

## **Inventory of Potential Beach Nourishment and Coastal Restoration Sand Sources on the Atlantic Outer Continental Shelf**

The Geophysical and Geological Data Acquisition: Inventory of Potential Beach Nourishment and Coastal Restoration Sand Sources on the Atlantic Outer Continental Shelf is an ongoing project being conducted by CB&I under contract with the Bureau of Ocean and Energy Management (BOEM). The purpose of this project is to identify, characterize and delineate potential sand resources on the Atlantic Outer Continental Shelf (OCS) for use in future coastal restoration, beach nourishment, and/or wetland restoration efforts. The eastern coast of the United States was severely damaged by strong winds, waves, and currents that were caused by Hurricane Sandy in October 2012. Since then, east coast beaches in several areas have been in need of coastal restoration. Upon the completion of this two-year project there will be an inventory of potential sand sources for future beach nourishment and coastal restoration efforts for the U.S. states adjacent to the Atlantic OCS. The project area extends from 5.6 kilometers (three nautical miles) to 14.8 kilometers (eight nautical miles) offshore on the Atlantic OCS within water depths up to approximately 30 meters from Maine to Miami, Florida. 5,600 kilometers (km) of geophysical data and 350 geological samples (250 vibracores and 100 surface grab samples) are planned. The data acquisition effort was divided between each of the 13 coastal states with an Atlantic OCS based on their length of coastline, historical need for OCS sand resources, potential future need for OCS sand resources, and historical geophysical and geological data density, among other criteria. As part of the Hurricane Sandy Disaster Relief Appropriations Act, the extent of damages caused by Hurricane Sandy was also a controlling factor, and thus required that New Jersey and New York together benefit from at least 40% of the overall project effort. Potential study areas were presented to BOEM, other federal agencies, and state and local stakeholders during State coordination meetings held between January and March 2015. Based on the criteria described above and specific input from these meetings, the study areas were refined and finalized and field investigations commenced April 19, 2015.

These data represent the sediment analysis results of the reconnaissance geologic survey samples collected using an Alpine Pneumatic vibracore for all vibracores and a Petite Ponar Grab for surface grab samples. These data were collected September 18, 2015 to September 19, 2015 and analyzed for sediment grain size and sample composition. These data are presented in the NAD 1983 Universal Transverse Mercator (UTM) Zone 17N projection.

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## CORING

Reconnaissance geologic samples were collected within a 50 foot buffer of the planned sample location which was approved by a qualified marine archaeologist.

This dataset is from one field activity with consistent instrument calibrations.

Navigation and horizontal positioning for the Odom Hydrotrac Sounder was provided by a Trimble SPS GPS utilizing dual frequency rover antennas with DGPS Beacon corrections. GPS measurements were offset to represent the center point of the vibracore or ponar location. GPS antennas were rigidly affixed to the vessel via a pole mount on the starboard side of the vessel. Starboard pole mount offsets were measured (to within 5 cm) in relation to the reference point (top of core or ponar capstan). The positioning of the vessel and the sample location were corrected during data collection utilizing HYPACK 2015 to account for instrument offset. DGPS in combination with beacon corrections is accurate to within 1 to 5 meters. Data were collected in UTM Zone 18N, units in meters. (NAD 1983 UTM Zone 18N)

All vertical measurements are referenced to datum NAVD88 (Geoid Model 12A). Top of core elevations were derived using soundings collected during the geophysical operations and verified using an Odom single beam sounder at the time of core collection. Sounding data has been corrected for tidal fluctuations. The Odom single beam sounder was calibrated using an Odom Digibar Pro sound velocity probe with sound velocity measurements taken before sampling began. The sounder calibration was verified using bar checks at 5 foot intervals down to 30 foot depths.

The vibracores were collected using a 271B Alpine Pneumatic vibracore, configured to collect undisturbed sediment cores up to 20 ft. in length. This self-contained, freestanding pneumatic vibracore unit contains an air-driven vibratory hammer assembly, an aluminum H-beam which acts as the vertical beam upright on the seafloor, 20 ft. long steel tubes measuring 4" in diameter (with a plastic core liner), and a drilling bit with a cutting edge. An air hose array provides compressed air from the compressor on deck to drive the vibracore. The vibracore unit was A-frame deployed from AVS's vessel, the M/V Thunderforce.

The desired penetration depth was 20 feet. It is recognized, however, that maximum penetration may not be achieved at all sample locations. A minimum of 80 percent of the expected penetration was required through the unconsolidated strata. When located over a boring site, AVS made every reasonable effort to reach the required depth or to reach penetration refusal. Penetration refusal was completed when less than 1 ft of advance was accomplished after 5 minutes of vibration. When refusal was met at less than 80 percent of the desired depth of penetration, AVS removed the sampled portion and a new core pipe was set up. A jet pump hose was attached to the tip of the core pipe just below the vibrator. The rig was lowered to the bottom and jetted down to a depth 2 ft above where the first attempt met refusal. The jet was then turned off and the vibrator turned on, taking the additional part of the core and 2 ft of overlap. Retries were accomplished until penetration had reached the required depth, refusal or until three (3) retries were attempted, whichever occurred first. The jetted cores were labeled with an "A" for the first jetted section and a "B" for the second jetted section after the core name.

The vibracores were then removed from the vibracore unit. They were measured, marked and cut into 5 ft. sections. The total length of recovery was measured and compared to the measured depth of penetration to calculate percent recovery. Penetration was determined with the use of a penetrometer and chart recorder. Depth of penetration beneath the surface of the bottom was known to be within plus or minus 0.5 ft of actual penetration. Each vibracore was labeled onboard the vessel.

CB&I utilized a Ponar petite grab sampler for collection of unconsolidated surface samples. The Ponar was lowered by hand over the side to the seafloor at pre-determined and pre-approved sample locations. Once near the seafloor, the Ponar was allowed to free-fall, triggering the sampling device to penetrate

and close into the seafloor, collecting a surface sediment sample. The Ponar was then retrieved to the deck of the vessel, and the sample collected into secure sample bags for transport back to CB&I's geotechnical laboratory for visual description, photographing and sediment analysis.

## **SAMPLING and ANALYSIS**

Upon completion of field operations, all vibracores were transported to CB&I's office in Boca Raton. The vibracores were split lengthwise and logged in detail by describing sedimentary properties by layer in terms of layer thickness, color, texture (grain size), composition and presence of clay, silt, gravel, or any other identifying features in accordance with American Society for Testing and Materials (ASTM) standard procedure D 2488-09a. The vibracores were photographed in 2.0 ft intervals using an Olympus C-765 digital camera that was mounted on a frame directly above the vibracores. The photographs were taken using full spectrum overhead lighting and an 18% gray background, which provides a known reference color and is the standard reference value against which all camera light meters are calibrated. Sediment samples were extracted from the vibracores at irregular intervals based on distinct stratigraphic layers in the sediment sequence. The vibracores were then wrapped and boxed for transfer to a BOEM-designated archive facility according to that facility's requirements (the Lamont-Doherty Core Repository). Sedimentary properties of the grab samples were also described. Each grab sample was split into two representative sub-samples, one sub-sample was used to conduct the laboratory analysis and the other sub-sample was provided to the BOEM approved archive facility.

The sediment samples were analyzed to determine color and grain size distribution. During sieve analysis, the wet, dry and washed Munsell colors were recorded. Grain size was determined through sieve analysis in accordance with ASTM Standard Materials Designation D422-63 for particle size analysis of soils. This method covers the quantitative determination of the distribution of sand particles. Sediment finer than the No. 230 sieve (4.0 phi) was analyzed following ASTM Standard Test Method, Designation D1140-00. Mechanical sieving was conducted using calibrated sieves with a gradation of half phi intervals. Additional sieves representing key ASTM sediment classification boundaries were also included to meet appropriate beach-compatible mineral characterization. Weights retained on each sieve were recorded cumulatively. Grain size results were entered into the gINT® software program, which computes the mean and median grain size, sorting, silt/clay percentages for each sample using the moment method.

The sediment samples extracted from the vibracores and the grab samples were prepared for processing in CB&I's accredited geotechnical laboratory. This laboratory is accredited by the Construction Materials Engineering Council, Inc. (CMEC) for (ASTM) D422/T88 Sieve Analysis, D1140, D4648, and CPE-HAT-09. Geological samples were analyzed to determine texture (grain size and sorting); percent carbonate, and color.

Data were collected by CB&I under BOEM contract number M14PC00006.

CB&I - Beau C. Suthard, Project Manager  
101 16th Avenue South, Suite 6, St Petersburg, FL 33701; 727.565.4660; Beau.Suthard@cbi.com

Jeff G. Helgerson, Marine Geologist  
101 16th Avenue South, Suite 6, St Petersburg, FL 33701; 727.565.4660; Jeff.Helgerson@cbi.com

Kristina McCoy, Project Geologist  
2481 N.W. Boca Raton Blvd., Boca Raton, FL 33431; 561.361.3183; Kristina.McCoy@cbi.com

APPENDIX 1  
VIBRACORE LOGS



**Legend for Geotechnical Data**

(SP), (SM), etc. Refers to the Army Corps of Engineers Unified Soils Classification System. Class types are defined primarily by grain size, sorting and percent of material passing the 200 sieve. Classification of materials on the core logs based on visual field examinations are identified on the core logs under the Classification of Materials Description. Classifications based on laboratory sieve analyses are identified on the core logs in the Legend and under Remarks.

**Grain Size Terms**

Cobble – retained on the 3.0” sieve  
Gravel – greater than the #4 sieve and less than the 3.0” sieve  
    Coarse: greater than the ¾” sieve and less than the 3.0” sieve  
    Fine – greater than the #4 sieve and less than the ¾” sieve  
Sand - greater than the #200 sieve and less than the #4 sieve  
    Coarse - greater than the #10 sieve and less than the #4 sieve  
    Medium - greater than the #40 sieve and less than the #10 sieve  
    Fine - greater than the #230 sieve and less than the #40 sieve  
Fines – (silt or clay) passing the #230 sieve

**Proportional definition of descriptive terms**

<u>Descriptive Term</u>	<u>Range of Proportions</u>
Sandy, gravelly, etc.	35 % to 50 %
Some	20 % to 35 %
Little	10 % to 20 %
Trace	1 % to 10 %



**Legend for Geotechnical Data**

GW		Well graded gravels or gravel-sand mixtures, little or no fines	ML		Inorganic silts and very fine sands, rock flour, sandy silts or clayey silts with slight plasticity
GP		Poorly graded gravels or gravel-sand mixtures, w/ little or no fines	MH		Inorganic silts, micaceous or diatomaceous fine sandy or silty soil, elastic silts
GM		Silty gravels, gravel-sand-silt mixtures	OL		Organic silts and organic silt-clays of low plasticity
GC		Clayey gravels, gravel-sand-clay mixtures	OH		Organic clays of medium to high plasticity, organic silts
SW		Well graded sands or gravelly sands, little or no fines	CL		Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
SP		Poorly graded sands or gravelly sands, little or no fines	CH		Inorganic clays of high plasticity, fat clays
SM		Silty sands, sand-silt mixtures	PT		Peat and other highly organic soils
SC		Clayey sands, sand-clay mixtures	SP-SM		Poorly-graded silty sand
SW-SM		Well-graded silty sand	SM-SC		Silty clayey sand
GW-GM		Well-graded silty gravel	ML-CL		Inorganic silty lean clay
GM-GC		Clayey silty gravel			

Note: Information is after ACOE Atlantic Division Manual # 1110-1-1 titled *Engineering and Design Geotechnical Manual for Surface and Subsurface Investigations*



**CB&I**  
**Coastal Planning & Engineering, Inc.**  
2481 N.W. Boca Raton Blvd.  
Boca Raton, Florida 33431  
Phone # 1 (561) 391-8102

### Legend for Geotechnical Data

The naming convention used by CB&I incorporates key information about the item in the title. The naming format uses the following information:

- **Abbreviated area name (two letters that will be used throughout the project)**
- **Abbreviated data type: vibracore (VC) or surface sample (SS)**
- **Collection year (YY)**
- **Identification number**
- **Sample identification number in the case vibracores.**

#### Format examples:

- A) **FL-BOEM-2015-VC05**  
B) **FL-BOEM-2015-VC05 S#1**

Example A is vibracore number 05, collected offshore of Florida in the year 2015.

Example B refers to sample number 1 taken from vibracore number 05, which was collected offshore of Florida in 2015.

<b>DRILLING LOG</b>		<b>DIVISION</b>	<b>INSTALLATION</b>	<b>SHEET 1</b> OF 1 SHEETS
<b>1. PROJECT</b> Inventory of Potential Beach Nourishment and Coastal Restoration Sand Sources on the Atlantic OCS			<b>9. SIZE AND TYPE OF BIT</b> 3.0 In.	
<b>2. BORING DESIGNATION</b> FL-BOEM-2015-VC01			<b>10. COORDINATE SYSTEM/DATUM</b> UTM 17	
<b>3. DRILLING AGENCY</b> American Vibracore Services, Inc.			<b>11. MANUFACTURER'S DESIGNATION OF DRILL</b> <input type="checkbox"/> AUTO HAMMER Alpine Pneumatic Vibracore <input type="checkbox"/> MANUAL HAMMER	
<b>4. NAME OF DRILLER</b> Brian McCord			<b>12. TOTAL SAMPLES</b> DISTURBED _____ UNDISTURBED (UD) _____	
<b>5. DIRECTION OF BORING</b> <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED			<b>13. TOTAL NUMBER CORE BOXES</b> _____	
<b>6. THICKNESS OF OVERBURDEN</b> 0.0 Ft.			<b>14. ELEVATION GROUND WATER</b> _____	
<b>7. DEPTH DRILLED INTO ROCK</b> 0.0 Ft.			<b>15. DATE BORING</b> _____	
<b>8. TOTAL DEPTH OF BORING</b> 18.0 Ft.			<b>16. ELEVATION TOP OF BORING</b> -76.6 Ft.	
			<b>17. TOTAL RECOVERY FOR BORING</b> 15 Ft.	
			<b>18. SIGNATURE AND TITLE OF INSPECTOR</b> DA	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-76.6	0.0					
-77.3	0.7		SAND, fine grained, quartz, trace shell fragments, trace silt, shell fragments up to 0.25", 1.75" shell fragment @ 0.5', gray (2.5Y-5/1), (SW-SM).		1	Sample #1, Depth = 0.4' Mean (mm): 0.16, Phi Sorting: 1.24 Fines (230): 6.78% (SW-SM)
-77.9	1.3		Sandy SHELL HASH, trace silt, gray (2.5Y-5/1), (SW).		2	Sample #2, Depth = 1.0' Mean (mm): 0.49, Phi Sorting: 1.51 Fines (230): 3.05% (SW)
			SAND, fine grained, quartz, trace shell fragments, trace shell hash, trace silt, shell fragments up to 0.5", shell hash distributed in pockets up to 0.5" and throughout layer, gray (2.5Y-5/1), (SP-SM).		3	Sample #3, Depth = 4.1' Mean (mm): 0.13, Phi Sorting: 0.78 Fines (230): 4.01% (SP-SM)
-82.2	5.6					
			SAND, fine grained, quartz, trace shell fragments, trace shell hash, trace silt, shell fragments up to 0.5", shell hash distributed in pockets up to 0.5" and throughout layer, gray (2.5Y-5/1), (SM).		4	Sample #4, Depth = 7.0' Mean (mm): 0.11, Phi Sorting: 0.73 Fines (230): 6.03% (SM)
-86.4	9.8					
			SAND, fine grained, quartz, some silt, little shell hash, (1.75" x 1.25") shell fragment @ 11.3', gray (2.5Y-5/1), (SM).		5	Sample #5, Depth = 11.3' Mean (mm): 0.16, Phi Sorting: 1.69 Fines (230): 22.18% (SM)
-89.3	12.7					
			Sandy ROCK FRAGMENTS, some shell fragments, rock fragments up to 3.25", shell fragments up to 0.5", dark gray (2.5Y-4/1), (GW).			
-90.2	13.6					
			SAND, medium to coarse grained, quartz, little shell hash, little silt, trace rock fragments, rock fragments up to 0.5", dark gray (2.5Y-4/1), (SW-SM). No Recovery.		6	Sample #6, Depth = 14.3' Mean (mm): 0.41, Phi Sorting: 0.98 Fines (230): 10.16% (SW-SM)
-91.6	15.0					
-94.6	18.0					
			End of Boring			


LOUISIANA FL-BOEM-2015-VC-GPJ-IPBRAZIL.GDT-9/12/16

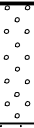
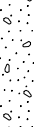
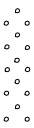



<b>DRILLING LOG</b>		<b>DIVISION</b>	<b>INSTALLATION</b>	<b>SHEET 1</b> OF 1 SHEETS
<b>1. PROJECT</b> Inventory of Potential Beach Nourishment and Coastal Restoration Sand Sources on the Atlantic OCS			<b>9. SIZE AND TYPE OF BIT</b> 3.0 In.	
<b>2. BORING DESIGNATION</b> FL-BOEM-2015-VC02			<b>10. COORDINATE SYSTEM/DATUM</b> UTM 17	
<b>3. DRILLING AGENCY</b> American Vibracore Services, Inc.			<b>11. MANUFACTURER'S DESIGNATION OF DRILL</b> <input type="checkbox"/> AUTO HAMMER Alpine Pneumatic Vibracore <input type="checkbox"/> MANUAL HAMMER	
<b>4. NAME OF DRILLER</b> Brian McCord			<b>12. TOTAL SAMPLES</b> DISTURBED: _____ UNDISTURBED (UD): _____	
<b>5. DIRECTION OF BORING</b> <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED			<b>13. TOTAL NUMBER CORE BOXES</b>	
<b>6. THICKNESS OF OVERBURDEN</b> 0.0 Ft.			<b>14. ELEVATION GROUND WATER</b>	
<b>7. DEPTH DRILLED INTO ROCK</b> 0.0 Ft.			<b>15. DATE BORING</b> STARTED: 07-30-15 08:16 COMPLETED: 07-30-15 08:22	
<b>8. TOTAL DEPTH OF BORING</b> 18.2 Ft.			<b>16. ELEVATION TOP OF BORING</b> -46.3 Ft.	
			<b>17. TOTAL RECOVERY FOR BORING</b> 16.6 Ft.	
			<b>18. SIGNATURE AND TITLE OF INSPECTOR</b> BF	


ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-46.3	0.0					
-48.5	2.2		Shelly SAND, fine grained, quartz, trace silt, shell component is shell hash and increases with depth, dark gray (5Y-4/1), (SW).		1	Sample #1, Depth = 1.1' Mean (mm): 0.44, Phi Sorting: 0.89 Fines (230): 1.63% (SW)
-49.9	3.6		Shelly SAND, fine grained, quartz, trace silt, shell component is shell hash, dark gray (5Y-4/1), (SW-SM).		2	Sample #2, Depth = 2.6' Mean (mm): 0.23, Phi Sorting: 1.36 Fines (230): 3.81% (SW-SM)
-51.0	4.7		SAND, fine grained, quartz, trace shell hash, trace silt, gray (5Y-5/1), (SP-SM).		3	Sample #3, Depth = 4.1' Mean (mm): 0.12, Phi Sorting: 0.64 Fines (230): 3.72% (SP-SM)
-51.5	5.2		Shelly SAND, fine grained, quartz, trace silt, shell component is shell hash, dark gray (5Y-4/1), (SW-SM).		2	Sample #4, Depth = 5.3' Mean (mm): 0.41, Phi Sorting: 1.05 Fines (230): 1.59% (SW)
-51.8	5.5			4		
-52.3	6.0			5		
			SHELL HASH, some sand, fine grained, quartz, trace silt, dark grayish brown (2.5Y-4/2), (SW).		6	Sample #5, Depth = 5.8' Mean (mm): 0.37, Phi Sorting: 0.98 Fines (230): 1.72% (SW)
-54.4	8.1		Shelly SAND, fine grained, quartz, trace silt, shell component is shell hash, very dark gray (5Y-3/1), (SW).		7	Sample #6, Depth = 7.0' Mean (mm): 0.21, Phi Sorting: 1.36 Fines (230): 4.09% (SW-SM)
			SAND, fine grained, quartz, some shell hash, trace shell fragments, trace silt, shell fragments up to 0.25", gray (5Y-5/1), (SW-SM).			
			SAND, fine grained, quartz, trace shell hash, trace silt, (1.0" x 0.5") shell fragment @ 8.3', gray (5Y-5/1), (SM).			
-59.8	13.5		SAND, fine grained, quartz, some clay, trace silt, clay distributed in pockets up to 1.0", color is mottled (5Y-5/1) and, dark gray (5Y-4/1), (SC).		8	Sample #7, Depth = 11.0' Mean (mm): 0.11, Phi Sorting: 0.36 Fines (230): 6.58% (SM)
-60.3	14.0					
-62.9	16.6		SAND, fine grained, quartz, trace shell hash, trace silt, gray (5Y-5/1), (SM).		7	Sample #8, Depth = 13.7' Mean (mm): 0.11, Phi Sorting: 0.52 Fines (230): 23.27% (SC)
-64.5	18.2		No Recovery.			
			End of Boring			

LOUISIANA FL-BOEM-2015-VC-GPJ-IBRAZIL.GDT 9/12/16

<b>DRILLING LOG</b>		<b>DIVISION</b>	<b>INSTALLATION</b>	<b>SHEET 1</b> OF 1 SHEETS
<b>1. PROJECT</b> Inventory of Potential Beach Nourishment and Coastal Restoration Sand Sources on the Atlantic OCS 			<b>9. SIZE AND TYPE OF BIT</b> 3.0 In.	
<b>2. BORING DESIGNATION</b> FL-BOEM-2015-VC03			<b>10. COORDINATE SYSTEM/DATUM</b> UTM 17	
<b>3. DRILLING AGENCY</b> American Vibracore Services, Inc.			<b>11. MANUFACTURER'S DESIGNATION OF DRILL</b> <input type="checkbox"/> AUTO HAMMER Alpine Pneumatic Vibracore <input type="checkbox"/> MANUAL HAMMER	
<b>4. NAME OF DRILLER</b> Brian McCord			<b>12. TOTAL SAMPLES</b> DISTURBED: _____ UNDISTURBED (UD): _____	
<b>5. DIRECTION OF BORING</b> <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED			<b>13. TOTAL NUMBER CORE BOXES</b> _____	
<b>6. THICKNESS OF OVERBURDEN</b> 0.0 Ft.			<b>14. ELEVATION GROUND WATER</b> _____	
<b>7. DEPTH DRILLED INTO ROCK</b> 0.0 Ft.			<b>15. DATE BORING</b> STARTED: 07-31-15 09:04 COMPLETED: 07-31-15 09:12	
<b>8. TOTAL DEPTH OF BORING</b> 20.0 Ft.			<b>16. ELEVATION TOP OF BORING</b> -41.1 Ft.	
			<b>17. TOTAL RECOVERY FOR BORING</b> 17.9 Ft.	
			<b>18. SIGNATURE AND TITLE OF INSPECTOR</b> DA	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-41.1	0.0					
-43.6	2.5		Sandy SHELL HASH, fine grained, quartz, trace shell fragments, trace silt, shell fragments up to 1.25", (2.0" x 1.25") shell fragment @ 1.3', olive brown (2.5Y-4/3), (SW).		1	Sample #1, Depth = 1.3' Mean (mm): 0.76, Phi Sorting: 1.56 Fines (230): 1.75% (SW)
-49.2	8.1		Sandy SHELL HASH, fine grained, quartz, some whole shell, trace silt, whole shells up to 3.0", dark grayish brown (2.5Y-4/2), (GW).		2	Sample #2, Depth = 5.3' Mean (mm): 1.22, Phi Sorting: 1.61 Fines (230): 4.21% (SW)
-56.4	15.3		Sandy SHELL HASH, fine grained, quartz, trace shell fragments, trace silt, shell fragments up to 1.5", dark grayish brown (2.5Y-4/2), (SW).		3	Sample #3, Depth = 11.7' Mean (mm): 0.40, Phi Sorting: 0.93 Fines (230): 1.81% (SW)
-59.0	17.9		Shelly SAND, fine grained, quartz, trace silt, shell component is shell hash, dark grayish brown (2.5Y-4/2), (SW).		4	Sample #4, Depth = 16.6' Mean (mm): 0.43, Phi Sorting: 1.11 Fines (230): 2.13% (SW)
-61.1	20.0		No Recovery.			
			End of Boring			

LOUISIANA FL BOEM 2015 VC GPJ JPBRAZIL GDT 9/12/16

<b>DRILLING LOG</b>		<b>DIVISION</b>	<b>INSTALLATION</b>	<b>SHEET 1</b> OF 1 SHEETS
<b>1. PROJECT</b> Inventory of Potential Beach Nourishment and Coastal Restoration Sand Sources on the Atlantic OCS 			<b>9. SIZE AND TYPE OF BIT</b> 3.0 In.	
<b>2. BORING DESIGNATION</b> FL-BOEM-2015-VC04			<b>10. COORDINATE SYSTEM/DATUM</b> UTM 17	
<b>3. DRILLING AGENCY</b> American Vibracore Services, Inc.			<b>11. MANUFACTURER'S DESIGNATION OF DRILL</b> <input type="checkbox"/> AUTO HAMMER Alpine Pneumatic Vibracore <input type="checkbox"/> MANUAL HAMMER	
<b>4. NAME OF DRILLER</b> Brian McCord			<b>12. TOTAL SAMPLES</b> DISTURBED: _____ UNDISTURBED (UD): _____	
<b>5. DIRECTION OF BORING</b> <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED			<b>13. TOTAL NUMBER CORE BOXES</b>	
<b>6. THICKNESS OF OVERBURDEN</b> 0.0 Ft.			<b>14. ELEVATION GROUND WATER</b>	
<b>7. DEPTH DRILLED INTO ROCK</b> 0.0 Ft.			<b>15. DATE BORING</b> STARTED: 07-31-15 10:11 COMPLETED: 07-31-15 10:13	
<b>8. TOTAL DEPTH OF BORING</b> 20.0 Ft.			<b>16. ELEVATION TOP OF BORING</b> -46.7 Ft.	
			<b>17. TOTAL RECOVERY FOR BORING</b> 19.6 Ft.	
			<b>18. SIGNATURE AND TITLE OF INSPECTOR</b> BF	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-46.7	0.0					
			Shelly SAND, fine grained, quartz, little whole shell, trace silt, shell component is shell hash, whole shells up to 0.5", (1.0" x 0.5") whole shell @ 8.7', 1.0" clay pocket @ 11.8', very dark gray (5Y-3/1), (SW).		1	Sample #1, Depth = 3.0' Mean (mm): 0.54, Phi Sorting: 0.96 Fines (230): 2.06% (SW)
					2	Sample #2, Depth = 6.0' Mean (mm): 0.57, Phi Sorting: 0.89 Fines (230): 1.99% (SW)
					3	Sample #3, Depth = 9.0' Mean (mm): 0.53, Phi Sorting: 0.94 Fines (230): 1.65% (SW)
-59.0	12.3					
			SAND, fine grained, quartz, some shell hash, trace shell fragments, trace silt, shell fragments up to 0.25", (1.0" x 0.5") shell fragment @ 13.8', 0.5" clay pocket @ 13.6', dark gray (5Y-4/1), (SP-SM).		4	Sample #4, Depth = 13.2' Mean (mm): 0.32, Phi Sorting: 0.85 Fines (230): 6.16% (SP-SM)
-61.3	14.6					
			SAND, fine grained, quartz, little clay, little shell hash, trace shell fragments, trace silt, shell fragments up to 0.75", (3.0" x 1.0") shell hash pocket @ 15.0', clay distributed in pockets up to 0.5" and increases with depth, dark gray (5Y-4/1), (SC).		5	Sample #5, Depth = 14.8' Mean (mm): 0.27, Phi Sorting: 1.03 Fines (230): 14.47% (SC)
-62.2	15.5					
			Clayey SHELL, little silt, shell components are shell fragments up to 1.0" and whole shells up to 2.0", dark greenish gray (10Y-4/1), (GC).			
-65.0	18.3					
			Clayey SHELL FRAGMENTS, shell fragments up to 2.0", greenish gray (10Y-6/1), (GC).			
-66.3	19.6					
-66.7	20.0		No Recovery.			
			End of Boring			

LOUISIANA FL-BOEM-2015-VC-GPJ-UBRAZIL-GDT-9/12/16

<b>DRILLING LOG</b>		<b>DIVISION</b>	<b>INSTALLATION</b>	<b>SHEET 1</b> OF 1 SHEETS
<b>1. PROJECT</b> Inventory of Potential Beach Nourishment and Coastal Restoration Sand Sources on the Atlantic OCS			<b>9. SIZE AND TYPE OF BIT</b> 3.0 In.	
<b>2. BORING DESIGNATION</b> FL-BOEM-2015-VC08			<b>10. COORDINATE SYSTEM/DATUM</b> UTM 17	
<b>3. DRILLING AGENCY</b> American Vibracore Services, Inc.			<b>11. MANUFACTURER'S DESIGNATION OF DRILL</b> <input type="checkbox"/> AUTO HAMMER Alpine Pneumatic Vibracore <input type="checkbox"/> MANUAL HAMMER	
<b>4. NAME OF DRILLER</b> Brian McCord			<b>12. TOTAL SAMPLES</b> DISTURBED _____ UNDISTURBED (UD) _____	
<b>5. DIRECTION OF BORING</b> <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED			<b>13. TOTAL NUMBER CORE BOXES</b> _____	
<b>6. THICKNESS OF OVERBURDEN</b> 0.0 Ft.			<b>14. ELEVATION GROUND WATER</b> _____	
<b>7. DEPTH DRILLED INTO ROCK</b> 0.0 Ft.			<b>15. DATE BORING</b> STARTED 08-14-15 07:59 COMPLETED 08-14-15 08:07	
<b>8. TOTAL DEPTH OF BORING</b> 20.0 Ft.			<b>16. ELEVATION TOP OF BORING</b> -61.0 Ft.	
			<b>17. TOTAL RECOVERY FOR BORING</b> 19.4 Ft.	
			<b>18. SIGNATURE AND TITLE OF INSPECTOR</b> BF	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-61.0	0.0					
			SAND, fine grained, quartz, trace shell hash, trace silt, trace whole shell, whole shells up to 0.75", silt distributed in silty laminae, pockets up to 1.0" and throughout layer, gray (5Y-5/1), (SP).		1	Sample #1, Depth = 2.0' Mean (mm): 0.23, Phi Sorting: 0.71 Fines (230): 1.29% (SP)
-66.2	5.2		SAND, fine grained, quartz, trace shell hash, trace silt, silt distributed in silty pockets up to 1.0" and throughout layer, 1.0" whole shell @ 5.8', dark gray (5Y-4/1), (SP).		2	Sample #2, Depth = 6.0' Mean (mm): 0.20, Phi Sorting: 0.57 Fines (230): 4.05% (SP)
			SAND, fine grained, quartz, trace shell fragments, trace shell hash, trace silt, trace whole shell, shell fragments up to 0.5", whole shells up to 0.25", (1.75" x 1.0") shell fragment @ 8.7', silt increases with depth, dark gray (5Y-4/1), (SP-SM).		3	Sample #3, Depth = 8.4' Mean (mm): 0.21, Phi Sorting: 0.80 Fines (230): 7.74% (SP-SM)
-71.7	10.7		SAND, fine grained, quartz, little shell fragments, little shell hash, little silt, little whole shell, whole shells up to 1.5", shell fragments up to 1.0", dark gray (5Y-4/1), (SW-SM).		4	Sample #4, Depth = 11.4' Mean (mm): 0.28, Phi Sorting: 1.62 Fines (230): 10.87% (SW-SM)
-73.0	12.0		Shelly CLAY, little sand, shell components are shell hash, shell fragments up to 1.5", and whole shells up to 2.0", (2.0" x 1.5") & (2.0" x 0.5") rock fragments @ 13.0', sand increases with depth, dark gray (5Y-4/1), (GC).			
-75.4	14.4		SAND, fine grained, quartz, trace shell fragments, trace shell hash, trace silt, trace whole shell, shell fragments and whole shells up to 1.0", 2.0" shelly pocket @ 16.1', shell components are shell fragments and whole shells up to 1.25", gray (5Y-5/1), (SW-SM).		5	Sample #5, Depth = 16.6' Mean (mm): 0.29, Phi Sorting: 1.45 Fines (230): 5.85% (SW-SM)
-79.0	18.0		SAND, fine grained, quartz, some shell, trace silt, shell components are shell hash, shell fragments and whole shells up to 0.5", dark gray (5Y-4/1), (SW).		6	Sample #6, Depth = 18.7' Mean (mm): 0.58, Phi Sorting: 1.76 Fines (230): 3.33% (SW)
-80.4	19.4					
-81.0	20.0					
			No Recovery.			
			End of Boring			

LOUISIANA FL BOEM 2015 VC GPJ JPBRAZIL.GDT 9/12/16

<b>DRILLING LOG</b>		<b>DIVISION</b>	<b>INSTALLATION</b>	<b>SHEET 1</b> OF 1 SHEETS
<b>1. PROJECT</b> Inventory of Potential Beach Nourishment and Coastal Restoration Sand Sources on the Atlantic OCS			<b>9. SIZE AND TYPE OF BIT</b> 3.0 In.	
<b>2. BORING DESIGNATION</b> FL-BOEM-2015-VC10			<b>10. COORDINATE SYSTEM/DATUM</b> UTM 17	
<b>3. DRILLING AGENCY</b> American Vibracore Services, Inc.			<b>11. MANUFACTURER'S DESIGNATION OF DRILL</b> <input type="checkbox"/> AUTO HAMMER Alpine Pneumatic Vibracore <input type="checkbox"/> MANUAL HAMMER	
<b>4. NAME OF DRILLER</b> Justin Robertson			<b>12. TOTAL SAMPLES</b> DISTURBED _____ UNDISTURBED (UD) _____	
<b>5. DIRECTION OF BORING</b> <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED			<b>13. TOTAL NUMBER CORE BOXES</b>	
<b>6. THICKNESS OF OVERBURDEN</b> 0.0 Ft.			<b>14. ELEVATION GROUND WATER</b>	
<b>7. DEPTH DRILLED INTO ROCK</b> 0.0 Ft.			<b>15. DATE BORING</b> STARTED 08-14-15 13:59 COMPLETED 08-14-15 14:01	
<b>8. TOTAL DEPTH OF BORING</b> 20.0 Ft.			<b>16. ELEVATION TOP OF BORING</b> -60.9 Ft.	
			<b>17. TOTAL RECOVERY FOR BORING</b> 19.7 Ft.	
			<b>18. SIGNATURE AND TITLE OF INSPECTOR</b> KM	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-60.9	0.0					
-61.6	0.7		SAND, fine grained, quartz, some shell hash, trace shell fragments, trace silt, shell fragments up to 0.5", dark gray (5Y-4/1), (SW).		1	Sample #1, Depth = 0.3' Mean (mm): 0.31, Phi Sorting: 1.16 Fines (230): 1.30% (SW)
-64.9	4.0		SAND, fine grained, quartz, little shell hash, trace shell fragments, trace silt, shell fragments up to (1.0" x 0.5"), (1.25" x 1.0") shell fragment @ 1.8', (1.5" x 1.0") shell fragment @ 3.2', gray (5Y-5/1), (SW).		2	Sample #2, Depth = 2.5' Mean (mm): 0.25, Phi Sorting: 0.88 Fines (230): 1.47% (SW)
-65.8	4.9		SAND, fine grained, quartz, trace shell hash, trace silt, gray (5Y-5/1), (SP).		3	Sample #3, Depth = 4.4' Mean (mm): 0.20, Phi Sorting: 0.54 Fines (230): 1.74% (SP)
-67.4	6.5		SAND, fine grained, quartz, little shell hash, trace shell fragments, trace silt, shell fragments up to 0.75", 0.25" silty pocket @ 5.6', gray (5Y-5/1), (SP).		4	Sample #4, Depth = 5.7' Mean (mm): 0.22, Phi Sorting: 0.61 Fines (230): 1.86% (SP)
-69.1	8.2		SAND, fine grained, quartz, little shell hash, trace shell fragments, trace silt, shell fragments up to 0.75", (1.25" x 1.0") whole shell @ 7.2', (1.0" x 3.0") silty pocket @ 8.1', dark gray (5Y-4/1), (SW-SM).		5	Sample #5, Depth = 7.3' Mean (mm): 0.22, Phi Sorting: 1.29 Fines (230): 4.95% (SW-SM)
-69.5	8.6		SHELL, trace silt, shell components are shell hash and shell fragments up to 0.75", (1.25" x 1.0") shell fragment @ 8.4', dark gray (5Y-4/1), (SW).		6	Sample #6, Depth = 8.4' Mean (mm): 0.46, Phi Sorting: 1.81 Fines (230): 4.51% (SW)
-71.4	10.5		SAND, fine grained, quartz, little shell hash, little silt, (2.0" x 1.5") shell fragment @ 8.9', dark greenish gray (10Y-4/1), (SM).		7	Sample #7, Depth = 9.6' Mean (mm): 0.16, Phi Sorting: 1.00 Fines (230): 11.23% (SM)
-73.3	12.4		Clayey SHELL, shell components are shell hash and shell fragments up to (1.5" x 1.0"), (3.0" x 1.75") shell fragment @ 11.0', 1.5" whole shell @ 11.3', dark greenish gray (5GY-4/1), (GC).			
-74.6	13.7		CLAY, soft, little shell hash, dark gray (N-4/0), (CL).			
-77.4	16.5		Clayey SHELL HASH, little sand, 1.5" whole shell @ 15.0', 3.0" clay pocket @ 16.4', dark gray (N-4/0), (GC).			
-80.6	19.7		SHELL HASH, little clay, little sand, little shell fragments, shell fragments up to 0.5", (2.5" x 1.5") shell fragment @ 19.7', dark gray (N-4/0), (GC).			
-80.9	20.0		No Recovery.			
			End of Boring			

LOUISIANA FL-BOEM-2015-VC-GPJ-IBRAZIL-GDT-9/12/16

<b>DRILLING LOG</b>		<b>DIVISION</b>	<b>INSTALLATION</b>	<b>SHEET 1</b> OF 1 SHEETS
<b>1. PROJECT</b> Inventory of Potential Beach Nourishment and Coastal Restoration Sand Sources on the Atlantic OCS			<b>9. SIZE AND TYPE OF BIT</b> 3.0 In.	
<b>2. BORING DESIGNATION</b> FL-BOEM-2015-VC15			<b>10. COORDINATE SYSTEM/DATUM</b> UTM 17	
<b>3. DRILLING AGENCY</b> American Vibracore Services, Inc.			<b>11. MANUFACTURER'S DESIGNATION OF DRILL</b> <input type="checkbox"/> AUTO HAMMER Alpine Pneumatic Vibracore <input type="checkbox"/> MANUAL HAMMER	
<b>4. NAME OF DRILLER</b> Brian McCord			<b>12. TOTAL SAMPLES</b> DISTURBED _____ UNDISTURBED (UD) _____	
<b>5. DIRECTION OF BORING</b> <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED			<b>13. TOTAL NUMBER CORE BOXES</b>	
<b>6. THICKNESS OF OVERBURDEN</b> 0.0 Ft.			<b>14. ELEVATION GROUND WATER</b>	
<b>7. DEPTH DRILLED INTO ROCK</b> 0.0 Ft.			<b>15. DATE BORING</b> STARTED 08-14-15 12:32 COMPLETED 08-14-15 12:36	
<b>8. TOTAL DEPTH OF BORING</b> 20.0 Ft.			<b>16. ELEVATION TOP OF BORING</b> -60.7 Ft.	
			<b>17. TOTAL RECOVERY FOR BORING</b> 17.5 Ft.	
			<b>18. SIGNATURE AND TITLE OF INSPECTOR</b> BF	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-60.7	0.0					
-61.4	0.7		SHELL HASH, some sand, fine grained, quartz, trace shell fragments, trace silt, trace whole shell, whole shells up to 1.0", shell fragments up to 0.25", gray (2.5Y-5/1), (SW).		1	Sample #1, Depth = 0.3' Mean (mm): 0.59, Phi Sorting: 1.67 Fines (230): 1.30% (SW)
-62.4	1.7				2	
-62.7	2.0		SAND, fine grained, quartz, little shell hash, trace silt, dark gray (5Y-4/1), (SW).		3	Sample #2, Depth = 1.1' Mean (mm): 0.34, Phi Sorting: 1.15 Fines (230): 1.60% (SW)
-64.4	3.7		Shelly SAND, fine grained, quartz, trace silt, shell components are shell hash and shell fragments up to 0.5", dark gray (5Y-4/1), (SW).		4	Sample #3, Depth = 1.8' Mean (mm): 0.48, Phi Sorting: 1.41 Fines (230): 1.18% (SW)
-65.8	5.1		SAND, fine grained, quartz, trace shell fragments, trace shell hash, trace silt, shell fragments up to 0.25", 1.5" shelly pocket @ 3.6', shell components are whole shells up to 0.75" and shell fragments up to 0.25", gray (5Y-5/1), (SP).		5	Sample #4, Depth = 2.7' Mean (mm): 0.24, Phi Sorting: 0.77 Fines (230): 1.19% (SP)
-68.4	7.7				6	Sample #5, Depth = 4.4' Mean (mm): 0.26, Phi Sorting: 0.91 Fines (230): 2.05% (SW)
-68.8	8.1		SAND, fine grained, quartz, trace silt, silt distributed in laminae, dark gray (2.5Y-4/1), (SW).		7	Sample #6, Depth = 5.9' Mean (mm): 0.35, Phi Sorting: 1.19 Fines (230): 2.37% (SW)
-69.5	8.8				8	Sample #7, Depth = 8.5' Mean (mm): 0.48, Phi Sorting: 1.62 Fines (230): 3.63% (SW)
-70.5	9.8		SAND, fine grained, quartz, little shell hash, trace shell fragments, trace silt, trace whole shell, whole shells up to 1.0", shell fragments up to 0.5", dark gray (5Y-4/1), (SW).		9	Sample #8, Depth = 9.2' Mean (mm): 0.21, Phi Sorting: 0.73 Fines (230): 4.93% (SP-SM)
-72.3	11.6		SAND, fine grained, quartz, trace shell hash, trace silt, dark gray (2.5Y-4/1), (SP-SM).		10	Sample #9, Depth = 10.5' Mean (mm): 0.22, Phi Sorting: 0.87 Fines (230): 6.23% (SW-SM)
-73.8	13.1		Shelly SAND, fine grained, quartz, trace silt, shell components are shell fragments up to 1.0" and whole shells up to 0.5", 0.5" clay pocket @ 8.1', dark gray (2.5Y-4/1), (SW).		11	
-76.9	16.2		SAND, fine grained, quartz, trace shell hash, trace silt, dark gray (2.5Y-4/1), (SP-SM).			Sample #10, Depth = 14.5' Mean (mm): 0.17, Phi Sorting: 0.65 Fines (230): 3.40% (SP)
-78.2	17.5		SAND, fine grained, quartz, trace shell hash, trace silt, silt and shell hash increases with depth, dark gray (2.5Y-4/1), (SW-SM).			Sample #11, Depth = 17.0' Mean (mm): 0.57, Phi Sorting: 2.09 Fines (230): 2.53% (SW)
-80.7	20.0		Shelly SILT, little sand, shell components are shell hash and shell fragments up to 1.5", 2 (3.0" x 2.0") shell fragments @ 12.2', (1.75" x 1.0") whole shell @ 11.7', dark gray (5Y-4/1), (GM).			
			SAND, fine grained, quartz, trace shell fragments, trace shell hash, trace silt, shell fragments up to 1.0", (1.0" x 0.5") whole shell @ 13.4', gray (5Y-5/1), (SP).			
			Sandy SHELL, trace silt, shell components are whole shells and shell fragments up to 1.0", (2.0" x 1.5") shell fragments @ 17.2' & 17.4', (1.25" x 1.0") shell fragments @ 17.1' & 17.2', gray (2.5Y-5/1), (GW).			
			No Recovery.			
			End of Boring			

LOUISIANA FL BOEM 2015 VC.GPJ JPBRAZIL.GDT 9/12/16



<b>DRILLING LOG</b>		<b>DIVISION</b>	<b>INSTALLATION</b>	<b>SHEET 1</b> OF 1 SHEETS
<b>1. PROJECT</b> Inventory of Potential Beach Nourishment and Coastal Restoration Sand Sources on the Atlantic OCS			<b>9. SIZE AND TYPE OF BIT</b> 3.0 In.	
<b>2. BORING DESIGNATION</b> FL-BOEM-2015-VC16			<b>10. COORDINATE SYSTEM/DATUM</b> UTM 17	
<b>3. DRILLING AGENCY</b> American Vibracore Services, Inc.			<b>11. MANUFACTURER'S DESIGNATION OF DRILL</b> <input type="checkbox"/> AUTO HAMMER Alpine Pneumatic Vibracore <input type="checkbox"/> MANUAL HAMMER	
<b>4. NAME OF DRILLER</b> Brian McCord			<b>12. TOTAL SAMPLES</b> DISTURBED _____ UNDISTURBED (UD) _____	
<b>5. DIRECTION OF BORING</b> <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED			<b>13. TOTAL NUMBER CORE BOXES</b> _____	
<b>6. THICKNESS OF OVERBURDEN</b> 0.0 Ft.			<b>14. ELEVATION GROUND WATER</b> _____	
<b>7. DEPTH DRILLED INTO ROCK</b> 0.0 Ft.			<b>15. DATE BORING</b> _____	
<b>8. TOTAL DEPTH OF BORING</b> 20.0 Ft.			<b>16. ELEVATION TOP OF BORING</b> -54.0 Ft.	
			<b>17. TOTAL RECOVERY FOR BORING</b> 19.9 Ft.	
			<b>18. SIGNATURE AND TITLE OF INSPECTOR</b> SMT	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-54.0	0.0					
-60.0	6.0		SAND, fine grained, quartz, trace shell hash, trace silt, silt distributed in silty pockets up to 0.25" and throughout layer, (0.5" x 0.25") shell fragment @ 2.0', gray (5Y-5/1), (SP).		1	Sample #1, Depth = 3.0' Mean (mm): 0.20, Phi Sorting: 0.56 Fines (230): 1.97% (SP)
-63.4	9.4		SAND, fine grained, quartz, trace shell hash, trace silt, 1.0" shell fragment @ 8.0', gray (5Y-5/1), (SP).		2	Sample #2, Depth = 7.7' Mean (mm): 0.18, Phi Sorting: 0.60 Fines (230): 2.49% (SP)
-63.8	9.8		SAND, fine grained, quartz, little silt, trace shell hash, 1.0" silt pocket @ 9.5', clayey lamina @ 9.7', dark gray (5Y-4/1), (SM).		3	Sample #3, Depth = 9.6' Mean (mm): 0.17, Phi Sorting: 0.64 Fines (230): 15.92% (SM)
-64.2	10.2				4	
-68.6	14.6		SAND, fine grained, quartz, trace shell hash, trace silt, trace whole shell, shell fragments up to 0.5", whole shells up to 0.75", 3 whole shells @ 10.1' (2 = 2.0" x 0.5", 1 = 1.5" x 0.5"), (1.25" x 1.0") shell fragment @ 10.1', dark gray (5Y-4/1), (SW).		5	Sample #4, Depth = 10.0' Mean (mm): 0.35, Phi Sorting: 1.41 Fines (230): 2.72% (SW) Sample #5, Depth = 12.4' Mean (mm): 0.19, Phi Sorting: 0.90 Fines (230): 4.32% (SW)
-69.4	15.4		SAND, fine grained, quartz, trace shell hash, trace silt, silt increases with depth, dark gray (2.5Y-4/1), (SW).		6	Sample #6, Depth = 15.2' Mean (mm): 0.17, Phi Sorting: 0.80 Fines (230): 7.97% (SP-SM)
-70.5	16.5		SAND, fine grained, quartz, trace shell hash, trace silt, dark gray (5Y-4/1), (SP-SM).		7	Sample #7, Depth = 15.8' Mean (mm): 0.56, Phi Sorting: 1.47 Fines (230): 5.60% (SW-SM)
-71.3	17.3		Shelly SAND, fine grained, quartz, trace silt, shell components are shell hash and shell fragments up to 0.75", dark gray (2.5Y-4/1), (SW-SM).		8	Sample #8, Depth = 16.8' Mean (mm): 0.20, Phi Sorting: 1.15 Fines (230): 7.56% (SW-SC)
-73.9	19.9		SAND, fine grained, quartz, trace clay, trace shell hash, trace silt, 1.0" whole shell @ 17.2', dark gray (2.5Y-4/1), (SW-SC).			
-74.0	20.0		CLAY, firm, color is mottled (2.5Y-5/6) and, dark greenish gray (5GY-4/1), (CL). No Recovery.			
			End of Boring			

LOUISIANA FL-BOEM-2015-VC-GPJ-JPBRAZIL-GDT-9/12/16

<b>DRILLING LOG</b>		<b>DIVISION</b>	<b>INSTALLATION</b>	<b>SHEET 1</b> OF 1 SHEETS
<b>1. PROJECT</b> Inventory of Potential Beach Nourishment and Coastal Restoration Sand Sources on the Atlantic OCS			<b>9. SIZE AND TYPE OF BIT</b> 3.0 In.	
<b>2. BORING DESIGNATION</b> FL-BOEM-2015-VC17			<b>10. COORDINATE SYSTEM/DATUM</b> UTM 17	<b>HORIZONTAL</b> NAD 1983
<b>3. DRILLING AGENCY</b> American Vibracore Services, Inc.			<b>11. MANUFACTURER'S DESIGNATION OF DRILL</b> <input type="checkbox"/> AUTO HAMMER Alpine Pneumatic Vibracore <input type="checkbox"/> MANUAL HAMMER	
<b>4. NAME OF DRILLER</b> Brian McCord			<b>12. TOTAL SAMPLES</b> <input type="checkbox"/> DISTURBED <input type="checkbox"/> UNDISTURBED (UD)	
<b>5. DIRECTION OF BORING</b> <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED			<b>13. TOTAL NUMBER CORE BOXES</b>	
<b>6. THICKNESS OF OVERBURDEN</b> 0.0 Ft.			<b>14. ELEVATION GROUND WATER</b>	
<b>7. DEPTH DRILLED INTO ROCK</b> 0.0 Ft.			<b>15. DATE BORING</b> <b>STARTED</b> 08-15-15 12:21 <b>COMPLETED</b> 08-15-15 12:24	
<b>8. TOTAL DEPTH OF BORING</b> 20.0 Ft.			<b>16. ELEVATION TOP OF BORING</b> -54.2 Ft.	
			<b>17. TOTAL RECOVERY FOR BORING</b> 19.7 Ft.	
			<b>18. SIGNATURE AND TITLE OF INSPECTOR</b> KM	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-54.2	0.0					
-55.8	1.6		SAND, fine grained, quartz, trace shell hash, trace silt, silt distributed in silty pockets up to 0.5", gray (5Y-5/1), (SW).		1	Sample #1, Depth = 0.8' Mean (mm): 0.23, Phi Sorting: 0.98 Fines (230): 1.74% (SW)
-56.7	2.5		SAND, fine grained, quartz, trace shell fragments, trace shell hash, trace silt, shell fragments up to 0.5", 1.25" shelly pocket @ 2.0', shell components are shell hash and shell fragments up to 0.75", dark gray (5Y-4/1), (SW).		2	Sample #2, Depth = 2.1' Mean (mm): 0.21, Phi Sorting: 0.86 Fines (230): 2.57% (SW)
-60.5	6.3		SAND, fine grained, quartz, trace shell fragments, trace shell hash, trace silt, shell fragments up to 0.5", (1.5" x 0.75") and (1.25" x 1.0") shell fragments @ 2.9', (1.0" x 0.5") shell fragment @ 4.7', (1.5" x 1.0") whole shell @ 6.2', very dark gray (5Y-3/1), (SP-SM).		3	Sample #3, Depth = 4.4' Mean (mm): 0.18, Phi Sorting: 0.74 Fines (230): 7.52% (SP-SM)
-61.6	7.4		CLAY, soft, little sand, little shell hash, very dark greenish gray (10Y-3/1), (CL).			
-63.0	8.8		Clayey SHELL HASH, some sand, very dark greenish gray (10Y-3/1), (SC).			
-63.8	9.6		CLAY, soft, little sand, little shell hash, very dark greenish gray (10Y-3/1), (CL).			
-64.8	10.6		Clayey SAND, fine grained, quartz, trace shell hash, very dark greenish gray (10Y-3/1), (SC).			
-65.8	11.6		CLAY, soft, some sand, little shell hash, very dark greenish gray (10Y-3/1), (CL).			
-66.6	12.4		Clayey SAND, fine grained, quartz, trace shell hash, very dark greenish gray (10Y-3/1), (SC).			
-67.9	13.7		CLAY, little sand, trace shell hash, very dark greenish gray (10Y-3/1), (CL).			
-69.1	14.9		Clayey SAND, medium grained, quartz, trace shell hash, very dark gray (N-3/0), (SC).			
-70.6	16.4		SAND, fine to medium grained, quartz, trace clay, trace shell hash, dark gray (N-4/0), (SW-SC).		4	Sample #4, Depth = 15.6' Mean (mm): 0.37, Phi Sorting: 0.92 Fines (230): 6.22% (SW-SC)
-72.3	18.1		Clayey GRAVEL, little shell hash, gravel components are shell fragments up to 1.5", rock fragments up to 2.0", and whole shells up to 1.0", dark greenish gray (5GY-4/1), (GC).			
-73.9	19.7		Clayey SAND, medium grained, quartz, trace shell hash, dark greenish gray (10Y-4/1), (SC).			
-74.2	20.0		No Recovery.			
			End of Boring			


LOUISIANA FL BOEM 2015 VC.GPJ JPBRAZIL.GDT 9/12/16



<b>DRILLING LOG</b>		<b>DIVISION</b>	<b>INSTALLATION</b>	<b>SHEET 1</b> OF 1 SHEETS
<b>1. PROJECT</b> Inventory of Potential Beach Nourishment and Coastal Restoration Sand Sources on the Atlantic OCS			<b>9. SIZE AND TYPE OF BIT</b> 3.0 In.	
<b>2. BORING DESIGNATION</b> FL-BOEM-2015-VC18			<b>10. COORDINATE SYSTEM/DATUM</b> UTM 17	
<b>3. DRILLING AGENCY</b> American Vibracore Services, Inc.			<b>11. MANUFACTURER'S DESIGNATION OF DRILL</b> Alpine Pneumatic Vibracore	
<b>4. NAME OF DRILLER</b> Brian McCord			<input type="checkbox"/> <b>AUTO HAMMER</b> <input type="checkbox"/> <b>MANUAL HAMMER</b>	
<b>5. DIRECTION OF BORING</b> <input checked="" type="checkbox"/> <b>VERTICAL</b> <input type="checkbox"/> <b>INCLINED</b>			<b>12. TOTAL SAMPLES</b> DISTURBED: _____ UNDISTURBED (UD): _____	
<b>6. THICKNESS OF OVERBURDEN</b> 0.0 Ft.			<b>13. TOTAL NUMBER CORE BOXES</b>	
<b>7. DEPTH DRILLED INTO ROCK</b> 0.0 Ft.			<b>14. ELEVATION GROUND WATER</b>	
<b>8. TOTAL DEPTH OF BORING</b> 20.0 Ft.			<b>15. DATE BORING</b> STARTED: 08-15-15 10:45 COMPLETED: 08-15-15 10:45	
			<b>16. ELEVATION TOP OF BORING</b> -57.3 Ft.	
			<b>17. TOTAL RECOVERY FOR BORING</b> 19.9 Ft.	
			<b>18. SIGNATURE AND TITLE OF INSPECTOR</b> SMT	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-57.3	0.0					
-60.6	3.3		SAND, fine grained, quartz, trace shell fragments, trace shell hash, trace silt, shell fragments up to 0.5", (2.0" x 0.5") shell fragment @ 0.4', gray (5Y-5/1), (SW).		1	Sample #1, Depth = 1.7' Mean (mm): 0.29, Phi Sorting: 1.02 Fines (230): 1.43% (SW)
-64.4	7.1		SAND, fine grained, quartz, trace shell hash, trace silt, (0.5" x 0.25") shell fragment @ 4.8', 0.5" whole shell and 1.0" silt pocket @ 5.3', gray (5Y-5/1), (SP).		2	Sample #2, Depth = 4.9' Mean (mm): 0.17, Phi Sorting: 0.61 Fines (230): 2.31% (SP)
-67.8	10.5		SAND, fine grained, quartz, trace shell hash, trace silt, silt distributed in silty pockets up to 0.5" and throughout layer, 0.25" shell fragment @ 8.4', gray (5Y-5/1), (SP).		3	Sample #3, Depth = 8.4' Mean (mm): 0.17, Phi Sorting: 0.59 Fines (230): 3.24% (SP)
-70.7	13.4		SAND, fine grained, quartz, trace shell hash, trace silt, (1.5" x 1.0") shell fragment @ 12.0', 0.5" shell fragment @ 12.1', silt increases with depth, clayey silt pocket @ 13.0', dark gray (5Y-4/1), (SP-SM).		4	Sample #4, Depth = 12.2' Mean (mm): 0.15, Phi Sorting: 0.74 Fines (230): 5.37% (SP-SM)
-71.5	14.2		Shelly SAND, fine grained, quartz, little silt, shell components are shell hash and shell fragments up to 1.0", (2.25" x 0.5") shell fragment @ 13.4', dark gray (5Y-4/1), (SM).			
-72.1	14.8		SAND, fine grained, quartz, little silt, trace shell fragments, trace shell hash, trace whole shell, whole shells and shell fragments up to 1.0", dark gray (5Y-4/1), (SM).			
-76.0	18.7		CLAY, firm, trace rock fragments, dark greenish gray (5G-4/1), (CL).			
-77.2	19.9		Sandy CLAY, trace rock fragments, trace shell hash, trace silt, greenish gray (5G-5/1), (CL).			
-77.3	20.0		No Recovery.			
			End of Boring			

LOUISIANA FL-BOEM-2015-VC-GPJ-JPBRAZIL-GDT-9/12/16

<b>DRILLING LOG</b>		<b>DIVISION</b>	<b>INSTALLATION</b>	<b>SHEET 1</b>
<b>1. PROJECT</b> Inventory of Potential Beach Nourishment and Coastal Restoration Sand Sources on the Atlantic OCS			<b>9. SIZE AND TYPE OF BIT</b> 3.0 In.	<b>OF 1 SHEETS</b>
<b>2. BORING DESIGNATION</b> FL-BOEM-2015-VC19		<b>LOCATION COORDINATES (m)</b> X = 477,850 Y = 3,312,643	<b>10. COORDINATE SYSTEM/DATUM</b> UTM 17	<b>HORIZONTAL</b> NAD 1983
<b>3. DRILLING AGENCY</b> American Vibracore Services, Inc.		<b>CONTRACTOR FILE NO.</b>	<b>11. MANUFACTURER'S DESIGNATION OF DRILL</b> Alpine Pneumatic Vibracore	<input type="checkbox"/> <b>AUTO HAMMER</b> <input type="checkbox"/> <b>MANUAL HAMMER</b>
<b>4. NAME OF DRILLER</b> Brian McCord			<b>12. TOTAL SAMPLES</b>	<b>DISTURBED</b> <b>UNDISTURBED (UD)</b>
<b>5. DIRECTION OF BORING</b> <input checked="" type="checkbox"/> <b>VERTICAL</b> <input type="checkbox"/> <b>INCLINED</b>		<b>DEG. FROM VERTICAL</b>	<b>13. TOTAL NUMBER CORE BOXES</b>	<b>14. ELEVATION GROUND WATER</b>
<b>6. THICKNESS OF OVERBURDEN</b> 0.0 Ft.		<b>BEARING</b>	<b>15. DATE BORING</b>	<b>STARTED</b> 08-15-15 09:35
<b>7. DEPTH DRILLED INTO ROCK</b> 0.0 Ft.			<b>16. ELEVATION TOP OF BORING</b> -49.6 Ft.	<b>COMPLETED</b> 08-15-15 09:38
<b>8. TOTAL DEPTH OF BORING</b> 20.0 Ft.			<b>17. TOTAL RECOVERY FOR BORING</b> 18.7 Ft.	<b>18. SIGNATURE AND TITLE OF INSPECTOR</b> SMT

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-49.6	0.0					
-53.7	4.1		SAND, fine grained, quartz, trace shell hash, trace silt, (2.0" x 1.25") shell hash pocket @ 0.7', (1.0" x 0.5") whole shell @ 3.3', (1.5" x 0.5") shell fragment @ 3.5', shell hash increases with depth, gray (5Y-6/1), (SP).		1	Sample #1, Depth = 2.0' Mean (mm): 0.21, Phi Sorting: 0.62 Fines (230): 1.35% (SP)
-54.2	4.6		Shelly SAND, fine grained, quartz, trace silt, shell components are shell hash, shell fragments up to 0.5" and whole shells up to 1.0", gray (2.5Y-5/1), (SW).		2	Sample #2, Depth = 4.4' Mean (mm): 0.46, Phi Sorting: 1.82 Fines (230): 1.45% (SW)
-56.6	7.0		SAND, fine grained, quartz, trace shell hash, trace silt, (1.0" x 1.5") shell fragment @ 5.2', gray (5Y-5/1), (SP).		1	
-58.8	9.2		SAND, fine grained, quartz, trace shell fragments, trace shell hash, trace silt, trace whole shell, shell fragments up to 1.0", whole shells up to 0.5", (1.5" x 0.5") shell fragment @ 7.5', silt distributed in silty pockets up to 0.5" and throughout layer, dark gray (5Y-4/1), (SP).		3	Sample #3, Depth = 8.1' Mean (mm): 0.20, Phi Sorting: 0.71 Fines (230): 2.66% (SP)
-59.3	9.7		Shelly SAND, fine grained, quartz, trace silt, shell components are shell hash, shell fragments and whole shells up to 1.0", gray (5Y-5/1), (SW).		2	
-62.4	12.8		SAND, fine grained, quartz, trace shell hash, trace silt, 1.25" whole shell @ 12.6', silt distributed in silty pockets up to 1.0" and throughout layer, shell hash increases with depth, gray (5Y-5/1), (SP).		1	
-68.3	18.7		SAND, fine grained, quartz, little silt, trace clay, trace shell fragments, trace shell hash, shell fragments up to 1.1", (2.0" x 1.0") whole shell @ 14.6', (1.75" x 1.0") shell fragment @ 16.0', (1.25" x 1.0") whole shell @ 17.2', dark olive gray (5Y-3/2), (SM).		4	Sample #4, Depth = 15.1' Mean (mm): 0.19, Phi Sorting: 1.09 Fines (230): 13.32% (SM)
-69.6	20.0		No Recovery.			
			End of Boring			

LOUISIANA FL-BOEM-2015-VC.GPJ JPBRAZIL.GDT 9/12/16

<b>DRILLING LOG</b>		<b>DIVISION</b>	<b>INSTALLATION</b>	<b>SHEET 1</b>
<b>1. PROJECT</b> Inventory of Potential Beach Nourishment and Coastal Restoration Sand Sources on the Atlantic OCS			<b>9. SIZE AND TYPE OF BIT</b> 3.0 In.	
<b>2. BORING DESIGNATION</b> FL-BOEM-2015-VC21			<b>10. COORDINATE SYSTEM/DATUM</b> UTM 17	
<b>3. DRILLING AGENCY</b> American Vibracore Services, Inc.			<b>11. MANUFACTURER'S DESIGNATION OF DRILL</b> Alpine Pneumatic Vibracore	
<b>4. NAME OF DRILLER</b> Brian McCord			<input type="checkbox"/> <b>AUTO HAMMER</b> <input type="checkbox"/> <b>MANUAL HAMMER</b>	
<b>5. DIRECTION OF BORING</b> <input checked="" type="checkbox"/> <b>VERTICAL</b> <input type="checkbox"/> <b>INCLINED</b>			<b>12. TOTAL SAMPLES</b> DISTURBED: _____ UNDISTURBED (UD): _____	
<b>6. THICKNESS OF OVERBURDEN</b> 0.0 Ft.			<b>13. TOTAL NUMBER CORE BOXES</b>	
<b>7. DEPTH DRILLED INTO ROCK</b> 0.0 Ft.			<b>14. ELEVATION GROUND WATER</b>	
<b>8. TOTAL DEPTH OF BORING</b> 20.0 Ft.			<b>15. DATE BORING</b> STARTED: 08-15-15 18:21 COMPLETED: 08-15-15 18:24	
			<b>16. ELEVATION TOP OF BORING</b> -50.8 Ft.	
			<b>17. TOTAL RECOVERY FOR BORING</b> 19.8 Ft.	
			<b>18. SIGNATURE AND TITLE OF INSPECTOR</b> BF	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-50.8	0.0					
-52.3	1.5		SAND, fine grained, quartz, trace shell hash, trace silt, silt increases with depth, dark gray (5Y-4/1), (SW-SM).		1	Sample #1, Depth = 0.8' Mean (mm): 0.17, Phi Sorting: 0.90 Fines (230): 6.78% (SW-SM)
-56.8	6.0		SAND, fine grained, quartz, little silt, trace clay, trace shell fragments, trace shell hash, shell fragments up to 0.5", silt and clay distributed in laminae, silt increases with depth, (0.75" x 0.5") shell fragment @ 3.2', (2.0" x 1.75") whole shell @ 4.7', (1.0" x 0.75") shell fragment @ 4.9', 1.5" whole shell @ 5.0', very dark gray (5Y-3/1), (SM).		2	Sample #2, Depth = 4.0' Mean (mm): 0.16, Phi Sorting: 1.04 Fines (230): 16.19% (SM)
-58.5	7.7		CLAY, soft, some sand, trace shell hash, sand distributed in laminae, 1.0" sand pocket and (1.5" x 0.75") shell fragment @ 7.6', dark gray (5Y-4/1), (CL).			
-62.0	11.2		Shelly CLAY, trace sand, trace silt, shell components are shell hash, shell fragments and whole shells up to 1.5", 2.0" shell fragment @ 9.3', 3.0" shelly sand pocket @ 9.7', shell component is shell hash, 4.0" shelly sand pocket @ 10.3', shell components are shell hash and shell fragments up to 0.5", 1.0" sand pocket @ 11.1', dark gray (5Y-4/1), (CL).			
-64.9	14.1		CLAY, soft, 2.0" sand pocket @ 12.7', dark gray (N-4/0), (CL).		T1	Sample #T1, Depth = 13.0' Ave. Field Vane (tsf): 0.49
-65.8	15.0		Shelly SAND, fine grained, quartz, little silt, shell components are shell hash and shell fragments up to 0.5", (2.0" x 1.0") clay pocket @ 14.7', dark gray (5Y-4/1), (SW-SM).		3	Sample #3, Depth = 14.5' Mean (mm): 0.55, Phi Sorting: 1.22 Fines (230): 10.42% (SW-SM)
-66.3	15.5				T2	Sample #T2, Depth = 15.2' Ave. Field Vane (tsf): 0.51
-67.1	16.3		CLAY, firm, dark gray (N-4/0), (CL).		4	Sample #4, Depth = 16.0' Mean (mm): 0.30, Phi Sorting: 1.06 Fines (230): 23.83% (SC)
-70.6	19.8		SAND, fine grained, quartz, some clay, trace shell hash, trace silt, clay distributed in laminae, dark gray (5Y-4/1), (SC).		5	Sample #5, Depth = 18.2' Mean (mm): 0.31, Phi Sorting: 0.80 Fines (230): 5.32% (SP-SM)
-70.8	20.0		SAND, fine grained, quartz, trace clay, trace silt, clay and silt distributed in laminae, dark olive gray (5Y-3/2), (SP-SM).			
			No Recovery.			
			End of Boring			

LOUISIANA FL-BOEM-2015-VC-GPJ-IPBRAZIL-GDT-9/12/16

<b>DRILLING LOG</b>		<b>DIVISION</b>	<b>INSTALLATION</b>	<b>SHEET 1</b> OF 1 SHEETS
<b>1. PROJECT</b> Inventory of Potential Beach Nourishment and Coastal Restoration Sand Sources on the Atlantic OCS			<b>9. SIZE AND TYPE OF BIT</b> 3.0 In.	
<b>2. BORING DESIGNATION</b> FL-BOEM-2015-VC22			<b>10. COORDINATE SYSTEM/DATUM</b> UTM 17	
<b>3. DRILLING AGENCY</b> American Vibracore Services, Inc.			<b>11. MANUFACTURER'S DESIGNATION OF DRILL</b> Alpine Pneumatic Vibracore	
<b>4. NAME OF DRILLER</b> Brian McCord			<input type="checkbox"/> <b>AUTO HAMMER</b> <input type="checkbox"/> <b>MANUAL HAMMER</b>	
<b>5. DIRECTION OF BORING</b> <input checked="" type="checkbox"/> <b>VERTICAL</b> <input type="checkbox"/> <b>INCLINED</b>			<b>12. TOTAL SAMPLES</b> DISTURBED: _____ UNDISTURBED (UD): _____	
<b>6. THICKNESS OF OVERBURDEN</b> 0.0 Ft.			<b>13. TOTAL NUMBER CORE BOXES</b>	
<b>7. DEPTH DRILLED INTO ROCK</b> 0.0 Ft.			<b>14. ELEVATION GROUND WATER</b>	
<b>8. TOTAL DEPTH OF BORING</b> 20.0 Ft.			<b>15. DATE BORING</b> STARTED: 08-15-15 18:49 COMPLETED: 08-15-15 18:51	
			<b>16. ELEVATION TOP OF BORING</b> -56.1 Ft.	
			<b>17. TOTAL RECOVERY FOR BORING</b> 19.6 Ft.	
			<b>18. SIGNATURE AND TITLE OF INSPECTOR</b> BF	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-56.1	0.0					
-56.9	0.8		CLAY, soft, some sand, trace shell hash, 2.4" sandy pocket @ 0', (1"x0.5") whole shell @ 0.2', very dark gray (5Y-3/1), (CL).			
-58.8	2.7		SANDY CLAY, little shell fragments, trace whole shell, whole shells up to 2", shell fragments up to 1", (1"x1.5") shell fragment @ 1.5', very dark gray (5Y-3/1), (CL).			
-60.5	4.4		SAND, fine grained, quartz, trace clay, trace shell hash, trace silt, 2 (2"x1") shell fragments @ 3.3', (1.5"x0.5") whole shell and 0.5" shell fragment @ 4.3', clay distributed in pockets up to 0.5", dark gray (5Y-4/1), (SP-SM).		1	Sample #1, Depth = 3.6' Mean (mm): 0.28, Phi Sorting: 0.73 Fines (230): 7.88% (SP-SM)
-61.4	5.3		SAND, fine grained, quartz, trace shell hash, trace silt, silt distributed in laminae, gray (5Y-5/1), (SP).		2	Sample #2, Depth = 4.8' Mean (mm): 0.33, Phi Sorting: 0.60 Fines (230): 2.64% (SP)
-63.8	7.7		SAND, fine grained, quartz, trace silt, silt distributed in laminae, shelly pocket @ 6.4', shell component is shell fragments up to 1", 2" shell fragment pocket @ 6.5', 1" clay pocket @ 7.2', (1.5"x0.5") and (1"x0.25") shell fragments @ 7.4', dark gray (5Y-4/1), (SP-SM).		3	Sample #3, Depth = 6.5' Mean (mm): 0.18, Phi Sorting: 0.43 Fines (230): 5.73% (SP-SM)
-68.0	11.9		SAND, fine grained, quartz, trace clay, trace shell hash, trace silt, clay and silt distributed in laminae, 3" shelly pocket @ 7.7', shell components are shell hash, shell fragments and whole shells up to 1.5", 1" clay pocket @ 8.1', 0.5" shell fragment @ 9', (2"x1.5") shell fragment @ 10.3', 2 (1"x0.5") shell fragments @ 10.4', dark gray (5Y-4/1), (SP-SM).		4	Sample #4, Depth = 9.3' Mean (mm): 0.31, Phi Sorting: 0.80 Fines (230): 6.74% (SP-SM)
-69.9	13.8		SAND, fine grained, quartz, trace clay, trace shell hash, trace silt, clay distributed in laminae, 0.5" shell fragment @ 13.4', (0.5"x0.25") wood fragment @ 13.5', gray (5Y-5/1), (SP-SM).		5	Sample #5, Depth = 12.8' Mean (mm): 0.33, Phi Sorting: 0.75 Fines (230): 5.79% (SP-SM)
-72.5	16.4		SAND, fine grained, quartz, trace clay, trace shell fragments, trace silt, shell fragments up to (1"x0.5"), silt distributed in laminae, clay distributed in pockets up to 0.25", (2"x1") shell fragments @ 13.8' and 14.0', (1"x0.5") whole shell @ 14.5', gray (5Y-5/1), (SP).		6	Sample #6, Depth = 15.2' Mean (mm): 0.31, Phi Sorting: 0.56 Fines (230): 2.58% (SP)
-75.7	19.6		SAND, fine grained, quartz, little clay, trace shell fragments, trace shell hash, trace silt, shell fragments up to (1"x0.5"), silt distributed in laminae, clay distributed in pockets up to 1", 3" clay pocket @ 16.3', (1.25"x0.5") whole shell @ 16.9', wood fragment laminae @ 17.6', color is mottled (5Y-5/1) and, dark gray (5Y-4/1), (SC).		7	Sample #7, Depth = 18.5' Mean (mm): 0.24, Phi Sorting: 0.59 Fines (230): 14.09% (SC)
-76.1	20.0		No Recovery.			

LOUISIANA FL-BOEM-2015-VC-GPJ-JPBRAZIL-GDT-9/12/16

<b>DRILLING LOG</b>		<b>DIVISION</b>	<b>INSTALLATION</b>	<b>SHEET 1</b> OF 1 SHEETS
<b>1. PROJECT</b> Inventory of Potential Beach Nourishment and Coastal Restoration Sand Sources on the Atlantic OCS			<b>9. SIZE AND TYPE OF BIT</b> 3.0 In.	
<b>2. BORING DESIGNATION</b> FL-BOEM-2015-VC23			<b>10. COORDINATE SYSTEM/DATUM</b> UTM 17	
<b>3. DRILLING AGENCY</b> American Vibracore Services, Inc.			<b>11. MANUFACTURER'S DESIGNATION OF DRILL</b> <input type="checkbox"/> AUTO HAMMER Alpine Pneumatic Vibracore <input type="checkbox"/> MANUAL HAMMER	
<b>4. NAME OF DRILLER</b> Justin Robertson			<b>12. TOTAL SAMPLES</b> DISTURBED: _____ UNDISTURBED (UD): _____	
<b>5. DIRECTION OF BORING</b> <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED			<b>13. TOTAL NUMBER CORE BOXES</b>	
<b>6. THICKNESS OF OVERBURDEN</b> 0.0 Ft.			<b>14. ELEVATION GROUND WATER</b>	
<b>7. DEPTH DRILLED INTO ROCK</b> 0.0 Ft.			<b>15. DATE BORING</b> STARTED 08-16-15 07:47 COMPLETED 08-16-15 07:49	
<b>8. TOTAL DEPTH OF BORING</b> 20.0 Ft.			<b>16. ELEVATION TOP OF BORING</b> -46.0 Ft.	
			<b>17. TOTAL RECOVERY FOR BORING</b> 17.7 Ft.	
			<b>18. SIGNATURE AND TITLE OF INSPECTOR</b> KM	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-46.0	0.0					
-50.8	4.8		SAND, fine grained, quartz, trace shell hash, trace silt, (1.25" x 0.5") shell fragment @ 3.6', dark gray (5Y-4/1), (SP).		1	Sample #1, Depth = 2.4' Mean (mm): 0.23, Phi Sorting: 0.74 Fines (230): 1.38% (SP)
-53.7	7.7		SAND, fine grained, quartz, trace shell hash, trace silt, silt distributed in silty pockets up to (0.5" x 0.25") and throughout layer, 0.5" whole shell @ 5.8', (1.25" x 0.75") shell fragment @ 5.9', very dark gray (5Y-3/1), (SP).		2	Sample #2, Depth = 6.3' Mean (mm): 0.19, Phi Sorting: 0.68 Fines (230): 3.01% (SP)
-55.8	9.8		SAND, fine grained, quartz, little silt, trace shell fragments, trace shell hash, shell fragments up to (0.75" x 0.25"), (2.0" x 3.0") shelly pocket @ 8.5', shell components are shell hash and shell fragments up to (1.0" x 0.75"), 2 (1.0") whole shells @ 9.6', black (5Y-2.5/1), (SM).		3	Sample #3, Depth = 9.0' Mean (mm): 0.12, Phi Sorting: 0.75 Fines (230): 12.67% (SM)
-57.7	11.7		SAND, fine grained, quartz, little clay, trace shell hash, very dark greenish gray (10Y-3/1), (SC).		4	Sample #4, Depth = 10.8' Mean (mm): 0.17, Phi Sorting: 0.67 Fines (230): 15.10% (SC)
-58.7	12.7		SAND, fine to medium grained, quartz, trace clay, trace shell hash, dark greenish gray (10Y-4/1), (SP-SC).		5	Sample #5, Depth = 12.2' Mean (mm): 0.32, Phi Sorting: 0.80 Fines (230): 9.24% (SP-SC)
-59.4	13.4		SAND, fine to medium grained, quartz, trace clay, trace shell hash, dark greenish gray (10Y-4/1), (SP-SC).		6	Sample #6, Depth = 13.0' Mean (mm): 1.51, Phi Sorting: 2.61 Fines (230): 9.12% (SW-SC)
-61.7	15.7		Sandy SHELL, trace clay, shell components are shell hash and shell fragments up to (1.25" x 1.0"), (2.0" x 1.25") shell fragment @ 12.8', greenish gray (10Y-5/1), (GW-GC).		7	Sample #7, Depth = 14.6' Mean (mm): 0.30, Phi Sorting: 0.63 Fines (230): 2.68% (SP)
-63.7	17.7		SAND, fine to medium grained, quartz, trace silt, silt distributed in silty pockets up to 0.75" and throughout layer, grayish brown (2.5Y-5/2), (SP).		8	Sample #8, Depth = 16.7' Mean (mm): 0.26, Phi Sorting: 0.68 Fines (230): 4.97% (SP-SM)
-66.0	20.0		SAND, fine to medium grained, quartz, trace silt, silt distributed in silty pockets up to (1.25" x 1.0") and throughout layer, very dark grayish brown (2.5Y-3/2), (SP-SM).			
			No Recovery.			
			End of Boring			

LOUISIANA FL-BOEM-2015-VC-GPJ-#BRAZIL-GDT-9/12/16

<b>DRILLING LOG</b>		<b>DIVISION</b>	<b>INSTALLATION</b>	<b>SHEET 1</b> OF 1 SHEETS						
<b>1. PROJECT</b> Inventory of Potential Beach Nourishment and Coastal Restoration Sand Sources on the Atlantic OCS			<b>9. SIZE AND TYPE OF BIT</b> 3.0 In.	<table border="1"> <tr> <td><b>10. COORDINATE SYSTEM/DATUM</b></td> <td><b>HORIZONTAL</b></td> <td><b>VERTICAL</b></td> </tr> <tr> <td>UTM 17</td> <td>NAD 1983</td> <td>NAVD88</td> </tr> </table>	<b>10. COORDINATE SYSTEM/DATUM</b>	<b>HORIZONTAL</b>	<b>VERTICAL</b>	UTM 17	NAD 1983	NAVD88
<b>10. COORDINATE SYSTEM/DATUM</b>	<b>HORIZONTAL</b>	<b>VERTICAL</b>								
UTM 17	NAD 1983	NAVD88								
<b>2. BORING DESIGNATION</b> FL-BOEM-2015-VC24		<b>LOCATION COORDINATES (m)</b> X = 465,630 Y = 3,379,768	<b>11. MANUFACTURER'S DESIGNATION OF DRILL</b> Alpine Pneumatic Vibracore	<input type="checkbox"/> <b>AUTO HAMMER</b> <input type="checkbox"/> <b>MANUAL HAMMER</b>						
<b>3. DRILLING AGENCY</b> American Vibracore Services, Inc.		<b>CONTRACTOR FILE NO.</b>	<b>12. TOTAL SAMPLES</b>	<table border="1"> <tr> <td><b>DISTURBED</b></td> <td><b>UNDISTURBED (UD)</b></td> </tr> <tr> <td></td> <td></td> </tr> </table>	<b>DISTURBED</b>	<b>UNDISTURBED (UD)</b>				
<b>DISTURBED</b>	<b>UNDISTURBED (UD)</b>									
<b>4. NAME OF DRILLER</b> Justin Robertson			<b>13. TOTAL NUMBER CORE BOXES</b>							
<b>5. DIRECTION OF BORING</b> <input checked="" type="checkbox"/> <b>VERTICAL</b> <input type="checkbox"/> <b>INCLINED</b>		<b>DEG. FROM VERTICAL</b>	<b>BEARING</b>	<b>14. ELEVATION GROUND WATER</b>						
<b>6. THICKNESS OF OVERBURDEN</b> 0.0 Ft.		<b>15. DATE BORING</b>		<b>STARTED</b>	<b>COMPLETED</b>					
<b>7. DEPTH DRILLED INTO ROCK</b> 0.0 Ft.		08-16-15 08:25		08-16-15 08:26						
<b>8. TOTAL DEPTH OF BORING</b> 20.0 Ft.		<b>16. ELEVATION TOP OF BORING</b> -48.1 Ft.		<b>17. TOTAL RECOVERY FOR BORING</b> 18.7 Ft.						
<b>18. SIGNATURE AND TITLE OF INSPECTOR</b> BF										

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-48.1	0.0					
-53.2	5.1		SAND, fine grained, quartz, little silt, trace shell fragments, trace shell hash, shell fragments up to 0.5", silt distributed in laminae, (1.0" x 0.5") shell fragment @ 1.6', 0.5" whole shells @ 2.5' and 3.9', 2.0" shell hash pocket @ 4.8', (1.0" x 0.25") whole shell @ 4.9', shell hash increases with depth, dark gray (5Y-4/1), (SW-SM).		1	Sample #1, Depth = 2.6' Mean (mm): 0.14, Phi Sorting: 0.87 Fines (230): 10.11% (SW-SM)
-55.2	7.1		SAND, fine grained, quartz, trace shell fragments, trace shell hash, trace silt, shell fragments up to 1.0", silt increases with depth, (0.25" x 0.5") whole shell @ 5.2', 2.0" shell hash pocket @ 6.5', dark gray (5Y-4/1), (SW-SM).		2	Sample #2, Depth = 6.0' Mean (mm): 0.16, Phi Sorting: 0.86 Fines (230): 4.91% (SW-SM)
-56.2	8.1				3	Sample #3, Depth = 7.5' Mean (mm): 0.15, Phi Sorting: 1.30 Fines (230): 10.83% (SM)
-57.1	9.0		SAND, fine grained, quartz, little silt, trace shell hash, silt increases with depth, 1.5" shell hash pocket @ 7.6', 1.0" shell hash pocket @ 8.0', dark gray (5Y-4/1), (SM). Sandy CLAY, trace shell hash, sand distributed in pockets up to 1.5", dark gray (N-4/0), (CL).		T1	Sample #T1, Depth = 11.2' Ave. Field Vane (tsf): 0.10
			CLAY, very soft, 1.0" sand pockets with trace shell hash @ 10.4' and 11.3', dark gray (N-4/0), (CL).		T2	Sample #T2, Depth = 16.0' Ave. Field Vane (tsf): 0.15
-66.8	18.7					
-68.1	20.0		No Recovery.			
			End of Boring			

LOUISIANA FL-BOEM-2015-VC.GPJ JPBRAZIL.GDT 9/12/16



<b>DRILLING LOG</b>		<b>DIVISION</b>	<b>INSTALLATION</b>	<b>SHEET 1</b> OF 1 SHEETS
<b>1. PROJECT</b> Inventory of Potential Beach Nourishment and Coastal Restoration Sand Sources on the Atlantic OCS			<b>9. SIZE AND TYPE OF BIT</b> 3.0 In.	
<b>2. BORING DESIGNATION</b> FL-BOEM-2015-VC25			<b>10. COORDINATE SYSTEM/DATUM</b> UTM 17	
<b>3. DRILLING AGENCY</b> American Vibracore Services, Inc.			<b>11. MANUFACTURER'S DESIGNATION OF DRILL</b> Alpine Pneumatic Vibracore	
<b>4. NAME OF DRILLER</b> Brian McCord			<input type="checkbox"/> <b>AUTO HAMMER</b> <input type="checkbox"/> <b>MANUAL HAMMER</b>	
<b>5. DIRECTION OF BORING</b> <input checked="" type="checkbox"/> <b>VERTICAL</b> <input type="checkbox"/> <b>INCLINED</b>			<b>12. TOTAL SAMPLES</b> DISTURBED: _____ UNDISTURBED (UD): _____	
<b>6. THICKNESS OF OVERBURDEN</b> 0.0 Ft.			<b>13. TOTAL NUMBER CORE BOXES</b>	
<b>7. DEPTH DRILLED INTO ROCK</b> 0.0 Ft.			<b>14. ELEVATION GROUND WATER</b>	
<b>8. TOTAL DEPTH OF BORING</b> 20.0 Ft.			<b>15. DATE BORING</b> STARTED: 08-16-15 12:14 COMPLETED: 08-16-15 12:15	
			<b>16. ELEVATION TOP OF BORING</b> -45.9 Ft.	
			<b>17. TOTAL RECOVERY FOR BORING</b> 19.4 Ft.	
			<b>18. SIGNATURE AND TITLE OF INSPECTOR</b> SMT	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-45.9	0.0					
-48.7	2.8		SAND, fine grained, quartz, trace shell hash, trace silt, (2.0" x 0.5") silt pocket @ 1.2', (0.75" x 0.5") whole shell @ 2.0', 1.0" whole shell @ 2.5', olive gray (5Y-5/2), (SP).		1	Sample #1, Depth = 1.4' Mean (mm): 0.21, Phi Sorting: 0.62 Fines (230): 2.17% (SP)
-49.9	4.0		SAND, fine grained, quartz, trace shell hash, trace silt, (1.0" x 0.5") clayey silt pocket @ 3.5', (1.5" x 1.0") clayey silt pocket @ 3.7', dark gray (5Y-4/1), (SW-SM).		2	Sample #2, Depth = 3.3' Mean (mm): 0.19, Phi Sorting: 0.87 Fines (230): 8.29% (SW-SM)
-51.1	5.2		SAND, fine grained, quartz, little silt, trace shell hash, 0.5" shell fragment and whole shell @ 4.1', very dark gray (5Y-3/1), (SM).		3	Sample #3, Depth = 4.6' Mean (mm): 0.14, Phi Sorting: 0.80 Fines (230): 14.97% (SM)
-52.2	6.3		SAND, fine grained, quartz, little silt, trace shell hash, (2.0" x 1.0") clayey pocket @ 5.7', (2.0" x 1.0") shell fragment @ 5.9', very dark gray (5Y-3/1), (SM).		4	Sample #4, Depth = 5.8' Mean (mm): 0.14, Phi Sorting: 0.88 Fines (230): 17.55% (SM)
-53.2	7.3		SAND, fine grained, quartz, little silt, trace shell fragments, trace shell hash, shell fragments up to 1.0", 1.0" whole shell @ 6.4', (2.0" x 1.0") shell fragment @ 6.5', very dark gray (5Y-3/1), (SM).		5	Sample #5, Depth = 6.7' Mean (mm): 0.24, Phi Sorting: 1.82 Fines (230): 17.33% (SM)
-55.1	9.2		SAND, fine grained, quartz, little silt, trace shell fragments, trace shell hash, shell fragments up to 1.0", 1.0" whole shell @ 6.4', (2.0" x 1.0") shell fragment @ 6.5', very dark gray (5Y-3/1), (SM).		6	Sample #6, Depth = 8.2' Mean (mm): 0.12, Phi Sorting: 0.80 Fines (230): 12.35% (SM)
			SAND, fine grained, quartz, little silt, trace clay, trace shell hash, clay distributed in pockets up to 1.0", dark gray (5Y-4/1), (SM).		T1	Sample #T1, Depth = 12.1' Ave. Field Vane (tsf): 0.10
			CLAY, very soft, dark greenish gray (10Y-4/1), (CL).		T2	Sample #T2, Depth = 14.8' Ave. Field Vane (tsf): 0.10
-65.3	19.4		No Recovery.			
-65.9	20.0		End of Boring			

LOUISIANA FL-BOEM-2015-VC-GPJ-JPBRAZIL-GDT-9/12/16

<b>DRILLING LOG</b>		<b>DIVISION</b>	<b>INSTALLATION</b>	<b>SHEET 1</b> OF 1 SHEETS						
<b>1. PROJECT</b> Inventory of Potential Beach Nourishment and Coastal Restoration Sand Sources on the Atlantic OCS			<b>9. SIZE AND TYPE OF BIT</b> 3.0 In.	<table border="1"> <tr> <td><b>10. COORDINATE SYSTEM/DATUM</b></td> <td><b>HORIZONTAL</b></td> <td><b>VERTICAL</b></td> </tr> <tr> <td>UTM 17</td> <td>NAD 1983</td> <td>NAVD88</td> </tr> </table>	<b>10. COORDINATE SYSTEM/DATUM</b>	<b>HORIZONTAL</b>	<b>VERTICAL</b>	UTM 17	NAD 1983	NAVD88
<b>10. COORDINATE SYSTEM/DATUM</b>	<b>HORIZONTAL</b>	<b>VERTICAL</b>								
UTM 17	NAD 1983	NAVD88								
<b>2. BORING DESIGNATION</b> FL-BOEM-2015-VC26		<b>LOCATION COORDINATES (m)</b> X = 470,058 Y = 3,396,823	<b>11. MANUFACTURER'S DESIGNATION OF DRILL</b> Alpine Pneumatic Vibracore	<input type="checkbox"/> <b>AUTO HAMMER</b> <input type="checkbox"/> <b>MANUAL HAMMER</b>						
<b>3. DRILLING AGENCY</b> American Vibracore Services, Inc.		<b>CONTRACTOR FILE NO.</b>	<b>12. TOTAL SAMPLES</b>	<table border="1"> <tr> <td><b>DISTURBED</b></td> <td><b>UNDISTURBED (UD)</b></td> </tr> <tr> <td></td> <td></td> </tr> </table>	<b>DISTURBED</b>	<b>UNDISTURBED (UD)</b>				
<b>DISTURBED</b>	<b>UNDISTURBED (UD)</b>									
<b>4. NAME OF DRILLER</b> Brian McCord			<b>13. TOTAL NUMBER CORE BOXES</b>							
<b>5. DIRECTION OF BORING</b> <input checked="" type="checkbox"/> <b>VERTICAL</b> <input type="checkbox"/> <b>INCLINED</b>		<b>DEG. FROM VERTICAL</b>	<b>BEARING</b>	<b>14. ELEVATION GROUND WATER</b>						
<b>6. THICKNESS OF OVERBURDEN</b> 0.0 Ft.		<b>15. DATE BORING</b>		<b>STARTED</b> 08-16-15 13:51	<b>COMPLETED</b> 08-16-15 13:58					
<b>7. DEPTH DRILLED INTO ROCK</b> 0.0 Ft.		<b>16. ELEVATION TOP OF BORING</b> -42.1 Ft.		<b>17. TOTAL RECOVERY FOR BORING</b> 17 Ft.						
<b>8. TOTAL DEPTH OF BORING</b> 20.0 Ft.		<b>18. SIGNATURE AND TITLE OF INSPECTOR</b> SMT								

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-42.1	0.0					
-47.1	5.0		SAND, fine grained, quartz, trace shell hash, trace silt, (1.5" x 1.0") whole shell @ 4.0', gray (2.5Y-5/1), (SP).		1	Sample #1, Depth = 2.9' Mean (mm): 0.17, Phi Sorting: 0.67 Fines (230): 1.52% (SP)
-48.1	6.0		Shelly SAND, fine grained, quartz, trace silt, shell components are shell hash, whole shells and shell fragments up to 0.5", (1.0" x 0.5") shell fragment @ 5.8', gray (5Y-5/1), (SW).		2	Sample #2, Depth = 5.5' Mean (mm): 0.28, Phi Sorting: 1.17 Fines (230): 1.53% (SW)
-52.1	10.0		SAND, fine grained, quartz, trace shell hash, trace silt, gray (2.5Y-5/1), (SP).		1	
-54.2	12.1		SAND, fine grained, quartz, trace shell fragments, trace shell hash, trace silt, shell fragments up to 0.5", 0.5" whole shell @ 11.9', dark gray (5Y-4/1), (SP).		3	Sample #3, Depth = 11.0' Mean (mm): 0.16, Phi Sorting: 0.76 Fines (230): 3.33% (SP)
-55.3	13.2		SAND, fine grained, quartz, trace shell fragments, trace shell hash, trace silt, trace whole shell, shell fragments and whole shells up to 0.75", olive gray (5Y-4/2), (SW).		4	Sample #4, Depth = 12.6' Mean (mm): 0.17, Phi Sorting: 1.11 Fines (230): 3.87% (SW)
-56.3	14.2		Shelly SAND, fine grained, quartz, trace silt, shell components are shell hash, shell fragments and whole shells up to 1.0", shell increases with depth, gray (5Y-5/1), (SW).		5	Sample #5, Depth = 13.6' Mean (mm): 0.45, Phi Sorting: 2.03 Fines (230): 3.06% (SW)
-59.1	17.0		SAND, fine grained, quartz, trace shell fragments, trace shell hash, trace silt, trace whole shell, whole shells and shell fragments up to 0.75", 1.0" whole shell @ 15.3', (1.5" x 0.5") whole shell @ 15.7', dark gray (5Y-4/1), (SP-SM).		6	Sample #6, Depth = 15.5' Mean (mm): 0.14, Phi Sorting: 0.83 Fines (230): 7.10% (SP-SM)
-62.1	20.0		No Recovery.			
			End of Boring			

LOUISIANA FL-BOEM-2015-VC-GPJ-JPBRAZIL-GDT-9/12/16



<b>DRILLING LOG</b>		<b>DIVISION</b>	<b>INSTALLATION</b>	<b>SHEET 1</b> <b>OF 1 SHEETS</b>
<b>1. PROJECT</b> Inventory of Potential Beach Nourishment and Coastal Restoration Sand Sources on the Atlantic OCS			<b>9. SIZE AND TYPE OF BIT</b> 3.0 In.	
<b>2. BORING DESIGNATION</b> FL-BOEM-2015-VC27			<b>10. COORDINATE SYSTEM/DATUM</b> UTM 17	
<b>3. DRILLING AGENCY</b> American Vibracore Services, Inc.			<b>11. MANUFACTURER'S DESIGNATION OF DRILL</b> <input type="checkbox"/> AUTO HAMMER Alpine Pneumatic Vibracore <input type="checkbox"/> MANUAL HAMMER	
<b>4. NAME OF DRILLER</b> Brian McCord			<b>12. TOTAL SAMPLES</b> DISTURBED: _____ UNDISTURBED (UD): _____	
<b>5. DIRECTION OF BORING</b> <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED			<b>13. TOTAL NUMBER CORE BOXES</b>	
<b>6. THICKNESS OF OVERBURDEN</b> 0.0 Ft.			<b>14. ELEVATION GROUND WATER</b>	
<b>7. DEPTH DRILLED INTO ROCK</b> 0.0 Ft.			<b>15. DATE BORING</b> STARTED: 08-16-15 14:49 COMPLETED: 08-16-15 14:52	
<b>8. TOTAL DEPTH OF BORING</b> 20.0 Ft.			<b>16. ELEVATION TOP OF BORING</b> -44.4 Ft.	
			<b>17. TOTAL RECOVERY FOR BORING</b> 18.9 Ft.	
			<b>18. SIGNATURE AND TITLE OF INSPECTOR</b> BF	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-44.4	0.0					
-48.4	4.0		SAND, fine grained, quartz, trace shell fragments, trace shell hash, trace silt, trace whole shell, whole shells and shell fragments up to 0.5", (1.0" x 0.25") whole shell @ 3.8', (0.75" x 0.5") whole shell @ 3.6', (1.0" x 0.25") shell fragment @ 0.2', 2.0" shelly pocket @ 1.6', shell components are shell hash and shell fragments up to 0.25", gray (5Y-5/1), (SP).		1	Sample #1, Depth = 2.0' Mean (mm): 0.21, Phi Sorting: 0.74 Fines (230): 1.36% (SP)
-49.6	5.2		SAND, fine grained, quartz, trace shell fragments, trace shell hash, trace silt, trace whole shell, whole shells and shell fragments up to 0.25", (1.5" x 0.25") shell fragment @ 4.1', 0.5" shell fragment @ 4.8', shell hash decreases with depth, gray (5Y-5/1), (SW).		2	Sample #2, Depth = 4.4' Mean (mm): 0.23, Phi Sorting: 1.17 Fines (230): 2.00% (SW)
-52.2	7.8		SAND, fine grained, quartz, trace shell fragments, trace shell hash, trace silt, shell fragments up to 0.5", silt distributed in laminae and increases with depth, 2.0" shelly pocket @ 7.2', shell components are shell hash and shell fragments up to 0.25", dark gray (2.5Y-4/1), (SW).		3	Sample #3, Depth = 6.3' Mean (mm): 0.19, Phi Sorting: 0.86 Fines (230): 1.96% (SW)
-53.0	8.6		SAND, fine grained, quartz, trace shell fragments, trace shell hash, trace silt, silt distributed in laminae, 1.0" clay pocket @ 8.1', 2.0" shelly pocket @ 8.4', shell components are shell hash, shell fragments and whole shells up to 0.5", dark gray (5Y-4/1), (SW-SM).		4	Sample #4, Depth = 8.3' Mean (mm): 0.21, Phi Sorting: 0.94 Fines (230): 5.07% (SW-SM)
-53.7	9.3		SAND, fine grained, quartz, trace shell hash, trace silt, gray (5Y-5/1), (SP).		5	Sample #5, Depth = 9.0' Mean (mm): 0.18, Phi Sorting: 0.82 Fines (230): 1.83% (SP)
-54.5	10.1		SAND, fine grained, quartz, trace shell hash, trace silt, gray (5Y-5/1), (SP).		6	Sample #6, Depth = 9.6' Mean (mm): 0.27, Phi Sorting: 1.51 Fines (230): 1.76% (SW)
-55.7	11.3		SAND, fine grained, quartz, little shell hash, trace shell fragments, trace silt, trace whole shell, shell fragments up to 0.5", whole shells up to 1.0", gray (5Y-5/1), (SW).		7	Sample #7, Depth = 10.5' Mean (mm): 0.35, Phi Sorting: 1.51 Fines (230): 4.38% (SW)
-58.1	13.7		SAND, fine grained, quartz, little shell hash, trace shell fragments, trace silt, trace whole shell, shell fragments and whole shells up to 1.0", silt increases with depth, dark gray (5Y-4/1), (SW).		T1	Sample #T1, Depth = 12.2' Ave. Field Vane (tsf): 0.10
-63.3	18.9		SANDY CLAY, very soft, trace shell hash, trace silt, (2.5" x 2.0") whole shell @ 11.5', 1.5" shell hash pocket @ 12.5', dark gray (N-4/0), (CL).		T2	Sample #T2, Depth = 15.6' Ave. Field Vane (tsf): 0.10
-64.4	20.0		CLAY, very soft, (2.0" x 0.5") sand pocket @ 14.8', 2 (1.5") whole shells @ 17.0', 2.0" shelly pocket @ 17.2', shell components are shell hash, shell fragments and whole shells up to 0.75", (2.0" x 1.0") sand pocket @ 18.0', dark gray (N-4/0), (CL). No Recovery.			
			End of Boring			

