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|--|----------------------------------|---|--------------------------------|--|----------------------------|---|-----------------|
| Granularmetric Report Depths and elevations based on measured values | | | |  Coastal Planning & Engineering 2481 NW Boca Raton Blvd. Boca Raton, FL 33431 ph (561) 391-8102 fax (561) 391-9116 | | | |
| Project Name: AMI 2013 Sand Search | | | | | | | |
| Sample Name: AMVC-13-14 #1 | | | | | | | |
| Analysis Date: 02-18-13 | | | | | | | |
| Analyzed By: BA | | | | | | | |
| Easting (ft): 409,234 | | Northing (ft): 1,160,666 | | Coordinate System: Florida State Plane West | | Elevation (ft): -11.3 NAVD 88 | |
| USCS: SP | | Munsell: Wet - 5Y-7/1 Dry - 5Y-8/1 Washed - 5Y-8/1 | | Comments: | | | |
| Dry Weight (g): 91.35 | Wash Weight (g): 90.62 | Pan Retained (g): 0.00 | Sieve Loss (%): 0.02 | Fines (%): #200 - 0.83 #230 - 0.82 | 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 | 0.05 | 0.05 | 0.05 | 0.05 | |
| 4 | -2.25 | 4.76 | 0.06 | 0.07 | 0.11 | 0.12 | |
| 5 | -2.00 | 4.00 | 0.00 | 0.00 | 0.11 | 0.12 | |
| 7 | -1.50 | 2.83 | 0.20 | 0.22 | 0.31 | 0.34 | |
| 10 | -1.00 | 2.00 | 0.51 | 0.56 | 0.82 | 0.90 | |
| 14 | -0.50 | 1.41 | 1.15 | 1.26 | 1.97 | 2.16 | |
| 18 | 0.00 | 1.00 | 1.43 | 1.57 | 3.40 | 3.73 | |
| 25 | 0.50 | 0.71 | 1.80 | 1.97 | 5.20 | 5.70 | |
| 35 | 1.00 | 0.50 | 2.45 | 2.68 | 7.65 | 8.38 | |
| 45 | 1.50 | 0.35 | 3.55 | 3.89 | 11.20 | 12.27 | |
| 60 | 2.00 | 0.25 | 11.19 | 12.25 | 22.39 | 24.52 | |
| 80 | 2.50 | 0.18 | 37.91 | 41.50 | 60.30 | 66.02 | |
| 120 | 3.00 | 0.13 | 29.17 | 31.93 | 89.47 | 97.95 | |
| 170 | 3.50 | 0.09 | 1.10 | 1.20 | 90.57 | 99.15 | |
| 200 | 3.75 | 0.07 | 0.02 | 0.02 | 90.59 | 99.17 | |
| 230 | 4.00 | 0.06 | 0.01 | 0.01 | 90.60 | 99.18 | |
| Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm. | | | | | | | |
| Phi 5 | Phi 16 | Phi 25 | Phi 50 | Phi 75 | Phi 84 | Phi 95 | |
| 2.95 | 2.78 | 2.64 | 2.31 | 2.01 | 1.65 | 0.32 | |
| Moment | Mean Phi | Mean mm | Sorting | Skewness | Kurtosis | | |
| Statistics | 2.13 | 0.23 | 0.8 | -2.23 | 9.05 | | |

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|--|----------------------------------|--|--------------------------------|--|----------------------------|---|-----------------|
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| Project Name: AMI 2013 Sand Search | | | | | | | |
| Sample Name: AMVC-13-14 #2 | | | | | | | |
| Analysis Date: 02-15-13 | | | | | | | |
| Analyzed By: AV | | | | | | | |
| Easting (ft): 409,234 | | Northing (ft): 1,160,666 | | Coordinate System: Florida State Plane West | | Elevation (ft): -13.6 NAVD 88 | |
| USCS: SP | | Munsell: Wet - 5Y-8/1 Dry - 5Y-8/1 Washed - 5Y-8/1 | | Comments: | | | |
| Dry Weight (g): 87.12 | Wash Weight (g): 86.09 | Pan Retained (g): 0.01 | Sieve Loss (%): 0.07 | Fines (%): #200 - 1.27 #230 - 1.26 | 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 | 0.00 | 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 | 0.02 | 0.02 | 0.02 | 0.02 | |
| 18 | 0.00 | 1.00 | 0.06 | 0.07 | 0.08 | 0.09 | |
| 25 | 0.50 | 0.71 | 0.08 | 0.09 | 0.16 | 0.18 | |
| 35 | 1.00 | 0.50 | 0.11 | 0.13 | 0.27 | 0.31 | |
| 45 | 1.50 | 0.35 | 0.30 | 0.34 | 0.57 | 0.65 | |
| 60 | 2.00 | 0.25 | 1.42 | 1.63 | 1.99 | 2.28 | |
| 80 | 2.50 | 0.18 | 22.32 | 25.62 | 24.31 | 27.90 | |
| 120 | 3.00 | 0.13 | 58.69 | 67.37 | 83.00 | 95.27 | |
| 170 | 3.50 | 0.09 | 2.95 | 3.39 | 85.95 | 98.66 | |
| 200 | 3.75 | 0.07 | 0.06 | 0.07 | 86.01 | 98.73 | |
| 230 | 4.00 | 0.06 | 0.01 | 0.01 | 86.02 | 98.74 | |
| Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm. | | | | | | | |
| Phi 5 | Phi 16 | Phi 25 | Phi 50 | Phi 75 | Phi 84 | Phi 95 | |
| 3.00 | 2.92 | 2.85 | 2.66 | 2.44 | 2.27 | 2.05 | |
| Moment | Mean Phi | Mean mm | Sorting | Skewness | Kurtosis | | |
| Statistics | 2.61 | 0.16 | 0.31 | -2.09 | 15.7 | | |

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| Project Name: AMI 2013 Sand Search | | | | | | | |
| Sample Name: AMVC-13-14 #3 | | | | | | | |
| Analysis Date: 02-15-13 | | | | | | | |
| Analyzed By: AV | | | | | | | |
| Easting (ft): 409,234 | | Northing (ft): 1,160,666 | | Coordinate System: Florida State Plane West | | Elevation (ft): -17.3 NAVD 88 | |
| USCS: SP | | Munsell: Wet - 5Y-7/1 Dry - 2.5Y-8/1 Washed - 2.5Y-8/1 | | Comments: | | | |
| Dry Weight (g): 71.73 | Wash Weight (g): 70.79 | Pan Retained (g): 0.02 | Sieve Loss (%): 0.06 | Fines (%): #200 - 1.40 #230 - 1.39 | 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 | 0.00 | 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 | 0.14 | 0.10 | 0.14 | |
| 10 | -1.00 | 2.00 | 0.20 | 0.28 | 0.30 | 0.42 | |
| 14 | -0.50 | 1.41 | 0.42 | 0.59 | 0.72 | 1.01 | |
| 18 | 0.00 | 1.00 | 0.50 | 0.70 | 1.22 | 1.71 | |
| 25 | 0.50 | 0.71 | 0.58 | 0.81 | 1.80 | 2.52 | |
| 35 | 1.00 | 0.50 | 0.74 | 1.03 | 2.54 | 3.55 | |
| 45 | 1.50 | 0.35 | 1.71 | 2.38 | 4.25 | 5.93 | |
| 60 | 2.00 | 0.25 | 4.09 | 5.70 | 8.34 | 11.63 | |
| 80 | 2.50 | 0.18 | 18.88 | 26.32 | 27.22 | 37.95 | |
| 120 | 3.00 | 0.13 | 40.06 | 55.85 | 67.28 | 93.80 | |
| 170 | 3.50 | 0.09 | 3.32 | 4.63 | 70.60 | 98.43 | |
| 200 | 3.75 | 0.07 | 0.12 | 0.17 | 70.72 | 98.60 | |
| 230 | 4.00 | 0.06 | 0.01 | 0.01 | 70.73 | 98.61 | |
| Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm. | | | | | | | |
| Phi 5 | Phi 16 | Phi 25 | Phi 50 | Phi 75 | Phi 84 | Phi 95 | |
| 3.13 | 2.91 | 2.83 | 2.61 | 2.25 | 2.08 | 1.30 | |
| Moment | Mean Phi | Mean mm | Sorting | Skewness | Kurtosis | | |
| Statistics | 2.45 | 0.18 | 0.64 | -2.88 | 14.32 | | |

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| Project Name: AMI 2013 Sand Search | | | | | | | |
| Sample Name: AMVC-13-14 #4 | | | | | | | |
| Analysis Date: 02-14-13 | | | | | | | |
| Analyzed By: AV | | | | | | | |
| Easting (ft): 409,234 | | Northing (ft): 1,160,666 | | Coordinate System: Florida State Plane West | | Elevation (ft): -19.0 NAVD 88 | |
| USCS: SW | | Munsell: Wet - 2.5Y-6/1 Dry - 2.5Y-6/1 Washed - 5Y-7/1 | | Comments: | | | |
| Dry Weight (g): 87.40 | Wash Weight (g): 86.22 | Pan Retained (g): 0.07 | Sieve Loss (%): 0.11 | Fines (%): #200 - 1.57 #230 - 1.54 | Organics (%): | Carbonates (%): 62 | 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 | 0.76 | 0.87 | 0.76 | 0.87 | |
| 5/16" | -3.00 | 8.00 | 0.26 | 0.30 | 1.02 | 1.17 | |
| 3.5 | -2.50 | 5.66 | 0.85 | 0.97 | 1.87 | 2.14 | |
| 4 | -2.25 | 4.76 | 0.64 | 0.73 | 2.51 | 2.87 | |
| 5 | -2.00 | 4.00 | 0.91 | 1.04 | 3.42 | 3.91 | |
| 7 | -1.50 | 2.83 | 3.87 | 4.43 | 7.29 | 8.34 | |
| 10 | -1.00 | 2.00 | 7.39 | 8.46 | 14.68 | 16.80 | |
| 14 | -0.50 | 1.41 | 10.28 | 11.76 | 24.96 | 28.56 | |
| 18 | 0.00 | 1.00 | 7.71 | 8.82 | 32.67 | 37.38 | |
| 25 | 0.50 | 0.71 | 8.99 | 10.29 | 41.66 | 47.67 | |
| 35 | 1.00 | 0.50 | 7.28 | 8.33 | 48.94 | 56.00 | |
| 45 | 1.50 | 0.35 | 7.40 | 8.47 | 56.34 | 64.47 | |
| 60 | 2.00 | 0.25 | 5.82 | 6.66 | 62.16 | 71.13 | |
| 80 | 2.50 | 0.18 | 9.50 | 10.87 | 71.66 | 82.00 | |
| 120 | 3.00 | 0.13 | 13.12 | 15.01 | 84.78 | 97.01 | |
| 170 | 3.50 | 0.09 | 1.17 | 1.34 | 85.95 | 98.35 | |
| 200 | 3.75 | 0.07 | 0.07 | 0.08 | 86.02 | 98.43 | |
| 230 | 4.00 | 0.06 | 0.03 | 0.03 | 86.05 | 98.46 | |
| Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm. | | | | | | | |
| Phi 5 | Phi 16 | Phi 25 | Phi 50 | Phi 75 | Phi 84 | Phi 95 | |
| 2.93 | 2.57 | 2.18 | 0.64 | -0.65 | -1.05 | -1.88 | |
| Moment | Mean Phi | Mean mm | Sorting | Skewness | Kurtosis | | |
| Statistics | 0.62 | 0.65 | 1.59 | -0.23 | 2.18 | | |

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| Project Name: AMI 2013 Sand Search | | | | | | | |
| Sample Name: AMVC-13-14 #5 | | | | | | | |
| Analysis Date: 02-14-13 | | | | | | | |
| Analyzed By: AV | | | | | | | |
| Easting (ft): 409,234 | | Northing (ft): 1,160,666 | | Coordinate System: Florida State Plane West | | Elevation (ft): -20.3 NAVD 88 | |
| USCS: SW | | Munsell: Wet - 2.5Y-7/1 Dry - 2.5Y-7/1 Washed - 5Y-7/1 | | Comments: | | | |
| Dry Weight (g): 92.89 | Wash Weight (g): 91.68 | Pan Retained (g): 0.05 | Sieve Loss (%): 0.08 | Fines (%): #200 - 1.46 #230 - 1.42 | Organics (%): | Carbonates (%): 46 | 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 | 0.91 | 0.98 | 0.91 | 0.98 | |
| 3.5 | -2.50 | 5.66 | 0.49 | 0.53 | 1.40 | 1.51 | |
| 4 | -2.25 | 4.76 | 0.47 | 0.51 | 1.87 | 2.02 | |
| 5 | -2.00 | 4.00 | 1.13 | 1.22 | 3.00 | 3.24 | |
| 7 | -1.50 | 2.83 | 4.41 | 4.75 | 7.41 | 7.99 | |
| 10 | -1.00 | 2.00 | 5.85 | 6.30 | 13.26 | 14.29 | |
| 14 | -0.50 | 1.41 | 6.23 | 6.71 | 19.49 | 21.00 | |
| 18 | 0.00 | 1.00 | 5.08 | 5.47 | 24.57 | 26.47 | |
