data below EL -20. A correlation was used to develop the value from EL-30 to EL -45. For the design lines between EL -2.5 and EL -10, the values shown were used in conjunction with correlation values in the next two graphs..


C_c for EL -2.5 to EL -5.5 using VT Correlations
Elevation (ft) NAVD 88
-2
-2.5
-3
-3.5
-4
-4.5
-5
-5.5
-6
0.00
1.00
2.00
3.00
4.00
5.00
6.00
7.00
8.00
C_c
BSFR-12U Sample 1
BSFR-12U Sample 2A
BSFR-13U Sample 1
BSFR-13U Sample 2A
BSFR-13U Sample 2B
BSFR-13U Sample 2C
BSFR-13U Sample 2C
BSFR-13U Sample 2C
BSFR-13U Sample 2C
BSFR-13U Sample 2D
BSFR-13U Sample 2D
BSFR-13U Sample 2D
BSFR-13U Sample 2D
Design Value

VT Correlation for C_c

Boring					C_c				Lab Values			
BSFR-12U	GS=	-3.4	Depth	Elevation	vs. w(%)	vs. e_0	vs. γ_d	vs. LL	w(%)	e_0	γ_d	LL
BSFR-12U Sample 1			0	-3.4	3.81				306			
BSFR-12U Sample 2A			2	-5.4	3.26				260			
BSFR-13U	GS=	-1.1	Depth	Elevation								
BSFR-13U Sample 1			0	-1.1	7.61				623			
BSFR-13U Sample 2A			2	-3.1	7.04				575			
BSFR-13U Sample 2B			3	-4.1	2.42				190			
BSFR-13U Sample 2C			4	-5.1	1.30	0.74	1.04	1.35	97	2.6684	47	106
BSFR-13U Sample 2D			5	-6.1	1.84	2.34	1.89	1.55	142	4.289	33	136

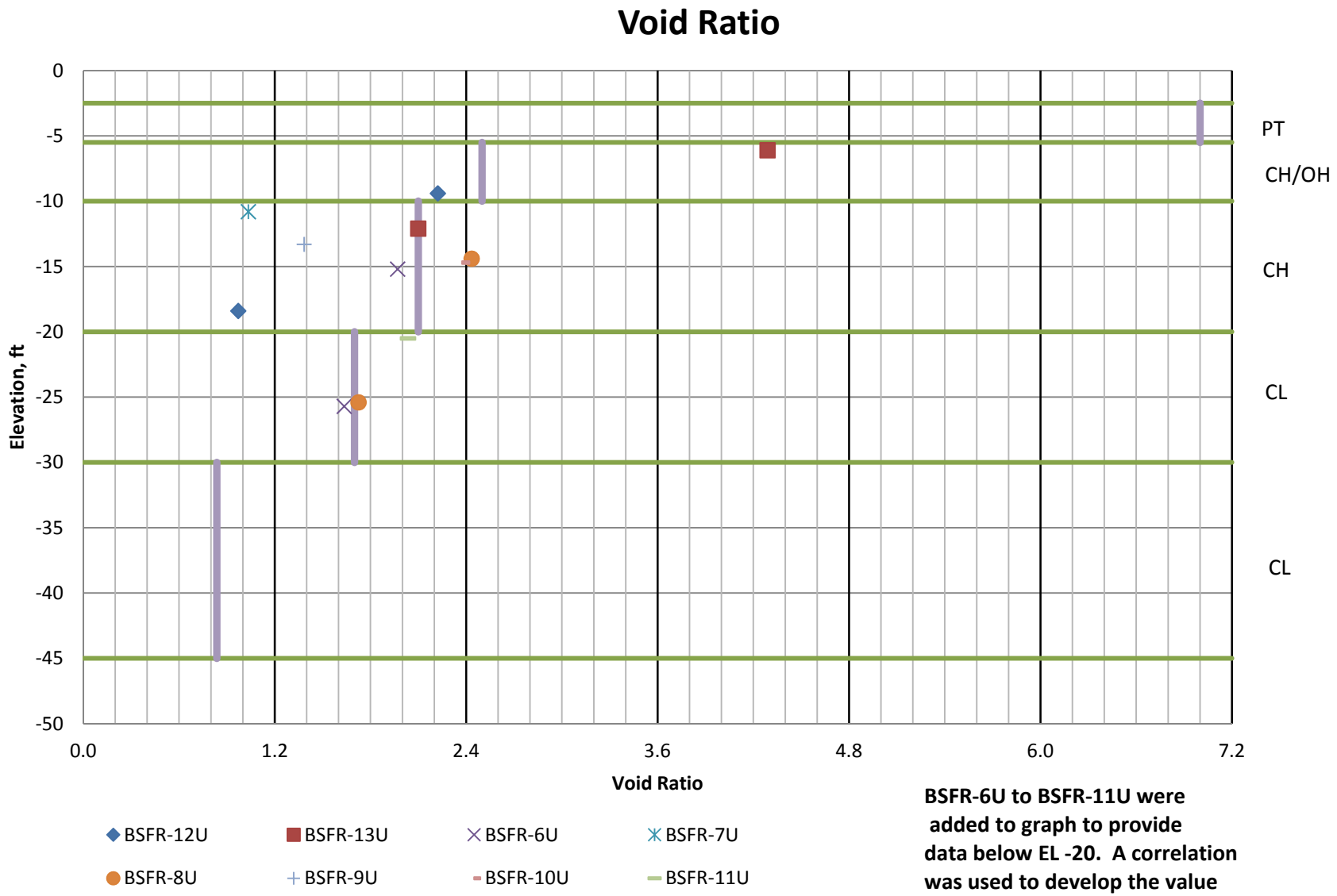
	C_c	EL
Design Value	3.5	-2.5
	3.5	-5.5


C_c for EL -5.5 to EL -10 using VT Correlations
Elevation (ft) NAVD 88
-5
-6
-7
-8
-9
-10
-11
0.00
1.00
2.00
3.00
4.00
5.00
6.00
7.00
C_c
BSFR-12U Sample 2B
BSFR-12U Sample 2C
BSFR-12U Sample 2C
BSFR-12U Sample 2C
BSFR-12U Sample 2C
BSFR-12U Sample 3A
BSFR-12U Sample 3A
BSFR-12U Sample 3A
BSFR-12U Sample 3A
BSFR-12U Sample 3B
BSFR-13U Sample 3A
BSFR-13U Sample 3A
BSFR-13U Sample 3A
BSFR-13U Sample 3B
BSFR-13U Sample 3C
BSFR-13U Sample 3D
BSFR-13U Sample 3D
Design Value

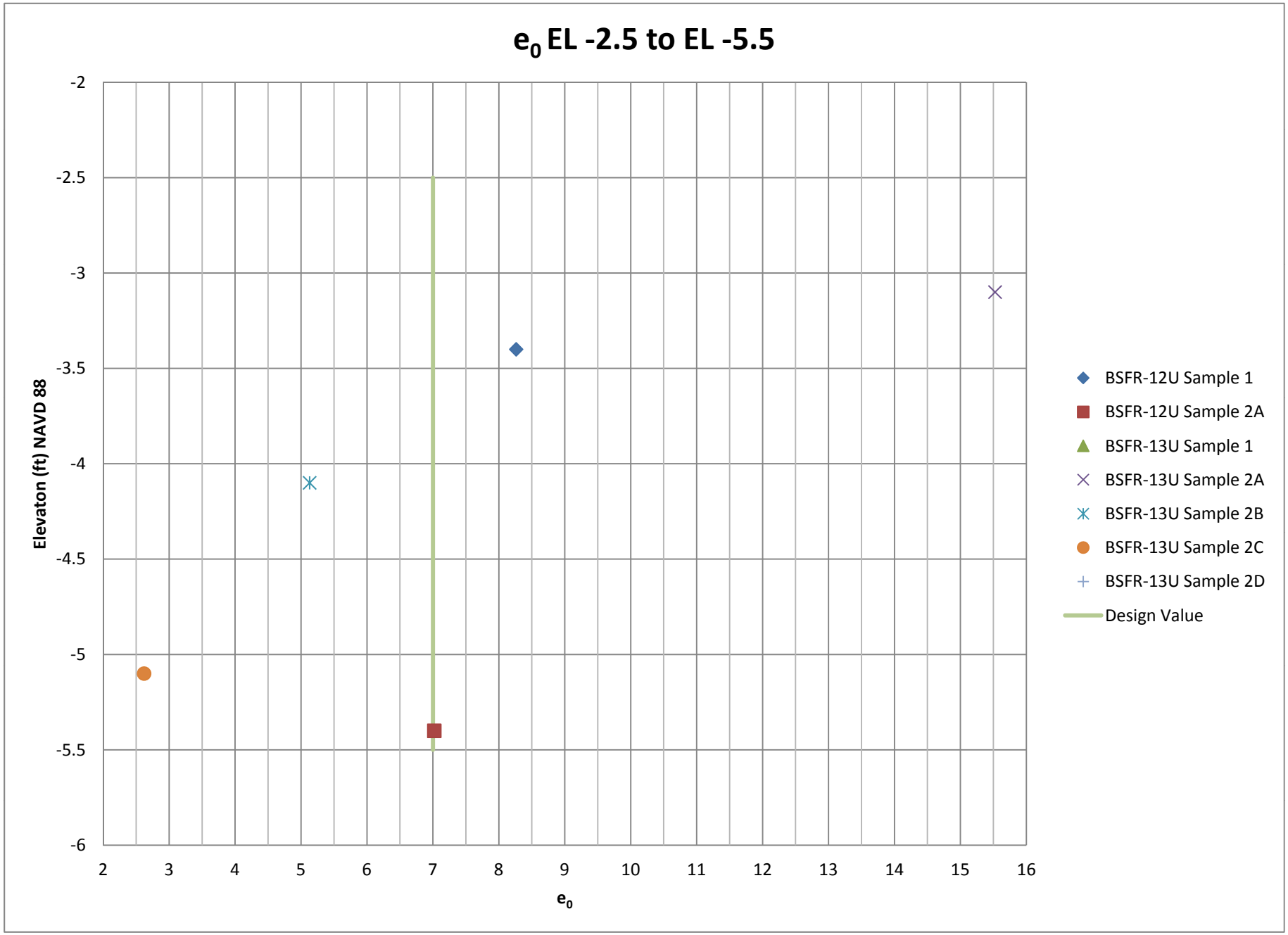
VT Correlation for C_c

Boring					C_c				Lab Values			
BSFR-12U	GS=	-3.4	Depth	Elevation	vs. w(%)	vs. e_0	vs. γ_d	vs. LL	w(%)	e_0	γ_d	LL
BSFR-12U Sample 2B			3	-6.4	1.13				84			
BSFR-12U Sample 2C			4	-7.4	0.77	0.75	0.70	0.74	63	1.6717	64	77
BSFR-12U Sample 3A			6	-9.4	0.67	1.12	5.88	0.74	57	2.222	8.1	78
BSFR-12U Sample 3B			7	-10.4	1.13				84			
BSFR-13U	GS=	-1.1	Depth	Elevation								
BSFR-13U Sample 3A			6	-7.1	1.79		1.89	1.20	123		38	132
BSFR-13U Sample 3B			7	-8.1	1.45				103			
BSFR-13U Sample 3C			8	-9.1	0.84				67			
BSFR-13U Sample 3D			9	-10.1	0.45			0.46	44			45

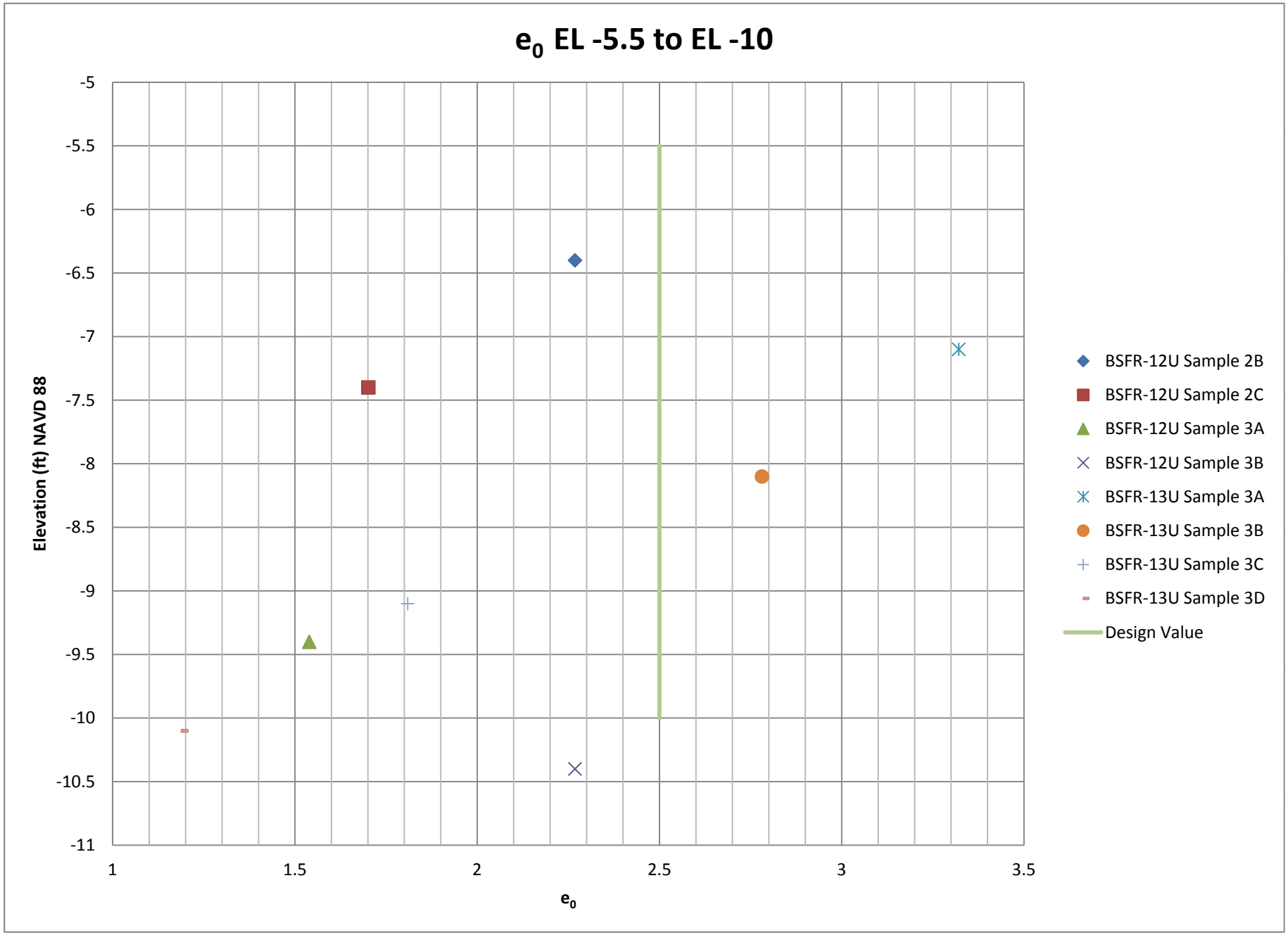
	C_c	EL
Design Value	1.2	-5.5
	1.2	-10



BSFR-6U to BSFR-11U were added to graph to provide data below EL -20. A correlation was used to develop the value from EL-30 to EL -45. For the design lines between EL -2.5 and EL -10, the values shown were used in conjunction with correlation values in the next two graphs.

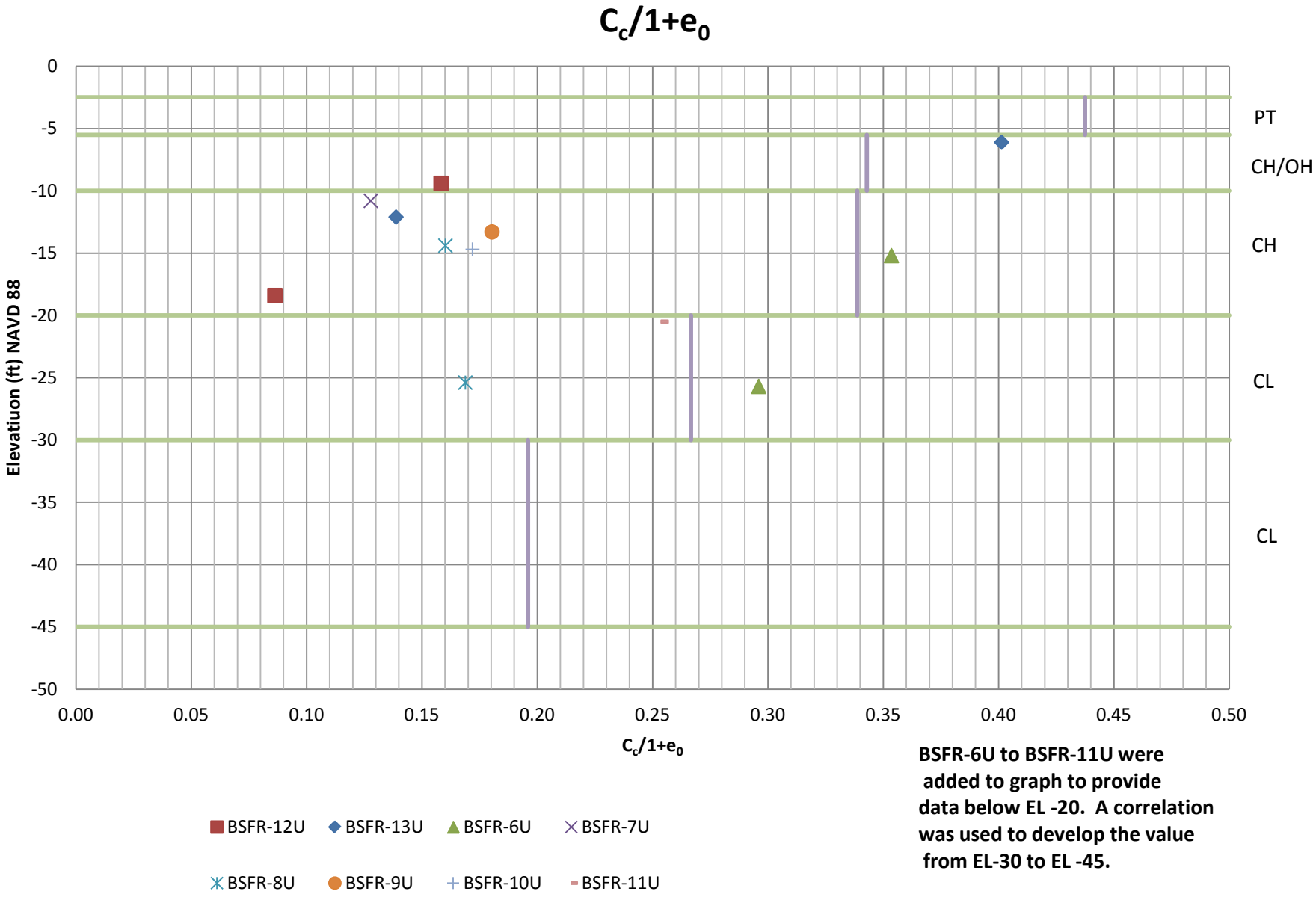

e_0 EL -2.5 to EL -5.5
Elevaton (ft) NAVD 88
-2
-2.5
-3
-3.5
-4
-4.5
-5
-5.5
-6
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
e_0
BSFR-12U Sample 1
BSFR-12U Sample 2A
BSFR-13U Sample 1
BSFR-13U Sample 2A
BSFR-13U Sample 2B
BSFR-13U Sample 2C
BSFR-13U Sample 2D
Design Value

Calculation of e_0				G_s = 2.7 (assumed)			
BSFR-12U	GS=	-3.4	Depth	Elevation		w(%)	e_0
BSFR-12U Sample 1			0	-3.4		306	8.262
BSFR-12U Sample 2A			2	-5.4		260	7.02
BSFR-13U	GS=	-1.1	Depth	Elevation			
BSFR-13U Sample 1			0	-1.1		623	16.821
BSFR-13U Sample 2A			2	-3.1		575	15.525
BSFR-13U Sample 2B			3	-4.1		190	5.13
BSFR-13U Sample 2C			4	-5.1		97	2.619
BSFR-13U Sample 2D			5	-6.1		142	3.834
			e_0	EL			
		Design Value	7	-2.5			
			7	-5.5			

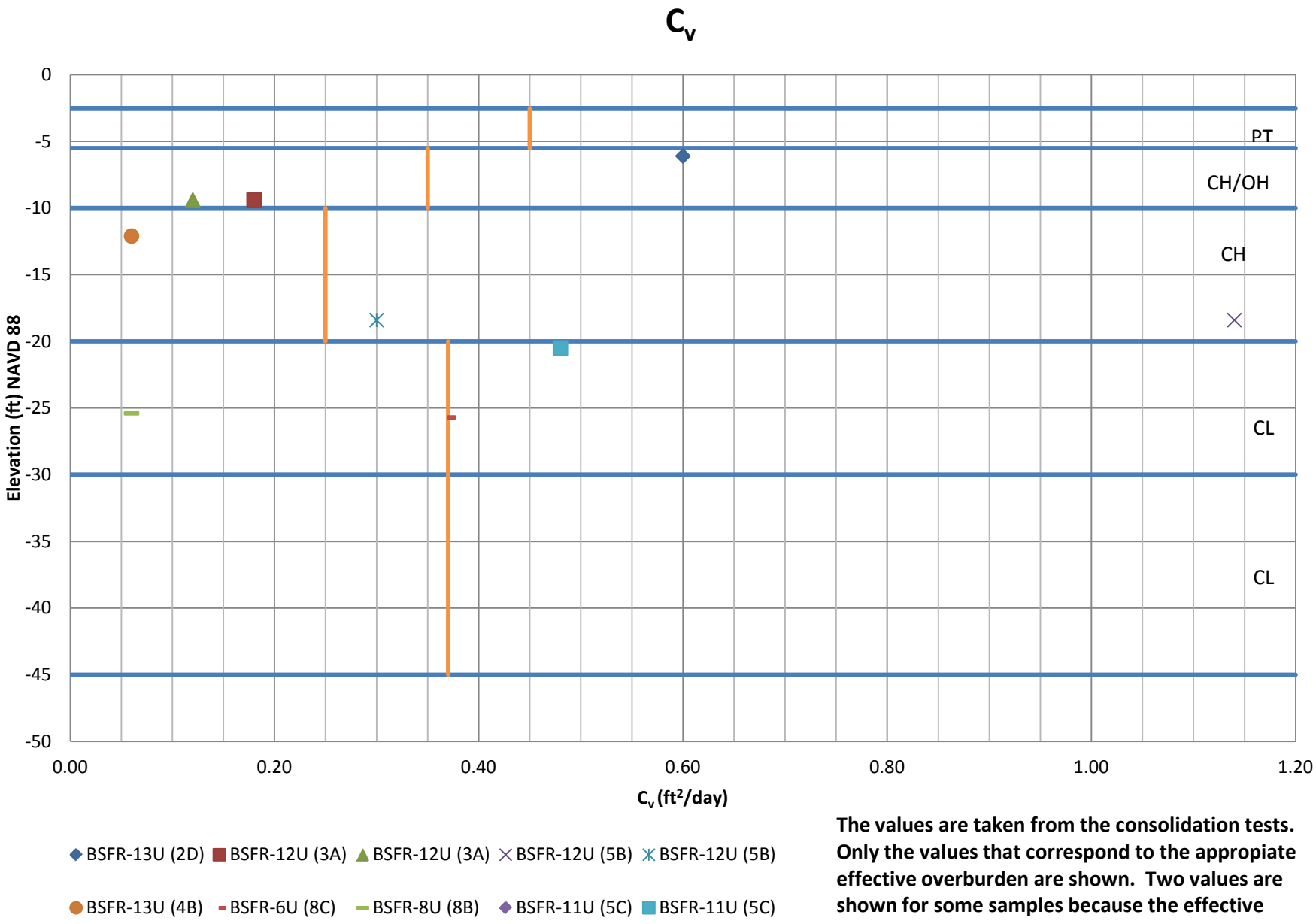

e0 EL -5.5 to EL -10
Elevation (ft) NAVD 88
-5
-5.5
-6
-6.5
-7
-7.5
-8
-8.5
-9
-9.5
-10
-10.5
-11
1
1.5
2
2.5
3
3.5
e0
BSFR-12U Sample 2B
BSFR-12U Sample 2C
BSFR-12U Sample 3A
BSFR-12U Sample 3B
BSFR-13U Sample 3A
BSFR-13U Sample 3B
BSFR-13U Sample 3C
BSFR-13U Sample 3D
Design Value

Calculation of e_0				G_s = 2.7 (assumed)		
BSFR-12U	GS=	-3.4	Depth	Elevation	w(%)	e_0
BSFR-12U Sample 2B			3	-6.4	84	2.268
BSFR-12U Sample 2C			4	-7.4	63	1.701
BSFR-12U Sample 3A			6	-9.4	57	1.539
BSFR-12U Sample 3B			7	-10.4	84	2.268
BSFR-13U	GS=	-1.1	Depth	Elevation		
BSFR-13U Sample 3A			6	-7.1	123	3.321
BSFR-13U Sample 3B			7	-8.1	103	2.781
BSFR-13U Sample 3C			8	-9.1	67	1.809
BSFR-13U Sample 3D			9	-10.1	44	1.188

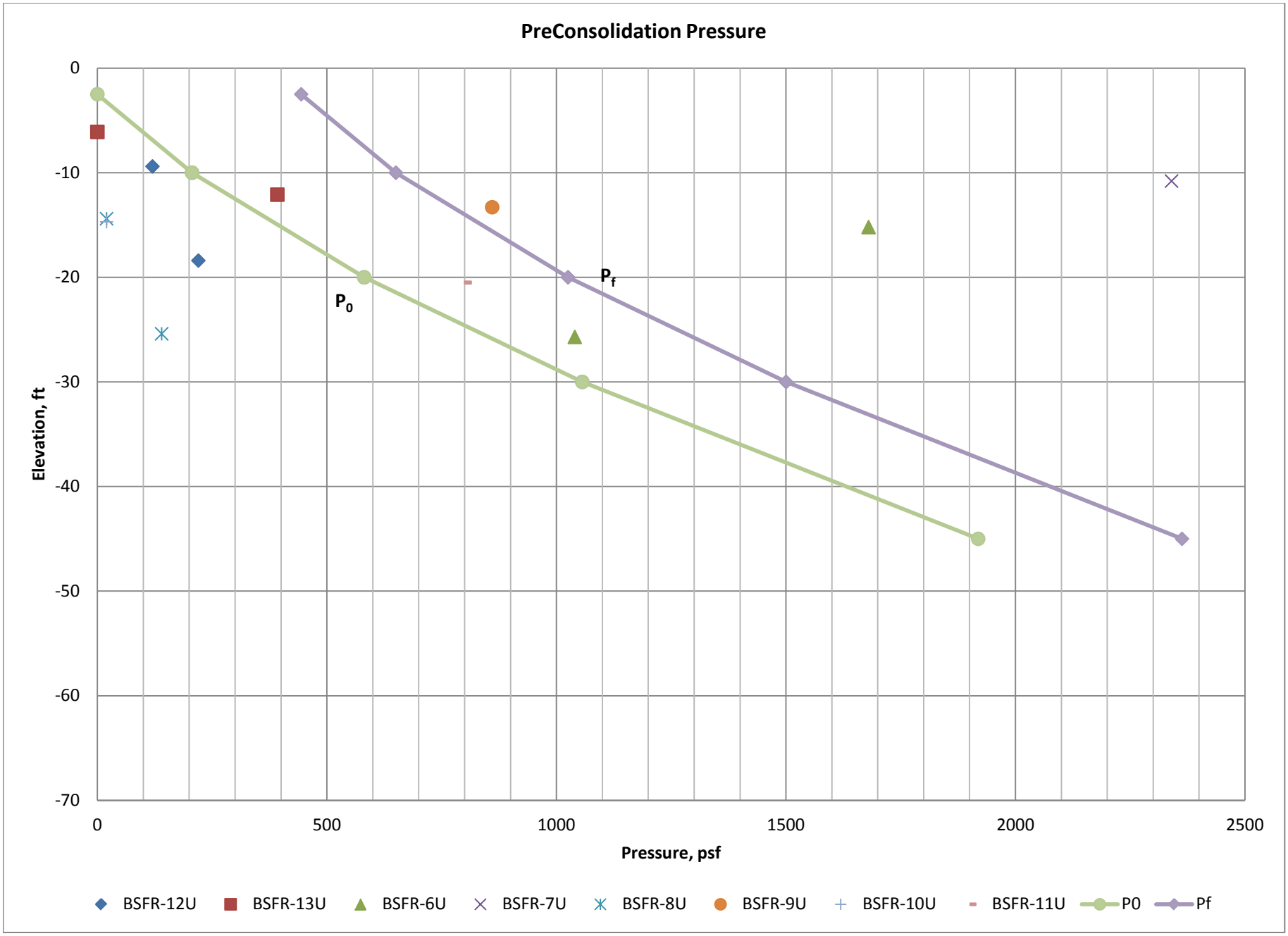
	e_0	EL
Design Value	2.5	-5.5
	2.5	-10



BSFR-6U to BSFR-11U were added to graph to provide data below EL -20. A correlation was used to develop the value from EL-30 to EL -45.

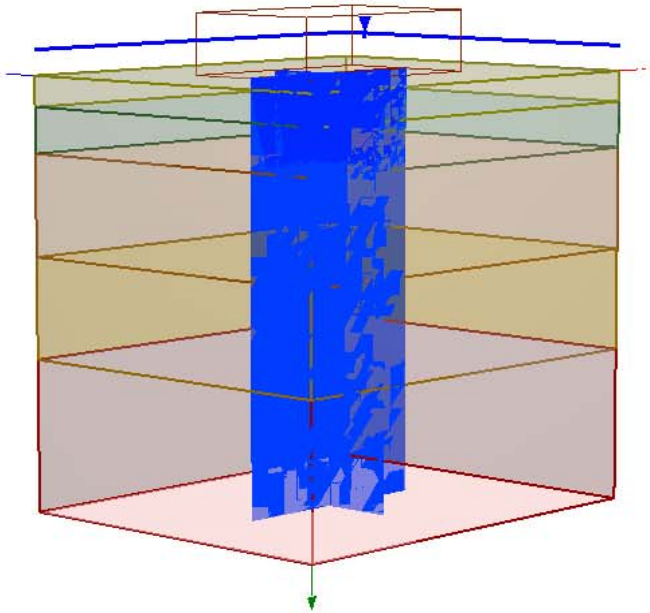


The values are taken from the consolidation tests. Only the values that correspond to the appropiate effective overburden are shown. Two values are shown for some samples because the effective overburden lies in between the test values.


PreConsolidation Pressure
Elevation, ft
0
-10
-20
-30
-40
-50
-60
-70
0
500
1000
1500
2000
2500
Pressure, psf
P0
Pf
BSFR-12U
BSFR-13U
BSFR-6U
BSFR-7U
BSFR-8U
BSFR-9U
BSFR-10U
BSFR-11U
P0
Pf

Stage 1 = 0 y

Data Type: Consolidation Settlement



Consolidation Settlement (ft)

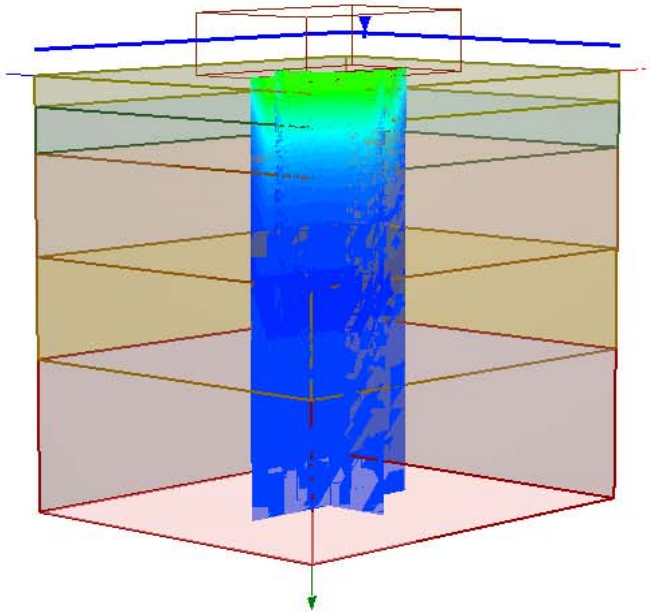
-0.25
0.10
0.45
0.80
1.15
1.50
1.85
2.20
2.55
2.90
3.25

max (stage): 0 ft
max (all): 2.3 ft

rocscience	Project	
	Analysis Description	
	Drawn By	Company
SETTLE3D 2.016	Date 12/17/2013, 3:52:37 PM	File Name Fill +3.5.s3z

Stage 2 = 1 y

Data Type: Consolidation Settlement



Consolidation Settlement (ft)

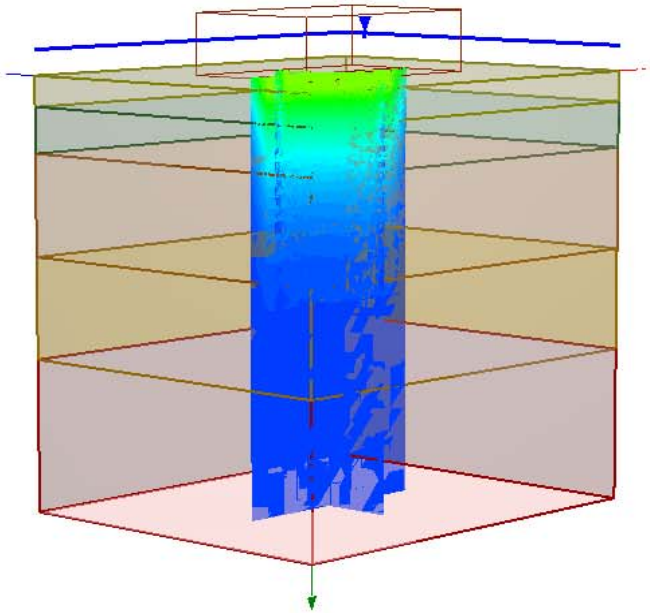
-0.25
0.10
0.45
0.80
1.15
1.50
1.85
2.20
2.55
2.90
3.25

max (stage): 1.7 ft
max (all): 2.3 ft

rocscience	Project	
	Analysis Description	
	Drawn By	Company
SETTLE3D 2.016	Date 12/17/2013, 3:52:37 PM	File Name Fill +3.5.s3z

Stage 3 = 2 y

Data Type: Consolidation Settlement



Consolidation Settlement (ft)

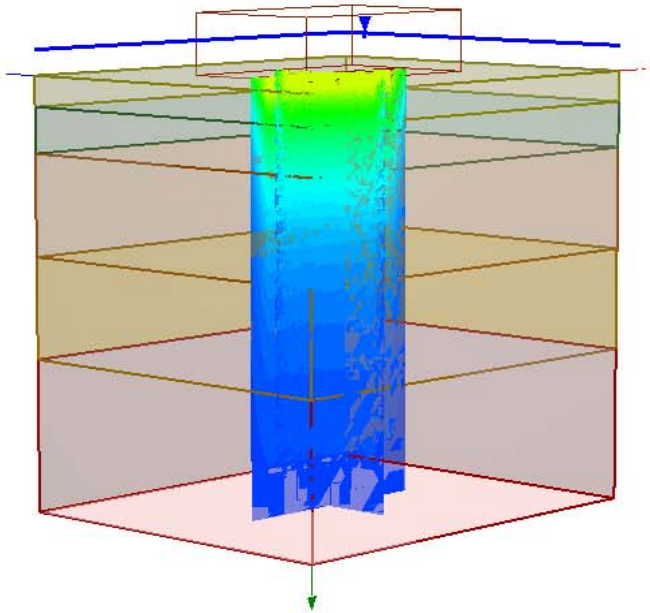
-0.25
0.10
0.45
0.80
1.15
1.50
1.85
2.20
2.55
2.90
3.25

max (stage): 1.94 ft
max (all): 2.3 ft

rocscience	Project	
	Analysis Description	
	Drawn By	Company
SETTLE3D 2.016	Date 12/17/2013, 3:52:37 PM	File Name Fill +3.5.s3z

Stage 4 = 5 y

Data Type: Consolidation Settlement



Consolidation Settlement (ft)

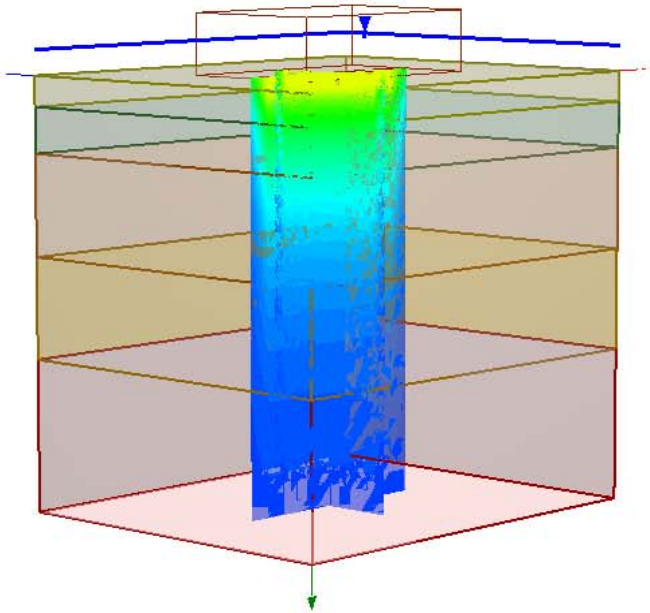
-0.25
0.10
0.45
0.80
1.15
1.50
1.85
2.20
2.55
2.90
3.25

max (stage): 2.23 ft
max (all): 2.3 ft

rocscience	Project	
	Analysis Description	
	Drawn By	Company
SETTLE3D 2.016	Date 12/17/2013, 3:52:37 PM	File Name Fill +3.5.s3z

Stage 5 = 10 y

Data Type: Consolidation Settlement



Consolidation Settlement (ft)

-0.25
0.10
0.45
0.80
1.15
1.50
1.85
2.20
2.55
2.90
3.25

max (stage): 2.3 ft
max (all): 2.3 ft

rocscience	Project	
	Analysis Description	
	Drawn By	Company
SETTLE3D 2.016	Date 12/17/2013, 3:52:37 PM	File Name Fill +3.5.s3z

Settle3D Analysis Information

Project Settings

Document Name: Fill +3.5.s3z
Date Created: 12/17/2013, 3:52:37 PM
Stress Computation Method: Boussinesq
Time-dependent Consolidation Analysis
Time Units: years
Permeability Units: feet/year
Include buoyancy effect when material settles below water table
Include vertical stress reduction due to settlement above a point
Use average properties to calculate layered stresses
Groundwater method: Water Table
Water Unit Weight: 0.0624 kips/ft^3
Depth to water table: -2.5 [ft]

Stage Settings

Stage #	Name	Time [years]
1	Stage 1	0
2	Stage 2	1
3	Stage 3	2
4	Stage 4	5
5	Stage 5	10

Results

Time taken to compute: 0.0593511 seconds

Stage: Stage 1 = 0 y

Data Type	Minimum	Maximum
Total Settlement [ft]	0	0.40635
Consolidation Settlement [ft]	-0.0759958	0
Immediate Settlement [ft]	0	0.482345
Secondary Settlement [ft]	0	0
Loading Stress [ksf]	0.299989	0.6
Effective Stress [ksf]	-0.0253567	1.90249
Total Stress [ksf]	0.377992	5.1331
Total Strain	0.00259339	0.0444
Pore Water Pressure [ksf]	0.390358	3.252
Excess Pore Water Pressure [ksf]	0.221992	0.444
Degree of Consolidation [%]	0	100
Pre-consolidation Stress [ksf]	0.0207	1.86129
Over-consolidation Ratio	1	2.59392
Void Ratio	0.823148	6.8638
Permeability [ft/y]	0.379917	91.7454

Coefficient of Consolidation [ft^2/y]	90	160
Hydroconsolidation Settlement [ft]	0	0
Average Degree of Consolidation [%]	0	0

Stage: Stage 2 = 1 y

Data Type	Minimum	Maximum
Total Settlement [ft]	0	2.1773
Consolidation Settlement [ft]	-0.044209	1.69597
Immediate Settlement [ft]	0	0.482345
Secondary Settlement [ft]	0	0
Loading Stress [ksf]	0.299989	0.6
Effective Stress [ksf]	0.125434	1.79534
Total Stress [ksf]	0.377992	4.96895
Total Strain	0.00207387	0.407385
Pore Water Pressure [ksf]	0.252557	3.22221
Excess Pore Water Pressure [ksf]	0	0.414212
Degree of Consolidation [%]	0	95.3283
Pre-consolidation Stress [ksf]	0.157787	1.86129
Over-consolidation Ratio	1	1.14807
Void Ratio	0.826323	6.6502
Permeability [ft/y]	0.379917	91.7454
Coefficient of Consolidation [ft^2/y]	90	160
Hydroconsolidation Settlement [ft]	0	0
Average Degree of Consolidation [%]	12.6814	99.9004

Stage: Stage 3 = 2 y

Data Type	Minimum	Maximum
Total Settlement [ft]	0	2.42399
Consolidation Settlement [ft]	-0.0139885	1.94304
Immediate Settlement [ft]	0	0.482345
Secondary Settlement [ft]	0	0
Loading Stress [ksf]	0.299989	0.6
Effective Stress [ksf]	0.118832	1.85591
Total Stress [ksf]	0.377992	4.94248
Total Strain	0.00309821	0.407123
Pore Water Pressure [ksf]	0.25916	3.08657
Excess Pore Water Pressure [ksf]	0	0.278567
Degree of Consolidation [%]	0	90.0641
Pre-consolidation Stress [ksf]	0.157787	1.86129
Over-consolidation Ratio	1	1.2048
Void Ratio	0.820822	6.65226
Permeability [ft/y]	0.379917	91.7454
Coefficient of Consolidation [ft^2/y]	90	160
Hydroconsolidation Settlement [ft]	0	0
Average Degree of Consolidation [%]	44.2291	99.957

Stage: Stage 4 = 5 y

Data Type	Minimum	Maximum

Total Settlement [ft]	0	2.71237
Consolidation Settlement [ft]	0	2.2319
Immediate Settlement [ft]	0	0.482345
Secondary Settlement [ft]	0	0
Loading Stress [ksf]	0.299989	0.6
Effective Stress [ksf]	0.110418	2.04594
Total Stress [ksf]	0.377992	4.91013
Total Strain	0.0052053	0.406766
Pore Water Pressure [ksf]	0.267574	2.86418
Excess Pore Water Pressure [ksf]	0	0.0561837
Degree of Consolidation [%]	0	97.3148
Pre-consolidation Stress [ksf]	0.157787	1.98533
Over-consolidation Ratio	1	1.28663
Void Ratio	0.803442	6.65481
Permeability [ft/y]	0.379917	91.7454
Coefficient of Consolidation [ft^2/y]	90	160
Hydroconsolidation Settlement [ft]	0	0
Average Degree of Consolidation [%]	88.9018	99.9924

Stage: Stage 5 = 10 y

Data Type	Minimum	Maximum
Total Settlement [ft]	0	2.77675
Consolidation Settlement [ft]	0	2.29639
Immediate Settlement [ft]	0	0.482345
Secondary Settlement [ft]	0	0
Loading Stress [ksf]	0.299989	0.6
Effective Stress [ksf]	0.10823	2.0913
Total Stress [ksf]	0.377992	4.90295
Total Strain	0.00620201	0.406669
Pore Water Pressure [ksf]	0.269762	2.81165
Excess Pore Water Pressure [ksf]	0	0.00365098
Degree of Consolidation [%]	0	99.7259
Pre-consolidation Stress [ksf]	0.157787	2.03055
Over-consolidation Ratio	1	1.30981
Void Ratio	0.799707	6.65539
Permeability [ft/y]	0.379917	91.7454
Coefficient of Consolidation [ft^2/y]	90	160
Hydroconsolidation Settlement [ft]	0	0
Average Degree of Consolidation [%]	99.2789	99.9995

Embankments

1. Embankment

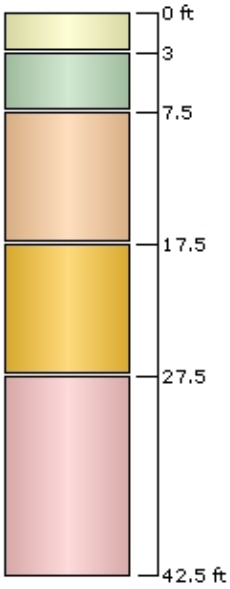
Center Line: (0, 0) to (-151477, 0)
Number of Layers: 1
Near End Angle: 90 degrees
Far End Angle: 90 degrees
Base Width: 100000

Layer	Stage	Left Bench Width (ft)	Left Angle (deg)	Height (ft)	Unit Weight (kips/ft^3)	Right Angle (deg)	Right Bench Width (ft)
1	Stage 1 = 0 y	0	90	6	0.1	90	0

Soil Layers

Layer #	Type	Thickness [ft]	Depth [ft]	Drained at Bottom
1	GS to EL -5.5 (PT)	3	0	No
2	EL -5.5 to EL -10 (CH)	4.5	3	No
3	EL -10 to EL -20 (CH)	10	7.5	No
4	EL -20 to EL -30 (CH)	10	17.5	No
5	EL -30 to EL -45 (CH)	15	27.5	No

Ground Surface Drained: Yes



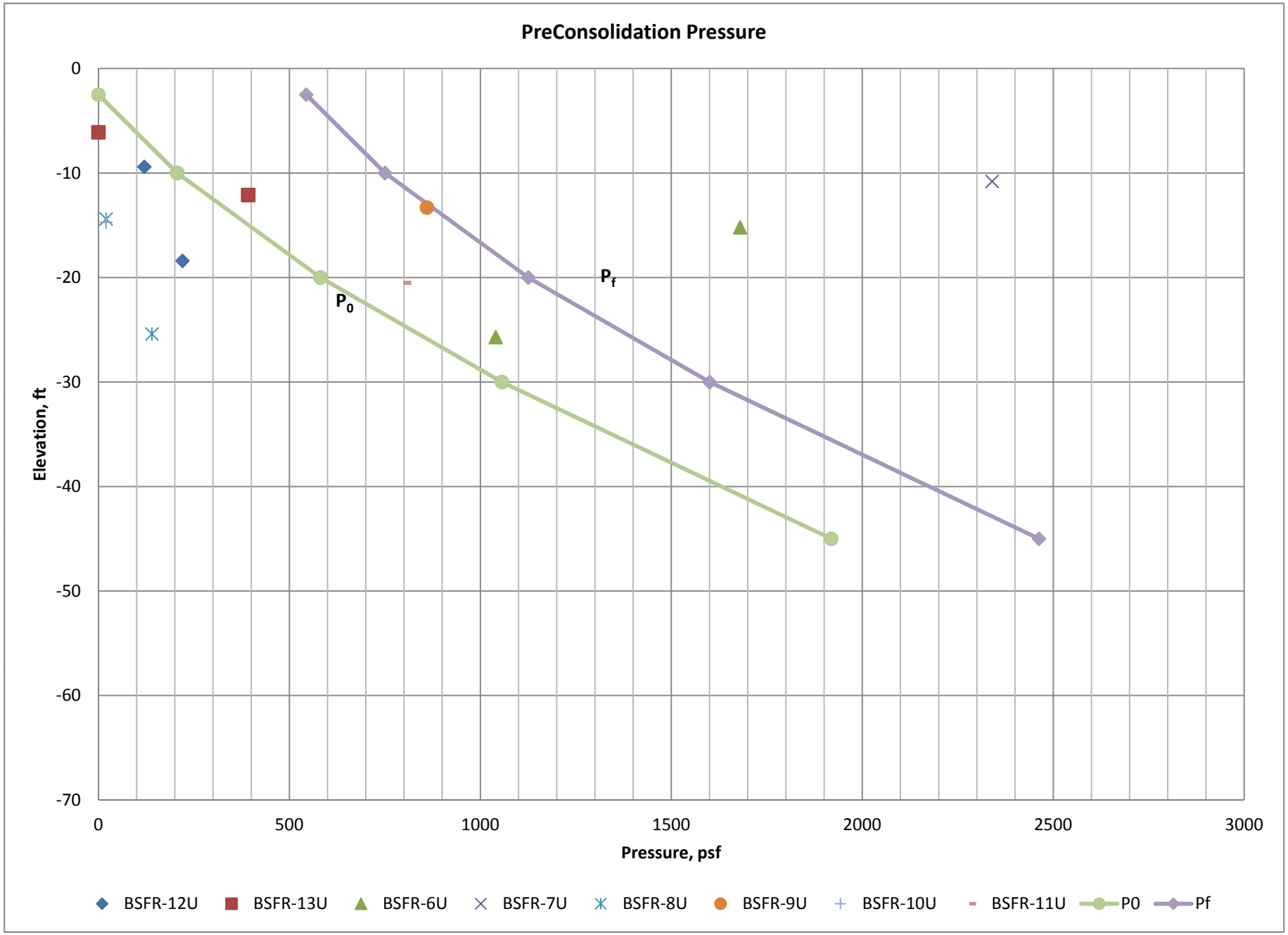
Soil Properties

Property	GS to EL -5.5 (PT)	EL -5.5 to EL -10 (CH)	EL -10 to EL -20 (CH)	EL -20 to EL -30 (CH)	EL -30 to EL -45 (CH)
Color					
Unit Weight [kips/ft^3]	0.09	0.09	0.1	0.11	0.12
Saturated Unit Weight [kips/ft^3]	0.09	0.09	0.1	0.11	0.12
Immediate Settlement	Enabled	Enabled	Enabled	Enabled	Enabled
Es [ksf]	10	30	55	55	55
Esur [ksf]	10	30	55	55	55
Primary Consolidation	Enabled	Enabled	Enabled	Enabled	Enabled
Material Type	Non-Linear	Non-Linear	Non-Linear	Non-Linear	Non-Linear
Cc	3.5	1.2	1.05	0.72	0.36
Cr	0.1	0.2	0.2	0.14	0.1
e0	7	2.5	2.1	1.7	0.837

OCR	1	1	1	1	1
Cv [ft^2/y]	160	126	90	133	133
B-bar	1	1	1	1	1

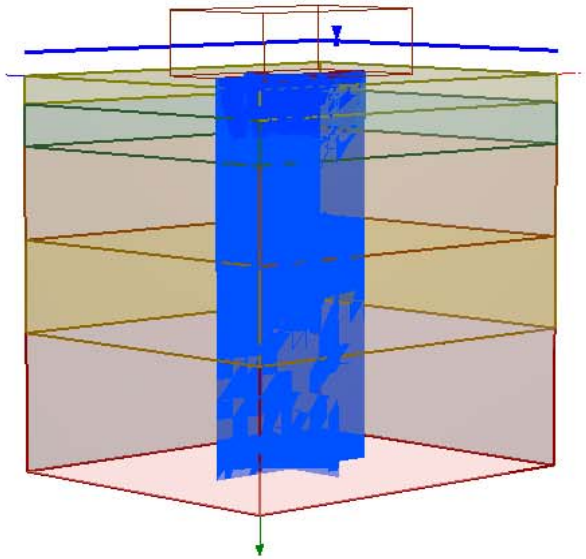
Query Lines

Line #	Start Location	End Location	Horizontal Divisions	Vertical Divisions
1	0, 0	-151477, 0	10	21
2	-76799.1, -50000	-76799.1, 50000	10	21


PreConsolidation Pressure
Elevation, ft
0
-10
-20
-30
-40
-50
-60
-70
0
500
1000
1500
2000
2500
3000
Pressure, psf
P0
Pf
BSFR-12U
BSFR-13U
BSFR-6U
BSFR-7U
BSFR-8U
BSFR-9U
BSFR-10U
BSFR-11U
P0
Pf

Stage 1 = 0 y

Data Type: Consolidation Settlement



Consolidation Settlement (ft)

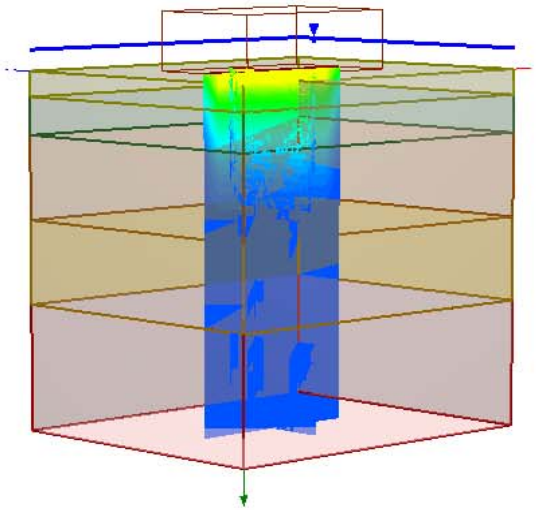
-0.3
-0.0
0.3
0.6
0.9
1.2
1.5
1.8
2.1
2.4
2.7

max (stage): 0 ft
max (all): 2.69 ft

rocscience	Project	
	Analysis Description	
	Drawn By	Company
SETTLE3D 2.016	Date 12/17/2013, 3:52:37 PM	File Name Fill +4.5.s3z

Stage 2 = 1 y

Data Type: Consolidation Settlement



Consolidation Settlement (ft)

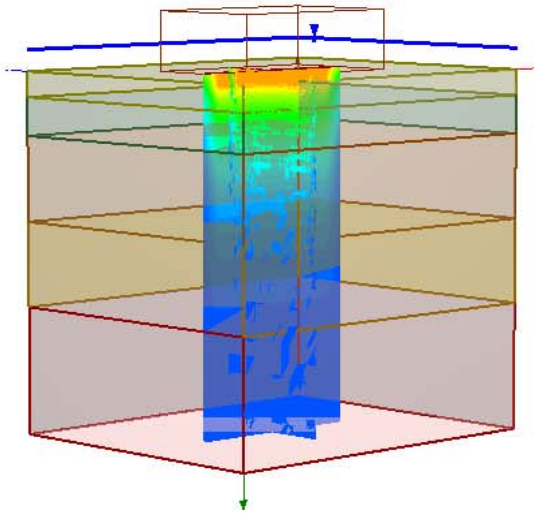
-0.3
-0.0
0.3
0.6
0.9
1.2
1.5
1.8
2.1
2.4
2.7

max (stage): 1.97 ft
max (all): 2.69 ft

rocscience	Project	
	Analysis Description	
	Drawn By	Company
SETTLE3D 2.016	Date 12/17/2013, 3:52:37 PM	File Name Fill +4.5.s3z

Stage 3 = 2 y

Data Type: Consolidation Settlement



Consolidation Settlement (ft)

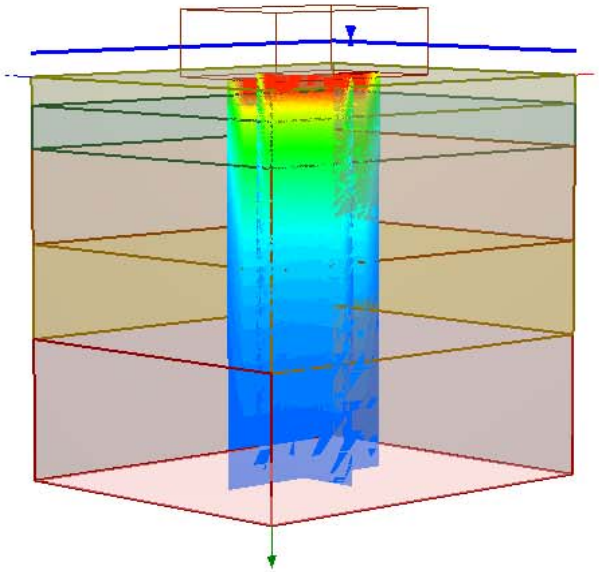
-0.3
-0.0
0.3
0.6
0.9
1.2
1.5
1.8
2.1
2.4
2.7

max (stage): 2.27 ft
max (all): 2.69 ft

rocscience	Project	
	Analysis Description	
	Drawn By	Company
SETTLE3D 2.016	Date 12/17/2013, 3:52:37 PM	File Name Fill +4.5.s3z

Stage 4 = 5 y

Data Type: Consolidation Settlement



Consolidation Settlement (ft)

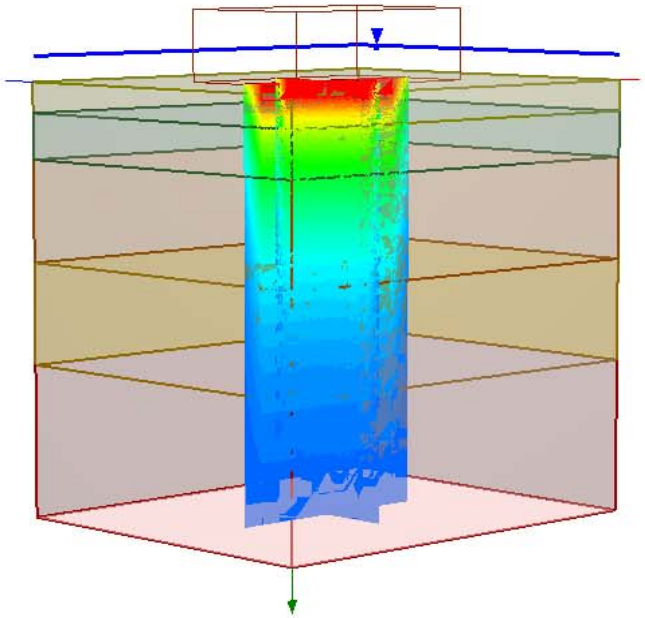
-0.3
-0.0
0.3
0.6
0.9
1.2
1.5
1.8
2.1
2.4
2.7

max (stage): 2.62 ft
max (all): 2.69 ft

rocscience	Project	
	Analysis Description	
	Drawn By	Company
SETTLE3D 2.016	Date 12/17/2013, 3:52:37 PM	File Name Fill +4.5.s3z

Stage 5 = 10 y

Data Type: Consolidation Settlement



Consolidation Settlement (ft)

-0.3
-0.0
0.3
0.6
0.9
1.2
1.5
1.8
2.1
2.4
2.7

max (stage): 2.69 ft
max (all): 2.69 ft

rocscience	Project	
	Analysis Description	
	Drawn By	Company
SETTLE3D 2.016	Date 12/17/2013, 3:52:37 PM	File Name Fill +4.5.s3z

Settle3D Analysis Information

Project Settings

Document Name: Fill +4.5.s3z
Date Created: 12/17/2013, 3:52:37 PM
Stress Computation Method: Boussinesq
Time-dependent Consolidation Analysis
Time Units: years
Permeability Units: feet/year
Include buoyancy effect when material settles below water table
Include vertical stress reduction due to settlement above a point
Use average properties to calculate layered stresses
Groundwater method: Water Table
Water Unit Weight: 0.0624 kips/ft^3
Depth to water table: -2.5 [ft]

Stage Settings

Stage #	Name	Time [years]
1	Stage 1	0
2	Stage 2	1
3	Stage 3	2
4	Stage 4	5
5	Stage 5	10

Results

Time taken to compute: 0.0592922 seconds

Stage: Stage 1 = 0 y

Data Type	Minimum	Maximum
Total Settlement [ft]	0	0.496148
Consolidation Settlement [ft]	-0.0948339	0
Immediate Settlement [ft]	0	0.590982
Secondary Settlement [ft]	0	0
Loading Stress [ksf]	0.349987	0.7
Effective Stress [ksf]	-0.0309595	1.89801
Total Stress [ksf]	0.42799	5.22382
Total Strain	0.00318231	0.0544
Pore Water Pressure [ksf]	0.443037	3.352
Excess Pore Water Pressure [ksf]	0.27199	0.544
Degree of Consolidation [%]	0	0
Pre-consolidation Stress [ksf]	0.0207	1.86129
Over-consolidation Ratio	1	3.94822
Void Ratio	0.820028	6.84204
Permeability [ft/y]	0.379917	91.7454

Coefficient of Consolidation [ft^2/y]	90	160
Hydroconsolidation Settlement [ft]	0	0
Average Degree of Consolidation [%]	0	0

Stage: Stage 2 = 1 y

Data Type	Minimum	Maximum
Total Settlement [ft]	0	2.55943
Consolidation Settlement [ft]	-0.0500915	1.96943
Immediate Settlement [ft]	0	0.590982
Secondary Settlement [ft]	0	0
Loading Stress [ksf]	0.349987	0.7
Effective Stress [ksf]	0.158394	1.77315
Total Stress [ksf]	0.42799	5.03217
Total Strain	0.00264992	0.452282
Pore Water Pressure [ksf]	0.269596	3.3155
Excess Pore Water Pressure [ksf]	0	0.507503
Degree of Consolidation [%]	0	83.8811
Pre-consolidation Stress [ksf]	0.194658	1.86129
Over-consolidation Ratio	1	1.14884
Void Ratio	0.823574	6.57003
Permeability [ft/y]	0.379917	91.7454
Coefficient of Consolidation [ft^2/y]	90	160
Hydroconsolidation Settlement [ft]	0	0
Average Degree of Consolidation [%]	12.6814	99.9004

Stage: Stage 3 = 2 y

Data Type	Minimum	Maximum
Total Settlement [ft]	0	2.86077
Consolidation Settlement [ft]	-0.0148913	2.27115
Immediate Settlement [ft]	0	0.590982
Secondary Settlement [ft]	0	0
Loading Stress [ksf]	0.349987	0.7
Effective Stress [ksf]	0.150045	1.85044
Total Stress [ksf]	0.42799	4.99975
Total Strain	0.00388131	0.452013
Pore Water Pressure [ksf]	0.277945	3.14931
Excess Pore Water Pressure [ksf]	0	0.341307
Degree of Consolidation [%]	0	86.5232
Pre-consolidation Stress [ksf]	0.194658	1.86129
Over-consolidation Ratio	1	1.20719
Void Ratio	0.815985	6.57207
Permeability [ft/y]	0.379917	91.7454
Coefficient of Consolidation [ft^2/y]	90	160
Hydroconsolidation Settlement [ft]	0	0
Average Degree of Consolidation [%]	44.2291	99.957

Stage: Stage 4 = 5 y

Data Type	Minimum	Maximum

Total Settlement [ft]	0	3.20805
Consolidation Settlement [ft]	0	2.61889
Immediate Settlement [ft]	0	0.590982
Secondary Settlement [ft]	0	0
Loading Stress [ksf]	0.349987	0.7
Effective Stress [ksf]	0.139537	2.08386
Total Stress [ksf]	0.42799	4.9607
Total Strain	0.00663212	0.451651
Pore Water Pressure [ksf]	0.288454	2.87684
Excess Pore Water Pressure [ksf]	0	0.0688377
Degree of Consolidation [%]	0	96.2134
Pre-consolidation Stress [ksf]	0.194658	2.02352
Over-consolidation Ratio	1	1.29046
Void Ratio	0.794972	6.57456
Permeability [ft/y]	0.379917	91.7454
Coefficient of Consolidation [ft^2/y]	90	160
Hydroconsolidation Settlement [ft]	0	0
Average Degree of Consolidation [%]	88.9018	99.9924

Stage: Stage 5 = 10 y

Data Type	Minimum	Maximum
Total Settlement [ft]	0	3.28393
Consolidation Settlement [ft]	0	2.69488
Immediate Settlement [ft]	0	0.590982
Secondary Settlement [ft]	0	0
Loading Stress [ksf]	0.349987	0.7
Effective Stress [ksf]	0.136886	2.13958
Total Stress [ksf]	0.42799	4.95205
Total Strain	0.00784684	0.451556
Pore Water Pressure [ksf]	0.291104	2.81247
Excess Pore Water Pressure [ksf]	0	0.00447328
Degree of Consolidation [%]	0	99.3915
Pre-consolidation Stress [ksf]	0.194658	2.07908
Over-consolidation Ratio	1	1.31335
Void Ratio	0.790539	6.57512
Permeability [ft/y]	0.379917	91.7454
Coefficient of Consolidation [ft^2/y]	90	160
Hydroconsolidation Settlement [ft]	0	0
Average Degree of Consolidation [%]	99.2789	99.9995

Embankments

1. Embankment

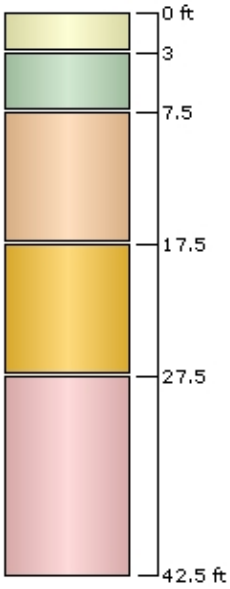
Center Line: (0, 0) to (-151477, 0)
Number of Layers: 1
Near End Angle: 90 degrees
Far End Angle: 90 degrees
Base Width: 100000

Layer	Stage	Left Bench Width (ft)	Left Angle (deg)	Height (ft)	Unit Weight (kips/ft^3)	Right Angle (deg)	Right Bench Width (ft)
1	Stage 1 = 0 y	0	90	7	0.1	90	0

Soil Layers

Layer #	Type	Thickness [ft]	Depth [ft]	Drained at Bottom
1	GS to EL -5.5 (PT)	3	0	No
2	EL -5.5 to EL -10 (CH)	4.5	3	No
3	EL -10 to EL -20 (CH)	10	7.5	No
4	EL -20 to EL -30 (CH)	10	17.5	No
5	EL -30 to EL -45 (CH)	15	27.5	No

Ground Surface Drained: Yes



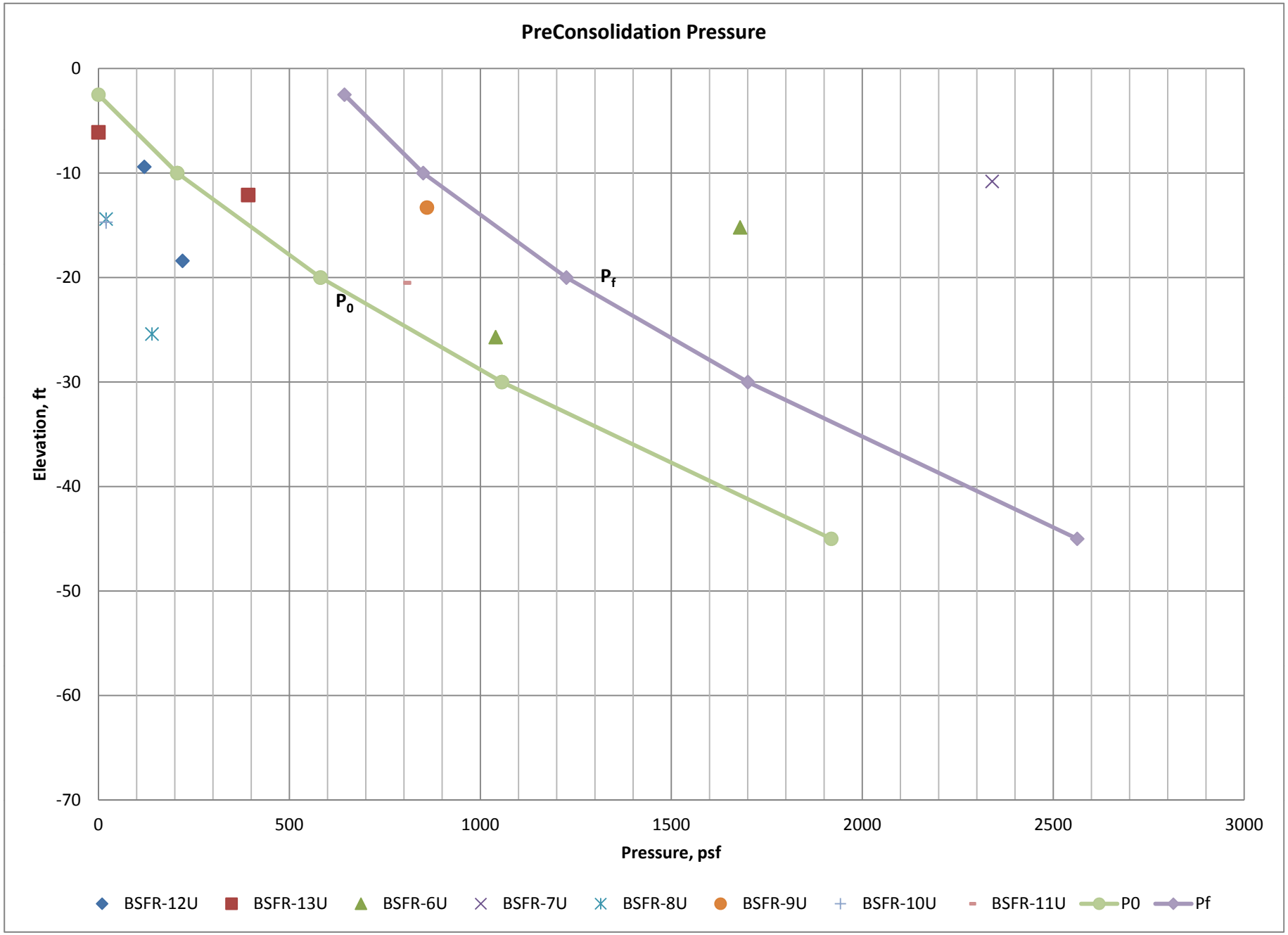
Soil Properties

Property	GS to EL -5.5 (PT)	EL -5.5 to EL -10 (CH)	EL -10 to EL -20 (CH)	EL -20 to EL -30 (CH)	EL -30 to EL -45 (CH)
Color					
Unit Weight [kips/ft^3]	0.09	0.09	0.1	0.11	0.12
Saturated Unit Weight [kips/ft^3]	0.09	0.09	0.1	0.11	0.12
Immediate Settlement	Enabled	Enabled	Enabled	Enabled	Enabled
Es [ksf]	10	30	55	55	55
Esur [ksf]	10	30	55	55	55
Primary Consolidation	Enabled	Enabled	Enabled	Enabled	Enabled
Material Type	Non-Linear	Non-Linear	Non-Linear	Non-Linear	Non-Linear
Cc	3.5	1.2	1.05	0.72	0.36
Cr	0.1	0.2	0.2	0.14	0.1
e0	7	2.5	2.1	1.7	0.837

OCR	1	1	1	1	1
Cv [ft^2/y]	160	126	90	133	133
B-bar	1	1	1	1	1

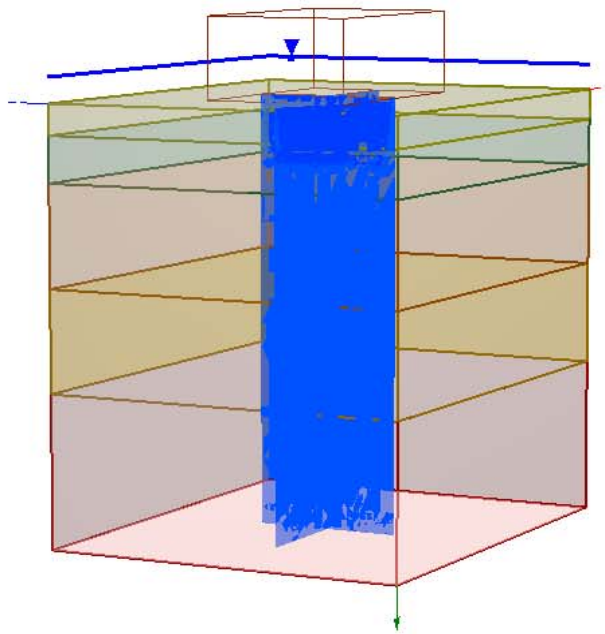
Query Lines

Line #	Start Location	End Location	Horizontal Divisions	Vertical Divisions
1	0, 0	-151477, 0	10	21
2	-76799.1, -50000	-76799.1, 50000	10	21


PreConsolidation Pressure
Elevation, ft
0
-10
-20
-30
-40
-50
-60
-70
0
500
1000
1500
2000
2500
3000
Pressure, psf
P0
Pf
BSFR-12U
BSFR-13U
BSFR-6U
BSFR-7U
BSFR-8U
BSFR-9U
BSFR-10U
BSFR-11U
P0
Pf

Stage 1 = 0 y

Data Type: Consolidation Settlement



Consolidation Settlement (ft)

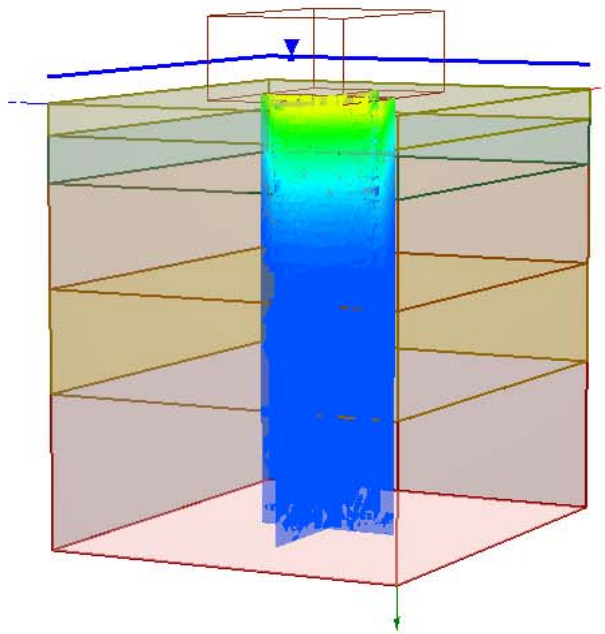
-0.35
0.00
0.35
0.70
1.05
1.40
1.75
2.10
2.45
2.80
3.15

max (stage): 0 ft
max (all): 3.06 ft

rocscience	Project	
	Analysis Description	
	Drawn By	Company
SETTLE3D 2.016	Date 12/17/2013, 3:52:37 PM	File Name Fill +5.5.s3z

Stage 2 = 1 y

Data Type: Consolidation Settlement



Consolidation Settlement (ft)

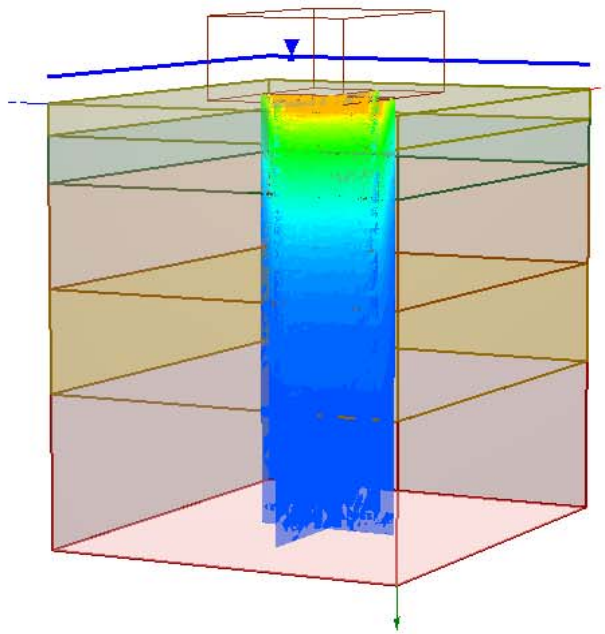
-0.35
0.00
0.35
0.70
1.05
1.40
1.75
2.10
2.45
2.80
3.15

max (stage): 2.22 ft
max (all): 3.07 ft

rocscience	Project	
	Analysis Description	
	Drawn By	Company
SETTLE3D 2.016	Date 12/17/2013, 3:52:37 PM	File Name Fill +5.5.s3z

Stage 3 = 2 y

Data Type: Consolidation Settlement



Consolidation Settlement (ft)

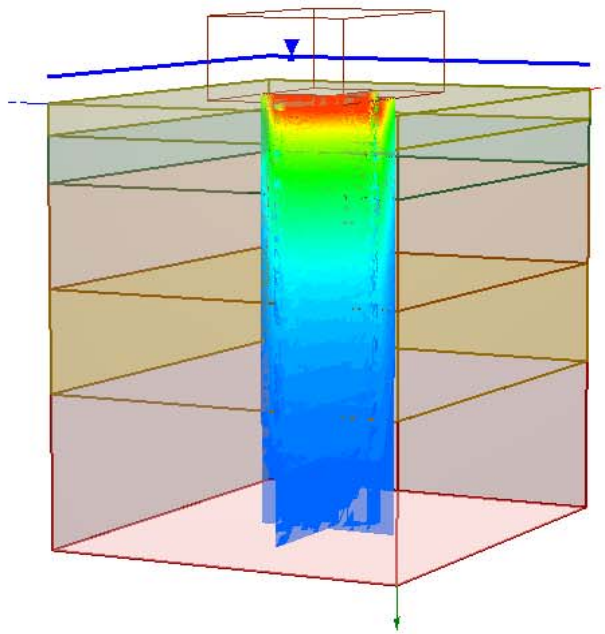
-0.35
0.00
0.35
0.70
1.05
1.40
1.75
2.10
2.45
2.80
3.15

max (stage): 2.58 ft
max (all): 3.07 ft

rocscience	Project	
	Analysis Description	
	Drawn By	Company
SETTLE3D 2.016	Date 12/17/2013, 3:52:37 PM	File Name Fill +5.5.s3z

Stage 4 = 5 y

Data Type: Consolidation Settlement



Consolidation Settlement (ft)

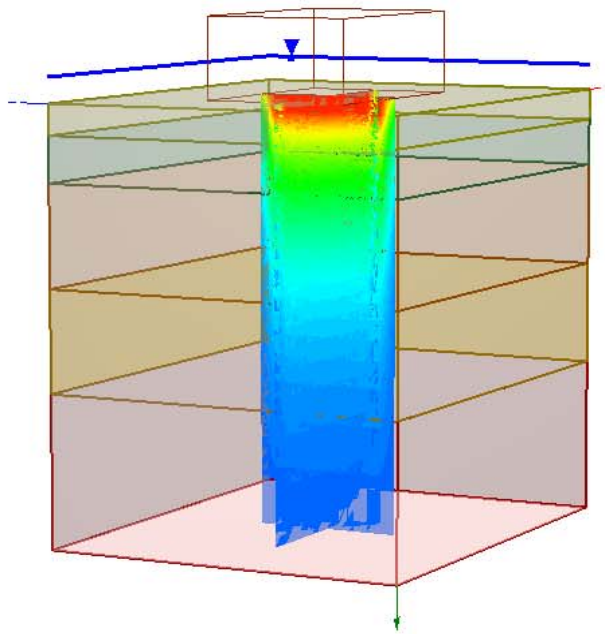
-0.35
0.00
0.35
0.70
1.05
1.40
1.75
2.10
2.45
2.80
3.15

max (stage): 2.98 ft
max (all): 3.07 ft

rocscience	Project	
	Analysis Description	
	Drawn By	Company
SETTLE3D 2.016	Date 12/17/2013, 3:52:37 PM	File Name Fill +5.5.s3z

Stage 5 = 10 y

Data Type: Consolidation Settlement



Consolidation Settlement (ft)

-0.35
0.00
0.35
0.70
1.05
1.40
1.75
2.10
2.45
2.80
3.15

max (stage): 3.07 ft
max (all): 3.07 ft

rocscience	Project	
	Analysis Description	
	Drawn By	Company
SETTLE3D 2.016	Date 12/17/2013, 3:52:37 PM	File Name Fill +5.5.s3z

Settle3D Analysis Information

Project Settings

Document Name: Fill +5.5.s3z
Date Created: 12/17/2013, 3:52:37 PM
Stress Computation Method: Boussinesq
Time-dependent Consolidation Analysis
Time Units: years
Permeability Units: feet/year
Include buoyancy effect when material settles below water table
Include vertical stress reduction due to settlement above a point
Use average properties to calculate layered stresses
Groundwater method: Water Table
Water Unit Weight: 0.0624 kips/ft^3
Depth to water table: -2.5 [ft]

Stage Settings

Stage #	Name	Time [years]
1	Stage 1	0
2	Stage 2	1
3	Stage 3	2
4	Stage 4	5
5	Stage 5	10

Results

Time taken to compute: 0.0576216 seconds

Stage: Stage 1 = 0 y

Data Type	Minimum	Maximum
Total Settlement [ft]	0	0.585057
Consolidation Settlement [ft]	-0.114561	0
Immediate Settlement [ft]	0	0.699618
Secondary Settlement [ft]	0	0
Loading Stress [ksf]	0.399985	0.8
Effective Stress [ksf]	-0.0365072	1.89371
Total Stress [ksf]	0.477988	5.31462
Total Strain	0.00378519	0.0644
Pore Water Pressure [ksf]	0.4956	3.452
Excess Pore Water Pressure [ksf]	0.321988	0.644
Degree of Consolidation [%]	0	0
Pre-consolidation Stress [ksf]	0.0207	1.86129
Over-consolidation Ratio	1	7.80556
Void Ratio	0.816906	6.83163
Permeability [ft/y]	0.379917	91.7454

Coefficient of Consolidation [ft^2/y]	90	160
Hydroconsolidation Settlement [ft]	0	0
Average Degree of Consolidation [%]	0	0

Stage: Stage 2 = 1 y

Data Type	Minimum	Maximum
Total Settlement [ft]	0	2.91994
Consolidation Settlement [ft]	-0.0554872	2.22127
Immediate Settlement [ft]	0	0.699618
Secondary Settlement [ft]	0	0
Loading Stress [ksf]	0.399985	0.8
Effective Stress [ksf]	0.19208	1.75195
Total Stress [ksf]	0.477988	5.09729
Total Strain	0.00324155	0.490708
Pore Water Pressure [ksf]	0.285908	3.40879
Excess Pore Water Pressure [ksf]	0	0.600794
Degree of Consolidation [%]	0	79.2991
Pre-consolidation Stress [ksf]	0.232091	1.86129
Over-consolidation Ratio	1	1.15413
Void Ratio	0.820754	6.48986
Permeability [ft/y]	0.379917	91.7454
Coefficient of Consolidation [ft^2/y]	90	160
Hydroconsolidation Settlement [ft]	0	0
Average Degree of Consolidation [%]	12.6814	99.9004

Stage: Stage 3 = 2 y

Data Type	Minimum	Maximum
Total Settlement [ft]	0	3.27382
Consolidation Settlement [ft]	-0.0156834	2.57552
Immediate Settlement [ft]	0	0.699618
Secondary Settlement [ft]	0	0
Loading Stress [ksf]	0.399985	0.8
Effective Stress [ksf]	0.182018	1.84709
Total Stress [ksf]	0.477988	5.05914
Total Strain	0.0046791	0.490436
Pore Water Pressure [ksf]	0.29597	3.21205
Excess Pore Water Pressure [ksf]	0	0.404048
Degree of Consolidation [%]	0	84.7934
Pre-consolidation Stress [ksf]	0.232091	1.86129
Over-consolidation Ratio	1	1.20622
Void Ratio	0.810817	6.49187
Permeability [ft/y]	0.379917	91.7454
Coefficient of Consolidation [ft^2/y]	90	160
Hydroconsolidation Settlement [ft]	0	0
Average Degree of Consolidation [%]	44.2291	99.957

Stage: Stage 4 = 5 y

Data Type	Minimum	Maximum

Total Settlement [ft]	0	3.6769
Consolidation Settlement [ft]	0	2.97906
Immediate Settlement [ft]	0	0.699618
Secondary Settlement [ft]	0	0
Loading Stress [ksf]	0.399985	0.8
Effective Stress [ksf]	0.169458	2.12408
Total Stress [ksf]	0.477988	5.01357
Total Strain	0.00810473	0.490074
Pore Water Pressure [ksf]	0.30853	2.88949
Excess Pore Water Pressure [ksf]	0	0.0814917
Degree of Consolidation [%]	0	95.6978
Pre-consolidation Stress [ksf]	0.232091	2.06402
Over-consolidation Ratio	1	1.28959
Void Ratio	0.786406	6.4943
Permeability [ft/y]	0.379917	91.7454
Coefficient of Consolidation [ft^2/y]	90	160
Hydroconsolidation Settlement [ft]	0	0
Average Degree of Consolidation [%]	88.9018	99.9924

Stage: Stage 5 = 10 y

Data Type	Minimum	Maximum
Total Settlement [ft]	0	3.76376
Consolidation Settlement [ft]	0	3.06602
Immediate Settlement [ft]	0	0.699618
Secondary Settlement [ft]	0	0
Loading Stress [ksf]	0.399985	0.8
Effective Stress [ksf]	0.166359	2.19038
Total Stress [ksf]	0.477988	5.00367
Total Strain	0.00953457	0.48998
Pore Water Pressure [ksf]	0.311629	2.8133
Excess Pore Water Pressure [ksf]	0	0.00529557
Degree of Consolidation [%]	0	99.2894
Pre-consolidation Stress [ksf]	0.232091	2.13012
Over-consolidation Ratio	1	1.312
Void Ratio	0.78131	6.49484
Permeability [ft/y]	0.379917	91.7454
Coefficient of Consolidation [ft^2/y]	90	160
Hydroconsolidation Settlement [ft]	0	0
Average Degree of Consolidation [%]	99.2789	99.9995

Embankments

1. Embankment

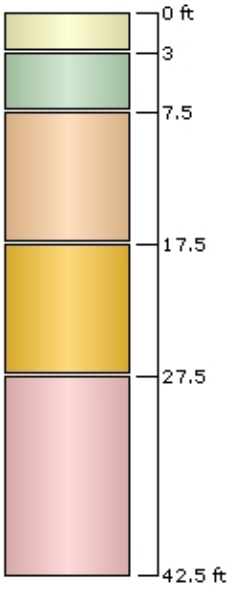
Center Line: (0, 0) to (-151477, 0)
Number of Layers: 1
Near End Angle: 90 degrees
Far End Angle: 90 degrees
Base Width: 100000

Layer	Stage	Left Bench Width (ft)	Left Angle (deg)	Height (ft)	Unit Weight (kips/ft^3)	Right Angle (deg)	Right Bench Width (ft)
1	Stage 1 = 0 y	0	90	8	0.1	90	0

Soil Layers

Layer #	Type	Thickness [ft]	Depth [ft]	Drained at Bottom
1	GS to EL -5.5 (PT)	3	0	No
2	EL -5.5 to EL -10 (CH)	4.5	3	No
3	EL -10 to EL -20 (CH)	10	7.5	No
4	EL -20 to EL -30 (CH)	10	17.5	No
5	EL -30 to EL -45 (CH)	15	27.5	No

Ground Surface Drained: Yes



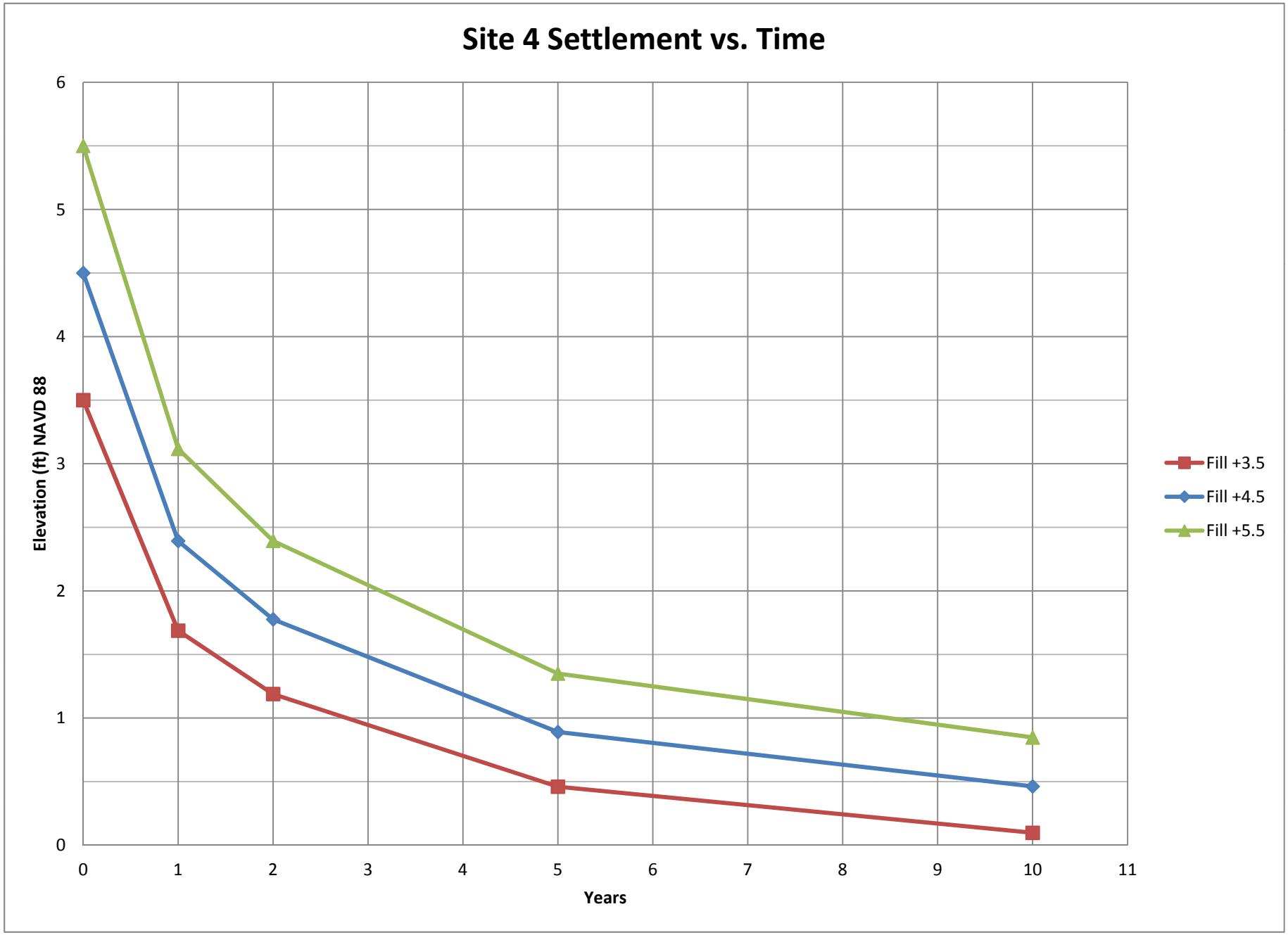
Soil Properties

Property	GS to EL -5.5 (PT)	EL -5.5 to EL -10 (CH)	EL -10 to EL -20 (CH)	EL -20 to EL -30 (CH)	EL -30 to EL -45 (CH)
Color					
Unit Weight [kips/ft^3]	0.09	0.09	0.1	0.11	0.12
Saturated Unit Weight [kips/ft^3]	0.09	0.09	0.1	0.11	0.12
Immediate Settlement	Enabled	Enabled	Enabled	Enabled	Enabled
Es [ksf]	10	30	55	55	55
Esur [ksf]	10	30	55	55	55
Primary Consolidation	Enabled	Enabled	Enabled	Enabled	Enabled
Material Type	Non-Linear	Non-Linear	Non-Linear	Non-Linear	Non-Linear
Cc	3.5	1.2	1.05	0.72	0.36
Cr	0.1	0.2	0.2	0.14	0.1
e0	7	2.5	2.1	1.7	0.837

OCR	1	1	1	1	1
Cv [ft^2/y]	160	126	90	133	133
B-bar	1	1	1	1	1

Query Lines

Line #	Start Location	End Location	Horizontal Divisions	Vertical Divisions
1	0, 0	-151477, 0	10	21
2	-76799.1, -50000	-76799.1, 50000	10	21


Site 4 Settlement vs. Time
Elevation (ft) NAVD 88
Years
0
1
2
3
4
5
6
7
8
9
10
11
Fill +3.5
Fill +4.5
Fill +5.5

	Fill +3.5			Fill +4.5			Fill +5.5		
Year	Consolidation Settlement From Settle3D	Shrinkage	Elevation	Consolidation Settlement From Settle3D	Shrinkage	Elevation	Consolidation Settlement From Settle3D	Shrinkage	Elevation
0	0	0	3.5	0	0	4.5	0	0	5.5
1	1.7	0.11	1.69	1.97	0.14	2.39	2.22	0.16	3.12
2	1.94	0.37	1.19	2.27	0.45	1.78	2.57	0.54	2.39
5	2.23	0.81	0.46	2.62	0.99	0.89	2.98	1.17	1.35
10	2.3	1.10	0.10	2.69	1.35	0.46	3.06	1.59	0.85

25% Fill Shrinkage - Above the Water Line

	Fill Shrinkage	10.00%	33.00%	50.00%	63.00%	72.00%	98.00%
		1	**2**	**3**	**4**	**5**	**10**
Fill @ El +3.5	0.875	0.09	0.29	0.44	0.55	0.63	0.86

	Fill Shrinkage	10.00%	33.00%	50.00%	63.00%	72.00%	98.00%
		1	**2**	**3**	**4**	**5**	**10**
Fill @ El +4.5	1.125	0.11	0.37	0.56	0.71	0.81	1.10

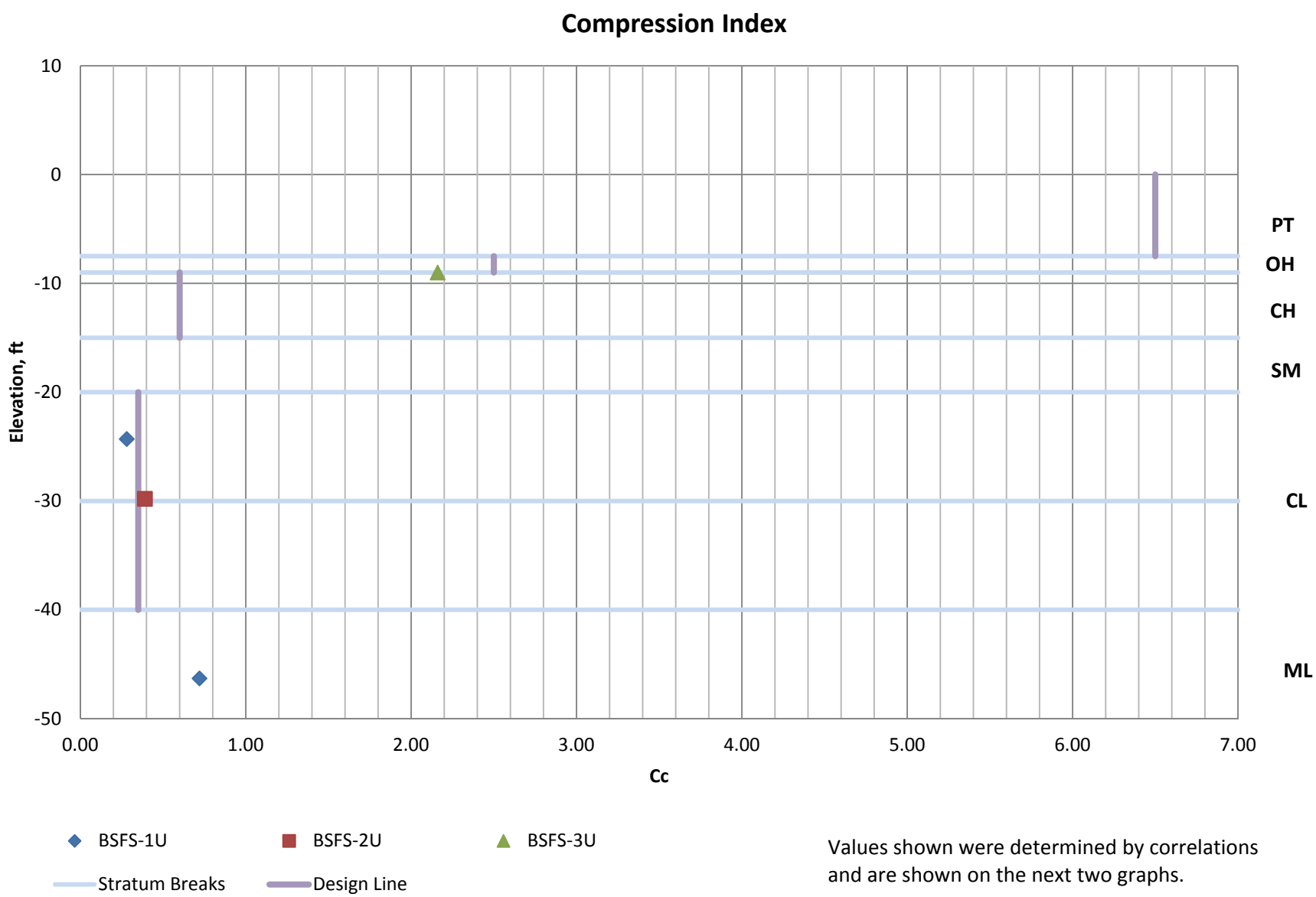
	Fill Shrinkage	10.00%	33.00%	50.00%	63.00%	72.00%	98.00%
		1	**2**	**3**	**4**	**5**	**10**
Fill @ El +5.5	1.375	0.14	0.45	0.69	0.87	0.99	1.35

10% Fill Consolidation - Below the Water Line

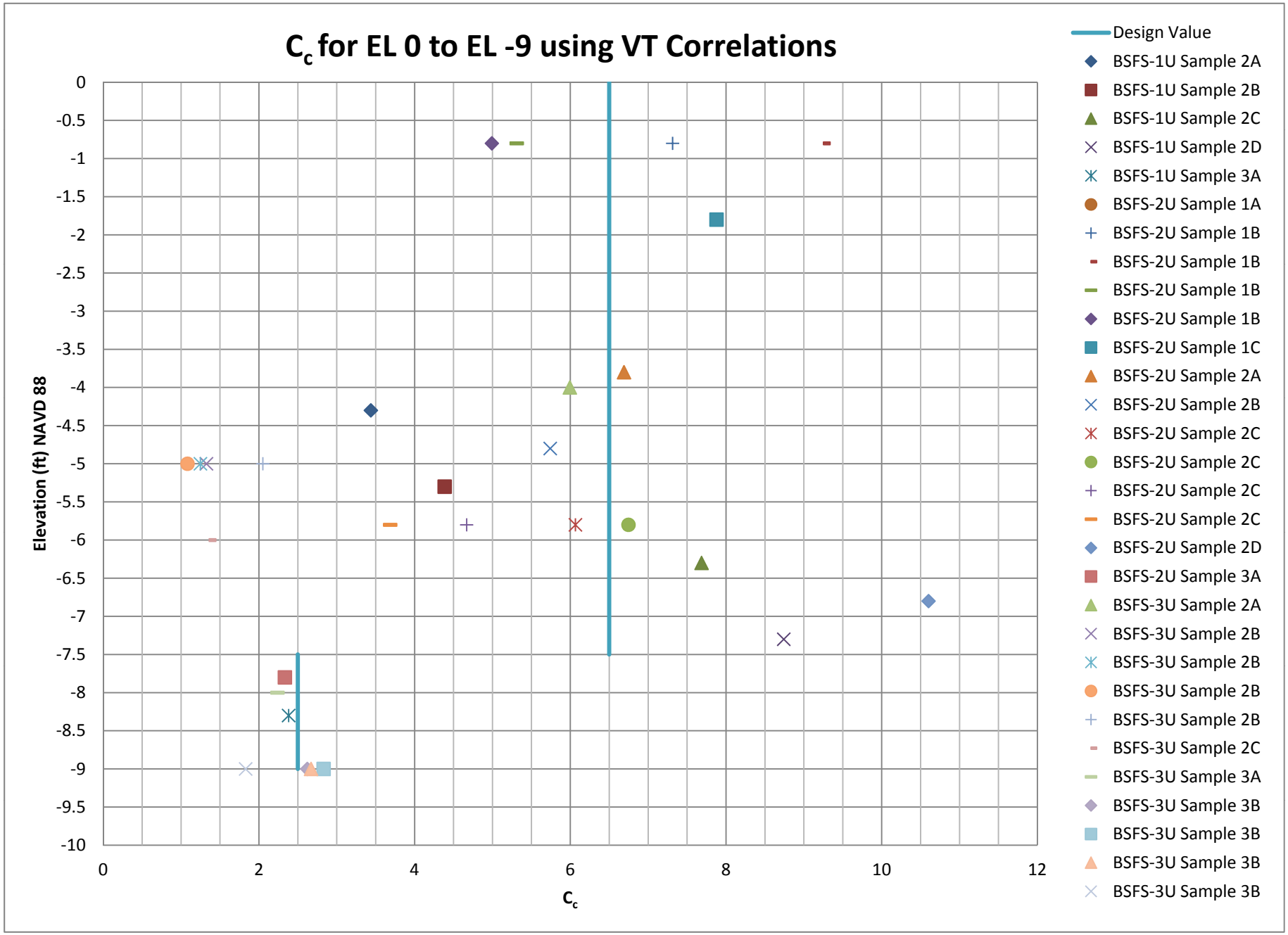
Fill Consolidation	10.00%	33.00%	50.00%	63.00%	72.00%	98.00%
	1	**2**	**3**	**4**	**5**	**10**
0.25	0.03	0.08	0.13	0.16	0.18	0.25

SETTLEMENT ESTIMATE

FOR BSFS-5



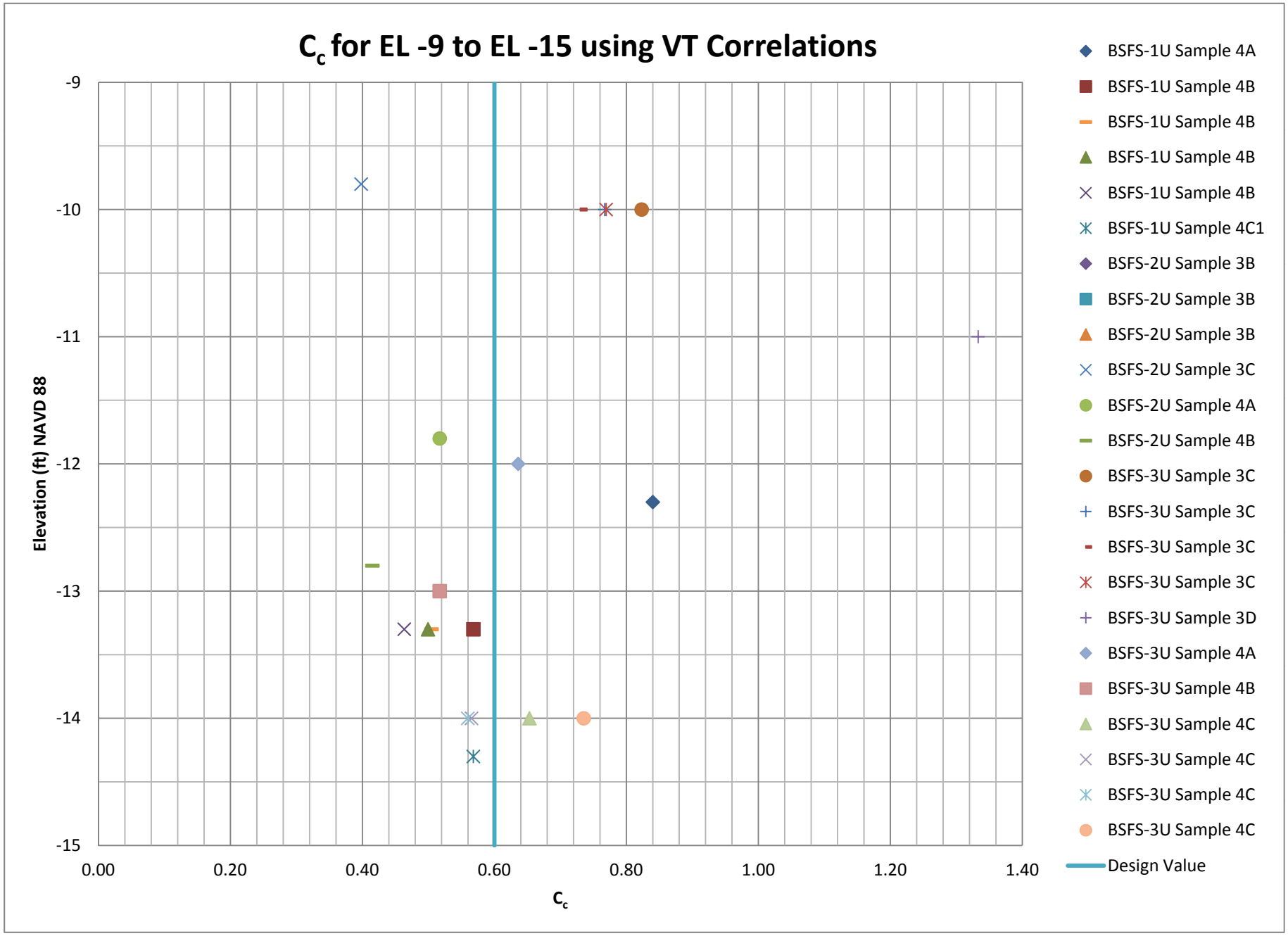
Values shown were determined by correlations and are shown on the next two graphs.


C_c for EL 0 to EL -9 using VT Correlations
Elevation (ft) NAVD 88
0
-0.5
-1
-1.5
-2
-2.5
-3
-3.5
-4
-4.5
-5
-5.5
-6
-6.5
-7
-7.5
-8
-8.5
-9
-9.5
-10
0
2
4
6
8
10
12
C_c
Design Value
BSFS-1U Sample 2A
BSFS-1U Sample 2B
BSFS-1U Sample 2C
BSFS-1U Sample 2D
BSFS-1U Sample 3A
BSFS-2U Sample 1A
BSFS-2U Sample 1B
BSFS-2U Sample 1B
BSFS-2U Sample 1B
BSFS-2U Sample 1B
BSFS-2U Sample 1C
BSFS-2U Sample 2A
BSFS-2U Sample 2B
BSFS-2U Sample 2C
BSFS-2U Sample 2C
BSFS-2U Sample 2C
BSFS-2U Sample 2C
BSFS-2U Sample 2D
BSFS-2U Sample 3A
BSFS-3U Sample 2A
BSFS-3U Sample 2B
BSFS-3U Sample 2B
BSFS-3U Sample 2B
BSFS-3U Sample 2B
BSFS-3U Sample 2C
BSFS-3U Sample 3A
BSFS-3U Sample 3B
BSFS-3U Sample 3B
BSFS-3U Sample 3B
BSFS-3U Sample 3B

VT Correlation for C_c

Boring					C_c				Lab Values			
BSFS-1U	GS=	-0.3	Depth	Elevation	vs. w(%)	vs. e_0	vs. γ_d	vs. LL	w(%)	e_0	γ_d	LL
BSFS-1U Sample 2A			4	-4.3	3.44				275			
BSFS-1U Sample 2B			5	-5.3	4.39				354			
BSFS-1U Sample 2C			6	-6.3	7.69				629			
BSFS-1U Sample 2D			7	-7.3	8.74				717			
BSFS-1U Sample 3A			8	-8.3	2.38				187			
BSFS-2U	GS=	0.2	Depth	Elevation								
BSFS-2U Sample 1A			0	0.2	6.93				566			
BSFS-2U Sample 1B			1	-0.8	7.31	9.25	5.31	4.99	598	15.6	9	650
BSFS-2U Sample 1C			2	-1.8	7.88				645			
BSFS-2U Sample 2A			4	-3.8	6.69				546			
BSFS-2U Sample 2B			5	-4.8	5.74				467			
BSFS-2U Sample 2C			6	-5.8	6.07	6.75	4.67	3.69	494	11.5	12	455
BSFS-2U Sample 2D			7	-6.8	10.60				872			
BSFS-2U Sample 3A			8	-7.8	2.33				183			
BSFS-3U	GS=	0	Depth	Elevation								
BSFS-3U Sample 2A			4	-4	5.99				488			
BSFS-3U Sample 2B			5	-5	1.33	1.25	1.08	2.05	99	2.5	46	211
BSFS-3U Sample 2C			6	-6	1.36				102			
BSFS-3U Sample 3A			8	-8	2.24				175			
BSFS-3U Sample 3B			9	-9	2.62	2.83	2.67	1.83	207	5.09	25	178

	C_c	EL
Design Value	6.5	0
	6.5	-7.5
	2.5	-7.5
	2.5	-9

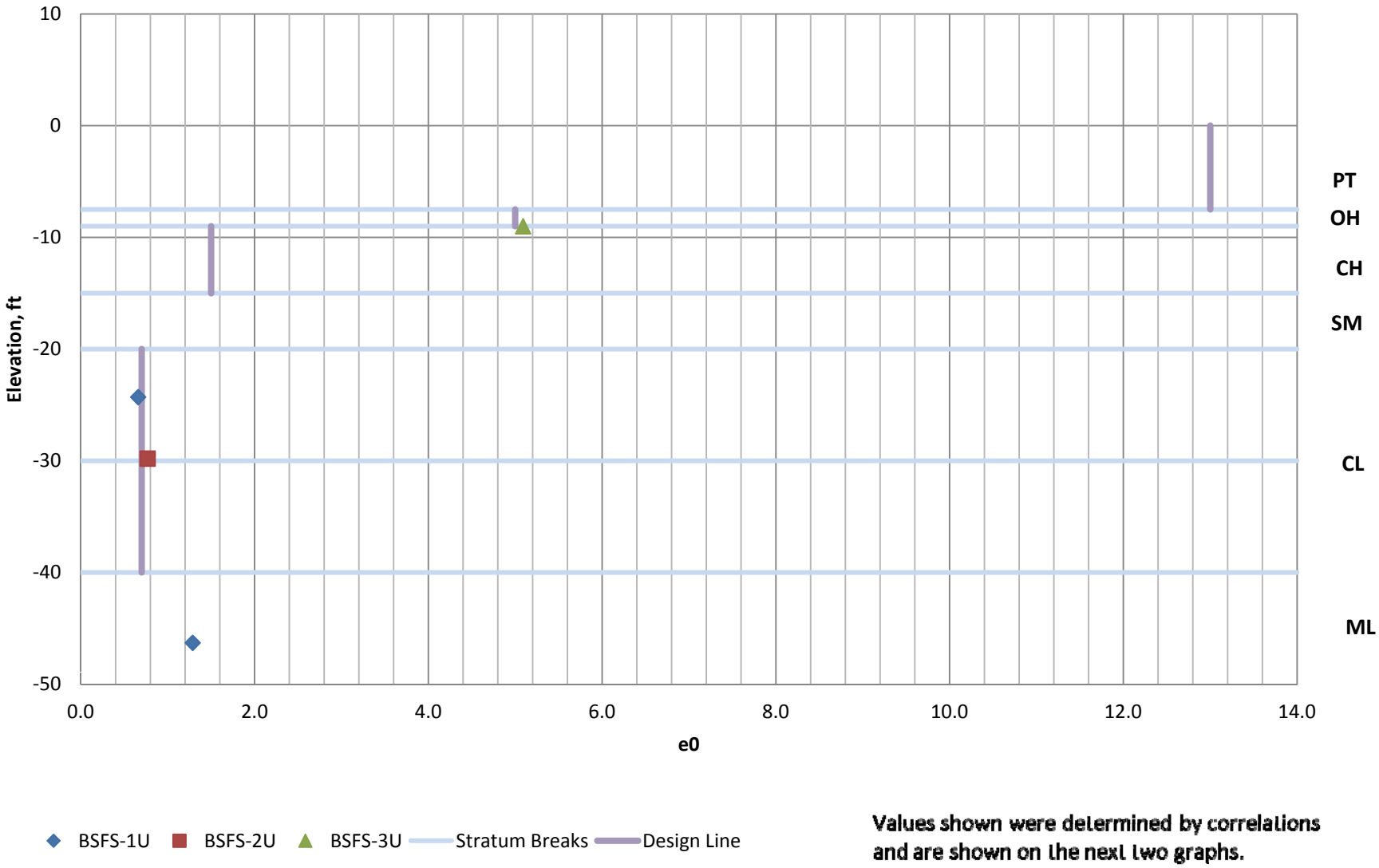

C_c for EL -9 to EL -15 using VT Correlations
Elevation (ft) NAVD 88
-9
-10
-11
-12
-13
-14
-15
0.00
0.20
0.40
0.60
0.80
1.00
1.20
1.40
C_c
BSFS-1U Sample 4A
BSFS-1U Sample 4B
BSFS-1U Sample 4B
BSFS-1U Sample 4B
BSFS-1U Sample 4B
BSFS-1U Sample 4C1
BSFS-2U Sample 3B
BSFS-2U Sample 3B
BSFS-2U Sample 3B
BSFS-2U Sample 3C
BSFS-2U Sample 4A
BSFS-2U Sample 4B
BSFS-3U Sample 3C
BSFS-3U Sample 3C
BSFS-3U Sample 3C
BSFS-3U Sample 3C
BSFS-3U Sample 3D
BSFS-3U Sample 4A
BSFS-3U Sample 4B
BSFS-3U Sample 4C
BSFS-3U Sample 4C
BSFS-3U Sample 4C
BSFS-3U Sample 4C
Design Value

VT Correlation for C_c

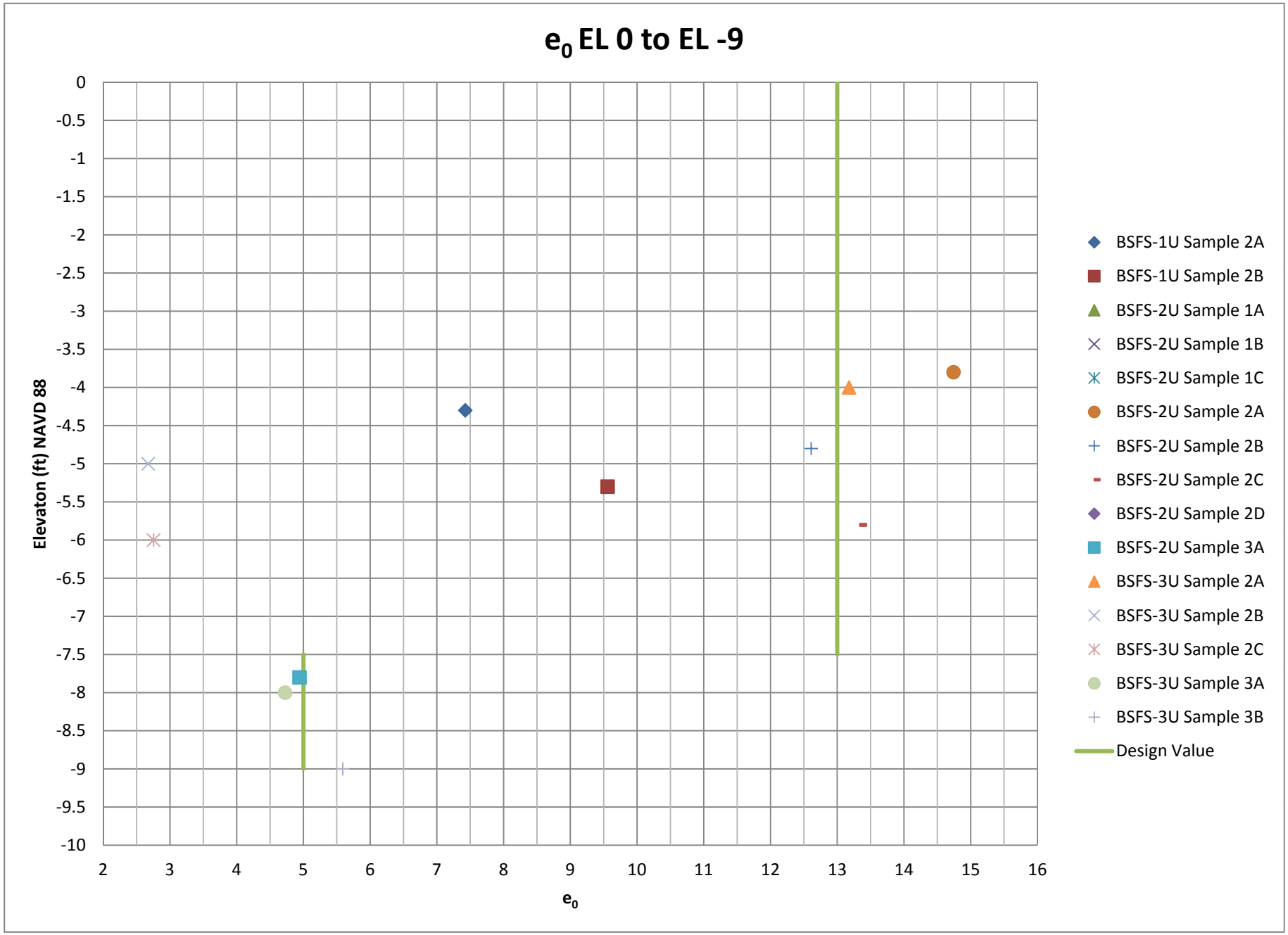
Boring					C_c				Lab Values			
BSFS-1U	GS=	-0.3	Depth	Elevation	vs. w(%)	vs. e_0	vs. γ_d	vs. LL	w(%)	e_0	γ_d	LL
BSFS-1U Sample 4A			12	-12.3	0.84				67			
BSFS-1U Sample 4B			13	-13.3	0.57	0.50	0.50	0.46	51	1.31	73	45
BSFS-1U Sample 4C1			14	-14.3	0.57				51			
BSFS-2U	GS=	0.2	Depth	Elevation								
BSFS-2U Sample 3B			9	-8.8	0.60	0.57	0.54	0.70	53	1.4	71	73
BSFS-2U Sample 3C			10	-9.8	0.40				41			
BSFS-2U Sample 3D			11	-10.8								
BSFS-2U Sample 4A			12	-11.8	0.52				48			
BSFS-2U Sample 4B			13	-12.8	0.42				42			
BSFS-3U	GS=	0	Depth	Elevation								
BSFS-3U Sample 3C			10	-10	0.82	0.77	0.73	0.77	66	1.7	63	81
BSFS-3U Sample 3D			11	-11	1.33				96			
BSFS-3U Sample 4A			12	-12	0.64				55			
BSFS-3U Sample 4B			13	-13	0.52				48			
BSFS-3U Sample 4C			14	-14	0.65	0.57	0.56	0.74	56	1.4	70	77

	C_c	EL
Design Value	0.6	-9
	0.6	-15

Void Ratio

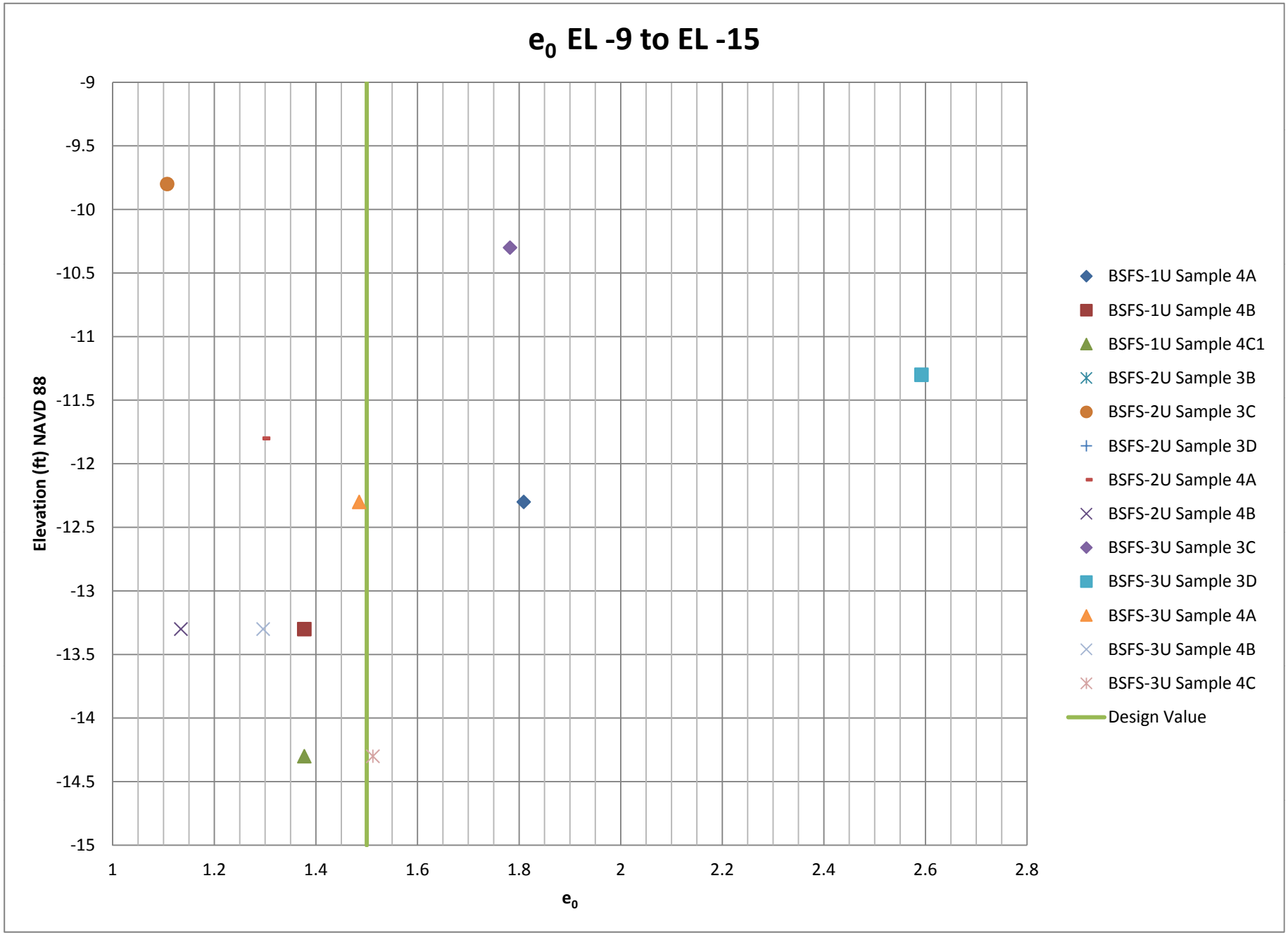


Values shown were determined by correlations and are shown on the next two graphs.


e_0 EL 0 to EL -9
Elevaton (ft) NAVD 88
0
-0.5
-1
-1.5
-2
-2.5
-3
-3.5
-4
-4.5
-5
-5.5
-6
-6.5
-7
-7.5
-8
-8.5
-9
-9.5
-10
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
e_0
BSFS-1U Sample 2A
BSFS-1U Sample 2B
BSFS-2U Sample 1A
BSFS-2U Sample 1B
BSFS-2U Sample 1C
BSFS-2U Sample 2A
BSFS-2U Sample 2B
BSFS-2U Sample 2C
BSFS-2U Sample 2D
BSFS-2U Sample 3A
BSFS-3U Sample 2A
BSFS-3U Sample 2B
BSFS-3U Sample 2C
BSFS-3U Sample 3A
BSFS-3U Sample 3B
Design Value

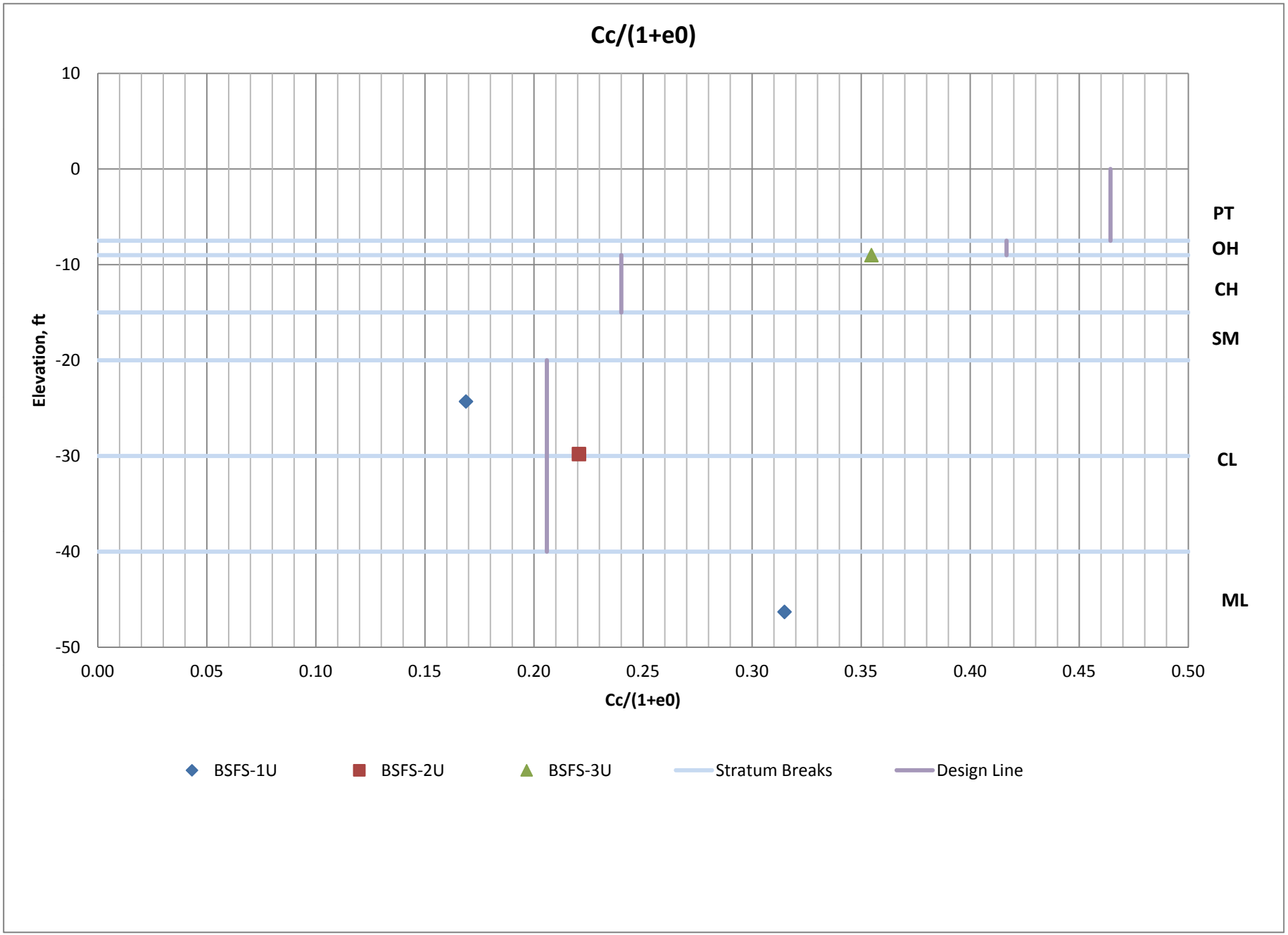
Calculation of e_0				G_s = 2.7 (assumed)		
BSFS-1U	GS=	-0.3	Depth	Elevation	w(%)	e_0
BSFS-1U Sample 2A			4	-4.3	275	7.425
BSFS-1U Sample 2B			5	-5.3	354	9.558
BSFS-1U Sample 2C			6	-6.3	629	16.983
BSFS-1U Sample 2D			7	-7.3	717	19.359
BSFS-1U Sample 3A			8	-8.3	187	5.049
BSFS-2U	GS=	0.2	Depth	Elevation		
BSFS-2U Sample 1A			0	0.2	566	15.282
BSFS-2U Sample 1B			1	-0.8	598	16.146
BSFS-2U Sample 1C			2	-1.8	645	17.415
BSFS-2U Sample 2A			4	-3.8	546	14.742
BSFS-2U Sample 2B			5	-4.8	467	12.609
BSFS-2U Sample 2C			6	-5.8	494	13.338
BSFS-2U Sample 2D			7	-6.8	872	23.544
BSFS-2U Sample 3A			8	-7.8	183	4.941
BSFS-3U	GS=	0	Depth	Elevation		
BSFS-3U Sample 2A			4	-4	488	13.176
BSFS-3U Sample 2B			5	-5	99	2.673
BSFS-3U Sample 2C			6	-6	102	2.754
BSFS-3U Sample 3A			8	-8	175	4.725
BSFS-3U Sample 3B			9	-9	207	5.589

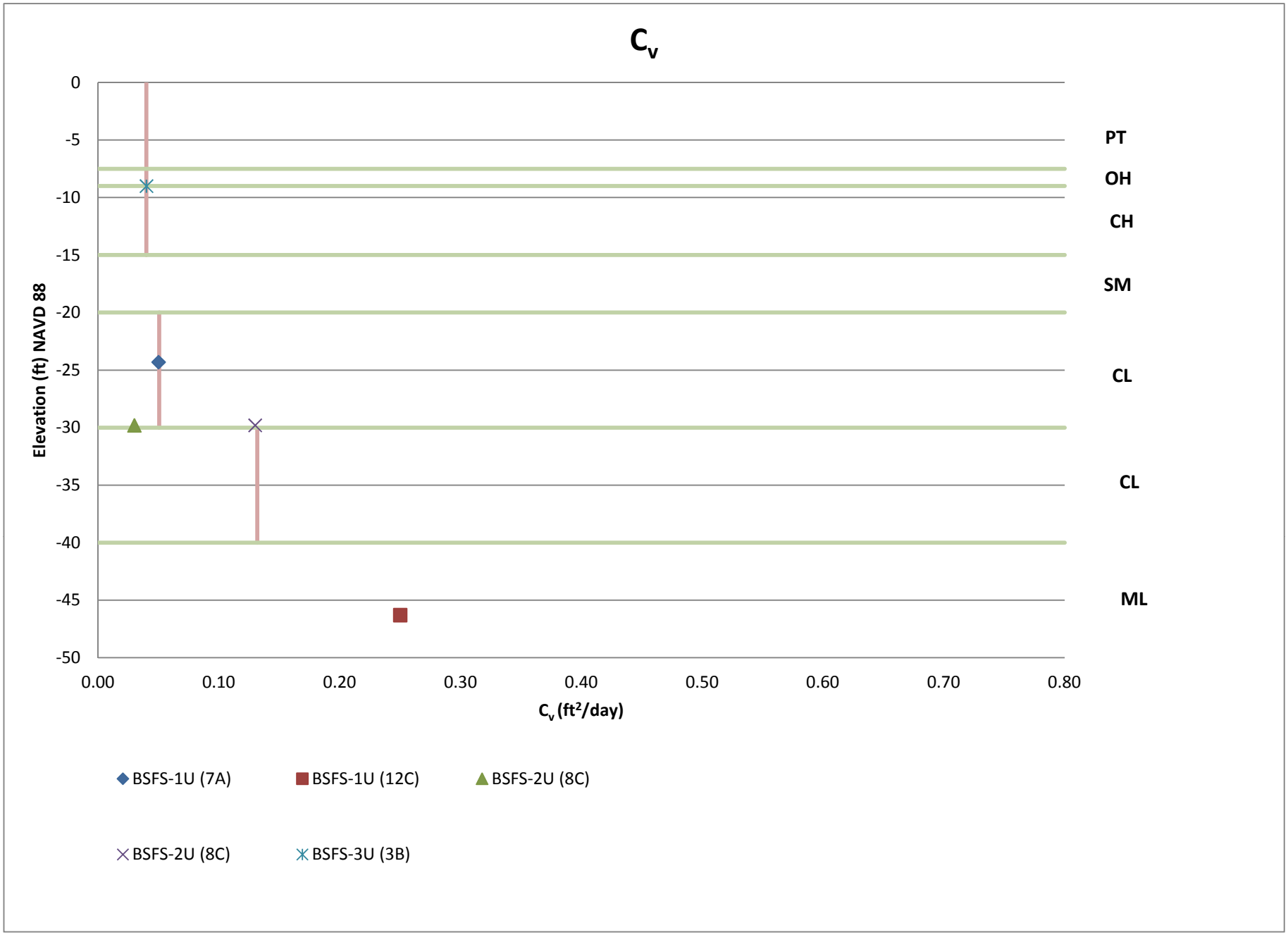
	e_0	EL
Design Value	13	0
	13	-7.5
	5	-7.5
	5	-9

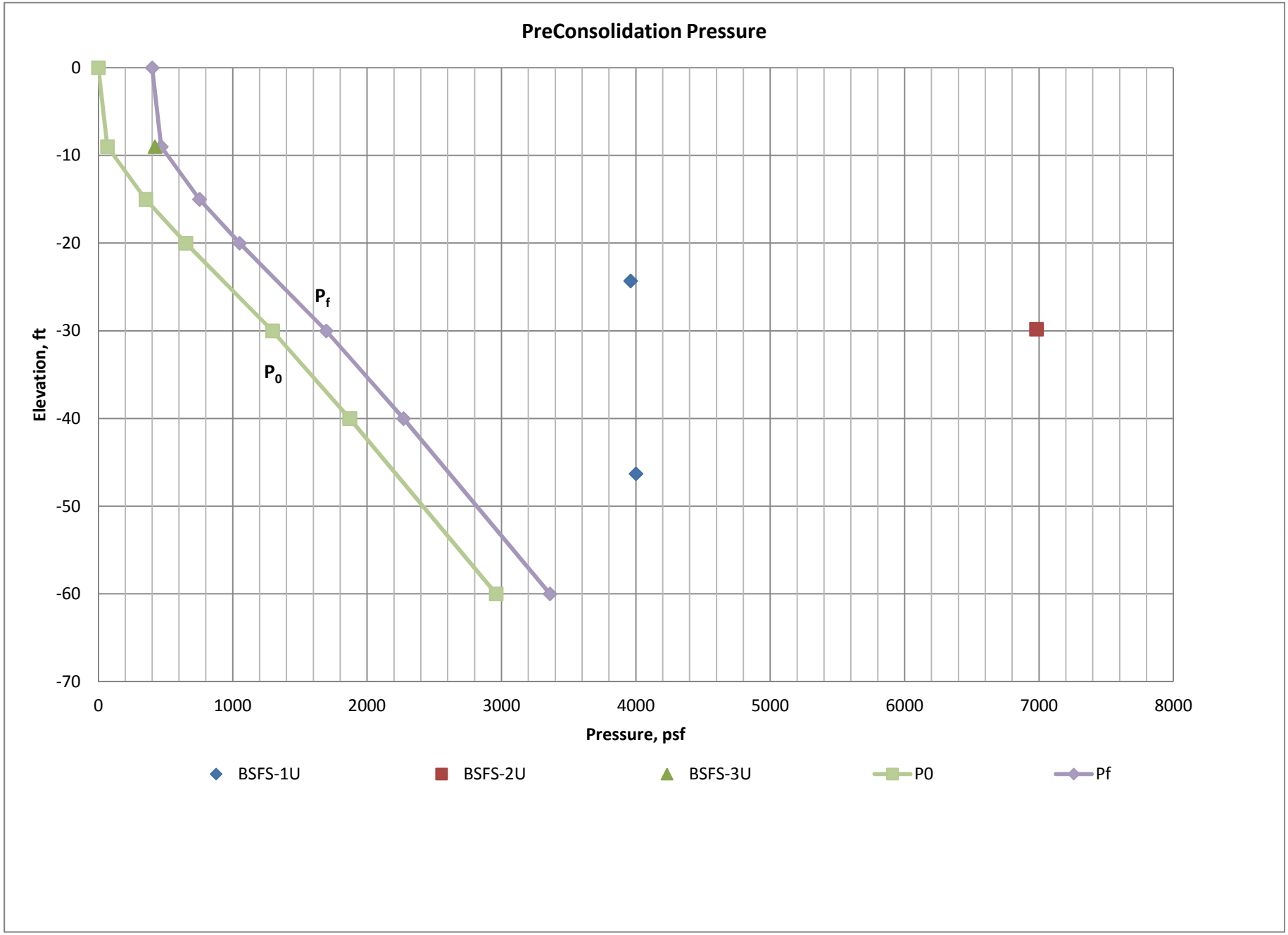

e0 EL -9 to EL -15
Elevation (ft) NAVD 88
-9
-9.5
-10
-10.5
-11
-11.5
-12
-12.5
-13
-13.5
-14
-14.5
-15
1
1.2
1.4
1.6
1.8
2
2.2
2.4
2.6
2.8
e0
BSFS-1U Sample 4A
BSFS-1U Sample 4B
BSFS-1U Sample 4C1
BSFS-2U Sample 3B
BSFS-2U Sample 3C
BSFS-2U Sample 3D
BSFS-2U Sample 4A
BSFS-2U Sample 4B
BSFS-3U Sample 3C
BSFS-3U Sample 3D
BSFS-3U Sample 4A
BSFS-3U Sample 4B
BSFS-3U Sample 4C
Design Value

Calculation of e_0				G_s = 2.7 (assumed)		
BSFS-1U	GS=	-0.3	Depth	Elevation	w(%)	e_0
BSFS-1U Sample 4A			12	-12.3	67	1.809
BSFS-1U Sample 4B			13	-13.3	51	1.377
BSFS-1U Sample 4C1			14	-14.3	51	1.377
BSFS-2U	GS=	0.2	Depth	Elevation		
BSFS-2U Sample 3B			9	-8.8	53	1.431
BSFS-2U Sample 3C			10	-9.8	41	1.107
BSFS-2U Sample 3D			11	-10.8	0	0
BSFS-2U Sample 4A			12	-11.8	48	1.296
BSFS-2U Sample 4B			13	-13.3	42	1.134
BSFS-3U	GS=	0	Depth	Elevation		
BSFS-3U Sample 3C			10	-10.3	66	1.782
BSFS-3U Sample 3D			11	-11.3	96	2.592
BSFS-3U Sample 4A			12	-12.3	55	1.485
BSFS-3U Sample 4B			13	-13.3	48	1.296
BSFS-3U Sample 4C			14	-14.3	56	1.512

	e_0	EL
Design Value	1.5	-9
	1.5	-15

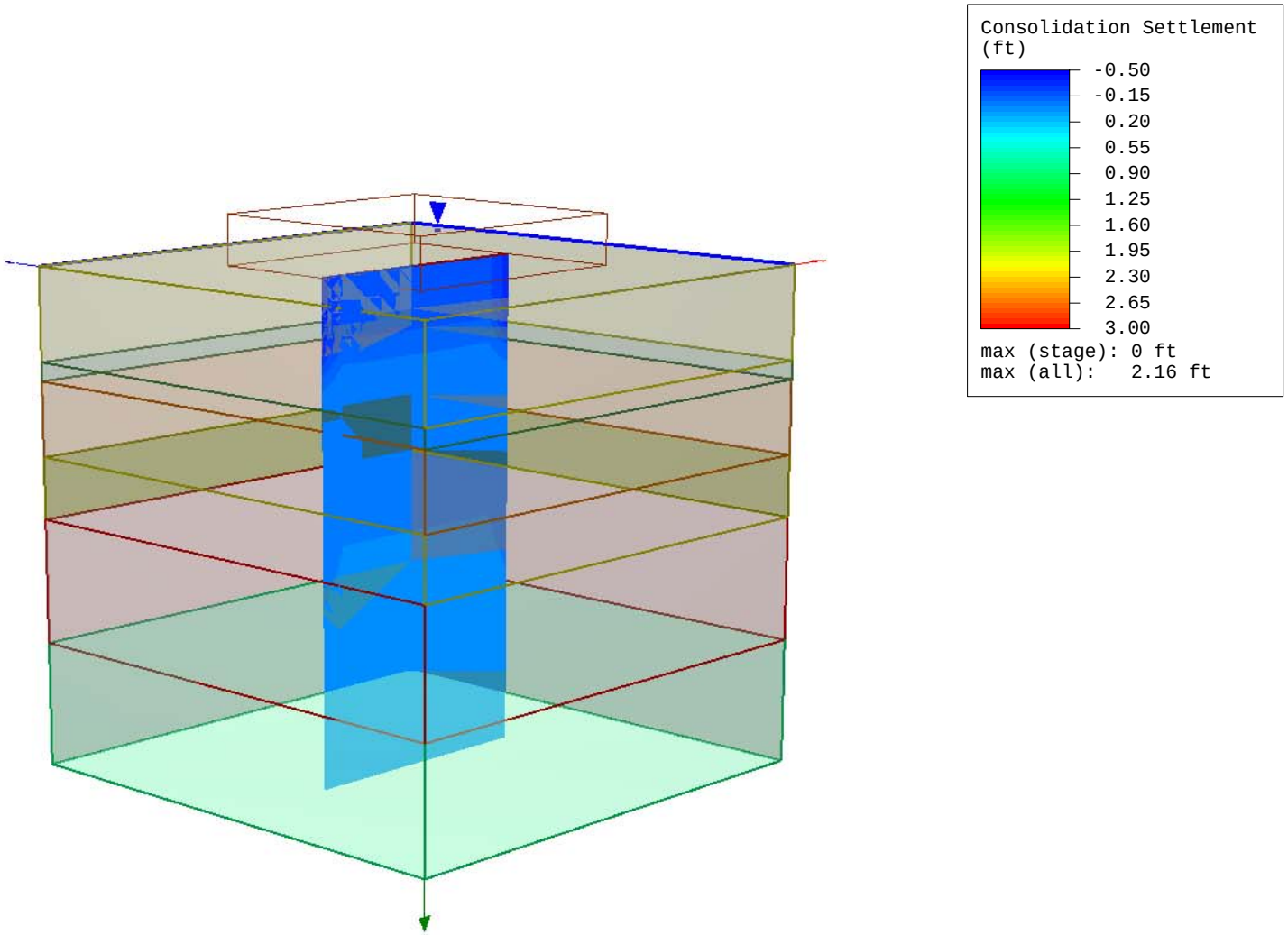

Cc/(1+e0)
10
0
-10
-20
-30
-40
-50
Elevation, ft
0.00
0.05
0.10
0.15
0.20
0.25
0.30
0.35
0.40
0.45
0.50
Cc/(1+e0)
PT
OH
CH
SM
CL
ML
BSFS-1U
BSFS-2U
BSFS-3U
Stratum Breaks
Design Line


C_v
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
Elevation (ft) NAVD 88
0.00
0.10
0.20
0.30
0.40
0.50
0.60
0.70
0.80
C_v (ft²/day)
PT
OH
CH
SM
CL
CL
ML
BSFS-1U (7A)
BSFS-1U (12C)
BSFS-2U (8C)
BSFS-2U (8C)
BSFS-3U (3B)


PreConsolidation Pressure
Elevation, ft
0
-10
-20
-30
-40
-50
-60
-70
0
1000
2000
3000
4000
5000
6000
7000
8000
Pressure, psf
P_f
P_0
BSFS-1U
BSFS-2U
BSFS-3U
P0
Pf

Stage 1 = 0 y

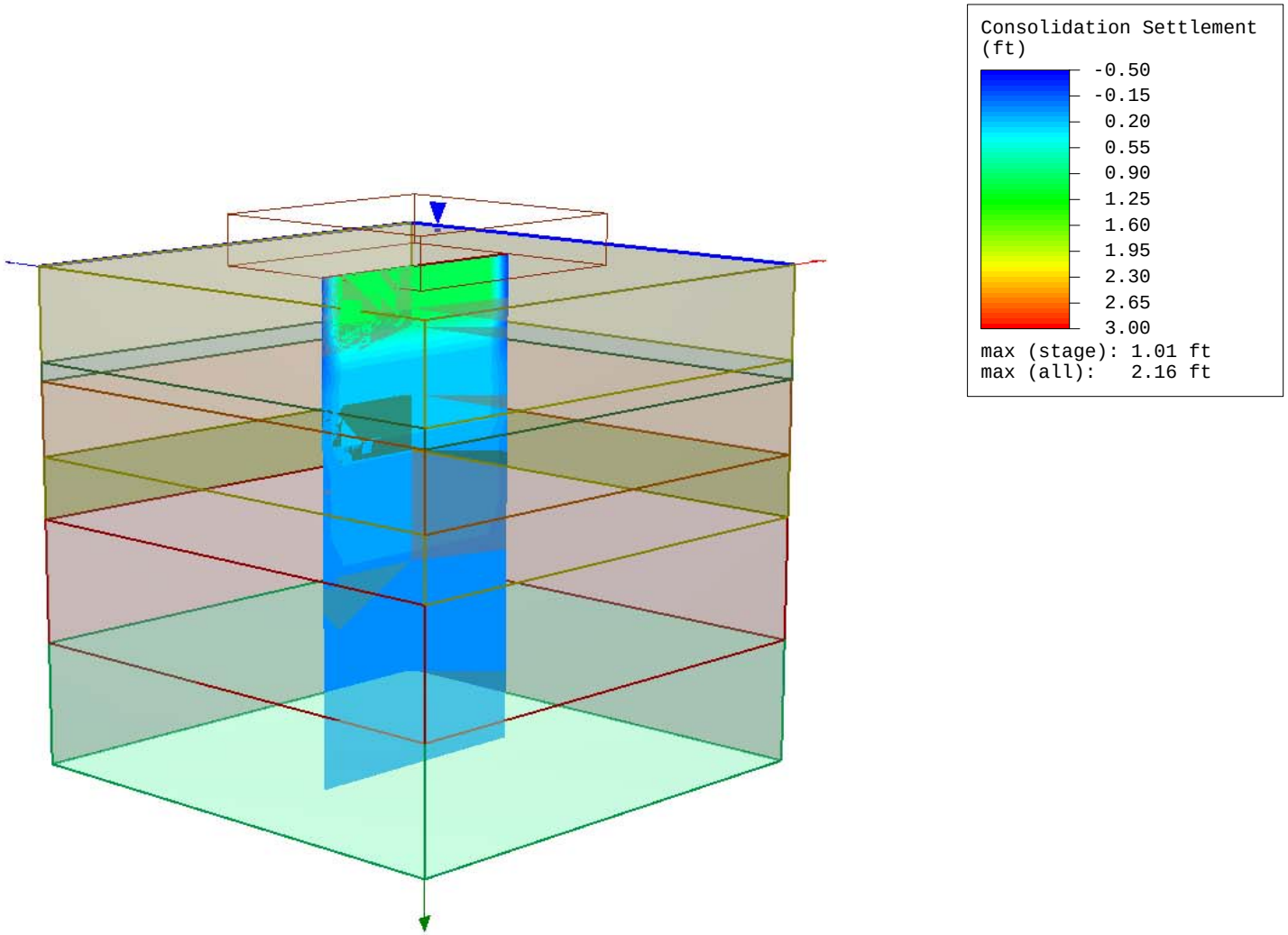
Data Type: Consolidation Settlement



rocscience	Project	
	Analysis Description	
	Drawn By	Company
SETTLE3D 2.016	Date 12/19/2013, 3:06:32 PM	File Name Project 1

Stage 2 = 1 y

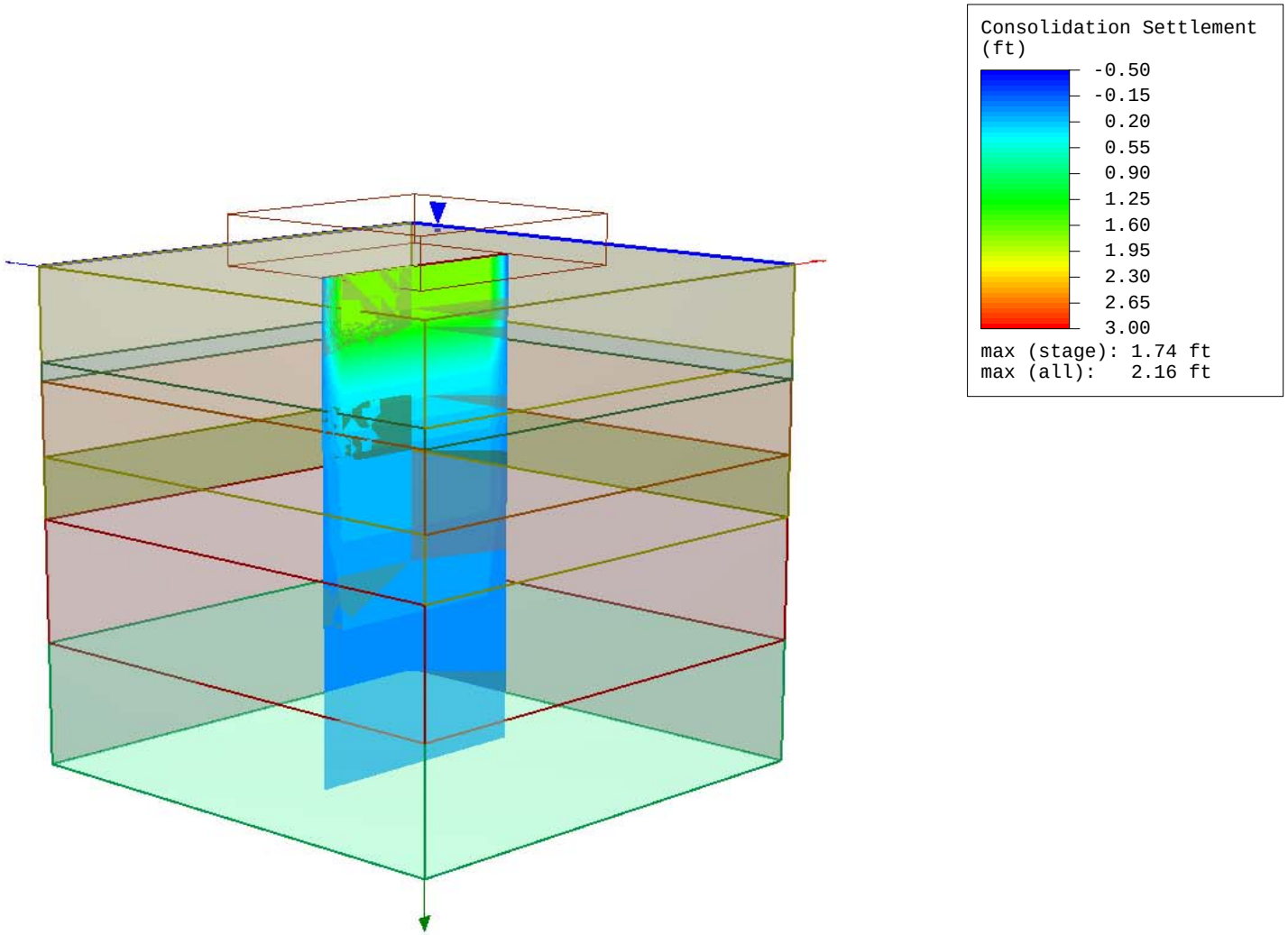
Data Type: Consolidation Settlement



rocscience	Project	
	Analysis Description	
	Drawn By	Company
SETTLE3D 2.016	Date 12/19/2013, 3:06:32 PM	File Name Project 1

Stage 3 = 2 y

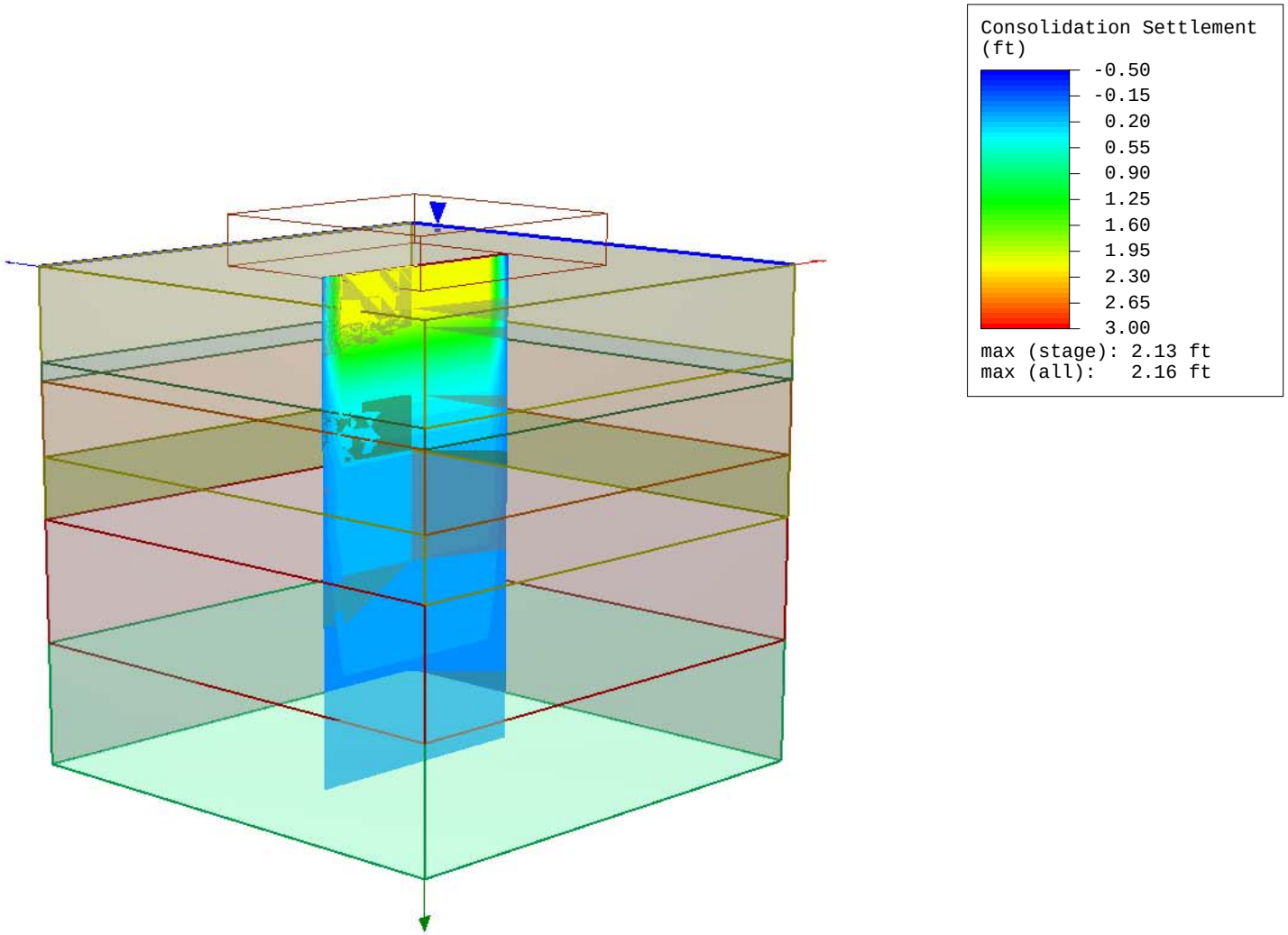
Data Type: Consolidation Settlement



rocscience	Project	
	Analysis Description	
	Drawn By	Company
SETTLE3D 2.016	Date 12/19/2013, 3:06:32 PM	File Name Project 1

Stage 4 = 5 y

Data Type: Consolidation Settlement

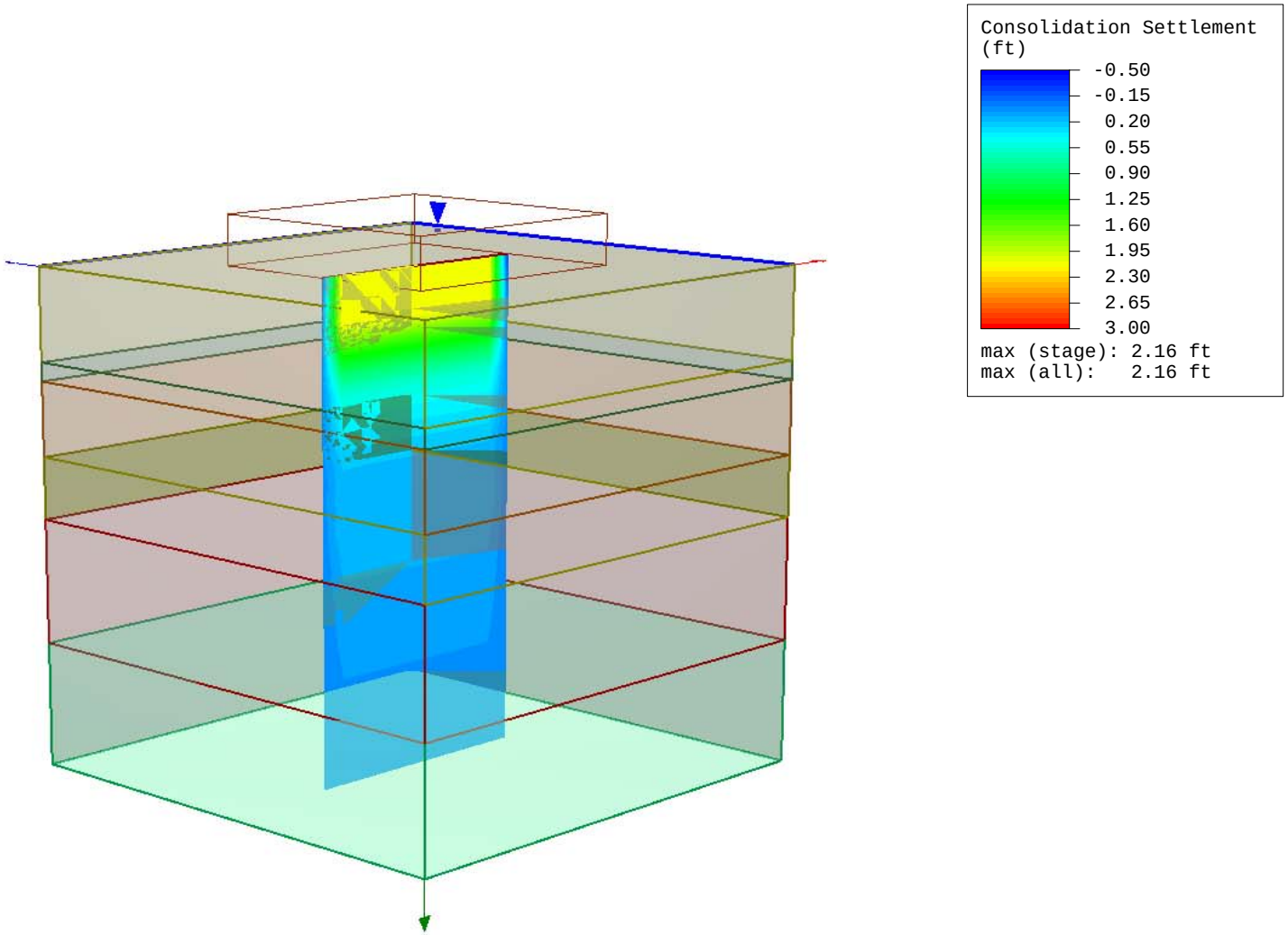


rocscience	Project	
	Analysis Description	
	Drawn By	Company
	Date 12/19/2013, 3:06:32 PM	File Name Project 1

SETTLE3D 2.016

Stage 5 = 10 y

Data Type: Consolidation Settlement



rocscience	Project	
	Analysis Description	
	Drawn By	Company
SETTLE3D 2.016	Date 12/19/2013, 3:06:32 PM	File Name Project 1

Settle3D Analysis Information

Project Settings

Document Name: Project 1
Date Created: 12/19/2013, 3:06:32 PM
Stress Computation Method: Boussinesq
Time-dependent Consolidation Analysis
Time Units: years
Permeability Units: feet/year
Include buoyancy effect when material settles below water table
Include vertical stress reduction due to settlement above a point
Use average properties to calculate layered stresses
Groundwater method: Water Table
Water Unit Weight: 0.0624 kips/ft^3
Depth to water table: 0 [ft]

Stage Settings

Stage #	Name	Time [years]
1	Stage 1	0
2	Stage 2	1
3	Stage 3	2
4	Stage 4	5
5	Stage 5	10

Results

Time taken to compute: 0.0350739 seconds

Stage: Stage 1 = 0 y

Data Type	Minimum	Maximum
Total Settlement [ft]	-0.13289	0.398469
Consolidation Settlement [ft]	-0.323117	0
Immediate Settlement [ft]	0	0.605455
Secondary Settlement [ft]	0	0
Loading Stress [ksf]	0.2	0.4
Effective Stress [ksf]	-0.0431563	1.83464
Total Stress [ksf]	0.2	4.73064
Total Strain	-0.0592473	0.04
Pore Water Pressure [ksf]	0.243156	2.896
Excess Pore Water Pressure [ksf]	0.2	0.4
Degree of Consolidation [%]	0	0
Pre-consolidation Stress [ksf]	0.007125	5.03
Over-consolidation Ratio	1	11.1575
Void Ratio	0	13.4306
Permeability [ft/y]	0	24.7506

Coefficient of Consolidation [ft^2/y]	0	48
Hydroconsolidation Settlement [ft]	0	0
Average Degree of Consolidation [%]	0	0

Stage: Stage 2 = 1 y

Data Type	Minimum	Maximum
Total Settlement [ft]	0	1.60584
Consolidation Settlement [ft]	-0.259433	1.01133
Immediate Settlement [ft]	0	0.605455
Secondary Settlement [ft]	0	0
Loading Stress [ksf]	0.2	0.4
Effective Stress [ksf]	0.00735081	2.07773
Total Stress [ksf]	0.2	4.57373
Total Strain	-0.0408161	0.247188
Pore Water Pressure [ksf]	0.122229	2.496
Excess Pore Water Pressure [ksf]	0	0.25156
Degree of Consolidation [%]	0	98.5651
Pre-consolidation Stress [ksf]	0.0554985	5.03
Over-consolidation Ratio	1	9.03138
Void Ratio	0	13.1034
Permeability [ft/y]	0	24.7506
Coefficient of Consolidation [ft^2/y]	0	48
Hydroconsolidation Settlement [ft]	0	0
Average Degree of Consolidation [%]	0	81.5036

Stage: Stage 3 = 2 y

Data Type	Minimum	Maximum
Total Settlement [ft]	0	2.31597
Consolidation Settlement [ft]	-0.0869945	1.73549
Immediate Settlement [ft]	0	0.605455
Secondary Settlement [ft]	0	0
Loading Stress [ksf]	0.2	0.4
Effective Stress [ksf]	0.0447398	2.0176
Total Stress [ksf]	0.2	4.5136
Total Strain	-0.0142169	0.326491
Pore Water Pressure [ksf]	0.151116	2.496
Excess Pore Water Pressure [ksf]	0	0.11421
Degree of Consolidation [%]	0	96.9143
Pre-consolidation Stress [ksf]	0.0554985	5.03
Over-consolidation Ratio	1	9.63148
Void Ratio	0	13.199
Permeability [ft/y]	0	24.7506
Coefficient of Consolidation [ft^2/y]	0	48
Hydroconsolidation Settlement [ft]	0	0
Average Degree of Consolidation [%]	0	92.8093

Stage: Stage 4 = 5 y

Data Type	Minimum	Maximum

Total Settlement [ft]	0	2.7025
Consolidation Settlement [ft]	-0.190738	2.12983
Immediate Settlement [ft]	0	0.605455
Secondary Settlement [ft]	0	0
Loading Stress [ksf]	0.2	0.4
Effective Stress [ksf]	0.0152105	1.98368
Total Stress [ksf]	0.2	4.47968
Total Strain	-0.0486145	0.366249
Pore Water Pressure [ksf]	0.184789	2.496
Excess Pore Water Pressure [ksf]	0	0.0119779
Degree of Consolidation [%]	0	98.0298
Pre-consolidation Stress [ksf]	0.0554985	5.03
Over-consolidation Ratio	1	10.4507
Void Ratio	0	13.6806
Permeability [ft/y]	0	24.7506
Coefficient of Consolidation [ft^2/y]	0	48
Hydroconsolidation Settlement [ft]	0	0
Average Degree of Consolidation [%]	0	99.5092

Stage: Stage 5 = 10 y

Data Type	Minimum	Maximum
Total Settlement [ft]	0	2.73085
Consolidation Settlement [ft]	-0.20339	2.15876
Immediate Settlement [ft]	0	0.605455
Secondary Settlement [ft]	0	0
Loading Stress [ksf]	0.2	0.4
Effective Stress [ksf]	0.0127056	1.98112
Total Stress [ksf]	0.2	4.47712
Total Strain	-0.0531057	0.368851
Pore Water Pressure [ksf]	0.187294	2.496
Excess Pore Water Pressure [ksf]	0	0.000278865
Degree of Consolidation [%]	0	99.2637
Pre-consolidation Stress [ksf]	0.0554985	5.03
Over-consolidation Ratio	1	10.5159
Void Ratio	0	13.7435
Permeability [ft/y]	0	24.7506
Coefficient of Consolidation [ft^2/y]	0	48
Hydroconsolidation Settlement [ft]	0	0
Average Degree of Consolidation [%]	0	99.9944

Embankments

1. Embankment

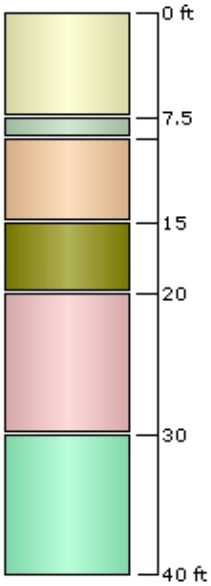
Center Line: (0, 0) to (100000, 0)
Number of Layers: 1
Near End Angle: 90 degrees
Far End Angle: 90 degrees
Base Width: 100000

Layer	Stage	Left Bench Width (ft)	Left Angle (deg)	Height (ft)	Unit Weight (kips/ft^3)	Right Angle (deg)	Right Bench Width (ft)
1	Stage 1 = 0 y	0	90	4	0.1	90	0

Soil Layers

Layer #	Type	Thickness [ft]	Depth [ft]	Drained at Bottom
1	GS to EL -7.5 (PT)	7.5	0	No
2	EL -7.5 TO EL -9 (OH)	1.5	7.5	No
3	EL -9 TO EL -15 (CH)	6	9	Yes
4	EL -15 TO EL -20 (SM)	5	15	No
5	EL -20 TO EL -30 (CL)	10	20	No
6	EL -30 TO EL -40 (CL)	10	30	Yes

Ground Surface Drained: Yes



Soil Properties

Property	GS to EL -7.5 (PT)	EL -7.5 TO EL -9 (OH)	EL -9 TO EL -15 (CH)	EL -15 TO EL -20 (SM)	EL -20 TO EL -30 (CL)	EL -30 TO EL -40 (CL)
Color						
Unit Weight [kips/ft^3]	0.07	0.07	0.11	0.122	0.127	0.12
Saturated Unit Weight [kips/ft^3]	0.07	0.07	0.11	0.122	0.127	0.12
Immediate Settlement	Enabled	Enabled	Enabled	Disabled	Enabled	Enabled
Es [ksf]	10	15	20		55	55
Esur [ksf]	10	15	20		55	55
Primary Consolidation	Enabled	Enabled	Enabled	Disabled	Enabled	Enabled
Material Type	Non-Linear	Non-Linear	Non-Linear		Non-Linear	Non-Linear
Cc	6.5	2.5	0.6		0.35	0.35

Cr	1.2	0.5	0.12		0.07	0.07
e0	13	5	1.5		0.7	0.7
OCR	1	1	1	10	1	1
Cv [ft^2/y]	14	14	14		18	48
B-bar	1	1	1		1	1

Query Lines

Line #	Start Location	End Location	Horizontal Divisions	Vertical Divisions
1	0, 0	100000, 0	10	21

Site 5 Settlement vs. Time
Elevation (ft) NAVD 88
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
0
1
2
3
4
5
6
7
8
9
10
11
Years
Fill +4

	Fill +4		
Year	Consolidation Settlement From Settle3D	Shrinkage	Elevation
0	0	0	4
1	1.01	0.10	2.89
2	1.74	0.33	1.93
5	2.13	0.72	1.15
10	2.16	0.98	0.86

25% Fill Shrinkage - Above the Water Line

	Fill Shrinkage	10.00%	33.00%	50.00%	63.00%	72.00%	98.00%
		1	**2**	**3**	**4**	**5**	**10**
Fill @ El +4	1	0.10	0.33	0.50	0.63	0.72	0.98

10% Fill Consolidation - Below the Water Line

Fill Consolidation	10.00%	33.00%	50.00%	63.00%	72.00%	98.00%
	1	**2**	**3**	**4**	**5**	**10**
0	0.00	0.00	0.00	0.00	0.00	0.00

APPENDIX B

LABORATORY TEST DATA

SUMMARY OF LABORATORY TEST RESULTS

Project: Soil Boring and Testing for Bayou Sauvage Flood Side Intermediate Mars Assigned By: _____

Project Number: 10-0170108 Current Date: 8/17/2012

Boring: BSFR-1G

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
1	0.0	VSO DGR CL6 W/ SIF	CL6		49												
2	1.0	VSO DGR CL6 W/ SIF	CL6		57												
3	2.0	VSO GR CL6 W/ SIF	CL6		48								45	16	29		
4	3.0	VSO GR CL6 W/ SIF	CL6		55												
5	4.0	VSO GR CL6	CL6		52												
6	5.0	VSO GR CH3	CH3		67												
7	6.0	VSO GR CH4	CH4		81												
8	7.0	VSO GR CH4	CH4		88								93	27	66		
9	8.0	SO GR CH2 W/ SIF	CH2		46												
10	9.0	VSO GR CH4	CH4		70												
11	10.0	SO GR CH3	CH3		53												
12	11.0	VSO GR CH4	CH4		85												
13	12.0	VSO GR CH4	CH4		75								78	21	57		
14	13.0	VSO GR CH4	CH4		83												
15	14.0	SO GR CH3	CH3		64												
16	15.0	VSO GR CH4	CH4		72												
17	16.0	M GR CH3 W/ ARS SP	CH3		40												
18	17.0	M GR CH3 W/ ARS SP	CH3		51								59	20	39		
19	18.0	M GR CH3 W/ ARS SP	CH3		51												
20	19.0	SO GR CH3	CH3		63												
21	20.0	SO GR CH3	CH3		62												
22	21.0	M GR CH3	CH3		42												
23	22.0	M GR CH3	CH3		42								74	24	50		
24	23.0	M GR CH3 W/ SIF	CH3		50												
25	24.0	M GR CH3 W/ SIF	CH3		49												
26	25.0	M GNG CL6	CL6		29												

Remarks: FUGRO CONSULTANTS, INC.

FFEB JV, LLC

Checked By: BN/ERM/BEC

File Name: 1G Bigeasy.xlsm

SUMMARY OF LABORATORY TEST RESULTS

Project: Soil Boring and Testing for Bayou Sauvage Flood Side Intermediate Mars Assigned By: _____

Project Number: 10-0170108 Current Date: 8/17/2012

Boring: BSFR-2G

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
1	0.0	VSO GR CH2	CH2		53												
2	1.0	VSO GR CH2	CH2		59												
3	2.0	VSO GR CL6	CL6		44								45	20	25		
4	3.0	VSO GR CH2	CH2		62												
5	4.0	VSO GR CH2	CH2		60												
6	5.0	VSO GR CH2	CH2		59												
7	6.0	SO GR CH4	CH4		77												
8	7.0	VSO GR CH4	CH4		85								79	31	48		
9	8.0	SO GR CH4	CH4		77												
10	9.0	SO GR CH4	CH4		74												
11	10.0	VSO GR CH4	CH4		81												
12	11.0	VSO GR CH4	CH4		85												
13	12.0	SO GR CH4	CH4		78								90	31	59		
14	13.0	M GNG CL6	CL6		27												
15	14.0	M GNG CL6	CL6		27												
16	15.0	M GNG CL6	CL6		25												
17	16.0	M GNG CL6	CL6		29												
18	17.0	M GNG CL6	CL6		31								44	20	24		
19	18.0	M GNG CL6 W/ OX	CL6		36												
20	19.0	M BR & GR CL6 W/ OX	CL6		31												
21	20.0	M BR & GR CL6	CL6		34												
22	21.0	SO BR & GR CH2	CH2		46												
23	22.0	M BR & GR CL6	CL6		36								46	17	29		
24	23.0	M BR & GR CL6	CL6		38												
25	24.0	M GR CL6	CL6		36												

Remarks: FUGRO CONSULTANTS, INC.

FFEB JV, LLC

Checked By: BN/ERM/BEC

File Name: 2G Bigeasy.xlsm

SUMMARY OF LABORATORY TEST RESULTS

Project: Soil Boring and Testing for Bayou Sauvage Flood Side Intermediate Mars Assigned By: _____

Project Number: 10-0170108 Current Date: 8/17/2012

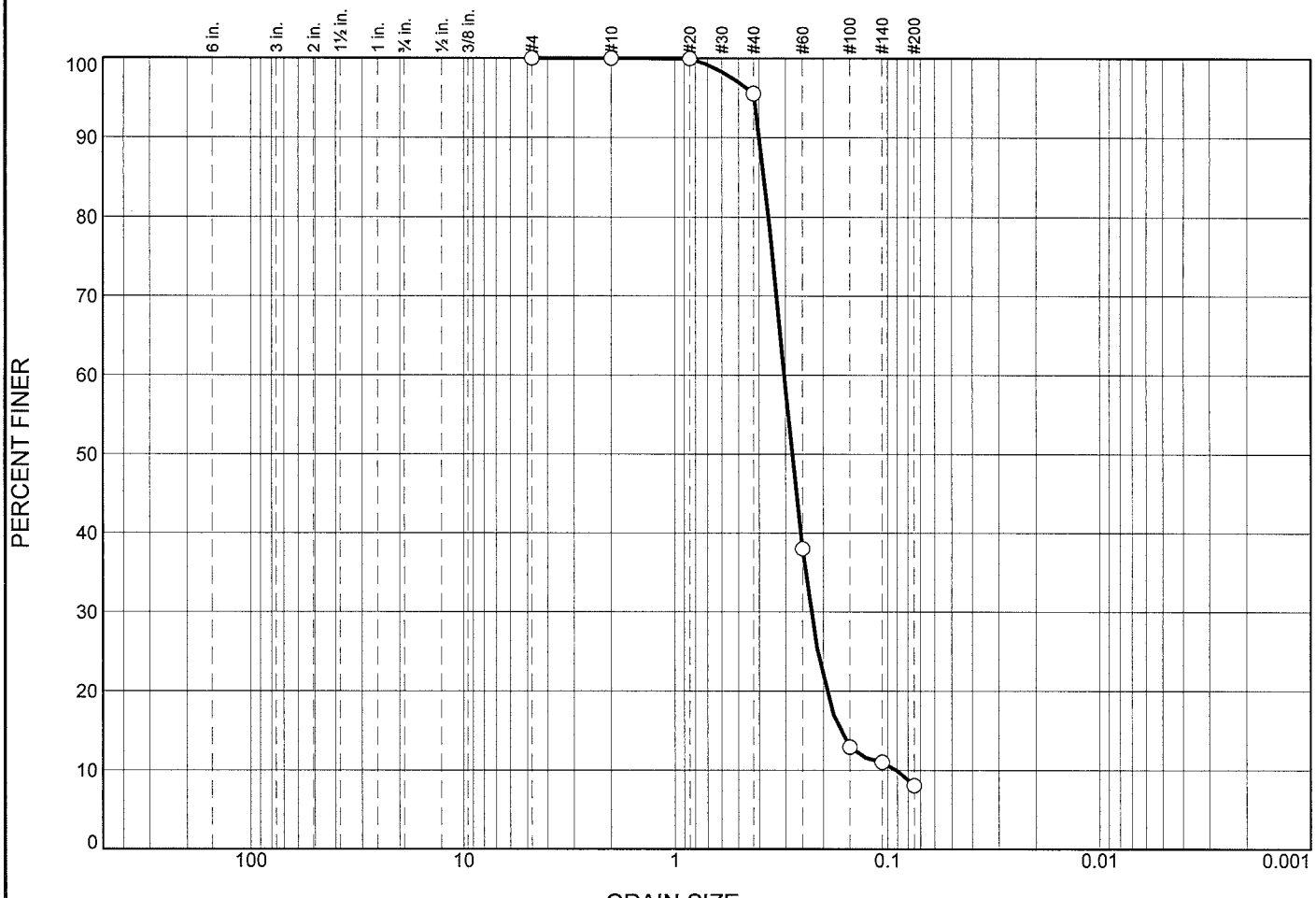
Boring: BSFR-3G

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
1	0.0	VSO DGR CL4	CL4		49												
2	1.0	VSO DGR CH2	CH2		67												
3	2.0	VSO DGR CH2 W/ O	CH2		53								58	19	39		
4	3.0	VSO GR CH4 W/ LNS ML	CH4		71												
5	4.0	VSO GR CH4 W/ O	CH4		90												
6	5.0	VSO GR CH4	CH4		73												
7	6.0	VSO GR CH4 W/ O	CH4		79												
8	7.0	VSO GR CH4 W/ O	CH4		84								95	28	67		
9	8.0	SO GR CL4 W/ SIF, ARS SP	CL4		32												
10	9.0	SO GR CL4 W/ ARS SP, WD, SIF	CL4		34												
11	10.0	VSO GR CH2 W/ SIF	CH2		63												
12	11.0	VSO GR CH2 W/ SIF	CH2		63												
13	12.0	SO GR CL4 W/ ARS SP	CL4		33								31	15	16		
14	13.0	M T & GR CL4	CL4		26												
15	14.0	ST T & GR CL4	CL4		21												
16	15.0	ST T & GR CL4 W/ ARS SP	CL4		23												
17	16.0	ST GNG CL4	CL4		22												
18	17.0	ST GNG CL6	CL6		28								43	15	28		
19	18.0	ST GNG CL6 W/ ARS SP	CL6		26												
20	20.0	BR & GR ML	ML		22												
21	21.0	M BR & GR CH3 W/ LYS ML, OX	CH3		44												
22	22.0	ST GR CH2 W/ LYS ML	CH2		32								57	18	39		
23	23.0	LGR SP W/ LYS & LNS ML	SP		23												SV
24	24.0	T & LGR SP W/ LYS & LNS ML	SP		22												

Remarks: FUGRO CONSULTANTS, INC.
FFEB JV, LLC

Checked By: BN/ERM/BEC
File Name: 3G Bigeasy.xlsm

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	4.4	87.6	8.0	

╳	Colloids	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○				0.3773	0.3042	0.2797	0.2277	0.1672	0.0910	1.87	3.34

Material Description	USCS	AASHTO
○ LGR SP W/ LYS & LNS ML		

Project No. 10-0170108 **Client:** United States Army Corps of Engineers

Project: Soil Boring and Testing for Bayou Sauvage Flood Side Intermediate Marsh Restoration

○ **Source of Sample:** BSFR-3G **Depth:** 23.0 **Sample Number:** 23

Date: ○ 08/15/2012

Remarks:

Fugro Consultants, Inc.

Baton Rouge, LA

Figure

Tested By: EEL **Checked By:** BN

SUMMARY OF LABORATORY TEST RESULTS

Project: Soil Boring and Testing for Bayou Sauvage Flood Side Intermediate Mars Assigned By: _____

Project Number: 10-0170108 Current Date: 8/17/2012

Boring: BSFR-4G

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
1	0.0	VSO DGR CH3	CH3		67												
2	1.0	VSO DGR CH3	CH3		80												
3	2.0	SO DGR CH3 W/ SIF	CH3		59								59	21	38		
4	3.0	VSO GR CH3 W/ WD, O	CH3		78												
5	4.0	VSO GR CH4 W/ O	CH4		91												
6	5.0	VSO GR CH4 W/ O	CH4		101												
7	6.0	SO GR CL4 W/ SIF	CL4		40												
8	7.0	SO GR CL4 W/ SIF	CL4		33								29	15	14		
9	8.0	SO GR CL4 W/ SIF	CL4		36												
10	9.0	SO GR CH2	CH2		50												
11	10.0	SO GR CL4	CL4		36												
12	11.0	M GR CL6	CL6		28												
13	12.0	M GNG CL6	CL6		26								44	15	29		
14	13.0	ST GR CL6	CL6		23												
15	14.0	VST GR CL6 W/ OX	CL6		20												
16	15.0	ST GR CL6 W/ LNS ML, OX	CL6		23												
17	16.0	ST GNG CL6 W/ LNS ML, OX	CL6		24												
18	17.0	VST GNG CH3 W/ OX, O	CH3		31								67	24	43		
19	18.0	ST GNG CH3 W/ OX	CH3		40												
20	20.0	ST GR & T CH3	CH3		41												
21	21.0	ST GR & BR CH3 W/ LNS ML	CH3		40												
22	22.0	M GR & BR CH3	CH3		43								61	22	39		
23	23.0	ST BR & GR CH3 W/ LNS ML	CH3		40												
24	24.0	M BR & GR CH3 W/ OX, LNS ML	CH3		44												

Remarks: FUGRO CONSULTANTS, INC.

FFEB JV, LLC

Checked By: BN/ERM/BEC

File Name: 4G Bigeasy.xlsm

SUMMARY OF LABORATORY TEST RESULTS

Project: Soil Boring and Testing for Bayou Sauvage Flood Side Intermediate Mars Assigned By: _____

Project Number: 10-0170108 Current Date: 8/17/2012

Boring: BSFR-5G

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
1	0.0	VSO DGR CHOA	CHOA		78												
2	1.0	SO DGR CH3	CH3		53												
3	2.0	VSO DGR CH3	CH3		75								64	15	49		
4	3.0	SO DGR CH3	CH3		57												
5	4.0	SO GR CH3	CH3		59												
6	5.0	SO GR CH3	CH3		54												
7	6.0	SO GR CH3	CH3		62												
8	7.0	SO GR CL4	CL4		34								32	13	19		
9	8.0	SO GR CL4 W/ SIF	CL4		31												
10	9.0	SO GR CL4	CL4		31												
11	10.0	SO GR CL4 W/ WD	CL4		33												
12	11.0	SO GR CH2 W/ LNS ML	CH2		50												
13	12.0	SO GR CH2 W/ LNS ML	CH2		52								55	14	41		
14	13.0	M GR CL6 W/ LNS ML	CL6		31												
15	14.0	M GR CL6	CL6		27												
16	15.0	M GR CL6	CL6		27												
17	16.0	M GR CL6	CL6		25												
18	17.0	M GNG CL6 W/ OX	CL6		28								49	16	33		
19	18.0	M GNG CL6	CL6		28												
20	19.0	M GNG CL6	CL6		27												
21	20.0	M GNG CL6	CL6		28												
22	22.0	M GNG CL4	CL4		25								30	19	11		
23	23.0	M GNG CL6	CL6		28												
24	24.0	M GNG CH2	CH2		43												

Remarks: FUGRO CONSULTANTS, INC.

FFEB JV, LLC

Checked By: BN/ERM/BEC

File Name: 5G Bigeasy.xlsm

SUMMARY OF LABORATORY TEST RESULTS

Project: Soil Boring and Testing for Bayou Sauvage Flood Side Intermediate Mars Assigned By: _____

Project Number: 10-0170108 Current Date: 8/17/2012

Boring: BSFR-6G

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
1	0.0	VSO GR CH3 W/ SIF, O	CH3		65												
2	1.0	SO GR CH3 W/ ARS SP	CH3		47												
3	2.0	SO GR CH3 W/ SIF	CH3		50								55	17	38		
4	3.0	SO GR CH3 W/ LYS ML	CH3		48												
5	4.0	SO GR CH3 W/ LNS ML	CH3		50												
6	5.0	VSO GR CH4 W/ O	CH4		78												
7	6.0	VSO GR CH4 W/ O	CH4		71												
8	7.0	VSO GR CH4 W/ SIF, O	CH4		77								77	24	53		
9	8.0	SO GR CH3 W/ O	CH3		51												
10	9.0	SO GR CH4	CH4		69												
11	10.0	SO GR CH4	CH4		70												
12	11.0	VSO GR CH4	CH4		82												
13	12.0	VSO GR CH4 W/ OX, ARS SP	CH4		79								96	23	73		
14	13.0	M LGR CL4 W/ OX, ARS SP	CL4		25												
15	14.0	M LGR CL4 W/ OX	CL4		26												
16	16.0	M LGR CL4	CL4		27												
17	17.0	M LGR CL4	CL4		27								37	18	19		
18	18.0	M LGR CL4	CL4		29												
19	19.0	M LGR CL4	CL4		29												
20	20.0	LGR ML W/ LYS CH	ML		35												
21	21.0	LGR ML W/ LYS CH	ML		32												
22	22.0	LGR ML W/ LYS CH	ML		33								27	21	6		
24	24.0	M LGR & BR CH3 W/ LYS SM	CH3		45												
25	25.0	M BR CL4	CL4		28												

Remarks: FUGRO CONSULTANTS, INC.

FFEB JV, LLC

Checked By: BN/ERM/BEC

File Name: 6G Bigeasy.xlsm

SUMMARY OF LABORATORY TEST RESULTS

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Paris Assigned By: _____

Project Number: 12-017108

Current Date: 8/23/2012

Boring: BSFR-12U

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
1	0.0	VSO BK PT W/ RT	PT		306												
2A	2.0	VSO BK PT W/ RT, WD	PT		260												
2B	3.0	VSO BK CH4 W/ LYS O, WD	CH4		84												
2C	4.0	VSO GR CH4 W/ LNS ML, WD	CH4	14	63	64	104	100	UC	-	98	195	77	24	53	0.10	
3A	6.0	VSO GR CH4 W/ LNS ML	CH4		57	14	22	72					78	24	54		GS=2.80, CON
3B	7.0	VSO GR CH4 W/ LNS ML	CH4		84												
3C	8.0	VSO GR CH4 W/ LNS ML	CH4		44	78	113	100	UU	0	151		79	15	64	0.10	
3D	9.0	VSO GR CH4 W/ LNS & LYS ML	CH4		78												
4A	10.0	VSO GR CH4 W/ LNS ML	CH4		97												
4B	11.0	VSO GR CH4 W/ LNS ML	CH4		102												
4C	12.0	VSO GR CH2 W/ LNS ML	CH2	11	79	55	98	100	UC	-	136	272	50	18	32	0.12	
4D	13.0	VSO GR CH2 W/ LYS & LNS SM, SIF	CH2		52												
5A	14.0	VSO GR CH2 W/ ARS SM, SIF	CH2		61												
5B	15.0	SO GR CL4 W/ ARS & LYS SM, SIF	CL4		39	10	13	100					33	15	18		GS=2.66, CON
5C	16.0	SO GR CH2 W/ ARS & LNS SM, SIF	CH2		44												
5D	17.0	VSO GR CH2 W/ ARS & LNS SM, SIF	CH2		59	65	104	100	UU	0	173		54	14	40	0.19	
6A	18.0	VSO GR CH2 W/ ARS & LNS SP, SIF	CH2		56												
6B	19.0	SO GR CH2 W/ ARS & LNS SP, SIF	CH2		40												
6C	20.0	SO GR CH2 W/ ARS & LNS SP, SIF	CH2		42												
6D	21.0	SO GR CL6 W/ ARS & LNS SP, SIF	CL6	5	41	82	115	100	UC	-	264	528	43	16	27	0.22	
7A	22.0	GNG ML W/ ARS CH	ML		26												
7B	23.0	GNG ML W/ ARS CH	ML		22												
7C	24.0	GNG ML W/ ARS CH	ML		22												
8A	26.0	M GNG & T CH2 W/ LNS ML	CH2		33												
8B	27.0	ST GNG & T CH2 W/ LNS ML	CH2		25	101	126	99	UU	0	1237		56	16	40	0.90	
8C	28.0	ST GNG & T CH2 W/ LNS ML	CH2		25												
8D	29.0	ST GNG & T CH2 W/ LNS ML	CH2		27												
9A	30.0	SO GNG & T CL6 W/ LNS ML	CL6		48												
9B	31.0	M GNG & T CL6 W/ LNS ML	CL6		31												
9C	32.0	M GNG & T CL6 W/ LNS ML	CL6		31												
9D	33.0	ST GNG & T CL6 W/ LNS ML	CL6	8	28	96	123	99	UC	-	1076	2153	44	17	27	0.80	
10A	34.0	SO GNG & T CL6 W/ ARS & LYS SP	CL6		40												
10B	35.0	M GNG & T CL6 W/ ARS & LYS SP	CL6		34												
10C	36.0	GR & GNG SM W/ LYS CH	SM		33												SV
10D	37.0	GR & GNG SM W/ LYS CH	SM		30												

Remarks: _____

Checked By: _____

Stantec Consulting Services Inc.

File Name: Final BSFR-12U_be_boring_log_v1

SUMMARY OF LABORATORY TEST RESULTS

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Paris Assigned By: _____

Project Number: 12-017108

Current Date: 8/23/2012

Boring: BSFR-12U

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
11A	38.0	SO GR & T CH2 W/ ARS & LNS SP	CH2		39												
11B	39.0	SO GR CH2 W/ ARS & LNS SP, WD	CH2		43	81	116	100	UU	0	346		52	15	37	0.28	
11C	40.0	SO GR CH2 W/ ARS & LNS SP	CH2		43												
11D	41.0	SO GR CH2 W/ ARS & LNS SP	CH2		42												

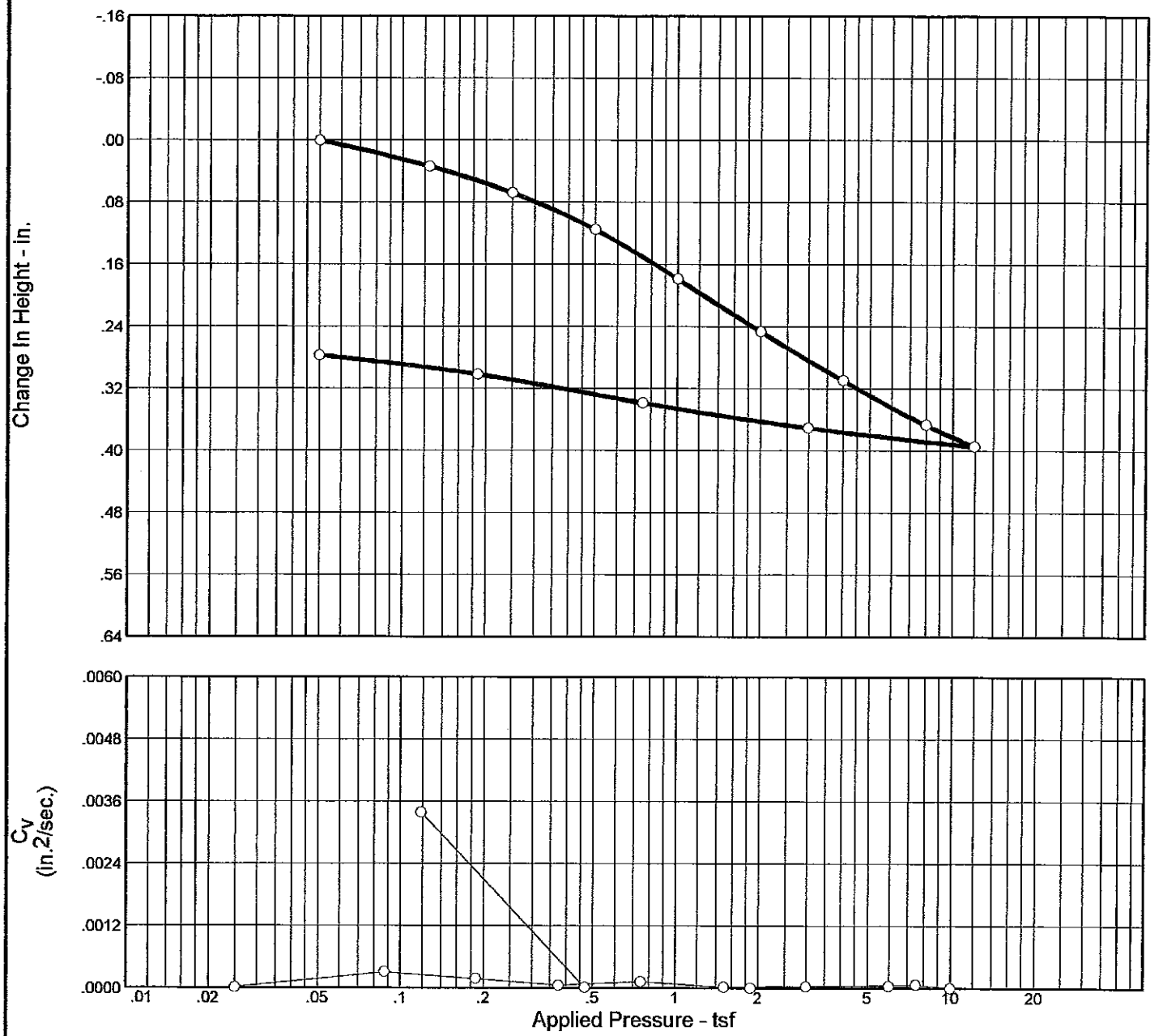
Remarks: _____

Checked By: _____

Stantec Consulting Services Inc.

File Name: Final BSFR-12U_be_boring_log_v1

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture							
72.0 %	57.2 %	8.1	78	54	2.80	0.06	0.51	2.222

MATERIAL DESCRIPTION	USCS	AASHTO
VSO GR CH4 W/ LNS ML	CH3	

Project No. 12-017108 **Client:** USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

Source: BSFR-12U **Sample No.:** 3A **Elev./Depth:** 6.0

FFEBJV, LLC

St Rose, LA

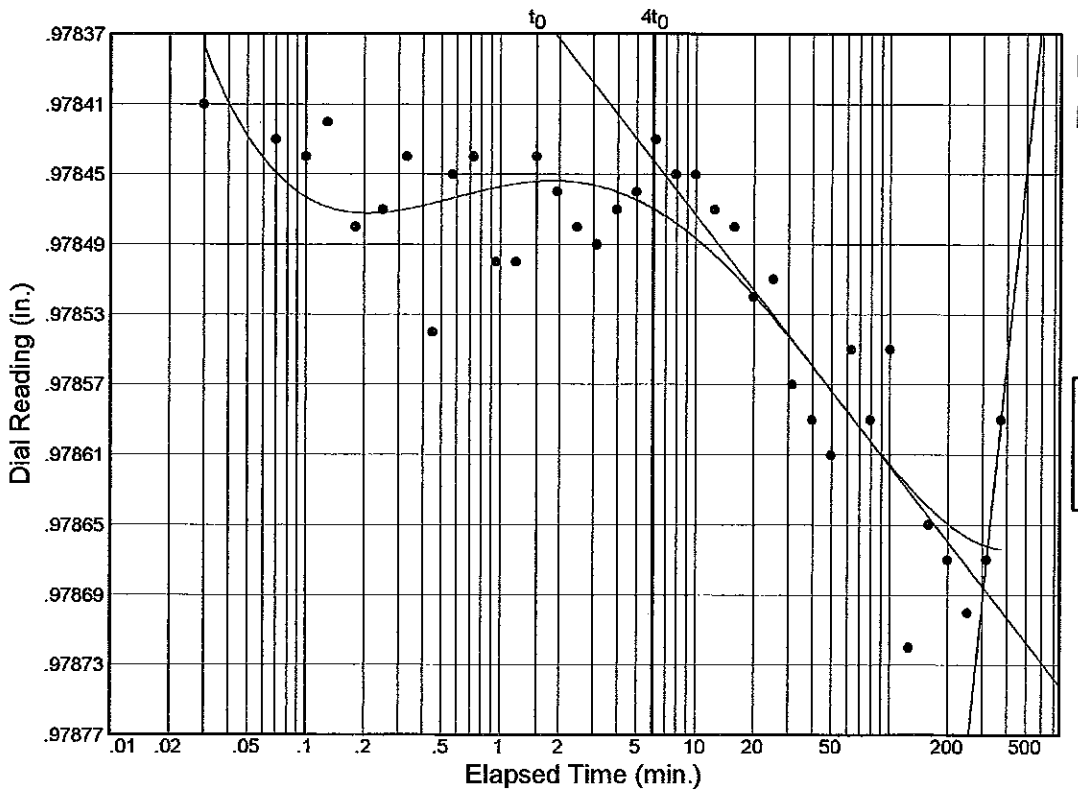
Remarks:

Figure

Dial Reading vs. Time

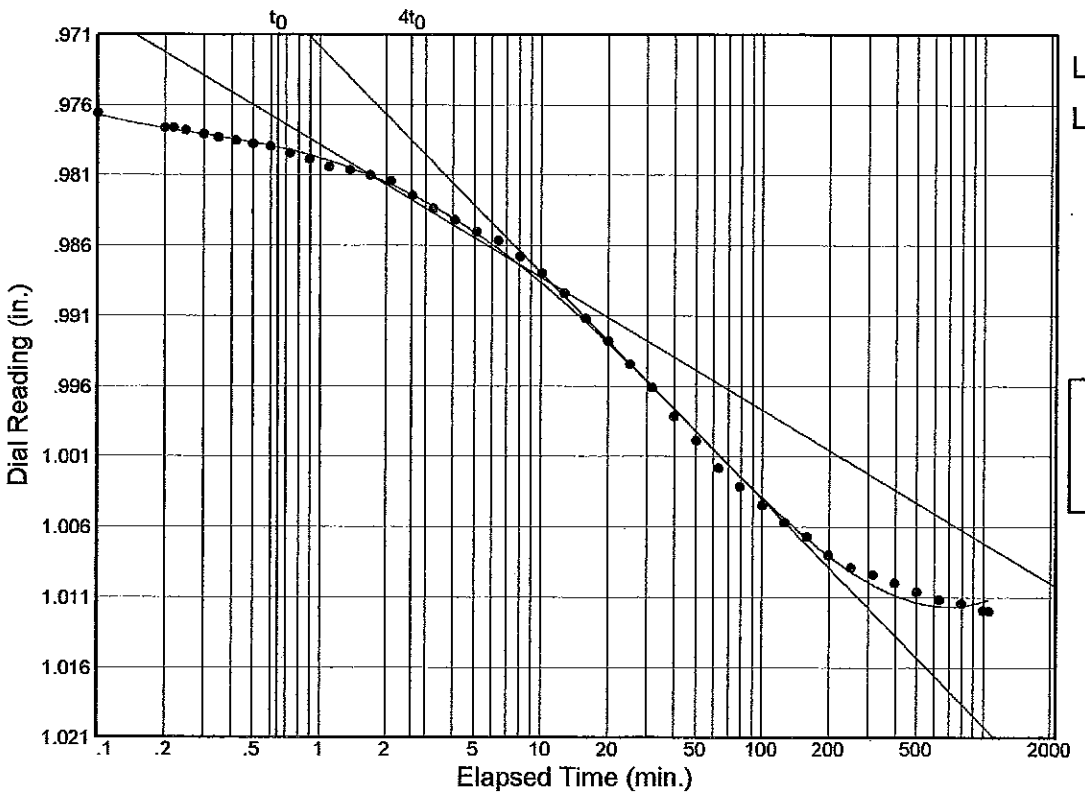
Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

Source: BSFR-12U Sample No.: 3A Elev./Depth: 6.0



Load No.= 1
Load= 0.05 tsf
D_0 = 0.97844
D_{50} = 0.97856
D_{100} = 0.97869
T_{50} = 35.36 min.

C_v @ T_{50}
0.0000 in.^{2}/sec.



Load No.= 2
Load= 0.13 tsf
D_0 = 0.97571
D_{50} = 0.98224
D_{100} = 0.98877
T_{50} = 2.51 min.

C_v @ T_{50}
0.0003 in.^{2}/sec.

C_α = 0.009

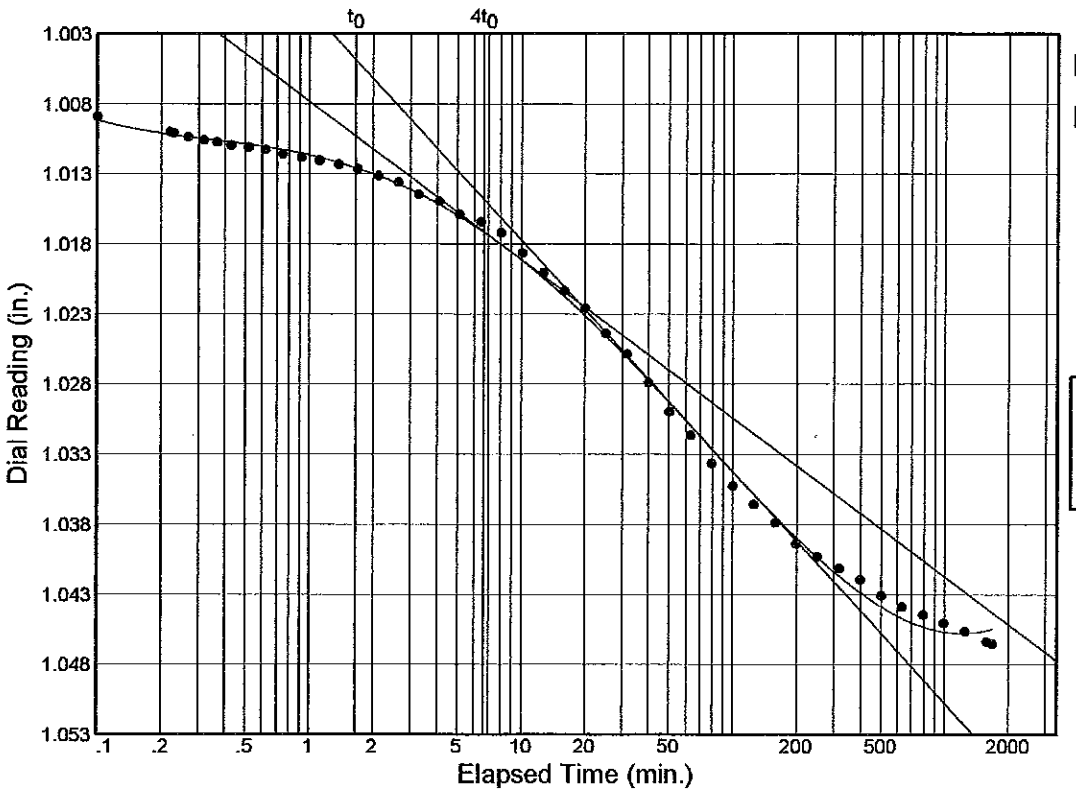
Figure

FFEBJV, LLC

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

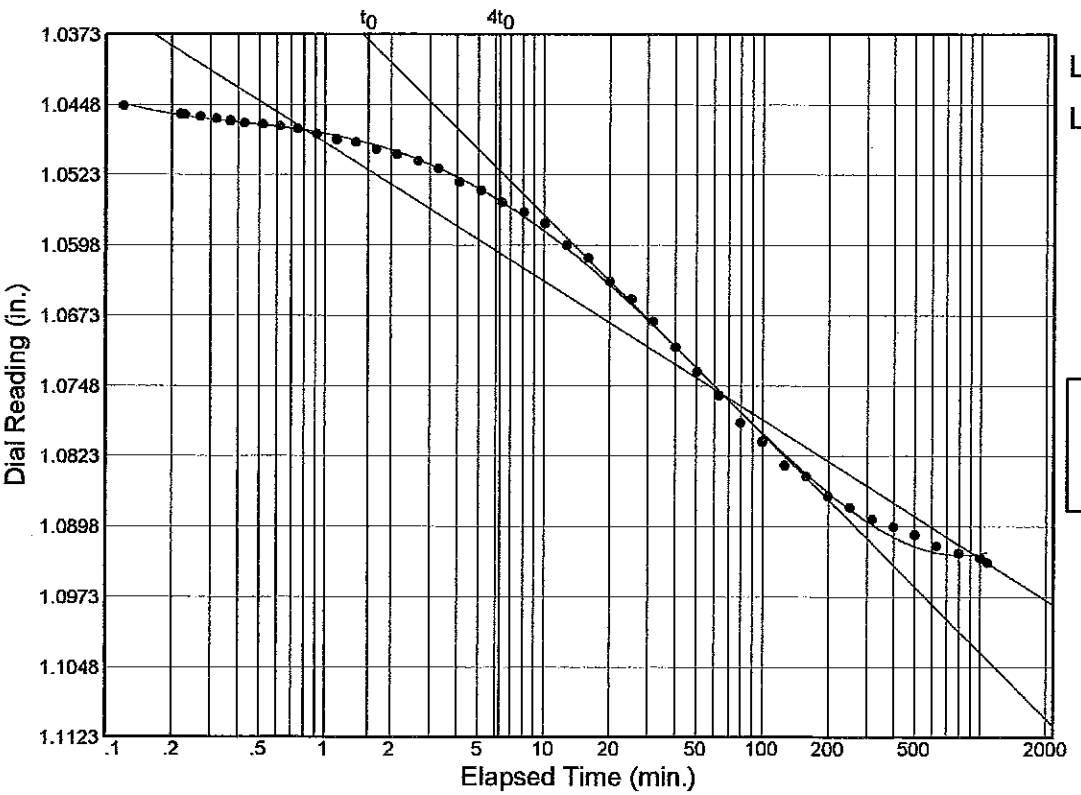
Source: BSFR-12U Sample No.: 3A Elev./Depth: 6.0



Load No.= 3
Load= 0.25 tsf
D_0 = 1.00800
D_{50} = 1.01508
D_{100} = 1.02216
T_{50} = 4.02 min.

C_v @ T_{50}
0.0002 in.^{2}/sec.

C_α = 0.012



Load No.= 4
Load= 0.50 tsf
D_0 = 1.04277
D_{50} = 1.05928
D_{100} = 1.07578
T_{50} = 11.41 min.

C_v @ T_{50}
0.0001 in.^{2}/sec.

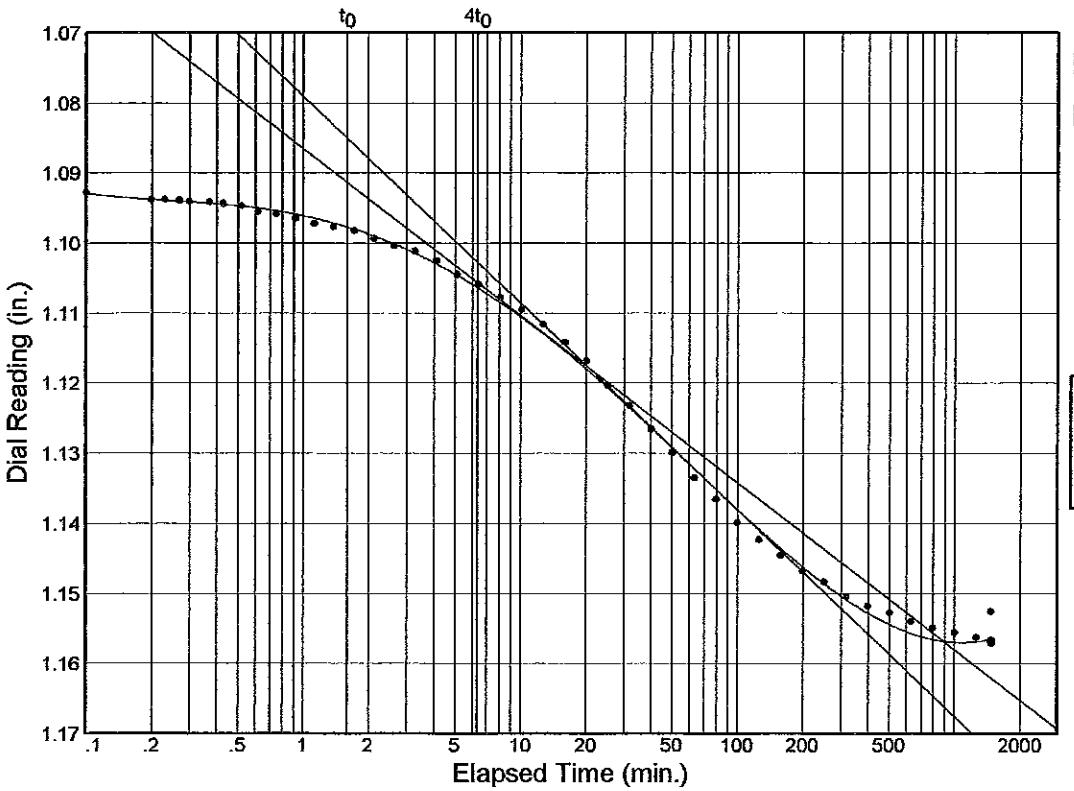
C_α = 0.016

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

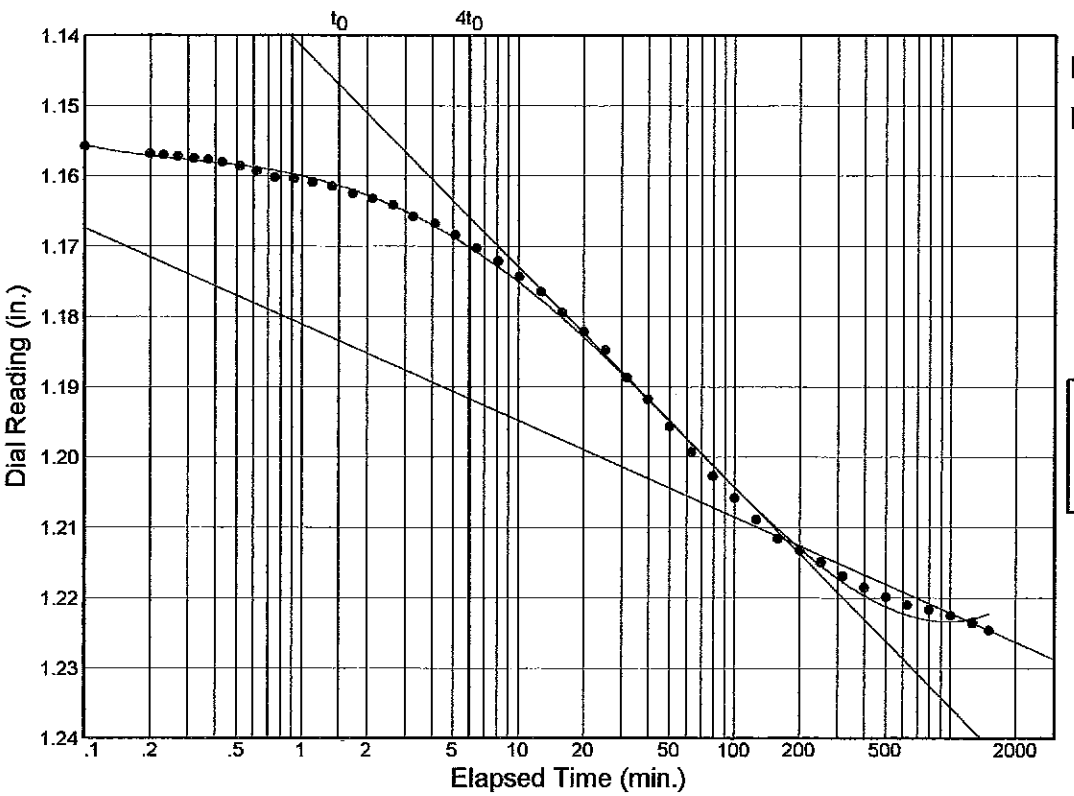
Source: BSFR-12U Sample No.: 3A Elev./Depth: 6.0



Load No.= 5
Load= 1.00 tsf
D_0 = 1.08907
D_{50} = 1.10362
D_{100} = 1.11816
T_{50} = 4.51 min.

C_v @ T_{50}
0.0001 in.^{2}/sec.

C_α = 0.027



Load No.= 6
Load= 2.00 tsf
D_0 = 1.15265
D_{50} = 1.18220
D_{100} = 1.21176
T_{50} = 18.94 min.

C_v @ T_{50}
0.0000 in.^{2}/sec.

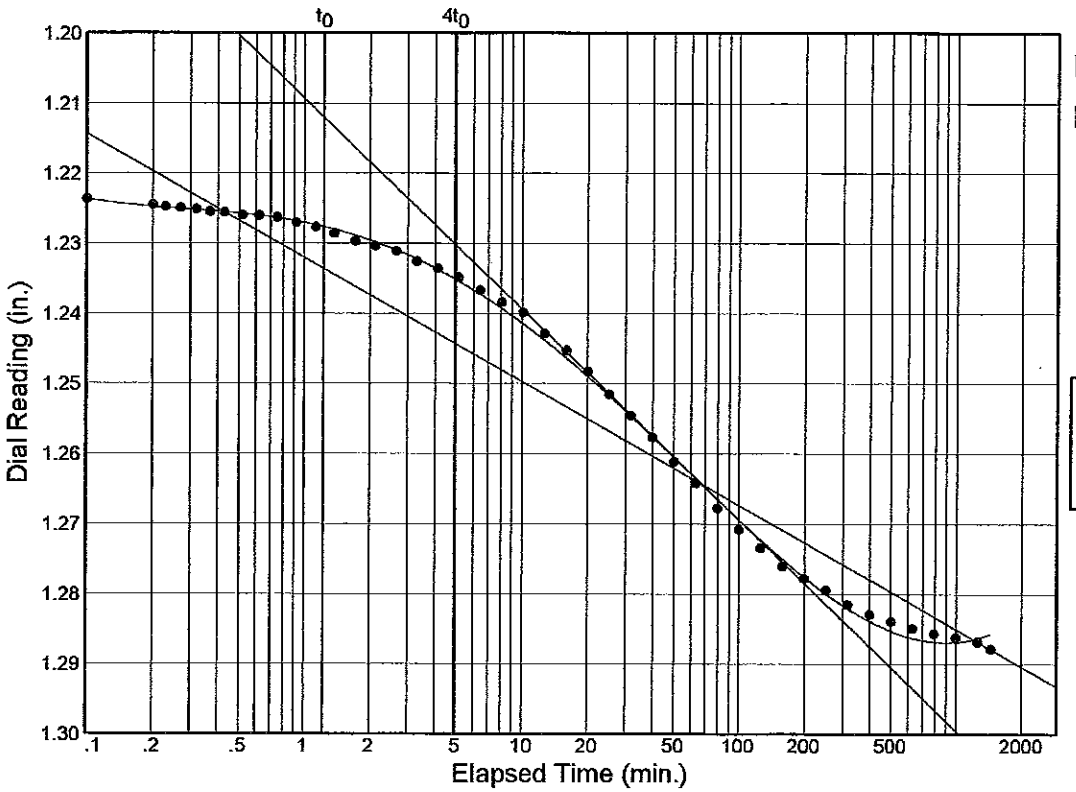
C_α = 0.017

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

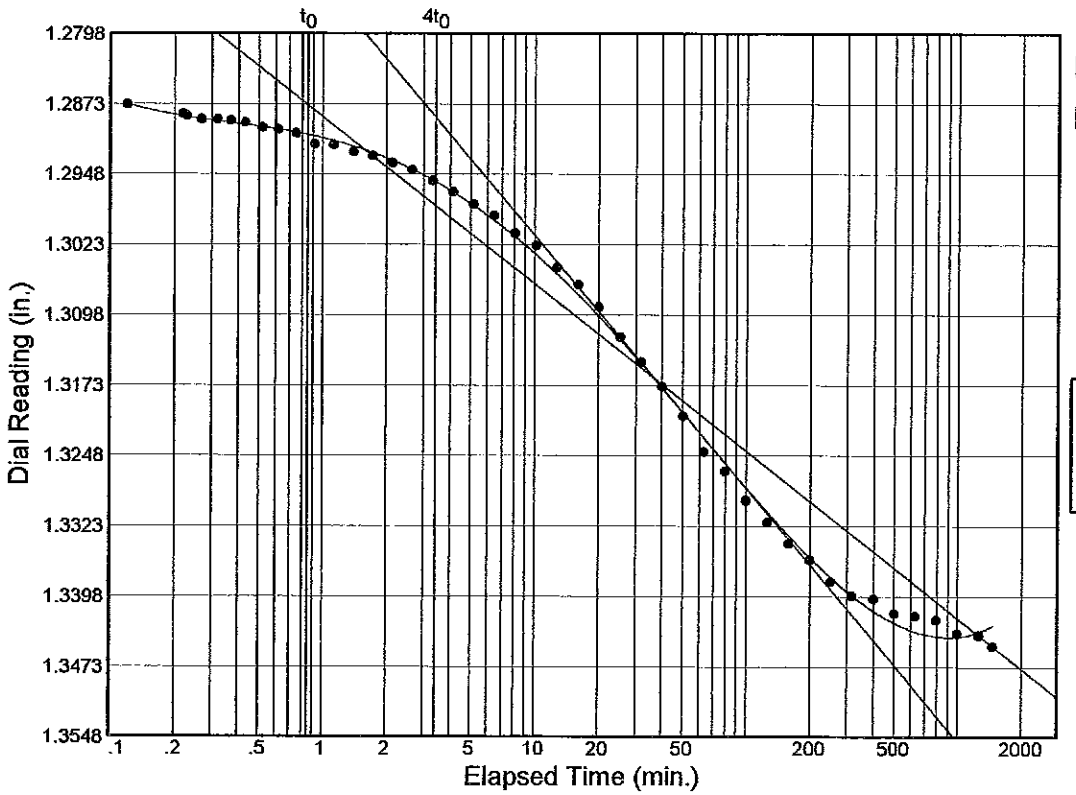
Source: BSFR-12U Sample No.: 3A Elev./Depth: 6.0



Load No.= 7
Load= 4.00 tsf
D_0 = 1.22023
D_{50} = 1.24230
D_{100} = 1.26437
T_{50} = 11.05 min.

C_v @ T_{50}
0.0000 in.^{2}/sec.

C_α = 0.023



Load No.= 8
Load= 8.00 tsf
D_0 = 1.28559
D_{50} = 1.30109
D_{100} = 1.31659
T_{50} = 7.74 min.

C_v @ T_{50}
0.0000 in.^{2}/sec.

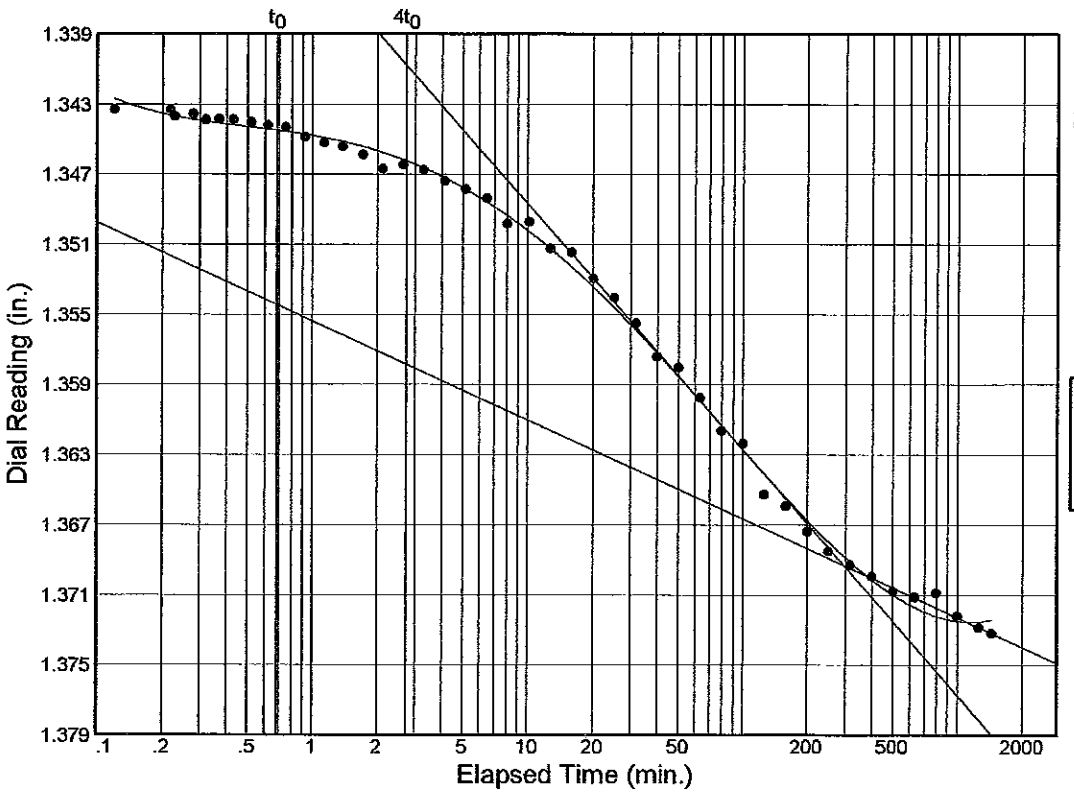
C_α = 0.026

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

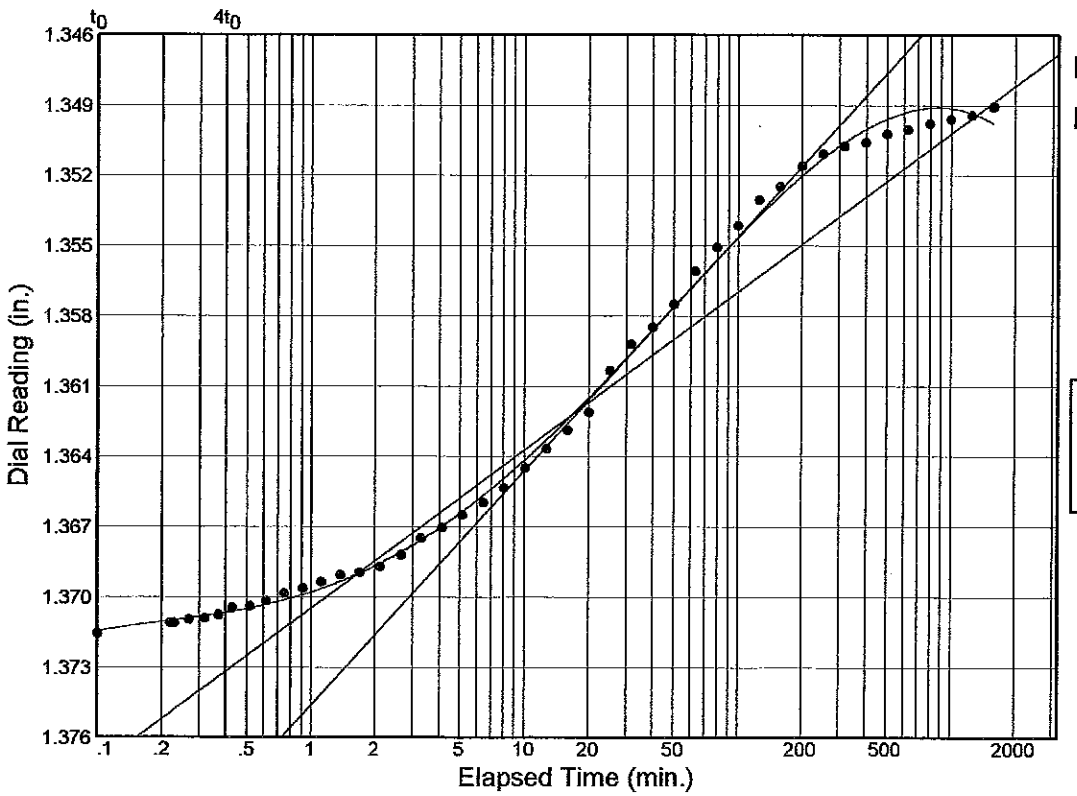
Source: BSFR-12U Sample No.: 3A Elev./Depth: 6.0



Load No.= 9
Load= 12.00 tsf
D_0 = 1.34275
D_{50} = 1.35602
D_{100} = 1.36929
T_{50} = 32.69 min.

C_v @ T_{50}
0.0000 in.^{2}/sec.

C_α = 0.009



Load No.= 10
Load= 3.00 tsf
D_0 = 1.37226
D_{50} = 1.36708
D_{100} = 1.36189
T_{50} = 3.97 min.

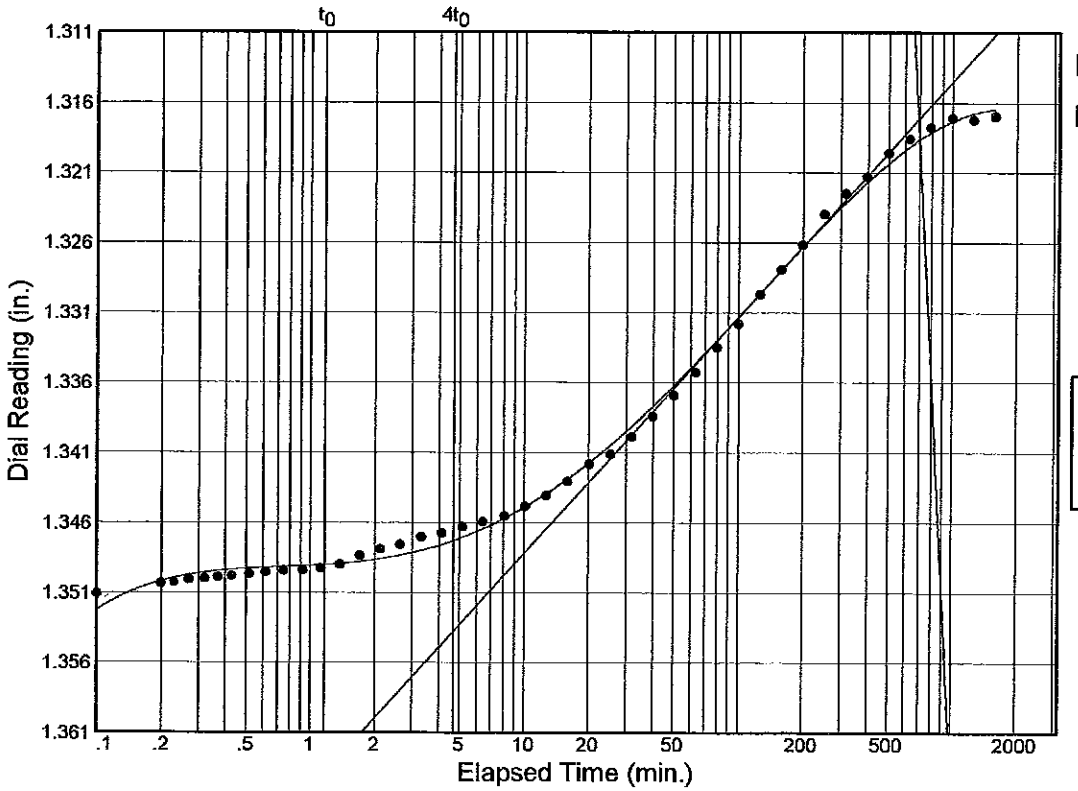
C_v @ T_{50}
0.0001 in.^{2}/sec.

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

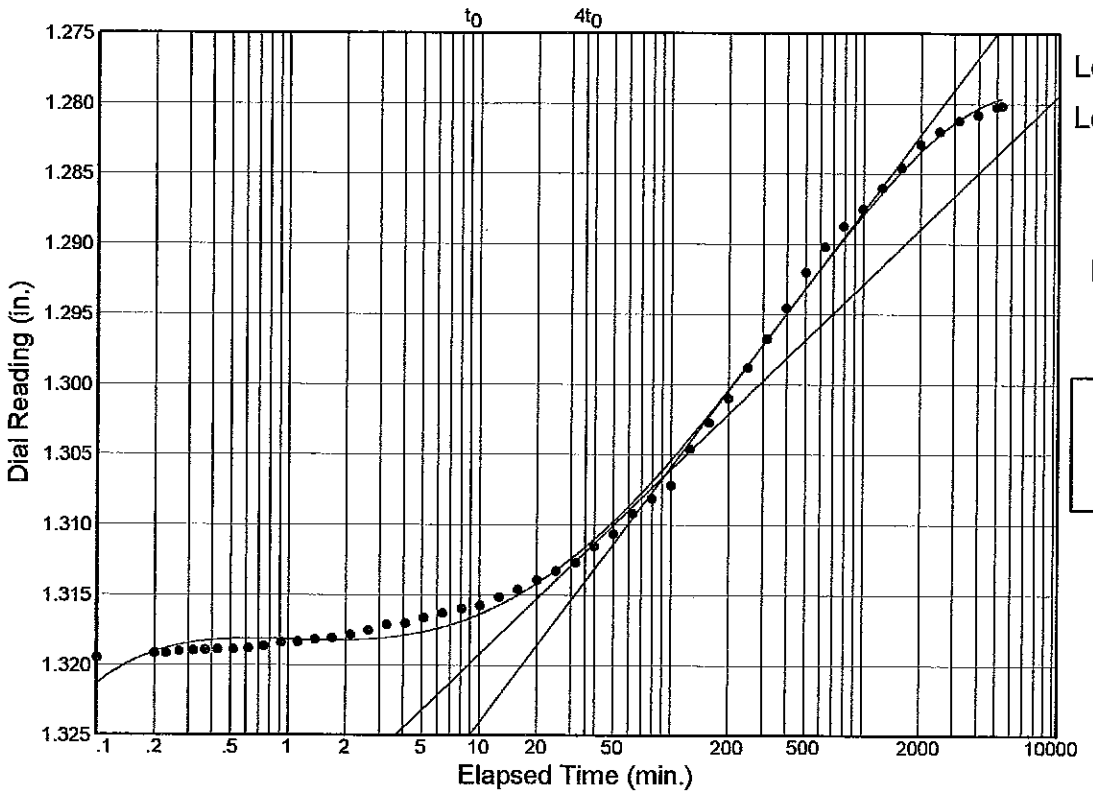
Source: BSFR-12U Sample No.: 3A Elev./Depth: 6.0



Load No.= 11
Load= 0.75 tsf
D_0 = 1.35077
D_{50} = 1.33398
D_{100} = 1.31718
T_{50} = 69.19 min.

C_v @ T_{50}
0.0000 in.^{2}/sec.

C_α = 0.469



Load No.= 12
Load= 0.19 tsf
D_0 = 1.32172
D_{50} = 1.31405
D_{100} = 1.30638
T_{50} = 20.63 min.

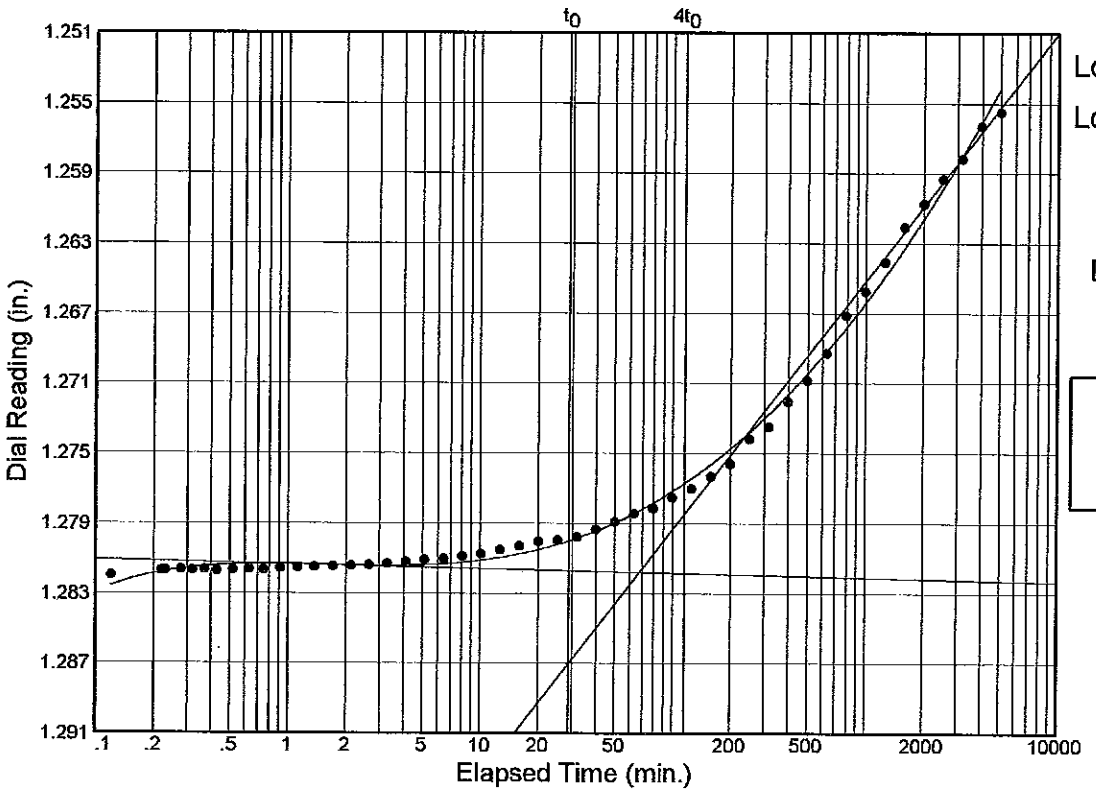
C_v @ T_{50}
0.0000 in.^{2}/sec.

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

Source: BSFR-12U Sample No.: 3A Elev./Depth: 6.0



Load No.= 13
Load= 0.05 tsf
D_0 = 1.28329
D_{50} = 1.28254
D_{100} = 1.28179
T_{50} = 0.12 min.

C_v @ T_{50}
0.0034 in.^{2}/sec.

CONSOLIDATION TEST DATA

Client: USACE
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans
Project Number: 12-017108

Sample Data

Source: BSFR-12U
Sample No.: 3A
Elev. or Depth: 6.0 **Sample Length(in./cm.):**
Location:
Description: VSO GR CH4 W/ LNS ML
Liquid Limit: 78 **Plasticity Index:** 54
USCS: CH3 **AASHTO:** **Figure No.:**
Testing Remarks:

Test Specimen Data

TOTAL SAMPLE		BEFORE TEST	AFTER TEST
Wet w+t	= 176.44 g.	Consolidometer # = 5	Wet w+t = 332.19 g.
Dry w+t	= 127.44 g.		Dry w+t = 249.72 g.
Tare Wt.	= 41.73 g.	Spec. Gravity = 2.80	Tare Wt. = 71.01 g.
Height	= 1.00 in.	Height = 1.00 in.	
Diameter	= 4.00 in.	Diameter = 4.00 in.	
Weight	= 41.73 g.	Defl. Table = n/a	
Moisture	= 57.2 %	Ht. Solids = 0.3101 in.	Moisture = 46.1 %
Wet Den.	= 12.7 pcf	Dry Wt. = 26.55 g.	Dry Wt. = 178.71 g.*
Dry Den.	= 8.1 pcf	Void Ratio = 2.222	Void Ratio = 1.328
		Saturation = 72.0 %	

* Final dry weight used in calculations

End-of-Load Summary

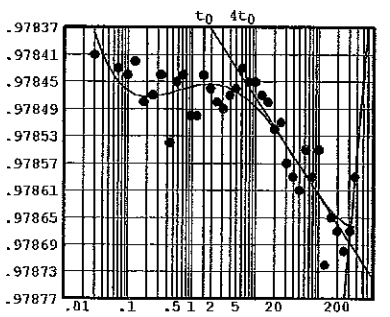
Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (in.^{2}/sec.)	C_α	Void Ratio	% Compression /Swell
start	0.97843				2.222	
0.05	0.97859	0.00000	0.0000		2.221	0.0 Comprs.
0.13	1.01199	0.00000	0.0003	0.009	2.114	3.4 Comprs.
0.25	1.04650	0.00000	0.0002	0.012	2.002	6.8 Comprs.
0.50	1.09367	0.00000	0.0001	0.016	1.850	11.5 Comprs.
1.00	1.15711	0.00000	0.0001	0.027	1.646	17.9 Comprs.
2.00	1.22463	0.00000	0.0000	0.017	1.428	24.6 Comprs.
4.00	1.28783	0.00000	0.0000	0.023	1.224	31.0 Comprs.
8.00	1.34513	0.00000	0.0000	0.026	1.039	36.7 Comprs.
12.00	1.37317	0.00000	0.0000	0.009	0.949	39.5 Comprs.
3.00	1.34906	0.00000	0.0001		1.027	37.1 Comprs.

Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (in.^{2}/sec.)	C_α	Void Ratio	% Compression /Swell
0.75	1.31700	0.00000	0.0000	0.469	1.130	33.9 Comprs.
0.19	1.28016	0.00000	0.0000		1.249	30.2 Comprs.
0.05	1.25551	0.00000	0.0034		1.328	27.7 Comprs.

C_c = 0.51 P_c = 0.06 tsf C_r = 0.16

Pressure: 0.05 tsf **TEST READINGS** **Load No. 1**

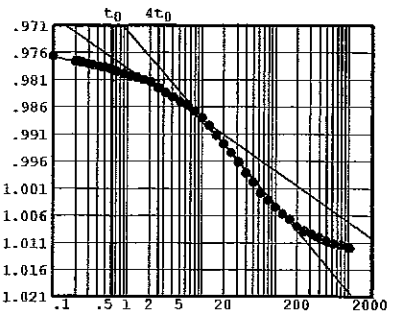
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.97843	20	6.27	0.97843
2	0.03	0.97841	21	7.90	0.97845
3	0.07	0.97843	22	9.97	0.97845
4	0.10	0.97844	23	12.55	0.97847
5	0.13	0.97842	24	15.82	0.97848
6	0.18	0.97848	25	19.92	0.97852
7	0.25	0.97847	26	25.08	0.97851
8	0.33	0.97844	27	31.58	0.97857
9	0.45	0.97854	28	39.78	0.97859
10	0.57	0.97845	29	50.08	0.97861
11	0.73	0.97844	30	63.07	0.97855
12	0.95	0.97850	31	79.40	0.97859
13	1.20	0.97850	32	99.97	0.97855
14	1.53	0.97844	33	125.87	0.97872
15	1.95	0.97846	34	158.47	0.97865
16	2.47	0.97848	35	199.50	0.97867
17	3.12	0.97849	36	251.17	0.97870
18	3.93	0.97847	37	316.20	0.97867
19	4.97	0.97846	38	373.45	0.97859



Void Ratio = 2.221 Compression = 0.0 %
D_0 = 0.97844 D_{50} = 0.97856 D_{100} = 0.97869
C_v at 35.4 min. = 0.0000 in.^{2}/sec.

Pressure: 0.13 tsf | TEST READINGS | Load No. 2

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.97247	23	10.12	0.98797
2	0.10	0.97658	24	12.72	0.98941
3	0.20	0.97761	25	15.97	0.99120
4	0.22	0.97765	26	20.08	0.99282
5	0.25	0.97781	27	25.25	0.99445
6	0.30	0.97808	28	31.75	0.99614
7	0.35	0.97830	29	39.93	0.99818
8	0.42	0.97855	30	50.25	0.99987
9	0.50	0.97875	31	63.22	1.00181
10	0.60	0.97895	32	79.57	1.00314
11	0.73	0.97947	33	100.13	1.00445
12	0.90	0.97986	34	126.03	1.00569
13	1.10	0.98039	35	158.62	1.00669
14	1.37	0.98063	36	199.67	1.00800
15	1.70	0.98100	37	251.33	1.00890
16	2.10	0.98142	38	316.37	1.00938
17	2.62	0.98247	39	398.25	1.00998
18	3.28	0.98338	40	501.33	1.01063
19	4.10	0.98418	41	631.10	1.01116
20	5.13	0.98501	42	794.48	1.01142
21	6.43	0.98564	43	1000.15	1.01193
22	8.07	0.98677	44	1056.68	1.01199



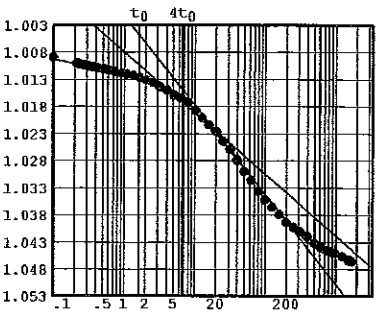
Void Ratio = 2.114 **Compression** = 3.4 %

D_0 = 0.97571 D_{50} = 0.98224 D_{100} = 0.98877

C_v **at 2.5 min.** = 0.0003 in.^{2}/sec. C_α = 0.009

Pressure: 0.25 tsf | TEST READINGS | Load No. 3

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	1.00733	24	12.72	1.02008
2	0.10	1.00890	25	15.98	1.02136
3	0.22	1.00999	26	20.08	1.02257
4	0.23	1.01010	27	25.25	1.02442
5	0.27	1.01037	28	31.75	1.02586
6	0.32	1.01061	29	39.95	1.02792
7	0.37	1.01073	30	50.25	1.02996
8	0.43	1.01095	31	63.23	1.03163
9	0.52	1.01110	32	79.57	1.03365
10	0.62	1.01129	33	100.13	1.03523
11	0.75	1.01158	34	126.03	1.03656
12	0.92	1.01182	35	158.63	1.03789
13	1.12	1.01203	36	199.68	1.03938
14	1.38	1.01231	37	251.33	1.04029
15	1.70	1.01265	38	316.38	1.04113
16	2.12	1.01313	39	398.25	1.04193
17	2.63	1.01359	40	501.33	1.04310
18	3.28	1.01445	41	631.12	1.04392
19	4.10	1.01498	42	794.48	1.04447
20	5.13	1.01587	43	1000.17	1.04503
21	6.43	1.01642	44	1259.08	1.04562
22	8.07	1.01720	45	1585.05	1.04638
23	10.13	1.01868	46	1696.13	1.04650



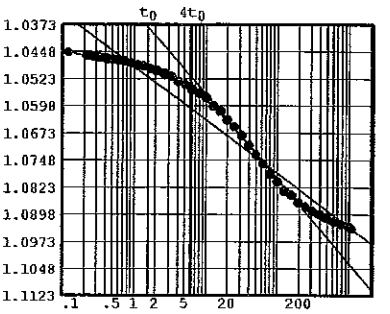
Void Ratio = 2.002 **Compression** = 6.8 %

D_0 = 1.00800 D_{50} = 1.01508 D_{100} = 1.02216

C_v **at 4.0 min.** = 0.0002 in.^{2}/sec. C_α = 0.012

Pressure: 0.50 tsf | TEST READINGS | Load No. 4

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	1.04222	23	10.13	1.05751
2	0.12	1.04490	24	12.73	1.05982
3	0.22	1.04583	25	15.98	1.06121
4	0.23	1.04589	26	20.10	1.06368
5	0.27	1.04609	27	25.27	1.06557
6	0.32	1.04628	28	31.77	1.06796
7	0.37	1.04653	29	39.95	1.07070
8	0.43	1.04675	30	50.27	1.07331
9	0.52	1.04689	31	63.25	1.07585
10	0.62	1.04709	32	79.58	1.07875
11	0.75	1.04741	33	100.15	1.08077
12	0.92	1.04792	34	126.05	1.08330
13	1.13	1.04851	35	158.63	1.08448
14	1.38	1.04883	36	199.68	1.08658
15	1.72	1.04959	37	251.33	1.08779
16	2.12	1.05011	38	316.38	1.08900
17	2.65	1.05079	39	398.27	1.08980
18	3.30	1.05160	40	501.33	1.09068
19	4.12	1.05303	41	631.12	1.09185
20	5.15	1.05395	42	794.48	1.09264
21	6.45	1.05524	43	1000.15	1.09319
22	8.08	1.05627	44	1077.77	1.09367



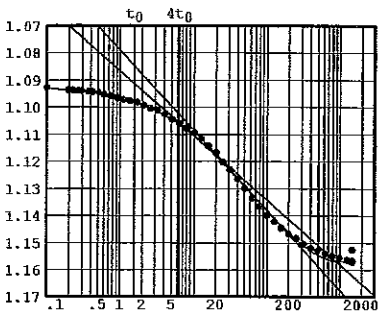
Void Ratio = 1.850 **Compression** = 11.5 %

D_0 = 1.04277 D_{50} = 1.05928 D_{100} = 1.07578

C_v **at 11.4 min.** = 0.0001 in.^{2}/sec. C_α = 0.016

Pressure: 1.00 tsf | TEST READINGS | Load No. 5

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	1.08942	33	100.15	1.13988
2	0.10	1.09275	34	126.03	1.14231
3	0.20	1.09375	35	158.63	1.14458
4	0.23	1.09373	36	199.67	1.14679
5	0.27	1.09390	37	251.33	1.14835
6	0.30	1.09403	38	316.38	1.15047
7	0.37	1.09410	39	398.25	1.15179
8	0.43	1.09436	40	501.33	1.15270
9	0.52	1.09467	41	631.12	1.15400
10	0.62	1.09544	42	794.48	1.15491
11	0.75	1.09585	43	1000.15	1.15555
12	0.92	1.09644	44	1259.08	1.15625
13	1.12	1.09720	45	1477.12	1.15253
14	1.38	1.09770	46	1477.22	1.15665
15	1.72	1.09823	47	1477.32	1.15671
16	2.12	1.09936	48	1477.35	1.15673
17	2.63	1.10043	49	1477.38	1.15682
18	3.28	1.10119	50	1477.42	1.15685
19	4.12	1.10252	51	1477.47	1.15683
20	5.13	1.10447	52	1477.53	1.15685
21	6.43	1.10586	53	1477.62	1.15685
22	8.07	1.10781	54	1477.73	1.15689
23	10.13	1.10951	55	1477.87	1.15696
24	12.72	1.11164	56	1478.02	1.15693
25	15.98	1.11420	57	1478.23	1.15692
26	20.08	1.11680	58	1478.48	1.15695
27	25.25	1.12039	59	1478.82	1.15702
28	31.77	1.12322	60	1479.23	1.15701
29	39.95	1.12652	61	1479.75	1.15699
30	50.25	1.12989	62	1480.40	1.15706
31	63.23	1.13346	63	1481.22	1.15708
32	79.57	1.13652	64	1482.08	1.15711



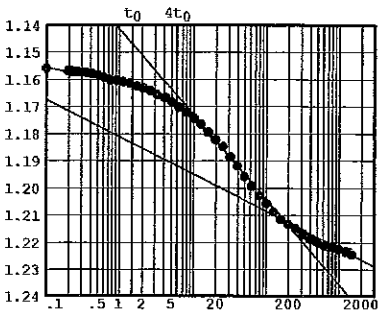
Void Ratio = 1.646 **Compression** = 17.9 %

D_0 = 1.08907 D_{50} = 1.10362 D_{100} = 1.11816

C_v **at 4.5 min.** = 0.0001 in.^{2}/sec. C_α = 0.027

Pressure: 2.00 tsf | TEST READINGS | Load No. 6

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	1.15188	24	12.72	1.17650
2	0.10	1.15575	25	15.98	1.17944
3	0.20	1.15681	26	20.08	1.18213
4	0.23	1.15704	27	25.25	1.18480
5	0.27	1.15717	28	31.75	1.18870
6	0.32	1.15749	29	39.95	1.19181
7	0.37	1.15763	30	50.25	1.19568
8	0.43	1.15799	31	63.23	1.19924
9	0.52	1.15859	32	79.58	1.20266
10	0.62	1.15931	33	100.15	1.20576
11	0.75	1.16017	34	126.03	1.20884
12	0.92	1.16036	35	158.63	1.21158
13	1.12	1.16087	36	199.68	1.21325
14	1.38	1.16143	37	251.33	1.21491
15	1.72	1.16248	38	316.38	1.21690
16	2.12	1.16318	39	398.27	1.21854
17	2.63	1.16414	40	501.35	1.21987
18	3.28	1.16572	41	631.12	1.22107
19	4.12	1.16677	42	794.48	1.22168
20	5.13	1.16841	43	1000.17	1.22255
21	6.43	1.17024	44	1259.08	1.22357
22	8.07	1.17213	45	1504.33	1.22463
23	10.13	1.17428			



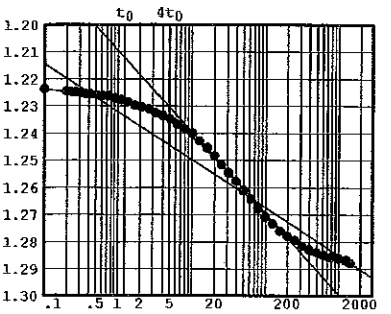
Void Ratio = 1.428 **Compression** = 24.6 %

D_0 = 1.15265 D_{50} = 1.18220 D_{100} = 1.21176

C_v **at 18.9 min.** = 0.0000 in.^{2}/sec. C_α = 0.017

Pressure: 4.00 tsf | TEST READINGS | Load No. 7

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	1.21746	24	12.73	1.24293
2	0.10	1.22363	25	16.00	1.24531
3	0.20	1.22449	26	20.10	1.24830
4	0.23	1.22473	27	25.27	1.25158
5	0.27	1.22490	28	31.77	1.25453
6	0.32	1.22510	29	39.97	1.25769
7	0.37	1.22551	30	50.27	1.26114
8	0.43	1.22555	31	63.25	1.26425
9	0.52	1.22592	32	79.58	1.26781
10	0.62	1.22604	33	100.17	1.27081
11	0.75	1.22628	34	126.05	1.27341
12	0.92	1.22702	35	158.65	1.27606
13	1.13	1.22768	36	199.68	1.27782
14	1.38	1.22855	37	251.35	1.27943
15	1.72	1.22967	38	316.40	1.28154
16	2.13	1.23042	39	398.28	1.28288
17	2.65	1.23112	40	501.35	1.28388
18	3.30	1.23258	41	631.13	1.28491
19	4.12	1.23361	42	794.50	1.28563
20	5.15	1.23485	43	1000.17	1.28617
21	6.45	1.23671	44	1259.10	1.28677
22	8.08	1.23844	45	1445.58	1.28783
23	10.15	1.23988			



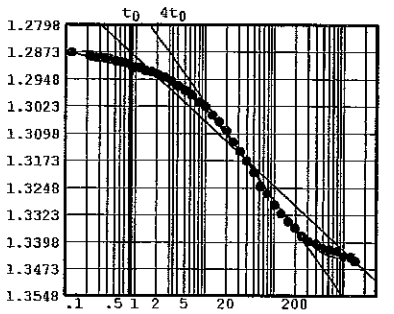
Void Ratio = 1.224 Compression = 31.0 %

D_0 = 1.22023 D_{50} = 1.24230 D_{100} = 1.26437

C_v at 11.1 min. = 0.0000 in.^{2}/sec. C_α = 0.023

Pressure: 8.00 tsf | TEST READINGS | Load No. 8

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	1.27904	24	12.73	1.30475
2	0.12	1.28738	25	16.00	1.30656
3	0.22	1.28837	26	20.10	1.30895
4	0.23	1.28861	27	25.27	1.31216
5	0.27	1.28895	28	31.78	1.31481
6	0.32	1.28891	29	39.97	1.31740
7	0.37	1.28907	30	50.28	1.32055
8	0.43	1.28925	31	63.25	1.32437
9	0.52	1.28982	32	79.60	1.32646
10	0.62	1.29004	33	100.17	1.32956
11	0.75	1.29044	34	126.05	1.33190
12	0.92	1.29158	35	158.65	1.33418
13	1.13	1.29165	36	199.70	1.33588
14	1.40	1.29243	37	251.37	1.33823
15	1.72	1.29283	38	316.40	1.33968
16	2.13	1.29360	39	398.28	1.34008
17	2.65	1.29430	40	501.37	1.34160
18	3.30	1.29546	41	631.13	1.34189
19	4.12	1.29664	42	794.50	1.34233
20	5.15	1.29796	43	1000.18	1.34375
21	6.45	1.29919	44	1259.10	1.34393
22	8.08	1.30110	45	1470.03	1.34513
23	10.15	1.30240			



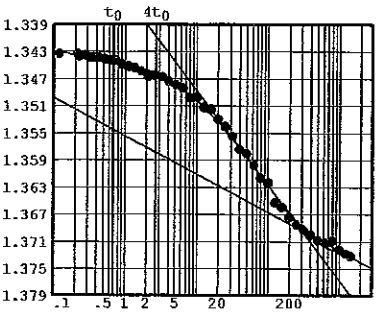
Void Ratio = 1.039 Compression = 36.7 %

D_0 = 1.28559 D_{50} = 1.30109 D_{100} = 1.31659

C_v at 7.7 min. = 0.0000 in.^{2}/sec. C_α = 0.026

Pressure: 12.00 tsf | TEST READINGS | Load No. 9

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	1.33725	24	12.73	1.35122
2	0.12	1.34329	25	16.00	1.35147
3	0.22	1.34334	26	20.10	1.35296
4	0.23	1.34368	27	25.27	1.35403
5	0.28	1.34354	28	31.78	1.35550
6	0.32	1.34389	29	39.97	1.35739
7	0.37	1.34385	30	50.27	1.35802
8	0.43	1.34386	31	63.25	1.35972
9	0.52	1.34402	32	79.58	1.36164
10	0.62	1.34421	33	100.17	1.36235
11	0.75	1.34430	34	126.05	1.36527
12	0.92	1.34487	35	158.67	1.36594
13	1.13	1.34520	36	199.70	1.36740
14	1.38	1.34539	37	251.37	1.36850
15	1.72	1.34587	38	316.40	1.36927
16	2.13	1.34668	39	398.28	1.36994
17	2.65	1.34647	40	501.37	1.37078
18	3.30	1.34674	41	631.15	1.37112
19	4.12	1.34738	42	794.52	1.37090
20	5.15	1.34786	43	1000.18	1.37219
21	6.45	1.34834	44	1259.12	1.37284
22	8.08	1.34982	45	1440.68	1.37317
23	10.15	1.34970			



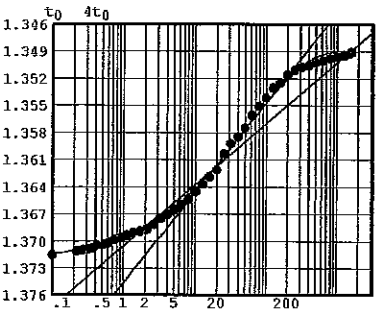
Void Ratio = 0.949 **Compression** = 39.5 %

D_0 = 1.34275 D_{50} = 1.35602 D_{100} = 1.36929

C_v **at 32.7 min.** = 0.0000 in.^{2}/sec. C_α = 0.009

Pressure: 3.00 tsf | TEST READINGS | Load No. 10

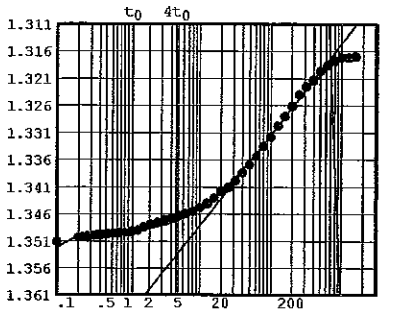
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	1.38933	24	12.73	1.36368
2	0.10	1.37157	25	16.00	1.36289
3	0.22	1.37111	26	20.10	1.36211
4	0.23	1.37110	27	25.27	1.36034
5	0.27	1.37097	28	31.77	1.35921
6	0.32	1.37091	29	39.97	1.35849
7	0.37	1.37077	30	50.27	1.35749
8	0.43	1.37047	31	63.25	1.35607
9	0.52	1.37040	32	79.58	1.35506
10	0.62	1.37019	33	100.15	1.35413
11	0.75	1.36986	34	126.05	1.35304
12	0.92	1.36963	35	158.65	1.35248
13	1.12	1.36936	36	199.68	1.35160
14	1.38	1.36905	37	251.35	1.35108
15	1.70	1.36894	38	316.38	1.35075
16	2.12	1.36871	39	398.27	1.35058
17	2.65	1.36820	40	501.35	1.35022
18	3.30	1.36749	41	631.13	1.35003
19	4.12	1.36704	42	794.50	1.34979
20	5.15	1.36649	43	1000.17	1.34960
21	6.45	1.36596	44	1259.10	1.34943
22	8.08	1.36535	45	1585.07	1.34908
23	10.13	1.36449	46	1594.72	1.34906



Void Ratio = 1.027 **Compression** = 37.1 %
D_0 = 1.37226 D_{50} = 1.36708 D_{100} = 1.36189
C_v **at 4.0 min.** = 0.0001 in.^{2}/sec.

Pressure: 0.75 tsf | TEST READINGS | Load No. 11

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	1.35737	24	12.73	1.34406
2	0.10	1.35109	25	15.98	1.34306
3	0.20	1.35035	26	20.10	1.34181
4	0.23	1.35027	27	25.27	1.34110
5	0.27	1.35010	28	31.77	1.33986
6	0.32	1.35000	29	39.95	1.33842
7	0.37	1.34988	30	50.27	1.33693
8	0.43	1.34981	31	63.25	1.33525
9	0.52	1.34966	32	79.58	1.33348
10	0.62	1.34954	33	100.15	1.33182
11	0.75	1.34944	34	126.05	1.32971
12	0.92	1.34941	35	158.65	1.32795
13	1.12	1.34925	36	199.68	1.32616
14	1.38	1.34899	37	251.35	1.32395
15	1.70	1.34837	38	316.40	1.32248
16	2.12	1.34788	39	398.27	1.32128
17	2.63	1.34757	40	501.35	1.31960
18	3.30	1.34704	41	631.13	1.31861
19	4.12	1.34676	42	794.50	1.31778
20	5.15	1.34628	43	1000.17	1.31711
21	6.43	1.34594	44	1259.10	1.31722
22	8.08	1.34554	45	1585.07	1.31696
23	10.13	1.34483	46	1585.87	1.31700



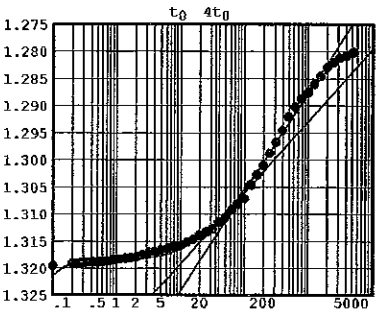
Void Ratio = 1.130 **Compression** = 33.9 %

D_0 = 1.35077 D_{50} = 1.33398 D_{100} = 1.31718

C_v **at 69.2 min.** = 0.0000 in.^{2}/sec. C_α = 0.469

Pressure: 0.19 tsf | TEST READINGS | Load No. 12

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	1.32203	27	25.25	1.31332
2	0.10	1.31951	28	31.77	1.31269
3	0.20	1.31919	29	39.95	1.31154
4	0.23	1.31917	30	50.25	1.31064
5	0.27	1.31905	31	63.23	1.30921
6	0.32	1.31901	32	79.57	1.30815
7	0.37	1.31894	33	100.15	1.30718
8	0.43	1.31889	34	126.03	1.30461
9	0.52	1.31890	35	158.63	1.30274
10	0.62	1.31883	36	199.67	1.30099
11	0.75	1.31868	37	251.33	1.29881
12	0.92	1.31842	38	316.37	1.29674
13	1.12	1.31835	39	398.25	1.29456
14	1.38	1.31817	40	501.33	1.29201
15	1.70	1.31807	41	631.10	1.29020
16	2.12	1.31787	42	794.48	1.28872
17	2.63	1.31754	43	1000.15	1.28752
18	3.28	1.31713	44	1259.08	1.28602
19	4.10	1.31702	45	1585.05	1.28457
20	5.13	1.31663	46	1995.42	1.28289
21	6.43	1.31631	47	2512.05	1.28201
22	8.08	1.31599	48	3162.43	1.28120
23	10.13	1.31574	49	3981.23	1.28081
24	12.72	1.31516	50	5012.03	1.28023
25	15.98	1.31464	51	5319.47	1.28016
26	20.08	1.31392			



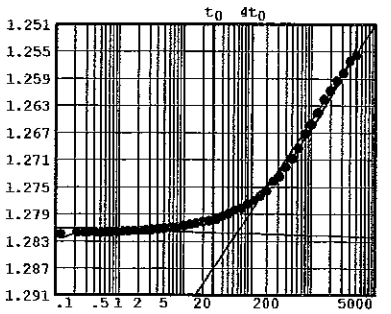
Void Ratio = 1.249 **Compression** = 30.2 %

D_0 = 1.32172 D_{50} = 1.31405 D_{100} = 1.30638

C_v **at 20.6 min.** = 0.0000 in.^{2}/sec.

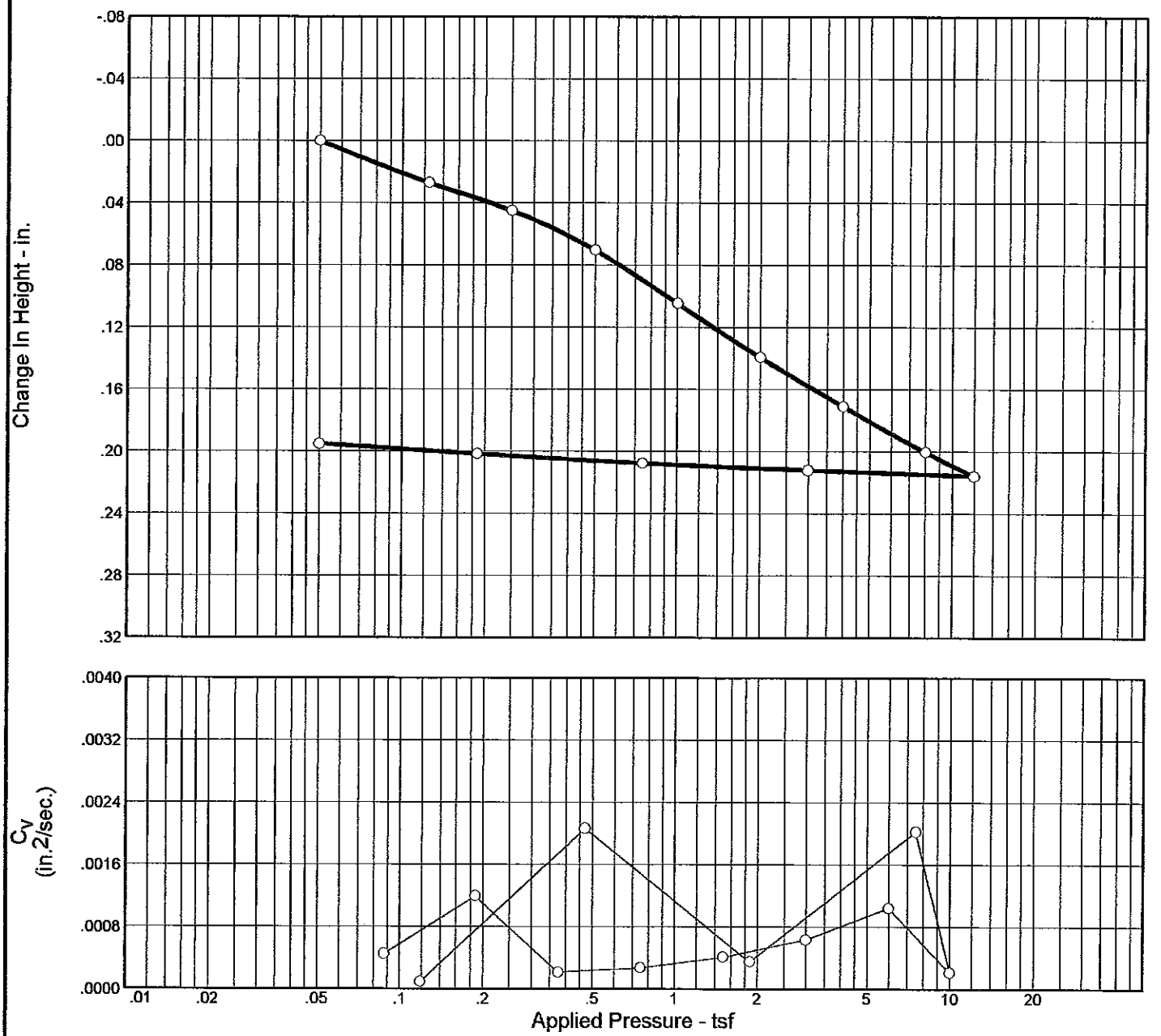
Pressure: 0.05 tsf | TEST READINGS | Load No. 13

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	1.28375	26	20.10	1.28005
2	0.12	1.28196	27	25.27	1.27996
3	0.22	1.28171	28	31.77	1.27977
4	0.23	1.28168	29	39.97	1.27935
5	0.28	1.28165	30	50.27	1.27892
6	0.32	1.28169	31	63.25	1.27844
7	0.37	1.28164	32	79.58	1.27813
8	0.43	1.28170	33	100.17	1.27752
9	0.52	1.28166	34	126.05	1.27703
10	0.63	1.28162	35	158.65	1.27633
11	0.75	1.28163	36	199.70	1.27558
12	0.92	1.28158	37	251.37	1.27418
13	1.13	1.28153	38	316.40	1.27348
14	1.38	1.28149	39	398.28	1.27205
15	1.72	1.28145	40	501.37	1.27084
16	2.13	1.28144	41	631.13	1.26928
17	2.65	1.28140	42	794.50	1.26714
18	3.30	1.28131	43	1000.18	1.26574
19	4.12	1.28122	44	1259.10	1.26408
20	5.15	1.28110	45	1585.08	1.26206
21	6.45	1.28102	46	1995.45	1.26074
22	8.08	1.28089	47	2512.07	1.25933
23	10.13	1.28073	48	3162.47	1.25816
24	12.73	1.28050	49	3981.27	1.25631
25	16.00	1.28031	50	5012.07	1.25551



Void Ratio = 1.328 **Compression** = 27.7 %
D_0 = 1.28329 D_{50} = 1.28254 D_{100} = 1.28179
C_v **at 0.1 min.** = 0.0034 in.^{2}/sec.

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture							
106.7 %	38.9 %	9.6	33	18	2.66	0.11	0.17	0.971

MATERIAL DESCRIPTION	USCS	AASHTO
SO GR CL4 W/ ARS & LYS SM, SIF	CH2	

Project No. 12-017108 **Client:** USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

Source: BSFR-12U **Sample No.:** 5B **Elev./Depth:** 15.0

FFEBJV, LLC

St Rose, LA

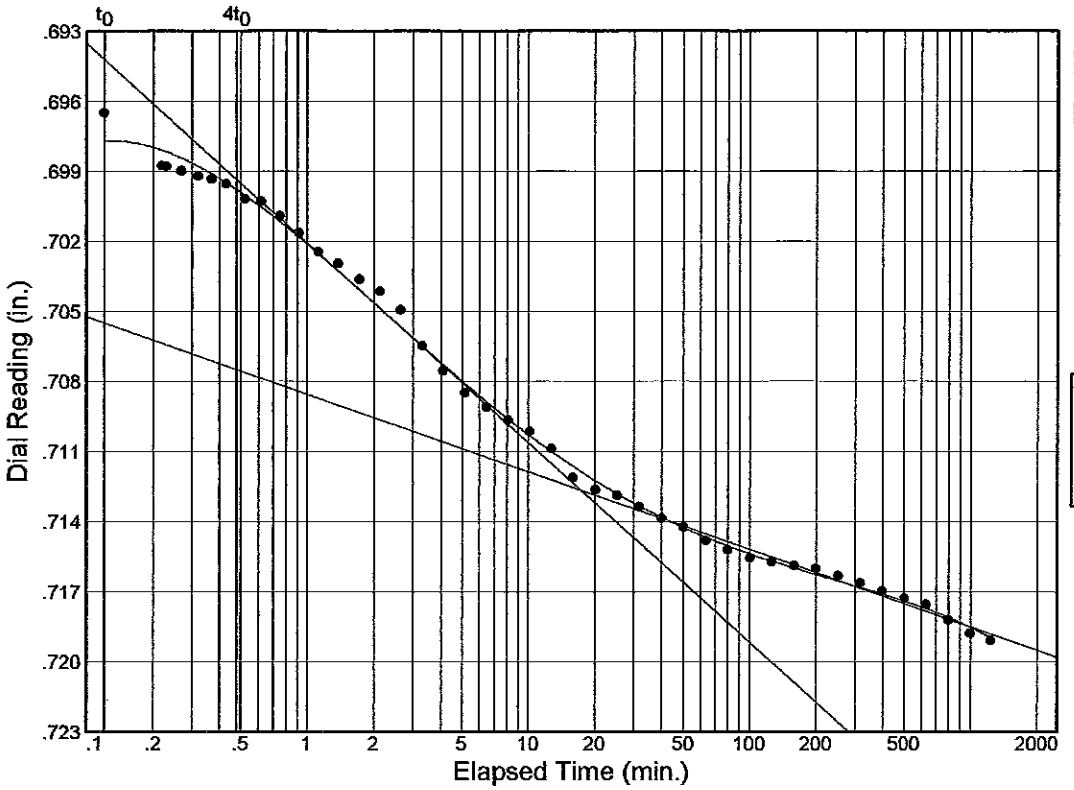
Remarks:

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

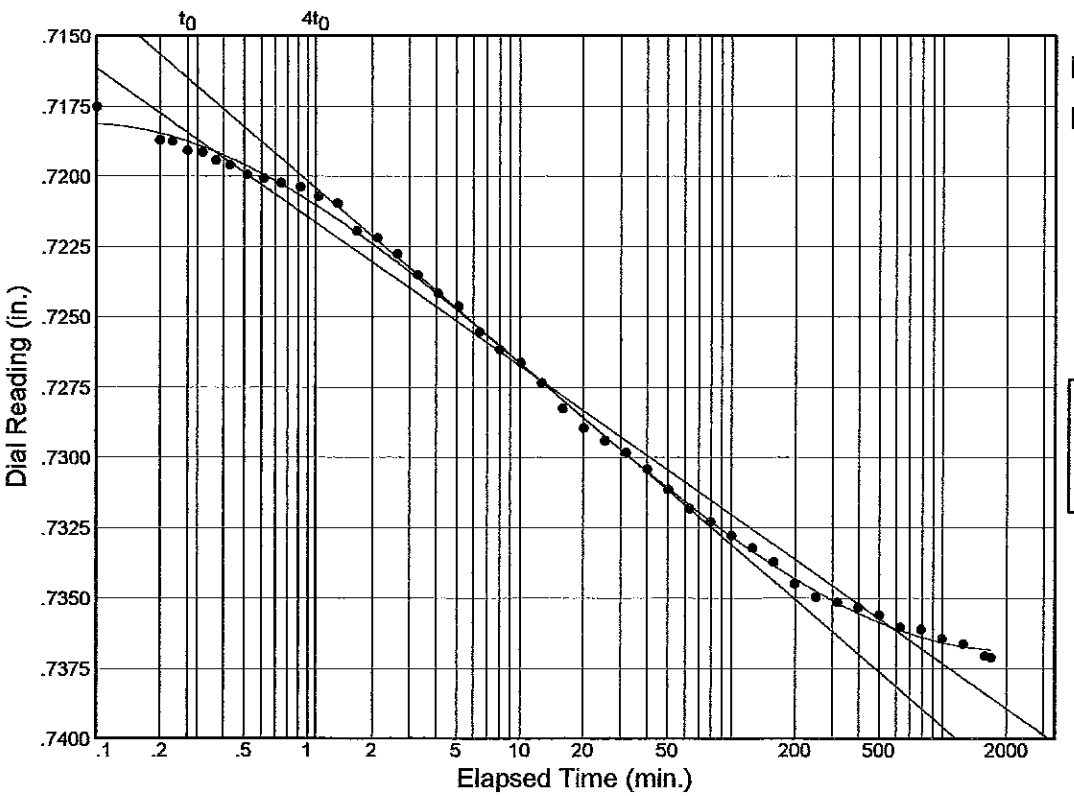
Source: BSFR-12U Sample No.: 5B Elev./Depth: 15.0



Load No.= 2
Load= 0.13 tsf
D_0 = 0.69565
D_{50} = 0.70416
D_{100} = 0.71266
T_{50} = 1.76 min.

C_v @ T_{50}
0.0005 in.^{2}/sec.

C_α = 0.003



Load No.= 3
Load= 0.25 tsf
D_0 = 0.71649
D_{50} = 0.72182
D_{100} = 0.72716
T_{50} = 1.58 min.

C_v @ T_{50}
0.0005 in.^{2}/sec.

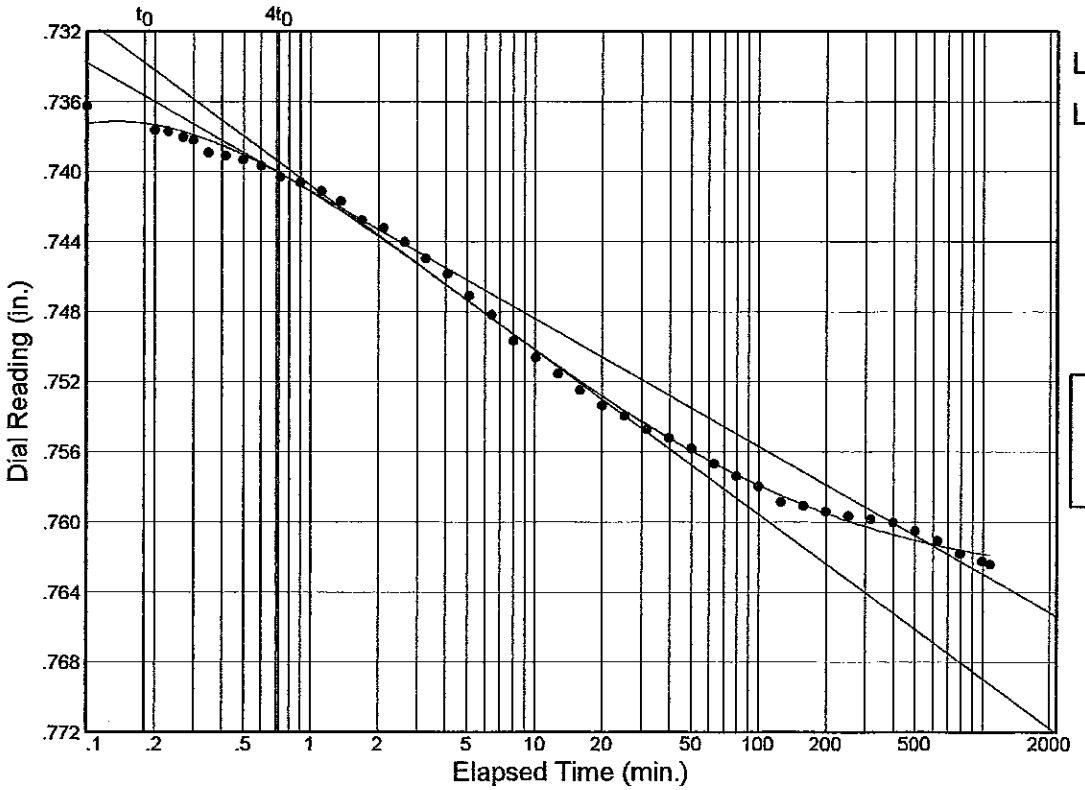
C_α = 0.005

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

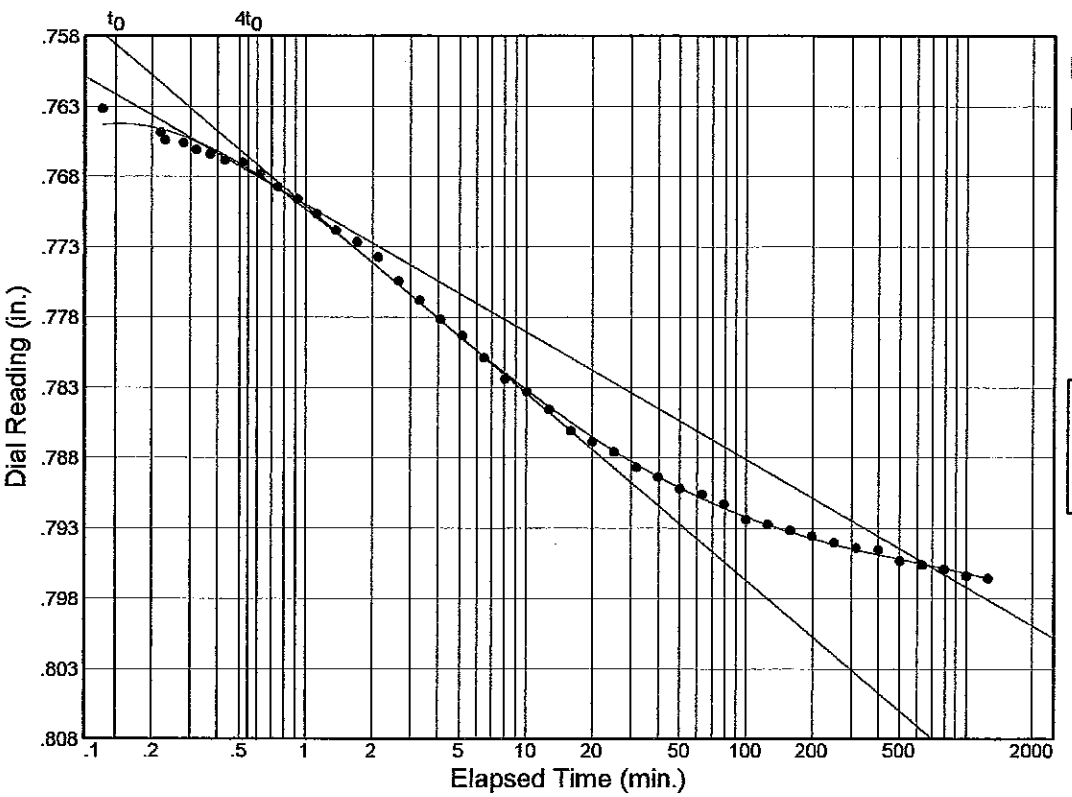
Source: BSFR-12U Sample No.: 5B Elev./Depth: 15.0



Load No.= 4
Load= 0.50 tsf
D_0 = 0.73446
D_{50} = 0.73833
D_{100} = 0.74220
T_{50} = 0.38 min.

C_v @ T_{50}
0.0019 in.^{2}/sec.

C_α = 0.008



Load No.= 5
Load= 1.00 tsf
D_0 = 0.76108
D_{50} = 0.76538
D_{100} = 0.76968
T_{50} = 0.31 min.

C_v @ T_{50}
0.0022 in.^{2}/sec.

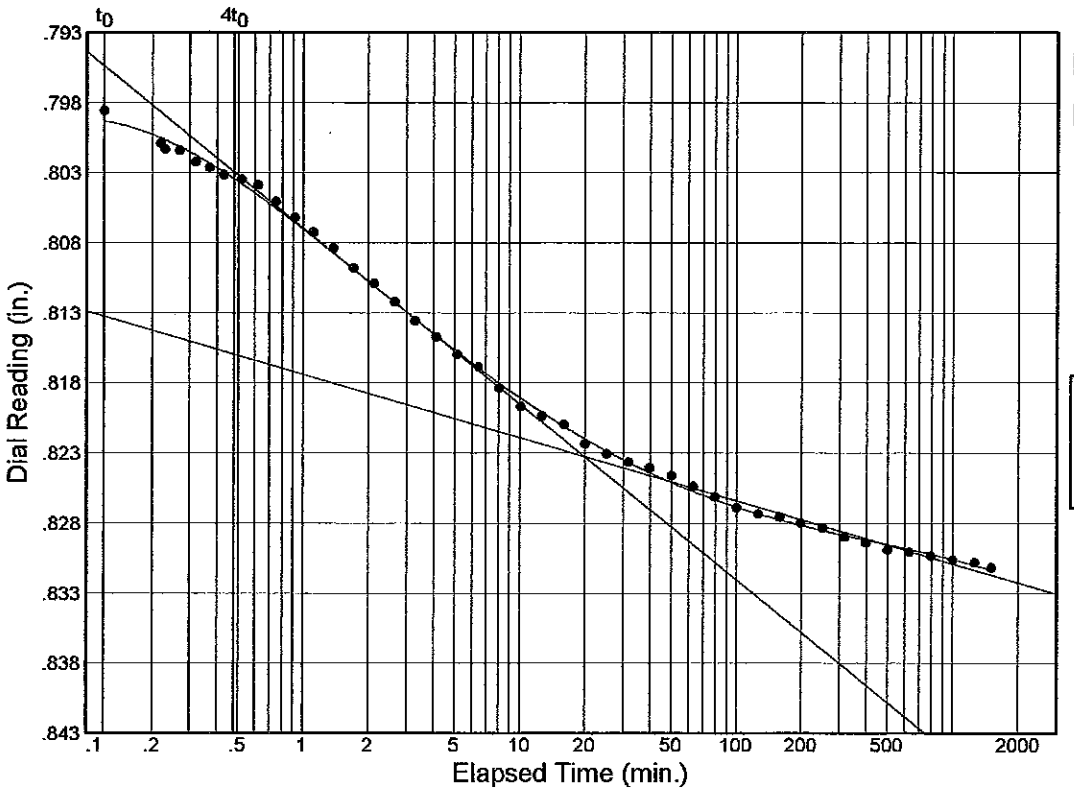
C_α = 0.010

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

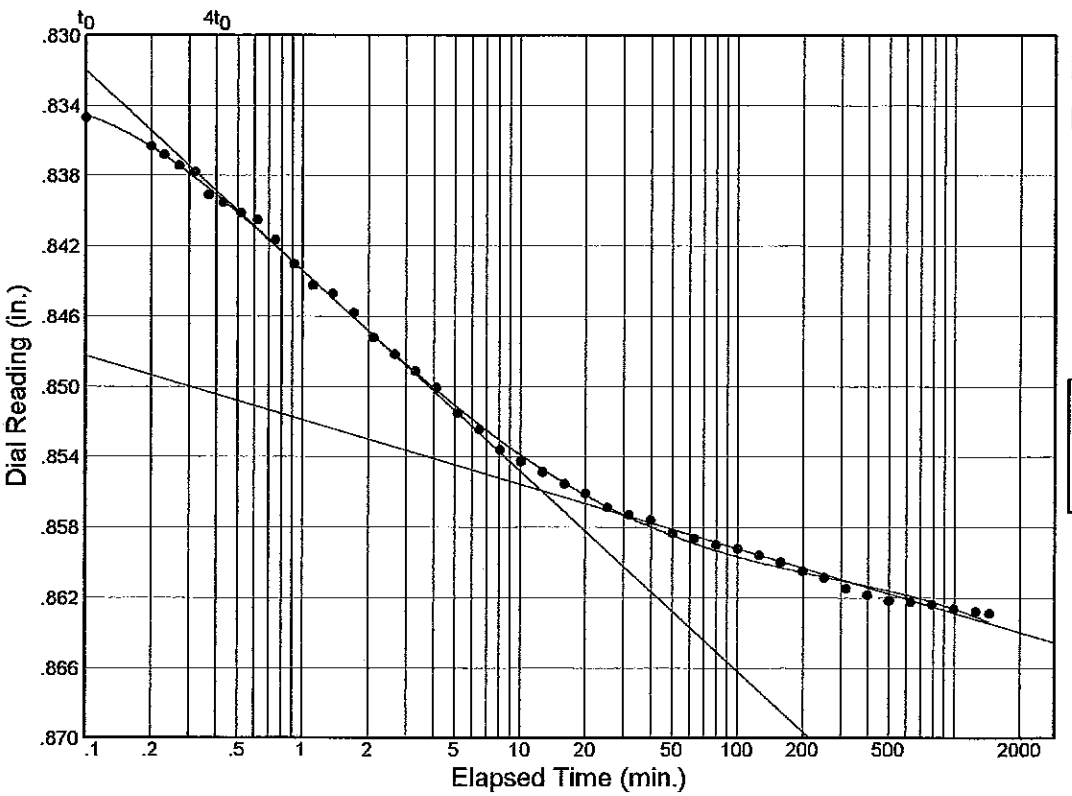
Source: BSFR-12U Sample No.: 5B Elev./Depth: 15.0



Load No.= 6
Load= 2.00 tsf
D_0 = 0.79526
D_{50} = 0.80924
D_{100} = 0.82323
T_{50} = 1.53 min.

C_v @ T_{50}
0.0004 in.^{2}/sec.

C_α = 0.005



Load No.= 7
Load= 4.00 tsf
D_0 = 0.83004
D_{50} = 0.84298
D_{100} = 0.85591
T_{50} = 0.92 min.

C_v @ T_{50}
0.0006 in.^{2}/sec.

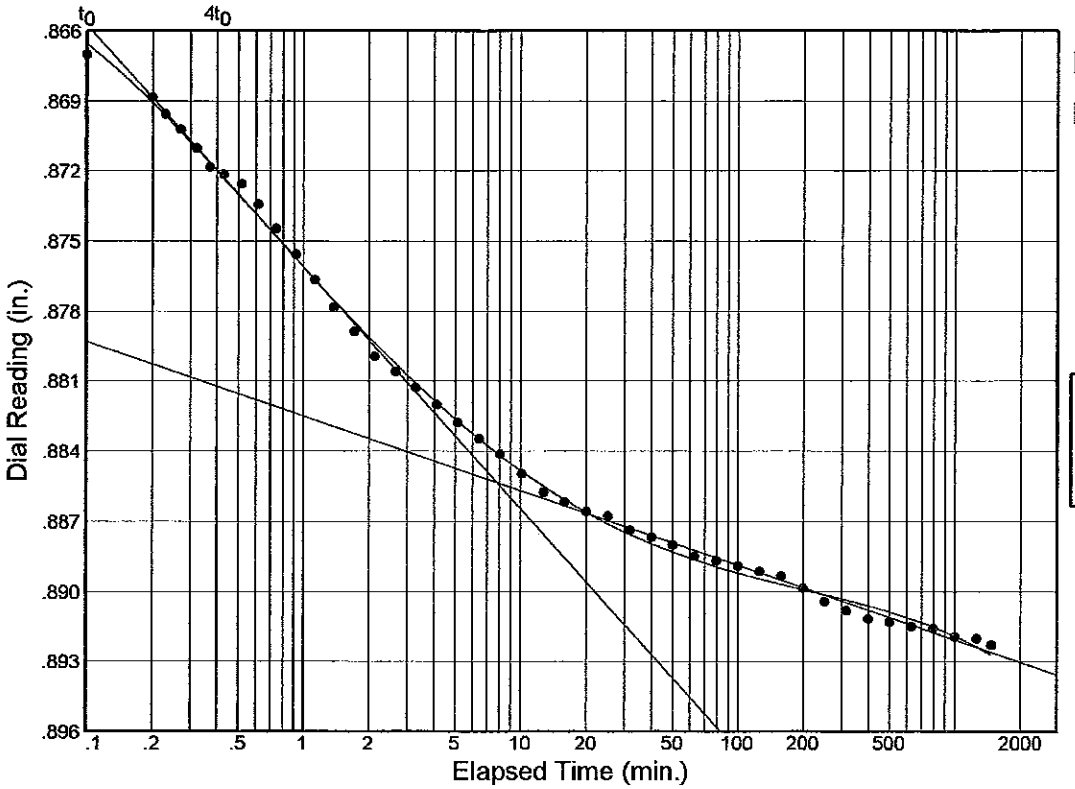
C_α = 0.004

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

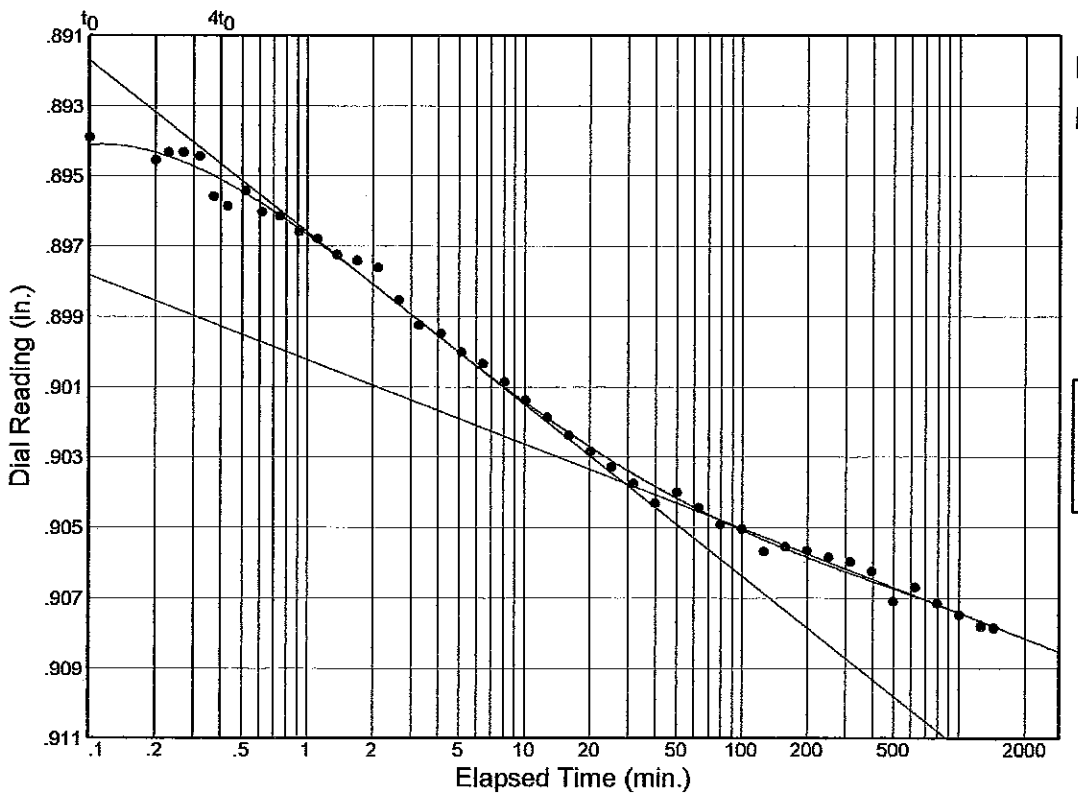
Source: BSFR-12U Sample No.: 5B Elev./Depth: 15.0



Load No.= 8
Load= 8.00 tsf
D_0 = 0.86109
D_{50} = 0.87321
D_{100} = 0.88534
T_{50} = 0.53 min.

C_v @ T_{50}
0.0010 in.^{2}/sec.

C_α = 0.004



Load No.= 9
Load= 12.00 tsf
D_0 = 0.89315
D_{50} = 0.89844
D_{100} = 0.90373
T_{50} = 2.39 min.

C_v @ T_{50}
0.0002 in.^{2}/sec.

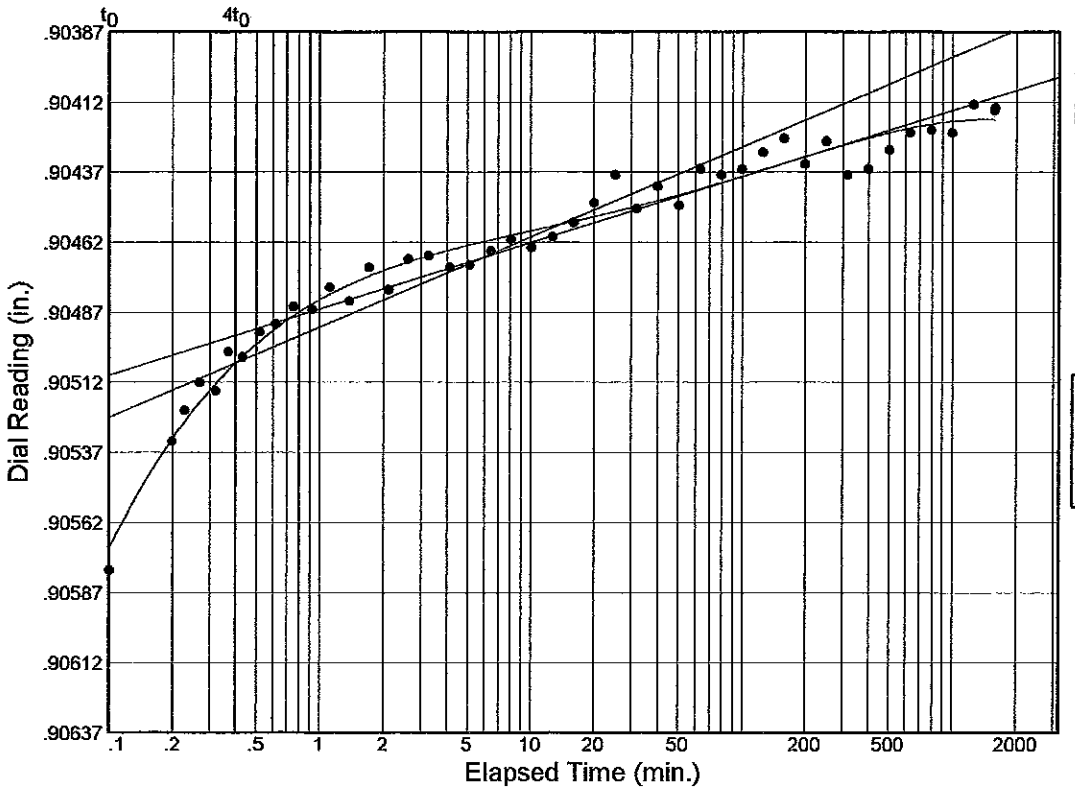
C_α = 0.003

Figure

Dial Reading vs. Time

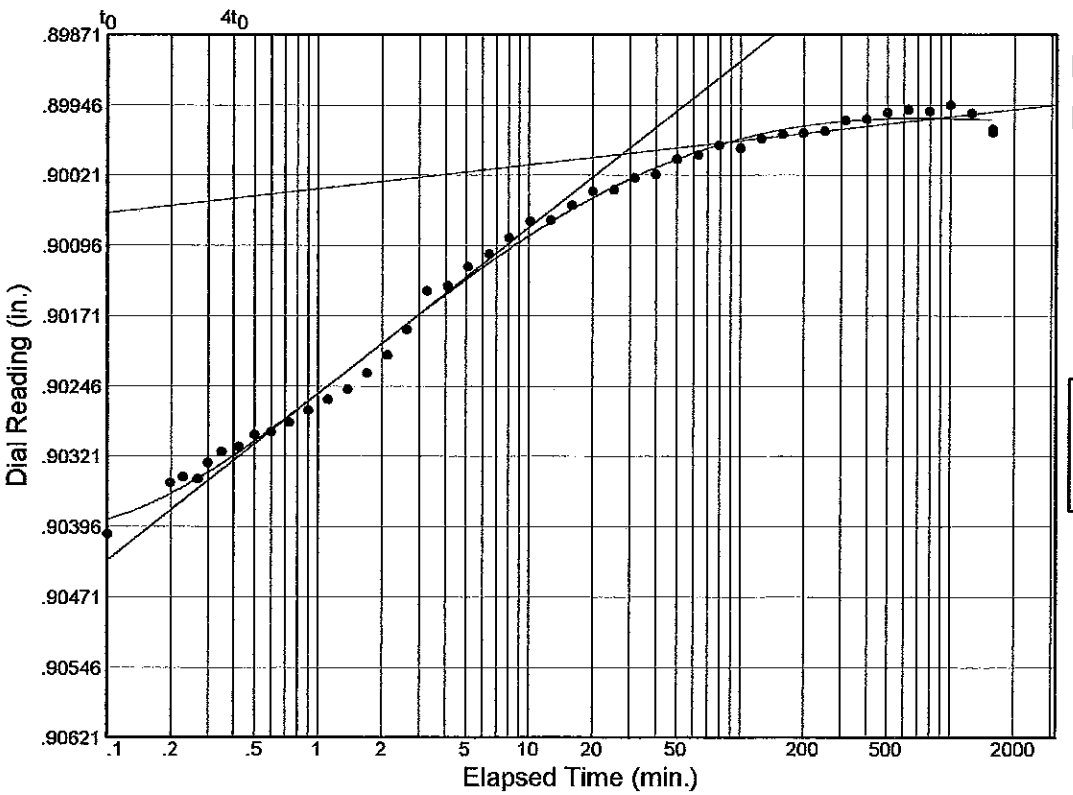
Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

Source: BSFR-12U Sample No.: 5B Elev./Depth: 15.0



Load No.= 10
Load= 3.00 tsf
D_0 = 0.90637
D_{50} = 0.90553
D_{100} = 0.90468
T_{50} = 0.13 min.

C_v @ T_{50}
0.0037 in.^{2}/sec.



Load No.= 11
Load= 0.75 tsf
D_0 = 0.90457
D_{50} = 0.90227
D_{100} = 0.89998
T_{50} = 1.41 min.

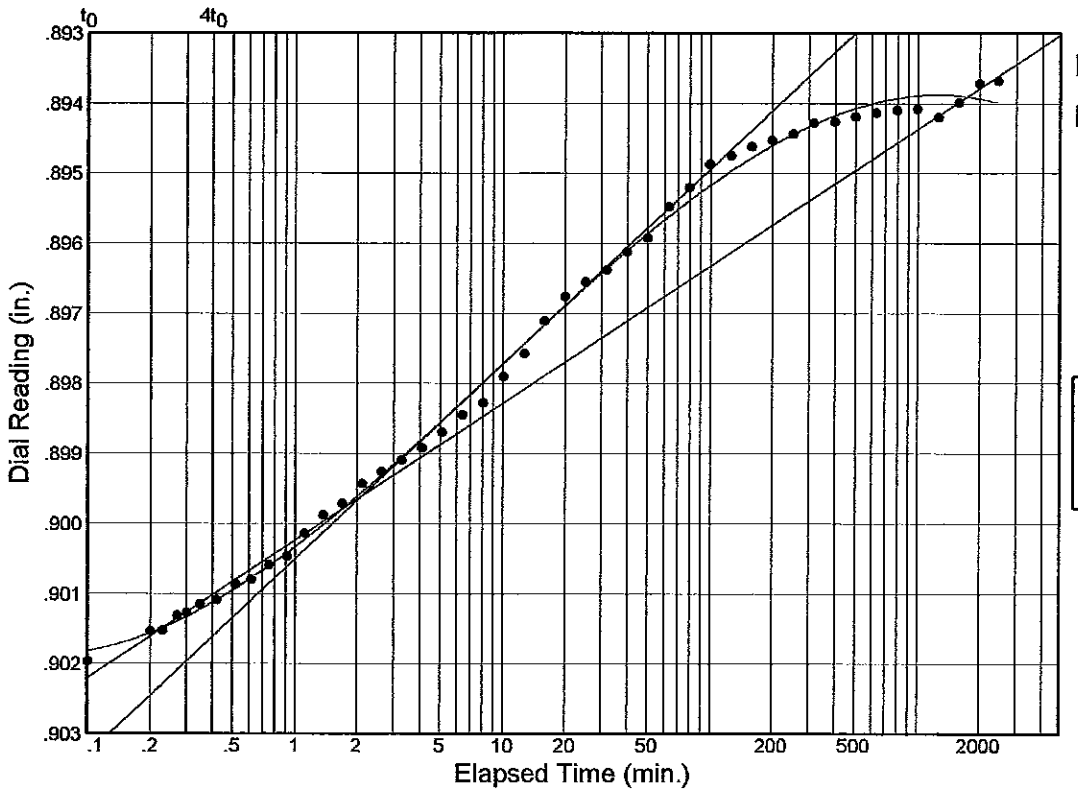
C_v @ T_{50}
0.0004 in.^{2}/sec.

Figure

Dial Reading vs. Time

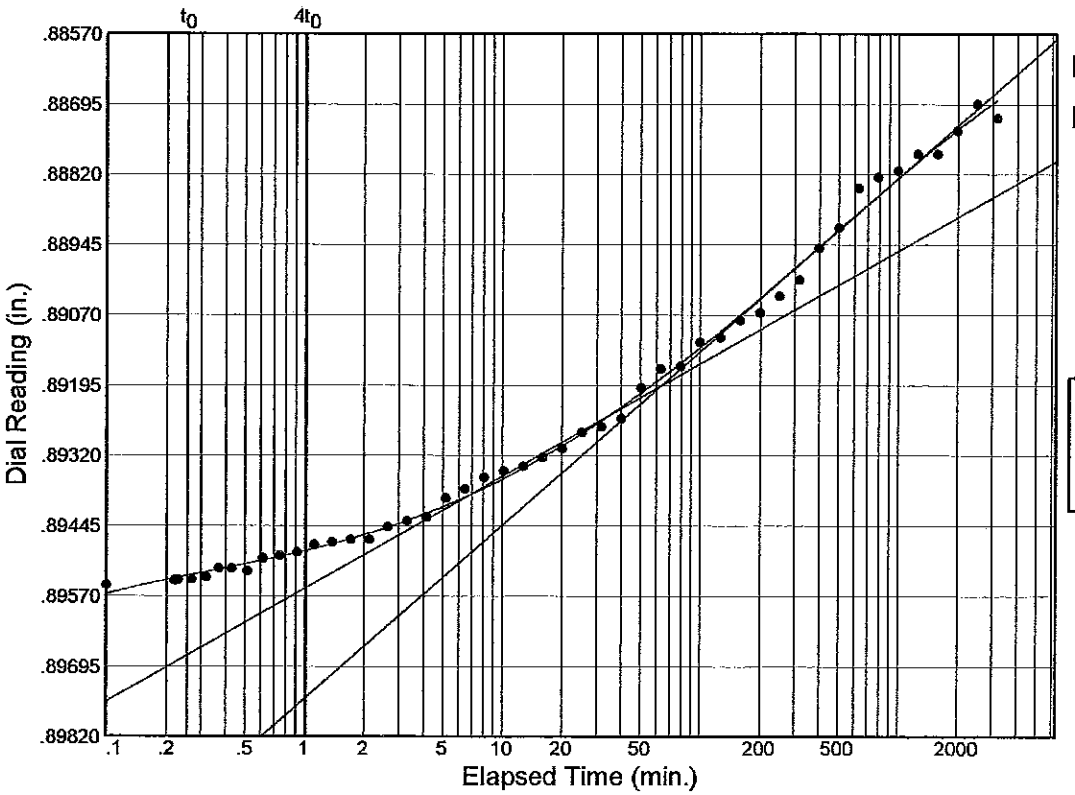
Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

Source: BSFR-12U Sample No.: 5B Elev./Depth: 15.0



Load No.= 12
Load= 0.19 tsf
D_0 = 0.90250
D_{50} = 0.90106
D_{100} = 0.89962
T_{50} = 0.44 min.

C_v @ T_{50}
0.0012 in.^{2}/sec.



Load No.= 13
Load= 0.05 tsf
D_0 = 0.89579
D_{50} = 0.89388
D_{100} = 0.89197
T_{50} = 7.07 min.

C_v @ T_{50}
0.0001 in.^{2}/sec.

SWELL/CONSOLIDATION TEST DATA

Client: USACE
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans
Project Number: 12-017108

Sample Data

Source: BSFR-12U
Sample No.: 5B
Elev. or Depth: 15.0 **Sample Length(in./cm.):**
Location:
Description: SO GR CL4 W/ ARS & LYS SM, SIF
Liquid Limit: **Plasticity Index:**
USCS: CH2 **AASHTO:** **Figure No.:**
Testing Remarks:

Test Specimen Data

TOTAL SAMPLE		BEFORE TEST	AFTER TEST
Wet w+t	= 139.77 g.	Consolidometer # = 6	Wet w+t = 409.32 g.
Dry w+t	= 112.94 g.		Dry w+t = 347.77 g.
Tare Wt.	= .00 g.	Spec. Gravity = 2.66	Tare Wt. = 69.99 g.
Height	= 1.00 in.	Height = 1.00 in.	
Diameter	= 4.00 in.	Diameter = 4.00 in.	
Weight	= 44.04 g.	Defl. Table = n/a	
Moisture	= 23.8 %	Ht. Solids = 0.5073 in.	Moisture = 22.2 %
Wet Den.	= 13.4 pcf	Dry Wt. = 35.58 g.	Dry Wt. = 277.78 g.*
Dry Den.	= 10.8 pcf	Void Ratio = 0.971	Void Ratio = 0.586
		Saturation = 65.1 %	

*** Final dry weight used in calculations**

End-of-Load Summary

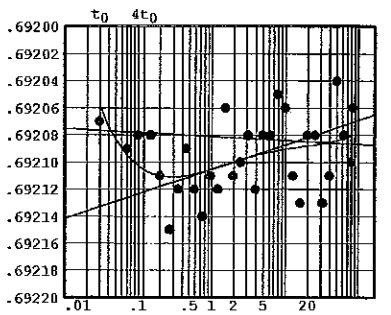
Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (in.^{2}/sec.)	C_α	Void Ratio	% Compression /Swell
start	0.69209				0.971	
0.05	0.69206	0.00000		0.000	0.971	0.0 Swell
0.13	0.71906	0.00000	0.0005	0.003	0.918	2.7 Comprs.
0.25	0.73712	0.00000	0.0005	0.005	0.882	4.5 Comprs.
0.50	0.76244	0.00000	0.0019	0.008	0.832	7.0 Comprs.
1.00	0.79656	0.00000	0.0022	0.010	0.765	10.4 Comprs.
2.00	0.83117	0.00000	0.0004	0.005	0.697	13.9 Comprs.
4.00	0.86291	0.00000	0.0006	0.004	0.634	17.1 Comprs.
8.00	0.89228	0.00000	0.0010	0.004	0.576	20.0 Comprs.
12.00	0.90786	0.00000	0.0002	0.003	0.546	21.6 Comprs.
3.00	0.90414	0.00000	0.0037		0.553	21.2 Comprs.

Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (in.^{2}/sec.)	C_α	Void Ratio	% Compression /Swell
0.75	0.89972	0.00000	0.0004		0.562	20.8 Comprs.
0.19	0.89368	0.00000	0.0012		0.574	20.2 Comprs.
0.05	0.88720	0.00000	0.0001		0.586	19.5 Comprs.

C_c = 0.17 P_c = 0.11 tsf C_r = 0.02

Pressure: 0.05 tsf **TEST READINGS** **Load No. 1**

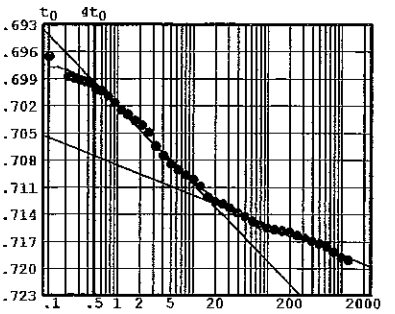
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.69209	17	3.12	0.69208
2	0.03	0.69207	18	3.93	0.69212
3	0.07	0.69209	19	4.97	0.69208
4	0.10	0.69208	20	6.27	0.69208
5	0.15	0.69208	21	7.90	0.69205
6	0.20	0.69211	22	9.97	0.69206
7	0.27	0.69215	23	12.55	0.69211
8	0.35	0.69212	24	15.82	0.69213
9	0.45	0.69209	25	19.92	0.69208
10	0.58	0.69212	26	25.08	0.69208
11	0.75	0.69214	27	31.60	0.69213
12	0.95	0.69211	28	39.78	0.69211
13	1.22	0.69212	29	50.10	0.69204
14	1.53	0.69206	30	63.07	0.69208
15	1.95	0.69211	31	79.42	0.69210
16	2.47	0.69210	32	83.18	0.69206



Void Ratio = 0.971 **Swell** = 0.0 %

Pressure: 0.13 tsf **TEST READINGS** **Load No. 2**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.68903	23	10.13	0.71014
2	0.12	0.69650	24	12.73	0.71087
3	0.22	0.69877	25	16.00	0.71209
4	0.23	0.69878	26	20.10	0.71262
5	0.27	0.69898	27	25.27	0.71286
6	0.32	0.69919	28	31.77	0.71337
7	0.37	0.69933	29	39.97	0.71386
8	0.43	0.69952	30	50.27	0.71424
9	0.52	0.70018	31	63.25	0.71481
10	0.62	0.70030	32	79.58	0.71518
11	0.75	0.70092	33	100.15	0.71554
12	0.92	0.70164	34	126.05	0.71571
13	1.12	0.70245	35	158.65	0.71587
14	1.38	0.70293	36	199.70	0.71602
15	1.72	0.70363	37	251.35	0.71631
16	2.12	0.70415	38	316.40	0.71660
17	2.63	0.70495	39	398.28	0.71696
18	3.30	0.70648	40	501.35	0.71726
19	4.12	0.70754	41	631.13	0.71755
20	5.15	0.70846	42	794.50	0.71821
21	6.45	0.70909	43	1000.18	0.71876
22	8.08	0.70965	44	1234.65	0.71906



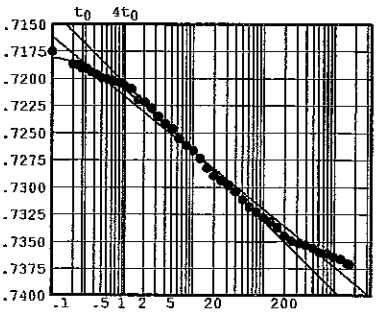
Void Ratio = 0.918 **Compression** = 2.7 %

D_0 = 0.69565 D_{50} = 0.70416 D_{100} = 0.71266

C_v **at 1.8 min.** = 0.0005 in.^{2}/sec. C_α = 0.003

Pressure: 0.25 tsf | TEST READINGS | Load No. 3

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.71563	24	12.72	0.72736
2	0.10	0.71751	25	15.98	0.72826
3	0.20	0.71870	26	20.08	0.72896
4	0.23	0.71875	27	25.25	0.72940
5	0.27	0.71907	28	31.77	0.72981
6	0.32	0.71913	29	39.95	0.73042
7	0.37	0.71942	30	50.25	0.73114
8	0.43	0.71960	31	63.23	0.73183
9	0.52	0.71994	32	79.57	0.73228
10	0.62	0.72008	33	100.13	0.73279
11	0.75	0.72023	34	126.03	0.73321
12	0.92	0.72036	35	158.63	0.73372
13	1.12	0.72071	36	199.67	0.73449
14	1.38	0.72096	37	251.33	0.73498
15	1.70	0.72194	38	316.37	0.73516
16	2.12	0.72219	39	398.25	0.73534
17	2.63	0.72275	40	501.33	0.73561
18	3.28	0.72351	41	631.10	0.73604
19	4.10	0.72417	42	794.48	0.73612
20	5.13	0.72463	43	1000.15	0.73645
21	6.43	0.72554	44	1259.07	0.73664
22	8.07	0.72617	45	1585.05	0.73707
23	10.13	0.72664	46	1695.30	0.73712



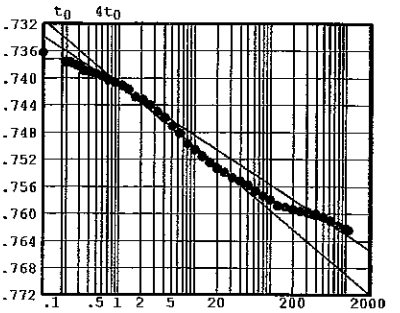
Void Ratio = 0.882 **Compression** = 4.5 %

D_0 = 0.71649 D_{50} = 0.72182 D_{100} = 0.72716

C_v **at 1.6 min.** = 0.0005 in.^{2}/sec. C_α = 0.005

Pressure: 0.50 tsf | TEST READINGS | Load No. 4

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.73257	23	10.12	0.75063
2	0.10	0.73626	24	12.72	0.75154
3	0.20	0.73762	25	15.98	0.75248
4	0.23	0.73771	26	20.08	0.75336
5	0.27	0.73802	27	25.25	0.75393
6	0.30	0.73819	28	31.75	0.75470
7	0.35	0.73891	29	39.95	0.75520
8	0.42	0.73911	30	50.25	0.75581
9	0.50	0.73933	31	63.23	0.75667
10	0.60	0.73969	32	79.57	0.75736
11	0.73	0.74031	33	100.13	0.75796
12	0.90	0.74061	34	126.03	0.75886
13	1.12	0.74109	35	158.63	0.75906
14	1.37	0.74167	36	199.67	0.75940
15	1.70	0.74277	37	251.33	0.75967
16	2.12	0.74322	38	316.37	0.75985
17	2.63	0.74401	39	398.25	0.76002
18	3.28	0.74498	40	501.33	0.76048
19	4.10	0.74584	41	631.10	0.76108
20	5.13	0.74708	42	794.48	0.76179
21	6.43	0.74819	43	1000.15	0.76223
22	8.07	0.74966	44	1077.50	0.76244



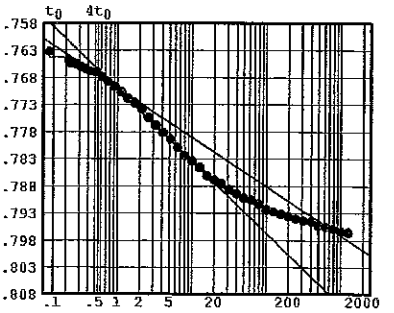
Void Ratio = 0.832 Compression = 7.0 %

D_0 = 0.73446 D_{50} = 0.73833 D_{100} = 0.74220

C_v at 0.4 min. = 0.0019 in.^{2}/sec. C_α = 0.008

Pressure: 1.00 tsf | TEST READINGS | Load No. 5

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.75772	23	10.13	0.78333
2	0.12	0.76319	24	12.73	0.78457
3	0.22	0.76488	25	15.98	0.78611
4	0.23	0.76540	26	20.10	0.78688
5	0.28	0.76560	27	25.27	0.78759
6	0.32	0.76610	28	31.77	0.78868
7	0.37	0.76642	29	39.97	0.78937
8	0.43	0.76683	30	50.27	0.79021
9	0.52	0.76701	31	63.25	0.79059
10	0.62	0.76781	32	79.58	0.79130
11	0.75	0.76872	33	100.15	0.79237
12	0.92	0.76958	34	126.05	0.79274
13	1.13	0.77065	35	158.65	0.79314
14	1.38	0.77182	36	199.68	0.79356
15	1.72	0.77267	37	251.35	0.79403
16	2.13	0.77375	38	316.38	0.79438
17	2.65	0.77541	39	398.27	0.79452
18	3.30	0.77678	40	501.35	0.79532
19	4.12	0.77817	41	631.12	0.79560
20	5.15	0.77932	42	794.50	0.79594
21	6.45	0.78091	43	1000.17	0.79641
22	8.08	0.78238	44	1259.10	0.79656



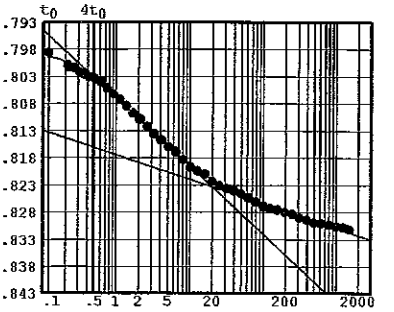
Void Ratio = 0.765 **Compression** = 10.4 %

D_0 = 0.76108 D_{50} = 0.76538 D_{100} = 0.76968

C_v **at 0.3 min.** = 0.0022 in.^{2}/sec. C_α = 0.010

Pressure: 2.00 tsf | TEST READINGS | Load No. 6

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.79175	24	12.73	0.82036
2	0.12	0.79857	25	16.00	0.82096
3	0.22	0.80092	26	20.10	0.82231
4	0.23	0.80133	27	25.27	0.82307
5	0.27	0.80140	28	31.77	0.82363
6	0.32	0.80225	29	39.97	0.82406
7	0.37	0.80263	30	50.27	0.82459
8	0.43	0.80316	31	63.25	0.82537
9	0.52	0.80346	32	79.58	0.82609
10	0.62	0.80389	33	100.15	0.82690
11	0.75	0.80508	34	126.05	0.82736
12	0.92	0.80619	35	158.65	0.82759
13	1.12	0.80723	36	199.70	0.82798
14	1.38	0.80838	37	251.37	0.82835
15	1.72	0.80982	38	316.40	0.82899
16	2.13	0.81088	39	398.28	0.82939
17	2.65	0.81223	40	501.35	0.82991
18	3.30	0.81356	41	631.13	0.83006
19	4.12	0.81474	42	794.50	0.83033
20	5.15	0.81597	43	1000.17	0.83064
21	6.45	0.81688	44	1259.10	0.83080
22	8.08	0.81835	45	1505.17	0.83117
23	10.15	0.81968			



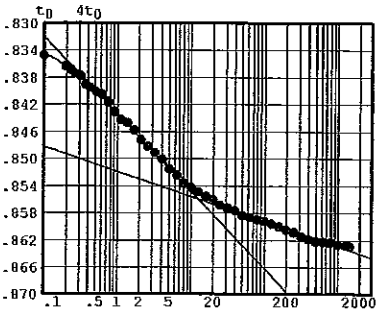
Void Ratio = 0.697 **Compression** = 13.9 %

D_0 = 0.79526 D_{50} = 0.80924 D_{100} = 0.82323

C_v **at 1.5 min.** = 0.0004 in.^{2}/sec. C_α = 0.005

Pressure: 4.00 tsf | TEST READINGS | Load No. 7

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.82528	24	12.75	0.85489
2	0.10	0.83470	25	16.02	0.85553
3	0.20	0.83634	26	20.12	0.85608
4	0.23	0.83681	27	25.28	0.85688
5	0.27	0.83743	28	31.80	0.85727
6	0.32	0.83778	29	39.98	0.85761
7	0.37	0.83909	30	50.30	0.85835
8	0.43	0.83953	31	63.27	0.85864
9	0.52	0.84013	32	79.62	0.85899
10	0.62	0.84052	33	100.18	0.85921
11	0.75	0.84166	34	126.07	0.85959
12	0.92	0.84304	35	158.68	0.85999
13	1.12	0.84422	36	199.72	0.86051
14	1.38	0.84470	37	251.38	0.86087
15	1.72	0.84581	38	316.42	0.86149
16	2.13	0.84721	39	398.30	0.86185
17	2.65	0.84818	40	501.38	0.86217
18	3.30	0.84912	41	631.15	0.86226
19	4.12	0.85008	42	794.53	0.86238
20	5.15	0.85151	43	1000.20	0.86266
21	6.47	0.85243	44	1259.13	0.86280
22	8.10	0.85359	45	1445.75	0.86291
23	10.15	0.85427			



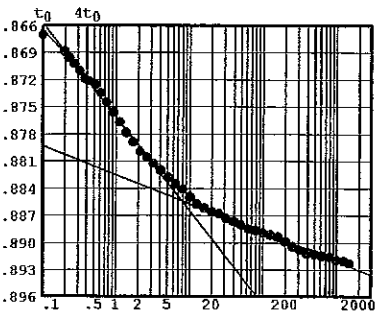
Void Ratio = 0.634 **Compression** = 17.1 %

D_0 = 0.83004 D_{50} = 0.84298 D_{100} = 0.85591

C_v **at 0.9 min.** = 0.0006 in.^{2}/sec. C_α = 0.004

Pressure: 8.00 tsf | TEST READINGS | Load No. 8

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.85322	24	12.73	0.88575
2	0.10	0.86700	25	16.00	0.88617
3	0.20	0.86885	26	20.12	0.88657
4	0.23	0.86956	27	25.28	0.88677
5	0.27	0.87023	28	31.78	0.88736
6	0.32	0.87102	29	39.98	0.88767
7	0.37	0.87183	30	50.28	0.88800
8	0.43	0.87214	31	63.27	0.88848
9	0.52	0.87255	32	79.60	0.88867
10	0.62	0.87342	33	100.18	0.88891
11	0.75	0.87447	34	126.07	0.88916
12	0.92	0.87557	35	158.67	0.88935
13	1.13	0.87666	36	199.72	0.88986
14	1.38	0.87783	37	251.37	0.89043
15	1.72	0.87887	38	316.42	0.89081
16	2.13	0.87994	39	398.30	0.89118
17	2.65	0.88058	40	501.37	0.89130
18	3.30	0.88128	41	631.15	0.89149
19	4.12	0.88201	42	794.52	0.89158
20	5.15	0.88279	43	1000.20	0.89193
21	6.45	0.88346	44	1259.12	0.89203
22	8.08	0.88411	45	1469.98	0.89228
23	10.15	0.88497			



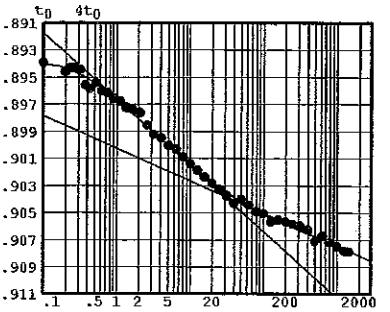
Void Ratio = 0.576 **Compression** = 20.0 %

D_0 = 0.86109 D_{50} = 0.87321 D_{100} = 0.88534

C_v **at 0.5 min.** = 0.0010 in.^{2}/sec. C_α = 0.004

Pressure: 12.00 tsf | TEST READINGS | Load No. 9

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.88415	24	12.73	0.90187
2	0.10	0.89389	25	15.98	0.90239
3	0.20	0.89455	26	20.10	0.90283
4	0.23	0.89432	27	25.27	0.90328
5	0.27	0.89433	28	31.77	0.90375
6	0.32	0.89444	29	39.97	0.90431
7	0.37	0.89558	30	50.27	0.90400
8	0.43	0.89586	31	63.25	0.90444
9	0.52	0.89542	32	79.60	0.90491
10	0.62	0.89603	33	100.17	0.90505
11	0.75	0.89615	34	126.05	0.90569
12	0.92	0.89659	35	158.65	0.90555
13	1.12	0.89678	36	199.70	0.90566
14	1.38	0.89725	37	251.35	0.90585
15	1.70	0.89740	38	316.40	0.90597
16	2.12	0.89761	39	398.28	0.90624
17	2.63	0.89854	40	501.37	0.90710
18	3.28	0.89924	41	631.13	0.90670
19	4.12	0.89949	42	794.50	0.90716
20	5.15	0.90002	43	1000.18	0.90748
21	6.45	0.90034	44	1259.10	0.90782
22	8.08	0.90086	45	1440.53	0.90786
23	10.13	0.90138			



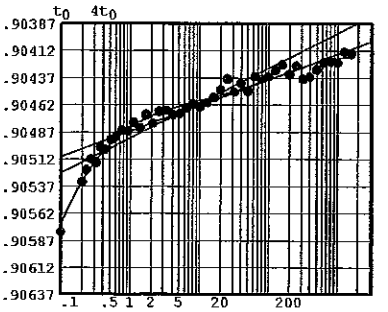
Void Ratio = 0.546 **Compression** = 21.6 %

D_0 = 0.89315 D_{50} = 0.89844 D_{100} = 0.90373

C_v **at 2.4 min.** = 0.0002 in.^{2}/sec. C_α = 0.003

Pressure: 3.00 tsf | TEST READINGS | Load No. 10

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.92530	24	12.73	0.90460
2	0.10	0.90579	25	15.98	0.90455
3	0.20	0.90533	26	20.10	0.90448
4	0.23	0.90522	27	25.27	0.90438
5	0.27	0.90512	28	31.77	0.90450
6	0.32	0.90515	29	39.95	0.90442
7	0.37	0.90501	30	50.27	0.90449
8	0.43	0.90503	31	63.25	0.90436
9	0.52	0.90494	32	79.58	0.90438
10	0.62	0.90491	33	100.15	0.90436
11	0.75	0.90485	34	126.05	0.90430
12	0.92	0.90486	35	158.65	0.90425
13	1.12	0.90478	36	199.68	0.90434
14	1.38	0.90483	37	251.35	0.90426
15	1.72	0.90471	38	316.40	0.90438
16	2.12	0.90479	39	398.27	0.90436
17	2.63	0.90468	40	501.35	0.90429
18	3.28	0.90467	41	631.13	0.90423
19	4.12	0.90471	42	794.50	0.90422
20	5.15	0.90470	43	1000.17	0.90423
21	6.45	0.90465	44	1259.10	0.90413
22	8.08	0.90461	45	1585.07	0.90415
23	10.13	0.90464	46	1594.78	0.90414



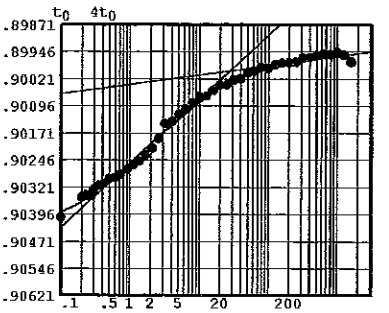
Void Ratio = 0.553 **Compression** = 21.2 %

D_0 = 0.90637 D_{50} = 0.90553 D_{100} = 0.90468

C_v **at 0.1 min.** = 0.0037 in.^{2}/sec.

Pressure: 0.75 tsf | TEST READINGS | Load No. 11

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.91164	24	12.72	0.90069
2	0.10	0.90404	25	15.98	0.90053
3	0.20	0.90349	26	20.10	0.90038
4	0.23	0.90343	27	25.27	0.90037
5	0.27	0.90345	28	31.77	0.90024
6	0.30	0.90328	29	39.95	0.90020
7	0.35	0.90316	30	50.27	0.90004
8	0.42	0.90311	31	63.25	0.89999
9	0.50	0.90298	32	79.58	0.89989
10	0.60	0.90295	33	100.15	0.89992
11	0.73	0.90285	34	126.05	0.89982
12	0.90	0.90272	35	158.65	0.89977
13	1.12	0.90260	36	199.68	0.89976
14	1.38	0.90249	37	251.35	0.89974
15	1.70	0.90232	38	316.40	0.89962
16	2.12	0.90213	39	398.28	0.89961
17	2.63	0.90186	40	501.35	0.89954
18	3.28	0.90145	41	631.13	0.89951
19	4.10	0.90139	42	794.50	0.89953
20	5.13	0.90119	43	1000.17	0.89946
21	6.43	0.90105	44	1259.10	0.89955
22	8.07	0.90088	45	1585.07	0.89975
23	10.13	0.90070	46	1585.93	0.89972



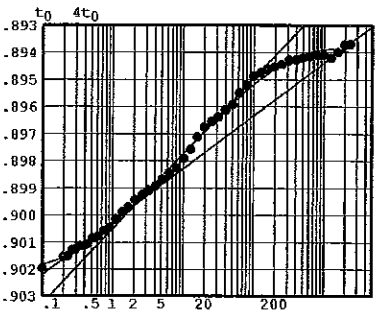
Void Ratio = 0.562 Compression = 20.8 %

D_0 = 0.90457 D_{50} = 0.90227 D_{100} = 0.89998

C_v at 1.4 min. = 0.0004 in.^{2}/sec.

Pressure: 0.19 tsf | TEST READINGS | Load No. 12

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.90495	25	15.98	0.89711
2	0.10	0.90196	26	20.08	0.89676
3	0.20	0.90154	27	25.25	0.89655
4	0.23	0.90153	28	31.77	0.89638
5	0.27	0.90131	29	39.95	0.89612
6	0.30	0.90127	30	50.27	0.89592
7	0.35	0.90115	31	63.25	0.89548
8	0.42	0.90109	32	79.58	0.89520
9	0.52	0.90086	33	100.15	0.89487
10	0.62	0.90080	34	126.05	0.89475
11	0.75	0.90059	35	158.65	0.89462
12	0.92	0.90047	36	199.68	0.89453
13	1.12	0.90014	37	251.35	0.89444
14	1.38	0.89988	38	316.38	0.89428
15	1.70	0.89971	39	398.27	0.89426
16	2.12	0.89943	40	501.35	0.89419
17	2.63	0.89926	41	631.12	0.89414
18	3.28	0.89909	42	794.50	0.89410
19	4.10	0.89892	43	1000.17	0.89408
20	5.13	0.89869	44	1259.10	0.89420
21	6.43	0.89845	45	1585.07	0.89399
22	8.07	0.89827	46	1995.43	0.89372
23	10.13	0.89790	47	2438.05	0.89368
24	12.72	0.89757			



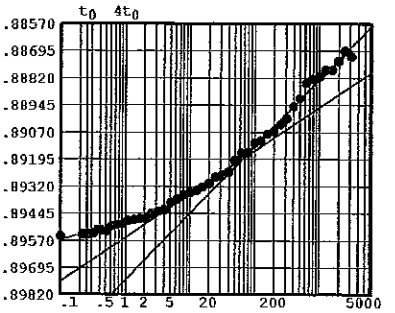
Void Ratio = 0.574 **Compression** = 20.2 %

D_0 = 0.90250 D_{50} = 0.90106 D_{100} = 0.89962

C_v **at 0.4 min.** = 0.0012 in.^{2}/sec.

Pressure: 0.05 tsf | TEST READINGS | Load No. 13

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.89745	25	16.00	0.89324
2	0.10	0.89550	26	20.10	0.89308
3	0.22	0.89542	27	25.27	0.89279
4	0.23	0.89541	28	31.78	0.89269
5	0.27	0.89540	29	39.97	0.89254
6	0.32	0.89537	30	50.28	0.89199
7	0.37	0.89521	31	63.25	0.89166
8	0.43	0.89521	32	79.60	0.89162
9	0.52	0.89525	33	100.17	0.89119
10	0.62	0.89503	34	126.05	0.89110
11	0.75	0.89498	35	158.65	0.89080
12	0.92	0.89492	36	199.70	0.89066
13	1.12	0.89479	37	251.35	0.89036
14	1.38	0.89474	38	316.40	0.89008
15	1.72	0.89469	39	398.28	0.88951
16	2.13	0.89469	40	501.37	0.88915
17	2.65	0.89447	41	631.13	0.88844
18	3.30	0.89436	42	794.50	0.88825
19	4.12	0.89429	43	1000.18	0.88813
20	5.15	0.89395	44	1259.10	0.88784
21	6.45	0.89379	45	1585.08	0.88784
22	8.08	0.89359	46	1995.45	0.88742
23	10.15	0.89348	47	2512.07	0.88695
24	12.73	0.89340	48	3162.47	0.88720

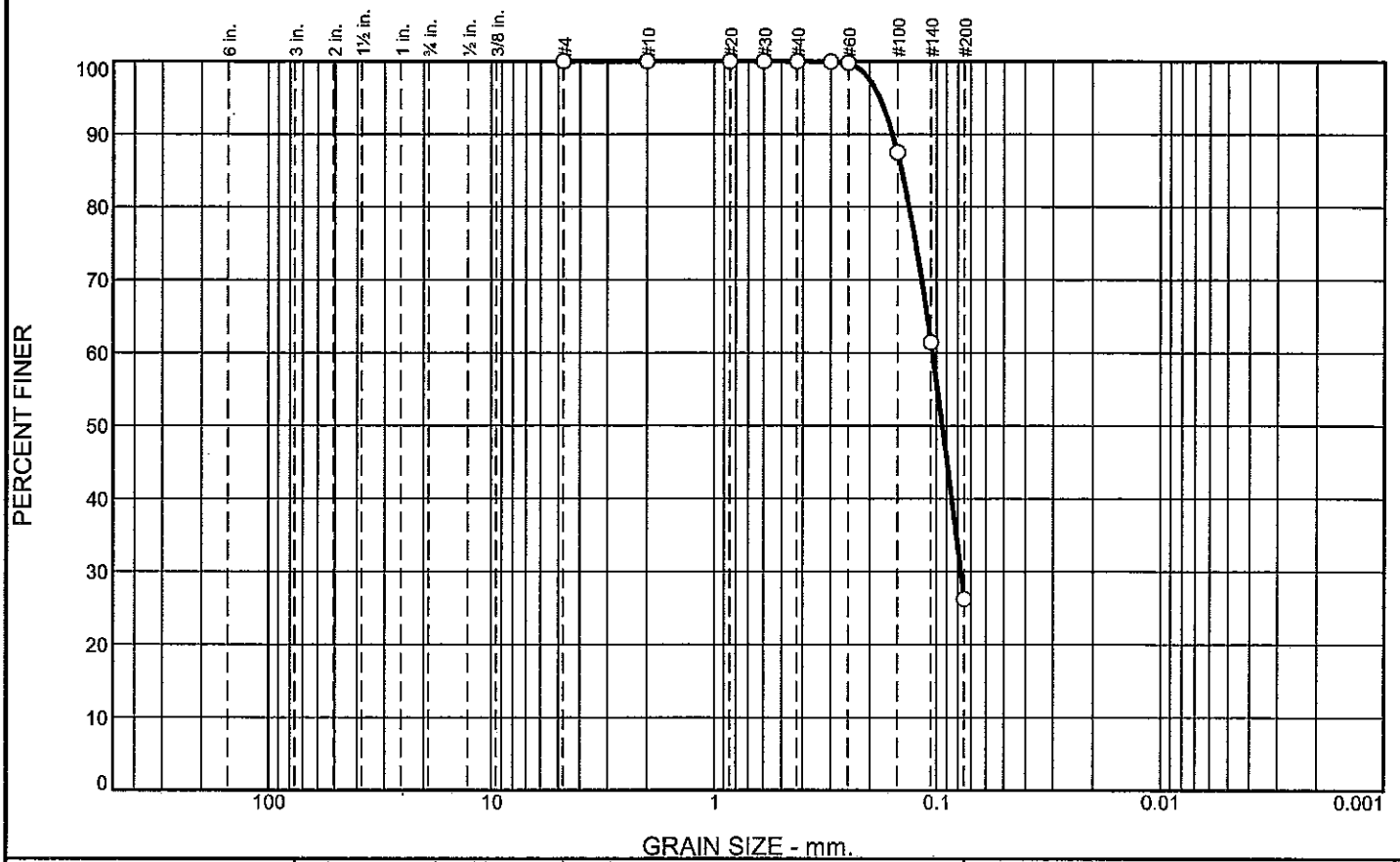


Void Ratio = 0.586 **Compression** = 19.5 %

D_0 = 0.89579 D_{50} = 0.89388 D_{100} = 0.89197

C_v **at 7.1 min.** = 0.0001 in.^{2}/sec.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.0	73.7	26.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	100.0		
#20	100.0		
#30	100.0		
#40	100.0		
#50	100.0		
#60	99.8		
#100	87.5		
#140	61.4		
#200	26.3		

* (no specification provided)

Soil Description

GR & GNG SM W/ LYS CH

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.1578 D_{85}= 0.1435 D_{60}= 0.1044
D_{50}= 0.0942 D_{30}= 0.0777 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

Source of Sample: BSFR-12U **Depth:** 36.0
Sample Number: 10C **Date:** 7-31-12

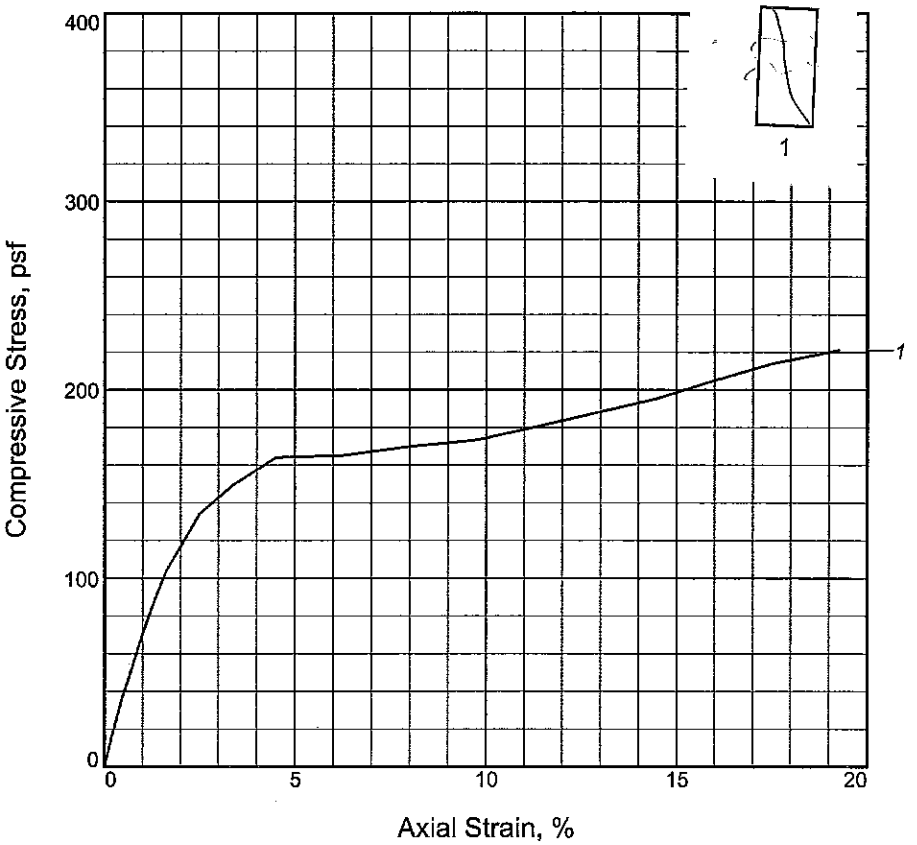
Stantec

Saint Rose, Louisiana

Client: USACE
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Project No: 12-017108 **Figure**

Tested By: NS

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	195			
Undrained shear strength, psf	98			
Failure strain, %	14.5			
Strain rate, in./min.	1.000			
Water content, %	63.2			
Wet density, pcf	103.7			
Dry density, pcf	63.6			
Saturation, %	102.9			
Void ratio	1.6717			
Specimen diameter, in.	1.367			
Specimen height, in.	2.991			
Height/diameter ratio	2.19			

Description: VSO GR CH4 W/ LNS ML, WD

LL = 77	**PL =** 24	**PI =** 53	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 12-017108
Date Sampled: 7-31-12
Remarks:
Torvane=0.10 tsf

Figure _____

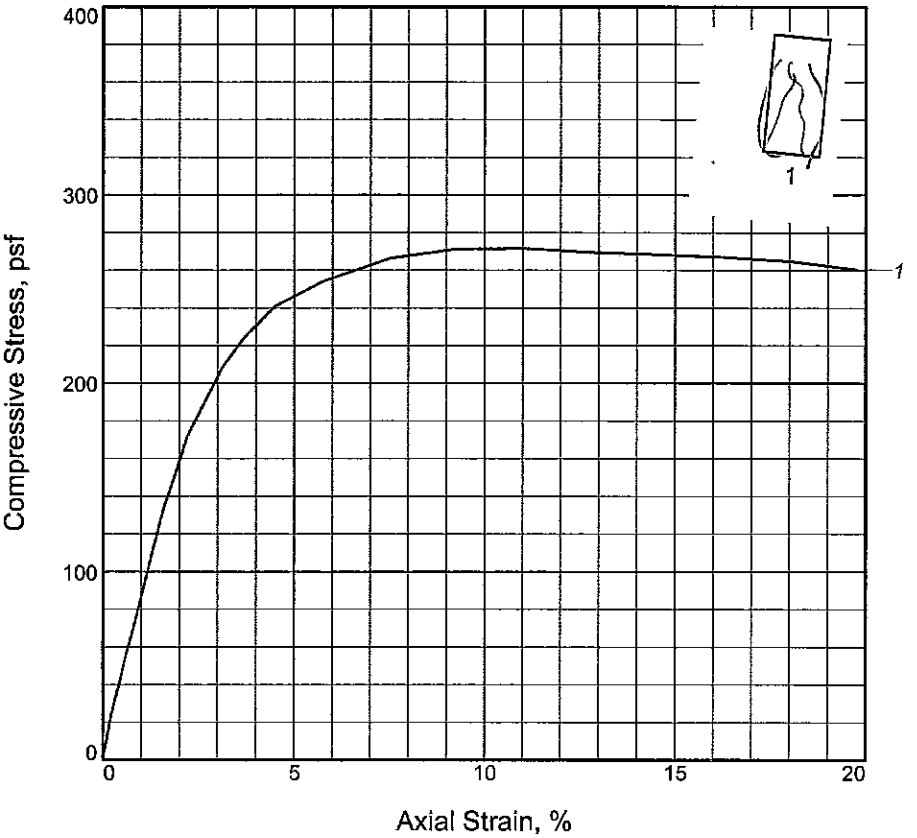
Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-12U **Depth:** 4.0
Sample Number: 2C

UNCONFINED COMPRESSION TEST
Stantec
Saint Rose, Louisiana

Tested By: JC

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	272			
Undrained shear strength, psf	136			
Failure strain, %	11.0			
Strain rate, in./min.	1.000			
Water content, %	78.9			
Wet density, pcf	98.4			
Dry density, pcf	55.0			
Saturation, %	102.9			
Void ratio	2.0863			
Specimen diameter, in.	1.351			
Specimen height, in.	2.985			
Height/diameter ratio	2.21			

Description: VSO GR CH2 W/ LNS ML

LL = 50	**PL =** 18	**PI =** 32	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 12-017108
Date Sampled: 7-31-12
Remarks:
Torvane=0.12 tsf

Figure _____

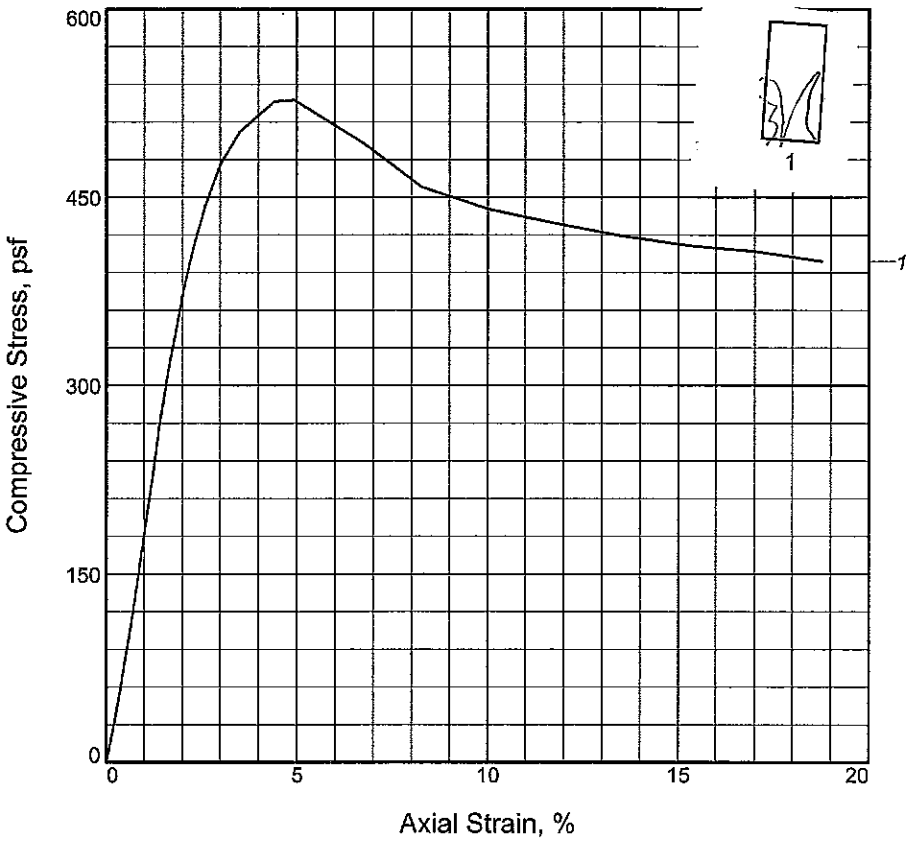
Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-12U **Depth:** 12.0
Sample Number: 4C

UNCONFINED COMPRESSION TEST
Stantec
Saint Rose, Louisiana

Tested By: JC

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	528			
Undrained shear strength, psf	264			
Failure strain, %	4.9			
Strain rate, in./min.	1.000			
Water content, %	40.7			
Wet density, pcf	115.1			
Dry density, pcf	81.8			
Saturation, %	103.6			
Void ratio	1.0597			
Specimen diameter, in.	1.399			
Specimen height, in.	2.998			
Height/diameter ratio	2.14			

Description: SO GR CL6 W/ ARS & LNS SP, SIF

LL = 43	**PL =** 16	**PI =** 27	**Assumed GS=** 2.70	**Type:** UNDISTURBED

Project No.: 12-017108
Date Sampled: 8-1-12
Remarks:
Torvane=0.22 tsf

Figure _____

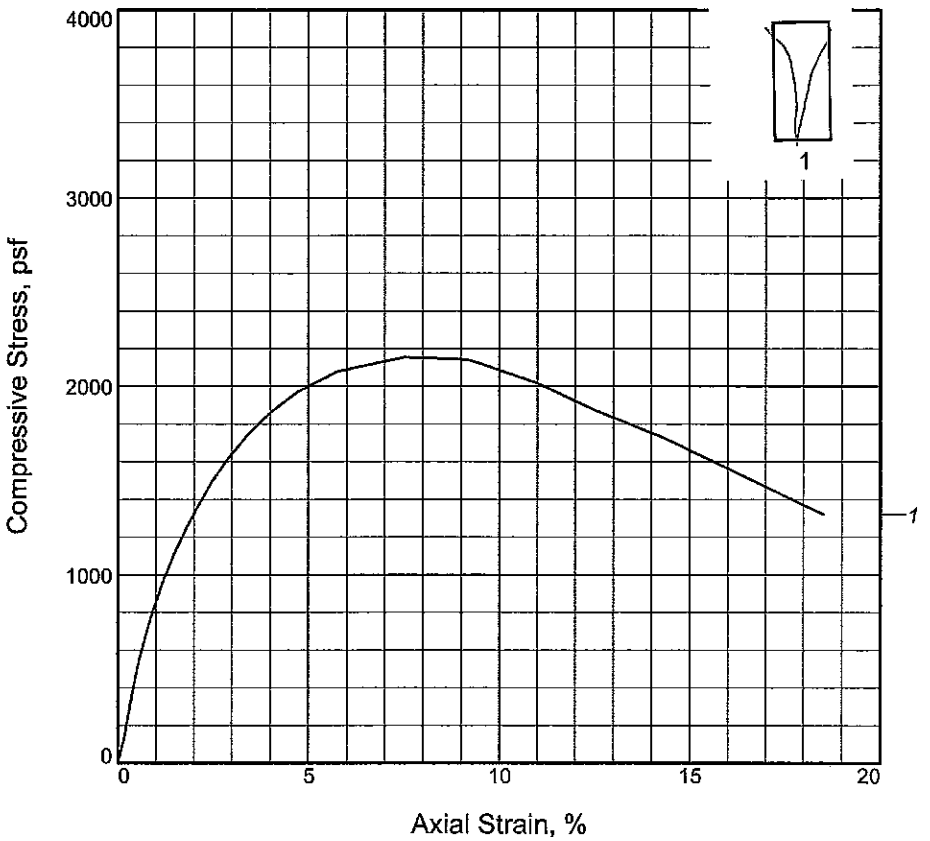
Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-12U **Depth:** 21.0
Sample Number: 6D

UNCONFINED COMPRESSION TEST
Stantec
Saint Rose, Louisiana

Tested By: JC

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	2153			
Undrained shear strength, psf	1077			
Failure strain, %	7.5			
Strain rate, in./min.	1.000			
Water content, %	27.6			
Wet density, pcf	122.6			
Dry density, pcf	96.1			
Saturation, %	98.7			
Void ratio	0.7536			
Specimen diameter, in.	1.417			
Specimen height, in.	3.007			
Height/diameter ratio	2.12			

Description: ST GNG & T CL6 W/ LNS ML

LL = 44	**PL =** 17	**PI =** 27	**Assumed GS=** 2.70	**Type:** UNDISTURBED

Project No.: 12-017108
Date Sampled: 8-1-12
Remarks:
Torvane=0.80 tsf

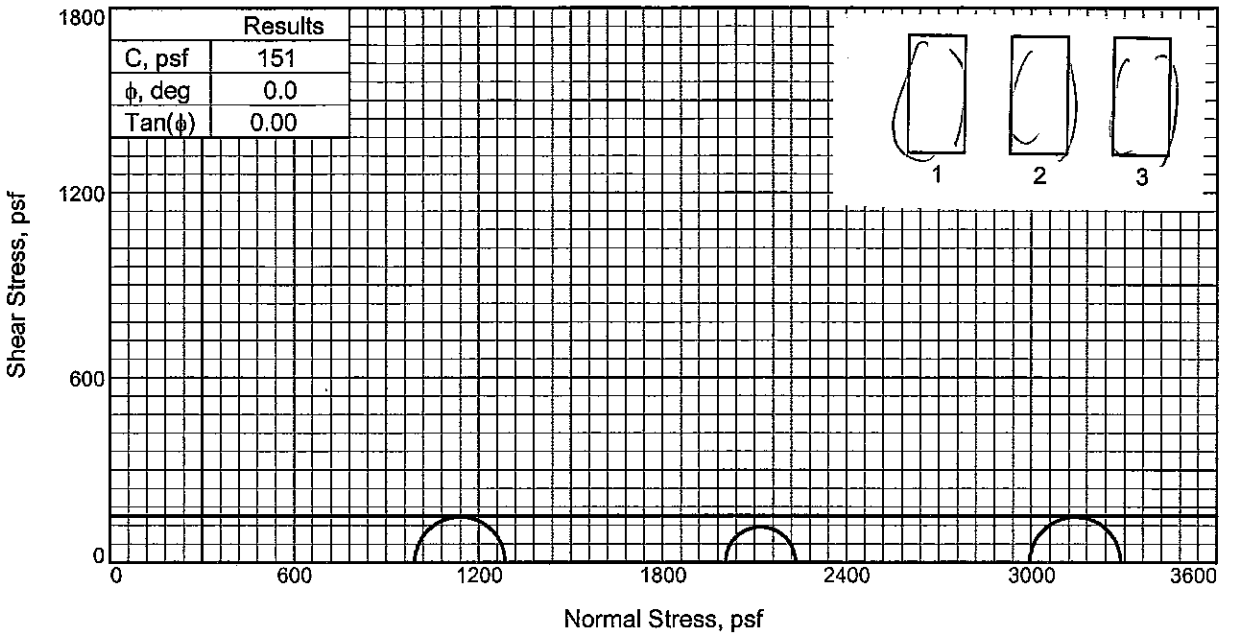
Figure _____

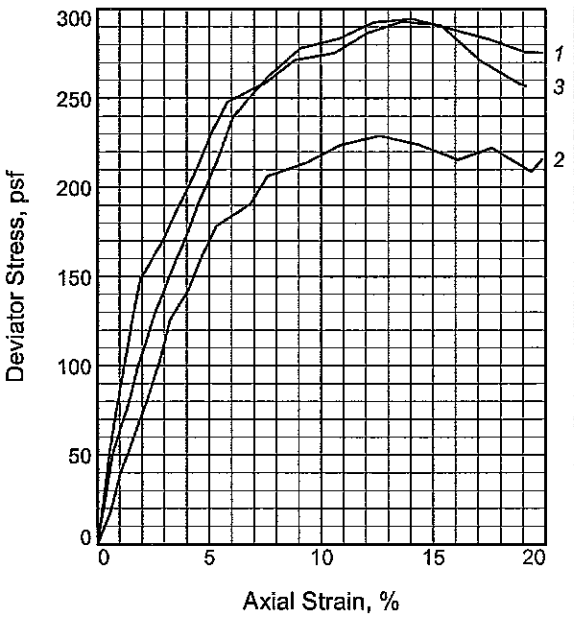
Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-12U **Depth:** 33.0
Sample Number: 9D

UNCONFINED COMPRESSION TEST
Stantec
Saint Rose, Louisiana

Tested By: JC





Sample No.		1	2	3
Initial	Water Content, %	44.0	47.3	47.7
	Dry Density, pcf	78.3	76.9	76.3
	Saturation, %	102.4	106.5	106.0
	Void Ratio	1.1688	1.2088	1.2247
	Diameter, in.	1.373	1.357	1.360
	Height, in.	2.993	2.972	2.976
At Test	Water Content, %	44.0	47.3	47.7
	Dry Density, pcf	78.3	76.9	76.3
	Saturation, %	102.4	106.5	106.0
	Void Ratio	1.1688	1.2088	1.2247
	Diameter, in.	1.373	1.357	1.360
	Height, in.	2.993	2.972	2.976
Strain rate, in./min.		1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.89	13.92	20.80
Fail. Stress, psf		294	229	293
Strain, %		14.1	12.6	13.6
Ult. Stress, psf		294	224	293
Strain, %		14.1	14.4	13.6
σ_1 Failure, psf		1287	2234	3288
σ_3 Failure, psf		992	2004	2995

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: VSO GR CH4 W/ LNS ML

LL= 79 **PL=** 15 **PI=** 64
Assumed Specific Gravity= 2.72
Remarks: Torvane=0.10 tsf

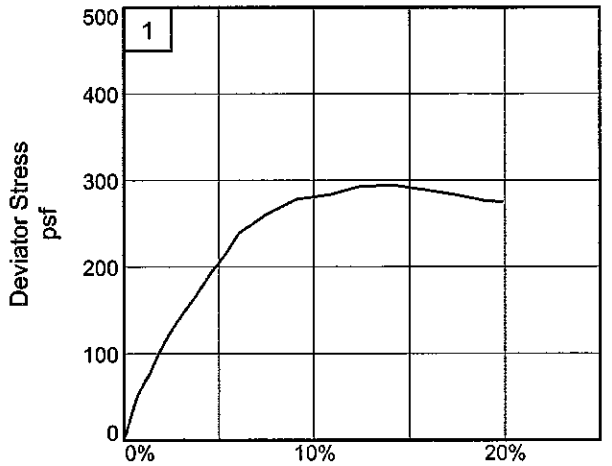
Figure _____

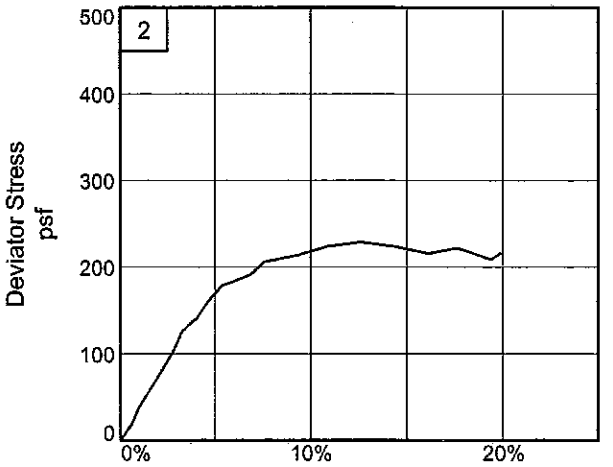
Client: USACE

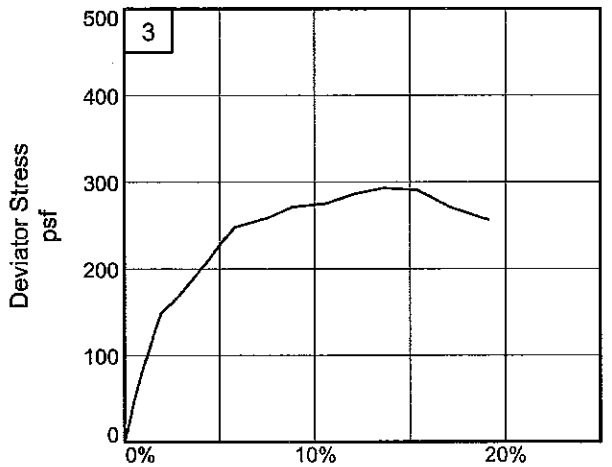
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-12U **Depth:** 8.0
Sample Number: 3C
Proj. No.: 12-017108 **Date Sampled:** 7-31-12

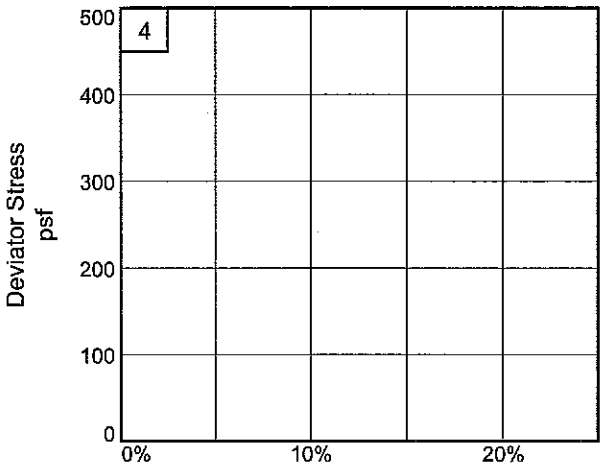
TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

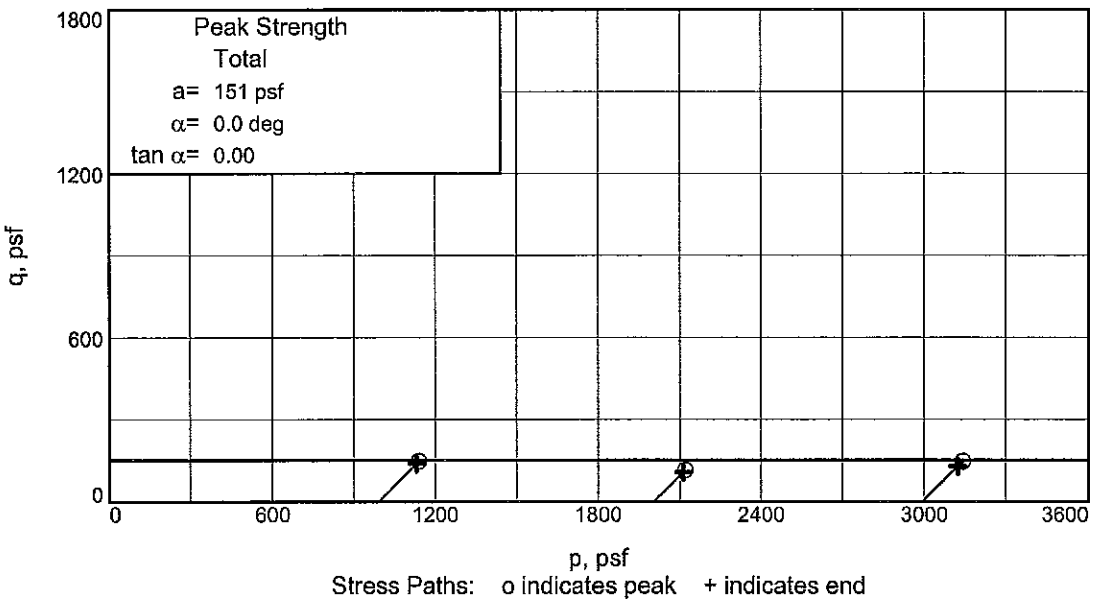
Tested By: JC











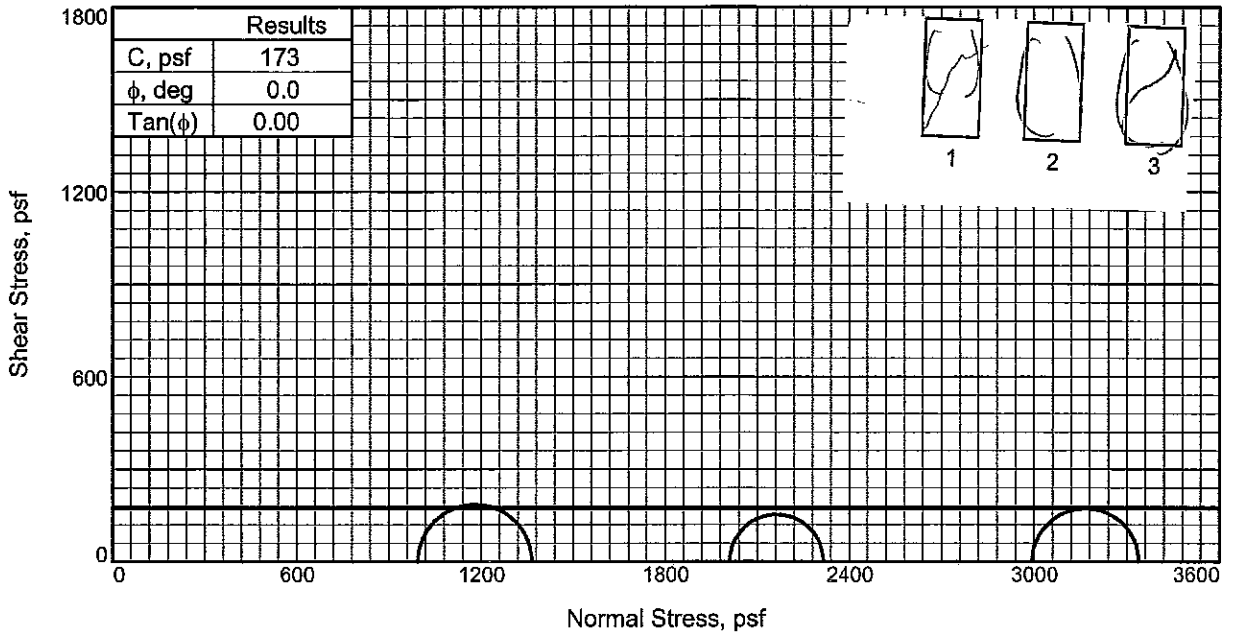
Client: USACE

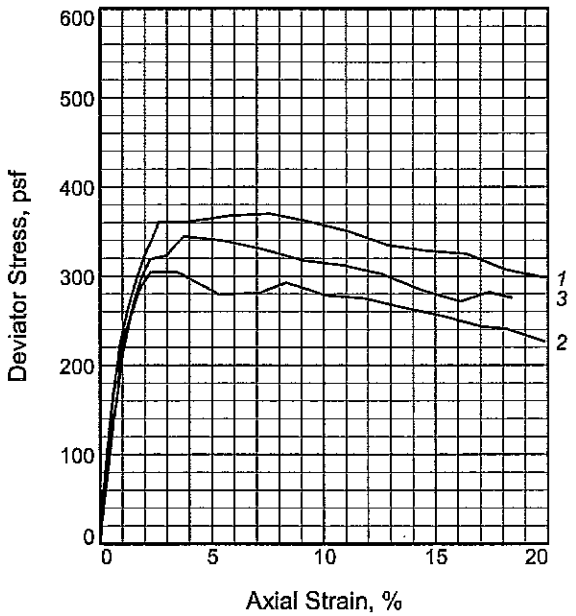
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

Source of Sample: BSFR-12U **Depth:** 8.0 **Sample Number:** 3C

Project No.: 12-017108 **Figure** _____ **Stantec, Inc.**

Tested By: JC





Sample No.		1	2	3
Initial	Water Content, %	59.4	56.6	53.9
	Dry Density, pcf	65.1	67.1	69.6
	Saturation, %	99.9	100.2	101.3
	Void Ratio	1.6292	1.5481	1.4588
	Diameter, in.	1.380	1.377	1.362
	Height, in.	2.998	2.996	2.996
At Test	Water Content, %	59.4	56.6	53.9
	Dry Density, pcf	65.1	67.1	69.6
	Saturation, %	99.9	100.2	101.3
	Void Ratio	1.6292	1.5481	1.4588
	Diameter, in.	1.380	1.377	1.362
	Height, in.	2.998	2.996	2.996
Strain rate, in./min.		1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.91	13.96	20.79
Fail. Stress, psf		370	305	344
Strain, %		7.6	3.4	3.8
Ult. Stress, psf		328	264	284
Strain, %		14.6	13.6	14.3
σ_1 Failure, psf		1365	2315	3338
σ_3 Failure, psf		995	2010	2994

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: VSO GR CH2 W/ ARS & LNS SM, SIF

LL= 54 **PL=** 14 **PI=** 40

Assumed Specific Gravity= 2.74

Remarks: Torvane=0.19 tsf

Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

Source of Sample: BSFR-12U **Depth:** 17.0

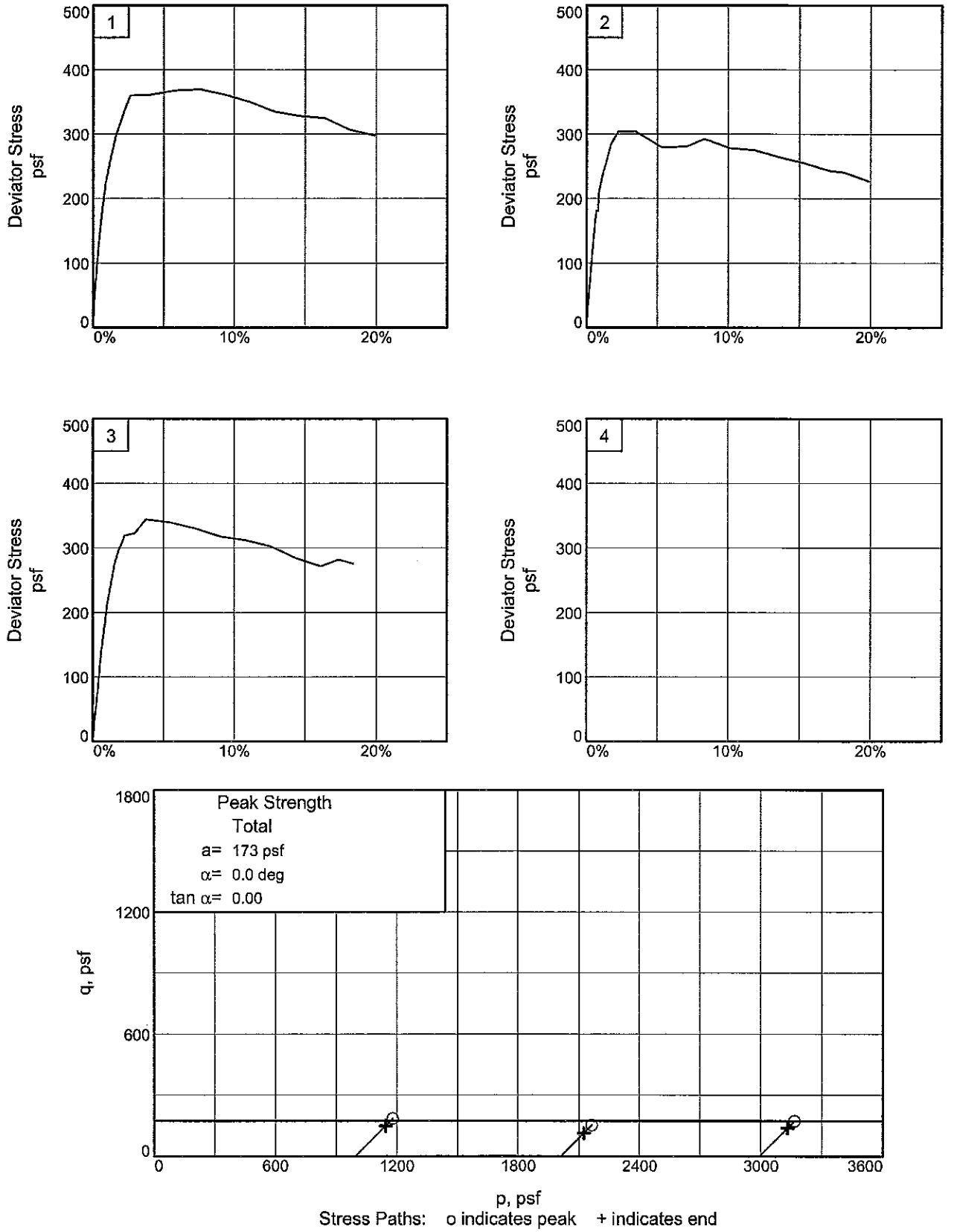
Sample Number: 5D

Proj. No.: 12-017108 **Date Sampled:** 7-31-12

TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

Figure _____

Tested By: JC



Client: USACE

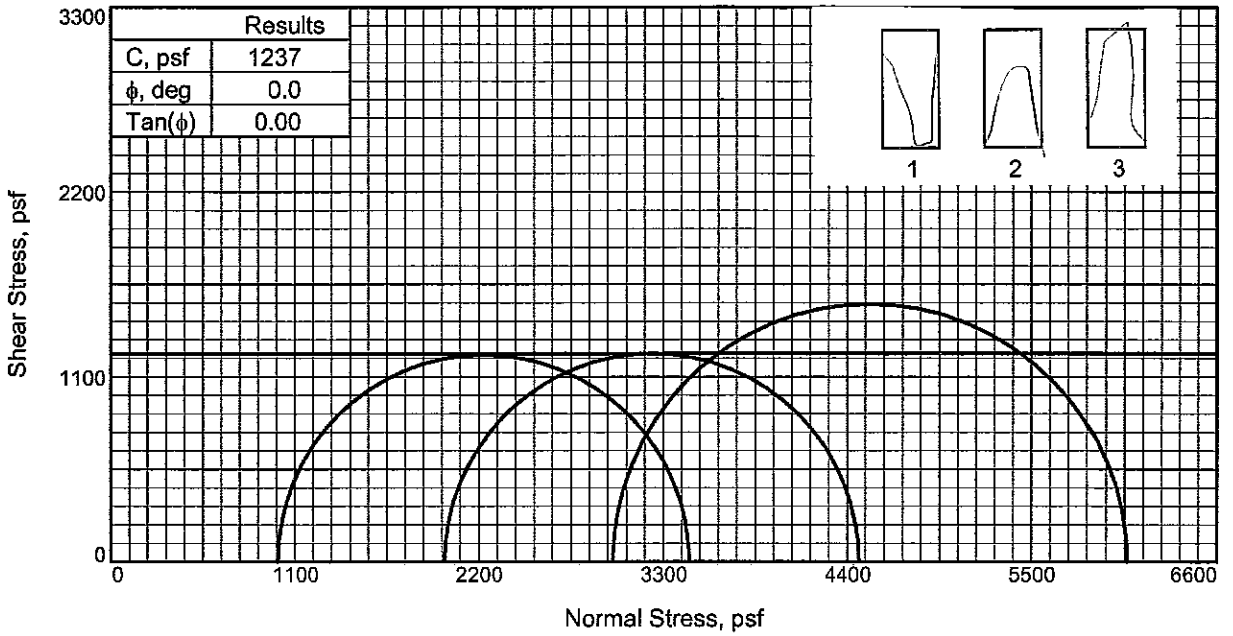
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

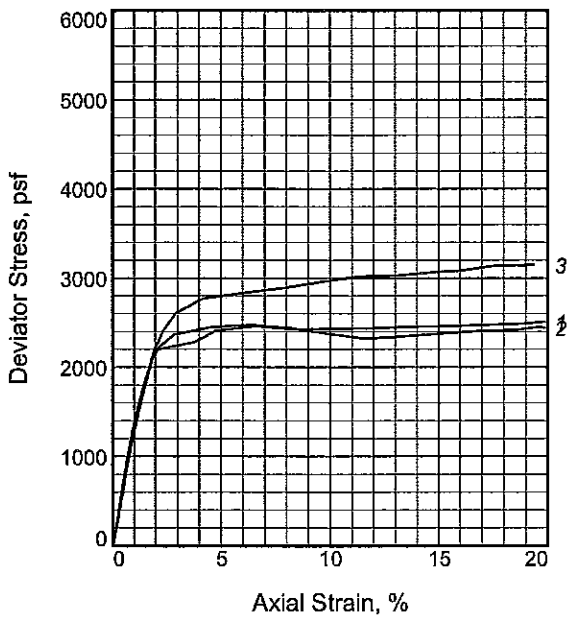
Source of Sample: BSFR-12U **Depth:** 17.0 **Sample Number:** 5D

Project No.: 12-017108 **Figure** _____

Stantec, Inc.

Tested By: JC





Sample No.		1	2	3
Initial	Water Content, %	25.1	25.2	26.0
	Dry Density, pcf	100.7	99.2	99.2
	Saturation, %	99.3	96.3	99.5
	Void Ratio	0.6870	0.7111	0.7112
	Diameter, in.	1.411	1.420	1.419
	Height, in.	3.000	2.997	2.990
At Test	Water Content, %	25.1	25.2	26.0
	Dry Density, pcf	100.7	99.2	99.2
	Saturation, %	99.3	96.3	99.5
	Void Ratio	0.6870	0.7111	0.7112
	Diameter, in.	1.411	1.420	1.419
	Height, in.	3.000	2.997	2.990
Strain rate, in./min.		1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.92	13.86	20.83
Fail. Stress, psf		2459	2475	3066
Strain, %		6.6	6.3	14.9
Ult. Stress, psf		2425	2319	3066
Strain, %		8.3	11.6	14.9
σ_1 Failure, psf		3456	4471	6065
σ_3 Failure, psf		996	1996	3000

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: ST GNG & T CH2 W/ LNS ML

LL= 56 **PL=** 16 **PI=** 40
Assumed Specific Gravity= 2.72
Remarks: Torvane=0.90 tsf

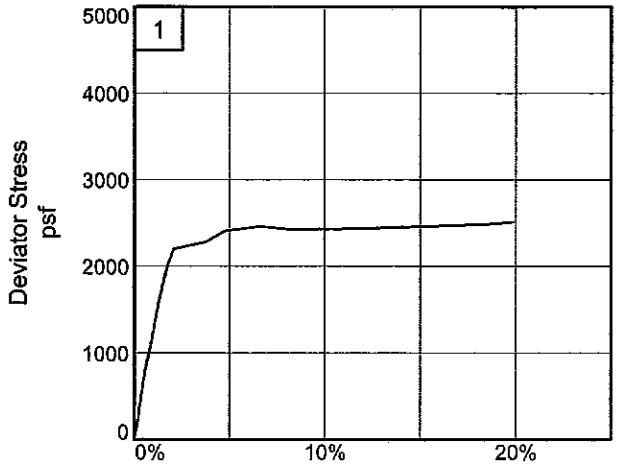
Figure _____

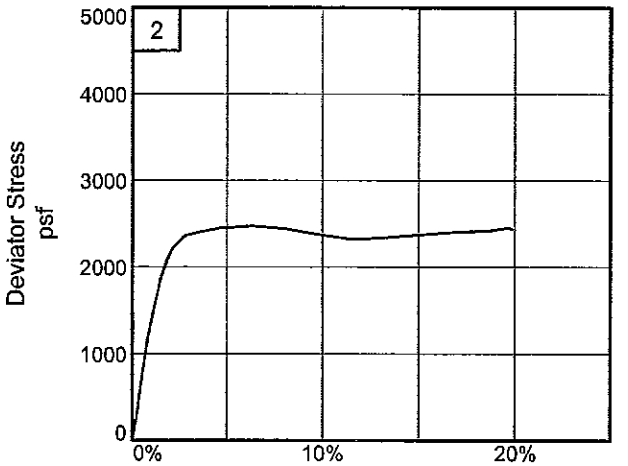
Client: USACE

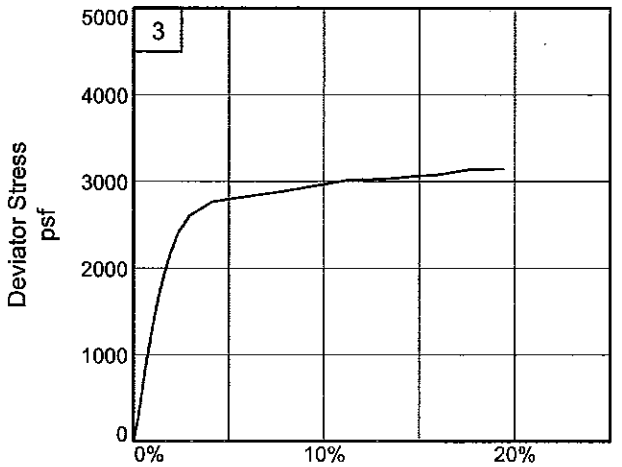
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-12U **Depth:** 27.0
Sample Number: 8B
Proj. No.: 12-017108 **Date Sampled:** 8-1-12

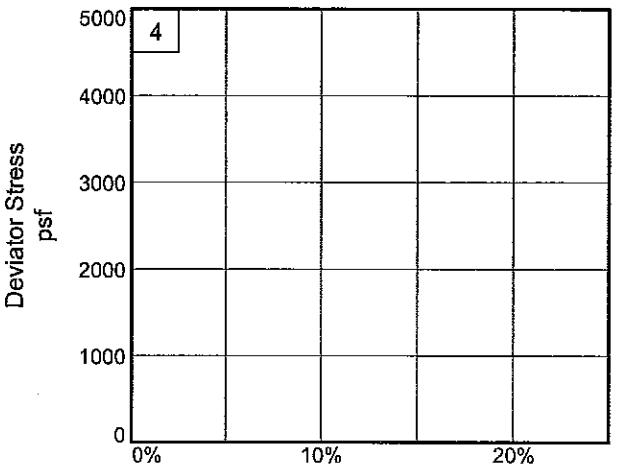
TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

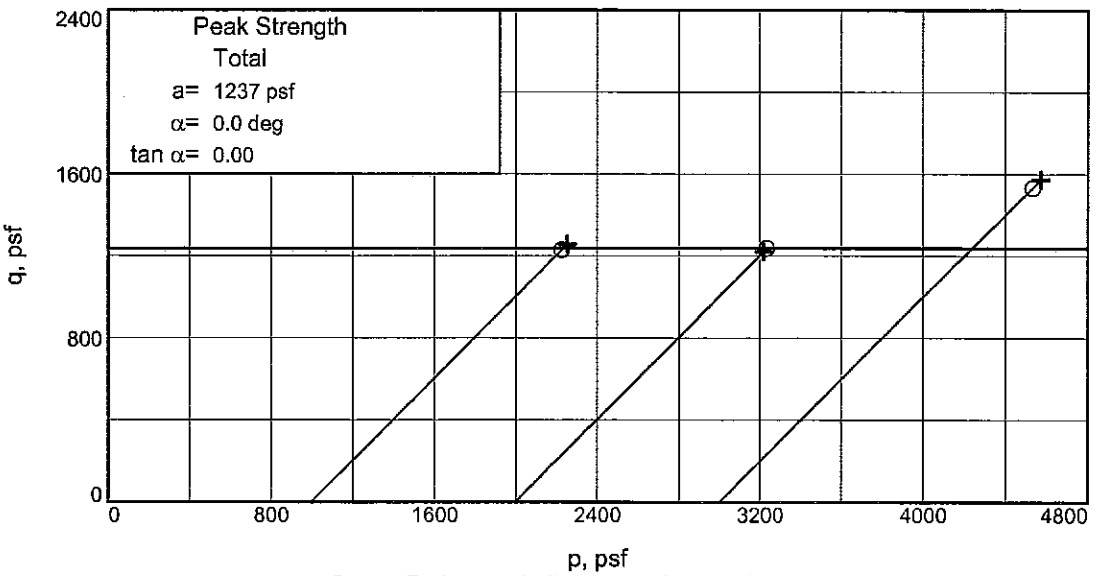
Tested By: JC











Stress Paths: o indicates peak + indicates end

Client: USACE

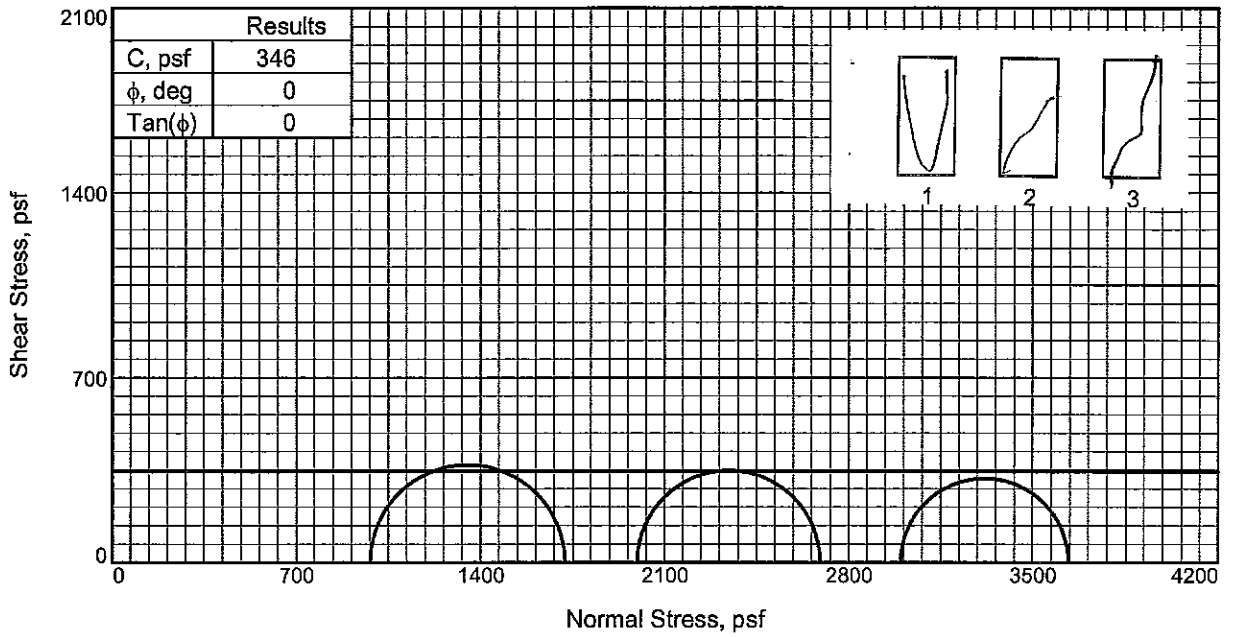
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

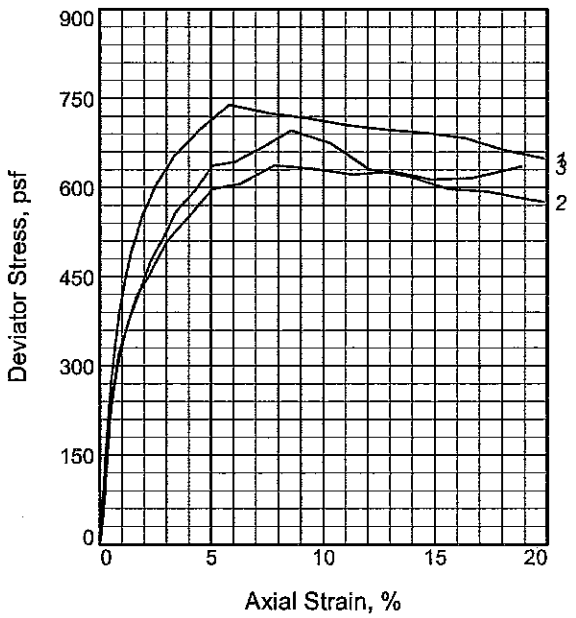
Source of Sample: BSFR-12U **Depth:** 27.0 **Sample Number:** 8B

Project No.: 12-017108 **Figure** _____

Stantec, Inc.

Tested By: JC





Sample No.		1	2	3
Initial	Water Content, %	42.8	41.7	43.8
	Dry Density, pcf	80.9	81.8	79.4
	Saturation, %	105.4	104.7	103.9
	Void Ratio	1.1136	1.0918	1.1548
	Diameter, in.	1.416	1.417	1.418
	Height, in.	2.999	2.994	2.992
At Test	Water Content, %	42.8	41.7	43.8
	Dry Density, pcf	80.9	81.8	79.4
	Saturation, %	105.3	104.7	103.9
	Void Ratio	1.1136	1.0918	1.1548
	Diameter, in.	1.416	1.417	1.418
	Height, in.	2.999	2.994	2.992
Strain rate, in./min.		1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.81	13.86	20.82
Fail. Stress, psf		739	696	637
Strain, %		5.8	8.6	7.8
Ult. Stress, psf		692	618	613
Strain, %		14.6	13.8	14.9
σ_1 Failure, psf		1720	2692	3635
σ_3 Failure, psf		981	1996	2998

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: SO GR CH2 W/ ARS & LNS SP, WD

LL= 52 **PL=** 15 **PI=** 37

Assumed Specific Gravity= 2.74

Remarks: Torvane=0.28 tsf

Figure _____

Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

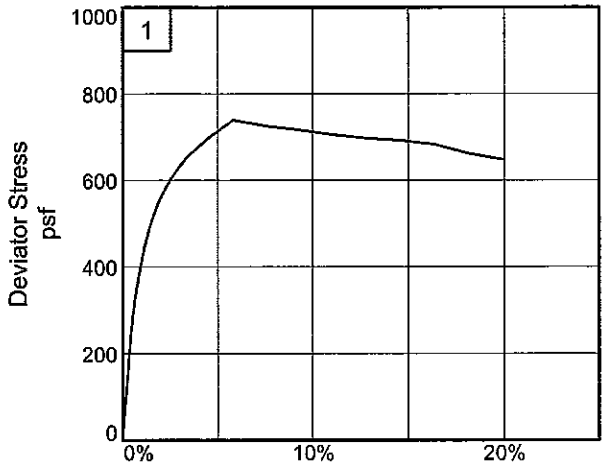
Source of Sample: BSFR-12U **Depth:** 39.0

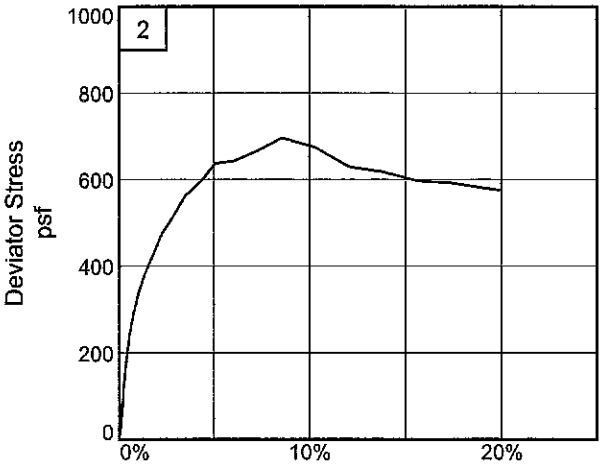
Sample Number: 11B

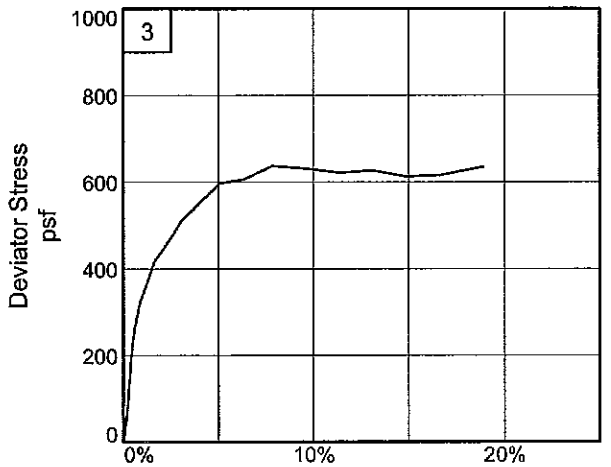
Proj. No.: 12-017108 **Date Sampled:** 8-1-12

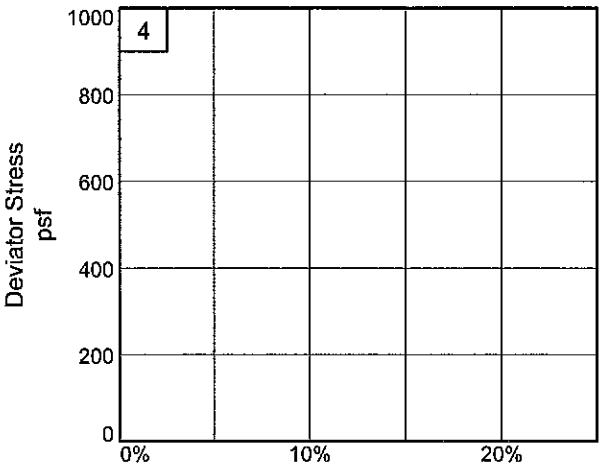
TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

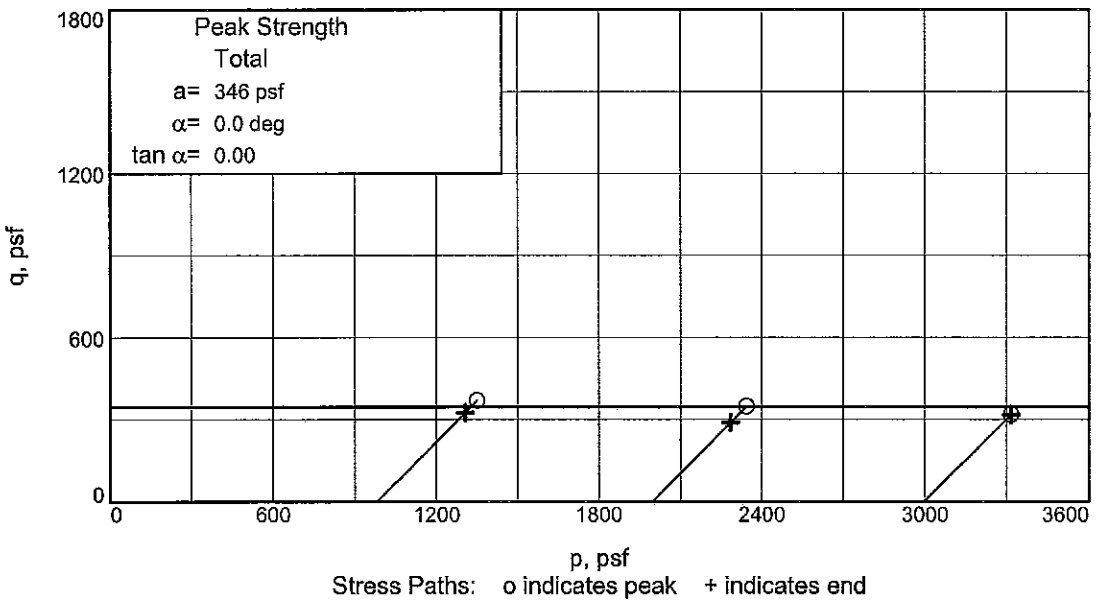
Tested By: JC











Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

Source of Sample: BSFR-12U **Depth:** 39.0 **Sample Number:** 11B

Project No.: 12-017108 **Figure** _____ **Stantec, Inc.**

Tested By: JC

SUMMARY OF LABORATORY TEST RESULTS

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Paris Assigned By: _____

Project Number: 12-017108 Current Date: 9/26/2012

Boring: BSFR-13U

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
1	0.0	M BK PT W/ RT	PT		623												
2A	2.0	M BK PT W/ RT	PT		575												
2B	3.0	M BK CHOC W/ RT	CHOC		190												
2C	4.0	VSO DGR CH4 W/ RT	CH4	7	97	47	92	100	UC	-	68	136	106	38	68	0.06	
2D	5.0	VSO DGR OH W/ RT	OH		142	33	79	84					136	110	26		GS=2.56, CON
3A	6.0	VSO GR CHOA	CHOA	13	123	38	86	98	UC	-	40	81	132	44	88	0.05	
3B	7.0	VSO GR CH4 W/ O	CH4		103												
3C	8.0	VSO GR CH4 W/ LYS ML, O	CH4		67												
3D	9.0	VSO GR CL6 W/ LYS CH	CL6		44								45	18	27		
4A	10.0	VSO GR CH3 W/ LYS ML	CH3		75												
4B	11.0	VSO GR CH2 W/ LNS ML	CH2		54	64	98	68					51	24	27		GS=2.69, CON
4C	12.0	VSO GR CH3 W/ LNS ML	CH3		84												
4D	13.0	VSO GR CH3 W/ LNS ML	CH3		76												
5A	14.0	VSO GR CH4	CH4	15	82	54	98	100	UC	-	78	157	97	27	70	0.05	
5B	15.0	VSO GR CH4	CH4		96												
5C	16.0	VSO GR CH2 W/ ARS SM, LYS SIF	CH2		58												
5D	17.0	VSO GR CH2 W/ ARS & LNS SM	CH2		49												
6A	18.0	SO GR CL4 W/ ARS SP, SIF	CL4		37												
6B	19.0	SO GR CL4 W/ ARS SP, SIF	CL4		31								37	10	27		
6C	20.0	VSO GR CL4 W/ ARS SP, SIF	CL4		49	72	107	98	UU	0	219		40	21	19	0.15	
6D	21.0	SO GR CL4 W/ ARS SP, SIF	CL4		37												
7A	22.0	VSO GR CL4 W/ ARS & LYS SP	CL4		42												
7B	23.0	VSO GR CL4 W/ ARS SP, SIF, WD	CL4		49												
7C	24.0	VSO GR CH4 W/ ARS SP	CH4	2	62	65	105	100	UC	-	194	388	97	27	70	0.35	
7D	25.0	SO GR CH3 W/ ARS SP	CH3		48												
8A	26.0	M GR CH3 W/ ARS SP	CH3		44												
8B	27.0	M GR CH3 W/ ARS SP	CH3		41												
8C	28.0	VSO GR CH4 W/ ARS SP	CH4		62	63	102	99	UU	0	217		103	24	79	0.15	
8D	29.0	VSO GNG CL4 W/ ARS SM	CL4		42								36	12	24		
9A	30.0	ST GNG CL4 W/ ARS CH	CL4		24												
9B	31.0	ST GNG CL4 W/ ARS CH	CL4		20												
9C	32.0	ST GNG CL4 W/ LYS ML	CL4		24												
9D	33.0	ST GNG CH2 W/ LYS ML	CH2	8	25	102	128	100	UC	-	1076	2153	50	16	34	0.86	
10A	34.0	GNG ML W/ ARS CH, LYS SIF	ML		36												
10B	35.0	M GNG CH2 W/ LYS ML	CH2		34												

Remarks: _____ Checked By: _____

Stantec Consulting Services Inc. File Name: Final BSFR-13U_be_boring_log_v1

SUMMARY OF LABORATORY TEST RESULTS

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Paris Assigned By: _____

Project Number: 12-017108 Current Date: 9/26/2012

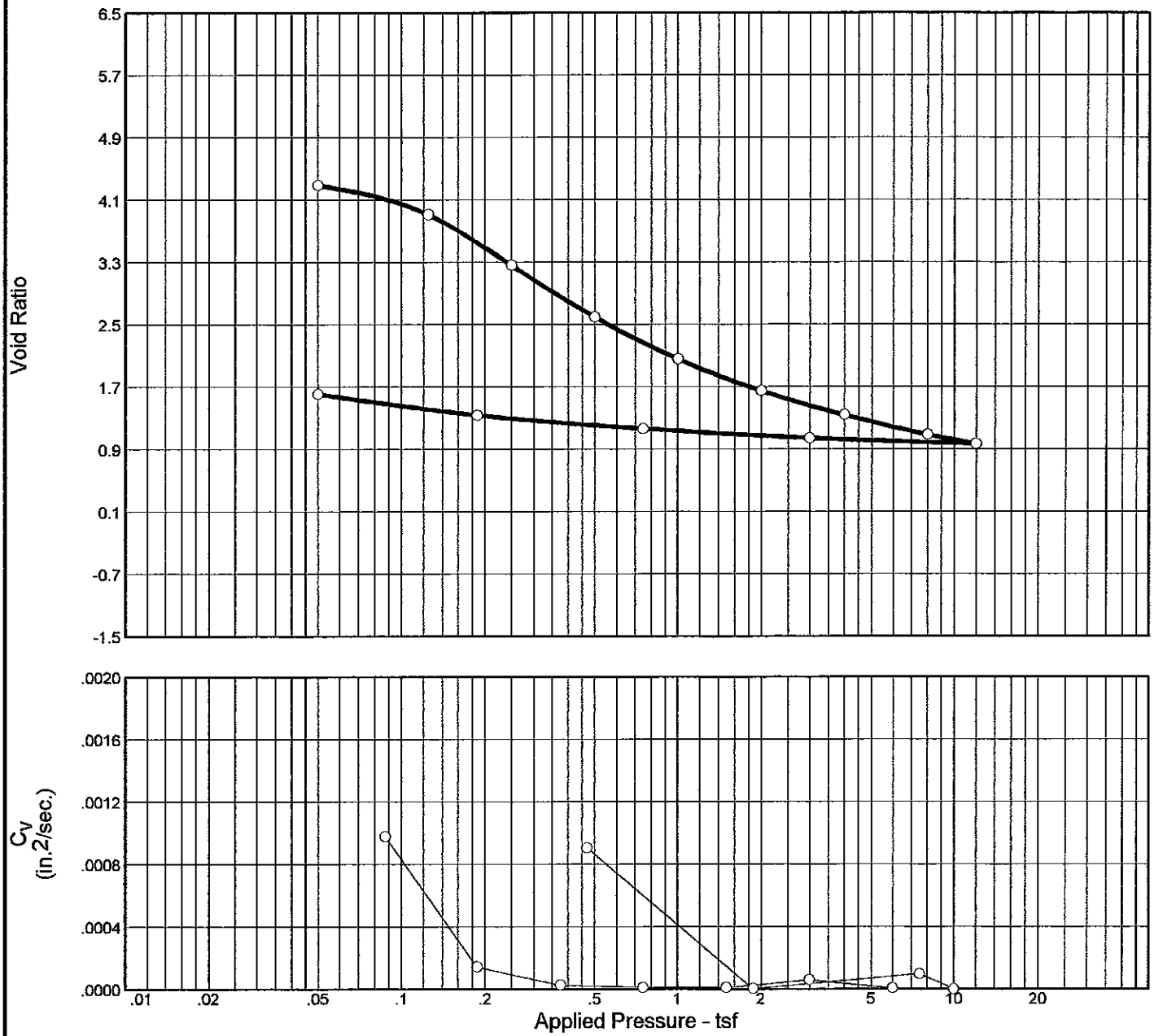
Boring: BSFR-13U

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
10C	36.0	M GNG CH2 W/ LNS ML	CH2		32												
10D	37.0	M GNG CH2 W/ LYS ML	CH2		31												
11A	38.0	ST GNG & LGR CH2 W/ LNS ML	CH2		34												
11B	39.0	ST GNG & LGR CH3 W/ LNS ML	CH3		34	89	119	100	UU	0	1059		71	20	51		
11C	40.0	ST GNG & LGR CH2 W/ LNS ML	CH2		31												
11D	41.0	ST GNG & LGR CH2 W/ LYS SM	CH2		29												

Remarks: _____ Checked By: _____

Stantec Consulting Services Inc. File Name: Final BSFR-13U_be_boring_log_v1

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture							
84.5 %	141.5 %	32.8	136	110	2.56	11.95	0.67	4.289

MATERIAL DESCRIPTION	USCS	AASHTO
VSO DGR OH W/ RT	OH	

Project No. 12-017108 **Client:** USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

Source: BSFR-13U **Sample No.:** 2D **Elev./Depth:** 5.0

Remarks:

FFEBJV, LLC

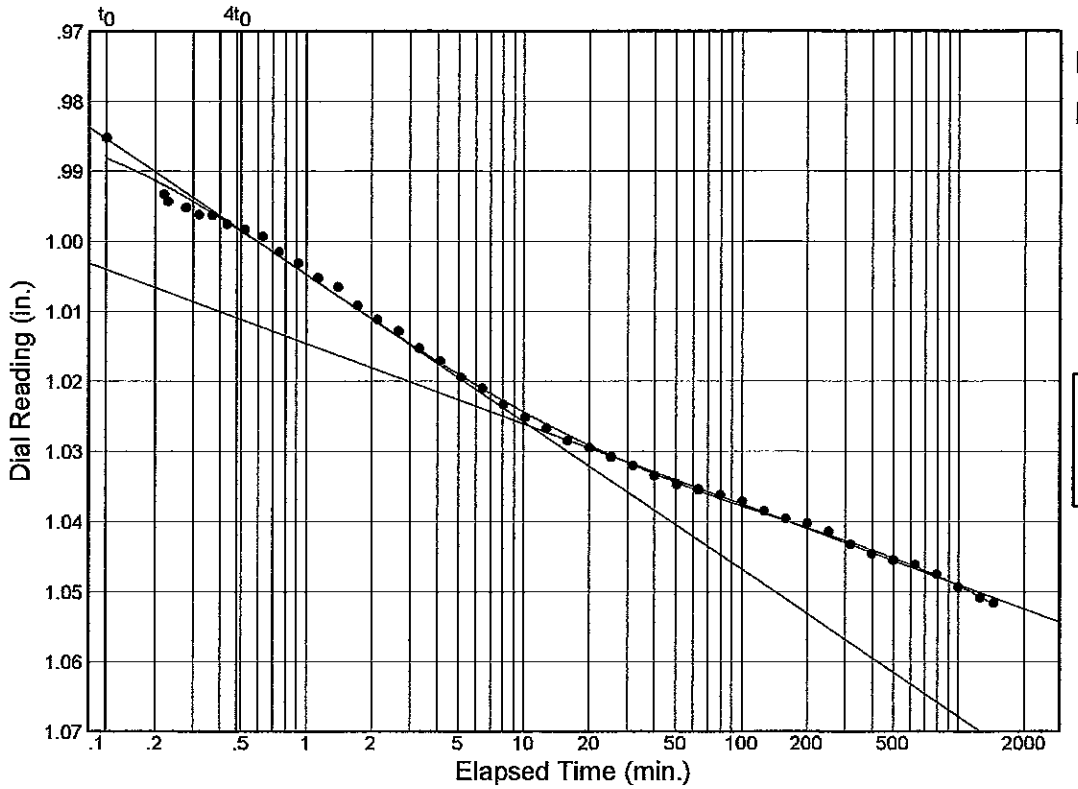
St Rose, LA

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

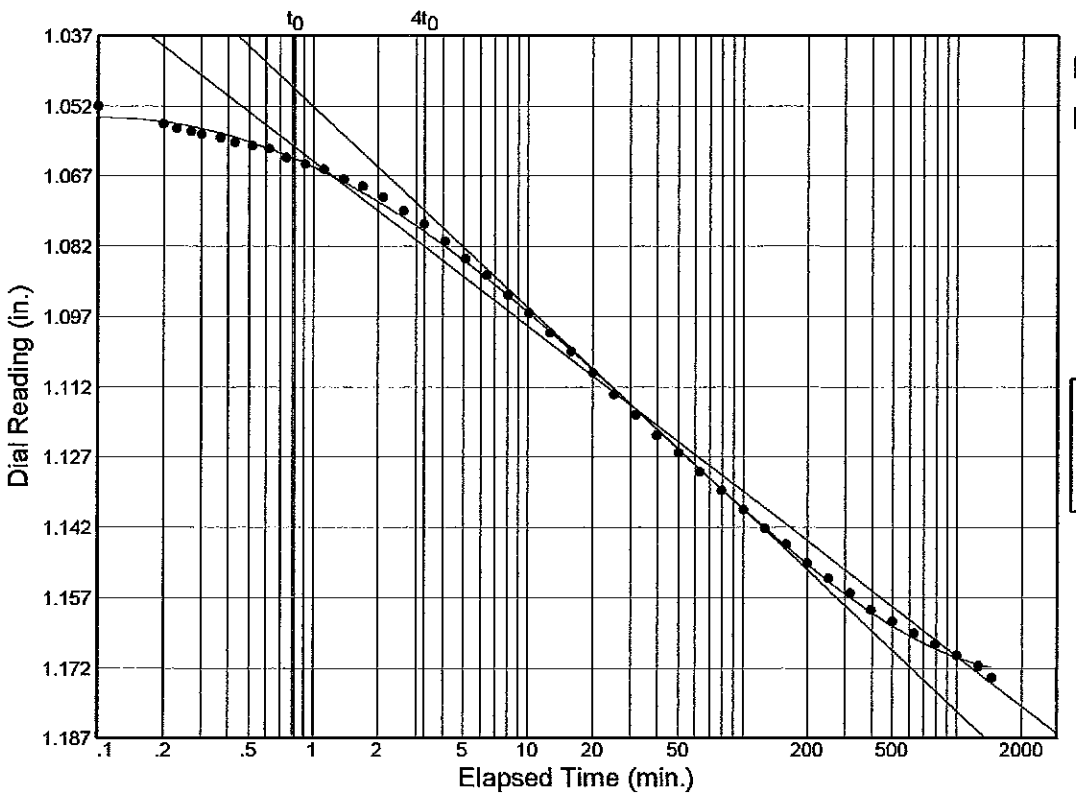
Source: BSFR-13U Sample No.: 2D Elev./Depth: 5.0



Load No.= 2
Load= 0.13 tsf
D_0 = 0.97816
D_{50} = 1.00232
D_{100} = 1.02648
T_{50} = 0.77 min.

C_v @ T_{50}
0.0010 in.^{2}/sec.

C_α = 0.012



Load No.= 3
Load= 0.25 tsf
D_0 = 1.04772
D_{50} = 1.08219
D_{100} = 1.11665
T_{50} = 4.18 min.

C_v @ T_{50}
0.0001 in.^{2}/sec.

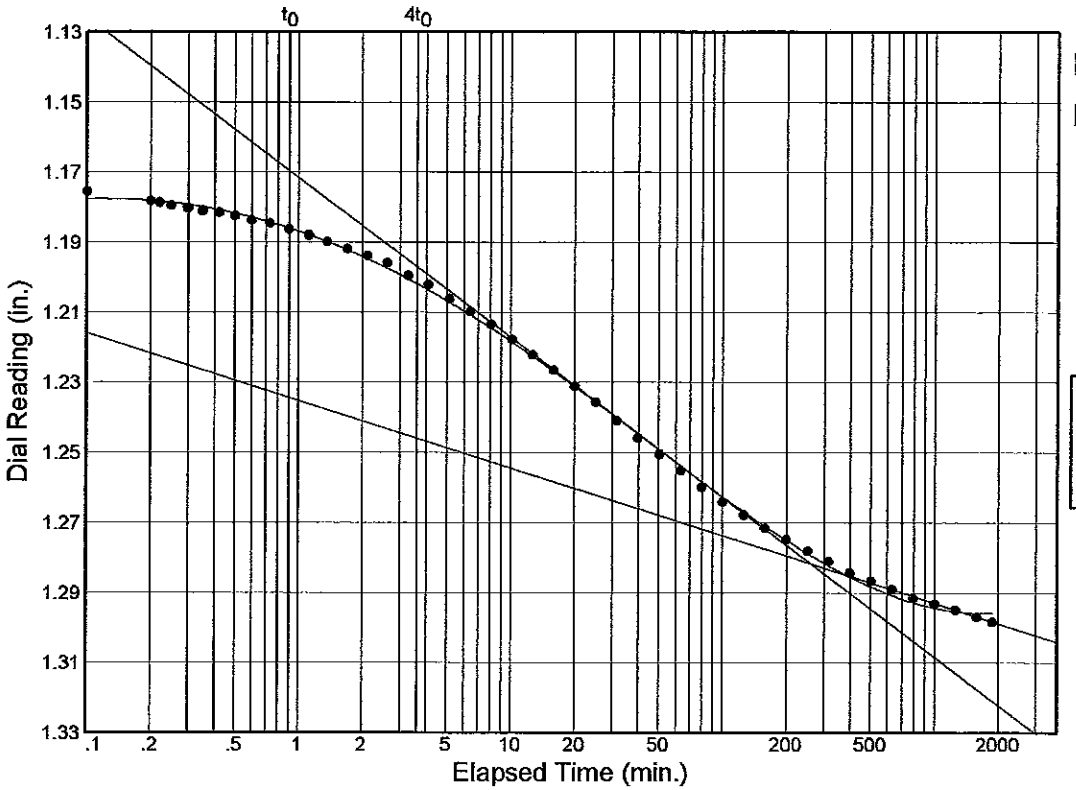
C_α = 0.038

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

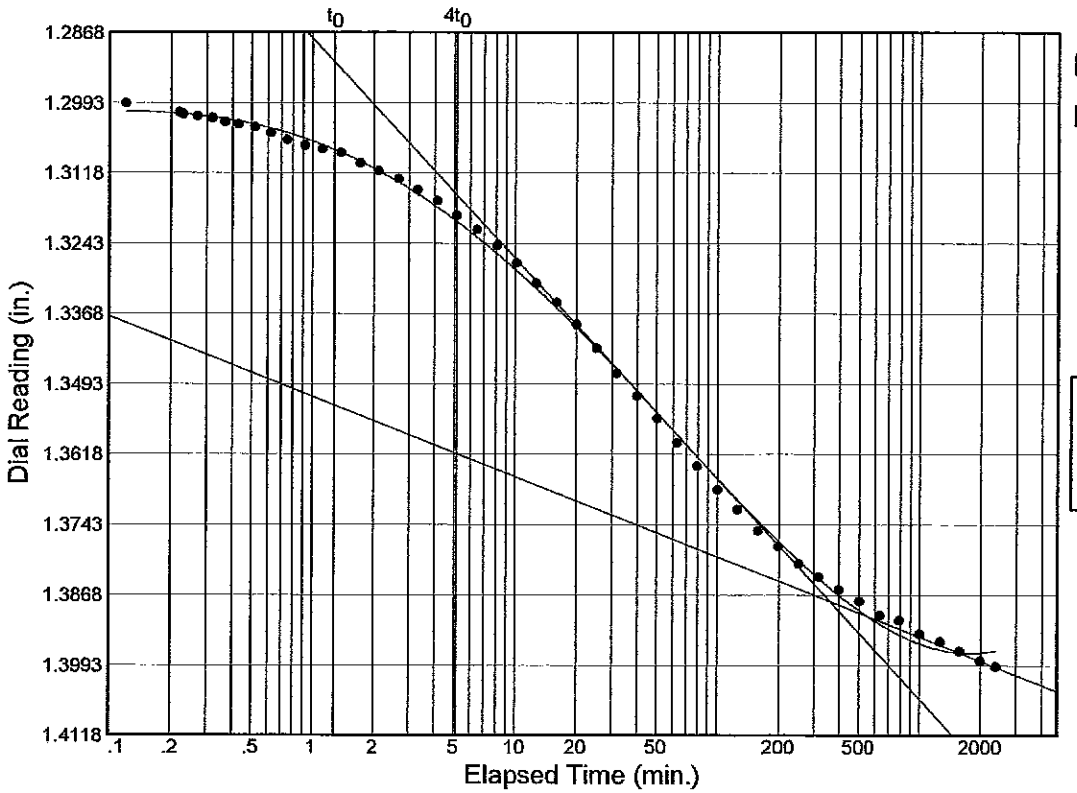
Source: BSFR-13U Sample No.: 2D Elev./Depth: 5.0



Load No.= 4
Load= 0.50 tsf
D_0 = 1.17010
D_{50} = 1.22597
D_{100} = 1.28184
T_{50} = 15.33 min.

C_v @ T_{50}
0.0000 in.^{2}/sec.

C_α = 0.024



Load No.= 5
Load= 1.00 tsf
D_0 = 1.29494
D_{50} = 1.34141
D_{100} = 1.38787
T_{50} = 22.88 min.

C_v @ T_{50}
0.0000 in.^{2}/sec.

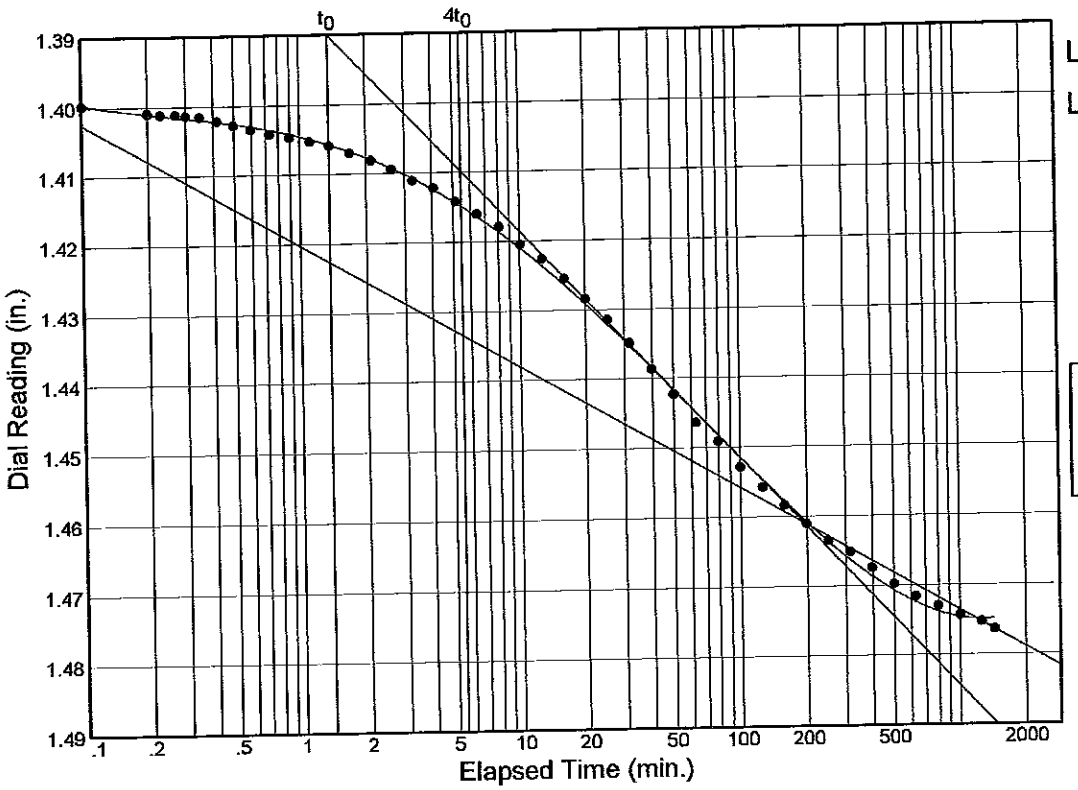
C_α = 0.021

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

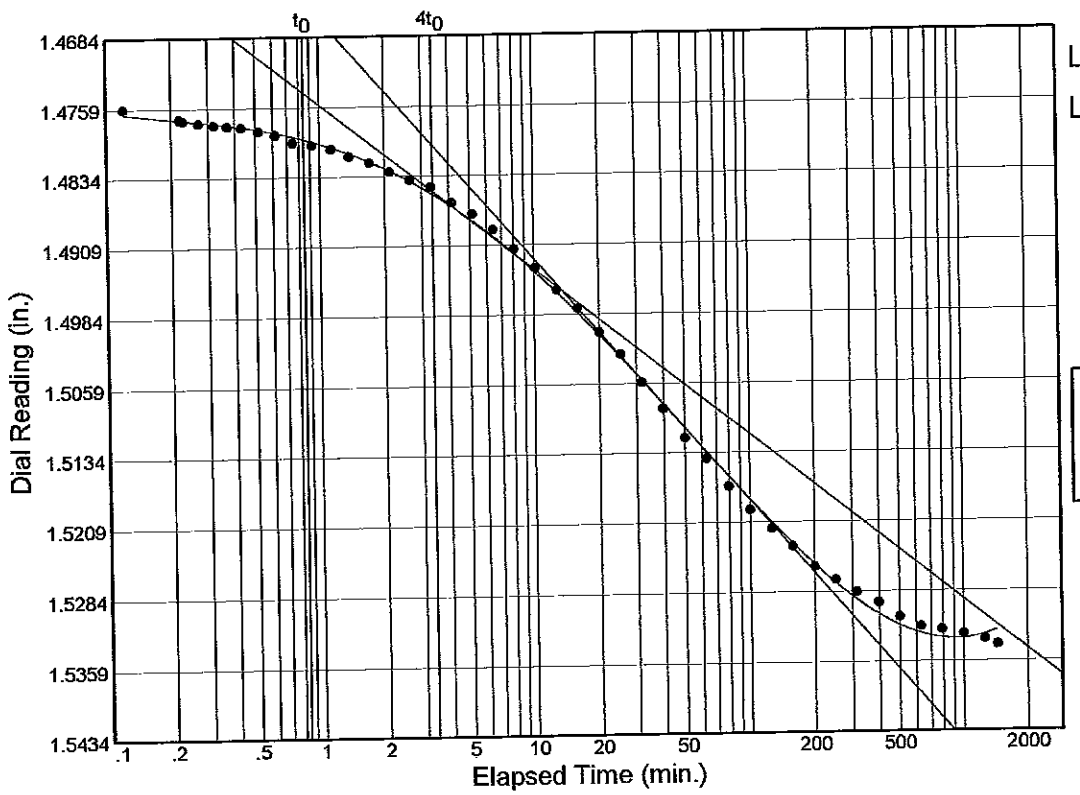
Source: BSFR-13U Sample No.: 2D Elev./Depth: 5.0



Load No.= 6
Load= 2.00 tsf
D_0 = 1.39666
D_{50} = 1.42873
D_{100} = 1.46080
T_{50} = 19.47 min.

C_v @ T_{50}
0.0000 in.^{2}/sec.

C_α = 0.031



Load No.= 7
Load= 4.00 tsf
D_0 = 1.47332
D_{50} = 1.48458
D_{100} = 1.49585
T_{50} = 2.97 min.

C_v @ T_{50}
0.0001 in.^{2}/sec.

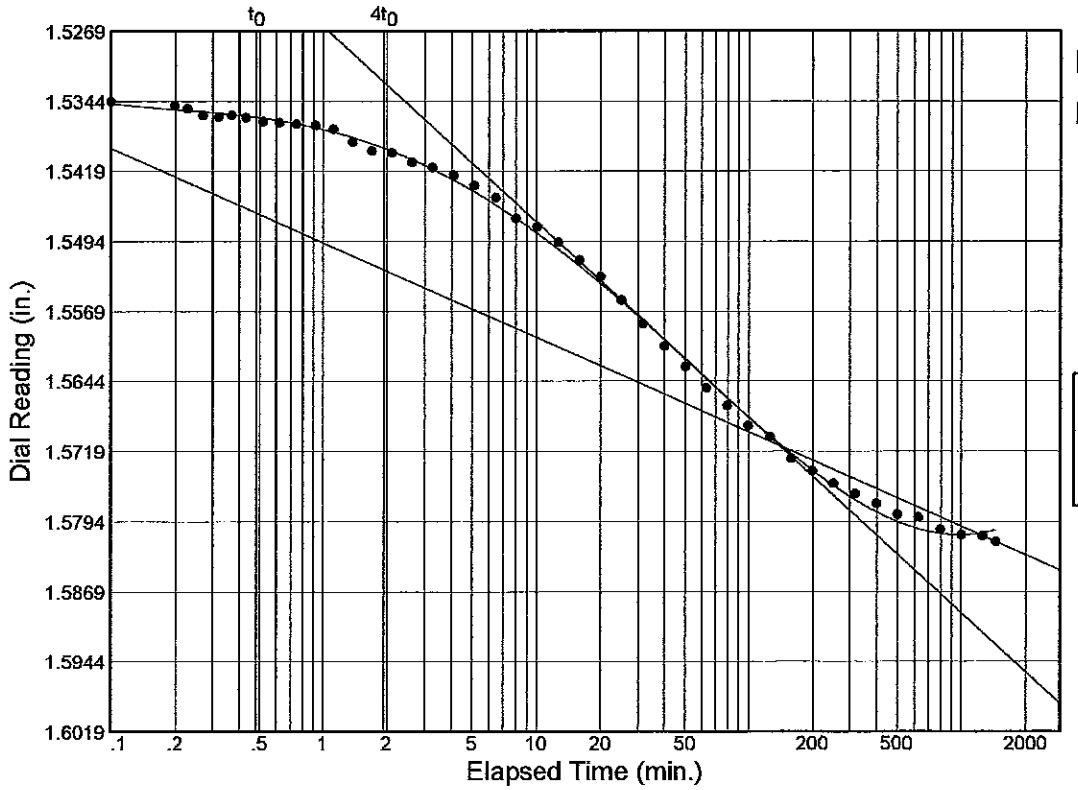
C_α = 0.035

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

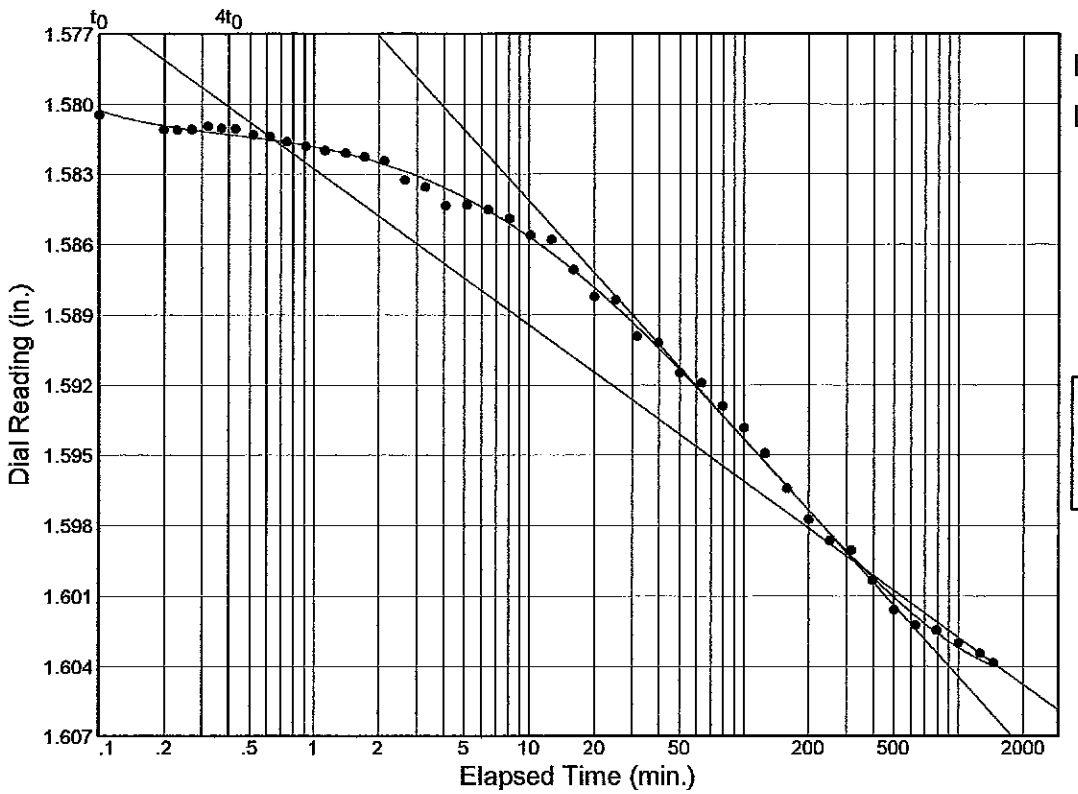
Source: BSFR-13U Sample No.: 2D Elev./Depth: 5.0



Load No.= 8
Load= 8.00 tsf
D_0 = 1.53288
D_{50} = 1.55204
D_{100} = 1.57120
T_{50} = 16.03 min.

C_v @ T_{50}
0.0000 in.^{2}/sec.

C_α = 0.023



Load No.= 9
Load= 12.00 tsf
D_0 = 1.57922
D_{50} = 1.58941
D_{100} = 1.59961
T_{50} = 30.97 min.

C_v @ T_{50}
0.0000 in.^{2}/sec.

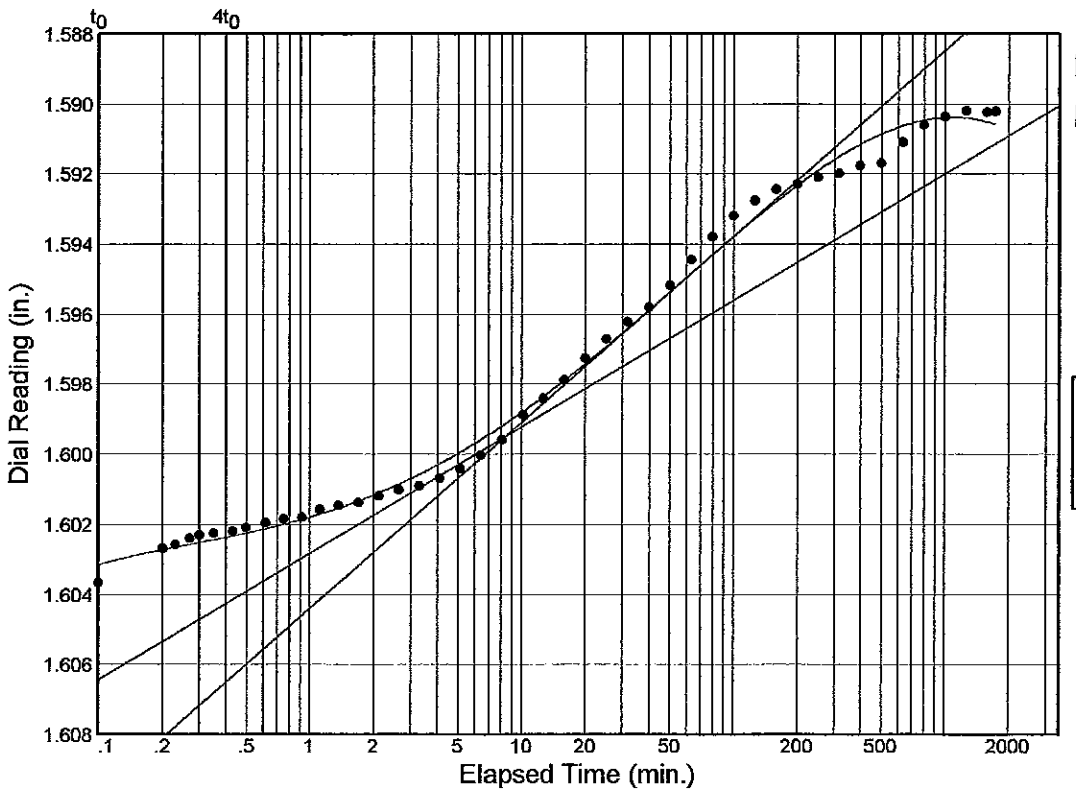
C_α = 0.017

Figure

Dial Reading vs. Time

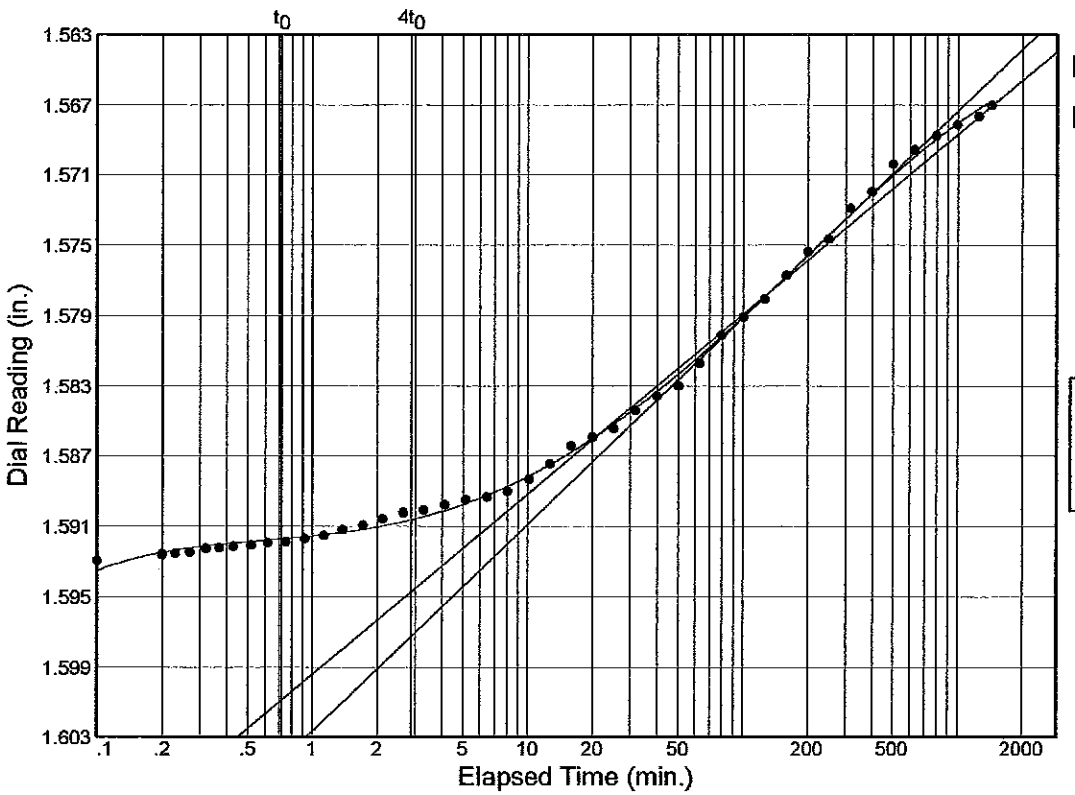
Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

Source: BSFR-13U Sample No.: 2D Elev./Depth: 5.0



Load No.= 10
Load= 3.00 tsf
D_0 = 1.60393
D_{50} = 1.60171
D_{100} = 1.59950
T_{50} = 1.11 min.

C_v @ T_{50}
0.0001 in.^{2}/sec.



Load No.= 11
Load= 0.75 tsf
D_0 = 1.59281
D_{50} = 1.58521
D_{100} = 1.57761
T_{50} = 24.95 min.

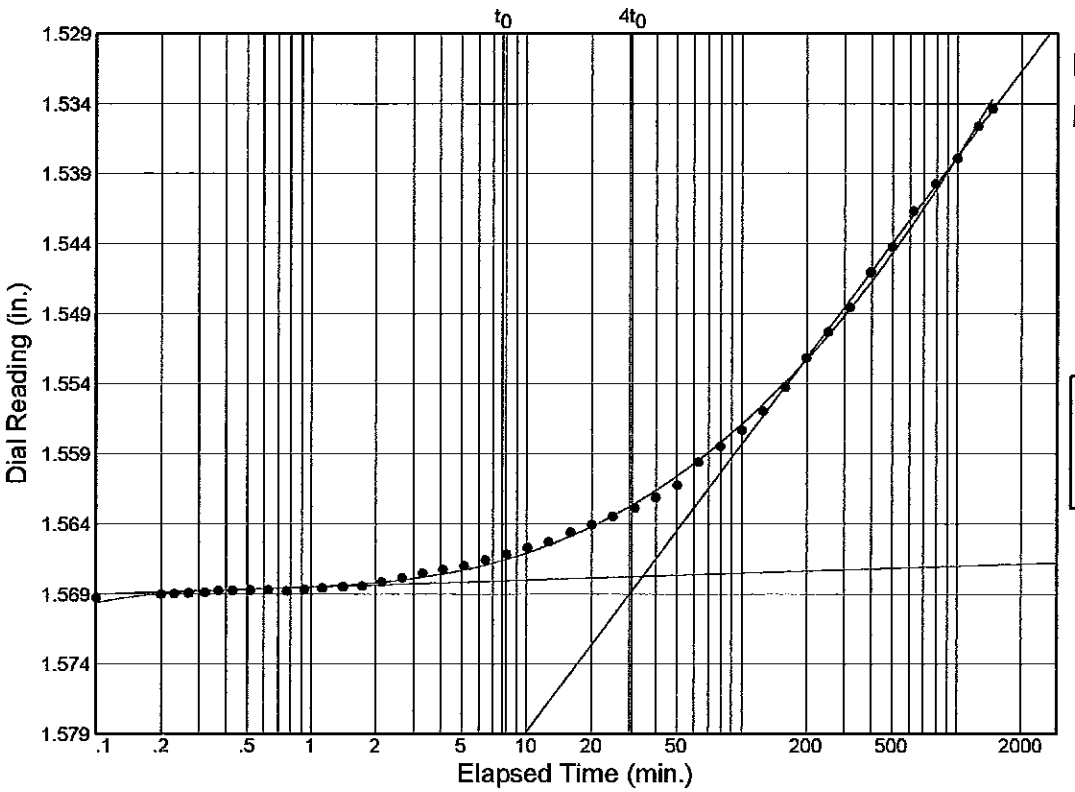
C_v @ T_{50}
0.0000 in.^{2}/sec.

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

Source: BSFR-13U Sample No.: 2D Elev./Depth: 5.0



Load No.= 12
Load= 0.19 tsf
D_0 = 1.57055
D_{50} = 1.56915
D_{100} = 1.56776
T_{50} = 0.16 min.

C_v @ T_{50}
0.0009 in.^{2}/sec.

CONSOLIDATION TEST DATA

Client: USACE
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans
Project Number: 12-017108

Sample Data

Source: BSFR-13U
Sample No.: 2D
Elev. or Depth: 5.0 **Sample Length(in./cm.):**
Location:
Description: VSO DGR OH W/ RT
Liquid Limit: 136 **Plasticity Index:** 110
USCS: OH **AASHTO:** **Figure No.:**
Testing Remarks:

Test Specimen Data

TOTAL SAMPLE	BEFORE TEST	AFTER TEST
Wet w+t = 325.45 g.	Consolidometer # = 5	Wet w+t = 229.99 g.
Dry w+t = 176.48 g.		Dry w+t = 168.60 g.
Tare Wt. = 71.23 g.	Spec. Gravity = 2.56	Tare Wt. = 69.78 g.
Height = .99 in.	Height = .99 in.	
Diameter = 3.99 in.	Diameter = 4.00 in.	
Weight = 258.09 g.	Defl. Table = n/a	
Moisture = 141.5 %	Ht. Solids = 0.1876 in.	Moisture = 62.1 %
Wet Den. = 79.2 pcf	Dry Wt. = 107.27 g.	Dry Wt. = 98.82 g.*
Dry Den. = 32.8 pcf	Void Ratio = 4.289	Void Ratio = 1.607
	Saturation = 84.5 %	

* Final dry weight used in calculations

End-of-Load Summary

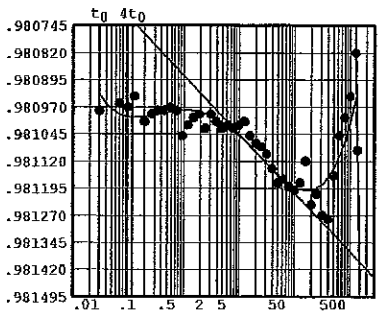
Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (in.^{2}/sec.)	C_α	Void Ratio	% Compression /Swell
start	0.98098				4.289	
0.05	0.98109	0.00000		0.009	4.288	0.0 Comprs.
0.13	1.05165	0.00000	0.0010	0.012	3.912	7.1 Comprs.
0.25	1.17400	0.00000	0.0001	0.038	3.260	19.5 Comprs.
0.50	1.29837	0.00000	0.0000	0.024	2.597	32.0 Comprs.
1.00	1.39957	0.00000	0.0000	0.021	2.057	42.2 Comprs.
2.00	1.47633	0.00000	0.0000	0.031	1.648	49.9 Comprs.
4.00	1.53420	0.00000	0.0001	0.035	1.339	55.8 Comprs.
8.00	1.58154	0.00000	0.0000	0.023	1.087	60.5 Comprs.
12.00	1.60387	0.00000	0.0000	0.017	0.968	62.8 Comprs.
3.00	1.59021	0.00000	0.0001		1.041	61.4 Comprs.

Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (in.^{2}/sec.)	C_α	Void Ratio	% Compression /Swell
0.75	1.56704	0.00000	0.0000		1.164	59.1 Comprs.
0.19	1.53440	0.00000	0.0009		1.338	55.8 Comprs.
0.05	1.48395	0.00000			1.607	50.7 Comprs.

C_c = 0.67 P_c = 11.95 tsf C_r = 0.27

Pressure: 0.05 tsf **TEST READINGS** **Load No. 1**

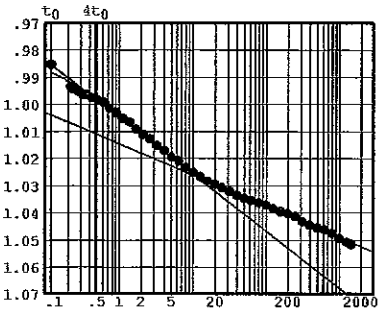
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.98098	23	12.55	0.98101
2	0.03	0.98098	24	15.82	0.98105
3	0.07	0.98096	25	19.92	0.98107
4	0.10	0.98097	26	25.08	0.98108
5	0.13	0.98094	27	31.58	0.98110
6	0.20	0.98101	28	39.78	0.98114
7	0.27	0.98099	29	50.08	0.98118
8	0.35	0.98098	30	63.07	0.98117
9	0.45	0.98098	31	79.40	0.98119
10	0.58	0.98097	32	99.97	0.98120
11	0.75	0.98098	33	125.87	0.98118
12	0.95	0.98105	34	158.47	0.98112
13	1.22	0.98102	35	199.50	0.98124
14	1.53	0.98100	36	251.17	0.98121
15	1.95	0.98099	37	316.20	0.98127
16	2.47	0.98103	38	398.08	0.98128
17	3.12	0.98099	39	501.17	0.98116
18	3.93	0.98101	40	630.95	0.98105
19	4.97	0.98103	41	794.32	0.98100
20	6.27	0.98102	42	999.98	0.98094
21	7.90	0.98103	43	1258.92	0.98082
22	9.97	0.98102	44	1354.48	0.98109



Void Ratio = 4.288 **Compression** = 0.0 %

Pressure: 0.13 tsf	TEST READINGS	Load No. 2

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.97502	24	12.73	1.02670
2	0.12	0.98523	25	16.00	1.02847
3	0.22	0.99329	26	20.10	1.02946
4	0.23	0.99431	27	25.27	1.03080
5	0.28	0.99519	28	31.77	1.03207
6	0.32	0.99624	29	39.97	1.03353
7	0.37	0.99635	30	50.27	1.03472
8	0.43	0.99759	31	63.25	1.03545
9	0.52	0.99834	32	79.58	1.03626
10	0.63	0.99932	33	100.15	1.03717
11	0.75	1.00154	34	126.05	1.03851
12	0.92	1.00315	35	158.65	1.03957
13	1.13	1.00521	36	199.68	1.04019
14	1.40	1.00651	37	251.35	1.04140
15	1.72	1.00914	38	316.38	1.04328
16	2.13	1.01112	39	398.27	1.04458
17	2.65	1.01282	40	501.35	1.04550
18	3.30	1.01529	41	631.12	1.04617
19	4.12	1.01711	42	794.50	1.04750
20	5.15	1.01944	43	1000.17	1.04938
21	6.45	1.02104	44	1259.10	1.05086
22	8.08	1.02332	45	1447.23	1.05165
23	10.15	1.02509			



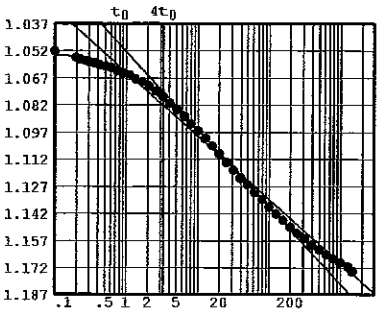
Void Ratio = 3.912 **Compression** = 7.1 %

D_0 = 0.97816 D_{50} = 1.00232 D_{100} = 1.02648

C_v **at 0.8 min.** = 0.0010 in.^{2}/sec. C_α = 0.012

Pressure: 0.25 tsf **TEST READINGS** **Load No. 3**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	1.04706	24	12.72	1.10046
2	0.10	1.05202	25	15.98	1.10451
3	0.20	1.05580	26	20.08	1.10897
4	0.23	1.05677	27	25.25	1.11368
5	0.27	1.05744	28	31.77	1.11799
6	0.30	1.05796	29	39.95	1.12238
7	0.37	1.05874	30	50.25	1.12606
8	0.43	1.05971	31	63.23	1.13019
9	0.52	1.06045	32	79.58	1.13417
10	0.62	1.06118	33	100.15	1.13825
11	0.75	1.06308	34	126.03	1.14218
12	0.92	1.06443	35	158.63	1.14561
13	1.12	1.06549	36	199.68	1.14956
14	1.38	1.06774	37	251.33	1.15287
15	1.70	1.06923	38	316.38	1.15601
16	2.12	1.07147	39	398.27	1.15953
17	2.63	1.07436	40	501.35	1.16197
18	3.28	1.07729	41	631.12	1.16464
19	4.10	1.08100	42	794.48	1.16698
20	5.13	1.08463	43	1000.17	1.16928
21	6.43	1.08814	44	1259.08	1.17151
22	8.07	1.09244	45	1456.27	1.17400
23	10.13	1.09633			



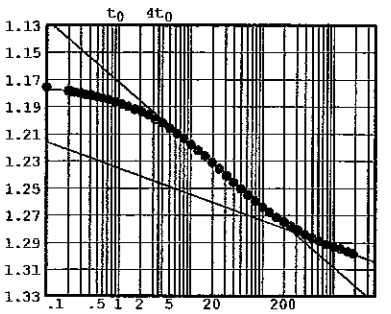
Void Ratio = 3.260 **Compression** = 19.5 %

D_0 = 1.04772 D_{50} = 1.08219 D_{100} = 1.11665

C_v **at 4.2 min.** = 0.0001 in.^{2}/sec. C_α = 0.038

Pressure: 0.50 tsf | TEST READINGS | Load No. 4

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	1.16971	24	12.72	1.22215
2	0.10	1.17554	25	15.98	1.22649
3	0.20	1.17826	26	20.08	1.23102
4	0.22	1.17870	27	25.25	1.23569
5	0.25	1.17950	28	31.77	1.24092
6	0.30	1.18024	29	39.95	1.24591
7	0.35	1.18106	30	50.27	1.25051
8	0.42	1.18151	31	63.23	1.25516
9	0.50	1.18247	32	79.58	1.25987
10	0.60	1.18365	33	100.15	1.26404
11	0.73	1.18458	34	126.05	1.26782
12	0.90	1.18619	35	158.65	1.27161
13	1.12	1.18799	36	199.68	1.27487
14	1.37	1.18991	37	251.35	1.27814
15	1.70	1.19188	38	316.38	1.28097
16	2.12	1.19398	39	398.27	1.28426
17	2.63	1.19597	40	501.35	1.28660
18	3.28	1.19955	41	631.12	1.28912
19	4.10	1.20210	42	794.48	1.29159
20	5.13	1.20612	43	1000.17	1.29322
21	6.43	1.20978	44	1259.08	1.29489
22	8.07	1.21343	45	1585.05	1.29690
23	10.13	1.21781	46	1888.92	1.29837



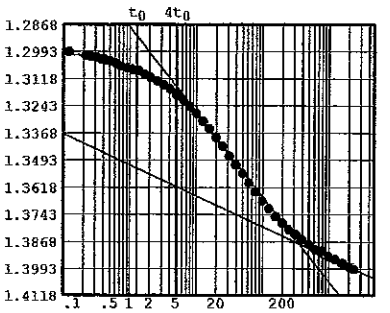
Void Ratio = 2.597 **Compression** = 32.0 %

D_0 = 1.17010 D_{50} = 1.22597 D_{100} = 1.28184

C_v **at 15.3 min.** = 0.0000 in.^{2}/sec. C_α = 0.024

Pressure: 1.00 tsf | TEST READINGS | Load No. 5

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	1.29405	25	15.98	1.33480
2	0.12	1.29936	26	20.10	1.33875
3	0.22	1.30103	27	25.27	1.34298
4	0.23	1.30127	28	31.77	1.34744
5	0.27	1.30164	29	39.95	1.35143
6	0.32	1.30205	30	50.27	1.35548
7	0.37	1.30274	31	63.25	1.35976
8	0.43	1.30314	32	79.58	1.36387
9	0.52	1.30361	33	100.15	1.36812
10	0.62	1.30467	34	126.05	1.37164
11	0.75	1.30591	35	158.63	1.37532
12	0.92	1.30685	36	199.68	1.37825
13	1.12	1.30752	37	251.35	1.38128
14	1.38	1.30812	38	316.38	1.38356
15	1.72	1.30994	39	398.27	1.38586
16	2.12	1.31134	40	501.35	1.38788
17	2.65	1.31286	41	631.12	1.39042
18	3.30	1.31480	42	794.48	1.39127
19	4.12	1.31666	43	1000.17	1.39370
20	5.15	1.31934	44	1259.08	1.39505
21	6.45	1.32179	45	1585.05	1.39682
22	8.08	1.32463	46	1995.43	1.39848
23	10.13	1.32772	47	2380.18	1.39957
24	12.73	1.33139			



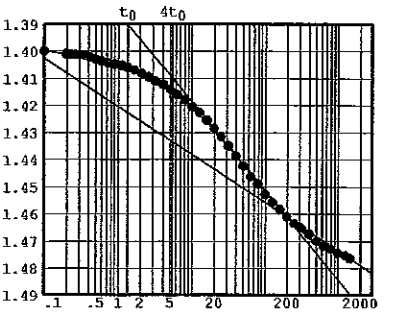
Void Ratio = 2.057 **Compression** = 42.2 %

D_0 = 1.29494 D_{50} = 1.34141 D_{100} = 1.38787

C_v **at 22.9 min.** = 0.0000 in.^{2}/sec. C_α = 0.021

Pressure: 2.00 tsf | TEST READINGS | Load No. 6

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	1.39436	24	12.72	1.42263
2	0.10	1.39981	25	15.98	1.42547
3	0.20	1.40095	26	20.08	1.42845
4	0.23	1.40115	27	25.25	1.43144
5	0.27	1.40119	28	31.75	1.43485
6	0.30	1.40136	29	39.95	1.43865
7	0.35	1.40157	30	50.25	1.44227
8	0.42	1.40219	31	63.23	1.44635
9	0.50	1.40284	32	79.57	1.44908
10	0.60	1.40350	33	100.13	1.45287
11	0.73	1.40422	34	126.03	1.45574
12	0.90	1.40468	35	158.63	1.45837
13	1.12	1.40526	36	199.67	1.46108
14	1.37	1.40593	37	251.33	1.46354
15	1.70	1.40698	38	316.37	1.46517
16	2.12	1.40815	39	398.25	1.46739
17	2.63	1.40946	40	501.33	1.46983
18	3.28	1.41109	41	631.10	1.47162
19	4.10	1.41221	42	794.48	1.47296
20	5.13	1.41418	43	1000.15	1.47431
21	6.43	1.41603	44	1259.08	1.47529
22	8.07	1.41790	45	1440.95	1.47633
23	10.13	1.42049			



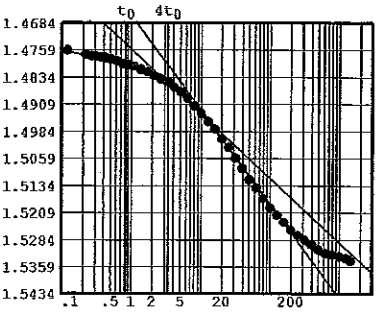
Void Ratio = 1.648 Compression = 49.9 %

D_0 = 1.39666 D_{50} = 1.42873 D_{100} = 1.46080

C_v at 19.5 min. = 0.0000 in.^{2}/sec. C_α = 0.031

Pressure: 4.00 tsf **TEST READINGS** **Load No. 7**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	1.46908	24	12.73	1.49575
2	0.12	1.47594	25	16.00	1.49777
3	0.22	1.47708	26	20.10	1.50036
4	0.23	1.47723	27	25.27	1.50277
5	0.27	1.47750	28	31.77	1.50580
6	0.32	1.47773	29	39.97	1.50865
7	0.37	1.47786	30	50.27	1.51174
8	0.43	1.47802	31	63.25	1.51400
9	0.52	1.47843	32	79.58	1.51700
10	0.62	1.47886	33	100.15	1.51953
11	0.75	1.47968	34	126.05	1.52161
12	0.92	1.47998	35	158.65	1.52354
13	1.13	1.48042	36	199.68	1.52568
14	1.38	1.48122	37	251.35	1.52716
15	1.72	1.48192	38	316.38	1.52846
16	2.12	1.48293	39	398.27	1.52960
17	2.63	1.48383	40	501.35	1.53115
18	3.30	1.48455	41	631.13	1.53220
19	4.12	1.48626	42	794.50	1.53256
20	5.15	1.48750	43	1000.17	1.53303
21	6.45	1.48924	44	1259.10	1.53354
22	8.08	1.49131	45	1445.83	1.53420
23	10.13	1.49337			



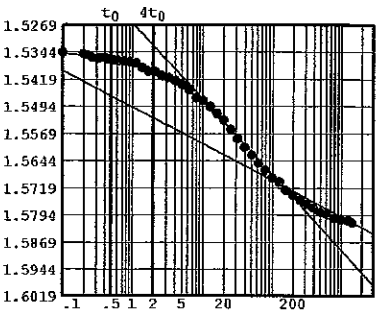
Void Ratio = 1.339 **Compression** = 55.8 %

D_0 = 1.47332 D_{50} = 1.48458 D_{100} = 1.49585

C_v **at 3.0 min.** = 0.0001 in.^{2}/sec. C_α = 0.035

Pressure: 8.00 tsf | TEST READINGS | Load No. 8

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	1.52537	24	12.72	1.54947
2	0.10	1.53445	25	15.98	1.55139
3	0.20	1.53488	26	20.08	1.55319
4	0.23	1.53519	27	25.25	1.55575
5	0.27	1.53589	28	31.75	1.55824
6	0.32	1.53609	29	39.95	1.56066
7	0.37	1.53591	30	50.27	1.56281
8	0.43	1.53616	31	63.23	1.56508
9	0.52	1.53657	32	79.58	1.56699
10	0.62	1.53671	33	100.15	1.56911
11	0.75	1.53686	34	126.03	1.57033
12	0.92	1.53702	35	158.63	1.57267
13	1.12	1.53738	36	199.67	1.57399
14	1.38	1.53875	37	251.33	1.57531
15	1.70	1.53973	38	316.38	1.57640
16	2.12	1.53990	39	398.27	1.57745
17	2.63	1.54096	40	501.35	1.57865
18	3.28	1.54149	41	631.12	1.57898
19	4.10	1.54232	42	794.48	1.58028
20	5.13	1.54342	43	1000.17	1.58079
21	6.43	1.54469	44	1259.08	1.58091
22	8.07	1.54694	45	1453.02	1.58154
23	10.13	1.54789			



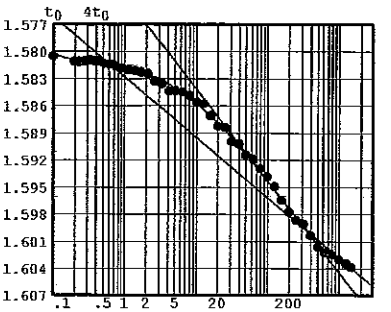
Void Ratio = 1.087 Compression = 60.5 %

D_0 = 1.53288 D_{50} = 1.55204 D_{100} = 1.57120

C_v at 16.0 min. = 0.0000 in.^{2}/sec. C_α = 0.023

Pressure: 12.00 tsf **TEST READINGS** **Load No. 9**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	1.57366	24	12.73	1.58578
2	0.10	1.58047	25	16.00	1.58707
3	0.20	1.58109	26	20.10	1.58823
4	0.23	1.58112	27	25.27	1.58837
5	0.27	1.58110	28	31.77	1.58993
6	0.32	1.58094	29	39.97	1.59018
7	0.37	1.58103	30	50.27	1.59147
8	0.43	1.58107	31	63.25	1.59191
9	0.52	1.58132	32	79.58	1.59291
10	0.62	1.58138	33	100.15	1.59383
11	0.75	1.58160	34	126.05	1.59492
12	0.92	1.58181	35	158.65	1.59643
13	1.13	1.58200	36	199.68	1.59775
14	1.40	1.58210	37	251.35	1.59863
15	1.72	1.58226	38	316.40	1.59906
16	2.13	1.58244	39	398.28	1.60033
17	2.65	1.58326	40	501.35	1.60160
18	3.30	1.58355	41	631.13	1.60224
19	4.12	1.58434	42	794.50	1.60246
20	5.15	1.58431	43	1000.17	1.60302
21	6.45	1.58450	44	1259.10	1.60345
22	8.08	1.58488	45	1455.50	1.60387
23	10.15	1.58560			



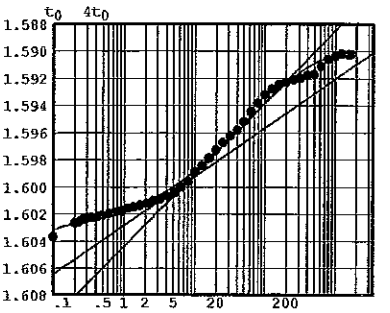
Void Ratio = 0.968 **Compression** = 62.8 %

D_0 = 1.57922 D_{50} = 1.58941 D_{100} = 1.59961

C_v **at 31.0 min.** = 0.0000 in.^{2}/sec. C_α = 0.017

Pressure: 3.00 tsf	TEST READINGS	Load No. 10

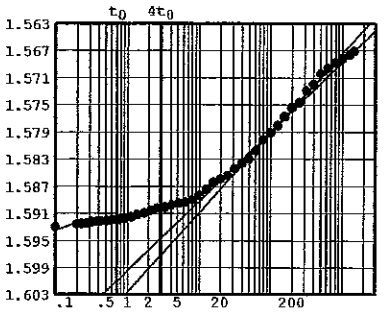
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	1.61996	24	12.72	1.59841
2	0.10	1.60366	25	15.98	1.59787
3	0.20	1.60269	26	20.08	1.59726
4	0.23	1.60258	27	25.25	1.59671
5	0.27	1.60240	28	31.77	1.59622
6	0.30	1.60231	29	39.95	1.59579
7	0.35	1.60225	30	50.25	1.59517
8	0.43	1.60219	31	63.23	1.59444
9	0.50	1.60209	32	79.58	1.59379
10	0.62	1.60195	33	100.15	1.59319
11	0.75	1.60185	34	126.03	1.59276
12	0.92	1.60179	35	158.63	1.59244
13	1.12	1.60157	36	199.68	1.59229
14	1.37	1.60147	37	251.33	1.59209
15	1.70	1.60137	38	316.38	1.59199
16	2.12	1.60119	39	398.27	1.59176
17	2.63	1.60101	40	501.35	1.59170
18	3.28	1.60090	41	631.12	1.59110
19	4.10	1.60068	42	794.48	1.59060
20	5.13	1.60041	43	1000.17	1.59037
21	6.43	1.60002	44	1259.08	1.59020
22	8.07	1.59959	45	1585.07	1.59023
23	10.13	1.59887	46	1730.63	1.59021



Void Ratio = 1.041 **Compression** = 61.4 %
D_0 = 1.60393 D_{50} = 1.60171 D_{100} = 1.59950
C_v **at 1.1 min.** = 0.0001 in.^{2}/sec.

Pressure: 0.75 tsf | TEST READINGS | Load No. 11

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	1.59849	24	12.73	1.58744
2	0.10	1.59296	25	16.00	1.58641
3	0.20	1.59260	26	20.10	1.58592
4	0.23	1.59254	27	25.27	1.58545
5	0.27	1.59247	28	31.78	1.58440
6	0.32	1.59226	29	39.97	1.58359
7	0.37	1.59223	30	50.28	1.58300
8	0.43	1.59213	31	63.25	1.58171
9	0.52	1.59206	32	79.60	1.58011
10	0.62	1.59193	33	100.17	1.57908
11	0.75	1.59190	34	126.07	1.57806
12	0.92	1.59169	35	158.67	1.57672
13	1.13	1.59152	36	199.70	1.57538
14	1.38	1.59119	37	251.37	1.57463
15	1.72	1.59093	38	316.40	1.57289
16	2.13	1.59057	39	398.28	1.57195
17	2.65	1.59023	40	501.37	1.57037
18	3.30	1.59008	41	631.13	1.56959
19	4.12	1.58976	42	794.52	1.56876
20	5.15	1.58947	43	1000.18	1.56813
21	6.45	1.58934	44	1259.12	1.56764
22	8.08	1.58901	45	1440.80	1.56704
23	10.15	1.58833			



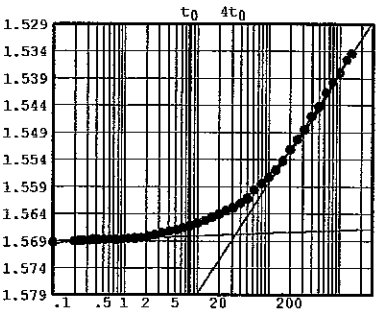
Void Ratio = 1.164 **Compression** = 59.1 %

D_0 = 1.59281 D_{50} = 1.58521 D_{100} = 1.57761

C_v **at 25.0 min.** = 0.0000 in.^{2}/sec.

Pressure: 0.19 tsf | TEST READINGS | Load No. 12

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	1.57208	24	12.75	1.56528
2	0.10	1.56926	25	16.00	1.56461
3	0.20	1.56905	26	20.10	1.56406
4	0.23	1.56901	27	25.27	1.56347
5	0.27	1.56894	28	31.78	1.56287
6	0.32	1.56891	29	39.97	1.56211
7	0.37	1.56877	30	50.28	1.56125
8	0.43	1.56876	31	63.25	1.55961
9	0.52	1.56874	32	79.60	1.55847
10	0.63	1.56871	33	100.17	1.55731
11	0.77	1.56879	34	126.05	1.55595
12	0.93	1.56869	35	158.65	1.55425
13	1.13	1.56859	36	199.68	1.55218
14	1.40	1.56849	37	251.35	1.55032
15	1.72	1.56845	38	316.40	1.54852
16	2.13	1.56819	39	398.28	1.54605
17	2.65	1.56787	40	501.37	1.54425
18	3.30	1.56755	41	631.13	1.54170
19	4.12	1.56725	42	794.50	1.53973
20	5.17	1.56699	43	1000.18	1.53791
21	6.47	1.56656	44	1259.10	1.53562
22	8.10	1.56617	45	1458.63	1.53440
23	10.15	1.56572			



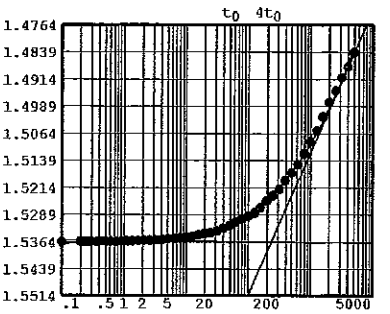
Void Ratio = 1.338 **Compression** = 55.8 %

D_0 = 1.57055 D_{50} = 1.56915 D_{100} = 1.56776

C_v **at 0.2 min.** = 0.0009 in.^{2}/sec.

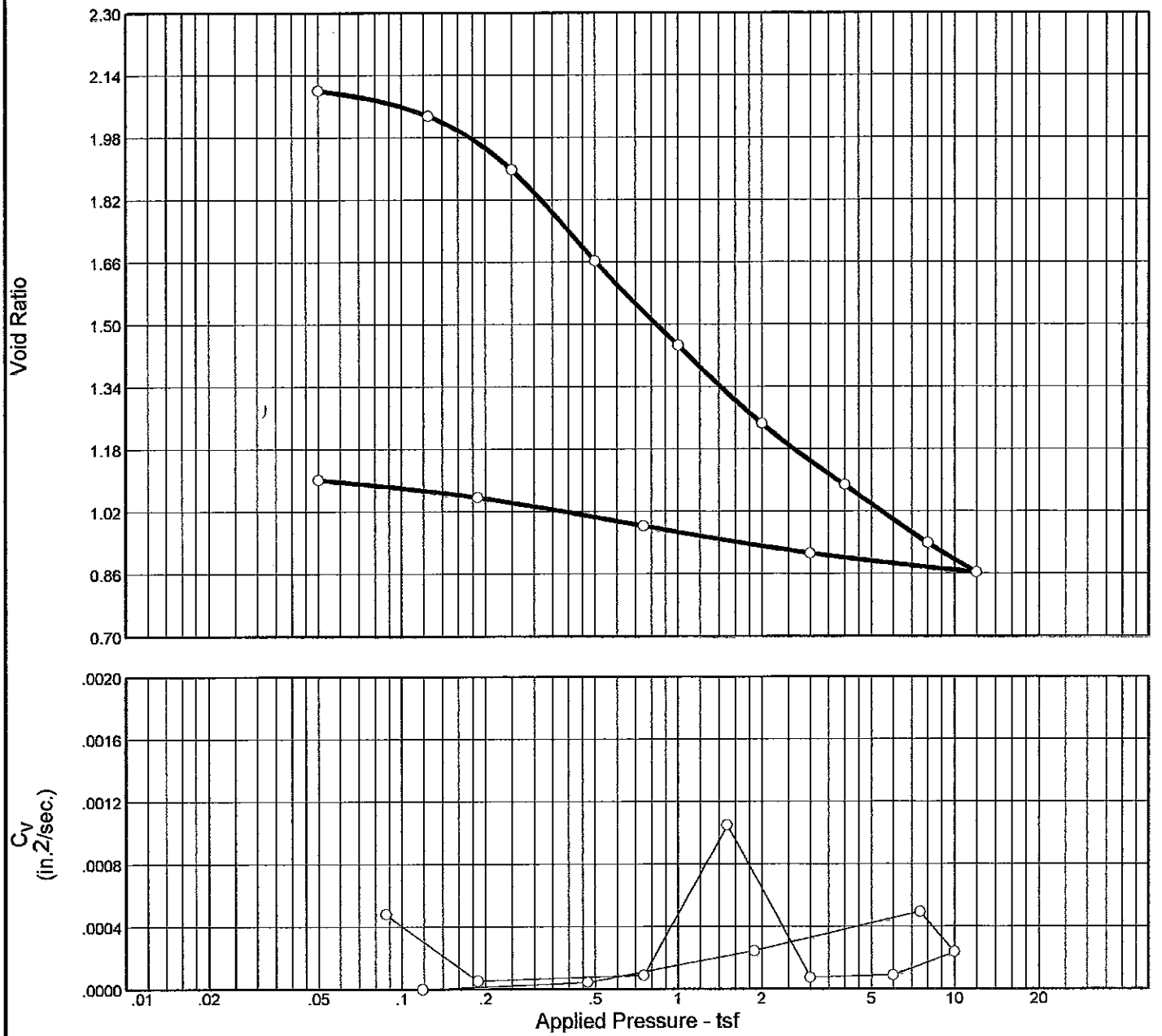
Pressure: 0.05 tsf | TEST READINGS | Load No. 13

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	1.53802	26	20.10	1.53413
2	0.10	1.53650	27	25.27	1.53389
3	0.20	1.53640	28	31.77	1.53336
4	0.23	1.53641	29	39.95	1.53269
5	0.27	1.53640	30	50.27	1.53195
6	0.30	1.53633	31	63.25	1.53091
7	0.37	1.53635	32	79.58	1.53003
8	0.43	1.53634	33	100.15	1.52932
9	0.52	1.53631	34	126.05	1.52842
10	0.62	1.53631	35	158.65	1.52697
11	0.75	1.53635	36	199.68	1.52512
12	0.92	1.53631	37	251.35	1.52367
13	1.12	1.53618	38	316.38	1.52190
14	1.38	1.53621	39	398.27	1.51939
15	1.72	1.53614	40	501.35	1.51732
16	2.12	1.53608	41	631.12	1.51497
17	2.63	1.53606	42	794.50	1.51186
18	3.28	1.53596	43	1000.17	1.50863
19	4.12	1.53583	44	1259.10	1.50554
20	5.15	1.53563	45	1585.07	1.50179
21	6.45	1.53549	46	1995.43	1.49765
22	8.08	1.53533	47	2512.07	1.49456
23	10.13	1.53507	48	3162.45	1.49092
24	12.73	1.53489	49	3981.25	1.48789
25	15.98	1.53443	50	5012.05	1.48395



Void Ratio = 1.607 **Compression** = 50.7 %

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture							
68.5 %	53.5 %	63.6	51	27	2.69	11.96	0.43	2.099

MATERIAL DESCRIPTION	USCS	AASHTO
VSO GR CH2 W/ LNS ML	CH	

Project No. 12-017108 **Client:** USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

Source: BSFR-13U **Sample No.:** 4B **Elev./Depth:** 11.0

FFEBJV, LLC

St Rose, LA

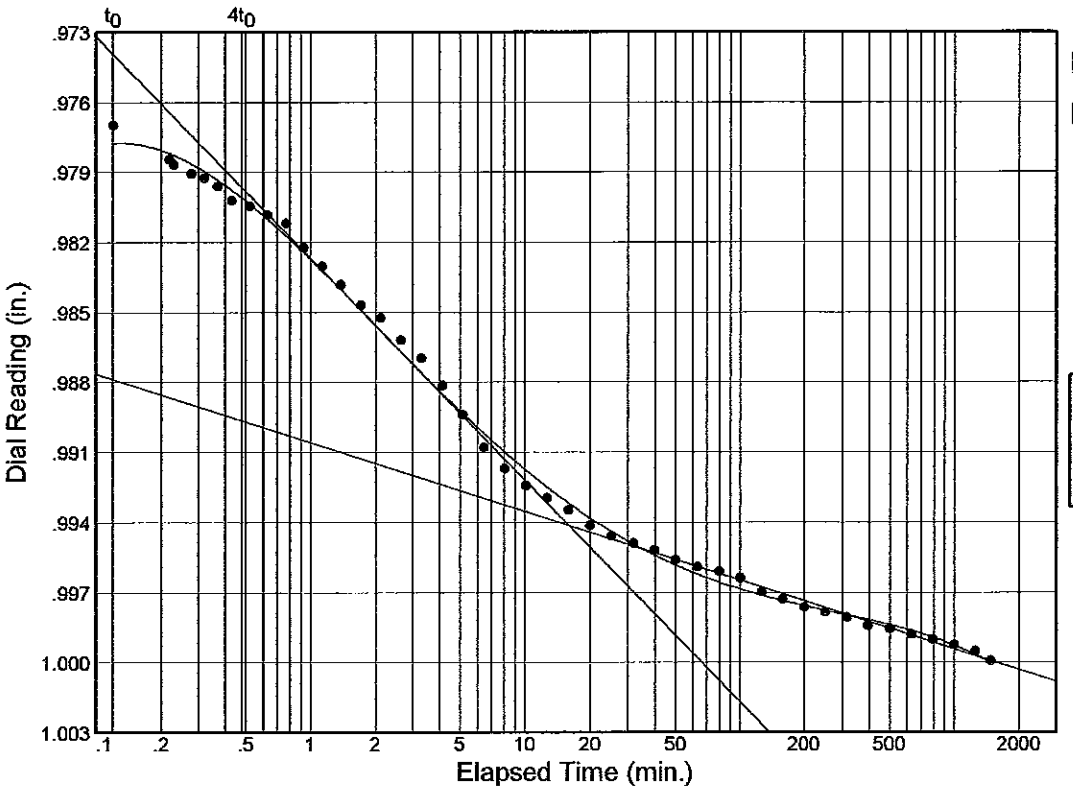
Remarks:

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

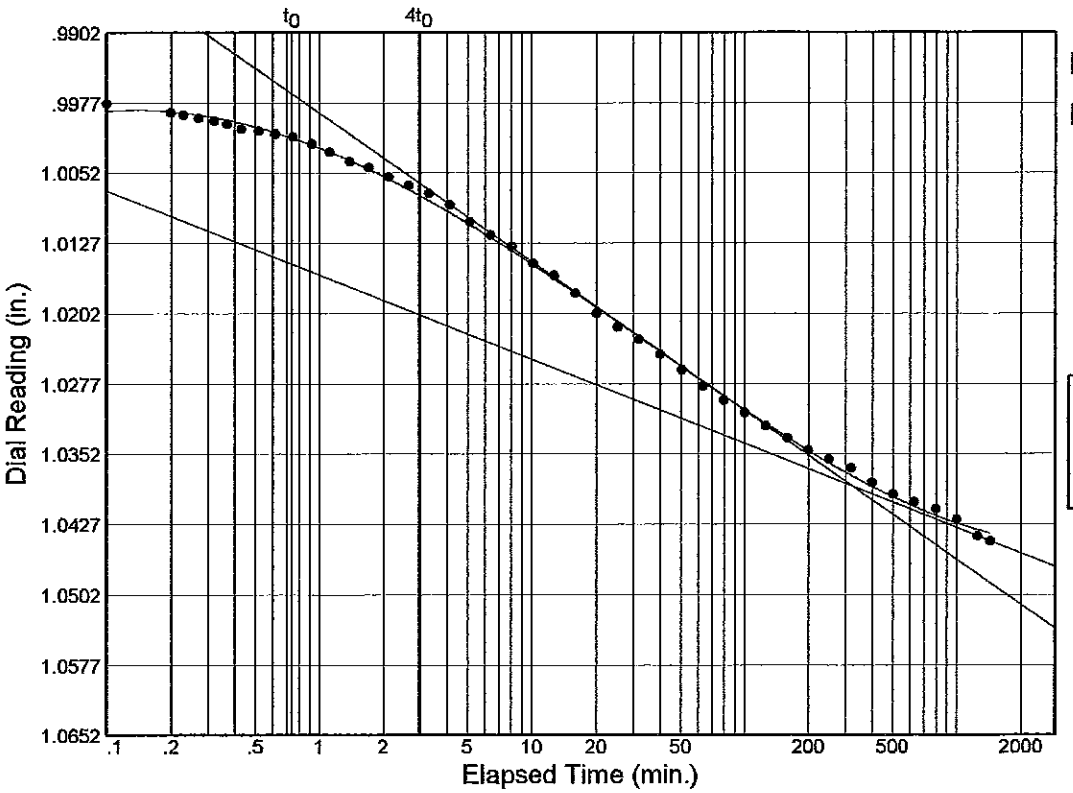
Source: BSFR-13U Sample No.: 4B Elev./Depth: 11.0



Load No.= 2
Load= 0.13 tsf
D_0 = 0.97546
D_{50} = 0.98480
D_{100} = 0.99414
T_{50} = 1.68 min.

C_v @ T_{50}
0.0005 in.^{2}/sec.

C_α = 0.003



Load No.= 3
Load= 0.25 tsf
D_0 = 0.99529
D_{50} = 1.01697
D_{100} = 1.03864
T_{50} = 13.78 min.

C_v @ T_{50}
0.0001 in.^{2}/sec.

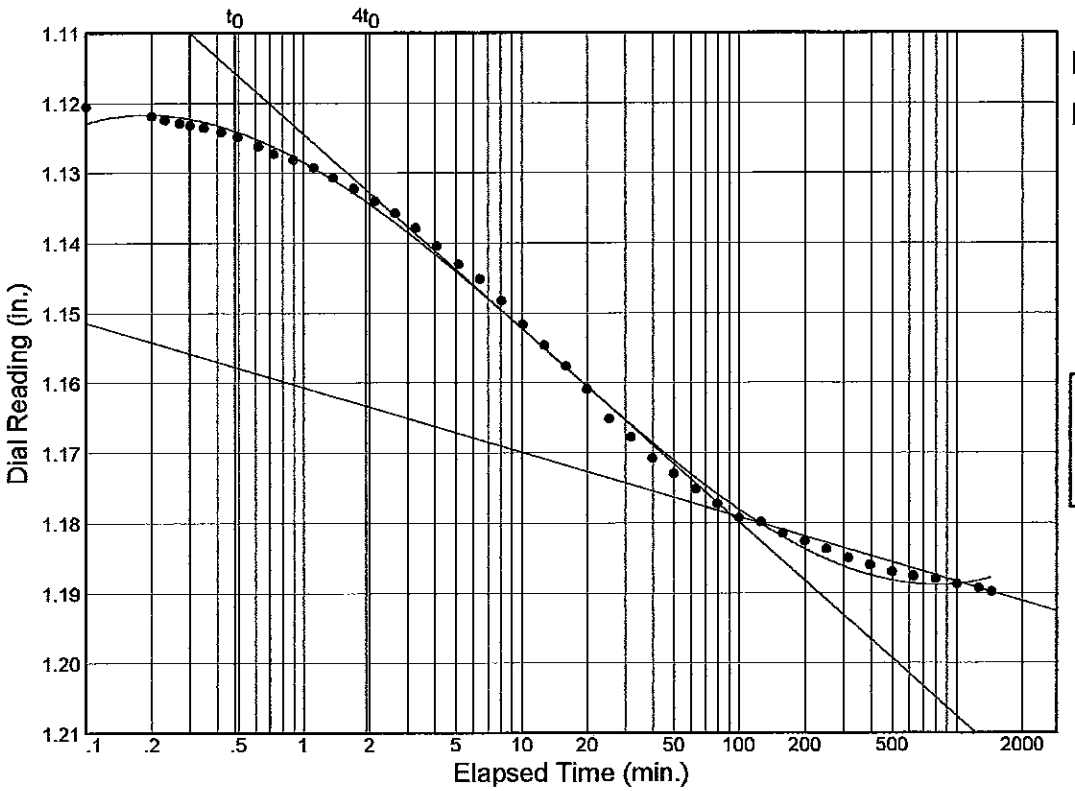
C_α = 0.009

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

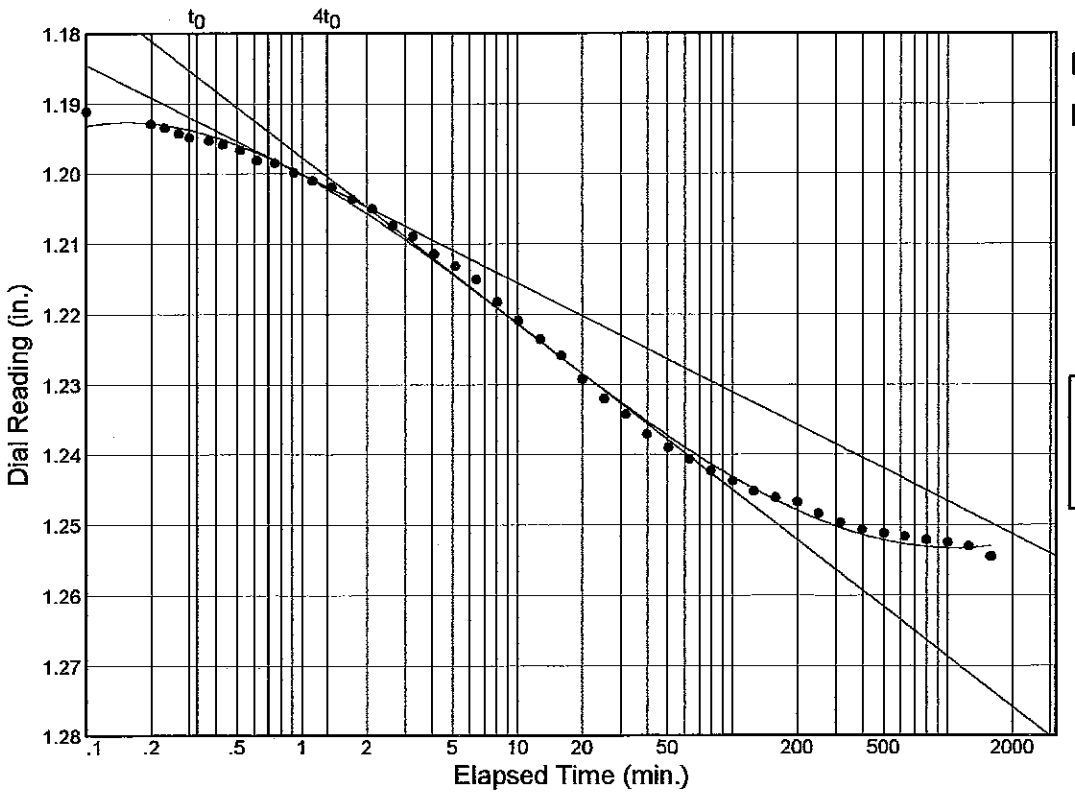
Source: BSFR-13U Sample No.: 4B Elev./Depth: 11.0



Load No.= 5
Load= 1.00 tsf
D_0 = 1.11397
D_{50} = 1.14638
D_{100} = 1.17879
T_{50} = 6.15 min.

C_v @ T_{50}
0.0001 in.^{2}/sec.

C_α = 0.011



Load No.= 6
Load= 2.00 tsf
D_0 = 1.18595
D_{50} = 1.19530
D_{100} = 1.20464
T_{50} = 0.45 min.

C_v @ T_{50}
0.0011 in.^{2}/sec.

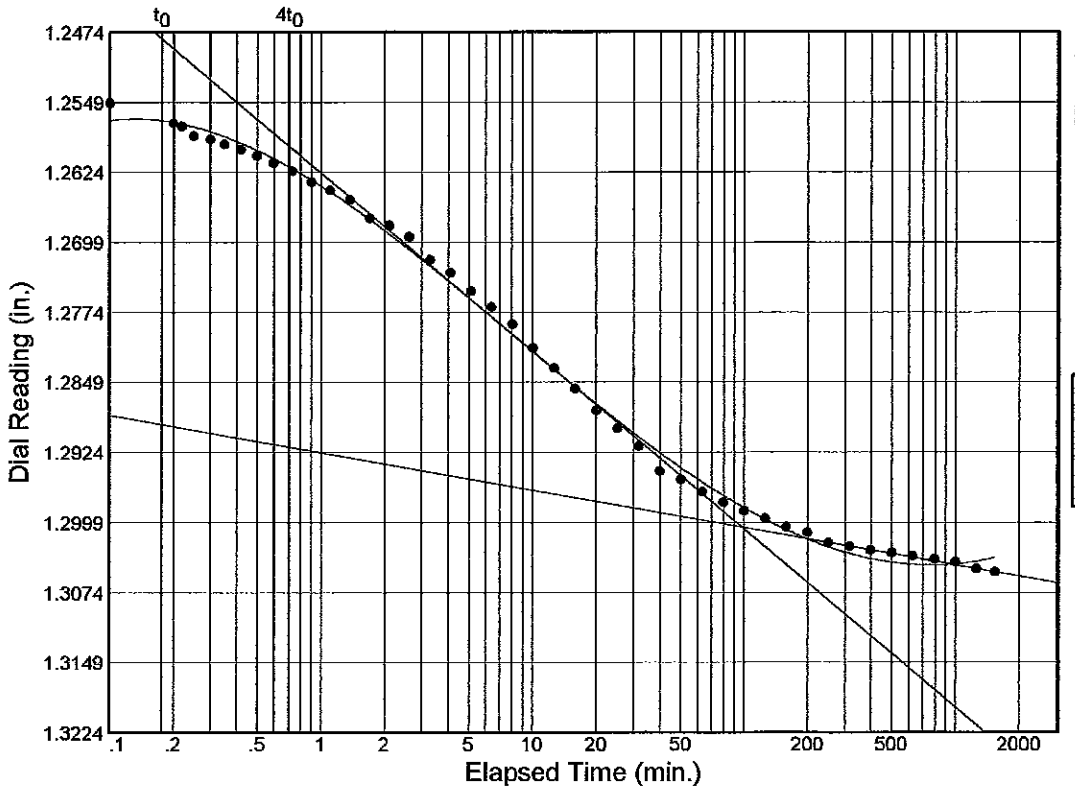
C_α = 0.020

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

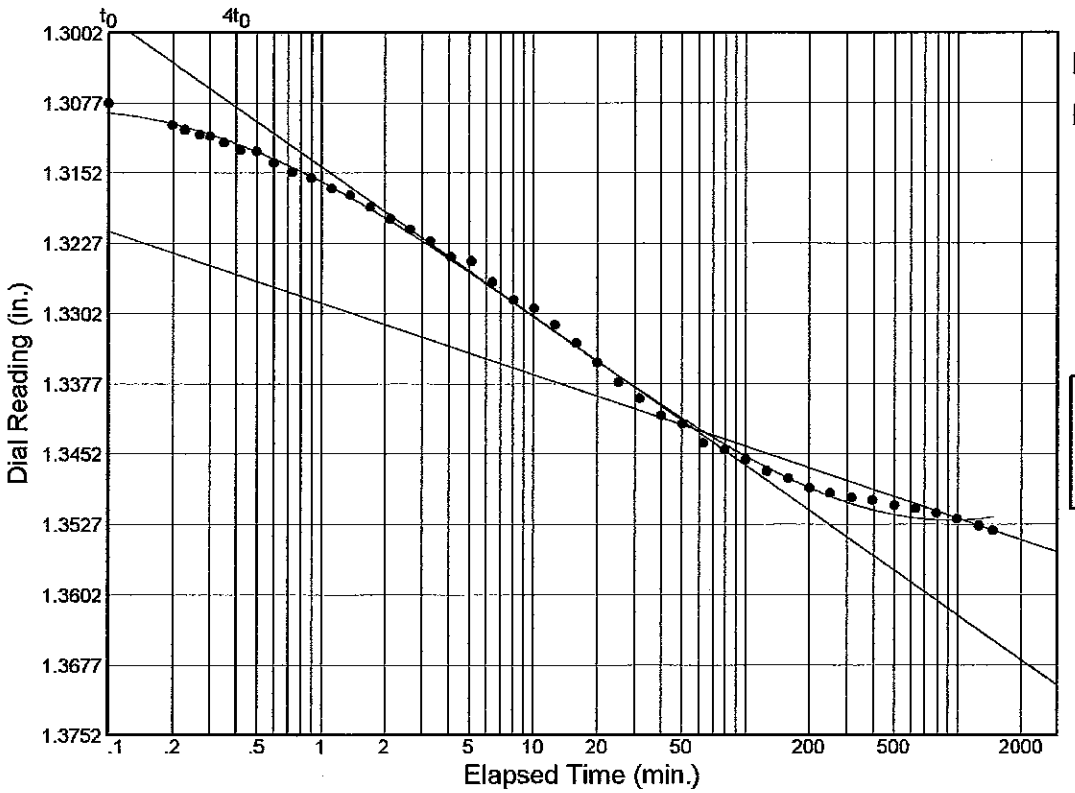
Source: BSFR-13U Sample No.: 4B Elev./Depth: 11.0



Load No.= 7
Load= 4.00 tsf
D_0 = 1.25201
D_{50} = 1.27621
D_{100} = 1.30040
T_{50} = 5.26 min.

C_v @ T_{50}
0.0001 in.^{2}/sec.

C_α = 0.005



Load No.= 8
Load= 8.00 tsf
D_0 = 1.30553
D_{50} = 1.32404
D_{100} = 1.34254
T_{50} = 3.86 min.

C_v @ T_{50}
0.0001 in.^{2}/sec.

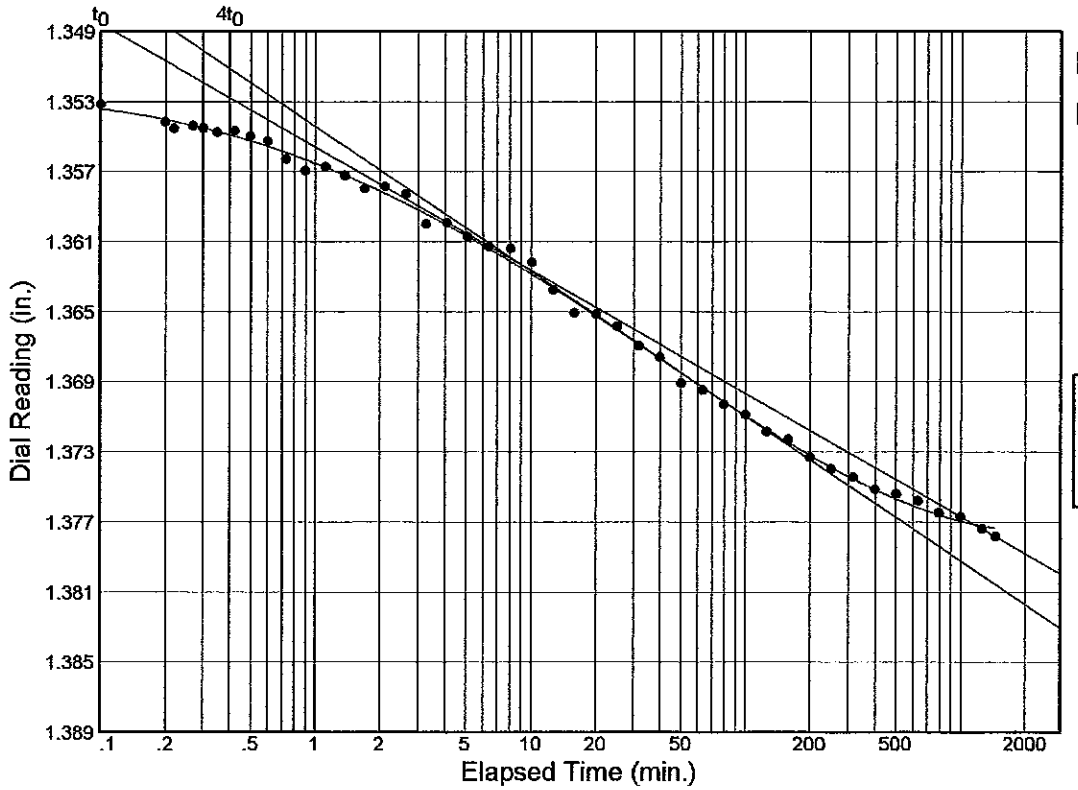
C_α = 0.011

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

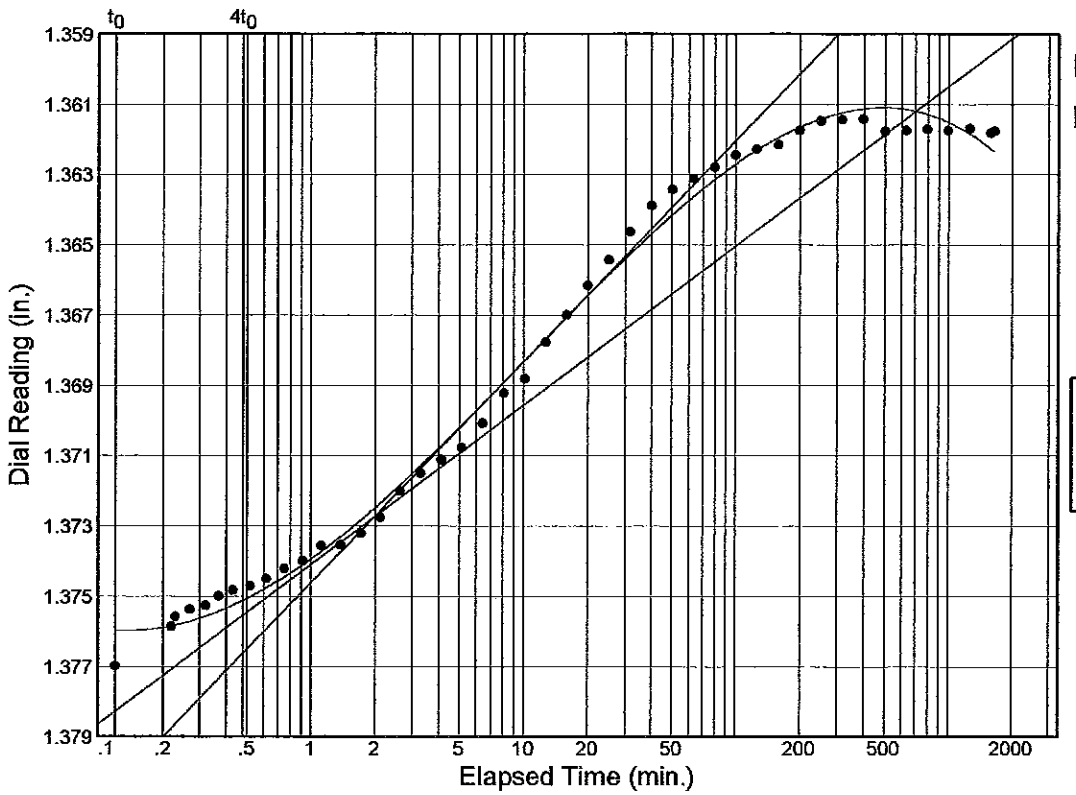
Source: BSFR-13U Sample No.: 4B Elev./Depth: 11.0



Load No.= 9
Load= 12.00 tsf
D_0 = 1.35195
D_{50} = 1.35709
D_{100} = 1.36223
T_{50} = 1.31 min.

C_v @ T_{50}
0.0002 in.^{2}/sec.

C_α = 0.011



Load No.= 10
Load= 3.00 tsf
D_0 = 1.37684
D_{50} = 1.37481
D_{100} = 1.37279
T_{50} = 0.59 min.

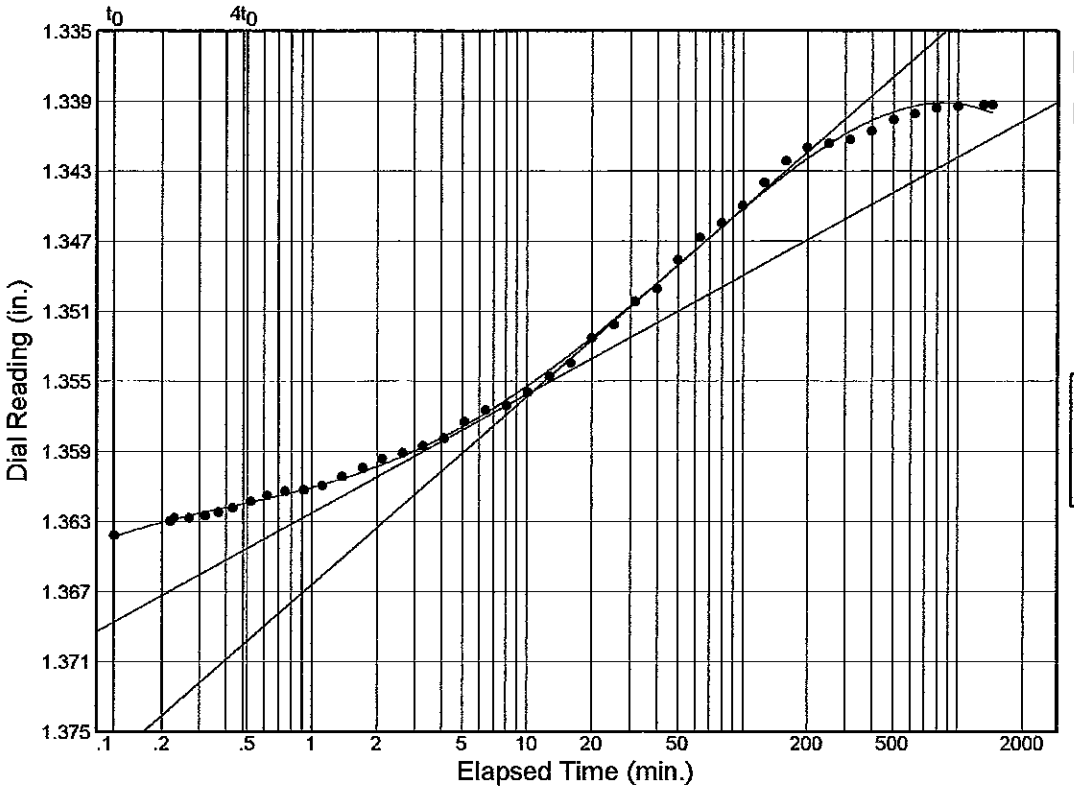
C_v @ T_{50}
0.0005 in.^{2}/sec.

Figure

Dial Reading vs. Time

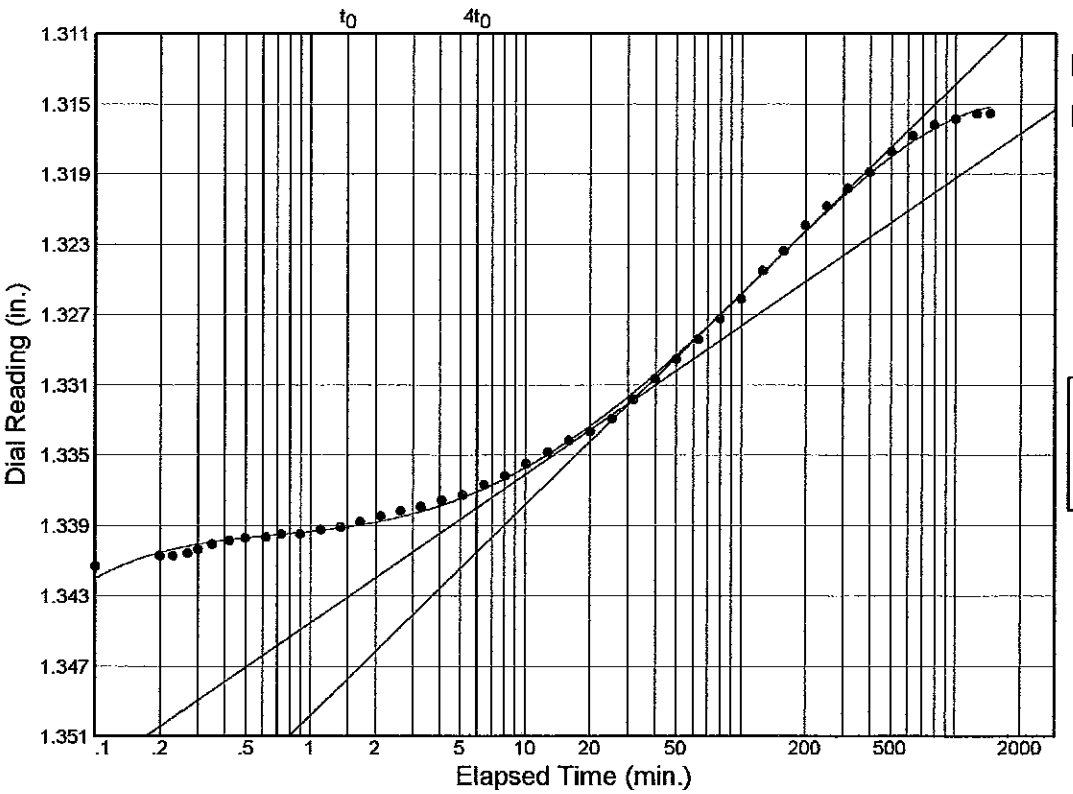
Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

Source: BSFR-13U Sample No.: 4B Elev./Depth: 11.0



Load No.= 11
Load= 0.75 tsf
D_0 = 1.36579
D_{50} = 1.36065
D_{100} = 1.35552
T_{50} = 1.30 min.

C_v @ T_{50}
0.0002 in.^{2}/sec.



Load No.= 12
Load= 0.19 tsf
D_0 = 1.34109
D_{50} = 1.33652
D_{100} = 1.33195
T_{50} = 7.49 min.

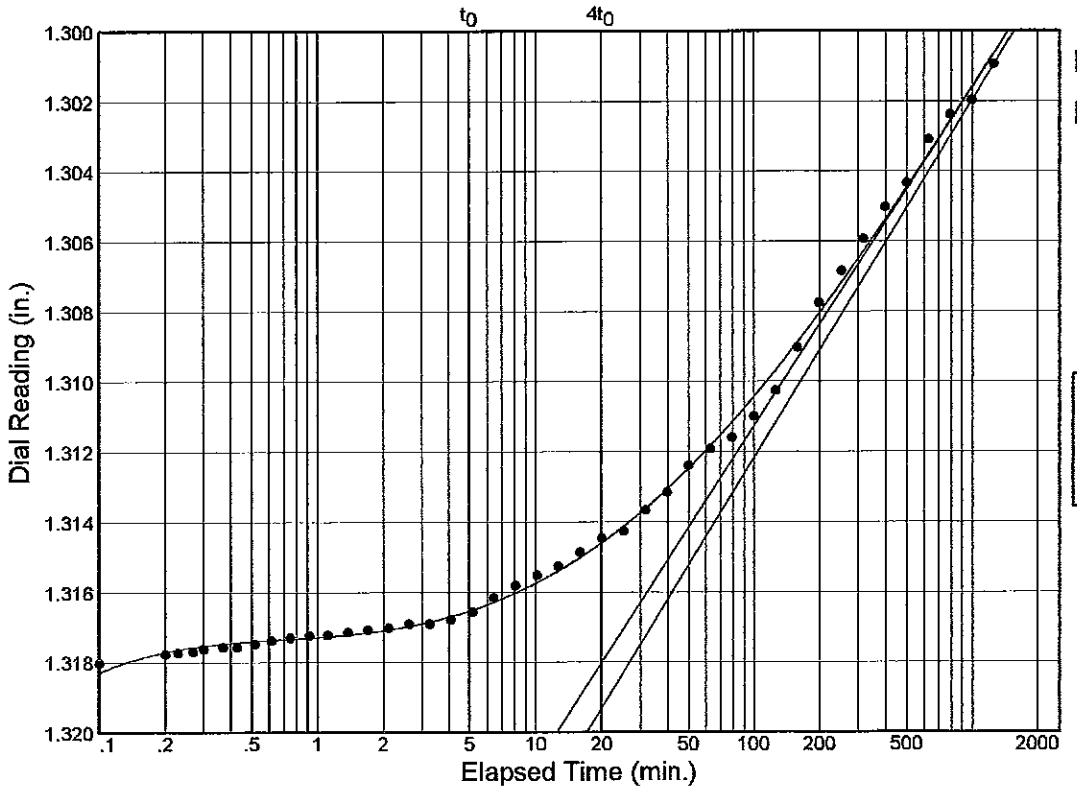
C_v @ T_{50}
0.0000 in.^{2}/sec.

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

Source: BSFR-13U Sample No.: 4B Elev./Depth: 11.0



Load No.= 13

Load= 0.05 tsf

D_0 = 1.31846

D_{50} = 1.30660

D_{100} = 1.29475

T_{50} = 292.12 min.

C_v @ T_{50}

0.0000 in.^{2}/sec.

SWELL/CONSOLIDATION TEST DATA

Client: USACE
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans
Project Number: 12-017108

Sample Data

Source: BSFR-13U
Sample No.: 4B
Elev. or Depth: 11.0 **Sample Length(in./cm.):**
Location:
Description: VSO GR CH2 W/ LNS ML
Liquid Limit: 51 **Plasticity Index:** 27
USCS: CH **AASHTO:** **Figure No.:**
Testing Remarks:

Test Specimen Data

TOTAL SAMPLE		BEFORE TEST	AFTER TEST
Wet w+t	= 269.96 g.	Consolidometer # = 5	Wet w+t = 323.30 g.
Dry w+t	= 198.36 g.		Dry w+t = 249.25 g.
Tare Wt.	= 64.43 g.	Spec. Gravity = 2.69	Tare Wt. = 70.79 g.
Height	= .99 in.	Height = 1.00 in.	
Diameter	= 3.99 in.	Diameter = 4.00 in.	
Weight	= 318.08 g.	Defl. Table = n/a	
Moisture	= 53.5 %	Ht. Solids = 0.3224 in.	Moisture = 41.5 %
Wet Den.	= 97.6 pcf	Dry Wt. = 209.55 g.	Dry Wt. = 178.46 g.*
Dry Den.	= 63.6 pcf	Void Ratio = 2.099	Void Ratio = 1.102
		Saturation = 68.5 %	

* Final dry weight used in calculations

End-of-Load Summary

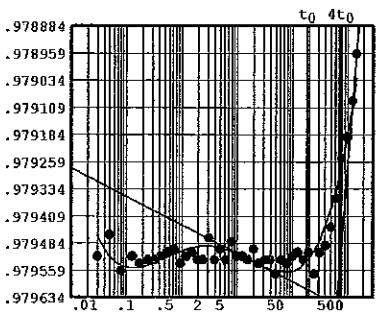
Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (in.^{2}/sec.)	C_α	Void Ratio	% Compression /Swell
start	0.97944				2.099	
0.05	0.97896	0.00000			2.101	0.0 Swell
0.13	0.99993	0.00000	0.0005	0.003	2.035	2.1 Comprs.
0.25	1.04451	0.00000	0.0001	0.009	1.897	6.5 Comprs.
0.50	1.11981	0.00000		0.023	1.664	14.1 Comprs.
1.00	1.18984	0.00000	0.0001	0.011	1.446	21.1 Comprs.
2.00	1.25449	0.00000	0.0011	0.020	1.246	27.5 Comprs.
4.00	1.30521	0.00000	0.0001	0.005	1.088	32.6 Comprs.
8.00	1.35335	0.00000	0.0001	0.011	0.939	37.4 Comprs.
12.00	1.37782	0.00000	0.0002	0.011	0.863	39.9 Comprs.
3.00	1.36177	0.00000	0.0005		0.913	38.3 Comprs.

Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (in.^{2}/sec.)	C_α	Void Ratio	% Compression /Swell
0.75	1.33920	0.00000	0.0002		0.983	36.0 Comprs.
0.19	1.31554	0.00000	0.0000		1.056	33.6 Comprs.
0.05	1.30094	0.00000	0.0000		1.102	32.2 Comprs.

C_c = 0.43 P_c = 11.96 tsf C_r = 0.10

Pressure: 0.05 tsf **TEST READINGS** **Load No. 1**

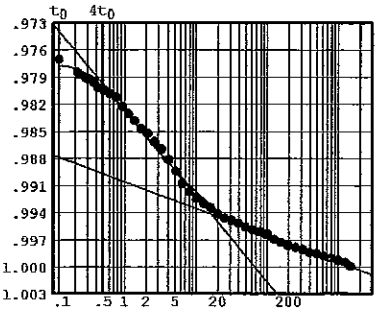
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.97944	23	12.55	0.97952
2	0.03	0.97952	24	15.80	0.97953
3	0.05	0.97946	25	19.92	0.97950
4	0.08	0.97956	26	25.08	0.97954
5	0.13	0.97952	27	31.58	0.97953
6	0.18	0.97954	28	39.78	0.97953
7	0.25	0.97953	29	50.08	0.97957
8	0.33	0.97953	30	63.07	0.97953
9	0.43	0.97952	31	79.40	0.97954
10	0.57	0.97951	32	99.97	0.97952
11	0.73	0.97950	33	125.87	0.97951
12	0.95	0.97954	34	158.47	0.97953
13	1.20	0.97952	35	199.50	0.97951
14	1.53	0.97951	36	251.17	0.97957
15	1.95	0.97953	37	316.20	0.97951
16	2.47	0.97953	38	398.08	0.97949
17	3.12	0.97947	39	501.17	0.97944
18	3.93	0.97953	40	630.93	0.97936
19	4.97	0.97950	41	794.32	0.97925
20	6.27	0.97953	42	999.98	0.97919
21	7.90	0.97948	43	1258.92	0.97909
22	9.95	0.97952	44	1474.15	0.97896



Void Ratio = 2.101 **Swell** = 0.0 %

Pressure: 0.13 tsf **TEST READINGS** **Load No. 2**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.97287	24	12.73	0.99296
2	0.12	0.97699	25	16.00	0.99347
3	0.22	0.97847	26	20.10	0.99412
4	0.23	0.97868	27	25.27	0.99460
5	0.28	0.97906	28	31.78	0.99489
6	0.32	0.97924	29	39.97	0.99519
7	0.37	0.97960	30	50.27	0.99559
8	0.43	0.98020	31	63.25	0.99590
9	0.52	0.98045	32	79.60	0.99610
10	0.63	0.98085	33	100.17	0.99638
11	0.77	0.98120	34	126.05	0.99696
12	0.93	0.98224	35	158.65	0.99730
13	1.13	0.98303	36	199.70	0.99763
14	1.38	0.98381	37	251.35	0.99785
15	1.72	0.98469	38	316.40	0.99805
16	2.13	0.98524	39	398.28	0.99841
17	2.65	0.98619	40	501.37	0.99855
18	3.30	0.98696	41	631.13	0.99881
19	4.12	0.98813	42	794.50	0.99902
20	5.15	0.98940	43	1000.18	0.99924
21	6.45	0.99078	44	1259.10	0.99951
22	8.08	0.99168	45	1479.98	0.99993
23	10.15	0.99243			



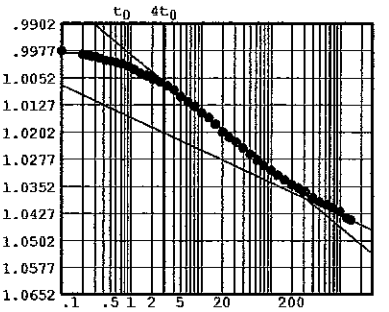
Void Ratio = 2.035 **Compression** = 2.1 %

D_0 = 0.97546 D_{50} = 0.98480 D_{100} = 0.99414

C_v **at 1.7 min.** = 0.0005 in.^{2}/sec. C_α = 0.003

Pressure: 0.25 tsf | TEST READINGS | Load No. 3

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.99522	24	12.73	1.01617
2	0.10	0.99773	25	15.98	1.01804
3	0.20	0.99872	26	20.10	1.02014
4	0.23	0.99897	27	25.25	1.02164
5	0.27	0.99934	28	31.77	1.02298
6	0.32	0.99959	29	39.95	1.02457
7	0.37	0.99995	30	50.27	1.02622
8	0.43	1.00047	31	63.25	1.02797
9	0.52	1.00067	32	79.58	1.02945
10	0.62	1.00100	33	100.15	1.03080
11	0.75	1.00134	34	126.05	1.03219
12	0.92	1.00205	35	158.65	1.03350
13	1.12	1.00294	36	199.68	1.03481
14	1.38	1.00397	37	251.35	1.03573
15	1.70	1.00456	38	316.38	1.03670
16	2.12	1.00564	39	398.27	1.03830
17	2.63	1.00650	40	501.35	1.03950
18	3.28	1.00742	41	631.13	1.04032
19	4.12	1.00860	42	794.50	1.04111
20	5.13	1.01040	43	1000.18	1.04218
21	6.43	1.01181	44	1259.10	1.04398
22	8.07	1.01306	45	1441.97	1.04451
23	10.13	1.01482			



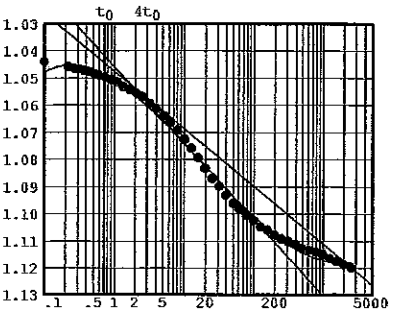
Void Ratio = 1.897 **Compression** = 6.5 %

D_0 = 0.99529 D_{50} = 1.01697 D_{100} = 1.03864

C_v **at 13.8 min.** = 0.0001 in.^{2}/sec. C_α = 0.009

Pressure: 0.50 tsf | TEST READINGS | Load No. 4

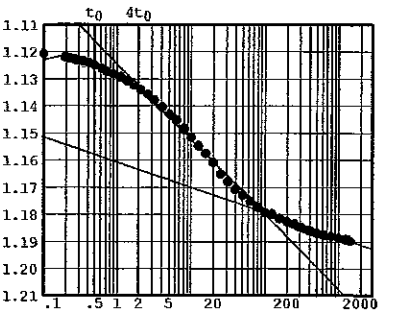
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	1.04024	25	15.98	1.07933
2	0.10	1.04387	26	20.08	1.08328
3	0.22	1.04576	27	25.25	1.08686
4	0.23	1.04606	28	31.75	1.08986
5	0.27	1.04655	29	39.95	1.09311
6	0.32	1.04676	30	50.25	1.09615
7	0.37	1.04728	31	63.23	1.09823
8	0.43	1.04770	32	79.57	1.10068
9	0.52	1.04845	33	100.15	1.10258
10	0.62	1.04908	34	126.03	1.10477
11	0.75	1.04984	35	158.63	1.10597
12	0.92	1.05065	36	199.68	1.10773
13	1.12	1.05153	37	251.33	1.10929
14	1.38	1.05322	38	316.38	1.11022
15	1.70	1.05426	39	398.27	1.11131
16	2.12	1.05564	40	501.35	1.11278
17	2.63	1.05686	41	631.12	1.11343
18	3.28	1.05948	42	794.50	1.11394
19	4.10	1.06134	43	1000.17	1.11496
20	5.13	1.06390	44	1259.10	1.11647
21	6.43	1.06632	45	1585.07	1.11748
22	8.07	1.06926	46	1995.43	1.11868
23	10.13	1.07251	47	2512.07	1.11959
24	12.72	1.07581	48	2572.73	1.11981



Void Ratio = 1.664 Compression = 14.1 %

Pressure: 1.00 tsf | TEST READINGS | Load No. 5

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	1.11548	24	12.72	1.15461
2	0.10	1.12058	25	15.98	1.15759
3	0.20	1.12190	26	20.08	1.16090
4	0.23	1.12242	27	25.25	1.16513
5	0.27	1.12288	28	31.75	1.16779
6	0.30	1.12319	29	39.95	1.17077
7	0.35	1.12353	30	50.25	1.17295
8	0.42	1.12418	31	63.23	1.17515
9	0.50	1.12486	32	79.57	1.17722
10	0.62	1.12621	33	100.13	1.17922
11	0.73	1.12728	34	126.03	1.17991
12	0.90	1.12812	35	158.63	1.18148
13	1.12	1.12927	36	199.67	1.18264
14	1.37	1.13064	37	251.33	1.18367
15	1.70	1.13225	38	316.37	1.18496
16	2.12	1.13400	39	398.25	1.18598
17	2.63	1.13573	40	501.33	1.18696
18	3.28	1.13785	41	631.10	1.18757
19	4.10	1.14040	42	794.48	1.18795
20	5.13	1.14303	43	1000.15	1.18872
21	6.43	1.14518	44	1259.08	1.18930
22	8.07	1.14823	45	1440.53	1.18984
23	10.13	1.15160			



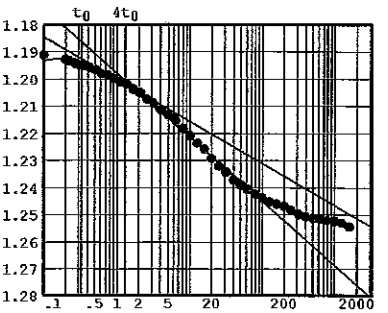
Void Ratio = 1.446 Compression = 21.1 %

D_0 = 1.11397 D_{50} = 1.14638 D_{100} = 1.17879

C_v at 6.2 min. = 0.0001 in.^{2}/sec. C_α = 0.011

Pressure: 2.00 tsf | TEST READINGS | Load No. 6

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	1.18463	24	12.72	1.22356
2	0.10	1.19112	25	15.98	1.22588
3	0.20	1.19289	26	20.08	1.22924
4	0.23	1.19344	27	25.27	1.23204
5	0.27	1.19428	28	31.77	1.23431
6	0.30	1.19484	29	39.95	1.23712
7	0.37	1.19526	30	50.27	1.23897
8	0.43	1.19581	31	63.23	1.24069
9	0.52	1.19661	32	79.58	1.24233
10	0.62	1.19807	33	100.15	1.24372
11	0.75	1.19847	34	126.03	1.24523
12	0.92	1.19978	35	158.63	1.24612
13	1.12	1.20104	36	199.68	1.24679
14	1.38	1.20196	37	251.35	1.24841
15	1.70	1.20362	38	316.38	1.24969
16	2.12	1.20504	39	398.27	1.25071
17	2.63	1.20739	40	501.35	1.25124
18	3.28	1.20894	41	631.12	1.25167
19	4.10	1.21137	42	794.48	1.25212
20	5.13	1.21309	43	1000.17	1.25250
21	6.43	1.21505	44	1259.08	1.25303
22	8.08	1.21827	45	1585.07	1.25449
23	10.13	1.22085	46	1602.25	1.25449



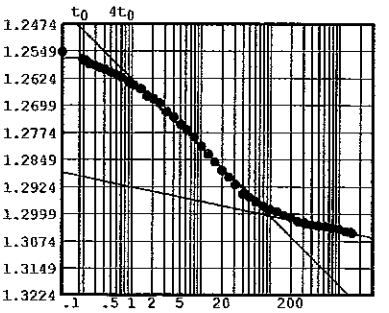
Void Ratio = 1.246 Compression = 27.5 %

D_0 = 1.18595 D_{50} = 1.19530 D_{100} = 1.20464

C_v at 0.4 min. = 0.0011 in.^{2}/sec. C_α = 0.020

Pressure: 4.00 tsf | TEST READINGS | Load No. 7

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	1.24732	24	12.72	1.28337
2	0.10	1.25500	25	15.97	1.28557
3	0.20	1.25718	26	20.08	1.28792
4	0.22	1.25749	27	25.25	1.28979
5	0.25	1.25849	28	31.75	1.29176
6	0.30	1.25887	29	39.93	1.29438
7	0.35	1.25943	30	50.25	1.29530
8	0.42	1.25997	31	63.22	1.29658
9	0.50	1.26066	32	79.57	1.29777
10	0.60	1.26137	33	100.13	1.29865
11	0.73	1.26228	34	126.02	1.29943
12	0.90	1.26343	35	158.62	1.30038
13	1.10	1.26434	36	199.67	1.30097
14	1.37	1.26536	37	251.32	1.30203
15	1.70	1.26733	38	316.37	1.30248
16	2.10	1.26812	39	398.25	1.30289
17	2.62	1.26929	40	501.33	1.30314
18	3.28	1.27178	41	631.10	1.30346
19	4.10	1.27313	42	794.47	1.30385
20	5.13	1.27511	43	1000.13	1.30411
21	6.43	1.27681	44	1259.07	1.30486
22	8.07	1.27869	45	1538.80	1.30521
23	10.12	1.28123			



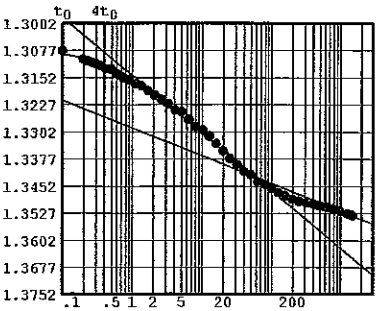
Void Ratio = 1.088 **Compression** = 32.6 %

D_0 = 1.25201 D_{50} = 1.27621 D_{100} = 1.30040

C_v **at 5.3 min.** = 0.0001 in.^{2}/sec. C_α = 0.005

Pressure: 8.00 tsf | TEST READINGS | Load No. 8

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	1.29644	24	12.72	1.33143
2	0.10	1.30772	25	15.98	1.33339
3	0.20	1.31008	26	20.08	1.33541
4	0.23	1.31059	27	25.25	1.33756
5	0.27	1.31113	28	31.75	1.33929
6	0.30	1.31126	29	39.95	1.34113
7	0.35	1.31190	30	50.25	1.34202
8	0.42	1.31276	31	63.23	1.34406
9	0.50	1.31286	32	79.57	1.34474
10	0.60	1.31412	33	100.13	1.34579
11	0.73	1.31510	34	126.03	1.34702
12	0.90	1.31572	35	158.63	1.34783
13	1.12	1.31686	36	199.67	1.34881
14	1.37	1.31753	37	251.33	1.34940
15	1.70	1.31884	38	316.38	1.34984
16	2.12	1.32009	39	398.25	1.35012
17	2.63	1.32121	40	501.33	1.35069
18	3.28	1.32246	41	631.12	1.35105
19	4.10	1.32418	42	794.48	1.35152
20	5.13	1.32460	43	1000.15	1.35209
21	6.43	1.32683	44	1259.08	1.35283
22	8.07	1.32873	45	1472.07	1.35335
23	10.13	1.32964			



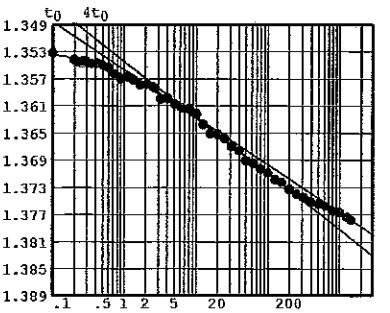
Void Ratio = 0.939 **Compression** = 37.4 %

D_0 = 1.30553 D_{50} = 1.32404 D_{100} = 1.34254

C_v **at 3.9 min.** = 0.0001 in.^{2}/sec. C_α = 0.011

Pressure: 12.00 tsf | TEST READINGS | Load No. 9

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	1.34548	24	12.72	1.36376
2	0.10	1.35316	25	15.97	1.36506
3	0.20	1.35415	26	20.08	1.36515
4	0.22	1.35454	27	25.25	1.36584
5	0.27	1.35438	28	31.75	1.36697
6	0.30	1.35451	29	39.93	1.36758
7	0.35	1.35474	30	50.25	1.36909
8	0.42	1.35469	31	63.23	1.36947
9	0.50	1.35496	32	79.57	1.37027
10	0.60	1.35525	33	100.13	1.37086
11	0.73	1.35628	34	126.03	1.37186
12	0.90	1.35695	35	158.63	1.37227
13	1.12	1.35671	36	199.67	1.37329
14	1.37	1.35722	37	251.33	1.37397
15	1.70	1.35797	38	316.37	1.37444
16	2.12	1.35783	39	398.25	1.37513
17	2.63	1.35830	40	501.33	1.37537
18	3.28	1.35998	41	631.10	1.37578
19	4.10	1.35991	42	794.48	1.37646
20	5.13	1.36072	43	1000.15	1.37668
21	6.43	1.36129	44	1259.08	1.37738
22	8.07	1.36139	45	1454.25	1.37782
23	10.12	1.36217			



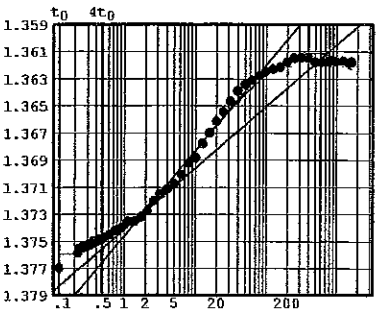
Void Ratio = 0.863 Compression = 39.9 %

D_0 = 1.35195 D_{50} = 1.35709 D_{100} = 1.36223

C_v at 1.3 min. = 0.0002 in.^{2}/sec. C_α = 0.011

Pressure: 3.00 tsf | TEST READINGS | Load No. 10

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	1.39400	24	12.72	1.36778
2	0.12	1.37698	25	15.98	1.36700
3	0.22	1.37586	26	20.08	1.36615
4	0.23	1.37557	27	25.25	1.36543
5	0.27	1.37538	28	31.77	1.36463
6	0.32	1.37527	29	39.95	1.36387
7	0.37	1.37500	30	50.27	1.36342
8	0.43	1.37483	31	63.25	1.36311
9	0.52	1.37470	32	79.58	1.36278
10	0.62	1.37450	33	100.15	1.36244
11	0.75	1.37421	34	126.05	1.36228
12	0.92	1.37399	35	158.65	1.36214
13	1.12	1.37355	36	199.68	1.36175
14	1.38	1.37353	37	251.35	1.36147
15	1.72	1.37321	38	316.38	1.36144
16	2.12	1.37275	39	398.27	1.36142
17	2.63	1.37200	40	501.35	1.36176
18	3.28	1.37150	41	631.12	1.36175
19	4.12	1.37112	42	794.48	1.36170
20	5.13	1.37077	43	1000.17	1.36174
21	6.45	1.37008	44	1259.08	1.36169
22	8.08	1.36922	45	1585.07	1.36181
23	10.13	1.36882	46	1655.98	1.36177



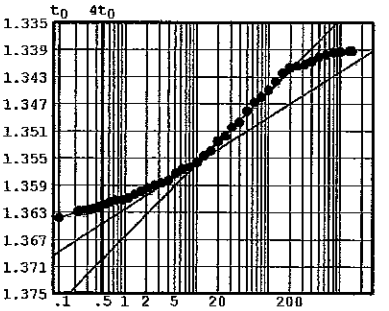
Void Ratio = 0.913 **Compression** = 38.3 %

D_0 = 1.37684 D_{50} = 1.37481 D_{100} = 1.37279

C_v **at 0.6 min.** = 0.0005 in.^{2}/sec.

Pressure: 0.75 tsf | TEST READINGS | Load No. 11

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	1.36997	24	12.73	1.35471
2	0.12	1.36379	25	15.98	1.35394
3	0.22	1.36297	26	20.10	1.35251
4	0.23	1.36280	27	25.27	1.35176
5	0.27	1.36280	28	31.77	1.35046
6	0.32	1.36266	29	39.97	1.34970
7	0.37	1.36249	30	50.27	1.34807
8	0.43	1.36222	31	63.25	1.34679
9	0.52	1.36187	32	79.58	1.34595
10	0.62	1.36152	33	100.15	1.34496
11	0.75	1.36127	34	126.05	1.34368
12	0.92	1.36119	35	158.65	1.34243
13	1.12	1.36093	36	199.68	1.34165
14	1.38	1.36042	37	251.35	1.34141
15	1.72	1.35994	38	316.40	1.34117
16	2.12	1.35940	39	398.27	1.34071
17	2.65	1.35909	40	501.35	1.34006
18	3.30	1.35868	41	631.13	1.33972
19	4.12	1.35826	42	794.50	1.33938
20	5.15	1.35728	43	1000.17	1.33930
21	6.45	1.35665	44	1319.10	1.33922
22	8.08	1.35640	45	1446.83	1.33920
23	10.13	1.35562			



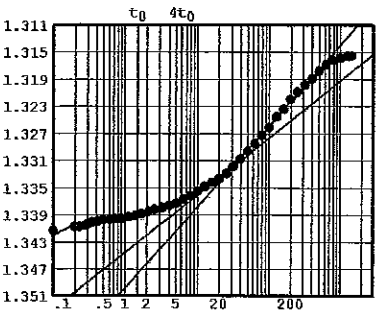
Void Ratio = 0.983 **Compression** = 36.0 %

D_0 = 1.36579 D_{50} = 1.36065 D_{100} = 1.35552

C_v **at 1.3 min.** = 0.0002 in.^{2}/sec.

Pressure: 0.19 tsf **TEST READINGS** **Load No. 12**

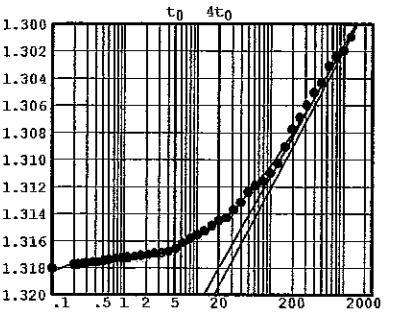
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	1.34426	24	12.72	1.33482
2	0.10	1.34131	25	15.98	1.33417
3	0.20	1.34072	26	20.08	1.33366
4	0.23	1.34074	27	25.25	1.33291
5	0.27	1.34058	28	31.77	1.33184
6	0.30	1.34035	29	39.95	1.33068
7	0.35	1.34008	30	50.27	1.32955
8	0.42	1.33987	31	63.23	1.32842
9	0.50	1.33971	32	79.58	1.32725
10	0.62	1.33967	33	100.15	1.32610
11	0.73	1.33949	34	126.03	1.32451
12	0.90	1.33949	35	158.63	1.32337
13	1.12	1.33923	36	199.68	1.32193
14	1.38	1.33910	37	251.33	1.32083
15	1.70	1.33880	38	316.38	1.31982
16	2.12	1.33848	39	398.27	1.31888
17	2.63	1.33819	40	501.33	1.31773
18	3.28	1.33792	41	631.12	1.31682
19	4.10	1.33757	42	794.48	1.31620
20	5.13	1.33725	43	1000.17	1.31586
21	6.43	1.33668	44	1259.08	1.31559
22	8.07	1.33616	45	1447.63	1.31554
23	10.13	1.33549			



Void Ratio = 1.056 **Compression** = 33.6 %
D_0 = 1.34109 D_{50} = 1.33652 D_{100} = 1.33195
C_v **at 7.5 min.** = 0.0000 in.^{2}/sec.

Pressure: 0.05 tsf | TEST READINGS | Load No. 13

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	1.31917	23	10.13	1.31552
2	0.10	1.31802	24	12.72	1.31526
3	0.20	1.31776	25	15.98	1.31486
4	0.23	1.31773	26	20.08	1.31446
5	0.27	1.31770	27	25.25	1.31427
6	0.30	1.31762	28	31.77	1.31366
7	0.37	1.31757	29	39.95	1.31315
8	0.43	1.31757	30	50.27	1.31238
9	0.52	1.31747	31	63.23	1.31191
10	0.62	1.31739	32	79.58	1.31158
11	0.75	1.31730	33	100.15	1.31098
12	0.92	1.31724	34	126.03	1.31025
13	1.12	1.31722	35	158.63	1.30904
14	1.38	1.31715	36	199.67	1.30775
15	1.70	1.31708	37	251.33	1.30685
16	2.12	1.31702	38	316.38	1.30593
17	2.63	1.31691	39	398.27	1.30503
18	3.28	1.31690	40	501.33	1.30433
19	4.10	1.31678	41	631.12	1.30309
20	5.13	1.31657	42	794.48	1.30239
21	6.43	1.31616	43	1000.15	1.30196
22	8.07	1.31581	44	1259.08	1.30094

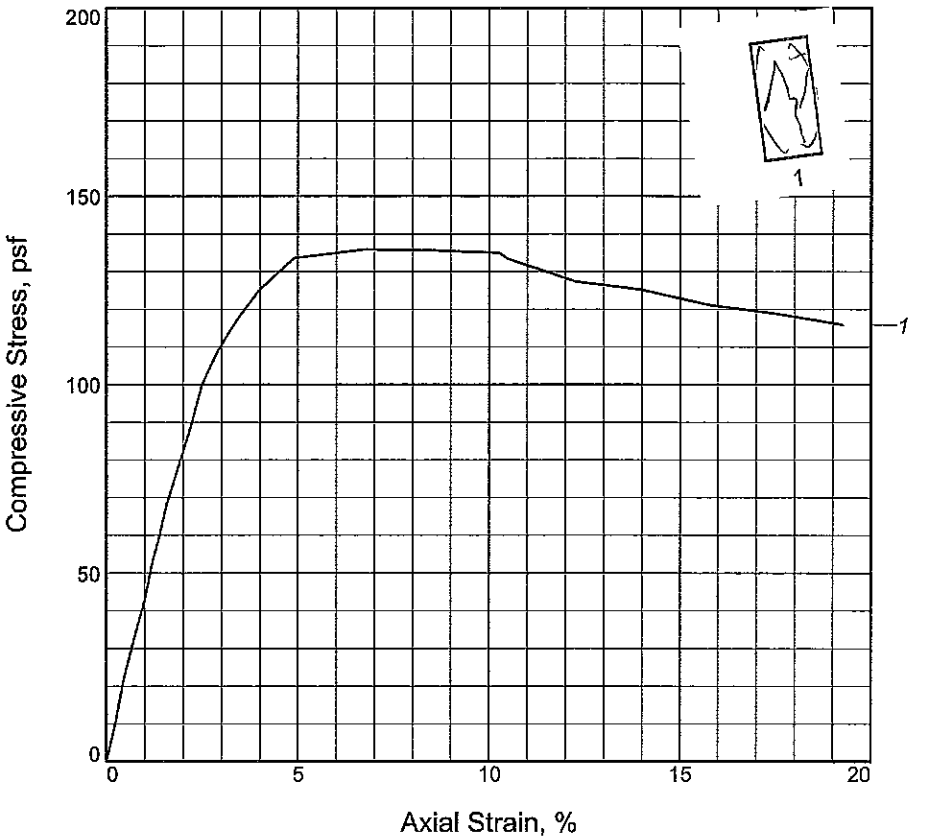


Void Ratio = 1.102 **Compression** = 32.2 %

D_0 = 1.31846 D_{50} = 1.30660 D_{100} = 1.29475

C_v **at 292.1 min.** = 0.0000 in.^{2}/sec.

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	136			
Undrained shear strength, psf	68			
Failure strain, %	6.7			
Strain rate, in./min.	1.000			
Water content, %	97.0			
Wet density, pcf	91.8			
Dry density, pcf	46.6			
Saturation, %	99.6			
Void ratio	2.6684			
Specimen diameter, in.	1.411			
Specimen height, in.	2.977			
Height/diameter ratio	2.11			

Description: VSO DGR CH4 W/ RT

LL = 106	**PL =** 38	**PI =** 68	**Assumed GS=** 2.74	**Type:** UNDISTURBED

Project No.: 12-017108
Date Sampled: 8-1-12
Remarks:
Torvane=0.06 tsf

Figure _____

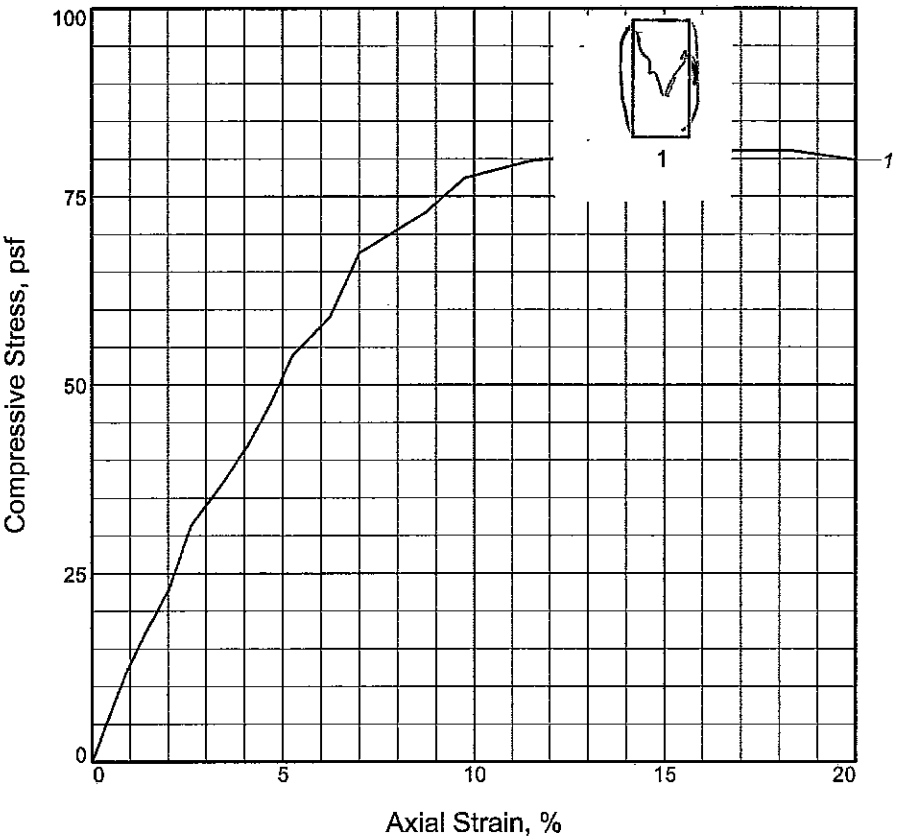
Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-13U **Depth:** 4.0
Sample Number: 2C

UNCONFINED COMPRESSION TEST
Stantec
Saint Rose, Louisiana

Tested By: JC **Checked By:** JS

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	81			
Undrained shear strength, psf	40			
Failure strain, %	13.2			
Strain rate, in./min.	1.000			
Water content, %	122.8			
Wet density, pcf	85.7			
Dry density, pcf	38.4			
Saturation, %	98.1			
Void ratio	3.3678			
Specimen diameter, in.	1.401			
Specimen height, in.	3.000			
Height/diameter ratio	2.14			

Description: VSO GR CHOA

LL = 132	**PL =** 44	**PI =** 88	**Assumed GS=** 2.69	**Type:** UNDISTURBED

Project No.: 12-017108
Date Sampled: 8-7-12
Remarks:
Torvane=0.05 tsf

Figure _____

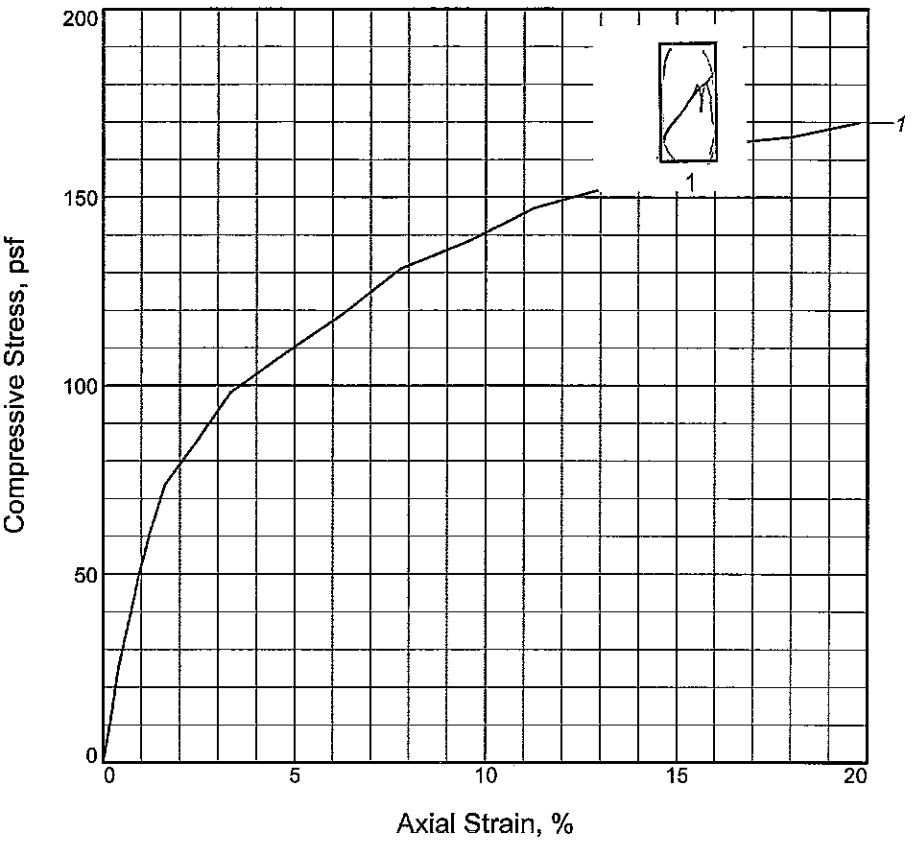
Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-13U **Depth:** 6.0
Sample Number: 3A

UNCONFINED COMPRESSION TEST
Stantec
Saint Rose, Louisiana

Tested By: JC **Checked By:** JS

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	157			
Undrained shear strength, psf	79			
Failure strain, %	14.8			
Strain rate, in./min.	1.000			
Water content, %	82.5			
Wet density, pcf	97.7			
Dry density, pcf	53.5			
Saturation, %	103.0			
Void ratio	2.1946			
Specimen diameter, in.	1.403			
Specimen height, in.	2.992			
Height/diameter ratio	2.13			

Description: VSO GR CH4

LL = 97	**PL =** 27	**PI =** 70	**Assumed GS=** 2.74	**Type:** UNDISTURBED

Project No.: 12-017108
Date Sampled: 8-1-12
Remarks:
Torvane=0.05 tsf

Figure _____

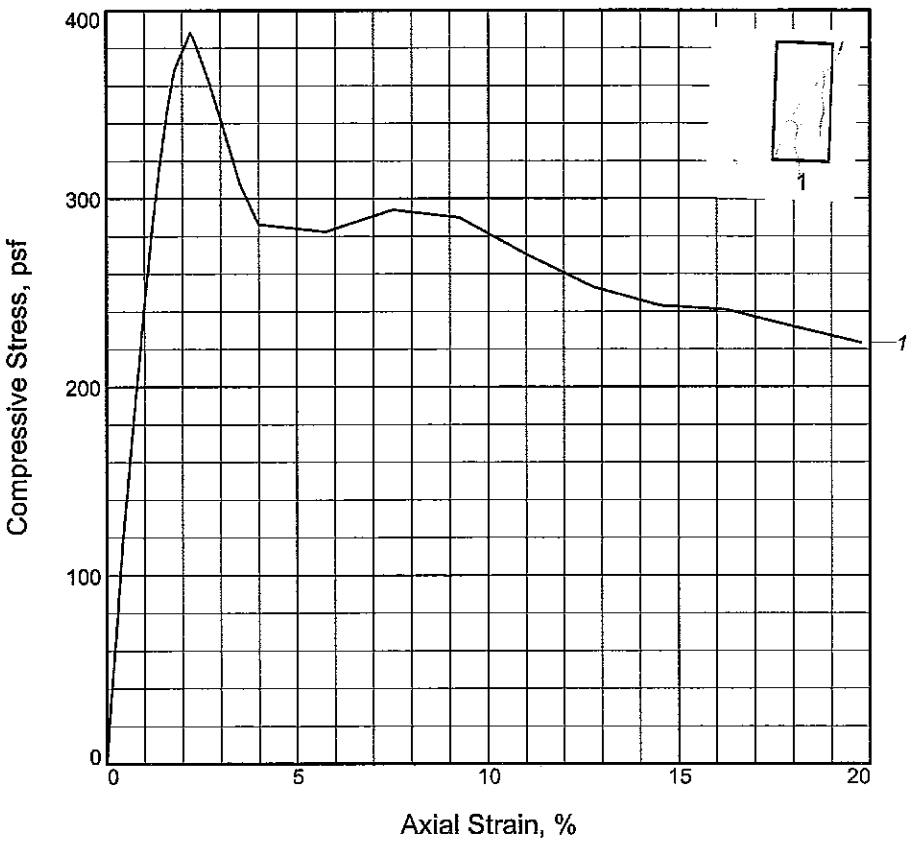
Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-13U **Depth:** 14.0
Sample Number: 5A

UNCONFINED COMPRESSION TEST
Stantec
Saint Rose, Louisiana

Tested By: JC

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	388			
Undrained shear strength, psf	194			
Failure strain, %	2.2			
Strain rate, in./min.	1.000			
Water content, %	61.6			
Wet density, pcf	104.9			
Dry density, pcf	64.9			
Saturation, %	103.2			
Void ratio	1.6355			
Specimen diameter, in.	1.417			
Specimen height, in.	2.997			
Height/diameter ratio	2.12			

Description: VSO GR CH4 W/ ARS SP

LL = 97	**PL =** 27	**PI =** 70	**Assumed GS=** 2.74	**Type:** UNDISTURBED

Project No.: 12-017108
Date Sampled: 8-1-12
Remarks:
Torvane=0.35 tsf

Figure _____

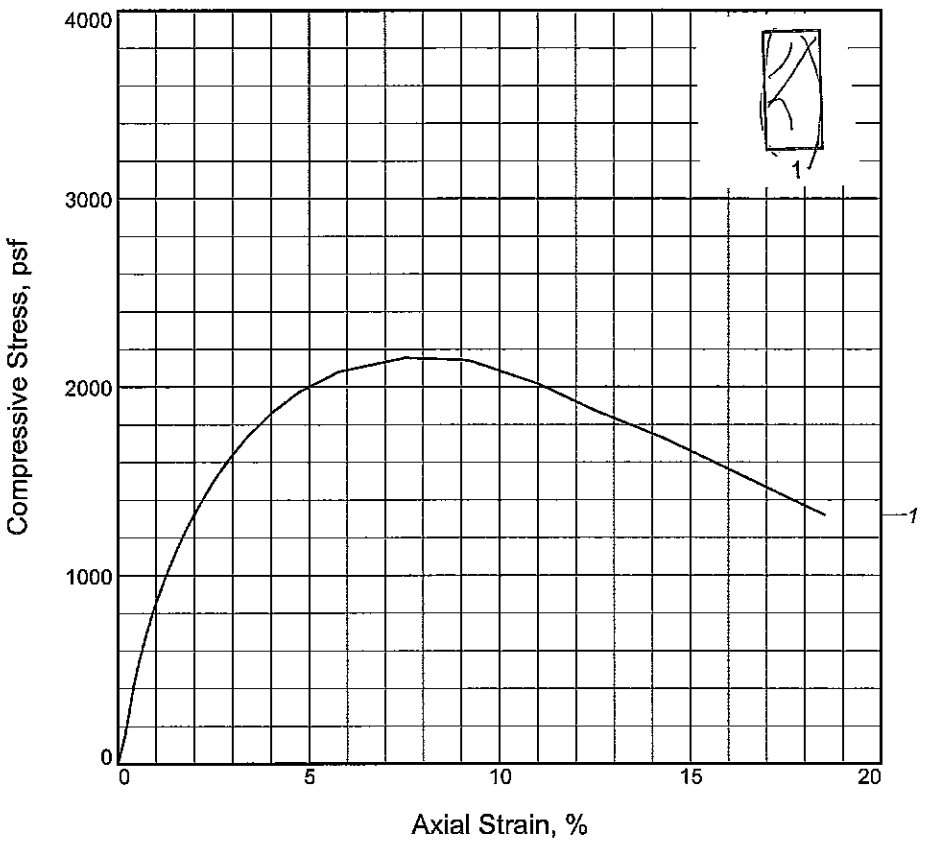
Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-13U **Depth:** 24.0
Sample Number: 7C

UNCONFINED COMPRESSION TEST
Stantec
Saint Rose, Louisiana

Tested By: JC **Checked By:** JS

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	2153			
Undrained shear strength, psf	1077			
Failure strain, %	7.5			
Strain rate, in./min.	1.000			
Water content, %	24.6			
Wet density, pcf	127.6			
Dry density, pcf	102.4			
Saturation, %	101.6			
Void ratio	0.6584			
Specimen diameter, in.	1.417			
Specimen height, in.	3.007			
Height/diameter ratio	2.12			

Description: ST GNG CH2 W/ LYS ML

LL = 50	**PL =** 16	**PI =** 34	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 12-017108
Date Sampled: 8-1-12
Remarks:
Torvane=0.86 tsf

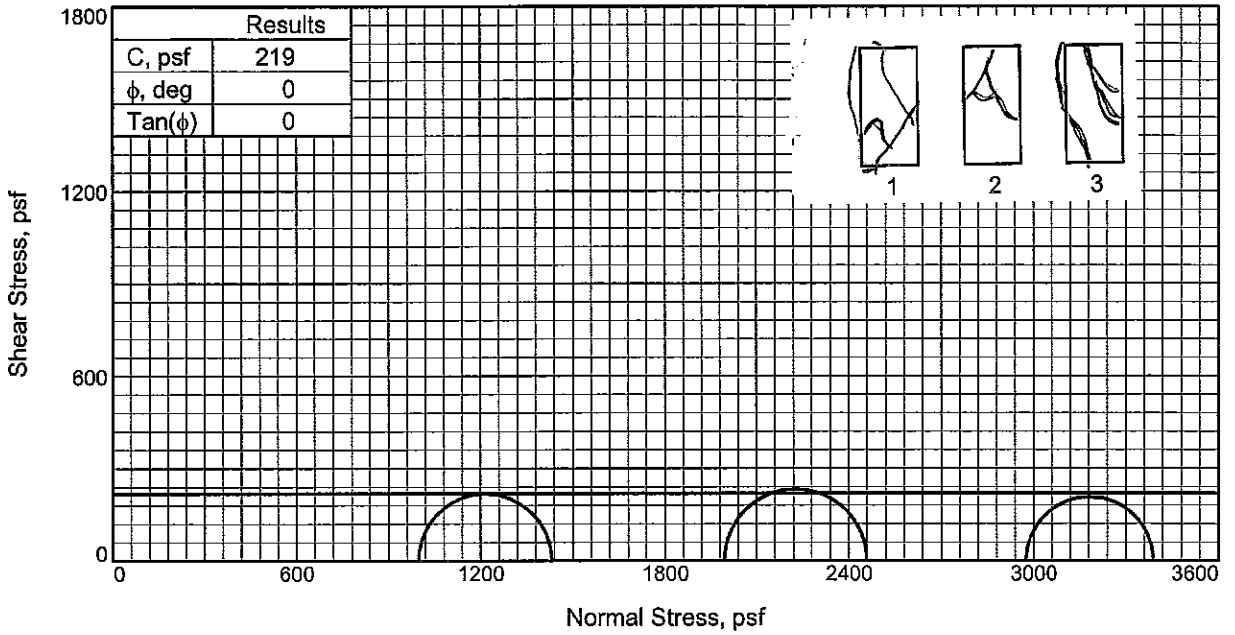
Figure _____

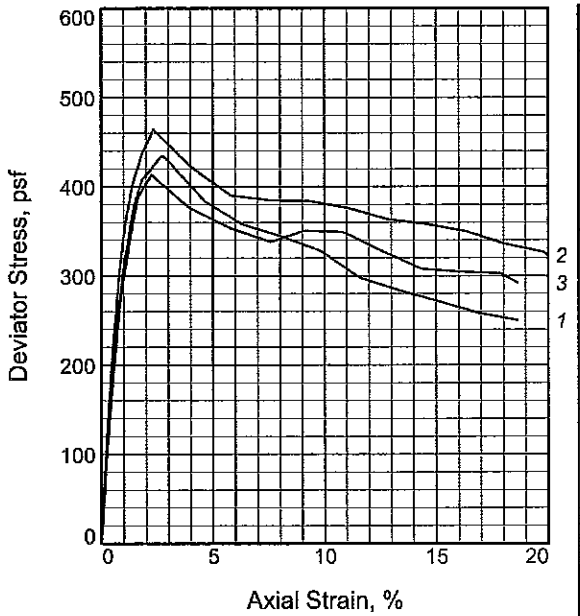
Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-13U **Depth:** 33.0
Sample Number: 9D

UNCONFINED COMPRESSION TEST
Stantec
Saint Rose, Louisiana

Tested By: JC **Checked By:** JS





Sample No.		1	2	3
Initial	Water Content, %	49.3	44.0	44.7
	Dry Density, pcf	71.8	77.4	76.1
	Saturation, %	98.7	101.0	99.3
	Void Ratio	1.3478	1.1764	1.2148
	Diameter, in.	1.419	1.412	1.408
	Height, in.	3.008	3.016	3.002
At Test	Water Content, %	49.3	44.0	44.7
	Dry Density, pcf	71.8	77.4	76.1
	Saturation, %	98.7	101.0	99.3
	Void Ratio	1.3478	1.1764	1.2148
	Diameter, in.	1.419	1.412	1.408
	Height, in.	3.008	3.016	3.002
Strain rate, in./min.		1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.92	13.85	20.66
Fail. Stress, psf		435	465	413
Strain, %		2.7	2.3	2.2
Ult. Stress, psf		271	358	308
Strain, %		15.1	14.6	14.3
σ_1 Failure, psf		1431	2459	3388
σ_3 Failure, psf		996	1994	2975

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CL4 W/ ARS SP, SIF

LL= 40 **PL=** 21 **PI=** 19
Assumed Specific Gravity= 2.70
Remarks: Torvane=0.15 tsf

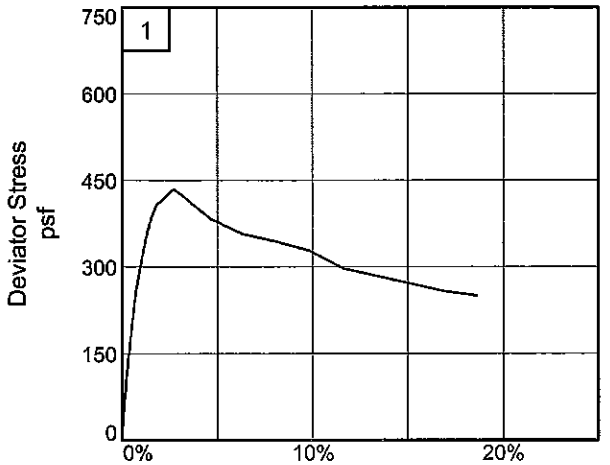
Figure _____

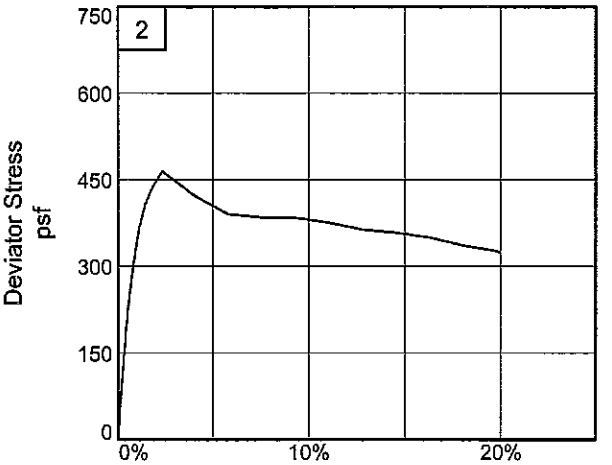
Client: USACE

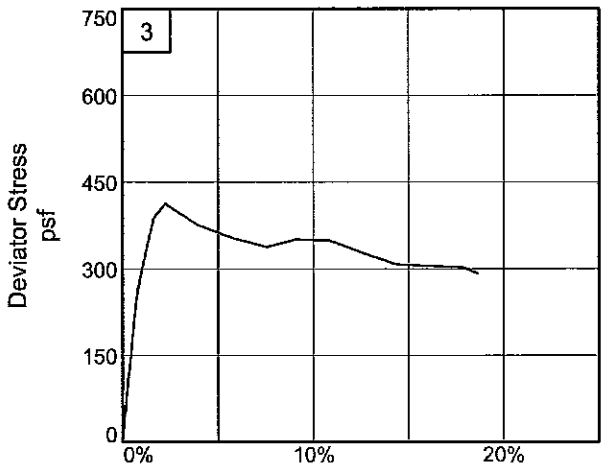
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-13U **Depth:** 20.0
Sample Number: 6C
Proj. No.: 12-017108 **Date Sampled:** 8-7-12

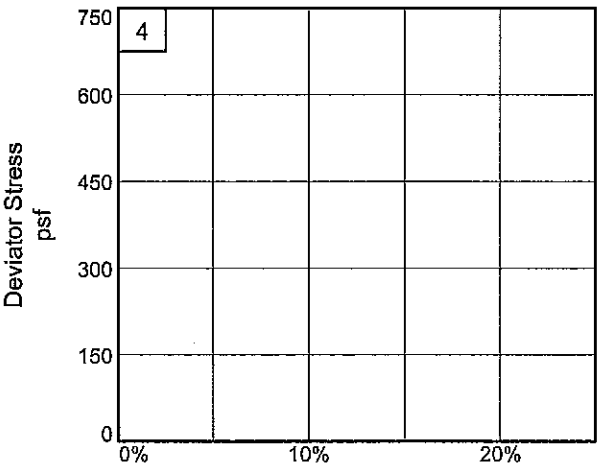
TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

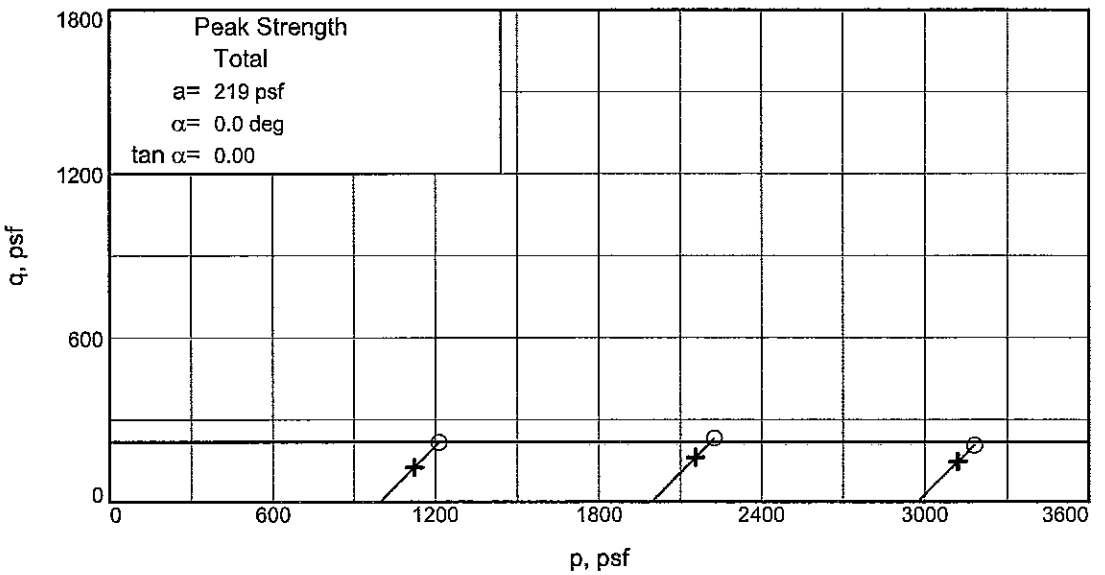
Tested By: JC **Checked By:** JS











Stress Paths: o indicates peak + indicates end

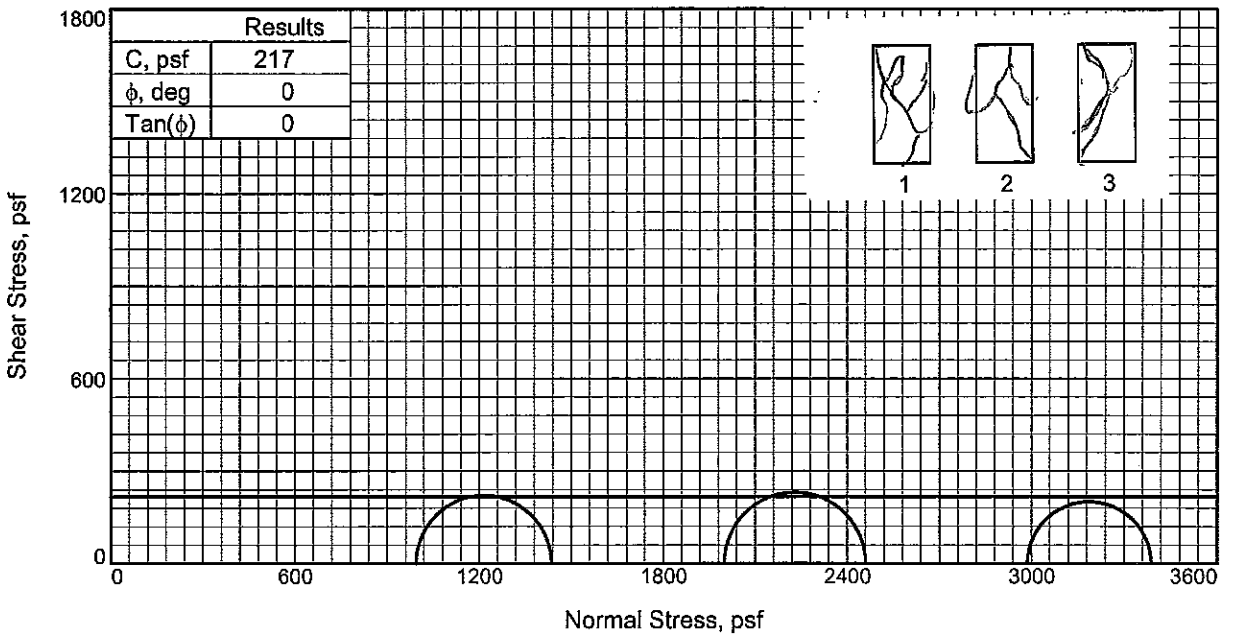
Client: USACE

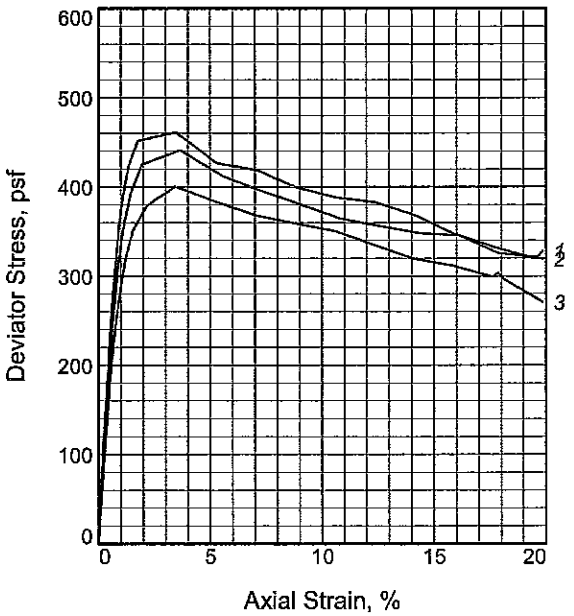
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

Source of Sample: BSFR-13U **Depth:** 20.0 **Sample Number:** 6C

Project No.: 12-017108 **Figure** _____ **Stantec, Inc.**

Tested By: JC **Checked By:** JS





Sample No.		1	2	3
Initial	Water Content, %	62.1	62.3	60.2
	Dry Density, pcf	63.0	63.1	63.5
	Saturation, %	99.3	99.7	97.3
	Void Ratio	1.7135	1.7114	1.6941
	Diameter, in.	1.410	1.406	1.410
	Height, in.	3.007	3.005	3.006
At Test	Water Content, %	62.1	62.3	60.2
	Dry Density, pcf	63.0	63.1	63.5
	Saturation, %	99.3	99.7	97.3
	Void Ratio	1.7135	1.7114	1.6941
	Diameter, in.	1.410	1.406	1.410
	Height, in.	3.007	3.005	3.006
Strain rate, in./min.		1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.90	13.88	20.74
Fail. Stress, psf		441	461	400
Strain, %		3.6	3.4	3.4
Ult. Stress, psf		348	369	319
Strain, %		14.3	14.1	14.1
σ_1 Failure, psf		1435	2460	3387
σ_3 Failure, psf		994	1999	2987

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: VSO GR CH4 W/ ARS SP

LL= 103 **PL=** 24 **PI=** 79
Assumed Specific Gravity= 2.74
Remarks: Torvane=0.15 tsf

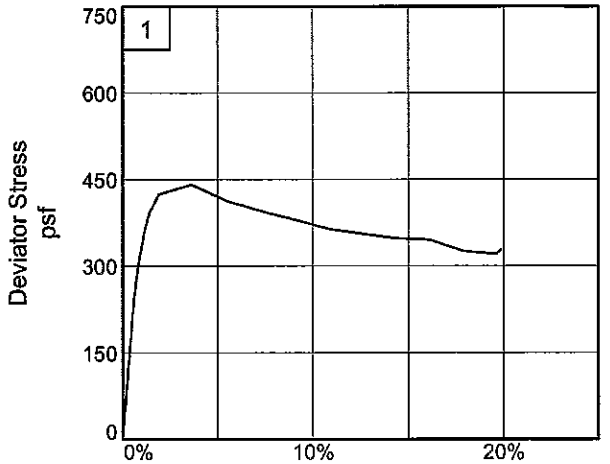
Figure _____

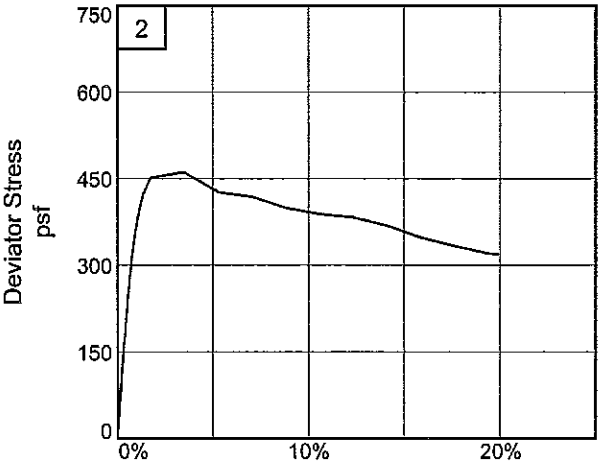
Client: USACE

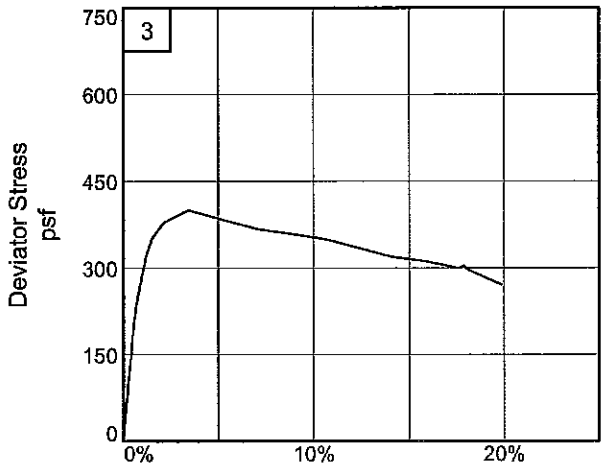
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-13U **Depth:** 28.0
Sample Number: 8C
Proj. No.: 12-017108 **Date Sampled:** 8-7-12

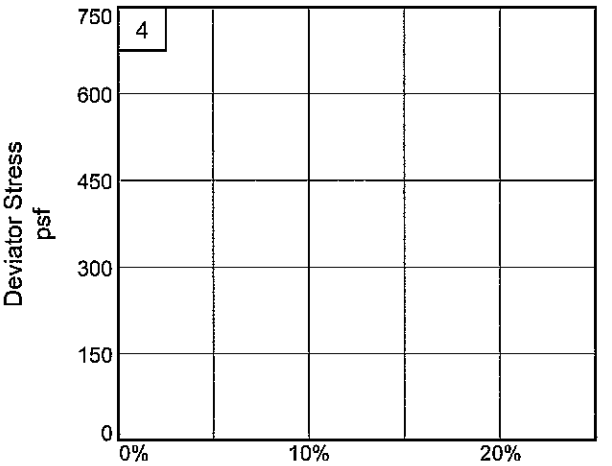
TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

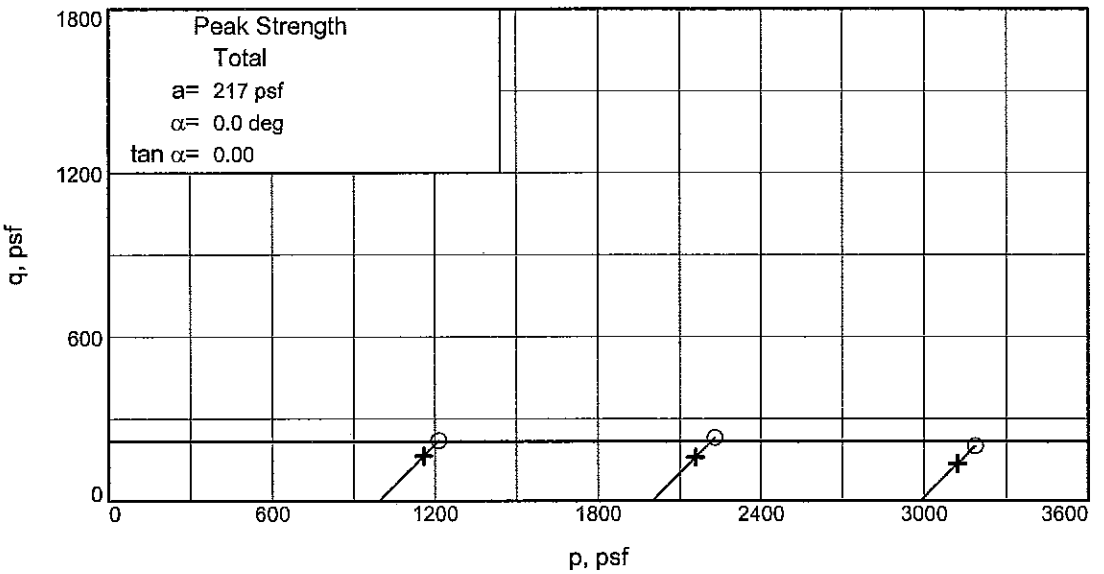
Tested By: JC











Stress Paths: o indicates peak + indicates end

Client: USACE

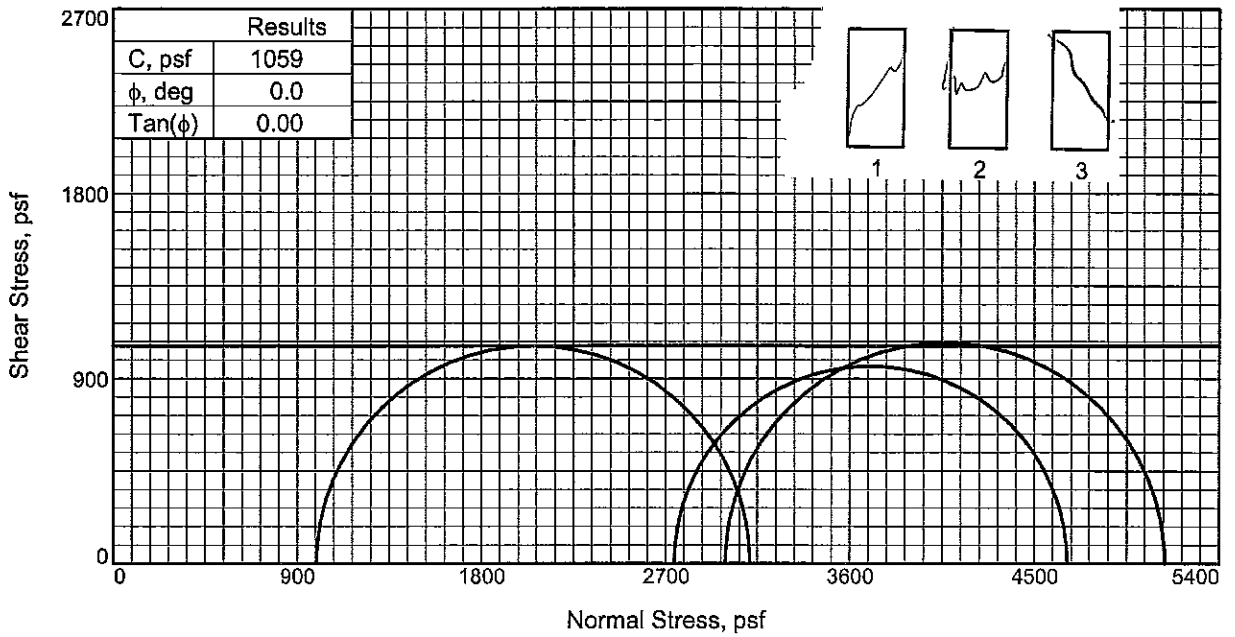
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

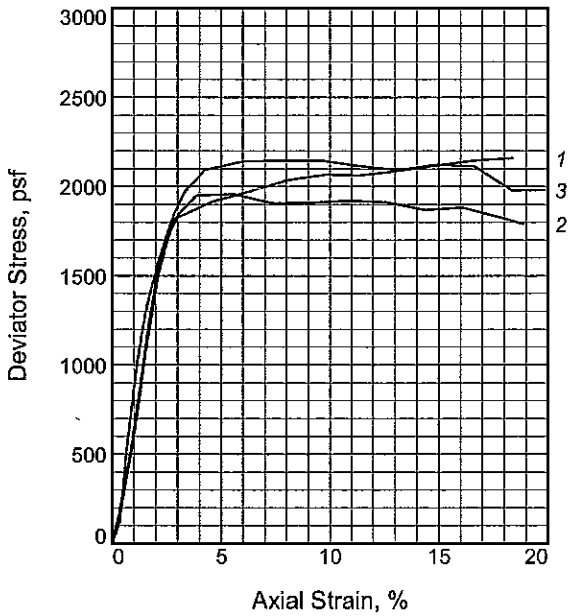
Source of Sample: BSFR-13U **Depth:** 28.0 **Sample Number:** 8C

Project No.: 12-017108 **Figure** _____

Stantec, Inc.

Tested By: JC





Sample No.		1	2	3
Initial	Water Content, %	34.0	35.5	33.7
	Dry Density, pcf	89.2	86.0	87.8
	Saturation, %	102.5	99.0	98.3
	Void Ratio	0.9031	0.9753	0.9336
	Diameter, in.	1.415	1.427	1.417
	Height, in.	3.003	3.006	3.008
At Test	Water Content, %	34.0	35.5	33.7
	Dry Density, pcf	89.2	86.0	87.8
	Saturation, %	102.5	99.0	98.2
	Void Ratio	0.9031	0.9753	0.9336
	Diameter, in.	1.415	1.427	1.417
	Height, in.	3.003	3.006	3.008
Strain rate, in./min.		1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.91	19.03	20.77
Fail. Stress, psf		2117	1921	2146
Strain, %		14.8	10.8	9.6
Ult. Stress, psf		2117	1870	2123
Strain, %		14.8	14.3	14.8
σ_1 Failure, psf		3112	4661	5137
σ_3 Failure, psf		995	2740	2991

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: ST GNG & LGR CH3 W/ LNS ML

LL= 71 **PL=** 20 **PI=** 51
Assumed Specific Gravity= 2.72
Remarks: Brittle

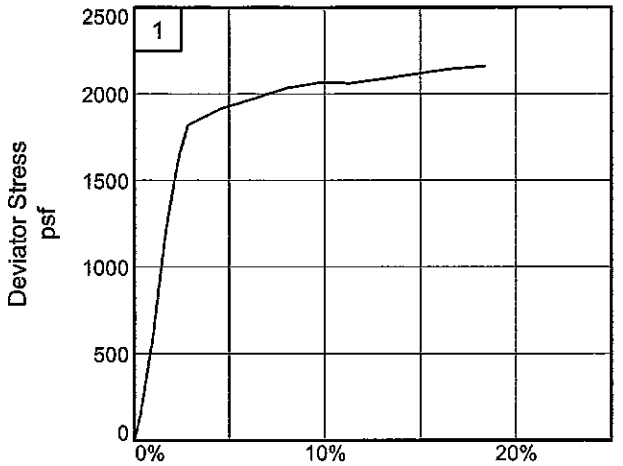
Figure _____

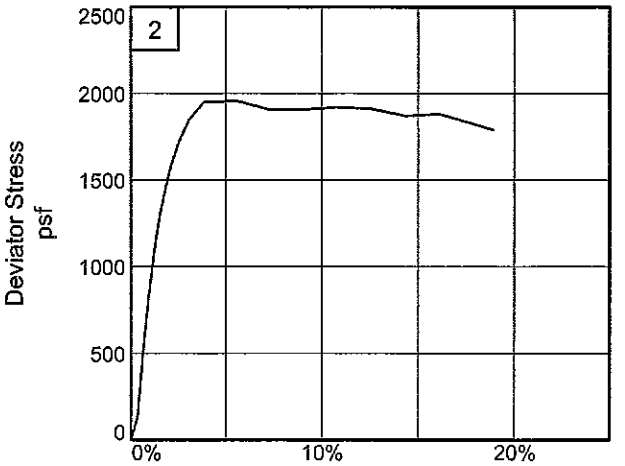
Client: USACE

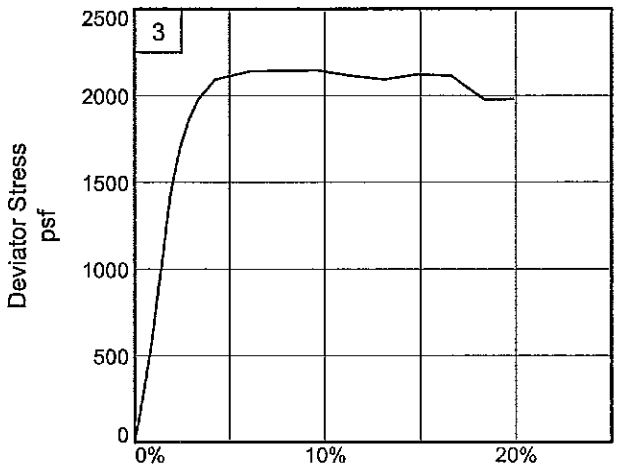
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-13U **Depth:** 39.0
Sample Number: 11B
Proj. No.: 12-017108 **Date Sampled:** 8-1-12

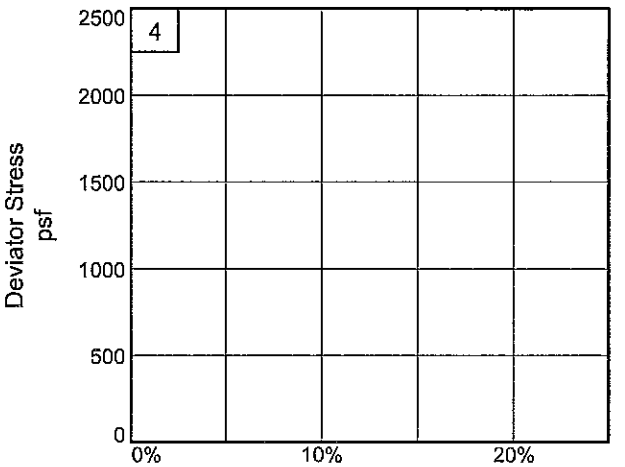
TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

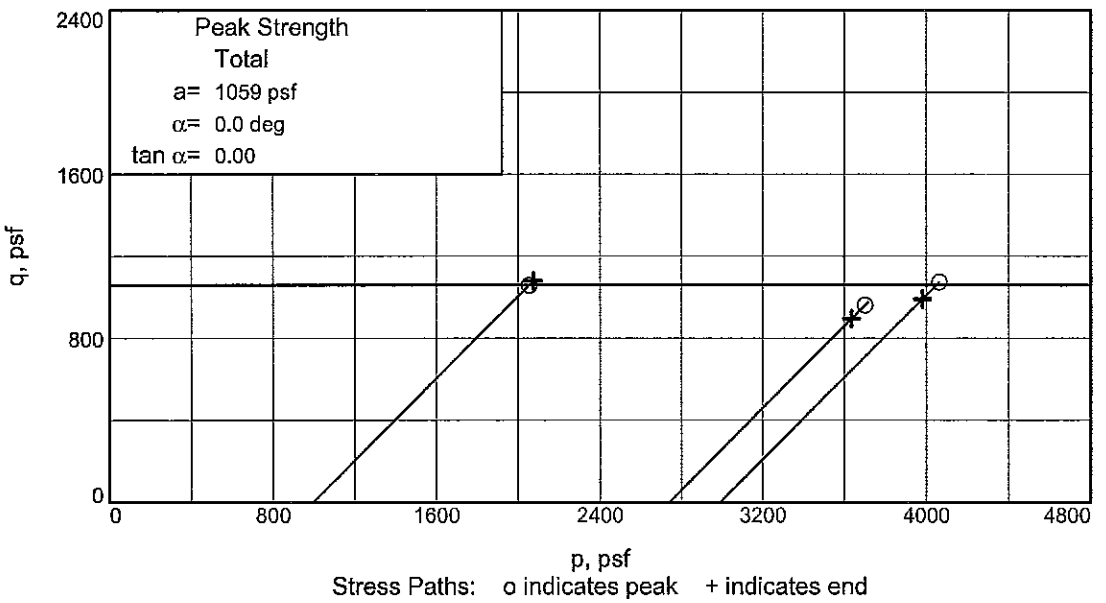
Tested By: JC











Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

Source of Sample: BSFR-13U **Depth:** 39.0 **Sample Number:** 11B

Project No.: 12-017108 **Figure** _____

Stantec, Inc.

Tested By: JC

SUMMARY OF LABORATORY TEST RESULTS

Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate MarAssigned By: _____

Project Number: 10-017146
Boring: BSFS-1U

Current Date: 9/18/2013

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
NS	0.0	NO SAMPLE	NS														
NS	1.0	NO SAMPLE	NS														
NS	2.0	NO SAMPLE	NS														
NS	3.0	NO SAMPLE	NS														
2A	4.0	VSO DGR PT	PT		275												
2B	5.0	SO DGR PT	PT		354												
2C	6.0	SO BK PT	PT		629												
2D	7.0	SO BK PT	PT		717												
3A	8.0	SO BK CHOC	CHOC		187												
3B	9.0	GR ML W/ ARS CH	ML		39												
4A	12.0	SO GR CH4 W/ LNS & ARS ML	CH4		67												
4B	13.0	VSO GR CL6 W/ LNS ML	CL6		51	73	110	100	UU	0	161		45	15	30	0.17	
4C1	14.0	SO GR CH3 W/ LNS & ARS SP	CH3		51												
4C2	14.6	GR SM	SM		32												
4D	15.0	LGR SM W/ SIF	SM		25												
5A	16.0	GR SM	SM		23												
5B	17.0	GR SM	SM		24												SV
5C	18.0	GR SM	SM		22												
5D	19.0	GR SM	SM		23												
6A	20.0	M T & GR CL4 W/ ARS SM	CL4		23												
7A	24.0	M GR CL4 W/ ARS SP	CL4		24	100	124	98					27	12	15		GS=2.66, CONS
7B	25.0	ST GR & T CL4 W/ ARS CH	CL4		21	107	129	100	UU	0	1474		31	8	23	0.52	
7C	26.0	M T & GR CL4 W/ ARS SM	CL4		22												
7D	27.0	M T & GR CL4 W/ ARS SM	CL4		21												
8A	28.0	GR & T SM W/ ARS CH	SM		25												
8B	29.0	GR & T SM W/ ARS CH	SM		24												
8C	30.0	ST T & GNG CL6 W/ ARS SM	CL6		28	98	125	100	UU	0	1161		43	12	31	0.67	
8D	31.0	M GR & T CL6	CL6		31												
9A	32.0	VSO T & GNG CL6 W/ LNS ML	CL6		36	89	120	100	UU	0	184		40	17	23	0.12	
9B	33.0	GR ML W/ LNS CH	ML		34												
9C	34.0	GR ML W/ LNS CH	ML		33												
9D	35.0	GR ML W/ LNS CH	ML		33												
10A	36.0	M GR CH4 W/ ARS ML	CH4		44												
11A	40.0	GR ML	ML		31												
11B	41.0	GR ML	ML		29												
11C	42.0	GR ML	ML		31												

Remarks: _____

Stantec Consulting Services Inc.

Checked By: _____

File Name: BSFS-1U_be_boring_log_v10_0.xls

SUMMARY OF LABORATORY TEST RESULTS

Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Mar Assigned By: _____

Project Number: 10-017146
Boring: BSFS-1U

Current Date: 9/18/2013

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
12A	44.0	GR ML W/ LNS CH	ML		38												
12B	45.0	GR ML	ML		29												
12C	46.0	M GR CL4 W/ LNS SP	CL4		39	79	110	92	UU	0	751		36	21	15	0.50	GS=2.71, CONS
13A	48.0	GR ML	ML		28												
14A	50.5	GR ML	ML		35												
15	53.0	M GR CH4 W/ ARS ML	CH4		45												
16	55.5	GR ML W/ ARS CH	ML		22												
17	58.0	GR ML W/ ARS CH	ML		24												

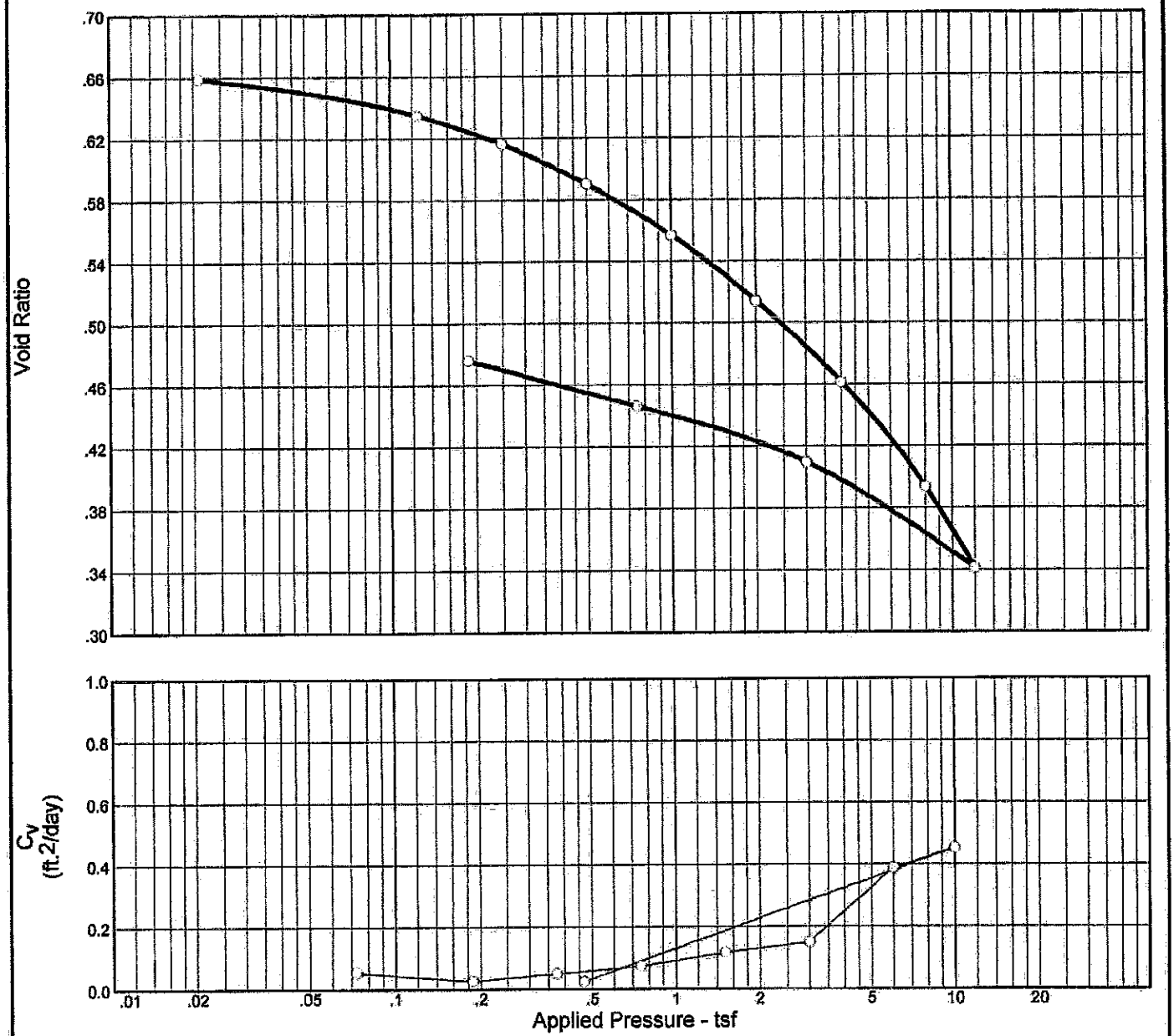
Remarks:

Stantec Consulting Services Inc.

Checked By: _____

File Name: BSFS-1U_be_boring_log_v10_0.xls

Consolidation Test Report



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture							
98.1 %	24.3 %	100.1	27	15	2.66	1.98	0.28	0.659

MATERIAL DESCRIPTION	USCS	AASHTO
M GR CL4 W/ ARS SP	CL4	

Project No. 10-017146 **Client:** USACE

Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Louisiana

Source: BSFS-1U **Sample No.:** 7A **Elev./Depth:** 24.0

BURNS COOLEY DENNIS, INC.

Ridgeland, Mississippi

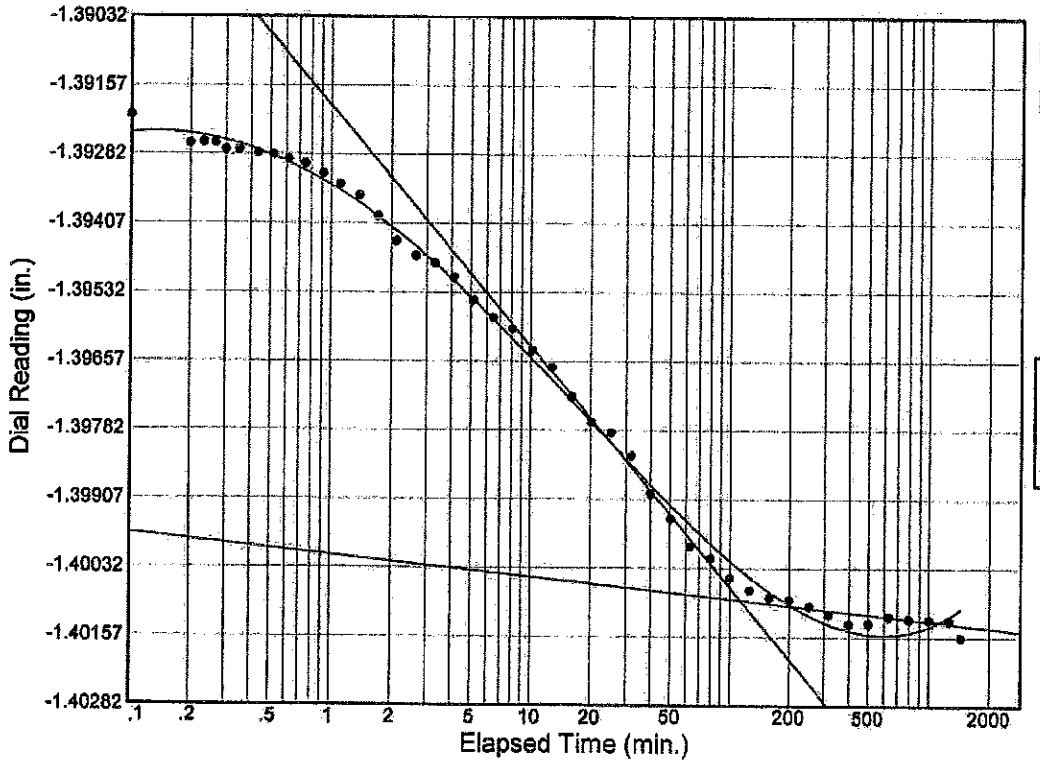
Remarks:

Figure

Dial Reading vs. Time

Project No.: 10-017146
Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

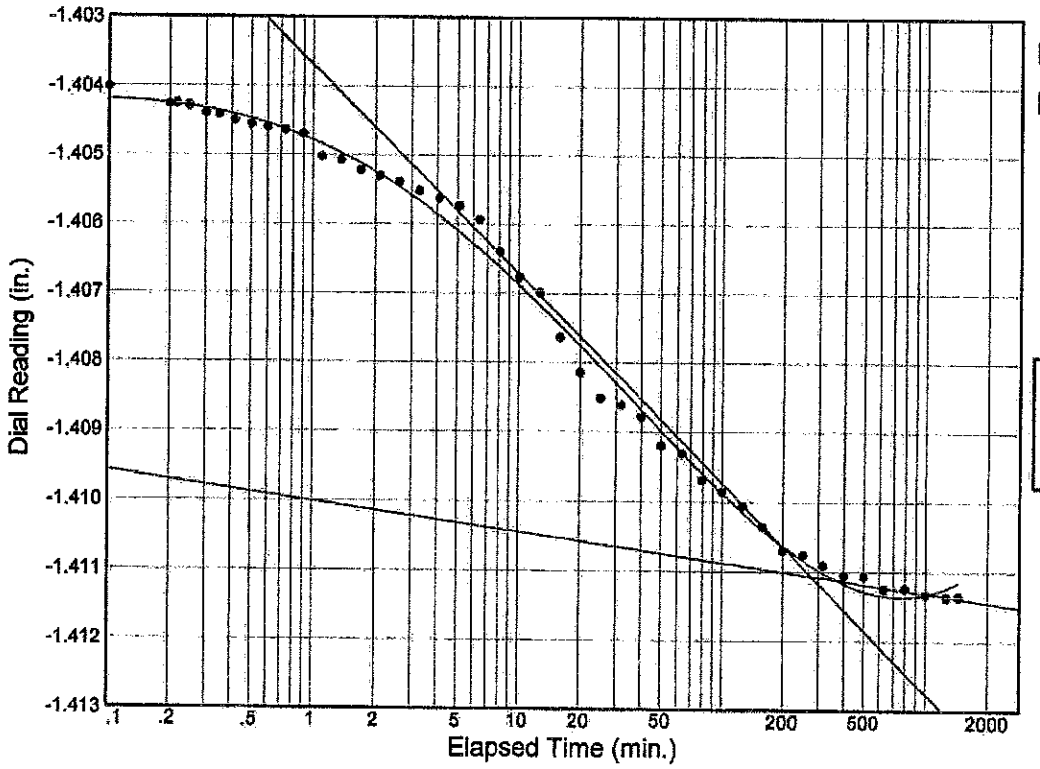
Source: BSFS-1U Sample No.: 7A Elev./Depth: 24.0



Load No.= 2
Load= 0.13 tsf
D_0 = -1.39086
D_{50} = -1.39588
D_{100} = -1.40090
T_{50} = 6.75 min.

C_v @ T_{50}
0.05 ft.^{2}/day

C_α = 0.000



Load No.= 3
Load= 0.25 tsf
D_0 = -1.40344
D_{50} = -1.40725
D_{100} = -1.41106
T_{50} = 13.51 min.

C_v @ T_{50}
0.03 ft.^{2}/day

C_α = 0.001

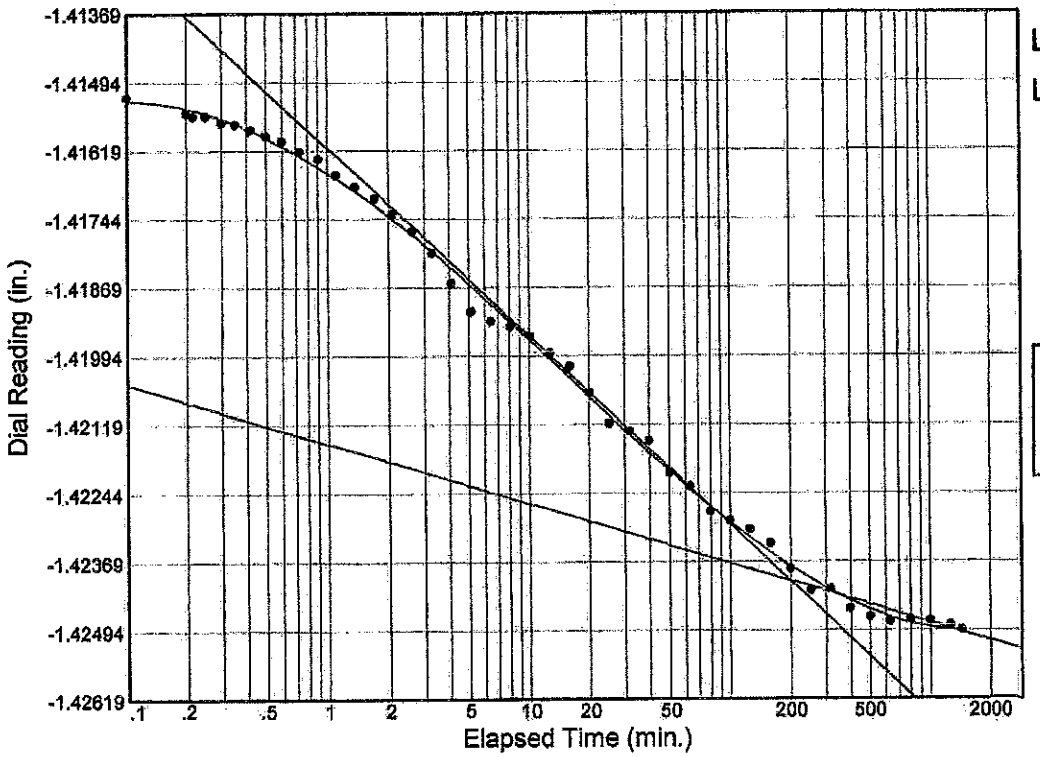
BURNS COOLEY DENNIS, INC.

Figure

Dial Reading vs. Time

Project No.: 10-017146
Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

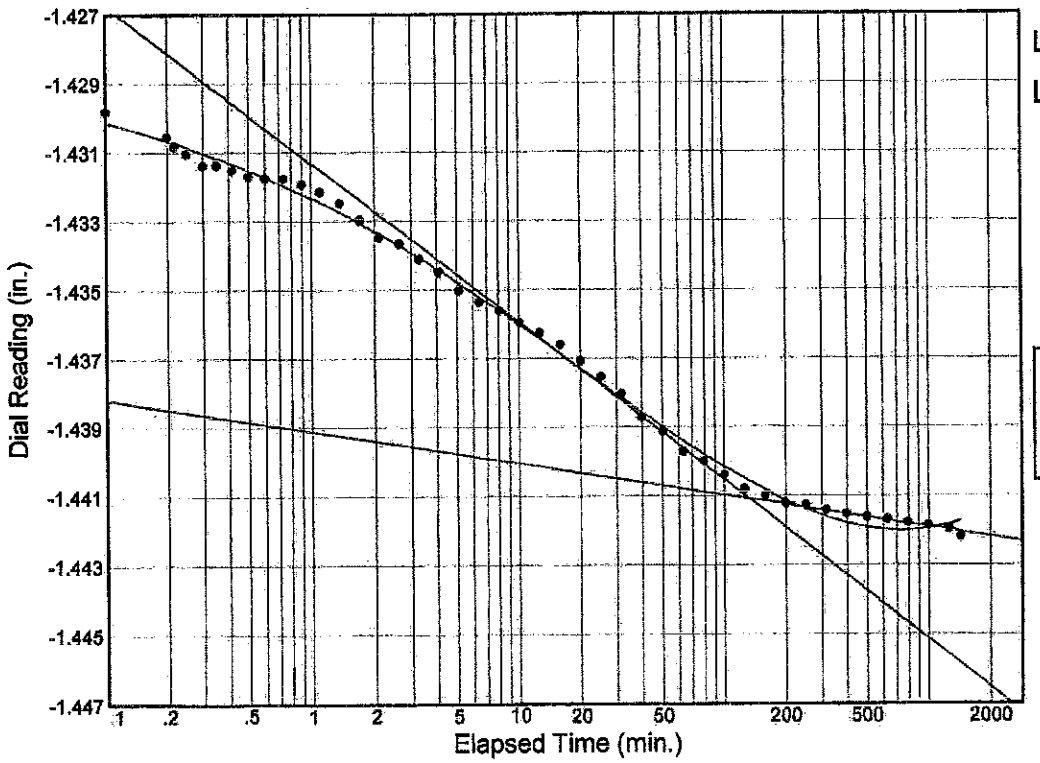
Source: BSFS-1U Sample No.: 7A Elev./Depth: 24.0



Load No.= 4
Load= 0.50 tsf
D_0 = -1.41417
D_{50} = -1.41911
D_{100} = -1.42404
T_{50} = 6.91 min.

C_v @ T_{50}
0.05 ft.^{2}/day

C_α = 0.001



Load No.= 5
Load= 1.00 tsf
D_0 = -1.42807
D_{50} = -1.43458
D_{100} = -1.44108
T_{50} = 4.44 min.

C_v @ T_{50}
0.07 ft.^{2}/day

C_α = 0.001

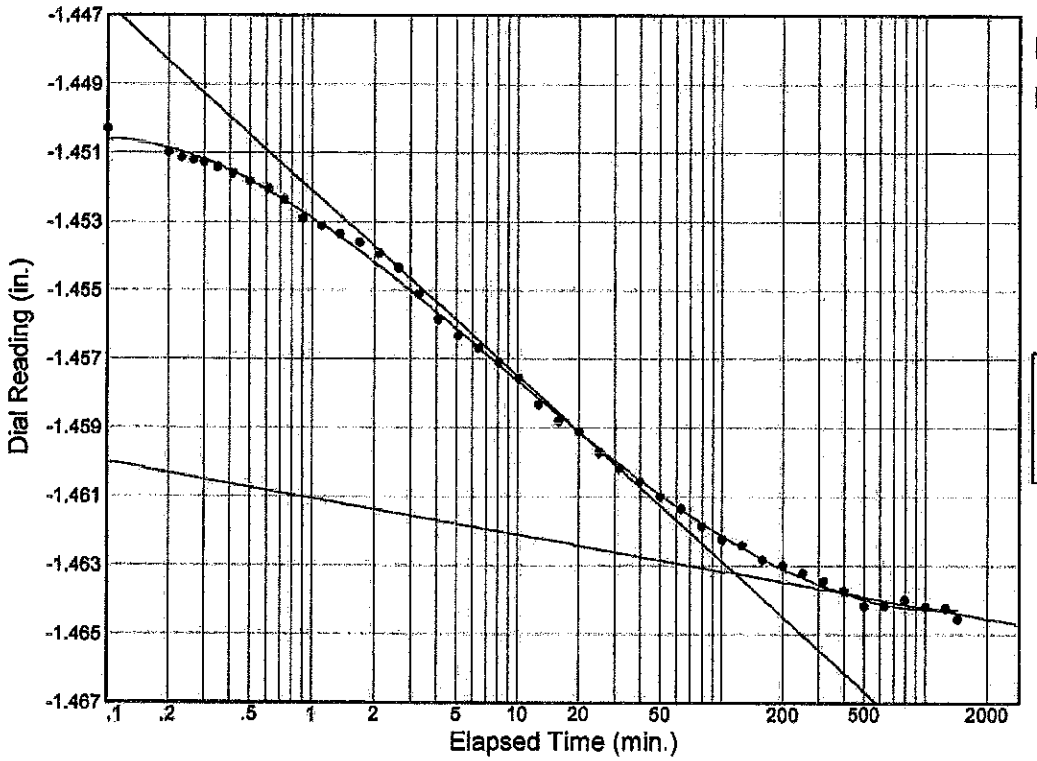
Figure

BURNS COOLEY DENNIS, INC.

Dial Reading vs. Time

Project No.: 10-017146
Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

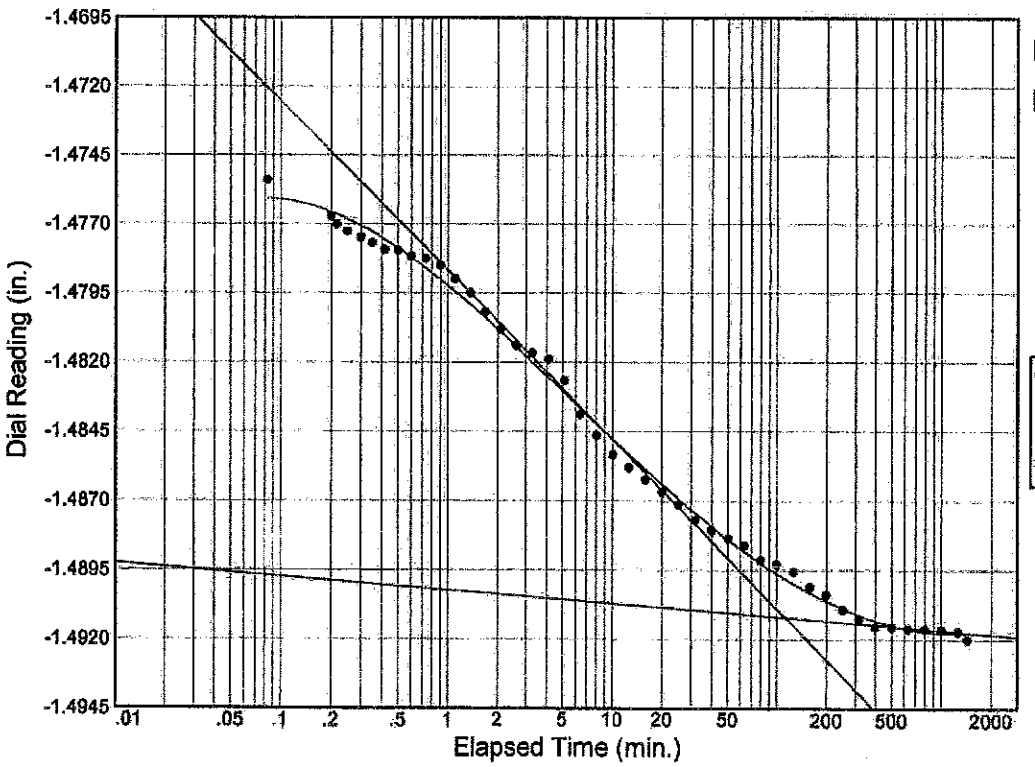
Source: BSFS-1U Sample No.: 7A Elev./Depth: 24.0



Load No.= 6
Load= 2.00 tsf
D_0 = -1.44633
D_{50} = -1.45479
D_{100} = -1.46324
T_{50} = 2.67 min.

C_v @ T_{50}
0.12 ft.^{2}/day

C_α = 0.001



Load No.= 7
Load= 4.00 tsf
D_0 = -1.47031
D_{50} = -1.48076
D_{100} = -1.49121
T_{50} = 1.96 min.

C_v @ T_{50}
0.15 ft.^{2}/day

C_α = 0.001

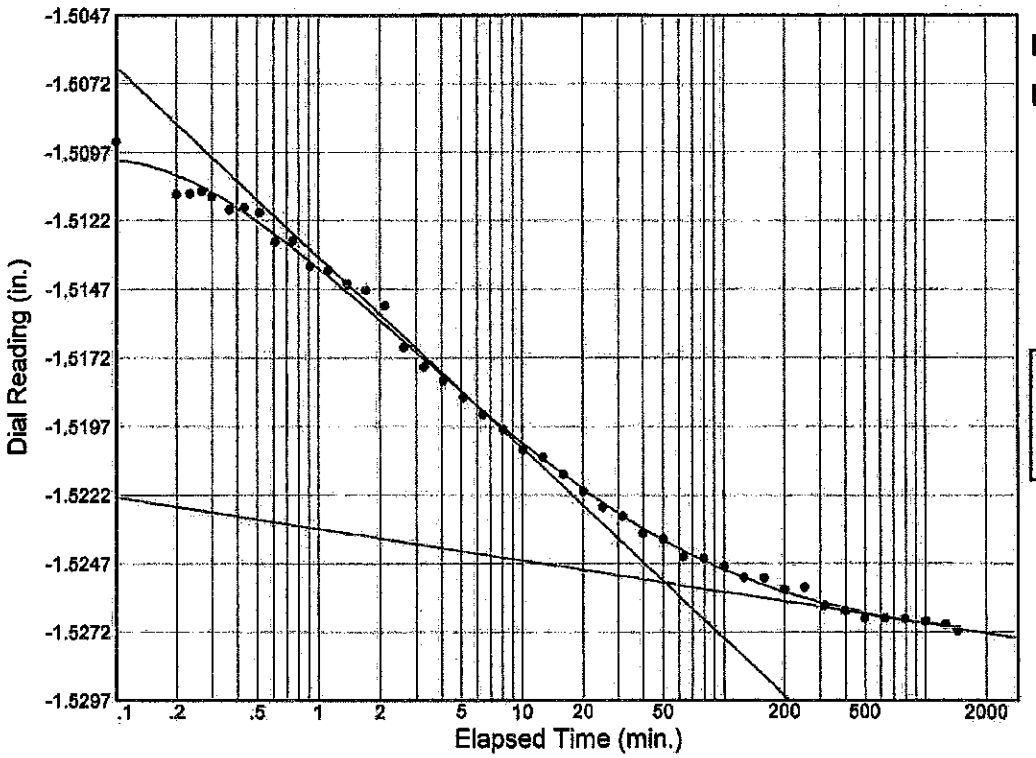
Figure

BURNS COOLEY DENNIS, INC.

Dial Reading vs. Time

Project No.: 10-017146
Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

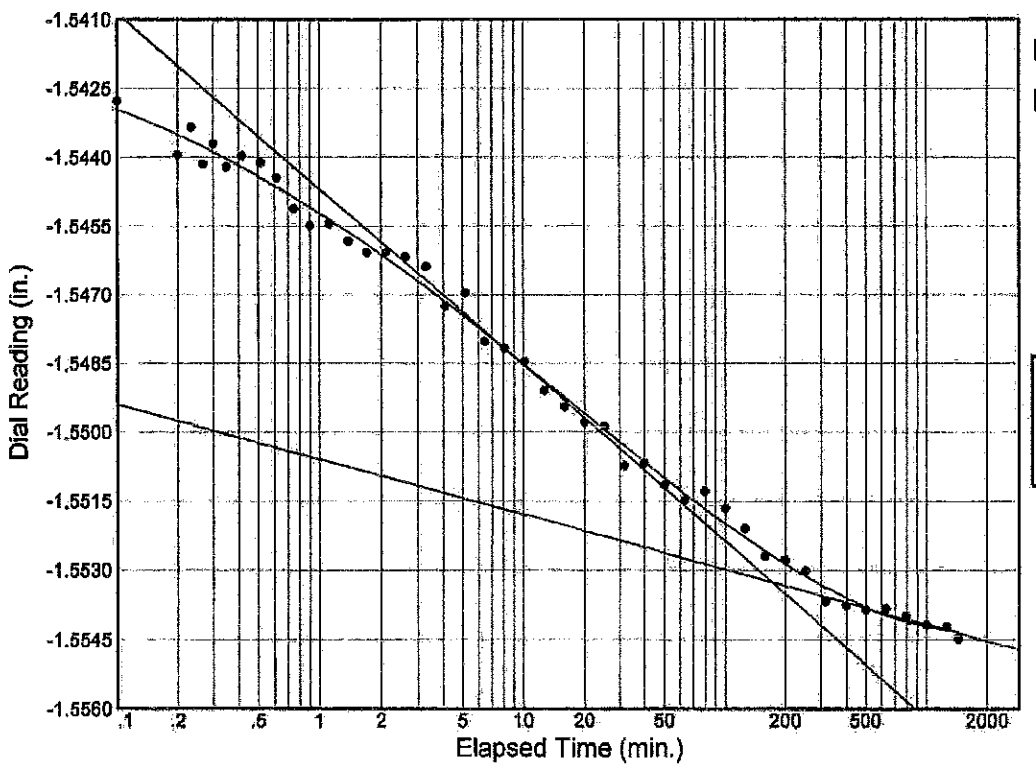
Source: BSFS-1U Sample No.: 7A Elev./Depth: 24.0



Load No.= 8
Load= 8.00 tsf
D_0 = -1.50060
D_{50} = -1.51300
D_{100} = -1.52540
T_{50} = 0.69 min.

C_v @ T_{50}
0.39 ft.^{2}/day

C_α = 0.002



Load No.= 9
Load= 12.00 tsf
D_0 = -1.53576
D_{50} = -1.54451
D_{100} = -1.55326
T_{50} = 0.55 min.

C_v @ T_{50}
0.45 ft.^{2}/day

C_α = 0.002

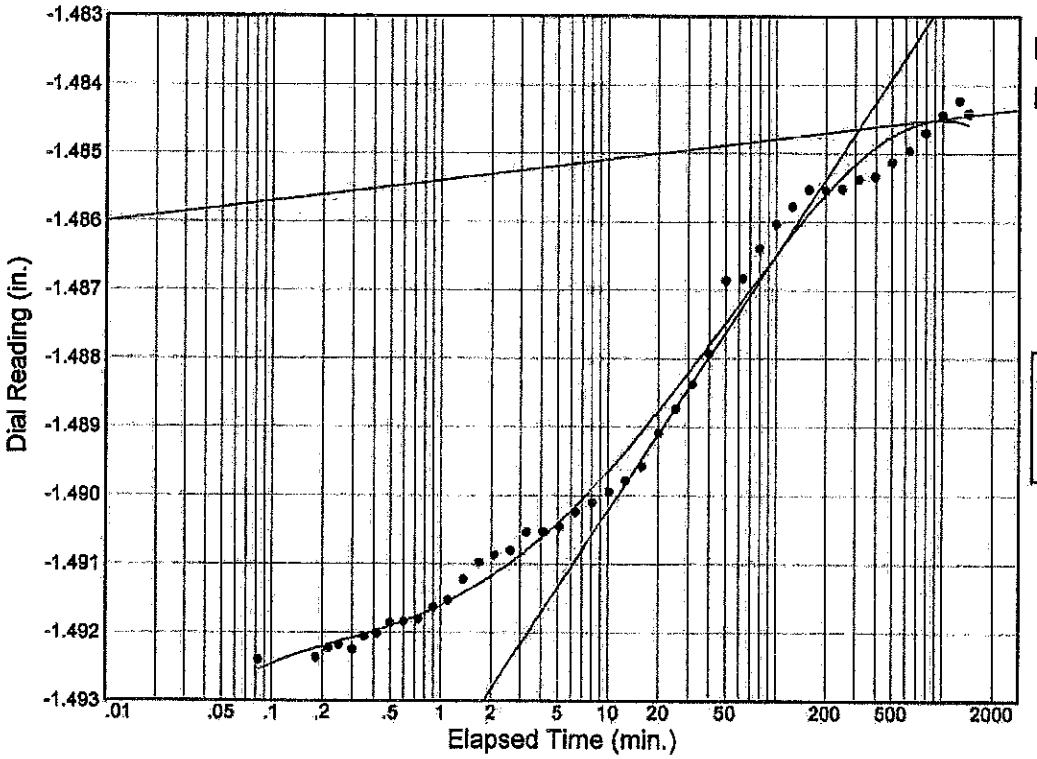
Figure

BURNS COOLEY DENNIS, INC.

Dial Reading vs. Time

Project No.: 10-017146
Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

Source: BSFS-1U Sample No.: 7A Elev./Depth: 24.0



Load No.= 12
Load= 0.19 tsf
D_0 = -1.49432
D_{50} = -1.48948
D_{100} = -1.48464
T_{50} = 11.69 min.

C_v @ T_{50}
0.02 ft.^{2}/day

CONSOLIDATION TEST DATA

Client: USACE
Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Louisiana
Project Number: 10-017146

Sample Data

Source: BSFS-1U
Sample No.: 7A
Elev. or Depth: 24.0 **Sample Length(in./cm.):**
Location:
Description: M GR CL4 W/ ARS SP
Liquid Limit: 27 **Plasticity Index:** 15
USCS: CL4 **AASHTO:** **Figure No.:**
Testing Remarks:

Test Specimen Data

TOTAL SAMPLE	BEFORE TEST	AFTER TEST
Wet w+t = 528.09 g.	**Consolidometer #** = 7	**Wet w+t** = 511.29 g.
Dry w+t = 458.77 g.		**Dry w+t** = 458.77 g.
Tare Wt. = 173.62 g.	**Spec. Gravity** = 2.66	**Tare Wt.** = 173.62 g.
Height = .86 in.	**Height** = .86 in.	
Diameter = 4.00 in.	**Diameter** = 2.50 in.	
Weight = 354.47 g.	**Defl. Table** = n/a	
Moisture = 24.3 %	**Ht. Solids** = 0.5206 in.	**Moisture** = 18.4 %
Wet Den. = 124.4 pcf	**Dry Wt.** = 111.39 g.*	**Dry Wt.** = 285.15 g.
Dry Den. = 100.1 pcf	**Void Ratio** = 0.659	**Void Ratio** = 0.476
	Saturation = 98.1 %	

*** Initial dry weight used in calculations**

End-of-Load Summary

Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (ft.^{2}/day)	C_α	Void Ratio	% Compression /Swell
start	-1.38897				0.659	
0.02	-1.38902	0.00000			0.659	0.0 Comprs.
0.13	-1.40157	0.00000	0.05	0.000	0.635	1.5 Comprs.
0.25	-1.41136	0.00000	0.03	0.001	0.616	2.6 Comprs.
0.50	-1.42494	0.00000	0.05	0.001	0.590	4.2 Comprs.
1.00	-1.44219	0.00000	0.07	0.001	0.557	6.2 Comprs.
2.00	-1.46457	0.00000	0.12	0.001	0.514	8.8 Comprs.
4.00	-1.49200	0.00000	0.15	0.001	0.461	11.9 Comprs.
8.00	-1.52716	0.00000	0.39	0.002	0.394	16.0 Comprs.
12.00	-1.55449	0.00000	0.45	0.002	0.341	19.2 Comprs.
3.00	-1.51888	0.00000			0.410	15.0 Comprs.
0.75	-1.49979	0.00000			0.446	12.8 Comprs.
0.19	-1.48442	0.00000	0.02		0.476	11.1 Comprs.

C_c = 0.28 P_c = 1.98 tsf C_r = 0.07

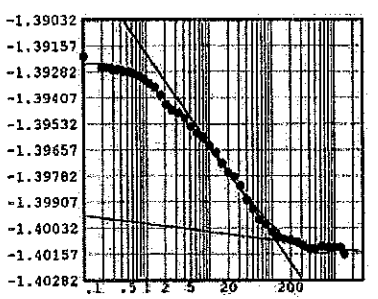
Pressure: 0.02 tsf **TEST READINGS** **Load No. 1**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.38897	16	2.47	-1.38911	31	79.40	-1.38943
2	0.03	-1.38896	17	3.12	-1.38911	32	99.97	-1.38937
3	0.07	-1.38899	18	3.93	-1.38913	33	125.87	-1.38939
4	0.10	-1.38898	19	4.97	-1.38912	34	158.45	-1.38939
5	0.13	-1.38893	20	6.27	-1.38910	35	199.50	-1.38944
6	0.18	-1.38900	21	7.90	-1.38918	36	251.15	-1.38937
7	0.25	-1.38905	22	9.97	-1.38912	37	316.18	-1.38936
8	0.33	-1.38898	23	12.55	-1.38914	38	398.07	-1.38934
9	0.43	-1.38908	24	15.82	-1.38916	39	501.15	-1.38915
10	0.57	-1.38915	25	19.92	-1.38930	40	630.92	-1.38905
11	0.73	-1.38908	26	25.08	-1.38930	41	794.28	-1.38897
12	0.95	-1.38911	27	31.58	-1.38932	42	999.95	-1.38893
13	1.20	-1.38917	28	39.78	-1.38929	43	1138.10	-1.38902
14	1.53	-1.38917	29	50.08	-1.38928			
15	1.95	-1.38913	30	63.07	-1.38943			

Void Ratio = 0.659 **Compression =** 0.0 %

Pressure: 0.13 tsf **TEST READINGS** **Load No. 2**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.39086	24	12.73	-1.39669
2	0.10	-1.39211	25	16.00	-1.39723
3	0.20	-1.39262	26	20.10	-1.39768
4	0.23	-1.39262	27	25.27	-1.39788
5	0.27	-1.39263	28	31.77	-1.39830
6	0.30	-1.39274	29	39.97	-1.39898
7	0.35	-1.39274	30	50.27	-1.39943
8	0.43	-1.39280	31	63.25	-1.39993
9	0.52	-1.39283	32	79.58	-1.40015
10	0.62	-1.39291	33	100.15	-1.40050
11	0.75	-1.39300	34	126.05	-1.40074
12	0.92	-1.39317	35	158.65	-1.40086
13	1.12	-1.39338	36	199.68	-1.40090
14	1.38	-1.39358	37	251.33	-1.40101
15	1.72	-1.39395	38	316.38	-1.40116
16	2.12	-1.39440	39	398.25	-1.40133
17	2.65	-1.39467	40	501.33	-1.40132
18	3.30	-1.39481	41	631.10	-1.40120
19	4.12	-1.39505	42	794.47	-1.40124
20	5.15	-1.39547	43	1000.13	-1.40126
21	6.45	-1.39578	44	1259.05	-1.40128
22	8.08	-1.39599	45	1440.32	-1.40157
23	10.13	-1.39638			



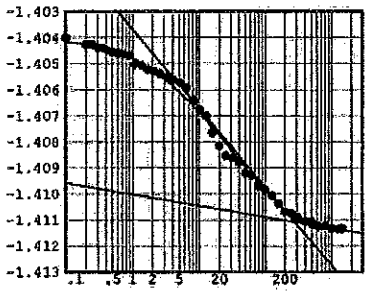
Void Ratio = 0.635 **Compression =** 1.5 %

D_0 = -1.39086 D_{50} = -1.39588 D_{100} = -1.40090

C_v **at 6.7 min.** = 0.05 ft.^{2}/day C_α = 0.000

Pressure: 0.25 tsf **TEST READINGS** **Load No. 3**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.40344	24	12.70	-1.40700
2	0.10	-1.40402	25	15.97	-1.40764
3	0.20	-1.40427	26	20.07	-1.40815
4	0.22	-1.40426	27	25.23	-1.40853
5	0.25	-1.40429	28	31.75	-1.40862
6	0.30	-1.40440	29	39.93	-1.40879
7	0.35	-1.40442	30	50.23	-1.40920
8	0.42	-1.40450	31	63.22	-1.40931
9	0.50	-1.40456	32	79.55	-1.40969
10	0.60	-1.40460	33	100.13	-1.40986
11	0.73	-1.40464	34	126.02	-1.41007
12	0.90	-1.40470	35	158.62	-1.41036
13	1.10	-1.40503	36	199.65	-1.41070
14	1.37	-1.40508	37	251.32	-1.41077
15	1.70	-1.40523	38	316.35	-1.41091
16	2.10	-1.40531	39	398.23	-1.41106
17	2.62	-1.40540	40	501.32	-1.41107
18	3.27	-1.40553	41	631.08	-1.41125
19	4.10	-1.40563	42	794.45	-1.41124
20	5.13	-1.40573	43	1000.12	-1.41133
21	6.43	-1.40593	44	1259.03	-1.41137
22	8.07	-1.40640	45	1440.33	-1.41136
23	10.12	-1.40677			



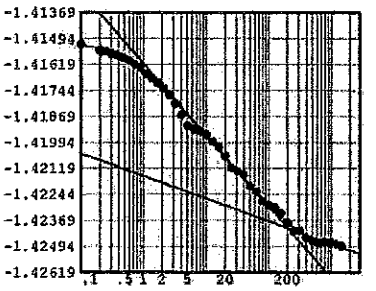
Void Ratio = 0.616 **Compression** = 2.6 %

D_0 = -1.40344 D_{50} = -1.40725 D_{100} = -1.41106

C_v **at 13.5 min.** = 0.03 ft.^{2}/day C_α = 0.001

Pressure: 0.50 tsf **TEST READINGS** **Load No. 4**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.41417	24	12.72	-1.41990
2	0.10	-1.41522	25	15.97	-1.42015
3	0.20	-1.41551	26	20.08	-1.42062
4	0.22	-1.41558	27	25.25	-1.42117
5	0.25	-1.41558	28	31.75	-1.42132
6	0.30	-1.41568	29	39.93	-1.42149
7	0.35	-1.41573	30	50.25	-1.42207
8	0.42	-1.41582	31	63.23	-1.42232
9	0.50	-1.41592	32	79.57	-1.42278
10	0.60	-1.41602	33	100.13	-1.42296
11	0.73	-1.41621	34	126.03	-1.42312
12	0.90	-1.41634	35	158.63	-1.42337
13	1.10	-1.41665	36	199.67	-1.42382
14	1.37	-1.41687	37	251.32	-1.42423
15	1.70	-1.41708	38	316.37	-1.42420
16	2.10	-1.41735	39	398.23	-1.42455
17	2.62	-1.41768	40	501.32	-1.42470
18	3.28	-1.41808	41	631.08	-1.42479
19	4.10	-1.41862	42	794.45	-1.42475
20	5.13	-1.41914	43	1000.12	-1.42479
21	6.43	-1.41931	44	1259.03	-1.42487
22	8.07	-1.41941	45	1440.30	-1.42494
23	10.12	-1.41958			



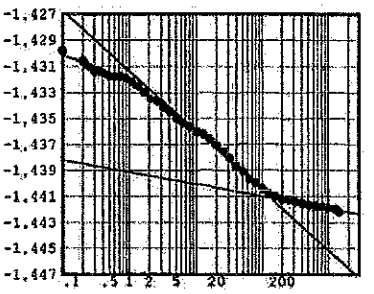
Void Ratio = 0.590 **Compression** = 4.2 %

D_0 = -1.41417 D_{50} = -1.41911 D_{100} = -1.42404

C_v **at 6.9 min.** = 0.05 ft.^{2}/day C_α = 0.001

Pressure: 1.00 tsf **TEST READINGS** **Load No. 5**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.42807	24	12.72	-1.43627
2	0.10	-1.42982	25	15.97	-1.43662
3	0.20	-1.43056	26	20.08	-1.43709
4	0.22	-1.43083	27	25.25	-1.43757
5	0.25	-1.43103	28	31.75	-1.43807
6	0.30	-1.43138	29	39.93	-1.43873
7	0.35	-1.43139	30	50.25	-1.43915
8	0.42	-1.43153	31	63.22	-1.43973
9	0.50	-1.43172	32	79.57	-1.44001
10	0.60	-1.43176	33	100.13	-1.44041
11	0.73	-1.43177	34	126.03	-1.44083
12	0.90	-1.43194	35	158.62	-1.44102
13	1.10	-1.43217	36	199.65	-1.44124
14	1.37	-1.43251	37	251.32	-1.44128
15	1.70	-1.43298	38	316.37	-1.44143
16	2.12	-1.43349	39	398.23	-1.44154
17	2.63	-1.43368	40	501.32	-1.44163
18	3.28	-1.43413	41	631.08	-1.44170
19	4.10	-1.43449	42	794.45	-1.44179
20	5.13	-1.43503	43	1000.12	-1.44189
21	6.43	-1.43536	44	1259.03	-1.44197
22	8.07	-1.43564	45	1440.33	-1.44219
23	10.12	-1.43598			



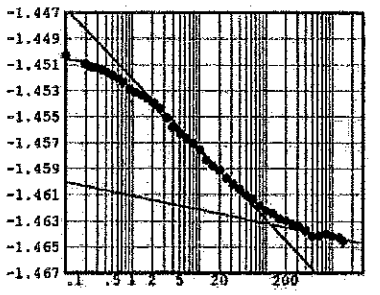
Void Ratio = 0.557 **Compression** = 6.2 %

D_0 = -1.42807 D_{50} = -1.43458 D_{100} = -1.44108

C_v **at 4.4 min.** = 0.07 ft.^{2}/day C_α = 0.001

Pressure: 2.00 tsf **TEST READINGS** **Load No. 6**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.44633	24	12.72	-1.45836
2	0.10	-1.45030	25	15.98	-1.45882
3	0.20	-1.45098	26	20.08	-1.45913
4	0.23	-1.45115	27	25.25	-1.45974
5	0.27	-1.45122	28	31.75	-1.46020
6	0.30	-1.45127	29	39.95	-1.46058
7	0.35	-1.45143	30	50.25	-1.46102
8	0.42	-1.45160	31	63.23	-1.46136
9	0.50	-1.45183	32	79.57	-1.46187
10	0.62	-1.45206	33	100.15	-1.46225
11	0.73	-1.45235	34	126.03	-1.46244
12	0.90	-1.45292	35	158.63	-1.46284
13	1.12	-1.45313	36	199.67	-1.46301
14	1.37	-1.45338	37	251.33	-1.46325
15	1.70	-1.45363	38	316.37	-1.46347
16	2.12	-1.45394	39	398.25	-1.46375
17	2.63	-1.45437	40	501.33	-1.46418
18	3.28	-1.45511	41	631.10	-1.46417
19	4.10	-1.45585	42	794.47	-1.46400
20	5.13	-1.45633	43	1000.13	-1.46421
21	6.43	-1.45668	44	1259.05	-1.46427
22	8.07	-1.45709	45	1440.20	-1.46457
23	10.13	-1.45757			



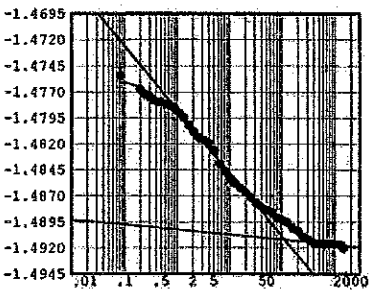
Void Ratio = 0.514 **Compression** = 8.8 %

D_0 = -1.44633 D_{50} = -1.45479 D_{100} = -1.46324

C_v **at 2.7 min.** = 0.12 ft.^{2}/day C_α = 0.001

Pressure: 4.00 tsf **TEST READINGS** **Load No. 7**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.47031	24	12.70	-1.48584
2	0.08	-1.47543	25	15.97	-1.48627
3	0.20	-1.47673	26	20.07	-1.48669
4	0.22	-1.47701	27	25.23	-1.48716
5	0.25	-1.47728	28	31.75	-1.48770
6	0.30	-1.47749	29	39.93	-1.48809
7	0.35	-1.47770	30	50.23	-1.48837
8	0.42	-1.47793	31	63.22	-1.48861
9	0.50	-1.47796	32	79.55	-1.48915
10	0.60	-1.47816	33	100.12	-1.48930
11	0.73	-1.47826	34	126.02	-1.48957
12	0.90	-1.47850	35	158.62	-1.49012
13	1.10	-1.47902	36	199.65	-1.49040
14	1.37	-1.47951	37	251.30	-1.49094
15	1.68	-1.48022	38	316.35	-1.49126
16	2.10	-1.48083	39	398.22	-1.49155
17	2.62	-1.48143	40	501.30	-1.49157
18	3.27	-1.48170	41	631.07	-1.49163
19	4.10	-1.48191	42	794.43	-1.49163
20	5.12	-1.48267	43	1000.10	-1.49166
21	6.42	-1.48390	44	1259.02	-1.49173
22	8.05	-1.48465	45	1440.20	-1.49200
23	10.12	-1.48535			



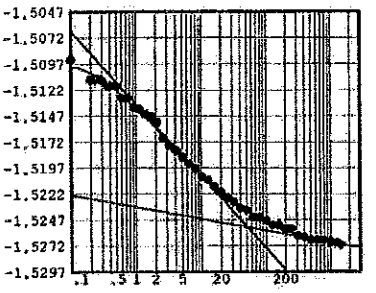
Void Ratio = 0.461 **Compression** = 11.9 %

D_0 = -1.47031 D_{50} = -1.48076 D_{100} = -1.49121

C_v **at 2.0 min.** = 0.15 ft.^{2}/day C_α = 0.001

Pressure: 8.00 tsf **TEST READINGS** **Load No. 8**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.50060	24	12.72	-1.52086
2	0.10	-1.50931	25	15.98	-1.52148
3	0.20	-1.51124	26	20.08	-1.52207
4	0.23	-1.51125	27	25.25	-1.52264
5	0.27	-1.51117	28	31.75	-1.52298
6	0.30	-1.51134	29	39.95	-1.52360
7	0.37	-1.51183	30	50.25	-1.52381
8	0.43	-1.51175	31	63.23	-1.52446
9	0.52	-1.51190	32	79.57	-1.52451
10	0.62	-1.51297	33	100.13	-1.52481
11	0.75	-1.51295	34	126.03	-1.52523
12	0.92	-1.51386	35	158.63	-1.52525
13	1.12	-1.51404	36	199.67	-1.52565
14	1.38	-1.51453	37	251.33	-1.52560
15	1.70	-1.51475	38	316.37	-1.52626
16	2.12	-1.51532	39	398.25	-1.52642
17	2.63	-1.51684	40	501.32	-1.52669
18	3.28	-1.51755	41	631.08	-1.52669
19	4.10	-1.51802	42	794.45	-1.52672
20	5.13	-1.51864	43	1000.12	-1.52681
21	6.43	-1.51926	44	1259.03	-1.52694
22	8.07	-1.51981	45	1440.05	-1.52716
23	10.13	-1.52057			



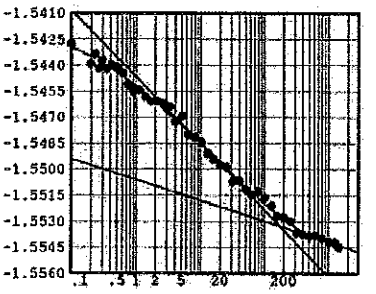
Void Ratio = 0.394 **Compression** = 16.0 %

D_0 = -1.50060 D_{50} = -1.51300 D_{100} = -1.52540

C_v **at 0.7 min.** = 0.39 ft.^{2}/day C_α = 0.002

Pressure: 12.00 tsf **TEST READINGS** **Load No. 9**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.53576	24	12.72	-1.54909
2	0.10	-1.54278	25	15.98	-1.54945
3	0.20	-1.54395	26	20.08	-1.54979
4	0.23	-1.54335	27	25.25	-1.54989
5	0.27	-1.54416	28	31.77	-1.55075
6	0.30	-1.54371	29	39.95	-1.55068
7	0.35	-1.54422	30	50.27	-1.55116
8	0.42	-1.54397	31	63.23	-1.55149
9	0.52	-1.54412	32	79.57	-1.55129
10	0.62	-1.54445	33	100.15	-1.55166
11	0.75	-1.54512	34	126.03	-1.55211
12	0.90	-1.54549	35	158.63	-1.55271
13	1.12	-1.54545	36	199.67	-1.55279
14	1.38	-1.54584	37	251.33	-1.55302
15	1.70	-1.54609	38	316.37	-1.55368
16	2.12	-1.54607	39	398.25	-1.55377
17	2.63	-1.54619	40	501.33	-1.55386
18	3.30	-1.54640	41	631.10	-1.55383
19	4.12	-1.54725	42	794.47	-1.55400
20	5.15	-1.54696	43	1000.13	-1.55420
21	6.45	-1.54802	44	1259.05	-1.55424
22	8.08	-1.54818	45	1440.27	-1.55449
23	10.13	-1.54847			



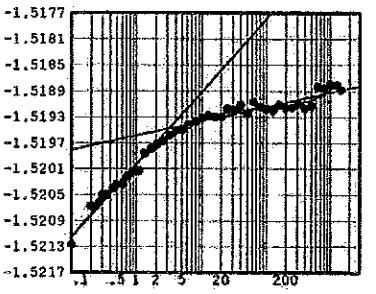
Void Ratio = 0.341 **Compression** = 19.2 %

D_0 = -1.53576 D_{50} = -1.54451 D_{100} = -1.55326

C_v **at 0.5 min.** = 0.45 ft.^{2}/day C_α = 0.002

Pressure: 3.00 tsf **TEST READINGS** **Load No. 10**

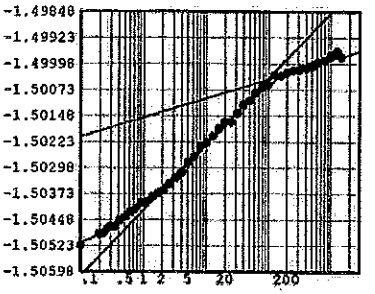
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.53806	24	12.72	-1.51928
2	0.10	-1.52128	25	15.97	-1.51930
3	0.20	-1.52068	26	20.08	-1.51930
4	0.23	-1.52068	27	25.25	-1.51918
5	0.27	-1.52062	28	31.75	-1.51920
6	0.30	-1.52051	29	39.93	-1.51912
7	0.35	-1.52050	30	50.25	-1.51925
8	0.43	-1.52041	31	63.22	-1.51907
9	0.50	-1.52035	32	79.57	-1.51914
10	0.62	-1.52034	33	100.13	-1.51918
11	0.73	-1.52022	34	126.02	-1.51920
12	0.90	-1.52015	35	158.62	-1.51912
13	1.12	-1.52013	36	199.65	-1.51916
14	1.37	-1.51986	37	251.32	-1.51915
15	1.70	-1.51979	38	316.35	-1.51910
16	2.12	-1.51972	39	398.23	-1.51917
17	2.63	-1.51967	40	501.32	-1.51913
18	3.28	-1.51958	41	631.08	-1.51884
19	4.10	-1.51951	42	794.45	-1.51886
20	5.13	-1.51949	43	1000.10	-1.51880
21	6.43	-1.51941	44	1259.03	-1.51881
22	8.07	-1.51937	45	1440.27	-1.51888
23	10.12	-1.51932			



Void Ratio = 0.410 **Compression** = 15.0 %

Pressure: 0.75 tsf **TEST READINGS** **Load No. 11**

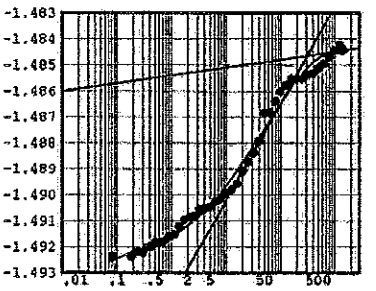
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.51091	24	12.73	-1.50207
2	0.10	-1.50523	25	15.98	-1.50186
3	0.20	-1.50490	26	20.10	-1.50167
4	0.23	-1.50486	27	25.27	-1.50165
5	0.27	-1.50474	28	31.77	-1.50141
6	0.30	-1.50468	29	39.95	-1.50116
7	0.35	-1.50468	30	50.27	-1.50105
8	0.42	-1.50450	31	63.25	-1.50081
9	0.50	-1.50439	32	79.58	-1.50066
10	0.62	-1.50426	33	100.15	-1.50058
11	0.75	-1.50416	34	126.05	-1.50031
12	0.92	-1.50400	35	158.63	-1.50033
13	1.12	-1.50397	36	199.68	-1.50025
14	1.38	-1.50382	37	251.33	-1.50018
15	1.70	-1.50372	38	316.38	-1.50016
16	2.12	-1.50364	39	398.25	-1.50012
17	2.63	-1.50344	40	501.33	-1.50007
18	3.28	-1.50327	41	631.10	-1.49994
19	4.12	-1.50311	42	794.47	-1.49989
20	5.15	-1.50281	43	1000.13	-1.49974
21	6.45	-1.50265	44	1259.05	-1.49962
22	8.08	-1.50238	45	1440.05	-1.49979
23	10.13	-1.50225			



Void Ratio = 0.446 **Compression =** 12.8 %

Pressure: 0.19 tsf **TEST READINGS** **Load No. 12**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.49432	24	12.70	-1.48979
2	0.08	-1.49240	25	15.97	-1.48958
3	0.18	-1.49238	26	20.07	-1.48909
4	0.22	-1.49224	27	25.23	-1.48875
5	0.25	-1.49219	28	31.75	-1.48839
6	0.30	-1.49225	29	39.93	-1.48793
7	0.35	-1.49206	30	50.23	-1.48686
8	0.42	-1.49201	31	63.22	-1.48683
9	0.50	-1.49186	32	79.55	-1.48639
10	0.60	-1.49184	33	100.13	-1.48604
11	0.73	-1.49180	34	126.02	-1.48579
12	0.90	-1.49163	35	158.62	-1.48554
13	1.10	-1.49154	36	199.65	-1.48554
14	1.37	-1.49124	37	251.32	-1.48552
15	1.70	-1.49098	38	316.35	-1.48538
16	2.10	-1.49088	39	398.23	-1.48534
17	2.62	-1.49082	40	501.32	-1.48513
18	3.27	-1.49055	41	631.08	-1.48496
19	4.10	-1.49053	42	794.45	-1.48470
20	5.13	-1.49046	43	1000.12	-1.48444
21	6.42	-1.49025	44	1259.03	-1.48424
22	8.07	-1.49012	45	1440.05	-1.48442
23	10.12	-1.48995			

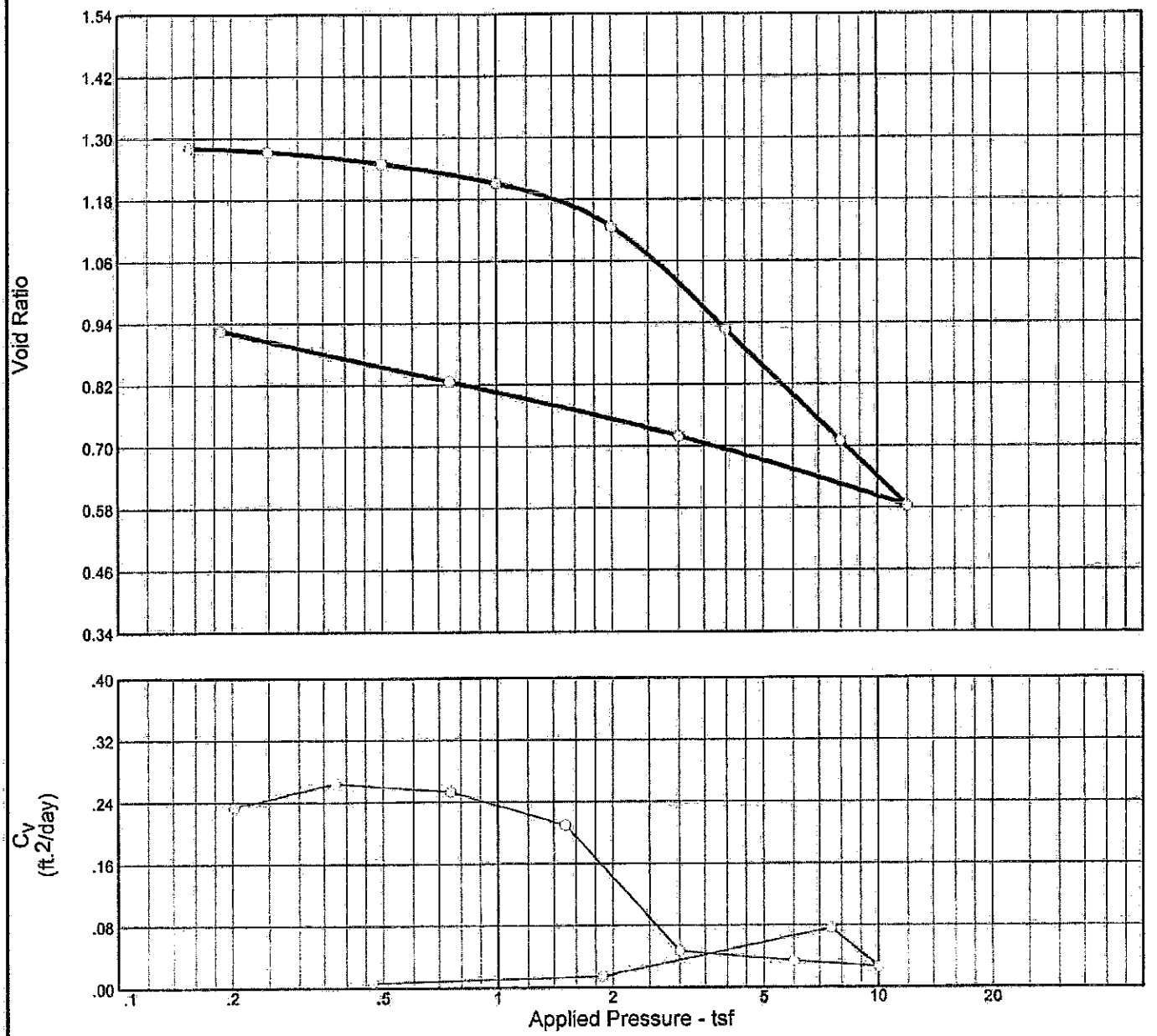


Void Ratio = 0.476 **Compression** = 11.1 %

D_0 = -1.49432 D_{50} = -1.48948 D_{100} = -1.48464

C_v **at 11.7 min.** = 0.02 ft.^{2}/day

Consolidation Test Report



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture							
100.8 %	47.9 %	74.0	36	15	2.71	2.00	0.72	1.287

MATERIAL DESCRIPTION	USCS	AASHTO
M GR CL4 W/ LNS SP	CL4	

Project No. 10-017146 **Client:** USACE

Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Louisiana

Source: BSFS-1U **Sample No.:** 12C **Elev./Depth:** 46.0

BURNS COOLEY DENNIS, INC.

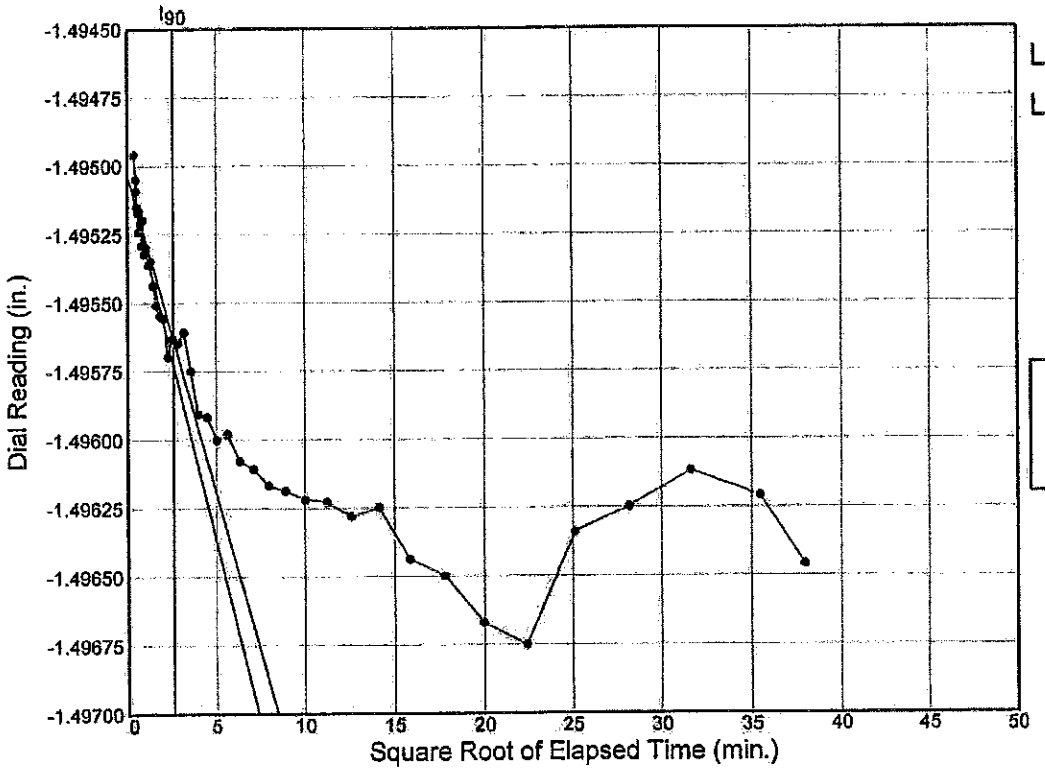
Ridgeland, Mississippi

Remarks:

Figure

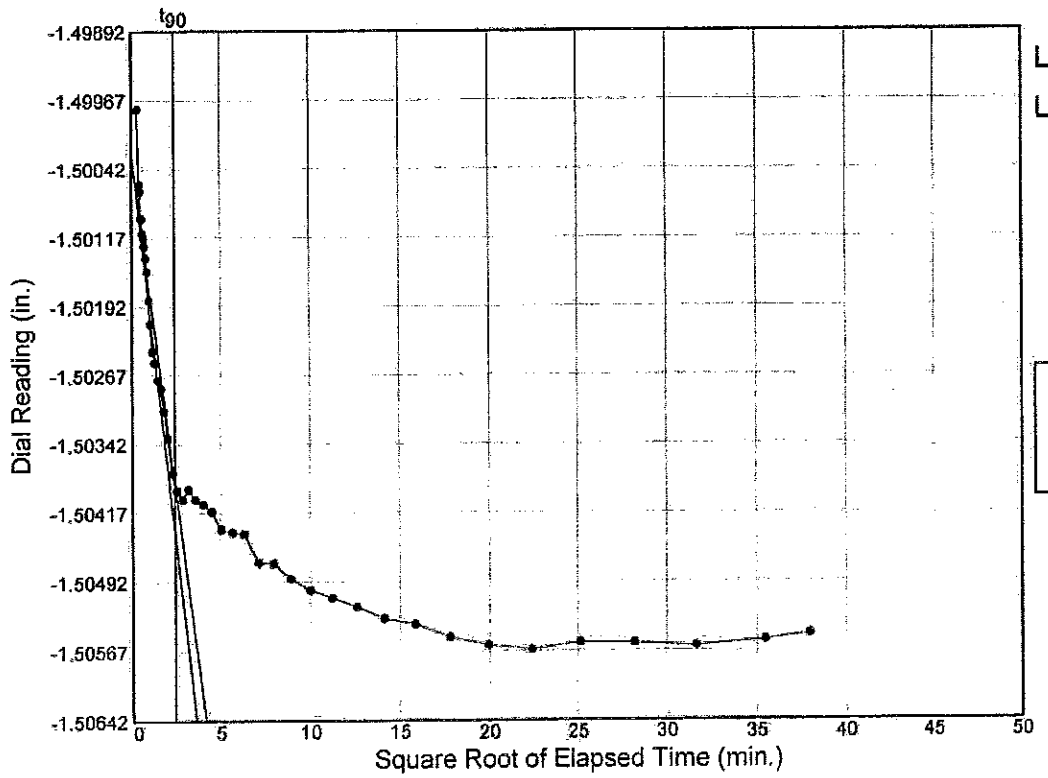
Dial Reading vs. Time

Project No.: 10-017146
Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Louisiana
Source: BSFS-1U Sample No.: 12C Elev./Depth: 46.0



Load No.= 2
Load= 0.25 tsf
D_0 = -1.49503
D_{90} = -1.49563
D_{100} = -1.49570
T_{90} = 6.75 min.

C_v @ T_{90}
0.23 ft.^{2}/day



Load No.= 3
Load= 0.50 tsf
D_0 = -1.50026
D_{90} = -1.50385
D_{100} = -1.50425
T_{90} = 5.88 min.

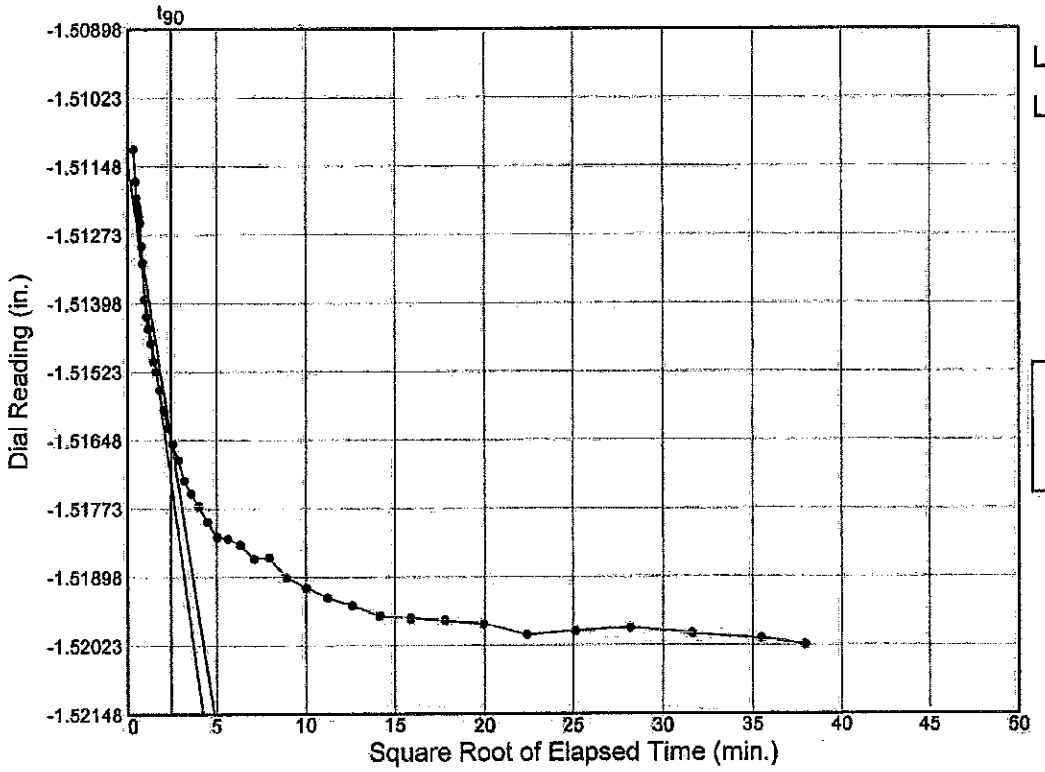
C_v @ T_{90}
0.26 ft.^{2}/day

Figure

BURNS COOLEY DENNIS, INC.

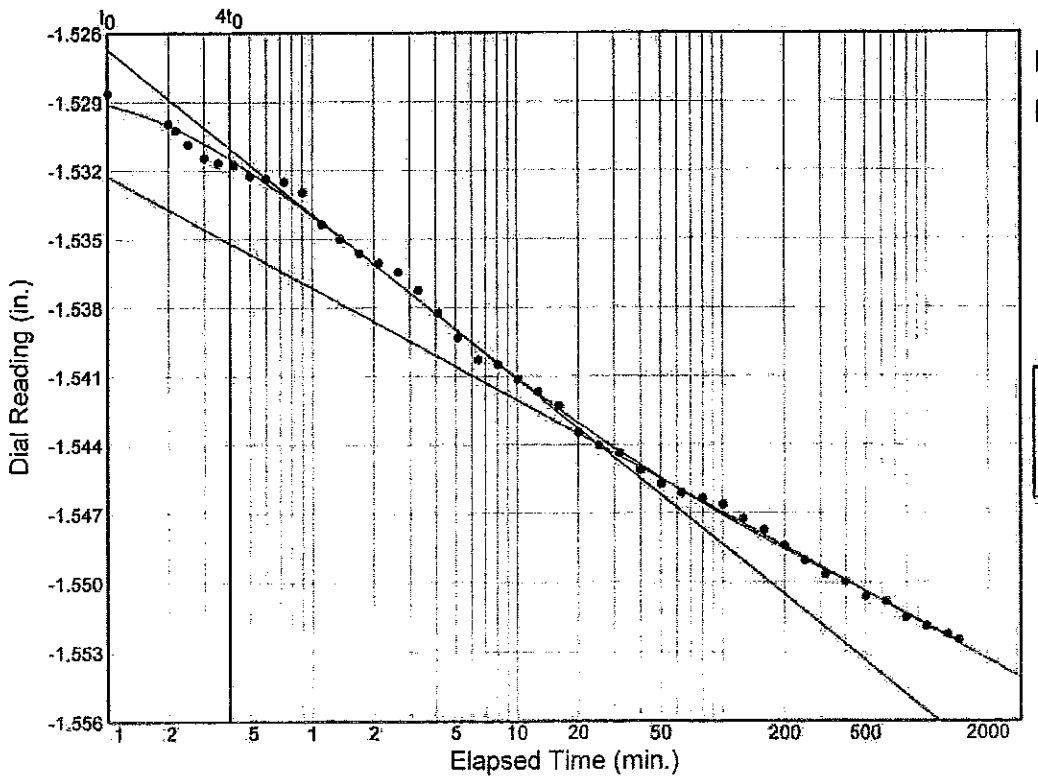
Dial Reading vs. Time

Project No.: 10-017146
Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Louisiana
Source: BSFS-1U Sample No.: 12C Elev./Depth: 46.0



Load No.= 4
Load= 1.00 tsf
D_0 = -1.51139
D_{90} = -1.51644
D_{100} = -1.51700
T_{90} = 5.97 min.

C_v @ T_{90}
0.25 ft.^{2}/day



Load No.= 5
Load= 2.00 tsf
D_0 = -1.52675
D_{50} = -1.53539
D_{100} = -1.54402
T_{50} = 1.58 min.

C_v @ T_{50}
0.21 ft.^{2}/day

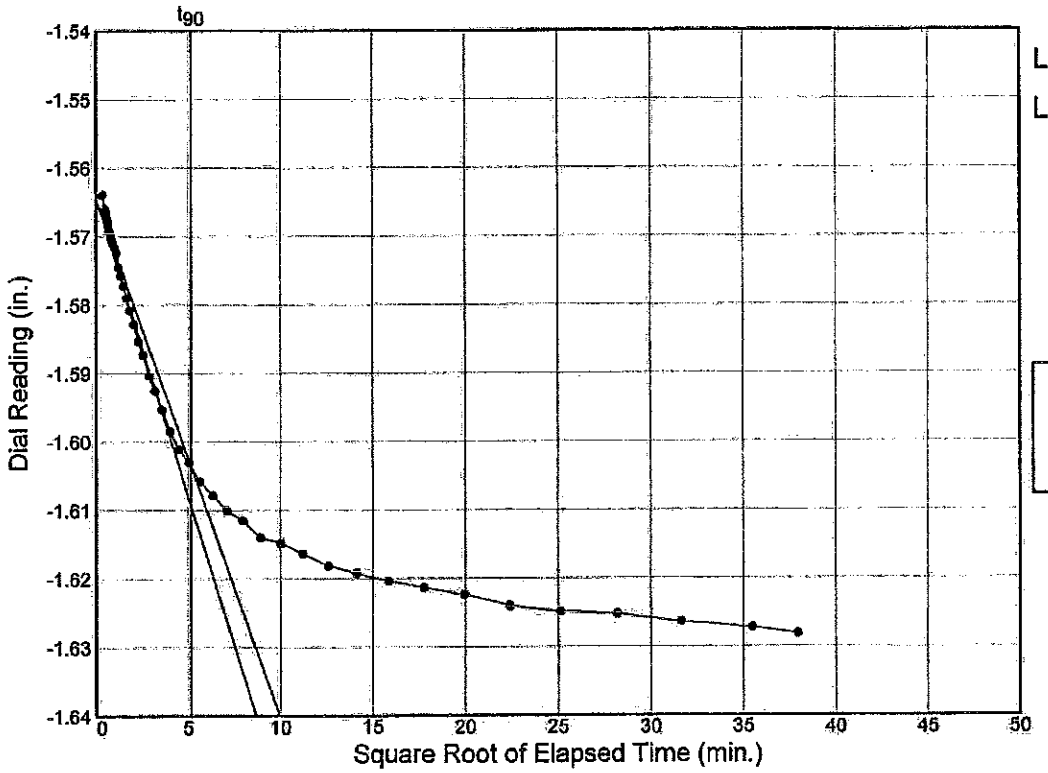
C_α = 0.006

Figure

BURNS COOLEY DENNIS, INC.

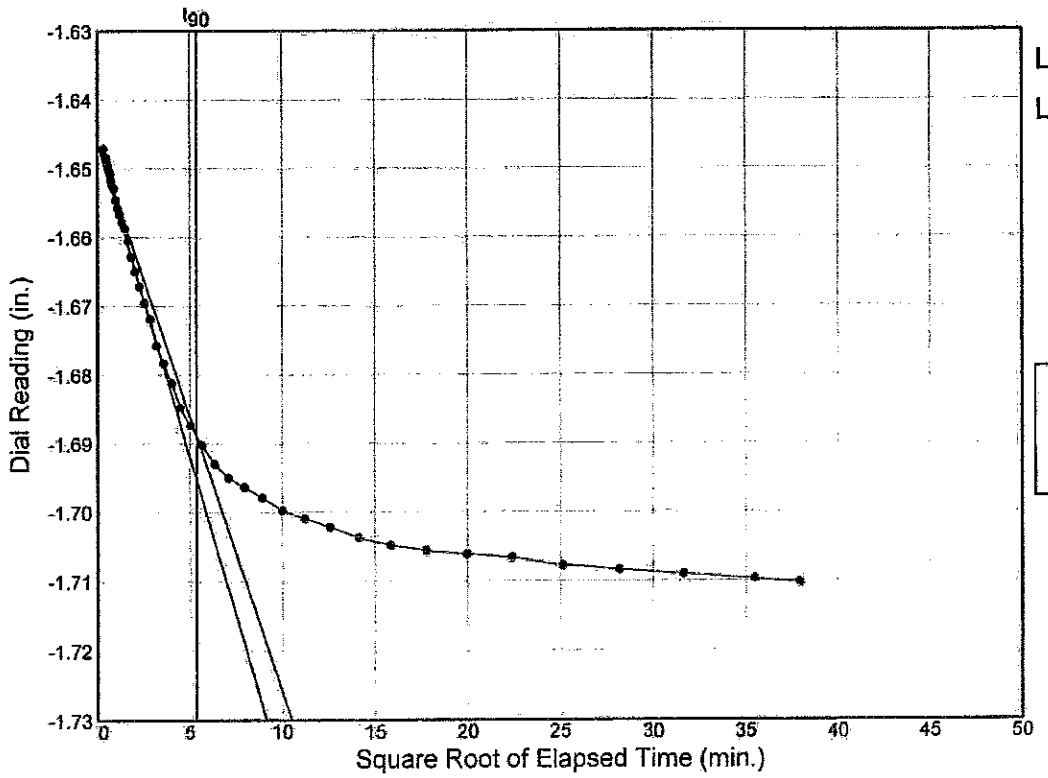
Dial Reading vs. Time

Project No.: 10-017146
Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Louisiana
Source: BSFS-1U Sample No.: 12C Elev./Depth: 46.0



Load No.= 6
Load= 4.00 tsf
D_0 = -1.56472
D_{90} = -1.60361
D_{100} = -1.60793
T_{90} = 26.47 min.

C_v @ T_{90}
0.05 ft.^{2}/day



Load No.= 7
Load= 8.00 tsf
D_0 = -1.64630
D_{90} = -1.68900
D_{100} = -1.69374
T_{90} = 28.82 min.

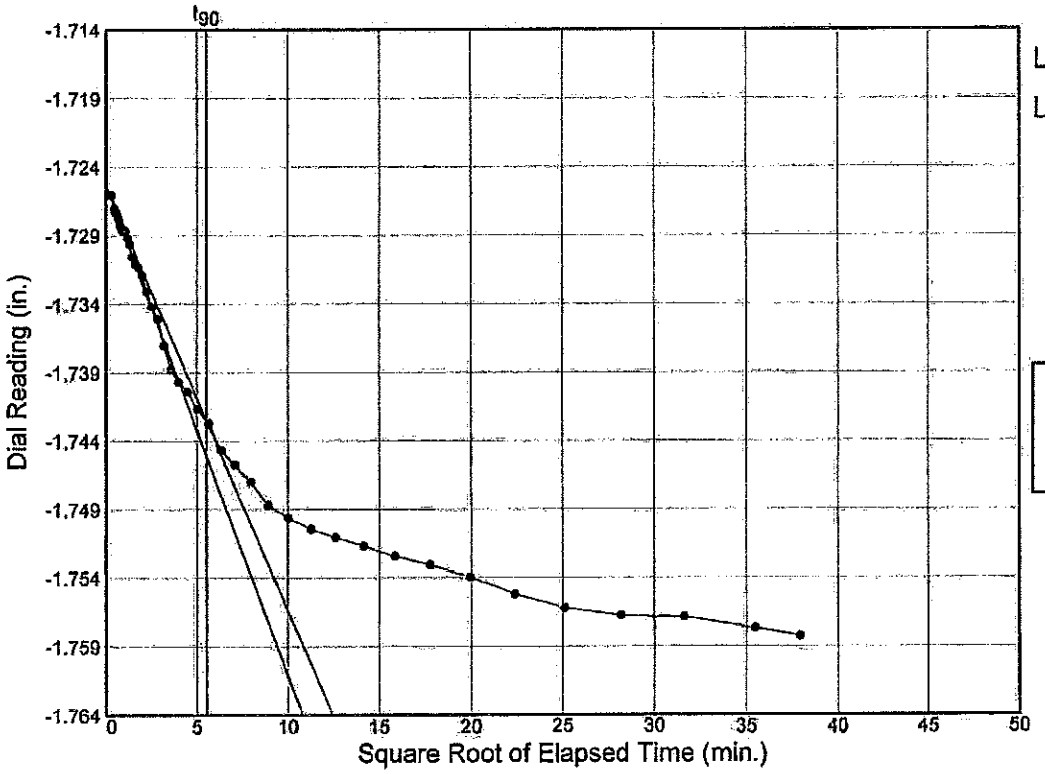
C_v @ T_{90}
0.03 ft.^{2}/day

Figure

BURNS COOLEY DENNIS, INC.

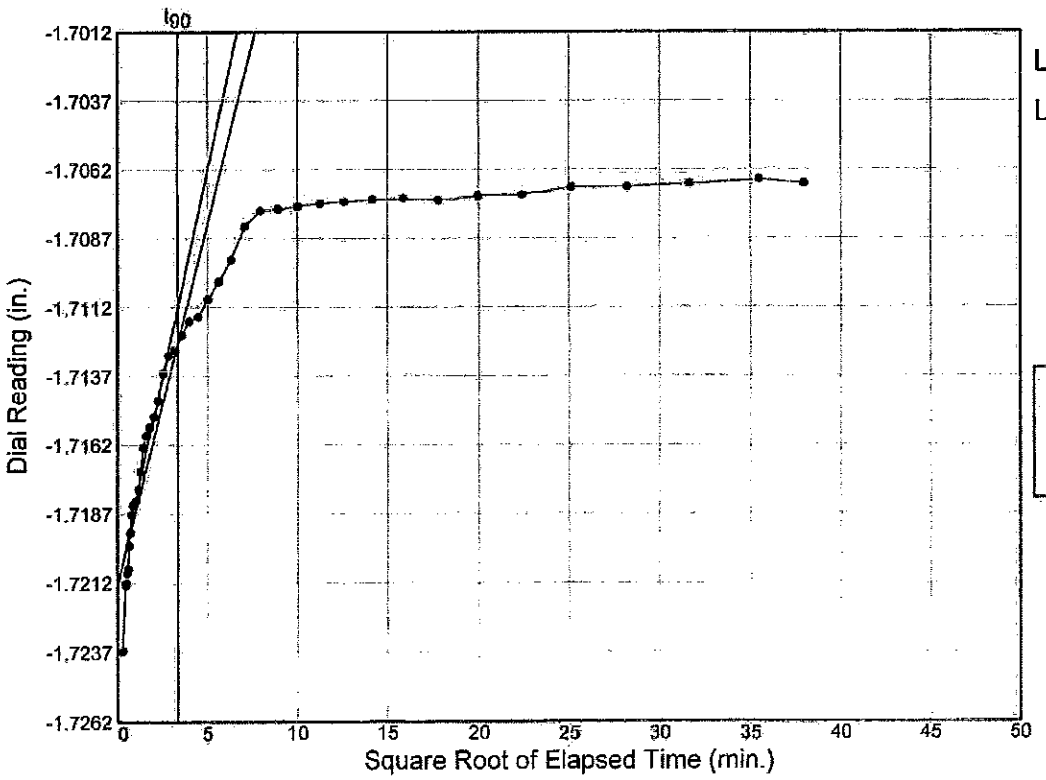
Dial Reading vs. Time

Project No.: 10-017146
Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Louisiana
Source: BSFS-1U Sample No.: 12C Elev./Depth: 46.0



Load No.= 8
Load= 12.00 tsf
D_0 = -1.72530
D_{90} = -1.74256
D_{100} = -1.74447
T_{90} = 30.67 min.

C_v @ T_{90}
0.03 ft.^{2}/day



Load No.= 9
Load= 3.00 tsf
D_0 = -1.72132
D_{90} = -1.71255
D_{100} = -1.71157
T_{90} = 11.17 min.

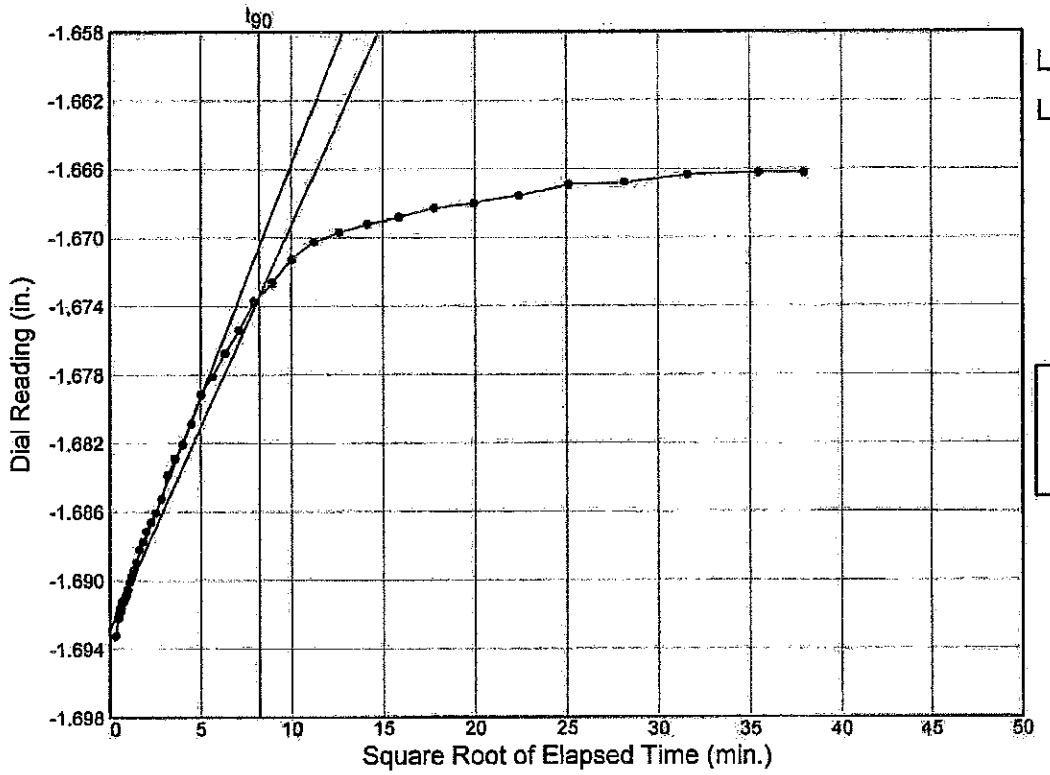
C_v @ T_{90}
0.08 ft.^{2}/day

Figure

BURNS COOLEY DENNIS, INC.

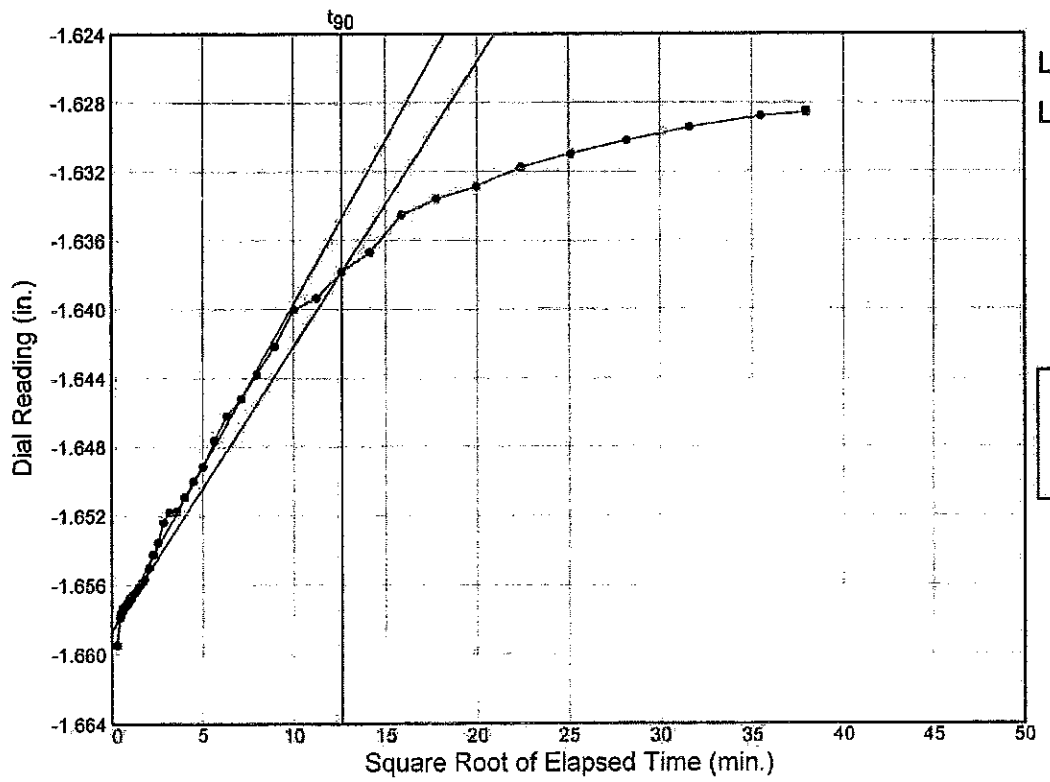
Dial Reading vs. Time

Project No.: 10-017146
Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Louisiana
Source: BSFS-1U Sample No.: 12C Elev./Depth: 46.0



Load No.= 10
Load= 0.75 tsf
D_0 = -1.69288
D_{90} = -1.67346
D_{100} = -1.67130
T_{90} = 67.63 min.

C_v @ T_{90}
0.01 ft.^{2}/day



Load No.= 11
Load= 0.19 tsf
D_0 = -1.65868
D_{90} = -1.63781
D_{100} = -1.63550
T_{90} = 159.50 min.

C_v @ T_{90}
0.01 ft.^{2}/day

Figure

BURNS COOLEY DENNIS, INC.

CONSOLIDATION TEST DATA

Client: USACE
Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Louisiana
Project Number: 10-017146

Sample Data

Source: BSFS-1U
Sample No.: 12C
Elev. or Depth: 46.0
Sample Length(in./cm.):
Location:
Description: M GR CL4 W/ LNS SP
Liquid Limit: 36
Plasticity Index: 15
USCS: CL4
AASHTO:
Figure No.:
Testing Remarks:

Test Specimen Data

TOTAL SAMPLE		BEFORE TEST	AFTER TEST
Wet w+t	= 486.33 g.	Consolidometer # = 8	Wet w+t = 461.27 g.
Dry w+t	= 385.08 g.		Dry w+t = 385.08 g.
Tare Wt.	= 173.51 g.	Spec. Gravity = 2.71	Tare Wt. = 173.51 g.
Height	= .87 in.	Height = .87 in.	
Diameter	= 4.00 in.	Diameter = 2.50 in.	
Weight	= 312.82 g.	Defl. Table = n/a	
Moisture	= 47.9 %	Ht. Solids = 0.3791 in.	Moisture = 36.0 %
Wet Den.	= 109.4 pcf	Dry Wt. = 82.64 g.*	Dry Wt. = 211.57 g.
Dry Den.	= 74.0 pcf	Void Ratio = 1.287	Void Ratio = 0.926
		Saturation = 100.8 %	

*** Initial dry weight used in calculations**

End-of-Load Summary

Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (ft.^{2}/day)	C_α	Void Ratio	% Compression /Swell
start	-1.49156				1.287	
0.16	-1.49354	0.00000			1.282	0.2 Comprs.
0.25	-1.49646	0.00000	0.23		1.274	0.6 Comprs.
0.50	-1.50549	0.00000	0.26		1.250	1.6 Comprs.
1.00	-1.52022	0.00000	0.25		1.211	3.3 Comprs.
2.00	-1.55249	0.00000	0.21	0.006	1.126	7.0 Comprs.
4.00	-1.62819	0.00000	0.05		0.927	15.8 Comprs.
8.00	-1.71020	0.00000	0.03		0.710	25.2 Comprs.
12.00	-1.75832	0.00000	0.03		0.583	30.8 Comprs.
3.00	-1.70675	0.00000	0.08		0.719	24.8 Comprs.
0.75	-1.66621	0.00000	0.01		0.826	20.1 Comprs.
0.19	-1.62850	0.00000	0.01		0.926	15.8 Comprs.

C_c = 0.72 P_c = 2.00 tsf C_r = 0.19

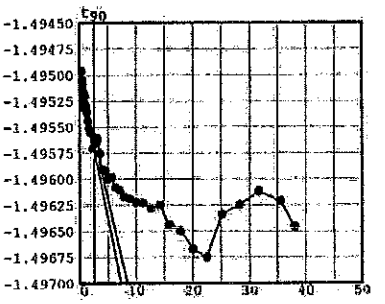
Pressure: 0.16 tsf — **TEST READINGS** — **Load No. 1**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.49156	16	2.45	-1.49347	31	79.38	-1.49402
2	0.03	-1.49157	17	3.10	-1.49342	32	99.95	-1.49411
3	0.05	-1.49155	18	3.92	-1.49340	33	125.85	-1.49411
4	0.08	-1.49156	19	4.95	-1.49343	34	158.45	-1.49402
5	0.13	-1.49158	20	6.25	-1.49338	35	199.48	-1.49406
6	0.18	-1.49157	21	7.88	-1.49349	36	251.13	-1.49403
7	0.25	-1.49161	22	9.95	-1.49349	37	316.18	-1.49389
8	0.33	-1.49162	23	12.53	-1.49348	38	398.05	-1.49372
9	0.43	-1.49156	24	15.80	-1.49345	39	501.13	-1.49363
10	0.57	-1.49179	25	19.90	-1.49345	40	630.90	-1.49356
11	0.73	-1.49186	26	25.07	-1.49349	41	794.27	-1.49358
12	0.93	-1.49186	27	31.57	-1.49347	42	999.93	-1.49352
13	1.20	-1.49346	28	39.77	-1.48814	43	1116.80	-1.49354
14	1.52	-1.49344	29	50.07	-1.49427			
15	1.93	-1.49351	30	63.05	-1.49405			

Void Ratio = 1.282 **Compression** = 0.2 %

Pressure: 0.25 tsf — **TEST READINGS** — **Load No. 2**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.49465	24	12.73	-1.49575
2	0.12	-1.49496	25	16.00	-1.49591
3	0.22	-1.49505	26	20.10	-1.49592
4	0.23	-1.49509	27	25.27	-1.49600
5	0.27	-1.49515	28	31.78	-1.49598
6	0.32	-1.49517	29	39.97	-1.49608
7	0.37	-1.49524	30	50.28	-1.49611
8	0.43	-1.49517	31	63.27	-1.49617
9	0.52	-1.49521	32	79.60	-1.49619
10	0.62	-1.49529	33	100.17	-1.49622
11	0.75	-1.49520	34	126.07	-1.49623
12	0.92	-1.49532	35	158.67	-1.49628
13	1.13	-1.49530	36	199.70	-1.49625
14	1.38	-1.49536	37	251.37	-1.49644
15	1.72	-1.49535	38	316.40	-1.49650
16	2.13	-1.49544	39	398.28	-1.49667
17	2.65	-1.49551	40	501.37	-1.49675
18	3.30	-1.49555	41	631.13	-1.49634
19	4.12	-1.49556	42	794.50	-1.49625
20	5.15	-1.49570	43	1000.15	-1.49612
21	6.45	-1.49563	44	1259.07	-1.49621
22	8.08	-1.49565	45	1440.15	-1.49646
23	10.15	-1.49561			



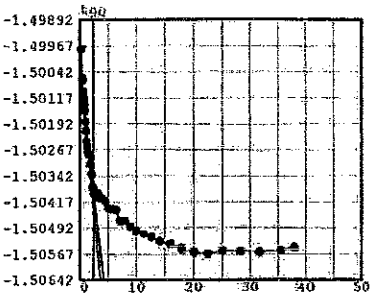
Void Ratio = 1.274 **Compression** = 0.6 %

D_0 = -1.49503 D_{90} = -1.49563 D_{100} = -1.49570

C_v **at 6.8 min.** = 0.23 ft.^{2}/day

Pressure: 0.50 tsf **TEST READINGS** **Load No. 3**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.49817	24	12.75	-1.50403
2	0.08	-1.49977	25	16.02	-1.50408
3	0.18	-1.50059	26	20.12	-1.50416
4	0.22	-1.50066	27	25.28	-1.50435
5	0.25	-1.50096	28	31.80	-1.50438
6	0.30	-1.50097	29	39.98	-1.50440
7	0.35	-1.50112	30	50.30	-1.50471
8	0.42	-1.50117	31	63.27	-1.50472
9	0.50	-1.50126	32	79.62	-1.50489
10	0.62	-1.50139	33	100.18	-1.50501
11	0.73	-1.50154	34	126.07	-1.50510
12	0.92	-1.50185	35	158.67	-1.50520
13	1.12	-1.50212	36	199.70	-1.50532
14	1.38	-1.50242	37	251.37	-1.50538
15	1.72	-1.50254	38	316.42	-1.50552
16	2.13	-1.50273	39	398.28	-1.50561
17	2.65	-1.50282	40	501.37	-1.50566
18	3.30	-1.50307	41	631.13	-1.50558
19	4.13	-1.50336	42	794.50	-1.50559
20	5.17	-1.50374	43	1000.17	-1.50562
21	6.47	-1.50393	44	1259.08	-1.50556
22	8.10	-1.50403	45	1440.15	-1.50549
23	10.17	-1.50392			



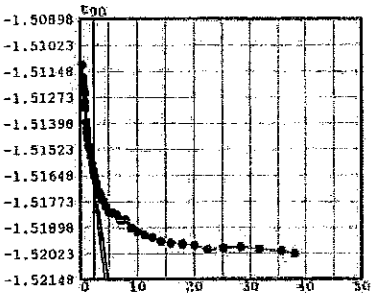
Void Ratio = 1.250 **Compression** = 1.6 %

D_0 = -1.50026 D_{90} = -1.50385 D_{100} = -1.50425

C_v **at 5.9 min.** = 0.26 ft.^{2}/day

Pressure: 1.00 tsf **TEST READINGS** **Load No. 4**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.50725	24	12.75	-1.51746
2	0.10	-1.51117	25	16.02	-1.51769
3	0.20	-1.51175	26	20.12	-1.51798
4	0.23	-1.51206	27	25.28	-1.51825
5	0.27	-1.51217	28	31.78	-1.51829
6	0.30	-1.51222	29	39.98	-1.51840
7	0.35	-1.51231	30	50.28	-1.51866
8	0.42	-1.51240	31	63.27	-1.51863
9	0.52	-1.51252	32	79.62	-1.51900
10	0.62	-1.51294	33	100.18	-1.51918
11	0.75	-1.51325	34	126.08	-1.51937
12	0.92	-1.51391	35	158.67	-1.51951
13	1.13	-1.51423	36	199.72	-1.51969
14	1.38	-1.51444	37	251.37	-1.51974
15	1.72	-1.51471	38	316.42	-1.51978
16	2.13	-1.51504	39	398.28	-1.51984
17	2.65	-1.51523	40	501.37	-1.52005
18	3.30	-1.51557	41	631.13	-1.51997
19	4.12	-1.51594	42	794.50	-1.51991
20	5.15	-1.51626	43	1000.17	-1.52002
21	6.47	-1.51655	44	1259.08	-1.52011
22	8.10	-1.51685	45	1440.05	-1.52022
23	10.15	-1.51723			



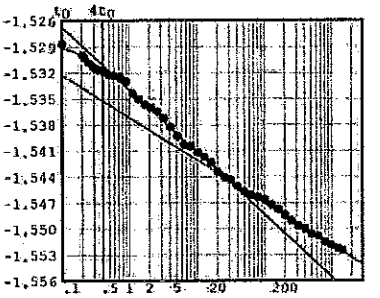
Void Ratio = 1.211 **Compression** = 3.3 %

D_0 = -1.51139 D_{90} = -1.51644 D_{100} = -1.51700

C_v **at 6.0 min.** = 0.25 ft.^{2}/day

Pressure: 2.00 tsf **TEST READINGS** **Load No. 5**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.52389	24	12.72	-1.54171
2	0.10	-1.52864	25	15.98	-1.54233
3	0.20	-1.52999	26	20.08	-1.54347
4	0.22	-1.53027	27	25.25	-1.54404
5	0.25	-1.53089	28	31.77	-1.54439
6	0.30	-1.53147	29	39.95	-1.54511
7	0.35	-1.53169	30	50.27	-1.54571
8	0.42	-1.53177	31	63.23	-1.54611
9	0.50	-1.53225	32	79.58	-1.54636
10	0.60	-1.53238	33	100.15	-1.54662
11	0.73	-1.53250	34	126.05	-1.54724
12	0.90	-1.53297	35	158.63	-1.54772
13	1.12	-1.53439	36	199.67	-1.54841
14	1.37	-1.53501	37	251.33	-1.54906
15	1.70	-1.53566	38	316.38	-1.54966
16	2.12	-1.53607	39	398.25	-1.55000
17	2.63	-1.53649	40	501.33	-1.55062
18	3.28	-1.53726	41	631.10	-1.55083
19	4.10	-1.53825	42	794.47	-1.55151
20	5.13	-1.53933	43	1000.13	-1.55189
21	6.43	-1.54029	44	1259.05	-1.55226
22	8.07	-1.54049	45	1440.22	-1.55249
23	10.13	-1.54116			



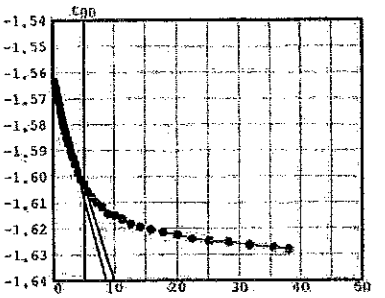
Void Ratio = 1.126 **Compression** = 7.0 %

D_0 = -1.52675 D_{50} = -1.53539 D_{100} = -1.54402

C_v **at 1.6 min.** = 0.21 ft.^{2}/day C_α = 0.006

Pressure: 4.00 tsf **TEST READINGS** **Load No. 6**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.55782	24	12.73	-1.59540
2	0.10	-1.56399	25	16.00	-1.59856
3	0.20	-1.56604	26	20.10	-1.60120
4	0.23	-1.56635	27	25.27	-1.60305
5	0.27	-1.56719	28	31.78	-1.60593
6	0.32	-1.56767	29	39.97	-1.60791
7	0.37	-1.56834	30	50.28	-1.61009
8	0.43	-1.56917	31	63.25	-1.61161
9	0.52	-1.56944	32	79.58	-1.61412
10	0.62	-1.57024	33	100.15	-1.61485
11	0.75	-1.57106	34	126.05	-1.61650
12	0.92	-1.57171	35	158.65	-1.61826
13	1.12	-1.57246	36	199.68	-1.61926
14	1.38	-1.57461	37	251.35	-1.62038
15	1.70	-1.57585	38	316.38	-1.62134
16	2.13	-1.57733	39	398.27	-1.62243
17	2.65	-1.57914	40	501.35	-1.62405
18	3.30	-1.58087	41	631.12	-1.62486
19	4.12	-1.58288	42	794.48	-1.62523
20	5.15	-1.58540	43	1000.15	-1.62641
21	6.45	-1.58743	44	1259.07	-1.62730
22	8.08	-1.59039	45	1440.08	-1.62819
23	10.15	-1.59265			



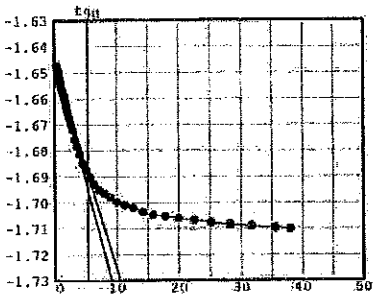
Void Ratio = 0.927 **Compression** = 15.8 %

D_0 = -1.56472 D_{90} = -1.60361 D_{100} = -1.60793

C_v **at 26.5 min.** = 0.05 ft.^{2}/day

Pressure: 8.00 tsf **TEST READINGS** **Load No. 7**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.63733	24	12.73	-1.67839
2	0.08	-1.64715	25	16.00	-1.68134
3	0.18	-1.64845	26	20.12	-1.68481
4	0.22	-1.64897	27	25.28	-1.68738
5	0.27	-1.64944	28	31.78	-1.69027
6	0.32	-1.65007	29	39.98	-1.69305
7	0.37	-1.65053	30	50.28	-1.69511
8	0.43	-1.65092	31	63.27	-1.69644
9	0.52	-1.65179	32	79.60	-1.69795
10	0.62	-1.65266	33	100.17	-1.69975
11	0.75	-1.65298	34	126.07	-1.70096
12	0.92	-1.65468	35	158.67	-1.70221
13	1.12	-1.65589	36	199.70	-1.70370
14	1.38	-1.65680	37	251.37	-1.70488
15	1.72	-1.65792	38	316.40	-1.70558
16	2.13	-1.65880	39	398.28	-1.70613
17	2.65	-1.66054	40	501.37	-1.70669
18	3.30	-1.66294	41	631.13	-1.70774
19	4.12	-1.66503	42	794.50	-1.70842
20	5.15	-1.66722	43	1000.17	-1.70902
21	6.45	-1.66960	44	1259.08	-1.70974
22	8.08	-1.67200	45	1440.27	-1.71020
23	10.15	-1.67584			



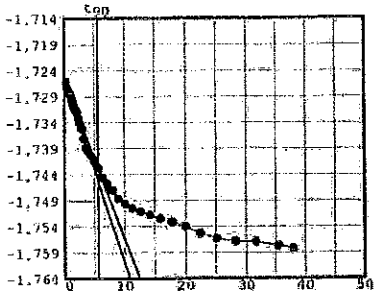
Void Ratio = 0.710 **Compression** = 25.2 %

D_0 = -1.64630 D_{90} = -1.68900 D_{100} = -1.69374

C_v **at 28.8 min.** = 0.03 ft.^{2}/day

Pressure: 12.00 tsf **TEST READINGS** **Load No. 8**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.71826	24	12.73	-1.73880
2	0.08	-1.72609	25	16.00	-1.73974
3	0.18	-1.72705	26	20.10	-1.74047
4	0.22	-1.72725	27	25.27	-1.74165
5	0.25	-1.72741	28	31.78	-1.74273
6	0.30	-1.72742	29	39.97	-1.74467
7	0.35	-1.72754	30	50.28	-1.74576
8	0.42	-1.72779	31	63.25	-1.74702
9	0.50	-1.72793	32	79.60	-1.74869
10	0.62	-1.72835	33	100.17	-1.74965
11	0.75	-1.72858	34	126.05	-1.75050
12	0.90	-1.72873	35	158.65	-1.75109
13	1.12	-1.72871	36	199.68	-1.75173
14	1.38	-1.72925	37	251.35	-1.75247
15	1.72	-1.72967	38	316.38	-1.75310
16	2.12	-1.73063	39	398.27	-1.75397
17	2.63	-1.73115	40	501.35	-1.75526
18	3.30	-1.73141	41	631.10	-1.75627
19	4.12	-1.73195	42	794.47	-1.75683
20	5.15	-1.73314	43	1000.13	-1.75694
21	6.45	-1.73420	44	1259.05	-1.75775
22	8.08	-1.73512	45	1440.40	-1.75832
23	10.15	-1.73708			



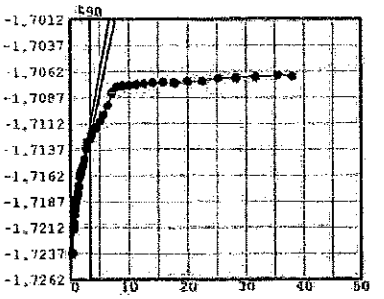
Void Ratio = 0.583 **Compression** = 30.8 %

D_0 = -1.72530 D_{90} = -1.74256 D_{100} = -1.74447

C_v **at 30.7 min.** = 0.03 ft.^{2}/day

Pressure: 3.00 tsf **TEST READINGS** **Load No. 9**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.74236	24	12.72	-1.71224
2	0.08	-1.72368	25	15.97	-1.71174
3	0.18	-1.72124	26	20.08	-1.71157
4	0.22	-1.72131	27	25.25	-1.71091
5	0.25	-1.72122	28	31.75	-1.71031
6	0.28	-1.72087	29	39.95	-1.70951
7	0.35	-1.72071	30	50.27	-1.70828
8	0.42	-1.71988	31	63.23	-1.70772
9	0.50	-1.71941	32	79.58	-1.70764
10	0.60	-1.71874	33	100.15	-1.70755
11	0.73	-1.71842	34	126.03	-1.70746
12	0.90	-1.71831	35	158.63	-1.70738
13	1.10	-1.71821	36	199.67	-1.70729
14	1.37	-1.71782	37	251.33	-1.70726
15	1.68	-1.71718	38	316.37	-1.70733
16	2.10	-1.71630	39	398.25	-1.70717
17	2.62	-1.71589	40	501.32	-1.70714
18	3.27	-1.71558	41	631.10	-1.70685
19	4.08	-1.71520	42	794.47	-1.70683
20	5.12	-1.71463	43	1000.13	-1.70673
21	6.42	-1.71362	44	1259.03	-1.70659
22	8.05	-1.71298	45	1440.28	-1.70675
23	10.12	-1.71277			



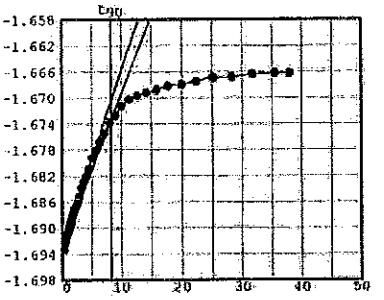
Void Ratio = 0.719 **Compression** = 24.8 %

D_0 = -1.72132 D_{90} = -1.71255 D_{100} = -1.71157

C_v **at 11.2 min.** = 0.08 ft.^{2}/day

Pressure: 0.75 tsf **TEST READINGS** **Load No. 10**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.70027	24	12.72	-1.68289
2	0.10	-1.69324	25	15.98	-1.68206
3	0.20	-1.69223	26	20.08	-1.68091
4	0.22	-1.69205	27	25.25	-1.67917
5	0.25	-1.69190	28	31.75	-1.67813
6	0.30	-1.69183	29	39.95	-1.67675
7	0.35	-1.69162	30	50.25	-1.67542
8	0.42	-1.69128	31	63.23	-1.67376
9	0.52	-1.69129	32	79.57	-1.67268
10	0.62	-1.69111	33	100.13	-1.67128
11	0.75	-1.69091	34	126.03	-1.67028
12	0.92	-1.69057	35	158.63	-1.66970
13	1.12	-1.69009	36	199.68	-1.66924
14	1.38	-1.68978	37	251.33	-1.66886
15	1.70	-1.68938	38	316.38	-1.66830
16	2.12	-1.68896	39	398.25	-1.66799
17	2.63	-1.68822	40	501.33	-1.66762
18	3.28	-1.68774	41	631.10	-1.66693
19	4.12	-1.68715	42	794.47	-1.66681
20	5.13	-1.68663	43	1000.13	-1.66636
21	6.43	-1.68605	44	1259.05	-1.66621
22	8.07	-1.68524	45	1440.20	-1.66621
23	10.13	-1.68386			



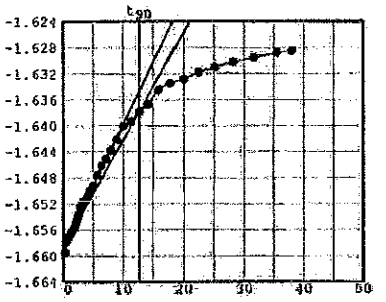
Void Ratio = 0.826 **Compression** = 20.1 %

D_0 = -1.69288 D_{90} = -1.67346 D_{100} = -1.67130

C_v **at 67.6 min.** = 0.01 ft.^{2}/day

Pressure: 0.19 tsf **TEST READINGS** **Load No. 11**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.66178	25	16.02	-1.65095
2	0.08	-1.65948	26	20.12	-1.65003
3	0.20	-1.65786	27	25.28	-1.64916
4	0.23	-1.65763	28	31.80	-1.64763
5	0.27	-1.65758	29	39.98	-1.64620
6	0.30	-1.65751	30	50.30	-1.64520
7	0.37	-1.65733	31	63.27	-1.64381
8	0.43	-1.65729	32	79.60	-1.64221
9	0.52	-1.65726	33	100.18	-1.64002
10	0.63	-1.65709	34	126.07	-1.63936
11	0.77	-1.65708	35	158.67	-1.63784
12	0.93	-1.65681	36	199.70	-1.63669
13	1.13	-1.65674	37	251.37	-1.63454
14	1.40	-1.65651	38	316.40	-1.63360
15	1.73	-1.65640	39	398.28	-1.63288
16	2.15	-1.65612	40	501.35	-1.63179
17	2.67	-1.65591	41	631.12	-1.63100
18	3.32	-1.65569	42	794.48	-1.63023
19	4.13	-1.65505	43	1000.15	-1.62947
20	5.17	-1.65428	44	1259.07	-1.62881
21	6.47	-1.65355	45	1440.48	-1.62861
22	8.10	-1.65240	46	1440.77	-1.62855
23	10.17	-1.65182	47	1441.28	-1.62850
24	12.75	-1.65177			

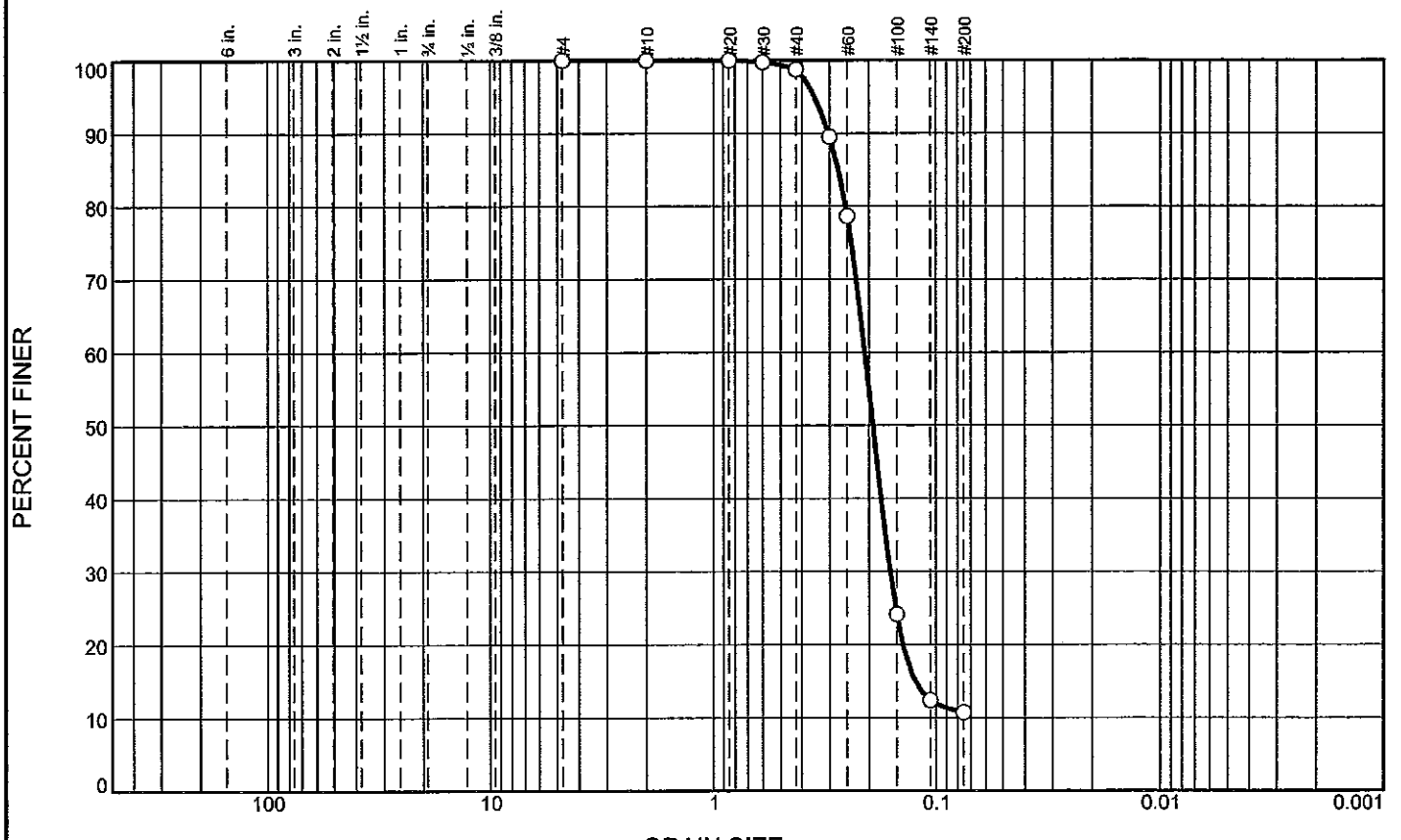


Void Ratio = 0.926 **Compression** = 15.8 %

D_0 = -1.65868 D_{90} = -1.63781 D_{100} = -1.63550

C_v **at 159.5 min.** = 0.01 ft.^{2}/day

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.2	88.1	10.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	100.0		
#20	100.0		
#30	99.8		
#40	98.8		
#50	89.5		
#60	78.6		
#100	24.2		
#140	12.4		
#200	10.7		

* (no specification provided)

Soil Description

GR SM

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.3034 D_{85}= 0.2740 D_{60}= 0.2088
D_{50}= 0.1921 D_{30}= 0.1605 D_{15}= 0.1243
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

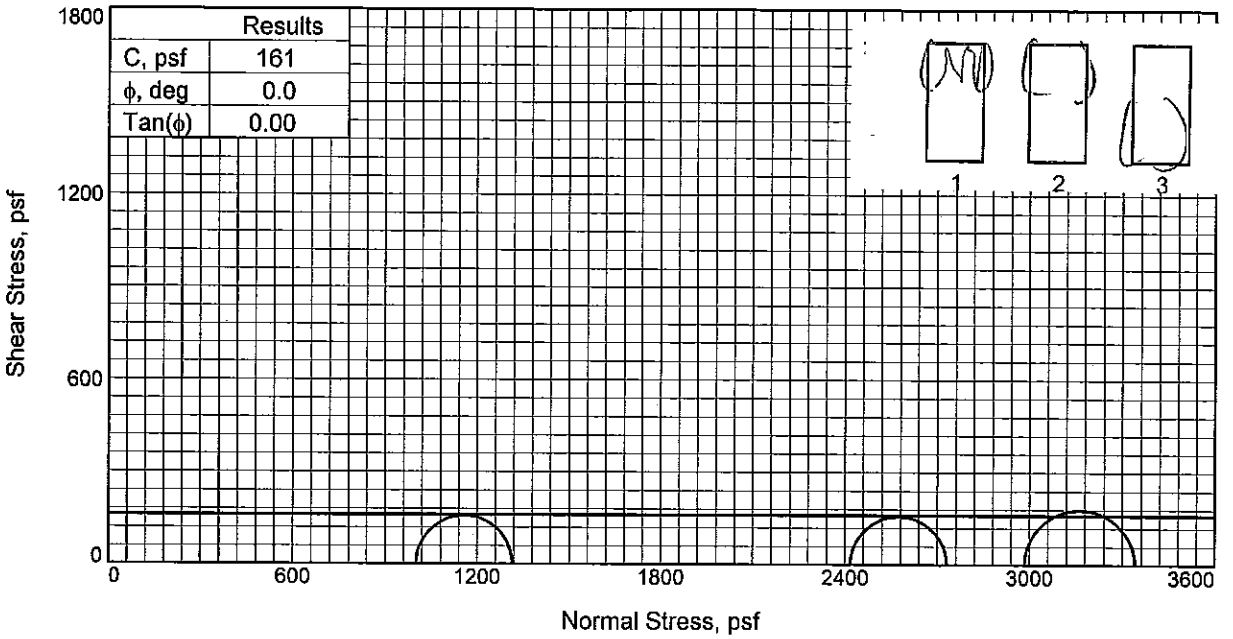
Source of Sample: BSFS-1U **Depth:** 17.0
Sample Number: 5B **Date:** 7/17/2013

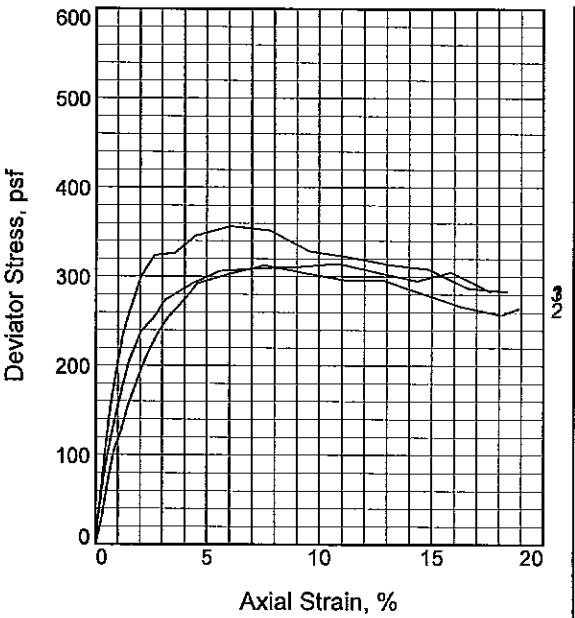
Stantec

Saint Rose, Louisiana

Client: USACE
Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Lousisiana
Project No: 10-017146 **Figure**

Tested By: JC **Checked By:** MJB/JS





Sample No.		1	2	3
Initial	Water Content, %	51.1	51.4	51.4
	Dry Density, pcf	72.5	73.0	72.7
	Saturation, %	104.3	106.2	105.2
	Void Ratio	1.3237	1.3081	1.3185
	Diameter, in.	1.395	1.387	1.387
	Height, in.	2.994	2.995	2.993
At Test	Water Content, %	51.1	51.4	51.4
	Dry Density, pcf	72.5	73.0	72.7
	Saturation, %	104.3	106.2	105.2
	Void Ratio	1.3237	1.3081	1.3185
	Diameter, in.	1.395	1.387	1.387
	Height, in.	2.994	2.995	2.993
Strain rate, in./min.		1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.95	16.79	20.72
Fail. Stress, psf		314	313	356
Strain, %		10.8	7.6	6.1
Ult. Stress, psf		295	280	308
Strain, %		14.4	14.6	14.8
σ_1 Failure, psf		1315	2730	3340
σ_3 Failure, psf		1001	2418	2984

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: VSO GR CL6 W/ LNS ML

LL= 45 **PL=** 15 **PI=** 30
Assumed Specific Gravity= 2.70
Remarks: Torvane=0.17 tsf

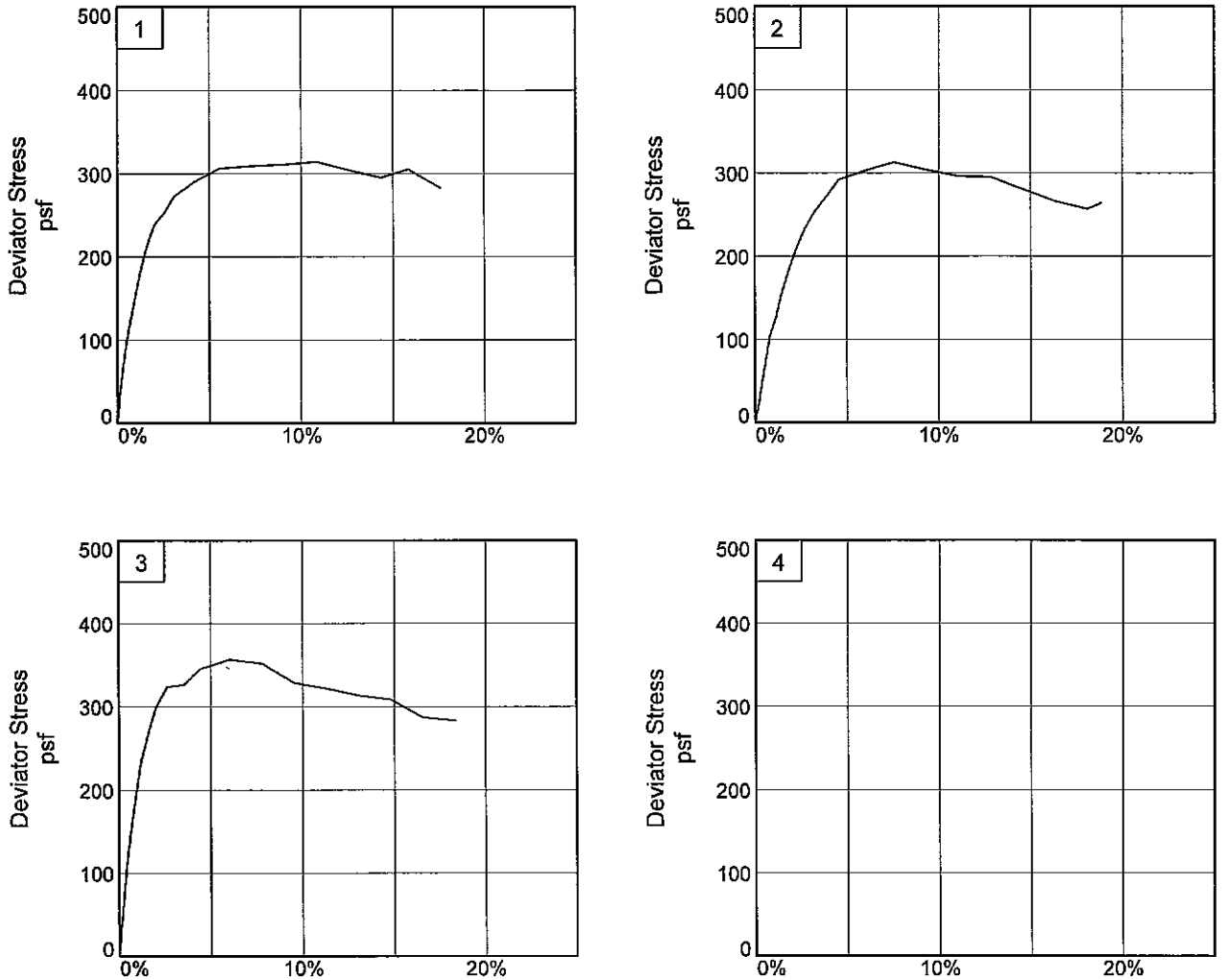
Figure _____

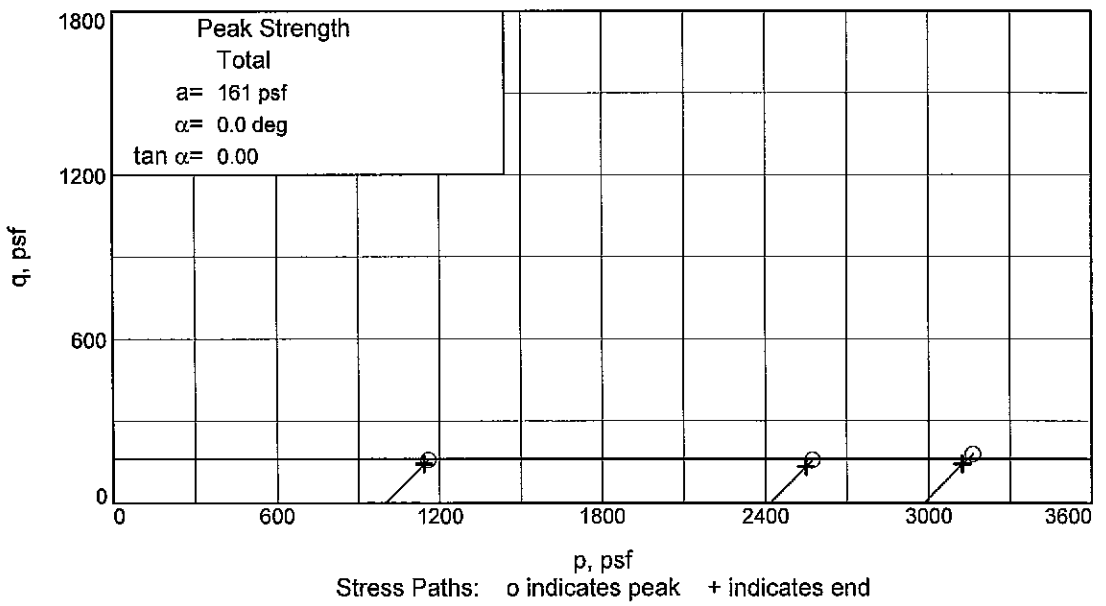
Client: USACE

Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Lousisiana
Source of Sample: BSFS-1U **Depth:** 13.0
Sample Number: 4B
Proj. No.: 10-017146 **Date Sampled:** 7/16/2013

TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

Tested By: JC **Checked By:** MJB/JS





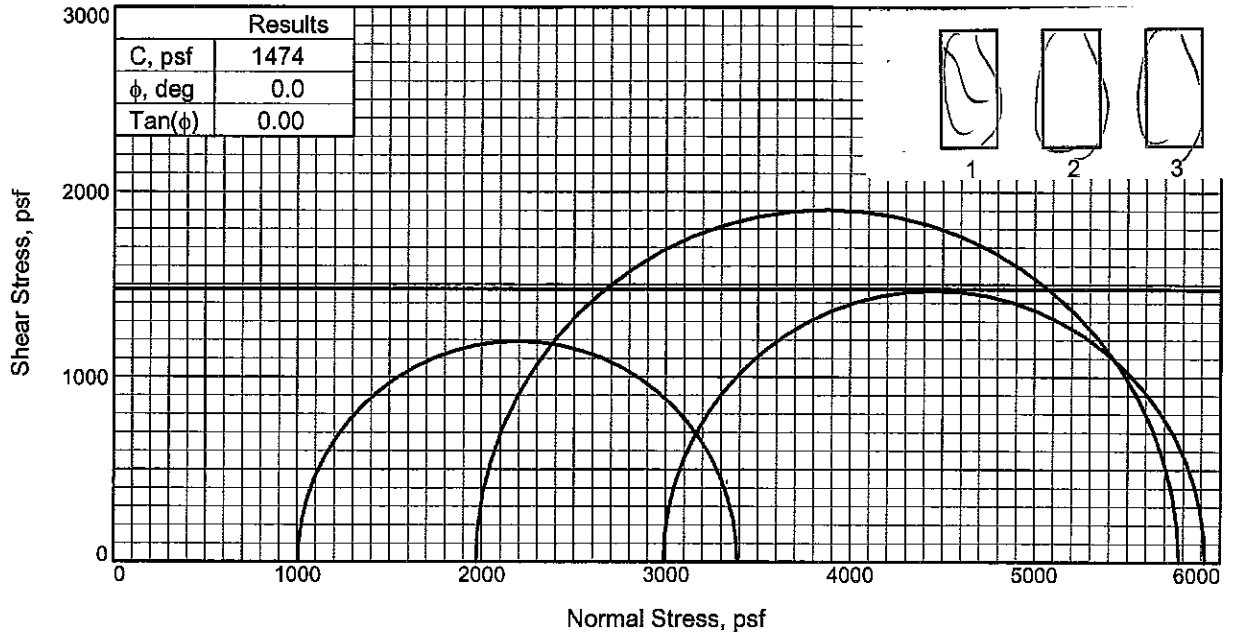
Client: USACE

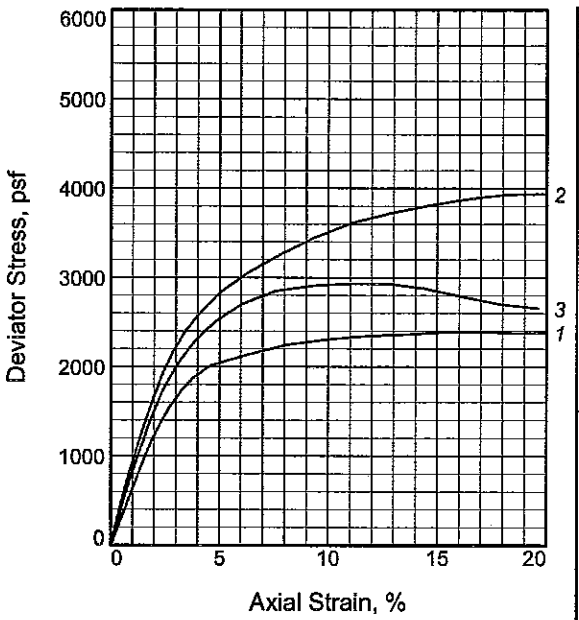
Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Lousisiana

Source of Sample: BSFS-1U **Depth:** 13.0 **Sample Number:** 4B

Project No.: 175561309 **Figure** _____ **Stantec, Inc.**

Tested By: JC **Checked By:** MJB/JS





Sample No.		1	2	3
Initial	Water Content, %	21.4	19.0	20.8
	Dry Density, pcf	106.5	112.9	111.7
	Saturation, %	99.2	104.3	110.3
	Void Ratio	0.5828	0.4928	0.5092
	Diameter, in.	1.411	1.411	1.411
	Height, in.	2.992	2.996	2.996
At Test	Water Content, %	21.4	19.0	20.8
	Dry Density, pcf	106.5	112.9	111.7
	Saturation, %	99.2	104.3	110.3
	Void Ratio	0.5828	0.4928	0.5092
	Diameter, in.	1.411	1.411	1.411
	Height, in.	2.992	2.996	2.996
Strain rate, in./min.		1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.97	13.68	20.75
Fail. Stress, psf		2383	3806	2931
Strain, %		15.1	14.6	11.1
Ult. Stress, psf		2383	3806	2881
Strain, %		15.1	14.6	14.3
σ_1 Failure, psf		3387	5776	5919
σ_3 Failure, psf		1004	1970	2988

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: ST GR & T CL4 W/ ARS CH

LL= 31 **PL=** 8 **PI=** 23
Assumed Specific Gravity= 2.70
Remarks: Torvane=0.52 tsf

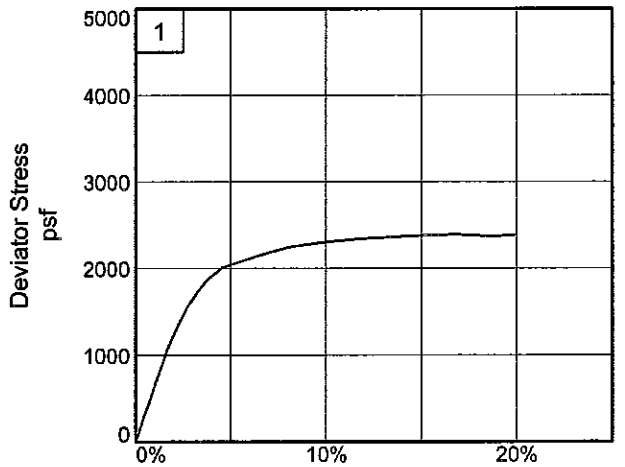
Client: USACE

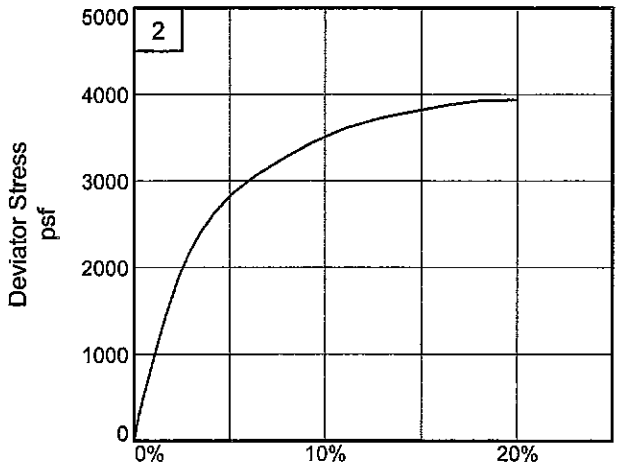
Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Lousisiana
Source of Sample: BSFS-1U **Depth:** 25.0
Sample Number: 7B
Proj. No.: 10-017146 **Date Sampled:** 7/16/2013

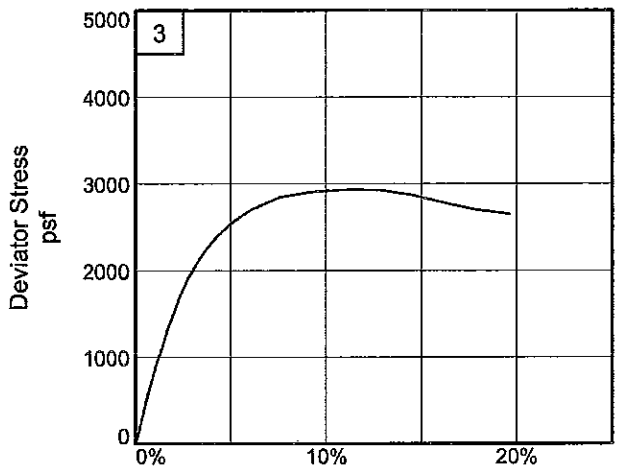
TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

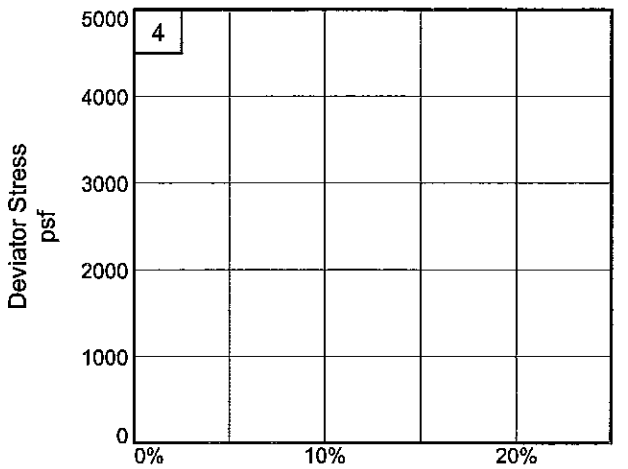
Figure _____

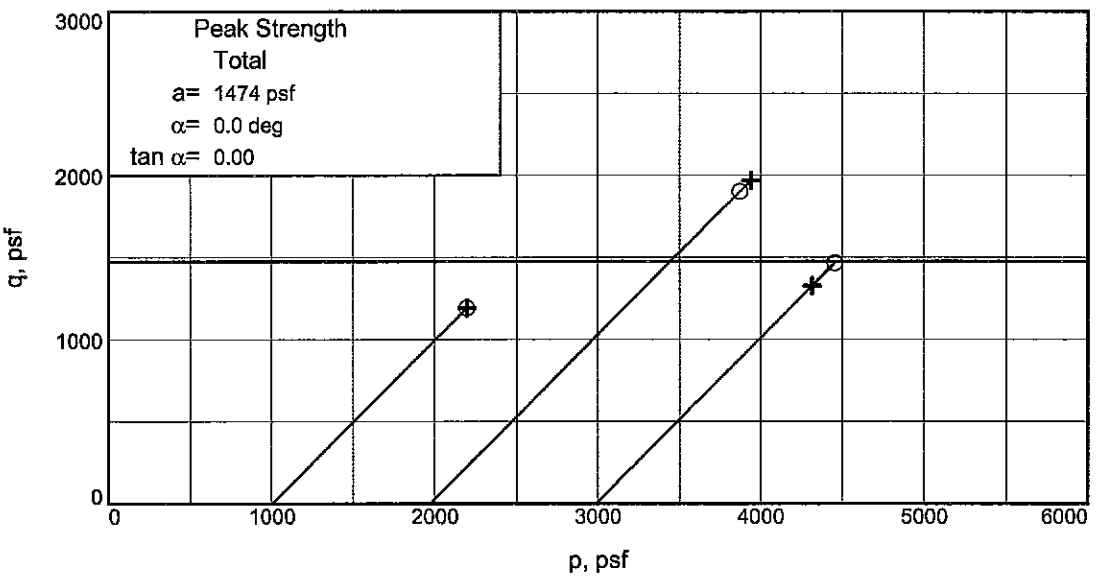
Tested By: JC **Checked By:** MJB/JS











Stress Paths: o indicates peak + indicates end

Client: USACE

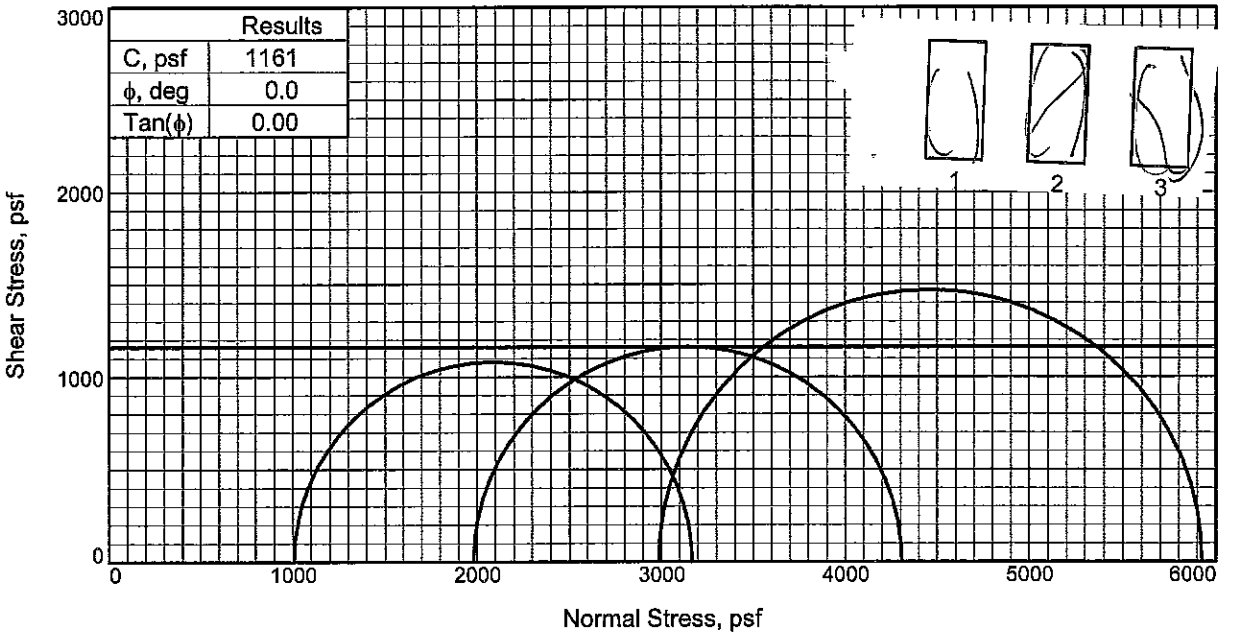
Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Lousisiana

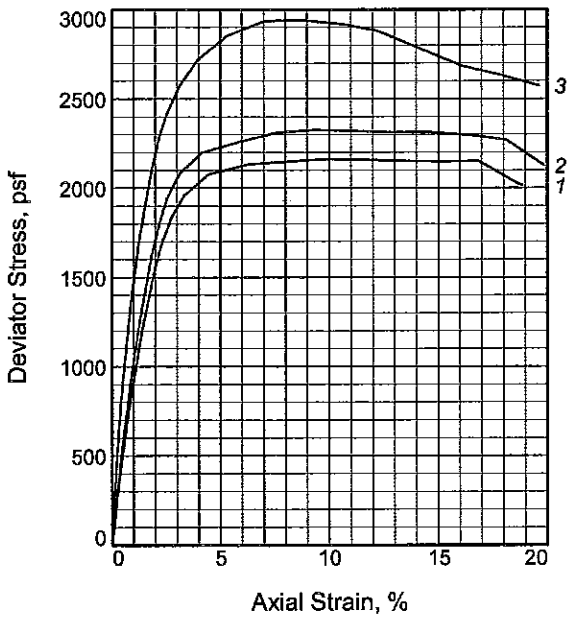
Source of Sample: BSFS-1U **Depth:** 25.0 **Sample Number:** 7B

Project No.: 175561309 **Figure** _____

Stantec, Inc.

Tested By: JC **Checked By:** MJB/JS





Sample No.		1	2	3
Initial	Water Content, %	27.7	28.7	24.5
	Dry Density, pcf	97.6	97.3	101.0
	Saturation, %	103.0	105.8	98.9
	Void Ratio	0.7270	0.7325	0.6685
	Diameter, in.	1.404	1.412	1.410
	Height, in.	3.002	3.002	2.987
At Test	Water Content, %	27.7	28.7	24.5
	Dry Density, pcf	97.6	97.3	101.0
	Saturation, %	103.0	105.8	98.9
	Void Ratio	0.7270	0.7325	0.6685
	Diameter, in.	1.404	1.412	1.410
	Height, in.	3.002	3.002	2.987
Strain rate, in./min.		1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.98	13.75	20.74
Fail. Stress, psf		2162	2325	2940
Strain, %		9.8	9.3	8.8
Ult. Stress, psf		2148	2314	2771
Strain, %		15.1	12.8	14.3
σ_1 Failure, psf		3167	4305	5926
σ_3 Failure, psf		1005	1980	2987

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: ST T & GNG CL6 W/ ARS SM

LL= 43 **PL=** 12 **PI=** 31
Assumed Specific Gravity= 2.70
Remarks: Torvane=0.67 tsf

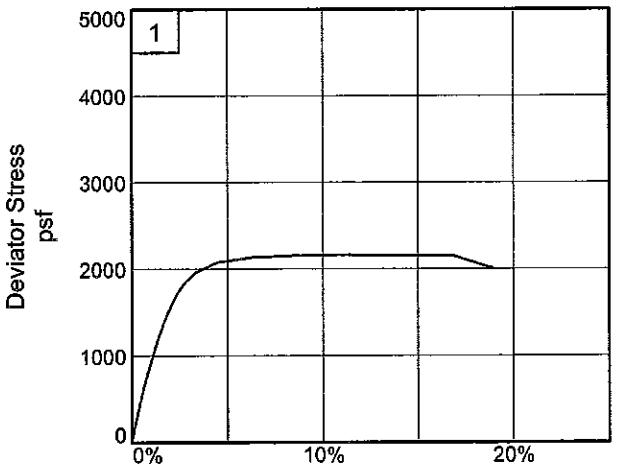
Client: USACE

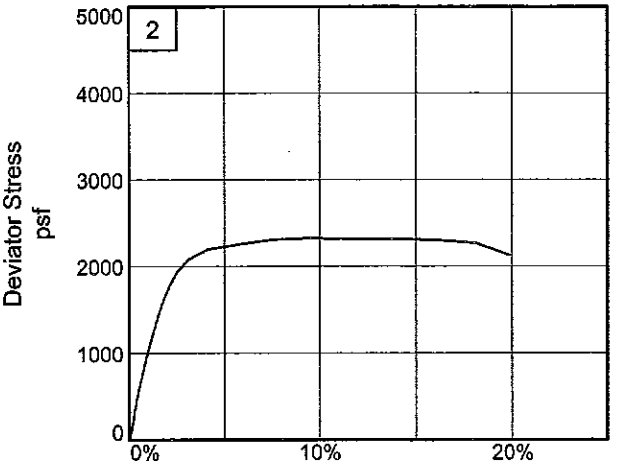
Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Lousisiana
Source of Sample: BSFS-1U **Depth:** 30.0
Sample Number: 8C
Proj. No.: 10-017146 **Date Sampled:** 7/16/2013

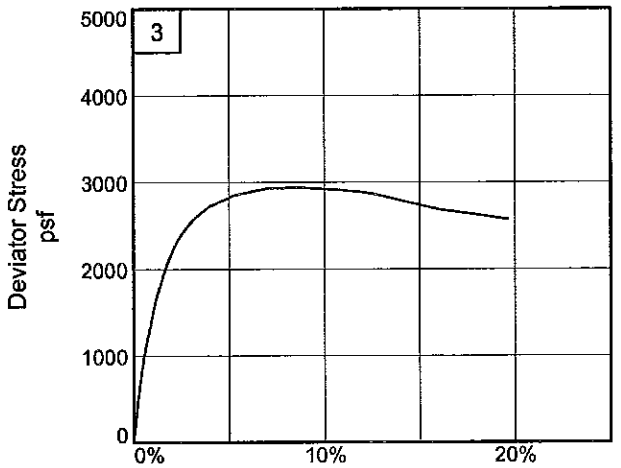
TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

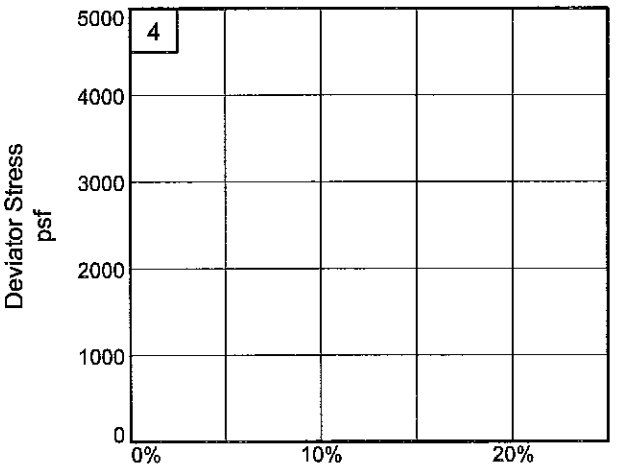
Figure _____

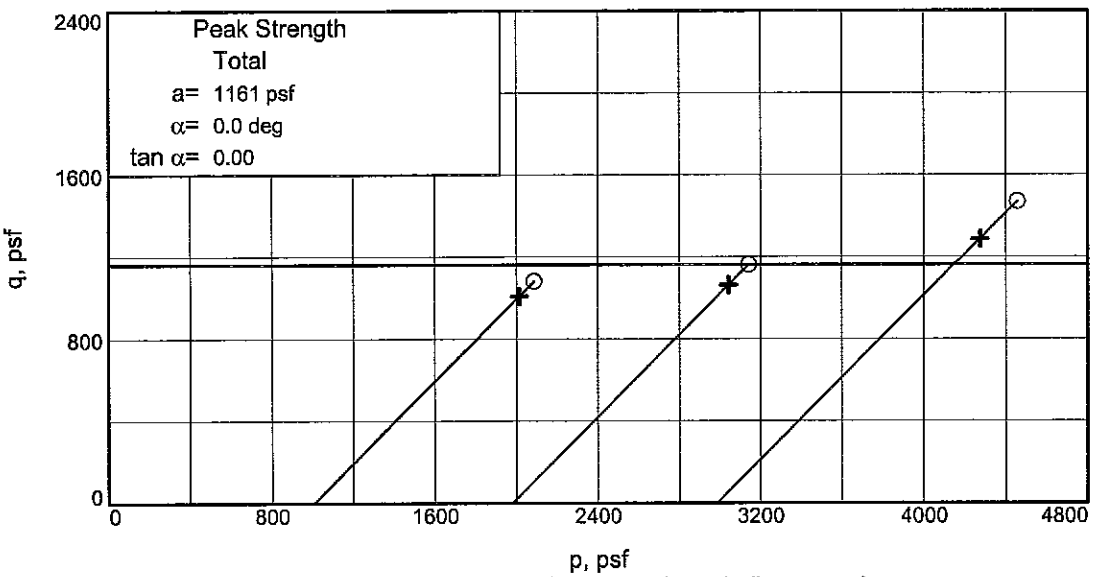
Tested By: JC **Checked By:** MJB/JS











Stress Paths: o indicates peak + indicates end

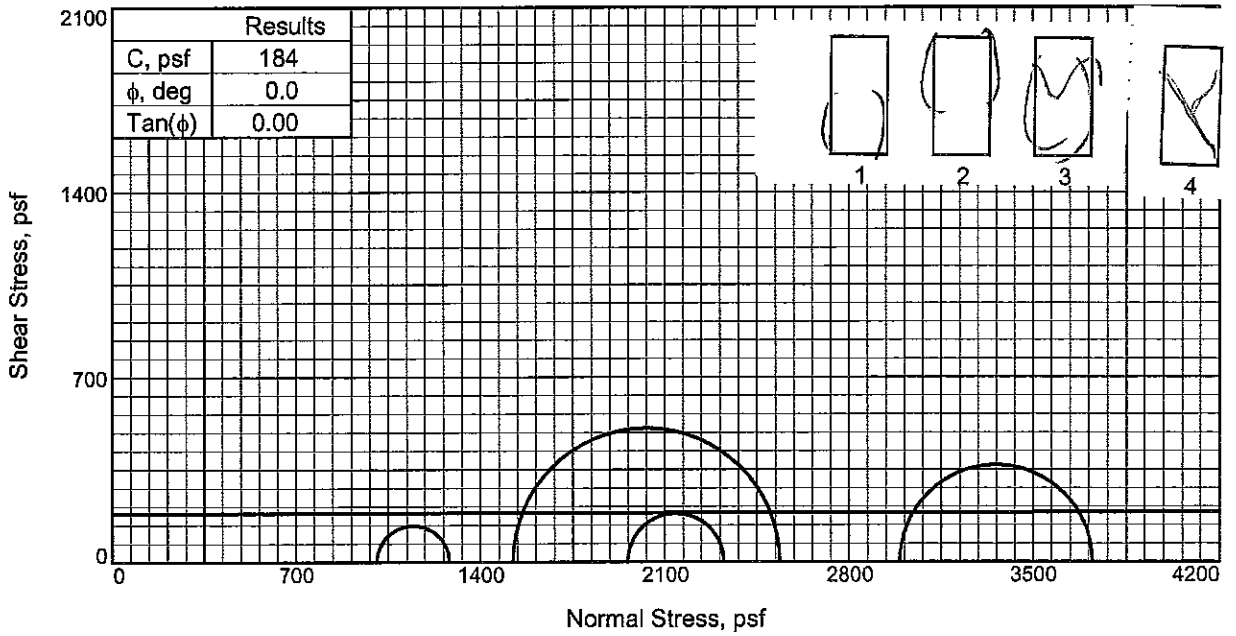
Client: USACE

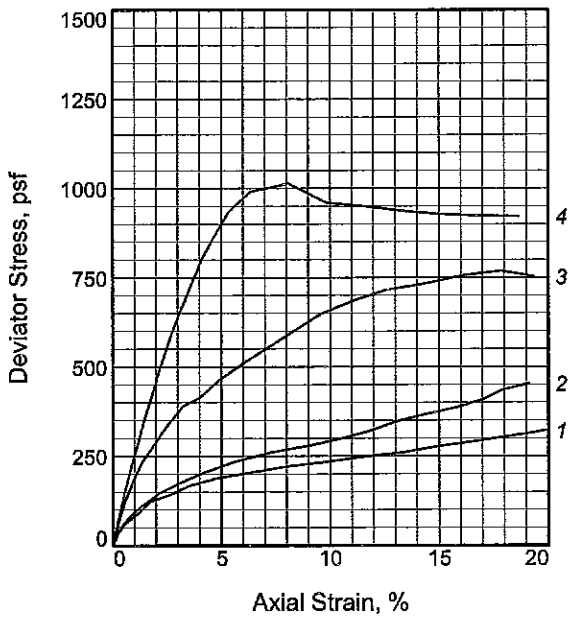
Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Lousisiana

Source of Sample: BSFS-1U **Depth:** 30.0 **Sample Number:** 8C

Project No.: 175561309 **Figure** _____ **Stantec, Inc.**

Tested By: JC **Checked By:** MJB/JS





Sample No.		1	2	3	4
Initial	Water Content, %	35.6	34.8	35.9	35.0
	Dry Density, pcf	88.7	91.5	89.2	88.8
	Saturation, %	106.0	110.6	107.9	104.5
	Void Ratio	0.9133	0.8565	0.9038	0.9112
	Diameter, in.	1.395	1.396	1.397	1.409
	Height, in.	2.975	2.972	2.984	2.947
At Test	Water Content, %	35.6	34.8	35.9	35.0
	Dry Density, pcf	88.7	91.5	89.2	88.8
	Saturation, %	106.0	110.6	107.9	104.5
	Void Ratio	0.9133	0.8565	0.9038	0.9112
	Diameter, in.	1.395	1.396	1.397	1.409
	Height, in.	2.975	2.972	2.984	2.947
Strain rate, in./min.		1.000	1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00	0.00
Cell Pressure, psi		6.99	13.59	20.77	10.57
Fail. Stress, psf		276	368	733	1014
Strain, %		14.8	14.4	14.3	8.1
Ult. Stress, psf		276	368	733	928
Strain, %		14.8	14.4	14.3	15.1
σ_1 Failure, psf		1283	2324	3724	2536
σ_3 Failure, psf		1007	1957	2991	1522

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: VSO T & GNG CL6 W/ LNS ML

LL= 40 **PL=** 17 **PI=** 23
Assumed Specific Gravity= 2.72
Remarks: Torvane=0.12 tsf

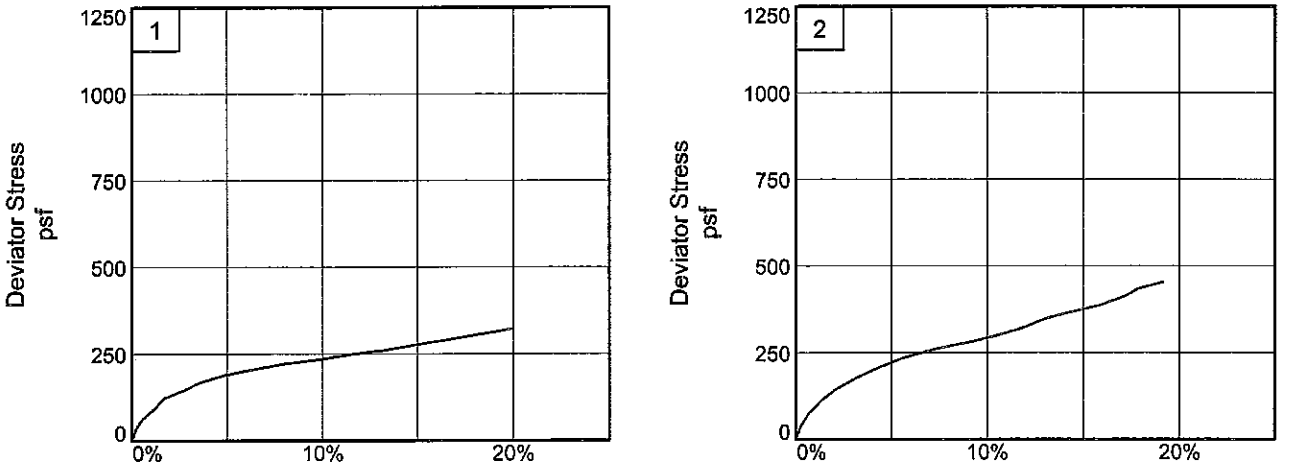
Client: USACE

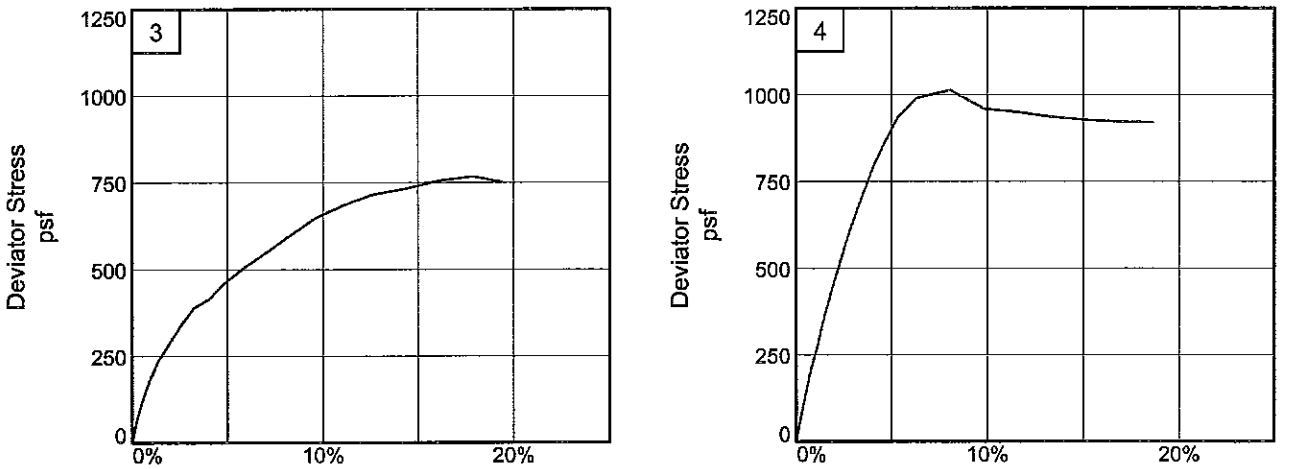
Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Lousisiana
Source of Sample: BSFS-1U **Depth:** 32.0
Sample Number: 9A
Proj. No.: 10-017146 **Date Sampled:** 7/17/2013

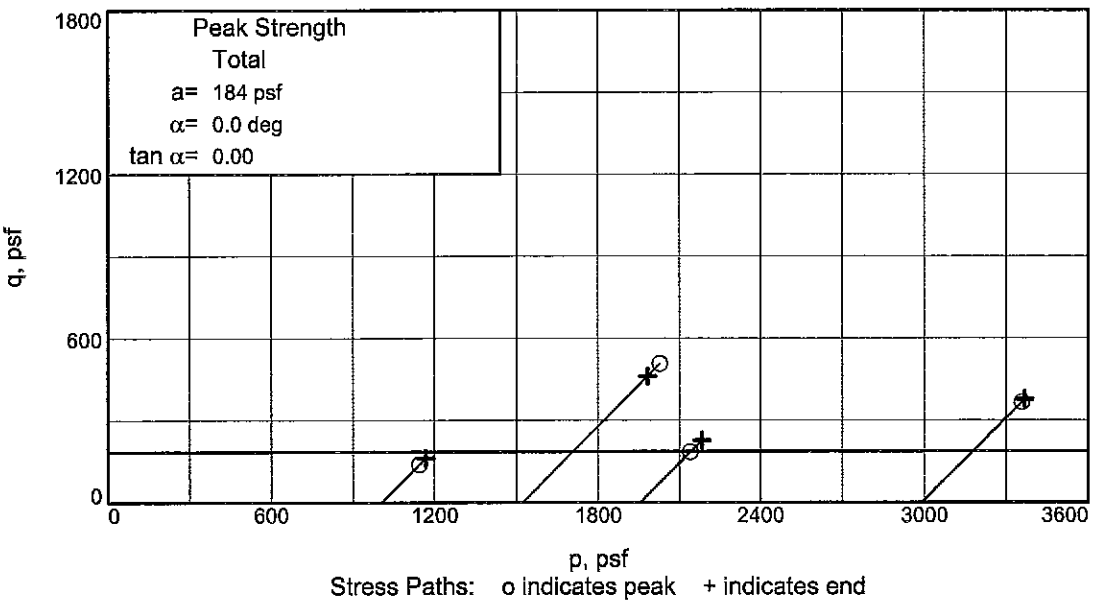
TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

Figure _____

Tested By: JC **Checked By:** MJB/JS







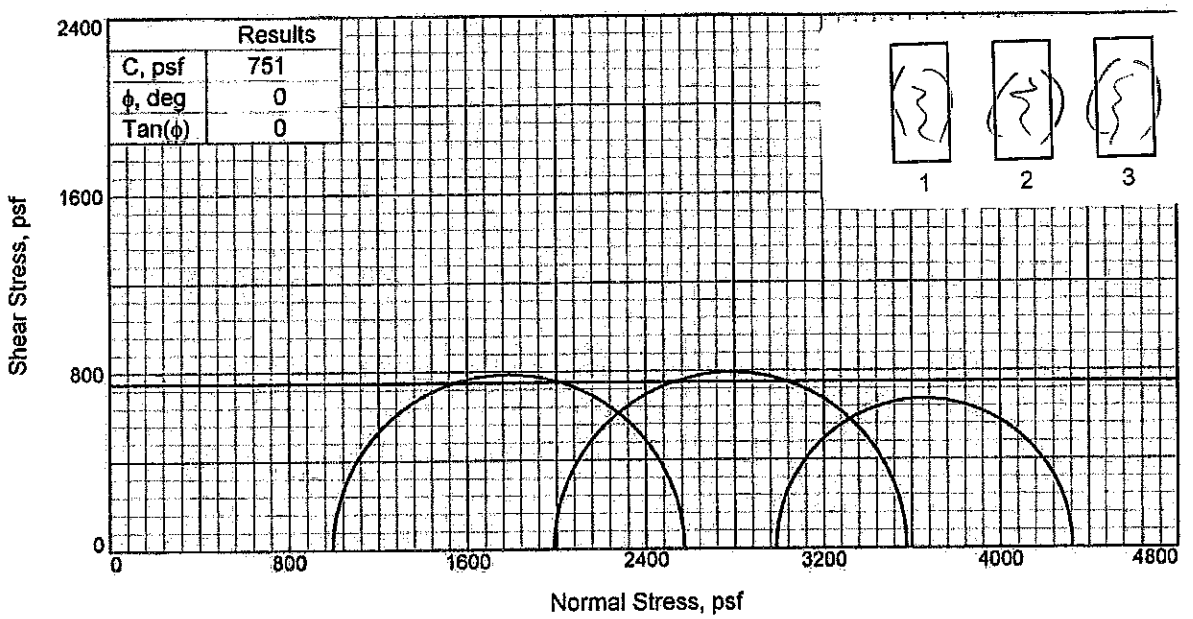
Client: USACE

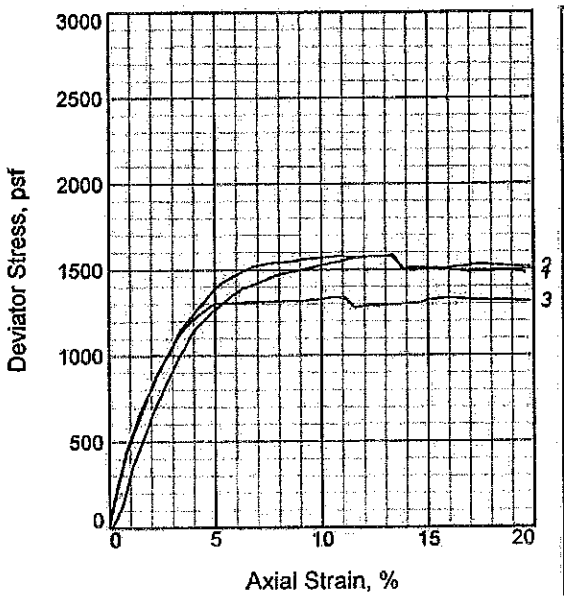
Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Lousisiana

Source of Sample: BSFS-1U **Depth:** 32.0 **Sample Number:** 9A

Project No.: 175561309 **Figure** _____ **Stantec, Inc.**

Tested By: JC **Checked By:** MJB/JS





Sample No.		1	2	3
Initial	Water Content, %	39.1	33.5	46.8
	Dry Density, pcf	78.8	85.5	74.6
	Saturation, %	92.5	92.7	99.9
	Void Ratio	1.1473	0.9782	1.2686
	Diameter, in.	1.387	1.408	1.389
	Height, in.	3.124	3.134	3.148
At Test	Water Content, %	42.3	36.1	46.8
	Dry Density, pcf	78.8	85.5	74.6
	Saturation, %	100.0	100.0	100.0
	Void Ratio	1.1473	0.9782	1.2686
	Diameter, in.	1.387	1.408	1.389
	Height, in.	3.124	3.134	3.148
Strain rate, %/min.		1.00	1.00	1.00
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.89	13.80	20.72
Fail. Stress, psf		1576	1587	1341
Strain, %		13.3	13.3	10.6
Ult. Stress, psf		1508	1496	1276
Strain, %		13.8	14.3	11.6
σ_1 Failure, psf		2568	3574	4324
σ_3 Failure, psf		992	1987	2984

Type of Test:
Unconsolidated Undrained
Sample Type: Undisturbed
Description: M GR CL4 W/ LNS SP

LL= 36 **PL=** 21 **PI=** 15
Specific Gravity= 2.71
Remarks: Date Tested: 07-17-2013
PP = 0.50 tsf

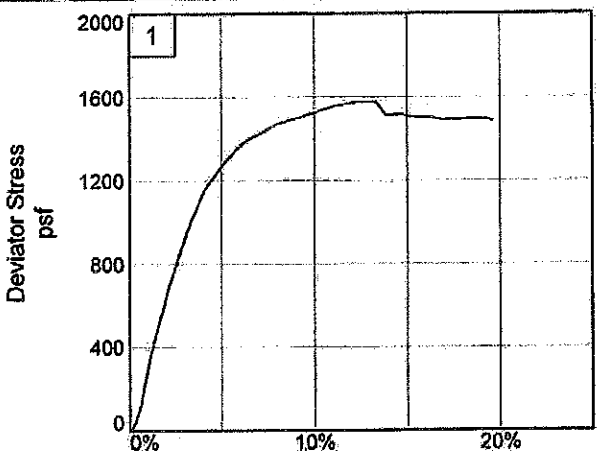
Figure _____

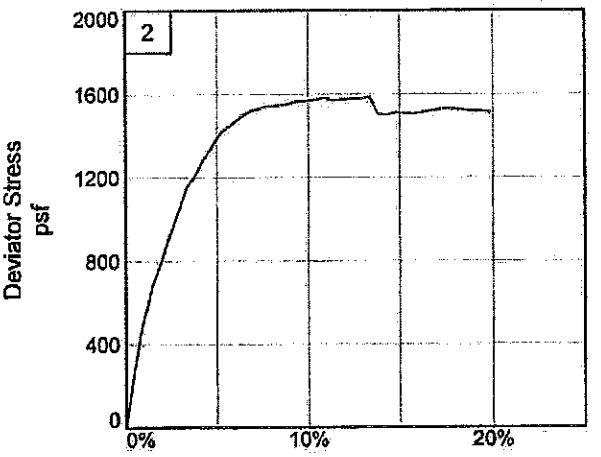
Client: USACE

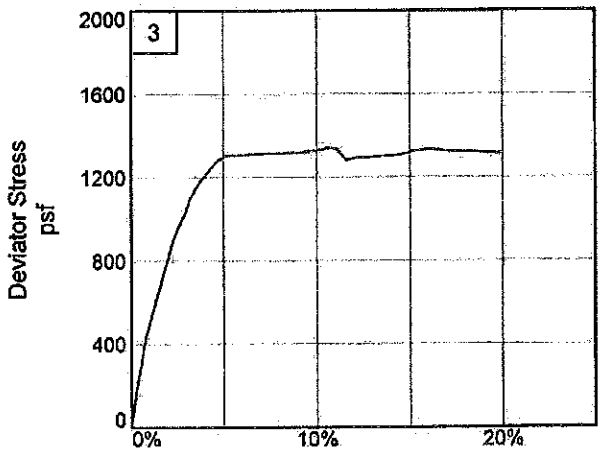
Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Louisiana
Source of Sample: BSFS-1U **Depth:** 45.5'
Sample Number: 12C
Proj. No.: 10-017146 **Date Sampled:**

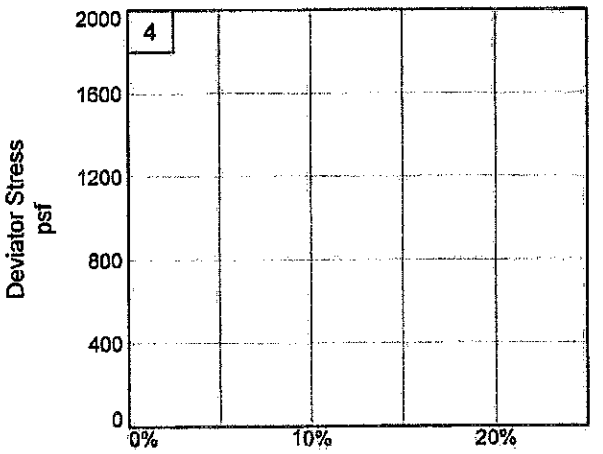
TRIAXIAL SHEAR TEST REPORT
BURNS COOLEY DENNIS, INC.
Ridgeland, Mississippi

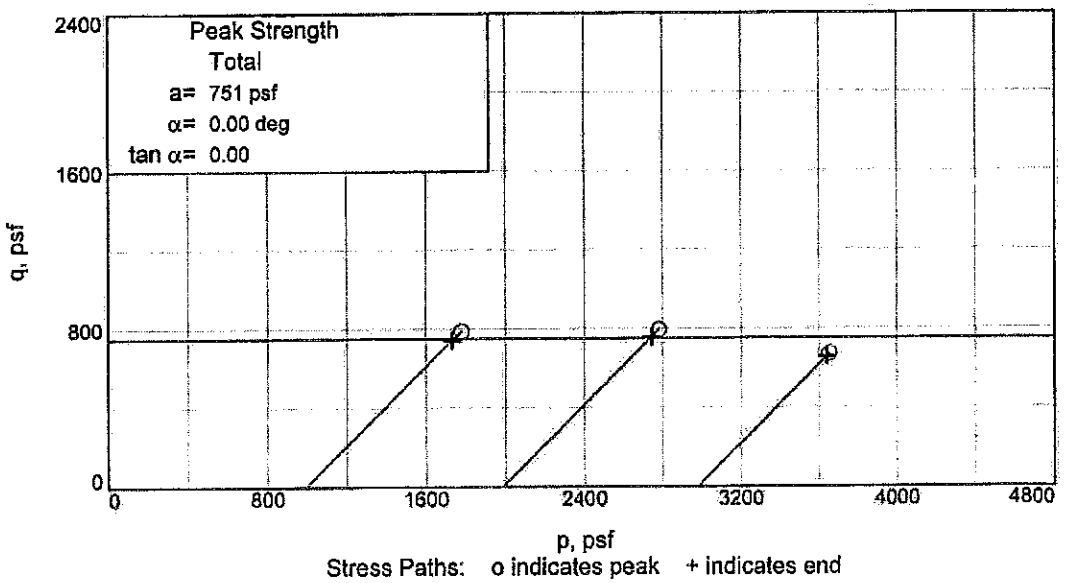
Tested By: nb **Checked By:** ah











Client: USACE

Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Louisiana

Source of Sample: BSFS-1U **Depth:** 45.5' **Sample Number:** 12C

Project No.: 10-017146 **Figure** _____

BURNS COOLEY DENNIS, INC.

Tested By: nb **Checked By:** ah

SUMMARY OF LABORATORY TEST RESULTS

Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Mar **Assigned By:** _____

Project Number: 10-017146 **Current Date:** 9/18/2013
Boring: BSFS-2U

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
1A	0.0	VSO BK PT	PT		566												
1B	1.0	VSO BK PT	PT		598	9	14	97	UU	0	46		650	310	340	0.17	
1C	2.0	VSO DGR PT	PT		645												
2A	4.0	VSO BK PT	PT		546												
2B	5.0	VSO BK PT	PT		467												
2C	6.0	VSO BK PT	PT		494	12	18	99	UU	0	61		455	225	230	0.09	
2D	7.0	VSO BK PT	PT		872												
3A	8.0	VSO BK CHOC	CHOC		183												
3B	9.0	VSO GR & DGR CH3 W/ ARS ML, O, WD	CH3		53	71	109	100	UU	0	90		73	28	45	0.09	
3C	10.0	SO BK CH2 W/ ARS ML	CH2		41												
3D	11.0	GR ML	ML		31												
4A	12.0	M GR CH3 W/ LNS SM	CH3		48												
4B	13.0	M GR CH2 W/ LNS & LYS SP	CH2		42												
4C	14.0	LGR SM	SM		16												SV
4D	15.0	LGR SP W/ SIF	SP		19												
5A	16.0	LGR SP	SP		23												
5B	17.0	LGR SP	SP		23												
6A	20.0	GR SM	SM		20												
6B	21.0	GR SM	SM		20												
6C	22.0	GR SM	SM		20												
6D	23.0	GR SM	SM		19												
7A	24.0	LGR SP	SP		25												
7B	25.0	ST LGR & T CL4 W/ ARS SP	CL4		20												
7C	26.0	ST LGR & T CL4 W/ ARS SP	CL4		20												
7D	27.0	ST LGR & T CL4 W/ ARS SP	CL4		21												
8A	28.0	GR & T SM	SM		25												
8B	29.0	M GR & T CL6 W/ ARS SM	CL6		25												
8C	30.0	ST GR & T CH2	CH2		27	96	122		UC	-	1186	2373	53	16	37		GS-2.66, CONS
8D	31.0	M GR & T CH2 W/ ARS SM	CH2		31												
9A	32.0	VSO GNG & T CL6 W/ LNS & LYS ML	CL6		35				UU	0	105		44	18	26	0.17	
9B	33.0	GR & T ML W/ ARS CH	ML		35												
9C	34.0	GR & T ML W/ ARS CH	ML		33												
9D	35.0	GR & T ML W/ ARS CH	ML		34												
10A	36.0	GNG ML W/ ARS CH	ML		38												
10B	37.0	GNG ML W/ LYS CH	ML		36												
10C	38.0	ST GNG CL6 W/ LNS & ARS ML	CL6		33	90	120	100	UU	0	1310		43	16	27	0.60	

Remarks: _____

Checked By: _____

Stantec Consulting Services Inc.

File Name: BSFS-2U_be_boring_log_v10_0.xls

SUMMARY OF LABORATORY TEST RESULTS

Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Mar Assigned By: _____

Project Number: 10-017146
Boring: BSFS-2U

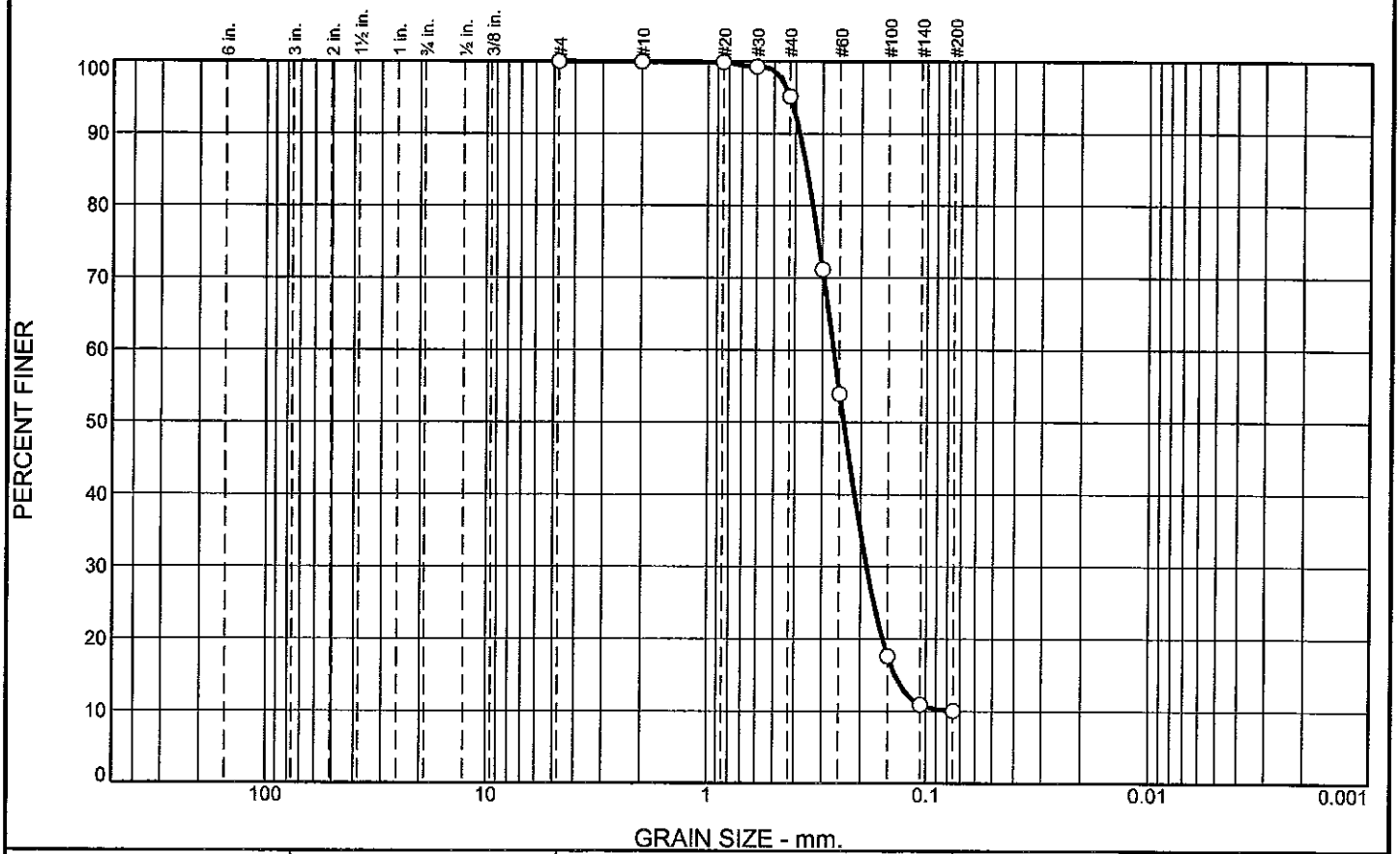
Current Date: 9/18/2013

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
10D	39.0	M GNG CH2 W/ ARS ML	CH2		33												

Remarks:
Stantec Consulting Services Inc.

Checked By: _____
File Name: BSFS-2U_be_boring_log_v10_0.xls

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	4.9	85.0	10.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	100.0		
#20	99.9		
#30	99.3		
#40	95.1		
#50	71.2		
#60	53.9		
#100	17.6		
#140	10.9		
#200	10.1		

* (no specification provided)

Soil Description

LGR SM

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.3825 D_{85}= 0.3546 D_{60}= 0.2665
D_{50}= 0.2396 D_{30}= 0.1875 D_{15}= 0.1388
D_{10}= C_u= C_c=

Classification

USCS= SP AASHTO=

Remarks

Source of Sample: BSFS-2U **Depth:** 14.0
Sample Number: 4C **Date:** 7/17/2013

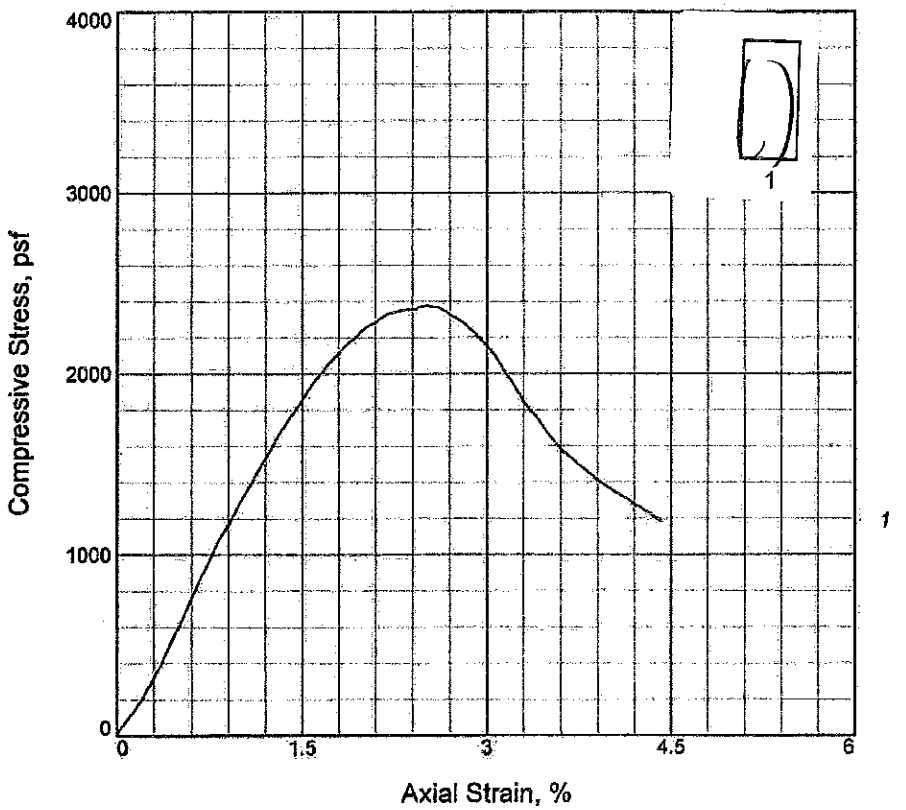
Stantec

Saint Rose, Louisiana

Client: USACE
Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Lousisiana
Project No: 10-017146 **Figure**

Tested By: JC **Checked By:** MJB/JS

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	2373			
Undrained shear strength, psf	1187			
Failure strain, %	2.5			
Strain rate, %/min.	1.00			
Water content, %	27.4			
Wet density, pcf	122.3			
Dry density, pcf	96.0			
Saturation, %	99.8			
Void ratio	0.7305			
Specimen diameter, in.	1.966			
Specimen height, in.	4.007			
Height/diameter ratio	2.04			

Description: ST GR & T CH2

LL = 53	**PL** = 16	**PI** = 37	**GS**= 2.66	**Type:** Undisturbed

Project No.: 10-017146

Date Sampled:

Remarks:
Date Tested: 07-17-2013
PP = 1.5 tsf

Figure _____

Client: USACE

Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Louisiana

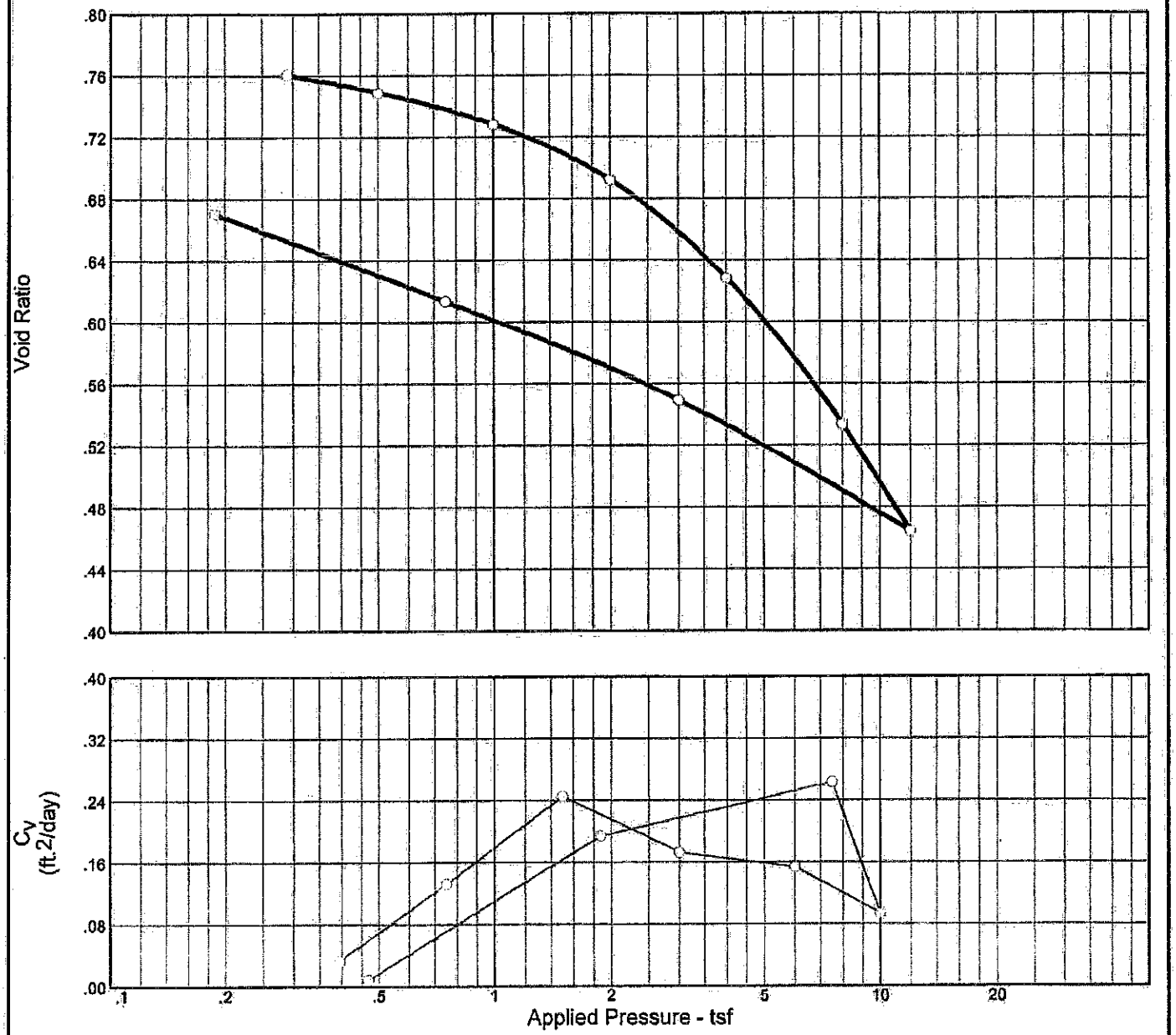
Source of Sample: BSFS-2U **Depth:** 29.5'

Sample Number: 8C

UNCONFINED COMPRESSION TEST
BURNS COOLEY DENNIS, INC.
Ridgeland, Mississippi

Tested By: nb **Checked By:** ah

Consolidation Test Report



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture							
96.2 %	27.8 %	93.9	53	37	2.66	3.49	0.39	0.768

MATERIAL DESCRIPTION	USCS	AASHTO
ST GR & T CH2	CL6	

Project No. 10-017146 **Client:** USACE

Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Louisiana

Source: BSFS-2U **Sample No.:** 8C **Elev./Depth:** 30.0

BURNS COOLEY DENNIS, INC.

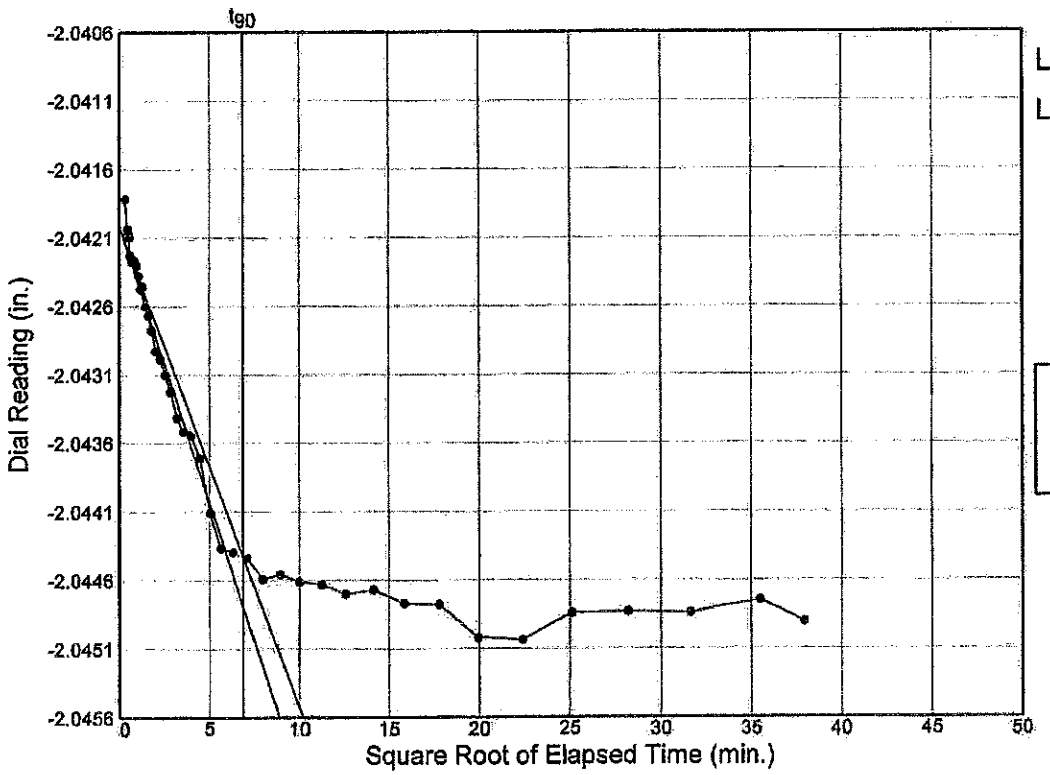
Ridgeland, Mississippi

Remarks:

Figure

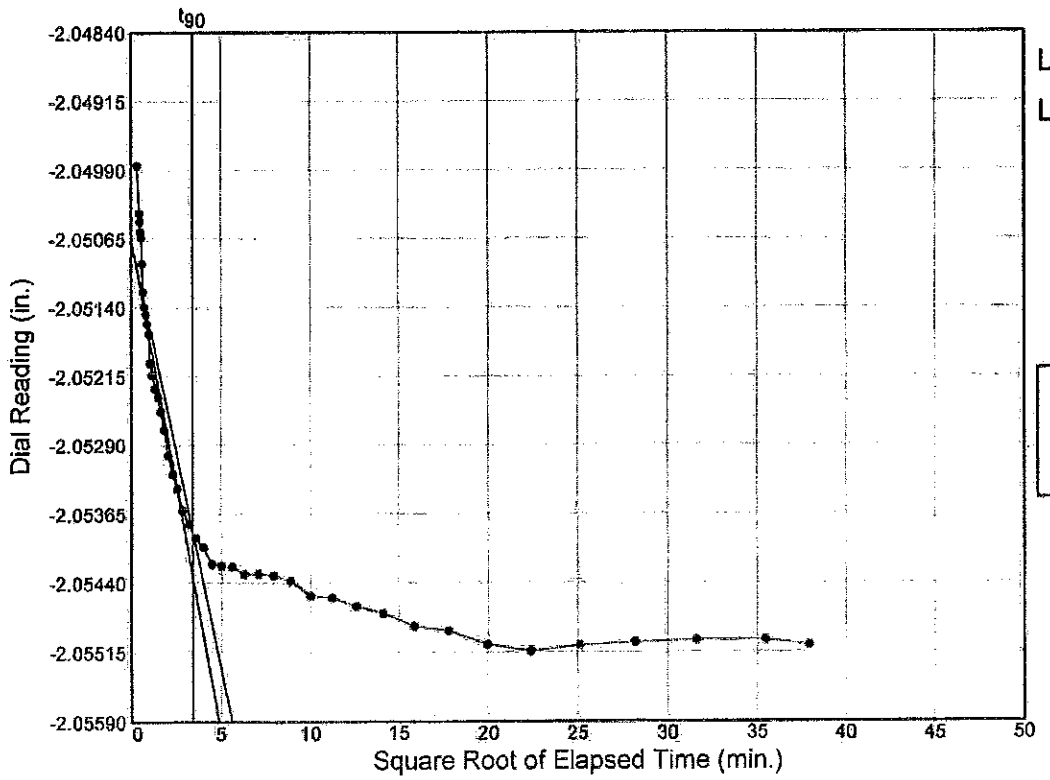
Dial Reading vs. Time

Project No.: 10-017146
Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Louisiana
Source: BSFS-2U Sample No.: 8C Elev./Depth: 30.0



Load No.= 2
Load= 0.50 tsf
D_0 = -2.04201
D_{90} = -2.04443
D_{100} = -2.04470
T_{90} = 47.31 min.

C_v @ T_{90}
0.03 ft.^{2}/day



Load No.= 3
Load= 1.00 tsf
D_0 = -2.05066
D_{90} = -2.05385
D_{100} = -2.05421
T_{90} = 11.75 min.

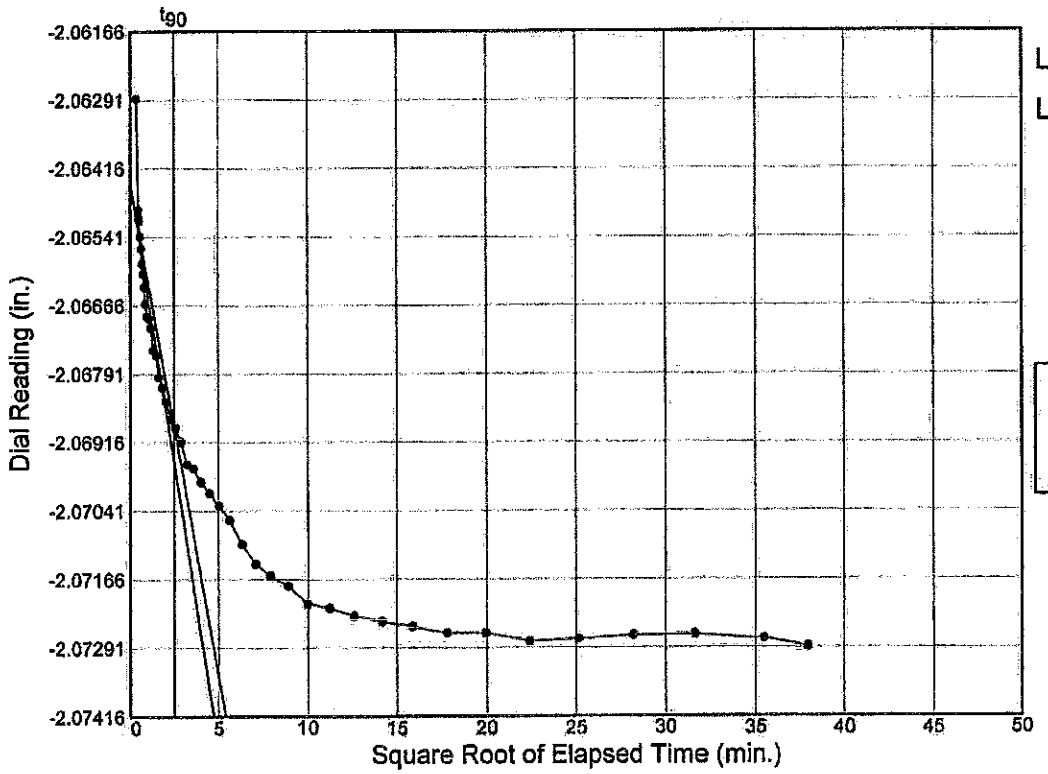
C_v @ T_{90}
0.13 ft.^{2}/day

Figure

BURNS COOLEY DENNIS, INC.

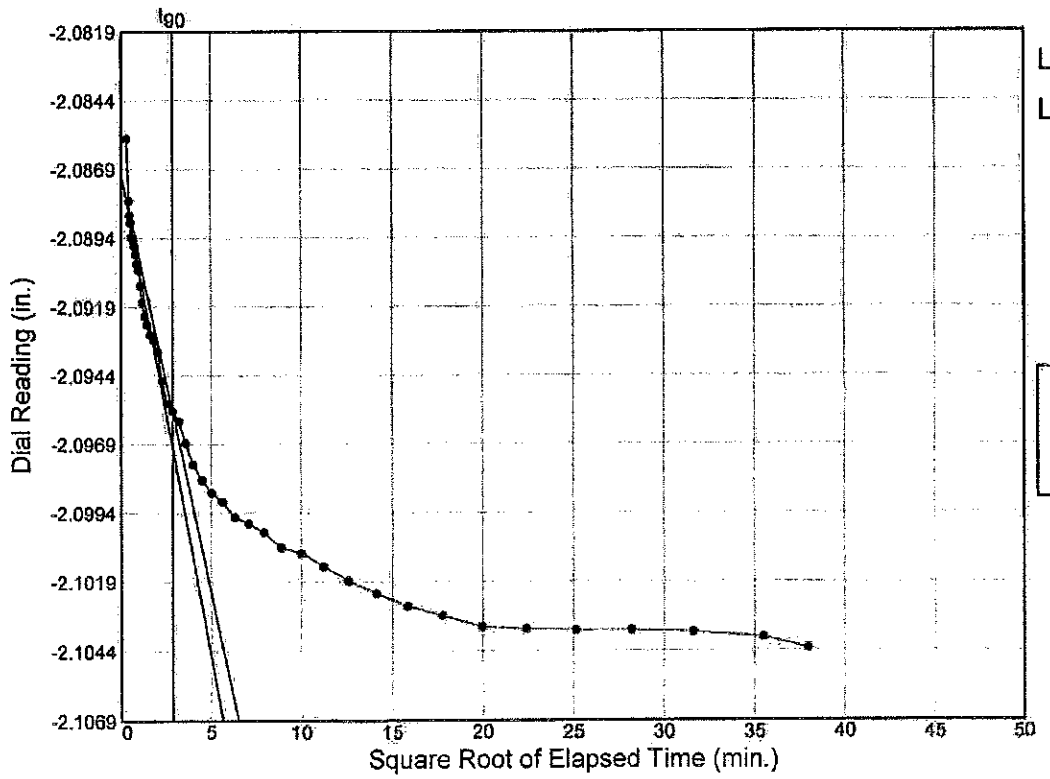
Dial Reading vs. Time

Project No.: 10-017146
Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Louisiana
Source: BSFS-2U Sample No.: 8C Elev./Depth: 30.0



Load No.= 4
Load= 2.00 tsf
D_0 = -2.06441
D_{90} = -2.06886
D_{100} = -2.06936
T_{90} = 6.11 min.

C_v @ T_{90}
0.24 ft.^{2}/day



Load No.= 5
Load= 4.00 tsf
D_0 = -2.08703
D_{90} = -2.09572
D_{100} = -2.09669
T_{90} = 8.14 min.

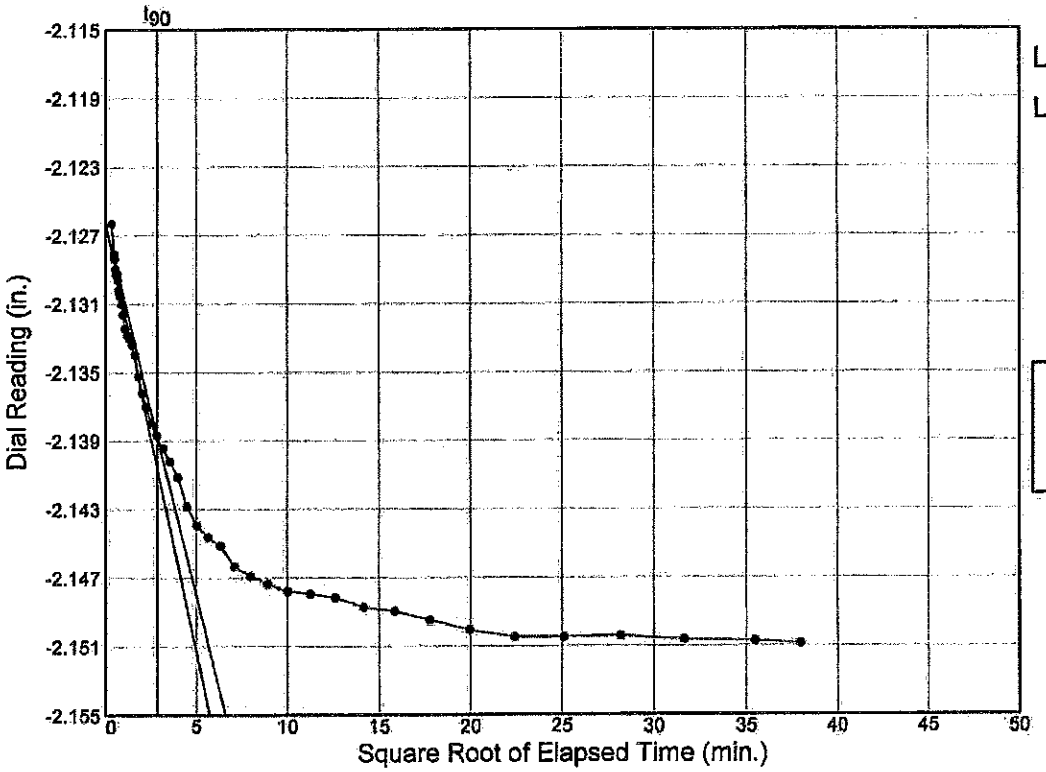
C_v @ T_{90}
0.17 ft.^{2}/day

Figure

BURNS COOLEY DENNIS, INC.

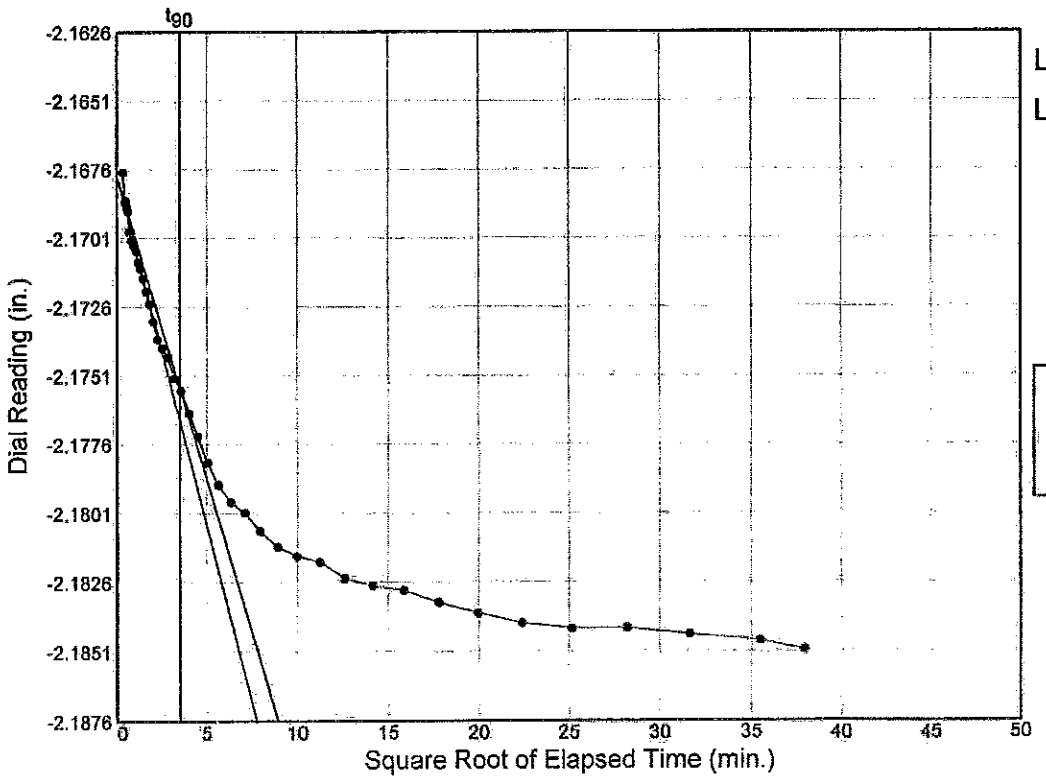
Dial Reading vs. Time

Project No.: 10-017146
Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Louisiana
Source: BSFS-2U Sample No.: 8C Elev./Depth: 30.0



Load No.= 6
Load= 8.00 tsf
D_0 = -2.12622
D_{90} = -2.13875
D_{100} = -2.14015
T_{90} = 8.25 min.

C_v @ T_{90}
0.15 ft.^{2}/day



Load No.= 7
Load= 12.00 tsf
D_0 = -2.16782
D_{90} = -2.17556
D_{100} = -2.17642
T_{90} = 12.23 min.

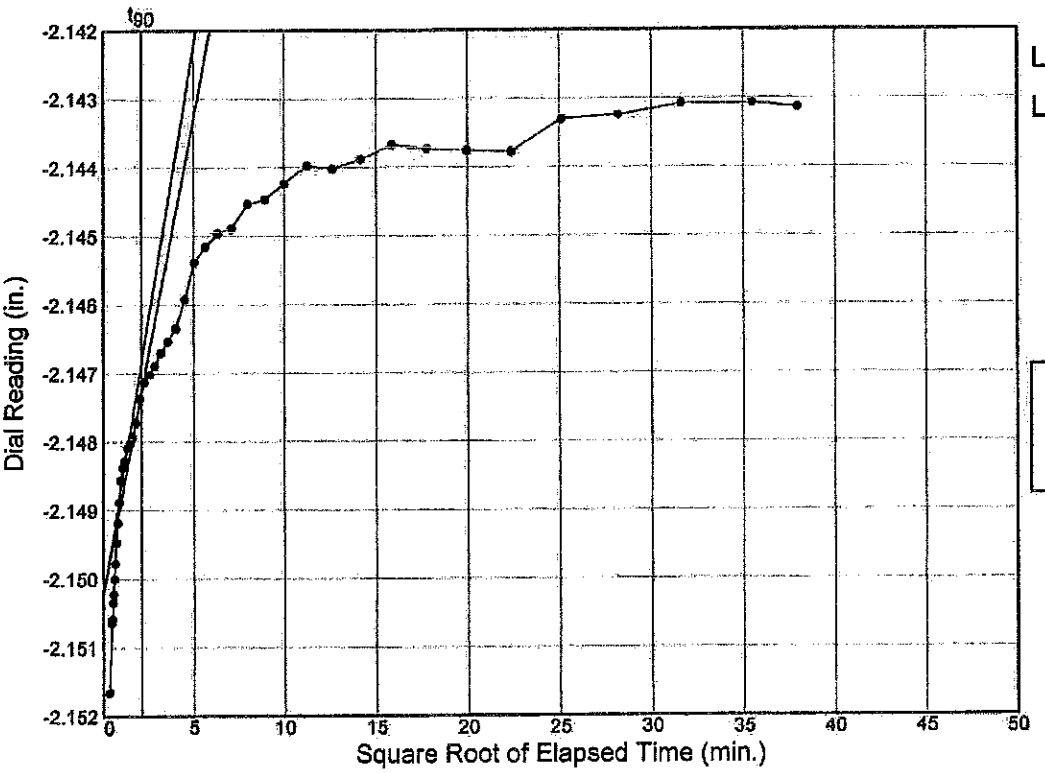
C_v @ T_{90}
0.09 ft.^{2}/day

Figure

BURNS COOLEY DENNIS, INC.

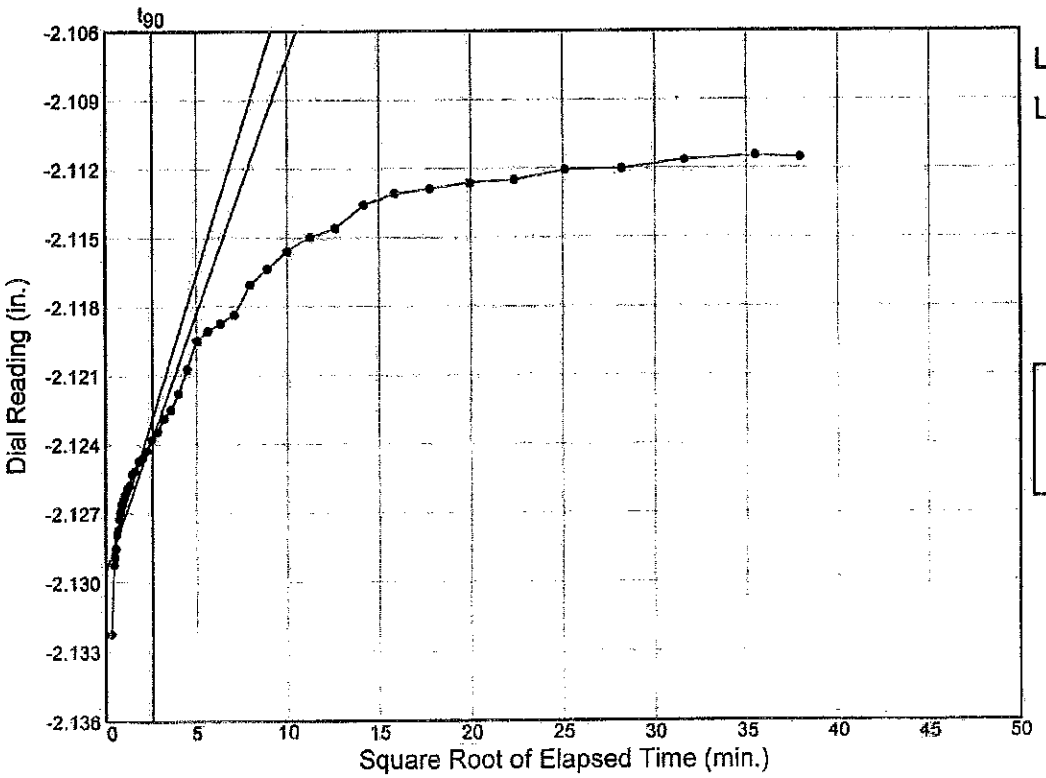
Dial Reading vs. Time

Project No.: 10-017146
Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Louisiana
Source: BSFS-2U Sample No.: 8C Elev./Depth: 30.0



Load No.= 8
Load= 3.00 tsf
D_0 = -2.15023
D_{90} = -2.14727
D_{100} = -2.14694
T_{90} = 4.52 min.

C_v @ T_{90}
0.26 ft.^{2}/day



Load No.= 9
Load= 0.75 tsf
D_0 = -2.12948
D_{90} = -2.12371
D_{100} = -2.12307
T_{90} = 6.68 min.

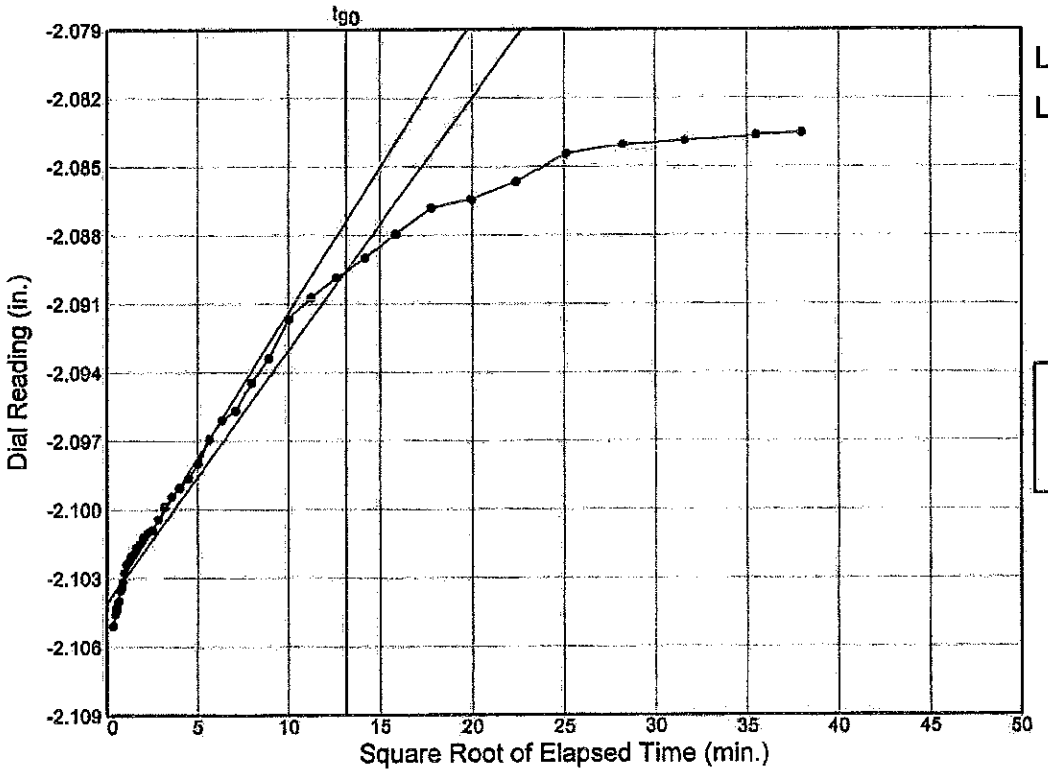
C_v @ T_{90}
0.19 ft.^{2}/day

Figure

BURNS COOLEY DENNIS, INC.

Dial Reading vs. Time

Project No.: 10-017146
Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Louisiana
Source: BSFS-2U Sample No.: 8C Elev./Depth: 30.0



Load No.= 10

Load= 0.19 tsf

D_0 = -2.10412

D_{90} = -2.08959

D_{100} = -2.08797

T_{90} = 172.57 min.

C_v @ T_{90}
0.01 ft.^{2}/day

Figure

CONSOLIDATION TEST DATA

Client: USACE
Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Louisiana
Project Number: 10-017146

Sample Data

Source: BSFS-2U
Sample No.: 8C
Elev. or Depth: 30.0 **Sample Length(in./cm.):**
Location:
Description: ST GR & T CH2
Liquid Limit: 53 **Plasticity Index:** 37
USCS: CL6 **AASHTO:** **Figure No.:**
Testing Remarks:

Test Specimen Data

TOTAL SAMPLE		BEFORE TEST	AFTER TEST
Wet w+t	= 521.58 g.	Consolidometer # = 9	Wet w+t = 516.70 g.
Dry w+t	= 446.73 g.		Dry w+t = 446.73 g.
Tare Wt.	= 177.12 g.	Spec. Gravity = 2.66	Tare Wt. = 177.12 g.
Height	= .87 in.	Height = .87 in.	
Diameter	= 4.00 in.	Diameter = 2.50 in.	
Weight	= 344.46 g.	Defl. Table = n/a	
Moisture	= 27.8 %	Ht. Solids = 0.4922 in.	Moisture = 26.0 %
Wet Den.	= 120.0 pcf	Dry Wt. = 105.32 g.*	Dry Wt. = 269.61 g.
Dry Den.	= 93.9 pcf	Void Ratio = 0.768	Void Ratio = 0.670
		Saturation = 96.2 %	

*** Initial dry weight used in calculations**

End-of-Load Summary

Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (ft.^{2}/day)	C_α	Void Ratio	% Compression /Swell
start	-2.03546				0.768	
0.29	-2.03914	0.00000			0.760	0.4 Comprs.
0.50	-2.04491	0.00000	0.03		0.749	1.1 Comprs.
1.00	-2.05508	0.00000	0.13		0.728	2.3 Comprs.
2.00	-2.07290	0.00000	0.24		0.692	4.3 Comprs.
4.00	-2.10430	0.00000	0.17		0.628	7.9 Comprs.
8.00	-2.15087	0.00000	0.15		0.533	13.3 Comprs.
12.00	-2.18505	0.00000	0.09		0.464	17.2 Comprs.
3.00	-2.14315	0.00000	0.26		0.549	12.4 Comprs.
0.75	-2.11157	0.00000	0.19		0.613	8.7 Comprs.
0.19	-2.08356	0.00000	0.01		0.670	5.5 Comprs.

C_c = 0.39 P_c = 3.49 tsf C_r = 0.11

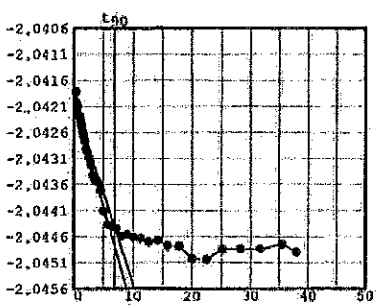
Pressure: 0.29 tsf — **TEST READINGS** — **Load No. 1**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-2.03546	16	2.47	-2.03580	31	79.42	-2.03828
2	0.03	-2.03551	17	3.12	-2.03606	32	99.98	-2.03838
3	0.05	-2.03553	18	3.93	-2.03620	33	125.87	-2.03837
4	0.08	-2.03550	19	4.97	-2.03630	34	158.47	-2.03840
5	0.13	-2.03551	20	6.27	-2.03646	35	199.50	-2.03834
6	0.18	-2.03548	21	7.92	-2.03673	36	251.17	-2.03837
7	0.25	-2.03546	22	9.97	-2.03699	37	316.22	-2.03828
8	0.33	-2.03549	23	12.57	-2.03721	38	398.08	-2.03916
9	0.43	-2.03551	24	15.82	-2.03819	39	501.17	-2.03915
10	0.57	-2.03551	25	19.93	-2.03830	40	630.93	-2.03918
11	0.73	-2.03553	26	25.10	-2.03829	41	794.30	-2.03918
12	0.95	-2.03566	27	31.60	-2.03825	42	999.97	-2.03914
13	1.20	-2.03559	28	39.78	-2.03830	43	1075.00	-2.03914
14	1.53	-2.03562	29	50.10	-2.03827			
15	1.95	-2.03559	30	63.08	-2.03830			

Void Ratio = 0.760 **Compression =** 0.4 %

Pressure: 0.50 tsf — **TEST READINGS** — **Load No. 2**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-2.04065	24	12.72	-2.04352
2	0.10	-2.04182	25	15.98	-2.04355
3	0.20	-2.04204	26	20.10	-2.04371
4	0.23	-2.04204	27	25.27	-2.04411
5	0.25	-2.04207	28	31.77	-2.04437
6	0.30	-2.04210	29	39.97	-2.04440
7	0.35	-2.04223	30	50.27	-2.04444
8	0.42	-2.04225	31	63.25	-2.04459
9	0.50	-2.04228	32	79.58	-2.04456
10	0.60	-2.04228	33	100.15	-2.04461
11	0.73	-2.04227	34	126.05	-2.04463
12	0.90	-2.04231	35	158.65	-2.04470
13	1.12	-2.04238	36	199.68	-2.04467
14	1.37	-2.04248	37	251.33	-2.04477
15	1.70	-2.04246	38	316.38	-2.04478
16	2.12	-2.04260	39	398.25	-2.04502
17	2.63	-2.04267	40	501.33	-2.04504
18	3.28	-2.04278	41	631.10	-2.04484
19	4.10	-2.04293	42	794.47	-2.04483
20	5.13	-2.04299	43	1000.13	-2.04484
21	6.43	-2.04310	44	1259.05	-2.04475
22	8.07	-2.04323	45	1440.47	-2.04491
23	10.13	-2.04342			



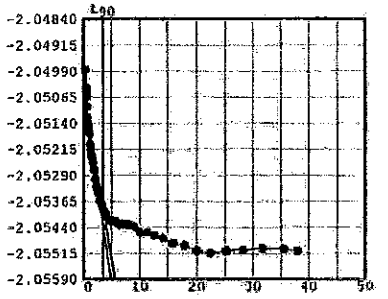
Void Ratio = 0.749 **Compression =** 1.1 %

D_0 = -2.04201 D_{90} = -2.04443 D_{100} = -2.04470

C_v **at 47.3 min.** = 0.03 ft.^{2}/day

Pressure: 1.00 tsf **TEST READINGS** **Load No. 3**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-2.04714	24	12.73	-2.05391
2	0.10	-2.04985	25	16.00	-2.05402
3	0.20	-2.05037	26	20.10	-2.05420
4	0.22	-2.05046	27	25.27	-2.05421
5	0.25	-2.05057	28	31.78	-2.05422
6	0.30	-2.05063	29	39.97	-2.05430
7	0.35	-2.05092	30	50.28	-2.05430
8	0.42	-2.05123	31	63.25	-2.05432
9	0.50	-2.05139	32	79.60	-2.05438
10	0.62	-2.05148	33	100.17	-2.05454
11	0.75	-2.05158	34	126.05	-2.05456
12	0.92	-2.05169	35	158.65	-2.05465
13	1.12	-2.05201	36	199.68	-2.05473
14	1.38	-2.05214	37	251.35	-2.05487
15	1.72	-2.05229	38	316.38	-2.05492
16	2.13	-2.05238	39	398.27	-2.05507
17	2.65	-2.05254	40	501.35	-2.05514
18	3.30	-2.05274	41	631.12	-2.05508
19	4.12	-2.05301	42	794.48	-2.05505
20	5.15	-2.05322	43	1000.15	-2.05502
21	6.45	-2.05338	44	1259.07	-2.05502
22	8.08	-2.05362	45	1440.22	-2.05508
23	10.15	-2.05376			



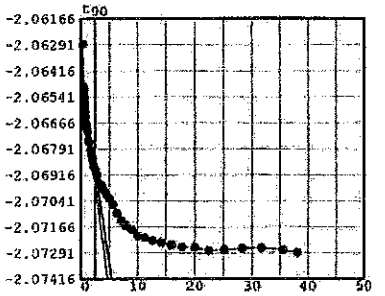
Void Ratio = 0.728 **Compression =** 2.3 %

D_0 = -2.05066 D_{90} = -2.05385 D_{100} = -2.05421

C_v **at 11.8 min. =** 0.13 ft.^{2}/day

Pressure: 2.00 tsf **TEST READINGS** **Load No. 4**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-2.05872	24	12.75	-2.06965
2	0.10	-2.06289	25	16.02	-2.06990
3	0.20	-2.06491	26	20.12	-2.07010
4	0.22	-2.06504	27	25.28	-2.07031
5	0.25	-2.06511	28	31.78	-2.07059
6	0.30	-2.06540	29	39.98	-2.07103
7	0.37	-2.06563	30	50.28	-2.07139
8	0.42	-2.06591	31	63.27	-2.07160
9	0.52	-2.06609	32	79.60	-2.07179
10	0.62	-2.06634	33	100.17	-2.07211
11	0.75	-2.06663	34	126.07	-2.07220
12	0.92	-2.06687	35	158.67	-2.07234
13	1.12	-2.06691	36	199.70	-2.07243
14	1.38	-2.06708	37	251.37	-2.07253
15	1.72	-2.06749	38	316.40	-2.07264
16	2.13	-2.06758	39	398.28	-2.07264
17	2.65	-2.06797	40	501.35	-2.07279
18	3.30	-2.06817	41	631.12	-2.07275
19	4.12	-2.06842	42	794.48	-2.07269
20	5.15	-2.06875	43	1000.15	-2.07267
21	6.45	-2.06890	44	1259.07	-2.07276
22	8.10	-2.06916	45	1440.30	-2.07290
23	10.15	-2.06957			



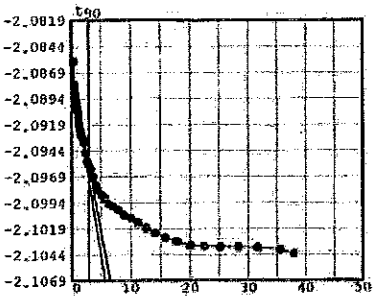
Void Ratio = 0.692 **Compression** = 4.3 %

D_0 = -2.06441 D_{90} = -2.06886 D_{100} = -2.06936

C_v **at 6.1 min.** = 0.24 ft.^{2}/day

Pressure: 4.00 tsf **TEST READINGS** **Load No. 5**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-2.07785	24	12.73	-2.09688
2	0.08	-2.08580	25	15.98	-2.09766
3	0.18	-2.08805	26	20.10	-2.09822
4	0.22	-2.08859	27	25.27	-2.09867
5	0.25	-2.08884	28	31.77	-2.09901
6	0.28	-2.08937	29	39.95	-2.09956
7	0.35	-2.08931	30	50.27	-2.09981
8	0.42	-2.08949	31	63.23	-2.10014
9	0.50	-2.08972	32	79.58	-2.10068
10	0.60	-2.09002	33	100.15	-2.10088
11	0.73	-2.09037	34	126.03	-2.10137
12	0.90	-2.09060	35	158.63	-2.10188
13	1.12	-2.09116	36	199.68	-2.10232
14	1.37	-2.09176	37	251.33	-2.10278
15	1.70	-2.09226	38	316.38	-2.10312
16	2.12	-2.09258	39	398.25	-2.10353
17	2.63	-2.09295	40	501.33	-2.10360
18	3.28	-2.09314	41	631.10	-2.10365
19	4.10	-2.09357	42	794.47	-2.10366
20	5.13	-2.09461	43	1000.13	-2.10372
21	6.43	-2.09541	44	1259.05	-2.10390
22	8.08	-2.09571	45	1440.28	-2.10430
23	10.13	-2.09610			



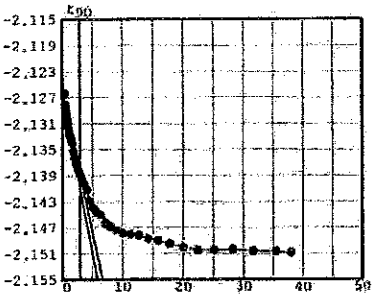
Void Ratio = 0.628 **Compression** = 7.9 %

D_0 = -2.08703 D_{90} = -2.09572 D_{100} = -2.09669

C_v **at 8.1 min.** = 0.17 ft.^{2}/day

Pressure: 8.00 tsf **TEST READINGS** **Load No. 6**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-2.11334	24	12.77	-2.14025
2	0.12	-2.12636	25	16.02	-2.14116
3	0.22	-2.12812	26	20.13	-2.14285
4	0.25	-2.12840	27	25.30	-2.14394
5	0.28	-2.12898	28	31.80	-2.14462
6	0.33	-2.12931	29	40.00	-2.14513
7	0.38	-2.12928	30	50.30	-2.14635
8	0.45	-2.12962	31	63.28	-2.14691
9	0.53	-2.13021	32	79.62	-2.14735
10	0.63	-2.13057	33	100.18	-2.14781
11	0.77	-2.13105	34	126.08	-2.14798
12	0.93	-2.13166	35	158.68	-2.14819
13	1.15	-2.13247	36	199.72	-2.14871
14	1.42	-2.13284	37	251.38	-2.14899
15	1.73	-2.13306	38	316.42	-2.14951
16	2.15	-2.13341	39	398.30	-2.15004
17	2.67	-2.13402	40	501.38	-2.15047
18	3.32	-2.13525	41	631.15	-2.15047
19	4.13	-2.13624	42	794.50	-2.15041
20	5.17	-2.13705	43	1000.18	-2.15063
21	6.47	-2.13801	44	1259.10	-2.15069
22	8.12	-2.13870	45	1440.02	-2.15087
23	10.17	-2.13947			



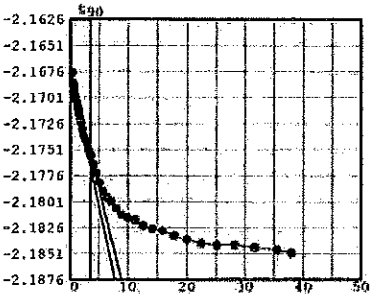
Void Ratio = 0.533 **Compression** = 13.3 %

D_0 = -2.12622 D_{90} = -2.13875 D_{100} = -2.14015

C_v **at 8.3 min.** = 0.15 ft.^{2}/day

Pressure: 12.00 tsf **TEST READINGS** **Load No. 7**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-2.15812	24	12.75	-2.17565
2	0.10	-2.16770	25	16.02	-2.17650
3	0.20	-2.16880	26	20.12	-2.17733
4	0.23	-2.16874	27	25.28	-2.17827
5	0.27	-2.16887	28	31.78	-2.17909
6	0.30	-2.16902	29	39.98	-2.17972
7	0.37	-2.16915	30	50.28	-2.18009
8	0.43	-2.16987	31	63.27	-2.18077
9	0.52	-2.16984	32	79.60	-2.18134
10	0.62	-2.17019	33	100.18	-2.18167
11	0.75	-2.17023	34	126.07	-2.18188
12	0.92	-2.17043	35	158.67	-2.18245
13	1.13	-2.17058	36	199.72	-2.18272
14	1.38	-2.17099	37	251.37	-2.18291
15	1.72	-2.17122	38	316.42	-2.18335
16	2.13	-2.17159	39	398.28	-2.18373
17	2.65	-2.17206	40	501.37	-2.18410
18	3.30	-2.17251	41	631.13	-2.18428
19	4.13	-2.17315	42	794.50	-2.18426
20	5.17	-2.17380	43	1000.17	-2.18451
21	6.47	-2.17412	44	1259.10	-2.18472
22	8.10	-2.17447	45	1440.20	-2.18505
23	10.17	-2.17518			



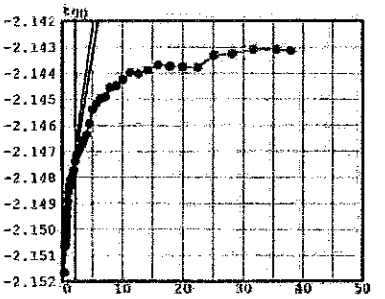
Void Ratio = 0.464 **Compression** = 17.2 %

D_0 = -2.16782 D_{90} = -2.17556 D_{100} = -2.17642

C_v **at 12.2 min.** = 0.09 ft.^{2}/day

Pressure: 3.00 tsf **TEST READINGS** **Load No. 8**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-2.16986	24	12.73	-2.14655
2	0.10	-2.15166	25	16.00	-2.14635
3	0.20	-2.15065	26	20.10	-2.14592
4	0.23	-2.15059	27	25.27	-2.14539
5	0.27	-2.15035	28	31.77	-2.14517
6	0.30	-2.15023	29	39.97	-2.14497
7	0.35	-2.15000	30	50.27	-2.14490
8	0.42	-2.14978	31	63.25	-2.14455
9	0.50	-2.14948	32	79.58	-2.14448
10	0.60	-2.14919	33	100.15	-2.14424
11	0.73	-2.14889	34	126.05	-2.14398
12	0.90	-2.14857	35	158.65	-2.14402
13	1.12	-2.14838	36	199.68	-2.14388
14	1.37	-2.14829	37	251.35	-2.14368
15	1.70	-2.14809	38	316.40	-2.14374
16	2.12	-2.14802	39	398.27	-2.14376
17	2.63	-2.14793	40	501.35	-2.14378
18	3.28	-2.14772	41	631.12	-2.14331
19	4.10	-2.14737	42	794.48	-2.14325
20	5.13	-2.14714	43	1000.15	-2.14308
21	6.43	-2.14702	44	1259.07	-2.14308
22	8.08	-2.14689	45	1440.42	-2.14315
23	10.13	-2.14671			



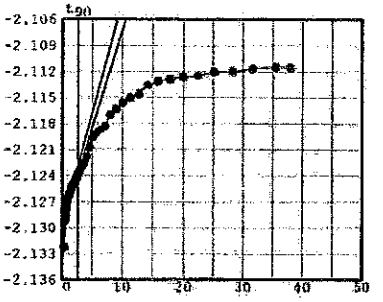
Void Ratio = 0.549 **Compression** = 12.4 %

D_0 = -2.15023 D_{90} = -2.14727 D_{100} = -2.14694

C_v **at 4.5 min.** = 0.26 ft.^{2}/day

Pressure: 0.75 tsf **TEST READINGS** **Load No. 9**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-2.13698	24	12.72	-2.12252
2	0.08	-2.13224	25	15.98	-2.12182
3	0.18	-2.12926	26	20.08	-2.12074
4	0.22	-2.12893	27	25.25	-2.11950
5	0.25	-2.12852	28	31.77	-2.11910
6	0.30	-2.12856	29	39.95	-2.11876
7	0.35	-2.12797	30	50.27	-2.11838
8	0.42	-2.12774	31	63.23	-2.11707
9	0.50	-2.12726	32	79.58	-2.11638
10	0.60	-2.12693	33	100.15	-2.11560
11	0.73	-2.12661	34	126.05	-2.11499
12	0.90	-2.12643	35	158.65	-2.11462
13	1.12	-2.12619	36	199.68	-2.11360
14	1.37	-2.12594	37	251.35	-2.11312
15	1.70	-2.12580	38	316.38	-2.11290
16	2.12	-2.12532	39	398.27	-2.11263
17	2.63	-2.12517	40	501.35	-2.11253
18	3.28	-2.12476	41	631.12	-2.11205
19	4.10	-2.12462	42	794.48	-2.11200
20	5.13	-2.12429	43	1000.15	-2.11167
21	6.43	-2.12376	44	1259.07	-2.11148
22	8.07	-2.12346	45	1440.37	-2.11157
23	10.13	-2.12291			



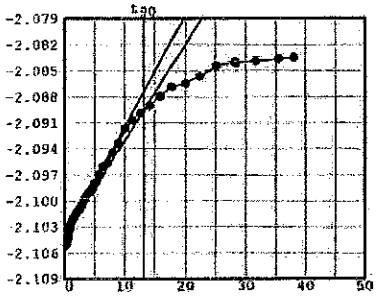
Void Ratio = 0.613 **Compression** = 8.7 %

D_0 = -2.12948 D_{90} = -2.12371 D_{100} = -2.12307

C_v **at 6.7 min.** = 0.19 ft.^{2}/day

Pressure: 0.19 tsf **TEST READINGS** **Load No. 10**

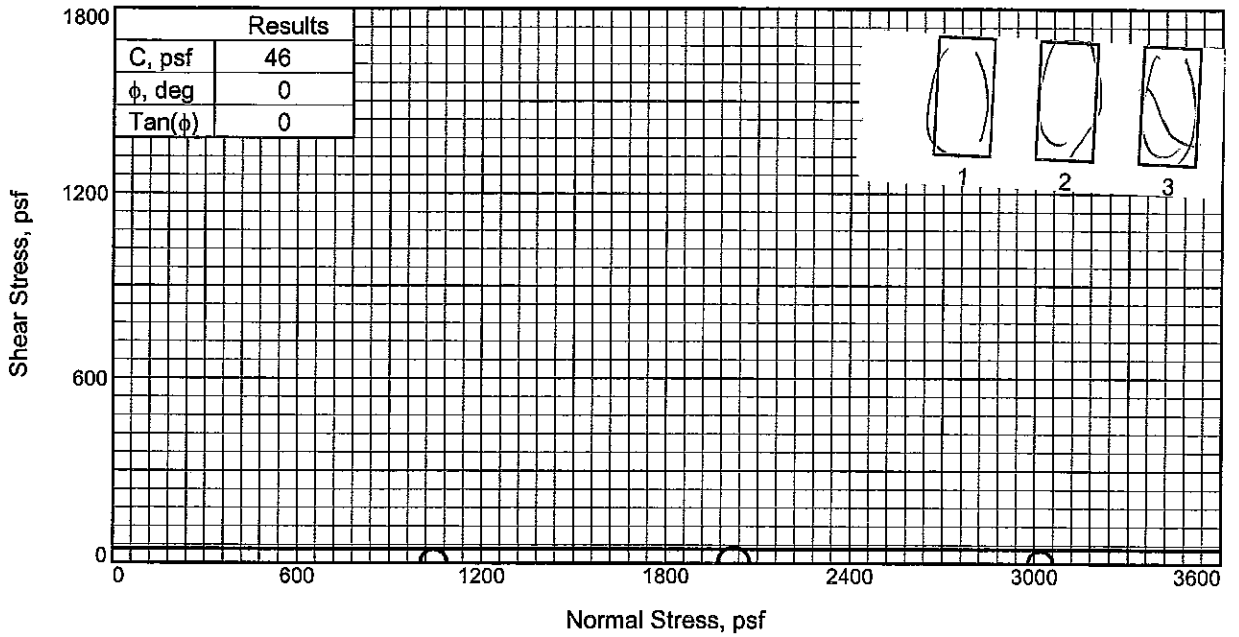
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-2.10763	24	12.75	-2.09947
2	0.10	-2.10510	25	16.00	-2.09909
3	0.20	-2.10458	26	20.12	-2.09868
4	0.22	-2.10453	27	25.28	-2.09797
5	0.25	-2.10431	28	31.78	-2.09694
6	0.30	-2.10436	29	39.97	-2.09612
7	0.35	-2.10407	30	50.28	-2.09572
8	0.43	-2.10403	31	63.25	-2.09448
9	0.52	-2.10355	32	79.60	-2.09341
10	0.62	-2.10344	33	100.17	-2.09168
11	0.75	-2.10316	34	126.05	-2.09073
12	0.92	-2.10276	35	158.65	-2.08989
13	1.12	-2.10239	36	199.70	-2.08903
14	1.38	-2.10228	37	251.37	-2.08796
15	1.72	-2.10208	38	316.40	-2.08684
16	2.12	-2.10195	39	398.28	-2.08645
17	2.63	-2.10166	40	501.35	-2.08570
18	3.30	-2.10150	41	631.12	-2.08446
19	4.12	-2.10119	42	794.48	-2.08406
20	5.15	-2.10100	43	1000.15	-2.08389
21	6.45	-2.10088	44	1259.07	-2.08365
22	8.08	-2.10042	45	1440.43	-2.08356
23	10.15	-2.09990			

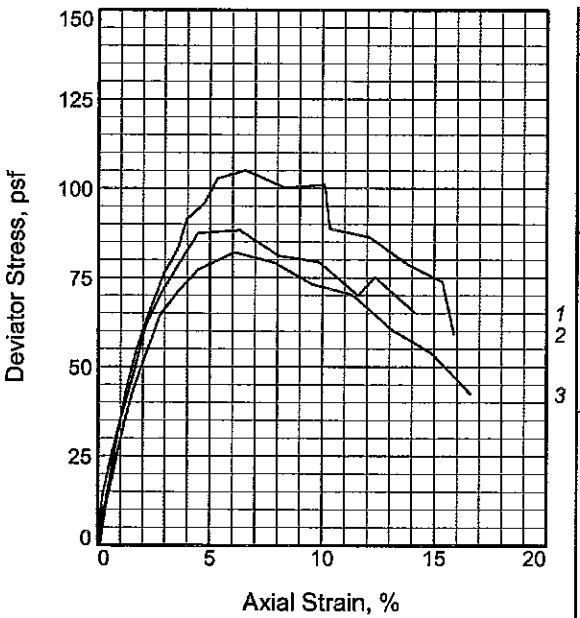


Void Ratio = 0.670 **Compression** = 5.5 %

D_0 = -2.10412 D_{90} = -2.08959 D_{100} = -2.08797

C_v **at 172.6 min.** = 0.01 ft.^{2}/day





Sample No.		1	2	3
Initial	Water Content, %	598.0	649.9	619.1
	Dry Density, pcf	9.5	8.8	8.6
	Saturation, %	97.3	96.5	90.4
	Void Ratio	15.6753	17.1790	17.4699
	Diameter, in.	1.373	1.371	1.393
	Height, in.	2.981	2.974	2.938
At Test	Water Content, %	598.0	649.9	619.1
	Dry Density, pcf	9.5	8.8	8.6
	Saturation, %	97.3	96.5	90.4
	Void Ratio	15.6753	17.1790	17.4699
	Diameter, in.	1.373	1.371	1.393
	Height, in.	2.981	2.974	2.938
Strain rate, in./min.		1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.95	13.68	20.69
Fail. Stress, psf		88	105	82
Strain, %		6.3	6.6	6.1
Ult. Stress, psf		65	74	54
Strain, %		14.1	15.3	14.9
σ_1 Failure, psf		1089	2075	3061
σ_3 Failure, psf		1001	1970	2979

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: VSO BK PT

LL= 650 **PL=** 310 **PI=** 340
Assumed Specific Gravity= 2.55
Remarks: Torvane=0.17 tsf

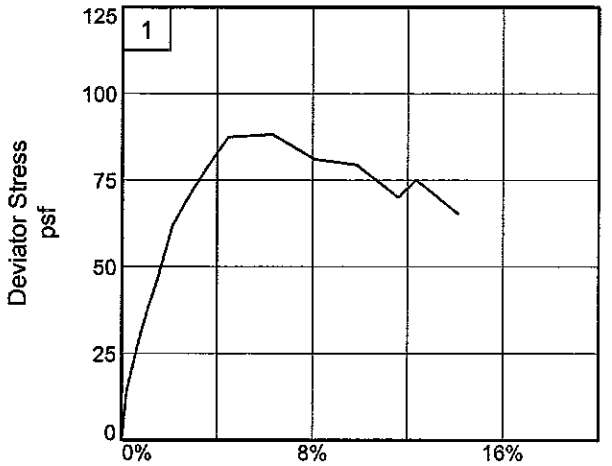
Figure _____

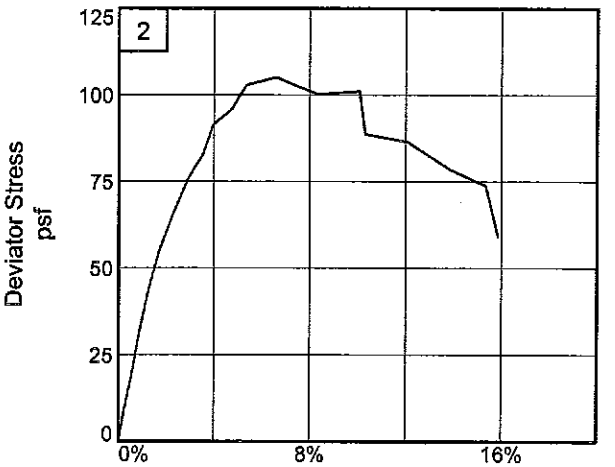
Client: USACE

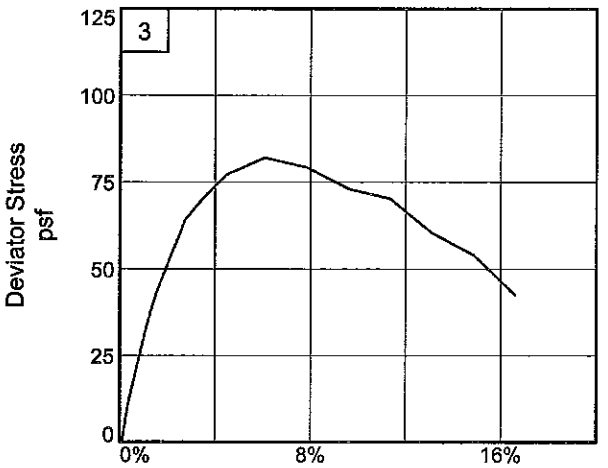
Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Lousisiana
Source of Sample: BSFS-2U **Depth:** 1.0
Sample Number: 1B
Proj. No.: 10-017146 **Date Sampled:** 7/17/2013

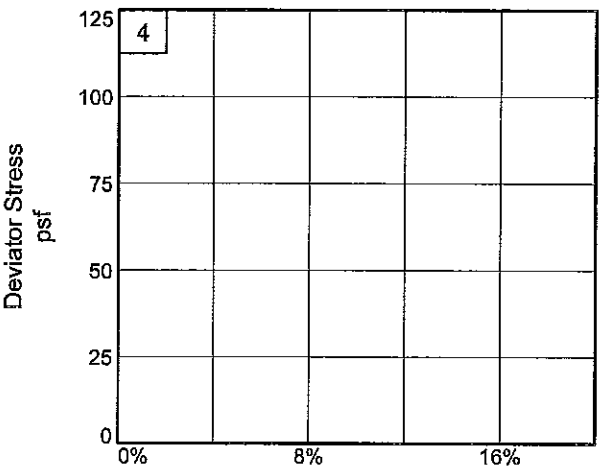
TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

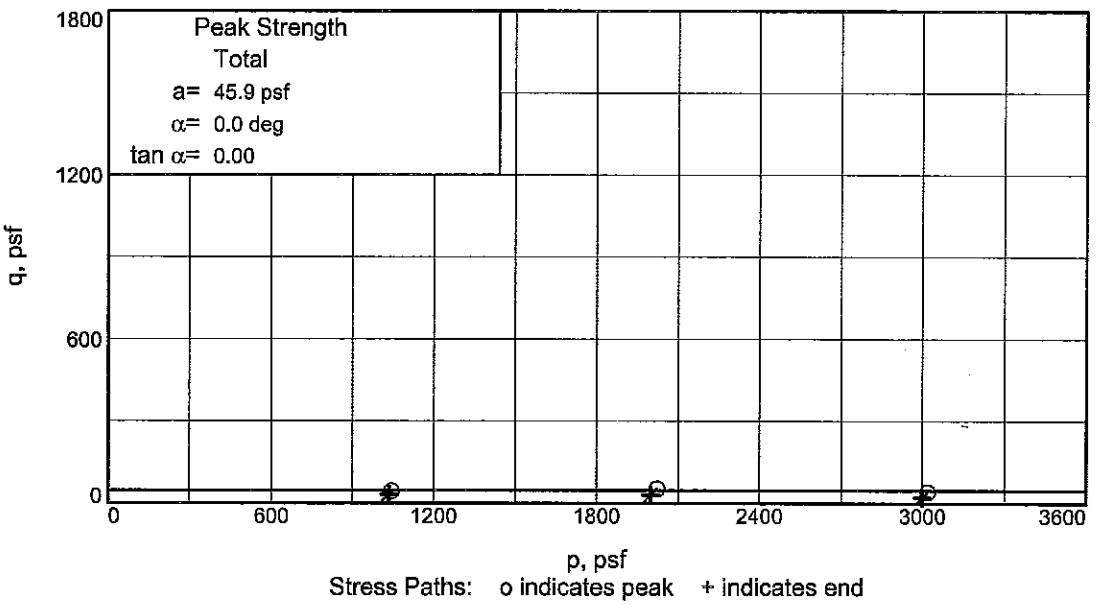
Tested By: JC **Checked By:** MJB/JS











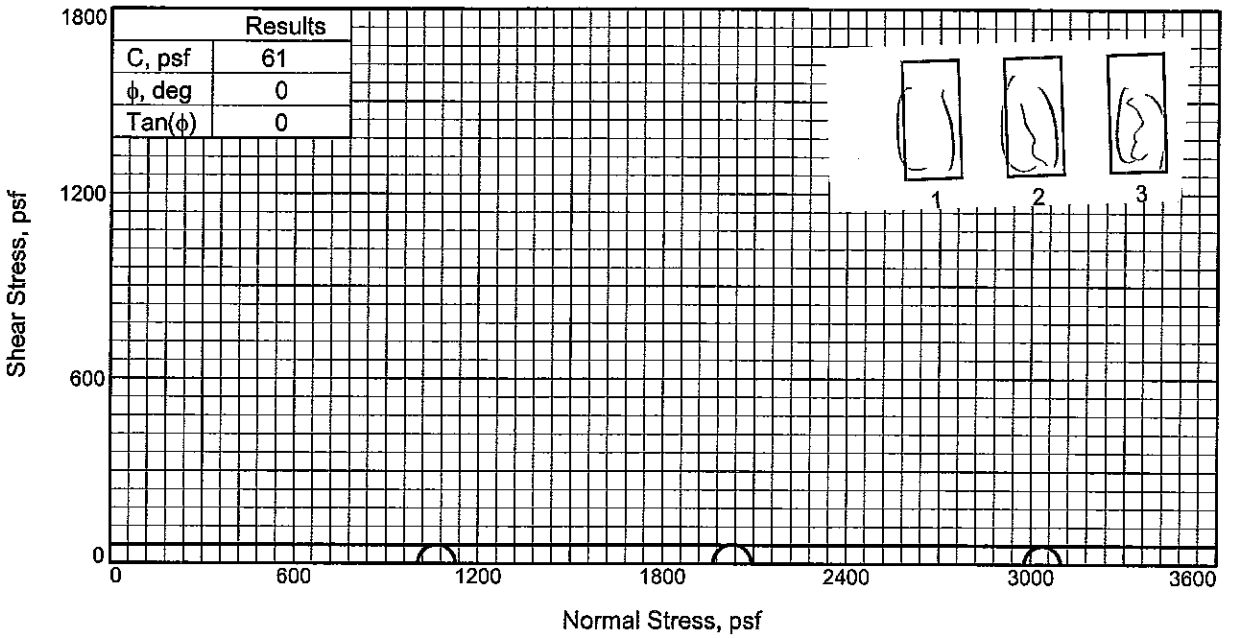
Client: USACE

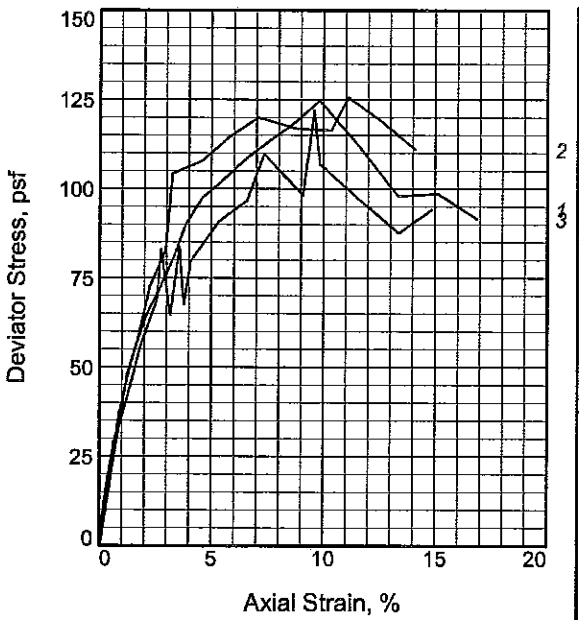
Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Lousisiana

Source of Sample: BSFS-2U **Depth:** 1.0 **Sample Number:** 1B

Project No.: 10-017146 **Figure** _____ **Stantec, Inc.**

Tested By: JC **Checked By:** MJB/JS





Sample No.		1	2	3
Initial	Water Content, %	493.9	441.0	447.1
	Dry Density, pcf	11.5	13.3	12.6
	Saturation, %	98.5	102.1	98.3
	Void Ratio	12.7873	11.0117	11.5971
	Diameter, in.	1.356	1.368	1.391
	Height, in.	2.980	2.961	2.976
At Test	Water Content, %	493.9	441.0	447.1
	Dry Density, pcf	11.5	13.3	12.6
	Saturation, %	98.5	102.1	98.3
	Void Ratio	12.7873	11.0117	11.5971
	Diameter, in.	1.356	1.368	1.391
	Height, in.	2.980	2.961	2.976
Strain rate, in./min.		1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.98	13.66	20.69
Fail. Stress, psf		122	126	118
Strain, %		9.6	11.1	8.6
Ult. Stress, psf		88	111	98
Strain, %		13.4	14.1	13.3
σ_1 Failure, psf		1127	2093	3097
σ_3 Failure, psf		1005	1967	2979

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: VSO BK PT

LL= 455 **PL=** 225 **PI=** 230
Assumed Specific Gravity= 2.55
Remarks: Torvane=0.09 tsf

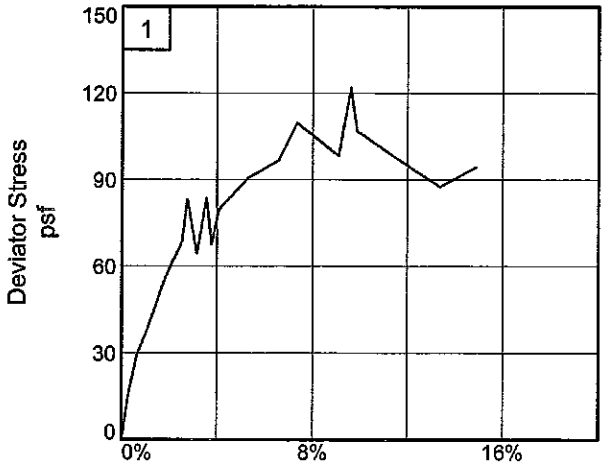
Figure _____

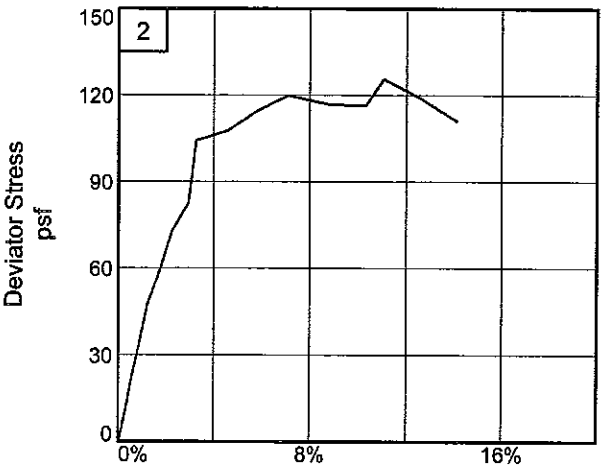
Client: USACE

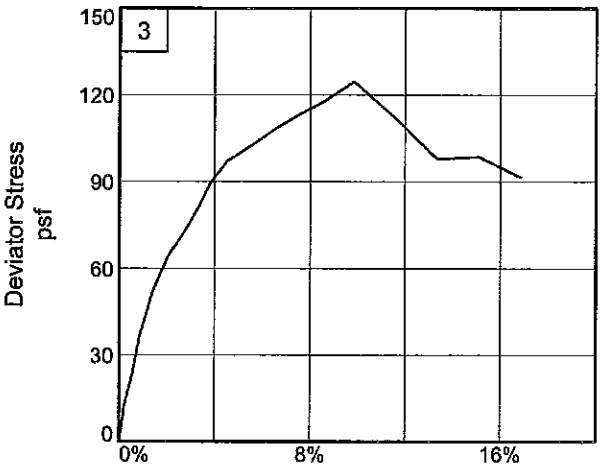
Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Lousisiana
Source of Sample: BSFS-2U **Depth:** 6.0
Sample Number: 2C
Proj. No.: 10-017146 **Date Sampled:** 7/17/2013

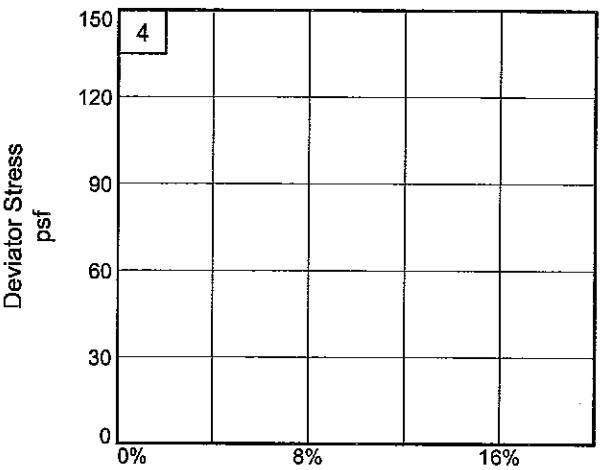
TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

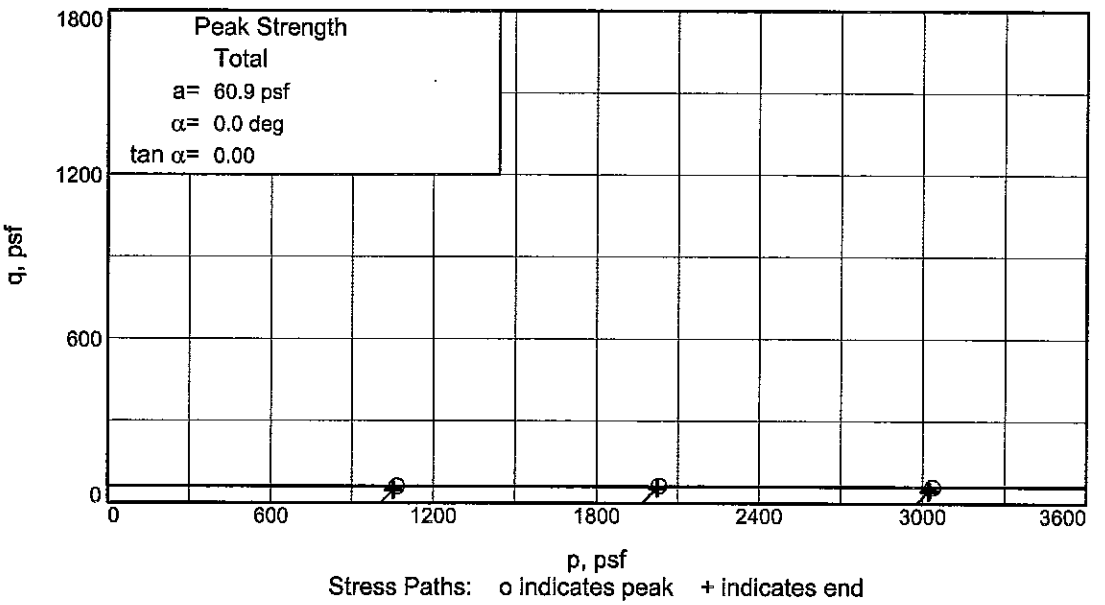
Tested By: JC **Checked By:** MJB/JS











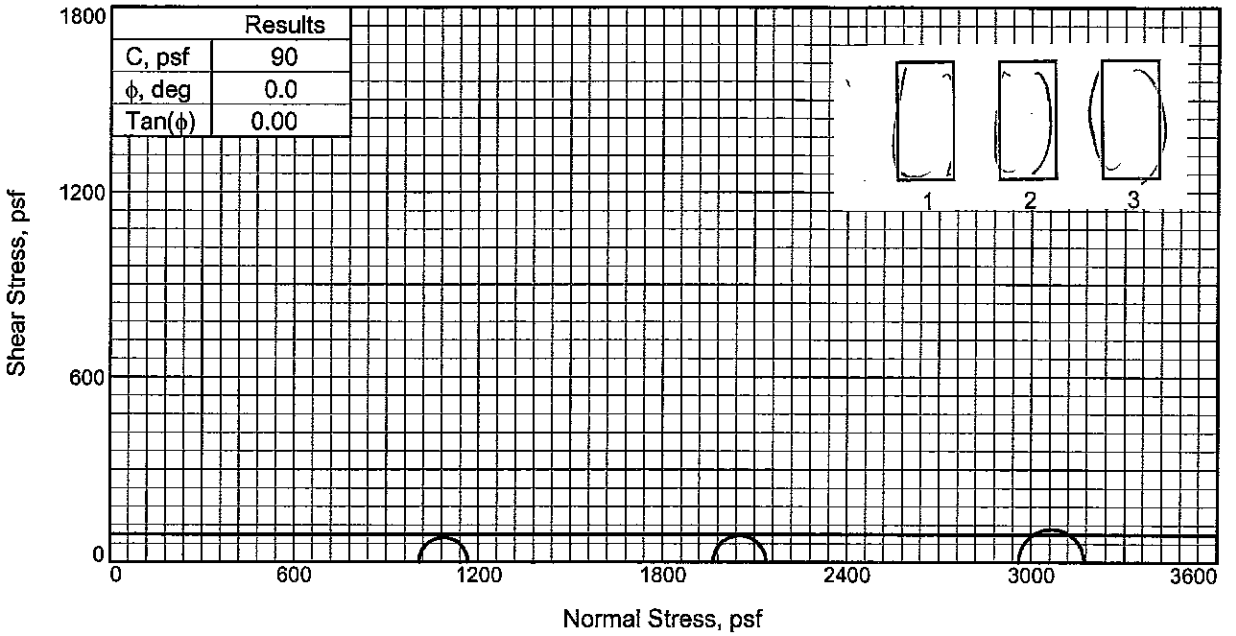
Client: USACE

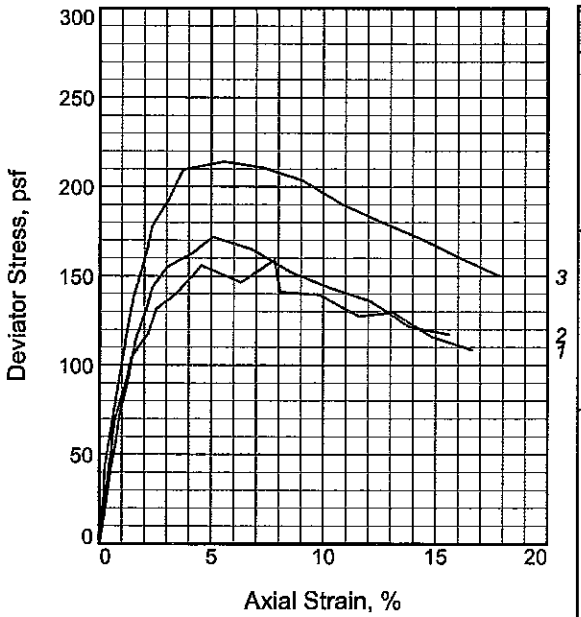
Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Lousisiana

Source of Sample: BSFS-2U **Depth:** 6.0 **Sample Number:** 2C

Project No.: 10-017146 **Figure** _____ **Stantec, Inc.**

Tested By: JC **Checked By:** MJB/JS





Sample No.		1	2	3
Initial	Water Content, %	53.0	64.5	48.9
	Dry Density, pcf	70.5	61.4	74.6
	Saturation, %	102.3	99.5	104.4
	Void Ratio	1.4092	1.7636	1.2748
	Diameter, in.	1.384	1.386	1.375
	Height, in.	2.964	2.981	2.991
At Test	Water Content, %	53.0	64.5	48.9
	Dry Density, pcf	70.5	61.4	74.6
	Saturation, %	102.3	99.5	104.4
	Void Ratio	1.4092	1.7636	1.2748
	Diameter, in.	1.384	1.386	1.375
	Height, in.	2.964	2.981	2.991
Strain rate, in./min.		1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.99	13.65	20.55
Fail. Stress, psf		159	172	214
Strain, %		7.8	5.1	5.6
Ult. Stress, psf		116	121	171
Strain, %		14.8	13.8	14.3
σ_1 Failure, psf		1166	2137	3173
σ_3 Failure, psf		1007	1966	2959

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: VSO GR & DGR CH3 W/ ARS ML, O, WD
LL= 73 **PL=** 28 **PI=** 45
Assumed Specific Gravity= 2.72
Remarks: Torvane=0.09 tsf

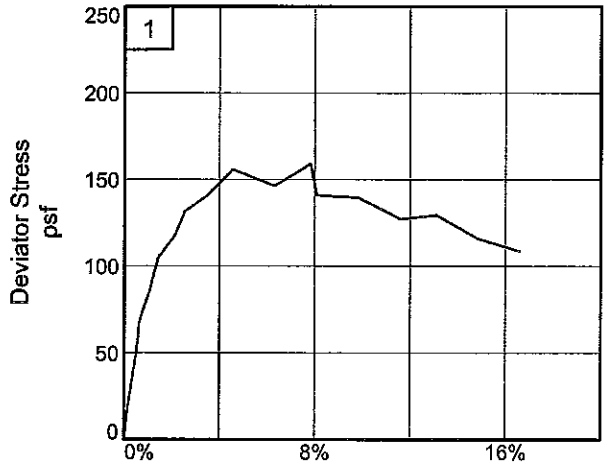
Figure _____

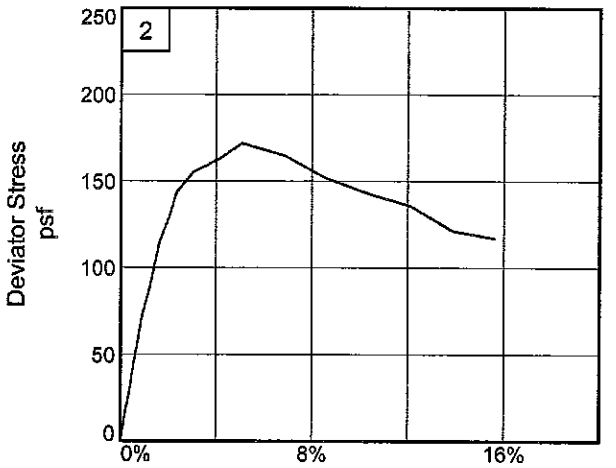
Client: USACE

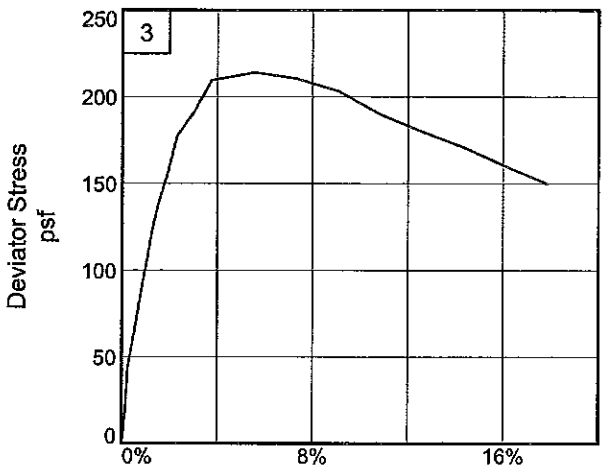
Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Lousisiana
Source of Sample: BSFS-2U **Depth:** 9.0
Sample Number: 3B
Proj. No.: 10-017146 **Date Sampled:** 7/17/2013

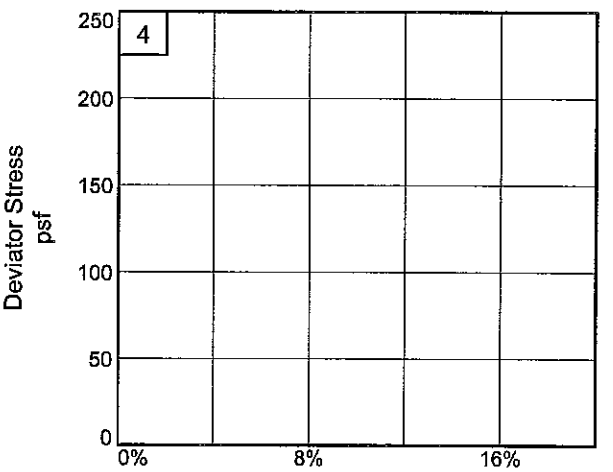
TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

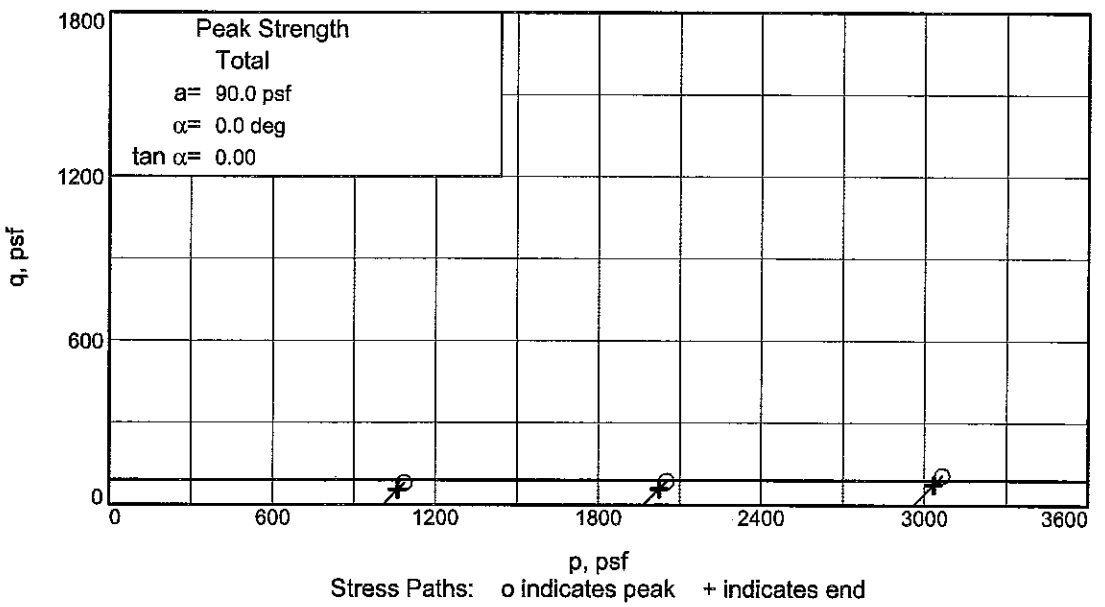
Tested By: JC **Checked By:** MJB/JS











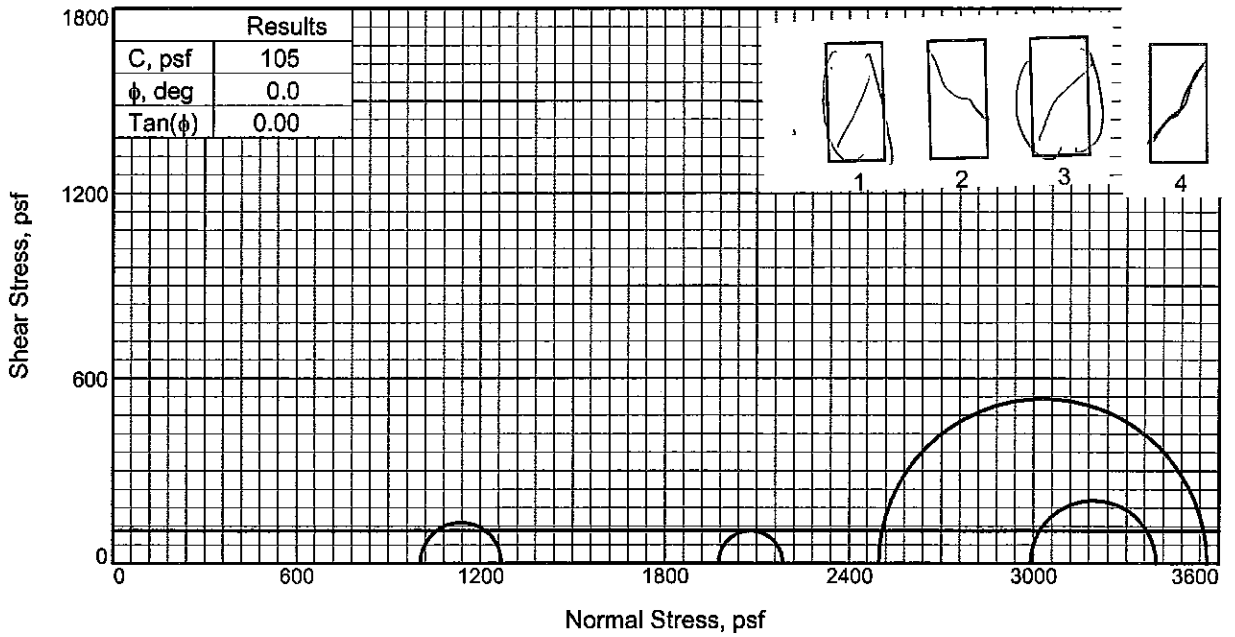
Client: USACE

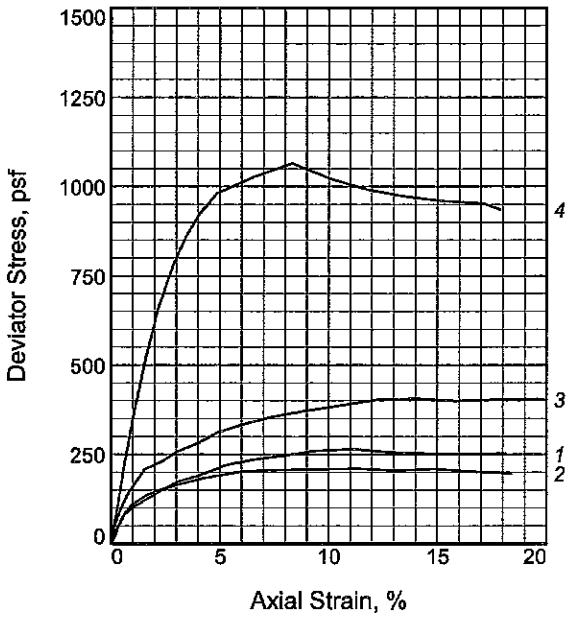
Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Lousisiana

Source of Sample: BSFS-2U **Depth:** 9.0 **Sample Number:** 3B

Project No.: 10-017146 **Figure** _____ **Stantec, Inc.**

Tested By: JC **Checked By:** MJB/JS





Sample No.		1	2	3	4
Initial	Water Content, %	33.0	34.7	31.8	33.5
	Dry Density, pcf	93.4	89.3	88.6	88.1
	Saturation, %	110.8	105.6	95.0	98.3
	Void Ratio	0.8048	0.8868	0.9027	0.9274
	Diameter, in.	1.387	1.397	1.424	1.416
	Height, in.	2.994	2.998	2.997	2.986
At Test	Water Content, %	33.0	34.7	31.8	33.5
	Dry Density, pcf	93.4	89.3	88.6	88.1
	Saturation, %	110.8	105.6	95.0	98.3
	Void Ratio	0.8048	0.8868	0.9027	0.9274
	Diameter, in.	1.387	1.397	1.424	1.416
	Height, in.	2.994	2.998	2.997	2.986
Strain rate, in./min.		1.000	1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00	0.00
Cell Pressure, psi		6.97	13.71	20.77	17.34
Fail. Stress, psf		265	210	406	1065
Strain, %		11.1	11.3	14.1	8.3
Ult. Stress, psf		252	209	406	971
Strain, %		14.6	14.8	14.1	13.6
σ_1 Failure, psf		1268	2184	3397	3562
σ_3 Failure, psf		1004	1974	2991	2497

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: VSO GNG & T CL6 W/ LNS & LYS ML
LL= 44 **PL=** 18 **PI=** 26
Assumed Specific Gravity= 2.70
Remarks: Torvane=0.17 tsf

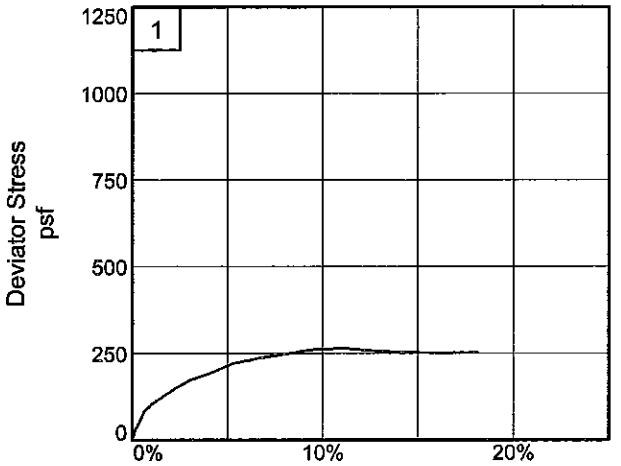
Client: USACE

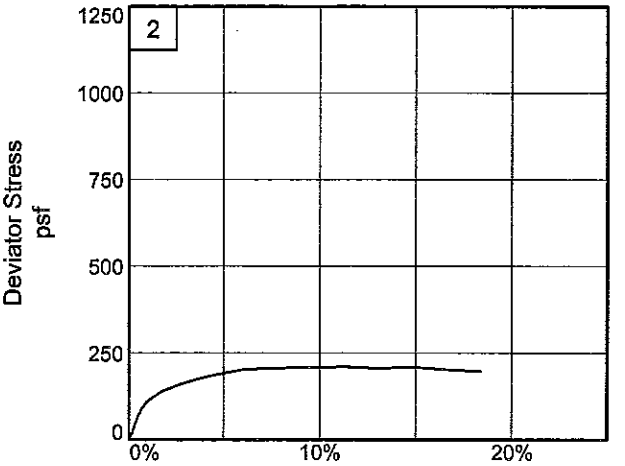
Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Lousisiana
Source of Sample: BSFS-2U **Depth:** 32.0
Sample Number: 9A
Proj. No.: 10-017146 **Date Sampled:** 7/17/2013

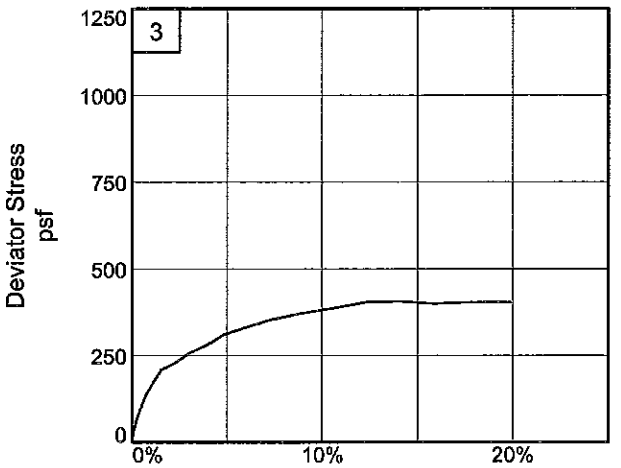
TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

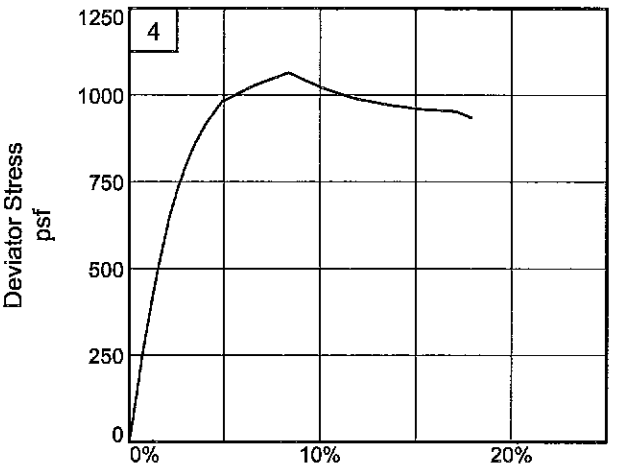
Figure _____

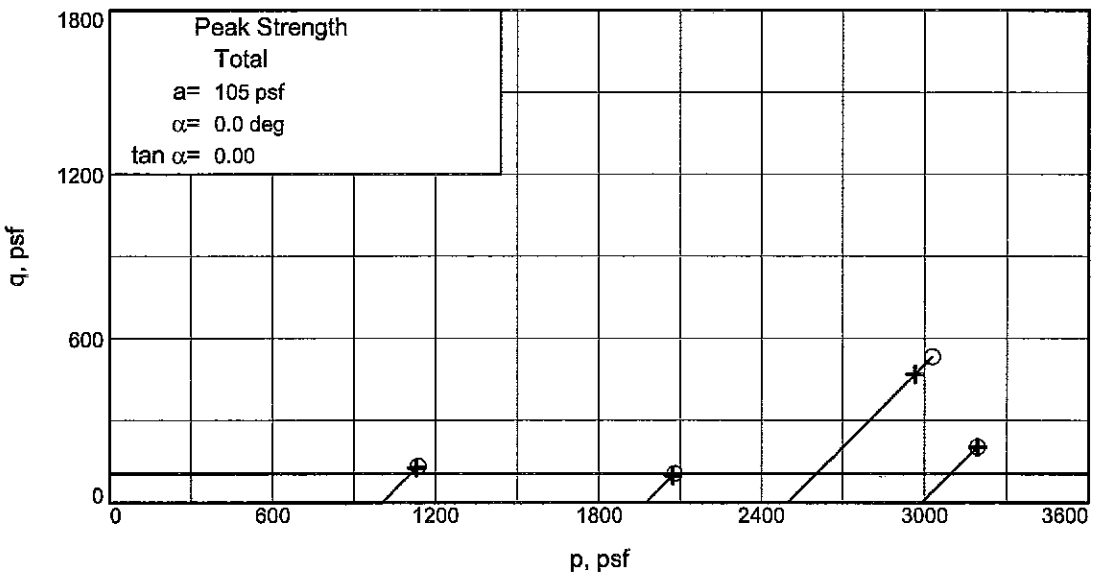
Tested By: JC **Checked By:** MJB/JS











Stress Paths: o indicates peak + indicates end

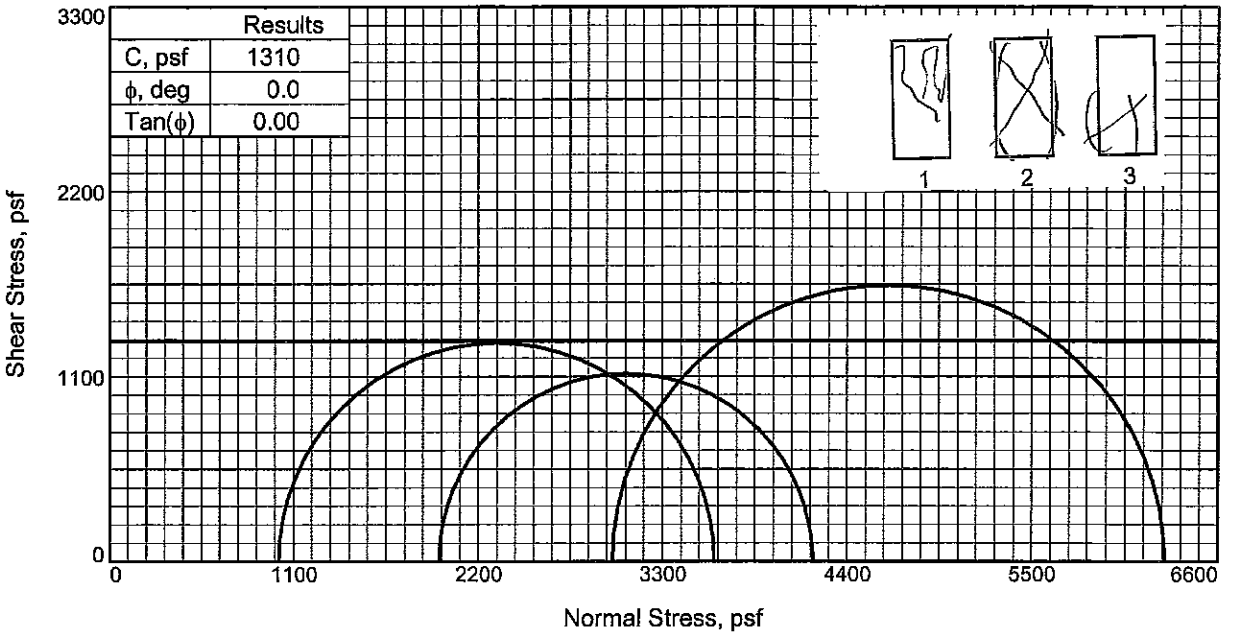
Client: USACE

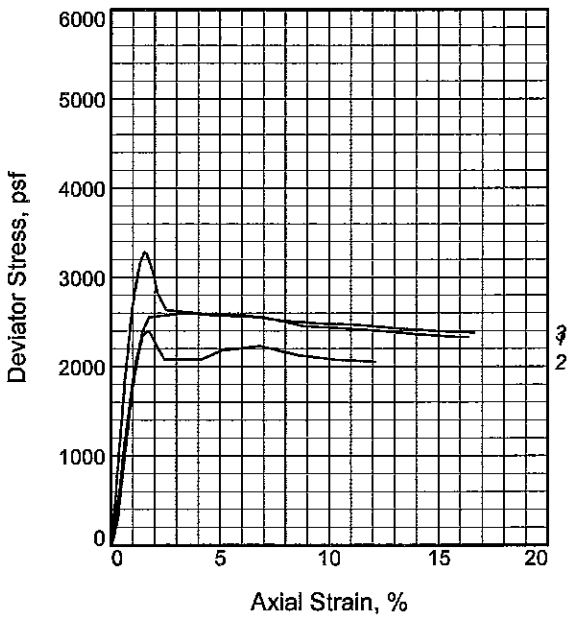
Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Lousisiana

Source of Sample: BSFS-2U **Depth:** 32.0 **Sample Number:** 9A

Project No.: 10-017146 **Figure** _____ **Stantec, Inc.**

Tested By: JC **Checked By:** MJB/JS





Sample No.		1	2	3
Initial	Water Content, %	33.2	32.6	33.4
	Dry Density, pcf	89.8	89.7	89.5
	Saturation, %	102.1	100.1	102.1
	Void Ratio	0.8778	0.8788	0.8838
	Diameter, in.	1.423	1.416	1.410
	Height, in.	2.996	2.997	2.994
At Test	Water Content, %	33.2	32.6	33.4
	Dry Density, pcf	89.8	89.7	89.5
	Saturation, %	102.1	100.1	102.1
	Void Ratio	0.8778	0.8788	0.8838
	Diameter, in.	1.423	1.416	1.410
	Height, in.	2.996	2.997	2.994
Strain rate, in./min.		1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		7.02	13.64	20.84
Fail. Stress, psf		2597	2232	3284
Strain, %		3.4	6.8	1.5
Ult. Stress, psf		2360	2054	2398
Strain, %		14.1	12.1	14.8
σ_1 Failure, psf		3608	4196	6285
σ_3 Failure, psf		1011	1964	3001

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: ST GNG CL6 W/ LNS & ARS ML

LL= 43 **PL=** 16 **PI=** 27

Assumed Specific Gravity= 2.70

Remarks: Torvane=0.60 tsf

Figure _____

Client: USACE

Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Lousisiana

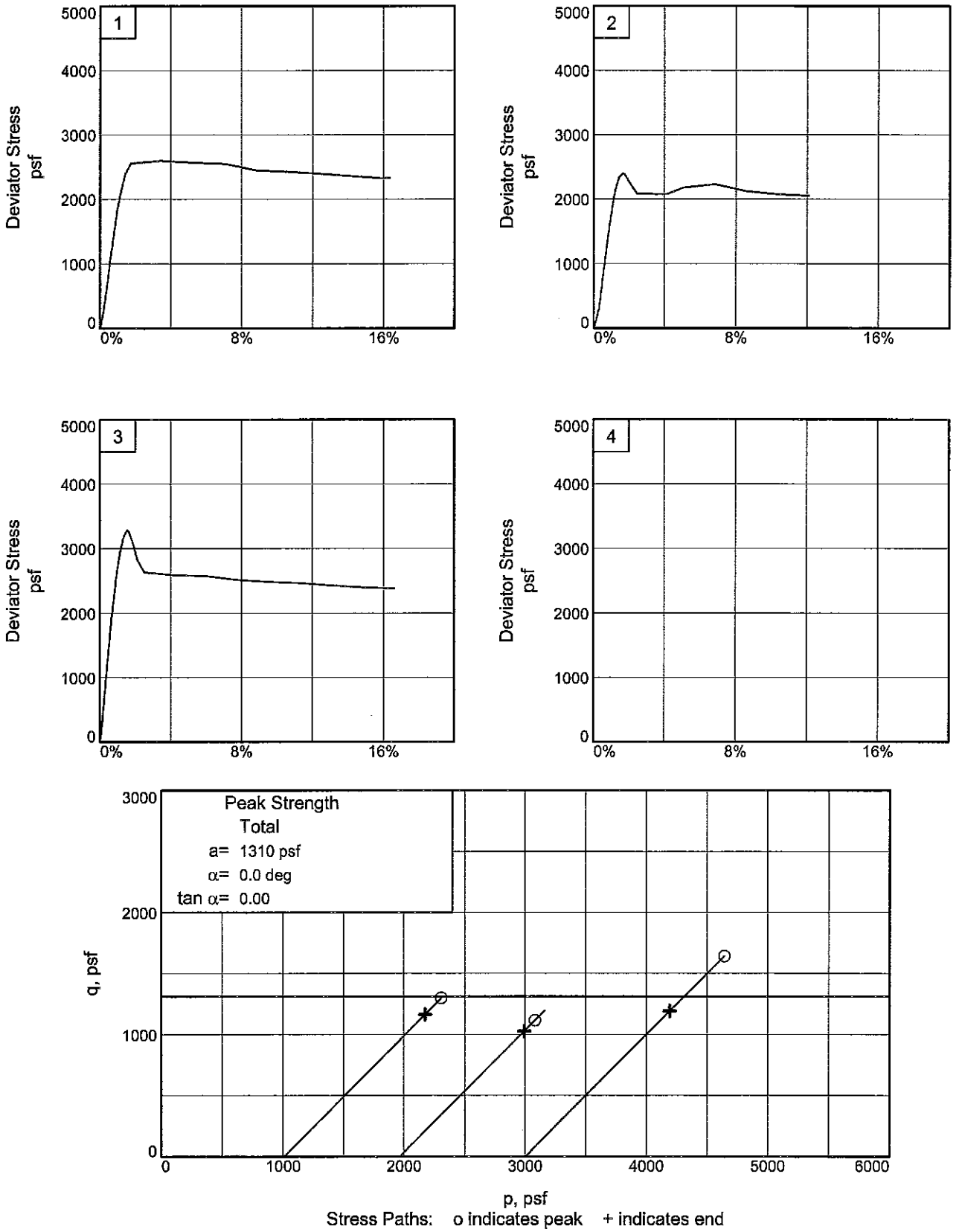
Source of Sample: BSFS-2U **Depth:** 38.0

Sample Number: 10C

Proj. No.: 10-017146 **Date Sampled:** 7/17/2013

TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

Tested By: JC **Checked By:** MJB/JS



Client: USACE

Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Lousisiana

Source of Sample: BSFS-2U **Depth:** 38.0 **Sample Number:** 10C

Project No.: 10-017146 **Figure** _____ **Stantec, Inc.**

Tested By: JC **Checked By:** MJB/JS

SUMMARY OF LABORATORY TEST RESULTS

Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Mar Assigned By: _____

Project Number: 10-017146

Current Date: 10/3/2013

Boring: BSFS-3U

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
NS	0.0	NO SAMPLE	NS														
NS	1.0	NO SAMPLE	NS														
NS	2.0	NO SAMPLE	NS														
NS	3.0	NO SAMPLE	NS														
2A	4.0	M BK PT	PT		488												
2B	5.0	VSO GR PT	PT		99	46	92	100	UU	0	28		211	69	142	0.07	
2C	6.0	VSO DGR CH4 W/ O	CH4		102												
3A	8.0	VSO GR CHOB	CHOB		175												
3B	9.0	VSO DGR CHOB	CHOB		207	25	77	100					178	36	142		GS=2.48, CONS
3C	10.0	VSO GR CH4 W/ ARS SM	CH4		66	63	104	100	UU	0	71		81	21	60	0.21	
3D	11.0	GR ML W/ LYS CH, RT	ML		96												
4A	12.0	VSO GR CH2 W/ LYS ML	CH2		55												
4B	13.0	VSO GR CH2 W/ LYS ML	CH2		48												
4C	14.0	VSO GR CH3 W/ LNS ML	CH3		56	70	109	100	UU	0	149		77	27	50	0.17	
4D	15.0	GR ML W/ LNS CH	ML		46												
5A	16.0	GR SM	SM		33												
6A	20.0	GR SM W/ SIF	SM		7												
6B	21.0	GR SM	SM		9												
6C	22.0	GR SM	SM		19												
6D	23.0	GR SM W/ SIF	SM		20												
7A	24.0	GR SM	SM		27												
8A	28.0	GR SM	SM		26												

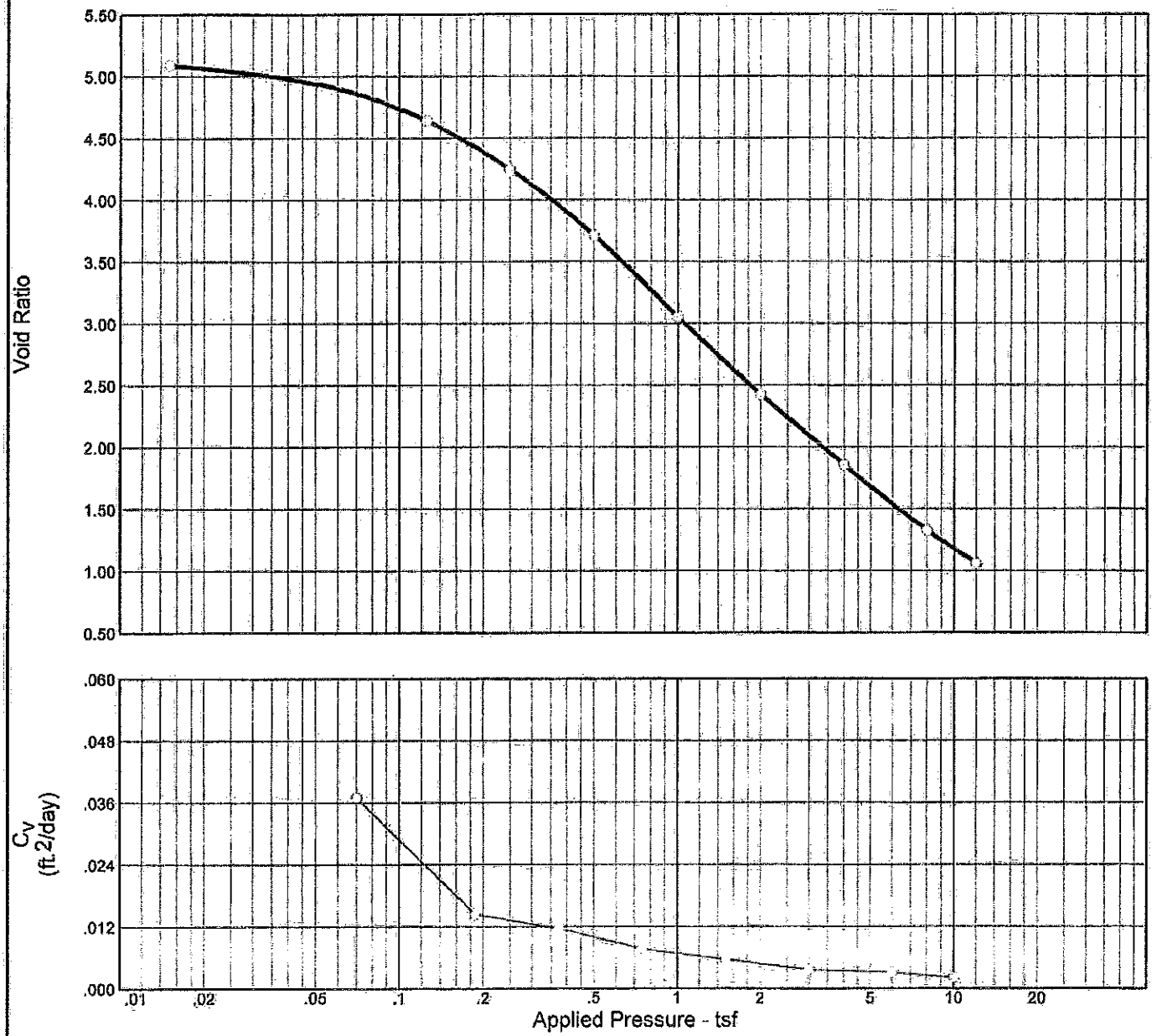
Remarks: Sample 3B - No rebound recorded due to machine malfunction.

Checked By: _____

Stantec Consulting Services Inc.

File Name: BSFS-3U_be_boring_log_v10_0.xls

Consolidation Test Report



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture							
100.7 %	206.7 %	25.4	178	142	2.48	0.21	2.16	5.090

MATERIAL DESCRIPTION	USCS	AASHTO
VSO DGR CH-OB	CH-OB	

Project No. 10-017146 **Client:** USACE

Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Louisiana

Source: BSFS-3U **Sample No.:** 3B **Elev./Depth:** 9.0'

Remarks:

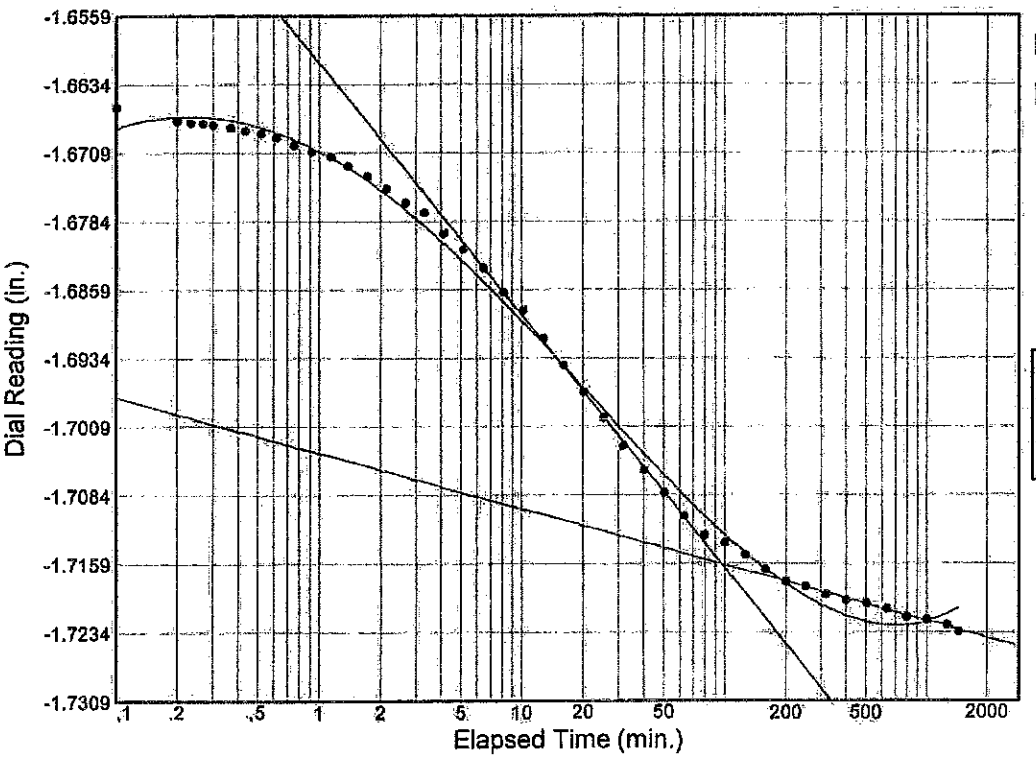
BURNS COOLEY DENNIS, INC.

Ridgeland, Mississippi

Figure

Dial Reading vs. Time

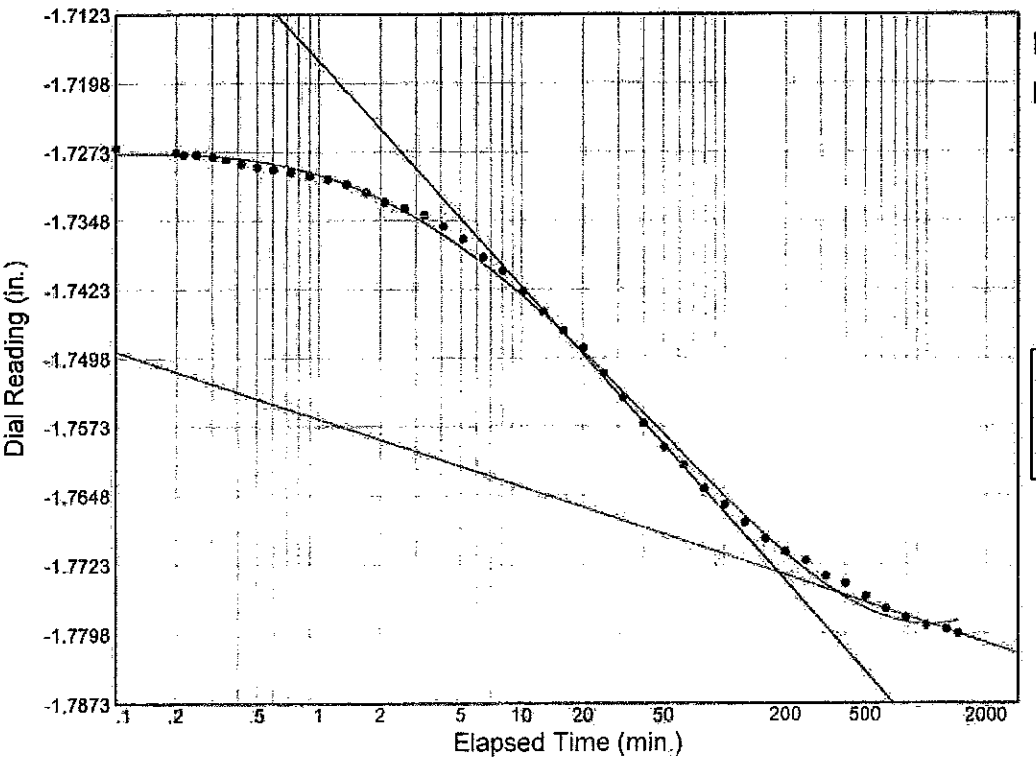
Project No.: 10-017146
Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Louisiana
Source: BSFS-3U Sample No.: 3B Elev./Depth: 9.0'



Load No.= 2
Load= 0.13 tsf
D_0 = -1.66100
D_{50} = -1.68848
D_{100} = -1.71596
T_{50} = 9.15 min.

C_v @ T_{50}
0.04 ft.^{2}/day

C_α = 0.007



Load No.= 3
Load= 0.25 tsf
D_0 = -1.72535
D_{50} = -1.74925
D_{100} = -1.77316
T_{50} = 20.28 min.

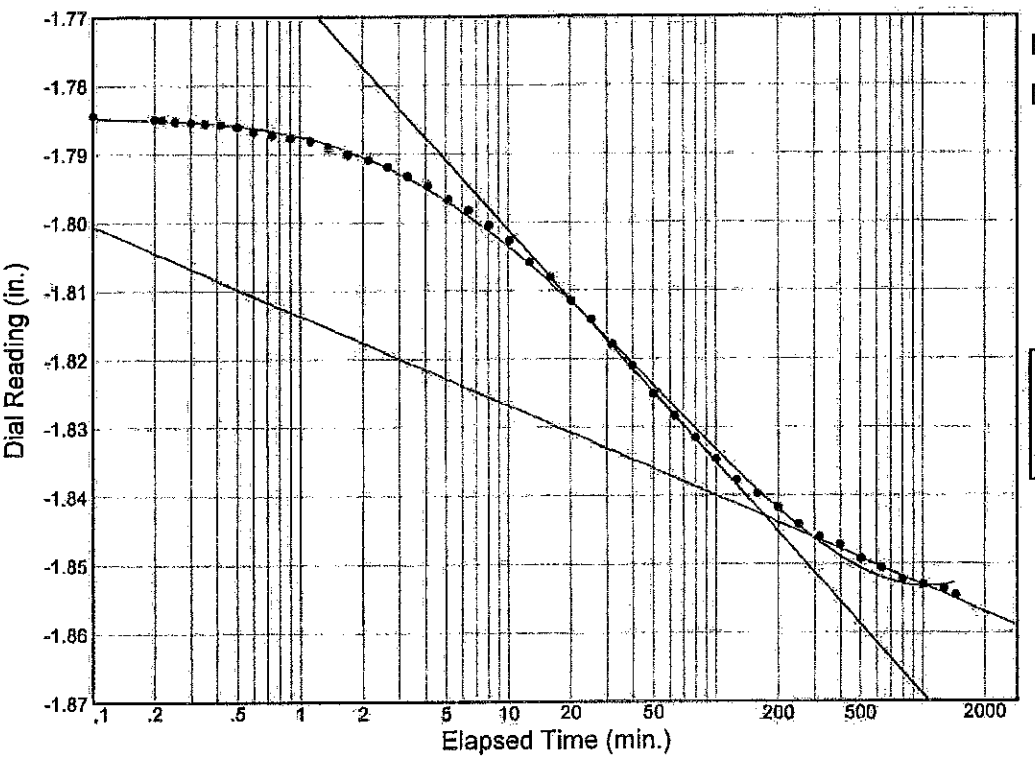
C_v @ T_{50}
0.01 ft.^{2}/day

C_α = 0.009

Figure

Dial Reading vs. Time

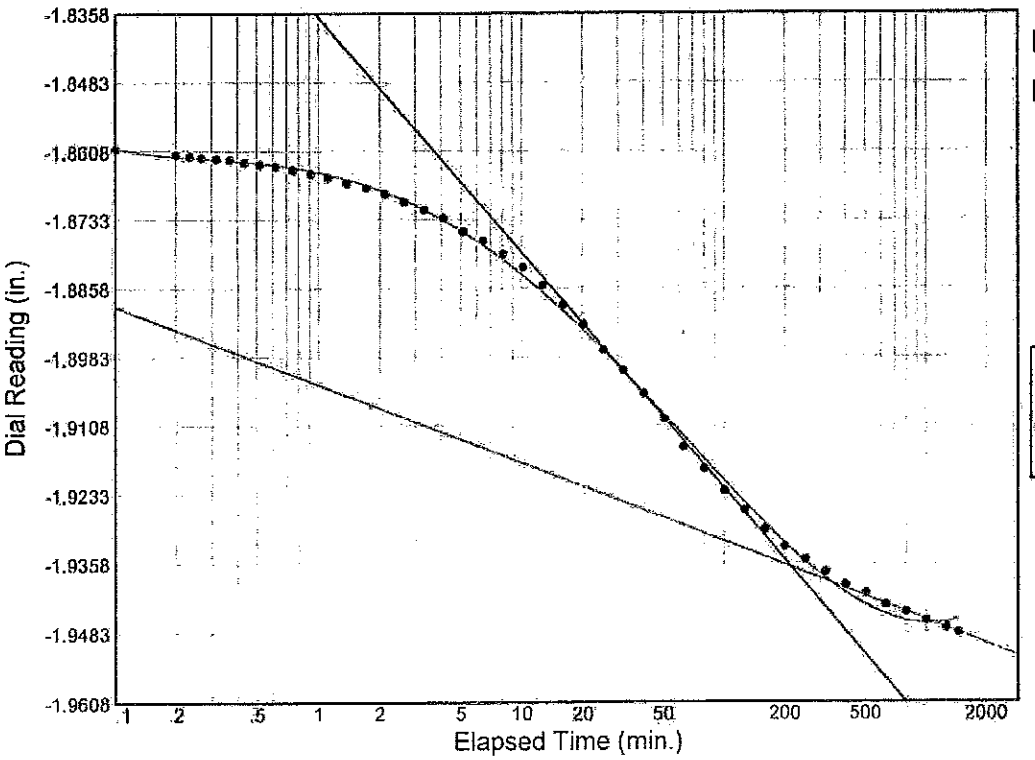
Project No.: 10-017146
Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Louisiana
Source: BSFS-3U Sample No.: 3B Elev./Depth: 9.0'



Load No.= 4
Load= 0.50 tsf
D_0 = -1.78154
D_{50} = -1.81231
D_{100} = -1.84309
T_{50} = 20.97 min.

C_v @ T_{50}
0.01 ft.^{2}/day

C_α = 0.018



Load No.= 5
Load= 1.00 tsf
D_0 = -1.85683
D_{50} = -1.89666
D_{100} = -1.93649
T_{50} = 24.59 min.

C_v @ T_{50}
0.01 ft.^{2}/day

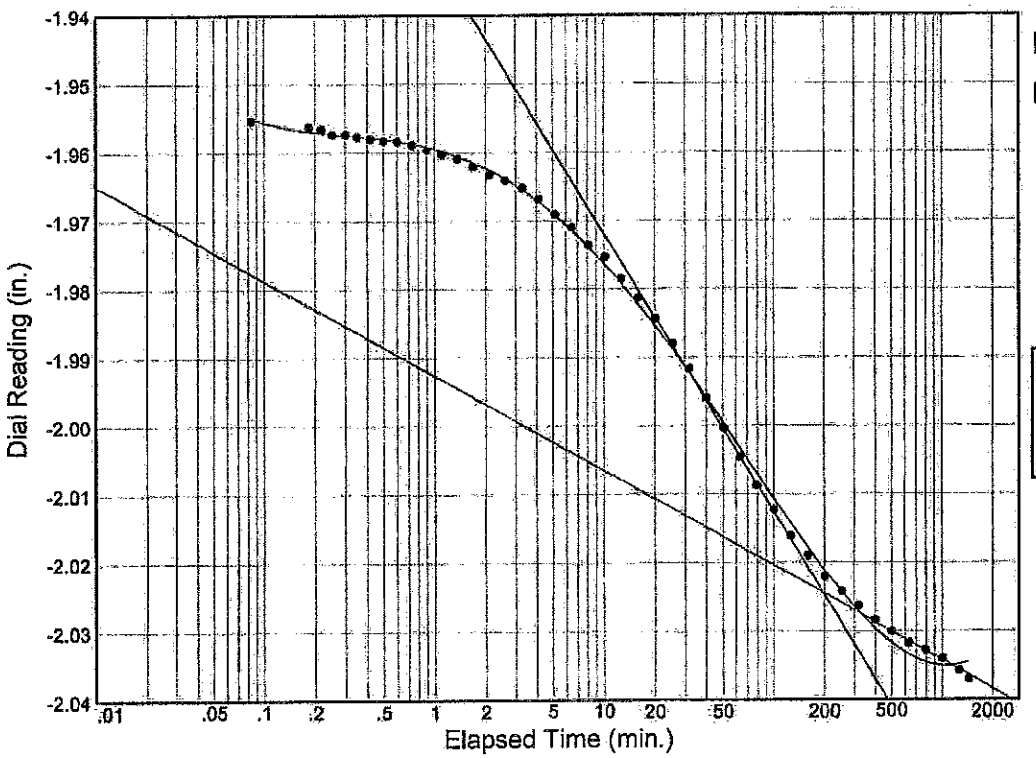
C_α = 0.021

Figure

BURNS COOLEY DENNIS, INC.

Dial Reading vs. Time

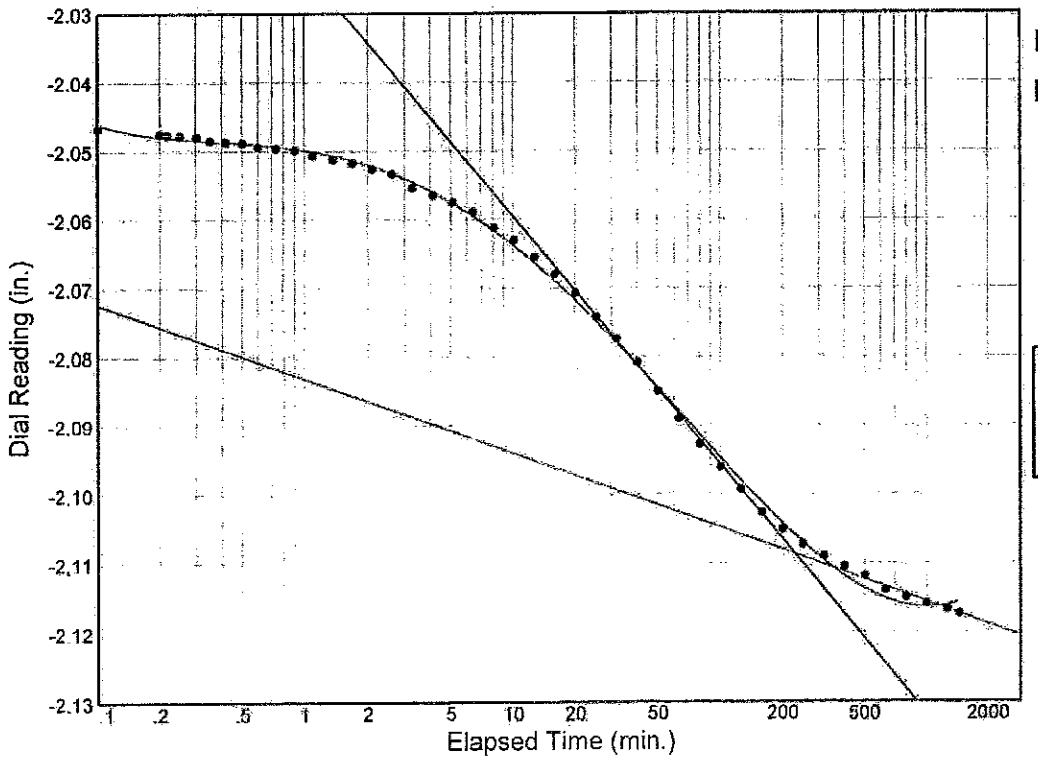
Project No.: 10-017146
Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Louisiana
Source: BSFS-3U Sample No.: 3B Elev./Depth: 9.0'



Load No.= 6
Load= 2.00 tsf
D_0 = -1.95191
D_{50} = -1.98820
D_{100} = -2.02448
T_{50} = 24.14 min.

C_v @ T_{50}
0.01 ft.^{2}/day

C_α = 0.024



Load No.= 7
Load= 4.00 tsf
D_0 = -2.04201
D_{50} = -2.07534
D_{100} = -2.10868
T_{50} = 26.12 min.

C_v @ T_{50}
0.00 ft.^{2}/day

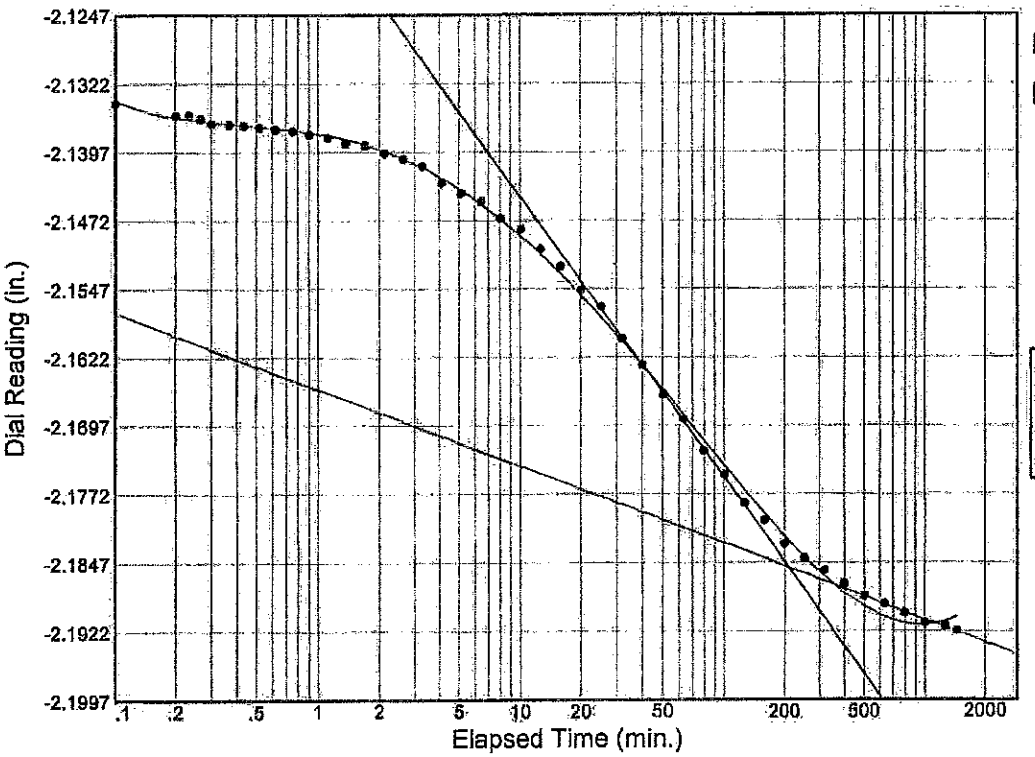
C_α = 0.023

Figure

BURNS COOLEY DENNIS, INC.

Dial Reading vs. Time

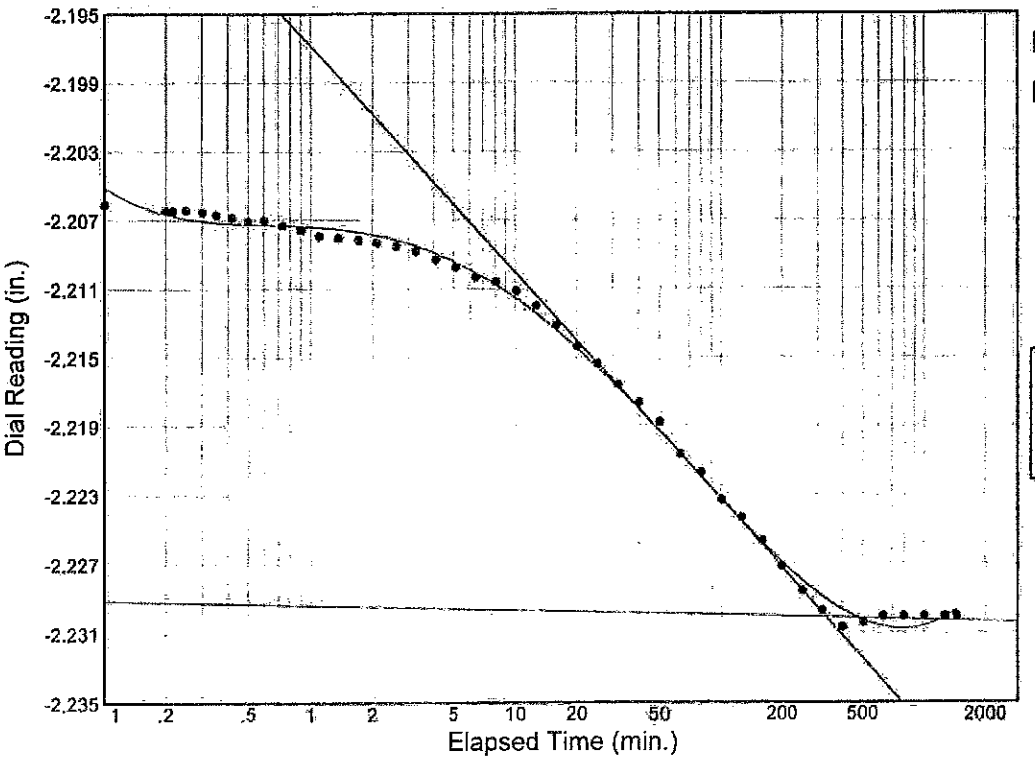
Project No.: 10-017146
Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Louisiana
Source: BSFS-3U Sample No.: 3B Elev./Depth: 9.0'



Load No.= 8
Load= 8.00 tsf
D_0 = -2.12630
D_{50} = -2.15579
D_{100} = -2.18528
T_{50} = 20.70 min.

C_v @ T_{50}
0.00 ft.^{2}/day

C_α = 0.021



Load No.= 9
Load= 12.00 tsf
D_0 = -2.19940
D_{50} = -2.21475
D_{100} = -2.23010
T_{50} = 21.23 min.

C_v @ T_{50}
0.00 ft.^{2}/day

C_α = 0.001

Figure

BURNS COOLEY DENNIS, INC.

CONSOLIDATION TEST DATA

Client: USACE
Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Louisiana
Project Number: 10-017146

Sample Data

Source: BSFS-3U
Sample No.: 3B
Elev. or Depth: 9.0'
Sample Length(in./cm.):
Location:
Description: VSO DGR CH-OB
Liquid Limit: 178
Plasticity Index: 142
USCS: CH-OB
AASHTO:
Figure No.:
Testing Remarks:

Test Specimen Data

TOTAL SAMPLE		BEFORE TEST	AFTER TEST
Wet w+t	= 398.68 g.	Consolidometer # = 9	Wet w+t = 292.13 g.
Dry w+t	= 249.37 g.		Dry w+t = 249.37 g.
Tare Wt.	= 177.12 g.	Spec. Gravity = 2.48	Tare Wt. = 177.12 g.
Height	= .86 in.	Height = .86 in.	
Diameter	= 4.00 in.	Diameter = 2.50 in.	
Weight	= 221.56 g.	Defl. Table = n/a	
Moisture	= 206.7 %	Ht. Solids = 0.1415 in.	Moisture = 59.2 %
Wet Den.	= 78.0 pcf	Dry Wt. = 28.22 g.*	Dry Wt. = 72.25 g.
Dry Den.	= 25.4 pcf	Void Ratio = 5.090	Void Ratio = 1.058
		Saturation = 100.7 %	

*** Initial dry weight used in calculations**

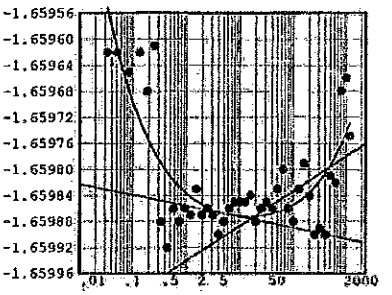
End-of-Load Summary

Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (ft.^{2}/day)	C_α	Void Ratio	% Compression /Swell
start	-1.65961				5.090	
0.02	-1.65975	0.00000			5.089	0.0 Comprs.
0.13	-1.72340	0.00000	0.04	0.007	4.639	7.4 Comprs.
0.25	-1.77974	0.00000	0.01	0.009	4.241	13.9 Comprs.
0.50	-1.85465	0.00000	0.01	0.018	3.712	22.6 Comprs.
1.00	-1.94822	0.00000	0.01	0.021	3.050	33.5 Comprs.
2.00	-2.03707	0.00000	0.01	0.024	2.422	43.8 Comprs.
4.00	-2.11729	0.00000	0.00	0.023	1.855	53.1 Comprs.
8.00	-2.19220	0.00000	0.00	0.021	1.326	61.8 Comprs.
12.00	-2.23001	0.00000	0.00	0.001	1.058	66.2 Comprs.

C_c = 2.16 P_c = 0.21 tsf

Pressure: 0.02 tsf **TEST READINGS** **Load No. 1**

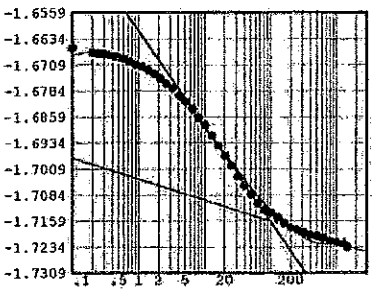
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.65961	23	12.53	-1.65985
2	0.03	-1.65962	24	15.80	-1.65984
3	0.05	-1.65962	25	19.90	-1.65988
4	0.08	-1.65965	26	25.07	-1.65986
5	0.13	-1.65962	27	31.58	-1.65985
6	0.18	-1.65968	28	39.77	-1.65986
7	0.25	-1.65961	29	50.08	-1.65983
8	0.33	-1.65988	30	63.05	-1.65980
9	0.43	-1.65992	31	79.40	-1.65986
10	0.57	-1.65986	32	99.97	-1.65988
11	0.73	-1.65988	33	125.85	-1.65983
12	0.93	-1.65986	34	158.45	-1.65979
13	1.20	-1.65987	35	199.48	-1.65984
14	1.53	-1.65983	36	251.15	-1.65990
15	1.93	-1.65987	37	316.18	-1.65989
16	2.45	-1.65986	38	398.07	-1.65990
17	3.10	-1.65987	39	501.15	-1.65981
18	3.93	-1.65990	40	630.92	-1.65982
19	4.97	-1.65988	41	794.28	-1.65968
20	6.25	-1.65986	42	999.93	-1.65966
21	7.90	-1.65985	43	1182.65	-1.65975
22	9.95	-1.65985			



Void Ratio = 5.089 **Compression =** 0.0 %

Pressure: 0.13 tsf **TEST READINGS** **Load No. 2**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.66100	24	12.73	-1.69129
2	0.10	-1.66589	25	16.00	-1.69423
3	0.20	-1.66736	26	20.10	-1.69716
4	0.23	-1.66768	27	25.27	-1.69998
5	0.27	-1.66772	28	31.77	-1.70308
6	0.30	-1.66783	29	39.97	-1.70566
7	0.37	-1.66820	30	50.27	-1.70816
8	0.43	-1.66845	31	63.25	-1.71072
9	0.52	-1.66878	32	79.58	-1.71279
10	0.62	-1.66923	33	100.15	-1.71360
11	0.75	-1.67005	34	126.05	-1.71501
12	0.92	-1.67080	35	158.65	-1.71657
13	1.13	-1.67138	36	199.68	-1.71787
14	1.38	-1.67242	37	251.35	-1.71849
15	1.72	-1.67355	38	316.38	-1.71934
16	2.13	-1.67494	39	398.27	-1.71992
17	2.65	-1.67646	40	501.35	-1.72024
18	3.30	-1.67752	41	631.12	-1.72084
19	4.12	-1.67975	42	794.48	-1.72174
20	5.15	-1.68151	43	1000.15	-1.72205
21	6.45	-1.68354	44	1259.07	-1.72266
22	8.08	-1.68624	45	1440.37	-1.72340
23	10.15	-1.68820			



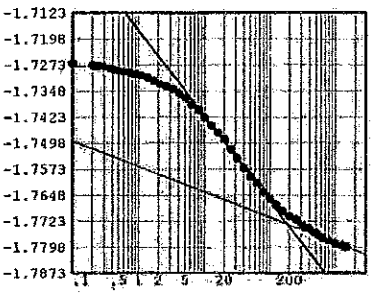
Void Ratio = 4.639 **Compression** = 7.4 %

D_0 = -1.66100 D_{50} = -1.68848 D_{100} = -1.71596

C_v **at 9.1 min.** = 0.04 ft.^{2}/day C_α = 0.007

Pressure: 0.25 tsf **TEST READINGS** **Load No. 3**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.72535	24	12.72	-1.74476
2	0.10	-1.72686	25	15.97	-1.74686
3	0.20	-1.72736	26	20.08	-1.74869
4	0.22	-1.72761	27	25.25	-1.75150
5	0.25	-1.72761	28	31.75	-1.75417
6	0.30	-1.72780	29	39.93	-1.75694
7	0.35	-1.72818	30	50.25	-1.75956
8	0.42	-1.72860	31	63.23	-1.76145
9	0.50	-1.72899	32	79.57	-1.76404
10	0.60	-1.72921	33	100.13	-1.76580
11	0.73	-1.72951	34	126.03	-1.76774
12	0.90	-1.72989	35	158.62	-1.76949
13	1.10	-1.73030	36	199.67	-1.77091
14	1.37	-1.73088	37	251.32	-1.77186
15	1.70	-1.73175	38	316.37	-1.77353
16	2.10	-1.73280	39	398.23	-1.77436
17	2.63	-1.73348	40	501.32	-1.77575
18	3.28	-1.73427	41	631.08	-1.77708
19	4.10	-1.73544	42	794.45	-1.77800
20	5.13	-1.73685	43	1000.12	-1.77882
21	6.43	-1.73882	44	1259.03	-1.77931
22	8.07	-1.74030	45	1440.22	-1.77974
23	10.12	-1.74256			



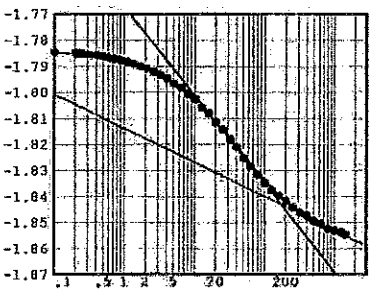
Void Ratio = 4.241 **Compression** = 13.9 %

D_0 = -1.72535 D_{50} = -1.74925 D_{100} = -1.77316

C_v **at 20.3 min.** = 0.01 ft.^{2}/day C_α = 0.009

Pressure: 0.50 tsf **TEST READINGS** **Load No. 4**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.78154	24	12.72	-1.80596
2	0.10	-1.78437	25	15.97	-1.80809
3	0.20	-1.78492	26	20.08	-1.81155
4	0.22	-1.78501	27	25.25	-1.81436
5	0.25	-1.78523	28	31.75	-1.81795
6	0.30	-1.78539	29	39.93	-1.82107
7	0.35	-1.78559	30	50.25	-1.82514
8	0.42	-1.78570	31	63.23	-1.82831
9	0.50	-1.78612	32	79.57	-1.83154
10	0.60	-1.78669	33	100.13	-1.83471
11	0.73	-1.78722	34	126.03	-1.83770
12	0.90	-1.78767	35	158.63	-1.83970
13	1.12	-1.78827	36	199.67	-1.84175
14	1.37	-1.78910	37	251.32	-1.84429
15	1.70	-1.79004	38	316.37	-1.84611
16	2.12	-1.79095	39	398.23	-1.84727
17	2.63	-1.79201	40	501.32	-1.84924
18	3.28	-1.79339	41	631.08	-1.85059
19	4.10	-1.79477	42	794.45	-1.85228
20	5.13	-1.79675	43	1000.12	-1.85308
21	6.43	-1.79823	44	1259.03	-1.85378
22	8.07	-1.80045	45	1440.12	-1.85465
23	10.12	-1.80271			



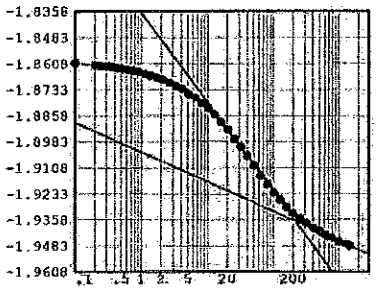
Void Ratio = 3.712 **Compression** = 22.6 %

D_0 = -1.78154 D_{50} = -1.81231 D_{100} = -1.84309

C_v **at 21.0 min.** = 0.01 ft.^{2}/day C_α = 0.018

Pressure: 1.00 tsf **TEST READINGS** **Load No. 5**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.85683	24	12.73	-1.88527
2	0.10	-1.86038	25	16.00	-1.88892
3	0.20	-1.86148	26	20.10	-1.89246
4	0.23	-1.86176	27	25.27	-1.89708
5	0.27	-1.86198	28	31.77	-1.90073
6	0.32	-1.86220	29	39.97	-1.90501
7	0.37	-1.86240	30	50.27	-1.90964
8	0.43	-1.86291	31	63.25	-1.91471
9	0.52	-1.86328	32	79.58	-1.91867
10	0.62	-1.86364	33	100.15	-1.92269
11	0.75	-1.86428	34	126.05	-1.92615
12	0.92	-1.86493	35	158.65	-1.92959
13	1.12	-1.86565	36	199.68	-1.93277
14	1.38	-1.86662	37	251.35	-1.93509
15	1.72	-1.86753	38	316.38	-1.93731
16	2.12	-1.86864	39	398.27	-1.93964
17	2.63	-1.87005	40	501.33	-1.94116
18	3.30	-1.87150	41	631.10	-1.94332
19	4.12	-1.87302	42	794.48	-1.94458
20	5.15	-1.87549	43	1000.13	-1.94613
21	6.45	-1.87721	44	1259.07	-1.94739
22	8.08	-1.87967	45	1440.42	-1.94822
23	10.13	-1.88195			



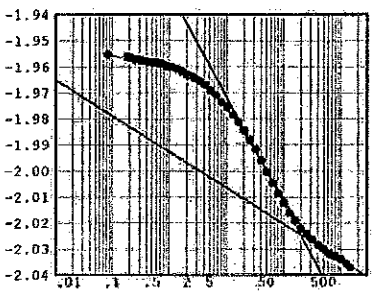
Void Ratio = 3.050 **Compression** = 33.5 %

D_0 = -1.85683 D_{50} = -1.89666 D_{100} = -1.93649

C_v **at 24.6 min.** = 0.01 ft.^{2}/day C_α = 0.021

Pressure: 2.00 tsf **TEST READINGS** **Load No. 6**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.95191	24	12.72	-1.97857
2	0.08	-1.95528	25	15.98	-1.98128
3	0.18	-1.95629	26	20.08	-1.98440
4	0.22	-1.95655	27	25.25	-1.98808
5	0.25	-1.95731	28	31.75	-1.99167
6	0.30	-1.95738	29	39.93	-1.99593
7	0.35	-1.95767	30	50.25	-2.00032
8	0.42	-1.95804	31	63.23	-2.00456
9	0.50	-1.95832	32	79.57	-2.00871
10	0.60	-1.95839	33	100.13	-2.01227
11	0.73	-1.95889	34	126.03	-2.01616
12	0.90	-1.95979	35	158.62	-2.01904
13	1.10	-1.96026	36	199.67	-2.02207
14	1.37	-1.96096	37	251.32	-2.02428
15	1.68	-1.96210	38	316.37	-2.02641
16	2.10	-1.96333	39	398.23	-2.02843
17	2.62	-1.96423	40	501.32	-2.03009
18	3.28	-1.96532	41	631.08	-2.03179
19	4.10	-1.96688	42	794.45	-2.03282
20	5.13	-1.96912	43	1000.12	-2.03403
21	6.43	-1.97100	44	1259.03	-2.03589
22	8.07	-1.97357	45	1440.08	-2.03707
23	10.12	-1.97532			



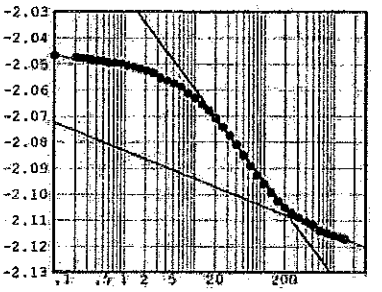
Void Ratio = 2.422 **Compression** = 43.8 %

D_0 = -1.95191 D_{50} = -1.98820 D_{100} = -2.02448

C_v **at 24.1 min.** = 0.01 ft.^{2}/day C_α = 0.024

Pressure: 4.00 tsf **TEST READINGS** **Load No. 7**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-2.04201	24	12.70	-2.06549
2	0.10	-2.04673	25	15.97	-2.06793
3	0.20	-2.04748	26	20.07	-2.07080
4	0.22	-2.04770	27	25.23	-2.07422
5	0.25	-2.04787	28	31.75	-2.07742
6	0.30	-2.04800	29	39.93	-2.08087
7	0.35	-2.04846	30	50.25	-2.08500
8	0.42	-2.04865	31	63.22	-2.08899
9	0.50	-2.04883	32	79.57	-2.09271
10	0.60	-2.04943	33	100.13	-2.09607
11	0.73	-2.04959	34	126.02	-2.09932
12	0.90	-2.04987	35	158.62	-2.10269
13	1.10	-2.05065	36	199.65	-2.10509
14	1.37	-2.05124	37	251.32	-2.10728
15	1.68	-2.05176	38	316.35	-2.10899
16	2.10	-2.05266	39	398.23	-2.11053
17	2.62	-2.05337	40	501.32	-2.11186
18	3.27	-2.05535	41	631.08	-2.11400
19	4.10	-2.05645	42	794.45	-2.11497
20	5.12	-2.05748	43	1000.12	-2.11593
21	6.42	-2.05888	44	1259.03	-2.11666
22	8.05	-2.06123	45	1440.07	-2.11729
23	10.12	-2.06302			



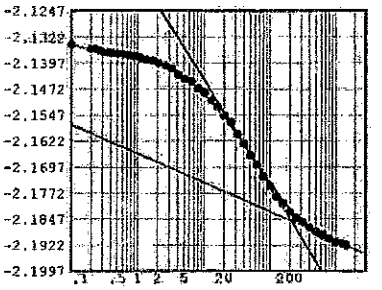
Void Ratio = 1.855 **Compression** = 53.1 %

D_0 = -2.04201 D_{50} = -2.07534 D_{100} = -2.10868

C_v **at 26.1 min.** = 0.00 ft.^{2}/day C_α = 0.023

Pressure: 8.00 tsf **TEST READINGS** **Load No. 8**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-2.12630	24	12.72	-2.15043
2	0.10	-2.13431	25	15.97	-2.15232
3	0.20	-2.13571	26	20.08	-2.15486
4	0.23	-2.13571	27	25.25	-2.15675
5	0.27	-2.13608	28	31.75	-2.16024
6	0.30	-2.13658	29	39.93	-2.16304
7	0.37	-2.13666	30	50.25	-2.16633
8	0.43	-2.13681	31	63.23	-2.16900
9	0.52	-2.13702	32	79.57	-2.17247
10	0.62	-2.13723	33	100.13	-2.17508
11	0.75	-2.13742	34	126.03	-2.17825
12	0.90	-2.13777	35	158.62	-2.18014
13	1.12	-2.13822	36	199.67	-2.18264
14	1.37	-2.13879	37	251.32	-2.18428
15	1.70	-2.13904	38	316.37	-2.18559
16	2.12	-2.13984	39	398.23	-2.18703
17	2.63	-2.14048	40	501.32	-2.18840
18	3.28	-2.14134	41	631.08	-2.18922
19	4.10	-2.14313	42	794.45	-2.19022
20	5.13	-2.14431	43	1000.12	-2.19132
21	6.43	-2.14514	44	1259.03	-2.19169
22	8.07	-2.14700	45	1440.08	-2.19220
23	10.12	-2.14817			



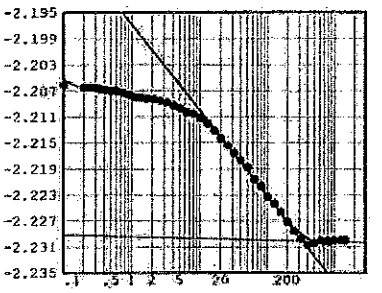
Void Ratio = 1.326 **Compression** = 61.8 %

D_0 = -2.12630 D_{50} = -2.15579 D_{100} = -2.18528

C_v **at 20.7 min.** = 0.00 ft.^{2}/day C_α = 0.021

Pressure: 12.00 tsf **TEST READINGS** **Load No. 9**

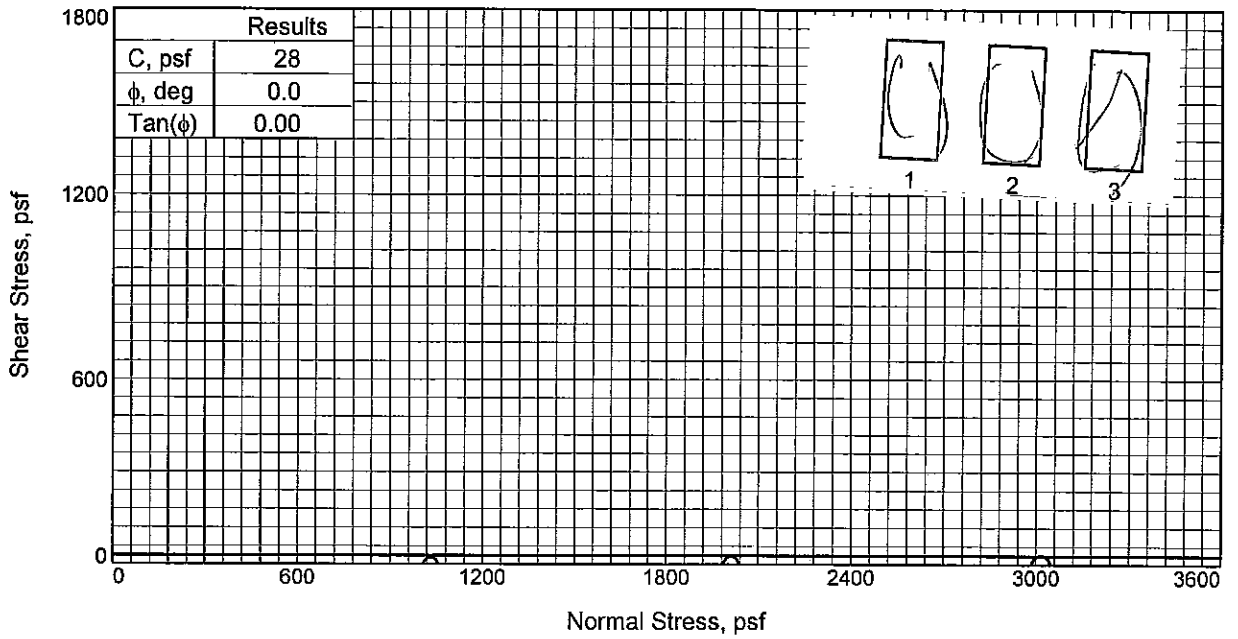
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-2.19940	24	12.70	-2.21199
2	0.10	-2.20610	25	15.97	-2.21314
3	0.20	-2.20647	26	20.07	-2.21436
4	0.22	-2.20650	27	25.23	-2.21538
5	0.25	-2.20645	28	31.75	-2.21661
6	0.30	-2.20654	29	39.93	-2.21767
7	0.35	-2.20670	30	50.23	-2.21878
8	0.42	-2.20686	31	63.22	-2.22065
9	0.50	-2.20705	32	79.55	-2.22171
10	0.60	-2.20700	33	100.12	-2.22330
11	0.73	-2.20733	34	126.02	-2.22434
12	0.90	-2.20759	35	158.62	-2.22568
13	1.10	-2.20793	36	199.65	-2.22714
14	1.37	-2.20804	37	251.32	-2.22858
15	1.70	-2.20818	38	316.35	-2.22973
16	2.10	-2.20833	39	398.23	-2.23068
17	2.62	-2.20853	40	501.30	-2.23040
18	3.27	-2.20883	41	631.07	-2.23004
19	4.10	-2.20931	42	794.43	-2.23003
20	5.13	-2.20975	43	1000.10	-2.23003
21	6.42	-2.21034	44	1259.02	-2.23002
22	8.07	-2.21059	45	1440.48	-2.23001
23	10.12	-2.21115			

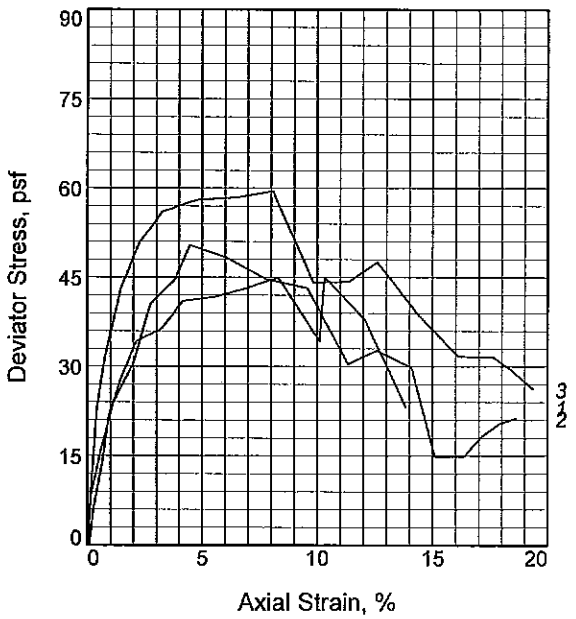


Void Ratio = 1.058 **Compression** = 66.2 %

D_0 = -2.19940 D_{50} = -2.21475 D_{100} = -2.23010

C_v **at 21.2 min.** = 0.00 ft.^{2}/day C_α = 0.001





Sample No.		1	2	3
Initial	Water Content, %	99.2	122.6	86.3
	Dry Density, pcf	46.2	39.4	51.8
	Saturation, %	103.4	102.9	106.3
	Void Ratio	2.4486	3.0377	2.0707
	Diameter, in.	1.396	1.391	1.391
	Height, in.	2.957	2.967	2.962
At Test	Water Content, %	99.2	122.6	86.3
	Dry Density, pcf	46.2	39.4	51.8
	Saturation, %	103.4	102.9	106.3
	Void Ratio	2.4486	3.0377	2.0707
	Diameter, in.	1.396	1.391	1.391
	Height, in.	2.957	2.967	2.962
Strain rate, in./min.		1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		7.01	13.79	20.74
Fail. Stress, psf		45	50	59
Strain, %		8.3	4.5	8.1
Ult. Stress, psf		23	15	39
Strain, %		13.8	15.1	14.4
σ_1 Failure, psf		1054	2036	3046
σ_3 Failure, psf		1009	1986	2987

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: VSO GR PT

LL= 211 **PL=** 69 **PI=** 142
Assumed Specific Gravity= 2.55
Remarks: Torvane=0.07 tsf

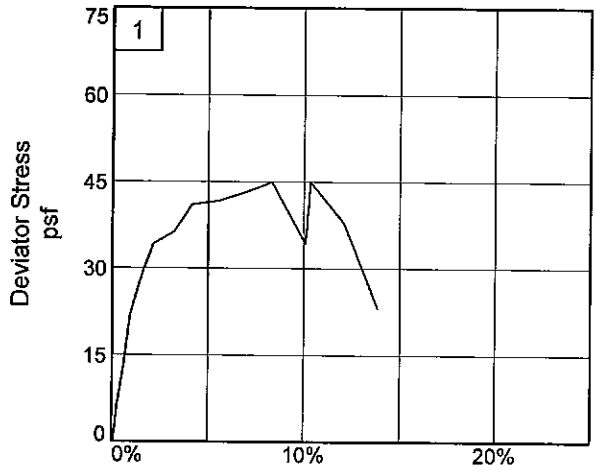
Figure _____

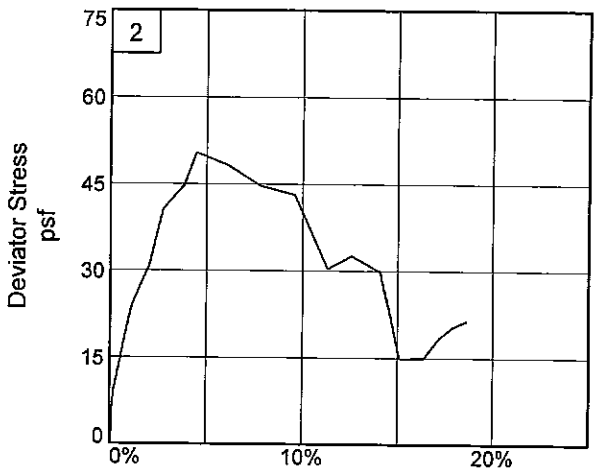
Client: USACE

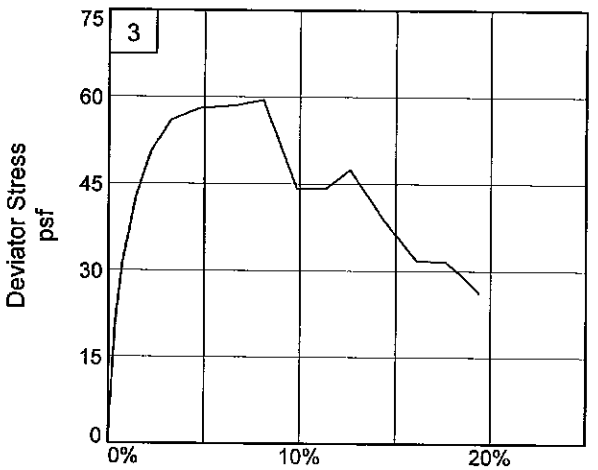
Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Lousisiana
Source of Sample: BSFS-3U **Depth:** 5.0
Sample Number: 2B
Proj. No.: 10-017146 **Date Sampled:** 7/17/2013

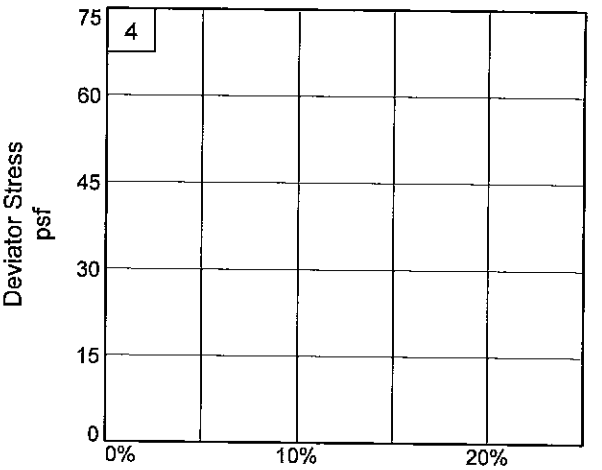
TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

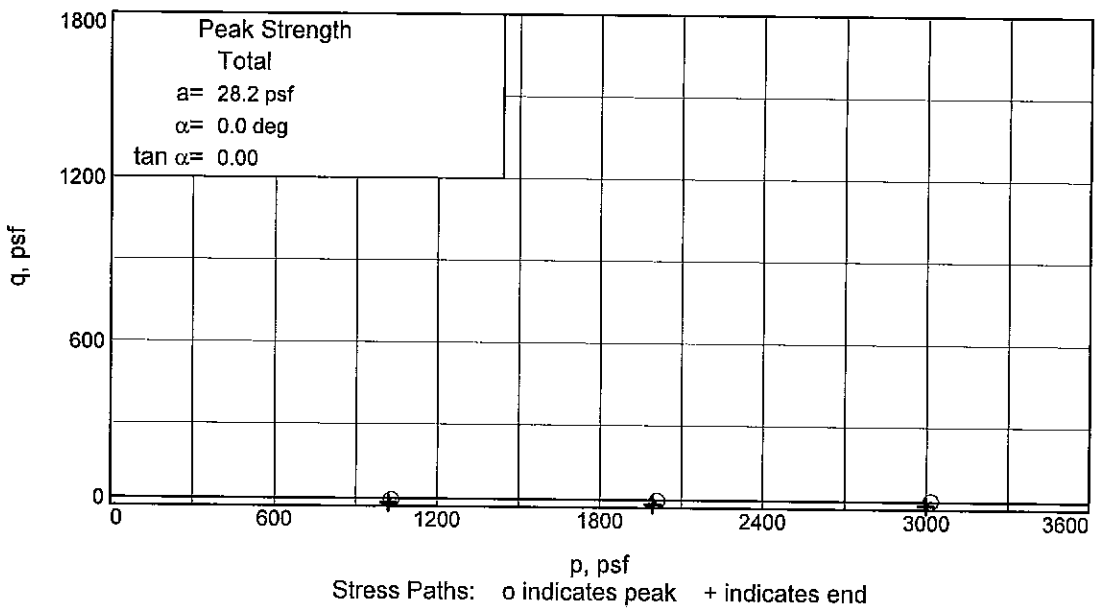
Tested By: JC **Checked By:** MJB/JS











Client: USACE

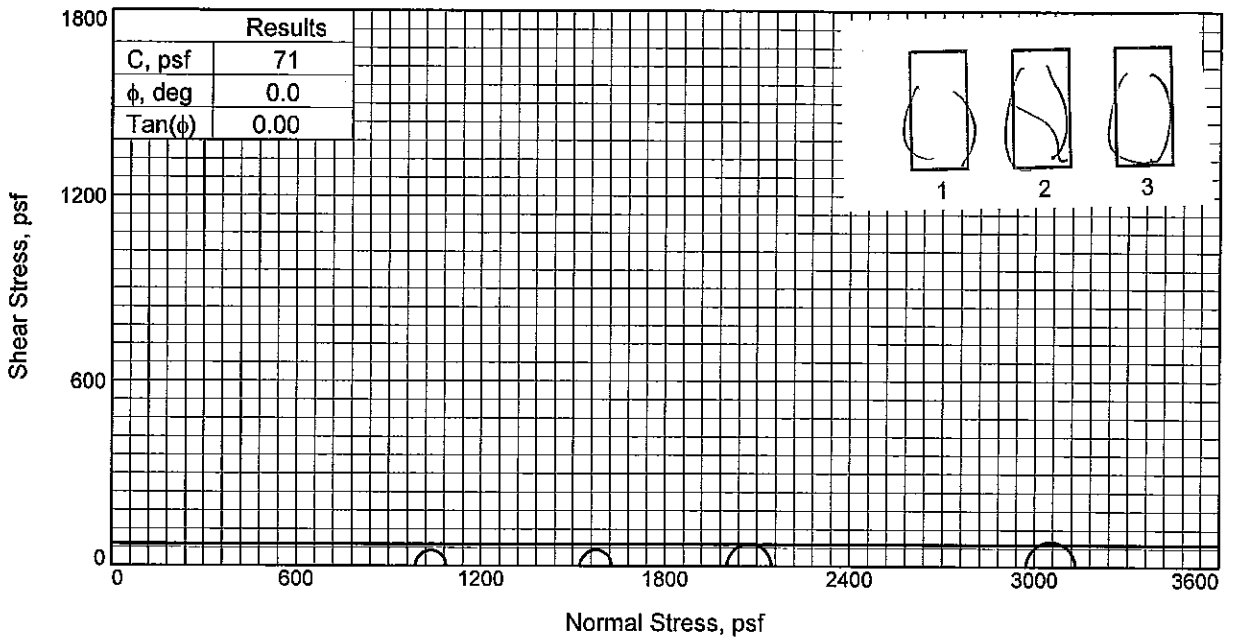
Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Lousisiana

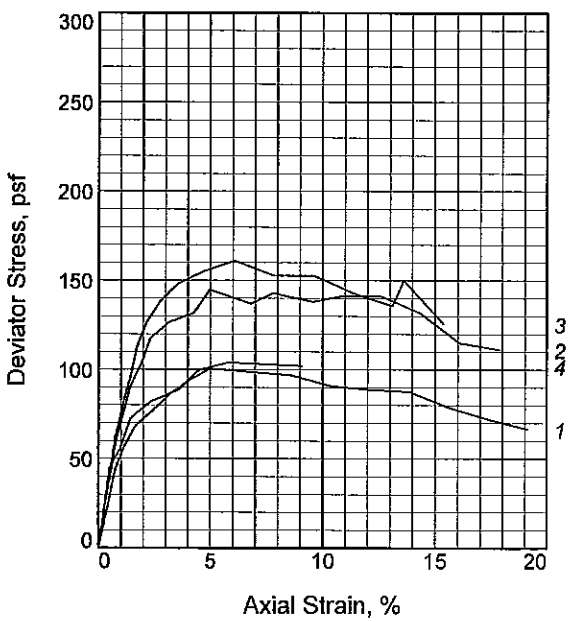
Source of Sample: BSFS-3U **Depth:** 5.0 **Sample Number:** 2B

Project No.: 175561309 **Figure** _____

Stantec, Inc.

Tested By: JC **Checked By:** MJB/JS





Sample No.		1	2	3	4
Initial	Water Content, %	65.8	66.2	63.2	82.2
	Dry Density, pcf	62.7	62.7	65.2	53.3
	Saturation, %	104.8	105.2	107.3	102.1
	Void Ratio	1.7076	1.7101	1.6028	2.1887
	Diameter, in.	1.390	1.400	1.388	1.395
	Height, in.	2.973	2.986	2.980	2.994
At Test	Water Content, %	65.8	66.2	63.2	82.2
	Dry Density, pcf	62.7	62.7	65.2	53.3
	Saturation, %	104.8	105.2	107.3	102.1
	Void Ratio	1.7076	1.7101	1.6028	2.1887
	Diameter, in.	1.390	1.400	1.388	1.395
	Height, in.	2.973	2.986	2.980	2.994
Strain rate, in./min.		1.000	1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00	0.00
Cell Pressure, psi		6.85	13.91	20.64	10.58
Fail. Stress, psf		100	145	161	104
Strain, %		5.0	5.0	6.1	5.8
Ult. Stress, psf		87	132	136	102
Strain, %		13.9	14.3	13.1	9.1
σ_1 Failure, psf		1087	2148	3133	1627
σ_3 Failure, psf		986	2003	2972	1524

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: SO GR CH4 W/ ARS ML, RT, O

LL= 81 **PL=** 21 **PI=** 60
Assumed Specific Gravity= 2.72
Remarks: Torvane=0.21 tsf

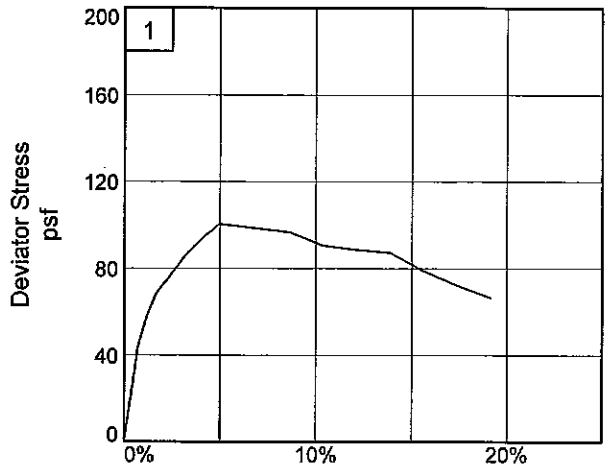
Figure _____

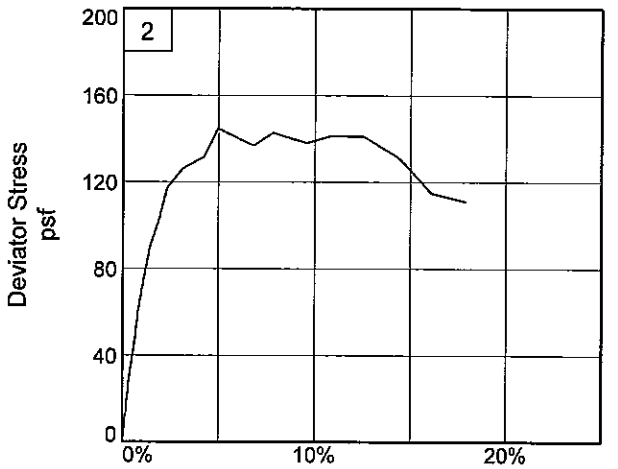
Client: USACE

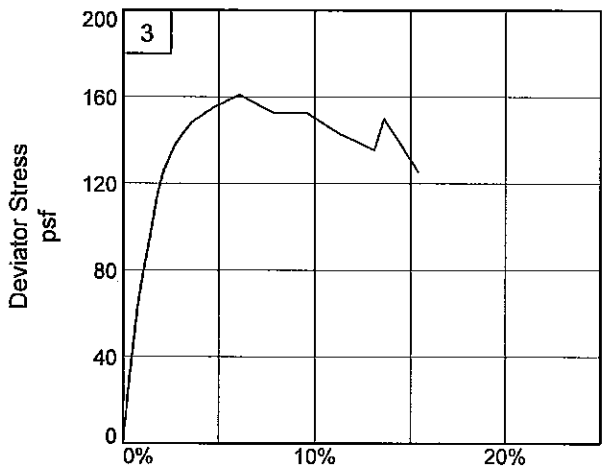
Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Lousisiana
Source of Sample: BSFS-3U
Sample Number: 3C
Proj. No.: 10-017146 **Date Sampled:** 8/14/2013

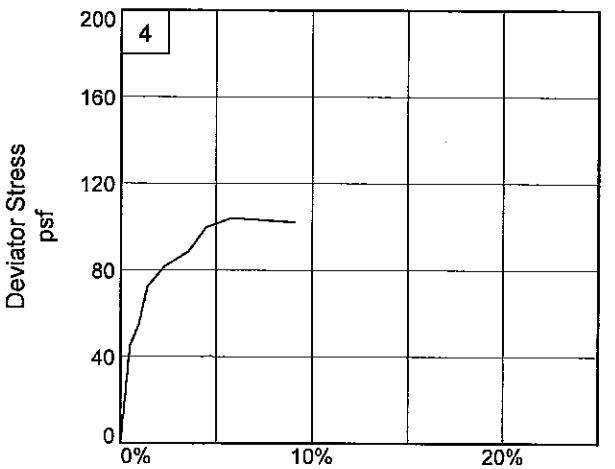
TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

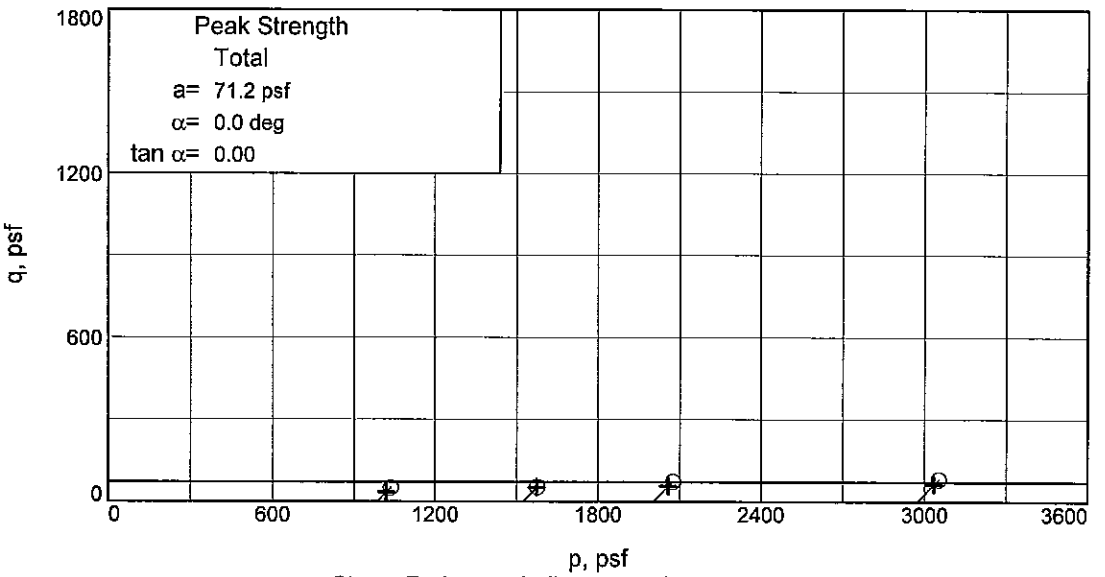
Tested By: JC **Checked By:** MJB/JS











Stress Paths: o indicates peak + indicates end

Client: USACE

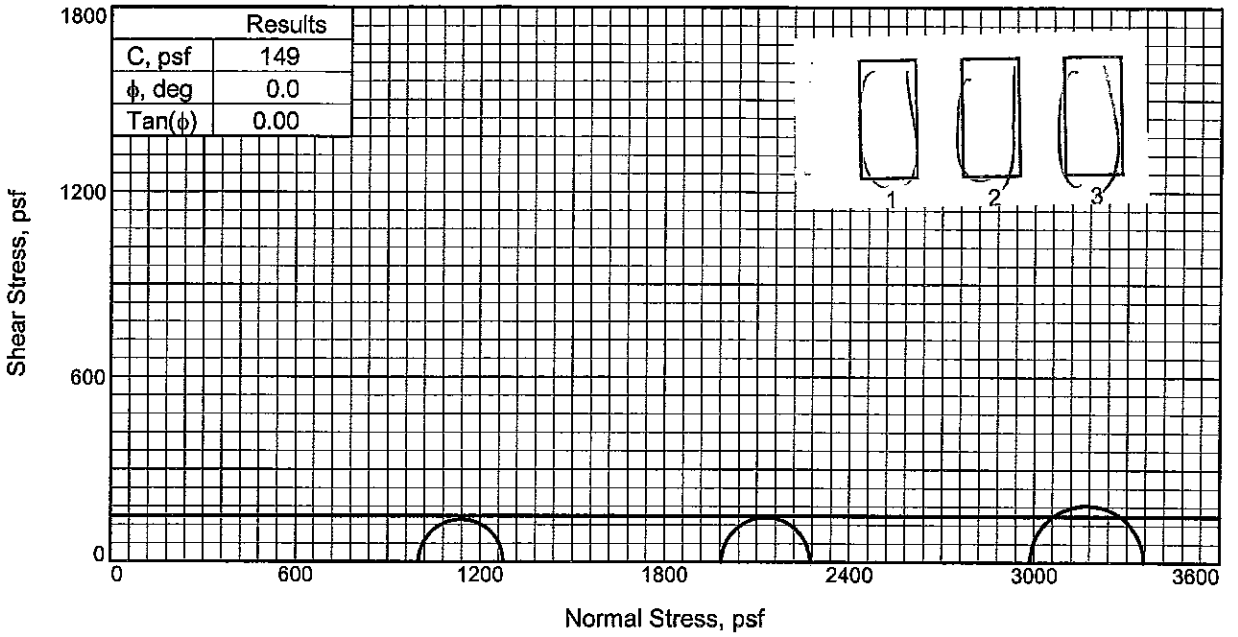
Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Lousisiana

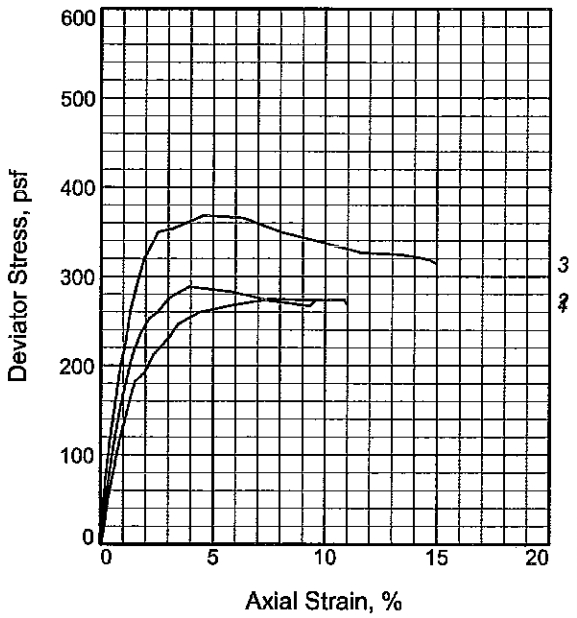
Source of Sample: BSFS-3U **Sample Number:** 3C

Project No.: 10-017146 **Figure** _____

Stantec, Inc.

Tested By: JC **Checked By:** MJB/JS





Sample No.		1	2	3
Initial	Water Content, %	55.6	57.5	52.8
	Dry Density, pcf	70.2	67.4	72.7
	Saturation, %	106.5	102.6	107.1
	Void Ratio	1.4193	1.5364	1.3520
	Diameter, in.	1.374	1.395	1.377
	Height, in.	2.973	2.964	2.977
At Test	Water Content, %	55.6	57.5	52.8
	Dry Density, pcf	70.2	67.4	72.7
	Saturation, %	106.5	102.6	107.1
	Void Ratio	1.4193	1.5364	1.3520
	Diameter, in.	1.374	1.395	1.377
	Height, in.	2.973	2.964	2.977
Strain rate, in./min.		1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.95	13.78	20.74
Fail. Stress, psf		275	288	368
Strain, %		7.6	3.9	4.5
Ult. Stress, psf		269	267	315
Strain, %		11.0	9.3	15.0
σ_1 Failure, psf		1275	2273	3355
σ_3 Failure, psf		1001	1984	2987

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: VSO GR CH3 W/ LNS ML

LL= 77 **PL=** 27 **PI=** 50
Assumed Specific Gravity= 2.72
Remarks: Torvane=0.17 tsf

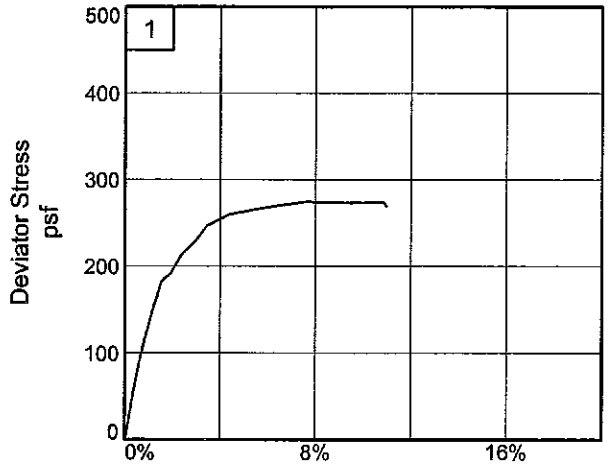
Figure _____

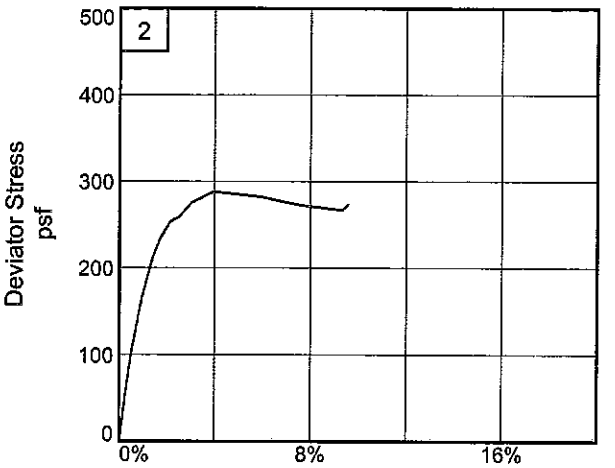
Client: USACE

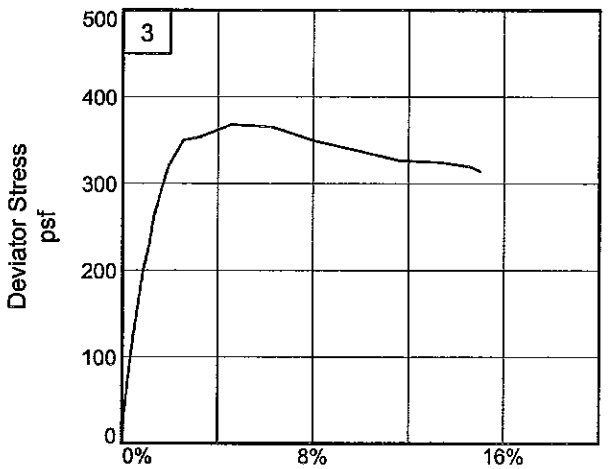
Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Lousisiana
Source of Sample: BSFS-3U **Depth:** 14.0
Sample Number: 4C
Proj. No.: 10-017146 **Date Sampled:** 7/17/2013

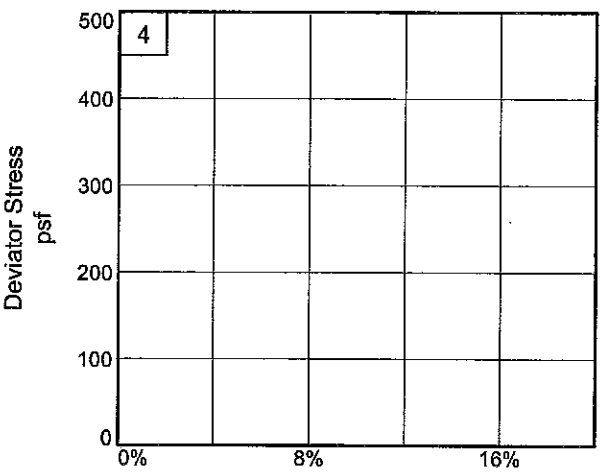
TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

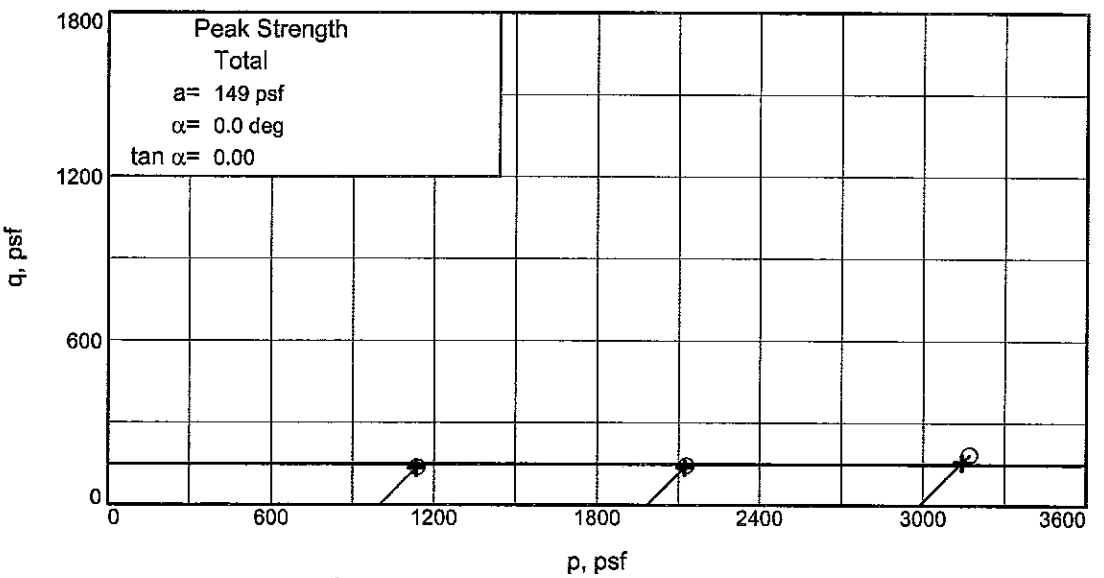
Tested By: JC **Checked By:** MJB/JS











Stress Paths: o indicates peak + indicates end

Client: USACE

Project: Undisturbed Soil Samples for Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, Lousisiana

Source of Sample: BSFS-3U **Depth:** 14.0 **Sample Number:** 4C

Project No.: 175561309 **Figure** _____

Stantec, Inc.

Tested By: JC **Checked By:** MJB/JS

SUMMARY OF LABORATORY TEST RESULTS

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Paris Assigned By: _____

Project Number: 12-017108 Current Date: 8/16/2012

Boring: BSFR-1U

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
1	0.0	M BK PT W/ RT	PT		610												
2	2.5	M BK PT W/ RT	PT		579												
3A	4.0	VSO BR PT	PT		603												
3B	5.0	VSO BK PT	PT	7	540	10	65	94	UC	-	100	201	606	284	322		
3C	6.0	VSO BK PT	PT		504												
3D	7.0	VSO BK PT	PT		187												
4A	8.0	M GR PT	PT		213												
4B	9.0	VSO GR CH2 W/ LNS ML	CH2		53	74	113	100	UU	0	77		54	22	32	0.60	
4C	10.0	VSO GR CH4 W/ LNS ML	CH4		79												
4D	11.0	VSO GR CH4 W/ LNS ML	CH4		86												
5A	12.0	VSO GR CH4 W/ LNS ML	CH4		75												
5B	13.0	VSO GR CH4 W/ LNS ML	CH4		160	35	91	100					79	30	49		GS=2.72, CON
5C	14.0	VSO GR CH3 W/ LNS ML	CH3	15	74	59	102	100	UC	-	81	162	69	22	47	0.90	
5D	15.0	VSO GR CH2 W/ LNS ML	CH2		59												
6A	16.0	GR SP W/ ARS CH, SIF	SP		30												
6B	17.0	SO GR CL4 W/ ARS SP, SIF	CL4		31												
6C	18.0	VSO GR CH2 W/ ARS SP, SIF	CH2		44	80	116	100	UU	0	124		52	22	30	0.15	
6D	19.0	SO GR CH2 W/ ARS & LNS SP, SIF	CH2		42	49	69	76					56	20	36		GS=2.74, CON SV
7A	20.0	GR SM W/ ARS CH, SIF	SM		41												
7B	21.0	GR SM W/ LYS CH	SM		32												
7C	22.0	SO GR CH4 W/ LYS CH, SIF	CH4		71												
7D	23.0	SO GR CH4 W/ ARS SP, SIF	CH4		71												
8A	24.0	LGR SM W/ ARS CH	SM		25												
8B	25.0	LGR SM W/ ARS CH	SM		27												
8C	26.0	LGR SM W/ ARS CH	SM		26												
8D	27.0	LGR SM W/ ARS CH	SM		20												
9A	28.0	T SM W/ ARS CH	SM		22												
9B	29.0	T SM W/ ARS & LNS CH	SM		23												
9C	30.0	ST T & GNG CL4 W/ ARS & LNS SM	CL4	4	24	101	125	95	UC	-	1133	2266	41	20	21	0.90	
9D	31.0	M T CL4 W/ LYS SM	CL4		27												
10A	32.0	M T CL4 W/ ARS & LYS ML	CL4		31	92	121	100	UU	0	555		40	20	20	0.54	
10B	33.0	ST T CH3 W/ LNS ML	CH3		39												
10C	34.0	ST T CH3 W/ LNS ML	CH3	1	41	80	112	98	UC	-	1943	3886	75	31	44	0.91	
10D	35.0	T ML W/ ARS CH	ML		32												
11A	36.0	ST T CL6 W/ LNS ML	CL6		33	88	117	97	UU	0	1272		48	23	25	0.72	

Remarks: _____

Checked By: _____

Stantec Consulting Services Inc.

File Name: Final BSFR-1U_be_boring_log_v1C

SUMMARY OF LABORATORY TEST RESULTS

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Paris Assigned By: _____

Project Number: 12-017108
Boring: BSFR-1U

Current Date: 8/16/2012

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
11B	37.0	M T CL6 W/ LNS & LYS ML	CL6		34												
11C	38.0	M T CL6 W/ LNS & LYS ML	CL6		32												
11D	39.0	T ML W/ LNS CH	ML		32												

Remarks:
Stantec Consulting Services Inc.

Checked By: _____

File Name: Final BSFR-1U_be_boring_log_v10

CONSOLIDATION TEST REPORT

Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (tsf)	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture								
76.1 %	41.8 %	48.8	56	36	2.74		115.43	0.36	1.504

MATERIAL DESCRIPTION	USCS	AASHTO
SO GR CH2 W/ ARS & LNS SP, SIF	CH	

Project No. 12-017108 **Client:** USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

Source: BSFR-1U **Sample No.:** 6D **Elev./Depth:** 19.0

FFEBJV, LLC

St Rose, LA

Remarks:

Figure

CONSOLIDATION TEST DATA

Client: USACE
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans
Project Number: 12-017108

Sample Data

Source: BSFR-1U
Sample No.: 6D
Elev. or Depth: 19.0 **Sample Length(in./cm.):**
Location:
Description: SO GR CH2 W/ ARS & LNS SP, SIF
Liquid Limit: 56 **Plasticity Index:** 36
USCS: CH **AASHTO:** **Figure No.:**
Testing Remarks:

Test Specimen Data

TOTAL SAMPLE		BEFORE TEST	AFTER TEST
Wet w+t	= 130.91 g.	Consolidometer # = 1	Wet w+t = 700.27 g.
Dry w+t	= 101.12 g.		Dry w+t = 450.42 g.
Tare Wt.	= 29.78 g.	Spec. Gravity = 2.74	Tare Wt. = 227.42 g.
Height	= 1.00 in.	Height = 1.00 in.	
Diameter	= 4.00 in.	Diameter = 3.98 in.	
Weight	= 227.42 g.	Defl. Table = n/a	
Moisture	= 41.8 %	Ht. Solids = 0.3986 in.	Moisture = 112.0 %
Wet Den.	= 69.2 pcf	Dry Wt. = 159.31 g.	Dry Wt. = 223.00 g.*
Dry Den.	= 48.8 pcf	Void Ratio = 1.504	Void Ratio = 0.867
		Saturation = 76.1 %	

* Final dry weight used in calculations

End-of-Load Summary

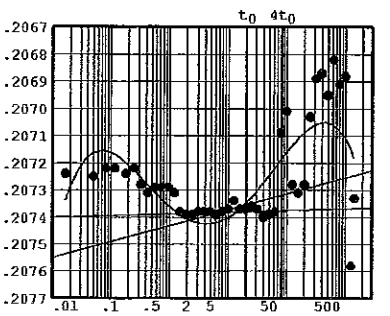
Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (ft.^{2}/day)	C_α	Void Ratio	% Compression /Swell
start	0.20722				1.504	
100.00	0.20733	0.00000	0.02		1.503	0.0 Comprs.
250.00	0.22261	0.00000	0.45	0.001	1.465	1.5 Comprs.
500.00	0.23677	0.00000	0.43	0.003	1.430	3.0 Comprs.
1000.00	0.28856	0.00000	0.05	0.006	1.300	8.2 Comprs.
2000.00	0.35365	0.00000	0.09	0.009	1.136	14.7 Comprs.
4000.00	0.41015	0.00000	0.08	0.007	0.995	20.3 Comprs.
8000.00	0.46236	0.00000	0.07	0.008	0.864	25.6 Comprs.
16000.00	0.50968	0.00000	0.06	0.007	0.745	30.3 Comprs.
24000.00	0.53488	0.00000	0.01		0.682	32.8 Comprs.
6000.00	0.52200	0.00000	0.18		0.714	31.5 Comprs.

Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (ft.^{2}/day)	C_α	Void Ratio	% Compression /Swell
1500.00	0.50311	0.00000	0.04		0.761	29.6 Comprs.
375.00	0.48193	0.00000	0.01		0.815	27.5 Comprs.
100.00	0.46112	0.00000	0.00		0.867	25.4 Comprs.

C_c = 0.36 P_c = 115.43 tsf C_r = 0.08

Pressure: 100.00 tsf **TEST READINGS** **Load No. 1**

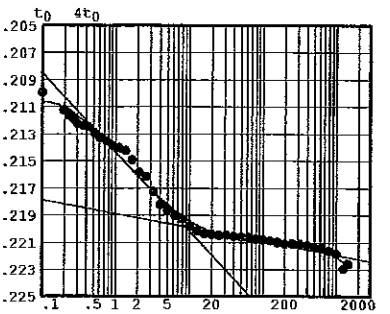
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.20722	23	12.53	0.20734
2	0.02	0.20724	24	15.80	0.20737
3	0.05	0.20725	25	19.90	0.20737
4	0.08	0.20722	26	25.07	0.20736
5	0.12	0.20722	27	31.57	0.20737
6	0.18	0.20724	28	39.77	0.20740
7	0.25	0.20722	29	50.07	0.20739
8	0.33	0.20728	30	63.05	0.20738
9	0.43	0.20731	31	79.38	0.20709
10	0.57	0.20729	32	99.95	0.20701
11	0.73	0.20729	33	125.85	0.20728
12	0.93	0.20729	34	158.45	0.20731
13	1.20	0.20731	35	199.48	0.20728
14	1.52	0.20738	36	251.15	0.20703
15	1.93	0.20739	37	316.18	0.20689
16	2.45	0.20739	38	398.07	0.20687
17	3.10	0.20738	39	501.15	0.20695
18	3.92	0.20738	40	630.92	0.20682
19	4.95	0.20738	41	794.30	0.20691
20	6.25	0.20739	42	999.97	0.20688
21	7.88	0.20738	43	1258.90	0.20758
22	9.95	0.20737	44	1440.05	0.20733



Void Ratio = 1.503 **Compression** = 0.0 %
D_0 = 0.20722 D_{50} = 0.20730 D_{100} = 0.20738
C_v **at 20.3 min.** = 0.02 ft.^{2}/day

Pressure: 250.00 tsf | TEST READINGS | Load No. 2

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.20591	24	12.72	0.22018
2	0.10	0.20992	25	15.98	0.22037
3	0.20	0.21124	26	20.08	0.22041
4	0.23	0.21161	27	25.25	0.22049
5	0.27	0.21189	28	31.75	0.22046
6	0.30	0.21223	29	39.95	0.22054
7	0.37	0.21240	30	50.25	0.22059
8	0.43	0.21250	31	63.23	0.22064
9	0.52	0.21291	32	79.57	0.22075
10	0.62	0.21328	33	100.13	0.22080
11	0.75	0.21354	34	126.03	0.22087
12	0.92	0.21385	35	158.63	0.22101
13	1.12	0.21403	36	199.67	0.22112
14	1.38	0.21424	37	251.33	0.22109
15	1.70	0.21491	38	316.37	0.22111
16	2.12	0.21584	39	398.25	0.22121
17	2.63	0.21617	40	501.33	0.22136
18	3.28	0.21725	41	631.12	0.22142
19	4.12	0.21822	42	794.48	0.22164
20	5.13	0.21870	43	1000.15	0.22183
21	6.43	0.21901	44	1259.08	0.22296
22	8.07	0.21927	45	1440.22	0.22261
23	10.13	0.21976			



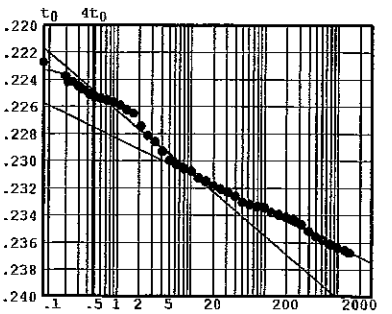
Void Ratio = 1.465 Compression = 1.5 %

D_0 = 0.20919 D_{50} = 0.21451 D_{100} = 0.21983

C_v at 1.1 min. = 0.45 ft.^{2}/day C_α = 0.001

Pressure: 500.00 tsf | TEST READINGS | Load No. 3

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.22096	24	12.72	0.23126
2	0.10	0.22270	25	15.97	0.23151
3	0.20	0.22377	26	20.08	0.23188
4	0.22	0.22417	27	25.25	0.23209
5	0.25	0.22419	28	31.75	0.23233
6	0.30	0.22450	29	39.93	0.23261
7	0.35	0.22476	30	50.25	0.23305
8	0.42	0.22507	31	63.23	0.23323
9	0.50	0.22533	32	79.57	0.23337
10	0.60	0.22539	33	100.13	0.23346
11	0.73	0.22554	34	126.03	0.23381
12	0.90	0.22568	35	158.63	0.23398
13	1.12	0.22591	36	199.67	0.23414
14	1.37	0.22624	37	251.33	0.23428
15	1.70	0.22651	38	316.37	0.23468
16	2.12	0.22745	39	398.25	0.23518
17	2.63	0.22816	40	501.33	0.23556
18	3.28	0.22861	41	631.10	0.23585
19	4.10	0.22932	42	794.48	0.23613
20	5.13	0.22997	43	1000.15	0.23641
21	6.43	0.23033	44	1259.08	0.23659
22	8.07	0.23057	45	1440.20	0.23677
23	10.12	0.23078			



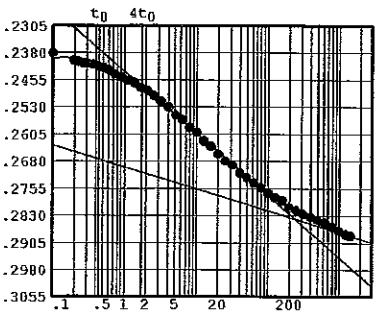
Void Ratio = 1.430 Compression = 3.0 %

D_0 = 0.22176 D_{50} = 0.22643 D_{100} = 0.23110

C_v at 1.1 min. = 0.43 ft.^{2}/day C_α = 0.003

Pressure: 1000.00 tsf | TEST READINGS | Load No. 4

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.23483	24	12.73	0.26243
2	0.10	0.23805	25	15.98	0.26391
3	0.20	0.24016	26	20.08	0.26605
4	0.23	0.24052	27	25.25	0.26797
5	0.27	0.24080	28	31.77	0.26903
6	0.30	0.24095	29	39.95	0.27124
7	0.37	0.24120	30	50.27	0.27247
8	0.43	0.24176	31	63.23	0.27394
9	0.52	0.24207	32	79.58	0.27531
10	0.62	0.24278	33	100.15	0.27685
11	0.75	0.24393	34	126.03	0.27815
12	0.92	0.24477	35	158.63	0.27882
13	1.12	0.24572	36	199.68	0.28073
14	1.38	0.24636	37	251.35	0.28158
15	1.72	0.24762	38	316.38	0.28264
16	2.12	0.24853	39	398.27	0.28336
17	2.63	0.24997	40	501.35	0.28425
18	3.28	0.25153	41	631.12	0.28505
19	4.12	0.25299	42	794.48	0.28612
20	5.15	0.25526	43	1000.17	0.28726
21	6.45	0.25650	44	1259.08	0.28821
22	8.08	0.25871	45	1440.20	0.28856
23	10.13	0.26002			



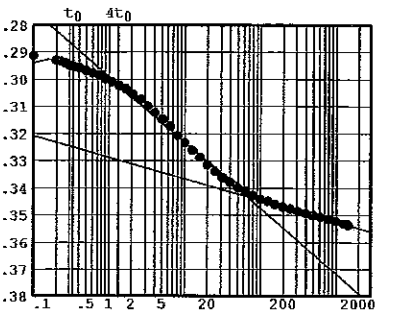
Void Ratio = 1.300 Compression = 8.2 %

D_0 = 0.23474 D_{50} = 0.25932 D_{100} = 0.28390

C_v at 8.8 min. = 0.05 ft.^{2}/day C_α = 0.006

Pressure: 2000.00 tsf | TEST READINGS | Load No. 5

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.28604	24	12.72	0.32618
2	0.10	0.29114	25	15.98	0.32874
3	0.20	0.29301	26	20.08	0.33144
4	0.23	0.29345	27	25.25	0.33395
5	0.27	0.29409	28	31.75	0.33622
6	0.30	0.29487	29	39.95	0.33781
7	0.35	0.29539	30	50.25	0.33981
8	0.42	0.29590	31	63.23	0.34111
9	0.50	0.29686	32	79.57	0.34270
10	0.62	0.29763	33	100.15	0.34419
11	0.75	0.29857	34	126.03	0.34497
12	0.90	0.29972	35	158.63	0.34604
13	1.12	0.30093	36	199.67	0.34700
14	1.37	0.30231	37	251.33	0.34770
15	1.70	0.30351	38	316.38	0.34865
16	2.12	0.30559	39	398.25	0.34923
17	2.63	0.30749	40	501.33	0.35003
18	3.28	0.30992	41	631.12	0.35086
19	4.10	0.31229	42	794.48	0.35156
20	5.13	0.31480	43	1000.15	0.35232
21	6.43	0.31737	44	1259.08	0.35325
22	8.07	0.32075	45	1440.08	0.35365
23	10.13	0.32333			



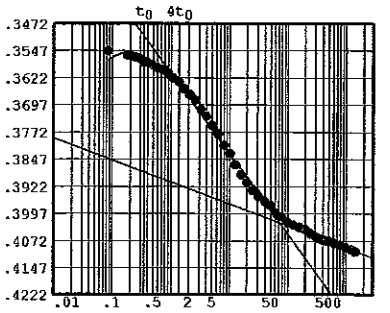
Void Ratio = 1.136 **Compression** = 14.7 %

D_0 = 0.28479 D_{50} = 0.31393 D_{100} = 0.34307

C_v **at 4.2 min.** = 0.09 ft.^{2}/day C_α = 0.009

Pressure: 4000.00 tsf | TEST READINGS | Load No. 6

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.34962	24	12.70	0.38622
2	0.08	0.35474	25	15.97	0.38899
3	0.18	0.35595	26	20.07	0.39121
4	0.22	0.35621	27	25.23	0.39331
5	0.25	0.35659	28	31.75	0.39510
6	0.30	0.35693	29	39.93	0.39646
7	0.35	0.35768	30	50.23	0.39746
8	0.42	0.35814	31	63.22	0.39961
9	0.50	0.35873	32	79.55	0.40057
10	0.60	0.35938	33	100.12	0.40206
11	0.73	0.35990	34	126.02	0.40283
12	0.90	0.36087	35	158.62	0.40347
13	1.10	0.36234	36	199.65	0.40402
14	1.37	0.36326	37	251.32	0.40529
15	1.68	0.36536	38	316.37	0.40628
16	2.10	0.36694	39	398.23	0.40681
17	2.62	0.36834	40	501.32	0.40734
18	3.27	0.37100	41	631.10	0.40787
19	4.10	0.37282	42	794.47	0.40846
20	5.12	0.37540	43	1000.13	0.40906
21	6.42	0.37771	44	1259.07	0.40964
22	8.07	0.38074	45	1440.40	0.41015
23	10.12	0.38304			



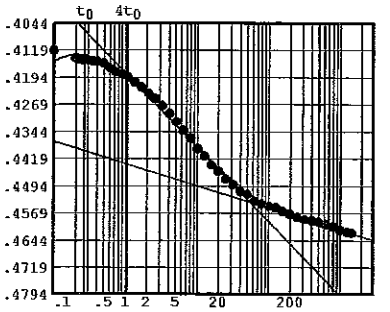
Void Ratio = 0.995 Compression = 20.3 %

D_0 = 0.34786 D_{50} = 0.37503 D_{100} = 0.40220

C_v at 4.4 min. = 0.08 ft.^{2}/day C_α = 0.007

Pressure: 8000.00 tsf | TEST READINGS | Load No. 7

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.40556	24	12.72	0.44114
2	0.10	0.41194	25	15.98	0.44365
3	0.20	0.41413	26	20.08	0.44532
4	0.22	0.41440	27	25.25	0.44755
5	0.25	0.41452	28	31.75	0.44907
6	0.30	0.41466	29	39.95	0.45082
7	0.35	0.41488	30	50.27	0.45169
8	0.42	0.41501	31	63.23	0.45349
9	0.50	0.41542	32	79.58	0.45428
10	0.60	0.41678	33	100.15	0.45491
11	0.73	0.41780	34	126.03	0.45540
12	0.90	0.41839	35	158.63	0.45648
13	1.10	0.41933	36	199.67	0.45710
14	1.37	0.42079	37	251.33	0.45802
15	1.70	0.42219	38	316.38	0.45863
16	2.12	0.42385	39	398.27	0.45892
17	2.63	0.42532	40	501.33	0.45929
18	3.28	0.42731	41	631.12	0.45996
19	4.10	0.42936	42	794.48	0.46070
20	5.13	0.43164	43	1000.17	0.46158
21	6.43	0.43402	44	1259.08	0.46221
22	8.07	0.43617	45	1440.07	0.46236
23	10.13	0.43915			



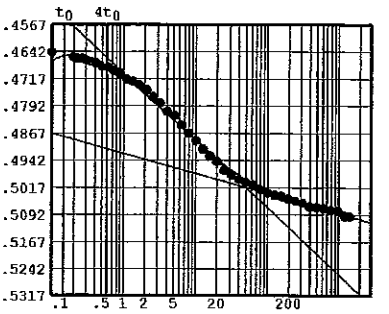
Void Ratio = 0.864 Compression = 25.6 %

D_0 = 0.40691 D_{50} = 0.43031 D_{100} = 0.45372

C_v at 3.9 min. = 0.07 ft.^{2}/day C_α = 0.008

Pressure: 16000.00 tsf | TEST READINGS | Load No. 8

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.45409	24	12.72	0.49110
2	0.10	0.46427	25	15.98	0.49301
3	0.20	0.46573	26	20.08	0.49455
4	0.23	0.46617	27	25.25	0.49696
5	0.27	0.46605	28	31.75	0.49818
6	0.30	0.46659	29	39.95	0.49944
7	0.35	0.46699	30	50.25	0.50023
8	0.42	0.46735	31	63.23	0.50096
9	0.50	0.46821	32	79.57	0.50212
10	0.62	0.46849	33	100.13	0.50314
11	0.73	0.46935	34	126.03	0.50378
12	0.90	0.47021	35	158.63	0.50419
13	1.12	0.47181	36	199.67	0.50487
14	1.37	0.47244	37	251.33	0.50545
15	1.70	0.47340	38	316.37	0.50599
16	2.12	0.47486	39	398.25	0.50696
17	2.63	0.47674	40	501.33	0.50717
18	3.28	0.47845	41	631.12	0.50750
19	4.10	0.48070	42	794.48	0.50793
20	5.13	0.48182	43	1000.15	0.50820
21	6.43	0.48443	44	1259.08	0.50967
22	8.07	0.48677	45	1440.25	0.50968
23	10.13	0.48871			



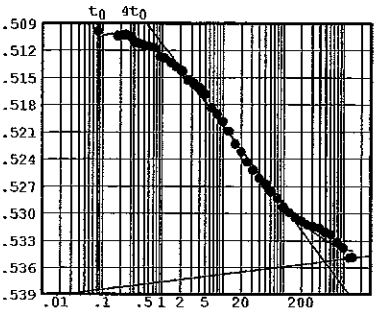
Void Ratio = 0.745 **Compression** = 30.3 %

D_0 = 0.46289 D_{50} = 0.48223 D_{100} = 0.50158

C_v **at 4.5 min.** = 0.06 ft.^{2}/day C_α = 0.007

Pressure: 24000.00 tsf | TEST READINGS | Load No. 9

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.50159	24	12.70	0.52096
2	0.08	0.50986	25	15.97	0.52232
3	0.18	0.51037	26	20.07	0.52321
4	0.22	0.51028	27	25.23	0.52434
5	0.25	0.51024	28	31.73	0.52524
6	0.30	0.51045	29	39.93	0.52612
7	0.35	0.51111	30	50.23	0.52676
8	0.42	0.51124	31	63.22	0.52763
9	0.50	0.51141	32	79.55	0.52833
10	0.60	0.51155	33	100.12	0.52933
11	0.73	0.51169	34	126.02	0.52993
12	0.90	0.51268	35	158.62	0.53047
13	1.10	0.51284	36	199.65	0.53085
14	1.37	0.51333	37	251.32	0.53127
15	1.68	0.51380	38	316.35	0.53148
16	2.10	0.51426	39	398.23	0.53163
17	2.62	0.51527	40	501.32	0.53206
18	3.27	0.51560	41	631.08	0.53240
19	4.08	0.51612	42	794.47	0.53322
20	5.12	0.51683	43	1000.13	0.53384
21	6.42	0.51834	44	1259.05	0.53493
22	8.05	0.51899	45	1440.23	0.53488
23	10.12	0.51985			



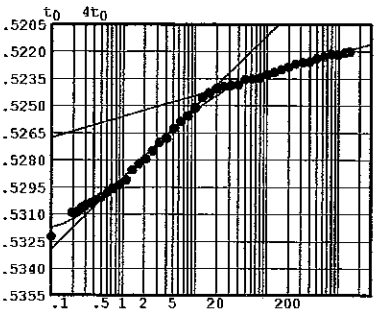
Void Ratio = 0.682 **Compression** = 32.8 %

D_0 = 0.51064 D_{50} = 0.52296 D_{100} = 0.53528

C_v **at 20.2 min.** = 0.01 ft.^{2}/day

Pressure: 6000.00 tsf | TEST READINGS | Load No. 10

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.55162	24	12.72	0.52456
2	0.10	0.53224	25	15.97	0.52431
3	0.20	0.53090	26	20.08	0.52405
4	0.23	0.53085	27	25.25	0.52393
5	0.27	0.53067	28	31.75	0.52388
6	0.30	0.53052	29	39.93	0.52384
7	0.35	0.53040	30	50.25	0.52354
8	0.42	0.53022	31	63.23	0.52351
9	0.50	0.53007	32	79.57	0.52347
10	0.62	0.52980	33	100.13	0.52328
11	0.73	0.52957	34	126.03	0.52315
12	0.90	0.52937	35	158.63	0.52301
13	1.12	0.52911	36	199.67	0.52287
14	1.37	0.52856	37	251.33	0.52270
15	1.70	0.52823	38	316.37	0.52260
16	2.12	0.52794	39	398.25	0.52257
17	2.63	0.52751	40	501.33	0.52237
18	3.28	0.52704	41	631.10	0.52229
19	4.10	0.52681	42	794.47	0.52215
20	5.13	0.52627	43	1000.15	0.52218
21	6.43	0.52588	44	1259.07	0.52208
22	8.07	0.52558	45	1440.12	0.52200
23	10.12	0.52511			



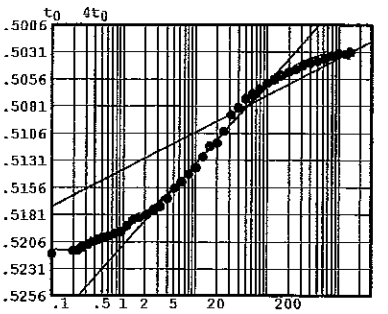
Void Ratio = 0.714 **Compression** = 31.5 %

D_0 = 0.53299 D_{50} = 0.52858 D_{100} = 0.52417

C_v **at 1.3 min.** = 0.18 ft.^{2}/day

Pressure: 1500.00 tsf | TEST READINGS | Load No. 11

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.52793	24	12.72	0.51280
2	0.10	0.52172	25	15.98	0.51181
3	0.20	0.52145	26	20.08	0.51151
4	0.23	0.52140	27	25.25	0.51044
5	0.27	0.52113	28	31.77	0.50890
6	0.32	0.52086	29	39.95	0.50823
7	0.37	0.52062	30	50.27	0.50740
8	0.43	0.52042	31	63.23	0.50695
9	0.52	0.52023	32	79.58	0.50649
10	0.62	0.52006	33	100.15	0.50596
11	0.75	0.51987	34	126.03	0.50564
12	0.92	0.51966	35	158.63	0.50527
13	1.12	0.51913	36	199.68	0.50497
14	1.38	0.51857	37	251.33	0.50471
15	1.70	0.51837	38	316.38	0.50430
16	2.12	0.51810	39	398.27	0.50412
17	2.63	0.51770	40	501.35	0.50395
18	3.28	0.51736	41	631.12	0.50375
19	4.10	0.51662	42	794.48	0.50346
20	5.13	0.51568	43	1000.17	0.50329
21	6.43	0.51513	44	1259.08	0.50331
22	8.07	0.51438	45	1440.50	0.50311
23	10.13	0.51376			



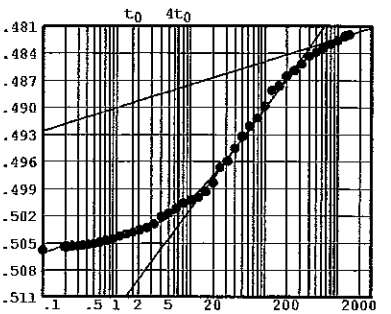
Void Ratio = 0.761 **Compression** = 29.6 %

D_0 = 0.52174 D_{50} = 0.51488 D_{100} = 0.50802

C_v **at 6.2 min.** = 0.04 ft.^{2}/day

Pressure: 375.00 tsf | TEST READINGS | Load No. 12

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.50775	24	12.72	0.49998
2	0.10	0.50579	25	15.97	0.49934
3	0.20	0.50543	26	20.08	0.49836
4	0.22	0.50542	27	25.25	0.49664
5	0.25	0.50533	28	31.75	0.49595
6	0.30	0.50534	29	39.93	0.49453
7	0.35	0.50527	30	50.25	0.49320
8	0.42	0.50518	31	63.23	0.49207
9	0.50	0.50509	32	79.57	0.49117
10	0.60	0.50491	33	100.13	0.48985
11	0.73	0.50472	34	126.03	0.48809
12	0.90	0.50454	35	158.63	0.48762
13	1.10	0.50425	36	199.67	0.48651
14	1.37	0.50403	37	251.33	0.48591
15	1.70	0.50382	38	316.37	0.48518
16	2.10	0.50359	39	398.25	0.48434
17	2.62	0.50333	40	501.33	0.48386
18	3.27	0.50292	41	631.10	0.48345
19	4.10	0.50211	42	794.48	0.48299
20	5.13	0.50170	43	1000.15	0.48260
21	6.43	0.50120	44	1259.08	0.48208
22	8.07	0.50060	45	1440.07	0.48193
23	10.12	0.50025			



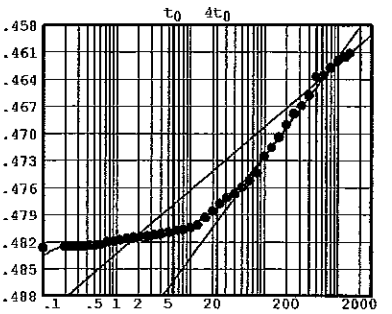
Void Ratio = 0.815 **Compression** = 27.5 %

D_0 = 0.50678 D_{50} = 0.49506 D_{100} = 0.48335

C_v **at 35.4 min.** = 0.01 ft.^{2}/day

Pressure: 100.00 tsf | TEST READINGS | Load No. 13

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.48380	24	12.72	0.48011
2	0.10	0.48264	25	15.98	0.47930
3	0.20	0.48252	26	20.08	0.47860
4	0.23	0.48249	27	25.25	0.47776
5	0.27	0.48252	28	31.77	0.47710
6	0.32	0.48250	29	39.95	0.47668
7	0.37	0.48248	30	50.27	0.47596
8	0.43	0.48244	31	63.23	0.47520
9	0.52	0.48242	32	79.58	0.47440
10	0.62	0.48229	33	100.15	0.47252
11	0.75	0.48201	34	126.03	0.47156
12	0.92	0.48193	35	158.63	0.47039
13	1.12	0.48177	36	199.68	0.46903
14	1.38	0.48160	37	251.33	0.46780
15	1.72	0.48149	38	316.38	0.46690
16	2.12	0.48141	39	398.27	0.46574
17	2.63	0.48137	40	501.35	0.46369
18	3.28	0.48119	41	631.12	0.46352
19	4.10	0.48108	42	794.48	0.46270
20	5.13	0.48095	43	1000.17	0.46191
21	6.43	0.48075	44	1259.08	0.46153
22	8.08	0.48064	45	1440.48	0.46112
23	10.13	0.48045			



Void Ratio = 0.867 Compression = 25.4 %

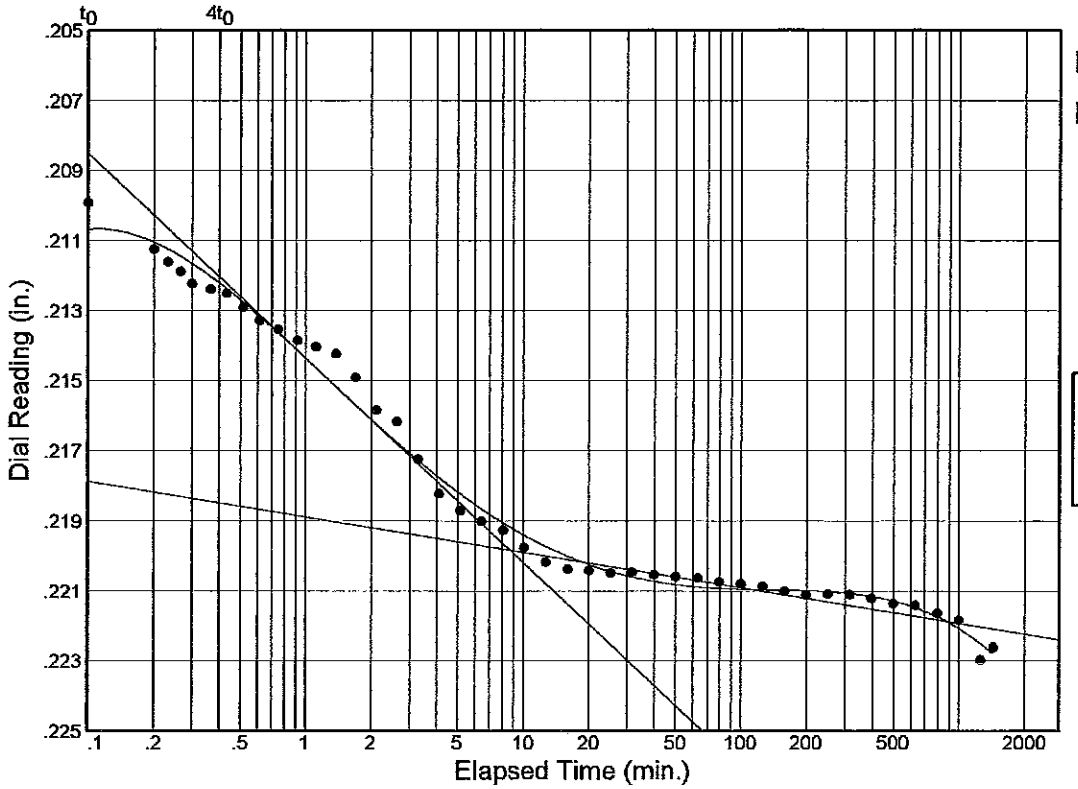
D_0 = 0.48409 D_{50} = 0.47381 D_{100} = 0.46353

C_v at 74.8 min. = 0.00 ft.^{2}/day

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

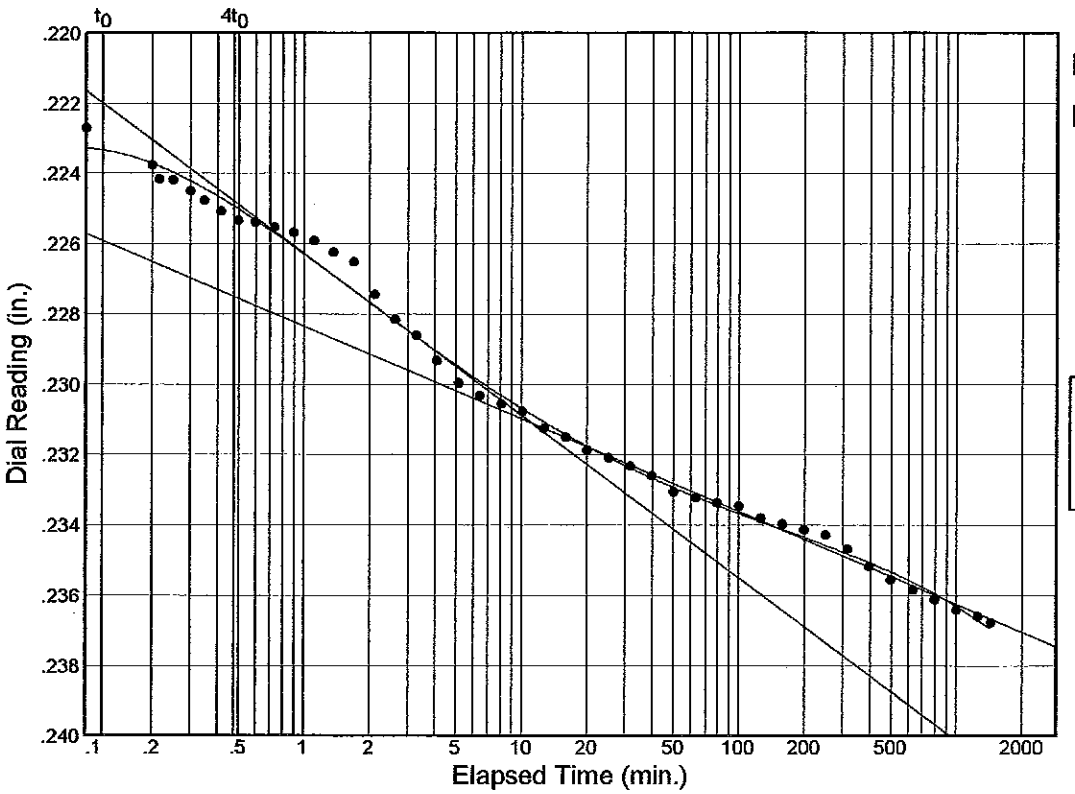
Source: BSFR-1U Sample No.: 6D Elev./Depth: 19.0



Load No.= 2
Load= 250.00 tsf
D_0 = 0.20919
D_{50} = 0.21451
D_{100} = 0.21983
T_{50} = 1.07 min.

C_v @ T_{50}
0.45 ft.^{2}/day

C_α = 0.001



Load No.= 3
Load= 500.00 tsf
D_0 = 0.22176
D_{50} = 0.22643
D_{100} = 0.23110
T_{50} = 1.08 min.

C_v @ T_{50}
0.43 ft.^{2}/day

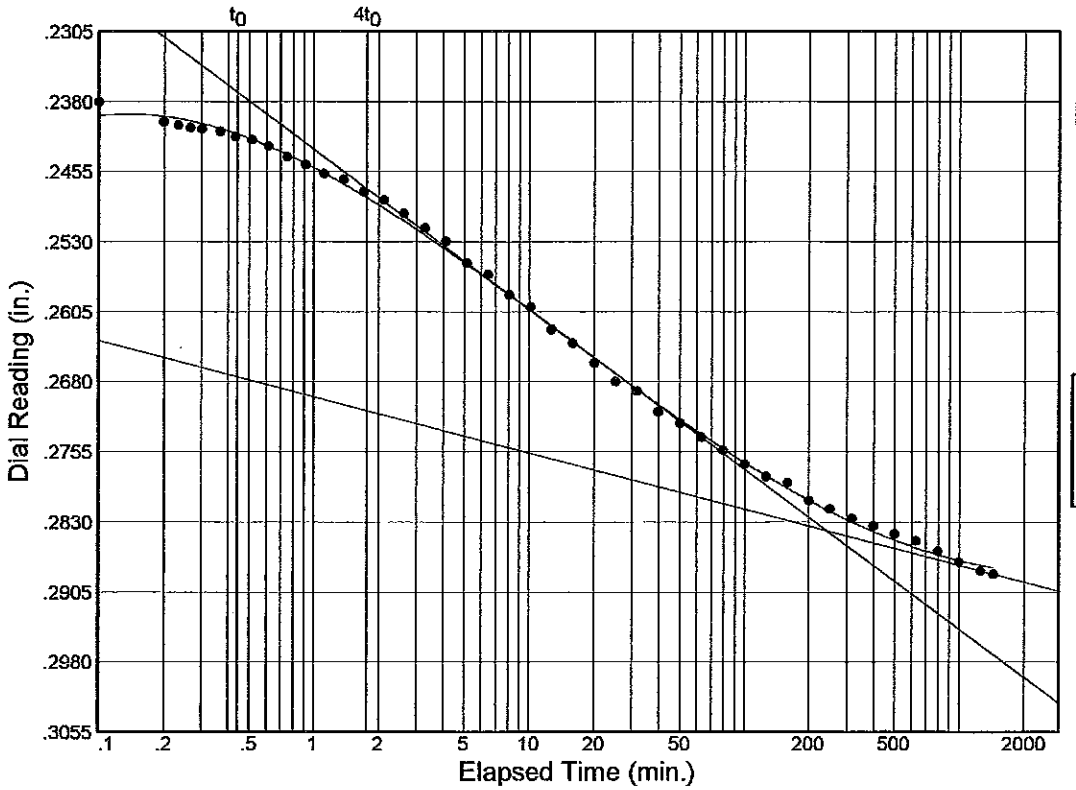
C_α = 0.003

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

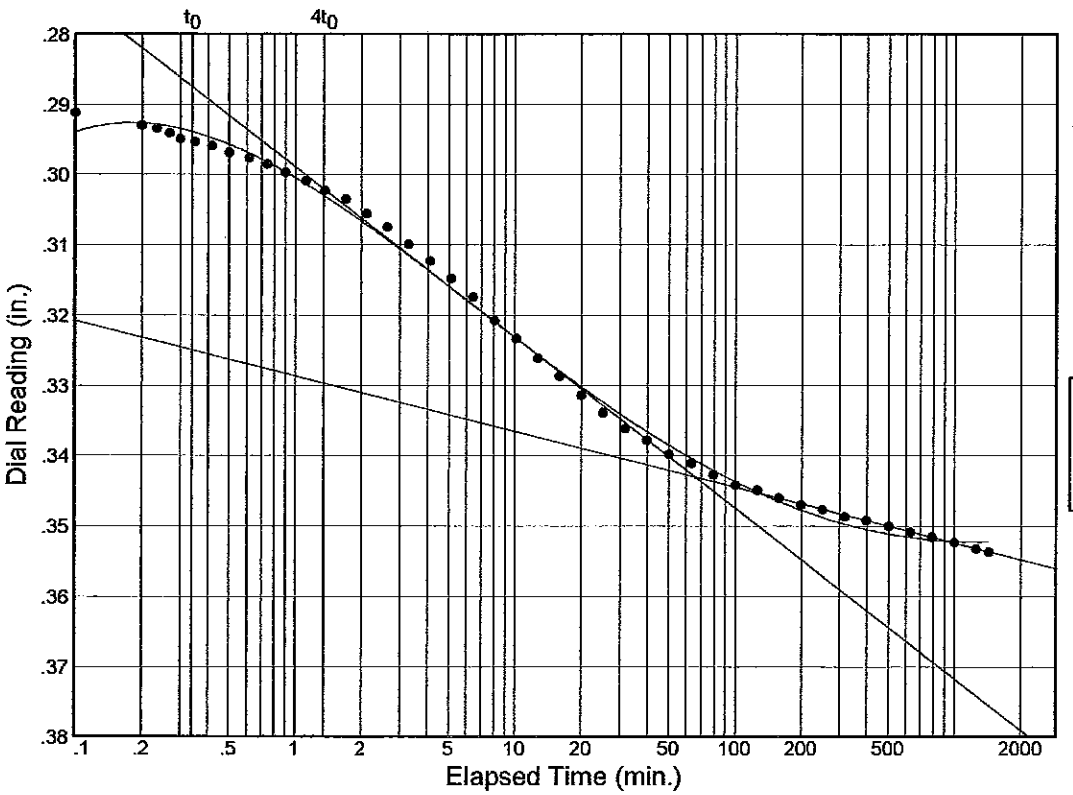
Source: BSFR-1U Sample No.: 6D Elev./Depth: 19.0



Load No.= 4
Load= 1000.00 tsf
D_0 = 0.23474
D_{50} = 0.25932
D_{100} = 0.28390
T_{50} = 8.84 min.

C_v @ T_{50}
0.05 ft.^{2}/day

C_α = 0.006



Load No.= 5
Load= 2000.00 tsf
D_0 = 0.28479
D_{50} = 0.31393
D_{100} = 0.34307
T_{50} = 4.17 min.

C_v @ T_{50}
0.09 ft.^{2}/day

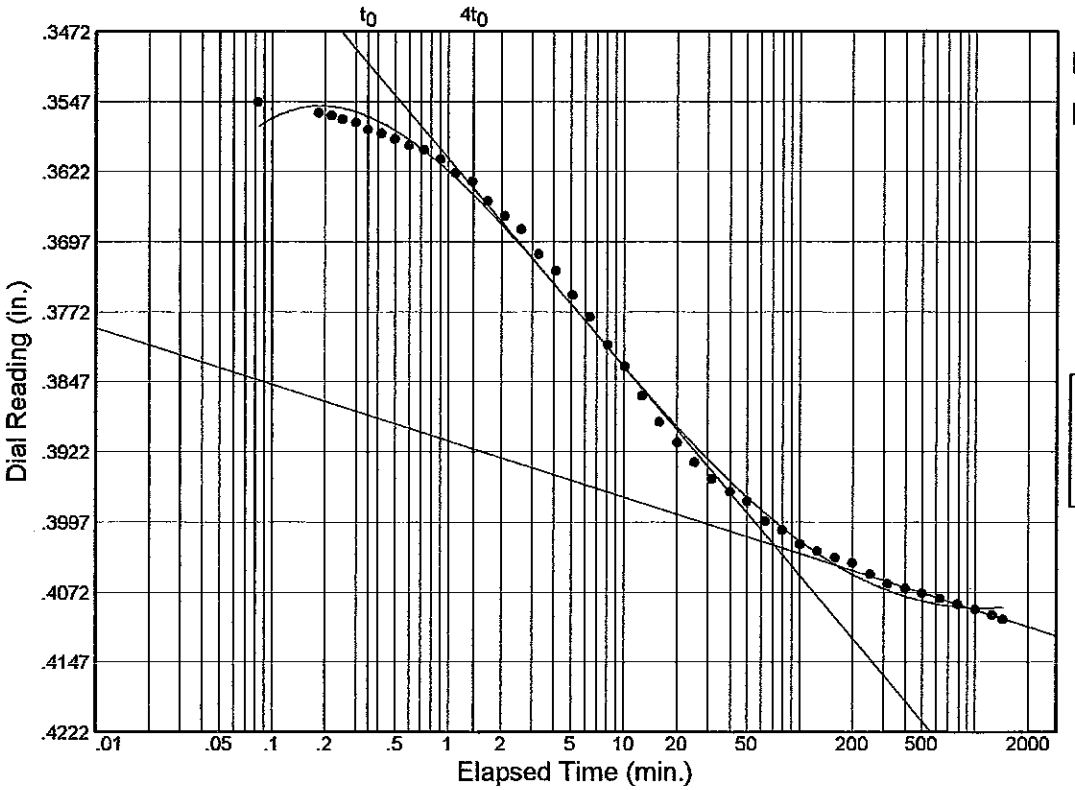
C_α = 0.009

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

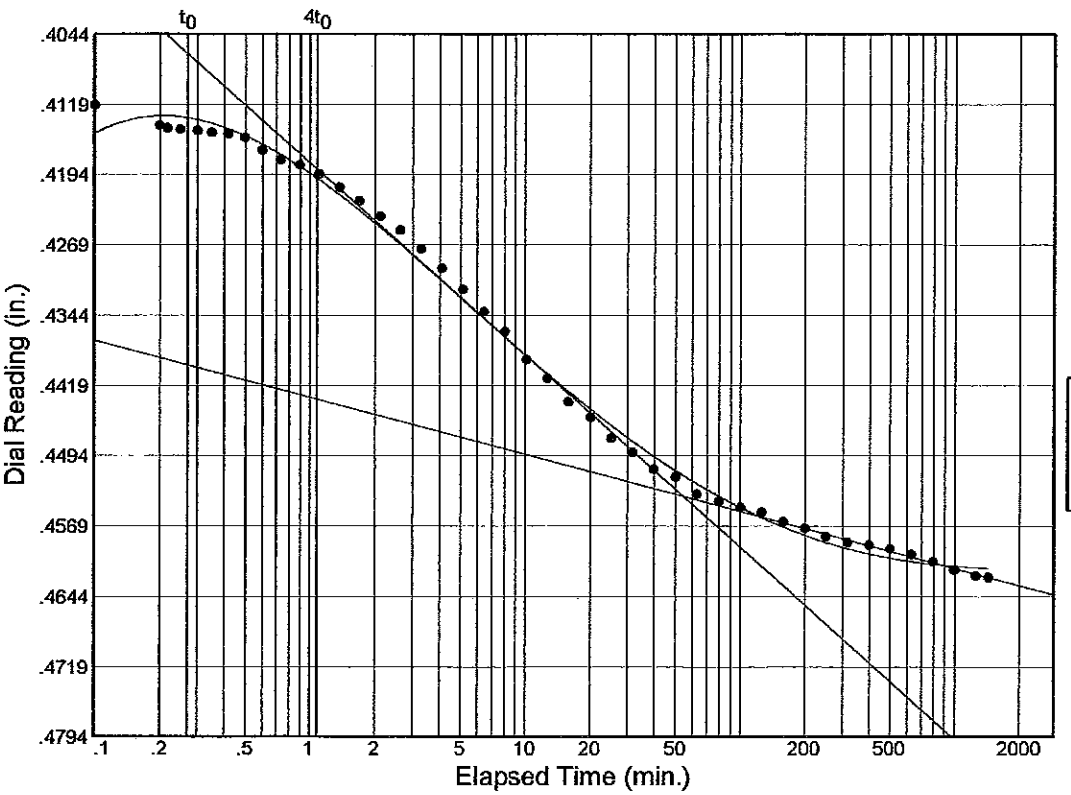
Source: BSFR-1U Sample No.: 6D Elev./Depth: 19.0



Load No.= 6
Load= 4000.00 tsf
D_0 = 0.34786
D_{50} = 0.37503
D_{100} = 0.40220
T_{50} = 4.37 min.

C_v @ T_{50}
0.08 ft.^{2}/day

C_α = 0.007



Load No.= 7
Load= 8000.00 tsf
D_0 = 0.40691
D_{50} = 0.43031
D_{100} = 0.45372
T_{50} = 3.93 min.

C_v @ T_{50}
0.07 ft.^{2}/day

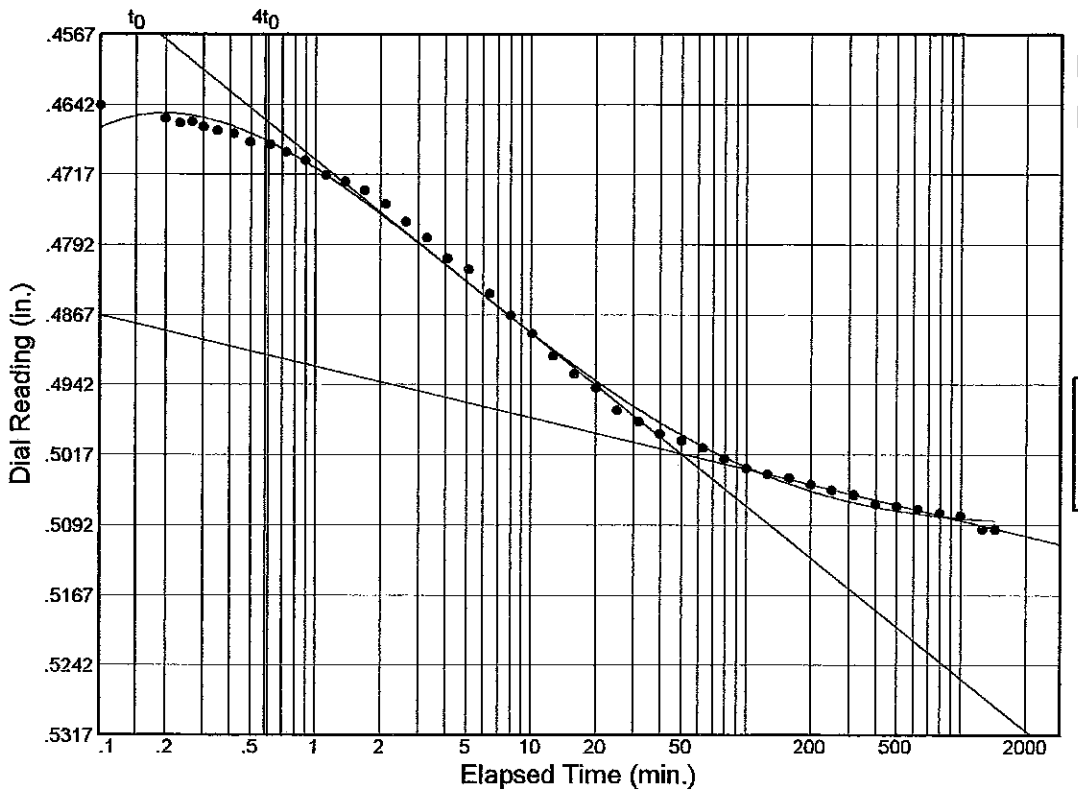
C_α = 0.008

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

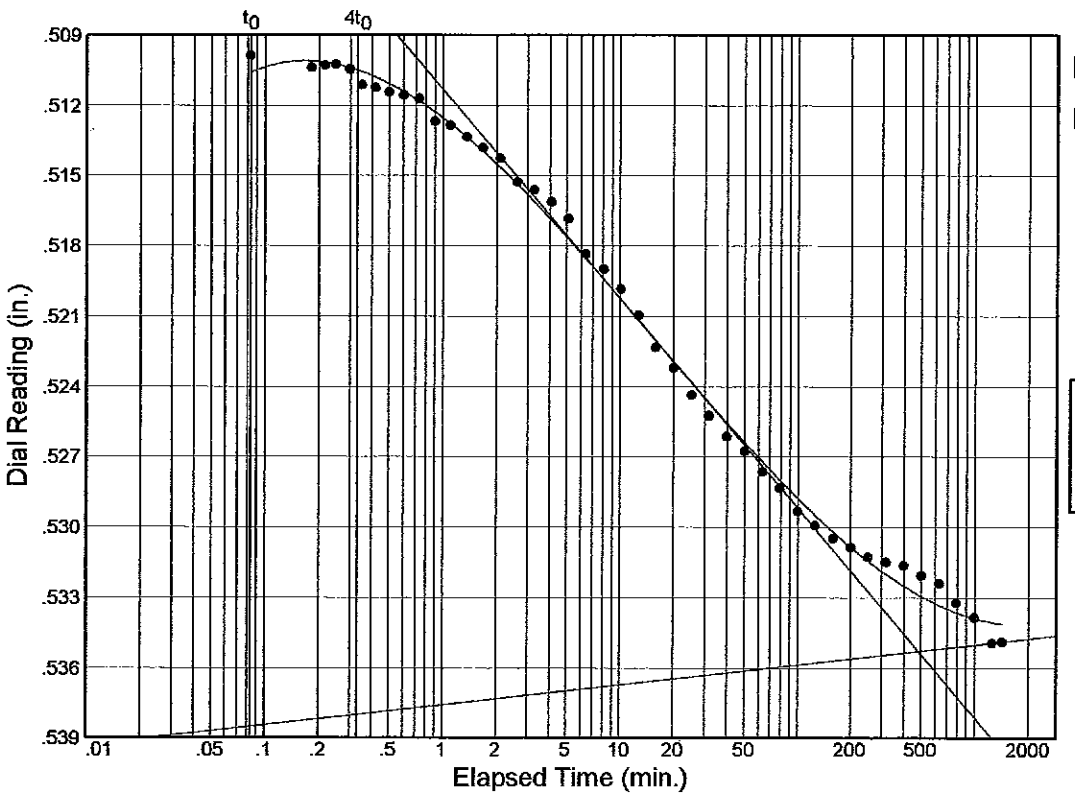
Source: BSFR-1U Sample No.: 6D Elev./Depth: 19.0



Load No.= 8
Load= 16000.00 tsf
D_0 = 0.46289
D_{50} = 0.48223
D_{100} = 0.50158
T_{50} = 4.51 min.

C_v @ T_{50}
0.06 ft.^{2}/day

C_α = 0.007



Load No.= 9
Load= 24000.00 tsf
D_0 = 0.51064
D_{50} = 0.52296
D_{100} = 0.53528
T_{50} = 20.24 min.

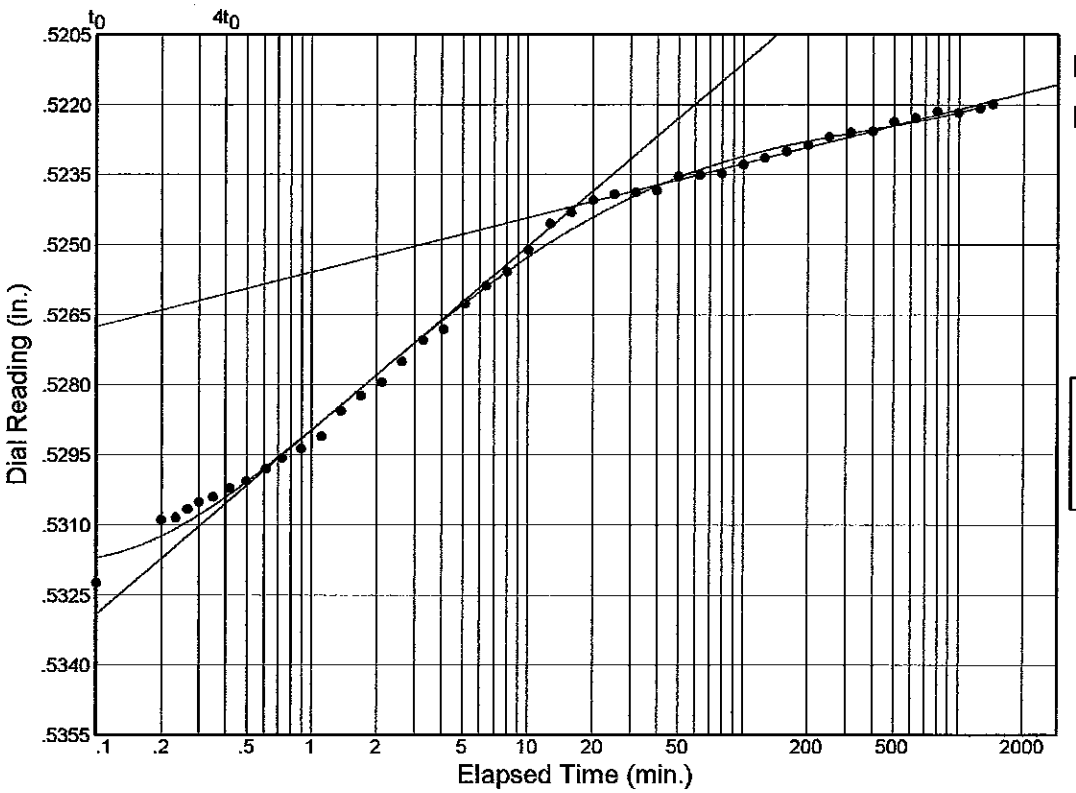
C_v @ T_{50}
0.01 ft.^{2}/day

Figure

Dial Reading vs. Time

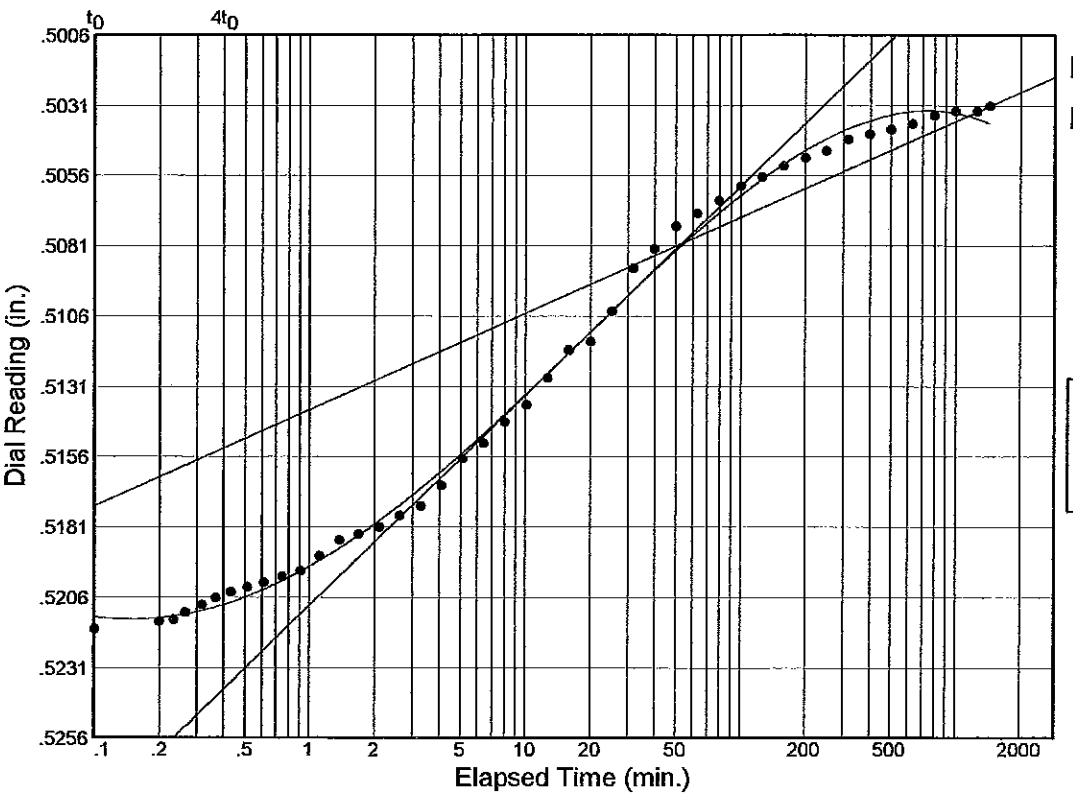
Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

Source: BSFR-1U Sample No.: 6D Elev./Depth: 19.0



Load No.= 10
Load= 6000.00 tsf
D_0 = 0.53299
D_{50} = 0.52858
D_{100} = 0.52417
T_{50} = 1.26 min.

C_v @ T_{50}
0.18 ft.^{2}/day



Load No.= 11
Load= 1500.00 tsf
D_0 = 0.52174
D_{50} = 0.51488
D_{100} = 0.50802
T_{50} = 6.21 min.

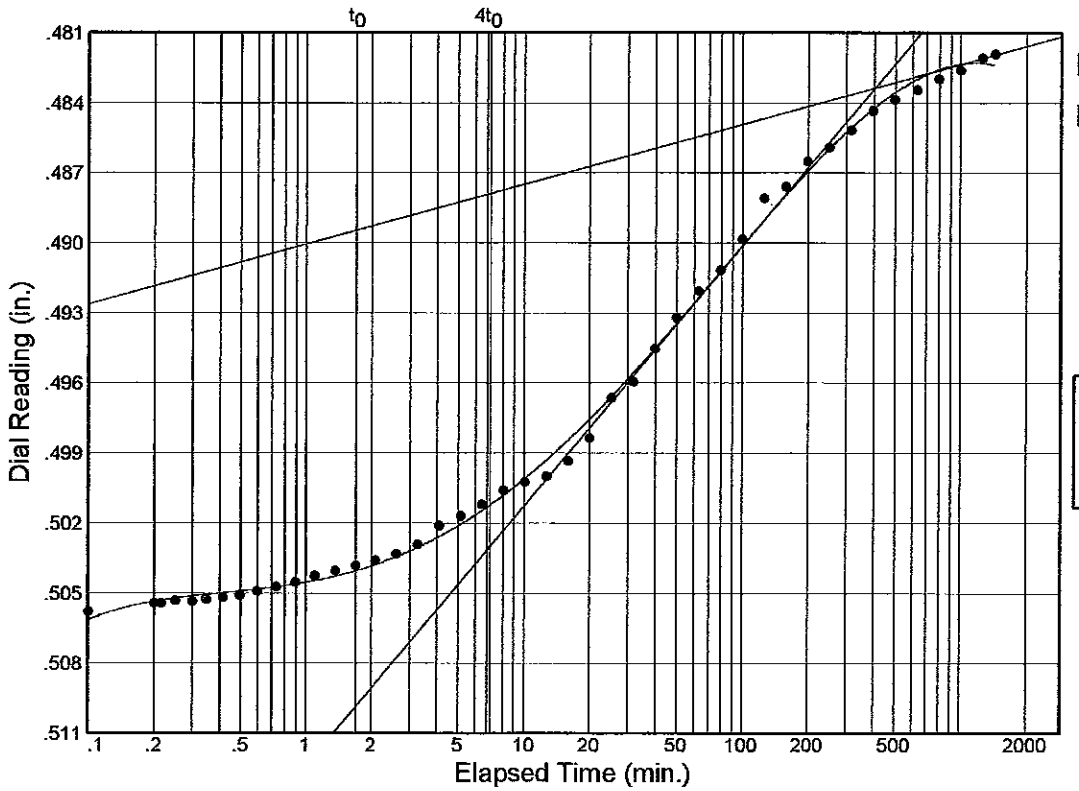
C_v @ T_{50}
0.04 ft.^{2}/day

Figure

Dial Reading vs. Time

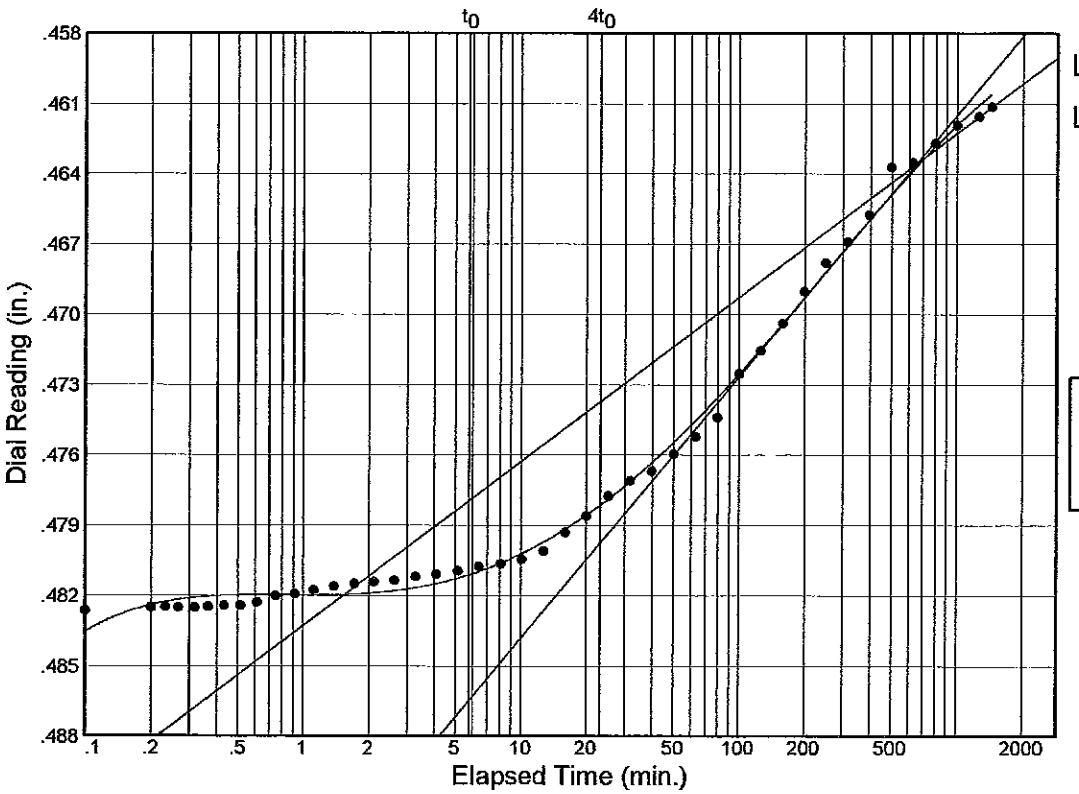
Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

Source: BSFR-1U Sample No.: 6D Elev./Depth: 19.0



Load No.= 12
Load= 375.00 tsf
D_0 = 0.50678
D_{50} = 0.49506
D_{100} = 0.48335
T_{50} = 35.38 min.

C_v @ T_{50}
0.01 ft.^{2}/day

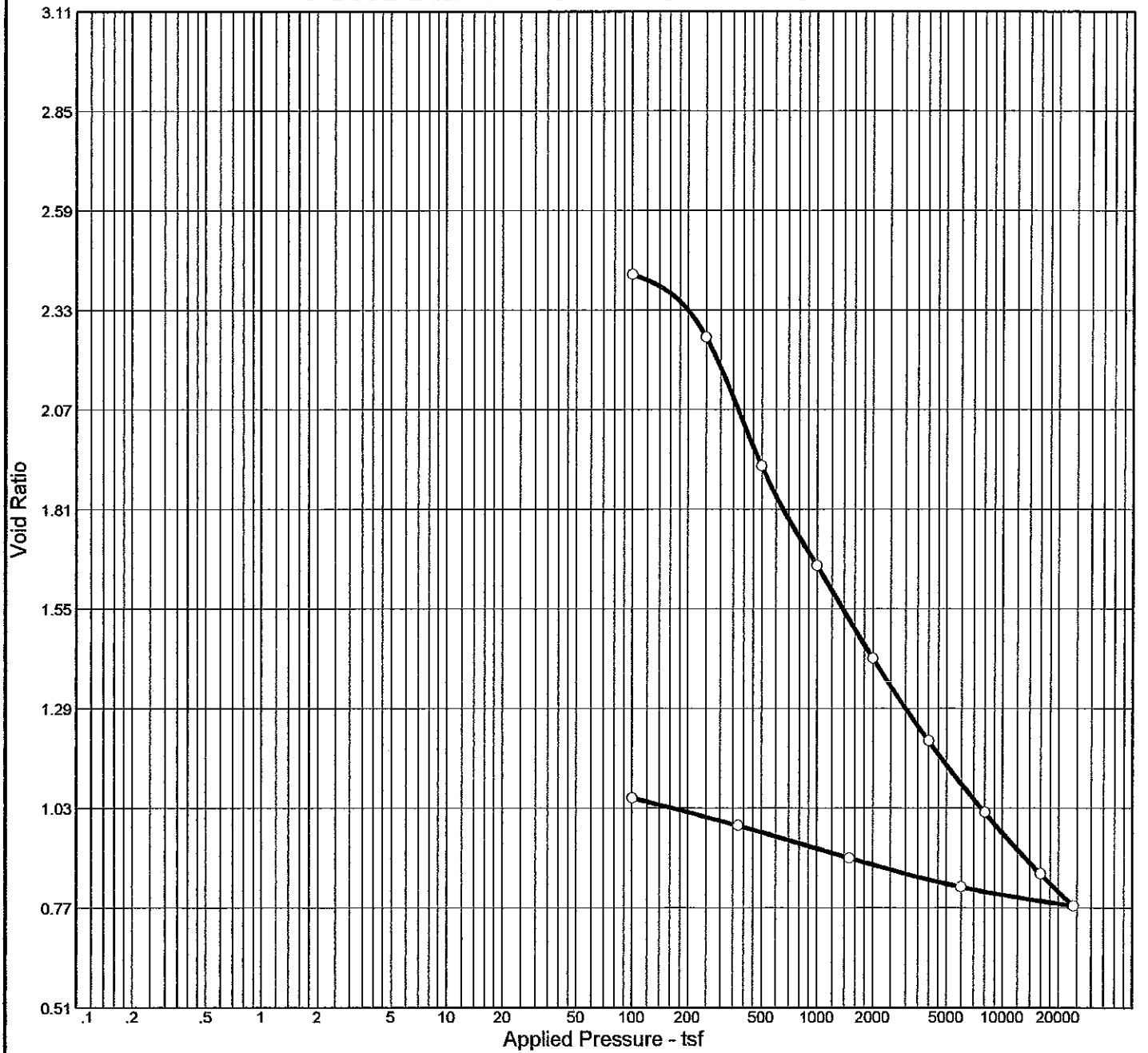


Load No.= 13
Load= 100.00 tsf
D_0 = 0.48409
D_{50} = 0.47381
D_{100} = 0.46353
T_{50} = 74.84 min.

C_v @ T_{50}
0.00 ft.^{2}/day

Figure

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (tsf)	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture								
179.7 %	160.2 %	34.8	79	49	2.72		0.00	0.47	2.425

MATERIAL DESCRIPTION	USCS	AASHTO
VSO GR CH4 W/ LNS ML	CH	

Project No. 12-017108 **Client:** USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

Source: BSFR-1U **Sample No.:** 5B **Elev./Depth:** 13.0

FFEBJV, LLC

St Rose, LA

Remarks:

Figure

CONSOLIDATION TEST DATA

Client: USACE
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans
Project Number: 12-017108

Sample Data

Source: BSFR-1U
Sample No.: 5B
Elev. or Depth: 13.0 **Sample Length(in./cm.):**
Location:
Description: VSO GR CH4 W/ LNS ML
Liquid Limit: 79 **Plasticity Index:** 49
USCS: CH **AASHTO:** **Figure No.:**
Testing Remarks:

Test Specimen Data

TOTAL SAMPLE	BEFORE TEST	AFTER TEST
Wet w+t = 83.23 g.	Consolidometer # = 1	Wet w+t = 702.75 g.
Dry w+t = 51.49 g.		Dry w+t = 460.15 g.
Tare Wt. = 31.67 g.	Spec. Gravity = 2.72	Tare Wt. = 297.82 g.
Height = 1.00 in.	Height = 1.00 in.	
Diameter = 3.99 in.	Diameter = 3.98 in.	
Weight = 297.82 g.	Defl. Table = n/a	
Moisture = 160.2 %	Ht. Solids = 0.2923 in.	Moisture = 149.4 %
Wet Den. = 90.6 pcf	Dry Wt. = 114.08 g.	Dry Wt. = 162.33 g.*
Dry Den. = 34.8 pcf	Void Ratio = 2.425	Void Ratio = 1.058
	Saturation = 179.7 %	

*** Final dry weight used in calculations**

End-of-Load Summary

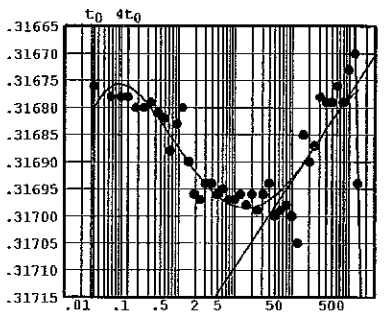
Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (ft.^{2}/day)	C_α	Void Ratio	% Compression /Swell
start	0.31678				2.425	
100.00	0.31694	0.00000	14.51	0.004	2.424	0.0 Comprs.
250.00	0.36462	0.00000	0.25	0.010	2.261	4.8 Comprs.
500.00	0.46298	0.00000	0.02	0.015	1.924	14.6 Comprs.
1000.00	0.53907	0.00000	0.02	0.009	1.664	22.2 Comprs.
2000.00	0.60983	0.00000	0.02	0.018	1.422	29.3 Comprs.
4000.00	0.67277	0.00000	0.04	0.022	1.207	35.6 Comprs.
8000.00	0.72727	0.00000	0.05	0.023	1.020	41.0 Comprs.
16000.00	0.77417	0.00000	0.01	0.008	0.860	45.7 Comprs.
24000.00	0.79851	0.00000	0.48	0.016	0.777	48.1 Comprs.
6000.00	0.78418	0.00000	0.01		0.826	46.7 Comprs.

Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (ft.^{2}/day)	C_α	Void Ratio	% Compression /Swell
1500.00	0.76211	0.00000	0.00		0.901	44.5 Comprs.
375.00	0.73750	0.00000	0.00	0.001	0.985	42.0 Comprs.
100.00	0.71627	0.00000	1.49		1.058	39.9 Comprs.

C_c = 0.47 P_c = 0.00 tsf C_r = 0.12

Pressure: 100.00 tsf **TEST READINGS** **Load No. 1**

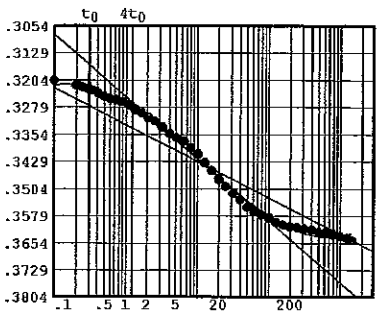
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.31678	23	12.55	0.31696
2	0.03	0.31676	24	15.82	0.31698
3	0.07	0.31678	25	19.92	0.31696
4	0.10	0.31678	26	25.08	0.31699
5	0.13	0.31678	27	31.58	0.31696
6	0.18	0.31680	28	39.78	0.31694
7	0.25	0.31680	29	50.08	0.31700
8	0.33	0.31679	30	63.07	0.31699
9	0.45	0.31681	31	79.40	0.31698
10	0.58	0.31682	32	99.97	0.31700
11	0.73	0.31688	33	125.87	0.31705
12	0.95	0.31683	34	158.47	0.31685
13	1.20	0.31680	35	199.50	0.31690
14	1.53	0.31690	36	251.17	0.31687
15	1.95	0.31696	37	316.20	0.31678
16	2.47	0.31697	38	398.08	0.31679
17	3.12	0.31694	39	501.17	0.31679
18	3.93	0.31694	40	630.93	0.31676
19	4.97	0.31696	41	794.30	0.31679
20	6.27	0.31695	42	999.98	0.31673
21	7.90	0.31697	43	1258.90	0.31670
22	9.95	0.31697	44	1440.07	0.31694



Void Ratio = 2.424 **Compression** = 0.0 %
D_0 = 0.31684 D_{50} = 0.31680 D_{100} = 0.31676
C_v **at 0.0 min.** = 14.51 ft.^{2}/day C_α = 0.004

Pressure: 250.00 tsf | TEST READINGS | Load No. 2

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.31585	24	12.72	0.34313
2	0.10	0.32046	25	15.97	0.34530
3	0.20	0.32184	26	20.08	0.34770
4	0.22	0.32204	27	25.25	0.34979
5	0.25	0.32238	28	31.75	0.35172
6	0.30	0.32280	29	39.93	0.35334
7	0.35	0.32329	30	50.25	0.35542
8	0.42	0.32404	31	63.22	0.35669
9	0.50	0.32488	32	79.57	0.35764
10	0.60	0.32547	33	100.13	0.35831
11	0.73	0.32585	34	126.02	0.35962
12	0.90	0.32636	35	158.62	0.36036
13	1.10	0.32728	36	199.67	0.36087
14	1.37	0.32850	37	251.32	0.36107
15	1.70	0.32938	38	316.37	0.36145
16	2.10	0.33081	39	398.25	0.36171
17	2.62	0.33172	40	501.33	0.36232
18	3.28	0.33340	41	631.10	0.36259
19	4.10	0.33518	42	794.47	0.36306
20	5.13	0.33630	43	1000.13	0.36352
21	6.43	0.33726	44	1259.07	0.36403
22	8.07	0.33903	45	1440.15	0.36462
23	10.12	0.34079			



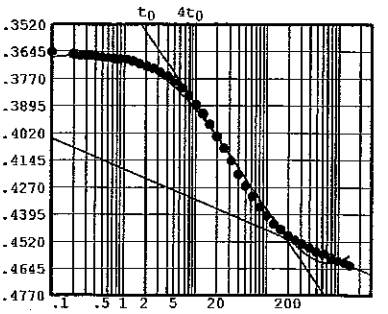
Void Ratio = 2.261 Compression = 4.8 %

D_0 = 0.31703 D_{50} = 0.33048 D_{100} = 0.34393

C_v at 1.9 min. = 0.25 ft.^{2}/day C_α = 0.010

Pressure: 500.00 tsf | TEST READINGS | Load No. 3

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.36277	24	12.72	0.39313
2	0.10	0.36458	25	15.98	0.39816
3	0.20	0.36570	26	20.08	0.40364
4	0.22	0.36597	27	25.25	0.40904
5	0.25	0.36626	28	31.75	0.41471
6	0.30	0.36636	29	39.95	0.42110
7	0.35	0.36647	30	50.25	0.42631
8	0.42	0.36668	31	63.23	0.43123
9	0.50	0.36700	32	79.57	0.43624
10	0.60	0.36730	33	100.13	0.44006
11	0.73	0.36778	34	126.03	0.44406
12	0.90	0.36795	35	158.63	0.44656
13	1.12	0.36819	36	199.67	0.44941
14	1.37	0.36902	37	251.33	0.45136
15	1.70	0.37024	38	316.37	0.45320
16	2.12	0.37137	39	398.25	0.45477
17	2.63	0.37229	40	501.33	0.45674
18	3.28	0.37404	41	631.12	0.45772
19	4.10	0.37581	42	794.48	0.45947
20	5.13	0.37811	43	1000.15	0.46091
21	6.43	0.38128	44	1259.08	0.46216
22	8.07	0.38491	45	1440.12	0.46298
23	10.13	0.38889			



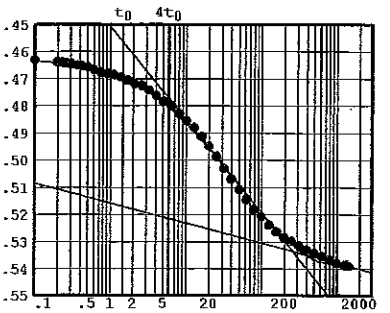
Void Ratio = 1.924 **Compression** = 14.6 %

D_0 = 0.35479 D_{50} = 0.40266 D_{100} = 0.45054

C_v **at 19.0 min.** = 0.02 ft.^{2}/day C_α = 0.015

Pressure: 1000.00 tsf | TEST READINGS | Load No. 4

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.46083	24	12.73	0.48791
2	0.10	0.46300	25	15.98	0.49126
3	0.20	0.46382	26	20.10	0.49479
4	0.23	0.46402	27	25.27	0.49868
5	0.27	0.46414	28	31.77	0.50305
6	0.30	0.46452	29	39.95	0.50696
7	0.37	0.46506	30	50.27	0.51074
8	0.43	0.46537	31	63.23	0.51443
9	0.52	0.46583	32	79.58	0.51823
10	0.62	0.46674	33	100.15	0.52086
11	0.75	0.46757	34	126.05	0.52384
12	0.92	0.46806	35	158.65	0.52634
13	1.12	0.46848	36	199.68	0.52852
14	1.38	0.46934	37	251.35	0.52989
15	1.72	0.47065	38	316.38	0.53149
16	2.12	0.47176	39	398.27	0.53294
17	2.63	0.47246	40	501.35	0.53429
18	3.30	0.47424	41	631.12	0.53545
19	4.12	0.47613	42	794.48	0.53654
20	5.15	0.47843	43	1000.17	0.53794
21	6.45	0.48000	44	1259.08	0.53864
22	8.08	0.48291	45	1440.15	0.53907
23	10.13	0.48543			



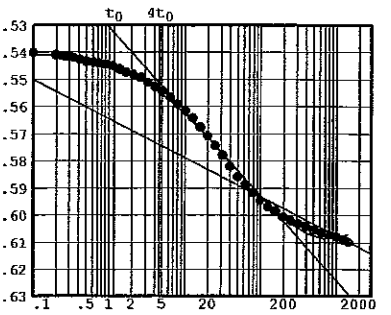
Void Ratio = 1.664 **Compression** = 22.2 %

D_0 = 0.45830 D_{50} = 0.49595 D_{100} = 0.53360

C_v **at 20.5 min.** = 0.02 ft.^{2}/day C_α = 0.009

Pressure: 2000.00 tsf | TEST READINGS | Load No. 5

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.53639	24	12.72	0.56416
2	0.10	0.54002	25	15.98	0.56754
3	0.20	0.54102	26	20.08	0.57075
4	0.23	0.54128	27	25.25	0.57442
5	0.27	0.54145	28	31.77	0.57790
6	0.30	0.54157	29	39.95	0.58197
7	0.35	0.54202	30	50.27	0.58584
8	0.42	0.54262	31	63.23	0.58883
9	0.50	0.54327	32	79.58	0.59173
10	0.62	0.54356	33	100.15	0.59453
11	0.73	0.54391	34	126.05	0.59685
12	0.90	0.54443	35	158.63	0.59848
13	1.12	0.54490	36	199.68	0.60072
14	1.38	0.54614	37	251.33	0.60199
15	1.70	0.54739	38	316.38	0.60312
16	2.12	0.54820	39	398.27	0.60409
17	2.63	0.54920	40	501.35	0.60540
18	3.28	0.55124	41	631.12	0.60641
19	4.10	0.55270	42	794.48	0.60725
20	5.13	0.55429	43	1000.17	0.60796
21	6.43	0.55657	44	1259.08	0.60899
22	8.07	0.55895	45	1440.17	0.60983
23	10.13	0.56144			



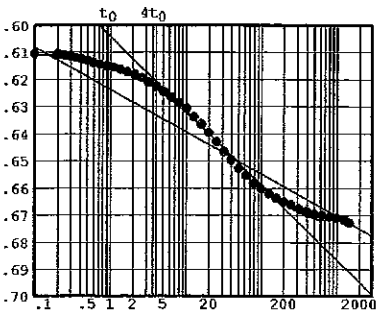
Void Ratio = 1.422 **Compression** = 29.3 %

D_0 = 0.53537 D_{50} = 0.56440 D_{100} = 0.59342

C_v **at 11.6 min.** = 0.02 ft.^{2}/day C_α = 0.018

Pressure: 4000.00 tsf | TEST READINGS | Load No. 6

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.60598	24	12.72	0.63374
2	0.10	0.61036	25	15.97	0.63640
3	0.20	0.61061	26	20.08	0.63957
4	0.22	0.61088	27	25.25	0.64293
5	0.25	0.61109	28	31.75	0.64654
6	0.30	0.61145	29	39.93	0.64963
7	0.35	0.61201	30	50.25	0.65276
8	0.42	0.61234	31	63.23	0.65534
9	0.50	0.61299	32	79.57	0.65838
10	0.60	0.61379	33	100.13	0.66027
11	0.73	0.61441	34	126.03	0.66209
12	0.90	0.61503	35	158.63	0.66375
13	1.12	0.61558	36	199.67	0.66504
14	1.37	0.61623	37	251.33	0.66618
15	1.70	0.61721	38	316.37	0.66763
16	2.12	0.61801	39	398.25	0.66856
17	2.63	0.61933	40	501.33	0.66965
18	3.28	0.62104	41	631.10	0.67002
19	4.10	0.62252	42	794.48	0.67052
20	5.13	0.62455	43	1000.15	0.67103
21	6.43	0.62646	44	1259.08	0.67186
22	8.07	0.62856	45	1440.43	0.67277
23	10.12	0.63057			



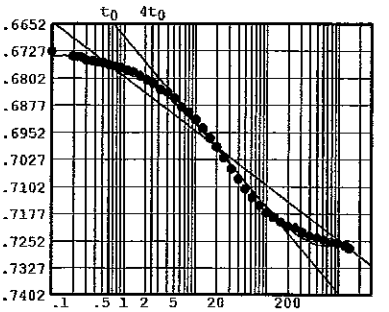
Void Ratio = 1.207 Compression = 35.6 %

D_0 = 0.60570 D_{50} = 0.62741 D_{100} = 0.64913

C_v at 6.3 min. = 0.04 ft.^{2}/day C_α = 0.022

Pressure: 8000.00 tsf | TEST READINGS | Load No. 7

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.66695	24	12.72	0.69405
2	0.10	0.67272	25	15.98	0.69675
3	0.20	0.67410	26	20.08	0.69919
4	0.23	0.67436	27	25.25	0.70221
5	0.27	0.67458	28	31.77	0.70525
6	0.30	0.67529	29	39.95	0.70804
7	0.37	0.67549	30	50.25	0.71078
8	0.43	0.67571	31	63.23	0.71320
9	0.52	0.67587	32	79.57	0.71535
10	0.62	0.67639	33	100.13	0.71734
11	0.75	0.67685	34	126.03	0.71869
12	0.92	0.67731	35	158.63	0.71997
13	1.12	0.67805	36	199.67	0.72114
14	1.38	0.67859	37	251.33	0.72155
15	1.70	0.67957	38	316.37	0.72294
16	2.12	0.68065	39	398.25	0.72367
17	2.63	0.68168	40	501.33	0.72431
18	3.28	0.68336	41	631.10	0.72502
19	4.10	0.68418	42	794.48	0.72543
20	5.13	0.68578	43	1000.15	0.72595
21	6.43	0.68815	44	1259.08	0.72639
22	8.07	0.68966	45	1440.30	0.72727
23	10.13	0.69161			



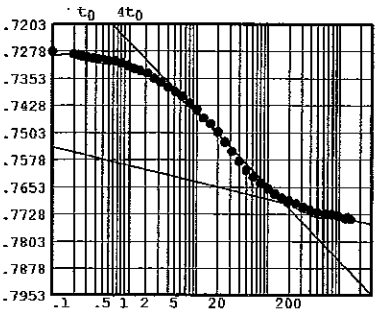
Void Ratio = 1.020 **Compression** = 41.0 %

D_0 = 0.66968 D_{50} = 0.68434 D_{100} = 0.69900

C_v **at 3.6 min.** = 0.05 ft.^{2}/day C_α = 0.023

Pressure: 16000.00 tsf | TEST READINGS | Load No. 8

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.71778	24	12.73	0.74627
2	0.10	0.72782	25	15.98	0.74789
3	0.20	0.72860	26	20.10	0.75009
4	0.23	0.72887	27	25.27	0.75289
5	0.27	0.72919	28	31.77	0.75548
6	0.30	0.72944	29	39.95	0.75816
7	0.37	0.72972	30	50.27	0.76064
8	0.43	0.72996	31	63.23	0.76252
9	0.52	0.73009	32	79.58	0.76422
10	0.62	0.73035	33	100.15	0.76578
11	0.75	0.73051	34	126.05	0.76722
12	0.92	0.73097	35	158.63	0.76839
13	1.12	0.73173	36	199.68	0.76919
14	1.38	0.73266	37	251.35	0.76991
15	1.70	0.73318	38	316.38	0.77087
16	2.12	0.73392	39	398.27	0.77163
17	2.63	0.73532	40	501.35	0.77223
18	3.28	0.73647	41	631.12	0.77271
19	4.12	0.73777	42	794.48	0.77291
20	5.15	0.73905	43	1000.17	0.77345
21	6.45	0.74028	44	1259.08	0.77389
22	8.08	0.74206	45	1440.17	0.77417
23	10.13	0.74390			



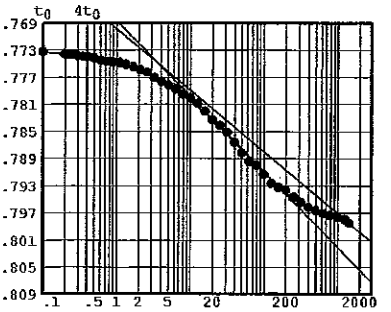
Void Ratio = 0.860 Compression = 45.7 %

D_0 = 0.72587 D_{50} = 0.74779 D_{100} = 0.76972

C_v at 14.4 min. = 0.01 ft.^{2}/day C_α = 0.008

Pressure: 24000.00 tsf | TEST READINGS | Load No. 9

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.76568	24	12.72	0.78083
2	0.10	0.77318	25	15.98	0.78199
3	0.20	0.77357	26	20.08	0.78329
4	0.23	0.77366	27	25.25	0.78407
5	0.27	0.77366	28	31.75	0.78511
6	0.30	0.77385	29	39.95	0.78657
7	0.35	0.77391	30	50.25	0.78815
8	0.42	0.77401	31	63.23	0.78939
9	0.50	0.77413	32	79.57	0.78998
10	0.62	0.77449	33	100.15	0.79134
11	0.73	0.77465	34	126.05	0.79265
12	0.90	0.77470	35	158.65	0.79328
13	1.12	0.77479	36	199.68	0.79367
14	1.37	0.77507	37	251.35	0.79468
15	1.70	0.77541	38	316.40	0.79546
16	2.12	0.77589	39	398.28	0.79615
17	2.63	0.77628	40	501.37	0.79663
18	3.28	0.77706	41	631.13	0.79710
19	4.10	0.77764	42	794.52	0.79732
20	5.13	0.77815	43	1000.18	0.79764
21	6.43	0.77876	44	1259.12	0.79798
22	8.07	0.77951	45	1440.00	0.79851
23	10.13	0.78004			



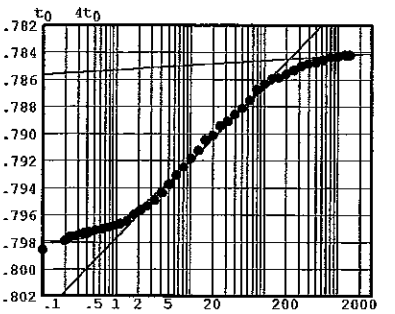
Void Ratio = 0.777 **Compression** = 48.1 %

D_0 = 0.77260 D_{50} = 0.77380 D_{100} = 0.77500

C_v **at 0.3 min.** = 0.48 ft.^{2}/day C_α = 0.016

Pressure: 6000.00 tsf | TEST READINGS | Load No. 10

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.81555	24	12.77	0.79123
2	0.10	0.79854	25	16.03	0.79047
3	0.20	0.79790	26	20.15	0.79012
4	0.23	0.79763	27	25.32	0.78941
5	0.27	0.79760	28	31.82	0.78908
6	0.32	0.79746	29	40.02	0.78858
7	0.37	0.79733	30	50.32	0.78813
8	0.43	0.79728	31	63.30	0.78755
9	0.52	0.79712	32	79.65	0.78674
10	0.63	0.79704	33	100.22	0.78630
11	0.77	0.79693	34	126.12	0.78598
12	0.93	0.79680	35	158.72	0.78586
13	1.13	0.79663	36	199.77	0.78558
14	1.40	0.79645	37	251.43	0.78533
15	1.73	0.79600	38	316.47	0.78499
16	2.15	0.79564	39	398.35	0.78483
17	2.67	0.79534	40	501.43	0.78475
18	3.32	0.79494	41	631.22	0.78457
19	4.15	0.79437	42	794.58	0.78435
20	5.18	0.79375	43	1000.27	0.78430
21	6.48	0.79305	44	1259.18	0.78420
22	8.12	0.79247	45	1440.22	0.78418
23	10.18	0.79183			



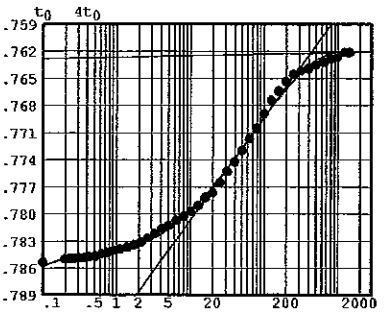
Void Ratio = 0.826 **Compression** = 46.7 %

D_0 = 0.79812 D_{50} = 0.79129 D_{100} = 0.78446

C_v **at 13.4 min.** = 0.01 ft.^{2}/day

Pressure: 1500.00 tsf | TEST READINGS | Load No. 11

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.79227	24	12.77	0.77908
2	0.10	0.78531	25	16.03	0.77820
3	0.20	0.78502	26	20.15	0.77767
4	0.23	0.78499	27	25.32	0.77654
5	0.27	0.78495	28	31.82	0.77528
6	0.32	0.78487	29	40.02	0.77423
7	0.37	0.78484	30	50.32	0.77295
8	0.43	0.78476	31	63.30	0.77164
9	0.52	0.78471	32	79.65	0.77050
10	0.63	0.78440	33	100.22	0.76891
11	0.77	0.78425	34	126.12	0.76740
12	0.93	0.78403	35	158.72	0.76639
13	1.13	0.78389	36	199.77	0.76531
14	1.40	0.78371	37	251.43	0.76456
15	1.73	0.78344	38	316.47	0.76416
16	2.15	0.78315	39	398.35	0.76391
17	2.67	0.78268	40	501.43	0.76350
18	3.33	0.78218	41	631.22	0.76320
19	4.15	0.78163	42	794.58	0.76287
20	5.18	0.78125	43	1000.27	0.76260
21	6.48	0.78074	44	1259.18	0.76212
22	8.12	0.78026	45	1440.05	0.76211
23	10.18	0.77970			



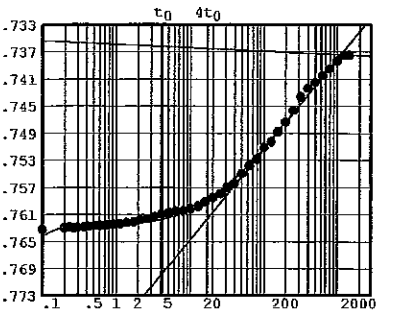
Void Ratio = 0.901 **Compression** = 44.5 %

D_0 = 0.78702 D_{50} = 0.77461 D_{100} = 0.76220

C_v **at 33.6 min.** = 0.00 ft.^{2}/day

Pressure: 375.00 tsf | TEST READINGS | Load No. 12

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.76583	24	12.77	0.75982
2	0.10	0.76324	25	16.03	0.75914
3	0.20	0.76299	26	20.13	0.75847
4	0.23	0.76293	27	25.30	0.75797
5	0.27	0.76300	28	31.82	0.75700
6	0.30	0.76292	29	40.00	0.75643
7	0.37	0.76286	30	50.32	0.75498
8	0.43	0.76278	31	63.30	0.75376
9	0.52	0.76269	32	79.63	0.75285
10	0.62	0.76263	33	100.22	0.75108
11	0.75	0.76255	34	126.12	0.75027
12	0.92	0.76247	35	158.72	0.74881
13	1.13	0.76239	36	199.75	0.74732
14	1.40	0.76223	37	251.42	0.74562
15	1.73	0.76211	38	316.47	0.74362
16	2.15	0.76183	39	398.35	0.74234
17	2.67	0.76163	40	501.43	0.74147
18	3.32	0.76135	41	631.20	0.74051
19	4.13	0.76100	42	794.58	0.73952
20	5.18	0.76076	43	1000.25	0.73831
21	6.47	0.76055	44	1259.18	0.73747
22	8.12	0.76047	45	1440.18	0.73750
23	10.17	0.76015			



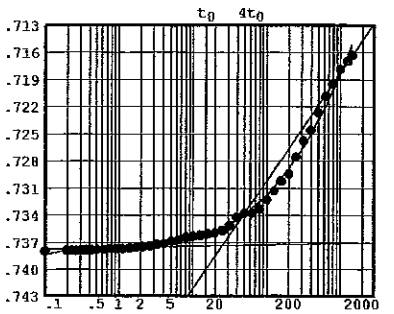
Void Ratio = 0.985 **Compression** = 42.0 %

D_0 = 0.76462 D_{50} = 0.75103 D_{100} = 0.73744

C_v **at 102.0 min.** = 0.00 ft.^{2}/day C_α = 0.001

Pressure: 100.00 tsf **TEST READINGS** **Load No. 13**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.73904	24	12.77	0.73620
2	0.10	0.73798	25	16.03	0.73608
3	0.20	0.73792	26	20.15	0.73597
4	0.23	0.73792	27	25.32	0.73572
5	0.27	0.73790	28	31.82	0.73514
6	0.32	0.73788	29	40.02	0.73423
7	0.37	0.73785	30	50.33	0.73378
8	0.43	0.73786	31	63.32	0.73375
9	0.52	0.73780	32	79.65	0.73332
10	0.63	0.73780	33	100.23	0.73230
11	0.77	0.73768	34	126.13	0.73131
12	0.93	0.73769	35	158.73	0.73023
13	1.13	0.73770	36	199.77	0.72942
14	1.40	0.73763	37	251.43	0.72757
15	1.73	0.73756	38	316.48	0.72574
16	2.15	0.73751	39	398.37	0.72458
17	2.67	0.73741	40	501.45	0.72265
18	3.33	0.73721	41	631.22	0.72084
19	4.15	0.73717	42	794.60	0.71952
20	5.18	0.73694	43	1000.27	0.71786
21	6.48	0.73676	44	1259.20	0.71697
22	8.12	0.73645	45	1440.33	0.71627
23	10.18	0.73629			



Void Ratio = 1.058 **Compression** = 39.9 %

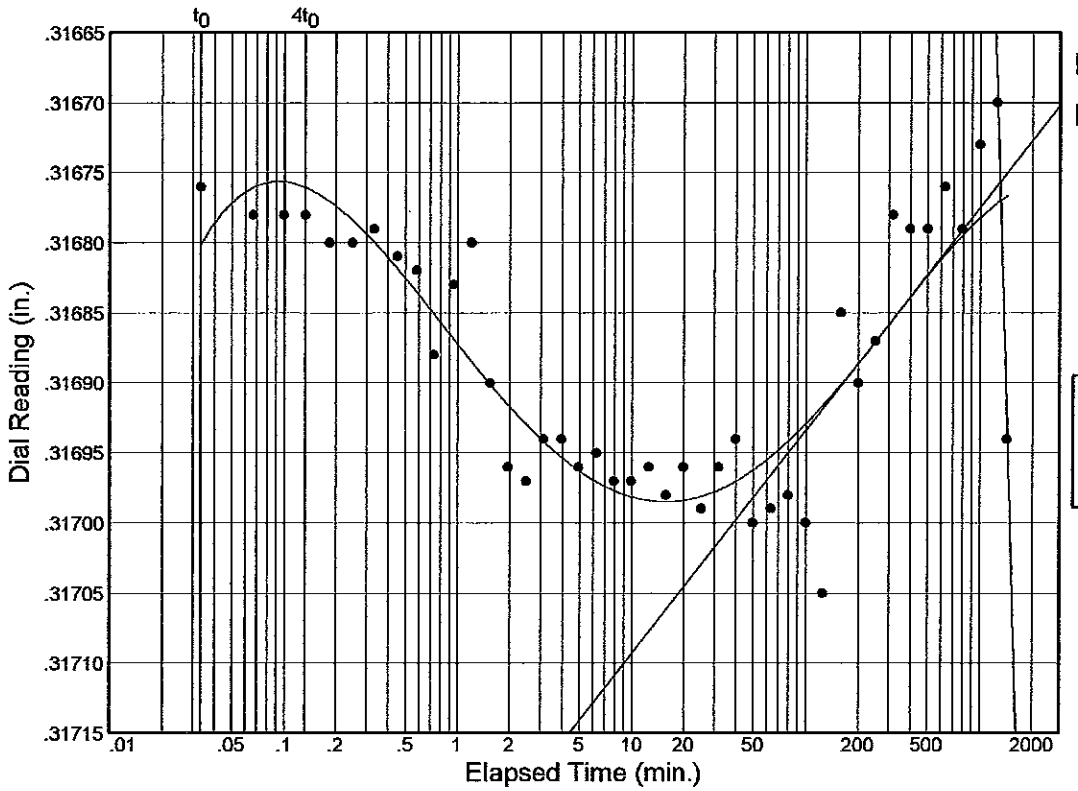
D_0 = 0.73914 D_{50} = 0.73826 D_{100} = 0.73738

C_v **at 0.1 min.** = 1.49 ft.^{2}/day

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

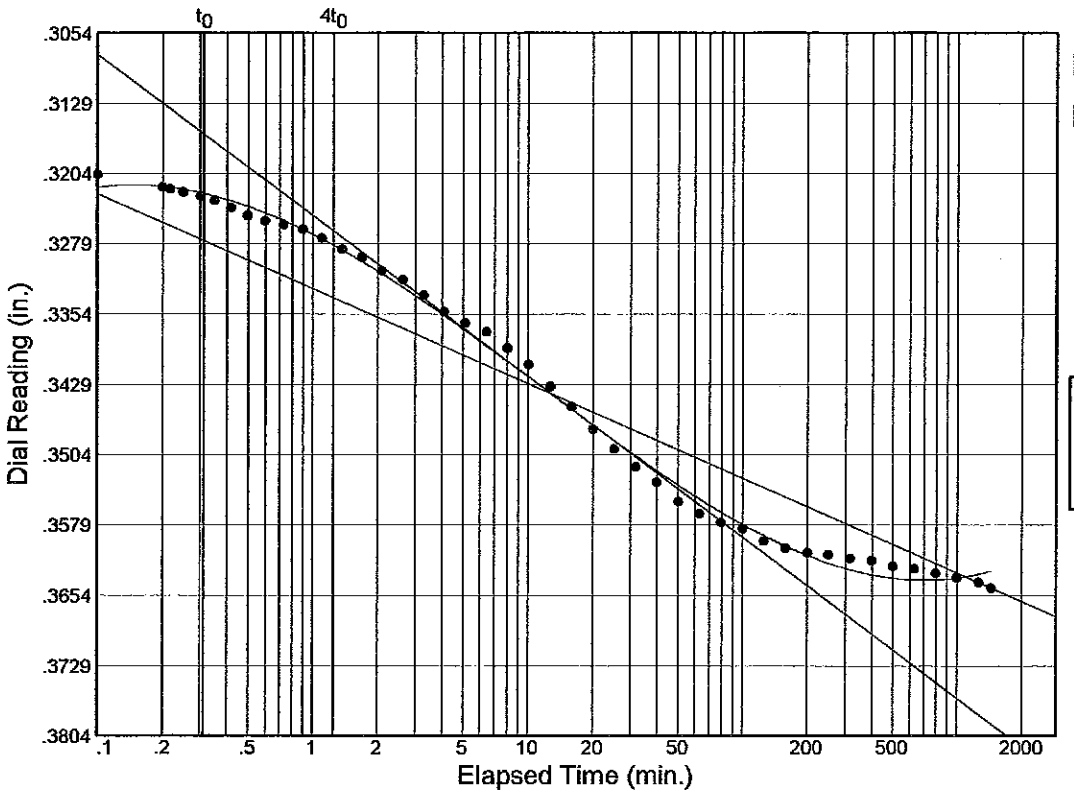
Source: BSFR-1U Sample No.: 5B Elev./Depth: 13.0



Load No.= 1
Load= 100.00 tsf
D_0 = 0.31684
D_{50} = 0.31680
D_{100} = 0.31676
T_{50} = 0.03 min.

C_v @ T_{50}
14.51 ft.^{2}/day

C_α = 0.004



Load No.= 2
Load= 250.00 tsf
D_0 = 0.31703
D_{50} = 0.33048
D_{100} = 0.34393
T_{50} = 1.91 min.

C_v @ T_{50}
0.25 ft.^{2}/day

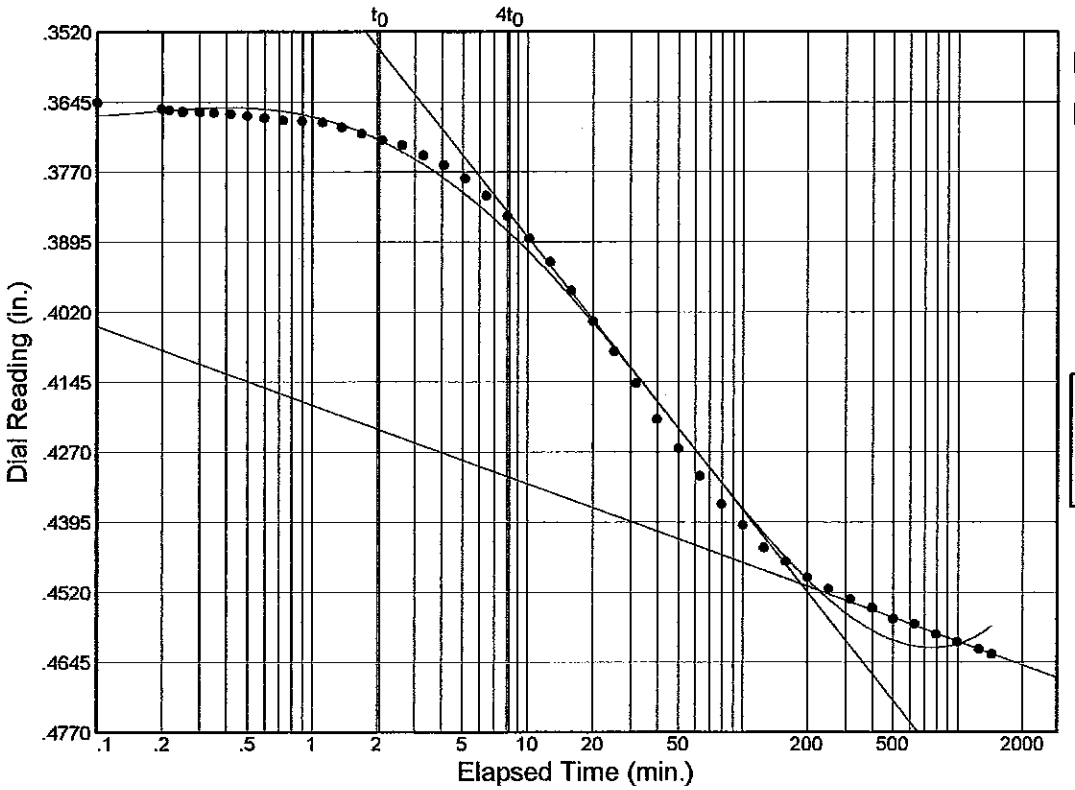
C_α = 0.010

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

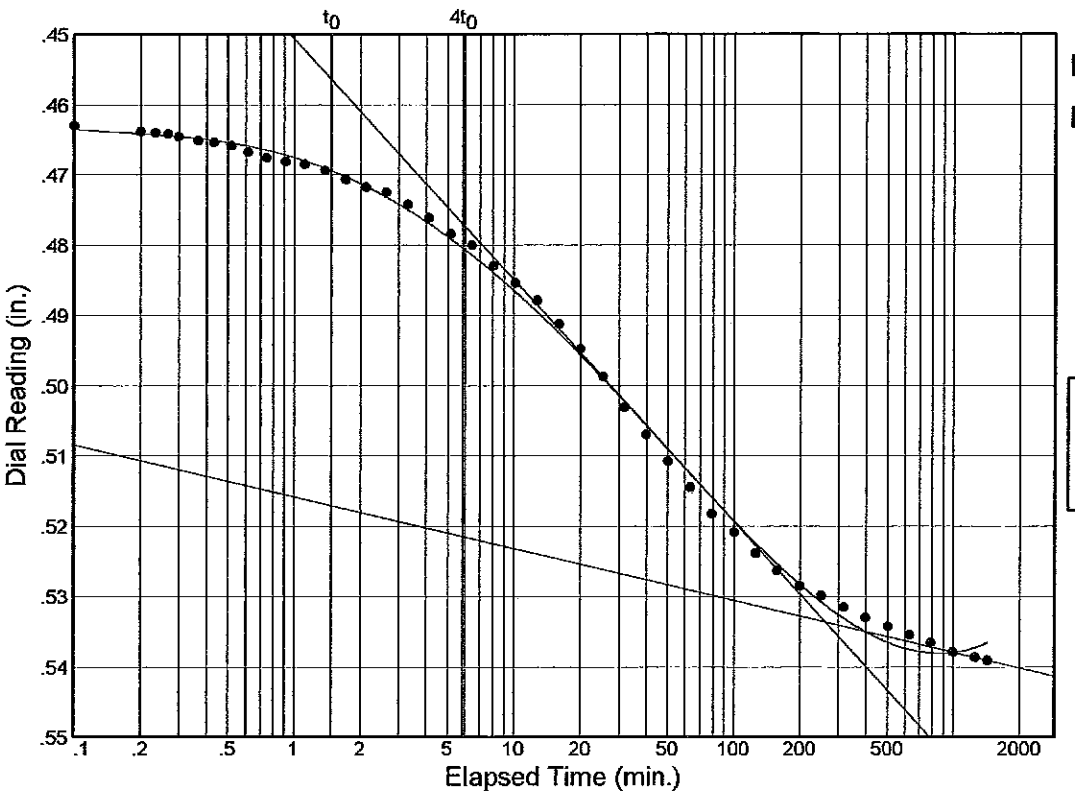
Source: BSFR-1U Sample No.: 5B Elev./Depth: 13.0



Load No.= 3
Load= 500.00 tsf
D_0 = 0.35479
D_{50} = 0.40266
D_{100} = 0.45054
T_{50} = 19.00 min.

C_v @ T_{50}
0.02 ft.^{2}/day

C_α = 0.015



Load No.= 4
Load= 1000.00 tsf
D_0 = 0.45830
D_{50} = 0.49595
D_{100} = 0.53360
T_{50} = 20.54 min.

C_v @ T_{50}
0.02 ft.^{2}/day

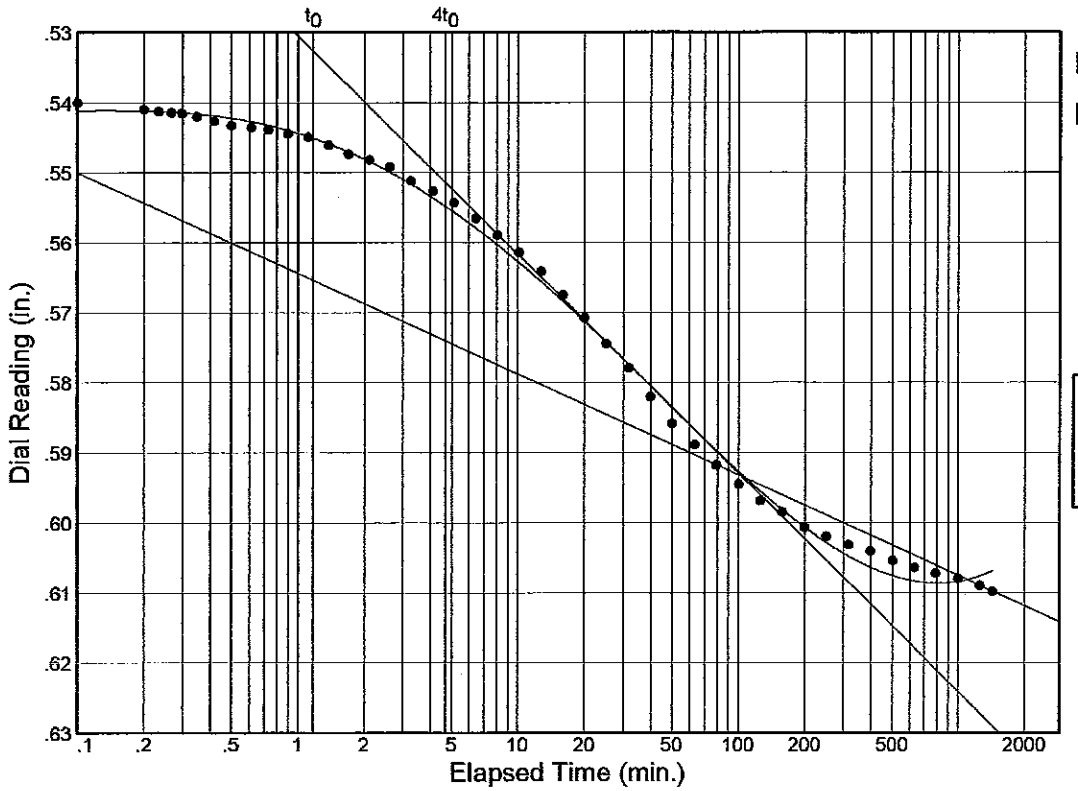
C_α = 0.009

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

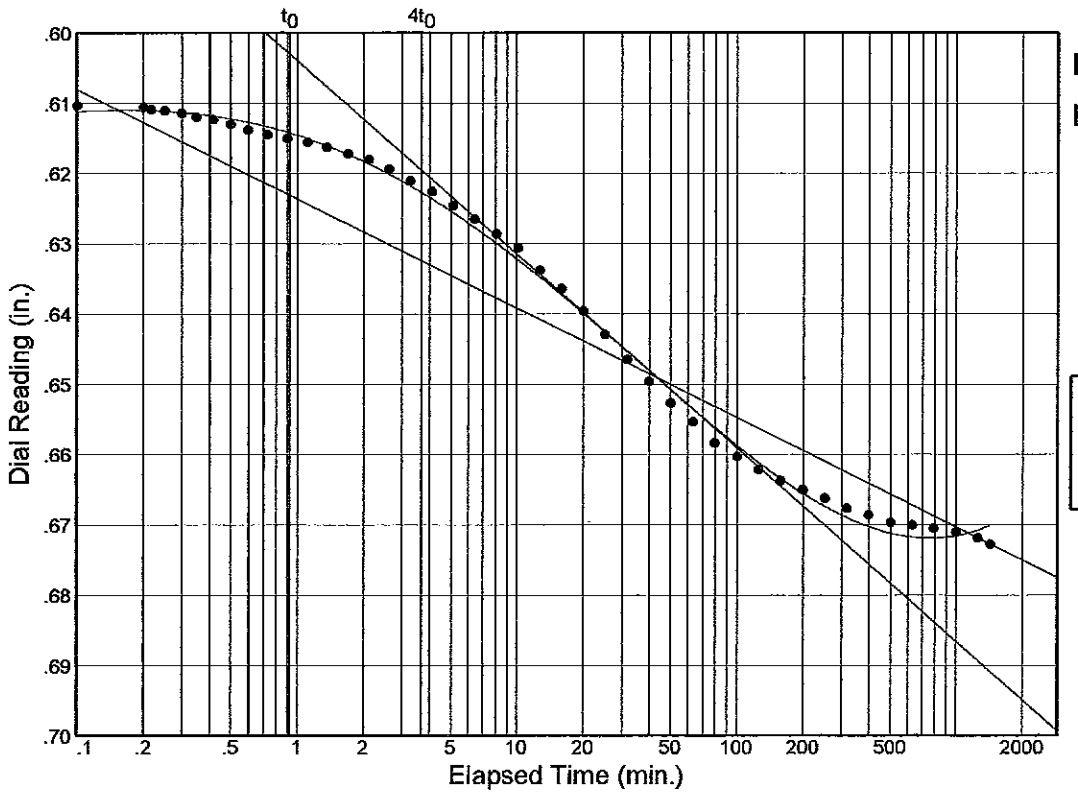
Source: BSFR-1U Sample No.: 5B Elev./Depth: 13.0



Load No.= 5
Load= 2000.00 tsf
D_0 = 0.53537
D_{50} = 0.56440
D_{100} = 0.59342
T_{50} = 11.59 min.

C_v @ T_{50}
0.02 ft.^{2}/day

C_α = 0.018



Load No.= 6
Load= 4000.00 tsf
D_0 = 0.60570
D_{50} = 0.62741
D_{100} = 0.64913
T_{50} = 6.29 min.

C_v @ T_{50}
0.04 ft.^{2}/day

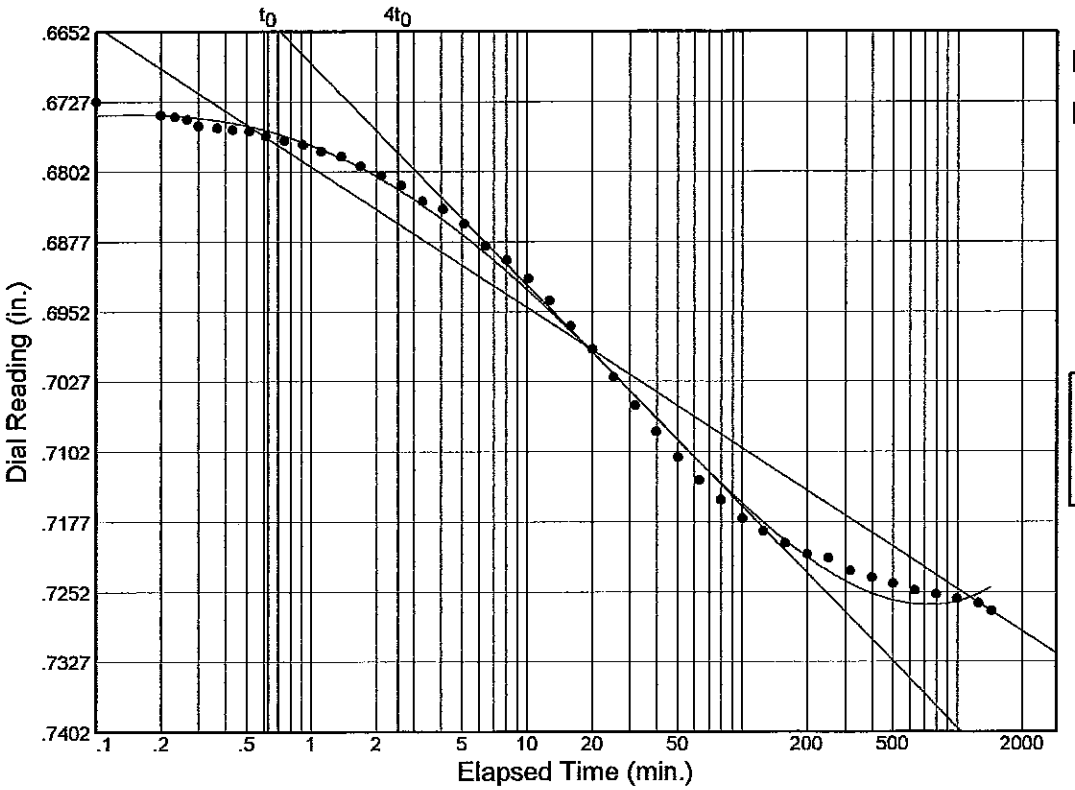
C_α = 0.022

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

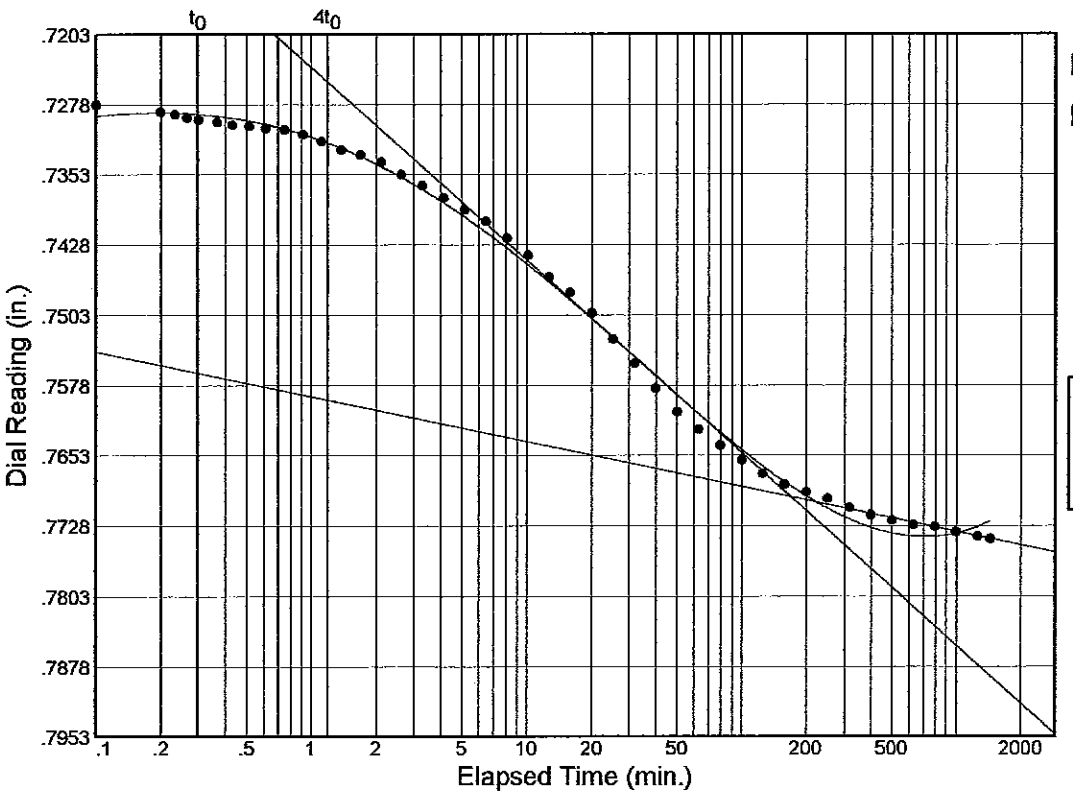
Source: BSFR-1U Sample No.: 5B Elev./Depth: 13.0



Load No.= 7
Load= 8000.00 tsf
D_0 = 0.66968
D_{50} = 0.68434
D_{100} = 0.69900
T_{50} = 3.58 min.

C_v @ T_{50}
0.05 ft.^{2}/day

C_α = 0.023



Load No.= 8
Load= 16000.00 tsf
D_0 = 0.72587
D_{50} = 0.74779
D_{100} = 0.76972
T_{50} = 14.44 min.

C_v @ T_{50}
0.01 ft.^{2}/day

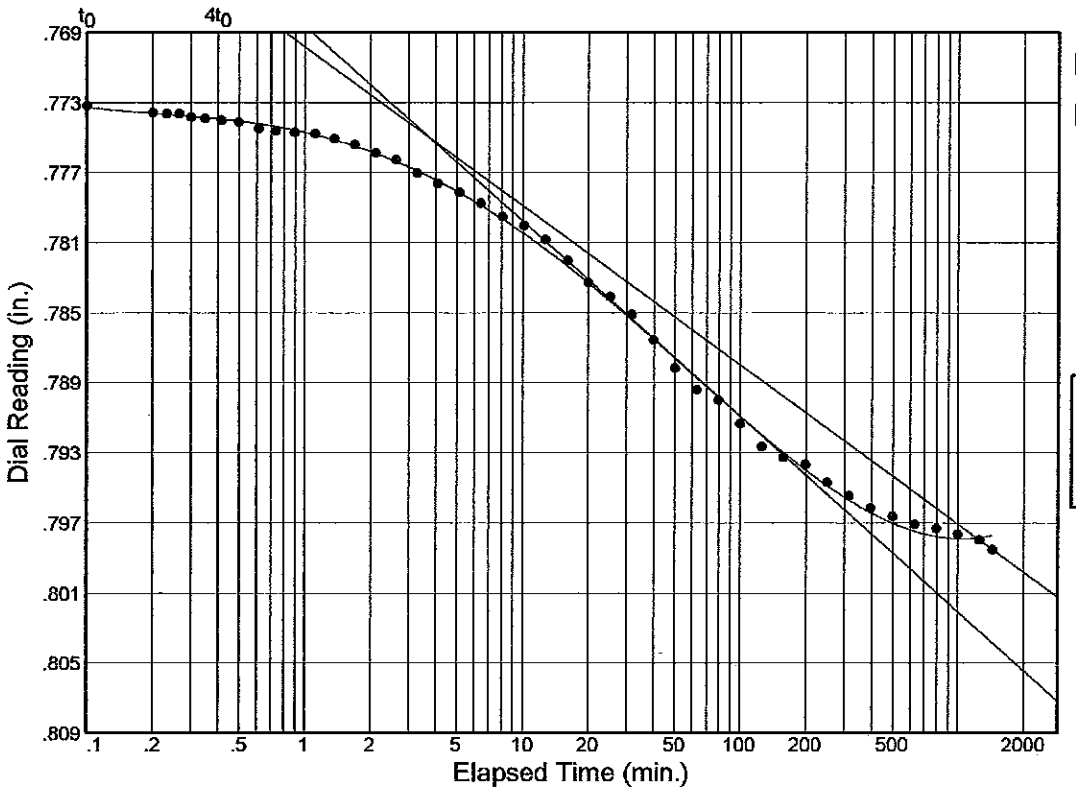
C_α = 0.008

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

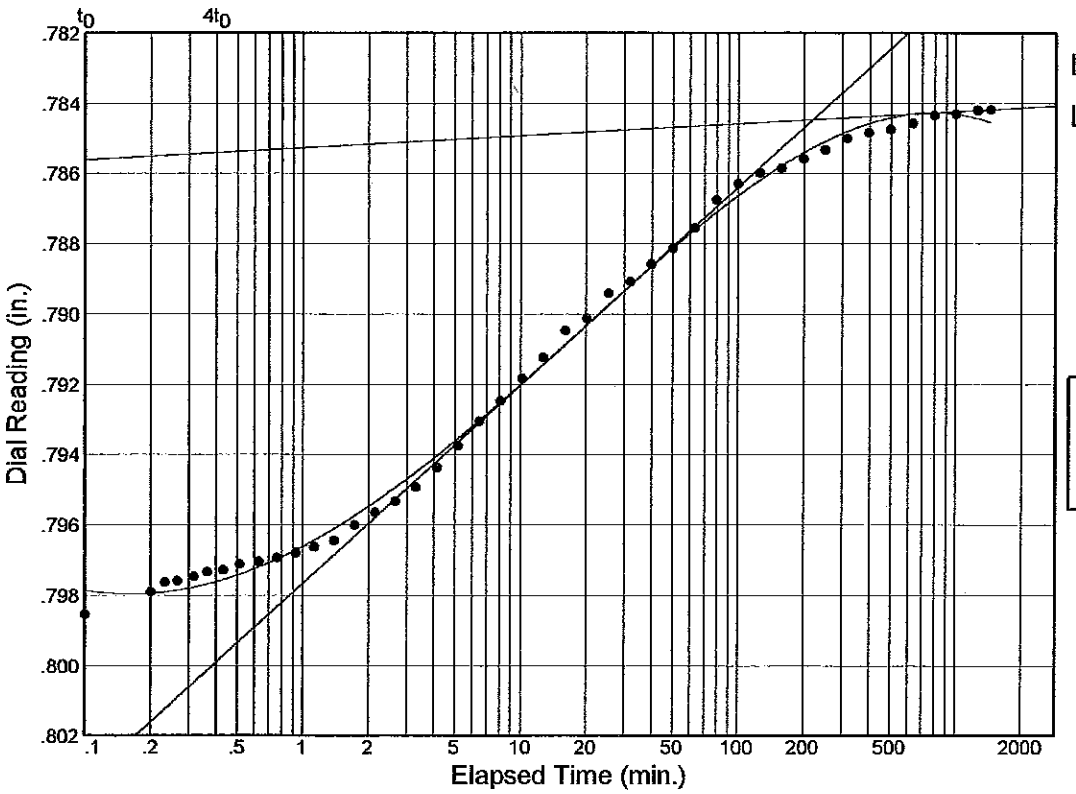
Source: BSFR-1U Sample No.: 5B Elev./Depth: 13.0



Load No.= 9
Load= 24000.00 tsf
D_0 = 0.77260
D_{50} = 0.77380
D_{100} = 0.77500
T_{50} = 0.30 min.

C_v @ T_{50}
0.48 ft.^{2}/day

C_α = 0.016



Load No.= 10
Load= 6000.00 tsf
D_0 = 0.79812
D_{50} = 0.79129
D_{100} = 0.78446
T_{50} = 13.44 min.

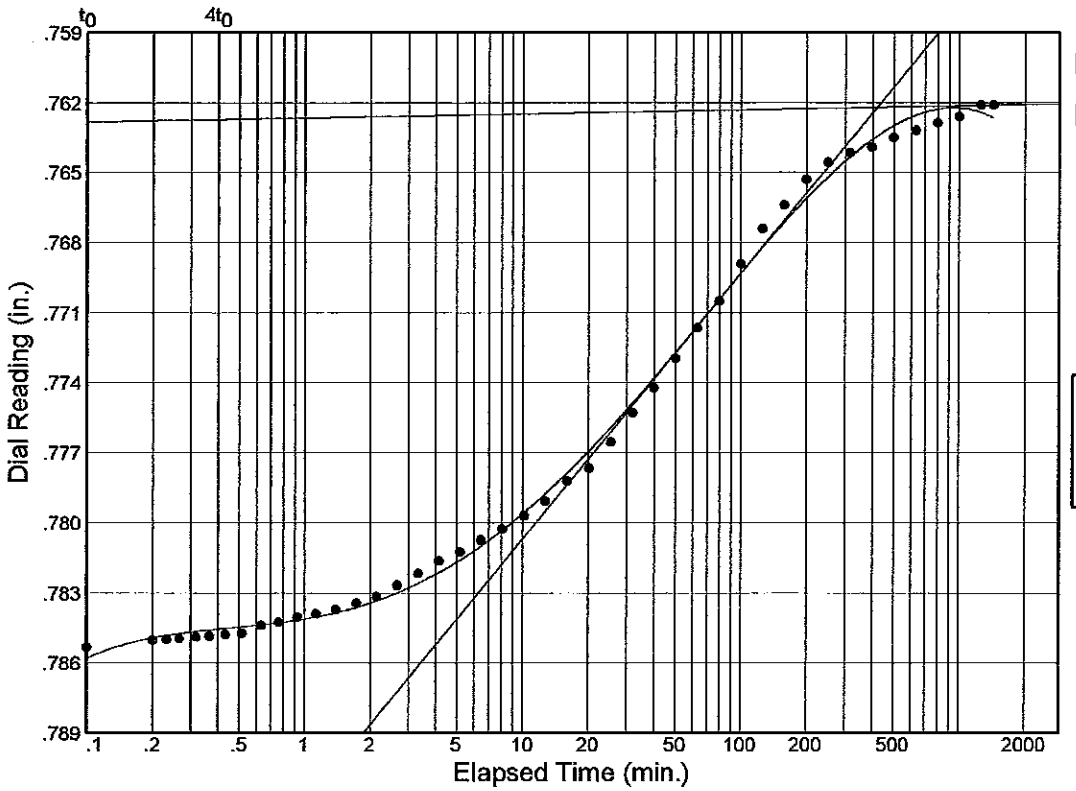
C_v @ T_{50}
0.01 ft.^{2}/day

Figure

Dial Reading vs. Time

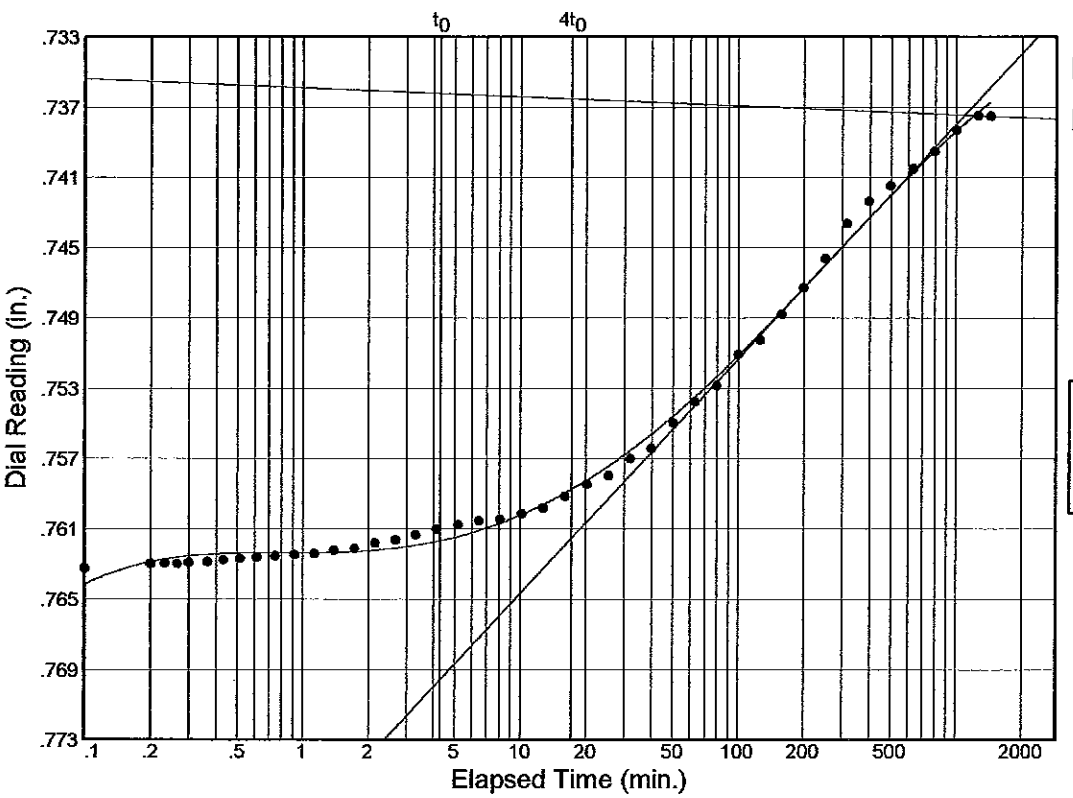
Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

Source: BSFR-1U Sample No.: 5B Elev./Depth: 13.0



Load No.= 11
Load= 1500.00 tsf
D_0 = 0.78702
D_{50} = 0.77461
D_{100} = 0.76220
T_{50} = 33.64 min.

C_v @ T_{50}
0.00 ft.^{2}/day



Load No.= 12
Load= 375.00 tsf
D_0 = 0.76462
D_{50} = 0.75103
D_{100} = 0.73744
T_{50} = 102.04 min.

C_v @ T_{50}
0.00 ft.^{2}/day

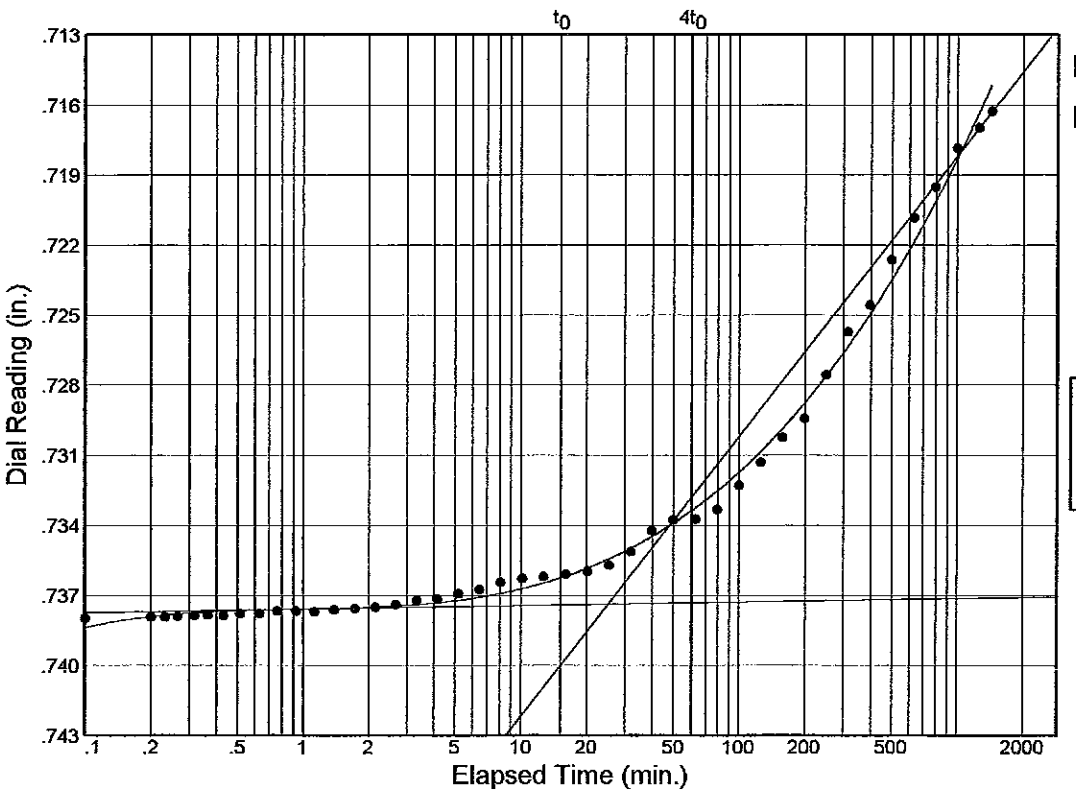
C_α = 0.001

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

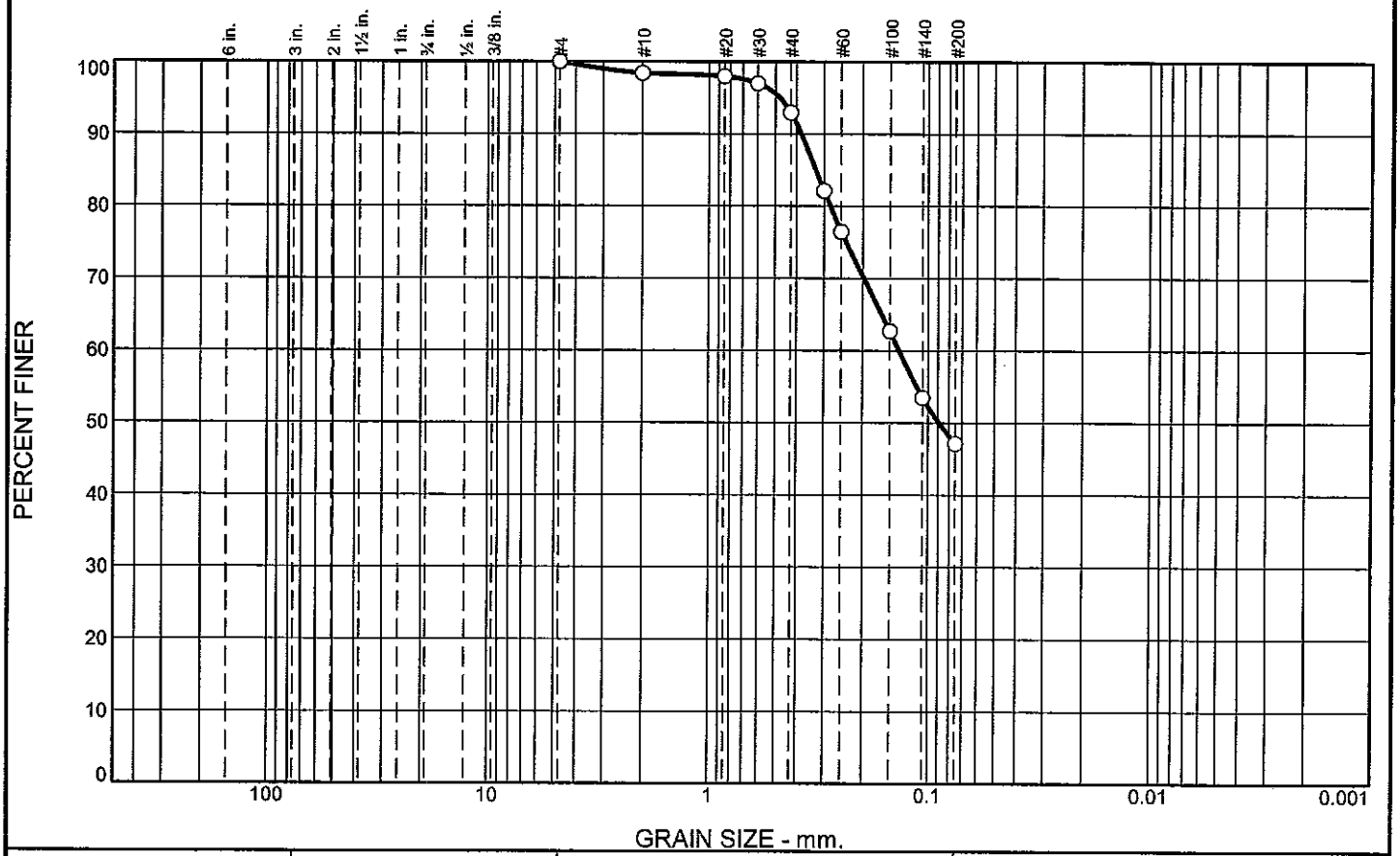
Source: BSFR-1U Sample No.: 5B Elev./Depth: 13.0



Load No.= 13
Load= 100.00 tsf
D_0 = 0.73914
D_{50} = 0.73826
D_{100} = 0.73738
T_{50} = 0.11 min.

C_v @ T_{50}
1.49 ft.^{2}/day

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	1.6	5.4	45.9	47.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	98.4		
#20	98.0		
#30	97.0		
#40	93.0		
#50	82.1		
#60	76.5		
#100	62.7		
#140	53.5		
#200	47.1		

* (no specification provided)

Soil Description

GR SM W/ ARS CH, SIF

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.3803 D_{85}= 0.3264 D_{60}= 0.1361
D_{50}= 0.0891 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

Source of Sample: BSFR-1U **Depth:** 20.0
Sample Number: 7A **Date:** 7-26-12

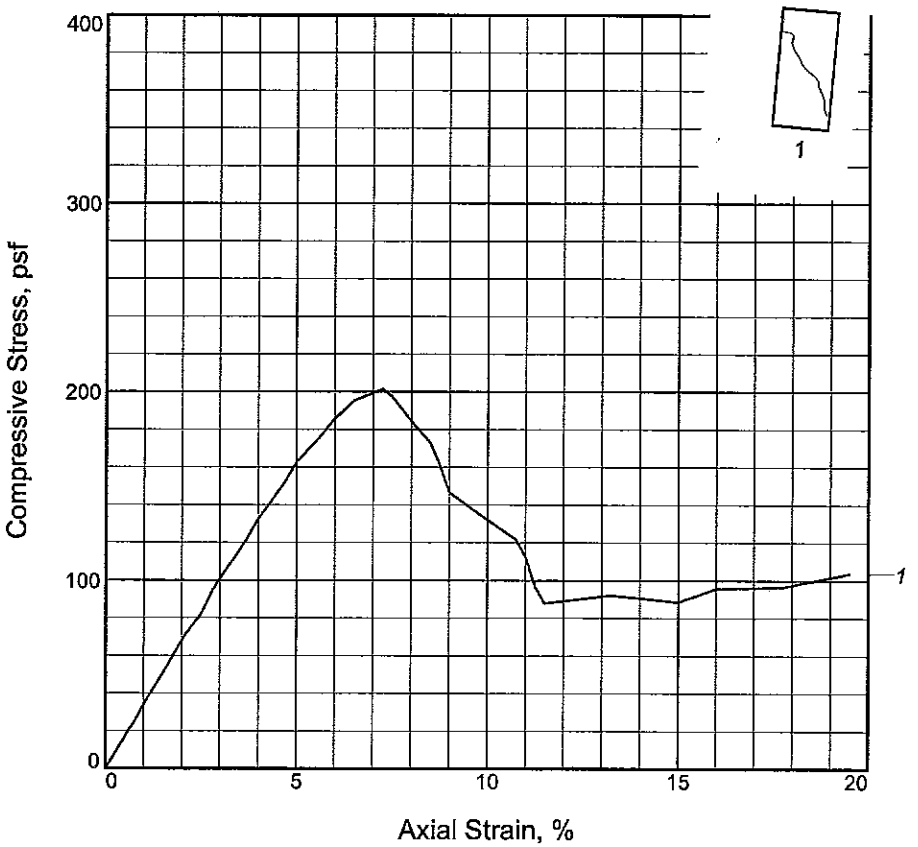
Stantec

Saint Rose, Louisiana

Client: USACE
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Project No: 12-017108 **Figure**

Tested By: MJB **Checked By:** JS

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	201			
Undrained shear strength, psf	101			
Failure strain, %	7.2			
Strain rate, in./min.	1.000			
Water content, %	540.1			
Wet density, pcf	64.8			
Dry density, pcf	10.1			
Saturation, %	93.5			
Void ratio	14.7302			
Specimen diameter, in.	1.350			
Specimen height, in.	2.966			
Height/diameter ratio	2.20			

Description: VSO BK PT

LL = 606	**PL =** 284	**PI =** 322	**Assumed GS=** 2.55	**Type:** UNDISTURBED

Project No.: 12-017108
Date Sampled: 7-24-12
Remarks:
Torvane=0.19 tsf

Figure _____

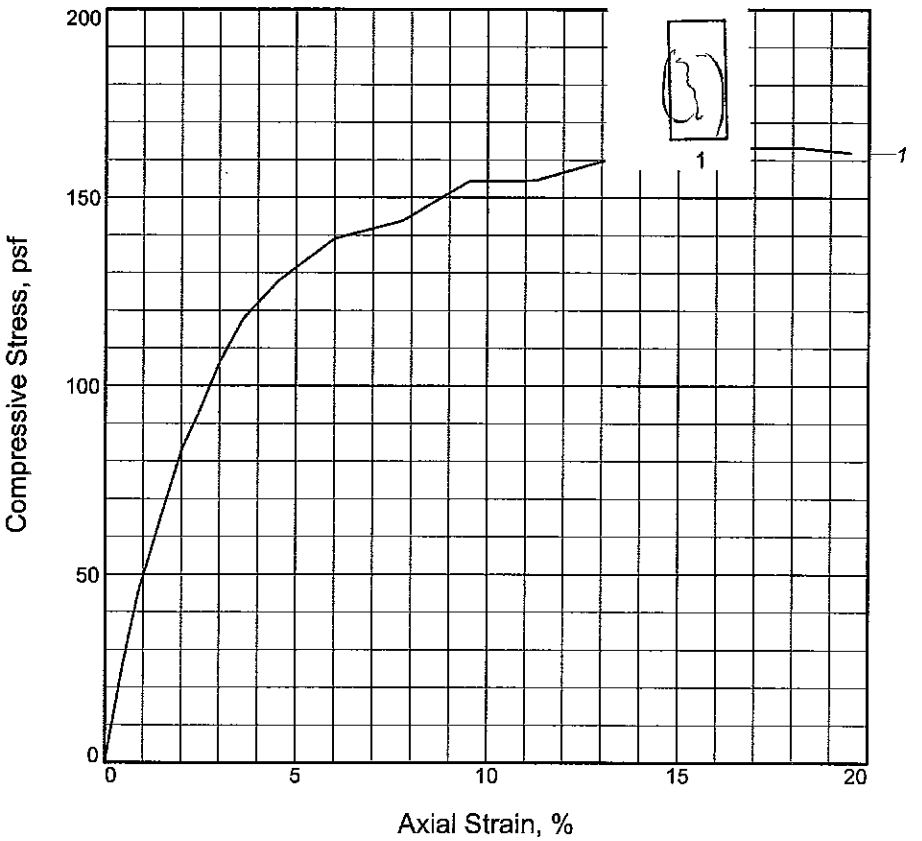
Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-1U **Depth:** 5.0
Sample Number: 3B

UNCONFINED COMPRESSION TEST
Stantec
Saint Rose, Louisiana

Tested By: JC

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	162			
Undrained shear strength, psf	81			
Failure strain, %	14.8			
Strain rate, in./min.	1.000			
Water content, %	74.4			
Wet density, pcf	102.4			
Dry density, pcf	58.7			
Saturation, %	106.9			
Void ratio	1.8925			
Specimen diameter, in.	1.357			
Specimen height, in.	2.993			
Height/diameter ratio	2.21			

Description: VSO GR CH3 W/ LNS ML

LL = 69	**PL =** 22	**PI =** 47	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 12-017108
Date Sampled: 7-24-12
Remarks:
Torvane=0.90 tsf

Figure _____

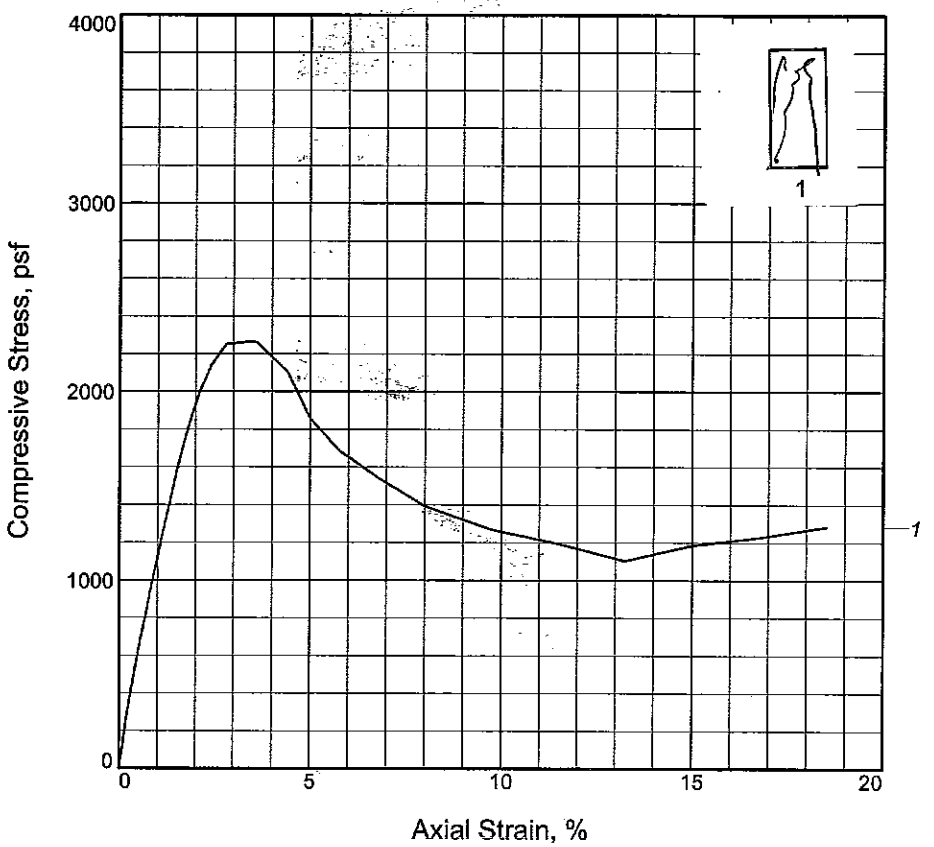
Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-1U **Depth:** 14.0
Sample Number: 5C

UNCONFINED COMPRESSION TEST
Stantec
Saint Rose, Louisiana

Tested By: JC **Checked By:** JS

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	2266			
Undrained shear strength, psf	1133			
Failure strain, %	3.5			
Strain rate, in./min.	1.000			
Water content, %	23.8			
Wet density, pcf	125.4			
Dry density, pcf	101.3			
Saturation, %	96.9			
Void ratio	0.6642			
Specimen diameter, in.	1.385			
Specimen height, in.	3.015			
Height/diameter ratio	2.18			

Description: ST T & GNG CL4 W/ ARS & LNS SM

LL = 41	**PL =** 20	**PI =** 21	**Assumed GS=** 2.70	**Type:** UNDISTURBED

Project No.: 12-017108
Date Sampled: 7-24-12
Remarks:
Torvane=0.90 tsf

Figure _____

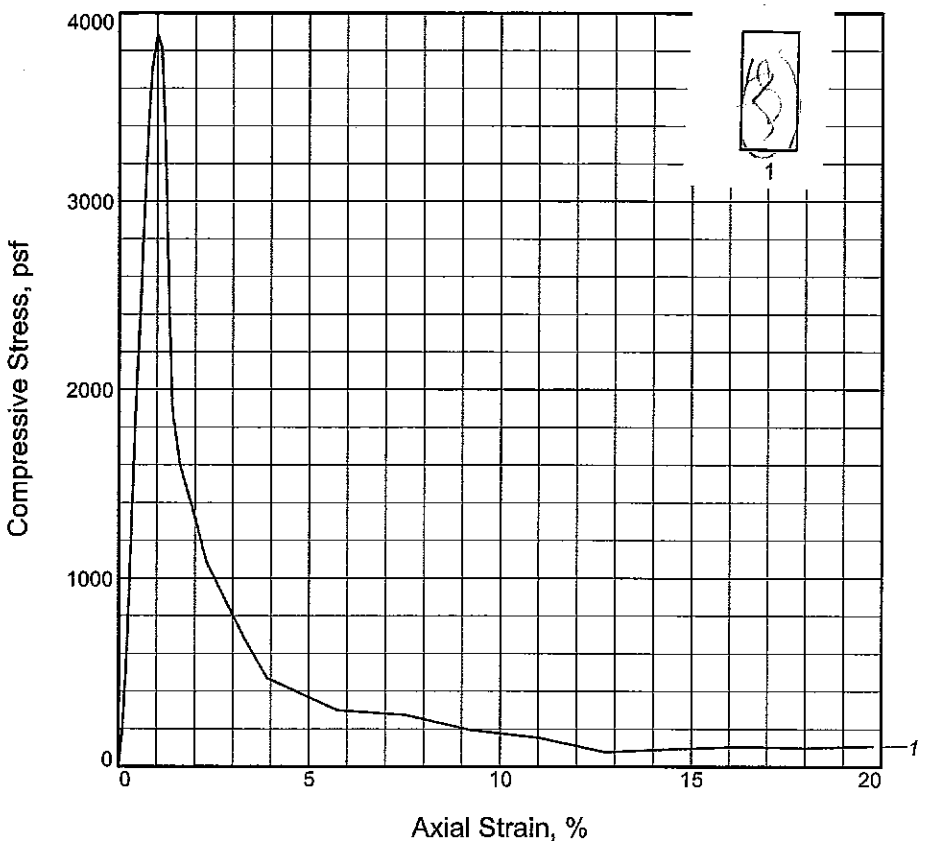
Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-1U **Depth:** 30.0
Sample Number: 9C

UNCONFINED COMPRESSION TEST
Stantec
Saint Rose, Louisiana

Tested By: JC **Checked By:** JS

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	3886			
Undrained shear strength, psf	1943			
Failure strain, %	1.0			
Strain rate, in./min.	1.000			
Water content, %	41.1			
Wet density, pcf	112.3			
Dry density, pcf	79.6			
Saturation, %	98.7			
Void ratio	1.1339			
Specimen diameter, in.	1.389			
Specimen height, in.	2.999			
Height/diameter ratio	2.16			

Description: ST T CH3 W/ LNS ML

LL = 75	**PL =** 31	**PI =** 44	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 12-017108
Date Sampled: 7-24-12
Remarks:
Torvane=0.91 tsf

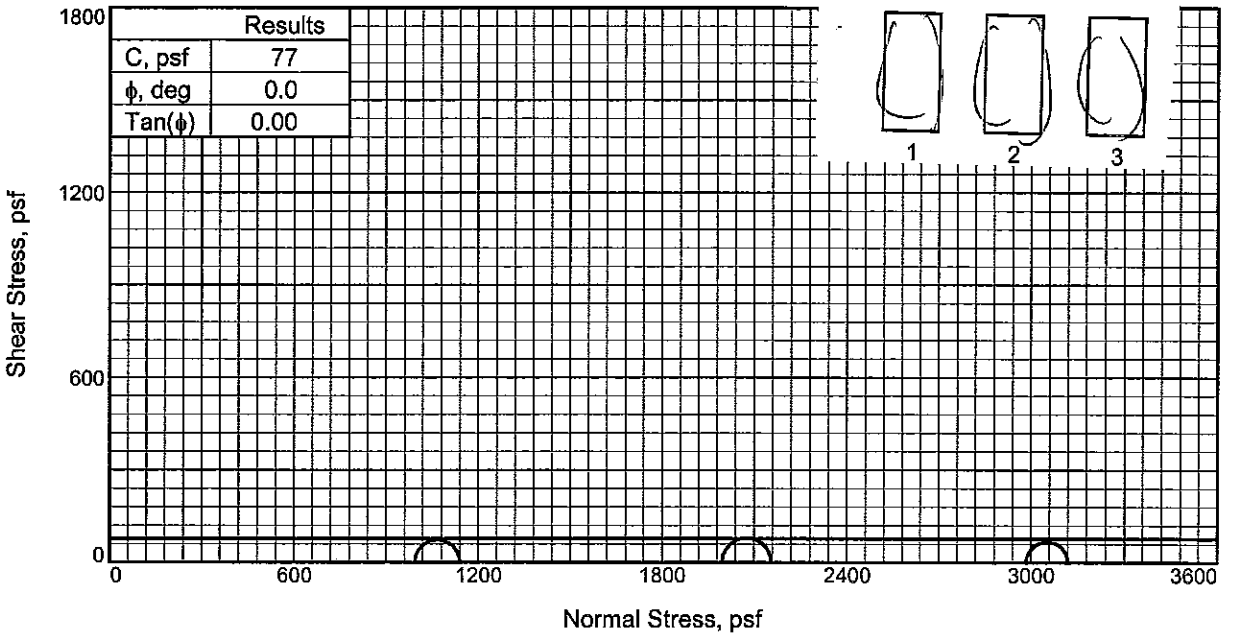
Figure _____

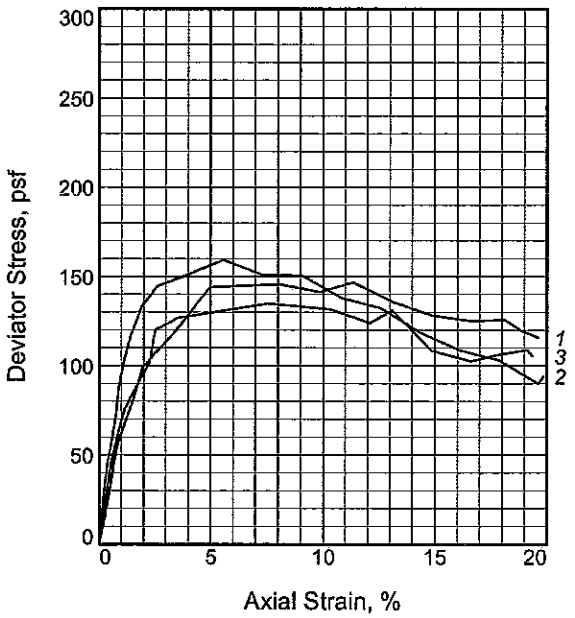
Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-1U **Depth:** 34.0
Sample Number: 10C

UNCONFINED COMPRESSION TEST
Stantec
Saint Rose, Louisiana

Tested By: JC **Checked By:** JS





Sample No.		1	2	3
Initial	Water Content, %	53.1	74.3	64.8
	Dry Density, pcf	74.0	57.7	63.3
	Saturation, %	111.4	104.2	104.8
	Void Ratio	1.2958	1.9409	1.6814
	Diameter, in.	1.354	1.375	1.360
	Height, in.	2.994	2.971	2.966
At Test	Water Content, %	53.1	74.3	64.8
	Dry Density, pcf	74.0	57.7	63.3
	Saturation, %	111.4	104.2	104.8
	Void Ratio	1.2958	1.9409	1.6814
	Diameter, in.	1.354	1.375	1.360
	Height, in.	2.994	2.971	2.966
Strain rate, in./min.		1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.90	13.86	20.73
Fail. Stress, psf		147	159	135
Strain, %		11.3	5.6	7.6
Ult. Stress, psf		128	119	108
Strain, %		14.9	14.3	14.8
σ_1 Failure, psf		1140	2155	3120
σ_3 Failure, psf		994	1996	2985

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: VSO GR CH2 W/ LNS ML

LL= 54 **PL=** 22 **PI=** 32
Assumed Specific Gravity= 2.72
Remarks: Torvane=0.60 tsf

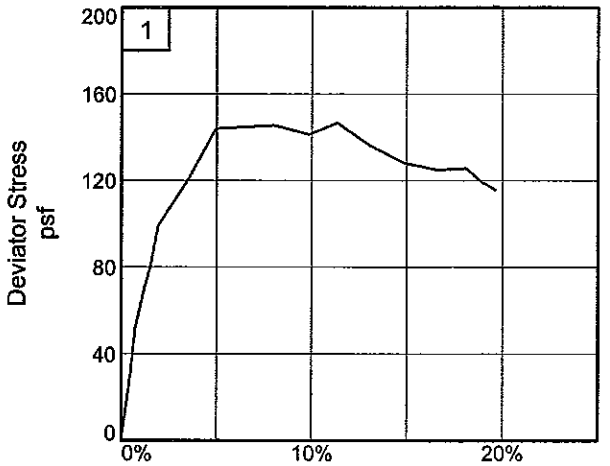
Client: USACE

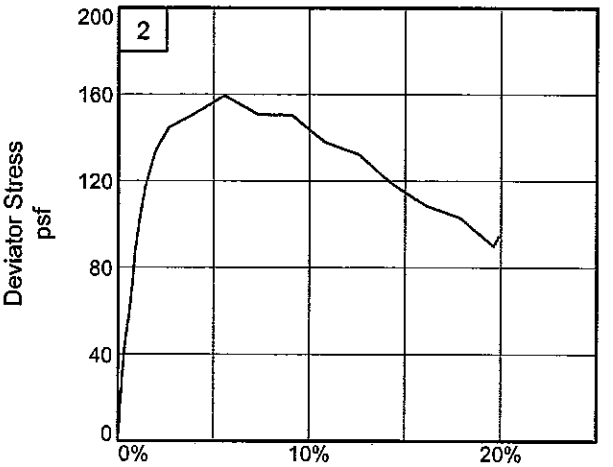
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-1U **Depth:** 9.0
Sample Number: 4B
Proj. No.: 12-017108 **Date Sampled:** 7-24-12

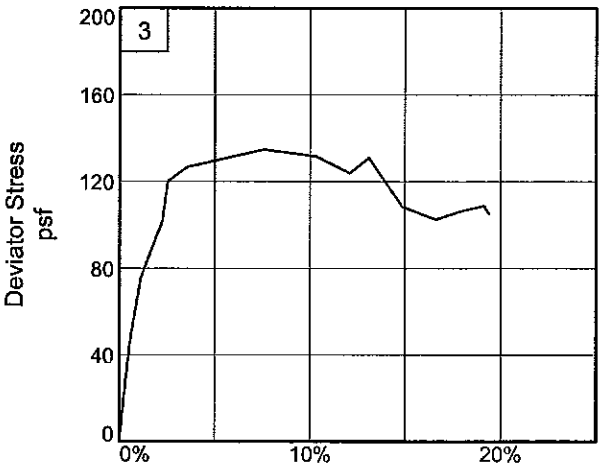
TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

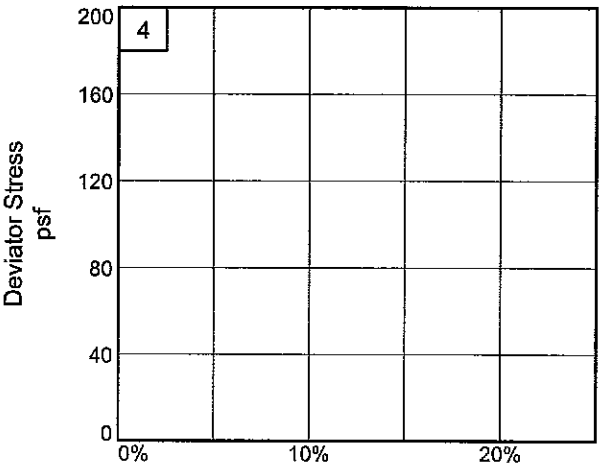
Figure _____

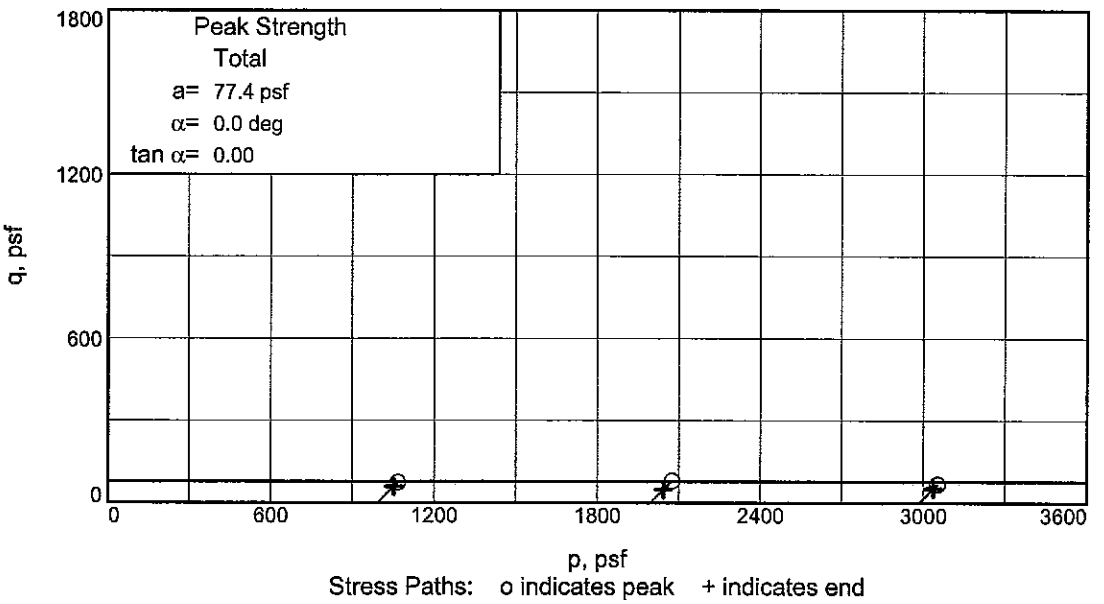
Tested By: JC











Client: USACE

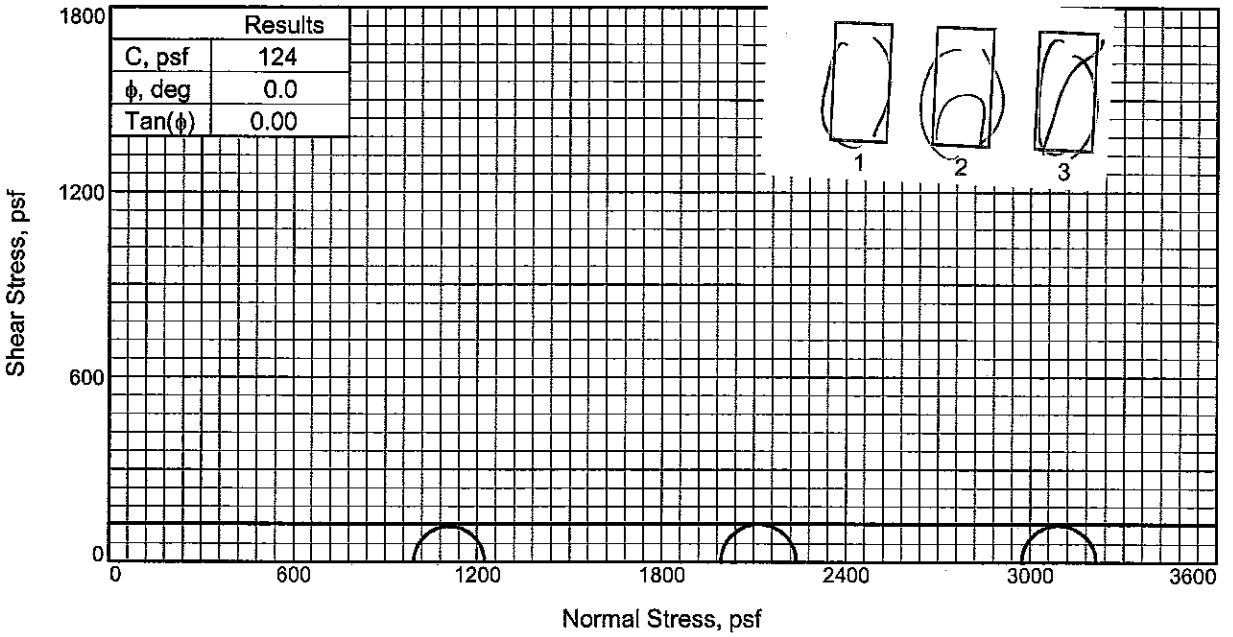
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

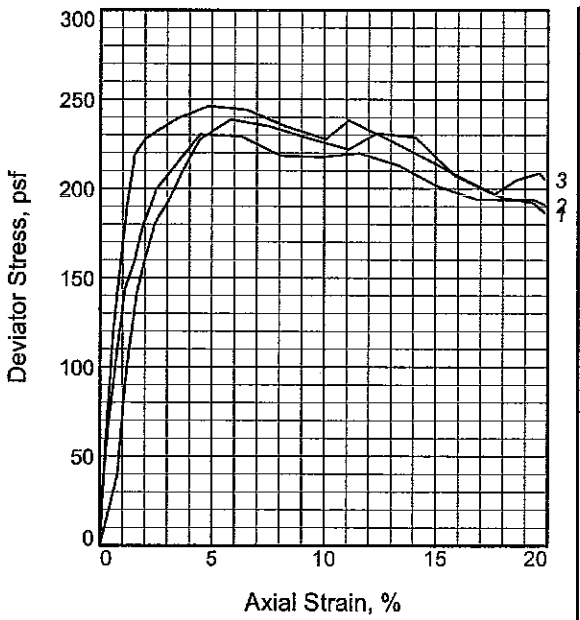
Source of Sample: BSFR-1U **Depth:** 9.0 **Sample Number:** 4B

Project No.: 12-017108 **Figure** _____

Stantec, Inc.

Tested By: JC





Sample No.		1	2	3
Initial	Water Content, %	44.5	49.2	40.6
	Dry Density, pcf	80.0	74.4	83.9
	Saturation, %	107.1	103.7	107.2
	Void Ratio	1.1382	1.2998	1.0377
	Diameter, in.	1.356	1.370	1.337
	Height, in.	2.983	2.974	2.964
At Test	Water Content, %	44.5	49.2	40.6
	Dry Density, pcf	80.0	74.4	83.9
	Saturation, %	107.1	103.7	107.2
	Void Ratio	1.1382	1.2998	1.0377
	Diameter, in.	1.356	1.370	1.337
	Height, in.	2.983	2.974	2.964
Strain rate, in./min.		1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.90	13.84	20.64
Fail. Stress, psf		230	246	239
Strain, %		4.5	4.9	5.8
Ult. Stress, psf		201	217	222
Strain, %		15.1	14.6	11.1
σ_1 Failure, psf		1224	2239	3211
σ_3 Failure, psf		994	1993	2972

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: VSO GR CH2 W/ ARS SP, SIF

LL= 52 **PL=** 22 **PI=** 30
Assumed Specific Gravity= 2.74
Remarks: Torvane=0.15 tsf

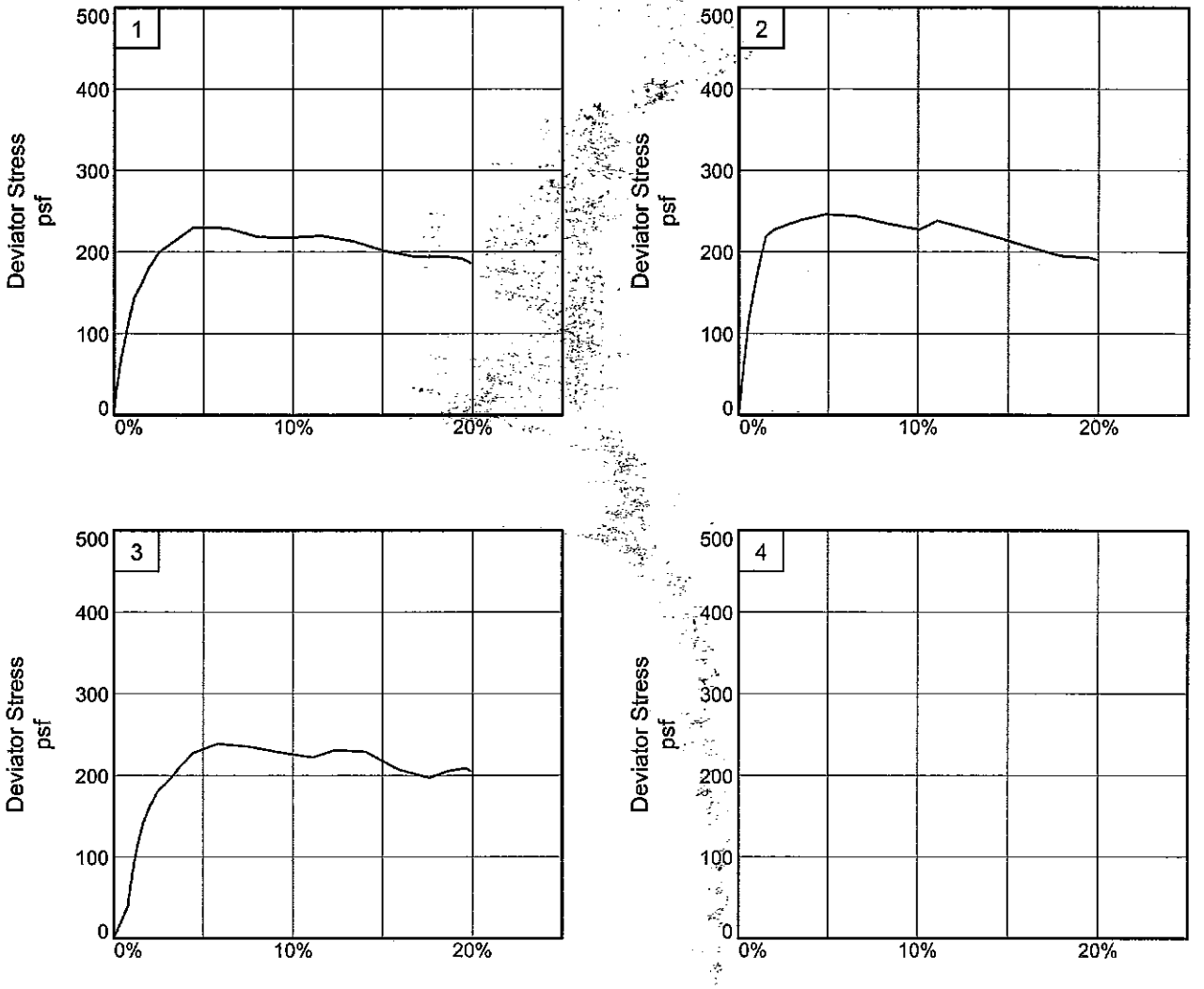
Client: USACE

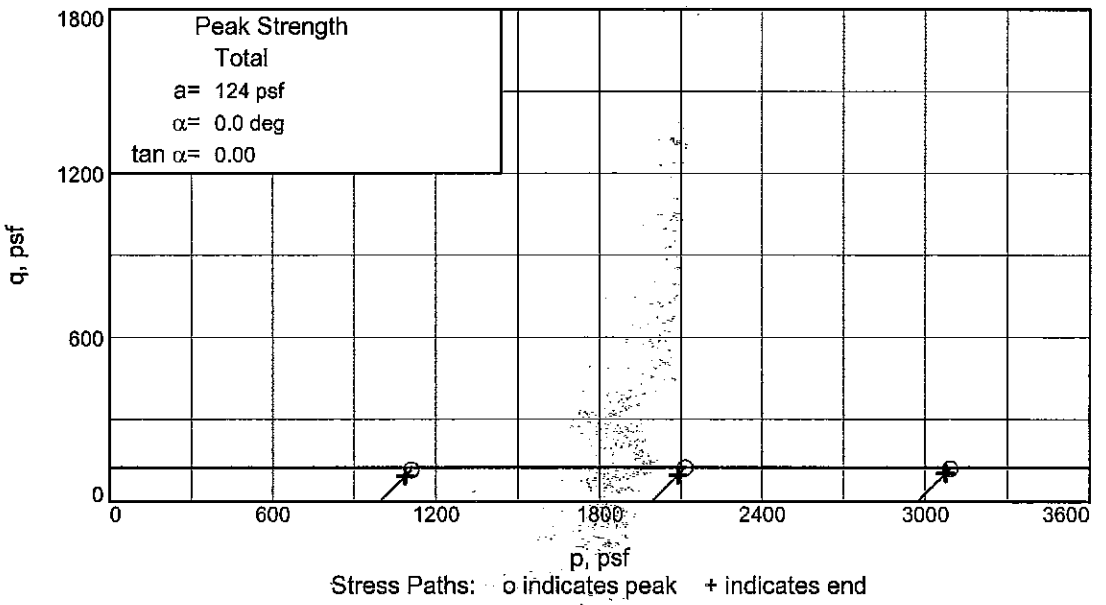
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-1U **Depth:** 18.0
Sample Number: 6C
Proj. No.: 12-017108 **Date Sampled:** 7-24-12

TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

Figure _____

Tested By: JC **Checked By:** JS





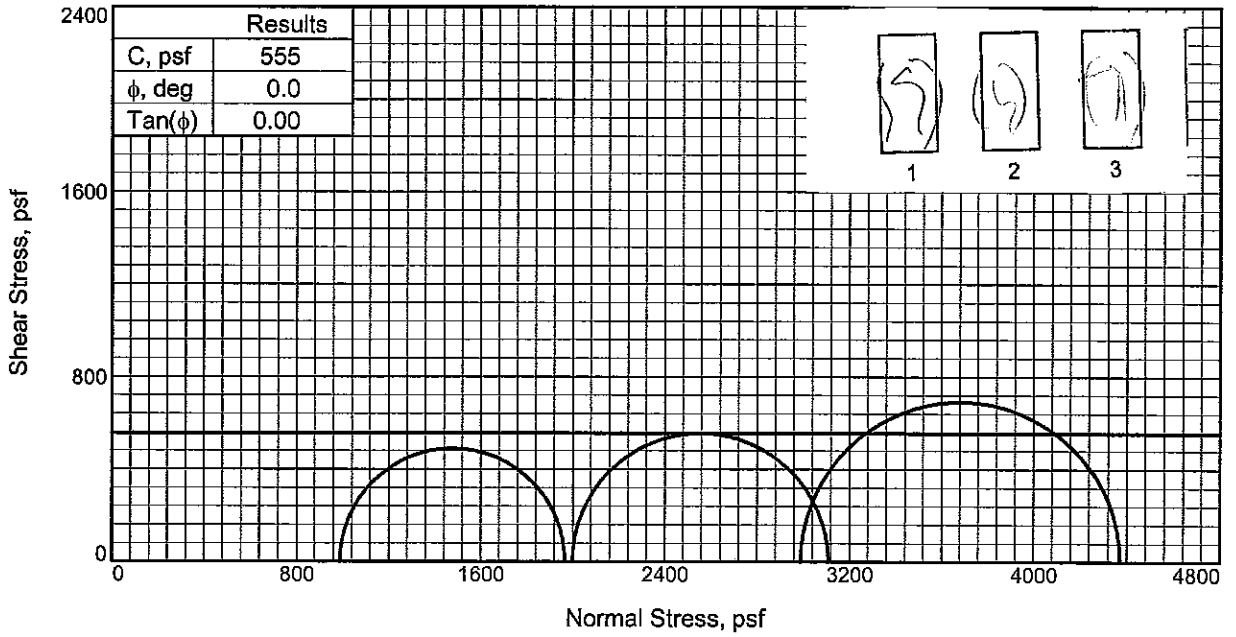
Client: USACE

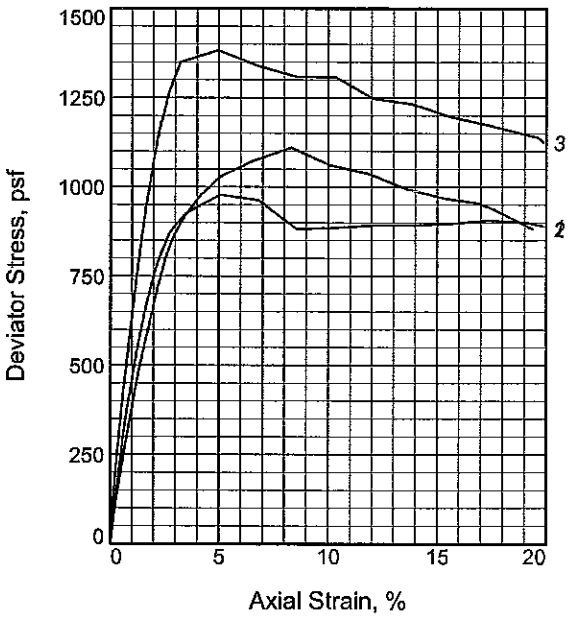
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

Source of Sample: BSFR-1U **Depth:** 18.0 **Sample Number:** 6C

Project No.: 12-017108 **Figure** _____ **Stantec, Inc.**

Tested By: JC **Checked By:** JS





Sample No.		1	2	3
Initial	Water Content, %	31.4	32.0	34.7
	Dry Density, pcf	92.4	90.2	89.2
	Saturation, %	102.9	99.5	105.3
	Void Ratio	0.8242	0.8686	0.8900
	Diameter, in.	1.375	1.390	1.367
	Height, in.	2.996	3.003	3.004
At Test	Water Content, %	31.4	32.0	34.7
	Dry Density, pcf	92.4	90.2	89.2
	Saturation, %	102.9	99.5	105.3
	Void Ratio	0.8242	0.8686	0.8900
	Diameter, in.	1.375	1.390	1.367
	Height, in.	2.996	3.003	3.004
Strain rate, in./min.		1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.86	13.88	20.76
Fail. Stress, psf		978	1110	1383
Strain, %		5.1	8.3	5.0
Ult. Stress, psf		882	995	1247
Strain, %		8.6	13.6	12.1
σ_1 Failure, psf		1966	3109	4373
σ_3 Failure, psf		988	1999	2989

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M T CL4 W/ ARS & LYS ML

LL= 40 **PL=** 20 **PI=** 20
Assumed Specific Gravity= 2.70
Remarks: Torvane=0.54 tsf

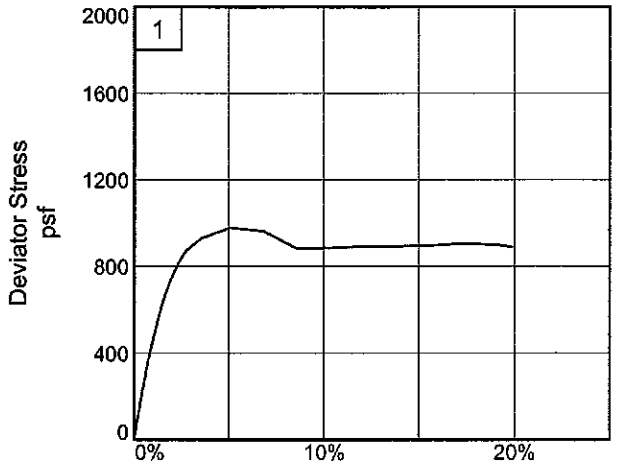
Client: USACE

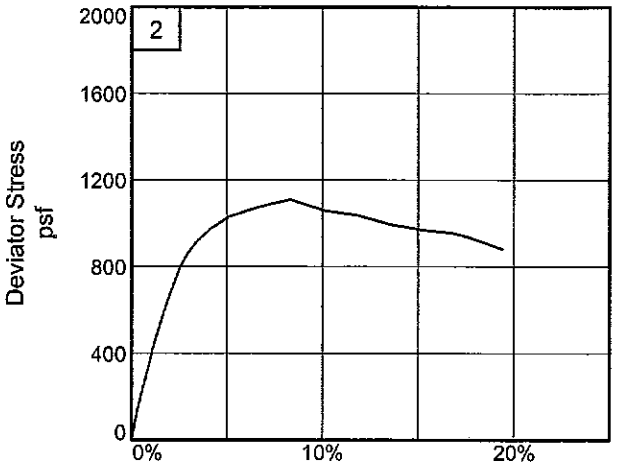
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-1U **Depth:** 32.0
Sample Number: 10A
Proj. No.: 12-017108 **Date Sampled:** 7-24-12

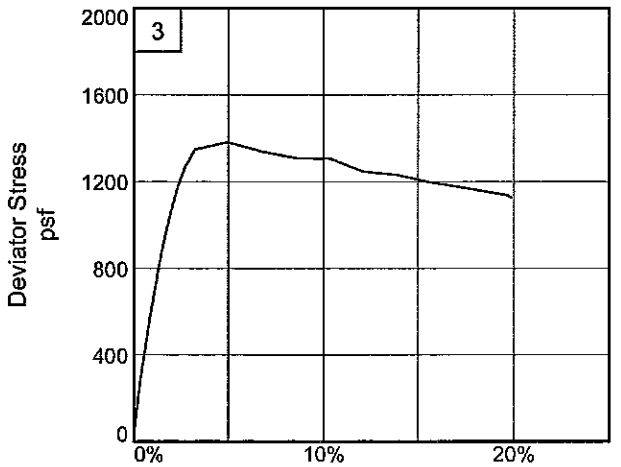
TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

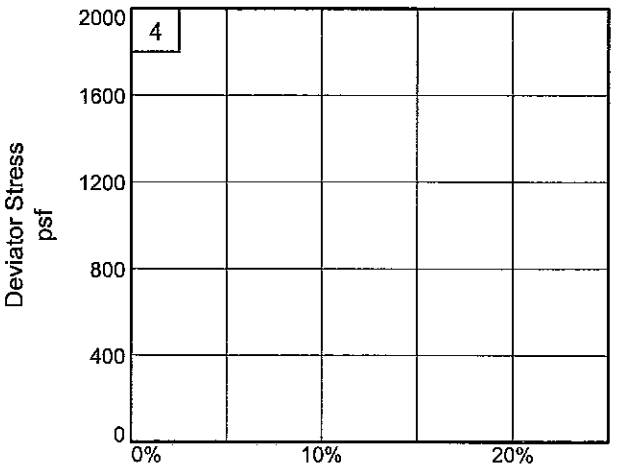
Figure _____

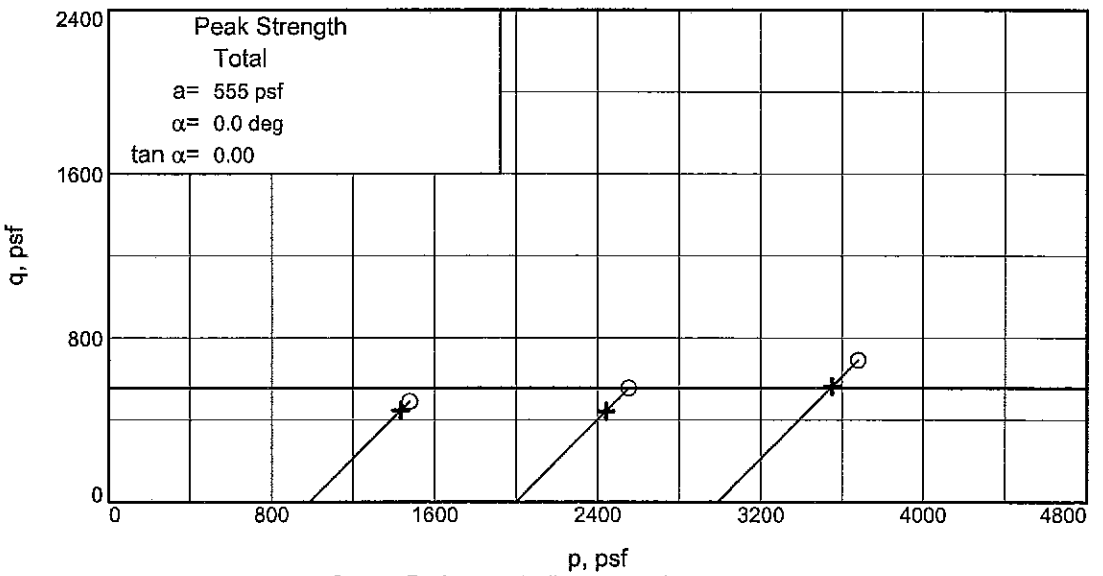
Tested By: JC **Checked By:** JS











Stress Paths: o indicates peak + indicates end

Client: USACE

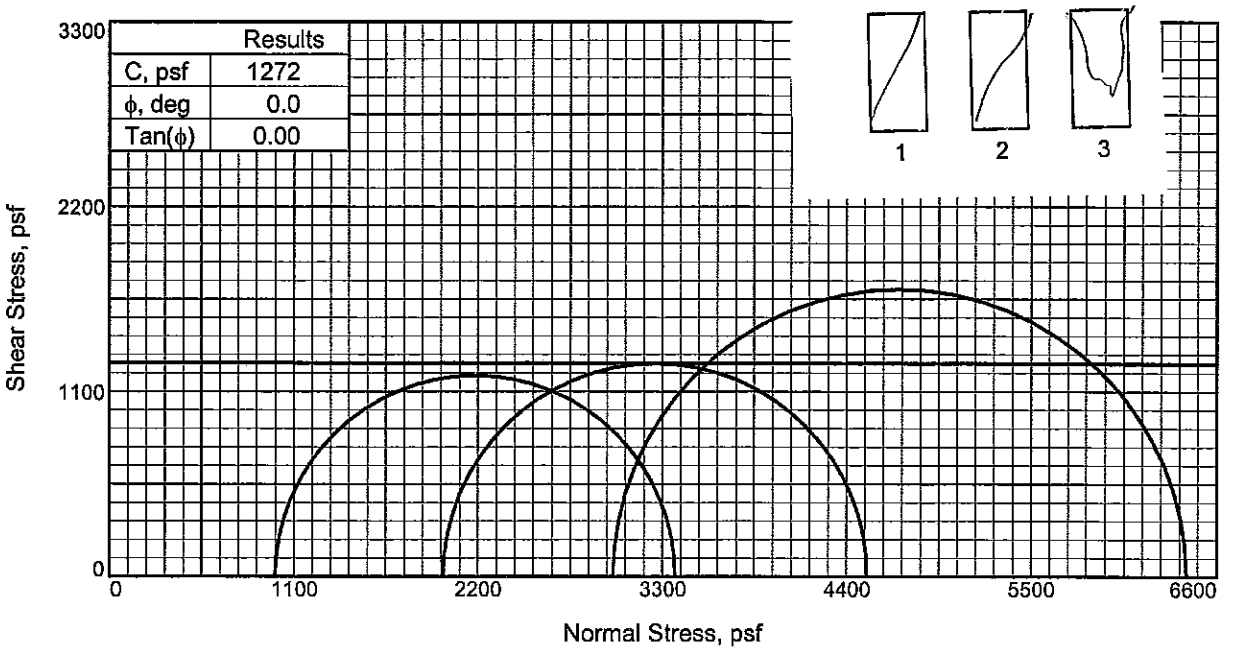
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

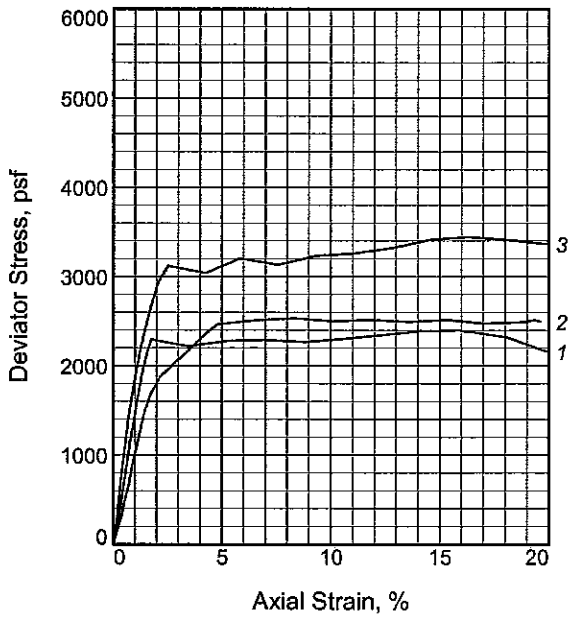
Source of Sample: BSFR-1U **Depth:** 32.0 **Sample Number:** 10A

Project No.: 12-017108 **Figure** _____

Stantec, Inc.

Tested By: JC **Checked By:** JS





Sample No.		1	2	3
Initial	Water Content, %	33.0	33.0	32.8
	Dry Density, pcf	87.8	88.5	89.3
	Saturation, %	96.7	98.5	99.6
	Void Ratio	0.9203	0.9040	0.8885
	Diameter, in.	1.397	1.382	1.391
	Height, in.	3.027	2.996	3.015
At Test	Water Content, %	33.0	33.0	32.8
	Dry Density, pcf	87.8	88.5	89.3
	Saturation, %	96.7	98.5	99.6
	Void Ratio	0.9203	0.9040	0.8885
	Diameter, in.	1.397	1.382	1.391
	Height, in.	3.027	2.996	3.015
Strain rate, in./min.		1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.86	13.83	20.87
Fail. Stress, psf		2389	2532	3415
Strain, %		14.1	8.3	14.6
Ult. Stress, psf		2389	2494	3415
Strain, %		14.1	13.6	14.6
σ_1 Failure, psf		3376	4524	6421
σ_3 Failure, psf		988	1992	3005

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: ST T CL6 W/ LNS ML

LL= 48 **PL=** 23 **PI=** 25
Assumed Specific Gravity= 2.70
Remarks: Torvane=0.72 tsf

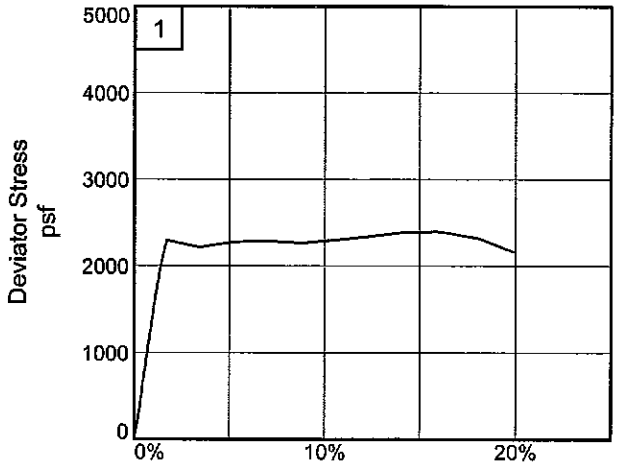
Figure _____

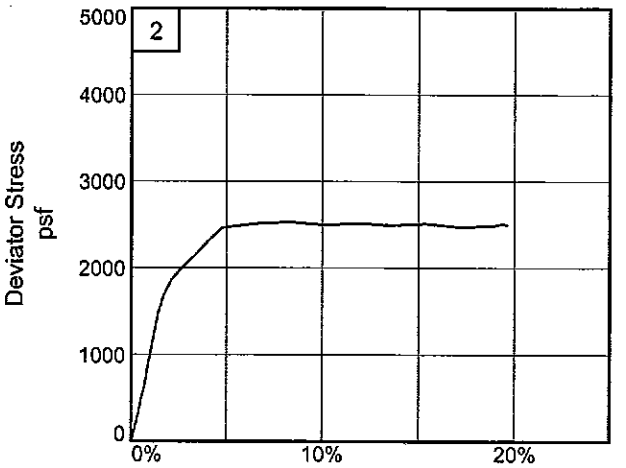
Client: USACE

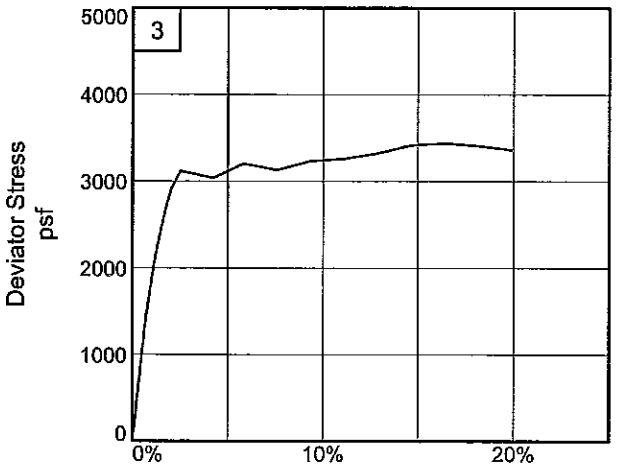
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-1U **Depth:** 36.0
Sample Number: 11A
Proj. No.: 12-017108 **Date Sampled:** 7-25-12

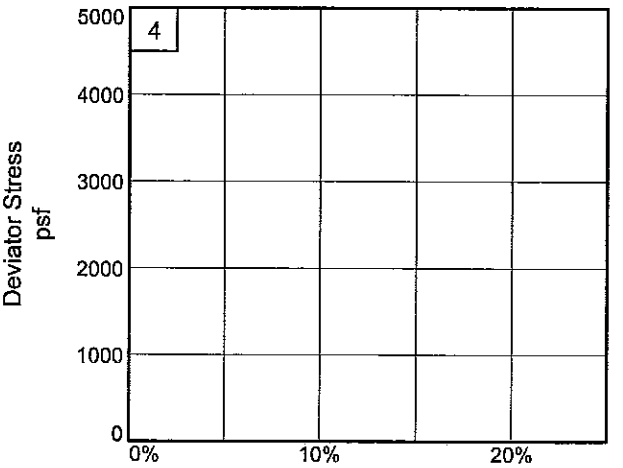
TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

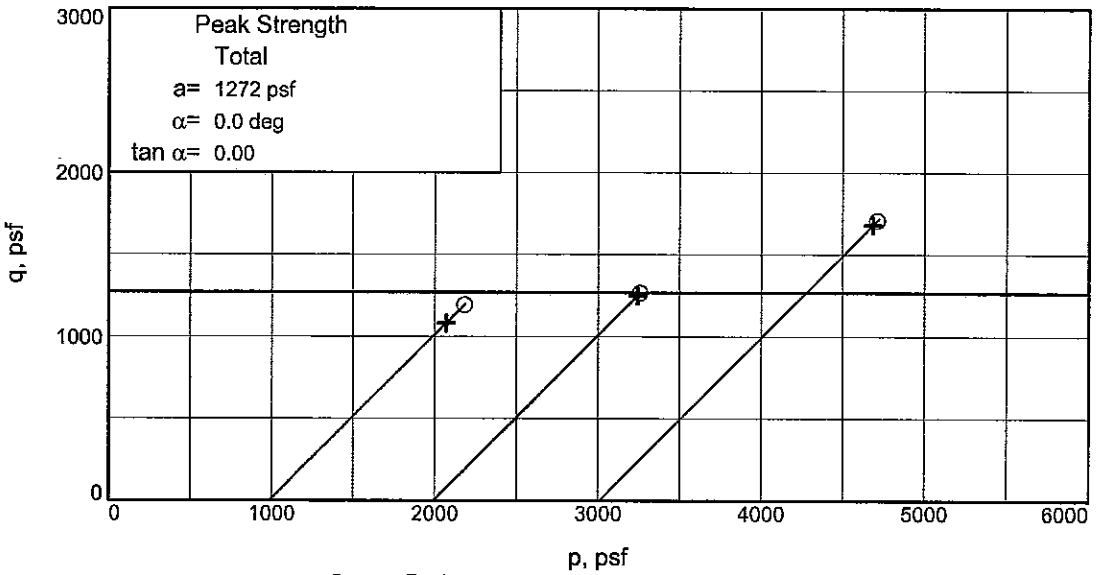
Tested By: JC











Stress Paths: o indicates peak + indicates end

Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

Source of Sample: BSFR-1U **Depth:** 36.0 **Sample Number:** 11A

Project No.: 12-017108 **Figure** _____

Stantec, Inc.

Tested By: JC

SUMMARY OF LABORATORY TEST RESULTS

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Paris Assigned By: _____

Project Number: 12-017108

Current Date: 9/26/2012

Boring: BSFR-2U

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
1	0.0	M BK PT	PT		440												
2	2.0	M BK PT	PT		411												
3A	4.0	VSO BK PT	PT	10	332	16	70	95	UC	-	92	183	285	87	198	0.10	
3B	5.0	VSO BK & GR CH4 W/ O	CH4		106												
3C	6.0	VSO BK CHOB	CHOB		169												
3D	7.0	VSO BK & GR CHOA W/ ARS ML, RT	CHOA		118	40	86	98	UU	0	121		123	27	96	0.10	
4A	8.0	VSO DGR PT	PT		257												
4B	9.0	VSO DGR CHOB W/ ARS ML	CHOB		152												
4C	10.0	VSO DGR CH3 W/ ARS ML, O	CH3	14	61	63	101	97	UC	-	74	147	61	26	35	0.30	
4D	11.0	VSO DGR CH3 W/ ARS ML, O, CC	CH3		78												
5A	12.0	VSO GR CH3 W/ ARS ML	CH3		81												
5B	13.0	VSO GR CH3 W/ LNS ML	CH3		64												
5C	14.0	VSO GR CH3 W/ LNS ML	CH3		66	60	99	97	UU	0	164		57	16	41	0.11	
5D	15.0	VSO GR CL6 W/ LNS ML	CL6		53	66	100	81					49	16	33		GS=2.59, CON
6A	16.0	GR SP W/ ARS & LYS CH, SIF	SP		36												
6B	17.0	GR SP W/ ARS & LYS CH, SIF	SP		36												
6C	18.0	VSO GR CL4 W/ ARS & LNS SP, SIF	CL4	14	31	88	115	90	UC	-	108	217	29	14	15	0.15	
6D	19.0	VSO GR CH3 W/ ARS & LYS SP, SIF	CH3		59												
7A	20.0	GR ML W/ ARS CH	ML		37												SV
7B	21.0	VSO GR CL6 W/ ARS & LYS SP, SIF	CL6		47	74	109	100	UU	0	207		44	21	23	0.25	
7C	22.0	GR SP W/ ARS CH, SIF	SP		32												
7D	23.0	GR SP W/ ARS CH, SIF	SP		35												
8A	24.0	T & LGR SM W/ ARS CH	SM		24												
8B	25.0	T & LGR SM W/ ARS CH	SM		23												
8C	26.0	T & LGR SM W/ ARS CH	SM		19												
8D	27.0	T & LGR SM W/ ARS CH	SM		21												
9A	28.0	T & GNG SM W/ ARS CH	SM		26												
9B	29.0	T & LGR SM W/ ARS CH	SM		21												
9C	30.0	LGR SM W/ ARS CH	SM		26												
9D	31.0	M GR CL4 W/ ARS & LYS SM	CL4		25												

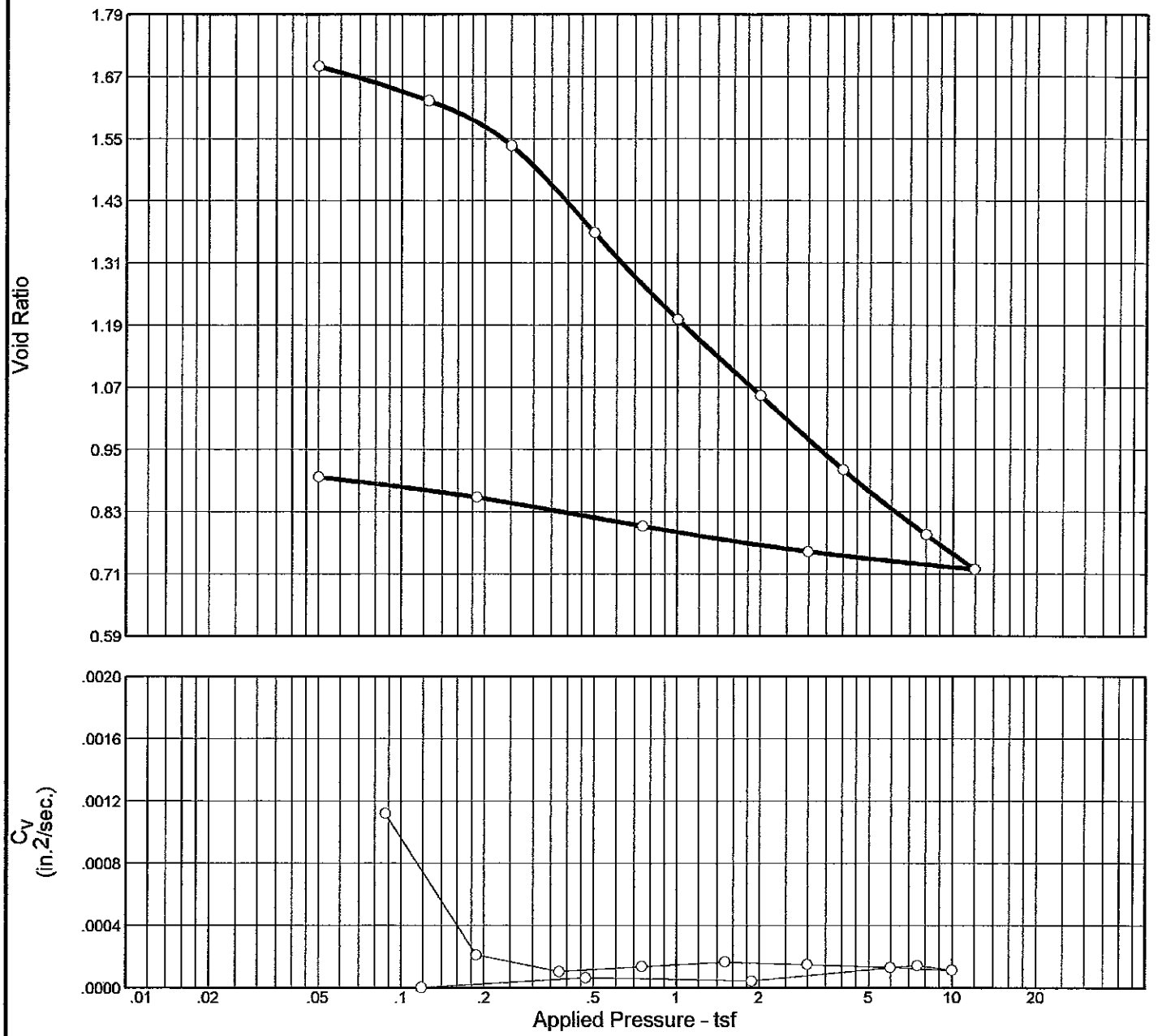
Remarks: _____

Checked By: _____

Stantec Consulting Services Inc.

File Name: Final BSFR-2U_be_boring_log_v1C

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture							
81.4 %	53.1 %	65.5	49	33	2.59	11.99	0.38	1.691

MATERIAL DESCRIPTION	USCS	AASHTO
VSO GR CL6 W/ LNS ML	CL	

Project No. 12-017108 **Client:** USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

Source: BSFR-2U **Sample No.:** 5D **Elev./Depth:** 15.0

FFEBJV, LLC

St Rose, LA

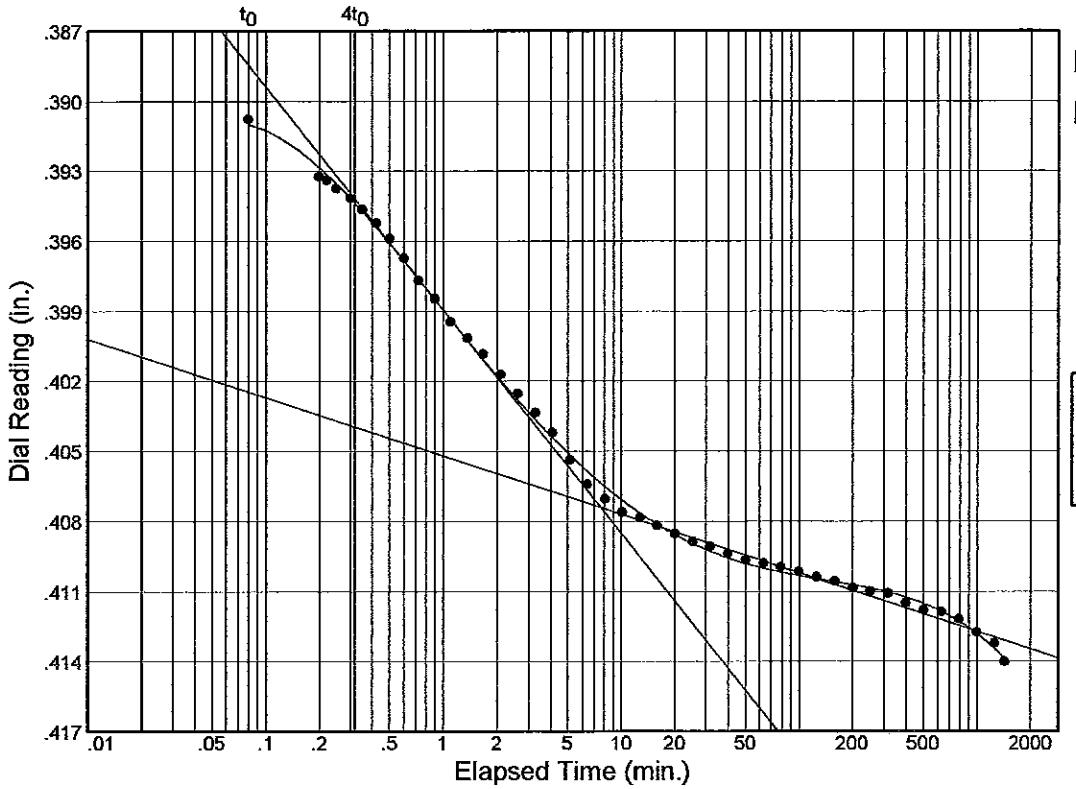
Remarks:

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

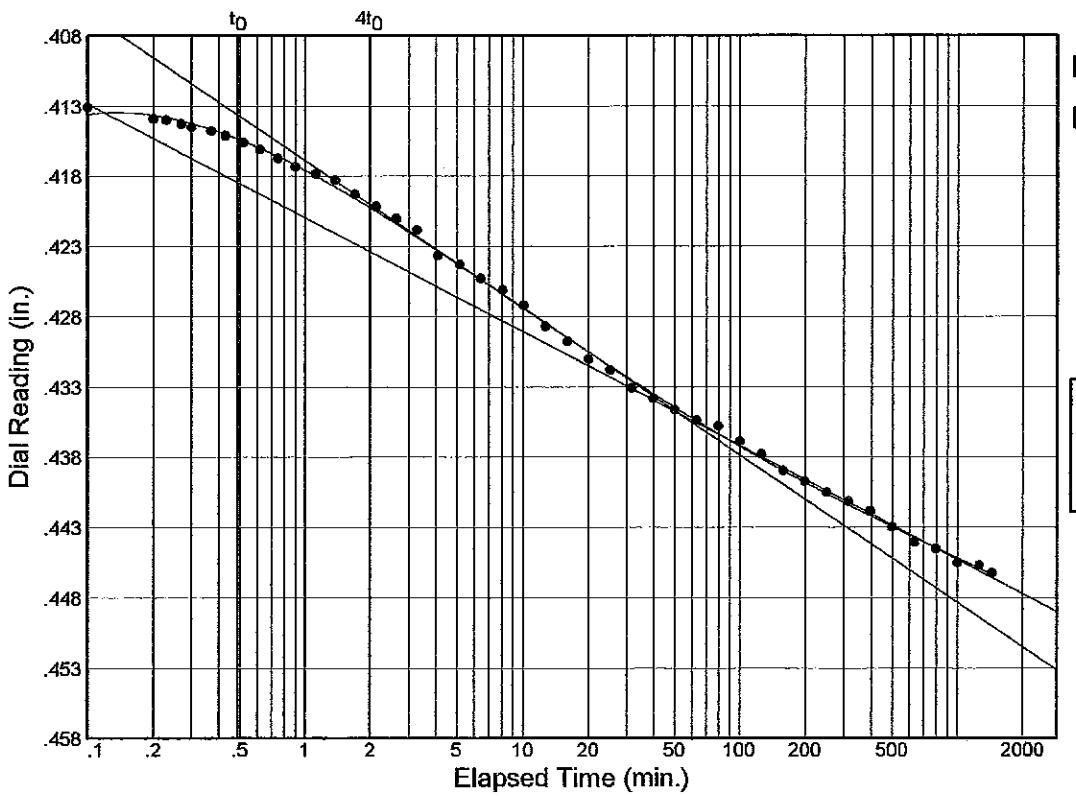
Source: BSFR-2U Sample No.: 5D Elev./Depth: 15.0



Load No.= 2
Load= 0.13 tsf
D_0 = 0.38764
D_{50} = 0.39752
D_{100} = 0.40740
T_{50} = 0.71 min.

C_v @ T_{50}
0.0011 in.^{2}/sec.

C_α = 0.003



Load No.= 3
Load= 0.25 tsf
D_0 = 0.41050
D_{50} = 0.42265
D_{100} = 0.43479
T_{50} = 3.52 min.

C_v @ T_{50}
0.0002 in.^{2}/sec.

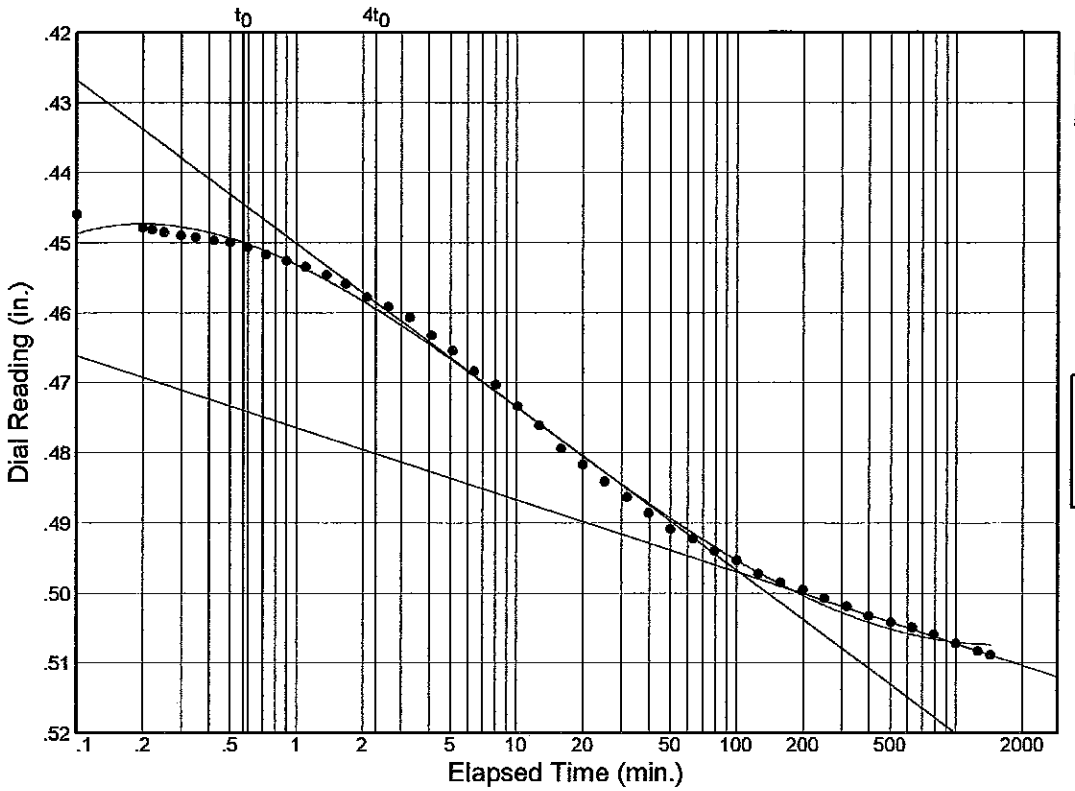
C_α = 0.008

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

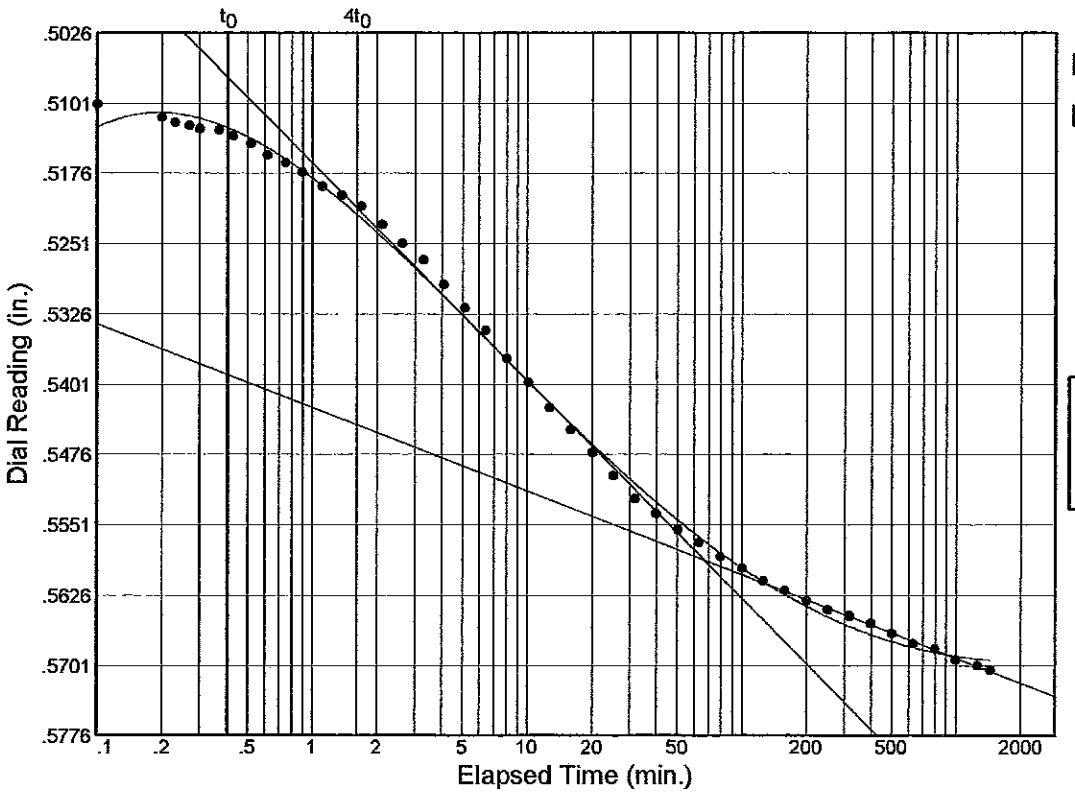
Source: BSFR-2U Sample No.: 5D Elev./Depth: 15.0



Load No.= 4
Load= 0.50 tsf
D_0 = 0.44052
D_{50} = 0.46883
D_{100} = 0.49714
T_{50} = 6.32 min.

C_v @ T_{50}
0.0001 in.^{2}/sec.

C_α = 0.011



Load No.= 5
Load= 1.00 tsf
D_0 = 0.50341
D_{50} = 0.53111
D_{100} = 0.55880
T_{50} = 4.27 min.

C_v @ T_{50}
0.0001 in.^{2}/sec.

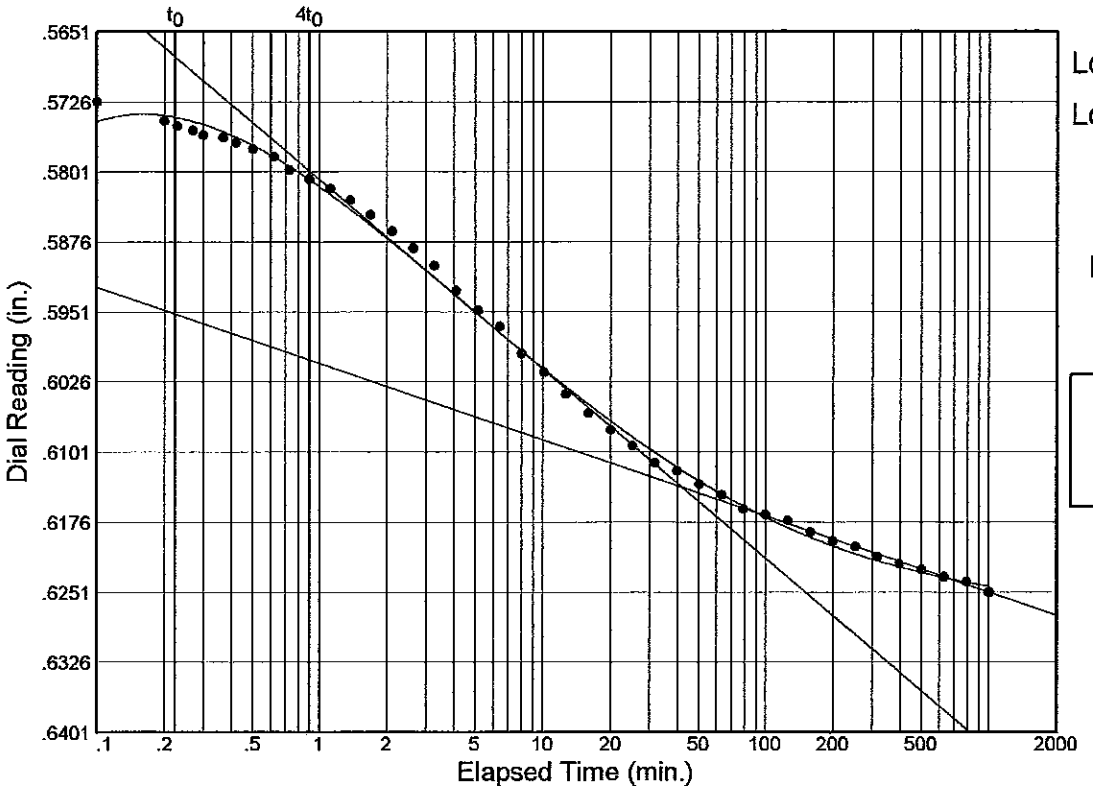
C_α = 0.010

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

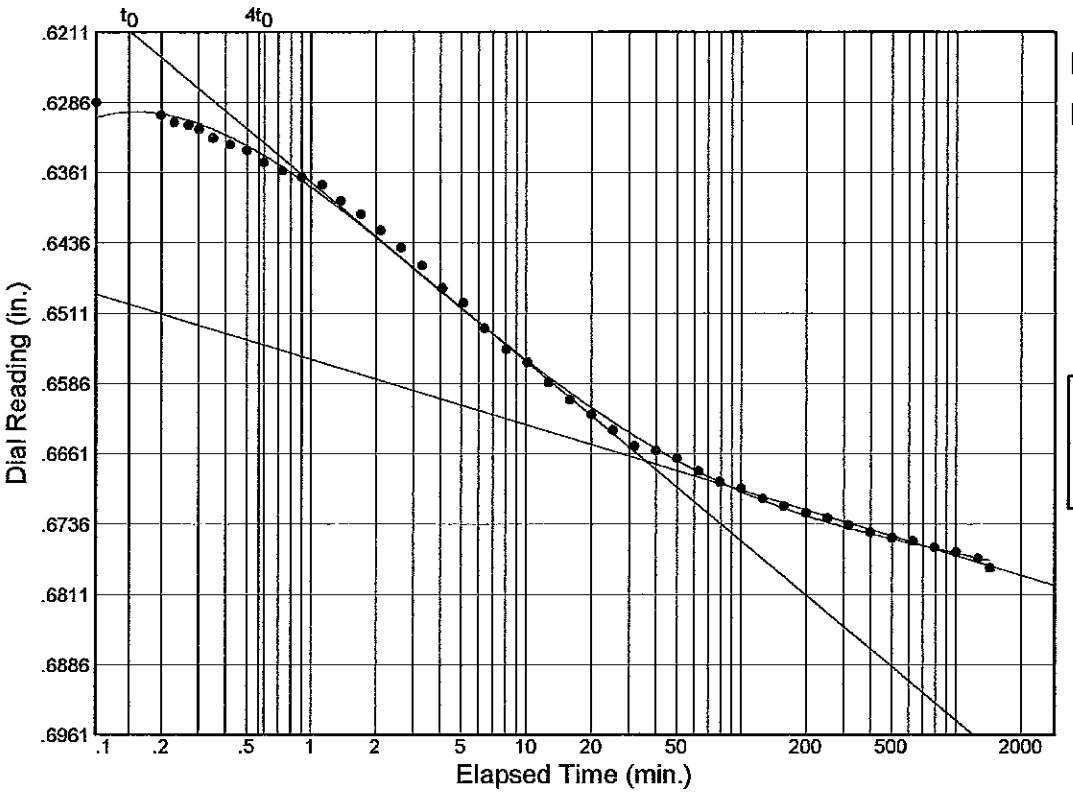
Source: BSFR-2U Sample No.: 5D Elev./Depth: 15.0



Load No.= 6
Load= 2.00 tsf
D_0 = 0.56763
D_{50} = 0.59077
D_{100} = 0.61391
T_{50} = 3.05 min.

C_v @ T_{50}
0.0002 in.^{2}/sec.

C_α = 0.010



Load No.= 7
Load= 4.00 tsf
D_0 = 0.62537
D_{50} = 0.64611
D_{100} = 0.66685
T_{50} = 2.94 min.

C_v @ T_{50}
0.0002 in.^{2}/sec.

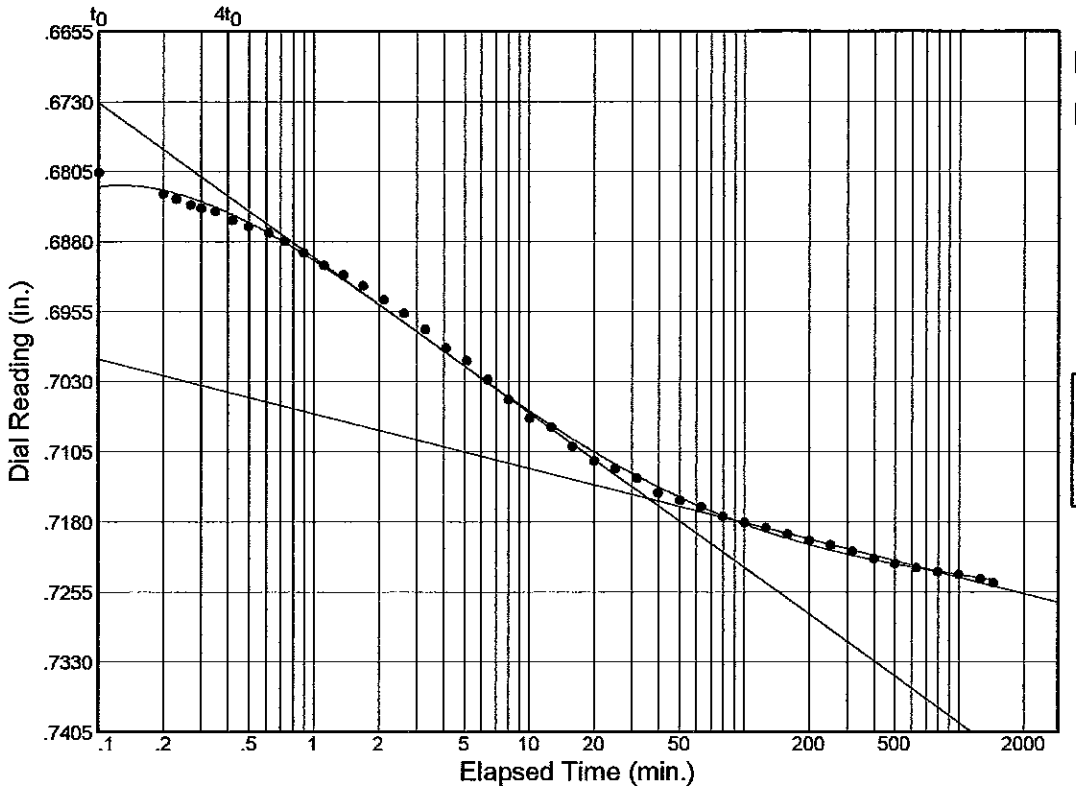
C_α = 0.009

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

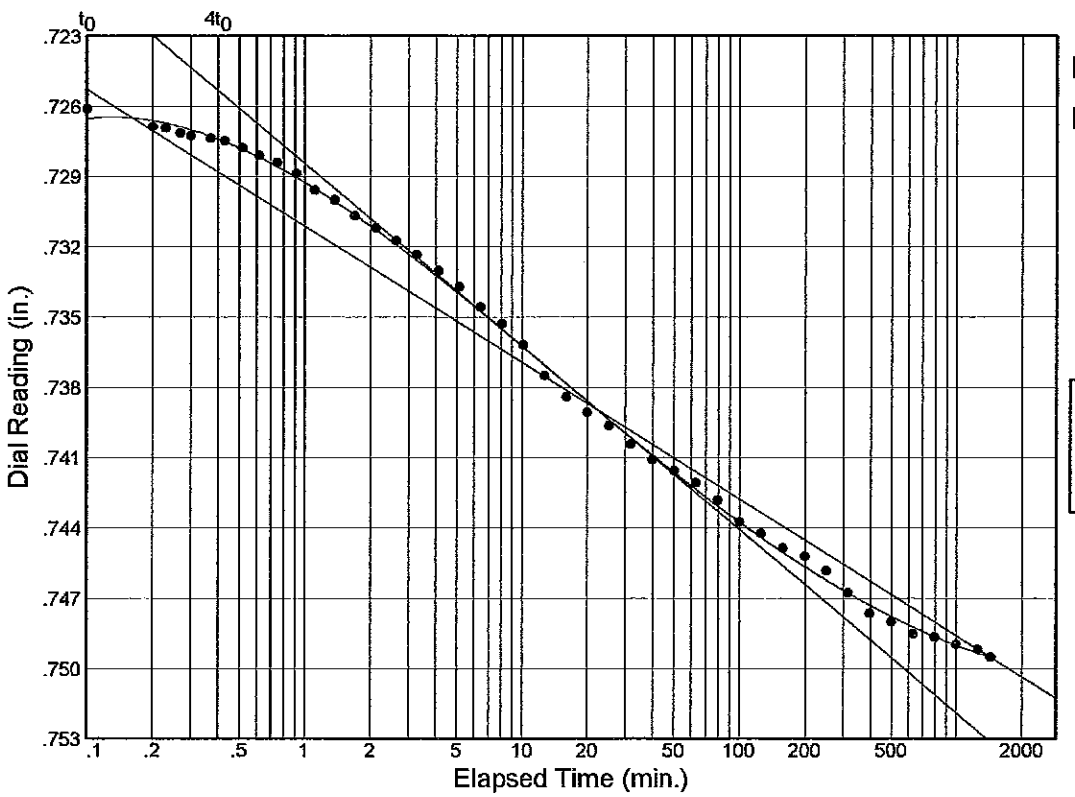
Source: BSFR-2U Sample No.: 5D Elev./Depth: 15.0



Load No.= 8
Load= 8.00 tsf
D_0 = 0.67933
D_{50} = 0.69740
D_{100} = 0.71547
T_{50} = 2.92 min.

C_v @ T_{50}
0.0001 in.^{2}/sec.

C_α = 0.008



Load No.= 9
Load= 12.00 tsf
D_0 = 0.72568
D_{50} = 0.73232
D_{100} = 0.73895
T_{50} = 3.02 min.

C_v @ T_{50}
0.0001 in.^{2}/sec.

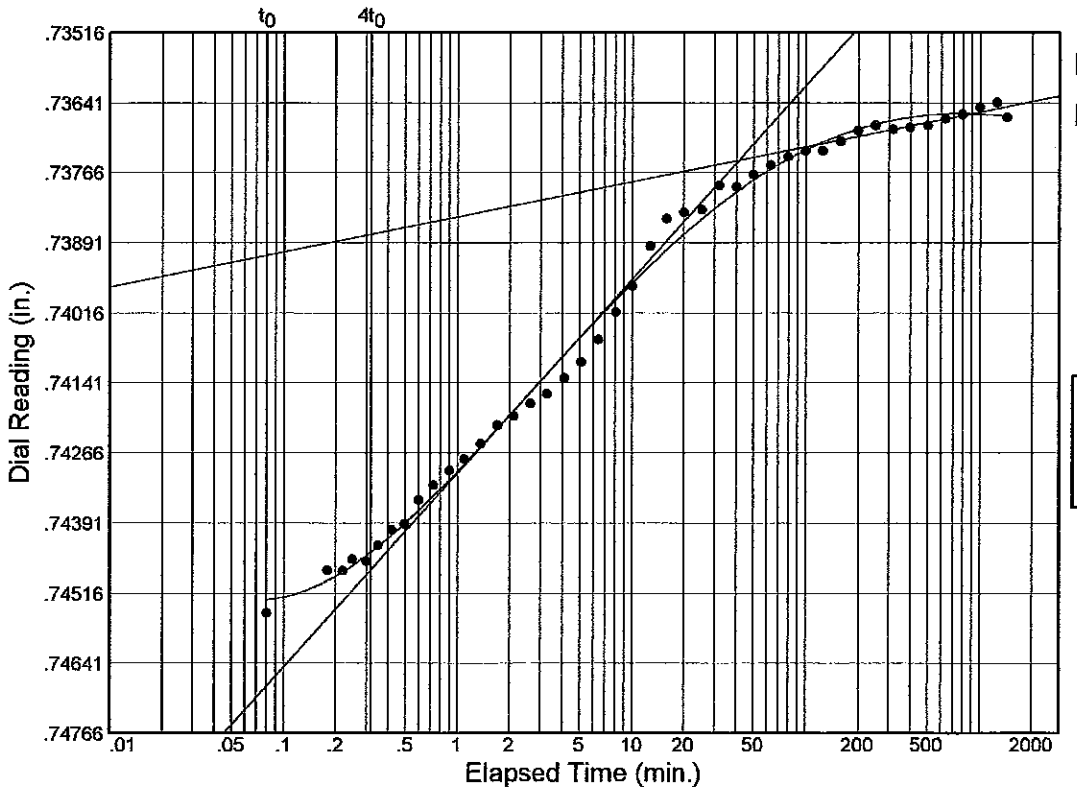
C_α = 0.009

Figure

Dial Reading vs. Time

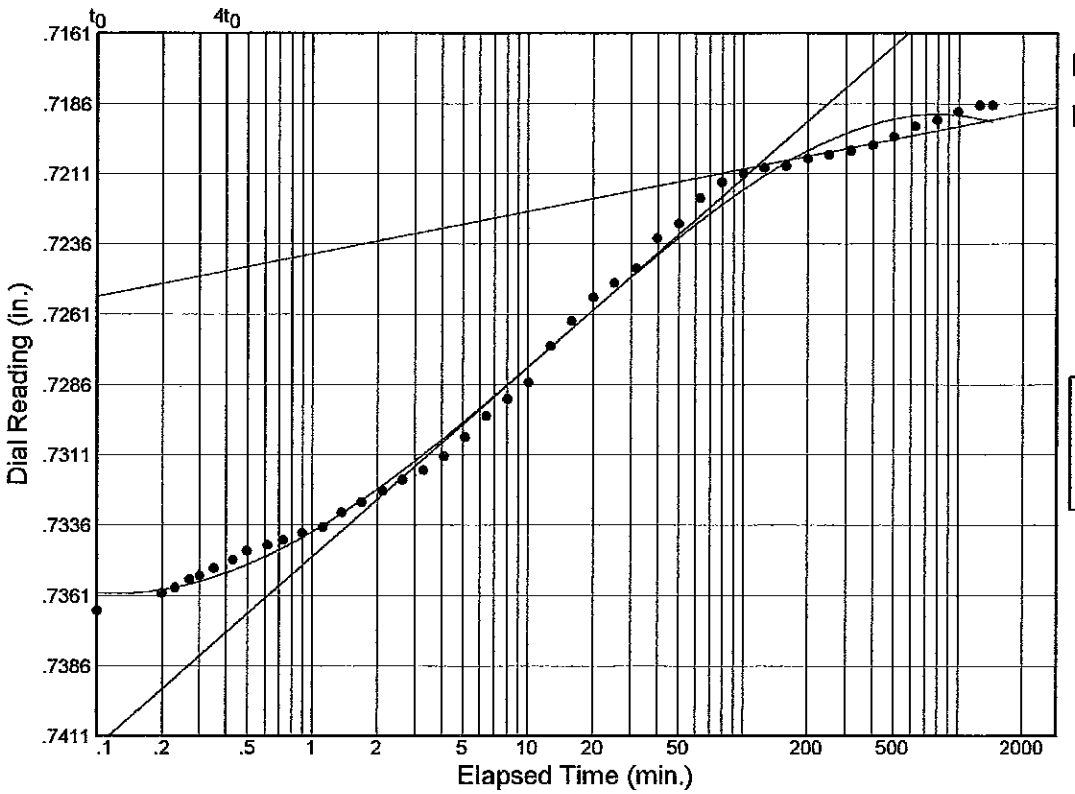
Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

Source: BSFR-2U Sample No.: 5D Elev./Depth: 15.0



Load No.= 10
Load= 3.00 tsf
D_0 = 0.74612
D_{50} = 0.74178
D_{100} = 0.73744
T_{50} = 2.27 min.

C_v @ T_{50}
0.0001 in.^{2}/sec.



Load No.= 11
Load= 0.75 tsf
D_0 = 0.73675
D_{50} = 0.72879
D_{100} = 0.72083
T_{50} = 7.54 min.

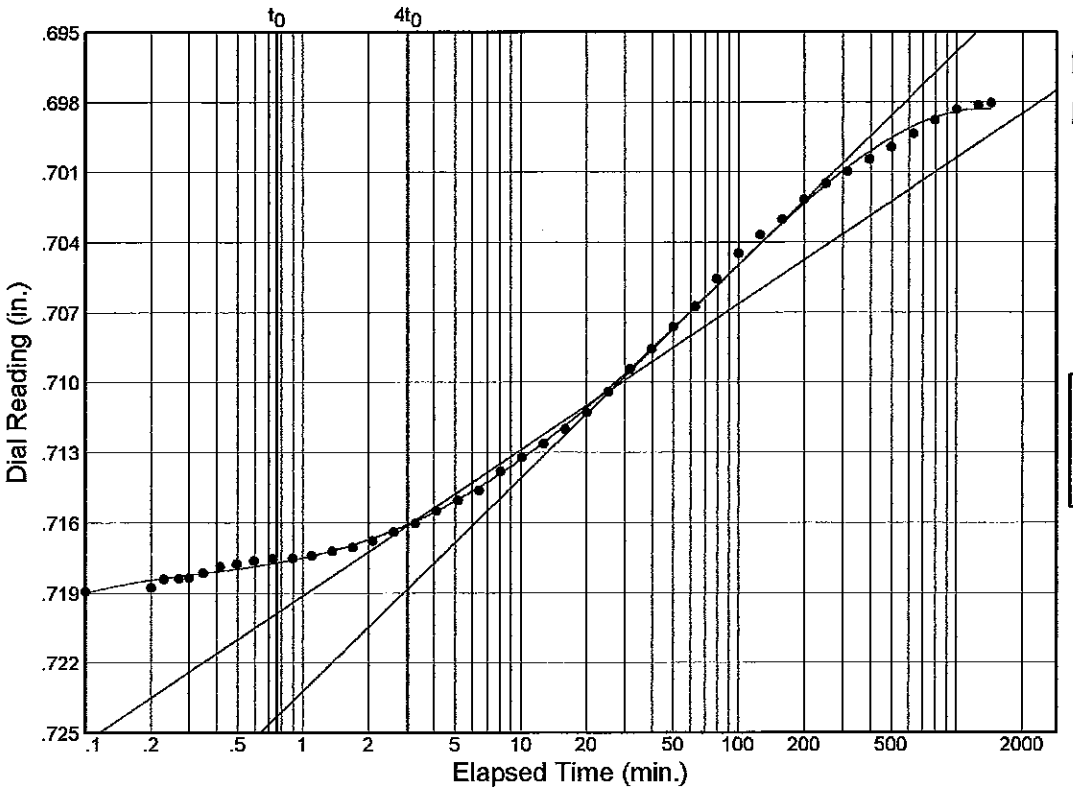
C_v @ T_{50}
0.0000 in.^{2}/sec.

Figure

Dial Reading vs. Time

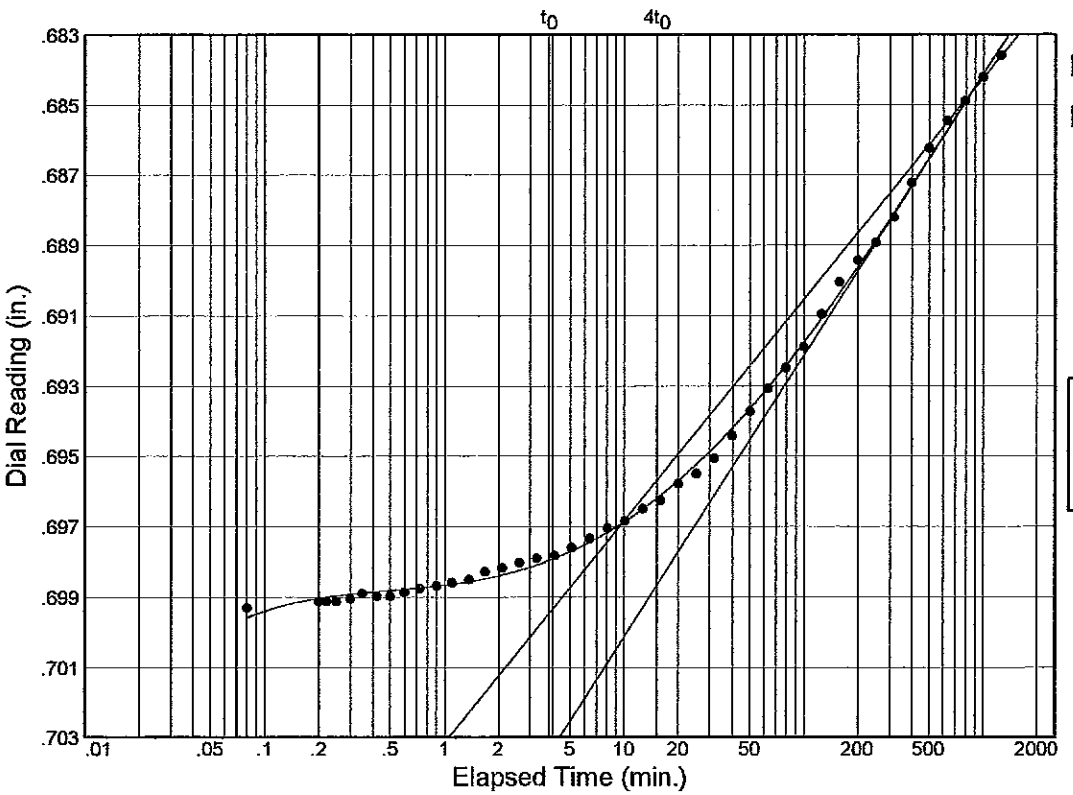
Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

Source: BSFR-2U Sample No.: 5D Elev./Depth: 15.0



Load No.= 12
Load= 0.19 tsf
D_0 = 0.71937
D_{50} = 0.71482
D_{100} = 0.71026
T_{50} = 5.59 min.

C_v @ T_{50}
0.0001 in.^{2}/sec.



Load No.= 13
Load= 0.05 tsf
D_0 = 0.69973
D_{50} = 0.69220
D_{100} = 0.68466
T_{50} = 85.84 min.

C_v @ T_{50}
0.0000 in.^{2}/sec.

Figure

CONSOLIDATION TEST DATA

Client: USACE
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans
Project Number: 12-017108

Sample Data

Source: BSFR-2U
Sample No.: 5D
Elev. or Depth: 15.0 **Sample Length(in./cm.):**
Location:
Description: VSO GR CL6 W/ LNS ML
Liquid Limit: 49 **Plasticity Index:** 33
USCS: CL **AASHTO:** **Figure No.:**
Testing Remarks:

Test Specimen Data

TOTAL SAMPLE		BEFORE TEST	AFTER TEST
Wet w+t =	233.18 g.	Consolidometer # = 3	Wet w+t = 566.67 g.
Dry w+t =	163.19 g.		Dry w+t = 495.82 g.
Tare Wt. =	31.49 g.	Spec. Gravity = 2.59	Tare Wt. = 298.16 g.
Height =	1.00 in.	Height = 1.00 in.	
Diameter =	4.00 in.	Diameter = 4.00 in.	
Weight =	329.40 g.	Defl. Table = n/a	
Moisture =	53.1 %	Ht. Solids = 0.3709 in.	Moisture = 35.8 %
Wet Den. =	100.3 pcf	Dry Wt. = 215.36 g.	Dry Wt. = 197.66 g.*
Dry Den. =	65.5 pcf	Void Ratio = 1.691	Void Ratio = 0.897
		Saturation = 81.4 %	

* Final dry weight used in calculations

End-of-Load Summary

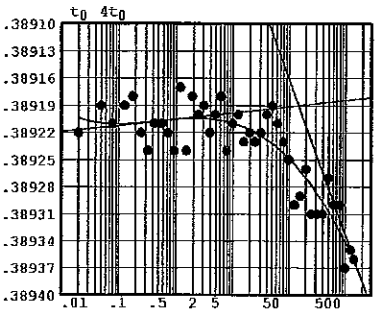
Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (in.^{2}/sec.)	C_α	Void Ratio	% Compression /Swell
start	0.38912				1.691	
0.05	0.38936	0.00000		0.000	1.690	0.0 Comprs.
0.13	0.41399	0.00000	0.0011	0.003	1.624	2.5 Comprs.
0.25	0.44627	0.00000	0.0002	0.008	1.537	5.7 Comprs.
0.50	0.50886	0.00000	0.0001	0.011	1.368	12.0 Comprs.
1.00	0.57058	0.00000	0.0001	0.010	1.202	18.2 Comprs.
2.00	0.62512	0.00000	0.0002	0.010	1.055	23.6 Comprs.
4.00	0.67825	0.00000	0.0002	0.009	0.911	29.0 Comprs.
8.00	0.72456	0.00000	0.0001	0.008	0.786	33.6 Comprs.
12.00	0.74951	0.00000	0.0001	0.009	0.719	36.1 Comprs.
3.00	0.73667	0.00000	0.0001		0.754	34.8 Comprs.

Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (in.^{2}/sec.)	C_α	Void Ratio	% Compression /Swell
0.75	0.71867	0.00000	0.0000		0.802	33.0 Comprs.
0.19	0.69805	0.00000	0.0001		0.858	31.0 Comprs.
0.05	0.68359	0.00000	0.0000		0.897	29.5 Comprs.

C_c = 0.38 P_c = 11.99 tsf C_r = 0.07

Pressure: 0.05 tsf **TEST READINGS** **Load No. 1**

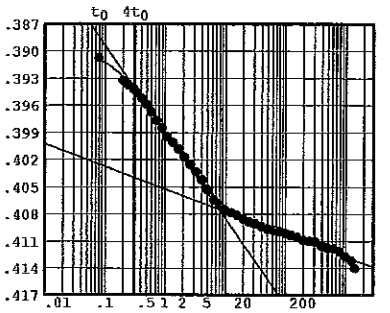
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.38912	23	12.53	0.38920
2	0.02	0.38922	24	15.78	0.38923
3	0.05	0.38919	25	19.90	0.38922
4	0.08	0.38921	26	25.07	0.38923
5	0.13	0.38919	27	31.57	0.38922
6	0.18	0.38918	28	39.75	0.38920
7	0.25	0.38922	29	50.07	0.38919
8	0.33	0.38924	30	63.05	0.38921
9	0.43	0.38921	31	79.38	0.38923
10	0.57	0.38921	32	99.95	0.38925
11	0.72	0.38922	33	125.85	0.38930
12	0.93	0.38924	34	158.45	0.38929
13	1.18	0.38917	35	199.48	0.38926
14	1.52	0.38924	36	251.15	0.38931
15	1.93	0.38918	37	316.18	0.38931
16	2.45	0.38920	38	398.07	0.38931
17	3.10	0.38919	39	501.15	0.38927
18	3.92	0.38922	40	630.92	0.38930
19	4.95	0.38920	41	794.28	0.38930
20	6.25	0.38918	42	999.97	0.38937
21	7.88	0.38924	43	1258.88	0.38935
22	9.93	0.38921	44	1440.18	0.38936



Void Ratio = 1.690 Compression = 0.0 %

Pressure: 0.13 tsf | TEST READINGS | Load No. 2

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.38714	24	12.72	0.40785
2	0.08	0.39076	25	15.97	0.40818
3	0.20	0.39323	26	20.08	0.40853
4	0.22	0.39338	27	25.25	0.40887
5	0.25	0.39375	28	31.75	0.40909
6	0.30	0.39415	29	39.95	0.40938
7	0.35	0.39465	30	50.25	0.40965
8	0.42	0.39522	31	63.23	0.40978
9	0.50	0.39589	32	79.57	0.40995
10	0.60	0.39672	33	100.13	0.41016
11	0.73	0.39767	34	126.03	0.41038
12	0.90	0.39846	35	158.63	0.41056
13	1.10	0.39946	36	199.67	0.41084
14	1.37	0.40013	37	251.33	0.41099
15	1.68	0.40083	38	316.37	0.41108
16	2.10	0.40169	39	398.25	0.41148
17	2.62	0.40252	40	501.33	0.41178
18	3.27	0.40334	41	631.10	0.41186
19	4.10	0.40420	42	794.48	0.41217
20	5.13	0.40536	43	1000.15	0.41274
21	6.43	0.40640	44	1259.08	0.41320
22	8.07	0.40704	45	1440.43	0.41399
23	10.12	0.40760			



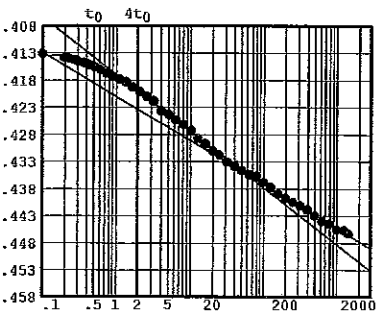
Void Ratio = 1.624 Compression = 2.5 %

D_0 = 0.38764 D_{50} = 0.39752 D_{100} = 0.40740

C_v at 0.7 min. = 0.0011 in.^{2}/sec. C_α = 0.003

Pressure: 0.25 tsf | TEST READINGS | Load No. 3

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.41147	24	12.72	0.42872
2	0.10	0.41309	25	15.98	0.42977
3	0.20	0.41390	26	20.08	0.43104
4	0.23	0.41401	27	25.25	0.43181
5	0.27	0.41425	28	31.75	0.43309
6	0.30	0.41447	29	39.95	0.43383
7	0.37	0.41475	30	50.25	0.43465
8	0.43	0.41511	31	63.23	0.43536
9	0.52	0.41557	32	79.57	0.43576
10	0.62	0.41609	33	100.13	0.43688
11	0.75	0.41672	34	126.03	0.43778
12	0.90	0.41732	35	158.63	0.43898
13	1.12	0.41783	36	199.67	0.43972
14	1.38	0.41829	37	251.33	0.44053
15	1.70	0.41929	38	316.38	0.44117
16	2.12	0.42014	39	398.27	0.44185
17	2.63	0.42101	40	501.33	0.44298
18	3.28	0.42185	41	631.12	0.44406
19	4.10	0.42366	42	794.48	0.44451
20	5.13	0.42429	43	1000.15	0.44554
21	6.43	0.42530	44	1259.08	0.44569
22	8.07	0.42612	45	1440.25	0.44627
23	10.13	0.42722			



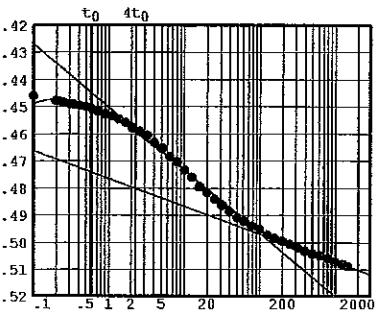
Void Ratio = 1.537 **Compression** = 5.7 %

D_0 = 0.41050 D_{50} = 0.42265 D_{100} = 0.43479

C_v **at 3.5 min.** = 0.0002 in.^{2}/sec. C_α = 0.008

Pressure: 0.50 tsf | TEST READINGS | Load No. 4

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.44296	24	12.72	0.47610
2	0.10	0.44597	25	15.97	0.47943
3	0.20	0.44784	26	20.08	0.48170
4	0.22	0.44809	27	25.25	0.48408
5	0.25	0.44854	28	31.75	0.48628
6	0.30	0.44897	29	39.93	0.48862
7	0.35	0.44926	30	50.25	0.49083
8	0.42	0.44966	31	63.22	0.49221
9	0.50	0.44994	32	79.57	0.49393
10	0.60	0.45068	33	100.13	0.49530
11	0.73	0.45166	34	126.02	0.49726
12	0.90	0.45260	35	158.63	0.49854
13	1.10	0.45346	36	199.67	0.49952
14	1.37	0.45464	37	251.33	0.50075
15	1.68	0.45586	38	316.37	0.50189
16	2.10	0.45781	39	398.25	0.50324
17	2.62	0.45918	40	501.33	0.50421
18	3.27	0.46068	41	631.10	0.50495
19	4.10	0.46322	42	794.47	0.50593
20	5.13	0.46541	43	1000.15	0.50718
21	6.43	0.46837	44	1259.07	0.50826
22	8.07	0.47024	45	1440.23	0.50886
23	10.12	0.47335			



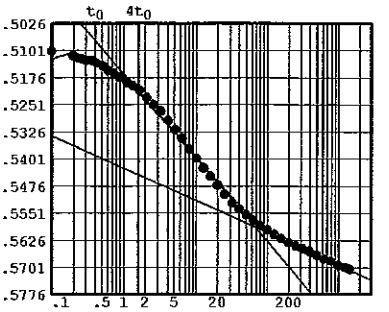
Void Ratio = 1.368 **Compression** = 12.0 %

D_0 = 0.44052 D_{50} = 0.46883 D_{100} = 0.49714

C_v **at 6.3 min.** = 0.0001 in.^{2}/sec. C_α = 0.011

Pressure: 1.00 tsf | TEST READINGS | Load No. 5

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.50579	24	12.72	0.54260
2	0.10	0.51018	25	15.98	0.54497
3	0.20	0.51157	26	20.08	0.54743
4	0.23	0.51212	27	25.25	0.54987
5	0.27	0.51247	28	31.75	0.55232
6	0.30	0.51283	29	39.95	0.55389
7	0.37	0.51298	30	50.25	0.55557
8	0.43	0.51354	31	63.23	0.55700
9	0.52	0.51439	32	79.57	0.55845
10	0.62	0.51562	33	100.13	0.55969
11	0.75	0.51644	34	126.03	0.56105
12	0.90	0.51749	35	158.63	0.56212
13	1.12	0.51899	36	199.67	0.56321
14	1.37	0.51991	37	251.33	0.56417
15	1.70	0.52108	38	316.37	0.56480
16	2.12	0.52309	39	398.25	0.56557
17	2.63	0.52504	40	501.33	0.56667
18	3.28	0.52682	41	631.12	0.56780
19	4.10	0.52943	42	794.48	0.56830
20	5.13	0.53196	43	1000.15	0.56950
21	6.43	0.53433	44	1259.08	0.57012
22	8.07	0.53737	45	1440.13	0.57058
23	10.13	0.53987			



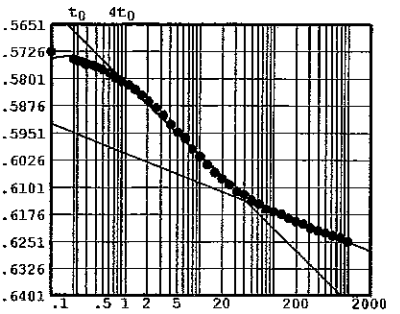
Void Ratio = 1.202 Compression = 18.2 %

D_0 = 0.50341 D_{50} = 0.53111 D_{100} = 0.55880

C_v at 4.3 min. = 0.0001 in.^{2}/sec. C_α = 0.010

Pressure: 2.00 tsf	TEST READINGS	Load No. 6

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.56615	23	10.12	0.60159
2	0.10	0.57261	24	12.72	0.60393
3	0.20	0.57464	25	15.98	0.60598
4	0.23	0.57519	26	20.08	0.60775
5	0.27	0.57566	27	25.25	0.60945
6	0.30	0.57612	28	31.75	0.61126
7	0.37	0.57643	29	39.95	0.61210
8	0.42	0.57694	30	50.25	0.61353
9	0.50	0.57765	31	63.23	0.61469
10	0.62	0.57849	32	79.57	0.61617
11	0.73	0.57988	33	100.13	0.61684
12	0.90	0.58090	34	126.03	0.61745
13	1.12	0.58192	35	158.63	0.61864
14	1.37	0.58315	36	199.67	0.61960
15	1.70	0.58472	37	251.33	0.62022
16	2.12	0.58647	38	316.37	0.62136
17	2.63	0.58828	39	398.25	0.62210
18	3.28	0.59019	40	501.33	0.62267
19	4.10	0.59286	41	631.10	0.62348
20	5.13	0.59493	42	794.47	0.62398
21	6.43	0.59667	43	1000.15	0.62509
22	8.07	0.59956	44	1007.03	0.62512



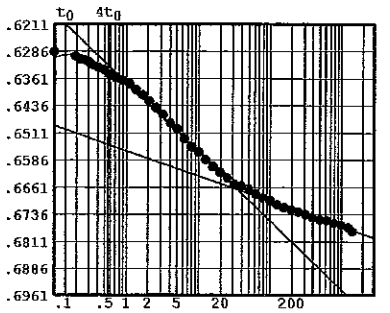
Void Ratio = 1.055 **Compression** = 23.6 %

D_0 = 0.56763 D_{50} = 0.59077 D_{100} = 0.61391

C_v **at 3.1 min.** = 0.0002 in.^{2}/sec. C_α = 0.010

Pressure: 4.00 tsf | TEST READINGS | Load No. 7

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.61914	24	12.72	0.65855
2	0.10	0.62861	25	15.97	0.66038
3	0.20	0.62997	26	20.08	0.66196
4	0.23	0.63074	27	25.25	0.66360
5	0.27	0.63101	28	31.75	0.66530
6	0.30	0.63145	29	39.93	0.66576
7	0.35	0.63244	30	50.25	0.66657
8	0.42	0.63309	31	63.22	0.66798
9	0.50	0.63373	32	79.57	0.66908
10	0.60	0.63503	33	100.13	0.66982
11	0.73	0.63591	34	126.03	0.67091
12	0.90	0.63660	35	158.63	0.67173
13	1.12	0.63742	36	199.67	0.67240
14	1.37	0.63914	37	251.33	0.67297
15	1.70	0.64054	38	316.37	0.67370
16	2.10	0.64228	39	398.25	0.67443
17	2.63	0.64412	40	501.33	0.67506
18	3.28	0.64604	41	631.10	0.67538
19	4.10	0.64844	42	794.48	0.67608
20	5.13	0.64999	43	1000.15	0.67660
21	6.43	0.65271	44	1259.08	0.67726
22	8.07	0.65497	45	1435.08	0.67825
23	10.12	0.65637			



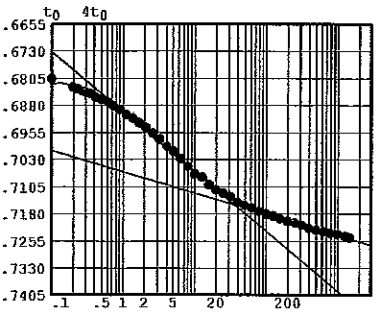
Void Ratio = 0.911 **Compression** = 29.0 %

D_0 = 0.62537 D_{50} = 0.64611 D_{100} = 0.66685

C_v **at 2.9 min.** = 0.0002 in.^{2}/sec. C_α = 0.009

Pressure: 8.00 tsf **TEST READINGS** **Load No. 8**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.66918	24	12.72	0.70787
2	0.10	0.68058	25	15.97	0.70991
3	0.20	0.68290	26	20.08	0.71147
4	0.23	0.68343	27	25.25	0.71227
5	0.27	0.68404	28	31.75	0.71335
6	0.30	0.68442	29	39.93	0.71488
7	0.35	0.68475	30	50.25	0.71572
8	0.42	0.68570	31	63.22	0.71641
9	0.50	0.68636	32	79.57	0.71741
10	0.62	0.68707	33	100.13	0.71807
11	0.73	0.68799	34	126.03	0.71863
12	0.90	0.68918	35	158.62	0.71936
13	1.12	0.69053	36	199.67	0.72003
14	1.37	0.69158	37	251.33	0.72047
15	1.70	0.69278	38	316.37	0.72118
16	2.12	0.69422	39	398.25	0.72194
17	2.63	0.69568	40	501.33	0.72250
18	3.28	0.69743	41	631.10	0.72296
19	4.10	0.69935	42	794.47	0.72340
20	5.13	0.70074	43	1000.15	0.72365
21	6.43	0.70276	44	1259.07	0.72415
22	8.07	0.70491	45	1440.35	0.72456
23	10.12	0.70692			



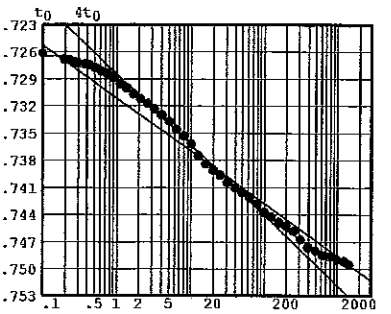
Void Ratio = 0.786 **Compression** = 33.6 %

D_0 = 0.67933 D_{50} = 0.69740 D_{100} = 0.71547

C_v **at 2.9 min.** = 0.0001 in.^{2}/sec. C_α = 0.008

Pressure: 12.00 tsf | TEST READINGS | Load No. 9

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.71690	24	12.72	0.73751
2	0.10	0.72611	25	15.98	0.73840
3	0.20	0.72686	26	20.08	0.73907
4	0.23	0.72693	27	25.25	0.73963
5	0.27	0.72713	28	31.77	0.74044
6	0.30	0.72724	29	39.95	0.74108
7	0.37	0.72736	30	50.25	0.74154
8	0.43	0.72746	31	63.23	0.74207
9	0.52	0.72778	32	79.58	0.74280
10	0.62	0.72811	33	100.15	0.74373
11	0.75	0.72841	34	126.03	0.74424
12	0.92	0.72887	35	158.63	0.74487
13	1.12	0.72957	36	199.67	0.74522
14	1.38	0.73000	37	251.33	0.74582
15	1.70	0.73067	38	316.38	0.74676
16	2.12	0.73120	39	398.27	0.74764
17	2.63	0.73173	40	501.35	0.74801
18	3.28	0.73234	41	631.12	0.74851
19	4.12	0.73301	42	794.48	0.74867
20	5.13	0.73371	43	1000.17	0.74896
21	6.43	0.73459	44	1259.08	0.74917
22	8.07	0.73529	45	1440.02	0.74951
23	10.13	0.73619			



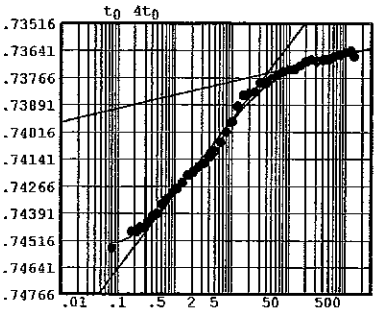
Void Ratio = 0.719 **Compression** = 36.1 %

D_0 = 0.72568 D_{50} = 0.73232 D_{100} = 0.73895

C_v **at 3.0 min.** = 0.0001 in.^{2}/sec. C_α = 0.009

Pressure: 3.00 tsf | TEST READINGS | Load No. 10

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.76416	24	12.72	0.73897
2	0.08	0.74551	25	15.97	0.73848
3	0.18	0.74475	26	20.08	0.73837
4	0.22	0.74476	27	25.25	0.73832
5	0.25	0.74455	28	31.75	0.73789
6	0.30	0.74459	29	39.93	0.73791
7	0.35	0.74430	30	50.25	0.73770
8	0.42	0.74403	31	63.23	0.73753
9	0.50	0.74393	32	79.57	0.73738
10	0.60	0.74350	33	100.13	0.73728
11	0.73	0.74323	34	126.03	0.73727
12	0.90	0.74297	35	158.63	0.73710
13	1.10	0.74277	36	199.67	0.73691
14	1.37	0.74249	37	251.33	0.73682
15	1.70	0.74216	38	316.37	0.73689
16	2.10	0.74200	39	398.25	0.73685
17	2.62	0.74177	40	501.33	0.73682
18	3.28	0.74160	41	631.10	0.73669
19	4.10	0.74132	42	794.48	0.73662
20	5.13	0.74103	43	1000.15	0.73649
21	6.43	0.74064	44	1259.08	0.73641
22	8.07	0.74015	45	1440.15	0.73667
23	10.12	0.73968			



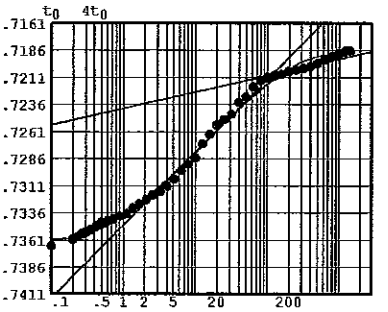
Void Ratio = 0.754 **Compression** = 34.8 %

D_0 = 0.74612 D_{50} = 0.74178 D_{100} = 0.73744

C_v **at 2.3 min.** = 0.0001 in.^{2}/sec.

Pressure: 0.75 tsf | TEST READINGS | Load No. 11

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.74331	24	12.72	0.72723
2	0.10	0.73664	25	15.97	0.72635
3	0.20	0.73603	26	20.08	0.72550
4	0.23	0.73583	27	25.25	0.72499
5	0.27	0.73553	28	31.75	0.72447
6	0.30	0.73540	29	39.93	0.72341
7	0.35	0.73514	30	50.25	0.72288
8	0.43	0.73483	31	63.23	0.72197
9	0.50	0.73452	32	79.57	0.72139
10	0.62	0.73432	33	100.13	0.72109
11	0.73	0.73414	34	126.03	0.72090
12	0.90	0.73388	35	158.62	0.72082
13	1.12	0.73368	36	199.67	0.72056
14	1.37	0.73316	37	251.33	0.72041
15	1.70	0.73279	38	316.37	0.72027
16	2.12	0.73239	39	398.25	0.72008
17	2.63	0.73199	40	501.33	0.71979
18	3.28	0.73165	41	631.10	0.71942
19	4.10	0.73114	42	794.47	0.71918
20	5.13	0.73047	43	1000.15	0.71890
21	6.43	0.72971	44	1259.07	0.71866
22	8.07	0.72911	45	1440.32	0.71867
23	10.12	0.72852			



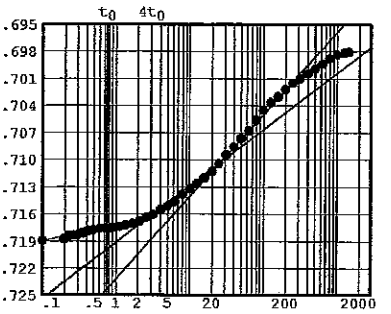
Void Ratio = 0.802 Compression = 33.0 %

D_0 = 0.73675 D_{50} = 0.72879 D_{100} = 0.72083

C_v at 7.5 min. = 0.0000 in.^{2}/sec.

Pressure: 0.19 tsf | TEST READINGS | Load No. 12

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.72207	24	12.72	0.71262
2	0.10	0.71894	25	15.97	0.71201
3	0.20	0.71878	26	20.08	0.71128
4	0.23	0.71843	27	25.25	0.71041
5	0.27	0.71839	28	31.75	0.70944
6	0.30	0.71837	29	39.93	0.70858
7	0.35	0.71815	30	50.25	0.70762
8	0.42	0.71787	31	63.22	0.70676
9	0.50	0.71777	32	79.57	0.70557
10	0.60	0.71763	33	100.13	0.70447
11	0.73	0.71754	34	126.03	0.70368
12	0.90	0.71751	35	158.62	0.70304
13	1.10	0.71740	36	199.67	0.70219
14	1.37	0.71722	37	251.32	0.70151
15	1.70	0.71705	38	316.37	0.70097
16	2.10	0.71679	39	398.25	0.70047
17	2.62	0.71640	40	501.33	0.69993
18	3.27	0.71605	41	631.10	0.69937
19	4.10	0.71550	42	794.47	0.69879
20	5.13	0.71507	43	1000.13	0.69833
21	6.42	0.71462	44	1259.07	0.69816
22	8.07	0.71381	45	1440.23	0.69805
23	10.12	0.71319			



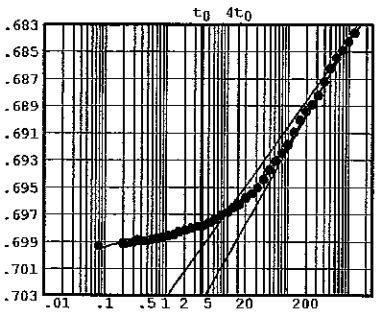
Void Ratio = 0.858 **Compression** = 31.0 %

D_0 = 0.71937 D_{50} = 0.71482 D_{100} = 0.71026

C_v **at 5.6 min.** = 0.0001 in.^{2}/sec.

Pressure: 0.05 tsf | TEST READINGS | Load No. 13

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.70039	23	10.12	0.69685
2	0.08	0.69930	24	12.72	0.69650
3	0.20	0.69913	25	15.97	0.69626
4	0.22	0.69913	26	20.08	0.69579
5	0.25	0.69912	27	25.25	0.69549
6	0.30	0.69904	28	31.75	0.69505
7	0.35	0.69891	29	39.95	0.69442
8	0.42	0.69898	30	50.25	0.69372
9	0.50	0.69898	31	63.23	0.69307
10	0.60	0.69886	32	79.57	0.69249
11	0.73	0.69876	33	100.15	0.69189
12	0.90	0.69869	34	126.03	0.69095
13	1.10	0.69859	35	158.63	0.69004
14	1.37	0.69851	36	199.68	0.68942
15	1.68	0.69828	37	251.33	0.68891
16	2.10	0.69818	38	316.38	0.68821
17	2.62	0.69802	39	398.27	0.68722
18	3.27	0.69790	40	501.35	0.68624
19	4.10	0.69783	41	631.12	0.68545
20	5.12	0.69760	42	794.48	0.68488
21	6.42	0.69734	43	1000.17	0.68422
22	8.07	0.69704	44	1259.08	0.68359

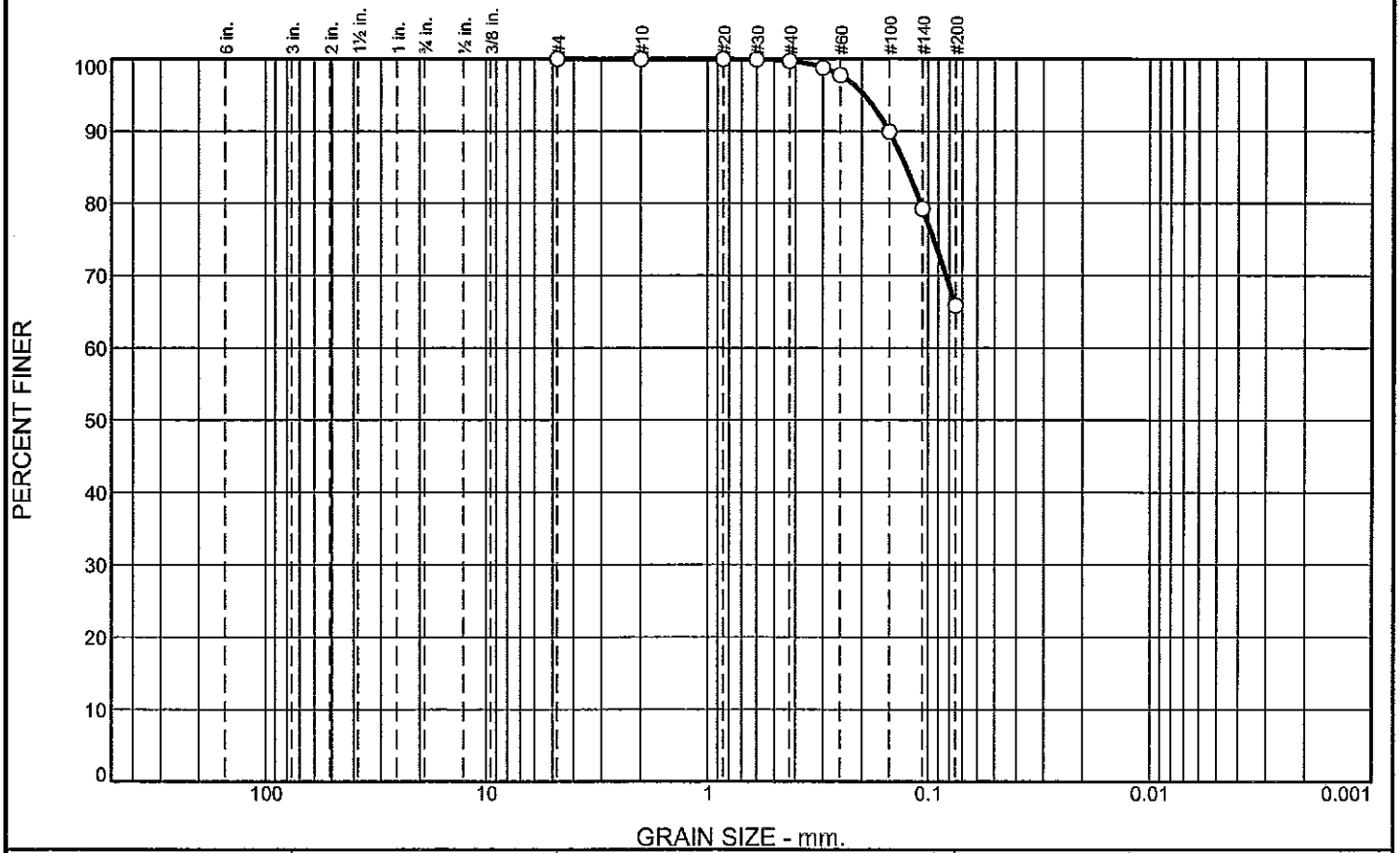


Void Ratio = 0.897 **Compression** = 29.5 %

D_0 = 0.69973 D_{50} = 0.69220 D_{100} = 0.68466

C_v **at 85.8 min.** = 0.0000 in.^{2}/sec.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.3	33.9	65.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	100.0		
#20	100.0		
#30	99.9		
#40	99.7		
#50	98.8		
#60	97.8		
#100	89.9		
#140	79.2		
#200	65.8		

* (no specification provided)

Soil Description

GR ML W/ ARS CH

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.1506 D_{85}= 0.1258 D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= ML AASHTO=

Remarks

Source of Sample: BSFR-2U **Depth:** 20.0
Sample Number: 7A **Date:** 8-6-12

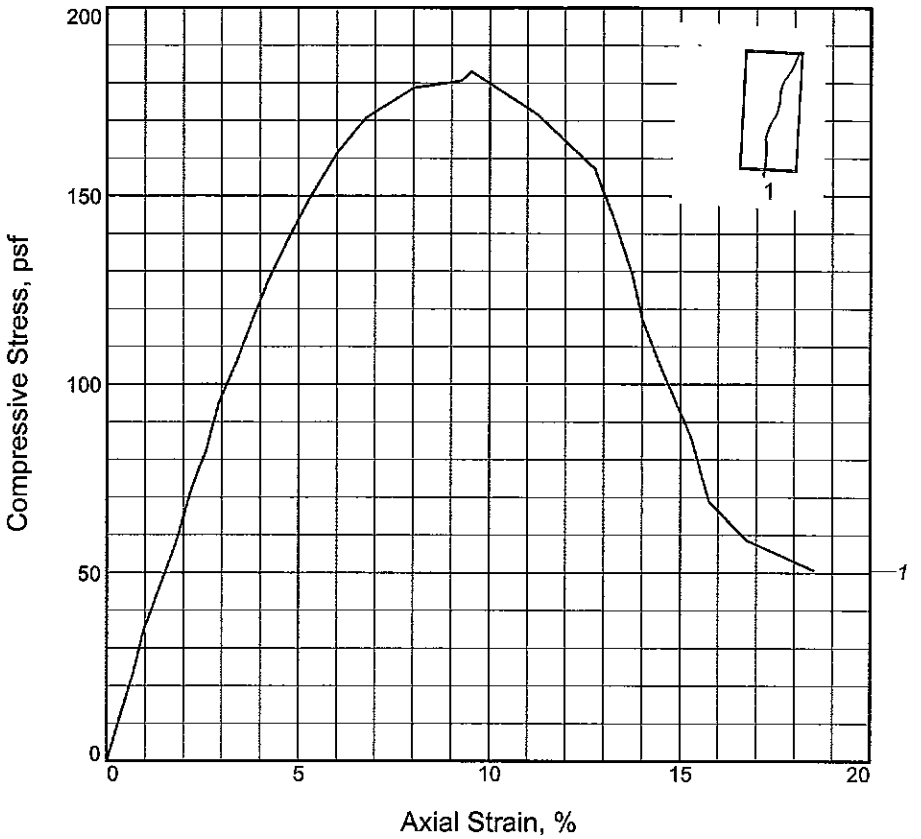
Stantec

Saint Rose, Louisiana

Client: USACE
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Project No: 12-017108 **Figure**

Tested By: JC

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	183			
Undrained shear strength, psf	92			
Failure strain, %	9.5			
Strain rate, in./min.	1.000			
Water content, %	332.1			
Wet density, pcf	69.7			
Dry density, pcf	16.1			
Saturation, %	95.4			
Void ratio	8.8716			
Specimen diameter, in.	1.376			
Specimen height, in.	3.001			
Height/diameter ratio	2.18			

Description: VSO BK PT

LL = 285	**PL =** 87	**PI =** 198	**Assumed GS=** 2.55	**Type:** UNDISTURBED

Project No.: 12-017108
Date Sampled: 7-24-12
Remarks:
Torvane 0.10 tsf

Figure _____

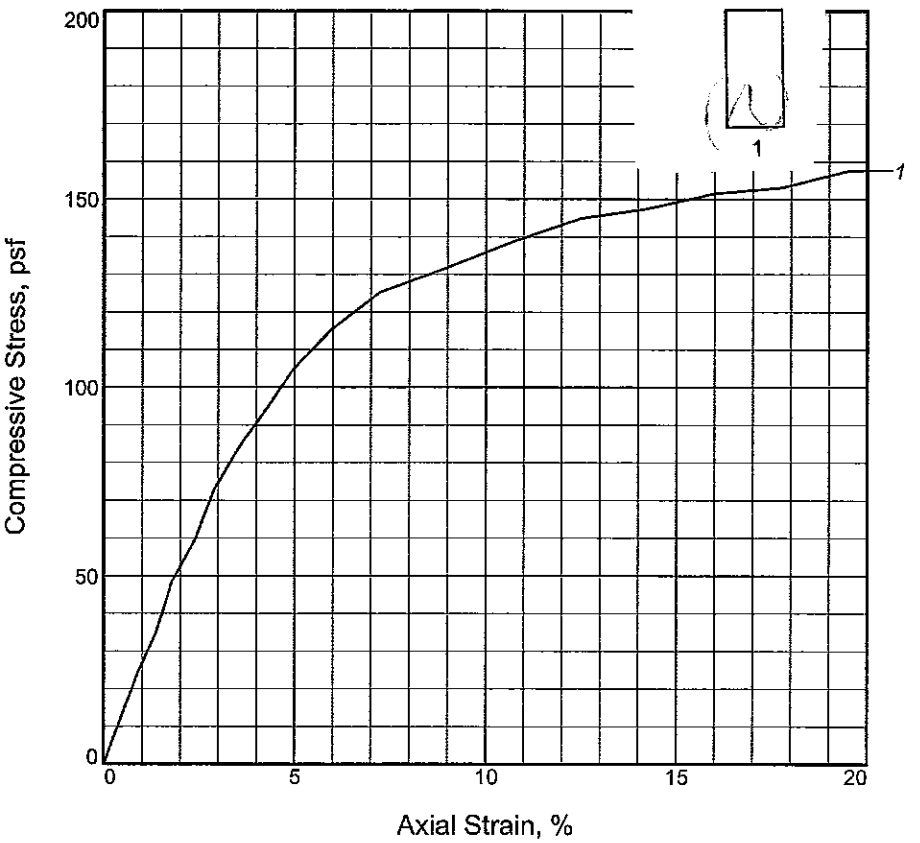
Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-2U **Depth:** 4.0
Sample Number: 3A

UNCONFINED COMPRESSION TEST
Stantec
Saint Rose, Louisiana

Tested By: JC

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	147			
Undrained shear strength, psf	74			
Failure strain, %	14.2			
Strain rate, in./min.	1.000			
Water content, %	60.8			
Wet density, pcf	101.1			
Dry density, pcf	62.9			
Saturation, %	97.2			
Void ratio	1.7008			
Specimen diameter, in.	1.382			
Specimen height, in.	2.995			
Height/diameter ratio	2.17			

Description: VSO DGR CH3 W/ ARS ML, O

LL = 61	**PL =** 26	**PI =** 35	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 12-017108
Date Sampled: 7-24-12
Remarks:
Torvane 0.30 tsf

Figure _____

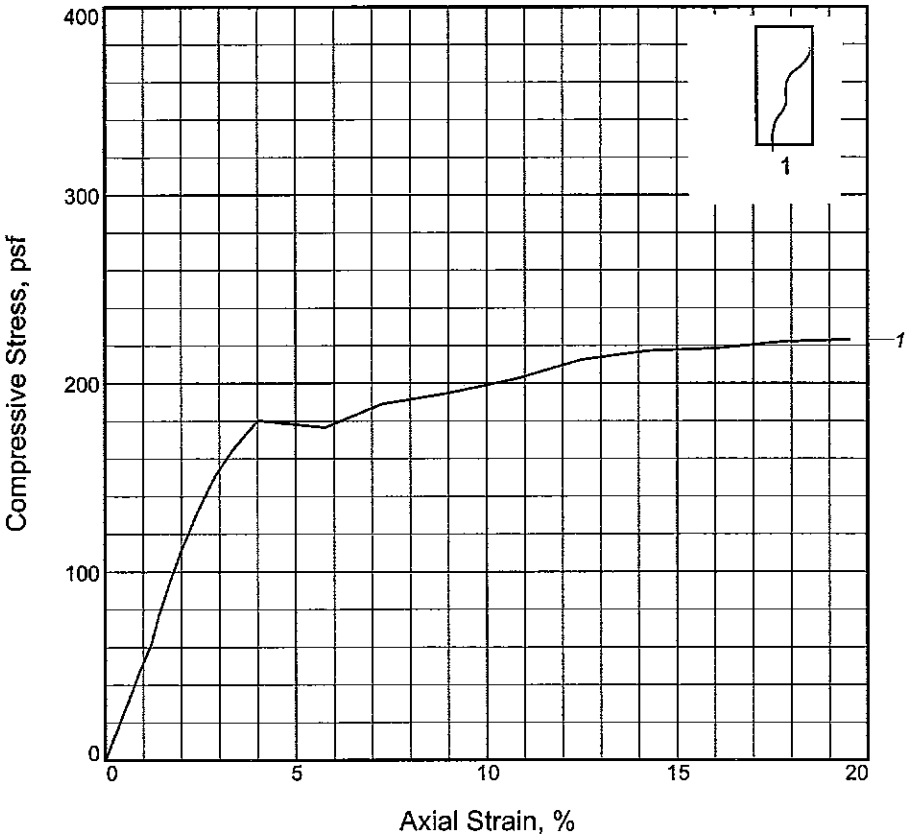
Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-2U **Depth:** 10.0
Sample Number: 4C

UNCONFINED COMPRESSION TEST
Stantec
Saint Rose, Louisiana

Tested By: JC

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	217			
Undrained shear strength, psf	109			
Failure strain, %	14.3			
Strain rate, in./min.	1.000			
Water content, %	31.3			
Wet density, pcf	115.0			
Dry density, pcf	87.6			
Saturation, %	91.5			
Void ratio	0.9247			
Specimen diameter, in.	1.386			
Specimen height, in.	3.002			
Height/diameter ratio	2.17			

Description: VSO GR CL4 W/ ARS & LNS SP, SIF

LL = 29	**PL =** 14	**PI =** 15	**Assumed GS=** 2.70	**Type:** UNDISTURBED

Project No.: 12-017108
Date Sampled: 7-24-12
Remarks:
Torvane=0.15 tsf

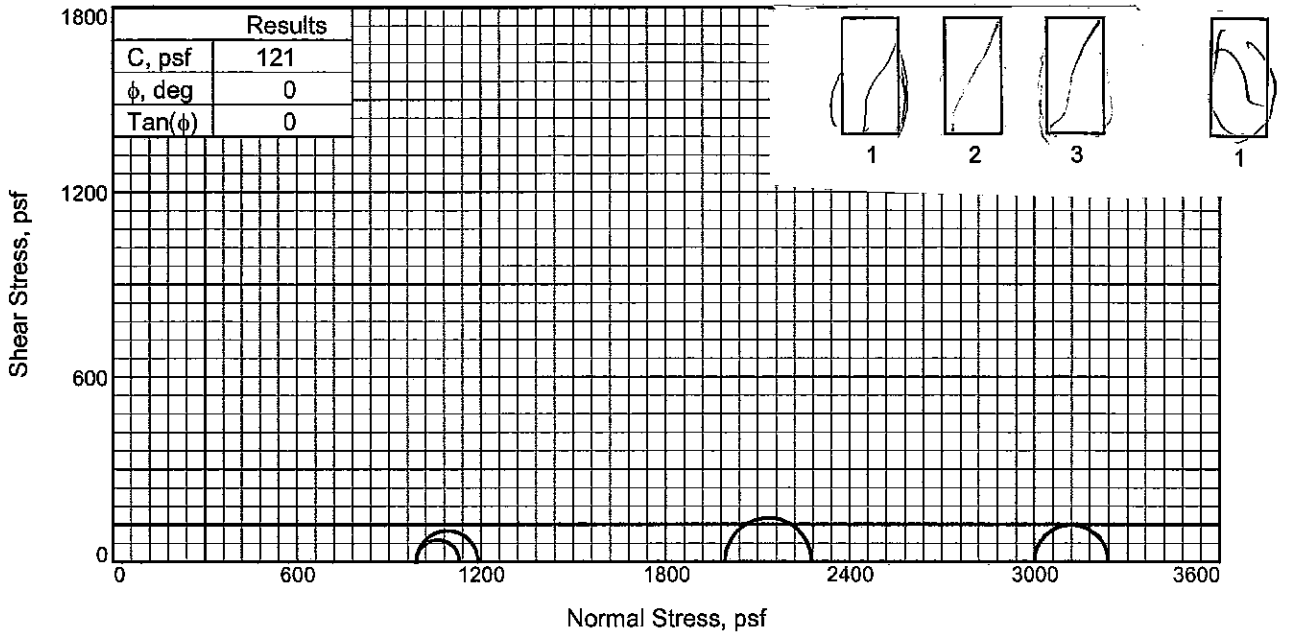
Figure _____

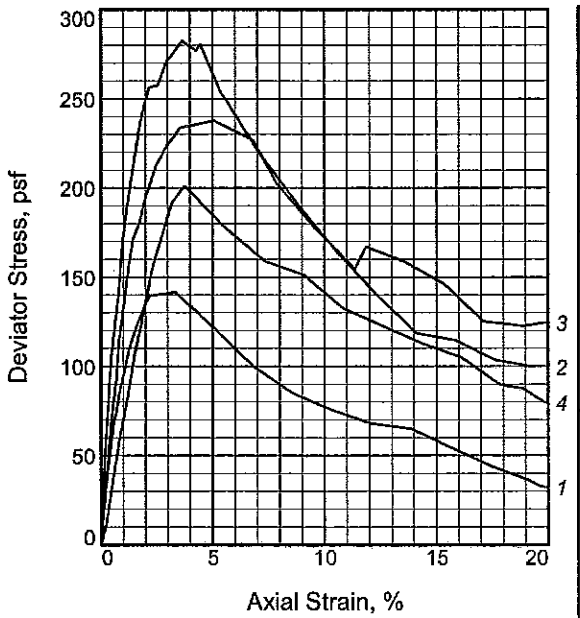
Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-2U **Depth:** 18.0
Sample Number: 6C

UNCONFINED COMPRESSION TEST
Stantec
Saint Rose, Louisiana

Tested By: JC **Checked By:** JS





Sample No.		1	2	3	4
Initial	Water Content, %	118.0	119.9	135.3	133.1
	Dry Density, pcf	39.6	38.9	35.9	36.7
	Saturation, %	97.9	97.4	99.1	100.0
	Void Ratio	3.2415	3.3117	3.6716	3.5820
	Diameter, in.	1.395	1.398	1.394	1.385
	Height, in.	3.001	3.008	3.007	2.985
At Test	Water Content, %	118.0	119.9	135.3	133.1
	Dry Density, pcf	39.6	38.9	35.9	36.7
	Saturation, %	97.9	97.4	99.1	100.0
	Void Ratio	3.2415	3.3117	3.6716	3.5820
	Diameter, in.	1.395	1.398	1.394	1.385
	Height, in.	3.001	3.008	3.007	2.985
Strain rate, in./min.		1.000	1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00	0.00
Cell Pressure, psi		6.86	13.84	20.83	6.87
Fail. Stress, psf		141	282	238	201
Strain, %		3.3	3.6	5.1	3.7
Ult. Stress, psf		65	118	155	113
Strain, %		13.8	14.1	11.3	14.4
σ_1 Failure, psf		1129	2275	3237	1190
σ_3 Failure, psf		988	1993	3000	989

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: VSO BK & GR CHOA W/ ARS ML, RT
LL= 123 **PL=** 27 **PI=** 96
Assumed Specific Gravity= 2.69
Remarks: Torvane 0.10 tsf

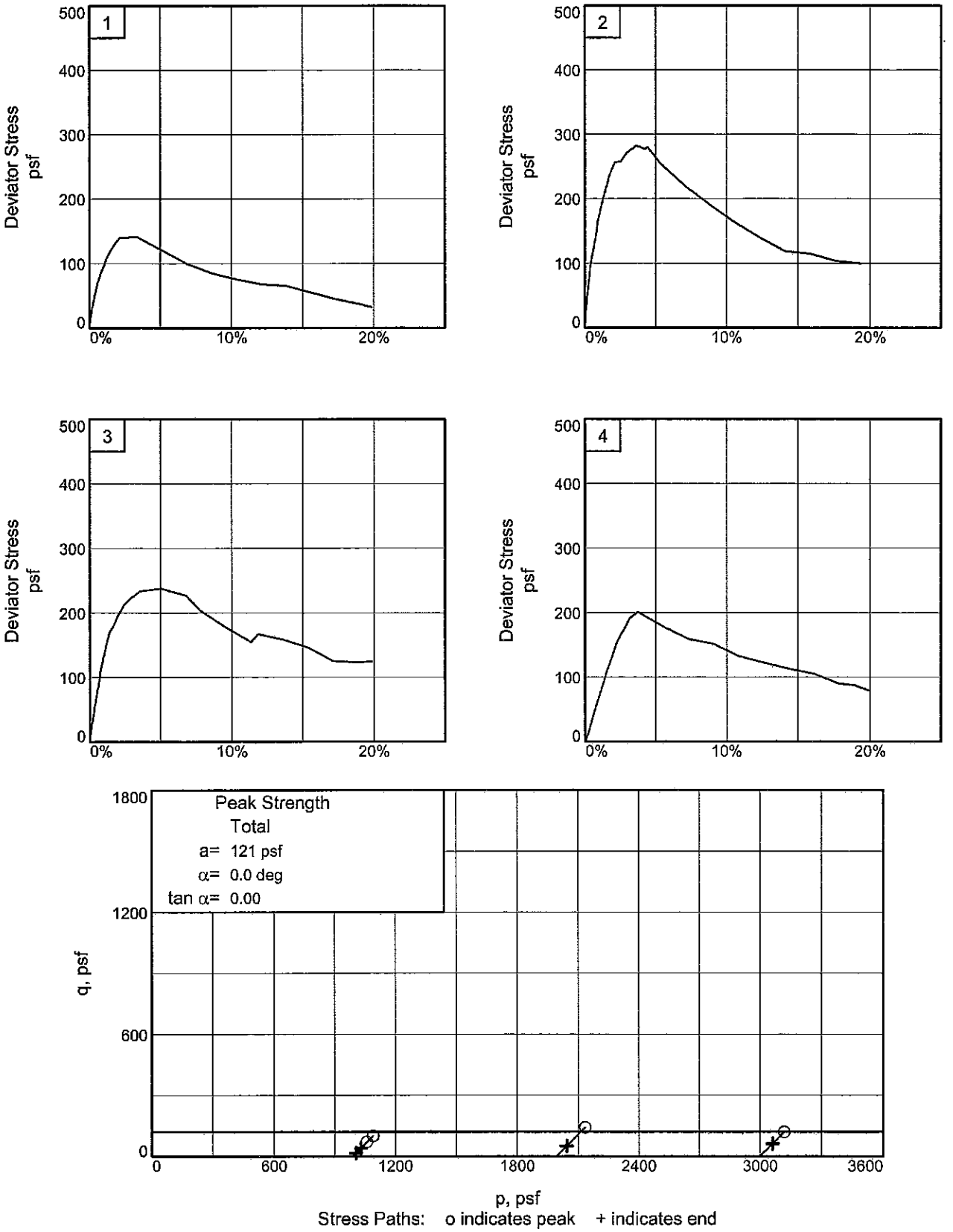
Figure _____

Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-2U **Depth:** 7.0
Sample Number: 3D
Proj. No.: 12-017108 **Date Sampled:** 7-24-12

TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

Tested By: JC



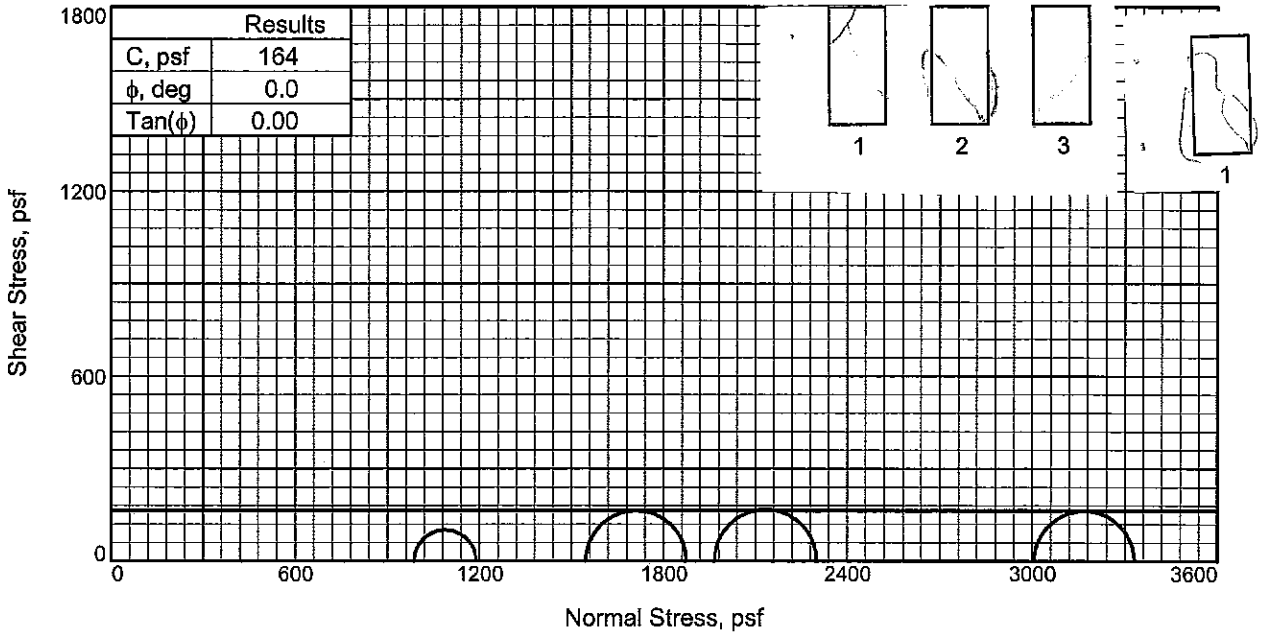
Client: USACE

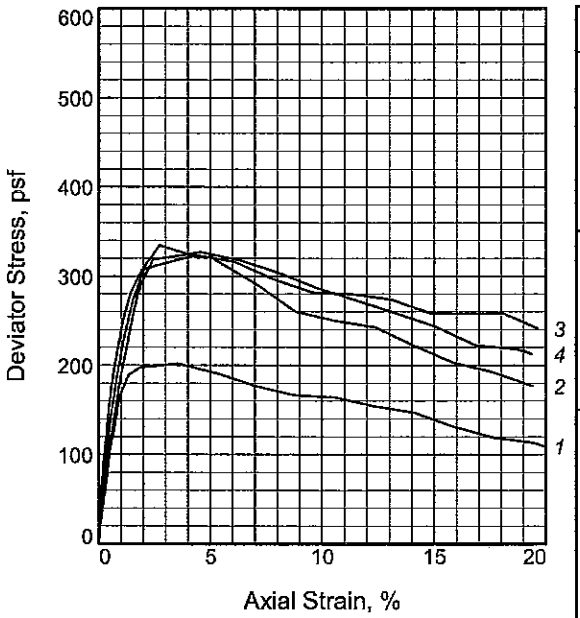
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

Source of Sample: BSFR-2U **Depth:** 7.0 **Sample Number:** 3D

Project No.: 12-017108 **Figure** _____ **Stantec, Inc.**

Tested By: JC





Sample No.		1	2	3	4
Initial	Water Content, %	66.0	63.1	57.6	68.5
	Dry Density, pcf	59.6	61.9	65.5	62.1
	Saturation, %	97.0	98.3	98.5	107.4
	Void Ratio	1.8493	1.7449	1.5914	1.7351
	Diameter, in.	1.384	1.390	1.389	1.397
	Height, in.	3.006	3.005	3.006	2.992
At Test	Water Content, %	66.0	63.1	57.6	68.5
	Dry Density, pcf	59.6	61.9	65.5	62.1
	Saturation, %	97.0	98.3	98.5	107.4
	Void Ratio	1.8493	1.7449	1.5914	1.7351
	Diameter, in.	1.384	1.390	1.389	1.397
	Height, in.	3.006	3.005	3.006	2.992
Strain rate, in./min.		1.000	1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00	0.00
Cell Pressure, psi		6.85	13.65	20.88	10.74
Fail. Stress, psf		202	334	324	327
Strain, %		3.5	2.7	4.4	4.5
Ult. Stress, psf		147	222	258	243
Strain, %		14.1	14.1	14.8	15.1
σ_1 Failure, psf		1188	2300	3330	1874
σ_3 Failure, psf		986	1966	3007	1547

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: VSO GR CH3 W/ LNS ML

LL= 57 **PL=** 16 **PI=** 41
Assumed Specific Gravity= 2.72
Remarks: Torvane=0.11 tsf

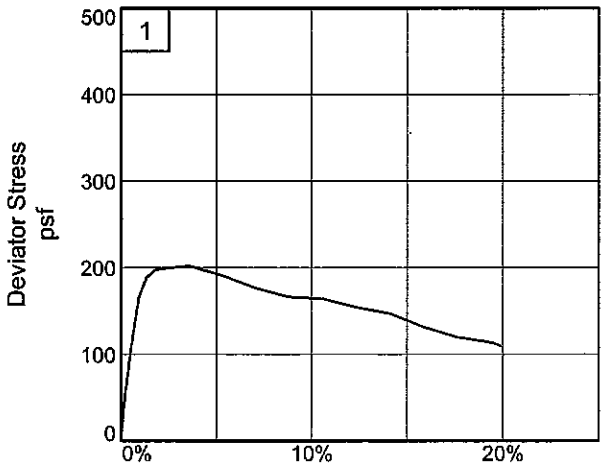
Client: USACE

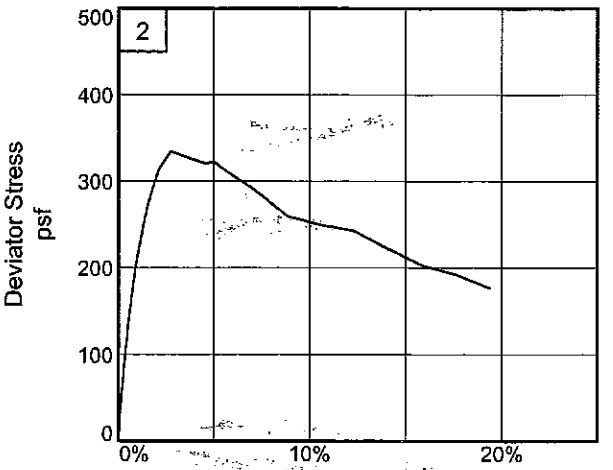
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-2U **Depth:** 14.0
Sample Number: 5C
Proj. No.: 12-017108 **Date Sampled:** 7-24-12

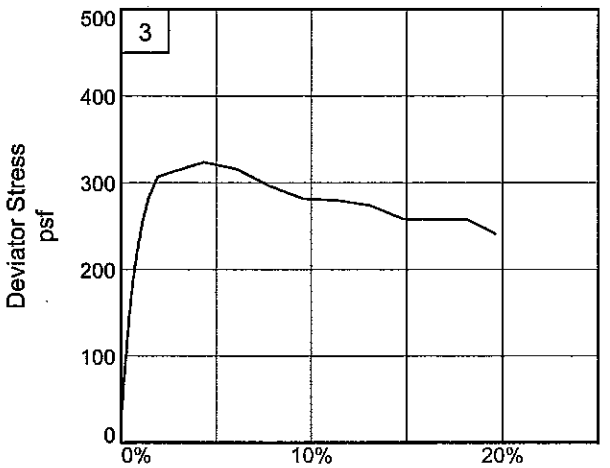
TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

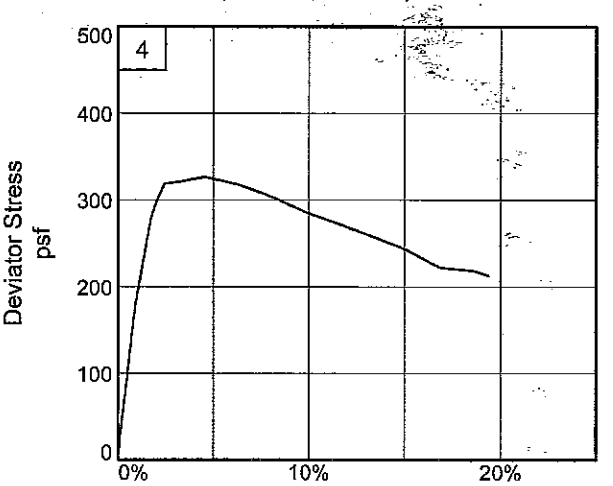
Figure _____

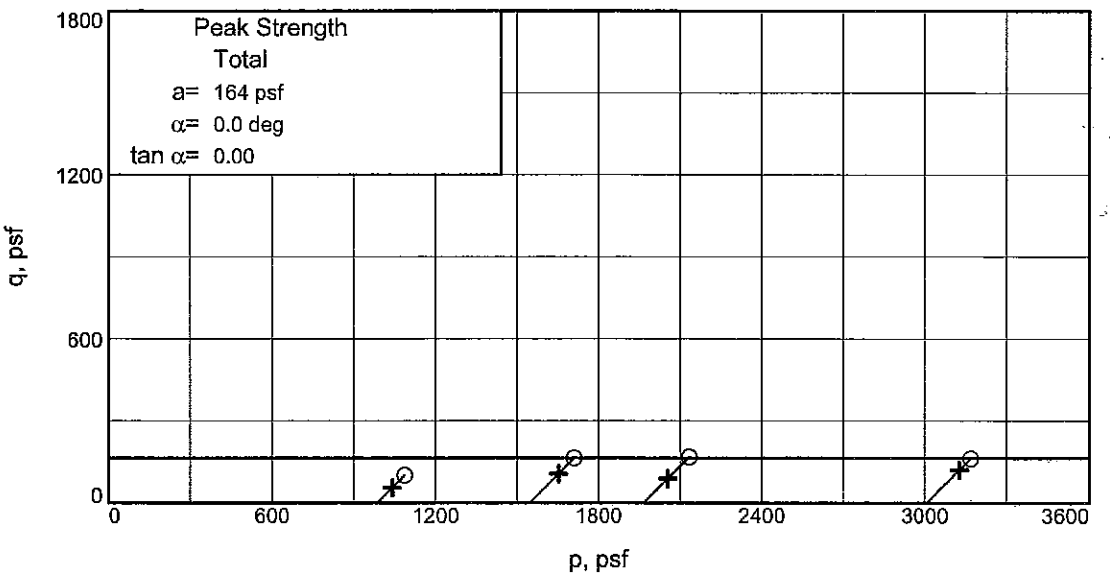
Tested By: JC











Stress Paths: o indicates peak + indicates end

Client: USACE

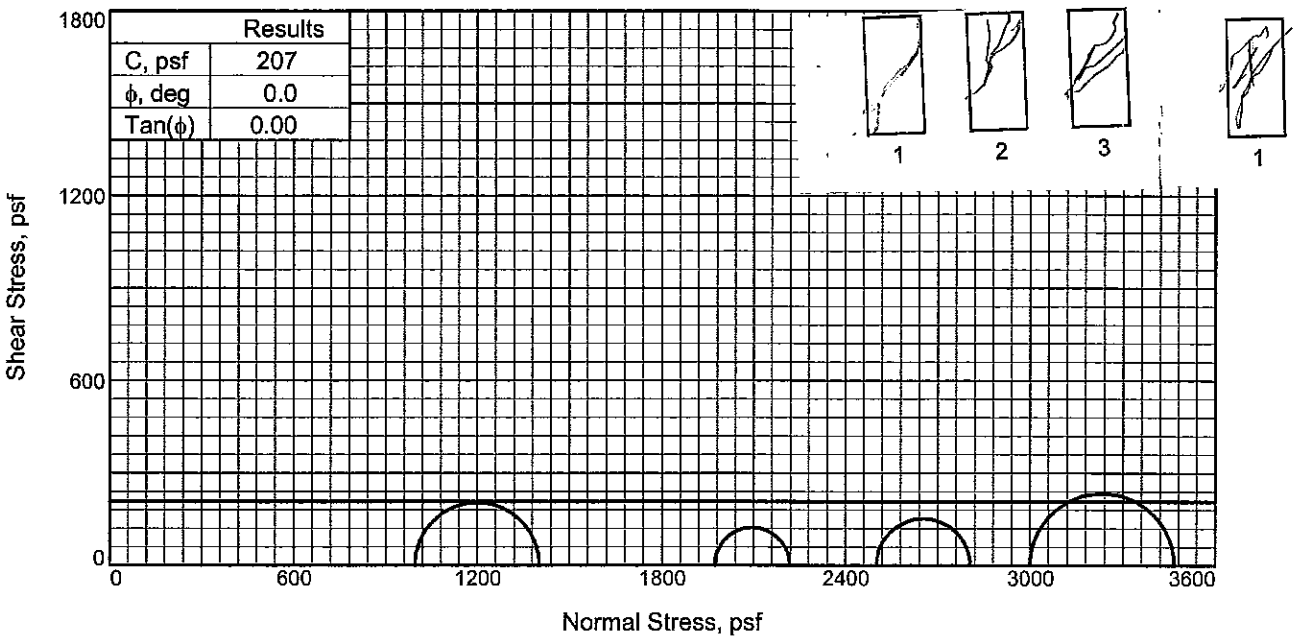
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

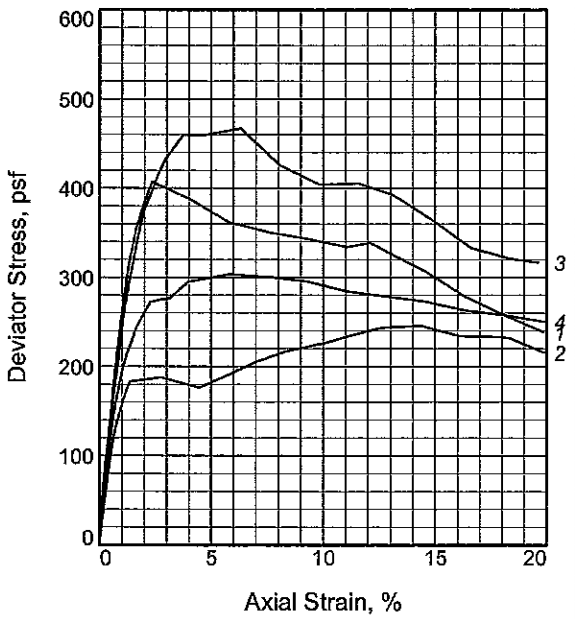
Source of Sample: BSFR-2U **Depth:** 14.0 **Sample Number:** 5C

Project No.: 12-017108 **Figure** _____

Stantec, Inc.

Tested By: JC





Sample No.		1	2	3	4
Initial	Water Content, %	46.9	44.7	43.1	43.4
	Dry Density, pcf	74.4	77.4	77.1	80.3
	Saturation, %	99.9	102.4	98.2	106.5
	Void Ratio	1.2666	1.1775	1.1848	1.0993
	Diameter, in.	1.381	1.370	1.381	1.388
	Height, in.	3.003	3.000	3.003	2.986
At Test	Water Content, %	46.9	44.7	43.1	43.4
	Dry Density, pcf	74.4	77.4	77.1	80.3
	Saturation, %	99.9	102.4	98.2	106.5
	Void Ratio	1.2666	1.1775	1.1848	1.0993
	Diameter, in.	1.381	1.370	1.381	1.388
	Height, in.	3.003	3.000	3.003	2.986
Strain rate, in./min.		1.000	1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00	0.00
Cell Pressure, psi		6.91	13.69	20.83	17.37
Fail. Stress, psf		407	246	467	303
Strain, %		2.3	14.3	6.3	5.8
Ult. Stress, psf		306	246	365	272
Strain, %		14.6	14.3	14.9	14.6
σ_1 Failure, psf		1402	2217	3466	2805
σ_3 Failure, psf		995	1971	3000	2501

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: VSO GR CL6 W/ ARS & LYS SP, SIF
LL= 44 **PL=** 21 **PI=** 23
Assumed Specific Gravity= 2.70
Remarks: Torvane=0.25 tsf

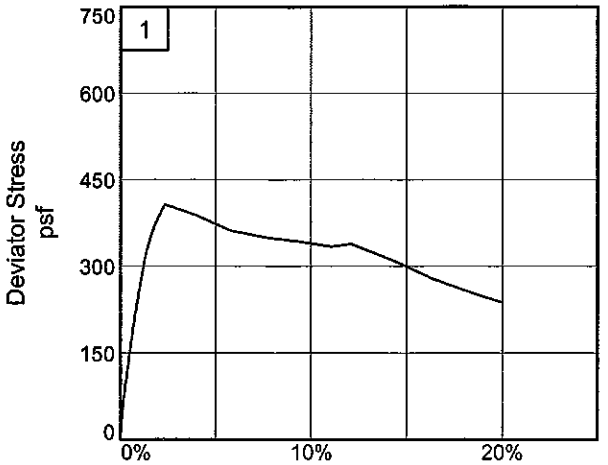
Client: USACE

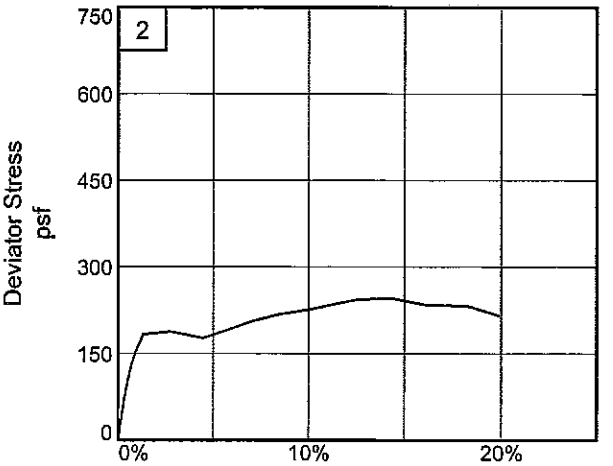
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-2U **Depth:** 21.0
Sample Number: 7B
Proj. No.: 12-017108 **Date Sampled:** 7-25-12

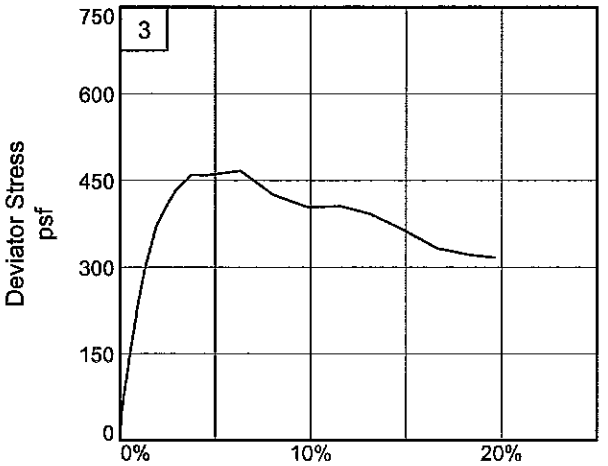
TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

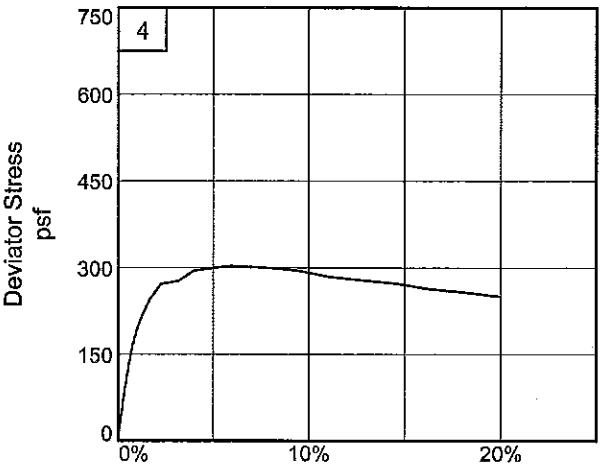
Figure _____

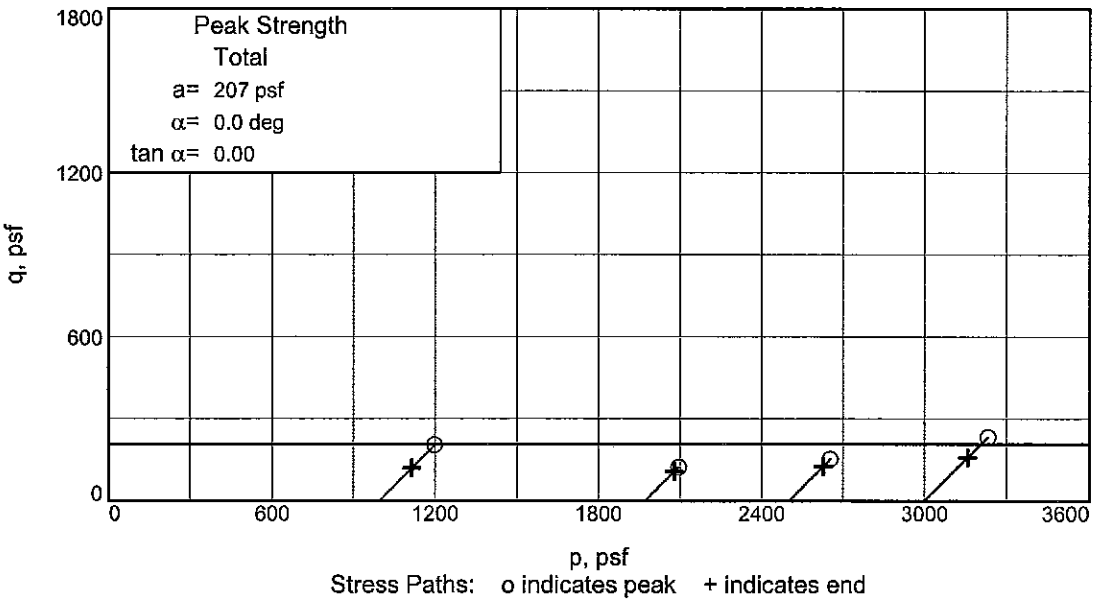
Tested By: JC











Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

Source of Sample: BSFR-2U **Depth:** 21.0 **Sample Number:** 7B

Project No.: 12-017108 **Figure** _____

Stantec, Inc.

Tested By: JC

SUMMARY OF LABORATORY TEST RESULTS

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Paris Assigned By: _____

Project Number: 12-017108

Current Date: 11/12/2012

Boring: BSFR-3U

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
1	0.0	M BK PT W/ RT	PT		438												
2	2.0	M BK PT W/ RT	PT		296												
3A	4.0	VSO BK PT W/ RT	PT	8	629	9	63	92	UC	-	80	161	545	211	334	0.15	
3B	5.0	VSO BK PT W/ RT	PT		272												
3C	6.0	VSO BK & GR CH4 W/ O	CH4		31								95	22	73		
3D	7.0	VSO GR CH4 W/ LYS ML, O	CH4		81	56	101	100	UU	0	109		105	39	66	0.07	
4A	8.0	VSO GR CH4 W/ LNS ML, O	CH4	14	49	72	107	98	UC	-	123	246	94	22	72	0.50	
4B	9.0	SO GR CH4 W/ LNS ML, O	CH4		58												
4C	10.0	VSO GR CH4 W/ LNS ML	CH4		65	61	100	99	UU	0	194		76	26	50	0.17	
4D	11.0	SO GR CH4 W/ LNS ML	CH4		59												
5A	12.0	SO GR CH4 W/ LNS ML	CH4		57												
5B	13.0	VSO GR CL4 W/ LNS & LYS CH	CL4		42	80	114	100	UU	0	170		43	20	23	0.15	
5C	14.0	SO GR CH3 W/ LNS & LYS ML	CH3		81	51	92	84					77	21	56		GS=2.43, CON
5D	15.0	SO GR CH3 W/ LNS & LYS ML	CH3		60												
6A	16.0	LGR ML W/ ARS CH, SIF	ML		33												
6B	17.0	LGR ML W/ ARS CH, SIF	ML		31												SV
6C	18.0	LGR ML W/ ARS CH, SIF	ML		30												
6D	19.0	LGR ML W/ ARS CH, SIF	ML		28												
7A	20.0	LGR ML W/ ARS CH, SIF	ML		32												
7B	21.0	LGR ML W/ ARS CH, SIF	ML		31												
7C	22.0	LGR ML W/ ARS CH, SIF	ML		28												
7D	23.0	LGR ML W/ ARS CH, SIF	ML		28												
8A	24.0	LGR SM W/ ARS CH, CC	SM		23												
8B	25.0	LGR SM W/ ARS CH, CC	SM		24												
8C	26.0	LGR SM W/ ARS CH, CC	SM		25												
8D	27.0	LGR SM W/ ARS CH, CC	SM		23												
9A	28.0	LGR SM W/ ARS CH	SM		23												
9B	29.0	LGR SM W/ ARS CH	SM		22												
9C	30.0	LGR SM W/ ARS CH	SM		23												
9D	31.0	M LGR CL6 W/ ARS SM	CL6	8	26	99	125	100	UC	-	890	1781	46	14	32	0.72	

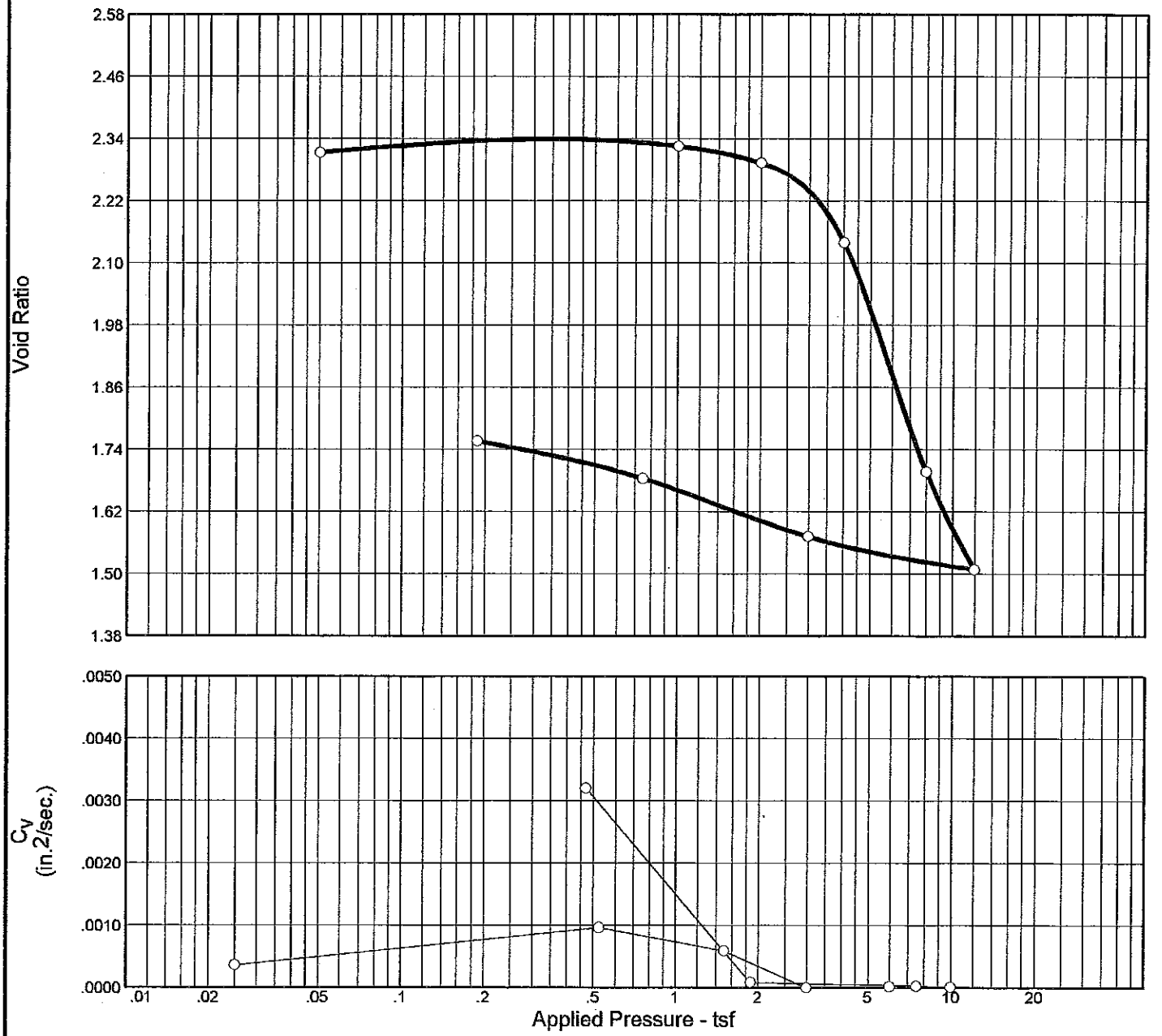
Remarks: _____

Checked By: _____

Stantec Consulting Services Inc.

File Name: Final BSFR-3U_be_boring_log_v1C

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture							
84.0 %	81.2 %	50.6	77	56	2.43	2.05	1.04	2.351

MATERIAL DESCRIPTION	USCS	AASHTO
SO GR CH3 W/ LNS & LYS ML	CH3	

Project No. 12-017108 **Client:** USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

Source: BSFR-3U **Sample No.:** 5C **Elev./Depth:** 14.0

FFEBJV, LLC

St Rose, LA

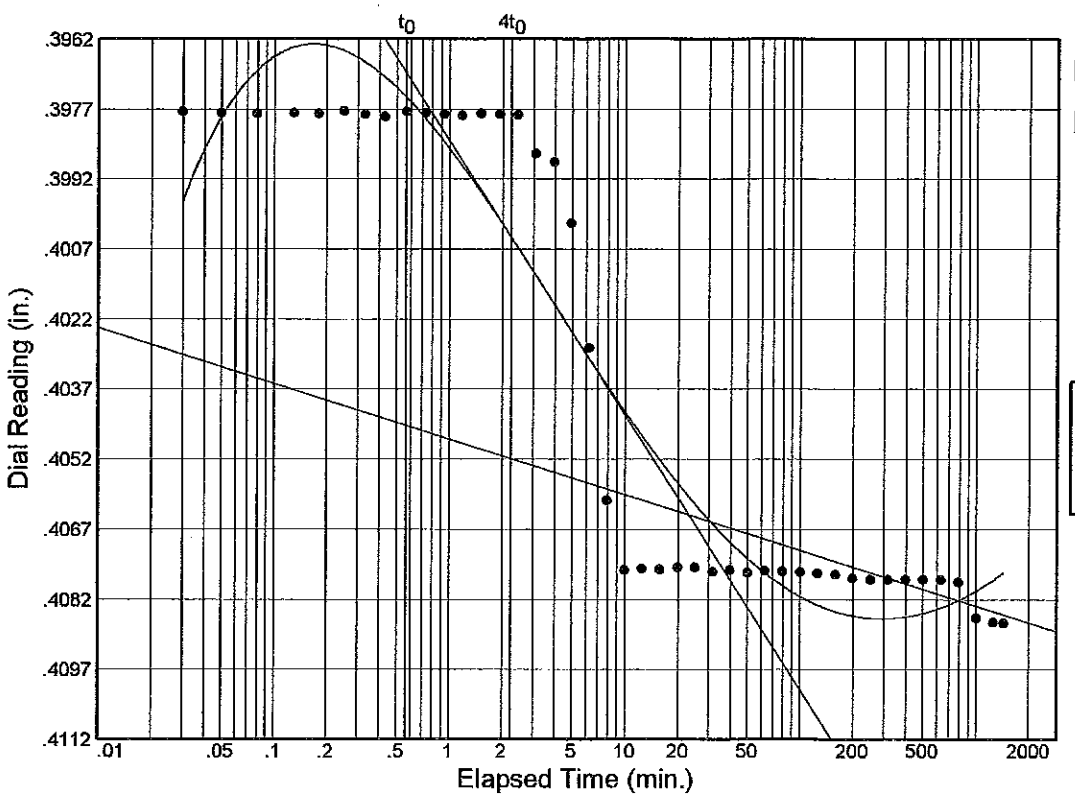
Remarks:

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

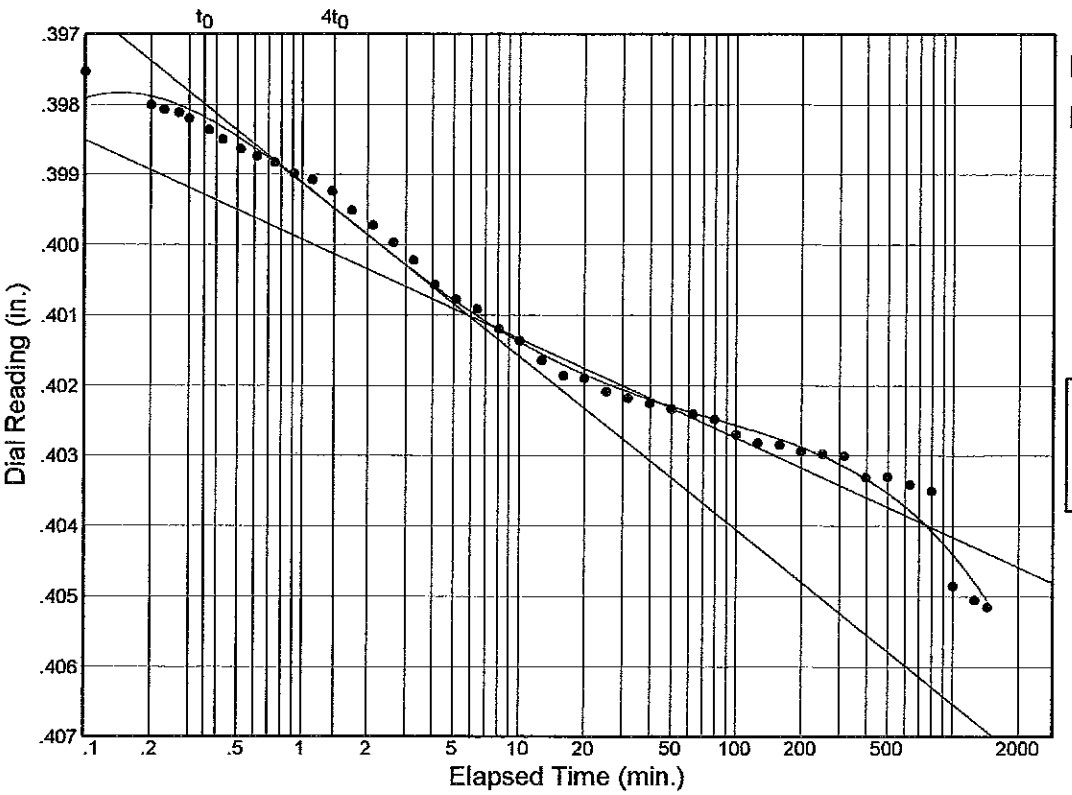
Source: BSFR-3U Sample No.: 5C Elev./Depth: 14.0



Load No.= 1
Load= 0.05 tsf
D_0 = 0.39442
D_{50} = 0.40041
D_{100} = 0.40640
T_{50} = 2.21 min.

C_v @ T_{50}
0.0004 in.^{2}/sec.

C_α = 0.001



Load No.= 2
Load= 1.00 tsf
D_0 = 0.39687
D_{50} = 0.39893
D_{100} = 0.40100
T_{50} = 0.84 min.

C_v @ T_{50}
0.0010 in.^{2}/sec.

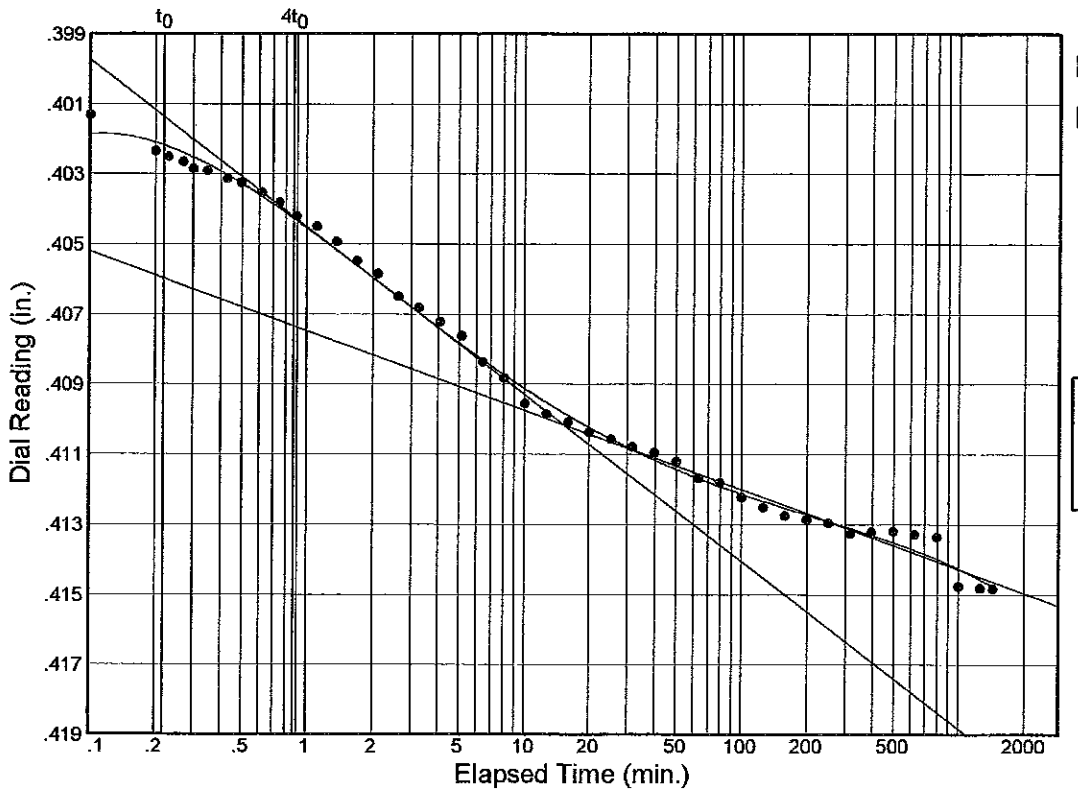
C_α = 0.001

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

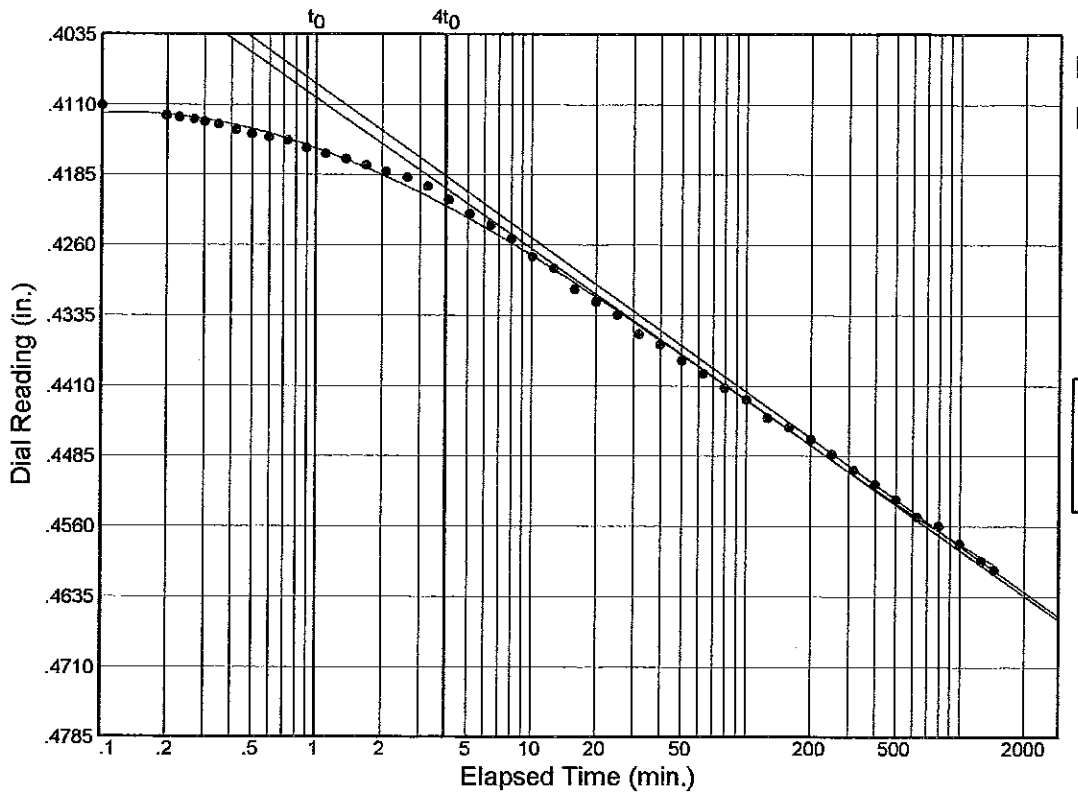
Source: BSFR-3U Sample No.: 5C Elev./Depth: 14.0



Load No.= 3
Load= 2.00 tsf
D_0 = 0.40008
D_{50} = 0.40512
D_{100} = 0.41016
T_{50} = 1.34 min.

C_v @ T_{50}
0.0006 in.^{2}/sec.

C_α = 0.002



Load No.= 4
Load= 4.00 tsf
D_0 = 0.40947
D_{50} = 0.44595
D_{100} = 0.48242
T_{50} = 164.21 min.

C_v @ T_{50}
0.0000 in.^{2}/sec.

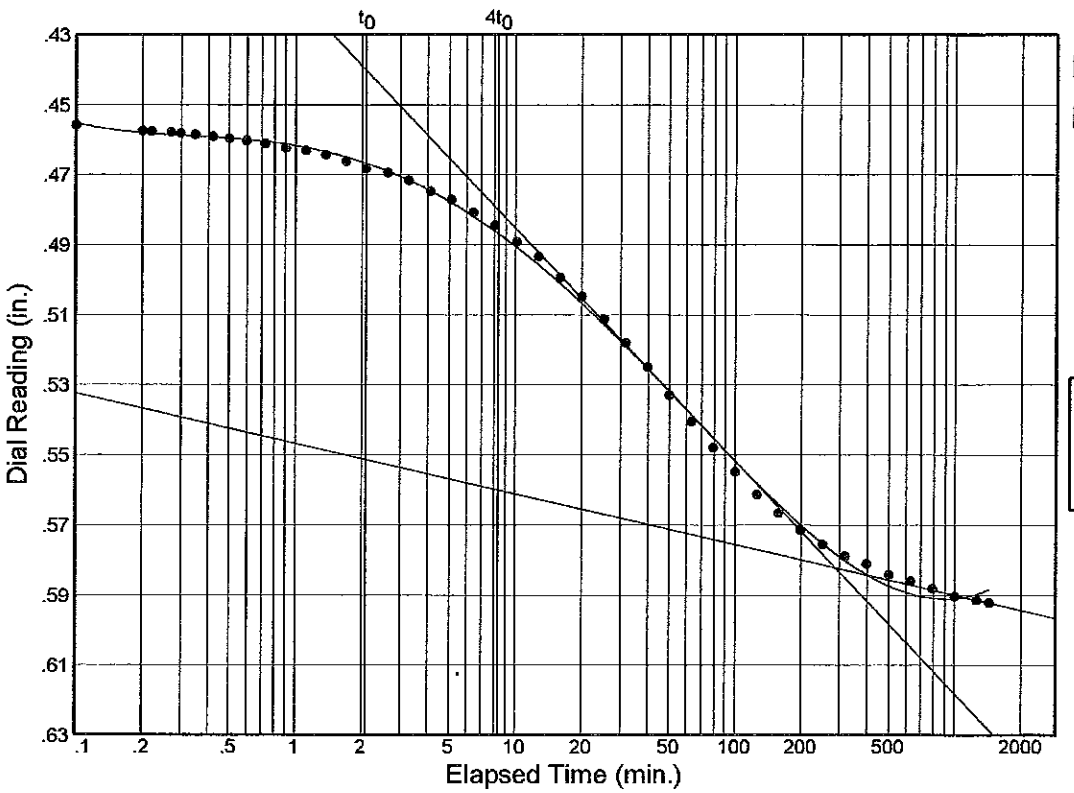
C_α = 0.017

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

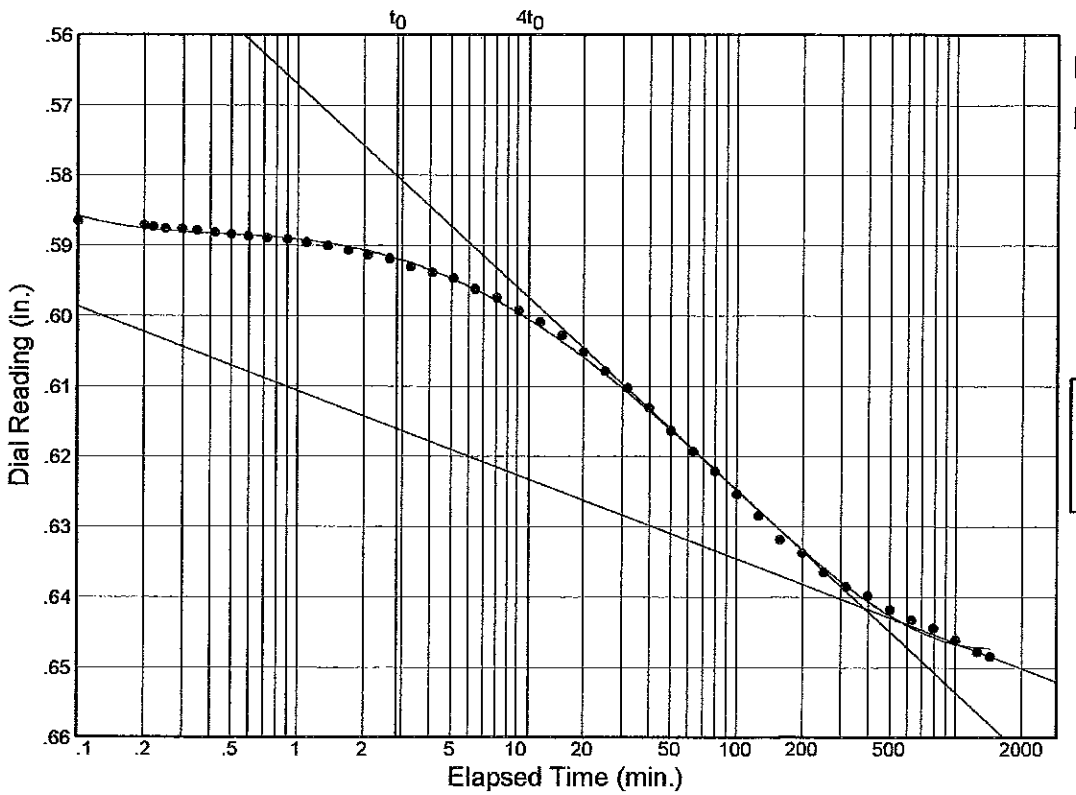
Source: BSFR-3U Sample No.: 5C Elev./Depth: 14.0



Load No.= 5
Load= 8.00 tsf
D_0 = 0.44668
D_{50} = 0.51441
D_{100} = 0.58213
T_{50} = 26.94 min.

C_v @ T_{50}
0.0000 in.^{2}/sec.

C_α = 0.015



Load No.= 6
Load= 12.00 tsf
D_0 = 0.58320
D_{50} = 0.61239
D_{100} = 0.64157
T_{50} = 36.45 min.

C_v @ T_{50}
0.0000 in.^{2}/sec.

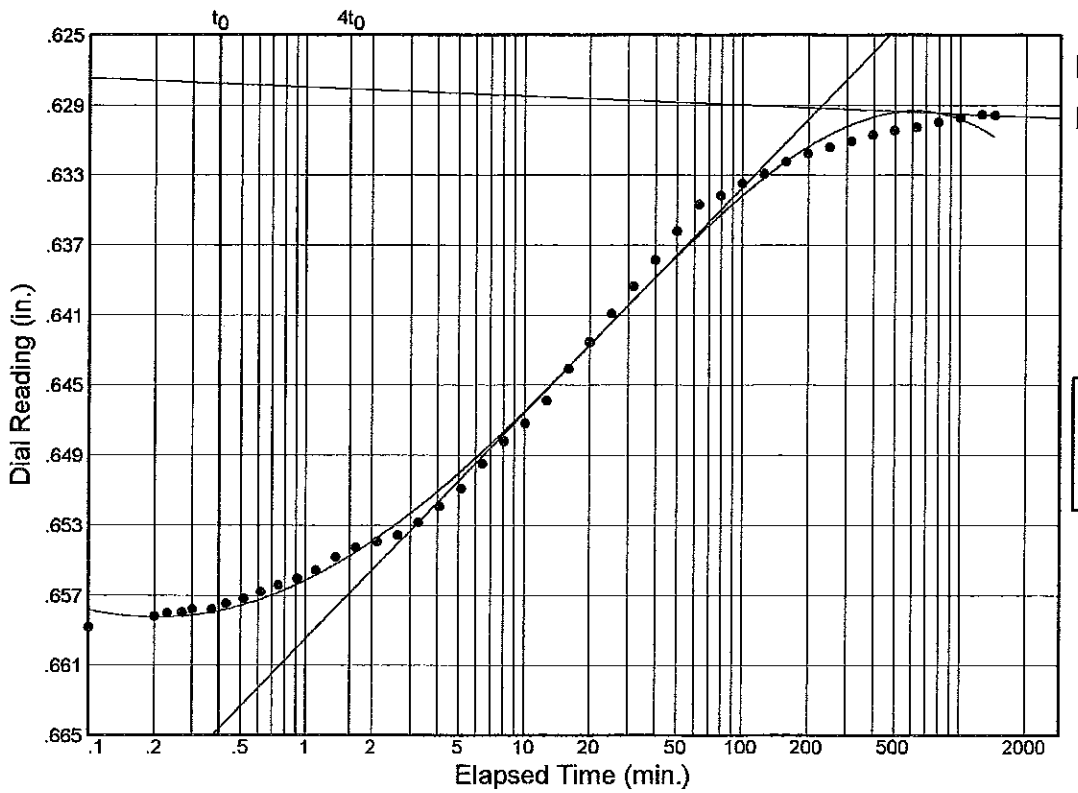
C_α = 0.015

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

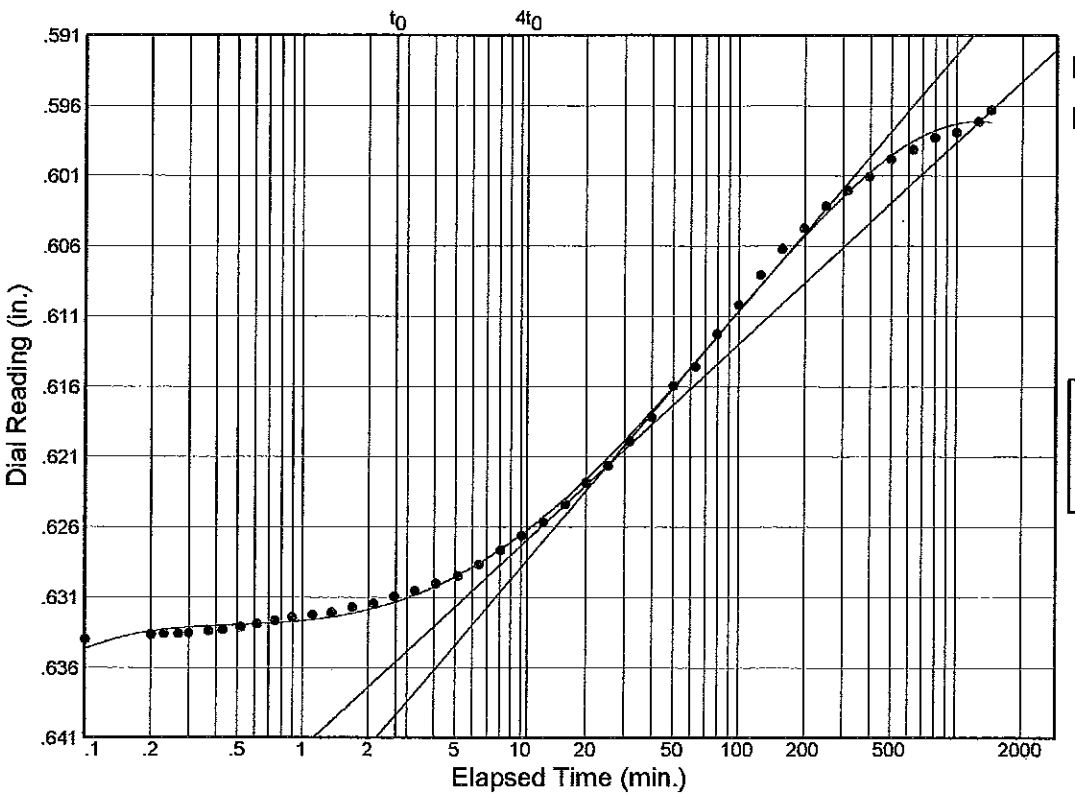
Source: BSFR-3U Sample No.: 5C Elev./Depth: 14.0



Load No.= 7
Load= 3.00 tsf
D_0 = 0.66103
D_{50} = 0.64510
D_{100} = 0.62917
T_{50} = 12.92 min.

C_v @ T_{50}
0.0000 in.^{2}/sec.

C_α = 0.001



Load No.= 8
Load= 0.75 tsf
D_0 = 0.63642
D_{50} = 0.62903
D_{100} = 0.62163
T_{50} = 5.73 min.

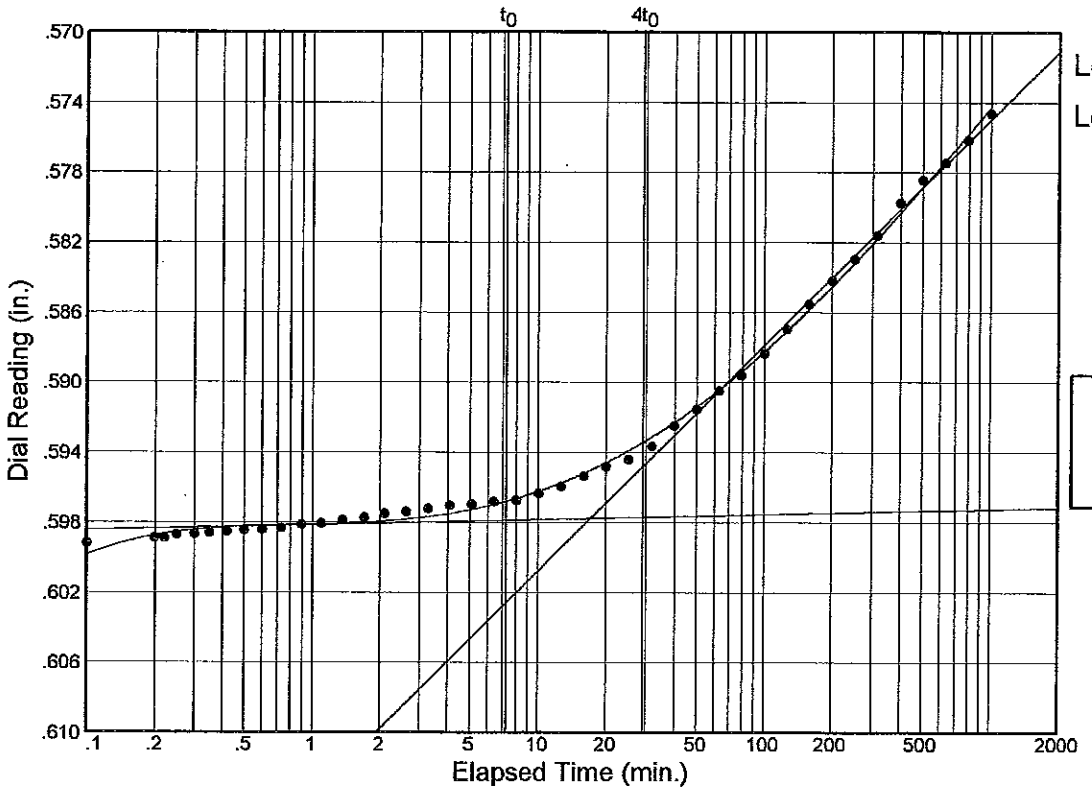
C_v @ T_{50}
0.0001 in.^{2}/sec.

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

Source: BSFR-3U Sample No.: 5C Elev./Depth: 14.0



Load No.= 9
Load= 0.19 tsf
D_0 = 0.60015
D_{50} = 0.59896
D_{100} = 0.59777
T_{50} = 0.17 min.

C_v @ T_{50}
0.0032 in.^{2}/sec.

CONSOLIDATION TEST DATA

Client: USACE
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans
Project Number: 12-017108

Sample Data

Source: BSFR-3U
Sample No.: 5C
Elev. or Depth: 14.0 **Sample Length(in./cm.):**
Location:
Description: SO GR CH3 W/ LNS & LYS ML
Liquid Limit: 77 **Plasticity Index:** 56
USCS: CH3 **AASHTO:** **Figure No.:**
Testing Remarks:

Test Specimen Data

TOTAL SAMPLE		BEFORE TEST	AFTER TEST	
Wet w+t =	147.48 g.	Consolidometer # = 3	Wet w+t =	737.35 g.
Dry w+t =	95.50 g.		Dry w+t =	446.30 g.
Tare Wt. =	31.51 g.	Spec. Gravity = 2.43	Tare Wt. =	297.36 g.
Height =	1.00 in.	Height = 1.00 in.		
Diameter =	3.99 in.	Diameter = 4.00 in.		
Weight =	300.88 g.	Defl. Table = n/a		
Moisture =	81.2 %	Ht. Solids = 0.2979 in.	Moisture =	195.4 %
Wet Den. =	91.6 pcf	Dry Wt. = 166.31 g.	Dry Wt. =	148.94 g.*
Dry Den. =	50.6 pcf	Void Ratio = 2.351	Void Ratio =	1.757
		Saturation = 84.0 %		

* Final dry weight used in calculations

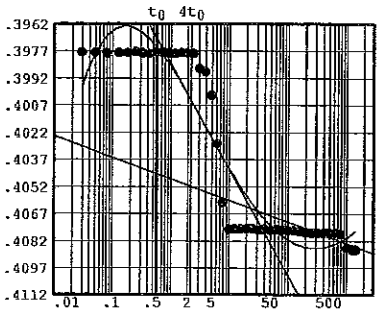
End-of-Load Summary

Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (in.^{2}/sec.)	C_α	Void Ratio	% Compression /Swell
start	0.39772				2.351	
0.05	0.40870	0.00000	0.0004	0.001	2.314	1.1 Comprs.
1.00	0.40515	0.00000			2.326	0.7 Comprs.
2.00	0.41484	0.00000			2.293	1.7 Comprs.
4.00	0.46070	0.00000			2.139	6.3 Comprs.
8.00	0.59221	0.00000			1.698	19.5 Comprs.
12.00	0.64846	0.00000			1.509	25.1 Comprs.
3.00	0.62959	0.00000			1.572	23.2 Comprs.
0.75	0.59629	0.00000			1.684	19.9 Comprs.
0.19	0.57465	0.00000			1.757	17.7 Comprs.

C_c = 1.04 P_c = 2.05 tsf C_r = 0.14

Pressure: 0.05 tsf | TEST READINGS | Load No. 1

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.39772	23	12.53	0.40754
2	0.03	0.39776	24	15.80	0.40755
3	0.05	0.39778	25	19.90	0.40752
4	0.08	0.39780	26	25.07	0.40752
5	0.13	0.39778	27	31.58	0.40761
6	0.18	0.39779	28	39.77	0.40757
7	0.25	0.39774	29	50.07	0.40762
8	0.33	0.39781	30	63.05	0.40758
9	0.43	0.39786	31	79.38	0.40760
10	0.57	0.39776	32	99.95	0.40761
11	0.73	0.39778	33	125.85	0.40764
12	0.93	0.39781	34	158.45	0.40766
13	1.18	0.39784	35	199.48	0.40774
14	1.52	0.39779	36	251.15	0.40777
15	1.93	0.39781	37	316.20	0.40778
16	2.45	0.39782	38	398.07	0.40777
17	3.10	0.39865	39	501.15	0.40778
18	3.92	0.39883	40	630.93	0.40778
19	4.95	0.40015	41	794.30	0.40783
20	6.25	0.40281	42	999.97	0.40860
21	7.88	0.40608	43	1258.90	0.40869
22	9.95	0.40757	44	1440.20	0.40870



Void Ratio = 2.314 Compression = 1.1 %

D_0 = 0.39442 D_{50} = 0.40041 D_{100} = 0.40640

C_v at 2.2 min. = 0.0004 in.^{2}/sec. C_α = 0.001

Pressure: 1.00 tsf TEST READINGS Load No. 2

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.39759	16	2.12	0.39972	31	63.23	0.40241
2	0.10	0.39753	17	2.63	0.39997	32	79.57	0.40248
3	0.20	0.39801	18	3.28	0.40022	33	100.13	0.40270
4	0.23	0.39807	19	4.10	0.40057	34	126.03	0.40282
5	0.27	0.39812	20	5.13	0.40078	35	158.63	0.40285
6	0.30	0.39820	21	6.43	0.40091	36	199.67	0.40294
7	0.37	0.39836	22	8.07	0.40120	37	251.33	0.40297
8	0.43	0.39850	23	10.13	0.40137	38	316.37	0.40300
9	0.52	0.39864	24	12.72	0.40164	39	398.25	0.40331
10	0.62	0.39874	25	15.98	0.40186	40	501.33	0.40330
11	0.75	0.39883	26	20.08	0.40190	41	631.10	0.40341
12	0.92	0.39898	27	25.25	0.40209	42	794.48	0.40350
13	1.12	0.39907	28	31.75	0.40218	43	1000.15	0.40485
14	1.38	0.39924	29	39.95	0.40225	44	1259.08	0.40505
15	1.70	0.39951	30	50.25	0.40234	45	1440.02	0.40515

Void Ratio = 2.326 Compression = 0.7 %

Pressure: 2.00 tsf TEST READINGS Load No. 3

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.40074	16	2.12	0.40585	31	63.23	0.41168
2	0.10	0.40131	17	2.63	0.40651	32	79.57	0.41181
3	0.20	0.40234	18	3.28	0.40681	33	100.13	0.41222
4	0.23	0.40251	19	4.10	0.40721	34	126.03	0.41252
5	0.27	0.40266	20	5.13	0.40761	35	158.63	0.41276
6	0.30	0.40286	21	6.43	0.40837	36	199.67	0.41286
7	0.35	0.40291	22	8.07	0.40882	37	251.33	0.41296
8	0.43	0.40313	23	10.12	0.40954	38	316.37	0.41326
9	0.50	0.40325	24	12.72	0.40985	39	398.25	0.41322
10	0.62	0.40354	25	15.97	0.41008	40	501.33	0.41319
11	0.75	0.40382	26	20.08	0.41036	41	631.10	0.41329
12	0.90	0.40420	27	25.25	0.41057	42	794.48	0.41335
13	1.12	0.40450	28	31.75	0.41078	43	1000.15	0.41476
14	1.38	0.40494	29	39.93	0.41096	44	1259.08	0.41481
15	1.70	0.40549	30	50.25	0.41120	45	1440.45	0.41484

Void Ratio = 2.293 Compression = 1.7 %

Pressure: 4.00 tsf TEST READINGS Load No. 4

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.40880	16	2.10	0.41816	31	63.22	0.43972
2	0.10	0.41107	17	2.62	0.41877	32	79.57	0.44129
3	0.20	0.41213	18	3.27	0.41976	33	100.13	0.44247
4	0.23	0.41233	19	4.10	0.42114	34	126.02	0.44445
5	0.27	0.41257	20	5.13	0.42266	35	158.62	0.44546
6	0.30	0.41280	21	6.43	0.42387	36	199.67	0.44671
7	0.35	0.41310	22	8.07	0.42534	37	251.32	0.44828
8	0.42	0.41371	23	10.12	0.42724	38	316.37	0.45000
9	0.50	0.41410	24	12.72	0.42848	39	398.25	0.45153
10	0.60	0.41449	25	15.97	0.43071	40	501.32	0.45314
11	0.73	0.41482	26	20.08	0.43207	41	631.10	0.45502
12	0.90	0.41563	27	25.25	0.43348	42	794.47	0.45596
13	1.10	0.41626	28	31.75	0.43551	43	1000.15	0.45785
14	1.37	0.41681	29	39.93	0.43661	44	1259.07	0.45974
15	1.70	0.41747	30	50.25	0.43831	45	1440.37	0.46070

Void Ratio = 2.139 Compression = 6.3 %

Pressure: 8.00 tsf TEST READINGS Load No. 5

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.45163	16	2.10	0.46821	31	63.22	0.54035
2	0.10	0.45589	17	2.62	0.46956	32	79.57	0.54787
3	0.20	0.45749	18	3.27	0.47161	33	100.13	0.55480
4	0.22	0.45768	19	4.10	0.47478	34	126.02	0.56133
5	0.27	0.45789	20	5.13	0.47723	35	158.62	0.56667
6	0.30	0.45826	21	6.43	0.48084	36	199.67	0.57150
7	0.35	0.45859	22	8.07	0.48445	37	251.33	0.57549
8	0.42	0.45918	23	10.12	0.48926	38	316.37	0.57887
9	0.50	0.45966	24	12.72	0.49342	39	398.25	0.58102
10	0.60	0.46029	25	15.97	0.49934	40	501.33	0.58411
11	0.73	0.46115	26	20.08	0.50467	41	631.10	0.58602
12	0.90	0.46236	27	25.25	0.51124	42	794.47	0.58814
13	1.12	0.46316	28	31.75	0.51802	43	1000.15	0.59028
14	1.37	0.46442	29	39.93	0.52489	44	1259.07	0.59137
15	1.70	0.46617	30	50.25	0.53287	45	1440.00	0.59221

Void Ratio = 1.698 Compression = 19.5 %

Pressure: 12.00 tsf | TEST READINGS | Load No. 6

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.58453	16	2.10	0.59135	31	63.23	0.61924
2	0.10	0.58648	17	2.62	0.59190	32	79.57	0.62210
3	0.20	0.58708	18	3.28	0.59302	33	100.13	0.62543
4	0.22	0.58732	19	4.10	0.59385	34	126.03	0.62852
5	0.25	0.58758	20	5.13	0.59467	35	158.63	0.63184
6	0.30	0.58770	21	6.43	0.59618	36	199.67	0.63381
7	0.35	0.58787	22	8.07	0.59742	37	251.33	0.63648
8	0.42	0.58814	23	10.12	0.59925	38	316.37	0.63850
9	0.50	0.58839	24	12.72	0.60086	39	398.25	0.63975
10	0.60	0.58862	25	15.97	0.60280	40	501.33	0.64182
11	0.73	0.58893	26	20.08	0.60513	41	631.10	0.64328
12	0.90	0.58915	27	25.25	0.60786	42	794.48	0.64444
13	1.10	0.58958	28	31.75	0.61024	43	1000.15	0.64611
14	1.37	0.58999	29	39.93	0.61310	44	1259.08	0.64776
15	1.70	0.59068	30	50.25	0.61632	45	1440.38	0.64846

Void Ratio = 1.509 Compression = 25.1 %

Pressure: 3.00 tsf | TEST READINGS | Load No. 7

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.66311	16	2.12	0.65392	31	63.23	0.63469
2	0.10	0.65883	17	2.63	0.65357	32	79.58	0.63416
3	0.20	0.65819	18	3.28	0.65285	33	100.15	0.63348
4	0.23	0.65803	19	4.10	0.65191	34	126.03	0.63293
5	0.27	0.65797	20	5.13	0.65091	35	158.63	0.63225
6	0.30	0.65778	21	6.43	0.64949	36	199.67	0.63176
7	0.37	0.65778	22	8.07	0.64819	37	251.33	0.63142
8	0.43	0.65745	23	10.13	0.64717	38	316.38	0.63109
9	0.52	0.65716	24	12.72	0.64589	39	398.25	0.63070
10	0.62	0.65680	25	15.98	0.64405	40	501.33	0.63044
11	0.75	0.65642	26	20.08	0.64254	41	631.12	0.63026
12	0.92	0.65603	27	25.25	0.64091	42	794.48	0.62998
13	1.12	0.65558	28	31.77	0.63936	43	1000.15	0.62974
14	1.38	0.65481	29	39.95	0.63784	44	1259.08	0.62956
15	1.70	0.65425	30	50.25	0.63622	45	1440.23	0.62959

Void Ratio = 1.572 Compression = 23.2 %

Pressure: 0.75 tsf | TEST READINGS | Load No. 8

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.63618	16	2.12	0.63144	31	63.23	0.61456
2	0.10	0.63401	17	2.63	0.63095	32	79.57	0.61228
3	0.20	0.63365	18	3.28	0.63053	33	100.13	0.61021
4	0.23	0.63360	19	4.10	0.63003	34	126.03	0.60805
5	0.27	0.63358	20	5.13	0.62949	35	158.63	0.60622
6	0.30	0.63352	21	6.43	0.62868	36	199.67	0.60474
7	0.37	0.63339	22	8.07	0.62766	37	251.33	0.60315
8	0.43	0.63332	23	10.13	0.62659	38	316.38	0.60201
9	0.52	0.63314	24	12.72	0.62566	39	398.25	0.60106
10	0.62	0.63288	25	15.98	0.62437	40	501.33	0.59980
11	0.75	0.63267	26	20.08	0.62284	41	631.12	0.59914
12	0.90	0.63242	27	25.25	0.62164	42	794.48	0.59829
13	1.12	0.63227	28	31.75	0.61989	43	1000.15	0.59789
14	1.37	0.63210	29	39.95	0.61816	44	1259.08	0.59713
15	1.70	0.63173	30	50.25	0.61596	45	1440.33	0.59629

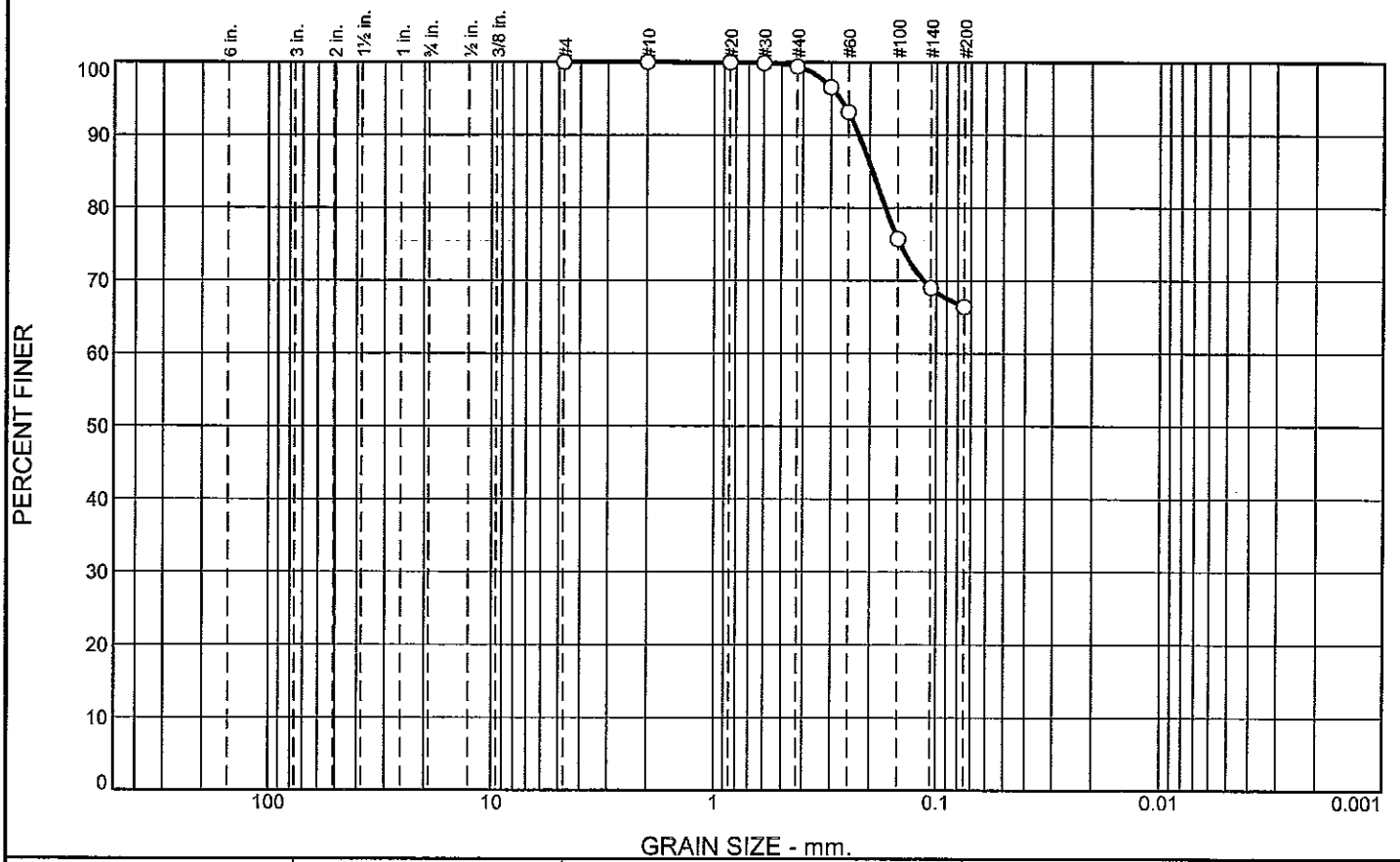
Void Ratio = 1.684 Compression = 19.9 %

Pressure: 0.19 tsf | TEST READINGS | Load No. 9

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.59968	16	2.10	0.59752	31	63.22	0.59049
2	0.10	0.59917	17	2.62	0.59741	32	79.55	0.58959
3	0.20	0.59891	18	3.27	0.59721	33	100.13	0.58836
4	0.22	0.59891	19	4.08	0.59704	34	126.02	0.58699
5	0.25	0.59871	20	5.12	0.59695	35	158.62	0.58556
6	0.30	0.59869	21	6.42	0.59682	36	199.65	0.58422
7	0.35	0.59861	22	8.05	0.59675	37	251.32	0.58296
8	0.42	0.59854	23	10.12	0.59634	38	316.37	0.58161
9	0.50	0.59847	24	12.70	0.59595	39	398.23	0.57976
10	0.60	0.59841	25	15.97	0.59535	40	501.32	0.57843
11	0.73	0.59834	26	20.07	0.59482	41	631.08	0.57747
12	0.90	0.59814	27	25.23	0.59440	42	794.47	0.57615
13	1.10	0.59804	28	31.75	0.59366	43	1000.13	0.57465
14	1.37	0.59787	29	39.93	0.59247			
15	1.70	0.59774	30	50.23	0.59152			

Void Ratio = 1.757 Compression = 17.7 %

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.6	33.0	66.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	100.0		
#20	100.0		
#30	99.9		
#40	99.4		
#50	96.6		
#60	93.2		
#100	75.7		
#140	69.0		
#200	66.4		

* (no specification provided)

Soil Description

LGR ML W/ ARS CH, SIF

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.2244 D_{85}= 0.1950 D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SP AASHTO=

Remarks

Source of Sample: BSFR-3U **Depth:** 17.0
Sample Number: 6B **Date:** 7-25-12

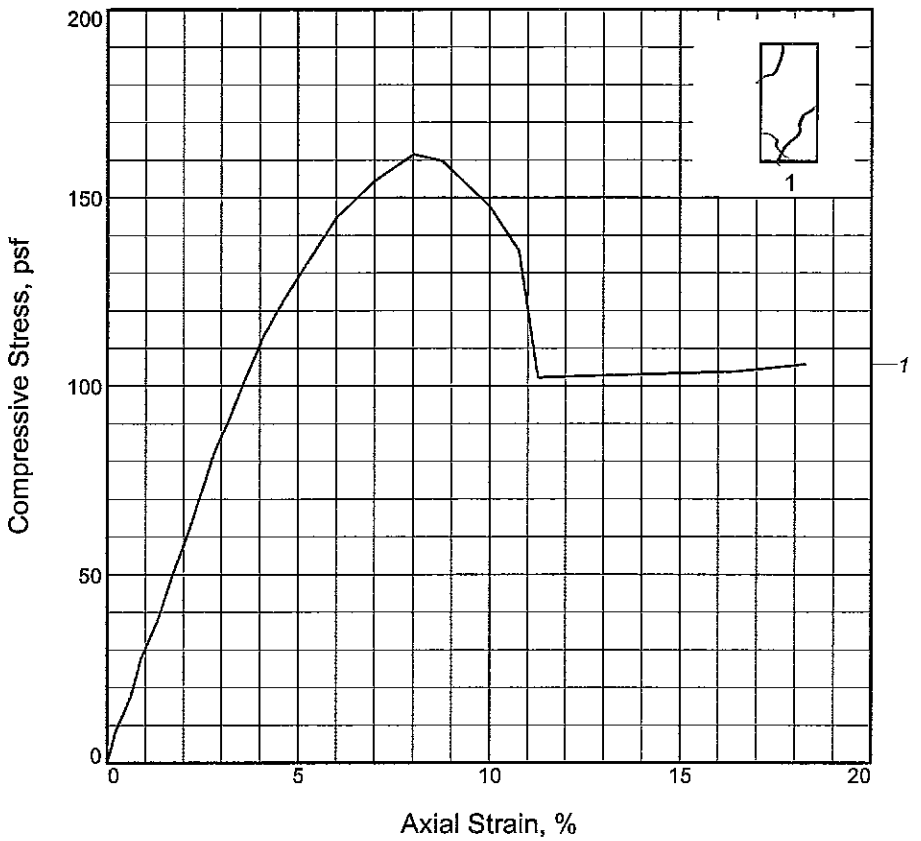
Stantec

Saint Rose, Louisiana

Client: USACE
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Project No: 12-017108 **Figure**

Tested By: JC

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	161			
Undrained shear strength, psf	81			
Failure strain, %	8.0			
Strain rate, in./min.	1.000			
Water content, %	629.3			
Wet density, pcf	63.3			
Dry density, pcf	8.7			
Saturation, %	92.5			
Void ratio	17.3498			
Specimen diameter, in.	1.375			
Specimen height, in.	3.004			
Height/diameter ratio	2.18			

Description: VSO BK PT W/ RT

LL = 545	**PL =** 211	**PI =** 334	**Assumed GS=** 2.55	**Type:** UNDISTURBED

Project No.: 12-017108
Date Sampled: 7-25-12
Remarks:
Torvane=0.15 tsf

Figure _____

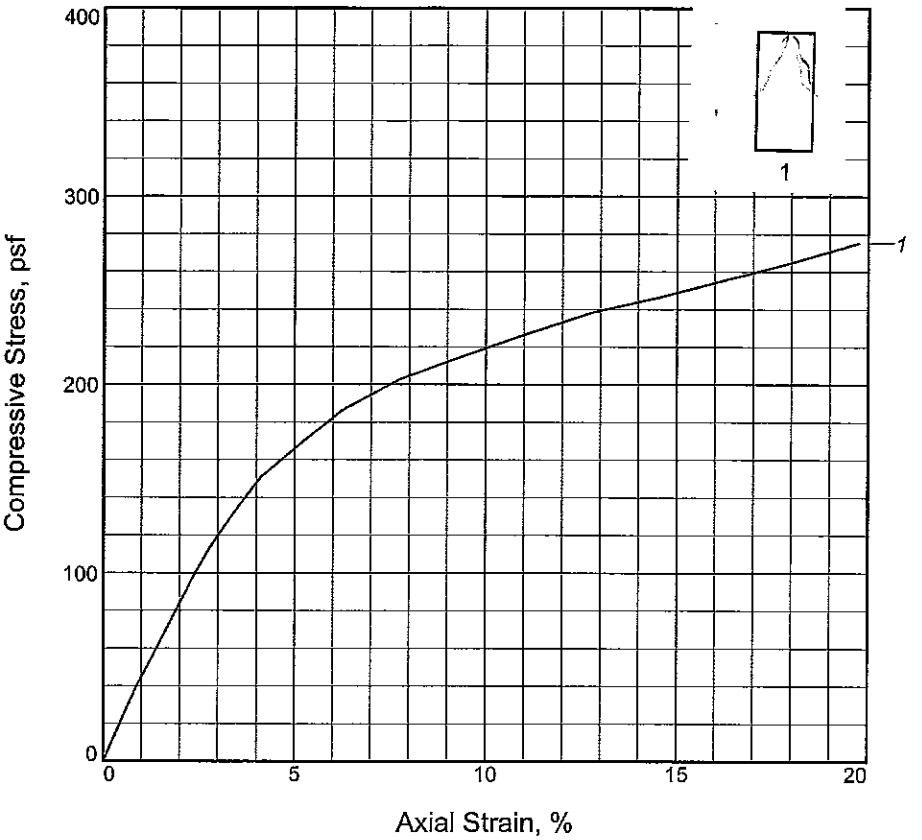
Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-3U **Depth:** 4.0
Sample Number: 3A

UNCONFINED COMPRESSION TEST
Stantec
Saint Rose, Louisiana

Tested By: JC

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	246			
Undrained shear strength, psf	123			
Failure strain, %	14.5			
Strain rate, in./min.	1.000			
Water content, %	48.9			
Wet density, pcf	107.0			
Dry density, pcf	71.9			
Saturation, %	97.7			
Void ratio	1.3628			
Specimen diameter, in.	1.385			
Specimen height, in.	3.001			
Height/diameter ratio	2.17			

Description: VSO GR CH4 W/ LNS ML, O

LL = 94	**PL =** 22	**PI =** 72	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 12-017108
Date Sampled: 7-25-12
Remarks:
Torvane=0.50 tsf

Figure _____

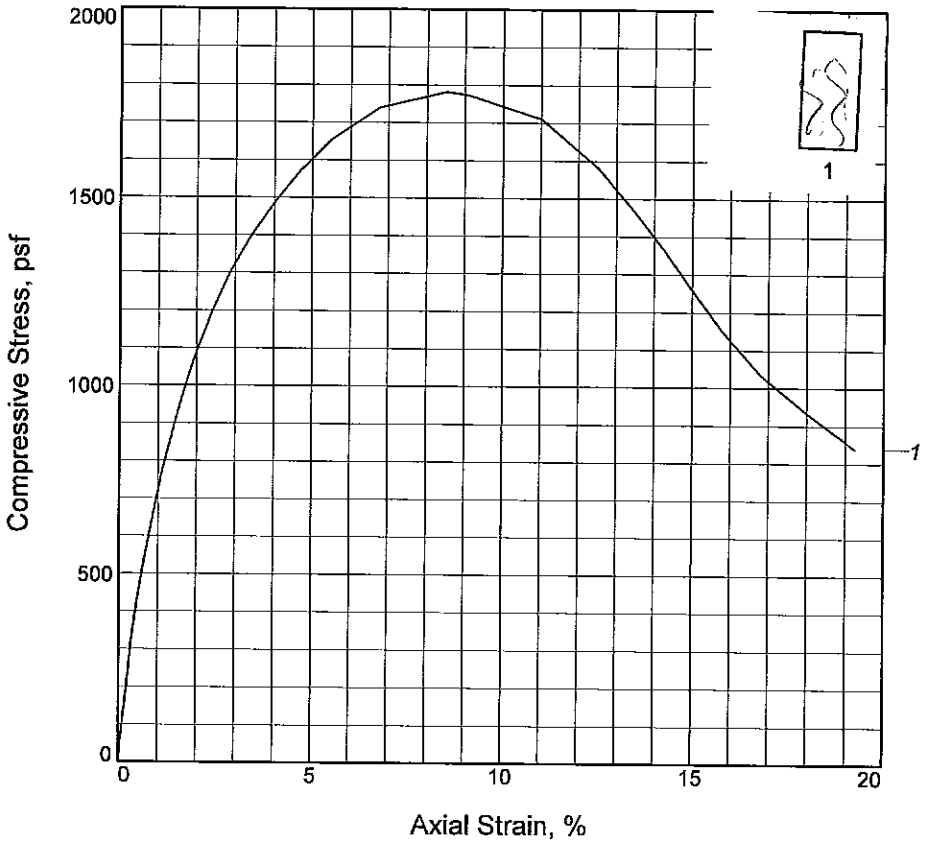
Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-3U **Depth:** 8.0
Sample Number: 4A

UNCONFINED COMPRESSION TEST
Stantec
Saint Rose, Louisiana

Tested By: JC

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1781			
Undrained shear strength, psf	891			
Failure strain, %	8.5			
Strain rate, in./min.	1.000			
Water content, %	26.4			
Wet density, pcf	124.7			
Dry density, pcf	98.7			
Saturation, %	100.5			
Void ratio	0.7079			
Specimen diameter, in.	1.376			
Specimen height, in.	3.004			
Height/diameter ratio	2.18			

Description: M LGR CL6 W/ ARS SM

LL = 46	**PL =** 14	**PI =** 32	**Assumed GS=** 2.70	**Type:** UNDISTURBED

Project No.: 12-017108
Date Sampled: 7-25-12
Remarks:
Torvane=0.72 tsf

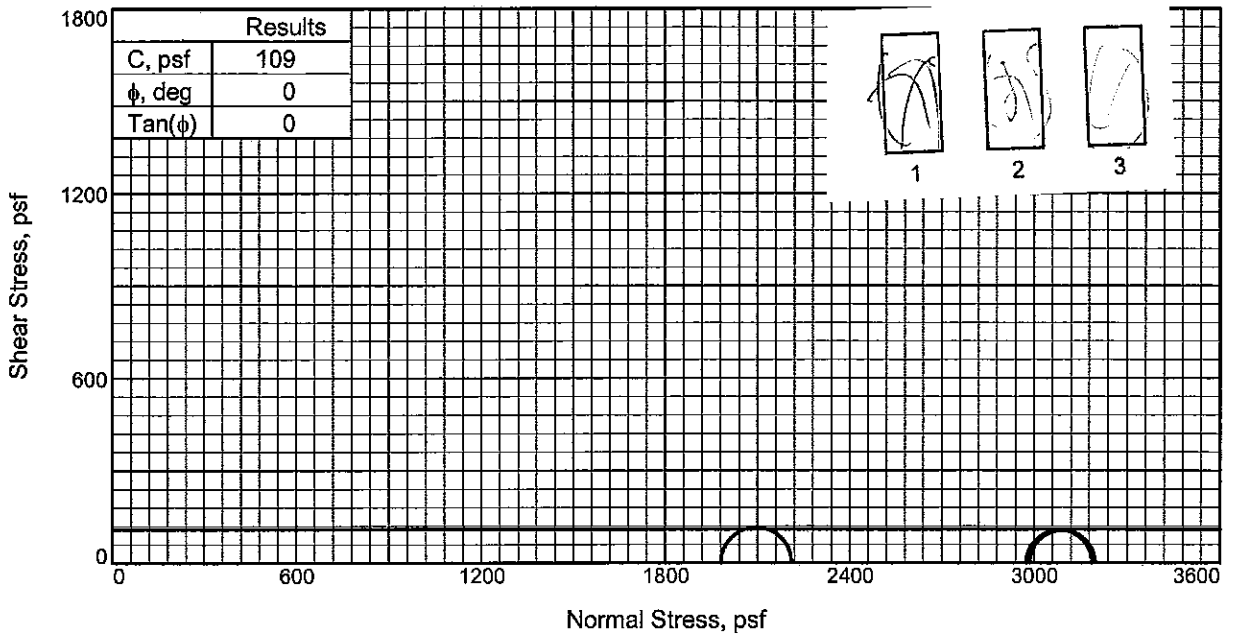
Figure _____

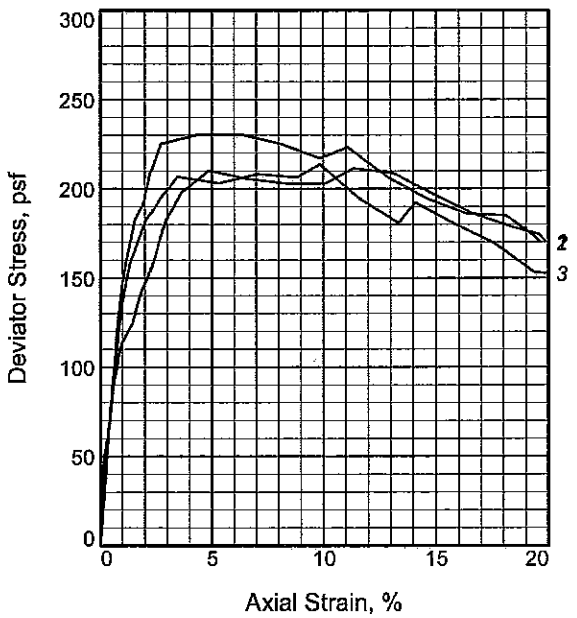
Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-3U **Depth:** 31.0
Sample Number: 9D

UNCONFINED COMPRESSION TEST
Stantec
Saint Rose, Louisiana

Tested By: JC





Sample No.		1	2	3
Initial	Water Content, %	81.4	81.2	83.0
	Dry Density, pcf	55.6	55.8	55.1
	Saturation, %	107.8	108.3	108.5
	Void Ratio	2.0550	2.0409	2.0811
	Diameter, in.	1.395	1.395	1.394
	Height, in.	2.991	2.998	2.992
At Test	Water Content, %	81.4	81.2	83.0
	Dry Density, pcf	55.6	55.8	55.1
	Saturation, %	107.8	108.3	108.5
	Void Ratio	2.0550	2.0409	2.0811
	Diameter, in.	1.395	1.395	1.394
	Height, in.	2.991	2.998	2.992
Strain rate, in./min.		1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		20.74	13.75	20.66
Fail. Stress, psf		211	231	214
Strain, %		11.3	4.5	9.8
Ult. Stress, psf		197	195	181
Strain, %		14.9	14.6	13.3
σ_1 Failure, psf		3198	2211	3189
σ_3 Failure, psf		2987	1980	2975

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: SO GR CH4 W/ LYS ML, O

LL= 105 **PL=** 39 **PI=** 66
Assumed Specific Gravity= 2.72
Remarks: Torvane=0.07 tsf

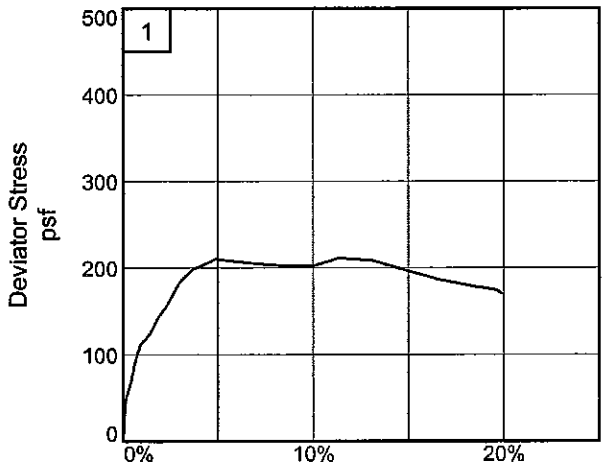
Figure _____

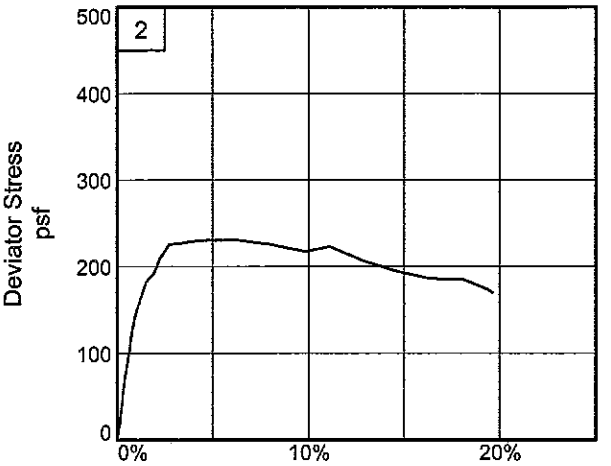
Client: USACE

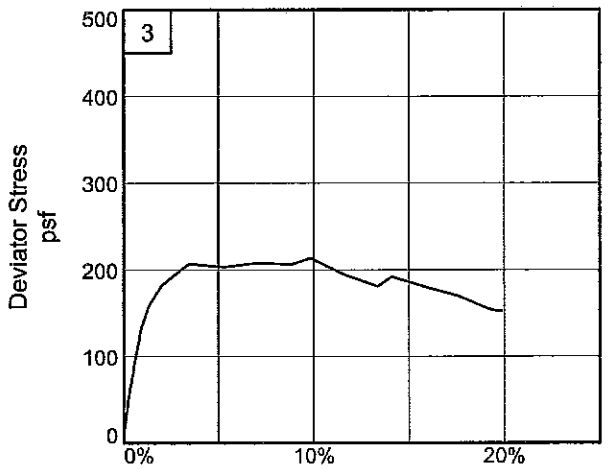
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-3U **Depth:** 7.0
Sample Number: 3D
Proj. No.: 12-017108 **Date Sampled:** 8-6-12

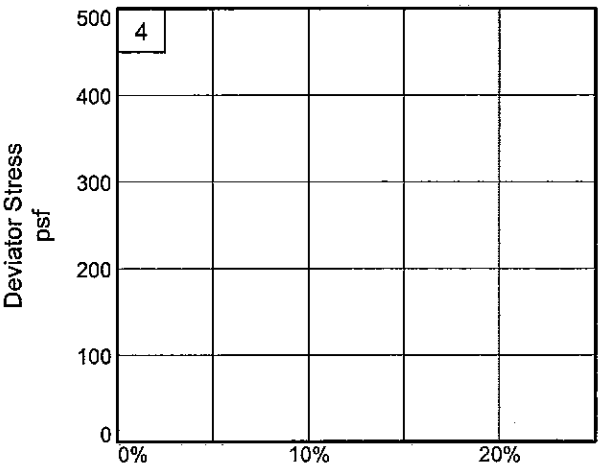
TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

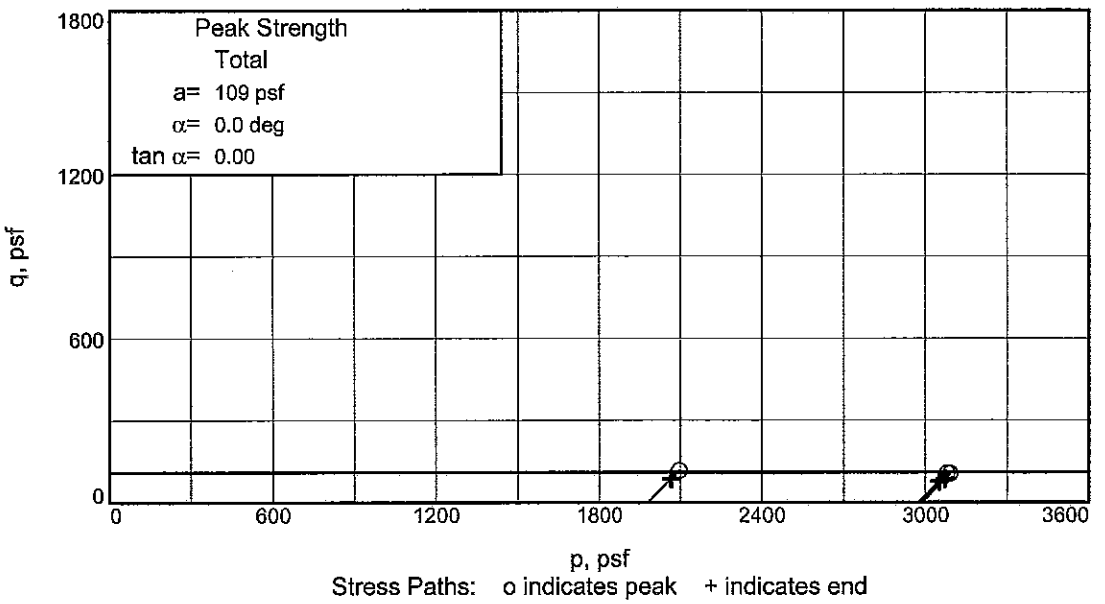
Tested By: JC











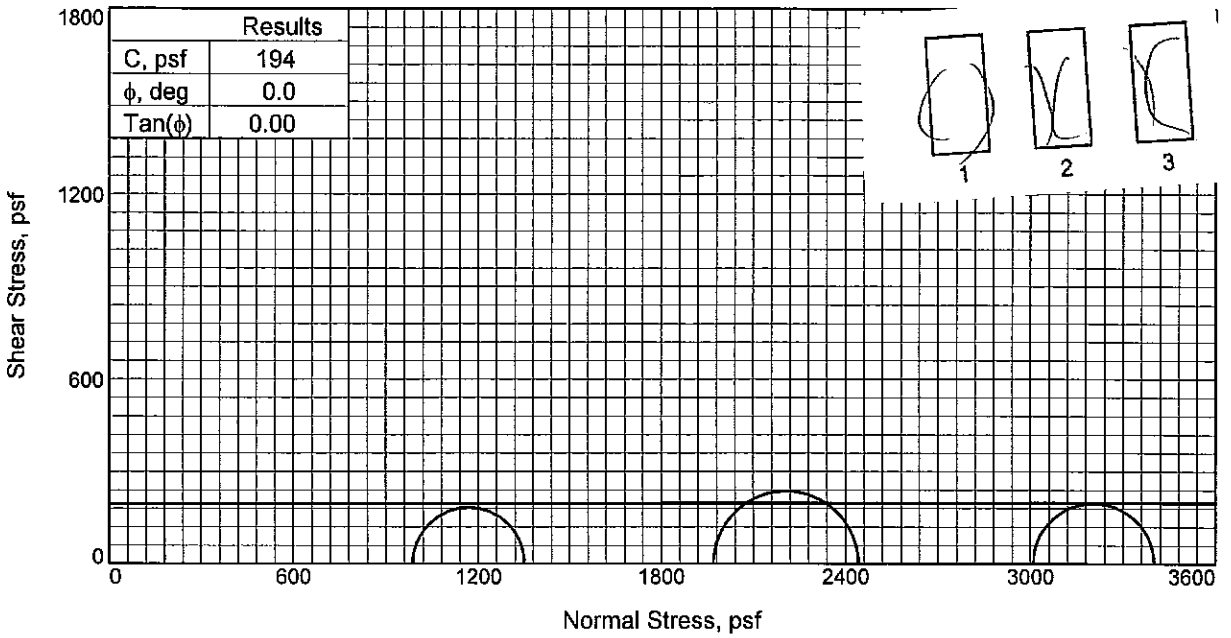
Client: USACE

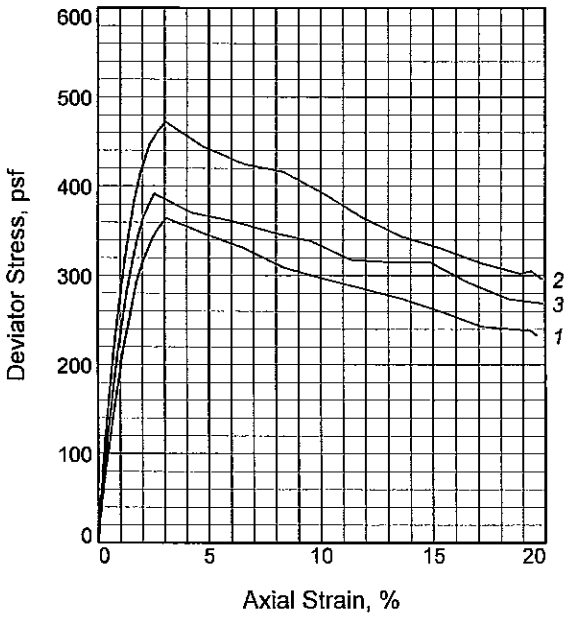
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

Source of Sample: BSFR-3U **Depth:** 7.0 **Sample Number:** 3D

Project No.: 12-017108 **Figure** _____ **Stantec, Inc.**

Tested By: JC





Sample No.		1	2	3
Initial	Water Content, %	65.4	62.3	65.3
	Dry Density, pcf	60.7	63.6	61.3
	Saturation, %	98.8	101.4	100.4
	Void Ratio	1.7997	1.6705	1.7693
	Diameter, in.	1.385	1.379	1.393
	Height, in.	3.003	3.004	3.003
At Test	Water Content, %	65.4	62.3	65.3
	Dry Density, pcf	60.7	63.6	61.3
	Saturation, %	98.8	101.4	100.4
	Void Ratio	1.7997	1.6705	1.7693
	Diameter, in.	1.385	1.379	1.393
	Height, in.	3.003	3.004	3.003
Strain rate, in./min.		1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.85	13.68	20.89
Fail. Stress, psf		365	472	392
Strain, %		3.1	3.0	2.5
Ult. Stress, psf		274	344	315
Strain, %		13.6	13.6	13.1
σ_1 Failure, psf		1351	2442	3400
σ_3 Failure, psf		986	1970	3008

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: VSO GR CH4 W/ LNS ML

LL= 76 **PL=** 26 **PI=** 50
Assumed Specific Gravity= 2.72
Remarks: Torvane=0.17 tsf

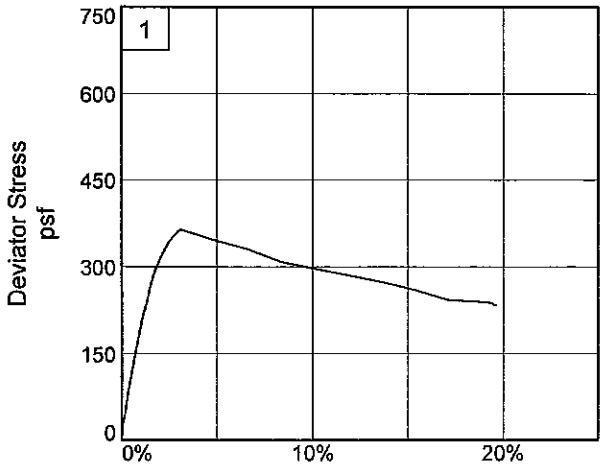
Figure _____

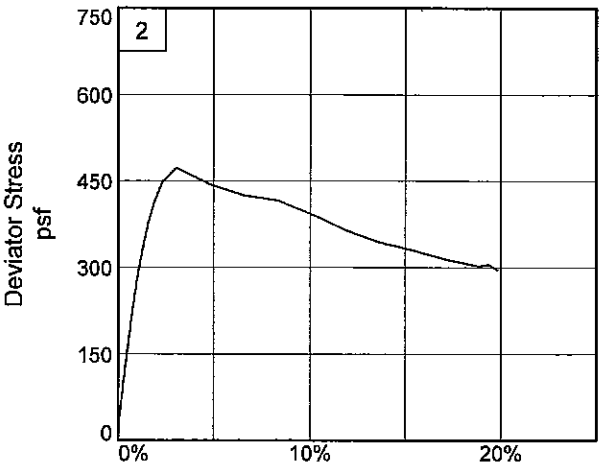
Client: USACE

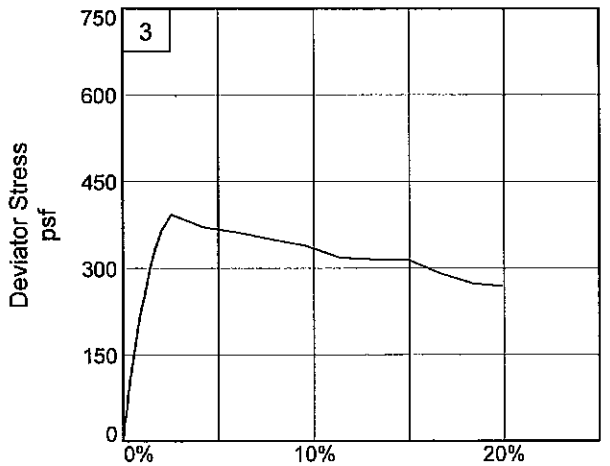
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-3U **Depth:** 10.0
Sample Number: 4C
Proj. No.: 12-017108 **Date Sampled:** 7-25-12

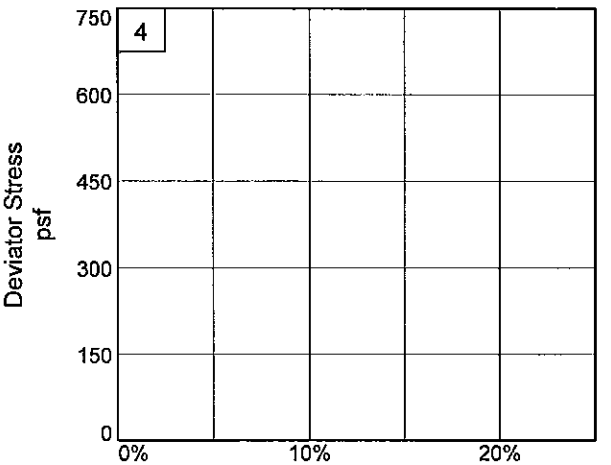
TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

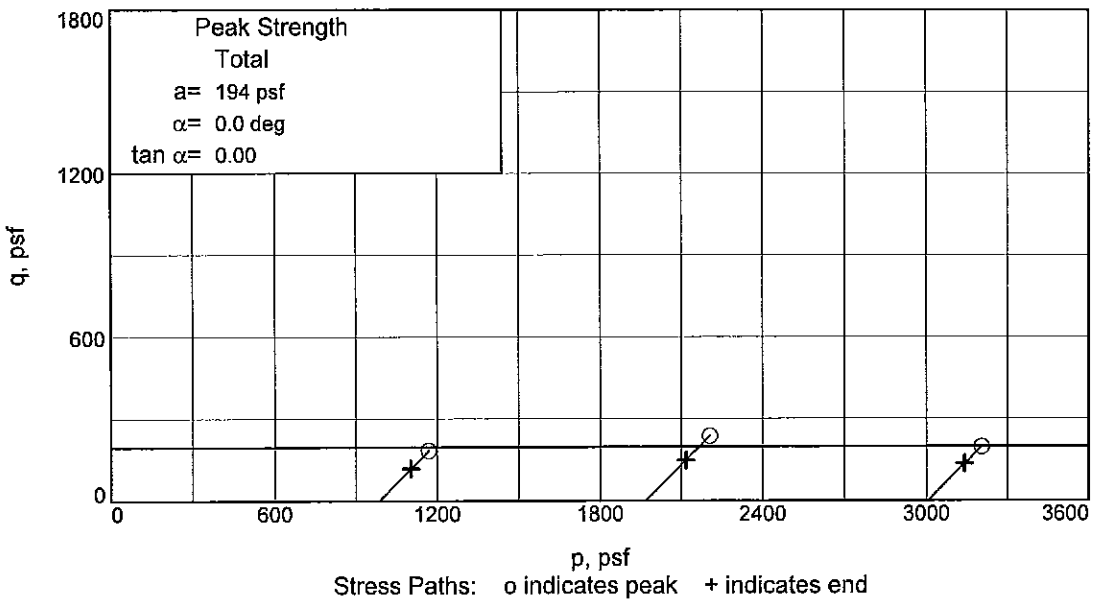
Tested By: JC











Client: USACE

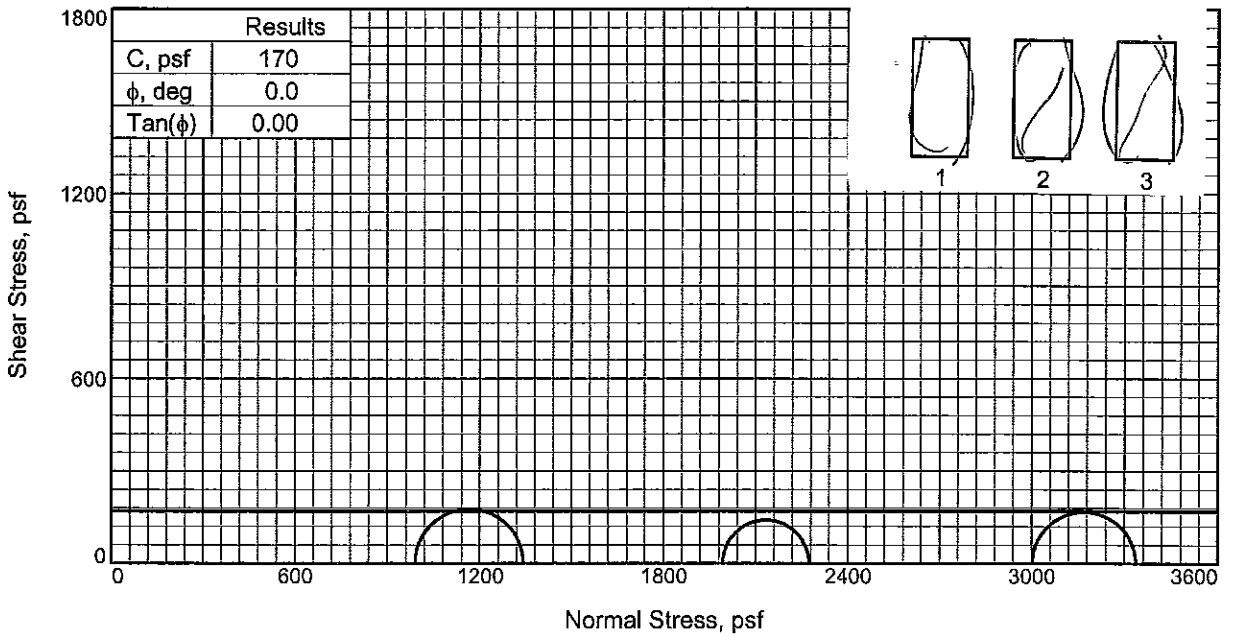
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

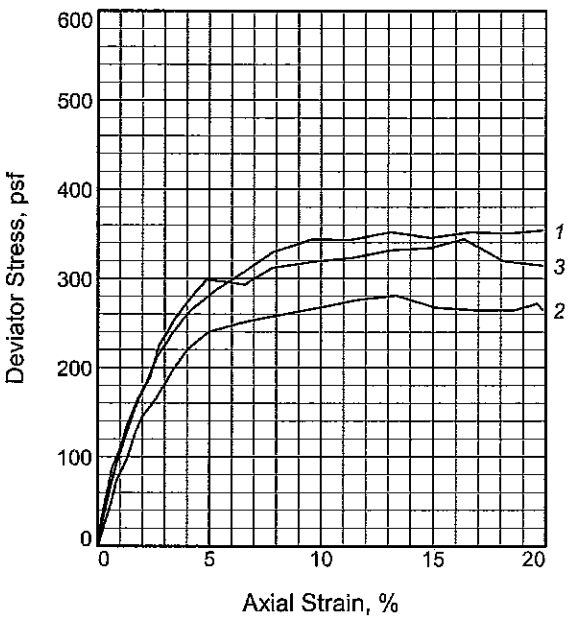
Source of Sample: BSFR-3U **Depth:** 10.0 **Sample Number:** 4C

Project No.: 12-017108 **Figure** _____

Stantec, Inc.

Tested By: JC





Sample No.		1	2	3
Initial	Water Content, %	41.9	43.3	44.0
	Dry Density, pcf	80.3	79.7	77.9
	Saturation, %	103.0	105.0	102.1
	Void Ratio	1.0982	1.1142	1.1645
	Diameter, in.	1.363	1.362	1.367
	Height, in.	2.957	2.993	2.965
At Test	Water Content, %	41.9	43.3	44.0
	Dry Density, pcf	80.3	79.7	77.9
	Saturation, %	103.0	105.0	102.1
	Void Ratio	1.0982	1.1142	1.1645
	Diameter, in.	1.363	1.362	1.367
	Height, in.	2.957	2.993	2.965
Strain rate, in./min.		1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.87	13.84	20.85
Fail. Stress, psf		352	281	334
Strain, %		13.1	13.3	14.8
Ult. Stress, psf		346	267	334
Strain, %		14.9	15.1	14.8
σ_1 Failure, psf		1341	2274	3336
σ_3 Failure, psf		989	1993	3002

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: VSO GR CL4 W/ LNS & LYS CH

LL= 43 **PL=** 20 **PI=** 23
Assumed Specific Gravity= 2.70
Remarks: Torvane=0.15 tsf

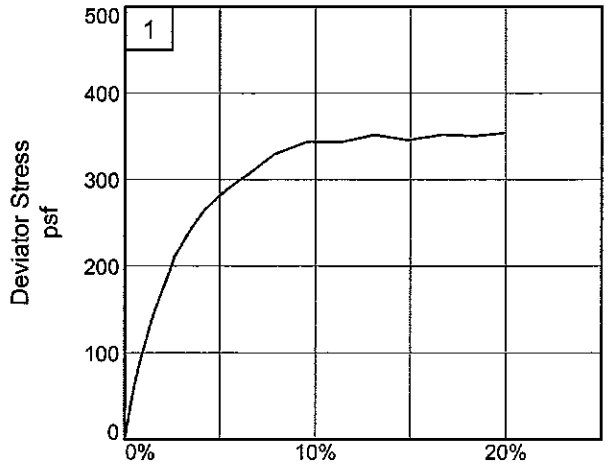
Client: USACE

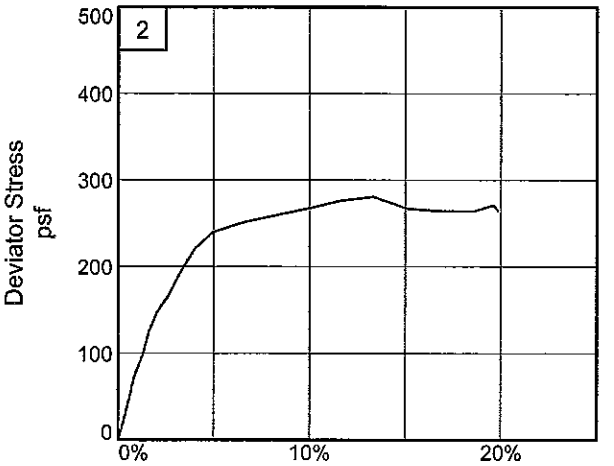
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-3U **Depth:** 13.0
Sample Number: 5B
Proj. No.: 12-017108 **Date Sampled:** 7-25-12

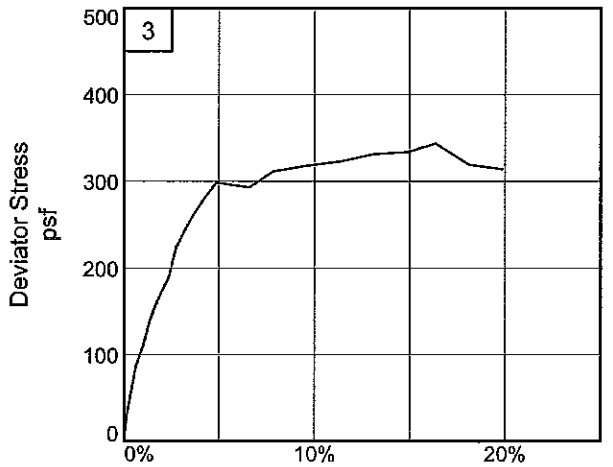
TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

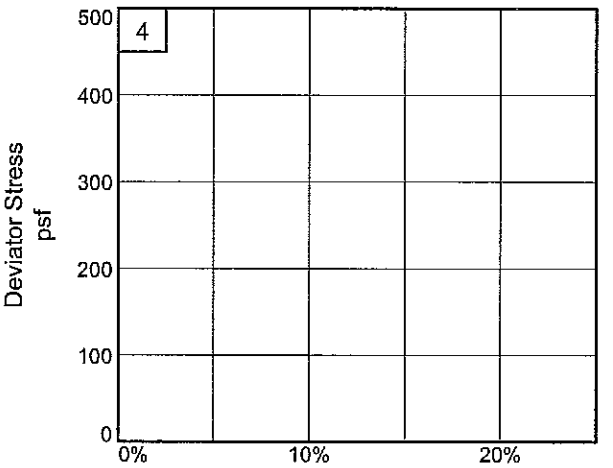
Figure _____

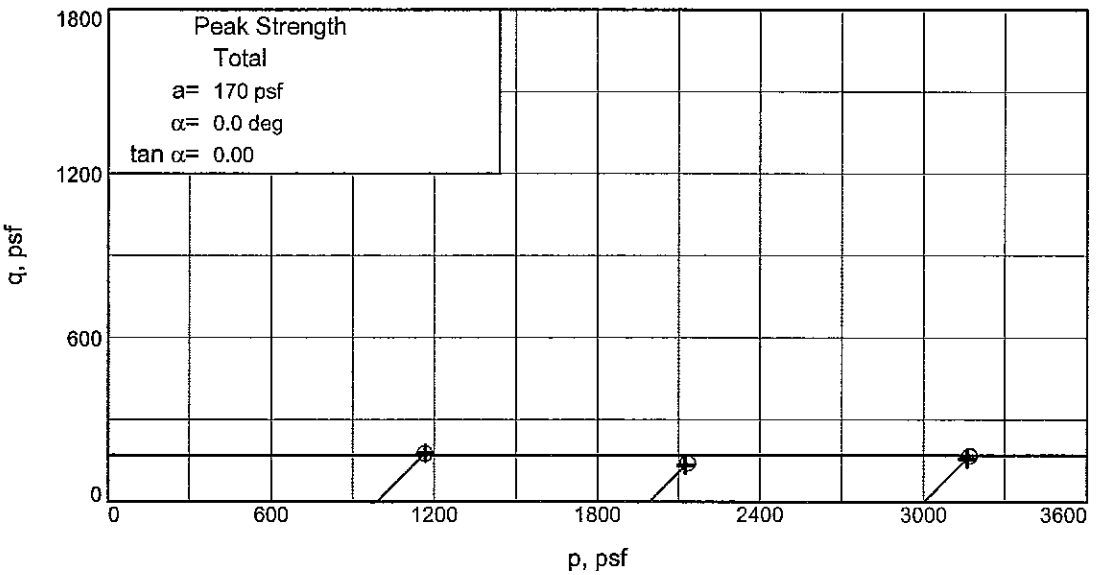
Tested By: JC











Stress Paths: o indicates peak + indicates end

Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

Source of Sample: BSFR-3U **Depth:** 13.0 **Sample Number:** 5B

Project No.: 12-017108 **Figure** _____

Stantec, Inc.

Tested By: JC

SUMMARY OF LABORATORY TEST RESULTS

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Paris **Assigned By:** _____

Project Number: 12-017108 **Current Date:** 8/27/2012

Boring: BSFR-4U

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
1	0.0	M BK PT W/ RT	PT		392												
2	2.5	M BK PT W/ RT	PT		438												
3A	4.0	VSO BK PT W/ RT	PT		565												
3B	5.0	VSO BK PT W/ RT	PT		487												
3C	6.0	VSO BK CHOC	CHOC	14	247	30	82	100	UC	-	40	81	198	40	158	0.70	
3D	7.0	VSO BK CHOC W/ ARS ML	CHOC		190												
4A	8.0	VSO GR CH4 W/ LNS & ARS ML	CH4		70												
4B	9.0	VSO GR CL6 W/ LNS ML	CL6		53	72	110	100	UU	0	71		45	19	26	0.50	
4C	10.0	M GR CH3	CH3		43	79	112	100					74	25	49		GS=2.73, CON
4D	11.0	VSO GR CH2 W/ LNS ML	CH2		59												
5A	12.0	VSO GR CH3	CH3		100	45	90	99					55	21	34		GS=2.70, CON
5B	13.0	VSO GR CH4 W/ LNS ML	CH4	6	84	52	95	99	UC	-	102	205	79	22	57	0.70	
5C	14.0	VSO GR CH4 W/ LYS ML, LYS SIF	CH4		72												
5D	15.0	GR SP W/ ARS CH, SIF	SP		25												
6A	16.0	SO GR CL6 W/ ARS & LYS SP, SIF	CL6		37												
6B	17.0	GR SM W/ ARS CH, SIF	SM		31												
6C	18.0	GR SM W/ ARS CH, SIF	SM		29												
6D	19.0	VSO GR CL6 W/ ARS SP, SIF	CL6		34	83	111	88	UU	0	166		40	11	29	0.22	
7A	20.0	GR SM W/ LYS CH	SM		38												SV
7B	21.0	GR SM W/ ARS CH	SM		28												
7C	22.0	GR SM W/ ARS CH	SM		32												
7D	23.0	VSO GR CL4 W/ ARS & LNS SP	CL4	13	26	94	118	88	UC	-	242	483	38	17	21	0.18	
8A	24.0	T & GR SM W/ ARS CH	SM		24												
8B	25.0	T & GR SM W/ ARS CH	SM		19												
8C	26.0	T & GR SM W/ ARS CH	SM		19												
8D	27.0	T & GR SM W/ ARS CH	SM		21												
9A	28.0	T SM W/ ARS CH	SM		22												
9B	29.0	ST T & GR CH2 W/ ARS SM	CH2		26	99	125	100	UU	0	1526		51	14	37	0.87	
9C	30.0	ST T CH2	CH2		28												
9D	31.0	M T CH2 W/ LYS & ARS SM	CH2	3	33	89	118	97	UC	-	783	1566	50	18	32	0.70	
10A	32.0	T & LGR SM	SM		33												
10B	33.0	T & LGR SM	SM		34												
10C	34.0	T & GNG SM W/ ARS CH	SM		33												
10D	35.0	T & GNG SM W/ LYS CH	SM		34												
11A	36.0	T & GNG SM W/ LYS CH	SM		29												

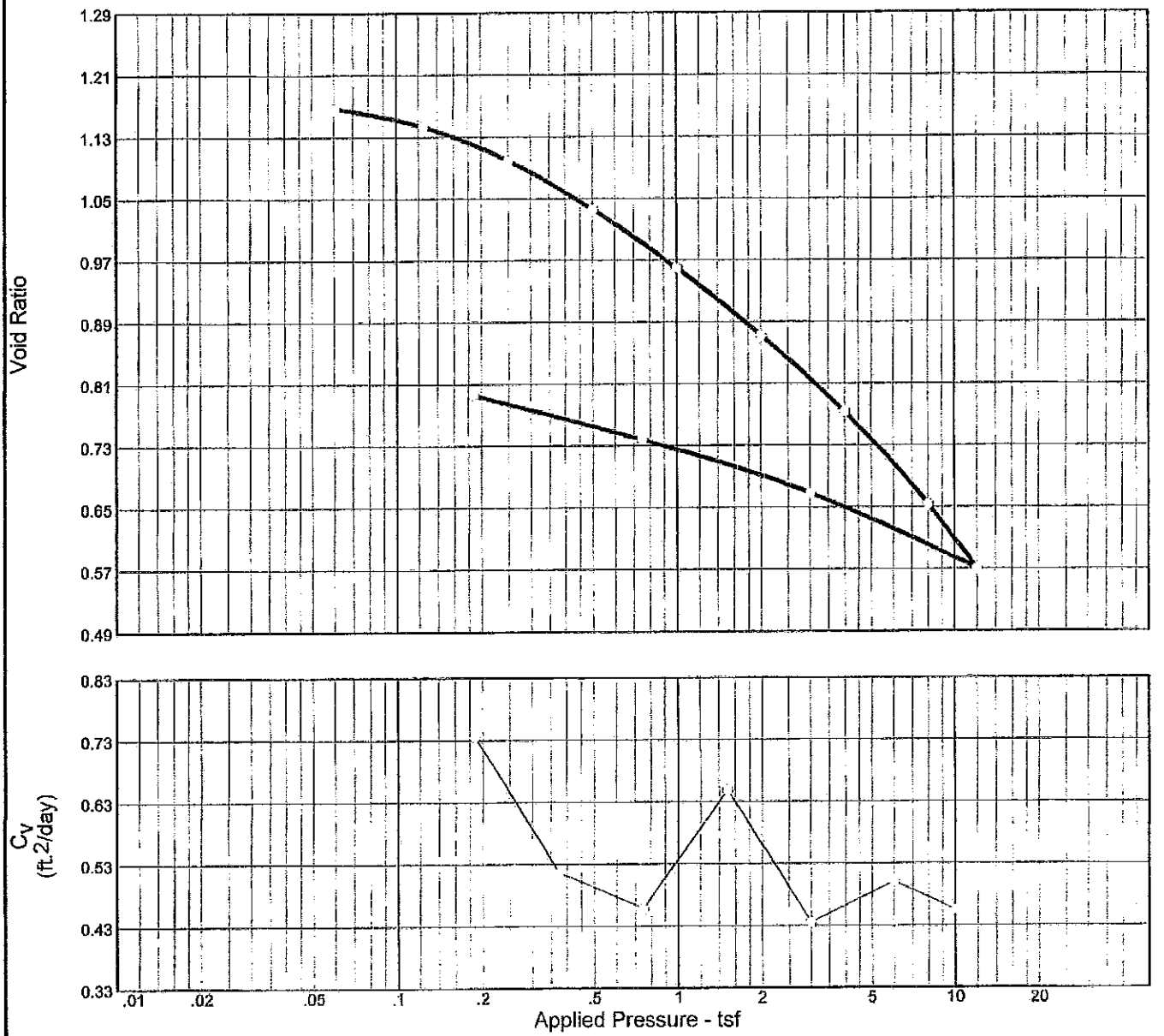
Remarks: _____

Checked By: _____

Stantec Consulting Services Inc.

File Name: Final BSFR-4U_be_boring_log_v1C

Consolidation Test Report



Natural Saturation	Natural Moisture	Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
99.7 %	42.7 %	78.6	74	49	2.73	0.93	0.47	1.169

MATERIAL DESCRIPTION	USCS	AASHTO
M GR CH3	CH3	

Project No. 0017-0108 **Client:** U.S. ARMY CORPS OF ENGINEERS - N.O. DISTRICT

Project: BAYOU SAUVAGE FLOOD SIDE INTERMEDIATE MARSH - TASK ORDER # 108

Source: BSFR-4U **Sample No.:** 4C **Elev./Depth:** 10.5

FFEBJV, LLC.

Ridgeland, Mississippi

Remarks:

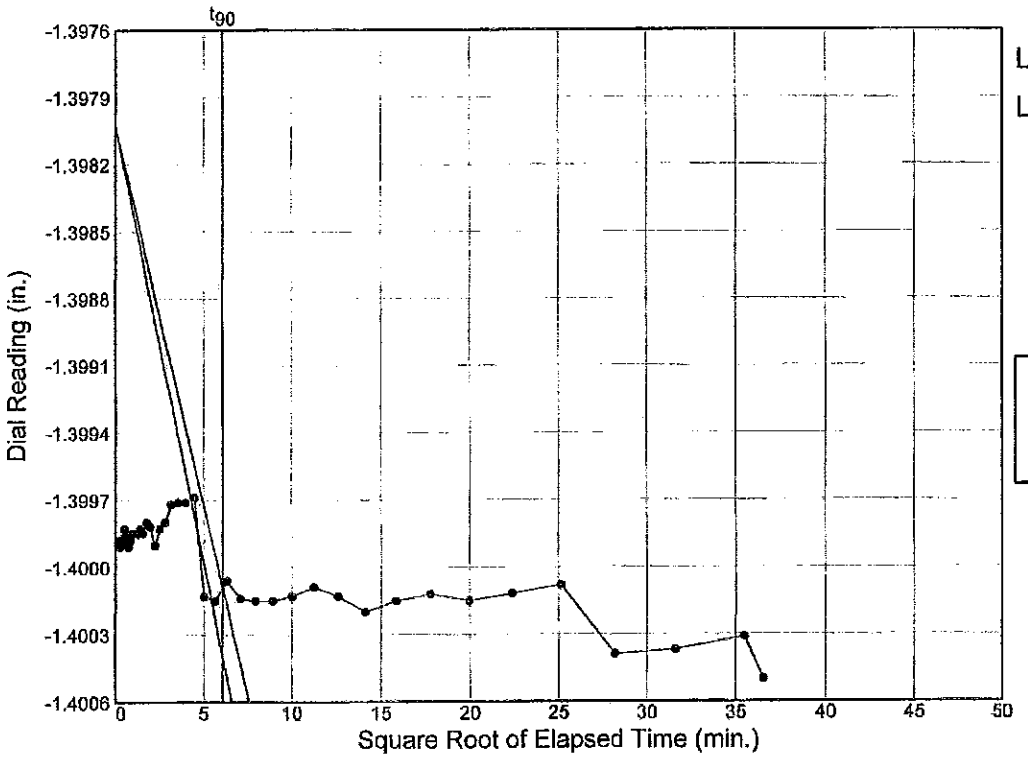
ASTM D2435, METHOD A
CHECKED BY: MR
TESTED BY: AH
CALCULATED BY: HS

Figure

Dial Reading vs. Time

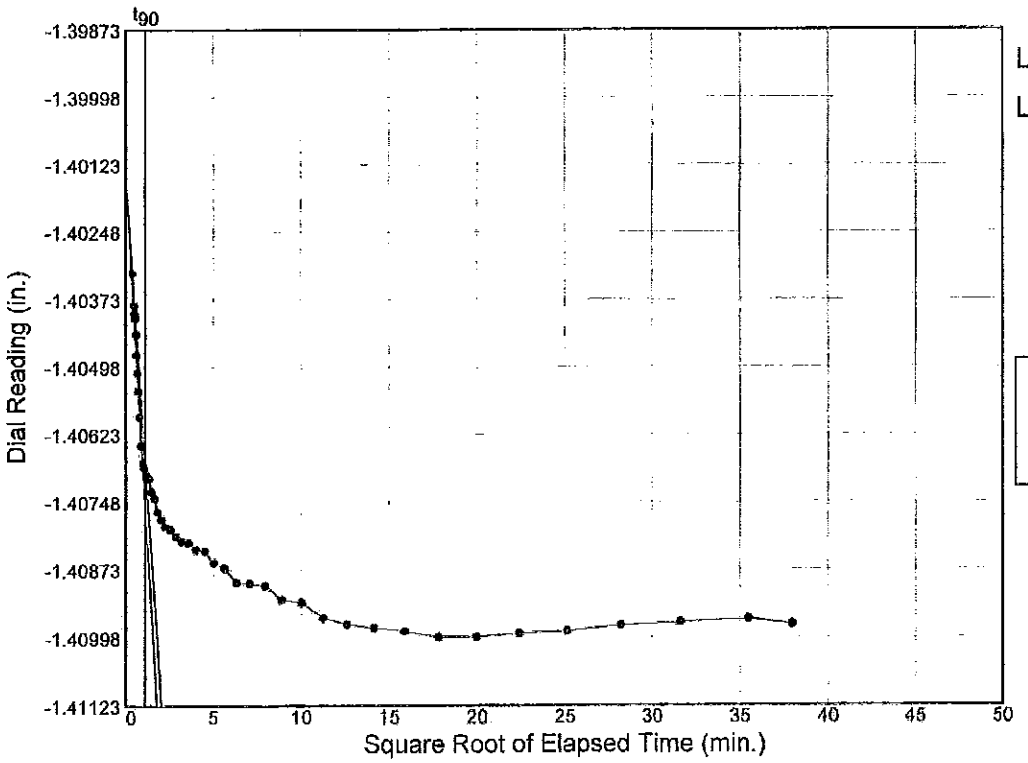
Project No.: 0017-0108
Project: BAYOU SAUVAGE FLOOD SIDE INTERMEDIATE MARSH - TASK ORDER # 108

Source: BSFR-4U Sample No.: 4C Elev./Depth: 10.5



Load No.= 1
Load= 0.06 tsf
D_0 = -1.39803
D_{90} = -1.40009
D_{100} = -1.40032
T_{90} = 36.96 min.

C_v @ T_{90}
0.04 ft.^{2}/day



Load No.= 2
Load= 0.13 tsf
D_0 = -1.40146
D_{90} = -1.40694
D_{100} = -1.40755
T_{90} = 1.31 min.

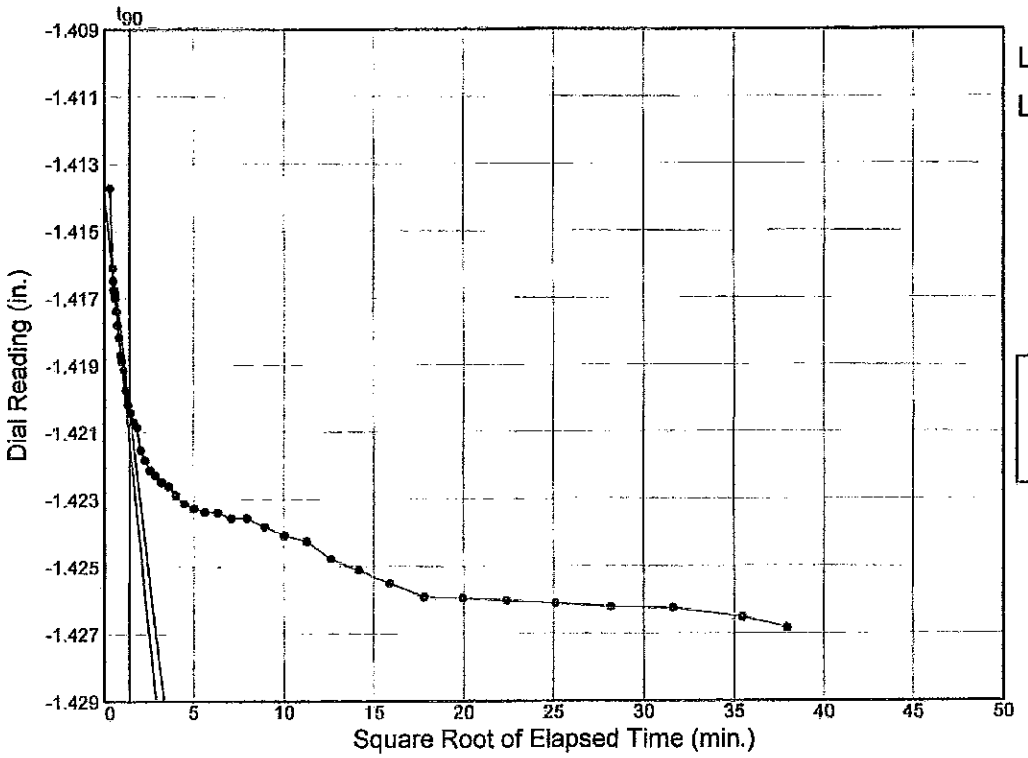
C_v @ T_{90}
1.13 ft.^{2}/day

Figure

Dial Reading vs. Time

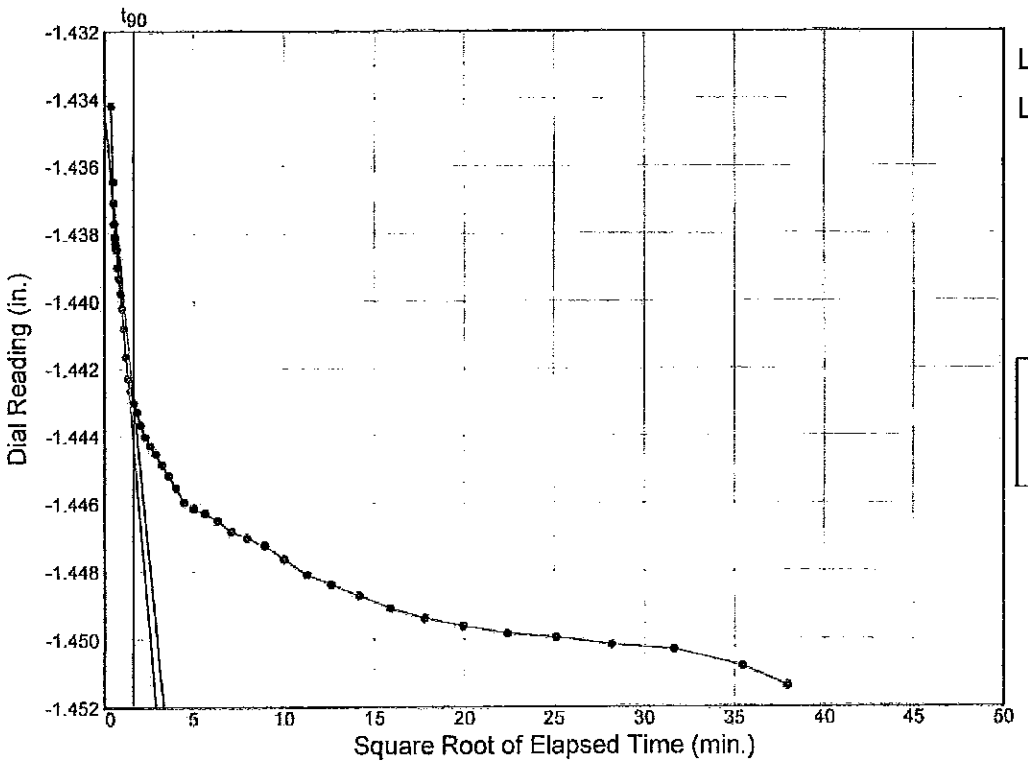
Project No.: 0017-0108
Project: BAYOU SAUVAGE FLOOD SIDE INTERMEDIATE MARSH - TASK ORDER # 108

Source: BSFR-4U Sample No.: 4C Elev./Depth: 10.5



Load No.= 3
Load= 0.25 tsf
D_0 = -1.41403
D_{90} = -1.42033
D_{100} = -1.42103
T_{90} = 1.95 min.

C_v @ T_{90}
0.74 ft.^{2}/day



Load No.= 4
Load= 0.50 tsf
D_0 = -1.43442
D_{90} = -1.44302
D_{100} = -1.44398
T_{90} = 2.64 min.

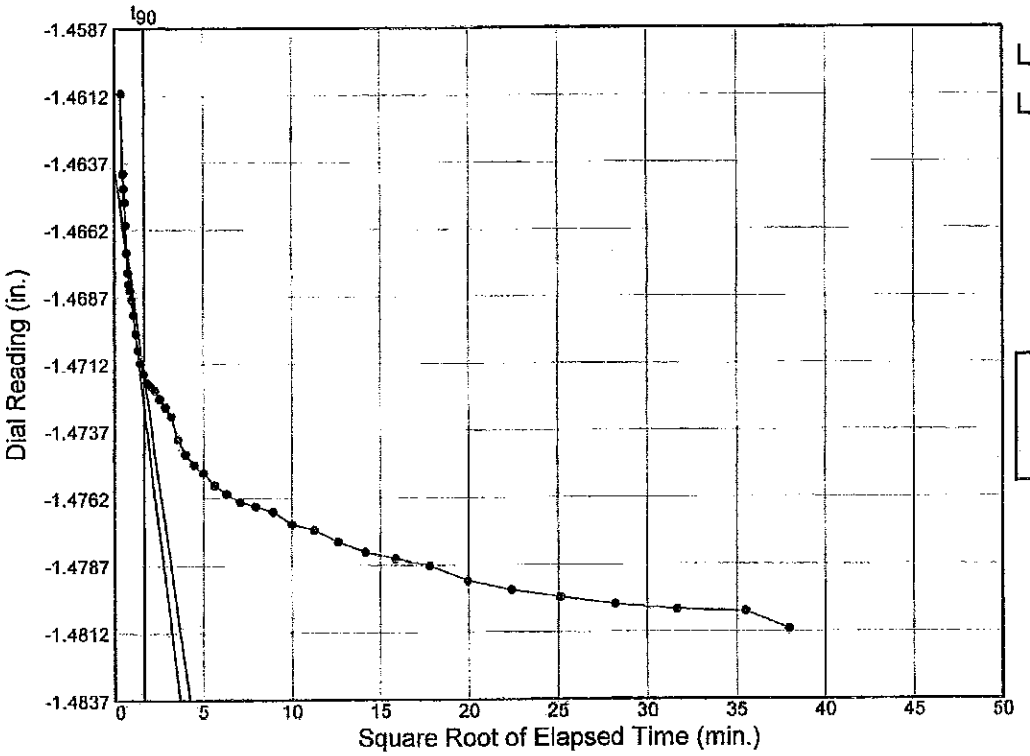
C_v @ T_{90}
0.52 ft.^{2}/day

Figure

Dial Reading vs. Time

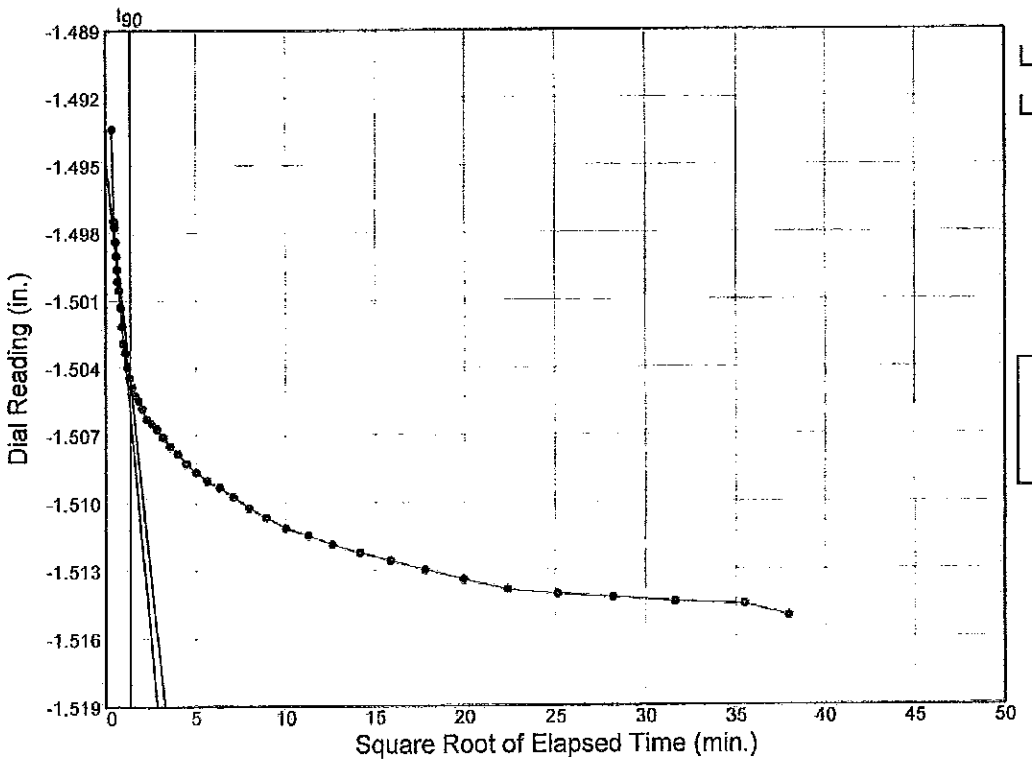
Project No.: 0017-0108
Project: BAYOU SAUVAGE FLOOD SIDE INTERMEDIATE MARSH - TASK ORDER # 108

Source: BSFR-4U Sample No.: 4C Elev./Depth: 10.5



Load No.= 5
Load= 1.00 tsf
D_0 = -1.46373
D_{90} = -1.47163
D_{100} = -1.47250
T_{90} = 2.78 min.

C_v @ T_{90}
0.46 ft.^{2}/day



Load No.= 6
Load= 2.00 tsf
D_0 = -1.49455
D_{90} = -1.50452
D_{100} = -1.50562
T_{90} = 1.80 min.

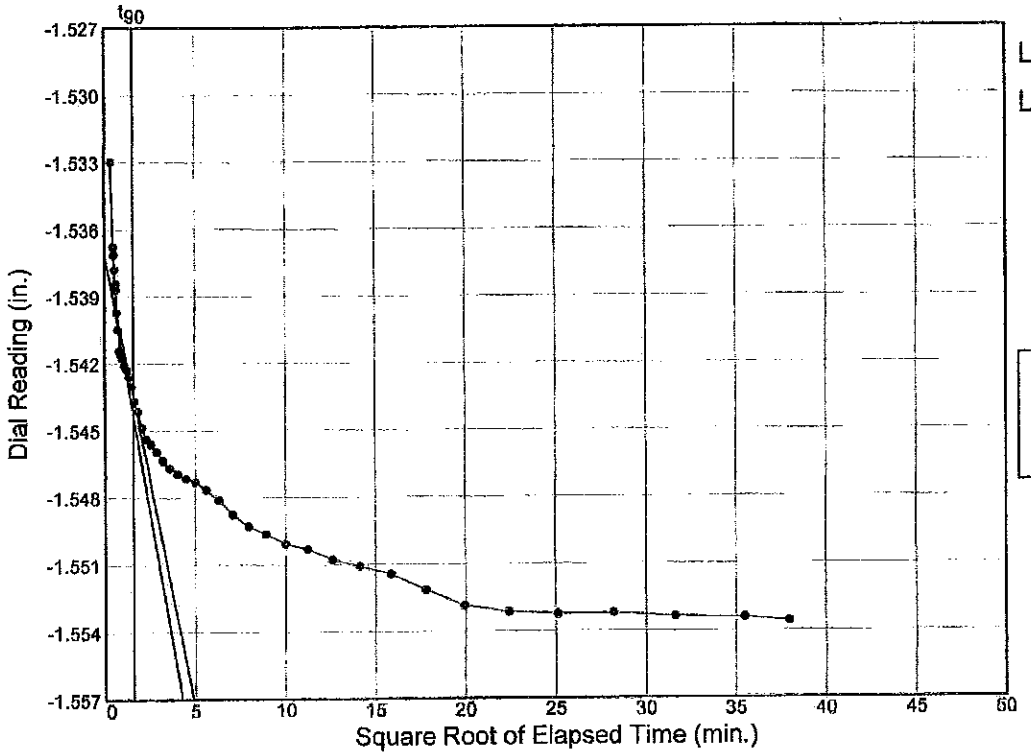
C_v @ T_{90}
0.65 ft.^{2}/day

Figure

Dial Reading vs. Time

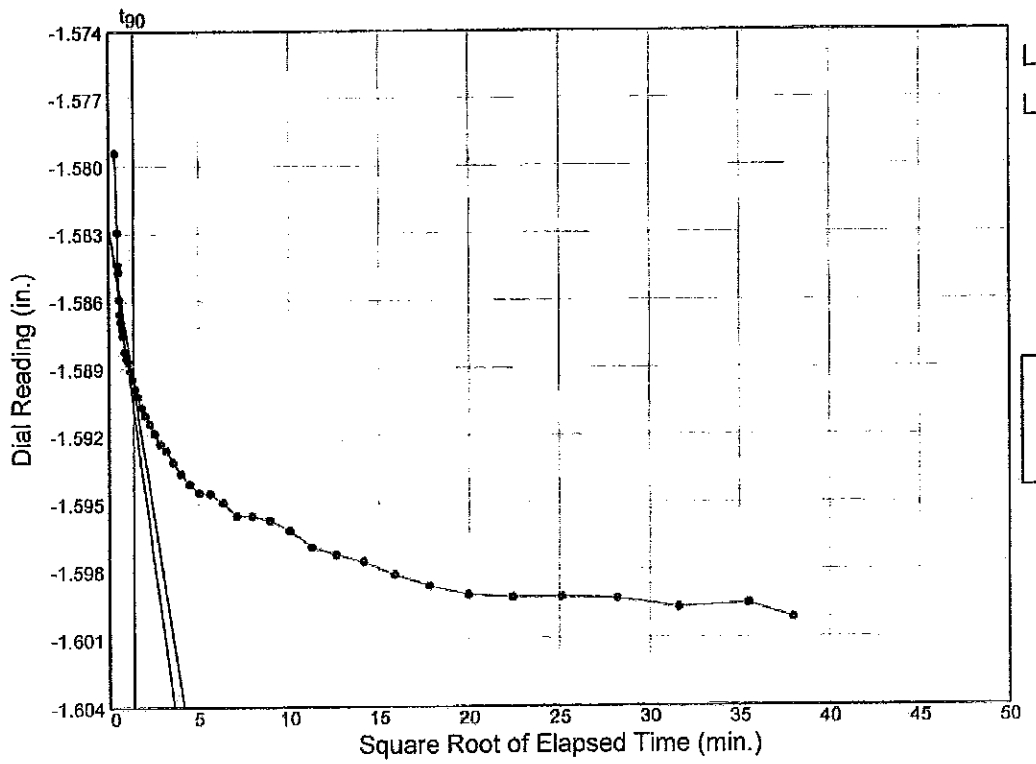
Project No.: 0017-0108
Project: BAYOU SAUVAGE FLOOD SIDE INTERMEDIATE MARSH - TASK ORDER # 108

Source: BSFR-4U Sample No.: 4C Elev./Depth: 10.5



Load No.= 7
Load= 4.00 tsf
D_0 = -1.53712
D_{90} = -1.54344
D_{100} = -1.54414
T_{90} = 2.42 min.

C_v @ T_{90}
0.44 ft.^{2}/day



Load No.= 8
Load= 8.00 tsf
D_0 = -1.58264
D_{90} = -1.58964
D_{100} = -1.59042
T_{90} = 1.85 min.

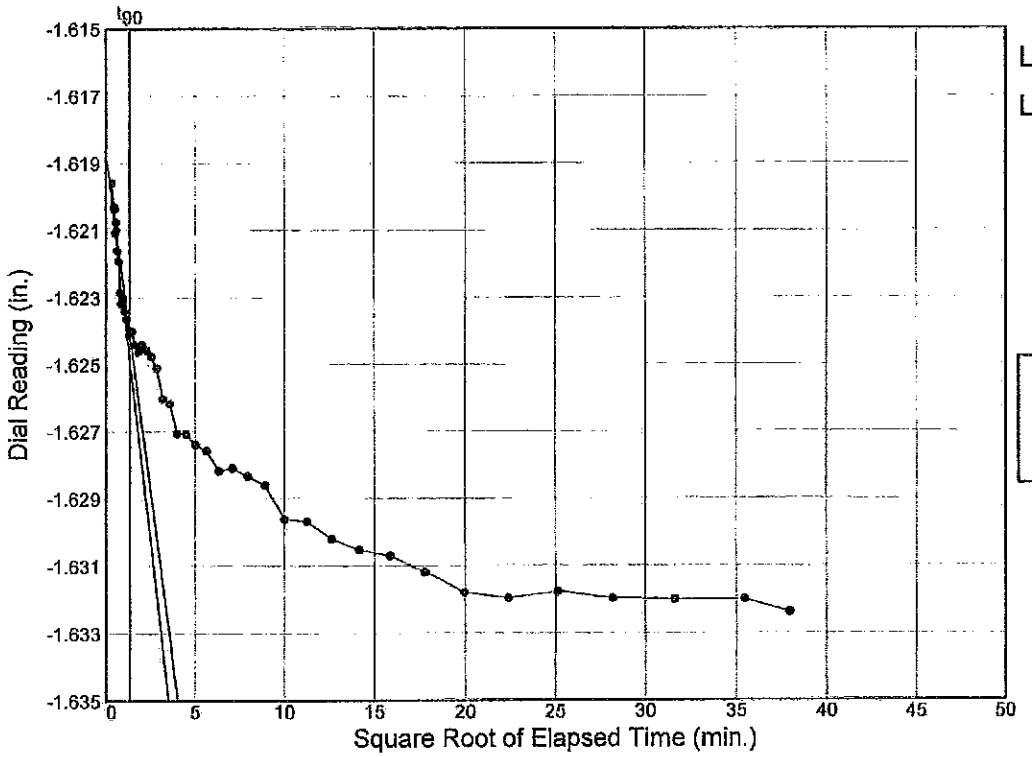
C_v @ T_{90}
0.50 ft.^{2}/day

Figure

Dial Reading vs. Time

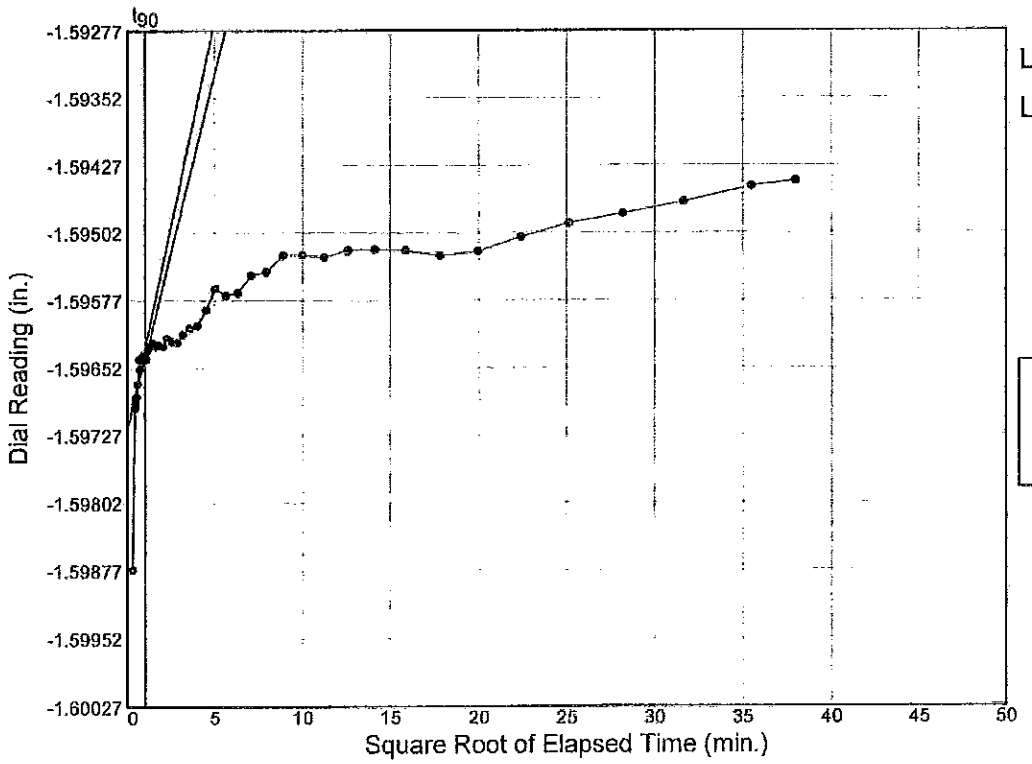
Project No.: 0017-0108
Project: BAYOU SAUVAGE FLOOD SIDE INTERMEDIATE MARSH - TASK ORDER # 108

Source: BSFR-4U Sample No.: 4C Elev./Depth: 10.5



Load No.= 9
Load= 12.00 tsf
D_0 = -1.61863
D_{90} = -1.62408
D_{100} = -1.62469
T_{90} = 1.80 min.

C_v @ T_{90}
0.46 ft.^{2}/day



Load No.= 10
Load= 3.00 tsf
D_0 = -1.59721
D_{90} = -1.59641
D_{100} = -1.59632
T_{90} = 1.04 min.

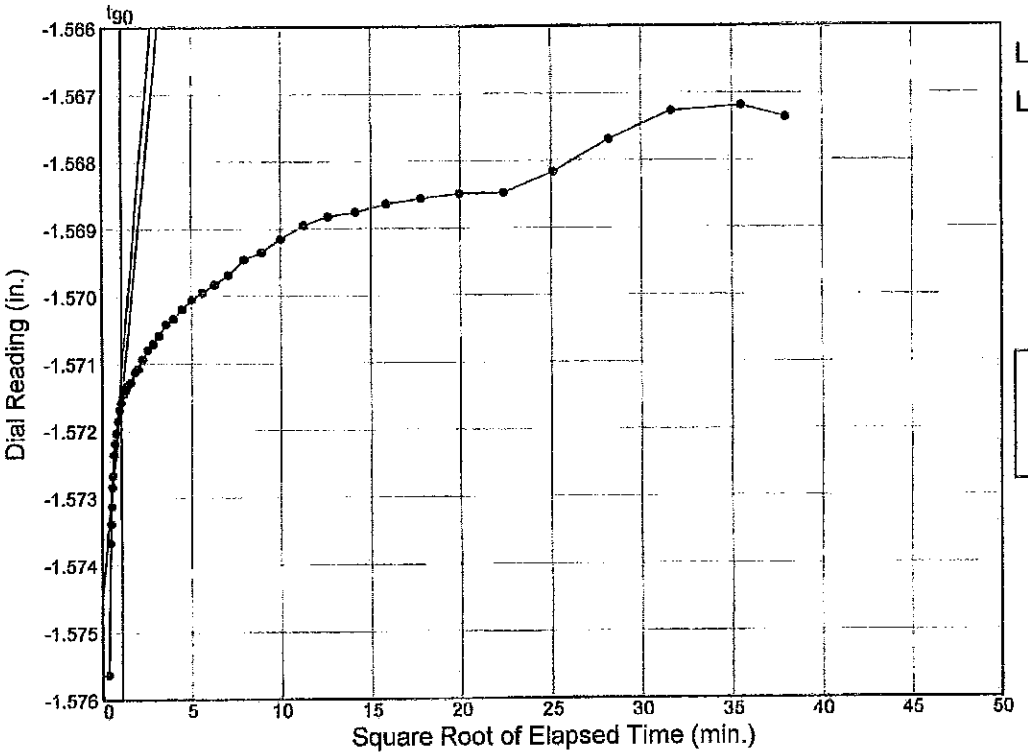
C_v @ T_{90}
0.83 ft.^{2}/day

Figure

Dial Reading vs. Time

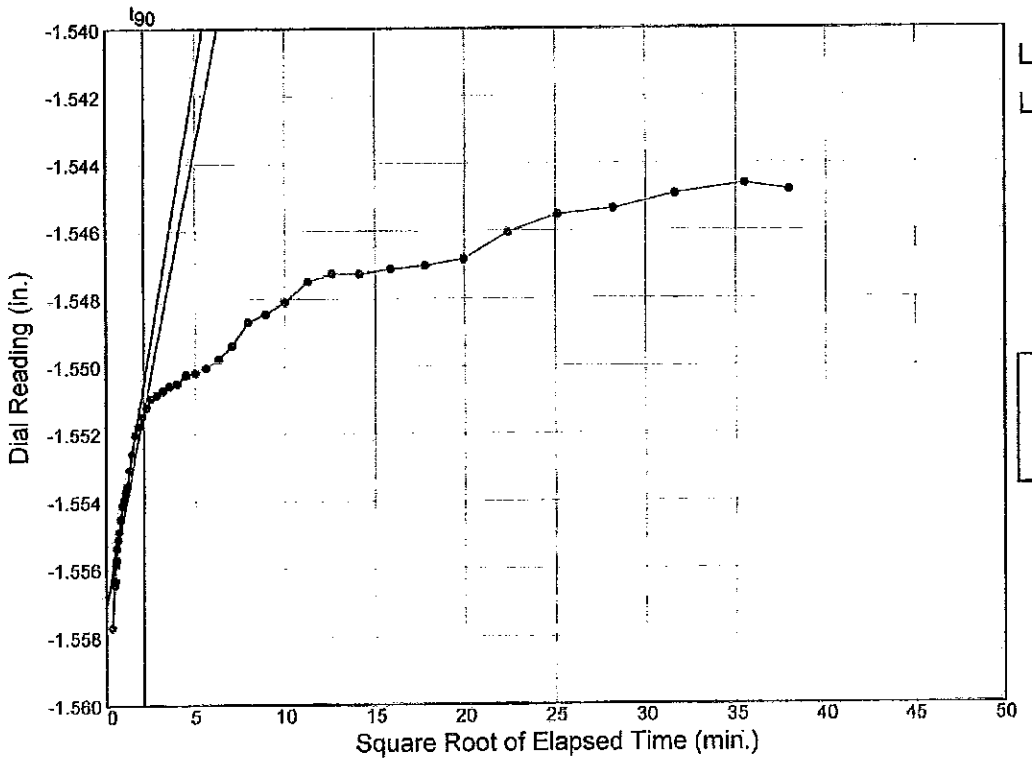
Project No.: 0017-0108
Project: BAYOU SAUVAGE FLOOD SIDE INTERMEDIATE MARSH - TASK ORDER # 108

Source: BSFR-4U Sample No.: 4C Elev./Depth: 10.5



Load No.= 11
Load= 0.75 tsf
D_0 = -1.57448
D_{90} = -1.57156
D_{100} = -1.57124
T_{90} = 1.15 min.

C_v @ T_{90}
0.82 ft.^{2}/day



Load No.= 12
Load= 0.19 tsf
D_0 = -1.55714
D_{90} = -1.55138
D_{100} = -1.55074
T_{90} = 4.44 min.

C_v @ T_{90}
0.23 ft.^{2}/day

Figure

CONSOLIDATION TEST DATA

Client: U.S. ARMY CORPS OF ENGINEERS - N.O. DISTRICT
Project: BAYOU SAUVAGE FLOOD SIDE INTERMEDIATE MARSH - TASK ORDER # 108
Project Number: 0017-0108

Sample Data

Source: BSFR-4U
Sample No.: 4C
Elev. or Depth: 10.5
Sample Length(in./cm.):
Location:
Description: M GR CH3
Liquid Limit: 74
Plasticity Index: 49
USCS: CH3
AASHTO:
Figure No.:
Testing Remarks: ASTM D2435, METHOD A
CHECKED BY: MR
TESTED BY: AH
CALCULATED BY: HS

Test Specimen Data

TOTAL SAMPLE		BEFORE TEST	AFTER TEST
Wet w+t	= 485.35 g.	Consolidometer # = 14	Wet w+t = 455.93 g.
Dry w+t	= 392.10 g.		Dry w+t = 387.37 g.
Tare Wt.	= 173.62 g.	Spec. Gravity = 2.73	Tare Wt. = 173.62 g.
Height	= .84 in.	Height = .84 in.	
Diameter	= 4.00 in.	Diameter = 4.00 in.	
Weight	= 311.73 g.	Defl. Table = n/a	
Moisture	= 42.7 %	Ht. Solids = 0.3886 in.	Moisture = 32.1 %
Wet Den.	= 112.1 pcf	Dry Wt. = 218.48 g.*	Dry Wt. = 213.75 g.
Dry Den.	= 78.6 pcf	Void Ratio = 1.169	Void Ratio = 0.796
		Saturation = 99.7 %	

*** Initial dry weight used in calculations**

End-of-Load Summary

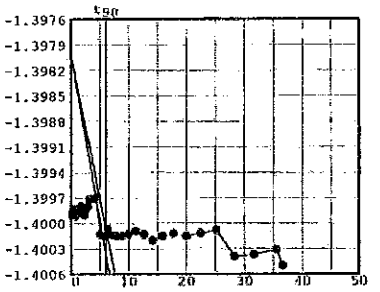
Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (ft.^{2}/day)	C_α	Void Ratio	% Compression /Swell
start	-1.39970				1.169	
0.06	-1.40050	0.00000	0.04		1.167	0.1 Comprs.
0.13	-1.40974	0.00000	1.13		1.143	1.2 Comprs.
0.25	-1.42684	0.00000	0.74		1.099	3.2 Comprs.
0.50	-1.45137	0.00000	0.52		1.036	6.1 Comprs.
1.00	-1.48112	0.00000	0.46		0.960	9.7 Comprs.
2.00	-1.51506	0.00000	0.65		0.872	13.7 Comprs.
4.00	-1.55361	0.00000	0.44		0.773	18.3 Comprs.
8.00	-1.60014	0.00000	0.50		0.653	23.8 Comprs.
12.00	-1.63239	0.00000	0.46		0.570	27.6 Comprs.
3.00	-1.59445	0.00000	0.83		0.668	23.1 Comprs.
0.75	-1.56737	0.00000	0.82		0.738	19.9 Comprs.

Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (ft.^{2}/day)	C_α	Void Ratio	% Compression /Swell
0.19	-1.54483	0.00000	0.23		0.796	17.2 Comprs.

C_c = 0.47 P_c = 0.93 tsf C_r = 0.12

Pressure: 0.06 tsf **TEST READINGS** **Load No. 1**

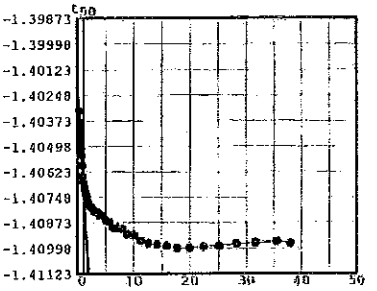
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.39970	23	12.55	-1.39971
2	0.03	-1.39988	24	15.82	-1.39971
3	0.07	-1.39991	25	19.92	-1.39969
4	0.10	-1.39990	26	25.08	-1.40013
5	0.13	-1.39989	27	31.58	-1.40015
6	0.18	-1.39987	28	39.78	-1.40006
7	0.25	-1.39983	29	50.08	-1.40014
8	0.33	-1.39989	30	63.07	-1.40015
9	0.45	-1.39985	31	79.40	-1.40015
10	0.57	-1.39991	32	99.97	-1.40013
11	0.73	-1.39988	33	125.87	-1.40009
12	0.95	-1.39985	34	158.47	-1.40013
13	1.20	-1.39985	35	199.50	-1.40020
14	1.53	-1.39985	36	251.15	-1.40015
15	1.95	-1.39983	37	316.20	-1.40012
16	2.47	-1.39985	38	398.07	-1.40015
17	3.12	-1.39980	39	501.15	-1.40012
18	3.93	-1.39982	40	630.92	-1.40008
19	4.97	-1.39990	41	794.28	-1.40039
20	6.27	-1.39983	42	999.95	-1.40037
21	7.90	-1.39980	43	1258.87	-1.40031
22	9.97	-1.39972	44	1332.35	-1.40050



Void Ratio = 1.167 **Compression** = 0.1 %
D_0 = -1.39803 D_{90} = -1.40009 D_{100} = -1.40032
C_v **at 37.0 min.** = 0.04 ft.^{2}/day

Pressure: 0.13 tsf | TEST READINGS | Load No. 2

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.40209	24	12.72	-1.40823
2	0.12	-1.40324	25	15.98	-1.40836
3	0.22	-1.40384	26	20.08	-1.40838
4	0.23	-1.40399	27	25.25	-1.40860
5	0.27	-1.40408	28	31.77	-1.40869
6	0.32	-1.40437	29	39.95	-1.40896
7	0.37	-1.40476	30	50.25	-1.40898
8	0.43	-1.40509	31	63.23	-1.40902
9	0.52	-1.40542	32	79.57	-1.40927
10	0.62	-1.40590	33	100.13	-1.40933
11	0.75	-1.40643	34	126.03	-1.40961
12	0.92	-1.40675	35	158.63	-1.40973
13	1.12	-1.40684	36	199.67	-1.40980
14	1.38	-1.40698	37	251.33	-1.40986
15	1.70	-1.40704	38	316.37	-1.40997
16	2.12	-1.40728	39	398.25	-1.40996
17	2.63	-1.40740	40	501.32	-1.40990
18	3.28	-1.40766	41	631.08	-1.40986
19	4.12	-1.40780	42	794.45	-1.40976
20	5.13	-1.40794	43	1000.13	-1.40970
21	6.43	-1.40799	44	1259.05	-1.40964
22	8.07	-1.40811	45	1440.12	-1.40974
23	10.13	-1.40820			



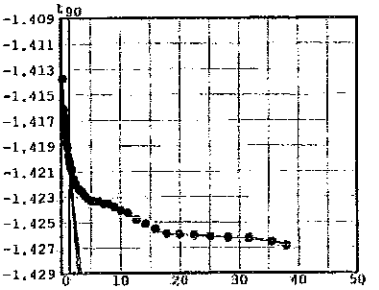
Void Ratio = 1.143 **Compression** = 1.2 %

D_0 = -1.40146 D_{90} = -1.40694 D_{100} = -1.40755

C_v **at 1.3 min.** = 1.13 ft.^{2}/day

Pressure: 0.25 tsf **TEST READINGS** **Load No. 3**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.41161	24	12.72	-1.42262
2	0.08	-1.41373	25	15.98	-1.42289
3	0.20	-1.41611	26	20.08	-1.42312
4	0.22	-1.41648	27	25.25	-1.42327
5	0.25	-1.41675	28	31.75	-1.42338
6	0.30	-1.41686	29	39.95	-1.42340
7	0.35	-1.41700	30	50.25	-1.42357
8	0.42	-1.41740	31	63.23	-1.42357
9	0.50	-1.41781	32	79.57	-1.42382
10	0.62	-1.41818	33	100.13	-1.42407
11	0.75	-1.41871	34	126.03	-1.42425
12	0.90	-1.41889	35	158.63	-1.42478
13	1.12	-1.41914	36	199.67	-1.42511
14	1.37	-1.41975	37	251.33	-1.42552
15	1.70	-1.42018	38	316.37	-1.42591
16	2.12	-1.42042	39	398.25	-1.42595
17	2.63	-1.42071	40	501.32	-1.42602
18	3.28	-1.42086	41	631.08	-1.42610
19	4.10	-1.42154	42	794.45	-1.42621
20	5.13	-1.42184	43	1000.12	-1.42625
21	6.43	-1.42214	44	1259.03	-1.42652
22	8.07	-1.42230	45	1440.08	-1.42684
23	10.13	-1.42249			



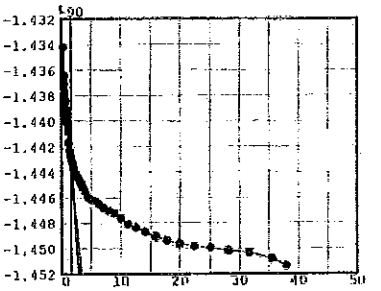
Void Ratio = 1.099 **Compression** = 3.2 %

D_0 = -1.41403 D_{90} = -1.42033 D_{100} = -1.42103

C_v **at 2.0 min.** = 0.74 ft.^{2}/day

Pressure: 0.50 tsf **TEST READINGS** **Load No. 4**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.42964	24	12.72	-1.44516
2	0.10	-1.43422	25	15.98	-1.44553
3	0.20	-1.43646	26	20.08	-1.44597
4	0.22	-1.43709	27	25.25	-1.44615
5	0.25	-1.43771	28	31.75	-1.44628
6	0.30	-1.43810	29	39.95	-1.44651
7	0.35	-1.43830	30	50.25	-1.44683
8	0.42	-1.43846	31	63.23	-1.44703
9	0.50	-1.43900	32	79.57	-1.44724
10	0.60	-1.43932	33	100.13	-1.44764
11	0.73	-1.43978	34	126.03	-1.44810
12	0.90	-1.44022	35	158.63	-1.44838
13	1.12	-1.44082	36	199.67	-1.44872
14	1.37	-1.44166	37	251.32	-1.44908
15	1.70	-1.44231	38	316.37	-1.44938
16	2.12	-1.44267	39	398.25	-1.44961
17	2.63	-1.44302	40	501.32	-1.44984
18	3.28	-1.44329	41	631.08	-1.44995
19	4.10	-1.44367	42	794.45	-1.45017
20	5.13	-1.44402	43	1000.12	-1.45031
21	6.43	-1.44429	44	1259.03	-1.45081
22	8.07	-1.44452	45	1440.48	-1.45137
23	10.13	-1.44484			



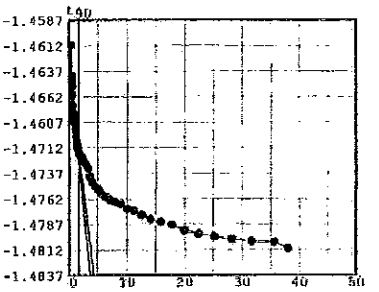
Void Ratio = 1.036 **Compression** = 6.1 %

D_0 = -1.43442 D_{90} = -1.44302 D_{100} = -1.44398

C_v **at 2.6 min.** = 0.52 ft.^{2}/day

Pressure: 1.00 tsf **TEST READINGS** **Load No. 5**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.45444	24	12.72	-1.47400
2	0.10	-1.46111	25	15.98	-1.47456
3	0.20	-1.46412	26	20.08	-1.47496
4	0.22	-1.46411	27	25.25	-1.47526
5	0.25	-1.46465	28	31.75	-1.47573
6	0.30	-1.46517	29	39.95	-1.47605
7	0.35	-1.46602	30	50.25	-1.47634
8	0.42	-1.46706	31	63.23	-1.47651
9	0.50	-1.46780	32	79.57	-1.47671
10	0.60	-1.46822	33	100.13	-1.47717
11	0.73	-1.46848	34	126.03	-1.47740
12	0.90	-1.46880	35	158.63	-1.47783
13	1.10	-1.46937	36	199.67	-1.47821
14	1.37	-1.47007	37	251.33	-1.47846
15	1.70	-1.47069	38	316.37	-1.47873
16	2.10	-1.47115	39	398.25	-1.47929
17	2.63	-1.47155	40	501.32	-1.47964
18	3.28	-1.47188	41	631.08	-1.47991
19	4.10	-1.47202	42	794.45	-1.48018
20	5.13	-1.47218	43	1000.12	-1.48037
21	6.43	-1.47250	44	1259.03	-1.48046
22	8.07	-1.47281	45	1440.42	-1.48112
23	10.13	-1.47315			



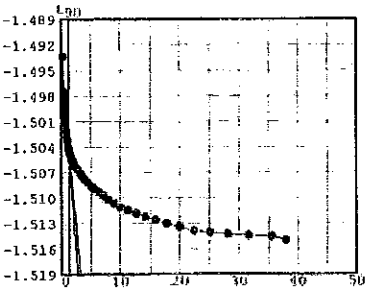
Void Ratio = 0.960 **Compression** = 9.7 %

D_0 = -1.46373 D_{90} = -1.47163 D_{100} = -1.47250

C_v **at 2.8 min.** = 0.46 ft.^{2}/day

Pressure: 2.00 tsf **TEST READINGS** **Load No. 6**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.48525	24	12.73	-1.50748
2	0.10	-1.49338	25	15.98	-1.50781
3	0.20	-1.49746	26	20.10	-1.50825
4	0.23	-1.49774	27	25.27	-1.50863
5	0.27	-1.49841	28	31.77	-1.50903
6	0.30	-1.49903	29	39.95	-1.50932
7	0.37	-1.49963	30	50.27	-1.50974
8	0.42	-1.50016	31	63.25	-1.51023
9	0.50	-1.50055	32	79.58	-1.51066
10	0.62	-1.50131	33	100.15	-1.51112
11	0.75	-1.50215	34	126.05	-1.51146
12	0.92	-1.50291	35	158.63	-1.51187
13	1.12	-1.50331	36	199.68	-1.51223
14	1.38	-1.50397	37	251.33	-1.51258
15	1.72	-1.50442	38	316.38	-1.51299
16	2.12	-1.50485	39	398.25	-1.51341
17	2.65	-1.50526	40	501.33	-1.51387
18	3.30	-1.50547	41	631.10	-1.51407
19	4.12	-1.50583	42	794.47	-1.51424
20	5.15	-1.50629	43	1000.13	-1.51442
21	6.45	-1.50648	44	1259.05	-1.51454
22	8.08	-1.50671	45	1440.08	-1.51506
23	10.13	-1.50708			



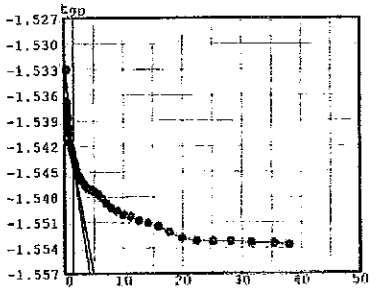
Void Ratio = 0.872 **Compression** = 13.7 %

D_0 = -1.49455 D_{90} = -1.50452 D_{100} = -1.50562

C_v **at 1.8 min.** = 0.65 ft.^{2}/day

Pressure: 4.00 tsf **TEST READINGS** **Load No. 7**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.52079	24	12.72	-1.54670
2	0.10	-1.53297	25	15.97	-1.54696
3	0.20	-1.53677	26	20.07	-1.54716
4	0.22	-1.53713	27	25.23	-1.54731
5	0.25	-1.53779	28	31.75	-1.54767
6	0.30	-1.53842	29	39.93	-1.54811
7	0.35	-1.53869	30	50.23	-1.54877
8	0.42	-1.53971	31	63.22	-1.54930
9	0.50	-1.54048	32	79.55	-1.54965
10	0.60	-1.54143	33	100.12	-1.55008
11	0.73	-1.54163	34	126.02	-1.55034
12	0.90	-1.54177	35	158.62	-1.55078
13	1.10	-1.54210	36	199.65	-1.55108
14	1.37	-1.54227	37	251.32	-1.55146
15	1.68	-1.54261	38	316.35	-1.55215
16	2.10	-1.54303	39	398.23	-1.55285
17	2.62	-1.54367	40	501.30	-1.55315
18	3.27	-1.54416	41	631.07	-1.55324
19	4.10	-1.54487	42	794.43	-1.55321
20	5.13	-1.54540	43	1000.12	-1.55337
21	6.42	-1.54562	44	1259.03	-1.55344
22	8.07	-1.54596	45	1440.40	-1.55361
23	10.12	-1.54636			



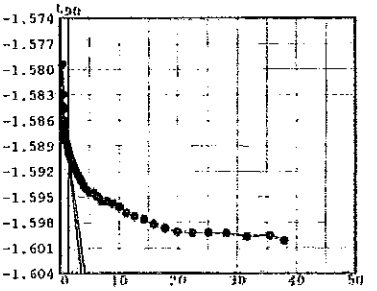
Void Ratio = 0.773 **Compression** = 18.3 %

D_0 = -1.53712 D_{90} = -1.54344 D_{100} = -1.54414

C_v **at 2.4 min.** = 0.44 ft.^{2}/day

Pressure: 8.00 tsf **TEST READINGS** **Load No. 8**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.56219	24	12.72	-1.59316
2	0.10	-1.57942	25	15.98	-1.59367
3	0.20	-1.58293	26	20.08	-1.59414
4	0.22	-1.58438	27	25.25	-1.59452
5	0.25	-1.58470	28	31.77	-1.59456
6	0.30	-1.58592	29	39.95	-1.59496
7	0.35	-1.58656	30	50.27	-1.59555
8	0.42	-1.58692	31	63.23	-1.59556
9	0.50	-1.58721	32	79.58	-1.59575
10	0.60	-1.58751	33	100.15	-1.59619
11	0.73	-1.58822	34	126.03	-1.59694
12	0.90	-1.58855	35	158.63	-1.59729
13	1.12	-1.58868	36	199.67	-1.59761
14	1.38	-1.58909	37	251.33	-1.59819
15	1.70	-1.58948	38	316.37	-1.59868
16	2.12	-1.58990	39	398.25	-1.59908
17	2.63	-1.59025	40	501.33	-1.59919
18	3.28	-1.59072	41	631.10	-1.59919
19	4.12	-1.59108	42	794.47	-1.59926
20	5.15	-1.59145	43	1000.13	-1.59966
21	6.43	-1.59188	44	1259.05	-1.59951
22	8.08	-1.59235	45	1440.37	-1.60014
23	10.13	-1.59264			



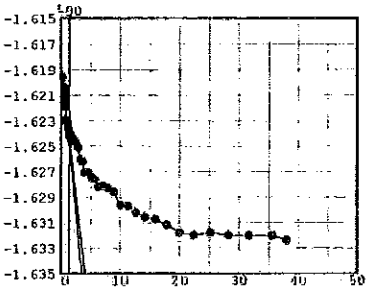
Void Ratio = 0.653 **Compression** = 23.8 %

D_0 = -1.58264 D_{90} = -1.58964 D_{100} = -1.59042

C_v **at 1.9 min.** = 0.50 ft.^{2}/day

Pressure: 12.00 tsf **TEST READINGS** **Load No. 9**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.60875	24	12.72	-1.62617
2	0.10	-1.61959	25	15.98	-1.62706
3	0.20	-1.62030	26	20.08	-1.62708
4	0.22	-1.62037	27	25.25	-1.62740
5	0.25	-1.62108	28	31.75	-1.62758
6	0.30	-1.62076	29	39.95	-1.62817
7	0.35	-1.62100	30	50.25	-1.62809
8	0.42	-1.62160	31	63.23	-1.62833
9	0.50	-1.62192	32	79.57	-1.62860
10	0.60	-1.62285	33	100.13	-1.62962
11	0.73	-1.62319	34	126.03	-1.62969
12	0.90	-1.62302	35	158.63	-1.63021
13	1.12	-1.62341	36	199.67	-1.63054
14	1.37	-1.62365	37	251.33	-1.63071
15	1.70	-1.62411	38	316.37	-1.63119
16	2.12	-1.62401	39	398.25	-1.63179
17	2.63	-1.62441	40	501.32	-1.63196
18	3.28	-1.62463	41	631.08	-1.63177
19	4.10	-1.62441	42	794.45	-1.63198
20	5.13	-1.62459	43	1000.12	-1.63199
21	6.43	-1.62477	44	1259.03	-1.63201
22	8.07	-1.62511	45	1440.40	-1.63239
23	10.13	-1.62603			



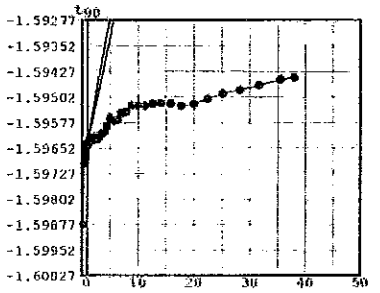
Void Ratio = 0.570 **Compression** = 27.6 %

D_0 = -1.61863 D_{90} = -1.62408 D_{100} = -1.62469

C_v **at 1.8 min.** = 0.46 ft.^{2}/day

Pressure: 3.00 tsf **TEST READINGS** **Load No. 10**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.61596	24	12.72	-1.59608
2	0.08	-1.59876	25	15.98	-1.59605
3	0.18	-1.59697	26	20.08	-1.59588
4	0.22	-1.59693	27	25.25	-1.59564
5	0.25	-1.59685	28	31.75	-1.59572
6	0.30	-1.59684	29	39.93	-1.59569
7	0.35	-1.59670	30	50.25	-1.59550
8	0.42	-1.59643	31	63.23	-1.59546
9	0.50	-1.59654	32	79.57	-1.59527
10	0.60	-1.59642	33	100.13	-1.59527
11	0.73	-1.59642	34	126.02	-1.59529
12	0.90	-1.59638	35	158.62	-1.59522
13	1.12	-1.59642	36	199.65	-1.59521
14	1.37	-1.59632	37	251.32	-1.59522
15	1.70	-1.59627	38	316.35	-1.59528
16	2.12	-1.59624	39	398.23	-1.59523
17	2.63	-1.59628	40	501.32	-1.59507
18	3.28	-1.59627	41	631.08	-1.59492
19	4.10	-1.59628	42	794.45	-1.59481
20	5.13	-1.59619	43	1000.12	-1.59468
21	6.43	-1.59623	44	1259.03	-1.59451
22	8.07	-1.59624	45	1440.30	-1.59445
23	10.12	-1.59615			



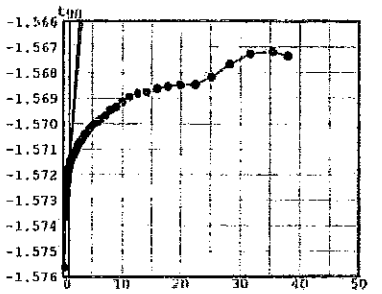
Void Ratio = 0.668 **Compression** = 23.1 %

D_0 = -1.59721 D_{90} = -1.59641 D_{100} = -1.59632

C_v **at 1.0 min.** = 0.83 ft.^{2}/day

Pressure: 0.75 tsf **TEST READINGS** **Load No. 11**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.58649	24	12.72	-1.57042
2	0.10	-1.57563	25	15.98	-1.57034
3	0.20	-1.57367	26	20.08	-1.57020
4	0.23	-1.57339	27	25.25	-1.57005
5	0.27	-1.57313	28	31.75	-1.56995
6	0.30	-1.57284	29	39.95	-1.56983
7	0.35	-1.57267	30	50.25	-1.56969
8	0.42	-1.57236	31	63.23	-1.56946
9	0.50	-1.57219	32	79.57	-1.56935
10	0.62	-1.57204	33	100.13	-1.56915
11	0.73	-1.57186	34	126.03	-1.56895
12	0.90	-1.57169	35	158.63	-1.56882
13	1.12	-1.57158	36	199.67	-1.56876
14	1.37	-1.57146	37	251.33	-1.56864
15	1.70	-1.57139	38	316.37	-1.56856
16	2.12	-1.57131	39	398.23	-1.56849
17	2.63	-1.57128	40	501.32	-1.56848
18	3.28	-1.57113	41	631.08	-1.56817
19	4.10	-1.57108	42	794.45	-1.56769
20	5.13	-1.57094	43	1000.12	-1.56727
21	6.43	-1.57080	44	1259.03	-1.56719
22	8.07	-1.57071	45	1440.07	-1.56737
23	10.13	-1.57059			



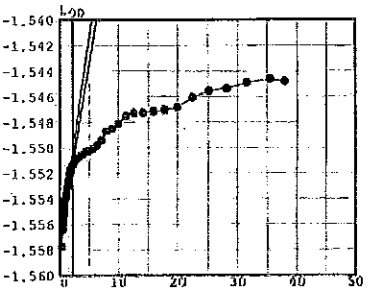
Void Ratio = 0.738 **Compression** = 19.9 %

D_0 = -1.57448 D_{90} = -1.57156 D_{100} = -1.57124

C_v **at 1.1 min.** = 0.82 ft.^{2}/day

Pressure: 0.19 tsf **TEST READINGS** **Load No. 12**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.56189	24	12.72	-1.55059
2	0.10	-1.55772	25	15.98	-1.55052
3	0.20	-1.55646	26	20.08	-1.55026
4	0.23	-1.55633	27	25.25	-1.55019
5	0.27	-1.55585	28	31.75	-1.55005
6	0.30	-1.55571	29	39.95	-1.54981
7	0.35	-1.55538	30	50.25	-1.54940
8	0.43	-1.55513	31	63.23	-1.54869
9	0.52	-1.55488	32	79.57	-1.54847
10	0.62	-1.55452	33	100.13	-1.54810
11	0.75	-1.55411	34	126.03	-1.54751
12	0.92	-1.55394	35	158.63	-1.54727
13	1.12	-1.55372	36	199.67	-1.54728
14	1.38	-1.55353	37	251.33	-1.54714
15	1.70	-1.55306	38	316.37	-1.54704
16	2.12	-1.55260	39	398.25	-1.54684
17	2.63	-1.55203	40	501.32	-1.54606
18	3.28	-1.55177	41	631.08	-1.54554
19	4.10	-1.55147	42	794.45	-1.54537
20	5.13	-1.55121	43	1000.12	-1.54493
21	6.43	-1.55093	44	1259.05	-1.54463
22	8.07	-1.55085	45	1440.15	-1.54483
23	10.13	-1.55073			

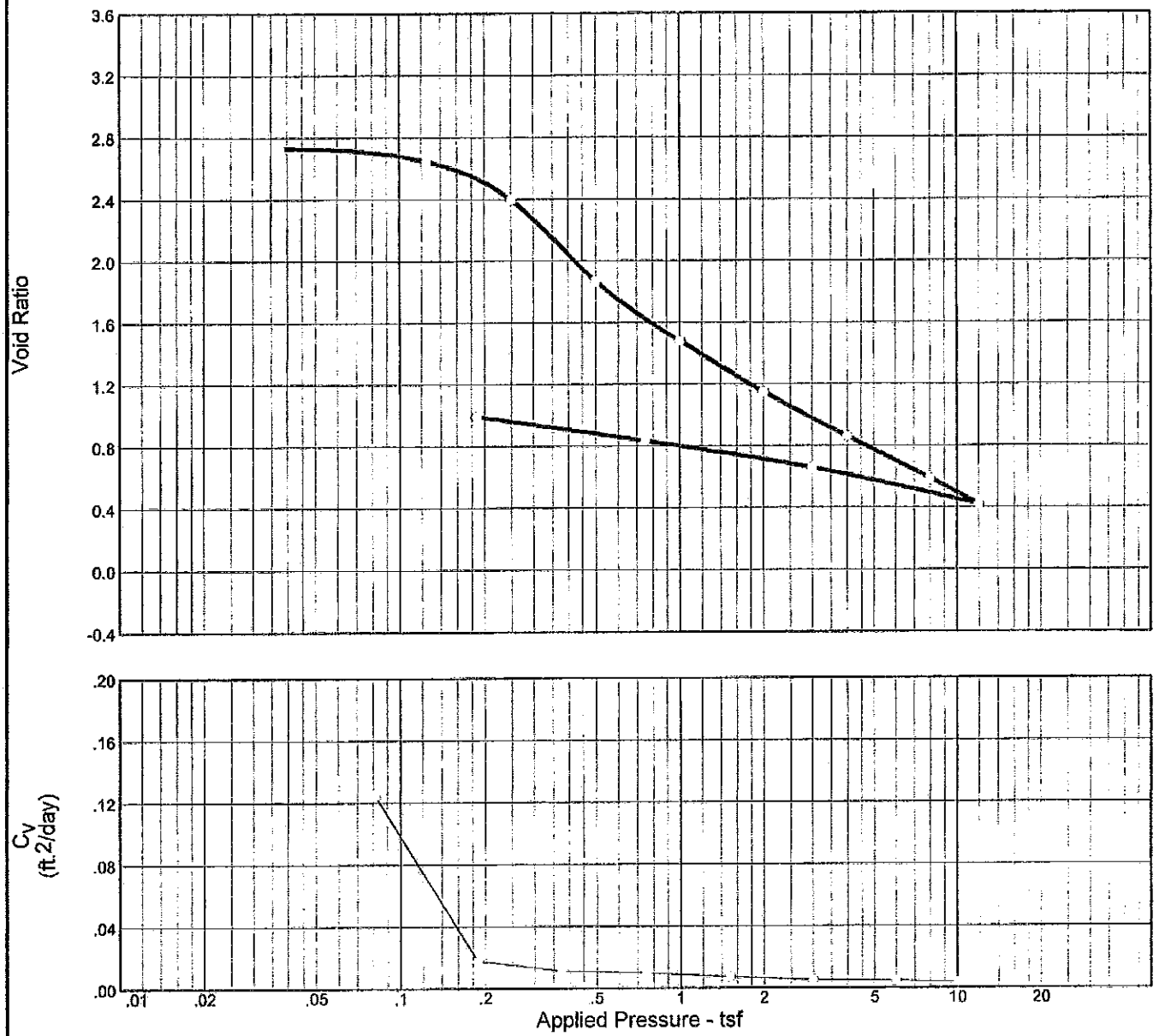


Void Ratio = 0.796 **Compression** = 17.2 %

D_0 = -1.55714 D_{90} = -1.55138 D_{100} = -1.55074

C_v **at 4.4 min.** = 0.23 ft.^{2}/day

Consolidation Test Report



Natural Saturation	Natural Moisture	Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
98.7 %	99.9 %	45.2	55	34	2.70	0.18	1.17	2.732

MATERIAL DESCRIPTION	USCS	AASHTO
VSO GR CH3	CH3	

Project No. 0017-0108 **Client:** U.S. ARMY CORPS OF ENGINEERS - N.O. DISTRICT

Project: BAYOU SAUVAGE FLOOD SIDE INTERMEDIATE MARSH - TASK ORDER # 108

Source: BSFR-4U **Sample No.:** 5A **Elev./Depth:** 12.5'

FFEBJV, LLC.

Ridgeland, Mississippi

Remarks:

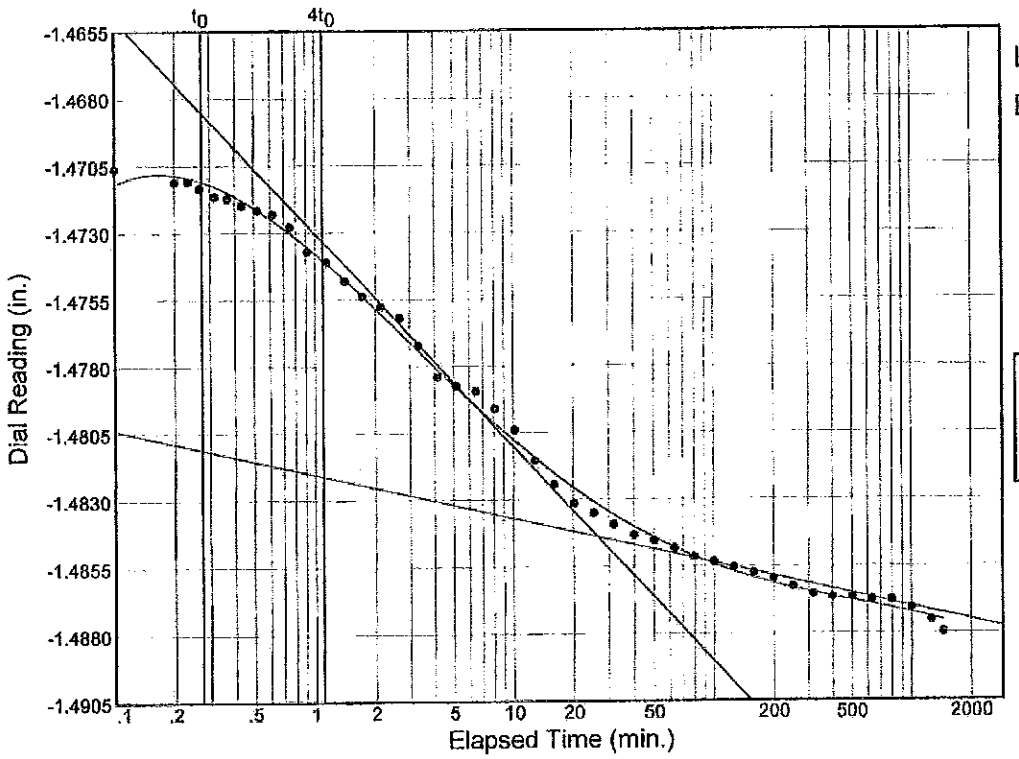
ASTM D2435, METHOD A
CHECKED BY: MR
TESTED BY: AH
CALCULATED BY: HS

Figure

Dial Reading vs. Time

Project No.: 0017-0108
Project: BAYOU SAUVAGE FLOOD SIDE INTERMEDIATE MARSH - TASK ORDER # 108

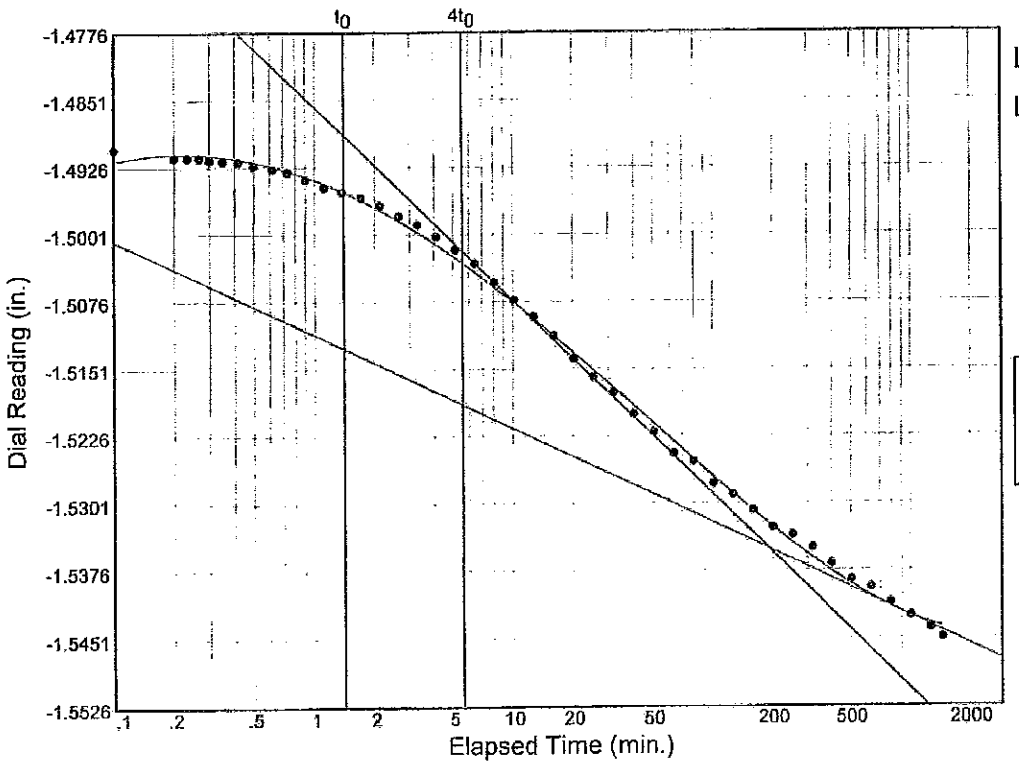
Source: BSFR-4U Sample No.: 5A Elev./Depth: 12.5'



Load No.= 2
Load= 0.13 tsf
D_0 = -1.46940
D_{50} = -1.47690
D_{100} = -1.48440
T_{50} = 2.79 min.

C_v @ T_{50}
0.12 ft.^{2}/day

C_α = 0.002



Load No.= 3
Load= 0.25 tsf
D_0 = -1.48945
D_{50} = -1.51230
D_{100} = -1.53516
T_{50} = 17.81 min.

C_v @ T_{50}
0.02 ft.^{2}/day

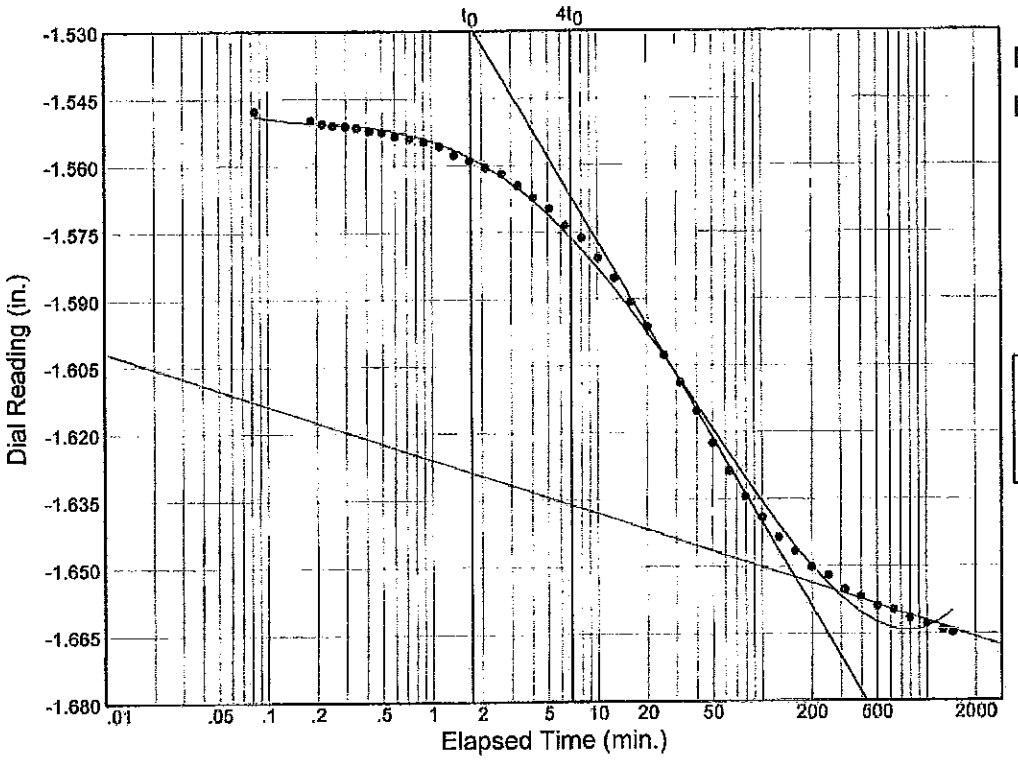
C_α = 0.013

Figure

Dial Reading vs. Time

Project No.: 0017-0108
Project: BAYOU SAUVAGE FLOOD SIDE INTERMEDIATE MARSH - TASK ORDER # 108

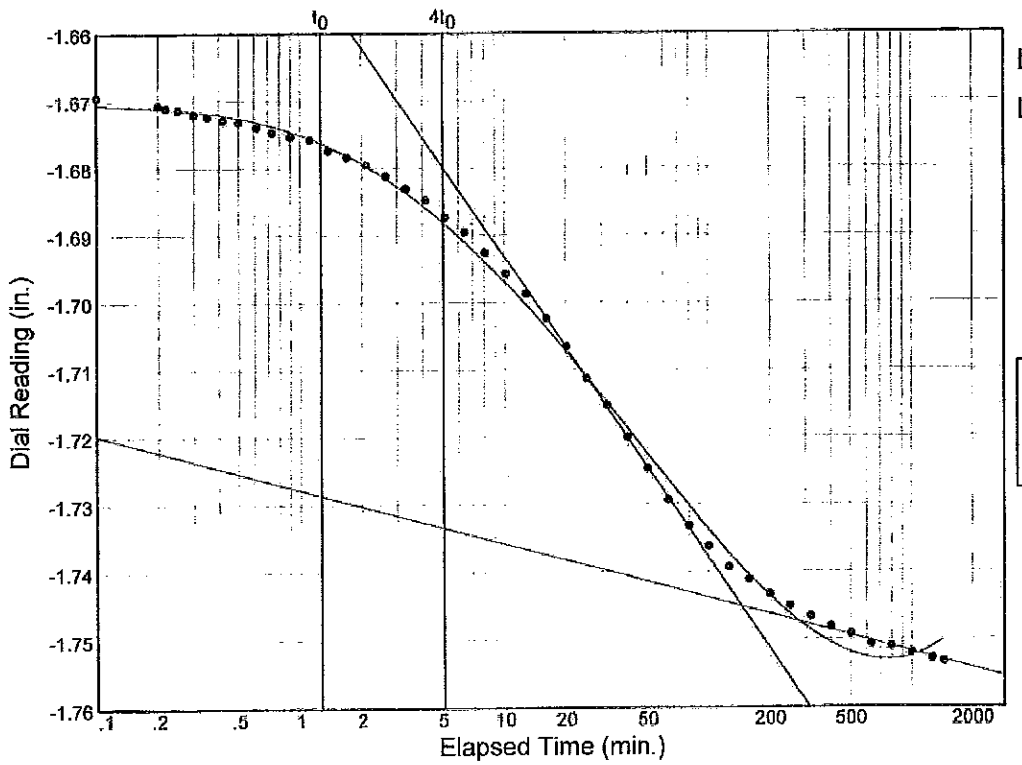
Source: BSFR-4U Sample No.: 5A Elev./Depth: 12.5'



Load No.= 4
Load= 0.50 tsf
D_0 = -1.54689
D_{50} = -1.59967
D_{100} = -1.65245
T_{50} = 21.96 min.

C_v @ T_{50}
0.01 ft.^{2}/day

C_α = 0.016



Load No.= 5
Load= 1.00 tsf
D_0 = -1.66655
D_{50} = -1.70585
D_{100} = -1.74515
T_{50} = 18.13 min.

C_v @ T_{50}
0.01 ft.^{2}/day

C_α = 0.012

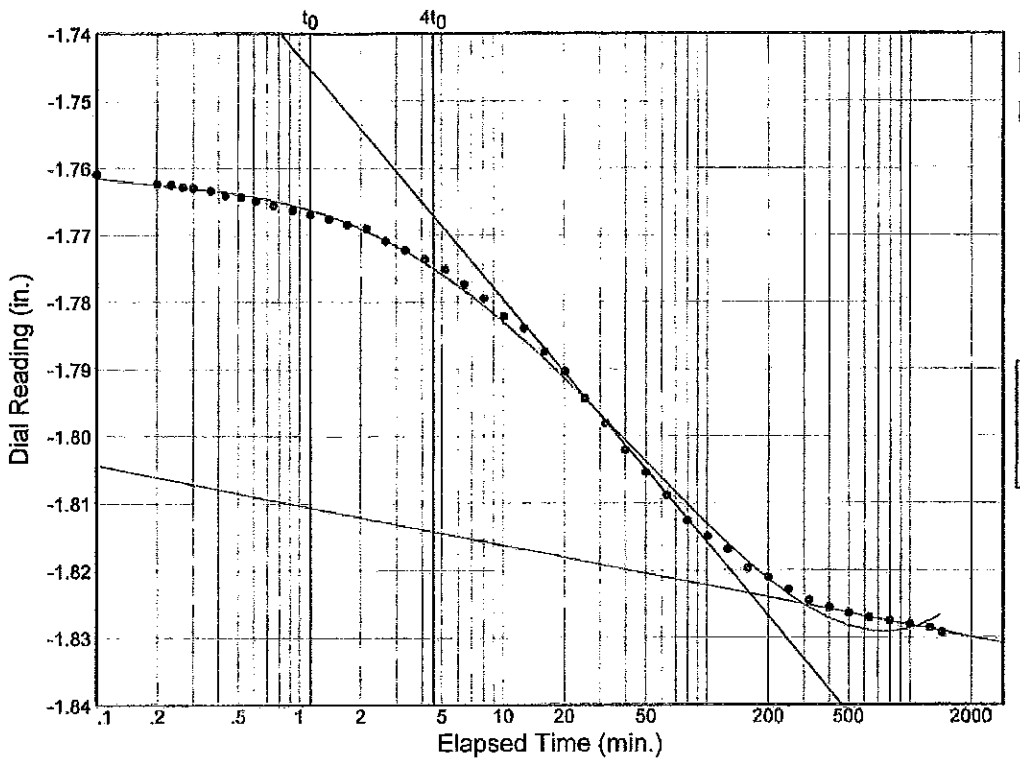
Figure

FFEBJV, LLC.

Dial Reading vs. Time

Project No.: 0017-0108
Project: BAYOU SAUVAGE FLOOD SIDE INTERMEDIATE MARSH - TASK ORDER # 108

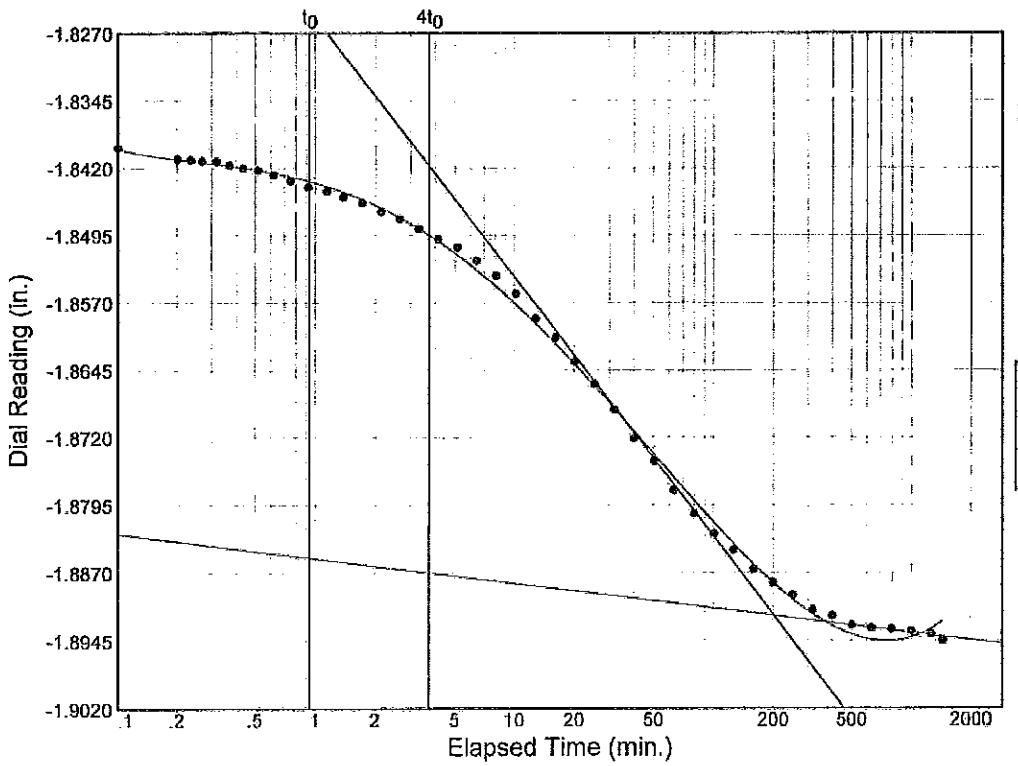
Source: BSFR-4U Sample No.: 5A Elev./Depth: 12.5'



Load No.= 6
Load= 2.00 tsf
D_0 = -1.75697
D_{50} = -1.79021
D_{100} = -1.82345
T_{50} = 18.28 min.

C_v @ T_{50}
0.01 ft.^{2}/day

C_α = 0.011



Load No.= 7
Load= 4.00 tsf
D_0 = -1.83452
D_{50} = -1.86312
D_{100} = -1.89172
T_{50} = 18.72 min.

C_v @ T_{50}
0.01 ft.^{2}/day

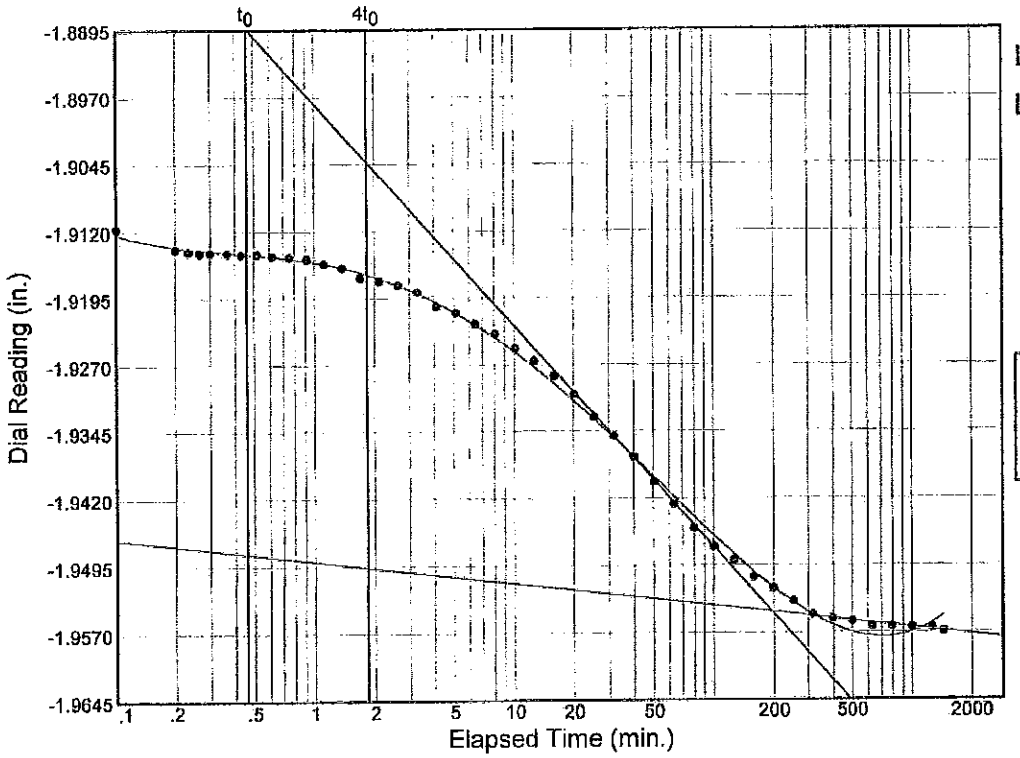
C_α = 0.006

Figure

Dial Reading vs. Time

Project No.: 0017-0108
Project: BAYOU SAUVAGE FLOOD SIDE INTERMEDIATE MARSH - TASK ORDER # 108

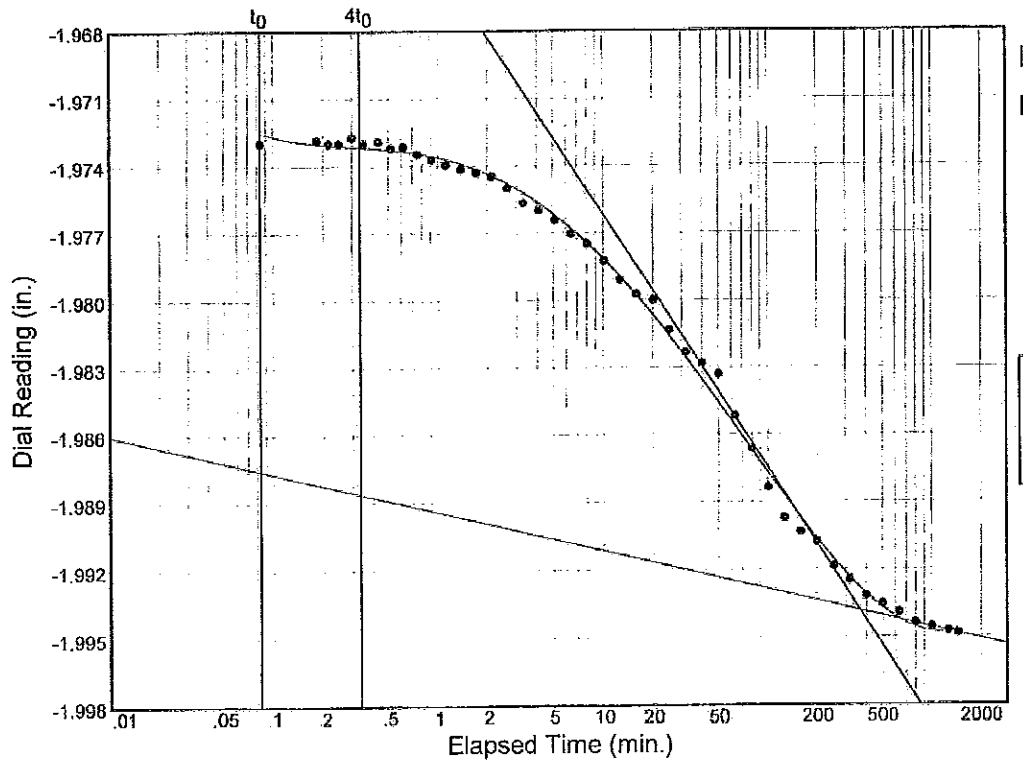
Source: BSFR-4U Sample No.: 5A Elev./Depth: 12.5'



Load No.= 8
Load= 8.00 tsf
D_0 = -1.90355
D_{50} = -1.92911
D_{100} = -1.95468
T_{50} = 15.93 min.

C_v @ T_{50}
0.00 ft.^{2}/day

C_α = 0.006



Load No.= 9
Load= 12.00 tsf
D_0 = -1.96496
D_{50} = -1.97939
D_{100} = -1.99382
T_{50} = 14.36 min.

C_v @ T_{50}
0.00 ft.^{2}/day

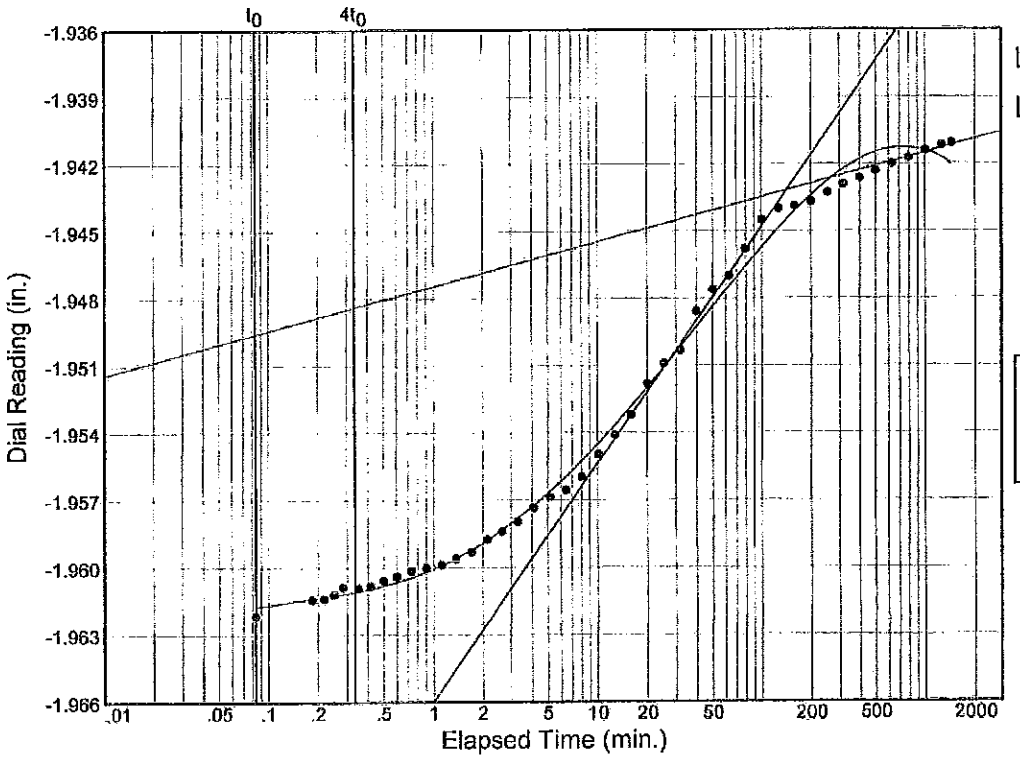
C_α = 0.005

Figure

Dial Reading vs. Time

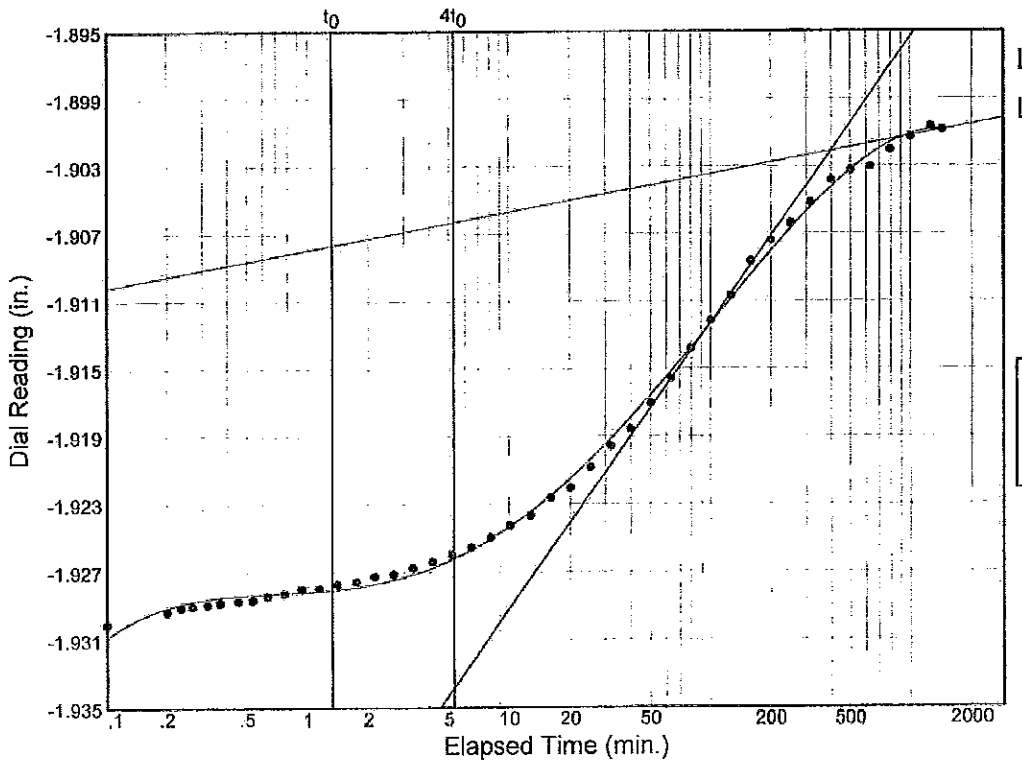
Project No.: 0017-0108
Project: BAYOU SAUVAGE FLOOD SIDE INTERMEDIATE MARSH - TASK ORDER # 108

Source: BSFR-4U Sample No.: 5A Elev./Depth: 12.5'



Load No.= 10
Load= 3.00 tsf
D_0 = -1.97891
D_{50} = -1.96105
D_{100} = -1.94318
T_{50} = 0.36 min.

C_v @ T_{50}
0.18 ft.^{2}/day



Load No.= 11
Load= 0.75 tsf
D_0 = -1.93468
D_{50} = -1.91839
D_{100} = -1.90211
T_{50} = 36.55 min.

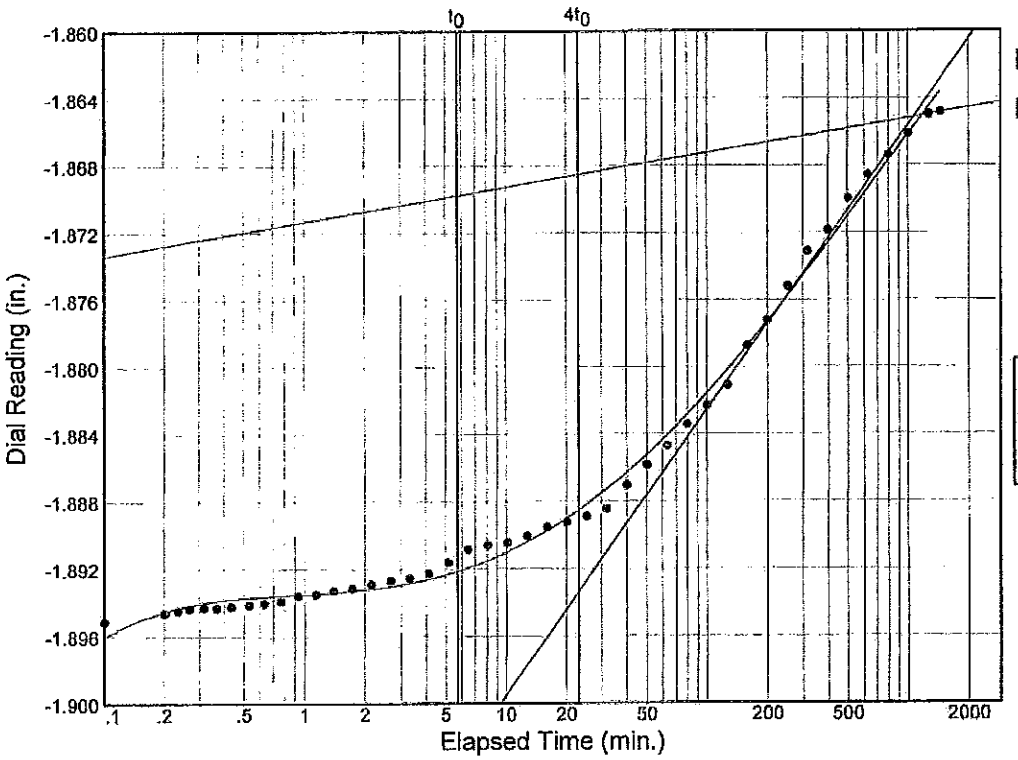
C_v @ T_{50}
0.00 ft.^{2}/day

Figure

Dial Reading vs. Time

Project No.: 0017-0108
Project: BAYOU SAUVAGE FLOOD SIDE INTERMEDIATE MARSH - TASK ORDER # 108

Source: BSFR-4U Sample No.: 5A Elev./Depth: 12.5'



Load No.= 12

Load= 0.19 tsf

D_0 = -1.89642

D_{50} = -1.88077

D_{100} = -1.86512

T_{50} = 114.76 min.

C_v @ T_{50}
0.00 ft.^{2}/day

Figure

SWELL/CONSOLIDATION TEST DATA

Client: U.S. ARMY CORPS OF ENGINEERS - N.O. DISTRICT
Project: BAYOU SAUVAGE FLOOD SIDE INTERMEDIATE MARSH - TASK ORDER # 108
Project Number: 0017-0108

Sample Data

Source: BSFR-4U
Sample No.: 5A
Elev. or Depth: 12.5'
Sample Length(in./cm.):
Location:
Description: VSO GR CH3
Liquid Limit: 55
Plasticity Index: 34
USCS: CH3
AASHTO:
Figure No.:
Testing Remarks: ASTM D2435, METHOD A
CHECKED BY: MR
TESTED BY: AH
CALCULATED BY: HS

Test Specimen Data

TOTAL SAMPLE		BEFORE TEST	AFTER TEST
Wet w+t	= 426.83 g.	Consolidometer # = 15	Wet w+t = 344.95 g.
Dry w+t	= 300.25 g.		Dry w+t = 289.34 g.
Tare Wt.	= 173.51 g.	Spec. Gravity = 2.70	Tare Wt. = 173.51 g.
Height	= .85 in.	Height = .85 in.	
Diameter	= 4.00 in.	Diameter = 4.00 in.	
Weight	= 253.32 g.	Defl. Table = n/a	
Moisture	= 99.9 %	Ht. Solids = 0.2279 in.	Moisture = 48.0 %
Wet Den.	= 90.3 pcf	Dry Wt. = 126.74 g.*	Dry Wt. = 115.83 g.
Dry Den.	= 45.2 pcf	Void Ratio = 2.732	Void Ratio = 0.992
		Saturation = 98.7 %	

*** Initial dry weight used in calculations**

End-of-Load Summary

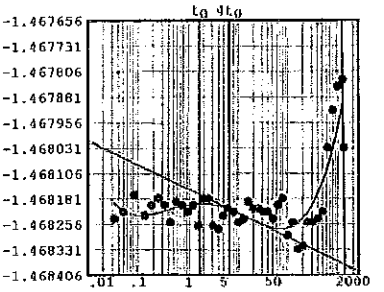
Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (ft.^{2}/day)	C_α	Void Ratio	% Compression /Swell
start	-1.46819				2.732	
0.04	-1.46803	0.00000		0.014	2.733	0.0 Swell
0.13	-1.48797	0.00000	0.12	0.002	2.646	2.3 Comprs.
0.25	-1.54508	0.00000	0.02	0.013	2.395	9.0 Comprs.
0.50	-1.66477	0.00000	0.01	0.016	1.870	23.1 Comprs.
1.00	-1.75336	0.00000	0.01	0.012	1.481	33.5 Comprs.
2.00	-1.82926	0.00000	0.01	0.011	1.148	42.4 Comprs.
4.00	-1.89446	0.00000	0.01	0.006	0.862	50.1 Comprs.
8.00	-1.95692	0.00000	0.00	0.006	0.588	57.4 Comprs.
12.00	-1.99484	0.00000	0.00	0.005	0.422	61.9 Comprs.
3.00	-1.94110	0.00000	0.18		0.658	55.6 Comprs.
0.75	-1.90085	0.00000	0.00		0.834	50.9 Comprs.

Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (ft.^{2}/day)	C_α	Void Ratio	% Compression /Swell
0.19	-1.86485	0.00000	0.00		0.992	46.6 Comprs.

C_c = 1.17 P_c = 0.18 tsf C_r = 0.32

Pressure: 0.04 tsf **TEST READINGS** **Load No. 1**

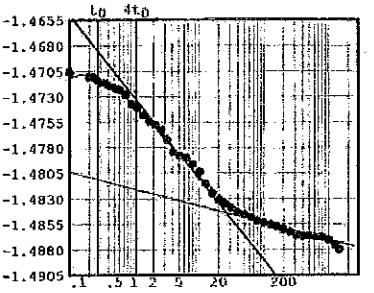
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.46819	23	12.55	-1.46824
2	0.03	-1.46824	24	15.82	-1.46819
3	0.05	-1.46822	25	19.92	-1.46821
4	0.08	-1.46817	26	25.08	-1.46821
5	0.13	-1.46823	27	31.58	-1.46822
6	0.18	-1.46820	28	39.78	-1.46822
7	0.25	-1.46818	29	50.08	-1.46824
8	0.33	-1.46820	30	63.07	-1.46820
9	0.43	-1.46825	31	79.42	-1.46818
10	0.57	-1.46819	32	99.98	-1.46829
11	0.73	-1.46820	33	125.87	-1.46825
12	0.95	-1.46822	34	158.47	-1.46833
13	1.20	-1.46820	35	199.50	-1.46832
14	1.53	-1.46826	36	251.17	-1.46825
15	1.95	-1.46818	37	316.20	-1.46825
16	2.47	-1.46818	38	398.08	-1.46824
17	3.12	-1.46826	39	501.17	-1.46822
18	3.93	-1.46827	40	630.93	-1.46803
19	4.97	-1.46823	41	794.30	-1.46792
20	6.27	-1.46821	42	999.97	-1.46785
21	7.90	-1.46822	43	1258.88	-1.46783
22	9.97	-1.46825	44	1307.23	-1.46803



Void Ratio = 2.733 **Swell** = 0.0 %

Pressure: 0.13 tsf **TEST READINGS** **Load No. 2**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.46940	24	12.75	-1.48155
2	0.10	-1.47061	25	16.00	-1.48245
3	0.20	-1.47111	26	20.12	-1.48315
4	0.23	-1.47109	27	25.28	-1.48351
5	0.27	-1.47134	28	31.78	-1.48394
6	0.32	-1.47165	29	39.98	-1.48434
7	0.37	-1.47172	30	50.28	-1.48454
8	0.43	-1.47198	31	63.27	-1.48483
9	0.52	-1.47216	32	79.60	-1.48516
10	0.62	-1.47232	33	100.17	-1.48534
11	0.75	-1.47278	34	126.07	-1.48553
12	0.92	-1.47371	35	158.67	-1.48573
13	1.13	-1.47410	36	199.70	-1.48597
14	1.40	-1.47482	37	251.37	-1.48626
15	1.72	-1.47539	38	316.40	-1.48653
16	2.13	-1.47577	39	398.28	-1.48665
17	2.65	-1.47620	40	501.37	-1.48665
18	3.30	-1.47724	41	631.13	-1.48675
19	4.13	-1.47842	42	794.50	-1.48677
20	5.17	-1.47877	43	1000.17	-1.48706
21	6.47	-1.47896	44	1259.08	-1.48754
22	8.10	-1.47961	45	1440.48	-1.48797
23	10.17	-1.48039			



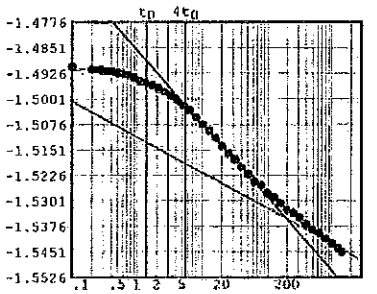
Void Ratio = 2.646 **Compression** = 2.3 %

D_0 = -1.46940 D_{50} = -1.47690 D_{100} = -1.48440

C_v **at 2.8 min.** = 0.12 ft.^{2}/day C_α = 0.002

Pressure: 0.25 tsf **TEST READINGS** **Load No. 3**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.48945	24	12.73	-1.50929
2	0.10	-1.49060	25	16.00	-1.51147
3	0.20	-1.49148	26	20.10	-1.51399
4	0.23	-1.49153	27	25.27	-1.51606
5	0.27	-1.49158	28	31.78	-1.51779
6	0.30	-1.49179	29	39.97	-1.52016
7	0.35	-1.49189	30	50.28	-1.52217
8	0.42	-1.49199	31	63.25	-1.52456
9	0.50	-1.49245	32	79.60	-1.52548
10	0.62	-1.49280	33	100.17	-1.52794
11	0.73	-1.49312	34	126.07	-1.52918
12	0.90	-1.49399	35	158.65	-1.53091
13	1.12	-1.49486	36	199.70	-1.53283
14	1.37	-1.49536	37	251.35	-1.53367
15	1.70	-1.49600	38	316.40	-1.53503
16	2.12	-1.49688	39	398.27	-1.53690
17	2.63	-1.49803	40	501.35	-1.53862
18	3.28	-1.49900	41	631.12	-1.53951
19	4.10	-1.50036	42	794.48	-1.54119
20	5.13	-1.50190	43	1000.15	-1.54266
21	6.43	-1.50338	44	1259.07	-1.54403
22	8.08	-1.50545	45	1440.33	-1.54508
23	10.13	-1.50751			



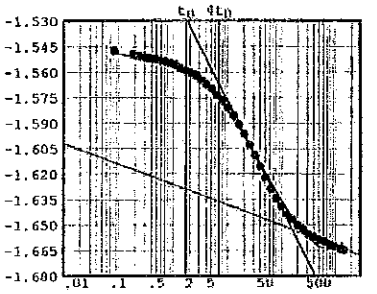
Void Ratio = 2.395 **Compression =** 9.0 %

D_0 = -1.48945 D_{50} = -1.51230 D_{100} = -1.53516

C_v **at 17.8 min.** = 0.02 ft.^{2}/day C_α = 0.013

Pressure: 0.50 tsf **TEST READINGS** **Load No. 4**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.54689	24	12.72	-1.58535
2	0.08	-1.54772	25	15.97	-1.59071
3	0.18	-1.54970	26	20.08	-1.59633
4	0.22	-1.55054	27	25.25	-1.60273
5	0.25	-1.55091	28	31.75	-1.60885
6	0.30	-1.55116	29	39.95	-1.61535
7	0.35	-1.55156	30	50.25	-1.62242
8	0.42	-1.55220	31	63.23	-1.62860
9	0.50	-1.55251	32	79.57	-1.63445
10	0.60	-1.55346	33	100.13	-1.63905
11	0.73	-1.55395	34	126.03	-1.64352
12	0.90	-1.55469	35	158.63	-1.64665
13	1.12	-1.55577	36	199.67	-1.65017
14	1.37	-1.55778	37	251.33	-1.65204
15	1.70	-1.55895	38	316.37	-1.65529
16	2.12	-1.56057	39	398.25	-1.65679
17	2.63	-1.56191	40	501.33	-1.65884
18	3.28	-1.56462	41	631.10	-1.65968
19	4.10	-1.56725	42	794.47	-1.66146
20	5.13	-1.56974	43	1000.13	-1.66284
21	6.43	-1.57355	44	1259.05	-1.66421
22	8.07	-1.57635	45	1440.42	-1.66477
23	10.12	-1.58088			



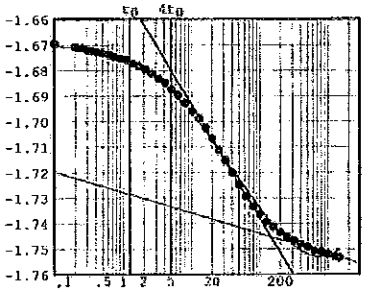
Void Ratio = 1.870 **Compression =** 23.1 %

D_0 = -1.54689 D_{50} = -1.59967 D_{100} = -1.65245

C_v **at 22.0 min.** = 0.01 ft.^{2}/day C_α = 0.016

Pressure: 1.00 tsf **TEST READINGS** **Load No. 5**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.66655	24	12.72	-1.69881
2	0.10	-1.66948	25	15.98	-1.70249
3	0.20	-1.67069	26	20.08	-1.70658
4	0.22	-1.67102	27	25.25	-1.71131
5	0.25	-1.67133	28	31.77	-1.71532
6	0.30	-1.67199	29	39.97	-1.72006
7	0.35	-1.67235	30	50.27	-1.72472
8	0.42	-1.67289	31	63.25	-1.72940
9	0.50	-1.67313	32	79.58	-1.73322
10	0.62	-1.67385	33	100.15	-1.73626
11	0.73	-1.67465	34	126.05	-1.73936
12	0.90	-1.67529	35	158.65	-1.74124
13	1.12	-1.67581	36	199.70	-1.74341
14	1.38	-1.67736	37	251.35	-1.74510
15	1.70	-1.67840	38	316.40	-1.74665
16	2.12	-1.67956	39	398.28	-1.74821
17	2.63	-1.68124	40	501.35	-1.74926
18	3.28	-1.68312	41	631.12	-1.75078
19	4.10	-1.68480	42	794.50	-1.75110
20	5.13	-1.68738	43	1000.17	-1.75201
21	6.43	-1.68957	44	1259.08	-1.75293
22	8.07	-1.69265	45	1440.42	-1.75336
23	10.13	-1.69582			



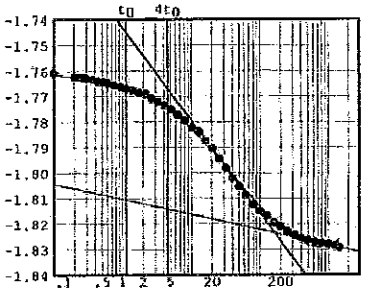
Void Ratio = 1.481 **Compression** = 33.5 %

D_0 = -1.66655 D_{50} = -1.70585 D_{100} = -1.74515

C_v **at 18.1 min.** = 0.01 ft.^{2}/day C_α = 0.012

Pressure: 2.00 tsf **TEST READINGS** **Load No. 6**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.75697	24	12.73	-1.78391
2	0.10	-1.76094	25	16.00	-1.78742
3	0.20	-1.76245	26	20.12	-1.79039
4	0.23	-1.76258	27	25.28	-1.79442
5	0.27	-1.76289	28	31.78	-1.79811
6	0.30	-1.76298	29	39.97	-1.80203
7	0.37	-1.76343	30	50.28	-1.80545
8	0.43	-1.76408	31	63.27	-1.80880
9	0.52	-1.76435	32	79.60	-1.81258
10	0.62	-1.76493	33	100.17	-1.81497
11	0.75	-1.76559	34	126.07	-1.81684
12	0.93	-1.76629	35	158.67	-1.81963
13	1.13	-1.76695	36	199.70	-1.82104
14	1.40	-1.76765	37	251.37	-1.82288
15	1.72	-1.76848	38	316.40	-1.82445
16	2.13	-1.76903	39	398.28	-1.82550
17	2.65	-1.77091	40	501.37	-1.82631
18	3.30	-1.77230	41	631.13	-1.82700
19	4.12	-1.77358	42	794.50	-1.82749
20	5.17	-1.77511	43	1000.17	-1.82801
21	6.45	-1.77735	44	1259.08	-1.82856
22	8.08	-1.77948	45	1440.32	-1.82926
23	10.15	-1.78218			



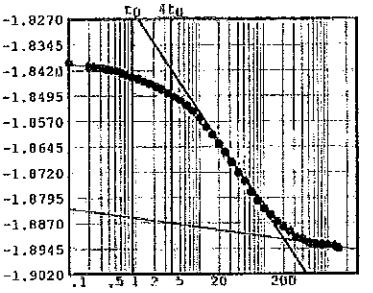
Void Ratio = 1.148 **Compression** = 42.4 %

D_0 = -1.75697 D_{50} = -1.79021 D_{100} = -1.82345

C_v **at 18.3 min.** = 0.01 ft.^{2}/day C_α = 0.011

Pressure: 4.00 tsf **TEST READINGS** **Load No. 7**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.83452	24	12.73	-1.85875
2	0.10	-1.83978	25	16.00	-1.86089
3	0.20	-1.84100	26	20.12	-1.86353
4	0.23	-1.84109	27	25.27	-1.86607
5	0.27	-1.84124	28	31.78	-1.86889
6	0.32	-1.84128	29	39.97	-1.87210
7	0.37	-1.84171	30	50.28	-1.87461
8	0.43	-1.84201	31	63.25	-1.87788
9	0.52	-1.84225	32	79.60	-1.88046
10	0.62	-1.84274	33	100.17	-1.88270
11	0.75	-1.84341	34	126.07	-1.88450
12	0.92	-1.84412	35	158.67	-1.88661
13	1.13	-1.84454	36	199.70	-1.88814
14	1.38	-1.84525	37	251.37	-1.88945
15	1.72	-1.84589	38	316.40	-1.89110
16	2.13	-1.84684	39	398.28	-1.89178
17	2.65	-1.84770	40	501.37	-1.89281
18	3.30	-1.84876	41	631.13	-1.89316
19	4.12	-1.84990	42	794.50	-1.89325
20	5.15	-1.85085	43	1000.17	-1.89349
21	6.45	-1.85229	44	1259.08	-1.89380
22	8.10	-1.85398	45	1440.37	-1.89446
23	10.15	-1.85598			



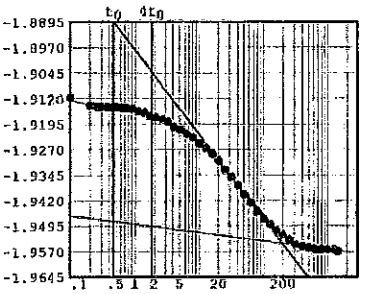
Void Ratio = 0.862 **Compression** = 50.1 %

D_0 = -1.83452 D_{50} = -1.86312 D_{100} = -1.89172

C_v **at 18.7 min.** = 0.01 ft.^{2}/day C_α = 0.006

Pressure: 8.00 tsf **TEST READINGS** **Load No. 8**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.90355	24	12.73	-1.92658
2	0.10	-1.91169	25	15.98	-1.92830
3	0.20	-1.91400	26	20.10	-1.93031
4	0.23	-1.91426	27	25.27	-1.93293
5	0.27	-1.91444	28	31.78	-1.93508
6	0.30	-1.91440	29	39.97	-1.93742
7	0.37	-1.91445	30	50.27	-1.94019
8	0.43	-1.91461	31	63.25	-1.94269
9	0.52	-1.91456	32	79.58	-1.94534
10	0.62	-1.91481	33	100.17	-1.94744
11	0.75	-1.91491	34	126.05	-1.94900
12	0.92	-1.91511	35	158.65	-1.95080
13	1.12	-1.91571	36	199.68	-1.95209
14	1.38	-1.91616	37	251.35	-1.95356
15	1.70	-1.91724	38	316.40	-1.95503
16	2.12	-1.91763	39	398.27	-1.95548
17	2.63	-1.91805	40	501.37	-1.95578
18	3.30	-1.91886	41	631.13	-1.95634
19	4.12	-1.92044	42	794.50	-1.95637
20	5.15	-1.92115	43	1000.17	-1.95646
21	6.45	-1.92240	44	1259.08	-1.95650
22	8.08	-1.92353	45	1440.03	-1.95692
23	10.13	-1.92518			



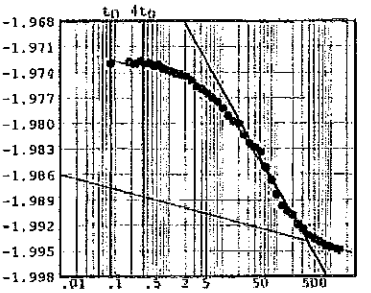
Void Ratio = 0.588 **Compression** = 57.4 %

D_0 = -1.90355 D_{50} = -1.92911 D_{100} = -1.95468

C_v **at 15.9 min.** = 0.00 ft.^{2}/day C_α = 0.006

Pressure: 12.00 tsf **TEST READINGS** **Load No. 9**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.96496	24	12.73	-1.97910
2	0.08	-1.97298	25	16.00	-1.97975
3	0.18	-1.97284	26	20.10	-1.98002
4	0.22	-1.97299	27	25.28	-1.98135
5	0.25	-1.97299	28	31.78	-1.98233
6	0.30	-1.97271	29	39.98	-1.98282
7	0.35	-1.97299	30	50.28	-1.98332
8	0.43	-1.97291	31	63.27	-1.98517
9	0.52	-1.97321	32	79.60	-1.98664
10	0.62	-1.97316	33	100.17	-1.98836
11	0.75	-1.97348	34	126.07	-1.98972
12	0.92	-1.97373	35	158.65	-1.99034
13	1.12	-1.97396	36	199.70	-1.99078
14	1.38	-1.97416	37	251.35	-1.99188
15	1.72	-1.97433	38	316.40	-1.99247
16	2.13	-1.97449	39	398.27	-1.99318
17	2.65	-1.97501	40	501.35	-1.99354
18	3.30	-1.97567	41	631.12	-1.99392
19	4.12	-1.97600	42	794.48	-1.99438
20	5.15	-1.97644	43	1000.15	-1.99457
21	6.45	-1.97704	44	1259.07	-1.99474
22	8.08	-1.97750	45	1440.45	-1.99484
23	10.15	-1.97825			



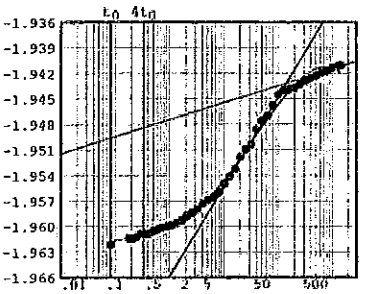
Void Ratio = 0.422 **Compression** = 61.9 %

D_0 = -1.96496 D_{50} = -1.97939 D_{100} = -1.99382

C_v **at 14.4 min.** = 0.00 ft.^{2}/day C_α = 0.005

Pressure: 3.00 tsf **TEST READINGS** **Load No. 10**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.97891	24	12.73	-1.95412
2	0.08	-1.96215	25	16.00	-1.95323
3	0.18	-1.96142	26	20.10	-1.95182
4	0.22	-1.96138	27	25.27	-1.95092
5	0.25	-1.96120	28	31.77	-1.95034
6	0.28	-1.96089	29	39.97	-1.94860
7	0.35	-1.96091	30	50.27	-1.94762
8	0.42	-1.96083	31	63.25	-1.94701
9	0.50	-1.96057	32	79.58	-1.94580
10	0.60	-1.96039	33	100.15	-1.94452
11	0.73	-1.96015	34	126.05	-1.94401
12	0.90	-1.96001	35	158.65	-1.94390
13	1.12	-1.95987	36	199.68	-1.94368
14	1.37	-1.95962	37	251.35	-1.94330
15	1.70	-1.95933	38	316.40	-1.94293
16	2.12	-1.95877	39	398.28	-1.94263
17	2.63	-1.95841	40	501.35	-1.94232
18	3.28	-1.95798	41	631.12	-1.94199
19	4.10	-1.95734	42	794.48	-1.94173
20	5.15	-1.95688	43	1000.17	-1.94140
21	6.45	-1.95657	44	1259.08	-1.94120
22	8.08	-1.95598	45	1440.43	-1.94110
23	10.13	-1.95497			



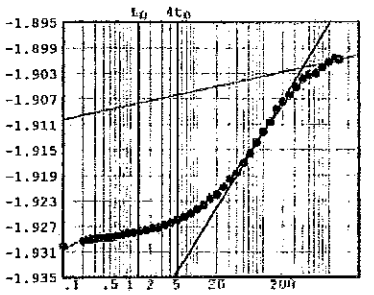
Void Ratio = 0.658 **Compression** = 55.6 %

D_0 = -1.97891 D_{50} = -1.96105 D_{100} = -1.94318

C_v **at 0.4 min.** = 0.18 ft.^{2}/day

Pressure: 0.75 tsf **TEST READINGS** **Load No. 11**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.93468	24	12.75	-1.92366
2	0.10	-1.93008	25	16.02	-1.92263
3	0.20	-1.92933	26	20.12	-1.92204
4	0.23	-1.92909	27	25.28	-1.92082
5	0.27	-1.92903	28	31.80	-1.91958
6	0.32	-1.92891	29	39.98	-1.91858
7	0.37	-1.92880	30	50.30	-1.91706
8	0.45	-1.92874	31	63.28	-1.91556
9	0.53	-1.92865	32	79.62	-1.91380
10	0.63	-1.92845	33	100.18	-1.91216
11	0.77	-1.92827	34	126.08	-1.91066
12	0.93	-1.92802	35	158.67	-1.90863
13	1.13	-1.92796	36	199.72	-1.90744
14	1.40	-1.92773	37	251.37	-1.90641
15	1.73	-1.92757	38	316.42	-1.90520
16	2.13	-1.92727	39	398.30	-1.90382
17	2.65	-1.92714	40	501.38	-1.90326
18	3.30	-1.92678	41	631.15	-1.90304
19	4.13	-1.92640	42	794.52	-1.90203
20	5.17	-1.92600	43	1000.18	-1.90128
21	6.47	-1.92555	44	1259.10	-1.90067
22	8.10	-1.92496	45	1440.33	-1.90085
23	10.15	-1.92427			



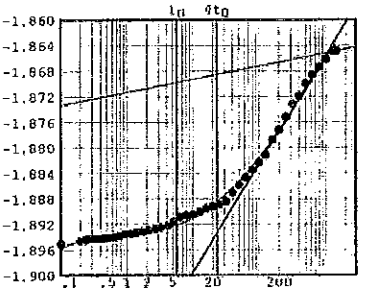
Void Ratio = 0.834 **Compression =** 50.9 %

D_0 = -1.93468 D_{50} = -1.91839 D_{100} = -1.90211

C_v **at 36.5 min.** = 0.00 ft.^{2}/day

Pressure: 0.19 tsf **TEST READINGS** **Load No. 12**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.89642	24	12.75	-1.89008
2	0.10	-1.89509	25	16.02	-1.88953
3	0.20	-1.89460	26	20.12	-1.88924
4	0.23	-1.89449	27	25.28	-1.88891
5	0.27	-1.89434	28	31.80	-1.88846
6	0.32	-1.89428	29	39.98	-1.88706
7	0.37	-1.89430	30	50.30	-1.88584
8	0.43	-1.89423	31	63.27	-1.88470
9	0.53	-1.89413	32	79.62	-1.88344
10	0.63	-1.89402	33	100.18	-1.88232
11	0.77	-1.89390	34	126.07	-1.88113
12	0.93	-1.89357	35	158.67	-1.87877
13	1.15	-1.89348	36	199.72	-1.87722
14	1.40	-1.89327	37	251.37	-1.87521
15	1.73	-1.89317	38	316.42	-1.87313
16	2.15	-1.89292	39	398.28	-1.87187
17	2.67	-1.89269	40	501.37	-1.86998
18	3.32	-1.89254	41	631.13	-1.86857
19	4.13	-1.89227	42	794.50	-1.86737
20	5.17	-1.89162	43	1000.17	-1.86612
21	6.47	-1.89085	44	1259.08	-1.86497
22	8.10	-1.89057	45	1440.37	-1.86485
23	10.17	-1.89046			

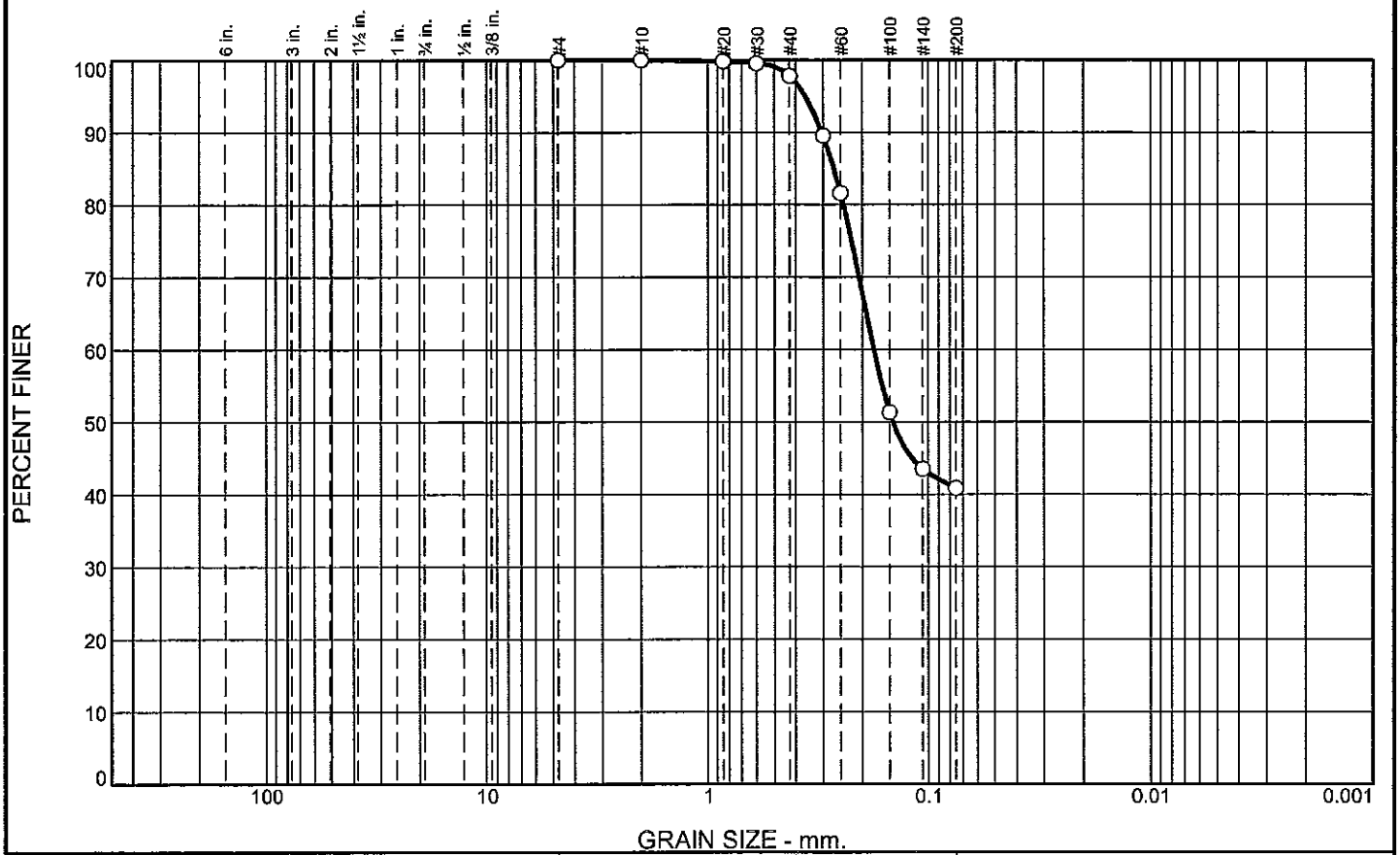


Void Ratio = 0.992 **Compression** = 46.6 %

D_0 = -1.89642 D_{50} = -1.88077 D_{100} = -1.86512

C_v **at 114.8 min.** = 0.00 ft.^{2}/day

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	2.2	56.9	40.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	100.0		
#20	99.9		
#30	99.6		
#40	97.8		
#50	89.6		
#60	81.6		
#100	51.4		
#140	43.5		
#200	40.9		

* (no specification provided)

Soil Description

GR SM W/ LYS CH

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.3036 D_{85}= 0.2679 D_{60}= 0.1767
D_{50}= 0.1450 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

Source of Sample: BSFR-4U **Depth:** 20.0
Sample Number: 7A **Date:** 7-27-12

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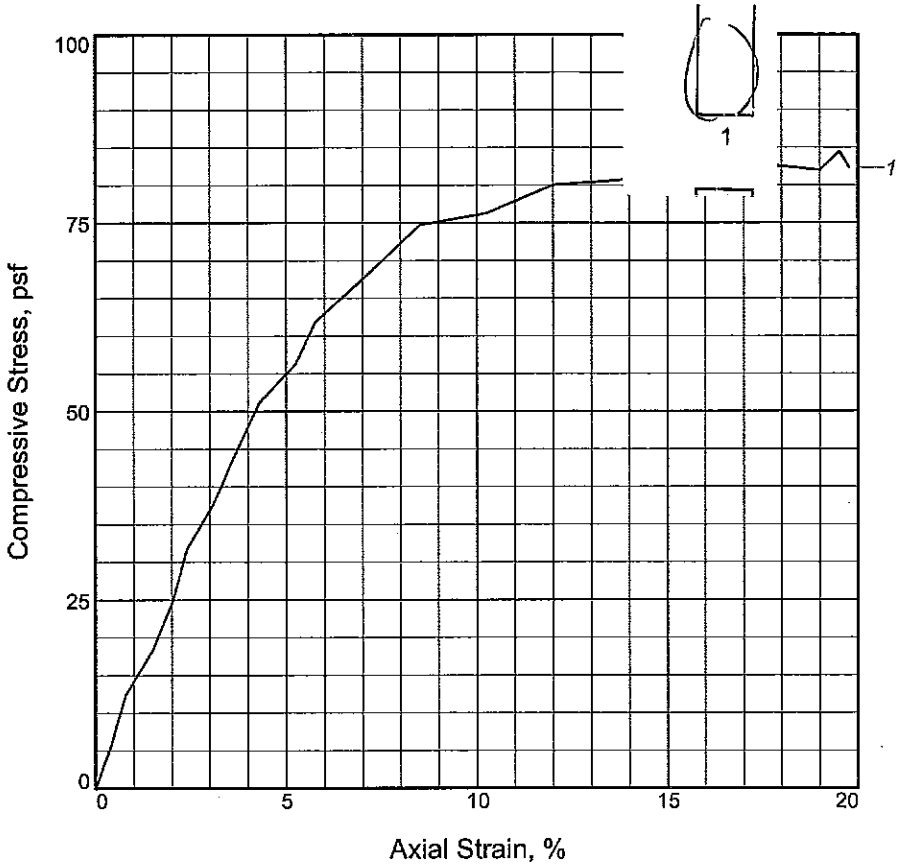
Saint Rose, Louisiana

Client: USACE
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Project No: 12-017108 **Figure**

Tested By: NS **Checked By:** JS

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	81			
Undrained shear strength, psf	40			
Failure strain, %	13.8			
Strain rate, in./min.	1.000			
Water content, %	170.8			
Wet density, pcf	82.4			
Dry density, pcf	30.4			
Saturation, %	102.5			
Void ratio	4.3339			
Specimen diameter, in.	1.360			
Specimen height, in.	2.964			
Height/diameter ratio	2.18			

Description: VSO BR CHOC

LL = 198	**PL =** 40	**PI =** 158	**Assumed GS=** 2.60	**Type:** UNDISTURBED

Project No.: 12-017108
Date Sampled: 7-25-12
Remarks:
Torvane=0.70 tsf

Figure _____

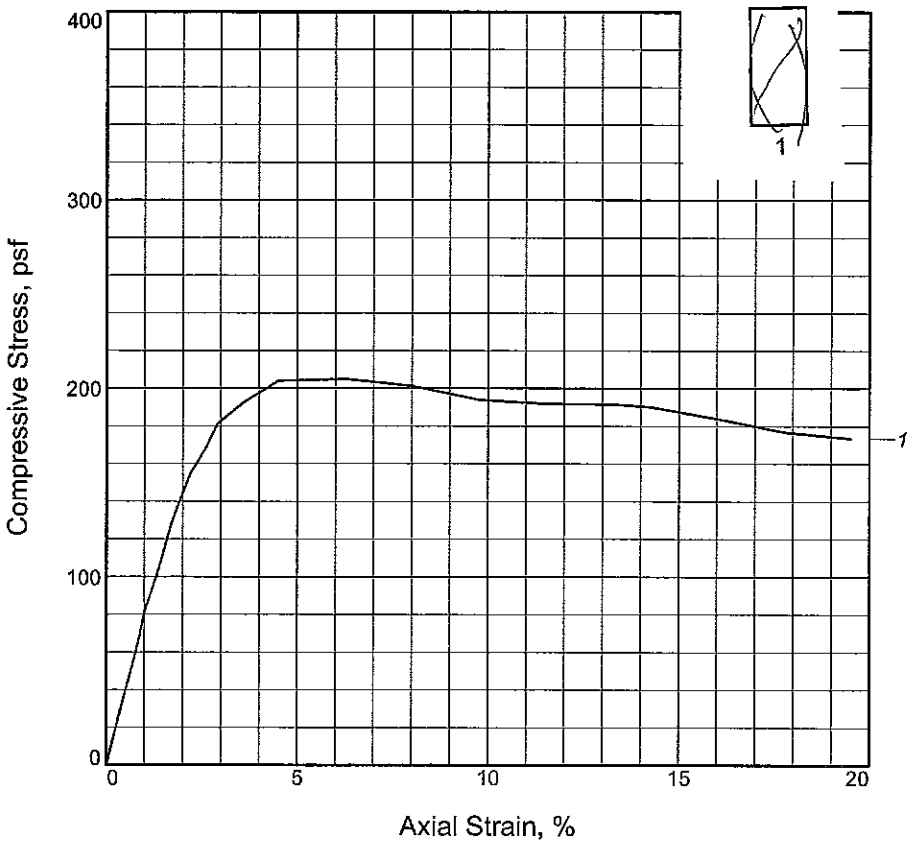
Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-4U **Depth:** 6.0
Sample Number: 3C

UNCONFINED COMPRESSION TEST
Stantec
Saint Rose, Louisiana

Tested By: JC

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	205			
Undrained shear strength, psf	103			
Failure strain, %	6.3			
Strain rate, in./min.	1.000			
Water content, %	83.5			
Wet density, pcf	94.8			
Dry density, pcf	51.7			
Saturation, %	99.4			
Void ratio	2.2858			
Specimen diameter, in.	1.388			
Specimen height, in.	3.003			
Height/diameter ratio	2.16			

Description: VSO GR CH4 W/ LNS ML

LL = 79	PL = 22	PI = 57	Assumed GS= 2.72	Type: UNDISTURBED

Project No.: 12-017108
Date Sampled: 7-25-12
Remarks:
Torvane=0.70 tsf

Figure _____

Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-4U **Depth:** 13.0
Sample Number: 5B

UNCONFINED COMPRESSION TEST
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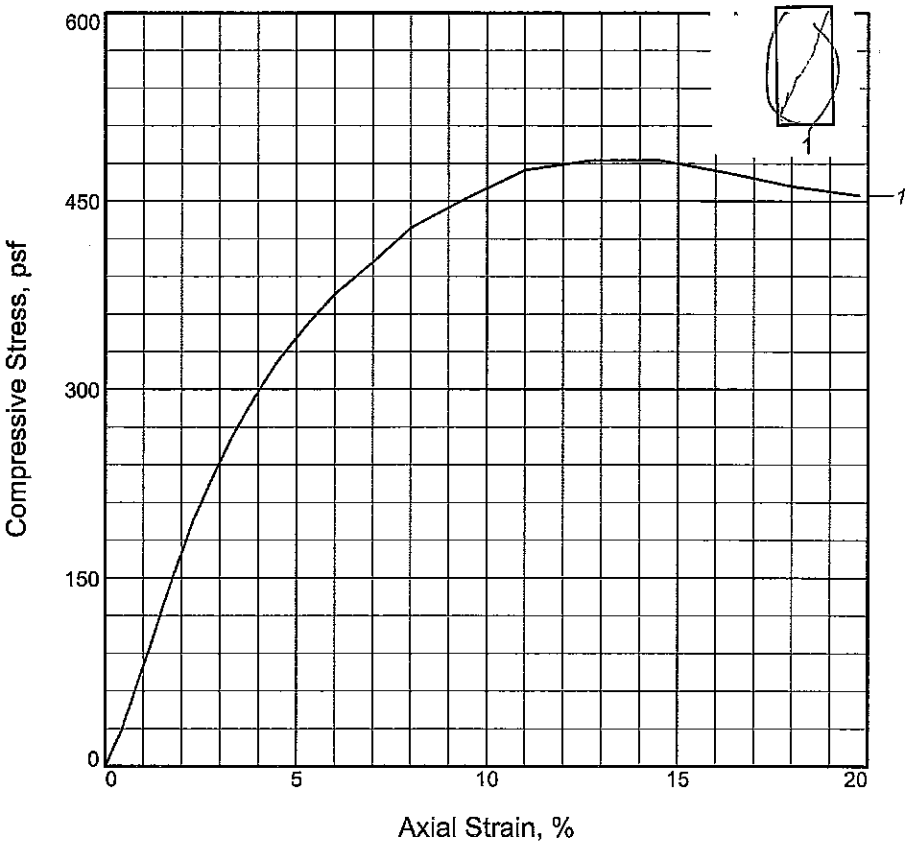
Tested By: JC

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	483			
Undrained shear strength, psf	241			
Failure strain, %	12.8			
Strain rate, in./min.	1.000			
Water content, %	26.5			
Wet density, pcf	118.5			
Dry density, pcf	93.7			
Saturation, %	89.4			
Void ratio	0.7997			
Specimen diameter, in.	1.366			
Specimen height, in.	2.965			
Height/diameter ratio	2.17			

Description: VSO GR CL4 W/ ARS & LNS SP

LL = 38	**PL =** 17	**PI =** 21	**Assumed GS=** 2.70	**Type:** UNDISTURBED

Project No.: 12-017108
Date Sampled: 7-25-12
Remarks:
Torvane=0.18 tsf

Figure _____

Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-4U **Depth:** 23.0
Sample Number: 7D

UNCONFINED COMPRESSION TEST
Stantec
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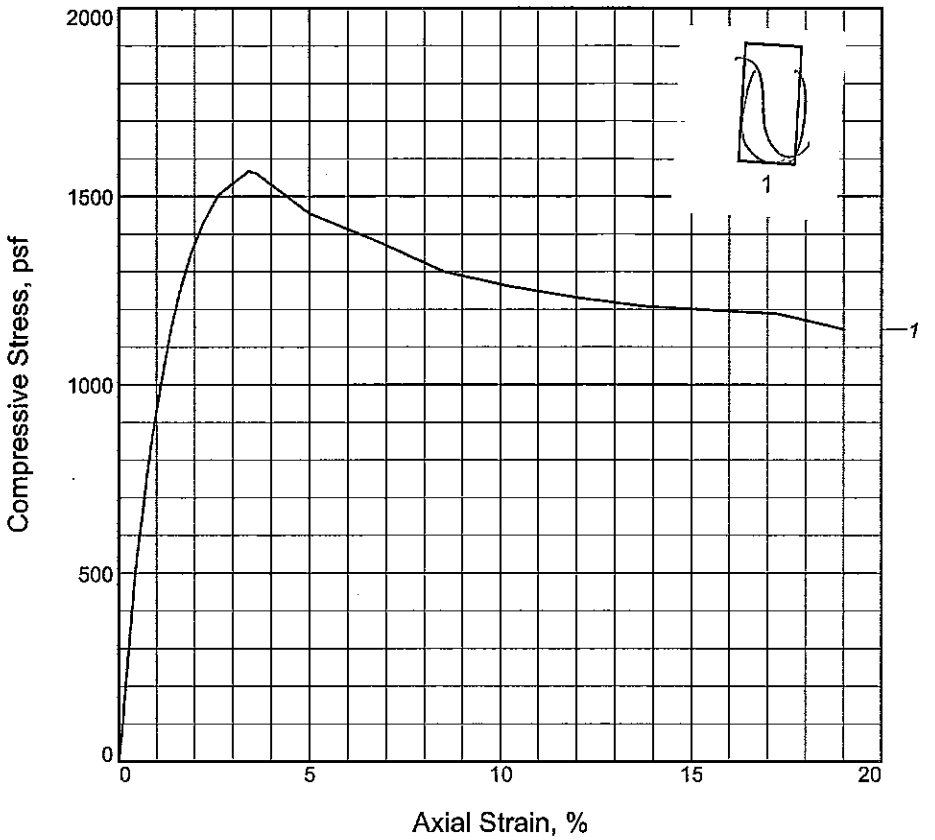
Tested By: JC **Checked By:** JS

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1566			
Undrained shear strength, psf	783			
Failure strain, %	3.4			
Strain rate, in./min.	1.000			
Water content, %	32.7			
Wet density, pcf	118.0			
Dry density, pcf	89.0			
Saturation, %	97.0			
Void ratio	0.9226			
Specimen diameter, in.	1.382			
Specimen height, in.	3.007			
Height/diameter ratio	2.18			

Description: M T CH2 W/ LYS & ARS SM

LL = 50	**PL =** 18	**PI =** 32	**Assumed GS=** 2.74	**Type:** UNDISTURBED

Project No.: 12-017108
Date Sampled: 7-26-12
Remarks:
Torvane=0.70 tsf

Figure _____

Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-4U **Depth:** 31.0
Sample Number: 9D

UNCONFINED COMPRESSION TEST
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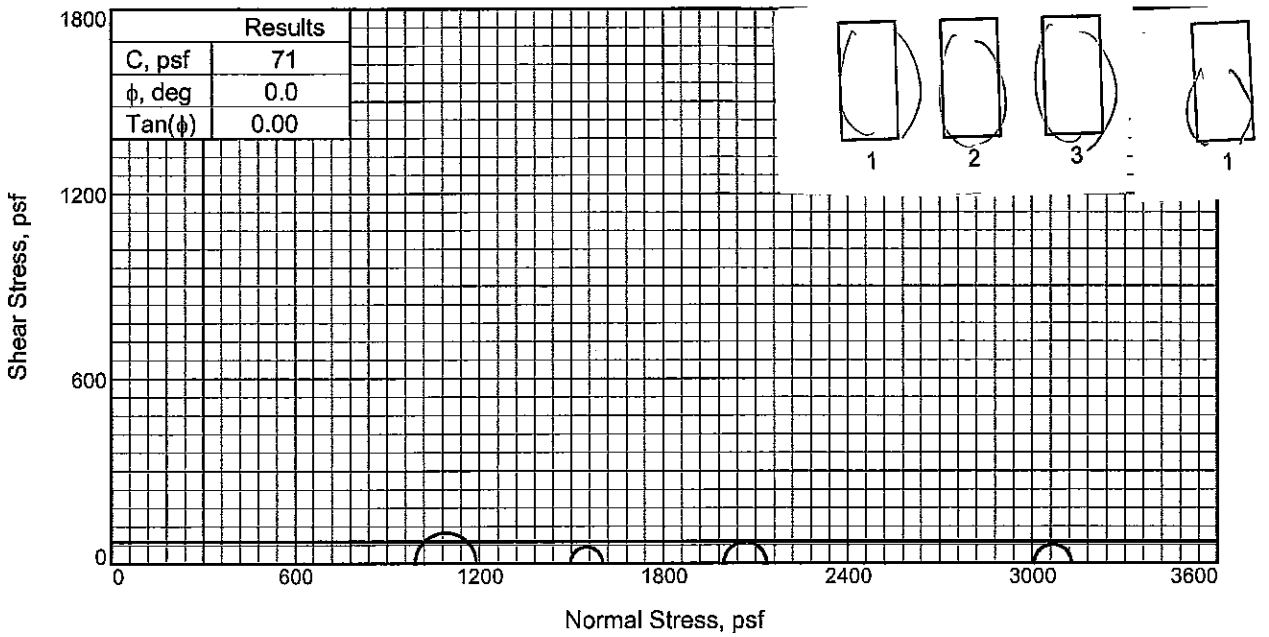
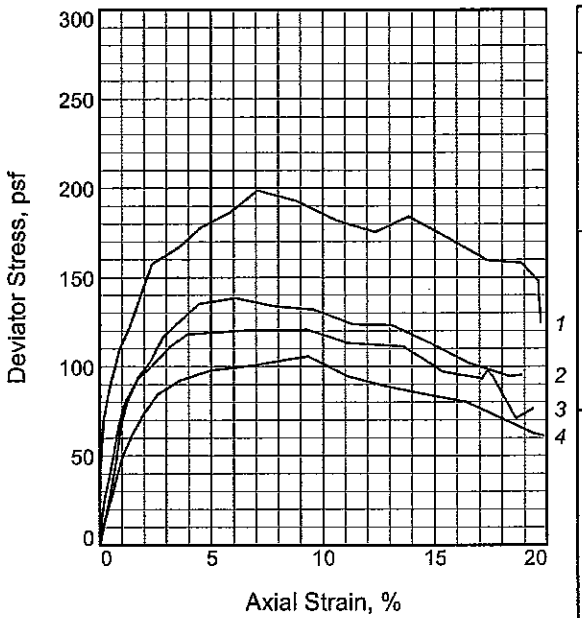
Tested By: JC





Sample No.		1	2	3	4
Initial	Water Content, %	53.1	53.0	57.1	54.2
	Dry Density, pcf	72.0	73.9	69.2	69.5
	Saturation, %	107.0	110.9	106.9	102.0
	Void Ratio	1.3403	1.2985	1.4521	1.4445
	Diameter, in.	1.346	1.342	1.370	1.361
	Height, in.	2.966	2.993	2.969	2.974
At Test	Water Content, %	53.1	53.0	57.1	54.2
	Dry Density, pcf	72.0	73.9	69.2	69.5
	Saturation, %	107.0	110.9	106.9	102.0
	Void Ratio	1.3403	1.2985	1.4521	1.4445
	Diameter, in.	1.346	1.342	1.370	1.361
	Height, in.	2.966	2.993	2.969	2.974
Strain rate, in./min.		1.000	1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00	0.00
Cell Pressure, psi		6.88	13.86	20.88	10.39
Fail. Stress, psf		199	139	121	106
Strain, %		7.1	6.1	9.3	9.3
Ult. Stress, psf		175	113	111	84
Strain, %		12.3	14.9	13.6	14.6
σ_1 Failure, psf		1190	2134	3127	1602
σ_3 Failure, psf		991	1996	3007	1496

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: VSO GR CL6 W/ LNS ML

LL= 45 **PL=** 19 **PI=** 26
Assumed Specific Gravity= 2.70
Remarks: Torvane=0.50 tsf

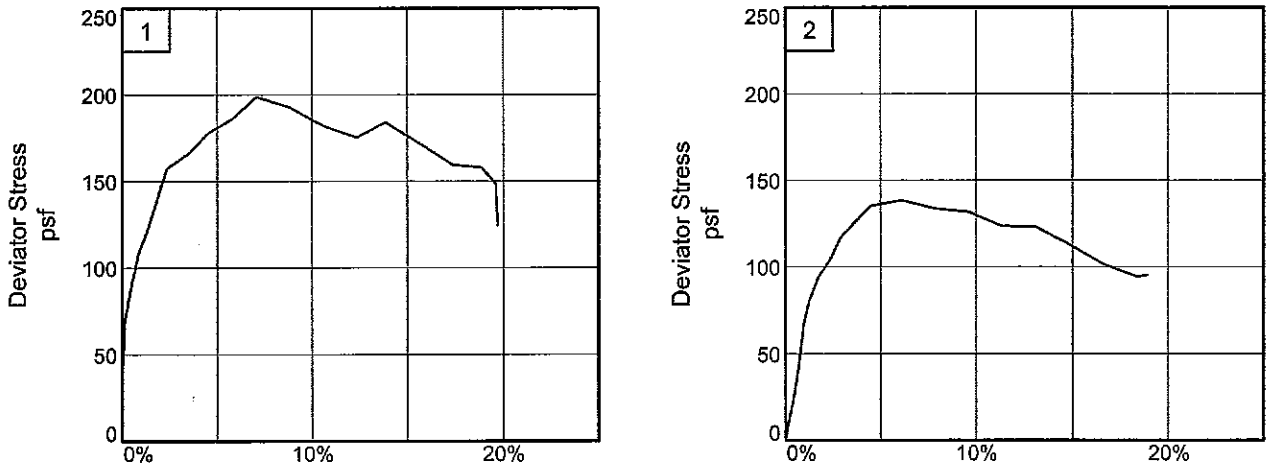
Client: USACE

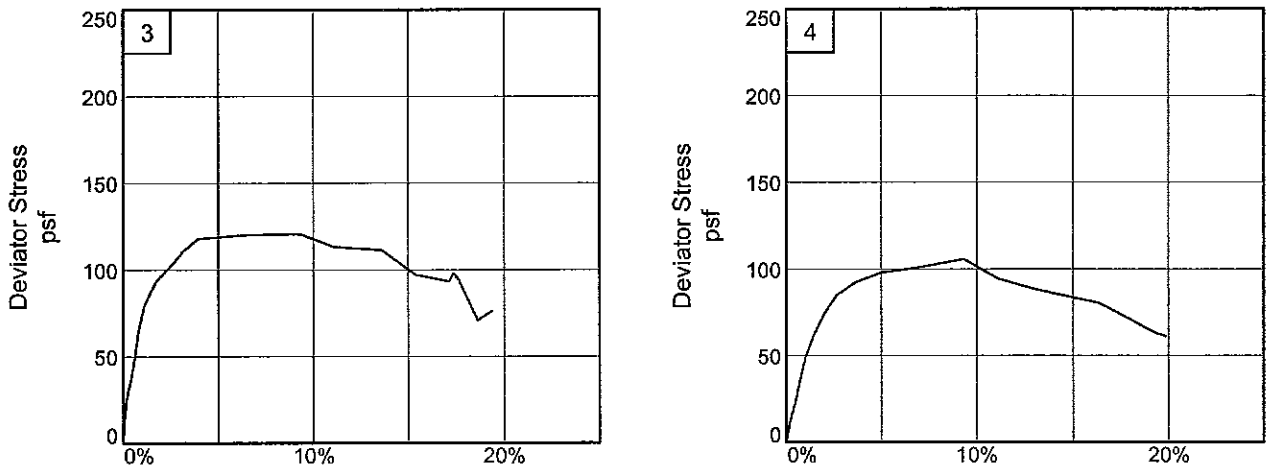
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-4U **Depth:** 9.0
Sample Number: 4B
Proj. No.: 12-017108 **Date Sampled:** 7-25-12

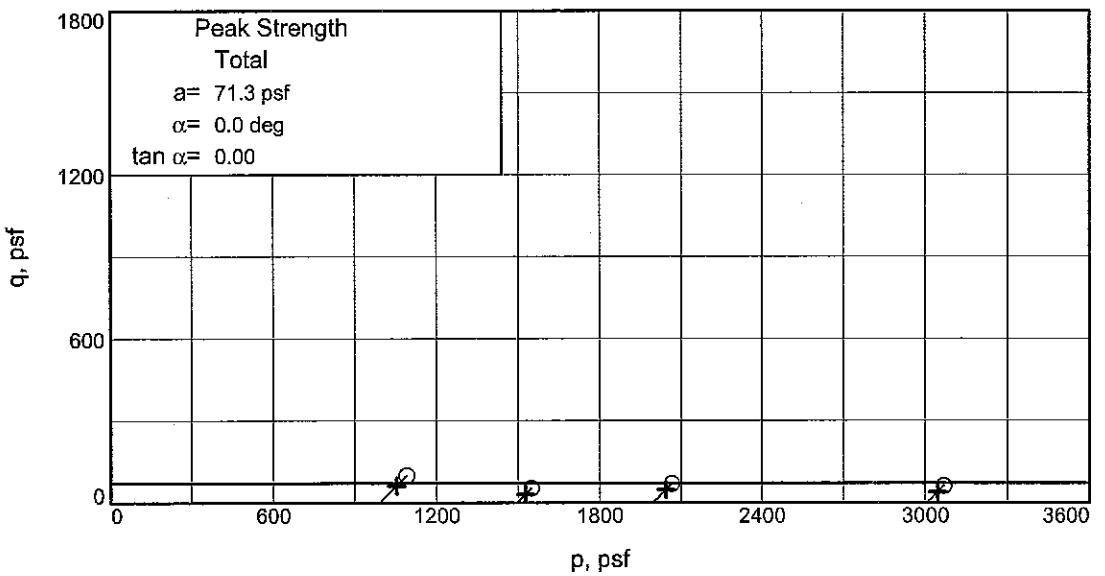
TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

Figure _____

Tested By: JC







Stress Paths: o indicates peak + indicates end

Client: USACE

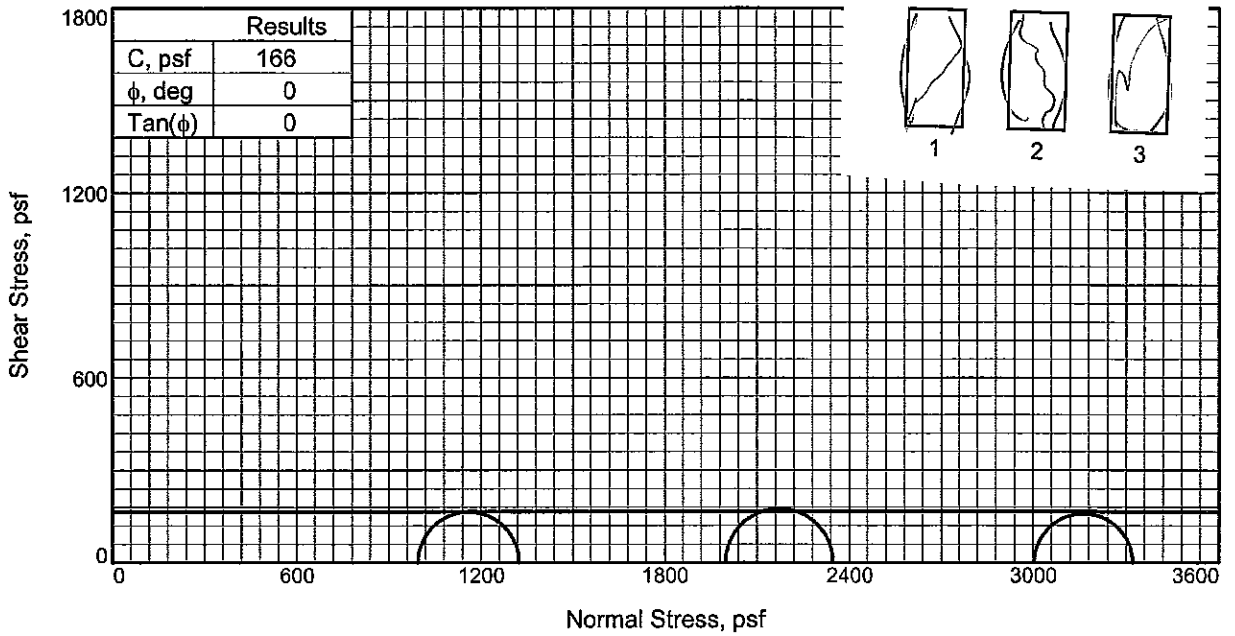
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

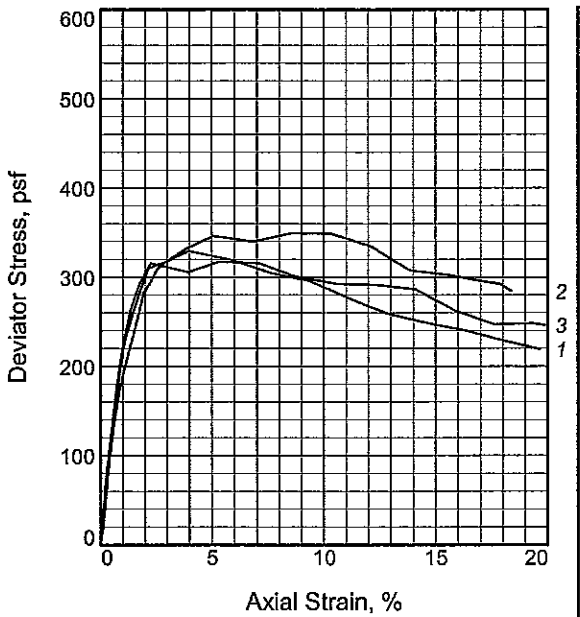
Source of Sample: BSFR-4U **Depth:** 9.0 **Sample Number:** 4B

Project No.: 12-017108 **Figure** _____

Stantec, Inc.

Tested By: JC





Sample No.		1	2	3
Initial	Water Content, %	34.1	38.5	44.7
	Dry Density, pcf	83.1	82.4	77.5
	Saturation, %	89.7	99.5	102.8
	Void Ratio	1.0272	1.0448	1.1743
	Diameter, in.	1.383	1.387	1.377
	Height, in.	2.997	2.997	2.992
At Test	Water Content, %	34.1	38.5	44.7
	Dry Density, pcf	83.1	82.4	77.5
	Saturation, %	89.7	99.5	102.8
	Void Ratio	1.0272	1.0448	1.1743
	Diameter, in.	1.383	1.387	1.377
	Height, in.	2.997	2.997	2.992
Strain rate, in./min.		1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.91	13.87	20.86
Fail. Stress, psf		329	350	317
Strain, %		4.0	8.6	5.3
Ult. Stress, psf		249	307	286
Strain, %		14.6	13.8	14.1
σ_1 Failure, psf		1324	2347	3321
σ_3 Failure, psf		995	1997	3004

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: VSO GR CL6 W/ ARS SP, SIF

LL= 40 **PL=** 11 **PI=** 29
Assumed Specific Gravity= 2.70
Remarks: Torvane=0.22 tsf

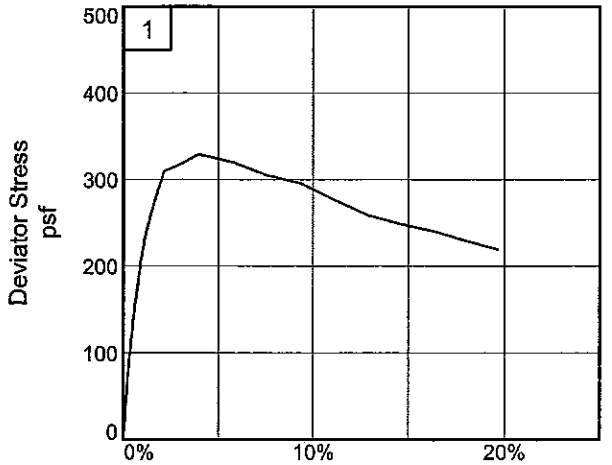
Client: USACE

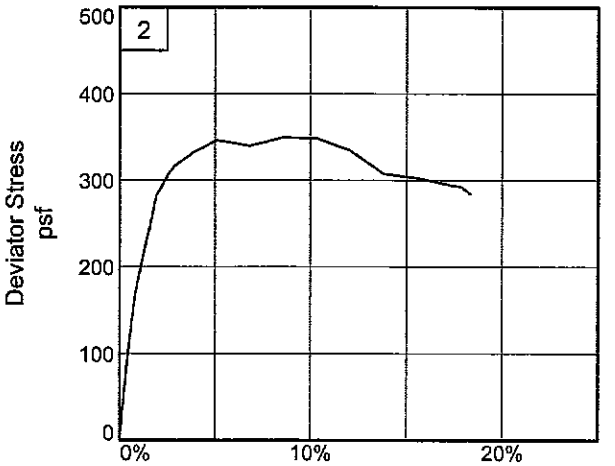
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-4U **Depth:** 19.0
Sample Number: 6D
Proj. No.: 12-017108 **Date Sampled:** 7-25-12

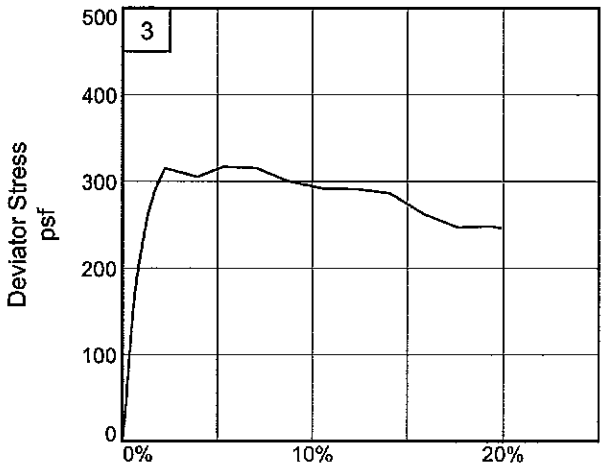
TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

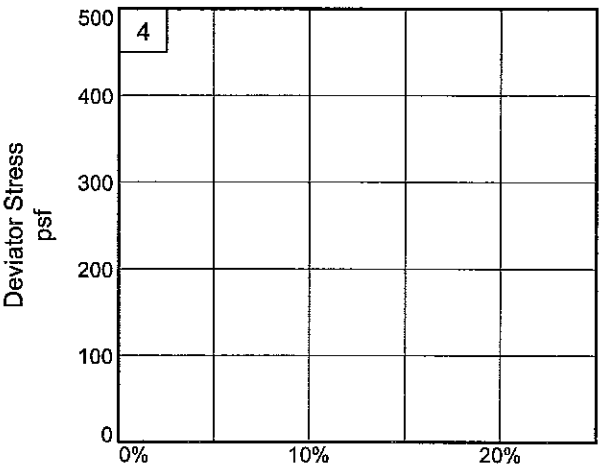
Figure _____

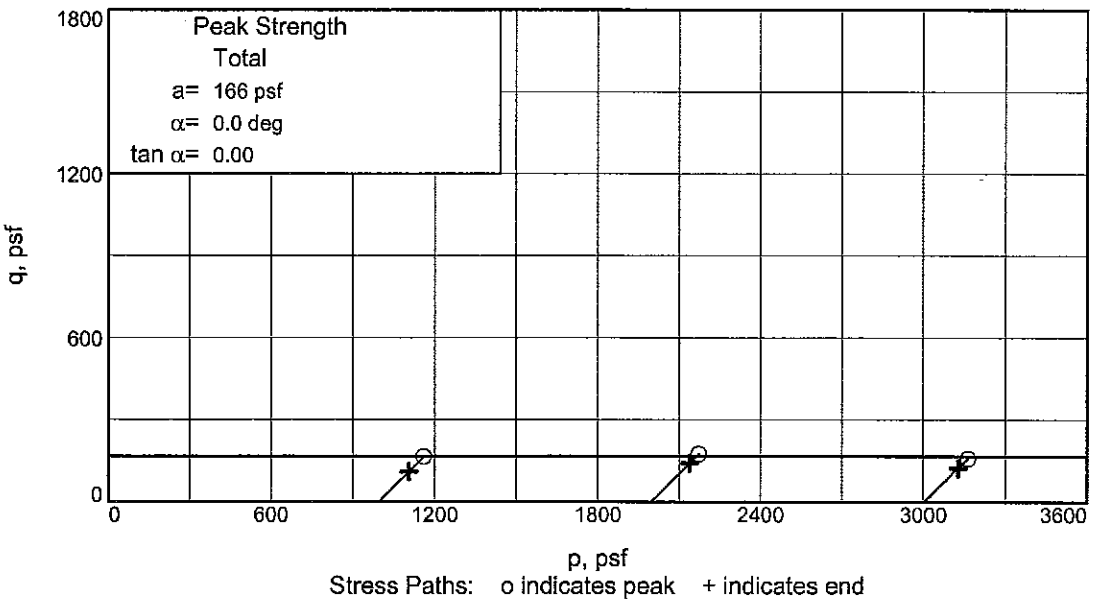
Tested By: JC











Client: USACE

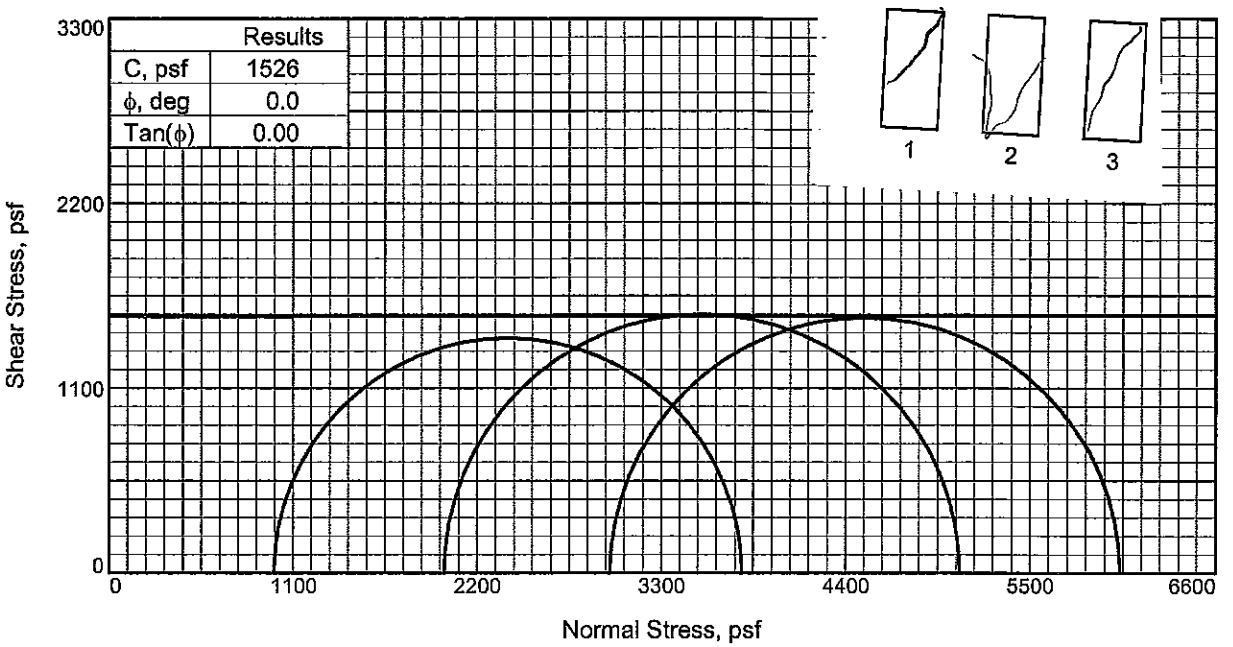
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

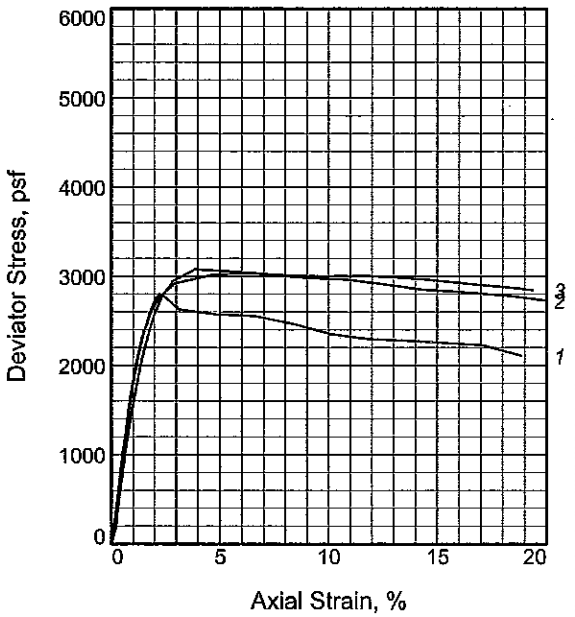
Source of Sample: BSFR-4U **Depth:** 19.0 **Sample Number:** 6D

Project No.: 12-017108 **Figure** _____

Stantec, Inc.

Tested By: JC





Sample No.		1	2	3
Initial	Water Content, %	26.0	26.7	27.3
	Dry Density, pcf	99.0	98.1	96.2
	Saturation, %	98.0	98.2	96.1
	Void Ratio	0.7280	0.7438	0.7777
	Diameter, in.	1.380	1.377	1.384
	Height, in.	3.014	3.007	3.007
At Test	Water Content, %	26.0	26.7	27.3
	Dry Density, pcf	99.0	98.1	96.2
	Saturation, %	98.0	98.2	96.1
	Void Ratio	0.7280	0.7438	0.7777
	Diameter, in.	1.380	1.377	1.384
	Height, in.	3.014	3.007	3.007
Strain rate, in./min.		1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.84	13.91	20.79
Fail. Stress, psf		2796	3078	3037
Strain, %		2.2	3.9	6.3
Ult. Stress, psf		2275	2848	2949
Strain, %		13.6	14.4	15.1
σ_1 Failure, psf		3781	5081	6031
σ_3 Failure, psf		985	2003	2994

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: ST T & GR CH2 W/ ARS SM

LL= 51 **PL=** 14 **PI=** 37
Assumed Specific Gravity= 2.74
Remarks: Torvane=0.87 tsf

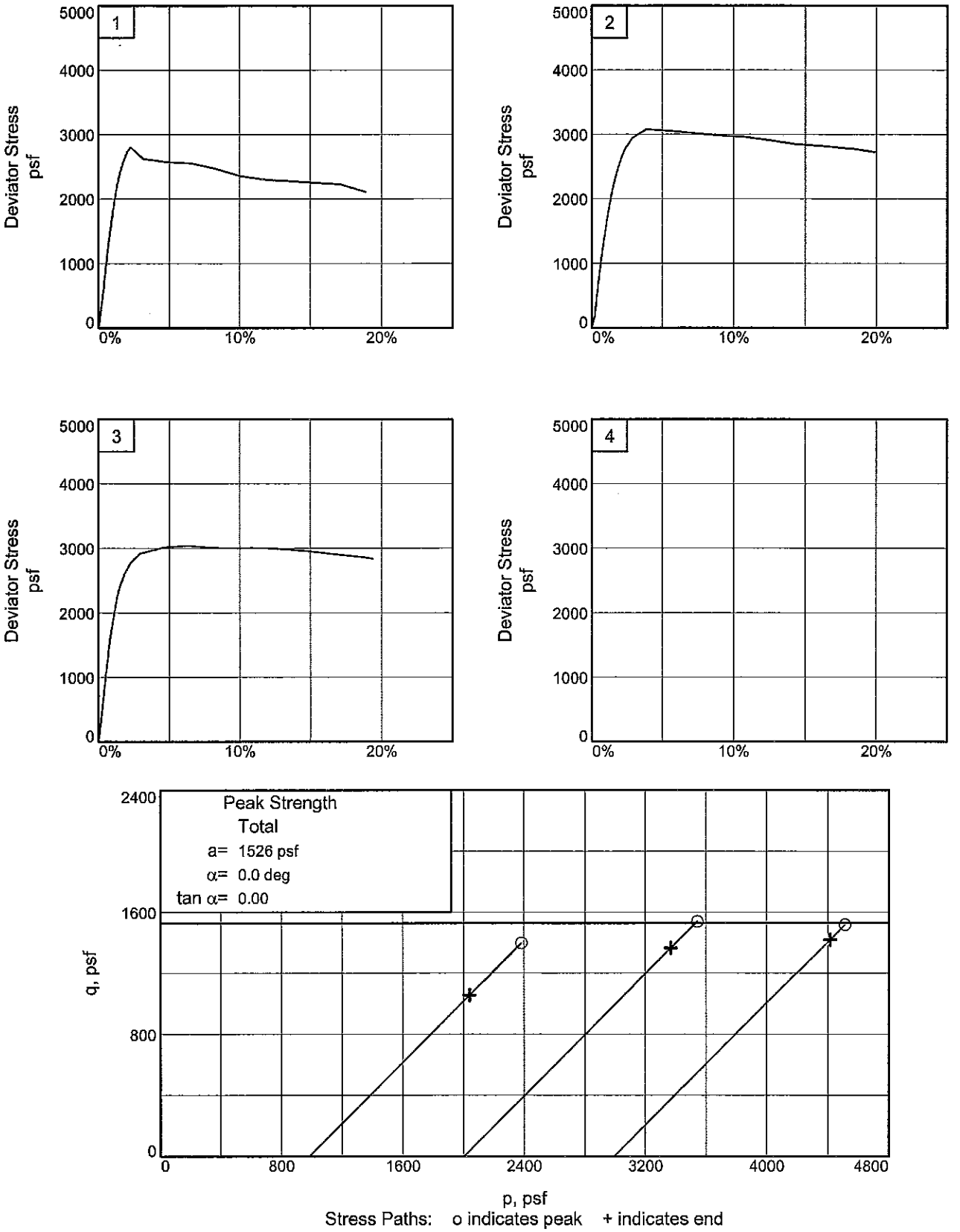
Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-4U **Depth:** 29.0
Sample Number: 9B
Proj. No.: 12-017108 **Date Sampled:** 7-26-12

TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

Figure _____

Tested By: JC



Client: USACE

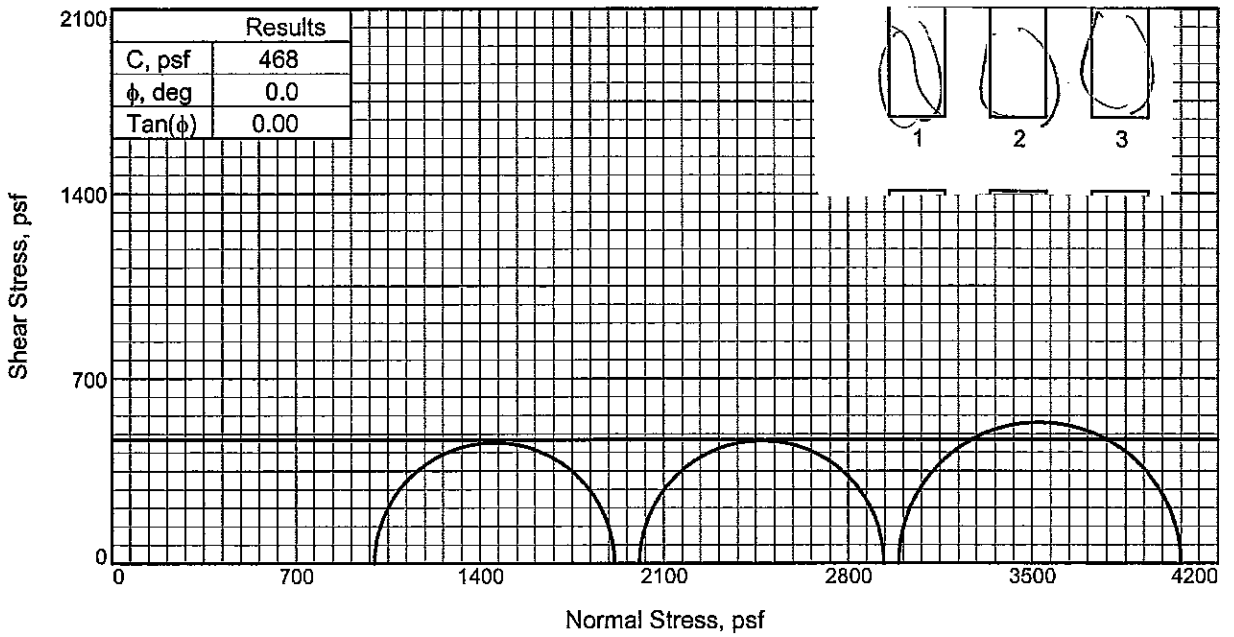
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

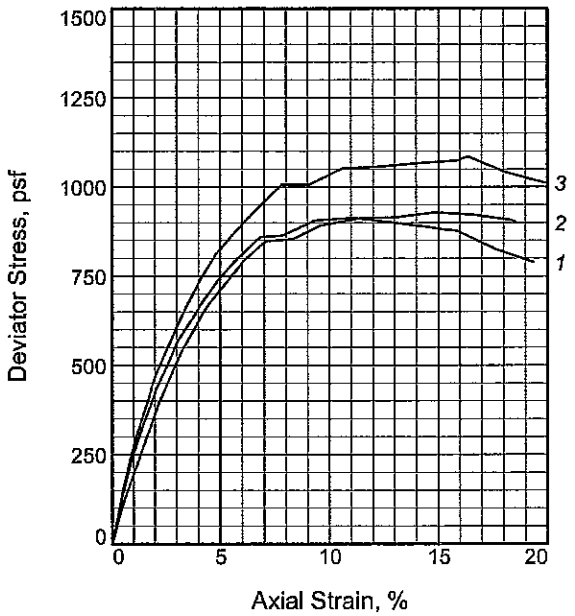
Source of Sample: BSFR-4U **Depth:** 29.0 **Sample Number:** 9B

Project No.: 12-017108 **Figure** _____

Stantec, Inc.

Tested By: JC





Sample No.		1	2	3
Initial	Water Content, %	32.1	32.2	31.8
	Dry Density, pcf	90.9	91.2	93.5
	Saturation, %	101.5	102.5	106.9
	Void Ratio	0.8551	0.8487	0.8034
	Diameter, in.	1.370	1.371	1.356
	Height, in.	2.985	2.985	2.988
At Test	Water Content, %	32.1	32.2	31.8
	Dry Density, pcf	90.9	91.2	93.5
	Saturation, %	101.5	102.5	106.9
	Void Ratio	0.8551	0.8487	0.8034
	Diameter, in.	1.370	1.371	1.356
	Height, in.	2.985	2.985	2.988
Strain rate, in./min.		1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.93	13.94	20.78
Fail. Stress, psf		914	929	1067
Strain, %		11.1	14.8	14.1
Ult. Stress, psf		882	929	1067
Strain, %		15.1	14.8	14.1
σ_1 Failure, psf		1912	2936	4059
σ_3 Failure, psf		998	2007	2992

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: SO T & GNG CL4 W/ LYS SM

LL= 35 **PL=** 16 **PI=** 19
Assumed Specific Gravity= 2.70
Remarks: Torvane=0.32 tsf

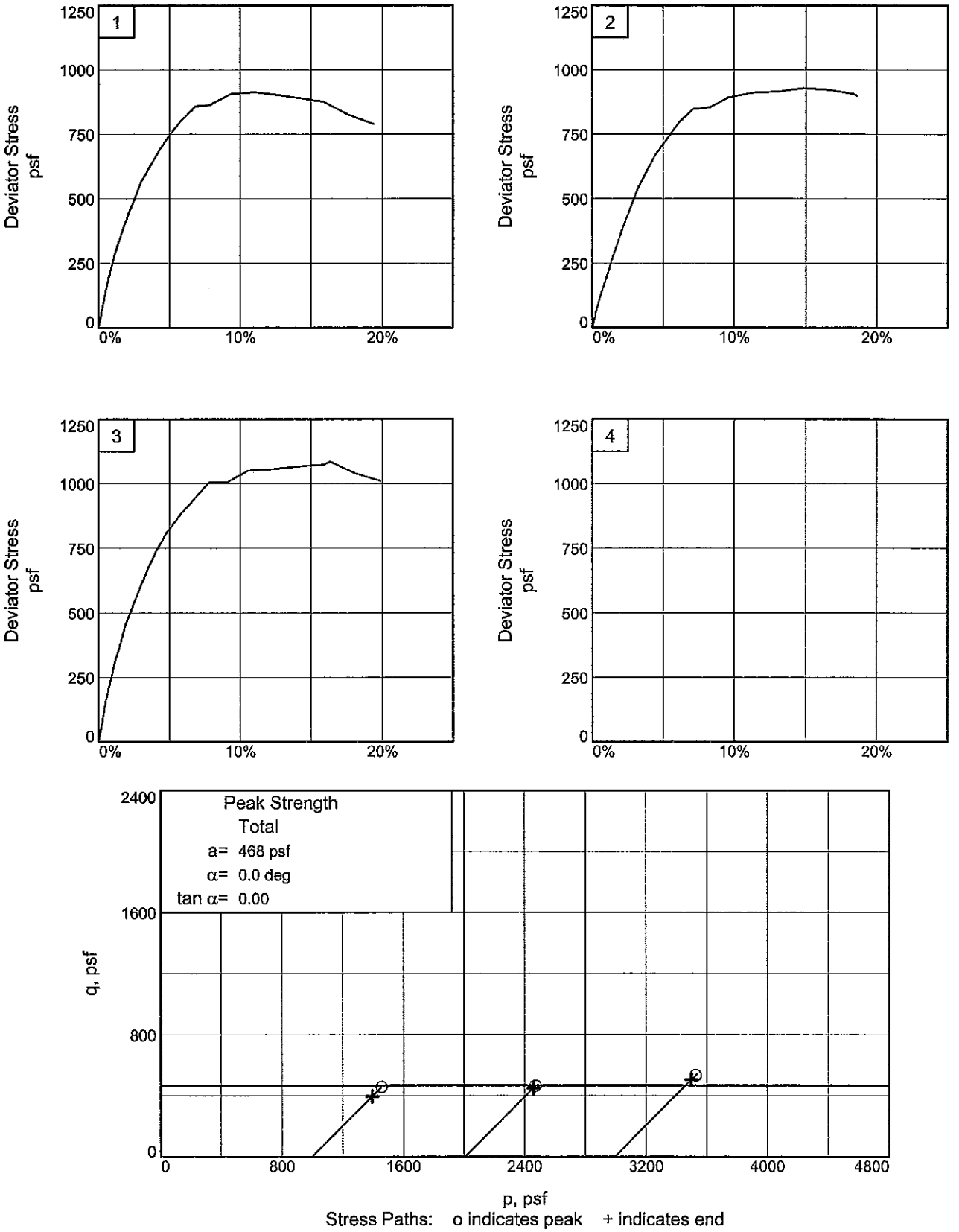
Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-4U **Depth:** 37.0
Sample Number: 11B
Proj. No.: 12-017108 **Date Sampled:** 7-26-12

TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

Figure _____

Tested By: JC



Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

Source of Sample: BSFR-4U **Depth:** 37.0 **Sample Number:** 11B

Project No.: 12-017108 **Figure** _____ **Stantec, Inc.**

Tested By: JC

SUMMARY OF LABORATORY TEST RESULTS

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Paris **Assigned By:** _____

Project Number: 12-017108 **Current Date:** 8/27/2012

Boring: BSFR-5U

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
1	0.0	M BK PT W/ RT	PT		152												
2	2.5	M BK PT W/ RT	PT		108												
3A	4.0	VSO BK PT W/ RT	PT	15	118	12	68	98	UC	-	138	276	492	139	353	0.70	
3B	5.0	VSO BK PT W/ RT	PT		121												
3C	6.0	VSO BK PT W/ RT	PT		53	31	47	100	UU	0	59		182	34	148	0.90	
3D	7.0	VSO BK CH4 W/ O, RT	CH4		80												
4A	8.0	VSO GR CH4 W/ LNS ML, O	CH4		73												
4B	9.0	VSO GR CH4 W/ LNS ML	CH4	5	38	51	97	100	UC	-	48	95	72	21	51	0.60	
4C	10.0	SO GR CL6	CL6		51	71	108	100					40	20	20		GS=2.72, CON
4D	11.0	VSO GR CH3 W/ LNS ML	CH3		82	55	100	100	UU	0	87		57	19	38	0.08	
5A	12.0	SO GR CH3 W/ LNS ML	CH3		63												
5B	13.0	VSO GR CH3 W/ LNS ML	CH3		70												
5C	14.0	VSO GR CH3 W/ LNS ML	CH3	13	71	57	100	100	UC	-	82	165	69	16	53	0.60	
5D	15.0	GR ML W/ LYS CH, SIF	ML		44												
6A	16.0	GR ML W/ ARS CH, SIF	ML		33												SV
6B	17.0	GR SP W/ ARS CH, SIF	SP		30												
6C	18.0	GR SP W/ ARS CH, SIF	SP		22												
6D	19.0	GR SP W/ ARS CH, SIF	SP		25												
7A	20.0	LGR SP W/ ARS CH, SIF	SP		30												
7B	21.0	GR SP W/ ARS CH	SP		24												
7C	22.0	GR SP W/ ARS CH, SIF	SP		30												
7D	23.0	GR SP W/ ARS CH, SIF	SP		32												
8A	24.0	LGR & GNG SP W/ ARS CH	SP		22												
8B	25.0	LGR & GNG SP W/ ARS CH	SP		23												
8C	26.0	LGR & GNG SP W/ ARS CH	SP		21												
8D	27.0	LGR & GNG SP W/ ARS CH	SP		18												
9A	28.0	T & GNG SM W/ ARS CH	SM		21												
9B	29.0	T & GR SM W/ ARS CH	SM		20												
9C	30.0	ST GNG & T CL6 W/ ARS CH	CL6		21	103	125	98	UU	0	1554		41	12	29	0.75	
9D	31.0	VST T & GR CL6 W/ LNS & ARS SM	CL6		22												

Remarks: _____ **Checked By:** _____

Stantec Consulting Services Inc. **File Name:** BSFR-5U_be_boring_log_v10_0.xls

SUMMARY OF LABORATORY TEST RESULTS

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Paris **Assigned By:** _____

Project Number: 12-017108 **Current Date:** 8/27/2012

Boring: BSFR-4U

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
11B	37.0	SO T & GNG CL4 W/ LYS SM	CL4		32	91	120	100	UU	0	468		35	16	19	0.32	
11C	38.0	M T & GNG CH2 W/ ARS & LNS SM	CH2		32												
11D	39.0	ST GNG CH3 W/ ARS & LNS SM	CH3		33												

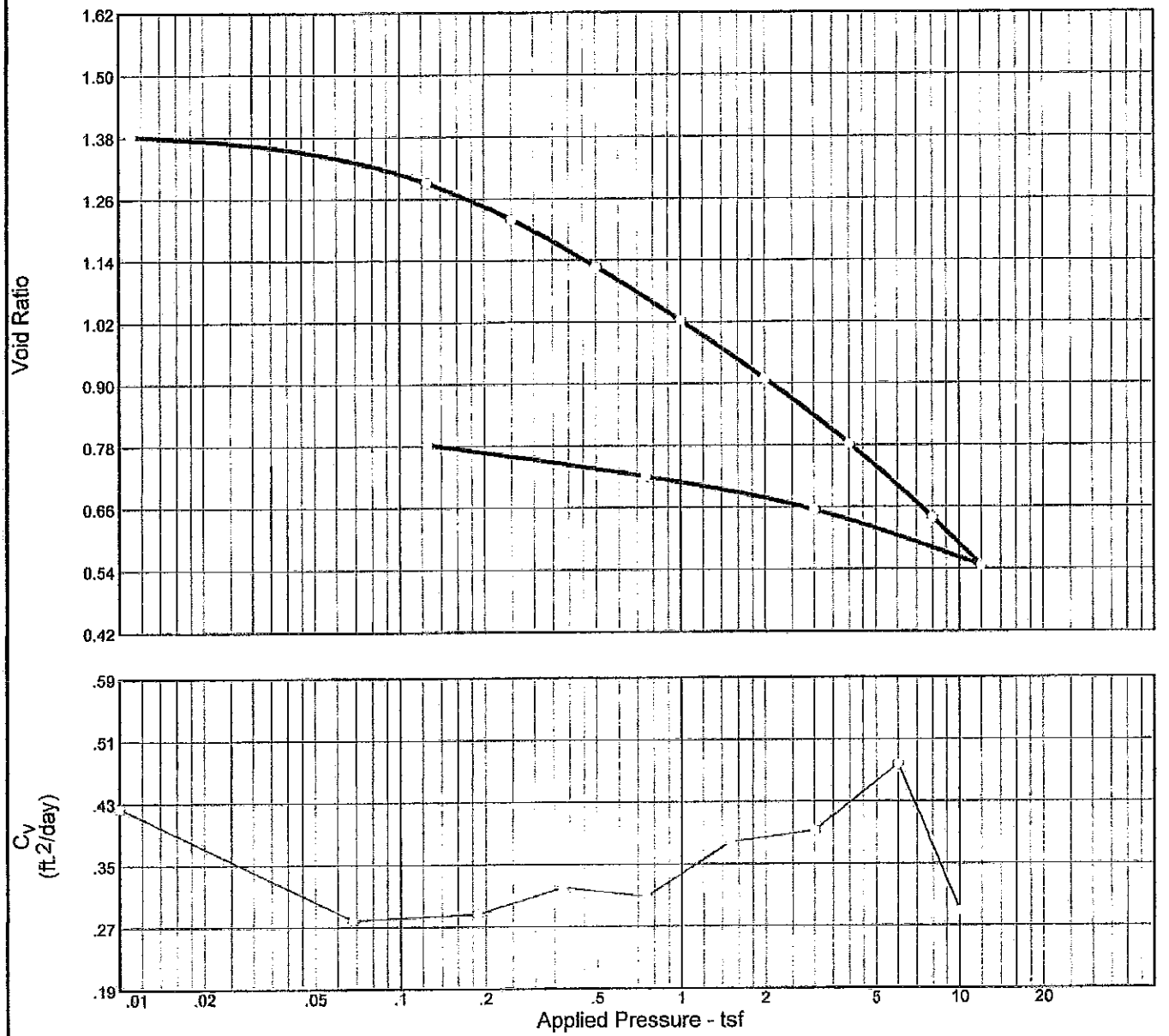
Remarks: _____

Checked By: _____

Stantec Consulting Services Inc.

File Name: Final BSFR-4U_be_boring_log_v1C

Consolidation Test Report



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture							
99.8 %	50.8 %	71.3	40	20	2.72	0.45	0.49	1.383

MATERIAL DESCRIPTION	USCS	AASHTO
SO GR CL6	CL6	

Project No. 0017-0108 **Client:** U.S. ARMY CORPS OF ENGINEERS - N.O. DISTRICT

Project: BAYOU SAUVAGE FLOOD SIDE INTERMEDIATE MARSH - TASK ORDER # 108

Source: BSFR-5U **Sample No.:** 4C **Elev./Depth:** 10.5

FFEBJV, LLC.

Ridgeland, Mississippi

Remarks:

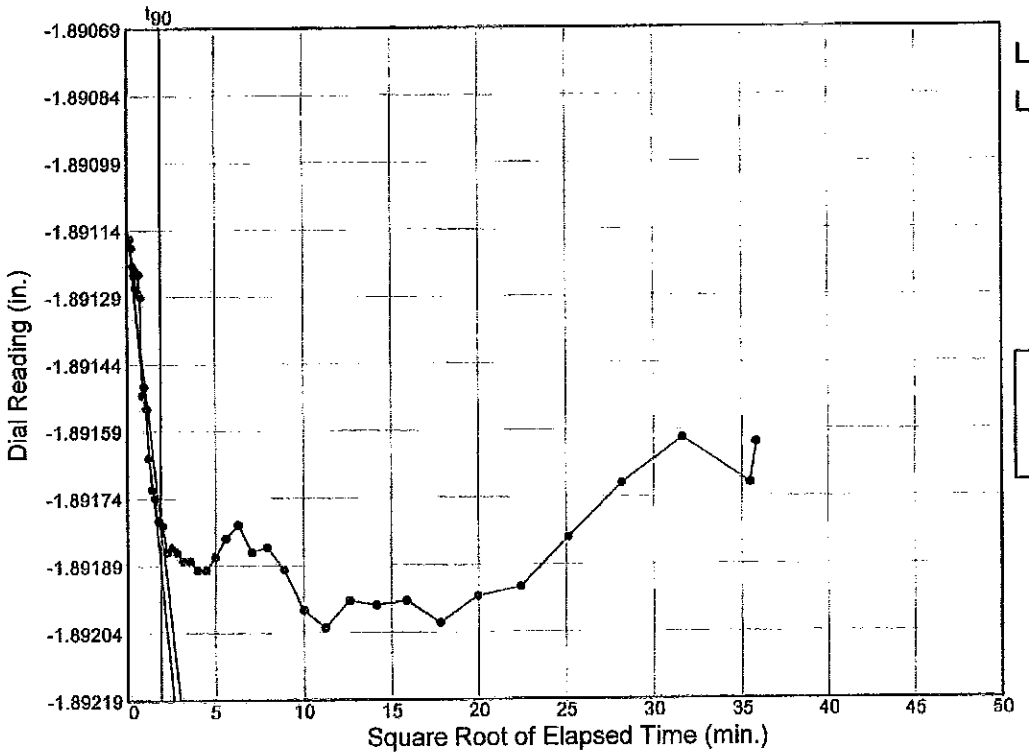
ASTM D2435, METHOD A
CHECKED BY: MR
TESTED BY: AH
CALCULATED BY: HS

Figure

Dial Reading vs. Time

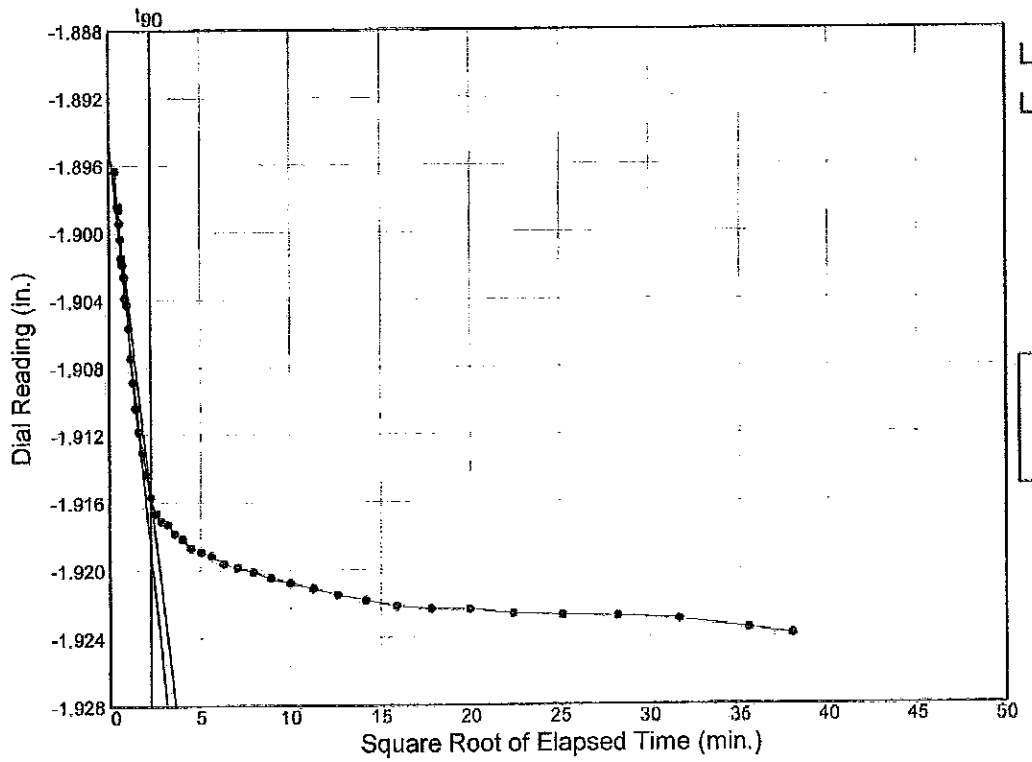
Project No.: 0017-0108
Project: BAYOU SAUVAGE FLOOD SIDE INTERMEDIATE MARSH - TASK ORDER # 108

Source: BSFR-5U Sample No.: 4C Elev./Depth: 10.5



Load No.= 1
Load= 0.01 tsf
D_0 = -1.89112
D_{90} = -1.89180
D_{100} = -1.89187
T_{90} = 3.56 min.

C_v @ T_{90}
0.42 ft.^{2}/day



Load No.= 2
Load= 0.13 tsf
D_0 = -1.89463
D_{90} = -1.91572
D_{100} = -1.91807
T_{90} = 5.19 min.

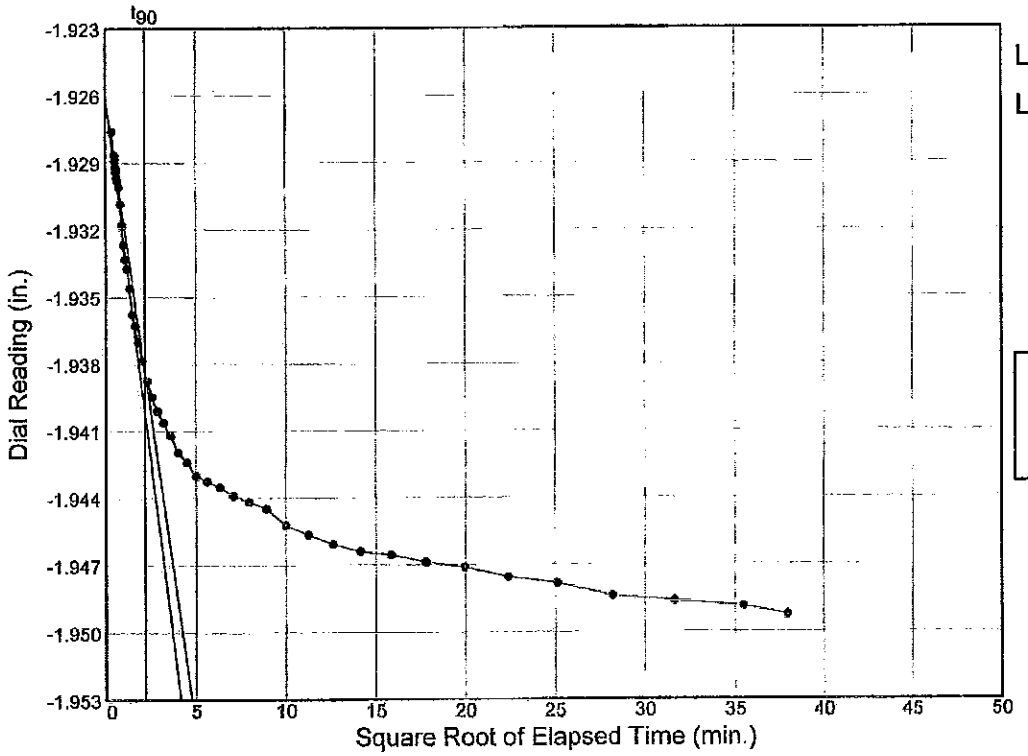
C_v @ T_{90}
0.28 ft.^{2}/day

Figure

Dial Reading vs. Time

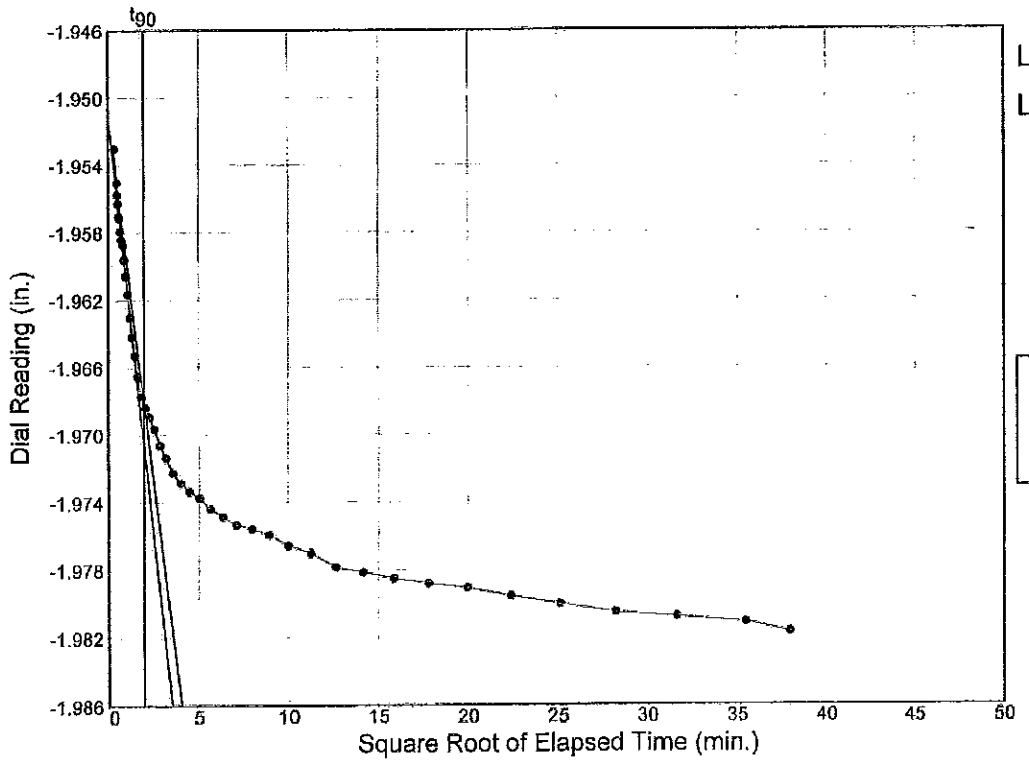
Project No.: 0017-0108
Project: BAYOU SAUVAGE FLOOD SIDE INTERMEDIATE MARSH - TASK ORDER # 108

Source: BSFR-5U Sample No.: 4C Elev./Depth: 10.5



Load No.= 3
Load= 0.25 tsf
D_0 = -1.92609
D_{90} = -1.93836
D_{100} = -1.93973
T_{90} = 4.70 min.

C_v @ T_{90}
0.29 ft.^{2}/day



Load No.= 4
Load= 0.50 tsf
D_0 = -1.95126
D_{90} = -1.96823
D_{100} = -1.97012
T_{90} = 3.90 min.

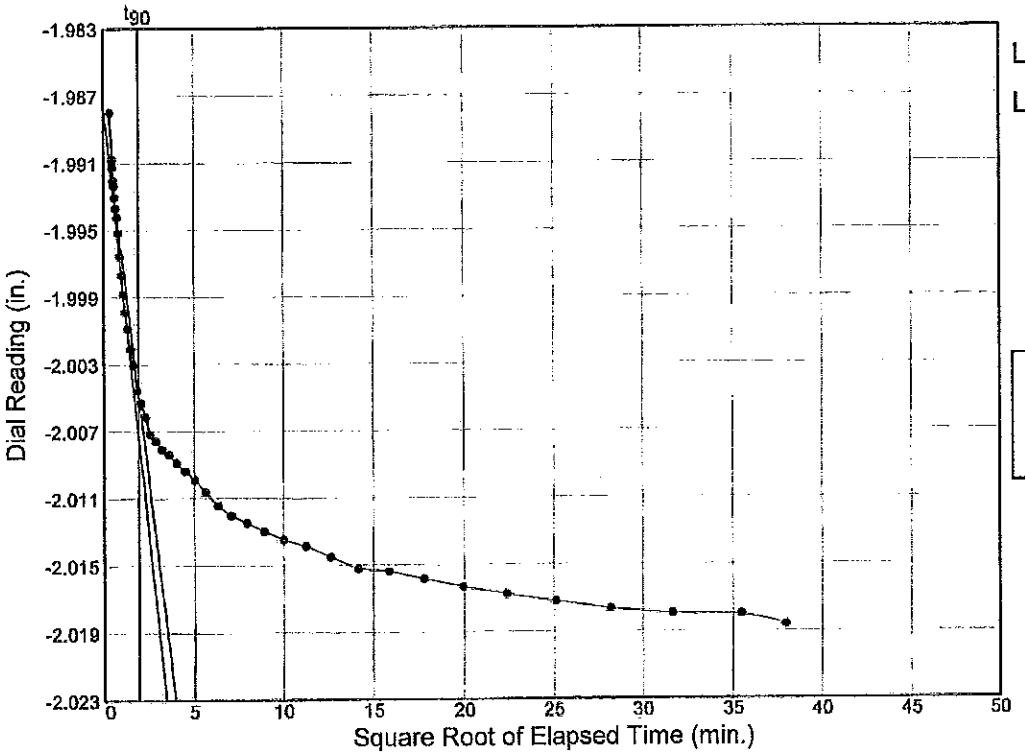
C_v @ T_{90}
0.32 ft.^{2}/day

Figure

Dial Reading vs. Time

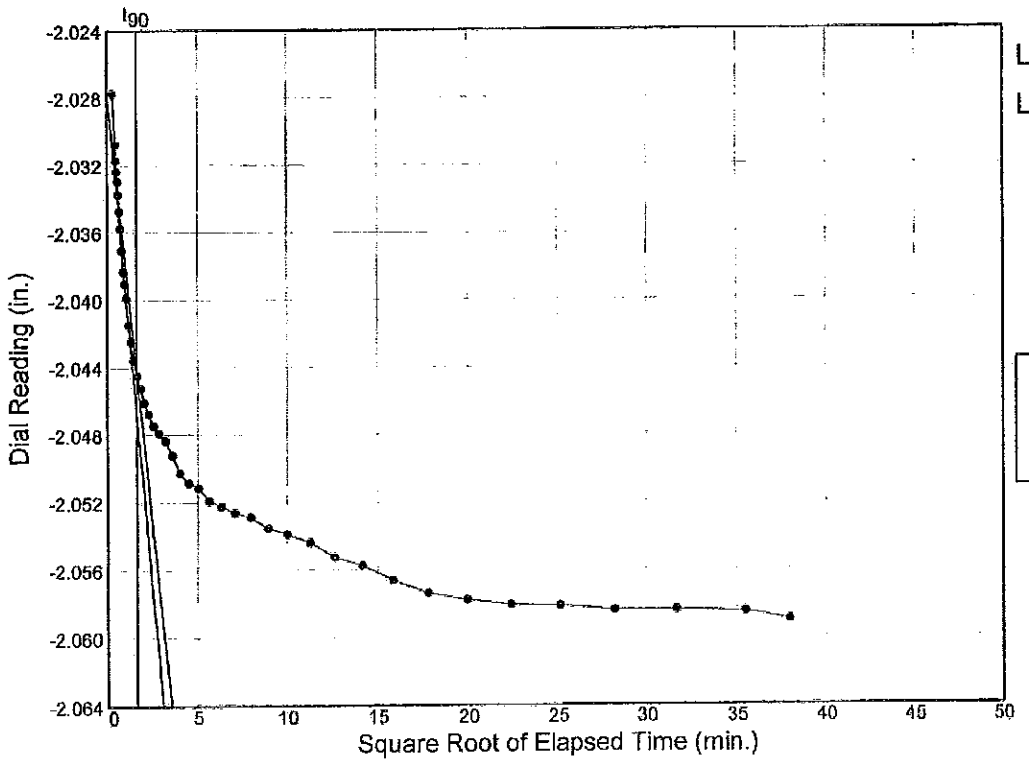
Project No.: 0017-0108
Project: BAYOU SAUVAGE FLOOD SIDE INTERMEDIATE MARSH - TASK ORDER # 108

Source: BSFR-5U Sample No.: 4C Elev./Depth: 10.5



Load No.= 5
Load= 1.00 tsf
D_0 = -1.98762
D_{90} = -2.00493
D_{100} = -2.00686
T_{90} = 3.69 min.

C_v @ T_{90}
0.31 ft.^{2}/day



Load No.= 6
Load= 2.00 tsf
D_0 = -2.02760
D_{90} = -2.04454
D_{100} = -2.04643
T_{90} = 2.69 min.

C_v @ T_{90}
0.38 ft.^{2}/day

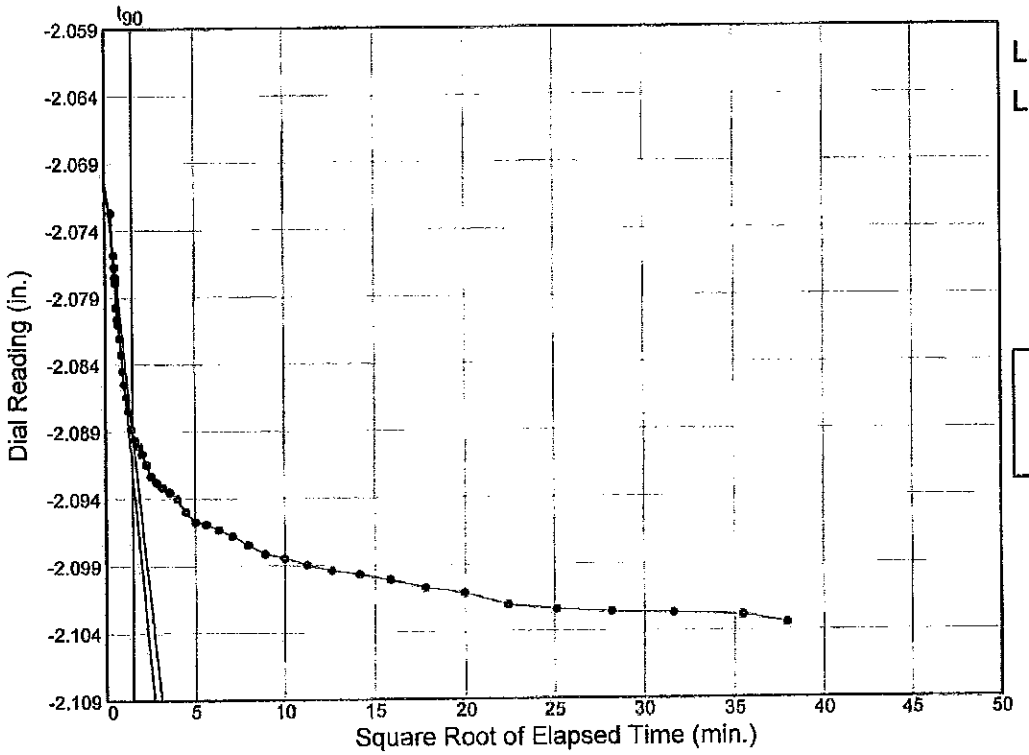
Figure

FFEBJV, LLC.

Dial Reading vs. Time

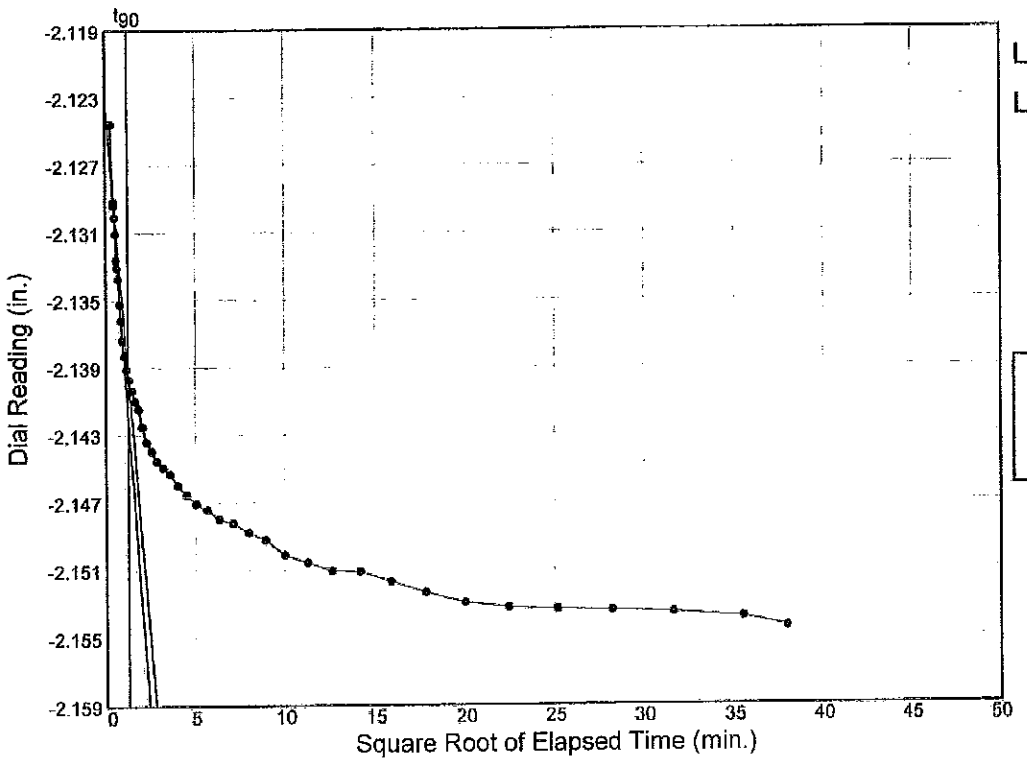
Project No.: 0017-0108
Project: BAYOU SAUVAGE FLOOD SIDE INTERMEDIATE MARSH - TASK ORDER # 108

Source: BSFR-5U Sample No.: 4C Elev./Depth: 10.5



Load No.= 7
Load= 4.00 tsf
D_0 = -2.07001
D_{90} = -2.08911
D_{100} = -2.09123
T_{90} = 2.29 min.

C_v @ T_{90}
0.39 ft.^{2}/day



Load No.= 8
Load= 8.00 tsf
D_0 = -2.12296
D_{90} = -2.13951
D_{100} = -2.14135
T_{90} = 1.60 min.

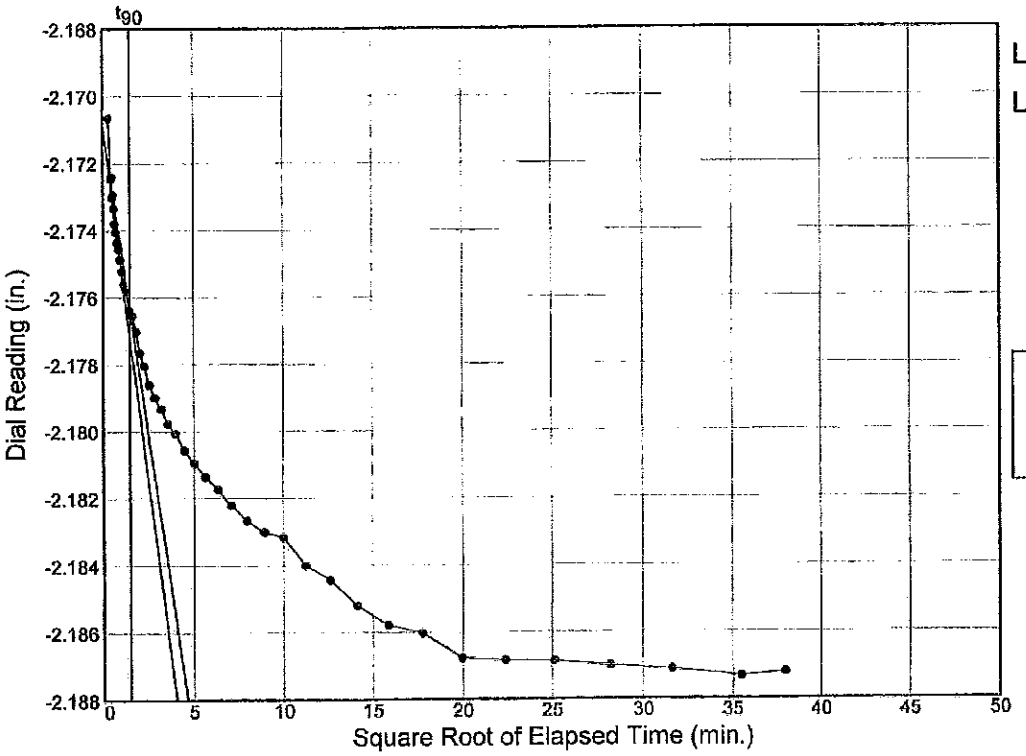
C_v @ T_{90}
0.48 ft.^{2}/day

Figure

Dial Reading vs. Time

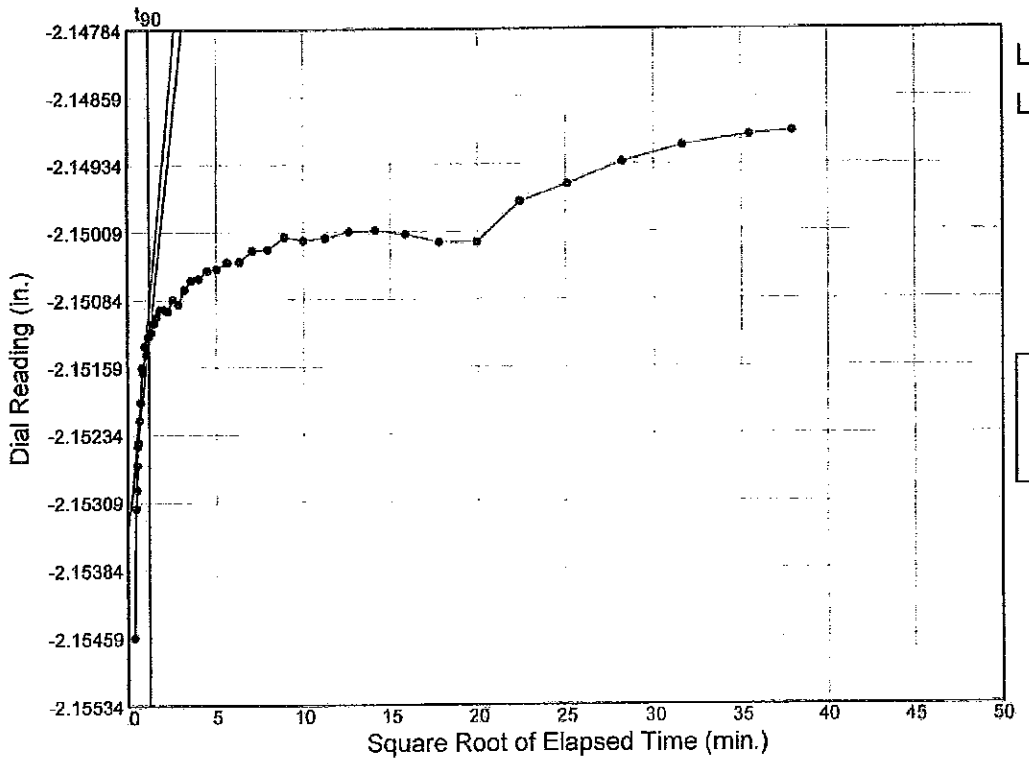
Project No.: 0017-0108
Project: BAYOU SAUVAGE FLOOD SIDE INTERMEDIATE MARSH - TASK ORDER # 108

Source: BSFR-5U Sample No.: 4C Elev./Depth: 10.5



Load No.= 9
Load= 12.00 tsf
D_0 = -2.17087
D_{90} = -2.17645
D_{100} = -2.17706
T_{90} = 2.30 min.

C_v @ T_{90}
0.29 ft.^{2}/day



Load No.= 10
Load= 3.00 tsf
D_0 = -2.15348
D_{90} = -2.15123
D_{100} = -2.15098
T_{90} = 1.49 min.

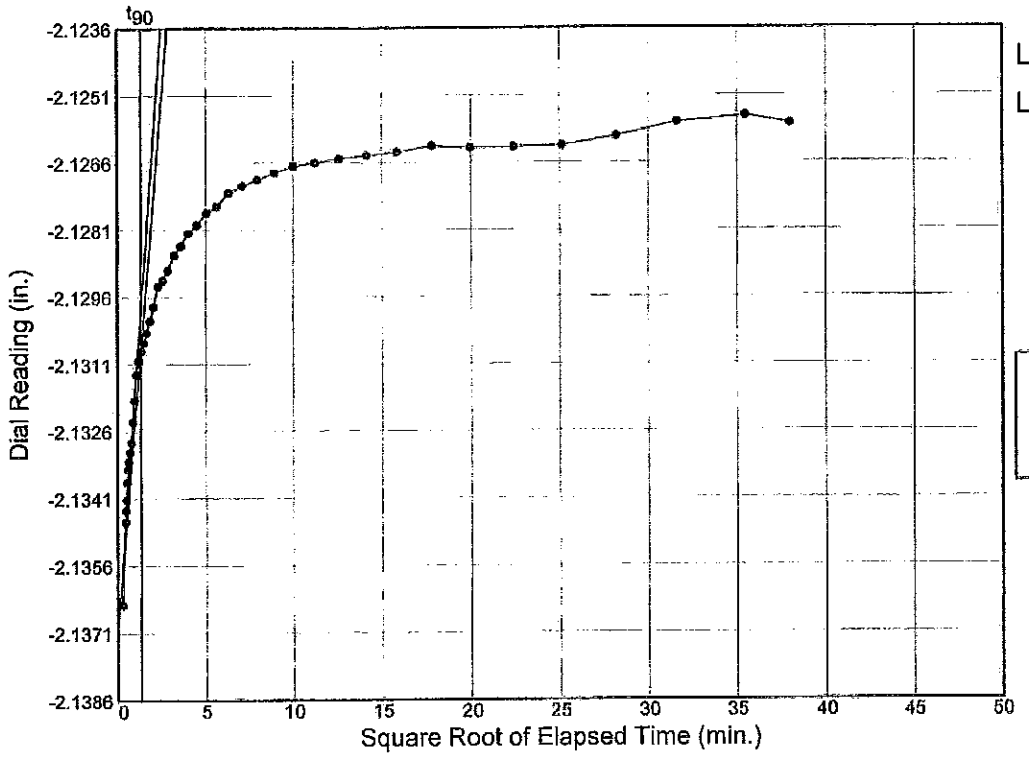
C_v @ T_{90}
0.47 ft.^{2}/day

Figure

Dial Reading vs. Time

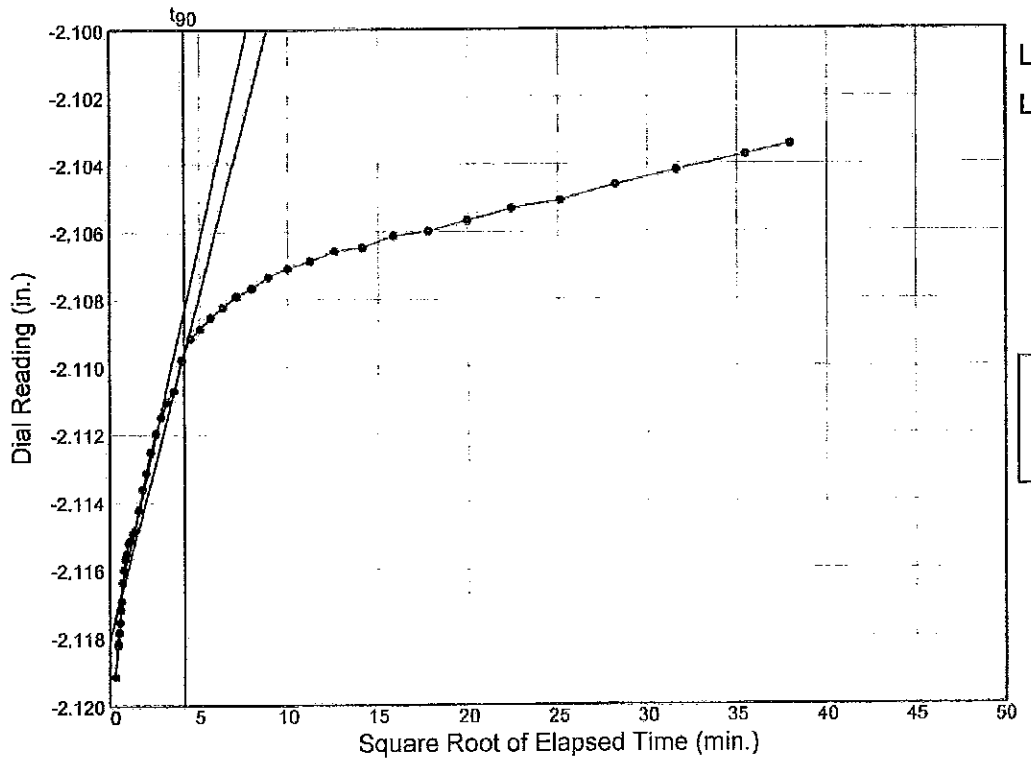
Project No.: 0017-0108
Project: BAYOU SAUVAGE FLOOD SIDE INTERMEDIATE MARSH - TASK ORDER # 108

Source: BSFR-5U Sample No.: 4C Elev./Depth: 10.5



Load No.= 11
Load= 0.75 tsf
D_0 = -2.13709
D_{90} = -2.13080
D_{100} = -2.13010
T_{90} = 1.73 min.

C_v @ T_{90}
0.44 ft.^{2}/day



Load No.= 12
Load= 0.13 tsf
D_0 = -2.11808
D_{90} = -2.10958
D_{100} = -2.10863
T_{90} = 17.25 min.

C_v @ T_{90}
0.05 ft.^{2}/day

Figure

CONSOLIDATION TEST DATA

Client: U.S. ARMY CORPS OF ENGINEERS - N.O. DISTRICT
Project: BAYOU SAUVAGE FLOOD SIDE INTERMEDIATE MARSH - TASK ORDER # 108
Project Number: 0017-0108

Sample Data

Source: BSFR-5U
Sample No.: 4C
Elev. or Depth: 10.5
Sample Length(in./cm.):
Location:
Description: SO GR CL6
Liquid Limit: 40
Plasticity Index: 20
USCS: CL6
AASHTO:
Figure No.:
Testing Remarks: ASTM D2435, METHOD A
CHECKED BY: MR
TESTED BY: AH
CALCULATED BY: HS

Test Specimen Data

TOTAL SAMPLE		BEFORE TEST	AFTER TEST
Wet w+t	= 475.91 g.	Consolidometer # = 16	Wet w+t = 431.11 g.
Dry w+t	= 375.32 g.		Dry w+t = 367.86 g.
Tare Wt.	= 177.12 g.	Spec. Gravity = 2.72	Tare Wt. = 177.12 g.
Height	= .84 in.	Height = .84 in.	
Diameter	= 4.00 in.	Diameter = 4.00 in.	
Weight	= 298.79 g.	Defl. Table = n/a	
Moisture	= 50.8 %	Ht. Solids = 0.3539 in.	Moisture = 33.2 %
Wet Den.	= 107.4 pcf	Dry Wt. = 198.20 g.*	Dry Wt. = 190.74 g.
Dry Den.	= 71.3 pcf	Void Ratio = 1.383	Void Ratio = 0.783
		Saturation = 99.8 %	

*** Initial dry weight used in calculations**

End-of-Load Summary

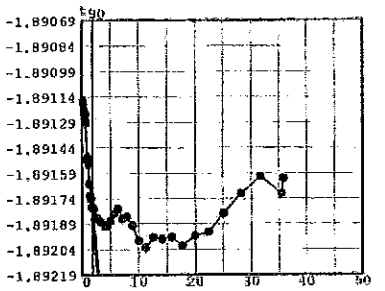
Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (ft.^{2}/day)	C_α	Void Ratio	% Compression /Swell
start	-1.89117				1.383	
0.01	-1.89162	0.00000	0.42		1.382	0.1 Comprs.
0.13	-1.92385	0.00000	0.28		1.291	3.9 Comprs.
0.25	-1.94924	0.00000	0.29		1.219	6.9 Comprs.
0.50	-1.98171	0.00000	0.32		1.127	10.7 Comprs.
1.00	-2.01860	0.00000	0.31		1.023	15.1 Comprs.
2.00	-2.05901	0.00000	0.38		0.909	19.9 Comprs.
4.00	-2.10344	0.00000	0.39		0.783	25.2 Comprs.
8.00	-2.15442	0.00000	0.48		0.639	31.2 Comprs.
12.00	-2.18722	0.00000	0.29		0.547	35.1 Comprs.
3.00	-2.14898	0.00000	0.47		0.655	30.6 Comprs.
0.75	-2.12575	0.00000	0.44		0.720	27.8 Comprs.

Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (ft.^{2}/day)	C_α	Void Ratio	% Compression /Swell
0.13	-2.10343	0.00000	0.05		0.783	25.2 Comprs.

C_c = 0.49 P_c = 0.45 tsf C_r = 0.12

Pressure: 0.01 tsf **TEST READINGS** **Load No. 1**

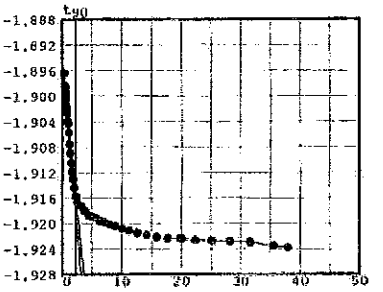
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.89117	23	12.55	-1.89188
2	0.02	-1.89116	24	15.80	-1.89190
3	0.05	-1.89118	25	19.92	-1.89190
4	0.08	-1.89122	26	25.08	-1.89187
5	0.13	-1.89124	27	31.58	-1.89183
6	0.18	-1.89123	28	39.77	-1.89180
7	0.25	-1.89127	29	50.08	-1.89186
8	0.33	-1.89128	30	63.07	-1.89185
9	0.43	-1.89124	31	79.40	-1.89190
10	0.57	-1.89129	32	99.97	-1.89199
11	0.73	-1.89151	33	125.85	-1.89203
12	0.93	-1.89149	34	158.45	-1.89197
13	1.20	-1.89154	35	199.50	-1.89198
14	1.52	-1.89165	36	251.15	-1.89197
15	1.93	-1.89172	37	316.20	-1.89202
16	2.45	-1.89174	38	398.07	-1.89196
17	3.10	-1.89179	39	501.15	-1.89194
18	3.93	-1.89180	40	630.92	-1.89183
19	4.97	-1.89186	41	794.28	-1.89171
20	6.27	-1.89185	42	999.95	-1.89161
21	7.90	-1.89186	43	1258.87	-1.89171
22	9.95	-1.89188	44	1282.77	-1.89162



Void Ratio = 1.382 **Compression** = 0.1 %
D_0 = -1.89112 D_{90} = -1.89180 D_{100} = -1.89187
C_v **at 3.6 min.** = 0.42 ft.^{2}/day

Pressure: 0.13 tsf **TEST READINGS** **Load No. 2**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.89288	24	12.72	-1.91784
2	0.10	-1.89636	25	15.98	-1.91815
3	0.20	-1.89840	26	20.08	-1.91871
4	0.23	-1.89844	27	25.25	-1.91892
5	0.27	-1.89866	28	31.77	-1.91917
6	0.30	-1.89945	29	39.95	-1.91963
7	0.35	-1.90038	30	50.25	-1.91986
8	0.42	-1.90151	31	63.23	-1.92011
9	0.50	-1.90191	32	79.58	-1.92048
10	0.62	-1.90265	33	100.15	-1.92078
11	0.73	-1.90387	34	126.03	-1.92111
12	0.90	-1.90430	35	158.63	-1.92146
13	1.12	-1.90567	36	199.67	-1.92181
14	1.37	-1.90747	37	251.33	-1.92215
15	1.70	-1.90889	38	316.37	-1.92232
16	2.12	-1.91044	39	398.25	-1.92237
17	2.63	-1.91181	40	501.33	-1.92261
18	3.28	-1.91301	41	631.10	-1.92273
19	4.10	-1.91433	42	794.47	-1.92280
20	5.13	-1.91568	43	1000.13	-1.92298
21	6.43	-1.91670	44	1259.05	-1.92352
22	8.08	-1.91712	45	1440.00	-1.92385
23	10.13	-1.91729			



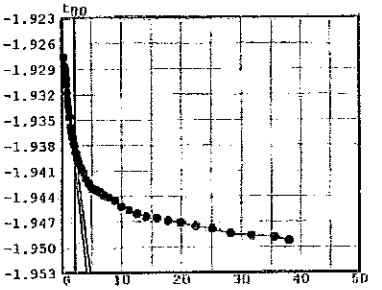
Void Ratio = 1.291 **Compression** = 3.9 %

D_0 = -1.89463 D_{90} = -1.91572 D_{100} = -1.91807

C_v **at 5.2 min.** = 0.28 ft.^{2}/day

Pressure: 0.25 tsf **TEST READINGS** **Load No. 3**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.92576	24	12.73	-1.94120
2	0.10	-1.92760	25	16.00	-1.94197
3	0.20	-1.92865	26	20.10	-1.94241
4	0.23	-1.92890	27	25.28	-1.94301
5	0.27	-1.92918	28	31.78	-1.94327
6	0.30	-1.92941	29	39.97	-1.94352
7	0.35	-1.92965	30	50.28	-1.94391
8	0.42	-1.92982	31	63.25	-1.94418
9	0.50	-1.93010	32	79.60	-1.94449
10	0.62	-1.93084	33	100.17	-1.94523
11	0.75	-1.93179	34	126.05	-1.94567
12	0.92	-1.93267	35	158.65	-1.94608
13	1.12	-1.93332	36	199.68	-1.94641
14	1.38	-1.93374	37	251.35	-1.94656
15	1.72	-1.93462	38	316.38	-1.94688
16	2.13	-1.93579	39	398.27	-1.94710
17	2.65	-1.93628	40	501.35	-1.94756
18	3.30	-1.93705	41	631.12	-1.94783
19	4.12	-1.93784	42	794.48	-1.94840
20	5.15	-1.93875	43	1000.15	-1.94862
21	6.45	-1.93947	44	1259.07	-1.94885
22	8.10	-1.94011	45	1440.32	-1.94924
23	10.15	-1.94063			



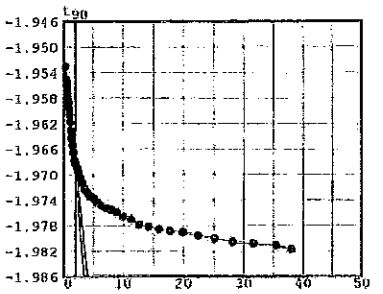
Void Ratio = 1.219 **Compression** = 6.9 %

D_0 = -1.92609 D_{90} = -1.93836 D_{100} = -1.93973

C_v **at 4.7 min.** = 0.29 ft.^{2}/day

Pressure: 0.50 tsf **TEST READINGS** **Load No. 4**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.95106	24	12.73	-1.97227
2	0.10	-1.95304	25	16.00	-1.97286
3	0.20	-1.95506	26	20.10	-1.97337
4	0.23	-1.95577	27	25.27	-1.97375
5	0.27	-1.95628	28	31.78	-1.97439
6	0.30	-1.95706	29	39.97	-1.97486
7	0.37	-1.95717	30	50.27	-1.97532
8	0.43	-1.95795	31	63.25	-1.97558
9	0.50	-1.95848	32	79.58	-1.97593
10	0.62	-1.95876	33	100.15	-1.97657
11	0.73	-1.95964	34	126.05	-1.97702
12	0.90	-1.96061	35	158.65	-1.97786
13	1.12	-1.96168	36	199.68	-1.97816
14	1.38	-1.96307	37	251.35	-1.97853
15	1.70	-1.96422	38	316.38	-1.97883
16	2.12	-1.96535	39	398.27	-1.97909
17	2.63	-1.96656	40	501.35	-1.97957
18	3.28	-1.96776	41	631.12	-1.98004
19	4.12	-1.96839	42	794.48	-1.98055
20	5.15	-1.96896	43	1000.15	-1.98081
21	6.45	-1.96965	44	1259.07	-1.98114
22	8.08	-1.97063	45	1440.48	-1.98171
23	10.13	-1.97137			



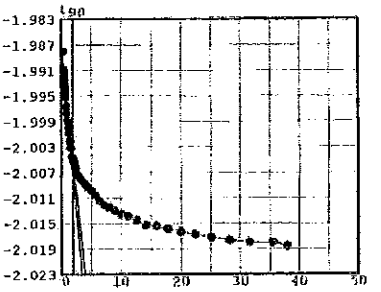
Void Ratio = 1.127 **Compression =** 10.7 %

D_0 = -1.95126 D_{90} = -1.96823 D_{100} = -1.97012

C_v **at 3.9 min.** = 0.32 ft.^{2}/day

Pressure: 1.00 tsf **TEST READINGS** **Load No. 5**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.98393	24	12.75	-2.00839
2	0.10	-1.98799	25	16.00	-2.00889
3	0.20	-1.99077	26	20.12	-2.00938
4	0.23	-1.99126	27	25.28	-2.00989
5	0.27	-1.99205	28	31.78	-2.01061
6	0.32	-1.99236	29	39.98	-2.01145
7	0.37	-1.99305	30	50.28	-2.01206
8	0.43	-1.99369	31	63.27	-2.01249
9	0.52	-1.99425	32	79.62	-2.01298
10	0.62	-1.99519	33	100.18	-2.01348
11	0.75	-1.99654	34	126.07	-2.01389
12	0.93	-1.99768	35	158.67	-2.01453
13	1.13	-1.99885	36	199.70	-2.01523
14	1.40	-1.99988	37	251.37	-2.01539
15	1.73	-2.00085	38	316.42	-2.01585
16	2.13	-2.00207	39	398.28	-2.01632
17	2.65	-2.00306	40	501.37	-2.01675
18	3.30	-2.00457	41	631.13	-2.01718
19	4.12	-2.00531	42	794.50	-2.01766
20	5.15	-2.00617	43	1000.17	-2.01795
21	6.45	-2.00718	44	1259.08	-2.01800
22	8.08	-2.00758	45	1440.13	-2.01860
23	10.15	-2.00808			



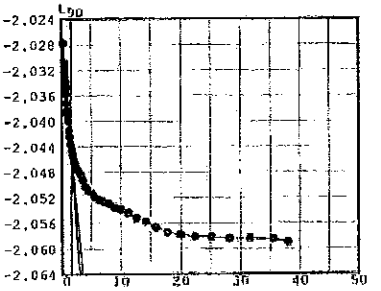
Void Ratio = 1.023 **Compression** = 15.1 %

D_0 = -1.98762 D_{90} = -2.00493 D_{100} = -2.00686

C_v **at 3.7 min.** = 0.31 ft.^{2}/day

Pressure: 2.00 tsf **TEST READINGS** **Load No. 6**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-2.02232	24	12.73	-2.04922
2	0.08	-2.02771	25	16.00	-2.05027
3	0.20	-2.03074	26	20.12	-2.05087
4	0.22	-2.03171	27	25.28	-2.05115
5	0.25	-2.03237	28	31.78	-2.05191
6	0.30	-2.03295	29	39.97	-2.05225
7	0.35	-2.03372	30	50.28	-2.05262
8	0.42	-2.03473	31	63.27	-2.05287
9	0.50	-2.03576	32	79.60	-2.05353
10	0.62	-2.03709	33	100.17	-2.05388
11	0.75	-2.03834	34	126.07	-2.05438
12	0.92	-2.03905	35	158.67	-2.05525
13	1.12	-2.03991	36	199.70	-2.05574
14	1.38	-2.04147	37	251.35	-2.05664
15	1.72	-2.04246	38	316.40	-2.05739
16	2.12	-2.04358	39	398.28	-2.05781
17	2.65	-2.04449	40	501.35	-2.05810
18	3.30	-2.04525	41	631.12	-2.05817
19	4.12	-2.04610	42	794.50	-2.05844
20	5.15	-2.04677	43	1000.17	-2.05841
21	6.45	-2.04748	44	1259.08	-2.05853
22	8.08	-2.04791	45	1440.38	-2.05901
23	10.15	-2.04836			



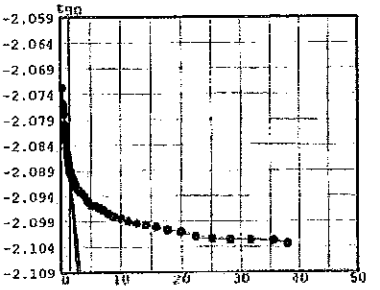
Void Ratio = 0.909 **Compression** = 19.9 %

D_0 = -2.02760 D_{90} = -2.04454 D_{100} = -2.04643

C_v **at 2.7 min.** = 0.38 ft.^{2}/day

Pressure: 4.00 tsf **TEST READINGS** **Load No. 7**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-2.06394	24	12.73	-2.09353
2	0.10	-2.07270	25	15.98	-2.09401
3	0.20	-2.07583	26	20.10	-2.09497
4	0.23	-2.07675	27	25.27	-2.09577
5	0.27	-2.07748	28	31.77	-2.09594
6	0.30	-2.07791	29	39.95	-2.09634
7	0.35	-2.07976	30	50.27	-2.09682
8	0.43	-2.08063	31	63.25	-2.09750
9	0.50	-2.08103	32	79.58	-2.09817
10	0.62	-2.08208	33	100.15	-2.09847
11	0.75	-2.08326	34	126.05	-2.09898
12	0.90	-2.08448	35	158.65	-2.09943
13	1.12	-2.08549	36	199.68	-2.09972
14	1.38	-2.08642	37	251.35	-2.10012
15	1.70	-2.08751	38	316.40	-2.10070
16	2.12	-2.08885	39	398.27	-2.10110
17	2.63	-2.08962	40	501.35	-2.10199
18	3.28	-2.09007	41	631.12	-2.10235
19	4.10	-2.09068	42	794.48	-2.10258
20	5.15	-2.09147	43	1000.17	-2.10267
21	6.43	-2.09234	44	1259.08	-2.10282
22	8.08	-2.09280	45	1440.08	-2.10344
23	10.13	-2.09318			



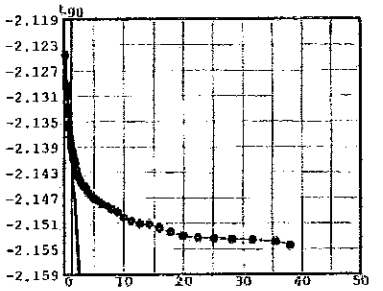
Void Ratio = 0.783 **Compression** = 25.2 %

D_0 = -2.07001 D_{90} = -2.08911 D_{100} = -2.09123

C_v **at 2.3 min.** = 0.39 ft.^{2}/day

Pressure: 8.00 tsf **TEST READINGS** **Load No. 8**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-2.11248	24	12.72	-2.14533
2	0.08	-2.12456	25	15.98	-2.14600
3	0.18	-2.12941	26	20.10	-2.14655
4	0.22	-2.12915	27	25.27	-2.14707
5	0.25	-2.13009	28	31.77	-2.14743
6	0.30	-2.13104	29	39.97	-2.14798
7	0.35	-2.13260	30	50.27	-2.14822
8	0.42	-2.13306	31	63.25	-2.14878
9	0.50	-2.13374	32	79.58	-2.14923
10	0.62	-2.13523	33	100.15	-2.15012
11	0.73	-2.13621	34	126.05	-2.15059
12	0.90	-2.13737	35	158.65	-2.15105
13	1.12	-2.13829	36	199.68	-2.15111
14	1.38	-2.13909	37	251.35	-2.15171
15	1.70	-2.13969	38	316.38	-2.15236
16	2.12	-2.14038	39	398.27	-2.15296
17	2.63	-2.14098	40	501.35	-2.15325
18	3.28	-2.14145	41	631.12	-2.15337
19	4.12	-2.14251	42	794.48	-2.15346
20	5.15	-2.14342	43	1000.15	-2.15357
21	6.43	-2.14397	44	1259.07	-2.15384
22	8.08	-2.14457	45	1440.05	-2.15442
23	10.13	-2.14495			



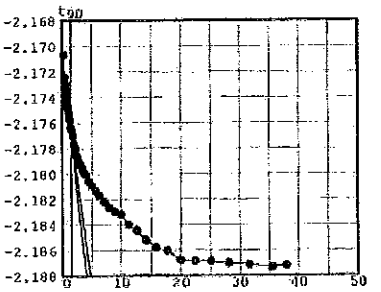
Void Ratio = 0.639 **Compression** = 31.2 %

D_0 = -2.12296 D_{90} = -2.13951 D_{100} = -2.14135

C_v **at 1.6 min.** = 0.48 ft.^{2}/day

Pressure: 12.00 tsf **TEST READINGS** **Load No. 9**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-2.16167	24	12.73	-2.17978
2	0.08	-2.17066	25	15.98	-2.18008
3	0.20	-2.17247	26	20.10	-2.18058
4	0.22	-2.17242	27	25.27	-2.18096
5	0.25	-2.17302	28	31.78	-2.18137
6	0.30	-2.17295	29	39.97	-2.18174
7	0.35	-2.17335	30	50.28	-2.18221
8	0.42	-2.17381	31	63.25	-2.18267
9	0.50	-2.17405	32	79.60	-2.18301
10	0.60	-2.17437	33	100.17	-2.18317
11	0.73	-2.17456	34	126.05	-2.18400
12	0.90	-2.17488	35	158.65	-2.18445
13	1.12	-2.17523	36	199.68	-2.18522
14	1.37	-2.17562	37	251.35	-2.18580
15	1.70	-2.17580	38	316.38	-2.18603
16	2.12	-2.17638	39	398.27	-2.18677
17	2.63	-2.17656	40	501.35	-2.18684
18	3.28	-2.17703	41	631.12	-2.18687
19	4.12	-2.17766	42	794.48	-2.18701
20	5.15	-2.17805	43	1000.15	-2.18712
21	6.45	-2.17861	44	1259.08	-2.18734
22	8.08	-2.17900	45	1440.38	-2.18722
23	10.13	-2.17934			



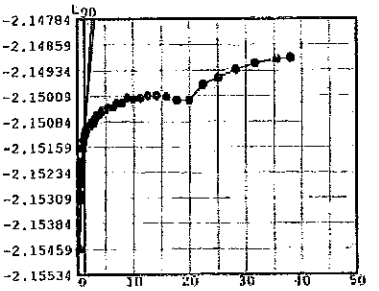
Void Ratio = 0.547 **Compression** = 35.1 %

D_0 = -2.17087 D_{90} = -2.17645 D_{100} = -2.17706

C_v **at 2.3 min.** = 0.29 ft.^{2}/day

Pressure: 3.00 tsf **TEST READINGS** **Load No. 10**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-2.17205	24	12.72	-2.15063
2	0.10	-2.15459	25	15.98	-2.15061
3	0.20	-2.15316	26	20.08	-2.15052
4	0.23	-2.15295	27	25.25	-2.15050
5	0.27	-2.15268	28	31.77	-2.15043
6	0.30	-2.15247	29	39.95	-2.15042
7	0.37	-2.15243	30	50.25	-2.15030
8	0.43	-2.15218	31	63.23	-2.15029
9	0.52	-2.15198	32	79.57	-2.15015
10	0.62	-2.15160	33	100.15	-2.15019
11	0.75	-2.15165	34	126.03	-2.15016
12	0.92	-2.15136	35	158.63	-2.15009
13	1.12	-2.15145	36	199.67	-2.15008
14	1.38	-2.15125	37	251.33	-2.15012
15	1.70	-2.15120	38	316.37	-2.15021
16	2.12	-2.15110	39	398.25	-2.15021
17	2.63	-2.15103	40	501.33	-2.14976
18	3.28	-2.15095	41	631.10	-2.14957
19	4.12	-2.15095	42	794.47	-2.14932
20	5.13	-2.15097	43	1000.13	-2.14914
21	6.43	-2.15084	44	1259.05	-2.14902
22	8.07	-2.15089	45	1440.15	-2.14898
23	10.13	-2.15073			



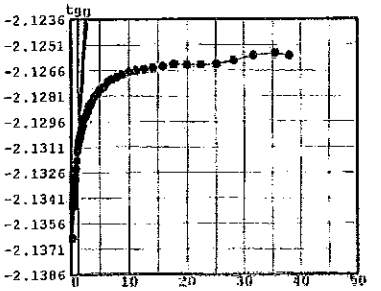
Void Ratio = 0.655 **Compression** = 30.6 %

D_0 = -2.15348 D_{90} = -2.15123 D_{100} = -2.15098

C_v **at 1.5 min.** = 0.47 ft.^{2}/day

Pressure: 0.75 tsf **TEST READINGS** **Load No. 11**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-2.14275	24	12.73	-2.12846
2	0.08	-2.13647	25	15.98	-2.12817
3	0.20	-2.13462	26	20.10	-2.12799
4	0.22	-2.13436	27	25.27	-2.12772
5	0.25	-2.13413	28	31.77	-2.12757
6	0.30	-2.13374	29	39.97	-2.12727
7	0.35	-2.13345	30	50.27	-2.12712
8	0.42	-2.13328	31	63.25	-2.12698
9	0.50	-2.13307	32	79.58	-2.12683
10	0.60	-2.13286	33	100.15	-2.12668
11	0.73	-2.13239	34	126.05	-2.12661
12	0.90	-2.13191	35	158.65	-2.12652
13	1.12	-2.13133	36	199.68	-2.12645
14	1.37	-2.13103	37	251.35	-2.12637
15	1.70	-2.13081	38	316.38	-2.12624
16	2.12	-2.13062	39	398.27	-2.12628
17	2.63	-2.13041	40	501.35	-2.12626
18	3.28	-2.13014	41	631.12	-2.12623
19	4.10	-2.12982	42	794.48	-2.12602
20	5.13	-2.12937	43	1000.15	-2.12572
21	6.43	-2.12924	44	1259.07	-2.12558
22	8.07	-2.12902	45	1440.00	-2.12575
23	10.13	-2.12867			



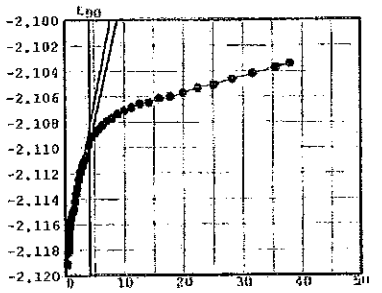
Void Ratio = 0.720 **Compression** = 27.8 %

D_0 = -2.13709 D_{90} = -2.13080 D_{100} = -2.13010

C_v **at 1.7 min.** = 0.44 ft.^{2}/day

Pressure: 0.13 tsf | TEST READINGS | Load No. 12

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-2.12175	24	12.72	-2.11070
2	0.08	-2.11914	25	15.98	-2.10978
3	0.18	-2.11821	26	20.08	-2.10915
4	0.22	-2.11815	27	25.25	-2.10887
5	0.25	-2.11783	28	31.77	-2.10852
6	0.30	-2.11754	29	39.95	-2.10823
7	0.35	-2.11717	30	50.27	-2.10790
8	0.42	-2.11691	31	63.25	-2.10767
9	0.50	-2.11636	32	79.58	-2.10733
10	0.60	-2.11600	33	100.15	-2.10709
11	0.73	-2.11568	34	126.05	-2.10687
12	0.90	-2.11552	35	158.65	-2.10657
13	1.10	-2.11521	36	199.68	-2.10647
14	1.37	-2.11512	37	251.35	-2.10613
15	1.70	-2.11491	38	316.38	-2.10599
16	2.12	-2.11481	39	398.27	-2.10568
17	2.63	-2.11423	40	501.35	-2.10532
18	3.28	-2.11361	41	631.12	-2.10508
19	4.10	-2.11312	42	794.48	-2.10463
20	5.13	-2.11251	43	1000.15	-2.10420
21	6.43	-2.11196	44	1259.07	-2.10373
22	8.07	-2.11148	45	1440.07	-2.10343
23	10.13	-2.11104			

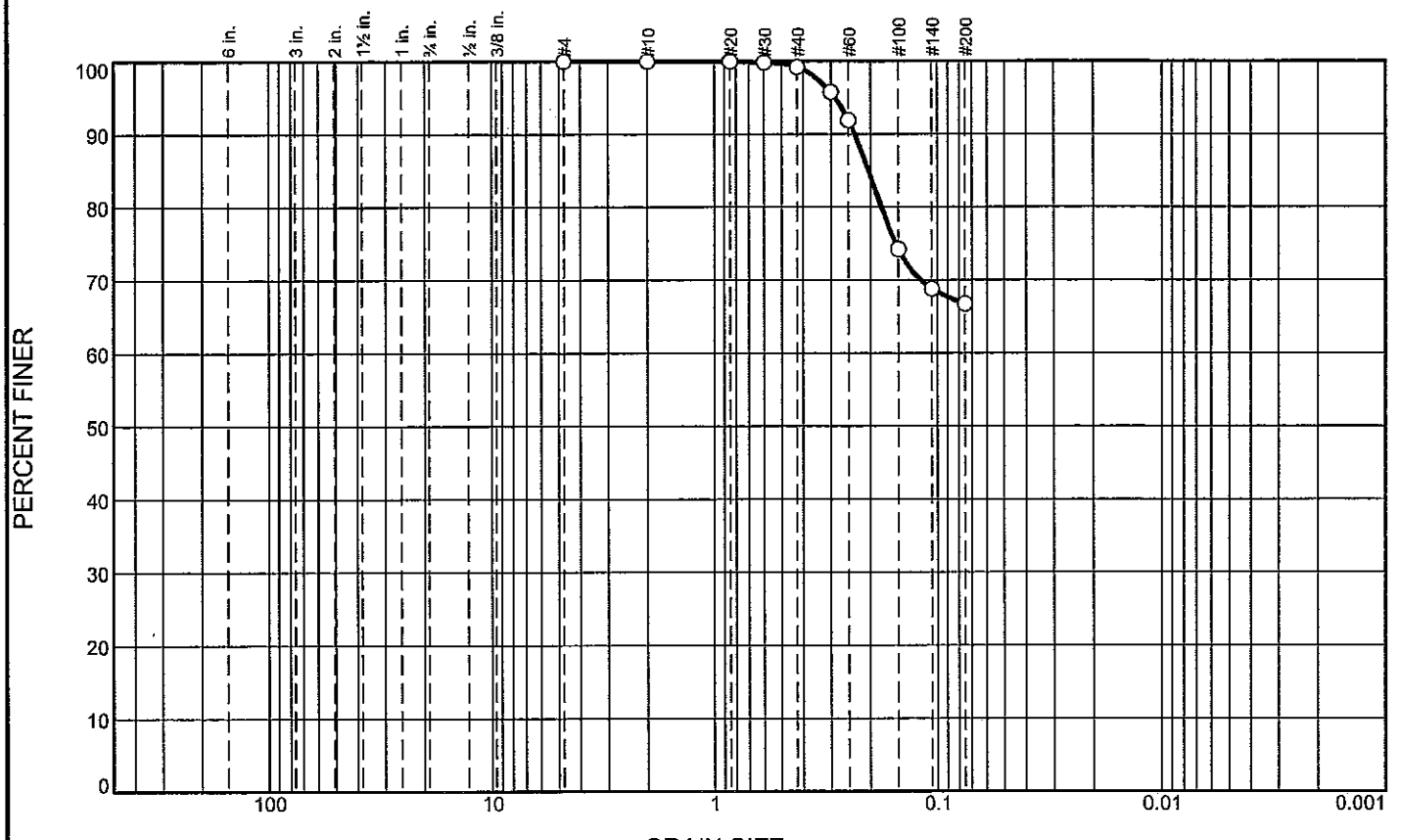


Void Ratio = 0.783 **Compression** = 25.2 %

D_0 = -2.11808 D_{90} = -2.10958 D_{100} = -2.10863

C_v **at 17.2 min.** = 0.05 ft.^{2}/day

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.8	32.5	66.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	100.0		
#20	100.0		
#30	99.9		
#40	99.2		
#50	95.7		
#60	91.9		
#100	74.2		
#140	68.8		
#200	66.7		

* (no specification provided)

Soil Description

GR ML W/ ARS CH, SIF

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.2347 D_{85}= 0.2040 D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= ML AASHTO=

Remarks

Source of Sample: BSFR-5U **Depth:** 16.0
Sample Number: 6A **Date:** 7-26-12

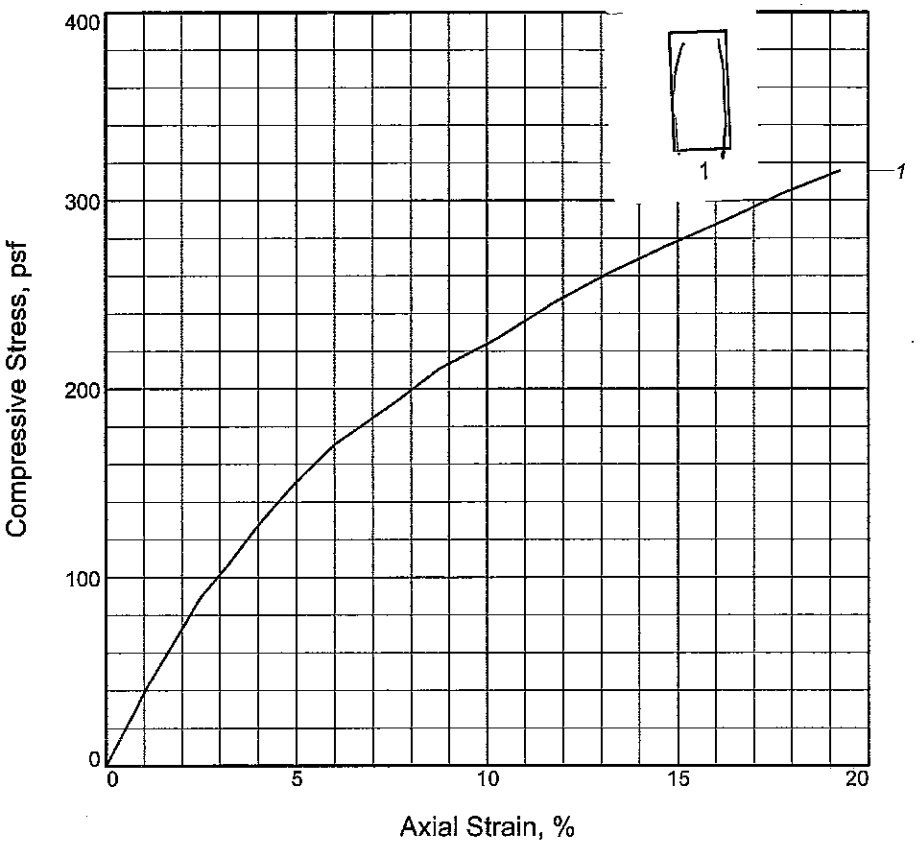
Stantec

Saint Rose, Louisiana

Client: USACE
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Project No: 12-017108 **Figure**

Tested By: JC

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	276			
Undrained shear strength, psf	138			
Failure strain, %	14.8			
Strain rate, in./min.	1.000			
Water content, %	487.8			
Wet density, pcf	68.4			
Dry density, pcf	11.6			
Saturation, %	98.1			
Void ratio	12.6752			
Specimen diameter, in.	1.374			
Specimen height, in.	2.988			
Height/diameter ratio	2.17			

Description: VSO BK PT W/ RT

LL = 492	**PL =** 139	**PI =** 353	**Assumed GS=** 2.55	**Type:** UNDISTURBED

Project No.: 12-017108
Date Sampled: 7-26-12
Remarks:
Torvane=0.70 tsf

Figure _____

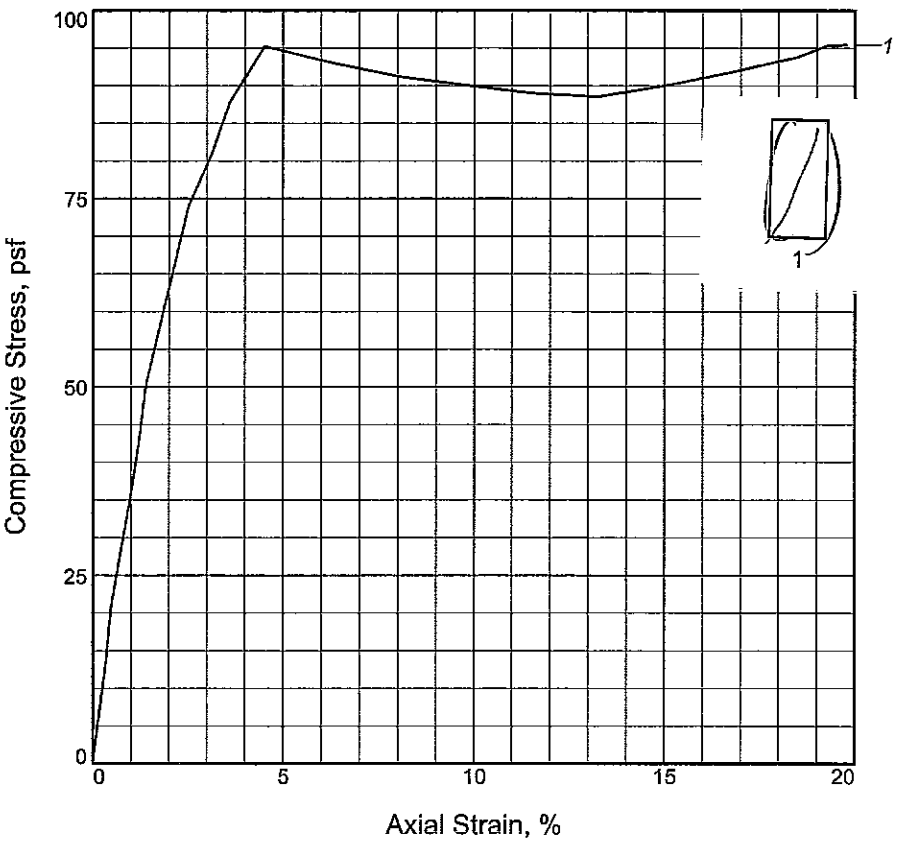
Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-5U **Depth:** 4.0
Sample Number: 3A

UNCONFINED COMPRESSION TEST
Stantec
Saint Rose, Louisiana

Tested By: JC **Checked By:** JS

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	95			
Undrained shear strength, psf	48			
Failure strain, %	4.5			
Strain rate, in./min.	1.000			
Water content, %	89.1			
Wet density, pcf	96.7			
Dry density, pcf	51.2			
Saturation, %	104.5			
Void ratio	2.3192			
Specimen diameter, in.	1.374			
Specimen height, in.	2.973			
Height/diameter ratio	2.16			

Description: VSO GR CH4 W/ LNS ML

LL = 72	**PL =** 21	**PI =** 51	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 12-017108
Date Sampled: 7-26-12
Remarks:
Torvane=0.60 tsf

Figure _____

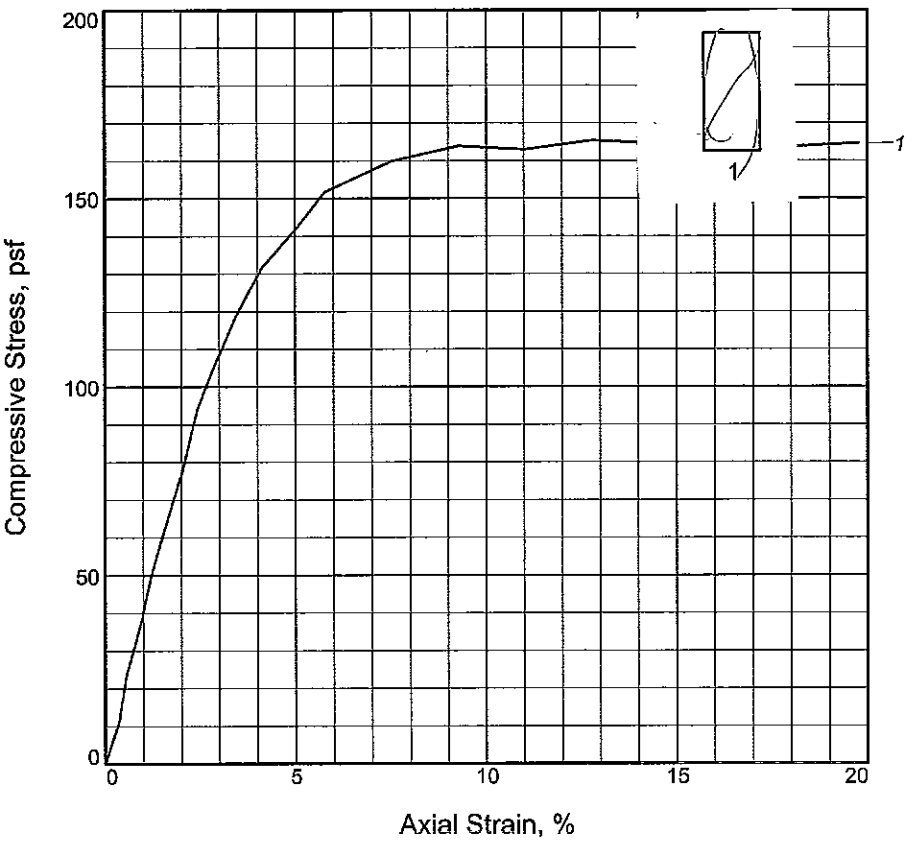
Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-5U **Depth:** 9.0
Sample Number: 4B

UNCONFINED COMPRESSION TEST
Stantec
Saint Rose, Louisiana

Tested By: JC

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	165			
Undrained shear strength, psf	83			
Failure strain, %	12.8			
Strain rate, in./min.	1.000			
Water content, %	74.7			
Wet density, pcf	100.3			
Dry density, pcf	57.4			
Saturation, %	103.8			
Void ratio	1.9570			
Specimen diameter, in.	1.366			
Specimen height, in.	2.961			
Height/diameter ratio	2.17			

Description: VSO GR CH3 W/ LNS ML

LL = 69	**PL =** 16	**PI =** 53	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 12-017108
Date Sampled: 7-26-12
Remarks:
Torvane=0.60 tsf

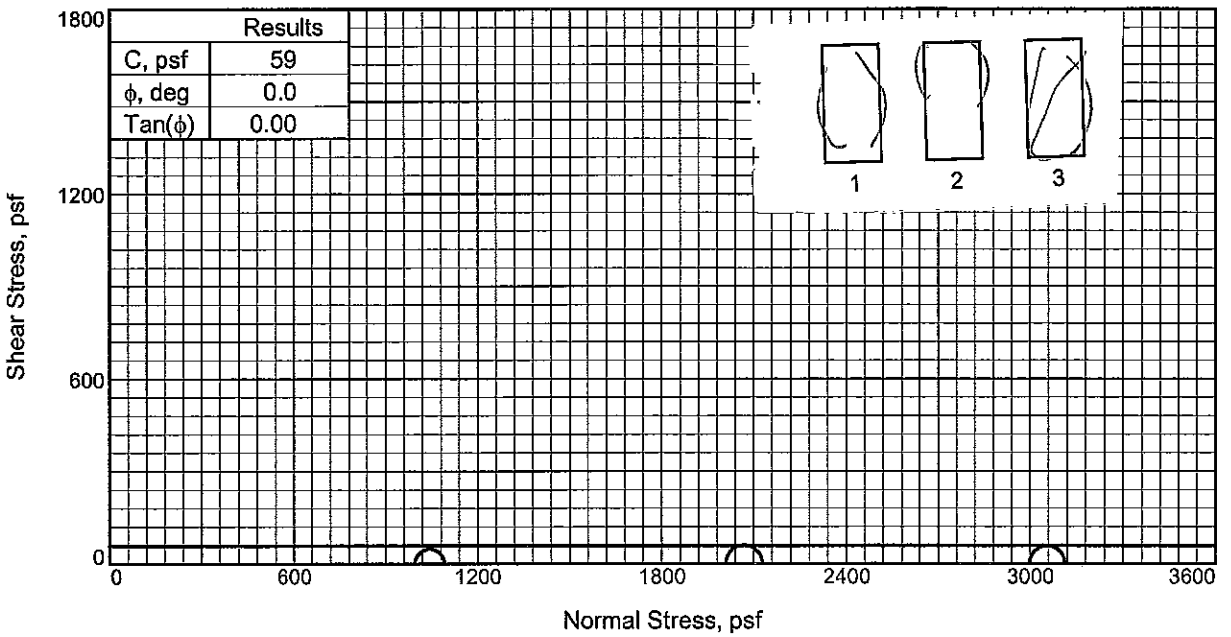
Figure _____

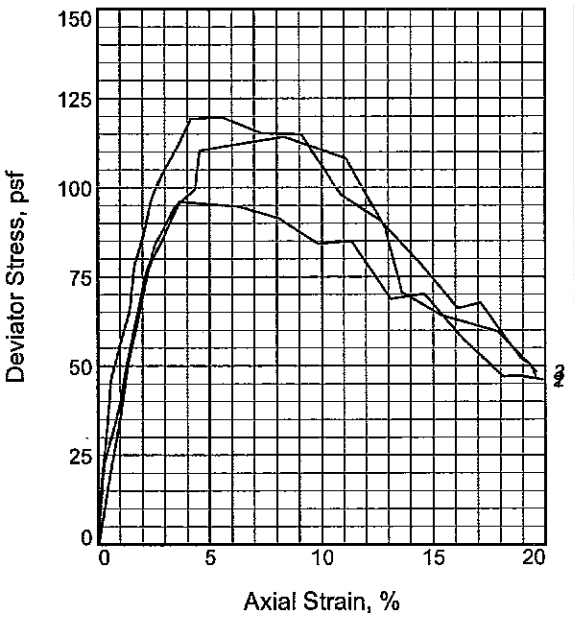
Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-5U **Depth:** 14.0
Sample Number: 5C

UNCONFINED COMPRESSION TEST
Stantec
Saint Rose, Louisiana

Tested By: JC





Sample No.		1	2	3
Initial	Water Content, %	168.4	166.2	219.5
	Dry Density, pcf	30.8	31.9	25.4
	Saturation, %	103.0	106.1	106.4
	Void Ratio	4.1671	3.9958	5.2609
	Diameter, in.	1.372	1.336	1.351
	Height, in.	2.974	2.977	2.950
At Test	Water Content, %	168.4	166.2	219.5
	Dry Density, pcf	30.8	31.9	25.4
	Saturation, %	103.0	106.1	106.4
	Void Ratio	4.1671	3.9958	5.2609
	Diameter, in.	1.372	1.336	1.351
	Height, in.	2.974	2.977	2.950
Strain rate, in./min.		1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.91	13.94	20.82
Fail. Stress, psf		96	120	114
Strain, %		3.7	5.6	8.3
Ult. Stress, psf		69	79	71
Strain, %		13.1	14.4	13.6
σ_1 Failure, psf		1091	2127	3112
σ_3 Failure, psf		995	2007	2998

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: VSO BK PT W/ RT

LL= 182 **PL=** 34 **PI=** 148
Assumed Specific Gravity= 2.55
Remarks: Torvane=0.90 tsf

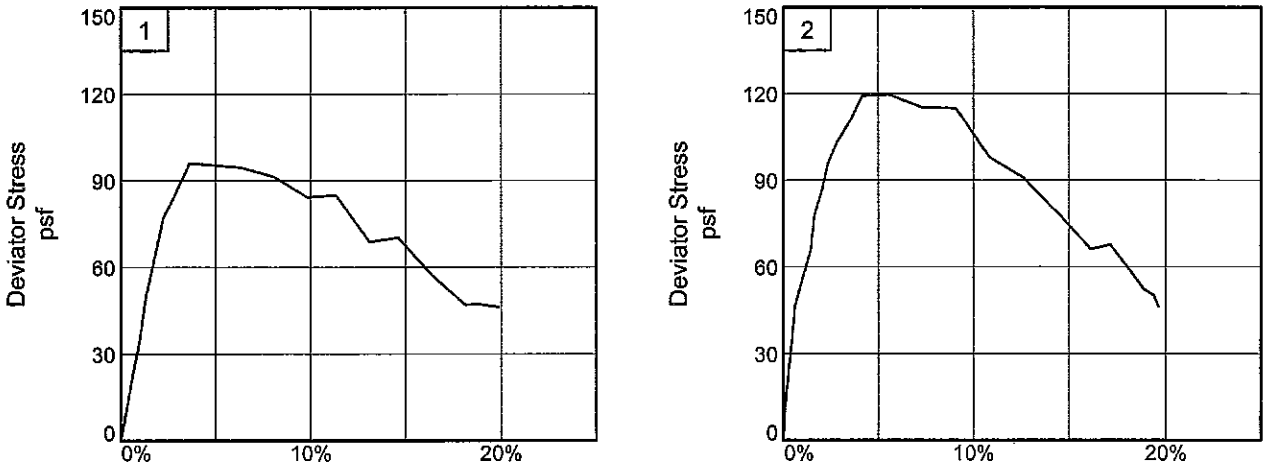
Figure _____

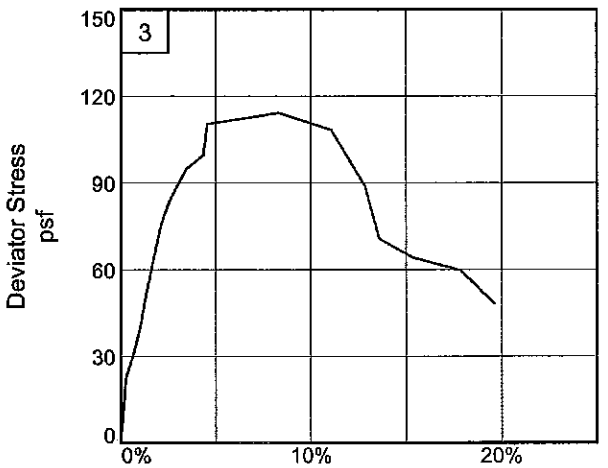
Client: USACE

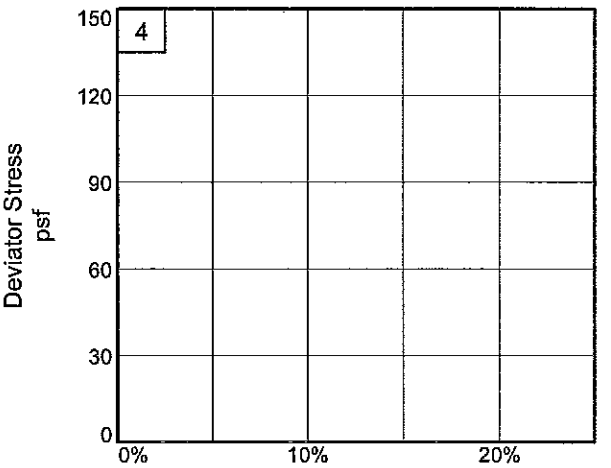
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-5U **Depth:** 6.0
Sample Number: 3C
Proj. No.: 12-017108 **Date Sampled:** 7-26-12

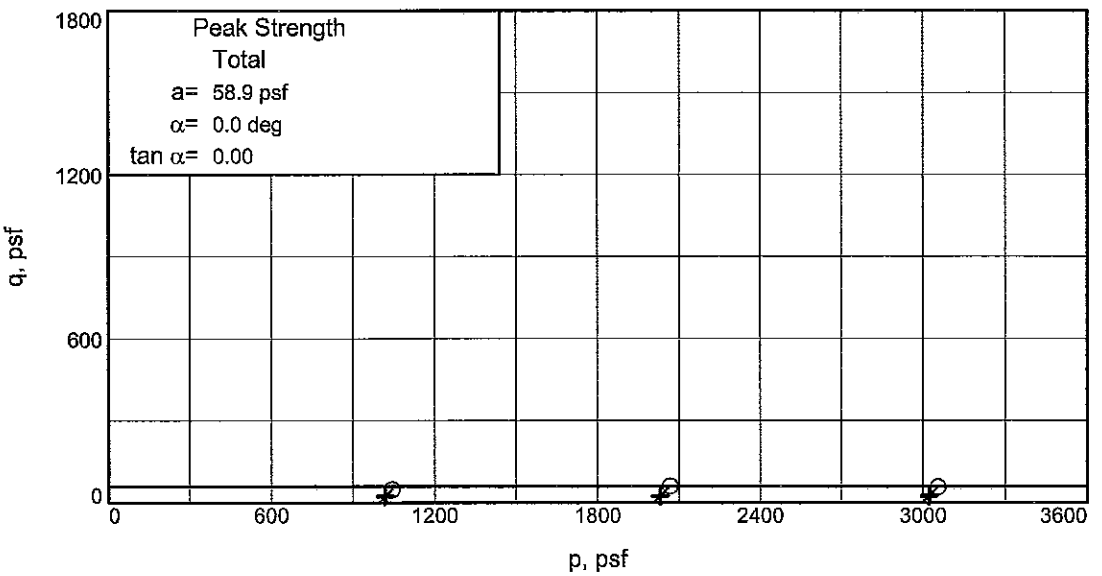
TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

Tested By: JC **Checked By:** JS









Stress Paths: o indicates peak + indicates end

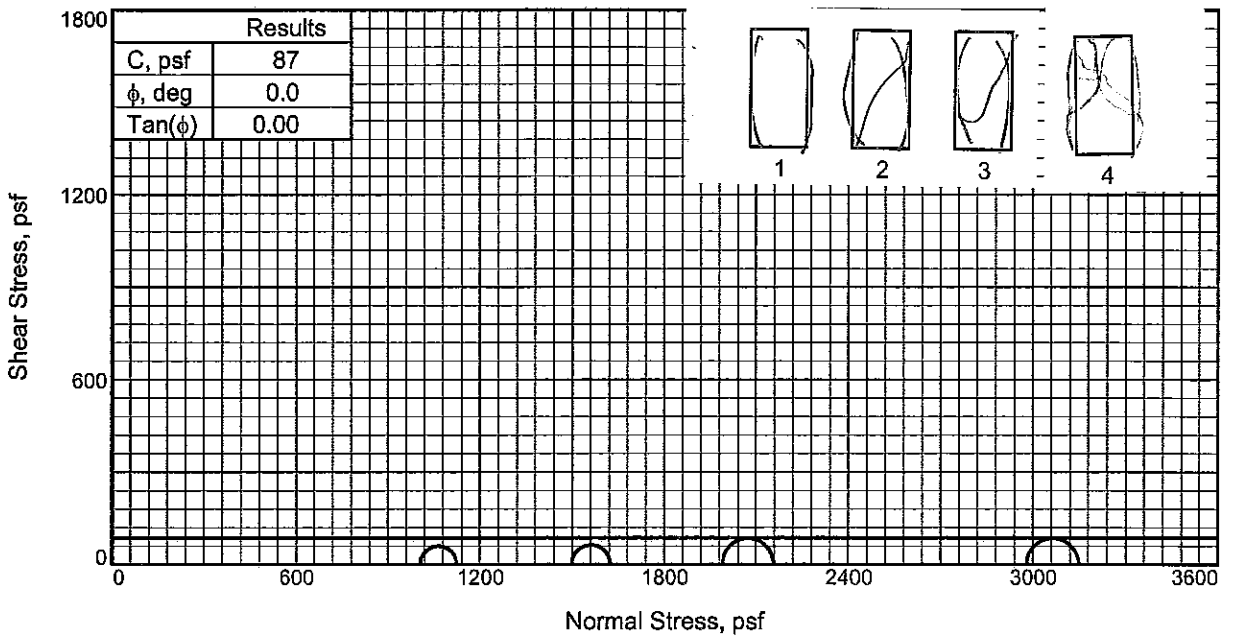
Client: USACE

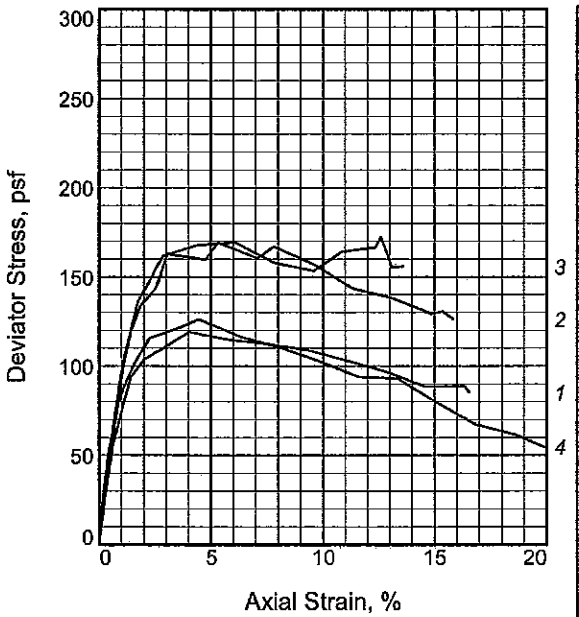
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

Source of Sample: BSFR-5U **Depth:** 6.0 **Sample Number:** 3C

Project No.: 12-017108 **Figure** _____ **Stantec, Inc.**

Tested By: JC **Checked By:** JS





Sample No.		1	2	3	4
Initial	Water Content, %	83.3	78.9	84.6	82.0
	Dry Density, pcf	54.3	56.2	53.7	52.5
	Saturation, %	106.6	106.2	106.3	99.7
	Void Ratio	2.1249	2.0189	2.1641	2.2366
	Diameter, in.	1.392	1.383	1.395	1.405
	Height, in.	2.971	2.983	2.984	3.006
At Test	Water Content, %	83.3	79.3	84.6	82.0
	Dry Density, pcf	54.3	56.2	53.7	52.5
	Saturation, %	106.6	106.8	106.3	99.7
	Void Ratio	2.1249	2.0189	2.1641	2.2366
	Diameter, in.	1.392	1.383	1.395	1.405
	Height, in.	2.971	2.983	2.984	3.006
Strain rate, in./min.		1.000	1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00	0.00
Cell Pressure, psi		6.98	13.81	20.69	10.40
Fail. Stress, psf		119	169	169	126
Strain, %		4.0	5.3	6.1	4.5
Ult. Stress, psf		97	129	153	80
Strain, %		12.8	14.8	9.6	15.1
σ_1 Failure, psf		1124	2158	3149	1624
σ_3 Failure, psf		1005	1989	2979	1498

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: VSO GR CH3 W/ LNS ML

LL= 57 **PL=** 19 **PI=** 38
Assumed Specific Gravity= 2.72
Remarks: Torvane=0.08 tsf

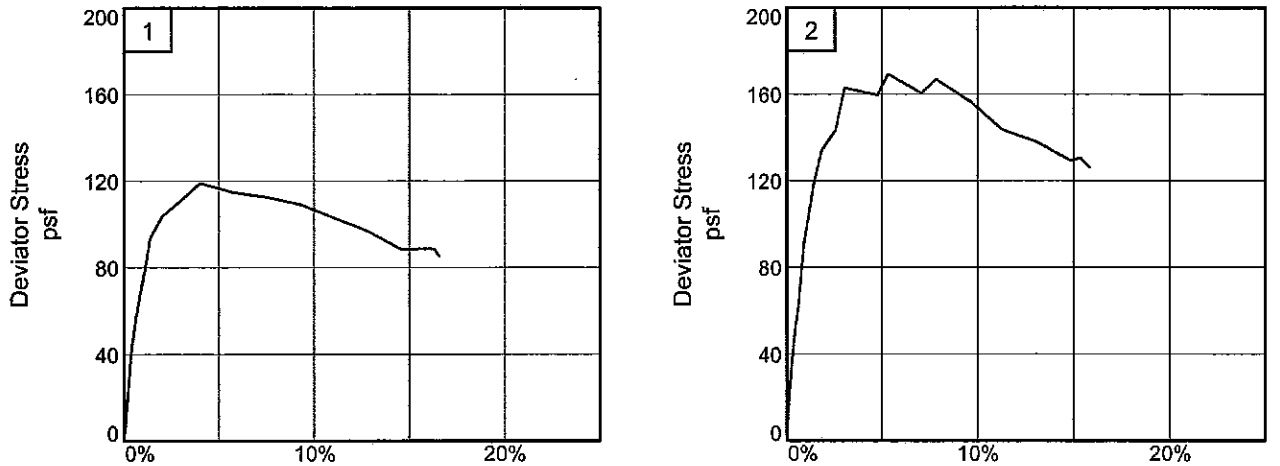
Figure _____

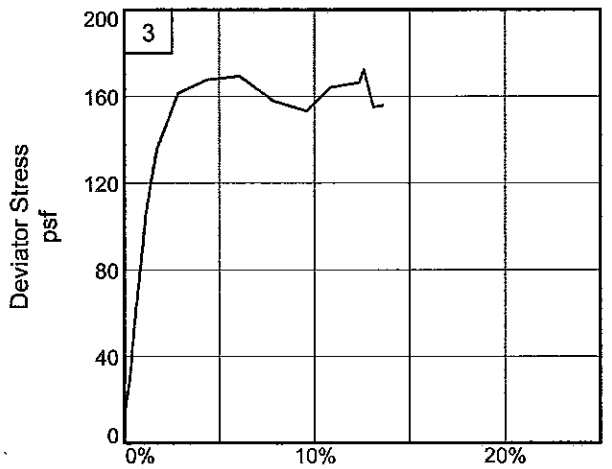
Client: USACE

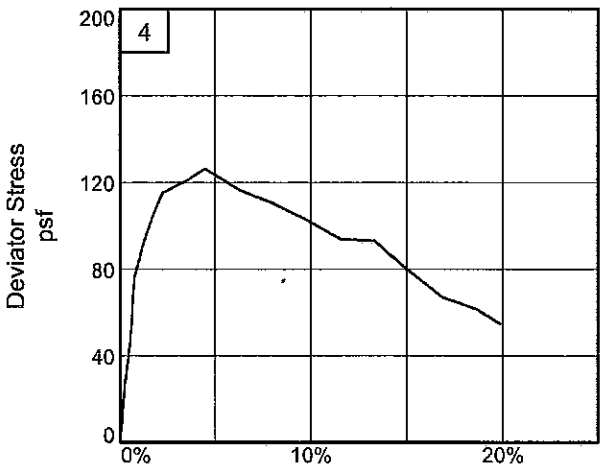
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-5U **Depth:** 11.0
Sample Number: 4D
Proj. No.: 12-017108 **Date Sampled:** 8-6-12

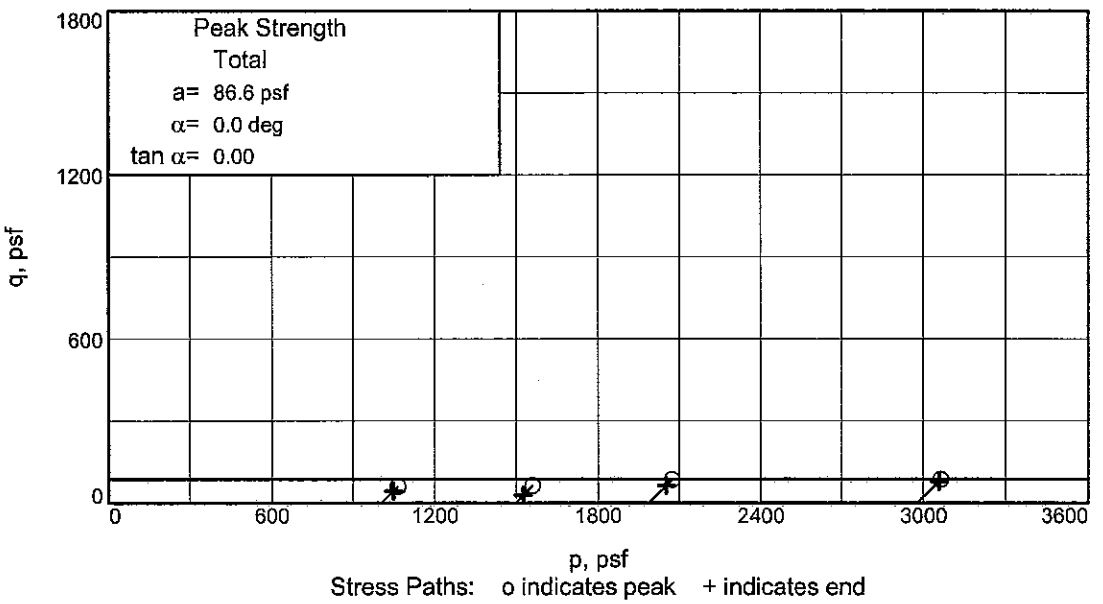
TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

Tested By: JC









Client: USACE

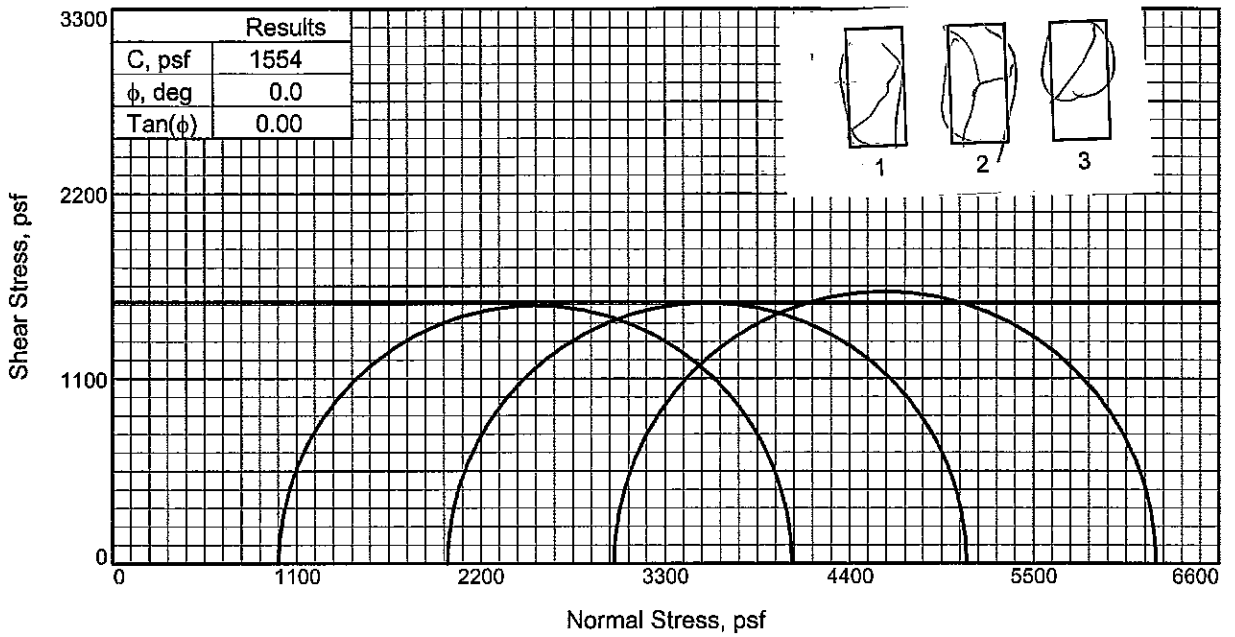
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

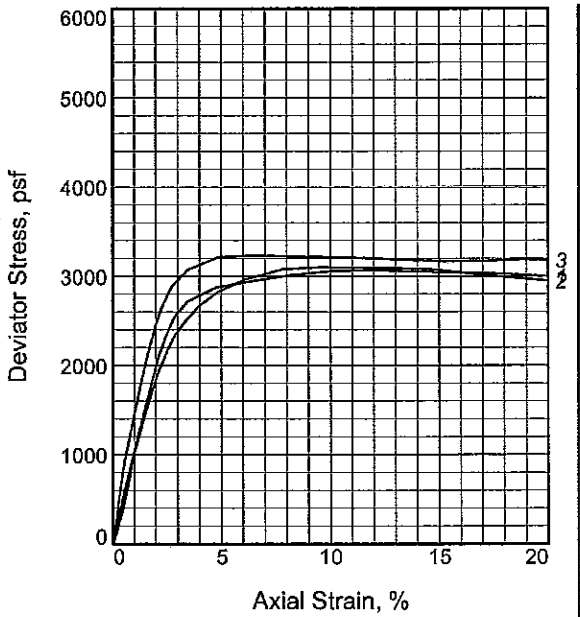
Source of Sample: BSFR-5U **Depth:** 11.0 **Sample Number:** 4D

Project No.: 12-017108 **Figure** _____

Stantec, Inc.

Tested By: JC





Sample No.		1	2	3
Initial	Water Content, %	22.4	23.3	23.1
	Dry Density, pcf	103.0	102.8	102.9
	Saturation, %	95.2	98.6	97.9
	Void Ratio	0.6357	0.6391	0.6373
	Diameter, in.	1.382	1.384	1.377
	Height, in.	3.002	2.996	2.988
At Test	Water Content, %	22.4	23.3	23.1
	Dry Density, pcf	103.0	102.8	102.9
	Saturation, %	95.2	98.6	97.9
	Void Ratio	0.6357	0.6391	0.6373
	Diameter, in.	1.382	1.384	1.377
	Height, in.	3.002	2.996	2.988
Strain rate, in./min.		1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.88	13.90	20.80
Fail. Stress, psf		3067	3098	3232
Strain, %		11.8	9.6	6.6
Ult. Stress, psf		3056	3073	3181
Strain, %		13.6	14.9	13.6
σ_1 Failure, psf		4058	5100	6227
σ_3 Failure, psf		991	2002	2995

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: ST GNG & T CL6 W/ ARS CH

LL= 41 **PL=** 12 **PI=** 29
Assumed Specific Gravity= 2.70
Remarks: Torvane=0.75 tsf

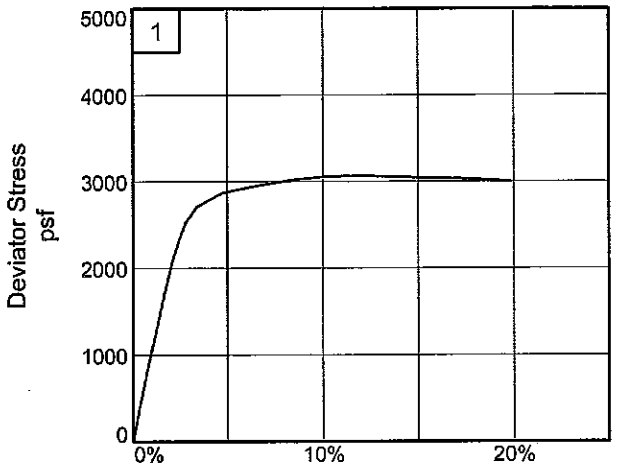
Figure _____

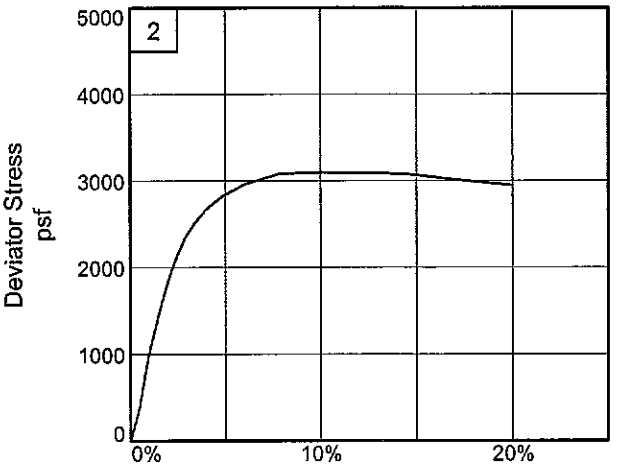
Client: USACE

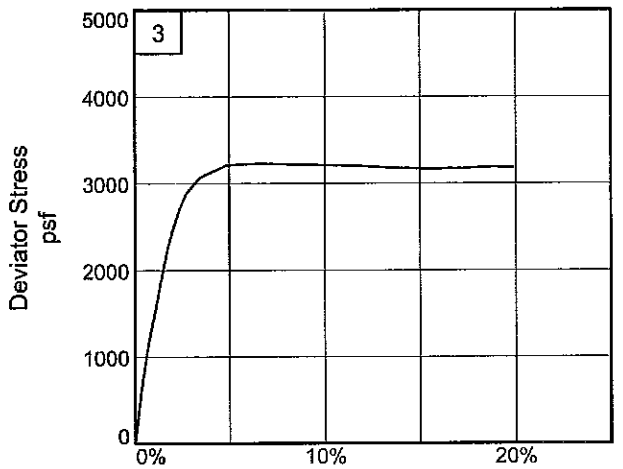
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-5U **Depth:** 28.0
Sample Number: 9C
Proj. No.: 12-017108 **Date Sampled:** 7-26-12

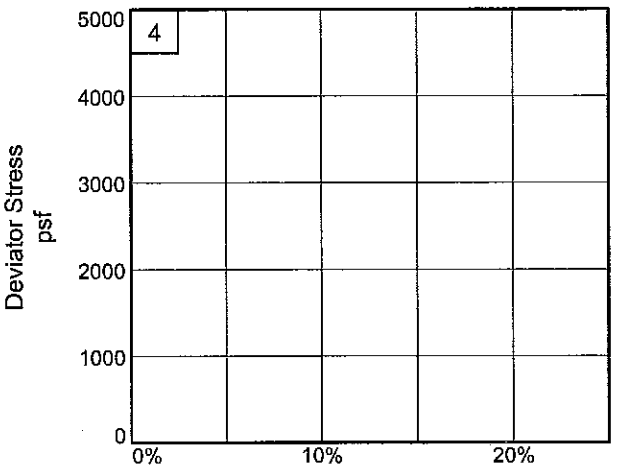
TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

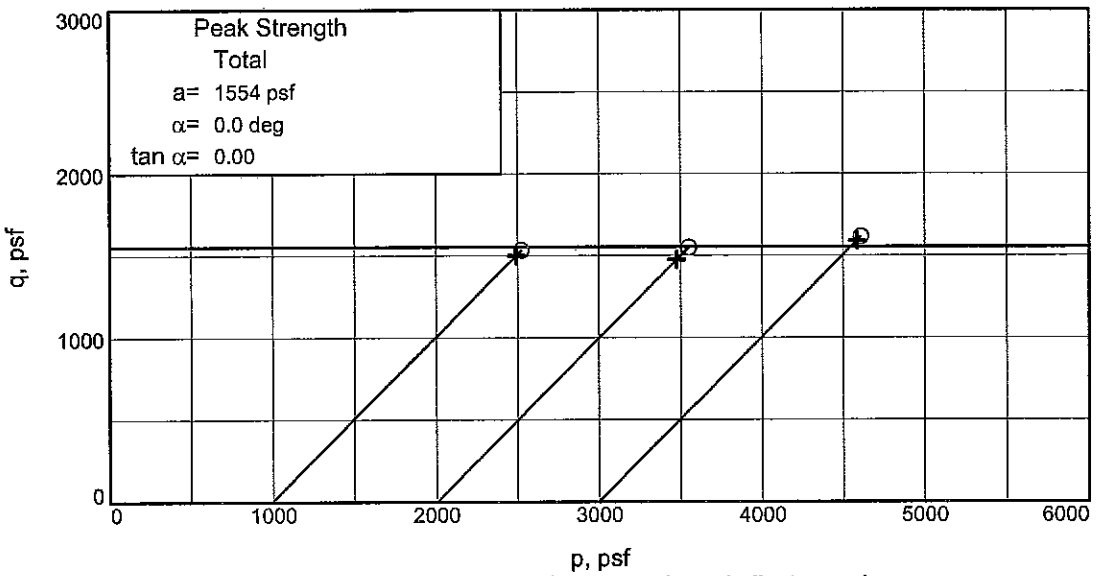
Tested By: JC











Stress Paths: o indicates peak + indicates end

Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

Source of Sample: BSFR-5U **Depth:** 28.0 **Sample Number:** 9C

Project No.: 12-017108 **Figure** _____

Stantec, Inc.

Tested By: JC

SUMMARY OF LABORATORY TEST RESULTS

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Paris **Assigned By:** _____

Project Number: 12-017108 **Current Date:** 8/27/2012

Boring: BSFR-6U

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
1	0.0	M BK PT W/ RT	PT		333												
2	2.0	M BK PT W/ RT	PT		396												
3A	4.0	VSO DGR CH3 W/ ARS ML, O	CH3		79												
3B	5.0	VSO DGR CH4 W/ ARS ML, O	CH4	11	60	65	104	100	UC	-	190	381	87	28	59	0.27	
3C	6.0	GR ML W/ LYS CH	ML		35												
3D	7.0	GR ML W/ LYS & LNS CH	ML		36												
4A	8.0	GR ML W/ ARS CH, RT	ML		41												
4B	9.0	GR SM W/ LYS CH, RT	SM		35												
4C	10.0	GR SM W/ LYS CH, RT	SM		36												
4D	11.0	GR SM W/ LYS CH, RT	SM		33												
5A	12.0	GR ML W/ LYS CH, RT	ML		43												
5B	13.0	M GR CL6 W/ LYS ML	CL6		36	87	118	100	UU	0	590		44	17	27	0.37	
5C	14.0	GR ML W/ LYS & LNS CH	ML		35												
5D1	15.0	GR SM W/ LNS CH	SM		33												
5D2	15.3	SO GR CH4 W/ ARS SM	CH4		65												
6A	16.0	SO GR CH4	CH4		72	58	99	100					102	27	75		GS=2.74, CON
6B	17.0	SO GR CH4 W/ LYS & LNS ML	CH4	2	76	56	98	100	UC	-	484	967	97	19	78	0.31	
6C	18.0	SO GR CH4 W/ LYS & LNS ML	CH4		61												
6D	19.0	SO GR CH4 W/ LNS ML	CH4		70												
7A	20.0	VSO GR CL6 W/ ARS SM, SIF	CL6		46	75	110	100	UU	0	277		48	22	26	0.23	
7B	21.0	M GR CH3 W/ ARS SP, SIF	CH3		36												
7C	22.0	M GR CH3 W/ ARS SP, SIF	CH3		37												
7D	23.0	M GR CH4 W/ ARS SP, SIF	CH4		54												
8A	24.0	M GR CH4 W/ ARS & LNS SM	CH4		61												
8B	25.0	SO GR CH4 W/ ARS & LNS SM	CH4	2	66	61	101	100	UC	-	366	732	80	19	61	0.28	
8C	26.0	SO GR CH3	CH3		60	64	102	99					61	17	44		GS=2.70, CON
8D	27.0	SO GR CL6 W/ ARS & LNS SP	CL6		36												
9A	28.0	GR SM W/ ARS CH, SIF	SM		34												SV
9B	29.0	GR ML W/ ARS SP	ML		32	96	126	100	UU	0	292		26	18	8	0.30	
9C	30.0	M GR CL4 W/ ARS SM	CL4		22												
9D	31.0	M GR CL4 W/ ARS SM	CL4		23												
10A	32.0	LGR ML W/ ARS CH	ML		27												
10B	33.0	ST LGR & GNG CL4 W/ ARS CH, ARS SM	CL4		23												
10C	34.0	ST GNG CL6 W/ ARS CH	CL6	6	23	104	104	99	UC	-	1944	3889	49	20	29	0.98	
10D	35.0	ST GNG CL4 W/ ARS CH	CL4		22												

Remarks: _____

Checked By: _____

Stantec Consulting Services Inc.

File Name: Final BSFR-6U_be_boring_log_v1C

SUMMARY OF LABORATORY TEST RESULTS

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Paris Assigned By: _____

Project Number: 12-017108

Current Date: 8/27/2012

Boring: BSFR-6U

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
11A	36.0	M GNG CL6 W/ LYS SM	CL6		30	92	120	97	UU	0	554		45	19	26	0.53	
11B	37.0	GNG SM W/ ARS & LYS CH	SM		26												
11C	38.0	GNG SM W/ ARS & LYS CH	SM		29												
11D	39.0	GNG SM	SM		26												

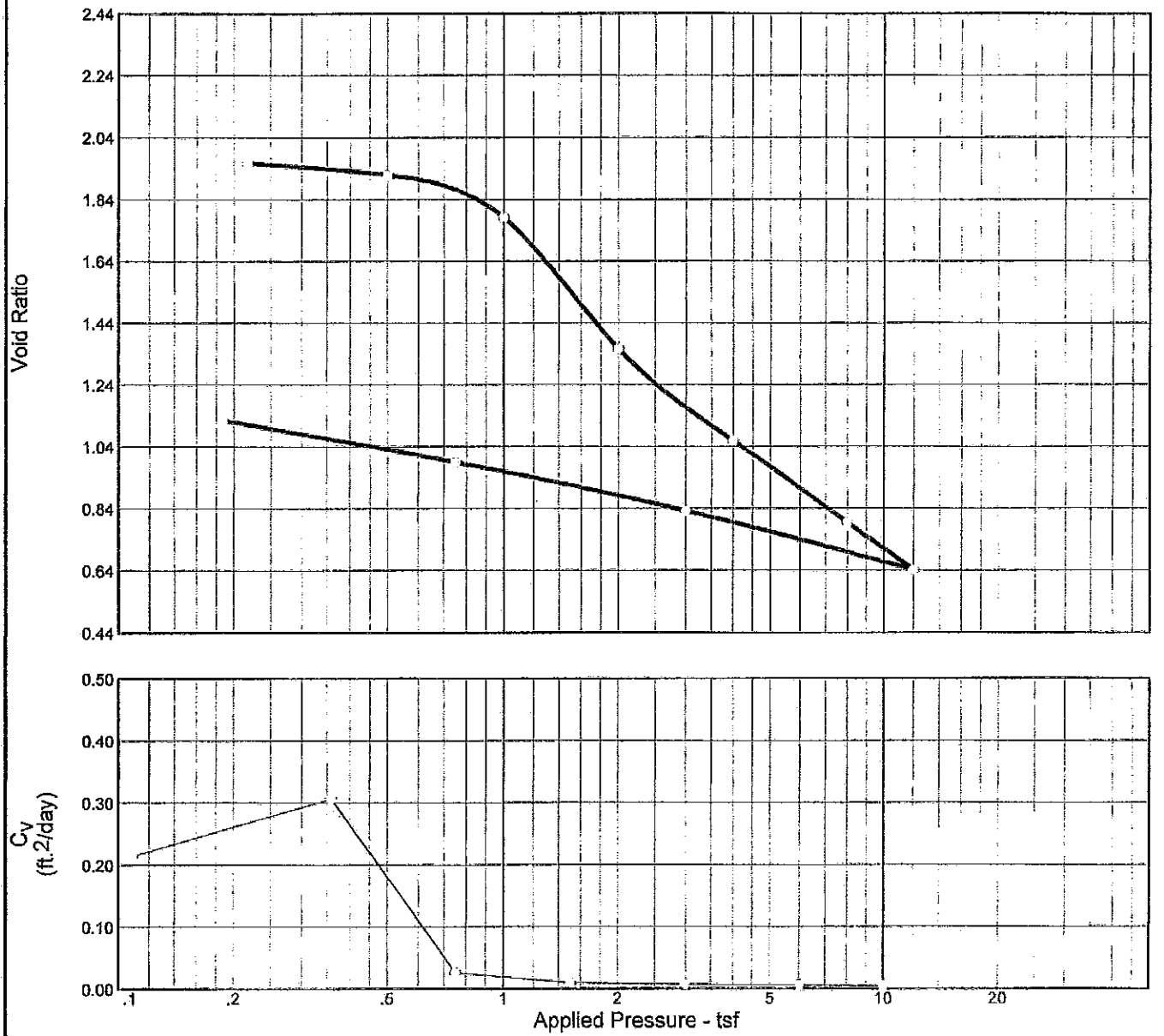
Remarks: _____

Checked By: _____

Stantec Consulting Services Inc.

File Name: Final BSFR-6U_be_boring_log_v10

Consolidation Test Report



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture							
99.7 %	71.7 %	57.6	102	75	2.74	0.84	1.05	1.970

MATERIAL DESCRIPTION	USCS	AASHTO
SO GR CH4	CH4	

Project No. 0017-0108 **Client:** U.S. ARMY CORPS OF ENGINEERS - N.O. DISTRICT

Project: BAYOU SAUVAGE FLOOD SIDE INTERMEDIATE MARSH - TASK ORDER # 108

Source: BSFR-6U **Sample No.:** 6A **Elev./Depth:** 16.5'

FFEBJV, LLC.

Ridgeland, Mississippi

Remarks:

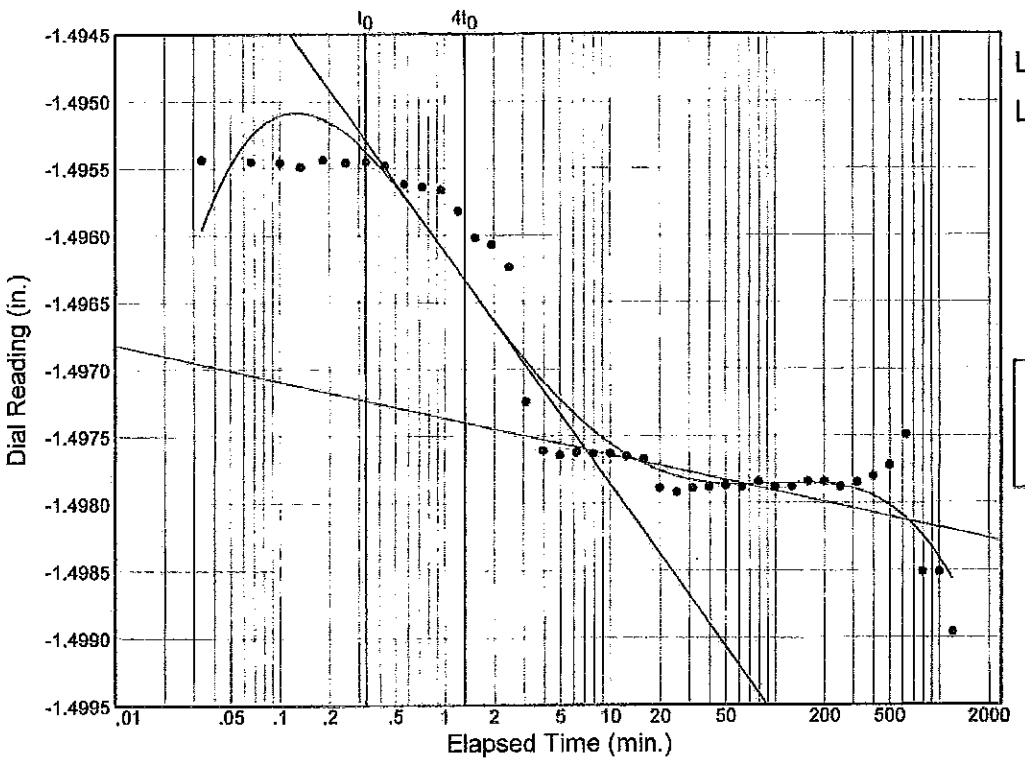
ASTM D2435, METHOD A
CHECKED BY: MR
TESTED BY: AH
CALCULATED BY: HS

Figure

Dial Reading vs. Time

Project No.: 0017-0108
Project: BAYOU SAUVAGE FLOOD SIDE INTERMEDIATE MARSH - TASK ORDER # 108

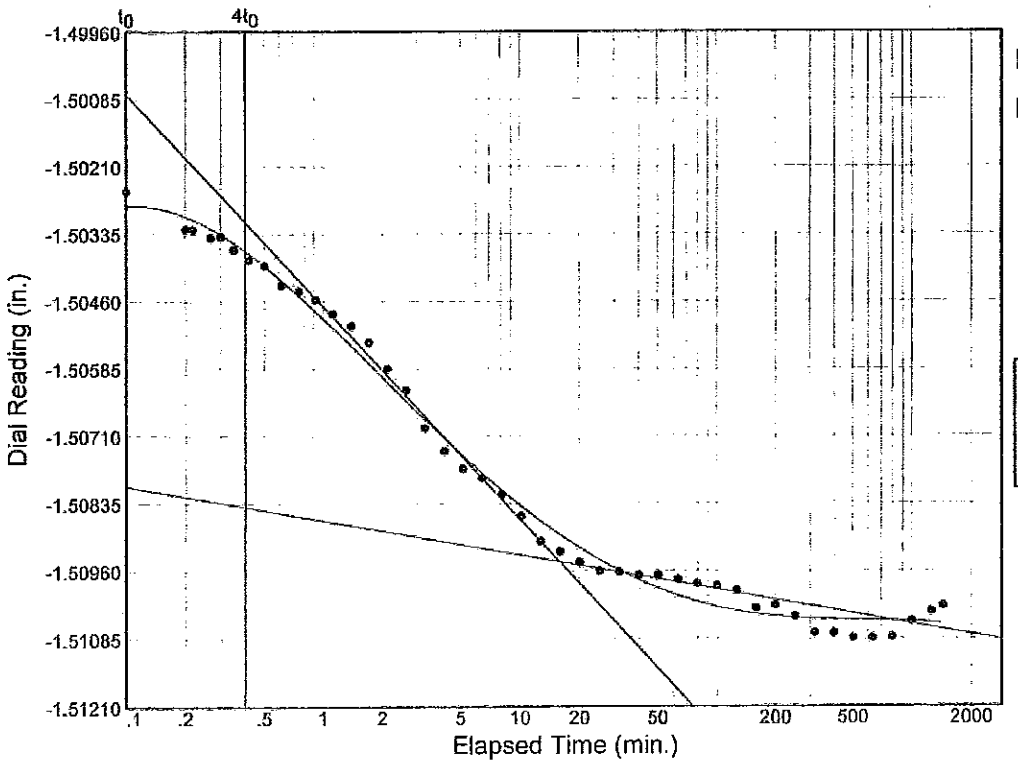
Source: BSFR-6U Sample No.: 6A Elev./Depth: 16.5'



Load No.= 1
Load= 0.22 tsf
D_0 = -1.49546
D_{50} = -1.49653
D_{100} = -1.49760
T_{50} = 1.72 min.

C_v @ T_{50}
0.21 ft.^{2}/day

C_α = 0.000



Load No.= 2
Load= 0.50 tsf
D_0 = -1.50092
D_{50} = -1.50518
D_{100} = -1.50943
T_{50} = 1.18 min.

C_v @ T_{50}
0.31 ft.^{2}/day

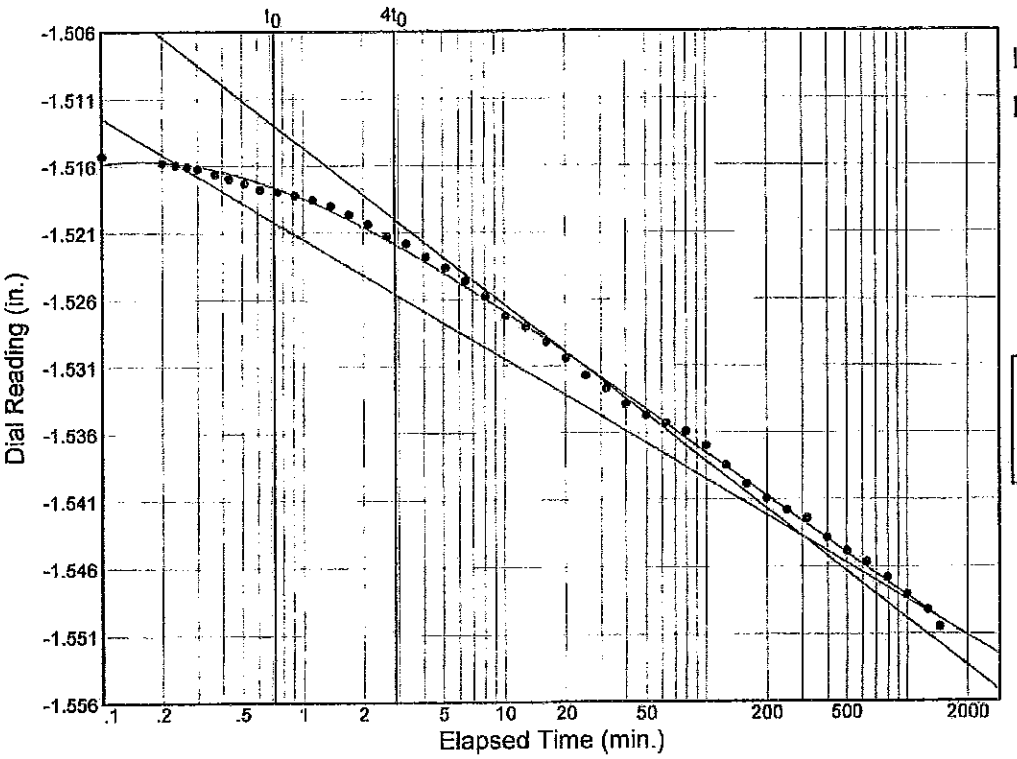
C_α = 0.001

Figure

Dial Reading vs. Time

Project No.: 0017-0108
Project: BAYOU SAUVAGE FLOOD SIDE INTERMEDIATE MARSH - TASK ORDER # 108

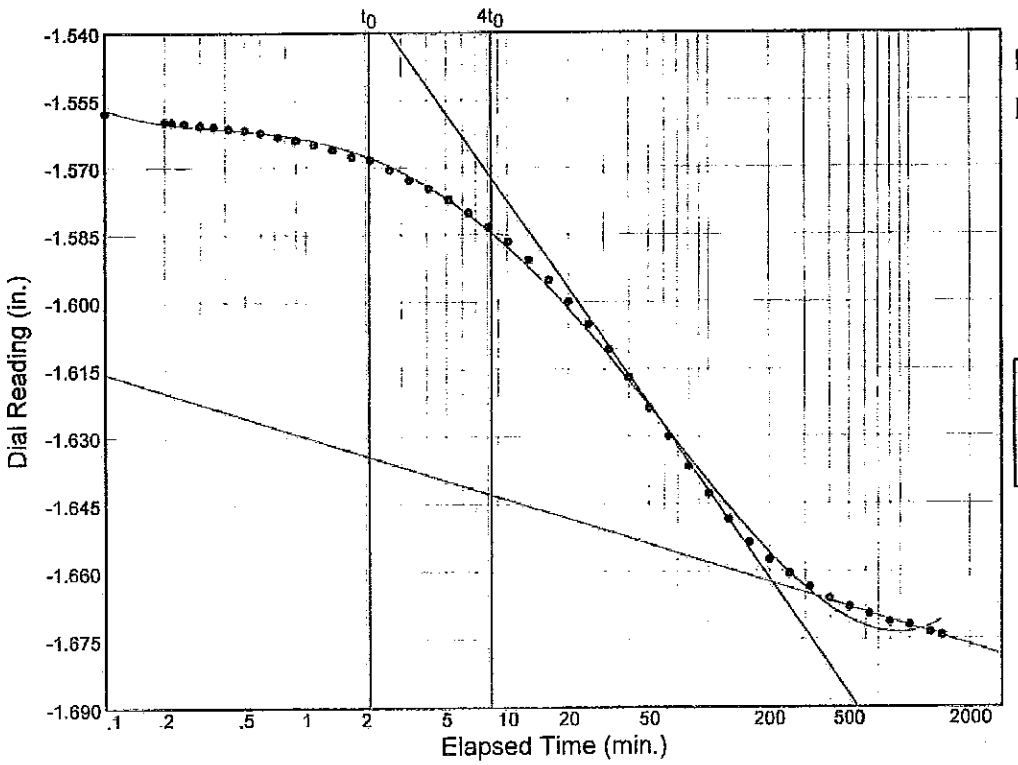
Source: BSFR-6U Sample No.: 6A Elev./Depth: 16.5'



Load No.= 3
Load= 1.00 tsf
D_0 = -1.51237
D_{50} = -1.52808
D_{100} = -1.54380
T_{50} = 13.06 min.

C_v @ T_{50}
0.03 ft.^{2}/day

C_α = 0.011



Load No.= 4
Load= 2.00 tsf
D_0 = -1.55470
D_{50} = -1.60860
D_{100} = -1.66250
T_{50} = 27.37 min.

C_v @ T_{50}
0.01 ft.^{2}/day

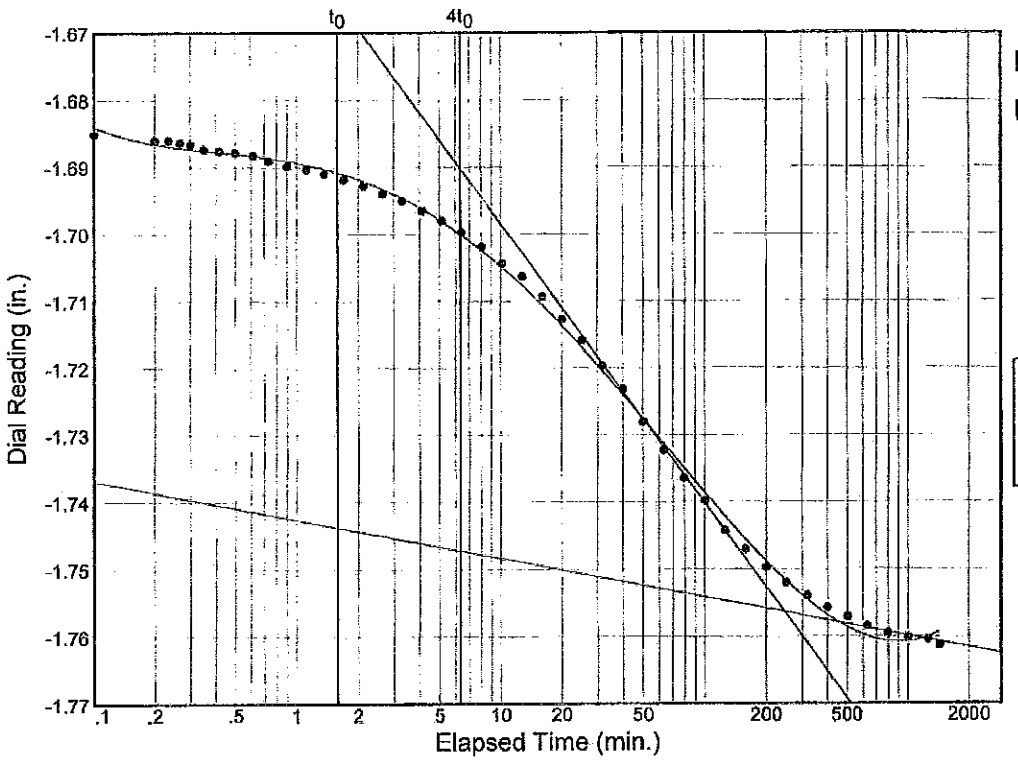
C_α = 0.017

Figure

Dial Reading vs. Time

Project No.: 0017-0108
Project: BAYOU SAUVAGE FLOOD SIDE INTERMEDIATE MARSH - TASK ORDER # 108

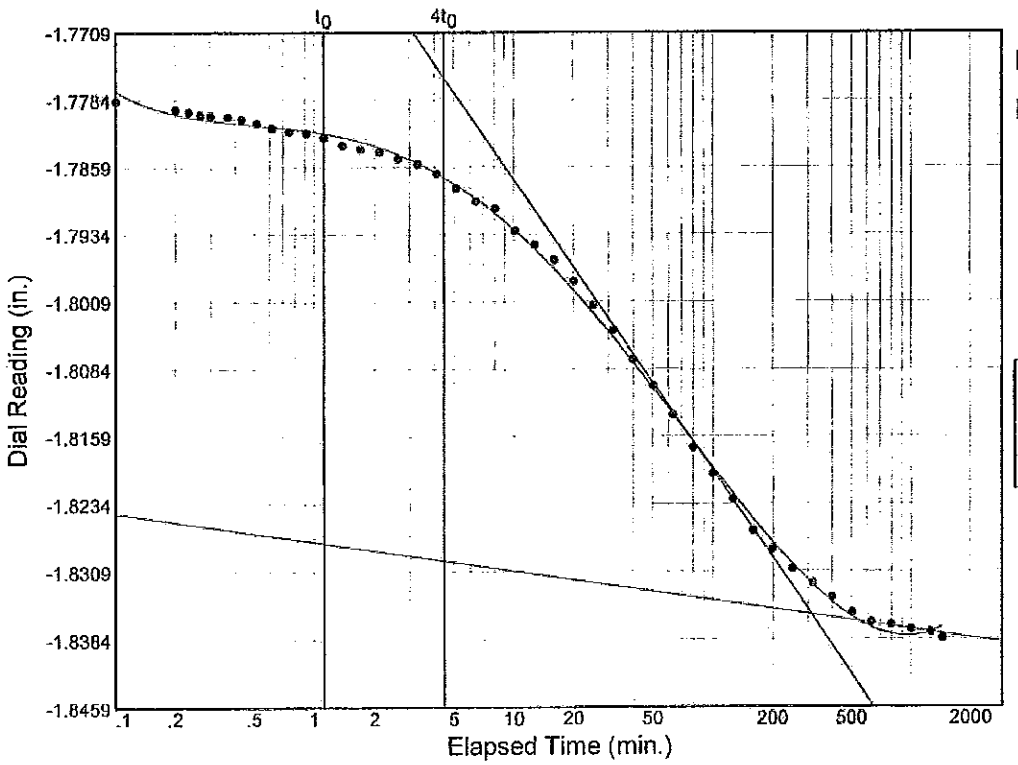
Source: BSFR-6U Sample No.: 6A Elev./Depth: 16.5'



Load No.= 5
Load= 4.00 tsf
D_0 = -1.67964
D_{50} = -1.71800
D_{100} = -1.75636
T_{50} = 26.93 min.

C_v @ T_{50}
0.01 ft.^{2}/day

C_α = 0.008



Load No.= 6
Load= 8.00 tsf
D_0 = -1.77000
D_{50} = -1.80283
D_{100} = -1.83566
T_{50} = 26.63 min.

C_v @ T_{50}
0.01 ft.^{2}/day

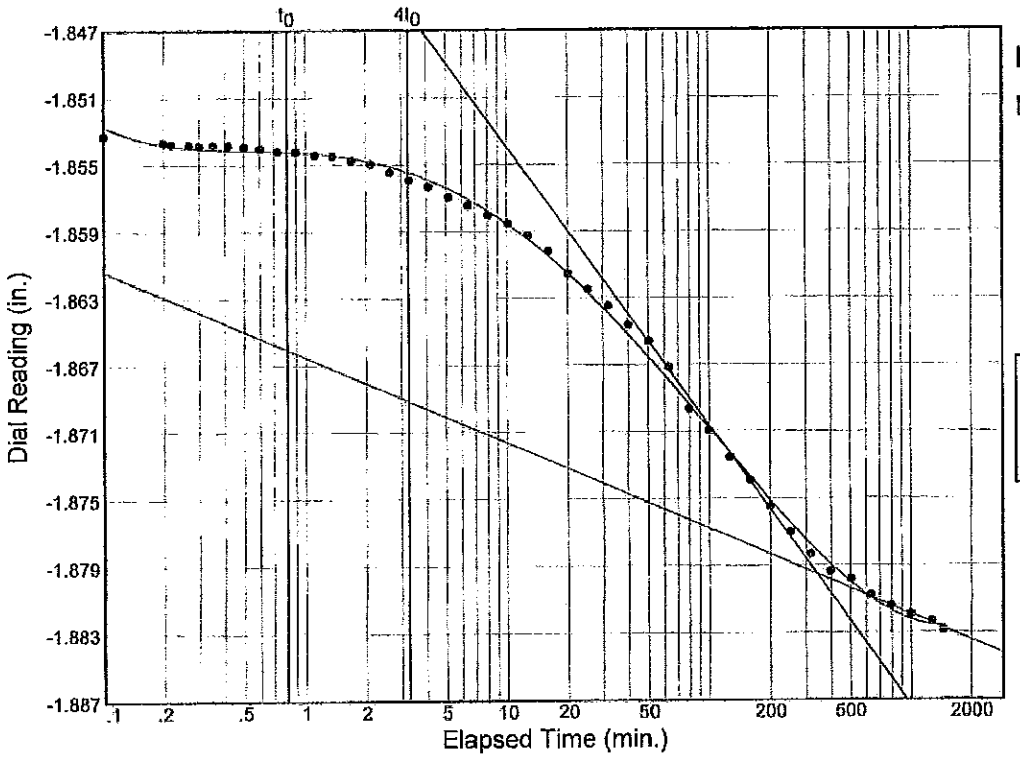
C_α = 0.005

Figure

Dial Reading vs. Time

Project No.: 0017-0108
Project: BAYOU SAUVAGE FLOOD SIDE INTERMEDIATE MARSH - TASK ORDER # 108

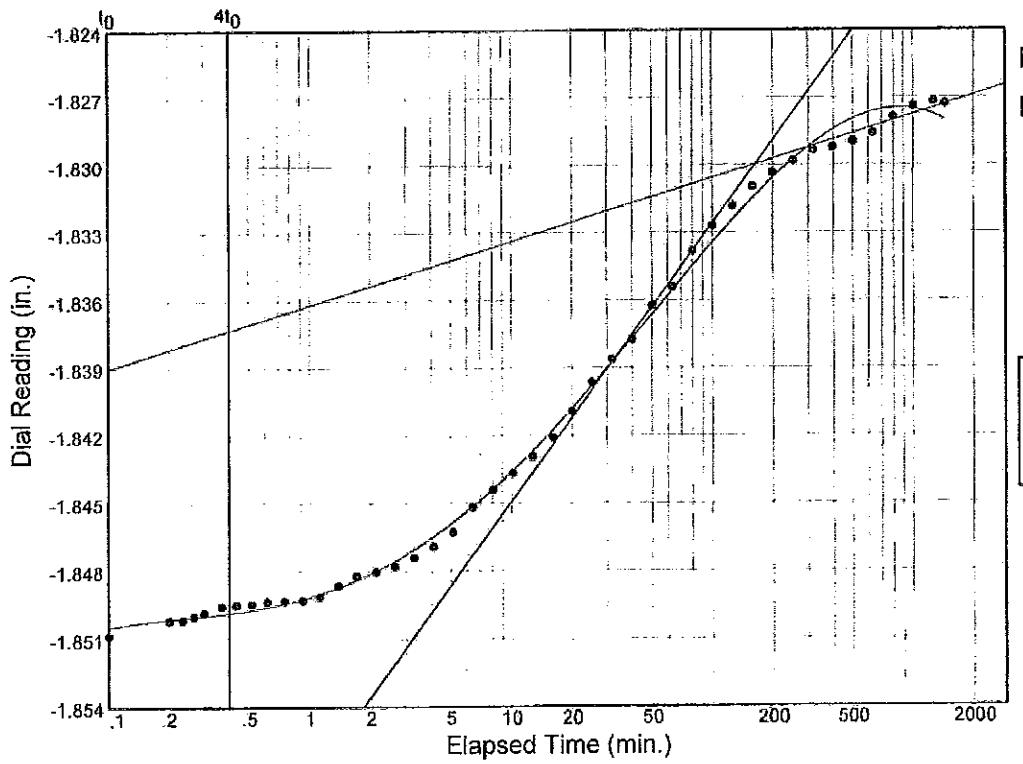
Source: BSFR-6U Sample No.: 6A Elev./Depth: 16.5'



Load No.= 7
Load= 12.00 tsf
D_0 = -1.84635
D_{50} = -1.86293
D_{100} = -1.87952
T_{50} = 26.42 min.

C_v @ T_{50}
0.00 ft.^{2}/day

C_α = 0.010



Load No.= 8
Load= 3.00 tsf
D_0 = -1.86750
D_{50} = -1.84873
D_{100} = -1.82997
T_{50} = 1.37 min.

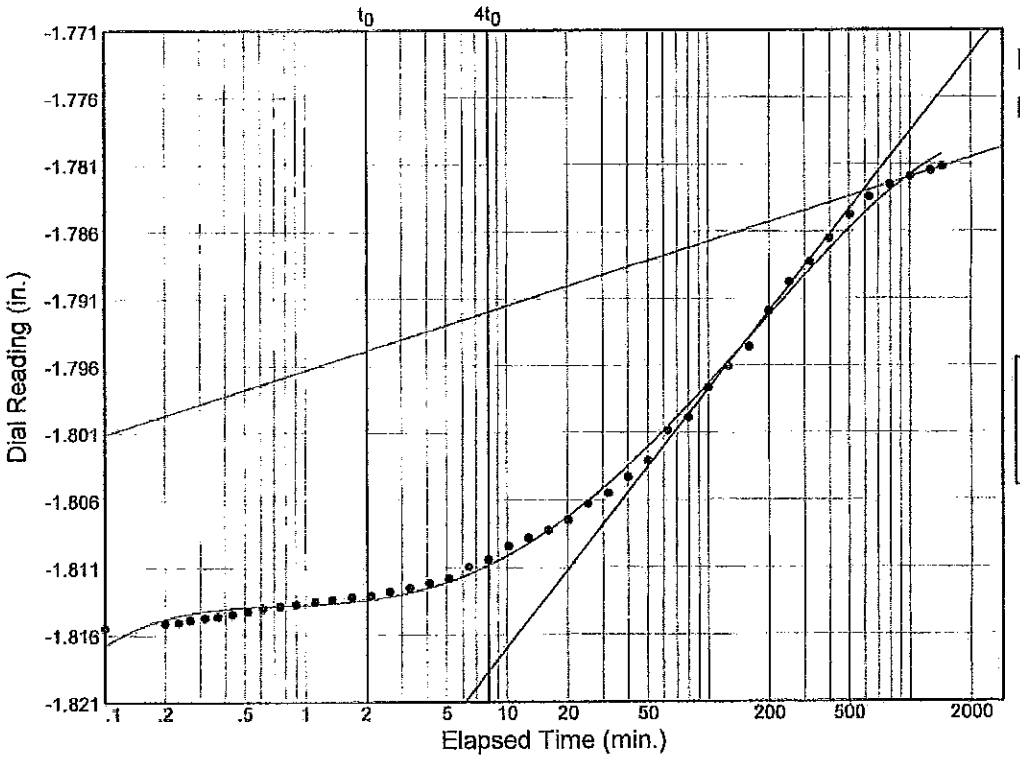
C_v @ T_{50}
0.10 ft.^{2}/day

Figure

Dial Reading vs. Time

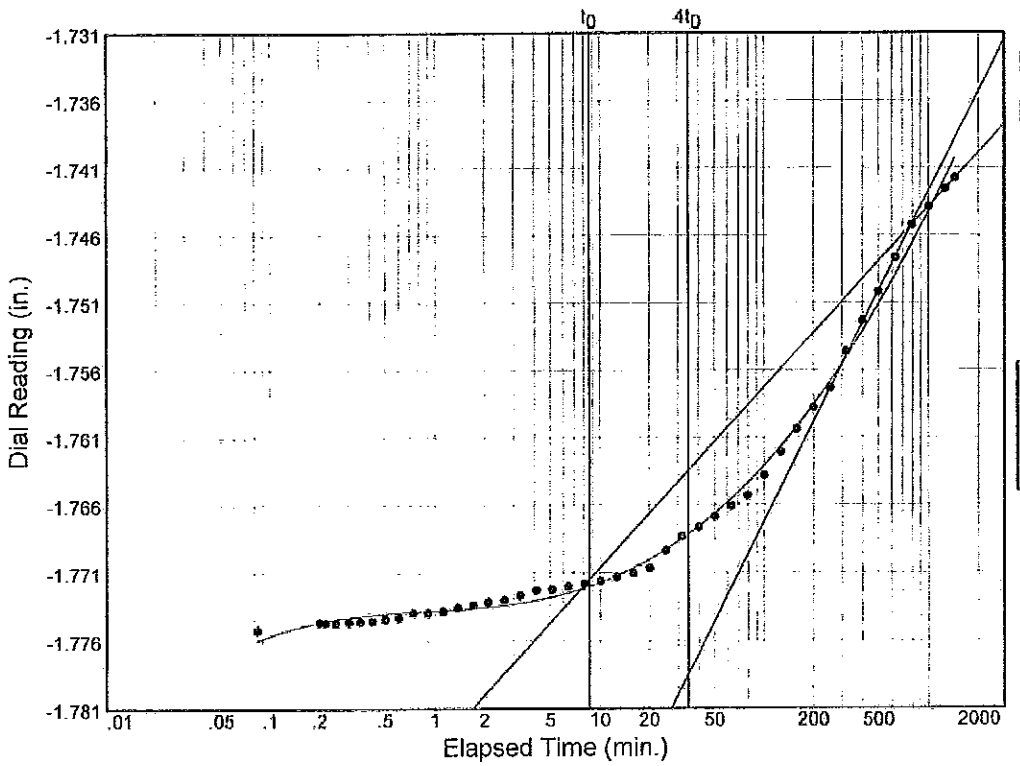
Project No.: 0017-0108
Project: BAYOU SAUVAGE FLOOD SIDE INTERMEDIATE MARSH - TASK ORDER # 108

Source: BSFR-6U Sample No.: 6A Elev./Depth: 16.5'



Load No.= 9
Load= 0.75 tsf
D_0 = -1.82068
D_{50} = -1.80190
D_{100} = -1.78311
T_{50} = 51.35 min.

C_v @ T_{50}
0.00 ft.^{2}/day



Load No.= 10
Load= 0.19 tsf
D_0 = -1.77694
D_{50} = -1.76115
D_{100} = -1.74535
T_{50} = 137.29 min.

C_v @ T_{50}
0.00 ft.^{2}/day

Figure

FFEBJV, LLC.

CONSOLIDATION TEST DATA

Client: U.S. ARMY CORPS OF ENGINEERS - N.O. DISTRICT
Project: BAYOU SAUVAGE FLOOD SIDE INTERMEDIATE MARSH - TASK ORDER # 108
Project Number: 0017-0108

Sample Data

Source: BSFR-6U
Sample No.: 6A
Elev. or Depth: 16.5'
Sample Length(in./cm.):
Location:
Description: SO GR CH4
Liquid Limit: 102
Plasticity Index: 75
USCS: CH4
AASHTO:
Figure No.:
Testing Remarks: ASTM D2435, METHOD A
CHECKED BY: MR
TESTED BY: AH
CALCULATED BY: HS

Test Specimen Data

TOTAL SAMPLE		BEFORE TEST	AFTER TEST
Wet w+t	= 458.17 g.	Consolidometer # = 18	Wet w+t = 409.30 g.
Dry w+t	= 340.25 g.		Dry w+t = 337.03 g.
Tare Wt.	= 175.72 g.	Spec. Gravity = 2.74	Tare Wt. = 175.72 g.
Height	= .87 in.	Height = .87 in.	
Diameter	= 4.00 in.	Diameter = 4.00 in.	
Weight	= 282.45 g.	Defl. Table = n/a	
Moisture	= 71.7 %	Ht. Solids = 0.2916 in.	Moisture = 44.8 %
Wet Den.	= 98.9 pcf	Dry Wt. = 164.53 g.*	Dry Wt. = 161.31 g.
Dry Den.	= 57.6 pcf	Void Ratio = 1.970	Void Ratio = 1.125
		Saturation = 99.7 %	

*** Initial dry weight used in calculations**

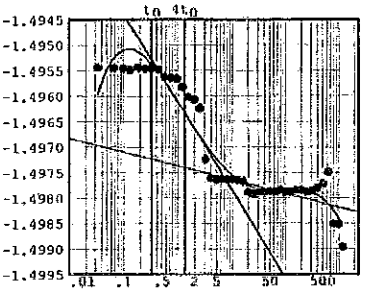
End-of-Load Summary

Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (ft.^{2}/day)	C_α	Void Ratio	% Compression /Swell
start	-1.49546				1.970	
0.22	-1.49896	0.00000	0.21	0.000	1.958	0.4 Comprs.
0.50	-1.51025	0.00000	0.31	0.001	1.919	1.7 Comprs.
1.00	-1.55048	0.00000	0.03	0.011	1.782	6.4 Comprs.
2.00	-1.67432	0.00000	0.01	0.017	1.357	20.7 Comprs.
4.00	-1.76128	0.00000	0.01	0.008	1.059	30.7 Comprs.
8.00	-1.83832	0.00000	0.01	0.005	0.794	39.6 Comprs.
12.00	-1.88285	0.00000	0.00	0.010	0.642	44.7 Comprs.
3.00	-1.82730	0.00000	0.10		0.832	38.3 Comprs.
0.75	-1.78121	0.00000	0.00		0.990	33.0 Comprs.
0.19	-1.74181	0.00000	0.00		1.125	28.4 Comprs.

C_c = 1.05 P_c = 0.84 tsf C_r = 0.27

Pressure: 0.22 tsf | TEST READINGS | Load No. 1

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.49546	23	12.55	-1.49765
2	0.03	-1.49544	24	15.80	-1.49767
3	0.07	-1.49545	25	19.92	-1.49789
4	0.10	-1.49546	26	25.08	-1.49792
5	0.13	-1.49549	27	31.58	-1.49789
6	0.18	-1.49544	28	39.77	-1.49788
7	0.25	-1.49546	29	50.08	-1.49787
8	0.33	-1.49545	30	63.07	-1.49788
9	0.43	-1.49548	31	79.40	-1.49784
10	0.57	-1.49562	32	99.97	-1.49788
11	0.73	-1.49564	33	125.85	-1.49788
12	0.95	-1.49566	34	158.45	-1.49784
13	1.20	-1.49582	35	199.48	-1.49784
14	1.53	-1.49602	36	251.15	-1.49788
15	1.93	-1.49607	37	316.18	-1.49785
16	2.45	-1.49624	38	398.07	-1.49780
17	3.12	-1.49724	39	501.15	-1.49772
18	3.93	-1.49761	40	630.90	-1.49749
19	4.97	-1.49764	41	794.27	-1.49851
20	6.27	-1.49762	42	999.93	-1.49851
21	7.90	-1.49763	43	1192.97	-1.49896
22	9.95	-1.49763			



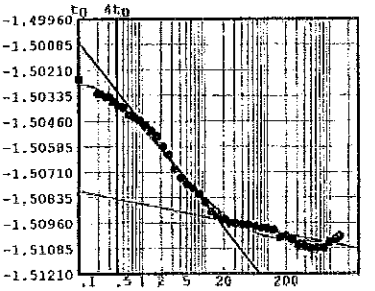
Void Ratio = 1.958 **Compression** = 0.4 %

D_0 = -1.49546 D_{50} = -1.49653 D_{100} = -1.49760

C_v **at 1.7 min.** = 0.21 ft.^{2}/day C_α = 0.000

Pressure: 0.50 tsf **TEST READINGS** **Load No. 2**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.50092	24	12.72	-1.50905
2	0.10	-1.50256	25	15.98	-1.50924
3	0.20	-1.50326	26	20.08	-1.50944
4	0.22	-1.50327	27	25.25	-1.50960
5	0.27	-1.50342	28	31.77	-1.50962
6	0.30	-1.50340	29	39.95	-1.50968
7	0.35	-1.50365	30	50.25	-1.50968
8	0.42	-1.50384	31	63.23	-1.50976
9	0.50	-1.50394	32	79.57	-1.50984
10	0.62	-1.50430	33	100.13	-1.50988
11	0.75	-1.50441	34	126.03	-1.50997
12	0.92	-1.50457	35	158.63	-1.51029
13	1.12	-1.50483	36	199.67	-1.51024
14	1.38	-1.50506	37	251.33	-1.51044
15	1.70	-1.50536	38	316.37	-1.51074
16	2.12	-1.50585	39	398.25	-1.51075
17	2.63	-1.50625	40	501.32	-1.51084
18	3.28	-1.50695	41	631.08	-1.51084
19	4.12	-1.50738	42	794.45	-1.51082
20	5.13	-1.50771	43	1000.12	-1.51053
21	6.43	-1.50788	44	1259.03	-1.51035
22	8.08	-1.50818	45	1440.38	-1.51025
23	10.13	-1.50858			



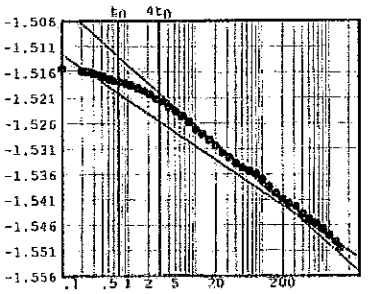
Void Ratio = 1.919 **Compression** = 1.7 %

D_0 = -1.50092 D_{50} = -1.50518 D_{100} = -1.50943

C_v **at 1.2 min.** = 0.31 ft.^{2}/day C_α = 0.001

Pressure: 1.00 tsf **TEST READINGS** **Load No. 3**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.51237	24	12.72	-1.52806
2	0.10	-1.51526	25	15.98	-1.52921
3	0.20	-1.51581	26	20.08	-1.53044
4	0.23	-1.51595	27	25.25	-1.53173
5	0.27	-1.51607	28	31.75	-1.53269
6	0.30	-1.51624	29	39.95	-1.53386
7	0.37	-1.51665	30	50.25	-1.53472
8	0.43	-1.51699	31	63.23	-1.53529
9	0.52	-1.51732	32	79.57	-1.53590
10	0.62	-1.51777	33	100.13	-1.53696
11	0.75	-1.51796	34	126.03	-1.53843
12	0.92	-1.51820	35	158.62	-1.53984
13	1.12	-1.51858	36	199.67	-1.54093
14	1.38	-1.51904	37	251.32	-1.54181
15	1.70	-1.51966	38	316.37	-1.54241
16	2.12	-1.52038	39	398.23	-1.54381
17	2.63	-1.52128	40	501.32	-1.54485
18	3.28	-1.52183	41	631.08	-1.54565
19	4.10	-1.52283	42	794.45	-1.54681
20	5.13	-1.52364	43	1000.12	-1.54806
21	6.43	-1.52459	44	1259.03	-1.54925
22	8.07	-1.52579	45	1440.37	-1.55048
23	10.13	-1.52725			



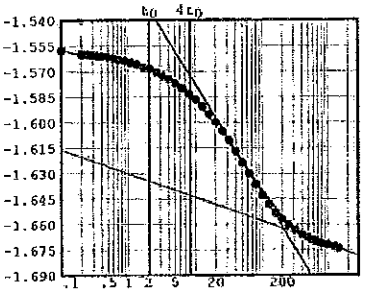
Void Ratio = 1.782 **Compression** = 6.4 %

D_0 = -1.51237 D_{50} = -1.52808 D_{100} = -1.54380

C_v **at 13.1 min.** = 0.03 ft.^{2}/day C_α = 0.011

Pressure: 2.00 tsf **TEST READINGS** **Load No. 4**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.55470	24	12.72	-1.59068
2	0.10	-1.55781	25	15.97	-1.59518
3	0.20	-1.55979	26	20.08	-1.59995
4	0.22	-1.55994	27	25.25	-1.60510
5	0.25	-1.56018	28	31.75	-1.61064
6	0.30	-1.56065	29	39.93	-1.61686
7	0.35	-1.56090	30	50.25	-1.62375
8	0.42	-1.56130	31	63.22	-1.63004
9	0.50	-1.56166	32	79.57	-1.63662
10	0.60	-1.56228	33	100.13	-1.64278
11	0.73	-1.56317	34	126.02	-1.64834
12	0.90	-1.56390	35	158.62	-1.65350
13	1.10	-1.56499	36	199.65	-1.65736
14	1.37	-1.56603	37	251.32	-1.66062
15	1.70	-1.56757	38	316.35	-1.66356
16	2.10	-1.56842	39	398.23	-1.66607
17	2.63	-1.57056	40	501.32	-1.66796
18	3.28	-1.57284	41	631.07	-1.66950
19	4.10	-1.57475	42	794.43	-1.67128
20	5.13	-1.57711	43	1000.10	-1.67204
21	6.43	-1.58014	44	1259.02	-1.67350
22	8.07	-1.58336	45	1440.37	-1.67432
23	10.12	-1.58663			



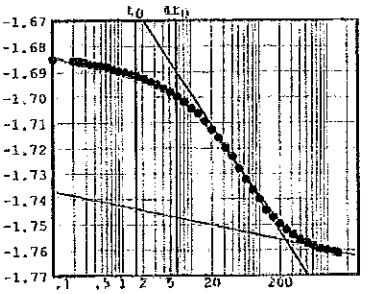
Void Ratio = 1.357 **Compression** = 20.7 %

D_0 = -1.55470 D_{50} = -1.60860 D_{100} = -1.66250

C_v **at 27.4 min.** = 0.01 ft.^{2}/day C_α = 0.017

Pressure: 4.00 tsf **TEST READINGS** **Load No. 5**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.67964	24	12.72	-1.70637
2	0.10	-1.68513	25	15.98	-1.70937
3	0.20	-1.68599	26	20.08	-1.71275
4	0.23	-1.68599	27	25.25	-1.71592
5	0.27	-1.68639	28	31.75	-1.71972
6	0.30	-1.68663	29	39.95	-1.72318
7	0.35	-1.68735	30	50.25	-1.72804
8	0.42	-1.68764	31	63.23	-1.73230
9	0.50	-1.68786	32	79.57	-1.73644
10	0.62	-1.68825	33	100.13	-1.73986
11	0.73	-1.68909	34	126.03	-1.74432
12	0.90	-1.68987	35	158.62	-1.74707
13	1.12	-1.69041	36	199.67	-1.74972
14	1.37	-1.69108	37	251.32	-1.75204
15	1.70	-1.69195	38	316.37	-1.75399
16	2.12	-1.69281	39	398.23	-1.75575
17	2.63	-1.69401	40	501.32	-1.75707
18	3.28	-1.69513	41	631.08	-1.75847
19	4.10	-1.69652	42	794.45	-1.75949
20	5.13	-1.69801	43	1000.12	-1.76007
21	6.43	-1.69973	44	1259.03	-1.76046
22	8.07	-1.70191	45	1440.17	-1.76128
23	10.13	-1.70439			



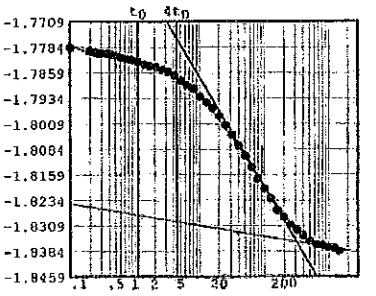
Void Ratio = 1.059 **Compression** = 30.7 %

D_0 = -1.67964 D_{50} = -1.71800 D_{100} = -1.75636

C_v **at 26.9 min.** = 0.01 ft.^{2}/day C_α = 0.008

Pressure: 8.00 tsf **TEST READINGS** **Load No. 6**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.77000	24	12.72	-1.79462
2	0.10	-1.77858	25	15.98	-1.79630
3	0.20	-1.77948	26	20.08	-1.79867
4	0.23	-1.77974	27	25.25	-1.80131
5	0.27	-1.78009	28	31.77	-1.80412
6	0.30	-1.78018	29	39.95	-1.80733
7	0.37	-1.78032	30	50.25	-1.81031
8	0.43	-1.78060	31	63.23	-1.81357
9	0.52	-1.78104	32	79.57	-1.81714
10	0.62	-1.78156	33	100.13	-1.82007
11	0.75	-1.78198	34	126.03	-1.82289
12	0.92	-1.78215	35	158.63	-1.82638
13	1.12	-1.78264	36	199.67	-1.82847
14	1.38	-1.78348	37	251.33	-1.83068
15	1.70	-1.78393	38	316.37	-1.83221
16	2.12	-1.78425	39	398.25	-1.83380
17	2.63	-1.78495	40	501.32	-1.83550
18	3.28	-1.78558	41	631.08	-1.83653
19	4.10	-1.78664	42	794.45	-1.83684
20	5.13	-1.78826	43	1000.12	-1.83732
21	6.43	-1.78975	44	1259.03	-1.83765
22	8.07	-1.79056	45	1440.47	-1.83832
23	10.13	-1.79301			



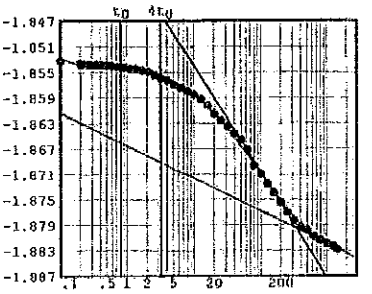
Void Ratio = 0.794 **Compression** = 39.6 %

D_0 = -1.77000 D_{50} = -1.80283 D_{100} = -1.83566

C_v **at 26.6 min.** = 0.01 ft.^{2}/day C_α = 0.005

Pressure: 12.00 tsf **TEST READINGS** **Load No. 7**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.84635	24	12.72	-1.85925
2	0.10	-1.85328	25	15.98	-1.86020
3	0.20	-1.85369	26	20.08	-1.86156
4	0.22	-1.85376	27	25.25	-1.86251
5	0.27	-1.85380	28	31.75	-1.86349
6	0.30	-1.85387	29	39.93	-1.86462
7	0.35	-1.85384	30	50.25	-1.86559
8	0.42	-1.85383	31	63.23	-1.86715
9	0.50	-1.85392	32	79.57	-1.86965
10	0.60	-1.85403	33	100.13	-1.87096
11	0.73	-1.85420	34	126.02	-1.87257
12	0.90	-1.85423	35	158.62	-1.87396
13	1.12	-1.85443	36	199.67	-1.87549
14	1.37	-1.85449	37	251.32	-1.87704
15	1.70	-1.85475	38	316.37	-1.87833
16	2.12	-1.85496	39	398.23	-1.87936
17	2.63	-1.85547	40	501.32	-1.87982
18	3.28	-1.85594	41	631.08	-1.88077
19	4.10	-1.85632	42	794.45	-1.88141
20	5.13	-1.85696	43	1000.12	-1.88193
21	6.43	-1.85744	44	1259.03	-1.88234
22	8.07	-1.85803	45	1440.20	-1.88285
23	10.12	-1.85854			



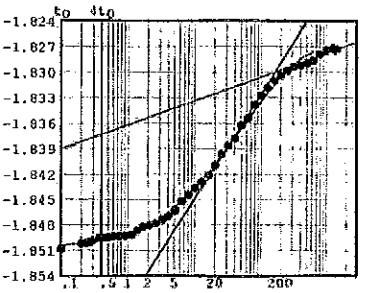
Void Ratio = 0.642 **Compression** = 44.7 %

D_0 = -1.84635 D_{50} = -1.86293 D_{100} = -1.87952

C_v **at 26.4 min.** = 0.00 ft.^{2}/day C_α = 0.010

Pressure: 3.00 tsf **TEST READINGS** **Load No. 8**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.86750	24	12.72	-1.84294
2	0.10	-1.85082	25	15.98	-1.84209
3	0.20	-1.85017	26	20.08	-1.84094
4	0.23	-1.85014	27	25.25	-1.83965
5	0.27	-1.84999	28	31.77	-1.83864
6	0.30	-1.84984	29	39.95	-1.83777
7	0.37	-1.84954	30	50.25	-1.83625
8	0.43	-1.84949	31	63.23	-1.83543
9	0.52	-1.84945	32	79.57	-1.83382
10	0.62	-1.84933	33	100.13	-1.83272
11	0.75	-1.84930	34	126.03	-1.83185
12	0.92	-1.84928	35	158.63	-1.83099
13	1.12	-1.84912	36	199.67	-1.83036
14	1.38	-1.84864	37	251.32	-1.82983
15	1.70	-1.84821	38	316.37	-1.82936
16	2.12	-1.84803	39	398.25	-1.82922
17	2.63	-1.84780	40	501.32	-1.82896
18	3.28	-1.84740	41	631.08	-1.82859
19	4.10	-1.84692	42	794.45	-1.82789
20	5.13	-1.84629	43	1000.12	-1.82742
21	6.43	-1.84517	44	1259.03	-1.82717
22	8.07	-1.84442	45	1440.32	-1.82730
23	10.13	-1.84366			



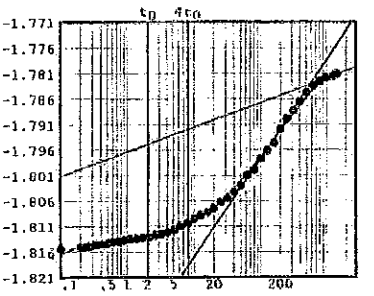
Void Ratio = 0.832 **Compression** = 38.3 %

D_0 = -1.86750 D_{50} = -1.84873 D_{100} = -1.82997

C_v **at 1.4 min.** = 0.10 ft.^{2}/day

Pressure: 0.75 tsf **TEST READINGS** **Load No. 9**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.82068	24	12.72	-1.80882
2	0.10	-1.81548	25	15.98	-1.80826
3	0.20	-1.81513	26	20.08	-1.80749
4	0.23	-1.81506	27	25.25	-1.80630
5	0.27	-1.81488	28	31.75	-1.80552
6	0.32	-1.81471	29	39.95	-1.80432
7	0.37	-1.81463	30	50.25	-1.80309
8	0.43	-1.81447	31	63.23	-1.80086
9	0.52	-1.81427	32	79.57	-1.79989
10	0.62	-1.81403	33	100.13	-1.79767
11	0.75	-1.81390	34	126.03	-1.79609
12	0.90	-1.81374	35	158.63	-1.79461
13	1.12	-1.81354	36	199.67	-1.79196
14	1.37	-1.81339	37	251.33	-1.78982
15	1.70	-1.81319	38	316.37	-1.78832
16	2.12	-1.81306	39	398.25	-1.78653
17	2.63	-1.81277	40	501.32	-1.78477
18	3.28	-1.81251	41	631.08	-1.78343
19	4.10	-1.81216	42	794.45	-1.78254
20	5.13	-1.81181	43	1000.12	-1.78192
21	6.43	-1.81094	44	1259.03	-1.78149
22	8.07	-1.81040	45	1440.38	-1.78121
23	10.13	-1.80940			



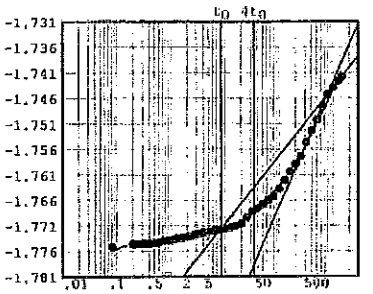
Void Ratio = 0.990 **Compression** = 33.0 %

D_0 = -1.82068 D_{50} = -1.80190 D_{100} = -1.78311

C_v **at 51.4 min.** = 0.00 ft.^{2}/day

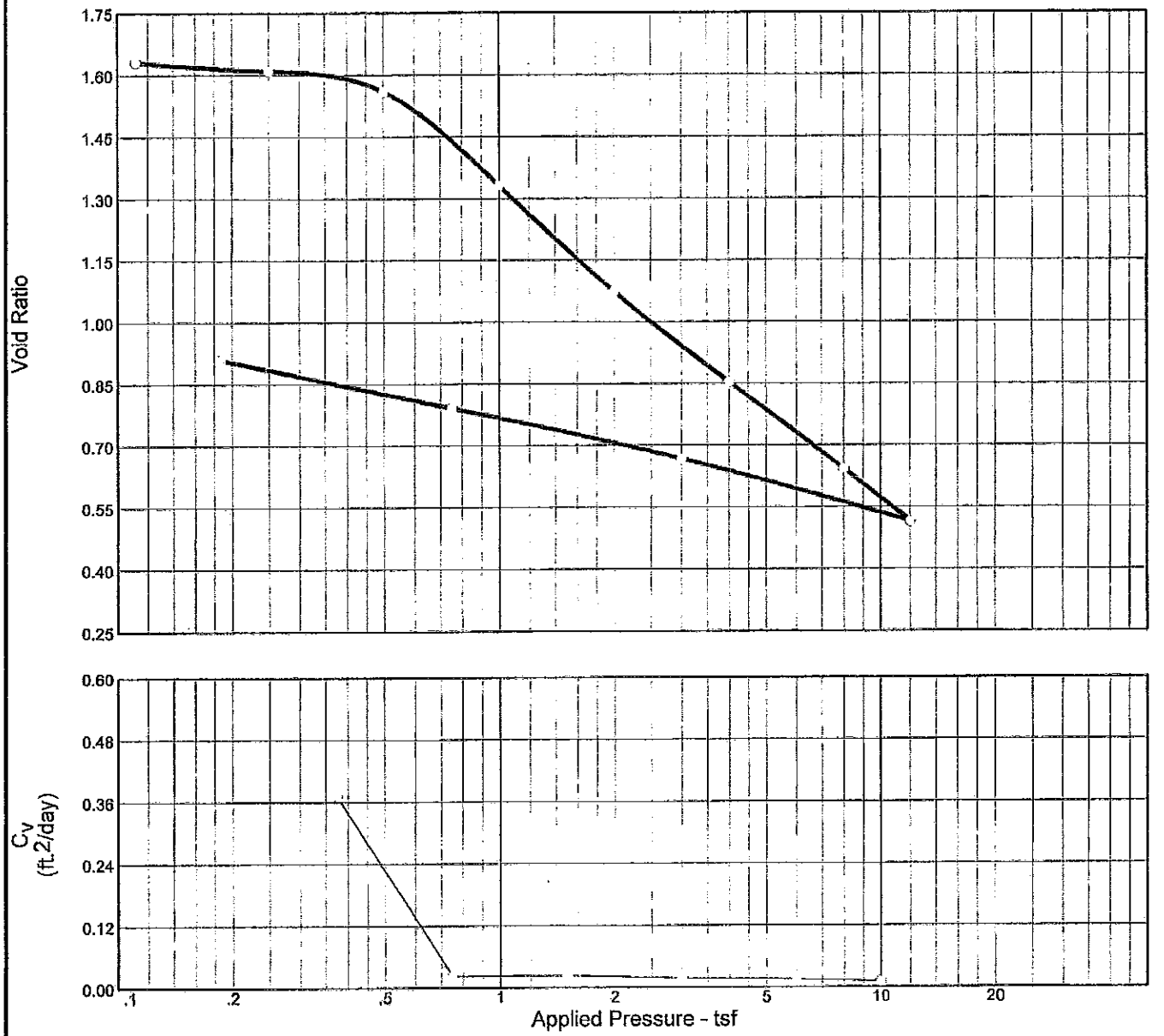
Pressure: 0.19 tsf **TEST READINGS** **Load No. 10**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.77694	24	12.72	-1.77133
2	0.08	-1.77520	25	15.97	-1.77105
3	0.20	-1.77463	26	20.07	-1.77065
4	0.22	-1.77465	27	25.25	-1.76939
5	0.25	-1.77468	28	31.75	-1.76833
6	0.30	-1.77460	29	39.93	-1.76765
7	0.35	-1.77456	30	50.25	-1.76684
8	0.42	-1.77453	31	63.22	-1.76607
9	0.50	-1.77439	32	79.55	-1.76529
10	0.60	-1.77430	33	100.13	-1.76379
11	0.73	-1.77394	34	126.02	-1.76208
12	0.90	-1.77394	35	158.62	-1.76038
13	1.12	-1.77381	36	199.65	-1.75881
14	1.37	-1.77354	37	251.32	-1.75736
15	1.70	-1.77335	38	316.35	-1.75463
16	2.10	-1.77314	39	398.22	-1.75237
17	2.63	-1.77297	40	501.30	-1.75024
18	3.28	-1.77265	41	631.07	-1.74768
19	4.10	-1.77230	42	794.43	-1.74526
20	5.13	-1.77221	43	1000.10	-1.74393
21	6.43	-1.77200	44	1259.02	-1.74259
22	8.07	-1.77180	45	1440.05	-1.74181
23	10.12	-1.77159			



Void Ratio = 1.125 **Compression =** 28.4 %
D_0 = -1.77694 D_{50} = -1.76115 D_{100} = -1.74535
C_v **at 137.3 min. =** 0.00 ft.^{2}/day

Consolidation Test Report



Natural Saturation	Natural Moisture	Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
98.9 %	59.9 %	64.0	61	44	2.70	0.52	0.78	1.635

MATERIAL DESCRIPTION	USCS	AASHTO
SO GR CH3	CH3	

Project No. 0017-0108 **Client:** U.S. ARMY CORPS OF ENGINEERS - N.O. DISTRICT

Project: BAYOU SAUVAGE FLOOD SIDE INTERMEDIATE MARSH - TASK ORDER # 108

Source: BSFR-6U **Sample No.:** 8C **Elev./Depth:** 26.5

FFEBJV, LLC.

Ridgeland, Mississippi

Remarks:

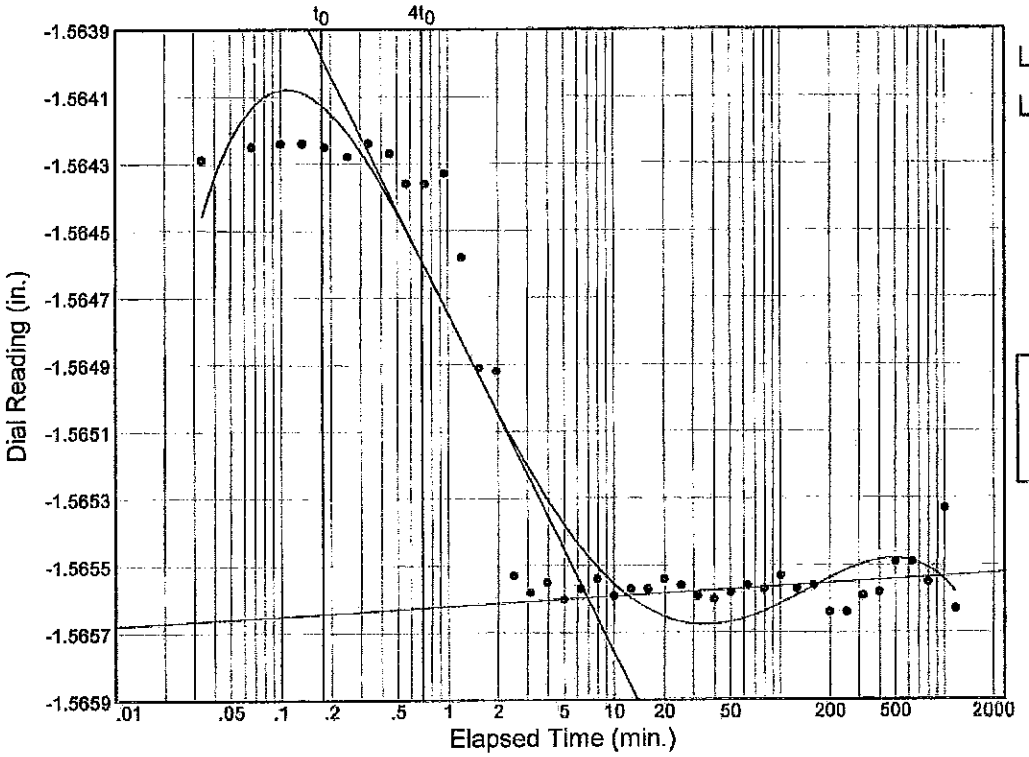
ASTM D2435, METHOD A
CHECKED BY: MR
TESTED BY: AH
CALCULATED BY: HS

Figure

Dial Reading vs. Time

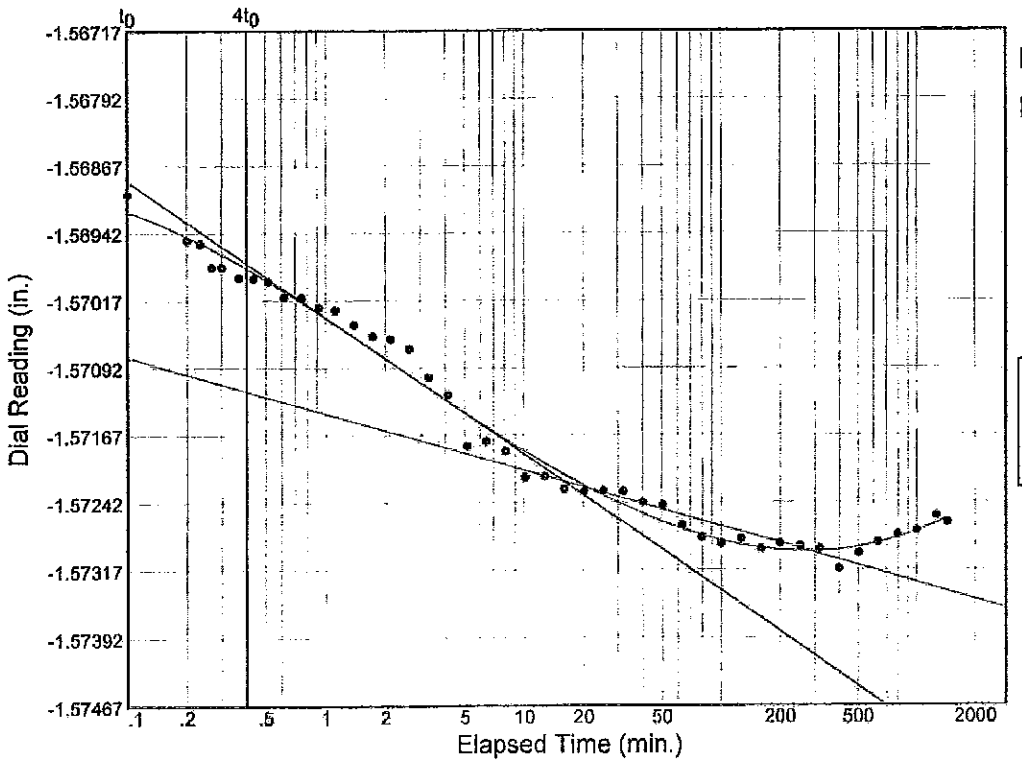
Project No.: 0017-0108
Project: BAYOU SAUVAGE FLOOD SIDE INTERMEDIATE MARSH - TASK ORDER # 108

Source: BSFR-6U Sample No.: 8C Elev./Depth: 26.5



Load No.= 1
Load= 0.11 tsf
D_0 = -1.56425
D_{50} = -1.56492
D_{100} = -1.56560
T_{50} = 1.50 min.

C_v @ T_{50}
0.25 ft.^{2}/day



Load No.= 2
Load= 0.25 tsf
D_0 = -1.56767
D_{50} = -1.56993
D_{100} = -1.57218
T_{50} = 0.49 min.

C_v @ T_{50}
0.75 ft.^{2}/day

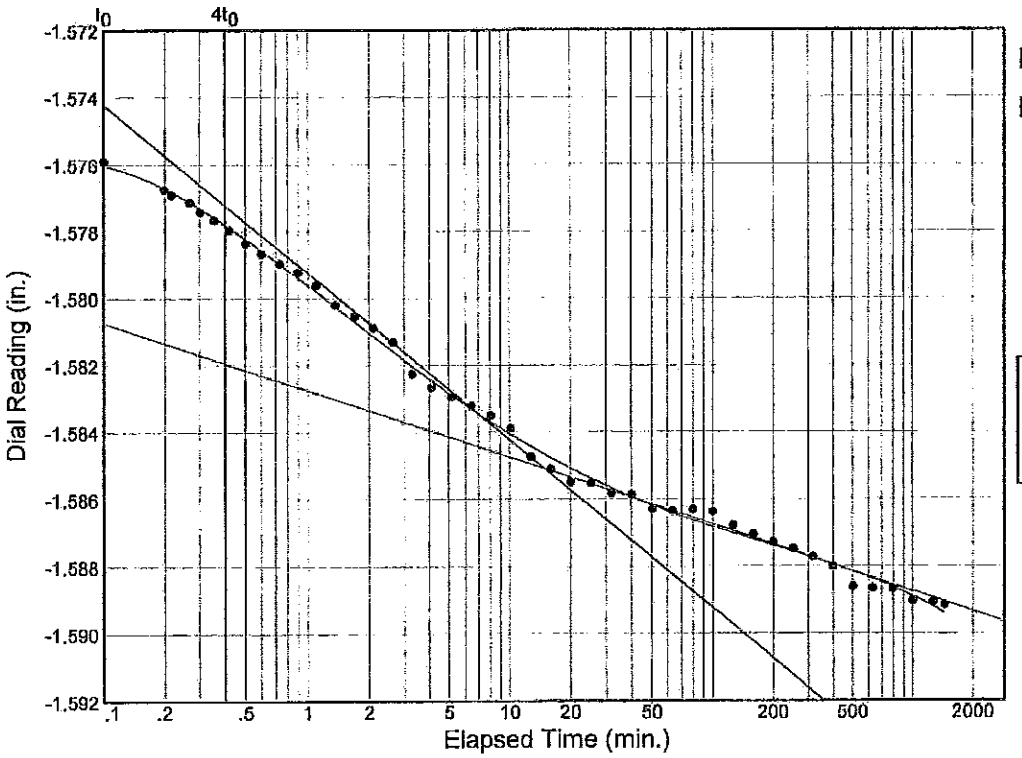
C_α = 0.001

Figure

Dial Reading vs. Time

Project No.: 0017-0108
Project: BAYOU SAUVAGE FLOOD SIDE INTERMEDIATE MARSH - TASK ORDER # 108

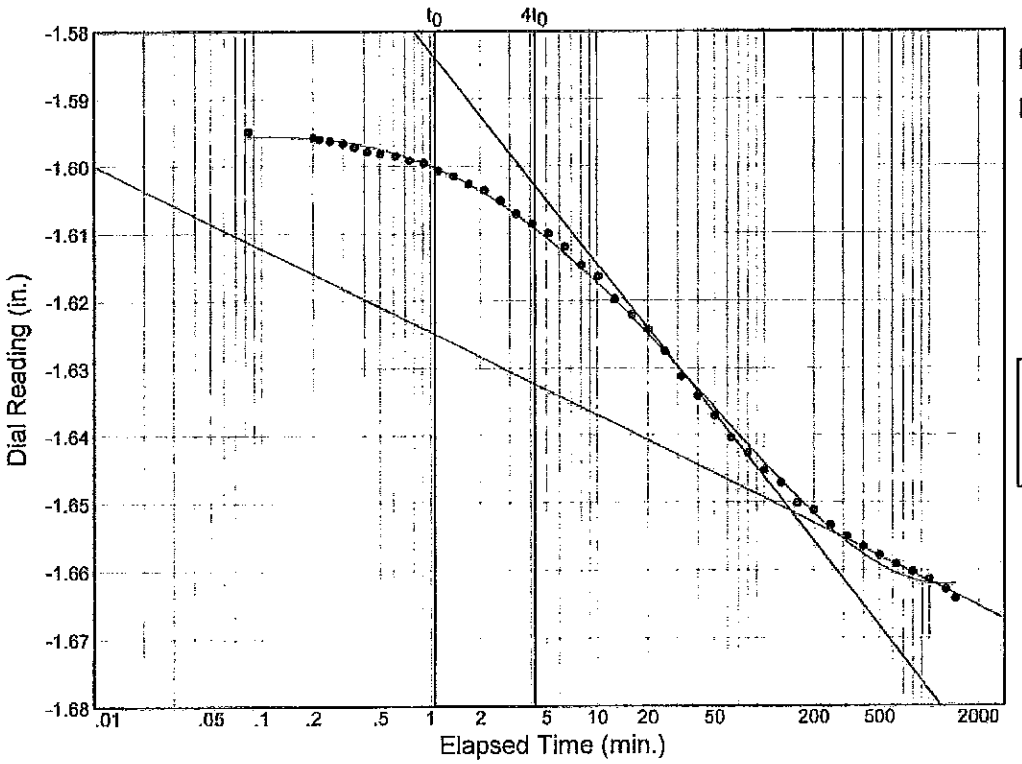
Source: BSFR-6U Sample No.: 8C Elev./Depth: 26.5



Load No.= 3
Load= 0.50 tsf
D_0 = -1.57396
D_{50} = -1.57953
D_{100} = -1.58509
T_{50} = 0.96 min.

C_v @ T_{50}
0.37 ft.^{2}/day

C_α = 0.002



Load No.= 4
Load= 1.00 tsf
D_0 = -1.59105
D_{50} = -1.62116
D_{100} = -1.65128
T_{50} = 14.20 min.

C_v @ T_{50}
0.02 ft.^{2}/day

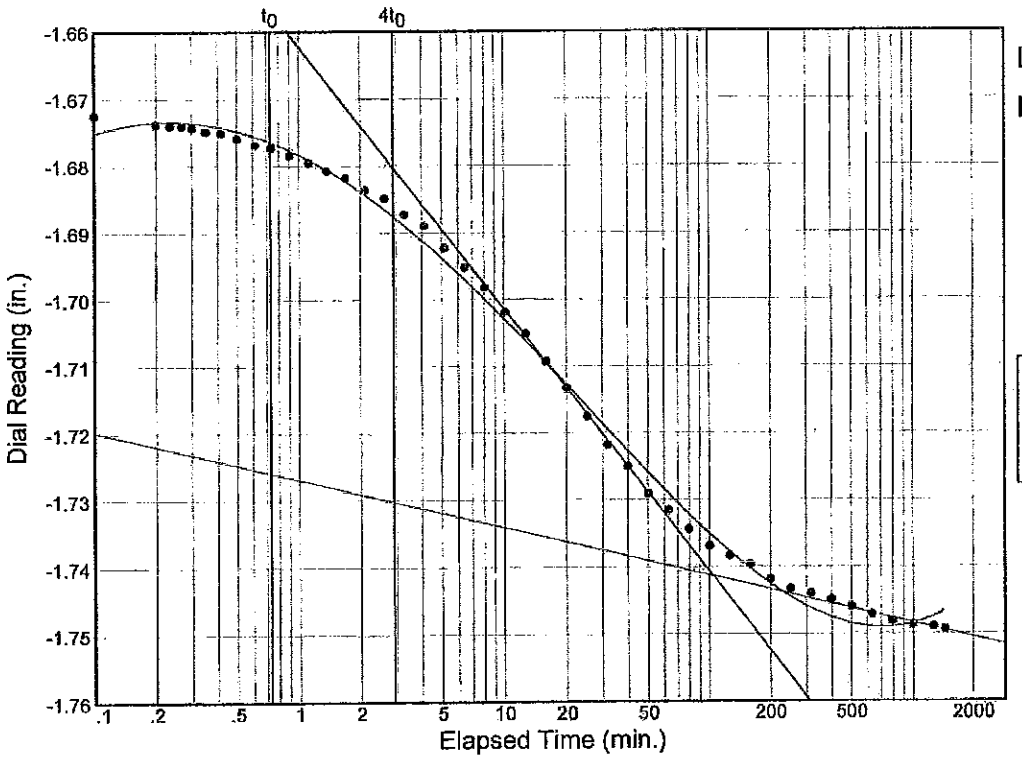
C_α = 0.015

Figure

Dial Reading vs. Time

Project No.: 0017-0108
Project: BAYOU SAUVAGE FLOOD SIDE INTERMEDIATE MARSH - TASK ORDER # 108

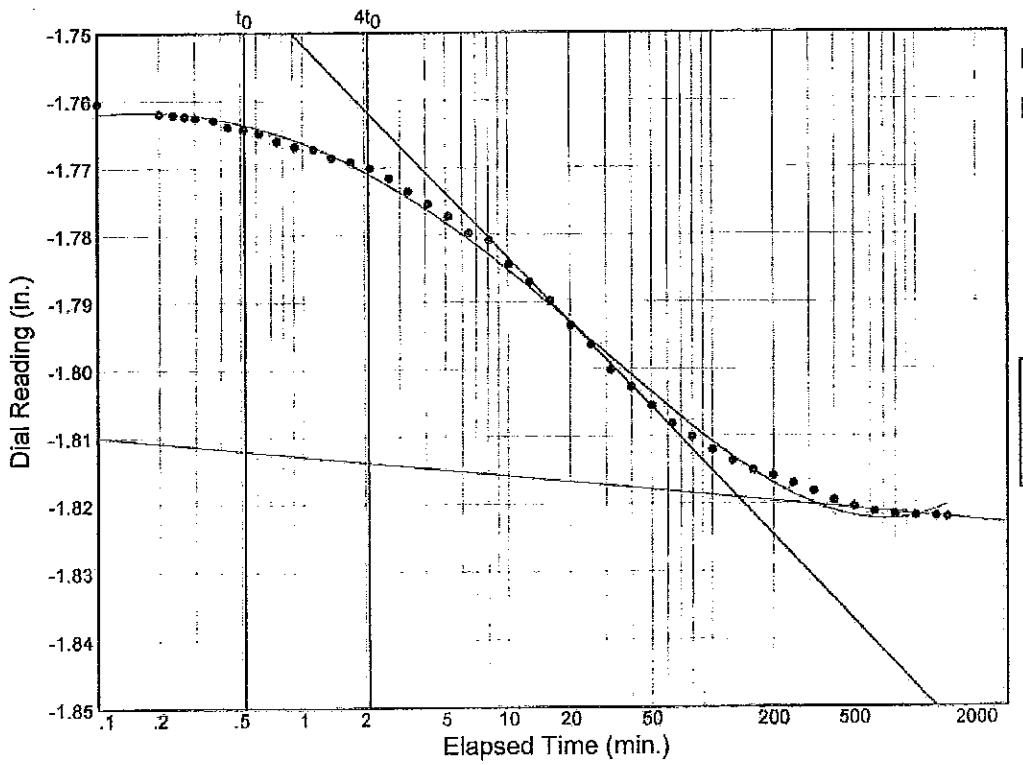
Source: BSFR-6U Sample No.: 8C Elev./Depth: 26.5



Load No.= 5
Load= 2.00 tsf
D_0 = -1.66708
D_{50} = -1.70419
D_{100} = -1.74130
T_{50} = 10.97 min.

C_v @ T_{50}
0.02 ft.^{2}/day

C_α = 0.009



Load No.= 6
Load= 4.00 tsf
D_0 = -1.75391
D_{50} = -1.78649
D_{100} = -1.81907
T_{50} = 11.22 min.

C_v @ T_{50}
0.02 ft.^{2}/day

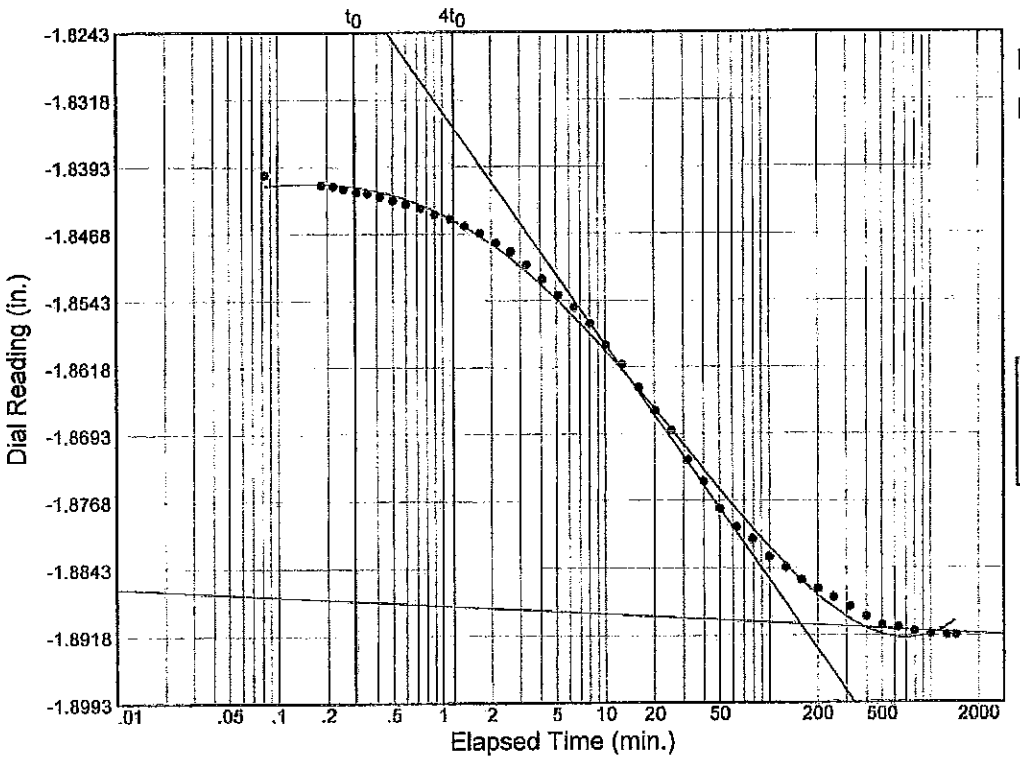
C_α = 0.004

Figure

Dial Reading vs. Time

Project No.: 0017-0108
Project: BAYOU SAUVAGE FLOOD SIDE INTERMEDIATE MARSH - TASK ORDER # 108

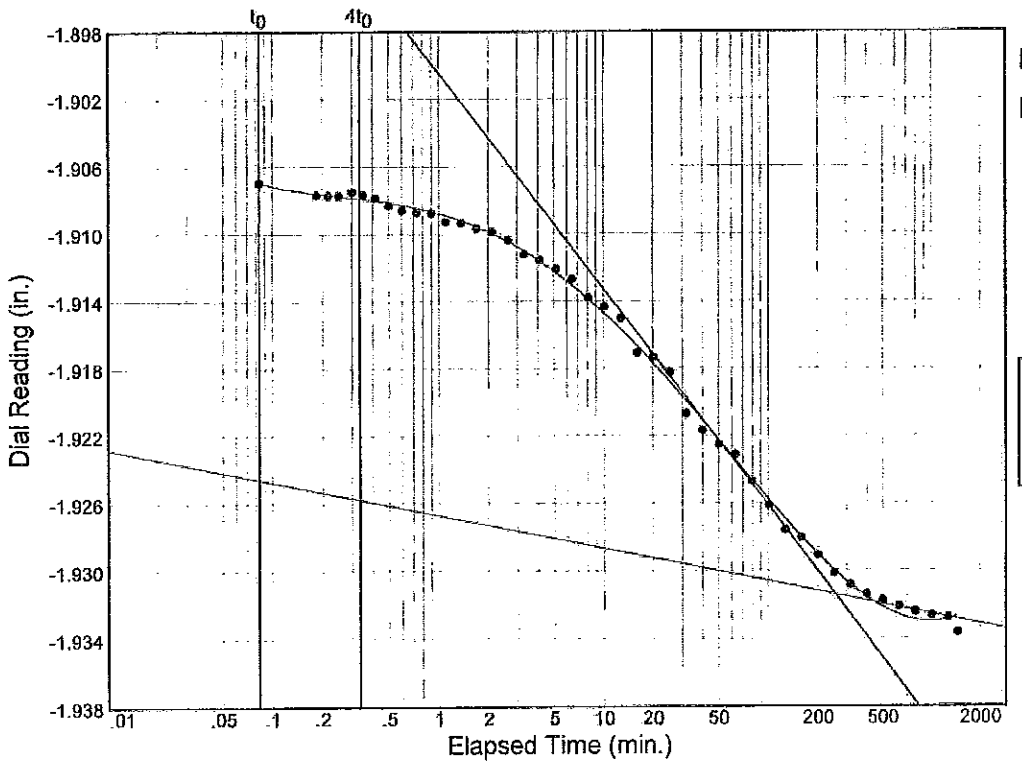
Source: BSFR-6U Sample No.: 8C Elev./Depth: 26.5



Load No.= 7
Load= 8.00 tsf
D_0 = -1.82984
D_{50} = -1.86018
D_{100} = -1.89052
T_{50} = 10.20 min.

C_v @ T_{50}
0.02 ft.^{2}/day

C_α = 0.002



Load No.= 8
Load= 12.00 tsf
D_0 = -1.89911
D_{50} = -1.91526
D_{100} = -1.93140
T_{50} = 11.40 min.

C_v @ T_{50}
0.01 ft.^{2}/day

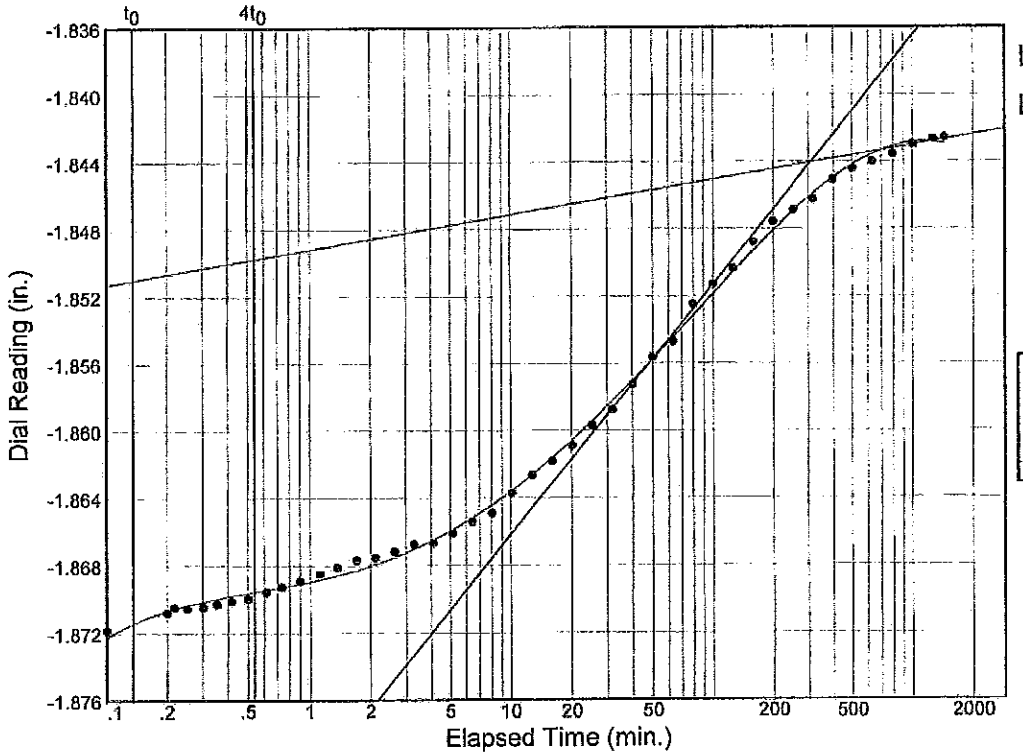
C_α = 0.004

Figure

Dial Reading vs. Time

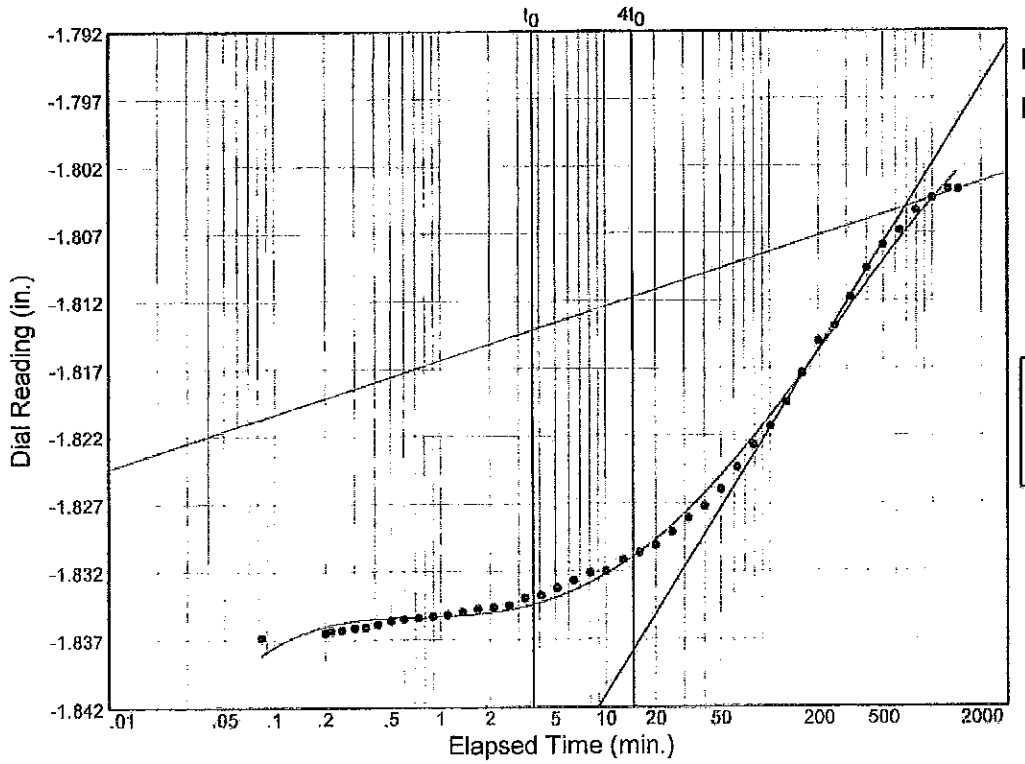
Project No.: 0017-0108
Project: BAYOU SAUVAGE FLOOD SIDE INTERMEDIATE MARSH - TASK ORDER # 108

Source: BSFR-6U Sample No.: 8C Elev./Depth: 26.5



Load No.= 10
Load= 0.75 tsf
D_0 = -1.87854
D_{50} = -1.86129
D_{100} = -1.84405
T_{50} = 17.23 min.

C_v @ T_{50}
0.01 ft.^{2}/day



Load No.= 11
Load= 0.19 tsf
D_0 = -1.83994
D_{50} = -1.82250
D_{100} = -1.80506
T_{50} = 74.83 min.

C_v @ T_{50}
0.00 ft.^{2}/day

Figure

FFEBJV, LLC.

CONSOLIDATION TEST DATA

Client: U.S. ARMY CORPS OF ENGINEERS - N.O. DISTRICT
Project: BAYOU SAUVAGE FLOOD SIDE INTERMEDIATE MARSH - TASK ORDER # 108
Project Number: 0017-0108

Sample Data

Source: BSFR-6U
Sample No.: 8C
Elev. or Depth: 26.5
Sample Length(in./cm.):
Location:
Description: SO GR CH3
Liquid Limit: 61
Plasticity Index: 44
USCS: CH3
AASHTO:
Figure No.:
Testing Remarks: ASTM D2435, METHOD A
CHECKED BY: MR
TESTED BY: AH
CALCULATED BY: HS

Test Specimen Data

TOTAL SAMPLE		BEFORE TEST	AFTER TEST
Wet w+t	= 468.58 g.	Consolidometer # = 19	Wet w+t = 421.44 g.
Dry w+t	= 358.78 g.		Dry w+t = 353.68 g.
Tare Wt.	= 175.34 g.	Spec. Gravity = 2.70	Tare Wt. = 175.34 g.
Height	= .87 in.	Height = .87 in.	
Diameter	= 4.00 in.	Diameter = 4.00 in.	
Weight	= 293.24 g.	Defl. Table = n/a	
Moisture	= 59.9 %	Ht. Solids = 0.3299 in.	Moisture = 38.0 %
Wet Den.	= 102.3 pcf	Dry Wt. = 183.44 g.*	Dry Wt. = 178.34 g.
Dry Den.	= 64.0 pcf	Void Ratio = 1.635	Void Ratio = 0.909
		Saturation = 98.9 %	

*** Initial dry weight used in calculations**

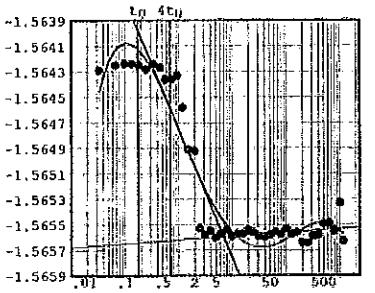
End-of-Load Summary

Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (ft.^{2}/day)	C_α	Void Ratio	% Compression /Swell
start	-1.56425				1.635	
0.11	-1.56563	0.00000	0.25		1.631	0.2 Comprs.
0.25	-1.57264	0.00000	0.75	0.001	1.609	1.0 Comprs.
0.50	-1.58917	0.00000	0.37	0.002	1.559	2.9 Comprs.
1.00	-1.66428	0.00000	0.02	0.015	1.332	11.5 Comprs.
2.00	-1.74938	0.00000	0.02	0.009	1.074	21.3 Comprs.
4.00	-1.82208	0.00000	0.02	0.004	0.853	29.7 Comprs.
8.00	-1.89174	0.00000	0.02	0.002	0.642	37.7 Comprs.
12.00	-1.93368	0.00000	0.01	0.004	0.515	42.5 Comprs.
3.00	-1.88341	0.00000			0.667	36.7 Comprs.
0.75	-1.84256	0.00000	0.01		0.791	32.0 Comprs.
0.19	-1.80382	0.00000	0.00		0.909	27.6 Comprs.

C_c = 0.78 P_c = 0.52 tsf C_r = 0.22

Pressure: 0.11 tsf **TEST READINGS** **Load No. 1**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.56425	23	12.55	-1.56557
2	0.03	-1.56429	24	15.82	-1.56557
3	0.07	-1.56425	25	19.92	-1.56554
4	0.10	-1.56424	26	25.08	-1.56556
5	0.13	-1.56424	27	31.60	-1.56559
6	0.18	-1.56425	28	39.78	-1.56560
7	0.25	-1.56428	29	50.08	-1.56558
8	0.33	-1.56424	30	63.07	-1.56556
9	0.45	-1.56427	31	79.40	-1.56557
10	0.57	-1.56436	32	99.97	-1.56553
11	0.73	-1.56436	33	125.87	-1.56557
12	0.95	-1.56433	34	158.47	-1.56556
13	1.20	-1.56458	35	199.50	-1.56564
14	1.53	-1.56491	36	251.17	-1.56564
15	1.95	-1.56492	37	316.20	-1.56559
16	2.47	-1.56553	38	398.08	-1.56558
17	3.12	-1.56558	39	501.15	-1.56549
18	3.93	-1.56555	40	630.92	-1.56549
19	4.97	-1.56560	41	794.28	-1.56555
20	6.27	-1.56557	42	999.95	-1.56533
21	7.90	-1.56554	43	1170.98	-1.56563
22	9.97	-1.56559			



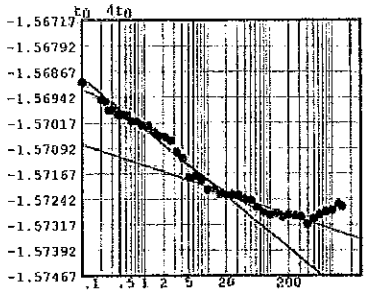
Void Ratio = 1.631 **Compression** = 0.2 %

D_0 = -1.56425 D_{50} = -1.56492 D_{100} = -1.56560

C_v **at 1.5 min.** = 0.25 ft.^{2}/day

Pressure: 0.25 tsf **TEST READINGS** **Load No. 2**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.56767	24	12.73	-1.57213
2	0.10	-1.56899	25	16.00	-1.57227
3	0.20	-1.56950	26	20.10	-1.57230
4	0.23	-1.56954	27	25.27	-1.57229
5	0.27	-1.56980	28	31.77	-1.57230
6	0.30	-1.56980	29	39.97	-1.57242
7	0.37	-1.56992	30	50.27	-1.57245
8	0.43	-1.56993	31	63.25	-1.57267
9	0.52	-1.56996	32	79.58	-1.57281
10	0.62	-1.57013	33	100.15	-1.57288
11	0.75	-1.57014	34	126.05	-1.57283
12	0.92	-1.57025	35	158.63	-1.57294
13	1.12	-1.57028	36	199.68	-1.57288
14	1.38	-1.57044	37	251.33	-1.57291
15	1.72	-1.57057	38	316.37	-1.57294
16	2.12	-1.57060	39	398.25	-1.57316
17	2.63	-1.57071	40	501.33	-1.57299
18	3.30	-1.57103	41	631.10	-1.57287
19	4.12	-1.57122	42	794.47	-1.57279
20	5.15	-1.57179	43	1000.12	-1.57274
21	6.45	-1.57174	44	1259.03	-1.57257
22	8.08	-1.57185	45	1440.12	-1.57264
23	10.15	-1.57214			



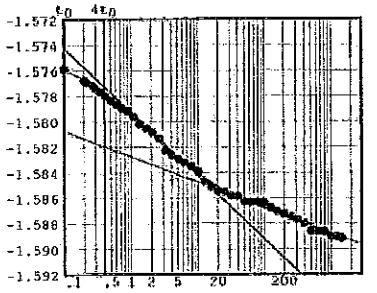
Void Ratio = 1.609 **Compression** = 1.0 %

D_0 = -1.56767 D_{50} = -1.56993 D_{100} = -1.57218

C_v **at 0.5 min.** = 0.75 ft.^{2}/day C_α = 0.001

Pressure: 0.50 tsf **TEST READINGS** **Load No. 3**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.57396	24	12.72	-1.58474
2	0.10	-1.57590	25	15.97	-1.58512
3	0.20	-1.57676	26	20.08	-1.58550
4	0.22	-1.57692	27	25.25	-1.58554
5	0.27	-1.57715	28	31.75	-1.58584
6	0.30	-1.57742	29	39.93	-1.58586
7	0.35	-1.57767	30	50.25	-1.58629
8	0.42	-1.57797	31	63.23	-1.58635
9	0.50	-1.57835	32	79.57	-1.58631
10	0.60	-1.57867	33	100.13	-1.58637
11	0.73	-1.57896	34	126.02	-1.58679
12	0.90	-1.57921	35	158.62	-1.58706
13	1.10	-1.57962	36	199.67	-1.58729
14	1.37	-1.58020	37	251.32	-1.58749
15	1.70	-1.58053	38	316.37	-1.58772
16	2.10	-1.58088	39	398.23	-1.58801
17	2.63	-1.58131	40	501.32	-1.58861
18	3.28	-1.58226	41	631.08	-1.58865
19	4.10	-1.58266	42	794.45	-1.58868
20	5.13	-1.58294	43	1000.12	-1.58904
21	6.43	-1.58321	44	1259.03	-1.58908
22	8.07	-1.58350	45	1440.33	-1.58917
23	10.12	-1.58390			



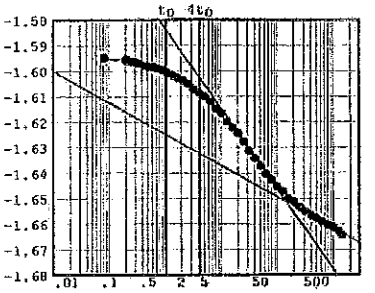
Void Ratio = 1.559 **Compression** = 2.9 %

D_0 = -1.57396 D_{50} = -1.57953 D_{100} = -1.58509

C_v **at 1.0 min.** = 0.37 ft.^{2}/day C_α = 0.002

Pressure: 1.00 tsf **TEST READINGS** **Load No. 4**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.59105	24	12.72	-1.61990
2	0.08	-1.59484	25	15.98	-1.62221
3	0.20	-1.59578	26	20.08	-1.62435
4	0.22	-1.59595	27	25.27	-1.62766
5	0.25	-1.59625	28	31.77	-1.63130
6	0.30	-1.59660	29	39.95	-1.63417
7	0.35	-1.59717	30	50.27	-1.63712
8	0.42	-1.59787	31	63.23	-1.64038
9	0.50	-1.59812	32	79.57	-1.64264
10	0.62	-1.59850	33	100.15	-1.64526
11	0.75	-1.59914	34	126.03	-1.64709
12	0.92	-1.59958	35	158.63	-1.65018
13	1.12	-1.60073	36	199.67	-1.65117
14	1.38	-1.60157	37	251.33	-1.65333
15	1.70	-1.60275	38	316.37	-1.65509
16	2.12	-1.60360	39	398.25	-1.65657
17	2.63	-1.60521	40	501.32	-1.65783
18	3.28	-1.60715	41	631.08	-1.65920
19	4.10	-1.60862	42	794.45	-1.66031
20	5.13	-1.61003	43	1000.12	-1.66140
21	6.43	-1.61203	44	1259.03	-1.66292
22	8.08	-1.61476	45	1440.20	-1.66428
23	10.13	-1.61642			



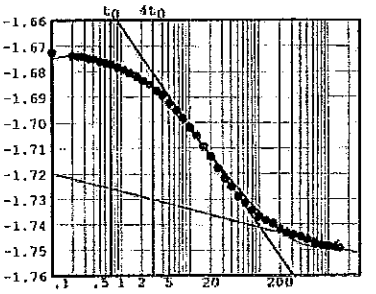
Void Ratio = 1.332 **Compression** = 11.5 %

D_0 = -1.59105 D_{50} = -1.62116 D_{100} = -1.65128

C_v **at 14.2 min.** = 0.02 ft.^{2}/day C_α = 0.015

Pressure: 2.00 tsf **TEST READINGS** **Load No. 5**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.66708	24	12.72	-1.70516
2	0.10	-1.67245	25	15.98	-1.70930
3	0.20	-1.67380	26	20.08	-1.71326
4	0.23	-1.67402	27	25.25	-1.71758
5	0.27	-1.67408	28	31.75	-1.72178
6	0.30	-1.67429	29	39.95	-1.72506
7	0.35	-1.67495	30	50.25	-1.72909
8	0.42	-1.67513	31	63.23	-1.73157
9	0.50	-1.67596	32	79.57	-1.73440
10	0.62	-1.67687	33	100.13	-1.73693
11	0.73	-1.67730	34	126.03	-1.73837
12	0.90	-1.67847	35	158.63	-1.73963
13	1.12	-1.67957	36	199.67	-1.74188
14	1.37	-1.68082	37	251.33	-1.74330
15	1.70	-1.68186	38	316.37	-1.74396
16	2.12	-1.68368	39	398.23	-1.74485
17	2.63	-1.68495	40	501.32	-1.74593
18	3.28	-1.68738	41	631.08	-1.74708
19	4.10	-1.68902	42	794.45	-1.74809
20	5.13	-1.69231	43	1000.10	-1.74865
21	6.43	-1.69520	44	1259.02	-1.74895
22	8.07	-1.69822	45	1440.33	-1.74938
23	10.13	-1.70196			



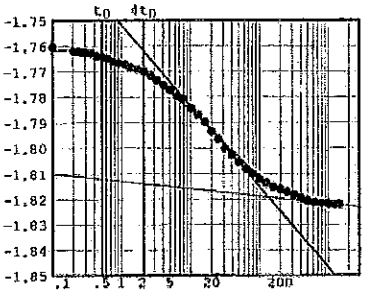
Void Ratio = 1.074 **Compression** = 21.3 %

D_0 = -1.66708 D_{50} = -1.70419 D_{100} = -1.74130

C_v **at 11.0 min.** = 0.02 ft.^{2}/day C_α = 0.009

Pressure: 4.00 tsf **TEST READINGS** **Load No. 6**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.75391	24	12.73	-1.78709
2	0.10	-1.76046	25	16.00	-1.78979
3	0.20	-1.76194	26	20.10	-1.79351
4	0.23	-1.76212	27	25.27	-1.79636
5	0.27	-1.76234	28	31.77	-1.80009
6	0.30	-1.76258	29	39.97	-1.80270
7	0.37	-1.76291	30	50.27	-1.80549
8	0.43	-1.76390	31	63.25	-1.80809
9	0.52	-1.76428	32	79.58	-1.81005
10	0.62	-1.76486	33	100.15	-1.81203
11	0.75	-1.76602	34	126.05	-1.81365
12	0.92	-1.76681	35	158.65	-1.81506
13	1.13	-1.76726	36	199.68	-1.81589
14	1.38	-1.76854	37	251.33	-1.81703
15	1.72	-1.76917	38	316.38	-1.81820
16	2.13	-1.77010	39	398.25	-1.81958
17	2.65	-1.77162	40	501.33	-1.82050
18	3.30	-1.77357	41	631.10	-1.82126
19	4.12	-1.77549	42	794.47	-1.82163
20	5.15	-1.77730	43	1000.13	-1.82184
21	6.45	-1.77979	44	1259.03	-1.82191
22	8.08	-1.78086	45	1440.27	-1.82208
23	10.15	-1.78440			



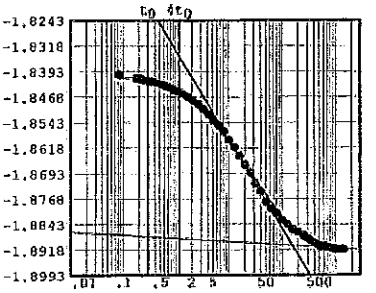
Void Ratio = 0.853 **Compression** = 29.7 %

D_0 = -1.75391 D_{50} = -1.78649 D_{100} = -1.81907

C_v **at 11.2 min.** = 0.02 ft.^{2}/day C_α = 0.004

Pressure: 8.00 tsf **TEST READINGS** **Load No. 7**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.82984	24	12.72	-1.86156
2	0.08	-1.84020	25	15.98	-1.86412
3	0.18	-1.84136	26	20.08	-1.86671
4	0.22	-1.84149	27	25.25	-1.86895
5	0.25	-1.84182	28	31.75	-1.87220
6	0.30	-1.84218	29	39.95	-1.87464
7	0.35	-1.84234	30	50.25	-1.87771
8	0.42	-1.84267	31	63.23	-1.87971
9	0.50	-1.84312	32	79.57	-1.88105
10	0.60	-1.84352	33	100.13	-1.88307
11	0.73	-1.84392	34	126.03	-1.88423
12	0.90	-1.84465	35	158.63	-1.88559
13	1.12	-1.84517	36	199.67	-1.88661
14	1.37	-1.84596	37	251.33	-1.88755
15	1.70	-1.84676	38	316.37	-1.88859
16	2.12	-1.84789	39	398.25	-1.88966
17	2.63	-1.84887	40	501.32	-1.89062
18	3.28	-1.85032	41	631.08	-1.89087
19	4.10	-1.85192	42	794.45	-1.89125
20	5.13	-1.85375	43	1000.12	-1.89159
21	6.43	-1.85506	44	1259.03	-1.89174
22	8.07	-1.85689	45	1440.40	-1.89174
23	10.13	-1.85941			



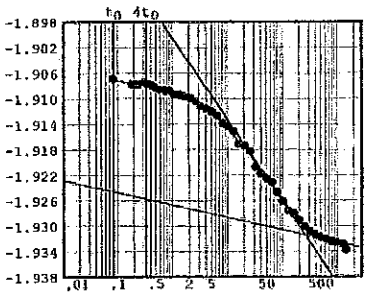
Void Ratio = 0.642 **Compression** = 37.7 %

D_0 = -1.82984 D_{50} = -1.86018 D_{100} = -1.89052

C_v **at 10.2 min.** = 0.02 ft.^{2}/day C_α = 0.002

Pressure: 12.00 tsf **TEST READINGS** **Load No. 8**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.89911	24	12.72	-1.91507
2	0.08	-1.90695	25	15.97	-1.91711
3	0.18	-1.90771	26	20.08	-1.91737
4	0.22	-1.90772	27	25.25	-1.91825
5	0.25	-1.90772	28	31.75	-1.92072
6	0.30	-1.90749	29	39.95	-1.92171
7	0.35	-1.90769	30	50.25	-1.92253
8	0.42	-1.90787	31	63.23	-1.92312
9	0.50	-1.90832	32	79.57	-1.92472
10	0.60	-1.90860	33	100.13	-1.92615
11	0.73	-1.90871	34	126.03	-1.92759
12	0.90	-1.90876	35	158.63	-1.92804
13	1.10	-1.90930	36	199.67	-1.92910
14	1.37	-1.90937	37	251.33	-1.93015
15	1.70	-1.90969	38	316.37	-1.93085
16	2.10	-1.90990	39	398.25	-1.93141
17	2.62	-1.91039	40	501.32	-1.93179
18	3.28	-1.91124	41	631.08	-1.93211
19	4.10	-1.91158	42	794.45	-1.93246
20	5.13	-1.91212	43	1000.12	-1.93265
21	6.43	-1.91272	44	1259.03	-1.93280
22	8.07	-1.91382	45	1440.27	-1.93368
23	10.12	-1.91435			



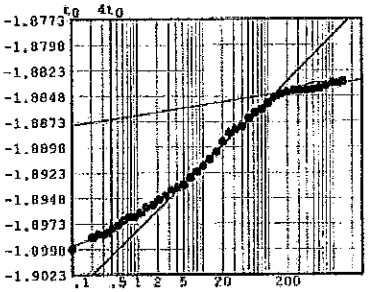
Void Ratio = 0.515 **Compression** = 42.5 %

D_0 = -1.89911 D_{50} = -1.91526 D_{100} = -1.93140

C_v **at 11.4 min.** = 0.01 ft.^{2}/day C_α = 0.004

Pressure: 3.00 tsf **TEST READINGS** **Load No. 9**

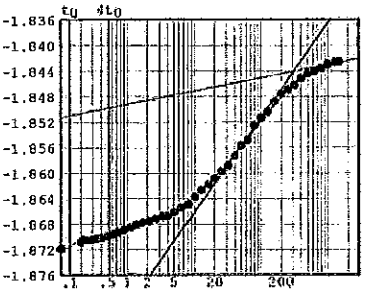
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.91800	24	12.72	-1.89097
2	0.10	-1.89979	25	15.98	-1.89030
3	0.20	-1.89861	26	20.08	-1.88929
4	0.22	-1.89859	27	25.25	-1.88842
5	0.25	-1.89834	28	31.75	-1.88808
6	0.30	-1.89837	29	39.95	-1.88778
7	0.35	-1.89815	30	50.25	-1.88701
8	0.42	-1.89773	31	63.23	-1.88641
9	0.50	-1.89749	32	79.57	-1.88613
10	0.60	-1.89702	33	100.15	-1.88548
11	0.73	-1.89663	34	126.03	-1.88490
12	0.90	-1.89662	35	158.63	-1.88460
13	1.12	-1.89624	36	199.67	-1.88442
14	1.37	-1.89568	37	251.33	-1.88425
15	1.70	-1.89546	38	316.37	-1.88422
16	2.12	-1.89494	39	398.25	-1.88425
17	2.63	-1.89457	40	501.32	-1.88416
18	3.28	-1.89397	41	631.10	-1.88402
19	4.10	-1.89376	42	794.45	-1.88380
20	5.13	-1.89356	43	1000.12	-1.88353
21	6.43	-1.89281	44	1259.03	-1.88354
22	8.07	-1.89217	45	1440.25	-1.88341
23	10.13	-1.89161			



Void Ratio = 0.667 **Compression =** 36.7 %

Pressure: 0.75 tsf **TEST READINGS** **Load No. 10**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.87854	24	12.72	-1.86265
2	0.10	-1.87182	25	15.98	-1.86182
3	0.20	-1.87078	26	20.08	-1.86089
4	0.22	-1.87046	27	25.25	-1.85971
5	0.25	-1.87052	28	31.77	-1.85878
6	0.30	-1.87043	29	39.95	-1.85728
7	0.35	-1.87025	30	50.25	-1.85565
8	0.42	-1.87009	31	63.23	-1.85474
9	0.50	-1.86994	32	79.57	-1.85247
10	0.62	-1.86954	33	100.13	-1.85130
11	0.73	-1.86926	34	126.03	-1.85038
12	0.90	-1.86890	35	158.63	-1.84879
13	1.12	-1.86850	36	199.67	-1.84759
14	1.37	-1.86810	37	251.33	-1.84691
15	1.70	-1.86769	38	316.37	-1.84625
16	2.12	-1.86752	39	398.25	-1.84510
17	2.63	-1.86718	40	501.32	-1.84443
18	3.28	-1.86675	41	631.08	-1.84402
19	4.10	-1.86667	42	794.45	-1.84355
20	5.13	-1.86608	43	1000.12	-1.84296
21	6.43	-1.86542	44	1259.03	-1.84266
22	8.07	-1.86489	45	1440.22	-1.84256
23	10.13	-1.86370			



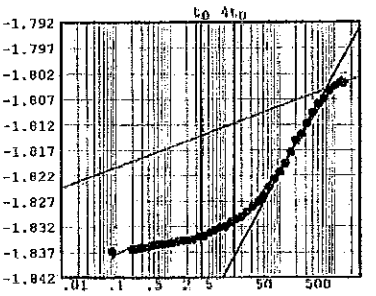
Void Ratio = 0.791 **Compression** = 32.0 %

D_0 = -1.87854 D_{50} = -1.86129 D_{100} = -1.84405

C_v **at 17.2 min.** = 0.01 ft.^{2}/day

Pressure: 0.19 tsf | TEST READINGS | Load No. 11

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	-1.83994	24	12.70	-1.83116
2	0.08	-1.83688	25	15.97	-1.83060
3	0.20	-1.83650	26	20.07	-1.83008
4	0.22	-1.83640	27	25.23	-1.82913
5	0.25	-1.83631	28	31.75	-1.82809
6	0.30	-1.83614	29	39.93	-1.82721
7	0.35	-1.83610	30	50.25	-1.82598
8	0.42	-1.83588	31	63.22	-1.82434
9	0.50	-1.83562	32	79.57	-1.82270
10	0.60	-1.83549	33	100.13	-1.82132
11	0.73	-1.83541	34	126.02	-1.81954
12	0.90	-1.83529	35	158.62	-1.81738
13	1.10	-1.83517	36	199.65	-1.81502
14	1.37	-1.83497	37	251.32	-1.81389
15	1.68	-1.83475	38	316.35	-1.81178
16	2.10	-1.83466	39	398.23	-1.80964
17	2.62	-1.83450	40	501.32	-1.80793
18	3.27	-1.83397	41	631.08	-1.80685
19	4.10	-1.83378	42	794.43	-1.80534
20	5.13	-1.83324	43	1000.10	-1.80442
21	6.42	-1.83268	44	1259.02	-1.80377
22	8.07	-1.83213	45	1440.22	-1.80382
23	10.12	-1.83200			

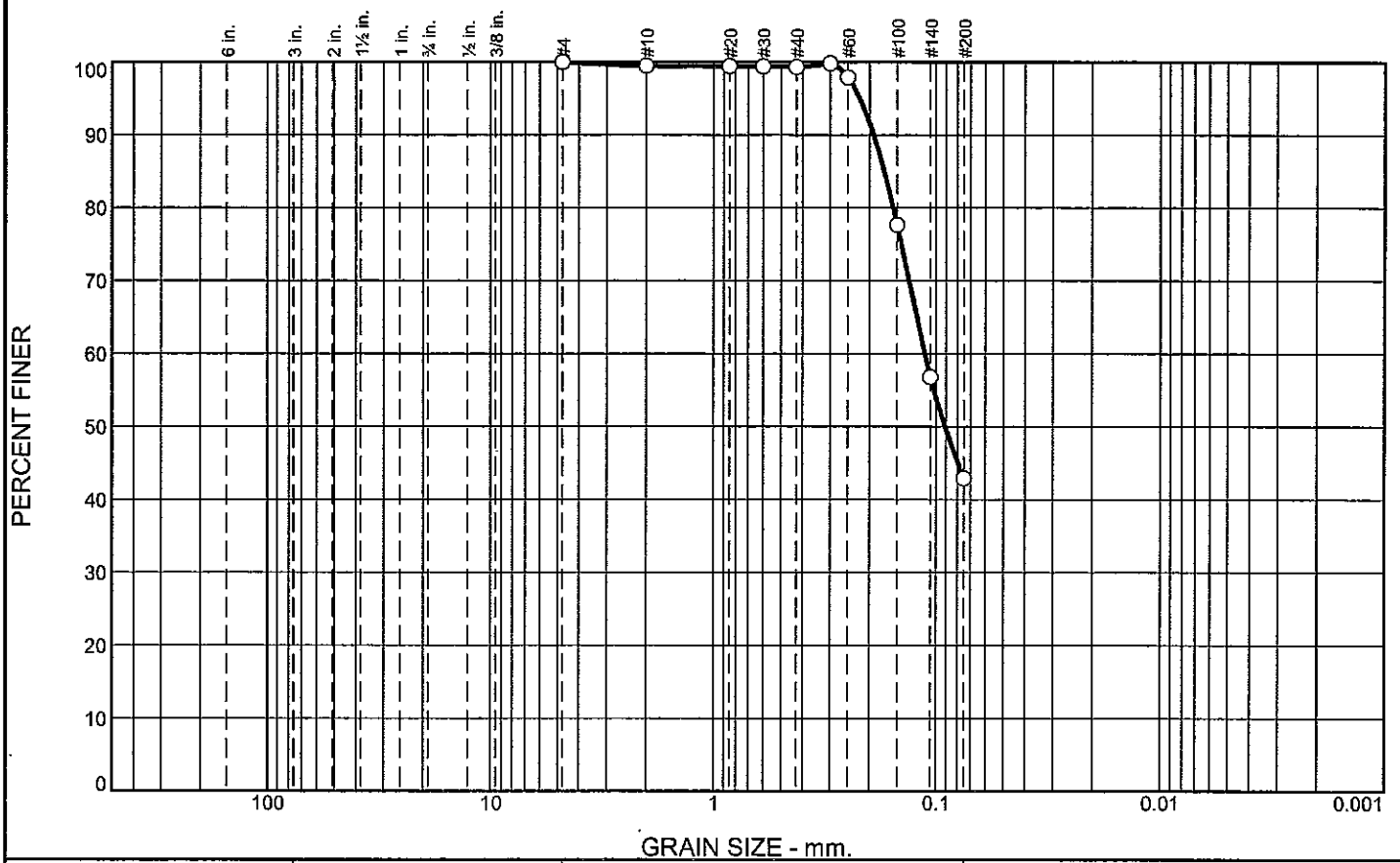


Void Ratio = 0.909 **Compression** = 27.6 %

D_0 = -1.83994 D_{50} = -1.82250 D_{100} = -1.80506

C_v **at 74.8 min.** = 0.00 ft.^{2}/day

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.5	0.2	56.4	42.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	99.5		
#20	99.4		
#30	99.4		
#40	99.3		
#50	99.8		
#60	97.9		
#100	77.6		
#140	56.8		
#200	42.9		

* (no specification provided)

Soil Description

GR SM W/ ARS CH, SIF

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.1919 D_{85}= 0.1719 D_{60}= 0.1124
D_{50}= 0.0912 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

Source of Sample: BSFR-6U **Depth:** 28.0
Sample Number: 9A **Date:** 7-27-12

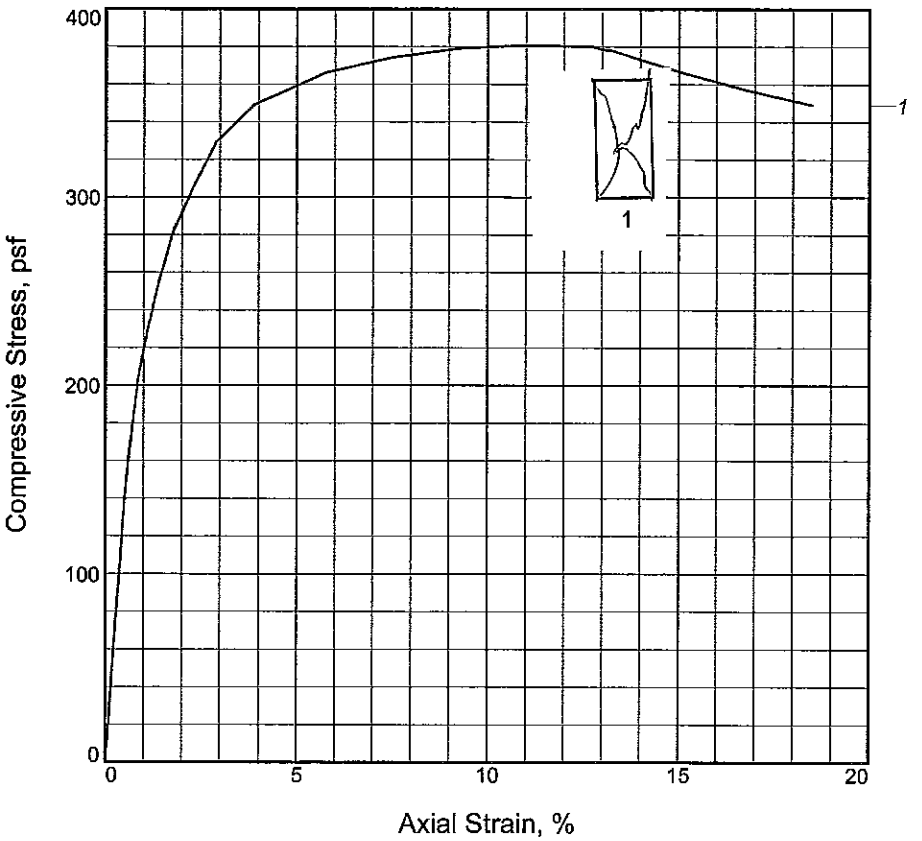
Stantec

Saint Rose, Louisiana

Client: USACE
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Project No: 12-017108 **Figure**

Tested By: NS

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	381			
Undrained shear strength, psf	190			
Failure strain, %	11.0			
Strain rate, in./min.	1.000			
Water content, %	60.5			
Wet density, pcf	103.8			
Dry density, pcf	64.7			
Saturation, %	101.2			
Void ratio	1.6246			
Specimen diameter, in.	1.388			
Specimen height, in.	2.970			
Height/diameter ratio	2.14			

Description: VSO DGR CH4 W/ ARS ML, O

LL = 87	**PL =** 28	**PI =** 59	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 12-017108
Date Sampled: 7-27-12
Remarks:
Torvane=0.27 tsf

Figure _____

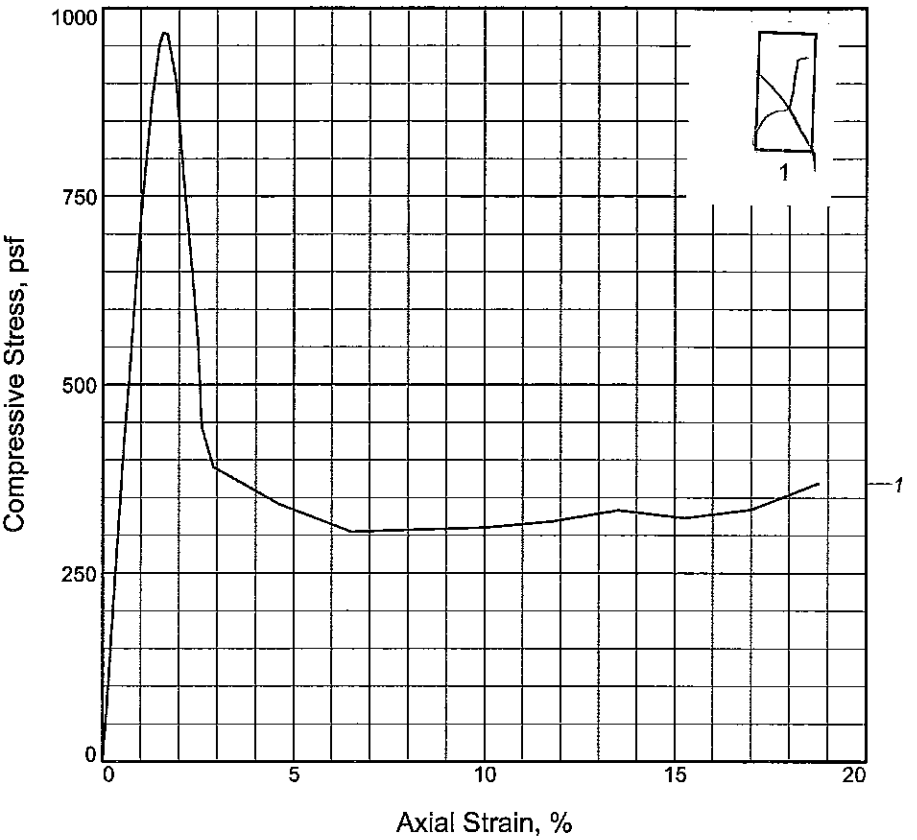
Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-6U **Depth:** 5.0
Sample Number: 3B

UNCONFINED COMPRESSION TEST
Stantec
Saint Rose, Louisiana

Tested By: JC

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	967			
Undrained shear strength, psf	484			
Failure strain, %	1.6			
Strain rate, in./min.	1.000			
Water content, %	76.0			
Wet density, pcf	98.2			
Dry density, pcf	55.8			
Saturation, %	101.1			
Void ratio	2.0453			
Specimen diameter, in.	1.387			
Specimen height, in.	3.012			
Height/diameter ratio	2.17			

Description: SO GR CH4 W/ LYS & LNS ML

LL = 97	**PL =** 19	**PI =** 78	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 12-017108
Date Sampled: 7-27-12
Remarks:
Torvane=0.31 tsf

Client: USACE

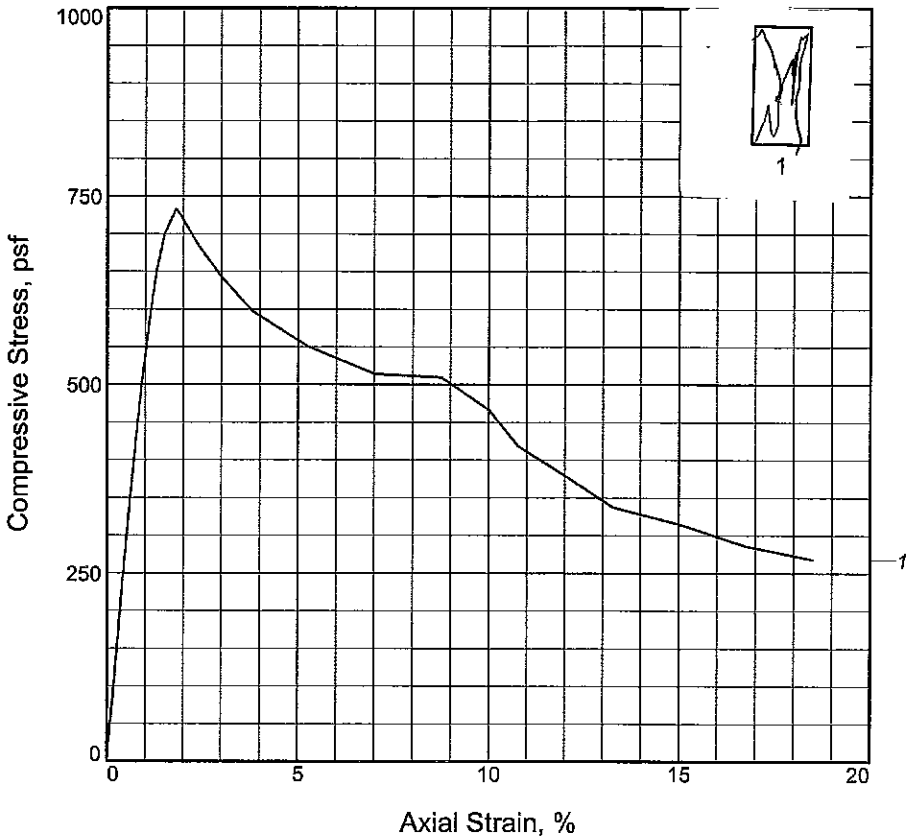
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-6U **Depth:** 17.0
Sample Number: 6B

UNCONFINED COMPRESSION TEST
Stantec
Saint Rose, Louisiana

Figure _____

Tested By: JC

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	732			
Undrained shear strength, psf	366			
Failure strain, %	1.8			
Strain rate, in./min.	1.000			
Water content, %	66.4			
Wet density, pcf	101.0			
Dry density, pcf	60.7			
Saturation, %	100.1			
Void ratio	1.8170			
Specimen diameter, in.	1.384			
Specimen height, in.	3.010			
Height/diameter ratio	2.17			

Description: SO GR CH4 W/ ARS & LNS SM

LL = 80	**PL =** 19	**PI =** 61	**Assumed GS=** 2.74	**Type:** UNDISTURBED

Project No.: 12-017108
Date Sampled: 7-27-12
Remarks:
Torvane=0.28 tsf

Figure _____

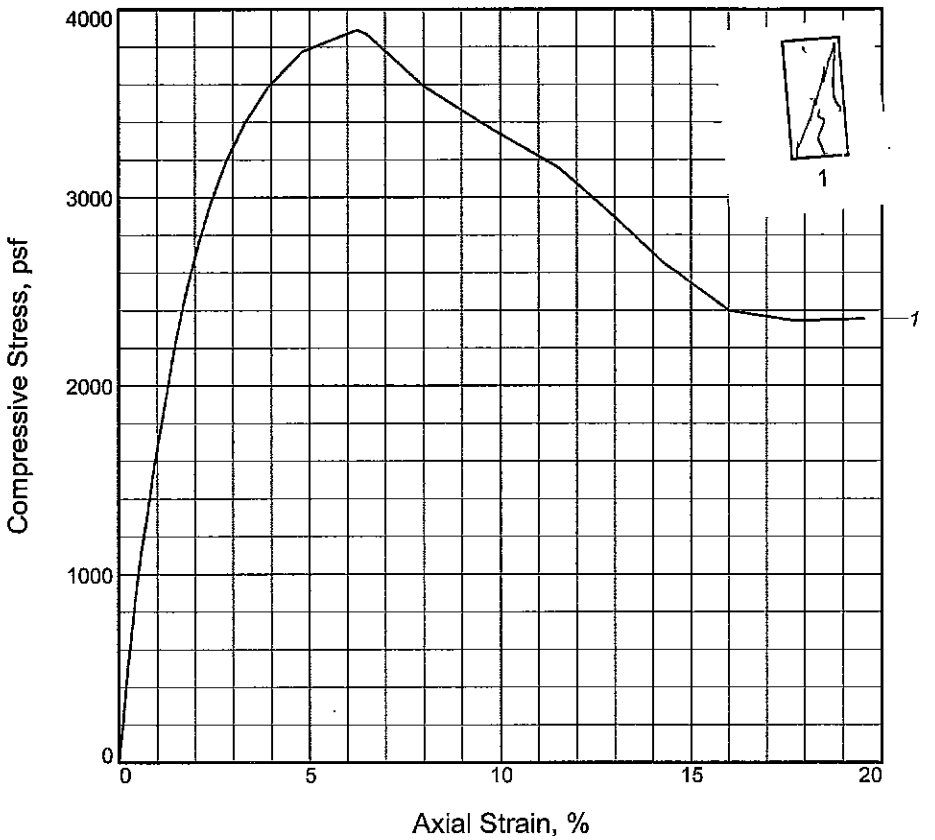
Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-6U **Depth:** 25.0
Sample Number: 8B

UNCONFINED COMPRESSION TEST
Stantec
Saint Rose, Louisiana

Tested By: JC

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	3889			
Undrained shear strength, psf	1944			
Failure strain, %	6.3			
Strain rate, in./min.	1.000			
Water content, %	22.8			
Wet density, pcf	127.6			
Dry density, pcf	103.9			
Saturation, %	98.9			
Void ratio	0.6229			
Specimen diameter, in.	1.373			
Specimen height, in.	3.004			
Height/diameter ratio	2.19			

Description: ST GNG CL6 W/ ARS CH

LL = 49	**PL =** 20	**PI =** 29	**Assumed GS=** 2.70	**Type:** UNDISTURBED

Project No.: 12-017108
Date Sampled: 7-27-12
Remarks:
Torvane=0.98 tsf

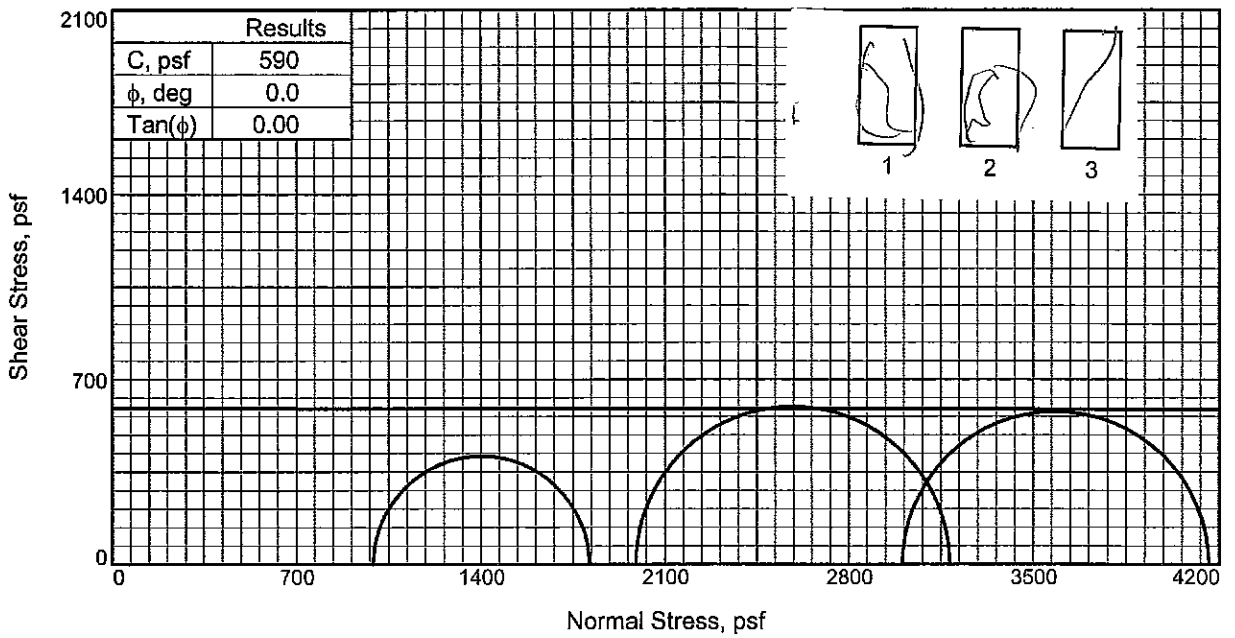
Figure _____

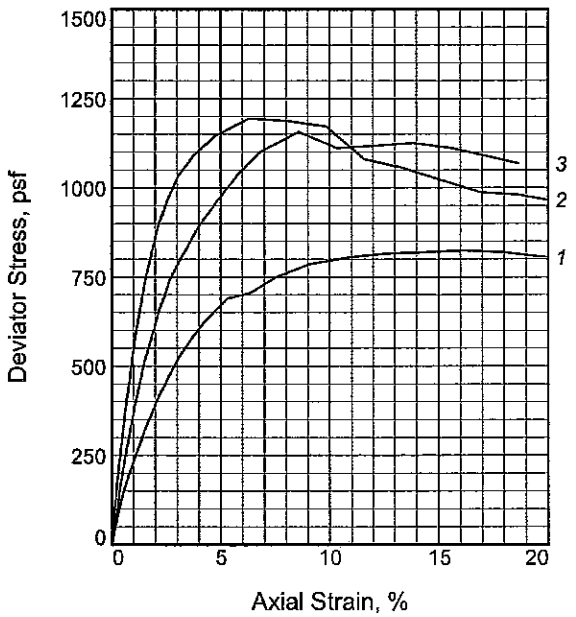
Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-6U **Depth:** 34.0
Sample Number: 10C

UNCONFINED COMPRESSION TEST
Stantec
Saint Rose, Louisiana

Tested By: JC **Checked By:** JS





Sample No.		1	2	3
Initial	Water Content, %	36.0	34.9	33.0
	Dry Density, pcf	86.9	86.3	88.5
	Saturation, %	103.6	98.8	98.4
	Void Ratio	0.9391	0.9540	0.9049
	Diameter, in.	1.385	1.389	1.389
	Height, in.	3.002	3.003	2.998
At Test	Water Content, %	36.0	34.9	33.0
	Dry Density, pcf	86.9	86.3	88.5
	Saturation, %	103.6	98.8	98.4
	Void Ratio	0.9391	0.9540	0.9049
	Diameter, in.	1.385	1.389	1.389
	Height, in.	3.002	3.003	2.998
Strain rate, in./min.		1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.89	13.81	20.86
Fail. Stress, psf		819	1194	1157
Strain, %		14.3	6.3	8.6
Ult. Stress, psf		819	1022	1111
Strain, %		14.3	15.1	10.3
σ_1 Failure, psf		1811	3183	4161
σ_3 Failure, psf		992	1989	3004

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GR CL6 W/ LYS ML

LL= 44 **PL=** 17 **PI=** 27
Assumed Specific Gravity= 2.70
Remarks: Torvane=0.37 tsf

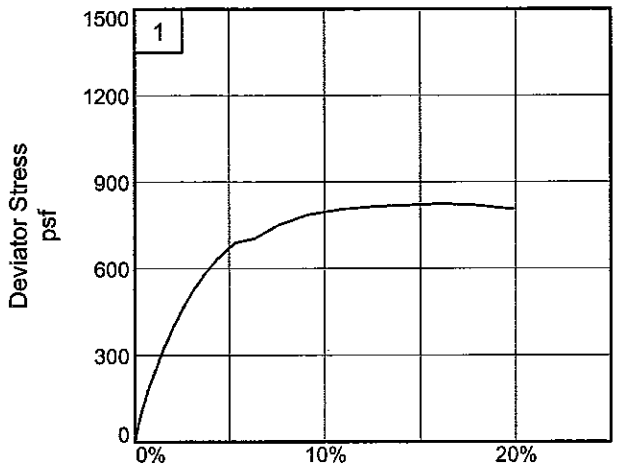
Figure _____

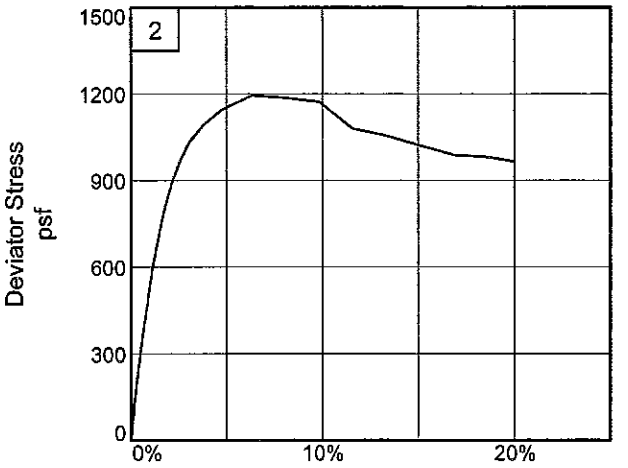
Client: USACE

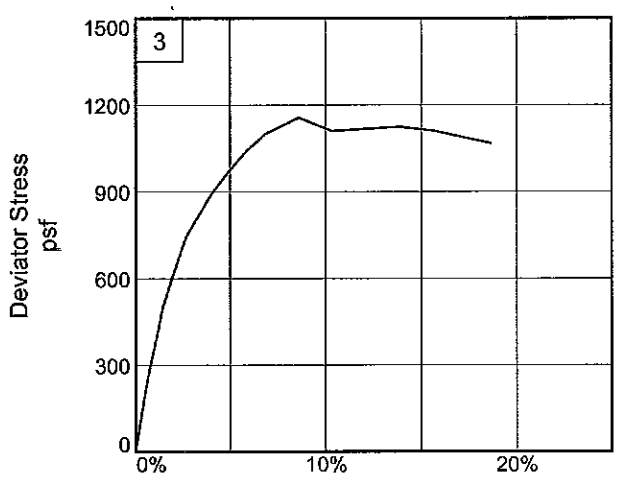
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-6U **Depth:** 13.0
Sample Number: 5B
Proj. No.: 12-017108 **Date Sampled:** 7-27-12

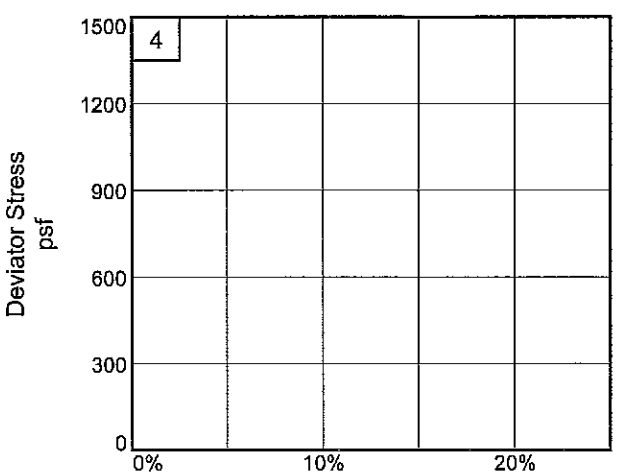
TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

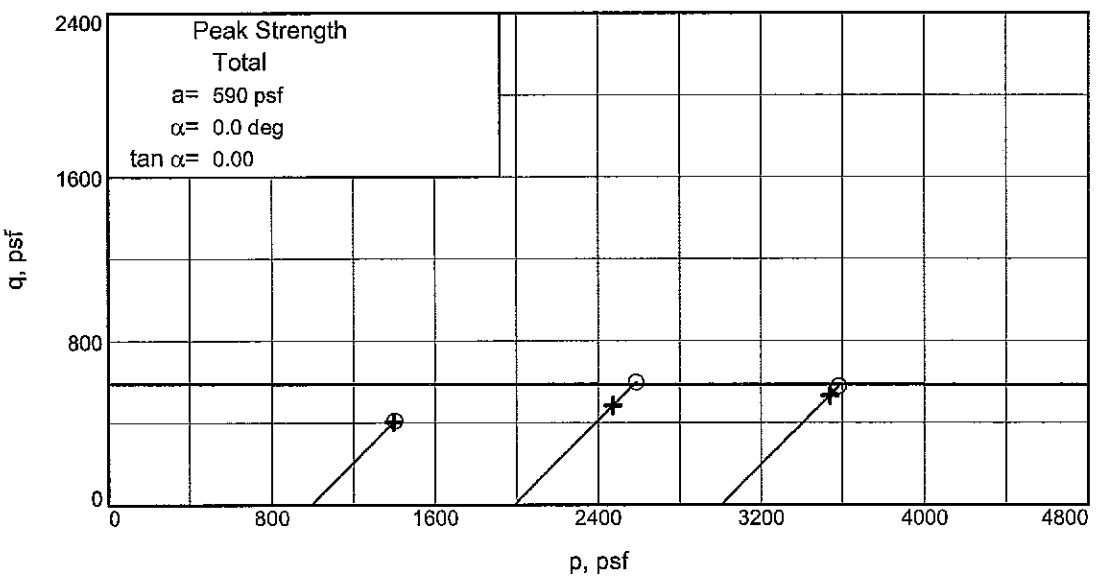
Tested By: JC











Stress Paths: o indicates peak + indicates end

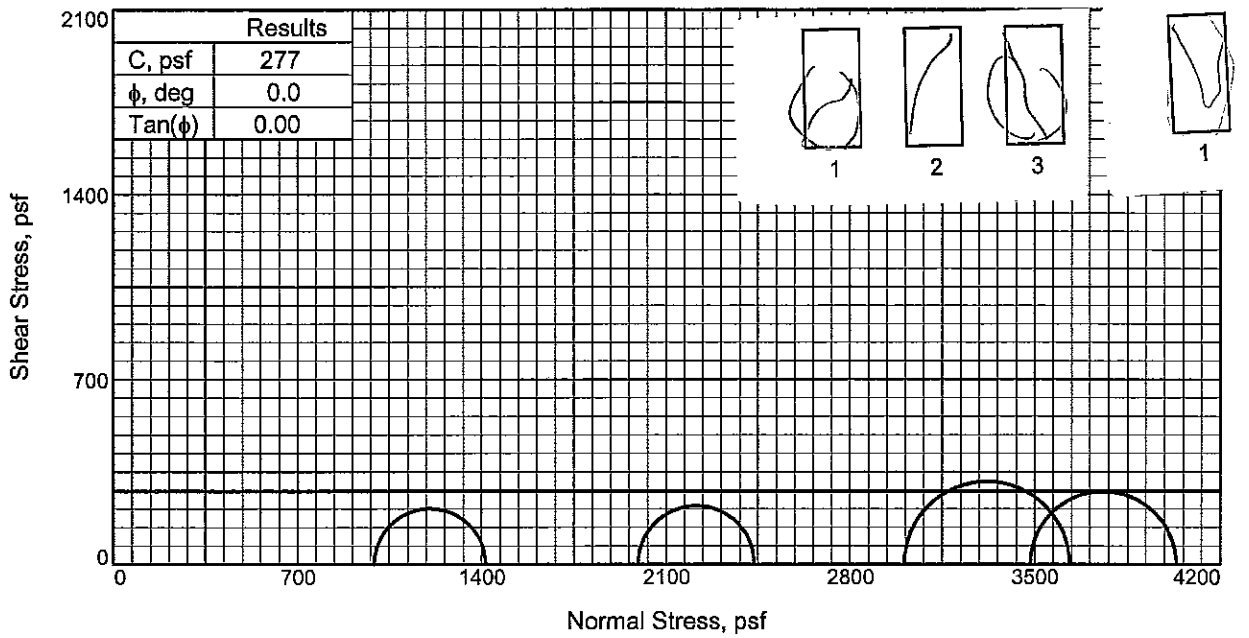
Client: USACE

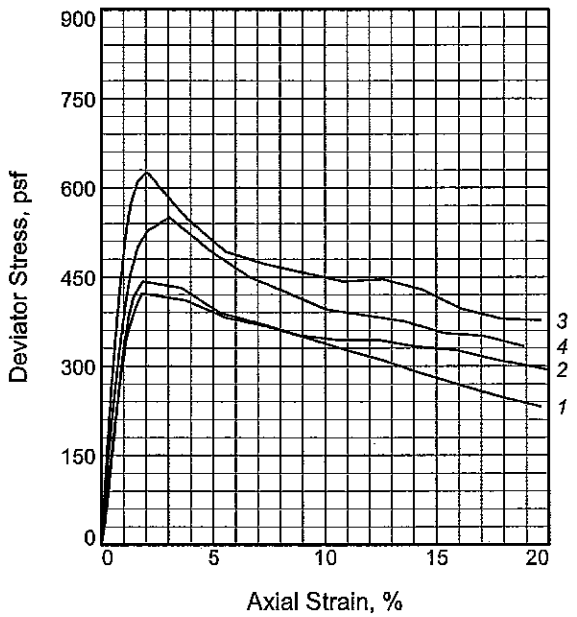
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

Source of Sample: BSFR-6U **Depth:** 13.0 **Sample Number:** 5B

Project No.: 12-017108 **Figure** _____ **Stantec, Inc.**

Tested By: JC





Sample No.		1	2	3	4
Initial	Water Content, %	46.4	45.6	47.3	48.1
	Dry Density, pcf	75.4	76.1	74.7	75.6
	Saturation, %	101.3	101.3	101.7	105.8
	Void Ratio	1.2359	1.2157	1.2557	1.2288
	Diameter, in.	1.382	1.385	1.384	1.395
	Height, in.	2.997	2.994	3.005	2.988
At Test	Water Content, %	46.4	45.6	47.3	48.1
	Dry Density, pcf	75.4	76.1	74.7	75.6
	Saturation, %	101.3	101.3	101.7	105.8
	Void Ratio	1.2359	1.2157	1.2557	1.2288
	Diameter, in.	1.382	1.385	1.384	1.395
	Height, in.	2.997	2.994	3.005	2.988
Strain rate, in./min.		1.000	1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00	0.00
Cell Pressure, psi		6.89	13.84	20.87	24.19
Fail. Stress, psf		422	442	626	550
Strain, %		1.8	1.9	2.0	3.0
Ult. Stress, psf		287	332	429	375
Strain, %		14.4	14.1	14.4	13.6
σ_1 Failure, psf		1414	2435	3632	4034
σ_3 Failure, psf		992	1993	3005	3483

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: VSO GR CL6 W/ ARS SM, SIF

LL= 48 **PL=** 22 **PI=** 26
Assumed Specific Gravity= 2.70
Remarks: Torvane=0.23 tsf

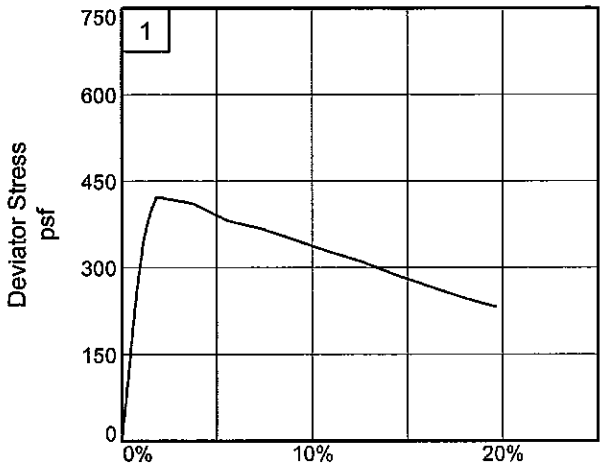
Figure _____

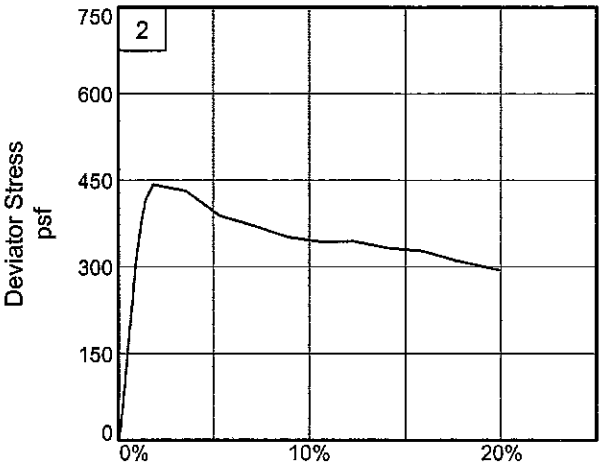
Client: USACE

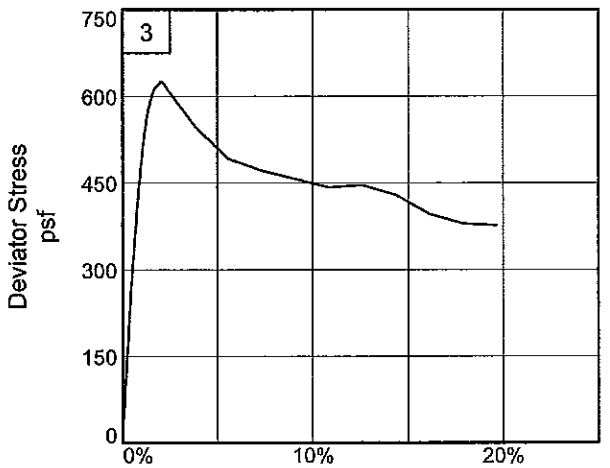
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-6U **Depth:** 20.0
Sample Number: 7A
Proj. No.: 12-017108 **Date Sampled:** 7-27-12

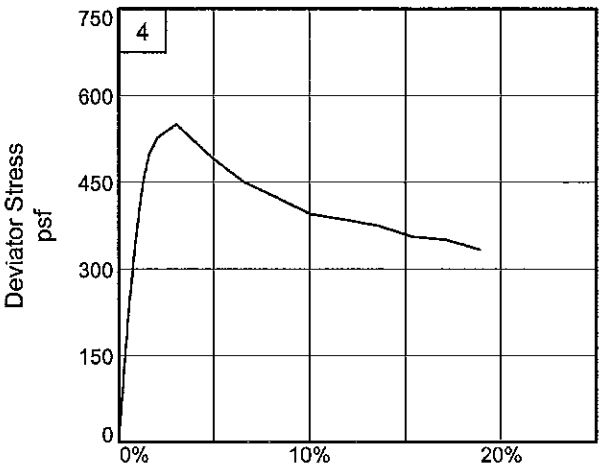
TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

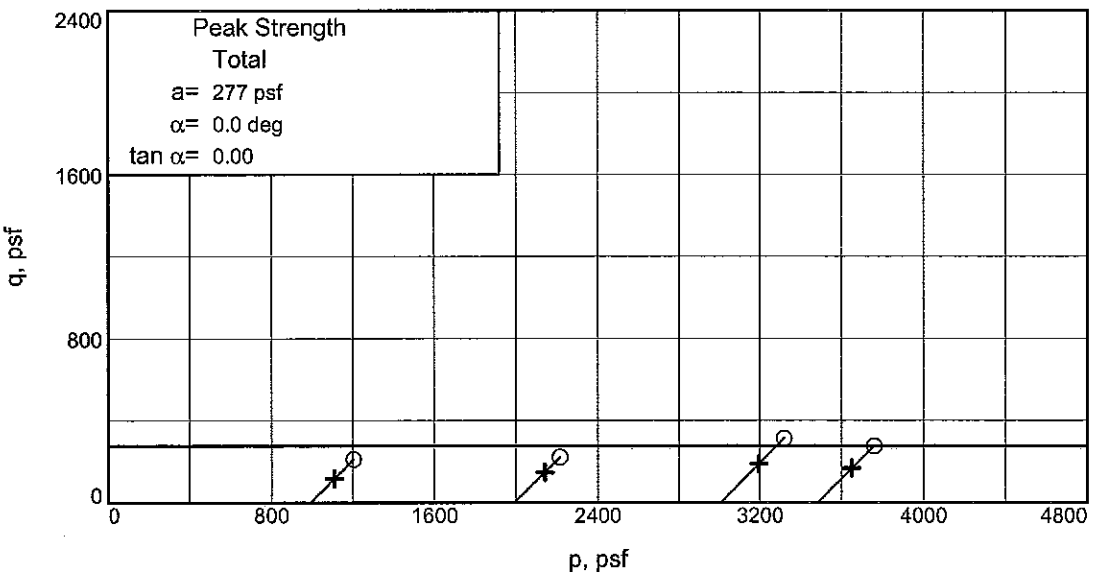
Tested By: JC











Stress Paths: o indicates peak + indicates end

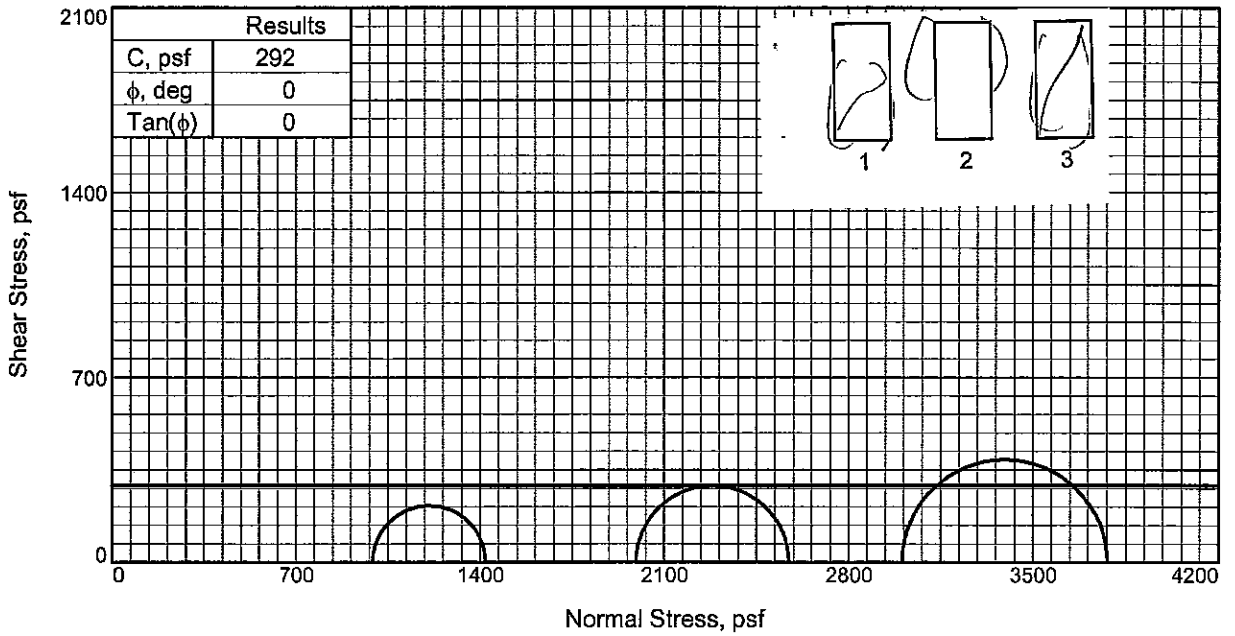
Client: USACE

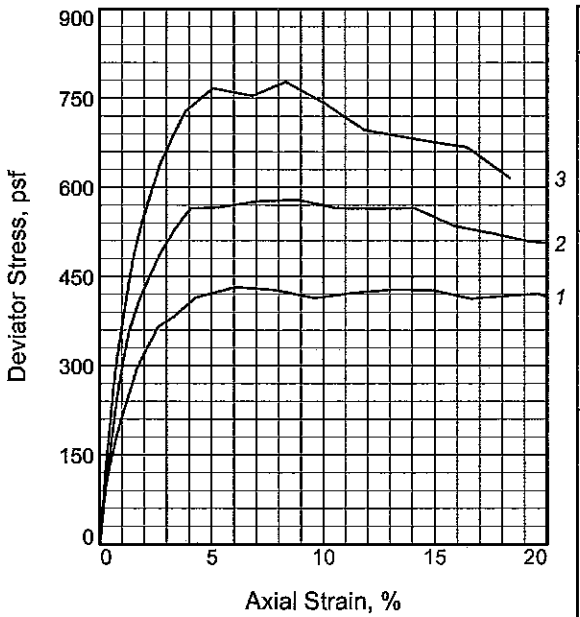
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

Source of Sample: BSFR-6U **Depth:** 20.0 **Sample Number:** 7A

Project No.: 12-017108 **Figure** _____ **Stantec, Inc.**

Tested By: JC





Sample No.		1	2	3
Initial	Water Content, %	31.5	29.5	29.3
	Dry Density, pcf	96.1	95.4	96.1
	Saturation, %	113.7	105.1	106.1
	Void Ratio	0.7413	0.7532	0.7411
	Diameter, in.	1.341	1.366	1.364
	Height, in.	2.948	2.972	2.982
At Test	Water Content, %	31.5	29.5	29.3
	Dry Density, pcf	96.1	95.4	96.1
	Saturation, %	113.7	105.1	106.1
	Void Ratio	0.7413	0.7532	0.7411
	Diameter, in.	1.341	1.366	1.364
	Height, in.	2.948	2.972	2.982
Strain rate, in./min.		1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.89	13.84	20.86
Fail. Stress, psf		428	579	778
Strain, %		13.1	8.8	8.3
Ult. Stress, psf		427	564	685
Strain, %		14.9	12.3	13.6
σ_1 Failure, psf		1420	2572	3781
σ_3 Failure, psf		992	1993	3004

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: GR ML W/ ARS SP

LL= 26 **PL=** 18 **PI=** 8
Assumed Specific Gravity= 2.68
Remarks: Torvane=0.30 tsf

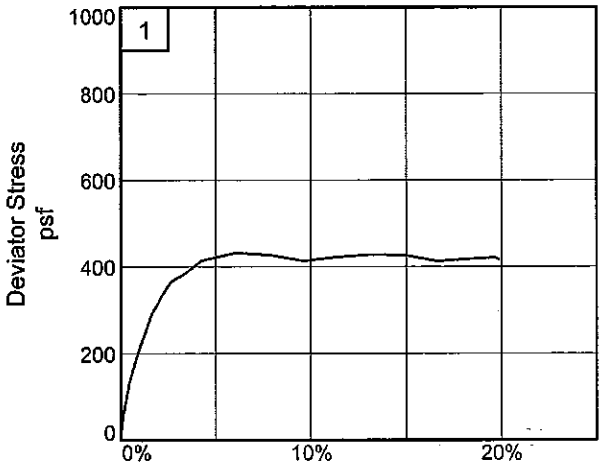
Client: USACE

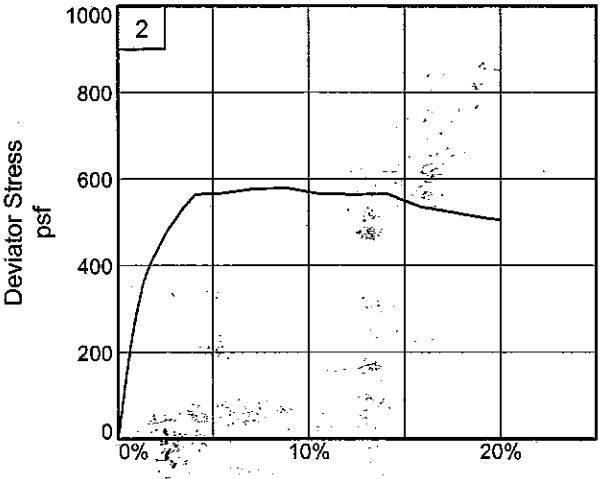
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-6U **Depth:** 29.0
Sample Number: 9B
Proj. No.: 12-017108 **Date Sampled:** 7-27-12

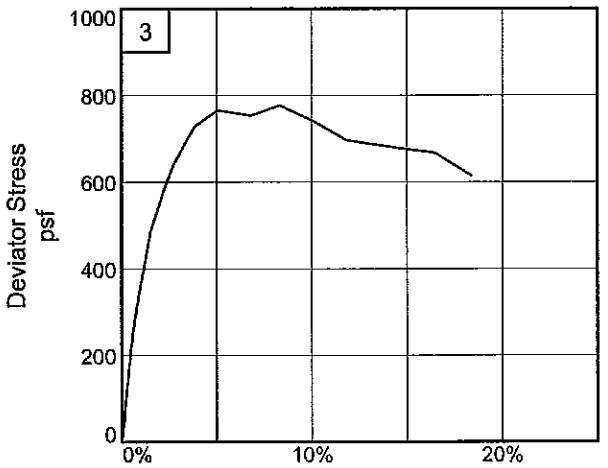
TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

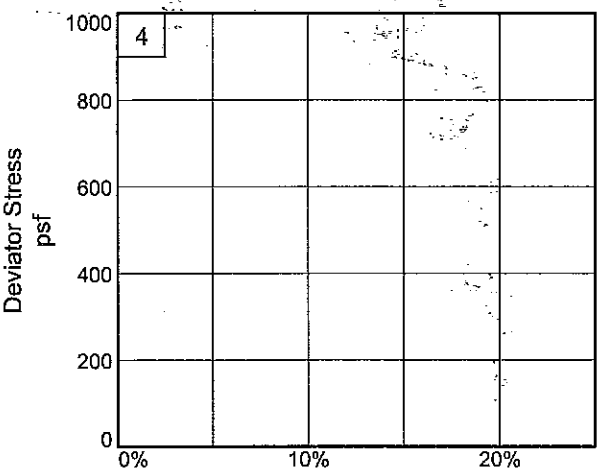
Figure _____

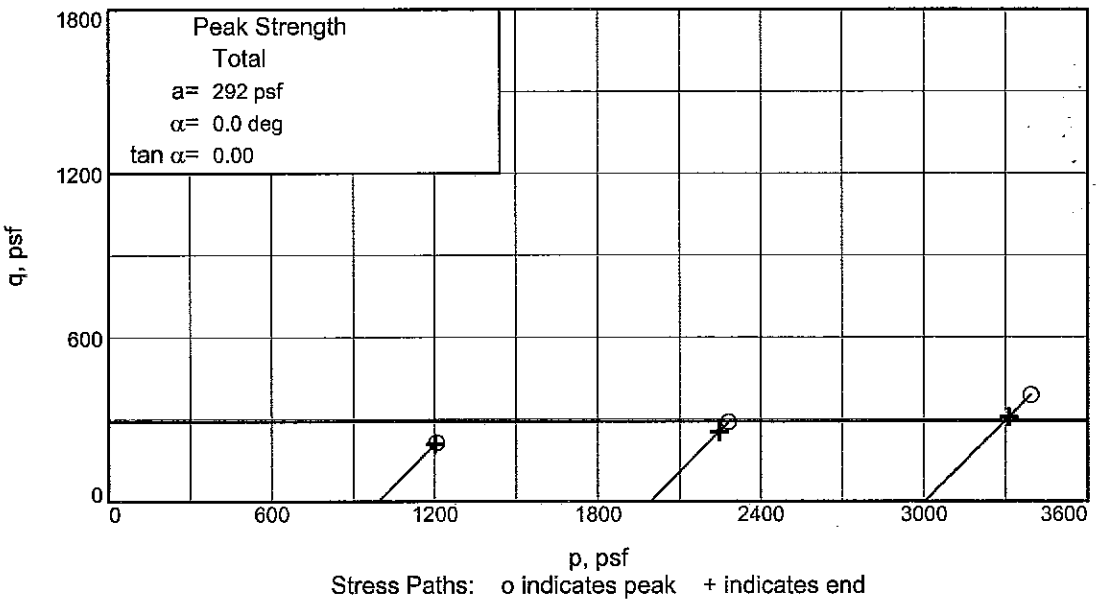
Tested By: JC











Client: USACE

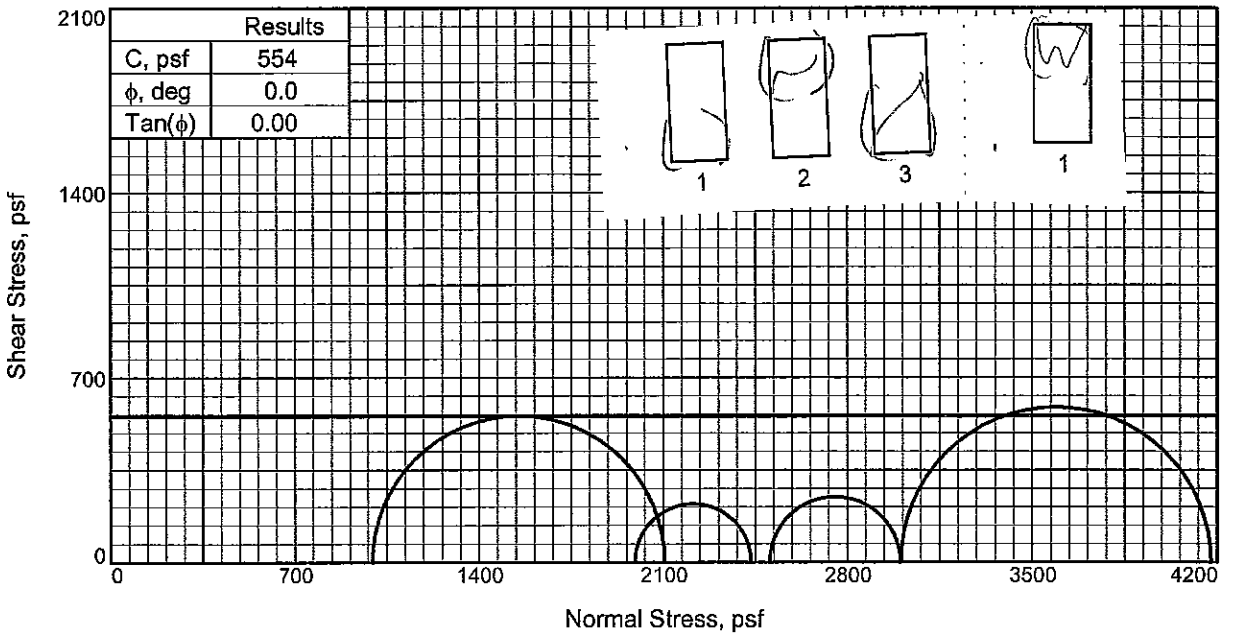
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

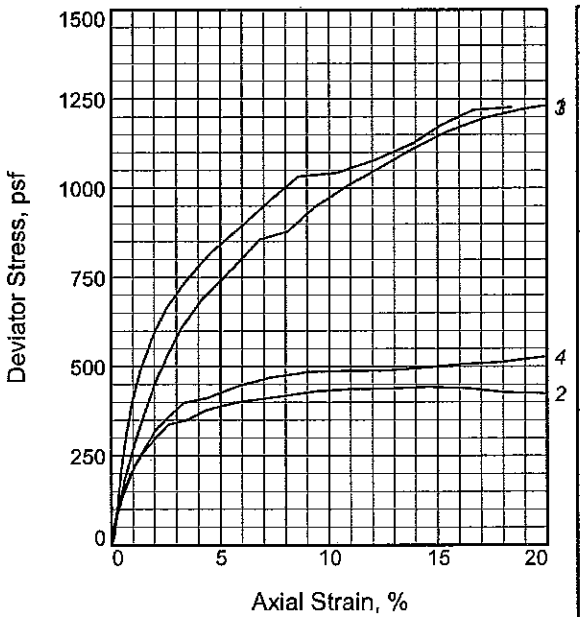
Source of Sample: BSFR-6U **Depth:** 29.0 **Sample Number:** 9B

Project No.: 12-017108 **Figure** _____

Stantec, Inc.

Tested By: JC





Sample No.		1	2	3	4
Initial	Water Content, %	30.2	29.5	31.2	38.5
	Dry Density, pcf	92.4	93.5	92.2	93.0
	Saturation, %	98.9	99.2	101.8	125.9
	Void Ratio	0.8240	0.8022	0.8279	0.8384
	Diameter, in.	1.410	1.391	1.388	1.376
	Height, in.	2.991	2.994	2.996	2.977
At Test	Water Content, %	30.2	29.5	31.2	38.5
	Dry Density, pcf	92.4	93.5	92.2	93.0
	Saturation, %	98.9	99.2	101.8	125.9
	Void Ratio	0.8240	0.8022	0.8279	0.8384
	Diameter, in.	1.410	1.391	1.388	1.376
	Height, in.	2.991	2.994	2.996	2.977
Strain rate, in./min.		1.000	1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00	0.00
Cell Pressure, psi		6.91	13.83	20.85	17.39
Fail. Stress, psf		1110	443	1175	496
Strain, %		13.9	14.6	15.1	14.3
Ult. Stress, psf		1110	443	1175	496
Strain, %		13.9	14.6	15.1	14.3
σ_1 Failure, psf		2105	2434	4177	3001
σ_3 Failure, psf		995	1992	3002	2504

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: M GNG CL6 W/ LYS SM

LL= 45 **PL=** 19 **PI=** 26
Assumed Specific Gravity= 2.70
Remarks: Torvane=0.53 tsf

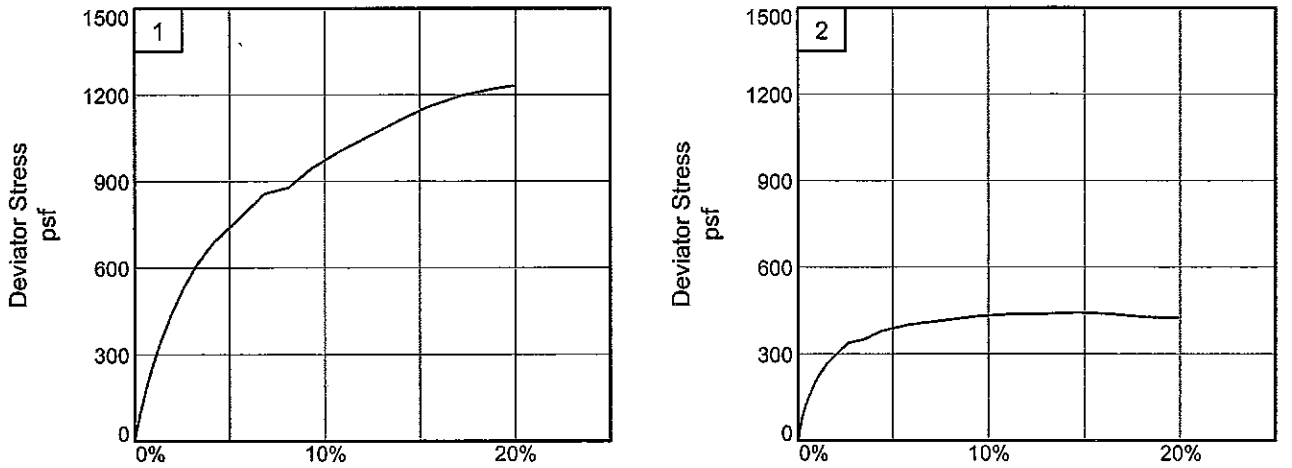
Client: USACE

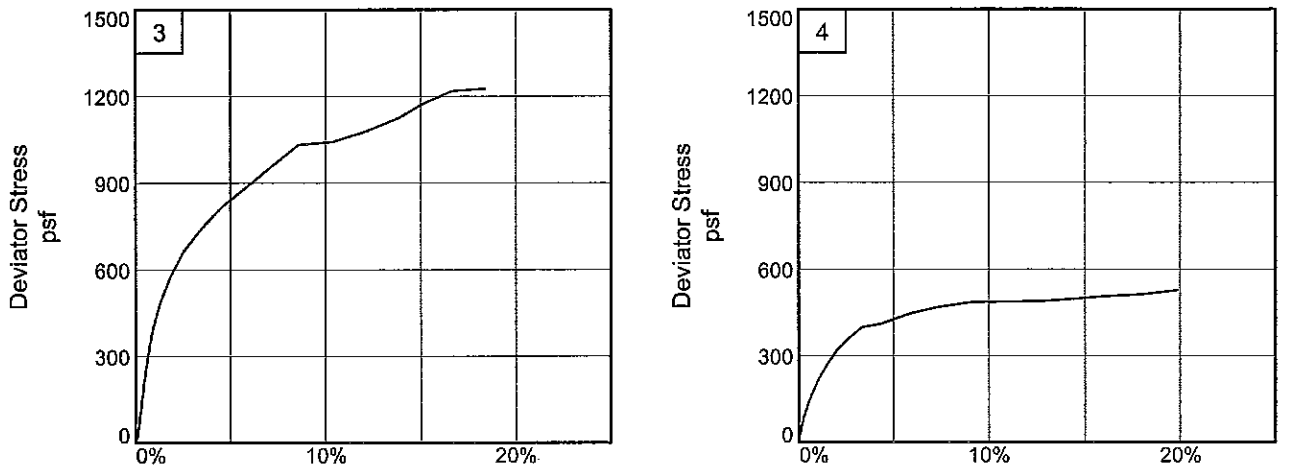
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-6U **Depth:** 36.0
Sample Number: 11A
Proj. No.: 12-017108 **Date Sampled:** 7-27-12

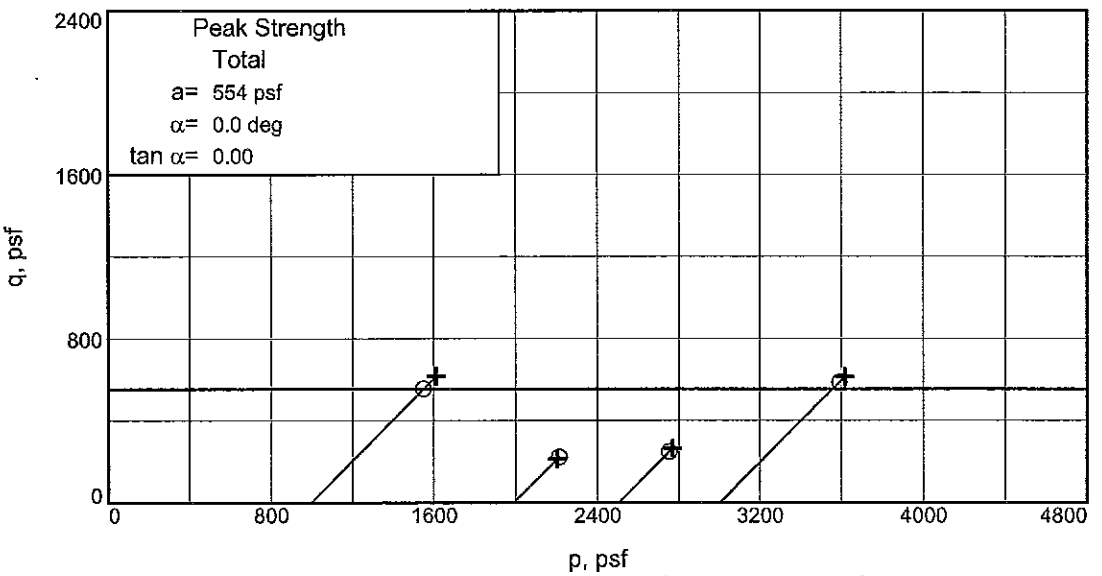
TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

Figure _____

Tested By: JC **Checked By:** JS







Stress Paths: o indicates peak + indicates end

Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

Source of Sample: BSFR-6U **Depth:** 36.0 **Sample Number:** 11A

Project No.: 12-017108 **Figure** _____ **Stantec, Inc.**

Tested By: JC **Checked By:** JS

SUMMARY OF LABORATORY TEST RESULTS

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Paris **Assigned By:** _____

Project Number: 12-017108 **Current Date:** 9/4/2012

Boring: BSFR-7U

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
1	0.0	VSO DGR CH4 W/ ARS O, RT	CH4		109												
2	2.0	VSO DGR CH3 W/ LYS SM, O, RT	CH3		70												
3A	4.0	SO GR & T CH4 W/ ARS ML	CH4		78												
3B	5.0	VSO GR & T CH4 W/ ARS ML	CH4	6	57	66	104	99	UC	-	116	233	87	29	58	0.32	
3C	6.0	M GR & T CH4 W/ ARS ML	CH4		53												
3D	7.0	M GR & T CH4 W/ ARS ML	CH4		44												
4A	8.0	SO GR & T CH2 W/ LYS ML	CH2		51												
4B	9.0	M GR & T CH3 W/ LYS ML	CH3		50	61	91	100					42	23	19		GS=2.67, CON
4C	10.0	M GR & T CL6 W/ LYS ML	CL6		38												
4D	11.0	GR & T SM	SM		27	104	132	100	UU	0	1942		NP	NP		0.24	
5A1	12.0	M GR CH4 W/ LNS SM	CH4		53												
5A2	12.7	GR SM W/ LNS CH	SM		33												
5B	13.0	GR SM W/ LYS CH	SM		37												SV
5C	14.0	SO GR CH4 W/ LNS SM	CH4		66	61	102	100	UU	0	421		77	19	58	0.35	
5D	15.0	SO GR CH4 W/ LYS & LNS SM	CH4		71												
6A	16.0	SO GR CH4 W/ LNS ML	CH4		66												
6B	17.0	M GR CH4 W/ LNS ML	CH4	2	75	56	97	99	UC	-	556	1112	80	21	59	0.28	
6C	18.0	M GR CH4 W/ LNS & LYS ML	CH4		63												
6D	19.0	VSO GR CH3 W/ LNS & LYS ML	CH3		76												
7A	20.0	M GR CH3 W/ ARS SM, SIF	CH3		46												
7B	21.0	SO GR CL6 W/ ARS SM, SIF	CL6		41	80	114	100	UU	0	367		40	13	27	0.30	
7C	22.0	M GR CH3 W/ ARS SM, SIF	CH3		43												
7D	23.0	M GR CH3 W/ ARS SM, SIF	CH3		53												
8A	24.0	SO GR CH4 W/ ARS SM, SIF	CH4		68												
8B	25.0	SO GR CH3 W/ LNS SM, SIF	CH3		66												
8C	26.0	M GR CH3 W/ LNS & ARS SM, SIF	CH3		46												
8D	27.0	M GR CH2 W/ LNS & ARS SM, SIF	CH2		37												
9A	28.0	SO GR CH3 W/ LNS SP	CH3		52												
9B	29.0	VSO GR CL4 W/ ARS & LNS SP, SIF	CL4	13	31	91	120	100	UC	-	190	379	31	17	14	0.25	
9C	30.0	M LGR CL6 W/ ARS & LNS SP	CL6		28												
9D	31.0	ST LGR CH2 W/ ARS SM	CH2		28												

Remarks: _____ **Checked By:** _____

Stantec Consulting Services Inc. File Name: Final BSFR-7U_be_boring_log_v1(

SUMMARY OF LABORATORY TEST RESULTS

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Paris **Assigned By:** _____

Project Number: 12-017108 **Current Date:** 9/4/2012

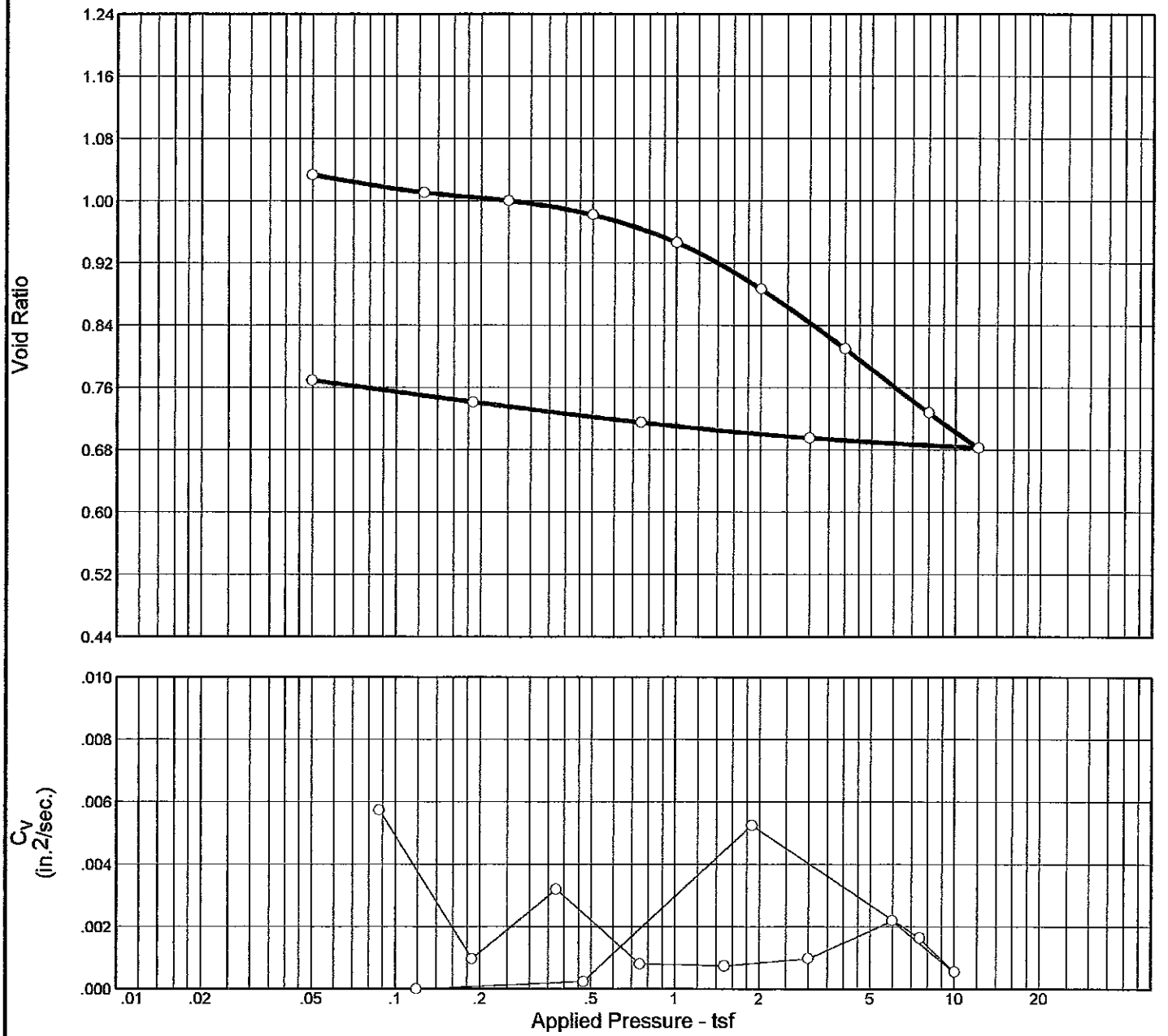
Boring: BSFR-7U

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
1	0.0	VSO DGR CH4 W/ ARS O, RT	CH4		109												
2	2.0	VSO DGR CH3 W/ LYS SM, O, RT	CH3		70												
3A	4.0	SO GR & T CH4 W/ ARS ML	CH4		78												
3B	5.0	VSO GR & T CH4 W/ ARS ML	CH4	6	57	66	104	99	UC	-	116	233	87	29	58	0.32	
3C	6.0	M GR & T CH4 W/ ARS ML	CH4		53												
3D	7.0	M GR & T CH4 W/ ARS ML	CH4		44												
4A	8.0	SO GR & T CH2 W/ LYS ML	CH2		51												
4B	9.0	M GR & T CH3 W/ LYS ML	CH3		50	61	91	100					42	23	19		GS=2.67, CON
4C	10.0	M GR & T CL6 W/ LYS ML	CL6		38												
4D	11.0	GR & T SM	SM		27	104	132	100	UU	0	1942		NP	NP		0.24	
5A1	12.0	M GR CH4 W/ LNS SM	CH4		53												
5A2	12.7	GR SM W/ LNS CH	SM		33												
5B	13.0	GR SM W/ LYS CH	SM		37												SV
5C	14.0	SO GR CH4 W/ LNS SM	CH4		66	61	102	100	UU	0	421		77	19	58	0.35	
5D	15.0	SO GR CH4 W/ LYS & LNS SM	CH4		71												
6A	16.0	SO GR CH4 W/ LNS ML	CH4		66												
6B	17.0	M GR CH4 W/ LNS ML	CH4	2	75	56	97	99	UC	-	556	1112	80	21	59	0.28	
6C	18.0	M GR CH4 W/ LNS & LYS ML	CH4		63												
6D	19.0	VSO GR CH3 W/ LNS & LYS ML	CH3		76												
7A	20.0	M GR CH3 W/ ARS SM, SIF	CH3		46												
7B	21.0	SO GR CL6 W/ ARS SM, SIF	CL6		41	80	114	100	UU	0	367		40	13	27	0.30	
7C	22.0	M GR CH3 W/ ARS SM, SIF	CH3		43												
7D	23.0	M GR CH3 W/ ARS SM, SIF	CH3		53												
8A	24.0	SO GR CH4 W/ ARS SM, SIF	CH4		68												
8B	25.0	SO GR CH3 W/ LNS SM, SIF	CH3		66												
8C	26.0	M GR CH3 W/ LNS & ARS SM, SIF	CH3		46												
8D	27.0	M GR CH2 W/ LNS & ARS SM, SIF	CH2		37												
9A	28.0	SO GR CH3 W/ LNS SP	CH3		52												
9B	29.0	VSO GR CL4 W/ ARS & LNS SP, SIF	CL4	13	31	91	120	100	UC	-	190	379	31	17	14	0.25	
9C	30.0	M LGR CL6 W/ ARS & LNS SP	CL6		28												
9D	31.0	ST LGR CH2 W/ ARS SM	CH2		28												

Remarks: _____ **Checked By:** _____

Stantec Consulting Services Inc. **File Name:** Final BSFR-7U_be_boring_log_v1C

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture							
128.2 %	49.6 %	60.7	42	19	2.67	1.17	0.26	1.034

MATERIAL DESCRIPTION	USCS	AASHTO
M GR & T CH3 W/ LYS ML	CH3	

Project No. 12-017108 **Client:** USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

Source: BSFR-7U **Sample No.:** 4B **Elev./Depth:** 9.0

FFEBJV, LLC

St Rose, LA

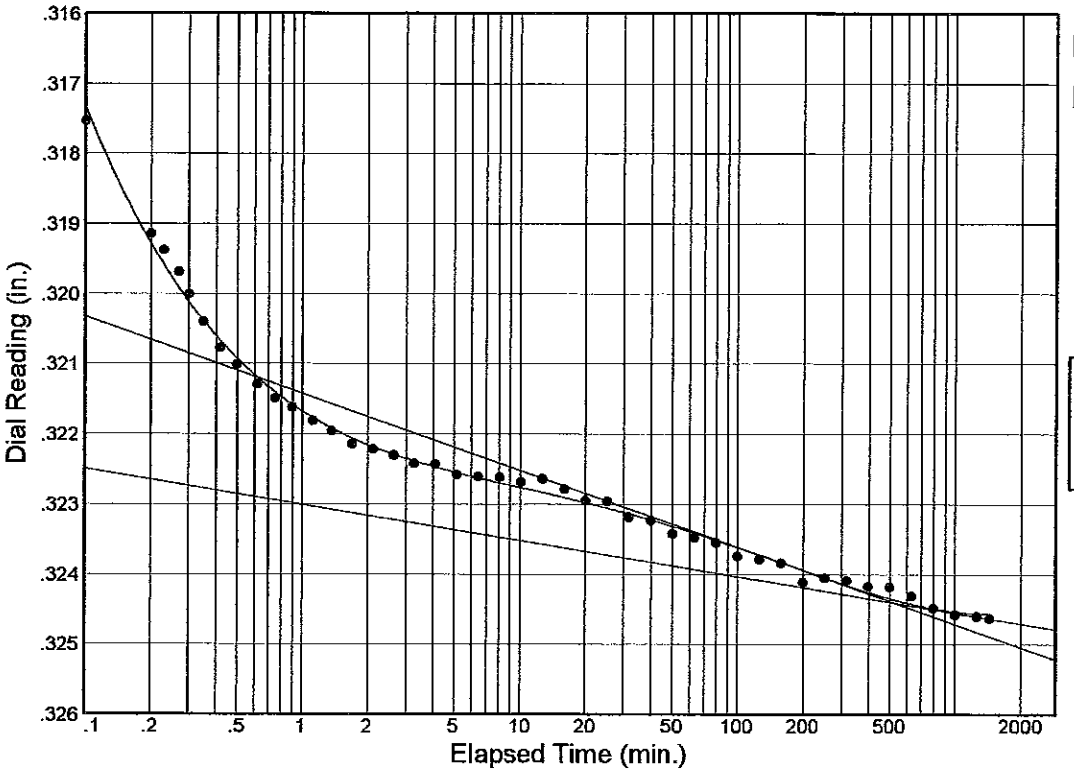
Remarks:

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

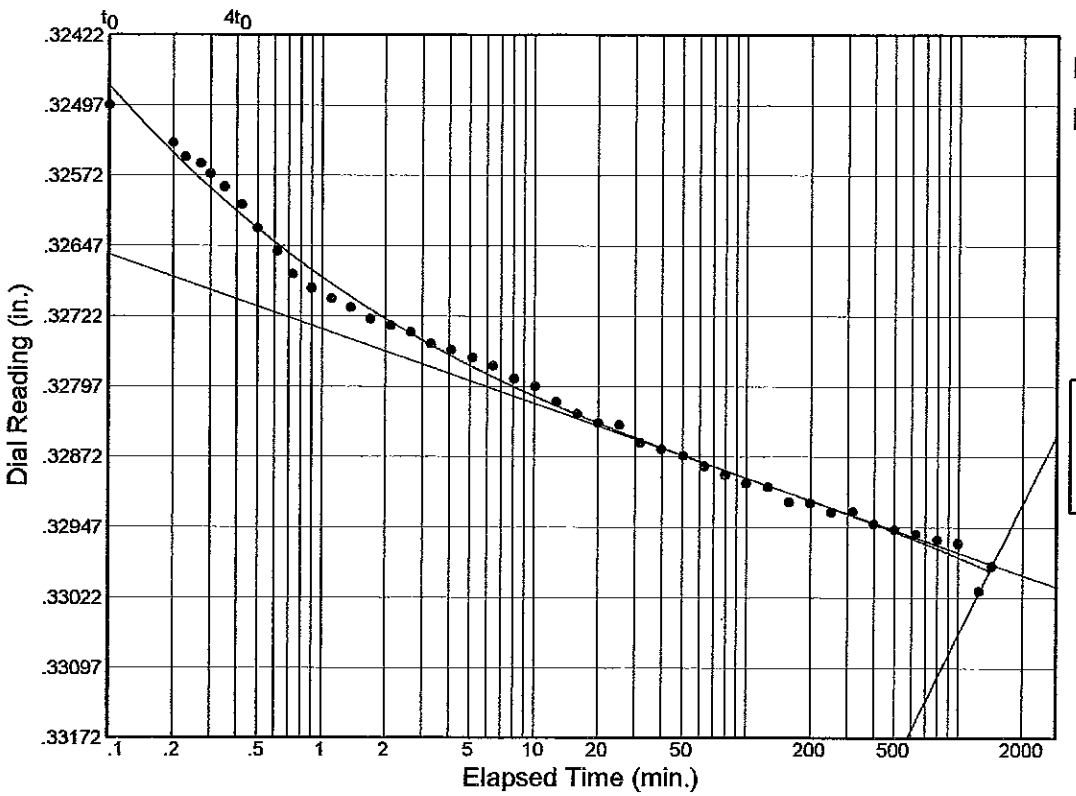
Source: BSFR-7U Sample No.: 4B Elev./Depth: 9.0



Load No.= 2
Load= 0.13 tsf
D_0 = 0.31233
D_{50} = 0.31837
D_{100} = 0.32441
T_{50} = 0.14 min.

C_v @ T_{50}
0.0058 in.^{2}/sec.

C_α = 0.001



Load No.= 3
Load= 0.25 tsf
D_0 = 0.32342
D_{50} = 0.32664
D_{100} = 0.32987
T_{50} = 0.81 min.

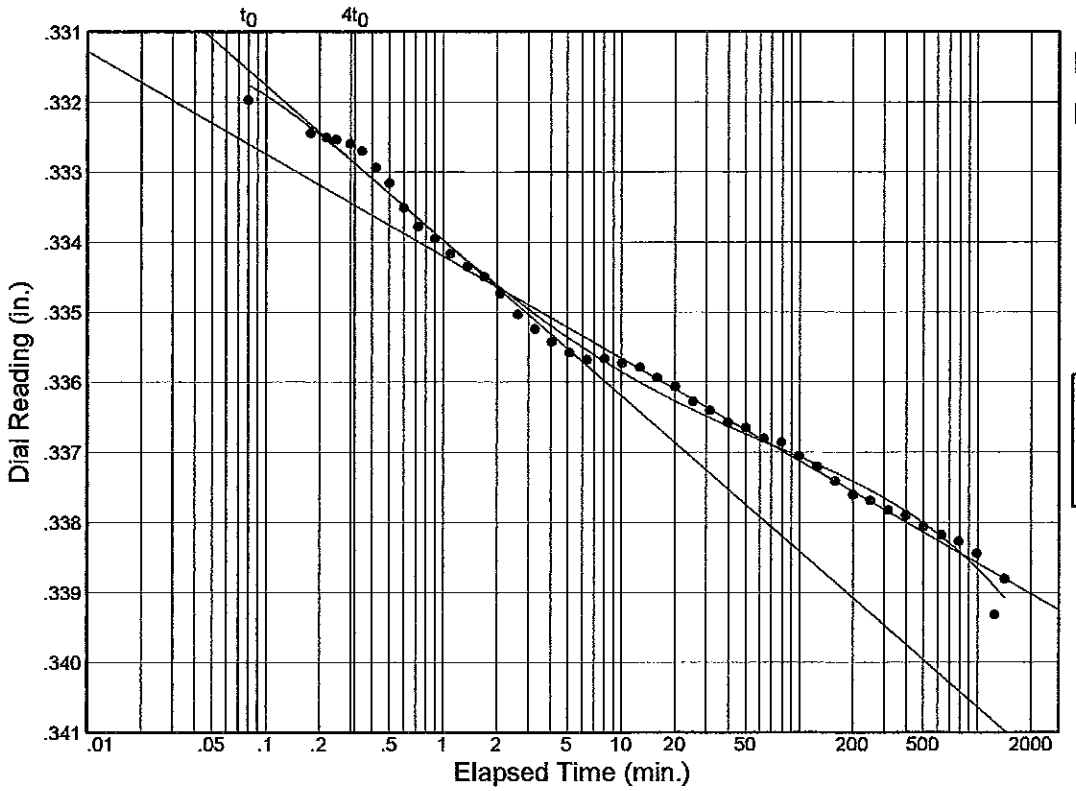
C_v @ T_{50}
0.0010 in.^{2}/sec.

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

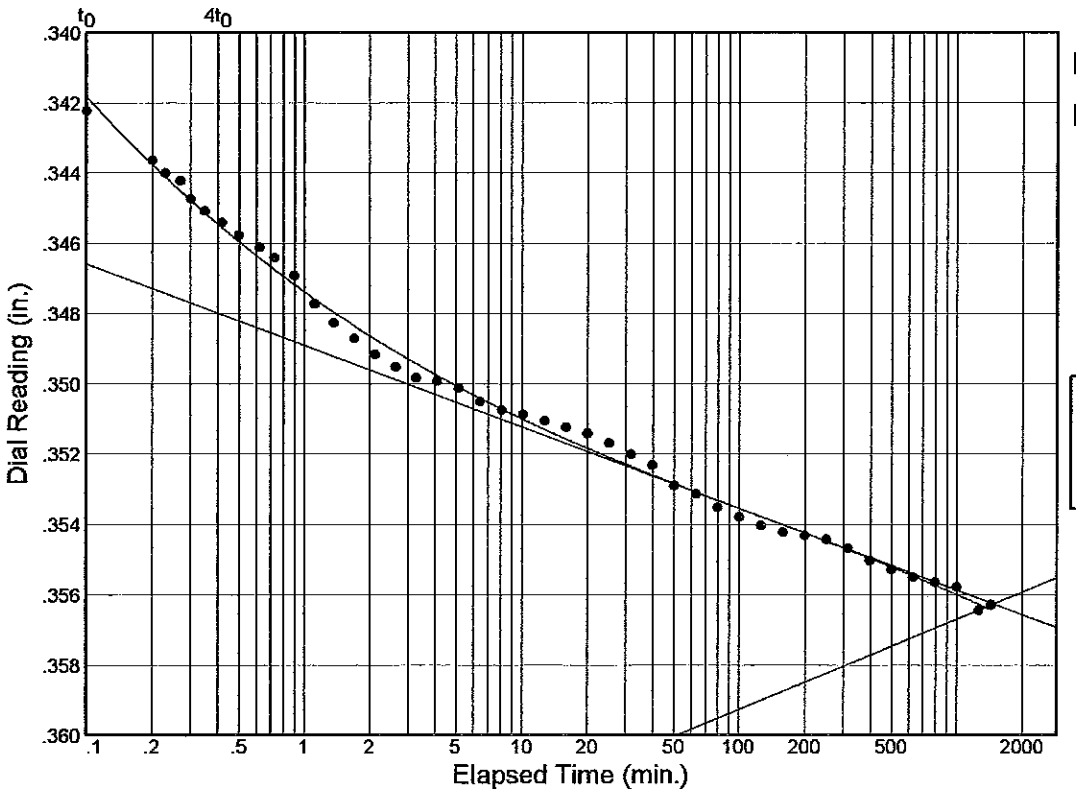
Source: BSFR-7U Sample No.: 4B Elev./Depth: 9.0



Load No.= 4
Load= 0.50 tsf
D_0 = 0.33063
D_{50} = 0.33263
D_{100} = 0.33462
T_{50} = 0.24 min.

C_v @ T_{50}
0.0032 in.^{2}/sec.

C_α = 0.001



Load No.= 5
Load= 1.00 tsf
D_0 = 0.33821
D_{50} = 0.34724
D_{100} = 0.35626
T_{50} = 0.94 min.

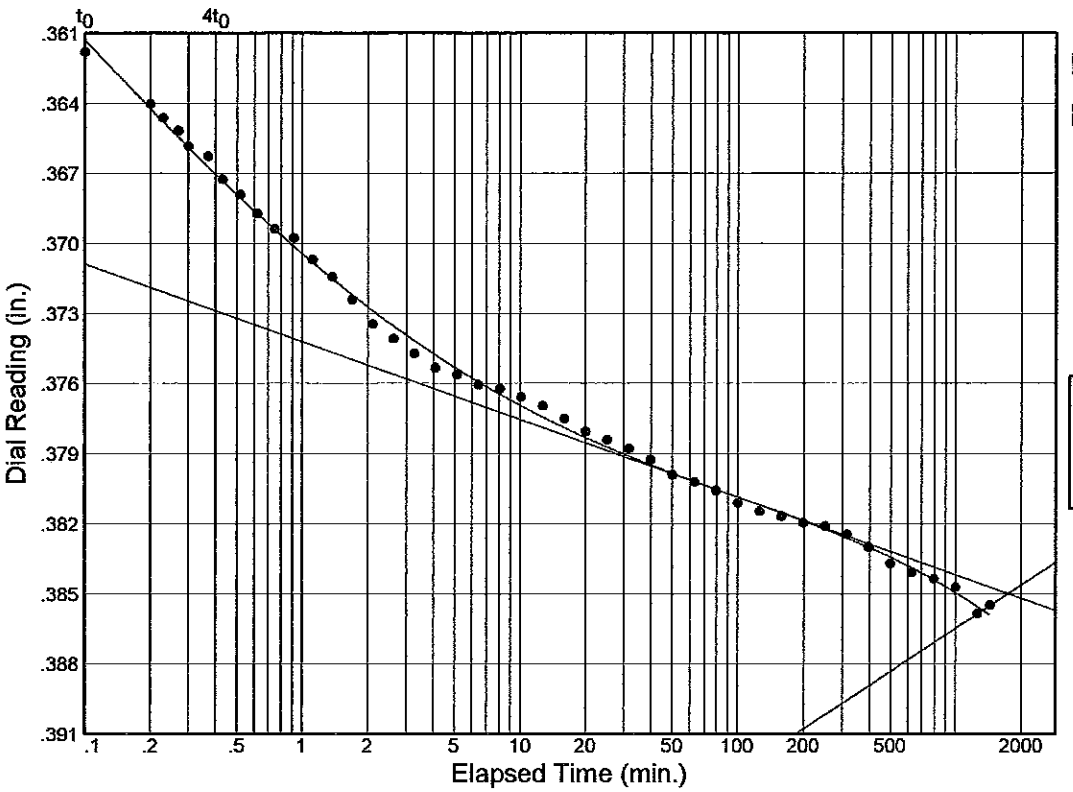
C_v @ T_{50}
0.0008 in.^{2}/sec.

Figure

Dial Reading vs. Time

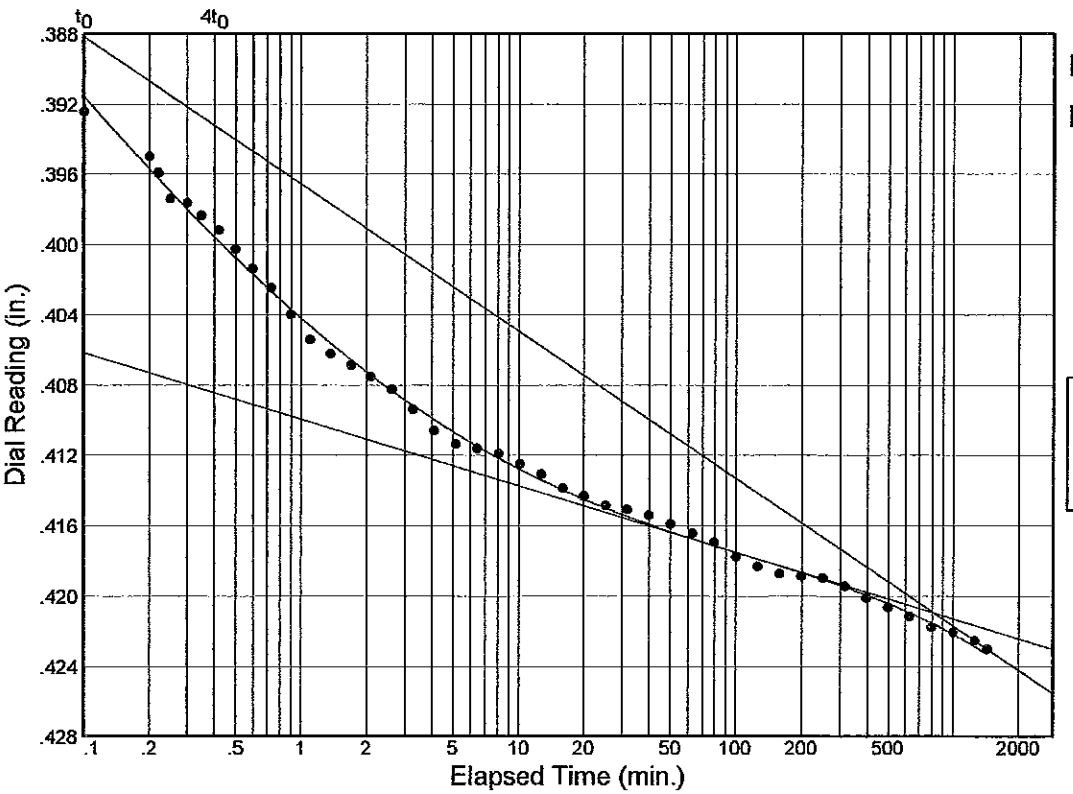
Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

Source: BSFR-7U Sample No.: 4B Elev./Depth: 9.0



Load No.= 6
Load= 2.00 tsf
D_0 = 0.35557
D_{50} = 0.37028
D_{100} = 0.38498
T_{50} = 0.96 min.

C_v @ T_{50}
0.0008 in.^{2}/sec.



Load No.= 7
Load= 4.00 tsf
D_0 = 0.38360
D_{50} = 0.40228
D_{100} = 0.42096
T_{50} = 0.68 min.

C_v @ T_{50}
0.0010 in.^{2}/sec.

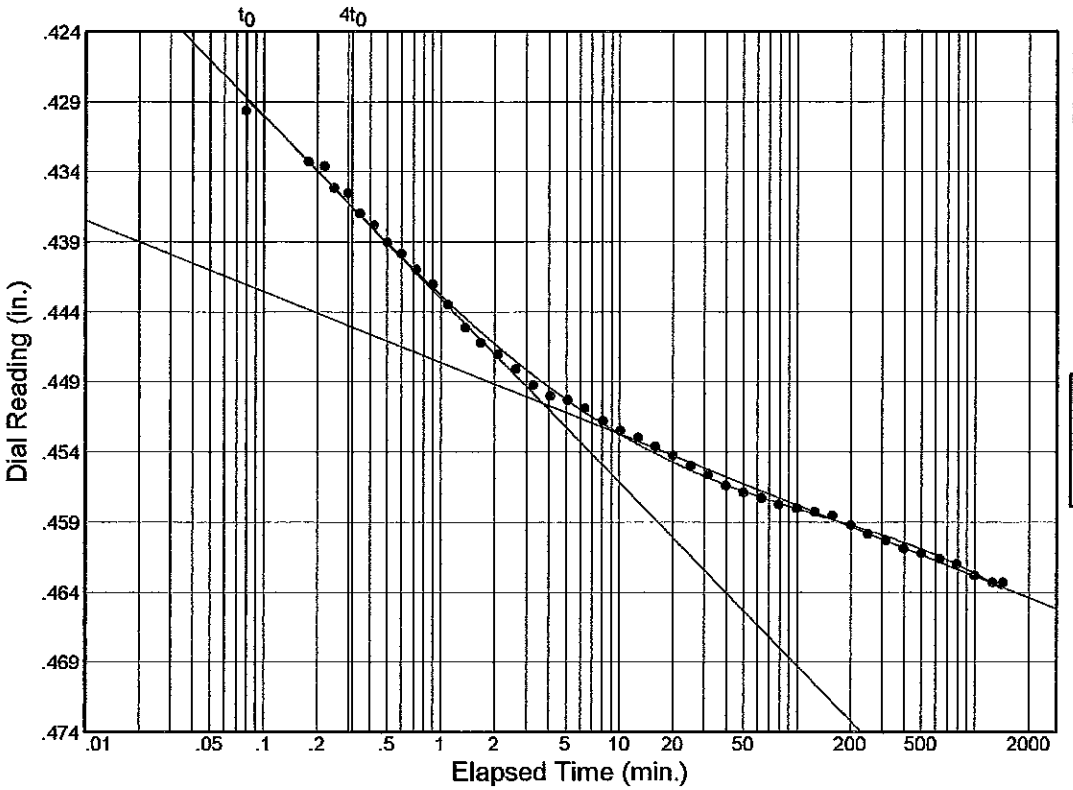
C_α = 0.009

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

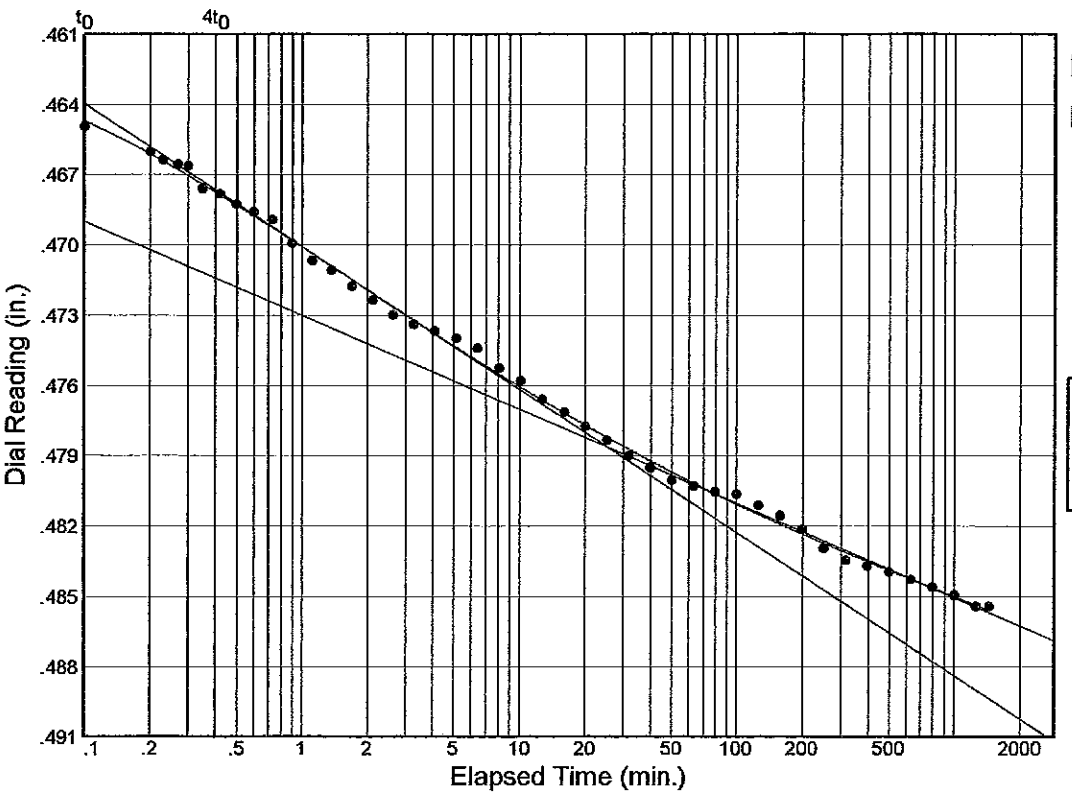
Source: BSFR-7U Sample No.: 4B Elev./Depth: 9.0



Load No.= 8
Load= 8.00 tsf
D_0 = 0.42117
D_{50} = 0.43584
D_{100} = 0.45050
T_{50} = 0.28 min.

C_v @ T_{50}
0.0022 in.^{2}/sec.

C_α = 0.006



Load No.= 9
Load= 12.00 tsf
D_0 = 0.46167
D_{50} = 0.47015
D_{100} = 0.47863
T_{50} = 1.03 min.

C_v @ T_{50}
0.0006 in.^{2}/sec.

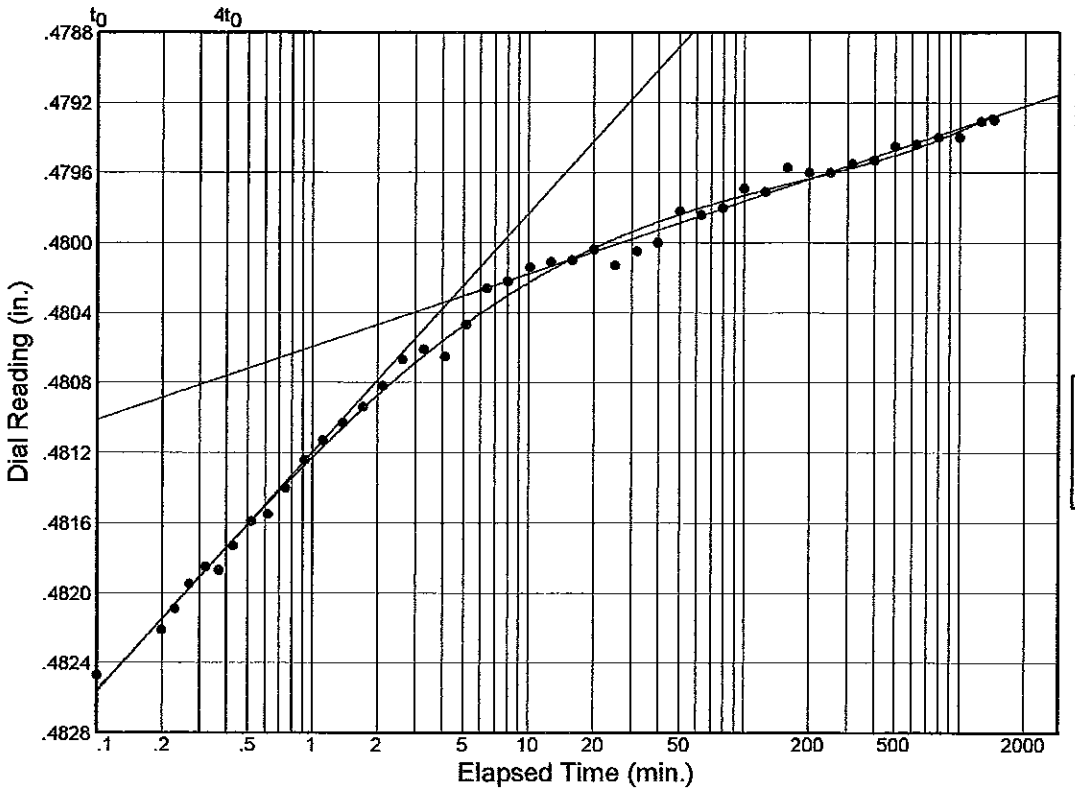
C_α = 0.005

Figure

Dial Reading vs. Time

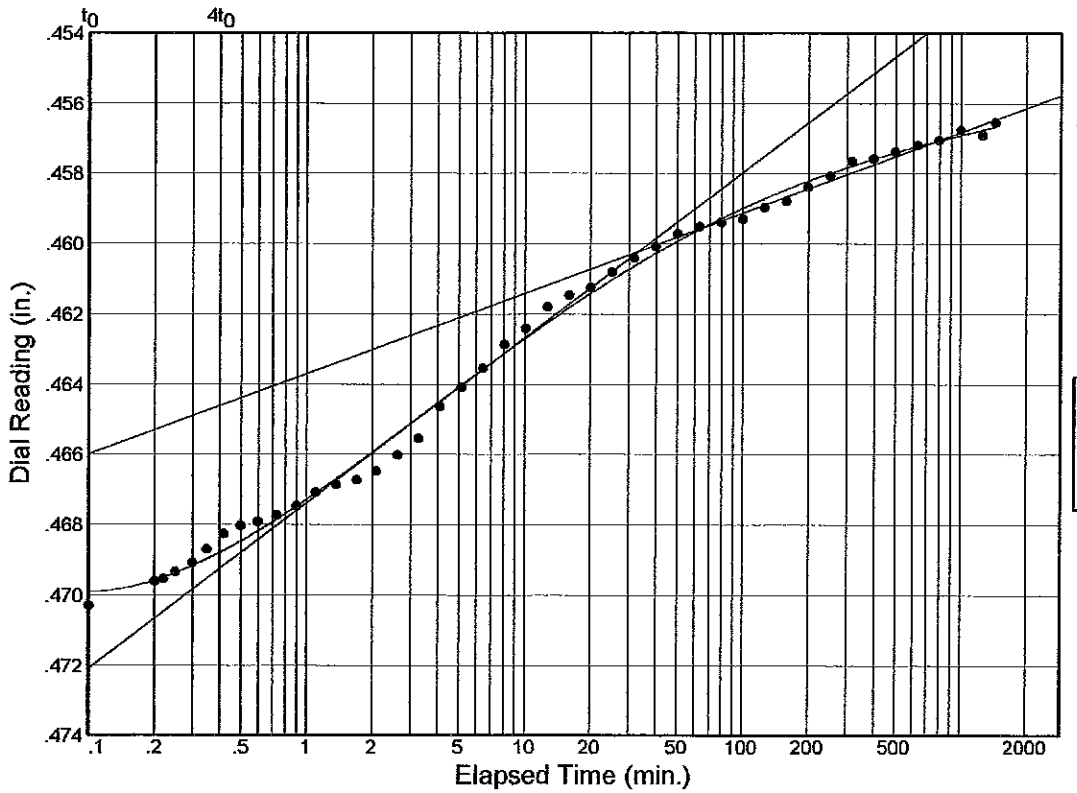
Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

Source: BSFR-7U Sample No.: 4B Elev./Depth: 9.0



Load No.= 10
Load= 3.00 tsf
D_0 = 0.48336
D_{50} = 0.48185
D_{100} = 0.48033
T_{50} = 0.33 min.

C_v @ T_{50}
0.0017 in.^{2}/sec.



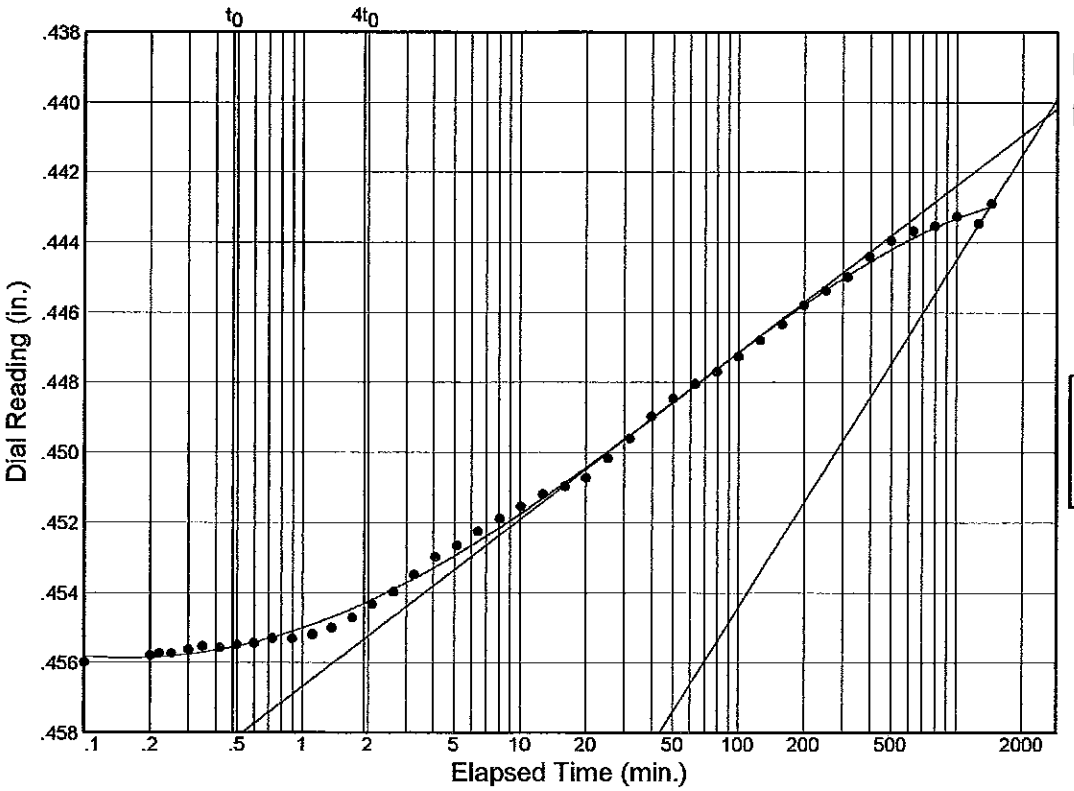
Load No.= 12
Load= 0.19 tsf
D_0 = 0.47105
D_{50} = 0.46563
D_{100} = 0.46022
T_{50} = 2.33 min.

C_v @ T_{50}
0.0003 in.^{2}/sec.

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

Source: BSFR-7U Sample No.: 4B Elev./Depth: 9.0



Load No.= 13
Load= 0.05 tsf
D_0 = 0.45679
D_{50} = 0.44860
D_{100} = 0.44042
T_{50} = 49.03 min.

C_v @ T_{50}
0.0000 in.^{2}/sec.

SWELL/CONSOLIDATION TEST DATA

Client: USACE
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans
Project Number: 12-017108

Sample Data

Source: BSFR-7U
Sample No.: 4B
Elev. or Depth: 9.0 **Sample Length(in./cm.):**
Location:
Description: M GR & T CH3 W/ LYS ML
Liquid Limit: 42 **Plasticity Index:** 19
USCS: CH3 **AASHTO:** **Figure No.:**
Testing Remarks:

Test Specimen Data

TOTAL SAMPLE		BEFORE TEST	AFTER TEST
Wet w+t	= 154.84 g.	Consolidometer # = 1	Wet w+t = 646.69 g.
Dry w+t	= 113.89 g.		Dry w+t = 566.66 g.
Tare Wt.	= 31.41 g.	Spec. Gravity = 2.67	Tare Wt. = 297.32 g.
Height	= 1.00 in.	Height = 1.00 in.	
Diameter	= 3.99 in.	Diameter = 4.00 in.	
Weight	= 297.32 g.	Defl. Table = n/a	
Moisture	= 49.6 %	Ht. Solids = 0.4902 in.	Moisture = 29.7 %
Wet Den.	= 90.8 pcf	Dry Wt. = 199.33 g.	Dry Wt. = 269.34 g.*
Dry Den.	= 60.7 pcf	Void Ratio = 1.034	Void Ratio = 0.770
		Saturation = 128.2 %	

* Final dry weight used in calculations

End-of-Load Summary

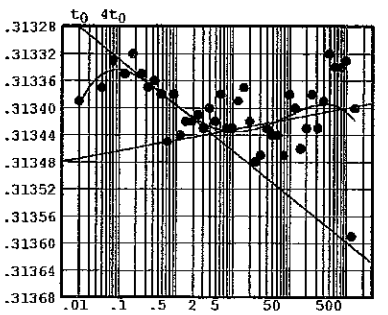
Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (in.^{2}/sec.)	C_α	Void Ratio	% Compression /Swell
start	0.31343				1.034	
0.05	0.31340	0.00000			1.034	0.0 Swell
0.13	0.32463	0.00000	0.0058	0.001	1.011	1.1 Comprs.
0.25	0.32988	0.00000	0.0010		1.000	1.6 Comprs.
0.50	0.33881	0.00000	0.0032	0.001	0.982	2.5 Comprs.
1.00	0.35629	0.00000	0.0008		0.946	4.3 Comprs.
2.00	0.38549	0.00000	0.0008		0.887	7.2 Comprs.
4.00	0.42303	0.00000	0.0010	0.009	0.810	11.0 Comprs.
8.00	0.46329	0.00000	0.0022	0.006	0.728	15.0 Comprs.
12.00	0.48544	0.00000	0.0006	0.005	0.683	17.3 Comprs.
3.00	0.47930	0.00000	0.0017		0.695	16.6 Comprs.

Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (in.^{2}/sec.)	C_α	Void Ratio	% Compression /Swell
0.75	0.46955	0.00000			0.715	15.7 Comprs.
0.19	0.45655	0.00000	0.0003		0.742	14.4 Comprs.
0.05	0.44289	0.00000	0.0000		0.770	13.0 Comprs.

C_c = 0.26 P_c = 1.17 tsf C_r = 0.04

Pressure: 0.05 tsf **TEST READINGS** **Load No. 1**

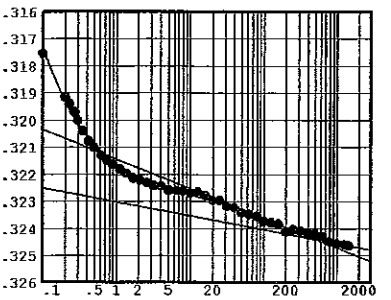
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.31343	23	12.53	0.31339
2	0.02	0.31339	24	15.80	0.31337
3	0.05	0.31337	25	19.90	0.31342
4	0.08	0.31333	26	25.08	0.31348
5	0.13	0.31335	27	31.58	0.31347
6	0.18	0.31332	28	39.77	0.31343
7	0.25	0.31335	29	50.08	0.31344
8	0.33	0.31337	30	63.05	0.31344
9	0.43	0.31336	31	79.40	0.31347
10	0.57	0.31338	32	99.97	0.31338
11	0.73	0.31345	33	125.87	0.31340
12	0.93	0.31338	34	158.45	0.31346
13	1.20	0.31344	35	199.50	0.31343
14	1.52	0.31342	36	251.17	0.31338
15	1.93	0.31342	37	316.20	0.31343
16	2.45	0.31341	38	398.08	0.31339
17	3.10	0.31343	39	501.17	0.31332
18	3.93	0.31340	40	630.93	0.31334
19	4.95	0.31342	41	794.30	0.31334
20	6.25	0.31338	42	999.98	0.31333
21	7.90	0.31343	43	1258.90	0.31359
22	9.95	0.31343	44	1440.27	0.31340



Void Ratio = 1.034 **Swell** = 0.0 %

Pressure: 0.13 tsf **TEST READINGS** **Load No. 2**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.31233	24	12.72	0.32264
2	0.10	0.31753	25	15.97	0.32279
3	0.20	0.31914	26	20.08	0.32295
4	0.23	0.31938	27	25.25	0.32296
5	0.27	0.31969	28	31.75	0.32319
6	0.30	0.32001	29	39.93	0.32323
7	0.35	0.32040	30	50.25	0.32342
8	0.42	0.32077	31	63.23	0.32348
9	0.50	0.32101	32	79.57	0.32355
10	0.62	0.32129	33	100.13	0.32374
11	0.75	0.32149	34	126.03	0.32379
12	0.90	0.32162	35	158.62	0.32384
13	1.12	0.32181	36	199.67	0.32412
14	1.37	0.32196	37	251.33	0.32405
15	1.70	0.32214	38	316.37	0.32409
16	2.12	0.32221	39	398.25	0.32417
17	2.63	0.32230	40	501.33	0.32418
18	3.28	0.32242	41	631.10	0.32431
19	4.10	0.32243	42	794.47	0.32448
20	5.13	0.32258	43	1000.15	0.32457
21	6.43	0.32260	44	1259.07	0.32460
22	8.07	0.32261	45	1440.12	0.32463
23	10.12	0.32269			



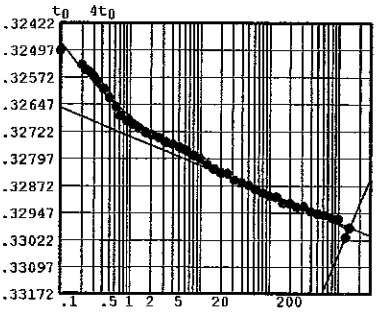
Void Ratio = 1.011 **Compression** = 1.1 %

D_0 = 0.31233 D_{50} = 0.31837 D_{100} = 0.32441

C_v **at 0.1 min.** = 0.0058 in.^{2}/sec. C_α = 0.001

Pressure: 0.25 tsf | TEST READINGS | Load No. 3

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.32280	24	12.72	0.32813
2	0.10	0.32497	25	15.98	0.32826
3	0.20	0.32537	26	20.08	0.32836
4	0.23	0.32552	27	25.25	0.32838
5	0.27	0.32559	28	31.75	0.32857
6	0.30	0.32570	29	39.95	0.32864
7	0.35	0.32584	30	50.25	0.32871
8	0.42	0.32603	31	63.23	0.32882
9	0.50	0.32628	32	79.57	0.32891
10	0.62	0.32653	33	100.13	0.32900
11	0.73	0.32677	34	126.03	0.32904
12	0.90	0.32692	35	158.63	0.32920
13	1.12	0.32703	36	199.67	0.32921
14	1.37	0.32713	37	251.33	0.32931
15	1.70	0.32725	38	316.37	0.32930
16	2.12	0.32732	39	398.25	0.32943
17	2.63	0.32739	40	501.33	0.32949
18	3.28	0.32752	41	631.10	0.32954
19	4.10	0.32758	42	794.47	0.32960
20	5.13	0.32766	43	1000.15	0.32964
21	6.43	0.32775	44	1259.07	0.33015
22	8.07	0.32789	45	1440.18	0.32988
23	10.13	0.32797			



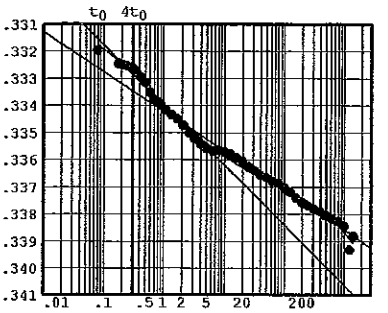
Void Ratio = 1.000 **Compression** = 1.6 %

D_0 = 0.32342 D_{50} = 0.32664 D_{100} = 0.32987

C_v **at 0.8 min.** = 0.0010 in.^{2}/sec.

Pressure: 0.50 tsf | TEST READINGS | Load No. 4

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.32765	24	12.70	0.33579
2	0.08	0.33197	25	15.97	0.33594
3	0.18	0.33245	26	20.07	0.33606
4	0.22	0.33251	27	25.23	0.33627
5	0.25	0.33254	28	31.75	0.33640
6	0.30	0.33259	29	39.93	0.33657
7	0.35	0.33270	30	50.23	0.33665
8	0.42	0.33294	31	63.22	0.33680
9	0.50	0.33316	32	79.57	0.33686
10	0.60	0.33351	33	100.13	0.33705
11	0.73	0.33378	34	126.02	0.33720
12	0.90	0.33395	35	158.62	0.33741
13	1.10	0.33417	36	199.65	0.33760
14	1.37	0.33435	37	251.32	0.33769
15	1.70	0.33450	38	316.37	0.33782
16	2.10	0.33473	39	398.23	0.33790
17	2.62	0.33503	40	501.32	0.33806
18	3.27	0.33524	41	631.10	0.33818
19	4.08	0.33543	42	794.47	0.33827
20	5.12	0.33558	43	1000.13	0.33844
21	6.42	0.33568	44	1259.07	0.33932
22	8.05	0.33566	45	1440.40	0.33881
23	10.12	0.33573			



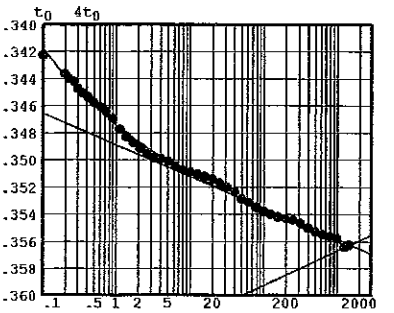
Void Ratio = 0.982 **Compression** = 2.5 %

D_0 = 0.33063 D_{50} = 0.33263 D_{100} = 0.33462

C_v **at 0.2 min.** = 0.0032 in.^{2}/sec. C_α = 0.001

Pressure: 1.00 tsf | TEST READINGS | Load No. 5

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.33622	24	12.72	0.35106
2	0.10	0.34224	25	15.98	0.35124
3	0.20	0.34363	26	20.08	0.35141
4	0.23	0.34400	27	25.25	0.35169
5	0.27	0.34422	28	31.77	0.35201
6	0.30	0.34473	29	39.95	0.35231
7	0.35	0.34508	30	50.25	0.35289
8	0.42	0.34541	31	63.23	0.35314
9	0.50	0.34577	32	79.57	0.35351
10	0.62	0.34611	33	100.15	0.35379
11	0.73	0.34640	34	126.03	0.35403
12	0.90	0.34692	35	158.63	0.35422
13	1.12	0.34772	36	199.68	0.35432
14	1.37	0.34827	37	251.33	0.35442
15	1.70	0.34871	38	316.38	0.35469
16	2.12	0.34916	39	398.27	0.35502
17	2.63	0.34953	40	501.33	0.35529
18	3.28	0.34983	41	631.12	0.35550
19	4.10	0.34993	42	794.48	0.35564
20	5.13	0.35012	43	1000.15	0.35578
21	6.43	0.35050	44	1259.08	0.35644
22	8.07	0.35074	45	1440.38	0.35629
23	10.13	0.35088			



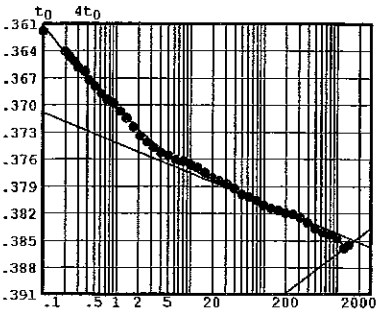
Void Ratio = 0.946 **Compression** = 4.3 %

D_0 = 0.33821 D_{50} = 0.34724 D_{100} = 0.35626

C_v **at 0.9 min.** = 0.0008 in.^{2}/sec.

Pressure: 2.00 tsf | TEST READINGS | Load No. 6

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.35244	24	12.72	0.37695
2	0.10	0.36181	25	15.97	0.37750
3	0.20	0.36403	26	20.08	0.37806
4	0.23	0.36464	27	25.25	0.37840
5	0.27	0.36518	28	31.75	0.37879
6	0.30	0.36583	29	39.95	0.37925
7	0.37	0.36626	30	50.25	0.37992
8	0.43	0.36724	31	63.23	0.38020
9	0.52	0.36792	32	79.57	0.38058
10	0.62	0.36874	33	100.13	0.38112
11	0.75	0.36938	34	126.03	0.38148
12	0.92	0.36977	35	158.63	0.38168
13	1.12	0.37070	36	199.67	0.38195
14	1.38	0.37143	37	251.33	0.38209
15	1.70	0.37242	38	316.37	0.38245
16	2.12	0.37345	39	398.25	0.38301
17	2.63	0.37408	40	501.33	0.38370
18	3.28	0.37472	41	631.10	0.38410
19	4.10	0.37533	42	794.47	0.38437
20	5.13	0.37561	43	1000.15	0.38473
21	6.43	0.37605	44	1259.07	0.38585
22	8.07	0.37623	45	1440.48	0.38549
23	10.12	0.37657			



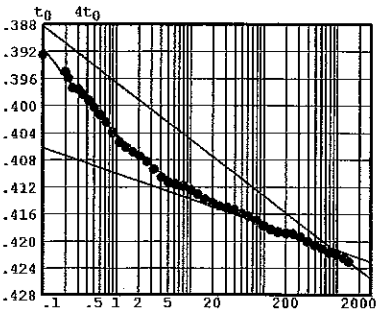
Void Ratio = 0.887 **Compression** = 7.2 %

D_0 = 0.35557 D_{50} = 0.37028 D_{100} = 0.38498

C_v **at 1.0 min.** = 0.0008 in.^{2}/sec.

Pressure: 4.00 tsf | TEST READINGS | Load No. 7

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.37971	24	12.72	0.41307
2	0.10	0.39244	25	15.97	0.41387
3	0.20	0.39499	26	20.08	0.41432
4	0.22	0.39591	27	25.25	0.41485
5	0.25	0.39739	28	31.75	0.41508
6	0.30	0.39759	29	39.93	0.41539
7	0.35	0.39832	30	50.25	0.41590
8	0.42	0.39919	31	63.22	0.41640
9	0.50	0.40027	32	79.57	0.41694
10	0.60	0.40135	33	100.13	0.41776
11	0.73	0.40246	34	126.03	0.41830
12	0.90	0.40398	35	158.62	0.41870
13	1.10	0.40540	36	199.67	0.41885
14	1.37	0.40621	37	251.33	0.41898
15	1.70	0.40686	38	316.37	0.41945
16	2.10	0.40751	39	398.25	0.42008
17	2.62	0.40825	40	501.33	0.42066
18	3.28	0.40938	41	631.10	0.42116
19	4.10	0.41059	42	794.47	0.42176
20	5.13	0.41134	43	1000.15	0.42208
21	6.43	0.41161	44	1259.08	0.42254
22	8.07	0.41188	45	1440.42	0.42303
23	10.12	0.41248			



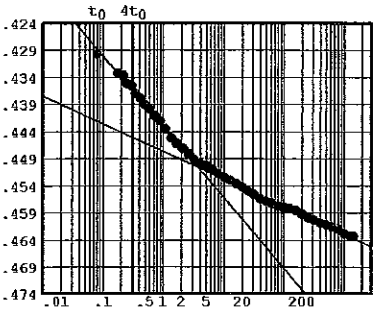
Void Ratio = 0.810 Compression = 11.0 %

D_0 = 0.38360 D_{50} = 0.40228 D_{100} = 0.42096

C_v at 0.7 min. = 0.0010 in.^{2}/sec. C_α = 0.009

Pressure: 8.00 tsf | TEST READINGS | Load No. 8

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.41360	24	12.72	0.45298
2	0.08	0.42965	25	15.97	0.45360
3	0.18	0.43326	26	20.07	0.45425
4	0.22	0.43358	27	25.25	0.45497
5	0.25	0.43515	28	31.75	0.45562
6	0.30	0.43551	29	39.93	0.45638
7	0.35	0.43695	30	50.25	0.45689
8	0.42	0.43777	31	63.22	0.45727
9	0.50	0.43902	32	79.57	0.45774
10	0.60	0.43984	33	100.13	0.45801
11	0.73	0.44100	34	126.03	0.45823
12	0.90	0.44201	35	158.62	0.45853
13	1.10	0.44348	36	199.67	0.45919
14	1.37	0.44513	37	251.32	0.45986
15	1.68	0.44622	38	316.37	0.46032
16	2.10	0.44702	39	398.25	0.46088
17	2.62	0.44808	40	501.33	0.46122
18	3.27	0.44923	41	631.10	0.46164
19	4.10	0.45001	42	794.47	0.46198
20	5.12	0.45030	43	1000.15	0.46280
21	6.42	0.45086	44	1259.07	0.46331
22	8.07	0.45179	45	1440.17	0.46329
23	10.12	0.45246			



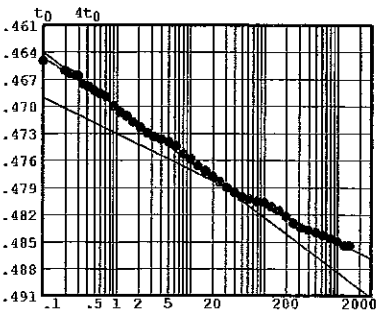
Void Ratio = 0.728 Compression = 15.0 %

D_0 = 0.42117 D_{50} = 0.43584 D_{100} = 0.45050

C_v at 0.3 min. = 0.0022 in.^{2}/sec. C_α = 0.006

Pressure: 12.00 tsf | TEST READINGS | Load No. 9

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.45479	24	12.72	0.47660
2	0.10	0.46494	25	15.98	0.47715
3	0.20	0.46602	26	20.08	0.47775
4	0.23	0.46637	27	25.25	0.47835
5	0.27	0.46656	28	31.75	0.47901
6	0.30	0.46663	29	39.95	0.47951
7	0.35	0.46759	30	50.25	0.48005
8	0.42	0.46782	31	63.23	0.48028
9	0.50	0.46826	32	79.57	0.48054
10	0.60	0.46859	33	100.13	0.48064
11	0.73	0.46892	34	126.03	0.48110
12	0.90	0.46993	35	158.63	0.48156
13	1.12	0.47066	36	199.67	0.48215
14	1.37	0.47107	37	251.33	0.48294
15	1.70	0.47175	38	316.37	0.48347
16	2.12	0.47236	39	398.25	0.48370
17	2.63	0.47299	40	501.33	0.48394
18	3.28	0.47341	41	631.10	0.48428
19	4.10	0.47367	42	794.48	0.48461
20	5.13	0.47398	43	1000.15	0.48495
21	6.43	0.47440	44	1259.08	0.48542
22	8.07	0.47527	45	1440.08	0.48544
23	10.13	0.47580			



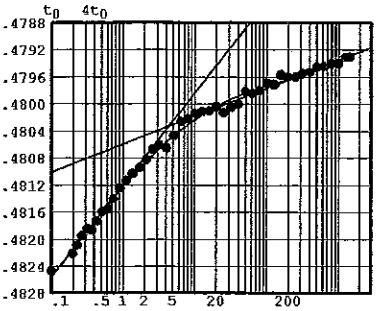
Void Ratio = 0.683 **Compression** = 17.3 %

D_0 = 0.46167 D_{50} = 0.47015 D_{100} = 0.47863

C_v **at 1.0 min.** = 0.0006 in.^{2}/sec. C_α = 0.005

Pressure: 3.00 tsf | TEST READINGS | Load No. 10

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.50246	24	12.72	0.48011
2	0.10	0.48247	25	15.98	0.48010
3	0.20	0.48221	26	20.10	0.48004
4	0.23	0.48209	27	25.27	0.48013
5	0.27	0.48195	28	31.77	0.48005
6	0.32	0.48185	29	39.95	0.48000
7	0.37	0.48187	30	50.27	0.47982
8	0.43	0.48173	31	63.23	0.47984
9	0.52	0.48159	32	79.58	0.47980
10	0.62	0.48155	33	100.15	0.47969
11	0.75	0.48140	34	126.05	0.47971
12	0.92	0.48124	35	158.63	0.47957
13	1.12	0.48113	36	199.68	0.47960
14	1.38	0.48103	37	251.35	0.47960
15	1.72	0.48094	38	316.38	0.47955
16	2.12	0.48082	39	398.27	0.47953
17	2.63	0.48067	40	501.35	0.47945
18	3.28	0.48061	41	631.12	0.47944
19	4.12	0.48065	42	794.48	0.47940
20	5.15	0.48047	43	1000.17	0.47940
21	6.43	0.48026	44	1259.08	0.47931
22	8.08	0.48022	45	1440.45	0.47930
23	10.13	0.48014			



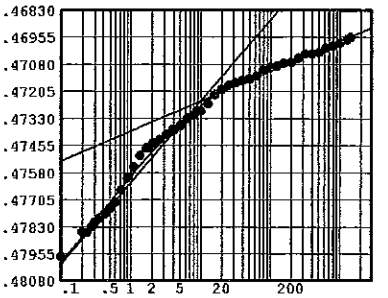
Void Ratio = 0.695 **Compression** = 16.6 %

D_0 = 0.48336 D_{50} = 0.48185 D_{100} = 0.48033

C_v **at 0.3 min.** = 0.0017 in.^{2}/sec.

Pressure: 0.75 tsf | TEST READINGS | Load No. 11

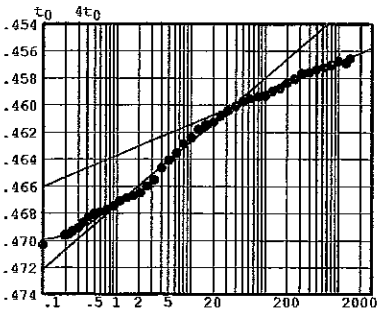
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.48742	24	12.72	0.47263
2	0.10	0.47968	25	15.97	0.47221
3	0.20	0.47855	26	20.08	0.47195
4	0.23	0.47858	27	25.25	0.47178
5	0.27	0.47831	28	31.75	0.47165
6	0.30	0.47810	29	39.95	0.47154
7	0.35	0.47792	30	50.25	0.47146
8	0.42	0.47773	31	63.23	0.47133
9	0.50	0.47745	32	79.57	0.47105
10	0.60	0.47716	33	100.13	0.47094
11	0.73	0.47661	34	126.03	0.47087
12	0.90	0.47604	35	158.63	0.47074
13	1.10	0.47555	36	199.67	0.47071
14	1.37	0.47502	37	251.33	0.47052
15	1.70	0.47467	38	316.37	0.47033
16	2.10	0.47444	39	398.25	0.47032
17	2.62	0.47428	40	501.33	0.47024
18	3.28	0.47404	41	631.10	0.47004
19	4.10	0.47382	42	794.48	0.46996
20	5.13	0.47362	43	1000.15	0.46982
21	6.43	0.47329	44	1259.08	0.46967
22	8.07	0.47313	45	1440.12	0.46955
23	10.12	0.47295			



Void Ratio = 0.715 Compression = 15.7 %

Pressure: 0.19 tsf | TEST READINGS | Load No. 12

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.47336	24	12.72	0.46180
2	0.10	0.47030	25	15.97	0.46147
3	0.20	0.46961	26	20.08	0.46125
4	0.22	0.46954	27	25.25	0.46080
5	0.25	0.46933	28	31.75	0.46040
6	0.30	0.46908	29	39.93	0.46008
7	0.35	0.46870	30	50.25	0.45972
8	0.42	0.46827	31	63.23	0.45951
9	0.50	0.46803	32	79.57	0.45938
10	0.60	0.46791	33	100.13	0.45929
11	0.73	0.46774	34	126.03	0.45896
12	0.90	0.46747	35	158.63	0.45879
13	1.10	0.46708	36	199.67	0.45839
14	1.37	0.46686	37	251.33	0.45808
15	1.70	0.46673	38	316.37	0.45766
16	2.10	0.46648	39	398.25	0.45758
17	2.62	0.46602	40	501.33	0.45738
18	3.28	0.46554	41	631.10	0.45720
19	4.10	0.46464	42	794.48	0.45705
20	5.13	0.46408	43	1000.15	0.45677
21	6.43	0.46355	44	1259.08	0.45690
22	8.07	0.46286	45	1440.23	0.45655
23	10.12	0.46242			



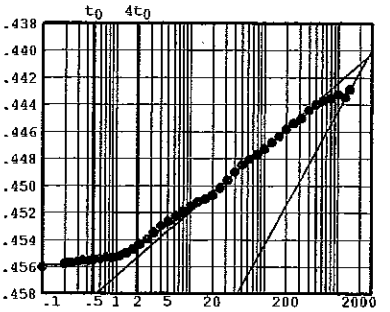
Void Ratio = 0.742 **Compression** = 14.4 %

D_0 = 0.47105 D_{50} = 0.46563 D_{100} = 0.46022

C_v **at 2.3 min.** = 0.0003 in.^{2}/sec.

Pressure: 0.05 tsf | TEST READINGS | Load No. 13

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.45810	24	12.72	0.45119
2	0.10	0.45599	25	15.97	0.45097
3	0.20	0.45578	26	20.08	0.45071
4	0.22	0.45572	27	25.25	0.45017
5	0.25	0.45572	28	31.75	0.44961
6	0.30	0.45562	29	39.93	0.44897
7	0.35	0.45553	30	50.25	0.44846
8	0.42	0.45557	31	63.23	0.44803
9	0.50	0.45547	32	79.57	0.44769
10	0.60	0.45543	33	100.13	0.44725
11	0.73	0.45530	34	126.03	0.44680
12	0.90	0.45531	35	158.62	0.44635
13	1.12	0.45519	36	199.67	0.44580
14	1.37	0.45500	37	251.33	0.44538
15	1.70	0.45470	38	316.37	0.44500
16	2.10	0.45433	39	398.25	0.44441
17	2.63	0.45397	40	501.33	0.44396
18	3.28	0.45348	41	631.10	0.44368
19	4.10	0.45298	42	794.47	0.44354
20	5.13	0.45265	43	1000.15	0.44326
21	6.43	0.45224	44	1259.07	0.44347
22	8.07	0.45188	45	1440.12	0.44289
23	10.12	0.45153			

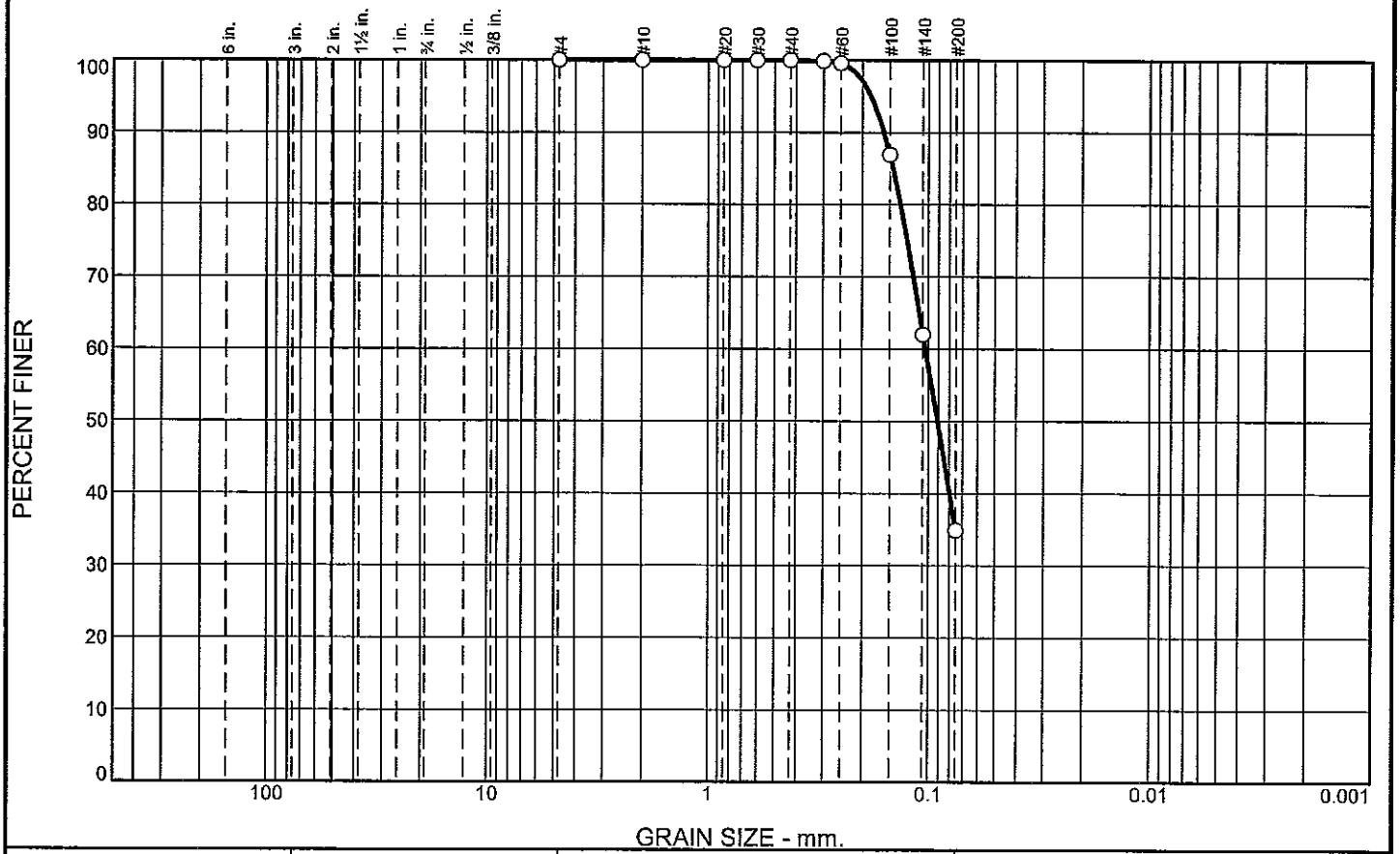


Void Ratio = 0.770 **Compression** = 13.0 %

D_0 = 0.45679 D_{50} = 0.44860 D_{100} = 0.44042

C_v **at 49.0 min.** = 0.0000 in.^{2}/sec.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.0	65.1	34.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	100.0		
#20	100.0		
#30	100.0		
#40	100.0		
#50	99.9		
#60	99.6		
#100	86.9		
#140	62.0		
#200	34.9		

* (no specification provided)

Soil Description

GR SM W/ LYS CH

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.1594 D_{85}= 0.1450 D_{60}= 0.1034
D_{50}= 0.0910 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

Source of Sample: BSFR-7U **Depth:** 13.0
Sample Number: 5B **Date:** 7-27-12

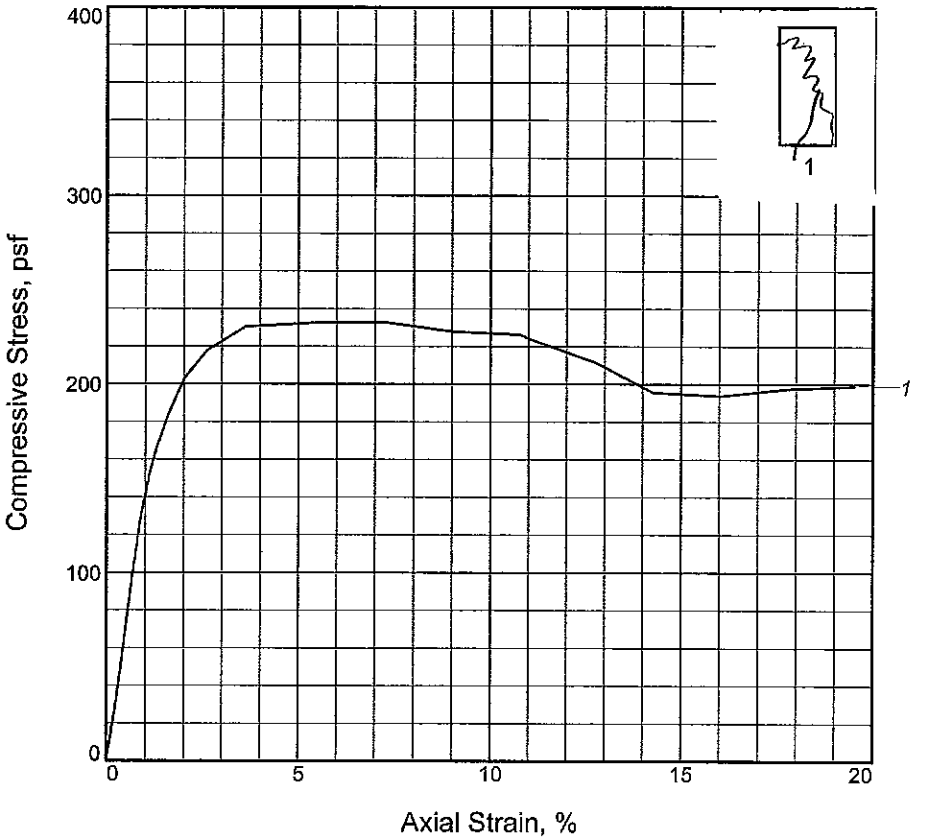
Stantec

Saint Rose, Louisiana

Client: USACE
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Project No: 12-017108 **Figure**

Tested By: JC

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	233			
Undrained shear strength, psf	116			
Failure strain, %	5.5			
Strain rate, in./min.	1.000			
Water content, %	57.4			
Wet density, pcf	103.6			
Dry density, pcf	65.8			
Saturation, %	98.8			
Void ratio	1.5815			
Specimen diameter, in.	1.388			
Specimen height, in.	3.004			
Height/diameter ratio	2.16			

Description: VSO GR & T CH4 W/ ARS ML

LL = 87	**PL =** 29	**PI =** 58	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 12-017108
Date Sampled: 7-27-12
Remarks:
Torvane=0.32 tsf

Figure _____

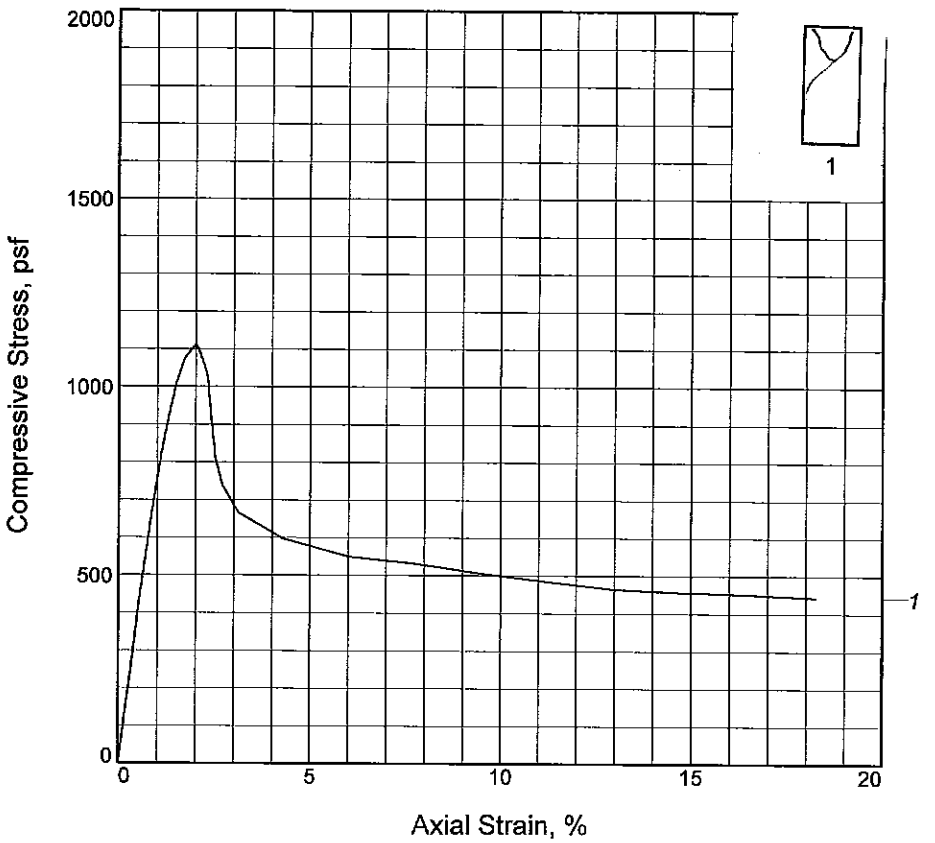
Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-7U **Depth:** 5.0
Sample Number: 3B

UNCONFINED COMPRESSION TEST
Stantec
Saint Rose, Louisiana

Tested By: JC

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1112			
Undrained shear strength, psf	556			
Failure strain, %	2.0			
Strain rate, in./min.	1.000			
Water content, %	75.4			
Wet density, pcf	97.4			
Dry density, pcf	55.5			
Saturation, %	99.7			
Void ratio	2.0593			
Specimen diameter, in.	1.390			
Specimen height, in.	3.015			
Height/diameter ratio	2.17			

Description: M GR CH4 W/ LNS ML

LL = 80	**PL =** 21	**PI =** 59	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 12-017108
Date Sampled: 7-27-12
Remarks:
Torvane=0.28 tsf

Figure _____

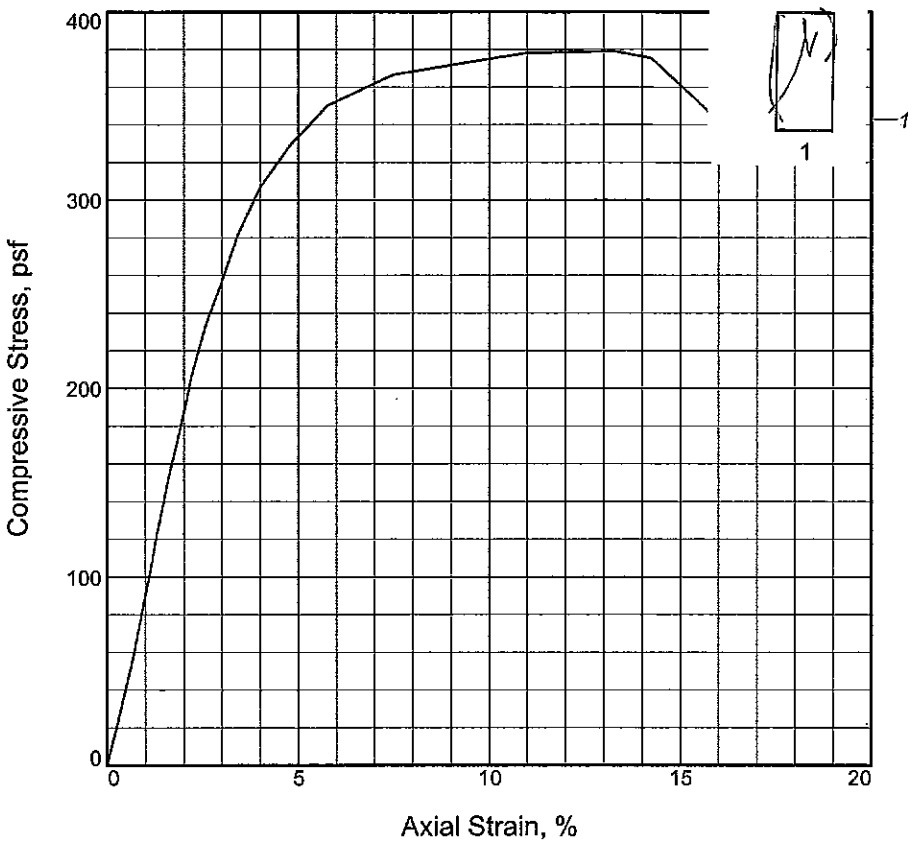
Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-7U **Depth:** 14.0
Sample Number: 6B

UNCONFINED COMPRESSION TEST
Stantec
Saint Rose, Louisiana

Tested By: JC **Checked By:** JS

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	379			
Undrained shear strength, psf	189			
Failure strain, %	12.8			
Strain rate, in./min.	1.000			
Water content, %	31.2			
Wet density, pcf	119.9			
Dry density, pcf	91.4			
Saturation, %	99.8			
Void ratio	0.8437			
Specimen diameter, in.	1.360			
Specimen height, in.	2.994			
Height/diameter ratio	2.20			

Description: VSO GR CL4 W/ ARS & LNS SP, SIF

LL = 31	**PL =** 17	**PI =** 14	**Assumed GS=** 2.70	**Type:** UNDISTURBED

Project No.: 12-017108
Date Sampled: 7-30-12
Remarks:
Torvane=0.25 tsf

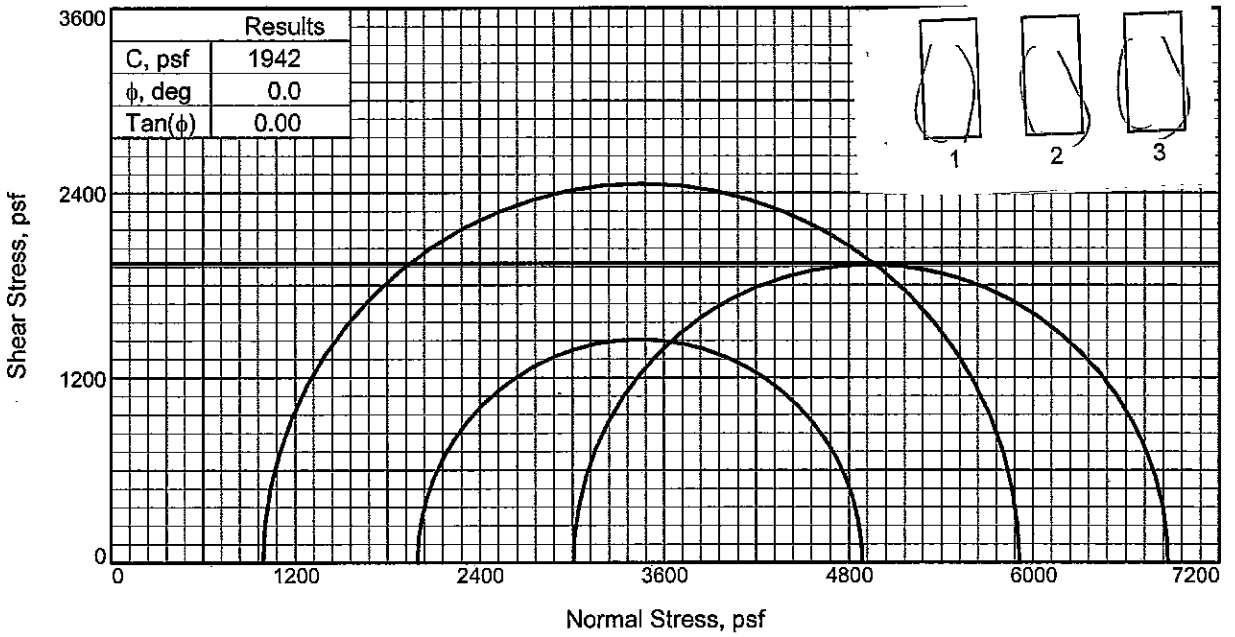
Figure _____

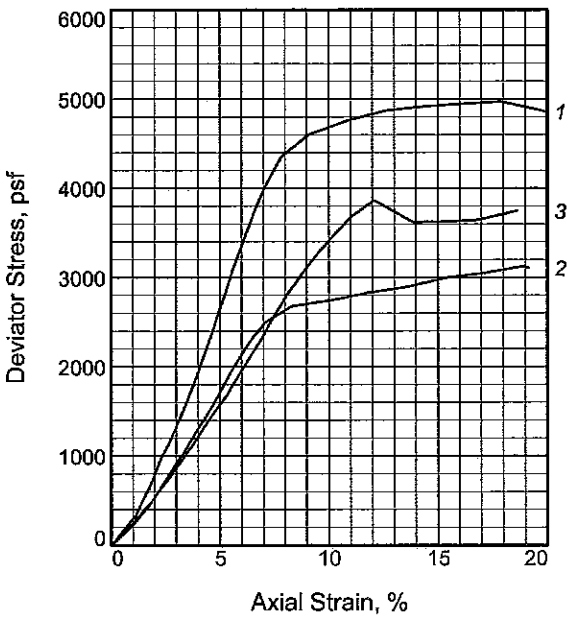
Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-7U **Depth:** 29.0
Sample Number: 9B

UNCONFINED COMPRESSION TEST
Stantec
Saint Rose, Louisiana

Tested By: JC





Sample No.		1	2	3
Initial	Water Content, %	26.7	27.6	28.1
	Dry Density, pcf	104.3	101.8	103.5
	Saturation, %	119.9	116.3	123.6
	Void Ratio	0.5920	0.6309	0.6041
	Diameter, in.	1.335	1.318	1.327
	Height, in.	2.997	2.978	2.979
At Test	Water Content, %	26.7	27.6	28.1
	Dry Density, pcf	104.3	101.8	103.5
	Saturation, %	119.9	116.3	123.6
	Void Ratio	0.5920	0.6309	0.6041
	Diameter, in.	1.335	1.318	1.327
	Height, in.	2.997	2.978	2.979
Strain rate, in./min.		1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.89	13.84	20.88
Fail. Stress, psf		4917	2895	3864
Strain, %		14.4	13.6	12.1
Ult. Stress, psf		4917	2895	3621
Strain, %		14.4	13.6	13.8
σ_1 Failure, psf		5909	4888	6871
σ_3 Failure, psf		992	1993	3007

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: GR & T SM

LL= NP **PI=** NP
Assumed Specific Gravity= 2.66
Remarks: Torvane=0.24 tsf

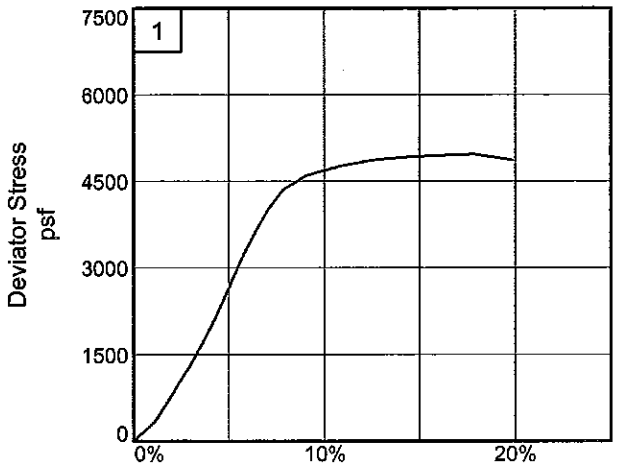
Figure _____

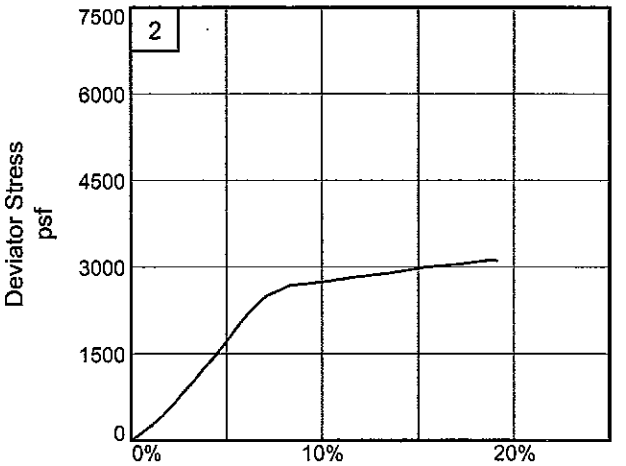
Client: USACE

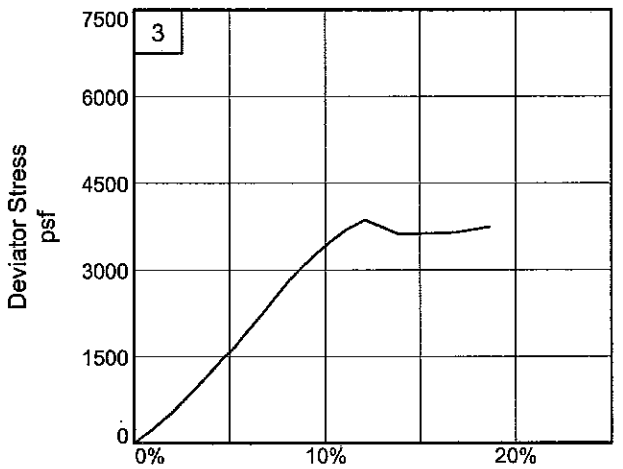
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-7U **Depth:** 11.0
Sample Number: 4D
Proj. No.: 12-017108 **Date Sampled:** 7-27-12

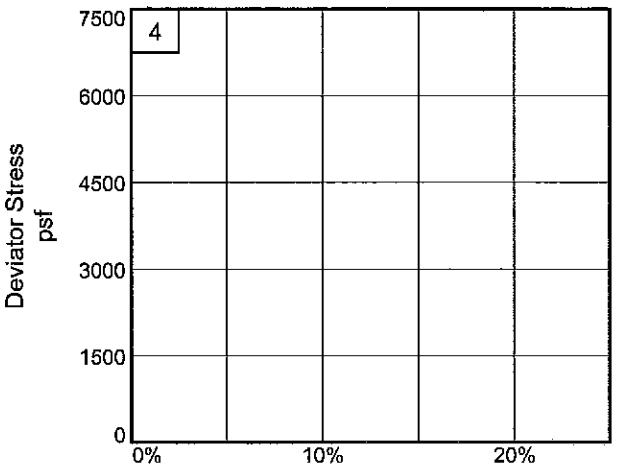
TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

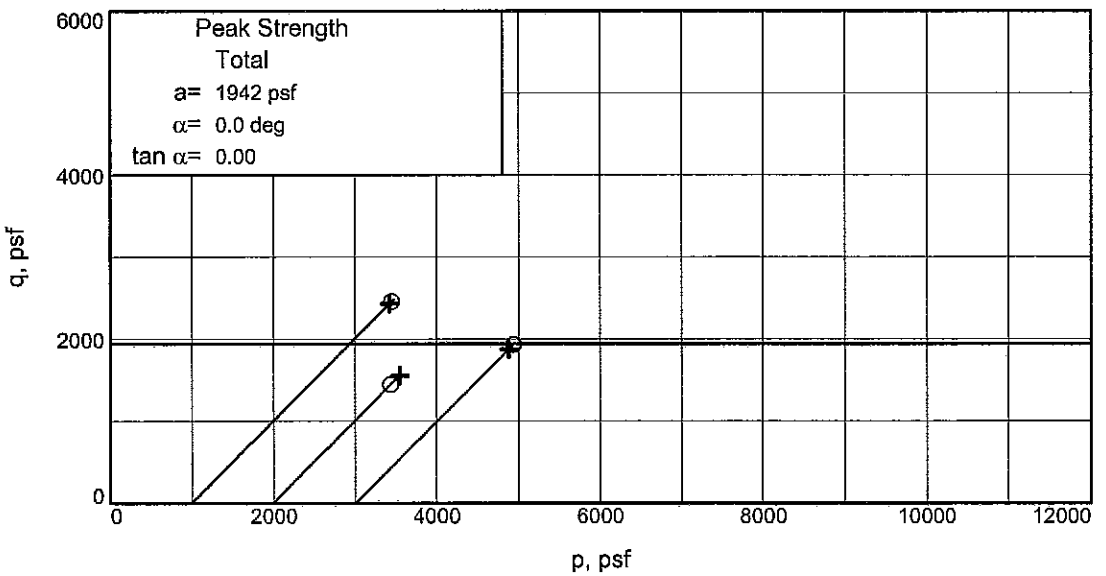
Tested By: JC **Checked By:** JS











Stress Paths: o indicates peak + indicates end

Client: USACE

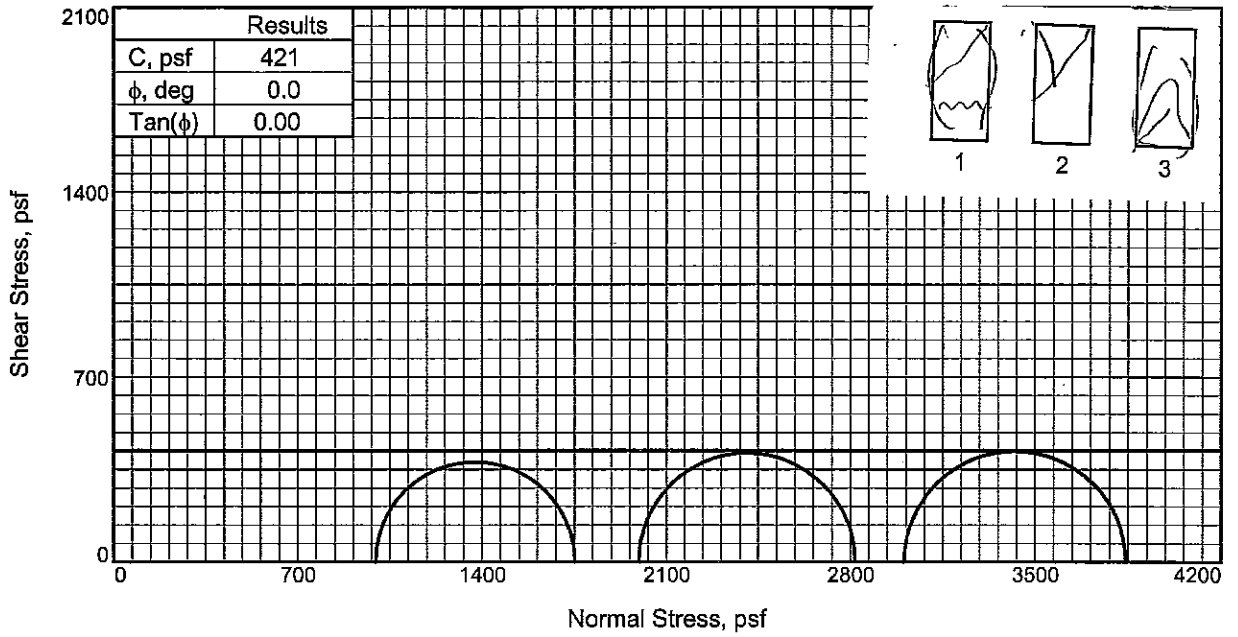
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

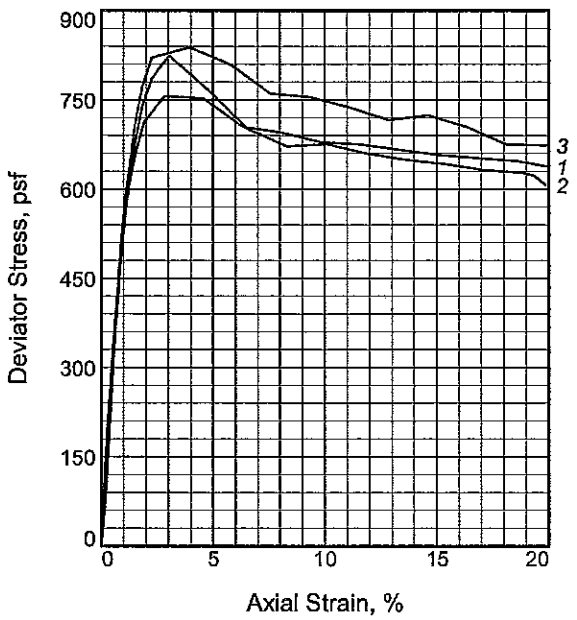
Source of Sample: BSFR-7U **Depth:** 11.0 **Sample Number:** 4D

Project No.: 12-017108 **Figure** _____

Stantec, Inc.

Tested By: JC **Checked By:** JS





Sample No.		1	2	3
Initial	Water Content, %	66.3	65.9	65.1
	Dry Density, pcf	61.2	61.3	61.5
	Saturation, %	101.3	101.0	100.1
	Void Ratio	1.7948	1.7888	1.7811
	Diameter, in.	1.385	1.391	1.391
	Height, in.	2.995	2.996	3.009
At Test	Water Content, %	66.3	65.9	65.1
	Dry Density, pcf	61.2	61.3	61.5
	Saturation, %	101.3	101.0	100.1
	Void Ratio	1.7948	1.7888	1.7811
	Diameter, in.	1.385	1.391	1.391
	Height, in.	2.995	2.996	3.009
Strain rate, in./min.		1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.91	13.85	20.85
Fail. Stress, psf		757	824	838
Strain, %		2.8	3.0	3.9
Ult. Stress, psf		658	642	716
Strain, %		15.1	15.3	12.8
σ_1 Failure, psf		1752	2819	3841
σ_3 Failure, psf		995	1994	3002

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: SO GR CH4 W/ LNS SM

LL= 77 **PL=** 19 **PI=** 58
Assumed Specific Gravity= 2.74
Remarks: Torvane=0.35 tsf

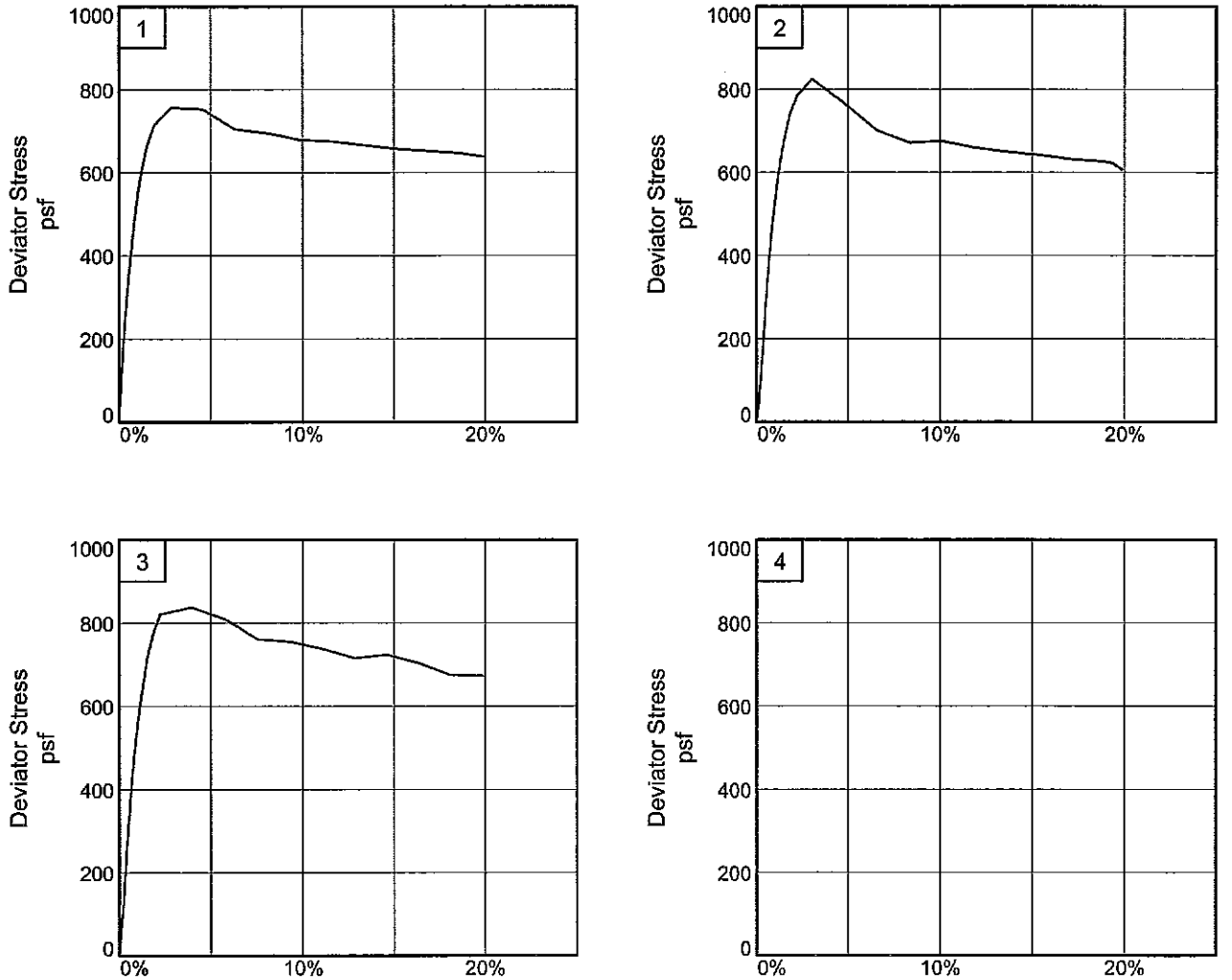
Figure _____

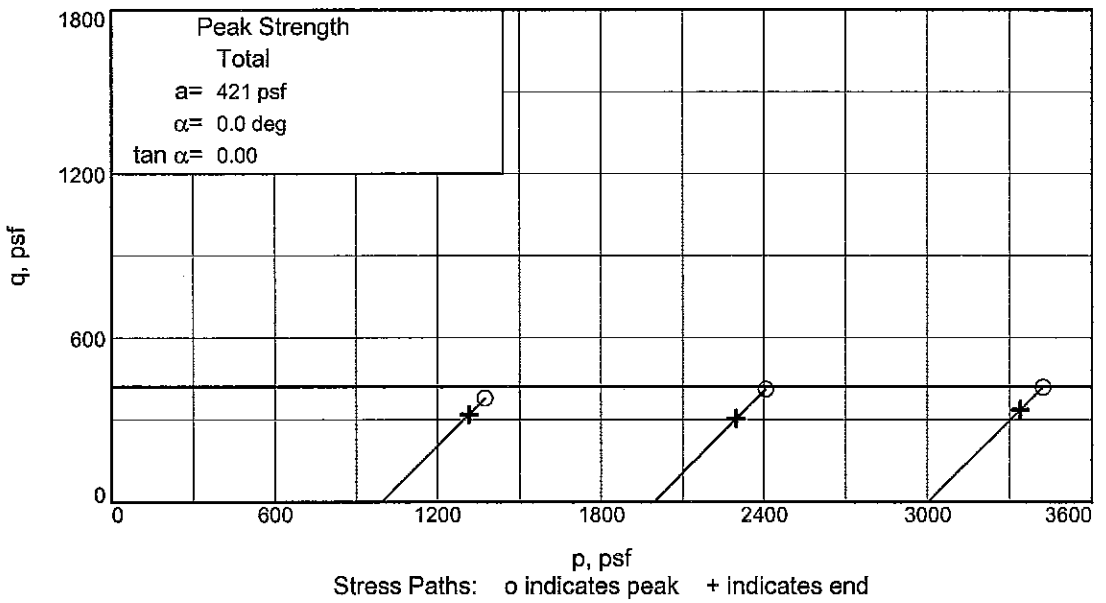
Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-7U **Depth:** 14.0
Sample Number: 5C
Proj. No.: 12-017108 **Date Sampled:** 7-27-12

TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

Tested By: JC





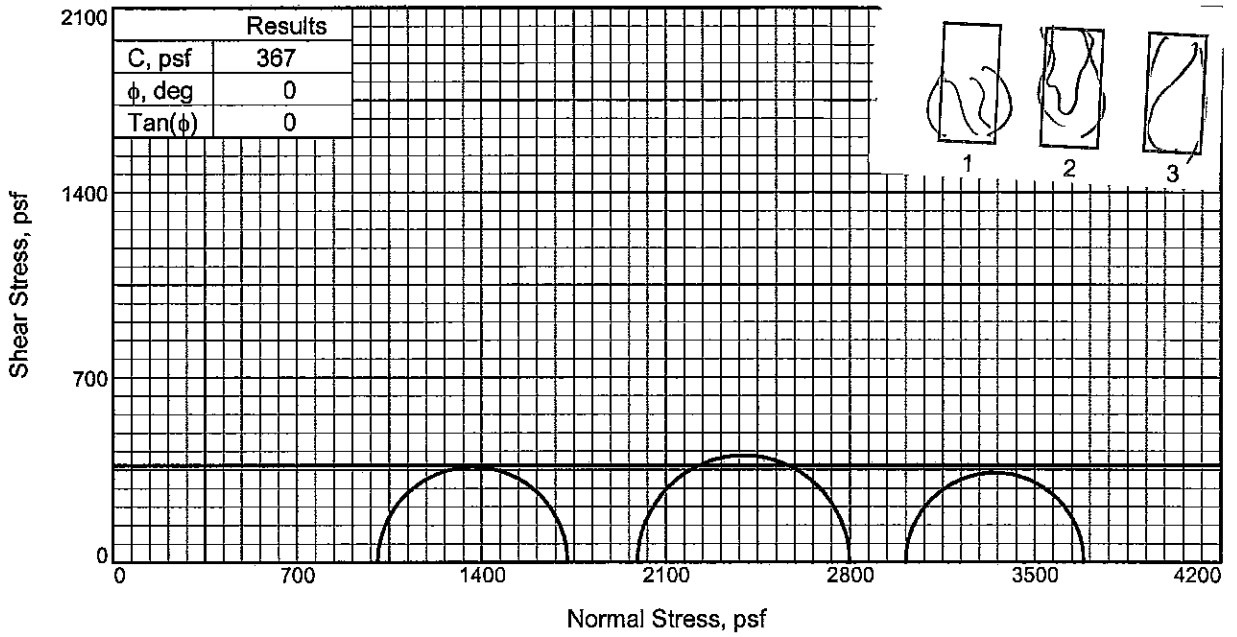
Client: USACE

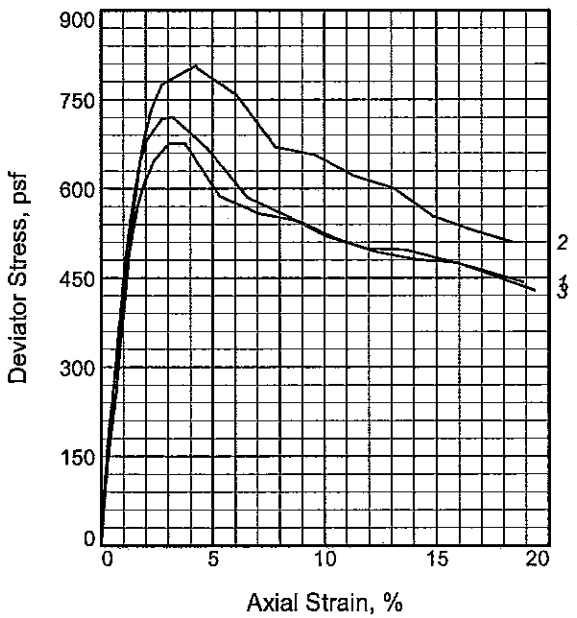
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

Source of Sample: BSFR-7U **Depth:** 14.0 **Sample Number:** 5C

Project No.: 12-017108 **Figure** _____ **Stantec, Inc.**

Tested By: JC





Sample No.		1	2	3
Initial	Water Content, %	41.4	39.7	41.3
	Dry Density, pcf	80.4	81.8	80.5
	Saturation, %	101.9	100.9	102.0
	Void Ratio	1.0963	1.0606	1.0936
	Diameter, in.	1.383	1.380	1.378
	Height, in.	2.997	2.998	2.998
At Test	Water Content, %	41.4	39.7	41.3
	Dry Density, pcf	80.4	81.8	80.5
	Saturation, %	101.9	100.9	102.0
	Void Ratio	1.0963	1.0606	1.0936
	Diameter, in.	1.383	1.380	1.378
	Height, in.	2.997	2.998	2.998
Strain rate, in./min.		1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.98	13.83	20.90
Fail. Stress, psf		720	807	676
Strain, %		3.1	4.2	3.1
Ult. Stress, psf		497	554	480
Strain, %		13.6	14.8	14.1
σ_1 Failure, psf		1726	2798	3686
σ_3 Failure, psf		1005	1992	3010

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: SO GR CL6 W/ ARS SM, SIF

LL= 40 **PL=** 13 **PI=** 27
Assumed Specific Gravity= 2.70
Remarks: Torvane=0.30 tsf

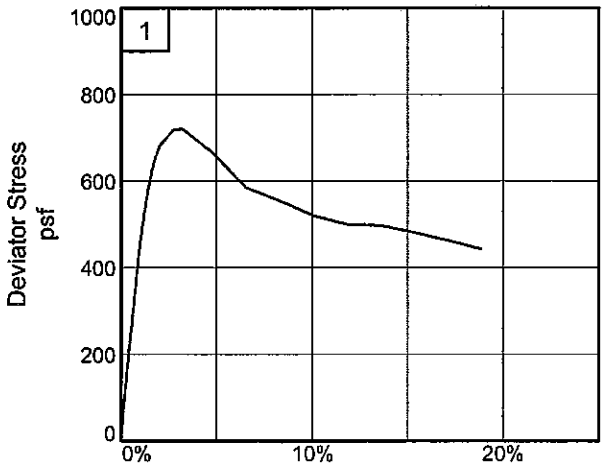
Figure _____

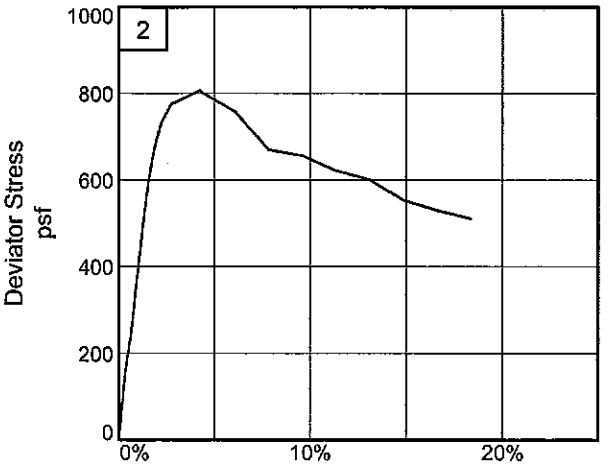
Client: USACE

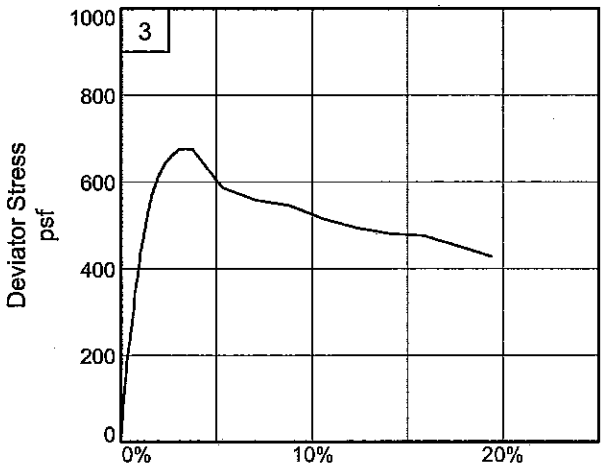
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-7U **Depth:** 21.0
Sample Number: 7B
Proj. No.: 12-017108 **Date Sampled:** 7-30-12

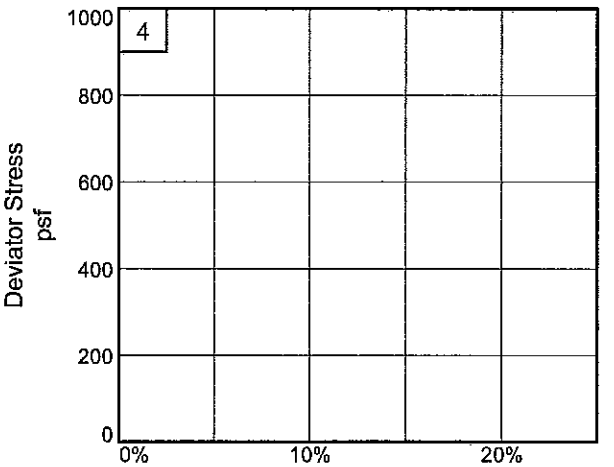
TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

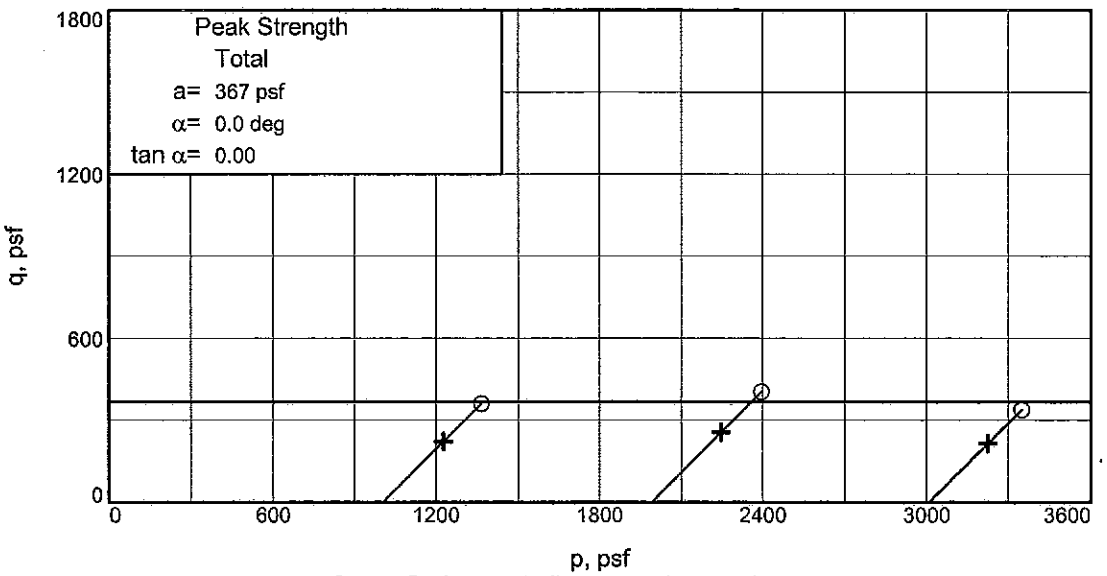
Tested By: JC











Stress Paths: o indicates peak + indicates end

Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

Source of Sample: BSFR-7U **Depth:** 21.0 **Sample Number:** 7B

Project No.: 12-017108 **Figure** _____

Stantec, Inc.

Tested By: JC

SUMMARY OF LABORATORY TEST RESULTS

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Paris **Assigned By:** _____

Project Number: 12-017108 **Current Date:** 9/5/2012

Boring: BSFR-8U

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
1	0.0	M BK PT W/ RT	PT		712												
2	2.0	M BK PT W/ RT	PT		328												
3A	4.0	M BK PT W/ RT, WD	PT		504												
3B	5.0	M BK CL6 W/ RT, WD	CL6		466								48	17	31		
3C	6.0	M BK PT W/ RT, WD	PT		548												
3D	7.0	VSO BK PT	PT	14	104	46	94	100	UC	-	66	131	119	27	92	0.06	
4A	8.0	VSO BK CHOC W/ LNS ML	CHOC		100								169	38	131		
4B	9.0	GR ML W/ LYS CH, O	ML		37												SV
4C	10.0	VSO GR CH4 W/ LYS SM	CH4		74	59	103	100	UU	0	142		71	20	51	0.22	
4D	11.0	SO GR CH4 W/ LYS SM	CH4		60												
5A	12.0	GR SM W/ LYS CH, WD	SM		57												
5B	13.0	VSO GR CH4 W/ LNS SM, WD	CH4	8	79	54	98	100	UC	-	114	229	88	27	61	0.07	
5C	14.0	VSO GR CH4 W/ LNS SM, WD	CH4		54	59	91	60					85	20	65		GS=2.70, CON
5D	15.0	VSO GR CH4 W/ RT	CH4		89												
6A	16.0	VSO GR CH4 W/ LNS ML	CH4		72												
6B	17.0	VSO GR CH4 W/ LNS ML	CH4		79	54	97	100	UU	0	127		75	27	48	0.10	
6C	18.0	VSO GR CH4 W/ LNS ML, SIF	CH4		86												
6D	19.0	VSO GR CH2 W/ LNS & LYS ML, SIF	CH2		56												
7A	20.0	SO GR CH2 W/ ARS ML	CH2		43												
7B	21.0	VSO GR CL4 W/ ARS ML, SIF	CL4	12	42	79	113	100	UC	-	103	206	39	12	27	0.09	
7C	22.0	SO GR CH4 W/ SIF	CH4		66												
7D	23.0	SO GR CH4 W/ SIF	CH4		64												
8A	24.0	VSO GR CH3 W/ LNS & ARS ML	CH3		64	62	102	100	UU	0	173		74	27	47	0.22	
8B	25.0	SO GR CH3 W/ LNS & ARS ML	CH3		48	61	90	72					73	18	55		GS=2.60, CON
8C	26.0	SO GR CL4 W/ ARS SP, SIF	CL4		37												
8D	27.0	GR SP W/ ARS CH, SIF	SP		30												
9A	28.0	GR SM W/ ARS CH	SM		31												
9B	29.0	SO GR CL4 W/ ARS & LYS SP, SIF	CL4	9	29	96	124	100	UC	-	358	716	29	19	10	0.30	
9C	30.0	SO GR CL4 W/ ARS & LYS SP, SIF	CL4		32												
9D	31.0	SO GR CL4 W/ ARS & LYS SP, SIF	CL4		33												
10A	32.0	GR SM W/ ARS CH	SM		34												
10B	33.0	GNG & GR SM W/ ARS CH	SM		29												
10C	34.0	M GNG & LGR CL4 W/ ARS SM, RT	CL4		25	96	121	91	UU	0	573		39	15	24	0.40	
10D	35.0	M GNG CL4 W/ ARS SM, ARS ML	CL4		30												
11A	36.0	GNG & LGR SM W/ ARS CH	SM		36												

Remarks: _____ **Checked By:** _____

Stantec Consulting Services Inc. **File Name:** Final BSFR-8U_be_boring_log_v1C

SUMMARY OF LABORATORY TEST RESULTS

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Paris Assigned By: _____

Project Number: 12-017108 Current Date: 9/5/2012

Boring: BSFR-8U

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
11B	37.0	GNG & LGR SM W/ ARS CH, WD	SM		29												
11C	38.0	BR & GNG SM W/ ARS CH, WD	SM		31												
11D	39.0	BR & GNG SM W/ ARS CH	SM		28												

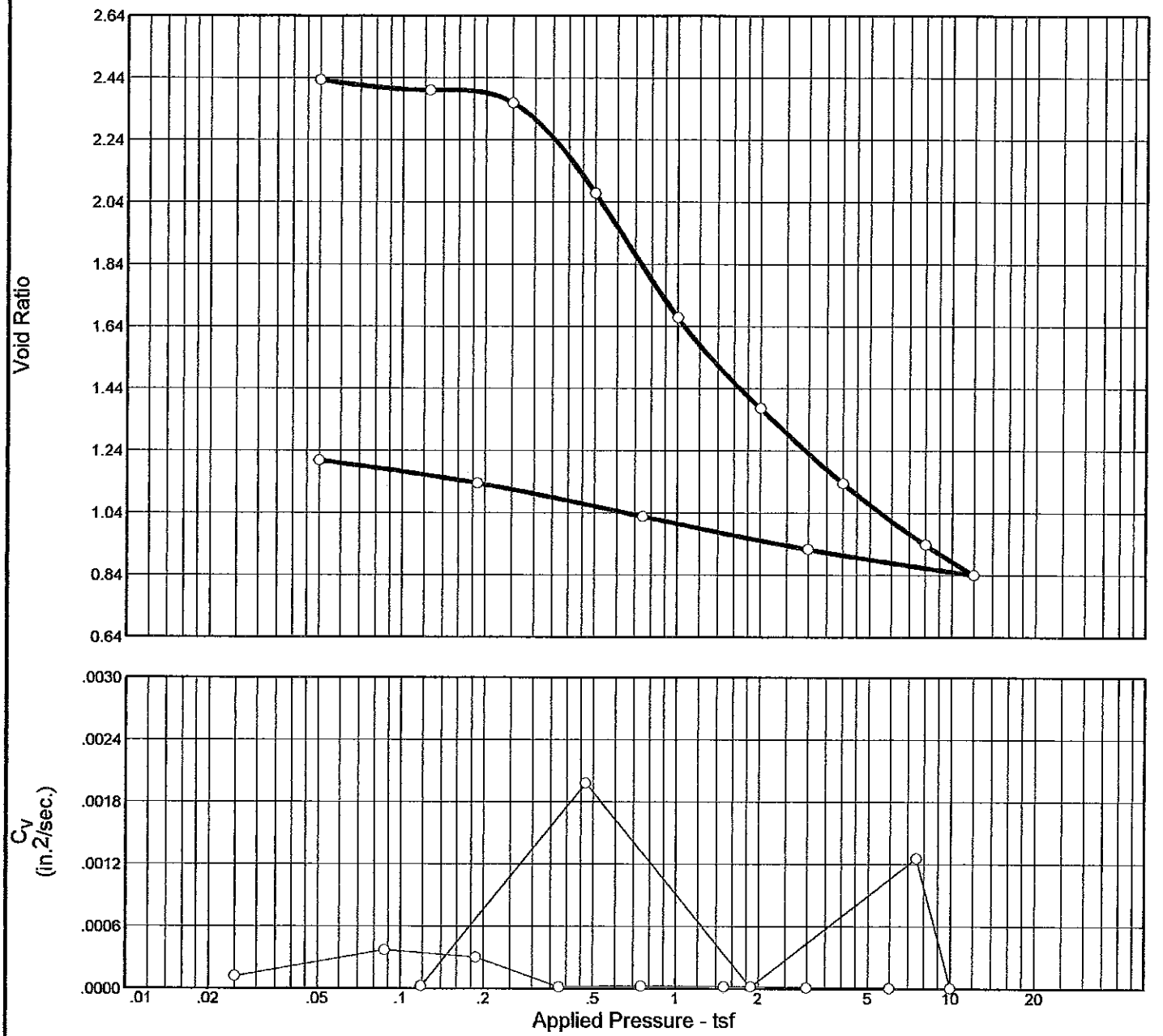
Remarks: _____

Checked By: _____

Stantec Consulting Services Inc.

File Name: Final BSFR-8U_be_boring_log_v1C

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture							
59.6 %	53.8 %	59.0	85	65	2.70	0.01	0.55	2.434

MATERIAL DESCRIPTION	USCS	AASHTO
VSO GR CH4 W/ LNS SM, WD	CH4	

Project No. 12-017108 **Client:** USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

Source: BSFR-8U **Sample No.:** 5C **Elev./Depth:** 14.0

FFEBJV, LLC

St Rose, LA

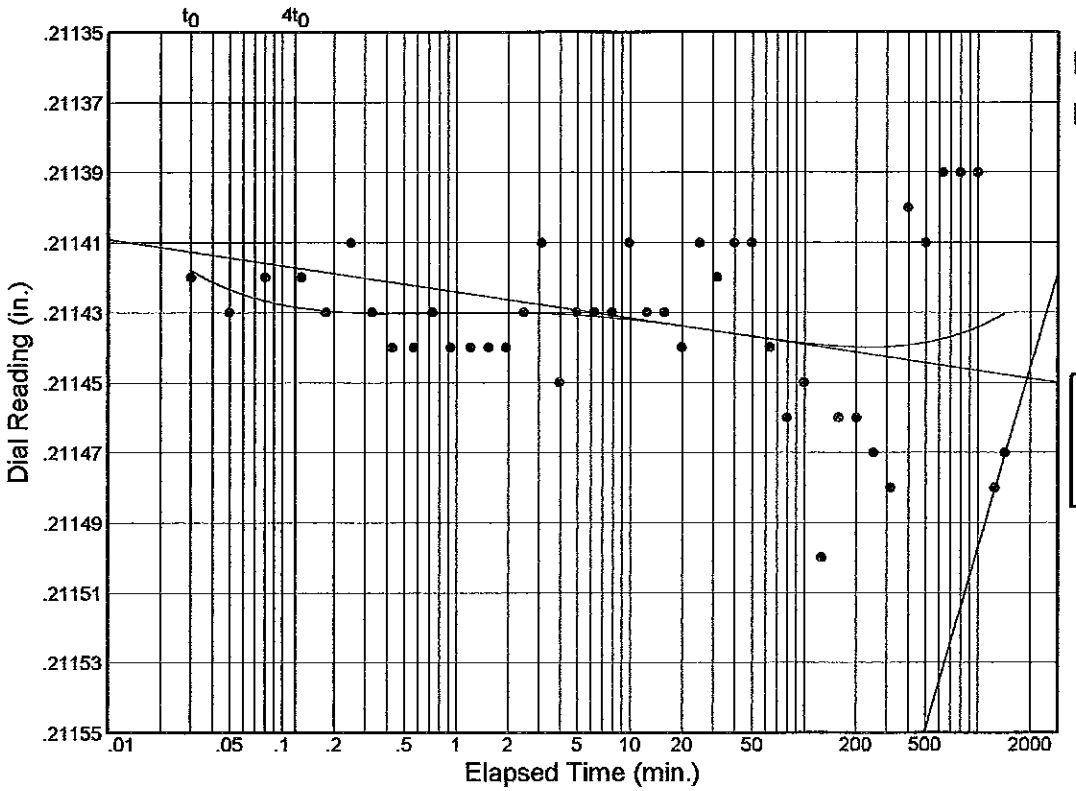
Remarks:

Figure

Dial Reading vs. Time

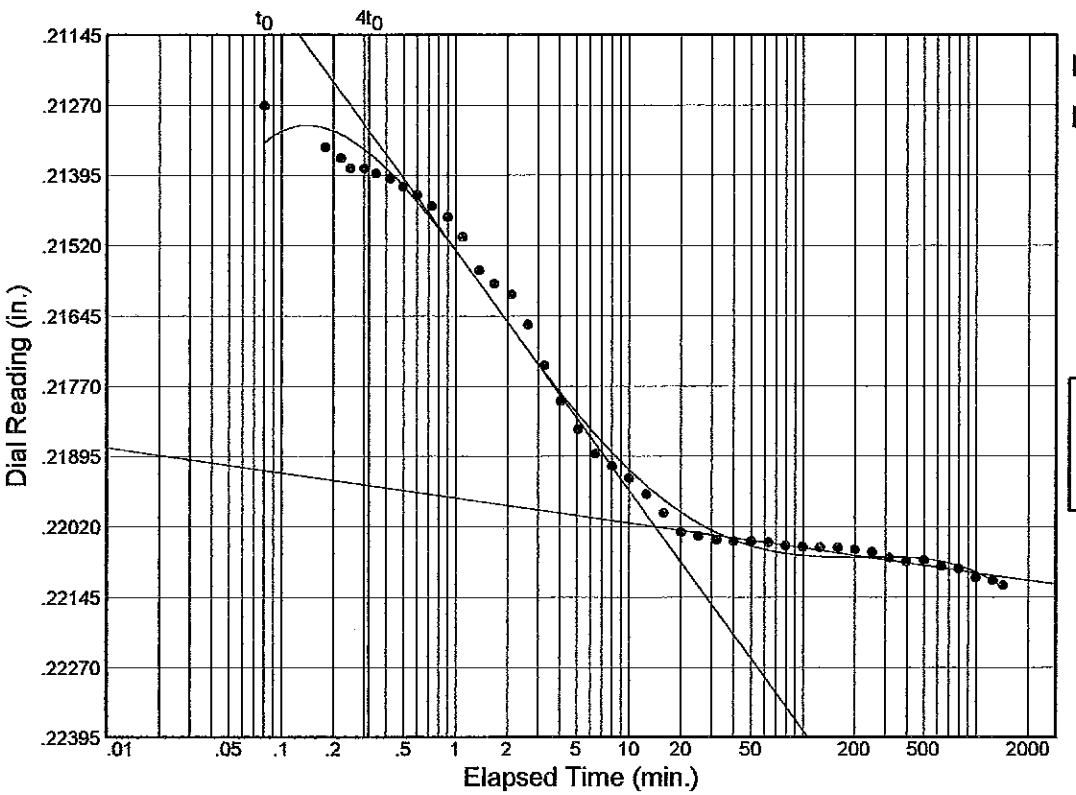
Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

Source: BSFR-8U Sample No.: 5C Elev./Depth: 14.0



Load No.= 1
Load= 0.05 tsf
D_0 = 0.21141
D_{50} = 0.21143
D_{100} = 0.21145
T_{50} = 6.57 min.

C_v @ T_{50}
0.0001 in.^{2}/sec.



Load No.= 2
Load= 0.13 tsf
D_0 = 0.21318
D_{50} = 0.21669
D_{100} = 0.22020
T_{50} = 2.15 min.

C_v @ T_{50}
0.0004 in.^{2}/sec.

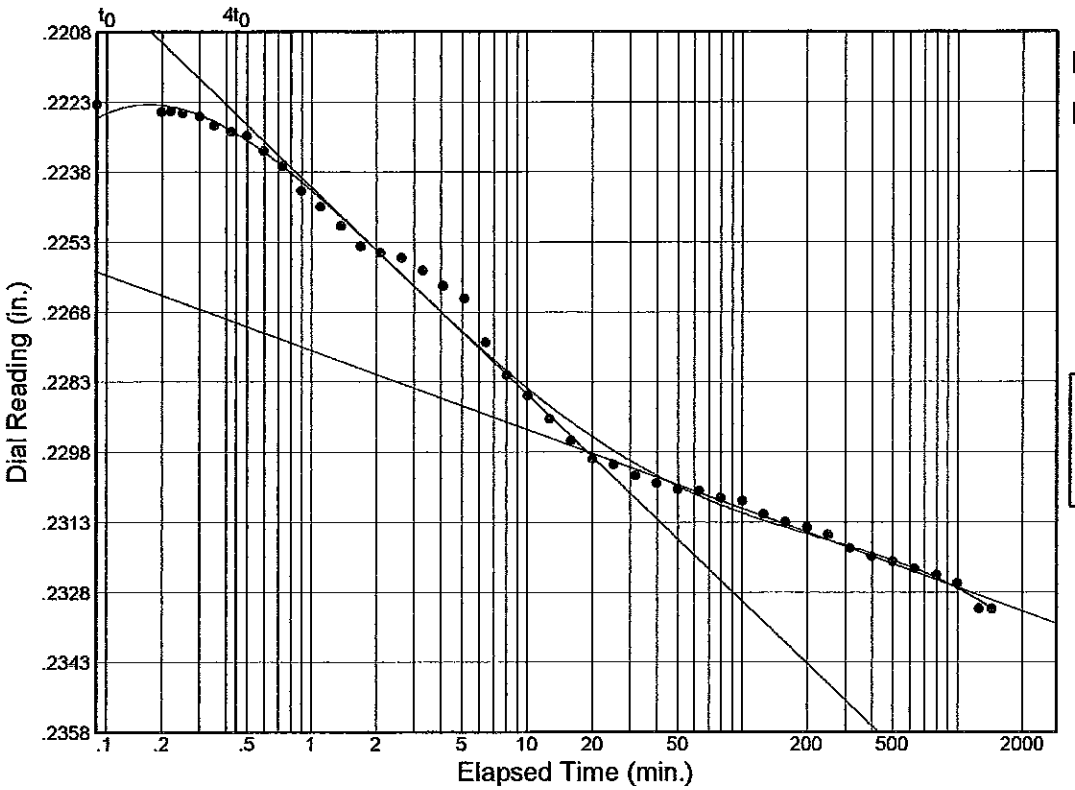
C_α = 0.000

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

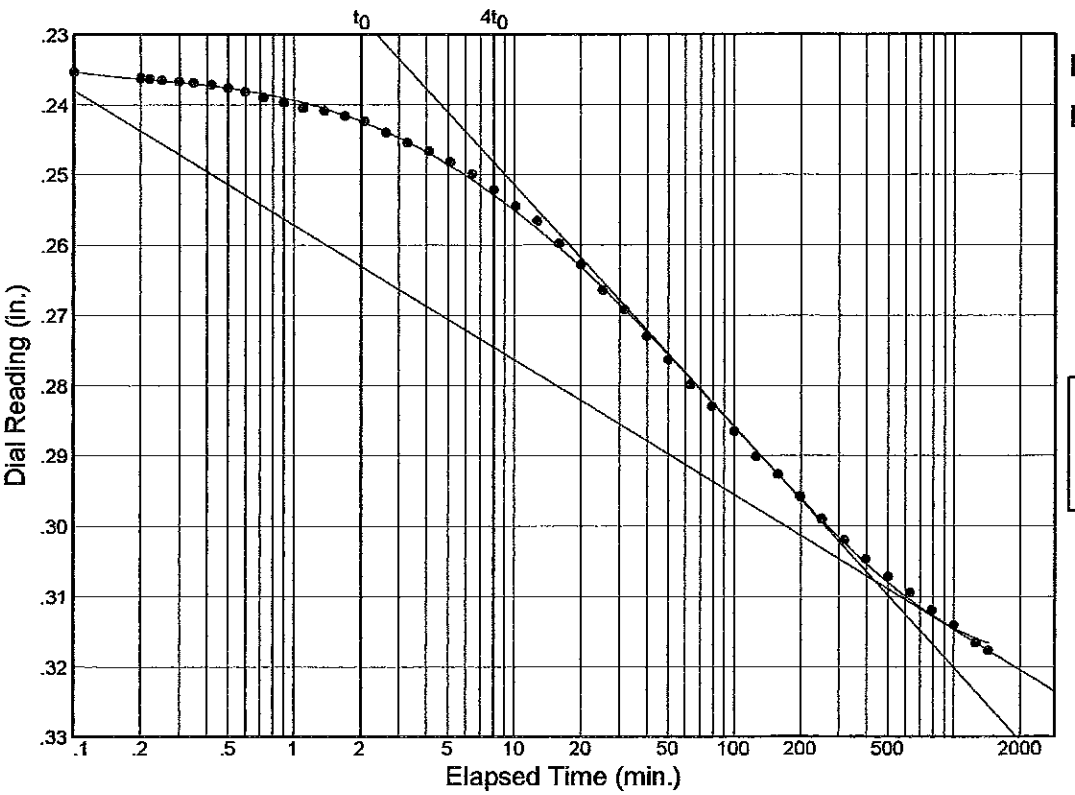
Source: BSFR-8U Sample No.: 5C Elev./Depth: 14.0



Load No.= 3
Load= 0.25 tsf
D_0 = 0.22212
D_{50} = 0.22595
D_{100} = 0.22978
T_{50} = 2.59 min.

C_v @ T_{50}
0.0003 in.^{2}/sec.

C_α = 0.002



Load No.= 4
Load= 0.50 tsf
D_0 = 0.23188
D_{50} = 0.26982
D_{100} = 0.30777
T_{50} = 33.39 min.

C_v @ T_{50}
0.0000 in.^{2}/sec.

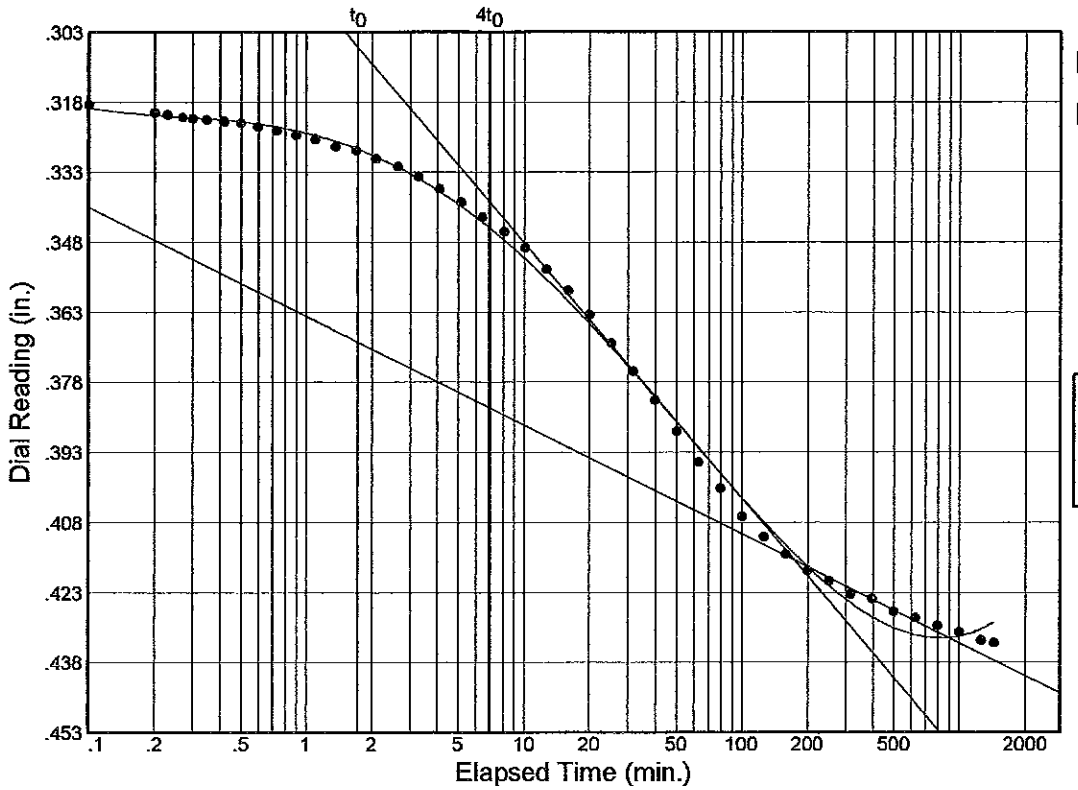
C_α = 0.020

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

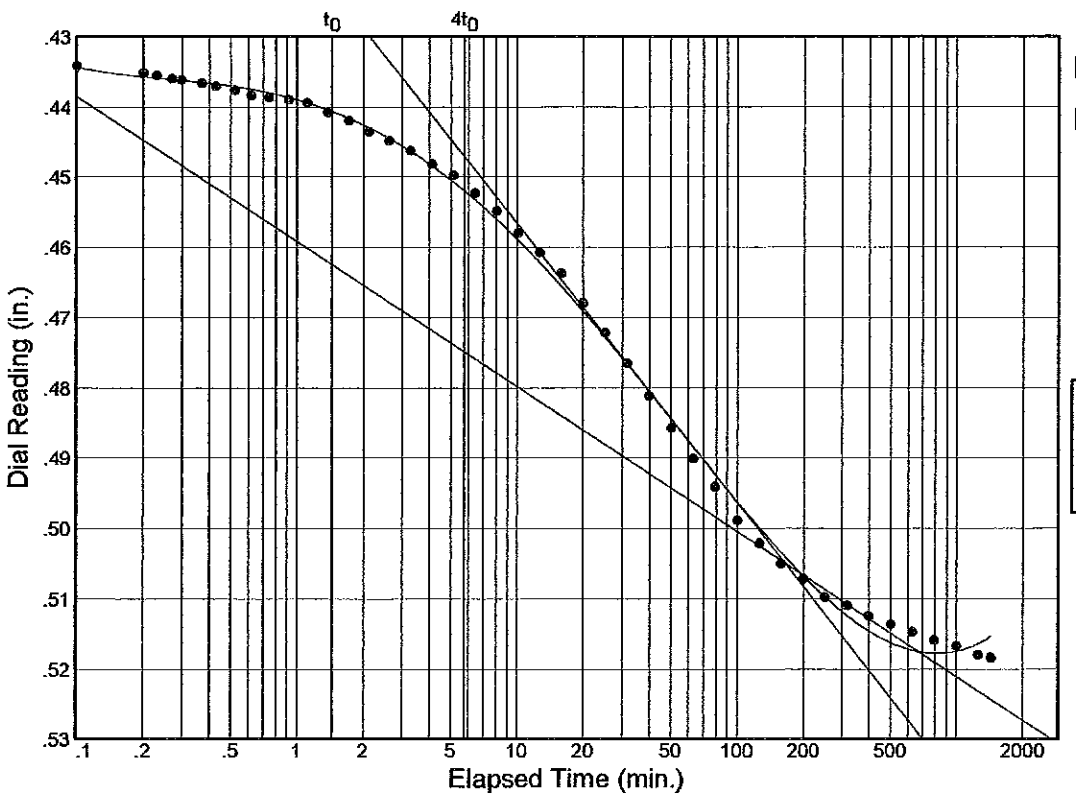
Source: BSFR-8U Sample No.: 5C Elev./Depth: 14.0



Load No.= 5
Load= 1.00 tsf
D_0 = 0.31137
D_{50} = 0.36371
D_{100} = 0.41605
T_{50} = 18.61 min.

C_v @ T_{50}
0.0000 in.^{2}/sec.

C_α = 0.026



Load No.= 6
Load= 2.00 tsf
D_0 = 0.42929
D_{50} = 0.46710
D_{100} = 0.50491
T_{50} = 17.72 min.

C_v @ T_{50}
0.0000 in.^{2}/sec.

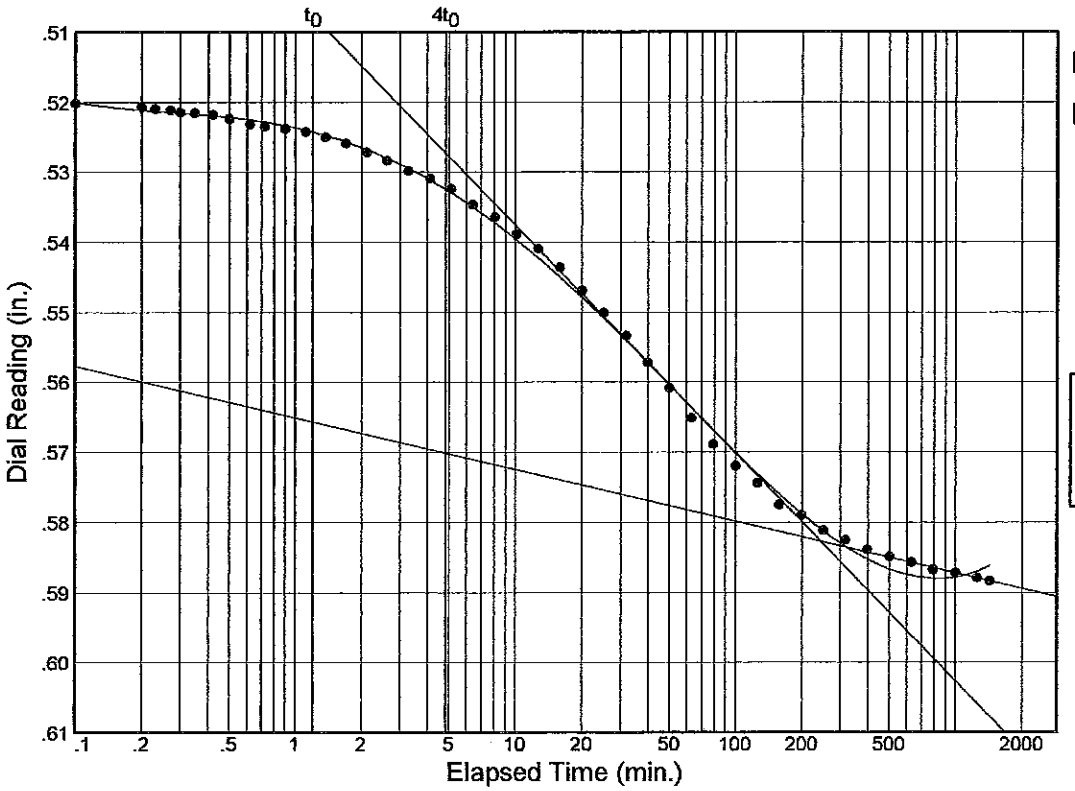
C_α = 0.027

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

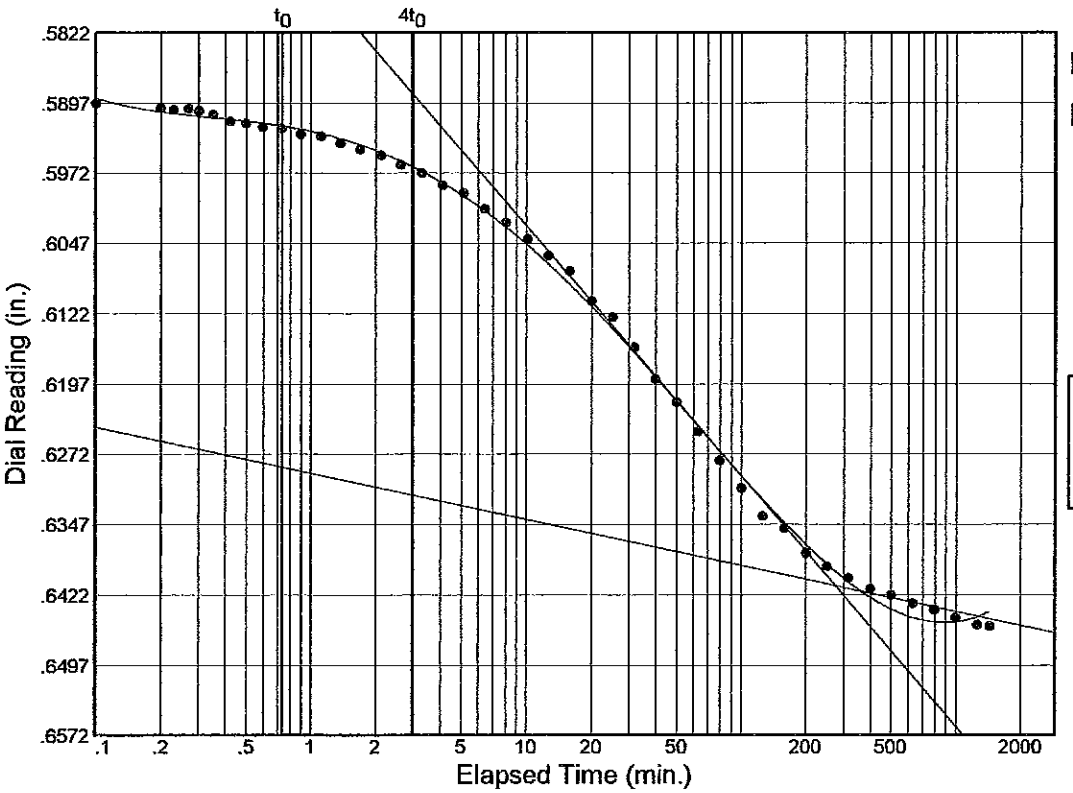
Source: BSFR-8U Sample No.: 5C Elev./Depth: 14.0



Load No.= 7
Load= 4.00 tsf
D_0 = 0.51616
D_{50} = 0.54939
D_{100} = 0.58263
T_{50} = 22.67 min.

C_v @ T_{50}
0.0000 in.^{2}/sec.

C_α = 0.011



Load No.= 8
Load= 8.00 tsf
D_0 = 0.58788
D_{50} = 0.61456
D_{100} = 0.64124
T_{50} = 27.14 min.

C_v @ T_{50}
0.0000 in.^{2}/sec.

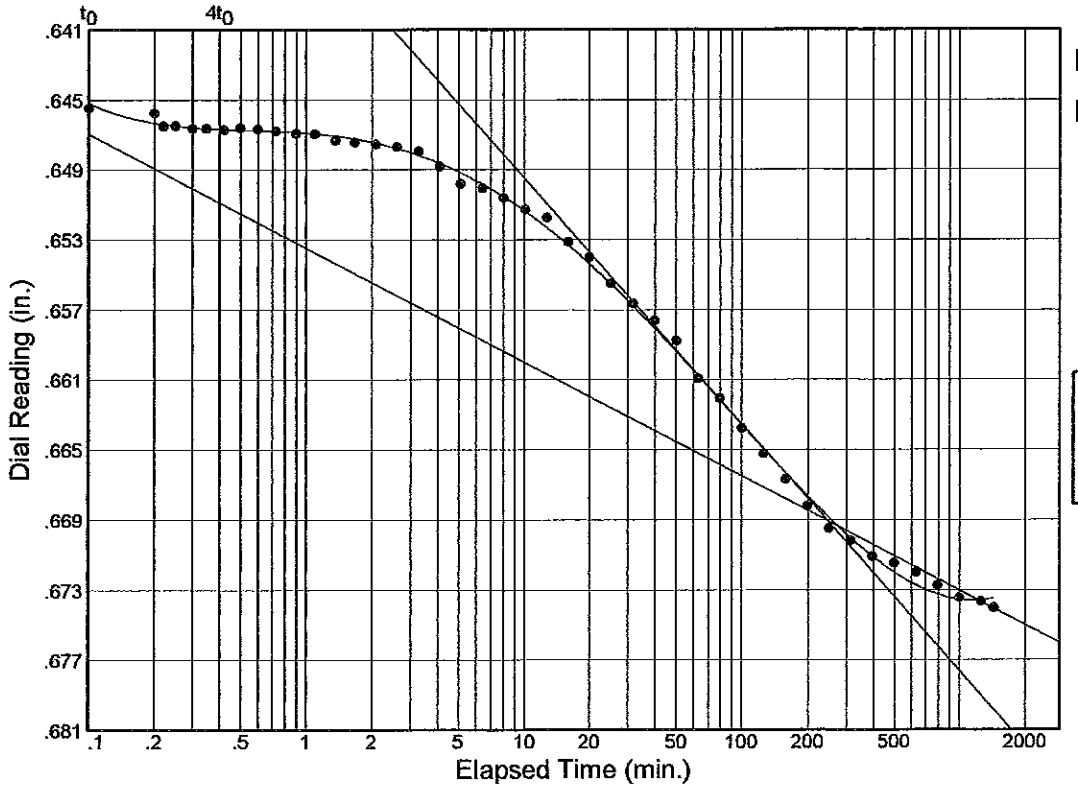
C_α = 0.008

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

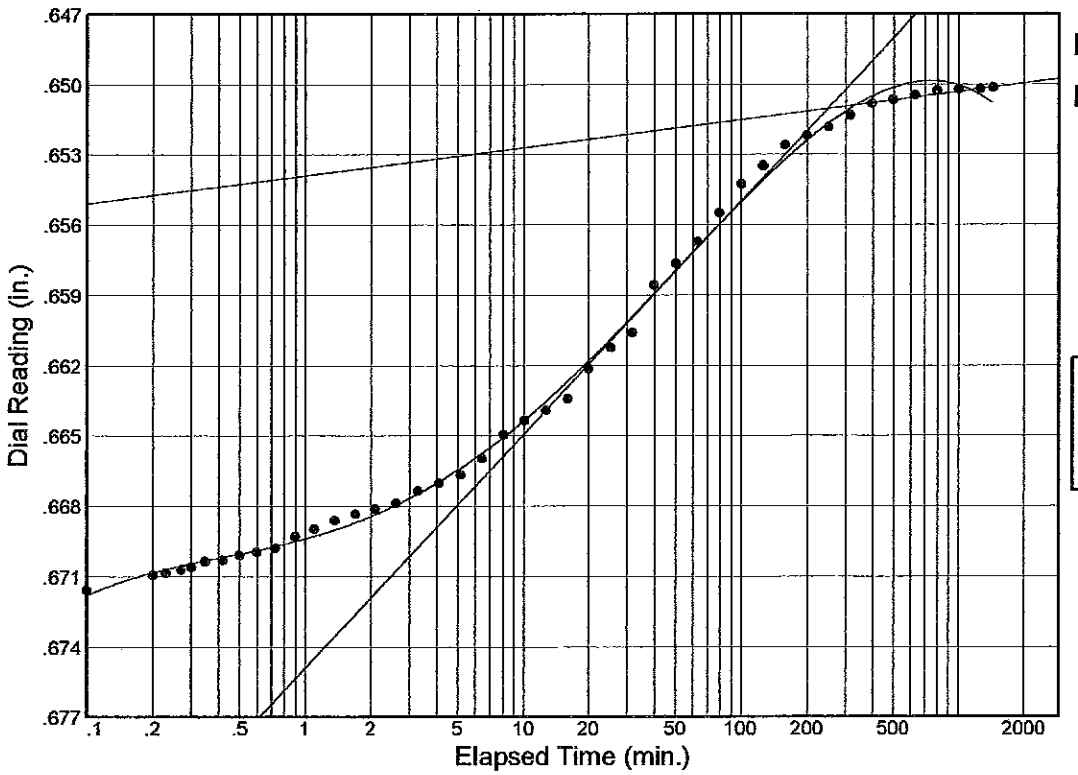
Source: BSFR-8U Sample No.: 5C Elev./Depth: 14.0



Load No.= 9
Load= 12.00 tsf
D_0 = 0.64367
D_{50} = 0.65635
D_{100} = 0.66903
T_{50} = 29.56 min.

C_v @ T_{50}
0.0000 in.^{2}/sec.

C_α = 0.011



Load No.= 10
Load= 3.00 tsf
D_0 = 0.69077
D_{50} = 0.67090
D_{100} = 0.65104
T_{50} = 0.19 min.

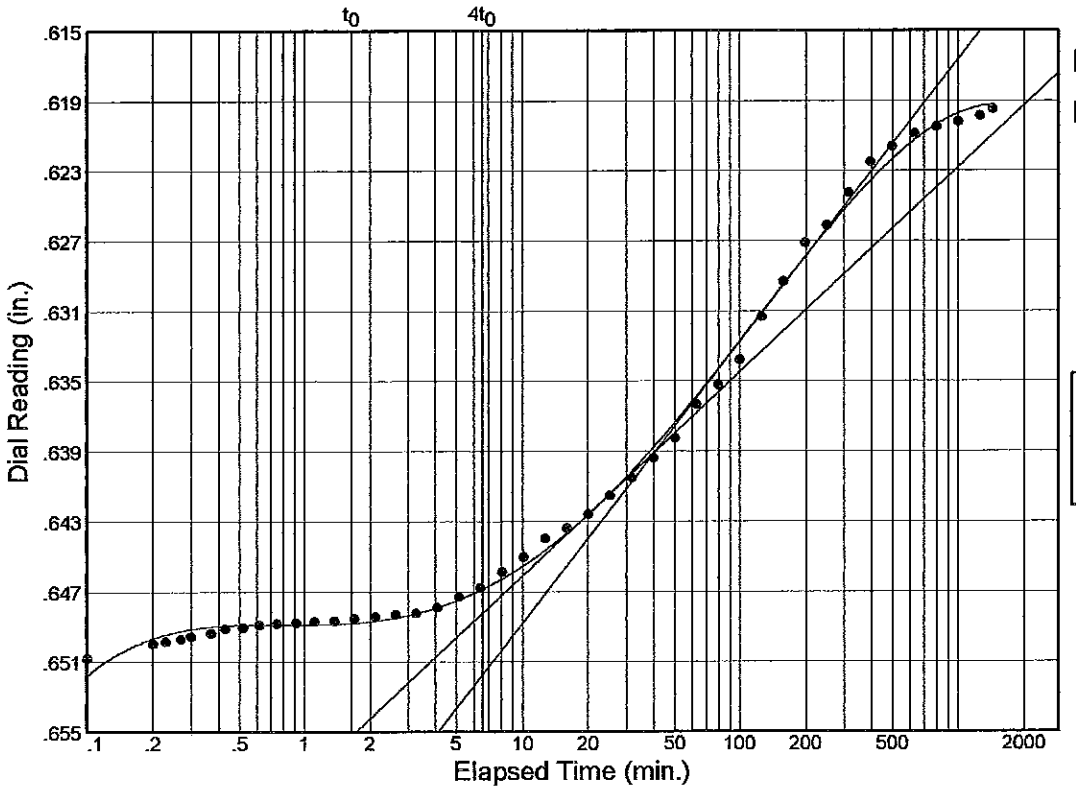
C_v @ T_{50}
0.0013 in.^{2}/sec.

Figure

Dial Reading vs. Time

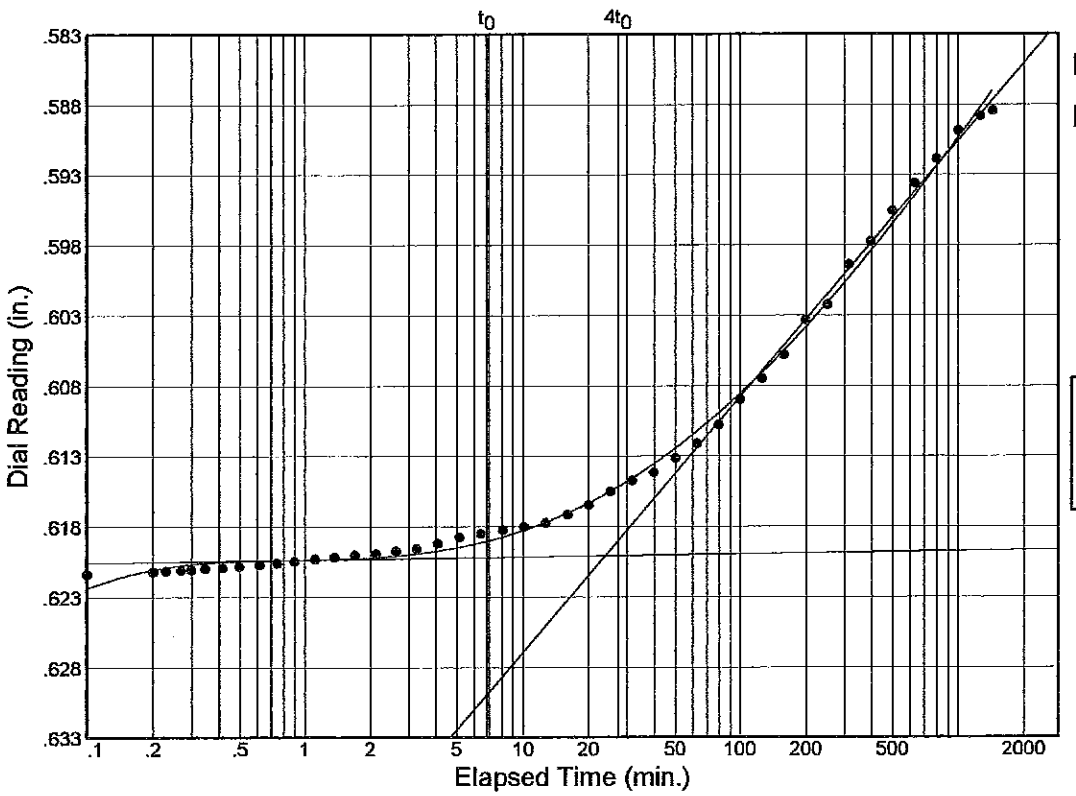
Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

Source: BSFR-8U Sample No.: 5C Elev./Depth: 14.0



Load No.= 11
Load= 0.75 tsf
D_0 = 0.65076
D_{50} = 0.64485
D_{100} = 0.63894
T_{50} = 12.07 min.

C_v @ T_{50}
0.0000 in.^{2}/sec.



Load No.= 12
Load= 0.19 tsf
D_0 = 0.62291
D_{50} = 0.62150
D_{100} = 0.62009
T_{50} = 0.15 min.

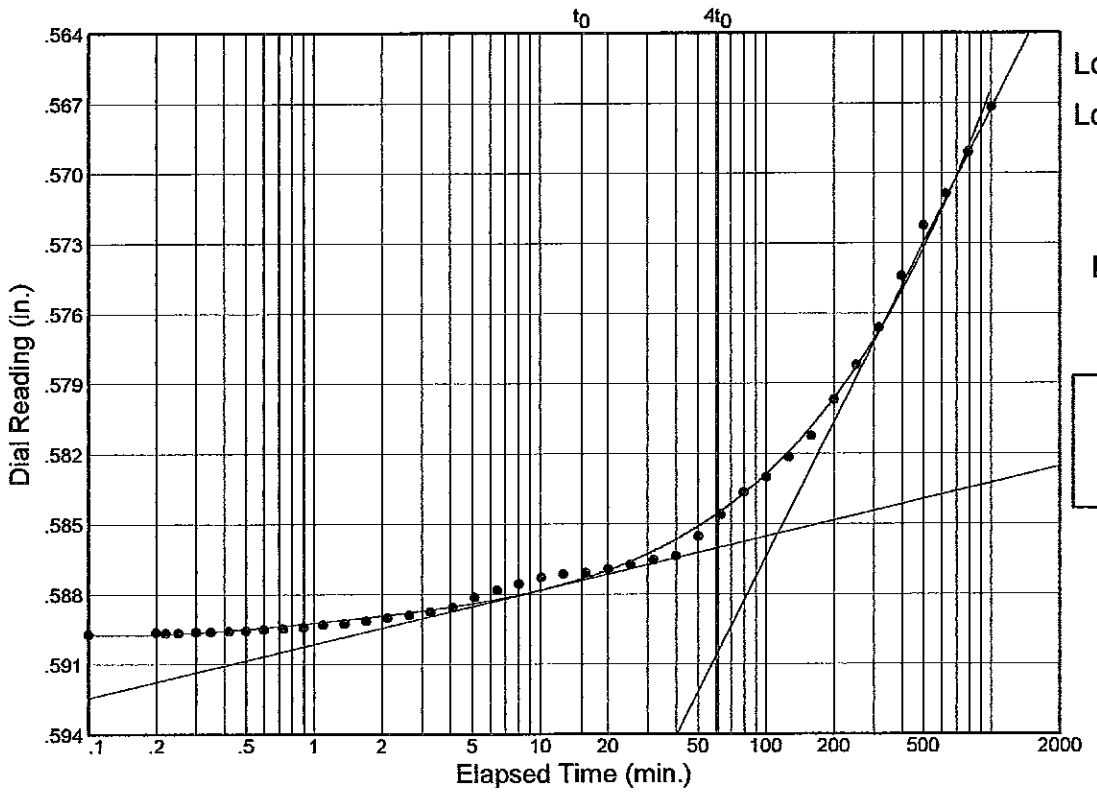
C_v @ T_{50}
0.0020 in.^{2}/sec.

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

Source: BSFR-8U Sample No.: 5C Elev./Depth: 14.0



Load No.= 13

Load= 0.05 tsf

D_0 = 0.59016

D_{50} = 0.58780

D_{100} = 0.58543

T_{50} = 10.42 min.

C_v @ T_{50}
0.0000 in.^{2}/sec.

CONSOLIDATION TEST DATA

Client: USACE
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans
Project Number: 12-017108

Sample Data

Source: BSFR-8U
Sample No.: 5C
Elev. or Depth: 14.0 **Sample Length(in./cm.):**
Location:
Description: VSO GR CH4 W/ LNS SM, WD
Liquid Limit: 85 **Plasticity Index:** 65
USCS: CH4 **AASHTO:** **Figure No.:**
Testing Remarks:

Test Specimen Data

TOTAL SAMPLE		BEFORE TEST	AFTER TEST
Wet w+t	= 144.95 g.	Consolidometer # = 2	Wet w+t = 533.33 g.
Dry w+t	= 104.85 g.		Dry w+t = 458.65 g.
Tare Wt.	= 30.27 g.	Spec. Gravity = 2.70	Tare Wt. = 297.32 g.
Height	= 1.00 in.	Height = 1.00 in.	
Diameter	= 3.99 in.	Diameter = 4.00 in.	
Weight	= 297.32 g.	Defl. Table = Stantec	
Moisture	= 53.8 %	Ht. Solids = 0.2903 in.	Moisture = 46.3 %
Wet Den.	= 90.8 pcf	Dry Wt. = 194.04 g.	Dry Wt. = 161.33 g.*
Dry Den.	= 59.0 pcf	Void Ratio = 2.434	Void Ratio = 1.209
		Saturation = 59.6 %	

* Final dry weight used in calculations

End-of-Load Summary

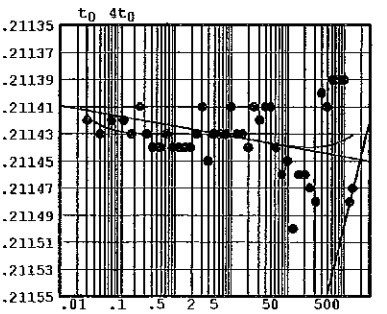
Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (in.^{2}/sec.)	C_α	Void Ratio	% Compression /Swell
start	0.21142				2.434	
0.05	0.21147	0.00000	0.0001		2.434	0.0 Comprs.
0.13	0.22124	0.00000	0.0004	0.000	2.401	1.0 Comprs.
0.25	0.23316	0.00000	0.0003	0.002	2.360	2.2 Comprs.
0.50	0.31771	0.00000	0.0000	0.020	2.068	10.7 Comprs.
1.00	0.43383	0.00000	0.0000	0.026	1.668	22.3 Comprs.
2.00	0.51840	0.00000	0.0000	0.027	1.377	30.8 Comprs.
4.00	0.58832	0.00000	0.0000	0.011	1.136	37.8 Comprs.
8.00	0.64554	0.00000	0.0000	0.008	0.939	43.5 Comprs.
12.00	0.67403	0.00000	0.0000	0.011	0.841	46.4 Comprs.
3.00	0.65012	0.00000	0.0013		0.923	44.0 Comprs.

Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (in.^{2}/sec.)	C_α	Void Ratio	% Compression /Swell
0.75	0.61946	0.00000	0.0000		1.029	40.9 Comprs.
0.19	0.58843	0.00000	0.0020		1.136	37.8 Comprs.
0.05	0.56717	0.00000	0.0000		1.209	35.7 Comprs.

C_c = 0.55 P_c = 0.01 tsf C_r = 0.15

Pressure: 0.05 tsf **TEST READINGS** **Load No. 1**

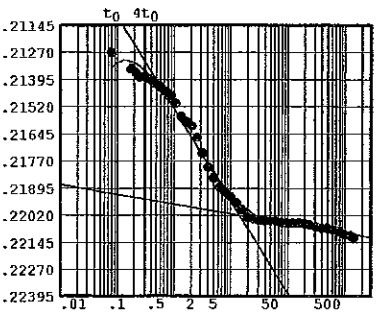
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.21142	23	12.55	0.21143
2	0.03	0.21142	24	15.80	0.21143
3	0.05	0.21143	25	19.92	0.21144
4	0.08	0.21142	26	25.08	0.21141
5	0.13	0.21142	27	31.58	0.21142
6	0.18	0.21143	28	39.77	0.21141
7	0.25	0.21141	29	50.08	0.21141
8	0.33	0.21143	30	63.05	0.21144
9	0.43	0.21144	31	79.40	0.21146
10	0.57	0.21144	32	99.97	0.21145
11	0.73	0.21143	33	125.87	0.21150
12	0.93	0.21144	34	158.45	0.21146
13	1.20	0.21144	35	199.50	0.21146
14	1.53	0.21144	36	251.17	0.21147
15	1.93	0.21144	37	316.20	0.21148
16	2.45	0.21143	38	398.08	0.21140
17	3.10	0.21141	39	501.17	0.21141
18	3.93	0.21145	40	630.93	0.21139
19	4.97	0.21143	41	794.30	0.21139
20	6.27	0.21143	42	999.98	0.21139
21	7.90	0.21143	43	1258.90	0.21148
22	9.95	0.21141	44	1440.25	0.21147



Void Ratio = 2.434 Compression = 0.0 %
D_0 = 0.21141 D_{50} = 0.21143 D_{100} = 0.21145
C_v at 6.6 min. = 0.0001 in.^{2}/sec.

Pressure: 0.13 tsf | TEST READINGS | Load No. 2

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.21001	24	12.70	0.21962
2	0.08	0.21271	25	15.97	0.21995
3	0.18	0.21345	26	20.07	0.22030
4	0.22	0.21364	27	25.23	0.22036
5	0.25	0.21382	28	31.75	0.22043
6	0.30	0.21382	29	39.93	0.22045
7	0.35	0.21392	30	50.23	0.22046
8	0.42	0.21401	31	63.22	0.22048
9	0.50	0.21416	32	79.55	0.22053
10	0.60	0.21429	33	100.13	0.22056
11	0.73	0.21450	34	126.02	0.22057
12	0.90	0.21469	35	158.62	0.22057
13	1.10	0.21504	36	199.65	0.22060
14	1.37	0.21564	37	251.32	0.22065
15	1.68	0.21588	38	316.37	0.22075
16	2.10	0.21607	39	398.23	0.22082
17	2.62	0.21661	40	501.32	0.22080
18	3.27	0.21733	41	631.10	0.22090
19	4.08	0.21797	42	794.47	0.22095
20	5.12	0.21847	43	1000.13	0.22110
21	6.42	0.21891	44	1259.07	0.22115
22	8.05	0.21912	45	1440.25	0.22124
23	10.12	0.21934			



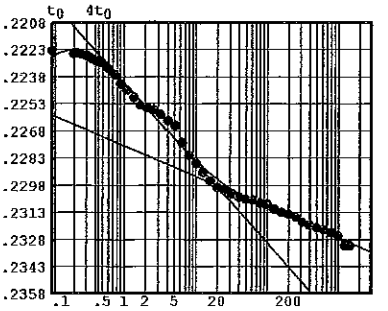
Void Ratio = 2.401 Compression = 1.0 %

D_0 = 0.21318 D_{50} = 0.21669 D_{100} = 0.22020

C_v at 2.2 min. = 0.0004 in.^{2}/sec. C_α = 0.000

Pressure: 0.25 tsf | TEST READINGS | Load No. 3

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.21957	24	12.72	0.22909
2	0.10	0.22236	25	15.97	0.22956
3	0.20	0.22252	26	20.08	0.22994
4	0.22	0.22251	27	25.25	0.23006
5	0.25	0.22254	28	31.75	0.23030
6	0.30	0.22262	29	39.93	0.23046
7	0.35	0.22280	30	50.25	0.23059
8	0.42	0.22294	31	63.23	0.23063
9	0.50	0.22303	32	79.57	0.23078
10	0.60	0.22335	33	100.15	0.23084
11	0.73	0.22368	34	126.03	0.23113
12	0.90	0.22420	35	158.63	0.23130
13	1.10	0.22454	36	199.67	0.23141
14	1.37	0.22495	37	251.33	0.23157
15	1.70	0.22539	38	316.37	0.23186
16	2.10	0.22552	39	398.25	0.23203
17	2.63	0.22564	40	501.33	0.23214
18	3.28	0.22591	41	631.10	0.23229
19	4.10	0.22624	42	794.48	0.23243
20	5.13	0.22651	43	1000.15	0.23261
21	6.43	0.22745	44	1259.08	0.23315
22	8.07	0.22815	45	1440.27	0.23316
23	10.12	0.22859			



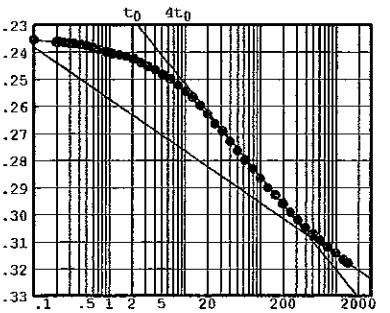
Void Ratio = 2.360 Compression = 2.2 %

D_0 = 0.22212 D_{50} = 0.22595 D_{100} = 0.22978

C_v at 2.6 min. = 0.0003 in.^{2}/sec. C_α = 0.002

Pressure: 0.50 tsf | TEST READINGS | Load No. 4

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.23125	24	12.72	0.25657
2	0.10	0.23537	25	15.98	0.25974
3	0.20	0.23620	26	20.08	0.26277
4	0.22	0.23630	27	25.25	0.26644
5	0.25	0.23655	28	31.75	0.26926
6	0.30	0.23672	29	39.93	0.27293
7	0.35	0.23687	30	50.25	0.27638
8	0.42	0.23715	31	63.23	0.27986
9	0.50	0.23757	32	79.57	0.28300
10	0.60	0.23815	33	100.13	0.28659
11	0.73	0.23901	34	126.03	0.29006
12	0.90	0.23974	35	158.62	0.29268
13	1.10	0.24053	36	199.67	0.29580
14	1.37	0.24093	37	251.33	0.29899
15	1.70	0.24159	38	316.37	0.30199
16	2.10	0.24232	39	398.25	0.30468
17	2.63	0.24395	40	501.33	0.30713
18	3.28	0.24545	41	631.10	0.30946
19	4.10	0.24661	42	794.47	0.31201
20	5.13	0.24822	43	1000.15	0.31407
21	6.43	0.24993	44	1259.07	0.31659
22	8.07	0.25212	45	1440.30	0.31771
23	10.12	0.25445			



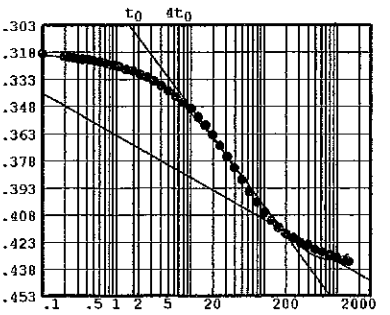
Void Ratio = 2.068 **Compression** = 10.7 %

D_0 = 0.23188 D_{50} = 0.26982 D_{100} = 0.30777

C_v **at 33.4 min.** = 0.0000 in.^{2}/sec. C_α = 0.020

Pressure: 1.00 tsf | TEST READINGS | Load No. 5

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.31516	24	12.72	0.35380
2	0.10	0.31853	25	15.97	0.35837
3	0.20	0.32031	26	20.08	0.36354
4	0.23	0.32078	27	25.25	0.36967
5	0.27	0.32123	28	31.75	0.37570
6	0.30	0.32161	29	39.93	0.38180
7	0.35	0.32185	30	50.25	0.38858
8	0.42	0.32216	31	63.23	0.39504
9	0.50	0.32255	32	79.57	0.40065
10	0.60	0.32332	33	100.13	0.40672
11	0.73	0.32420	34	126.03	0.41103
12	0.90	0.32506	35	158.63	0.41483
13	1.10	0.32599	36	199.67	0.41830
14	1.37	0.32756	37	251.33	0.42055
15	1.70	0.32834	38	316.37	0.42332
16	2.10	0.33017	39	398.25	0.42439
17	2.63	0.33175	40	501.33	0.42702
18	3.28	0.33394	41	631.10	0.42849
19	4.10	0.33652	42	794.48	0.43012
20	5.13	0.33939	43	1000.15	0.43146
21	6.43	0.34258	44	1259.08	0.43322
22	8.07	0.34576	45	1440.33	0.43383
23	10.12	0.34920			



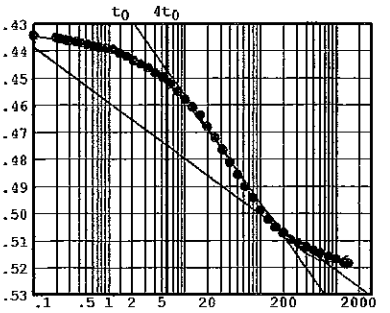
Void Ratio = 1.668 Compression = 22.3 %

D_0 = 0.31137 D_{50} = 0.36371 D_{100} = 0.41605

C_v at 18.6 min. = 0.0000 in.^{2}/sec. C_α = 0.026

Pressure: 2.00 tsf | TEST READINGS | Load No. 6

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.42975	24	12.72	0.46076
2	0.10	0.43412	25	15.98	0.46371
3	0.20	0.43512	26	20.08	0.46791
4	0.23	0.43553	27	25.25	0.47211
5	0.27	0.43597	28	31.77	0.47655
6	0.30	0.43615	29	39.95	0.48120
7	0.37	0.43664	30	50.27	0.48574
8	0.43	0.43710	31	63.23	0.49007
9	0.52	0.43763	32	79.58	0.49415
10	0.62	0.43832	33	100.15	0.49881
11	0.75	0.43863	34	126.03	0.50212
12	0.92	0.43898	35	158.63	0.50503
13	1.12	0.43944	36	199.68	0.50718
14	1.38	0.44079	37	251.33	0.50977
15	1.72	0.44199	38	316.38	0.51101
16	2.12	0.44351	39	398.27	0.51239
17	2.63	0.44482	40	501.35	0.51363
18	3.28	0.44626	41	631.12	0.51470
19	4.12	0.44815	42	794.48	0.51590
20	5.15	0.44974	43	1000.17	0.51673
21	6.43	0.45228	44	1259.08	0.51798
22	8.08	0.45485	45	1440.18	0.51840
23	10.13	0.45790			



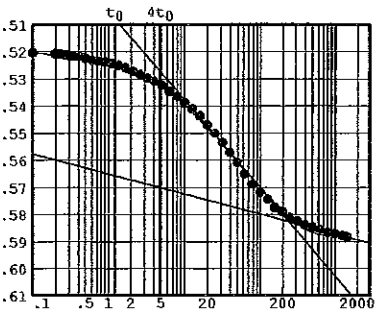
Void Ratio = 1.377 **Compression** = 30.8 %

D_0 = 0.42929 D_{50} = 0.46710 D_{100} = 0.50491

C_v **at 17.7 min.** = 0.0000 in.^{2}/sec. C_α = 0.027

Pressure: 4.00 tsf | TEST READINGS | Load No. 7

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.51377	24	12.72	0.54098
2	0.10	0.52021	25	15.97	0.54357
3	0.20	0.52073	26	20.08	0.54689
4	0.23	0.52097	27	25.25	0.55008
5	0.27	0.52121	28	31.75	0.55339
6	0.30	0.52148	29	39.95	0.55717
7	0.35	0.52152	30	50.25	0.56081
8	0.42	0.52184	31	63.23	0.56514
9	0.50	0.52241	32	79.57	0.56888
10	0.62	0.52316	33	100.13	0.57191
11	0.73	0.52345	34	126.03	0.57441
12	0.90	0.52384	35	158.63	0.57749
13	1.12	0.52427	36	199.67	0.57892
14	1.37	0.52503	37	251.33	0.58113
15	1.70	0.52593	38	316.37	0.58251
16	2.12	0.52722	39	398.25	0.58388
17	2.63	0.52841	40	501.33	0.58485
18	3.28	0.52982	41	631.10	0.58566
19	4.10	0.53096	42	794.48	0.58675
20	5.13	0.53240	43	1000.15	0.58720
21	6.43	0.53469	44	1259.08	0.58789
22	8.07	0.53636	45	1440.28	0.58832
23	10.12	0.53886			



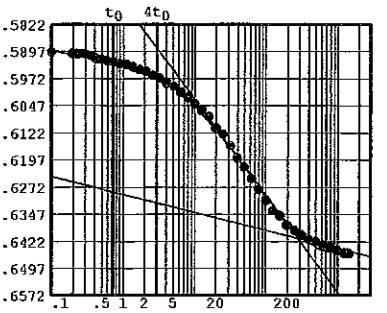
Void Ratio = 1.136 **Compression** = 37.8 %

D_0 = 0.51616 D_{50} = 0.54939 D_{100} = 0.58263

C_v **at 22.7 min.** = 0.0000 in.^{2}/sec. C_α = 0.011

Pressure: 8.00 tsf | TEST READINGS | Load No. 8

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.58008	24	12.72	0.60599
2	0.10	0.58978	25	15.98	0.60767
3	0.20	0.59023	26	20.08	0.61087
4	0.23	0.59044	27	25.25	0.61261
5	0.27	0.59032	28	31.75	0.61580
6	0.30	0.59054	29	39.95	0.61923
7	0.35	0.59089	30	50.25	0.62170
8	0.42	0.59168	31	63.23	0.62483
9	0.50	0.59188	32	79.57	0.62786
10	0.60	0.59226	33	100.13	0.63085
11	0.73	0.59244	34	126.03	0.63382
12	0.90	0.59300	35	158.63	0.63512
13	1.12	0.59323	36	199.67	0.63777
14	1.37	0.59397	37	251.33	0.63915
15	1.70	0.59465	38	316.37	0.64037
16	2.12	0.59532	39	398.25	0.64154
17	2.63	0.59633	40	501.33	0.64224
18	3.28	0.59718	41	631.10	0.64315
19	4.10	0.59851	42	794.48	0.64380
20	5.13	0.59931	43	1000.15	0.64462
21	6.43	0.60103	44	1259.08	0.64540
22	8.07	0.60246	45	1440.30	0.64554
23	10.13	0.60422			



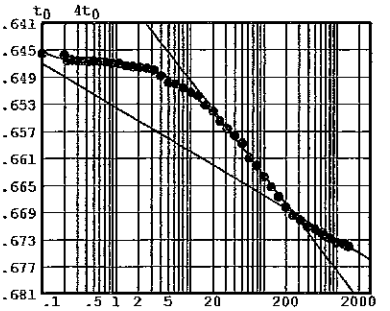
Void Ratio = 0.939 **Compression** = 43.5 %

D_0 = 0.58788 D_{50} = 0.61456 D_{100} = 0.64124

C_v **at 27.1 min.** = 0.0000 in.^{2}/sec. C_α = 0.008

Pressure: 12.00 tsf | TEST READINGS | Load No. 9

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.63747	24	12.70	0.65173
2	0.10	0.64547	25	15.97	0.65314
3	0.20	0.64578	26	20.07	0.65399
4	0.22	0.64651	27	25.23	0.65550
5	0.25	0.64650	28	31.73	0.65664
6	0.30	0.64663	29	39.93	0.65761
7	0.35	0.64665	30	50.23	0.65879
8	0.42	0.64670	31	63.22	0.66094
9	0.50	0.64661	32	79.55	0.66206
10	0.60	0.64667	33	100.12	0.66378
11	0.73	0.64677	34	126.02	0.66523
12	0.90	0.64694	35	158.62	0.66668
13	1.10	0.64698	36	199.65	0.66821
14	1.37	0.64733	37	251.32	0.66948
15	1.68	0.64744	38	316.37	0.67018
16	2.10	0.64754	39	398.25	0.67109
17	2.62	0.64770	40	501.33	0.67145
18	3.27	0.64796	41	631.10	0.67199
19	4.08	0.64882	42	794.47	0.67274
20	5.12	0.64980	43	1000.15	0.67344
21	6.42	0.65006	44	1259.07	0.67365
22	8.05	0.65061	45	1440.07	0.67403
23	10.12	0.65127			



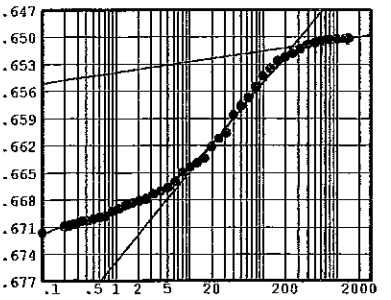
Void Ratio = 0.841 **Compression** = 46.4 %

D_0 = 0.64367 D_{50} = 0.65635 D_{100} = 0.66903

C_v **at 29.6 min.** = 0.0000 in.^{2}/sec. C_α = 0.011

Pressure: 3.00 tsf | TEST READINGS | Load No. 10

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.69077	24	12.72	0.66392
2	0.10	0.67160	25	15.97	0.66341
3	0.20	0.67094	26	20.08	0.66213
4	0.23	0.67086	27	25.25	0.66122
5	0.27	0.67071	28	31.75	0.66060
6	0.30	0.67060	29	39.93	0.65859
7	0.35	0.67037	30	50.25	0.65764
8	0.42	0.67031	31	63.23	0.65674
9	0.50	0.67010	32	79.57	0.65550
10	0.60	0.66995	33	100.13	0.65427
11	0.73	0.66978	34	126.03	0.65348
12	0.90	0.66930	35	158.62	0.65258
13	1.10	0.66898	36	199.67	0.65218
14	1.37	0.66860	37	251.33	0.65182
15	1.70	0.66834	38	316.37	0.65132
16	2.10	0.66811	39	398.25	0.65082
17	2.62	0.66788	40	501.33	0.65064
18	3.28	0.66735	41	631.10	0.65046
19	4.10	0.66702	42	794.47	0.65028
20	5.13	0.66666	43	1000.15	0.65022
21	6.43	0.66595	44	1259.07	0.65019
22	8.07	0.66494	45	1440.48	0.65012
23	10.12	0.66435			



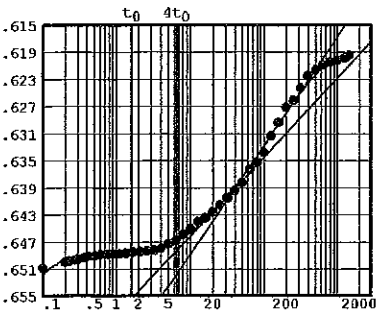
Void Ratio = 0.923 **Compression** = 44.0 %

D_0 = 0.69077 D_{50} = 0.67090 D_{100} = 0.65104

C_v **at 0.2 min.** = 0.0013 in.^{2}/sec.

Pressure: 0.75 tsf | TEST READINGS | Load No. 11

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.65598	24	12.72	0.64397
2	0.10	0.65080	25	15.98	0.64340
3	0.20	0.64995	26	20.08	0.64258
4	0.23	0.64984	27	25.25	0.64153
5	0.27	0.64968	28	31.77	0.64052
6	0.30	0.64956	29	39.95	0.63936
7	0.37	0.64937	30	50.27	0.63824
8	0.43	0.64911	31	63.23	0.63631
9	0.52	0.64902	32	79.58	0.63520
10	0.62	0.64890	33	100.15	0.63375
11	0.75	0.64882	34	126.03	0.63133
12	0.92	0.64877	35	158.63	0.62933
13	1.12	0.64872	36	199.68	0.62712
14	1.38	0.64867	37	251.33	0.62609
15	1.70	0.64852	38	316.38	0.62423
16	2.12	0.64843	39	398.27	0.62249
17	2.63	0.64832	40	501.35	0.62162
18	3.28	0.64822	41	631.12	0.62091
19	4.10	0.64791	42	794.48	0.62048
20	5.13	0.64730	43	1000.17	0.62020
21	6.43	0.64677	44	1259.08	0.61986
22	8.07	0.64588	45	1440.02	0.61946
23	10.13	0.64501			



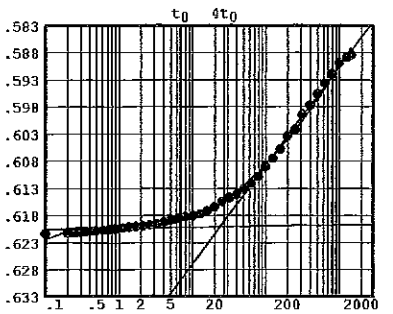
Void Ratio = 1.029 **Compression** = 40.9 %

D_0 = 0.65076 D_{50} = 0.64485 D_{100} = 0.63894

C_v **at 12.1 min.** = 0.0000 in.^{2}/sec.

Pressure: 0.19 tsf | TEST READINGS | Load No. 12

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.62407	24	12.72	0.61775
2	0.10	0.62137	25	15.97	0.61717
3	0.20	0.62121	26	20.08	0.61647
4	0.23	0.62116	27	25.25	0.61550
5	0.27	0.62112	28	31.75	0.61474
6	0.30	0.62107	29	39.93	0.61415
7	0.35	0.62100	30	50.25	0.61316
8	0.42	0.62093	31	63.23	0.61208
9	0.50	0.62084	32	79.57	0.61078
10	0.62	0.62072	33	100.13	0.60900
11	0.75	0.62061	34	126.03	0.60748
12	0.90	0.62049	35	158.63	0.60579
13	1.12	0.62032	36	199.67	0.60336
14	1.37	0.62014	37	251.33	0.60224
15	1.70	0.62004	38	316.37	0.59939
16	2.12	0.61992	39	398.25	0.59772
17	2.63	0.61975	40	501.33	0.59557
18	3.28	0.61959	41	631.10	0.59359
19	4.10	0.61922	42	794.48	0.59188
20	5.13	0.61875	43	1000.15	0.58986
21	6.43	0.61853	44	1259.08	0.58882
22	8.07	0.61823	45	1440.10	0.58843
23	10.12	0.61802			



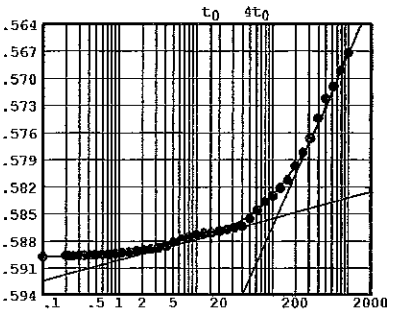
Void Ratio = 1.136 **Compression** = 37.8 %

D_0 = 0.62291 D_{50} = 0.62150 D_{100} = 0.62009

C_v **at 0.1 min.** = 0.0020 in.^{2}/sec.

Pressure: 0.05 tsf | TEST READINGS | Load No. 13

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.59031	23	10.12	0.58728
2	0.10	0.58972	24	12.72	0.58716
3	0.20	0.58964	25	15.97	0.58710
4	0.22	0.58966	26	20.08	0.58692
5	0.25	0.58965	27	25.25	0.58675
6	0.30	0.58962	28	31.75	0.58655
7	0.35	0.58961	29	39.93	0.58637
8	0.42	0.58958	30	50.25	0.58553
9	0.50	0.58955	31	63.23	0.58461
10	0.60	0.58951	32	79.57	0.58366
11	0.73	0.58947	33	100.13	0.58298
12	0.90	0.58942	34	126.03	0.58214
13	1.10	0.58930	35	158.63	0.58125
14	1.37	0.58925	36	199.67	0.57968
15	1.70	0.58914	37	251.33	0.57820
16	2.12	0.58901	38	316.37	0.57663
17	2.63	0.58890	39	398.25	0.57440
18	3.28	0.58876	40	501.33	0.57224
19	4.10	0.58858	41	631.10	0.57088
20	5.13	0.58814	42	794.48	0.56909
21	6.43	0.58783	43	1000.15	0.56717
22	8.07	0.58757			

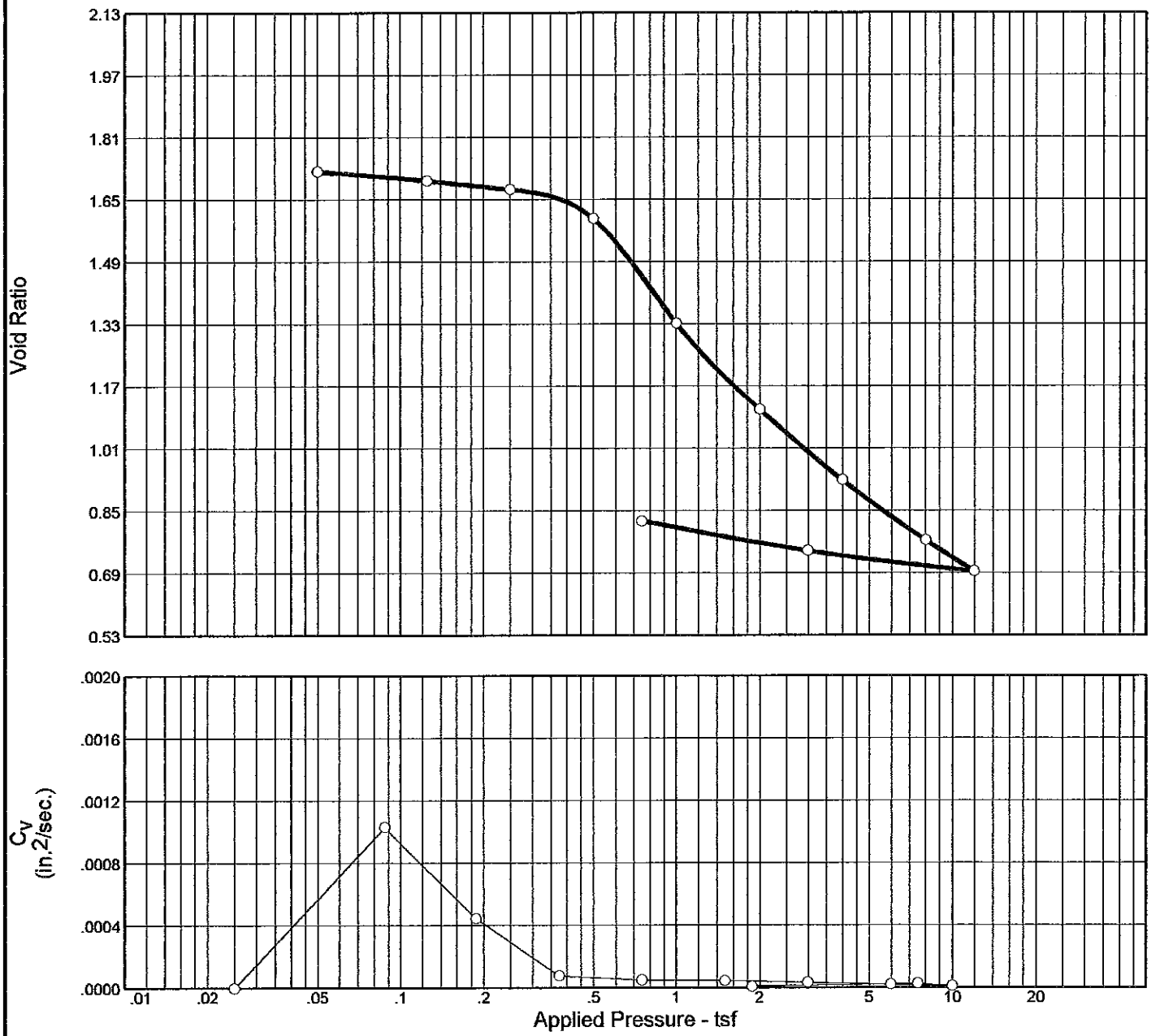


Void Ratio = 1.209 **Compression** = 35.7 %

D_0 = 0.59016 D_{50} = 0.58780 D_{100} = 0.58543

C_v **at 10.4 min.** = 0.0000 in.^{2}/sec.

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture							
71.6 %	47.5 %	61.2	73	55	2.60	0.07	0.46	1.725

MATERIAL DESCRIPTION	USCS	AASHTO
SO GR CH3 W/ LNS & ARS ML	CH4	

Project No. 12-017108 **Client:** USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

Source: BSFR-8U **Sample No.:** 8B **Elev./Depth:** 25.0

Remarks:

FFEBJV, LLC

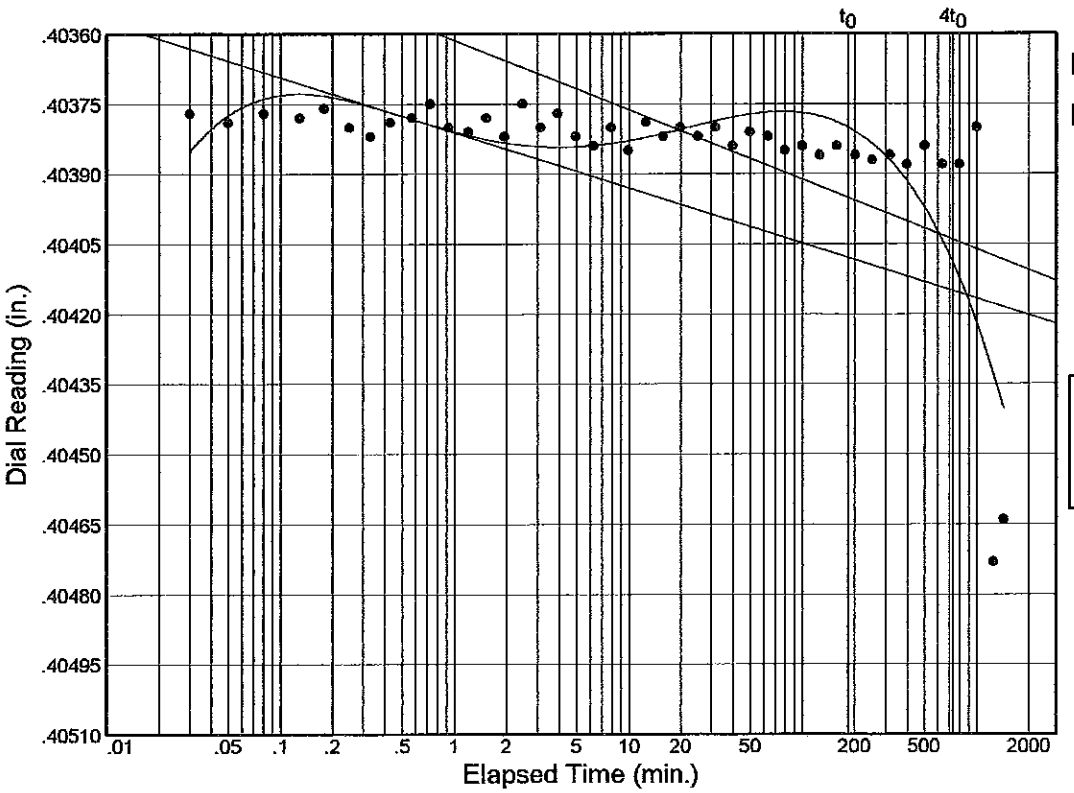
St Rose, LA

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

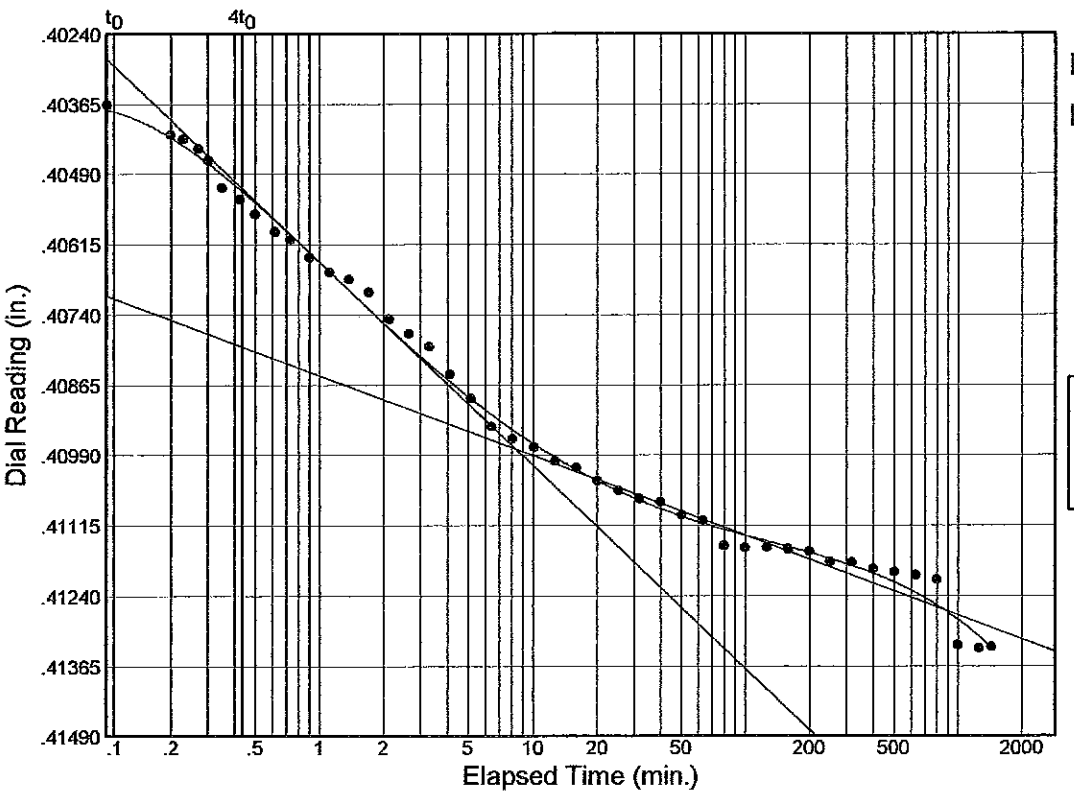
Source: BSFR-8U Sample No.: 8B Elev./Depth: 25.0



Load No.= 1
Load= 0.05 tsf
D_0 = 0.40351
D_{50} = 0.40404
D_{100} = 0.40457
T_{50} = 734.26 min.

C_v @ T_{50}
0.0000 in.^{2}/sec.

C_α = 0.000



Load No.= 2
Load= 0.13 tsf
D_0 = 0.40238
D_{50} = 0.40608
D_{100} = 0.40979
T_{50} = 0.79 min.

C_v @ T_{50}
0.0010 in.^{2}/sec.

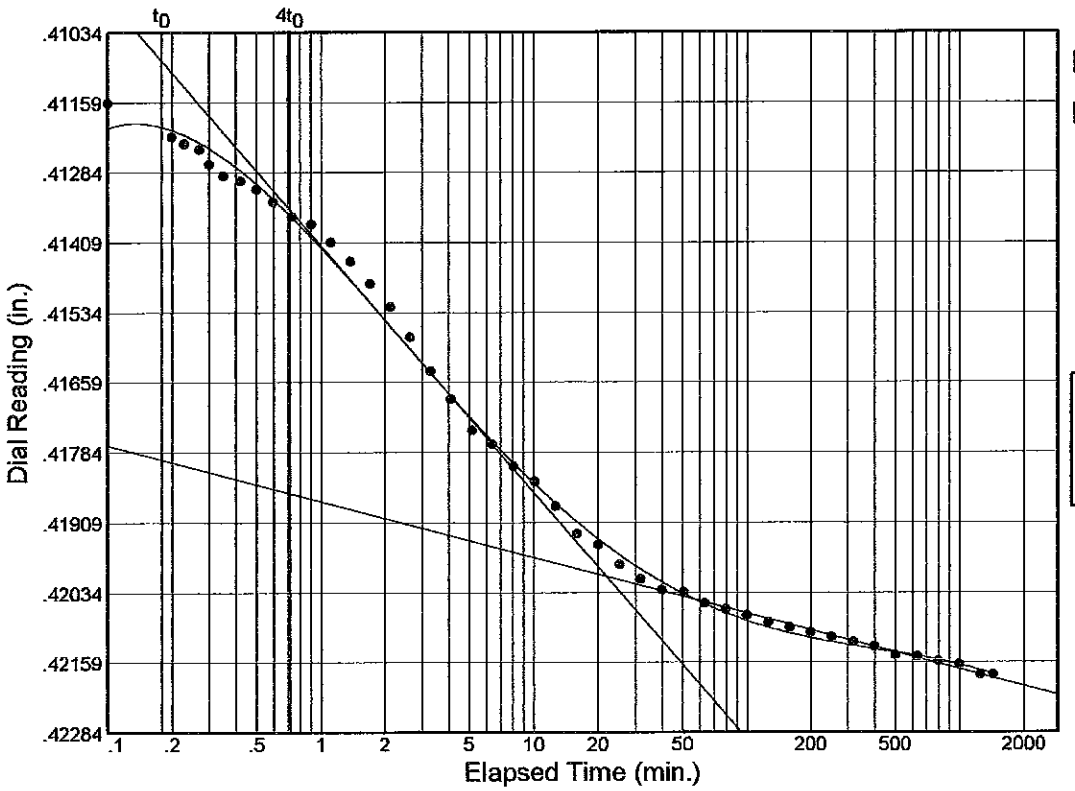
C_α = 0.001

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

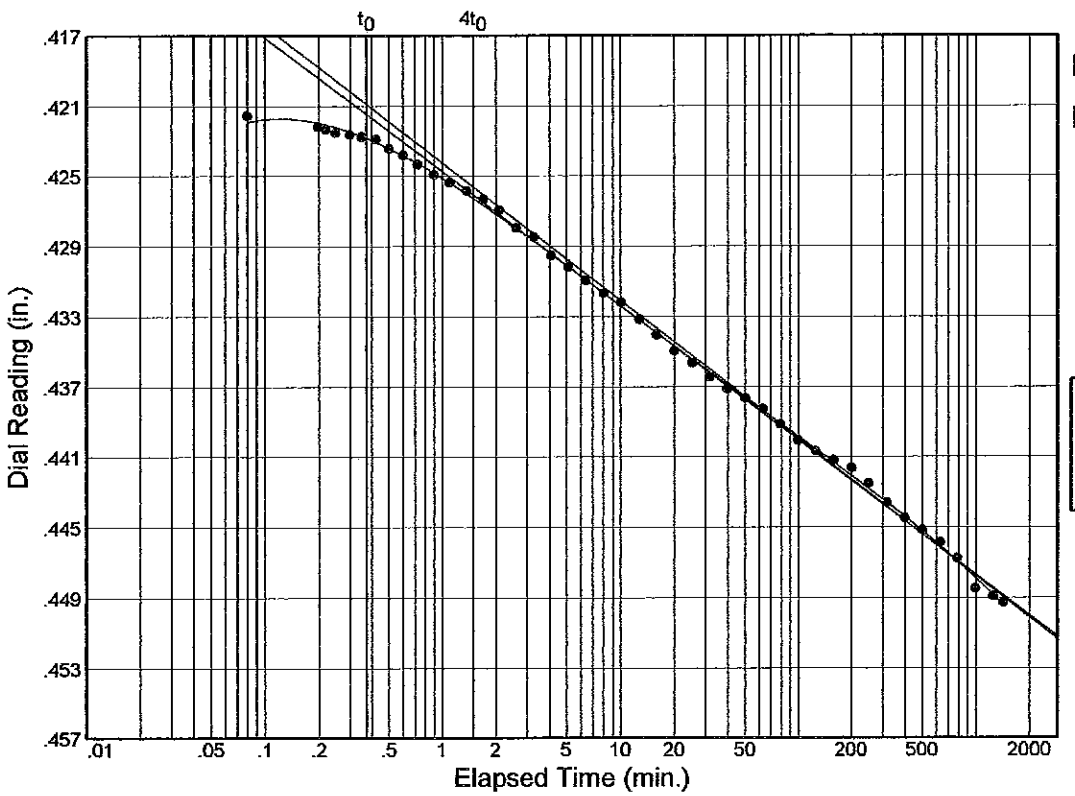
Source: BSFR-8U Sample No.: 8B Elev./Depth: 25.0



Load No.= 3
Load= 0.25 tsf
D_0 = 0.41047
D_{50} = 0.41526
D_{100} = 0.42005
T_{50} = 1.80 min.

C_v @ T_{50}
0.0004 in.^{2}/sec.

C_α = 0.001



Load No.= 4
Load= 0.50 tsf
D_0 = 0.41942
D_{50} = 0.43230
D_{100} = 0.44518
T_{50} = 9.78 min.

C_v @ T_{50}
0.0001 in.^{2}/sec.

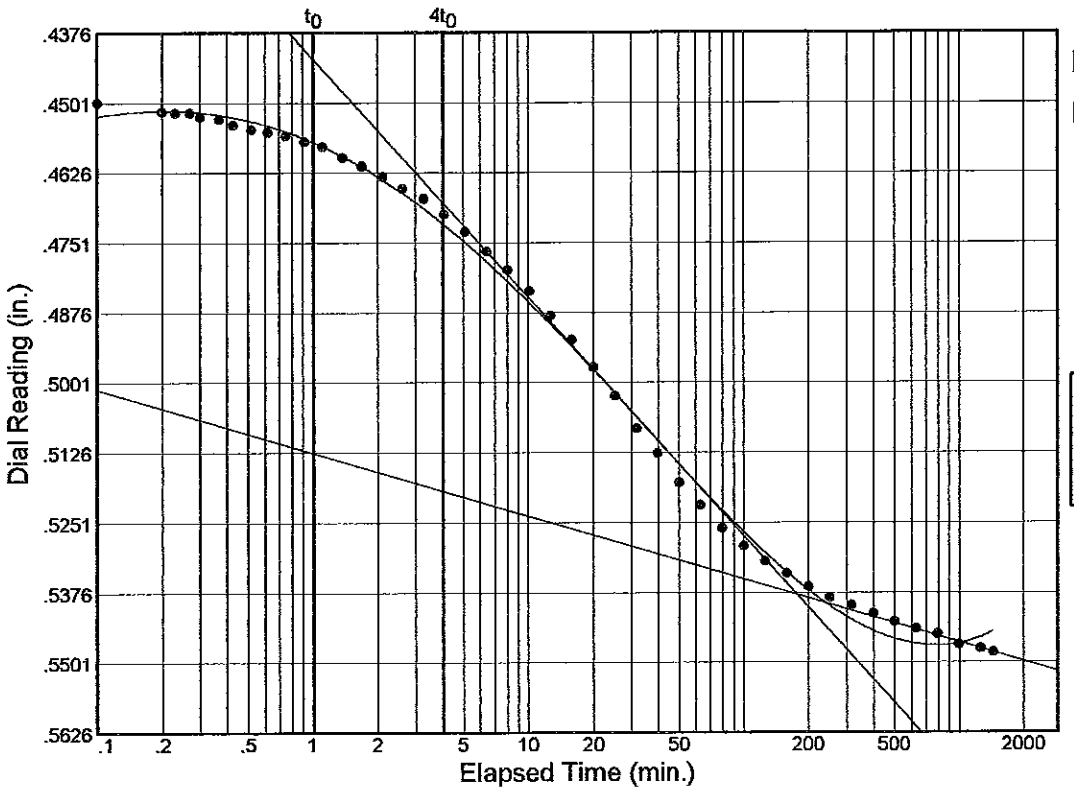
C_α = 0.008

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

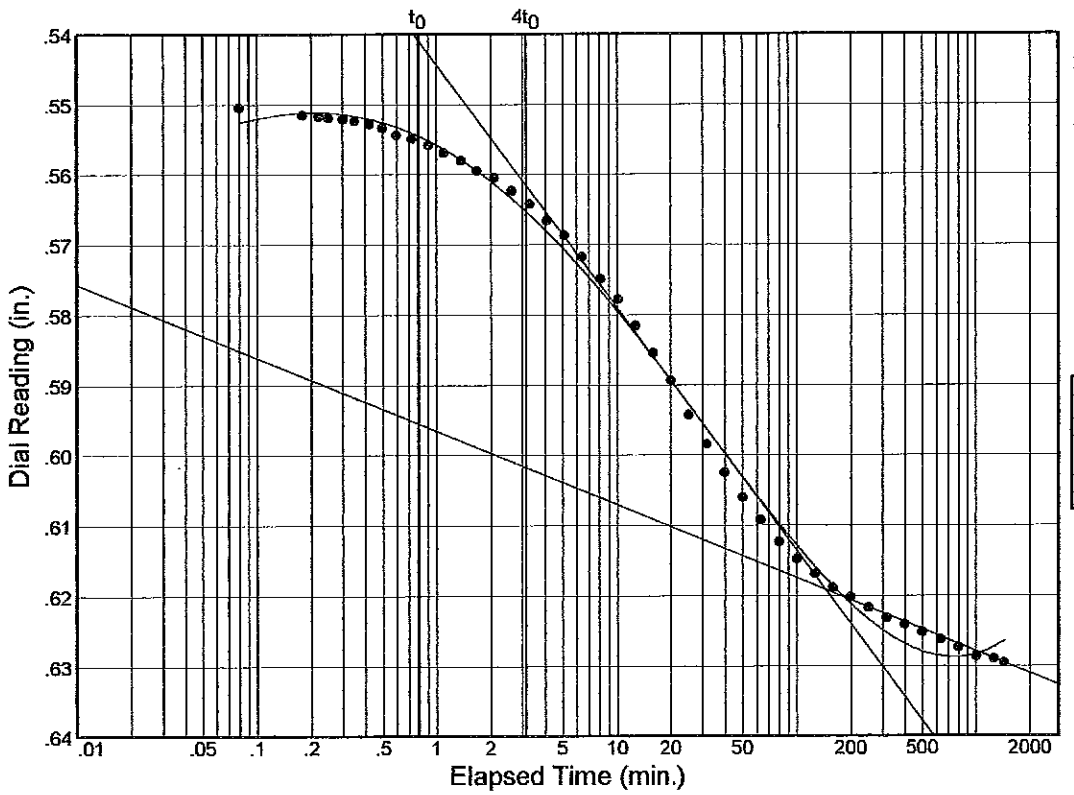
Source: BSFR-8U Sample No.: 8B Elev./Depth: 25.0



Load No.= 5
Load= 1.00 tsf
D_0 = 0.44257
D_{50} = 0.49027
D_{100} = 0.53797
T_{50} = 13.22 min.

C_v @ T_{50}
0.0001 in.^{2}/sec.

C_α = 0.012



Load No.= 6
Load= 2.00 tsf
D_0 = 0.54366
D_{50} = 0.58142
D_{100} = 0.61917
T_{50} = 11.54 min.

C_v @ T_{50}
0.0000 in.^{2}/sec.

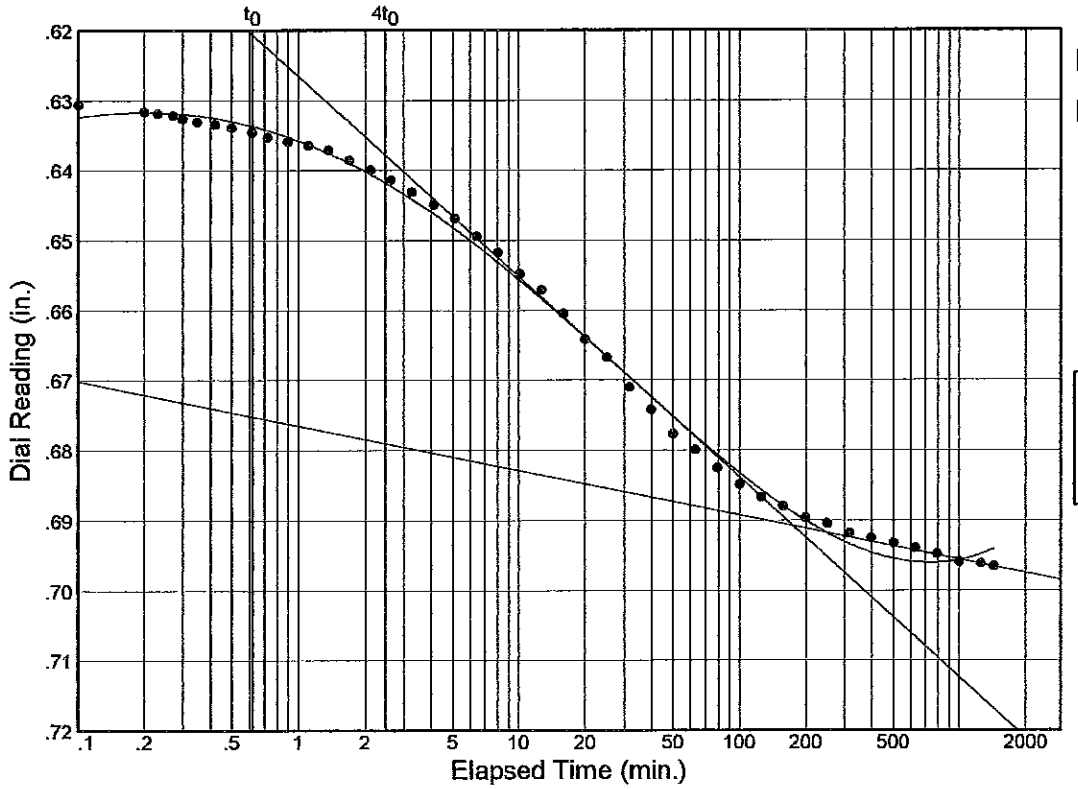
C_α = 0.012

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

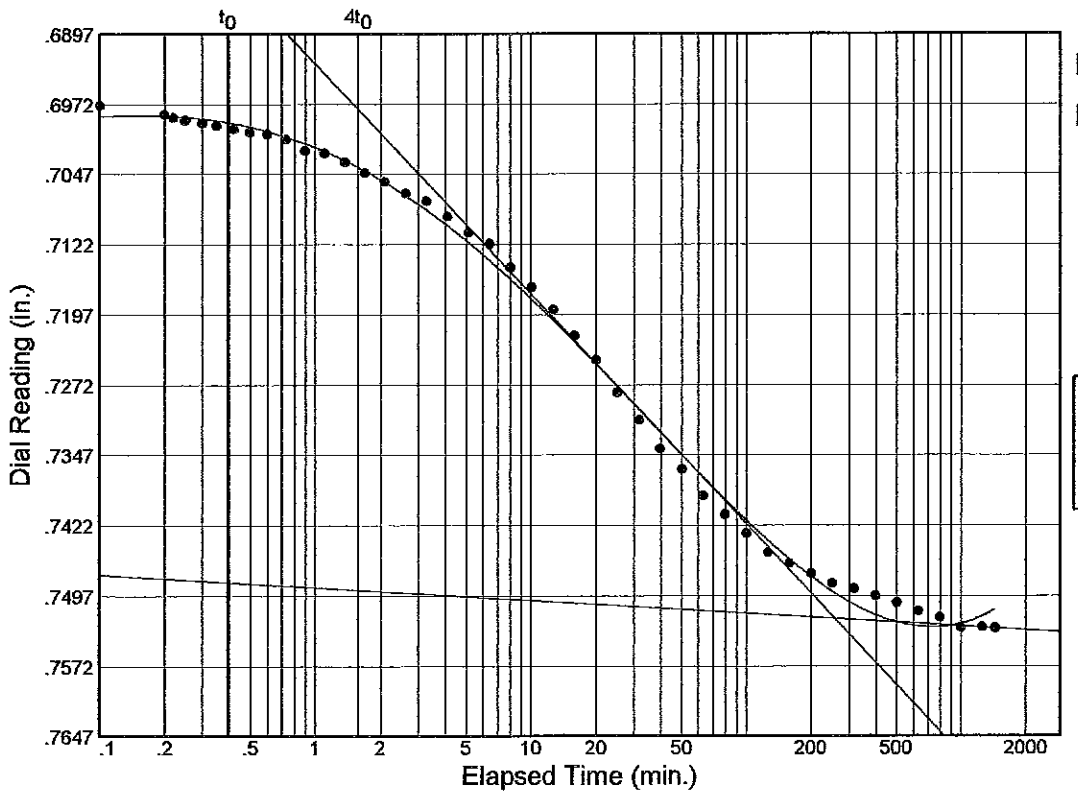
Source: BSFR-8U Sample No.: 8B Elev./Depth: 25.0



Load No.= 7
Load= 4.00 tsf
D_0 = 0.62563
D_{50} = 0.65820
D_{100} = 0.69076
T_{50} = 12.61 min.

C_v @ T_{50}
0.0000 in.^{2}/sec.

C_α = 0.008



Load No.= 8
Load= 8.00 tsf
D_0 = 0.69440
D_{50} = 0.72325
D_{100} = 0.75211
T_{50} = 17.11 min.

C_v @ T_{50}
0.0000 in.^{2}/sec.

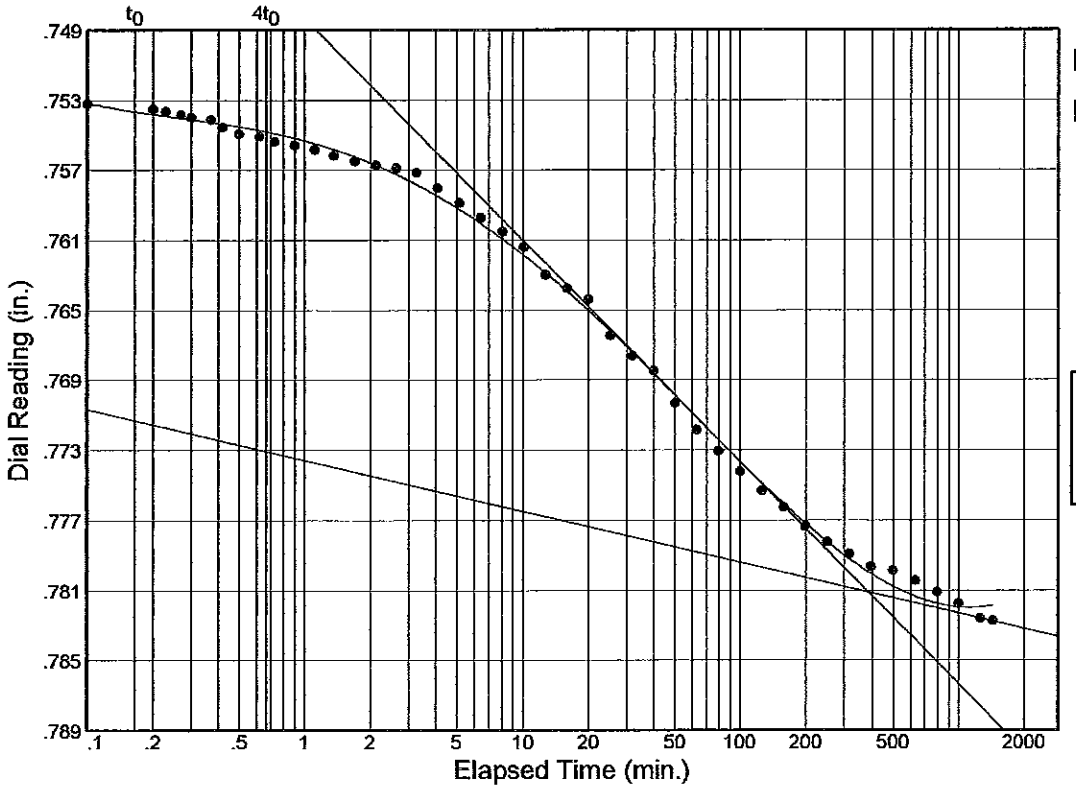
C_α = 0.002

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

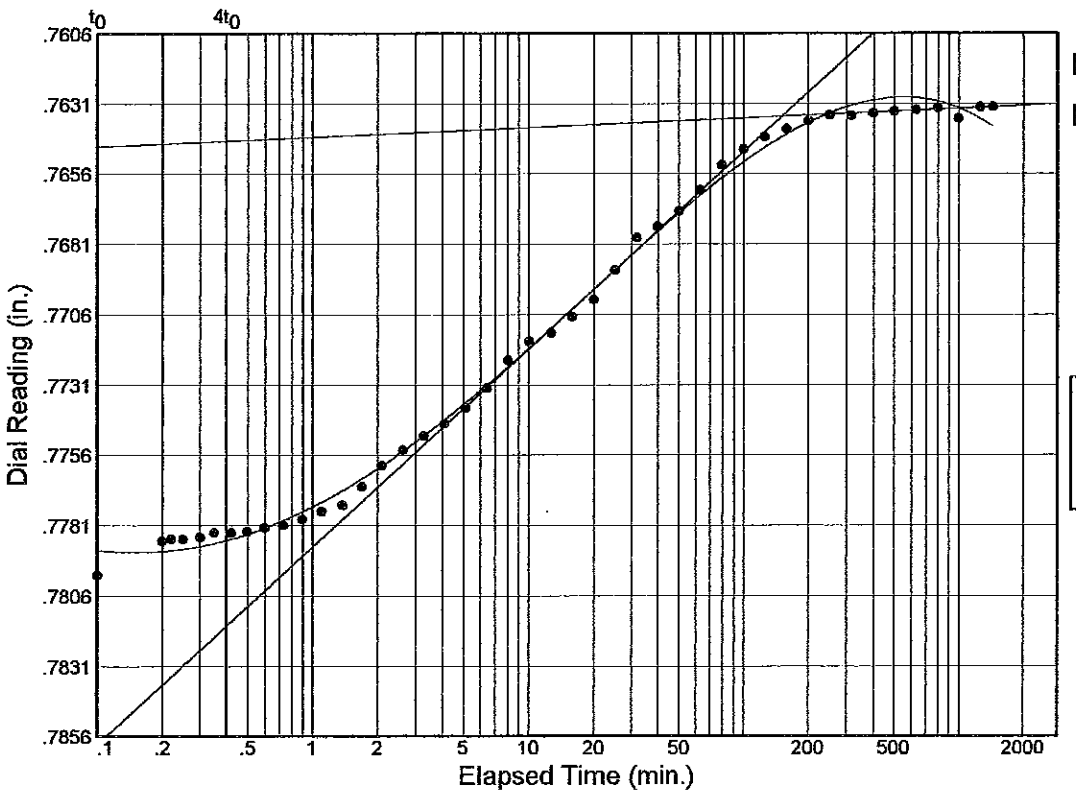
Source: BSFR-8U Sample No.: 8B Elev./Depth: 25.0



Load No.= 9
Load= 12.00 tsf
D_0 = 0.75254
D_{50} = 0.76682
D_{100} = 0.78110
T_{50} = 28.60 min.

C_v @ T_{50}
0.0000 in.^{2}/sec.

C_α = 0.004



Load No.= 10
Load= 3.00 tsf
D_0 = 0.77935
D_{50} = 0.77145
D_{100} = 0.76354
T_{50} = 11.31 min.

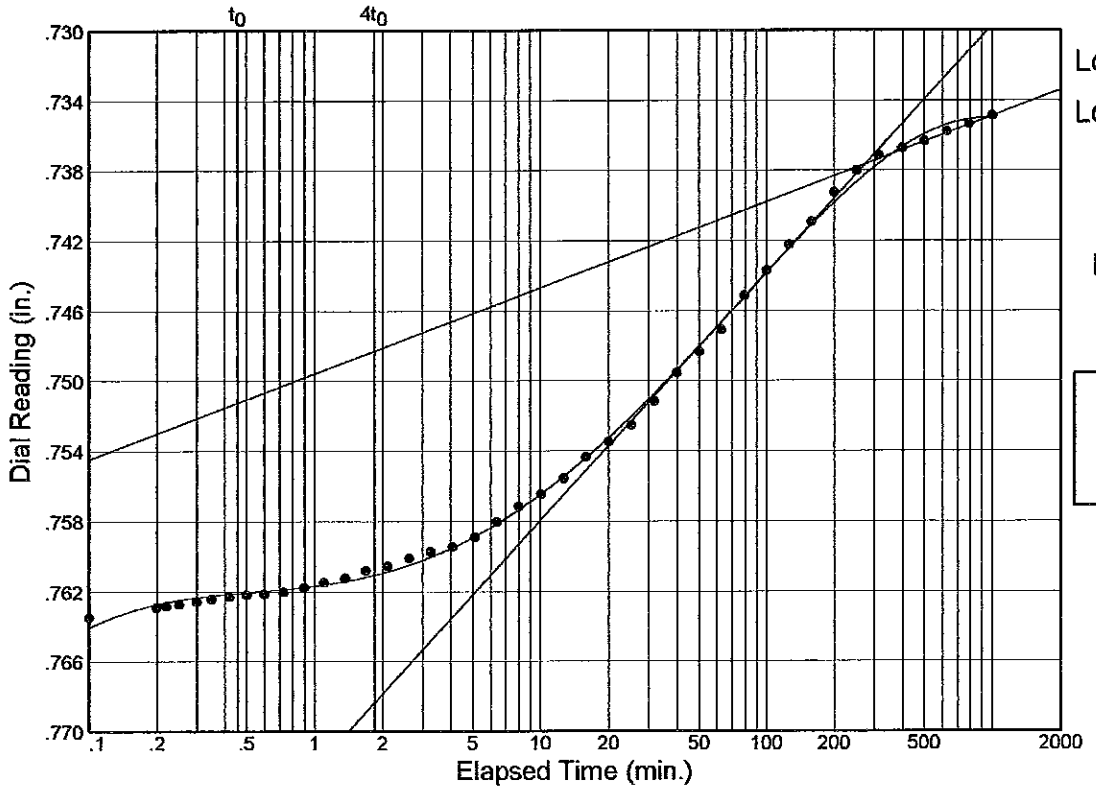
C_v @ T_{50}
0.0000 in.^{2}/sec.

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

Source: BSFR-8U Sample No.: 8B Elev./Depth: 25.0



Load No.= 11

Load= 0.75 tsf

D_0 = 0.76315

D_{50} = 0.75039

D_{100} = 0.73762

T_{50} = 33.60 min.

C_v @ T_{50}
0.0000 in.^{2}/sec.

CONSOLIDATION TEST DATA

Client: USACE
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans
Project Number: 12-017108

Sample Data

Source: BSFR-8U
Sample No.: 8B
Elev. or Depth: 25.0 **Sample Length(in./cm.):**
Location:
Description: SO GR CH3 W/ LNS & ARS ML
Liquid Limit: 73 **Plasticity Index:** 55
USCS: CH4 **AASHTO:** **Figure No.:**
Testing Remarks:

Test Specimen Data

TOTAL SAMPLE		BEFORE TEST	AFTER TEST
Wet w+t	= 172.88 g.	Consolidometer # = 3	Wet w+t = 560.44 g.
Dry w+t	= 127.32 g.		Dry w+t = 493.83 g.
Tare Wt.	= 31.44 g.	Spec. Gravity = 2.60	Tare Wt. = 297.07 g.
Height	= 1.00 in.	Height = 1.00 in.	
Diameter	= 3.99 in.	Diameter = 4.00 in.	
Weight	= 297.07 g.	Defl. Table = n/a	
Moisture	= 47.5 %	Ht. Solids = 0.3678 in.	Moisture = 33.9 %
Wet Den.	= 90.3 pcf	Dry Wt. = 202.14 g.	Dry Wt. = 196.76 g.*
Dry Den.	= 61.2 pcf	Void Ratio = 1.725	Void Ratio = 0.824
		Saturation = 71.6 %	

* Final dry weight used in calculations

End-of-Load Summary

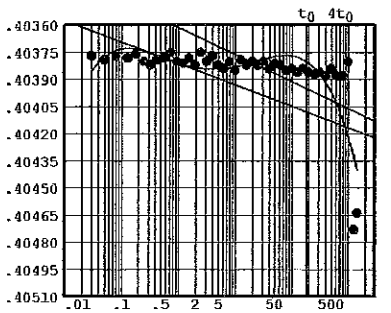
Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (in.^{2}/sec.)	C_α	Void Ratio	% Compression /Swell
start	0.40380				1.725	
0.05	0.40464	0.00000	0.0000	0.000	1.722	0.1 Comprs.
0.13	0.41331	0.00000	0.0010	0.001	1.699	0.9 Comprs.
0.25	0.42181	0.00000	0.0004	0.001	1.676	1.8 Comprs.
0.50	0.44929	0.00000	0.0001	0.008	1.601	4.5 Comprs.
1.00	0.54826	0.00000	0.0001	0.012	1.332	14.4 Comprs.
2.00	0.62958	0.00000	0.0000	0.012	1.111	22.5 Comprs.
4.00	0.69655	0.00000	0.0000	0.008	0.929	29.2 Comprs.
8.00	0.75313	0.00000	0.0000	0.002	0.775	34.9 Comprs.
12.00	0.78276	0.00000	0.0000	0.004	0.694	37.8 Comprs.
3.00	0.76320	0.00000	0.0000		0.747	35.9 Comprs.

Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (in.^{2}/sec.)	C_α	Void Ratio	% Compression /Swell
0.75	0.73486	0.00000	0.0000		0.824	33.0 Comprs.

C_c = 0.46 P_c = 0.02 tsf C_r = 0.11

Pressure: 0.05 tsf **TEST READINGS** **Load No. 1**

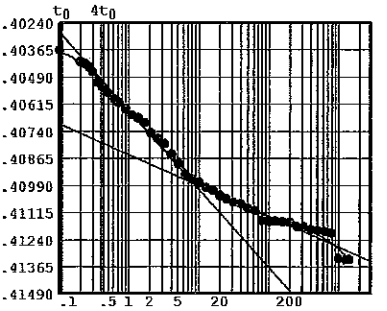
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.40380	23	12.53	0.40379
2	0.03	0.40377	24	15.80	0.40382
3	0.05	0.40379	25	19.90	0.40380
4	0.08	0.40377	26	25.07	0.40382
5	0.13	0.40378	27	31.58	0.40380
6	0.18	0.40376	28	39.77	0.40384
7	0.25	0.40380	29	50.08	0.40381
8	0.33	0.40382	30	63.05	0.40382
9	0.43	0.40379	31	79.40	0.40385
10	0.57	0.40378	32	99.97	0.40384
11	0.73	0.40375	33	125.85	0.40386
12	0.93	0.40380	34	158.45	0.40384
13	1.20	0.40381	35	199.50	0.40386
14	1.52	0.40378	36	251.15	0.40387
15	1.93	0.40382	37	316.20	0.40386
16	2.45	0.40375	38	398.07	0.40388
17	3.10	0.40380	39	501.15	0.40384
18	3.92	0.40377	40	630.93	0.40388
19	4.95	0.40382	41	794.30	0.40388
20	6.25	0.40384	42	999.97	0.40380
21	7.88	0.40380	43	1258.90	0.40473
22	9.95	0.40385	44	1440.23	0.40464



Void Ratio = 1.722 **Compression** = 0.1 %
D_0 = 0.40351 D_{50} = 0.40404 D_{100} = 0.40457
C_v **at 734.3 min.** = 0.0000 in.^{2}/sec. C_α = 0.000

Pressure: 0.13 tsf | TEST READINGS | Load No. 2

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.40248	24	12.72	0.41000
2	0.10	0.40366	25	15.97	0.41012
3	0.20	0.40419	26	20.08	0.41036
4	0.23	0.40427	27	25.25	0.41053
5	0.27	0.40445	28	31.75	0.41068
6	0.30	0.40465	29	39.93	0.41073
7	0.35	0.40514	30	50.25	0.41096
8	0.42	0.40534	31	63.23	0.41106
9	0.50	0.40561	32	79.57	0.41151
10	0.62	0.40592	33	100.13	0.41154
11	0.73	0.40606	34	126.03	0.41154
12	0.90	0.40638	35	158.63	0.41157
13	1.12	0.40664	36	199.67	0.41161
14	1.37	0.40677	37	251.33	0.41179
15	1.70	0.40700	38	316.37	0.41180
16	2.12	0.40748	39	398.25	0.41192
17	2.63	0.40774	40	501.33	0.41197
18	3.28	0.40797	41	631.10	0.41203
19	4.10	0.40845	42	794.48	0.41211
20	5.13	0.40889	43	1000.15	0.41327
21	6.43	0.40939	44	1259.08	0.41333
22	8.07	0.40960	45	1440.22	0.41331
23	10.12	0.40975			



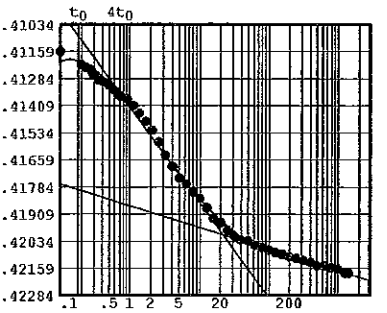
Void Ratio = 1.699 **Compression** = 0.9 %

D_0 = 0.40238 D_{50} = 0.40608 D_{100} = 0.40979

C_v **at 0.8 min.** = 0.0010 in.^{2}/sec. C_α = 0.001

Pressure: 0.25 tsf | TEST READINGS | Load No. 3

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.41086	24	12.72	0.41880
2	0.10	0.41160	25	15.98	0.41929
3	0.20	0.41220	26	20.08	0.41948
4	0.23	0.41233	27	25.25	0.41984
5	0.27	0.41243	28	31.75	0.42010
6	0.30	0.41269	29	39.95	0.42029
7	0.35	0.41290	30	50.25	0.42033
8	0.42	0.41299	31	63.23	0.42053
9	0.50	0.41314	32	79.57	0.42064
10	0.60	0.41337	33	100.13	0.42075
11	0.73	0.41363	34	126.03	0.42087
12	0.90	0.41376	35	158.63	0.42096
13	1.12	0.41408	36	199.67	0.42106
14	1.37	0.41443	37	251.33	0.42114
15	1.70	0.41482	38	316.37	0.42123
16	2.12	0.41523	39	398.25	0.42131
17	2.63	0.41578	40	501.33	0.42147
18	3.28	0.41638	41	631.10	0.42149
19	4.10	0.41689	42	794.48	0.42157
20	5.13	0.41744	43	1000.15	0.42162
21	6.43	0.41770	44	1259.08	0.42181
22	8.07	0.41808	45	1440.05	0.42181
23	10.12	0.41836			



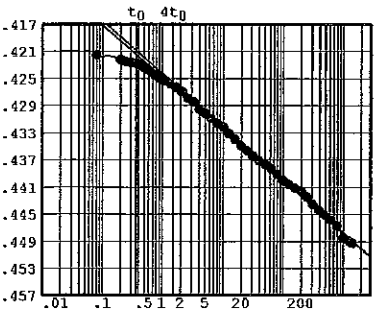
Void Ratio = 1.676 **Compression** = 1.8 %

D_0 = 0.41047 D_{50} = 0.41526 D_{100} = 0.42005

C_v **at 1.8 min.** = 0.0004 in.^{2}/sec. C_α = 0.001

Pressure: 0.50 tsf | TEST READINGS | Load No. 4

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.41858	24	12.72	0.43315
2	0.08	0.42154	25	15.97	0.43403
3	0.20	0.42219	26	20.07	0.43494
4	0.22	0.42233	27	25.23	0.43566
5	0.25	0.42251	28	31.75	0.43644
6	0.30	0.42262	29	39.93	0.43713
7	0.35	0.42276	30	50.25	0.43766
8	0.42	0.42290	31	63.22	0.43827
9	0.50	0.42342	32	79.57	0.43914
10	0.60	0.42379	33	100.13	0.44005
11	0.73	0.42435	34	126.02	0.44067
12	0.90	0.42492	35	158.62	0.44120
13	1.10	0.42535	36	199.67	0.44161
14	1.37	0.42585	37	251.32	0.44250
15	1.70	0.42630	38	316.37	0.44358
16	2.10	0.42693	39	398.25	0.44448
17	2.63	0.42794	40	501.32	0.44516
18	3.28	0.42848	41	631.10	0.44586
19	4.10	0.42952	42	794.47	0.44675
20	5.13	0.43017	43	1000.13	0.44849
21	6.43	0.43095	44	1259.07	0.44893
22	8.07	0.43166	45	1440.20	0.44929
23	10.12	0.43218			



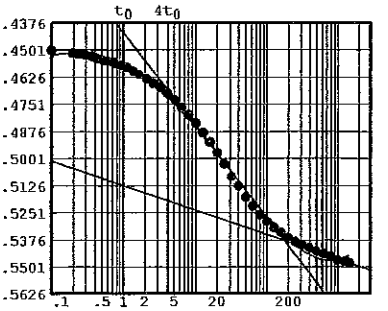
Void Ratio = 1.601 **Compression** = 4.5 %

D_0 = 0.41942 D_{50} = 0.43230 D_{100} = 0.44518

C_v **at 9.8 min.** = 0.0001 in.^{2}/sec. C_α = 0.008

Pressure: 1.00 tsf **TEST READINGS** **Load No. 5**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.44626	24	12.72	0.48809
2	0.10	0.45012	25	15.98	0.49245
3	0.20	0.45167	26	20.08	0.49741
4	0.23	0.45192	27	25.25	0.50254
5	0.27	0.45193	28	31.77	0.50828
6	0.30	0.45256	29	39.95	0.51276
7	0.37	0.45310	30	50.25	0.51796
8	0.43	0.45403	31	63.23	0.52201
9	0.52	0.45483	32	79.57	0.52609
10	0.62	0.45534	33	100.15	0.52921
11	0.75	0.45600	34	126.03	0.53195
12	0.92	0.45701	35	158.63	0.53421
13	1.12	0.45800	36	199.67	0.53650
14	1.38	0.45988	37	251.33	0.53845
15	1.70	0.46143	38	316.38	0.53990
16	2.12	0.46330	39	398.25	0.54129
17	2.63	0.46543	40	501.33	0.54283
18	3.28	0.46724	41	631.12	0.54404
19	4.10	0.47008	42	794.48	0.54504
20	5.13	0.47312	43	1000.17	0.54695
21	6.43	0.47665	44	1259.08	0.54760
22	8.08	0.47989	45	1440.23	0.54826
23	10.13	0.48372			



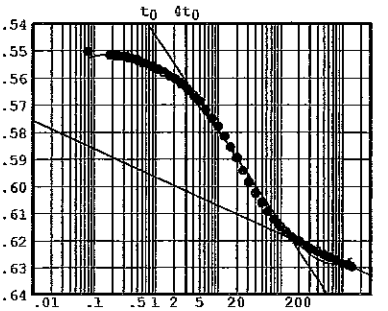
Void Ratio = 1.332 **Compression** = 14.4 %

D_0 = 0.44257 D_{50} = 0.49027 D_{100} = 0.53797

C_v **at 13.2 min.** = 0.0001 in.^{2}/sec. C_α = 0.012

Pressure: 2.00 tsf | TEST READINGS | Load No. 6

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.54385	24	12.70	0.58151
2	0.08	0.55041	25	15.97	0.58546
3	0.18	0.55156	26	20.07	0.58937
4	0.22	0.55174	27	25.23	0.59424
5	0.25	0.55187	28	31.75	0.59850
6	0.30	0.55205	29	39.93	0.60250
7	0.35	0.55237	30	50.25	0.60606
8	0.42	0.55282	31	63.22	0.60925
9	0.50	0.55335	32	79.57	0.61228
10	0.60	0.55437	33	100.13	0.61477
11	0.73	0.55486	34	126.02	0.61684
12	0.90	0.55578	35	158.62	0.61888
13	1.10	0.55689	36	199.67	0.62017
14	1.37	0.55797	37	251.32	0.62173
15	1.68	0.55942	38	316.37	0.62317
16	2.10	0.56048	39	398.25	0.62403
17	2.62	0.56233	40	501.33	0.62520
18	3.27	0.56420	41	631.10	0.62630
19	4.10	0.56655	42	794.47	0.62731
20	5.12	0.56868	43	1000.15	0.62862
21	6.42	0.57173	44	1259.07	0.62897
22	8.05	0.57489	45	1440.10	0.62958
23	10.12	0.57778			



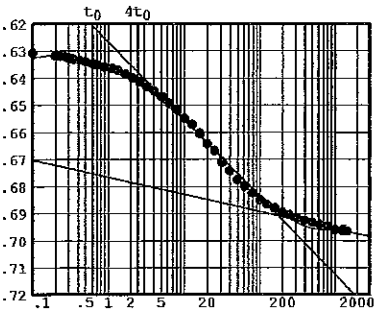
Void Ratio = 1.111 **Compression** = 22.5 %

D_0 = 0.54366 D_{50} = 0.58142 D_{100} = 0.61917

C_v **at 11.5 min.** = 0.0000 in.^{2}/sec. C_α = 0.012

Pressure: 4.00 tsf | TEST READINGS | Load No. 7

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.62348	24	12.72	0.65704
2	0.10	0.63062	25	15.98	0.66039
3	0.20	0.63162	26	20.08	0.66416
4	0.23	0.63193	27	25.25	0.66674
5	0.27	0.63215	28	31.77	0.67097
6	0.30	0.63266	29	39.95	0.67423
7	0.35	0.63308	30	50.25	0.67765
8	0.42	0.63345	31	63.23	0.67995
9	0.50	0.63391	32	79.57	0.68246
10	0.62	0.63457	33	100.13	0.68489
11	0.73	0.63527	34	126.03	0.68669
12	0.90	0.63591	35	158.63	0.68798
13	1.12	0.63643	36	199.67	0.68957
14	1.37	0.63709	37	251.33	0.69046
15	1.70	0.63854	38	316.37	0.69174
16	2.12	0.63990	39	398.25	0.69254
17	2.63	0.64138	40	501.33	0.69323
18	3.28	0.64311	41	631.10	0.69396
19	4.10	0.64492	42	794.48	0.69482
20	5.13	0.64689	43	1000.15	0.69593
21	6.43	0.64937	44	1259.08	0.69618
22	8.07	0.65171	45	1440.15	0.69655
23	10.13	0.65479			



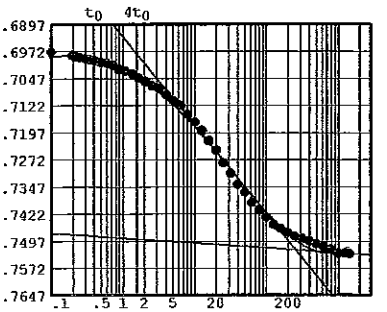
Void Ratio = 0.929 Compression = 29.2 %

D_0 = 0.62563 D_{50} = 0.65820 D_{100} = 0.69076

C_v at 12.6 min. = 0.0000 in.^{2}/sec. C_α = 0.008

Pressure: 8.00 tsf | TEST READINGS | Load No. 8

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.68753	24	12.70	0.71912
2	0.10	0.69729	25	15.97	0.72193
3	0.20	0.69825	26	20.07	0.72451
4	0.22	0.69865	27	25.23	0.72801
5	0.25	0.69893	28	31.75	0.73093
6	0.30	0.69923	29	39.93	0.73402
7	0.35	0.69949	30	50.25	0.73621
8	0.42	0.69984	31	63.22	0.73901
9	0.50	0.70020	32	79.57	0.74103
10	0.60	0.70042	33	100.13	0.74305
11	0.73	0.70097	34	126.03	0.74507
12	0.90	0.70217	35	158.63	0.74626
13	1.10	0.70248	36	199.67	0.74731
14	1.37	0.70342	37	251.33	0.74839
15	1.70	0.70455	38	316.37	0.74893
16	2.10	0.70555	39	398.25	0.74967
17	2.62	0.70677	40	501.33	0.75040
18	3.27	0.70756	41	631.10	0.75133
19	4.10	0.70924	42	794.47	0.75199
20	5.12	0.71090	43	1000.15	0.75309
21	6.43	0.71212	44	1259.07	0.75305
22	8.07	0.71465	45	1440.40	0.75313
23	10.12	0.71671			



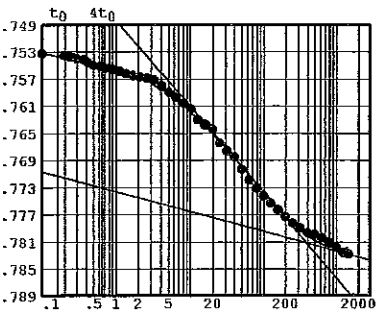
Void Ratio = 0.775 Compression = 34.9 %

D_0 = 0.69440 D_{50} = 0.72325 D_{100} = 0.75211

C_v at 17.1 min. = 0.0000 in.^{2}/sec. C_α = 0.002

Pressure: 12.00 tsf | TEST READINGS | Load No. 9

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.74549	24	12.72	0.76298
2	0.10	0.75321	25	15.98	0.76376
3	0.20	0.75351	26	20.08	0.76436
4	0.23	0.75367	27	25.25	0.76644
5	0.27	0.75382	28	31.75	0.76763
6	0.30	0.75399	29	39.95	0.76844
7	0.37	0.75413	30	50.25	0.77032
8	0.42	0.75455	31	63.23	0.77185
9	0.50	0.75493	32	79.57	0.77306
10	0.62	0.75506	33	100.13	0.77420
11	0.73	0.75538	34	126.03	0.77530
12	0.90	0.75557	35	158.63	0.77626
13	1.12	0.75584	36	199.67	0.77733
14	1.37	0.75617	37	251.33	0.77822
15	1.70	0.75651	38	316.37	0.77891
16	2.12	0.75671	39	398.25	0.77963
17	2.63	0.75688	40	501.33	0.77987
18	3.28	0.75715	41	631.10	0.78045
19	4.10	0.75803	42	794.48	0.78109
20	5.13	0.75888	43	1000.15	0.78176
21	6.43	0.75969	44	1259.08	0.78259
22	8.07	0.76049	45	1440.17	0.78276
23	10.13	0.76138			



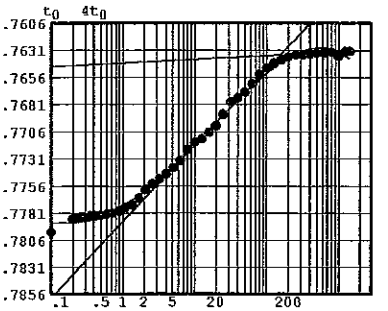
Void Ratio = 0.694 **Compression** = 37.8 %

D_0 = 0.75254 D_{50} = 0.76682 D_{100} = 0.78110

C_v **at 28.6 min.** = 0.0000 in.^{2}/sec. C_α = 0.004

Pressure: 3.00 tsf | TEST READINGS | Load No. 10

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.79745	24	12.72	0.77125
2	0.10	0.77987	25	15.97	0.77068
3	0.20	0.77865	26	20.08	0.77006
4	0.22	0.77859	27	25.25	0.76901
5	0.25	0.77859	28	31.75	0.76785
6	0.30	0.77852	29	39.93	0.76747
7	0.35	0.77837	30	50.25	0.76693
8	0.42	0.77837	31	63.23	0.76618
9	0.50	0.77831	32	79.57	0.76529
10	0.60	0.77818	33	100.13	0.76472
11	0.73	0.77809	34	126.03	0.76428
12	0.90	0.77789	35	158.63	0.76400
13	1.10	0.77761	36	199.67	0.76372
14	1.37	0.77737	37	251.33	0.76351
15	1.70	0.77672	38	316.37	0.76352
16	2.10	0.77596	39	398.25	0.76343
17	2.62	0.77542	40	501.33	0.76337
18	3.28	0.77493	41	631.10	0.76333
19	4.10	0.77448	42	794.48	0.76325
20	5.13	0.77391	43	1000.15	0.76362
21	6.43	0.77322	44	1259.08	0.76322
22	8.07	0.77222	45	1440.20	0.76320
23	10.12	0.77155			



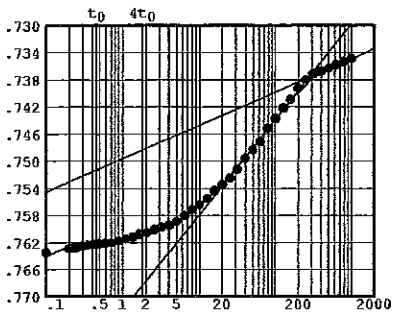
Void Ratio = 0.747 **Compression** = 35.9 %

D_0 = 0.77935 D_{50} = 0.77145 D_{100} = 0.76354

C_v **at 11.3 min.** = 0.0000 in.^{2}/sec.

Pressure: 0.75 tsf | TEST READINGS | Load No. 11

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.76980	23	10.12	0.75644
2	0.10	0.76350	24	12.72	0.75556
3	0.20	0.76290	25	15.97	0.75435
4	0.22	0.76284	26	20.08	0.75348
5	0.25	0.76273	27	25.25	0.75253
6	0.30	0.76257	28	31.75	0.75116
7	0.35	0.76242	29	39.93	0.74954
8	0.42	0.76229	30	50.25	0.74832
9	0.50	0.76219	31	63.23	0.74709
10	0.60	0.76214	32	79.57	0.74512
11	0.73	0.76203	33	100.13	0.74370
12	0.90	0.76177	34	126.03	0.74222
13	1.10	0.76148	35	158.63	0.74091
14	1.37	0.76122	36	199.67	0.73923
15	1.68	0.76079	37	251.33	0.73800
16	2.10	0.76053	38	316.37	0.73714
17	2.62	0.76010	39	398.25	0.73672
18	3.27	0.75972	40	501.33	0.73633
19	4.08	0.75943	41	631.10	0.73579
20	5.12	0.75891	42	794.48	0.73535
21	6.42	0.75802	43	1000.15	0.73486
22	8.07	0.75716			

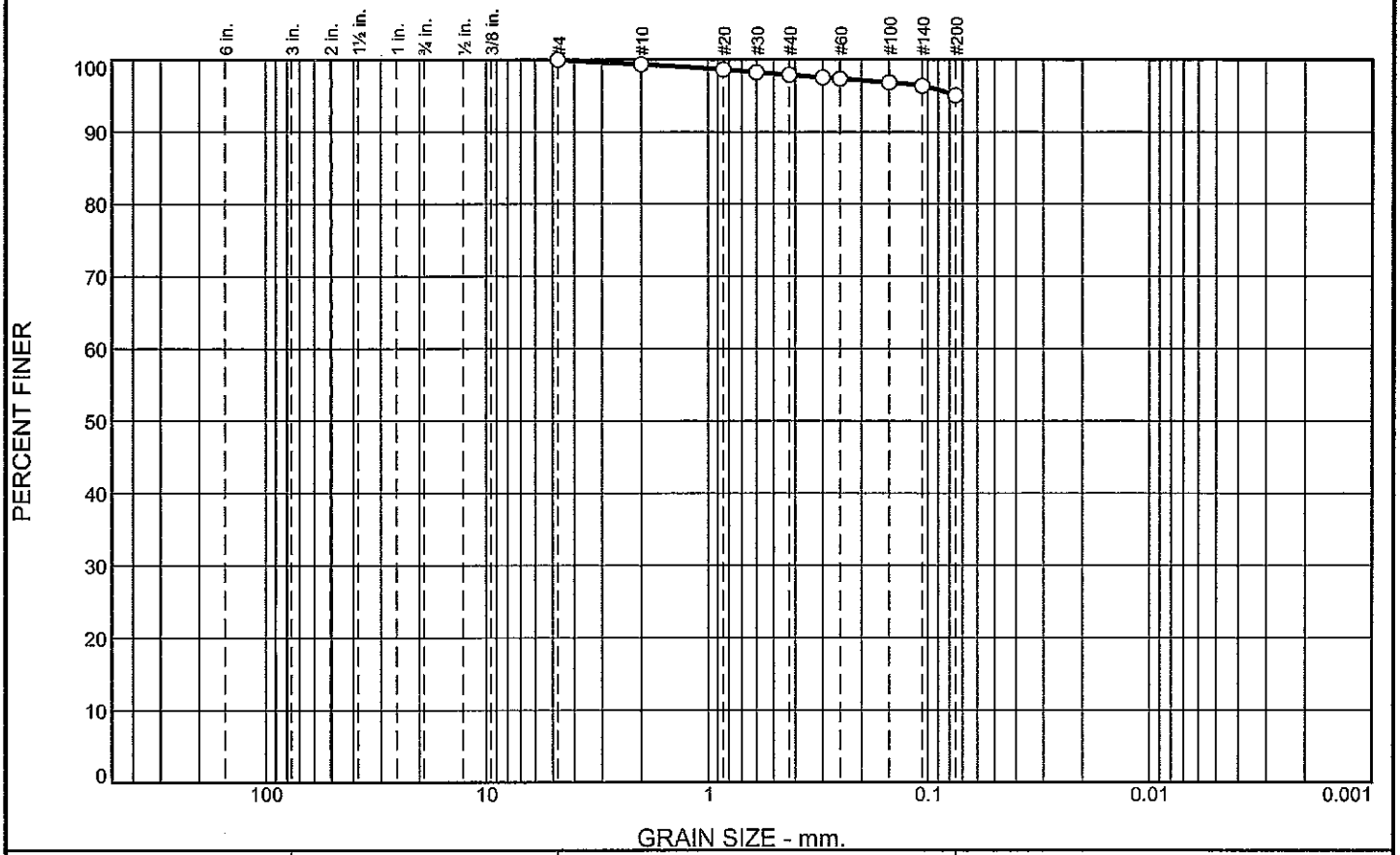


Void Ratio = 0.824 Compression = 33.0 %

D_0 = 0.76315 D_{50} = 0.75039 D_{100} = 0.73762

C_v at 33.6 min. = 0.0000 in.^{2}/sec.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.6	1.5	2.8	95.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	99.4		
#20	98.6		
#30	98.3		
#40	97.9		
#50	97.5		
#60	97.4		
#100	96.8		
#140	96.3		
#200	95.1		

* (no specification provided)

Soil Description

GR ML W/ LYS CH, O

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= ML AASHTO=

Remarks

Source of Sample: BSFR-8U **Depth:** 9.0
Sample Number: 4B **Date:** 7-27-12

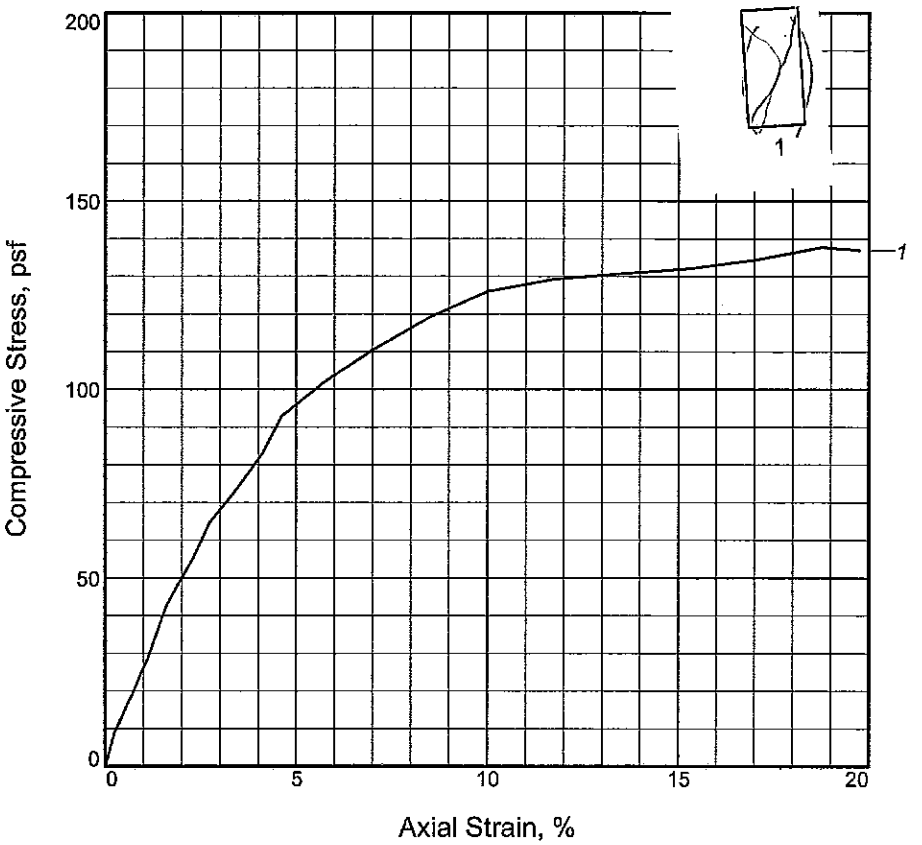
Stantec

Saint Rose, Louisiana

Client: USACE
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Project No: 12-017108 **Figure**

Tested By: JC **Checked By:** JS

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	131			
Undrained shear strength, psf	65			
Failure strain, %	13.5			
Strain rate, in./min.	1.000			
Water content, %	104.0			
Wet density, pcf	94.5			
Dry density, pcf	46.3			
Saturation, %	108.9			
Void ratio	2.4364			
Specimen diameter, in.	1.393			
Specimen height, in.	2.974			
Height/diameter ratio	2.13			

Description: VSO BK PT

LL = 119	**PL =** 27	**PI =** 92	**Assumed GS=** 2.55	**Type:** UNDISTURBED

Project No.: 12-017108
Date Sampled: 8-6-12
Remarks:
Torvane=0.06 tsf

Figure _____

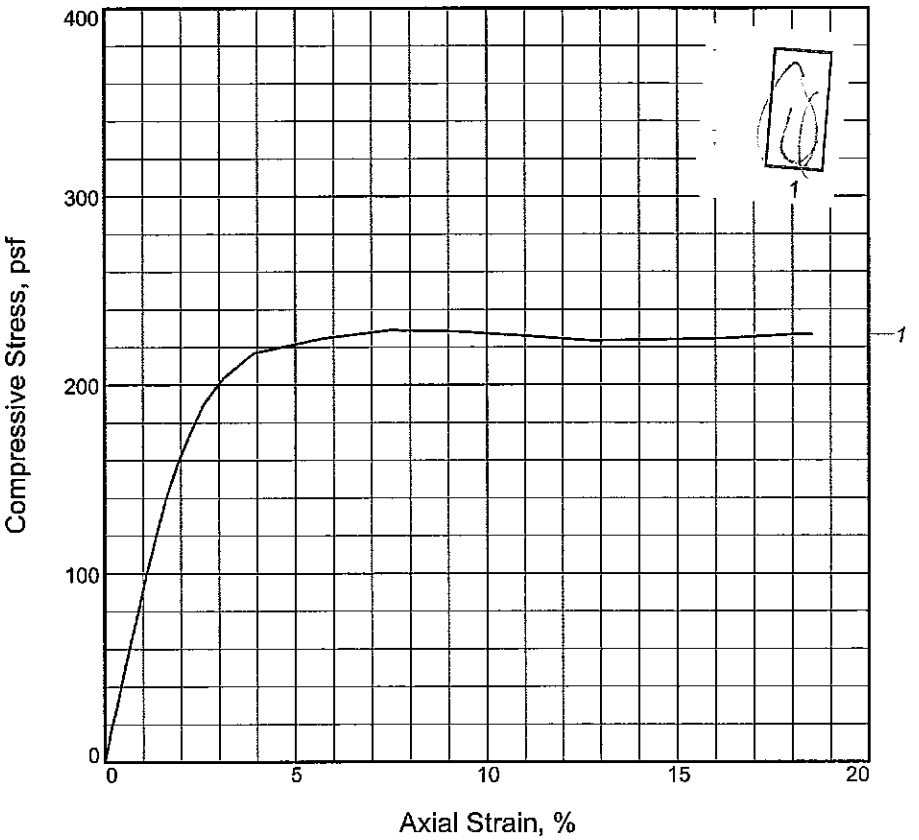
Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-8U **Depth:** 7.0
Sample Number: 3D

UNCONFINED COMPRESSION TEST
Stantec
Saint Rose, Louisiana

Tested By: JC

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	229			
Undrained shear strength, psf	114			
Failure strain, %	7.5			
Strain rate, in./min.	1.000			
Water content, %	79.1			
Wet density, pcf	97.6			
Dry density, pcf	54.5			
Saturation, %	101.3			
Void ratio	2.1398			
Specimen diameter, in.	1.373			
Specimen height, in.	2.998			
Height/diameter ratio	2.18			

Description: VSO GR CH4 W/ LNS SM, WD

LL = 88	**PL =** 27	**PI =** 61	**Assumed GS=** 2.74	**Type:** UNDISTURBED

Project No.: 12-017108
Date Sampled: 7-30-12
Remarks:
Torvane=0.07 tsf

Figure _____

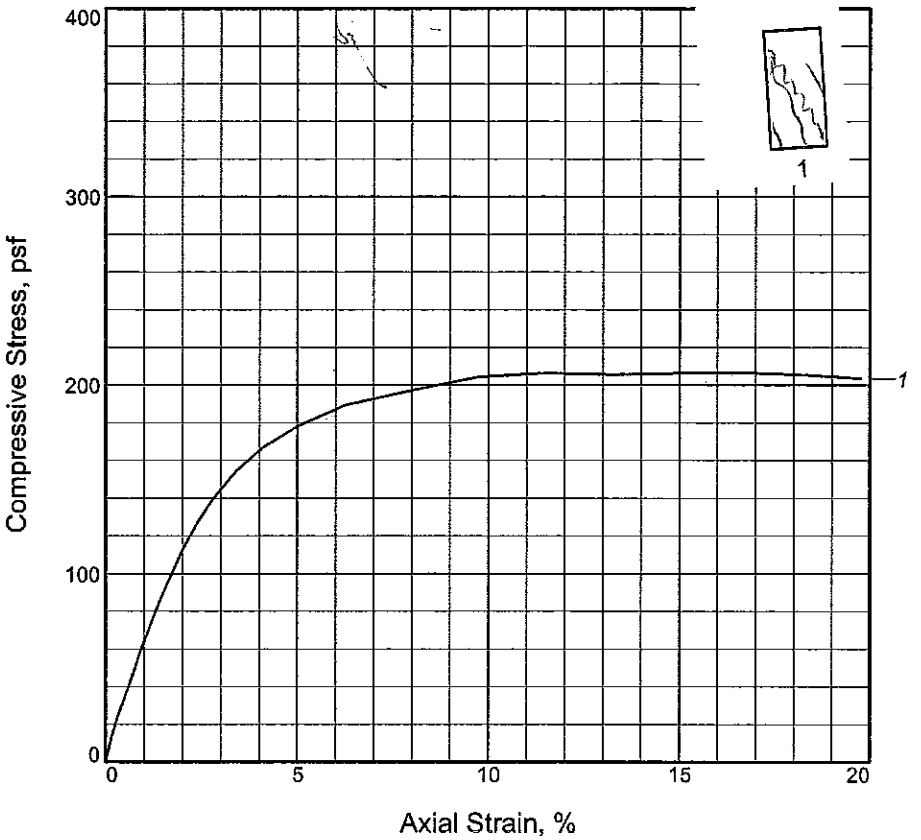
Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-8U **Depth:** 13.0
Sample Number: 5B

UNCONFINED COMPRESSION TEST
Stantec
Saint Rose, Louisiana

Tested By: JC **Checked By:** JS

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	206			
Undrained shear strength, psf	103			
Failure strain, %	11.5			
Strain rate, in./min.	1.000			
Water content, %	42.2			
Wet density, pcf	112.6			
Dry density, pcf	79.2			
Saturation, %	101.0			
Void ratio	1.1289			
Specimen diameter, in.	1.370			
Specimen height, in.	2.993			
Height/diameter ratio	2.18			

Description: VSO GR CL4 W/ ARS ML, SIF

LL = 39	**PL =** 12	**PI =** 27	**Assumed GS=** 2.70	**Type:** UNDISTURBED

Project No.: 12-017108
Date Sampled: 7-30-12
Remarks:
Torvane=0.09 tsf

Figure _____

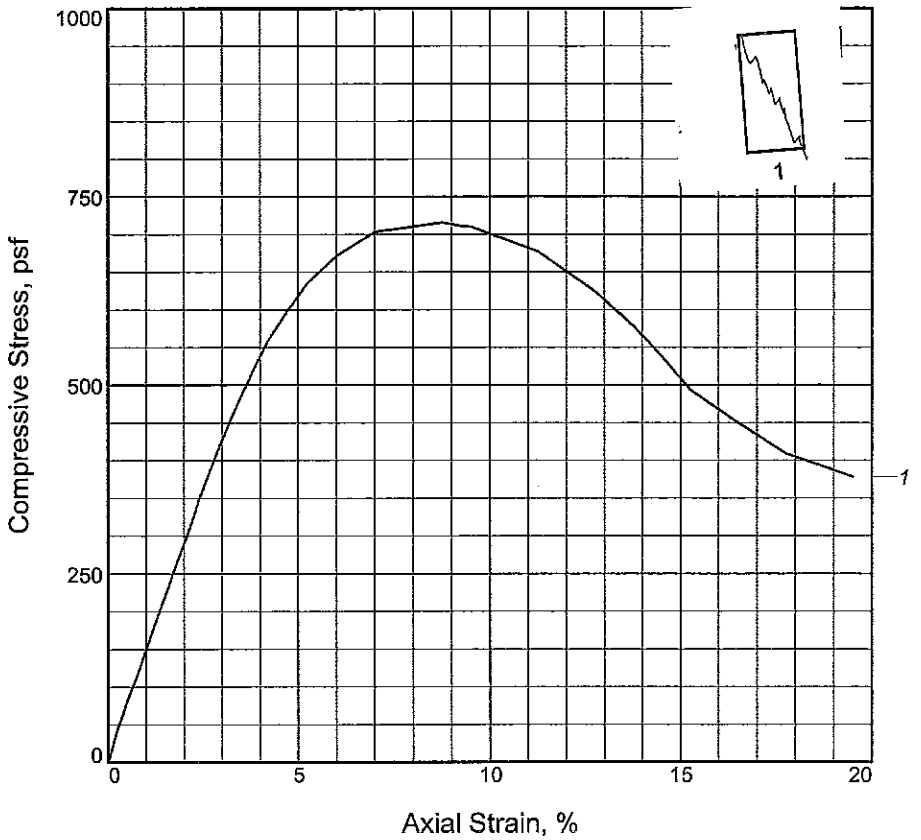
Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-8U **Depth:** 21.0
Sample Number: 7B

UNCONFINED COMPRESSION TEST
Stantec
Saint Rose, Louisiana

Tested By: JC **Checked By:** JS

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	716			
Undrained shear strength, psf	358			
Failure strain, %	8.8			
Strain rate, in./min.	1.000			
Water content, %	29.2			
Wet density, pcf	123.9			
Dry density, pcf	95.9			
Saturation, %	103.9			
Void ratio	0.7577			
Specimen diameter, in.	1.364			
Specimen height, in.	2.996			
Height/diameter ratio	2.20			

Description: SO GR CL4 W/ ARS & LYS SP, SIF

LL = 29	**PL =** 19	**PI =** 10	**Assumed GS=** 2.70	**Type:** UNDISTURBED

Project No.: 12-017108
Date Sampled: 7-30-12
Remarks:
Torvane=0.30 tsf

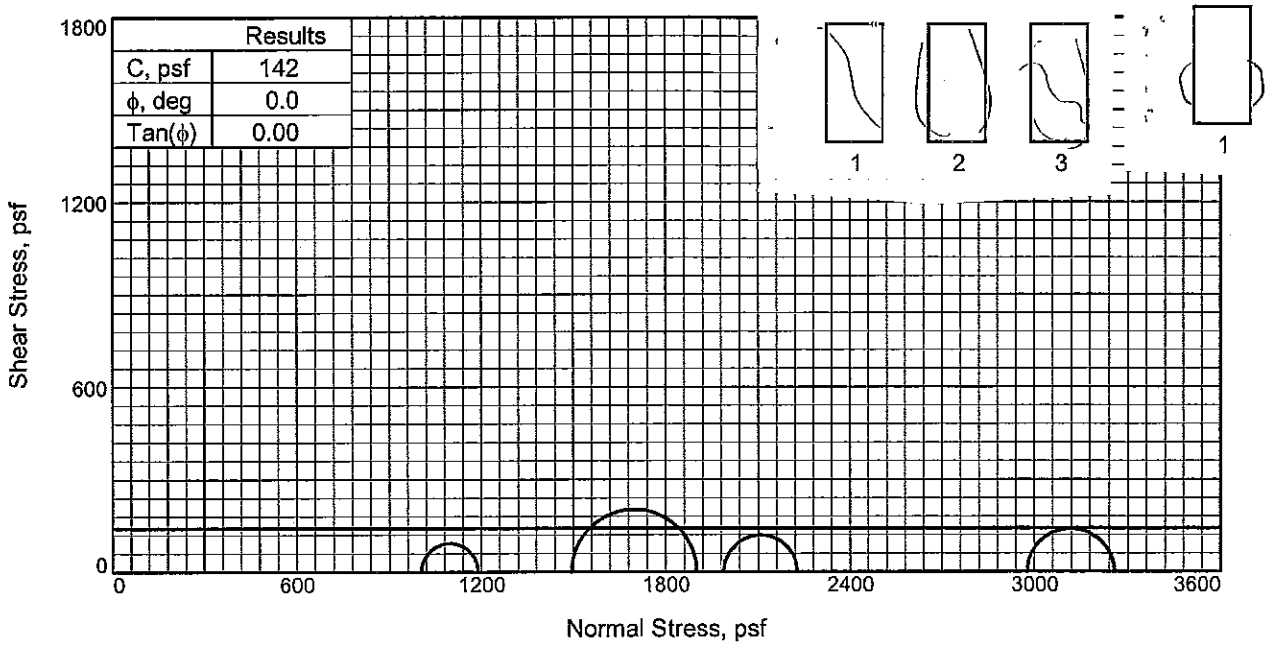
Figure _____

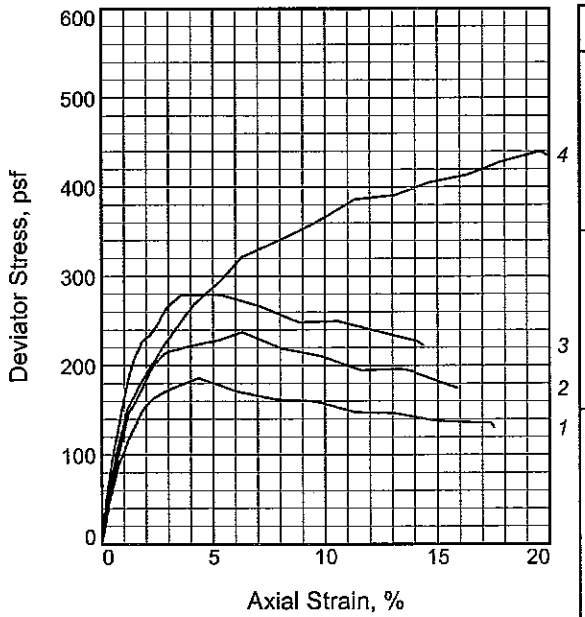
Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-8U **Depth:** 29.0
Sample Number: 9B

UNCONFINED COMPRESSION TEST
Stantec
Saint Rose, Louisiana

Tested By: JC **Checked By:** JS





Sample No.		1	2	3	4
Initial	Water Content, %	73.8	77.0	74.5	39.8
	Dry Density, pcf	59.2	57.9	59.3	83.6
	Saturation, %	107.2	107.9	108.3	105.6
	Void Ratio	1.8873	1.9568	1.8845	1.0169
	Diameter, in.	1.397	1.394	1.397	1.373
	Height, in.	2.993	2.994	2.995	2.978
At Test	Water Content, %	73.8	77.0	74.5	39.8
	Dry Density, pcf	59.2	57.9	59.3	83.6
	Saturation, %	107.2	107.9	108.3	105.6
	Void Ratio	1.8873	1.9568	1.8845	1.0169
	Diameter, in.	1.397	1.394	1.397	1.373
	Height, in.	2.993	2.994	2.995	2.978
Strain rate, in./min.		1.000	1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00	0.00
Cell Pressure, psi		6.97	13.81	20.67	10.38
Fail. Stress, psf		186	237	279	405
Strain, %		4.3	6.3	3.6	14.6
Ult. Stress, psf		138	191	223	405
Strain, %		14.8	14.1	14.4	14.6
σ_1 Failure, psf		1190	2226	3255	1899
σ_3 Failure, psf		1004	1989	2976	1495

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: VSO GR CH4 W/ LYS SM

LL= 71 **PL=** 20 **PI=** 51
Assumed Specific Gravity= 2.74
Remarks: Torvane=0.22 tsf

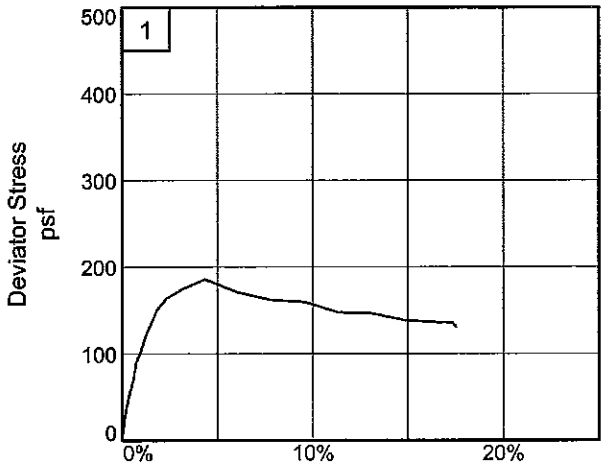
Client: USACE

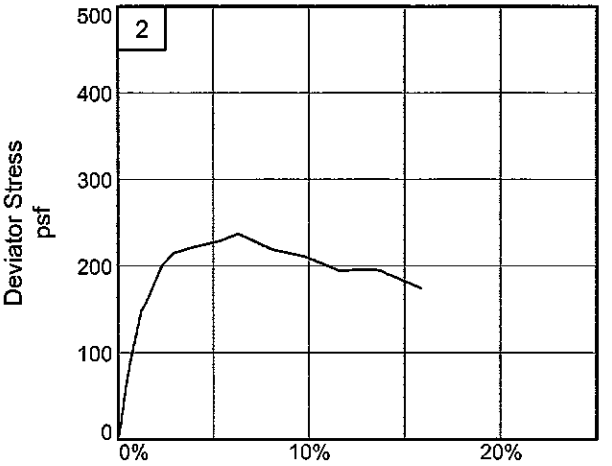
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-8U **Depth:** 10.0
Sample Number: 4C
Proj. No.: 12-017108 **Date Sampled:** 8-6-12

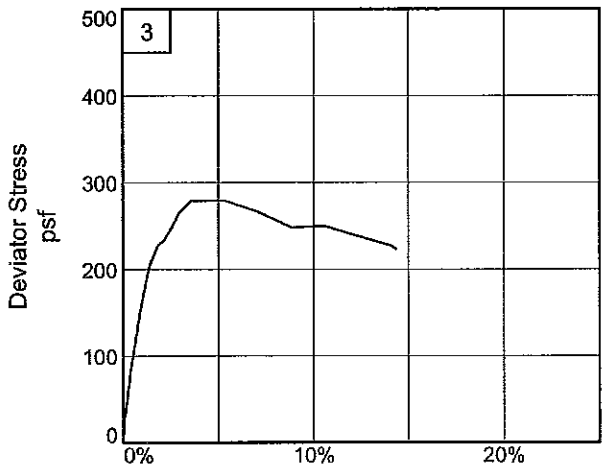
TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

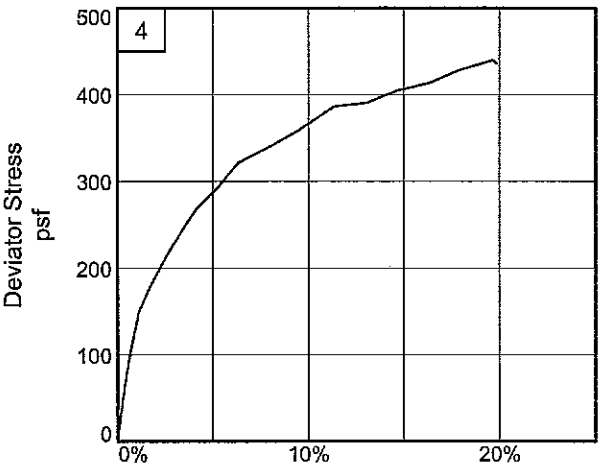
Figure _____

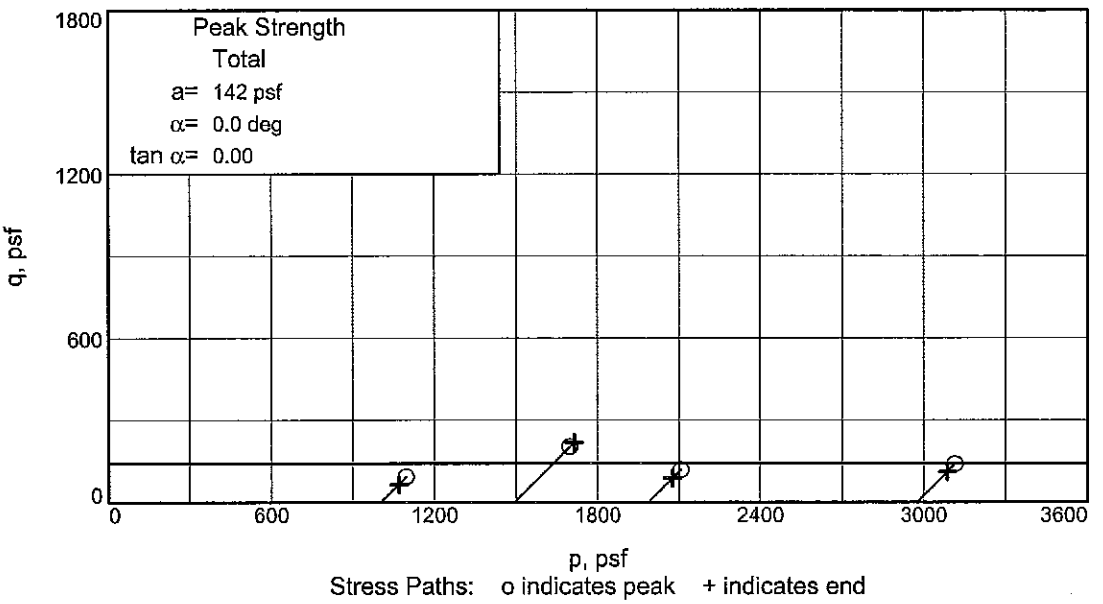
Tested By: JC **Checked By:** JS











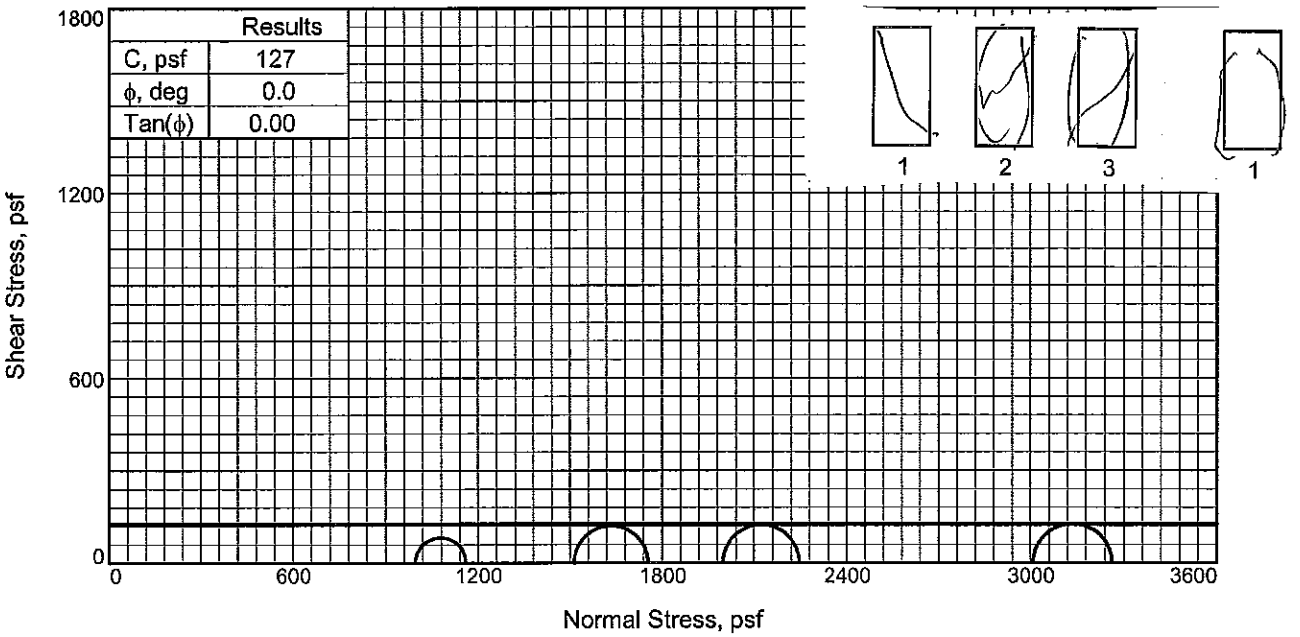
Client: USACE

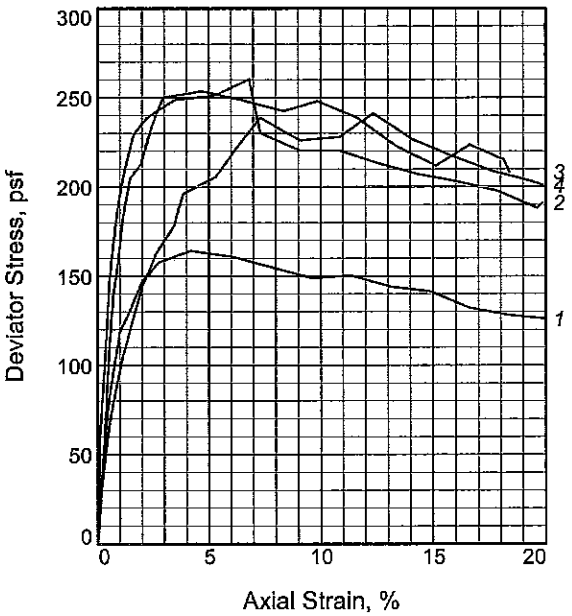
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

Source of Sample: BSFR-8U **Depth:** 10.0 **Sample Number:** 4C

Project No.: 12-017108 **Figure** _____ **Stantec, Inc.**

Tested By: JC _____ **Checked By:** JS _____





Sample No.		1	2	3	4
Initial	Water Content, %	79.0	77.4	84.4	71.2
	Dry Density, pcf	54.4	54.6	52.4	59.1
	Saturation, %	101.3	99.7	102.4	103.4
	Void Ratio	2.1229	2.1110	2.2430	1.8733
	Diameter, in.	1.372	1.380	1.373	1.405
	Height, in.	2.995	2.993	2.993	3.008
At Test	Water Content, %	79.0	77.4	84.4	71.2
	Dry Density, pcf	54.4	54.6	52.4	59.1
	Saturation, %	101.3	99.7	102.4	103.4
	Void Ratio	2.1229	2.1110	2.2430	1.8733
	Diameter, in.	1.372	1.380	1.373	1.405
	Height, in.	2.995	2.993	2.993	3.008
Strain rate, in./min.		1.000	1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00	0.00
Cell Pressure, psi		6.91	13.87	20.89	10.51
Fail. Stress, psf		164	249	254	241
Strain, %		4.2	3.4	4.7	12.3
Ult. Stress, psf		141	207	212	227
Strain, %		14.9	14.4	15.1	14.1
σ_1 Failure, psf		1159	2246	3262	1755
σ_3 Failure, psf		995	1997	3008	1513

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: VSO GR CH4 W/ LNS ML

LL= 75 **PL=** 27 **PI=** 48
Assumed Specific Gravity= 2.72
Remarks: Torvane=0.10 tsf

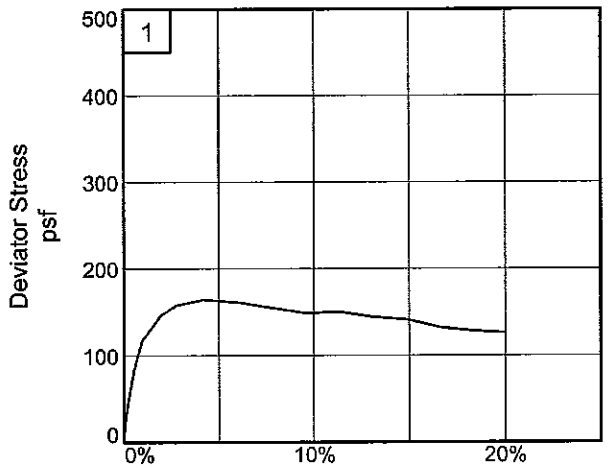
Figure _____

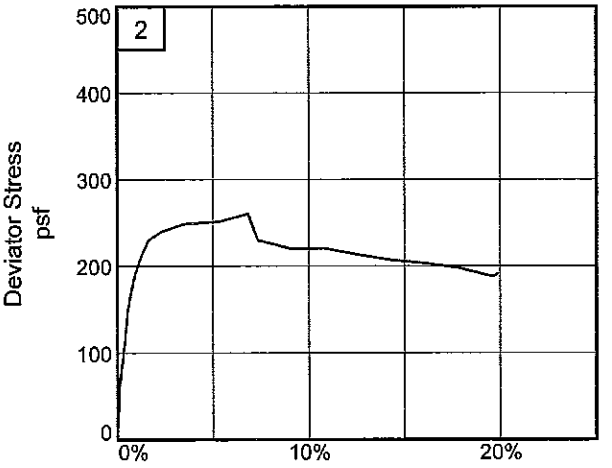
Client: USACE

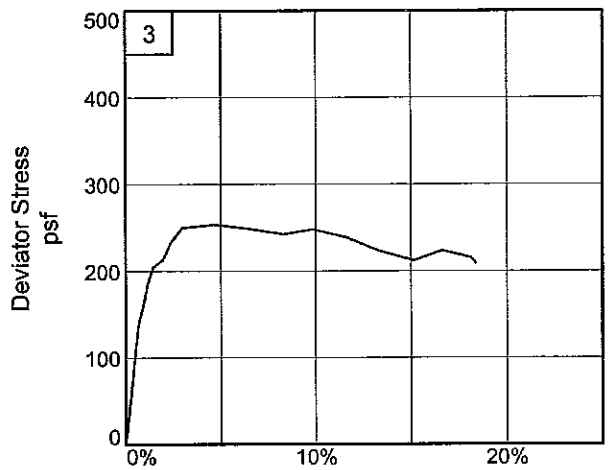
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-8U **Depth:** 17.0
Sample Number: 6B
Proj. No.: 12-017108 **Date Sampled:** 7-30-12

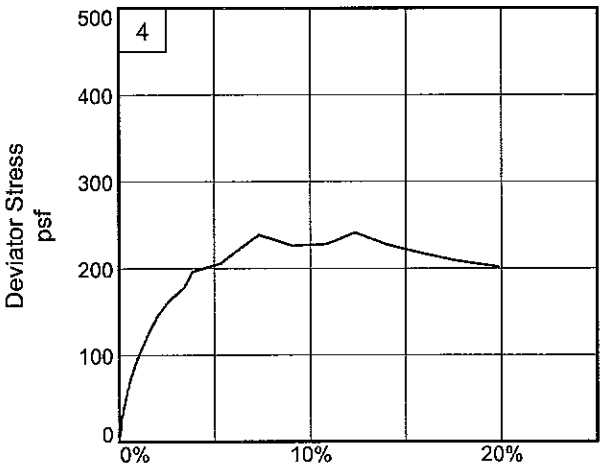
TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

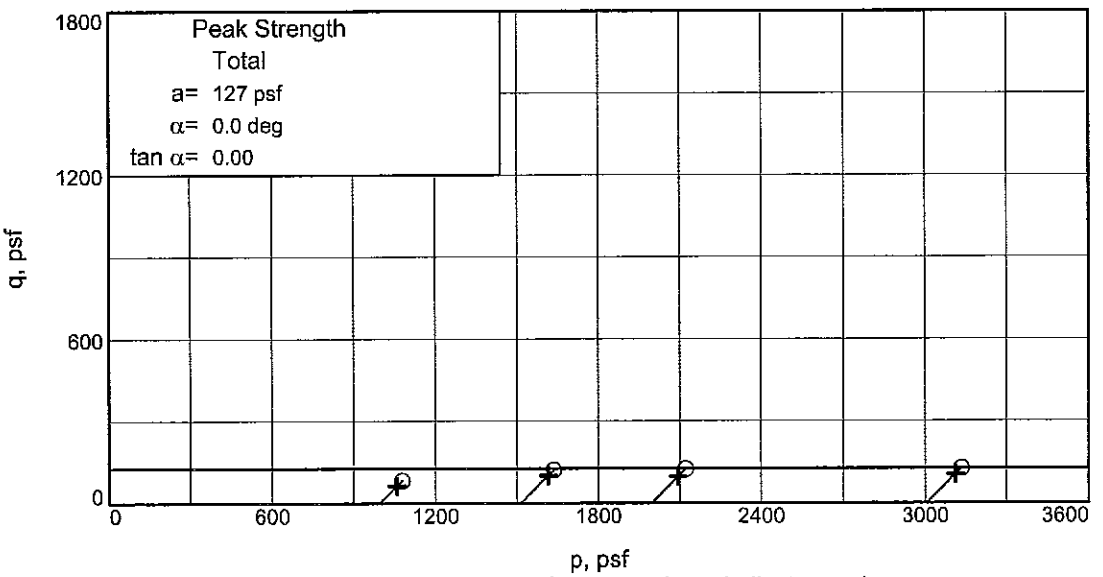
Tested By: JC **Checked By:** JS











Stress Paths: o indicates peak + indicates end

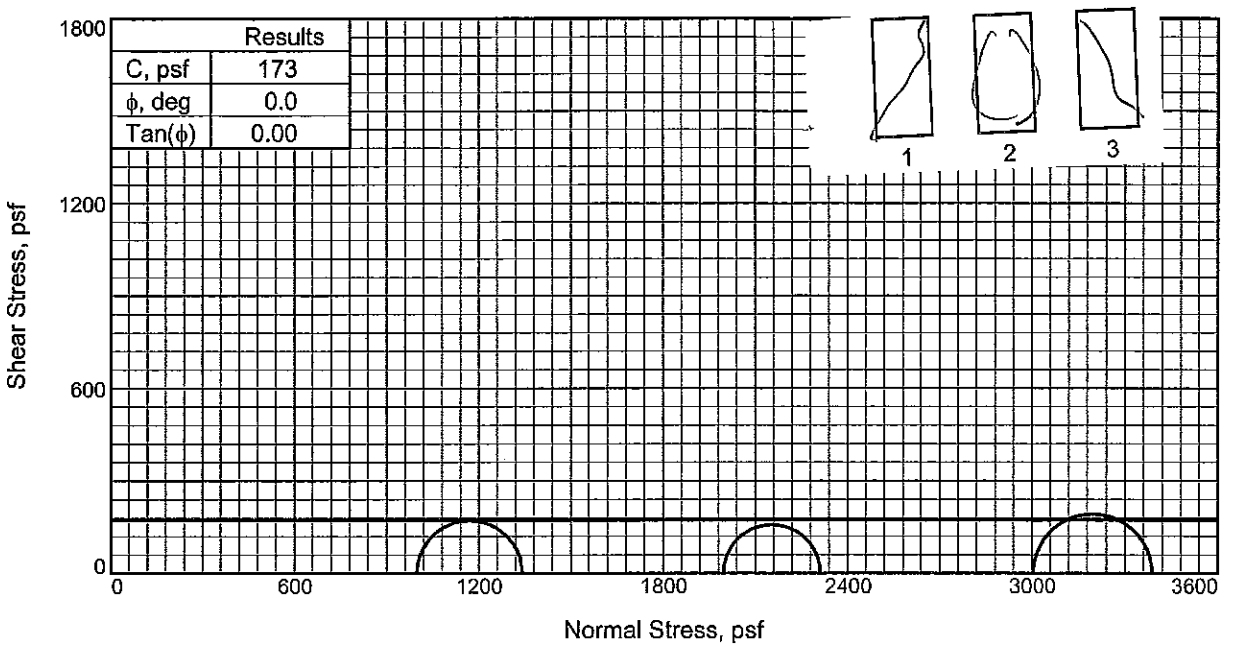
Client: USACE

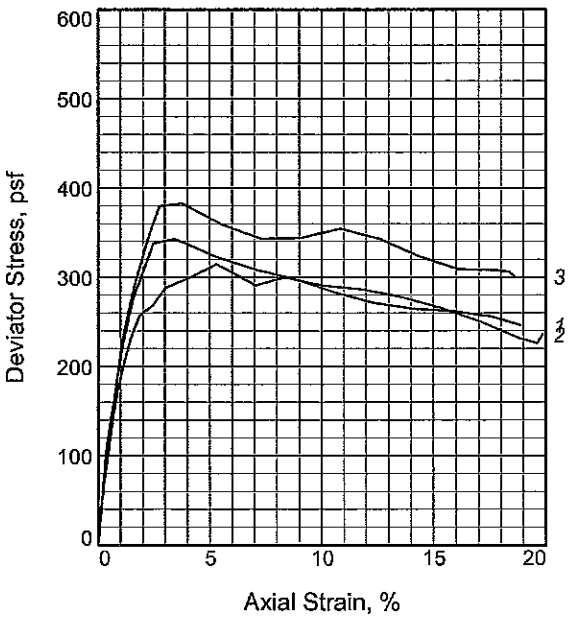
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

Source of Sample: BSFR-8U **Depth:** 17.0 **Sample Number:** 6B

Project No.: 12-017108 **Figure** _____ **Stantec, Inc.**

Tested By: JC **Checked By:** JS





Sample No.		1	2	3
Initial	Water Content, %	63.5	64.7	66.5
	Dry Density, pcf	62.4	61.4	60.7
	Saturation, %	100.2	99.7	100.7
	Void Ratio	1.7225	1.7667	1.7965
	Diameter, in.	1.373	1.381	1.371
	Height, in.	3.006	2.985	2.997
At Test	Water Content, %	63.5	64.7	66.5
	Dry Density, pcf	62.4	61.4	60.7
	Saturation, %	100.2	99.7	100.7
	Void Ratio	1.7225	1.7667	1.7965
	Diameter, in.	1.373	1.381	1.371
	Height, in.	3.006	2.985	2.997
Strain rate, in./min.		1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.93	13.86	20.86
Fail. Stress, psf		343	315	383
Strain, %		3.4	5.3	3.7
Ult. Stress, psf		265	278	324
Strain, %		14.1	13.6	14.3
σ_1 Failure, psf		1341	2310	3386
σ_3 Failure, psf		998	1996	3004

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: VSO GR CH3 W/LNS & ARS ML

LL= 74 **PL=** 27 **PI=** 47
Assumed Specific Gravity= 2.72
Remarks: Torvane=0.22 tsf

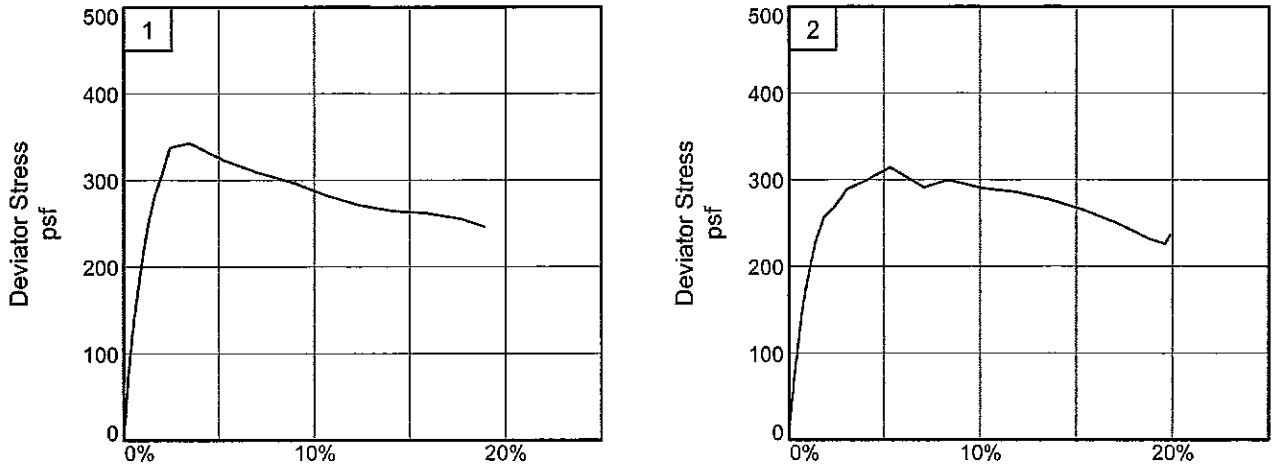
Client: USACE

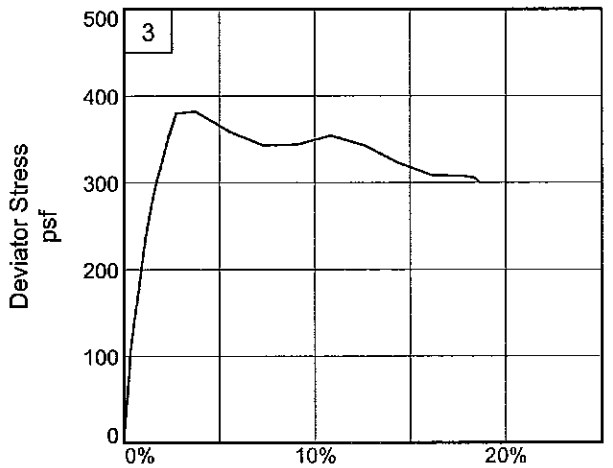
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-8U **Depth:** 24.0
Sample Number: 8A
Proj. No.: 12-017108 **Date Sampled:** 7-30-12

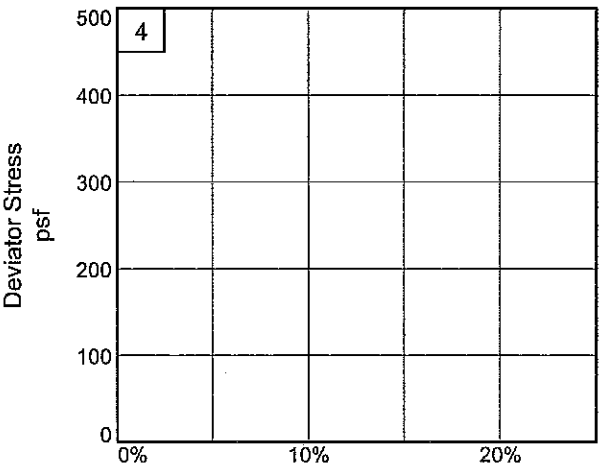
TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

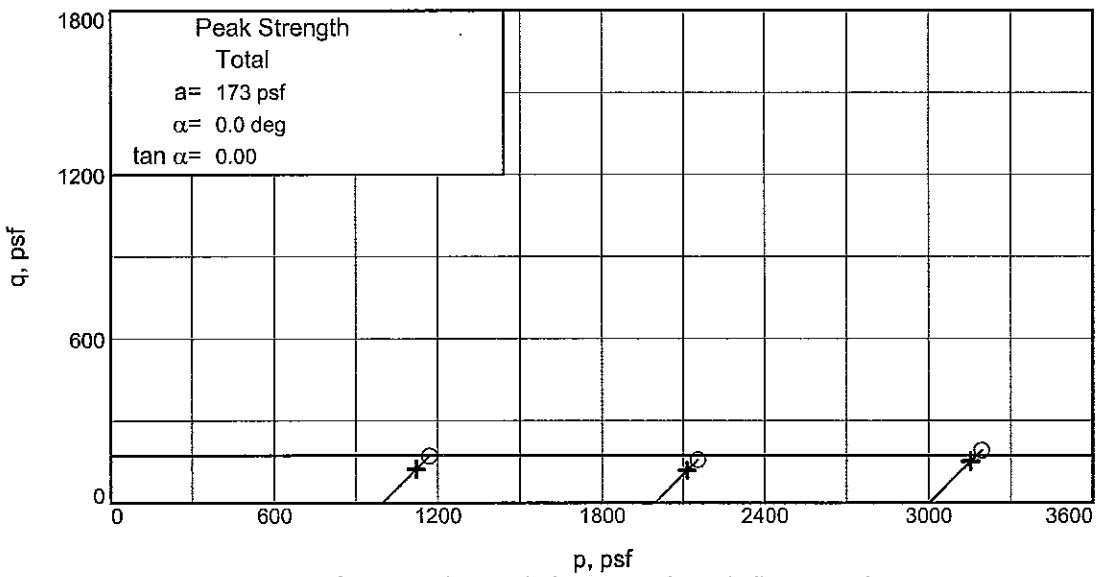
Figure _____

Tested By: JC **Checked By:** JS









Stress Paths: o indicates peak + indicates end

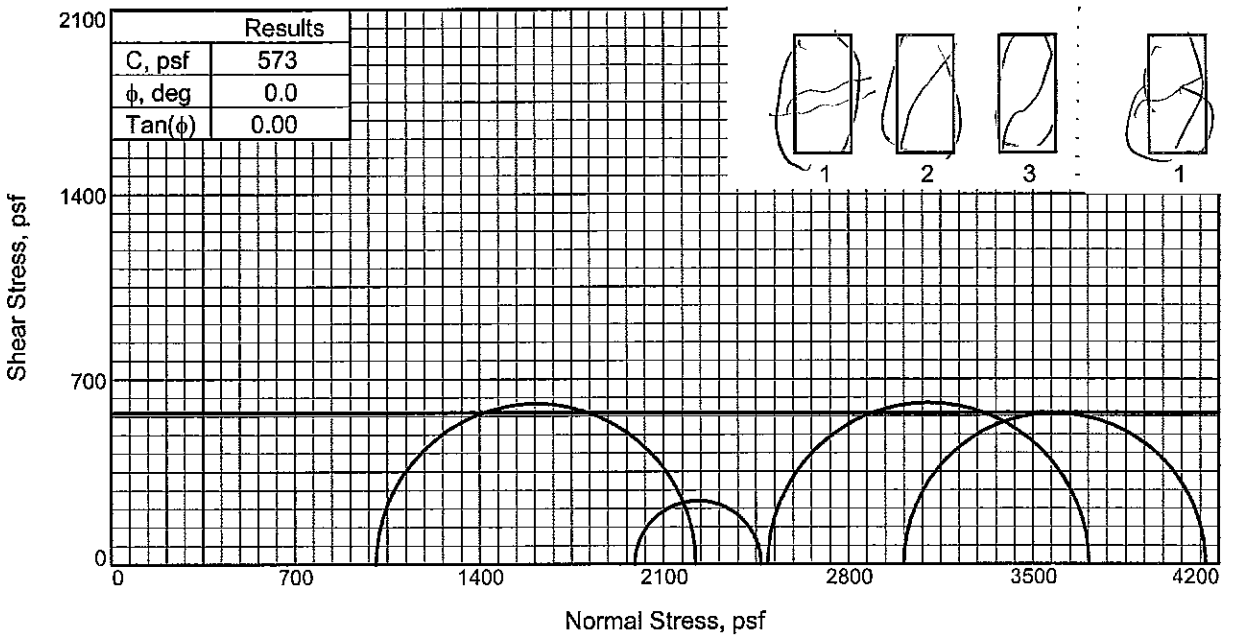
Client: USACE

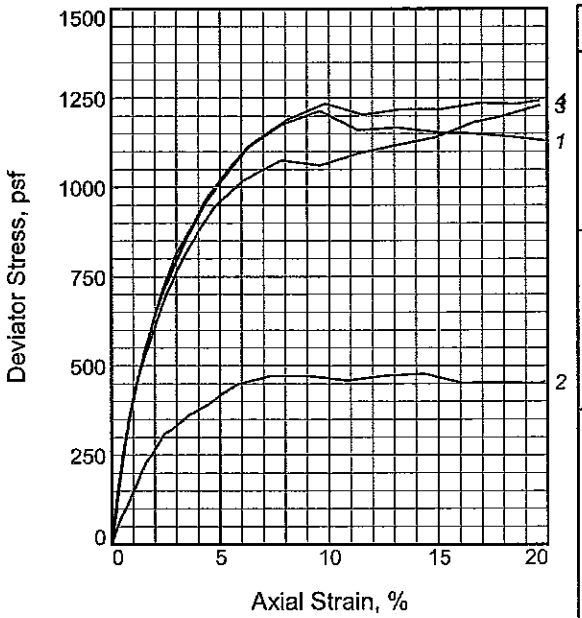
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

Source of Sample: BSFR-8U **Depth:** 24.0 **Sample Number:** 8A

Project No.: 12-017108 **Figure** _____ **Stantec, Inc.**

Tested By: JC **Checked By:** JS





Sample No.		1	2	3	4
Initial	Water Content, %	25.2	35.7	35.2	34.3
	Dry Density, pcf	96.4	87.3	90.6	87.7
	Saturation, %	91.1	103.5	110.6	100.4
	Void Ratio	0.7481	0.9313	0.8598	0.9226
	Diameter, in.	1.376	1.381	1.386	1.377
	Height, in.	2.991	2.972	3.003	2.992
At Test	Water Content, %	25.2	35.7	35.2	34.3
	Dry Density, pcf	96.4	87.3	90.6	87.7
	Saturation, %	91.1	103.5	110.6	100.4
	Void Ratio	0.7481	0.9313	0.8598	0.9226
	Diameter, in.	1.376	1.381	1.386	1.377
	Height, in.	2.991	2.972	3.003	2.992
Strain rate, in./min.		1.000	1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00	0.00
Cell Pressure, psi		6.99	13.82	20.90	17.31
Fail. Stress, psf		1214	478	1140	1219
Strain, %		9.6	14.3	14.9	13.3
Ult. Stress, psf		1154	478	1140	1219
Strain, %		14.9	14.3	14.9	13.3
σ_1 Failure, psf		2221	2468	4150	3712
σ_3 Failure, psf		1007	1990	3010	2493

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: M GNG & LGR CL4 W/ ARS SM, RT

LL= 39 **PL=** 15 **PI=** 24

Assumed Specific Gravity= 2.70

Remarks: Torvane=0.40 tsf

Figure _____

Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

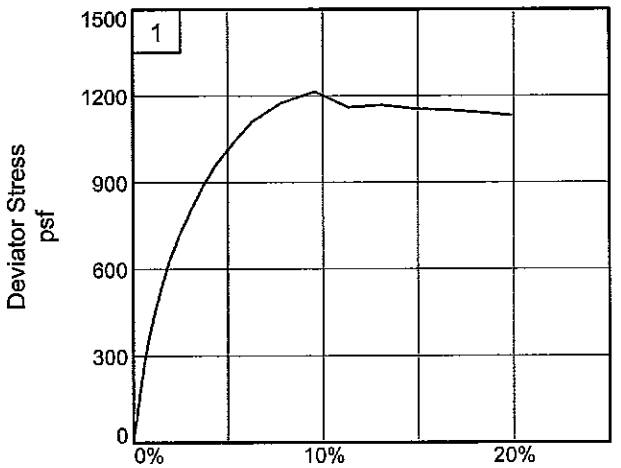
Source of Sample: BSFR-8U **Depth:** 34.0

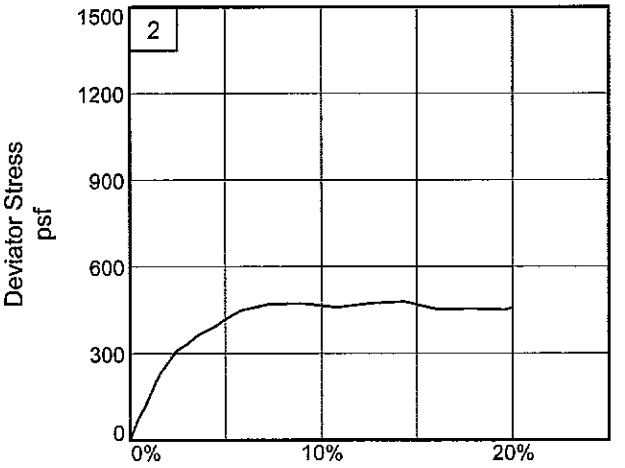
Sample Number: 10C

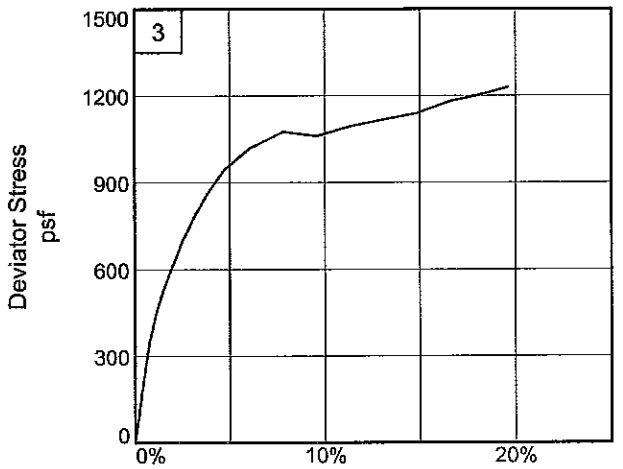
Proj. No.: 12-017108 **Date Sampled:** 7-30-12

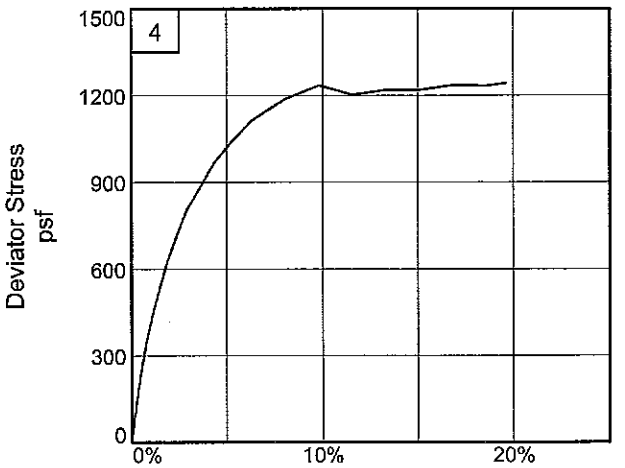
TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

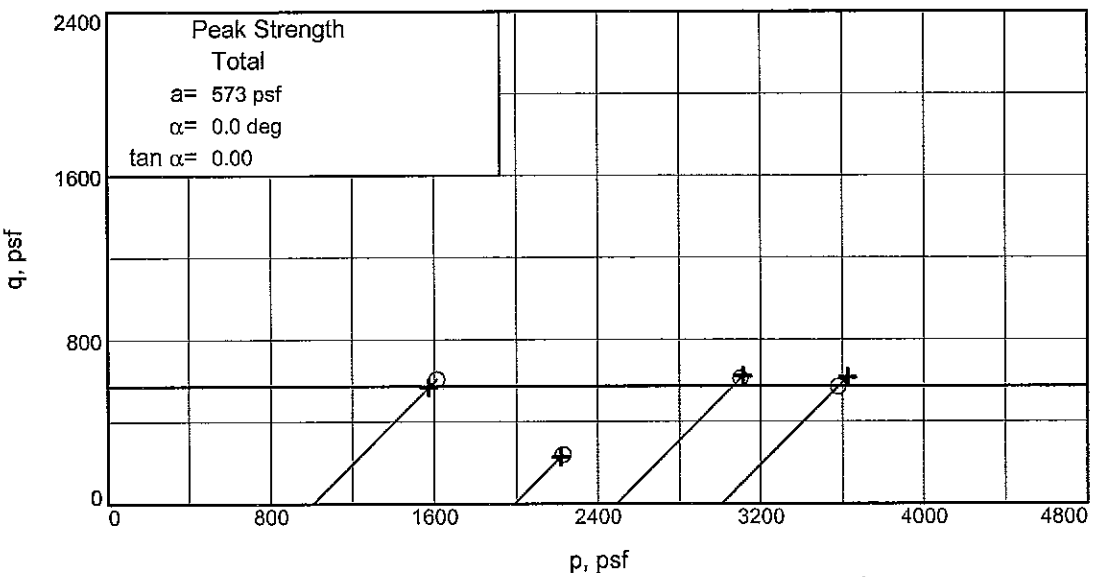
Tested By: JC **Checked By:** JS











Stress Paths: o indicates peak + indicates end

Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

Source of Sample: BSFR-8U **Depth:** 34.0 **Sample Number:** 10C

Project No.: 12-017108 **Figure** _____ **Stantec, Inc.**

Tested By: JC **Checked By:** JS

SUMMARY OF LABORATORY TEST RESULTS

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Paris **Assigned By:** _____

Project Number: 12-017108 **Current Date:** 9/26/2012

Boring: BSFR-9U

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
1	0.0	M BK PT W/ RT	PT		744												
2	2.0	VSO BK CH4 W/ O, RT	CH4		100												
3A	4.0	M BK PT	PT		277												
3B	5.0	VSO BK CH4 W/ ARS ML, RT	CH4		82	51	93	95	UU	0	111		101	38	63	0.20	
3C	6.0	SO GR CH4 W/ ARS ML, RT	CH4		63												
3D	7.0	M GR CH4 W/ ARS ML, RT	CH4		52												
4A	8.0	VSO GR CH3 W/ ARS ML	CH3		68												
4B	9.0	VSO GR CL6 W/ ARS & LNS ML	CL6	14	35	94	126	100	UC	-	248	497	47	25	22	0.23	
4C	10.0	SO GR CH2 W/ ARS WD	CH2		44												
4D	11.0	SO GR CH2 W/ ARS WD	CH2		44												
5A	12.0	M GR CH4 W/ LNS ML	CH4		54	69	107	100					71	21	50		GS=2.61, CON
5B	13.0	GR ML W/ RT	ML		38												
5C	14.0	GR ML W/ LYS CH	ML		31												
5D	15.0	VSO GR CH4 W/ LYS SM	CH4		64	64	105	100	UU	0	133		87	21	66	0.22	
6A	16.0	SO GR CH4 W/ LNS ML, RT	CH4		70												
6B	17.0	SO GR CH4 W/ LNS ML, RT	CH4		70												
6C	18.0	SO GR CH3 W/ LNS ML, RT	CH3	2	73	57	98	99	UC	-	410	819	57	25	32	0.25	
6D	19.0	SO GR CH4 W/ LNS ML, RT, CC	CH4		69												
7A	20.0	M GR CH4 W/ ARS & LYS ML, SIF	CH4		62												
7B	21.0	VSO GR CL6 W/ ARS SM	CL6		50	72	108	100	UU	0	148		48	17	31	0.22	
7C	22.0	M GR CH3 W/ ARS SM, SIF	CH3		39												
7D	23.0	M GR CH3 W/ ARS SM, SIF	CH3		38												
8A	24.0	M GR CH4 W/ ARS & LNS SM, SIF	CH4		62												
8B	25.0	SO GR CH4 W/ ARS & LNS SM, SIF	CH4	2	56	68	106	100	UC	-	328	656	86	21	65	0.32	
8C	26.0	SO GR CH4 W/ ARS & LNS SM, SIF	CH4		67												
8D	27.0	ST GR CH4 W/ ARS & LNS SM, SIF	CH4		42												
9A	28.0	GR SM W/ ARS CH, SIF	SM		36												SV
9B	29.0	GR SM W/ ARS CH, SIF	SM		36												
9C	30.0	M GR CH4 W/ ARS SP, SIF	CH4		52												
9D	31.0	SO GR CH4 W/ ARS SP, SIF	CH4		70												
10A	32.0	M GR CH3 W/ ARS SM, SIF	CH3		40												
10B	33.0	M GR CH3 W/ ARS SM, SIF	CH3		37												
10C	34.0	M GR CH3 W/ ARS SM, SIF	CH3		40												
10D	35.0	M GR CH3 W/ ARS SM, SIF	CH3		42												
11A	36.0	M GR CH3 W/ ARS SP	CH3		45												
11B	37.0	M GR CH3 W/ ARS SP	CH3		42												

Remarks: _____ **Checked By:** _____

Stantec Consulting Services Inc. File Name: Final BSFR-9U_be_boring_log_v1C

SUMMARY OF LABORATORY TEST RESULTS

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Paris Assigned By: _____

Project Number: 12-017108 Current Date: 9/26/2012

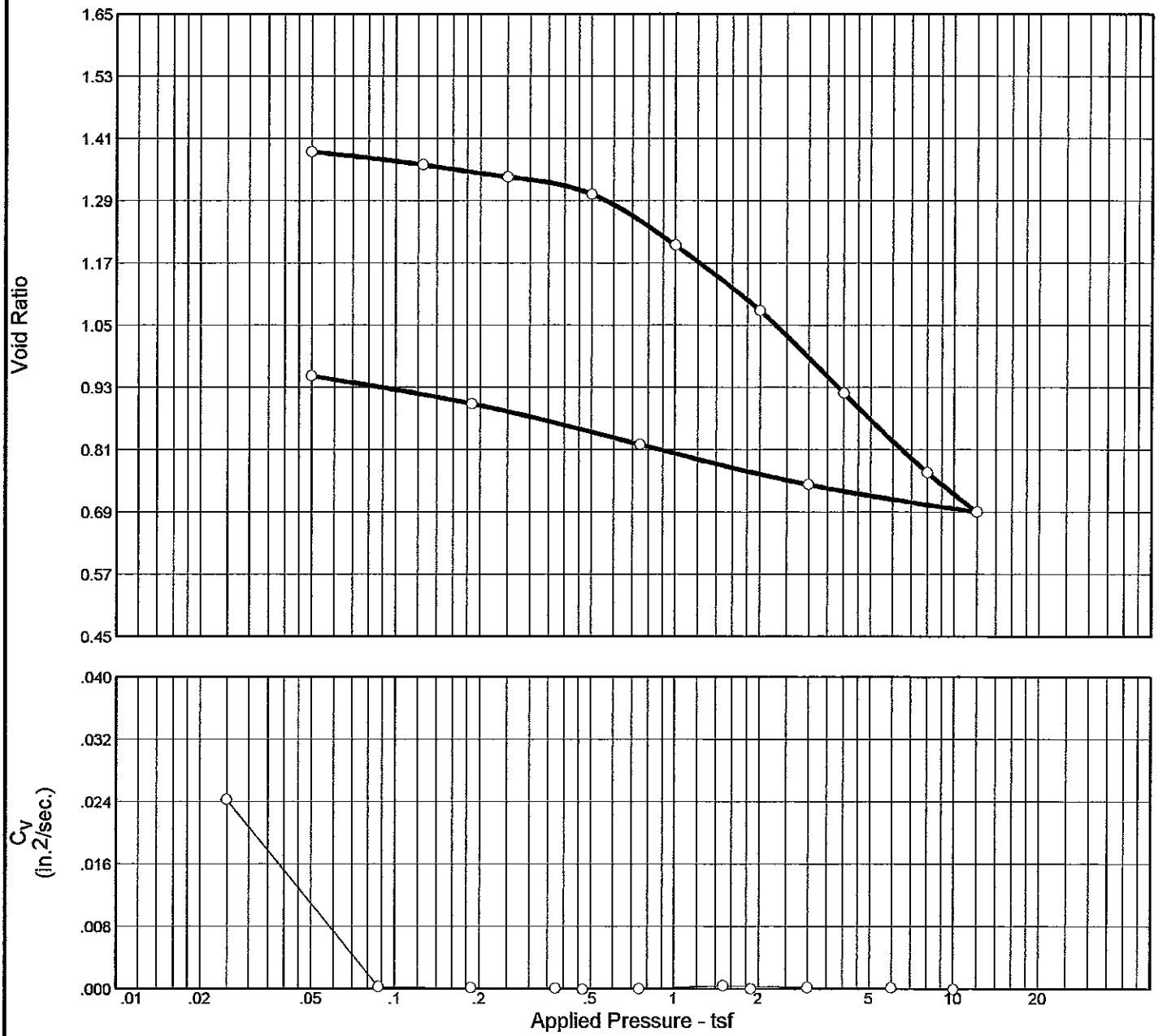
Boring: BSFR-9U

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
11C	38.0	M GR CH2 W/ ARS SP	CH2		36												
11D	39.0	M GR CH2 W/ ARS SP	CH2		37												

Remarks: _____ Checked By: _____

Stantec Consulting Services Inc. File Name: Final BSFR-9U_be_boring_log_v10

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture							
101.0 %	53.5 %	69.4	71	50	2.61	0.43	0.43	1.384

MATERIAL DESCRIPTION	USCS	AASHTO
M GR CH4 W/ LNS ML	CH4	

Project No. 12-017108 **Client:** USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

Source: BSFR-9U **Sample No.:** 5A **Elev./Depth:** 12.0

FFEBJV, LLC

St Rose, LA

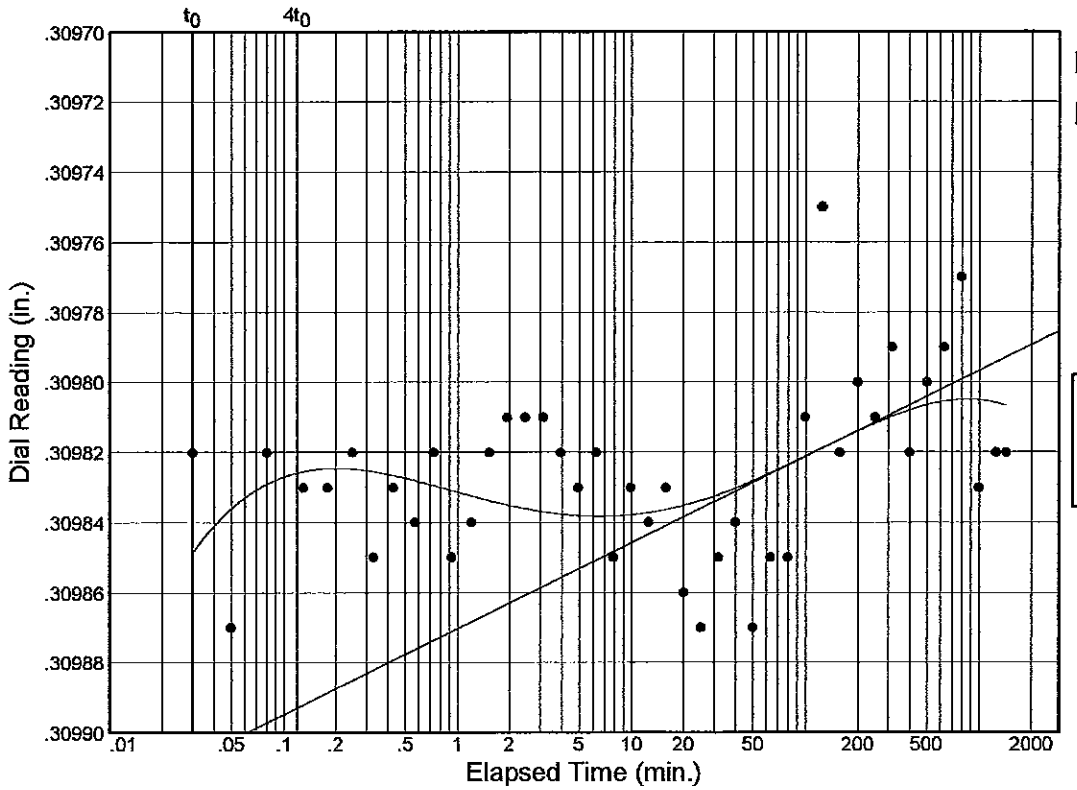
Remarks:

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

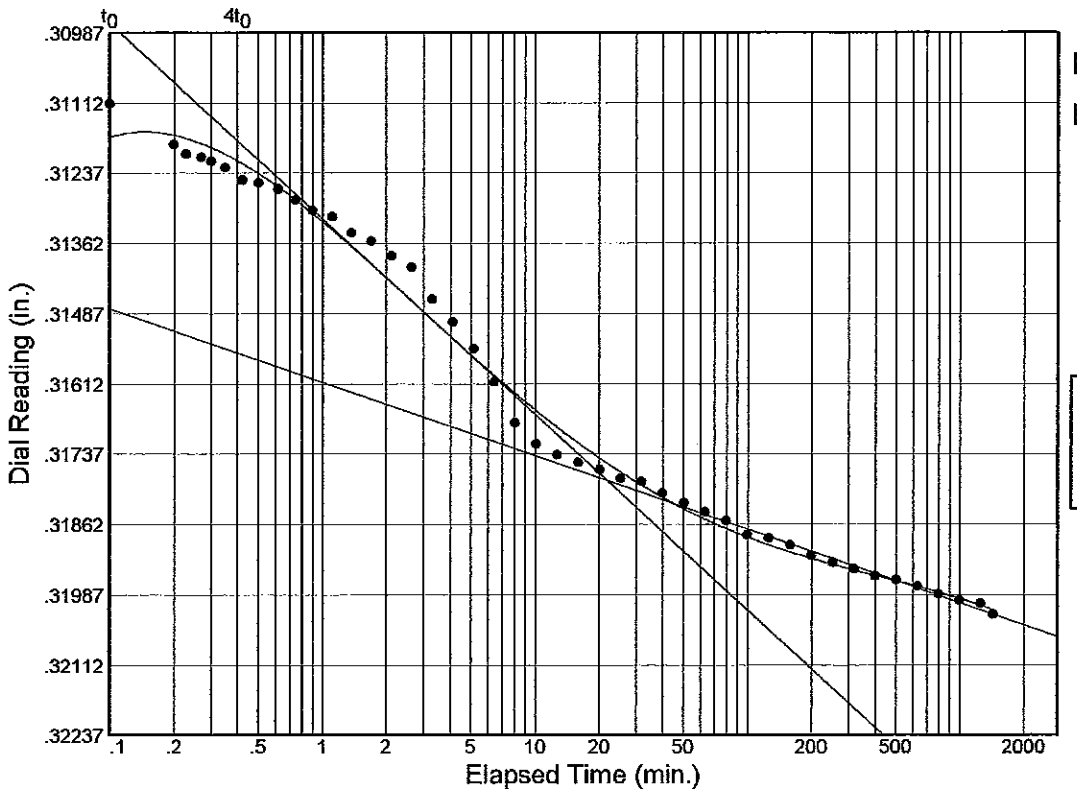
Source: BSFR-9U Sample No.: 5A Elev./Depth: 12.0



Load No.= 1
Load= 0.05 tsf
D_0 = 0.30987
D_{50} = 0.30985
D_{100} = 0.30982
T_{50} = 0.03 min.

C_v @ T_{50}
0.0243 in.^{2}/sec.

C_α = 0.000



Load No.= 2
Load= 0.13 tsf
D_0 = 0.31131
D_{50} = 0.31457
D_{100} = 0.31784
T_{50} = 2.52 min.

C_v @ T_{50}
0.0003 in.^{2}/sec.