LOUISIANA FL-BOEM-2015-VC.GPJ JPBRAZIL.GDT 9/12/16

<b>DRILLING LOG</b>		<b>DIVISION</b>	<b>INSTALLATION</b>	<b>SHEET 1</b> OF 1 SHEETS
<b>1. PROJECT</b> Inventory of Potential Beach Nourishment and Coastal Restoration Sand Sources on the Atlantic OCS			<b>9. SIZE AND TYPE OF BIT</b> 3.0 In.	
<b>2. BORING DESIGNATION</b> FL-BOEM-2015-VC28			<b>10. COORDINATE SYSTEM/DATUM</b> UTM 17	
<b>3. DRILLING AGENCY</b> American Vibracore Services, Inc.			<b>11. MANUFACTURER'S DESIGNATION OF DRILL</b> <input type="checkbox"/> AUTO HAMMER Alpine Pneumatic Vibracore <input type="checkbox"/> MANUAL HAMMER	
<b>4. NAME OF DRILLER</b> Brian McCord			<b>12. TOTAL SAMPLES</b> DISTURBED: _____ UNDISTURBED (UD): _____	
<b>5. DIRECTION OF BORING</b> <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED			<b>13. TOTAL NUMBER CORE BOXES</b>	
<b>6. THICKNESS OF OVERBURDEN</b> 0.0 Ft.			<b>14. ELEVATION GROUND WATER</b>	
<b>7. DEPTH DRILLED INTO ROCK</b> 0.0 Ft.			<b>15. DATE BORING</b> STARTED: 08-16-15 15:16 COMPLETED: 08-16-15 15:19	
<b>8. TOTAL DEPTH OF BORING</b> 20.0 Ft.			<b>16. ELEVATION TOP OF BORING</b> -44.0 Ft.	
			<b>17. TOTAL RECOVERY FOR BORING</b> 19.1 Ft.	
			<b>18. SIGNATURE AND TITLE OF INSPECTOR</b> SMT	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-44.0	0.0					
-52.0	8.0		SAND, fine grained, quartz, trace shell hash, trace silt, 0.75" whole shell @ 1.3', 1.0" whole shell @ 2.3', (0.75" x 1.5") shell fragment @ 5.0', (1.0" x 0.5") shell fragment @ 6.9', gray (5Y-5/1), (SW).		1	Sample #1, Depth = 4.0' Mean (mm): 0.21, Phi Sorting: 0.88 Fines (230): 1.60% (SW)
-53.3	9.3		SAND, fine grained, quartz, trace clay, trace shell hash, trace silt, clay distributed in clayey pockets up to (1.5" x 1.0"), shelly lamina @ 8.7', (1.5" x 0.5") and (1.0" x 0.5") whole shells @ 9.2', very dark gray (2.5Y-3/1), (SW-SM).		2	Sample #2, Depth = 8.5' Mean (mm): 0.54, Phi Sorting: 1.50 Fines (230): 5.32% (SW-SM)
-53.7	9.7				3	Sample #3, Depth = 9.4' Mean (mm): 0.17, Phi Sorting: 0.86 Fines (230): 6.07% (SW-SM)
-54.1	10.1				4	
-54.4	10.4				5	
				SAND, fine grained, quartz, trace shell hash, trace silt, 0.5" shell fragment @ 9.7', very dark gray (5Y-3/1), (SW-SM).		T1
			SAND, fine grained, quartz, trace shell fragments, trace shell hash, trace silt, trace whole shell, shell fragments and whole shells up to 0.5", 0.75" whole shell @ 9.8', 1.25" whole shell @ 10.2', dark gray (5Y-4/1), (SW).		Sample #5, Depth = 10.2' Mean (mm): 0.51, Phi Sorting: 2.44 Fines (230): 6.90% (SW-SM)	
			Shelly SAND, fine grained, quartz, trace silt, shell components are shell hash and shell fragments up to (1.5" x 0.5"), dark gray (5Y-4/1), (SW-SM).		Sample #T1, Depth = 15.0' Ave. Field Vane (tsf): 0.20	
			CLAY, very soft, dark greenish gray (10GY-4/1), (CL).			
-62.7	18.7		CLAY, soft, little sand, little shell hash, trace shell fragments, shell fragments up to 0.75", 1.5" shell fragment @ 19.4', dark greenish gray (10GY-4/1), (CL). No Recovery.			
-63.1	19.1					
-64.0	20.0					
			End of Boring			

LOUISIANA FL-BOEM-2015-VC-GPJ-JPBRAZIL.GDT-9/12/16

APPENDIX 3

INDIVIDUAL VIBRACORE GRANULARMETRIC REPORTS

## Granularmetric Report

Depths and elevations based on measured values



**CB&I**  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC01 #1

Analysis Date: 10-30-15

Analyzed By: DA

Easting (m):  
**596,390**

Northing (m):  
**2,995,020**

Coordinate System:  
**UTM 17**

Elevation (ft):  
**-77.0 NAVD88**

USCS: <b>SW-SM</b>	Munsell: Wet - 2.5Y-5/1 Dry - 2.5Y-7/1 Washed - 2.5Y-8/1	Comments:
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Dry Weight (g): <b>92.38</b>	Wash Weight (g): <b>87.72</b>	Pan Retained (g): <b>1.56</b>	Sieve Loss (%): <b>0.04</b>	Fines (%): #200 - 11.60 #230 - 6.78	Organics (%):	Carbonates (%): <b>48</b>	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.22	0.24	0.22	0.24
3.5	-2.50	5.66	0.00	0.00	0.22	0.24
4	-2.25	4.76	0.06	0.06	0.28	0.30
5	-2.00	4.00	0.18	0.19	0.46	0.49
7	-1.50	2.83	0.43	0.47	0.89	0.96
10	-1.00	2.00	0.75	0.81	1.64	1.77
14	-0.50	1.41	1.26	1.36	2.90	3.13
18	0.00	1.00	1.97	2.13	4.87	5.26
25	0.50	0.71	2.26	2.45	7.13	7.71
35	1.00	0.50	3.74	4.05	10.87	11.76
45	1.50	0.35	3.86	4.18	14.73	15.94
60	2.00	0.25	4.67	5.06	19.40	21.00
80	2.50	0.18	2.83	3.06	22.23	24.06
120	3.00	0.13	16.40	17.75	38.63	41.81
170	3.50	0.09	30.98	33.54	69.61	75.35
200	3.75	0.07	12.06	13.05	81.67	88.40
230	4.00	0.06	4.45	4.82	86.12	93.22

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.67	3.49	3.12	2.53	1.51	-0.06
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	2.61	0.16	1.24	-1.73	5.78	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL\_GDT 9/12/16

# Granularmetric Report

Depths and elevations based on measured values



**CB&I**  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC01 #2

Analysis Date: 10-30-15

Analyzed By: DA

Easting (m):  
**596,390**

Northing (m):  
**2,995,020**

Coordinate System:  
**UTM 17**

Elevation (ft):  
**-77.6 NAVD88**

USCS:

**SW**

Munsell: Wet - 2.5Y-5/1  
Dry - 2.5Y-6/1  
Washed - 2.5Y-6/1

Comments:

Dry Weight (g): <b>103.34</b>	Wash Weight (g): <b>100.45</b>	Pan Retained (g): <b>0.23</b>	Sieve Loss (%): <b>0.05</b>	Fines (%): #200 - 4.43 #230 - 3.05	Organics (%):	Carbonates (%): <b>76</b>	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.17	0.16	0.17	0.16
3.5	-2.50	5.66	0.23	0.22	0.40	0.38
4	-2.25	4.76	0.62	0.60	1.02	0.98
5	-2.00	4.00	0.68	0.66	1.70	1.64
7	-1.50	2.83	1.95	1.89	3.65	3.53
10	-1.00	2.00	5.05	4.89	8.70	8.42
14	-0.50	1.41	7.39	7.15	16.09	15.57
18	0.00	1.00	10.96	10.61	27.05	26.18
25	0.50	0.71	10.36	10.03	37.41	36.21
35	1.00	0.50	14.33	13.87	51.74	50.08
45	1.50	0.35	15.12	14.63	66.86	64.71
60	2.00	0.25	7.53	7.29	74.39	72.00
80	2.50	0.18	2.26	2.19	76.65	74.19
120	3.00	0.13	9.11	8.82	85.76	83.01
170	3.50	0.09	9.65	9.34	95.41	92.35
200	3.75	0.07	3.33	3.22	98.74	95.57
230	4.00	0.06	1.43	1.38	100.17	96.95

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.71	3.05	2.55	1.00	-0.06	-0.48	-1.35
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	1.02	0.49	1.51	0.04	2.3	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

# Granularmetric Report

Depths and elevations based on measured values



**CB&I**  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC01 #3

Analysis Date: 10-30-15

Analyzed By: DA

Easting (m):  
**596,390**

Northing (m):  
**2,995,020**

Coordinate System:  
**UTM 17**

Elevation (ft):  
**-80.7 NAVD88**

USCS: **SP-SM**

Munsell: **Wet - 2.5Y-5/1**  
**Dry - 2.5Y-7/1**  
**Washed - 2.5Y-8/1**

Comments:

Dry Weight (g): <b>93.03</b>	Wash Weight (g): <b>89.83</b>	Pan Retained (g): <b>0.51</b>	Sieve Loss (%): <b>0.02</b>	Fines (%): <b>#200 - 7.64</b> <b>#230 - 4.01</b>	Organics (%):	Carbonates (%): <b>41</b>	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.14	0.15	0.14	0.15
4	-2.25	4.76	0.09	0.10	0.23	0.25
5	-2.00	4.00	0.00	0.00	0.23	0.25
7	-1.50	2.83	0.16	0.17	0.39	0.42
10	-1.00	2.00	0.37	0.40	0.76	0.82
14	-0.50	1.41	0.36	0.39	1.12	1.21
18	0.00	1.00	0.51	0.55	1.63	1.76
25	0.50	0.71	0.61	0.66	2.24	2.42
35	1.00	0.50	0.86	0.92	3.10	3.34
45	1.50	0.35	0.94	1.01	4.04	4.35
60	2.00	0.25	1.26	1.35	5.30	5.70
80	2.50	0.18	3.21	3.45	8.51	9.15
120	3.00	0.13	31.11	33.44	39.62	42.59
170	3.50	0.09	35.81	38.49	75.43	81.08
200	3.75	0.07	10.49	11.28	85.92	92.36
230	4.00	0.06	3.38	3.63	89.30	95.99

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.93	3.56	3.42	3.10	2.74	2.60	1.74
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	2.94	0.13	0.78	-3.31	18.22	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

# Granularmetric Report

Depths and elevations based on measured values



**CB&I**  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC01 #4

Analysis Date: 10-30-15

Analyzed By: DA

Easting (m):  
**596,390**

Northing (m):  
**2,995,020**

Coordinate System:  
**UTM 17**

Elevation (ft):  
**-83.6 NAVD88**

USCS:

**SM**

Munsell: Wet - 2.5Y-5/1  
Dry - 2.5Y-7/1  
Washed - 2.5Y-8/2

Comments:

Dry Weight (g): <b>105.13</b>	Wash Weight (g): <b>100.20</b>	Pan Retained (g): <b>1.37</b>	Sieve Loss (%): <b>0.05</b>	Fines (%): #200 - 14.02 #230 - 6.03	Organics (%):	Carbonates (%): <b>36</b>	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.00	0.00	0.00	0.00
4	-2.25	4.76	0.05	0.05	0.05	0.05
5	-2.00	4.00	0.00	0.00	0.05	0.05
7	-1.50	2.83	0.11	0.10	0.16	0.15
10	-1.00	2.00	0.21	0.20	0.37	0.35
14	-0.50	1.41	0.45	0.43	0.82	0.78
18	0.00	1.00	0.61	0.58	1.43	1.36
25	0.50	0.71	0.64	0.61	2.07	1.97
35	1.00	0.50	0.89	0.85	2.96	2.82
45	1.50	0.35	0.91	0.87	3.87	3.69
60	2.00	0.25	1.01	0.96	4.88	4.65
80	2.50	0.18	2.60	2.47	7.48	7.12
120	3.00	0.13	17.52	16.67	25.00	23.79
170	3.50	0.09	44.42	42.25	69.42	66.04
200	3.75	0.07	20.96	19.94	90.38	85.98
230	4.00	0.06	8.40	7.99	98.78	93.97

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.73	3.61	3.31	3.01	2.77	2.07
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	3.13	0.11	0.73	-3.2	16.66	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC01 #5

Analysis Date: 10-30-15

Analyzed By: DA

Easting (m):  
 596,390

Northing (m):  
 2,995,020

Coordinate System:  
 UTM 17

Elevation (ft):  
 -87.9 NAVD88

USCS: SM  
 Munsell: Wet - 2.5Y-5/1  
 Dry - 2.5Y-7/1  
 Washed - 2.5Y-8/1

Comments:

Dry Weight (g): 95.23  
 Wash Weight (g): 77.50  
 Pan Retained (g): 3.31  
 Sieve Loss (%): 0.08  
 Finest (%): #200 - 36.94  
 #230 - 22.18  
 Organics (%):  
 Carbonates (%): 44  
 Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.13	0.14	0.13	0.14
3.5	-2.50	5.66	0.32	0.34	0.45	0.48
4	-2.25	4.76	0.29	0.30	0.74	0.78
5	-2.00	4.00	0.48	0.50	1.22	1.28
7	-1.50	2.83	1.71	1.80	2.93	3.08
10	-1.00	2.00	2.24	2.35	5.17	5.43
14	-0.50	1.41	1.94	2.04	7.11	7.47
18	0.00	1.00	2.28	2.39	9.39	9.86
25	0.50	0.71	1.74	1.83	11.13	11.69
35	1.00	0.50	1.94	2.04	13.07	13.73
45	1.50	0.35	1.58	1.66	14.65	15.39
60	2.00	0.25	1.88	1.97	16.53	17.36
80	2.50	0.18	1.34	1.41	17.87	18.77
120	3.00	0.13	2.76	2.90	20.63	21.67
170	3.50	0.09	17.17	18.03	37.80	39.70
200	3.75	0.07	22.25	23.36	60.05	63.06
230	4.00	0.06	14.06	14.76	74.11	77.82

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	2.67	0.16	1.69	-1.63	4.38

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16



**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC01 #6

Analysis Date: 10-30-15

Analyzed By: DA

Easting (m):  
 596,390

Northing (m):  
 2,995,020

Coordinate System:  
 UTM 17

Elevation (ft):  
 -90.9 NAVD88

USCS: SW-SM  
 Munsell: Wet - 2.5Y-4/1  
 Dry - 2.5Y-5/1  
 Washed - 2.5Y-6/1  
 Comments:

Dry Weight (g): 107.30  
 Wash Weight (g): 96.53  
 Pan Retained (g): 0.14  
 Sieve Loss (%): 0.00  
 Finest (%): #200 - 11.94  
 #230 - 10.16  
 Organics (%):  
 Carbonates (%): 82  
 Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.25	0.23	0.25	0.23
4	-2.25	4.76	0.05	0.05	0.30	0.28
5	-2.00	4.00	0.18	0.17	0.48	0.45
7	-1.50	2.83	0.22	0.21	0.70	0.66
10	-1.00	2.00	0.86	0.80	1.56	1.46
14	-0.50	1.41	1.49	1.39	3.05	2.85
18	0.00	1.00	3.88	3.62	6.93	6.47
25	0.50	0.71	8.22	7.66	15.15	14.13
35	1.00	0.50	18.57	17.31	33.72	31.44
45	1.50	0.35	25.83	24.07	59.55	55.51
60	2.00	0.25	20.23	18.85	79.78	74.36
80	2.50	0.18	8.20	7.64	87.98	82.00
120	3.00	0.13	2.20	2.05	90.18	84.05
170	3.50	0.09	2.34	2.18	92.52	86.23
200	3.75	0.07	1.96	1.83	94.48	88.06
230	4.00	0.06	1.91	1.78	96.39	89.84

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	1.3	0.41	0.98	0.03	4.55

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC02 #1

Analysis Date: 10-29-15

Analyzed By: DA

Easting (m):  
 590,316

Northing (m):  
 3,003,454

Coordinate System:  
 UTM 17

Elevation (ft):  
 -47.4 NAVD88

USCS: SW  
 Munsell: Wet - 5Y-4/1  
 Dry - 5Y-4/1  
 Washed - 5Y-5/1

Comments:

Dry Weight (g): 99.55  
 Wash Weight (g): 98.19  
 Pan Retained (g): 0.11  
 Sieve Loss (%): 0.13  
 Finest (%): #200 - 2.37  
 #230 - 1.63  
 Organics (%):  
 Carbonates (%): 85  
 Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.00	0.00	0.00	0.00
4	-2.25	4.76	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.83	0.10	0.10	0.10	0.10
10	-1.00	2.00	0.34	0.34	0.44	0.44
14	-0.50	1.41	1.16	1.17	1.60	1.61
18	0.00	1.00	5.10	5.12	6.70	6.73
25	0.50	0.71	11.90	11.95	18.60	18.68
35	1.00	0.50	21.93	22.03	40.53	40.71
45	1.50	0.35	26.93	27.05	67.46	67.76
60	2.00	0.25	18.26	18.34	85.72	86.10
80	2.50	0.18	5.46	5.48	91.18	91.58
120	3.00	0.13	0.81	0.81	91.99	92.39
170	3.50	0.09	2.94	2.95	94.93	95.34
200	3.75	0.07	2.28	2.29	97.21	97.63
230	4.00	0.06	0.74	0.74	97.95	98.37

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
	3.44	1.94	1.70	1.17	0.64	0.39	-0.17
	1.2	0.44	0.89	0.58	4.06		

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

# Granularmetric Report

Depths and elevations based on measured values



**CB&I**  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC02 #2

Analysis Date: 10-28-15

Analyzed By: SMT

Easting (m):  
**590,316**

Northing (m):  
**3,003,454**

Coordinate System:  
**UTM 17**

Elevation (ft):  
**-48.9 NAVD88**

USCS: **SW-SM**

Munsell: **Wet - 5Y-4/1  
Dry - 5Y-5/1  
Washed - 5Y-6/1**

Comments:

Dry Weight (g): <b>98.20</b>	Wash Weight (g): <b>95.26</b>	Pan Retained (g): <b>0.67</b>	Sieve Loss (%): <b>0.12</b>	Fines (%): <b>#200 - 8.42 #230 - 3.81</b>	Organics (%):	Carbonates (%): <b>61</b>	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.09	0.09	0.09	0.09
4	-2.25	4.76	0.09	0.09	0.18	0.18
5	-2.00	4.00	0.24	0.24	0.42	0.42
7	-1.50	2.83	0.64	0.65	1.06	1.07
10	-1.00	2.00	0.87	0.89	1.93	1.96
14	-0.50	1.41	2.26	2.30	4.19	4.26
18	0.00	1.00	3.40	3.46	7.59	7.72
25	0.50	0.71	4.76	4.85	12.35	12.57
35	1.00	0.50	7.31	7.44	19.66	20.01
45	1.50	0.35	10.40	10.59	30.06	30.60
60	2.00	0.25	13.67	13.92	43.73	44.52
80	2.50	0.18	10.31	10.50	54.04	55.02
120	3.00	0.13	3.86	3.93	57.90	58.95
170	3.50	0.09	18.93	19.28	76.83	78.23
200	3.75	0.07	13.11	13.35	89.94	91.58
230	4.00	0.06	4.53	4.61	94.47	96.19

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.94	3.61	3.42	2.26	1.24	0.73	-0.39
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	2.1	0.23	1.36	-0.65	2.77	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC02 #3

Analysis Date: 10-28-15

Analyzed By: SMT

Easting (m):  
 590,316

Northing (m):  
 3,003,454

Coordinate System:  
 UTM 17

Elevation (ft):  
 -50.4 NAVD88

USCS: SP-SM  
 Munsell: Wet - 5Y-5/1  
 Dry - 5Y-6/1  
 Washed - 5Y-8/1

Comments:

Dry Weight (g): 88.34  
 Wash Weight (g): 85.26  
 Pan Retained (g): 0.19  
 Sieve Loss (%): 0.03  
 Finest (%): #200 - 6.97  
 #230 - 3.72  
 Organics (%):  
 Carbonates (%): 18  
 Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.00	0.00	0.00	0.00
4	-2.25	4.76	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.83	0.14	0.16	0.14	0.16
10	-1.00	2.00	0.13	0.15	0.27	0.31
14	-0.50	1.41	0.25	0.28	0.52	0.59
18	0.00	1.00	0.28	0.32	0.80	0.91
25	0.50	0.71	0.50	0.57	1.30	1.48
35	1.00	0.50	0.74	0.84	2.04	2.32
45	1.50	0.35	1.12	1.27	3.16	3.59
60	2.00	0.25	1.05	1.19	4.21	4.78
80	2.50	0.18	1.04	1.18	5.25	5.96
120	3.00	0.13	23.37	26.45	28.62	32.41
170	3.50	0.09	43.57	49.32	72.19	81.73
200	3.75	0.07	9.98	11.30	82.17	93.03
230	4.00	0.06	2.87	3.25	85.04	96.28

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	3.90	3.43	3.18	2.86	2.69
	3.04	0.12	0.64	-3.3	18.52

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC02 #4

Analysis Date: 10-28-15

Analyzed By: SMT

Easting (m):  
 590,316

Northing (m):  
 3,003,454

Coordinate System:  
 UTM 17

Elevation (ft):  
 -51.6 NAVD88

USCS: SW  
 Munsell: Wet - 2.5Y-4/2  
 Dry - 2.5Y-4/2  
 Washed - 2.5Y-5/2

Comments:

Dry Weight (g): 91.46	Wash Weight (g): 90.06	Pan Retained (g): 0.05	Sieve Loss (%): 0.00	Fines (%): #200 - 2.13 #230 - 1.59	Organics (%):	Carbonates (%): 81	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.43	0.47	0.43	0.47
5/16"	-3.00	8.00	0.00	0.00	0.43	0.47
3.5	-2.50	5.66	0.15	0.16	0.58	0.63
4	-2.25	4.76	0.04	0.04	0.62	0.67
5	-2.00	4.00	0.13	0.14	0.75	0.81
7	-1.50	2.83	0.26	0.28	1.01	1.09
10	-1.00	2.00	0.86	0.94	1.87	2.03
14	-0.50	1.41	2.04	2.23	3.91	4.26
18	0.00	1.00	4.06	4.44	7.97	8.70
25	0.50	0.71	7.09	7.75	15.06	16.45
35	1.00	0.50	13.78	15.07	28.84	31.52
45	1.50	0.35	25.71	28.11	54.55	59.63
60	2.00	0.25	21.37	23.37	75.92	83.00
80	2.50	0.18	5.40	5.90	81.32	88.90
120	3.00	0.13	1.20	1.31	82.52	90.21
170	3.50	0.09	5.20	5.69	87.72	95.90
200	3.75	0.07	1.80	1.97	89.52	97.87
230	4.00	0.06	0.49	0.54	90.01	98.41

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.42	2.08	1.83	1.33	0.78	0.47	-0.42
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	1.29	0.41	1.05	-0.53	5.87	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC02 #5

Analysis Date: 10-29-15

Analyzed By: SMT

Easting (m):  
 590,316

Northing (m):  
 3,003,454

Coordinate System:  
 UTM 17

Elevation (ft):  
 -52.1 NAVD88

USCS: SW  
 Munsell: Wet - 5Y-3/1  
 Dry - 5Y-4/1  
 Washed - 5Y-5/1

Comments:

Dry Weight (g): 95.62	Wash Weight (g): 94.02	Pan Retained (g): 0.04	Sieve Loss (%): 0.00	Fines (%): #200 - 2.43 #230 - 1.72	Organics (%):	Carbonates (%): 82	Shell Hash (%)
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.00	0.00	0.00	0.00
4	-2.25	4.76	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.83	0.21	0.22	0.21	0.22
10	-1.00	2.00	0.64	0.67	0.85	0.89
14	-0.50	1.41	1.90	1.99	2.75	2.88
18	0.00	1.00	4.15	4.34	6.90	7.22
25	0.50	0.71	7.30	7.63	14.20	14.85
35	1.00	0.50	14.22	14.87	28.42	29.72
45	1.50	0.35	22.70	23.74	51.12	53.46
60	2.00	0.25	22.32	23.34	73.44	76.80
80	2.50	0.18	9.65	10.09	83.09	86.89
120	3.00	0.13	2.31	2.42	85.40	89.31
170	3.50	0.09	6.22	6.50	91.62	95.81
200	3.75	0.07	1.68	1.76	93.30	97.57
230	4.00	0.06	0.68	0.71	93.98	98.28

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.44	2.36	1.96	1.43	0.84	0.54	-0.26
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	1.42	0.37	0.98	0.05	3.34	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC02 #6

Analysis Date: 10-29-15

Analyzed By: SMT

Easting (m):  
 590,316

Northing (m):  
 3,003,454

Coordinate System:  
 UTM 17

Elevation (ft):  
 -53.3 NAVD88

USCS: SW-SM  
 Munsell: Wet - 5Y-5/1  
 Dry - 5Y-4/1  
 Washed - 5Y-6/1  
 Comments:

Dry Weight (g): 95.34  
 Wash Weight (g): 92.39  
 Pan Retained (g): 0.88  
 Sieve Loss (%): 0.06  
 Finest (%): #200 - 9.81  
 #230 - 4.09  
 Organics (%):  
 Carbonates (%): 57  
 Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.08	0.08	0.08	0.08
4	-2.25	4.76	0.05	0.05	0.13	0.13
5	-2.00	4.00	0.15	0.16	0.28	0.29
7	-1.50	2.83	0.29	0.30	0.57	0.59
10	-1.00	2.00	0.50	0.52	1.07	1.11
14	-0.50	1.41	1.53	1.60	2.60	2.71
18	0.00	1.00	2.87	3.01	5.47	5.72
25	0.50	0.71	4.90	5.14	10.37	10.86
35	1.00	0.50	8.43	8.84	18.80	19.70
45	1.50	0.35	12.18	12.78	30.98	32.48
60	2.00	0.25	9.39	9.85	40.37	42.33
80	2.50	0.18	3.71	3.89	44.08	46.22
120	3.00	0.13	3.00	3.15	47.08	49.37
170	3.50	0.09	22.53	23.63	69.61	73.00
200	3.75	0.07	16.39	17.19	86.00	90.19
230	4.00	0.06	5.45	5.72	91.45	95.91

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.96	3.66	3.53	3.01	1.21	0.79	-0.12

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	2.25	0.21	1.36	-0.63	2.42

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

# Granularmetric Report

Depths and elevations based on measured values



**CB&I**  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC02 #7

Analysis Date: 10-29-15

Analyzed By: SMT

Easting (m):  
**590,316**

Northing (m):  
**3,003,454**

Coordinate System:  
**UTM 17**

Elevation (ft):  
**-57.3 NAVD88**

USCS: **SM**

Munsell: **Wet - 5Y-5/1**  
**Dry - 5Y-6/1**  
**Washed - 5Y-8/1**

Comments:

Dry Weight (g): <b>96.07</b>	Wash Weight (g): <b>91.06</b>	Pan Retained (g): <b>1.27</b>	Sieve Loss (%): <b>0.04</b>	Fines (%): <b>#200 - 13.00</b> <b>#230 - 6.58</b>	Organics (%):	Carbonates (%): <b>16</b>	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.00	0.00	0.00	0.00
4	-2.25	4.76	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.83	0.01	0.01	0.01	0.01
10	-1.00	2.00	0.01	0.01	0.02	0.02
14	-0.50	1.41	0.01	0.01	0.03	0.03
18	0.00	1.00	0.04	0.04	0.07	0.07
25	0.50	0.71	0.03	0.03	0.10	0.10
35	1.00	0.50	0.05	0.05	0.15	0.15
45	1.50	0.35	0.13	0.14	0.28	0.29
60	2.00	0.25	0.18	0.19	0.46	0.48
80	2.50	0.18	0.47	0.49	0.93	0.97
120	3.00	0.13	17.20	17.90	18.13	18.87
170	3.50	0.09	51.72	53.84	69.85	72.71
200	3.75	0.07	13.73	14.29	83.58	87.00
230	4.00	0.06	6.17	6.42	89.75	93.42

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.70	3.54	3.29	3.06	2.92	2.61
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	3.24	0.11	0.36	-1.83	18.77	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16



**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC02 #8

Analysis Date: 10-29-15

Analyzed By: SMT

Easting (m):  
 590,316

Northing (m):  
 3,003,454

Coordinate System:  
 UTM 17

Elevation (ft):  
 -60.0 NAVD88

USCS: SC  
 Munsell: Wet - 5Y-4/1  
 Dry - 5Y-6/1  
 Washed - 5Y-7/1

Comments:

Dry Weight (g): 89.50  
 Wash Weight (g): 69.00  
 Pan Retained (g): 0.34  
 Sieve Loss (%): 0.00  
 Finest (%): #200 - 27.35  
 #230 - 23.27  
 Organics (%):  
 Carbonates (%): 17  
 Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.00	0.00	0.00	0.00
4	-2.25	4.76	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.01	0.01	0.01	0.01
7	-1.50	2.83	0.04	0.04	0.05	0.05
10	-1.00	2.00	0.08	0.09	0.13	0.14
14	-0.50	1.41	0.16	0.18	0.29	0.32
18	0.00	1.00	0.14	0.16	0.43	0.48
25	0.50	0.71	0.22	0.25	0.65	0.73
35	1.00	0.50	0.34	0.38	0.99	1.11
45	1.50	0.35	0.42	0.47	1.41	1.58
60	2.00	0.25	0.64	0.72	2.05	2.30
80	2.50	0.18	0.68	0.76	2.73	3.06
120	3.00	0.13	1.64	1.83	4.37	4.89
170	3.50	0.09	48.55	54.25	52.92	59.14
200	3.75	0.07	12.09	13.51	65.01	72.65
230	4.00	0.06	3.65	4.08	68.66	76.73

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	3.25	0.11	0.52	-4.79	33.94

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL\_GDT 9/12/16

# Granularmetric Report

Depths and elevations based on measured values



**CB&I**  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC03 #1

Analysis Date: 10-28-15

Analyzed By: SMT

Easting (m):  
**566,326**

Northing (m):  
**3,082,299**

Coordinate System:  
**UTM 17**

Elevation (ft):  
**-42.4 NAVD88**

USCS: **SW**

Munsell: Wet - 2.5Y-4/3  
Dry - 2.5Y-5/3  
Washed - 2.5Y-6/3

Comments:

Dry Weight (g): <b>98.36</b>	Wash Weight (g): <b>96.70</b>	Pan Retained (g): <b>0.01</b>	Sieve Loss (%): <b>0.05</b>	Fines (%): #200 - 1.76 #230 - 1.75	Organics (%):	Carbonates (%): <b>85</b>	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	6.92	7.04	6.92	7.04
5/16"	-3.00	8.00	1.23	1.25	8.15	8.29
3.5	-2.50	5.66	1.99	2.02	10.14	10.31
4	-2.25	4.76	0.27	0.27	10.41	10.58
5	-2.00	4.00	0.92	0.94	11.33	11.52
7	-1.50	2.83	1.16	1.18	12.49	12.70
10	-1.00	2.00	1.21	1.23	13.70	13.93
14	-0.50	1.41	2.32	2.36	16.02	16.29
18	0.00	1.00	5.09	5.17	21.11	21.46
25	0.50	0.71	11.25	11.44	32.36	32.90
35	1.00	0.50	21.75	22.11	54.11	55.01
45	1.50	0.35	26.77	27.22	80.88	82.23
60	2.00	0.25	12.80	13.01	93.68	95.24
80	2.50	0.18	2.37	2.41	96.05	97.65
120	3.00	0.13	0.45	0.46	96.50	98.11
170	3.50	0.09	0.09	0.09	96.59	98.20
200	3.75	0.07	0.04	0.04	96.63	98.24
230	4.00	0.06	0.01	0.01	96.64	98.25

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
1.99	1.57	1.37	0.89	0.15	-0.56	-3.72
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	0.39	0.76	1.56	-1.58	4.64	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

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Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC03 #2

Analysis Date: 10-28-15

Analyzed By: SMT

Easting (m): **566,326**      Northing (m): **3,082,299**

Coordinate System: **UTM 17**

Elevation (ft): **-46.4 NAVD88**

USCS: **SW**      Munsell: Wet - 2.5Y-4/2  
 Dry - 2.5Y-5/2  
 Washed - 2.5Y-6/2      Comments: **11.49g (1.5" x 1.0") coral fragment removed prior to sieving**

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%): #200 - 4.35 #230 - 4.21	Organics (%):	Carbonates (%):	Shell Hash (%):
<b>90.15</b>	<b>86.37</b>	<b>0.01</b>	<b>0.00</b>			<b>89</b>	

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	2.83	3.14	2.83	3.14
5/16"	-3.00	8.00	3.95	4.38	6.78	7.52
3.5	-2.50	5.66	3.97	4.40	10.75	11.92
4	-2.25	4.76	1.94	2.15	12.69	14.07
5	-2.00	4.00	3.54	3.93	16.23	18.00
7	-1.50	2.83	4.41	4.89	20.64	22.89
10	-1.00	2.00	5.69	6.31	26.33	29.20
14	-0.50	1.41	7.60	8.43	33.93	37.63
18	0.00	1.00	9.55	10.59	43.48	48.22
25	0.50	0.71	10.86	12.05	54.34	60.27
35	1.00	0.50	11.87	13.17	66.21	73.44
45	1.50	0.35	10.71	11.88	76.92	85.32
60	2.00	0.25	5.95	6.60	82.87	91.92
80	2.50	0.18	2.02	2.24	84.89	94.16
120	3.00	0.13	0.82	0.91	85.71	95.07
170	3.50	0.09	0.37	0.41	86.08	95.48
200	3.75	0.07	0.15	0.17	86.23	95.65
230	4.00	0.06	0.13	0.14	86.36	95.79

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
	Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	2.96	1.44	1.07	0.07	-1.33	-2.13	-3.29
	-0.29	1.22	1.61	-0.39	2.42		

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Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC03 #3

Analysis Date: 10-28-15

Analyzed By: SMT

Easting (m):  
 566,326

Northing (m):  
 3,082,299

Coordinate System:  
 UTM 17

Elevation (ft):  
 -52.8 NAVD88

USCS: SW  
 Munsell: Wet - 2.5Y-4/1  
 Dry - 2.5Y-5/1  
 Washed - 2.5Y-6/1

Comments:

Dry Weight (g): 99.10  
 Wash Weight (g): 97.35  
 Pan Retained (g): 0.01  
 Sieve Loss (%): 0.03  
 Fines (%): #200 - 2.11, #230 - 1.81  
 Organics (%):  
 Carbonates (%): 65  
 Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.49	0.49	0.49	0.49
3.5	-2.50	5.66	0.00	0.00	0.49	0.49
4	-2.25	4.76	0.09	0.09	0.58	0.58
5	-2.00	4.00	0.13	0.13	0.71	0.71
7	-1.50	2.83	0.20	0.20	0.91	0.91
10	-1.00	2.00	0.90	0.91	1.81	1.82
14	-0.50	1.41	1.98	2.00	3.79	3.82
18	0.00	1.00	4.57	4.61	8.36	8.43
25	0.50	0.71	6.66	6.72	15.02	15.15
35	1.00	0.50	10.98	11.08	26.00	26.23
45	1.50	0.35	21.42	21.61	47.42	47.84
60	2.00	0.25	30.46	30.74	77.88	78.58
80	2.50	0.18	14.89	15.03	92.77	93.61
120	3.00	0.13	3.16	3.19	95.93	96.80
170	3.50	0.09	0.67	0.68	96.60	97.48
200	3.75	0.07	0.41	0.41	97.01	97.89
230	4.00	0.06	0.30	0.30	97.31	98.19

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	1.34	0.40	0.93	-1.17	6.26

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Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC03 #4

Analysis Date: 10-28-15

Analyzed By: DA

Easting (m):  
**566,326**

Northing (m):  
**3,082,299**

Coordinate System:  
**UTM 17**

Elevation (ft):  
**-57.7 NAVD88**

USCS:

**SW**

Munsell: Wet - 2.5Y-4/2  
Dry - 2.5Y-5/2  
Washed - 2.5Y-6/1

Comments:

Dry Weight (g): <b>96.59</b>	Wash Weight (g): <b>94.53</b>	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>0.00</b>	Fines (%): #200 - 2.23 #230 - 2.13	Organics (%):	Carbonates (%): <b>73</b>	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.96	0.99	0.96	0.99
5/16"	-3.00	8.00	0.00	0.00	0.96	0.99
3.5	-2.50	5.66	0.09	0.09	1.05	1.08
4	-2.25	4.76	0.13	0.13	1.18	1.21
5	-2.00	4.00	0.16	0.17	1.34	1.38
7	-1.50	2.83	0.82	0.85	2.16	2.23
10	-1.00	2.00	2.19	2.27	4.35	4.50
14	-0.50	1.41	2.25	2.33	6.60	6.83
18	0.00	1.00	5.13	5.31	11.73	12.14
25	0.50	0.71	6.87	7.11	18.60	19.25
35	1.00	0.50	11.51	11.92	30.11	31.17
45	1.50	0.35	16.32	16.90	46.43	48.07
60	2.00	0.25	27.04	27.99	73.47	76.06
80	2.50	0.18	16.66	17.25	90.13	93.31
120	3.00	0.13	3.65	3.78	93.78	97.09
170	3.50	0.09	0.48	0.50	94.26	97.59
200	3.75	0.07	0.17	0.18	94.43	97.77
230	4.00	0.06	0.10	0.10	94.53	97.87

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.72	2.23	1.98	1.53	0.74	0.27	-0.89
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	1.23	0.43	1.11	-1.5	6.58	

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Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC04 #1

Analysis Date: 10-29-15

Analyzed By: SMT

Easting (m):  
 560,596

Northing (m):  
 3,084,074

Coordinate System:  
 UTM 17

Elevation (ft):  
 -49.7 NAVD88

USCS: SW  
 Munsell: Wet - 5Y-3/1  
 Dry - 2.5Y-6/1  
 Washed - 2.5Y-6/1  
 Comments:

Dry Weight (g): 95.70	Wash Weight (g): 93.76	Pan Retained (g): 0.02	Sieve Loss (%): 0.02	Fines (%): #200 - 2.10 #230 - 2.06	Organics (%):	Carbonates (%): 48	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.20	0.21	0.20	0.21
3.5	-2.50	5.66	0.45	0.47	0.65	0.68
4	-2.25	4.76	0.33	0.34	0.98	1.02
5	-2.00	4.00	0.14	0.15	1.12	1.17
7	-1.50	2.83	0.85	0.89	1.97	2.06
10	-1.00	2.00	0.88	0.92	2.85	2.98
14	-0.50	1.41	3.79	3.96	6.64	6.94
18	0.00	1.00	11.00	11.49	17.64	18.43
25	0.50	0.71	11.70	12.23	29.34	30.66
35	1.00	0.50	13.26	13.86	42.60	44.52
45	1.50	0.35	24.61	25.72	67.21	70.24
60	2.00	0.25	20.28	21.19	87.49	91.43
80	2.50	0.18	5.10	5.33	92.59	96.76
120	3.00	0.13	0.88	0.92	93.47	97.68
170	3.50	0.09	0.15	0.16	93.62	97.84
200	3.75	0.07	0.06	0.06	93.68	97.90
230	4.00	0.06	0.04	0.04	93.72	97.94

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.33	1.82	1.61	1.11	0.27	-0.11	-0.74
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	0.88	0.54	0.96	-0.89	4.35	

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Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC04 #2

Analysis Date: 10-29-15

Analyzed By: SMT

Easting (m):  
 560,596

Northing (m):  
 3,084,074

Coordinate System:  
 UTM 17

Elevation (ft):  
 -52.7 NAVD88

USCS: SW  
 Munsell: Wet - 5Y-3/1  
 Dry - 5Y-5/1  
 Washed - 5Y-5/1  
 Comments:

Dry Weight (g): 94.71	Wash Weight (g): 92.86	Pan Retained (g): 0.00	Sieve Loss (%): 0.02	Fines (%): #200 - 2.03 #230 - 1.99	Organics (%):	Carbonates (%): 57	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.00	0.00	0.00	0.00
4	-2.25	4.76	0.07	0.07	0.07	0.07
5	-2.00	4.00	0.18	0.19	0.25	0.26
7	-1.50	2.83	0.59	0.62	0.84	0.88
10	-1.00	2.00	1.04	1.10	1.88	1.98
14	-0.50	1.41	4.21	4.45	6.09	6.43
18	0.00	1.00	12.80	13.51	18.89	19.94
25	0.50	0.71	14.64	15.46	33.53	35.40
35	1.00	0.50	15.94	16.83	49.47	52.23
45	1.50	0.35	21.89	23.11	71.36	75.34
60	2.00	0.25	15.61	16.48	86.97	91.82
80	2.50	0.18	4.63	4.89	91.60	96.71
120	3.00	0.13	0.92	0.97	92.52	97.68
170	3.50	0.09	0.22	0.23	92.74	97.91
200	3.75	0.07	0.06	0.06	92.80	97.97
230	4.00	0.06	0.04	0.04	92.84	98.01

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.33	1.76	1.49	0.93	0.16	-0.15	-0.66
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	0.81	0.57	0.89	-0.28	2.92	

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Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC04 #3

Analysis Date: 10-29-15

Analyzed By: SMT

Easting (m):  
**560,596**

Northing (m):  
**3,084,074**

Coordinate System:  
**UTM 17**

Elevation (ft):  
**-55.7 NAVD88**

USCS:

**SW**

Munsell: **Wet - 5Y-3/1**  
**Dry - 2.5Y-6/1**  
**Washed - 2.5Y-6/1**

Comments:

Dry Weight (g):

**100.40**

Wash Weight (g):

**98.79**

Pan Retained (g):

**0.02**

Sieve Loss (%):

**0.03**

Fines (%):

**#200 - 1.73**  
**#230 - 1.65**

Organics (%):

**52**

Carbonates (%):

**52**

Shell Hash (%):

**Sieve Number**

**Sieve Size (Phi)**

**Sieve Size (Millimeters)**

**Grams Retained**

**% Weight Retained**

**Cum. Grams Retained**

**C. % Weight Retained**

**3/4"**

**-4.25**

**19.03**

**0.00**

**0.00**

**0.00**

**0.00**

**5/8"**

**-4.00**

**16.00**

**0.00**

**0.00**

**0.00**

**0.00**

**7/16"**

**-3.50**

**11.31**

**0.00**

**0.00**

**0.00**

**0.00**

**5/16"**

**-3.00**

**8.00**

**0.19**

**0.19**

**0.19**

**0.19**

**3.5**

**-2.50**

**5.66**

**0.00**

**0.00**

**0.19**

**0.19**

**4**

**-2.25**

**4.76**

**0.00**

**0.00**

**0.19**

**0.19**

**5**

**-2.00**

**4.00**

**0.12**

**0.12**

**0.31**

**0.31**

**7**

**-1.50**

**2.83**

**0.46**

**0.46**

**0.77**

**0.77**

**10**

**-1.00**

**2.00**

**0.85**

**0.85**

**1.62**

**1.62**

**14**

**-0.50**

**1.41**

**4.37**

**4.35**

**5.99**

**5.97**

**18**

**0.00**

**1.00**

**12.68**

**12.63**

**18.67**

**18.60**

**25**

**0.50**

**0.71**

**14.21**

**14.15**

**32.88**

**32.75**

**35**

**1.00**

**0.50**

**14.22**

**14.16**

**47.10**

**46.91**

**45**

**1.50**

**0.35**

**21.10**

**21.02**

**68.20**

**67.93**

**60**

**2.00**

**0.25**

**20.51**

**20.43**

**88.71**

**88.36**

**80**

**2.50**

**0.18**

**7.86**

**7.83**

**96.57**

**96.19**

**120**

**3.00**

**0.13**

**1.64**

**1.63**

**98.21**

**97.82**

**170**

**3.50**

**0.09**

**0.35**

**0.35**

**98.56**

**98.17**

**200**

**3.75**

**0.07**

**0.10**

**0.10**

**98.66**

**98.27**

**230**

**4.00**

**0.06**

**0.08**

**0.08**

**98.74**

**98.35**

**Phi 5**

**Phi 16**

**Phi 25**

**Phi 50**

**Phi 75**

**Phi 84**

**Phi 95**

**2.42**

**1.89**

**1.67**

**1.07**

**0.23**

**-0.10**

**-0.61**

**Moment**

**Mean Phi**

**Mean mm**

**Sorting**

**Skewness**

**Kurtosis**

**Statistics**

**0.92**

**0.53**

**0.94**

**-0.38**

**3.19**

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CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC04 #4

Analysis Date: 10-29-15

Analyzed By: SMT

Easting (m):  
 560,596

Northing (m):  
 3,084,074

Coordinate System:  
 UTM 17

Elevation (ft):  
 -59.9 NAVD88

USCS: SP-SM  
 Munsell: Wet - 5Y-4/1  
 Dry - 5Y-5/1  
 Washed - 5Y-6/1  
 Comments:

Dry Weight (g): 88.64	Wash Weight (g): 83.30	Pan Retained (g): 0.07	Sieve Loss (%): 0.06	Fines (%): #200 - 6.50 #230 - 6.16	Organics (%):	Carbonates (%): 78	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.00	0.00	0.00	0.00
4	-2.25	4.76	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.02	0.02	0.02	0.02
7	-1.50	2.83	0.06	0.07	0.08	0.09
10	-1.00	2.00	0.27	0.30	0.35	0.39
14	-0.50	1.41	0.54	0.61	0.89	1.00
18	0.00	1.00	1.83	2.06	2.72	3.06
25	0.50	0.71	4.94	5.57	7.66	8.63
35	1.00	0.50	10.99	12.40	18.65	21.03
45	1.50	0.35	15.76	17.78	34.41	38.81
60	2.00	0.25	18.97	21.40	53.38	60.21
80	2.50	0.18	17.57	19.82	70.95	80.03
120	3.00	0.13	9.64	10.88	80.59	90.91
170	3.50	0.09	1.78	2.01	82.37	92.92
200	3.75	0.07	0.51	0.58	82.88	93.50
230	4.00	0.06	0.30	0.34	83.18	93.84

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	2.68	2.37	1.76	1.11	0.80	0.17
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	1.63	0.32	0.85	-0.36	3.24	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC04 #5

Analysis Date: 10-29-15

Analyzed By: SMT

Easting (m):  
 560,596

Northing (m):  
 3,084,074

Coordinate System:  
 UTM 17

Elevation (ft):  
 -61.5 NAVD88

USCS: SC  
 Munsell: Wet - 5Y-4/1  
 Dry - 5Y-6/1  
 Washed - 5Y-6/1  
 Comments:

Dry Weight (g): 83.90  
 Wash Weight (g): 71.94  
 Pan Retained (g): 0.14  
 Sieve Loss (%): 0.05  
 Finest (%): #200 - 15.19  
 #230 - 14.47  
 Organics (%):  
 Carbonates (%): 64  
 Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.28	0.33	0.28	0.33
4	-2.25	4.76	0.00	0.00	0.28	0.33
5	-2.00	4.00	0.13	0.15	0.41	0.48
7	-1.50	2.83	0.36	0.43	0.77	0.91
10	-1.00	2.00	0.56	0.67	1.33	1.58
14	-0.50	1.41	0.96	1.14	2.29	2.72
18	0.00	1.00	1.78	2.12	4.07	4.84
25	0.50	0.71	2.91	3.47	6.98	8.31
35	1.00	0.50	5.06	6.03	12.04	14.34
45	1.50	0.35	6.96	8.30	19.00	22.64
60	2.00	0.25	10.62	12.66	29.62	35.30
80	2.50	0.18	21.22	25.29	50.84	60.59
120	3.00	0.13	16.26	19.38	67.10	79.97
170	3.50	0.09	3.23	3.85	70.33	83.82
200	3.75	0.07	0.83	0.99	71.16	84.81
230	4.00	0.06	0.60	0.72	71.76	85.53

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	1.9	0.27	1.03	-1.31	5.4

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC08 #1

Analysis Date: 10-27-15

Analyzed By: SMT

Easting (m):  
 524,496

Northing (m):  
 3,210,546

Coordinate System:  
 UTM 17

Elevation (ft):  
 -63.0 NAVD88

USCS: SP  
 Munsell: Wet - 5Y-5/1  
 Dry - 5Y-6/1  
 Washed - 5Y-8/1

Comments:

Dry Weight (g): 98.62  
 Wash Weight (g): 97.37  
 Pan Retained (g): 0.01  
 Sieve Loss (%): 0.00  
 Finest (%): #200 - 1.39  
 #230 - 1.29  
 Organics (%):  
 Carbonates (%): 8  
 Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.32	0.32	0.32	0.32
3.5	-2.50	5.66	0.00	0.00	0.32	0.32
4	-2.25	4.76	0.00	0.00	0.32	0.32
5	-2.00	4.00	0.05	0.05	0.37	0.37
7	-1.50	2.83	0.30	0.30	0.67	0.67
10	-1.00	2.00	0.54	0.55	1.21	1.22
14	-0.50	1.41	0.76	0.77	1.97	1.99
18	0.00	1.00	0.62	0.63	2.59	2.62
25	0.50	0.71	0.68	0.69	3.27	3.31
35	1.00	0.50	1.16	1.18	4.43	4.49
45	1.50	0.35	3.22	3.27	7.65	7.76
60	2.00	0.25	13.81	14.00	21.46	21.76
80	2.50	0.18	59.20	60.03	80.66	81.79
120	3.00	0.13	14.60	14.80	95.26	96.59
170	3.50	0.09	1.72	1.74	96.98	98.33
200	3.75	0.07	0.28	0.28	97.26	98.61
230	4.00	0.06	0.10	0.10	97.36	98.71

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	2.12	0.23	0.71	-3.43	20.53

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



**CB&I**  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC08 #2

Analysis Date: 10-28-15

Analyzed By: SMT

Easting (m):  
 524,496

Northing (m):  
 3,210,546

Coordinate System:  
 UTM 17

Elevation (ft):  
 -67.0 NAVD88

USCS: SP  
 Munsell: Wet - 5Y-4/1  
 Dry - 5Y-5/1  
 Washed - 5Y-8/1  
 Comments:

Dry Weight (g): 100.11  
 Wash Weight (g): 96.10  
 Pan Retained (g): 0.01  
 Sieve Loss (%): 0.04  
 Finest (%): #200 - 4.27  
 #230 - 4.05  
 Organics (%):  
 Carbonates (%): 7  
 Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.11	0.11	0.11	0.11
4	-2.25	4.76	0.00	0.00	0.11	0.11
5	-2.00	4.00	0.00	0.00	0.11	0.11
7	-1.50	2.83	0.14	0.14	0.25	0.25
10	-1.00	2.00	0.17	0.17	0.42	0.42
14	-0.50	1.41	0.37	0.37	0.79	0.79
18	0.00	1.00	0.46	0.46	1.25	1.25
25	0.50	0.71	0.35	0.35	1.60	1.60
35	1.00	0.50	0.59	0.59	2.19	2.19
45	1.50	0.35	1.52	1.52	3.71	3.71
60	2.00	0.25	8.01	8.00	11.72	11.71
80	2.50	0.18	50.83	50.77	62.55	62.48
120	3.00	0.13	29.41	29.38	91.96	91.86
170	3.50	0.09	3.13	3.13	95.09	94.99
200	3.75	0.07	0.74	0.74	95.83	95.73
230	4.00	0.06	0.22	0.22	96.05	95.95

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	2.33	0.20	0.57	-2.96	21.01

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

# Granularmetric Report

Depths and elevations based on measured values



**CB&I**  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC08 #3

Analysis Date: 10-28-15

Analyzed By: SMT

Easting (m):  
**524,496**

Northing (m):  
**3,210,546**

Coordinate System:  
**UTM 17**

Elevation (ft):  
**-69.4 NAVD88**

USCS: **SP-SM**

Munsell: **Wet - 5Y-4/1**  
**Dry - 5Y-5/2**  
**Washed - 5Y-7/1**

Comments:

Dry Weight (g): <b>93.09</b>	Wash Weight (g): <b>85.92</b>	Pan Retained (g): <b>0.05</b>	Sieve Loss (%): <b>0.00</b>	Fines (%): <b>#200 - 8.15</b> <b>#230 - 7.74</b>	Organics (%):	Carbonates (%): <b>10</b>	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.64	0.69	0.64	0.69
4	-2.25	4.76	0.00	0.00	0.64	0.69
5	-2.00	4.00	0.17	0.18	0.81	0.87
7	-1.50	2.83	0.27	0.29	1.08	1.16
10	-1.00	2.00	0.49	0.53	1.57	1.69
14	-0.50	1.41	0.52	0.56	2.09	2.25
18	0.00	1.00	0.53	0.57	2.62	2.82
25	0.50	0.71	0.46	0.49	3.08	3.31
35	1.00	0.50	0.57	0.61	3.65	3.92
45	1.50	0.35	1.14	1.22	4.79	5.14
60	2.00	0.25	4.65	5.00	9.44	10.14
80	2.50	0.18	49.51	53.19	58.95	63.33
120	3.00	0.13	21.95	23.58	80.90	86.91
170	3.50	0.09	3.84	4.13	84.74	91.04
200	3.75	0.07	0.75	0.81	85.49	91.85
230	4.00	0.06	0.38	0.41	85.87	92.26

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	2.94	2.75	2.37	2.14	2.06	1.44
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	2.27	0.21	0.8	-3.55	20.12	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



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 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC08 #4

Analysis Date: 10-28-15

Analyzed By: SMT

Easting (m):  
 524,496

Northing (m):  
 3,210,546

Coordinate System:  
 UTM 17

Elevation (ft):  
 -72.4 NAVD88

USCS: SW-SM  
 Munsell: Wet - 5Y-4/1  
 Dry - 5Y-5/2  
 Washed - 5Y-8/1

Comments:

Dry Weight (g): 92.17  
 Wash Weight (g): 82.22  
 Pan Retained (g): 0.03  
 Sieve Loss (%): 0.03  
 Finest (%): #200 - 11.26  
 #230 - 10.87  
 Organics (%):  
 Carbonates (%): 22  
 Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	1.33	1.44	1.33	1.44
3.5	-2.50	5.66	2.47	2.68	3.80	4.12
4	-2.25	4.76	0.50	0.54	4.30	4.66
5	-2.00	4.00	1.07	1.16	5.37	5.82
7	-1.50	2.83	1.90	2.06	7.27	7.88
10	-1.00	2.00	1.34	1.45	8.61	9.33
14	-0.50	1.41	1.42	1.54	10.03	10.87
18	0.00	1.00	1.07	1.16	11.10	12.03
25	0.50	0.71	0.93	1.01	12.03	13.04
35	1.00	0.50	1.60	1.74	13.63	14.78
45	1.50	0.35	3.07	3.33	16.70	18.11
60	2.00	0.25	6.09	6.61	22.79	24.72
80	2.50	0.18	20.68	22.44	43.47	47.16
120	3.00	0.13	30.50	33.09	73.97	80.25
170	3.50	0.09	6.64	7.20	80.61	87.45
200	3.75	0.07	1.19	1.29	81.80	88.74
230	4.00	0.06	0.36	0.39	82.16	89.13

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	1.86	0.28	1.62	-1.84	5.37

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC08 #5

Analysis Date: 10-28-15

Analyzed By: SMT

Easting (m):  
 524,496

Northing (m):  
 3,210,546

Coordinate System:  
 UTM 17

Elevation (ft):  
 -77.6 NAVD88

USCS: SW-SM  
 Munsell: Wet - 5Y-5/1  
 Dry - 5Y-6/1  
 Washed - 5Y-7/1  
 Comments:

Dry Weight (g): 93.13  
 Wash Weight (g): 87.71  
 Pan Retained (g): 0.03  
 Sieve Loss (%): 0.00  
 Finest (%): #200 - 6.09  
 #230 - 5.85  
 Organics (%):  
 Carbonates (%): 40  
 Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	1.46	1.57	1.46	1.57
5/16"	-3.00	8.00	0.52	0.56	1.98	2.13
3.5	-2.50	5.66	1.43	1.54	3.41	3.67
4	-2.25	4.76	0.73	0.78	4.14	4.45
5	-2.00	4.00	0.23	0.25	4.37	4.70
7	-1.50	2.83	0.94	1.01	5.31	5.71
10	-1.00	2.00	1.04	1.12	6.35	6.83
14	-0.50	1.41	1.13	1.21	7.48	8.04
18	0.00	1.00	1.23	1.32	8.71	9.36
25	0.50	0.71	1.52	1.63	10.23	10.99
35	1.00	0.50	2.79	3.00	13.02	13.99
45	1.50	0.35	6.21	6.67	19.23	20.66
60	2.00	0.25	12.11	13.00	31.34	33.66
80	2.50	0.18	29.46	31.63	60.80	65.29
120	3.00	0.13	22.38	24.03	83.18	89.32
170	3.50	0.09	3.84	4.12	87.02	93.44
200	3.75	0.07	0.44	0.47	87.46	93.91
230	4.00	0.06	0.22	0.24	87.68	94.15

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	1.79	0.29	1.45	-2.2	7.69

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16



**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC08 #6

Analysis Date: 10-28-15

Analyzed By: SMT

Easting (m):  
 524,496

Northing (m):  
 3,210,546

Coordinate System:  
 UTM 17

Elevation (ft):  
 -79.7 NAVD88

USCS: SW  
 Munsell: Wet - 5Y-4/1  
 Dry - 5Y-5/1  
 Washed - 5Y-6/1

Comments:

Dry Weight (g): 99.02  
 Wash Weight (g): 95.79  
 Pan Retained (g): 0.03  
 Sieve Loss (%): 0.02  
 Finest (%): #200 - 3.50  
 #230 - 3.33  
 Organics (%):  
 Carbonates (%): 65  
 Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	1.41	1.42	1.41	1.42
5/16"	-3.00	8.00	2.14	2.16	3.55	3.58
3.5	-2.50	5.66	2.05	2.07	5.60	5.65
4	-2.25	4.76	1.03	1.04	6.63	6.69
5	-2.00	4.00	1.00	1.01	7.63	7.70
7	-1.50	2.83	3.35	3.38	10.98	11.08
10	-1.00	2.00	5.13	5.18	16.11	16.26
14	-0.50	1.41	7.85	7.93	23.96	24.19
18	0.00	1.00	7.81	7.89	31.77	32.08
25	0.50	0.71	6.01	6.07	37.78	38.15
35	1.00	0.50	6.39	6.45	44.17	44.60
45	1.50	0.35	8.95	9.04	53.12	53.64
60	2.00	0.25	11.36	11.47	64.48	65.11
80	2.50	0.18	15.35	15.50	79.83	80.61
120	3.00	0.13	12.52	12.64	92.35	93.25
170	3.50	0.09	2.88	2.91	95.23	96.16
200	3.75	0.07	0.34	0.34	95.57	96.50
230	4.00	0.06	0.17	0.17	95.74	96.67

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	0.78	0.58	1.76	-0.66	2.58

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC10 #1

Analysis Date: 10-28-15

Analyzed By: DA

Easting (m):  
 505,911

Northing (m):  
 3,247,612

Coordinate System:  
 UTM 17

Elevation (ft):  
 -61.2 NAVD88

USCS: SW  
 Munsell: Wet - 5Y-4/1  
 Dry - 5Y-5/1  
 Washed - 5Y-7/1

Comments:

Dry Weight (g): 100.05  
 Wash Weight (g): 98.80  
 Pan Retained (g): 0.01  
 Sieve Loss (%): 0.05  
 Finest (%): #200 - 1.36  
 #230 - 1.30  
 Organics (%):  
 Carbonates (%): 25  
 Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.49	0.49	0.49	0.49
5/16"	-3.00	8.00	0.00	0.00	0.49	0.49
3.5	-2.50	5.66	0.39	0.39	0.88	0.88
4	-2.25	4.76	0.27	0.27	1.15	1.15
5	-2.00	4.00	0.38	0.38	1.53	1.53
7	-1.50	2.83	1.24	1.24	2.77	2.77
10	-1.00	2.00	2.27	2.27	5.04	5.04
14	-0.50	1.41	1.78	1.78	6.82	6.82
18	0.00	1.00	2.78	2.78	9.60	9.60
25	0.50	0.71	3.14	3.14	12.74	12.74
35	1.00	0.50	5.11	5.11	17.85	17.85
45	1.50	0.35	8.44	8.44	26.29	26.29
60	2.00	0.25	20.91	20.90	47.20	47.19
80	2.50	0.18	34.02	34.00	81.22	81.19
120	3.00	0.13	15.80	15.79	97.02	96.98
170	3.50	0.09	1.43	1.43	98.45	98.41
200	3.75	0.07	0.23	0.23	98.68	98.64
230	4.00	0.06	0.06	0.06	98.74	98.70

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	2.94	2.41	2.04	1.42	-1.01
	1.68	0.31	1.16	-1.84	6.81

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC10 #2

Analysis Date: 10-28-15

Analyzed By: DA

Easting (m):  
 505,911

Northing (m):  
 3,247,612

Coordinate System:  
 UTM 17

Elevation (ft):  
 -63.4 NAVD88

USCS: SW  
 Munsell: Wet - 5Y-5/1  
 Dry - 5Y-6/1  
 Washed - 5Y-7/1

Comments:

Dry Weight (g): 99.82  
 Wash Weight (g): 98.48  
 Pan Retained (g): 0.02  
 Sieve Loss (%): 0.10  
 Finest (%): #200 - 1.58  
 #230 - 1.47  
 Organics (%):  
 Carbonates (%): 15  
 Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.50	0.50	0.50	0.50
4	-2.25	4.76	0.06	0.06	0.56	0.56
5	-2.00	4.00	0.16	0.16	0.72	0.72
7	-1.50	2.83	0.21	0.21	0.93	0.93
10	-1.00	2.00	0.85	0.85	1.78	1.78
14	-0.50	1.41	0.86	0.86	2.64	2.64
18	0.00	1.00	1.54	1.54	4.18	4.18
25	0.50	0.71	1.73	1.73	5.91	5.91
35	1.00	0.50	3.09	3.10	9.00	9.01
45	1.50	0.35	6.06	6.07	15.06	15.08
60	2.00	0.25	18.54	18.57	33.60	33.65
80	2.50	0.18	43.13	43.21	76.73	76.86
120	3.00	0.13	18.01	18.04	94.74	94.90
170	3.50	0.09	3.01	3.02	97.75	97.92
200	3.75	0.07	0.50	0.50	98.25	98.42
230	4.00	0.06	0.11	0.11	98.36	98.53

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	2	0.25	0.88	-2.24	10.29

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC10 #3

Analysis Date: 10-29-15

Analyzed By: DA

Easting (m):  
 505,911

Northing (m):  
 3,247,612

Coordinate System:  
 UTM 17

Elevation (ft):  
 -65.3 NAVD88

USCS: SP  
 Munsell: Wet - 5Y-5/1  
 Dry - 5Y-6/1  
 Washed - 5Y-8/1  
 Comments:

Dry Weight (g): 93.74  
 Wash Weight (g): 92.15  
 Pan Retained (g): 0.02  
 Sieve Loss (%): 0.01  
 Finest (%): #200 - 1.88  
 #230 - 1.74  
 Organics (%):  
 Carbonates (%): 9  
 Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.00	0.00	0.00	0.00
4	-2.25	4.76	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.05	0.05	0.05	0.05
7	-1.50	2.83	0.07	0.07	0.12	0.12
10	-1.00	2.00	0.08	0.09	0.20	0.21
14	-0.50	1.41	0.20	0.21	0.40	0.42
18	0.00	1.00	0.39	0.42	0.79	0.84
25	0.50	0.71	0.46	0.49	1.25	1.33
35	1.00	0.50	0.90	0.96	2.15	2.29
45	1.50	0.35	1.83	1.95	3.98	4.24
60	2.00	0.25	11.00	11.73	14.98	15.97
80	2.50	0.18	46.24	49.33	61.22	65.30
120	3.00	0.13	26.12	27.86	87.34	93.16
170	3.50	0.09	4.09	4.36	91.43	97.52
200	3.75	0.07	0.56	0.60	91.99	98.12
230	4.00	0.06	0.13	0.14	92.12	98.26

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	3.21	2.67	2.34	2.09	1.53
	2.32	0.20	0.54	-1.99	13.54

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC10 #4

Analysis Date: 10-29-15

Analyzed By: DA

Easting (m):  
 505,911

Northing (m):  
 3,247,612

Coordinate System:  
 UTM 17

Elevation (ft):  
 -66.6 NAVD88

USCS: SP  
 Munsell: Wet - 5Y-5/1  
 Dry - 5Y-6/1  
 Washed - 5Y-8/1

Comments:

Dry Weight (g): 95.24  
 Wash Weight (g): 93.47  
 Pan Retained (g): 0.02  
 Sieve Loss (%): 0.00  
 Finest (%): #200 - 2.02  
 #230 - 1.86  
 Organics (%):  
 Carbonates (%): 12  
 Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.00	0.00	0.00	0.00
4	-2.25	4.76	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.83	0.01	0.01	0.01	0.01
10	-1.00	2.00	0.22	0.23	0.23	0.24
14	-0.50	1.41	0.38	0.40	0.61	0.64
18	0.00	1.00	0.80	0.84	1.41	1.48
25	0.50	0.71	0.92	0.97	2.33	2.45
35	1.00	0.50	1.63	1.71	3.96	4.16
45	1.50	0.35	3.31	3.48	7.27	7.64
60	2.00	0.25	14.41	15.13	21.68	22.77
80	2.50	0.18	51.27	53.83	72.95	76.60
120	3.00	0.13	16.12	16.93	89.07	93.53
170	3.50	0.09	3.72	3.91	92.79	97.44
200	3.75	0.07	0.51	0.54	93.30	97.98
230	4.00	0.06	0.15	0.16	93.45	98.14

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	2.19	0.22	0.61	-1.76	9.73

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC10 #5

Analysis Date: 10-29-15

Analyzed By: DA

Easting (m):  
 505,911

Northing (m):  
 3,247,612

Coordinate System:  
 UTM 17

Elevation (ft):  
 -68.2 NAVD88

USCS: SW-SM  
 Munsell: Wet - 5Y-4/1  
 Dry - 5Y-5/1  
 Washed - 5Y-8/1

Comments:

Dry Weight (g): 93.33  
 Wash Weight (g): 88.89  
 Pan Retained (g): 0.19  
 Sieve Loss (%): 0.00  
 Fines (%): #200 - 5.86, #230 - 4.95  
 Organics (%):  
 Carbonates (%): 22  
 Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.65	0.70	0.65	0.70
5/16"	-3.00	8.00	0.82	0.88	1.47	1.58
3.5	-2.50	5.66	0.22	0.24	1.69	1.82
4	-2.25	4.76	0.09	0.10	1.78	1.92
5	-2.00	4.00	0.33	0.35	2.11	2.27
7	-1.50	2.83	0.42	0.45	2.53	2.72
10	-1.00	2.00	1.38	1.48	3.91	4.20
14	-0.50	1.41	1.37	1.47	5.28	5.67
18	0.00	1.00	1.86	1.99	7.14	7.66
25	0.50	0.71	1.58	1.69	8.72	9.35
35	1.00	0.50	2.15	2.30	10.87	11.65
45	1.50	0.35	2.26	2.42	13.13	14.07
60	2.00	0.25	5.47	5.86	18.60	19.93
80	2.50	0.18	20.40	21.86	39.00	41.79
120	3.00	0.13	39.14	41.94	78.14	83.73
170	3.50	0.09	7.79	8.35	85.93	92.08
200	3.75	0.07	1.92	2.06	87.85	94.14
230	4.00	0.06	0.85	0.91	88.70	95.05

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
	3.99	3.02	2.90	2.60	2.12	1.66	-0.73
	2.18	0.22	1.29	-2.43	9.45		

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

## Granularmetric Report

Depths and elevations based on measured values



**CB&I**  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC10 #6

Analysis Date: 10-29-15

Analyzed By: DA

Easting (m):  
**505,911**

Northing (m):  
**3,247,612**

Coordinate System:  
**UTM 17**

Elevation (ft):  
**-69.3 NAVD88**

USCS: **SW**

Munsell: **Wet - 5Y-4/1  
Dry - 5Y-5/1  
Washed - 5Y-7/1**

Comments:

Dry Weight (g): <b>96.52</b>	Wash Weight (g): <b>92.37</b>	Pan Retained (g): <b>0.08</b>	Sieve Loss (%): <b>0.12</b>	Fines (%): <b>#200 - 4.80 #230 - 4.51</b>	Organics (%):	Carbonates (%): <b>46</b>	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	1.65	1.71	1.65	1.71
3.5	-2.50	5.66	2.14	2.22	3.79	3.93
4	-2.25	4.76	1.88	1.95	5.67	5.88
5	-2.00	4.00	1.63	1.69	7.30	7.57
7	-1.50	2.83	3.99	4.13	11.29	11.70
10	-1.00	2.00	4.83	5.00	16.12	16.70
14	-0.50	1.41	4.66	4.83	20.78	21.53
18	0.00	1.00	5.24	5.43	26.02	26.96
25	0.50	0.71	3.88	4.02	29.90	30.98
35	1.00	0.50	4.70	4.87	34.60	35.85
45	1.50	0.35	5.13	5.31	39.73	41.16
60	2.00	0.25	7.88	8.16	47.61	49.32
80	2.50	0.18	18.73	19.41	66.34	68.73
120	3.00	0.13	19.95	20.67	86.29	89.40
170	3.50	0.09	4.77	4.94	91.06	94.34
200	3.75	0.07	0.83	0.86	91.89	95.20
230	4.00	0.06	0.28	0.29	92.17	95.49

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.69	2.87	2.65	2.02	-0.18	-1.07	-2.36
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	1.13	0.46	1.81	-0.79	2.4	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

# Granularmetric Report

Depths and elevations based on measured values



**CB&I**  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC10 #7

Analysis Date: 10-29-15

Analyzed By: DA

Easting (m):  
**505,911**

Northing (m):  
**3,247,612**

Coordinate System:  
**UTM 17**

Elevation (ft):  
**-70.5 NAVD88**

USCS: **SM**

Munsell: Wet - 10Y-4/1  
Dry - 10Y-6/1  
Washed - 10Y-7/1

Comments:

Dry Weight (g): <b>93.86</b>	Wash Weight (g): <b>83.57</b>	Pan Retained (g): <b>0.21</b>	Sieve Loss (%): <b>0.04</b>	Fines (%): #200 - 12.48 #230 - 11.23	Organics (%):	Carbonates (%): <b>18</b>	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.18	0.19	0.18	0.19
4	-2.25	4.76	0.11	0.12	0.29	0.31
5	-2.00	4.00	0.33	0.35	0.62	0.66
7	-1.50	2.83	0.72	0.77	1.34	1.43
10	-1.00	2.00	0.77	0.82	2.11	2.25
14	-0.50	1.41	0.80	0.85	2.91	3.10
18	0.00	1.00	0.82	0.87	3.73	3.97
25	0.50	0.71	0.66	0.70	4.39	4.67
35	1.00	0.50	0.90	0.96	5.29	5.63
45	1.50	0.35	0.92	0.98	6.21	6.61
60	2.00	0.25	2.89	3.08	9.10	9.69
80	2.50	0.18	9.70	10.33	18.80	20.02
120	3.00	0.13	38.48	41.00	57.28	61.02
170	3.50	0.09	21.72	23.14	79.00	84.16
200	3.75	0.07	3.15	3.36	82.15	87.52
230	4.00	0.06	1.17	1.25	83.32	88.77

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.50	3.30	2.87	2.56	2.31	0.67
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	2.6	0.16	1	-2.85	12.24	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16



# Granularmetric Report

Depths and elevations based on measured values



**CB&I**  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC15 #1

Analysis Date: 09-29-15

Analyzed By: SMT

Easting (m):  
**518,706**

Northing (m):  
**3,224,812**

Coordinate System:  
**UTM 17**

Elevation (ft):  
**-61.0 NAVD88**

USCS:

**SW**

Munsell: Wet - 2.5Y-5/1  
Dry - 2.5Y-7/1  
Washed - 2.5Y-7/1

Comments:

Dry Weight (g): <b>94.93</b>	Wash Weight (g): <b>93.80</b>	Pan Retained (g): <b>0.00</b>	Sieve Loss (%): <b>0.11</b>	Fines (%): #200 - 1.32 #230 - 1.30	Organics (%):	Carbonates (%): <b>48</b>	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.51	0.54	0.51	0.54
7/16"	-3.50	11.31	1.35	1.42	1.86	1.96
5/16"	-3.00	8.00	1.68	1.77	3.54	3.73
3.5	-2.50	5.66	2.72	2.87	6.26	6.60
4	-2.25	4.76	1.57	1.65	7.83	8.25
5	-2.00	4.00	1.38	1.45	9.21	9.70
7	-1.50	2.83	2.94	3.10	12.15	12.80
10	-1.00	2.00	3.29	3.47	15.44	16.27
14	-0.50	1.41	4.34	4.57	19.78	20.84
18	0.00	1.00	5.03	5.30	24.81	26.14
25	0.50	0.71	6.06	6.38	30.87	32.52
35	1.00	0.50	7.74	8.15	38.61	40.67
45	1.50	0.35	12.94	13.63	51.55	54.30
60	2.00	0.25	18.07	19.04	69.62	73.34
80	2.50	0.18	18.52	19.51	88.14	92.85
120	3.00	0.13	5.03	5.30	93.17	98.15
170	3.50	0.09	0.45	0.47	93.62	98.62
200	3.75	0.07	0.06	0.06	93.68	98.68
230	4.00	0.06	0.02	0.02	93.70	98.70

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.70	2.27	2.04	1.34	-0.11	-1.04	-2.78
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	0.77	0.59	1.67	-1.06	3.26	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

# Granularmetric Report

Depths and elevations based on measured values



**CB&I**  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC15 #2

Analysis Date: 09-29-15

Analyzed By: SMT

Easting (m):  
**518,706**

Northing (m):  
**3,224,812**

Coordinate System:  
**UTM 17**

Elevation (ft):  
**-61.8 NAVD88**

USCS: **SW**

Munsell: **Wet - 5Y-4/1  
Dry - 5Y-6/1  
Washed - 5Y-7/1**

Comments:

Dry Weight (g): <b>91.21</b>	Wash Weight (g): <b>89.86</b>	Pan Retained (g): <b>0.05</b>	Sieve Loss (%): <b>0.08</b>	Fines (%): <b>#200 - 1.68 #230 - 1.60</b>	Organics (%):	Carbonates (%): <b>34</b>	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.26	0.29	0.26	0.29
3.5	-2.50	5.66	0.38	0.42	0.64	0.71
4	-2.25	4.76	0.49	0.54	1.13	1.25
5	-2.00	4.00	0.64	0.70	1.77	1.95
7	-1.50	2.83	0.96	1.05	2.73	3.00
10	-1.00	2.00	1.32	1.45	4.05	4.45
14	-0.50	1.41	2.59	2.84	6.64	7.29
18	0.00	1.00	3.06	3.35	9.70	10.64
25	0.50	0.71	4.78	5.24	14.48	15.88
35	1.00	0.50	5.88	6.45	20.36	22.33
45	1.50	0.35	9.24	10.13	29.60	32.46
60	2.00	0.25	18.87	20.69	48.47	53.15
80	2.50	0.18	32.08	35.17	80.55	88.32
120	3.00	0.13	8.21	9.00	88.76	97.32
170	3.50	0.09	0.80	0.88	89.56	98.20
200	3.75	0.07	0.11	0.12	89.67	98.32
230	4.00	0.06	0.07	0.08	89.74	98.40

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.87	2.44	2.31	1.92	1.13	0.51	-0.90
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	1.54	0.34	1.15	-1.56	5.43	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC15 #3

Analysis Date: 09-29-15

Analyzed By: SMT

Easting (m):  
 518,706

Northing (m):  
 3,224,812

Coordinate System:  
 UTM 17

Elevation (ft):  
 -62.5 NAVD88

USCS: SW  
 Munsell: Wet - 5Y-4/1  
 Dry - 5Y-6/1  
 Washed - 5Y-6/1  
 Comments:

Dry Weight (g): 94.24	Wash Weight (g): 93.12	Pan Retained (g): 0.00	Sieve Loss (%): 0.00	Fines (%): #200 - 1.21 #230 - 1.18	Organics (%):	Carbonates (%): 47	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.61	0.65	0.61	0.65
3.5	-2.50	5.66	1.43	1.52	2.04	2.17
4	-2.25	4.76	0.56	0.59	2.60	2.76
5	-2.00	4.00	0.70	0.74	3.30	3.50
7	-1.50	2.83	2.90	3.08	6.20	6.58
10	-1.00	2.00	3.56	3.78	9.76	10.36
14	-0.50	1.41	5.52	5.86	15.28	16.22
18	0.00	1.00	6.19	6.57	21.47	22.79
25	0.50	0.71	6.61	7.01	28.08	29.80
35	1.00	0.50	6.93	7.35	35.01	37.15
45	1.50	0.35	10.93	11.60	45.94	48.75
60	2.00	0.25	16.80	17.83	62.74	66.58
80	2.50	0.18	22.36	23.73	85.10	90.31
120	3.00	0.13	7.16	7.60	92.26	97.91
170	3.50	0.09	0.71	0.75	92.97	98.66
200	3.75	0.07	0.12	0.13	93.09	98.79
230	4.00	0.06	0.03	0.03	93.12	98.82

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.81	2.37	2.18	1.54	0.16	-0.52	-1.76
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	1.06	0.48	1.41	-0.93	3.1	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL\_GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC15 #4

Analysis Date: 09-30-15

Analyzed By: SMT

Easting (m):  
 518,706

Northing (m):  
 3,224,812

Coordinate System:  
 UTM 17

Elevation (ft):  
 -63.4 NAVD88

USCS: SP  
 Munsell: Wet - 5Y-5/1  
 Dry - 5Y-7/1  
 Washed - 5Y-7/1  
 Comments:

Dry Weight (g): 92.86	Wash Weight (g): 91.80	Pan Retained (g): 0.02	Sieve Loss (%): 0.02	Fines (%): #200 - 1.25 #230 - 1.19	Organics (%):	Carbonates (%): 18	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.00	0.00	0.00	0.00
4	-2.25	4.76	0.06	0.06	0.06	0.06
5	-2.00	4.00	0.00	0.00	0.06	0.06
7	-1.50	2.83	0.23	0.25	0.29	0.31
10	-1.00	2.00	0.35	0.38	0.64	0.69
14	-0.50	1.41	1.00	1.08	1.64	1.77
18	0.00	1.00	1.29	1.39	2.93	3.16
25	0.50	0.71	1.86	2.00	4.79	5.16
35	1.00	0.50	2.70	2.91	7.49	8.07
45	1.50	0.35	5.84	6.29	13.33	14.36
60	2.00	0.25	16.97	18.27	30.30	32.63
80	2.50	0.18	40.33	43.43	70.63	76.06
120	3.00	0.13	17.60	18.95	88.23	95.01
170	3.50	0.09	3.08	3.32	91.31	98.33
200	3.75	0.07	0.39	0.42	91.70	98.75
230	4.00	0.06	0.06	0.06	91.76	98.81

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.00	2.71	2.49	2.20	1.79	1.54	0.46
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	2.05	0.24	0.77	-1.78	7.8	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

# Granularmetric Report

Depths and elevations based on measured values



**CB&I**  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC15 #5

Analysis Date: 09-30-15

Analyzed By: SMT

Easting (m):  
**518,706**

Northing (m):  
**3,224,812**

Coordinate System:  
**UTM 17**

Elevation (ft):  
**-65.1 NAVD88**

USCS:

**SW**

Munsell: Wet - 2.5Y-4/1  
Dry - 2.5-7/1  
Washed - 2.5Y-7/1

Comments:

Dry Weight (g): <b>92.18</b>	Wash Weight (g): <b>90.37</b>	Pan Retained (g): <b>0.04</b>	Sieve Loss (%): <b>0.07</b>	Fines (%): #200 - 2.27 #230 - 2.05	Organics (%):	Carbonates (%): <b>23</b>	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.36	0.39	0.36	0.39
4	-2.25	4.76	0.13	0.14	0.49	0.53
5	-2.00	4.00	0.20	0.22	0.69	0.75
7	-1.50	2.83	0.43	0.47	1.12	1.22
10	-1.00	2.00	0.54	0.59	1.66	1.81
14	-0.50	1.41	1.09	1.18	2.75	2.99
18	0.00	1.00	1.81	1.96	4.56	4.95
25	0.50	0.71	2.22	2.41	6.78	7.36
35	1.00	0.50	3.48	3.78	10.26	11.14
45	1.50	0.35	6.11	6.63	16.37	17.77
60	2.00	0.25	15.87	17.22	32.24	34.99
80	2.50	0.18	41.83	45.38	74.07	80.37
120	3.00	0.13	13.45	14.59	87.52	94.96
170	3.50	0.09	2.20	2.39	89.72	97.35
200	3.75	0.07	0.35	0.38	90.07	97.73
230	4.00	0.06	0.20	0.22	90.27	97.95

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.01	2.62	2.44	2.17	1.71	1.37	0.01
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	1.93	0.26	0.91	-2.08	8.88	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL\_GDT 9/12/16

# Granularmetric Report

Depths and elevations based on measured values



**CB&I**  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC15 #6

Analysis Date: 09-30-15

Analyzed By: SMT

Easting (m):  
**518,706**

Northing (m):  
**3,224,812**

Coordinate System:  
**UTM 17**

Elevation (ft):  
**-66.6 NAVD88**

USCS:

**SW**

Munsell: Wet - 5Y-4/1  
Dry - 5Y-6/1  
Washed - 5Y-6/1

Comments:

Dry Weight (g): <b>92.46</b>	Wash Weight (g): <b>90.34</b>	Pan Retained (g): <b>0.01</b>	Sieve Loss (%): <b>0.05</b>	Fines (%): #200 - 2.53 #230 - 2.37	Organics (%):	Carbonates (%): <b>38</b>	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.25	0.27	0.25	0.27
3.5	-2.50	5.66	0.00	0.00	0.25	0.27
4	-2.25	4.76	0.54	0.58	0.79	0.85
5	-2.00	4.00	0.47	0.51	1.26	1.36
7	-1.50	2.83	1.27	1.37	2.53	2.73
10	-1.00	2.00	2.07	2.24	4.60	4.97
14	-0.50	1.41	3.42	3.70	8.02	8.67
18	0.00	1.00	3.95	4.27	11.97	12.94
25	0.50	0.71	4.53	4.90	16.50	17.84
35	1.00	0.50	5.63	6.09	22.13	23.93
45	1.50	0.35	8.92	9.65	31.05	33.58
60	2.00	0.25	16.92	18.30	47.97	51.88
80	2.50	0.18	31.63	34.21	79.60	86.09
120	3.00	0.13	8.49	9.18	88.09	95.27
170	3.50	0.09	1.77	1.91	89.86	97.18
200	3.75	0.07	0.27	0.29	90.13	97.47
230	4.00	0.06	0.15	0.16	90.28	97.63

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.99	2.47	2.34	1.95	1.06	0.31	-1.00
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	1.51	0.35	1.19	-1.29	4.33	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

# Granularmetric Report

Depths and elevations based on measured values



**CB&I**  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC15 #7

Analysis Date: 09-30-15

Analyzed By: SMT

Easting (m):  
**518,706**

Northing (m):  
**3,224,812**

Coordinate System:  
**UTM 17**

Elevation (ft):  
**-69.2 NAVD88**

USCS: **SW**

Munsell: **Wet - 2.5Y-4/1**  
**Dry - 2.5Y-6/1**  
**Washed - 2.5Y-6/1**

Comments:

Dry Weight (g): <b>90.92</b>	Wash Weight (g): <b>87.73</b>	Pan Retained (g): <b>0.03</b>	Sieve Loss (%): <b>0.09</b>	Fines (%): <b>#200 - 3.86</b> <b>#230 - 3.63</b>	Organics (%):	Carbonates (%): <b>59</b>	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.74	0.81	0.74	0.81
5/16"	-3.00	8.00	1.33	1.46	2.07	2.27
3.5	-2.50	5.66	1.25	1.37	3.32	3.64
4	-2.25	4.76	1.26	1.39	4.58	5.03
5	-2.00	4.00	0.86	0.95	5.44	5.98
7	-1.50	2.83	2.23	2.45	7.67	8.43
10	-1.00	2.00	3.53	3.88	11.20	12.31
14	-0.50	1.41	4.46	4.91	15.66	17.22
18	0.00	1.00	5.15	5.66	20.81	22.88
25	0.50	0.71	5.93	6.52	26.74	29.40
35	1.00	0.50	7.19	7.91	33.93	37.31
45	1.50	0.35	9.09	10.00	43.02	47.31
60	2.00	0.25	11.20	12.32	54.22	59.63
80	2.50	0.18	19.28	21.21	73.50	80.84
120	3.00	0.13	10.68	11.75	84.18	92.59
170	3.50	0.09	2.70	2.97	86.88	95.56
200	3.75	0.07	0.53	0.58	87.41	96.14
230	4.00	0.06	0.21	0.23	87.62	96.37

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.41	2.63	2.36	1.61	0.16	-0.62	-2.26
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	1.07	0.48	1.62	-0.94	3.21	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC15 #8

Analysis Date: 09-30-15

Analyzed By: SMT

Easting (m):  
 518,706

Northing (m):  
 3,224,812

Coordinate System:  
 UTM 17

Elevation (ft):  
 -69.9 NAVD88

USCS: SP-SM      Munsell: Wet - 2.5Y-4/1  
 Dry - 2.5Y-6/1  
 Washed - 2.5Y-7/1      Comments: 1.05g (1.0" x 0.5") sand dollar fragment removed prior to sieving

Dry Weight (g): 88.96	Wash Weight (g): 84.60	Pan Retained (g): 0.01	Sieve Loss (%): 0.02	Fines (%): #200 - 5.12 #230 - 4.93	Organics (%):	Carbonates (%): 20	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.00	0.00	0.00	0.00
4	-2.25	4.76	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.09	0.10	0.09	0.10
7	-1.50	2.83	0.14	0.16	0.23	0.26
10	-1.00	2.00	0.31	0.35	0.54	0.61
14	-0.50	1.41	0.66	0.74	1.20	1.35
18	0.00	1.00	0.88	0.99	2.08	2.34
25	0.50	0.71	1.07	1.20	3.15	3.54
35	1.00	0.50	1.83	2.06	4.98	5.60
45	1.50	0.35	3.59	4.04	8.57	9.64
60	2.00	0.25	9.56	10.75	18.13	20.39
80	2.50	0.18	38.88	43.71	57.01	64.10
120	3.00	0.13	22.51	25.30	79.52	89.40
170	3.50	0.09	4.22	4.74	83.74	94.14
200	3.75	0.07	0.66	0.74	84.40	94.88
230	4.00	0.06	0.17	0.19	84.57	95.07

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.91	2.89	2.72	2.34	2.05	1.80	0.85
Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
	2.22	0.21	0.73	-2.04	9.75	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16



**Granularmetric Report**  
 Depths and elevations based on measured values



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 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC15 #9

Analysis Date: 09-30-15

Analyzed By: SMT

Easting (m):  
 518,706

Northing (m):  
 3,224,812

Coordinate System:  
 UTM 17

Elevation (ft):  
 -71.2 NAVD88

USCS: SW-SM  
 Munsell: Wet - 2.5Y-4/1  
 Dry - 2.5Y-6/1  
 Washed - 2.5Y-7/1

Comments:

Dry Weight (g): 90.72  
 Wash Weight (g): 85.11  
 Pan Retained (g): 0.02  
 Sieve Loss (%): 0.02  
 Finest (%): #200 - 6.62  
 #230 - 6.23  
 Organics (%):  
 Carbonates (%): 22  
 Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.51	0.56	0.51	0.56
4	-2.25	4.76	0.06	0.07	0.57	0.63
5	-2.00	4.00	0.00	0.00	0.57	0.63
7	-1.50	2.83	0.20	0.22	0.77	0.85
10	-1.00	2.00	0.51	0.56	1.28	1.41
14	-0.50	1.41	0.78	0.86	2.06	2.27
18	0.00	1.00	1.05	1.16	3.11	3.43
25	0.50	0.71	1.18	1.30	4.29	4.73
35	1.00	0.50	1.77	1.95	6.06	6.68
45	1.50	0.35	3.08	3.40	9.14	10.08
60	2.00	0.25	7.26	8.00	16.40	18.08
80	2.50	0.18	38.32	42.24	54.72	60.32
120	3.00	0.13	23.77	26.20	78.49	86.52
170	3.50	0.09	5.41	5.96	83.90	92.48
200	3.75	0.07	0.82	0.90	84.72	93.38
230	4.00	0.06	0.35	0.39	85.07	93.77

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	2.21	0.22	0.87	-2.54	12.33

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



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 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC15 #10

Analysis Date: 10-27-15

Analyzed By: SMT

Easting (m):  
 518,706

Northing (m):  
 3,224,812

Coordinate System:  
 UTM 17

Elevation (ft):  
 -75.2 NAVD88

USCS: SP  
 Munsell: Wet - 5Y-5/1  
 Dry - 5Y-6/1  
 Washed - 5Y-8/1  
 Comments:

Dry Weight (g): 96.78	Wash Weight (g): 93.56	Pan Retained (g): 0.04	Sieve Loss (%): 0.04	Fines (%): #200 - 3.64 #230 - 3.40	Organics (%):	Carbonates (%): 21	Shell Hash (%)
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.26	0.27	0.26	0.27
4	-2.25	4.76	0.07	0.07	0.33	0.34
5	-2.00	4.00	0.07	0.07	0.40	0.41
7	-1.50	2.83	0.19	0.20	0.59	0.61
10	-1.00	2.00	0.28	0.29	0.87	0.90
14	-0.50	1.41	0.31	0.32	1.18	1.22
18	0.00	1.00	0.29	0.30	1.47	1.52
25	0.50	0.71	0.37	0.38	1.84	1.90
35	1.00	0.50	0.48	0.50	2.32	2.40
45	1.50	0.35	0.83	0.86	3.15	3.26
60	2.00	0.25	2.32	2.40	5.47	5.66
80	2.50	0.18	22.14	22.88	27.61	28.54
120	3.00	0.13	57.21	59.11	84.82	87.65
170	3.50	0.09	8.07	8.34	92.89	95.99
200	3.75	0.07	0.36	0.37	93.25	96.36
230	4.00	0.06	0.23	0.24	93.48	96.60

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.44	2.97	2.89	2.68	2.42	2.23	1.86
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	2.56	0.17	0.65	-4.33	29.42	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



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 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC15 #11

Analysis Date: 10-27-15

Analyzed By: SMT

Easting (m):  
 518,706

Northing (m):  
 3,224,812

Coordinate System:  
 UTM 17

Elevation (ft):  
 -77.7 NAVD88

USCS: SW  
 Munsell: Wet - 2.5Y-5/1  
 Dry - 2.5Y-7/2  
 Washed - 2.5Y-7/2  
 Comments:

Dry Weight (g): 105.04	Wash Weight (g): 102.45	Pan Retained (g): 0.03	Sieve Loss (%): 0.03	Fines (%): #200 - 2.69 #230 - 2.53	Organics (%):	Carbonates (%): 58	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	2.04	1.94	2.04	1.94
5/16"	-3.00	8.00	2.61	2.48	4.65	4.42
3.5	-2.50	5.66	5.50	5.24	10.15	9.66
4	-2.25	4.76	2.16	2.06	12.31	11.72
5	-2.00	4.00	3.40	3.24	15.71	14.96
7	-1.50	2.83	5.36	5.10	21.07	20.06
10	-1.00	2.00	4.79	4.56	25.86	24.62
14	-0.50	1.41	5.16	4.91	31.02	29.53
18	0.00	1.00	3.96	3.77	34.98	33.30
25	0.50	0.71	2.62	2.49	37.60	35.79
35	1.00	0.50	5.23	4.98	42.83	40.77
45	1.50	0.35	5.62	5.35	48.45	46.12
60	2.00	0.25	7.29	6.94	55.74	53.06
80	2.50	0.18	15.74	14.98	71.48	68.04
120	3.00	0.13	26.33	25.07	97.81	93.11
170	3.50	0.09	4.00	3.81	101.81	96.92
200	3.75	0.07	0.41	0.39	102.22	97.31
230	4.00	0.06	0.17	0.16	102.39	97.47

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.25	2.82	2.64	1.78	-0.96	-1.90	-2.94
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	0.82	0.57	2.09	-0.66	2.02	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



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 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC16 #1

Analysis Date: 10-13-15

Analyzed By: SMT

Easting (m):  
 480,634

Northing (m):  
 3,323,433

Coordinate System:  
 UTM 17

Elevation (ft):  
 -57.0 NAVD88

USCS: SP  
 Munsell: Wet - 5Y-5/1  
 Dry - 5Y-7/1  
 Washed - 5Y-8/1

Comments:

Dry Weight (g): 94.49  
 Wash Weight (g): 92.72  
 Pan Retained (g): 0.01  
 Sieve Loss (%): 0.07  
 Finest (%): #200 - 2.13  
 #230 - 1.97  
 Organics (%):  
 Carbonates (%): 6  
 Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.00	0.00	0.00	0.00
4	-2.25	4.76	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.83	0.03	0.03	0.03	0.03
10	-1.00	2.00	0.04	0.04	0.07	0.07
14	-0.50	1.41	0.08	0.08	0.15	0.15
18	0.00	1.00	0.14	0.15	0.29	0.30
25	0.50	0.71	0.34	0.36	0.63	0.66
35	1.00	0.50	1.36	1.44	1.99	2.10
45	1.50	0.35	4.52	4.78	6.51	6.88
60	2.00	0.25	15.49	16.39	22.00	23.27
80	2.50	0.18	34.66	36.68	56.66	59.95
120	3.00	0.13	30.74	32.53	87.40	92.48
170	3.50	0.09	4.44	4.70	91.84	97.18
200	3.75	0.07	0.65	0.69	92.49	97.87
230	4.00	0.06	0.15	0.16	92.64	98.03

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
	3.27	2.87	2.73	2.36	2.02	1.78	1.30
	2.31	0.20	0.56	-0.99	6.25		

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



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 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC16 #2

Analysis Date: 10-13-15

Analyzed By: SMT

Easting (m):  
 480,634

Northing (m):  
 3,323,433

Coordinate System:  
 UTM 17

Elevation (ft):  
 -61.7 NAVD88

USCS: SP      Munsell: Wet - 5Y-5/1  
 Dry - 5Y-7/1  
 Washed - 5Y-7/1      Comments:

Dry Weight (g): 95.60      Wash Weight (g): 93.32      Pan Retained (g): 0.03      Sieve Loss (%): 0.07  
 Fines (%): #200 - 3.10  
 #230 - 2.49      Organics (%):      Carbonates (%): 10      Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.08	0.08	0.08	0.08
4	-2.25	4.76	0.00	0.00	0.08	0.08
5	-2.00	4.00	0.00	0.00	0.08	0.08
7	-1.50	2.83	0.08	0.08	0.16	0.16
10	-1.00	2.00	0.13	0.14	0.29	0.30
14	-0.50	1.41	0.09	0.09	0.38	0.39
18	0.00	1.00	0.17	0.18	0.55	0.57
25	0.50	0.71	0.40	0.42	0.95	0.99
35	1.00	0.50	0.93	0.97	1.88	1.96
45	1.50	0.35	2.63	2.75	4.51	4.71
60	2.00	0.25	8.82	9.23	13.33	13.94
80	2.50	0.18	30.89	32.31	44.22	46.25
120	3.00	0.13	37.10	38.81	81.32	85.06
170	3.50	0.09	10.23	10.70	91.55	95.76
200	3.75	0.07	1.09	1.14	92.64	96.90
230	4.00	0.06	0.58	0.61	93.22	97.51

