

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT



SUBSURFACE INVESTIGATION

STATE JOB NO. 020539

FEDERAL AID PROJECT NO. STPR-0001(27)

BAYOU METO STRS. & APPRS. (S)

STATE HIGHWAY 11 SECTION 5 & 6

IN JEFFERSON & ARKANSAS COUNTY

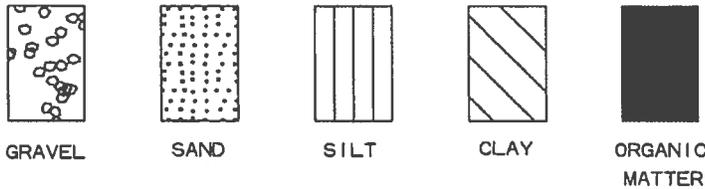
LETTING OF MAY 11, 2016

The information contained herein was obtained by the Department for design and estimating purposes only. It is being furnished with the express understanding that said information does not constitute a part of the Proposal or Contract and represents only the best knowledge of the Department as to the location, character and depth of the materials encountered. The information is only included and made available so that bidders may have access to subsurface information obtained by the Department and is not intended to be a substitute for personal investigation, interpretation and judgment of the bidder. The bidder should be cognizant of the possibility that conditions affecting the cost and/or quantities of work to be performed may differ from those indicated herein.

LEGEND

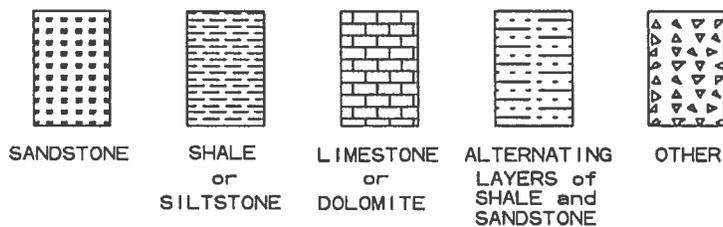
SOIL TYPES

(SHOWN IN SYMBOL COLUMN)
(PREDOMINANT TYPE SHOWN HEAVY)



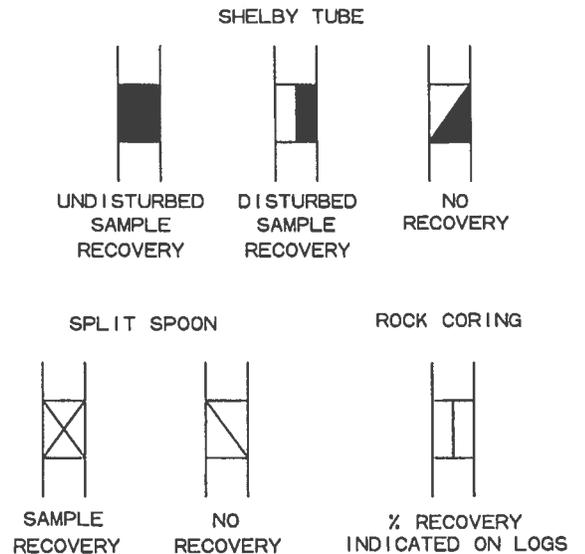
ROCK TYPES

(SHOWN IN SYMBOL COLUMN)



SAMPLER TYPES

(SHOWN IN SAMPLE COLUMN)



TERMS DESCRIBING CONSISTENCY OR CONDITION

GRANULAR SOIL		CLAY		CLAY-SHALE		SHALE	
'N' Value	Density	'N' Value	Consistency	'N' Value	Consistency	'N' Value	Consistency
0-4	Very Loose	0-1	Very Soft	0-1	Very Soft		
5-10	Loose	2-4	Soft	2-4	Soft	31-60	Soft
11-30	Medium Dense	5-8	Medium Stiff	5-8	Medium Stiff	Over 60	
31-50	Dense	9-15	Stiff	9-15	Stiff	More than 2'	
Over 50	Very Dense	16-30	Very Stiff	16-30	Very Stiff	Penetration	
		31-60	Hard	31-60	Hard	in 60 Blows	Medium Hard
		Over 60	Very Hard	Over 60	Very Hard	Less than 2'	
						Penetration	
						in 60 Blows	Hard

