

| 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" | | | | | |
| (Coordinates or Station) | | 11. DATUM FOR ELEVATION SHOWN ^(TBM or MSL) | | | | | |
| 2. LOCATION X= 686156 Y= 751368 | | NGVD | | | | | |
| 3. DRILLING AGENCY: Alpine Ocean Seismic Survey Inc. | | 12. MANUFACTURER'S DESIGNATION OF DRILL | | | | | |
| 4. HOLE NO. (As shown on drawing title and file number) | | ALPINE PNEUMATIC VIBRACORE | | | | | |
| EI-00-10 | | 13. TOT NO. OF OVERBURDEN SAMPLES TAKEN | | | | | |
| 5. NAME OF DRILLER MAURIZIO ROSSI | | Disturbed: 0.0 Undisturbed: 0.0 | | | | | |
| 6. DIRECTION OF HOLE VERTICAL | | 14. TOTAL NO. OF CORE BOXES | | | | | |
| 7. THICKNESS OF BURDEN 0.0 FT | | 15. ELEVATION GROUND WATER | | | | | |
| 8. DEPTH DRILLED INTO ROCK N/A | | 16. DATE HOLE Started Completed | | | | | |
| 9. TOTAL DEPTH OF HOLE 19.8 ft | | 8/5/00 1540 | | | | | |
| | | 17. ELEVATION TOP OF HOLE -9.2 ft | | | | | |
| | | 18. TOTAL CORE RECOVERY FOR BORING 69% | | | | | |
| | | 19. SIGNATURE OF GEOLOGIST SYED KHALIL | | | | | |

| ELEV. | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS (Description) | CORE REC % | SAMPLE NUMBER | REMARKS |
|-------|-------|--------|---|------------|---------------|--|
| -9.2 | 0 | | | | | |
| -10.9 | 1 | | SAND, fine to medium-grained, some shell hash/shell fragments, White (5Y-8/1) to Light gray (5Y-7/1) (SP) | | 1 | Sample #1, Depth = 1.0' Mean (mm): 0.24, Phi Sorting: 1.56 Silt: 2.7% |
| -14.2 | 2 | | | | | |
| | 3 | | fine-grained, trace silt, trace shell hash/shell fragments, Gray (5Y-6/1) (SP) from -9.2' to -10.9' | | 2 | Sample #2, Depth = 4.0' Mean (mm): 0.13, Phi Sorting: 0.67 Silt: 5.0% |
| | 4 | | | | | |
| -15.9 | 5 | | | | | |
| | 6 | | SAND, fine-grained, trace shell hash/shell fragments, trace silt, Gray (5Y-5/1) (SP-SM) | | 3 | Sample #3, Depth = 5.8' Mean (mm): 0.15, Phi Sorting: 1.18 Silt: 11.9% |
| | 7 | | | | | |
| -19.2 | 8 | | SILTY CLAY, some shell hash/fragments/whole shell, partially fluidized between 18.6' & 19.2', Gray (5Y-5/1) (ML-CL) | | | |
| | 9 | | | | | |
| | 10 | | | | | |
| -22.8 | 11 | | CARBONATE CLAST, limestone cobbles/pebble/gravels, fines of lime (GP) | | | |
| | 12 | | | | | |
| | 13 | | | | | |
| | 14 | | | | | |
| | 15 | | | | | |
| | 16 | | | | | |
| | 17 | | NO RECOVERY | | | |
| | 18 | | | | | |
| | 19 | | | | | |
| -29 | 20 | | End of Boring | | | |
| | 21 | | Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System. | | | LAT - LONG 26 24.053 N 81 54.503 W |
| | 22 | | | | | |
| | 23 | | | | | |
| | 24 | | | | | |

