

# ALEXANDER ISLAND BORING SUMMARY SHEET

<b>BORING ID:</b>	<u>13-P04</u>
<b>BORING TYPE:</b>	<u>Perimeter Levee</u>
<b>DEPTH:</b>	<u>60'</u>
<b>ELEVATION:</b>	<u>24.00'</u>
<b>X (US SURVEY FT):</b>	<u>3224458.15</u>
<b>Y (US SURVEY FT):</b>	<u>13829880.09</u>
<b>DEPTH TO WATER:</b>	<u>7.9'</u>

Client: USACE-Galveston District Boring: 13-P04  
 Date/Time Drilling Begun: 12.28.19 1450 Date/Time Drilling Ended: 12.29.13 / 1120  
 Driller: Jason New Logger: E. Ficker Designated X (Easting): 3224458  
 Drill Rig: Mobile B57 Designated Y (Northing): 13829880 Z (Elevation): 24.0011'  
 Total depth: 60.0 Initial Water Encounter (Depth, date/time): 10.5 ft (12.28.13/1535) Water Depth (15 min.): 7.9 ft

1450 ft  
 Pledge spoil  
 14'

Feet	USCS Log	Sample Interval (ft)	Amount Material Obtained (in)	Sample Type Blow Counts	Number of Tubes	Pocket Pene. (tsf)	Shear Strength (tsf)	Description (SOIL TYPE, color, moisture, plasticity, consistency, density, inclusions, etc.)
0								
1'6"	CL	0-2	15	ST	1 T	1.5	-	Silty V. Sandy CLAY, Moist Yellowish Orange to Light Gray, Med to High Plast. Stiff, Common shell frags - 2'
2'	SM							
		2-4	15	SS	1 B	-	-	V. Light Grayish Brown silty SAND (F-C), Moist, V. Loose, to 2'
	SC	3.3-3.5						2' to 6' Light Brown, clayey SAND (F-C), Moist, V. Loose.
5'								
6'								
		6-8						
	CH	8-10	14	SS 1-1-1	1 O	0 to 0.5	0.4	Light Grayish Brown, Silty CLAY, Soft, High Plast.
10'	CH	10-12	15	ST	1 T	0.5 to 1.0	-	Silty CLAY; Mixed Gray + Black, moist, Soft, High Plast 10-11'
								11'-12' Mixed Reddish Brown + Light Gray + Yellowish, Moist, High Plast, Orange
	SM	12-14	14	ST	1 B	-	-	Silty SAND (F-C), Wet, Gray, Loose
15'		14-15						SAP to 15'
16'	OH/CH	15-5	18	SS 5-4-8	1 B	∅	0.2	15' to 16' BLK + Dk Gray Silty CLAY, Moist, High Plast, V. Soft, Trace FSA
17'	SM	16-18	∅	ST	-	-	-	16-17: Silty SAND (F-C), Wet, V. Loose
	SC							17-18: Silty clayey SAND (F-M), Wet, V. Loose
18'	CH/SH	17-19	20	ST	2 1 T 1 B	∅	0.25	18' Dk Gray to BLK, Silty CLAY, Moist, High Plast, V. Soft

Weather: Overcast, Calm, ~60°F; Dk=Dark V=very BLK=black Frags=fragments A abundant carbonaceous debris  
 Comments: Plast.=Plasticity (F-C)=fine to coarse grained F-M=fine to medium grained

USCS Log Legend:

GW	GP	GM	GC	SW	SP	SM	SC	ML	CL	OL	MH	CH	OH	PT
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US Army Corps of Engineers, Southwestern Division  
 Galveston District  
 2000 Fort Point Road/P.O. Box 1229  
 Galveston, TX 77553-1229

Alexander Island  
 Houston Ship Channel  
 Baytown, TX

**QRI** Quaternary Resource Investigations, L.L.C.  
 Government & Industry in Harmony with the Environment  
 13588 Florida Boulevard, Baton Rouge, Louisiana 70819