1. Ground water elevations indicated on boring logs represent ground water elevations at date or time shown on boring log. Absence of water surface implies that no ground water data is available but does not necessarily mean that ground water will not be encountered at locations or within the vertical reaches of these borings.
2. Borings represent subsurface conditions at their respective locations for their respective depths. Variations in conditions between or adjacent to boring locations may be encountered.
3. Terms used for describing soils according to their texture or grain size distribution are in accordance with the Unified Soil Classification System.

Standard Penetration Test – Driving a 2.0" O.D., 1-3/8" I.D. sampler a distance of 1.0 foot into undisturbed soil with a 140 pound hammer free falling a distance of 30 inches. It is customary to drive the spoon 6.0 inches to seat into undisturbed soil, then perform the test. The number of hammer blows for seating the spoon and performing the test are recorded for each 6 inches of penetration on the drill log. The field "N" Value (N_f) can be obtained by

adding the bottom two numbers for example: $\frac{6}{8-9} \Rightarrow 8+9 = 17 \text{ blows/ft}$. The "N" Value corrected to 60% efficiency (N_{60}) can be obtained by multiplying N_f by the hammer correction factor published on the boring log.

**ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.**

BORING NO. 1
PAGE 1 OF 3

JOB NO. 020539 Arkansas & Jefferson Counties
JOB NAME: Bayou Meto Str. & Apprs. (S)
STATION: 112+15
LOCATION: Centerline of Construction

DATE: October 13, 2015
TYPE OF DRILLING:
Hollow Stem Auger - Rotary Wash
EQUIPMENT: CME 750
HAMMER CORRECTION FACTOR: 1.23

COMPLETION DEPTH: 101.5

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% S C R	% R O D
			SURFACE ELEVATION: 169.6									
5		X	Moist, Medium Dense, Brown and Gray Silt with Sand							8 7-7		
10		X	Moist, Loose, Brown and Gray Silt with Sand							3 3-4		
15		X	Wet, Very Loose, Gray Silt with Sand							1 0-1		
20		X	Wet, Loose, Brown Sand with Silt							2 2-4		
25		X	Wet, Medium Dense, Brown and Gray Gravel							6 6-7		
30		X	Wet, Medium Dense, Gray and Brown Sand with Some Gravel									
35		X	Wet, Medium Dense, Gray Sand with Trace Gravel							11 12-15		

REMARKS:

**ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.**

BORING NO. 1
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JOB NO. 020539 Arkansas & Jefferson Counties
JOB NAME: Bayou Meto Str. & Apprs. (S)

DATE: October 13, 2015

STATION: 112+15
LOCATION: Centerline of Construction

TYPE OF DRILLING:
Hollow Stem Auger - Rotary Wash
EQUIPMENT: CME 750
HAMMER CORRECTION FACTOR: 1.23

COMPLETION DEPTH: 101.5

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% S C R	% R O D
			SURFACE ELEVATION: 169.6									
40		X	Wet, Medium Dense, Brown Sand with Trace Gravel							5 7-9		
45		X	Wet, Dense, Brown Sand							20 20-13		
50		X	Wet, Dense, Gray Sand							8 14-19		
55		X	Wet, Very Dense, Gray Sand							11 28-33		
55		X	Wet, Medium Dense, Gray Sand with Gravel							7 6-6		
60		X	Wet, Stiff, Gray Clay									
65		X	Wet, Medium Dense, Brown Sand with Trace Gravel and Some Clay							8 11-15		
70		X	Wet, Very Dense, Brown Sand with Some Clay							24 28-33		

REMARKS:

**ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.**

BORING NO. 1
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JOB NO. 020539 Arkansas & Jefferson Counties
JOB NAME: Bayou Meto Str. & Apprs. (S)
STATION: 112+15
LOCATION: Centerline of Construction

