

| DRILLING LOG | | DIVISION: South Atlantic | | INSTALLATION: Jacksonville District | | SHEET 1 of 1 | |
|--|--|---|--|--|--|---|--|
| 1. PROJECT ESTERO ISLAND BEACH RESTORATION | | 10. SIZE AND TYPE OF BIT 3 5/8" | | 11. DATUM FOR ELEVATION SHOWN (TBM or MSL) | | NGVD | |
| (Coordinates or Station) | | 12. MANUFACTURER'S DESIGNATION OF DRILL | | ALPINE PNEUMATIC VIBRACORE | | 13. TOT NO. OF OVERBURDEN SAMPLES TAKEN | |
| 2. LOCATION X= 661590 Y= 767085 | | 14. TOTAL NO. OF CORE BOXES | | 15. ELEVATION GROUND WATER | | 16. DATE HOLE Started Completed | |
| 3. DRILLING AGENCY: Alpine Ocean Seismic Survey Inc. | | 17. ELEVATION TOP OF HOLE -8.3 ft | | 18. TOTAL CORE RECOVERY FOR BORING 82% | | 19. SIGNATURE OF GEOLOGIST SYED KHALIL | |
| (As shown on drawing title and file number) | | 19. SIGNATURE OF GEOLOGIST SYED KHALIL | | | | | |
| 4. HOLE NO. EI-00-28 | | | | | | | |
| 5. NAME OF DRILLER MAURIZIO ROSSI | | | | | | | |
| 6. DIRECTION OF HOLE VERTICAL | | | | | | | |
| 7. THICKNESS OF BURDEN 0.0 FT | | | | | | | |
| 8. DEPTH DRILLED INTO ROCK N/A | | | | | | | |
| 9. TOTAL DEPTH OF HOLE 17.7 ft | | | | | | | |

| ELEV. | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS (Description) | CORE REC % | SAMPLE NUMBER | REMARKS |
|-------|-------|--------|---|------------|---------------|--|
| -8.3 | 0 | | | | | |
| | 1 | | SAND, fine-grained, some shell hash/shell fragments/whole shells, Light gray (5Y-7/1) (SP) | | 1 | Sample #1, Depth = 1.5' Mean (mm): 0.23, Phi Sorting: 1.60 Silt: 3.9% |
| -11 | 2 | | | | | |
| -11.6 | 3 | | fine-grained, Light Gray (5Y-7/1) (SP) from -11.0' to -11.6' | | 2 | Sample #2, Depth = 3.0' Mean (mm): 0.13, Phi Sorting: 0.59 Silt: 3.7% |
| | 4 | | SAND, fine-grained, trace silt, little shell hash/shell fragments, Light gray (5Y-7/1) (SP-SM) | | 3 | Sample #3, Depth = 4.0' Mean (mm): 0.18, Phi Sorting: 1.42 Silt: 6.5% |
| -13 | 5 | | fine-grained, shelly, Light gray (5Y-7/1) (SP-SM) from -13.0' to -13.2' | | | |
| -14.2 | 6 | | fine-grained, trace silt, little shell hash/shell fragments, Gray (5Y-6/1) (SP-SM) from -13.2' to -14.2' | | 4 | Sample #4, Depth = 6.3' Mean (mm): 0.31, Phi Sorting: 2.34 Silt: 19.8% |
| -15 | 7 | | SILTY SAND, fine-grained, little shell hash/shell fragments, Gray (5Y-5/1) (SM) | | | |
| | 8 | | | | | |
| | 9 | | fine-grained, trace clay, little shell hash/shell fragments/whole shell, Gray (5Y-5/1) (SM) from -15.0' to -20.3' | | | |
| -20.3 | 10 | | | | | |
| | 11 | | | | | |
| -21.8 | 12 | | SAND, fine-grained, some shell hash/shell fragments/whole shell, Light gray (5Y-7/1) (SP) | | | |
| -23.3 | 13 | | CARBONATE CLASTS, cobble size embedded in carbonate fines (GP) | | | |
| | 14 | | | | | |
| | 15 | | | | | |
| | 16 | | NO RECOVERY | | | |
| -26 | 17 | | | | | |
| | 18 | | End of Boring | | | |
| | 19 | | | | | |
| | 20 | | | | | |
| | 21 | | Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System. | | | LAT - LONG 26 26.645 N 81 59.006 W |
| | 22 | | | | | |
| | 23 | | | | | |
| | 24 | | | | | |