Client: USACE-Galveston District

Boring: 13-P04

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Feet	USCS Log	Sample Interval (ft)	Amount Material Obtained (in)	Sample Type Blow Counts	Number of Tubes	Pocket Pene. (tsf)	Shear Strength (tsf)	Description (SOIL TYPE, color, moisture, plasticity, consistency, density, inclusions, etc.)
20-21	CH	19-21	10	ST	1T	0 to 0.25	0.3	Silty CLAY, Gray, Moist, High Plast., V. Soft to Soft.
21-23	CH/ST	21-23	16	ST	1T	0 to 0.25	0.5	S.A.A.; Dk Gray BIK Trace of Fine SA
23-25	CH	23-25	15	ST	1T	∅	0.4	D.K Gray, SAA
25-27	SC	25-27	∅	ST	1	—	—	No Recovery Light Brown, Clayey, V. Silty SAND (F-M), V. Loose; shell frags
27-28	SC	26-28	18	ST	1B	—	—	
28-30	CH/ST	28.5-30	18	ST	1B	0 to 0.25	0.25	Silty CLAY, Gray to BIK, Moist, High Plast., V. Soft-Soft
30-32	OH	30-32	16	ST	1T	∅	0.35	SAA; BIK
32-34	OH	32-34	20	ST	1T	0.25	0.5	SAA
34-36	OH	34-36	11	ST	1T	∅	0.35	SAA Trace of fine sand in bottom of sample. Turning D.K Gray
36-38	NR	36-38	NR	ST	—	—	—	No Recovery
37-39	NR	37-39	NR	ST	—	—	—	No Recovery; Indication of sand on center bit. Switching to Split Spoon 38.5
38.5-40	SM	38.5-40	10	ST	1B	—	—	V. Silty SAND (F-M), Wet, Loose, Slightly Clayey.

END 12.28.13 1735  
START 12.29.13 755

Weather: Overcast, 60°F; Sunny calm, 55°F  
Comments: 12.28.13 12.29.13

SAA = same as above  
Dk = Dark BIK = Black  
Gray  
V = Very  
(F-C) = fine to coarse  
(F-M) = fine to medium

USCS Log Legend:

GW	GP	GM	GC	SW	SP	SM	SC	ML	CL	OL	MH	CH	OH	PT
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Total depth: 60.0

Date/Time Drilling Ended: 12.29.13 / 1120

Feet	USCS Log	Sample Interval (ft)	Amount Material Obtained (in)	Sample Type Blow Counts	Number of Tubes	Pocket Pene. (tsf)	Shear Strength (tsf)	Description (SOIL TYPE, color, moisture, plasticity, consistency, density, inclusions, etc.)
40								
45	SM	43.5-45	17	SS 3-2-1	1B	-	-	SAA
50	SC/SM	48.5-50	15	SP 1-2-1	1B	-	-	S.A.A.; Clayey (SC), Common shell frags
55	SC/SM	53.5-55	15	SS 2-2-2	1B	-	-	S.A.A. Clayey (SC), Common Shell frags
60	SC	58.5-60	16	SS WGR-WGR-2	1B	-	-	Clayey SAND (F-M), Grey, Wet, Common shell frags;

1/20

Weather: Sunny, calm, ~60°F  
Comments: SAA = same as above

WGR = Weight of Rods

(F-M) = fine to medium grained

Frags = Fragments

Abundant silt (CLAY (CH) lams

USCS Log Legend:

GW	GP	GM	GC	SW	SP	SM	SC	ML	CL	OL	MH	CH	OH	PT
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COPY OF PEGGY LAKE GEOTECH BH - PEGGY LAKE TEMPLATE.GDT - 4/4/14 15:04 - F:\QRI DATA\TECHNICAL\JOBS (CURRENT)\AGE - GALVESTON\2012-12-20 GEOTECHNICAL\CONTRACT\TASK ORDER DY06 2013-09-10 ALEXANDER ISLAND\DELIVERABLES\ALEX



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 Fax: 225-292-1404

**CLIENT** USACE-Galveston District      **PROJECT NAME** Alexander Island  
**PROJECT NUMBER** W912HY-13-D-0001-DY06      **PROJECT LOCATION** Alexander Island, Baytown, TX  
**DATE STARTED** 12/28/2013 2:50:00 PM **COMPLETED** 12/29/2013 11:20:00 AM **GROUND ELEVATION** 24.0011 ft      **HOLE SIZE** 8.25 inches  
**DRILLING CONTRACTOR** QRI      **NORTHING** 13829880 ft      **EASTING** 3224458 ft  
**DRILLING METHOD** Hollow Stem Auger      **DRILLING RIG MAKE/MODEL** Mobile B57 on Gemco Articulated Platform  
**LOGGED BY** Eddie Ficker      **TOTAL DEPTH** 60 ft      **GROUND WATER LEVEL** ∇ AT TIME OF DRILLING 10.50 ft / Elev 13.50 ft  
**WEATHER** cloudy to sunny, 60 to 55, calm      **∇ 24 HOURS AFTER DRILLING** 7.90 ft / Elev 16.10 ft

GRAPHIC LOG	USCS SYMBOL	MATERIAL DESCRIPTION	DEPTH (ft)	SAMPLE TYPE	RECOVERY (in)	SPT BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	FIELD TORVANE (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS					MINUS #200 SIEVE CONTENT (%)	COMPRESSIVE STRENGTH (tsf)	FAILURE STRAIN (%)	CONFINING PRESSURE (psi)
											LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX						
	CL	Silty very sandy CLAY; yellowish orange to light gray, moist, medium to high plasticity, stiff, with common shell fragments	0	ST	15		1.5			21									
	SM				NR	0													
	SC	Silty SAND; fine to coarse grained, very light grayish brown, moist, very loose Clayey SAND; fine to coarse grained, light grayish brown, moist, very loose	5	SS	15	1-1-2 (3)				19	27	11	16	38					
	CH				NR	0													
	CH	CLAY; light grayish brown, soft, high plasticity	10	SS	14	1-1-1 (2)	0-0.5	0.4		39									
	CH	mixed gray and black, moist mixed reddish brown/light gray/yellowish orange, stiff		ST	15		0.5-1.0		55	74					0.44	15	0		
	SP-SM	SAND with SILT; fine to coarse grained, gray, wet, loose	15	ST	14					20					8				
	CH				SS	18	5-4-8 (12)	0	0.2		35								
	SM	Silty SAND; fine to coarse grained, wet, very loose		NR	0														
	SC				ST	20		0	0.25		90								
	CH	CLAY; dark gray to black, moist, high plasticity, very soft, abundant carbonaceous debris	20	ST	10		0-0.25	0.3	73	38	112	35	77	98	0.45	1	11		
	CH	gray, very soft to soft, no carbonaceous debris		ST	16		0-0.25	0.5	53	84	113	30	83		0.68	4	0		
	CH	dark gray and black (CH/OH), trace of fine sand		ST	15		0	0.4	54	79	149	37	112		0.69	2	12		
	SC	Clayey SAND; fine to medium grained, light grayish brown, very moist, very loose, with common shell fragments	25	NR	0														
	SC				ST	14													
	CH	CLAY; gray to black, moist, high plasticity, very soft to soft	30	NR	0														
	CH	black		SS	18	1-1-2 (3)	0-0.25	0.25		70									
	CH			ST	16		0	0.35	58	71	118	30	88		0.65	3	0		
				ST	20		0.25	0.5		67									
			35																

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											LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX				
	CH	CLAY; gray to black, moist, high plasticity, very soft to soft ( <i>continued</i> ) trace of fine sand and turning dark gray	35	ST	11		0	0.35	58	67	118	32	86	99			
	SM	Very silty SAND; fine to medium grained, gray, wet, loose, slightly clayey	40	SS	10	5-4-4 (8)					23						
45			SS	17	3-2-1 (3)					18			19				
50			SS	15	1-2-1 (3)						24			43			
55			SS	15	2-2-2 (4)						23						
SC	Clayey SAND; fine to medium grained, gray, wet, loose, with common shell fragments	60	SS	16	0-0-2 (2)					31			52				
			NR	0													

Bottom of borehole at 60.0 feet.





