







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		Northing (m):		Coordinate System:		Elevation (ft):	
Easting (m):							
464,846		3,378,105		UTM 17		-48.4 NAVD88	
USCS:		Munsell:		Comments:			
SP		Wet - 5Y-4/1 Dry - 5Y-7/1 Washed - 5Y-8/1					
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
101.99	100.65	0.01	0.07	#200 - 1.51 #230 - 1.38		7	
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	0.47	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	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	2.12	0.23	0.74	-3.52	19.98		


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		Northing (m):		Coordinate System:		Elevation (ft):	
Easting (m):							
464,846		3,378,105		UTM 17		-52.3 NAVD88	
USCS:		Munsell:		Comments:			
SP		Wet - 5Y-3/1 Dry - 5Y-6/1 Washed - 5Y-7/1					
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
98.34	95.49	0.08	0.03	#200 - 3.49 #230 - 3.01		6	
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				 CB&I Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102			
Depths and elevations based on measured values							
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				Coordinate System:		Elevation (ft):	
Analyzed By: SMT		Northing (m):		UTM 17		-55.0 NAVD88	
Easting (m):		3,378,105					
464,846							
USCS:		Munsell: Wet - 5Y-2.5/1 Dry - 5Y-6/1 Washed - 5Y-7/1		Comments:			
SM							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
92.85	82.72	1.41	0.25	#200 - 18.82 #230 - 12.67		8	
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	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
	3.86	3.61	3.26	2.93	2.68	2.10	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	3.05	0.12	0.75	-4.04	27.28		

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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-VC23 #4							
Analysis Date: 10-14-15							
Analyzed By: SMT		Northing (m):		Coordinate System:		Elevation (ft):	
Easting (m):							
464,846		3,378,105		UTM 17		-56.8 NAVD88	
USCS:		Munsell: Wet - 10Y-3/1 Dry - 10YR-5/1 Washed - 10YR-8/1		Comments:			
SC							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
97.30	82.76	0.06	0.08	#200 - 15.56 #230 - 15.10		2	
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		

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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-VC23 #5							
Analysis Date: 10-14-15							
Analyzed By: SMT		Northing (m):		Coordinate System:		Elevation (ft):	
Easting (m):							
464,846		3,378,105		UTM 17		-58.2 NAVD88	
USCS:		Munsell: Wet - 10Y-4/1 Dry - 10YR-6/1 Washed - 10YR-8/1		Comments:			
SP-SC							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shell Hash (%):
95.69	86.97	0.05	0.07	#200 - 9.50 #230 - 9.24		1	
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		

<div>Granularmetric Report</div> <div>Depths and elevations based on measured values</div>				<div></div> <div>CB&I Coastal Planning & Engineering, Inc. 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391 8102</div>			
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		Northing (m):		Coordinate System:		Elevation (ft):	
Easting (m):							
464,846		3,378,105		UTM 17		-59.0 NAVD88	
USCS:		Munsell: Wet - 10Y-5/1 Dry - 10YR-7/1 Washed - 10YR-8/1		Comments:			
SW-SC							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%): #200 - 9.37 #230 - 9.12	Organics (%):	Carbonates (%):	Shell Hash (%):
99.39	91.09	0.54	0.23			56	
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained	
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	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	-0.59	1.51	2.61	-0.04	1.49		

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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-VC23 #7							
Analysis Date: 10-14-15							
Analyzed By: SMT		Northing (m):		Coordinate System:		Elevation (ft):	
Easting (m):							
464,846		3,378,105		UTM 17		-60.6 NAVD88	
USCS:		Munsell: Wet - 2.5Y-5/2 Dry - 2.5Y-7/2 Washed - 2.5Y-8/1		Comments:			
SP							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%): #200 - 2.83 #230 - 2.68	Organics (%):	Carbonates (%):	Shell Hash (%):
102.49	99.78	0.04	0.00			1	
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		

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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-VC23 #8							
Analysis Date: 10-14-15							
Analyzed By: SMT		Northing (m):		Coordinate System:		Elevation (ft):	
Easting (m):							
464,846		3,378,105		UTM 17		-62.7 NAVD88	
USCS:		Munsell: Wet - 2.5Y-3/2 Dry - 2.5Y-5/2 Washed - 2.5Y-7/1		Comments:			
SP-SM							
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%): #200 - 5.26 #230 - 4.97	Organics (%):	Carbonates (%):	Shell Hash (%):
99.19	94.35	0.08	0.00			2	
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	
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
3.97	2.74	2.46	2.04	1.59	1.33	0.78	
Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis		
Statistics	1.95	0.26	0.68	-0.77	6.1		