DATE: October 13, 2015
TYPE OF DRILLING:
Hollow Stem Auger - Rotary Wash
EQUIPMENT: CME 750
HAMMER CORRECTION FACTOR: 1.23

COMPLETION DEPTH: 101.5

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% S C R	% R O D
			SURFACE ELEVATION: 169.6									
75		X	Wet, Medium Dense, Brown Sand							7 10-11		
80		X	Moist, Medium Dense, Brown Sand with Some Clay							6 7-10		
85		X	Moist, Medium Dense, Brown Sand with Some Gravel and Clay							11 12-13		
		X	Moist, Very Stiff, Gray Silty Clay with Some Gravel							6 9-17		
		X	Moist, Very Stiff, Gray Clay with Gravel									
90		X	Moist, Very Dense, Gray Silty Sand with Trace Lignite							9 24-33		
95		X	Moist, Dense, Gray Silty Sand							13 16-34		
100		X	Moist, Very Dense, Gray Silty Sand with Some Clay							15 27-42		
			Boring Terminated									
105												

REMARKS:

**ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.**

BORING NO. 2
PAGE 1 OF 4

JOB NO. 020539 Arkansas & Jefferson Counties
JOB NAME: Bayou Meto Str. & Apprs. (S)
STATION: 112+77
LOCATION: 6' Right of Centerline of Construction

DATE: October 14, 2015
TYPE OF DRILLING:
Hollow Stem Auger - Rotary Wash
EQUIPMENT: CME 750
HAMMER CORRECTION FACTOR: 1.23

COMPLETION DEPTH: 106.5

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% S C R	% R O D
			SURFACE ELEVATION: 167.8									
5		X	Moist, Medium Dense, Brown and Gray Silt							5 5-6		
10		X	Wet, Loose, Gray Silt with Sand							1 3-2		
15		X	Wet, Medium Dense, Gray Sand							1 7-4		
20		X	Wet, Medium Dense, Gray Sand with Some Gravel							6 8-8		
25		X	Wet, Medium Dense, Gray Sand with Gravel							7 7-9		
30		X	Wet, Medium Dense, Gray Sand with Trace Gravel							3 4-8		
35												

REMARKS:

ARKANSAS HWY. & TRANS. DEPARTMENT MATERIALS DIVISION - GEOTECHNICAL SEC.		BORING NO. '2 PAGE 2 OF 4
JOB NO. 020539 Arkansas & Jefferson Counties	DATE: October 14, 2015	
JOB NAME: Bayou Meto Str. & Apprs. (S)	TYPE OF DRILLING: Hollow Stem Auger - Rotary Wash	
STATION: 112+77	EQUIPMENT: CME 750	
LOCATION: 6' Right of Centerline of Construction	HAMMER CORRECTION FACTOR: 1.23	

COMPLETION DEPTH: 106.5

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% S C R	% R O D
			SURFACE ELEVATION: 167.8									
40		X	Wet, Very Dense, Gray Sand							19 33-36		
45		X	Wet, Medium Dense, Gray Sand with Trace Gravel							8 13-14		
50		X	Wet, Medium Dense, Gray Sand with Trace Gravel							7 11-14		
55		X	Wet, Medium Dense, Brown Sand							5 6-10		
60		X	Wet, Dense, Brown Sand with Trace Clay							9 15-18		
65		X	Wet, Very Dense, Brown Sand							18 22-31		
70		X								17 22-23		

REMARKS:

**ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.**

BORING NO. 2
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JOB NO. 020539 Arkansas & Jefferson Counties
JOB NAME: Bayou Meto Str. & Apprs. (S)

DATE: October 14, 2015

STATION: 112+77
LOCATION: 6' Right of Centerline of Construction

TYPE OF DRILLING:
Hollow Stem Auger - Rotary Wash
EQUIPMENT: CME 750
HAMMER CORRECTION FACTOR: 1.23