| 25 | 0.50 | 0.71 | 5.33 | 5.74 | 29.90 | 32.21 | |
| 35 | 1.00 | 0.50 | 4.97 | 5.35 | 34.87 | 37.56 | |
| 45 | 1.50 | 0.35 | 5.00 | 5.38 | 39.87 | 42.94 | |
| 60 | 2.00 | 0.25 | 8.94 | 9.62 | 48.81 | 52.56 | |
| 80 | 2.50 | 0.18 | 24.01 | 25.85 | 72.82 | 78.41 | |
| 120 | 3.00 | 0.13 | 17.75 | 19.11 | 90.57 | 97.52 | |
| 170 | 3.50 | 0.09 | 0.90 | 0.97 | 91.47 | 98.49 | |
| 200 | 3.75 | 0.07 | 0.05 | 0.05 | 91.52 | 98.54 | |
| 230 | 4.00 | 0.06 | 0.04 | 0.04 | 91.56 | 98.58 | |
| Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm. | | | | | | | |
| Phi 5 | Phi 16 | Phi 25 | Phi 50 | Phi 75 | Phi 84 | Phi 95 | |
| 2.93 | 2.65 | 2.43 | 1.87 | -0.13 | -0.87 | -1.81 | |
| Moment | Mean Phi | Mean mm | Sorting | Skewness | Kurtosis | | |
| Statistics | 1.14 | 0.45 | 1.6 | -0.78 | 2.39 | | |

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|--|----------------------------------|--|--------------------------------|--|----------------------------|---|-----------------|
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| Project Name: AMI 2013 Sand Search | | | | | | | |
| Sample Name: AMVC-13-14 #6 | | | | | | | |
| Analysis Date: 02-14-13 | | | | | | | |
| Analyzed By: AV | | | | | | | |
| Easting (ft): 409,234 | | Northing (ft): 1,160,666 | | Coordinate System: Florida State Plane West | | Elevation (ft): -26.3 NAVD 88 | |
| USCS: SW | | Munsell: Wet - 2.5Y-7/1 Dry - 2.5Y-8/1 Washed - 2.5Y-8/1 | | Comments: | | | |
| Dry Weight (g): 96.89 | Wash Weight (g): 96.08 | Pan Retained (g): 0.12 | Sieve Loss (%): 0.01 | Fines (%): #200 - 1.06 #230 - 0.99 | Organics (%): | Carbonates (%): | 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 | 1.27 | 1.31 | 1.27 | 1.31 | |
| 3.5 | -2.50 | 5.66 | 1.03 | 1.06 | 2.30 | 2.37 | |
| 4 | -2.25 | 4.76 | 0.98 | 1.01 | 3.28 | 3.38 | |
| 5 | -2.00 | 4.00 | 1.18 | 1.22 | 4.46 | 4.60 | |
| 7 | -1.50 | 2.83 | 2.55 | 2.63 | 7.01 | 7.23 | |
| 10 | -1.00 | 2.00 | 2.85 | 2.94 | 9.86 | 10.17 | |
| 14 | -0.50 | 1.41 | 3.66 | 3.78 | 13.52 | 13.95 | |
| 18 | 0.00 | 1.00 | 2.62 | 2.70 | 16.14 | 16.65 | |
| 25 | 0.50 | 0.71 | 2.61 | 2.69 | 18.75 | 19.34 | |
| 35 | 1.00 | 0.50 | 2.01 | 2.07 | 20.76 | 21.41 | |
| 45 | 1.50 | 0.35 | 2.42 | 2.50 | 23.18 | 23.91 | |
| 60 | 2.00 | 0.25 | 4.00 | 4.13 | 27.18 | 28.04 | |
| 80 | 2.50 | 0.18 | 21.35 | 22.04 | 48.53 | 50.08 | |
| 120 | 3.00 | 0.13 | 43.65 | 45.05 | 92.18 | 95.13 | |
| 170 | 3.50 | 0.09 | 3.57 | 3.68 | 95.75 | 98.81 | |
| 200 | 3.75 | 0.07 | 0.13 | 0.13 | 95.88 | 98.94 | |
| 230 | 4.00 | 0.06 | 0.07 | 0.07 | 95.95 | 99.01 | |
| Shell Hash calculated from visual estimate of shell <4.75mm and >2.8mm. | | | | | | | |
| Phi 5 | Phi 16 | Phi 25 | Phi 50 | Phi 75 | Phi 84 | Phi 95 | |
| 3.00 | 2.88 | 2.78 | 2.50 | 1.63 | -0.12 | -1.92 | |
| Moment | Mean Phi | Mean mm | Sorting | Skewness | Kurtosis | | |
| Statistics | 1.77 | 0.29 | 1.59 | -1.59 | 4.34 | | |