GRADATION ANALYSIS REPORT

ESTERO VC 2000

TESTED BY: ID ON: 8/00

SAMPLE NO.: EI-00-10#1
SAMPLE ELEV. (FT. NGVD): 1.0
SAMPLE DEPTH (FT.): 1.0
SAMPLE TYPE: CORE SAMPLE

USCS DESCRIPTION: SP

DRY SAMPLE WEIGHT (GRAMS): 90.89
SAMPLE WEIGHT AFTER WASH (GRAMS): 88.76

| 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 | 1.90 | 2.09 | 97.91 |
| 7 | -1.50 | 2.800 | 3.78 | 4.16 | 95.84 |
| 10 | -1.00 | 2.000 | 7.10 | 7.81 | 92.19 |
| 14 | -0.50 | 1.400 | 11.34 | 12.48 | 87.52 |
| 18 | 0.00 | 1.000 | 14.49 | 15.94 | 84.06 |
| 25 | 0.50 | 0.710 | 17.16 | 18.88 | 81.12 |
| 35 | 1.00 | 0.500 | 19.20 | 21.12 | 78.88 |
| 45 | 1.50 | 0.355 | 20.80 | 22.88 | 77.12 |
| 60 | 2.00 | 0.250 | 22.60 | 24.87 | 75.13 |
| 80 | 2.50 | 0.180 | 28.24 | 31.07 | 68.93 |
| 120 | 3.00 | 0.125 | 69.47 | 76.43 | 23.57 |
| 170 | 3.50 | 0.090 | 87.70 | 96.49 | 3.51 |
| 200 | 3.75 | 0.075 | 88.46 | 97.33 | 2.67 |
| 230 | 4.00 | 0.063 | 89.71 | 98.70 | 1.30 |
| PAN | | | 90.88 | 99.99 | 0.01 |

PHI (5): -1.38 PHI (16): 0.01 PHI (25): 2.01
PHI (50): 2.71 PHI (75): 2.98 PHI (84): 3.19
PHI (95): 3.46

SIEVE LOSS (g): 0.01 SILT/CLAY: 2.67%
SKEWNESS: -1.050 KURTOSIS: 2.041

GRAPHIC METHOD

MEAN (PHI): 1.60 SORTING: 1.59
MEAN (mm): 0.33 MEDIAN (mm): 0.15
NOTE: MEAN WAS CALCULATED USING 5 POINT METHOD

MOMENT METHOD

MEAN (PHI): 2.05 SORTING: 1.56
MEAN (mm): 0.24

DATA FILE NAME: EI-00-10#1.TAB

GRADATION ANALYSIS REPORT
ESTERO VC 2000
TESTED BY: ID ON: 8/00

SAMPLE NO.: EI-00-10#2
SAMPLE ELEV. (FT. NGVD): 4.0
SAMPLE DEPTH (FT.): 4.0
SAMPLE TYPE: CORE SAMPLE

USCS DESCRIPTION: SP-SM

DRY SAMPLE WEIGHT (GRAMS): 94.22
SAMPLE WEIGHT AFTER WASH (GRAMS): 90.86

| 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 | 0.00 | 0.00 | 100.00 |
| 5 | -2.00 | 4.000 | 0.30 | 0.32 | 99.68 |
| 7 | -1.50 | 2.800 | 0.61 | 0.65 | 99.35 |
| 10 | -1.00 | 2.000 | 0.98 | 1.04 | 98.96 |
| 14 | -0.50 | 1.400 | 1.29 | 1.37 | 98.63 |
| 18 | 0.00 | 1.000 | 1.52 | 1.61 | 98.39 |
| 25 | 0.50 | 0.710 | 1.73 | 1.84 | 98.16 |
| 35 | 1.00 | 0.500 | 1.94 | 2.06 | 97.94 |
| 45 | 1.50 | 0.355 | 2.09 | 2.22 | 97.78 |
| 60 | 2.00 | 0.250 | 2.42 | 2.57 | 97.43 |
| 80 | 2.50 | 0.180 | 3.77 | 4.00 | 96.00 |
| 120 | 3.00 | 0.125 | 52.63 | 55.86 | 44.14 |
| 170 | 3.50 | 0.090 | 86.31 | 91.60 | 8.40 |
| 200 | 3.75 | 0.075 | 89.48 | 94.97 | 5.03 |
| 230 | 4.00 | 0.063 | 92.25 | 97.91 | 2.09 |
| PAN | | | 94.07 | 99.84 | 0.16 |