COMPLETION DEPTH: 106.5

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% S C R	% R O D
			SURFACE ELEVATION: 167.8									
75		X	Wet, Dense, Brown Sand							16 19-21		
80		X	Wet, Medium Dense, Gray Sand with Some Clay Layers and Trace Gravel							4 7-12		
85		X	Moist, Very Stiff, Gray Sandy Clay with Gravel							7 10-11		
90		X	Moist, Very Dense, Gray Sand with Some Silty Clay							20 28-29		
95		X	Moist, Hard, Gray Silty Clay							11 16-15		
100		X	Moist, Dense, Gray Sand with Silt							15 17-26		
105		X	Moist, Very Dense, Gray Sand with Silt and Some Clay Partings							11 22-29		

REMARKS:

**ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.**

BORING NO. 2
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JOB NO. 020539 Arkansas & Jefferson Counties
JOB NAME: Bayou Meto Str. & Apprs. (S)
STATION: 112+77
LOCATION: 6' Right of Centerline of Construction

DATE: October 14, 2015
TYPE OF DRILLING:
Hollow Stem Auger - Rotary Wash
EQUIPMENT: CME 750
HAMMER CORRECTION FACTOR: 1.23

COMPLETION DEPTH: 106.5

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% S C R	% R O D
			SURFACE ELEVATION: 167.8									
		X	Moist, Dense, Gray Sand with Silt and Some Clay Partings							14 16-29		
			Boring Terminated									
110												
115												
120												
125												
130												
135												
140												

REMARKS:

**ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.**

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JOB NO. 020539 Arkansas & Jefferson Counties
JOB NAME: Bayou Meto Str. & Apprs. (S)
STATION: 115+81
LOCATION: 4' Right of Centerline of Construction

DATE: October 6 & 7, 2015
TYPE OF DRILLING:
Hollow Stem Auger - Rotary Wash
EQUIPMENT: CME 750
HAMMER CORRECTION FACTOR: 1.23

COMPLETION DEPTH: 101.5

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% S C R	% R O D
			SURFACE ELEVATION: 169.0									
5		X	Moist, Loose, Brown Sandy Silt							$\frac{3}{4-6}$		
10		X	Wet, Loose, Brown Silty Sand							$\frac{5}{5-5}$		
15		X	Wet, Loose, Gray Sand With Silt							$\frac{5}{3-5}$		
20		X								$\frac{8}{11-9}$		
25		X								$\frac{8}{13-14}$		
30		X								$\frac{10}{15-15}$		
35		X	Wet, Medium Dense, Gray Sand With Some									

REMARKS:

**ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.**

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JOB NO. 020539 Arkansas & Jefferson Counties
JOB NAME: Bayou Meto Str. & Apprs. (S)

DATE: October 6 & 7, 2015
TYPE OF DRILLING:
Hollow Stem Auger - Rotary Wash
EQUIPMENT: CME 750
HAMMER CORRECTION FACTOR: 1.23

STATION: 115+81
LOCATION: 4' Right of Centerline of Construction

COMPLETION DEPTH: 101.5

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% S C R	% R O D
			SURFACE ELEVATION: 169.0									
		X	Gravel							6 6-9		
40		X								4 5-6		
45		X								7 11-11		
50		X								6 11-11		
55		X	Wet, Medium Dense, Sand with Some Clay							6 6-9		
60		X	Wet, Medium Dense, Brown and Gray Sand with Clay							8 7-6		
65		X	Wet, Medium Dense, Brown and GRay Sand with Clay and Some Gravel							9 12-17		
70		X	Wet, Medium Dense, Brown Sand									

REMARKS:

**ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.**

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JOB NO. 020539 Arkansas & Jefferson Counties
JOB NAME: Bayou Meto Str. & Apprs. (S)

DATE: October 6 & 7, 2015
TYPE OF DRILLING:
Hollow Stem Auger - Rotary Wash
EQUIPMENT: CME 750
HAMMER CORRECTION FACTOR: 1.23