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	3.46	2.87	2.55	2.17	1.52
	2.47	0.18	0.6	-1.88	13.07

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



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 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC16 #3

Analysis Date: 10-02-15

Analyzed By: DA

Easting (m):  
 480,634

Northing (m):  
 3,323,433

Coordinate System:  
 UTM 17

Elevation (ft):  
 -63.6 NAVD88

USCS: SM  
 Munsell: Wet - 5Y-4/1  
 Dry - 5Y-6/1  
 Washed - 5Y-7/1  
 Comments:

Dry Weight (g): 88.44  
 Wash Weight (g): 74.49  
 Pan Retained (g): 0.06  
 Sieve Loss (%): 0.07  
 Finest (%): #200 - 16.64  
 #230 - 15.92  
 Organics (%):  
 Carbonates (%): 12  
 Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.00	0.00	0.00	0.00
4	-2.25	4.76	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.83	0.02	0.02	0.02	0.02
10	-1.00	2.00	0.03	0.03	0.05	0.05
14	-0.50	1.41	0.11	0.12	0.16	0.17
18	0.00	1.00	0.15	0.17	0.31	0.34
25	0.50	0.71	0.36	0.41	0.67	0.75
35	1.00	0.50	1.05	1.19	1.72	1.94
45	1.50	0.35	2.34	2.65	4.06	4.59
60	2.00	0.25	6.03	6.82	10.09	11.41
80	2.50	0.18	25.19	28.48	35.28	39.89
120	3.00	0.13	21.26	24.04	56.54	63.93
170	3.50	0.09	15.47	17.49	72.01	81.42
200	3.75	0.07	1.72	1.94	73.73	83.36
230	4.00	0.06	0.64	0.72	74.37	84.08

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	2.53	0.17	0.64	-1	5.95

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



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 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC16 #4

Analysis Date: 10-02-15

Analyzed By: DA

Easting (m):  
 480,634

Northing (m):  
 3,323,433

Coordinate System:  
 UTM 17

Elevation (ft):  
 -64.0 NAVD88

USCS: SW  
 Munsell: Wet - 5Y-4/1  
 Dry - 5Y-6/1  
 Washed - 5Y-7/1

Comments:

Dry Weight (g): 102.34  
 Wash Weight (g): 99.72  
 Pan Retained (g): 0.08  
 Sieve Loss (%): 0.08  
 Fines (%): #200 - 3.04, #230 - 2.72  
 Organics (%):  
 Carbonates (%): 20  
 Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.91	0.89	0.91	0.89
5/16"	-3.00	8.00	1.15	1.12	2.06	2.01
3.5	-2.50	5.66	0.72	0.70	2.78	2.71
4	-2.25	4.76	0.51	0.50	3.29	3.21
5	-2.00	4.00	0.70	0.68	3.99	3.89
7	-1.50	2.83	1.64	1.60	5.63	5.49
10	-1.00	2.00	1.47	1.44	7.10	6.93
14	-0.50	1.41	1.61	1.57	8.71	8.50
18	0.00	1.00	2.15	2.10	10.86	10.60
25	0.50	0.71	4.02	3.93	14.88	14.53
35	1.00	0.50	11.00	10.75	25.88	25.28
45	1.50	0.35	13.28	12.98	39.16	38.26
60	2.00	0.25	15.97	15.60	55.13	53.86
80	2.50	0.18	21.62	21.13	76.75	74.99
120	3.00	0.13	15.70	15.34	92.45	90.33
170	3.50	0.09	5.87	5.74	98.32	96.07
200	3.75	0.07	0.91	0.89	99.23	96.96
230	4.00	0.06	0.33	0.32	99.56	97.28

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	1.52	0.35	1.41	-1.52	5.65

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

# Granularmetric Report

Depths and elevations based on measured values



**CB&I**  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC16 #5

Analysis Date: 10-02-15

Analyzed By: DA

Easting (m):  
**480,634**

Northing (m):  
**3,323,433**

Coordinate System:  
**UTM 17**

Elevation (ft):  
**-66.4 NAVD88**

USCS:

**SW**

Munsell: Wet - 2.5Y-4/1  
Dry - 2.5Y-6/1  
Washed - 2.5Y-7/1

Comments:

Dry Weight (g): <b>93.28</b>	Wash Weight (g): <b>89.30</b>	Pan Retained (g): <b>0.03</b>	Sieve Loss (%): <b>0.02</b>	Fines (%): #200 - 4.83 #230 - 4.32	Organics (%):	Carbonates (%): <b>11</b>	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.85	0.91	0.85	0.91
5/16"	-3.00	8.00	0.00	0.00	0.85	0.91
3.5	-2.50	5.66	0.35	0.38	1.20	1.29
4	-2.25	4.76	0.00	0.00	1.20	1.29
5	-2.00	4.00	0.04	0.04	1.24	1.33
7	-1.50	2.83	0.17	0.18	1.41	1.51
10	-1.00	2.00	0.11	0.12	1.52	1.63
14	-0.50	1.41	0.11	0.12	1.63	1.75
18	0.00	1.00	0.16	0.17	1.79	1.92
25	0.50	0.71	0.21	0.23	2.00	2.15
35	1.00	0.50	0.54	0.58	2.54	2.73
45	1.50	0.35	1.51	1.62	4.05	4.35
60	2.00	0.25	4.97	5.33	9.02	9.68
80	2.50	0.18	35.31	37.85	44.33	47.53
120	3.00	0.13	30.56	32.76	74.89	80.29
170	3.50	0.09	12.38	13.27	87.27	93.56
200	3.75	0.07	1.50	1.61	88.77	95.17
230	4.00	0.06	0.48	0.51	89.25	95.68

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.72	3.14	2.92	2.54	2.20	2.08	1.56
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	2.43	0.19	0.9	-4.26	28	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16



# Granularmetric Report

Depths and elevations based on measured values



**CB&I**  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC16 #6

Analysis Date: 10-02-15

Analyzed By: DA

Easting (m):  
**480,634**

Northing (m):  
**3,323,433**

Coordinate System:  
**UTM 17**

Elevation (ft):  
**-69.2 NAVD88**

USCS: **SP-SM**      Munsell: **Wet - 5Y-4/1  
Dry - 5Y-6/1  
Washed - 5Y-7/1**      Comments:

Dry Weight (g): <b>90.27</b>	Wash Weight (g): <b>83.40</b>	Pan Retained (g): <b>0.20</b>	Sieve Loss (%): <b>0.14</b>	Fines (%): <b>#200 - 8.79 #230 - 7.97</b>	Organics (%):	Carbonates (%): <b>14</b>	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.05	0.06	0.05	0.06
4	-2.25	4.76	0.07	0.08	0.12	0.14
5	-2.00	4.00	0.10	0.11	0.22	0.25
7	-1.50	2.83	0.33	0.37	0.55	0.62
10	-1.00	2.00	0.12	0.13	0.67	0.75
14	-0.50	1.41	0.33	0.37	1.00	1.12
18	0.00	1.00	0.45	0.50	1.45	1.62
25	0.50	0.71	0.78	0.86	2.23	2.48
35	1.00	0.50	1.61	1.78	3.84	4.26
45	1.50	0.35	1.97	2.18	5.81	6.44
60	2.00	0.25	4.80	5.32	10.61	11.76
80	2.50	0.18	18.20	20.16	28.81	31.92
120	3.00	0.13	31.57	34.97	60.38	66.89
170	3.50	0.09	19.53	21.64	79.91	88.53
200	3.75	0.07	2.42	2.68	82.33	91.21
230	4.00	0.06	0.74	0.82	83.07	92.03

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.40	3.19	2.76	2.33	2.11	1.17
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	2.57	0.17	0.8	-2.35	11.98	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC16 #7

Analysis Date: 10-05-15

Analyzed By: DA

Easting (m):  
 480,634

Northing (m):  
 3,323,433

Coordinate System:  
 UTM 17

Elevation (ft):  
 -69.8 NAVD88

USCS: SW-SM  
 Munsell: Wet - 2.5Y-4/1  
 Dry - 2.5Y-6/1  
 Washed - 2.5Y-7/1

Comments:

Dry Weight (g): 99.28  
 Wash Weight (g): 93.81  
 Pan Retained (g): 0.04  
 Sieve Loss (%): 0.02  
 Fines (%): #200 - 5.81, #230 - 5.60  
 Organics (%):  
 Carbonates (%): 31  
 Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.56	0.56	0.56	0.56
5/16"	-3.00	8.00	0.79	0.80	1.35	1.36
3.5	-2.50	5.66	1.97	1.98	3.32	3.34
4	-2.25	4.76	0.43	0.43	3.75	3.77
5	-2.00	4.00	0.72	0.73	4.47	4.50
7	-1.50	2.83	1.62	1.63	6.09	6.13
10	-1.00	2.00	2.97	2.99	9.06	9.12
14	-0.50	1.41	4.61	4.64	13.67	13.76
18	0.00	1.00	9.10	9.17	22.77	22.93
25	0.50	0.71	13.74	13.84	36.51	36.77
35	1.00	0.50	18.56	18.69	55.07	55.46
45	1.50	0.35	8.45	8.51	63.52	63.97
60	2.00	0.25	7.15	7.20	70.67	71.17
80	2.50	0.18	8.86	8.92	79.53	80.09
120	3.00	0.13	8.86	8.92	88.39	89.01
170	3.50	0.09	4.53	4.56	92.92	93.57
200	3.75	0.07	0.62	0.62	93.54	94.19
230	4.00	0.06	0.21	0.21	93.75	94.40

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	0.83	0.56	1.47	-0.46	3.26

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC16 #8

Analysis Date: 10-05-15

Analyzed By: DA

Easting (m):  
 480,634

Northing (m):  
 3,323,433

Coordinate System:  
 UTM 17

Elevation (ft):  
 -70.8 NAVD88

USCS: SW-SC  
 Munsell: Wet - 2.5Y-4/1  
 Dry - 2.5Y-6/1  
 Washed - 2.5Y-7/1

Comments:

Dry Weight (g): 91.50  
 Wash Weight (g): 84.71  
 Pan Retained (g): 0.12  
 Sieve Loss (%): 0.02  
 Finest (%): #200 - 8.34  
 #230 - 7.56  
 Organics (%):  
 Carbonates (%): 21  
 Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.28	0.31	0.28	0.31
4	-2.25	4.76	0.09	0.10	0.37	0.41
5	-2.00	4.00	0.02	0.02	0.39	0.43
7	-1.50	2.83	0.37	0.40	0.76	0.83
10	-1.00	2.00	0.84	0.92	1.60	1.75
14	-0.50	1.41	1.48	1.62	3.08	3.37
18	0.00	1.00	2.45	2.68	5.53	6.05
25	0.50	0.71	2.53	2.77	8.06	8.82
35	1.00	0.50	4.13	4.51	12.19	13.33
45	1.50	0.35	2.97	3.25	15.16	16.58
60	2.00	0.25	4.78	5.22	19.94	21.80
80	2.50	0.18	11.36	12.42	31.30	34.22
120	3.00	0.13	29.39	32.12	60.69	66.34
170	3.50	0.09	20.50	22.40	81.19	88.74
200	3.75	0.07	2.67	2.92	83.86	91.66
230	4.00	0.06	0.71	0.78	84.57	92.44

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	2.33	0.20	1.15	-1.65	5.55

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
Depths and elevations based on measured values



CB&I  
Coastal Planning & Engineering, Inc.  
2481 NW Boca Raton Blvd.  
Boca Raton, FL 33431  
ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC17 #1

Analysis Date: 10-27-15

Analyzed By: DA

Easting (m):  
**476,287**

Northing (m):  
**3,319,774**

Coordinate System:  
**UTM 17**

Elevation (ft):  
**-55.0 NAVD88**

USCS: **SW**      Munsell: **Wet - 5Y-5/1  
Dry - 5Y-6/1  
Washed - 5Y-7/1**      Comments:

Dry Weight (g): <b>97.23</b>	Wash Weight (g): <b>95.56</b>	Pan Retained (g): <b>0.01</b>	Sieve Loss (%): <b>0.03</b>	Fines (%): <b>#200 - 1.94 #230 - 1.74</b>	Organics (%):	Carbonates (%): <b>9</b>	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
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3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.42	0.43	0.42	0.43
3.5	-2.50	5.66	0.34	0.35	0.76	0.78
4	-2.25	4.76	0.23	0.24	0.99	1.02
5	-2.00	4.00	0.20	0.21	1.19	1.23
7	-1.50	2.83	0.77	0.79	1.96	2.02
10	-1.00	2.00	0.87	0.89	2.83	2.91
14	-0.50	1.41	0.87	0.89	3.70	3.80
18	0.00	1.00	0.90	0.93	4.60	4.73
25	0.50	0.71	0.95	0.98	5.55	5.71
35	1.00	0.50	1.75	1.80	7.30	7.51
45	1.50	0.35	3.00	3.09	10.30	10.60
60	2.00	0.25	11.48	11.81	21.78	22.41
80	2.50	0.18	40.21	41.36	61.99	63.77
120	3.00	0.13	28.51	29.32	90.50	93.09
170	3.50	0.09	4.23	4.35	94.73	97.44
200	3.75	0.07	0.60	0.62	95.33	98.06
230	4.00	0.06	0.19	0.20	95.52	98.26

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.22	2.84	2.69	2.33	2.03	1.73	0.14

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	2.14	0.23	0.98	-2.81	12.77

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

## Granularmetric Report

Depths and elevations based on measured values



**CB&I**  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC17 #2

Analysis Date: 10-27-15

Analyzed By: DA

Easting (m):  
**476,287**

Northing (m):  
**3,319,774**

Coordinate System:  
**UTM 17**

Elevation (ft):  
**-56.3 NAVD88**

USCS: **SW**

Munsell: **Wet - 5Y-4/1  
Dry - 5Y-5/1  
Washed - 5Y-7/1**

Comments:

Dry Weight (g): <b>96.97</b>	Wash Weight (g): <b>94.54</b>	Pan Retained (g): <b>0.02</b>	Sieve Loss (%): <b>0.05</b>	Fines (%): <b>#200 - 2.85 #230 - 2.57</b>	Organics (%):	Carbonates (%): <b>9</b>	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.21	0.22	0.21	0.22
4	-2.25	4.76	0.06	0.06	0.27	0.28
5	-2.00	4.00	0.28	0.29	0.55	0.57
7	-1.50	2.83	0.80	0.82	1.35	1.39
10	-1.00	2.00	0.69	0.71	2.04	2.10
14	-0.50	1.41	0.69	0.71	2.73	2.81
18	0.00	1.00	0.88	0.91	3.61	3.72
25	0.50	0.71	0.86	0.89	4.47	4.61
35	1.00	0.50	1.47	1.52	5.94	6.13
45	1.50	0.35	2.36	2.43	8.30	8.56
60	2.00	0.25	7.36	7.59	15.66	16.15
80	2.50	0.18	37.81	38.99	53.47	55.14
120	3.00	0.13	36.38	37.52	89.85	92.66
170	3.50	0.09	3.70	3.82	93.55	96.48
200	3.75	0.07	0.65	0.67	94.20	97.15
230	4.00	0.06	0.27	0.28	94.47	97.43

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.31	2.88	2.76	2.43	2.11	1.99	0.63
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	2.26	0.21	0.86	-2.87	13.3	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC17 #3

Analysis Date: 10-27-15

Analyzed By: DA

Easting (m):  
 476,287

Northing (m):  
 3,319,774

Coordinate System:  
 UTM 17

Elevation (ft):  
 -58.6 NAVD88

USCS: SP-SM  
 Munsell: Wet - 5Y-3/1  
 Dry - 5Y-4/1  
 Washed - 5Y-7/1

Comments:

Dry Weight (g): 94.47  
 Wash Weight (g): 87.45  
 Pan Retained (g): 0.04  
 Sieve Loss (%): 0.04  
 Finest (%): #200 - 8.16  
 #230 - 7.52  
 Organics (%):  
 Carbonates (%): 6  
 Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.23	0.24	0.23	0.24
4	-2.25	4.76	0.00	0.00	0.23	0.24
5	-2.00	4.00	0.16	0.17	0.39	0.41
7	-1.50	2.83	0.34	0.36	0.73	0.77
10	-1.00	2.00	0.29	0.31	1.02	1.08
14	-0.50	1.41	0.41	0.43	1.43	1.51
18	0.00	1.00	0.39	0.41	1.82	1.92
25	0.50	0.71	0.41	0.43	2.23	2.35
35	1.00	0.50	0.74	0.78	2.97	3.13
45	1.50	0.35	1.46	1.55	4.43	4.68
60	2.00	0.25	4.38	4.64	8.81	9.32
80	2.50	0.18	26.54	28.09	35.35	37.41
120	3.00	0.13	41.19	43.60	76.54	81.01
170	3.50	0.09	8.74	9.25	85.28	90.26
200	3.75	0.07	1.49	1.58	86.77	91.84
230	4.00	0.06	0.60	0.64	87.37	92.48

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	2.48	0.18	0.74	-3.21	18.81

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC17 #4

Analysis Date: 10-28-15

Analyzed By: DA

Easting (m):  
 476,287

Northing (m):  
 3,319,774

Coordinate System:  
 UTM 17

Elevation (ft):  
 -69.8 NAVD88

USCS: SW-SC  
 Munsell: Wet - N-4/0  
 Dry - 10Y-5/1  
 Washed - 2.5Y-7/2

Comments:

Dry Weight (g): 100.96	Wash Weight (g): 94.80	Pan Retained (g): 0.05	Sieve Loss (%): 0.08	Fines (%): #200 - 6.40 #230 - 6.22	Organics (%):	Carbonates (%): 13	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.18	0.18	0.18	0.18
4	-2.25	4.76	0.23	0.23	0.41	0.41
5	-2.00	4.00	0.03	0.03	0.44	0.44
7	-1.50	2.83	0.45	0.45	0.89	0.89
10	-1.00	2.00	1.05	1.04	1.94	1.93
14	-0.50	1.41	0.91	0.90	2.85	2.83
18	0.00	1.00	2.28	2.26	5.13	5.09
25	0.50	0.71	6.05	5.99	11.18	11.08
35	1.00	0.50	18.18	18.01	29.36	29.09
45	1.50	0.35	16.48	16.32	45.84	45.41
60	2.00	0.25	20.10	19.91	65.94	65.32
80	2.50	0.18	20.02	19.83	85.96	85.15
120	3.00	0.13	7.38	7.31	93.34	92.46
170	3.50	0.09	0.89	0.88	94.23	93.34
200	3.75	0.07	0.26	0.26	94.49	93.60
230	4.00	0.06	0.18	0.18	94.67	93.78

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	2.47	2.24	1.62	0.89	0.64	-0.02
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	1.44	0.37	0.92	-0.82	4.63	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC18 #1

Analysis Date: 09-30-15

Analyzed By: DA

Easting (m):  
 482,957

Northing (m):  
 3,316,294

Coordinate System:  
 UTM 17

Elevation (ft):  
 -59.0 NAVD88

USCS: SW  
 Munsell: Wet - 5Y-5/1  
 Dry - 5Y-6/1  
 Washed - 5Y-7/2

Comments:

Dry Weight (g): 99.44  
 Wash Weight (g): 98.06  
 Pan Retained (g): 0.02  
 Sieve Loss (%): 0.01  
 Fines (%): #200 - 1.53, #230 - 1.43  
 Organics (%):  
 Carbonates (%): 14  
 Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.52	0.52	0.52	0.52
4	-2.25	4.76	0.08	0.08	0.60	0.60
5	-2.00	4.00	0.16	0.16	0.76	0.76
7	-1.50	2.83	0.62	0.62	1.38	1.38
10	-1.00	2.00	1.01	1.02	2.39	2.40
14	-0.50	1.41	1.24	1.25	3.63	3.65
18	0.00	1.00	2.09	2.10	5.72	5.75
25	0.50	0.71	3.08	3.10	8.80	8.85
35	1.00	0.50	10.76	10.82	19.56	19.67
45	1.50	0.35	9.44	9.49	29.00	29.16
60	2.00	0.25	15.09	15.17	44.09	44.33
80	2.50	0.18	30.84	31.01	74.93	75.34
120	3.00	0.13	20.06	20.17	94.99	95.51
170	3.50	0.09	2.69	2.71	97.68	98.22
200	3.75	0.07	0.25	0.25	97.93	98.47
230	4.00	0.06	0.10	0.10	98.03	98.57

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
	2.99	2.71	2.49	2.09	1.28	0.83	-0.18
	1.79	0.29	1.02	-1.46	5.85		

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16



**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC18 #2

Analysis Date: 09-29-15

Analyzed By: DA

Easting (m):  
 482,957

Northing (m):  
 3,316,294

Coordinate System:  
 UTM 17

Elevation (ft):  
 -62.2 NAVD88

USCS: SP Munsell: Wet - 5Y-5/1  
 Dry - 5Y-6/1  
 Washed - 5Y-7/1 Comments:

Dry Weight (g): 90.58 Wash Weight (g): 88.55 Pan Retained (g): 0.03 Sieve Loss (%): 0.03  
 Fines (%): #200 - 2.64 #230 - 2.31 Organics (%): Carbonates (%): 8 Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.12	0.13	0.12	0.13
4	-2.25	4.76	0.00	0.00	0.12	0.13
5	-2.00	4.00	0.00	0.00	0.12	0.13
7	-1.50	2.83	0.06	0.07	0.18	0.20
10	-1.00	2.00	0.11	0.12	0.29	0.32
14	-0.50	1.41	0.25	0.28	0.54	0.60
18	0.00	1.00	0.26	0.29	0.80	0.89
25	0.50	0.71	0.40	0.44	1.20	1.33
35	1.00	0.50	0.87	0.96	2.07	2.29
45	1.50	0.35	1.37	1.51	3.44	3.80
60	2.00	0.25	5.22	5.76	8.66	9.56
80	2.50	0.18	25.84	28.53	34.50	38.09
120	3.00	0.13	40.50	44.71	75.00	82.80
170	3.50	0.09	12.05	13.30	87.05	96.10
200	3.75	0.07	1.14	1.26	88.19	97.36
230	4.00	0.06	0.30	0.33	88.49	97.69

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	3.46	2.91	2.63	2.27	1.60
	2.54	0.17	0.61	-2.57	17.25

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

# Granularmetric Report

Depths and elevations based on measured values



**CB&I**  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC18 #3

Analysis Date: 09-29-15

Analyzed By: DA

Easting (m):  
**482,957**

Northing (m):  
**3,316,294**

Coordinate System:  
**UTM 17**

Elevation (ft):  
**-65.7 NAVD88**

USCS: **SP**      Munsell: **Wet - 5Y-5/1  
Dry - 5Y-6/1  
Washed - 5Y-7/1**      Comments:

Dry Weight (g): <b>91.85</b>	Wash Weight (g): <b>88.94</b>	Pan Retained (g): <b>0.05</b>	Sieve Loss (%): <b>0.00</b>	Fines (%): <b>#200 - 3.66 #230 - 3.24</b>	Organics (%):	Carbonates (%): <b>8</b>	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.00	0.00	0.00	0.00
4	-2.25	4.76	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.83	0.06	0.07	0.06	0.07
10	-1.00	2.00	0.16	0.17	0.22	0.24
14	-0.50	1.41	0.28	0.30	0.50	0.54
18	0.00	1.00	0.30	0.33	0.80	0.87
25	0.50	0.71	0.31	0.34	1.11	1.21
35	1.00	0.50	0.56	0.61	1.67	1.82
45	1.50	0.35	1.78	1.94	3.45	3.76
60	2.00	0.25	6.36	6.92	9.81	10.68
80	2.50	0.18	26.59	28.95	36.40	39.63
120	3.00	0.13	40.17	43.73	76.57	83.36
170	3.50	0.09	10.64	11.58	87.21	94.94
200	3.75	0.07	1.29	1.40	88.50	96.34
230	4.00	0.06	0.39	0.42	88.89	96.76

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.51	3.03	2.90	2.62	2.25	2.09	1.59
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	2.52	0.17	0.59	-2.01	12.24	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC18 #4

Analysis Date: 09-29-15

Analyzed By: DA

Easting (m):  
 482,957

Northing (m):  
 3,316,294

Coordinate System:  
 UTM 17

Elevation (ft):  
 -69.5 NAVD88

USCS: SP-SM  
 Munsell: Wet - 5Y-4/1  
 Dry - 5Y-6/1  
 Washed - 5Y-7/1  
 Comments:

Dry Weight (g): 89.63  
 Wash Weight (g): 84.91  
 Pan Retained (g): 0.03  
 Sieve Loss (%): 0.06  
 Finest (%): #200 - 5.95  
 #230 - 5.37  
 Organics (%):  
 Carbonates (%): 10  
 Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.00	0.00	0.00	0.00
4	-2.25	4.76	0.13	0.15	0.13	0.15
5	-2.00	4.00	0.00	0.00	0.13	0.15
7	-1.50	2.83	0.29	0.32	0.42	0.47
10	-1.00	2.00	0.46	0.51	0.88	0.98
14	-0.50	1.41	0.50	0.56	1.38	1.54
18	0.00	1.00	0.38	0.42	1.76	1.96
25	0.50	0.71	0.32	0.36	2.08	2.32
35	1.00	0.50	0.47	0.52	2.55	2.84
45	1.50	0.35	1.17	1.31	3.72	4.15
60	2.00	0.25	3.41	3.80	7.13	7.95
80	2.50	0.18	11.61	12.95	18.74	20.90
120	3.00	0.13	39.52	44.09	58.26	64.99
170	3.50	0.09	23.85	26.61	82.11	91.60
200	3.75	0.07	2.20	2.45	84.31	94.05
230	4.00	0.06	0.52	0.58	84.83	94.63

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	2.69	0.15	0.74	-3.12	16.85

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

# Granularmetric Report

Depths and elevations based on measured values



CB&I  
Coastal Planning & Engineering, Inc.  
2481 NW Boca Raton Blvd.  
Boca Raton, FL 33431  
ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC19 #1

Analysis Date: 10-27-15

Analyzed By: DA

Easting (m):  
477,850

Northing (m):  
3,312,643

Coordinate System:  
UTM 17

Elevation (ft):  
-51.6 NAVD88

USCS:

SP

Munsell:

Wet - 5Y-6/1  
Dry - 5Y-7/1  
Washed - 5Y-7/1

Comments:

Dry Weight (g):

96.91

Wash Weight (g):

95.59

Pan Retained (g):

0.00

Sieve Loss (%):

0.00

Fines (%):

#200 - 1.42  
#230 - 1.35

Organics (%):

Carbonates (%):

5

Shell Hash (%):

Sieve Number

Sieve Size  
(Phi)

Sieve Size  
(Millimeters)

Grams  
Retained

% Weight  
Retained

Cum. Grams  
Retained

C. % Weight  
Retained

3/4"

-4.25

19.03

0.00

0.00

0.00

0.00

5/8"

-4.00

16.00

0.00

0.00

0.00

0.00

7/16"

-3.50

11.31

0.00

0.00

0.00

0.00

5/16"

-3.00

8.00

0.00

0.00

0.00

0.00

3.5

-2.50

5.66

0.00

0.00

0.00

0.00

4

-2.25

4.76

0.00

0.00

0.00

0.00

5

-2.00

4.00

0.03

0.03

0.03

0.03

7

-1.50

2.83

0.21

0.22

0.24

0.25

10

-1.00

2.00

0.29

0.30

0.53

0.55

14

-0.50

1.41

0.34

0.35

0.87

0.90

18

0.00

1.00

0.72

0.74

1.59

1.64

25

0.50

0.71

0.86

0.89

2.45

2.53

35

1.00

0.50

1.50

1.55

3.95

4.08

45

1.50

0.35

2.55

2.63

6.50

6.71

60

2.00

0.25

11.53

11.90

18.03

18.61

80

2.50

0.18

48.16

49.70

66.19

68.31

120

3.00

0.13

27.37

28.24

93.56

96.55

170

3.50

0.09

1.80

1.86

95.36

98.41

200

3.75

0.07

0.16

0.17

95.52

98.58

230

4.00

0.06

0.07

0.07

95.59

98.65

Phi 5

Phi 16

Phi 25

Phi 50

Phi 75

Phi 84

Phi 95

2.97

2.78

2.62

2.32

2.06

1.89

1.17

Moment

Mean Phi

Mean mm

Sorting

Skewness

Kurtosis

Statistics

2.24

0.21

0.62

-2.55

13.7

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL\_GDT 9/12/16

# Granularmetric Report

Depths and elevations based on measured values



**CB&I**  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC19 #2

Analysis Date: 10-27-15

Analyzed By: DA

Easting (m):  
**477,850**

Northing (m):  
**3,312,643**

Coordinate System:  
**UTM 17**

Elevation (ft):  
**-54.0 NAVD88**

USCS:

**SW**

Munsell: Wet - 2.5Y-5/1  
Dry - 2.5Y-6/1  
Washed - 2.5Y-7/1

Comments:

Dry Weight (g): <b>106.23</b>	Wash Weight (g): <b>104.73</b>	Pan Retained (g): <b>0.02</b>	Sieve Loss (%): <b>0.01</b>	Fines (%): #200 - 1.55 #230 - 1.45	Organics (%):	Carbonates (%): <b>31</b>	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.28	0.26	0.28	0.26
5/16"	-3.00	8.00	1.00	0.94	1.28	1.20
3.5	-2.50	5.66	5.64	5.31	6.92	6.51
4	-2.25	4.76	2.46	2.32	9.38	8.83
5	-2.00	4.00	2.41	2.27	11.79	11.10
7	-1.50	2.83	3.13	2.95	14.92	14.05
10	-1.00	2.00	4.78	4.50	19.70	18.55
14	-0.50	1.41	2.86	2.69	22.56	21.24
18	0.00	1.00	3.50	3.29	26.06	24.53
25	0.50	0.71	3.69	3.47	29.75	28.00
35	1.00	0.50	4.55	4.28	34.30	32.28
45	1.50	0.35	4.85	4.57	39.15	36.85
60	2.00	0.25	11.75	11.06	50.90	47.91
80	2.50	0.18	32.66	30.74	83.56	78.65
120	3.00	0.13	19.12	18.00	102.68	96.65
170	3.50	0.09	1.69	1.59	104.37	98.24
200	3.75	0.07	0.22	0.21	104.59	98.45
230	4.00	0.06	0.11	0.10	104.70	98.55

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.95	2.65	2.44	2.03	0.07	-1.28	-2.64
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	1.13	0.46	1.82	-1.04	2.73	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

# Granularmetric Report

Depths and elevations based on measured values



**CB&I**  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC19 #3

Analysis Date: 10-27-15

Analyzed By: DA

Easting (m):  
**477,850**

Northing (m):  
**3,312,643**

Coordinate System:  
**UTM 17**

Elevation (ft):  
**-57.7 NAVD88**

USCS:

**SP**

Munsell: Wet - 5Y-4/1  
Dry - 5Y-5/1  
Washed - 5Y-7/1

Comments:

Dry Weight (g): <b>99.31</b>	Wash Weight (g): <b>96.76</b>	Pan Retained (g): <b>0.03</b>	Sieve Loss (%): <b>0.04</b>	Fines (%): #200 - 2.83 #230 - 2.66	Organics (%):	Carbonates (%): <b>6</b>	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.17	0.17	0.17	0.17
4	-2.25	4.76	0.11	0.11	0.28	0.28
5	-2.00	4.00	0.09	0.09	0.37	0.37
7	-1.50	2.83	0.50	0.50	0.87	0.87
10	-1.00	2.00	0.55	0.55	1.42	1.42
14	-0.50	1.41	0.54	0.54	1.96	1.96
18	0.00	1.00	0.36	0.36	2.32	2.32
25	0.50	0.71	0.42	0.42	2.74	2.74
35	1.00	0.50	0.63	0.63	3.37	3.37
45	1.50	0.35	0.99	1.00	4.36	4.37
60	2.00	0.25	6.11	6.15	10.47	10.52
80	2.50	0.18	45.82	46.14	56.29	56.66
120	3.00	0.13	36.75	37.01	93.04	93.67
170	3.50	0.09	3.07	3.09	96.11	96.76
200	3.75	0.07	0.41	0.41	96.52	97.17
230	4.00	0.06	0.17	0.17	96.69	97.34

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.22	2.87	2.75	2.43	2.16	2.06	1.55
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	2.34	0.20	0.71	-3.65	21.24	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
Depths and elevations based on measured values



CB&I  
Coastal Planning & Engineering, Inc.  
2481 NW Boca Raton Blvd.  
Boca Raton, FL 33431  
ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC19 #4

Analysis Date: 10-27-15

Analyzed By: DA

Easting (m):  
**477,850**

Northing (m):  
**3,312,643**

Coordinate System:  
**UTM 17**

Elevation (ft):  
**-64.7 NAVD88**

USCS: **SM**  
Munsell: **Wet - 5Y-3/2  
Dry - 5Y-4/2  
Washed - 5Y-7/1**  
Comments:

Dry Weight (g): <b>101.64</b>	Wash Weight (g): <b>88.26</b>	Pan Retained (g): <b>0.13</b>	Sieve Loss (%): <b>0.04</b>	Fines (%): <b>#200 - 14.11 #230 - 13.32</b>	Organics (%):	Carbonates (%): <b>9</b>	Shell Hash (%)
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.79	0.78	0.79	0.78
3.5	-2.50	5.66	0.41	0.40	1.20	1.18
4	-2.25	4.76	0.27	0.27	1.47	1.45
5	-2.00	4.00	0.15	0.15	1.62	1.60
7	-1.50	2.83	0.70	0.69	2.32	2.29
10	-1.00	2.00	0.75	0.74	3.07	3.03
14	-0.50	1.41	0.73	0.72	3.80	3.75
18	0.00	1.00	0.63	0.62	4.43	4.37
25	0.50	0.71	0.54	0.53	4.97	4.90
35	1.00	0.50	0.86	0.85	5.83	5.75
45	1.50	0.35	1.40	1.38	7.23	7.13
60	2.00	0.25	3.94	3.88	11.17	11.01
80	2.50	0.18	21.52	21.17	32.69	32.18
120	3.00	0.13	41.99	41.31	74.68	73.49
170	3.50	0.09	10.90	10.72	85.58	84.21
200	3.75	0.07	1.71	1.68	87.29	85.89
230	4.00	0.06	0.80	0.79	88.09	86.68

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.49	3.07	2.72	2.33	2.12	0.56
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	2.39	0.19	1.09	-3.11	14.02	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC21 #1

Analysis Date: 10-05-15

Analyzed By: SMT

Easting (m):  
 465,510

Northing (m):  
 3,376,131

Coordinate System:  
 UTM 17

Elevation (ft):  
 -51.6 NAVD88

USCS: SW-SM  
 Munsell: Wet - 5Y-4/1  
 Dry - 5Y-6/1  
 Washed - 5Y-7/1

Comments:

Dry Weight (g): 90.47  
 Wash Weight (g): 84.46  
 Pan Retained (g): 0.06  
 Sieve Loss (%): 0.08  
 Finest (%): #200 - 7.32  
 #230 - 6.78  
 Organics (%):  
 Carbonates (%): 8  
 Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.18	0.20	0.18	0.20
4	-2.25	4.76	0.17	0.19	0.35	0.39
5	-2.00	4.00	0.32	0.35	0.67	0.74
7	-1.50	2.83	0.63	0.70	1.30	1.44
10	-1.00	2.00	0.58	0.64	1.88	2.08
14	-0.50	1.41	0.66	0.73	2.54	2.81
18	0.00	1.00	0.45	0.50	2.99	3.31
25	0.50	0.71	0.53	0.59	3.52	3.90
35	1.00	0.50	0.55	0.61	4.07	4.51
45	1.50	0.35	1.04	1.15	5.11	5.66
60	2.00	0.25	2.59	2.86	7.70	8.52
80	2.50	0.18	13.11	14.49	20.81	23.01
120	3.00	0.13	46.82	51.75	67.63	74.76
170	3.50	0.09	14.83	16.39	82.46	91.15
200	3.75	0.07	1.38	1.53	83.84	92.68
230	4.00	0.06	0.49	0.54	84.33	93.22

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	2.56	0.17	0.9	-3.34	16.11

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16



**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC21 #2

Analysis Date: 10-05-15

Analyzed By: SMT

Easting (m):  
 465,510

Northing (m):  
 3,376,131

Coordinate System:  
 UTM 17

Elevation (ft):  
 -54.8 NAVD88

USCS: SM  
 Munsell: Wet - 5Y-3/1  
 Dry - 5Y-5/1  
 Washed - 5Y-7/1

Comments:

Dry Weight (g): 87.13  
 Wash Weight (g): 73.29  
 Pan Retained (g): 0.22  
 Sieve Loss (%): 0.03  
 Finest (%): #200 - 18.08  
 #230 - 16.19  
 Organics (%):  
 Carbonates (%): 10  
 Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.28	0.32	0.28	0.32
4	-2.25	4.76	0.16	0.18	0.44	0.50
5	-2.00	4.00	0.10	0.11	0.54	0.61
7	-1.50	2.83	0.75	0.86	1.29	1.47
10	-1.00	2.00	0.76	0.87	2.05	2.34
14	-0.50	1.41	0.80	0.92	2.85	3.26
18	0.00	1.00	0.76	0.87	3.61	4.13
25	0.50	0.71	0.71	0.81	4.32	4.94
35	1.00	0.50	0.81	0.93	5.13	5.87
45	1.50	0.35	0.95	1.09	6.08	6.96
60	2.00	0.25	1.17	1.34	7.25	8.30
80	2.50	0.18	4.73	5.43	11.98	13.73
120	3.00	0.13	39.60	45.45	51.58	59.18
170	3.50	0.09	16.63	19.09	68.21	78.27
200	3.75	0.07	3.18	3.65	71.39	81.92
230	4.00	0.06	1.65	1.89	73.04	83.81

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	2.62	0.16	1.04	-2.89	12.12

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

# Granularmetric Report

Depths and elevations based on measured values



**CB&I**  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC21 #3

Analysis Date: 10-05-15

Analyzed By: SMT

Easting (m):  
**465,510**

Northing (m):  
**3,376,131**

Coordinate System:  
**UTM 17**

Elevation (ft):  
**-65.3 NAVD88**

USCS: **SW-SM**      Munsell: **Wet - 5Y-4/1  
Dry - 5Y-6/1  
Washed - 5Y-7/1**      Comments:

Dry Weight (g): <b>90.74</b>	Wash Weight (g): <b>81.40</b>	Pan Retained (g): <b>0.02</b>	Sieve Loss (%): <b>0.09</b>	Fines (%): <b>#200 - 11.00 #230 - 10.42</b>	Organics (%):	Carbonates (%): <b>11</b>	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.49	0.54	0.49	0.54
3.5	-2.50	5.66	0.60	0.66	1.09	1.20
4	-2.25	4.76	0.79	0.87	1.88	2.07
5	-2.00	4.00	0.30	0.33	2.18	2.40
7	-1.50	2.83	1.40	1.54	3.58	3.94
10	-1.00	2.00	2.02	2.23	5.60	6.17
14	-0.50	1.41	3.91	4.31	9.51	10.48
18	0.00	1.00	6.78	7.47	16.29	17.95
25	0.50	0.71	10.86	11.97	27.15	29.92
35	1.00	0.50	15.43	17.00	42.58	46.92
45	1.50	0.35	15.47	17.05	58.05	63.97
60	2.00	0.25	10.71	11.80	68.76	75.77
80	2.50	0.18	7.66	8.44	76.42	84.21
120	3.00	0.13	2.09	2.30	78.51	86.51
170	3.50	0.09	1.58	1.74	80.09	88.25
200	3.75	0.07	0.68	0.75	80.77	89.00
230	4.00	0.06	0.53	0.58	81.30	89.58

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	2.49	1.97	1.09	0.29	-0.13	-1.26
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	0.86	0.55	1.22	-0.51	3.88	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC21 #4

Analysis Date: 09-30-15

Analyzed By: SMT

Easting (m):  
 465,510

Northing (m):  
 3,376,131

Coordinate System:  
 UTM 17

Elevation (ft):  
 -66.8 NAVD88

USCS: SC  
 Munsell: Wet - 5Y-4/1  
 Dry - 5Y-5/1  
 Washed - 5Y-7/1  
 Comments:

Dry Weight (g): 84.56  
 Wash Weight (g): 64.65  
 Pan Retained (g): 0.13  
 Sieve Loss (%): 0.12  
 Finest (%): #200 - 25.36  
 #230 - 23.83  
 Organics (%):  
 Carbonates (%): 4  
 Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.14	0.17	0.14	0.17
4	-2.25	4.76	0.00	0.00	0.14	0.17
5	-2.00	4.00	0.05	0.06	0.19	0.23
7	-1.50	2.83	0.06	0.07	0.25	0.30
10	-1.00	2.00	0.35	0.41	0.60	0.71
14	-0.50	1.41	0.90	1.06	1.50	1.77
18	0.00	1.00	2.04	2.41	3.54	4.18
25	0.50	0.71	4.07	4.81	7.61	8.99
35	1.00	0.50	6.74	7.97	14.35	16.96
45	1.50	0.35	11.23	13.28	25.58	30.24
60	2.00	0.25	14.26	16.86	39.84	47.10
80	2.50	0.18	9.90	11.71	49.74	58.81
120	3.00	0.13	6.85	8.10	56.59	66.91
170	3.50	0.09	4.88	5.77	61.47	72.68
200	3.75	0.07	1.66	1.96	63.13	74.64
230	4.00	0.06	1.29	1.53	64.42	76.17

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	1.72	0.30	1.06	-0.34	3.46

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC21 #5

Analysis Date: 09-30-15

Analyzed By: SMT

Easting (m):  
 465,510

Northing (m):  
 3,376,131

Coordinate System:  
 UTM 17

Elevation (ft):  
 -69.0 NAVD88

USCS: SP-SM  
 Munsell: Wet - 5Y-3/2  
 Dry - 5Y-4/2  
 Washed - 5Y-7/1  
 Comments:

Dry Weight (g): 89.04	Wash Weight (g): 84.36	Pan Retained (g): 0.01	Sieve Loss (%): 0.06	Fines (%): #200 - 5.43 #230 - 5.32	Organics (%):	Carbonates (%): 1	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.00	0.00	0.00	0.00
4	-2.25	4.76	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.83	0.00	0.00	0.00	0.00
10	-1.00	2.00	0.03	0.03	0.03	0.03
14	-0.50	1.41	0.57	0.64	0.60	0.67
18	0.00	1.00	1.75	1.97	2.35	2.64
25	0.50	0.71	4.52	5.08	6.87	7.72
35	1.00	0.50	8.98	10.09	15.85	17.81
45	1.50	0.35	15.63	17.55	31.48	35.36
60	2.00	0.25	20.93	23.51	52.41	58.87
80	2.50	0.18	19.22	21.59	71.63	80.46
120	3.00	0.13	10.83	12.16	82.46	92.62
170	3.50	0.09	1.49	1.67	83.95	94.29
200	3.75	0.07	0.25	0.28	84.20	94.57
230	4.00	0.06	0.10	0.11	84.30	94.68

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	2.65	2.37	1.81	1.20	0.91	0.23
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	1.69	0.31	0.8	-0.44	3.03	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

# Granularmetric Report

Depths and elevations based on measured values



**CB&I**  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC22 #1

Analysis Date: 10-13-15

Analyzed By: SMT

Easting (m):  
**464,683**

Northing (m):  
**3,377,415**

Coordinate System:  
**UTM 17**

Elevation (ft):  
**-59.7 NAVD88**

USCS:

**SP-SM**

Munsell: Wet - 5Y-4/1  
Dry - 5Y-6/1  
Washed - 5Y-8/1

Comments:

Dry Weight (g): <b>92.77</b>	Wash Weight (g): <b>85.61</b>	Pan Retained (g): <b>0.08</b>	Sieve Loss (%): <b>0.06</b>	Fines (%): #200 - 8.12 #230 - 7.88	Organics (%):	Carbonates (%): <b>2</b>	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.32	0.34	0.32	0.34
4	-2.25	4.76	0.00	0.00	0.32	0.34
5	-2.00	4.00	0.30	0.32	0.62	0.66
7	-1.50	2.83	0.25	0.27	0.87	0.93
10	-1.00	2.00	0.18	0.19	1.05	1.12
14	-0.50	1.41	0.28	0.30	1.33	1.42
18	0.00	1.00	0.56	0.60	1.89	2.02
25	0.50	0.71	0.92	0.99	2.81	3.01
35	1.00	0.50	2.48	2.67	5.29	5.68
45	1.50	0.35	13.61	14.67	18.90	20.35
60	2.00	0.25	33.94	36.59	52.84	56.94
80	2.50	0.18	22.86	24.64	75.70	81.58
120	3.00	0.13	8.17	8.81	83.87	90.39
170	3.50	0.09	1.23	1.33	85.10	91.72
200	3.75	0.07	0.15	0.16	85.25	91.88
230	4.00	0.06	0.22	0.24	85.47	92.12

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	2.64	2.37	1.91	1.56	1.35	0.87
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	1.82	0.28	0.73	-2.09	13.19	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
Depths and elevations based on measured values



CB&I  
Coastal Planning & Engineering, Inc.  
2481 NW Boca Raton Blvd.  
Boca Raton, FL 33431  
ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC22 #2

Analysis Date: 10-13-15

Analyzed By: SMT

Easting (m):  
**464,683**

Northing (m):  
**3,377,415**

Coordinate System:  
**UTM 17**

Elevation (ft):  
**-60.9 NAVD88**

USCS: **SP**  
Munsell: **Wet - 5Y-5/1  
Dry - 5Y-6/1  
Washed - 5Y-8/1**

Comments:

Dry Weight (g): <b>102.37</b>	Wash Weight (g): <b>99.67</b>	Pan Retained (g): <b>0.01</b>	Sieve Loss (%): <b>0.00</b>	Fines (%): <b>#200 - 2.71 #230 - 2.64</b>	Organics (%):	Carbonates (%): <b>0</b>	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.00	0.00	0.00	0.00
4	-2.25	4.76	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.08	0.08	0.08	0.08
7	-1.50	2.83	0.00	0.00	0.08	0.08
10	-1.00	2.00	0.05	0.05	0.13	0.13
14	-0.50	1.41	0.18	0.18	0.31	0.31
18	0.00	1.00	0.71	0.69	1.02	1.00
25	0.50	0.71	2.52	2.46	3.54	3.46
35	1.00	0.50	8.77	8.57	12.31	12.03
45	1.50	0.35	24.97	24.39	37.28	36.42
60	2.00	0.25	40.31	39.38	77.59	75.80
80	2.50	0.18	16.64	16.25	94.23	92.05
120	3.00	0.13	4.74	4.63	98.97	96.68
170	3.50	0.09	0.52	0.51	99.49	97.19
200	3.75	0.07	0.10	0.10	99.59	97.29
230	4.00	0.06	0.07	0.07	99.66	97.36

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.82	2.25	1.99	1.67	1.27	1.08	0.59
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	1.62	0.33	0.6	-0.51	5.22	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

# Granularmetric Report

Depths and elevations based on measured values



**CB&I**  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC22 #3

Analysis Date: 10-14-15

Analyzed By: SMT

Easting (m):  
**464,683**

Northing (m):  
**3,377,415**

Coordinate System:  
**UTM 17**

Elevation (ft):  
**-62.6 NAVD88**

USCS: **SP-SM**      Munsell: **Wet - 5Y-4/1  
Dry - 5Y-7/1  
Washed - 5Y-8/1**      Comments:

Dry Weight (g): <b>96.82</b>	Wash Weight (g): <b>91.40</b>	Pan Retained (g): <b>0.08</b>	Sieve Loss (%): <b>0.04</b>	Fines (%): <b>#200 - 6.19 #230 - 5.73</b>	Organics (%):	Carbonates (%): <b>1</b>	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.00	0.00	0.00	0.00
4	-2.25	4.76	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.83	0.02	0.02	0.02	0.02
10	-1.00	2.00	0.00	0.00	0.02	0.02
14	-0.50	1.41	0.02	0.02	0.04	0.04
18	0.00	1.00	0.05	0.05	0.09	0.09
25	0.50	0.71	0.11	0.11	0.20	0.20
35	1.00	0.50	0.32	0.33	0.52	0.53
45	1.50	0.35	1.07	1.11	1.59	1.64
60	2.00	0.25	7.33	7.57	8.92	9.21
80	2.50	0.18	35.52	36.69	44.44	45.90
120	3.00	0.13	41.54	42.90	85.98	88.80
170	3.50	0.09	4.53	4.68	90.51	93.48
200	3.75	0.07	0.32	0.33	90.83	93.81
230	4.00	0.06	0.45	0.46	91.28	94.27

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	2.94	2.84	2.55	2.22	2.09	1.72
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	2.48	0.18	0.43	-0.92	8.22	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

# Granularmetric Report

Depths and elevations based on measured values



**CB&I**  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC22 #4

Analysis Date: 10-15-15

Analyzed By: SMT

Easting (m):  
**464,683**

Northing (m):  
**3,377,415**

Coordinate System:  
**UTM 17**

Elevation (ft):  
**-65.4 NAVD88**

USCS:

**SP-SM**

Munsell: **Wet - 5Y-4/1  
Dry - 5Y-6/1  
Washed - 5Y-8/1**

Comments:

Dry Weight (g): <b>94.85</b>	Wash Weight (g): <b>88.56</b>	Pan Retained (g): <b>0.02</b>	Sieve Loss (%): <b>0.07</b>	Fines (%): <b>#200 - 6.90 #230 - 6.74</b>	Organics (%):	Carbonates (%): <b>1</b>	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.29	0.31	0.29	0.31
3.5	-2.50	5.66	0.00	0.00	0.29	0.31
4	-2.25	4.76	0.00	0.00	0.29	0.31
5	-2.00	4.00	0.10	0.11	0.39	0.42
7	-1.50	2.83	0.05	0.05	0.44	0.47
10	-1.00	2.00	0.20	0.21	0.64	0.68
14	-0.50	1.41	0.32	0.34	0.96	1.02
18	0.00	1.00	0.96	1.01	1.92	2.03
25	0.50	0.71	3.38	3.56	5.30	5.59
35	1.00	0.50	8.55	9.01	13.85	14.60
45	1.50	0.35	16.66	17.56	30.51	32.16
60	2.00	0.25	26.70	28.15	57.21	60.31
80	2.50	0.18	18.81	19.83	76.02	80.14
120	3.00	0.13	10.54	11.11	86.56	91.25
170	3.50	0.09	1.55	1.63	88.11	92.88
200	3.75	0.07	0.21	0.22	88.32	93.10
230	4.00	0.06	0.15	0.16	88.47	93.26

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	2.67	2.37	1.82	1.30	1.04	0.42
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	1.7	0.31	0.8	-1.19	7.98	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16



**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC22 #5

Analysis Date: 10-15-15

Analyzed By: SMT

Easting (m):  
 464,683

Northing (m):  
 3,377,415

Coordinate System:  
 UTM 17

Elevation (ft):  
 -68.9 NAVD88

USCS: SP-SM  
 Munsell: Wet - 5Y-5/1  
 Dry - 5Y-6/1  
 Washed - 5Y-8/1  
 Comments:

Dry Weight (g): 95.22	Wash Weight (g): 89.81	Pan Retained (g): 0.03	Sieve Loss (%): 0.07	Fines (%): #200 - 6.12 #230 - 5.79	Organics (%):	Carbonates (%): 1	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.08	0.08	0.08	0.08
4	-2.25	4.76	0.00	0.00	0.08	0.08
5	-2.00	4.00	0.00	0.00	0.08	0.08
7	-1.50	2.83	0.04	0.04	0.12	0.12
10	-1.00	2.00	0.09	0.09	0.21	0.21
14	-0.50	1.41	0.57	0.60	0.78	0.81
18	0.00	1.00	1.95	2.05	2.73	2.86
25	0.50	0.71	4.26	4.47	6.99	7.33
35	1.00	0.50	9.24	9.70	16.23	17.03
45	1.50	0.35	18.41	19.33	34.64	36.36
60	2.00	0.25	29.10	30.56	63.74	66.92
80	2.50	0.18	18.86	19.81	82.60	86.73
120	3.00	0.13	5.73	6.02	88.33	92.75
170	3.50	0.09	0.97	1.02	89.30	93.77
200	3.75	0.07	0.10	0.11	89.40	93.88
230	4.00	0.06	0.31	0.33	89.71	94.21

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	1.6	0.33	0.75	-0.64	4.64

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC22 #6

Analysis Date: 10-15-15

Analyzed By: SMT

Easting (m):  
 464,683

Northing (m):  
 3,377,415

Coordinate System:  
 UTM 17

Elevation (ft):  
 -71.3 NAVD88

USCS: SP  
 Munsell: Wet - 5Y-5/1  
 Dry - 5Y-6/1  
 Washed - 5Y-8/1  
 Comments:

Dry Weight (g): 102.02  
 Wash Weight (g): 99.44  
 Pan Retained (g): 0.01  
 Sieve Loss (%): 0.05  
 Finest (%): #200 - 2.62  
 #230 - 2.58  
 Organics (%):  
 Carbonates (%): 0  
 Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.00	0.00	0.00	0.00
4	-2.25	4.76	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.83	0.00	0.00	0.00	0.00
10	-1.00	2.00	0.00	0.00	0.00	0.00
14	-0.50	1.41	0.09	0.09	0.09	0.09
18	0.00	1.00	0.41	0.40	0.50	0.49
25	0.50	0.71	1.55	1.52	2.05	2.01
35	1.00	0.50	6.36	6.23	8.41	8.24
45	1.50	0.35	24.33	23.85	32.74	32.09
60	2.00	0.25	41.73	40.90	74.47	72.99
80	2.50	0.18	17.81	17.46	92.28	90.45
120	3.00	0.13	6.25	6.13	98.53	96.58
170	3.50	0.09	0.71	0.70	99.24	97.28
200	3.75	0.07	0.10	0.10	99.34	97.38
230	4.00	0.06	0.04	0.04	99.38	97.42

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
	2.87	2.32	2.06	1.72	1.35	1.16	0.74
	1.7	0.31	0.56	-0.14	3.99		

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC22 #7

Analysis Date: 10-12-15

Analyzed By: SMT

Easting (m):  
 464,683

Northing (m):  
 3,377,415

Coordinate System:  
 UTM 17

Elevation (ft):  
 -74.6 NAVD88

USCS: SC  
 Munsell: Wet - 5Y-5/1  
 Dry - 5Y-6/1  
 Washed - 5Y-8/1

Comments:

Dry Weight (g): 91.69  
 Wash Weight (g): 78.97  
 Pan Retained (g): 0.04  
 Sieve Loss (%): 0.17  
 Finest (%): #200 - 14.25  
 #230 - 14.09  
 Organics (%):  
 Carbonates (%): 1  
 Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.00	0.00	0.00	0.00
4	-2.25	4.76	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.83	0.02	0.02	0.02	0.02
10	-1.00	2.00	0.02	0.02	0.04	0.04
14	-0.50	1.41	0.07	0.08	0.11	0.12
18	0.00	1.00	0.26	0.28	0.37	0.40
25	0.50	0.71	0.98	1.07	1.35	1.47
35	1.00	0.50	2.75	3.00	4.10	4.47
45	1.50	0.35	6.92	7.55	11.02	12.02
60	2.00	0.25	23.46	25.59	34.48	37.61
80	2.50	0.18	29.59	32.27	64.07	69.88
120	3.00	0.13	12.77	13.93	76.84	83.81
170	3.50	0.09	1.64	1.79	78.48	85.60
200	3.75	0.07	0.14	0.15	78.62	85.75
230	4.00	0.06	0.15	0.16	78.77	85.91

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	2.03	0.24	0.59	-0.74	4.96

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC23 #1

Analysis Date: 10-21-15

Analyzed By: ST

Easting (m):  
 464,846

Northing (m):  
 3,378,105

Coordinate System:  
 UTM 17

Elevation (ft):  
 -48.4 NAVD88

USCS: SP  
 Munsell: Wet - 5Y-4/1  
 Dry - 5Y-7/1  
 Washed - 5Y-8/1  
 Comments:

Dry Weight (g): 101.99  
 Wash Weight (g): 100.65  
 Pan Retained (g): 0.01  
 Sieve Loss (%): 0.07  
 Finest (%): #200 - 1.51  
 #230 - 1.38  
 Organics (%):  
 Carbonates (%): 7  
 Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
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3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.47	0.46	0.47	0.46
4	-2.25	4.76	0.17	0.17	0.64	0.63
5	-2.00	4.00	0.07	0.07	0.71	0.70
7	-1.50	2.83	0.46	0.45	1.17	1.15
10	-1.00	2.00	0.54	0.53	1.71	1.68
14	-0.50	1.41	0.71	0.70	2.42	2.38
18	0.00	1.00	0.57	0.56	2.99	2.94
25	0.50	0.71	0.43	0.42	3.42	3.36
35	1.00	0.50	0.80	0.78	4.22	4.14
45	1.50	0.35	2.65	2.60	6.87	6.74
60	2.00	0.25	14.61	14.32	21.48	21.06
80	2.50	0.18	62.17	60.96	83.65	82.02
120	3.00	0.13	14.02	13.75	97.67	95.77
170	3.50	0.09	2.53	2.48	100.20	98.25
200	3.75	0.07	0.24	0.24	100.44	98.49
230	4.00	0.06	0.13	0.13	100.57	98.62

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.97	2.57	2.44	2.24	2.03	1.82	1.17

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	2.12	0.23	0.74	-3.52	19.98

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC23 #2

Analysis Date: 10-21-15

Analyzed By: ST

Easting (m):  
 464,846

Northing (m):  
 3,378,105

Coordinate System:  
 UTM 17

Elevation (ft):  
 -52.3 NAVD88

USCS: SP  
 Munsell: Wet - 5Y-3/1  
 Dry - 5Y-6/1  
 Washed - 5Y-7/1  
 Comments:

Dry Weight (g): 98.34	Wash Weight (g): 95.49	Pan Retained (g): 0.08	Sieve Loss (%): 0.03	Fines (%): #200 - 3.49 #230 - 3.01	Organics (%):	Carbonates (%): 6	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.08	0.08	0.08	0.08
4	-2.25	4.76	0.09	0.09	0.17	0.17
5	-2.00	4.00	0.05	0.05	0.22	0.22
7	-1.50	2.83	0.23	0.23	0.45	0.45
10	-1.00	2.00	0.50	0.51	0.95	0.96
14	-0.50	1.41	0.47	0.48	1.42	1.44
18	0.00	1.00	0.43	0.44	1.85	1.88
25	0.50	0.71	0.32	0.33	2.17	2.21
35	1.00	0.50	0.38	0.39	2.55	2.60
45	1.50	0.35	0.95	0.97	3.50	3.57
60	2.00	0.25	4.25	4.32	7.75	7.89
80	2.50	0.18	50.58	51.43	58.33	59.32
120	3.00	0.13	23.96	24.36	82.29	83.68
170	3.50	0.09	11.35	11.54	93.64	95.22
200	3.75	0.07	1.27	1.29	94.91	96.51
230	4.00	0.06	0.47	0.48	95.38	96.99

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.49	3.01	2.82	2.41	2.17	2.08	1.67
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	2.41	0.19	0.68	-2.86	18.29	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC23 #3

Analysis Date: 10-14-15

Analyzed By: SMT

Easting (m):  
 464,846

Northing (m):  
 3,378,105

Coordinate System:  
 UTM 17

Elevation (ft):  
 -55.0 NAVD88

USCS: SM  
 Munsell: Wet - 5Y-2.5/1  
 Dry - 5Y-6/1  
 Washed - 5Y-7/1

Comments:

Dry Weight (g): 92.85  
 Wash Weight (g): 82.72  
 Pan Retained (g): 1.41  
 Sieve Loss (%): 0.25  
 Finest (%): #200 - 18.82  
 #230 - 12.67  
 Organics (%):  
 Carbonates (%): 8  
 Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.37	0.40	0.37	0.40
4	-2.25	4.76	0.00	0.00	0.37	0.40
5	-2.00	4.00	0.12	0.13	0.49	0.53
7	-1.50	2.83	0.15	0.16	0.64	0.69
10	-1.00	2.00	0.11	0.12	0.75	0.81
14	-0.50	1.41	0.14	0.15	0.89	0.96
18	0.00	1.00	0.11	0.12	1.00	1.08
25	0.50	0.71	0.20	0.22	1.20	1.30
35	1.00	0.50	0.32	0.34	1.52	1.64
45	1.50	0.35	0.63	0.68	2.15	2.32
60	2.00	0.25	1.46	1.57	3.61	3.89
80	2.50	0.18	5.05	5.44	8.66	9.33
120	3.00	0.13	17.11	18.43	25.77	27.76
170	3.50	0.09	39.56	42.61	65.33	70.37
200	3.75	0.07	10.04	10.81	75.37	81.18
230	4.00	0.06	5.71	6.15	81.08	87.33

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	3.05	0.12	0.75	-4.04	27.28

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

# Granularmetric Report

Depths and elevations based on measured values



CB&I  
Coastal Planning & Engineering, Inc.  
2481 NW Boca Raton Blvd.  
Boca Raton, FL 33431  
ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC23 #4

Analysis Date: 10-14-15

Analyzed By: SMT

Easting (m):  
**464,846**

Northing (m):  
**3,378,105**

Coordinate System:  
**UTM 17**

Elevation (ft):  
**-56.8 NAVD88**

USCS:

**SC**

Munsell: Wet - 10Y-3/1  
Dry - 10YR-5/1  
Washed - 10YR-8/1

Comments:

Dry Weight (g): <b>97.30</b>	Wash Weight (g): <b>82.76</b>	Pan Retained (g): <b>0.06</b>	Sieve Loss (%): <b>0.08</b>	Fines (%): #200 - 15.56 #230 - 15.10	Organics (%):	Carbonates (%): <b>2</b>	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.08	0.08	0.08	0.08
4	-2.25	4.76	0.00	0.00	0.08	0.08
5	-2.00	4.00	0.18	0.18	0.26	0.26
7	-1.50	2.83	0.12	0.12	0.38	0.38
10	-1.00	2.00	0.20	0.21	0.58	0.59
14	-0.50	1.41	0.15	0.15	0.73	0.74
18	0.00	1.00	0.16	0.16	0.89	0.90
25	0.50	0.71	0.35	0.36	1.24	1.26
35	1.00	0.50	0.76	0.78	2.00	2.04
45	1.50	0.35	2.46	2.53	4.46	4.57
60	2.00	0.25	5.35	5.50	9.81	10.07
80	2.50	0.18	17.01	17.48	26.82	27.55
120	3.00	0.13	43.59	44.80	70.41	72.35
170	3.50	0.09	10.48	10.77	80.89	83.12
200	3.75	0.07	1.28	1.32	82.17	84.44
230	4.00	0.06	0.45	0.46	82.62	84.90

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.67	3.12	2.75	2.43	2.17	1.54
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	2.55	0.17	0.67	-2.86	17.84	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC23 #5

Analysis Date: 10-14-15

Analyzed By: SMT

Easting (m):  
 464,846

Northing (m):  
 3,378,105

Coordinate System:  
 UTM 17

Elevation (ft):  
 -58.2 NAVD88

USCS: SP-SC  
 Munsell: Wet - 10Y-4/1  
 Dry - 10YR-6/1  
 Washed - 10YR-8/1  
 Comments:

Dry Weight (g): 95.69	Wash Weight (g): 86.97	Pan Retained (g): 0.05	Sieve Loss (%): 0.07	Fines (%): #200 - 9.50 #230 - 9.24	Organics (%):	Carbonates (%): 1	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.00	0.00	0.00	0.00
4	-2.25	4.76	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.83	0.11	0.11	0.11	0.11
10	-1.00	2.00	0.46	0.48	0.57	0.59
14	-0.50	1.41	0.51	0.53	1.08	1.12
18	0.00	1.00	1.35	1.41	2.43	2.53
25	0.50	0.71	3.21	3.35	5.64	5.88
35	1.00	0.50	8.60	8.99	14.24	14.87
45	1.50	0.35	25.04	26.17	39.28	41.04
60	2.00	0.25	20.83	21.77	60.11	62.81
80	2.50	0.18	14.62	15.28	74.73	78.09
120	3.00	0.13	8.82	9.22	83.55	87.31
170	3.50	0.09	2.71	2.83	86.26	90.14
200	3.75	0.07	0.34	0.36	86.60	90.50
230	4.00	0.06	0.25	0.26	86.85	90.76

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	2.82	2.40	1.71	1.19	1.02	0.37
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	1.63	0.32	0.8	-0.31	3.99	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16



**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC23 #6

Analysis Date: 10-14-15

Analyzed By: SMT

Easting (m):  
 464,846

Northing (m):  
 3,378,105

Coordinate System:  
 UTM 17

Elevation (ft):  
 -59.0 NAVD88

USCS: SW-SC  
 Munsell: Wet - 10Y-5/1  
 Dry - 10YR-7/1  
 Washed - 10YR-8/1  
 Comments:

Dry Weight (g): 99.39	Wash Weight (g): 91.09	Pan Retained (g): 0.54	Sieve Loss (%): 0.23	Fines (%): #200 - 9.37 #230 - 9.12	Organics (%):	Carbonates (%): 56	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
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1"	-4.75	26.91	0.00	0.00	0.00	0.00
3/4"	-4.25	19.03	5.50	5.53	5.50	5.53
5/8"	-4.00	16.00	1.77	1.78	7.27	7.31
7/16"	-3.50	11.31	11.26	11.33	18.53	18.64
5/16"	-3.00	8.00	7.47	7.52	26.00	26.16
3.5	-2.50	5.66	5.84	5.88	31.84	32.04
4	-2.25	4.76	2.13	2.14	33.97	34.18
5	-2.00	4.00	1.35	1.36	35.32	35.54
7	-1.50	2.83	2.85	2.87	38.17	38.41
10	-1.00	2.00	3.08	3.10	41.25	41.51
14	-0.50	1.41	2.84	2.86	44.09	44.37
18	0.00	1.00	2.36	2.37	46.45	46.74
25	0.50	0.71	4.53	4.56	50.98	51.30
35	1.00	0.50	5.24	5.27	56.22	56.57
45	1.50	0.35	7.67	7.72	63.89	64.29
60	2.00	0.25	6.94	6.98	70.83	71.27
80	2.50	0.18	4.36	4.39	75.19	75.66
120	3.00	0.13	10.67	10.74	85.86	86.40
170	3.50	0.09	3.76	3.78	89.62	90.18
200	3.75	0.07	0.45	0.45	90.07	90.63
230	4.00	0.06	0.25	0.25	90.32	90.88

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	2.89	2.42	0.36	-3.08	-3.62	-4.30

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	-0.59	1.51	2.61	-0.04	1.49

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC23 #7

Analysis Date: 10-14-15

Analyzed By: SMT

Easting (m):  
 464,846

Northing (m):  
 3,378,105

Coordinate System:  
 UTM 17

Elevation (ft):  
 -60.6 NAVD88

USCS: SP  
 Munsell: Wet - 2.5Y-5/2  
 Dry - 2.5Y-7/2  
 Washed - 2.5Y-8/1  
 Comments:

Dry Weight (g): 102.49	Wash Weight (g): 99.78	Pan Retained (g): 0.04	Sieve Loss (%): 0.00	Fines (%): #200 - 2.83 #230 - 2.68	Organics (%):	Carbonates (%): 1	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.00	0.00	0.00	0.00
4	-2.25	4.76	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.83	0.00	0.00	0.00	0.00
10	-1.00	2.00	0.00	0.00	0.00	0.00
14	-0.50	1.41	0.01	0.01	0.01	0.01
18	0.00	1.00	0.30	0.29	0.31	0.30
25	0.50	0.71	2.05	2.00	2.36	2.30
35	1.00	0.50	9.26	9.04	11.62	11.34
45	1.50	0.35	21.39	20.87	33.01	32.21
60	2.00	0.25	31.55	30.78	64.56	62.99
80	2.50	0.18	25.38	24.76	89.94	87.75
120	3.00	0.13	8.25	8.05	98.19	95.80
170	3.50	0.09	1.20	1.17	99.39	96.97
200	3.75	0.07	0.20	0.20	99.59	97.17
230	4.00	0.06	0.15	0.15	99.74	97.32

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.95	2.42	2.24	1.79	1.33	1.11	0.65
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	1.75	0.30	0.63	-0.12	3.1	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC23 #8

Analysis Date: 10-14-15

Analyzed By: SMT

Easting (m):  
 464,846

Northing (m):  
 3,378,105

Coordinate System:  
 UTM 17

Elevation (ft):  
 -62.7 NAVD88

USCS: SP-SM  
 Munsell: Wet - 2.5Y-3/2  
 Dry - 2.5Y-5/2  
 Washed - 2.5Y-7/1

Comments:

Dry Weight (g): 99.19  
 Wash Weight (g): 94.35  
 Pan Retained (g): 0.08  
 Sieve Loss (%): 0.00  
 Fines (%): #200 - 5.26, #230 - 4.97  
 Organics (%):  
 Carbonates (%): 2  
 Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.08	0.08	0.08	0.08
4	-2.25	4.76	0.00	0.00	0.08	0.08
5	-2.00	4.00	0.00	0.00	0.08	0.08
7	-1.50	2.83	0.08	0.08	0.16	0.16
10	-1.00	2.00	0.07	0.07	0.23	0.23
14	-0.50	1.41	0.15	0.15	0.38	0.38
18	0.00	1.00	0.26	0.26	0.64	0.64
25	0.50	0.71	1.40	1.41	2.04	2.05
35	1.00	0.50	5.14	5.18	7.18	7.23
45	1.50	0.35	13.04	13.15	20.22	20.38
60	2.00	0.25	26.90	27.12	47.12	47.50
80	2.50	0.18	29.37	29.61	76.49	77.11
120	3.00	0.13	14.47	14.59	90.96	91.70
170	3.50	0.09	2.45	2.47	93.41	94.17
200	3.75	0.07	0.57	0.57	93.98	94.74
230	4.00	0.06	0.29	0.29	94.27	95.03

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	1.95	0.26	0.68	-0.77	6.1

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC24 #1

Analysis Date: 09-30-15

Analyzed By: SMT

Easting (m):  
 465,630

Northing (m):  
 3,379,768

Coordinate System:  
 UTM 17

Elevation (ft):  
 -50.7 NAVD88

USCS: SW-SM  
 Munsell: Wet - 5Y-4/1  
 Dry - 5Y-6/1  
 Washed - 5Y-7/1  
 Comments:

Dry Weight (g): 93.65	Wash Weight (g): 84.39	Pan Retained (g): 0.15	Sieve Loss (%): 0.06	Fines (%): #200 - 11.48 #230 - 10.11	Organics (%):	Carbonates (%): 6	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.82	0.88	0.82	0.88
3.5	-2.50	5.66	0.10	0.11	0.92	0.99
4	-2.25	4.76	0.13	0.14	1.05	1.13
5	-2.00	4.00	0.11	0.12	1.16	1.25
7	-1.50	2.83	0.21	0.22	1.37	1.47
10	-1.00	2.00	0.11	0.12	1.48	1.59
14	-0.50	1.41	0.12	0.13	1.60	1.72
18	0.00	1.00	0.14	0.15	1.74	1.87
25	0.50	0.71	0.11	0.12	1.85	1.99
35	1.00	0.50	0.18	0.19	2.03	2.18
45	1.50	0.35	0.34	0.36	2.37	2.54
60	2.00	0.25	0.93	0.99	3.30	3.53
80	2.50	0.18	4.75	5.07	8.05	8.60
120	3.00	0.13	40.67	43.43	48.72	52.03
170	3.50	0.09	30.87	32.96	79.59	84.99
200	3.75	0.07	3.31	3.53	82.90	88.52
230	4.00	0.06	1.28	1.37	84.18	89.89

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.48	3.35	2.98	2.69	2.59	2.14
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	2.83	0.14	0.87	-4.98	32.81	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

# Granularmetric Report

Depths and elevations based on measured values



**CB&I**  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC24 #2

Analysis Date: 09-30-15

Analyzed By: DA

Easting (m):  
**465,630**

Northing (m):  
**3,379,768**

Coordinate System:  
**UTM 17**

Elevation (ft):  
**-54.1 NAVD88**

USCS: **SW-SM**      Munsell: **Wet - 5Y-4/1  
Dry - 5Y-6/1  
Washed - 5Y-7/1**      Comments:

Dry Weight (g): <b>93.81</b>	Wash Weight (g): <b>89.39</b>	Pan Retained (g): <b>0.15</b>	Sieve Loss (%): <b>0.04</b>	Fines (%): <b>#200 - 6.06 #230 - 4.91</b>	Organics (%):	Carbonates (%): <b>8</b>	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.25	0.27	0.25	0.27
4	-2.25	4.76	0.14	0.15	0.39	0.42
5	-2.00	4.00	0.32	0.34	0.71	0.76
7	-1.50	2.83	0.31	0.33	1.02	1.09
10	-1.00	2.00	0.49	0.52	1.51	1.61
14	-0.50	1.41	0.46	0.49	1.97	2.10
18	0.00	1.00	0.40	0.43	2.37	2.53
25	0.50	0.71	0.44	0.47	2.81	3.00
35	1.00	0.50	0.61	0.65	3.42	3.65
45	1.50	0.35	0.98	1.04	4.40	4.69
60	2.00	0.25	2.78	2.96	7.18	7.65
80	2.50	0.18	19.94	21.26	27.12	28.91
120	3.00	0.13	34.35	36.62	61.47	65.53
170	3.50	0.09	23.00	24.52	84.47	90.05
200	3.75	0.07	3.65	3.89	88.12	93.94
230	4.00	0.06	1.08	1.15	89.20	95.09

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.98	3.38	3.19	2.79	2.41	2.20	1.55
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	2.63	0.16	0.86	-3.13	16.62	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC24 #3

Analysis Date: 09-30-15

Analyzed By: DA

Easting (m):  
 465,630

Northing (m):  
 3,379,768

Coordinate System:  
 UTM 17

Elevation (ft):  
 -55.6 NAVD88

USCS: SM  
 Munsell: Wet - 5Y-4/1  
 Dry - 5Y-6/1  
 Washed - 5Y-7/1  
 Comments:

Dry Weight (g): 88.62  
 Wash Weight (g): 79.34  
 Pan Retained (g): 0.26  
 Sieve Loss (%): 0.06  
 Finest (%): #200 - 13.04  
 #230 - 10.83  
 Organics (%):  
 Carbonates (%): 11  
 Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.66	0.74	0.66	0.74
7/16"	-3.50	11.31	0.00	0.00	0.66	0.74
5/16"	-3.00	8.00	0.22	0.25	0.88	0.99
3.5	-2.50	5.66	0.25	0.28	1.13	1.27
4	-2.25	4.76	0.55	0.62	1.68	1.89
5	-2.00	4.00	0.46	0.52	2.14	2.41
7	-1.50	2.83	0.63	0.71	2.77	3.12
10	-1.00	2.00	0.90	1.02	3.67	4.14
14	-0.50	1.41	0.72	0.81	4.39	4.95
18	0.00	1.00	0.49	0.55	4.88	5.50
25	0.50	0.71	0.30	0.34	5.18	5.84
35	1.00	0.50	0.39	0.44	5.57	6.28
45	1.50	0.35	0.32	0.36	5.89	6.64
60	2.00	0.25	0.77	0.87	6.66	7.51
80	2.50	0.18	3.82	4.31	10.48	11.82
120	3.00	0.13	25.54	28.82	36.02	40.64
170	3.50	0.09	35.69	40.27	71.71	80.91
200	3.75	0.07	5.36	6.05	77.07	86.96
230	4.00	0.06	1.96	2.21	79.03	89.17

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	2.72	0.15	1.3	-3.31	14.2

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC25 #1

Analysis Date: 09-29-15

Analyzed By: DA

Easting (m):  
 464,405

Northing (m):  
 3,387,421

Coordinate System:  
 UTM 17

Elevation (ft):  
 -47.3 NAVD88

USCS: SP  
 Munsell: Wet - 5Y-5/2  
 Dry - 5Y-7/2  
 Washed - 5Y-8/1  
 Comments:

Dry Weight (g): 94.34	Wash Weight (g): 92.30	Pan Retained (g): 0.01	Sieve Loss (%): 0.00	Fines (%): #200 - 2.32 #230 - 2.17	Organics (%):	Carbonates (%): 5	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.00	0.00	0.00	0.00
4	-2.25	4.76	0.05	0.05	0.05	0.05
5	-2.00	4.00	0.06	0.06	0.11	0.11
7	-1.50	2.83	0.29	0.31	0.40	0.42
10	-1.00	2.00	0.32	0.34	0.72	0.76
14	-0.50	1.41	0.35	0.37	1.07	1.13
18	0.00	1.00	0.48	0.51	1.55	1.64
25	0.50	0.71	0.49	0.52	2.04	2.16
35	1.00	0.50	0.99	1.05	3.03	3.21
45	1.50	0.35	2.95	3.13	5.98	6.34
60	2.00	0.25	10.97	11.63	16.95	17.97
80	2.50	0.18	52.85	56.02	69.80	73.99
120	3.00	0.13	19.01	20.15	88.81	94.14
170	3.50	0.09	3.02	3.20	91.83	97.34
200	3.75	0.07	0.32	0.34	92.15	97.68
230	4.00	0.06	0.14	0.15	92.29	97.83

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.13	2.75	2.53	2.29	2.06	1.92	1.29
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	2.22	0.21	0.62	-2.76	16.84	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC25 #2

Analysis Date: 09-29-15

Analyzed By: DA

Easting (m):  
 464,405

Northing (m):  
 3,387,421

Coordinate System:  
 UTM 17

Elevation (ft):  
 -49.2 NAVD88

USCS: SW-SM  
 Munsell: Wet - 5Y-4/1  
 Dry - 5Y-6/1  
 Washed - 5Y-7/1  
 Comments:

Dry Weight (g): 91.38	Wash Weight (g): 83.91	Pan Retained (g): 0.07	Sieve Loss (%): 0.03	Fines (%): #200 - 9.15 #230 - 8.29	Organics (%):	Carbonates (%): 9	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.24	0.26	0.24	0.26
4	-2.25	4.76	0.12	0.13	0.36	0.39
5	-2.00	4.00	0.10	0.11	0.46	0.50
7	-1.50	2.83	0.57	0.62	1.03	1.12
10	-1.00	2.00	0.55	0.60	1.58	1.72
14	-0.50	1.41	0.57	0.62	2.15	2.34
18	0.00	1.00	0.61	0.67	2.76	3.01
25	0.50	0.71	0.72	0.79	3.48	3.80
35	1.00	0.50	1.24	1.36	4.72	5.16
45	1.50	0.35	2.43	2.66	7.15	7.82
60	2.00	0.25	4.98	5.45	12.13	13.27
80	2.50	0.18	27.12	29.68	39.25	42.95
120	3.00	0.13	35.53	38.88	74.78	81.83
170	3.50	0.09	7.12	7.79	81.90	89.62
200	3.75	0.07	1.12	1.23	83.02	90.85
230	4.00	0.06	0.79	0.86	83.81	91.71

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.14	2.91	2.59	2.20	2.05	0.94
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	2.37	0.19	0.87	-2.76	13.36	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16



# Granularmetric Report

Depths and elevations based on measured values



**CB&I**  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC25 #3

Analysis Date: 09-30-15

Analyzed By: DA

Easting (m):  
**464,405**

Northing (m):  
**3,387,421**

Coordinate System:  
**UTM 17**

Elevation (ft):  
**-50.5 NAVD88**

USCS:

**SM**

Munsell: Wet - 5Y-3/1  
Dry - 5Y-5/1  
Washed - 5Y-7/1

Comments:

Dry Weight (g): <b>91.77</b>	Wash Weight (g): <b>78.22</b>	Pan Retained (g): <b>0.16</b>	Sieve Loss (%): <b>0.04</b>	Fines (%): #200 - 16.39 #230 - 14.97	Organics (%):	Carbonates (%): <b>7</b>	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.09	0.10	0.09	0.10
4	-2.25	4.76	0.17	0.19	0.26	0.29
5	-2.00	4.00	0.07	0.08	0.33	0.37
7	-1.50	2.83	0.34	0.37	0.67	0.74
10	-1.00	2.00	0.41	0.45	1.08	1.19
14	-0.50	1.41	0.31	0.34	1.39	1.53
18	0.00	1.00	0.31	0.34	1.70	1.87
25	0.50	0.71	0.30	0.33	2.00	2.20
35	1.00	0.50	0.64	0.70	2.64	2.90
45	1.50	0.35	0.70	0.76	3.34	3.66
60	2.00	0.25	1.58	1.72	4.92	5.38
80	2.50	0.18	7.16	7.80	12.08	13.18
120	3.00	0.13	30.48	33.21	42.56	46.39
170	3.50	0.09	30.88	33.65	73.44	80.04
200	3.75	0.07	3.28	3.57	76.72	83.61
230	4.00	0.06	1.30	1.42	78.02	85.03

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.82	3.43	3.05	2.68	2.54	1.89
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	2.81	0.14	0.8	-3.52	19.49	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

# Granularmetric Report

Depths and elevations based on measured values



**CB&I**  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC25 #4

Analysis Date: 09-30-15

Analyzed By: DA

Easting (m):  
**464,405**

Northing (m):  
**3,387,421**

Coordinate System:  
**UTM 17**

Elevation (ft):  
**-51.7 NAVD88**

USCS:

**SM**

Munsell: Wet - 5Y-3/1  
Dry - 5Y-5/1  
Washed - 5Y-7/1

Comments:

Dry Weight (g): <b>86.22</b>	Wash Weight (g): <b>71.54</b>	Pan Retained (g): <b>0.41</b>	Sieve Loss (%): <b>0.06</b>	Fines (%): #200 - 19.79 #230 - 17.55	Organics (%):	Carbonates (%): <b>8</b>	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.20	0.23	0.20	0.23
4	-2.25	4.76	0.14	0.16	0.34	0.39
5	-2.00	4.00	0.10	0.12	0.44	0.51
7	-1.50	2.83	0.35	0.41	0.79	0.92
10	-1.00	2.00	0.18	0.21	0.97	1.13
14	-0.50	1.41	0.42	0.49	1.39	1.62
18	0.00	1.00	0.47	0.55	1.86	2.17
25	0.50	0.71	0.44	0.51	2.30	2.68
35	1.00	0.50	0.83	0.96	3.13	3.64
45	1.50	0.35	0.87	1.01	4.00	4.65
60	2.00	0.25	1.19	1.38	5.19	6.03
80	2.50	0.18	5.38	6.24	10.57	12.27
120	3.00	0.13	22.30	25.86	32.87	38.13
170	3.50	0.09	30.90	35.84	63.77	73.97
200	3.75	0.07	5.38	6.24	69.15	80.21
230	4.00	0.06	1.93	2.24	71.08	82.45

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
		3.54	3.17	2.75	2.57	1.63
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	2.85	0.14	0.88	-3.3	16.8	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
Depths and elevations based on measured values



CB&I  
Coastal Planning & Engineering, Inc.  
2481 NW Boca Raton Blvd.  
Boca Raton, FL 33431  
ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC25 #5

Analysis Date: 10-01-15

Analyzed By: DA

Easting (m):  
**464,405**

Northing (m):  
**3,387,421**

Coordinate System:  
**UTM 17**

Elevation (ft):  
**-52.6 NAVD88**

USCS:

**SM**

Munsell: Wet - 5Y-3/1  
Dry - 5Y-4/1  
Washed - 5Y-7/1

Comments:

Dry Weight (g): <b>91.53</b>	Wash Weight (g): <b>76.00</b>	Pan Retained (g): <b>0.33</b>	Sieve Loss (%): <b>0.00</b>	Fines (%): #200 - 19.48 #230 - 17.33	Organics (%):	Carbonates (%): <b>20</b>	Shell Hash (%)
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.57	0.62	0.57	0.62
3.5	-2.50	5.66	2.88	3.15	3.45	3.77
4	-2.25	4.76	0.59	0.64	4.04	4.41
5	-2.00	4.00	0.99	1.08	5.03	5.49
7	-1.50	2.83	2.32	2.53	7.35	8.02
10	-1.00	2.00	1.38	1.51	8.73	9.53
14	-0.50	1.41	1.28	1.40	10.01	10.93
18	0.00	1.00	1.47	1.61	11.48	12.54
25	0.50	0.71	1.79	1.96	13.27	14.50
35	1.00	0.50	2.67	2.92	15.94	17.42
45	1.50	0.35	1.91	2.09	17.85	19.51
60	2.00	0.25	1.33	1.45	19.18	20.96
80	2.50	0.18	5.17	5.65	24.35	26.61
120	3.00	0.13	22.35	24.42	46.70	51.03
170	3.50	0.09	21.33	23.30	68.03	74.33
200	3.75	0.07	5.67	6.19	73.70	80.52
230	4.00	0.06	1.97	2.15	75.67	82.67

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
		3.53	2.98	2.36	0.76	-2.11
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	2.08	0.24	1.82	-1.55	4.17	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

# Granularmetric Report

Depths and elevations based on measured values



**CB&I**  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC25 #6

Analysis Date: 10-01-15

Analyzed By: DA

Easting (m):  
**464,405**

Northing (m):  
**3,387,421**

Coordinate System:  
**UTM 17**

Elevation (ft):  
**-54.1 NAVD88**

USCS:

**SM**

Munsell: Wet - 5Y-4/1  
Dry - 5Y-6/1  
Washed - 5Y-7/1

Comments:

Dry Weight (g): <b>87.56</b>	Wash Weight (g): <b>77.23</b>	Pan Retained (g): <b>0.48</b>	Sieve Loss (%): <b>0.00</b>	Fines (%): #200 - 15.79 #230 - 12.35	Organics (%):	Carbonates (%): <b>7</b>	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.23	0.26	0.23	0.26
4	-2.25	4.76	0.14	0.16	0.37	0.42
5	-2.00	4.00	0.05	0.06	0.42	0.48
7	-1.50	2.83	0.31	0.35	0.73	0.83
10	-1.00	2.00	0.29	0.33	1.02	1.16
14	-0.50	1.41	0.30	0.34	1.32	1.50
18	0.00	1.00	0.25	0.29	1.57	1.79
25	0.50	0.71	0.27	0.31	1.84	2.10
35	1.00	0.50	0.42	0.48	2.26	2.58
45	1.50	0.35	0.34	0.39	2.60	2.97
60	2.00	0.25	0.31	0.35	2.91	3.32
80	2.50	0.18	1.22	1.39	4.13	4.71
120	3.00	0.13	13.87	15.84	18.00	20.55
170	3.50	0.09	42.82	48.90	60.82	69.45
200	3.75	0.07	12.92	14.76	73.74	84.21
230	4.00	0.06	3.01	3.44	76.75	87.65

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.75	3.59	3.30	3.05	2.86	2.51
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	3.1	0.12	0.8	-4.49	27.31	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC26 #1

Analysis Date: 10-13-15

Analyzed By: SMT

Easting (m):  
 470,058

Northing (m):  
 3,396,823

Coordinate System:  
 UTM 17

Elevation (ft):  
 -45.0 NAVD88

USCS: SP  
 Munsell: Wet - 2.5Y-5/1  
 Dry - 2.5Y-7/1  
 Washed - 2.5Y-7/1

Comments:

Dry Weight (g): 96.76	Wash Weight (g): 95.40	Pan Retained (g): 0.01	Sieve Loss (%): 0.10	Fines (%): #200 - 1.69 #230 - 1.52	Organics (%):	Carbonates (%): 5	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.14	0.14	0.14	0.14
4	-2.25	4.76	0.03	0.03	0.17	0.17
5	-2.00	4.00	0.12	0.12	0.29	0.29
7	-1.50	2.83	0.12	0.12	0.41	0.41
10	-1.00	2.00	0.33	0.34	0.74	0.75
14	-0.50	1.41	0.48	0.50	1.22	1.25
18	0.00	1.00	0.46	0.48	1.68	1.73
25	0.50	0.71	0.50	0.52	2.18	2.25
35	1.00	0.50	0.52	0.54	2.70	2.79
45	1.50	0.35	1.15	1.19	3.85	3.98
60	2.00	0.25	3.89	4.02	7.74	8.00
80	2.50	0.18	23.13	23.90	30.87	31.90
120	3.00	0.13	52.74	54.51	83.61	86.41
170	3.50	0.09	10.87	11.23	94.48	97.64
200	3.75	0.07	0.65	0.67	95.13	98.31
230	4.00	0.06	0.16	0.17	95.29	98.48

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.38	2.98	2.90	2.67	2.36	2.17	1.63
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	2.54	0.17	0.67	-3.53	21.53	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC26 #2

Analysis Date: 10-13-15

Analyzed By: SMT

Easting (m):  
 470,058

Northing (m):  
 3,396,823

Coordinate System:  
 UTM 17

Elevation (ft):  
 -47.6 NAVD88

USCS: SW  
 Munsell: Wet - 5Y-5/1  
 Dry - 5Y-7/1  
 Washed - 5Y-7/1  
 Comments:

Dry Weight (g): 102.39  
 Wash Weight (g): 101.00  
 Pan Retained (g): 0.04  
 Sieve Loss (%): 0.11  
 Finest (%): #200 - 1.74  
 #230 - 1.53  
 Organics (%):  
 Carbonates (%): 21  
 Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
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3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.28	0.27	0.28	0.27
4	-2.25	4.76	0.20	0.20	0.48	0.47
5	-2.00	4.00	0.25	0.24	0.73	0.71
7	-1.50	2.83	0.81	0.79	1.54	1.50
10	-1.00	2.00	1.59	1.55	3.13	3.05
14	-0.50	1.41	3.07	3.00	6.20	6.05
18	0.00	1.00	3.77	3.68	9.97	9.73
25	0.50	0.71	4.31	4.21	14.28	13.94
35	1.00	0.50	4.75	4.64	19.03	18.58
45	1.50	0.35	10.51	10.26	29.54	28.84
60	2.00	0.25	13.24	12.93	42.78	41.77
80	2.50	0.18	22.95	22.41	65.73	64.18
120	3.00	0.13	28.70	28.03	94.43	92.21
170	3.50	0.09	5.90	5.76	100.33	97.97
200	3.75	0.07	0.30	0.29	100.63	98.26
230	4.00	0.06	0.22	0.21	100.85	98.47

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.24	2.85	2.69	2.18	1.31	0.72	-0.68

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	1.83	0.28	1.17	-1.29	4.33

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC26 #3

Analysis Date: 10-13-15

Analyzed By: SMT

Easting (m):  
 470,058

Northing (m):  
 3,396,823

Coordinate System:  
 UTM 17

Elevation (ft):  
 -53.1 NAVD88

USCS: SP  
 Munsell: Wet - 5Y-4/1  
 Dry - 5Y-6/1  
 Washed - 5Y-8/1  
 Comments:

Dry Weight (g): 96.45	Wash Weight (g): 93.39	Pan Retained (g): 0.06	Sieve Loss (%): 0.09	Fines (%): #200 - 3.77 #230 - 3.33	Organics (%):	Carbonates (%): 8	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.25	0.26	0.25	0.26
3.5	-2.50	5.66	0.10	0.10	0.35	0.36
4	-2.25	4.76	0.00	0.00	0.35	0.36
5	-2.00	4.00	0.00	0.00	0.35	0.36
7	-1.50	2.83	0.15	0.16	0.50	0.52
10	-1.00	2.00	0.36	0.37	0.86	0.89
14	-0.50	1.41	0.44	0.46	1.30	1.35
18	0.00	1.00	0.53	0.55	1.83	1.90
25	0.50	0.71	0.75	0.78	2.58	2.68
35	1.00	0.50	0.82	0.85	3.40	3.53
45	1.50	0.35	1.21	1.25	4.61	4.78
60	2.00	0.25	2.48	2.57	7.09	7.35
80	2.50	0.18	11.47	11.89	18.56	19.24
120	3.00	0.13	51.29	53.18	69.85	72.42
170	3.50	0.09	21.58	22.37	91.43	94.79
200	3.75	0.07	1.39	1.44	92.82	96.23
230	4.00	0.06	0.42	0.44	93.24	96.67

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.54	3.26	3.06	2.79	2.55	2.36	1.54
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	2.66	0.16	0.76	-3.68	22.25	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC26 #4

Analysis Date: 10-01-15

Analyzed By: DA

Easting (m):  
 470,058

Northing (m):  
 3,396,823

Coordinate System:  
 UTM 17

Elevation (ft):  
 -54.7 NAVD88

USCS: SW  
 Munsell: Wet - 5Y-4/2  
 Dry - 5Y-6/2  
 Washed - 2.5Y-7/1  
 Comments:

Dry Weight (g): 95.95	Wash Weight (g): 92.32	Pan Retained (g): 0.05	Sieve Loss (%): 0.04	Fines (%): #200 - 4.40 #230 - 3.87	Organics (%):	Carbonates (%): 11	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.36	0.38	0.36	0.38
5/16"	-3.00	8.00	0.29	0.30	0.65	0.68
3.5	-2.50	5.66	0.33	0.34	0.98	1.02
4	-2.25	4.76	0.41	0.43	1.39	1.45
5	-2.00	4.00	0.38	0.40	1.77	1.85
7	-1.50	2.83	0.44	0.46	2.21	2.31
10	-1.00	2.00	0.79	0.82	3.00	3.13
14	-0.50	1.41	0.88	0.92	3.88	4.05
18	0.00	1.00	1.09	1.14	4.97	5.19
25	0.50	0.71	0.65	0.68	5.62	5.87
35	1.00	0.50	0.82	0.85	6.44	6.72
45	1.50	0.35	0.98	1.02	7.42	7.74
60	2.00	0.25	1.84	1.92	9.26	9.66
80	2.50	0.18	7.47	7.79	16.73	17.45
120	3.00	0.13	51.28	53.44	68.01	70.89
170	3.50	0.09	22.13	23.06	90.14	93.95
200	3.75	0.07	1.58	1.65	91.72	95.60
230	4.00	0.06	0.51	0.53	92.23	96.13

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.66	3.28	3.09	2.80	2.57	2.41	-0.08
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	2.55	0.17	1.11	-3.31	14.79	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16



**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC26 #5

Analysis Date: 10-01-15

Analyzed By: DA

Easting (m):  
 470,058

Northing (m):  
 3,396,823

Coordinate System:  
 UTM 17

Elevation (ft):  
 -55.7 NAVD88

USCS: SW  
 Munsell: Wet - 5Y-5/1  
 Dry - 5Y-6/1  
 Washed - 5Y-7/1

Comments:

Dry Weight (g): 103.77  
 Wash Weight (g): 100.74  
 Pan Retained (g): 0.07  
 Sieve Loss (%): 0.07  
 Finest (%): #200 - 3.45  
 #230 - 3.06  
 Organics (%):  
 Carbonates (%): 42  
 Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	2.78	2.68	2.78	2.68
5/16"	-3.00	8.00	1.53	1.47	4.31	4.15
3.5	-2.50	5.66	2.35	2.26	6.66	6.41
4	-2.25	4.76	1.03	0.99	7.69	7.40
5	-2.00	4.00	1.64	1.58	9.33	8.98
7	-1.50	2.83	3.72	3.58	13.05	12.56
10	-1.00	2.00	4.22	4.07	17.27	16.63
14	-0.50	1.41	6.23	6.00	23.50	22.63
18	0.00	1.00	6.59	6.35	30.09	28.98
25	0.50	0.71	4.63	4.46	34.72	33.44
35	1.00	0.50	7.18	6.92	41.90	40.36
45	1.50	0.35	6.33	6.10	48.23	46.46
60	2.00	0.25	2.96	2.85	51.19	49.31
80	2.50	0.18	5.60	5.40	56.79	54.71
120	3.00	0.13	26.27	25.32	83.06	80.03
170	3.50	0.09	16.01	15.43	99.07	95.46
200	3.75	0.07	1.13	1.09	100.20	96.55
230	4.00	0.06	0.40	0.39	100.60	96.94

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	1.16	0.45	2.03	-0.75	2.44

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
Depths and elevations based on measured values



CB&I  
Coastal Planning & Engineering, Inc.  
2481 NW Boca Raton Blvd.  
Boca Raton, FL 33431  
ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC26 #6

Analysis Date: 10-01-15

Analyzed By: DA

Easting (m):  
**470,058**

Northing (m):  
**3,396,823**

Coordinate System:  
**UTM 17**

Elevation (ft):  
**-57.6 NAVD88**

USCS: **SP-SM**      Munsell: **Wet - 5Y-4/1  
Dry - 5Y-6/1  
Washed - 5Y-7/1**      Comments:

Dry Weight (g): <b>94.91</b>	Wash Weight (g): <b>88.32</b>	Pan Retained (g): <b>0.15</b>	Sieve Loss (%): <b>0.01</b>	Fines (%): <b>#200 - 8.16 #230 - 7.10</b>	Organics (%):	Carbonates (%): <b>7</b>	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.18	0.19	0.18	0.19
3.5	-2.50	5.66	0.11	0.12	0.29	0.31
4	-2.25	4.76	0.19	0.20	0.48	0.51
5	-2.00	4.00	0.12	0.13	0.60	0.64
7	-1.50	2.83	0.19	0.20	0.79	0.84
10	-1.00	2.00	0.31	0.33	1.10	1.17
14	-0.50	1.41	0.42	0.44	1.52	1.61
18	0.00	1.00	0.45	0.47	1.97	2.08
25	0.50	0.71	0.51	0.54	2.48	2.62
35	1.00	0.50	0.84	0.89	3.32	3.51
45	1.50	0.35	0.86	0.91	4.18	4.42
60	2.00	0.25	1.29	1.36	5.47	5.78
80	2.50	0.18	4.53	4.77	10.00	10.55
120	3.00	0.13	29.30	30.87	39.30	41.42
170	3.50	0.09	44.30	46.68	83.60	88.10
200	3.75	0.07	3.55	3.74	87.15	91.84
230	4.00	0.06	1.01	1.06	88.16	92.90

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.46	3.36	3.09	2.73	2.59	1.71
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	2.87	0.14	0.83	-3.91	22.31	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC27 #1

Analysis Date: 10-22-15

Analyzed By: DA

Easting (m):  
 469,591

Northing (m):  
 3,397,978

Coordinate System:  
 UTM 17

Elevation (ft):  
 -46.4 NAVD88

USCS: SP  
 Munsell: Wet - 5Y-5/1  
 Dry - 5Y-7/1  
 Washed - 5Y-7/1  
 Comments:

Dry Weight (g): 94.46  
 Wash Weight (g): 93.20  
 Pan Retained (g): 0.01  
 Sieve Loss (%): 0.00  
 Finest (%): #200 - 1.52  
 #230 - 1.36  
 Organics (%):  
 Carbonates (%): 6  
 Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.23	0.24	0.23	0.24
4	-2.25	4.76	0.00	0.00	0.23	0.24
5	-2.00	4.00	0.00	0.00	0.23	0.24
7	-1.50	2.83	0.41	0.43	0.64	0.67
10	-1.00	2.00	0.41	0.43	1.05	1.10
14	-0.50	1.41	0.62	0.66	1.67	1.76
18	0.00	1.00	0.74	0.78	2.41	2.54
25	0.50	0.71	0.84	0.89	3.25	3.43
35	1.00	0.50	1.41	1.49	4.66	4.92
45	1.50	0.35	2.74	2.90	7.40	7.82
60	2.00	0.25	6.89	7.29	14.29	15.11
80	2.50	0.18	44.82	47.45	59.11	62.56
120	3.00	0.13	28.95	30.65	88.06	93.21
170	3.50	0.09	4.65	4.92	92.71	98.13
200	3.75	0.07	0.33	0.35	93.04	98.48
230	4.00	0.06	0.15	0.16	93.19	98.64

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	2.27	0.21	0.74	-2.86	15.19

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC27 #2

Analysis Date: 10-22-15

Analyzed By: DA

Easting (m):  
 469,591

Northing (m):  
 3,397,978

Coordinate System:  
 UTM 17

Elevation (ft):  
 -48.8 NAVD88

USCS: SW  
 Munsell: Wet - 5Y-5/1  
 Dry - 5Y-7/1  
 Washed - 5Y-7/1  
 Comments:

Dry Weight (g): 95.19	Wash Weight (g): 93.33	Pan Retained (g): 0.02	Sieve Loss (%): 0.00	Fines (%): #200 - 2.24 #230 - 2.00	Organics (%):	Carbonates (%): 13	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.29	0.30	0.29	0.30
3.5	-2.50	5.66	0.21	0.22	0.50	0.52
4	-2.25	4.76	0.25	0.26	0.75	0.78
5	-2.00	4.00	0.36	0.38	1.11	1.16
7	-1.50	2.83	1.23	1.29	2.34	2.45
10	-1.00	2.00	1.53	1.61	3.87	4.06
14	-0.50	1.41	1.67	1.75	5.54	5.81
18	0.00	1.00	1.61	1.69	7.15	7.50
25	0.50	0.71	1.46	1.53	8.61	9.03
35	1.00	0.50	2.24	2.35	10.85	11.38
45	1.50	0.35	3.97	4.17	14.82	15.55
60	2.00	0.25	7.81	8.20	22.63	23.75
80	2.50	0.18	23.93	25.14	46.56	48.89
120	3.00	0.13	34.90	36.66	81.46	85.55
170	3.50	0.09	10.80	11.35	92.26	96.90
200	3.75	0.07	0.82	0.86	93.08	97.76
230	4.00	0.06	0.23	0.24	93.31	98.00

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.42	2.98	2.86	2.52	2.02	1.53	-0.73
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	2.15	0.23	1.17	-2.1	7.55	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC27 #3

Analysis Date: 10-22-15

Analyzed By: DA

Easting (m):  
 469,591

Northing (m):  
 3,397,978

Coordinate System:  
 UTM 17

Elevation (ft):  
 -50.7 NAVD88

USCS: SW  
 Munsell: Wet - 2.5Y-4/1  
 Dry - 2.5Y-7/1  
 Washed - 2.5Y-7/1

Comments:

Dry Weight (g): 94.30  
 Wash Weight (g): 92.48  
 Pan Retained (g): 0.04  
 Sieve Loss (%): 0.00  
 Fines (%): #200 - 2.35, #230 - 1.96  
 Organics (%):  
 Carbonates (%): 9  
 Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.15	0.16	0.15	0.16
4	-2.25	4.76	0.13	0.14	0.28	0.30
5	-2.00	4.00	0.09	0.10	0.37	0.40
7	-1.50	2.83	0.72	0.76	1.09	1.16
10	-1.00	2.00	0.78	0.83	1.87	1.99
14	-0.50	1.41	0.89	0.94	2.76	2.93
18	0.00	1.00	0.71	0.75	3.47	3.68
25	0.50	0.71	0.61	0.65	4.08	4.33
35	1.00	0.50	0.84	0.89	4.92	5.22
45	1.50	0.35	1.32	1.40	6.24	6.62
60	2.00	0.25	3.07	3.26	9.31	9.88
80	2.50	0.18	32.06	34.00	41.37	43.88
120	3.00	0.13	40.79	43.26	82.16	87.14
170	3.50	0.09	9.09	9.64	91.25	96.78
200	3.75	0.07	0.82	0.87	92.07	97.65
230	4.00	0.06	0.37	0.39	92.44	98.04

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	3.41	2.86	2.57	2.22	0.88
	2.4	0.19	0.86	-3.04	14.42

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC27 #4

Analysis Date: 10-21-15

Analyzed By: ST

Easting (m):  
 469,591

Northing (m):  
 3,397,978

Coordinate System:  
 UTM 17

Elevation (ft):  
 -52.7 NAVD88

USCS: SW-SM  
 Munsell: Wet - 5Y-4/1  
 Dry - 5Y-7/1  
 Washed - 5Y-7/1  
 Comments:

Dry Weight (g): 91.45  
 Wash Weight (g): 86.93  
 Pan Retained (g): 0.04  
 Sieve Loss (%): 0.09  
 Finest (%): #200 - 5.42  
 #230 - 5.07  
 Organics (%):  
 Carbonates (%): 9  
 Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.44	0.48	0.44	0.48
4	-2.25	4.76	0.00	0.00	0.44	0.48
5	-2.00	4.00	0.19	0.21	0.63	0.69
7	-1.50	2.83	0.63	0.69	1.26	1.38
10	-1.00	2.00	0.62	0.68	1.88	2.06
14	-0.50	1.41	0.91	1.00	2.79	3.06
18	0.00	1.00	0.95	1.04	3.74	4.10
25	0.50	0.71	1.12	1.22	4.86	5.32
35	1.00	0.50	1.66	1.82	6.52	7.14
45	1.50	0.35	2.28	2.49	8.80	9.63
60	2.00	0.25	4.37	4.78	13.17	14.41
80	2.50	0.18	34.56	37.79	47.73	52.20
120	3.00	0.13	29.34	32.08	77.07	84.28
170	3.50	0.09	8.64	9.45	85.71	93.73
200	3.75	0.07	0.78	0.85	86.49	94.58
230	4.00	0.06	0.32	0.35	86.81	94.93

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	2.28	0.21	0.94	-2.61	11.63

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

# Granularmetric Report

Depths and elevations based on measured values



**CB&I**  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC27 #5

Analysis Date: 10-21-15

Analyzed By: ST

Easting (m):  
**469,591**

Northing (m):  
**3,397,978**

Coordinate System:  
**UTM 17**

Elevation (ft):  
**-53.4 NAVD88**

USCS: **SP**

Munsell: **Wet - 5Y-5/1  
Dry - 5Y-7/1  
Washed - 5Y-7/1**

Comments:

Dry Weight (g): <b>91.29</b>	Wash Weight (g): <b>89.68</b>	Pan Retained (g): <b>0.03</b>	Sieve Loss (%): <b>0.05</b>	Fines (%): <b>#200 - 2.08 #230 - 1.83</b>	Organics (%):	Carbonates (%): <b>9</b>	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.00	0.00	0.00	0.00
4	-2.25	4.76	0.11	0.12	0.11	0.12
5	-2.00	4.00	0.16	0.18	0.27	0.30
7	-1.50	2.83	0.39	0.43	0.66	0.73
10	-1.00	2.00	0.69	0.76	1.35	1.49
14	-0.50	1.41	0.65	0.71	2.00	2.20
18	0.00	1.00	0.79	0.87	2.79	3.07
25	0.50	0.71	0.63	0.69	3.42	3.76
35	1.00	0.50	1.09	1.19	4.51	4.95
45	1.50	0.35	1.54	1.69	6.05	6.64
60	2.00	0.25	3.41	3.74	9.46	10.38
80	2.50	0.18	25.32	27.74	34.78	38.12
120	3.00	0.13	40.35	44.20	75.13	82.32
170	3.50	0.09	13.43	14.71	88.56	97.03
200	3.75	0.07	0.81	0.89	89.37	97.92
230	4.00	0.06	0.23	0.25	89.60	98.17

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.43	3.06	2.92	2.63	2.26	2.10	1.01
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	2.47	0.18	0.82	-2.85	13.62	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

# Granularmetric Report

Depths and elevations based on measured values



**CB&I**  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC27 #6

Analysis Date: 10-21-15

Analyzed By: ST

Easting (m):  
**469,591**

Northing (m):  
**3,397,978**

Coordinate System:  
**UTM 17**

Elevation (ft):  
**-54.0 NAVD88**

USCS: **SW**

Munsell: **Wet - 5Y-5/1  
Dry - 5Y-7/1  
Washed - 5Y-7/1**

Comments:

Dry Weight (g): <b>93.32</b>	Wash Weight (g): <b>91.73</b>	Pan Retained (g): <b>0.04</b>	Sieve Loss (%): <b>0.01</b>	Fines (%): <b>#200 - 2.01 #230 - 1.76</b>	Organics (%):	Carbonates (%): <b>24</b>	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.43	0.46	0.43	0.46
3.5	-2.50	5.66	1.60	1.71	2.03	2.17
4	-2.25	4.76	0.72	0.77	2.75	2.94
5	-2.00	4.00	1.00	1.07	3.75	4.01
7	-1.50	2.83	2.13	2.28	5.88	6.29
10	-1.00	2.00	2.54	2.72	8.42	9.01
14	-0.50	1.41	2.13	2.28	10.55	11.29
18	0.00	1.00	2.25	2.41	12.80	13.70
25	0.50	0.71	1.81	1.94	14.61	15.64
35	1.00	0.50	2.45	2.63	17.06	18.27
45	1.50	0.35	2.48	2.66	19.54	20.93
60	2.00	0.25	3.99	4.28	23.53	25.21
80	2.50	0.18	29.93	32.07	53.46	57.28
120	3.00	0.13	25.95	27.81	79.41	85.09
170	3.50	0.09	11.30	12.11	90.71	97.20
200	3.75	0.07	0.74	0.79	91.45	97.99
230	4.00	0.06	0.23	0.25	91.68	98.24

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.41	2.98	2.82	2.39	1.98	0.57	-1.78
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	1.88	0.27	1.51	-1.7	4.96	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16



**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC27 #7

Analysis Date: 10-15-15

Analyzed By: SMT

Easting (m):  
 469,591

Northing (m):  
 3,397,978

Coordinate System:  
 UTM 17

Elevation (ft):  
 -54.9 NAVD88

USCS: SW  
 Munsell: Wet - 5Y-4/1  
 Dry - 5Y-6/1  
 Washed - 5Y-7/1

Comments:

Dry Weight (g): 96.25  
 Wash Weight (g): 92.25  
 Pan Retained (g): 0.10  
 Sieve Loss (%): 0.10  
 Finest (%): #200 - 4.95  
 #230 - 4.38  
 Organics (%):  
 Carbonates (%): 16  
 Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.56	0.58	0.56	0.58
3.5	-2.50	5.66	0.84	0.87	1.40	1.45
4	-2.25	4.76	0.50	0.52	1.90	1.97
5	-2.00	4.00	0.66	0.69	2.56	2.66
7	-1.50	2.83	0.94	0.98	3.50	3.64
10	-1.00	2.00	1.34	1.39	4.84	5.03
14	-0.50	1.41	2.41	2.50	7.25	7.53
18	0.00	1.00	5.74	5.96	12.99	13.49
25	0.50	0.71	11.99	12.46	24.98	25.95
35	1.00	0.50	14.13	14.68	39.11	40.63
45	1.50	0.35	5.70	5.92	44.81	46.55
60	2.00	0.25	2.06	2.14	46.87	48.69
80	2.50	0.18	6.74	7.00	53.61	55.69
120	3.00	0.13	22.82	23.71	76.43	79.40
170	3.50	0.09	14.22	14.77	90.65	94.17
200	3.75	0.07	0.85	0.88	91.50	95.05
230	4.00	0.06	0.55	0.57	92.05	95.62

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.74	3.16	2.91	2.09	0.46	0.10	-1.01

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	1.53	0.35	1.51	-0.66	2.82

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC28 #1

Analysis Date: 10-22-15

Analyzed By: DA

Easting (m):  
 468,873

Northing (m):  
 3,398,381

Coordinate System:  
 UTM 17

Elevation (ft):  
 -48.0 NAVD88

USCS: SW  
 Munsell: Wet - 5Y-5/1  
 Dry - 5Y-6/1  
 Washed - 5Y-7/1  
 Comments:

Dry Weight (g): 95.05  
 Wash Weight (g): 93.63  
 Pan Retained (g): 0.04  
 Sieve Loss (%): 0.05  
 Finest (%): #200 - 1.93  
 #230 - 1.60  
 Organics (%):  
 Carbonates (%): 9  
 Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.14	0.15	0.14	0.15
4	-2.25	4.76	0.03	0.03	0.17	0.18
5	-2.00	4.00	0.08	0.08	0.25	0.26
7	-1.50	2.83	0.53	0.56	0.78	0.82
10	-1.00	2.00	0.59	0.62	1.37	1.44
14	-0.50	1.41	1.19	1.25	2.56	2.69
18	0.00	1.00	1.42	1.49	3.98	4.18
25	0.50	0.71	1.43	1.50	5.41	5.68
35	1.00	0.50	1.80	1.89	7.21	7.57
45	1.50	0.35	2.48	2.61	9.69	10.18
60	2.00	0.25	5.47	5.75	15.16	15.93
80	2.50	0.18	39.70	41.77	54.86	57.70
120	3.00	0.13	30.10	31.67	84.96	89.37
170	3.50	0.09	7.58	7.97	92.54	97.34
200	3.75	0.07	0.69	0.73	93.23	98.07
230	4.00	0.06	0.31	0.33	93.54	98.40

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	2.26	0.21	0.88	-2.37	10.17

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC28 #2

Analysis Date: 10-22-15

Analyzed By: DA

Easting (m):  
 468,873

Northing (m):  
 3,398,381

Coordinate System:  
 UTM 17

Elevation (ft):  
 -52.5 NAVD88

USCS: SW-SM  
 Munsell: Wet - 2.5Y-3/1  
 Dry - 2.5Y-6/1  
 Washed - 2.5Y-6/1

Comments:

Dry Weight (g): 100.92  
 Wash Weight (g): 95.59  
 Pan Retained (g): 0.02  
 Sieve Loss (%): 0.02  
 Fines (%): #200 - 5.53, #230 - 5.32  
 Organics (%):  
 Carbonates (%): 31  
 Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.33	0.33	0.33	0.33
5/16"	-3.00	8.00	0.22	0.22	0.55	0.55
3.5	-2.50	5.66	1.43	1.42	1.98	1.97
4	-2.25	4.76	0.80	0.79	2.78	2.76
5	-2.00	4.00	0.82	0.81	3.60	3.57
7	-1.50	2.83	3.49	3.46	7.09	7.03
10	-1.00	2.00	3.85	3.81	10.94	10.84
14	-0.50	1.41	5.81	5.76	16.75	16.60
18	0.00	1.00	8.32	8.24	25.07	24.84
25	0.50	0.71	10.84	10.74	35.91	35.58
35	1.00	0.50	14.76	14.63	50.67	50.21
45	1.50	0.35	10.74	10.64	61.41	60.85
60	2.00	0.25	6.77	6.71	68.18	67.56
80	2.50	0.18	10.77	10.67	78.95	78.23
120	3.00	0.13	11.86	11.75	90.81	89.98
170	3.50	0.09	4.04	4.00	94.85	93.98
200	3.75	0.07	0.49	0.49	95.34	94.47
230	4.00	0.06	0.21	0.21	95.55	94.68

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	0.89	0.54	1.5	-0.41	2.68

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

# Granularmetric Report

Depths and elevations based on measured values



**CB&I**  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC28 #3

Analysis Date: 10-22-15

Analyzed By: DA

Easting (m):  
**468,873**

Northing (m):  
**3,398,381**

Coordinate System:  
**UTM 17**

Elevation (ft):  
**-53.4 NAVD88**

USCS: **SW-SM**      Munsell: **Wet - 5Y-3/1  
Dry - 5Y-5/1  
Washed - 5Y-7/1**      Comments:

Dry Weight (g): <b>94.14</b>	Wash Weight (g): <b>88.55</b>	Pan Retained (g): <b>0.08</b>	Sieve Loss (%): <b>0.03</b>	Fines (%): <b>#200 - 6.75 #230 - 6.07</b>	Organics (%):	Carbonates (%): <b>9</b>	Shell Hash (%):
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.00	0.00	0.00	0.00
5/16"	-3.00	8.00	0.00	0.00	0.00	0.00
3.5	-2.50	5.66	0.23	0.24	0.23	0.24
4	-2.25	4.76	0.11	0.12	0.34	0.36
5	-2.00	4.00	0.22	0.23	0.56	0.59
7	-1.50	2.83	0.57	0.61	1.13	1.20
10	-1.00	2.00	0.51	0.54	1.64	1.74
14	-0.50	1.41	0.55	0.58	2.19	2.32
18	0.00	1.00	0.56	0.59	2.75	2.91
25	0.50	0.71	0.71	0.75	3.46	3.66
35	1.00	0.50	1.02	1.08	4.48	4.74
45	1.50	0.35	1.17	1.24	5.65	5.98
60	2.00	0.25	2.26	2.40	7.91	8.38
80	2.50	0.18	17.86	18.97	25.77	27.35
120	3.00	0.13	46.83	49.75	72.60	77.10
170	3.50	0.09	13.83	14.69	86.43	91.79
200	3.75	0.07	1.37	1.46	87.80	93.25
230	4.00	0.06	0.64	0.68	88.44	93.93

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.23	2.98	2.73	2.44	2.20	1.10
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	2.53	0.17	0.86	-3.23	16.07	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

**Granularmetric Report**  
 Depths and elevations based on measured values



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC28 #4

Analysis Date: 10-27-15

Analyzed By: SMT

Easting (m):  
 468,873

Northing (m):  
 3,398,381

Coordinate System:  
 UTM 17

Elevation (ft):  
 -53.9 NAVD88

USCS: SW  
 Munsell: Wet - 5Y-4/1  
 Dry - 5Y-6/1  
 Washed - 5Y-7/1

Comments:

Dry Weight (g): 90.73  
 Wash Weight (g): 87.53  
 Pan Retained (g): 0.28  
 Sieve Loss (%): 0.22  
 Finest (%): #200 - 4.78  
 #230 - 4.05  
 Organics (%):  
 Carbonates (%): 17  
 Shell Hash (%):

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	0.00	0.00	0.00	0.00
7/16"	-3.50	11.31	0.46	0.51	0.46	0.51
5/16"	-3.00	8.00	0.85	0.94	1.31	1.45
3.5	-2.50	5.66	1.19	1.31	2.50	2.76
4	-2.25	4.76	0.33	0.36	2.83	3.12
5	-2.00	4.00	0.55	0.61	3.38	3.73
7	-1.50	2.83	1.05	1.16	4.43	4.89
10	-1.00	2.00	1.03	1.14	5.46	6.03
14	-0.50	1.41	1.20	1.32	6.66	7.35
18	0.00	1.00	1.08	1.19	7.74	8.54
25	0.50	0.71	1.68	1.85	9.42	10.39
35	1.00	0.50	1.87	2.06	11.29	12.45
45	1.50	0.35	2.07	2.28	13.36	14.73
60	2.00	0.25	3.35	3.69	16.71	18.42
80	2.50	0.18	17.27	19.03	33.98	37.45
120	3.00	0.13	31.86	35.12	65.84	72.57
170	3.50	0.09	19.37	21.35	85.21	93.92
200	3.75	0.07	1.18	1.30	86.39	95.22
230	4.00	0.06	0.66	0.73	87.05	95.95

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	2.21	0.22	1.44	-2.29	7.94

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16

## Granularmetric Report

Depths and elevations based on measured values



**CB&I**  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Project Name: Inventory of Potential Beach Nourishment and Coastal Restoration

Sand Sources on the Atlantic OCS

Sample Name: FL-BOEM-2015-VC28 #5

Analysis Date: 10-27-15

Analyzed By: SMT

Easting (m):  
**468,873**

Northing (m):  
**3,398,381**

Coordinate System:  
**UTM 17**

Elevation (ft):  
**-54.2 NAVD88**

USCS:

**SW-SM**

Munsell:

Wet - 5Y-4/1  
Dry - 5Y-6/1  
Washed - 5Y-6/1

Comments:

Dry Weight (g): <b>94.23</b>	Wash Weight (g): <b>87.88</b>	Pan Retained (g): <b>0.14</b>	Sieve Loss (%): <b>0.01</b>	Fines (%): #200 - 7.59 #230 - 6.90	Organics (%):	Carbonates (%): <b>38</b>	Shell Hash (%):
---------------------------------	----------------------------------	----------------------------------	--------------------------------	--	---------------	------------------------------	-----------------

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4"	-4.25	19.03	0.00	0.00	0.00	0.00
5/8"	-4.00	16.00	2.54	2.70	2.54	2.70
7/16"	-3.50	11.31	5.01	5.32	7.55	8.02
5/16"	-3.00	8.00	2.65	2.81	10.20	10.83
3.5	-2.50	5.66	1.67	1.77	11.87	12.60
4	-2.25	4.76	2.11	2.24	13.98	14.84
5	-2.00	4.00	1.54	1.63	15.52	16.47
7	-1.50	2.83	3.83	4.06	19.35	20.53
10	-1.00	2.00	2.97	3.15	22.32	23.68
14	-0.50	1.41	2.89	3.07	25.21	26.75
18	0.00	1.00	2.67	2.83	27.88	29.58
25	0.50	0.71	2.88	3.06	30.76	32.64
35	1.00	0.50	3.07	3.26	33.83	35.90
45	1.50	0.35	2.06	2.19	35.89	38.09
60	2.00	0.25	2.51	2.66	38.40	40.75
80	2.50	0.18	9.19	9.75	47.59	50.50
120	3.00	0.13	24.95	26.48	72.54	76.98
170	3.50	0.09	12.90	13.69	85.44	90.67
200	3.75	0.07	1.64	1.74	87.08	92.41
230	4.00	0.06	0.65	0.69	87.73	93.10

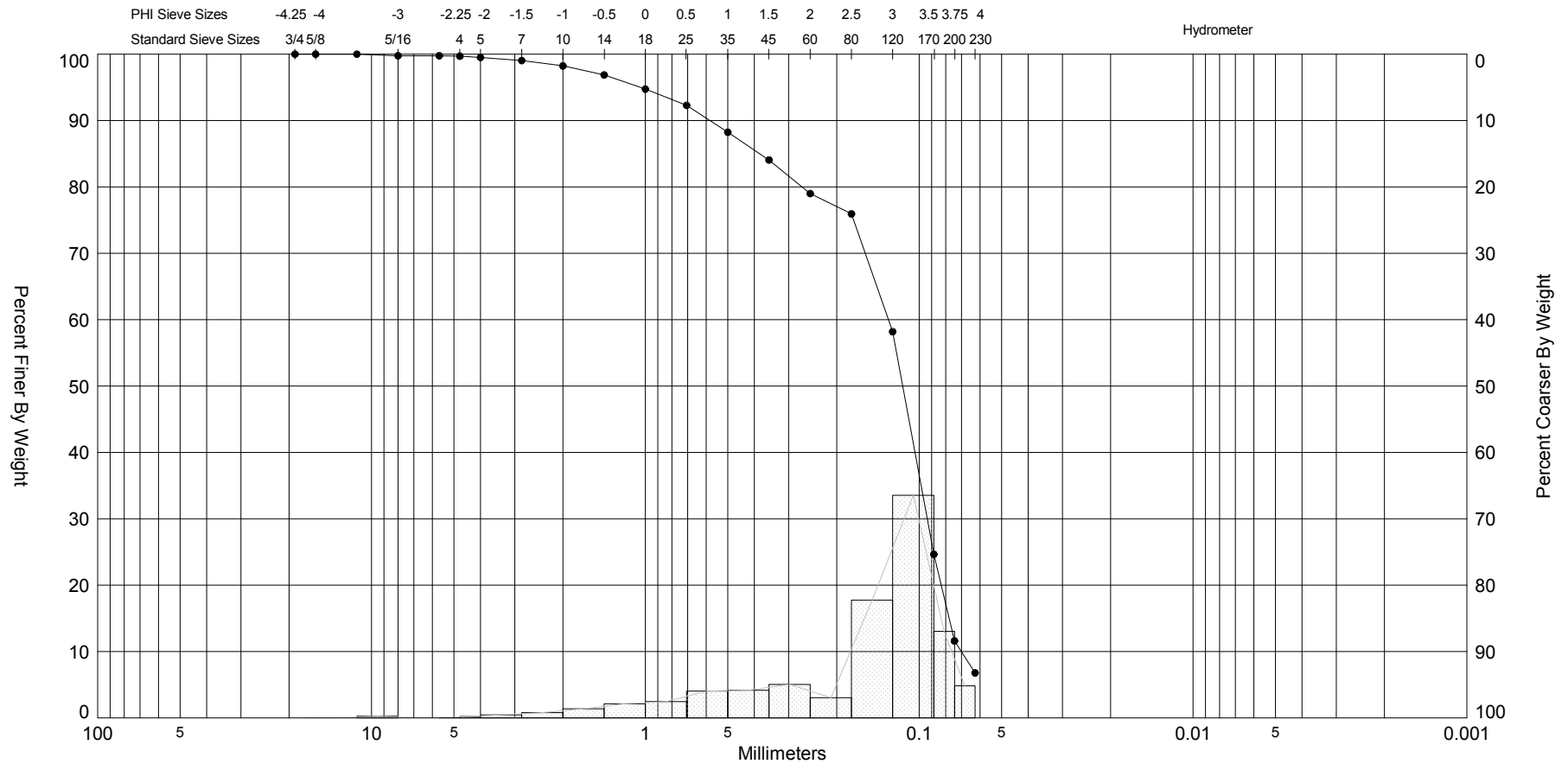
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.26	2.96	2.47	-0.79	-2.07	-3.78
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis	
Statistics	0.98	0.51	2.44	-0.82	2.2	

GRANULARMETRIC REPORT FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16


## APPENDIX 4

### INDIVIDUAL VIBRACORE GRAIN SIZE DISTRIBUTION CURVES/HISTOGRAMS

SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16

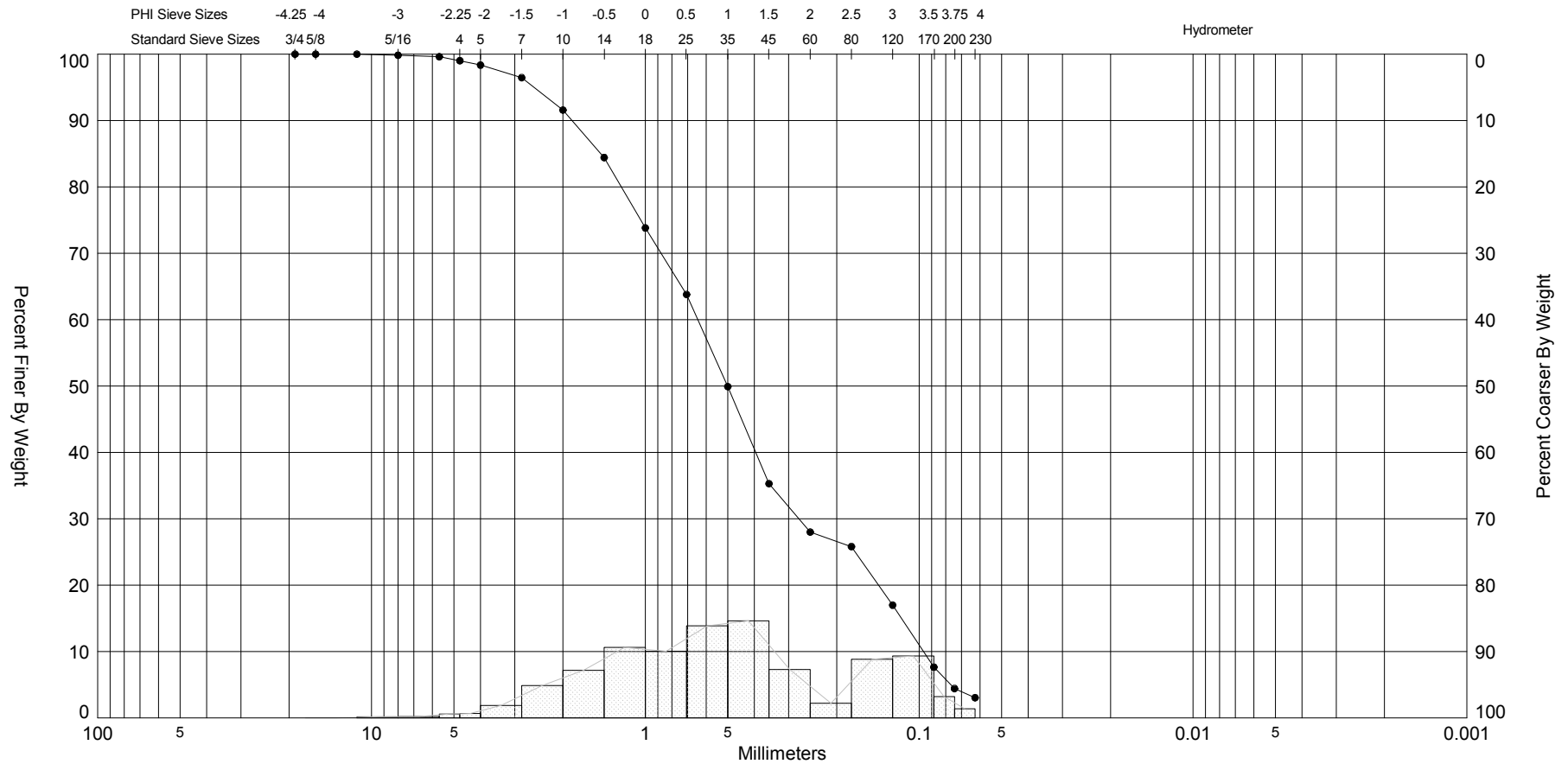


Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	


Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC01 #1	—●—	-77.0	SW-SM	#200 - 11.60 #230 - 6.78		48	3.12	2.61	-1.73	5.78	1.24	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-30-15 DA
												Easting (X, m):	596.390
												Northing (Y, m):	2,995,020
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
<p style="text-align: center;"> <b>CB&amp;I</b>            Coastal Planning &amp; Engineering, Inc.            2481 NW Boca Raton Blvd.            Boca Raton, FL 33431            ph (561) 391 8102         </p>													



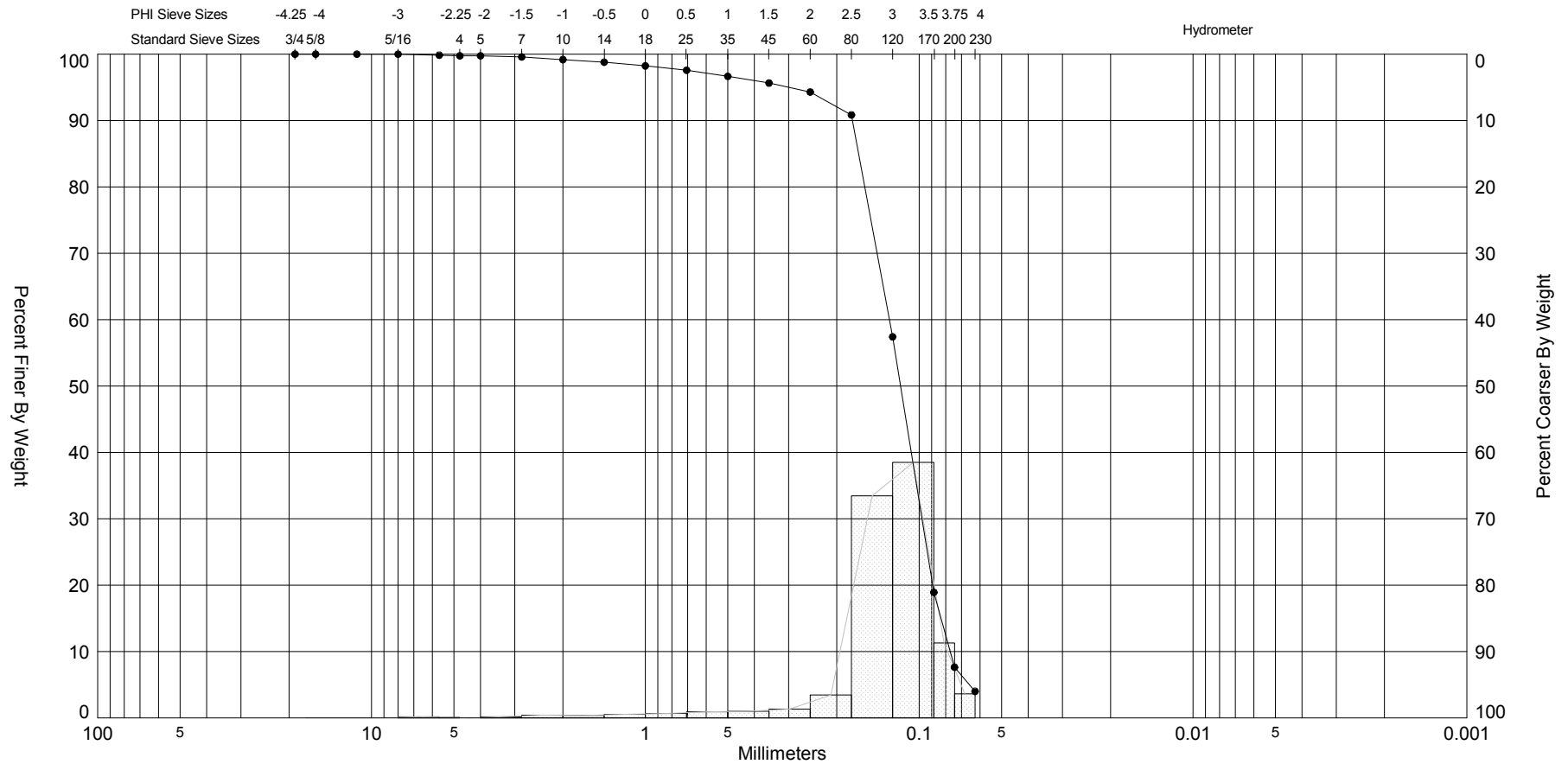
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC01 #2	—●—	-77.6	SW	#200 - 4.43 #230 - 3.05		76	1	1.02	0.04	2.3	1.51	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-30-15 DA
												Easting (X, m):	596.390
												Northing (Y, m):	2,995,020
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
<p style="text-align: center;"> <b>CB&amp;I</b>            Coastal Planning &amp; Engineering, Inc.            2481 NW Boca Raton Blvd.            Boca Raton, FL 33431            ph (561) 391 8102         </p>													

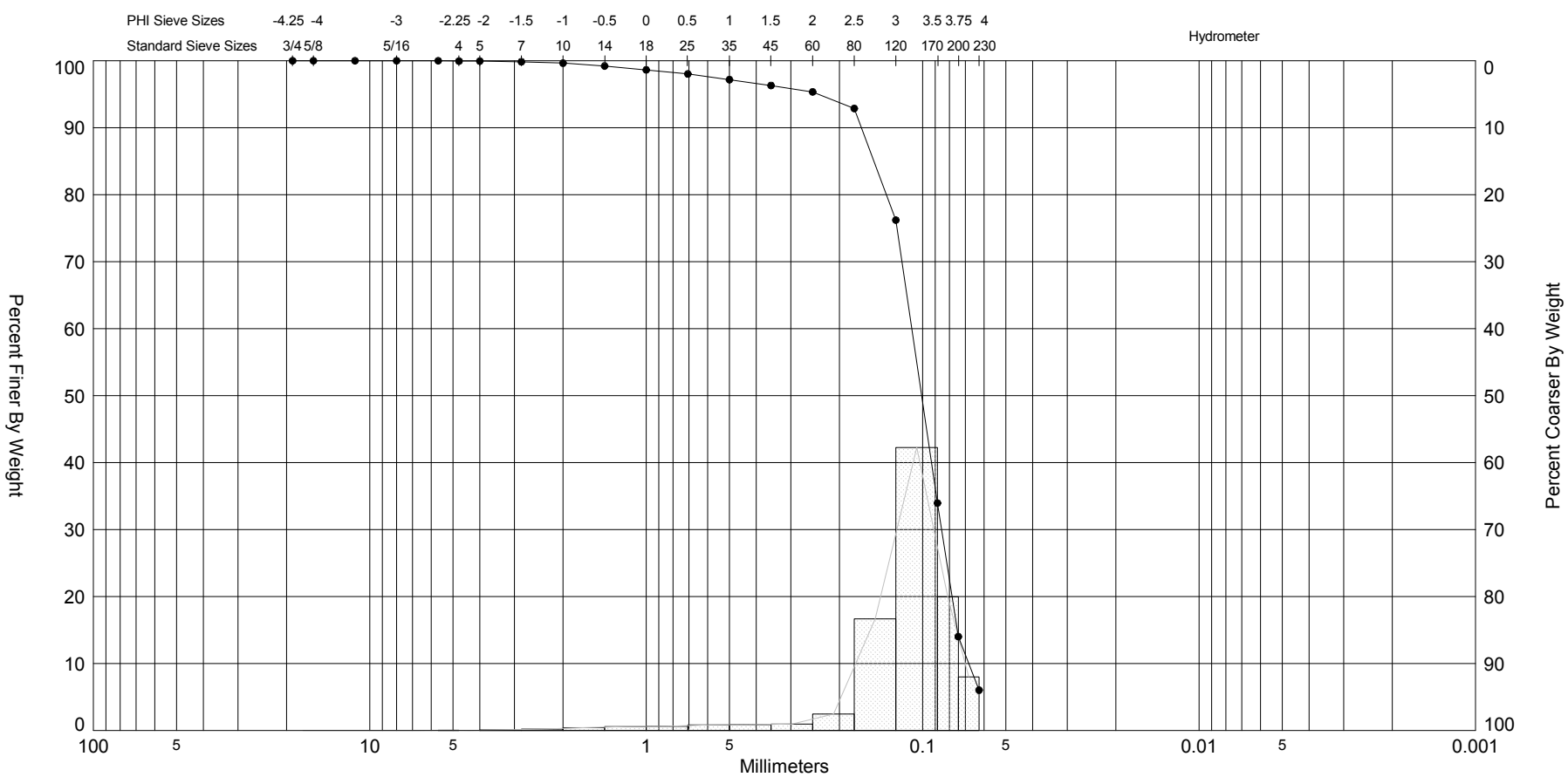
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC01 #3	—●—	-80.7	SP-SM	#200 - 7.64 #230 - 4.01		41	3.1	2.94	-3.31	18.22	0.78	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-30-15 DA
												Easting (X, m):	596.390
												Northing (Y, m):	2,995,020
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
CB&I Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													

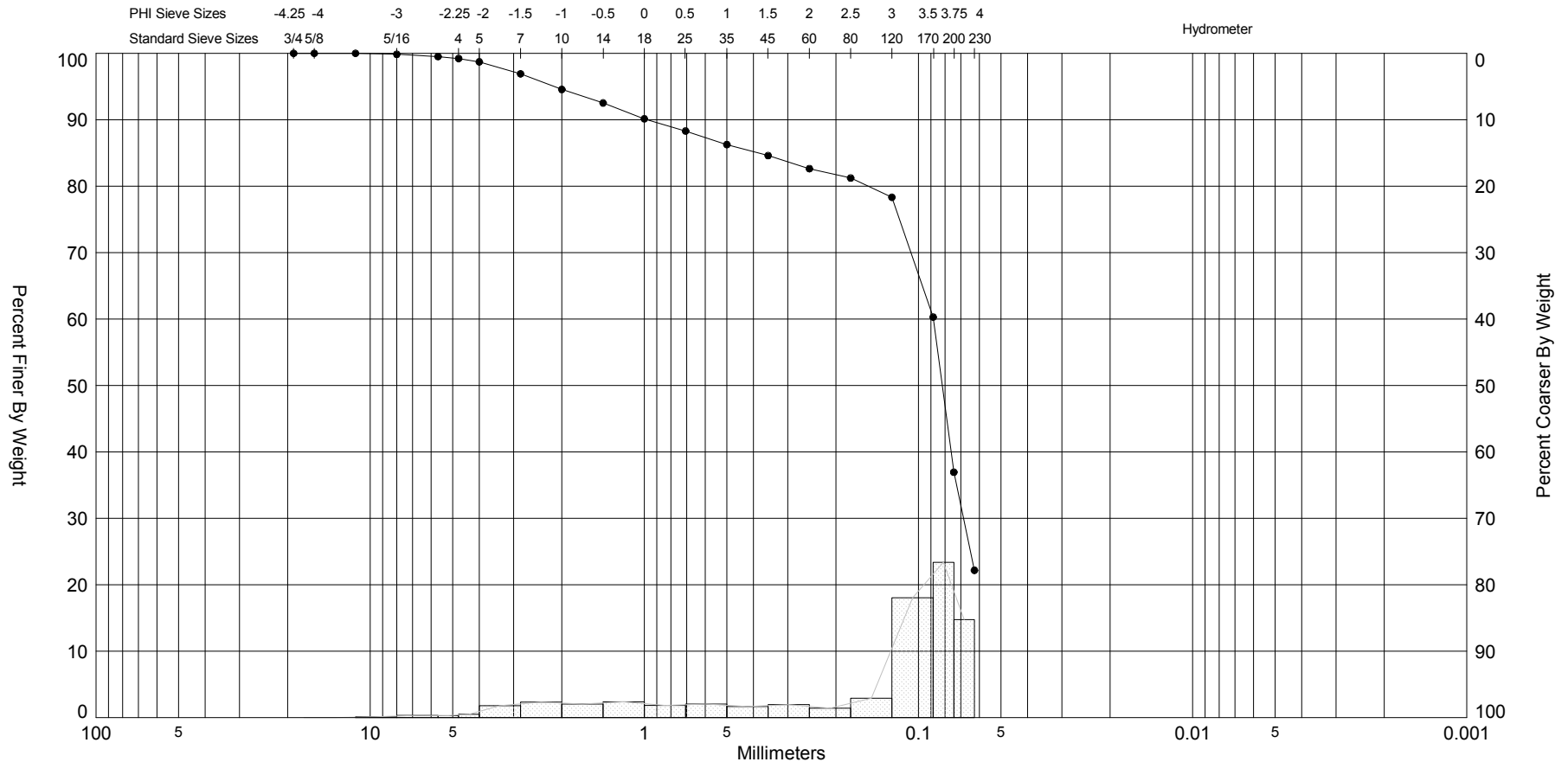
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC01 #4	—●—	-83.6	SM	#200 - 14.02 #230 - 6.03		36	3.31	3.13	-3.2	16.66	0.73	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-30-15
 <div style="text-align: center;"> <p>CB&amp;I Coastal Planning &amp; Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102</p> </div>												Easting (X, m):	596.390
												Northing (Y, m):	2,995,020
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88

SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC01 #5	—●—	-87.9	SM	#200 - 36.94 #230 - 22.18		44	3.61	2.67	-1.63	4.38	1.69	Project Name:	Inventory of Potential Beach Nourishment and Coastal

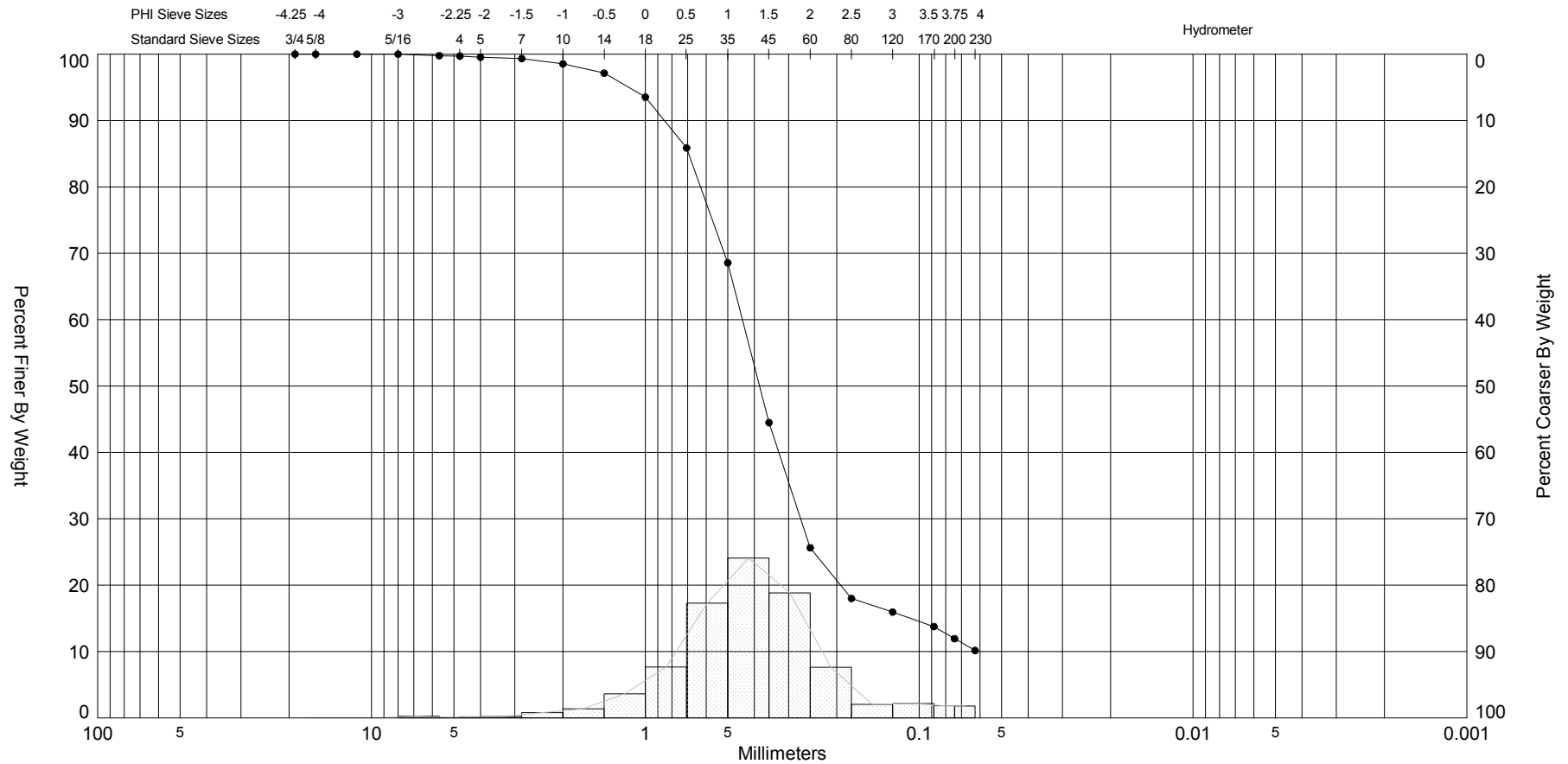
Comments:	Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values	Analyzed By:	10-30-15
	Easting (X, m):	DA




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 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Northing (Y, m):	596.390
Horizontal System:	2,995,020
Vertical System:	NAD 1983
	NAVD88

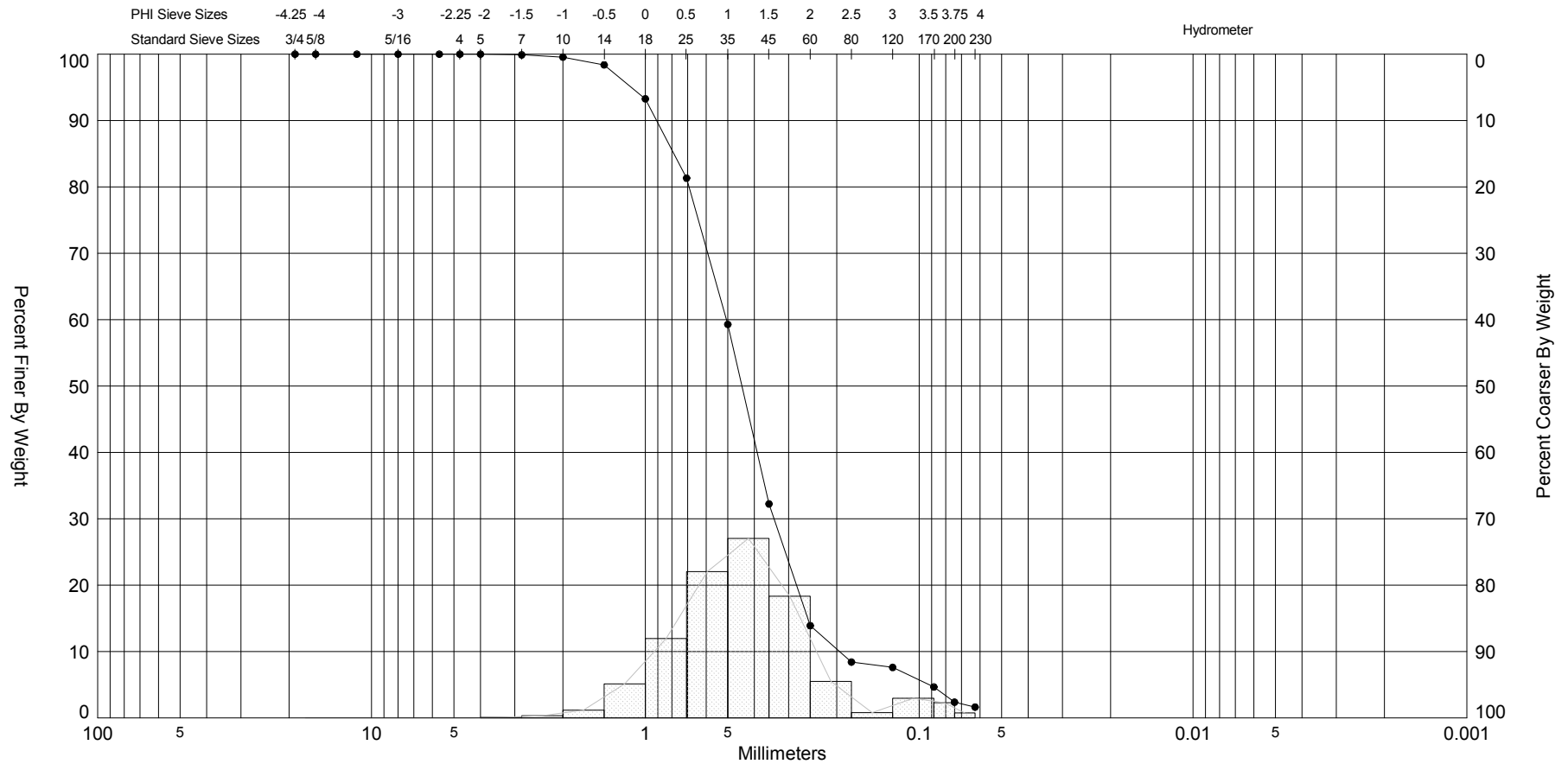
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC01 #6	—●—	-90.9	SW-SM	#200 - 11.94 #230 - 10.16		82	1.39	1.3	0.03	4.55	0.98	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-30-15 DA
												Easting (X, m):	596.390
												Northing (Y, m):	2,995.020
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
CB&I Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													


SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16



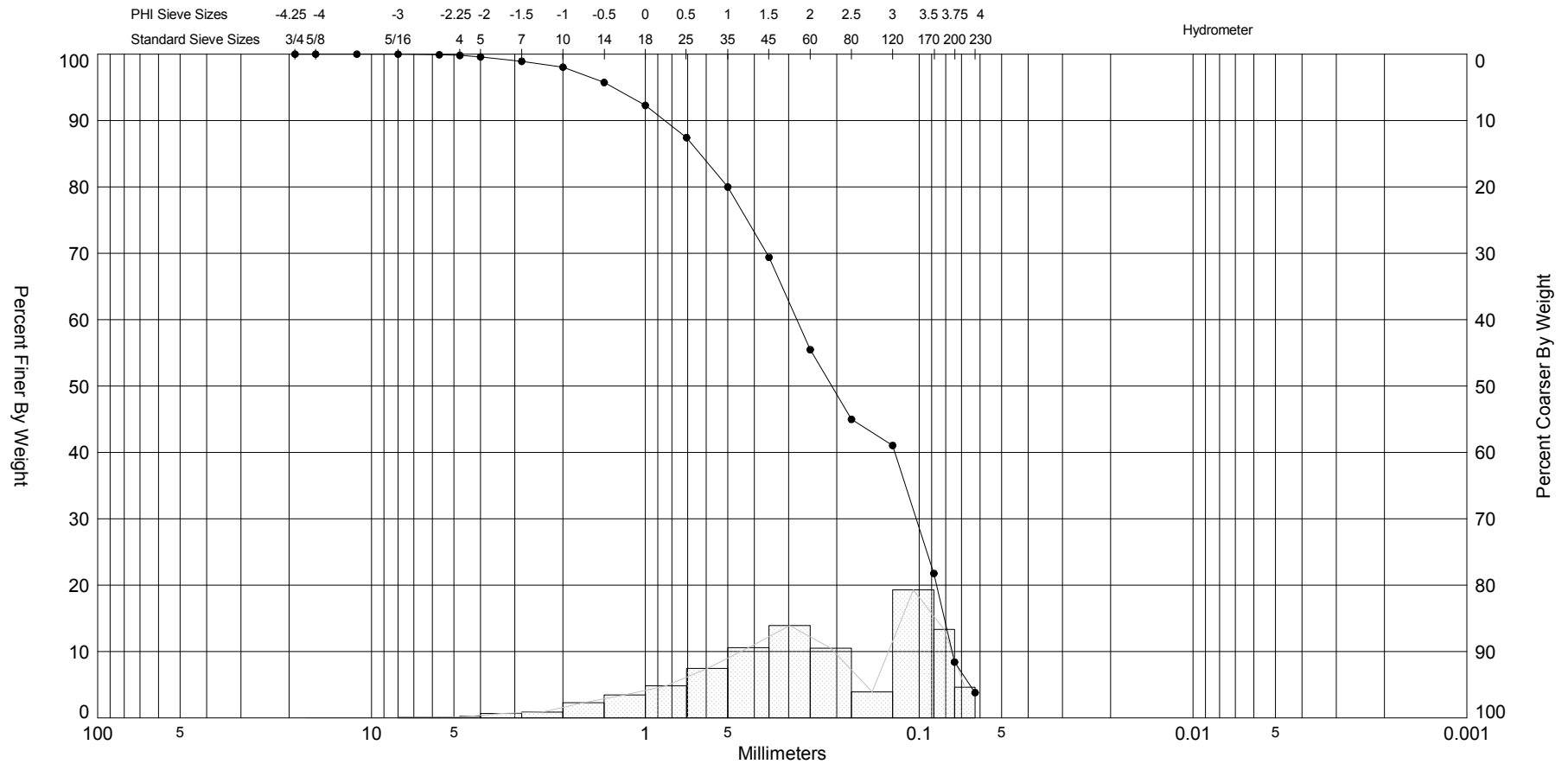
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC02 #1	—●—	-47.4	SW	#200 - 2.37 #230 - 1.63		85	1.17	1.2	0.58	4.06	0.89	Project Name:	Inventory of Potential Beach Nourishment and Coastal


Comments:	Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values	Analyzed By:	10-29-15
	Easting (X, m):	DA

	CB&I Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102	
	Horizontal System:	NAD 1983
	Vertical System:	NAVD88
	Northing (Y, m):	590,316

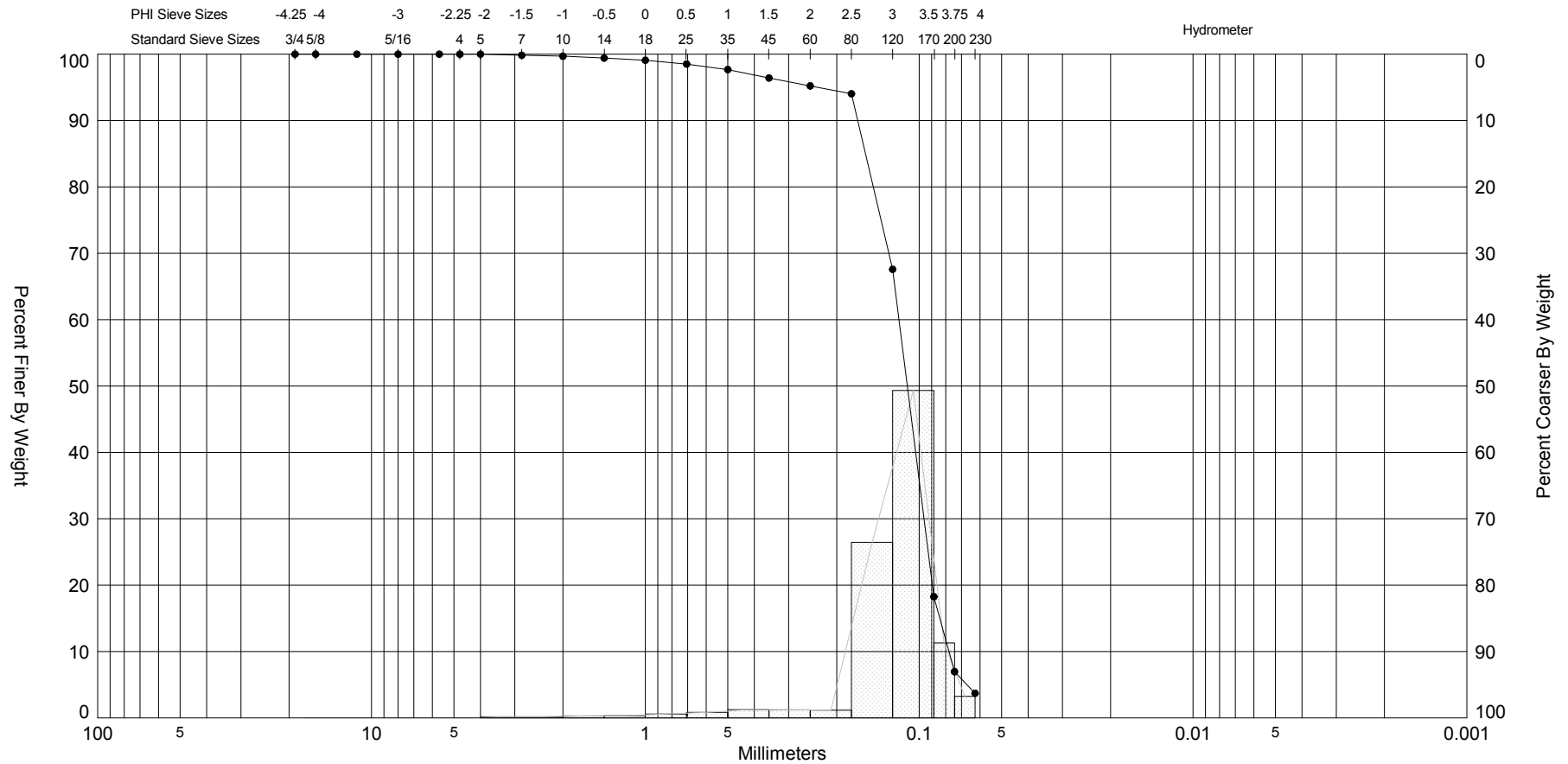
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC02 #2	—●—	-48.9	SW-SM	#200 - 8.42 #230 - 3.81		61	2.26	2.1	-0.65	2.77	1.36	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-28-15 SMT
 <b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102												Easting (X, m):	590,316
												Northing (Y, m):	3,003,454
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88

SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16

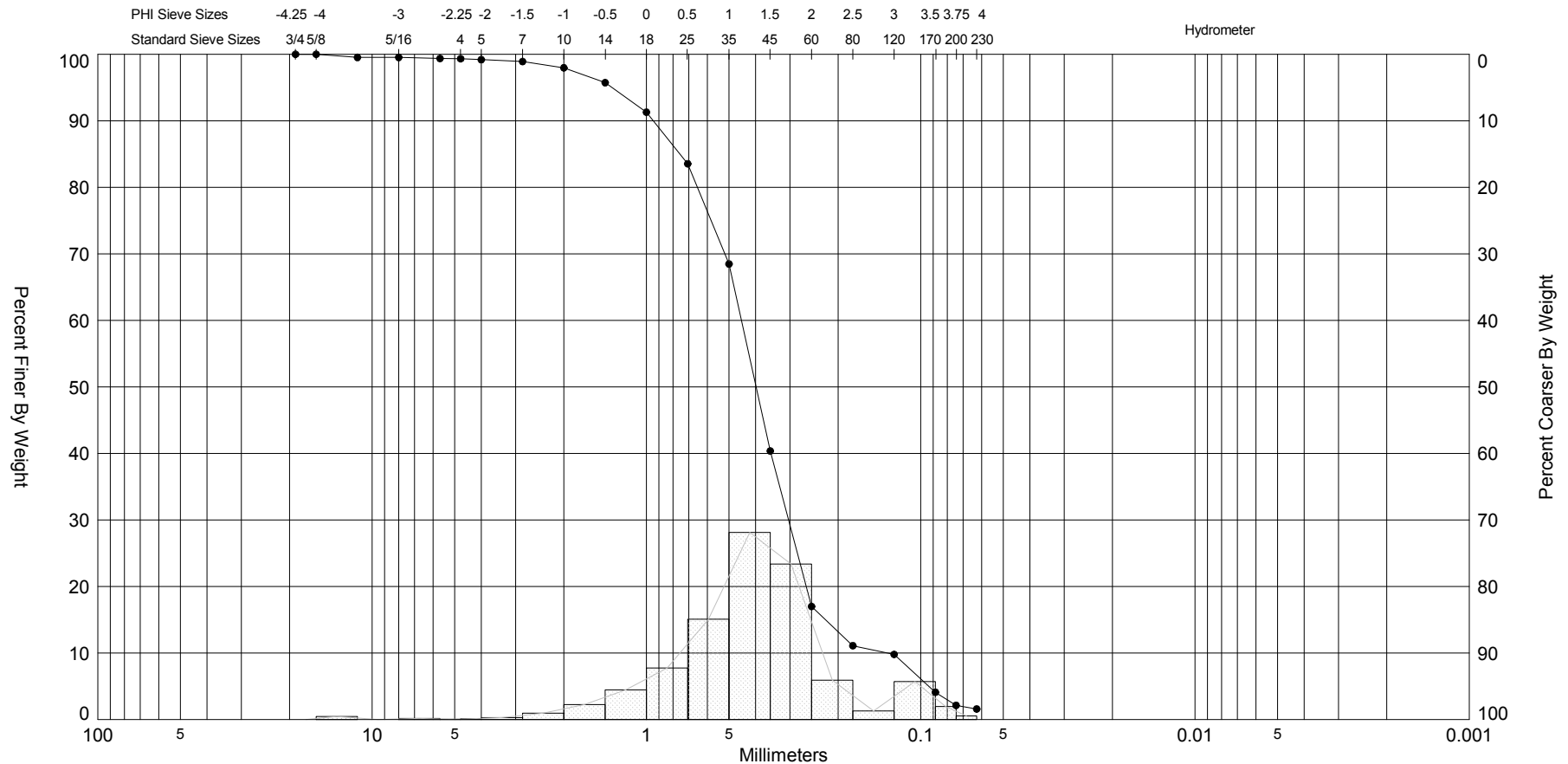


Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	


Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC02 #3	—●—	-50.4	SP-SM	#200 - 6.97 #230 - 3.72		18	3.18	3.04	-3.3	18.52	0.64	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-28-15 SMT
												Easting (X, m):	590,316
												Northing (Y, m):	3,003,454
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
<b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													



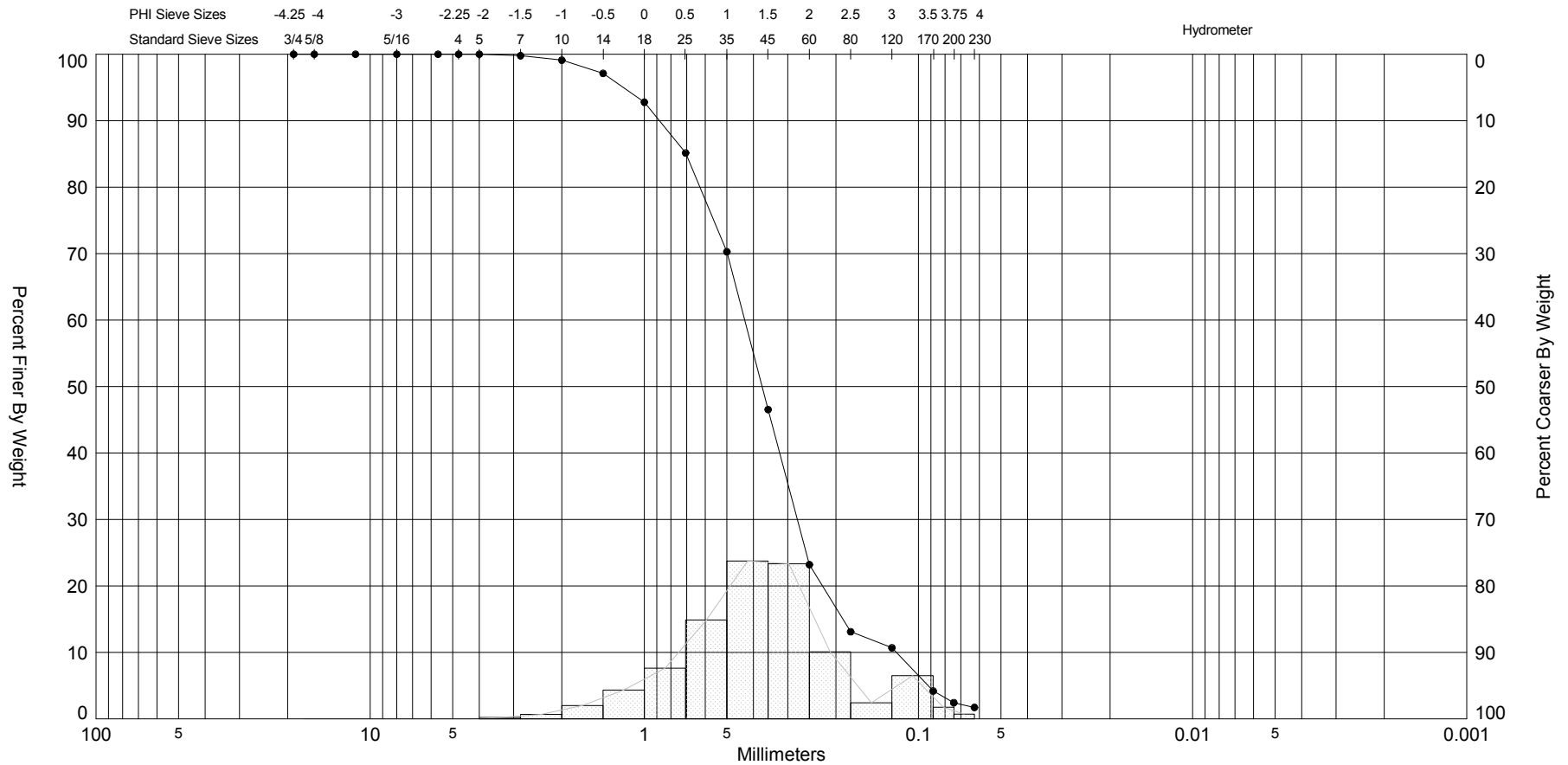
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC02 #4	—●—	-51.6	SW	#200 - 2.13 #230 - 1.59		81	1.33	1.29	-0.53	5.87	1.05	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-28-15 SMT
												Easting (X, m):	590,316
												Northing (Y, m):	3,003,454
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
CB&I Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													

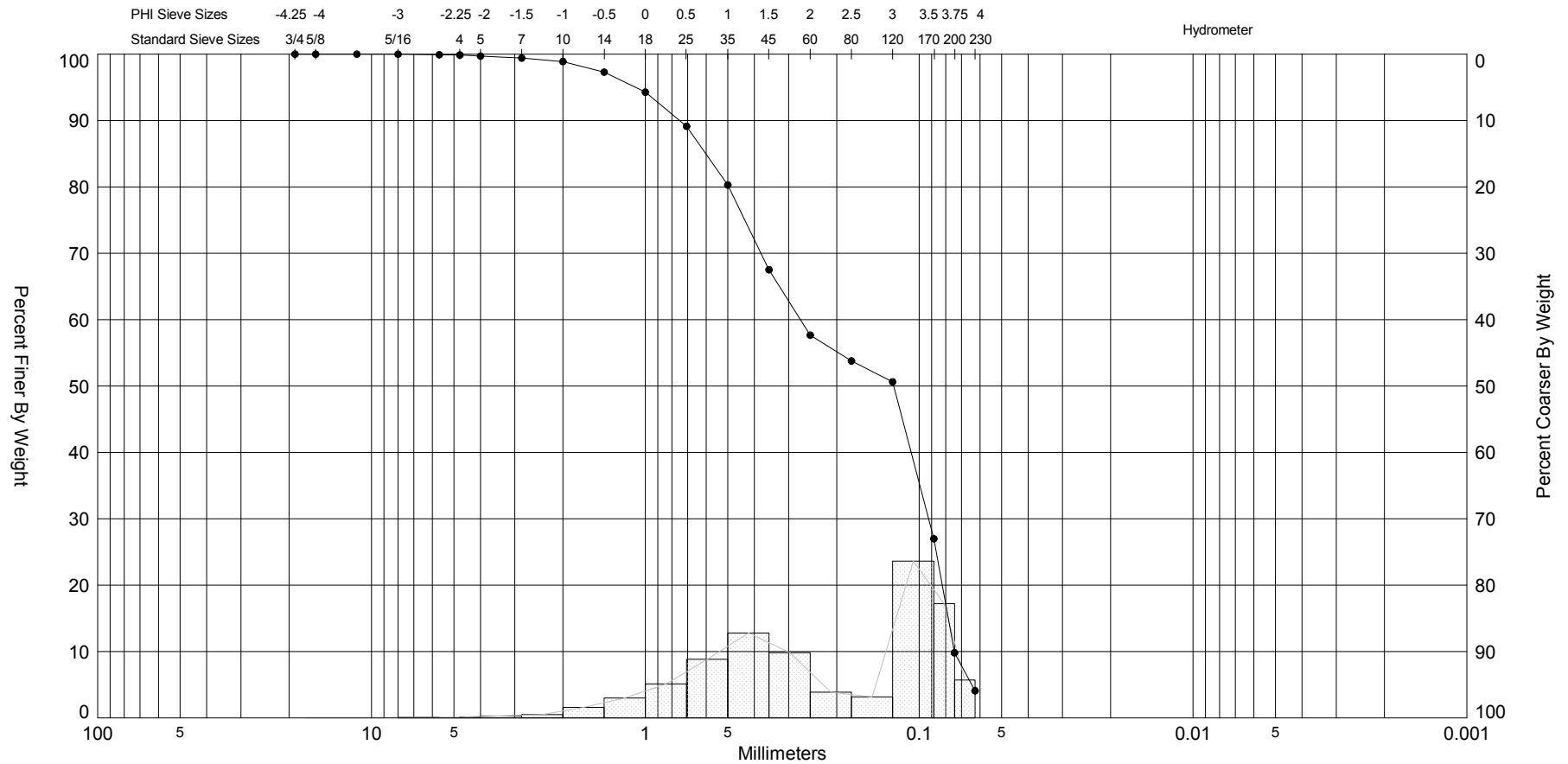
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay	
Coarse	Fine	Coarse	Medium	Fine		

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC02 #5	—●—	-52.1	SW	#200 - 2.43 #230 - 1.72		82	1.43	1.42	0.05	3.34	0.98	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-29-15 SMT
<p><b>CB&amp;I</b> Coastal Planning &amp; Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102</p>												Easting (X, m):	590,316
												Northing (Y, m):	3,003,454
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88

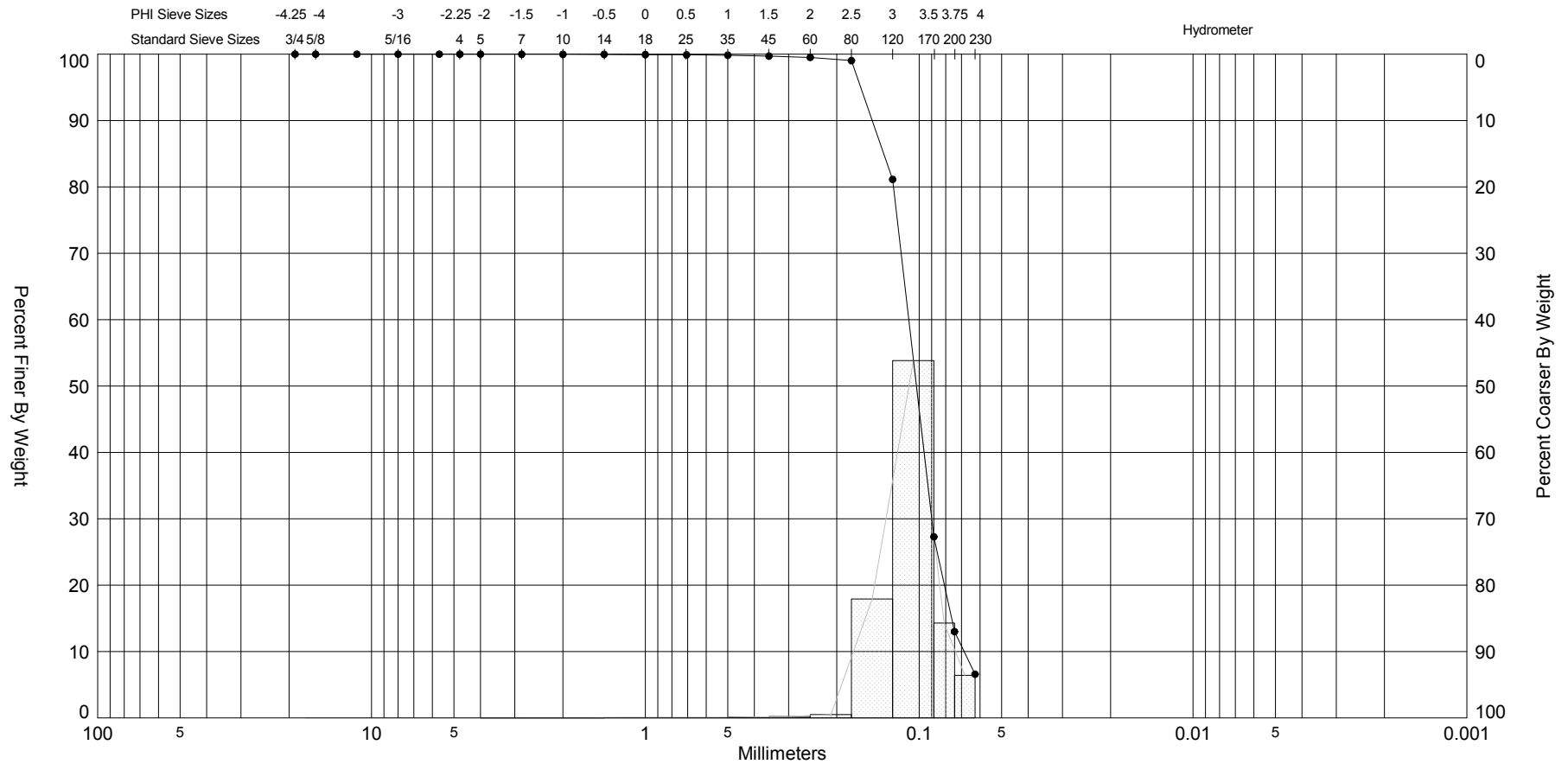
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC02 #6	—●—	-53.3	SW-SM	#200 - 9.81 #230 - 4.09		57	3.01	2.25	-0.63	2.42	1.36	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-29-15 SMT
												Easting (X, m):	590,316
												Northing (Y, m):	3,003,454
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
<p style="text-align: center;"><b>CB&amp;I</b> Coastal Planning &amp; Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102</p>													

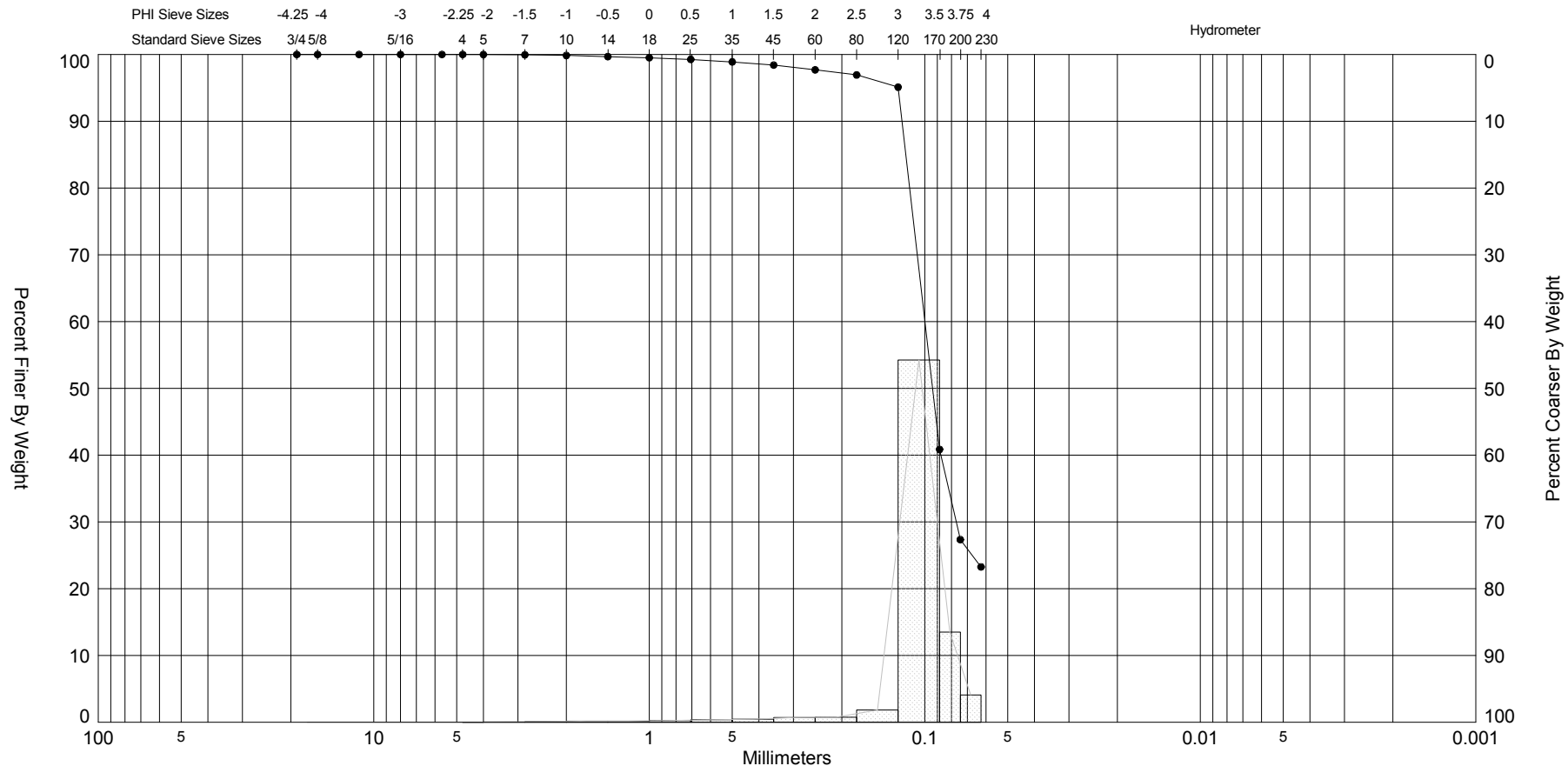
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC02 #7	—●—	-57.3	SM	#200 - 13.00 #230 - 6.58		16	3.29	3.24	-1.83	18.77	0.36	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-29-15 SMT
												Easting (X, m):	590,316
												Northing (Y, m):	3,003,454
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
CB&I Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													

SIEVE ANALYSIS FL\_BOEM-2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16



Gravel		Sand			Silt and Clay
		Coarse	Fine	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC02 #8	—●—	-60.0	SC	#200 - 27.35 #230 - 23.27		17	3.42	3.25	-4.79	33.94	0.52	Project Name:	Inventory of Potential Beach Nourishment and Coastal

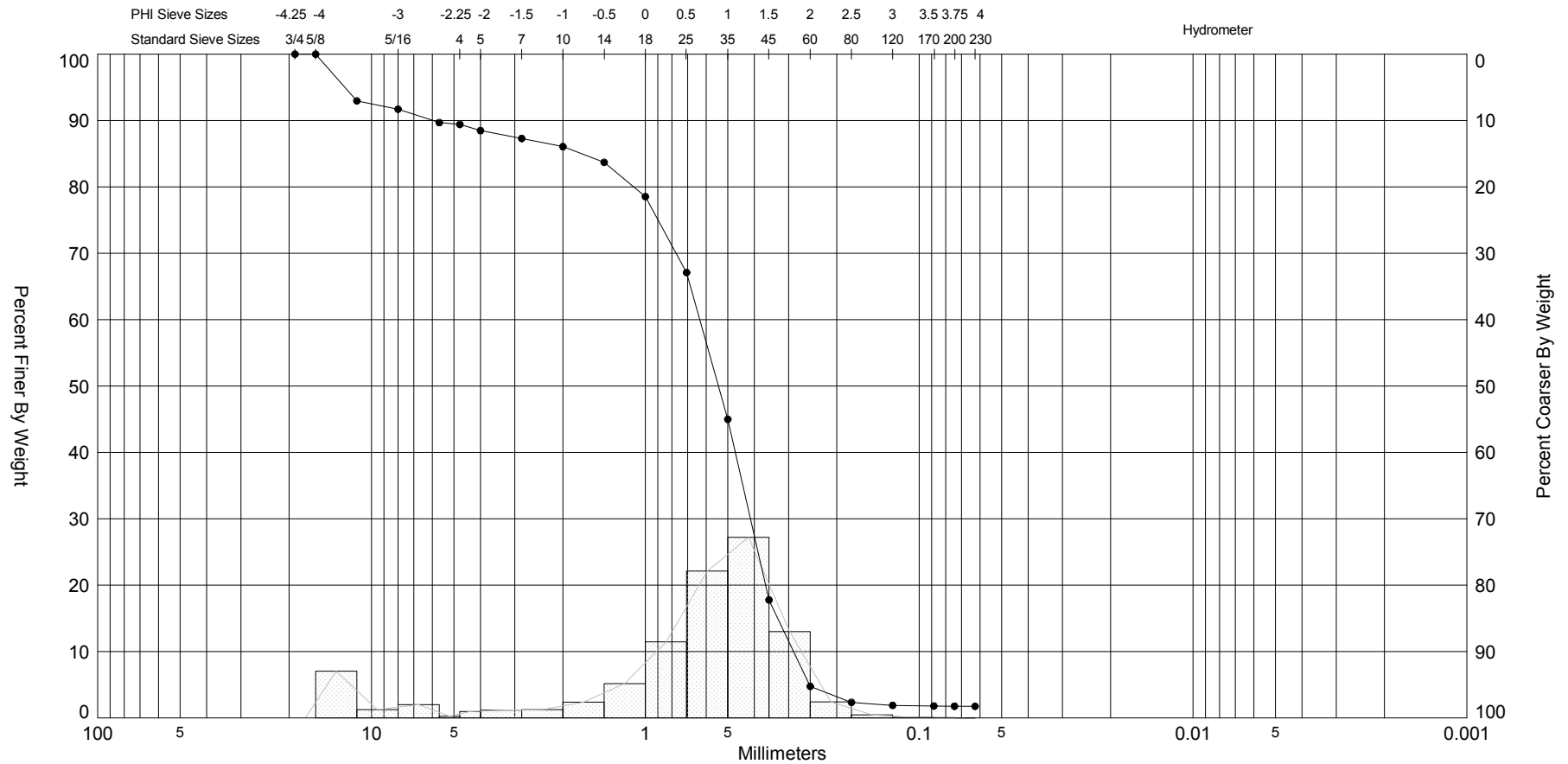
Comments:	Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values	Analyzed By:	10-29-15



CB&I  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Easting (X, m):	590,316
Northing (Y, m):	3,003,454
Horizontal System:	NAD 1983
Vertical System:	NAVD88

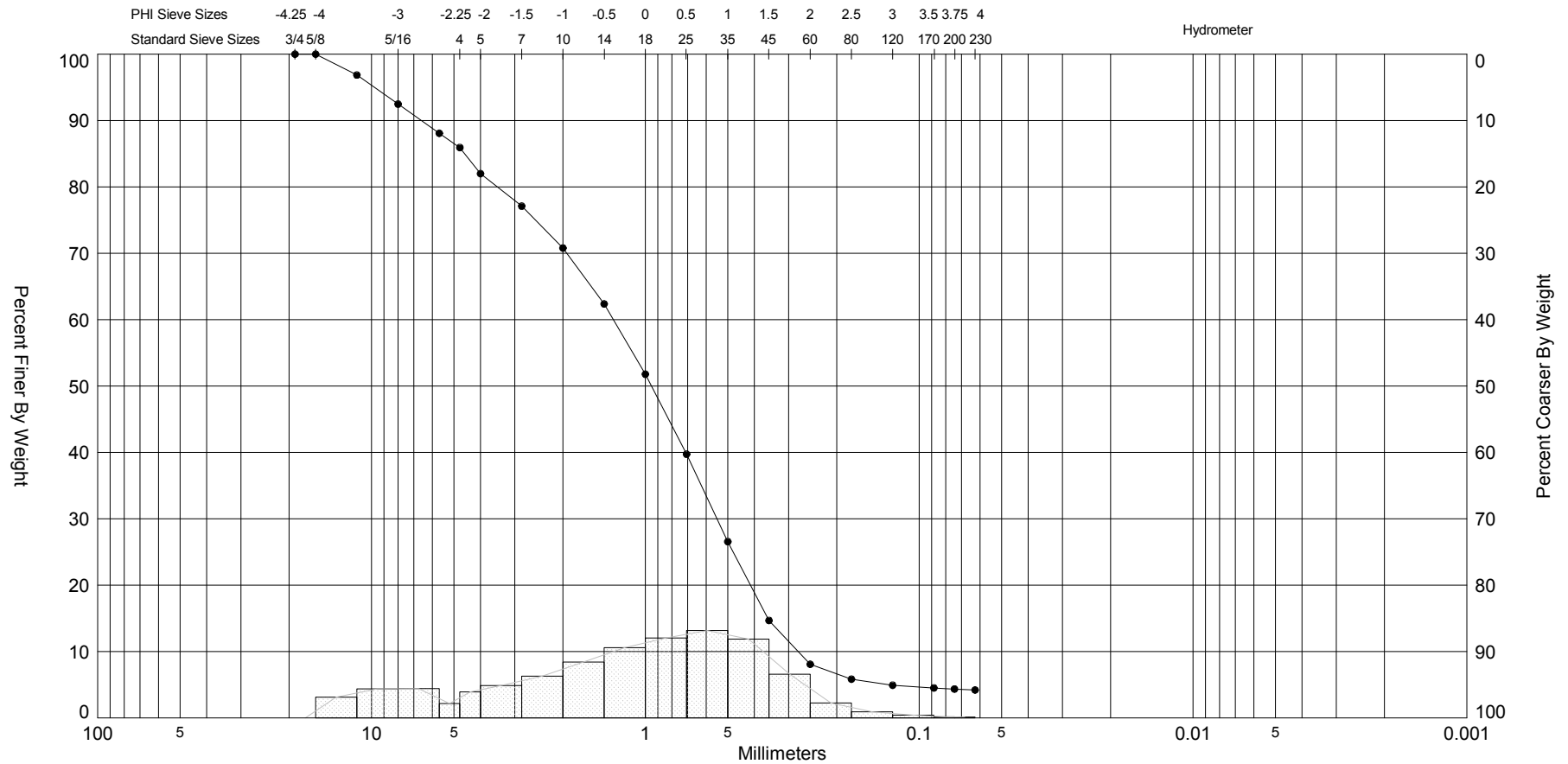
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC03 #1	—●—	-42.4	SW	#200 - 1.76 #230 - 1.75		85	0.89	0.39	-1.58	4.64	1.56	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-28-15 SMT
<p><b>CB&amp;I</b> Coastal Planning &amp; Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102</p>												Easting (X, m):	566,326
												Northing (Y, m):	3,082,299
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88

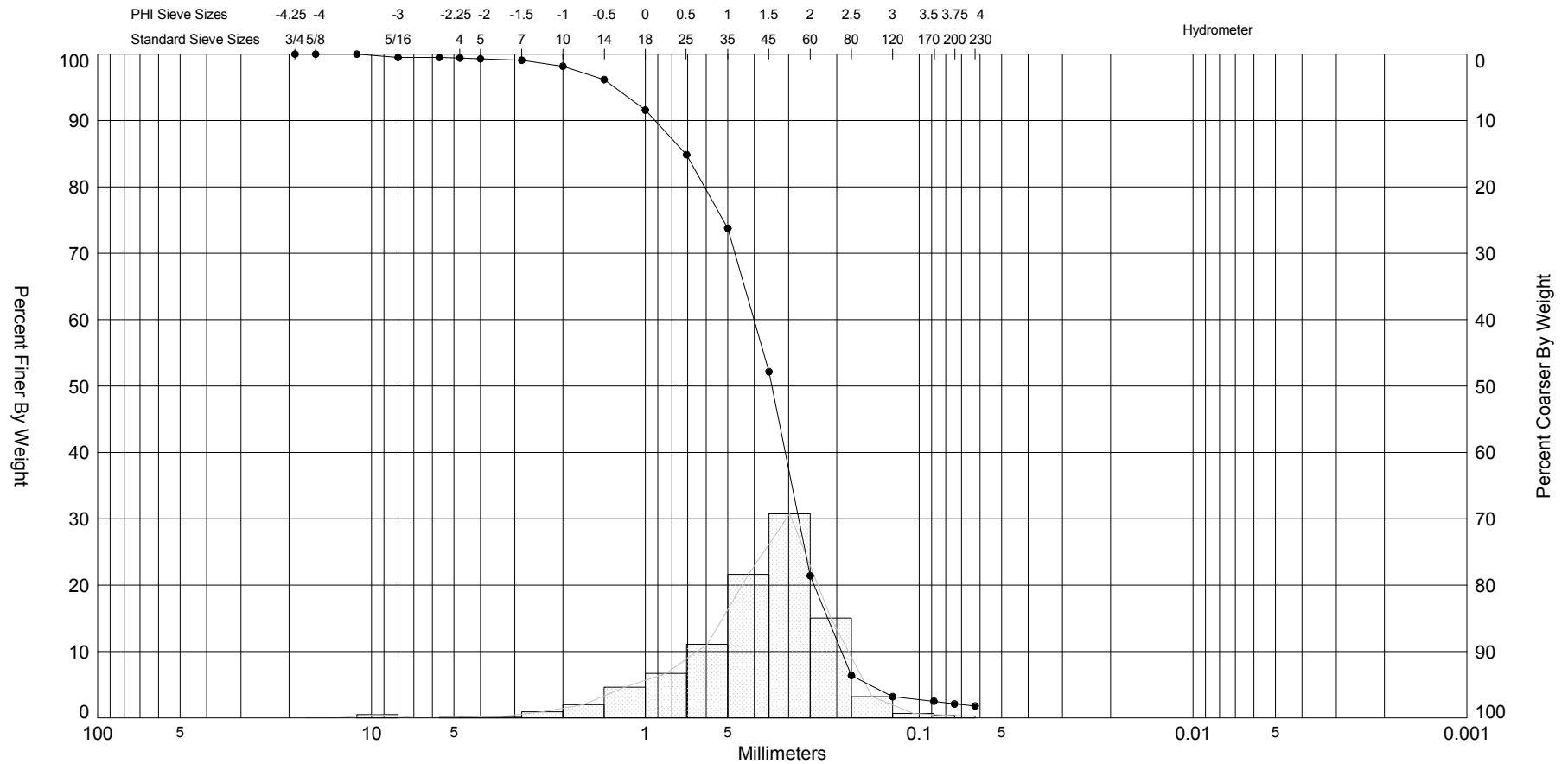
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC03 #2	—●—	-46.4	SW	#200 - 4.35 #230 - 4.21		89	0.07	-0.29	-0.39	2.42	1.61	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments: 11.49g (1.5" x 1.0") coral fragment removed prior to sieving												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-28-15
												Easting (X, m):	566.326
												Northing (Y, m):	3,082,299
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
CB&I Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													

SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16

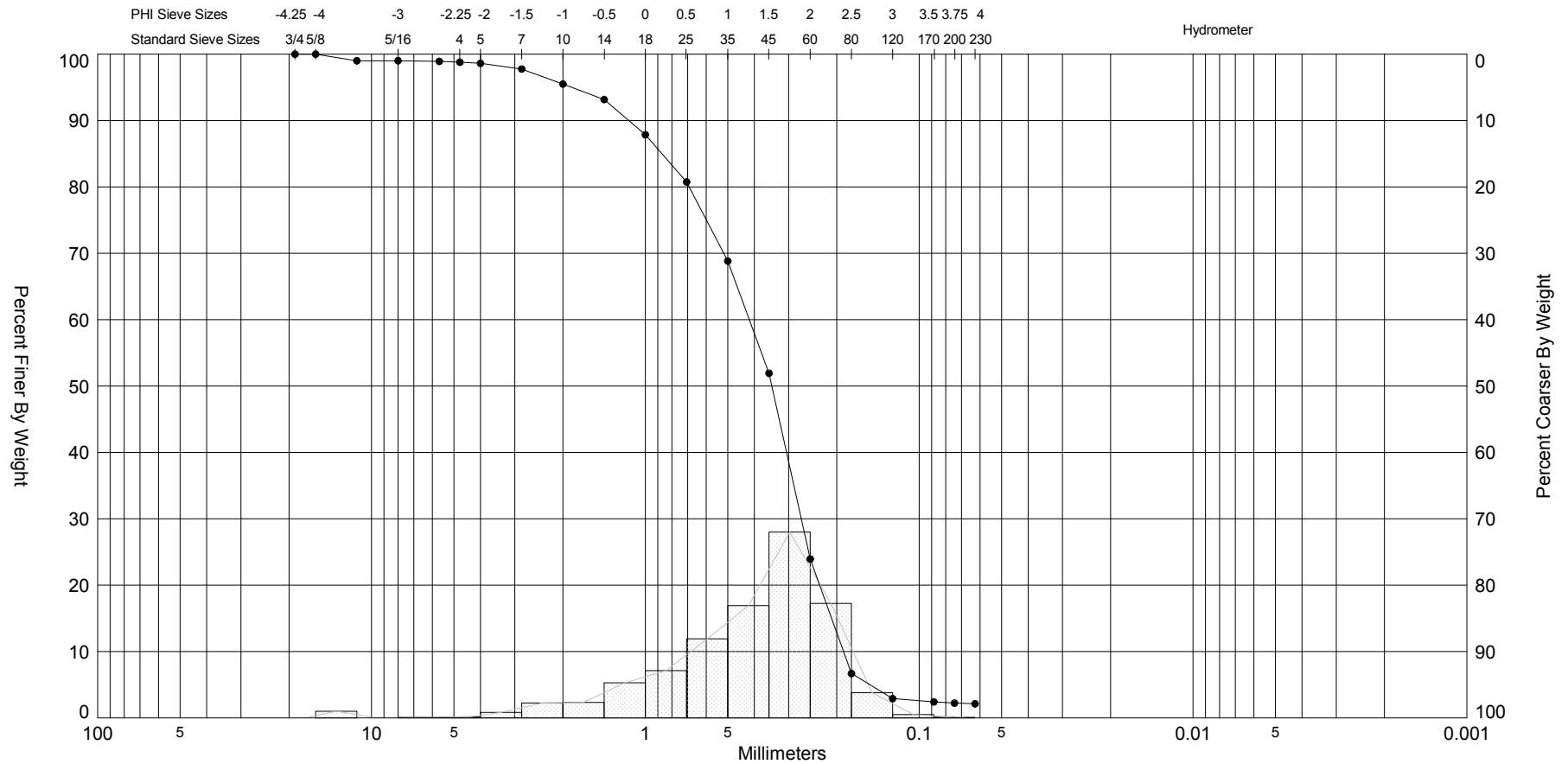


Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC03 #3	—●—	-52.8	SW	#200 - 2.11 #230 - 1.81		65	1.54	1.34	-1.17	6.26	0.93	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-28-15 SMT
 <b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102												Easting (X, m):	566,326
												Northing (Y, m):	3,082,299
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88



SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC03 #4	—●—	-57.7	SW	#200 - 2.23 #230 - 2.13		73	1.53	1.23	-1.5	6.58	1.11	Project Name:	Inventory of Potential Beach Nourishment and Coastal

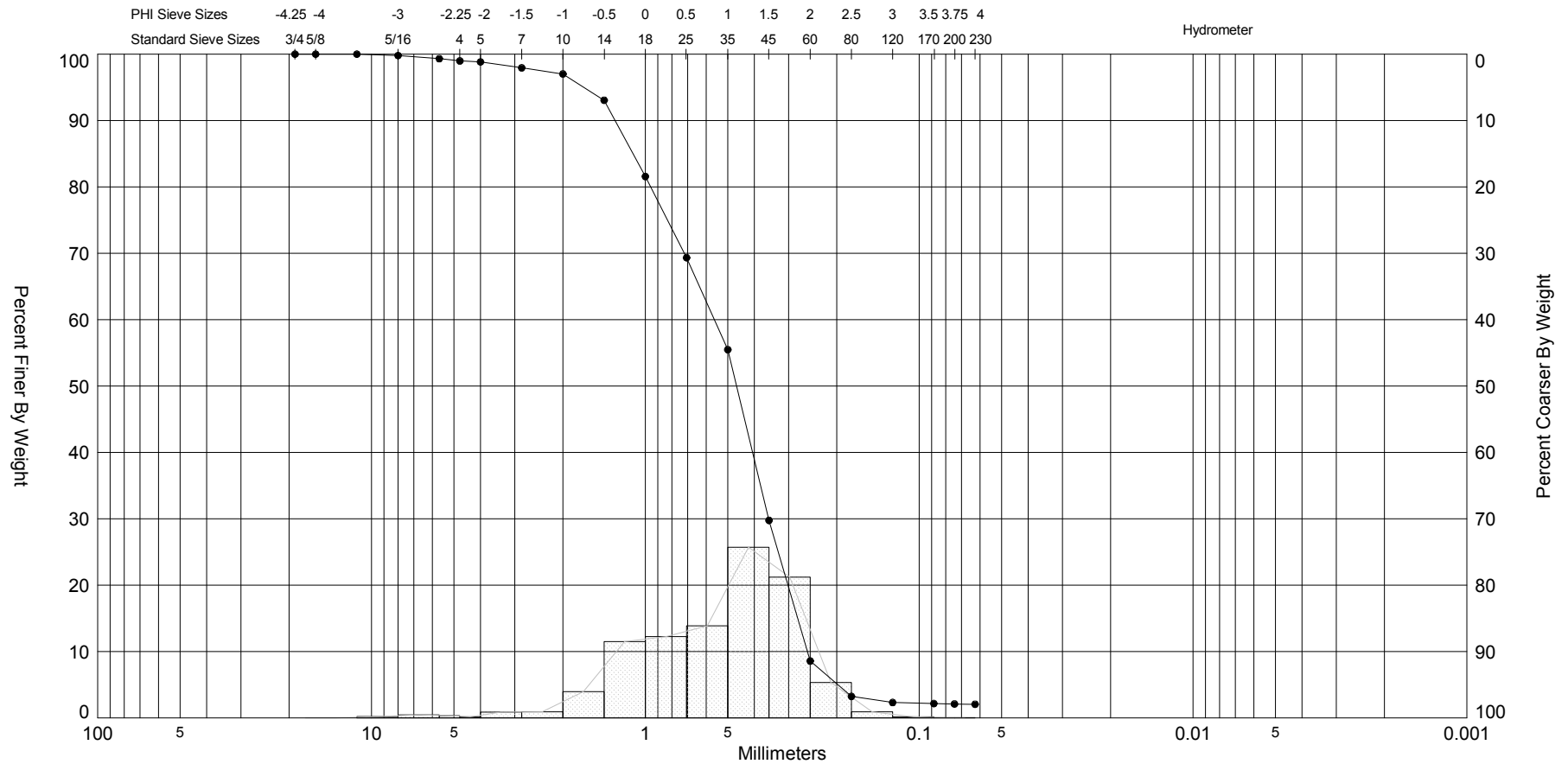
Comments:	Analysis Date:
Depths and elevations based on measured values	Analyzed By:
	Easting (X, m):




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 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Northing (Y, m):	3,082,299
Horizontal System:	NAD 1983
Vertical System:	NAVD88

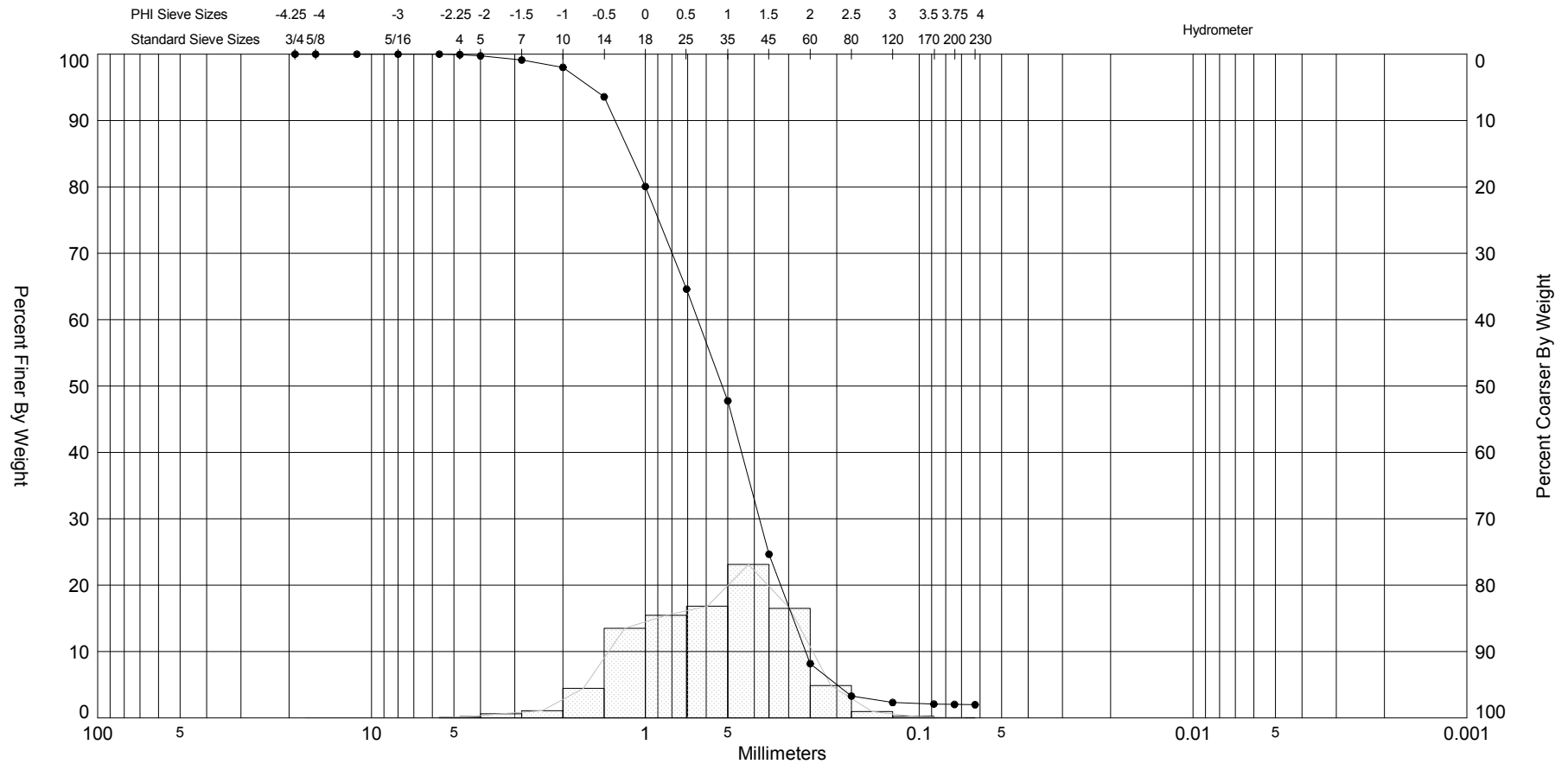
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC04 #1	—●—	-49.7	SW	#200 - 2.10 #230 - 2.06		48	1.11	0.88	-0.89	4.35	0.96	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-29-15 SMT
												Easting (X, m):	560.596
												Northing (Y, m):	3,084.074
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
CB&I Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													

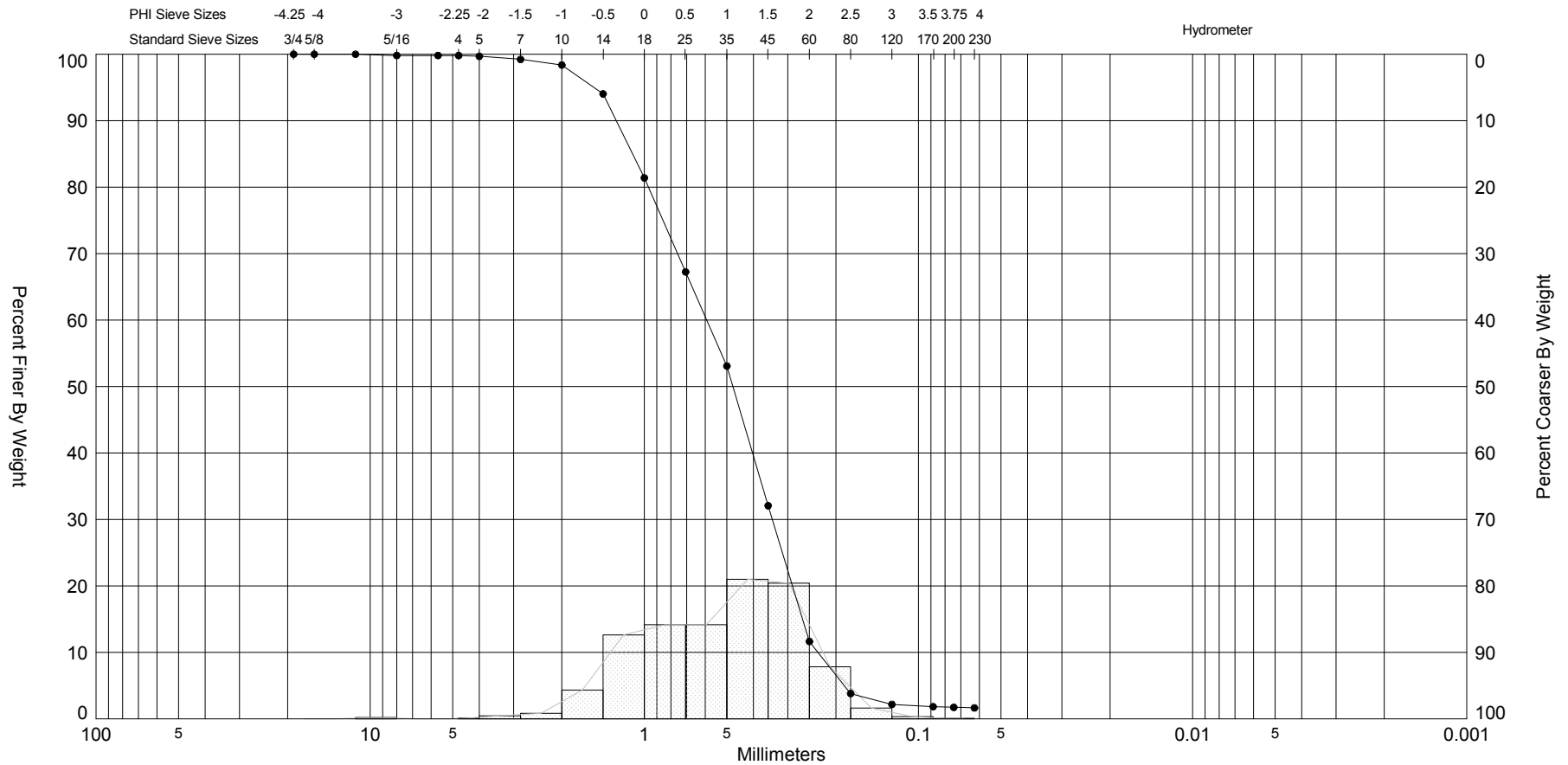
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC04 #2	—●—	-52.7	SW	#200 - 2.03 #230 - 1.99		57	0.93	0.81	-0.28	2.92	0.89	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-29-15 SMT
												Easting (X, m):	560.596
												Northing (Y, m):	3,084.074
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
<b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													

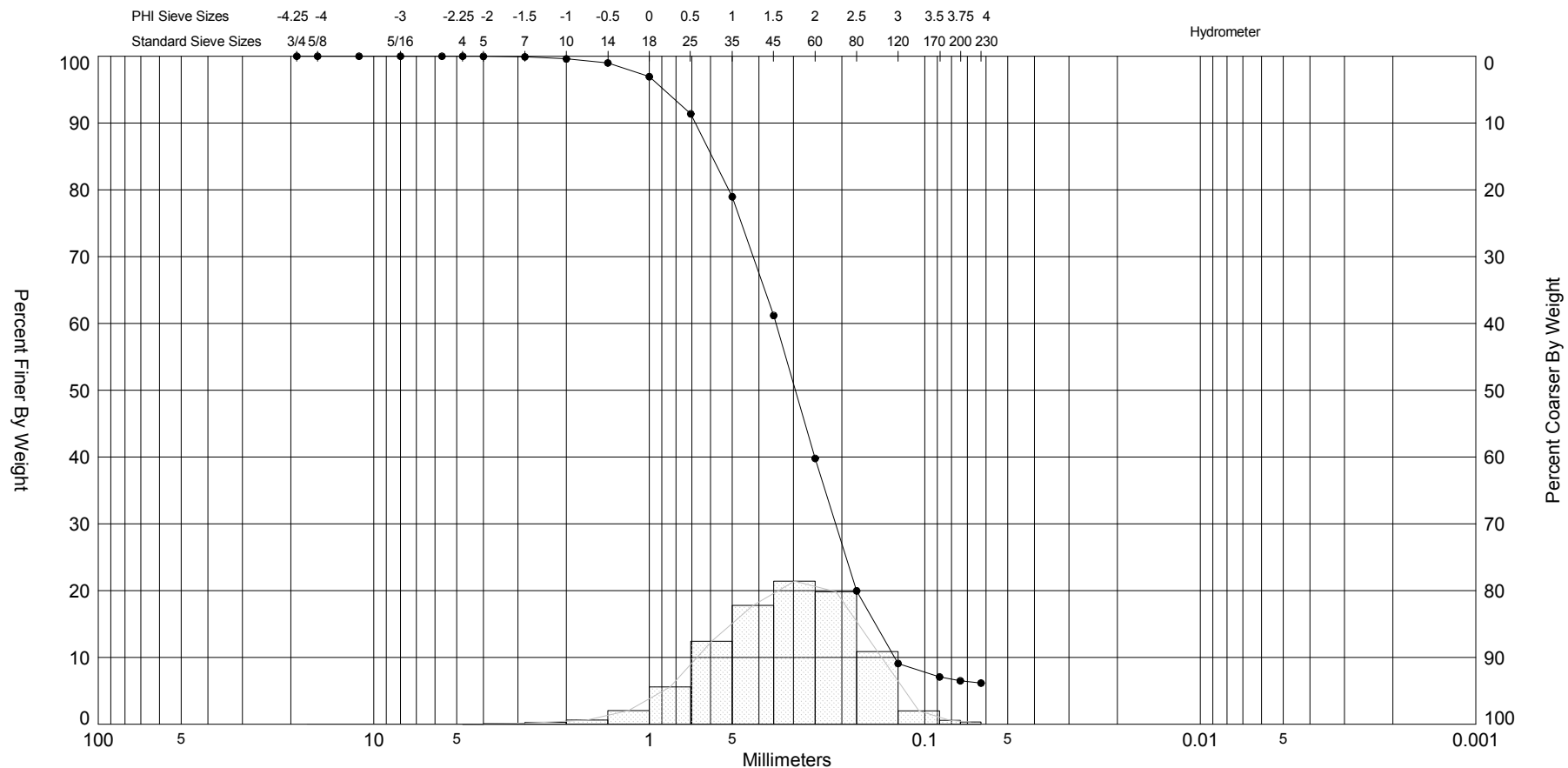
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC04 #3	—●—	-55.7	SW	#200 - 1.73 #230 - 1.65		52	1.07	0.92	-0.38	3.19	0.94	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-29-15 SMT
												Easting (X, m):	560.596
												Northing (Y, m):	3,084,074
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
<p style="text-align: center;"> <b>CB&amp;I</b>            Coastal Planning &amp; Engineering, Inc.            2481 NW Boca Raton Blvd.            Boca Raton, FL 33431            ph (561) 391 8102         </p>													

SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC04 #4	—●—	-59.9	SP-SM	#200 - 6.50 #230 - 6.16		78	1.76	1.63	-0.36	3.24	0.85	Project Name:	Inventory of Potential Beach Nourishment and Coastal

Comments:

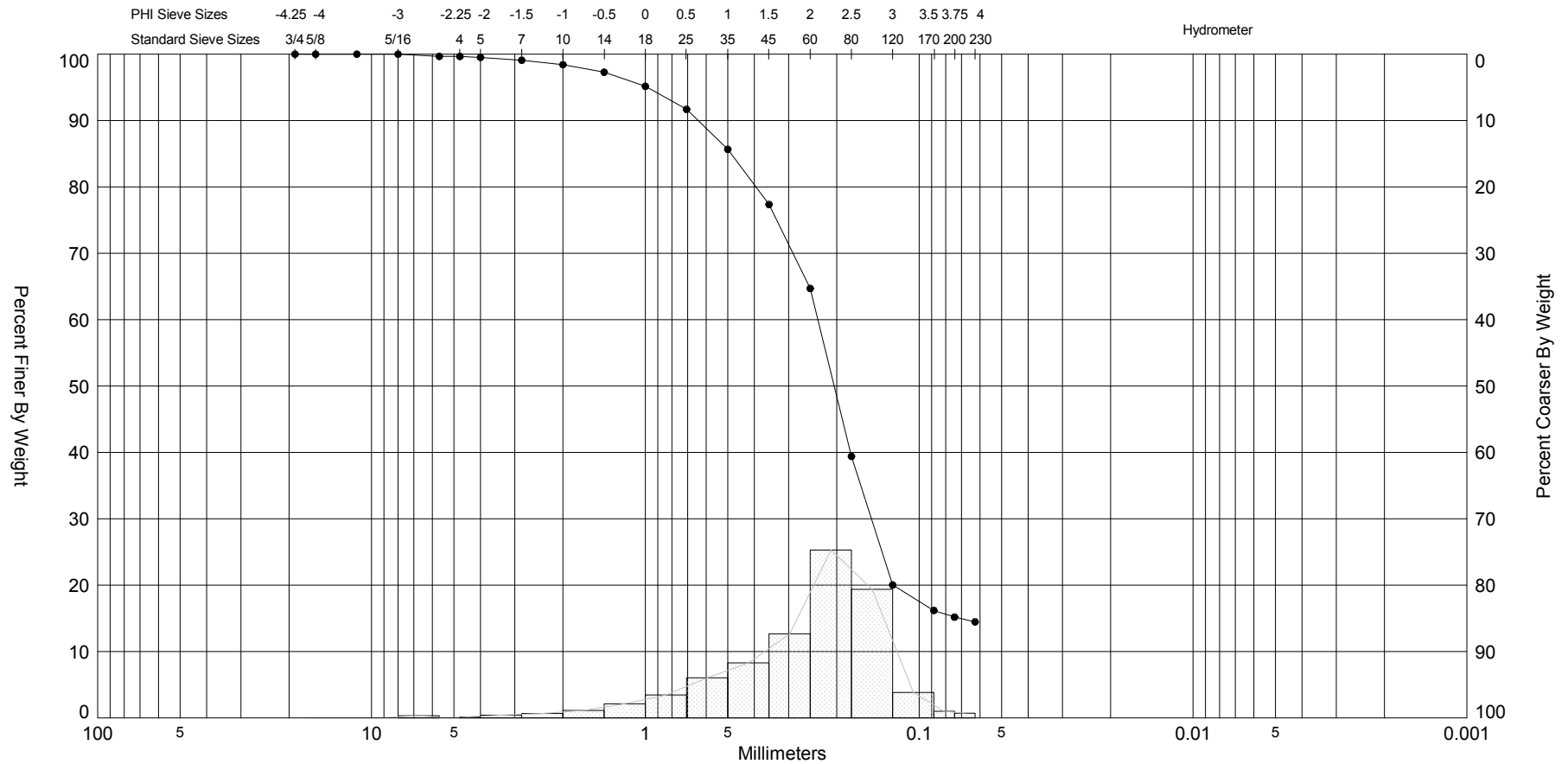
Depths and elevations based on measured values




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ph (561) 391 8102

Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Analyzed By:	10-29-15
Easting (X, m):	SMT
Northing (Y, m):	560.596
Horizontal System:	3,084.074
Vertical System:	NAD 1983
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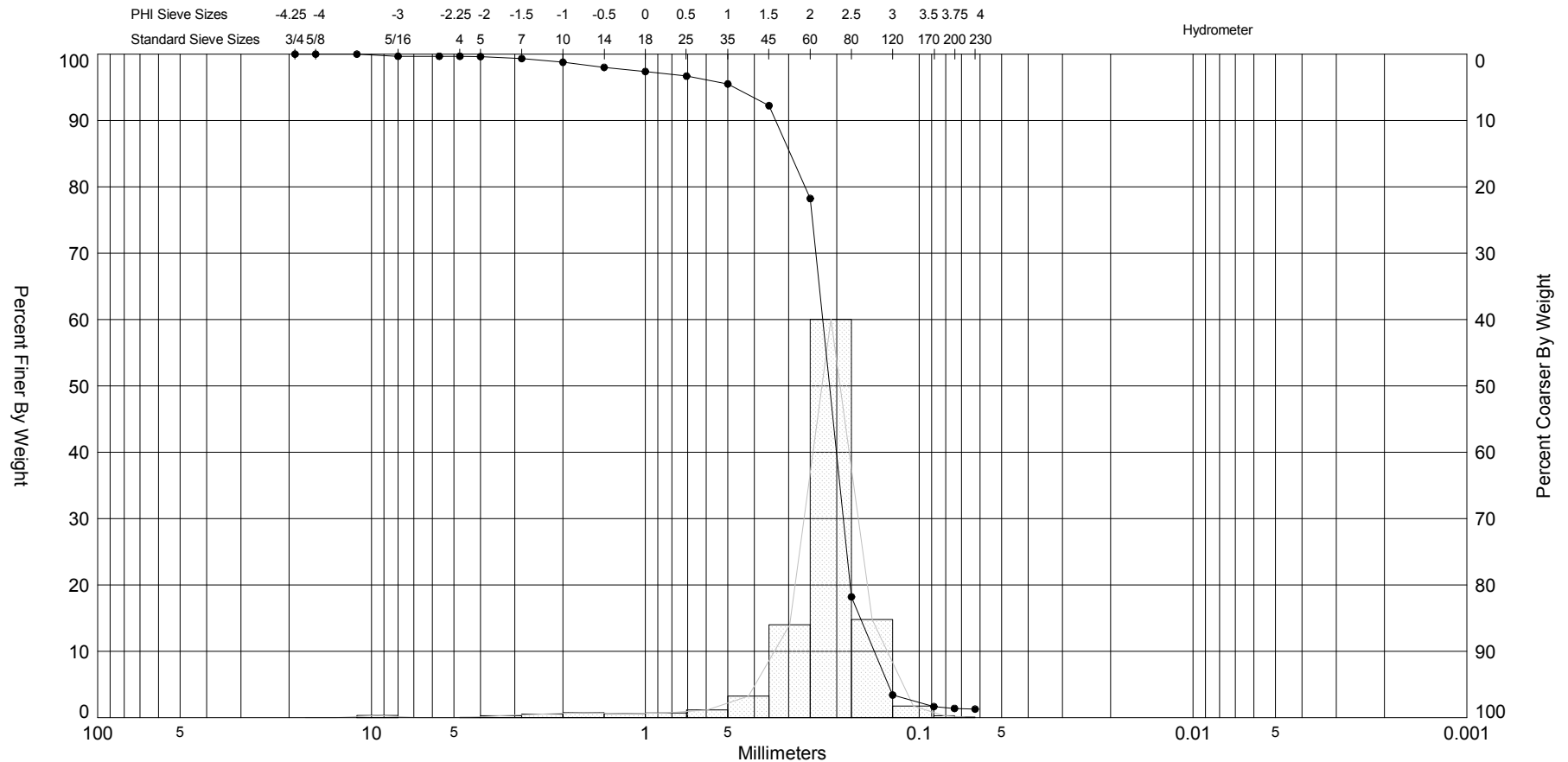
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC04 #5	—●—	-61.5	SC	#200 - 15.19 #230 - 14.47		64	2.29	1.9	-1.31	5.4	1.03	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-29-15 SMT
												Easting (X, m):	560.596
												Northing (Y, m):	3,084.074
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
CB&I Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													

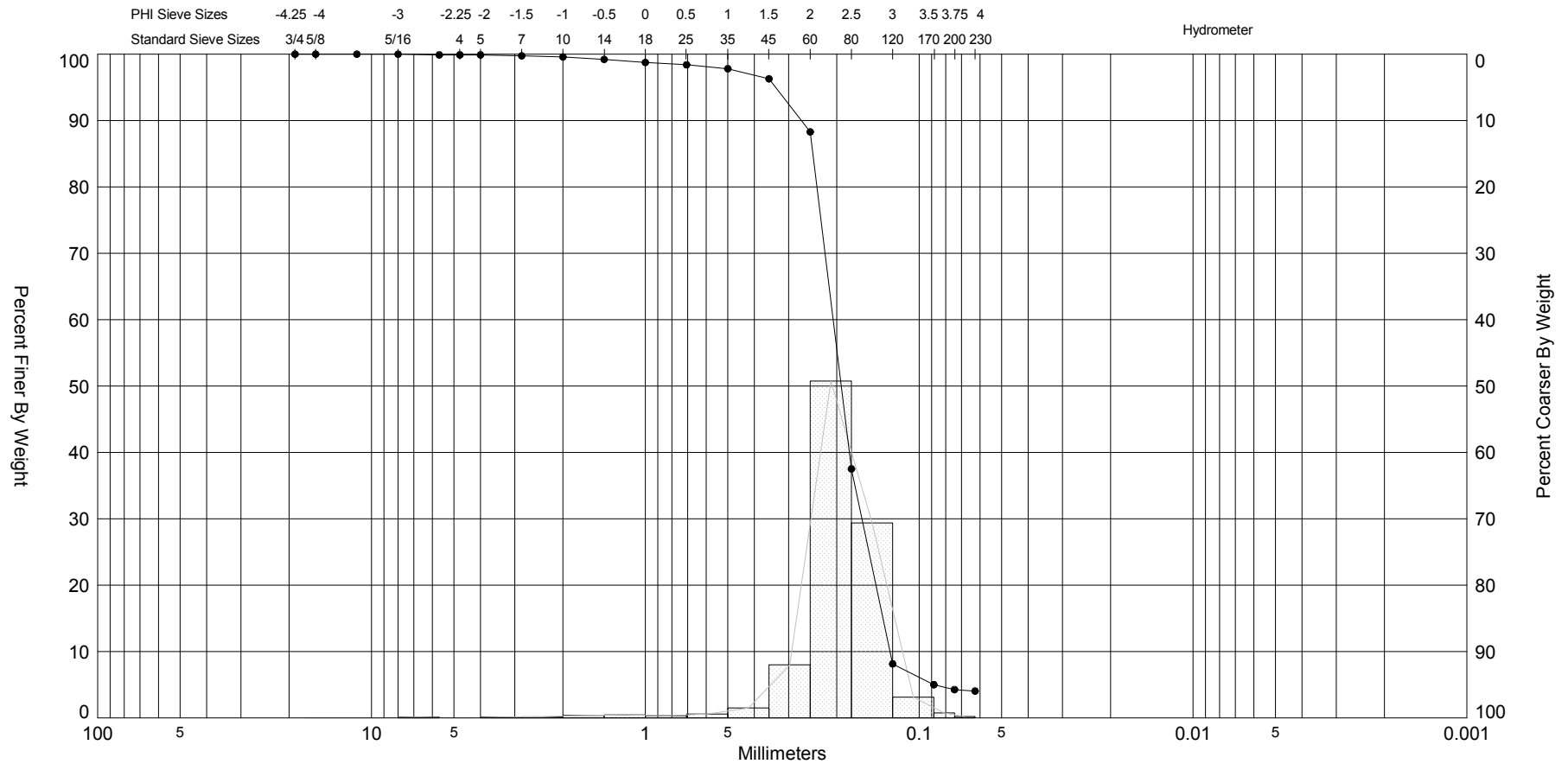
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Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC08 #1	—●—	-63.0	SP	#200 - 1.39 #230 - 1.29		8	2.24	2.12	-3.43	20.53	0.71	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-27-15 SMT
 <b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102												Easting (X, m):	524.496
												Northing (Y, m):	3,210,546
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88

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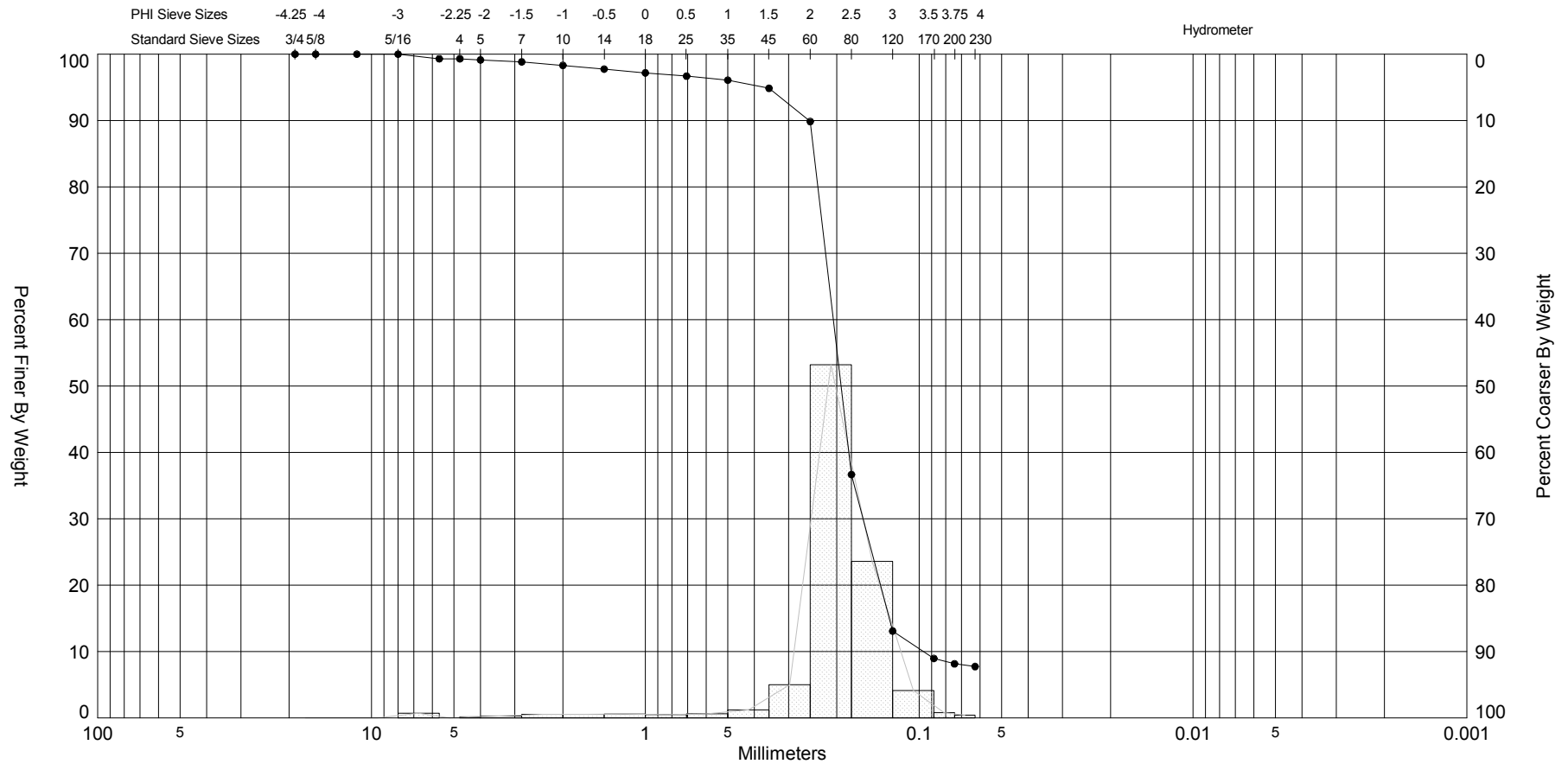


Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	


Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC08 #2	—●—	-67.0	SP	#200 - 4.27 #230 - 4.05		7	2.38	2.33	-2.96	21.01	0.57	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-28-15 SMT
												Easting (X, m):	524.496
												Northing (Y, m):	3,210,546
												Horizontal System:	NAD 1983
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<b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													



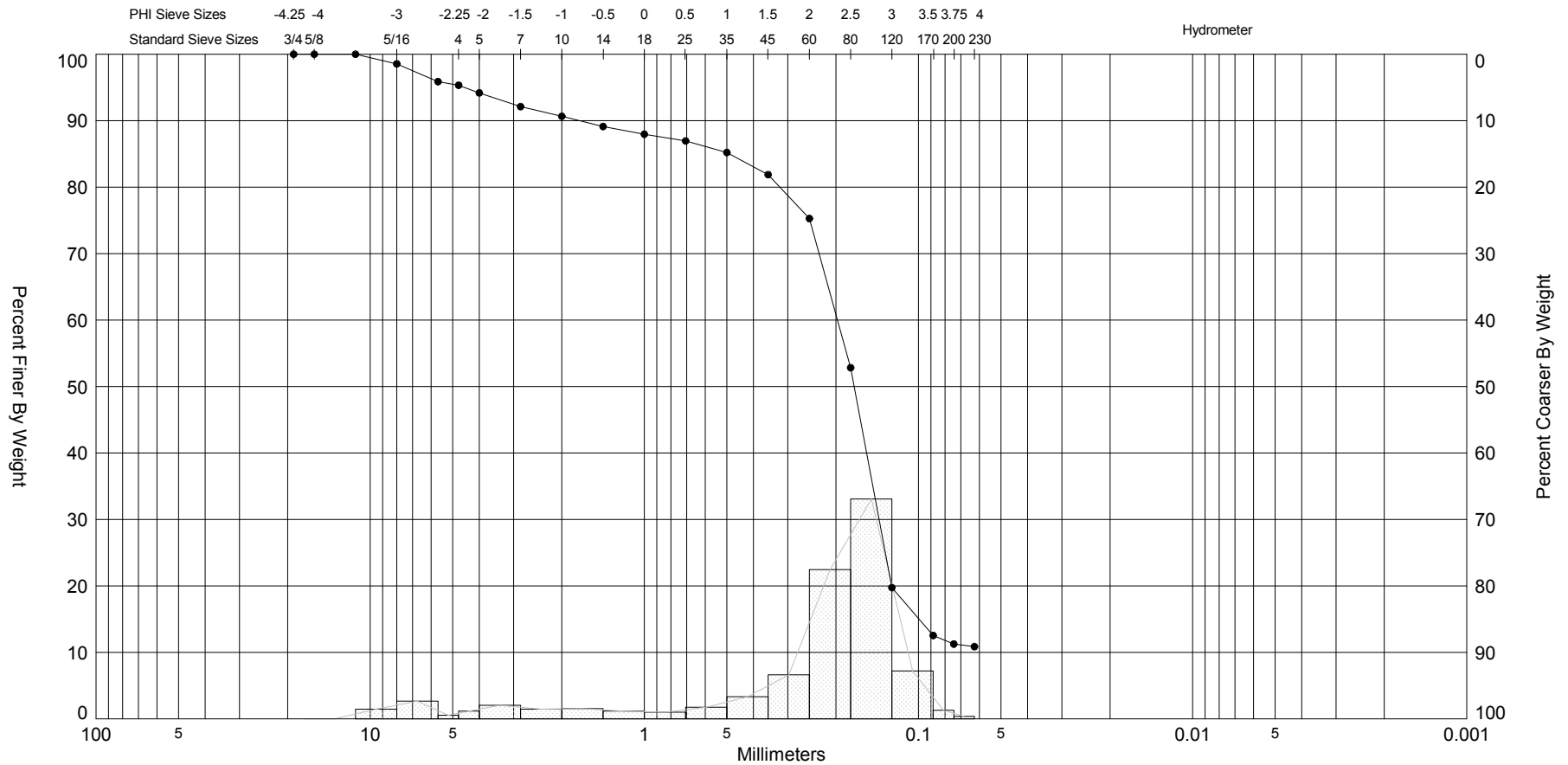
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC08 #3	—●—	-69.4	SP-SM	#200 - 8.15 #230 - 7.74		10	2.37	2.27	-3.55	20.12	0.8	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-28-15 SMT
												Easting (X, m):	524.496
												Northing (Y, m):	3,210,546
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
<p style="text-align: center;"> <b>CB&amp;I</b>            Coastal Planning &amp; Engineering, Inc.            2481 NW Boca Raton Blvd.            Boca Raton, FL 33431            ph (561) 391 8102         </p>													

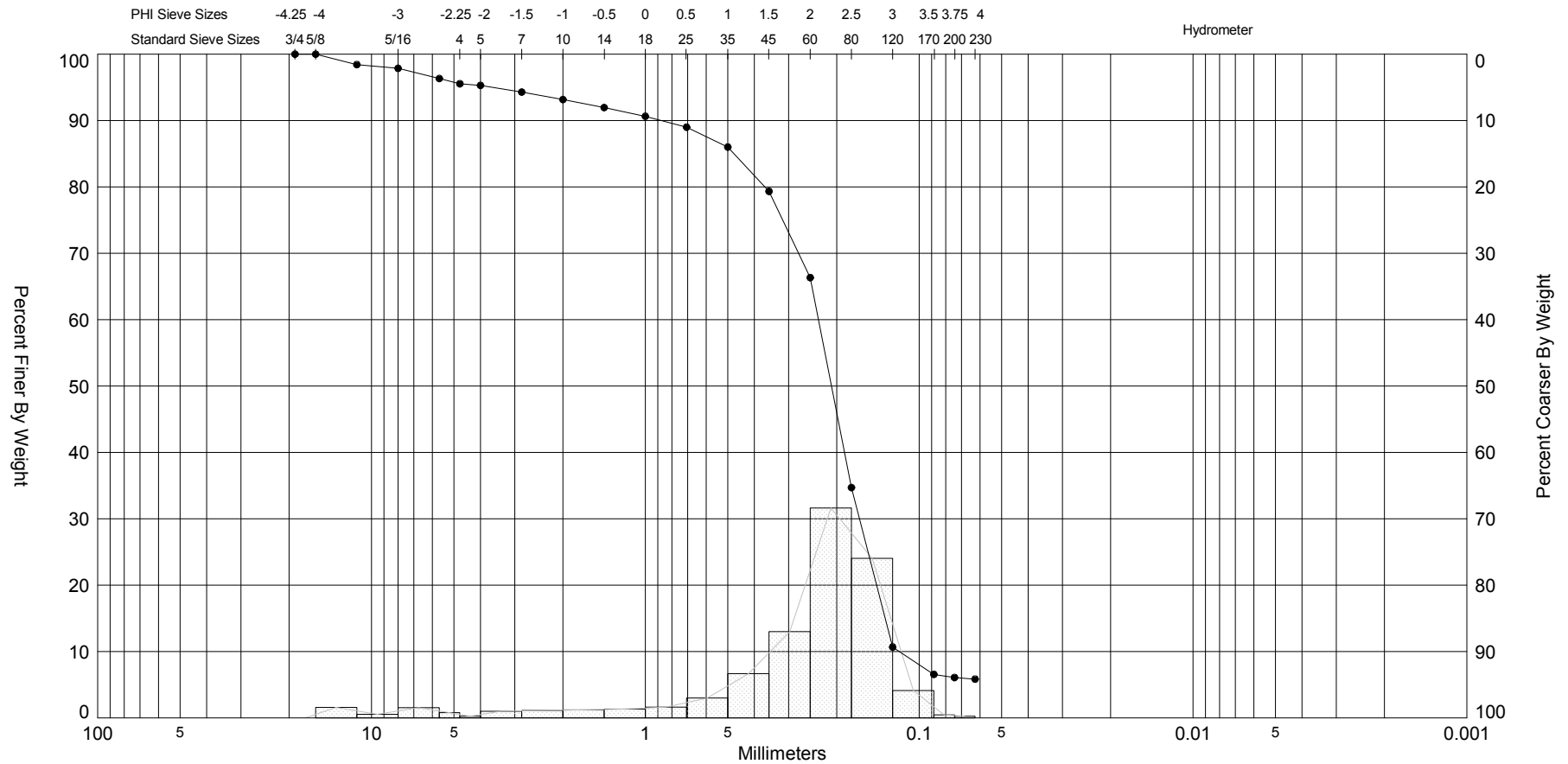
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC08 #4	—●—	-72.4	SW-SM	#200 - 11.26 #230 - 10.87		22	2.54	1.86	-1.84	5.37	1.62	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-28-15 SMT
 <div style="text-align: center;"> <b>CB&amp;I</b>            Coastal Planning &amp; Engineering, Inc.            2481 NW Boca Raton Blvd.            Boca Raton, FL 33431            ph (561) 391 8102         </div>												Easting (X, m):	524.496
												Northing (Y, m):	3,210,546
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88

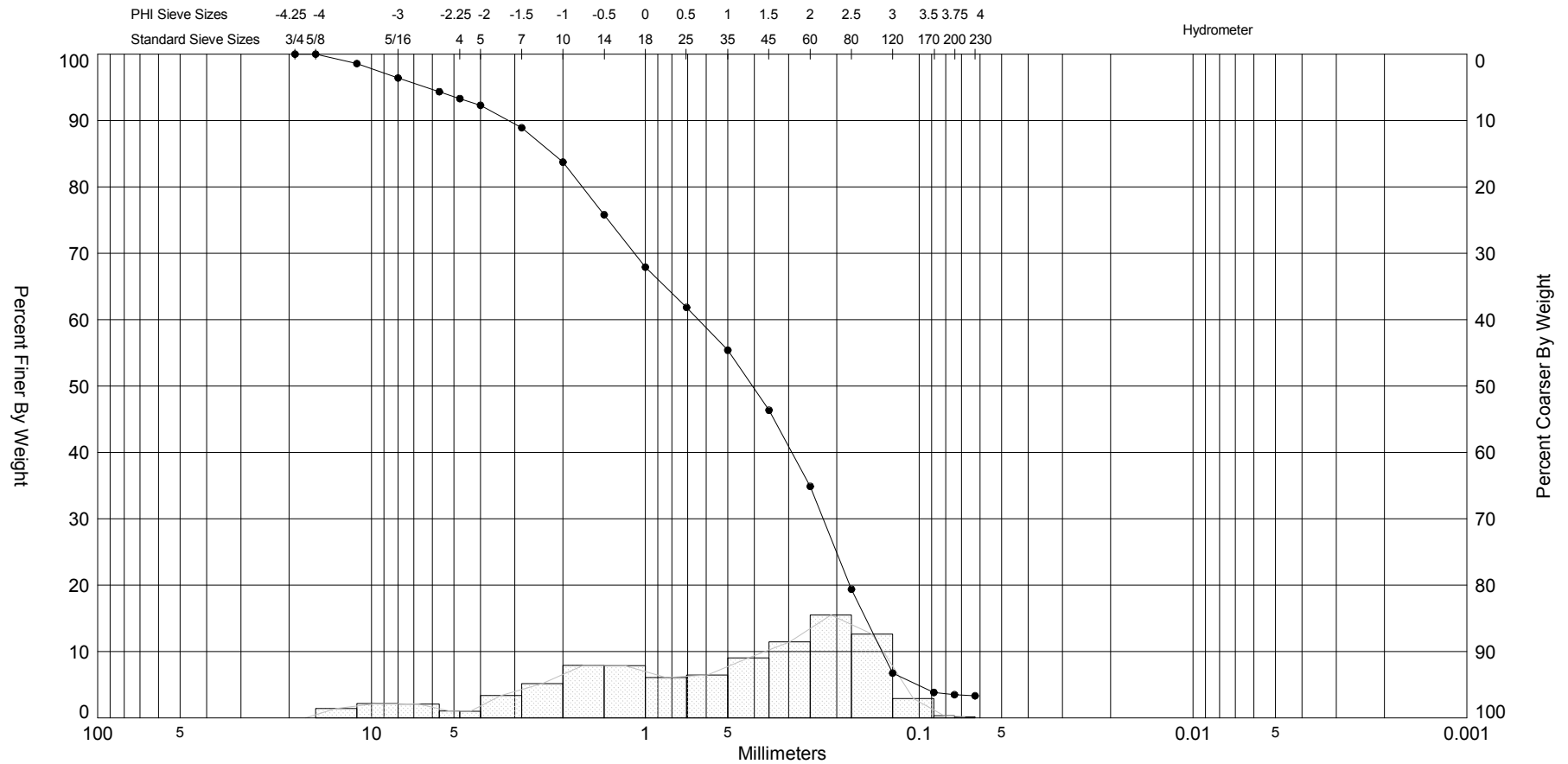
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC08 #5	—●—	-77.6	SW-SM	#200 - 6.09 #230 - 5.85		40	2.26	1.79	-2.2	7.69	1.45	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-28-15 SMT
 <b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102												Easting (X, m):	524.496
												Northing (Y, m):	3,210,546
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88

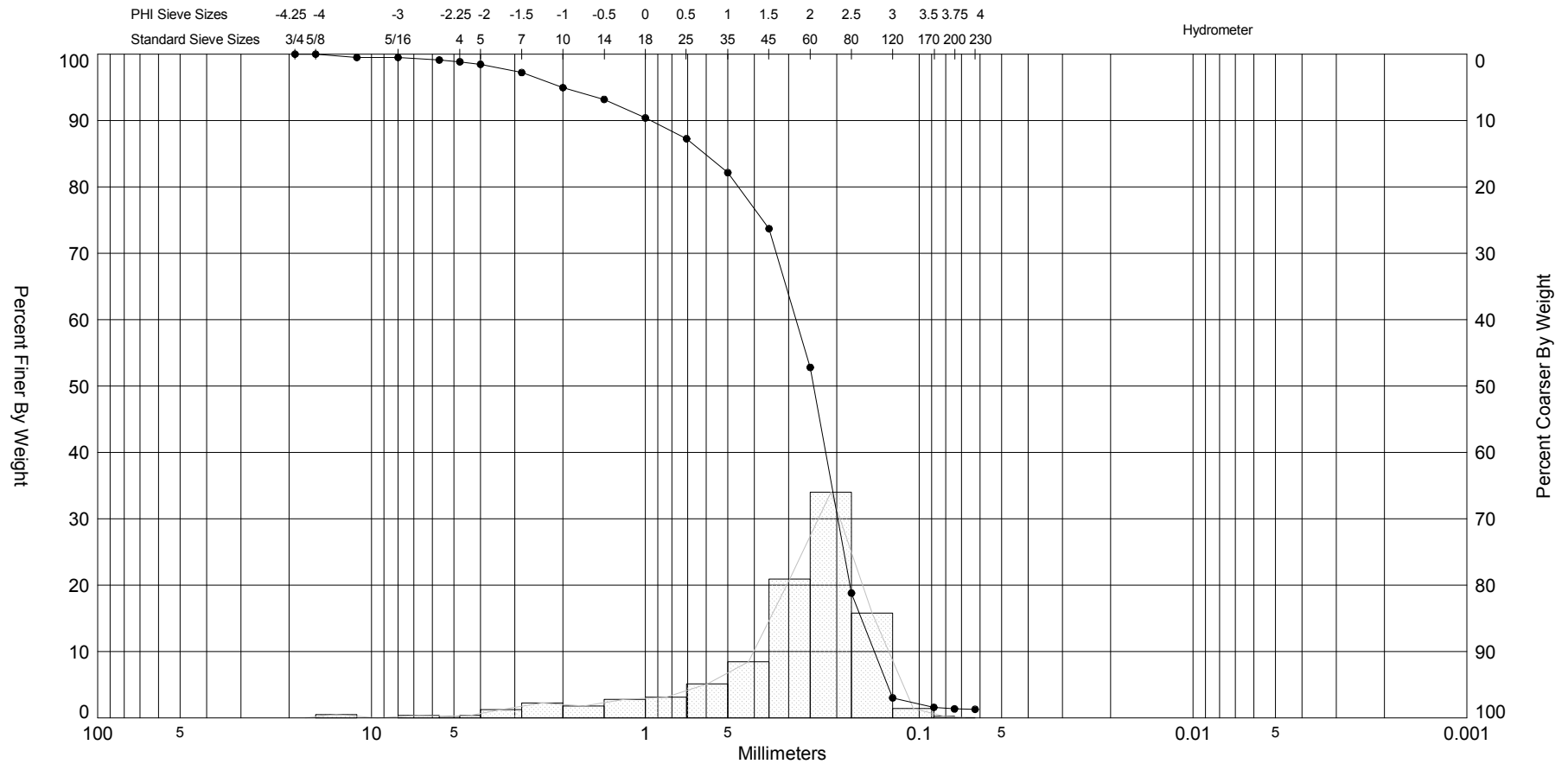
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC08 #6	—●—	-79.7	SW	#200 - 3.50 #230 - 3.33		65	1.3	0.78	-0.66	2.58	1.76	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-28-15 SMT
												Easting (X, m):	524.496
												Northing (Y, m):	3,210,546
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
<b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													

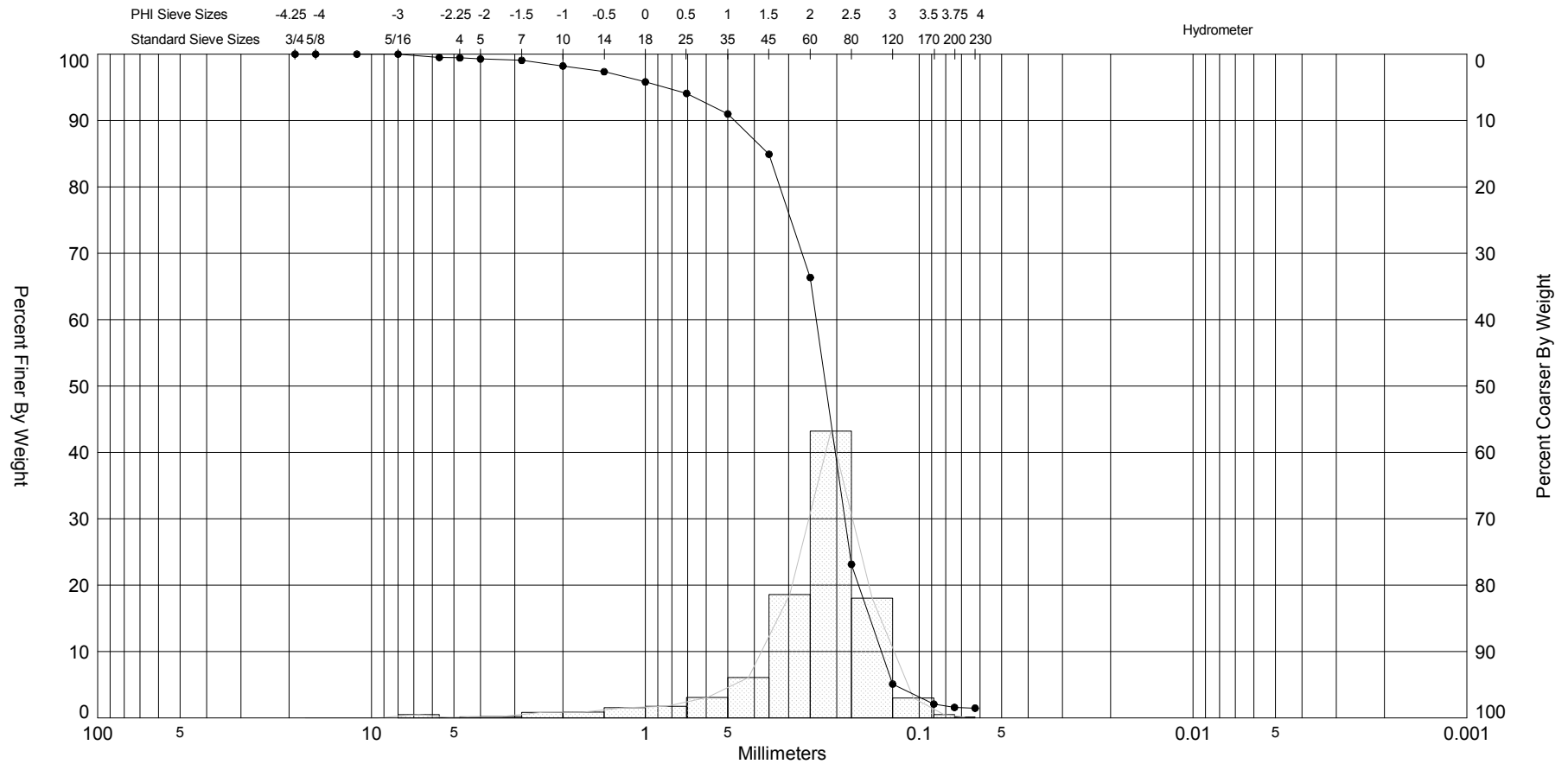
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC10 #1	—●—	-61.2	SW	#200 - 1.36 #230 - 1.30		25	2.04	1.68	-1.84	6.81	1.16	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-28-15 DA
												Easting (X, m):	505,911
												Northing (Y, m):	3,247,612
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
CB&I Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													

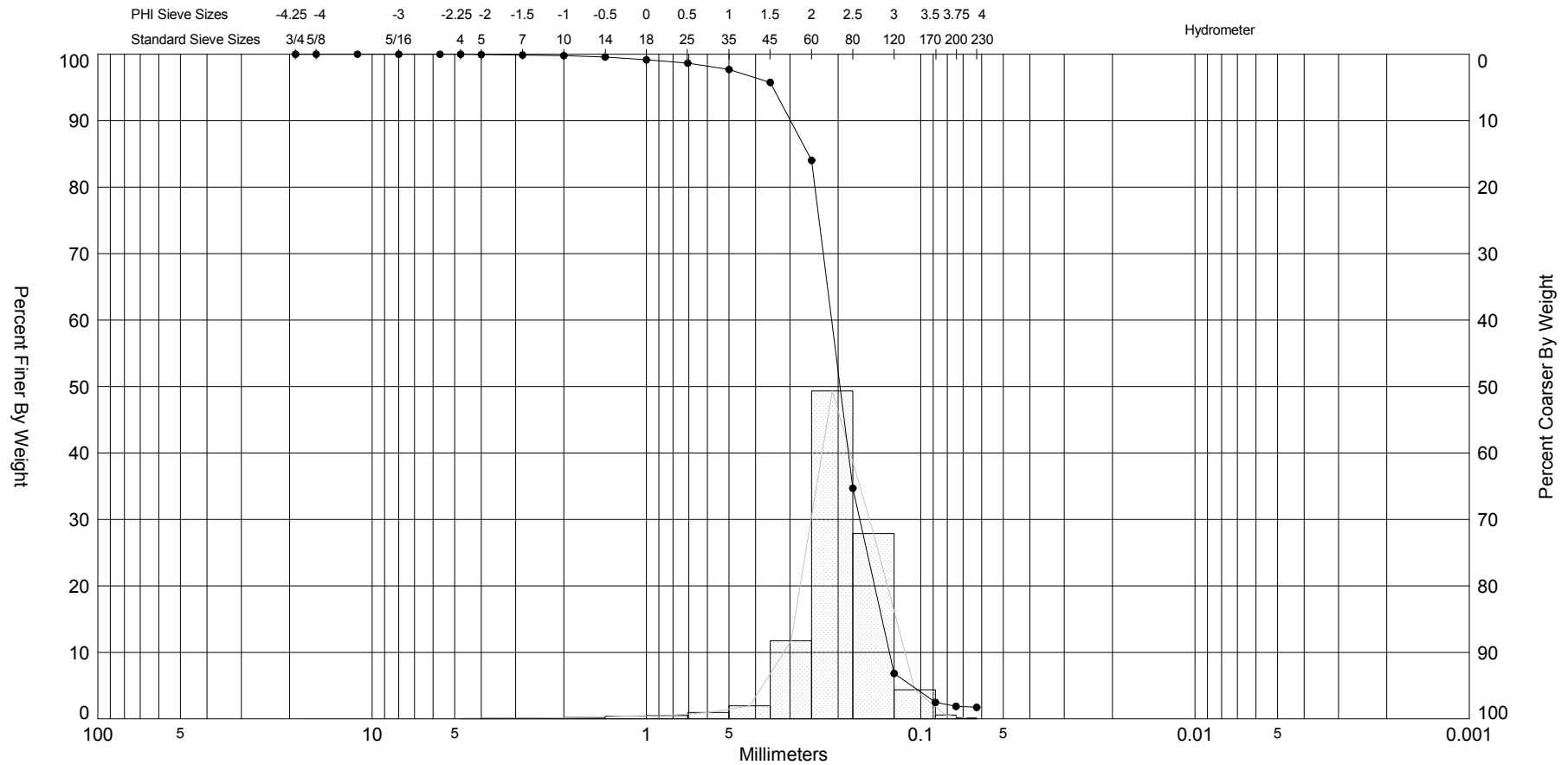
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC10 #2	—●—	-63.4	SW	#200 - 1.58 #230 - 1.47		15	2.19	2	-2.24	10.29	0.88	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-28-15 DA
												Easting (X, m):	505,911
												Northing (Y, m):	3,247,612
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
<b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													

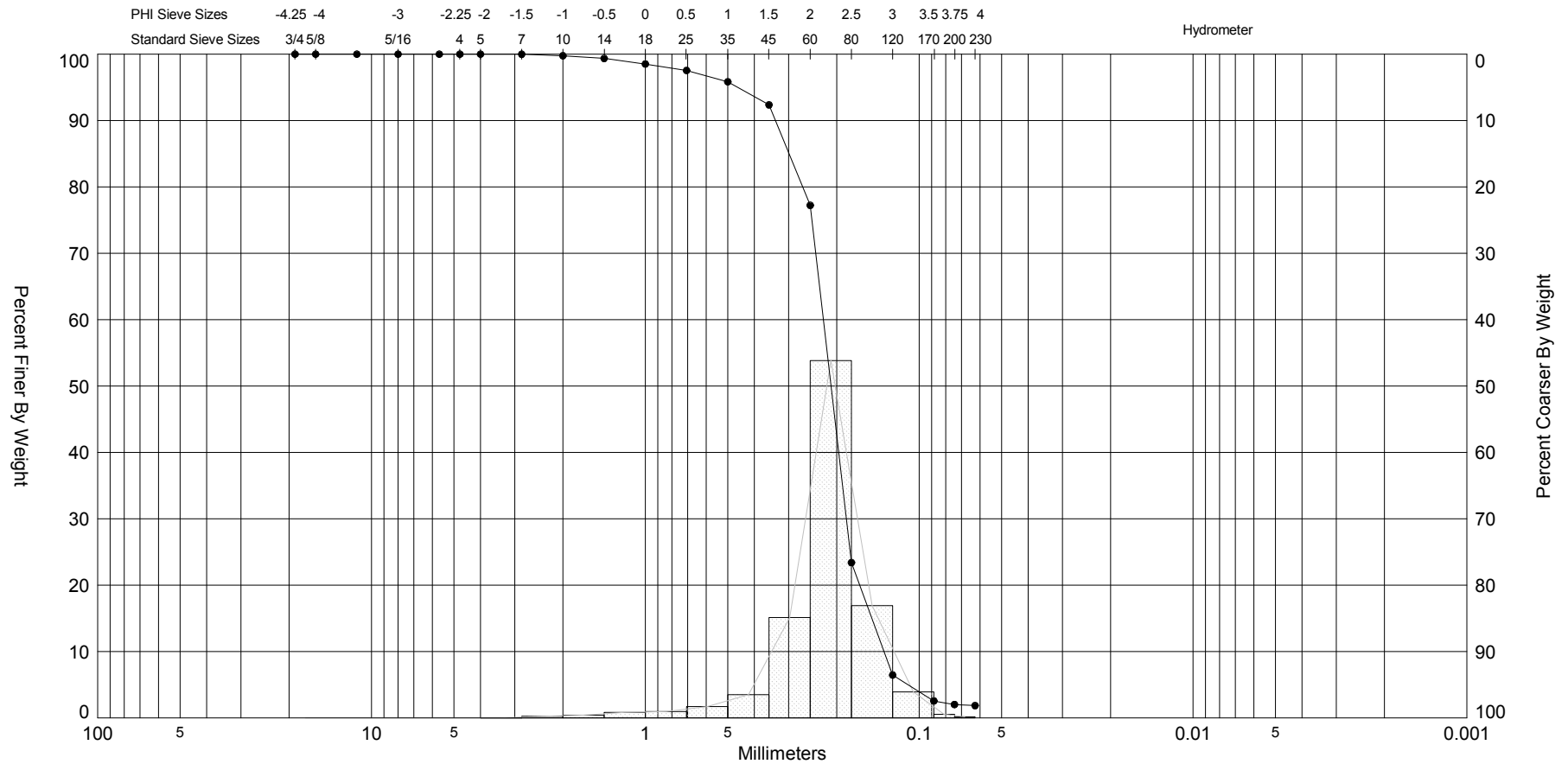
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC10 #3	—●—	-65.3	SP	#200 - 1.88 #230 - 1.74		9	2.34	2.32	-1.99	13.54	0.54	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-29-15 DA
 <b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102												Easting (X, m):	505.911
												Northing (Y, m):	3,247,612
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88

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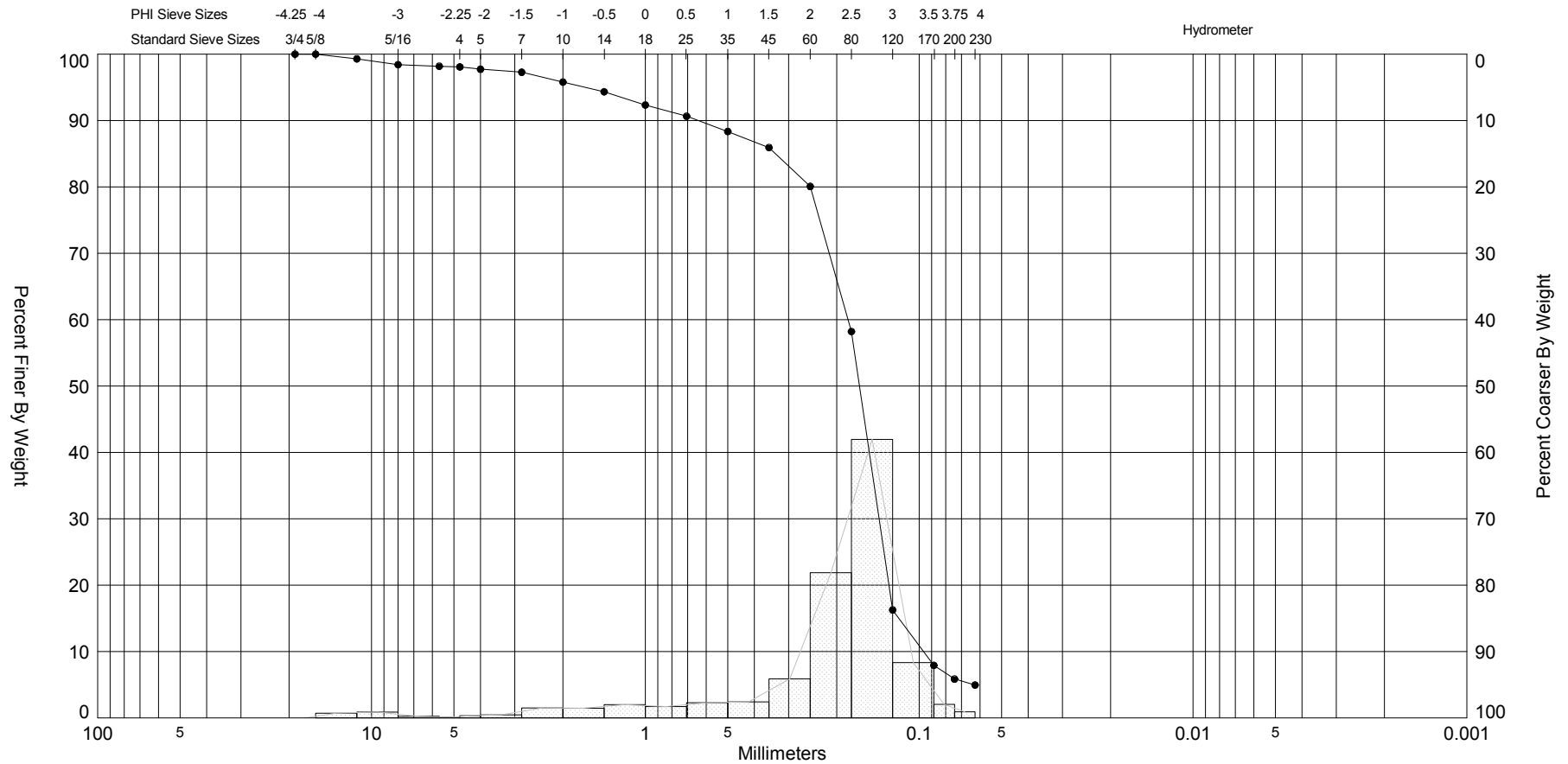


Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	


Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC10 #4	—●—	-66.6	SP	#200 - 2.02 #230 - 1.86		12	2.25	2.19	-1.76	9.73	0.61	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-29-15
												Easting (X, m):	505,911
												Northing (Y, m):	3,247,612
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
<b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													



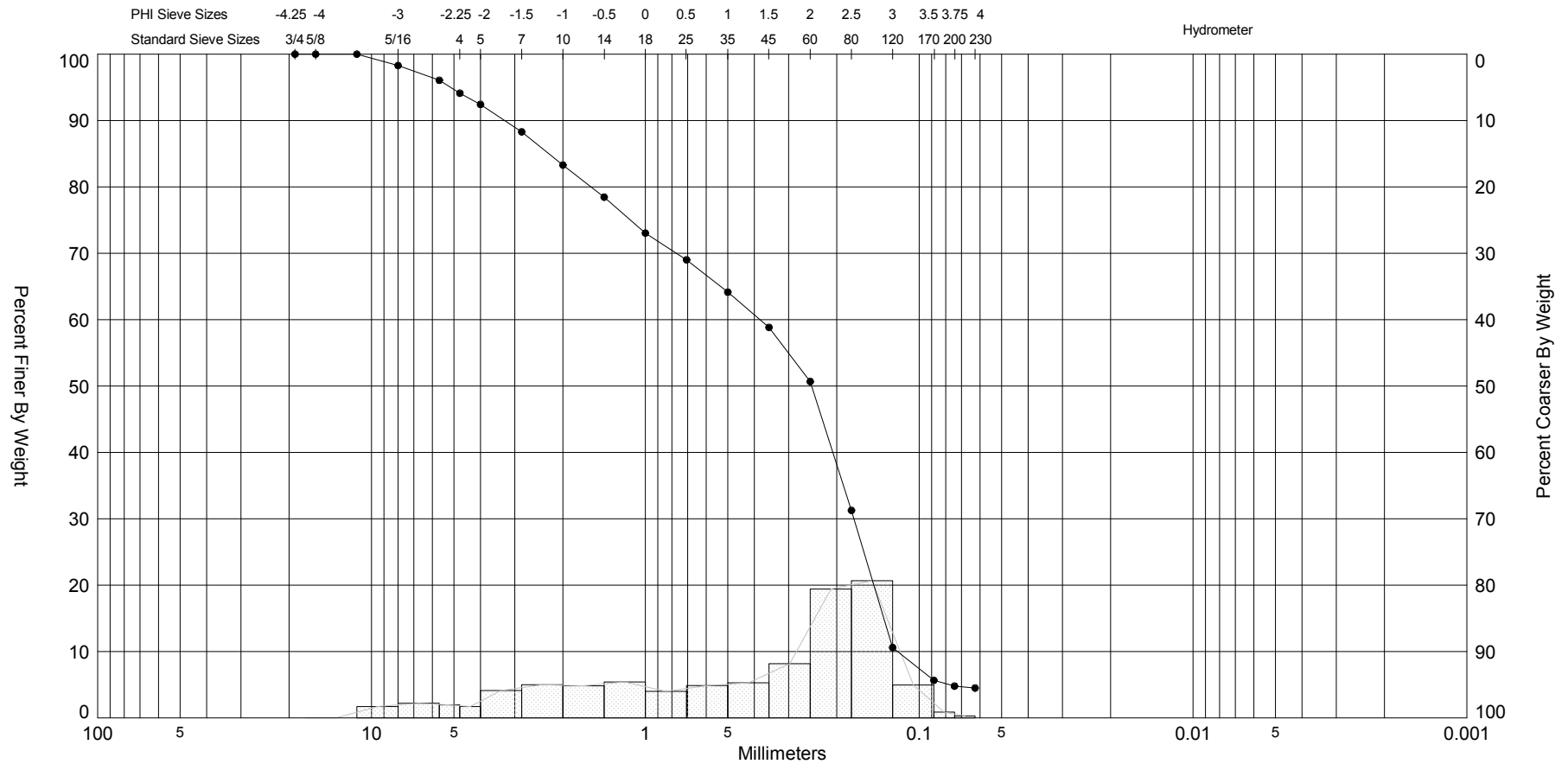
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC10 #5	—●—	-68.2	SW-SM	#200 - 5.86 #230 - 4.95		22	2.6	2.18	-2.43	9.45	1.29	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-29-15 DA
												Easting (X, m):	505,911
												Northing (Y, m):	3,247,612
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
CB&I Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													

SIEVE ANALYSIS FL\_BOEM-2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16

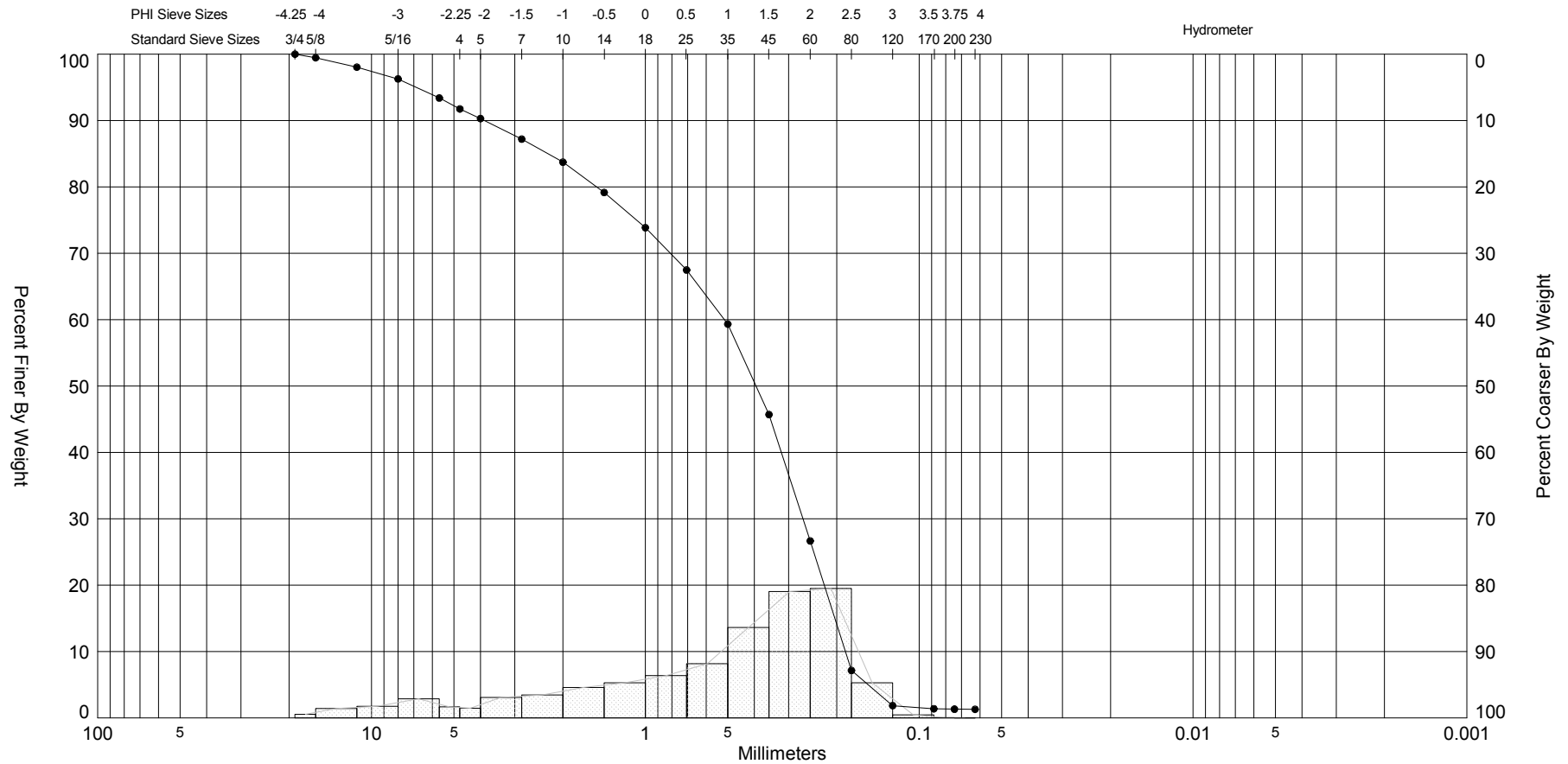


Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC10 #6	—●—	-69.3	SW	#200 - 4.80 #230 - 4.51		46	2.02	1.13	-0.79	2.4	1.81	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-29-15 DA
												Easting (X, m):	505,911
												Northing (Y, m):	3,247,612
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
CB&I Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													



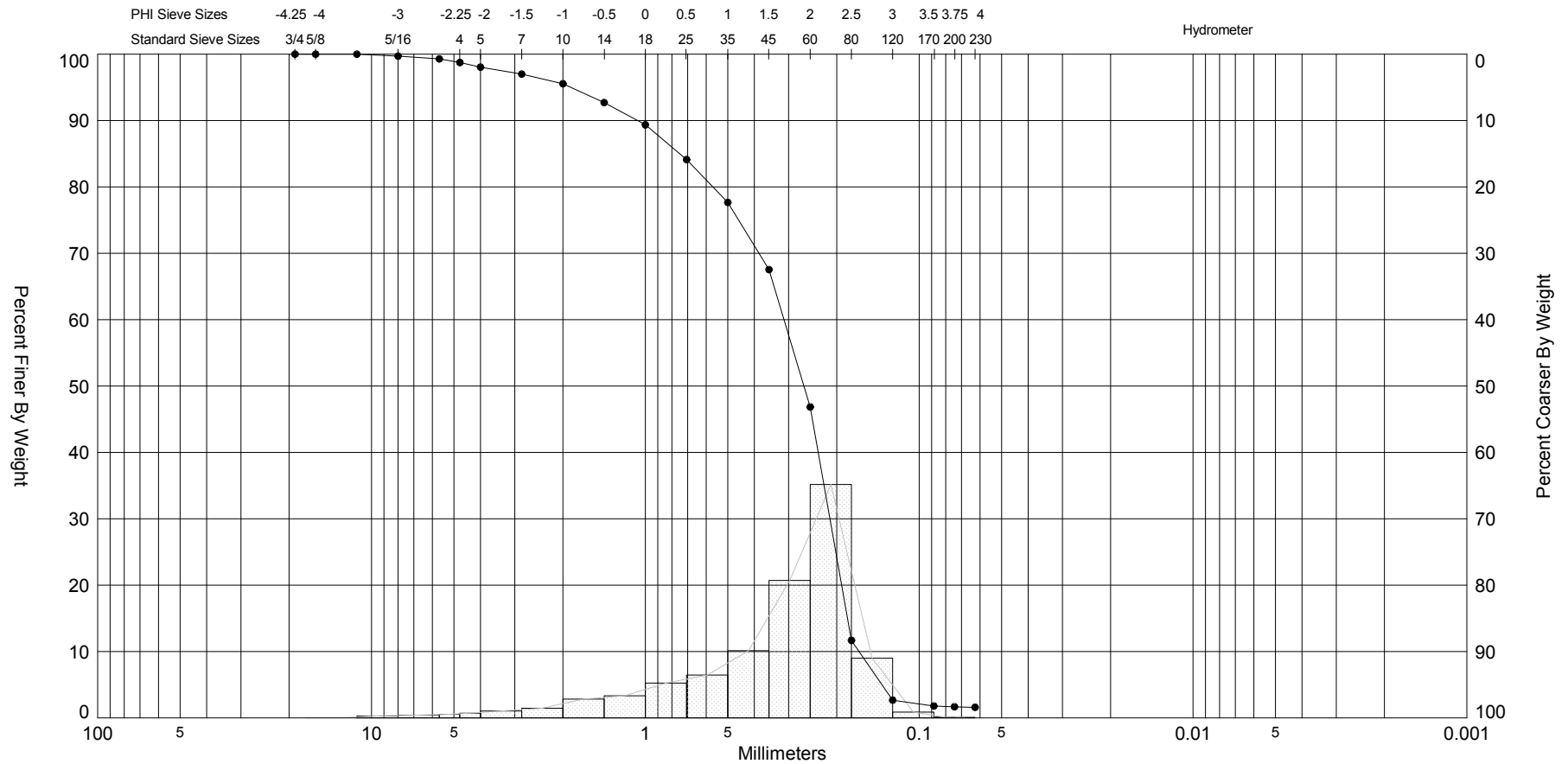
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC15 #1	—●—	-61.0	SW	#200 - 1.32 #230 - 1.30		48	1.34	0.77	-1.06	3.26	1.67	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	09-29-15 SMT
												Easting (X, m):	518.706
												Northing (Y, m):	3,224.812
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
<b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													

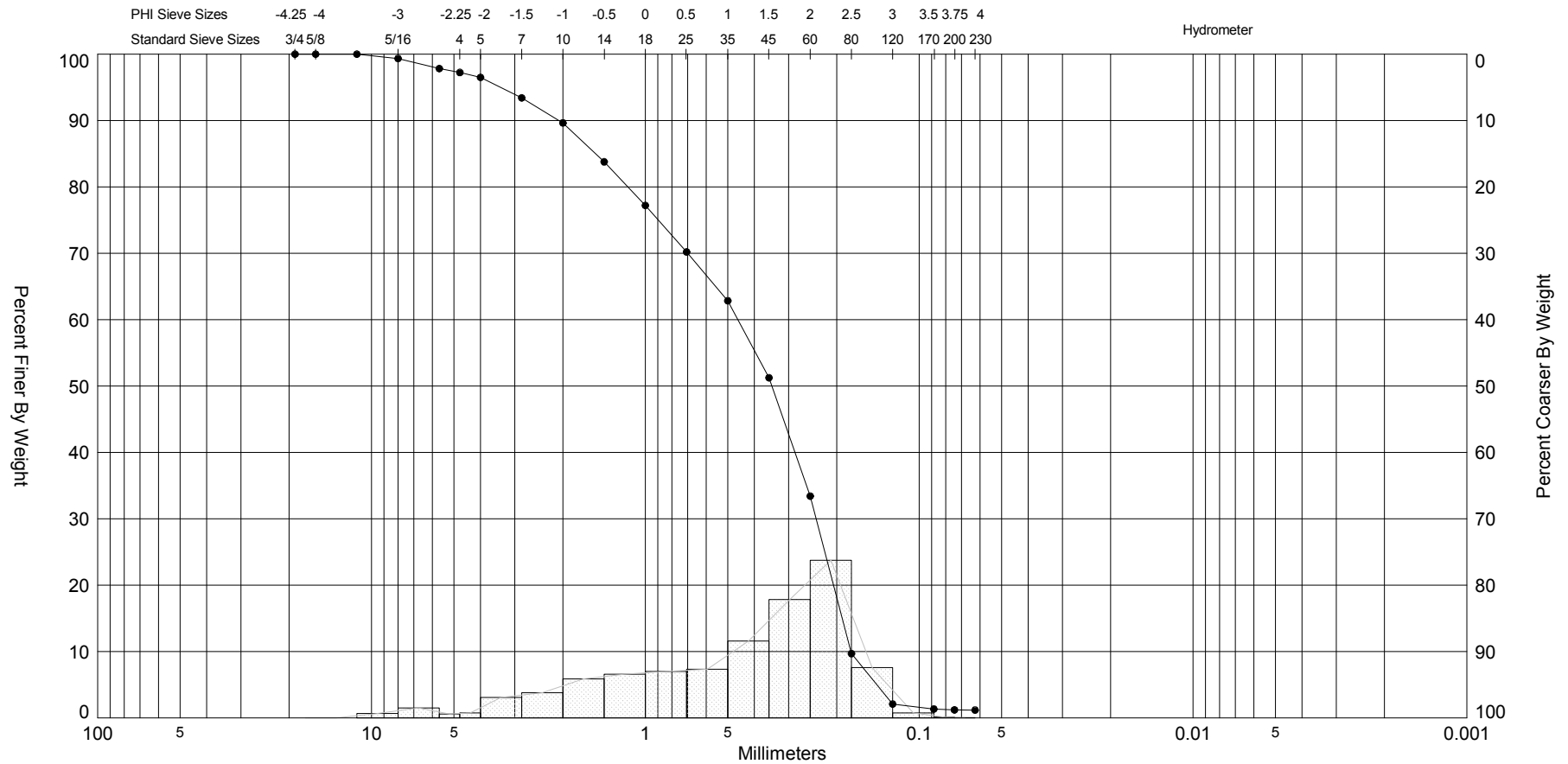
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC15 #2	—●—	-61.8	SW	#200 - 1.68 #230 - 1.60		34	1.92	1.54	-1.56	5.43	1.15	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	09-29-15 SMT
												Easting (X, m):	518.706
												Northing (Y, m):	3,224.812
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
<b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													

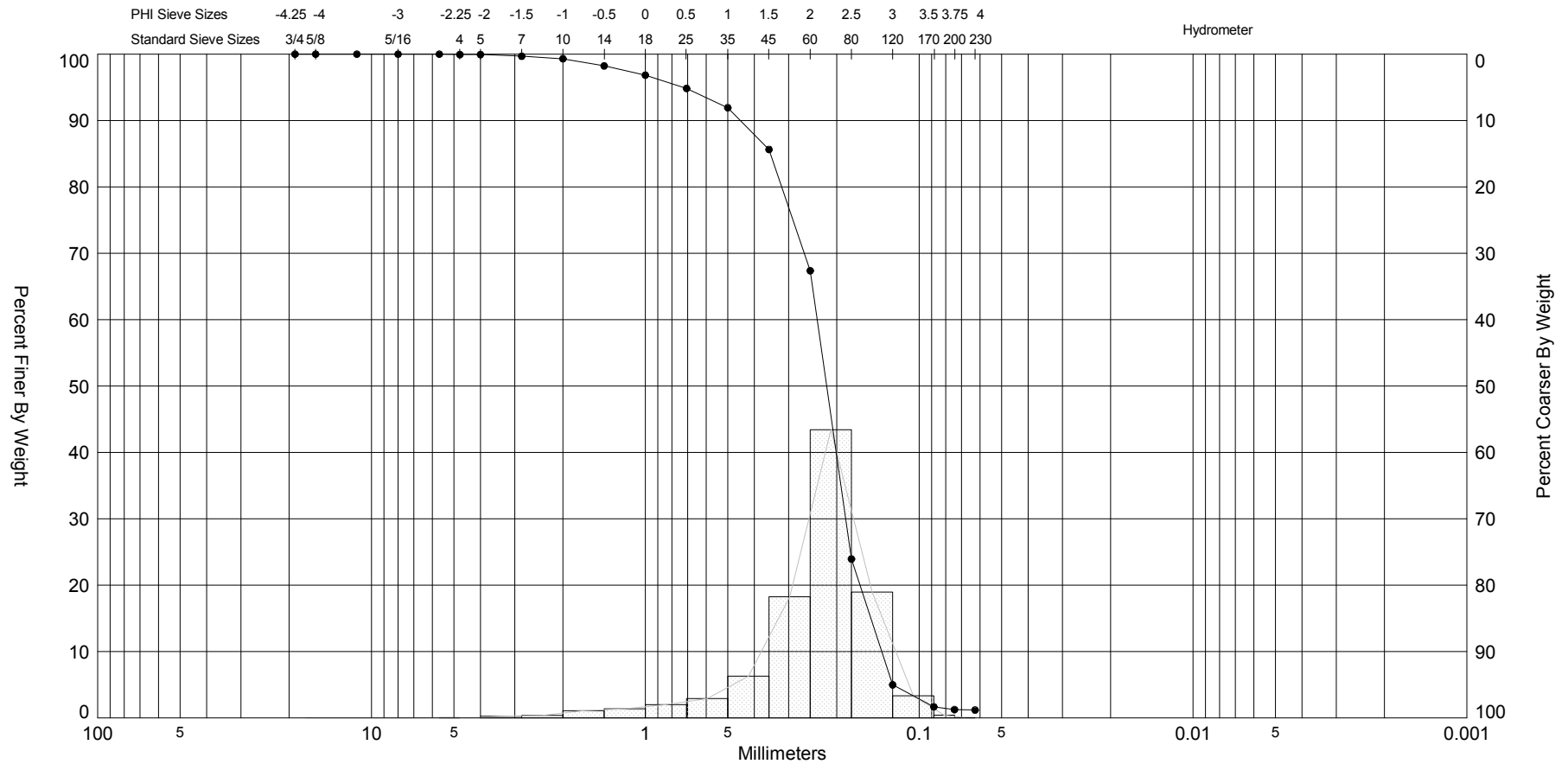
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC15 #3	—●—	-62.5	SW	#200 - 1.21 #230 - 1.18		47	1.54	1.06	-0.93	3.1	1.41	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	09-29-15 SMT
<p><b>CB&amp;I</b> Coastal Planning &amp; Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102</p>												Easting (X, m):	518.706
												Northing (Y, m):	3,224.812
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88

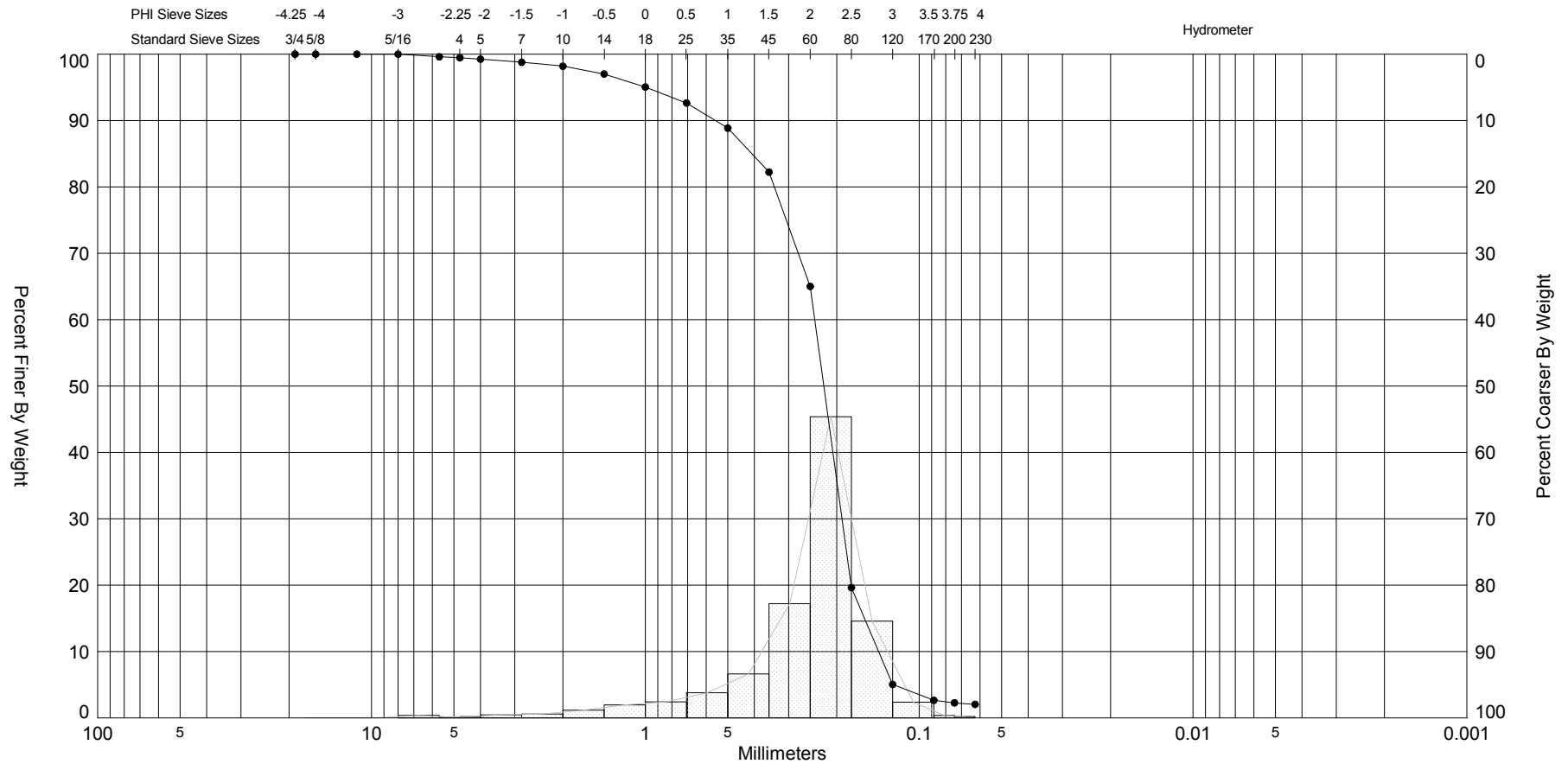
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC15 #4	—●—	-63.4	SP	#200 - 1.25 #230 - 1.19		18	2.2	2.05	-1.78	7.8	0.77	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	09-30-15 SMT
												Easting (X, m):	518.706
												Northing (Y, m):	3,224.812
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
<b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													

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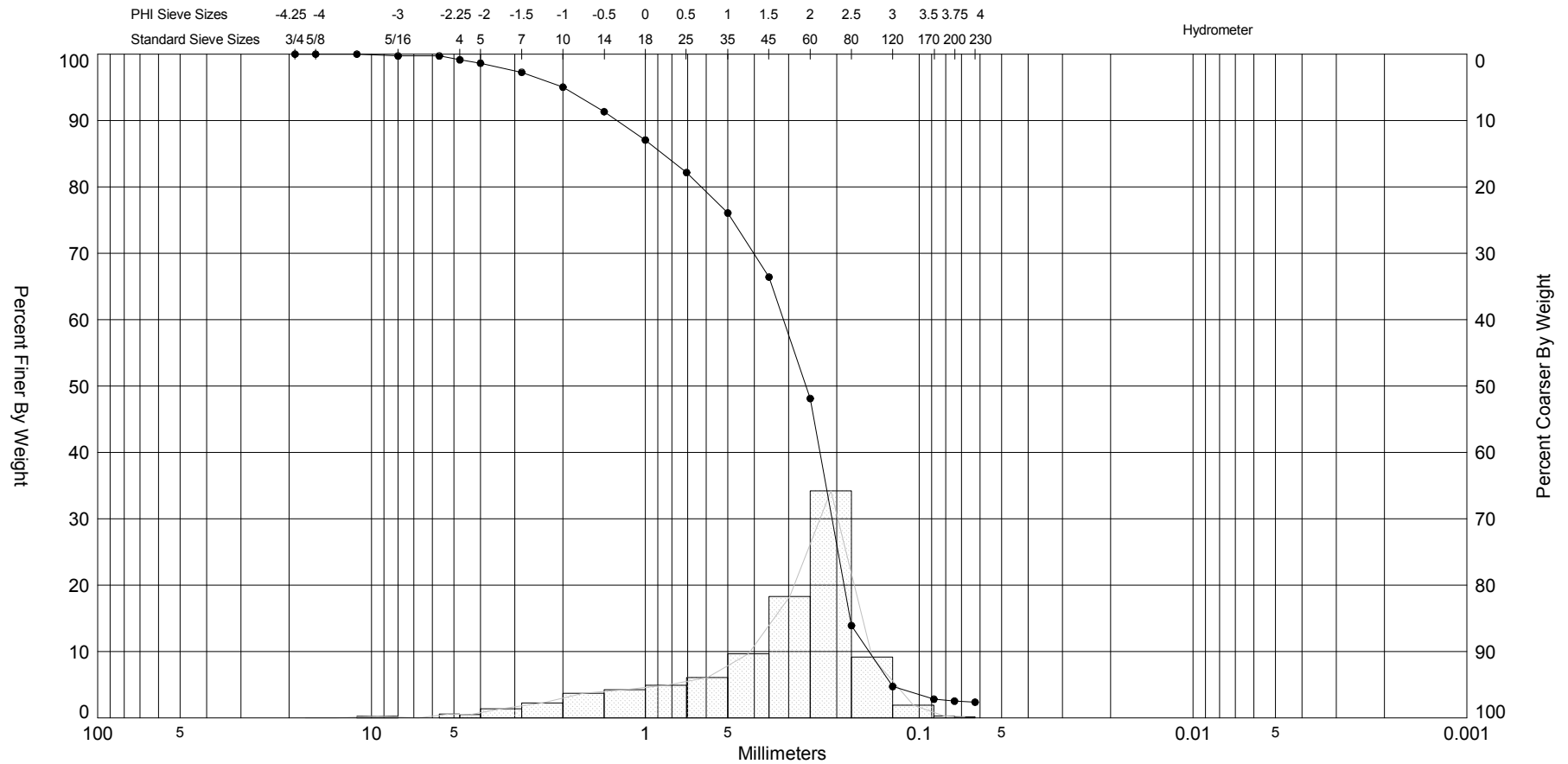


Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	


Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC15 #5	—●—	-65.1	SW	#200 - 2.27 #230 - 2.05		23	2.17	1.93	-2.08	8.88	0.91	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	09-30-15
												Easting (X, m):	518.706
												Northing (Y, m):	3,224.812
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
CB&I Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													



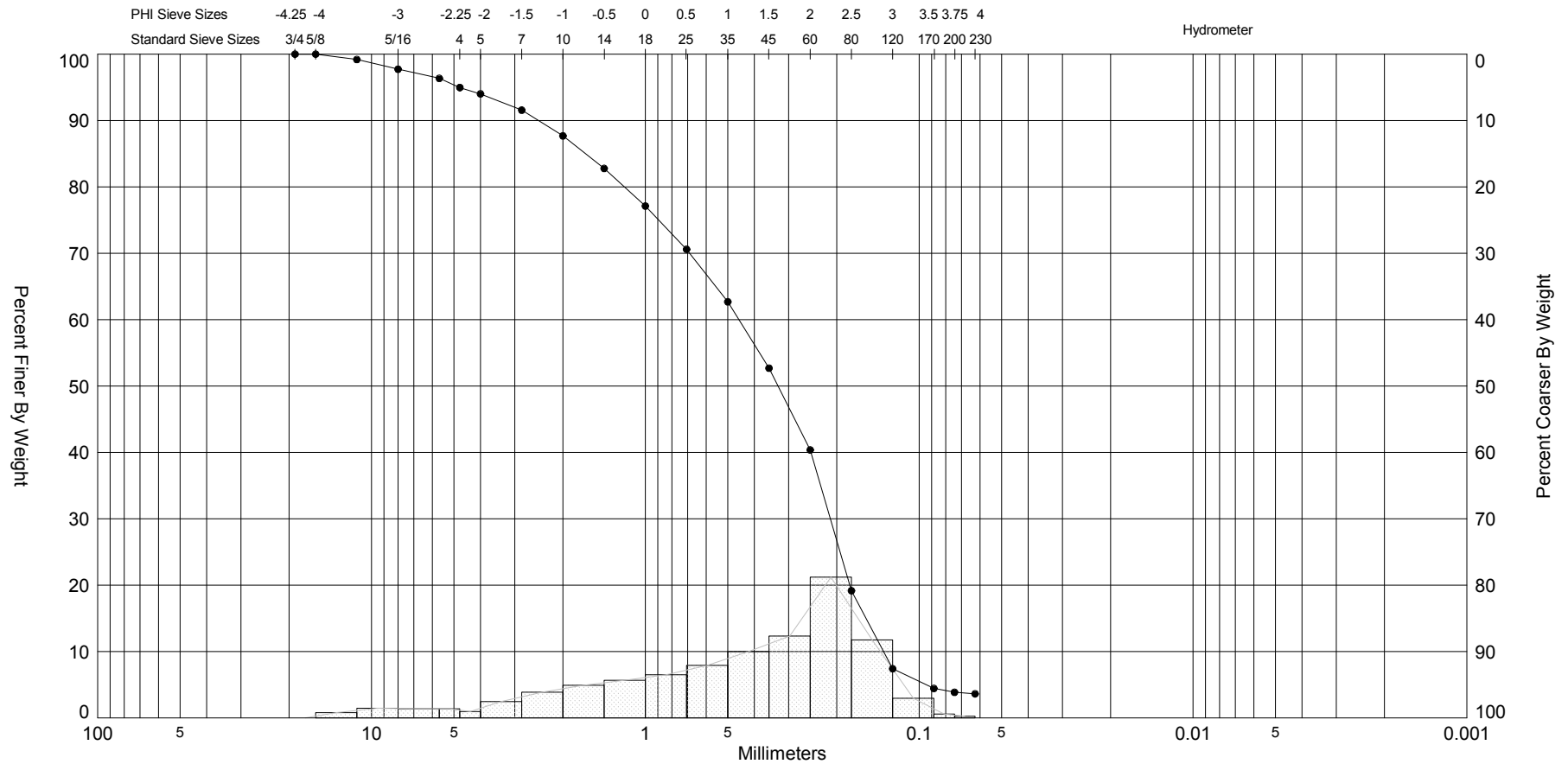
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC15 #6	—●—	-66.6	SW	#200 - 2.53 #230 - 2.37		38	1.95	1.51	-1.29	4.33	1.19	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	09-30-15 SMT
												Easting (X, m):	518.706
												Northing (Y, m):	3,224.812
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
<b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													

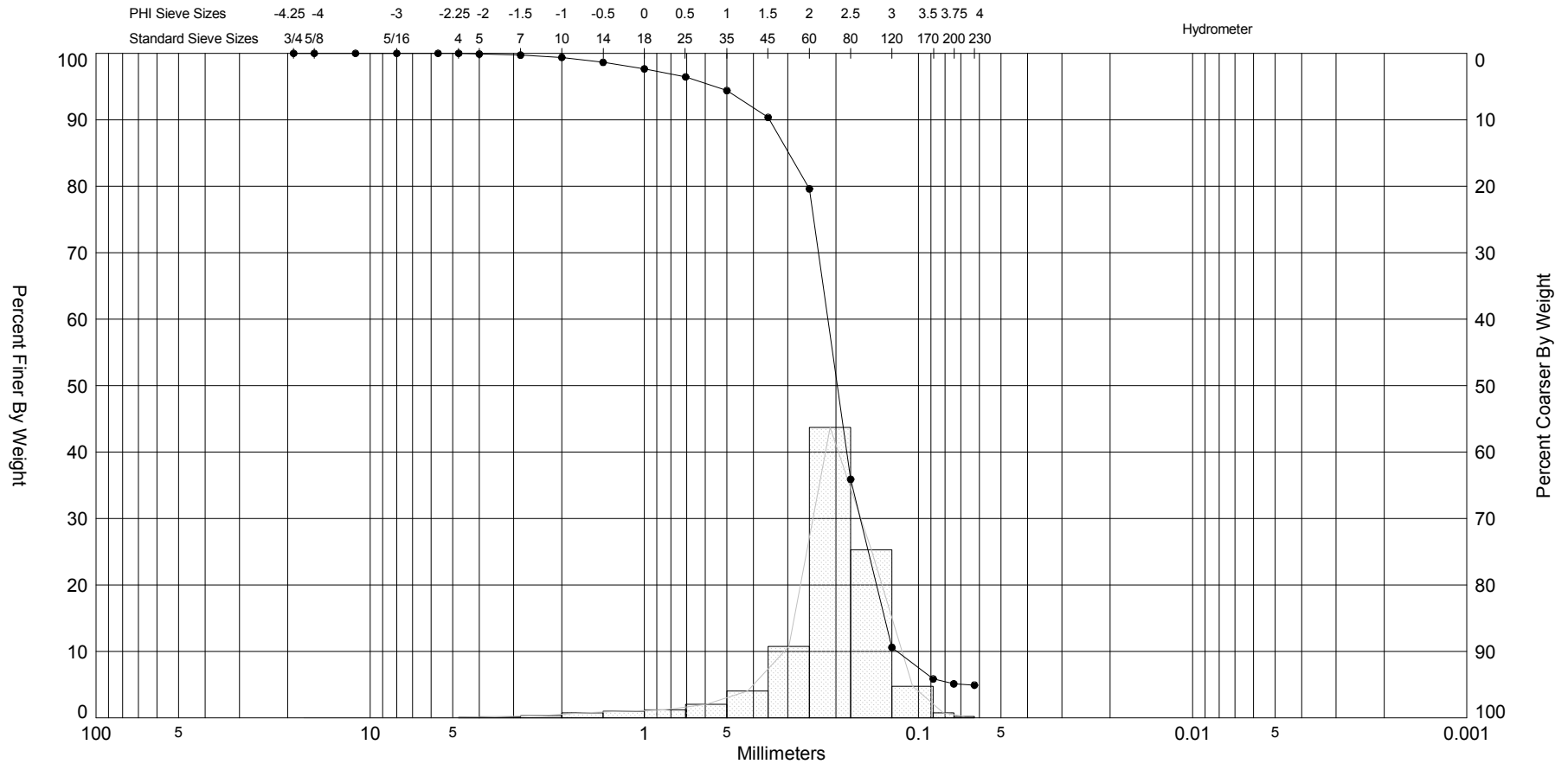
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC15 #7	—●—	-69.2	SW	#200 - 3.86 #230 - 3.63		59	1.61	1.07	-0.94	3.21	1.62	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	09-30-15 SMT
												Easting (X, m):	518.706
												Northing (Y, m):	3,224.812
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
<b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													

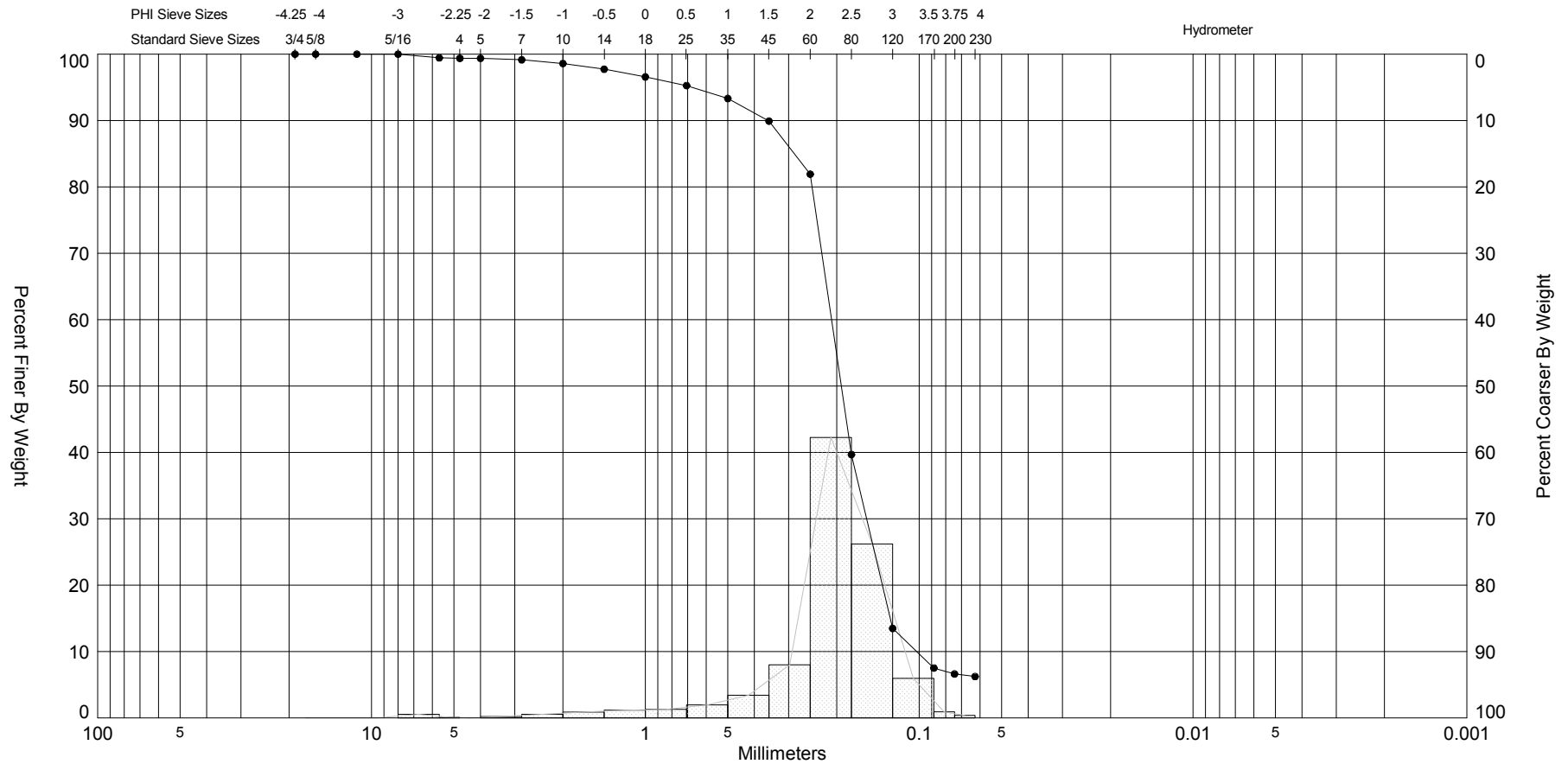
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC15 #8	—●—	-69.9	SP-SM	#200 - 5.12 #230 - 4.93		20	2.34	2.22	-2.04	9.75	0.73	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments: 1.05g (1.0" x 0.5") sand dollar fragment removed prior to sieving												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	09-30-15
												Easting (X, m):	518.706
												Northing (Y, m):	3,224.812
												Horizontal System:	NAD 1983
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<b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													

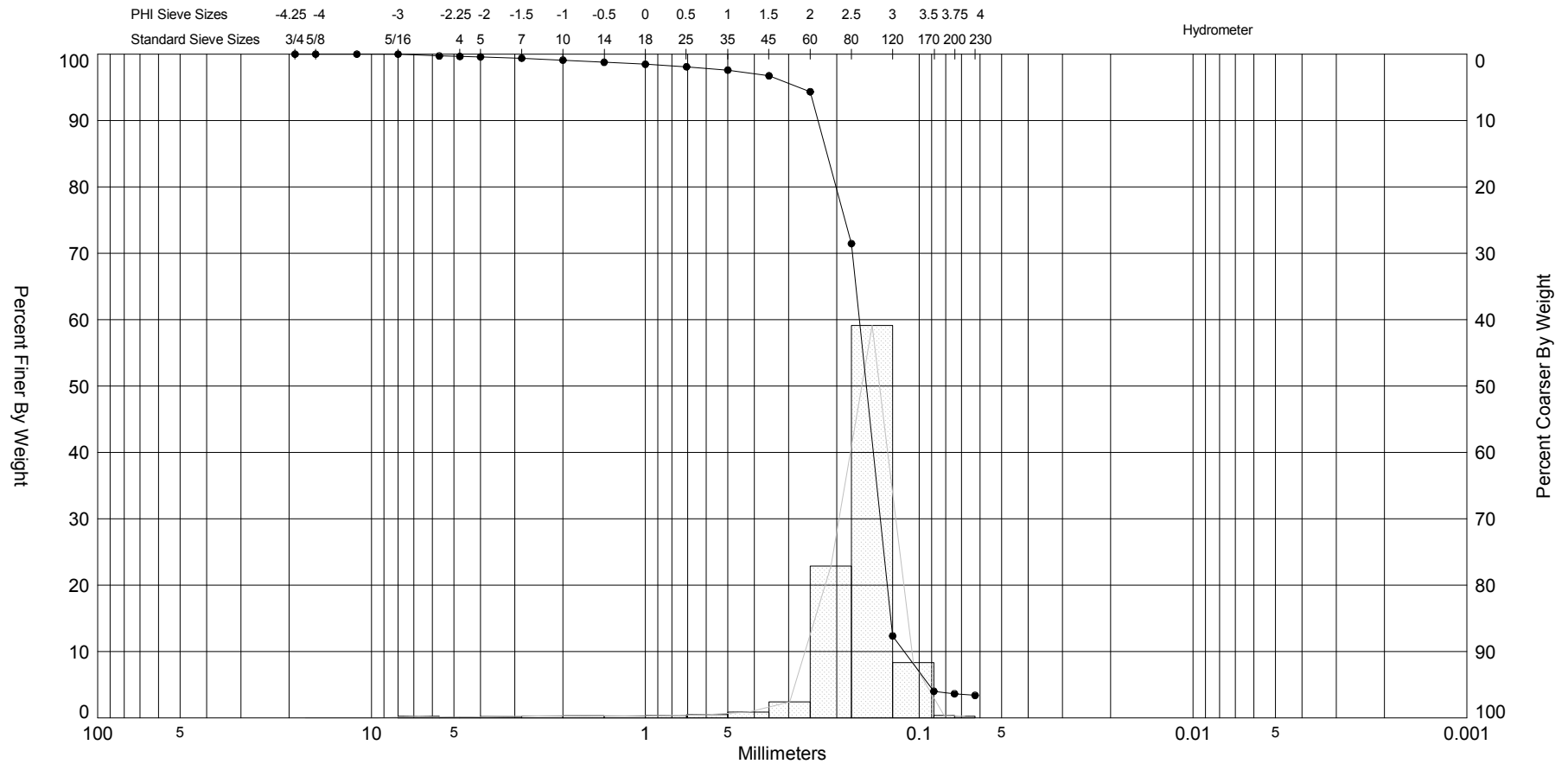
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC15 #9	—●—	-71.2	SW-SM	#200 - 6.62 #230 - 6.23		22	2.38	2.21	-2.54	12.33	0.87	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	09-30-15
												Easting (X, m):	518.706
												Northing (Y, m):	3,224.812
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
CB&I Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													

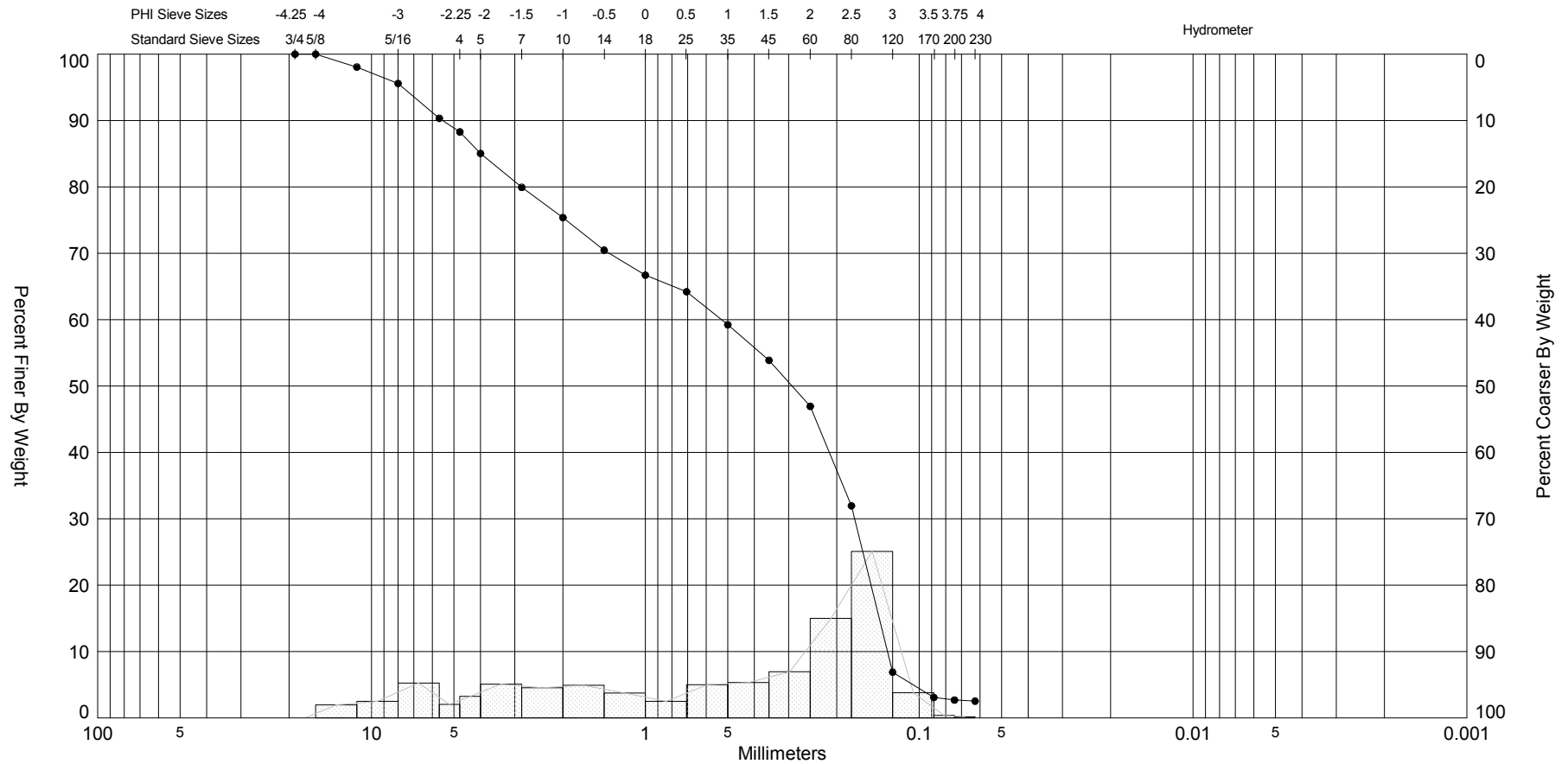
SIEVE ANALYSIS FL\_BOEM\_2015\_VC.GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC15 #10	—●—	-75.2	SP	#200 - 3.64 #230 - 3.40		21	2.68	2.56	-4.33	29.42	0.65	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-27-15 SMT
												Easting (X, m):	518.706
												Northing (Y, m):	3,224.812
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
CB&I Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													

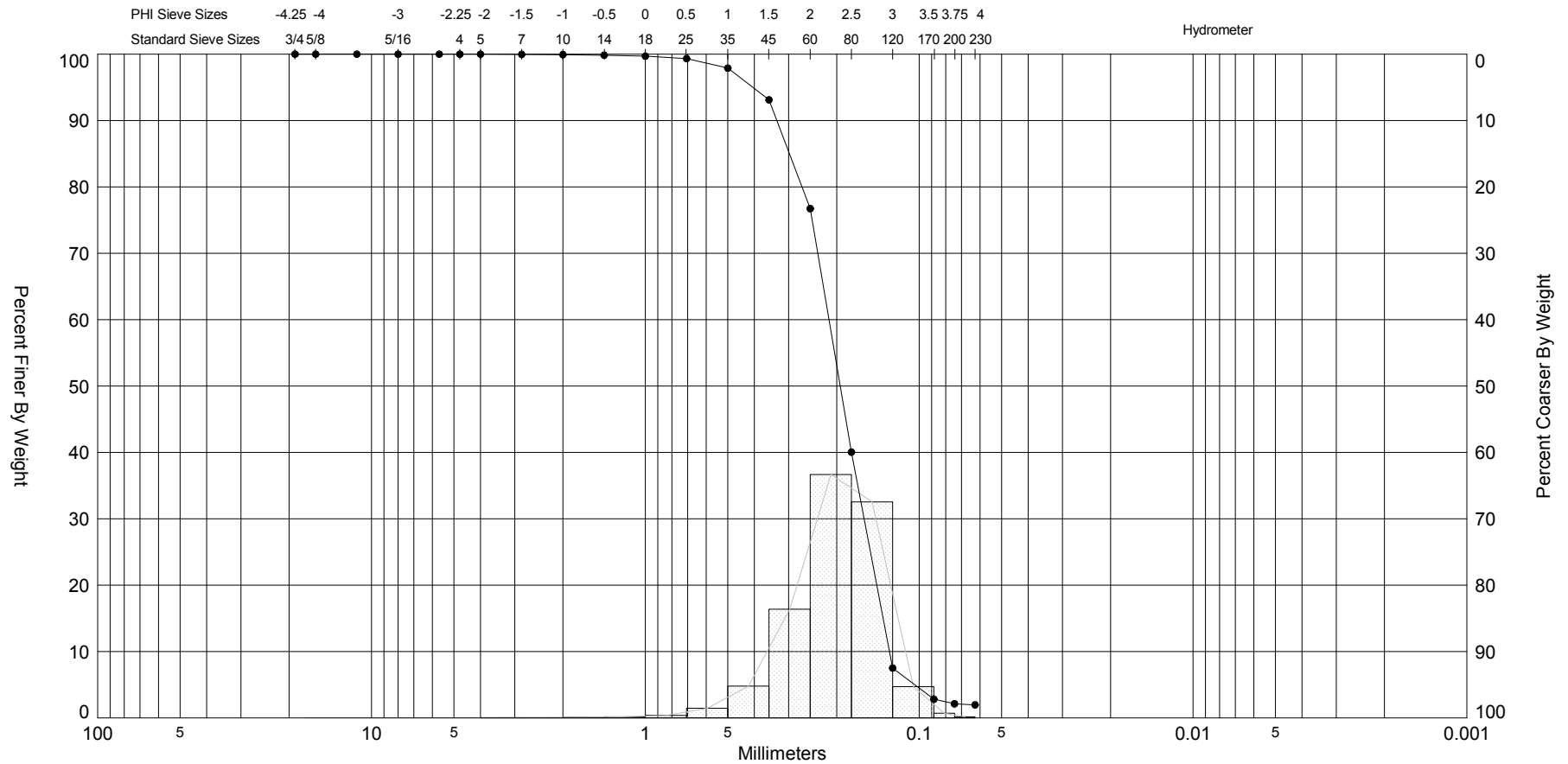
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC15 #11	—●—	-77.7	SW	#200 - 2.69 #230 - 2.53		58	1.78	0.82	-0.66	2.02	2.09	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-27-15 SMT
 <b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102												Easting (X, m):	518.706
												Northing (Y, m):	3,224.812
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88

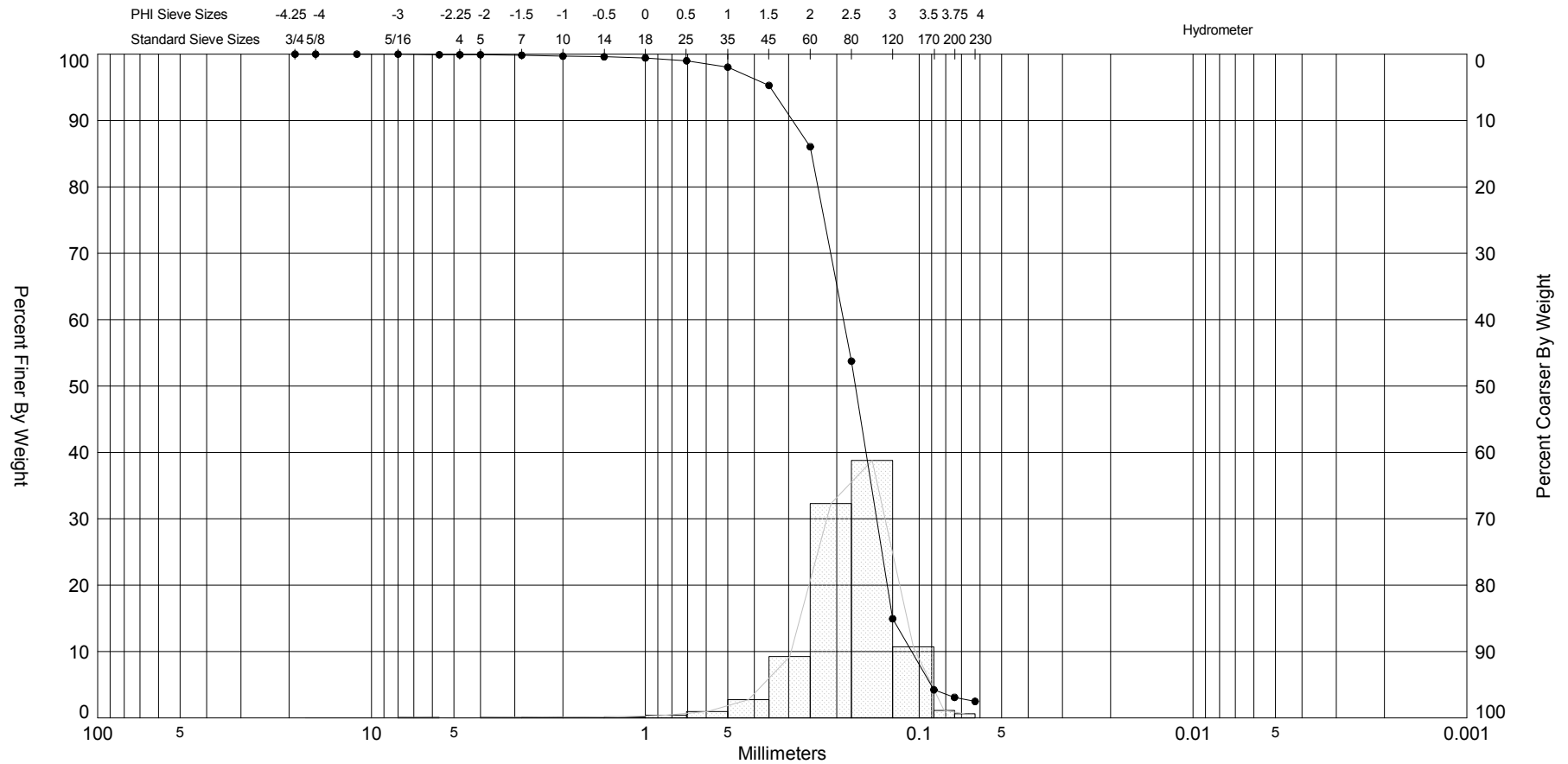
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC16 #1	—●—	-57.0	SP	#200 - 2.13 #230 - 1.97		6	2.36	2.31	-0.99	6.25	0.56	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-13-15 SMT
												Easting (X, m):	480.634
												Northing (Y, m):	3,323,433
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
<p style="text-align: center;"> <b>CB&amp;I</b>            Coastal Planning &amp; Engineering, Inc.            2481 NW Boca Raton Blvd.            Boca Raton, FL 33431            ph (561) 391 8102         </p>													

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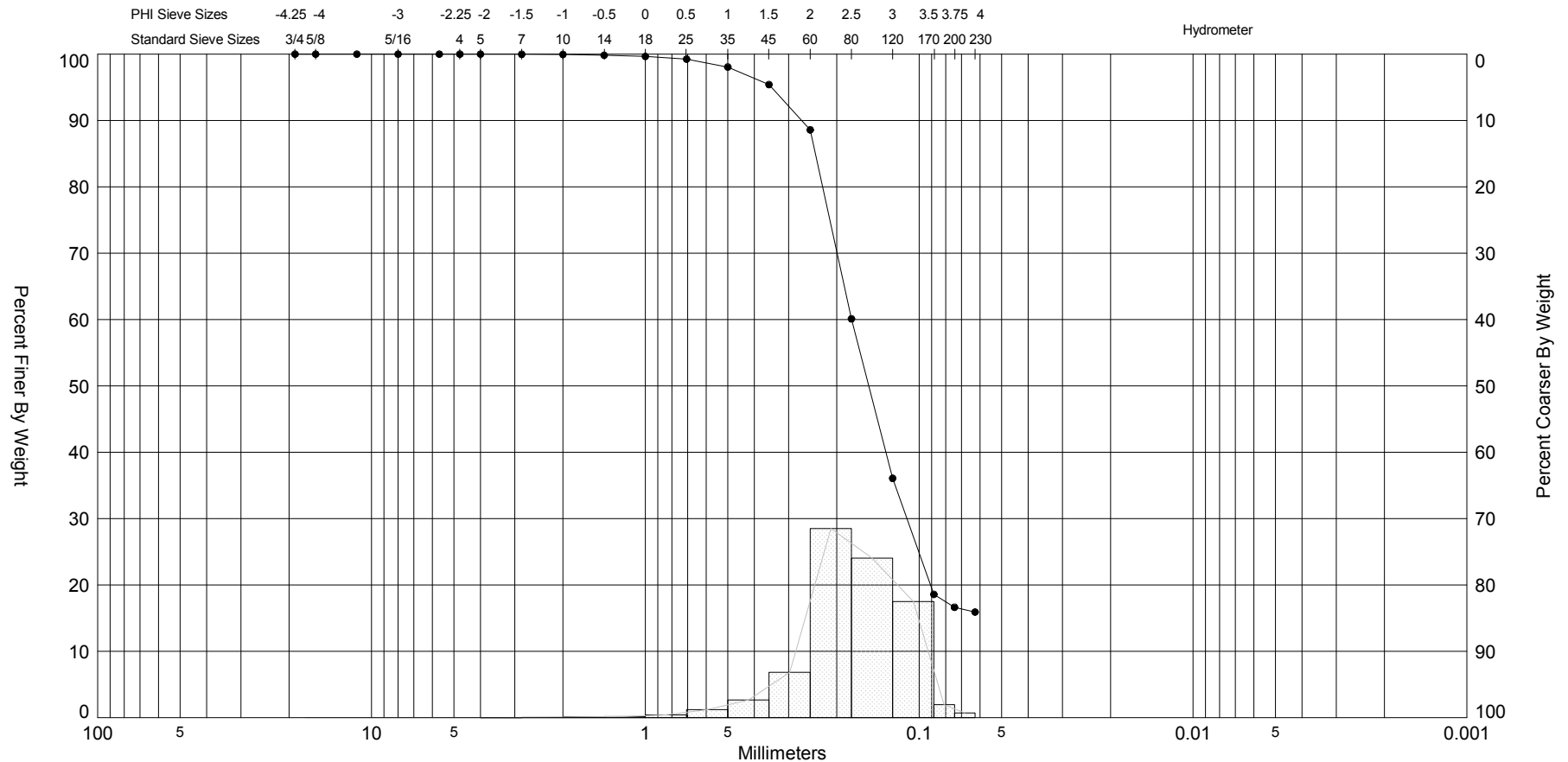


Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	


Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC16 #2	—●—	-61.7	SP	#200 - 3.10 #230 - 2.49		10	2.55	2.47	-1.88	13.07	0.6	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-13-15 SMT
 <b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102												Easting (X, m):	480.634
												Northing (Y, m):	3,323,433
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88



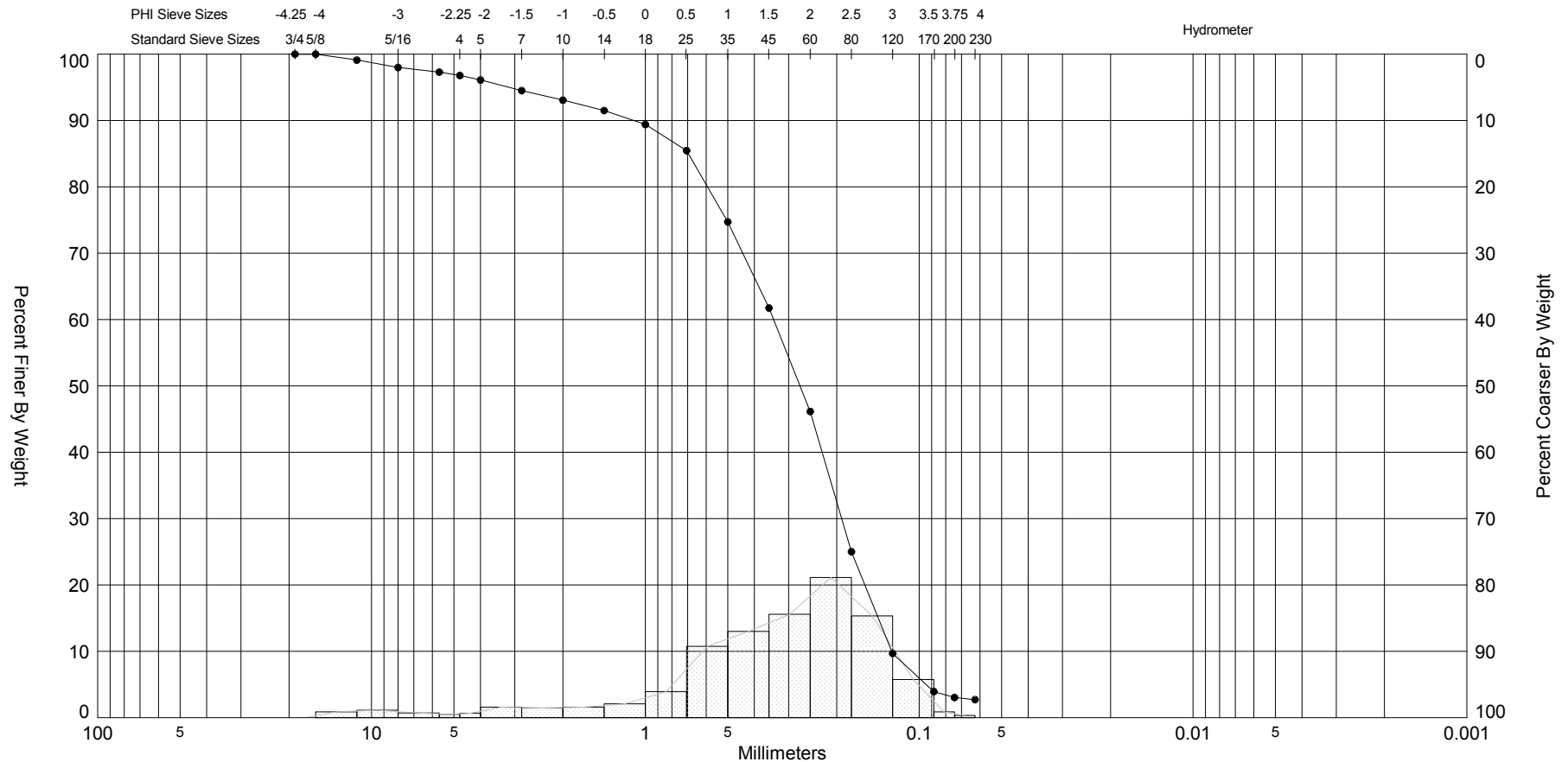
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC16 #3	—●—	-63.6	SM	#200 - 16.64 #230 - 15.92		12	2.71	2.53	-1	5.95	0.64	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-02-15
 <b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102												Easting (X, m):	480.634
												Northing (Y, m):	3,323,433
												Horizontal System:	NAD 1983
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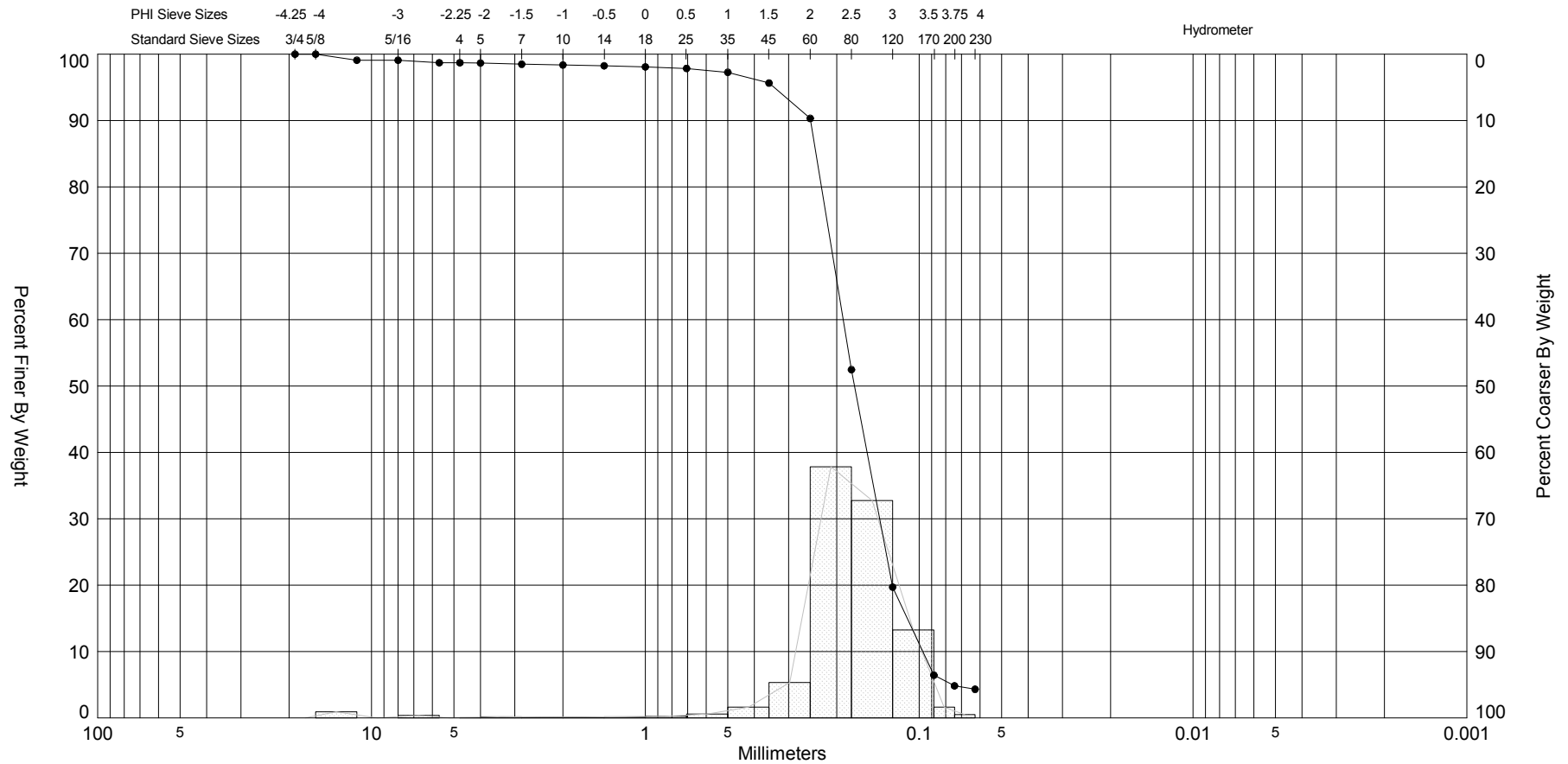
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC16 #4	—●—	-64.0	SW	#200 - 3.04 #230 - 2.72		20	1.88	1.52	-1.52	5.65	1.41	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-02-15 DA
												Easting (X, m):	480.634
												Northing (Y, m):	3,323,433
												Horizontal System:	NAD 1983
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<b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													

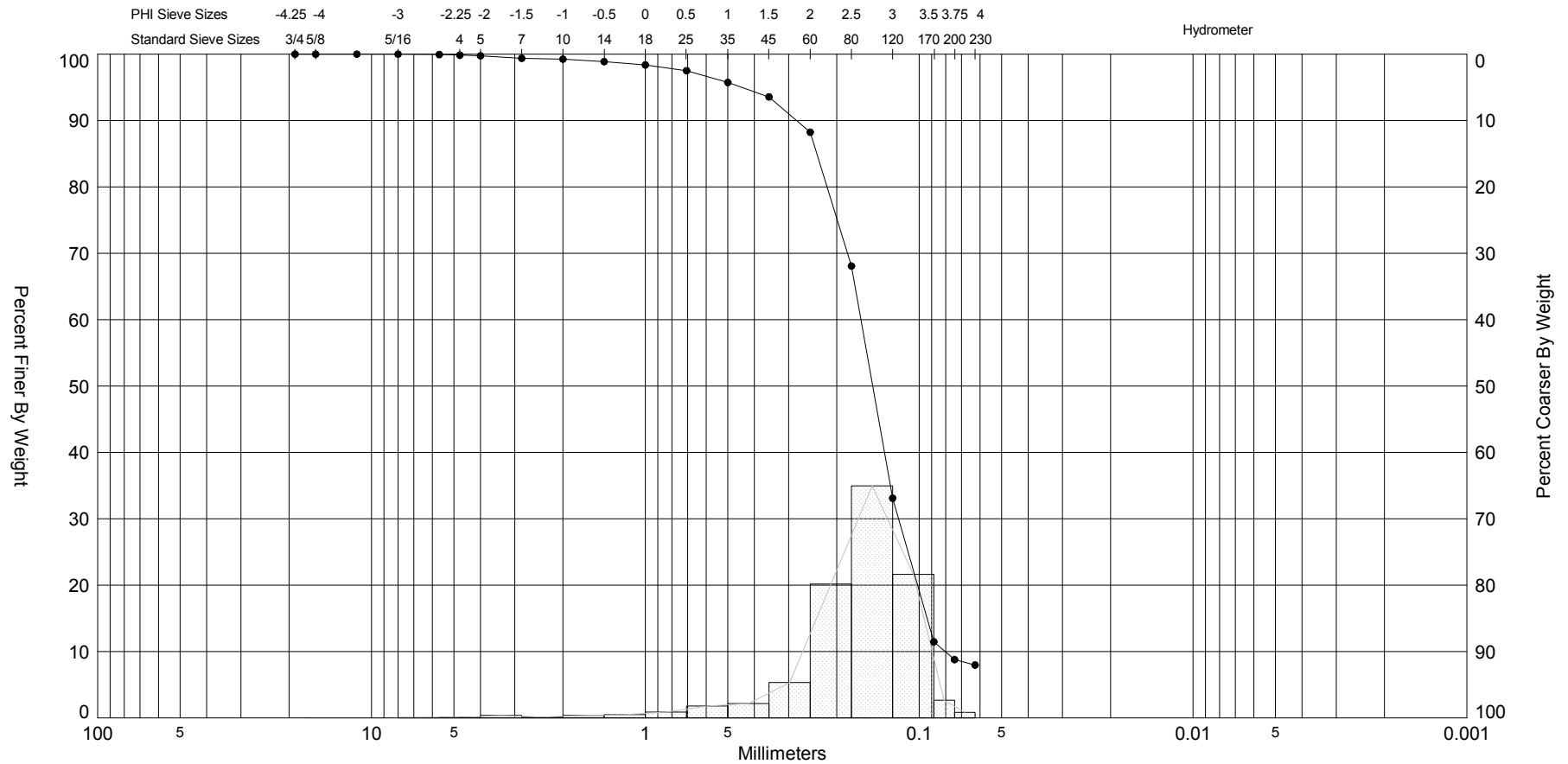
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC16 #5	—●—	-66.4	SW	#200 - 4.83 #230 - 4.32		11	2.54	2.43	-4.26	28	0.9	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-02-15 DA
												Easting (X, m):	480.634
												Northing (Y, m):	3,323,433
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
<p style="text-align: center;"><b>CB&amp;I</b> Coastal Planning &amp; Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102</p>													

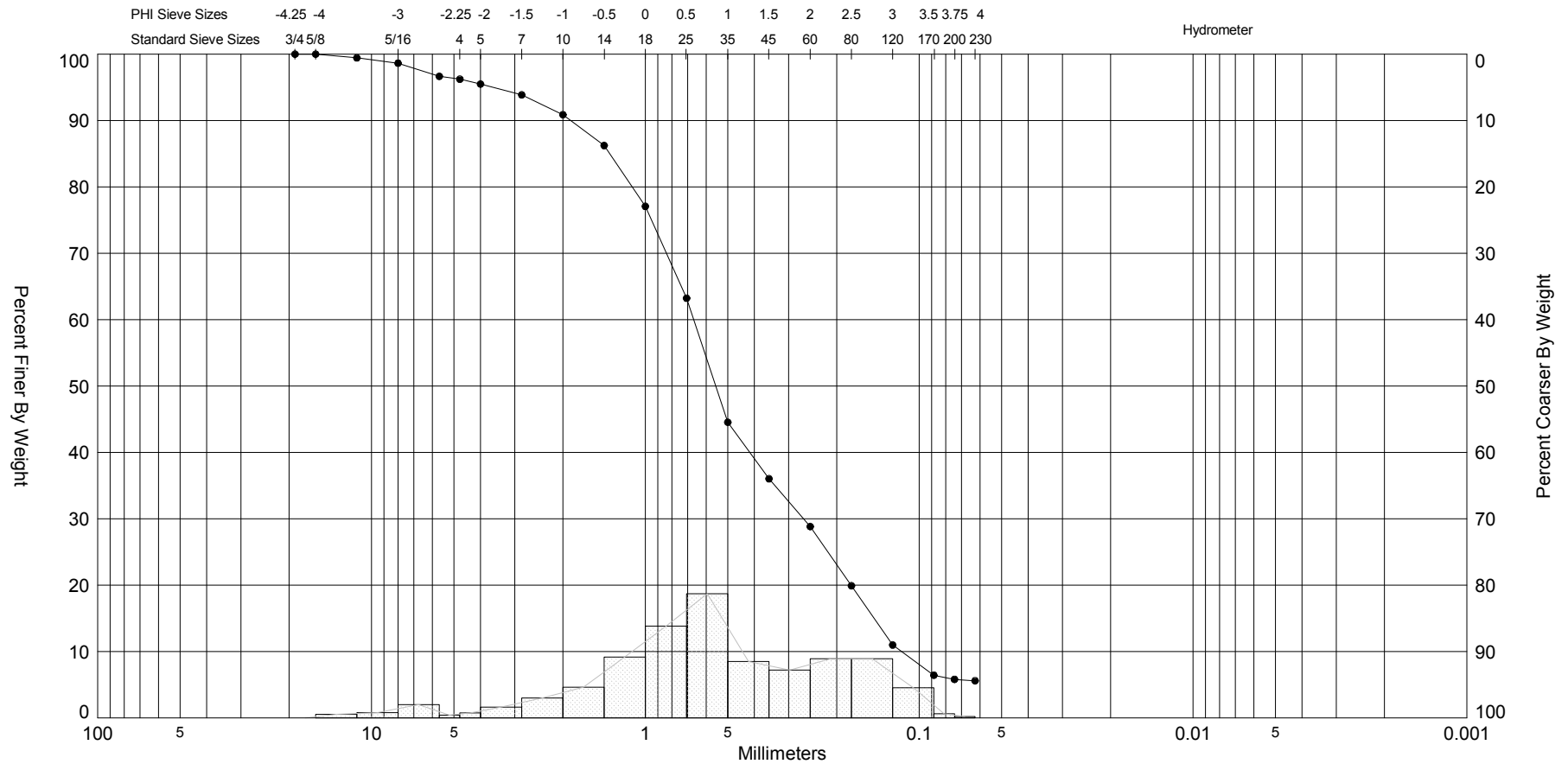
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC16 #6	—●—	-69.2	SP-SM	#200 - 8.79 #230 - 7.97		14	2.76	2.57	-2.35	11.98	0.8	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-02-15 DA
												Easting (X, m):	480.634
												Northing (Y, m):	3,323,433
												Horizontal System:	NAD 1983
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CB&I Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													

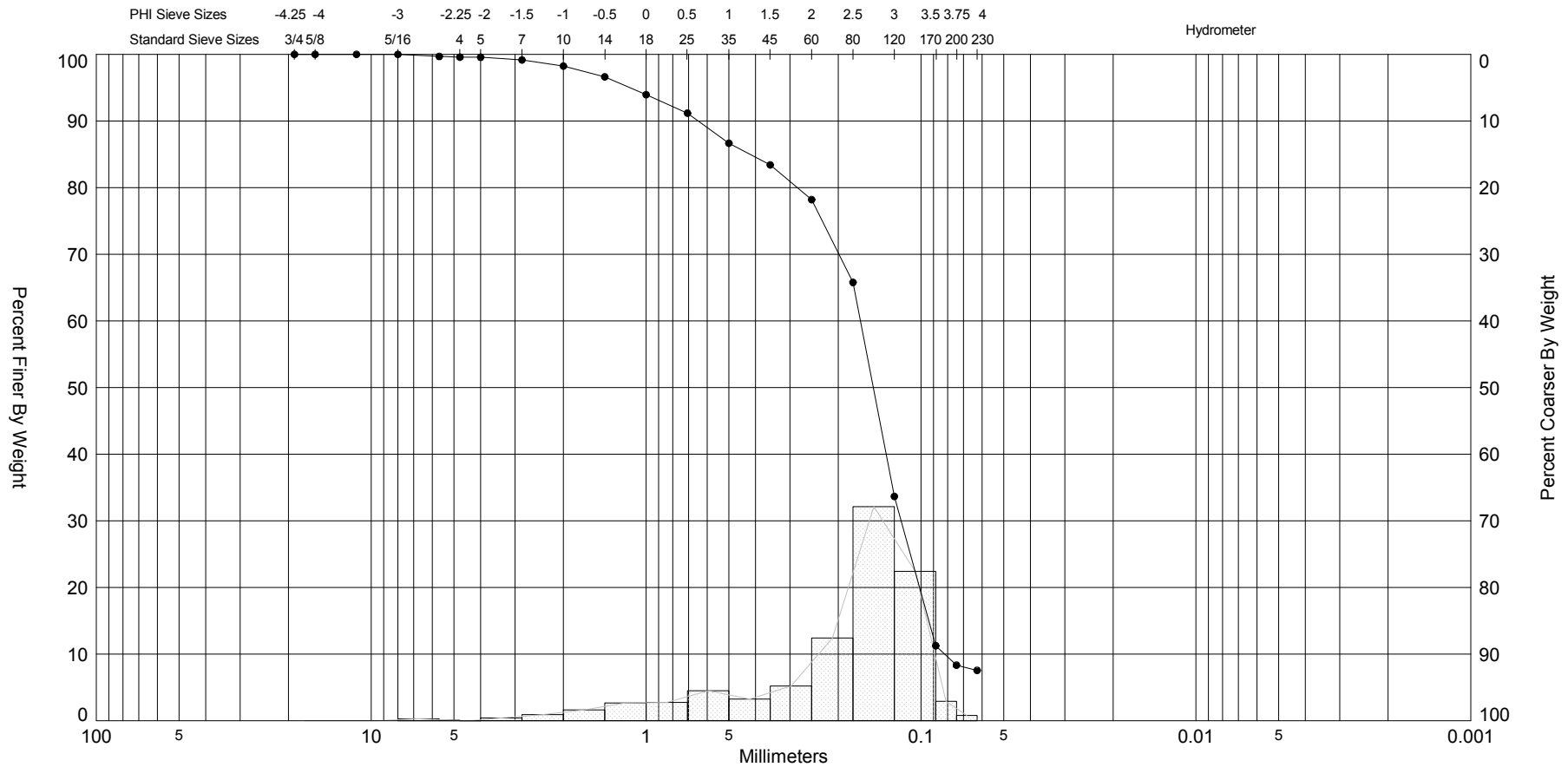
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC16 #7	—●—	-69.8	SW-SM	#200 - 5.81 #230 - 5.60		31	0.85	0.83	-0.46	3.26	1.47	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-05-15 DA
 <b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102												Easting (X, m):	480.634
												Northing (Y, m):	3,323,433
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88

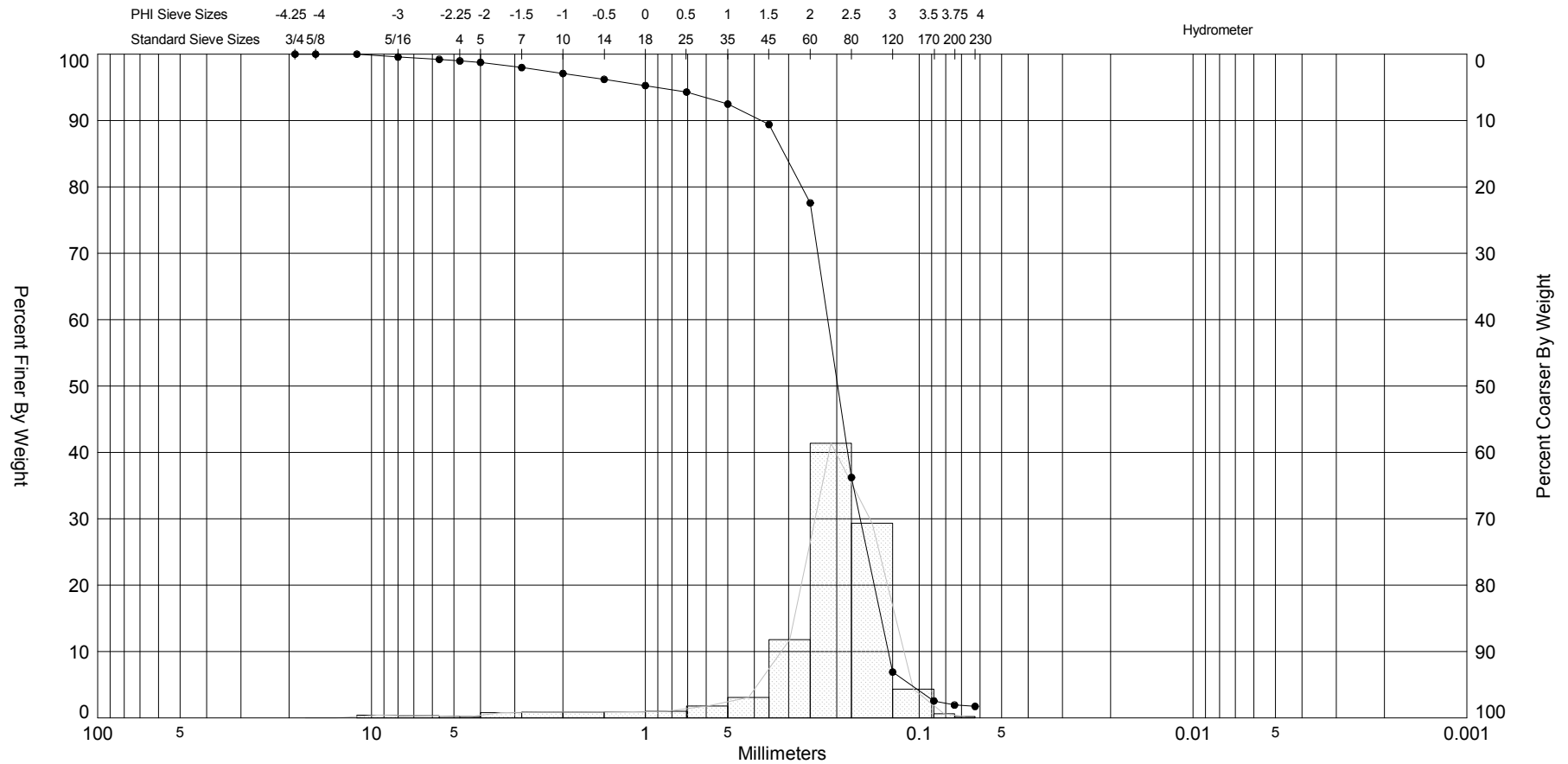
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC16 #8	—●—	-70.8	SW-SC	#200 - 8.34 #230 - 7.56		21	2.75	2.33	-1.65	5.55	1.15	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-05-15 DA
 <div style="text-align: center;"> <b>CB&amp;I</b>            Coastal Planning &amp; Engineering, Inc.            2481 NW Boca Raton Blvd.            Boca Raton, FL 33431            ph (561) 391 8102         </div>												Easting (X, m):	480.634
												Northing (Y, m):	3,323,433
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88

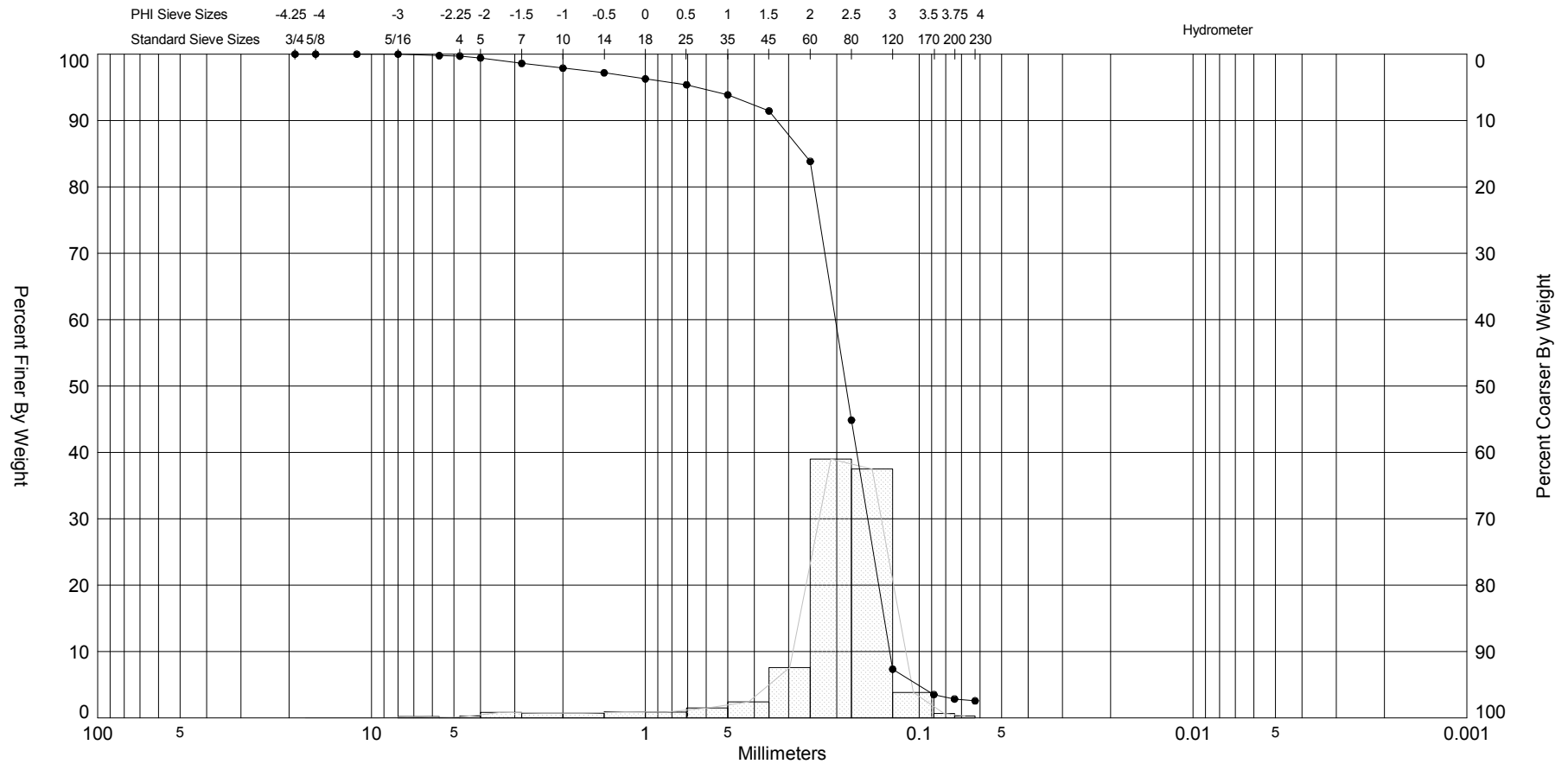
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC17 #1	—●—	-55.0	SW	#200 - 1.94 #230 - 1.74		9	2.33	2.14	-2.81	12.77	0.98	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-27-15 DA
												Easting (X, m):	476.287
												Northing (Y, m):	3,319,774
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
<p style="text-align: center;"> <b>CB&amp;I</b>            Coastal Planning &amp; Engineering, Inc.            2481 NW Boca Raton Blvd.            Boca Raton, FL 33431            ph (561) 391 8102         </p>													

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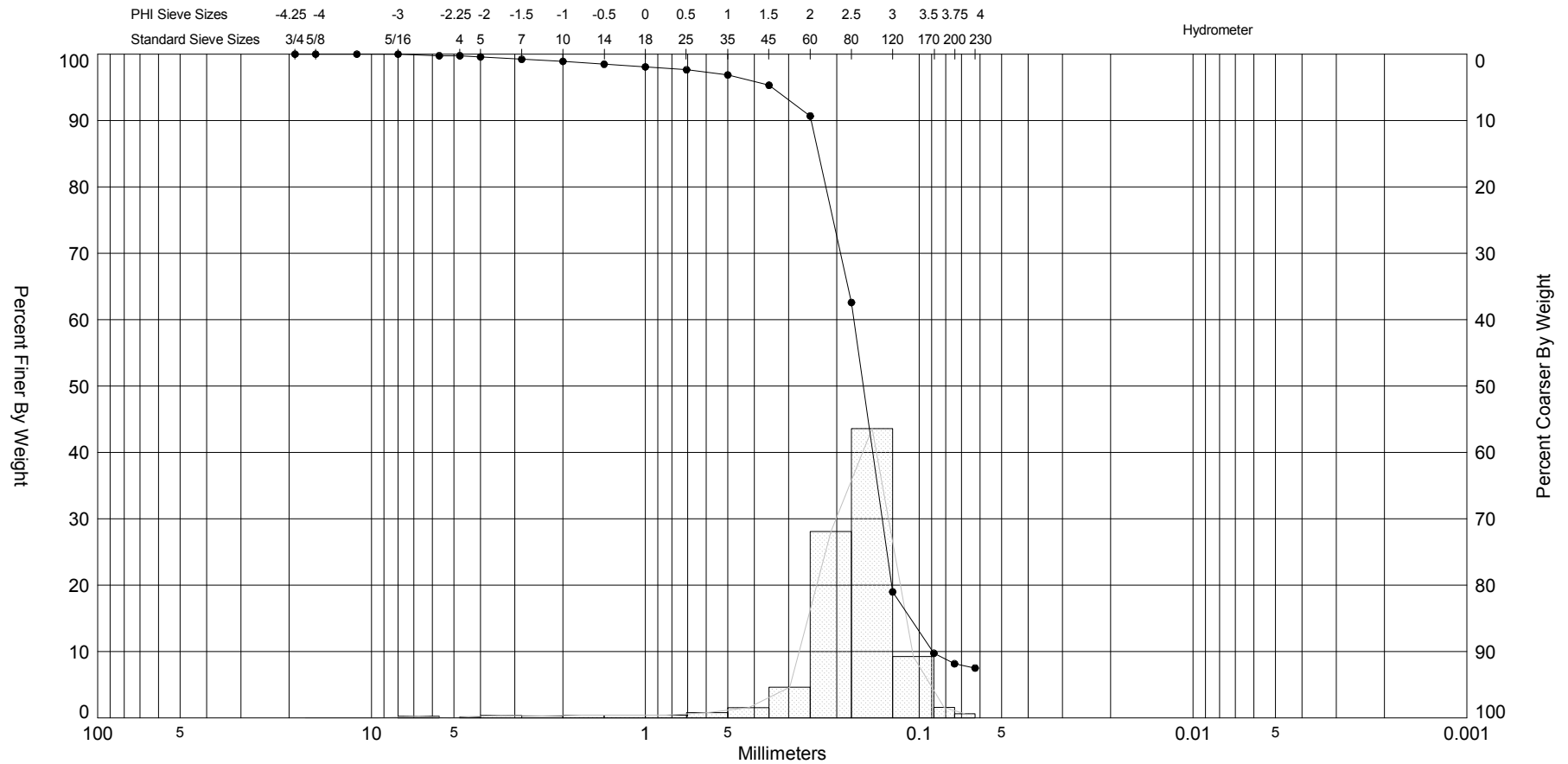


Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	


Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC17 #2	—●—	-56.3	SW	#200 - 2.85 #230 - 2.57		9	2.43	2.26	-2.87	13.3	0.86	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-27-15 DA
												Easting (X, m):	476.287
												Northing (Y, m):	3,319,774
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
CB&I Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													



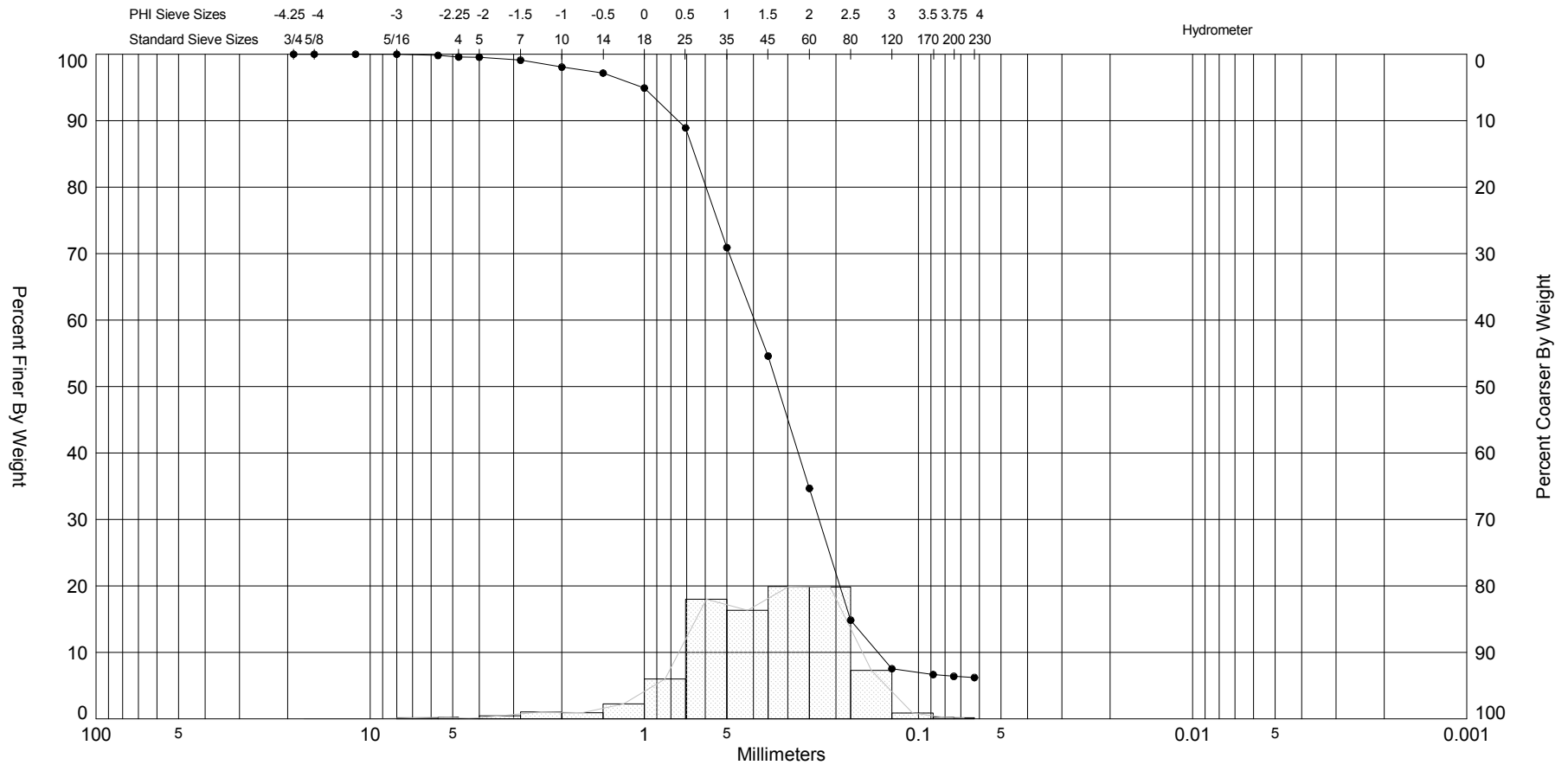
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC17 #3	—●—	-58.6	SP-SM	#200 - 8.16 #230 - 7.52		6	2.64	2.48	-3.21	18.81	0.74	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-27-15 DA
												Easting (X, m):	476.287
												Northing (Y, m):	3,319,774
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
CB&I Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													

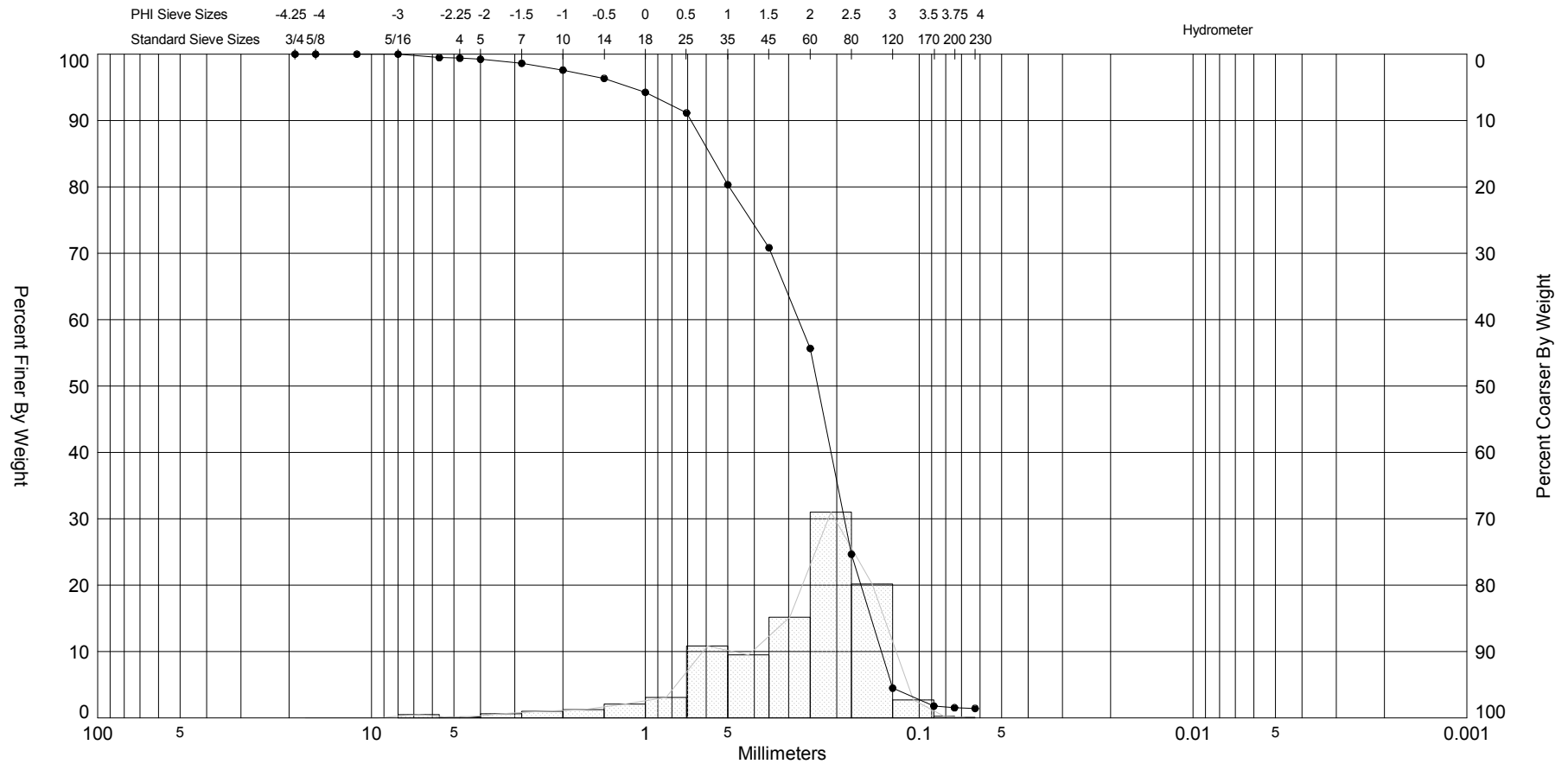
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC17 #4	—●—	-69.8	SW-SC	#200 - 6.40 #230 - 6.22		13	1.62	1.44	-0.82	4.63	0.92	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-28-15 DA
												Easting (X, m):	476.287
												Northing (Y, m):	3,319,774
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
<p style="text-align: center;"> <b>CB&amp;I</b>            Coastal Planning &amp; Engineering, Inc.            2481 NW Boca Raton Blvd.            Boca Raton, FL 33431            ph (561) 391 8102         </p>													

SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC18 #1	—●—	-59.0	SW	#200 - 1.53 #230 - 1.43		14	2.09	1.79	-1.46	5.85	1.02	Project Name:	Inventory of Potential Beach Nourishment and Coastal

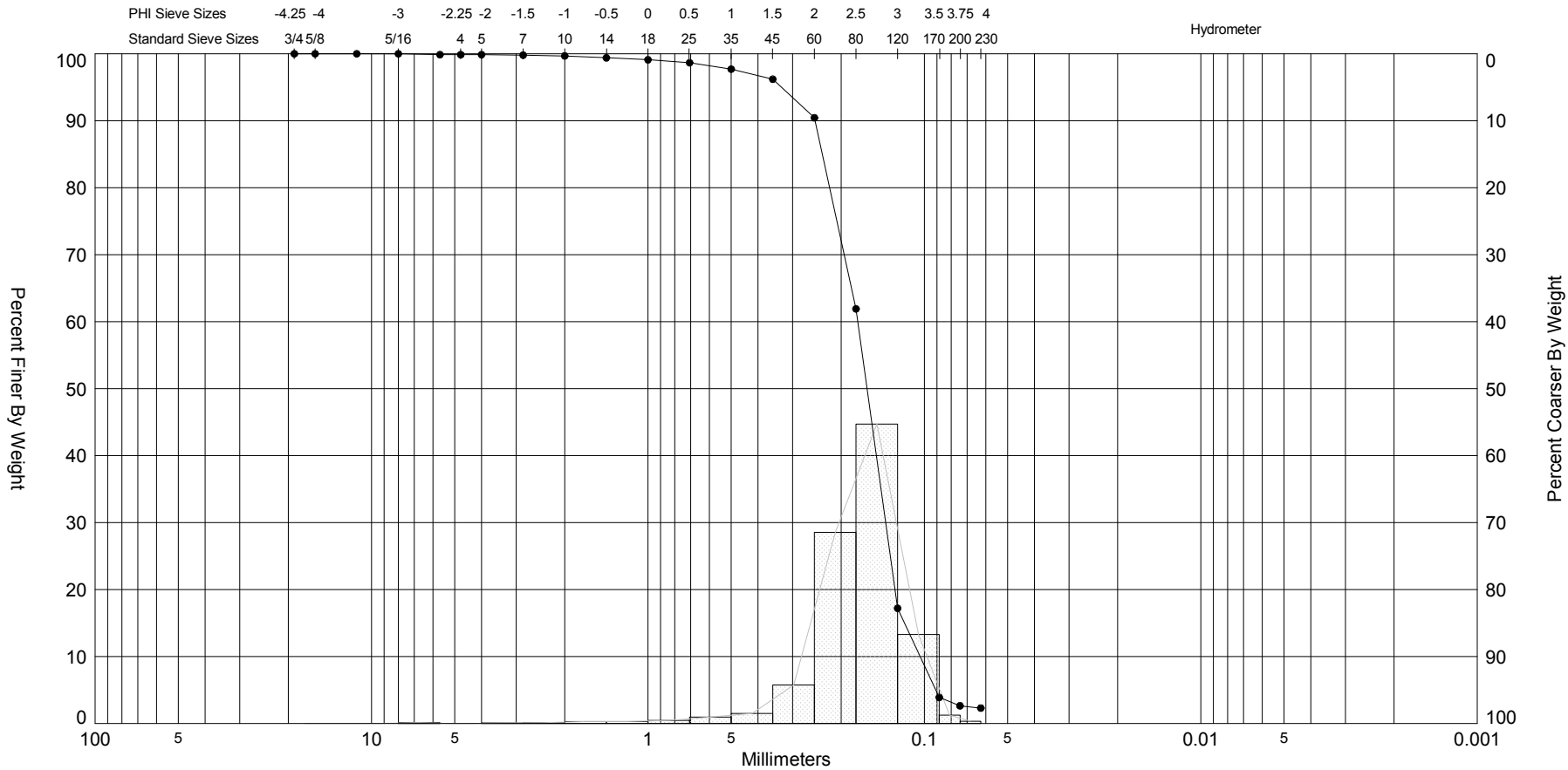
Comments: Depths and elevations based on measured values	Analysis Date:	Restoration Sand Sources on the Atlantic OCS
	Analyzed By:	09-30-15



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 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Easting (X, m):	482,957
Northing (Y, m):	3,316,294
Horizontal System:	NAD 1983
Vertical System:	NAVD88

SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC18 #2	—●—	-62.2	SP	#200 - 2.64 #230 - 2.31		8	2.63	2.54	-2.57	17.25	0.61	Project Name:	Inventory of Potential Beach Nourishment and Coastal

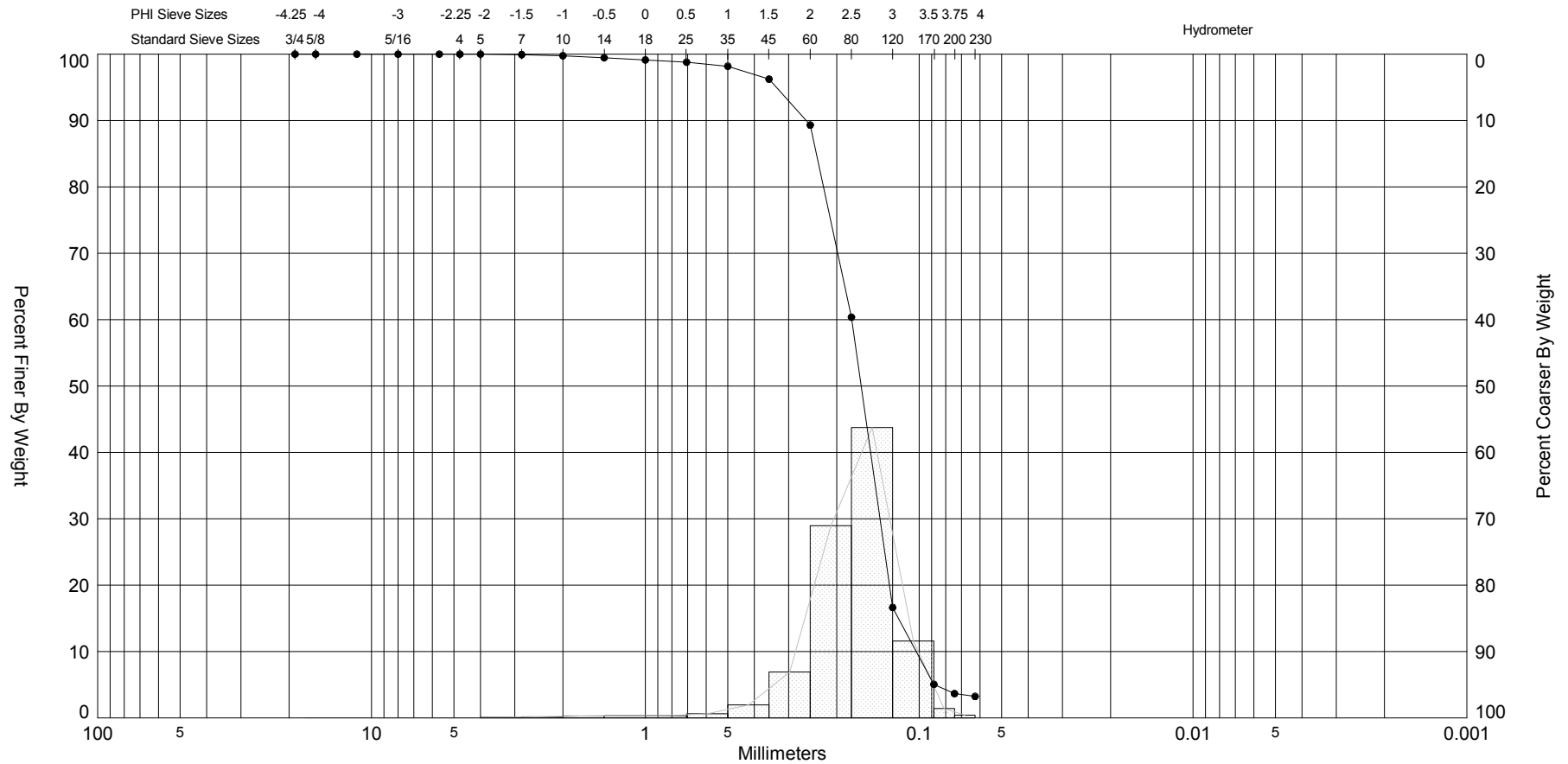
Comments: Depths and elevations based on measured values

Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Analyzed By:	09-29-15
Easting (X, m):	DA
Northing (Y, m):	482,957
Horizontal System:	3,316,294
Vertical System:	NAD 1983
	NAVD88




**CB&I**  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

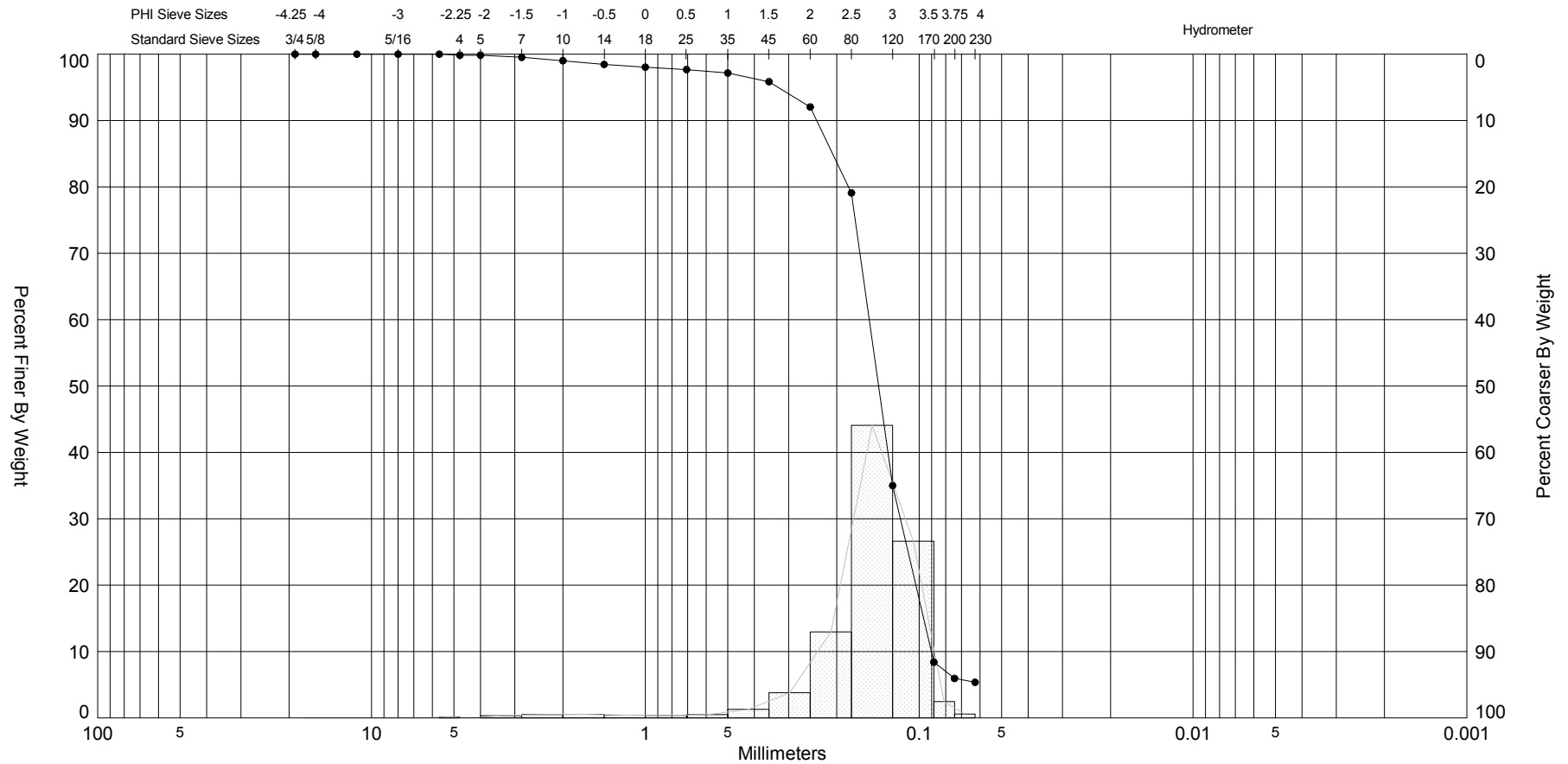
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC18 #3	—●—	-65.7	SP	#200 - 3.66 #230 - 3.24		8	2.62	2.52	-2.01	12.24	0.59	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	09-29-15
 <b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102												Easting (X, m):	482.957
												Northing (Y, m):	3,316,294
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88

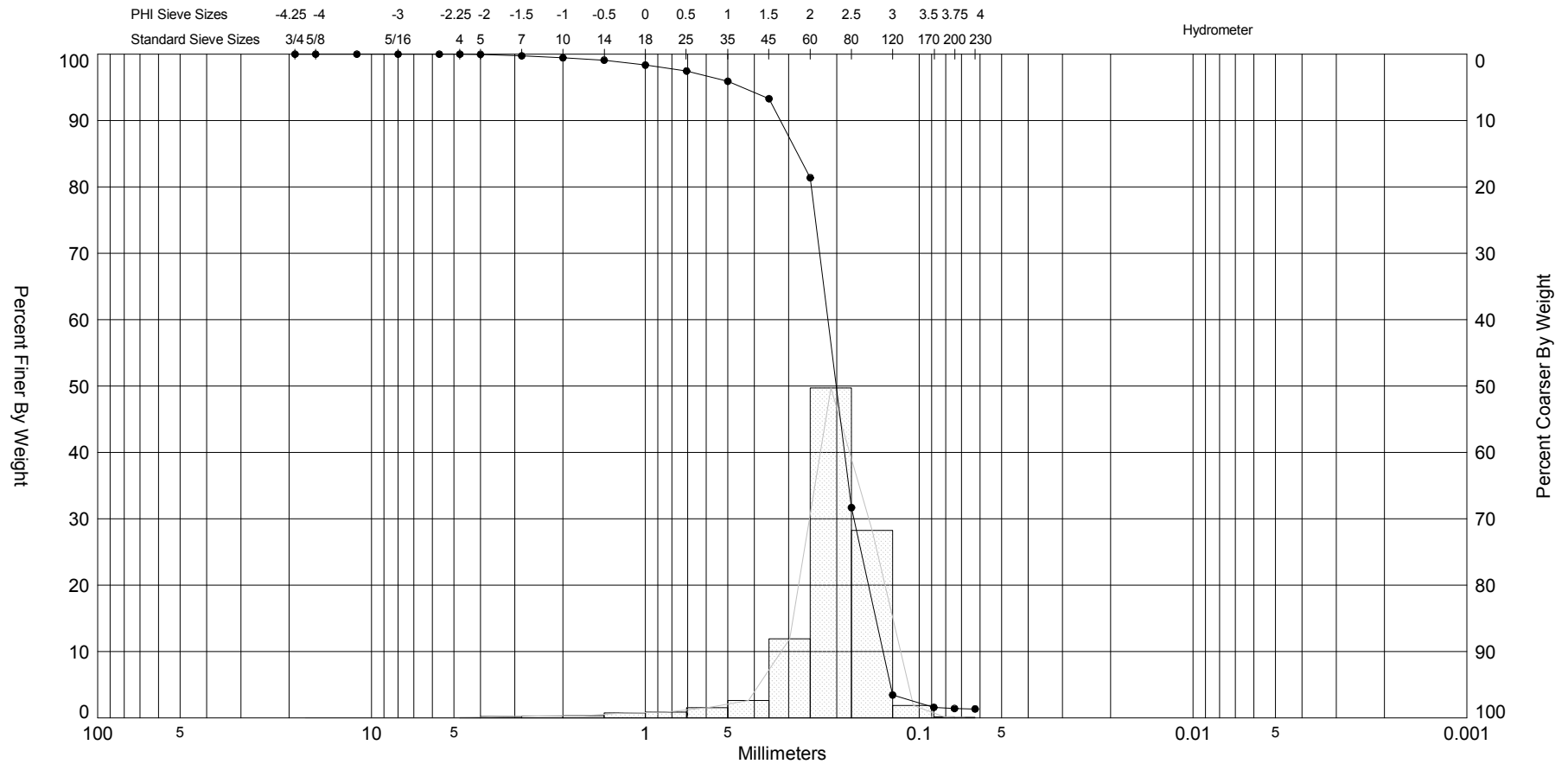
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC18 #4	—●—	-69.5	SP-SM	#200 - 5.95 #230 - 5.37		10	2.83	2.69	-3.12	16.85	0.74	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	09-29-15
												Easting (X, m):	482,957
												Northing (Y, m):	3,316,294
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
<p style="text-align: center;"> <b>CB&amp;I</b>            Coastal Planning &amp; Engineering, Inc.            2481 NW Boca Raton Blvd.            Boca Raton, FL 33431            ph (561) 391 8102         </p>													

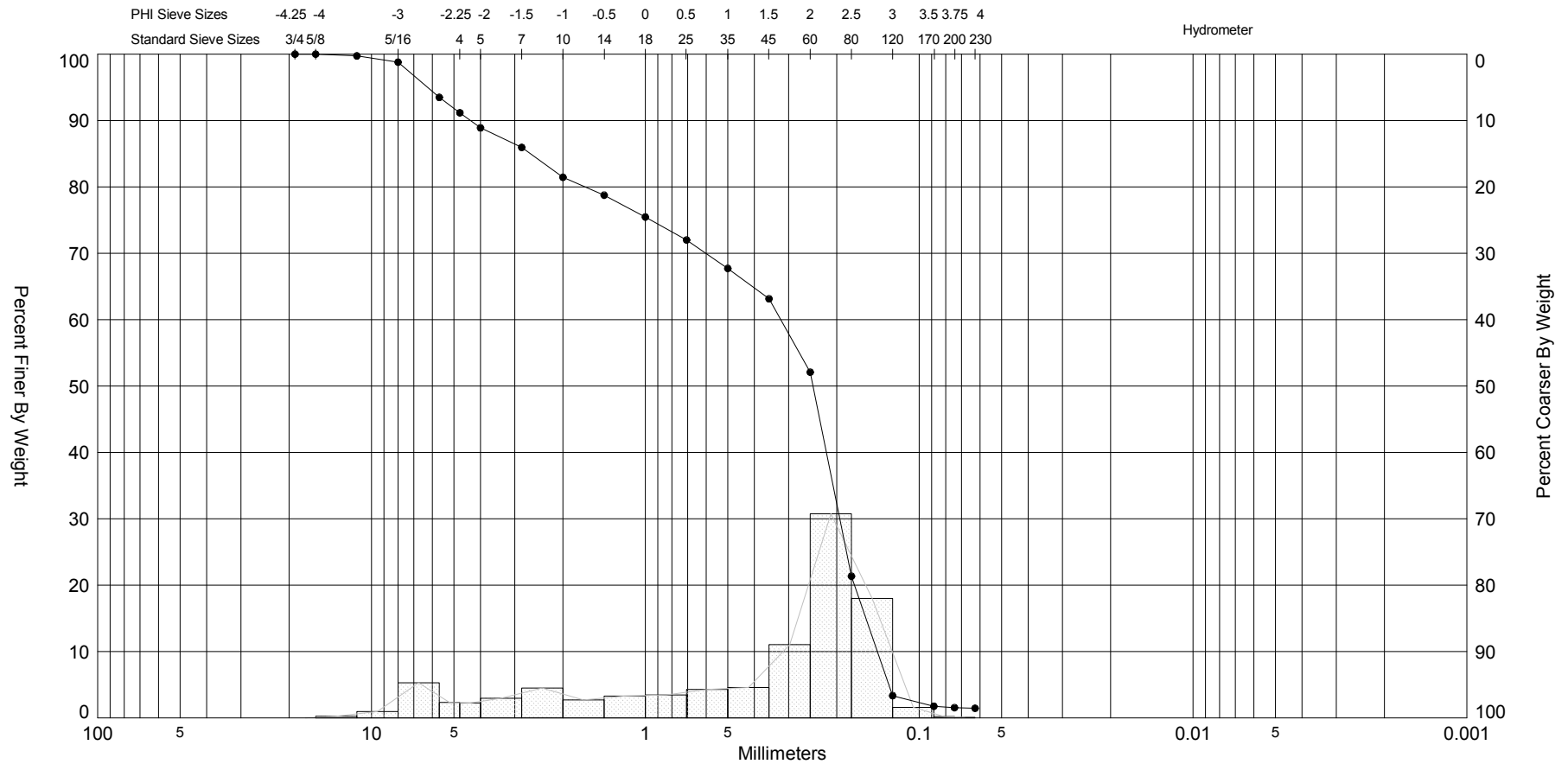
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC19 #1	—●—	-51.6	SP	#200 - 1.42 #230 - 1.35		5	2.32	2.24	-2.55	13.7	0.62	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-27-15
												Easting (X, m):	477.850
												Northing (Y, m):	3,312,643
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
<b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													

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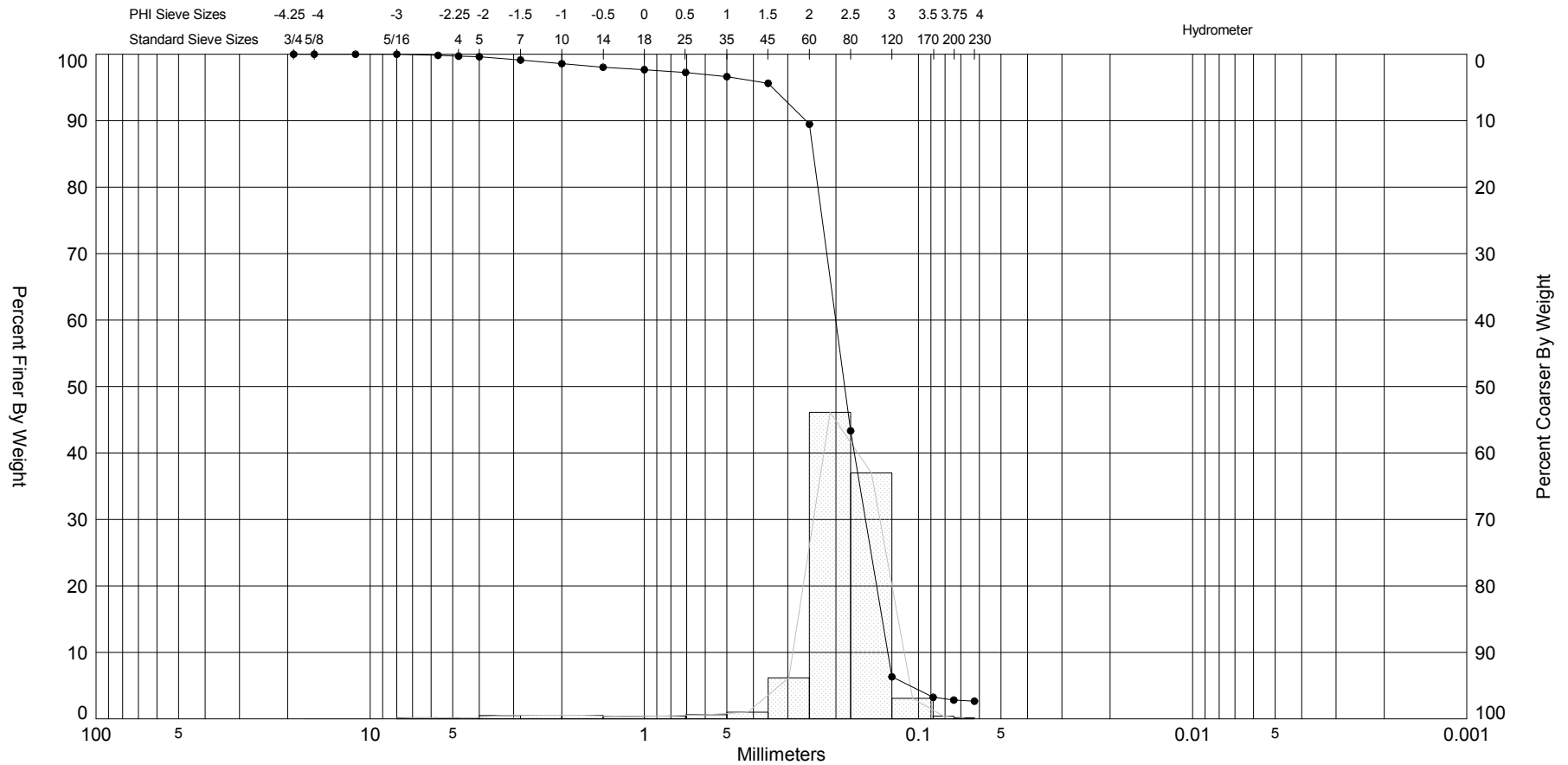


Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	


Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC19 #2	—●—	-54.0	SW	#200 - 1.55 #230 - 1.45		31	2.03	1.13	-1.04	2.73	1.82	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-27-15
 <b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102												Easting (X, m):	477.850
												Northing (Y, m):	3,312,643
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88



