

BORING LOG NO. B-11

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PROJECT: Galveston Island Sand Source Investigation

CLIENT: Atkins North America, Inc.
Houston, Texas

SITE: Sullivan Ranch Property
Galveston, Texas

GRAPHIC LOG	LOCATION See Exhibit A-6 Latitude: 29.2535° Longitude: -94.899°	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												
	SILTY SAND (SM) , gray, loose to medium dense - with scattered roots 0 to 2 feet				2-2-3 N=5							
	- gray and tan 2 to 6 feet				3-4-6 N=10				18			13
		5			9-10-10 N=20							
	- gray 6 to 8 feet				7-10-12 N=22							
8.0					10-18-18 N=36				21			3
	POORLY GRADED SAND (SP) , gray, dense to very dense, with shell fragments	10			18-23-14 N=37							
					20-25-31 N=56							
		15			22-41-44 N=85							
					15-21-22 N=43							
					7-15-20 N=35							
20.0		20										
	Boring Terminated at 20 Feet											

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

Hammer Type: Rope and Cathead

Advancement Method:
Dry augered to 8 feet; wet rotary thereafter.

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

- 8 ft While drilling
- 7 ft After 5 minutes
- 4.5 ft After 15 minutes

Terracon
551 League City Pkwy Ste F
League City, TX

Boring Started: 09-26-2017

Drill Rig: ATV

Project No.: 91175091

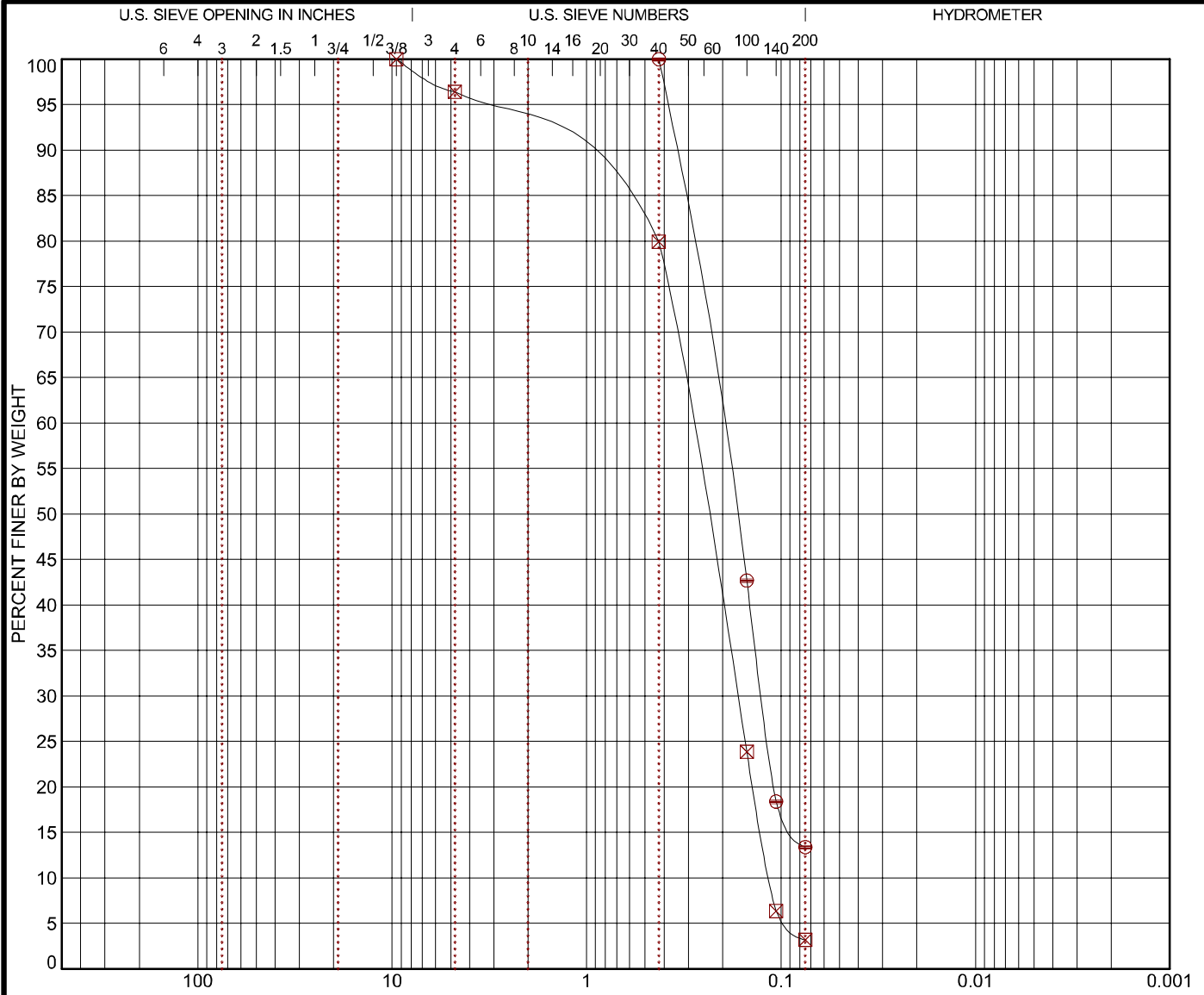
Boring Completed: 09-26-2017

Driller: Van and Sons

Exhibit: A-16

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-11	2.5 - 4	SILTY SAND (SM)				18					
⊗ B-11	8.5 - 10	POORLY GRADED SAND (SP)				21				0.85	2.58
Boring ID	Depth	D ₁₀₀	D ₈₅	D ₅₀	D ₁₀	%Gravel	%Sand	%Silt	%Fines	%Clay	
⊖ B-11	2.5 - 4	0.425	0.324	0.171		0.0	86.6		13.4		
⊗ B-11	8.5 - 10	9.5	0.893	0.244	0.114	3.6	93.2		3.2		

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EXHIBIT: A-33