STATION: 115+81
LOCATION: 4' Right of Centerline of Construction

COMPLETION DEPTH: 101.5

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% S C R	% R O D
			SURFACE ELEVATION: 169.0									
75		X	Wet, Medium Dense, Brown Clayey Sand with Some Gravel							7 13-15		
		X	Wet, Medium Dense, Gray Sand with Some Gravel							12 9-10		
		X	Wet, Medium Dense, Gray Sand with Gravel									
80		X	Wet, Very Dense, Gray Sand with Trace Gravel							20 31-34		
		X	Wet, Very Dense, Gray Sand with Gravel									
85		X	Moist, Very Stiff, Gray Clay with Sand							6 12-14		
		X	Moist, Hard, Brown Clay with Sand							13 18-20		
90		X	Moist, Very Dense, Gray Sand with Lignitic Clay							14 22-40		
		X	Boring Terminated							10 25-31		
100		X										
105		X										

REMARKS:

ARKANSAS HWY. & TRANS. DEPARTMENT MATERIALS DIVISION - GEOTECHNICAL SEC.		BORING NO. 4 PAGE 1 OF 3
JOB NO. 020539 Arkansas & Jefferson Counties	DATE: October 7 & 8, 2015	
JOB NAME: Bayou Meto Str. & Apprs. (S)	TYPE OF DRILLING: Hollow Stem Auger -	
STATION: 116+40	EQUIPMENT: CME 750	
LOCATION: 8' Right of Centerline of Construction	HAMMER CORRECTION FACTOR: 1.23	

COMPLETION DEPTH: 101.5

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% S C R	% R Q D
			SURFACE ELEVATION: 168.6									
5		X	Moist, Stiff, Gray Clay with Sand							4 5-5		
10		X	Wet, Loose, Gray Silty Sand							2 5-5		
15		X								4 4-7		
20		X	Wet, Medium Dense, Gray Sand							7 10-9		
25		X								6 11-9		
30		X	Wet, Medium Dense, Gray Sand with Gravel							3 9-18		
35		X	Wet, Medium Dense, Gray Gravel with Sand									

REMARKS:

**ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.**

BORING NO. 4
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JOB NO. 020539 Arkansas & Jefferson Counties
JOB NAME: Bayou Meto Str. & Apprs. (S)

DATE: October 7 & 8, 2015
TYPE OF DRILLING: Hollow Stem Auger -

STATION: 116+40
LOCATION: 8' Right of Centerline of Construction

EQUIPMENT: CME 750
HAMMER CORRECTION FACTOR: 1.23

COMPLETION DEPTH: 101.5

DEPTH FT.	S Y M B O L	S A M P L E S	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% S C R	% R O D
			SURFACE ELEVATION: 168.6									
40		X	Wet, Medium Dense, Gray Sand with Trace Gravel							3 7-11		
45		X	Wet, Medium Dense, Gray Sand							7 10-8		
50		X	Wet, Medium Dense, Sand with Some Gravel							6 8-8		
55		X	Wet, Stiff, Gray Sandy Clay with Gravel							3 3-8		
60		X	Wet, Medium Dense, Gray Sand							10 12-14		
65		X	Wet, Medium Dense, Gray Sand							8 9-13		
70		X	Wet, Medium Dense, Brown Sand With Clay and Some Gravel							7 8-11		

REMARKS:

**ARKANSAS HWY. & TRANS. DEPARTMENT
MATERIALS DIVISION - GEOTECHNICAL SEC.**

BORING NO. 4
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JOB NO. 020539 Arkansas & Jefferson Counties
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			SURFACE ELEVATION: 168.6									
75		X	Wet, Medium Dense, Gray Sand							12 13-14		
80		X	Wet, Medium Dense, Gray Sand With Some Gravel							12 16-14		
85		X	Wet, Dense, Gray Sand With Gravel							14 24-15		
85		X	Moist, Hard, Gray Clay									
90		X	Moist, Very Dense, Gray Sand							22 54-41		
90		X	Moist, Very Hard, Brown and Gray Lignitic Clay With Sand									
95		X	Moist, Very Dense, Gray Sand							20 35-54		
100		X	Moist, Very Dense, Gray Sand With Clay							14 22-30		
100		X	Moist, Hard, Brown and Gray Lignitic Clay with Sand									
105			Boring Terminated							12 18-22		

REMARKS: