PELICAN ISLAND RESTORATION (BA-38-1) CWPPRA PROJECT

TECHNICAL PROVISIONS

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PELICAN ISLAND RESTORATION (BA-38-1) CWPPRA PROJECT

TECHNICAL PROVISIONS

I. GENERAL

1. PELICAN ISLAND RESTORATION (BA 38-1) CWPPRA PROJECT DESCRIPTION

The Pelican Island Restoration (BA-38-1) CWPPRA Project consists of the placement of marsh fill, beach and dune fill, and extension of the eastern Empire Waterway jetty. The construction berm elevation on Pelican Island is +6 feet, NAVD and the marsh platform elevation is +2.6 feet, NAVD. The slope of the beach and dune fill template is one (1) foot vertical to forty-five (45) feet horizontal along the gulf face and one (1) foot vertical to thirty (30) feet horizontal along the bay face. Extension of the eastern jetty to the existing shoreline involves the placement of marine mattress and armor stone to construct a four hundred ninety (490) foot jetty with a crest elevation of +4.5 feet, NAVD; the stone used to construct the jetty extension is to be supplied from an off-site location.

2. WORK COVERED BY CONTRACT DOCUMENTS

The base bid includes the placement of 1.4 million cubic yards of beach and dune fill and 1.6 million cubic yards of marsh fill in accordance with contract documents. Line Item Number 0003A Option increases the beach and dune fill by 250,000 cubic yards of beach and dune fill while Line Item Number 0003B Option increases the beach fill by 500,000 cubic yards of beach and dune fill.

3. SCOPE

The CONTRACTOR shall provide the dredge and support vessels, labor, equipment, supplies, materials, and submittals to perform all operations for excavating, transporting, placing, dressing, and grading the fill, and extending the eastern jetty as indicated in the Plans and required by the Contract Documents.

4. PHYSICAL DATA

4.1 Information and data furnished or referred to in the Contract Documents are furnished for the CONTRACTOR'S information. However, it is expressly understood that the GOVERNMENT will not be responsible for any interpretation or conclusion drawn there from by the CONTRACTOR. Likewise, the GOVERNMENT will not be responsible for any information provided to the CONTRACTOR by any information agency or other party.

4.1.1 The physical conditions of the borrow area resources indicated on the Drawings and in the Specifications are the results of site investigations conducted using remote sensing techniques, bathymetric surveys, and vibracore sediment sampling. When the indicated physical conditions are the result of site investigations by vibracores, the sampling locations are shown on the Drawings. While the GOVERNMENT'S remote sensing survey,

bathymetric survey, and vibracore sediment samples are representative of subsurface conditions at their specific locations and vertical reaches, variations in the characteristics of the surface or subsurface materials are possible and should be expected. Interpretations as shown in the Plans between sampling points are estimates of expected average conditions in these areas and are provided for the convenience and use of the CONTRACTOR but should not be taken as the actual conditions at each point beyond the sampling points. Should any questions or discrepancies arise, the conditions should be independently confirmed by the CONTRACTOR. Copies of the vibracore logs are included in Appendix I of the Technical Provisions. Data regarding sand sample analyses are provided in Appendix II of the Technical Provisions.

4.1.2 The physical conditions of the project borrow areas, as indicated on the Drawings, are based on survey data acquired in September 2002. Additional limited survey information acquired in December 2003 is provided in Appendix V of the Technical Provisions. Survey data in the vicinity of the beach and dune and marsh fill areas are based on data collected in October 2010.

4.2 **Weather Conditions:** The project area may be affected by tropical storms and hurricanes primarily from June through November and by stormy and/or rainy weather, including severe thunderstorms, during any time of the year. The CONTRACTOR shall be responsible for obtaining information concerning rain, wind, and wave conditions that could influence safety, dredging, and disposal operations prior to making a bid. A list of publications containing climatological and meteorological observations and data for the project area is provided below. Other publications or information sources are available in addition to the following:

4.2.1 Local Climatological Data – Monthly Summary published by the National Oceanic and Atmospheric Administration (NOAA), Asheville, NC. Subscription price and ordering information is available from the National Climatic Data Center, Federal Building, Asheville, NC 22801. This publication gives hourly wind speed and direction observations. The Annual Summary gives a summary of the observations for the period of record.

4.2.2 Summary of Synoptic Meteorological Observations: North American Coastal Marine Areas Atlantic and Gulf Coasts. Produced by the National Weather Service, U.S. Department of Commerce. Distributed by the National Technical Information Service, U.S. Department of Commerce.

4.2.3 Wave Hindcast Data is available online from the U.S. Army Corps of Engineers, Waterways Experiment Station, Coastal and Hydraulics Laboratory (CHL) at http://bigfoot.wes.army.mil/c201.html and http://frf.usace.army.mil/wis/. Wave hindcasts computed on a revised grid in the vicinity of the project area are also available from CHL.

4.3 **Land Access to the Project Site:** There is no land access to Pelican Island from the mainland of Louisiana or any other islands.

4.4 **Obstruction to Navigation:** The CONTRACTOR shall operate in compliance with pertinent U.S. Coast Guard regulations and conduct the Work in such a manner as to minimize any obstruction to navigation. Failure of the CONTRACTOR to familiarize himself with all terms, conditions, and provisions of the rules and regulations applicable to the Work shall not relieve them of their responsibility under the Contract. If the CONTRACTOR'S dredge or other floating equipment so obstructs any navigation channel as to make navigation difficult or endanger the passage of vessels, said dredge or equipment shall be promptly moved on the approach of any vessel to such an extent as may be necessary to afford a practicable passage. Upon completion of the Work, the CONTRACTOR shall promptly remove the dredge and other floating equipment, as well as ranges, buoys, piles, and other marks or objects placed in navigable waters or on shore.

4.5 **Local Inlets, Waterways, and Ports:** Pelican Island is bordered on the east by Scofield Pass and on the west by the Empire Waterway, which is a navigable channel with rock jetties. Empire Waterway and Scofield Pass can be navigated by fishing vessels. Boat traffic offshore and around the Pelican Island project area and borrow area will consist primarily of pleasure boats, commercial fishing boats, commercial oyster harvesting vessels, and oil and gas industry vessels. All inlets, waterways, and ports are used at the CONTRACTOR'S own risk. The CONTRACTOR is responsible for any damage to any oyster leases due to activity by the CONTRACTOR.

4.6 **Navigation Safety:** Navigable depths shall not be impaired except as allowed by laws regulating navigation in the area. It is the CONTRACTOR'S responsibility to select equipment that can navigate from the navigation channels to the project site without dredging, except for dredging the access channels, initial fill source for primary dike, and secondary fill source for primary dike as depicted in the Plans. All equipment shall remain floating at all times during the transit to the project site. The CONTRACTOR is referred to the following government web site for navigation information and charts:

Website: http://www.nauticalcharts.noaa.gov/mcd/OnLineViewer.html
Chart Name: Barataria Bay and Approaches
Chart #: 11358, 11361, and 11352.

5. PAYMENT FOR MOBILIZATION AND DEMOBILIZATION

5.1 **General:** All costs connected with the mobilization and demobilization of all the CONTRACTOR'S equipment and personnel, including the dredge and all other equipment, will be paid for at the Contract lump sum price for this item (Line Item 0001). Sixty percent (60%) of the lump sum price will be paid to the CONTRACTOR after commencement of dredging and placement of a quantity of, at a minimum, five thousand (5,000) cubic yards of material within the fill template in a twenty-four (24) hour period. The remaining forty percent (40%) will be included in the final payment for Work under this Contract.

5.2 In the event the GOVERNMENT considers that the cost for mobilization does not bear a reasonable relation to the cost of the entire Work in this Contract, the GOVERNMENT may require the CONTRACTOR to produce cost data to justify this portion of the bid. Failure to justify such price to the satisfaction of the GOVERNMENT will result in payment of estimated mobilization costs, as determined by the GOVERNMENT at the completion of mobilization, and payment of the remainder of this item in the final payment under this Contract.

6. PAYMENT FOR PERFORMANCE AND PAYMENT BONDS

All costs connected with obtaining performance and payment bonds for the project will be paid for at the Contract lump sum price for this item (Line Item 0002). The CONTRACTOR may apply for one hundred percent (100%) payment of this item following written approval by the GOVERNMENT of the Schedule of Prices.

7. PAYMENT FOR HYDRAULIC FILL PLACEMENT – BEACH AND DUNE FILL

7.1 **General:** Costs associated with the project, including costs associated with, but not limited to, surveying and reporting, water quality monitoring, debris removal, excavating, transporting, providing certified sea turtle observers on a hopper dredge (if applicable), site restoration and repairs, hydraulic beach fill placement, and other materials and work shall be included in the Contract unit price per cubic yard for Beach and Dune Fill Placement (Line Item 0003), which payment shall also include all other items of overhead, profit, labor, material, and any other costs incidental to performing the Work. Any cost of overburden removal and offshore disposal shall also be included in the unit cost for Beach and Dune Fill Placement.

7.2 **Payment Surveys:** Payments will be based on the result of the comparison of pre-construction and as-built surveys. The GOVERNMENT will verify the pay quantities provided by the CONTRACTOR based on pre-construction and as-built surveys conducted by the CONTRACTOR and accepted by the GOVERNMENT. Payment surveys shall be certified by a Licensed Surveyor or Professional Engineer (licensed professional) registered in the State of Louisiana. The licensed professional shall be employed by a firm registered to perform land surveys in the State of Louisiana. The CONTRACTOR shall notify the GOVERNMENT at least

three (3) working days prior to when the payment surveys will be conducted. The GOVERNMENT, at its discretion, may verify the as-built survey results of the CONTRACTOR. The GOVERNMENT'S survey will be used for payment purposes if, in the GOVERNMENT'S opinion, a significant difference is found between the CONTRACTOR'S as-built survey and the GOVERNMENT'S survey. The surveys will be conducted per the specifications provided in Section 31 of the Technical Provisions. The pre-construction surveys will not be adjusted based on any possible subsidence measured by the settlement plates or grade stakes.

7.3 **Acceptance Notification:** The notification of rejection or acceptance of a fill section will be based on written notification provided by the GOVERNMENT to the CONTRACTOR after the GOVERNMENT has reviewed the submitted survey data. After the survey data has been received by the GOVERNMENT, the GOVERNMENT will have four (4) working days to review the data and prepare a written response indicating whether the section(s) have been accepted or rejected, and the reason for rejection, if applicable.

7.4 **Computation of Payment Volumes:** The volume of material in a pay section shall be the length of the pay section multiplied by the average cross-sectional area of the profile lines enclosing the beach fill pay section (average end area method). The length of the pay section is equal to the distance between the adjacent profile lines measured along the baseline. This distance is listed in the plans. The portions of the profile lines that lie outside the limits of the fill shall NOT be included in this computation. Payment will be provided for fill contained within the payment profile construction templates only, as shown in the Plans. No payment will be provided for fill placed above the template. The CONTRACTOR'S bid shall have accounted for any costs associated with the pay profile selection, the azimuth of the pay profile lines, the effective distance between pay profiles, the profile measurement technique, or the payment volume calculation technique. The CONTRACTOR shall provide their volume calculations along with their monthly invoice to the GOVERNMENT. Payment recommendations will be based on computations made by the GOVERNMENT of volumes placed.

7.5 It is recognized that it may be difficult to control fill below approximately 1-foot NAVD. Payment by application of compensating slope will be allowed for beach fill placed below 1-foot NAVD. Material placed above the template and below 1-foot NAVD can be used to offset deficiencies in filling the template below 1-foot NAVD. Compensating volume will only be paid up to the volume contained within the template shown in the plans. Under filling of the template above 1-foot NAVD will not be compensated for by the placement of additional fill below 1-foot NAVD and vice-versa. Payment will only be based on fill that can be measured within the limits of the pre- and post-construction surveys. The CONTRACTOR is responsible for any additional costs incurred (such as but not limited to expanded surveys or calculations) required to satisfy compensating slope measurements. Regardless of the compensating slope specification, the CONTRACTOR is required to make a best effort to meet the slopes shown in the Construction Plans. The application of

compensating slope will not alter the specification allowing for a one-time request for adjustment of construction slope as noted in Section 19 of the Technical Provisions.

7.6 **Fill Tolerances:** Payment shall be for hydraulic beach fill placed within the construction template only, as shown in the Plans. Any material placed above the template may be left in place at the discretion of the GOVERNMENT; however, this material will not be included in the pay quantities. The maximum vertical tolerance below and above the template is 0.5 feet for the beach and dune fill. Hydraulic fill placement must at least meet the 0.5-foot tolerance below the template everywhere in the acceptance segment and contain the minimum fill volume requirement. The CONTRACTOR shall fill any deficient segment to meet, at a minimum,

(a) The lower template tolerance everywhere on the constructed cross-section, and,
(b) Ninety-five percent (95%) of the fill volume for the acceptance segment.

7.7 **Payment Requests:** The CONTRACTOR may request payment for hydraulic fill placement on a monthly basis. Payments shall be based on completed adjacent fill sections that have been approved by the GOVERNMENT. The CONTRACTOR will be eligible for the initial progress payment when a minimum of five (5) adjacent fill sections (approximately 500 feet) have been surveyed and accepted. The next payment and all future payments may occur when additional pay sections have been hydraulically filled and accepted by the GOVERNMENT. The CONTRACTOR shall submit to the GOVERNMENT for review, on a monthly basis, an Application for Progress Payment filled out and signed by the CONTRACTOR covering the Work completed as required by the Contract Documents and accompanied by such supporting documentation as is required by the Contract Documents and also as the GOVERNMENT may reasonably require.

7.8 **Payment Unit Cost:** The CONTRACTOR shall be paid at the unit cost for beach and dune fill listed in Line Item 0003 up to the base bid volume of 1.4M cubic yards. If either Option's is selected by the GOVERNMENT, any fill placed exceeding 1.4M cubic yards shall be paid for at the unit cost listed in Line Item 0003A or 0003B depending on the Option selected.

8. PAYMENT FOR HYDRAULIC FILL PLACEMENT – MARSH FILL

8.1 **General:** Costs associated with the project, including costs associated with, but not limited to, surveying and reporting, water quality monitoring, debris removal, excavating, transporting, secondary dike construction, secondary containment leveling, site restoration and repairs, hydraulic marsh fill placement, and other materials and work shall be included in the Contract unit price per cubic yard for Marsh Fill Placement (Line Item 0004), which payment shall also include all other items of overhead, profit, labor, material, and any other costs incidental to performing the Work.

8.2 **Payment Surveys:** Payments will be based on the result of the comparison of pre-construction and as-built surveys along the lines listed in the Plans. A minimum of thirty (30) days is required between the completion of fill placement and conducting the as-built survey. The GOVERNMENT will verify the pay quantities provided by the CONTRACTOR based on pre-construction and as-built surveys conducted by the CONTRACTOR and accepted by the GOVERNMENT. Surveys shall be certified by a Licensed Surveyor or Professional Engineer (licensed professional) registered in the State of Louisiana. The licensed professional shall be employed by a firm registered to perform land surveys in the State of Louisiana. The CONTRACTOR shall notify the GOVERNMENT at least three (3) working days prior to when the payment surveys will be conducted. The GOVERNMENT, at its discretion, may verify the as-built survey results of the CONTRACTOR. The GOVERNMENT'S survey will be used for payment purposes if, in the GOVERNMENT'S opinion, a significant difference is found between the CONTRACTOR'S as-built survey and the GOVERNMENT'S survey. The surveys will be conducted per the specifications provided in Section 32 of the Technical Provisions. The pre-construction surveys will not be adjusted based on any possible subsidence measured by the settlement plates or grade stakes.

8.3 **Acceptance Notification:** The notification of rejection or acceptance of a fill section will be based on written notification provided by the GOVERNMENT to the CONTRACTOR after the GOVERNMENT has reviewed the submitted survey data. After the survey data has been received by the GOVERNMENT, the GOVERNMENT will have four (4) working days to review the data and prepare a written response indicating whether the segment(s) have been accepted or rejected, and the reason for rejection, if applicable.

8.4 **Computation of Payment Volumes:** The volume of material in an acceptance segment shall be the length of the fill section multiplied by the average cross-sectional area of the profile lines enclosing the pay section (average end area method). The pre-construction survey shall be taken as the post-construction survey of the beach fill, unless the beach fill is above the template in which case the template will be taken as the pre-construction marsh fill surface, joined with the pre-construction survey collected north of the beach fill area. The effective distance between pay sections is listed in the Plans. The portions of the profile lines that lie outside the acceptance segment (i.e., south of the marsh and beach intersection shown on the Plans or north of the marsh and primary dike intersection shown on the Plans) shall NOT be included in this computation. Only those profiles shown in the Plans and listed in the Contract Documents will be used for computation for payment purposes of the fill quantities placed. No other profile lines will be considered in computing pay volumes. No payment will be provided for fill placed above the template. The CONTRACTOR will not receive payment for any marsh fill that is placed within the beach and dune template. The CONTRACTOR'S bid shall have accounted for any costs associated with the profile selection, the azimuth of profile lines, the profile measurement technique, or the payment volume calculation

technique. The CONTRACTOR shall provide their volume calculations along with their invoice to the GOVERNMENT. Payment recommendations will be based on computations made by the GOVERNMENT of volumes placed.

8.5 **Fill Tolerances:** Payment will be for marsh fill placed within the construction template only, as shown in the Plans. Any material placed above the template may be left in place at the discretion of the GOVERNMENT; however, this material will not be included in the pay quantities. The GOVERNMENT may require removal of material placed above the upper tolerance. The maximum vertical tolerance above and below the template is 0.5 feet for the marsh. Hydraulic fill placement must at least meet the 0.5-foot tolerance below the template everywhere in the acceptance segment and the minimum fill volume requirement, except between Station 11+51 and Station 28+15 where there is no lower tolerance. The CONTRACTOR shall fill any deficient segment to meet, at a minimum,

(a) The lower template tolerance everywhere on the constructed cross-section, and
(b) Ninety-five percent (95%) of the fill volume for the acceptance section.

8.6 **Payment Requests:** The CONTRACTOR may request payment for hydraulic marsh fill placement on a monthly basis. Payments shall be based on completed adjacent acceptance segments that have been approved by the GOVERNMENT. The CONTRACTOR will be eligible for the initial progress payment when a minimum of two (2) adjacent fill segments have been surveyed and accepted. The next payment and all future payments may occur when additional adjacent segments have been hydraulically filled and accepted by the GOVERNMENT. The CONTRACTOR shall submit to the GOVERNMENT for review, on a monthly basis, an Application for Progress Payment filled out and signed by the CONTRACTOR covering the Work completed as required by the Contract Documents and accompanied by such supporting documentation as is required by the Contract Documents and also as the GOVERNMENT may reasonably require.

9. PAYMENT FOR PRIMARY DIKE

9.1 **General:** All costs associated with dredging the fill source for the primary dike, refilling the interior fill source for the primary dike with marsh fill, transporting dike fill, layout, construction, and maintenance of the primary dikes shall be included in the Contract unit price per linear foot of Primary Dike (Line Item 0005), which payment shall also include all other items of overhead, profit, labor, material, and any other costs incidental to performing the Work. All secondary dikes shall be constructed as needed at no cost to the GOVERNMENT.

9.2 **Payment Request:** The CONTRACTOR shall survey the centerline of the primary dike as a basis for payment. Seventy-five percent (75%) of the Contract linear footage will be paid to the CONTRACTOR for dikes installed on a monthly basis. The remaining twenty-five percent (25%) will be included in the final payment.