GRADATION ANALYSIS REPORT
ESTERO VC 2000
TESTED BY: ID ON: 9/00

SAMPLE NO.: EI-00-28#1
SAMPLE ELEV. (FT. NGVD): 1.5
SAMPLE DEPTH (FT.): 1.5
SAMPLE TYPE: CORE SAMPLE

USCS DESCRIPTION: SP

DRY SAMPLE WEIGHT (GRAMS): 99.55
SAMPLE WEIGHT AFTER WASH (GRAMS): 95.86

| SIEVE SIZE | PHI SIZE | MESH SIZE (mm) | RETAINED (GRAMS) | RETAINED (%) | PASSED (%) |
|---------------|-------------|-------------------|---------------------|-----------------|---------------|
| 5/8 | -4.00 | 16.000 | 0.00 | 0.00 | 100.00 |
| 5/16 | -3.00 | 8.000 | 2.70 | 2.71 | 97.29 |
| 5 | -2.00 | 4.000 | 5.36 | 5.38 | 94.62 |
| 7 | -1.50 | 2.800 | 6.91 | 6.94 | 93.06 |
| 10 | -1.00 | 2.000 | 7.99 | 8.03 | 91.97 |
| 14 | -0.50 | 1.400 | 9.09 | 9.13 | 90.87 |
| 18 | 0.00 | 1.000 | 10.32 | 10.37 | 89.63 |
| 25 | 0.50 | 0.710 | 11.73 | 11.78 | 88.22 |
| 35 | 1.00 | 0.500 | 13.39 | 13.45 | 86.55 |
| 45 | 1.50 | 0.355 | 15.23 | 15.30 | 84.70 |
| 60 | 2.00 | 0.250 | 18.38 | 18.46 | 81.54 |
| 80 | 2.50 | 0.180 | 33.47 | 33.62 | 66.38 |
| 120 | 3.00 | 0.125 | 78.24 | 78.59 | 21.41 |
| 170 | 3.50 | 0.090 | 94.45 | 94.88 | 5.12 |
| 200 | 3.75 | 0.075 | 95.64 | 96.07 | 3.93 |
| 230 | 4.00 | 0.063 | 97.68 | 98.12 | 1.88 |
| PAN | | | 99.53 | 99.98 | 0.02 |