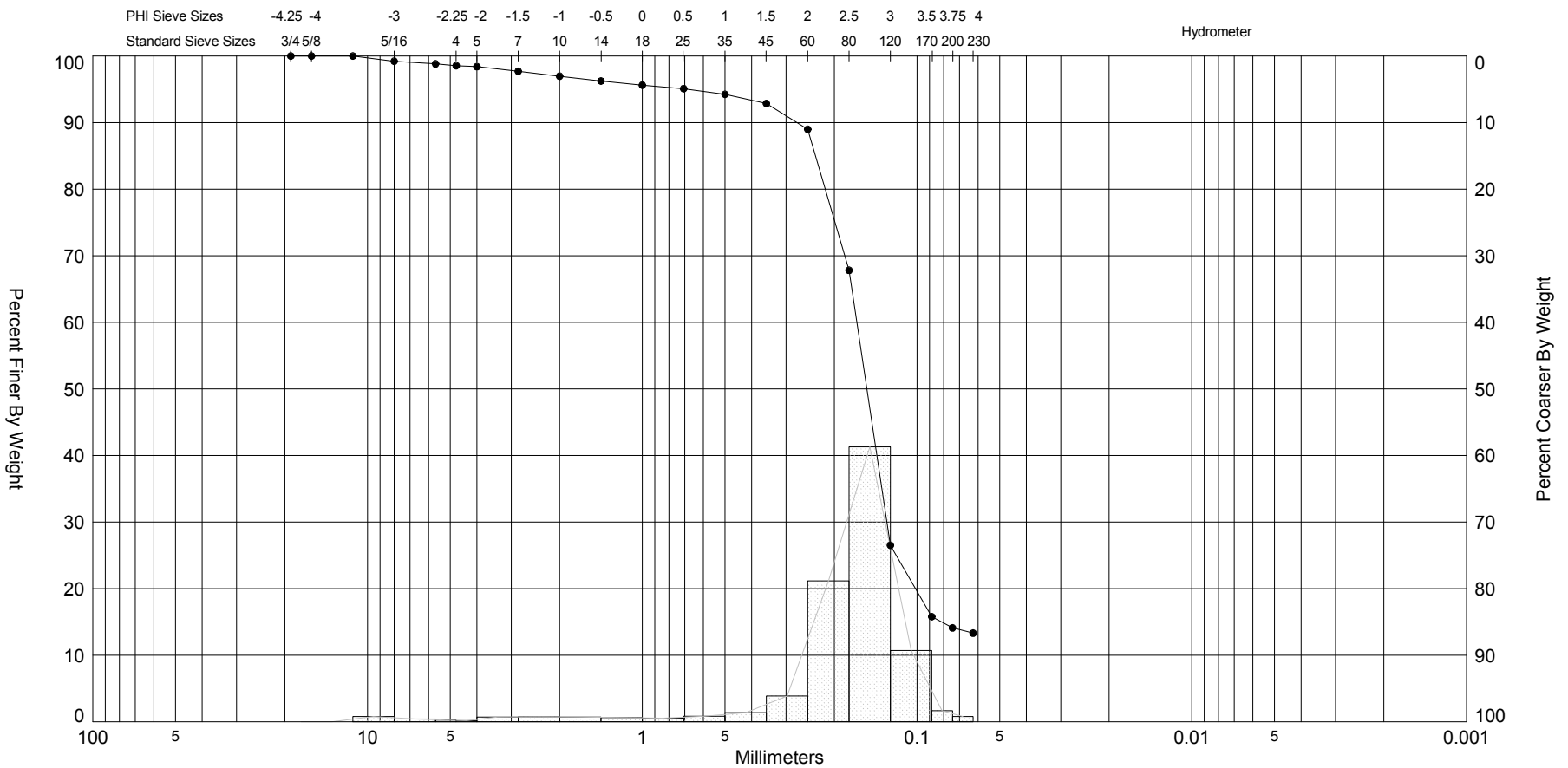
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC19 #3	—●—	-57.7	SP	#200 - 2.83 #230 - 2.66		6	2.43	2.34	-3.65	21.24	0.71	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-27-15 DA
												Easting (X, m):	477.850
												Northing (Y, m):	3,312,643
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
<p style="text-align: center;"> <b>CB&amp;I</b>            Coastal Planning &amp; Engineering, Inc.            2481 NW Boca Raton Blvd.            Boca Raton, FL 33431            ph (561) 391 8102         </p>													

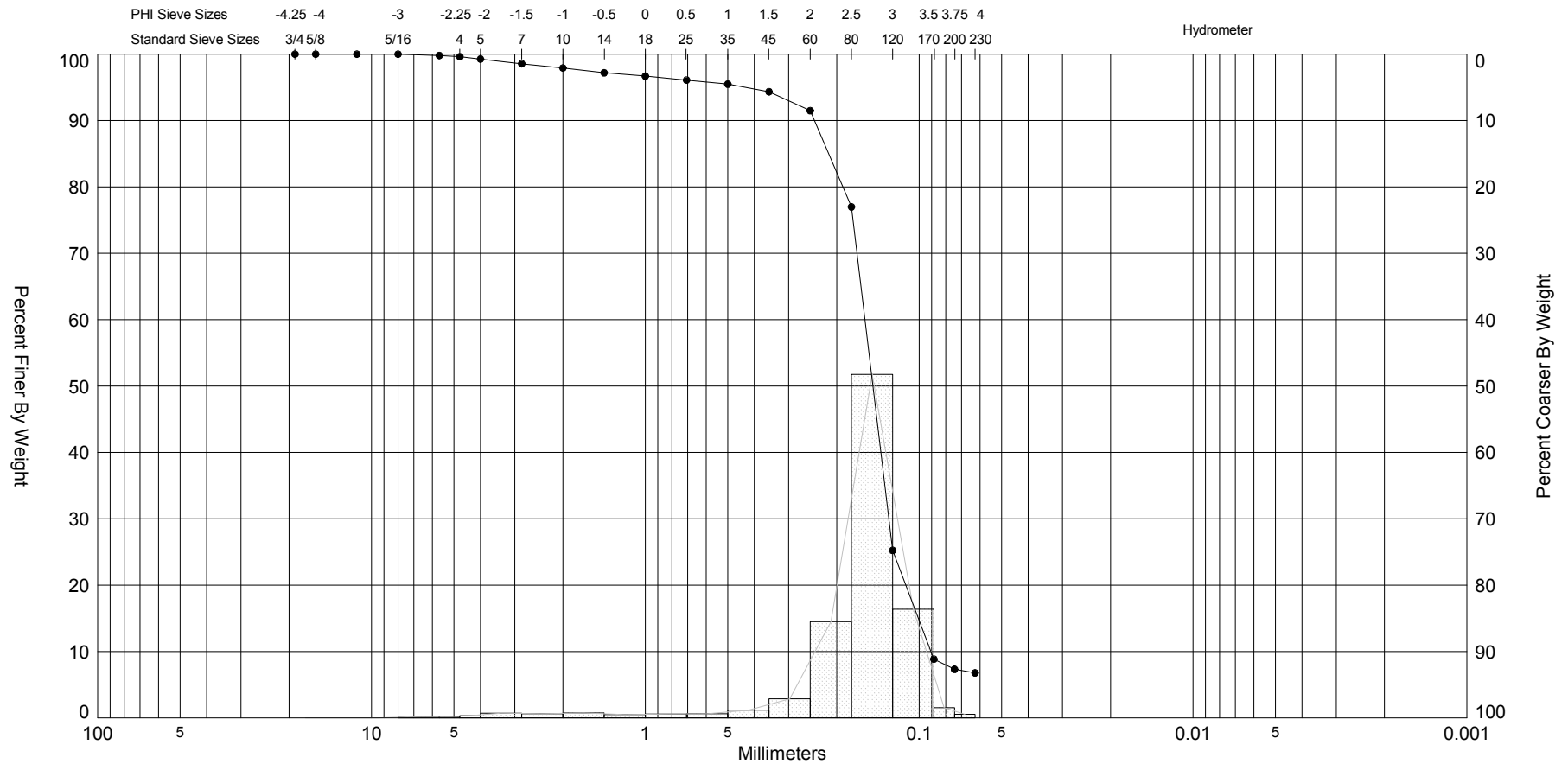
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC19 #4	—●—	-64.7	SM	#200 - 14.11 #230 - 13.32		9	2.72	2.39	-3.11	14.02	1.09	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-27-15
 <div style="text-align: center;"> <p>CB&amp;I Coastal Planning &amp; Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102</p> </div>												Easting (X, m):	477.850
												Northing (Y, m):	3,312,643
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88

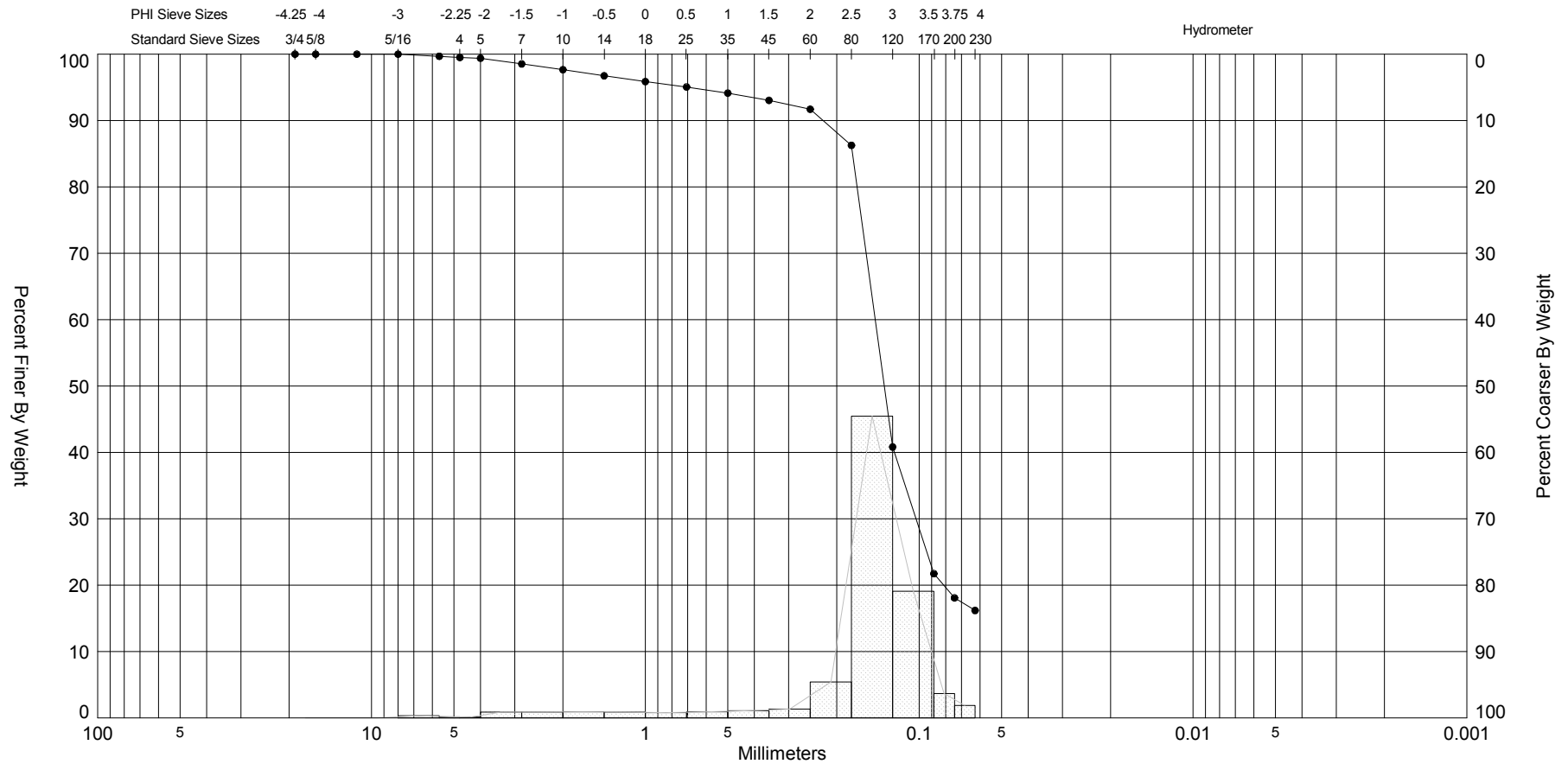
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC21 #1	—●—	-51.6	SW-SM	#200 - 7.32 #230 - 6.78		8	2.76	2.56	-3.34	16.11	0.9	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-05-15 SMT
												Easting (X, m):	465.510
												Northing (Y, m):	3,376,131
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
CB&I Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													

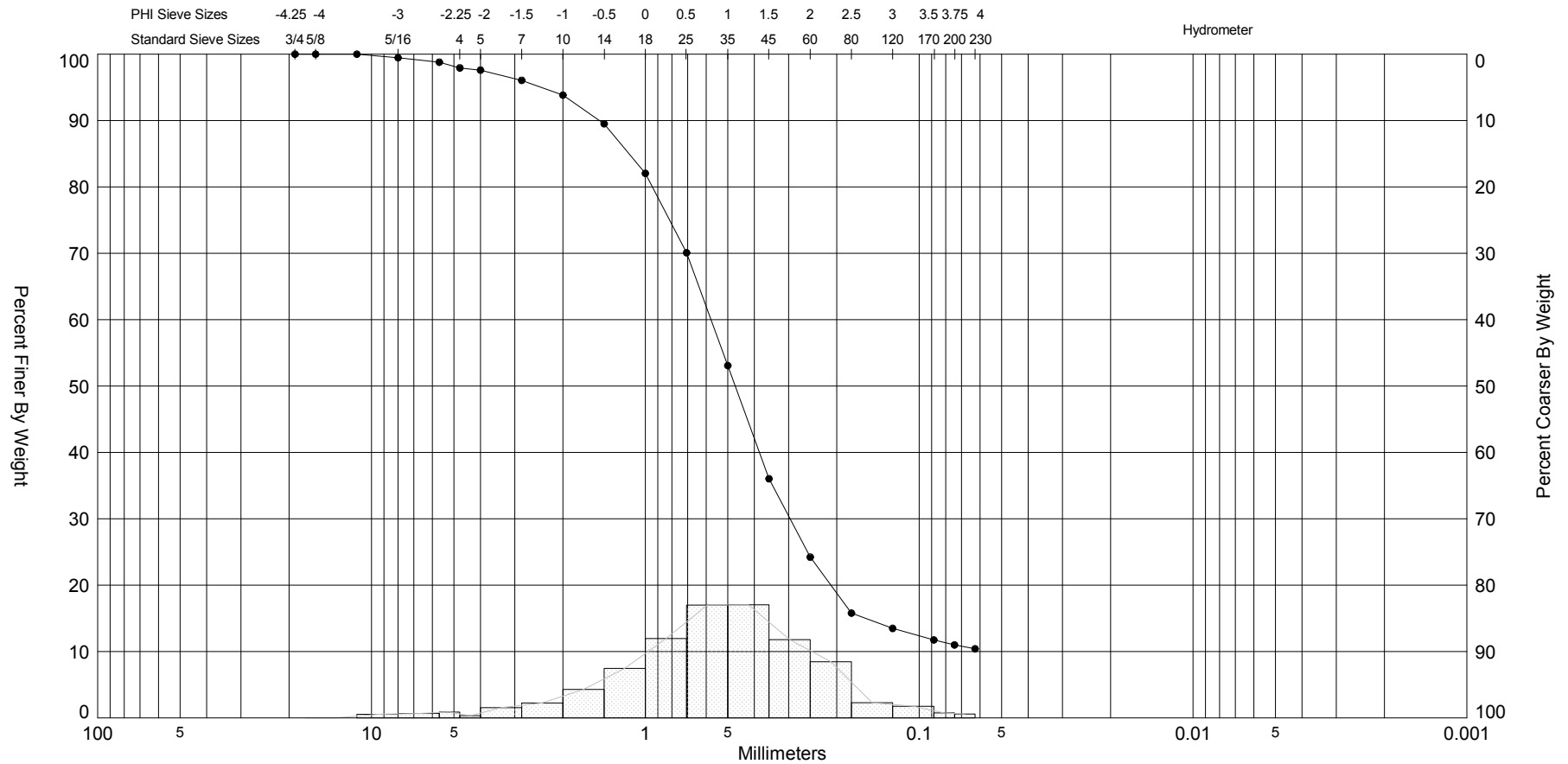
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC21 #2	—●—	-54.8	SM	#200 - 18.08 #230 - 16.19		10	2.9	2.62	-2.89	12.12	1.04	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-05-15 SMT
												Easting (X, m):	465.510
												Northing (Y, m):	3,376,131
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
CB&I Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													

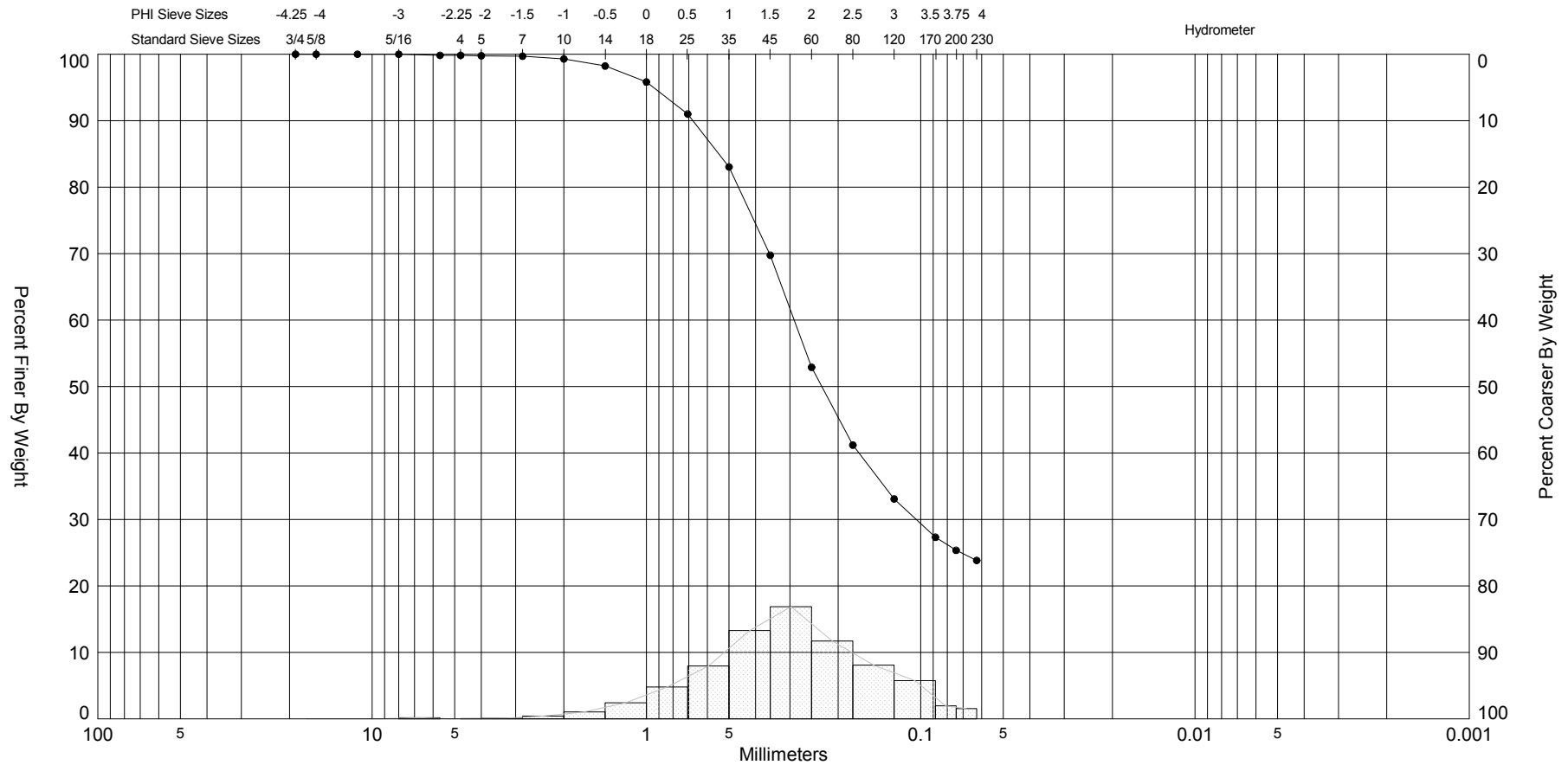
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC21 #3	—●—	-65.3	SW-SM	#200 - 11.00 #230 - 10.42		11	1.09	0.86	-0.51	3.88	1.22	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-05-15 SMT
												Easting (X, m):	465.510
												Northing (Y, m):	3,376,131
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
CB&I Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													

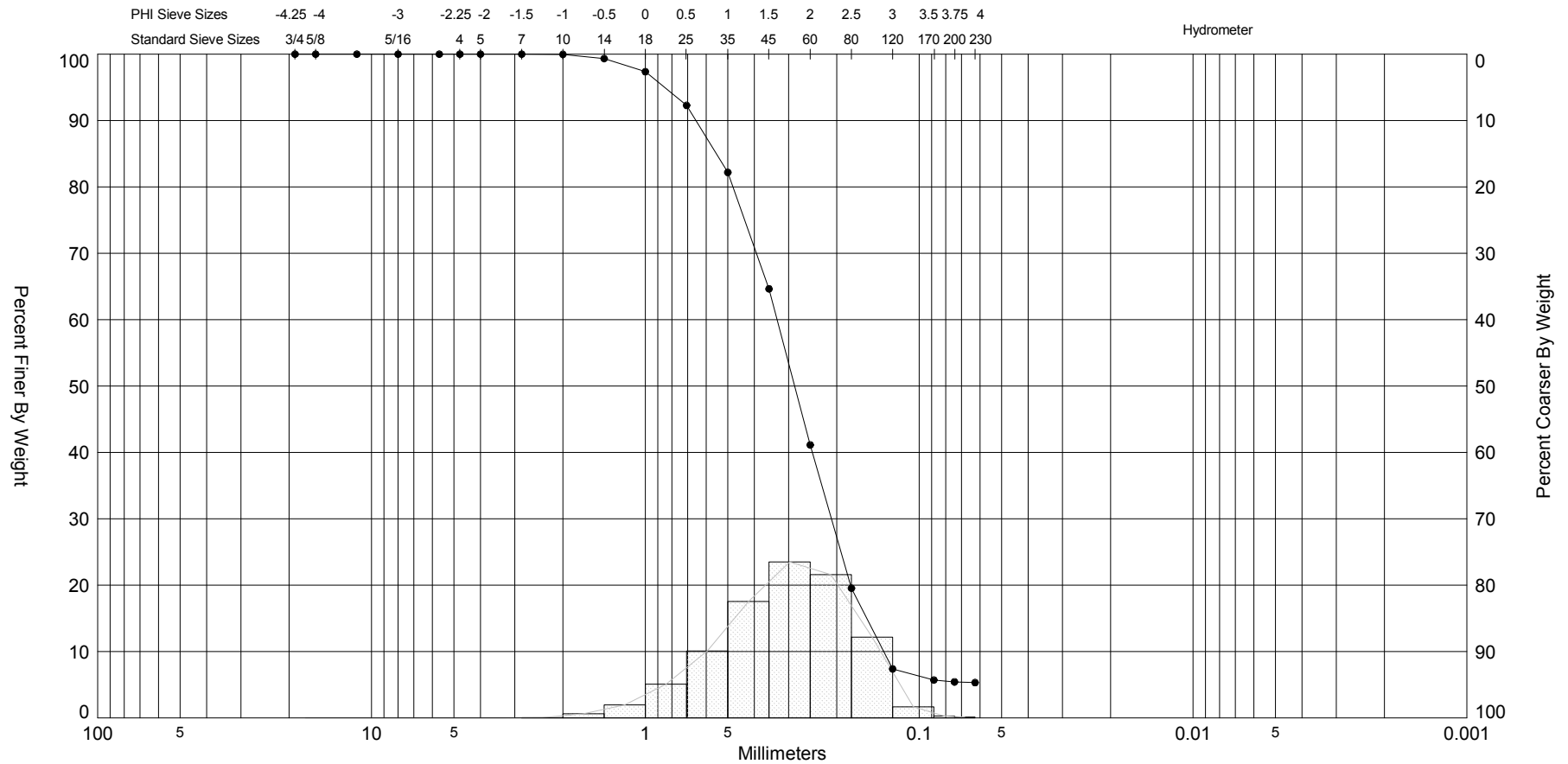
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC21 #4	—●—	-66.8	SC	#200 - 25.36 #230 - 23.83		4	2.12	1.72	-0.34	3.46	1.06	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	09-30-15
												Easting (X, m):	465.510
												Northing (Y, m):	3,376,131
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
<b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													


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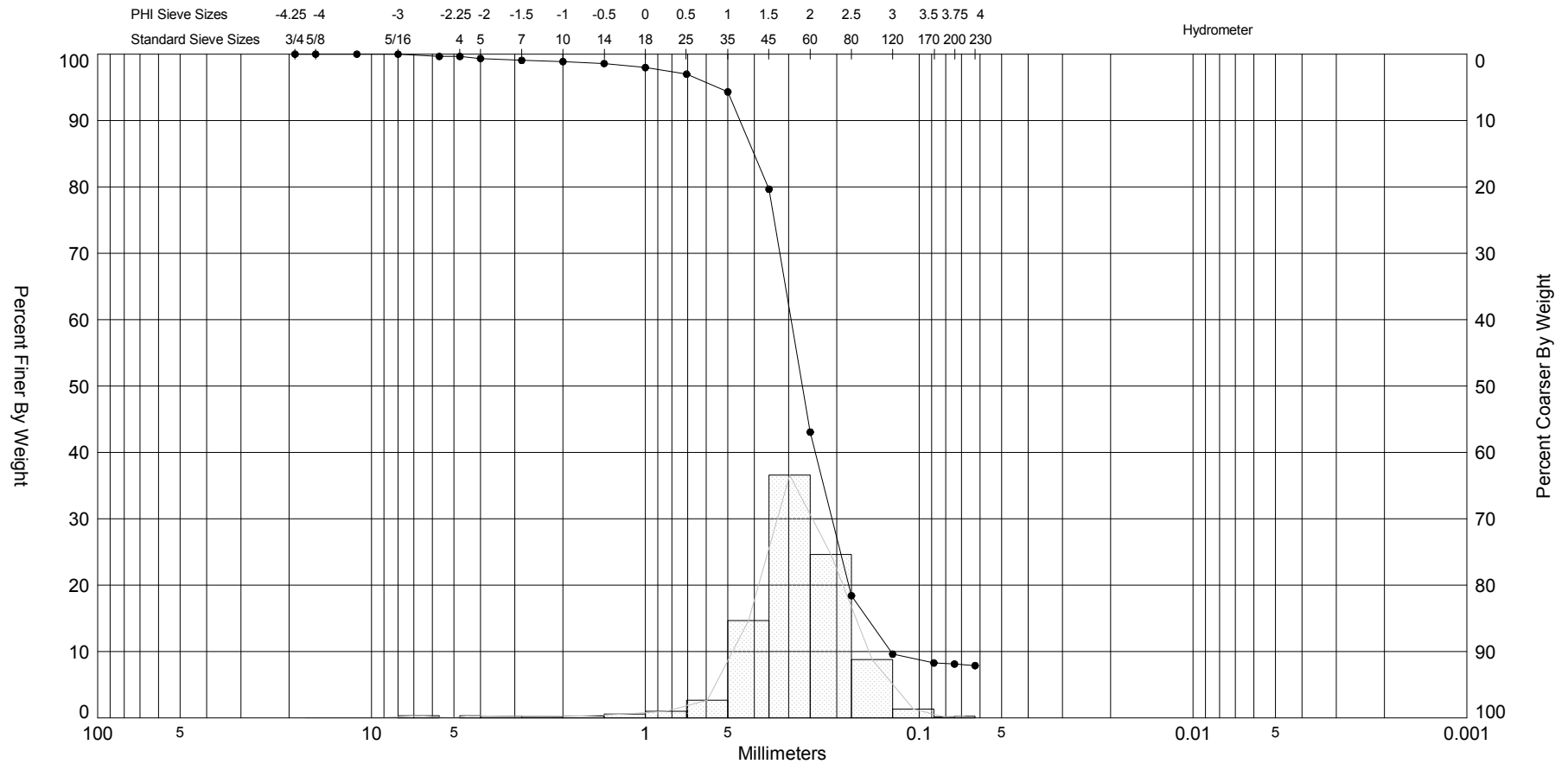
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC21 #5	—●—	-69.0	SP-SM	#200 - 5.43 #230 - 5.32		1	1.81	1.69	-0.44	3.03	0.8	Project Name:	Inventory of Potential Beach Nourishment and Coastal

Comments:	Analysis Date:
Depths and elevations based on measured values	Analyzed By:

	<p><b>CB&amp;I</b>                  Coastal Planning &amp; Engineering, Inc.                  2481 NW Boca Raton Blvd.                  Boca Raton, FL 33431                  ph (561) 391 8102</p>
	Easting (X, m): 465.510 Northing (Y, m): 3,376,131 Horizontal System: NAD 1983 Vertical System: NAVD88

SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16

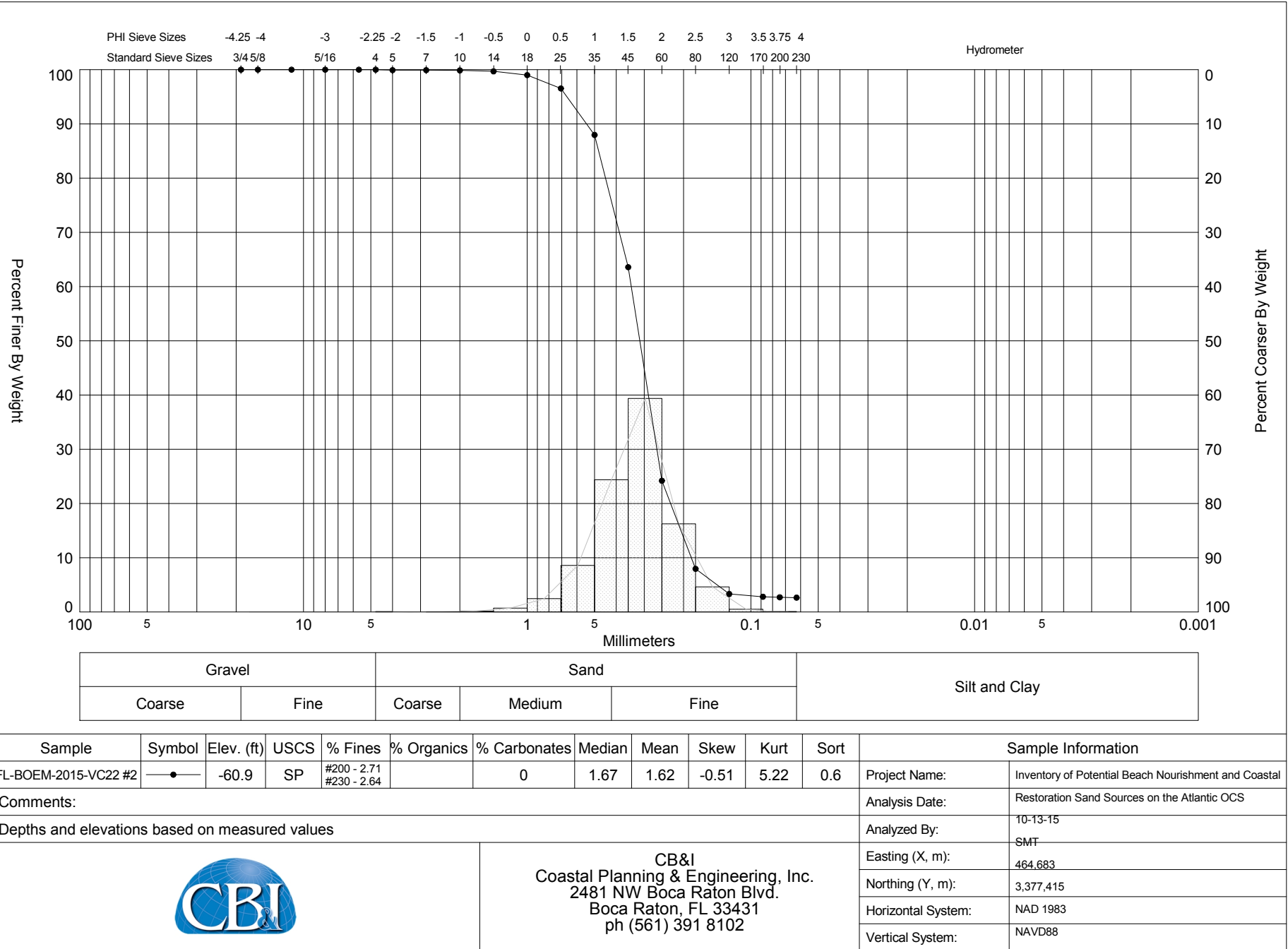


Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	


Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC22 #1	—●—	-59.7	SP-SM	#200 - 8.12 #230 - 7.88		2	1.91	1.82	-2.09	13.19	0.73	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-13-15 SMT
<p><b>CB&amp;I</b> Coastal Planning &amp; Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102</p>												Easting (X, m):	464.683
												Northing (Y, m):	3,377,415
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88



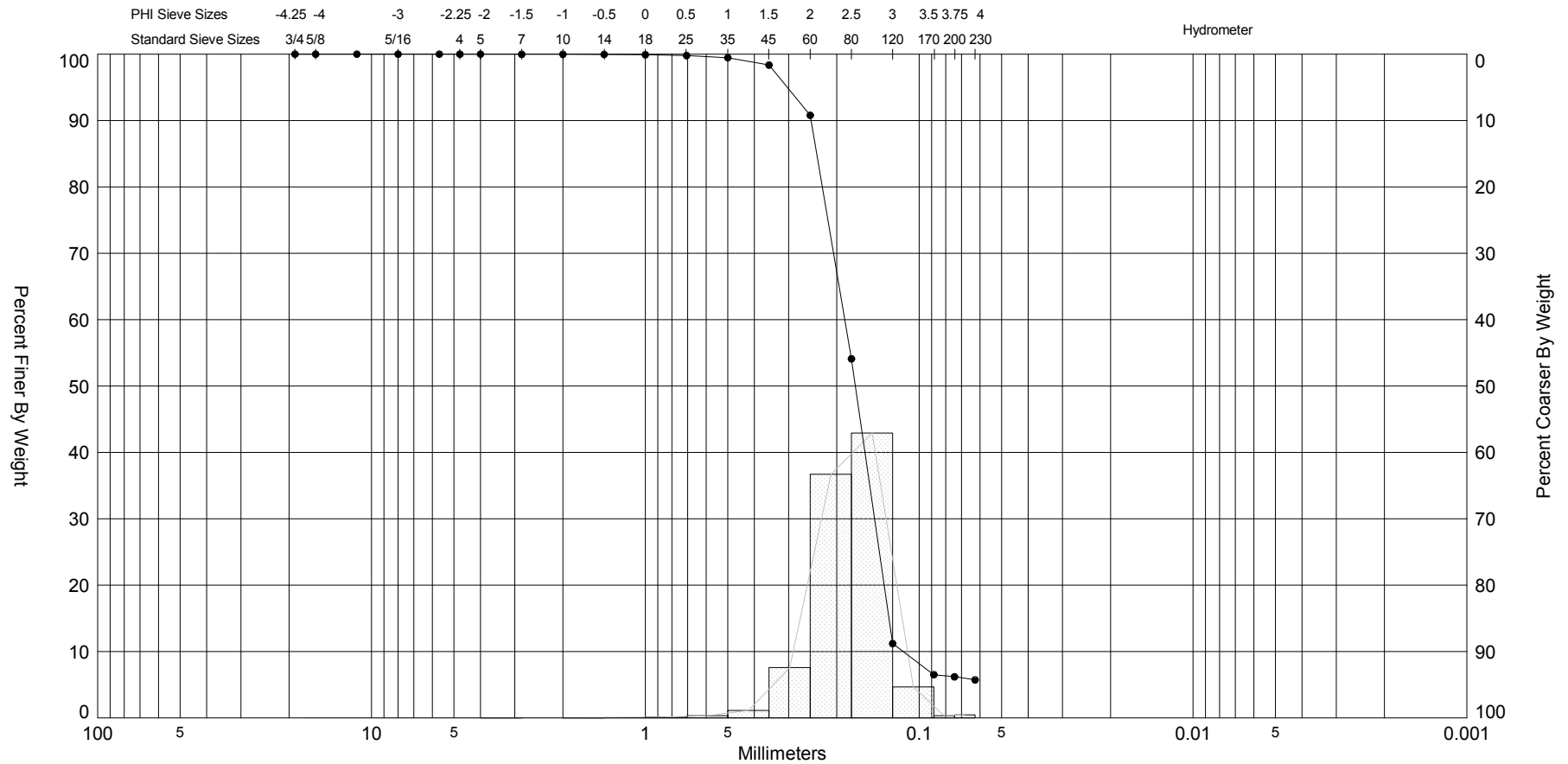
SIEVE ANALYSIS FL\_BOEM-2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC22 #2	—●—	-60.9	SP	#200 - 2.71 #230 - 2.64		0	1.67	1.62	-0.51	5.22	0.6	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-13-15
												Easting (X, m):	464.683
												Northing (Y, m):	3,377,415
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
CB&I Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													

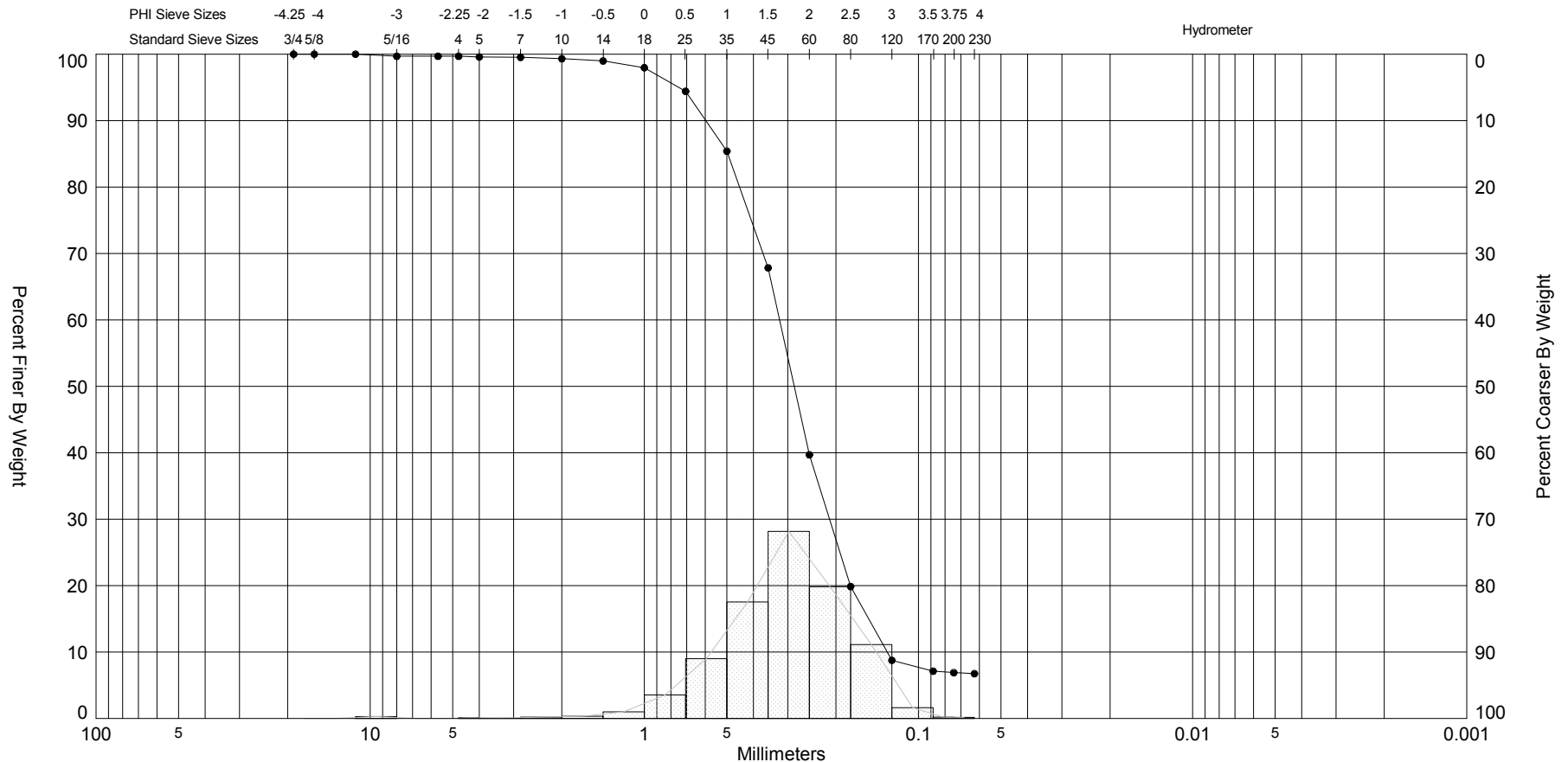
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC22 #3	—●—	-62.6	SP-SM	#200 - 6.19 #230 - 5.73		1	2.55	2.48	-0.92	8.22	0.43	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-14-15 SMT
												Easting (X, m):	464.683
												Northing (Y, m):	3,377,415
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
<p style="text-align: center;"> <b>CB&amp;I</b>            Coastal Planning &amp; Engineering, Inc.            2481 NW Boca Raton Blvd.            Boca Raton, FL 33431            ph (561) 391 8102         </p>													


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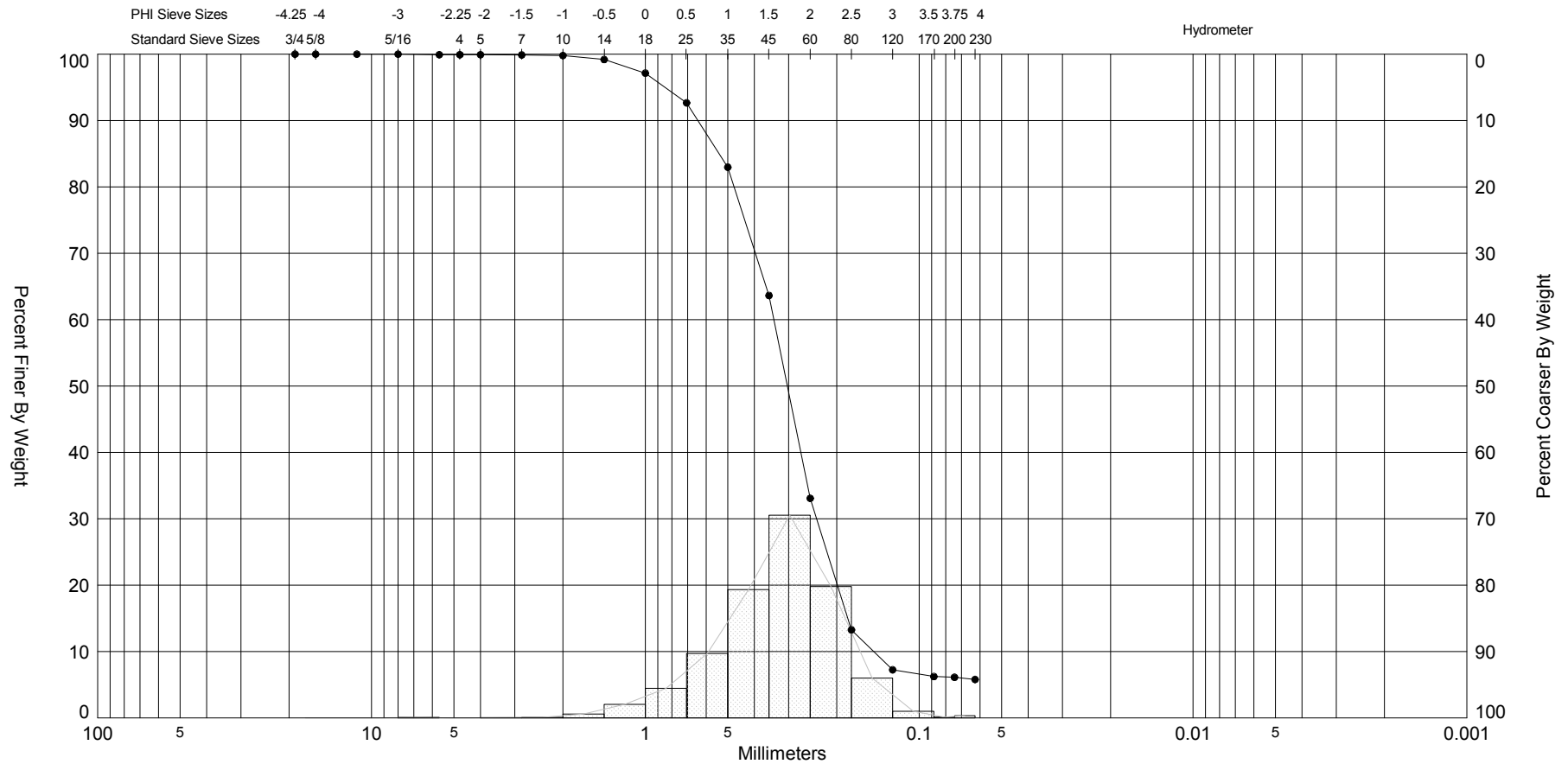
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC22 #4	—●—	-65.4	SP-SM	#200 - 6.90 #230 - 6.74		1	1.82	1.7	-1.19	7.98	0.8	Project Name:	Inventory of Potential Beach Nourishment and Coastal

Comments: Depths and elevations based on measured values	Analysis Date:	Restoration Sand Sources on the Atlantic OCS
	Analyzed By:	10-15-15 SMT

	<b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102	
	Easting (X, m):	464.683
	Northing (Y, m):	3,377,415
	Horizontal System:	NAD 1983
	Vertical System:	NAVD88

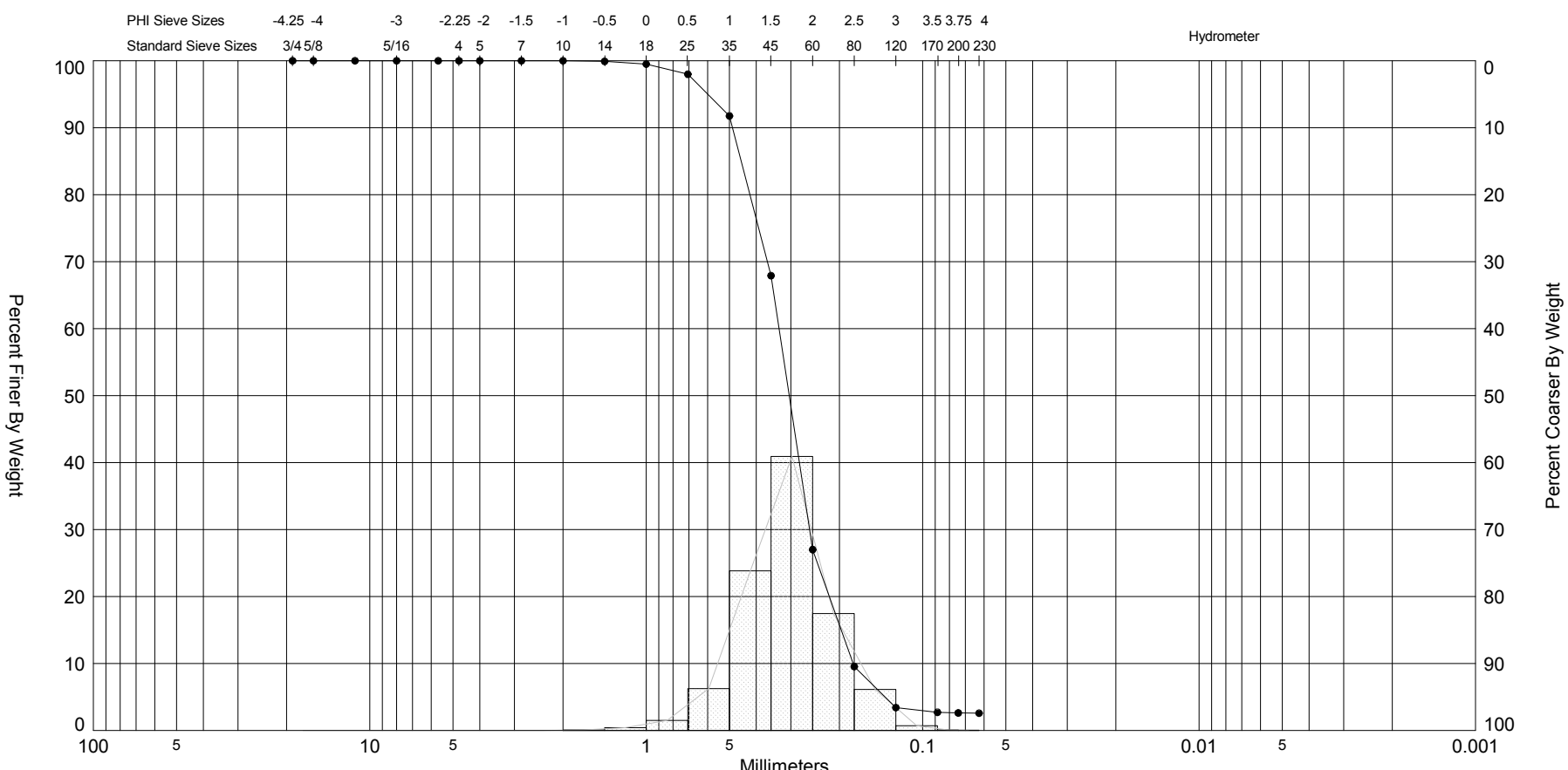
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16



Gravel		Sand			Silt and Clay	
Coarse	Fine	Coarse	Medium	Fine		

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC22 #5	—●—	-68.9	SP-SM	#200 - 6.12 #230 - 5.79		1	1.72	1.6	-0.64	4.64	0.75	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-15-15 SMT
 <b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102												Easting (X, m):	464.683
												Northing (Y, m):	3,377,415
												Horizontal System:	NAD 1983
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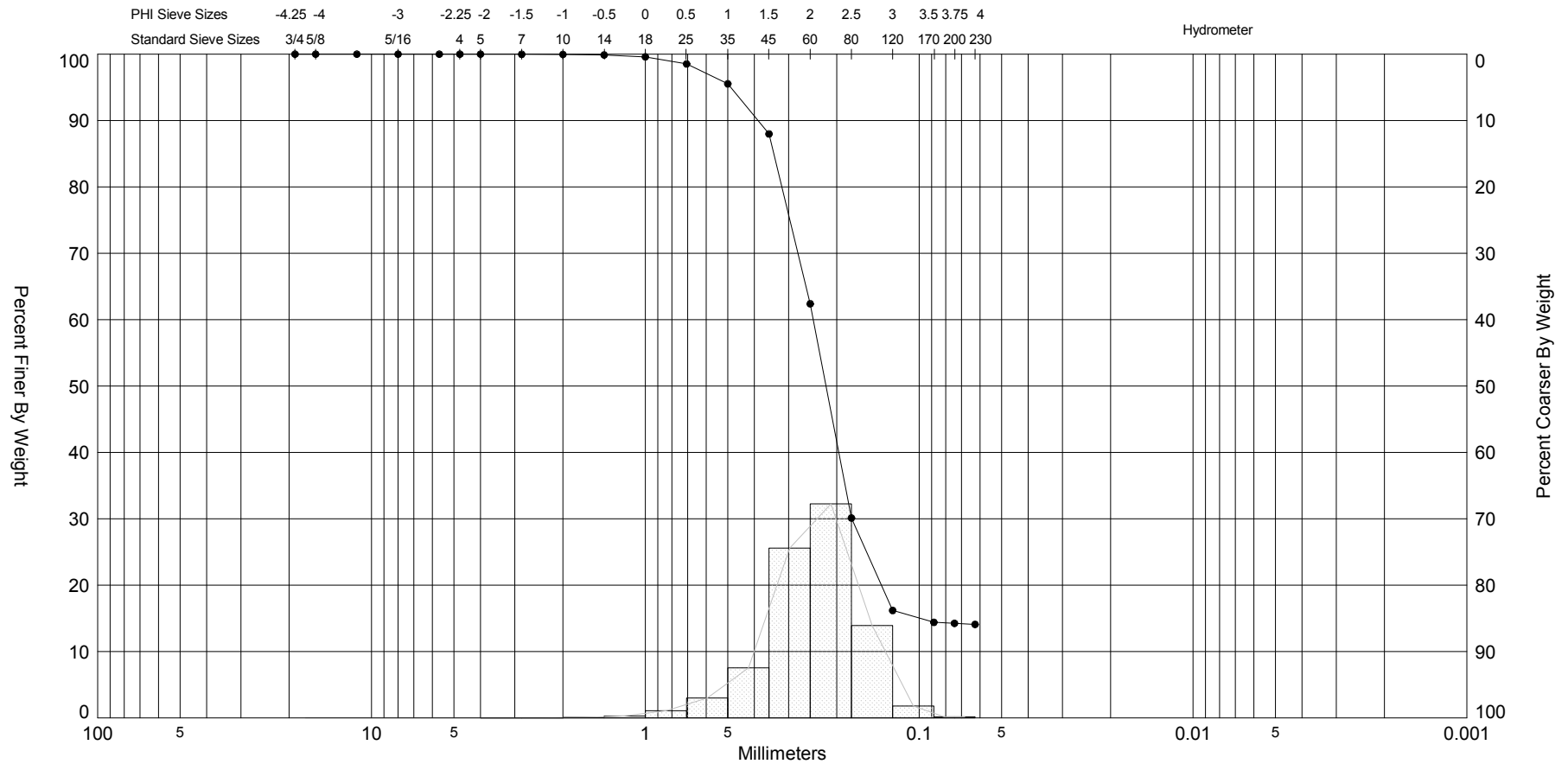
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16



Gravel		Sand			Silt and Clay	
Coarse	Fine	Coarse	Medium	Fine		

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC22 #6	—●—	-71.3	SP	#200 - 2.62 #230 - 2.58		0	1.72	1.7	-0.14	3.99	0.56	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-15-15 SMT
 <b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102												Easting (X, m):	464.683
												Northing (Y, m):	3,377,415
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88

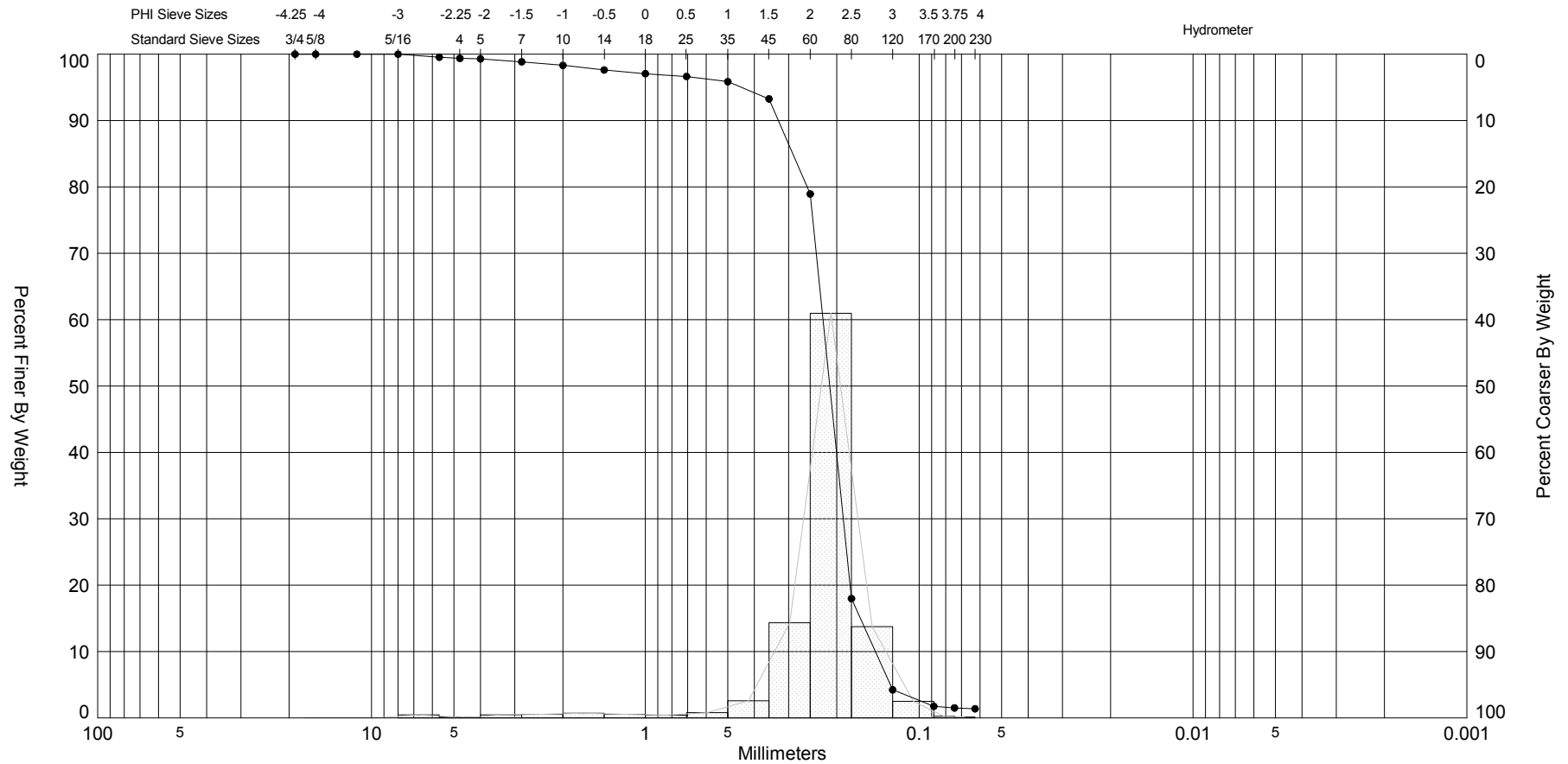
SIEVE ANALYSIS FL\_BOEM-2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC22 #7	—●—	-74.6	SC	#200 - 14.25 #230 - 14.09		1	2.19	2.03	-0.74	4.96	0.59	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-12-15 SMT
 <b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102												Easting (X, m):	464.683
												Northing (Y, m):	3,377,415
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88

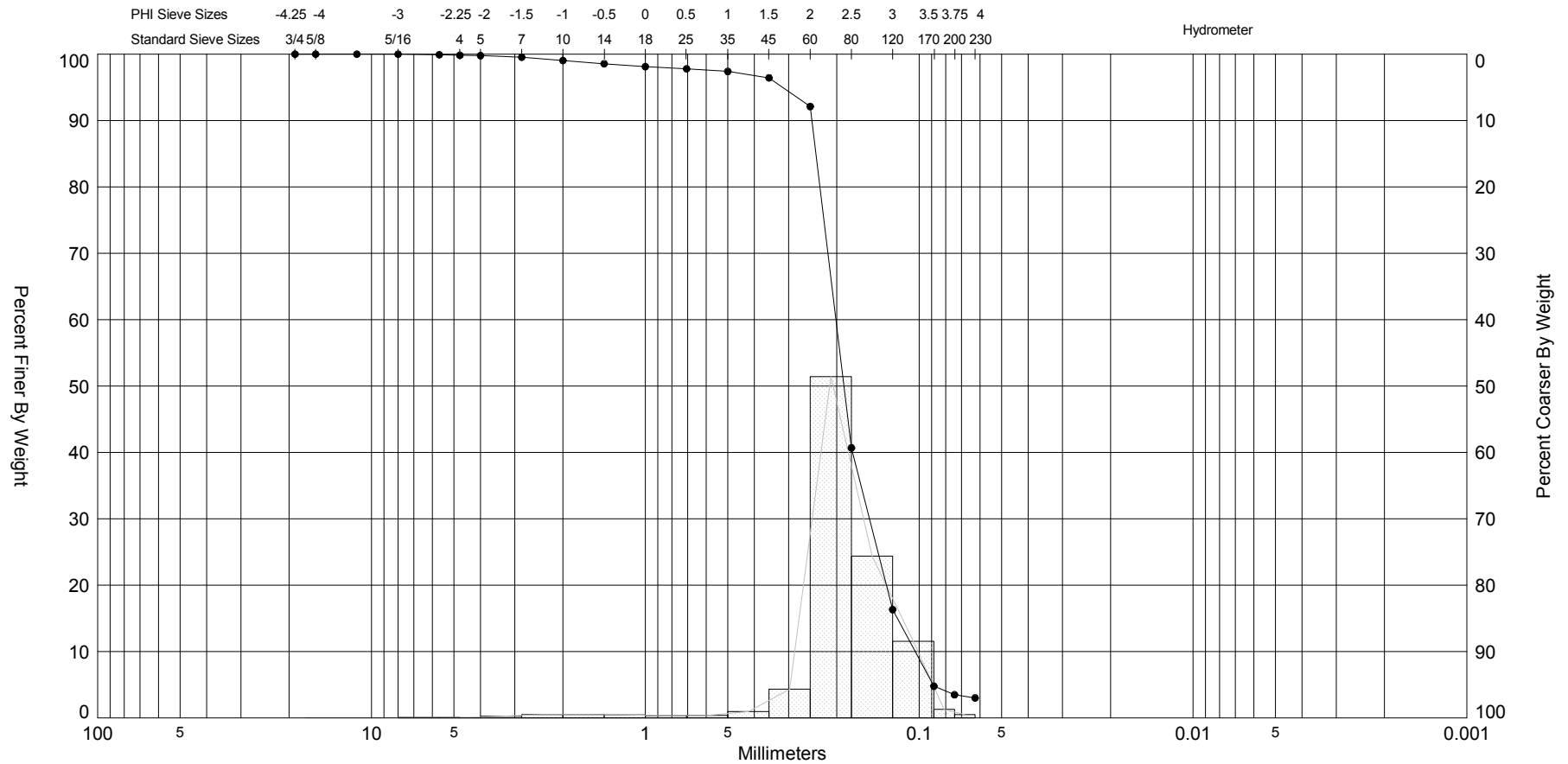
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC23 #1	—●—	-48.4	SP	#200 - 1.51 #230 - 1.38		7	2.24	2.12	-3.52	19.98	0.74	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-21-15 ST
 <b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102												Easting (X, m):	464,846
												Northing (Y, m):	3,378,105
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88

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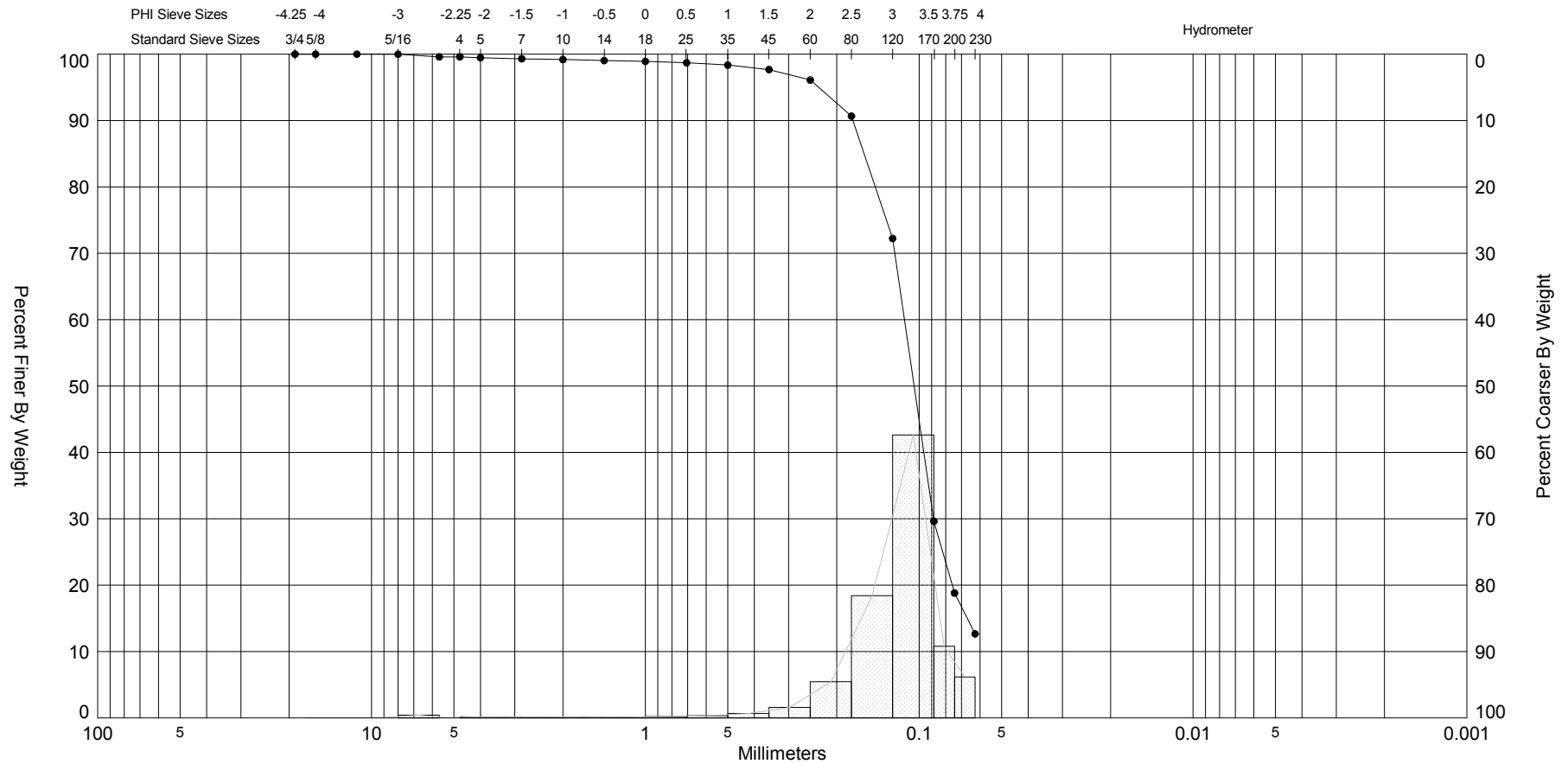


Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	


Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC23 #2	—●—	-52.3	SP	#200 - 3.49 #230 - 3.01		6	2.41	2.41	-2.86	18.29	0.68	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-21-15 ST
												Easting (X, m):	464,846
												Northing (Y, m):	3,378,105
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
<b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													



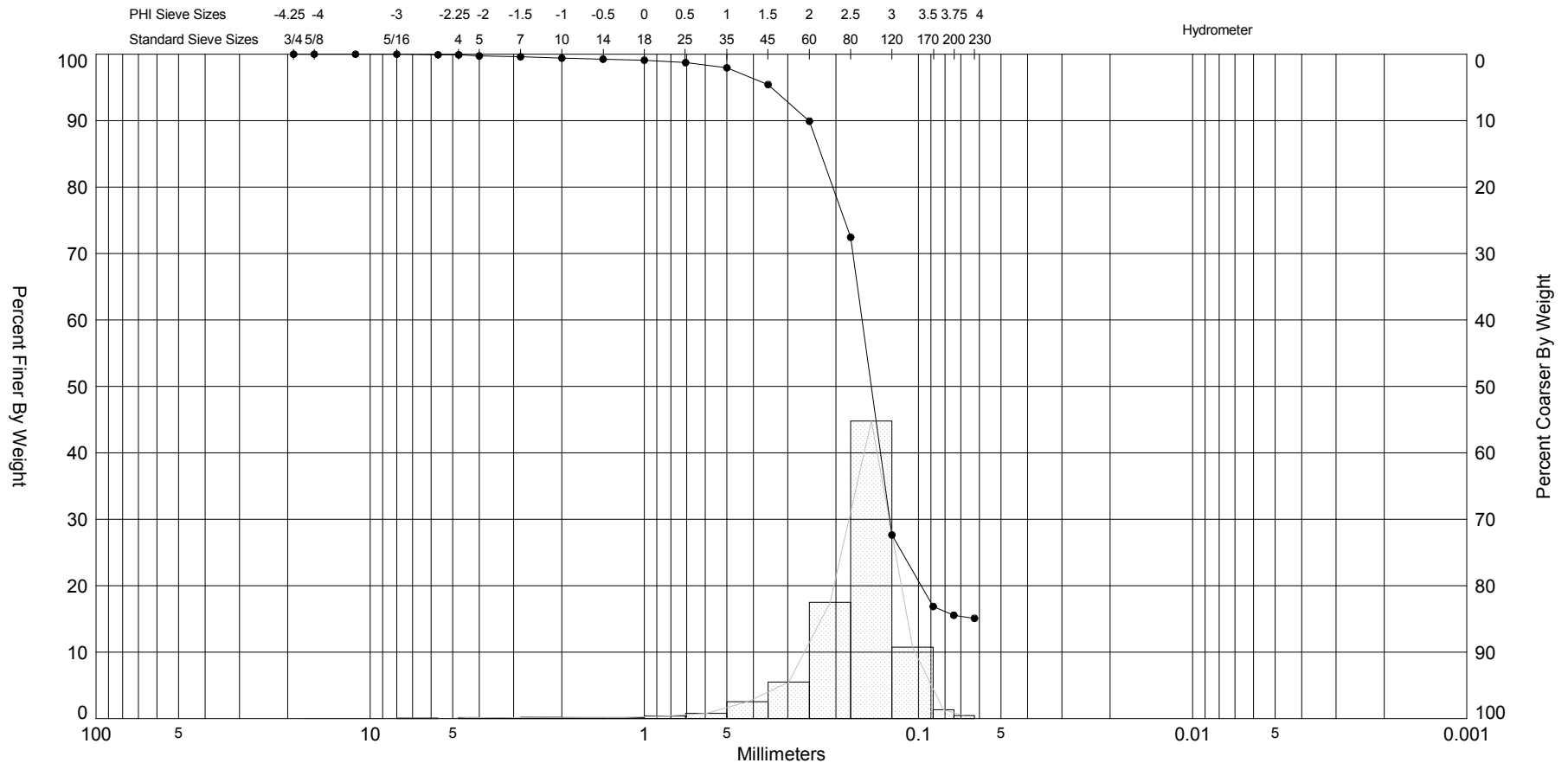
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC23 #3	—●—	-55.0	SM	#200 - 18.82 #230 - 12.67		8	3.26	3.05	-4.04	27.28	0.75	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-14-15 SMT
												Easting (X, m):	464,846
												Northing (Y, m):	3,378,105
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
<b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													

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Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC23 #4	—●—	-56.8	SC	#200 - 15.56 #230 - 15.10		2	2.75	2.55	-2.86	17.84	0.67	Project Name:	Inventory of Potential Beach Nourishment and Coastal

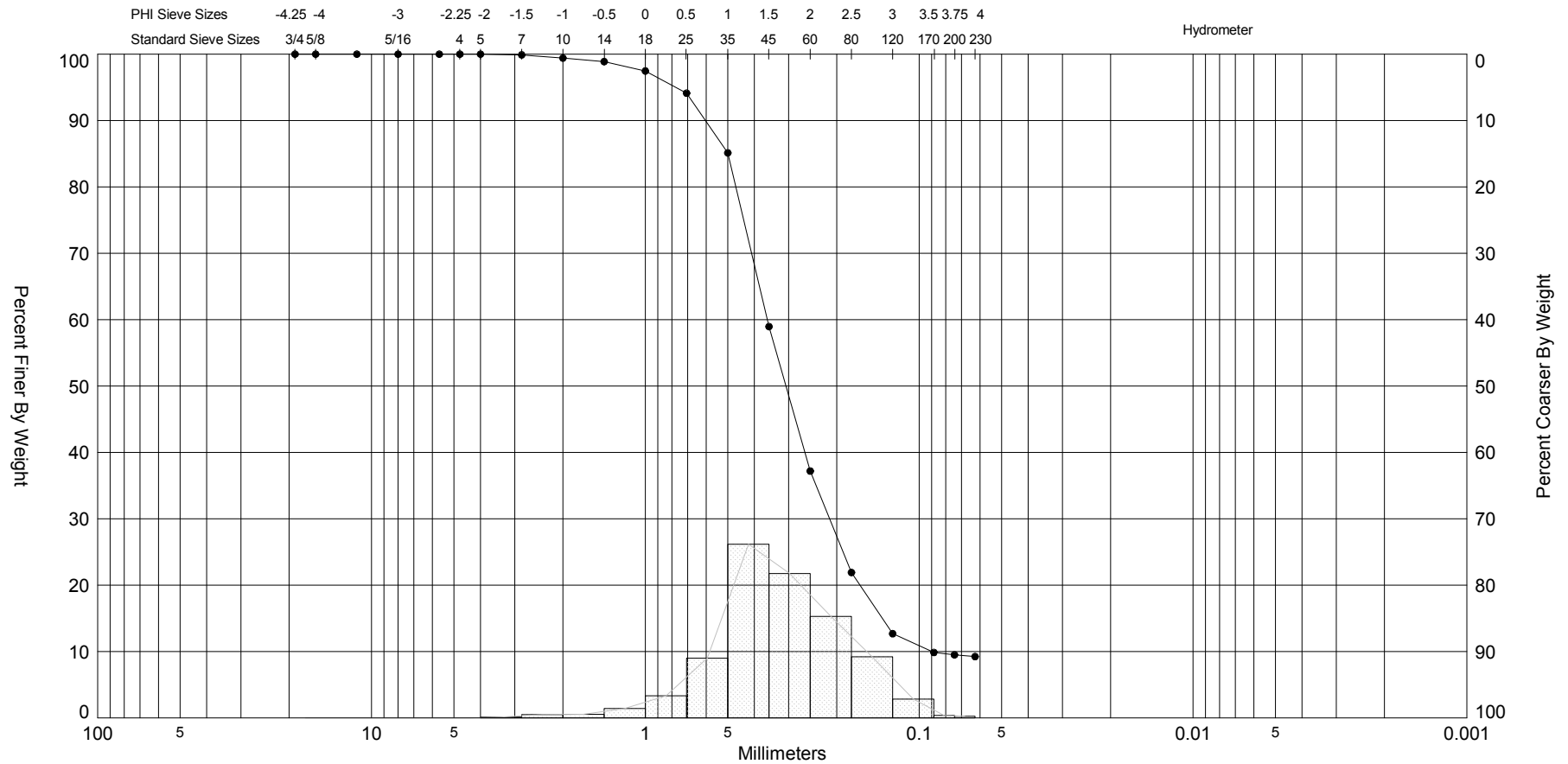
Comments:	Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values	Analyzed By:	10-14-15
	Easting (X, m):	SMT




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 Boca Raton, FL 33431  
 ph (561) 391 8102

Northing (Y, m):	464,846
Horizontal System:	3,378,105
Vertical System:	NAD 1983
	NAVD88

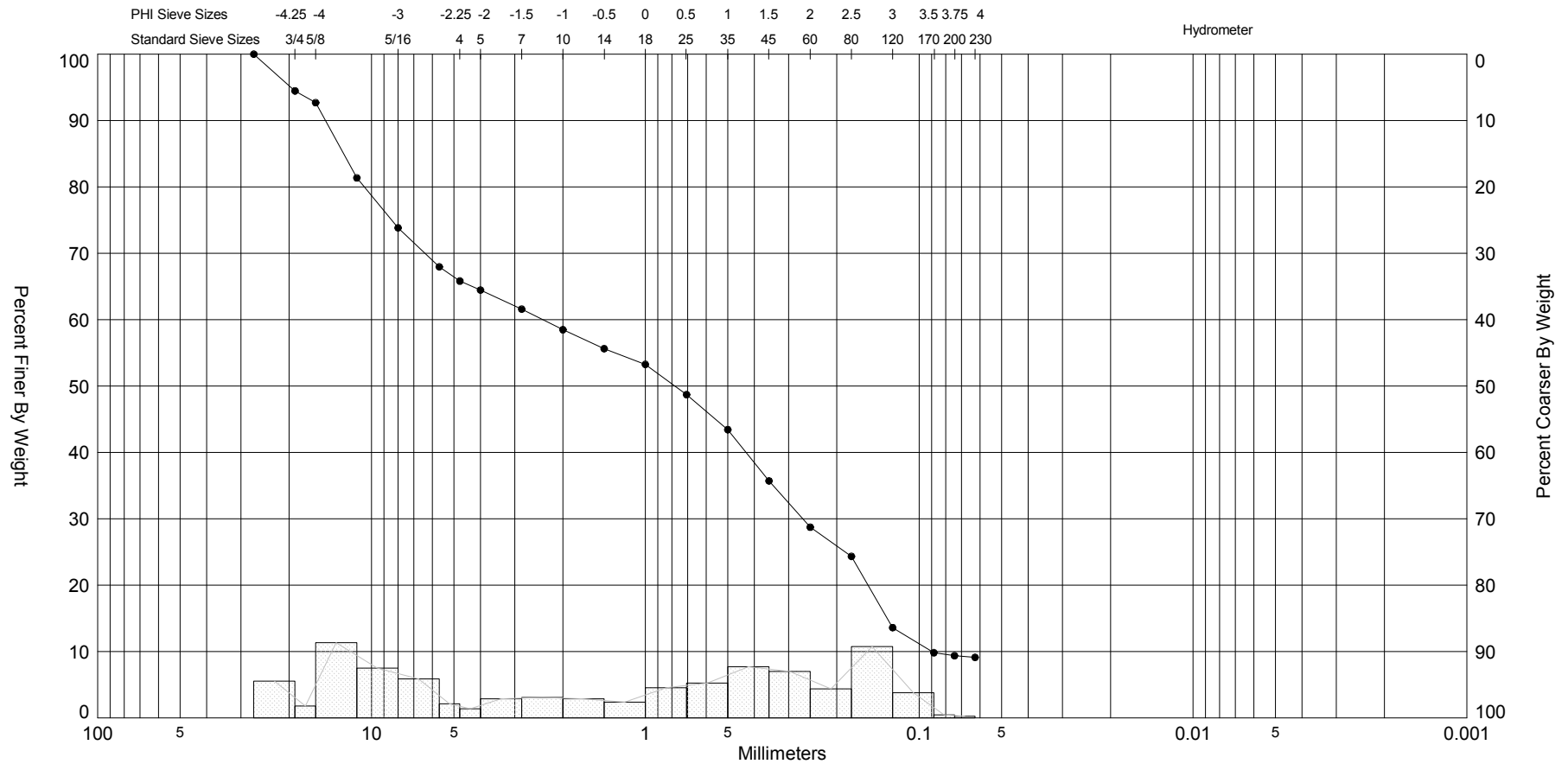
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC23 #5	—●—	-58.2	SP-SC	#200 - 9.50 #230 - 9.24		1	1.71	1.63	-0.31	3.99	0.8	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-14-15 SMT
												Easting (X, m):	464,846
												Northing (Y, m):	3,378,105
												Horizontal System:	NAD 1983
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<b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													

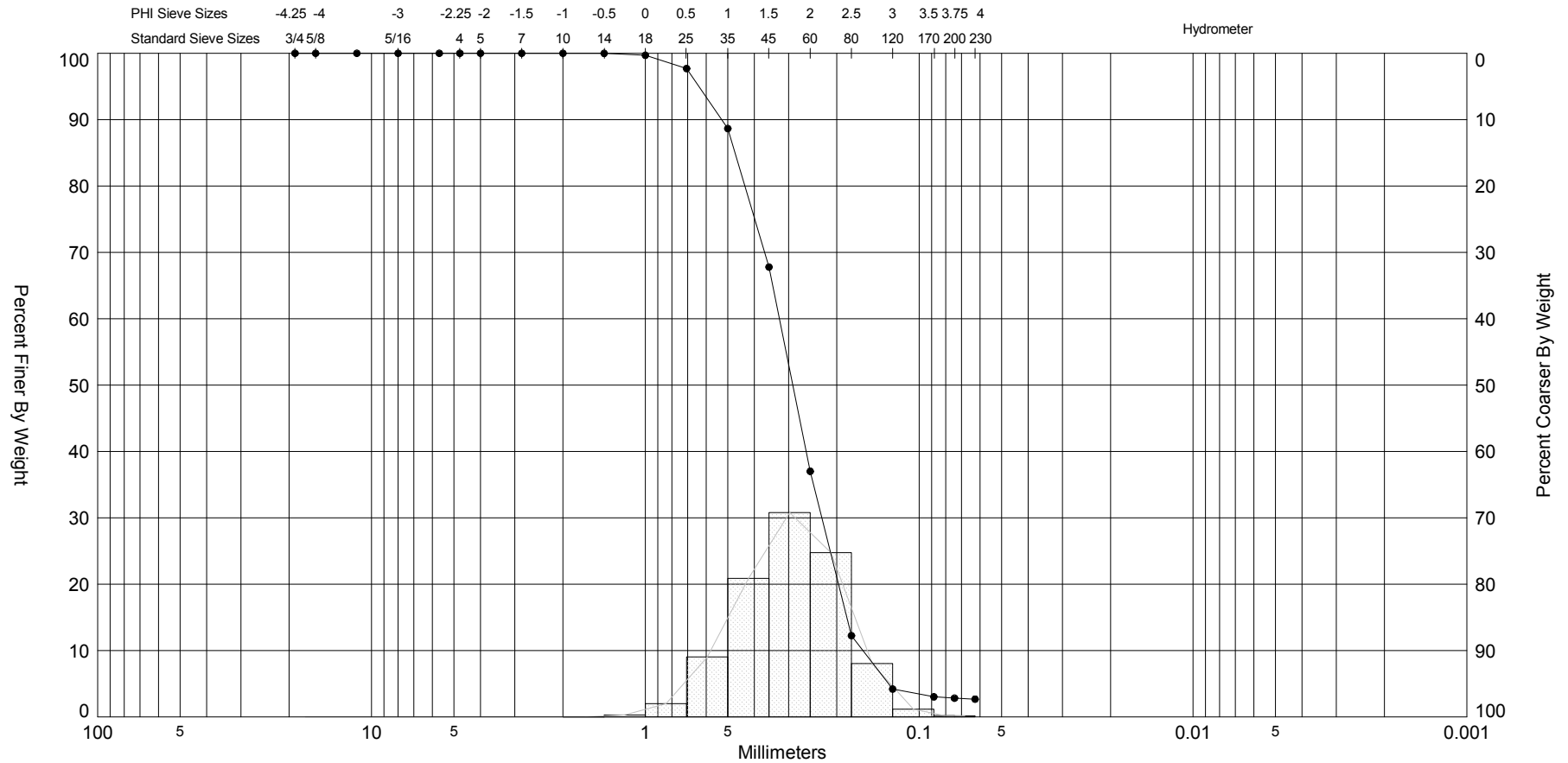
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC23 #6	—●—	-59.0	SW-SC	#200 - 9.37 #230 - 9.12		56	0.36	-0.59	-0.04	1.49	2.61	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-14-15 SMT
												Easting (X, m):	464,846
												Northing (Y, m):	3,378,105
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
CB&I Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													


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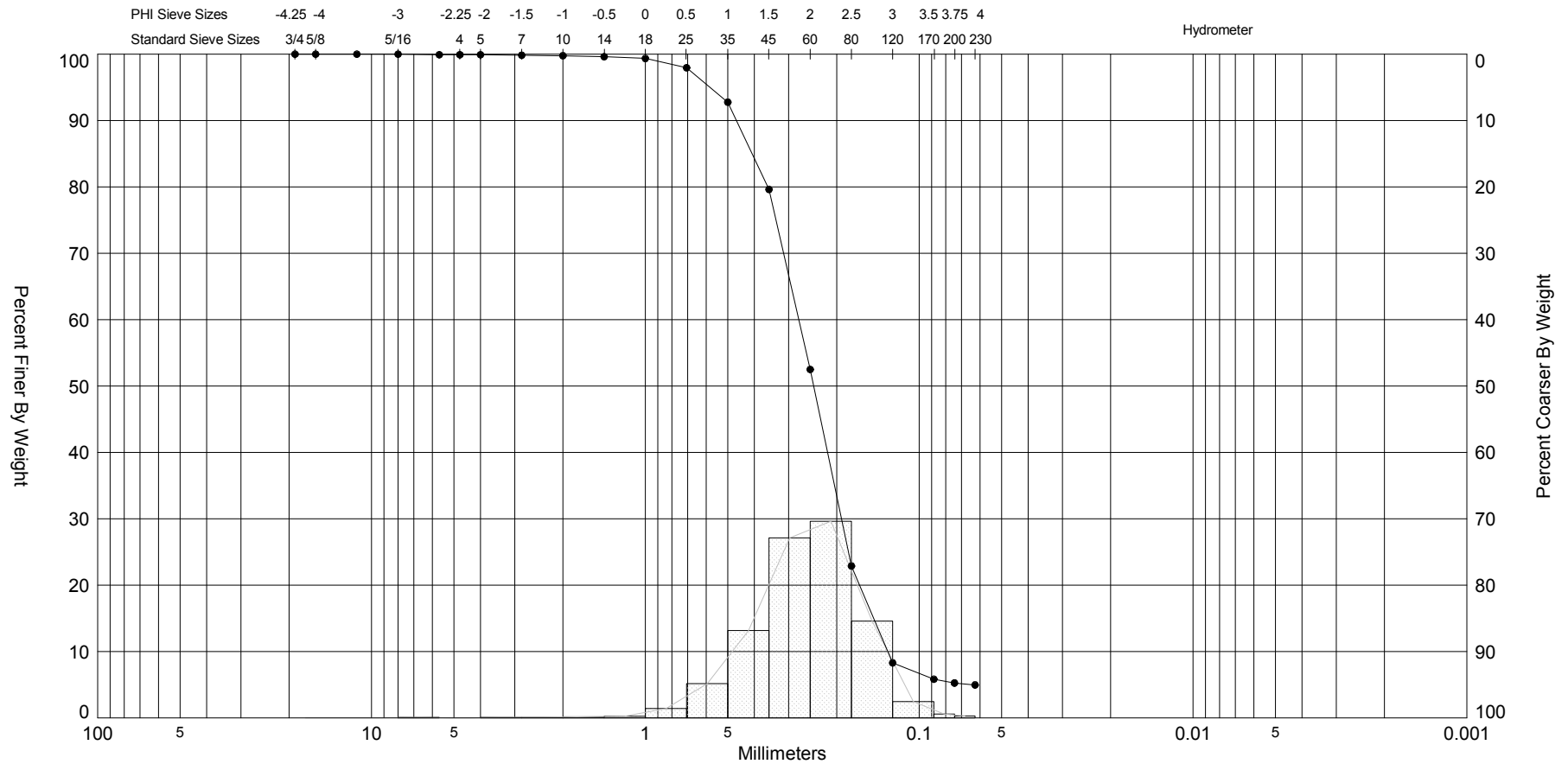
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC23 #7	—●—	-60.6	SP	#200 - 2.83 #230 - 2.68		1	1.79	1.75	-0.12	3.1	0.63	Project Name:	Inventory of Potential Beach Nourishment and Coastal

Comments: Depths and elevations based on measured values	Analysis Date:	Restoration Sand Sources on the Atlantic OCS
	Analyzed By:	10-14-15 SMT

	CB&I Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102	
	Easting (X, m):	464,846
	Northing (Y, m):	3,378,105
	Horizontal System:	NAD 1983
	Vertical System:	NAVD88

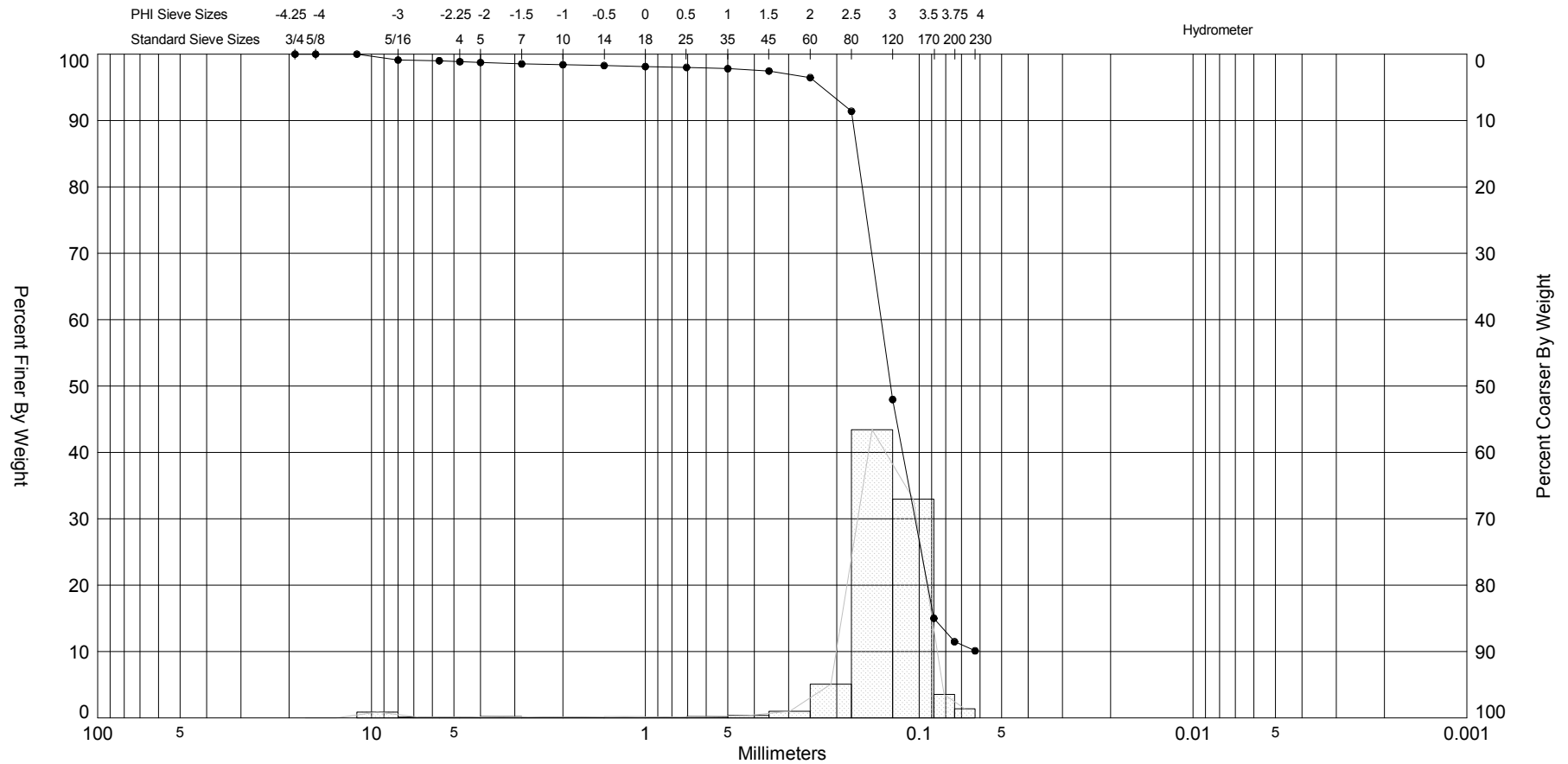
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Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC23 #8	—●—	-62.7	SP-SM	#200 - 5.26 #230 - 4.97		2	2.04	1.95	-0.77	6.1	0.68	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-14-15 SMT
 <b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102												Easting (X, m):	464,846
												Northing (Y, m):	3,378,105
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88

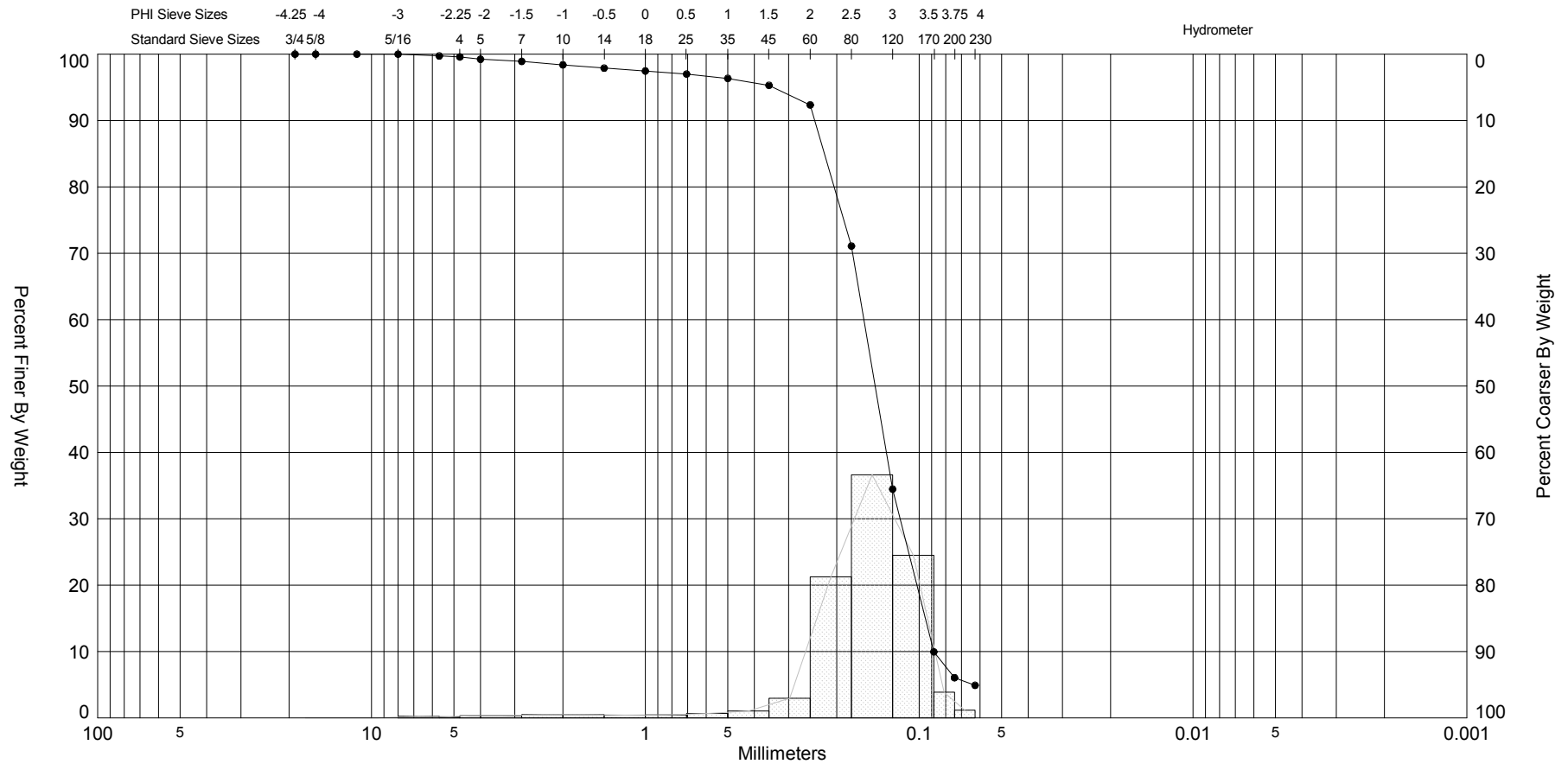
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Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC24 #1	—●—	-50.7	SW-SM	#200 - 11.48 #230 - 10.11		6	2.98	2.83	-4.98	32.81	0.87	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	09-30-15 SMT
												Easting (X, m):	465.630
												Northing (Y, m):	3,379,768
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
<b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													

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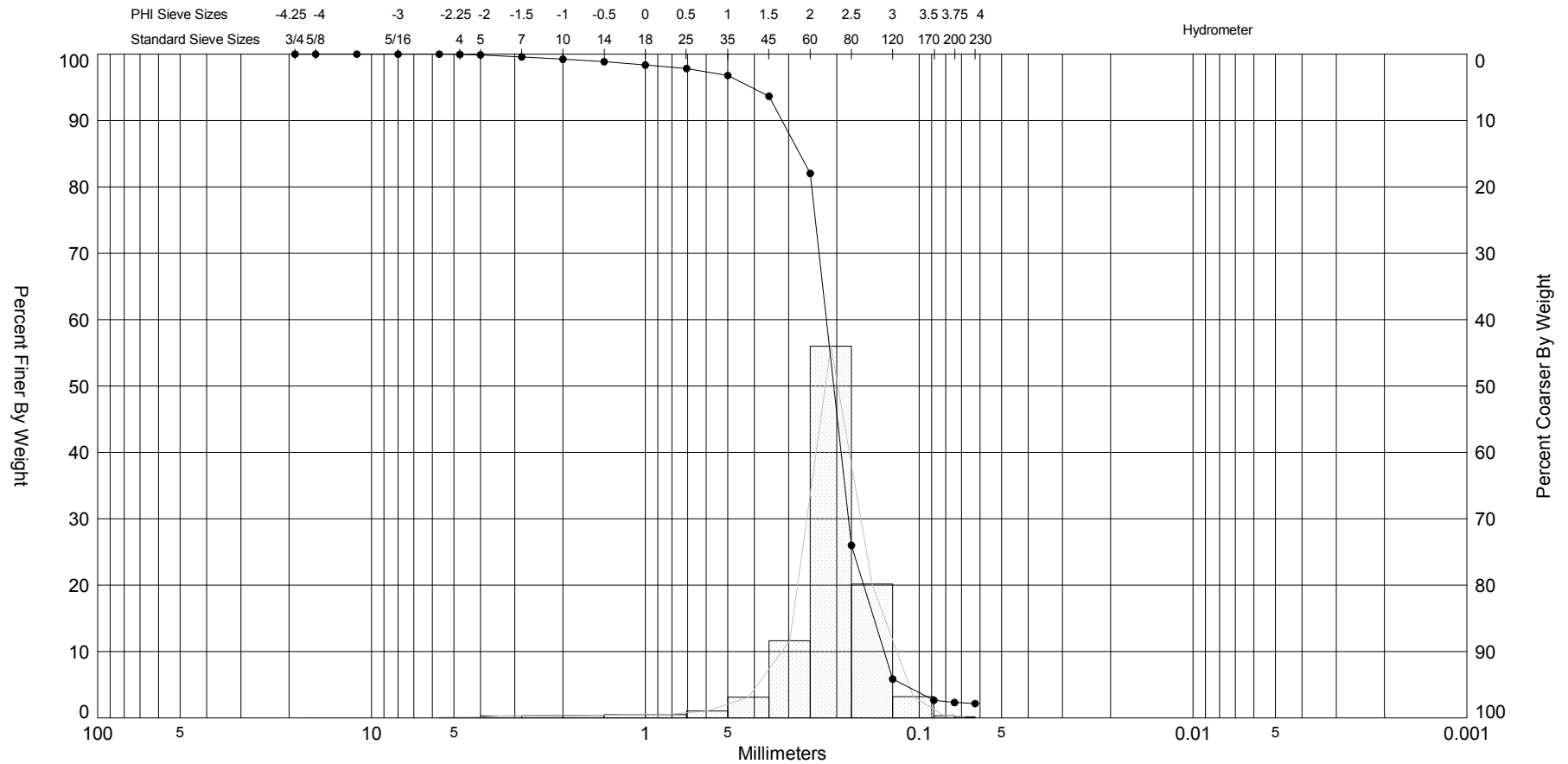
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC24 #2	—●—	-54.1	SW-SM	#200 - 6.06 #230 - 4.91		8	2.79	2.63	-3.13	16.62	0.86	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	09-30-15
												Easting (X, m):	465.630
												Northing (Y, m):	3,379,768
												Horizontal System:	NAD 1983
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CB&I Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													






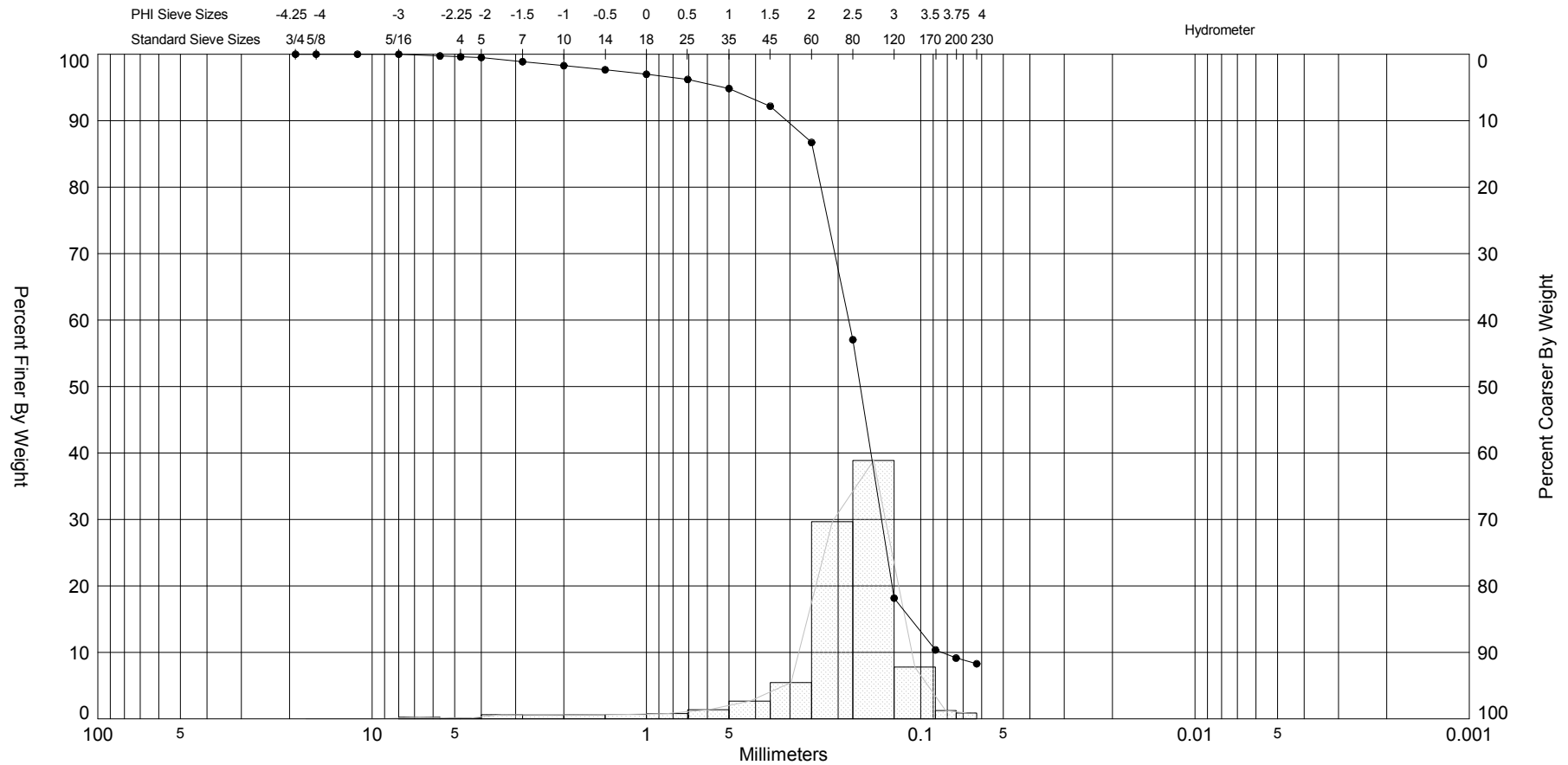
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Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC25 #1	—●—	-47.3	SP	#200 - 2.32 #230 - 2.17		5	2.29	2.22	-2.76	16.84	0.62	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	09-29-15 DA
 <b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102												Easting (X, m):	464.405
												Northing (Y, m):	3,387,421
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88

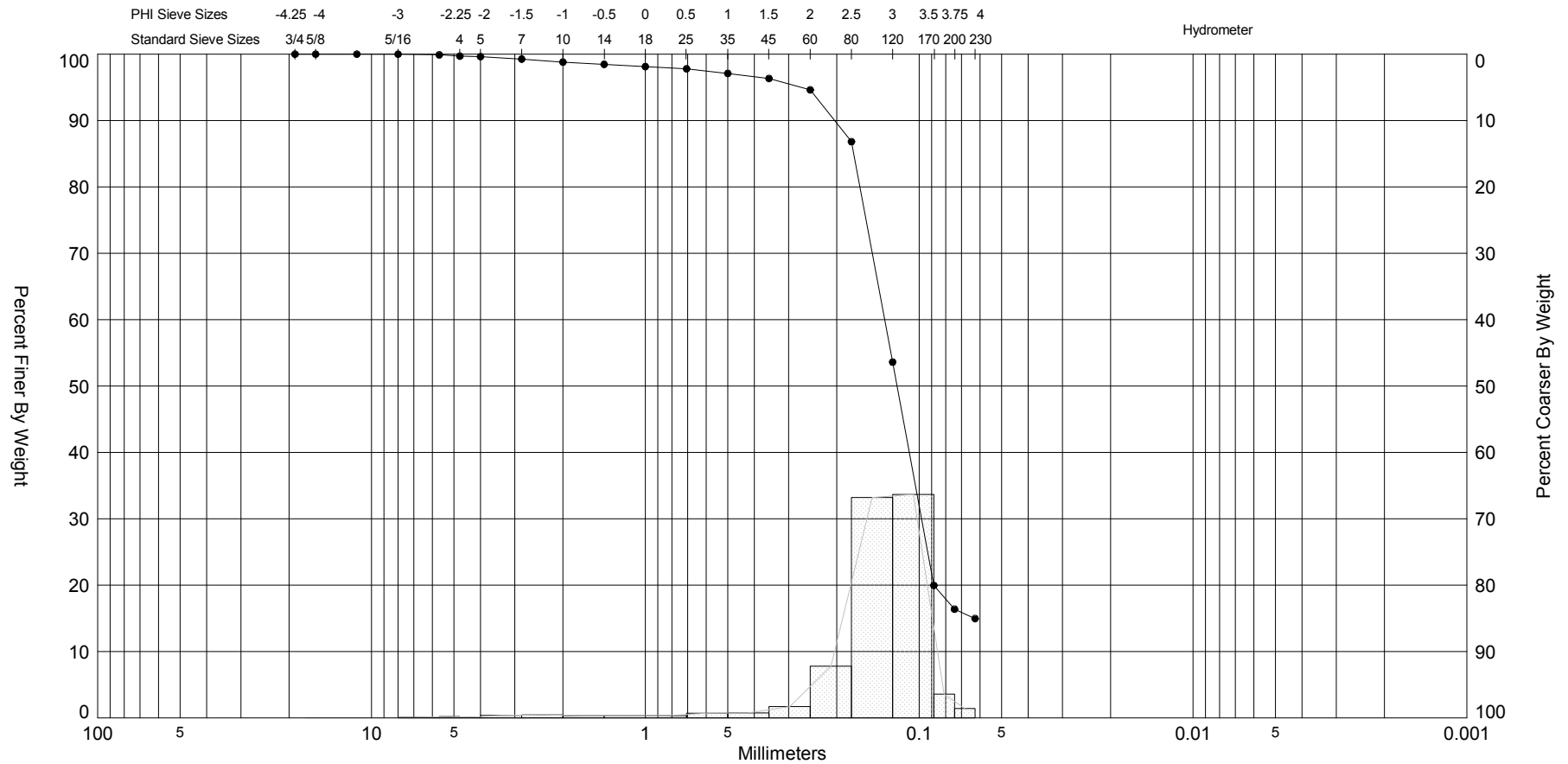
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Gravel		Sand			Silt and Clay	
Coarse	Fine	Coarse	Medium	Fine		

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC25 #2	—●—	-49.2	SW-SM	#200 - 9.15 #230 - 8.29		9	2.59	2.37	-2.76	13.36	0.87	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	09-29-15
 <b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102												Easting (X, m):	464.405
												Northing (Y, m):	3,387,421
												Horizontal System:	NAD 1983
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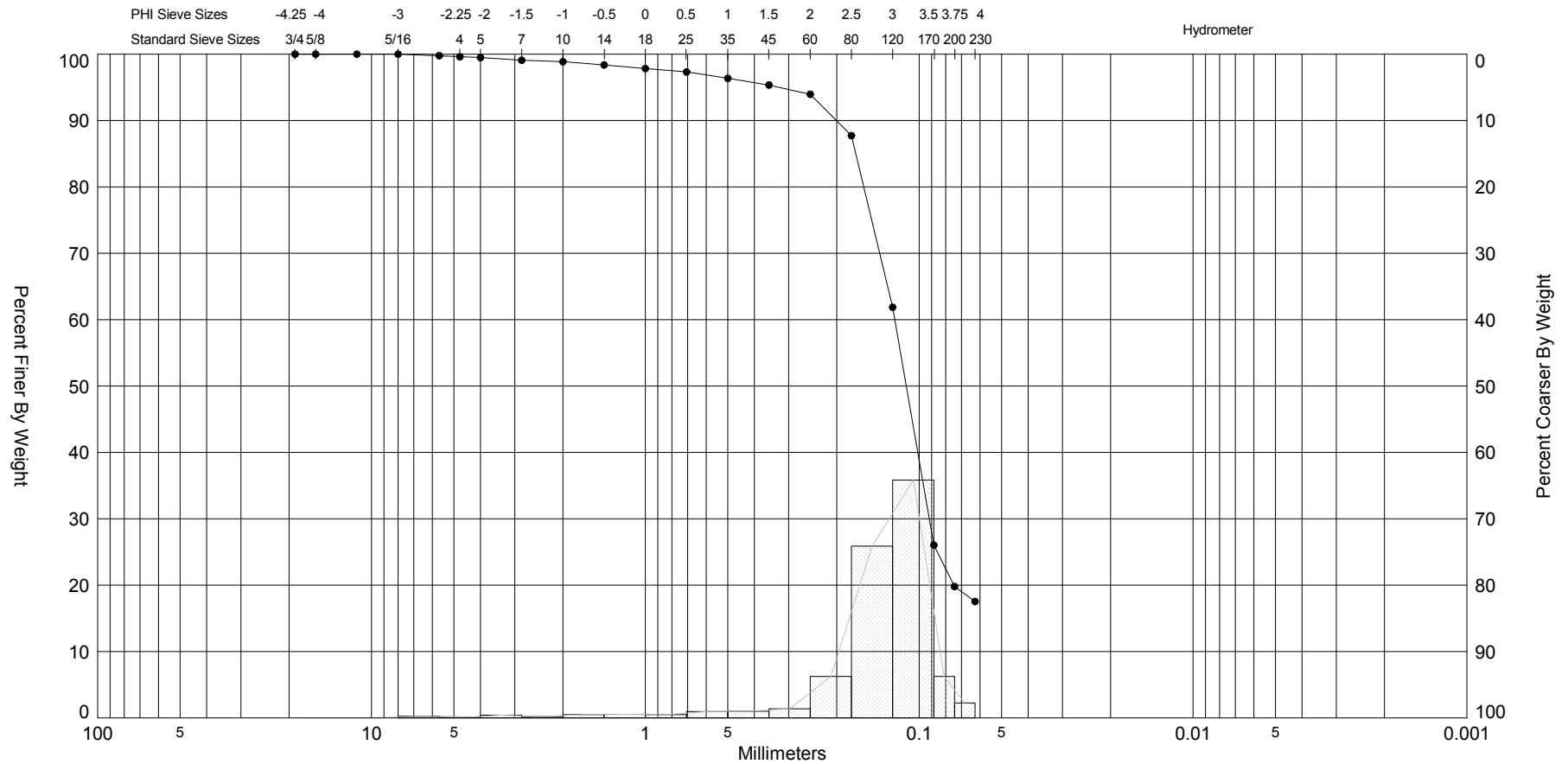
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC25 #3	—●—	-50.5	SM	#200 - 16.39 #230 - 14.97		7	3.05	2.81	-3.52	19.49	0.8	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	09-30-15 DA
												Easting (X, m):	464.405
												Northing (Y, m):	3,387,421
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
CB&I Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													

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Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC25 #4	—●—	-51.7	SM	#200 - 19.79 #230 - 17.55		8	3.17	2.85	-3.3	16.8	0.88	Project Name:	Inventory of Potential Beach Nourishment and Coastal

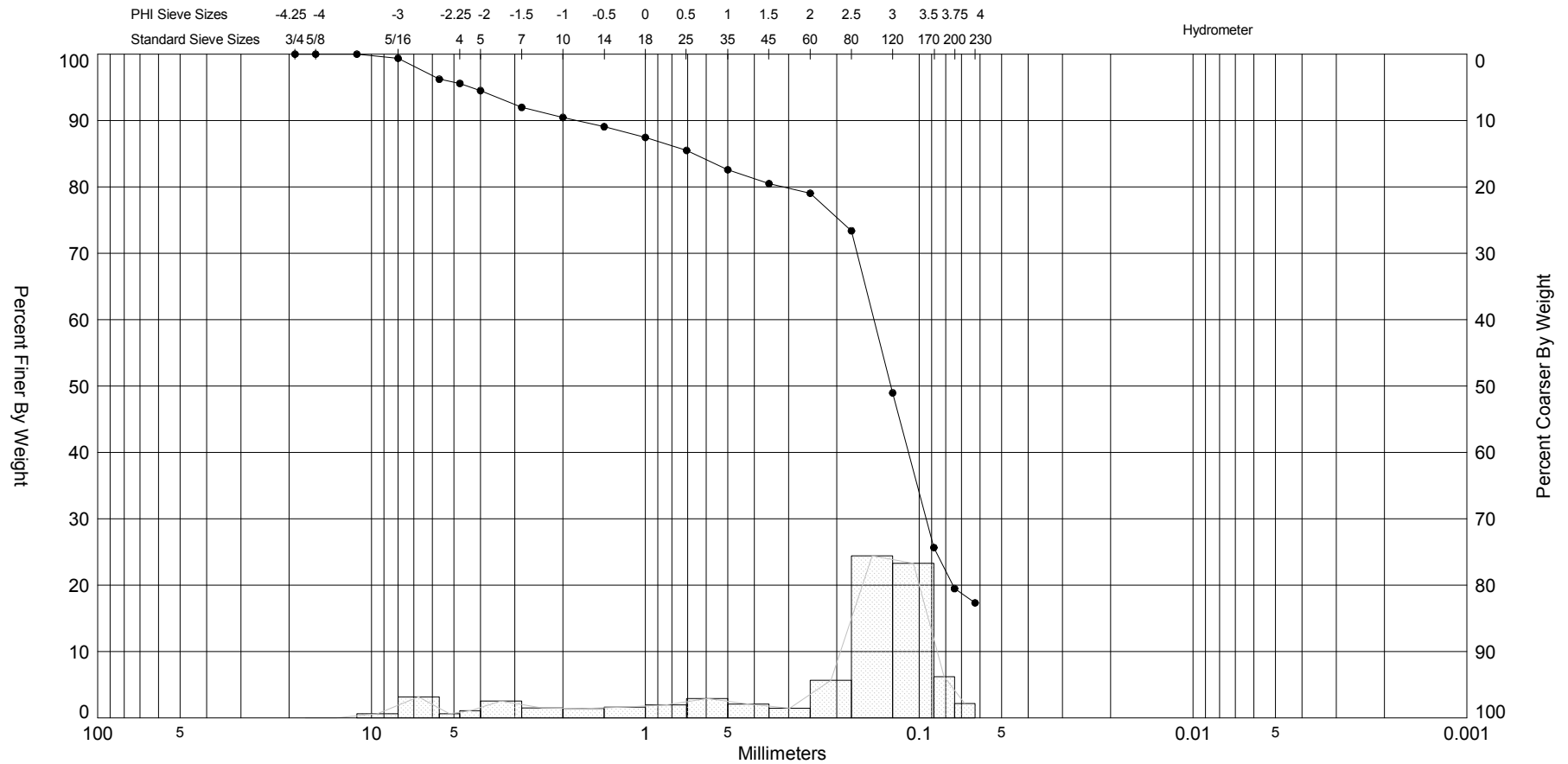
Comments:	Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values	Analyzed By:	09-30-15
	Easting (X, m):	DA




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 Boca Raton, FL 33431  
 ph (561) 391 8102

Northing (Y, m):	464.405
Horizontal System:	3,387,421
Vertical System:	NAD 1983
	NAVD88

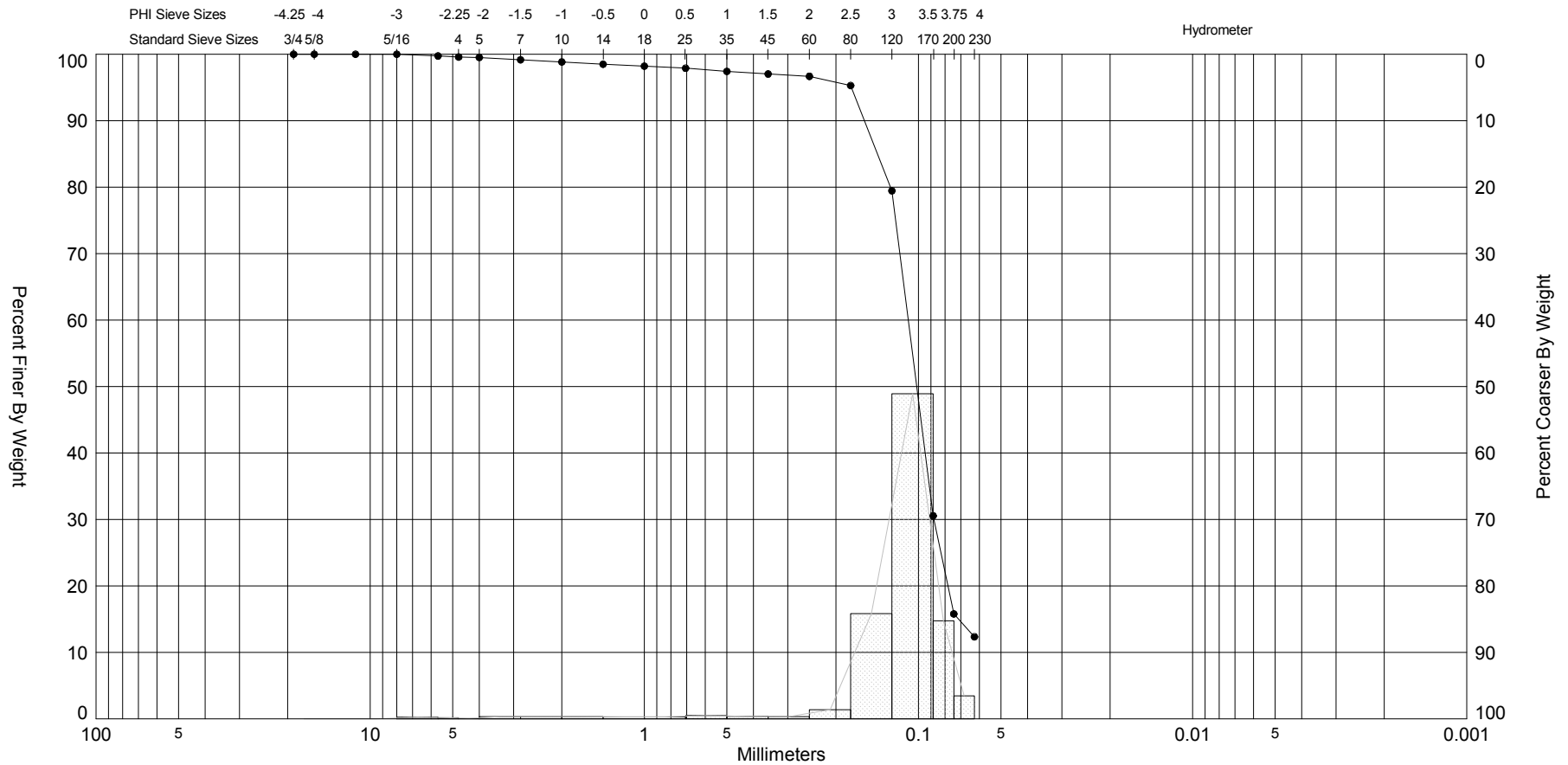
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC25 #5	—●—	-52.6	SM	#200 - 19.48 #230 - 17.33		20	2.98	2.08	-1.55	4.17	1.82	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-01-15 DA
												Easting (X, m):	464.405
												Northing (Y, m):	3,387,421
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
<p style="text-align: center;"> <b>CB&amp;I</b>            Coastal Planning &amp; Engineering, Inc.            2481 NW Boca Raton Blvd.            Boca Raton, FL 33431            ph (561) 391 8102         </p>													

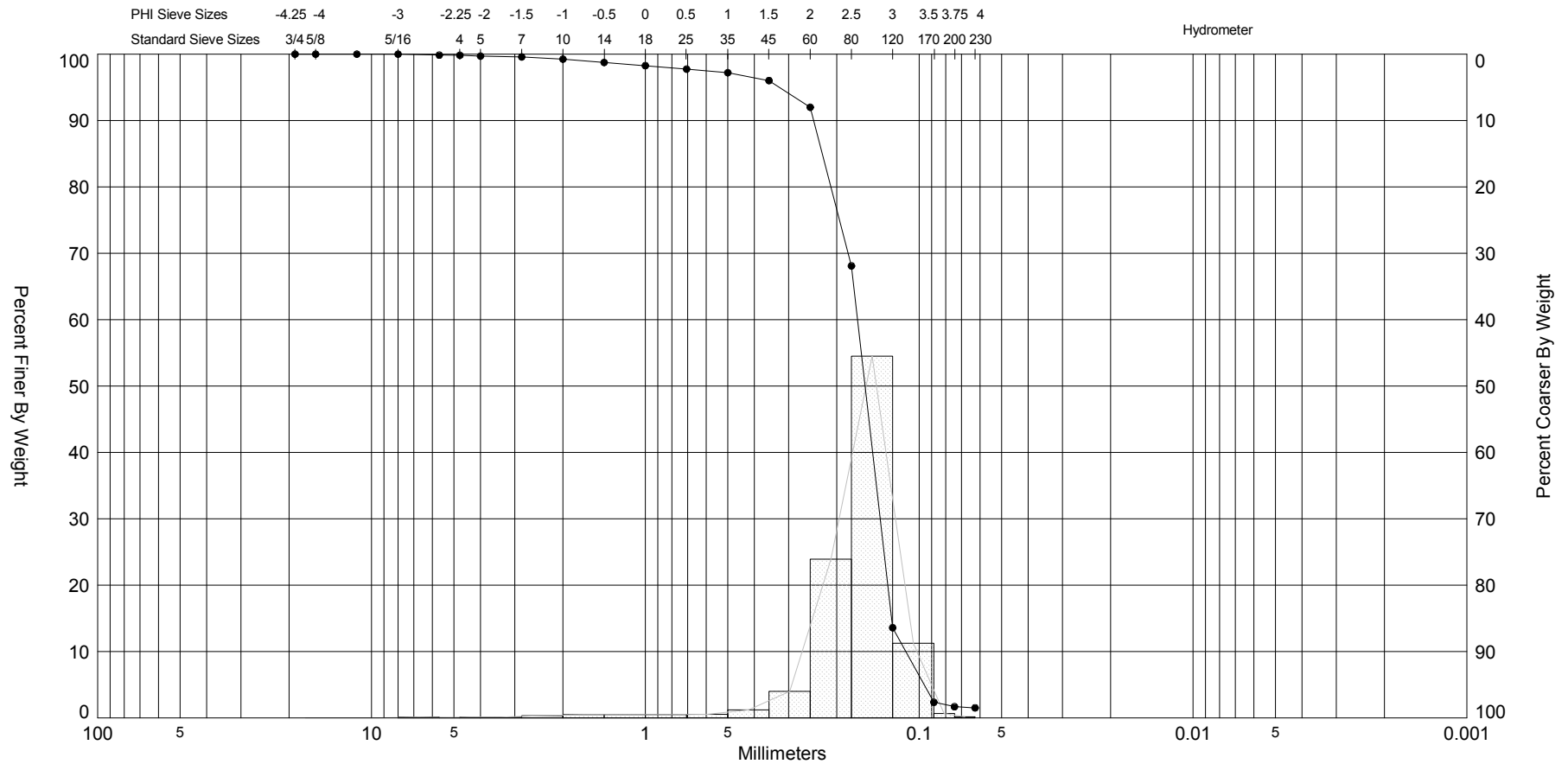
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC25 #6	—●—	-54.1	SM	#200 - 15.79 #230 - 12.35		7	3.3	3.1	-4.49	27.31	0.8	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-01-15 DA
												Easting (X, m):	464.405
												Northing (Y, m):	3,387,421
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
<p style="text-align: center;"> <b>CB&amp;I</b>            Coastal Planning &amp; Engineering, Inc.            2481 NW Boca Raton Blvd.            Boca Raton, FL 33431            ph (561) 391 8102         </p>													

SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16

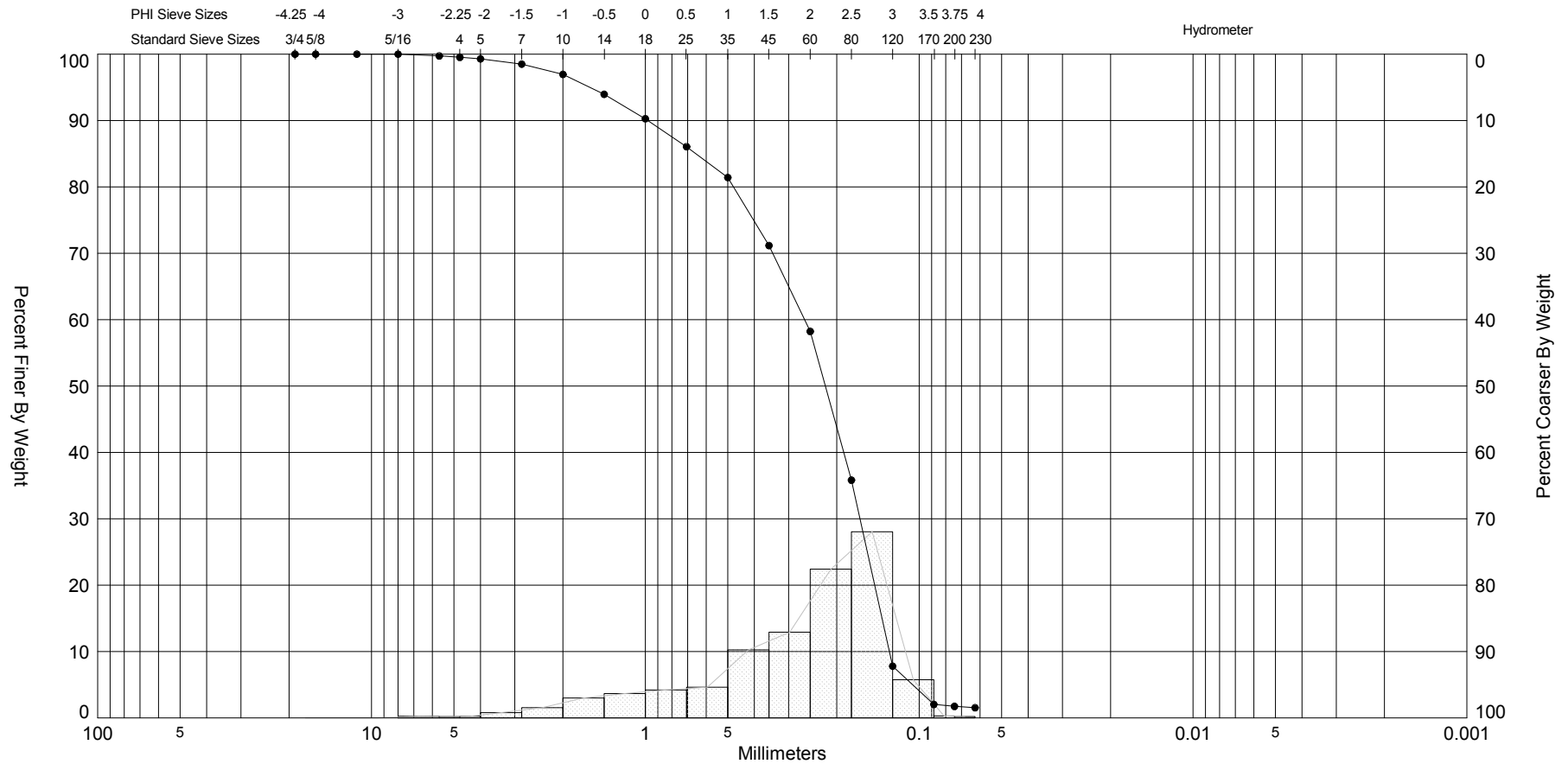


Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	


Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC26 #1	—●—	-45.0	SP	#200 - 1.69 #230 - 1.52		5	2.67	2.54	-3.53	21.53	0.67	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-13-15 SMT
												Easting (X, m):	470.058
												Northing (Y, m):	3,396.823
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
CB&I Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													



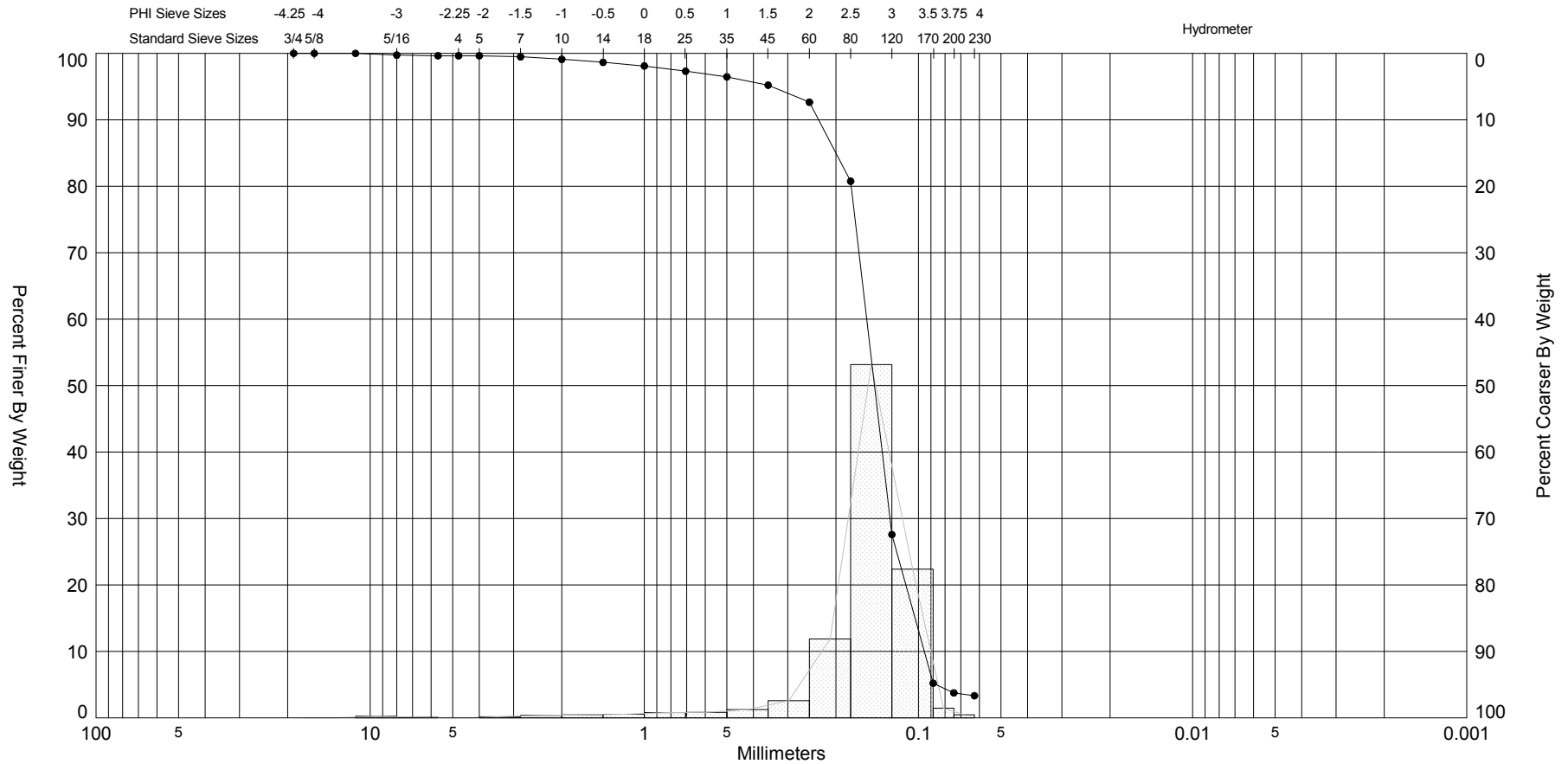
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC26 #2	—●—	-47.6	SW	#200 - 1.74 #230 - 1.53		21	2.18	1.83	-1.29	4.33	1.17	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-13-15 SMT
 <b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102												Easting (X, m):	470.058
												Northing (Y, m):	3,396,823
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88

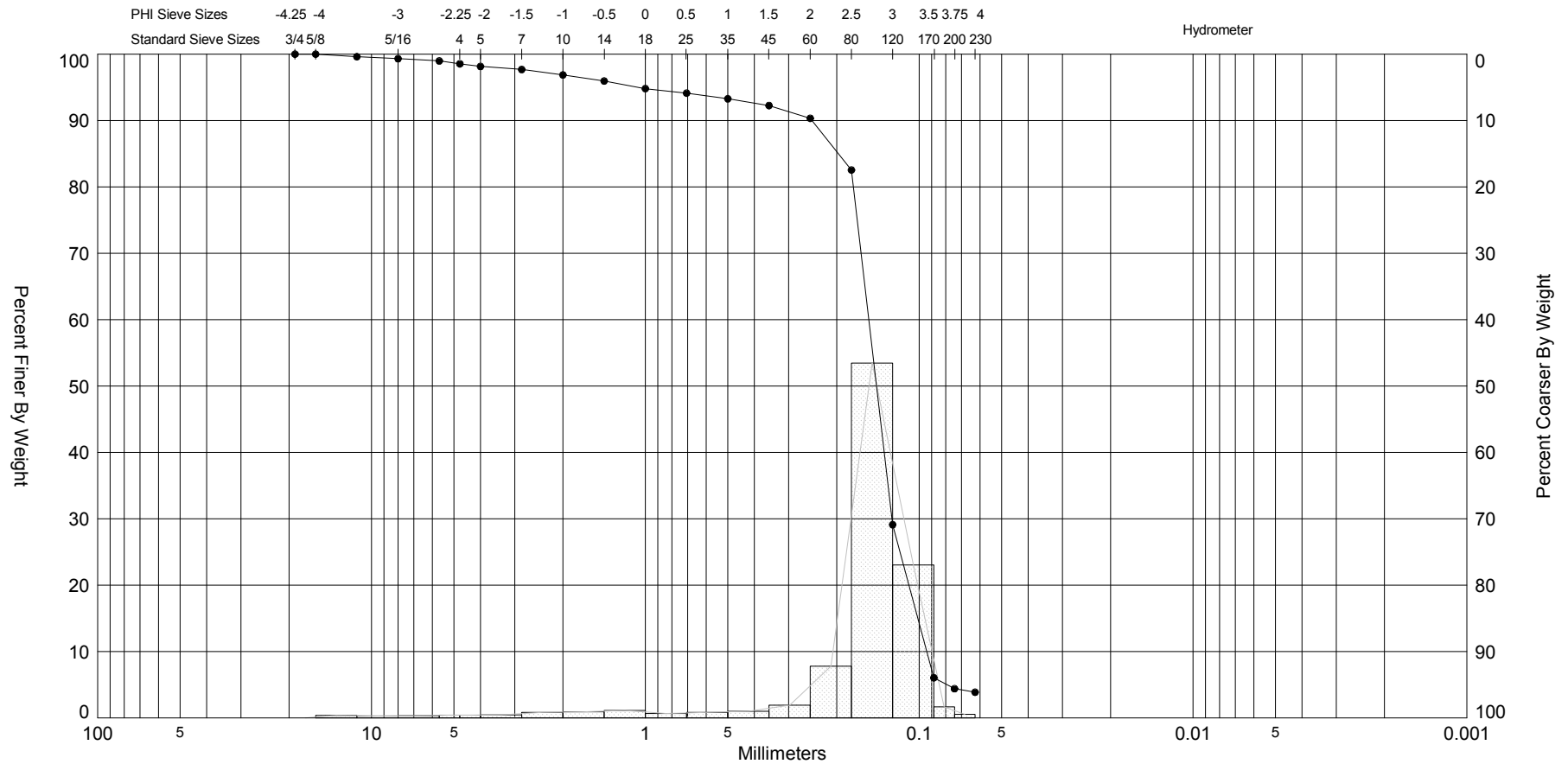
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC26 #3	—●—	-53.1	SP	#200 - 3.77 #230 - 3.33		8	2.79	2.66	-3.68	22.25	0.76	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-13-15 SMT
												Easting (X, m):	470.058
												Northing (Y, m):	3,396,823
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
<b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													

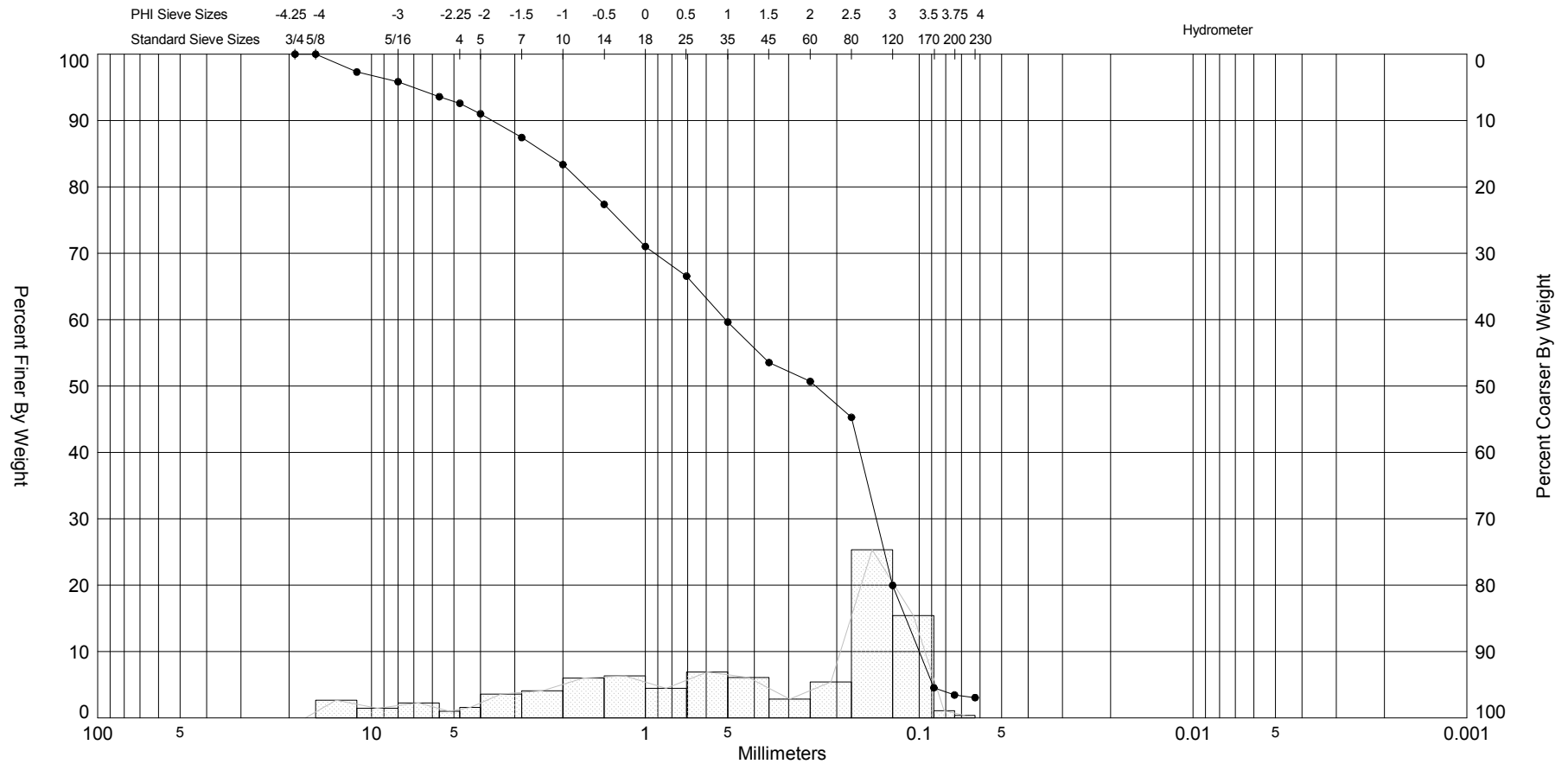
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC26 #4	—●—	-54.7	SW	#200 - 4.40 #230 - 3.87		11	2.8	2.55	-3.31	14.79	1.11	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-01-15 DA
												Easting (X, m):	470.058
												Northing (Y, m):	3,396,823
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
CB&I Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													

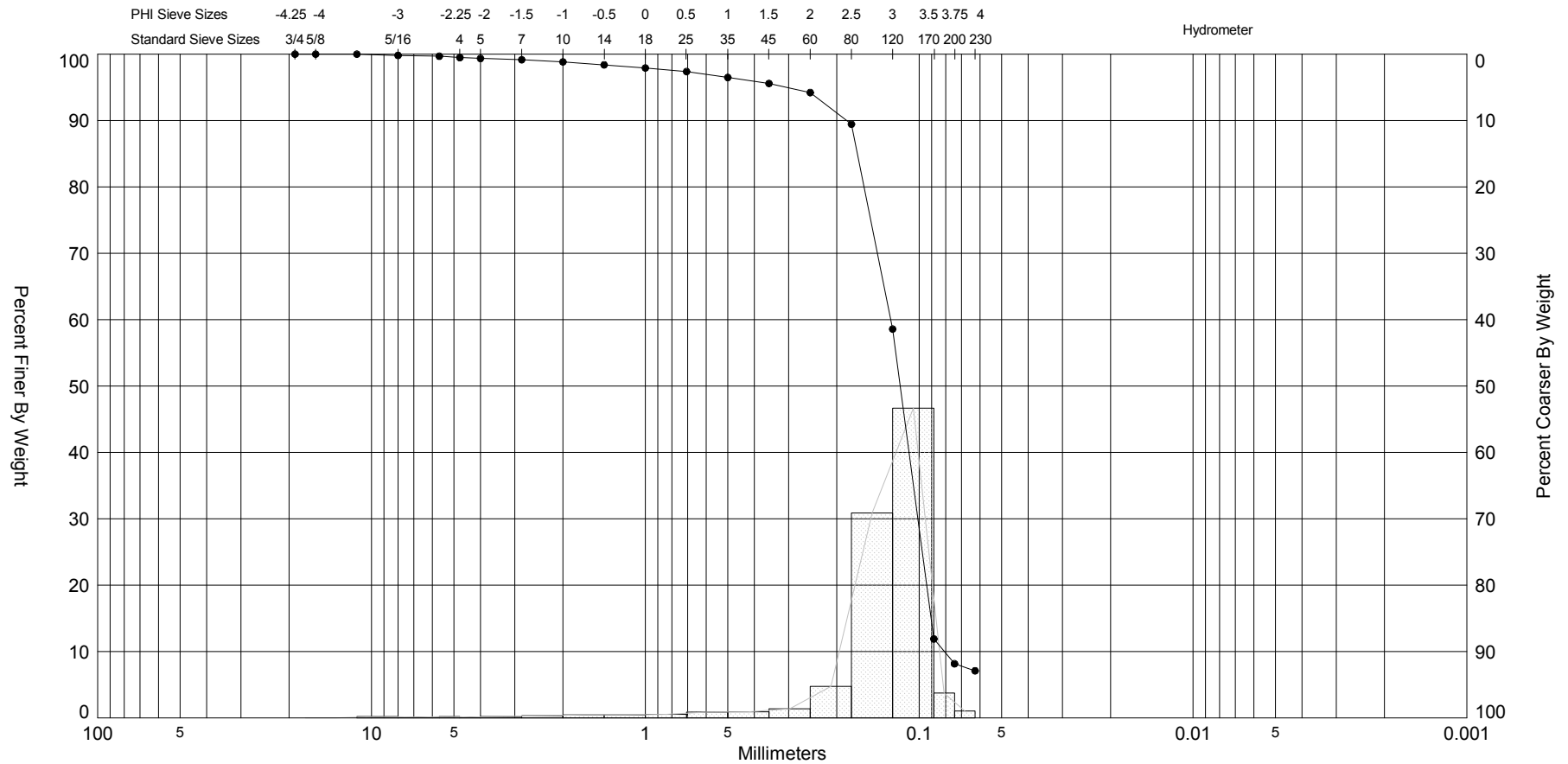
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC26 #5	—●—	-55.7	SW	#200 - 3.45 #230 - 3.06		42	2.06	1.16	-0.75	2.44	2.03	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-01-15 DA
												Easting (X, m):	470.058
												Northing (Y, m):	3,396.823
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
<b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													

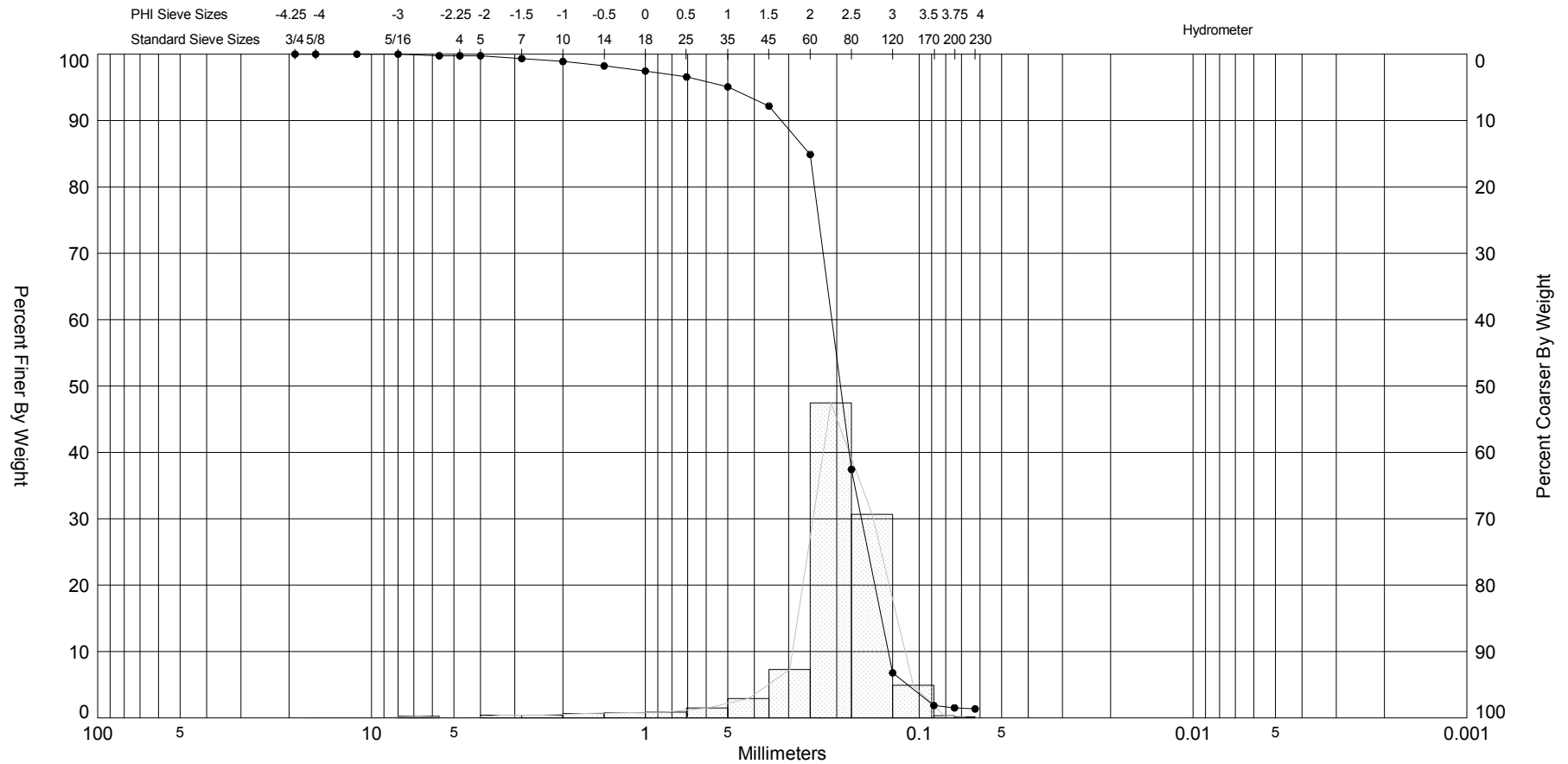
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC26 #6	—●—	-57.6	SP-SM	#200 - 8.16 #230 - 7.10		7	3.09	2.87	-3.91	22.31	0.83	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-01-15 DA
												Easting (X, m):	470.058
												Northing (Y, m):	3,396.823
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
												<b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102	

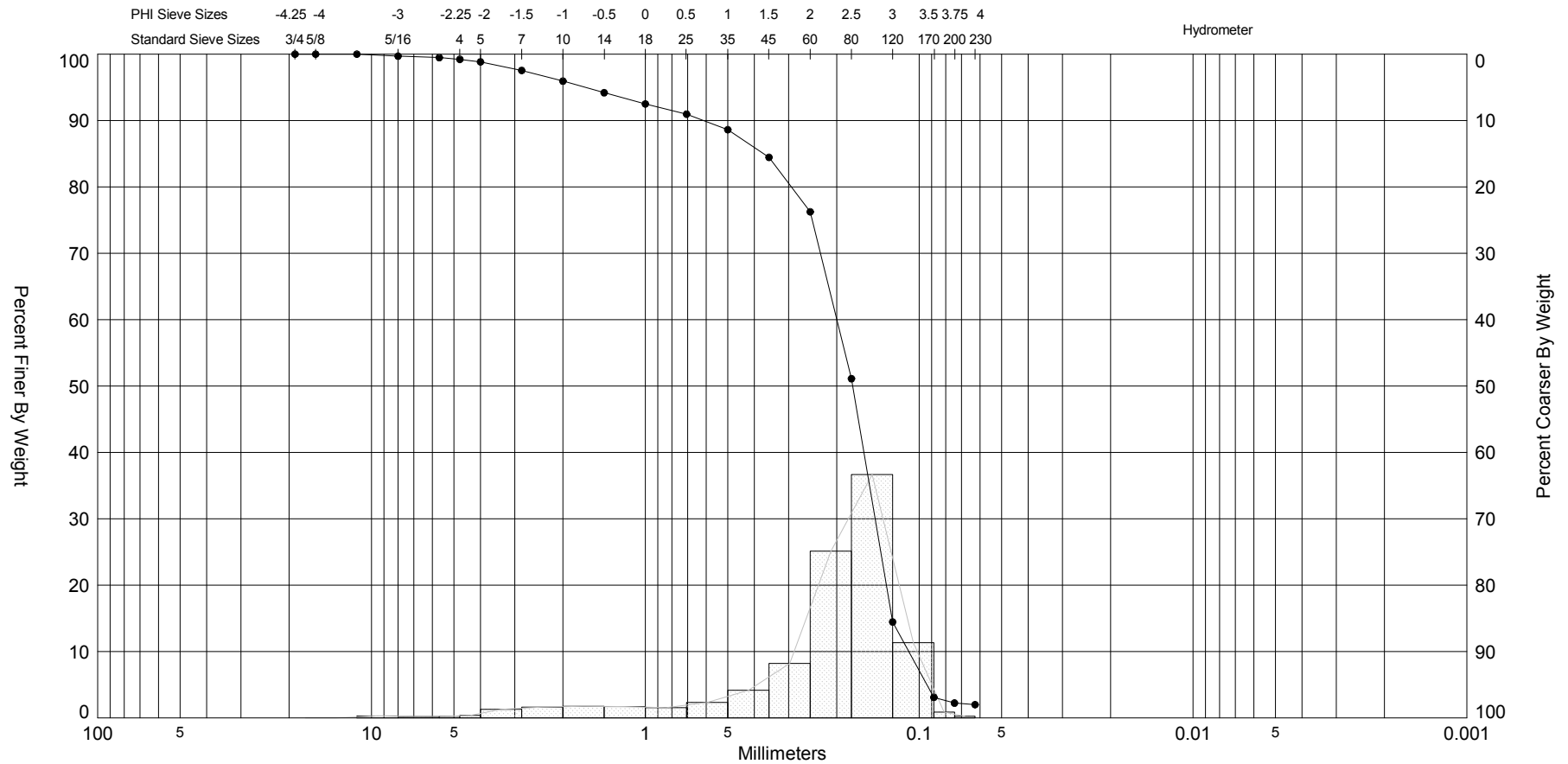
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC27 #1	—●—	-46.4	SP	#200 - 1.52 #230 - 1.36		6	2.37	2.27	-2.86	15.19	0.74	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-22-15 DA
												Easting (X, m):	469,591
												Northing (Y, m):	3,397,978
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
<b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													

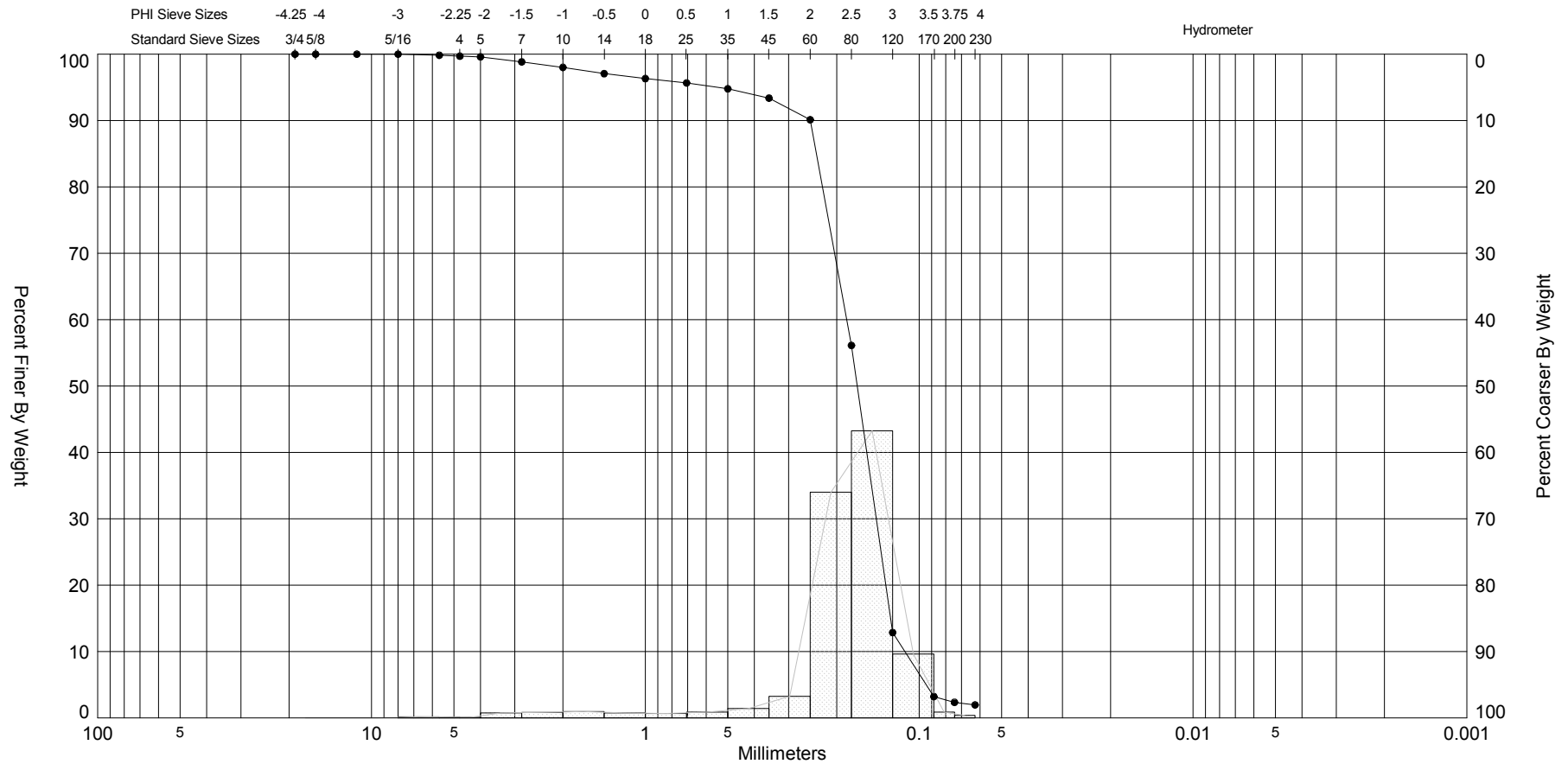
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC27 #2	—●—	-48.8	SW	#200 - 2.24 #230 - 2.00		13	2.52	2.15	-2.1	7.55	1.17	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-22-15 DA
												Easting (X, m):	469,591
												Northing (Y, m):	3,397,978
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
<p style="text-align: center;"> <b>CB&amp;I</b>            Coastal Planning &amp; Engineering, Inc.            2481 NW Boca Raton Blvd.            Boca Raton, FL 33431            ph (561) 391 8102         </p>													

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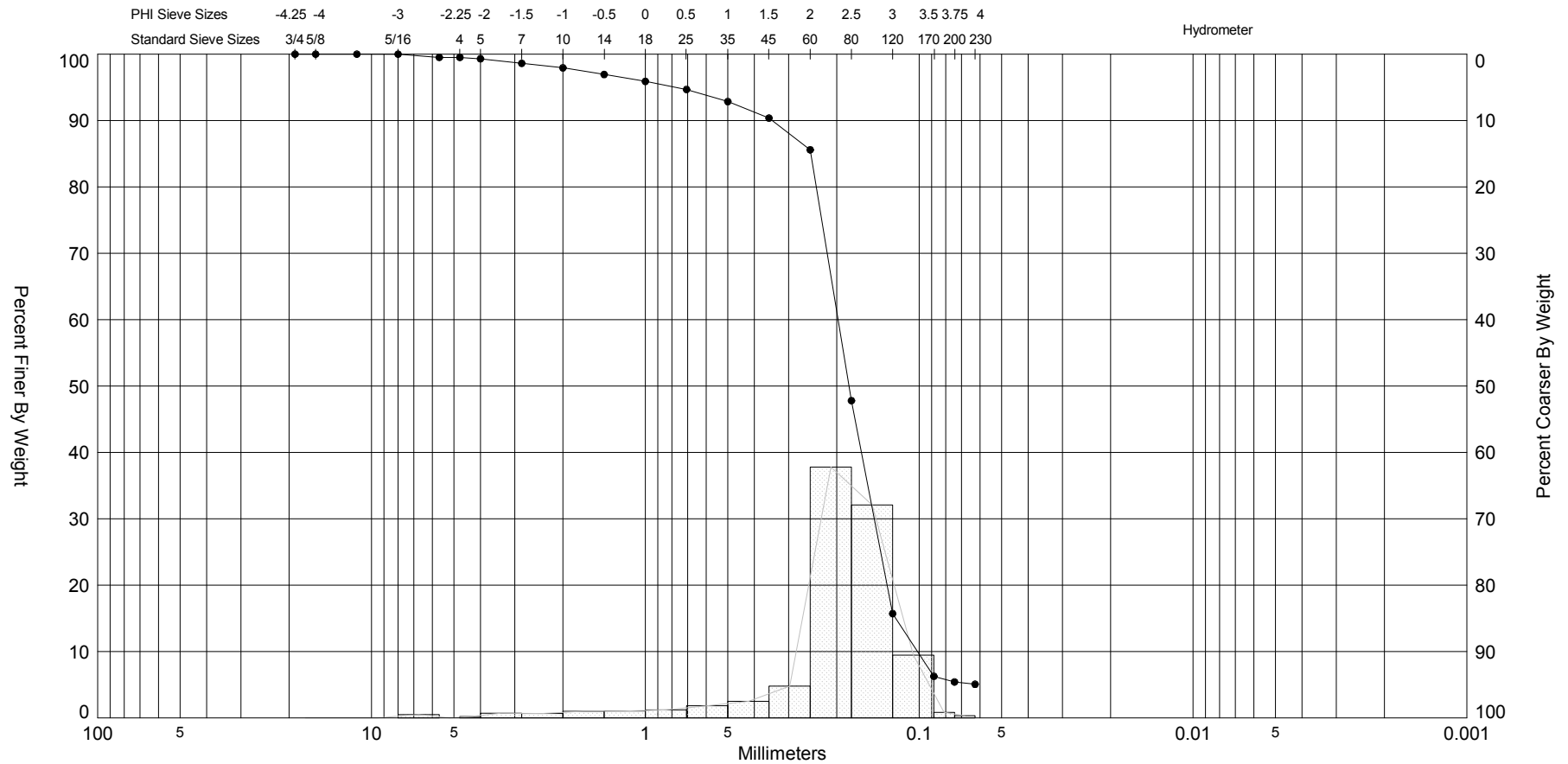


Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC27 #3	—●—	-50.7	SW	#200 - 2.35 #230 - 1.96		9	2.57	2.4	-3.04	14.42	0.86	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-22-15 DA
												Easting (X, m):	469,591
												Northing (Y, m):	3,397,978
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
<p style="text-align: center;"> <b>CB&amp;I</b>            Coastal Planning &amp; Engineering, Inc.            2481 NW Boca Raton Blvd.            Boca Raton, FL 33431            ph (561) 391 8102         </p>													



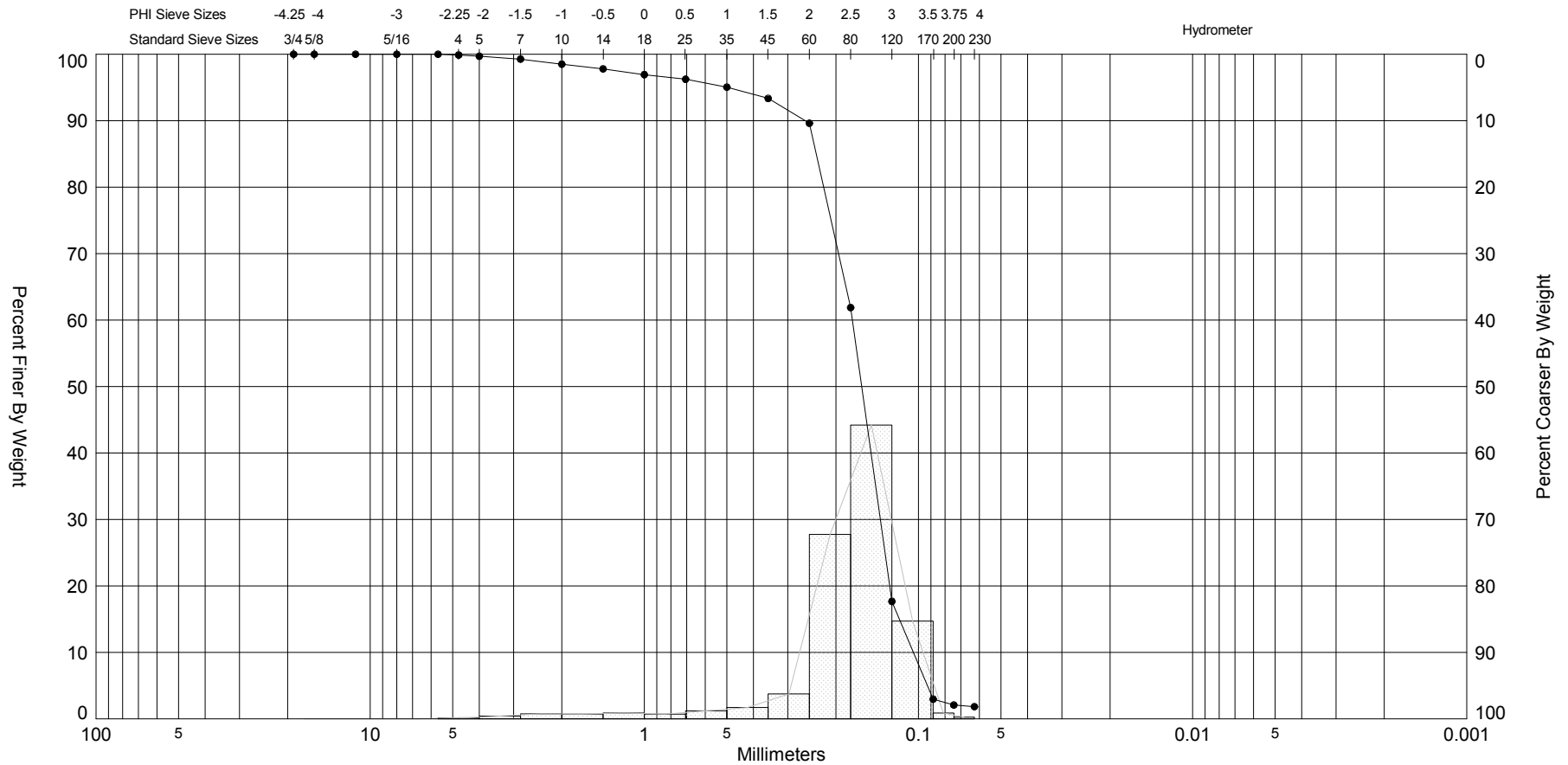
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC27 #4	—●—	-52.7	SW-SM	#200 - 5.42 #230 - 5.07		9	2.47	2.28	-2.61	11.63	0.94	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-21-15 ST
<p style="margin-top: 10px;"> <b>CB&amp;I</b>            Coastal Planning &amp; Engineering, Inc.            2481 NW Boca Raton Blvd.            Boca Raton, FL 33431            ph (561) 391 8102         </p>												Easting (X, m):	469,591
												Northing (Y, m):	3,397,978
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88

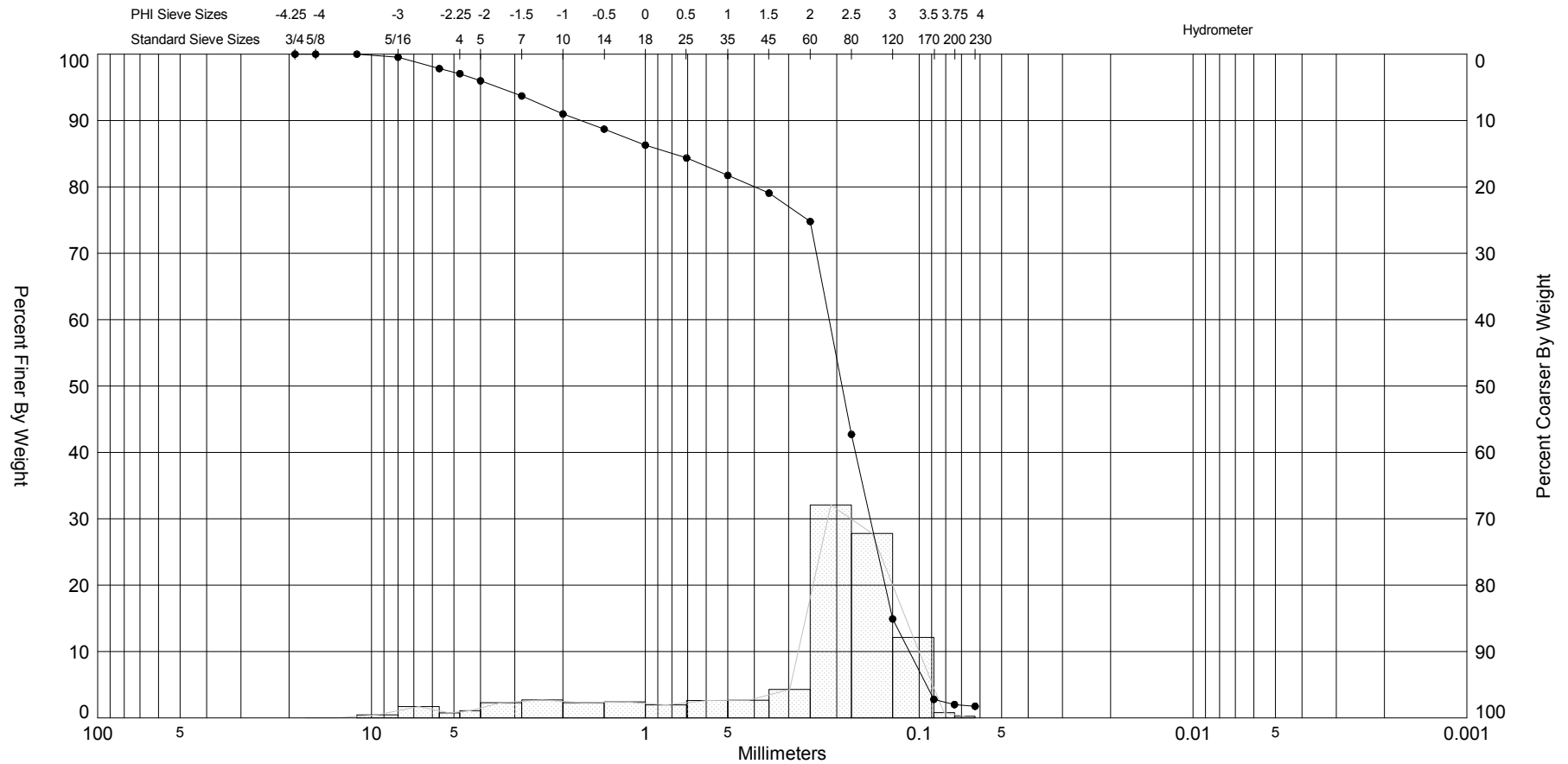
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC27 #5	—●—	-53.4	SP	#200 - 2.08 #230 - 1.83		9	2.63	2.47	-2.85	13.62	0.82	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-21-15 ST
												Easting (X, m):	469,591
												Northing (Y, m):	3,397,978
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
												<b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102	

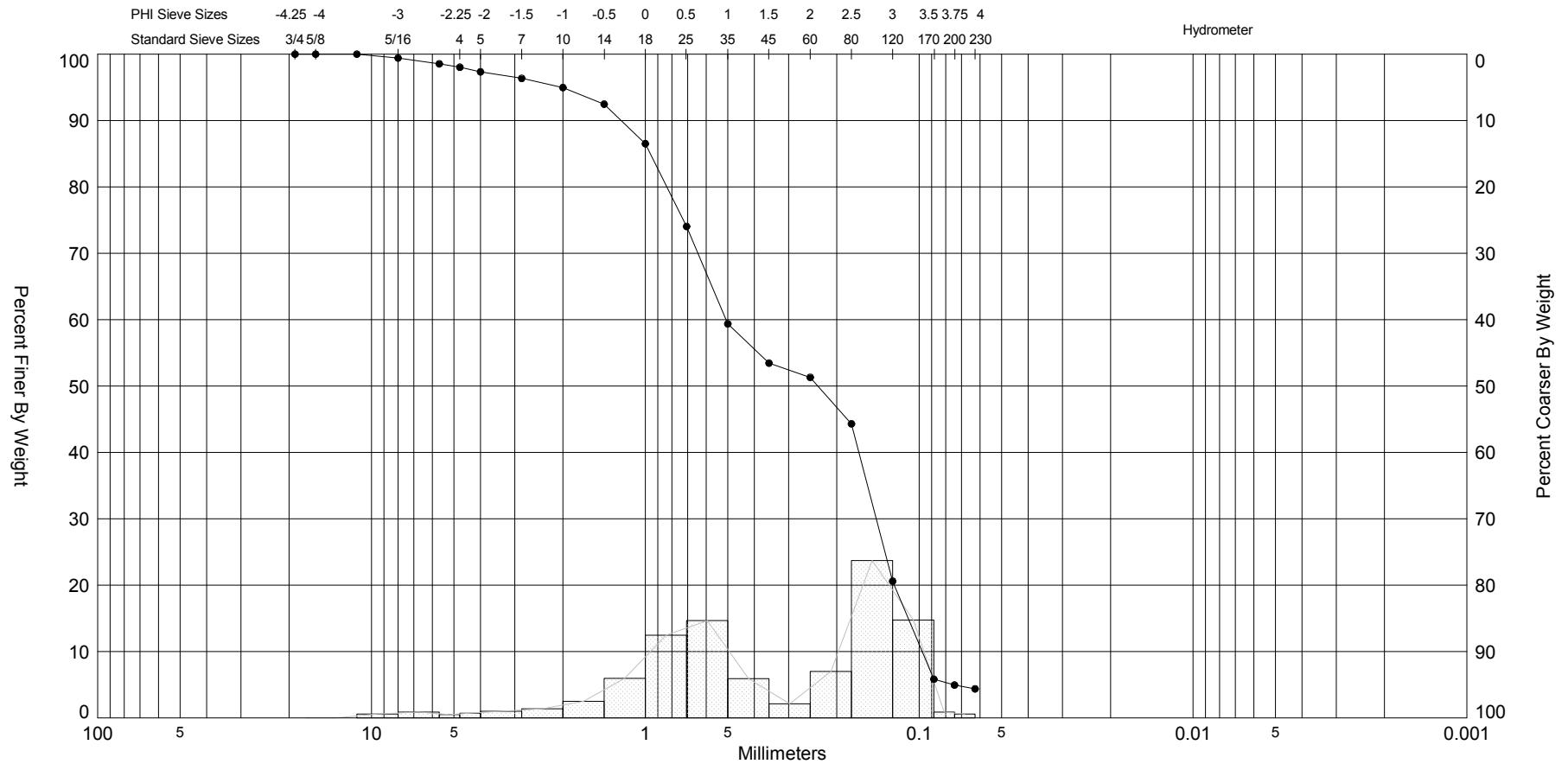
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC27 #6	—●—	-54.0	SW	#200 - 2.01 #230 - 1.76		24	2.39	1.88	-1.7	4.96	1.51	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-21-15 ST
												Easting (X, m):	469,591
												Northing (Y, m):	3,397,978
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
<b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													

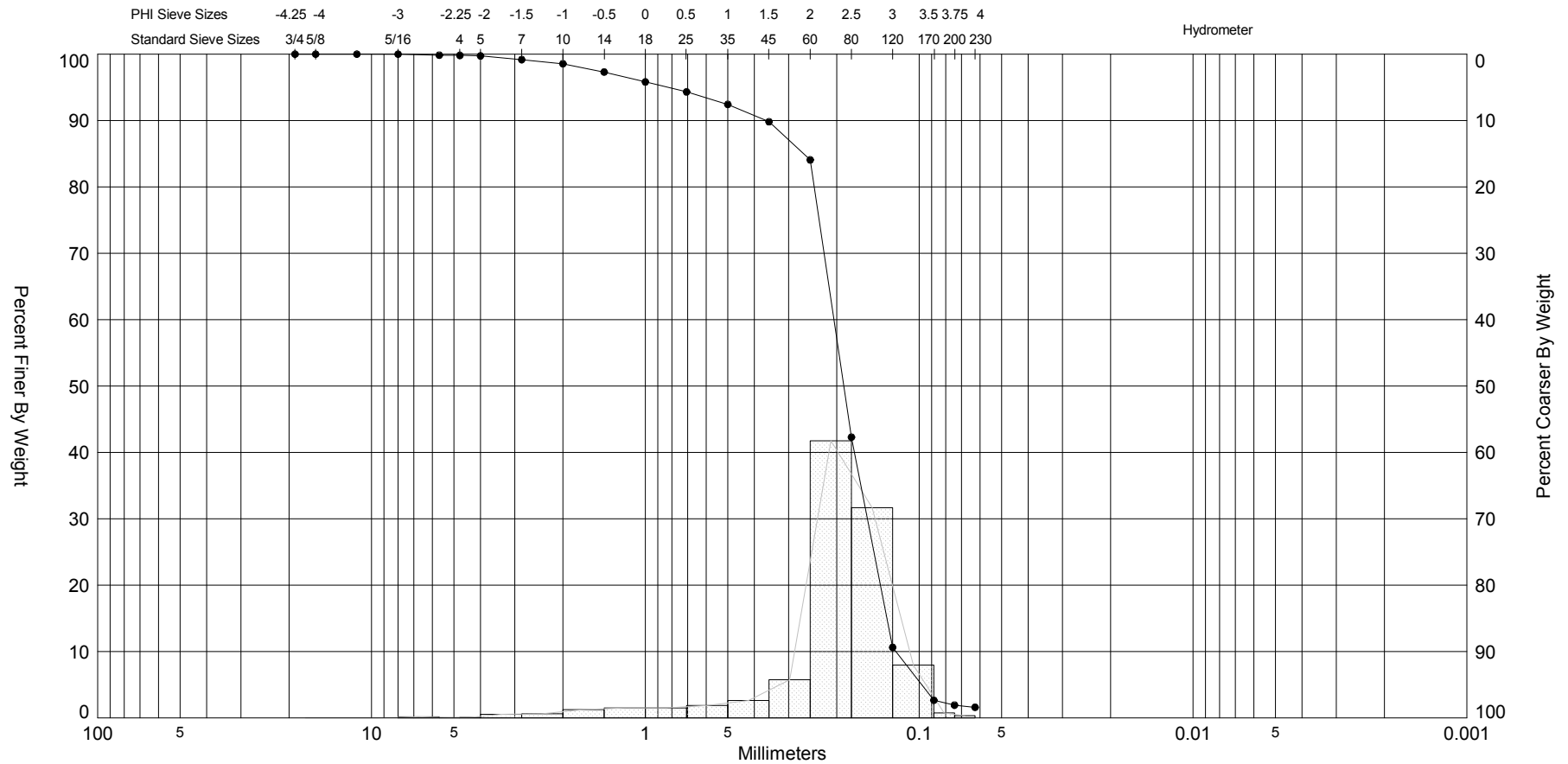
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC27 #7	—●—	-54.9	SW	#200 - 4.95 #230 - 4.38		16	2.09	1.53	-0.66	2.82	1.51	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-15-15 SMT
 <b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102												Easting (X, m):	469,591
												Northing (Y, m):	3,397,978
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88

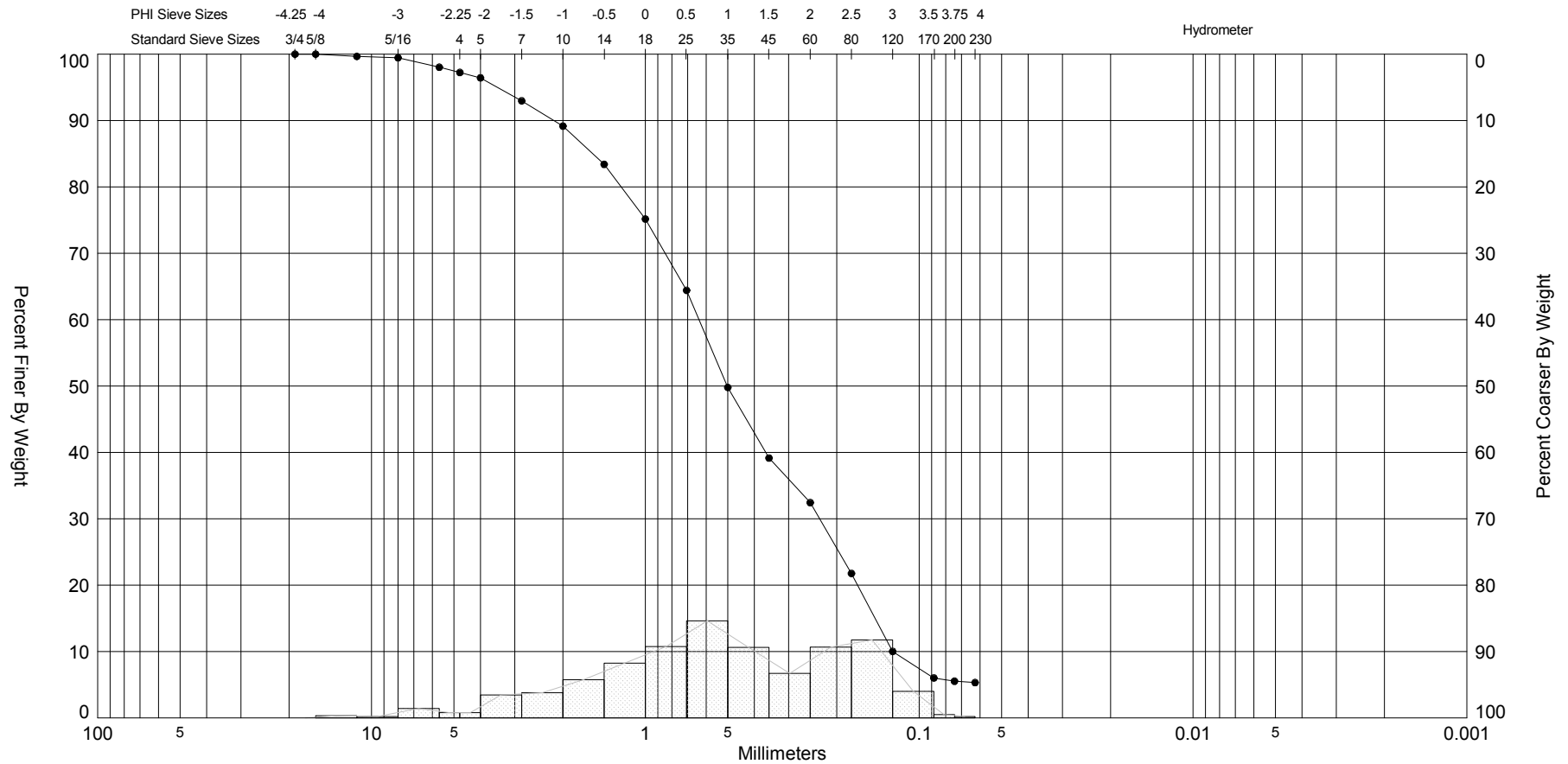
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16




Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC28 #1	—●—	-48.0	SW	#200 - 1.93 #230 - 1.60		9	2.41	2.26	-2.37	10.17	0.88	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-22-15 DA
												Easting (X, m):	468,873
												Northing (Y, m):	3,398,381
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
<b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													

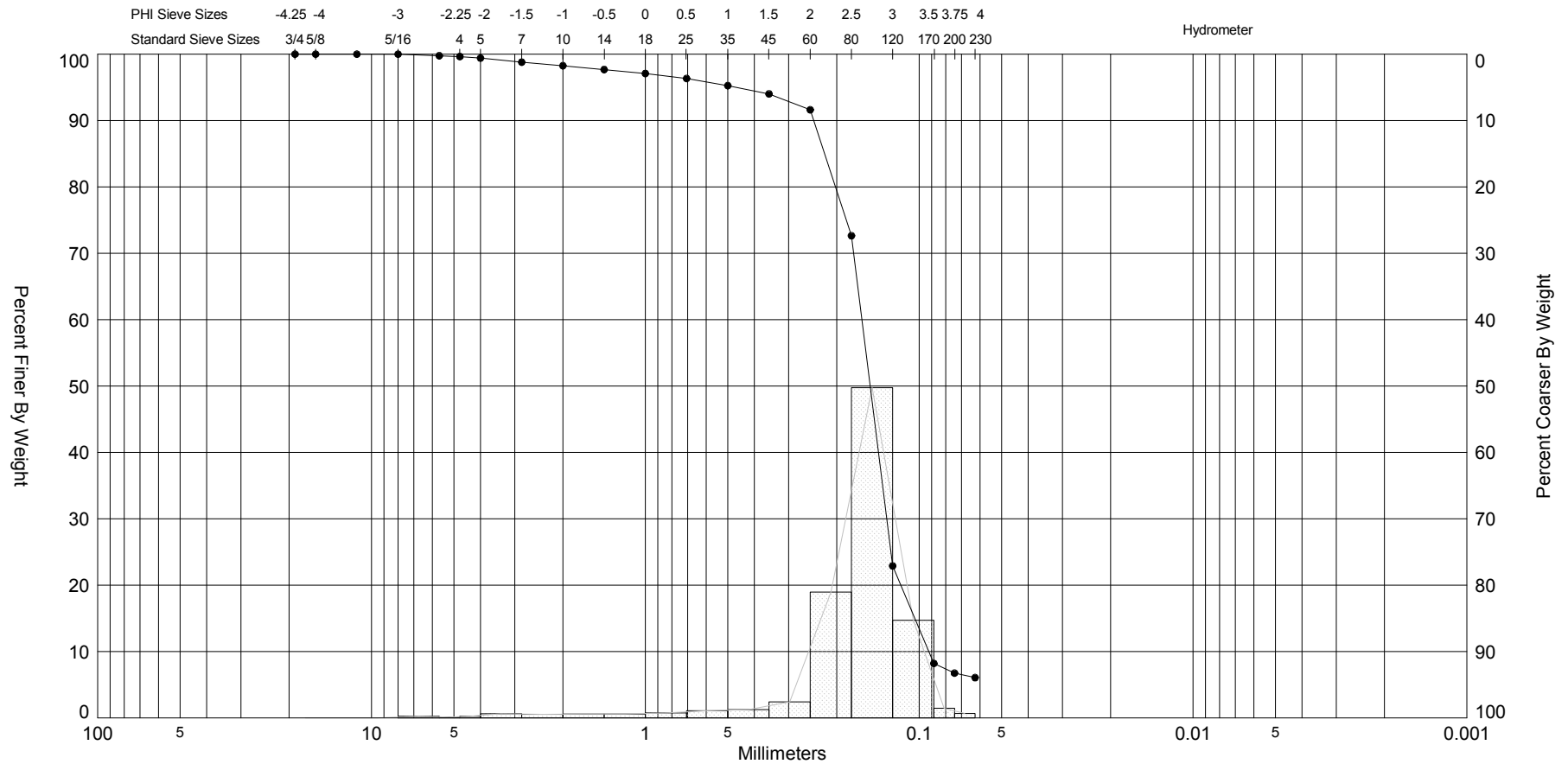
SIEVE ANALYSIS FL\_BOEM\_2015\_VC\_GPJ\_JPBRAZIL.GDT 9/12/16



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC28 #2	—●—	-52.5	SW-SM	#200 - 5.53 #230 - 5.32		31	0.99	0.89	-0.41	2.68	1.5	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-22-15 DA
												Easting (X, m):	468,873
												Northing (Y, m):	3,398,381
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
CB&I Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													


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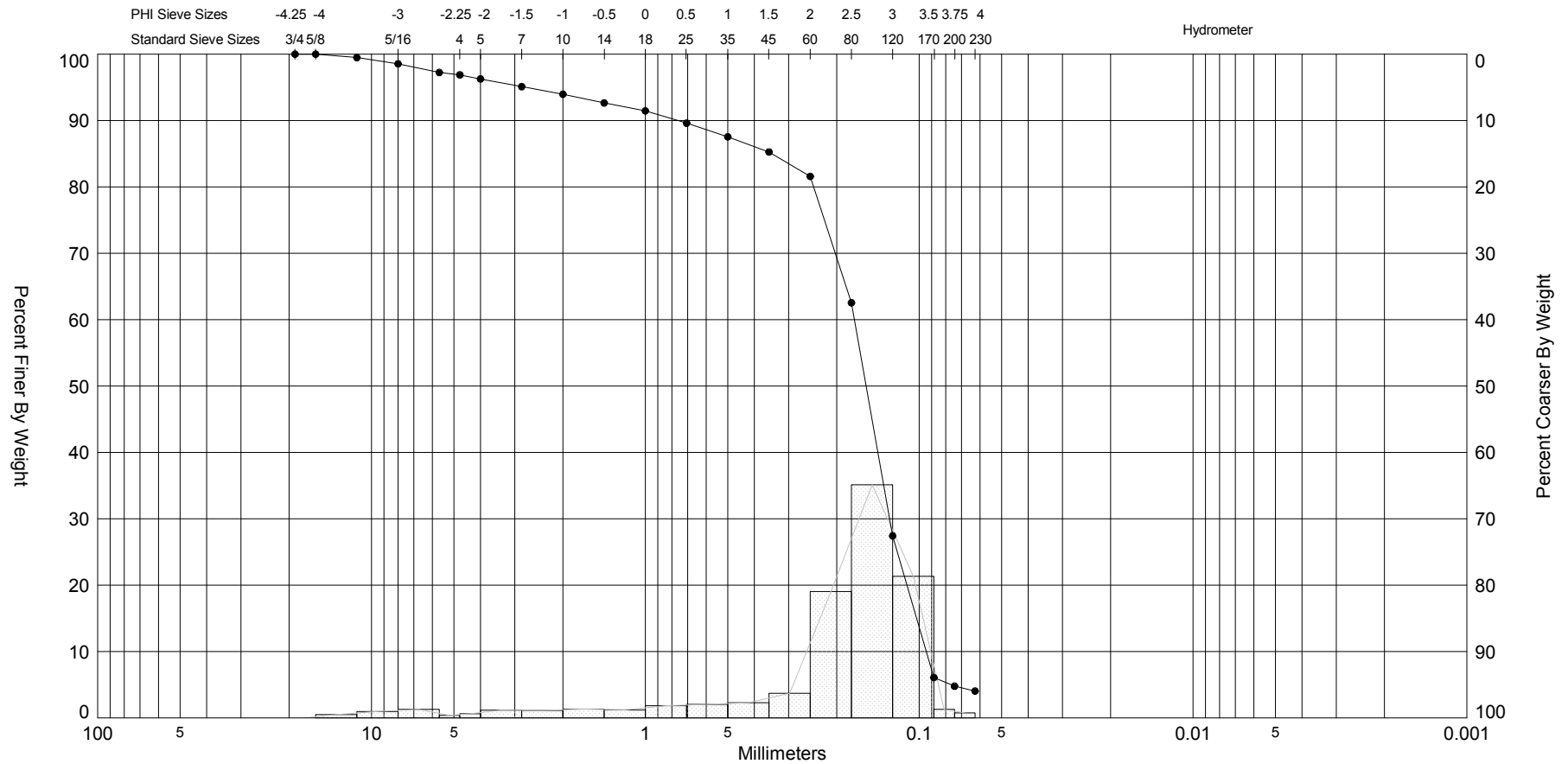
Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC28 #3	—●—	-53.4	SW-SM	#200 - 6.75 #230 - 6.07		9	2.73	2.53	-3.23	16.07	0.86	Project Name:	Inventory of Potential Beach Nourishment and Coastal


Comments: Depths and elevations based on measured values	Analysis Date:	Restoration Sand Sources on the Atlantic OCS
	Analyzed By:	10-22-15

	<b>CB&amp;I</b> Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102		Easting (X, m):	468,873
			Northing (Y, m):	3,398,381
			Horizontal System:	NAD 1983
			Vertical System:	NAVD88

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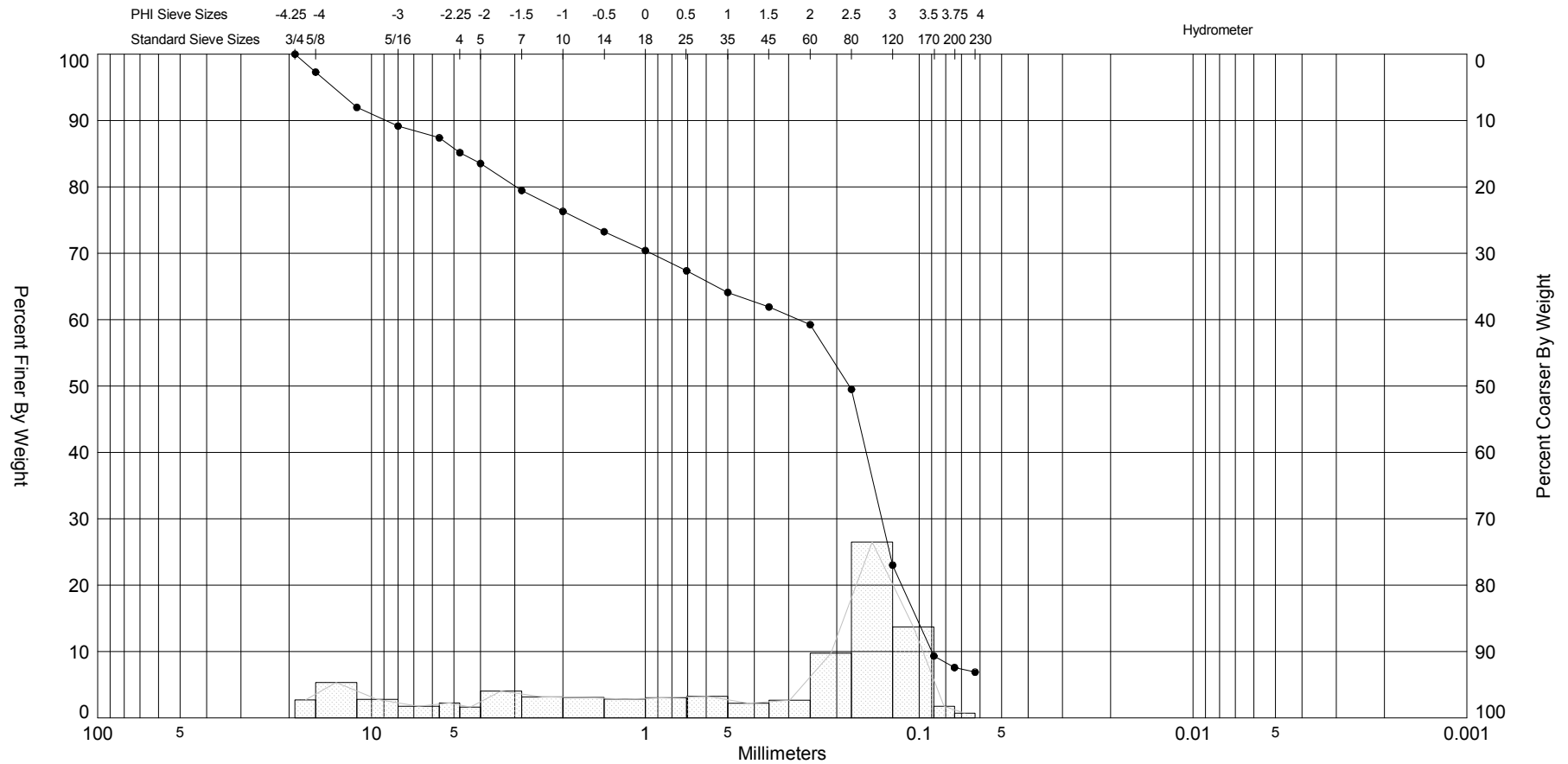


Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC28 #4	—●—	-53.9	SW	#200 - 4.78 #230 - 4.05		17	2.68	2.21	-2.29	7.94	1.44	Project Name:	Inventory of Potential Beach Nourishment and Coastal
Comments:												Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values												Analyzed By:	10-27-15 SMT
												Easting (X, m):	468,873
												Northing (Y, m):	3,398,381
												Horizontal System:	NAD 1983
												Vertical System:	NAVD88
CB&I Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102													



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Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort	Sample Information	
FL-BOEM-2015-VC28 #5	—●—	-54.2	SW-SM	#200 - 7.59 #230 - 6.90		38	2.47	0.98	-0.82	2.2	2.44	Project Name:	Inventory of Potential Beach Nourishment and Coastal

Comments:	Analysis Date:	Restoration Sand Sources on the Atlantic OCS
Depths and elevations based on measured values	Analyzed By:	10-27-15
	Easting (X, m):	SMT



**CB&I**  
 Coastal Planning & Engineering, Inc.  
 2481 NW Boca Raton Blvd.  
 Boca Raton, FL 33431  
 ph (561) 391 8102

Northing (Y, m):	468,873
Horizontal System:	3,398,381
Vertical System:	NAD 1983
	NAVD88