However, all required maintenance of the primary dikes shall be performed by the CONTRACTOR at no additional cost to the GOVERNMENT. The CONTRACTOR is required to provide continual maintenance of the primary dikes so that they perform their intended function during the construction period for which they are needed. Double handling of the fill source material may be required to construct and maintain the primary dikes. Detailed information regarding fill and fill source densities is provided in Appendix V of the Technical Provisions. The CONTRACTOR shall submit to the GOVERNMENT for review, on a monthly basis, an Application for Progress Payment filled out and signed by the CONTRACTOR covering the Work completed as required by the Contract Documents and accompanied by such supporting documentation as is required by the Contract Documents and also as the GOVERNMENT may reasonably require.

10. PAYMENT FOR SAND FENCING

This work shall consist of supplying all sand fence material and installing the sand fence in accordance with the Plans and Specifications. All costs connected with the sand fence will be paid for at the Contract unit price per linear foot of Sand Fence (Line Item 0006), which payment shall also include all other items of overhead, profit, labor, material, and any other costs incidental to performing the Work. The CONTRACTOR shall survey the start and end points of each sand fence segment as a basis for payment. The length of sand fence for payment shall be based on the installed length of sand fence (i.e., not the roll length by number of rolls installed), including the 30-foot overlap at the gap. Splice overlaps between adjacent rolls of sand fence shall not be eligible for payment. The CONTRACTOR may request payment for the installation of sand fencing on a monthly basis. The CONTRACTOR shall submit to the GOVERNMENT for review, on a monthly basis, an Application for Progress Payment filled out and signed by the CONTRACTOR covering the Work completed as required by the Contract Documents and accompanied by such supporting documentation as is required by the Contract Documents and also as the GOVERNMENT may reasonably require.

11. PAYMENT FOR SETTLEMENT PLATES

This work consists of furnishing and assembling the materials needed to construct, layout, install, and monitor (survey) the settlement plates in accordance with the project Plans and Specifications. All costs connected with the settlement plates will be paid for at the Contract unit price per each Settlement Plate (Line Item 0007), which payment shall also include all other items of overhead, profit, labor, material, and any other costs incidental to performing the Work. It should be noted that the settlement plates are intended for OCPR's long term monitoring of the island and payment for marsh and island fill shall not be based on the settlement of these plates. The CONTRACTOR shall survey the adjacent grade, location, and bolt elevation of the settlement plates and provide the data to the GOVERNMENT in a survey format provided in Appendix III of the Technical Provisions. The CONTRACTOR may request payment for the installation of settlement plates on a monthly basis. The CONTRACTOR shall submit to the GOVERNMENT for review, on a monthly basis, an Application for Progress Payment filled out and signed by the CONTRACTOR covering the Work completed as required by the Contract Documents and accompanied by such supporting

documentation as is required by the Contract Documents and also as the GOVERNMENT may reasonably require.

12. PAYMENT FOR JETTY EXTENSION FOUNDATION

12.1 **General:** All costs associated with the procurement, filling, transport and placement of the marine mattress foundation and excavation and preparation of the jetty extension footprint shall be included in the Contract unit price per square foot for Jetty Extension Foundation (Line Item 0008), which payment shall also include all other items of overhead, profit, labor, material, and any other costs incidental to performing the Work.

12.2 **Payment Surveys:** Payments shall be based on the square footage of marine mattresses placed within the jetty extension footprint. The CONTRACTOR shall submit cross-section surveys of the completed portion of the eastern jetty extension footprint to confirm the square footage and placement of the marine mattress units. The GOVERNMENT will verify the quantities provided by the CONTRACTOR based on the comparison of post-excavation and as-built surveys conducted by the CONTRACTOR and accepted by the GOVERNMENT. Surveys shall be certified by a Licensed Surveyor or Professional Engineer (licensed professional) registered in the State of Louisiana. The licensed professional shall be employed by a firm registered to perform land surveys in the State of Louisiana. The CONTRACTOR shall notify the GOVERNMENT at least three (3) working days prior to when the payment surveys will be conducted. The GOVERNMENT, at its discretion, may verify the as-built survey results of the CONTRACTOR. The surveys will be conducted per the specifications provided in Section 35 of the Technical Provisions.

12.3 **Acceptance Notification:** The notification of rejection or acceptance of the constructed portion of the jetty extension foundation will be based on written notification provided by the GOVERNMENT to the CONTRACTOR after the GOVERNMENT has reviewed the submitted survey data. After the survey data has been received by the GOVERNMENT, the GOVERNMENT will have four (4) working days to review the data and prepare a written response indicating whether the completed section of the jetty extension foundation has been accepted or rejected, and the reason for rejection, if applicable.

12.4 **Payment Request:** The CONTRACTOR may request payment for the jetty extension foundation on a monthly basis. Payments shall be based on the square footage of marine mattress placed within the template of the jetty extension footprint and approved by the GOVERNMENT. The CONTRACTOR shall submit cross-section surveys of the completed portion of the jetty extension footprint upon which the estimate of square footage will be made. The CONTRACTOR shall submit to the GOVERNMENT for review, on a monthly basis, an Application for Progress Payment filled out and signed by the CONTRACTOR covering the Work completed as required by the Contract Documents and accompanied by such supporting

documentation as is required by the Contract Documents and also as the GOVERNMENT may reasonably require.

13. PAYMENT FOR JETTY EXTENSION

13.1 **General:** All costs associated with acquisition of rock from an off-site location, rock certification, transport of the rock, layout, and placement of the rock within the lines and grades of the eastern jetty extension shall be included in the Contract unit price per ton of stone for Jetty Extension (Line Item 0009), which payment shall also include all other items of overhead, profit, labor, material, and any other costs incidental to performing the Work.

13.2 **Payment Surveys:** Payment shall be based upon the per unit items constructed by the CONTRACTOR and accepted by the GOVERNMENT on the basis of both suitable documentation provided and observation of the works. Documentation of the work shall include a certified weight determination of the quantity of material delivered to the site and placed within the lines and grades described in these Specifications and the Plans and a survey of the completed and accepted work. The surveys will be conducted per the specifications provided in Section 35 of the Technical Provisions and be certified by a Licensed Surveyor or Professional Engineer (licensed professional) registered in the State of Louisiana. The weight of the armor stone shall be measured by the net ton (2,000 pounds), dry in its natural state, as determined by barge displacement. The CONTRACTOR shall notify the GOVERNMENT at least three (3) working days prior to when the barge displacement surveys will be conducted. All costs incidental to the weight determination and survey shall be borne by the CONTRACTOR. Rock placed in excess of tolerances will be ineligible for payment. Rock not meeting the specifications will not be paid for and must be removed from the site by the CONTRACTOR at the CONTRACTOR'S expense.

13.2.1 **Barge Displacement:** The following procedure shall be used to calculate weights using the barge displacement method. Each barge will be accurately measured and shall be fitted with displacement indicators (gauges or load-lines) graduated in tenths of a foot. The indicators shall be located on each corner of the barge, near the lower end of the rake, with two (2) additional indicators amidship, if deemed necessary by the GOVERNMENT. The indicators shall be acceptable to the GOVERNMENT. Fore and aft displacement due to the load shall not differ by more than ten percent (10%) from their mean for the determination of tonnage. The tonnage of the stone shall be determined from the difference of the "loaded" and "light" conditions. All gauge readings shall be made in still water. The average of all gauge readings shall be used to calculate the tonnage of "loaded and "light" conditions. The weight of seawater displaced will be assumed to be uniformly 64.0 pounds per cubic foot for saltwater. All barges shall be pumped dry, within the limits of pump suction, before each gauging and limber holes shall be kept open so that any water in the barge will flow freely

to the pump suction. All equipment, personnel, dirt, and other material that is on the barge shall remain when gauged "loaded" and "light" so as to measure only the net weight of stone.

13.3 **Acceptance Notification:** The notification of rejection or acceptance of the constructed portion will be based on written notification provided by the GOVERNMENT to the CONTRACTOR after the GOVERNMENT has reviewed the submitted survey data. After the survey data has been received by the GOVERNMENT, the GOVERNMENT will have four (4) working days to review the data and prepare a written response indicating whether the completed section of the jetty extension has been accepted or rejected, and the reason for rejection, if applicable.

13.4 **Structure Tolerances:** A vertical tolerance of plus or minus six (±6) inches to the design surface of the jetty is specified in the Drawings and shall be permitted for projections and depressions of the in-place material. The horizontal tolerances are plus or minus two (±2) feet. The CONTRACTOR may be required to readjust the stone to fit within the template and tolerance of the structure. Any stone placed outside the template plus tolerance is ineligible for payment, but may be left in place at the discretion of the GOVERNMENT. The GOVERNMENT may require removal of material placed above the upper tolerance by the CONTRACTOR at the CONTRACTOR'S expense.

13.5 **Payment Request:** The CONTRACTOR may request payment for jetty extension on a monthly basis. Payments shall be based on the tonnage of rock that has been placed within the template and approved by the GOVERNMENT. The CONTRACTOR shall submit cross-section surveys, as specified in Section 35 of the Technical Provisions, of the completed portion of the eastern jetty extension. The CONTRACTOR shall submit to the GOVERNMENT for review, on a monthly basis, an Application for Progress Payment filled out and signed by the CONTRACTOR covering the Work completed as required by the Contract Documents and accompanied by such supporting documentation as is required by the Contract Documents and also as the GOVERNMENT may reasonably require.

14. PAYMENT FOR PRE-CONSTRUCTION SURVEY

14.1 **General:** The pre-construction survey shall consist of hydrographic and topographic surveying of the marsh and dune/beach fill area, the Empire Waterway, and jetty extension footprint, hydrographic surveying of the borrow areas, and disposal sites, and a magnetometer survey of all areas to be excavated, according to the Plans and Specifications. All costs connected with the pre-construction survey will be paid for at the Contract lump sum price for Pre-Construction Survey (Line Item 0010), which payment shall also include all other items of overhead, profit, labor, material, and any other costs incidental to performing the Work.

14.2 **Payment Requests:** The CONTRACTOR may apply for payment for the pre-construction survey once the completed survey has been submitted to and accepted by the GOVERNMENT in a survey format provided in Appendix III of the Technical Provisions. Thirty percent (30%) of the lump sum cost will be paid following submittal of the beach and dune pre-construction survey, twenty-five percent (25%) of the lump sum cost will be paid following submittal of the marsh pre-construction survey, ten percent (10%) of the lump sum cost will be paid following submittal of the Empire Waterway survey, ten (10%) of the lump sum cost will be paid following submittal of the magnetometer survey, five percent (5%) of the lump sum cost will be paid following submittal of the Empire Jetty extension survey and twenty percent (20%) of the lump sum cost will be paid following submittal of the borrow area and disposal site pre-construction surveys.

15. PAYMENT FOR AS-BUILT SURVEY

15.1 **General:** All costs connected with the as-built survey of the marsh fill area, dune and beach fill area, Empire Waterway, borrow areas, disposal sites, and jetty extension will be paid for at the Contract lump sum price for As-Built Survey (Line Item 0011), which payment shall also include all other items of overhead, profit, labor, material, and any other costs incidental to performing the Work.

15.2 **Payment Requests:** The CONTRACTOR may apply for payment for the as-built survey once the completed surveys of the marsh fill area, dune and beach fill area, borrow area, jetty extension, and Empire Waterway have been submitted to and accepted by the GOVERNMENT in a survey format provided in Appendix III of the Technical Provisions. Thirty percent (30%) of the lump sum cost will be paid following submittal of the beach and dune as-built survey, thirty percent (30%) of the lump sum cost will be paid following submittal of the marsh as-built survey, ten percent (10%) of the lump sum cost will be paid following submittal of the Empire Waterway as-built survey, ten percent (10%) of the lump sum cost will be paid following submittal of the Empire Jetty extension as-built survey, and twenty percent (20%) will be paid following submittal of the borrow area and disposal site as-built surveys.

16. PAYMENT FOR SEA TURTLE RELOCATION TRAWLING

16.1 **General:** The sea turtle relocation trawling shall consist of providing a sea turtle trawler and NOAA Fisheries approved sea turtle observers on the trawler to relocate any turtles that may be present in the Sandy Point borrow areas. All costs connected with the sea turtle relocation trawling will be paid for at the Contract daily rate for Sea Turtle Relocation Trawling (Line Item 0012), which payment shall also include all other items of overhead, profit, labor, material, and any other costs incidental to performing the Work.

16.2 **Payment Requests:** The CONTRACTOR may apply for payment for the sea turtle relocation trawling on a monthly basis. Payments shall be based on sea turtle

relocation reports submitted to the GOVERNMENT. The CONTRACTOR will be eligible for the initial progress payment of sea turtle relocation trawling when three (3) days have been completed. The CONTRACTOR shall submit to the GOVERNMENT for review, on a monthly basis, an Application for Progress Payment filled out and signed by the CONTRACTOR covering the Work completed as required by the Contract Documents and accompanied by such supporting documentation as is required by the Contract Documents and also as the GOVERNMENT may reasonably require.

II. MATERIALS AND EXECUTION

17. LAYOUT OF WORK FOR HYDRAULIC FILL PLACEMENT

17.1 **Profile Lines:** The CONTRACTOR may use any control deemed necessary for the layout of Work. The CONTRACTOR may establish any profile cross-sections deemed necessary for the layout of Work. Each beach/marsh profile line is to be surveyed on an azimuth of 195.1°.

17.2 **Contractor Acceptance of Survey Control:** No physical monumentation of the pay profile lines currently exists on the island. The CONTRACTOR is required to establish survey control for each pay profile line sufficient for the construction of the project. The CONTRACTOR shall immediately contact the GOVERNMENT if any discrepancies are discovered in any of the information presented concerning all survey control. If the GOVERNMENT is not contacted by the CONTRACTOR, it is understood that the CONTRACTOR agrees with all information presented in the Plans related to survey control information.

17.3 **Surveyor:** The CONTRACTOR will use a licensed surveyor or professional engineer (licensed professional) registered in the State of Louisiana. The licensed professional will be responsible for all survey work and will certify all survey work. The licensed professional is not obligated to perform the field work but shall exhibit responsible charge over the work. All submittals shall be certified by the licensed professional. The licensed professional shall be employed by a firm that is licensed to provide surveying services in the State of Louisiana. Non-firm individual proprietorships that bear the full name of the owner who is a licensed professional are exempt from having to be part of a licensed firm.

17.4 **Work Layout:** Utilizing control data provided by the GOVERNMENT and verified by the CONTRACTOR, the CONTRACTOR shall complete the layout of the Work and shall be responsible for all measurements that may be required for the execution of the layout of the Work, subject to such modifications as the GOVERNMENT may require to meet changed conditions or as a result of necessary modifications to the Contract Work. The CONTRACTOR shall furnish, at their own expense, such stakes, templates, platforms, equipment, tools and material, and all labor as may be required in laying out any part of the Work from the survey monuments, control data, and elevations provided by the GOVERNMENT and verified by the CONTRACTOR, the cost of which is included in the unit cost for fill placement. It shall be the responsibility of the CONTRACTOR to maintain and preserve all stakes and other marks unless and until they are no longer needed to construct the project. All temporary marking stakes (including grade stakes) placed by the CONTRACTOR in the sand dune/beach and marsh must be completely removed upon completion of the project.

17.5 **Site Layout Prior to Construction:** Prior to the initiation of heavy construction, excavation, dredging, or disposal activities, the CONTRACTOR shall survey and

layout the following items at the cross-section stations shown in the Plans: the northern and southern dune crest, the southern limit of marsh fill, the northern limit of marsh fill (intercept with the primary dike), the northern limit of the toe of the primary dike, and the northern limit of the fill source for the primary dike. The layout shall be surveyed and staked adequately to depict the limits and location of the Work. Layout stakes shall include grade information (i.e., fill heights, vertical tolerance) delineated in different colors. The CONTRACTOR shall maintain stakes and grades for the duration of the Contract to the GOVERNMENT'S satisfaction. The CONTRACTOR shall also coordinate with utilities, landowners, and leaseholders as required by this Contract to ensure identification, location, and marking of all public and private infrastructure that may occur at the project site. The GOVERNMENT will conduct a hold-point inspection at the completion of site layout prior to construction. However, the CONTRACTOR may request in writing that portions of construction be started prior to the hold-point inspection, once the layout for that portion has been accepted by the GOVERNMENT.

17.6 **Grade Stakes:** Any and all grade stakes used in the project area for layout shall be composed of metal conduit pipe to facilitate recovery of the stakes. The CONTRACTOR shall maintain a log of the grade stakes documenting the placement and removal of each grade stake; the grade stakes shall be marked with the Station and Range to facilitate logging. The CONTRACTOR shall remove all grade stakes from each completed section immediately after the section has been completed. Upon completion of construction in an area, the CONTRACTOR shall conduct a search using a suitable sensitive metal detector to find each and every stake placed by the CONTRACTOR in the area. The search and removal of all grade stakes shall be certified by the CONTRACTOR. The CONTRACTOR will not be eligible for payment until the CONTRACTOR certifies that all grade stakes have been removed. Sections of the beach upon which the search for, and removal of, grade stakes is complete shall be documented in the Daily Contractor Quality Control Report. Any grade stakes left in the fill area will be the sole responsibility and liability of the CONTRACTOR. Any injuries to people which may occur because grade stakes were left in the fill area by the CONTRACTOR will be the responsibility and the liability of the CONTRACTOR. If the CONTRACTOR fails to remove grade stakes in a timely manner, the GOVERNMENT may have the stakes removed and deduct the cost from the CONTRACTOR'S final payment.

17.7 **Survey Monumentation:** Permanent markers or survey monuments will not be disturbed, damaged, or destroyed by the CONTRACTOR. Disturbed, damaged, or destroyed survey monuments will be replaced by the GOVERNMENT, at their discretion, and the expense of replacement will be deducted from any amounts due, or to become due, to the CONTRACTOR.

17.8 **Survey Datum:** The horizontal datum for the baseline provided in the Plans is in Louisiana South State Plane Coordinate System referenced to the North American Datum of 1983 (NAD, 1983). The vertical datum at the beach, marsh, and borrow

area is in feet referenced to the North American Vertical Datum of 1988 (NAVD, 1988) using the Geiod of 2009.

18. HYDRAULIC PLACEMENT OF FILL

18.1 **Fill Placement Requirements:** All dune/beach and marsh fill excavated from the borrow areas shall be transported to, and hydraulically deposited on, the dune/beach or marsh within the lines, grades, and cross-sections shown in the Plans for the type of fill being placed (marsh or dune/beach), unless otherwise provided for herein or directed by the GOVERNMENT. The topography of the fill area is subject to changes and the elevations on the beach at the time the Work is done may vary from the elevations shown in the Plans. The CONTRACTOR is to place the hydraulic fill in the fill area in such a manner as to establish a uniform dune/beach, and/or marsh platform between adjacent pay profile lines. Sections located between pay profiles shall not be under filled, as defined in the Contract Documents. The dune/beach fill on the landward side of the template shall be placed and surveyed prior to the placement of marsh fill at that profile. The CONTRACTOR shall maintain and protect the fill and all primary dikes in a satisfactory condition at all times until final completion and acceptance of the Work by the GOVERNMENT.

18.2 **Right to Vary the Filled Area:** The GOVERNMENT reserves the right to vary the width or grade of the berm from the lines and grades shown on the Plans or observed at the project site in order to establish a uniform fill area between adjacent pay profile lines or for the entire length of the project, as shown in the Plans for the project. The hydraulic fill cross-sections shown in the Plans are for the purpose of estimating the amount of hydraulic fill needed and will be used by the GOVERNMENT in making any change in the lines and grades.

18.3 **Control of Fill:** The CONTRACTOR shall retain placed fill within the fill template until acceptance of each fill section. The CONTRACTOR shall construct primary dikes along the northern limit of the marsh platform as shown on the Plans. The CONTRACTOR may construct secondary dikes, at their discretion, at other locations within the marsh platform, including the boundary between the marsh platform and the dune/beach. Secondary dikes and spreader and pocket pipe can be used as necessary to prevent gullying and erosion of the beach/dune fill, to retain the hydraulic fill on the beach within the limits of the hydraulic fill template cross-section, and to control water turbidity. The pipeline discharge shall be located no closer than twenty-five (25) feet from any structure and at a minimum distance deemed safe by the CONTRACTOR to avoid potentially undermining the structure. Secondary dikes shall be constructed along the Gulf of Mexico waterline as necessary to direct the pipeline discharge longitudinally along the beach to avoid transverse gullying direct from the discharge point to the Gulf of Mexico, and to build the dune crest to the design grade of +6.0 feet (NAVD). Total containment, however, of beach and dune fill is not allowed except between Station 9+00 and Station 14+00 and between Station 135+61 and Station 141+00.

18.4 **Construction Elevations and Slopes:** The Plans and Contract Documents for the project delineate a construction dune crest with an elevation of +6.0 feet NAVD, a northern construction dune slope of one (1) foot vertical to thirty (30) feet horizontal, and a southern construction dune slope of one (1) foot vertical to forty-five (45) feet horizontal. The Plans and Contract Documents for the project delineate a marsh platform elevation of +2.6 feet NAVD. The marsh fill area will be inspected after a minimum of thirty (30) days to evaluate initial settling, completeness, elevation, and width. If the inspected area has undergone settlement in excess of the allowable tolerances, the GOVERNMENT may require the CONTRACTOR to place additional material prior to acceptance.

18.5 **Uniform Fill Areas:** The dune/beach fill areas between the pay profiles shall be graded, dressed, and uniform in dimension. Segments between pay profiles shall be filled to a minimum of ninety-five percent (95%) of the volume based on the fill templates shown in the cross-sections of the Plans and to the minimum tolerance everywhere, except where noted for minimum tolerance of marsh fill. The constructed grades between pay profiles, including the dune crest and primary dikes, will be uniform with parallel and straight contour lines, indicating that the CONTRACTOR has constructed a uniform (non-cuspate) cross-section between the profile lines to the appropriate elevations (+6.0 feet NAVD beach and dune, +2.6 feet NAVD marsh) and widths.

18.6 **Dressing Beach/Dune Fill:** Upon completion of all filling operations within an acceptance section, and prior to surveying for payment, the beach and dune fill shall be graded and dressed so as to eliminate any undrained pockets, ridges, and depressions in the hydraulic fill surfaces. The CONTRACTOR shall use a dragged pipe for this task. The CONTRACTOR shall grade and dress the dune/beach fill in such a manner as to establish a uniform dune crest width and slopes between adjacent pay profile lines. Banks or scarps caused by wave erosion shall be eliminated during this task. Grading and other construction equipment shall not be permitted outside the project limit, as shown in the Plans, except for ingress or egress to and from the site.

18.7 **Beach Fill Terminus:** The CONTRACTOR shall construct a fill taper or fill section at each end of the fill area, as indicated in the Plans.

18.8 **Removal of All Debris from the Fill Area:** Prior to placement of fill, the CONTRACTOR shall remove:

(a) All snags, driftwood, trash, sand bags, sand bag cables, and similar debris laying within the foundation limits of the beach and dune fill area.
(b) All snags, driftwood, trash, sand bags, sand bag cables, and similar debris laying within the foundation limits of the marsh platform.
(c) All snags, driftwood, trash, and similar debris laying within the limits of the jetty extension.

All materials removed shall be disposed of in an appropriate and legal manner and at the expense of the CONTRACTOR. The CONTRACTOR shall provide disposal tickets to verify debris has been properly disposed of. No separate payment for removal and disposal of these materials shall be made. All costs shall be incorporated into the unit cost for beach and dune fill, marsh fill, and jetty extension.

19. ONE-TIME BEACH AND DUNE SLOPE ADJUSTMENT

Should the CONTRACTOR encounter difficulty attaining the beach and dune slope delineated within the Plan Drawings, the CONTRACTOR may request a change in construction slope. This request must be provided to the GOVERNMENT in writing. The reason for the construction slope adjustment request must be clearly stated and an alternate slope must be clearly stated. Based on this request and at the GOVERNMENT'S discretion, the construction slope may be altered. The placed volume amounts for each payment section shall remain unaltered by this change in slope. No additional compensation will be provided to the CONTRACTOR. A request for slope adjustment may be made only once during the construction of this project, following which the CONTRACTOR will be required to maintain the revised construction slope throughout the remainder of the project. A set of revised Construction Drawings delineating the change in construction slope and new slope break stationing will be provided to the CONTRACTOR within five (5) working days of the GOVERNMENT'S acceptance of the change in construction slope.

20. DREDGE LOCATION CONTROL

20.1 **Continuous Electronic Positioning on the Dredge:** The CONTRACTOR is required to have in continuous operation on the dredge electronic positioning equipment that will accurately and continuously compute and plot the position of the dredge. A geographic positioning system, Differential Global Positioning System (DGPS), or equivalent, shall be used to maintain precise positioning of the dredge. Whenever dredging operations are underway, the location of the dredge shall be continuously monitored and its position recorded in the Louisiana South State Plane Coordinate System, NAD 1983 (Lambert Conformal Conic), at intervals not to exceed one (1) minute. The CONTRACTOR shall be running a dredge location and management program, such as DREDGEPACK or equivalent. The GOVERNMENT shall have unrestricted access to the bridge GPS and depth recording units to enable onboard real time review at anytime during construction. Plotters shall also continuously record the X, Y, Z (with respect to NAVD) position of the dredge's cutterhead or drag heads. If the CONTRACTOR elects to use a hopper dredge, the slurry velocity through the dragheads shall be submitted along with the X,Y,Z data. Such fixes (T,X,Y,Z), and the accompanying plots, shall be furnished to the GOVERNMENT daily, by 2 PM the following day, in an electronic format as part of the Daily Contractor Quality Control Reports. All vertical measurements shall be tide corrected, using tides measured along the open coast, and reported in feet NAVD; predicted tides will not be accepted. The dredge operator shall have visual controls that depict the location and depth of the dredge's excavation device within the specified borrow area. The electronic positioning equipment shall be calibrated, maintained, and operated so that the maximum error for the fixes recorded do not

exceed the tolerances in the horizontal position (±3 feet) or vertical position (±0.1 foot). The location of the master antenna on the dredge and the distance and direction from the master antenna to the dredge's excavation device shall be reported in the Daily Contractor Quality Control Reports. A ten percent (10%) retainage will be withheld from each of the monthly application of progress payments until this information is provided to the GOVERNMENT.

20.2 **Tides:** The CONTRACTOR shall use measured tides for all hydrographic surveying and tidal corrections of cutterhead or drag heads (predicted tides are not acceptable). Measured tides shall be along the open coast of the project area and not within either adjacent navigation channels unless a tide study conducted by the CONTRACTOR and accepted by the GOVERNMENT supports the use of tide gages in the navigation channels.

21. SUBMERGED PIPELINE BUOYS

Any submerged dredge pipeline not covered by at least twenty (20) feet of water must be marked with yellow buoys displaying a yellow two and one half (2.5) second flashing light. The lights must have a one mile nominal range and should be set every half (0.5) mile. A Private Aids to Navigation Application shall be submitted to the United States Coast Guard, Mr. Joe Vawters at (504) 671-2119, and the GOVERNMENT thirty (30) days prior to laying the subline. The lighted buoys shall be maintained by the CONTRACTOR in the proper location, floating, upright, and with functioning lights throughout the duration of the project. Electronic positioning shall be employed to set the buoys, and to check the positional integrity of the buoys on a daily basis. The results of these checks shall be reported in the Daily Quality Control Reports. If any of the buoys are not maintained in the proper location, the CONTRACTOR shall cease dredging until the buoys are maintained, replaced, or repositioned. Failure to maintain buoys will result in a withholding of payments to the CONTRACTOR until the buoys meet permit, United States Coast Guard (USCG), and Contract Document requirements and are satisfactory to the GOVERNMENT. The CONTRACTOR shall submit the latitude and longitude of the pipeline at one (1) mile intervals to the USCG. The perimeters of the borrow areas and disposal areas do not need to be marked with buoys.

22. EXCAVATION

22.1 **Potential Differing Borrow Area Characteristics:** The characteristics of the materials in the borrow areas may be as indicated by the sediment boring logs and grain size distribution curves attached hereto as Appendices I and II. The material found in each of the borrow area sediment core borings (vibracores) is indicative only of the material at that discrete location. The CONTRACTOR should be aware that it is possible for material of differing characteristics to be present in the borrow area, including material differing from that contained in the vibracores.

22.2 **Excavation:** Three (3) borrow areas have been identified for potential use during this project: Sandy Point NW, Sandy Point SE, and Empire Borrow Area. The Sandy Point borrow areas will be used as the source of beach fill, while all three borrow areas can be used as a source of marsh fill. Sandy Point NW is located approximately eight and a half (8.5) miles south-southeast of the project area. Sandy

Point NW does not contain sufficient dune/beach or marsh fill to construct the entire project. The Sandy Point SE borrow area is located approximately ten and a half (10.5) miles south-southeast of the project area and one and a half (1.5) miles southeast of the Sandy Point NW borrow area. There is sufficient beach/dune fill and marsh fill in the Sandy Point NW borrow area to construct the entire project. The Empire borrow area is located approximately one and three tenths (1.3) miles due south of the project area and contains twice the marsh fill template volume.

22.2.1 <u>Overburden</u>: The Sandy Point borrow areas have a layer of mud overburden material atop the dune and beach material. This overburden may either be used as marsh fill and dredged and placed within the marsh fill template, as shown on the Plans, or sidecast into the overburden disposal areas. If the material is sidecast, then the discharge pipe must remain within the limits shown on the plans and the maximum elevation of the discharge area shall be -25 feet, NAVD for the Southeast borrow area or -27 feet, NAVD for the Northwest borrow area. Removal of the overburden is necessary before the dune and beach material can be dredged. Sidecasting overburden from the borrow area and depositing it within the limits of the existing borrow area is not allowed. The cost of removing and disposing of overburden shall be included in the cost of dune and beach fill.

22.2.2 <u>Overburden Disposal Control</u>: All overburden disposal operations shall be performed within the horizontal and vertical limits of the disposal sites as shown in the Plans. The CONTRACTOR shall provide continuous positioning information for the location of discharge points used during all discharge operations. Whenever disposal operations are underway, the location of the disposal discharge points shall be monitored and recorded in Louisiana South State Plane Coordinate System, NAD 1983 (Lambert Conformal Conic), at intervals not to exceed four (4) hours. Such information and accompanying plots shall be furnished to the GOVERNMENT daily in electronic format as part of the Daily Contractor Quality Control Reports during disposal operations. The Daily Contractor Quality Control Reports shall be provided to the GOVERNMENT by 2:00 pm the next day.

22.2.3 <u>Overburden Disposal Site Check Surveys</u>: During any overburden disposal operations the CONTRACTOR shall perform bathymetric check surveys of the disposal sites on a weekly basis. The check surveys shall consist of two (2) survey lines oriented either north-south or east-west through the disposal sites and extending five hundred (500) feet beyond the site limits. This information shall be submitted in the format provided in Appendix III of the Technical Provisions. The CONTRACTOR shall submit check surveys weekly during overburden disposal operations.

22.2.4 <u>Borrow Area Excavation Limitations</u>: All excavation shall be performed within the horizontal and vertical limits of the borrow areas shown in the

Plans. The borrow areas have been further divided based on the allowable dredge depth in each sub-area of the borrow areas. Under no circumstances shall equipment exceed the maximum depth of equipment shown in the plans. The material located below the indicated design dredge depth, in many cases, may not be suitable for placement. The CONTRACTOR will be required to certify in each Daily Contractor Quality Control Report that the excavation has occurred within the limits of the Plans. If excavation occurs outside of the permitted borrow area, or below the depth as shown in the Plans, the CONTRACTOR shall pay any and all permit fines for the permit violation. If the CONTRACTOR does not pay any costs, fines, or other expenses related to dredging outside of the borrow area limits and/or for permit violations, the GOVERNMENT will withhold retainage from payments due to the CONTRACTOR from the GOVERNMENT, or may be recovered from the CONTRACTOR'S bond to cover all costs, fines, or expenses related to excavating outside of the borrow area limits and/or deeper than allowed within the borrow area. The GOVERNMENT may deduct quantities of material dredged outside of and/or below the allowable dredge depths from pay quantities.

22.2.5 **Uniform Excavation:** To the greatest extent practicable, all excavation shall be performed in a uniform and continuous manner so as to avoid creating multiple holes, valleys, or ridges within the borrow area. The borrow area shall be dredged to maximize the removal of suitable material from each sub-area of the borrow area.

22.3 Acceptable and Unacceptable Materials:

22.3.1 The project, as depicted in the Plans, features a marsh platform and a beach and dune fill area. The locations of the marsh fill and the beach and dune fill areas appear in the Plans.

22.3.2 **Beach and Dune Fill Area:** The “Landward Toe of Dune”, which appears on the Plans, marks the northern boundary of the beach and dune fill area. The CONTRACTOR will NOT be paid for any material placed in the beach and dune fill area that comes from a source other than the beach fill sections of the borrow areas. In order to minimize turbidity in the Gulf of Mexico and maximize project performance, beach and dune fill shall not exceed a silt content of twenty percent (20%) with a minimum mean grain size of (0.09 mm, as measured on the beach following placement. Overburden materials shall not be used for beach and dune fill. Unacceptable materials also include hard clays, debris, and rocks or rubble larger than 1.9 mm in diameter. If the GOVERNMENT has reason to believe that the material being placed in the beach and dune fill area does not meet the above standards, the GOVERNMENT may require the CONTRACTOR to collect sand samples under the GOVERNMENT’S direction and supervision and the CONTRACTOR’S expense. The GOVERNMENT may then conduct a sieve

analysis to determine whether the material being placed in the beach and dune fill area is acceptable.

22.3.3 **Marsh Platform:** Any dune and beach fill material incidentally dredged from the borrow area and placed within the marsh fill template within the limits shown on the Plans may be left in place at the sole discretion of the Government. The material will be accounted for as marsh fill and paid for at the unit price for marsh fill.

22.4 **Encountering Unacceptable Material in the Borrow Area:** Unacceptable material shall not be placed in the fill areas. The CONTRACTOR shall continuously monitor the fill material for unacceptable materials in the fill being placed. If unacceptable materials are encountered during dredging, the CONTRACTOR shall immediately cease dredging operations and relocate to another portion of the borrow area to eliminate the placement of unacceptable materials. The CONTRACTOR shall immediately notify the GOVERNMENT verbally, and report the encounter with the unacceptable materials in the Daily Contractor Quality Control Report, providing location in State Plane Coordinates of the area of the unacceptable materials. At the discretion of the GOVERNMENT these unacceptable materials that are excavated and placed in the fill areas may be required to be removed from the beach areas by the CONTRACTOR, at the CONTRACTOR'S expense. If the CONTRACTOR fails to remove the unacceptable materials to the satisfaction of the GOVERNMENT, such materials may be removed by the GOVERNMENT and the cost of such removal may be deducted from any money due, or to become due, to the CONTRACTOR or may be recovered under their bond. The GOVERNMENT has the authority to determine if the quality of the material being placed in the areas is acceptable. If the GOVERNMENT makes a specific determination that material being placed is unacceptable, the CONTRACTOR shall adjust their construction operation to avoid this material. This does not relieve the CONTRACTOR of responsibility for all placed material, including unacceptable material, rock, rubble, and debris.

22.5 **Character of Material Within the Borrow Area:** The descriptions of the material are based on remote site investigations and site-specific core borings. The material descriptions are provided in the appendices of this section and only describe the materials obtained from those investigations. The CONTRACTOR is solely responsible for any interpretation or conclusions drawn there from. The CONTRACTOR may visually inspect the core samples prior to the start of construction. The cores may be viewed at the offices of Mark Kulp, University of New Orleans (504-280-1170) during normal business hours. The CONTRACTOR shall provide a five (5) work day notice to the GOVERNMENT of the requested visit.

22.5.1 **Sandy Point Borrow Areas:** Based on limited information provided by the core borings, the materials found within the Sandy Point Borrow Areas consists of fine sand overlain by a mud overburden.

22.5.2 **Empire Borrow Area:** Based on limited information provided by the core borings, the materials found within the Empire Borrow Area consists of silt with some areas containing sandy layers.

22.6 **Preservation of Historical, Archeological, and Cultural Resources:** A cultural resource study has been conducted within the borrow areas. Those areas with magnetic anomalies that have been judged to possibly be of historical, archeological, or cultural value have been excluded from the borrow areas. If during construction activities the CONTRACTOR observes items that may have historical, cultural, or archeological value, the CONTRACTOR shall immediately cease all activities that may result in the destruction of these resources and shall prevent their employees and subcontractors from trespassing on, removing, or otherwise damaging such resources. Such observations shall be reported immediately to the GOVERNMENT so that the appropriate authorities may be notified and a determination made as to their significance and what, if any, special disposition of the finds should be made. The CONTRACTOR shall report any observed unauthorized removal or destruction of such resources by any person to the GOVERNMENT and appropriate State of Louisiana authorities. The CONTRACTOR shall relocate the dredge to another area within the borrow area and resume construction of the project, and not return to the site in question until State authorities have rendered judgment concerning the artifacts of interest.

22.7 **Preservation of Existing Natural Resources:** Equipment operators shall be instructed by the CONTRACTOR with regards to avoiding damage to the water bottoms and existing vegetation outside the fill areas as marked on the Plans during all phases of the Work.

22.8 **Dredge Mobilization/Demobilization Notification:** The CONTRACTOR shall notify the GOVERNMENT at least three (3) days in advance of the date the dredge and other equipment will be mobilized and demobilized to and from the project area.

23. TRANSPORT OF EXCAVATED MATERIALS

23.1 **Hydraulic Placement of Fill:** All fill will be placed hydraulically. The method of transport and hydraulic placement will be at the discretion of the CONTRACTOR. However, methods and equipment will have to comply with all permit, production, environmental, and contractual requirements.

23.2 **Scows and Vessels:** All scows and vessels must be kept in good condition, the coamings repaired, and the pockets provided with proper doors or appliances to prevent leakage of material.

23.3 **Pipeline Transport of Fill:** If a pipeline is used to transport material, the pipeline seaward of the beach landing shall be submerged except at the dredge, booster pumps (if required), and at oil and gas infrastructure crossings. In these instances, the pipeline shall be floated unless written permission has been obtained from the pipeline owner to lay the submerged pipeline on the ocean floor. A copy of this permission shall be provided to the GOVERNMENT.

23.4 **Pipeline Leaks:** The CONTRACTOR shall maintain a tight discharge pipeline at all times. The joints shall be so constructed as to preclude spillage and leakage. Leaks shall be promptly repaired. The CONTRACTOR shall transport the GOVERNMENT to the leak repair site for visual inspection if so requested by the GOVERNMENT. Failure to repair leaks or change the method of operation that is resulting in leakage and wastes beach and dune compatible material or exceeds turbidity and water quality standards during transport to the discharge site will result in a requirement to suspend dredging operations and require immediate repair or change of operation to prevent leakage as a prerequisite to the resumption of dredging. The CONTRACTOR shall furnish any data collected during checks of the submerged pipeline in one of the approved formats contained in Appendix III of the Technical Provisions.

23.5 **Submerged Line Approvals:** Should the CONTRACTOR choose to use a submerged line from the borrow area to the placement area, or a pump out station to the placement area, the CONTRACTOR shall obtain all easements, rights of way, and permits required. The CONTRACTOR is required to conduct any field investigations or surveys necessary to establish the pipeline corridor.

24. OPEN WATER DISCHARGE

24.1 **Turbidity Control:** The CONTRACTOR will likely have to discharge water from the marsh fill area into adjacent waters to avoid impoundment of water. The CONTRACTOR must provide a Turbidity Control Plan detailing means and methods for any discharge of water outside the project footprint, including, if applicable, a description of any water control structures and locations of such structures proposed for use. The plan must contain methods to limit turbidity and sedimentation in open water. Turbidity curtains shall be used at all outflow areas. The turbidity control plan must be submitted to the GOVERNMENT at least seven (7) days prior to the pre-construction conference.

24.2 **Water Control Structures:** The CONTRACTOR may use any number or design of water control structures for water discharge provided the structure is of sufficient size to discharge an appropriate volume of water. The Drawings show the location of approved discharge locations; discharge at other locations is not permitted. Each discharge area is 300 feet long, measured along the primary dike, and centered on the coordinates provided in the plans. The rate of discharge must be manually controllable with the ability to completely shut off discharge through the structure.

The turbidity control plan shall also describe the method and timing of removal of any proposed water control structures.

24.3 **Turbidity Sampling:** In the event that the GOVERNMENT observes signs of the discharge of turbid waters which form noticeable plumes outside the limits of the Work, the GOVERNMENT may, at its sole discretion, require that the CONTRACTOR immediately initiate twice daily turbidity sampling with reports submitted to the GOVERNMENT. No additional compensation shall be paid to the CONTRACTOR for this work.

25. MISPLACED MATERIALS

The CONTRACTOR shall not deposit dredged material on the existing bay shores, beaches, or marshes without approval of the GOVERNMENT, except within the fill areas shown on the Plans. If any material is deposited in places other than those designated or approved, the CONTRACTOR may be required to remove such misplaced material and redeposit it where directed by the GOVERNMENT, at the CONTRACTOR'S expense. This will include materials in the borrow area (see Section 22.2.1 of the Technical Provisions).

26. PRIMARY DIKE CONSTRUCTION

26.1 **General:** The boundaries of the primary dikes appear in the Plans. Discharge from the marsh fill areas shall not be allowed to flow into the adjacent bays, the Gulf of Mexico, or other navigable waters. Primary dikes shall be erected as shown on the Drawings to contain and dewater hydraulic fill and prevent discharge of turbid water into said areas. The CONTRACTOR is required to provide continual maintenance of the primary dikes so that they perform their intended function during the construction period.

26.2 **Dimensions:** The dimensions of the primary dike shall be at the discretion of the CONTRACTOR, provided the structure is substantial enough to prevent excessive slumping, any failure or blowout, discharge of fill material, and/or turbid water discharge into adjacent water bodies. A maximum dike dimension has been provided with a maximum elevation of +7.0 feet NAVD, a crest width of 10 feet, and side slope of one (1) foot vertical to eight (8) feet horizontal (1V:8H). The CONTRACTOR is required to build and maintain the primary dikes until completion of the project. The CONTRACTOR may leave the primary dikes in place at the end of construction. Data regarding existing geotechnical site conditions and recommendations regarding stable slopes and dike cross-sections are provided in Appendix IV of the Technical Provisions. The CONTRACTOR shall provide a plan for primary dike construction including a representative drawing of dike dimensions at least seven (7) days prior to the pre-construction conference.

26.3 **Primary Dike Fill Source:** A fill source for initial construction of the primary dikes is identified on the plans. The maximum depth of excavation within this channel is -7.0 feet, NAVD. The interior fill source shall be filled with sediment during marsh

construction. A secondary fill source located north of the primary dike may be used to repair or maintain the primary dike as necessary following initial construction of the primary dike. The CONTRACTOR shall request written permission from the GOVERNMENT prior to utilizing this secondary fill source.

26.4 **Method:** No method of dredging is specified. The CONTRACTOR shall use any environmentally acceptable method that will complete the Work in accordance with the Plans. However, the CONTRACTOR shall submit to the GOVERNMENT the method and equipment intended to be used to dredge the flotation canal and construct the primary dikes at least seven (7) days prior to the pre-construction conference.

27. EXCAVATION WITHIN THE VICINITY OF EXISTING INFRASTRUCTURE

27.1 **Limit of Excavation:** Oil and gas infrastructure are present throughout the project area. Project construction requires work in the immediate vicinity of oil and gas pipelines, wellheads, and other infrastructure. The CONTRACTOR is required to independently locate infrastructure in accordance with Section 29.4 of the General Conditions. Under the terms of this Contract, the CONTRACTOR shall not excavate within twenty-five (25) feet of any active and/or abandoned pipeline. The CONTRACTOR shall notify representatives of the oil companies as in accordance with Section 29.3 of the General Conditions.

28. SAND FENCING

28.1 **Description:** Sand fencing shall be installed after beach fill segments are accepted in accordance with the Drawings to aid in the stabilization of sand and in the retention of wind blown sand within the project areas. Sand fencing shall be installed within seven (7) days following acceptance of a fill segment. A single row of sand fencing shall be constructed. Section lengths and configurations may vary. Coordinates of the beginning and end points of each section are provided in the Plans. Wooden fence posts are to be used for vertical support. The slatted wood sand fencing shall be wired to the posts at the top, middle, and bottom. The wire shall be corrosion resistant and affixed with no less than three (3) ties around the posts. Tie wire must be approved by the GOVERNMENT prior to construction.

28.2 Material Specifications:

28.2.1 **Posts:** Posts shall be 0.40 pcf ACQ (Alkaline copper quaternary) retention, #2 grade, new lumber. Fence posts shall be 4” x 4” square or 4” diameter round posts at least eight (8) feet long driven at least four (4) feet into the ground and placed ten (10) feet on center. The posts shall be vertically plumb, the alignment shall be in straight lines.

28.2.2 **Fencing:** Sand fencing shall be standard, weather resistant snow fencing. Sand fence shall be furnished in rolls of fifty (50) feet or one hundred (100) feet. The sand fence is to be composed of the following elements:

28.2.2.1 **Slats:** Slats shall be made of No. 1 aspen or spruce measuring 3/8 inch thick, 1.5 inches wide, by four (4) feet long. The maximum distance between slats shall not exceed 1.5 inches. The slats shall be weather proofed by an acceptable pressure treatment method or coated with red oxide paint.

28.2.2.2 **Fence Wire:** Wire for securing slats shall be commercial quality steel that has been hot-dipped galvanized with a minimum gauge rating of thirteen (13). The wire shall be twisted around the slats sufficiently to penetrate the slat to hold it in place. Wire strands shall not exceed ten (10) inches apart and shall not be closer than four (4) inches from slat ends.

28.2.2.3 **Tie Wire:** The wire that is used to tie the fence to the posts shall be hot-dipped galvanized and shall be at least one gauge larger than the individual wires used for the fencing.

28.2.2.4 **Overlaps:** Where sections of sand fence are joined, a minimum of six (6) inches of each section shall overlap. The overlaps shall be secured using three (3) wraps of wiring at four (4) places: top, bottom, middle top, and middle bottom as specified.

28.3 Installation:

28.3.1 Sand fence location and alignment shall be in conformance with the Drawings unless otherwise required or approved by the GOVERNMENT in order to accommodate site conditions that exist at the time of installation. Square fence posts shall be installed with the flat portion of the post facing the Gulf of Mexico. The sand fence shall be installed on the Gulf of Mexico side of the post. Such location and alignment changes shall not reduce the Contract quantity of fencing materials.

28.3.2 The CONTRACTOR'S equipment used for the installation of fence posts, the transportation of fencing materials, and the movement of personnel shall be of the type that shall not cause non-repairable damage to surface areas of the beach when properly used. A list of equipment to be used to construct the sand fence shall be submitted to the GOVERNMENT seven (7) days prior to the pre-construction conference. All equipment proposed for use on the beach shall be acceptable to the GOVERNMENT prior to mobilization to the beach. Equipment operators shall be fully instructed with regards to avoiding damage to the beach surfaces and vegetation. At the discretion of GOVERNMENT, the CONTRACTOR may be required to restore beach surface elevations changed by 0.5 feet or more by the CONTRACTOR during mobilization, construction, or demobilization.

28.3.3 The CONTRACTOR shall designate areas to store the fencing materials and submit to the GOVERNMENT seven (7) days prior to the pre-construction

conference. Fencing materials stored on the work site shall be placed in an easily accessible location that has been approved by the GOVERNMENT. Stored materials shall be placed and maintained in a neat, orderly, and safe manner.

29. SETTLEMENT PLATES

29.1 **Scope:** This work consists of furnishing and assembling the materials needed to construct and install nine (9) settlement plates in accordance with these Specifications and the project Plans or as directed by the GOVERNMENT. It should be noted that the settlement plates are intended for OCPR's long term monitoring of the island and payment for marsh and beach and dune fill shall not be based on the settlement of these plates.

29.2 **Materials:** Plates shall be fabricated with a four (4) foot x four (4) foot x 1/4 inch steel plate with a three (3) inch diameter galvanized schedule forty (40) or heavier pipe connected to the center of the plate with a 3/16 inch continuous filet weld. The pipe length shall be of sufficient length to facilitate the placement in the areas as shown in the Plans, extending a minimum of five (5) feet and a maximum of eight (8) feet above the finished grade. A six (6) inch long steel bolt (HHMB) shall be placed through the riser pipe approximately three (3) feet above the design grade for surveying purposes. The bolt and washer shall have a hot dipped galvanized finish. The top of the pipe shall be closed with a threaded galvanized cap. The cap shall be free of ventilation holes to prohibit rain from entering the pipe. After fabrication, the settlement plate shall be hot dipped galvanized.

29.3 **Zinc Coating:** Zinc coating shall be applied in a manner and thickness quality conforming to ASTM A 123. In all cases where zinc coating is destroyed by cutting or other causes, the affected areas shall be regalvanized with a suitable low-melting zinc base alloy similar to the recommendations of the American Hot-Dip Galvanizers Association to the thickness and quality specified for the original zinc coating. Coatings less than two (2) ounces shall be regalvanized by a repair compound.

29.4 **Installation:** The settlement plates shall be installed at the following locations prior to the placement of marsh or beach fill and construction of the primary dikes: Station 28+15, Range 1+07; Station 28+15, Range -7+85; Station 46+29, Range -14+29; Station 64+43, Range -4+64; Station 82+58, Range -13+45; Station 91+64, Range -8+23; Station 100+71, Range 0+05; Station 109+79, Range -4+26; Station 118+86, Range -15+21. The CONTRACTOR shall exercise care when placing fill material in the vicinity of the settlement plates. Any damaged settlement plates shall be replaced by the CONTRACTOR at no expense to the GOVERNMENT. Damaged settlement plates are defined as plates which would not accurately locate the primary dike centerline, sand dune centerline, and marsh elevations as determined by the GOVERNMENT. Leveling of the plate bed shall be accomplished by removing the minimum amount of earth or debris necessary to produce an even foundation and in such manner that the density of the plate bed will remain at the same density as the

undisturbed adjacent ground. Leveling of the plate bed by the addition of fill will not be permitted.

29.5 **Monitoring:** The CONTRACTOR shall survey the existing grade and bolt elevation of the settlement plates immediately after placement and every seven (7) days until final acceptance of the project. The CONTRACTOR shall provide the data to the GOVERNMENT in a survey format provided in Appendix III of the Technical Provisions along with a time stamp. The collected survey data shall include a note specifying the activity occurring near/over the plate following the previous survey. This survey data shall be provided to the GOVERNMENT on a monthly basis, with the application of progress payment.

30. JETTY EXTENSION

30.1 **Description:** This work consists of excavating to approximately -5.5 feet, NAVD, installing a marine mattress foundation, and placing rock acquired from an off-site location within the lines and grades shown on the plans for the jetty extension. The depth of excavation varies from zero (0) to eight (8) feet. The marine mattress units are typically half (0.5) feet thick by six (6) feet wide and twenty (20) feet long. The rock to be transported and placed varies in size up to approximately three (3) feet across and is assumed to have a density of approximately one hundred sixty-five (165) pcf.

30.2 **Order of Work:** The CONTRACTOR shall complete the jetty extension prior to the placement of beach fill west of Station 13+00.

30.3 **Excavation:** The CONTRACTOR shall excavate as necessary to place the marine mattress foundation and armor stone in order to meet the design template. Spoil shall be placed within the project footprint to the maximum extent possible and may be used to construct primary containment dikes.

30.4 Armor Stone:

30.4.1 **Quality of Stone:** All rock proposed for use in the structure (armor stone boulders and marine mattress stone) is subject to approval by the GOVERNMENT. The GOVERNMENT may reject stone at any time prior to final acceptance, and may require disassembly of the structure in order to replace unacceptable stone with acceptable stone. All rock for the Work shall be hard dense, non-friable stone from sources proposed by the CONTRACTOR and approved by the GOVERNMENT. The rock shall be free from cracks, seams, drill holes, laminations, weak cleavages, and similar defects and shall not fracture when dropped during the drop test. All stone shall be clean and free from earth, dust, or other refuse.

30.4.2 **Stone Certification:** At least seven (7) days prior to the pre-construction conference, information regarding the stone source and stone certification

with the name, location and telephone number of the vendor(s) and quarry(s) from which stone materials will be supplied, shall be provided to the GOVERNMENT for review prior to delivery of stone material to the project site. The stone certification shall be based upon an independent laboratory analysis of the rock's specific gravity, and shall indicate the standards by which the results were developed. Certifications are required for the armor stone and mattress stone.

30.4.3 **Armor Stone Dimension and Weight:** The faces of all stones shall be roughly angular, not rounded, in shape. The least dimension of each stone shall not be less than one-third (1/3) of the greatest dimension of that stone. Flat armor stone will not be accepted. The armor stone shall be 1.7 tons to 2.8 tons with fifty percent (50%) greater than 2.2 tons in weight. Based on a unit weight of one hundred sixty-five (165) pcf, a 2.2 ton angular armor stone would have an average dimension of approximately three (3.0) feet. The CONTRACTOR shall select fifteen (15) armor stones from the quarry and have each stone weighed. Each weighted stone shall be clearly marked with its weight. The weighted stones that meet the specifications shall be placed in a convenient location in the quarry where the CONTRACTOR can compare future selected armor stones for possible shipment to the project site.

30.4.4 **Armor Stone Unit Weight:** At least seven (7) days prior to the pre-construction conference, the CONTRACTOR shall provide certified results of laboratory testing conducted by an independent lab to determine the unit weight and specific gravity of the stone. The tests shall be conducted on a minimum of ten (10) samples randomly selected from the quarry proposed for use. No two (2) or more samples shall be taken from the same stone. The test shall be ASTM C127. The minimum unit weight of the armor stone is one hundred and sixty (160) pcf (saturated, surface dried) and the minimum specific gravity shall be 2.56. All ten (10) samples shall exceed these minimum standards. Failure of the test on the first set of ten (10) samples and a following set of ten (10) samples will be cause for rejection of the quarry and/or quarrying process. Stones that fail the test shall not be incorporated into the Work. The initial test and any additional test required because of failure of the initial test sample will be made at no cost to the GOVERNMENT. The CONTRACTOR may not use more than one quarry without prior approval of the GOVERNMENT. The GOVERNMENT will require additional tests, at no expense to the GOVERNMENT, if additional quarries are requested.

30.4.5 **Drop Test at the Quarry:** A drop test will be performed on eight (8) stone samples (boulders) at the rock quarry. The drop test shall be performed by the CONTRACTOR in the presence of the GOVERNMENT. The CONTRACTOR shall give the GOVERNMENT one (1) week notice for the date of the drop test. The CONTRACTOR and GOVERNMENT will agree

on a date, time, and location (rock quarry) for the drop test. The drop test will consist of dropping the armor stone from a height of five (5) feet onto an eight (8) foot by eight (8) foot, or larger, steel plate. The steel plate shall be a minimum of one (1) inch thick and be placed on firm ground. Acceptable stone will not fracture when dropped. The stone should be examined carefully before testing as well as afterward. Failure criteria are breakage, development of new cracks, and opening of old cracks. All eight (8) stones must pass the drop test to approve the quarry, quarrying process, and stone selection. Stones that fail the test shall not be incorporated into the Work.

30.4.6 **Drop Tests at the Project Site:** Drop tests may be requested on individual stones at the project site at any time by the GOVERNMENT to check stone quality. Stones that are not tested after requested by the GOVERNMENT, or that fail the drop test, will be rejected and shall be removed from the site by the CONTRACTOR at no expense to the GOVERNMENT.

30.4.7 **Non-Specification Armor Stone:** The GOVERNMENT reserves the right to refuse payment for armor stone delivered to the site that does not meet these specifications. The CONTRACTOR shall remove unacceptable stone from the Work site at no additional expense to the GOVERNMENT. Unacceptable stone removed from the site shall be returned to the quarry, the CONTRACTOR'S yard, or otherwise disposed of in a legal manner.

30.4.8 **Certified Rock Quantity:** The CONTRACTOR shall provide records of the net weight of rock transported to the Work site. The CONTRACTOR shall provide the GOVERNMENT with a weekly cumulative total of all rock delivered to the project site and a total of all rock placed by weight. Signed records shall be provided to the GOVERNMENT weekly.

30.5 **Marine Mattress:** A stone filled marine mattress foundation is a non-metallic compartmental structure pre-filled densely and tightly with stone. Filling is achieved while each unit is positioned on edge prior to installation. Mattress units are comprised of structural geogrid, braid, and mechanical connection elements, and stone fill. The units are fabricated to allow placement and provide containment of stone fill. This Work shall consist of furnishing materials, including geogrid, braid, mechanical connections, and stone fill, and furnishing fabrication, filling, and installation of Polymeric Marine Mattress, all in accordance with these specifications and in conformity with the lines, grades, design, and dimensions shown in the Plans. The CONTRACTOR shall make his/her own arrangements to purchase the structural geogrid, braid, and mechanical connection elements from an approved supplier. Certain material properties of the structural geogrid are critical to the fabrication, lifting and placement, and serviceability of this application. .

30.5.1 **<u>Marine Mattress Certification</u>:** At least seven (7) days prior to the pre-construction conference, the CONTRACTOR shall submit to the GOVERNMENT for approval the following:

(a) Product samples of the geogrid, braid, mechanical connection elements, and the geogrid/fabric.

(b) A geogrid product data sheet and certification from the manufacturer that the mattress geogrid product meets the requirements of these specifications. Acceptance of furnished material will be based on the Certificate of Compliance, accompanying test reports, and observation of the fabric by the GOVERNMENT.

(c) Manufacturer's general recommendations and instructions for fabrication, filling, installation, and repair of the geogrid mattresses.

30.5.2 **<u>Marine Mattress Quantity</u>:** The total area projected for the marine mattress foundation is 19,630 square feet. The marine mattress foundation shall be composed of individual units. Each unit shall be one half (0.5) foot thick by six and a half (6.5) feet wide and twenty (20) feet long. The CONTRACTOR may propose in writing equivalent foundation designs for consideration by the GOVERNMENT.

30.6 Marine Mattress Materials:

30.6.1 **<u>Geogrid</u>:** The structural geogrid shall be an integrally formed grid structure manufactured of a stress resistant polypropylene or high density polyethylene material with molecular weight and molecular characteristics which impart high resistance to loss of load capacity or structural integrity when the geogrid is subjected to mechanical stress in installation and/or long-term environmental stress. The structural geogrid shall accept applied force in use by positive mechanical interlocking (i.e. direct mechanical keying) with contiguous sections of itself by rigid mechanical connection elements such as bodkins, pins or hooks. There shall be sufficient geogrid material (2 geogrid aperture minimum) to form lifting hoops for the units. The Filter Mattresses shall be constructed of structural geogrid conforming to the following material properties.

MD/XMD1Load Capacity	
True Initial Modulus at 1% Strain[2] lb/ft	18,160/29,470
Structural Integrity	
Junction Strength[3] lb/ft	1,432/1,233
Flexural Stiffness[4] mg-cm	750,000/
Torsional Stiffness[5] kg-cm/deg	4.8/
Dimensions	
Aperture Size in.	1.0/1.3

Percent Open Area %	70
Minimum Thickness (any dimension) in.	0.045

The geogrid product shall also meet the following durability requirements:

Ultraviolet Stability[6]	98%
Resistance to installation damage (GP)[7]:	85%
Resistance to long term degradation[8]:	100%

Nominal roll size shall be 13.1 feet wide by 164 feet in length.

Notes:
1. MD dimension is along roll length. XMD dimension is across roll width. Unless indicated otherwise, values shown are determined in accordance with ASTM D 4759. Brief descriptions of test procedures are given in the following notes.
2. True resistance to elongation when initially subjected to a load measured via GRI GG1 without deforming test materials under load before measuring such resistance or employing "secant" or "offset" tangent methods of measurement so as to overstate tensile properties.
3. Load transfer capability measured via GRI GG2.
4. Resistance to bending force measured via ASTM D 1388.
5. Resistance to in-plane rotational movement measured by applying a twenty (20) cm-kg moment to the central junction of a nine inch by nine inch (9" x 9") specimen restrained at its perimeter (U.S. Army Corps of Engineers Methodology).
6. Retained strength after 500 hours of exposure per ASTM D 4355.
7. Resistance to loss of load capacity or structural integrity when subjected to mechanical stress in installation measured via ASTM D 5818 in a poorly graded gravel (GP) with a maximum two (2) inch particle size.
8. Resistance to loss of load capacity or structural integrity when subjected to chemically aggressive environments measured via EPA Method 9090 immersion testing.

30.6.2 **Mechanical Connection Elements:** The mechanical connection elements shall be composed of high density polyethylene (HDPE) and/or polypropylene (PP), unless otherwise approved by the GOVERNMENT. The mechanical connection used shall be a bodkin, unless otherwise approved by the GOVERNMENT. A one (1) foot sample of the geogrid and a one (1) foot length of bodkin shall be provided to the GOVERNMENT upon request.

30.6.3 **Braid:** The braid used for tying and lacing in the fabrication of the marine mattress units shall be eight (8) strand hollow-core high density polyethylene braid and shall have a minimum diameter of 3/16 inch (nominal) with a breaking strength of not less than four hundred (400) pound load on a test

specimen 36 inches in length. For UV stability, the braid material shall have a minimum carbon black content of 2.0% throughout. A three (3) foot length of braid shall be provided to the GOVERNMENT upon request.

30.6.4 **Acceptance of Material:** The CONTRACTOR shall inspect the geotextile, geogrid, braid, and mechanical connection elements upon delivery to verify that the proper material has been received. These materials shall be inspected by the CONTRACTOR to be free of flaws, defects, rips, holes, deterioration, or damage occurring during manufacturing, shipping, or handling.

30.6.5 **Stone for Filling Mattress:** Stone for filling Filter Mattresses may be crushed stone. The stone shall be durable and of suitable quality to ensure suitable performance in the Mattresses and the climate at the work site. Stone shall be free from cracks, seams, and other defects that would tend to increase its deterioration in the Mattresses. The inclusion of objectionable quantities of dirt, sand, clay, and rock fines shall not be permitted. The minimum diameter of the bedding stone used shall be two (2) inches across the smallest dimension of the stone. The maximum diameter of the bedding stone used shall be six (6) inches. The minimum acceptable unit weight of the bedding stone is one hundred sixty (160) pcf (saturated, surface dry) (ASTM, C127). The CONTRACTOR shall provided certified results of laboratory testing by an independent lab to determine the unit weight and specific gravity of ten (10) randomly selected samples. All ten (10) samples must pass the test for use of the quarry stone.

30.6.6 **Abrasion Tests:** The CONTRACTOR shall provide certified results of laboratory testing conducted by an independent lab to determine the unit weight, specific gravity of the bedding stone and the results of the Los Angeles Abrasion Test. The tests shall be conducted on a minimum of ten (10) samples randomly selected from the quarry proposed for use. The loss when the stone is subjected to the Los Angeles Abrasion Test shall not exceed forty percent (40%). Unit weight and abrasion tests will be made at no cost to the GOVERNMENT. The GOVERNMENT, at any time during construction, may require the CONTRACTOR to conduct additional tests at the expense of the CONTRACTOR. The CONTRACTOR may not use more than one quarry without prior approval of the GOVERNMENT.

30.6.7 **Gradation:** Stone for filling Filter Mattresses shall be a well-graded mixture with the following gradation:

Sieve Size	%, by Weight, Passing (inches)
3	100
2-1/2	90-100
2	35-70
1-1/2	0-15

3/4	0-5

30.6.8 **<u>Geotextiles</u>:** Geotextiles shall conform to AASHTO M 288.

30.6.9 **<u>Extensions on Mattresses</u>:** Extensions on Mattresses shall be constructed of the same material as the Filter Mattress.

30.7 **<u>Assembly of Marine Mattress Units</u>:** Empty Mattress units shall be assembled as recommended by the manufacturer and as indicated on the contract drawings. The joints where the ends and baffles of each unit join the top or bottom of the unit shall be made with a mechanical connection.

30.8 All cut ends of braid material shall be knotted within one (1) two (2) inches of the end to prevent raveling of the braid material. The braid material shall be securely knotted to the geogrid at all ends of all stitched seams, and at a spacing not to exceed three (3) feet along any stitched seam. Pieces of braid material may be spliced end to end by securely knotting. The stitches along each seam shall be sufficiently tight to close the gap between the adjacent pieces of geogrid. The braid material shall be stitched through each pair of apertures along each seam at least once. The spacing of stitches shall be reasonably uniform at approximately six (6) (minimum) stitches per foot along the entire length of each seam.

30.8.1 **<u>Extensions</u>:** The two (2) foot extensions on the Filter Mattresses shall be attached to the Filter Mattresses in the same manner as specified herein for connecting baffles and sides to the primary panel of the Mattress. Geotextile shall be attached to the underside of the extensions and the underside of the Filter Mattress, as indicated on the contract drawings.

30.8.2 **<u>Geotextile Placement</u>:** Each individual compartment of the Filter Mattresses shall be lined with geotextile. The geotextile shall be installed in each compartment such that full coverage of geotextile is provided on the top, bottom, and sides of the Mattress. The geotextile in each compartment shall be overlapped a minimum of one (1) foot to allow movement, but ensure full coverage, during attachment to the Mattress material. All fabric that is torn or punctured, prior to filling, shall be repaired or replaced by the CONTRACTOR at no additional cost to the GOVERNMENT. Unless otherwise approved by the GOVERNMENT, the repair shall consist of a patch of the same geotextile material placed over the ruptured area and lapped a minimum of thirty-six (36) inches beyond the edge of any part of the rupture.

30.8.3 **<u>Filling with Stone</u>:** The Mattresses shall be pre-filled with stone prior to placement as specified below. The stone shall be carefully placed on the geotextile in the Mattress. Stone filling operations shall carefully proceed with placement by hand or machine so as not to damage the geotextile, to assure a minimum of voids between the matstones, and to avoid deformation

throughout the filling process. Undue bulging of the Mattress material shall be avoided. The maximum height from which the stone may be dropped into the basket units shall be one (1) foot. The stone shall be leveled with the top of the Mattress to allow for proper closing of the lid. The geotextile shall be protected and carefully handled during the lid closing operation. The Mattresses shall be closed over the stone as recommended by the manufacturer.

30.8.3.1 **Mechanical Connections:** The joints where the ends and baffles of each geogrid join the top or bottom of the unit shall be made with a mechanical connection between the geogrid.

30.8.3.2 **Seaming:** All the specifications within this section apply unless otherwise approved by the GOVERNMENT. All cut ends of braid material shall be knotted within one half (½) inch to two (2) inches of the end to prevent raveling of the material. The braid material shall be securely knotted to the geogrid at all ends of all stitched seams, and at a spacing not to exceed one (1) foot along any stitched seam. Pieces of braid material may be spliced end to end by securely knotting. The stitches along each seam shall be sufficiently tight to close the gap between the adjacent pieces of geogrid. The braid material shall be stitched through each pair of apertures along each seam at least twice. The spacing of stitches shall be reasonably uniform at approximately six (6) (minimum) stitches per foot along the entire length of each seam. Seaming to connect adjacent units is not required.

30.8.3.3 **Filling:** All the specifications within this section apply unless otherwise approved by the GOVERNMENT. Each unit shall be filled and the fill shall be packed while the unit is supported in an upright position resting on its side with the open side facing upward and the long direction of the compartments running vertical. Each compartment shall be filled in lifts and each lift shall be tightly packed, except the final lift. The typical lift height shall not exceed three (3) feet (loose) or two and a half (2.5) feet (packed). The final lift height shall not exceed nine (9) inches in height and should overfill each compartment by approximately two (2) inches. Filling shall not occur on the beach.

30.8.3.4 **Compaction of Stone:** Packing of the stone fill material and complete filling of each compartment shall be accomplished by rodding and/or vibration. The degree of filling and packing shall be adequate to achieve complete filling as evidenced by tightly confined stone particles, tensioned interior diaphragms, snug bodkin connections, slight bulging of each compartment, and no evidence of air space between compartment during lifting. Excessive bulging of the unit or displacement on the interior diaphragms, such as caused by over packing or inadequate support, shall be rejected. Filling shall be accomplished in a manner that does not cause

excessive damage to the geotextile, geogrid, mechanical connection elements, or the braid.

30.8.3.5 **Lifting Hoops:** Lifting hoops shall be formed by joining the top and bottom layers of grid from each unit by means of approved mechanical connections. When filling and fabrication of a unit are complete, the unit shall be rotated to a horizontal position resting on its bottom in order to facilitate subsequent lifting.

30.8.3.6 **Geotextile Underlayment for Marine Mattress:** The sheet of geotextile shall be attached to the bottom of the marine mattress unit after filling. The geotextile shall be laid loosely, not in a stretched condition, but free of wrinkles and creases. The geotextile shall be attached, with polymeric cable ties, with the long dimension (stronger principal direction) parallel to the long axis of the mattress unit. The geotextile shall be lapped a minimum of two (2) feet at ends and sides of adjoining marine mattress units. Payment for geotextile will be based on the plan view area of the structure with the specified lengths of fabric shown in the cross-sections. The geotextile shall be integrated into the unit cost of the marine mattress. No payment will be made for the two (2) foot overlap sections or for geotextile wrapped around the sides or top of the marine mattress unit. The geotextile shall be protected at all times during construction and any geotextile damaged shall be removed and replaced with undamaged geotextile at the expense of the CONTRACTOR. A one (1) foot by one (1) foot sample of the geotextile shall be provided to the GOVERNMENT upon request.

30.8.3.7 **Observation:** The CONTRACTOR shall notify the GOVERNMENT of the time and location that the mattresses will be assembled and filled. It is preferred that the mattresses be assembled at the staging area or on the barge and transported to the site.

30.9 **Excavation Requirements:** Sand, rock, silt, clay, mud and/or other debris shall be excavated by the CONTRACTOR as necessary to achieve the specified structure crest elevation. The CONTRACTOR shall estimate the required excavation prior to making his/her bid. Existing beach material (sand) excavated for construction of the jetty extension shall be placed adjacent to the south side of the structure. Debris will be removed from the construction site and disposed of in a legal manner. Rock shall be reincorporated into the existing jetty. If waves or currents refill any excavated area, the CONTRACTOR shall re-excavate at no cost to the GOVERNMENT. The CONTRACTOR shall be responsible for protecting the Empire Waterway from deposit on or filling with any material as a result of his/her operations in the performance of the Work. The use of temporary cofferdams may be required. The cost for excavation shall be included in the cost for jetty extension on the Bid Sheet. No separate payment for excavation shall be made. The Plans show the grade as surveyed in October 2010.

30.10 **<u>Installation of Marine Mattress</u>:** The surface to receive the marine mattress unit shall be prepared to a relatively smooth condition free of obstructions, depressions, and debris and soft or low density pockets of material. Mattresses shall be set to the required lines and grades as shown on the contract drawings. Adjacent Mattresses shall be placed on the extension of grid/mesh attached to each Mattress and shall abut each other along the entire perimeter of their contact surfaces, in order to obtain a monolithic structure. The allowable tolerance on the space between adjacent Mattresses shall not be greater than four (4) inches.

The procedure used in placement of the units shall be in accordance with the recommendations of the system supplier and as approved by the GOVERNMENT. For lifting of each unit, a spreader beam and / or spreader bars shall be used in a manner that the unit is not subjected to severe bending or distortion and that the top and bottom layers of the Mattress material are tensioned uniformly across their width. Units should generally be lifted from a horizontal position. Personnel shall stay clear of the area beneath units and rigging during lifting. Tag lines and/or divers may be required to facilitate proper placement of the units.

30.11 **<u>Repair of Filter Mattresses</u>:** Damaged Mattresses shall be replaced or repaired in a manner approved by the GOVERNMENT. Damaged braid shall be repaired by installing a new braided seam in accordance with the project specifications, and extending at least one (1) foot in either direction beyond the location of the damaged braid.

30.12 **<u>Partial Placement of Mats Where Needed</u>:** Marine mattresses shall be placed as shown on the Plans. All sandy areas within the jetty footprint will require a marine mattress foundation. Based on aerial photography, sufficient foundation may exist in some areas for direct placement of armor stone without installation of marine mattresses. The CONTRACTOR shall be prepared to place, at minimum, approximately nineteen thousand six hundred thirty (19,630) square feet of mattress. The CONTRACTOR will be paid only for the mattresses placed within the lines and grades shown on the Plans. The CONTRACTOR shall conduct his/her own investigation to determine where mats may be required by determining where foundation materials (rock) may exist. No payment will be made for mattresses that are not incorporated into the Work. Placement of the total mattress foundation as shown on the Plans is acceptable, but will require some re-working of the underlying (existing) rock to prepare a suitable installation surface as described in Section 30.9.

30.13 **<u>Armor Stone Placement</u>:** Armor stones of the quality and size specified shall be placed in such a manner so as to minimize the void spaces between the stones, though chinking the voids is not permitted. Armor stone shall be placed so as to be in contact with adjacent stones and should interlock to form a compact stable structure. Armor stones should be oriented with the longest dimension perpendicular to the structure's alignment, where possible. Armor stones shall be individually placed with the stone in contact with the intended position prior to release of the stone. The stone shall be placed directly on top of the marine mattress units or

existing stone. The stone shall be placed in a manner that will prevent rolling or sliding of stone down the slope. Placing the armor stone by dumping into chutes or by similar methods shall not be allowed. The finished surface shall be relatively uniform and shall contain the maximum amount of armor stone as can be obtained by performing the Work as specified. The structure shall be constructed to the lines and grades shown on the drawings. Both during construction and upon completion, the structure will be inspected for conformance to the design. The GOVERNMENT will not pay for any stone misplaced or lost during placement.

30.14 **Displaced Materials:** Placement of stone material during periods of wave energy sufficient to cause displacement of material shall be at the CONTRACTOR'S risk. All materials lost or displaced during construction as a result of wave displacement shall be replaced at the CONTRACTOR'S expense.

30.15 **Horizontal and Vertical Limits:** The CONTRACTOR shall establish the survey control for the Work. The CONTRACTOR shall layout the horizontal and vertical limits of the Work from the control provided in the Plans. The CONTRACTOR shall be responsible for maintaining the accurate alignment and configuration of the jetty extension during construction. The CONTRACTOR shall not scale dimensions from the Plans for the purposes of Work layout. The CONTRACTOR shall be responsible for all measurements that may be required for the execution of the Work to the location and limit marks prescribed in the drawings and in these specifications.

30.16 **Tolerances:** A vertical tolerance of plus or minus six (6) inches to the design surface of the jetty crest is specified in the drawings and shall be permitted for projections and depressions of the in-place material. The horizontal tolerances are plus or minus two (2) feet. Placed material that is beyond the maximum tolerance stated herein shall be repositioned so that it is within the tolerance. The GOVERNMENT may request any stone that exceeds the tolerances be removed by CONTRACTOR at the CONTRACTOR’S expense. The CONTRACTOR may vary the base elevation of the jetty extension to accommodate the required volume of stone in the structure and meet the vertical tolerance.

30.17 **Construction Stakes:** The CONTRACTOR shall furnish, at their own expense, such stakes, templates, platforms, equipment, tools, and material, and all labor as may be required in laying out any part of the Work from the monuments, control data and elevations. The CONTRACTOR shall maintain and preserve the established stakes and other monuments or marks. If such monuments or marks are destroyed by the CONTRACTOR, they may be replaced by the GOVERNMENT at the GOVERNMENT’S discretion, and the expense of replacement will be deducted from any amounts due or to become due the CONTRACTOR. Work may be suspended at any time when location and limit marks established by the CONTRACTOR are not adequate to permit checking of the Work.

30.18 **Test Section:** The CONTRACTOR shall complete a twenty-five (25) foot test section of the structure prior to performing Work on other sections of the jetty. The

CONTRACTOR shall notify the GOVERNMENT that the test section is complete, and shall submit a survey consisting of at least two (2) cross-sections to the GOVERNMENT. The GOVERNMENT may observe the section to determine compliance with the construction plans and specifications. The CONTRACTOR may continue construction of the jetty structure once the GOVERNMENT approves the test section.

30.19 **Jetty Extension Daily Reports:** The CONTRACTOR shall report on the Daily Contractor Quality Reports all the work that has been done in regards to the Jetty Extension.

31. PRE-CONSTRUCTION AND AS-BUILT SURVEYS – BEACH AND DUNE

31.1 **Survey Requirements:** All profile surveys shall be conducted by RTK (real time kinetic) GPS or conventional survey techniques. Loop closures shall be performed on all profile control. The closure shall be less than 0.04 feet. All topographic points shall be within one (1) foot horizontally of the established profile line. All hydrographic points shall be within ten (10) feet horizontally of the established profile line. Pre-construction and as-built surveys shall be conducted along the lines listed in the plans. Surveys shall extend a minimum of five hundred (500) feet seaward of the seaward toe of fill and one hundred (100) feet north of the landward toe of fill. A pre-construction and post-construction (as-built) survey shall be performed in the vicinity of the Empire Waterway, as shown on the plans. If a fathometer is used to survey the offshore portion of the profile, the bathymetric survey and rod survey shall overlap a minimum of fifty (50) feet. A six (6) inch diameter metal plate shall be attached to the bottom of the survey rod to prevent the rod from sinking into the bottom.

31.2 **Collection of Survey Points:** Profile line surveys shall be conducted along an azimuth of 191.5°. The survey baseline on each profile line is Range 0+00. Data points collected south of the baseline shall be reported as a positive offset while data points north of the baseline shall have a negative offset. A sufficient number of points shall be taken along each line to ensure adequate description of topographic features, such as the dune crest, foreshore, primary dikes, slope breaks, and intersections of the fill with the existing grade. Data points shall be taken at a spacing of not more than twenty (20) feet with a maximum elevation difference of approximately one (1) foot between adjacent points. The product shall be a continuous line representing the entire fill template of the beach and dune.

31.3 **Survey Documentation:** All survey work shall be documented with copies supplied to the GOVERNMENT. The As-Built pay surveys may be required to be conducted in the presence of the GOVERNMENT or their representative, at the option of the GOVERNMENT. The CONTRACTOR shall provide at least three (3) working days advance notice to the GOVERNMENT prior to conducting surveys. The CONTRACTOR shall submit survey field notes to the GOVERNMENT upon completion of each survey to expedite review of payment requests. All field notes,

survey and volume computations, and the records used by the CONTRACTOR to compute the CONTRACTOR'S estimate of payment fill quantity shall be furnished to the GOVERNMENT with the Application for Progress Payment and Final Application for Payment.

31.4 **Deliverables to the GOVERNMENT:** Deliverables to the GOVERNMENT shall include processed survey data with station, range, and elevation from each of the profile baseline monuments in a hard copy form and in one of the electronic ASCII formats appearing in Appendix III of the Technical Provisions. No other formats are acceptable. Additional information to be provided the GOVERNMENT shall include any corrections and field notes.

31.5 **Pre-Construction Survey:** Pre-construction surveys shall be conducted by the CONTRACTOR. The CONTRACTOR shall provide a survey time frame with the initial construction timeline seven (7) days prior to the pre-construction conference. The surveys will be used by the GOVERNMENT to update the Plans and prepare the final cross-sections for the Plans. The CONTRACTOR shall not commence construction until all cross-sections, based upon the CONTRACTOR'S dune and beach fill area pre-construction survey, have been incorporated into the Plans for the project. A minimum of five (5) working days to a maximum of ten (10) working days will be required to update the project Plans upon receipt of the pre-construction survey data.

31.6 **As-Built Survey:** If determined by the GOVERNMENT to be an accurate representation of the post-construction fill placement, the CONTRACTOR'S as-built survey records will be used to compute the volume placed for payment purposes. The GOVERNMENT, at their discretion, may verify the as-built survey results of the CONTRACTOR. The GOVERNMENT'S survey will be used for payment purposes if, in the GOVERNMENT'S opinion, a significant difference is found between the CONTRACTOR'S as-built survey and the GOVERNMENT'S survey.

31.7 **Survey Field Notes Submittal:** The CONTRACTOR shall submit survey field notes to the GOVERNMENT upon completion of each survey to expedite review of payment requests. All field notes, survey and volume computations, and the records used by the CONTRACTOR to compute the payment fill quantity shall be furnished to the GOVERNMENT with the Application for Progress Payment and Final Application for Payment.

31.8 **Survey Discrepancy:** If there is a discrepancy between surveys conducted by the CONTRACTOR and the GOVERNMENT, the respective surveyors will attempt to resolve the survey discrepancy.

32. PRE-CONSTRUCTION AND AS-BUILT SURVEYS – MARSH

32.1 **Pre-Construction Survey:** The pre-construction survey shall be conducted by the CONTRACTOR. The CONTRACTOR shall provide a survey time frame with the

initial construction timeline seven (7) days prior to the pre-construction conference. The surveys will be used by the GOVERNMENT to update the Plans and prepare the final cross-sections for the Plans. The CONTRACTOR shall not commence construction until all cross-sections, based upon the CONTRACTOR'S marsh fill area pre-construction survey, have been incorporated into the Plans for the project. The CONTRACTOR shall propose the marsh survey method to be used at least seven (7) days prior to the pre-construction conference and demonstrate that it will provide acceptable results before the GOVERNMENT approves this surveying method. A minimum of five (5) working days and a maximum of ten (10) working days will be required to update the project Plans upon receipt of the pre-construction survey data.

32.2 **As-built Survey:** The CONTRACTOR shall perform the as-built survey no earlier than thirty (30) days following completion of marsh fill placement within a fill section. The CONTRACTOR may perform the as-built survey in a similar manner as to the pre-construction survey. However, it is anticipated that the constructed marsh may be in a semi-liquid state and conventional surveying may be difficult. The CONTRACTOR shall propose the marsh survey method to be used at least seven (7) days prior to the pre-construction conference and demonstrate that it will provide acceptable results before the GOVERNMENT approves this surveying method.

32.3 **Collection of Survey Points:** All profile surveys shall be conducted by RTK (real time kinetic) GPS or conventional survey techniques. Loop closures shall be performed on all profile control. The closure shall be less than 0.04 feet. All topographic points shall be within one (1) foot horizontally of the established profile line. All hydrographic points shall be within ten (10) feet of the established profile line. Profile line surveys shall be conducted along an azimuth of 191.5° and along the profile lines shown in the plans. The survey baseline on each profile line is Range 0+00. Data points collected south of the baseline shall be reported as a positive offset while data points north of the baseline shall have a negative offset. Surveys shall extend a minimum of fifty (50) feet south of the beach and marsh intersection and one hundred (100) feet north of the access channel and secondary fill source for primary dike construction. A six (6) inch diameter metal plate shall be attached to the bottom of the survey rod to prevent the rod from sinking into the bottom. A sufficient number of points shall be taken along each line to ensure adequate description of topographic features, such as the toe and crest of the primary dike, intersection of the fill with the existing grade, primary dike, and beach fill. Data points shall be taken at a spacing of not more than fifty (50) feet with a maximum elevation difference of approximately one (1) foot between adjacent points. The product shall be a continuous line representing the entire fill template of the marsh.

32.4 **Survey Documentation:** All survey work shall be documented with copies supplied to the GOVERNMENT. The as-built pay surveys may be required to be conducted in the presence of the GOVERNMENT or their representative, at the option of the

GOVERNMENT. The CONTRACTOR shall provide at least three (3) days advance notice to the GOVERNMENT prior to conducting surveys. The CONTRACTOR shall submit survey field notes to the GOVERNMENT upon completion of each survey to expedite review of payment requests. All field notes, survey and volume computations, and the records used by the CONTRACTOR to compute the CONTRACTOR'S estimate of payment fill quantity shall be furnished to the GOVERNMENT with the Application for Progress Payment and Final Application for Payment.

32.5 **Deliverables to the GOVERNMENT:** Deliverables to the GOVERNMENT shall include processed survey data with range and elevation from each of the profile baseline monuments in a hard copy form and in one of the electronic ASCII formats appearing in Appendix III of the Technical Provisions. No other formats are acceptable. Additional information to be provided the GOVERNMENT shall include any corrections and field notes.

33. PRE-CONSTRUCTION MAGNETOMETER SURVEY

Prior to any excavation or placement of material or submerged pipeline, the CONTRACTOR shall call Louisiana one call (DOTTIE) at 1-800-272-3020 to locate any utility lines in the area. The CONTRACTOR shall confirm the location of these utility lines and the utility lines shown in the Plans using a magnetometer survey and ground-truthing by probing. Field verification shall also include identifying and locating any above ground infrastructure. A magnetometer survey shall be performed along any proposed submerged pipeline corridor. The CONTRACTOR shall submit a report showing all magnetometer hits. Magnetometer surveys and ground-truthing by probing shall also be conducted along the surveyed profile lines and in the vicinity of any infrastructure. The Contractor shall then perform a magnetometer survey of the primary dike initial and secondary fill sources and any other area to be excavated. The survey shall be conducted using a Geometrics G-882 magnetometer or equivalent. A minimum of two magnetometer survey lines shall be run along any area of excavation. All findings shall be confirmed with the operators/owners. The Contractor shall submit the results and interpretation of the magnetometer survey and ground-truthings to the GOVERNMENT at least three (3) days prior to any excavation. The CONTRACTOR shall submit a Hazards and Pipeline Verification Plan at least seven (7) days prior to the pre-construction conference.

34. PRE-CONSTRUCTION AND AS-BUILT SURVEYS – BORROW AREAS AND OVERBURDEN DISPOSAL SITES

The CONTRACTOR shall perform a pre-construction survey of the Sandy Point borrow areas that comply with the MMS/BOEMRE Memorandum of Understanding and Amendment thereto (See Appendix III of the Environmental Provisions). The CONTRACTOR shall perform a post-construction bathymetric survey of any borrow area and the associated disposal site if material was sidecast. The survey shall include any undredged portions of the borrow area. The survey shall be conducted within seven (7) days after the completion of dredging. The bathymetric survey shall be at a grid spacing of no more than one hundred (100) feet (survey lines shall be oriented north-south and east-west). The survey lines shall extend a minimum of five hundred (500) feet from the edge of

the borrow area or disposal site; every fifth survey line shall extend a minimum of one thousand (1,000) feet from the edge of the borrow area or disposal site. A survey line at the approximate center of the borrow area shall extend one thousand (1,000) feet from the edge of the borrow area. A bathymetric plot and an electronic copy of the bathymetric survey shall be furnished to the GOVERNMENT in a format provided in Appendix III of the Technical Provisions. The bathymetric survey shall be performed using an Odom Hydrotrac fathometer or equivalent. Hydrographic surveys shall be performed in accordance with EM 1110-2-1003, dated 1 January 2002.

35. AS-BUILT SURVEYS – JETTY EXTENSION

35.1 **Jetty Extension Sections:** The CONTRACTOR shall perform the as-built surveys as one hundred (100) foot sections of the jetty are completed. The as-built surveys shall be measured along transects that are perpendicular to the alignment of the structure and that are spaced no more than twenty (20) feet apart. The survey shall extend ten (10) feet beyond the toe of the structure. Survey points shall be collected for each armor stone along the cross-section with the survey point representative of the top elevation of the stone. The intercept of the toe of the structure with existing ground shall be depicted along with additional points showing the existing ground ten (10) feet beyond the intercept. Survey transects shall also be taken at any change in the slope of the structure. A longitudinal cross-section of the jetty shall be collected along the length of the section of jetty extension.

35.2 **Collection of Survey Points:** All profile surveys shall be conducted by RTK (real time kinetic) GPS or conventional survey techniques. Loop closures shall be performed on all profile control. The closure shall be less than 0.04 feet. All points shall be within plus or minus one (1) foot horizontally of the established profile line. A sufficient number of points shall be taken along each profile to accurately represent the general shape and average trend of the constructed lines and grades. Elevations of any stone shall be measured by selecting a point on the stone that represents the average elevation of the top of the stone (determined visually). If any survey results do not accurately represent the structure, the CONTRACTOR shall resurvey any portion of a structure at no additional cost to the GOVERNMENT.

35.3 **Survey Documentation:** All survey work shall be documented with copies supplied to the GOVERNMENT. The as-built pay surveys may be required to be conducted in the presence of the GOVERNMENT or their representative, at the option of the GOVERNMENT. The CONTRACTOR shall provide at least three (3) days advance notice to the GOVERNMENT prior to conducting surveys. The CONTRACTOR shall submit survey field notes to the GOVERNMENT upon completion of each survey to expedite review of payment requests. All field notes, survey and volume computations, and the records used by the CONTRACTOR to compute the CONTRACTOR'S estimate of payment fill quantity shall be furnished to the GOVERNMENT with the Application for Progress Payment and Final Application for Payment.

35.4 **Deliverables to the GOVERNMENT:** Deliverables to the GOVERNMENT shall include processed survey data with range and elevation from each of the cross-sections in a hard copy form and in one of the electronic ASCII formats appearing in Appendix III of the Technical Provisions. No other formats are acceptable. Additional information to be provided the GOVERNMENT shall include any corrections and field notes.

36. VESSEL-SHORE TRANSFERS

For shore-to-vessel and vessel-to-shore transfers of personnel and supplies, the CONTRACTOR may utilize any commercial, public, or private facility for shallow draft vessels. It is the responsibility of the CONTRACTOR to obtain the required permission from the facility owner and to pay any costs associated with the use of the sites. The CONTRACTOR shall be responsible for any damages caused by the use of any site for landing and transfers. The CONTRACTOR shall not obstruct navigation through any navigable waterways or boat ramps. The CONTRACTOR shall use any landing site, transfer area, or staging area at their own risk. For informational purposes, the CONTRACTOR will be required to inform the GOVERNMENT of the site that the CONTRACTOR will be using for vessel-shore transfers.

37. WORK AREA AND TEMPORARY FENCING

The construction and borrow area limits available to the CONTRACTOR for accomplishing the Work are shown in the Plans. Construction access will be as shown in the Plans. The CONTRACTOR shall accomplish the Work in such a manner so as to minimize disruption to boat traffic. The CONTRACTOR will be required to exclude the public, for safety purposes, from the work areas in the immediate vicinity of the hydraulic fill placement, grading and transporting operations, or any other area that may be dangerous to the public. The storage areas shall be kept neat, orderly, and in a safe manner. Temporary fencing and cautionary signage shall be used by the CONTRACTOR, if necessary, to exclude the public from work areas and storage areas.

38. CONSTRUCTION ACCESS

The CONTRACTOR shall limit construction access to the fill area to the locations shown in the Plans or as approved by the GOVERNMENT. The accesses must be restored to the pre-construction condition upon project completion at the cost of the CONTRACTOR, except as noted in the Plans. The CONTRACTOR shall exercise caution when accessing and driving in the fill area with vehicles or equipment. In the event that damage is caused by the CONTRACTOR, the CONTRACTOR shall restore all damage to inlet jetties, vegetation, or any other structure or natural feature to pre-construction conditions or better at the cost of the CONTRACTOR. The CONTRACTOR will not receive final payment until all damage is restored to the satisfaction of the GOVERNMENT.

39. STAGING AREAS

The CONTRACTOR shall stage operations as needed within the project footprint. The staging areas shall not be located on existing marsh, wetland, or vegetated areas. The CONTRACTOR shall

cordon off and/or fence the staging areas to secure all staging areas from the public, as necessary. The staging areas shall be restored to the pre-construction condition upon project completion at the cost of the CONTRACTOR. Staging areas shall be procured by and at the expense of the CONTRACTOR.

40. MISPLACED MATERIAL, PLANT MACHINERY, EQUIPMENT, OR APPLIANCE

Should the CONTRACTOR, during the progress of the Work, lose, discard, throw overboard, sink, or misplace any material, plant, machinery, equipment, or appliance, which in the opinion of the GOVERNMENT should be removed, the CONTRACTOR shall recover and remove the same with the utmost dispatch. The CONTRACTOR shall give immediate notice, with description and location of such material, plant, machinery, equipment, or appliance, to the GOVERNMENT. Should the GOVERNMENT discover such material, plant, machinery, equipment, or appliance, the GOVERNMENT may locate through electronic means or buoy the material, plant, machinery, equipment, or appliance, and may notify the CONTRACTOR of its location. Removal of the material, plant, machinery, equipment, or appliance, shall be the responsibility of the CONTRACTOR and cost of the removal will be paid for by the CONTRACTOR. Should the CONTRACTOR refuse, neglect, or delay compliance with the above requirements, such material, plant, machinery, equipment, or appliance may be removed by the GOVERNMENT, and the cost of such removal may be deducted from any money due or to become due to the CONTRACTOR or may be recovered under the CONTRACTOR'S bond. The liability of the CONTRACTOR for the removal of a vessel wrecked or sunk without fault or negligence shall be limited to that provided in Sections 15, 19, and 20 of the River and Harbor Act of March 3, 1899 (33-U.S.C. 410 et.seq.), or most recent version, if any.

41. FINAL CLEAN-UP

Final clean-up shall include the removal of the CONTRACTOR'S plant and all equipment or materials either for disposal or reuse. The CONTRACTOR shall remove all non-perishable debris, trash, and garbage from the site of work prior to final acceptance. Plant and/or equipment or materials to be disposed of shall only be disposed of in a manner and at locations approved by the GOVERNMENT. Unless otherwise approved in writing by the GOVERNMENT, the CONTRACTOR is not permitted to abandon pipelines, cables, pipeline supports, pontoons, or other equipment or materials in the disposal area, pipeline access areas, water areas, underwater in the Gulf of Mexico, Caprien Bay, or in any harbors, passes, or inlets, or other areas adjacent to the Work site. Any stakes or other markers placed by the CONTRACTOR must be removed as a part of the final clean-up. All stakes, including grade stakes, placed during the fill for the beach and dune or marsh fill operations shall be completely removed and shall not be left buried in the fill.

42. RESTRICTION OF PUBLIC ACCESS

42.1 **Restrictive Barrier:** If requested by the GOVERNMENT, the CONTRACTOR shall be required to erect, maintain, and move as necessary, a restrictive barrier around the discharge of his hydraulic pipeline (or other mechanical off loader) or any other active area where Work may present a safety hazard to the public. In the vicinity of the discharge, the barrier shall be constructed so as to prevent the public

from approaching the discharge from any direction closer than one hundred (100) feet or to provide an area sufficient in size for the safe progression of the Work. The CONTRACTOR shall post signs in a conspicuous manner stating, **"DANGER - HIGH PRESSURE DISCHARGE FROM DREDGE."**

42.2 **Dedicated Safety and Flag Person:** If requested by the GOVERNMENT, the CONTRACTOR shall have a dedicated safety and flag person on site at all times, whose sole responsibility is preventing the public from entering the Work area.

43. SCHEDULE OF DELIVERABLES

TASK	DELIVERABLE	SUBMISSION
TP-7.2	Beach Pay Survey Request	Three (3) days prior to conducting the beach pay survey
TP-7.4	Payment Volumes - Beach and Dune Fill	Monthly - Prior to Final Acceptance
TP-7.7	Post-Construction (Pay) Survey Data - Beach and Dune Fill	Monthly - Prior to Final Acceptance
TP-8.2	Marsh Pay Survey Request	Three (3) days prior to conducting the marsh pay survey
TP-8.4	Payment Volumes - Marsh Fill	Monthly - Prior to Final Acceptance
TP-8.6	Post-Construction (Pay) Survey Data - Marsh Fill	Monthly - Prior to Final Acceptance
TP-9.2	Post-Construction (Pay) Survey Data - Primary Dike	Monthly - Prior to Final Acceptance
TP-10	Post-Construction (Pay) Survey Data - Sand Fencing	Monthly - Prior to Final Acceptance
TP-11	Post-Construction (Pay) Survey Data - Settlement Plates	Monthly - Prior to Final Acceptance
TP-12.2	Jetty Extension Foundation Pay Survey Request	Three (3) days prior to conducting the jetty extension foundation pay survey
TP-12.4	Post-Construction (Pay) Survey Data - Jetty Extension Foundation	Monthly - Prior to Final Acceptance
TP-13.2	Jetty Extension Pay Survey Request	Three (3) days prior to conducting the jetty extension pay survey
TP-13.5	Post-Construction (Pay) Survey Data - Jetty Extension	Monthly - Prior to Final Acceptance
TP-19	One-Time Beach and Dune Slope Adjustment	During Construction
TP-20	Dredge Position Data	Daily by 2 PM the following day
TP-21	Private Aids to Navigation Application	Thirty (30) days prior to laying out the subline
TP-22.2.2	Overburden Disposal Control Data	Daily, by 2 PM the following day, During Overburden Disposal
TP-22.2.4	Overburden Disposal Check Surveys	Weekly During Overburden Disposal
TP-22.5	Core Sample Visual Inspection Notice	Five (5) days prior to requested inspection date
TP-22.8	Dredge Mobilization/Demobilization Notification	Three (3) days in advance of the mobilization/demobilization

TP-23.3	Permission to Lay Submerged Pipeline Over Oil and Gas Pipelines	Prior to laying the submerged pipeline
TP-24.1	Turbidity Control Plan	Seven (7) days prior to the pre-construction conference
TP-26.2	Primary Dike Plan	Seven (7) days prior to the pre-construction conference
TP-26.4	Primary Dike Construction Method and Equipment	Seven (7) days prior to the pre-construction conference
TP-26.3	Secondary Fill Source Use Request	Prior to using the secondary fill source
TP-26.4	Primary Dike Construction Method	Seven (7) days prior to the pre-construction conference
TP-28.1	Sand Fence Tie Wire	Approval prior to sand fence construction
TP-29.5	Settlement Plate Monitoring Data	Monthly - Prior to Final Acceptance
TP-30.4.2	Stone Certification	Seven (7) days prior to the pre-construction conference
TP-30.4.4	Armor Stone Unit Weight	Seven (7) days prior to the pre-construction conference
TP-30.4.5	Drop Test	One (1) week prior to the test
TP-30.4.8	Certified Rock Quantity	Weekly
TP-30.5.1	Marine Mattress Certification	Seven (7) days prior to the pre-construction conference
TP-31.5	Beach Survey Time Frame	Seven (7) days prior to the pre-construction conference
TP-31.5	Pre-Construction Survey Data - Beach and Dune	At least ten (10) working days prior to the intended start of beach fill operations
TP-31.7	Survey Field Notes - Beach and Dune	Monthly - Prior to Final Acceptance
TP-32.1	Marsh Survey Time Frame	Seven (7) days prior to the pre-construction conference
TP-32.1	Marsh Pre-Construction Survey Method	Seven (7) days prior to the pre-construction conference
TP-32.1	Pre-Construction Survey Data - Marsh	At least ten (10) working days prior to the intended start of marsh fill operations
TP-32.2	Marsh As-Built Survey Method	Seven (7) days prior to the pre-construction conference
TP-32.4	Survey Field Notes - Marsh	Monthly - Prior to Final Acceptance
TP-33	Hazards Survey Results	Three (3) days prior to excavation
TP-33	Hazards and Pipeline Verification Plan	Seven (7) days prior to the pre-construction conference
TP-34	Borrow Area and Disposal Site As-Built Survey	Seven (7) days after the completion of dredging
TP-35.3	Survey Field Notes - Jetty Extension	Monthly - Prior to Final Acceptance

APPENDIX I AND II

VIBRACORE LOGS AND SAND SAMPLE ANALYSIS

Note: A letter designation is used for multiple vibracores within the same location (e.g. vibracore QBVC-02-11A was taken at the same location as QBVC-02-11).

APPENDIX OVERVIEW

1) 2002 Empire Vibracore Logs
A total of 81 vibracores were collected from within the three study areas. Laboratory and descriptive information for each vibracore is presented on the log sheets. Unified Soils Classification terminology is used in the core layer descriptions and key grain size information (mean grain size, silt content and sorting) for each vibracore sample is presented under the Remarks column. Multiple layer intervals are sometimes represented by a single sample. The Sample Number column is used to identify the specific sample that represents a specific layer.

Samples were analyzed by both Coastal Planning & Engineering, Inc. (CPE) and the University of New Orleans (UNO). Samples composed almost entirely of clay or silt were analyzed by UNO using a Coulter LS200 particle-size analyzer. Sandy samples were sieved by CPE using standard mechanical sieving and analysis techniques. Information from both data sets are presented on the vibracore logs.

2) 2002 Empire Individual Granularmetric Reports
Samples were analyzed by both Coastal Planning & Engineering, Inc. (CPE) and the University of New Orleans (UNO). Samples composed almost entirely of clay or silt were analyzed by UNO using a Coulter LS200 particle-size analyzer. Sandy samples were sieved by CPE using standard mechanical sieving and analysis techniques. Appendix 2 contains individual granularmetric analysis reports for each of the 235 vibracore samples analyzed by CPE.

3) 2002 Empire Individual Grain Size Distribution Curves/Histograms
Samples were analyzed by both Coastal Planning & Engineering, Inc. (CPE) and the University of New Orleans (UNO). Samples composed almost entirely of clay or silt were analyzed by UNO using a Coulter LS200 particle-size analyzer. Sandy samples were sieved by CPE using standard mechanical sieving and analysis techniques. Appendix 3 contains individual grain size distribution curves/histograms for each of the 235 vibracore samples analyzed by CPE.

4) 2002 Empire UNO Sediment Analysis
Samples were analyzed by both Coastal Planning & Engineering, Inc. (CPE) and the University of New Orleans (UNO). Samples composed almost entirely of clay or silt were analyzed by UNO using a Coulter LS200 particle-size analyzer. This appendix contains grain size data for 218 vibracore samples analyzed by UNO.

5) 2002 Empire Vibracore Photographs
Vibracores obtained by CPE during this phase of the project were photographed as complete cores and in 1.0 ft intervals.

6) 2002 Empire Penetrometer Records
Vibracore penetrometer records were collected by Eckerd College during field operations. These records show the speed of penetration for the vibracores, which is needed to determine refusal. Penetrometer records can also be useful in making estimates of sediment type in the field. Due to occasional penetrometer malfunctions, some of the records were not collected. Cores that do not have penetrometer records are as follows: EMVC-O2-02.

7) 2003 Sandy Point Vibracore Logs
A total of 35 vibracores were collected from within the study area. Laboratory and descriptive information for each vibracore is presented on the log sheets. Unified Soils Classification terminology is used in the core layer descriptions and key grain size information (mean grain size, silt content and sorting) for each vibracore sample is presented under the Remarks column. Multiple layer intervals are sometimes represented by a single sample. The Sample Number column is used to identify the specific sample that represents a specific layer.

Samples were analyzed by both Coastal Planning & Engineering, Inc. (CPE) and the University of New Orleans (UNO). Samples composed almost entirely of clay or silt were analyzed by UNO using a Coulter LS200 particle-size analyzer. Sandy samples were sieved by CPE using standard mechanical sieving and analysis techniques. Information from both data sets are presented on the vibracore logs.

8) 2003 Sandy Point Individual Granularmetric Analysis Reports
Samples were analyzed by both Coastal Planning & Engineering, Inc. (CPE) and the University of New Orleans (UNO). Samples composed almost entirely of clay or silt were analyzed by UNO using a Coulter LS200 particle-size analyzer. Sandy samples were sieved by CPE using standard mechanical sieving and analysis techniques. Appendix 8 contains individual granularmetric analysis reports for each of the 137 vibracore samples analyzed by CPE.

9) 2003 Sandy Point Individual Grain Size Distribution Curves/Histograms
Samples were analyzed by both Coastal Planning & Engineering, Inc. (CPE) and the University of New Orleans (UNO). Samples composed almost entirely of clay or silt were analyzed by UNO using a Coulter LS200 particle-size analyzer. Sandy samples were sieved by CPE using standard mechanical sieving and analysis techniques. Appendix 9 contains individual grain size distribution curves/histograms for each of the 137 vibracore samples analyzed by CPE.

10) 2003 Sandy Point UNO Sediment Analysis
Samples were analyzed by both Coastal Planning & Engineering, Inc. (CPE) and the University of New Orleans (UNO). Samples composed almost entirely of clay or silt were analyzed by UNO using a Coulter LS200 particle-size analyzer. This appendix contains grain size data for 90 vibracore samples analyzed by UNO.

11) 2003 Sandy Point Vibracore Photographs
Vibracores obtained by CPE during this phase of the project were photographed as complete cores and in 1.0 ft intervals.

12) 2003 Sandy Point Penetrometer Records
Vibracore penetrometer records were collected by Eckerd College during field operations. These records show the speed of penetration for the vibracores, which is needed to determine refusal. Penetrometer records can also be useful in making estimates of sediment type in the field.

13) 2005 Sandy Point Vibracore Logs
A total of 8 vibracores were collected from within the southeast borrow area in 2005. Laboratory and descriptive information for each vibracore is presented on the log sheets. Unified Soils

Classification terminology is used in the core layer descriptions and key grain size information (mean grain size, silt content and sorting) for each vibracore sample is presented under the *Remarks* column. Multiple layer intervals are sometimes represented by a single sample. The *Sample Number* column is used to identify the specific sample that represents a specific layer. Sandy samples collected in 2005 were sieved by CPE using standard mechanical sieving and analysis techniques. Information from both data sets are presented on the vibracore logs.

14) 2005 Sandy Point Individual Granularmetric Reports

Sandy samples collected in 2005 were sieved by CPE using standard mechanical sieving and analysis techniques. Appendix 14 contains individual granularmetric reports for each of the 30 vibracore samples collected in 2005 that were analyzed by CPE.

15) 2005 Sandy Point Individual Grain Size Distribution Curves/Histograms

Sandy samples collected in 2005 were sieved by CPE using standard mechanical sieving and analysis techniques. Appendix 15 contains individual grain size distribution curves/histograms for each of the 30 vibracore samples collected in 2005 that were analyzed by CPE.

16) 2005 Sandy Point Vibracore Photographs

The 2005 vibracores obtained by CPE were photographed in 2.0 ft intervals.

APPENDIX 1
2002 EMPIRE VIBRACORE LOGS

Coastal Planning & Engineering
2481 N.W. Boca Raton Blvd.
Boca Raton, Florida 33431
Phone # 1-561-391-8102

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 is initially based on visual field examinations and are identified on the core logs under the Classification of Materials Description. Final classifications are based on laboratory sieve analyses and are identified on the core logs in the Legend and under Remarks.

Silty, shelly, etc. — The indicated sediment type is present. The estimated percentage indicated by the Unified Soil Classification System descriptive terms selected to describe the sediment.

Definition of descriptive terms

Clean	Free of silt or clay
Very	To a high degree
Slightly	To a small degree
Isolated	Limited occurrence
Occasional	Infrequently present
Tight	Dense compacted

Grain size terms

Cobbles – above 3”
Gravel – 3” sieve to # 4 sieve
- Coarse – 3” sieve to ¾” sieve
- Fine – ¾” sieve to # 4 sieve

Sand – # 4 sieve to # 200 sieve
- Coarse - # 4 sieve to # 10 sieve
- Medium - # 10 sieve to # 40 sieve
- Fine - # 40 sieve to # 200 sieve

Fine – (silt or clay) < # 200 sieve

Proportional definition of descriptive terms

Descriptive Term	Range of Proportions
Sandy, gravelly, etc.	35 % to 50 %
Some	20 % to 35 %
Little	10 % to 20 %
Trace	1 % to 10 %
Coarse to fine	All sizes
Coarse to medium	10 % fine
Medium to fine	10 % coarse
Coarse	10 % medium and fine
Medium	10 % coarse and fine
Fine	10 % coarse and medium

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

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Legend for Geotechnical Data

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

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

Coastal Planning & Engineering
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Boca Raton, Florida 33431
Phone # 1-561-391-8102

Legend for Geotechnical Data

The naming convention used by Coastal Planning and Engineering 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: jet probe (JP), vibracore (VC) or surface sample (SS)
- Collection year (yy)
- Identification number
- Sample identification in the case of jet probes or vibracores
- Composite samples are indicated by COMP or SOBC following the identification number. COMP represents a composite developed to characterize beach compatible material. SOBC represents a composite developed to characterize sandy overburden material to be used in marsh design.

Format examples:
A) EMVC-02-01
B) EMVC-02-03 S#3

Example A is a vibracore number 1, collected in the Empire Waterway area in the year 2002.

Example B refers to sample number 3 taken from vibracore number 3, which was collected in the Empire Waterway area in 2002.

No specific format is followed for area name abbreviations, however, the name of the area is always given in the appendix title page where the data is presented.

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

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3840584 Y=266724	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) EMVC-02-01	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
	16. DATE HOLE Started 08/30/02 12:01 Completed
7. THICKNESS OF BURDEN 0.0 FT	17. ELEVATION TOP OF HOLE -19.8 FT
8. DEPTH DRILLED INTO ROCK N/A	18. TOTAL CORE RECOVERY FOR BORING 88%
9. TOTAL DEPTH OF HOLE 19.4 FT	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-19.8	0					
	1, 2, 3, 4, 5, 6, 7		CLAY, 1/2" fine grained sand layer @ 5.4', silt layer with little shell hash from top to 0.1', olive gray (5Y-4/2), (CL).		1	Sample #1 Depth = 5.0 *Mean (mm): 0.01, Phi Sorting: 2.0 *Sand 7.7%, Silt 47.7%, Clay 44.6%
-27.7	8		SILT, trace very fine grained sand, trace organics, dark gray (5Y-4/1), (ML).			
-28.5	9		CLAY, olive gray (5Y-5/2), (CL). little sandy laminae, trace organics, leafy black (10YR-2/1) organic material from 8.7' to 8.9', very dark gray (5Y-3/1), (CL).			
-31	10, 11					
-32.5	12		trace sandy laminae, 1" organic layer @ 11.7', gray (5Y-5/1), (CL).			
-33	13		SAND, fine to very fine grained, quartz, trace silt, gray (5Y-6/1), (SW-SM).			
-36.9	14, 15, 16, 17		CLAY, trace sand, dark gray (5Y-4/1), (CL).			
-39.2	18, 19		No Recovery			
	20, 21, 22, 23, 24		End of Boring Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

HOLE NO. EMVC-02-02

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3841075 Y=269441	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) EMVC-02-02	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
	16. DATE HOLE Started 08/30/02 09:48 Completed
7. THICKNESS OF BURDEN 0.0 FT	17. ELEVATION TOP OF HOLE -16.2 FT
8. DEPTH DRILLED INTO ROCK N/A	18. TOTAL CORE RECOVERY FOR BORING 88%
9. TOTAL DEPTH OF HOLE 19.4 FT	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-16.2						
-16.7	0		CLAY, soft, little sand filled burrows, trace shell hash, dark gray (5Y-4/1), (CL).		1	Sample #1 Depth = 0.3 *Mean (mm): 0.01, Phi Sorting: 2.60 *Sand 16.0%, Silt 47.4%, Clay 36.6%
	1 2 3 4 5 6		trace silty laminae, trace organics, dark gray (10YR-4/1), (CL).		2	Sample #2 Depth = 3.5 *Mean (mm): 0.01, Phi Sorting:1.90 *Sand 3.3%, Silt 53.3%, Clay 43.5%
-22.9						
	7 8 9 10 11 12		Alternating layers of CLAY and very fine SILTY SAND, trace organics, olive gray (5Y-4/2), (ML).		3	Sample #3 Depth = 9.3 *Mean (mm): 0.01, Phi Sorting: 2.30 *Sand 11.6%, Silt 62.5%, Clay 26.1%
-28.7						
	13 14 15 16 17		CLAY, trace silty laminae, olive gray (5Y-4/2), (CL).		2	
-33.3						
	18 19		No Recovery			
-35.6						
	20 21 22 23 24		End of Boring Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

PROJECT: BARATARIA

HOLE NUMBER: EMVC-02-02

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3842191 Y=271480	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) EMVC-02-03	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
7. THICKNESS OF BURDEN 0.0 FT	16. DATE HOLE Started 08/30/02 12:51 Completed
8. DEPTH DRILLED INTO ROCK N/A	17. ELEVATION TOP OF HOLE -12.8 FT
9. TOTAL DEPTH OF HOLE 19.2 FT	18. TOTAL CORE RECOVERY FOR BORING 95%
	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-12.8	0					
-13.6			CLAY, soft, 1" pocket of shell hash @ 0.6', olive gray (5Y-4/2), (CL).		1	Sample #1 Depth = 0.3 *Mean (mm): 0.08, Phi Sorting: 2.70 *Sand 30.3%, Silt 52.3%, Clay 17.5%
-16.6	1, 2, 3		SILTY CLAY, trace shell hash, dark grayish brown (10YR-4/2), (CL).		2	Sample #2 Depth = 2.3 *Mean (mm): 0.03, Phi Sorting: 2.30 *Sand 14.0%, Silt 63.2%, Clay 22.7%
-17.7	4		CLAY, trace sand filled burrows, trace shell hash, dark grayish brown (10YR-4/2), (CL).		3	Sample #3 Depth = 4.4 *Mean (mm): 0.03, Phi Sorting: 2.7 *Sand 15.8%, Silt 44.9%, Clay 39.3%
-24.5	5, 6, 7, 8, 9, 10, 11		trace silt, trace shell hash, trace organics, 1" whole shell @ 8.8', dark gray (5Y-4/1), (CL).		3	
-26.2	12, 13		Alternating layers of CLAY and fine grained SAND, trace silt, olive gray (5Y-4/2), (SC).		4	Sample #4 Depth = 12.9 *Mean (mm): 0.06, Phi Sorting: 2.20 *Sand 33.6%, Silt 53.5%, Clay 13.0%
-27.2	14		SILT, trace very fine grained sand, trace organics, 1" clay pocket @ 14.2' and 14.3', olive gray (5Y-4/2), (ML).		5	Sample #5 Depth = 13.6 Mean (mm):0.06 , Phi Sorting: 0.17 Silt: 83.67% (ML)
-28.7	15		SAND, very fine grained, quartz, little silt, 1" clay pocket @ 14.7', olive gray (5Y-4/2), (SM).		6	Sample #6 Depth = 15.5 Mean (mm):0.09 , Phi Sorting: 0.63 Silt: 32.83% (SM)
-31.1	16, 17, 18		Alternating layers of CLAY and SAND, trace silt, olive gray (5Y-4/2), (SC).		4	
-32	19		No Recovery			
	20, 21, 22, 23, 24		End of Boring Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

HOLE NO. EMVC-02-04

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3839803 Y=272873	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) EMVC-02-04	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
7. THICKNESS OF BURDEN 0.0 FT	16. DATE HOLE Started 08/30/02 13:39 Completed
8. DEPTH DRILLED INTO ROCK N/A	17. ELEVATION TOP OF HOLE -11.7 FT
9. TOTAL DEPTH OF HOLE 19.4 FT	18. TOTAL CORE RECOVERY FOR BORING 80%
	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-11.7	0		CLAY, soft, some very fine grained sand, olive gray (5Y-5/2), (CL).			
	1					
	2		trace shell hash, dark gray (5Y-4/1), (CL).			
-15.2	3					
-16.3	4		some organics, dark gray (10YR-4/1), (CL).			
	5					
	6				1	Sample #1 Depth = 2.0 *Mean (mm): 0.007, Phi Sorting: 2.10 *Sand 4.1%, Silt 62.0%, Clay 34.0%
	7					
	8		trace organics, two (<0.5") partly lithified clay fragments (pale yellow (5Y-7/3) @ 5.4', gray (5Y-5/1), (CL).			
	9					
	10					
	11					
-23.3						
	12					
	13		SILTY CLAY, gray (5Y-5/1), (CL).		2	Sample #2 Depth = 12.9 *Mean (mm): 0.014, Phi Sorting: 2.30 *Sand 18.1%, Silt 61.5%, Clay 20.4%
-26.1	14					
-27.3	15		Alternating 3" layers of CLAY and very fine grained SILTY SAND, gray (5Y-5/1), (SC).		3	Sample #3 Depth = 15.0 *Mean (mm): 0.013, Phi Sorting: 2.80 *Sand 23.3%, Silt 45.6%, Clay 31.2%
	16					
	17		No Recovery			
	18					
-31.1	19					
	20		End of Boring			
	21		Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO
	22					
	23					
	24					