PHI (5): -2.14 PHI (16): 1.61 PHI (25): 2.22
PHI (50): 2.68 PHI (75): 2.96 PHI (84): 3.17
PHI (95): 3.53

SIEVE LOSS (g): 0.02 SILT/CLAY: 3.93%
SKEWNESS: -2.561 KURTOSIS: 3.121

GRAPHIC METHOD

MEAN (PHI): 1.77 SORTING: 0.78
MEAN (mm): 0.29 MEDIAN (mm): 0.16
NOTE: MEAN WAS CALCULATED USING 5 POINT METHOD

MOMENT METHOD

MEAN (PHI): 2.15 SORTING: 1.60
MEAN (mm): 0.23

DATA FILE NAME: EI-00-28#1.TAB

GRADATION ANALYSIS REPORT

ESTERO VC 2000

TESTED BY: ID ON: 9/00

SAMPLE NO.: EI-00-28#2
SAMPLE ELEV. (FT. NGVD): 3.0
SAMPLE DEPTH (FT.): 3.0
SAMPLE TYPE: CORE SAMPLE

USCS DESCRIPTION: SP

DRY SAMPLE WEIGHT (GRAMS): 99.65
SAMPLE WEIGHT AFTER WASH (GRAMS): 96.18

| SIEVE SIZE | PHI SIZE | MESH SIZE (mm) | RETAINED (GRAMS) | RETAINED (%) | PASSED (%) |
|---------------|-------------|-------------------|---------------------|-----------------|---------------|
| 5/8 | -4.00 | 16.000 | 0.00 | 0.00 | 100.00 |
| 5/16 | -3.00 | 8.000 | 0.00 | 0.00 | 100.00 |
| 5 | -2.00 | 4.000 | 0.00 | 0.00 | 100.00 |
| 7 | -1.50 | 2.800 | 0.12 | 0.12 | 99.88 |
| 10 | -1.00 | 2.000 | 0.16 | 0.16 | 99.84 |
| 14 | -0.50 | 1.400 | 0.34 | 0.34 | 99.66 |
| 18 | 0.00 | 1.000 | 0.52 | 0.52 | 99.48 |
| 25 | 0.50 | 0.710 | 0.84 | 0.84 | 99.16 |
| 35 | 1.00 | 0.500 | 1.34 | 1.34 | 98.66 |
| 45 | 1.50 | 0.355 | 2.02 | 2.03 | 97.97 |
| 60 | 2.00 | 0.250 | 3.50 | 3.51 | 96.49 |
| 80 | 2.50 | 0.180 | 9.31 | 9.34 | 90.66 |
| 120 | 3.00 | 0.125 | 65.41 | 65.64 | 34.36 |
| 170 | 3.50 | 0.090 | 73.93 | 74.19 | 25.81 |
| 200 | 3.75 | 0.075 | 95.93 | 96.27 | 3.73 |
| 230 | 4.00 | 0.063 | 97.88 | 98.22 | 1.78 |
| PAN | | | 99.62 | 99.97 | 0.03 |

PHI (5): 2.13 PHI (16): 2.56 PHI (25): 2.64
PHI (50): 2.86 PHI (75): 3.51 PHI (84): 3.61
PHI (95): 3.74

SIEVE LOSS (g): 0.03 SILT/CLAY: 3.73%
SKEWNESS: 0.134 KURTOSIS: 0.757

GRAPHIC METHOD

MEAN (PHI): 2.98 SORTING: 0.53
MEAN (mm): 0.13 MEDIAN (mm): 0.14

NOTE: MEAN WAS CALCULATED USING 5 POINT METHOD

MOMENT METHOD

MEAN (PHI): 2.92 SORTING: 0.59
MEAN (mm): 0.13

DATA FILE NAME: EI-00-28#2.TAB

GRADATION ANALYSIS REPORT
ESTERO VC 2000
TESTED BY: ID ON: 9/00

SAMPLE NO.: EI-00-28#3
SAMPLE ELEV. (FT. NGVD): 4.0
SAMPLE DEPTH (FT.): 4.0
SAMPLE TYPE: CORE SAMPLE

USCS DESCRIPTION: SP-SM

DRY SAMPLE WEIGHT (GRAMS): 97.73
SAMPLE WEIGHT AFTER WASH (GRAMS): 91.81

| SIEVE SIZE | PHI SIZE | MESH SIZE (mm) | RETAINED (GRAMS) | RETAINED (%) | PASSED (%) |
|---------------|-------------|-------------------|---------------------|-----------------|---------------|
| 5/8 | -4.00 | 16.000 | 0.00 | 0.00 | 100.00 |
| 5/16 | -3.00 | 8.000 | 1.45 | 1.48 | 98.52 |
| 5 | -2.00 | 4.000 | 3.51 | 3.59 | 96.41 |
| 7 | -1.50 | 2.800 | 4.77 | 4.88 | 95.12 |
| 10 | -1.00 | 2.000 | 5.67 | 5.80 | 94.20 |
| 14 | -0.50 | 1.400 | 6.50 | 6.65 | 93.35 |
| 18 | 0.00 | 1.000 | 7.42 | 7.59 | 92.41 |
| 25 | 0.50 | 0.710 | 8.38 | 8.57 | 91.43 |
| 35 | 1.00 | 0.500 | 9.37 | 9.59 | 90.41 |
| 45 | 1.50 | 0.355 | 10.44 | 10.68 | 89.32 |
| 60 | 2.00 | 0.250 | 11.94 | 12.22 | 87.78 |
| 80 | 2.50 | 0.180 | 16.95 | 17.34 | 82.66 |
| 120 | 3.00 | 0.125 | 64.11 | 65.60 | 34.40 |
| 170 | 3.50 | 0.090 | 89.20 | 91.27 | 8.73 |
| 200 | 3.75 | 0.075 | 91.43 | 93.55 | 6.45 |
| 230 | 4.00 | 0.063 | 94.74 | 96.94 | 3.06 |
| PAN | | | 97.71 | 99.98 | 0.02 |

