

BORING LOG NO. B-13

Page 1 of 1

PROJECT: Galveston Bay Sand Reclamation Project

CLIENT: Atkins North America, Inc.
Houston, Texas

SITE: Galveston Bay
Galveston, Texas

GRAPHIC LOG	LOCATION See Exhibit A-2 Latitude: 29.30575° Longitude: -94.83232°	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	STRENGTH TEST			WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
						TEST TYPE	COMPRESSIVE STRENGTH (tsf)	STRAIN (%)				
DEPTH												
	POORLY GRADED SAND WITH SILT (SP-SM) , gray, very loose to medium dense, with shell fragments				4-5-5 N=10							
					4-4-9 N=13							
		5			5-8-10 N=18							8
					1-1-1 N=2							
					3-9-13 N=22							
		10			6-7-7 N=14							
					1-1-2 N=3							
		15			7-8-7 N=15							12
					7-6-6 N=12							
					7-11-16 N=27							
		20			6-10-12 N=22							10
					4-6-7 N=13							
		24.0										
	CLAY , reddish brown and light gray, medium stiff, with calcareous nodules				2-3-4 N=7							
		26.0										
	Boring Terminated at 26 Feet											

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Dry augered to 6 feet; wet rotary thereafter.

Abandonment Method:
Not applicable

See Exhibit A-3 for description of field procedures.
See Appendix B for description of laboratory procedures and additional data (if any).
See Appendix C for explanation of symbols and abbreviations.

Notes:
- Water depth of about 7 feet at the time of our field program.

WATER LEVEL OBSERVATIONS

Not applicable

Terracon
551 League City Pkwy Ste F
League City, TX

Boring Started: 07-13-2017

Drill Rig: Truck

Project No.: 91175047

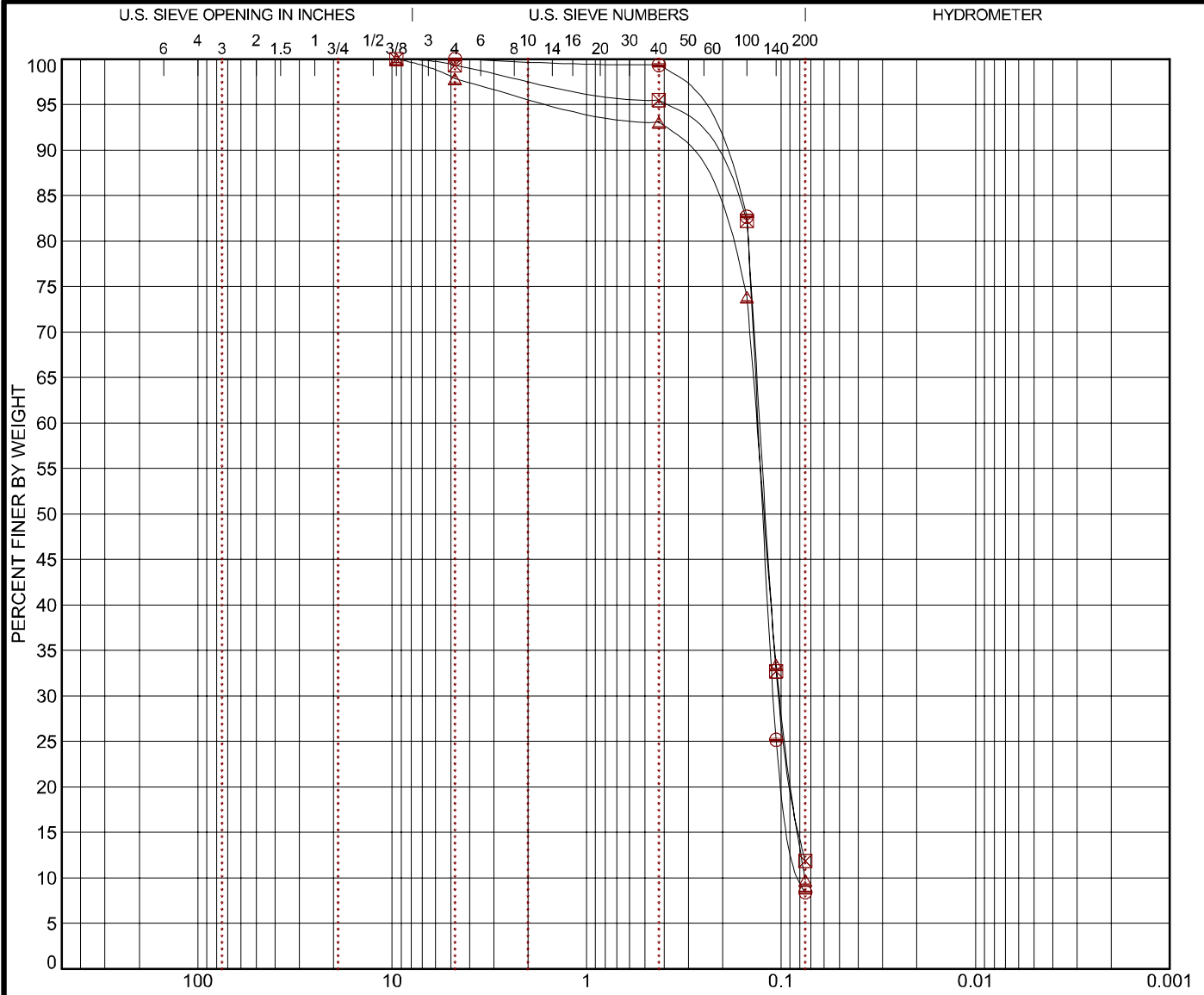
Boring Completed: 07-13-2017

Driller: Van and Sons

Exhibit: A-15

GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Boring ID		Depth	USCS Classification				WC (%)	LL	PL	PI	Cc	Cu
⊖	B-13	4.5 - 6	POORLY GRADED SAND WITH SILT (SP-SM)								1.18	1.69
⊗	B-13	14.5 - 16	POORLY GRADED SAND WITH SILT (SP-SM)								1.10	1.77
△	B-13	20.5 - 22	POORLY GRADED SAND WITH SILT (SP-SM)								1.01	1.77
Boring ID		Depth	D ₁₀₀	D ₈₅	D ₅₀	D ₁₀	%Gravel	%Sand	%Silt	%Fines	%Clay	
⊖	B-13	4.5 - 6	4.75	0.173	0.123	0.077	0.0	91.6		8.4		
⊗	B-13	14.5 - 16	9.5	0.186	0.12		0.7	87.5		11.9		
△	B-13	20.5 - 22	9.5	0.275	0.122	0.075	2.2	88.1		9.7		

PROJECT: Galveston Bay Sand Reclamation Project

SITE: Galveston Bay
Galveston, Texas

Terracon
551 League City Pkwy Ste F
League City, TX

PROJECT NUMBER: 91175047

CLIENT: Atkins North America, Inc.
Houston, Texas

EXHIBIT: A-30