PHI (5): 2.51 PHI (16): 2.62 PHI (25): 2.70
PHI (50): 2.94 PHI (75): 3.27 PHI (84): 3.39
PHI (95): 3.75

SIEVE LOSS (g): 0.15 SILT/CLAY: 5.03%
SKEWNESS: 0.482 KURTOSIS: 0.901

GRAPHIC METHOD

MEAN (PHI): 3.04 SORTING: 0.39
MEAN (mm): 0.12 MEDIAN (mm): 0.13
NOTE: MEAN WAS CALCULATED USING 5 POINT METHOD

MOMENT METHOD

MEAN (PHI): 2.91 SORTING: 0.67
MEAN (mm): 0.13

DATA FILE NAME: EI-00-10#2.TAB

GRADATION ANALYSIS REPORT
ESTERO VC 2000
TESTED BY: ID ON: 8/00

SAMPLE NO.: EI-00-10#3
SAMPLE ELEV. (FT. NGVD): 5.8
SAMPLE DEPTH (FT.): 5.8
SAMPLE TYPE: CORE SAMPLE

USCS DESCRIPTION: SP-SM

DRY SAMPLE WEIGHT (GRAMS): 99.53
SAMPLE WEIGHT AFTER WASH (GRAMS): 88.15

| 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 | 1.59 | 1.60 | 98.40 |
| 7 | -1.50 | 2.800 | 2.80 | 2.81 | 97.19 |
| 10 | -1.00 | 2.000 | 3.93 | 3.95 | 96.05 |
| 14 | -0.50 | 1.400 | 5.05 | 5.07 | 94.93 |
| 18 | 0.00 | 1.000 | 5.76 | 5.79 | 94.21 |
| 25 | 0.50 | 0.710 | 6.34 | 6.37 | 93.63 |
| 35 | 1.00 | 0.500 | 6.84 | 6.87 | 93.13 |
| 45 | 1.50 | 0.355 | 7.20 | 7.23 | 92.77 |
| 60 | 2.00 | 0.250 | 7.80 | 7.84 | 92.16 |
| 80 | 2.50 | 0.180 | 9.24 | 9.28 | 90.72 |
| 120 | 3.00 | 0.125 | 57.24 | 57.51 | 42.49 |
| 170 | 3.50 | 0.090 | 84.81 | 85.21 | 14.79 |
| 200 | 3.75 | 0.075 | 87.69 | 88.10 | 11.90 |
| 230 | 4.00 | 0.063 | 93.83 | 94.27 | 5.73 |
| PAN | | | 99.53 | 100.00 | 0.00 |