PHI (5): -1.44 PHI (16): 2.37 PHI (25): 2.58
PHI (50): 2.84 PHI (75): 3.18 PHI (84): 3.36
PHI (95): 3.86

SIEVE LOSS (g): 0.02 SILT/CLAY: 6.45%
SKEWNESS: -3.290 KURTOSIS: 3.592

GRAPHIC METHOD

MEAN (PHI): 2.20 SORTING: 0.49
MEAN (mm): 0.22 MEDIAN (mm): 0.14

NOTE: MEAN WAS CALCULATED USING 5 POINT METHOD

MOMENT METHOD

MEAN (PHI): 2.47 SORTING: 1.42
MEAN (mm): 0.18

DATA FILE NAME: EI-00-28#3.TAB

GRADATION ANALYSIS REPORT

ESTERO VC 2000

TESTED BY: MC

ON: 9/00

SAMPLE NO.: EI-00-28#4

SAMPLE ELEV. (FT. NGVD): 6.3

SAMPLE DEPTH (FT.): 6.3

SAMPLE TYPE: CORE SAMPLE

USCS DESCRIPTION: SP-SM

DRY SAMPLE WEIGHT (GRAMS): 98.69

SAMPLE WEIGHT AFTER WASH (GRAMS): 80.26

| SIEVE SIZE | PHI SIZE | MESH SIZE (mm) | RETAINED (GRAMS) | RETAINED (%) | PASSED (%) |
|---------------|-------------|-------------------|---------------------|-----------------|---------------|
| 5/8 | -4.00 | 16.000 | 0.00 | 0.00 | 100.00 |
| 5/16 | -3.00 | 8.000 | 3.39 | 3.43 | 96.57 |
| 5 | -2.00 | 4.000 | 11.16 | 11.31 | 88.69 |
| 7 | -1.50 | 2.800 | 14.89 | 15.09 | 84.91 |
| 10 | -1.00 | 2.000 | 18.14 | 18.38 | 81.62 |
| 14 | -0.50 | 1.400 | 21.24 | 21.52 | 78.48 |
| 18 | 0.00 | 1.000 | 23.82 | 24.14 | 75.86 |
| 25 | 0.50 | 0.710 | 26.22 | 26.57 | 73.43 |
| 35 | 1.00 | 0.500 | 28.38 | 28.76 | 71.24 |
| 45 | 1.50 | 0.355 | 30.21 | 30.61 | 69.39 |
| 60 | 2.00 | 0.250 | 32.26 | 32.69 | 67.31 |
| 80 | 2.50 | 0.180 | 34.52 | 34.98 | 65.02 |
| 120 | 3.00 | 0.125 | 44.55 | 45.14 | 54.86 |
| 170 | 3.50 | 0.090 | 72.86 | 73.83 | 26.17 |
| 200 | 3.75 | 0.075 | 79.13 | 80.18 | 19.82 |
| 230 | 4.00 | 0.063 | 89.21 | 90.40 | 9.60 |
| PAN | | | 98.67 | 99.98 | 0.02 |