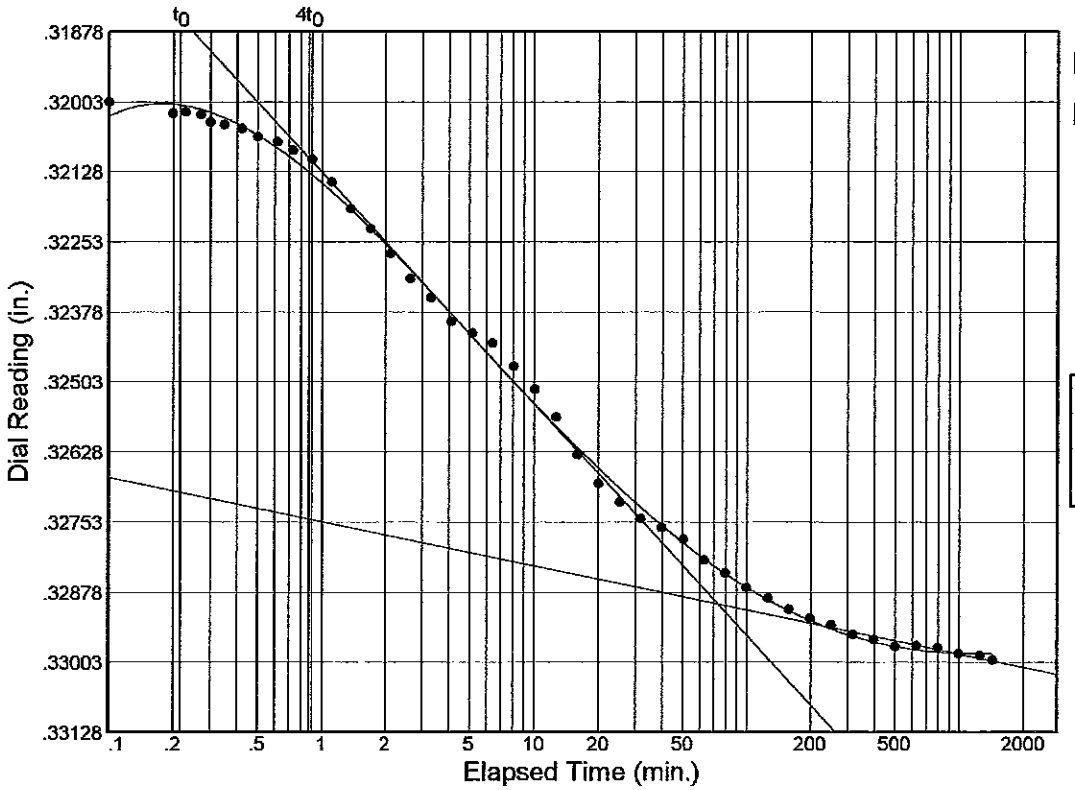
C_α = 0.001

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

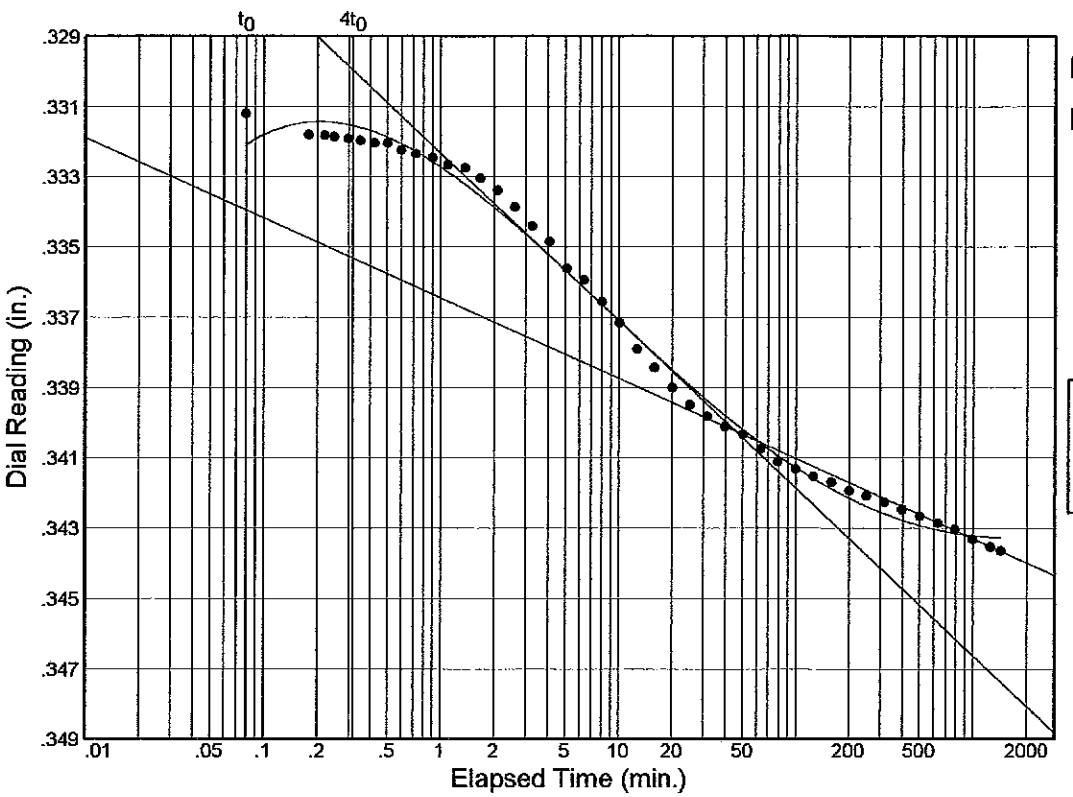
Source: BSFR-9U Sample No.: 5A Elev./Depth: 12.0



Load No.= 3
Load= 0.25 tsf
D_0 = 0.31890
D_{50} = 0.32394
D_{100} = 0.32899
T_{50} = 4.43 min.

C_v @ T_{50}
0.0002 in.^{2}/sec.

C_α = 0.001



Load No.= 4
Load= 0.50 tsf
D_0 = 0.33260
D_{50} = 0.33642
D_{100} = 0.34024
T_{50} = 7.24 min.

C_v @ T_{50}
0.0001 in.^{2}/sec.

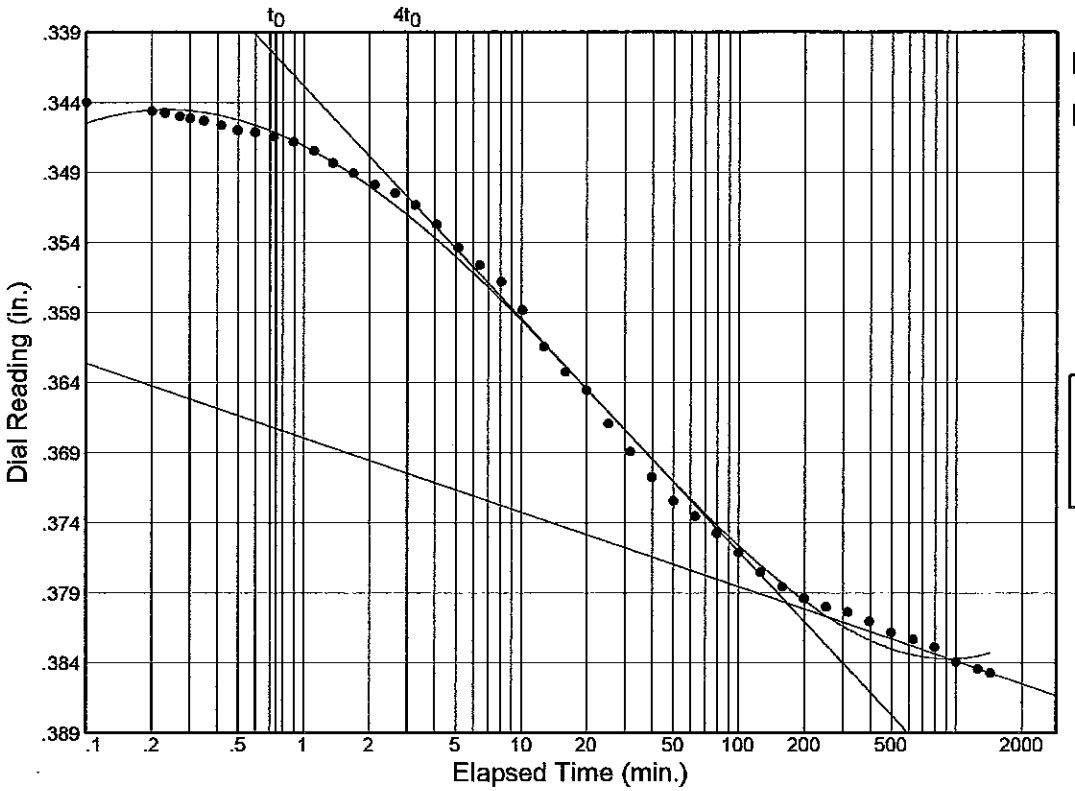
C_α = 0.002

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

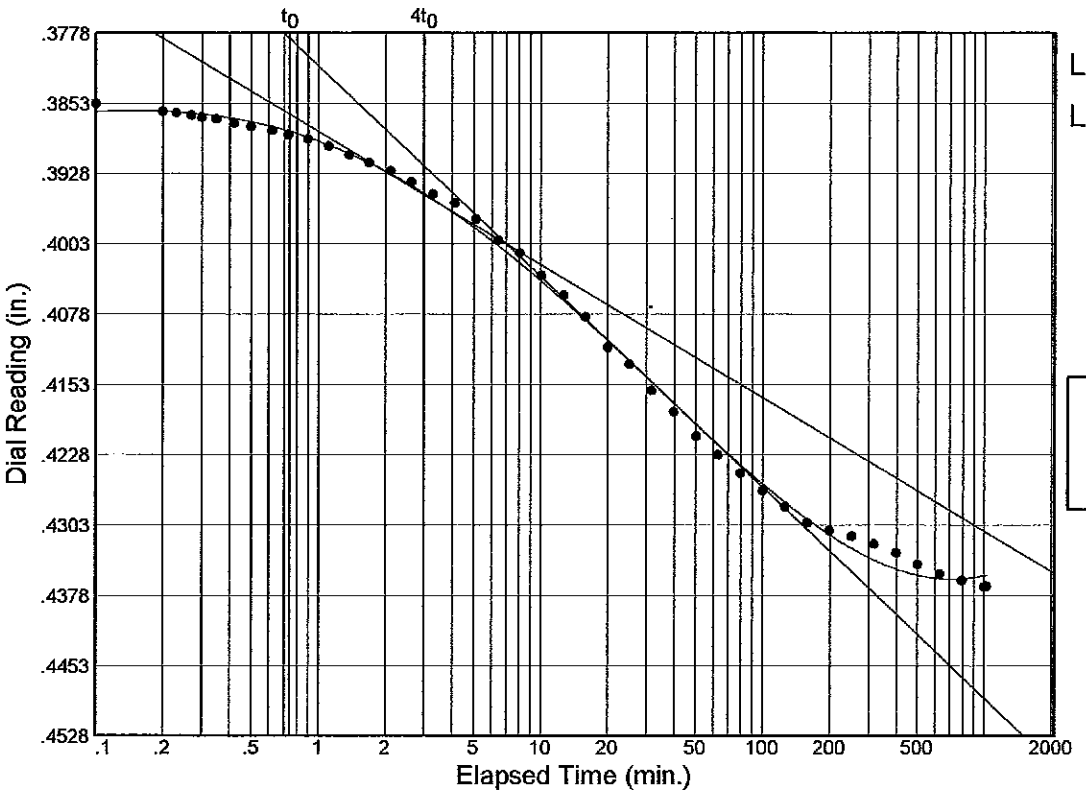
Source: BSFR-9U Sample No.: 5A Elev./Depth: 12.0



Load No.= 5
Load= 1.00 tsf
D_0 = 0.34037
D_{50} = 0.36005
D_{100} = 0.37973
T_{50} = 10.78 min.

C_v @ T_{50}
0.0001 in.^{2}/sec.

C_α = 0.006



Load No.= 6
Load= 2.00 tsf
D_0 = 0.38177
D_{50} = 0.39106
D_{100} = 0.40036
T_{50} = 1.51 min.

C_v @ T_{50}
0.0004 in.^{2}/sec.

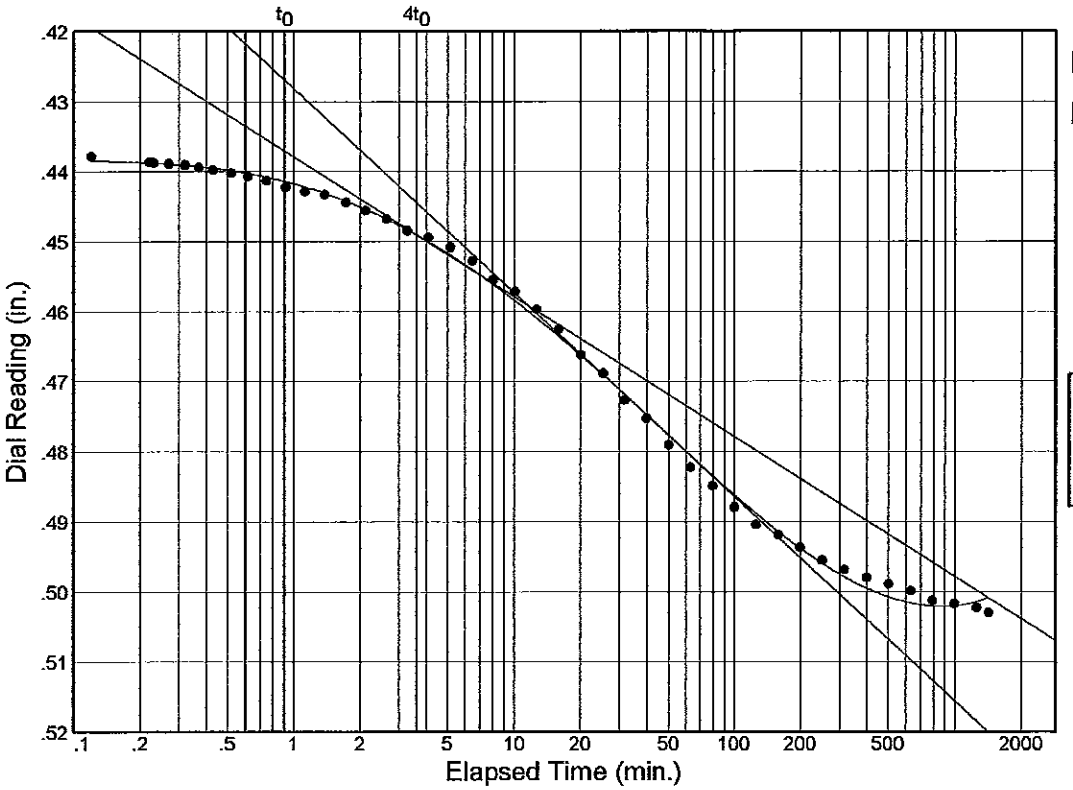
C_α = 0.015

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

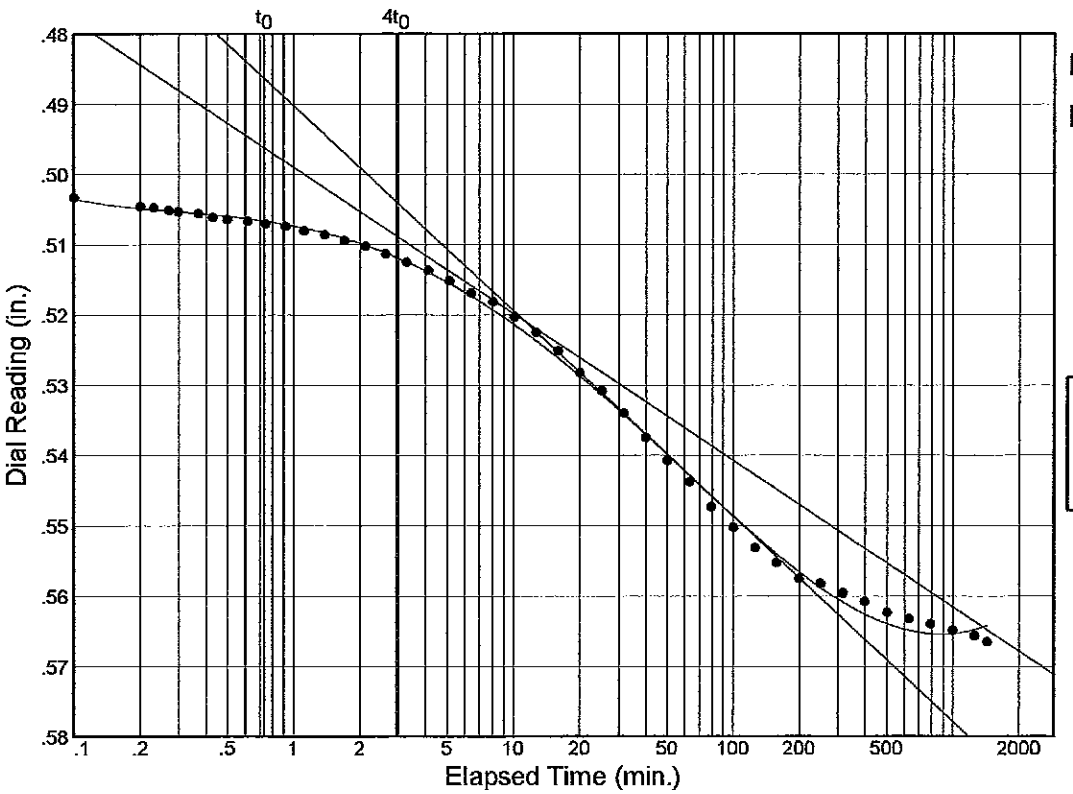
Source: BSFR-9U Sample No.: 5A Elev./Depth: 12.0



Load No.= 7
Load= 4.00 tsf
D_0 = 0.43375
D_{50} = 0.44650
D_{100} = 0.45926
T_{50} = 2.54 min.

C_v @ T_{50}
0.0002 in.^{2}/sec.

C_α = 0.023



Load No.= 8
Load= 8.00 tsf
D_0 = 0.50147
D_{50} = 0.51117
D_{100} = 0.52087
T_{50} = 2.64 min.

C_v @ T_{50}
0.0002 in.^{2}/sec.

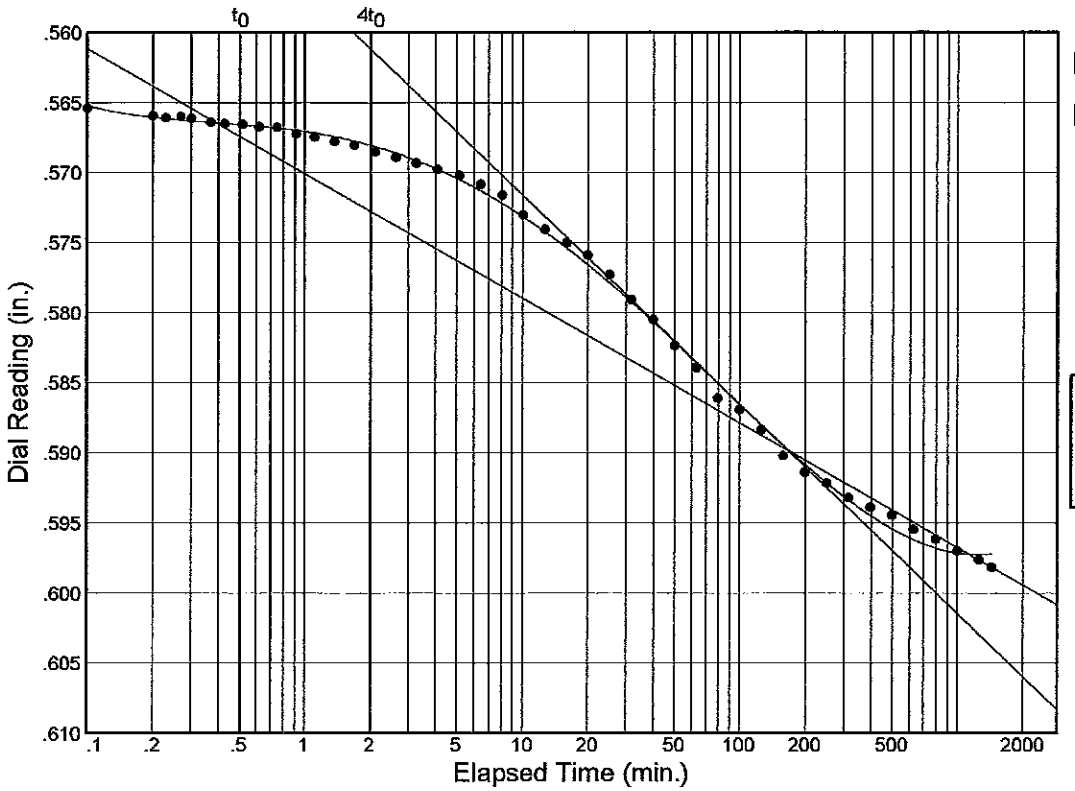
C_α = 0.026

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

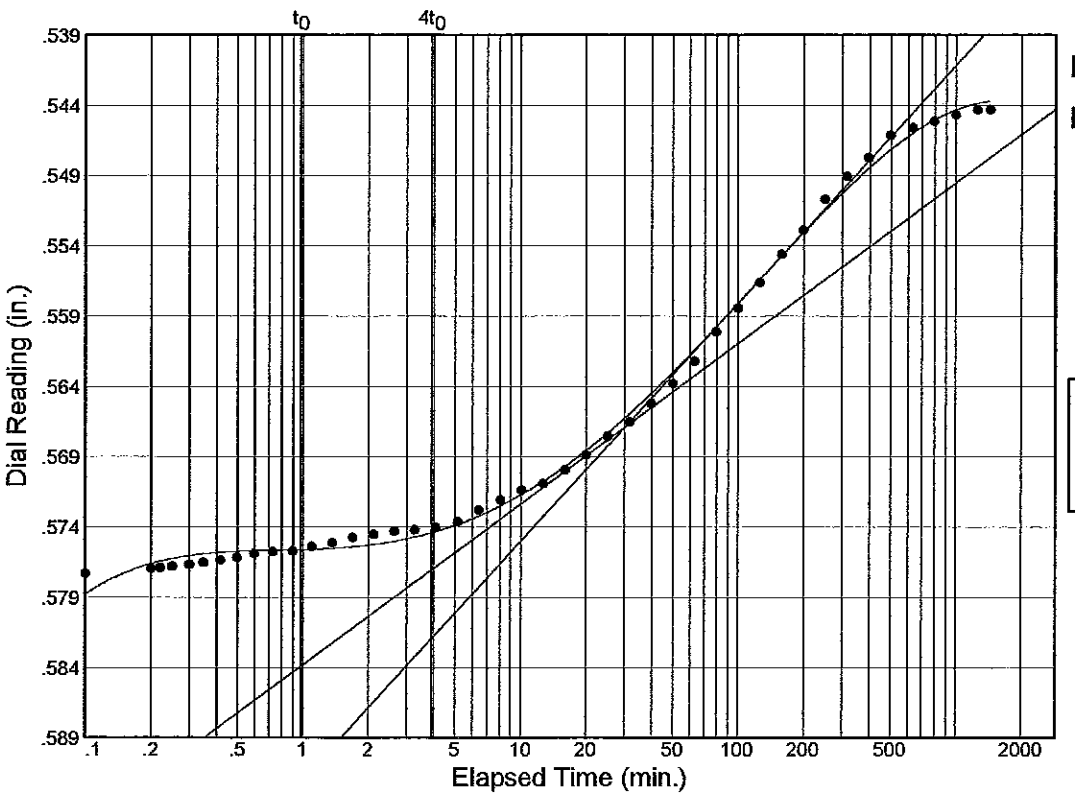
Source: BSFR-9U Sample No.: 5A Elev./Depth: 12.0



Load No.= 9
Load= 12.00 tsf
D_0 = 0.56511
D_{50} = 0.57745
D_{100} = 0.58980
T_{50} = 23.51 min.

C_v @ T_{50}
0.0000 in.^{2}/sec.

C_α = 0.012



Load No.= 11
Load= 0.75 tsf
D_0 = 0.57686
D_{50} = 0.57184
D_{100} = 0.56682
T_{50} = 9.70 min.

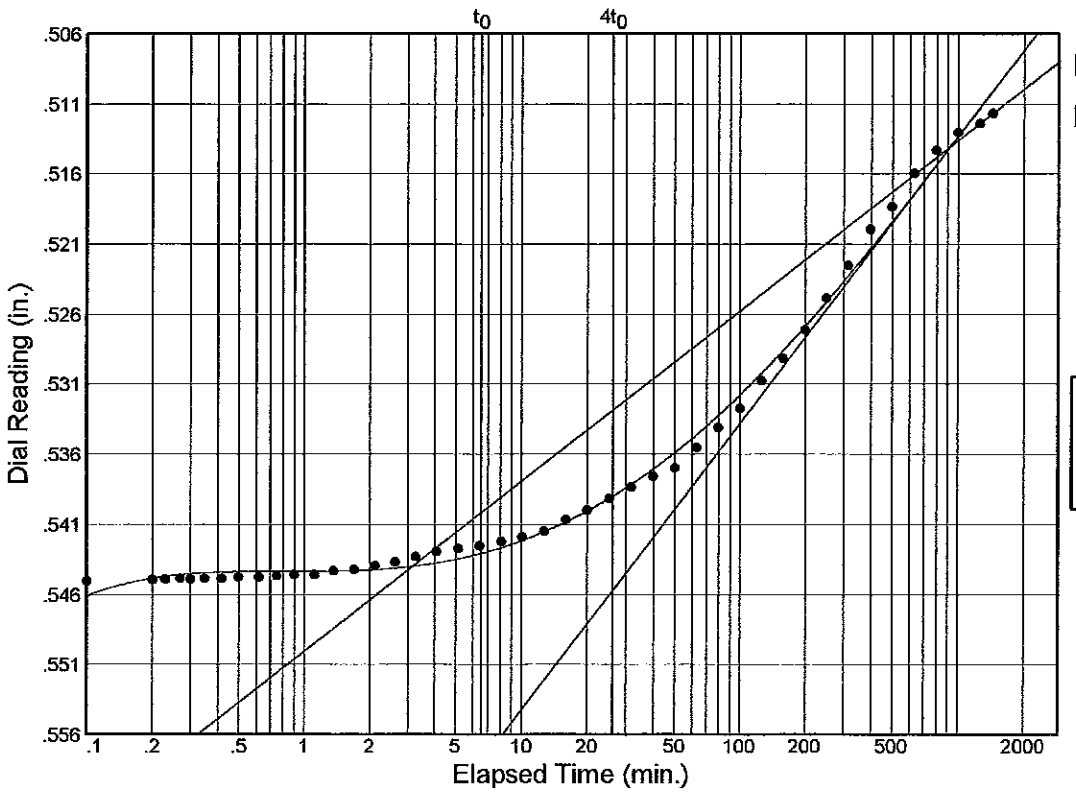
C_v @ T_{50}
0.0000 in.^{2}/sec.

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

Source: BSFR-9U Sample No.: 5A Elev./Depth: 12.0



Load No.= 12
Load= 0.19 tsf
D_0 = 0.54715
D_{50} = 0.53057
D_{100} = 0.51400
T_{50} = 119.41 min.

C_v @ T_{50}
0.0000 in.^{2}/sec.

CONSOLIDATION TEST DATA

Client: USACE
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans
Project Number: 12-017108

Sample Data

Source: BSFR-9U
Sample No.: 5A
Elev. or Depth: 12.0 **Sample Length(in./cm.):**
Location:
Description: M GR CH4 W/ LNS ML
Liquid Limit: 71 **Plasticity Index:** 50
USCS: CH4 **AASHTO:** **Figure No.:**
Testing Remarks:

Test Specimen Data

TOTAL SAMPLE		BEFORE TEST	AFTER TEST	
Wet w+t	= 198.52 g.	Consolidometer # = 1	Wet w+t	= 605.80 g.
Dry w+t	= 139.85 g.		Dry w+t	= 518.96 g.
Tare Wt.	= 30.27 g.	Spec. Gravity = 2.61	Tare Wt.	= 295.73 g.
Height	= .99 in.	Height = .99 in.		
Diameter	= 3.99 in.	Diameter = 4.00 in.		
Weight	= 347.01 g.	Defl. Table = n/a		
Moisture	= 53.5 %	Ht. Solids = 0.4156 in.	Moisture	= 38.9 %
Wet Den.	= 106.5 pcf	Dry Wt. = 226.63 g.	Dry Wt.	= 223.23 g.*
Dry Den.	= 69.4 pcf	Void Ratio = 1.384	Void Ratio	= 0.952
		Saturation = 101.0 %		

* Final dry weight used in calculations

End-of-Load Summary

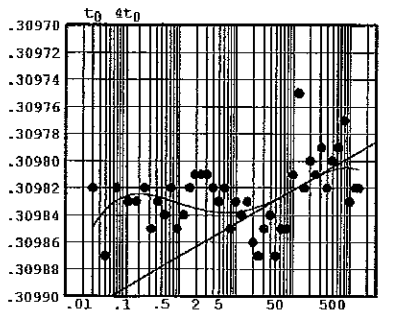
Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (in.^{2}/sec.)	C_α	Void Ratio	% Compression /Swell
start	0.30980				1.384	
0.05	0.30982	0.00000	0.0243	0.000	1.384	0.0 Comprs.
0.13	0.32022	0.00000	0.0003	0.001	1.359	1.1 Comprs.
0.25	0.32999	0.00000	0.0002	0.001	1.336	2.0 Comprs.
0.50	0.34365	0.00000	0.0001	0.002	1.303	3.4 Comprs.
1.00	0.38471	0.00000	0.0001	0.006	1.204	7.6 Comprs.
2.00	0.43683	0.00000	0.0004	0.015	1.079	12.8 Comprs.
4.00	0.50300	0.00000	0.0002	0.023	0.919	19.5 Comprs.
8.00	0.56650	0.00000	0.0002	0.026	0.767	25.9 Comprs.
12.00	0.59815	0.00000	0.0000	0.012	0.690	29.1 Comprs.
3.00	0.57635	0.00000			0.743	26.9 Comprs.

Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (in.^{2}/sec.)	C_α	Void Ratio	% Compression /Swell
0.75	0.54429	0.00000	0.0000		0.820	23.7 Comprs.
0.19	0.51168	0.00000	0.0000		0.899	20.4 Comprs.
0.05	0.48946	0.00000			0.952	18.1 Comprs.

C_c = 0.43 P_c = 0.43 tsf C_r = 0.11

Pressure: 0.05 tsf **TEST READINGS** **Load No. 1**

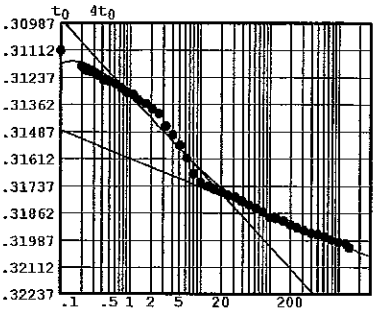
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.30980	23	12.55	0.30984
2	0.03	0.30982	24	15.80	0.30983
3	0.05	0.30987	25	19.92	0.30986
4	0.08	0.30982	26	25.08	0.30987
5	0.13	0.30983	27	31.58	0.30985
6	0.18	0.30983	28	39.77	0.30984
7	0.25	0.30982	29	50.08	0.30987
8	0.33	0.30985	30	63.05	0.30985
9	0.43	0.30983	31	79.40	0.30985
10	0.57	0.30984	32	99.97	0.30981
11	0.73	0.30982	33	125.85	0.30975
12	0.93	0.30985	34	158.45	0.30982
13	1.20	0.30984	35	199.50	0.30980
14	1.53	0.30982	36	251.17	0.30981
15	1.93	0.30981	37	316.20	0.30979
16	2.45	0.30981	38	398.08	0.30982
17	3.10	0.30981	39	501.17	0.30980
18	3.93	0.30982	40	630.93	0.30979
19	4.97	0.30983	41	794.30	0.30977
20	6.27	0.30982	42	999.98	0.30983
21	7.90	0.30985	43	1258.90	0.30982
22	9.95	0.30983	44	1440.05	0.30982



Void Ratio = 1.384 **Compression** = 0.0 %
D_0 = 0.30987 D_{50} = 0.30985 D_{100} = 0.30982
C_v **at 0.0 min.** = 0.0243 in.^{2}/sec. C_α = 0.000

Pressure: 0.13 tsf | TEST READINGS | Load No. 2

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.30876	24	12.72	0.31738
2	0.10	0.31113	25	15.98	0.31752
3	0.20	0.31186	26	20.08	0.31764
4	0.23	0.31203	27	25.25	0.31780
5	0.27	0.31209	28	31.75	0.31786
6	0.30	0.31215	29	39.95	0.31807
7	0.35	0.31227	30	50.25	0.31824
8	0.42	0.31249	31	63.23	0.31840
9	0.50	0.31254	32	79.57	0.31856
10	0.62	0.31265	33	100.15	0.31881
11	0.75	0.31285	34	126.03	0.31886
12	0.90	0.31303	35	158.63	0.31899
13	1.12	0.31315	36	199.67	0.31917
14	1.37	0.31343	37	251.33	0.31930
15	1.70	0.31358	38	316.38	0.31941
16	2.12	0.31384	39	398.27	0.31954
17	2.63	0.31404	40	501.33	0.31960
18	3.28	0.31461	41	631.12	0.31972
19	4.10	0.31501	42	794.48	0.31986
20	5.13	0.31549	43	1000.15	0.31997
21	6.43	0.31608	44	1259.08	0.32003
22	8.07	0.31681	45	1440.32	0.32022
23	10.13	0.31719			



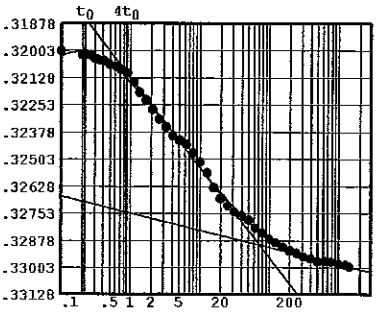
Void Ratio = 1.359 **Compression** = 1.1 %

D_0 = 0.31131 D_{50} = 0.31457 D_{100} = 0.31784

C_v **at 2.5 min.** = 0.0003 in.^{2}/sec. C_α = 0.001

Pressure: 0.25 tsf | TEST READINGS | Load No. 3

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.31838	24	12.72	0.32566
2	0.10	0.32003	25	15.98	0.32633
3	0.20	0.32023	26	20.08	0.32684
4	0.23	0.32021	27	25.25	0.32717
5	0.27	0.32026	28	31.75	0.32747
6	0.30	0.32039	29	39.95	0.32763
7	0.35	0.32044	30	50.25	0.32783
8	0.42	0.32051	31	63.23	0.32821
9	0.50	0.32066	32	79.57	0.32844
10	0.62	0.32075	33	100.13	0.32870
11	0.73	0.32089	34	126.03	0.32888
12	0.90	0.32105	35	158.63	0.32909
13	1.12	0.32146	36	199.67	0.32925
14	1.37	0.32194	37	251.33	0.32936
15	1.70	0.32230	38	316.37	0.32953
16	2.12	0.32274	39	398.25	0.32962
17	2.63	0.32319	40	501.33	0.32975
18	3.28	0.32353	41	631.10	0.32974
19	4.10	0.32395	42	794.48	0.32977
20	5.13	0.32415	43	1000.15	0.32987
21	6.43	0.32434	44	1259.08	0.32991
22	8.07	0.32475	45	1440.27	0.32999
23	10.13	0.32516			



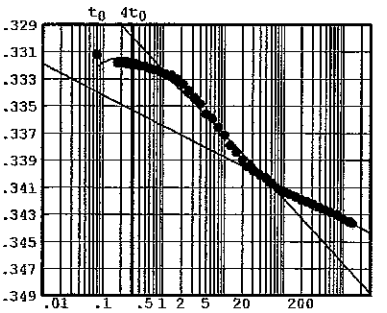
Void Ratio = 1.336 **Compression** = 2.0 %

D_0 = 0.31890 D_{50} = 0.32394 D_{100} = 0.32899

C_v **at 4.4 min.** = 0.0002 in.^{2}/sec. C_α = 0.001

Pressure: 0.50 tsf | TEST READINGS | Load No. 4

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.32778	24	12.72	0.33790
2	0.08	0.33119	25	15.97	0.33843
3	0.18	0.33180	26	20.08	0.33900
4	0.22	0.33181	27	25.25	0.33949
5	0.25	0.33185	28	31.75	0.33982
6	0.30	0.33190	29	39.93	0.34010
7	0.35	0.33197	30	50.25	0.34033
8	0.42	0.33203	31	63.23	0.34075
9	0.50	0.33204	32	79.57	0.34112
10	0.60	0.33224	33	100.13	0.34132
11	0.73	0.33234	34	126.03	0.34153
12	0.90	0.33246	35	158.63	0.34170
13	1.10	0.33266	36	199.67	0.34193
14	1.37	0.33275	37	251.33	0.34207
15	1.68	0.33303	38	316.37	0.34226
16	2.10	0.33338	39	398.25	0.34247
17	2.62	0.33385	40	501.33	0.34266
18	3.27	0.33441	41	631.10	0.34286
19	4.10	0.33485	42	794.47	0.34302
20	5.13	0.33560	43	1000.15	0.34332
21	6.42	0.33593	44	1259.07	0.34353
22	8.07	0.33656	45	1440.10	0.34365
23	10.12	0.33716			



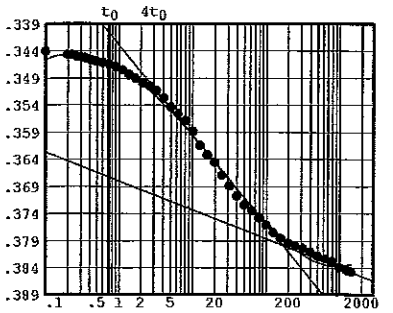
Void Ratio = 1.303 **Compression** = 3.4 %

D_0 = 0.33260 D_{50} = 0.33642 D_{100} = 0.34024

C_v **at 7.2 min.** = 0.0001 in.^{2}/sec. C_α = 0.002

Pressure: 1.00 tsf | **TEST READINGS** | **Load No. 5**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.34109	24	12.72	0.36144
2	0.10	0.34400	25	15.97	0.36321
3	0.20	0.34465	26	20.08	0.36456
4	0.23	0.34475	27	25.25	0.36690
5	0.27	0.34502	28	31.75	0.36894
6	0.30	0.34512	29	39.95	0.37076
7	0.35	0.34534	30	50.25	0.37242
8	0.42	0.34564	31	63.23	0.37353
9	0.50	0.34598	32	79.57	0.37473
10	0.60	0.34615	33	100.13	0.37613
11	0.73	0.34645	34	126.03	0.37754
12	0.90	0.34681	35	158.63	0.37858
13	1.12	0.34748	36	199.67	0.37941
14	1.37	0.34834	37	251.33	0.38000
15	1.70	0.34905	38	316.37	0.38035
16	2.12	0.34988	39	398.25	0.38103
17	2.63	0.35048	40	501.33	0.38181
18	3.28	0.35134	41	631.10	0.38233
19	4.10	0.35268	42	794.48	0.38287
20	5.13	0.35440	43	1000.15	0.38392
21	6.43	0.35563	44	1259.08	0.38440
22	8.07	0.35682	45	1440.23	0.38471
23	10.12	0.35883			



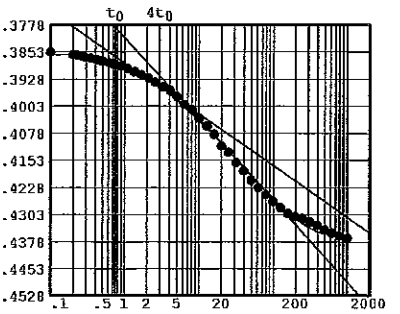
Void Ratio = 1.204 **Compression** = 7.6 %

D_0 = 0.34037 D_{50} = 0.36005 D_{100} = 0.37973

C_v **at 10.8 min.** = 0.0001 in.^{2}/sec. C_α = 0.006

Pressure: 2.00 tsf | TEST READINGS | Load No. 6

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.38088	23	10.13	0.40366
2	0.10	0.38532	24	12.72	0.40578
3	0.20	0.38615	25	15.98	0.40814
4	0.23	0.38628	26	20.08	0.41136
5	0.27	0.38656	27	25.25	0.41316
6	0.30	0.38680	28	31.77	0.41595
7	0.35	0.38700	29	39.95	0.41824
8	0.42	0.38741	30	50.27	0.42085
9	0.50	0.38783	31	63.23	0.42283
10	0.62	0.38821	32	79.58	0.42482
11	0.73	0.38867	33	100.15	0.42664
12	0.90	0.38913	34	126.03	0.42838
13	1.12	0.38988	35	158.63	0.43004
14	1.38	0.39084	36	199.68	0.43085
15	1.70	0.39162	37	251.33	0.43147
16	2.12	0.39255	38	316.38	0.43234
17	2.63	0.39370	39	398.27	0.43326
18	3.28	0.39497	40	501.35	0.43451
19	4.10	0.39592	41	631.12	0.43549
20	5.13	0.39768	42	794.48	0.43623
21	6.43	0.39992	43	1000.15	0.43689
22	8.07	0.40125	44	1030.13	0.43683



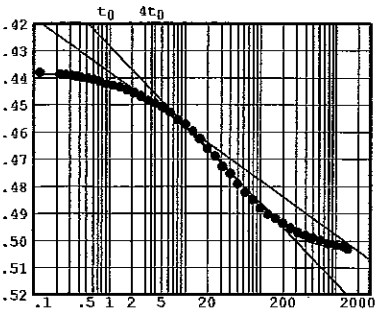
Void Ratio = 1.079 **Compression** = 12.8 %

D_0 = 0.38177 D_{50} = 0.39106 D_{100} = 0.40036

C_v **at 1.5 min.** = 0.0004 in.^{2}/sec. C_α = 0.015

Pressure: 4.00 tsf | TEST READINGS | Load No. 7

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.43109	24	12.73	0.45968
2	0.12	0.43787	25	15.98	0.46252
3	0.22	0.43863	26	20.10	0.46620
4	0.23	0.43878	27	25.27	0.46885
5	0.27	0.43888	28	31.77	0.47265
6	0.32	0.43906	29	39.95	0.47524
7	0.37	0.43940	30	50.27	0.47901
8	0.43	0.43977	31	63.25	0.48218
9	0.52	0.44018	32	79.58	0.48488
10	0.62	0.44064	33	100.15	0.48791
11	0.75	0.44132	34	126.05	0.49039
12	0.92	0.44218	35	158.63	0.49190
13	1.12	0.44285	36	199.68	0.49369
14	1.38	0.44329	37	251.33	0.49552
15	1.72	0.44438	38	316.38	0.49689
16	2.12	0.44562	39	398.27	0.49796
17	2.65	0.44680	40	501.33	0.49893
18	3.30	0.44845	41	631.12	0.49986
19	4.12	0.44940	42	794.48	0.50123
20	5.15	0.45082	43	1000.15	0.50174
21	6.45	0.45279	44	1259.08	0.50225
22	8.08	0.45540	45	1434.20	0.50300
23	10.13	0.45711			



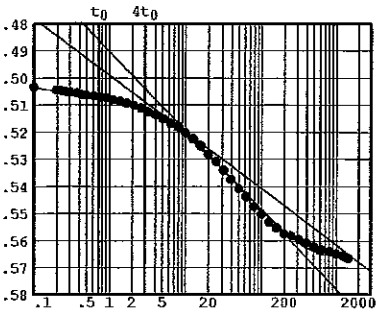
Void Ratio = 0.919 **Compression** = 19.5 %

D_0 = 0.43375 D_{50} = 0.44650 D_{100} = 0.45926

C_v **at 2.5 min.** = 0.0002 in.^{2}/sec. C_α = 0.023

Pressure: 8.00 tsf | TEST READINGS | Load No. 8

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.49352	24	12.72	0.52253
2	0.10	0.50332	25	15.98	0.52512
3	0.20	0.50456	26	20.08	0.52822
4	0.23	0.50476	27	25.25	0.53079
5	0.27	0.50509	28	31.77	0.53404
6	0.30	0.50526	29	39.95	0.53744
7	0.37	0.50559	30	50.25	0.54075
8	0.43	0.50612	31	63.23	0.54375
9	0.50	0.50638	32	79.57	0.54734
10	0.62	0.50668	33	100.15	0.55018
11	0.75	0.50705	34	126.03	0.55310
12	0.92	0.50738	35	158.63	0.55523
13	1.12	0.50803	36	199.67	0.55750
14	1.38	0.50856	37	251.33	0.55823
15	1.70	0.50939	38	316.38	0.55956
16	2.12	0.51019	39	398.25	0.56082
17	2.63	0.51128	40	501.33	0.56237
18	3.28	0.51250	41	631.12	0.56329
19	4.12	0.51364	42	794.48	0.56397
20	5.13	0.51516	43	1000.17	0.56492
21	6.43	0.51690	44	1259.08	0.56561
22	8.07	0.51812	45	1440.25	0.56650
23	10.13	0.52033			



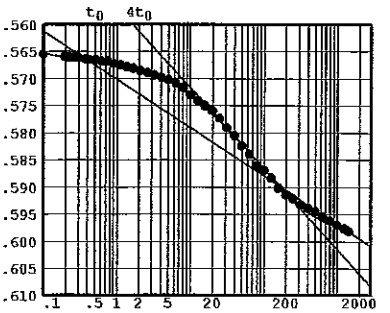
Void Ratio = 0.767 **Compression** = 25.9 %

D_0 = 0.50147 D_{50} = 0.51117 D_{100} = 0.52087

C_v **at 2.6 min.** = 0.0002 in.^{2}/sec. C_α = 0.026

Pressure: 12.00 tsf | TEST READINGS | Load No. 9

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.55804	24	12.72	0.57408
2	0.10	0.56542	25	15.98	0.57501
3	0.20	0.56594	26	20.08	0.57589
4	0.23	0.56609	27	25.25	0.57730
5	0.27	0.56599	28	31.77	0.57907
6	0.30	0.56615	29	39.95	0.58048
7	0.37	0.56639	30	50.25	0.58236
8	0.43	0.56650	31	63.23	0.58393
9	0.52	0.56654	32	79.58	0.58611
10	0.62	0.56671	33	100.15	0.58692
11	0.75	0.56679	34	126.03	0.58835
12	0.92	0.56721	35	158.63	0.59021
13	1.12	0.56744	36	199.68	0.59137
14	1.38	0.56779	37	251.35	0.59216
15	1.70	0.56806	38	316.38	0.59322
16	2.12	0.56852	39	398.27	0.59389
17	2.63	0.56893	40	501.35	0.59444
18	3.28	0.56934	41	631.12	0.59548
19	4.10	0.56979	42	794.50	0.59616
20	5.13	0.57020	43	1000.17	0.59699
21	6.43	0.57081	44	1259.10	0.59763
22	8.07	0.57160	45	1440.40	0.59815
23	10.13	0.57300			



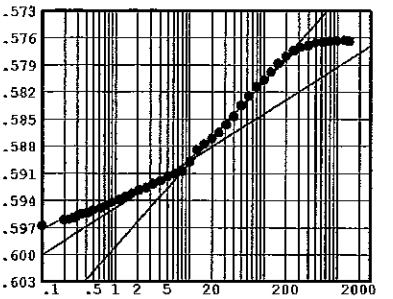
Void Ratio = 0.690 **Compression** = 29.1 %

D_0 = 0.56511 D_{50} = 0.57745 D_{100} = 0.58980

C_v **at 23.5 min.** = 0.0000 in.^{2}/sec. C_α = 0.012

Pressure: 3.00 tsf | TEST READINGS | Load No. 10

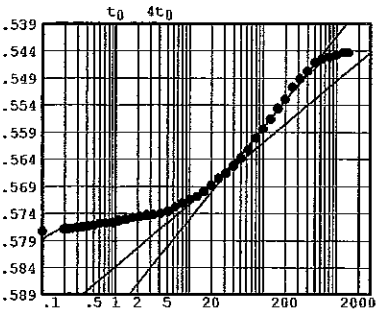
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.61512	24	12.72	0.58841
2	0.10	0.59677	25	15.98	0.58776
3	0.20	0.59614	26	20.08	0.58716
4	0.23	0.59612	27	25.25	0.58650
5	0.27	0.59593	28	31.75	0.58563
6	0.30	0.59576	29	39.95	0.58468
7	0.35	0.59552	30	50.25	0.58350
8	0.42	0.59539	31	63.23	0.58244
9	0.50	0.59510	32	79.57	0.58146
10	0.62	0.59489	33	100.13	0.58069
11	0.75	0.59456	34	126.03	0.57980
12	0.90	0.59419	35	158.63	0.57882
13	1.12	0.59394	36	199.67	0.57802
14	1.37	0.59360	37	251.33	0.57744
15	1.70	0.59322	38	316.37	0.57703
16	2.12	0.59284	39	398.25	0.57685
17	2.63	0.59263	40	501.33	0.57654
18	3.28	0.59218	41	631.10	0.57649
19	4.10	0.59187	42	794.48	0.57639
20	5.13	0.59139	43	1000.15	0.57632
21	6.43	0.59104	44	1259.08	0.57626
22	8.07	0.59078	45	1440.50	0.57635
23	10.13	0.58973			



Void Ratio = 0.743 **Compression** = 26.9 %

Pressure: 0.75 tsf | TEST READINGS | Load No. 11

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.58443	24	12.72	0.57092
2	0.10	0.57731	25	15.97	0.56994
3	0.20	0.57695	26	20.08	0.56886
4	0.22	0.57690	27	25.25	0.56757
5	0.25	0.57680	28	31.75	0.56655
6	0.30	0.57664	29	39.93	0.56522
7	0.35	0.57652	30	50.25	0.56379
8	0.42	0.57636	31	63.23	0.56220
9	0.50	0.57615	32	79.57	0.56010
10	0.60	0.57588	33	100.13	0.55845
11	0.73	0.57574	34	126.03	0.55662
12	0.90	0.57569	35	158.63	0.55460
13	1.10	0.57537	36	199.67	0.55288
14	1.37	0.57513	37	251.33	0.55068
15	1.70	0.57473	38	316.37	0.54906
16	2.12	0.57454	39	398.25	0.54772
17	2.63	0.57431	40	501.33	0.54614
18	3.28	0.57420	41	631.10	0.54557
19	4.10	0.57401	42	794.47	0.54515
20	5.13	0.57361	43	1000.15	0.54469
21	6.43	0.57279	44	1259.07	0.54430
22	8.07	0.57208	45	1440.30	0.54429
23	10.12	0.57139			



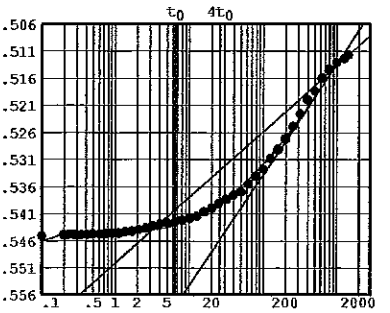
Void Ratio = 0.820 **Compression** = 23.7 %

D_0 = 0.57686 D_{50} = 0.57184 D_{100} = 0.56682

C_v **at 9.7 min.** = 0.0000 in.^{2}/sec.

Pressure: 0.19 tsf | TEST READINGS | Load No. 12

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.54808	24	12.72	0.54147
2	0.10	0.54504	25	15.98	0.54064
3	0.20	0.54495	26	20.08	0.53996
4	0.23	0.54489	27	25.25	0.53917
5	0.27	0.54487	28	31.75	0.53832
6	0.30	0.54491	29	39.95	0.53755
7	0.35	0.54486	30	50.25	0.53698
8	0.42	0.54485	31	63.23	0.53552
9	0.50	0.54475	32	79.57	0.53411
10	0.62	0.54474	33	100.13	0.53272
11	0.75	0.54467	34	126.03	0.53079
12	0.90	0.54456	35	158.63	0.52917
13	1.12	0.54456	36	199.67	0.52714
14	1.37	0.54431	37	251.33	0.52483
15	1.70	0.54420	38	316.37	0.52252
16	2.12	0.54392	39	398.25	0.51995
17	2.63	0.54365	40	501.33	0.51832
18	3.28	0.54329	41	631.10	0.51597
19	4.10	0.54295	42	794.47	0.51431
20	5.13	0.54273	43	1000.15	0.51305
21	6.43	0.54253	44	1259.08	0.51239
22	8.07	0.54220	45	1440.47	0.51168
23	10.13	0.54189			



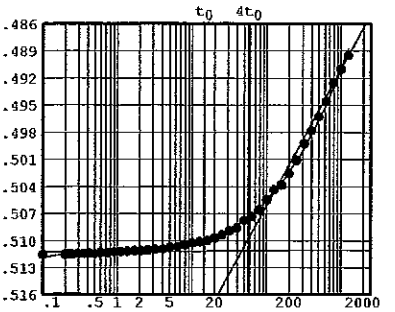
Void Ratio = 0.899 Compression = 20.4 %

D_0 = 0.54715 D_{50} = 0.53057 D_{100} = 0.51400

C_v at 119.4 min. = 0.0000 in.^{2}/sec.

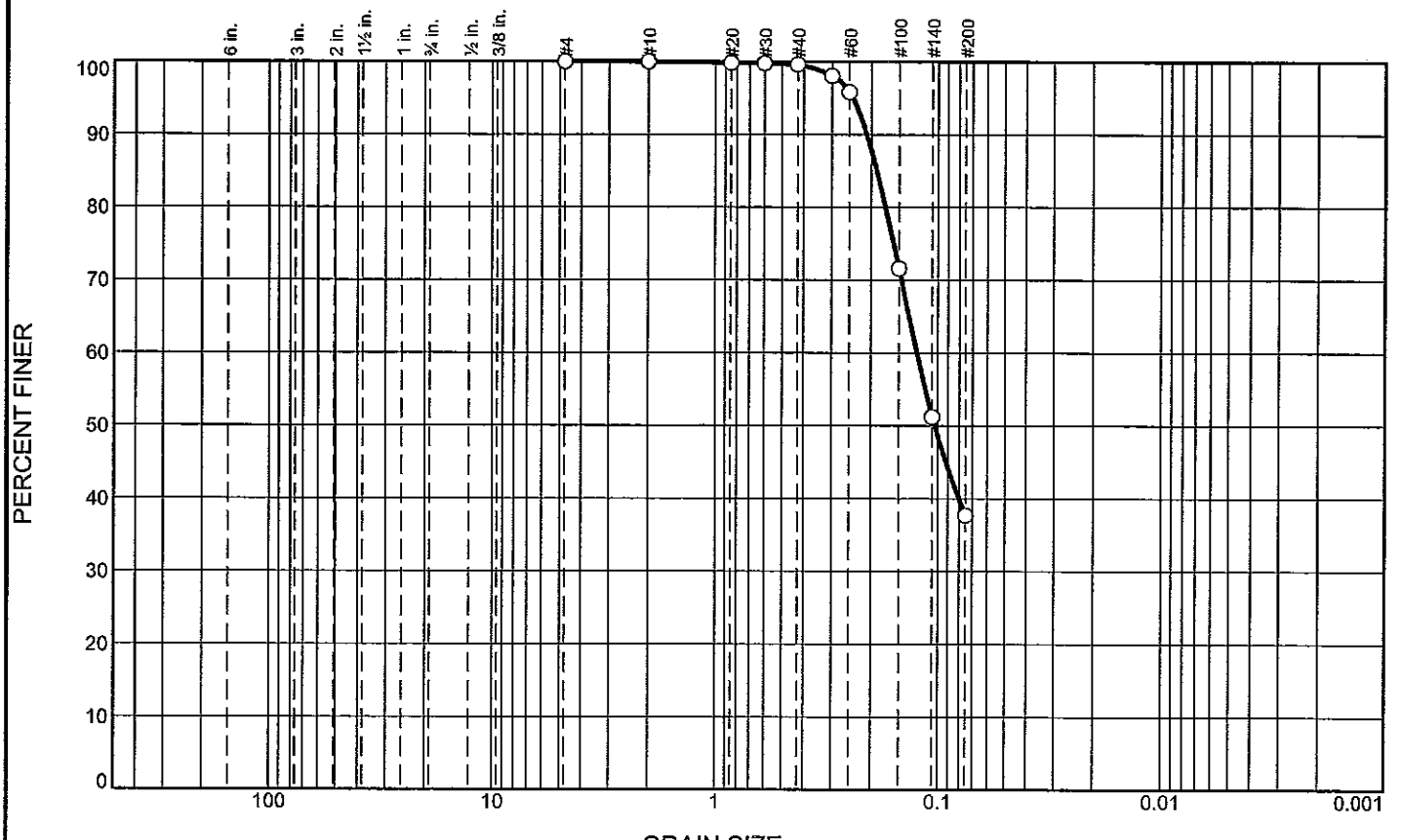
Pressure: 0.05 tsf | TEST READINGS | Load No. 13

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.51325	23	10.12	0.51028
2	0.10	0.51157	24	12.72	0.51014
3	0.20	0.51157	25	15.97	0.50998
4	0.22	0.51150	26	20.07	0.50970
5	0.25	0.51152	27	25.25	0.50936
6	0.30	0.51145	28	31.75	0.50891
7	0.35	0.51144	29	39.93	0.50861
8	0.42	0.51142	30	50.25	0.50777
9	0.50	0.51144	31	63.22	0.50732
10	0.60	0.51135	32	79.57	0.50659
11	0.73	0.51134	33	100.13	0.50548
12	0.90	0.51127	34	126.02	0.50438
13	1.12	0.51123	35	158.62	0.50385
14	1.37	0.51120	36	199.67	0.50258
15	1.70	0.51113	37	251.32	0.50108
16	2.10	0.51111	38	316.37	0.49926
17	2.62	0.51106	39	398.25	0.49780
18	3.28	0.51098	40	501.33	0.49626
19	4.10	0.51094	41	631.10	0.49459
20	5.13	0.51074	42	794.47	0.49258
21	6.43	0.51068	43	1000.15	0.49097
22	8.07	0.51048	44	1259.07	0.48946



Void Ratio = 0.952 **Compression** = 18.1 %

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.4	61.9	37.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	100.0		
#20	99.9		
#30	99.8		
#40	99.6		
#50	98.1		
#60	95.9		
#100	71.6		
#140	51.2		
#200	37.7		

* (no specification provided)

Soil Description

GR SM W/ ARS CH, SIF

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.2094 D_{85}= 0.1887 D_{60}= 0.1243
D_{50}= 0.1033 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

Source of Sample: BSFR-9U **Depth:** 28.0
Sample Number: 9A **Date:** 7-27-12

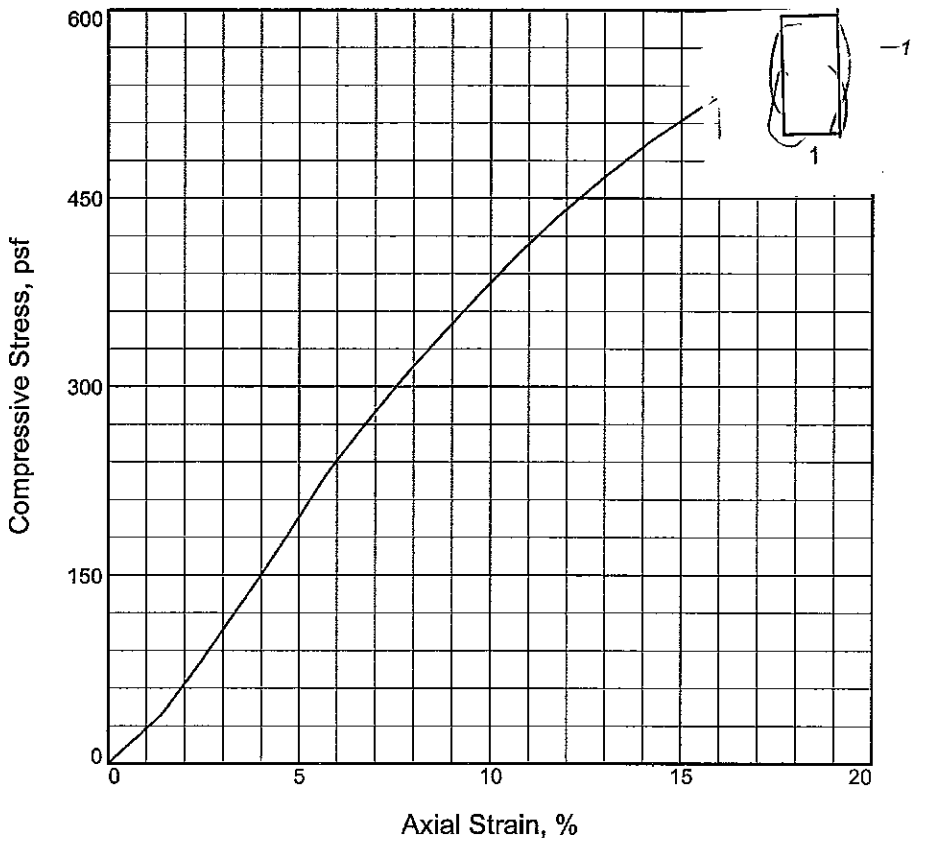
Stantec

Saint Rose, Louisiana

Client: USACE
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Project No: 12-017108 **Figure**

Tested By: JC **Checked By:** JS

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	497			
Undrained shear strength, psf	248			
Failure strain, %	14.2			
Strain rate, in./min.	1.000			
Water content, %	34.7			
Wet density, pcf	126.0			
Dry density, pcf	93.5			
Saturation, %	116.9			
Void ratio	0.8019			
Specimen diameter, in.	1.388			
Specimen height, in.	2.994			
Height/diameter ratio	2.16			

Description: VSO GR CL6 W/ ARS & LNS ML

LL = 47	**PL =** 25	**PI =** 22	**Assumed GS=** 2.70	**Type:** UNDISTURBED

Project No.: 12-017108
Date Sampled: 7-30-12
Remarks:
Torvane=0.23 tsf

Client: USACE

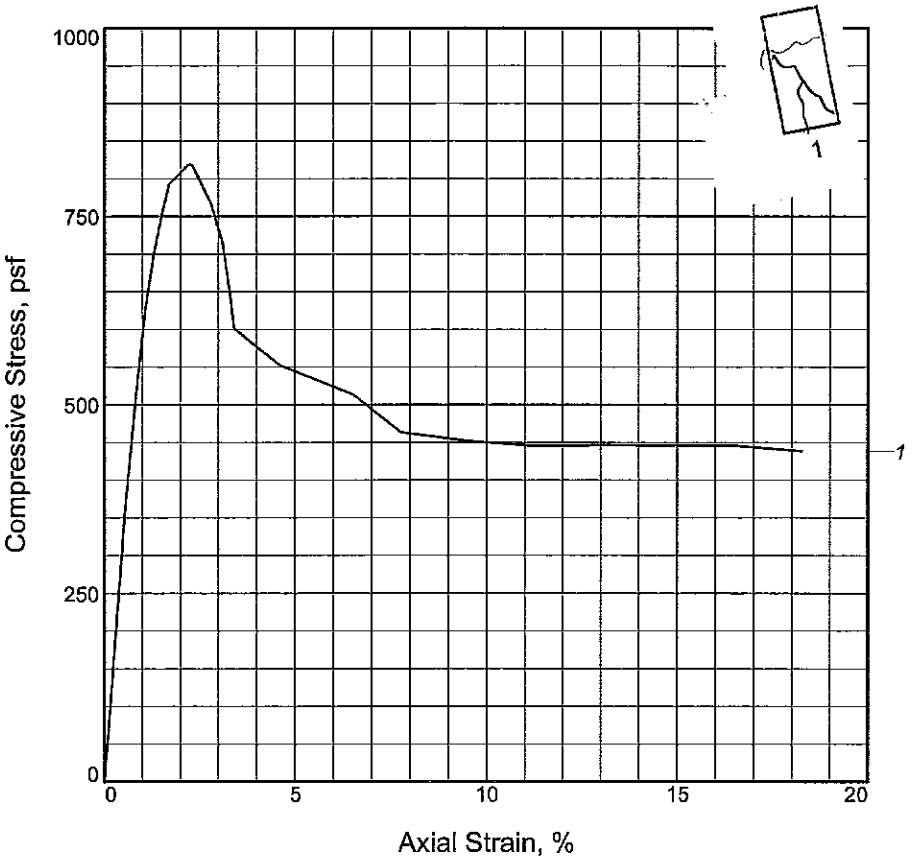
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-9U **Depth:** 9.0
Sample Number: 4B

UNCONFINED COMPRESSION TEST
Stantec
Saint Rose, Louisiana

Figure _____

Tested By: JC

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	819			
Undrained shear strength, psf	409			
Failure strain, %	2.2			
Strain rate, in./min.	1.000			
Water content, %	73.0			
Wet density, pcf	98.0			
Dry density, pcf	56.7			
Saturation, %	99.4			
Void ratio	1.9963			
Specimen diameter, in.	1.385			
Specimen height, in.	3.007			
Height/diameter ratio	2.17			

Description: SO GR CH3 W/ LNS ML, RT

LL = 57	**PL =** 25	**PI =** 32	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 12-017108
Date Sampled: 7-30-12
Remarks:
Torvane=0.25 tsf

Figure _____

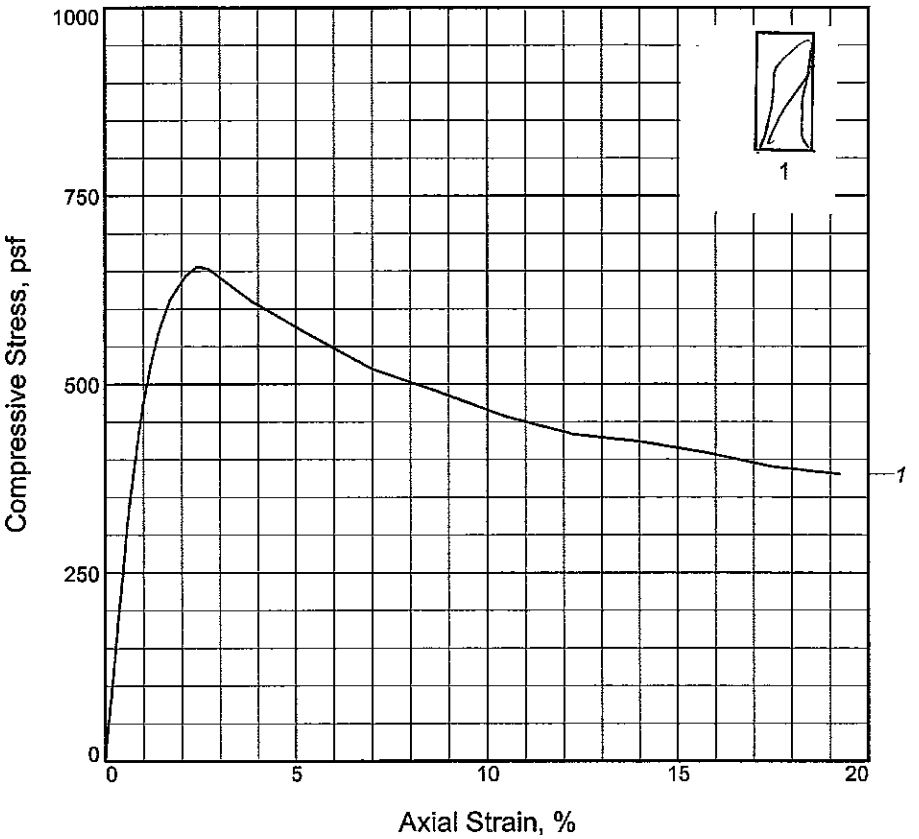
Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-9U **Depth:** 18.0
Sample Number: 6C

UNCONFINED COMPRESSION TEST
Stantec
Saint Rose, Louisiana

Tested By: JC

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	656			
Undrained shear strength, psf	328			
Failure strain, %	2.4			
Strain rate, in./min.	1.000			
Water content, %	56.1			
Wet density, pcf	105.8			
Dry density, pcf	67.8			
Saturation, %	100.9			
Void ratio	1.5221			
Specimen diameter, in.	1.380			
Specimen height, in.	3.010			
Height/diameter ratio	2.18			

Description: SO GR CH4 W/ ARS & LNS SM, SIF

LL = 86	**PL =** 21	**PI =** 65	**Assumed GS=** 2.74	**Type:** UNDISTURBED

Project No.: 12-017108
Date Sampled: 7-30-12
Remarks:
Torvane=0.32 tsf

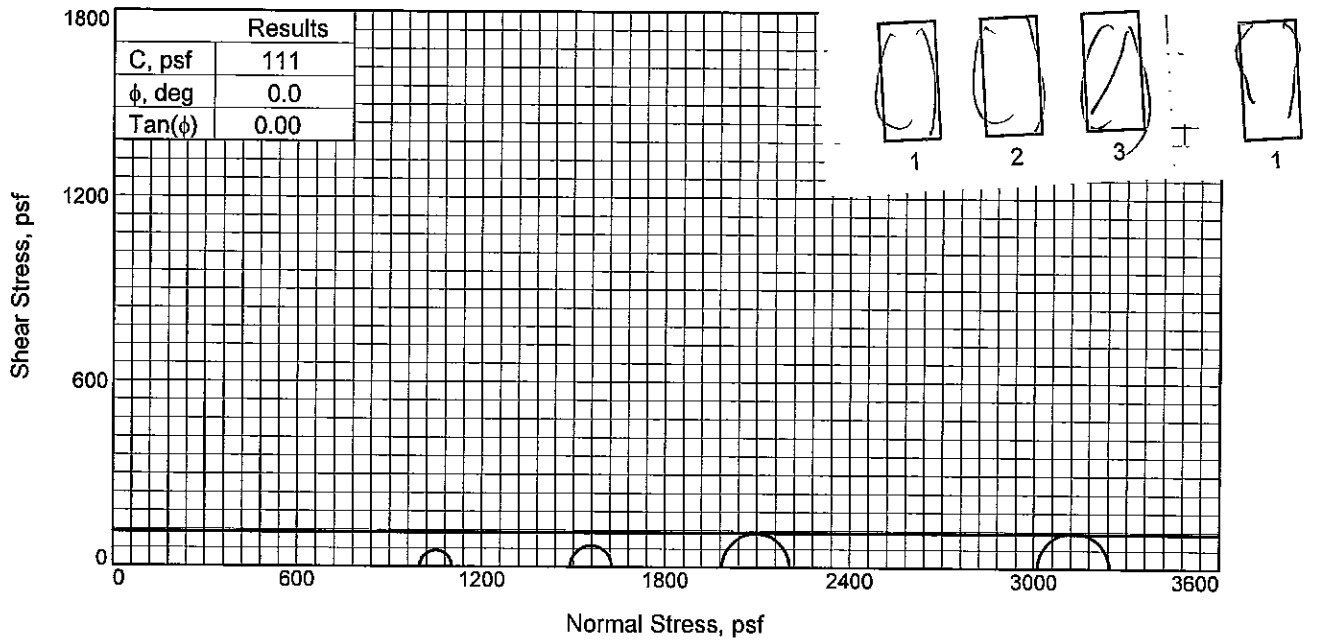
Client: USACE

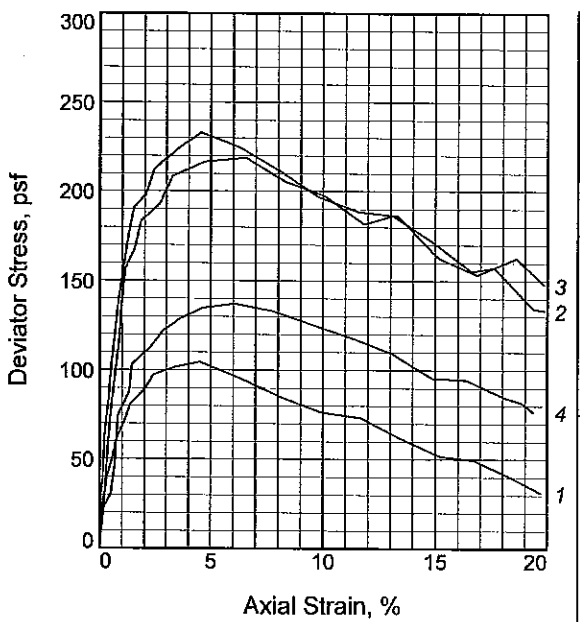
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-9U **Depth:** 25.0
Sample Number: 8B

UNCONFINED COMPRESSION TEST
Stantec
Saint Rose, Louisiana

Figure _____

Tested By: JC





Sample No.		1	2	3	4
Initial	Water Content, %	82.1	75.8	78.4	83.6
	Dry Density, pcf	50.8	55.0	54.9	51.6
	Saturation, %	95.2	98.8	102.0	99.2
	Void Ratio	2.3450	2.0880	2.0915	2.2919
	Diameter, in.	1.378	1.384	1.370	1.412
	Height, in.	2.983	2.996	2.996	2.982
At Test	Water Content, %	82.1	75.8	78.4	83.6
	Dry Density, pcf	50.8	55.0	54.9	51.6
	Saturation, %	95.2	98.8	102.0	99.2
	Void Ratio	2.3450	2.0880	2.0915	2.2919
	Diameter, in.	1.378	1.384	1.370	1.412
	Height, in.	2.983	2.996	2.996	2.982
Strain rate, in./min.		1.000	1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00	0.00
Cell Pressure, psi		6.93	13.80	20.91	10.34
Fail. Stress, psf		105	219	233	137
Strain, %		4.5	6.6	4.5	6.1
Ult. Stress, psf		62	172	163	96
Strain, %		13.5	14.9	15.1	14.9
σ_1 Failure, psf		1102	2206	3244	1626
σ_3 Failure, psf		998	1987	3011	1489

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: VSO BK CH4 W/ ARS ML, RT

LL= 101 **PL=** 38 **PI=** 63
Assumed Specific Gravity= 2.72
Remarks: Torvane=0.20 tsf

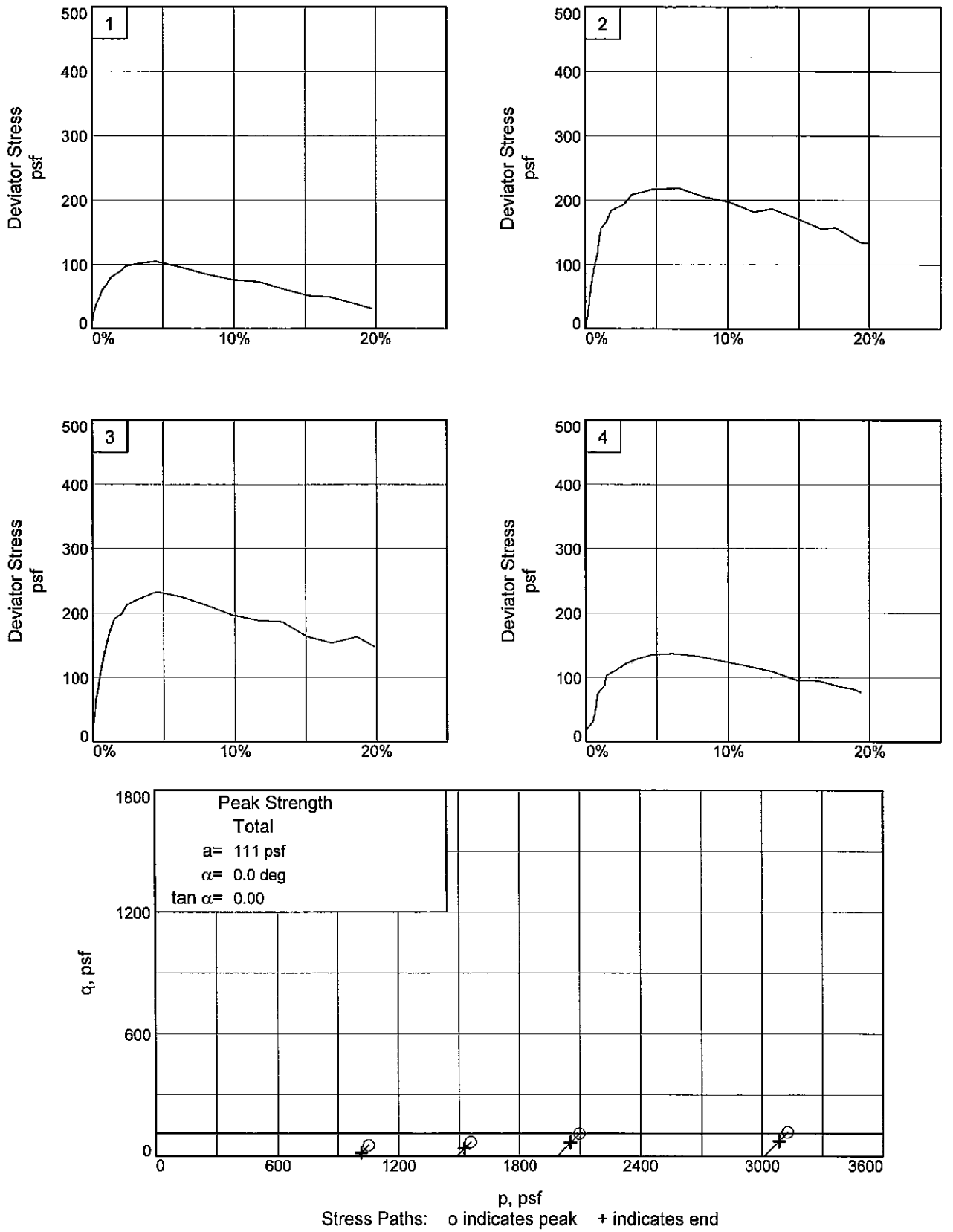
Figure _____

Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-9U **Depth:** 5.0
Sample Number: 3B
Proj. No.: 12-017108 **Date Sampled:** 7-30-12

TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

Tested By: JC



Client: USACE

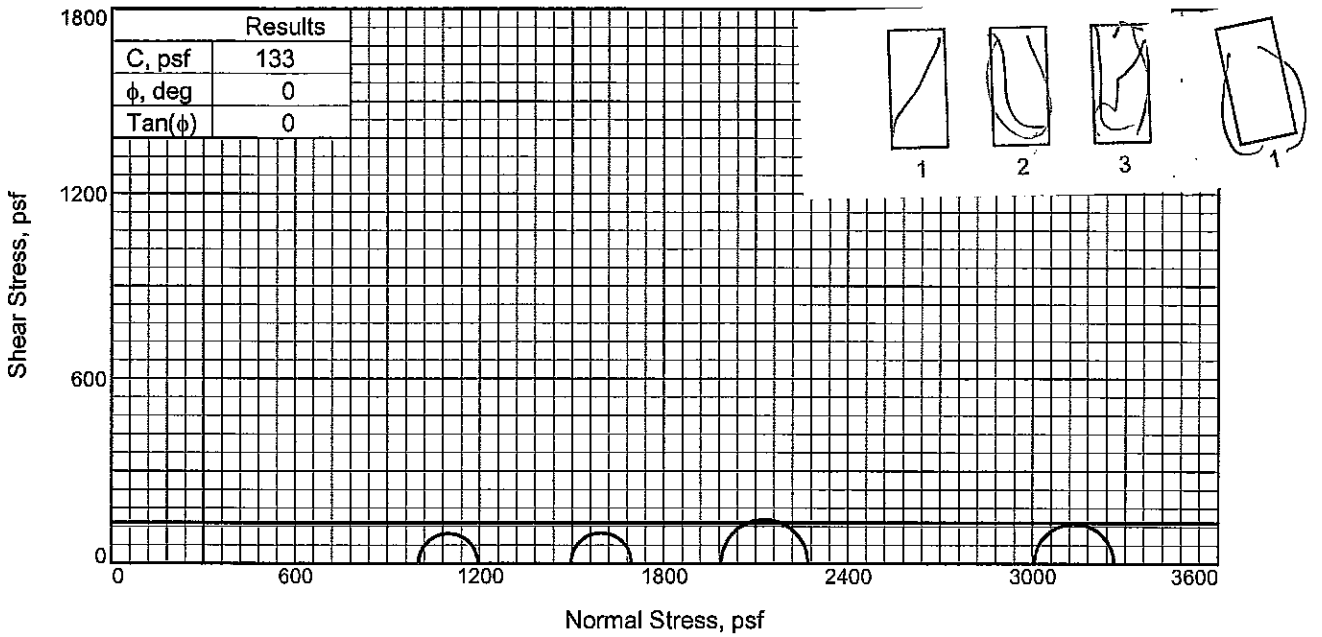
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

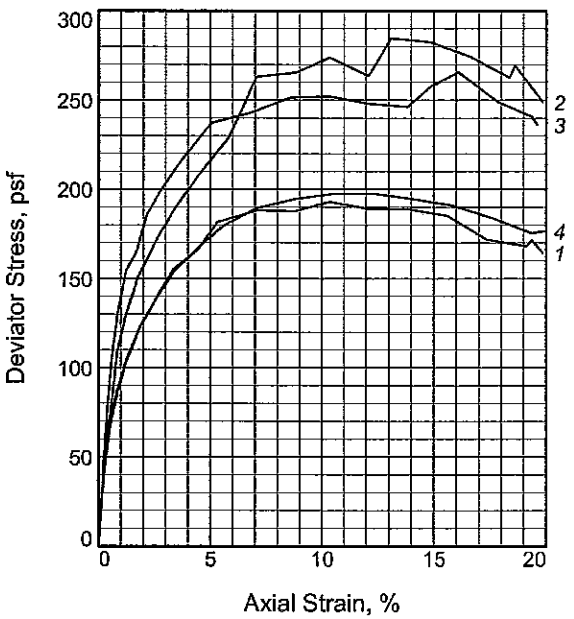
Source of Sample: BSFR-9U **Depth:** 5.0 **Sample Number:** 3B

Project No.: 12-017108 **Figure** _____

Stantec, Inc.

Tested By: JC





Sample No.		1	2	3	4
Initial	Water Content, %	64.3	63.3	62.3	60.1
	Dry Density, pcf	63.8	63.9	63.7	66.9
	Saturation, %	104.7	103.5	101.3	105.9
	Void Ratio	1.6830	1.6750	1.6838	1.5556
	Diameter, in.	1.359	1.365	1.375	1.406
	Height, in.	2.998	2.986	2.997	2.997
At Test	Water Content, %	64.3	63.3	62.3	60.1
	Dry Density, pcf	63.8	63.9	63.7	66.9
	Saturation, %	104.7	103.5	101.3	105.9
	Void Ratio	1.6830	1.6750	1.6838	1.5556
	Diameter, in.	1.359	1.365	1.375	1.406
	Height, in.	2.998	2.986	2.997	2.997
Strain rate, in./min.		1.000	1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00	0.00
Cell Pressure, psi		6.95	13.79	20.87	10.39
Fail. Stress, psf		193	285	258	198
Strain, %		10.3	13.1	14.8	10.6
Ult. Stress, psf		189	282	258	195
Strain, %		12.1	14.9	14.8	14.1
σ_1 Failure, psf		1194	2270	3263	1694
σ_3 Failure, psf		1001	1986	3005	1496

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: VSO GR CH4 W/ LYS SM

LL= 87 **PL=** 21 **PI=** 66
Assumed Specific Gravity= 2.74
Remarks: Torvane=0.22 tsf

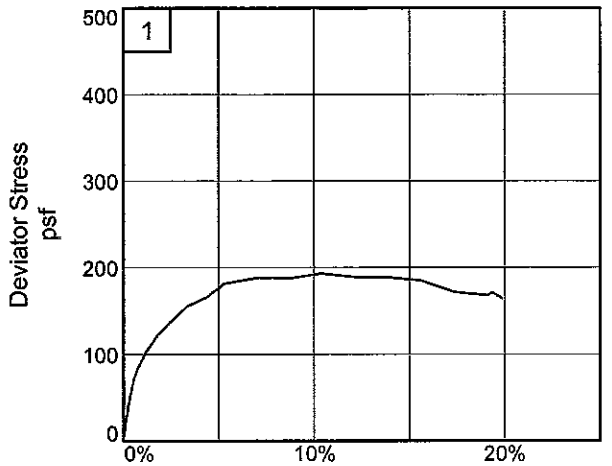
Figure _____

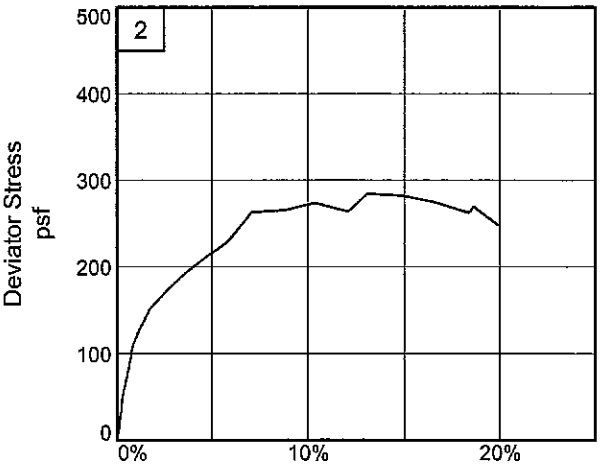
Client: USACE

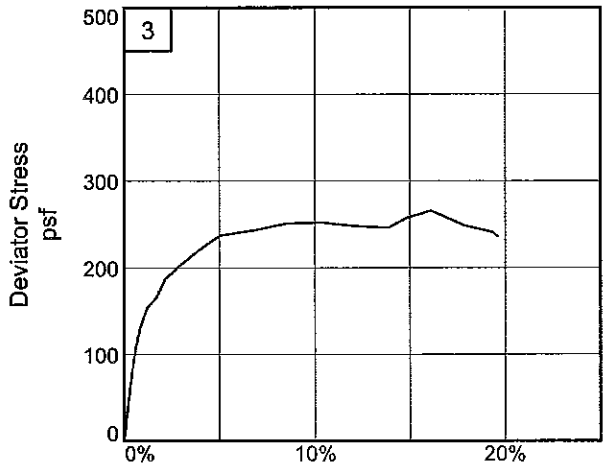
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-9U **Depth:** 15.0
Sample Number: 5D
Proj. No.: 12-017108 **Date Sampled:** 7-30-12

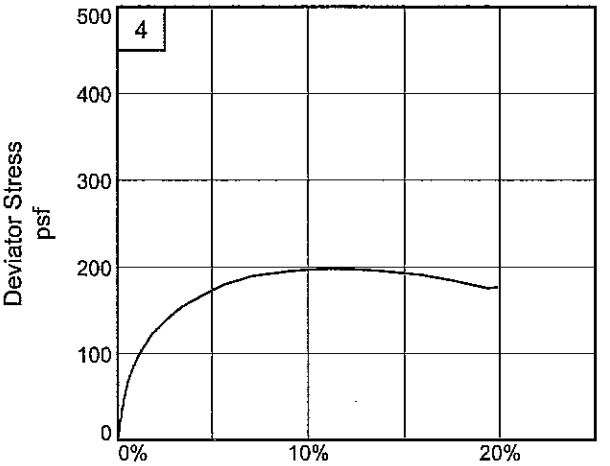
TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

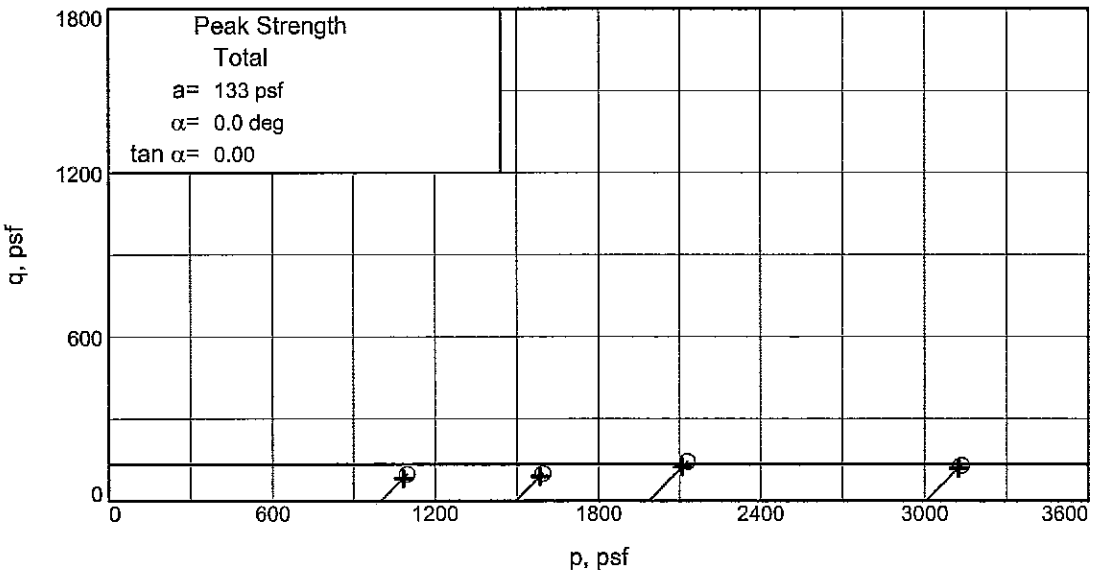
Tested By: JC **Checked By:** JS











Stress Paths: o indicates peak + indicates end

Client: USACE

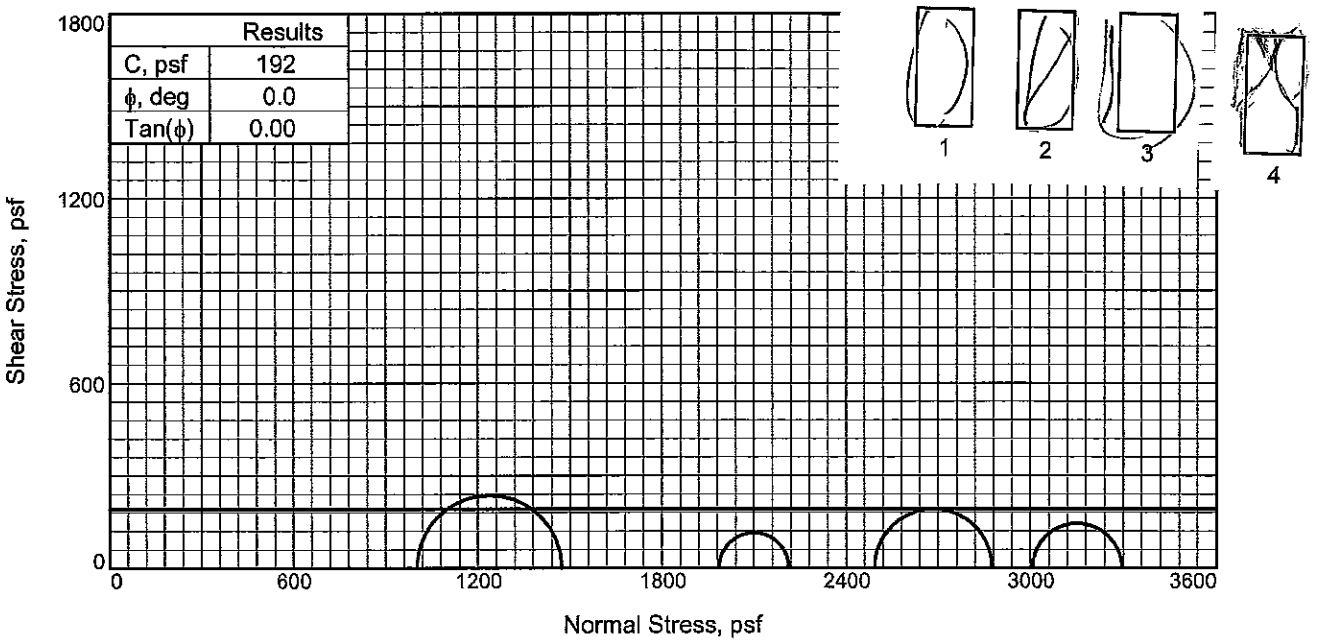
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

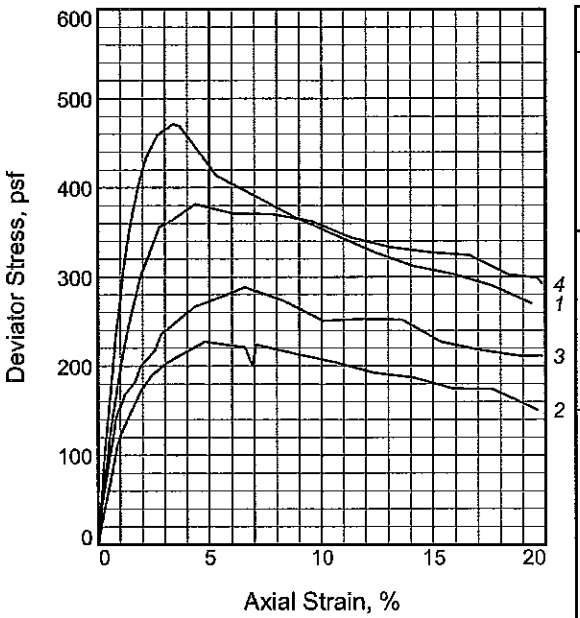
Source of Sample: BSFR-9U **Depth:** 15.0 **Sample Number:** 5D

Project No.: 12-017108 **Figure** _____

Stantec, Inc.

Tested By: JC **Checked By:** JS





Sample No.		1	2	3	4
Initial	Water Content, %	49.8	45.5	48.6	40.7
	Dry Density, pcf	71.9	76.8	74.2	78.6
	Saturation, %	99.9	102.9	103.2	96.0
	Void Ratio	1.3452	1.1936	1.2719	1.1439
	Diameter, in.	1.375	1.362	1.370	1.412
	Height, in.	2.999	2.985	2.987	3.004
At Test	Water Content, %	49.8	45.5	48.6	40.7
	Dry Density, pcf	71.9	76.8	74.2	78.6
	Saturation, %	99.9	102.9	103.2	96.0
	Void Ratio	1.3452	1.1936	1.2719	1.1439
	Diameter, in.	1.375	1.362	1.370	1.412
	Height, in.	2.999	2.985	2.987	3.004
Strain rate, in./min.		1.000	1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00	0.00
Cell Pressure, psi		6.95	13.79	20.88	17.31
Fail. Stress, psf		471	227	288	381
Strain, %		3.4	4.8	6.6	4.4
Ult. Stress, psf		312	187	251	328
Strain, %		14.1	14.1	10.1	14.8
σ_1 Failure, psf		1472	2213	3295	2874
σ_3 Failure, psf		1001	1986	3007	2493

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: VSO GR CL6 W/ ARS SM

LL= 48 **PL=** 17 **PI=** 31
Assumed Specific Gravity= 2.70
Remarks: Torvane=0.22 tsf

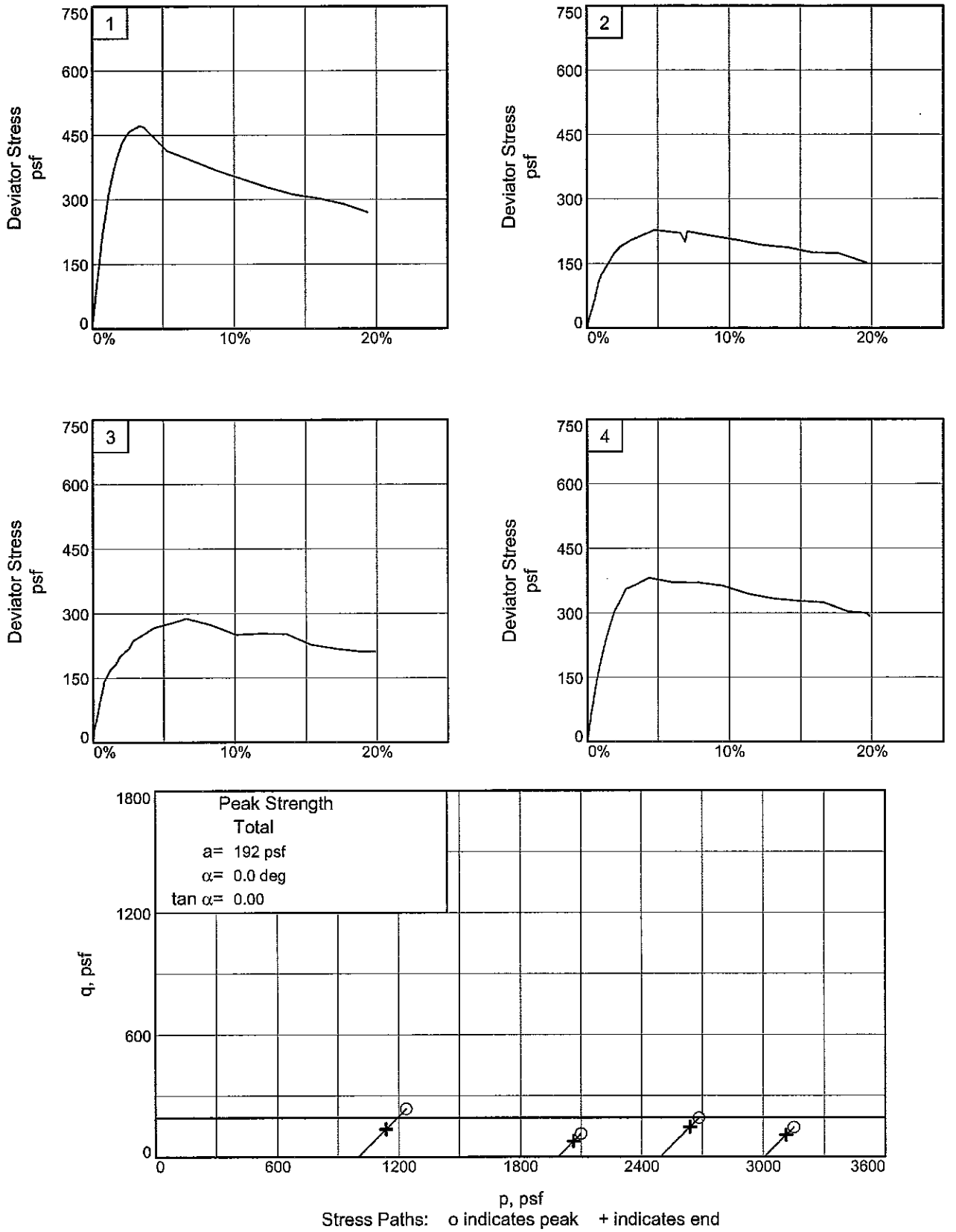
Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-9U **Depth:** 21.0
Sample Number: 7B
Proj. No.: 12-017108 **Date Sampled:** 7-30-12

TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

Figure _____

Tested By: JC **Checked By:** JS



Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

Source of Sample: BSFR-9U **Depth:** 21.0 **Sample Number:** 7B

Project No.: 12-017108 **Figure** _____

Stantec, Inc.

Tested By: JC **Checked By:** JS

SUMMARY OF LABORATORY TEST RESULTS

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Paris Assigned By: _____

Project Number: 12-017108 Current Date: 9/26/2012

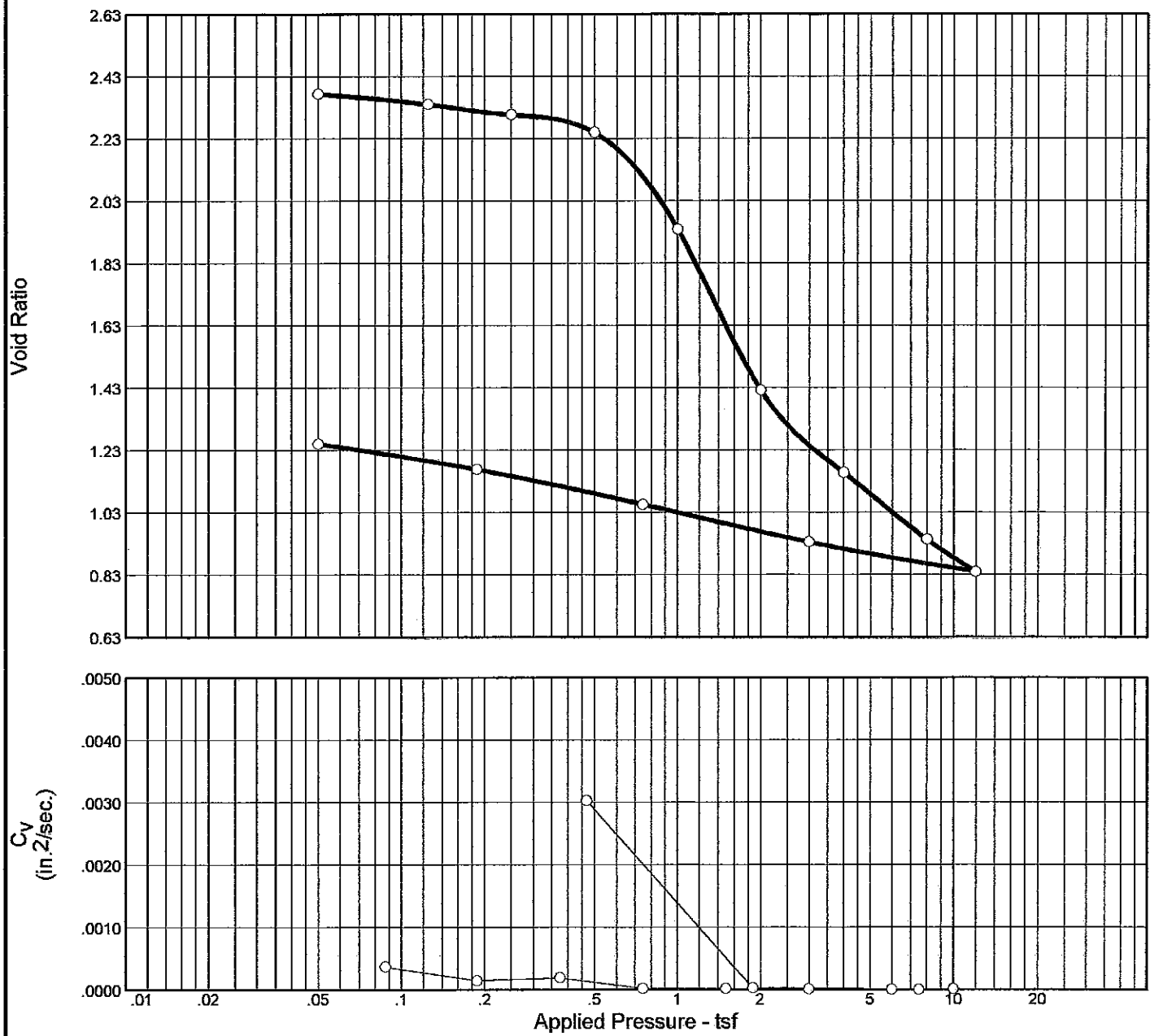
Boring: BSFR-10U

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
1	0.0	M BK PT	PT		315												
2A	2.0	M BK PT W/ SIF	PT		264												
2B	3.0	VSO BK PT W/ LYS CH	PT	7	289	18	70	94	UC	-	114	229	354	158	196	0.12	
2C	4.0	VSO DGR CH4 W/ O	CH4		88												
2D	5.0	SO DGR CH4 W/ LNS ML	CH4		58												
3A	6.0	VSO BK CH4 W/ ARS ML, O	CH4		81												
3B	7.0	M GR CH4 W/ LNS ML, RT	CH4		58												
3C	8.0	VSO GR CH3 W/ LNS ML, RT	CH3		76	60	106	100	UU	0	142		76	29	47	0.25	
3D	9.0	SO GR CH3 W/ LNS ML, RT	CH3		64												
4A	10.0	SO GR CH3 W/ LNS ML, RT	CH3		63												
4B	11.0	VSO GR CH3 W/ LNS & LYS ML, RT	CH3		68												
4C	12.0	VSO GR CH3 W/ LNS ML, RT	CH3	8	72	58	100	100	UC	-	170	340	66	28	38	0.40	
4D	13.0	SO GR CH4 W/ LNS ML, WD	CH4		90	50	94	100					88	23	65		GS=2.70, CON
5A	14.0	VSO GR CH4 W/ LNS ML, RT	CH4		81												
5B	15.0	VSO GR CH4 W/ LNS ML, RT	CH4		86												
5C	16.0	M GR CH3 W/ LYS ML, SIF	CH3		50												
5D	17.0	M GR CH3 W/ ARS ML, SIF	CH3		40												
6A	18.0	VSO GR CL4 W/ ARS SM, SIF	CL4		60	73	116	100	UU	0	124		36	18	18	0.12	
6B	19.0	M GR CH3 W/ ARS SM, SIF	CH3		37												
6C	20.0	M GR CH3 W/ ARS SM, SIF	CH3		48												
6D	21.0	VSO GR CH3 W/ ARS SM, SIF	CH3		72	59	102	100	UU	0	198		75	20	55	0.17	
7A	22.0	SO GR CL6	CL6		36												
7B	23.0	SO GR CL6	CL6	6	60	73	116	100	UC	-	276	551	43	22	21	0.27	
7C	24.0	ST GR CH2	CH2		33												
7D	25.0	LGR ML W/ ARS CH, RT	ML		25												
8A	26.0	M GR CH2	CH2		36								56	21	35		
8B	27.0	GNG ML W/ ARS CH	ML		24												
8C	28.0	GNG ML W/ LYS CH	ML		24												
8D1	29.0	GNG ML W/ ARS CH	ML		24												
8D2	29.5	M GNG CH3 W/ LNS ML	CH3		34												

Remarks: _____ Checked By: _____

Stantec Consulting Services Inc. File Name: Final BSFR-10U_be_boring_log_v1

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture							
102.6 %	90.2 %	49.6	88	65	2.70	0.01	0.58	2.374

MATERIAL DESCRIPTION	USCS	AASHTO
SO GR CH4 W/ LNS ML, WD	CH	

Project No. 12-017108 **Client:** USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

Source: BSFR-10U **Sample No.:** 4D **Elev./Depth:** 13.0

FFEBJV, LLC

St Rose, LA

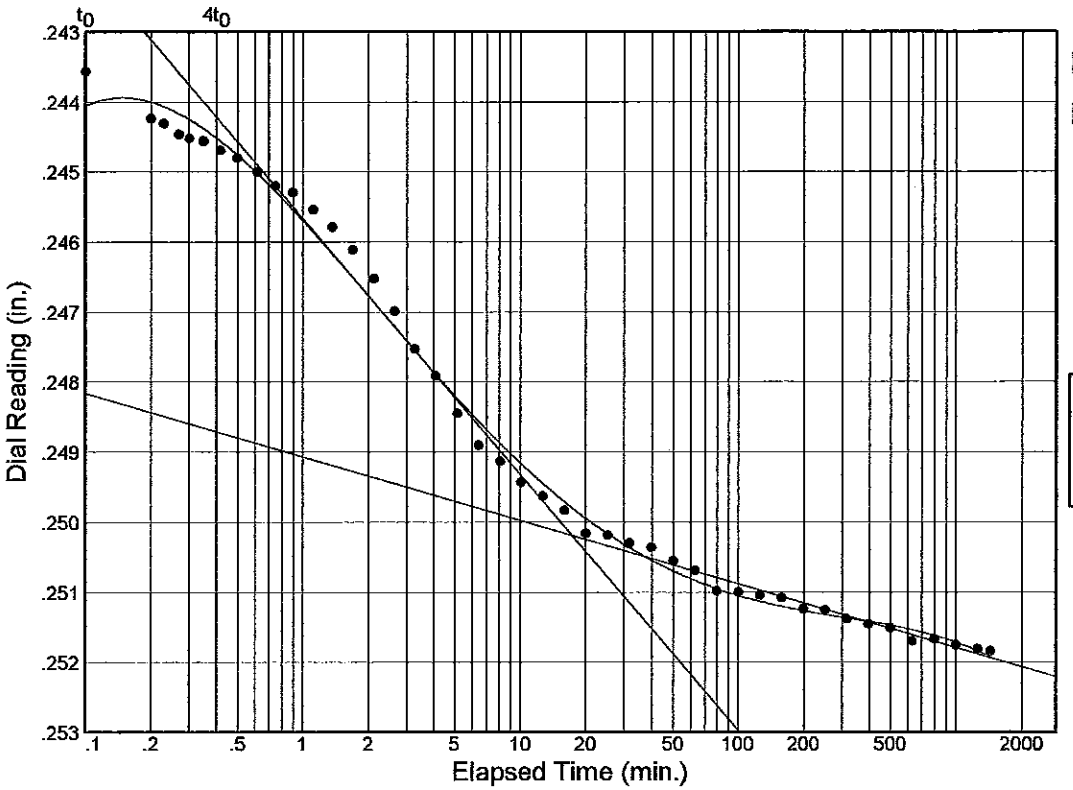
Remarks:

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

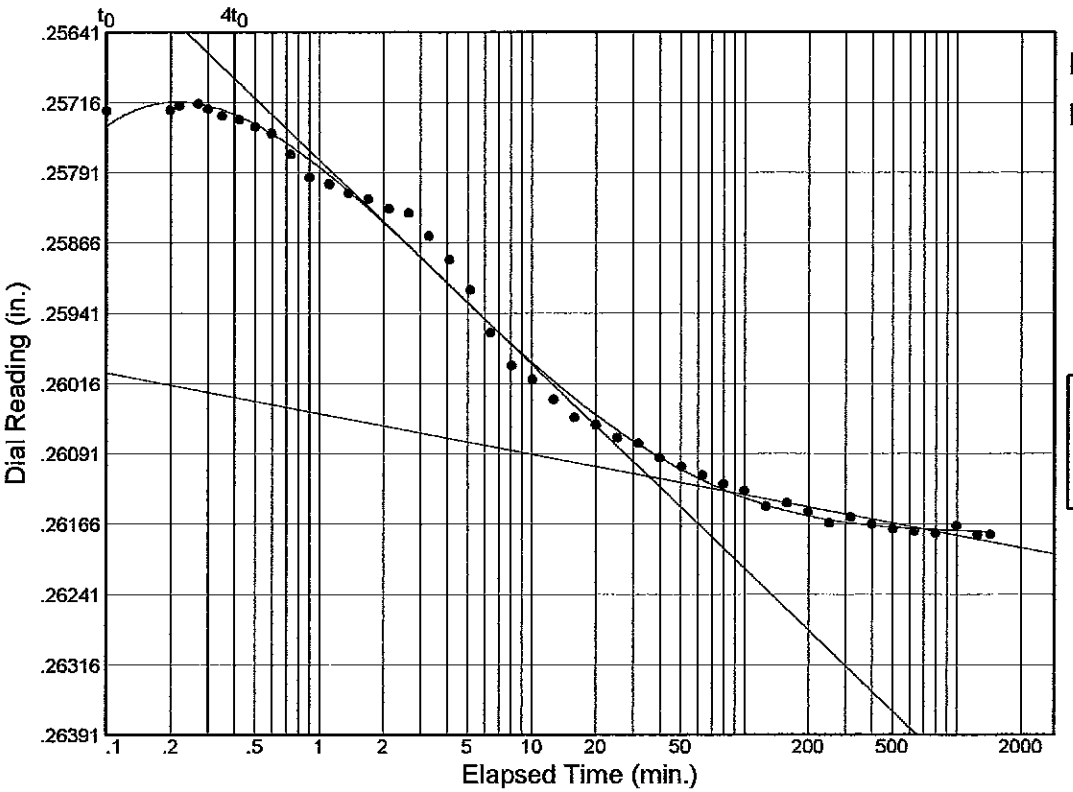
Source: BSFR-10U Sample No.: 4D Elev./Depth: 13.0



Load No.= 2
Load= 0.13 tsf
D_0 = 0.24360
D_{50} = 0.24690
D_{100} = 0.25019
T_{50} = 2.18 min.

C_v @ T_{50}
0.0004 in.^{2}/sec.

C_α = 0.001



Load No.= 3
Load= 0.25 tsf
D_0 = 0.25753
D_{50} = 0.25934
D_{100} = 0.26115
T_{50} = 5.24 min.

C_v @ T_{50}
0.0002 in.^{2}/sec.

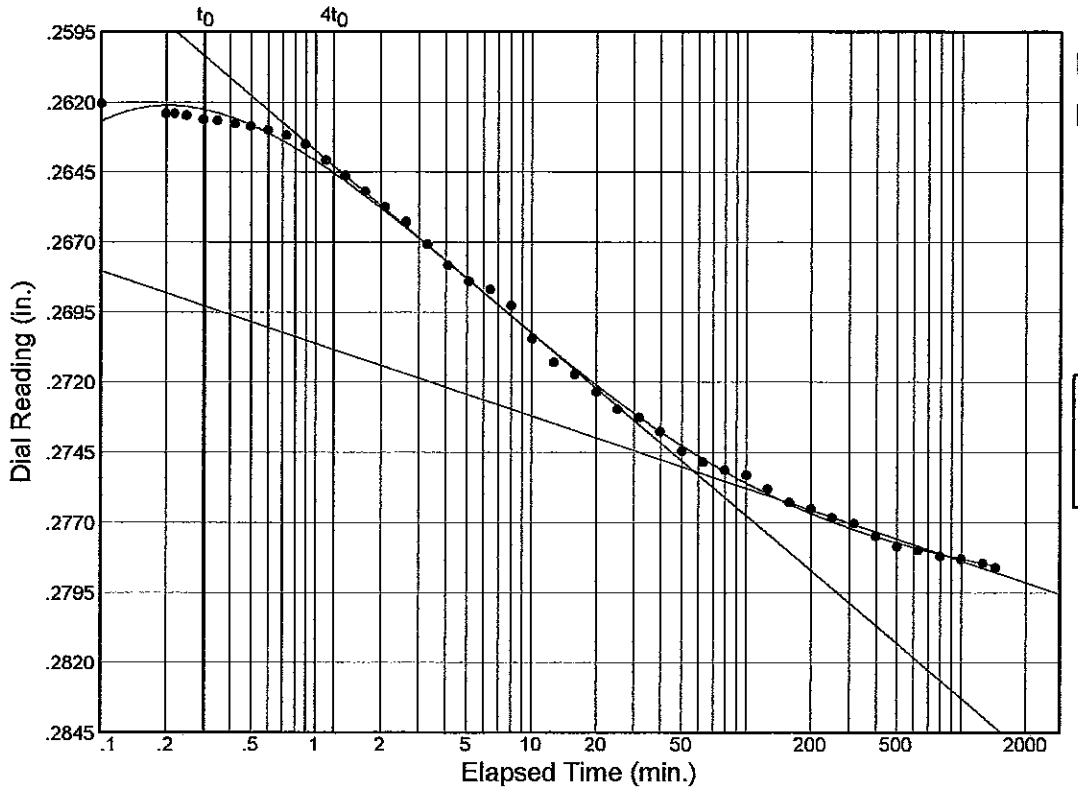
C_α = 0.000

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

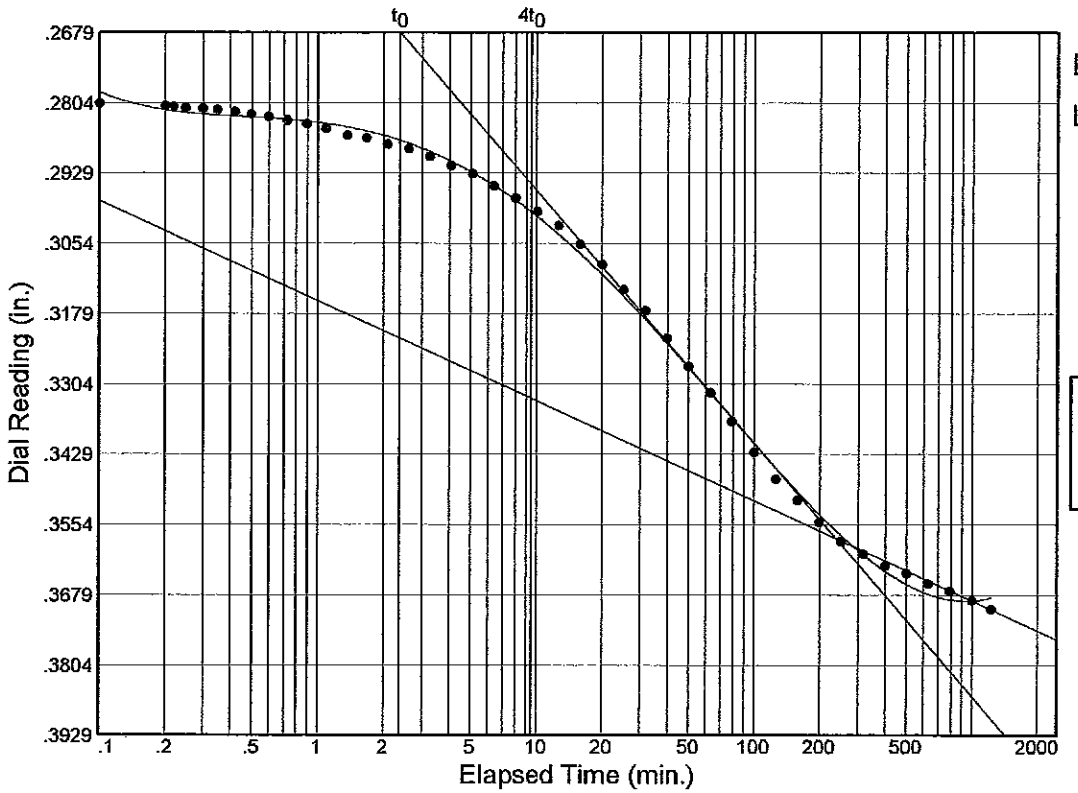
Source: BSFR-10U Sample No.: 4D Elev./Depth: 13.0



Load No.= 4
Load= 0.50 tsf
D_0 = 0.26002
D_{50} = 0.26758
D_{100} = 0.27514
T_{50} = 3.90 min.

C_v @ T_{50}
0.0002 in.^{2}/sec.

C_α = 0.003



Load No.= 5
Load= 1.00 tsf
D_0 = 0.27432
D_{50} = 0.31608
D_{100} = 0.35784
T_{50} = 27.22 min.

C_v @ T_{50}
0.0000 in.^{2}/sec.

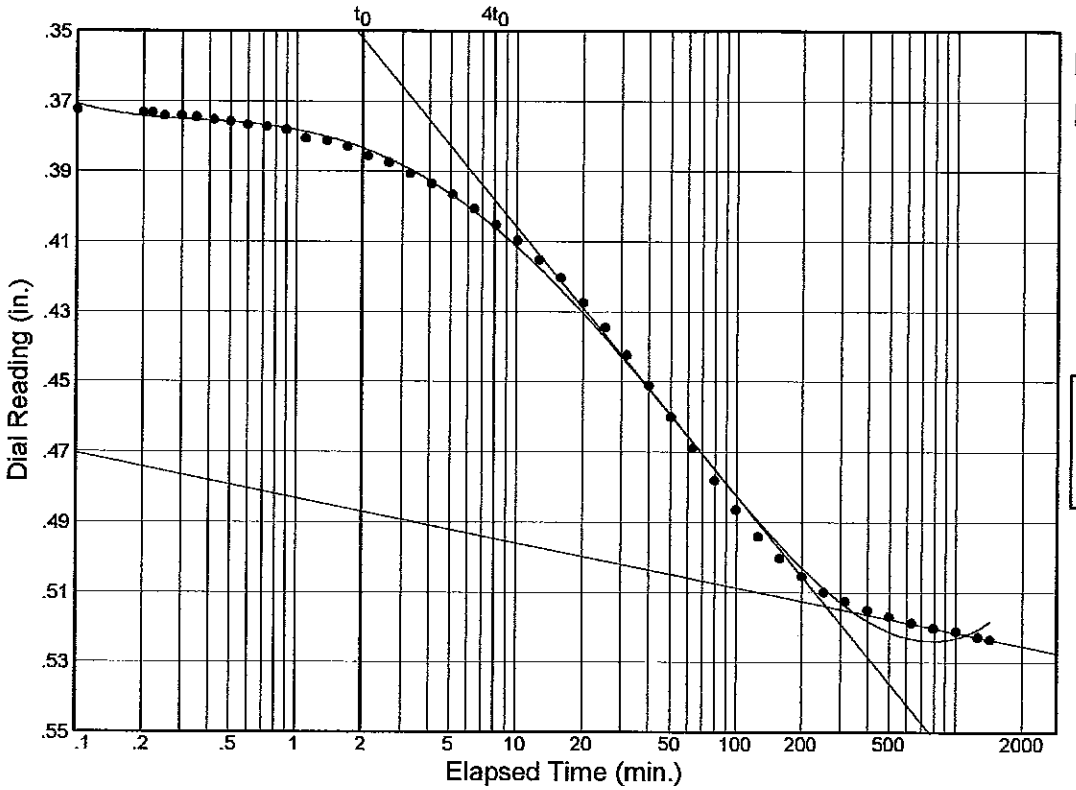
C_α = 0.018

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

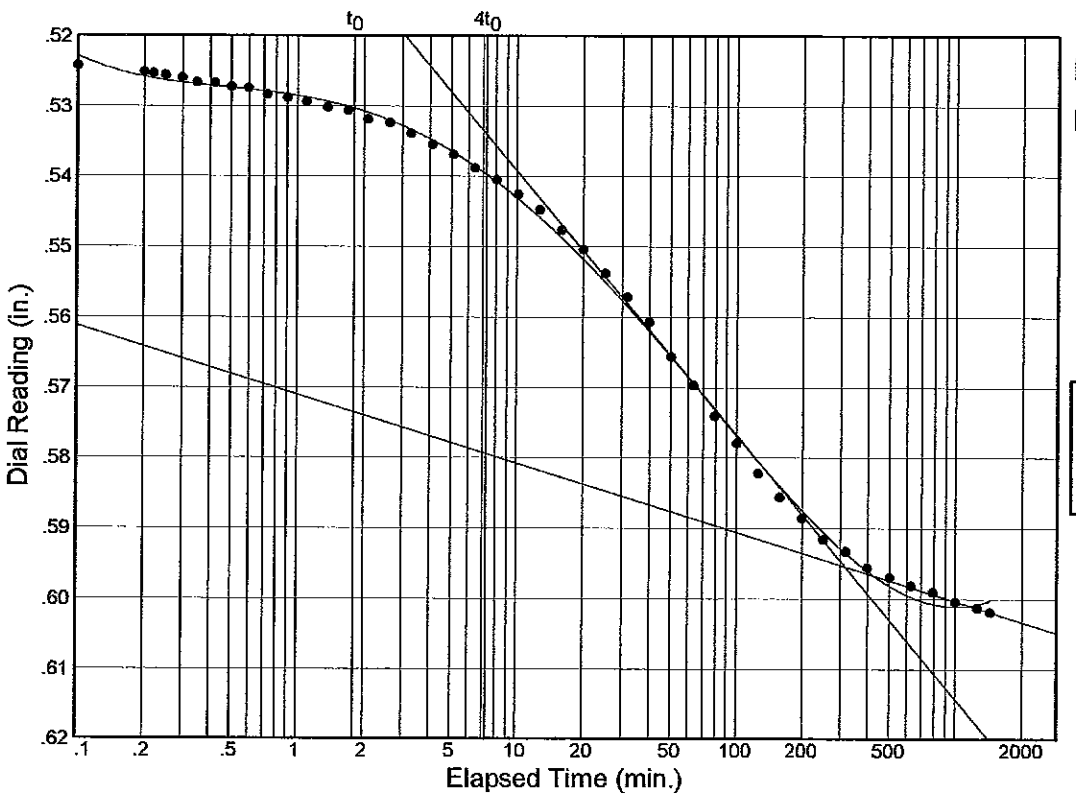
Source: BSFR-10U Sample No.: 4D Elev./Depth: 13.0



Load No.= 6
Load= 2.00 tsf
D_0 = 0.36075
D_{50} = 0.43737
D_{100} = 0.51399
T_{50} = 25.34 min.

C_v @ T_{50}
0.0000 in.^{2}/sec.

C_α = 0.015



Load No.= 7
Load= 4.00 tsf
D_0 = 0.52098
D_{50} = 0.55818
D_{100} = 0.59538
T_{50} = 31.31 min.

C_v @ T_{50}
0.0000 in.^{2}/sec.

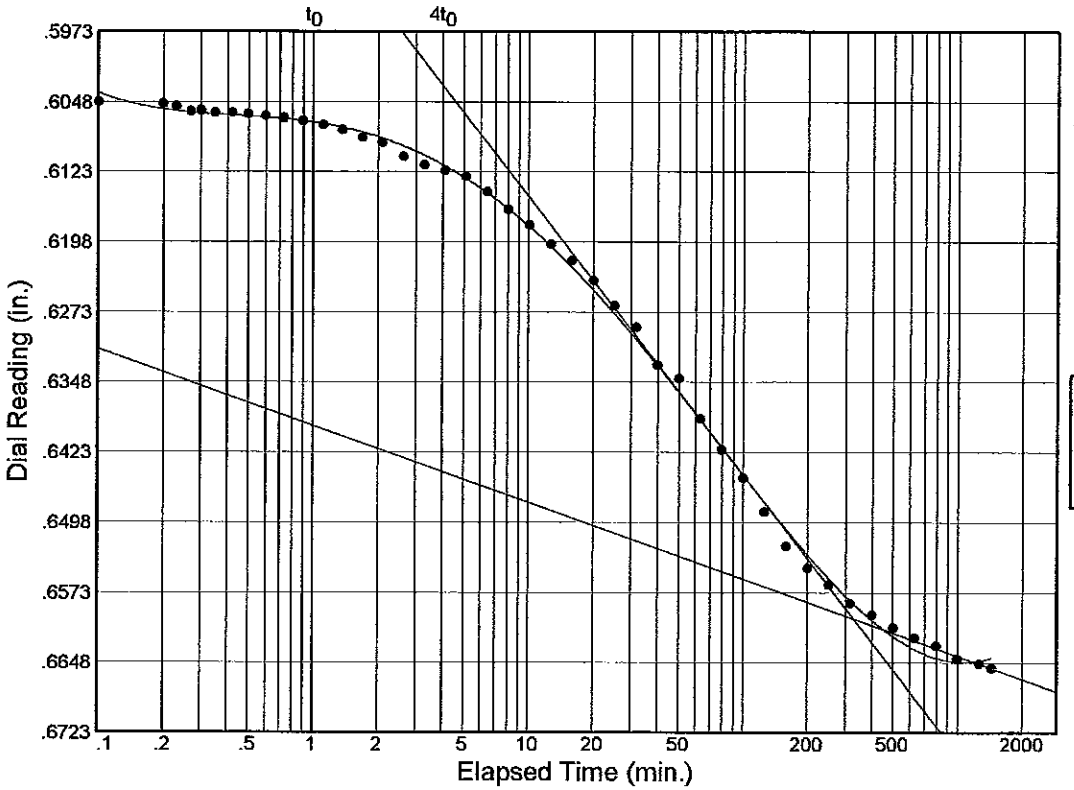
C_α = 0.014

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

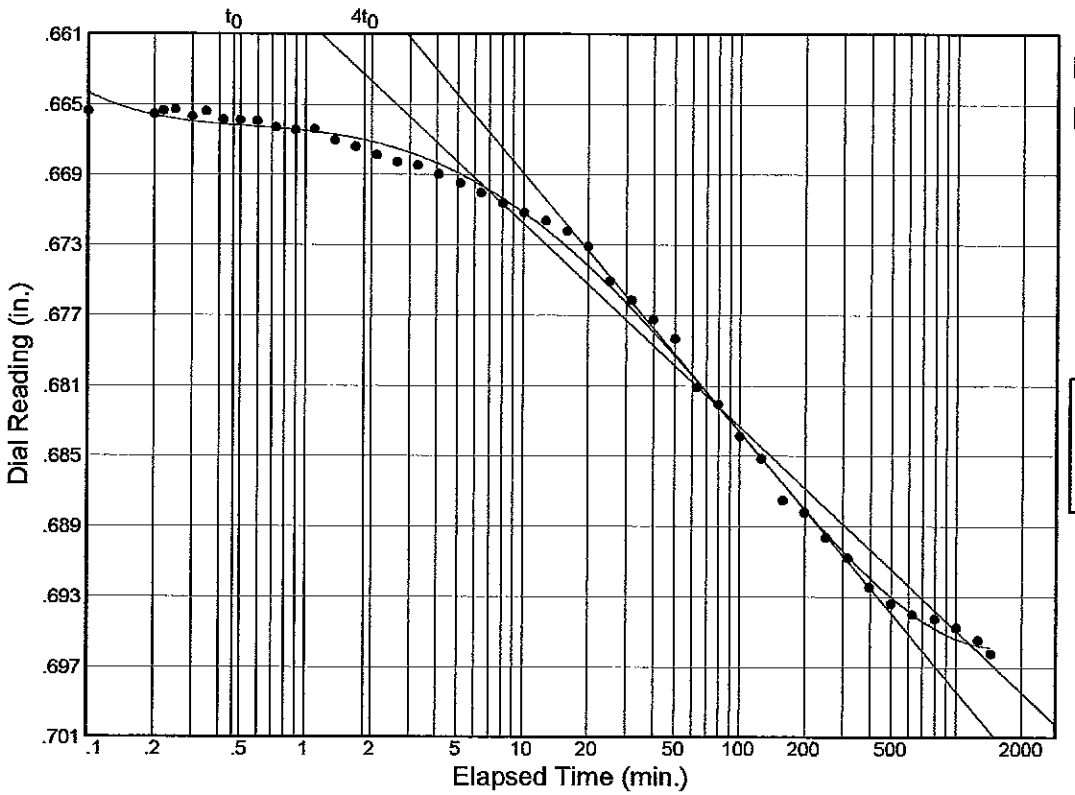
Source: BSFR-10U Sample No.: 4D Elev./Depth: 13.0



Load No.= 8
Load= 8.00 tsf
D_0 = 0.60244
D_{50} = 0.63127
D_{100} = 0.66010
T_{50} = 34.85 min.

C_v @ T_{50}
0.0000 in.^{2}/sec.

C_α = 0.013



Load No.= 9
Load= 12.00 tsf
D_0 = 0.66533
D_{50} = 0.67384
D_{100} = 0.68234
T_{50} = 18.72 min.

C_v @ T_{50}
0.0000 in.^{2}/sec.

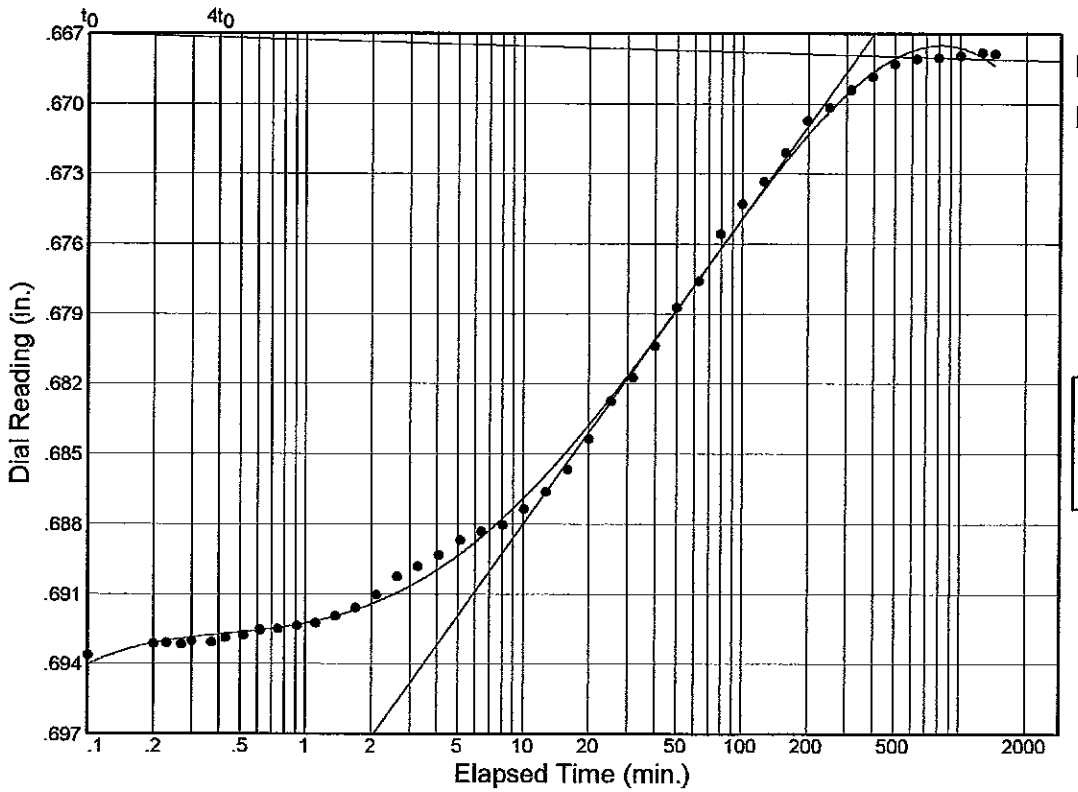
C_α = 0.020

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

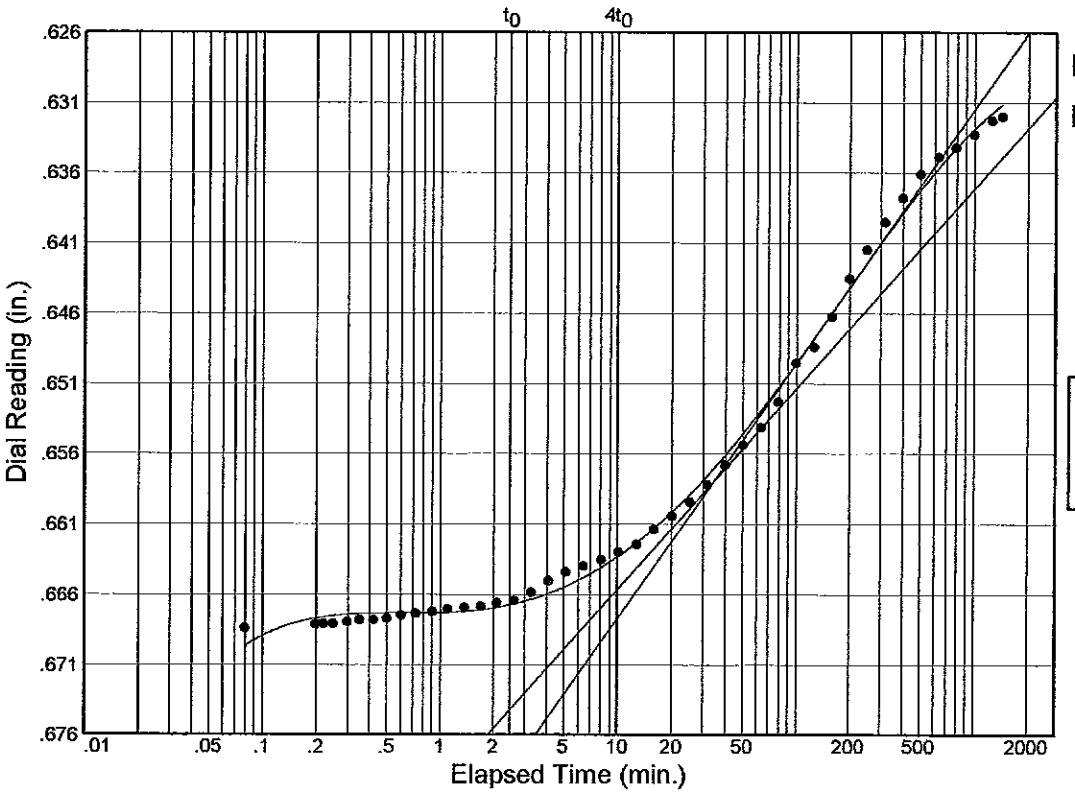
Source: BSFR-10U Sample No.: 4D Elev./Depth: 13.0



Load No.= 10
Load= 3.00 tsf
D_0 = 0.69530
D_{50} = 0.68162
D_{100} = 0.66793
T_{50} = 30.21 min.

C_v @ T_{50}
0.0000 in.^{2}/sec.

C_α = 0.001



Load No.= 11
Load= 0.75 tsf
D_0 = 0.67015
D_{50} = 0.66399
D_{100} = 0.65782
T_{50} = 8.24 min.

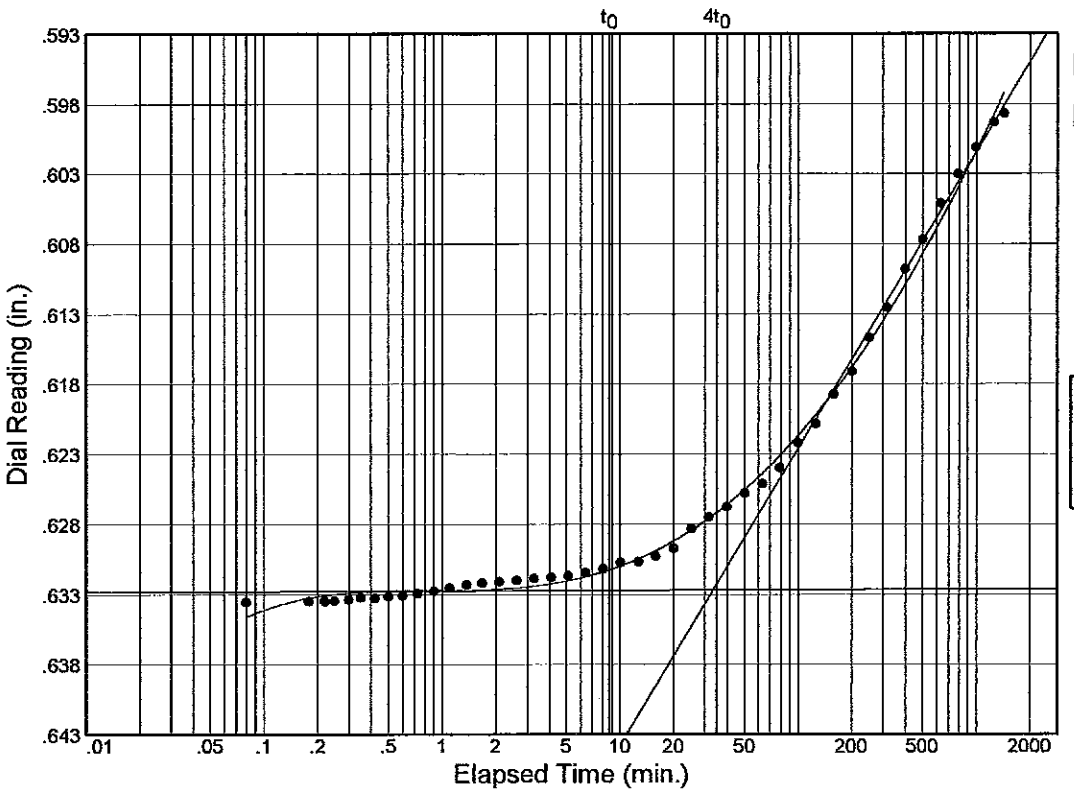
C_v @ T_{50}
0.0000 in.^{2}/sec.

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

Source: BSFR-10U Sample No.: 4D Elev./Depth: 13.0



Load No.= 12
Load= 0.19 tsf
D_0 = 0.63532
D_{50} = 0.63401
D_{100} = 0.63269
T_{50} = 0.11 min.

C_v @ T_{50}
0.0030 in.^{2}/sec.

SWELL/CONSOLIDATION TEST DATA

Client: USACE
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans
Project Number: 12-017108

Sample Data

Source: BSFR-10U
Sample No.: 4D
Elev. or Depth: 13.0 **Sample Length(in./cm.):**
Location:
Description: SO GR CH4 W/ LNS ML, WD
Liquid Limit: 88 **Plasticity Index:** 65
USCS: CH **AASHTO:** **Figure No.:**
Testing Remarks:

Test Specimen Data

TOTAL SAMPLE		BEFORE TEST	AFTER TEST
Wet w+t	= 205.81 g.	Consolidometer # = 2	Wet w+t = 539.52 g.
Dry w+t	= 122.91 g.		Dry w+t = 460.30 g.
Tare Wt.	= 31.02 g.	Spec. Gravity = 2.70	Tare Wt. = 295.74 g.
Height	= 1.00 in.	Height = 1.00 in.	
Diameter	= 4.00 in.	Diameter = 4.00 in.	
Weight	= 310.59 g.	Defl. Table = n/a	
Moisture	= 90.2 %	Ht. Solids = 0.2961 in.	Moisture = 48.1 %
Wet Den.	= 94.4 pcf	Dry Wt. = 163.45 g.	Dry Wt. = 164.56 g.*
Dry Den.	= 49.6 pcf	Void Ratio = 2.374	Void Ratio = 1.251
		Saturation = 102.6 %	

* Final dry weight used in calculations

End-of-Load Summary

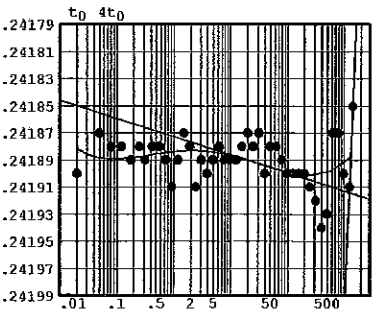
Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (in.^{2}/sec.)	C_α	Void Ratio	% Compression /Swell
start	0.24186				2.374	
0.05	0.24185	0.00000			2.374	0.0 Swell
0.13	0.25184	0.00000	0.0004	0.001	2.340	1.0 Comprs.
0.25	0.26177	0.00000	0.0002	0.000	2.307	2.0 Comprs.
0.50	0.27860	0.00000	0.0002	0.003	2.250	3.7 Comprs.
1.00	0.37052	0.00000	0.0000	0.018	1.939	12.9 Comprs.
2.00	0.52351	0.00000	0.0000	0.015	1.423	28.2 Comprs.
4.00	0.60186	0.00000	0.0000	0.014	1.158	36.0 Comprs.
8.00	0.66537	0.00000	0.0000	0.013	0.944	42.4 Comprs.
12.00	0.69623	0.00000	0.0000	0.020	0.839	45.5 Comprs.
3.00	0.66787	0.00000	0.0000	0.001	0.935	42.6 Comprs.

Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (in.^{2}/sec.)	C_α	Void Ratio	% Compression /Swell
0.75	0.63198	0.00000	0.0000		1.056	39.1 Comprs.
0.19	0.59869	0.00000	0.0030		1.169	35.7 Comprs.
0.05	0.57437	0.00000			1.251	33.3 Comprs.

C_c = 0.58 P_c = 0.01 tsf C_r = 0.17

Pressure: 0.05 tsf **TEST READINGS** **Load No. 1**

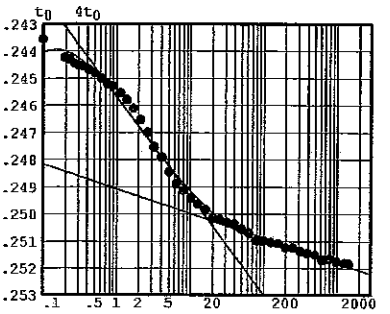
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.24186	23	12.53	0.24189
2	0.02	0.24190	24	15.80	0.24188
3	0.05	0.24187	25	19.90	0.24187
4	0.08	0.24188	26	25.07	0.24188
5	0.12	0.24188	27	31.57	0.24187
6	0.18	0.24189	28	39.77	0.24190
7	0.25	0.24188	29	50.07	0.24188
8	0.32	0.24189	30	63.05	0.24188
9	0.43	0.24188	31	79.38	0.24189
10	0.57	0.24188	32	99.95	0.24190
11	0.72	0.24189	33	125.85	0.24190
12	0.93	0.24191	34	158.45	0.24190
13	1.18	0.24189	35	199.48	0.24190
14	1.52	0.24187	36	251.15	0.24191
15	1.93	0.24188	37	316.18	0.24192
16	2.45	0.24191	38	398.07	0.24194
17	3.10	0.24189	39	501.15	0.24193
18	3.92	0.24190	40	630.92	0.24187
19	4.95	0.24189	41	794.30	0.24187
20	6.25	0.24188	42	999.97	0.24190
21	7.88	0.24189	43	1258.90	0.24191
22	9.95	0.24189	44	1440.38	0.24185



Void Ratio = 2.374 **Swell** = 0.0 %

Pressure: 0.13 tsf | TEST READINGS | Load No. 2

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.24040	24	12.72	0.24963
2	0.10	0.24356	25	15.97	0.24983
3	0.20	0.24424	26	20.08	0.25016
4	0.23	0.24431	27	25.25	0.25019
5	0.27	0.24446	28	31.75	0.25030
6	0.30	0.24452	29	39.93	0.25036
7	0.35	0.24456	30	50.25	0.25055
8	0.42	0.24469	31	63.22	0.25069
9	0.50	0.24480	32	79.57	0.25098
10	0.62	0.24500	33	100.13	0.25100
11	0.75	0.24520	34	126.02	0.25104
12	0.90	0.24529	35	158.62	0.25108
13	1.12	0.24554	36	199.67	0.25124
14	1.37	0.24579	37	251.32	0.25125
15	1.70	0.24611	38	316.37	0.25138
16	2.12	0.24652	39	398.25	0.25145
17	2.63	0.24699	40	501.33	0.25151
18	3.28	0.24753	41	631.10	0.25170
19	4.10	0.24791	42	794.47	0.25166
20	5.13	0.24845	43	1000.15	0.25175
21	6.43	0.24890	44	1259.07	0.25181
22	8.07	0.24913	45	1440.17	0.25184
23	10.12	0.24943			



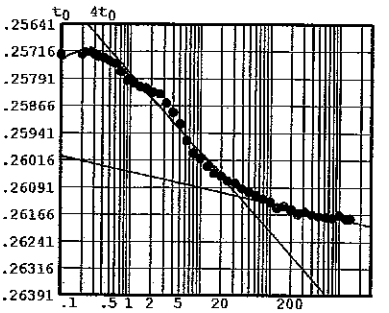
Void Ratio = 2.340 **Compression** = 1.0 %

D_0 = 0.24360 D_{50} = 0.24690 D_{100} = 0.25019

C_v **at 2.2 min.** = 0.0004 in.^{2}/sec. C_α = 0.001

Pressure: 0.25 tsf | TEST READINGS | Load No. 3

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.25022	24	12.72	0.26033
2	0.10	0.25725	25	15.98	0.26052
3	0.20	0.25724	26	20.08	0.26060
4	0.22	0.25719	27	25.25	0.26074
5	0.27	0.25717	28	31.75	0.26080
6	0.30	0.25723	29	39.95	0.26095
7	0.35	0.25730	30	50.25	0.26105
8	0.42	0.25734	31	63.23	0.26114
9	0.50	0.25742	32	79.57	0.26123
10	0.60	0.25749	33	100.13	0.26131
11	0.73	0.25771	34	126.03	0.26147
12	0.90	0.25796	35	158.63	0.26144
13	1.12	0.25803	36	199.67	0.26153
14	1.37	0.25813	37	251.33	0.26165
15	1.70	0.25819	38	316.37	0.26159
16	2.12	0.25829	39	398.25	0.26166
17	2.63	0.25834	40	501.33	0.26171
18	3.28	0.25859	41	631.10	0.26174
19	4.10	0.25884	42	794.48	0.26176
20	5.13	0.25916	43	1000.15	0.26168
21	6.43	0.25962	44	1259.08	0.26178
22	8.07	0.25997	45	1440.20	0.26177
23	10.13	0.26012			



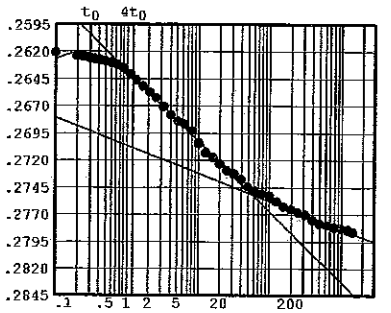
Void Ratio = 2.307 **Compression** = 2.0 %

D_0 = 0.25753 D_{50} = 0.25934 D_{100} = 0.26115

C_v **at 5.2 min.** = 0.0002 in.^{2}/sec. C_α = 0.000

Pressure: 0.50 tsf | TEST READINGS | Load No. 4

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.25984	24	12.72	0.27130
2	0.10	0.26205	25	15.97	0.27172
3	0.20	0.26240	26	20.08	0.27234
4	0.22	0.26240	27	25.25	0.27295
5	0.25	0.26248	28	31.75	0.27326
6	0.30	0.26261	29	39.93	0.27376
7	0.35	0.26267	30	50.25	0.27445
8	0.42	0.26277	31	63.23	0.27484
9	0.50	0.26286	32	79.57	0.27512
10	0.60	0.26300	33	100.13	0.27531
11	0.73	0.26319	34	126.03	0.27581
12	0.90	0.26350	35	158.63	0.27629
13	1.12	0.26408	36	199.67	0.27652
14	1.37	0.26463	37	251.33	0.27683
15	1.70	0.26518	38	316.37	0.27704
16	2.10	0.26574	39	398.25	0.27749
17	2.62	0.26627	40	501.33	0.27785
18	3.28	0.26707	41	631.10	0.27800
19	4.10	0.26784	42	794.47	0.27819
20	5.13	0.26840	43	1000.15	0.27830
21	6.43	0.26869	44	1259.08	0.27844
22	8.07	0.26927	45	1440.17	0.27860
23	10.12	0.27044			



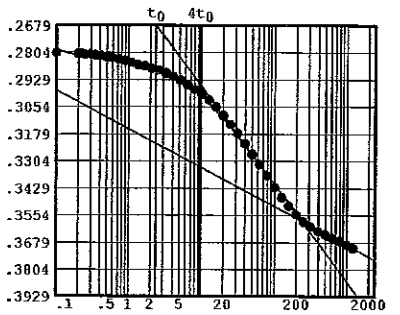
Void Ratio = 2.250 **Compression** = 3.7 %

D_0 = 0.26002 D_{50} = 0.26758 D_{100} = 0.27514

C_v **at 3.9 min.** = 0.0002 in.^{2}/sec. C_α = 0.003

Pressure: 1.00 tsf **TEST READINGS** **Load No. 5**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.27609	23	10.12	0.29974
2	0.10	0.28050	24	12.70	0.30230
3	0.20	0.28097	25	15.97	0.30551
4	0.22	0.28110	26	20.07	0.30922
5	0.25	0.28131	27	25.25	0.31359
6	0.30	0.28138	28	31.75	0.31745
7	0.35	0.28167	29	39.93	0.32233
8	0.42	0.28195	30	50.25	0.32733
9	0.50	0.28241	31	63.22	0.33203
10	0.60	0.28285	32	79.57	0.33710
11	0.73	0.28351	33	100.13	0.34261
12	0.90	0.28413	34	126.02	0.34733
13	1.10	0.28497	35	158.62	0.35111
14	1.37	0.28620	36	199.65	0.35502
15	1.68	0.28664	37	251.32	0.35843
16	2.10	0.28777	38	316.37	0.36069
17	2.62	0.28856	39	398.25	0.36278
18	3.27	0.28991	40	501.32	0.36409
19	4.08	0.29153	41	631.10	0.36590
20	5.12	0.29304	42	794.47	0.36725
21	6.42	0.29517	43	1000.13	0.36893
22	8.05	0.29736	44	1228.68	0.37052



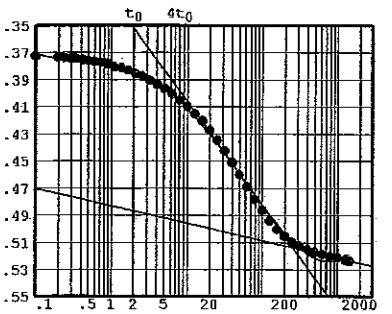
Void Ratio = 1.939 **Compression** = 12.9 %

D_0 = 0.27432 D_{50} = 0.31608 D_{100} = 0.35784

C_v **at 27.2 min.** = 0.0000 in.^{2}/sec. C_α = 0.018

Pressure: 2.00 tsf | TEST READINGS | Load No. 6

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.36644	24	12.70	0.41525
2	0.10	0.37230	25	15.97	0.42037
3	0.20	0.37335	26	20.07	0.42739
4	0.22	0.37321	27	25.23	0.43458
5	0.25	0.37410	28	31.75	0.44235
6	0.30	0.37420	29	39.93	0.45109
7	0.35	0.37451	30	50.25	0.45997
8	0.42	0.37525	31	63.23	0.46890
9	0.50	0.37589	32	79.57	0.47813
10	0.60	0.37676	33	100.13	0.48646
11	0.73	0.37732	34	126.03	0.49410
12	0.90	0.37815	35	158.62	0.50035
13	1.10	0.38059	36	199.67	0.50539
14	1.37	0.38121	37	251.33	0.50996
15	1.70	0.38292	38	316.37	0.51252
16	2.10	0.38563	39	398.25	0.51502
17	2.62	0.38752	40	501.33	0.51695
18	3.27	0.39052	41	631.10	0.51871
19	4.10	0.39358	42	794.47	0.52012
20	5.12	0.39668	43	1000.15	0.52101
21	6.42	0.40064	44	1259.07	0.52280
22	8.05	0.40524	45	1430.48	0.52351
23	10.12	0.40963			



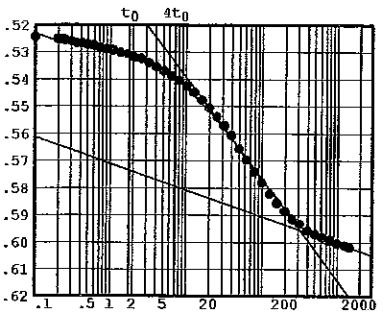
Void Ratio = 1.423 **Compression** = 28.2 %

D_0 = 0.36075 D_{50} = 0.43737 D_{100} = 0.51399

C_v **at 25.3 min.** = 0.0000 in.^{2}/sec. C_α = 0.015

Pressure: 4.00 tsf | TEST READINGS | Load No. 7

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.51893	24	12.72	0.54476
2	0.10	0.52426	25	15.97	0.54762
3	0.20	0.52512	26	20.08	0.55039
4	0.22	0.52536	27	25.25	0.55378
5	0.25	0.52560	28	31.75	0.55718
6	0.30	0.52593	29	39.93	0.56067
7	0.35	0.52659	30	50.25	0.56557
8	0.42	0.52667	31	63.23	0.56967
9	0.50	0.52721	32	79.57	0.57407
10	0.60	0.52746	33	100.13	0.57794
11	0.73	0.52833	34	126.03	0.58217
12	0.90	0.52882	35	158.62	0.58559
13	1.10	0.52933	36	199.67	0.58855
14	1.37	0.53015	37	251.33	0.59157
15	1.70	0.53058	38	316.37	0.59327
16	2.10	0.53189	39	398.25	0.59558
17	2.62	0.53239	40	501.33	0.59692
18	3.28	0.53388	41	631.10	0.59813
19	4.10	0.53542	42	794.47	0.59908
20	5.13	0.53692	43	1000.15	0.60044
21	6.43	0.53885	44	1259.08	0.60129
22	8.07	0.54050	45	1440.12	0.60186
23	10.12	0.54252			



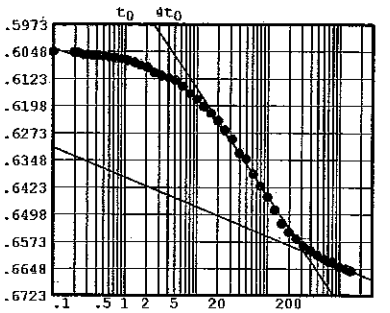
Void Ratio = 1.158 **Compression** = 36.0 %

D_0 = 0.52098 D_{50} = 0.55818 D_{100} = 0.59538

C_v **at 31.3 min.** = 0.0000 in.^{2}/sec. C_α = 0.014

Pressure: 8.00 tsf | TEST READINGS | Load No. 8

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.59359	24	12.72	0.62005
2	0.10	0.60481	25	15.97	0.62184
3	0.20	0.60499	26	20.08	0.62392
4	0.23	0.60527	27	25.25	0.62658
5	0.27	0.60579	28	31.75	0.62892
6	0.30	0.60572	29	39.93	0.63295
7	0.35	0.60593	30	50.25	0.63439
8	0.42	0.60593	31	63.23	0.63868
9	0.50	0.60607	32	79.57	0.64203
10	0.60	0.60629	33	100.13	0.64504
11	0.73	0.60654	34	126.03	0.64868
12	0.90	0.60687	35	158.62	0.65236
13	1.12	0.60726	36	199.67	0.65471
14	1.37	0.60780	37	251.32	0.65646
15	1.70	0.60860	38	316.37	0.65845
16	2.10	0.60920	39	398.25	0.65970
17	2.62	0.61065	40	501.33	0.66105
18	3.28	0.61155	41	631.10	0.66213
19	4.10	0.61217	42	794.47	0.66294
20	5.13	0.61279	43	1000.15	0.66437
21	6.43	0.61441	44	1259.07	0.66489
22	8.07	0.61637	45	1440.27	0.66537
23	10.12	0.61796			



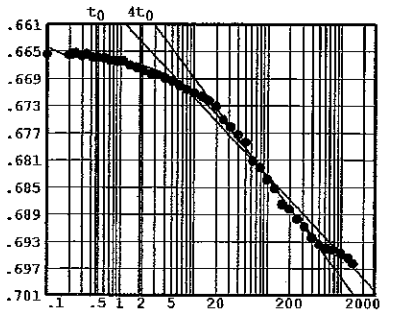
Void Ratio = 0.944 Compression = 42.4 %

D_0 = 0.60244 D_{50} = 0.63127 D_{100} = 0.66010

C_v at 34.8 min. = 0.0000 in.^{2}/sec. C_α = 0.013

Pressure: 12.00 tsf | TEST READINGS | Load No. 9

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.65729	24	12.72	0.67164
2	0.10	0.66534	25	15.97	0.67220
3	0.20	0.66554	26	20.08	0.67307
4	0.22	0.66536	27	25.25	0.67506
5	0.25	0.66528	28	31.75	0.67613
6	0.30	0.66570	29	39.93	0.67724
7	0.35	0.66540	30	50.25	0.67833
8	0.42	0.66587	31	63.22	0.68111
9	0.50	0.66591	32	79.57	0.68205
10	0.60	0.66593	33	100.13	0.68386
11	0.73	0.66632	34	126.03	0.68515
12	0.90	0.66644	35	158.62	0.68751
13	1.10	0.66641	36	199.67	0.68822
14	1.37	0.66705	37	251.32	0.68963
15	1.70	0.66739	38	316.37	0.69081
16	2.12	0.66788	39	398.25	0.69244
17	2.63	0.66829	40	501.33	0.69340
18	3.28	0.66845	41	631.10	0.69402
19	4.10	0.66897	42	794.47	0.69428
20	5.13	0.66946	43	1000.15	0.69474
21	6.43	0.67001	44	1259.07	0.69545
22	8.07	0.67061	45	1440.48	0.69623
23	10.12	0.67114			



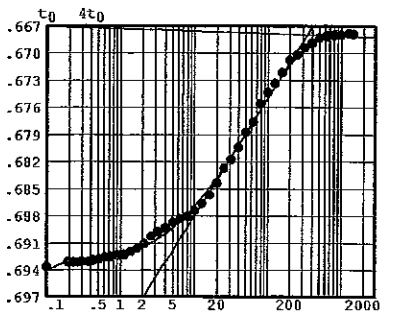
Void Ratio = 0.839 **Compression** = 45.5 %

D_0 = 0.66533 D_{50} = 0.67384 D_{100} = 0.68234

C_v **at 18.7 min.** = 0.0000 in.^{2}/sec. C_α = 0.020

Pressure: 3.00 tsf | TEST READINGS | Load No. 10

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.71297	24	12.72	0.68662
2	0.10	0.69363	25	15.98	0.68567
3	0.20	0.69312	26	20.08	0.68434
4	0.23	0.69310	27	25.25	0.68274
5	0.27	0.69315	28	31.77	0.68174
6	0.30	0.69303	29	39.95	0.68038
7	0.37	0.69308	30	50.25	0.67873
8	0.43	0.69289	31	63.23	0.67759
9	0.52	0.69276	32	79.57	0.67558
10	0.62	0.69254	33	100.13	0.67430
11	0.75	0.69250	34	126.03	0.67334
12	0.92	0.69235	35	158.63	0.67211
13	1.12	0.69226	36	199.67	0.67074
14	1.38	0.69194	37	251.33	0.67017
15	1.70	0.69160	38	316.37	0.66941
16	2.12	0.69106	39	398.25	0.66886
17	2.63	0.69026	40	501.33	0.66830
18	3.28	0.68981	41	631.10	0.66809
19	4.10	0.68934	42	794.48	0.66802
20	5.13	0.68869	43	1000.15	0.66794
21	6.43	0.68832	44	1259.08	0.66781
22	8.07	0.68804	45	1440.13	0.66787
23	10.13	0.68735			



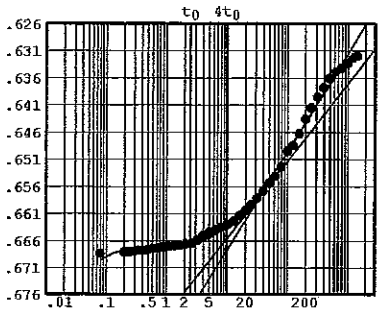
Void Ratio = 0.935 **Compression** = 42.6 %

D_0 = 0.69530 D_{50} = 0.68162 D_{100} = 0.66793

C_v **at 30.2 min.** = 0.0000 in.^{2}/sec. C_α = 0.001

Pressure: 0.75 tsf | TEST READINGS | Load No. 11

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.67376	24	12.72	0.66244
2	0.08	0.66841	25	15.97	0.66139
3	0.20	0.66813	26	20.08	0.66044
4	0.22	0.66809	27	25.25	0.65941
5	0.25	0.66808	28	31.75	0.65818
6	0.30	0.66795	29	39.93	0.65680
7	0.35	0.66782	30	50.25	0.65538
8	0.42	0.66782	31	63.23	0.65415
9	0.50	0.66772	32	79.57	0.65230
10	0.60	0.66748	33	100.13	0.64952
11	0.73	0.66735	34	126.03	0.64840
12	0.90	0.66721	35	158.63	0.64626
13	1.10	0.66703	36	199.67	0.64354
14	1.37	0.66694	37	251.33	0.64149
15	1.70	0.66686	38	316.37	0.63952
16	2.10	0.66660	39	398.25	0.63780
17	2.62	0.66645	40	501.33	0.63609
18	3.27	0.66585	41	631.10	0.63485
19	4.10	0.66502	42	794.47	0.63420
20	5.13	0.66440	43	1000.15	0.63326
21	6.43	0.66398	44	1259.07	0.63226
22	8.07	0.66354	45	1440.32	0.63198
23	10.12	0.66298			



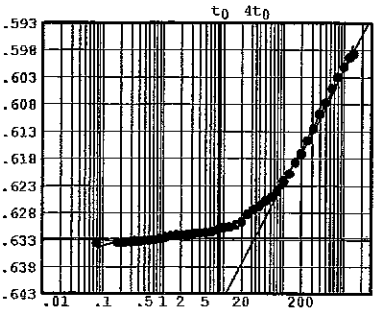
Void Ratio = 1.056 **Compression** = 39.1 %

D_0 = 0.67015 D_{50} = 0.66399 D_{100} = 0.65782

C_v **at 8.2 min.** = 0.0000 in.^{2}/sec.

Pressure: 0.19 tsf **TEST READINGS** **Load No. 12**

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.63662	24	12.70	0.63066
2	0.08	0.63355	25	15.97	0.63026
3	0.18	0.63348	26	20.07	0.62970
4	0.22	0.63347	27	25.23	0.62831
5	0.25	0.63343	28	31.75	0.62747
6	0.30	0.63336	29	39.93	0.62674
7	0.35	0.63321	30	50.25	0.62579
8	0.42	0.63327	31	63.22	0.62511
9	0.50	0.63311	32	79.57	0.62396
10	0.60	0.63308	33	100.13	0.62218
11	0.73	0.63296	34	126.02	0.62082
12	0.90	0.63275	35	158.62	0.61873
13	1.10	0.63254	36	199.67	0.61710
14	1.37	0.63231	37	251.32	0.61469
15	1.68	0.63216	38	316.37	0.61253
16	2.10	0.63210	39	398.25	0.60980
17	2.62	0.63198	40	501.33	0.60771
18	3.27	0.63184	41	631.10	0.60510
19	4.10	0.63176	42	794.47	0.60299
20	5.12	0.63165	43	1000.15	0.60108
21	6.42	0.63143	44	1259.07	0.59933
22	8.05	0.63119	45	1440.27	0.59869
23	10.12	0.63073			



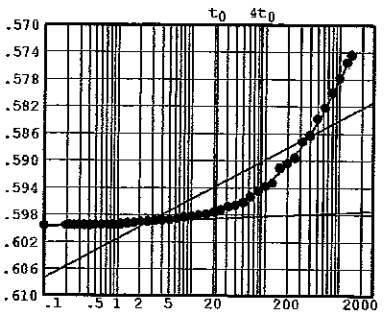
Void Ratio = 1.169 **Compression** = 35.7 %

D_0 = 0.63532 D_{50} = 0.63401 D_{100} = 0.63269

C_v **at 0.1 min.** = 0.0030 in.^{2}/sec.

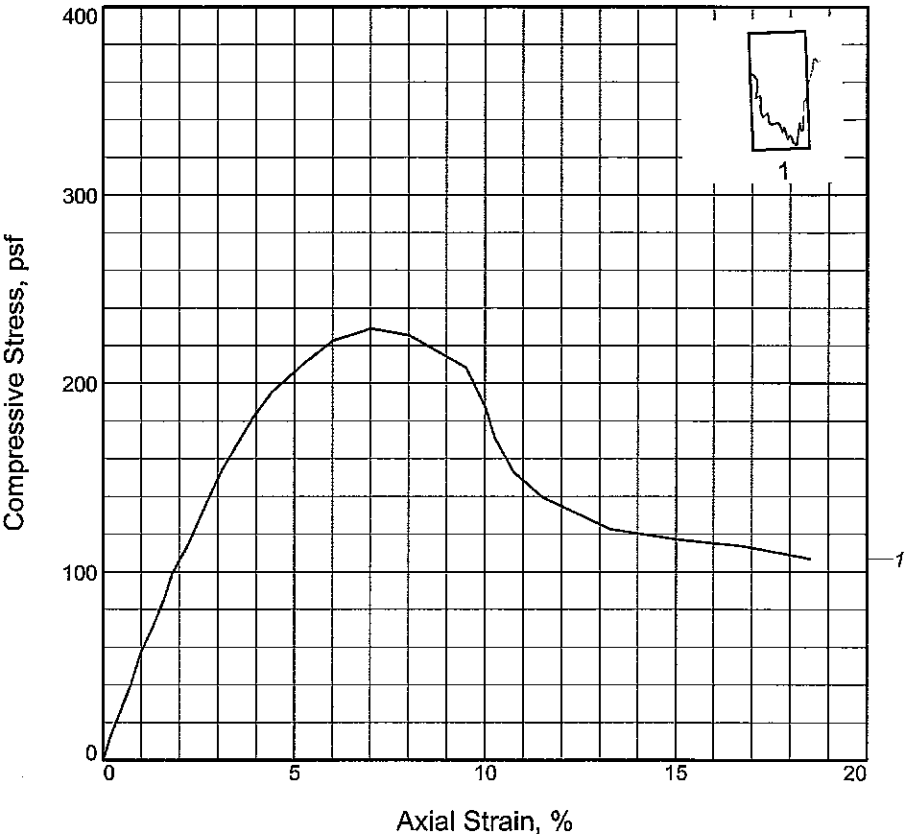
Pressure: 0.05 tsf | TEST READINGS | Load No. 13

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.60060	24	12.70	0.59806
2	0.10	0.59958	25	15.97	0.59789
3	0.20	0.59958	26	20.07	0.59759
4	0.22	0.59954	27	25.23	0.59728
5	0.25	0.59954	28	31.75	0.59676
6	0.30	0.59953	29	39.93	0.59659
7	0.35	0.59952	30	50.25	0.59619
8	0.42	0.59952	31	63.22	0.59529
9	0.50	0.59949	32	79.57	0.59448
10	0.60	0.59950	33	100.13	0.59373
11	0.73	0.59945	34	126.02	0.59326
12	0.90	0.59943	35	158.62	0.59106
13	1.10	0.59936	36	199.67	0.59037
14	1.37	0.59928	37	251.32	0.58955
15	1.70	0.59918	38	316.37	0.58716
16	2.10	0.59904	39	398.25	0.58625
17	2.62	0.59898	40	501.32	0.58375
18	3.28	0.59891	41	631.10	0.58218
19	4.10	0.59883	42	794.47	0.57993
20	5.13	0.59875	43	1000.13	0.57777
21	6.42	0.59854	44	1259.07	0.57545
22	8.07	0.59834	45	1440.38	0.57437
23	10.12	0.59816			



Void Ratio = 1.251 Compression = 33.3 %

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	229			
Undrained shear strength, psf	115			
Failure strain, %	7.0			
Strain rate, in./min.	1.000			
Water content, %	289.4			
Wet density, pcf	70.3			
Dry density, pcf	18.1			
Saturation, %	94.4			
Void ratio	7.8144			
Specimen diameter, in.	1.368			
Specimen height, in.	2.984			
Height/diameter ratio	2.18			

Description: VSO BK PT W/ LYS CH

LL = 354	**PL =** 158	**PI =** 196	**Assumed GS=** 2.55	**Type:** UNDISTURBED

Project No.: 12-017108
Date Sampled: 7-30-12
Remarks:
Torvane=0.12 tsf

Figure _____

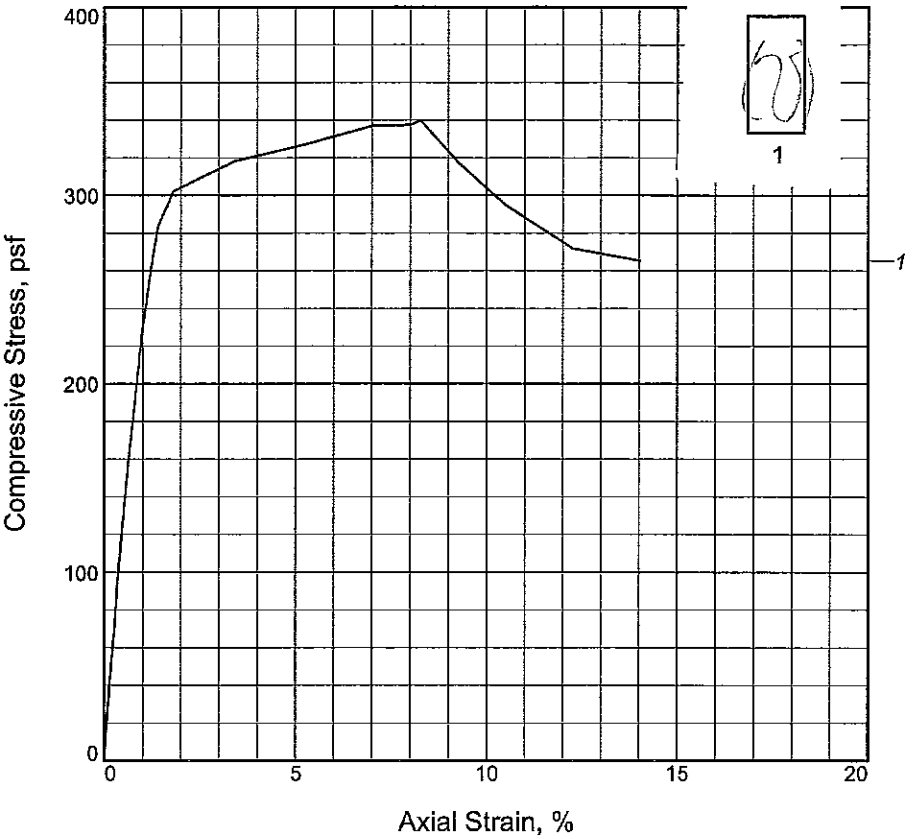
Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-10U **Depth:** 3.0
Sample Number: 2B

UNCONFINED COMPRESSION TEST
Stantec
Saint Rose, Louisiana

Tested By: JC **Checked By:** JS

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	340			
Undrained shear strength, psf	170			
Failure strain, %	8.3			
Strain rate, in./min.	1.000			
Water content, %	72.5			
Wet density, pcf	100.0			
Dry density, pcf	58.0			
Saturation, %	102.2			
Void ratio	1.9298			
Specimen diameter, in.	1.376			
Specimen height, in.	2.986			
Height/diameter ratio	2.17			

Description: SO GR CH3 W/ LNS ML, RT

LL = 66	**PL =** 28	**PI =** 38	**Assumed GS=** 2.72	**Type:** UNDISTURBED

Project No.: 12-017108
Date Sampled: 7-30-12
Remarks:
Torvane=0.40 tsf

Figure _____

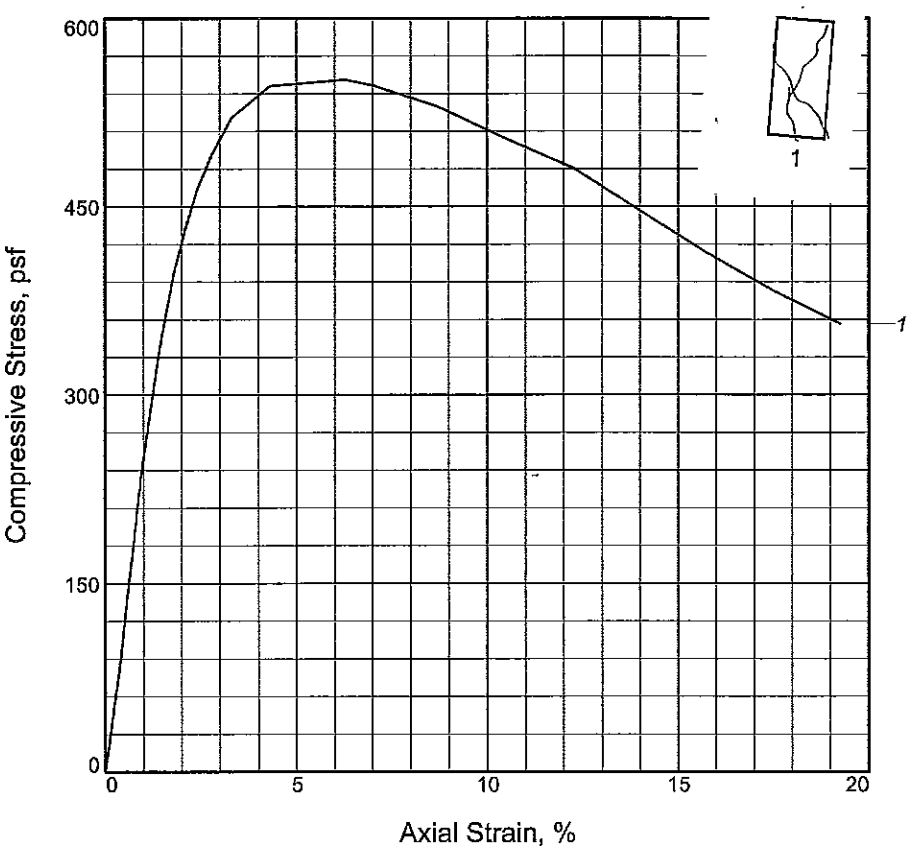
Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-10U **Depth:** 12.0
Sample Number: 4C

UNCONFINED COMPRESSION TEST
Stantec
Saint Rose, Louisiana

Tested By: JC

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	551			
Undrained shear strength, psf	276			
Failure strain, %	6.3			
Strain rate, in./min.	1.000			
Water content, %	59.5			
Wet density, pcf	116.5			
Dry density, pcf	73.0			
Saturation, %	122.9			
Void ratio	1.3078			
Specimen diameter, in.	1.357			
Specimen height, in.	2.995			
Height/diameter ratio	2.21			

Description: SO GR CL6

LL = 43	**PL =** 22	**PI =** 21	**Assumed GS=** 2.70	**Type:** 7-31-12

Project No.: 12-017108
Date Sampled: 7-31-12
Remarks:
Torvane=0.27 tsf

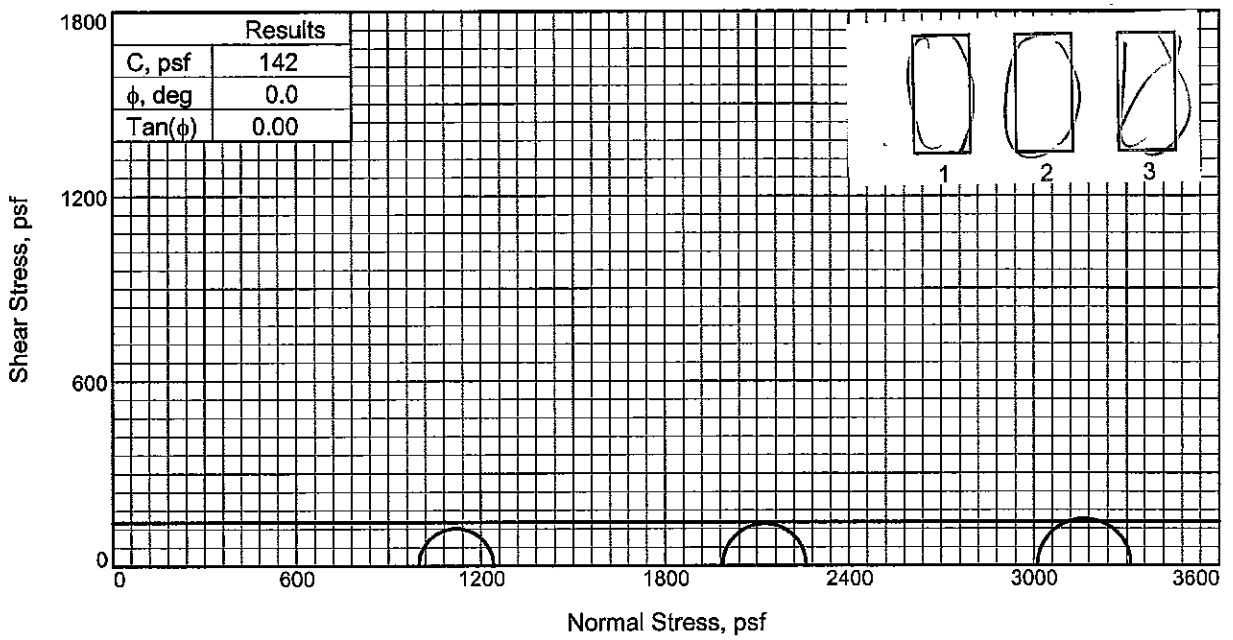
Figure _____

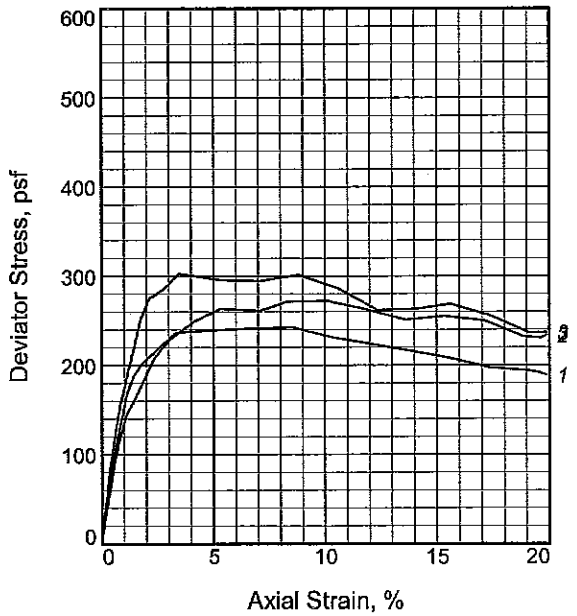
Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-10U **Depth:** 23.0
Sample Number: 7B

UNCONFINED COMPRESSION TEST
Stantec
Saint Rose, Louisiana

Tested By: JC





Sample No.		1	2	3
Initial	Water Content, %	76.0	56.4	80.4
	Dry Density, pcf	60.0	63.7	54.7
	Saturation, %	112.9	92.1	103.8
	Void Ratio	1.8311	1.6671	2.1070
	Diameter, in.	1.372	1.366	1.366
	Height, in.	2.987	2.995	2.995
At Test	Water Content, %	76.0	56.4	80.4
	Dry Density, pcf	60.0	63.7	54.7
	Saturation, %	112.9	92.1	103.8
	Void Ratio	1.8311	1.6671	2.1070
	Diameter, in.	1.372	1.366	1.366
	Height, in.	2.987	2.995	2.995
Strain rate, in./min.		1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.93	13.80	20.92
Fail. Stress, psf		242	272	303
Strain, %		8.6	10.1	3.4
Ult. Stress, psf		216	251	262
Strain, %		13.8	13.6	12.3
σ_1 Failure, psf		1240	2260	3315
σ_3 Failure, psf		998	1987	3012

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: VSO GR CH3 W/ LNS ML, RT

LL= 76 **PL=** 29 **PI=** 47
Assumed Specific Gravity= 2.72
Remarks: Torvane=0.25 tsf

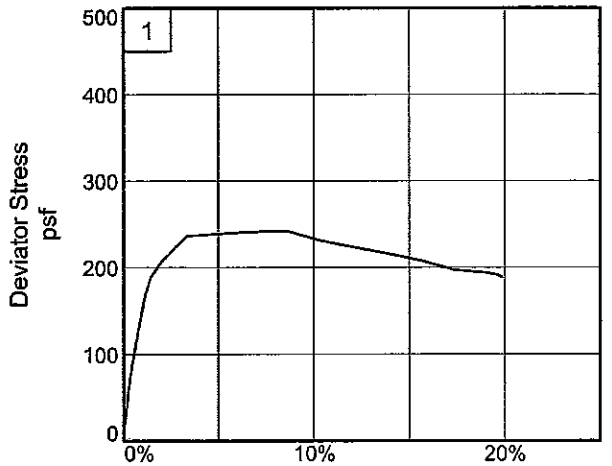
Client: USACE

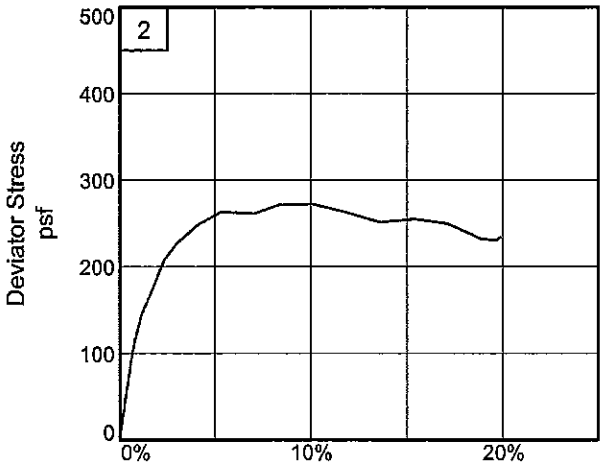
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-10U **Depth:** 8.0
Sample Number: 3C
Proj. No.: 12-017108 **Date Sampled:** 7-30-12

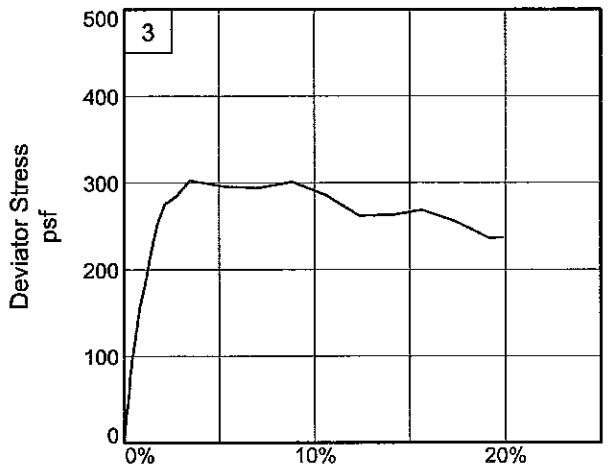
TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

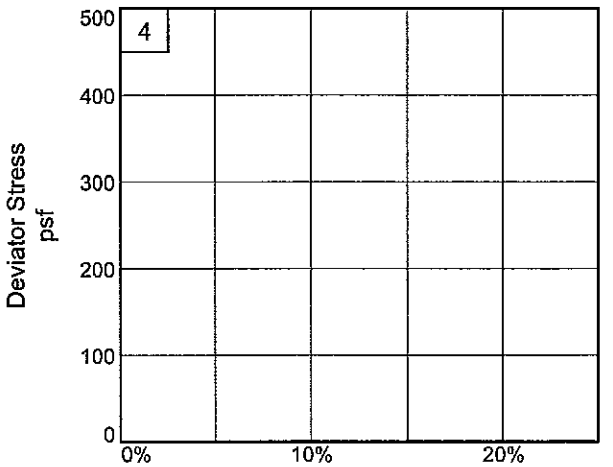
Figure _____

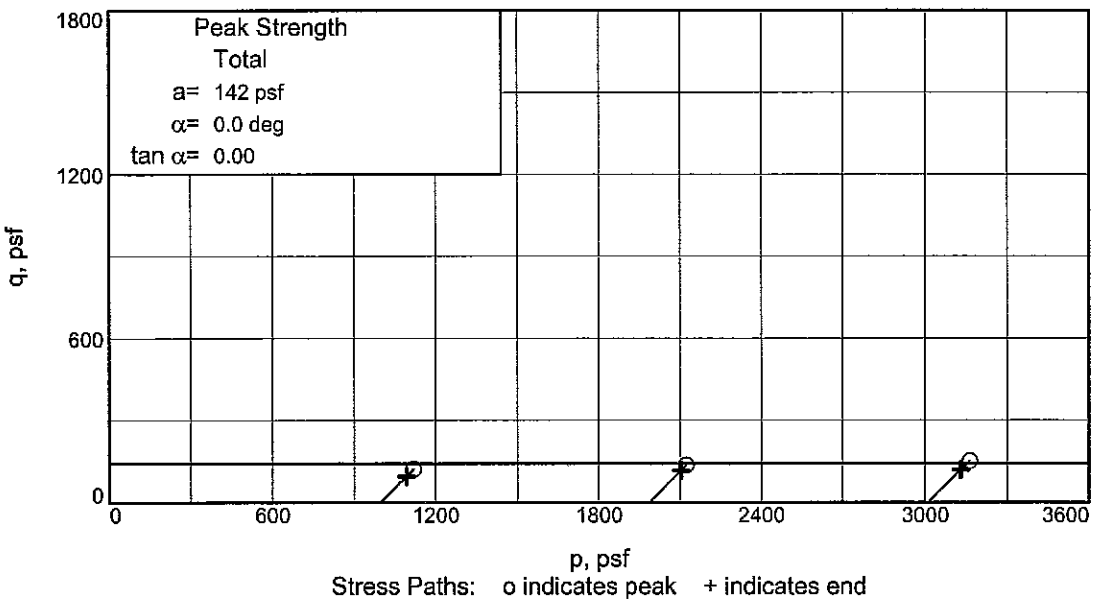
Tested By: JC











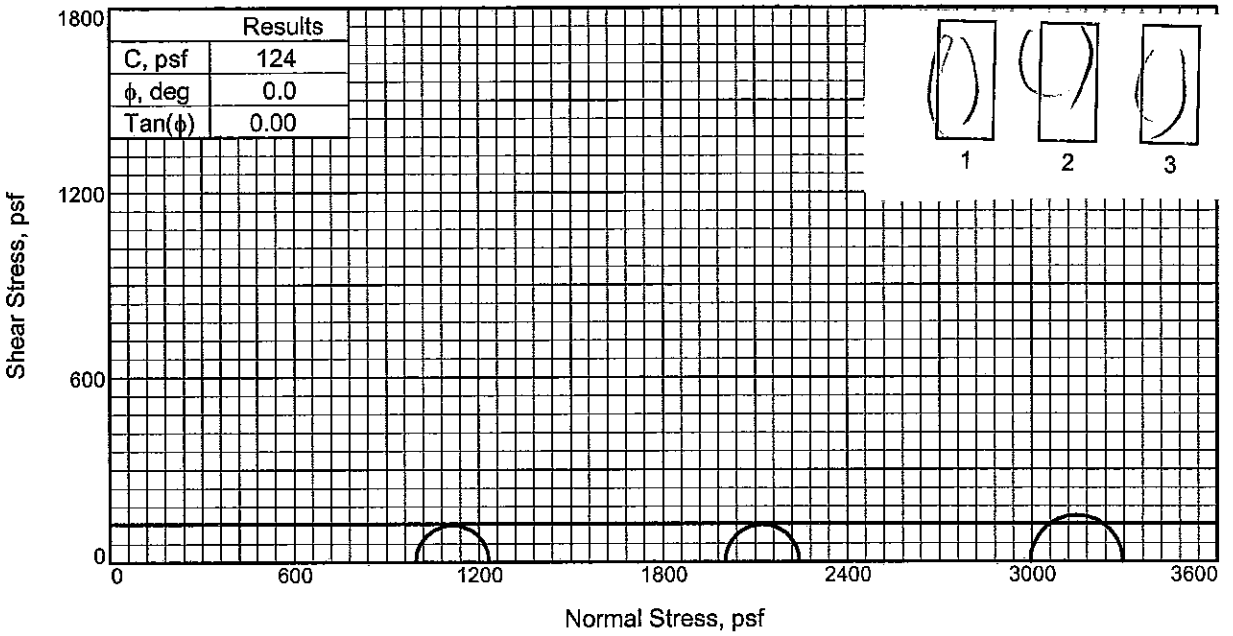
Client: USACE

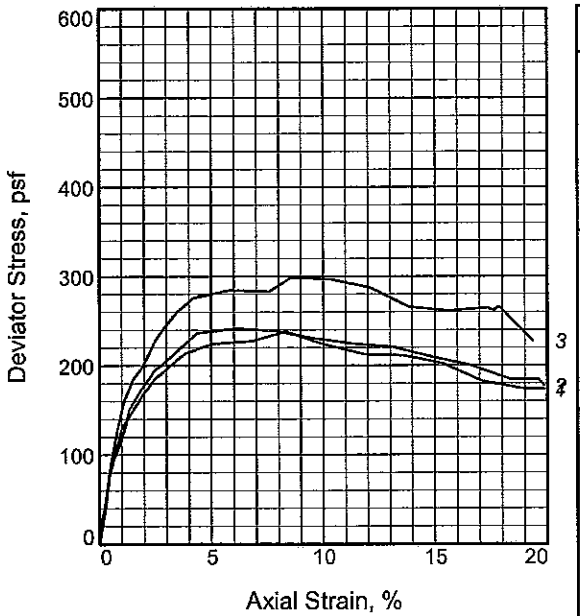
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

Source of Sample: BSFR-10U **Depth:** 8.0 **Sample Number:** 3C

Project No.: 12-017108 **Figure** _____ **Stantec, Inc.**

Tested By: JC





Sample No.		1	2	3
Initial	Water Content, %	59.8	62.5	59.8
	Dry Density, pcf	72.8	71.6	72.9
	Saturation, %	122.9	124.6	123.0
	Void Ratio	1.3143	1.3548	1.3121
	Diameter, in.	1.372	1.352	1.365
	Height, in.	2.986	2.977	2.989
At Test	Water Content, %	59.8	62.5	59.8
	Dry Density, pcf	72.8	71.6	72.9
	Saturation, %	122.9	124.6	123.0
	Void Ratio	1.3143	1.3548	1.3121
	Diameter, in.	1.372	1.352	1.365
	Height, in.	2.986	2.977	2.989
Strain rate, in./min.		1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.91	13.90	20.80
Fail. Stress, psf		238	242	299
Strain, %		8.3	6.1	8.6
Ult. Stress, psf		211	210	266
Strain, %		13.6	14.8	13.8
σ_1 Failure, psf		1233	2243	3294
σ_3 Failure, psf		995	2002	2995

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: VSO GR CL4 W/ ARS SM, SIF

LL= 36 **PL=** 18 **PI=** 18
Assumed Specific Gravity= 2.70
Remarks: Torvane=0.12 tsf

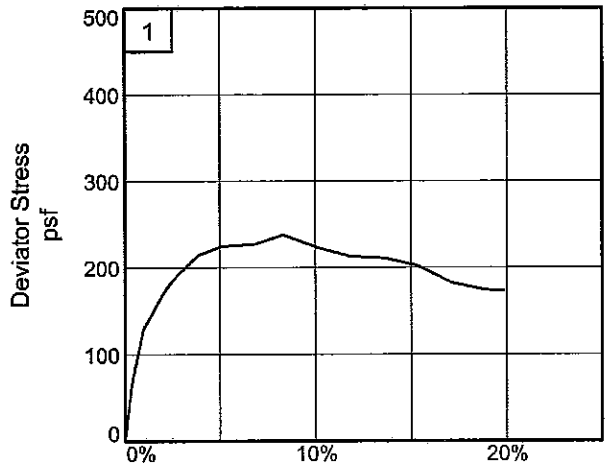
Client: USACE

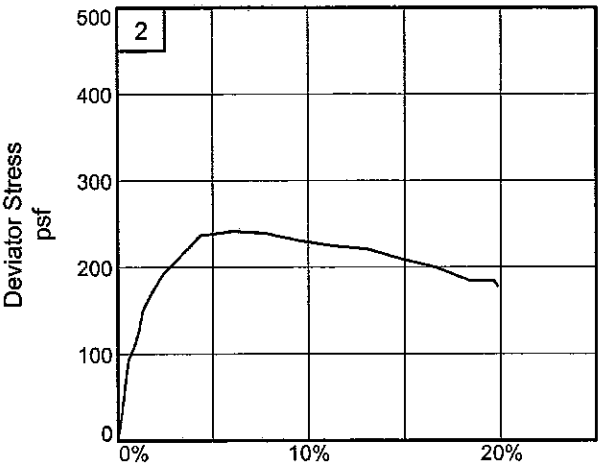
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-10U **Depth:** 18.0
Sample Number: 6A
Proj. No.: 12-017108 **Date Sampled:** 7-31-12

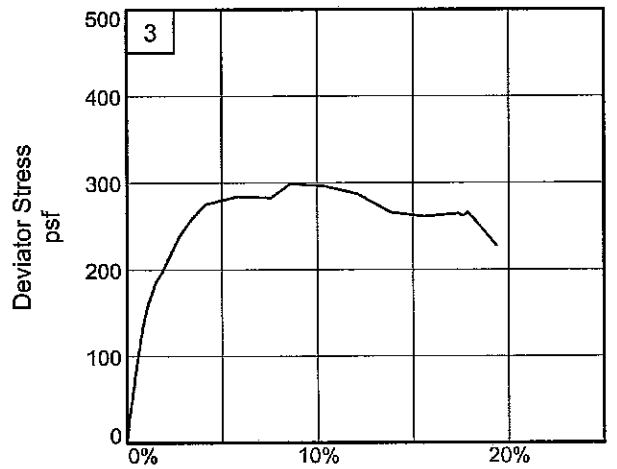
TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

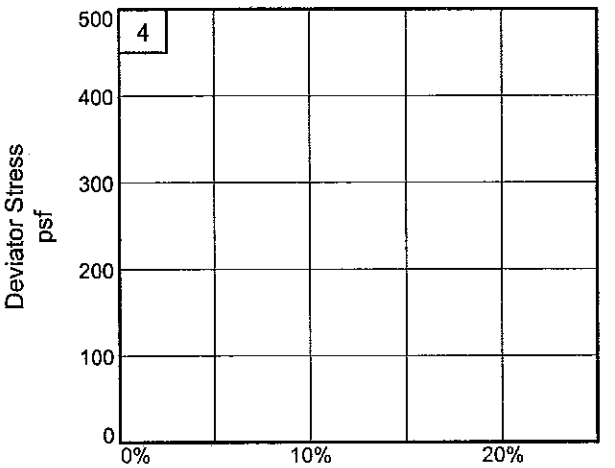
Figure _____

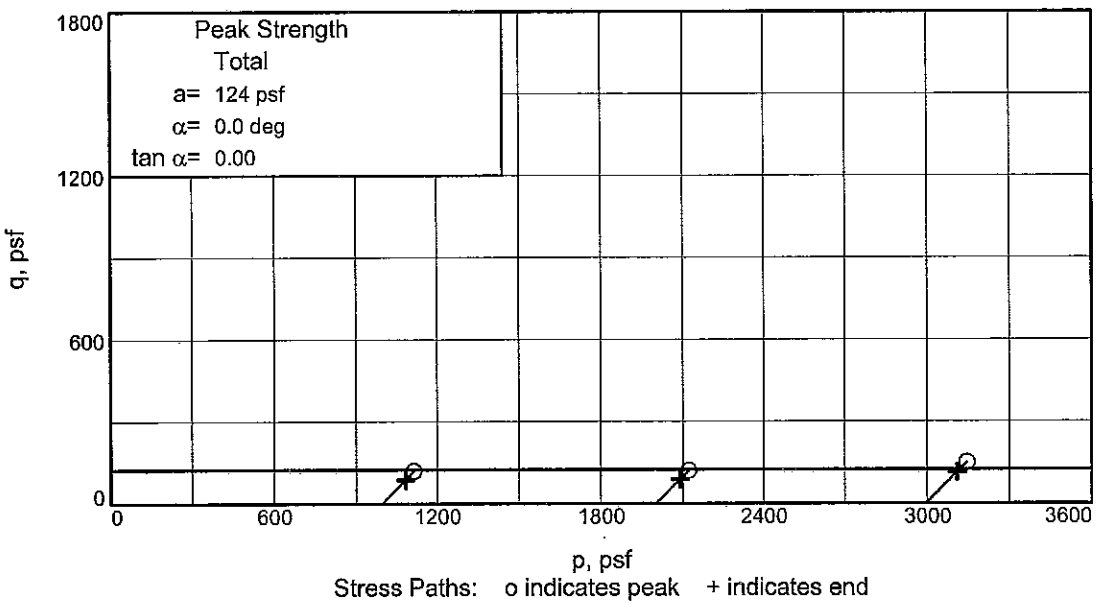
Tested By: JC











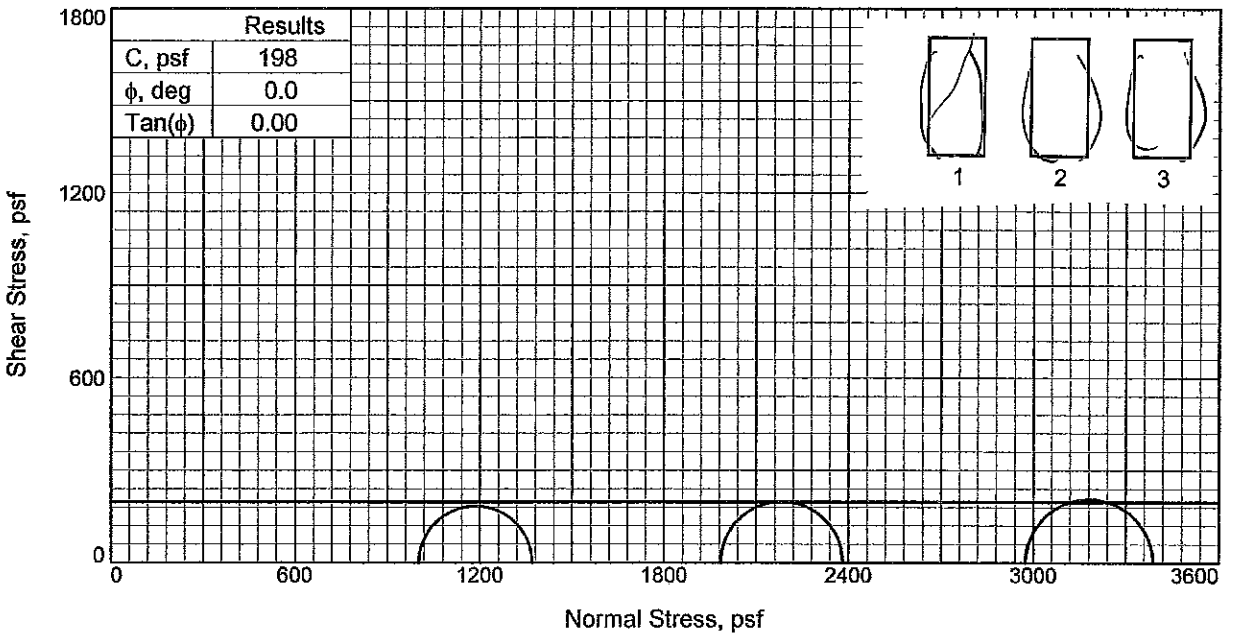
Client: USACE

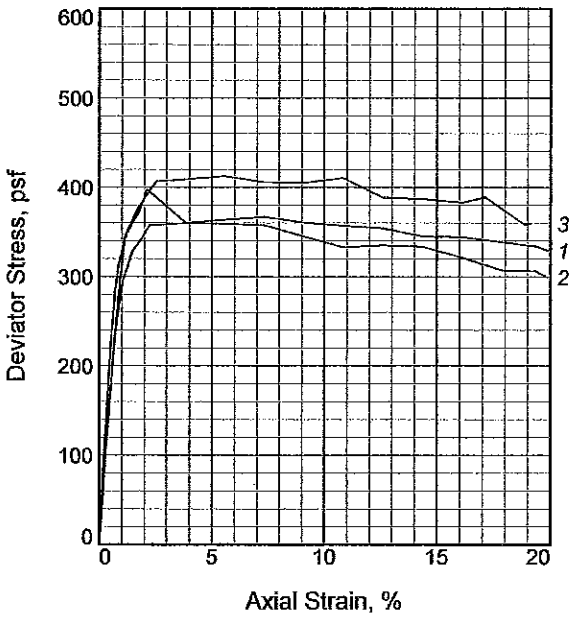
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

Source of Sample: BSFR-10U **Depth:** 18.0 **Sample Number:** 6A

Project No.: 12-017108 **Figure** _____ **Stantec, Inc.**

Tested By: JC





Sample No.		1	2	3
Initial	Water Content, %	71.7	71.6	70.5
	Dry Density, pcf	59.2	59.5	59.8
	Saturation, %	104.0	104.7	103.8
	Void Ratio	1.8899	1.8741	1.8626
	Diameter, in.	1.412	1.406	1.408
	Height, in.	2.986	2.997	2.997
At Test	Water Content, %	71.7	71.6	70.5
	Dry Density, pcf	59.2	59.5	59.8
	Saturation, %	104.0	104.7	103.8
	Void Ratio	1.8899	1.8741	1.8626
	Diameter, in.	1.412	1.406	1.408
	Height, in.	2.986	2.997	2.997
Strain rate, in./min.		1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.96	13.78	20.66
Fail. Stress, psf		367	397	412
Strain, %		7.3	2.1	5.6
Ult. Stress, psf		345	333	387
Strain, %		14.4	10.8	14.3
σ_1 Failure, psf		1369	2382	3387
σ_3 Failure, psf		1002	1984	2975

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: VSO GR CH3 W/ ARS SM, SIF

LL= 75 **PL=** 20 **PI=** 55
Assumed Specific Gravity= 2.74
Remarks: Torvane=0.17 tsf

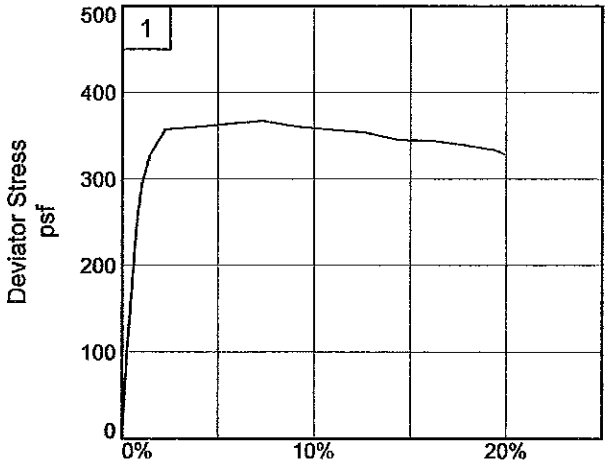
Client: USACE

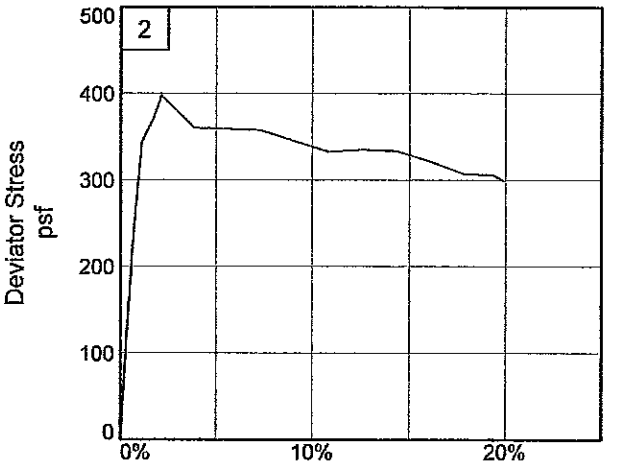
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-10U **Depth:** 21.0
Sample Number: 6D
Proj. No.: 12-017108 **Date Sampled:** 8-6-12

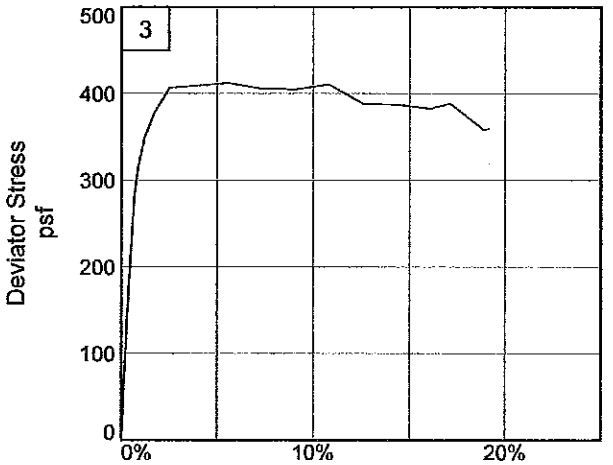
TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

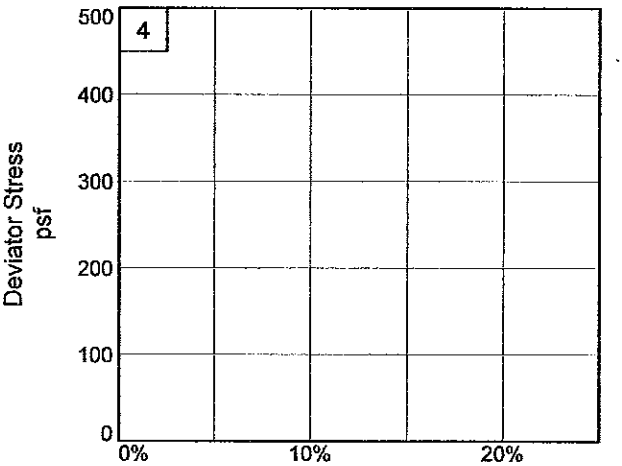
Figure _____

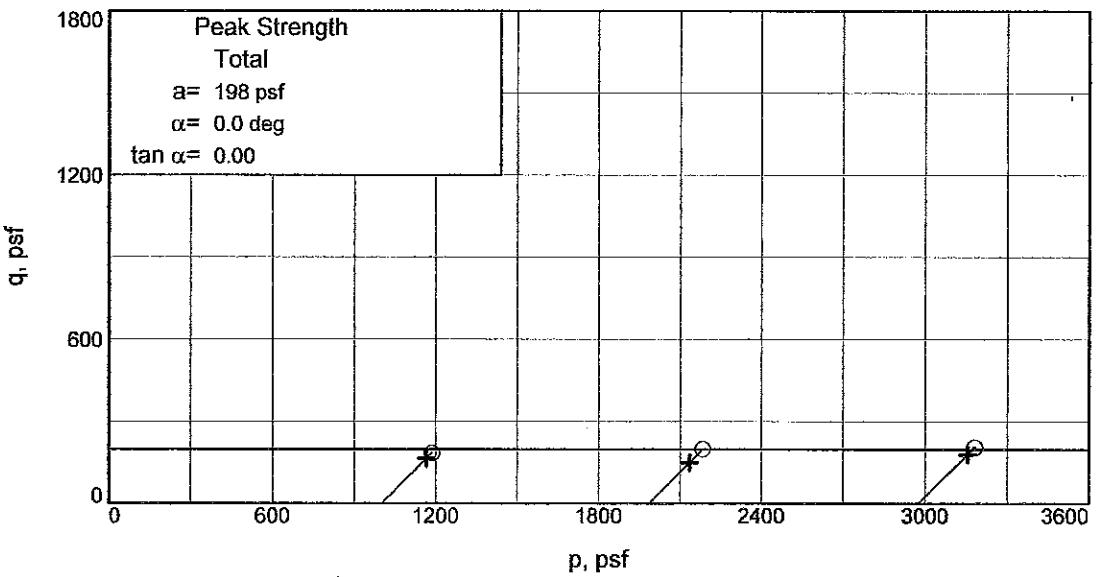
Tested By: JC











Stress Paths: o indicates peak + indicates end

Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

Source of Sample: BSFR-10U **Depth:** 21.0 **Sample Number:** 6D

Project No.: 12-017108 **Figure** _____ **Stantec, Inc.**

Tested By: JC

SUMMARY OF LABORATORY TEST RESULTS

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Paris **Assigned By:** _____

Project Number: 12-017108
Boring: BSFR-11U

Current Date: 10/4/2012

Sample Number	Depth	Visual Classification	USCS	E(f)	W%	Dry Dens (pcf)	Wet Dens (pcf)	Sat %	Shear Test Type	Angle	Cohesion (psf)	Unconf. Comp. Str.	LL	PL	PI	Torvane (tsf)	Other Tests
1	0.0	M BK PT W/ RT	PT		344												
2A	2.0	VSO BK PT	PT		209												
2B	3.0	M DBR PT W/ WD	PT		203												
2C	4.0	VSO GR CH4 W/ O, RT, WD	CH4	12	101	50	101	100	UC	-	201	402	99	40	59	0.39	
2D	5.0	SO GR CH4 W/ O, RT	CH4		63												
3A	6.0	GR SM W/ LYS CH, RT	SM		32												
3B	7.0	SO GR CH2 W/ LYS & LNS SM, RT	CH2		74	63	110	100	UU	0	324		56	17	39	0.37	
3C	8.0	VSO GR CL6 W/ LYS & LNS SM, RT	CL6		40												
3D	9.0	GR ML W/ LYS CH, RT	ML		36												SV
4A	10.0	GR ML W/ LYS CH, RT	ML		38												
4B	11.0	VSO GR CH4 W/ LYS & LNS SM	CH4	4	112	48	101	100	UC	-	160	320	75	19	56	0.23	
4C	12.0	SO GR CH2 W/ LYS & LNS SM	CH2		44												
4D	13.0	SO GR CH4 W/ LNS ML, RT	CH4		67												
5A	14.0	VSO GR CH4 W/ LNS ML	CH4		89												
5B	15.0	SO GR CH4 W/ LNS ML, RT, SIF	CH4		76	56	99	100	UU	0	331		88	30	58	0.23	
5C	16.0	VSO GR CH4 W/ LYS ML, RT, SIF	CH4		80	84	152	100					94	26	68		GS=2.57, CON
5D	17.0	M GR CH3 W/ LNS & ARS SM, SIF	CH3		47												
6A	18.0	M GR CH3 W/ ARS SM, SIF	CH3		37												
6B	19.0	SO GR CL4 W/ ARS SM, SIF	CL4	2	36	85	116	98	UC	-	330	659	39	17	22	0.25	
6C	20.0	M GR CH4 W/ ARS SM, SIF	CH4		49												
6D	21.0	M GR CH4 W/ ARS & LNS SM, SIF	CH4		59												
7A	22.0	SO GR CH4 W/ LNS ML	CH4		66												
7B	23.0	SO GR CH3 W/ LYS & LNS SP, SIF	CH3		61	65	104	100	UU	0	392		63	18	45	0.30	
7C	24.0	M GR CH3 W/ ARS SP, RT	CH3		38												
7D	25.0	M GR CH3 W/ ARS SP, RT	CH3		38												
8A	26.0	M GR CH3 W/ ARS SP, SIF	CH3		46												
8B	27.0	M GR CH3 W/ ARS SP, SIF	CH3		37												
8C	28.0	M GR CH3 W/ ARS SP, SIF	CH3		34												
8D	29.0	ST GR CH3 W/ ARS SP, SIF	CH3		33												

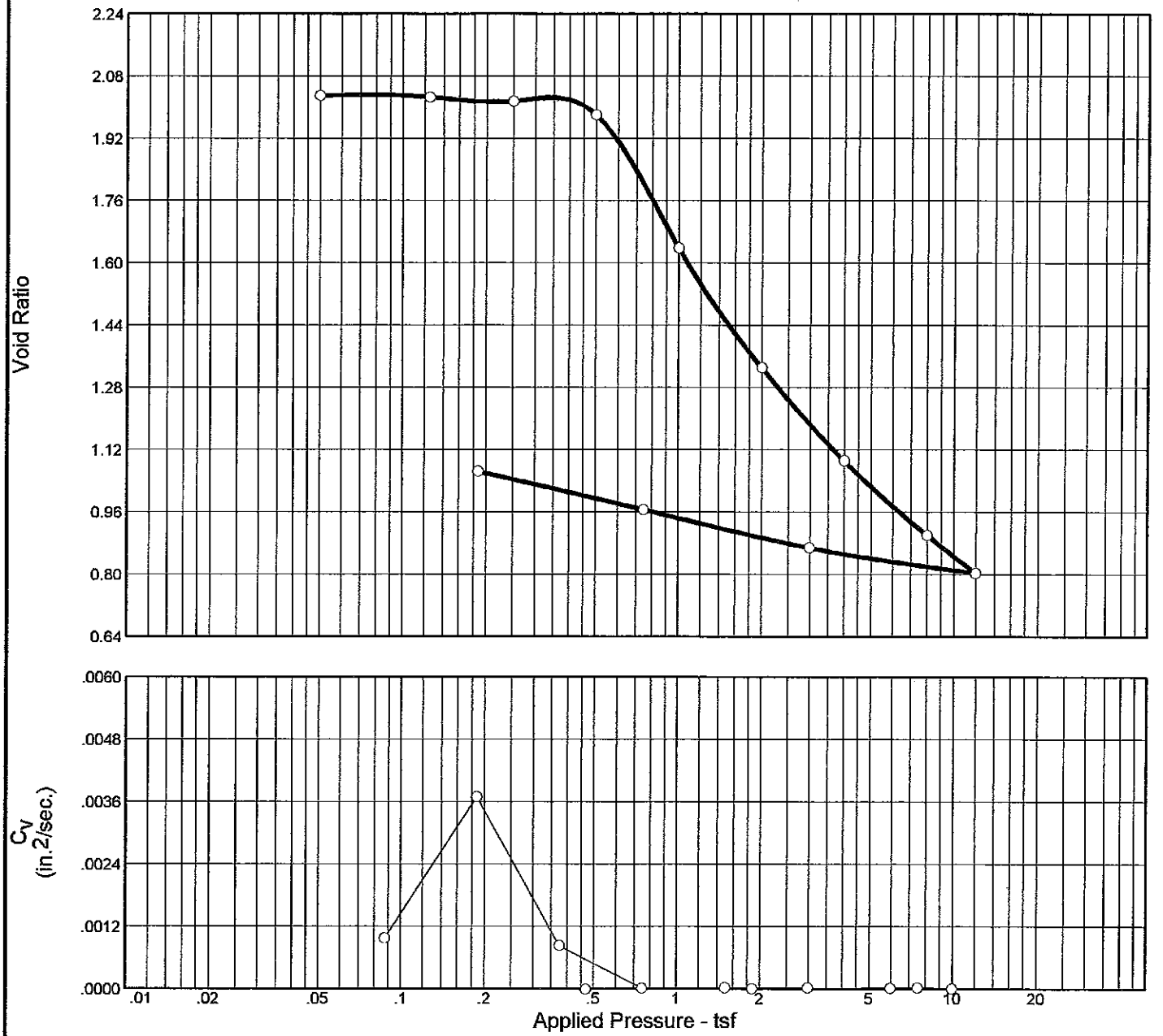
Remarks: _____

Checked By: _____

Stantec Consulting Services Inc.

File Name: Final BSFR-11U_be_boring_log_v1

CONSOLIDATION TEST REPORT



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	P_c (tsf)	C_c	Initial Void Ratio
Saturation	Moisture							
100.9 %	79.9 %	84.4	94	68	2.57	0.40	0.77	2.035

MATERIAL DESCRIPTION	USCS	AASHTO
VSO GR CH4 W/ LYS ML, RT, SIF	CH4	

Project No. 12-017108 **Client:** USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

Source: BSFR-11U **Sample No.:** 5C **Elev./Depth:** 16.0

FFEBJV, LLC

St Rose, LA

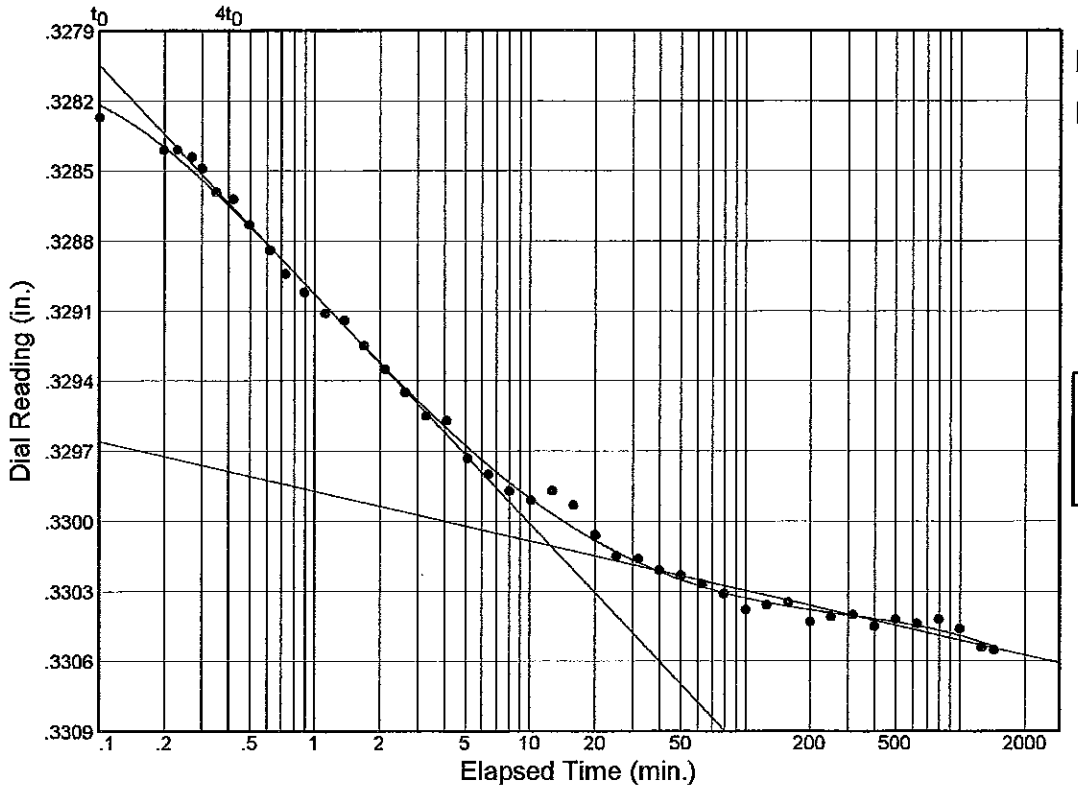
Remarks:

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

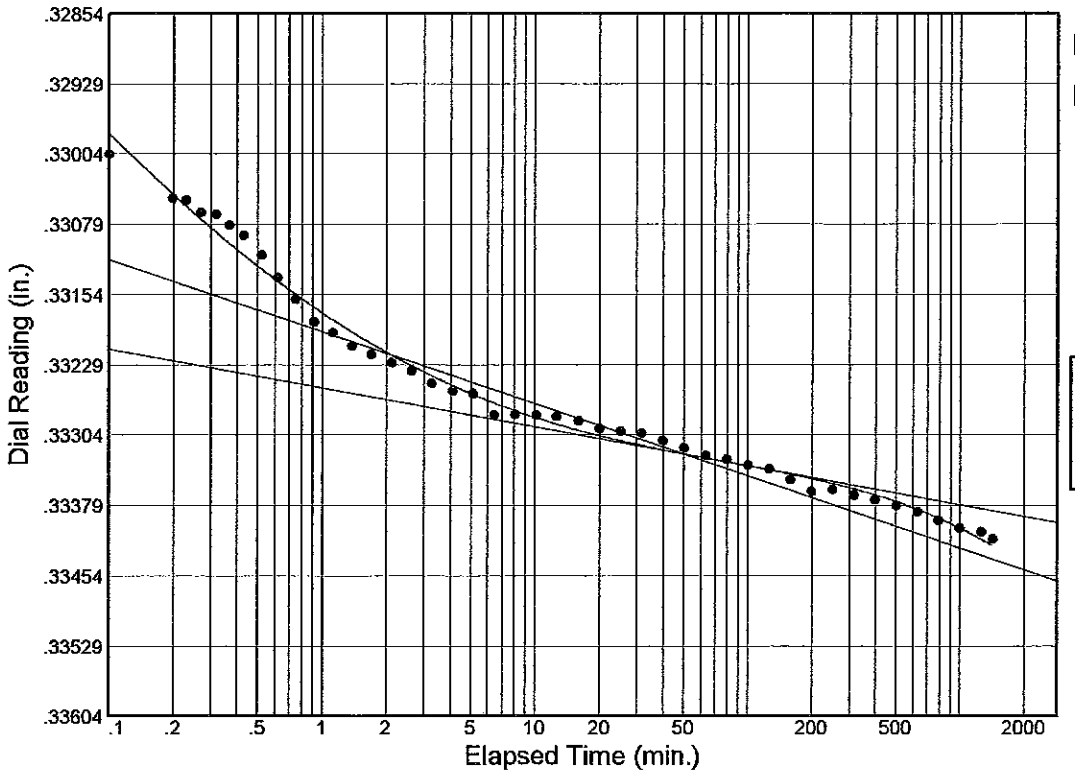
Source: BSFR-11U Sample No.: 5C Elev./Depth: 16.0



Load No.= 2
Load= 0.13 tsf
D_0 = 0.32779
D_{50} = 0.32895
D_{100} = 0.33011
T_{50} = 0.83 min.

C_v @ T_{50}
0.0010 in.^{2}/sec.

C_α = 0.000



Load No.= 3
Load= 0.25 tsf
D_0 = 0.32785
D_{50} = 0.33055
D_{100} = 0.33325
T_{50} = 0.22 min.

C_v @ T_{50}
0.0037 in.^{2}/sec.

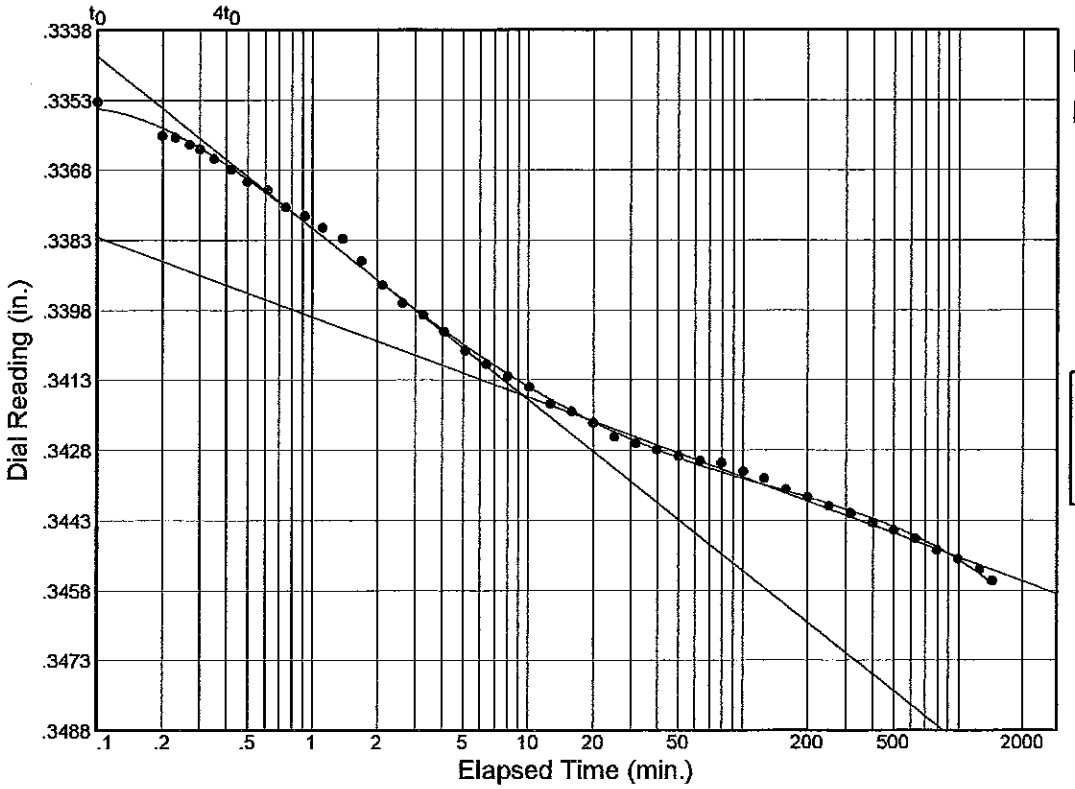
C_α = 0.001

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

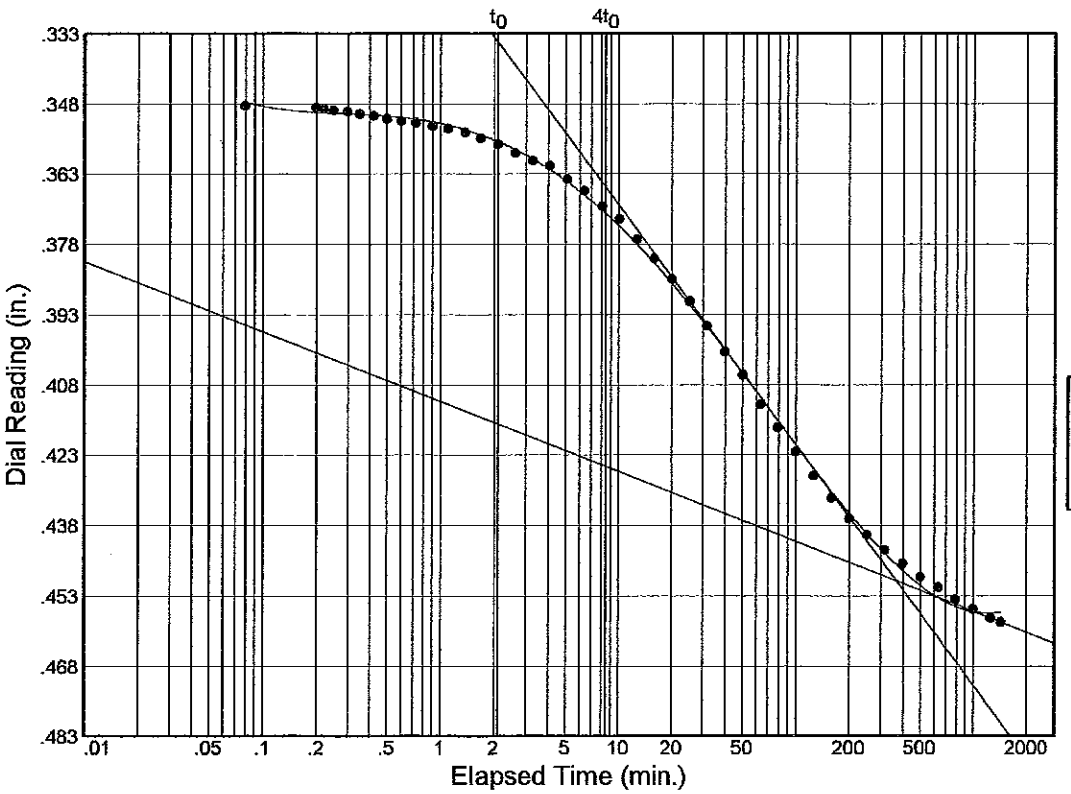
Source: BSFR-11U Sample No.: 5C Elev./Depth: 16.0



Load No.= 4
Load= 0.50 tsf
D_0 = 0.33430
D_{50} = 0.33796
D_{100} = 0.34162
T_{50} = 0.96 min.

C_v @ T_{50}
0.0008 in.^{2}/sec.

C_α = 0.002



Load No.= 5
Load= 1.00 tsf
D_0 = 0.34084
D_{50} = 0.39530
D_{100} = 0.44977
T_{50} = 31.29 min.

C_v @ T_{50}
0.0000 in.^{2}/sec.

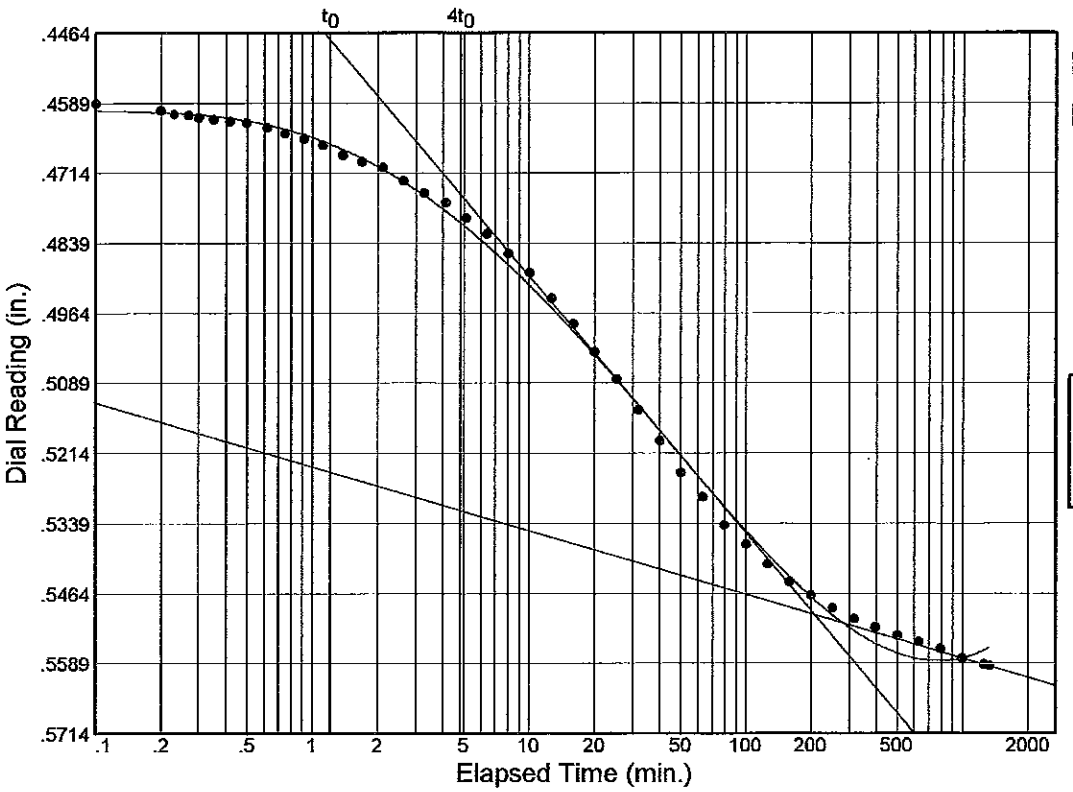
C_α = 0.015

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

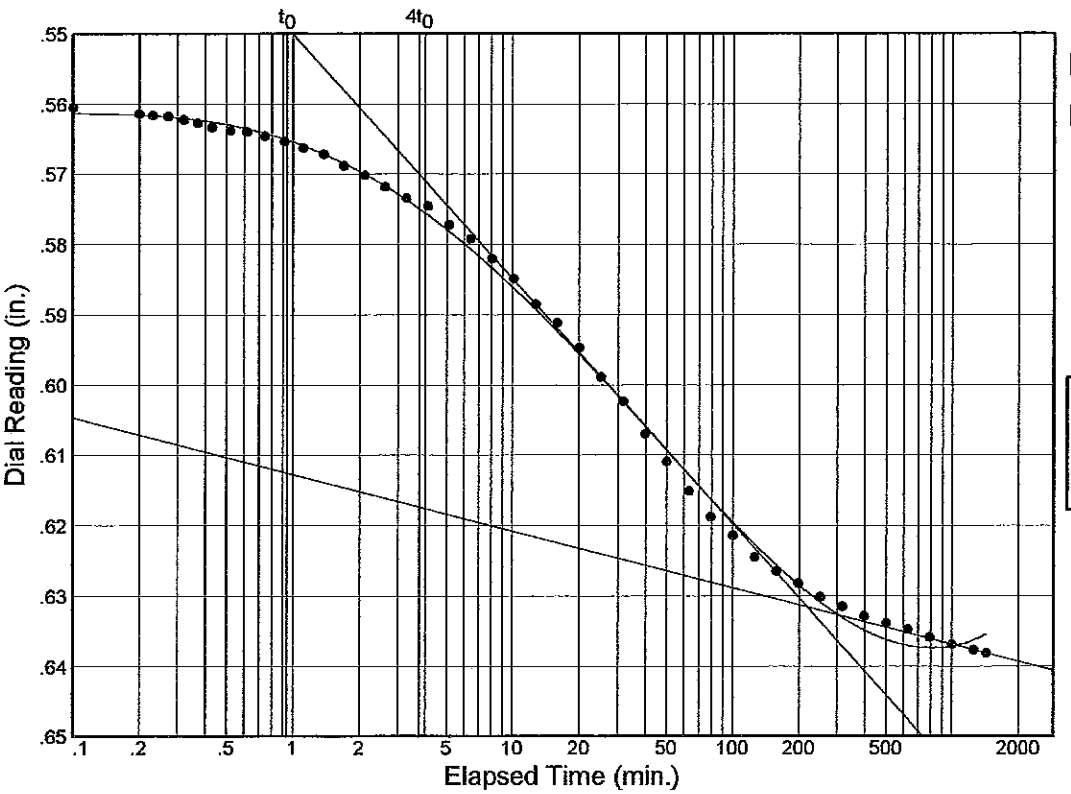
Source: BSFR-11U Sample No.: 5C Elev./Depth: 16.0



Load No.= 6
Load= 2.00 tsf
D_0 = 0.45220
D_{50} = 0.50119
D_{100} = 0.55018
T_{50} = 17.47 min.

C_v @ T_{50}
0.0000 in.^{2}/sec.

C_α = 0.013



Load No.= 7
Load= 4.00 tsf
D_0 = 0.55534
D_{50} = 0.59346
D_{100} = 0.63157
T_{50} = 17.30 min.

C_v @ T_{50}
0.0000 in.^{2}/sec.

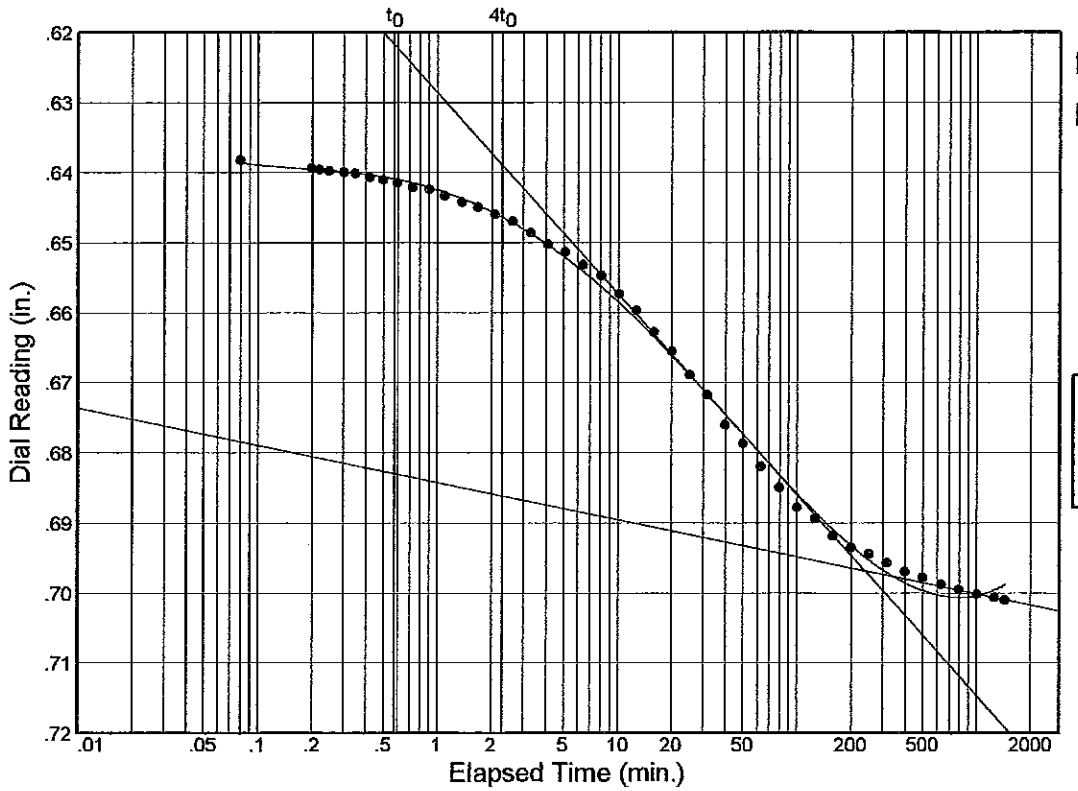
C_α = 0.010

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

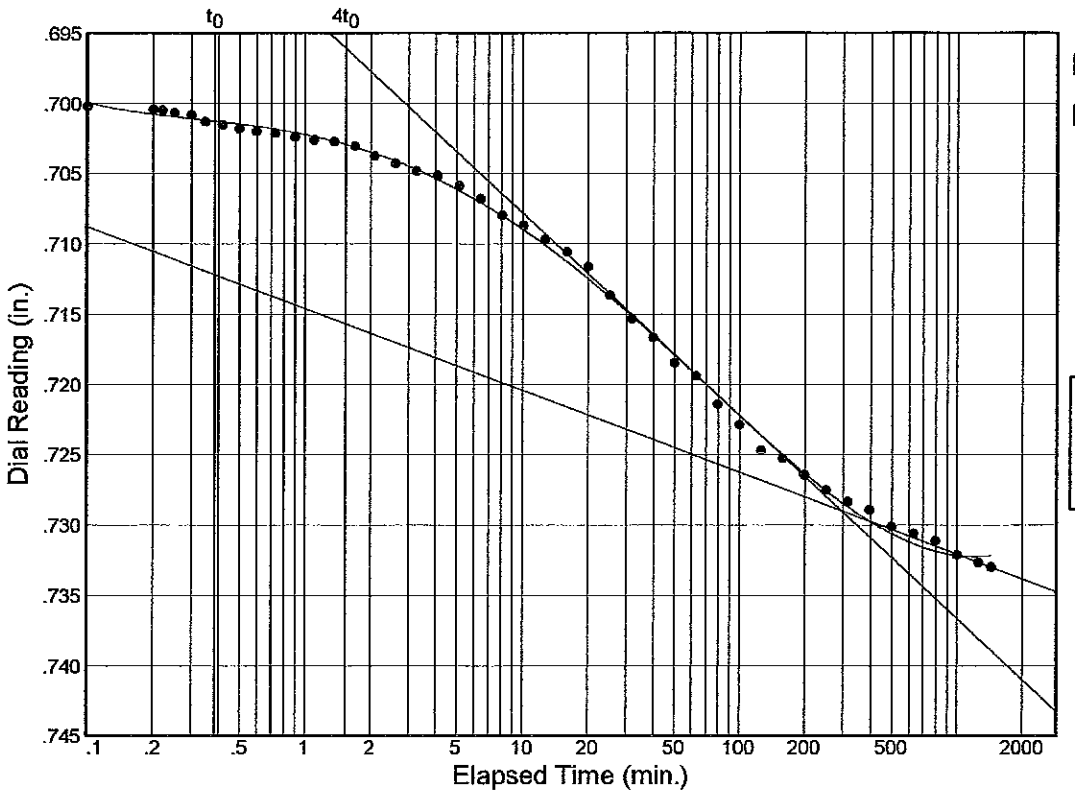
Source: BSFR-11U Sample No.: 5C Elev./Depth: 16.0



Load No.= 8
Load= 8.00 tsf
D_0 = 0.63550
D_{50} = 0.66616
D_{100} = 0.69682
T_{50} = 20.04 min.

C_v @ T_{50}
0.0000 in.^{2}/sec.

C_α = 0.008



Load No.= 9
Load= 12.00 tsf
D_0 = 0.69965
D_{50} = 0.71432
D_{100} = 0.72899
T_{50} = 27.78 min.

C_v @ T_{50}
0.0000 in.^{2}/sec.

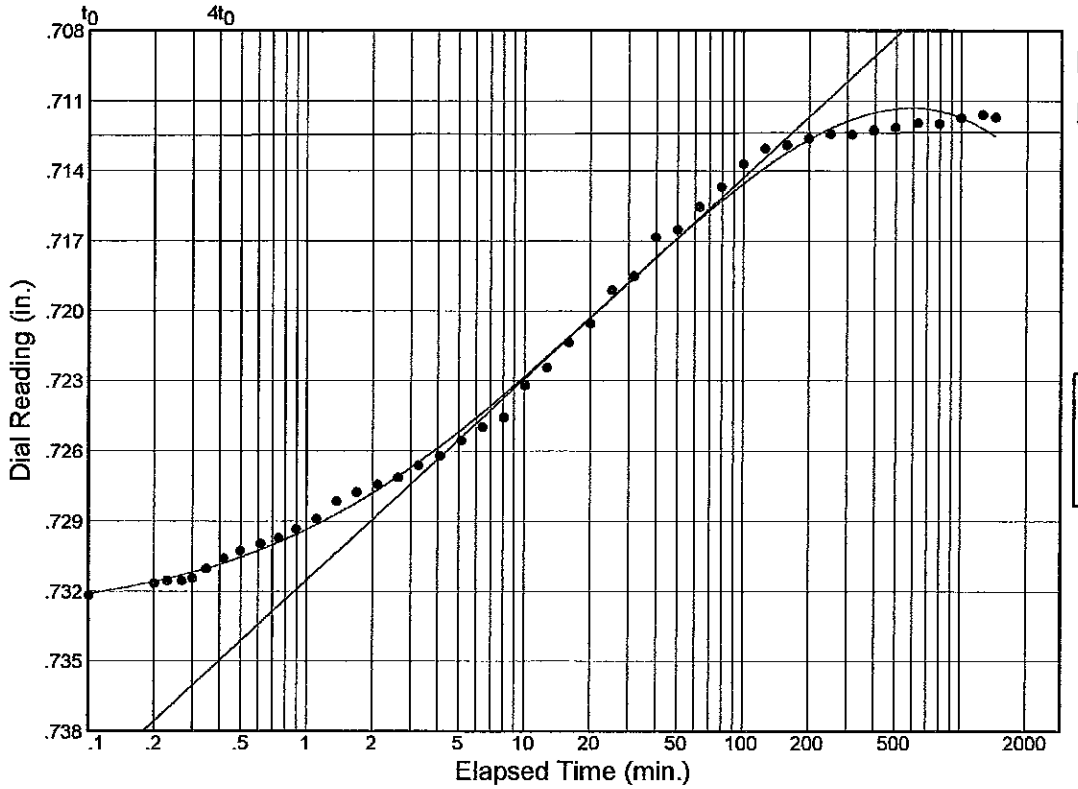
C_α = 0.009

Figure

Dial Reading vs. Time

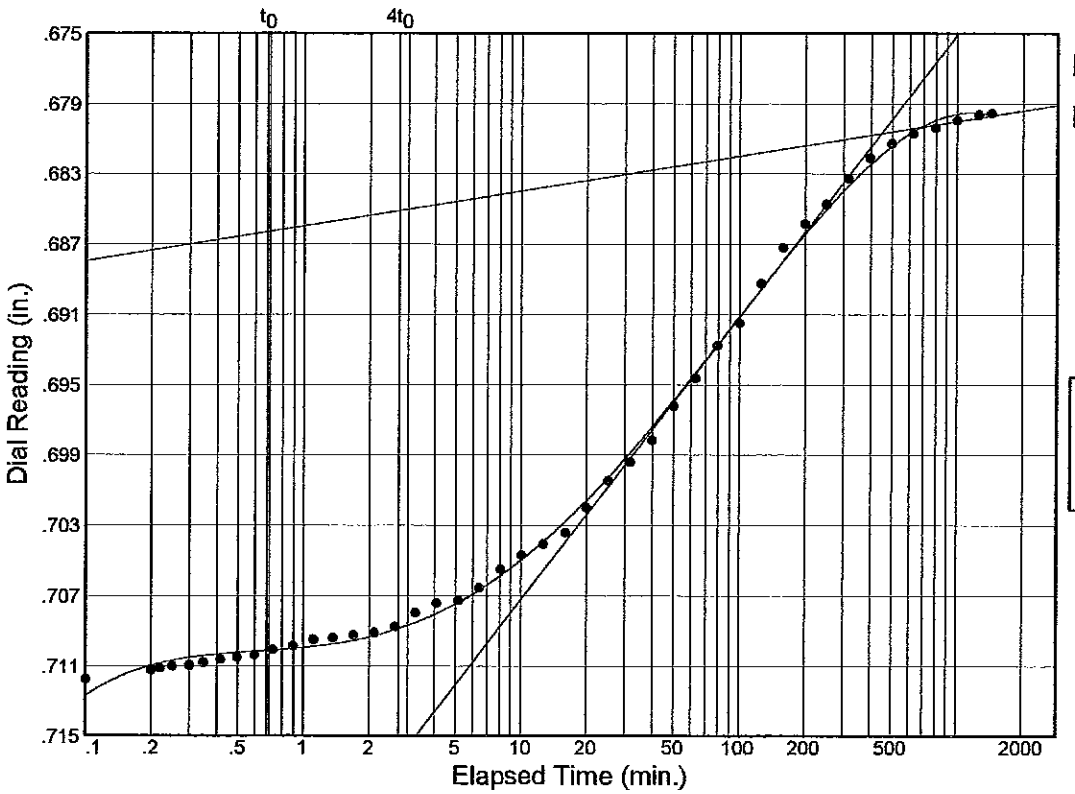
Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

Source: BSFR-11U Sample No.: 5C Elev./Depth: 16.0



Load No.= 10
Load= 3.00 tsf
D_0 = 0.73339
D_{50} = 0.72288
D_{100} = 0.71238
T_{50} = 9.83 min.

C_v @ T_{50}
0.0000 in.^{2}/sec.



Load No.= 11
Load= 0.75 tsf
D_0 = 0.71140
D_{50} = 0.69605
D_{100} = 0.68069
T_{50} = 48.95 min.

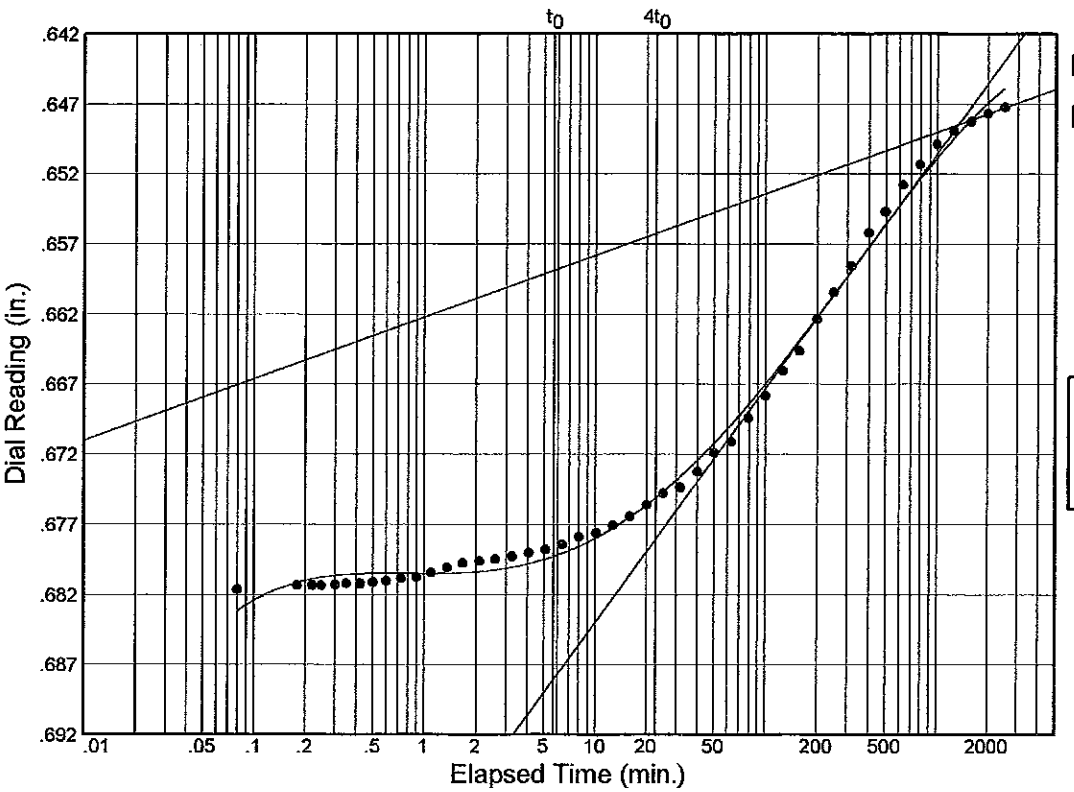
C_v @ T_{50}
0.0000 in.^{2}/sec.

Figure

Dial Reading vs. Time

Project No.: 12-017108
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans

Source: BSFR-11U Sample No.: 5C Elev./Depth: 16.0



Load No.= 12

Load= 0.19 tsf

D_0 = 0.68349

D_{50} = 0.66597

D_{100} = 0.64846

T_{50} = 116.05 min.

C_v @ T_{50}

0.0000 in.^{2}/sec.

CONSOLIDATION TEST DATA

Client: USACE
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans
Project Number: 12-017108

Sample Data

Source: BSFR-11U
Sample No.: 5C
Elev. or Depth: 16.0 **Sample Length(in./cm.):**
Location:
Description: VSO GR CH4 W/ LYS ML, RT, SIF
Liquid Limit: 94 **Plasticity Index:** 68
USCS: CH4 **AASHTO:** **Figure No.:**
Testing Remarks:

Test Specimen Data

TOTAL SAMPLE		BEFORE TEST	AFTER TEST
Wet w+t	= 216.69 g.	Consolidometer # = 1	Wet w+t = 543.85 g.
Dry w+t	= 133.67 g.		Dry w+t = 467.45 g.
Tare Wt.	= 29.78 g.	Spec. Gravity = 2.57	Tare Wt. = 293.37 g.
Height	= 1.00 in.	Height = 1.00 in.	
Diameter	= 3.96 in.	Diameter = 4.00 in.	
Weight	= 491.35 g.	Defl. Table = n/a	
Moisture	= 79.9 %	Ht. Solids = 0.3292 in.	Moisture = 43.9 %
Wet Den.	= 151.8 pcf	Dry Wt. = 277.88 g.	Dry Wt. = 174.08 g.*
Dry Den.	= 84.4 pcf	Void Ratio = 2.035	Void Ratio = 1.064
		Saturation = 100.9 %	

* Final dry weight used in calculations

End-of-Load Summary

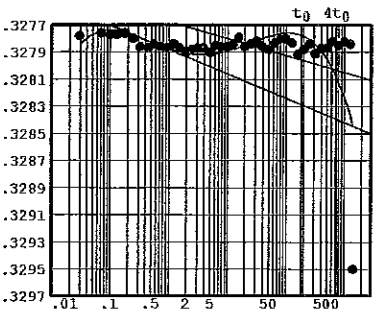
Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (in.^{2}/sec.)	C_α	Void Ratio	% Compression /Swell
start	0.32774				2.035	
0.05	0.32950	0.00000		0.000	2.029	0.2 Comprs.
0.13	0.33055	0.00000	0.0010	0.000	2.026	0.3 Comprs.
0.25	0.33415	0.00000	0.0037	0.001	2.015	0.6 Comprs.
0.50	0.34559	0.00000	0.0008	0.002	1.981	1.8 Comprs.
1.00	0.45863	0.00000	0.0000	0.015	1.637	13.1 Comprs.
2.00	0.55938	0.00000	0.0000	0.013	1.331	23.2 Comprs.
4.00	0.63817	0.00000	0.0000	0.010	1.092	31.1 Comprs.
8.00	0.70097	0.00000	0.0000	0.008	0.901	37.4 Comprs.
12.00	0.73300	0.00000	0.0000	0.009	0.804	40.6 Comprs.
3.00	0.71171	0.00000	0.0000		0.868	38.4 Comprs.

Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C_v (in.^{2}/sec.)	C_α	Void Ratio	% Compression /Swell
0.75	0.67954	0.00000	0.0000		0.966	35.2 Comprs.
0.19	0.64724	0.00000	0.0000		1.064	32.0 Comprs.

C_c = 0.55 P_c = 5.75 tsf C_r = 0.14

Pressure: 0.05 tsf **TEST READINGS** **Load No. 1**

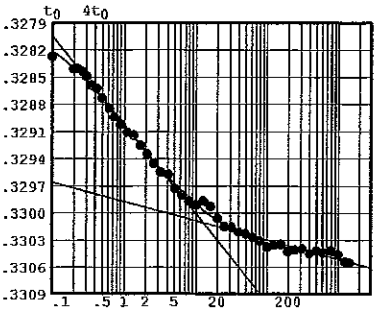
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.32774	23	12.55	0.32784
2	0.03	0.32778	24	15.80	0.32779
3	0.07	0.32776	25	19.92	0.32786
4	0.10	0.32777	26	25.08	0.32784
5	0.13	0.32777	27	31.58	0.32782
6	0.18	0.32776	28	39.77	0.32786
7	0.25	0.32780	29	50.08	0.32788
8	0.33	0.32786	30	63.07	0.32783
9	0.45	0.32787	31	79.40	0.32780
10	0.57	0.32784	32	99.97	0.32780
11	0.73	0.32786	33	125.87	0.32783
12	0.95	0.32787	34	158.47	0.32792
13	1.20	0.32784	35	199.50	0.32788
14	1.53	0.32787	36	251.17	0.32784
15	1.95	0.32790	37	316.20	0.32791
16	2.47	0.32788	38	398.08	0.32787
17	3.12	0.32787	39	501.17	0.32787
18	3.93	0.32787	40	630.93	0.32782
19	4.97	0.32790	41	794.30	0.32785
20	6.27	0.32785	42	999.98	0.32782
21	7.90	0.32786	43	1258.90	0.32784
22	9.95	0.32786	44	1440.35	0.32950



Void Ratio = 2.029 **Compression** = 0.2 %

Pressure: 0.13 tsf | TEST READINGS | Load No. 2

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.32767	24	12.72	0.32987
2	0.10	0.32827	25	15.98	0.32993
3	0.20	0.32841	26	20.08	0.33006
4	0.23	0.32841	27	25.25	0.33015
5	0.27	0.32844	28	31.77	0.33016
6	0.30	0.32849	29	39.95	0.33021
7	0.35	0.32859	30	50.27	0.33023
8	0.42	0.32862	31	63.23	0.33027
9	0.50	0.32873	32	79.58	0.33031
10	0.62	0.32884	33	100.15	0.33038
11	0.73	0.32894	34	126.03	0.33036
12	0.90	0.32902	35	158.63	0.33035
13	1.12	0.32911	36	199.67	0.33043
14	1.37	0.32914	37	251.33	0.33041
15	1.70	0.32925	38	316.38	0.33040
16	2.12	0.32935	39	398.25	0.33045
17	2.63	0.32945	40	501.33	0.33042
18	3.28	0.32955	41	631.12	0.33044
19	4.10	0.32957	42	794.48	0.33042
20	5.13	0.32973	43	1000.15	0.33046
21	6.43	0.32980	44	1259.08	0.33054
22	8.07	0.32987	45	1440.47	0.33055
23	10.13	0.32991			



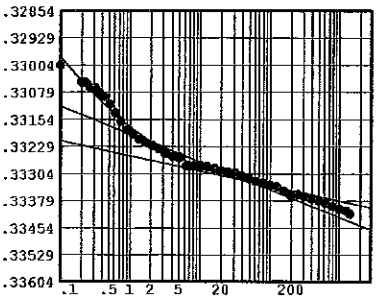
Void Ratio = 2.026 **Compression** = 0.3 %

D_0 = 0.32779 D_{50} = 0.32895 D_{100} = 0.33011

C_v **at 0.8 min.** = 0.0010 in.^{2}/sec. C_α = 0.000

Pressure: 0.25 tsf | TEST READINGS | Load No. 3

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.32785	24	12.72	0.33284
2	0.10	0.33004	25	15.98	0.33289
3	0.20	0.33051	26	20.08	0.33297
4	0.23	0.33053	27	25.25	0.33300
5	0.27	0.33066	28	31.77	0.33302
6	0.32	0.33068	29	39.95	0.33310
7	0.37	0.33080	30	50.27	0.33318
8	0.43	0.33091	31	63.25	0.33326
9	0.52	0.33112	32	79.58	0.33330
10	0.62	0.33136	33	100.15	0.33336
11	0.75	0.33159	34	126.05	0.33340
12	0.92	0.33183	35	158.65	0.33352
13	1.12	0.33195	36	199.68	0.33364
14	1.38	0.33209	37	251.35	0.33362
15	1.70	0.33218	38	316.38	0.33368
16	2.12	0.33227	39	398.27	0.33373
17	2.63	0.33236	40	501.35	0.33379
18	3.28	0.33249	41	631.12	0.33386
19	4.12	0.33257	42	794.50	0.33395
20	5.13	0.33260	43	1000.17	0.33403
21	6.43	0.33283	44	1259.10	0.33407
22	8.07	0.33282	45	1426.73	0.33415
23	10.13	0.33283			



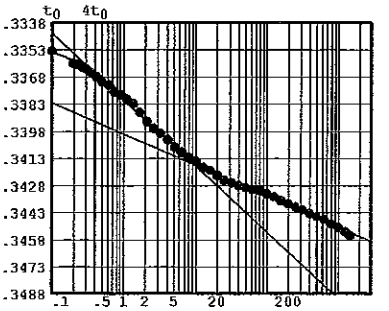
Void Ratio = 2.015 **Compression** = 0.6 %

D_0 = 0.32785 D_{50} = 0.33055 D_{100} = 0.33325

C_v **at 0.2 min.** = 0.0037 in.^{2}/sec. C_α = 0.001

Pressure: 0.50 tsf | TEST READINGS | Load No. 4

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.33213	24	12.72	0.34181
2	0.10	0.33534	25	15.98	0.34197
3	0.20	0.33606	26	20.08	0.34222
4	0.23	0.33611	27	25.25	0.34252
5	0.27	0.33625	28	31.77	0.34265
6	0.30	0.33635	29	39.95	0.34279
7	0.35	0.33656	30	50.27	0.34292
8	0.42	0.33679	31	63.25	0.34302
9	0.50	0.33705	32	79.58	0.34307
10	0.62	0.33723	33	100.15	0.34326
11	0.75	0.33760	34	126.05	0.34341
12	0.92	0.33778	35	158.63	0.34364
13	1.12	0.33803	36	199.68	0.34380
14	1.38	0.33827	37	251.35	0.34399
15	1.70	0.33875	38	316.38	0.34415
16	2.12	0.33926	39	398.27	0.34435
17	2.63	0.33965	40	501.35	0.34451
18	3.28	0.33991	41	631.12	0.34469
19	4.10	0.34026	42	794.48	0.34494
20	5.13	0.34067	43	1000.17	0.34513
21	6.43	0.34096	44	1259.08	0.34535
22	8.07	0.34122	45	1440.08	0.34559
23	10.13	0.34145			



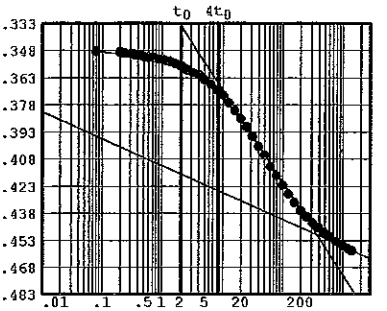
Void Ratio = 1.981 **Compression** = 1.8 %

D_0 = 0.33430 D_{50} = 0.33796 D_{100} = 0.34162

C_v **at 1.0 min.** = 0.0008 in.^{2}/sec. C_α = 0.002

Pressure: 1.00 tsf | TEST READINGS | Load No. 5

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.34228	24	12.72	0.37690
2	0.08	0.34837	25	15.97	0.38105
3	0.20	0.34883	26	20.07	0.38546
4	0.22	0.34906	27	25.25	0.39014
5	0.25	0.34936	28	31.75	0.39542
6	0.30	0.34959	29	39.93	0.40094
7	0.35	0.35018	30	50.25	0.40586
8	0.42	0.35058	31	63.23	0.41218
9	0.50	0.35118	32	79.57	0.41716
10	0.60	0.35166	33	100.13	0.42236
11	0.73	0.35200	34	126.03	0.42740
12	0.90	0.35278	35	158.63	0.43221
13	1.10	0.35328	36	199.67	0.43650
14	1.37	0.35406	37	251.33	0.43991
15	1.68	0.35533	38	316.37	0.44323
16	2.10	0.35658	39	398.25	0.44606
17	2.62	0.35855	40	501.33	0.44898
18	3.27	0.36015	41	631.10	0.45120
19	4.10	0.36121	42	794.48	0.45382
20	5.13	0.36415	43	1000.15	0.45581
21	6.42	0.36661	44	1259.08	0.45776
22	8.07	0.36980	45	1440.00	0.45863
23	10.12	0.37261			



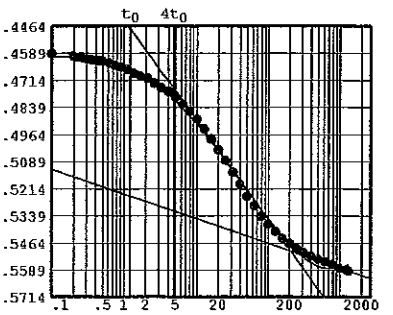
Void Ratio = 1.637 **Compression** = 13.1 %

D_0 = 0.34084 D_{50} = 0.39530 D_{100} = 0.44977

C_v **at 31.3 min.** = 0.0000 in.^{2}/sec. C_α = 0.015

Pressure: 2.00 tsf | TEST READINGS | Load No. 6

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.45386	24	12.72	0.49374
2	0.10	0.45897	25	15.98	0.49835
3	0.20	0.46024	26	20.08	0.50334
4	0.23	0.46089	27	25.25	0.50826
5	0.27	0.46111	28	31.77	0.51366
6	0.30	0.46147	29	39.95	0.51920
7	0.35	0.46188	30	50.27	0.52482
8	0.42	0.46218	31	63.23	0.52920
9	0.50	0.46245	32	79.58	0.53414
10	0.62	0.46333	33	100.15	0.53765
11	0.75	0.46434	34	126.03	0.54116
12	0.92	0.46522	35	158.63	0.54431
13	1.12	0.46646	36	199.67	0.54673
14	1.38	0.46818	37	251.33	0.54905
15	1.70	0.46933	38	316.38	0.55090
16	2.12	0.47045	39	398.27	0.55246
17	2.63	0.47284	40	501.33	0.55385
18	3.28	0.47491	41	631.12	0.55506
19	4.12	0.47664	42	794.48	0.55627
20	5.13	0.47943	43	1000.17	0.55805
21	6.43	0.48228	44	1259.08	0.55908
22	8.08	0.48580	45	1337.78	0.55938
23	10.13	0.48917			



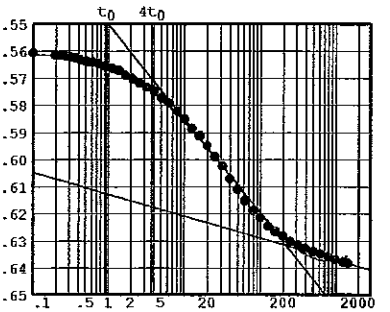
Void Ratio = 1.331 **Compression** = 23.2 %

D_0 = 0.45220 D_{50} = 0.50119 D_{100} = 0.55018

C_v **at 17.5 min.** = 0.0000 in.^{2}/sec. C_α = 0.013

Pressure: 4.00 tsf | TEST READINGS | Load No. 7

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.55383	24	12.72	0.58847
2	0.10	0.56052	25	15.98	0.59115
3	0.20	0.56141	26	20.08	0.59474
4	0.23	0.56159	27	25.25	0.59890
5	0.27	0.56179	28	31.75	0.60232
6	0.32	0.56224	29	39.95	0.60697
7	0.37	0.56268	30	50.25	0.61091
8	0.43	0.56337	31	63.23	0.61509
9	0.52	0.56381	32	79.57	0.61877
10	0.62	0.56400	33	100.13	0.62138
11	0.75	0.56462	34	126.03	0.62452
12	0.92	0.56538	35	158.63	0.62649
13	1.12	0.56628	36	199.67	0.62822
14	1.38	0.56714	37	251.33	0.63017
15	1.70	0.56883	38	316.38	0.63152
16	2.12	0.57019	39	398.25	0.63288
17	2.63	0.57179	40	501.33	0.63393
18	3.28	0.57338	41	631.12	0.63481
19	4.10	0.57460	42	794.48	0.63586
20	5.13	0.57718	43	1000.15	0.63692
21	6.43	0.57919	44	1259.08	0.63770
22	8.07	0.58207	45	1440.10	0.63817
23	10.13	0.58486			



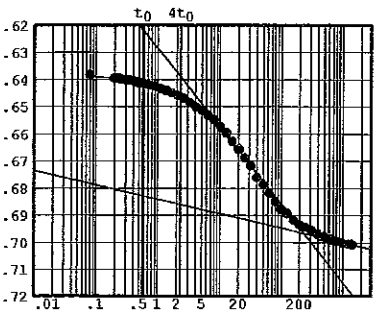
Void Ratio = 1.092 **Compression** = 31.1 %

D_0 = 0.55534 D_{50} = 0.59346 D_{100} = 0.63157

C_v **at 17.3 min.** = 0.0000 in.^{2}/sec. C_α = 0.010

Pressure: 8.00 tsf | TEST READINGS | Load No. 8

No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading
1	0.00	0.62817	24	12.70	0.65968
2	0.08	0.63818	25	15.97	0.66283
3	0.20	0.63941	26	20.07	0.66554
4	0.22	0.63953	27	25.23	0.66891
5	0.25	0.63971	28	31.75	0.67174
6	0.30	0.63990	29	39.93	0.67604
7	0.35	0.64012	30	50.25	0.67864
8	0.42	0.64064	31	63.22	0.68198
9	0.50	0.64103	32	79.57	0.68493
10	0.60	0.64149	33	100.13	0.68775
11	0.73	0.64210	34	126.02	0.68944
12	0.90	0.64240	35	158.62	0.69190
13	1.10	0.64332	36	199.67	0.69351
14	1.37	0.64422	37	251.32	0.69442
15	1.68	0.64495	38	316.37	0.69569
16	2.10	0.64591	39	398.25	0.69698
17	2.62	0.64693	40	501.33	0.69783
18	3.27	0.64856	41	631.10	0.69876
19	4.10	0.65021	42	794.47	0.69949
20	5.12	0.65135	43	1000.15	0.70018
21	6.42	0.65316	44	1259.07	0.70066
22	8.05	0.65470	45	1440.12	0.70097
23	10.12	0.65736			

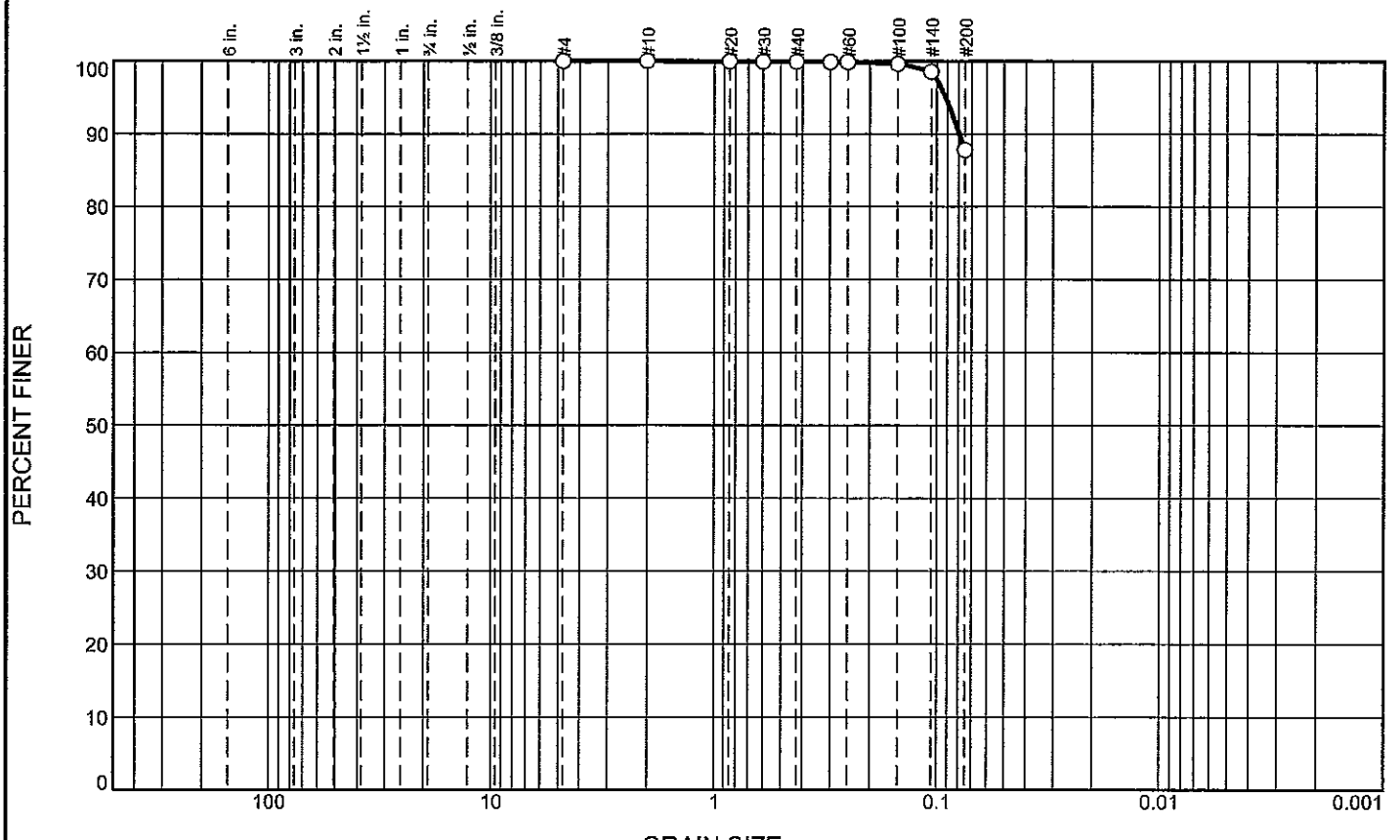


Void Ratio = 0.901 **Compression** = 37.4 %

D_0 = 0.63550 D_{50} = 0.66616 D_{100} = 0.69682

C_v **at 20.0 min.** = 0.0000 in.^{2}/sec. C_α = 0.008

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.1	12.1	87.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	100.0		
#20	100.0		
#30	99.9		
#40	99.9		
#50	99.9		
#60	99.9		
#100	99.6		
#140	98.6		
#200	87.8		

* (no specification provided)

Soil Description

GR ML W/ LYS CH, RT

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.0795 D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= ML AASHTO=

Remarks

Source of Sample: BSFR-11U **Depth:** 9.0
Sample Number: 3D **Date:** 7-31-12

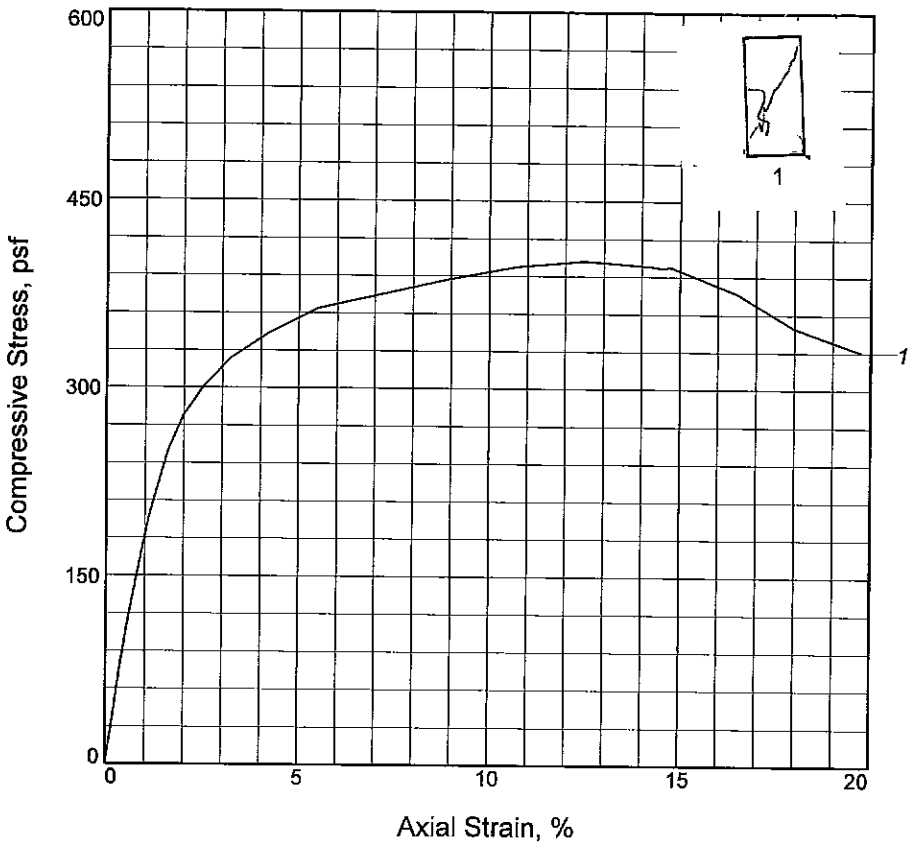
Stantec

Saint Rose, Louisiana

Client: USACE
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Project No: 12-017108 **Figure**

Tested By: JC **Checked By:** JS

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	402			
Undrained shear strength, psf	201			
Failure strain, %	12.5			
Strain rate, in./min.	1.000			
Water content, %	101.2			
Wet density, pcf	101.3			
Dry density, pcf	50.3			
Saturation, %	115.6			
Void ratio	2.3993			
Specimen diameter, in.	1.383			
Specimen height, in.	2.996			
Height/diameter ratio	2.17			

Description: VSO GR CH4 W/ O, RT, WD

LL = 99	**PL =** 40	**PI =** 59	**Assumed GS=** 2.74	**Type:** UNDISTURBED

Project No.: 12-017108
Date Sampled: 7-31-12

Remarks:
Torvane=0.39 tsf

Figure _____

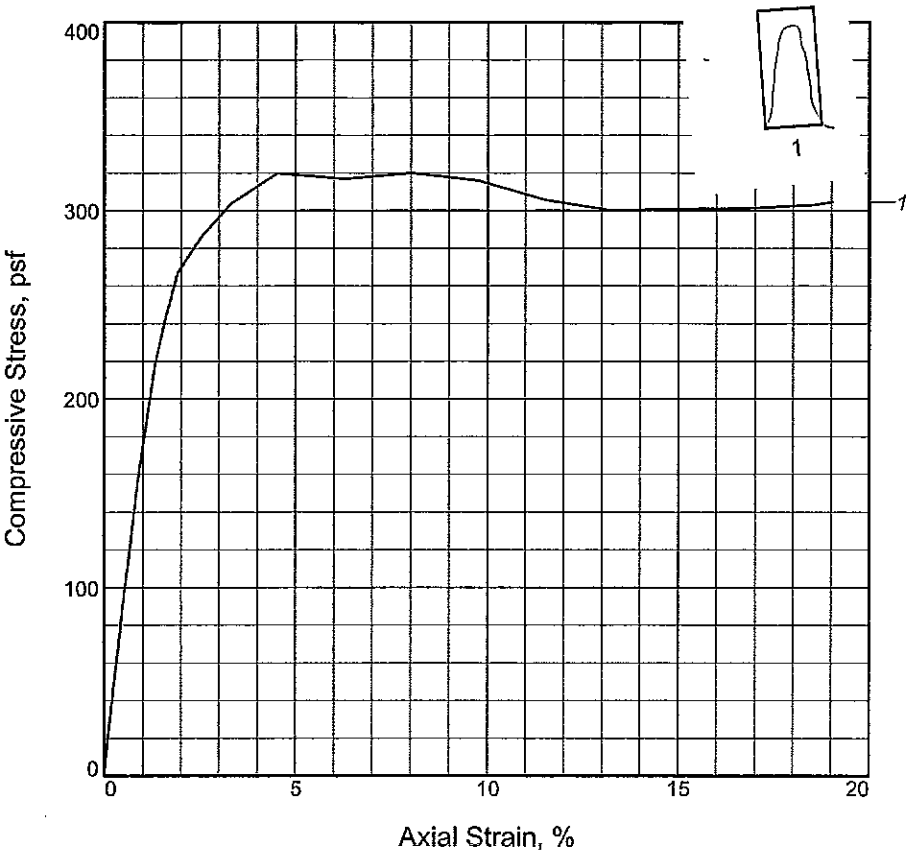
Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-11U **Depth:** 4.0
Sample Number: 2C

UNCONFINED COMPRESSION TEST
Stantec
Saint Rose, Louisiana

Tested By: JC

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	320			
Undrained shear strength, psf	160			
Failure strain, %	4.5			
Strain rate, in./min.	0.611			
Water content, %	111.8			
Wet density, pcf	100.8			
Dry density, pcf	47.6			
Saturation, %	118.1			
Void ratio	2.5941			
Specimen diameter, in.	1.386			
Specimen height, in.	2.996			
Height/diameter ratio	2.16			

Description: VSO GR CH4 W/ LYS & LNS SM

LL = 75	**PL =** 19	**PI =** 56	**Assumed GS=** 2.74	**Type:** UNDISTURBED

Project No.: 12-017108
Date Sampled: 7-31-12
Remarks:
Torvane=0.23 tsf

Figure _____

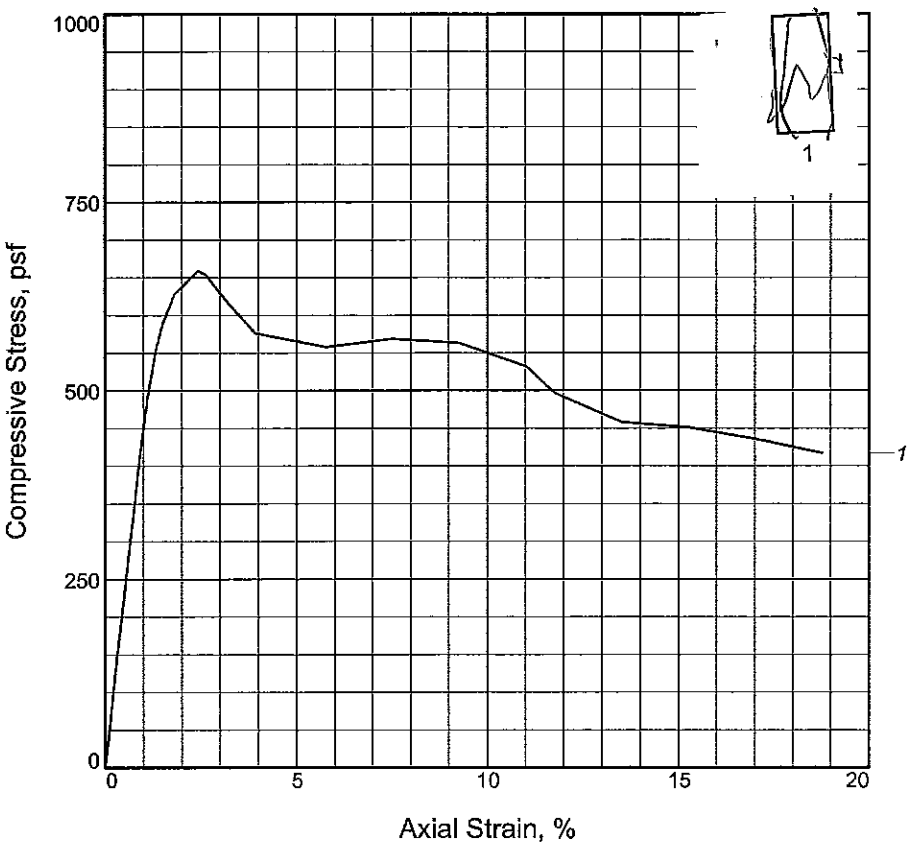
Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-11U **Depth:** 11.0
Sample Number: 4B

UNCONFINED COMPRESSION TEST
Stantec
Saint Rose, Louisiana

Tested By: JC

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	659			
Undrained shear strength, psf	329			
Failure strain, %	2.4			
Strain rate, in./min.	1.000			
Water content, %	36.4			
Wet density, pcf	115.5			
Dry density, pcf	84.7			
Saturation, %	99.2			
Void ratio	0.9894			
Specimen diameter, in.	1.375			
Specimen height, in.	3.001			
Height/diameter ratio	2.18			

Description: SO GR CL4 W/ ARS SM, SIF

LL = 39	**PL =** 17	**PI =** 22	**Assumed GS=** 2.70	**Type:** UNDISTURBED

Project No.: 12-017108
Date Sampled: 7-31-12
Remarks:
Torvane=0.25 tsf

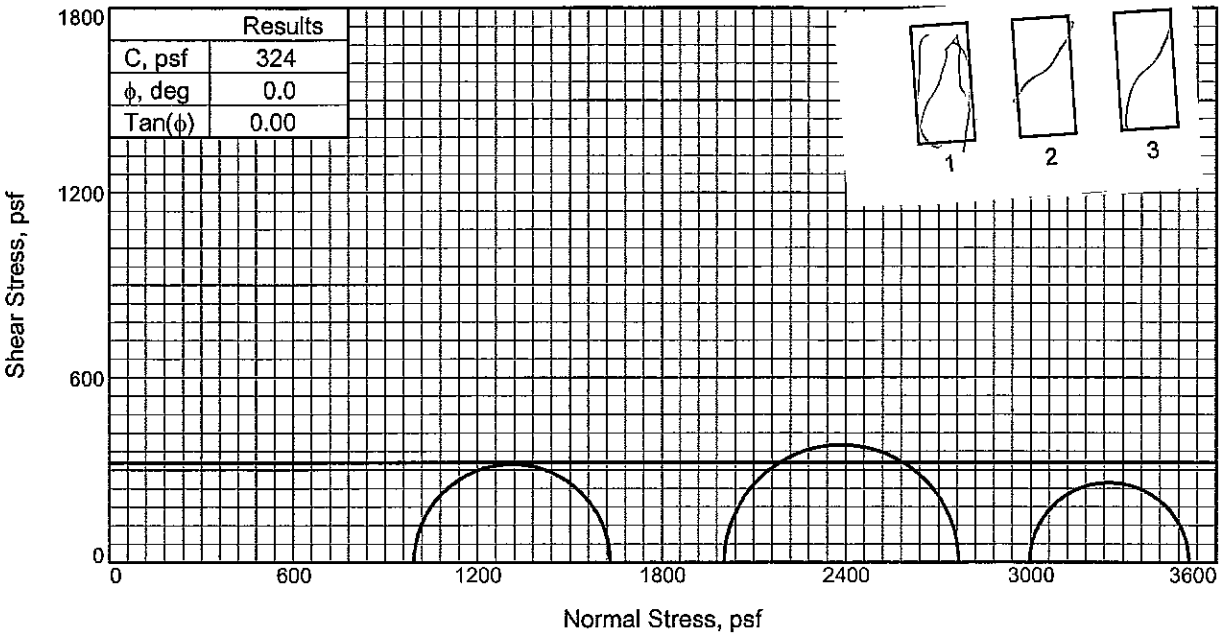
Figure _____

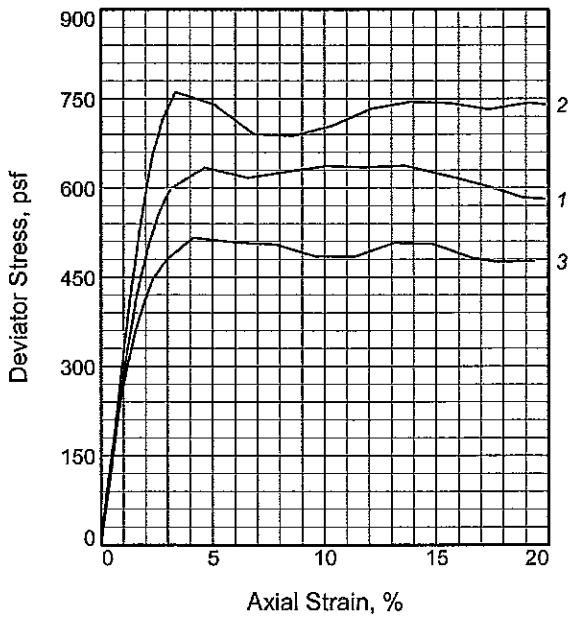
Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-11U **Depth:** 19.0
Sample Number: 6B

UNCONFINED COMPRESSION TEST
Stantec
Saint Rose, Louisiana

Tested By: JC





Sample No.		1	2	3
Initial	Water Content, %	74.4	44.9	51.8
	Dry Density, pcf	62.8	77.4	71.3
	Saturation, %	118.4	101.6	101.6
	Void Ratio	1.7222	1.2111	1.3980
	Diameter, in.	1.387	1.386	1.382
	Height, in.	2.996	3.003	2.988
At Test	Water Content, %	74.4	44.9	51.8
	Dry Density, pcf	62.8	77.4	71.3
	Saturation, %	118.4	101.6	101.6
	Void Ratio	1.7222	1.2111	1.3980
	Diameter, in.	1.387	1.386	1.382
	Height, in.	2.996	3.003	2.988
Strain rate, in./min.		1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.90	13.92	20.81
Fail. Stress, psf		637	761	516
Strain, %		10.1	3.3	4.2
Ult. Stress, psf		635	688	484
Strain, %		11.8	8.6	11.3
σ_1 Failure, psf		1630	2766	3513
σ_3 Failure, psf		994	2004	2997

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: SO GR CH2 W/ LYS & LNS SM, RT

LL= 56 **PL=** 17 **PI=** 39
Assumed Specific Gravity= 2.74
Remarks: Torvane=0.37 tsf

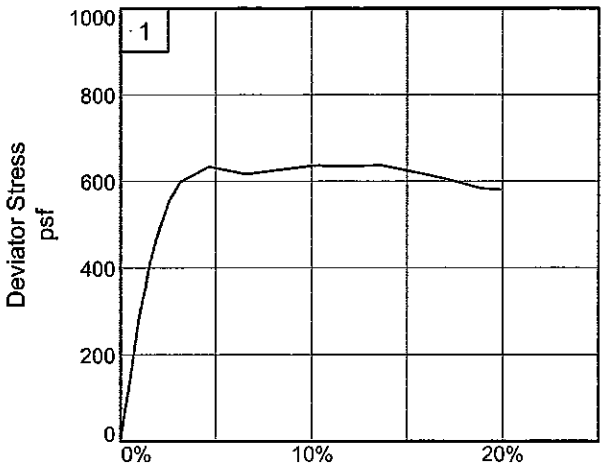
Figure _____

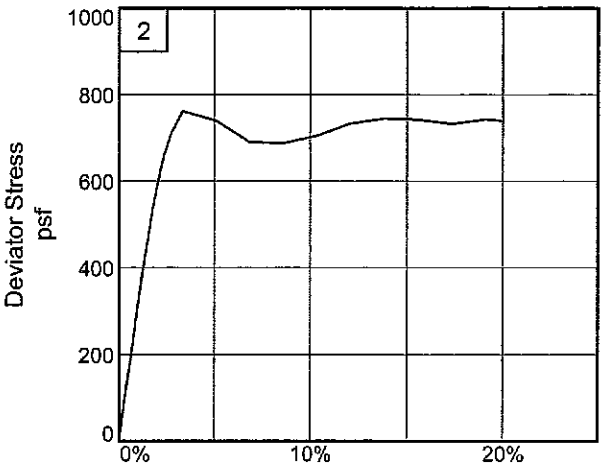
Client: USACE

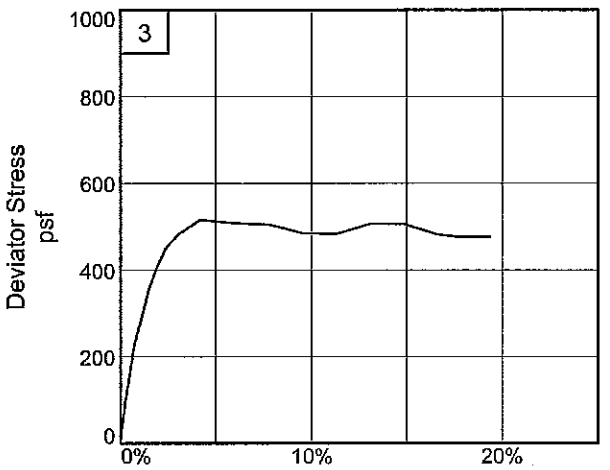
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-11U **Depth:** 7.0
Sample Number: 3B
Proj. No.: 12-017108 **Date Sampled:** 7-31-12

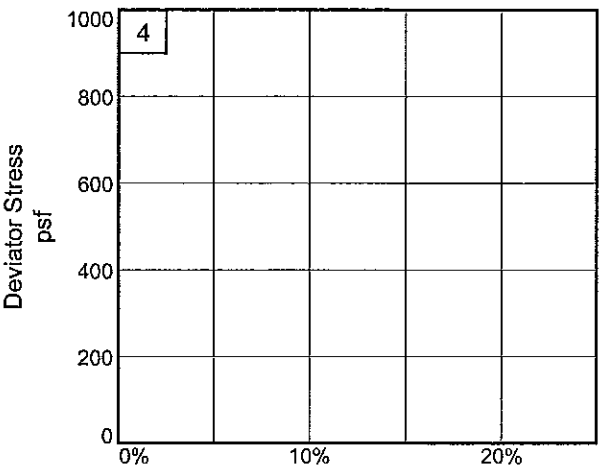
TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

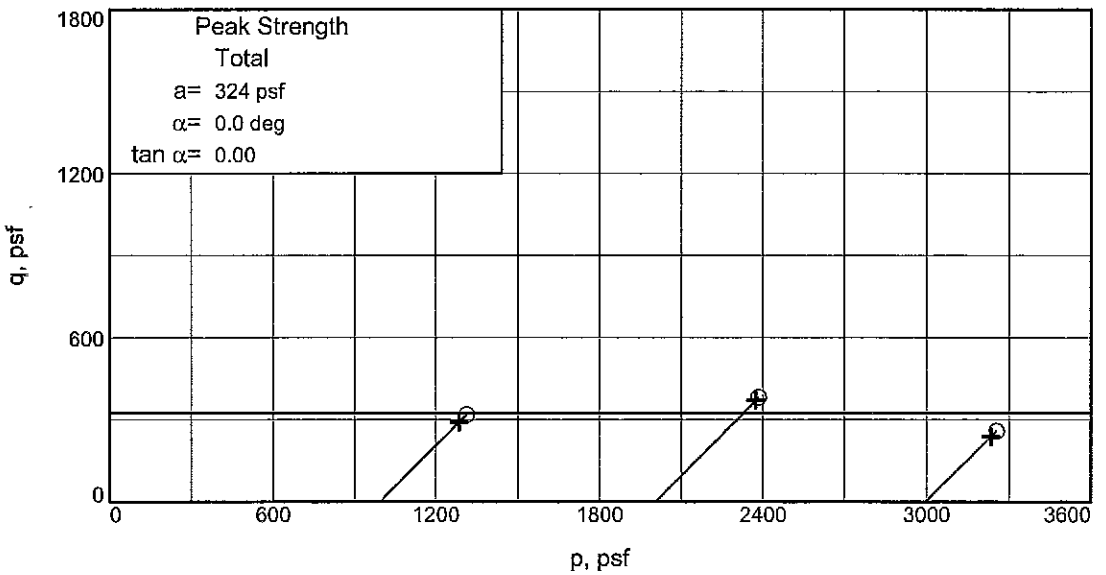
Tested By: JC **Checked By:** JS











Stress Paths: o indicates peak + indicates end

Client: USACE

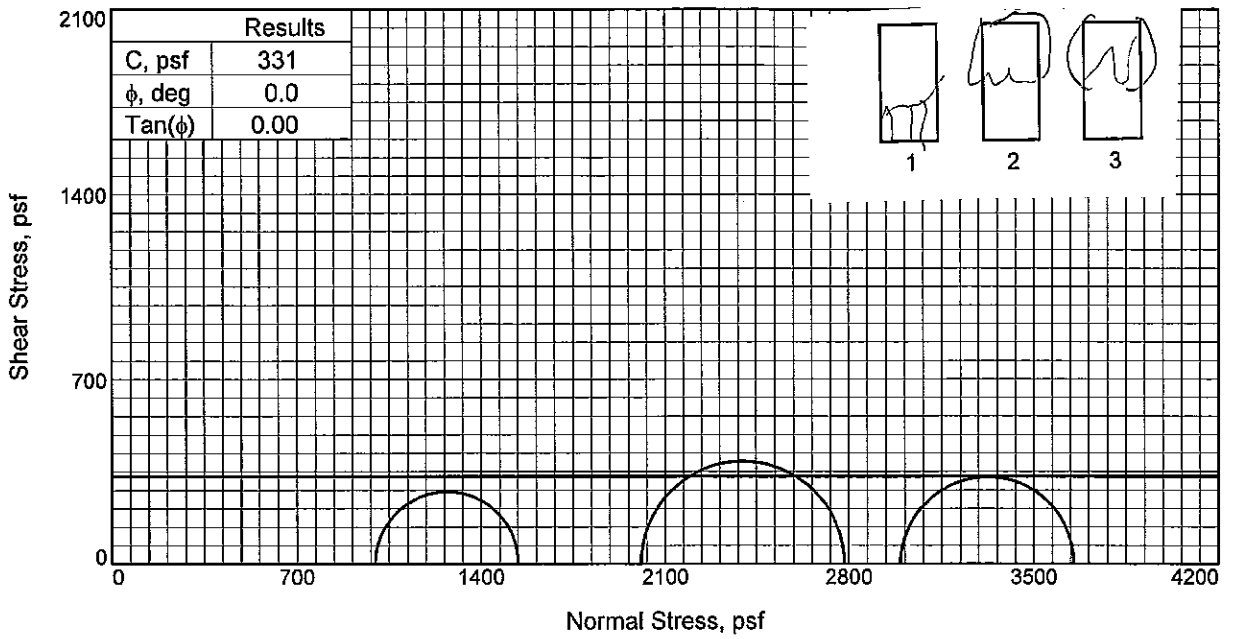
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

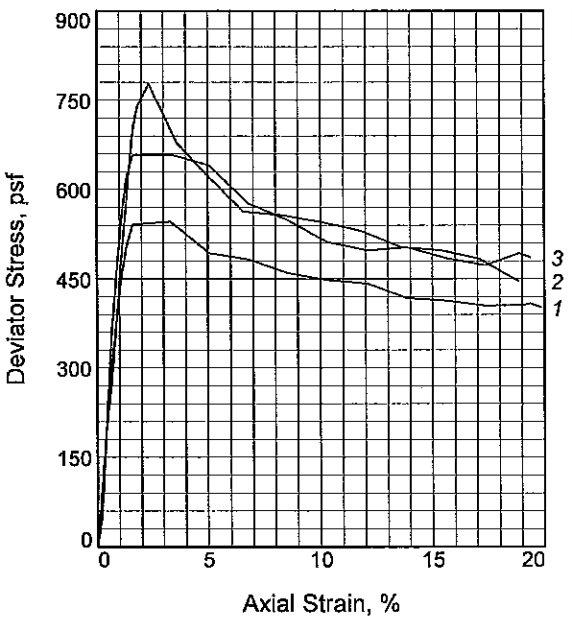
Source of Sample: BSFR-11U **Depth:** 7.0 **Sample Number:** 3B

Project No.: 12-017108 **Figure** _____

Stantec, Inc.

Tested By: JC **Checked By:** JS





Sample No.		1	2	3
Initial	Water Content, %	75.7	72.3	77.8
	Dry Density, pcf	56.1	57.4	54.4
	Saturation, %	101.6	100.3	99.9
	Void Ratio	2.0266	1.9605	2.1188
	Diameter, in.	1.383	1.378	1.385
	Height, in.	3.006	3.003	2.996
At Test	Water Content, %	75.7	72.3	77.8
	Dry Density, pcf	56.1	57.4	54.4
	Saturation, %	101.6	100.3	99.9
	Void Ratio	2.0266	1.9605	2.1188
	Diameter, in.	1.383	1.378	1.385
	Height, in.	3.006	3.003	2.996
Strain rate, in./min.		1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.92	13.94	20.80
Fail. Stress, psf		546	777	658
Strain, %		3.3	2.3	1.6
Ult. Stress, psf		418	502	497
Strain, %		13.8	13.6	12.1
σ_1 Failure, psf		1542	2784	3653
σ_3 Failure, psf		996	2007	2995

Type of Test:
Unconsolidated Undrained
Sample Type: UNDISTURBED
Description: SO GR CH4 W/ LNS ML, RT, SIF

LL= 88 **PL=** 30 **PI=** 58
Assumed Specific Gravity= 2.72
Remarks: Torvane=0.23 tsf

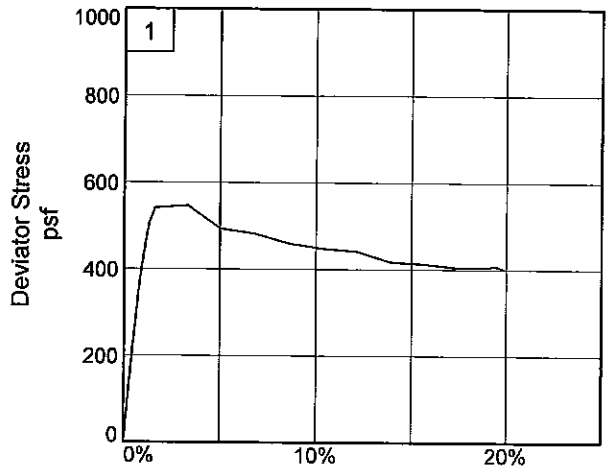
Figure _____

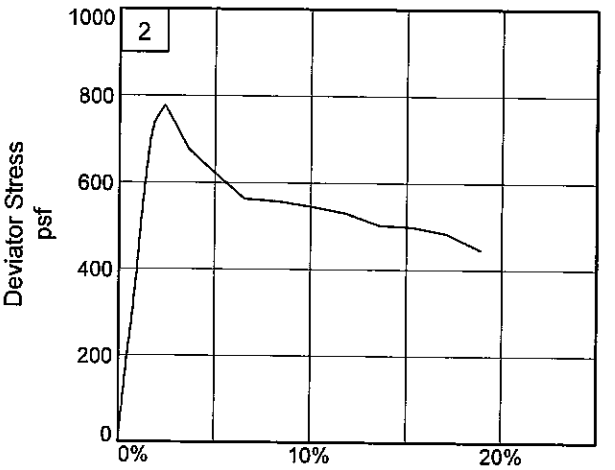
Client: USACE

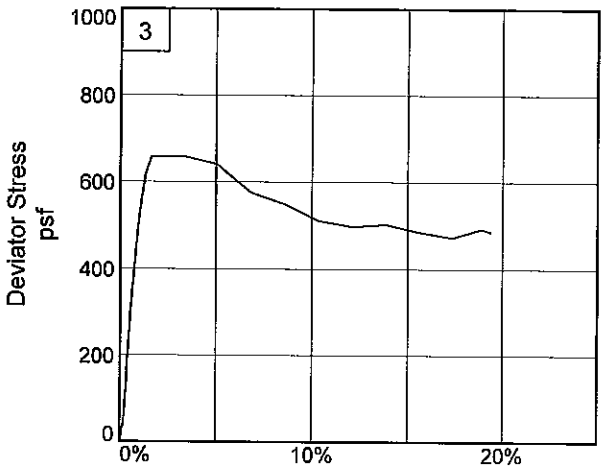
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA
Source of Sample: BSFR-11U **Depth:** 15.0
Sample Number: 5B
Proj. No.: 12-017108 **Date Sampled:** 7-31-12

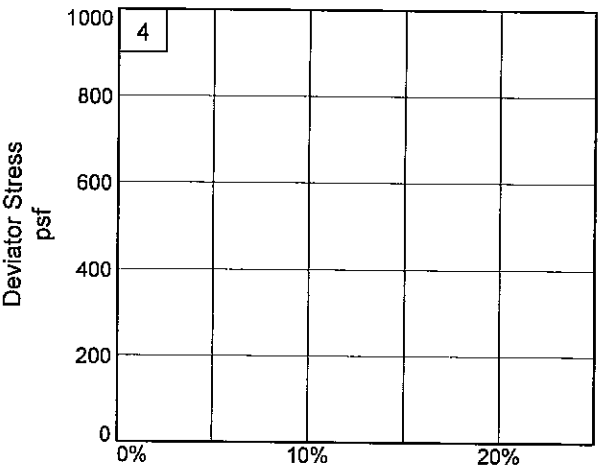
TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

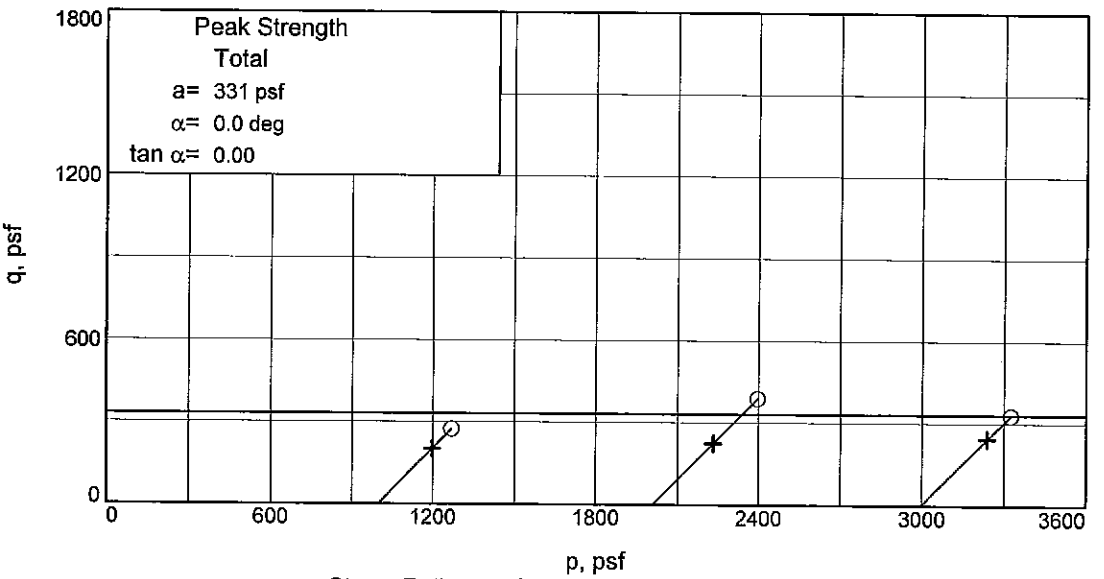
Tested By: JC











Stress Paths: o indicates peak + indicates end

Client: USACE

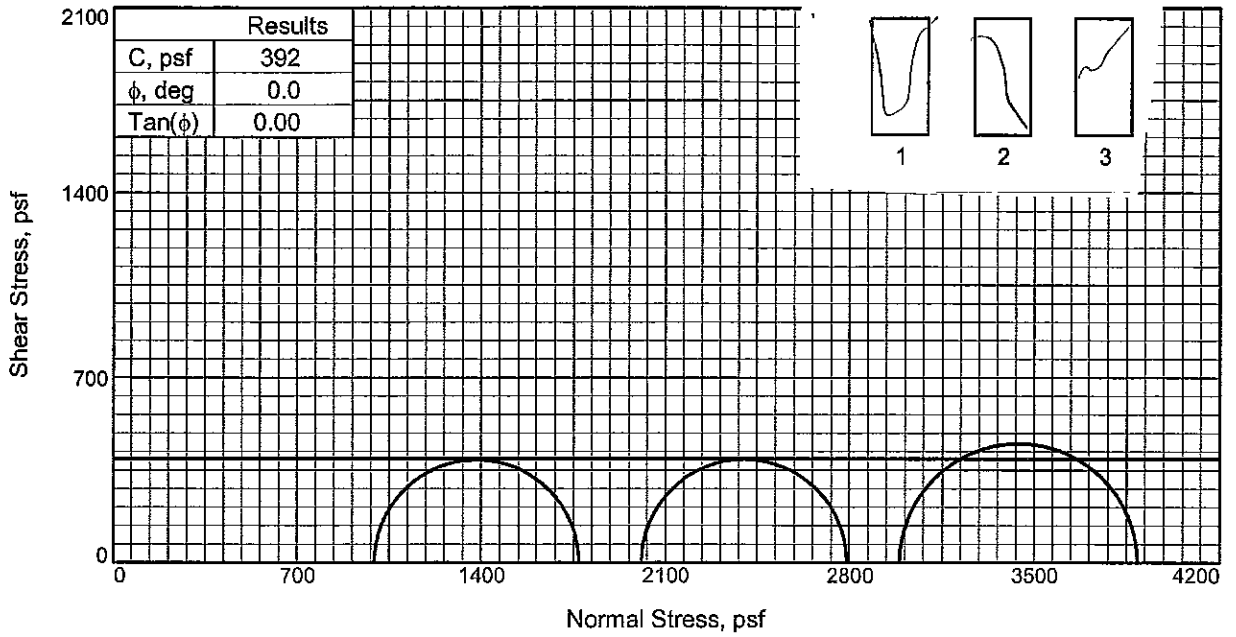
Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

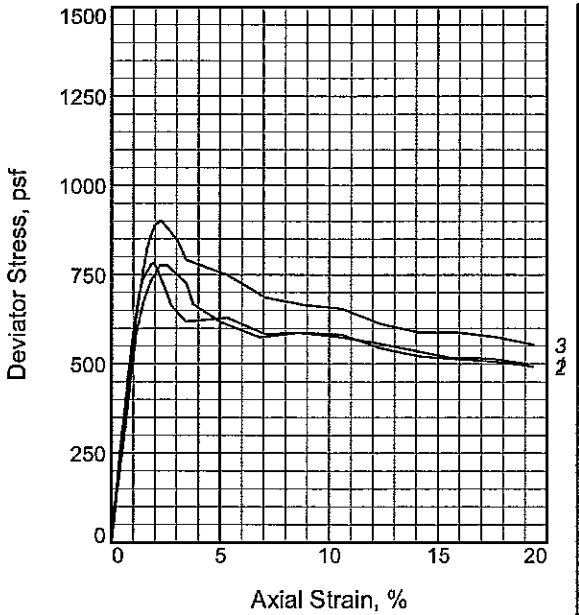
Source of Sample: BSFR-11U **Depth:** 15.0 **Sample Number:** 5B

Project No.: 12-017108 **Figure** _____

Stantec, Inc.

Tested By: JC





Sample No.		1	2	3
Initial	Water Content, %	60.7	58.2	58.4
	Dry Density, pcf	64.7	65.3	65.9
	Saturation, %	101.2	98.6	100.3
	Void Ratio	1.6426	1.6180	1.5957
	Diameter, in.	1.388	1.383	1.376
	Height, in.	3.002	3.001	3.003
At Test	Water Content, %	60.7	58.2	58.4
	Dry Density, pcf	64.7	65.3	65.9
	Saturation, %	101.2	98.6	100.3
	Void Ratio	1.6426	1.6180	1.5957
	Diameter, in.	1.388	1.383	1.376
	Height, in.	3.002	3.001	3.003
Strain rate, in./min.		1.000	1.000	1.000
Back Pressure, psi		0.00	0.00	0.00
Cell Pressure, psi		6.90	13.95	20.76
Fail. Stress, psf		777	782	902
Strain, %		2.2	1.9	2.2
Ult. Stress, psf		538	522	588
Strain, %		13.8	14.1	14.1
σ_1 Failure, psf		1771	2791	3891
σ_3 Failure, psf		994	2009	2989

Type of Test:
Unconsolidated Undrained

Sample Type: UNDISTURBED

Description: SO GR CH3 WS/ LYS & LNS SP, SIF

LL= 63 **PL=** 18 **PI=** 45

Assumed Specific Gravity= 2.74

Remarks: Torvane=0.30 tsf

Figure _____

Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

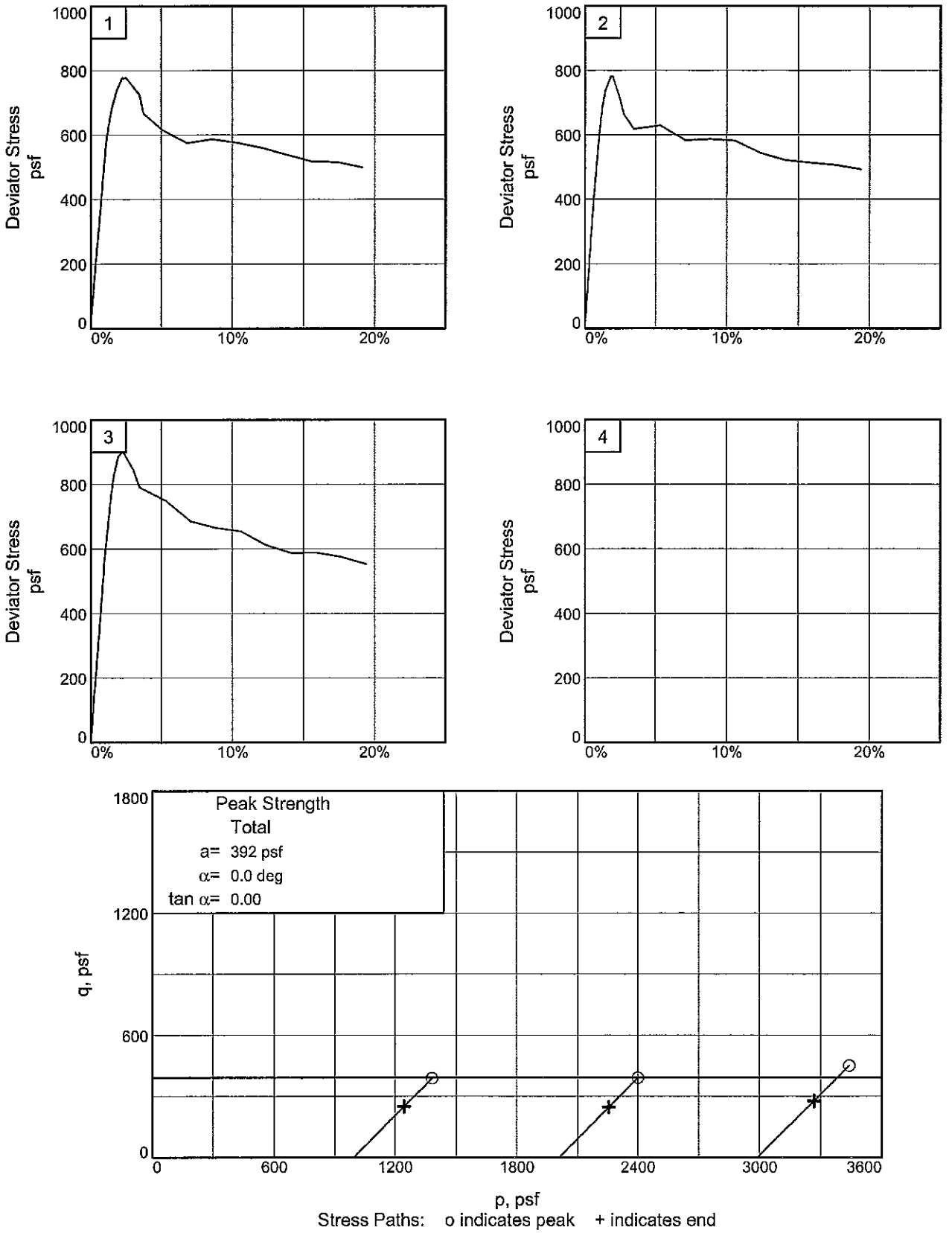
Source of Sample: BSFR-11U **Depth:** 23.0

Sample Number: 7B

Proj. No.: 12-017108 **Date Sampled:** 7-31-12

TRIAXIAL SHEAR TEST REPORT
Stantec
Saint Rose, Louisiana

Tested By: JC



Client: USACE

Project: Bayou Sauvage Flood Side Intermediate Marsh Restoration, Orleans Parish, LA

Source of Sample: BSFR-11U **Depth:** 23.0 **Sample Number:** 7B

Project No.: 12-017108 **Figure** _____ **Stantec, Inc.**

Tested By: JC