PHI (5): -0.53 PHI (16): 2.57 PHI (25): 2.66
PHI (50): 2.92 PHI (75): 3.32 PHI (84): 3.48
PHI (95): 4.03

SIEVE LOSS (g): 0.00 SILT/CLAY: 11.90%
SKEWNESS: -2.584 KURTOSIS: 2.864

GRAPHIC METHOD

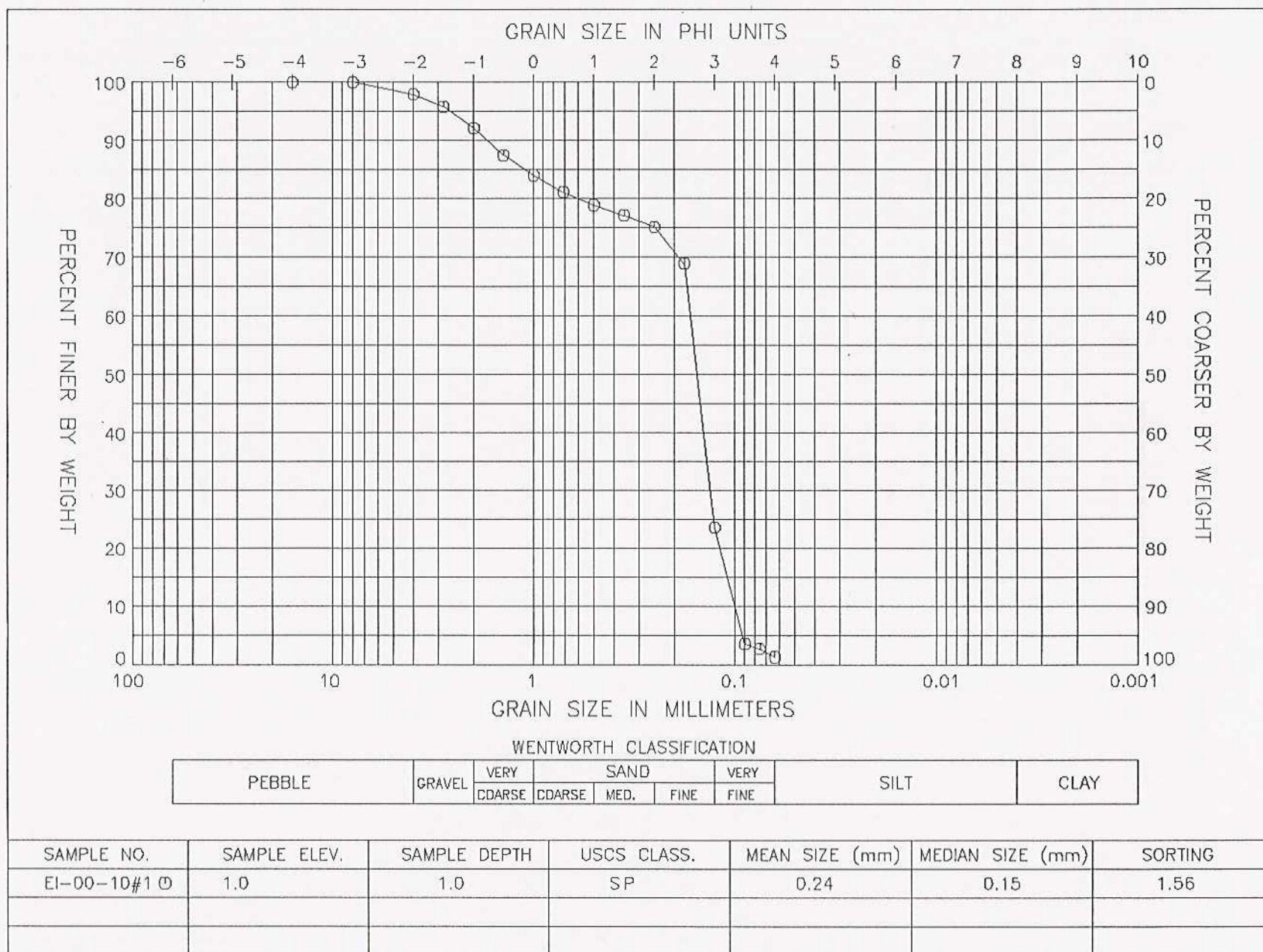
MEAN (PHI): 2.49 SORTING: 0.45
MEAN (mm): 0.18 MEDIAN (mm): 0.13
NOTE: MEAN WAS CALCULATED USING 5 POINT METHOD

MOMENT METHOD

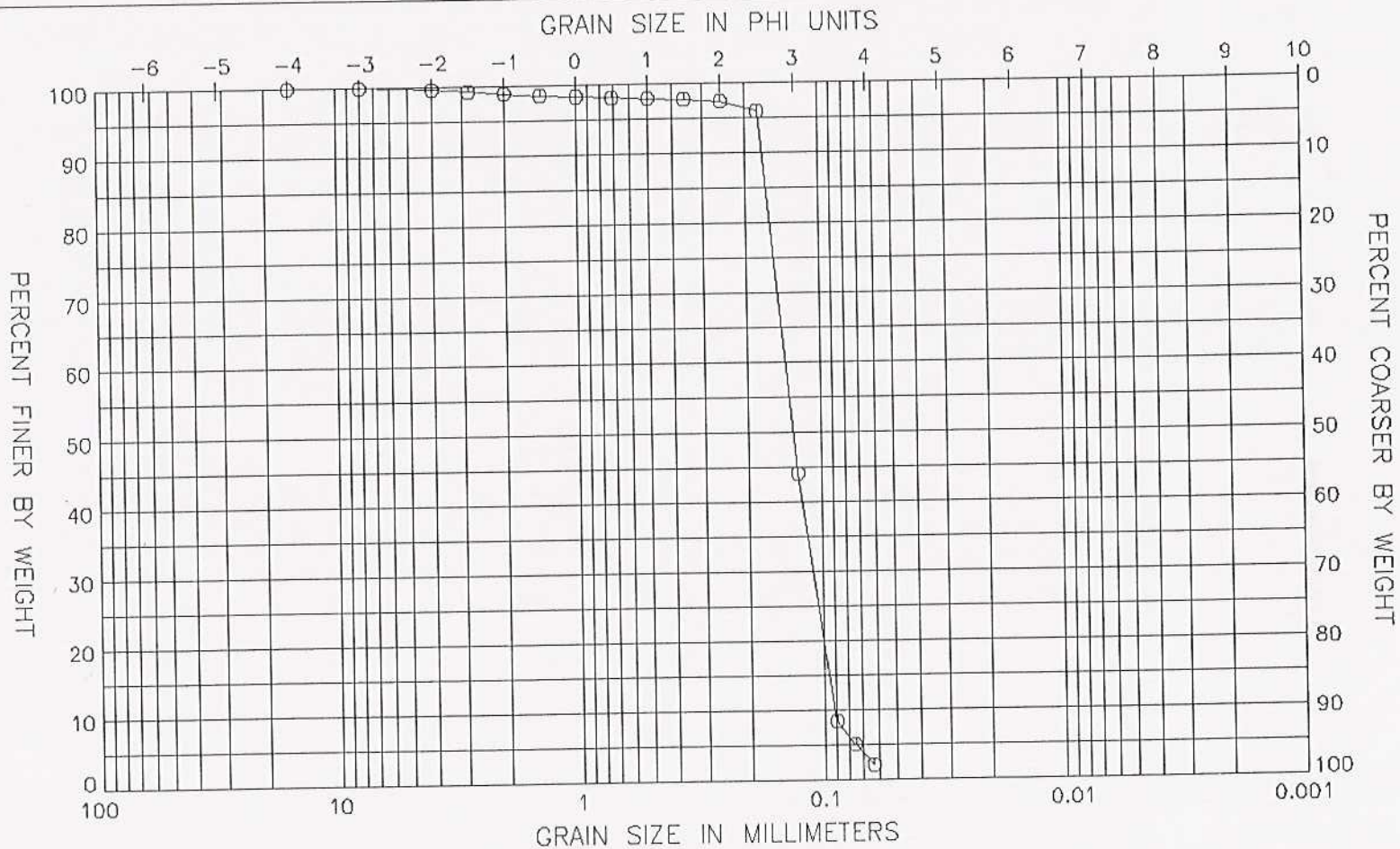
MEAN (PHI): 2.69 SORTING: 1.18
MEAN (mm): 0.15

DATA FILE NAME: EI-00-10#3.TAB

GRAIN SIZE DISTRIBUTION CURVE
ESTERO VC 2000



GRAIN SIZE DISTRIBUTION CURVE ESTERO VC 2000



| WENTWORTH CLASSIFICATION | | | | | | | |
|--------------------------|--------|--------|--------|-----------|------|------|------|
| PEBBLE | GRAVEL | VERY | SAND | | VERY | SILT | CLAY |
| | | COARSE | COARSE | MED. FINE | FINE | | |

| SAMPLE NO. | SAMPLE ELEV. | SAMPLE DEPTH | USCS CLASS. | MEAN SIZE (mm) | MEDIAN SIZE (mm) | SORTING |
|-------------------|--------------|--------------|-------------|----------------|------------------|---------|
| EI-00-10#2 ϕ | 4.0 | 4.0 | SP-SM | 0.13 | 0.13 | 0.67 |
| | | | | | | |
| | | | | | | |

GRAIN SIZE DISTRIBUTION CURVE
ESTERO VC 2000