PHI (5): -2.80

PHI (16): -1.36

PHI (25): 0.18

PHI (50): 3.08

PHI (75): 3.55

PHI (84): 3.84

PHI (95): 4.11

SIEVE LOSS (g): 0.02

SILT/CLAY: 19.82%

SKEWNESS: -0.933

KURTOSIS: 0.841

GRAPHIC METHOD

MEAN (PHI): 1.38

SORTING: 2.60

MEAN (mm): 0.39

MEDIAN (mm): 0.12

NOTE: MEAN WAS CALCULATED USING 5 POINT METHOD

MOMENT METHOD

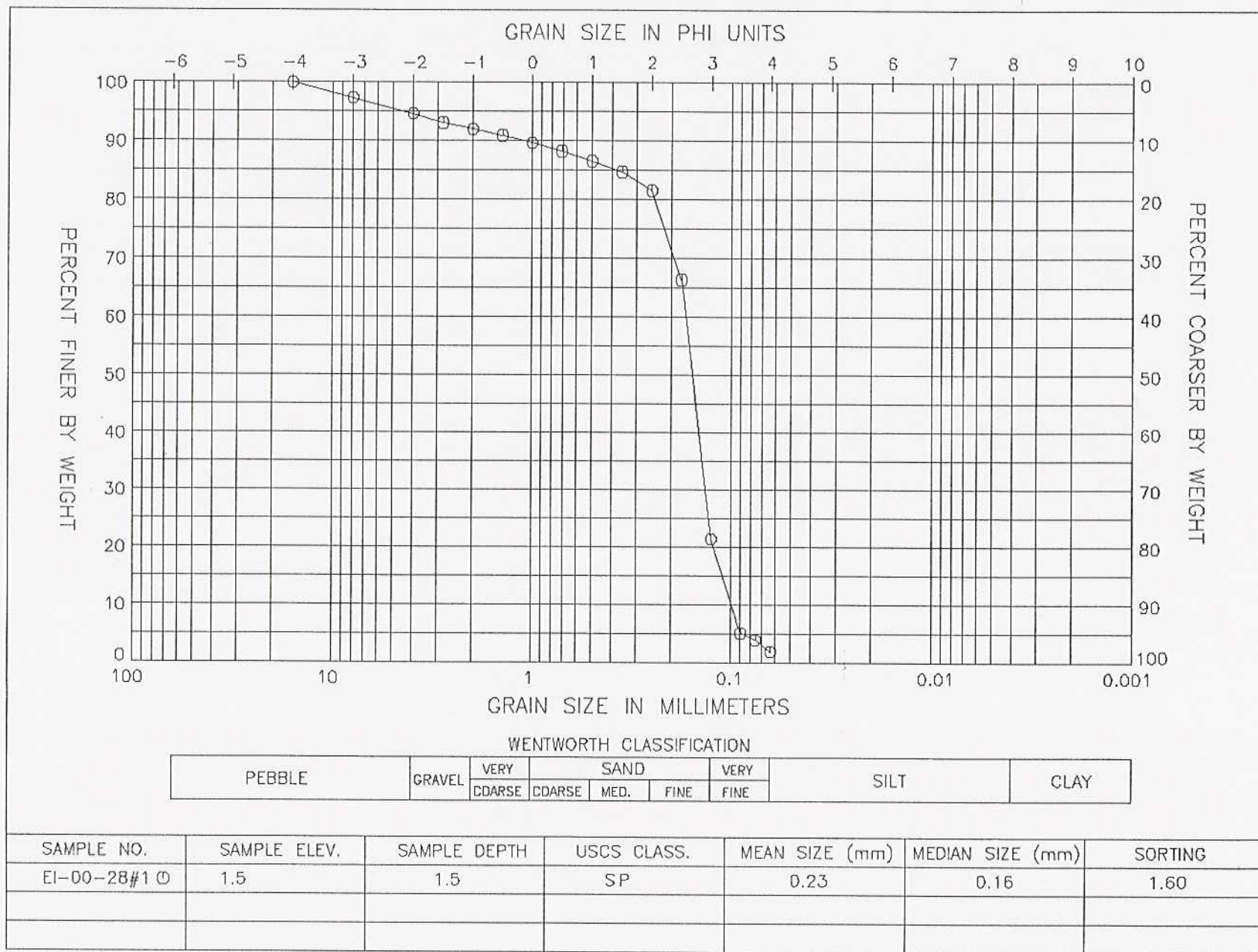
MEAN (PHI): 1.68

SORTING: 2.34

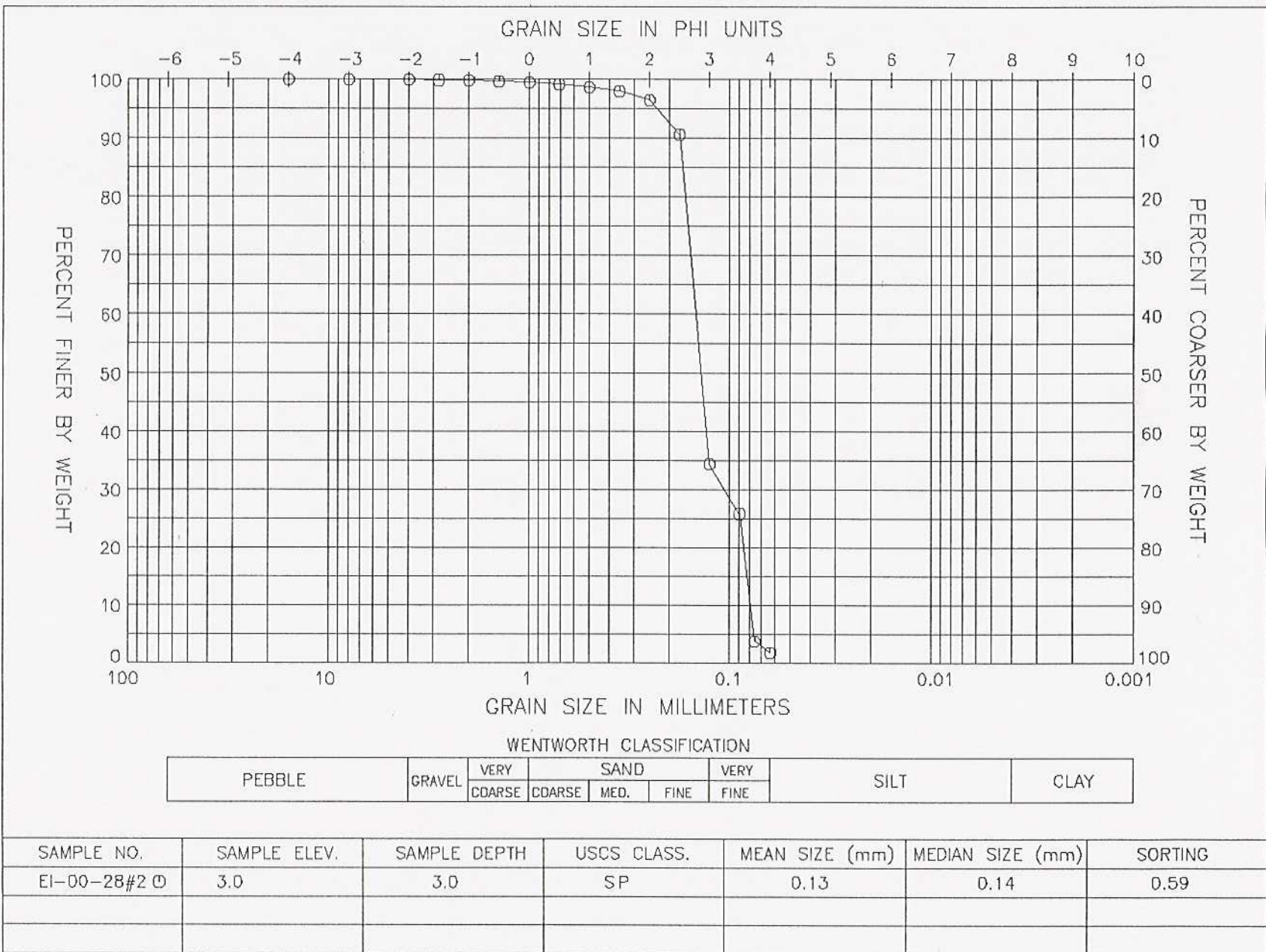
MEAN (mm): 0.31

DATA FILE NAME: EI-00-28#4.TAB

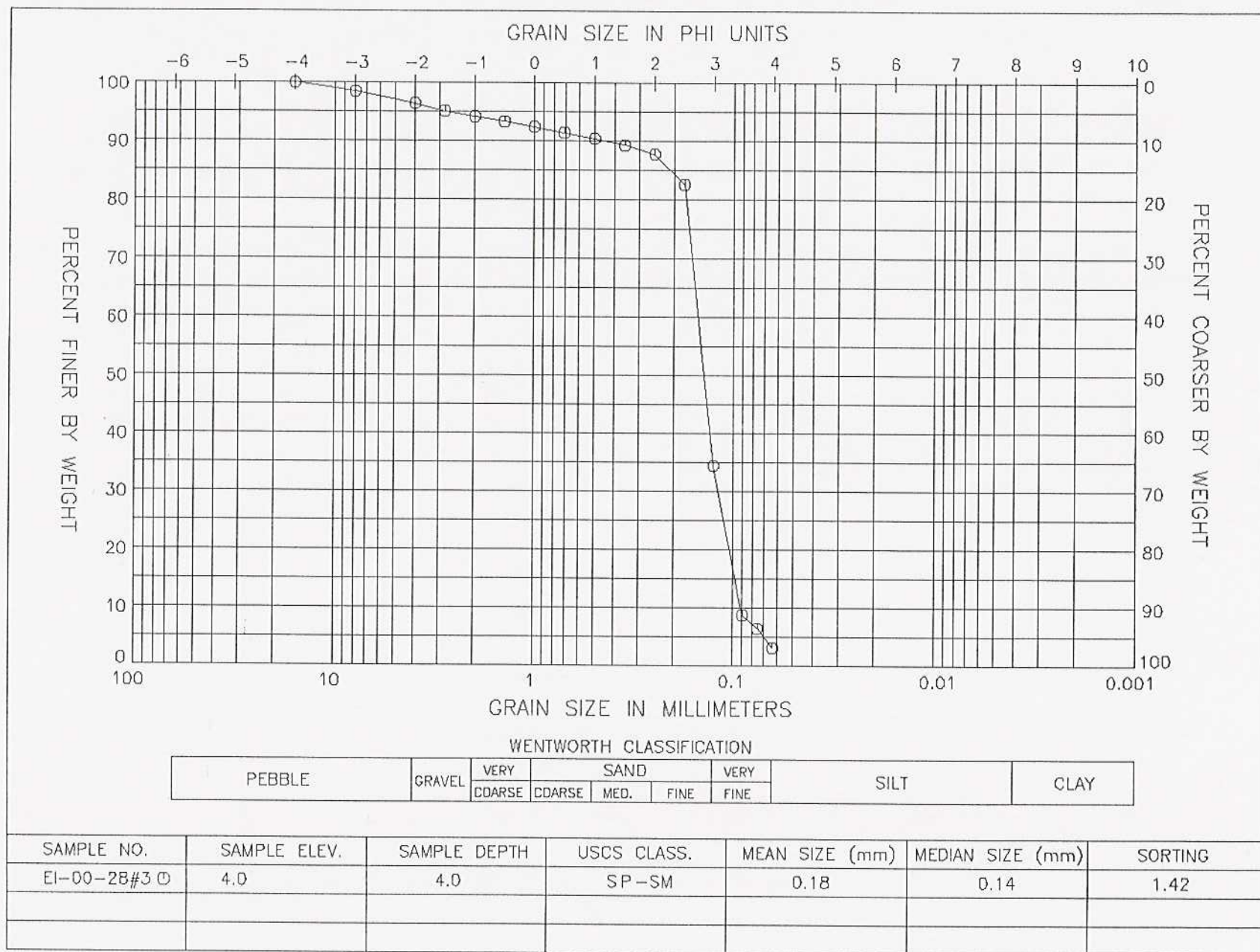
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