PROJECT: BARATARIA

HOLE NUMBER: EMVC-02-04

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3837493 Y=270868	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) EMVC-02-05	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
	16. DATE HOLE Started 08/29/02 12:26 Completed
7. THICKNESS OF BURDEN 0.0 FT	17. ELEVATION TOP OF HOLE -14.9 FT
8. DEPTH DRILLED INTO ROCK N/A	18. TOTAL CORE RECOVERY FOR BORING 77%
9. TOTAL DEPTH OF HOLE 18.8 FT	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-14.9	0		CLAY, soft, trace shell hash, 1" fine grained sand layer at 0.3' and 1.0' olive gray (5Y-4/2), (CL).		1	Sample #1 Depth = 0.5 *Mean (mm): 0.012, Phi Sorting: 2.2 *Sand 13.5%, Silt 62.3%, Clay 24.2%
-16	1					
	2 3 4 5		1" layer of very fine grained sand @ 2.7', 2" layer of fine grained sand @ 3.4' and 4.3', 4" x 1/4" long sand filled burrow @ 3.7', olive gray (5Y-4/2), (CL).		2	Sample #2 Depth = 3.1 *Mean (mm): 0.006, Phi Sorting: 2.1 *Sand 9.7%, Silt 47.6%, Clay 42.7%
-21	6					
	7 8 9		Alternating CLAY and very fine grained SAND laminae, 1/2" layer of leafy organics @ 6.9' and 8.6', dark gray (5Y-4/1), (SC).		3	Sample #3 Depth = 7.4 *Mean (mm): 0.02, Phi Sorting: 2.3 *Sand 26.1%, Silt 58.0%, Clay 15.9%
-25	10					
	11 12 13		CLAY, trace sandy laminae, trace organics, dark gray (5Y-4/1), (CL).		4	Sample #4 Depth = 12.6 *Mean (mm): 0.012, Phi Sorting: 2.2 *Sand 13.6%, Silt 63.6%, Clay 22.9%
-29.4	14					
	15 16 17 18		No Recovery			
-33.7	19		End of Boring			
	20 21 22 23 24		Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3837653 Y=269110	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) EMVC-02-06	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
7. THICKNESS OF BURDEN 0.0 FT	16. DATE HOLE Started 08/31/02 11:25 Completed
8. DEPTH DRILLED INTO ROCK N/A	17. ELEVATION TOP OF HOLE -17.6 FT
9. TOTAL DEPTH OF HOLE 19.6 FT	18. TOTAL CORE RECOVERY FOR BORING 68 %
	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-17.6	0					
-18.3			SAND, quartz, trace clay, trace shell hash, dark gray (5Y-4/1), (SW-SM).		1 2	Sample #1 Depth = 0.1 Mean (mm): 0.11, Phi Sorting: 0.70 Silt: 14.75% (SM)
-19.4	1		CLAY, olive gray (5Y-4/2), (CL). some silty laminae, dark gray (5Y-4/1), (CL).		3	
-20	2		SILT, some very fine grained sand, trace organics, gray (5Y-5/1), (ML)		4 3	Sample #4 Depth = 2.0 Mean (mm): 0.07, Phi Sorting: 0.43 Silt: 59.38% (ML)
-21.4	3		CLAY, some silty laminae, gray (5Y-5/1), (CL).		5	Sample #5 Depth = 3.3 Mean (mm): 0.10, Phi Sorting: 0.53 Silt: 10.96% (SM)
-22.5	4		SAND, very fine grained, trace silt, gray (5Y-5/1), (SW-SM).		3	
-24	5 6		CLAY, some silty laminae, dark gray (5Y-4/1), (CL). CLAYEY SILT, dark gray (5Y-4/1), (ML).		6	Sample #6 Depth = 5.5 *Mean (mm): 0.013, Phi Sorting: 2.2 *Sand 14.8%, Silt 65.6%, Clay 19.7%
-24.5			CLAY, olive gray (5Y-4/2), (CL).		2	Sample #2 Depth = 6.6 *Mean (mm): 0.005, Phi Sorting: 1.8 *Sand 0.0%, Silt 55.6%, Clay 44.5%
-28	7 8 9 10		some silty laminae, gray (5Y-5/1), (CL).		3	Sample #3 Depth = 8.5 *Mean (mm): 0.035, Phi Sorting: 2.4 *Sand 39.7% Silt 48.8%, Clay 11.5%
-30.9	11 12 13		little silty laminae, gray (5Y-5/1), (CL).		2	
-37.2	14 15 16 17 18 19		No Recovery			
	20 21 22 23 24		End of Boring Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3833687 Y=270236	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) EMVC-02-07	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
	16. DATE HOLE Started 08/31/02 12:45 Completed
7. THICKNESS OF BURDEN 0.0 FT	17. ELEVATION TOP OF HOLE -18.9 FT
	18. TOTAL CORE RECOVERY FOR BORING 81%
8. DEPTH DRILLED INTO ROCK N/A	19. SIGNATURE OF GEOLOGIST ML and JB
9. TOTAL DEPTH OF HOLE 19.0 FT	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-18.9	0					
-20.9	1, 2		CLAY, little very fine grained silty sand laminae, trace shell hash, dark gray (5Y-4/1), (CL).		1	Sample #1 Depth = 1.0 *Mean (mm): 0.013, Phi Sorting: 2.1 *Sand 14.6%, Silt 63.8%, Clay 21.7%
-23.6	3, 4		SAND, fine grained, quartz, trace silt, gray (5Y-5/1), (SP).		2	Sample #2 Depth = 3.3 Mean (mm): 0.13, Phi Sorting: 0.68 Silt: 6.78% (SW-SM)
-24.6	5		SAND, fine grained, quartz, trace silt, little shell hash, trace shell fragments, <0.5" partially lithified clay fragments @ 4.8', gray (5Y-5/1), (SW-SM).		3 4	Sample #3 Depth = 4.9 Mean (mm): 0.19, Phi Sorting: 2.31 Silt: 15.4% (SM) Sample #4 Depth = 5.5 Mean (mm): 0.10, Phi Sorting: 0.89 Silt: 45.2% (ML)
-27.5	6, 7, 8		SILTY SAND, very fine grained, quartz, gray (5Y-5/1), (ML). SAND, fine grained, quartz, trace silt, trace organics, some clay laminae from 5.7'-5.9' and 8.1'-8.3', 1" clay lens @ 8.5', olive gray (5Y-5/2), (SP).		5	Sample #5 Depth = 7.6 Mean (mm): 0.17, Phi Sorting: 0.51 Silt: 3.72% (SP)
-31	9, 10, 11, 12		Alternating CLAY and very fine grained SILTY SAND laminae, dark gray (5Y-4/1), (SC).		6	Sample #6 Depth = 9.6 *Mean (mm): 0.023, Phi Sorting: 2.8 *Sand 38.4%, Silt 43.7%, Clay 17.8%
-34.2	13, 14, 15		CLAY, little silty sand pockets, olive gray (5Y-4/2), (CL).		1	
-37.9	16, 17, 18		No Recovery			
	19		End of Boring			
	20, 21, 22, 23, 24		Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3834669 Y=271902	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) EMVC-02-08	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
7. THICKNESS OF BURDEN 0.0 FT	16. DATE HOLE Started 08/29/02 10:47 Completed
8. DEPTH DRILLED INTO ROCK N/A	17. ELEVATION TOP OF HOLE -15.9 FT
9. TOTAL DEPTH OF HOLE 18.9 FT	18. TOTAL CORE RECOVERY FOR BORING 36%
	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-15.9	0					
-17.7	1		CLAY, trace sandy laminae, trace sand filled burrows, trace shell hash, dark gray (5Y-4/1), (CL).		1	Sample #1 Depth = 0.5 *Mean (mm): 0.013, Phi Sorting: 2.8 *Sand 20.4%, Silt 48.0%, Clay 31.6%
-18.8	2		SANDY SILT, dark gray (5Y-4/1), (ML).		2	Sample #2 Depth = 2.4 Mean (mm): 0.07, Phi Sorting:0.35 Silt: 67.1% (ML)
-21.8	3 4 5		Alternating CLAY and very fined grained quartz SAND layers, little silt, dark gray (5Y-4/1), (SC).		3	Sample #3 Depth = 4.9 *Mean (mm): 0.008, Phi Sorting: 2.2 *Sand 9.0%, Silt 58.5%, Clay 32.5%
-22.6	6		SAND, fine to very fine grained, quartz, little silt, olive gray (5Y-5/2), (SM).		4	Sample #4 Depth = 6.4 Mean (mm): 0.08, Phi Sorting:0.61 Silt: 32.9% (SM)
	7		CLAY, dark gray (5Y-4/1), (CL).			
	8 9 10 11 12 13 14 15 16 17 18		No Recovery			
-34.8	19		End of Boring			
	20 21 22 23 24		Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

PROJECT: BARATARIA

HOLE NUMBER: EMVC-02-08

HOLE NO. EMVC-02-08A

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3834666 Y=271905	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) EMVC-02-08A	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
	16. DATE HOLE Started 08/29/02 11:15 Completed
7. THICKNESS OF BURDEN 0.0 FT	17. ELEVATION TOP OF HOLE -15.9 FT
8. DEPTH DRILLED INTO ROCK N/A	18. TOTAL CORE RECOVERY FOR BORING 89%
9. TOTAL DEPTH OF HOLE 18.6 FT	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-15.9	0					
	1					
	2					
	3		JET			
	4					
	5					
-21.7						
	6		CLAY, dark gray (5Y-4/1), (CL).		1	
			SAND, very fine grained, quartz, some silt, olive gray (5Y-4/2), (SW-SM).		2	
	7		SAND, fine grained, quartz, trace silt, 2" pocket of very fine grained sand with organics @ 8.5', olive gray (5Y-5/2), (SP).		3	Sample #3 Depth = 7.8 Mean (mm): 0.14, Phi Sorting: 0.71 Silt: 6.49% (SW-SM)
	8					
-24.9	9					
	10		SAND, very fine grained, quartz, some silt, trace organics, olive gray (5Y-5/2), (SM).		2	Sample #2 Depth = 10.7 Mean (mm): 0.07, Phi Sorting:0.47 Silt: 48.7% (ML)
	11					
-28.2	12					
	13		SAND, very fine grained, quartz, some clayey laminae, trace organics, very dark gray (5Y-3/1), (SC).		4	Sample #4 Depth = 13.5 *Mean (mm): 0.03, Phi Sorting: 2.5 *Sand 42.4%, Silt 44.8%, Clay 12.8%
-30.3	14					
-31	15		CLAY, dark gray (5Y-4/1), (CL).		1	
-31.7			SAND, very fine grained, quartz, some clayey laminae, very dark gray (5Y-3/1), (SC).		4	
	16		CLAY, dark gray (5Y-4/1), (CL).		1	Sample #1 Depth = 16.5 *Mean (mm): 0.009, Phi Sorting: 2.4 *Sand 12.6%, Silt 56.1%, Clay 31.4%
-33.1	17					
	18		No Recovery			
-34.5						
	19		End of Boring			
	20					
	21		Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO
	22					
	23					
	24					

PROJECT: BARATARIA | HOLE NUMBER: EMVC-02-08A

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3829719 Y=274358	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) EMVC-02-09	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
	16. DATE HOLE Started 08/29/02 08:14 Completed
7. THICKNESS OF BURDEN 0.0 FT	17. ELEVATION TOP OF HOLE -15.6 FT
8. DEPTH DRILLED INTO ROCK N/A	18. TOTAL CORE RECOVERY FOR BORING 100%
9. TOTAL DEPTH OF HOLE 9.4 FT	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-15.6	0					
-16.2			CLAY, soft, olive gray (5Y-4/2), (CL).		1	Sample #1 Depth = 0.3 *Mean (mm): 0.01, Phi Sorting:1.9 *Sand 6.6%, Silt 69.1%, Clay 24.4%
-16.7	1		some sandy laminae, trace shell hash, dark gray (5Y-4/1), (CL).		2	Sample #2 Depth = 0.8 *Mean (mm): 0.021, Phi Sorting: 2.7 *Sand 27.1%, Silt 54.2%, Clay 18.7%
	2		trace sand laminae/burrows, dark gray (5Y-4/1), (CL).		3	Sample #3 Depth = 2.5 *Mean (mm): 0.005, Phi Sorting: 2.0 *Sand 8.5%, Silt 48.3%, Clay 43.2%
-19.5	3					
	4		SANDY SILT, little clay laminae, olive gray (5Y-5/2), (ML).		4	Sample #4 Depth = 4.4 Mean (mm): 0.07, Phi Sorting:0.42 Silt: 66.46% (ML)
-20.9	5					
	6					
	7		SAND, fine grained, quartz, trace silt, olive gray (5Y-5/2), (SP).		5	Sample #5 Depth = 7.0 Mean (mm): 0.10, Phi Sorting: 0.58 Silt: 9.84% (SM)
	8					
-25	9					
	10		End of Boring			
	11					
	12					
	13					
	14					
	15					
	16					
	17					
	18					
	19					
	20					
	21		Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO
	22					
	23					
	24					

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3829716 Y=274360	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) EMVC-02-09A	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
7. THICKNESS OF BURDEN 0.0 FT	16. DATE HOLE Started 08/29/02 09:54 Completed
8. DEPTH DRILLED INTO ROCK N/A	17. ELEVATION TOP OF HOLE -15.6 FT
9. TOTAL DEPTH OF HOLE 18.6 FT	18. TOTAL CORE RECOVERY FOR BORING 69%
	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-15.6	0					
-24.3	1, 2, 3, 4, 5, 6, 7, 8		JET			
-26	9, 10		SAND, fine grained, quartz, trace silt, olive gray (5Y-5/2), (SP).		9 S#5	
-31.1	11, 12, 13, 14, 15		Alternating very fine grained quartz SAND and CLAY layers, 1" x 0.5" decomposed wood @ 11.2', gray (5Y-5/1), (SC).		1	Sample #1 Depth = 12.0 *Mean (mm): 0.017, Phi Sorting: 2.5 *Sand 25.9%, Silt 54.4%, Clay 19.7%
-34.2	16, 17, 18		No Recovery			
	19, 20, 21, 22, 23, 24		End of Boring Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

PROJECT: BARATARIA

HOLE NUMBER: EMVC-02-09A

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3830073 Y=271961	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) EMVC-02-10	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
	16. DATE HOLE Started 08/30/02 16:42 Completed
7. THICKNESS OF BURDEN 0.0 FT	17. ELEVATION TOP OF HOLE -19.1 FT
8. DEPTH DRILLED INTO ROCK N/A	18. TOTAL CORE RECOVERY FOR BORING 90%
9. TOTAL DEPTH OF HOLE 19.4 FT	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-19.1						
-19.8	0		CLAY, little sand, trace shell hash, dark gray (5Y-4/1), (CL).		1	Sample #1 Depth = 0.5 *Mean (mm): 0.009, Phi Sorting: 2.10 *Sand 9.4%, Silt 61.4%, Clay 29.3%
-21.8	1, 2		CLAYEY SAND, quartz, trace shell hash, trace organics, dark gray (5Y-4/1), (SC).		2	Sample #2 Depth = 1.5 *Mean (mm): 0.017, Phi Sorting: 2.70 *Sand 25.9%, Silt 52.5%, Clay 21.7%
-22.8	3		SAND, very fine grained, quartz, some silt, olive gray (5Y-4/2), (SM).		3	Sample #3 Depth = 3.0 Mean (mm): 0.08, Phi Sorting: 0.49 Silt: 36.86% (ML)
-26.9	4, 5, 6, 7		CLAY, some sandy laminae, olive gray (5Y-4/2), (CL).		4	Sample #4 Depth = 6.5 *Mean (mm): 0.017, Phi Sorting: 2.50 *Sand 23.0%, Silt 57.1%, Clay 19.8%
-28.5	8, 9		SAND, fine to very fine grained, quartz, some silt, olive gray (5Y-4/2), (SM).		5	Sample #5 Depth = 8.0 Mean (mm): 0.08, Phi Sorting: 0.43 Silt: 34.41% (ML)
-29.9	10		CLAY, some sandy laminae, dark gray (5Y-4/1), (CL).		4	
-36.6	11, 12, 13, 14, 15, 16, 17		trace sandy laminae, dark gray (5Y-4/1), (CL).		1	
-38.5	18, 19		No Recovery			
	20, 21, 22, 23, 24		End of Boring Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3829938 Y=273317	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) EMVC-02-11	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
7. THICKNESS OF BURDEN 0.0 FT	16. DATE HOLE Started 08/30/02 15:05 Completed
8. DEPTH DRILLED INTO ROCK N/A	17. ELEVATION TOP OF HOLE -17.3 FT
9. TOTAL DEPTH OF HOLE 13.1 FT	18. TOTAL CORE RECOVERY FOR BORING 95%
	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-17.3	0					
-19.5	1, 2		CLAY, trace sand laminae and burrows, dark gray (5Y-4/1), (CL).		1	Sample #1 Depth = 1.4 *Mean (mm): 0.007, Phi Sorting: 2.0 *Sand 6.7%, Silt 57.5%, Clay 35.8%
-24	3, 4, 5, 6		Alternating CLAY and very fine grained quartz SAND layers, trace silt, olive gray (5Y-4/2), (SC).		2	Sample #2 Depth = 4.0 *Mean (mm): 0.007, Phi Sorting: 2.2 *Sand 9.4%, Silt 54.0%, Clay 36.5%
-29.8	7, 8, 9, 10, 11, 12		Alternating fine grained SAND and SILTY SAND layers, quartz, little clay laminae, 2" clay layer @ 10.6' and 11.4', dark gray (5Y-4/1), (SM).		3	Sample #3 Depth = 9.6 *Mean (mm): 0.024, Phi Sorting: 2.3 *Sand 39.6%, Silt 46.8%, Clay 13.6%
-30.4	13		No Recovery			
	14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24		End of Boring Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3829938 Y=273315	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) EMVC-02-11A	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
	16. DATE HOLE Started 08/30/02 15:44 Completed
7. THICKNESS OF BURDEN 0.0 FT	17. ELEVATION TOP OF HOLE -17.3 FT
8. DEPTH DRILLED INTO ROCK N/A	18. TOTAL CORE RECOVERY FOR BORING 100%
9. TOTAL DEPTH OF HOLE 18.4 FT	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-17.3	0					
	1					
	2					
	3					
	4					
	5					
	6		JET			
	7					
	8					
	9					
	10					
	11					
-29.3	12					
	13		SILT, little very fine grained quartz sand, 1" clay layer @ 12.1', dark gray (5Y-4/1), (ML).		1	Sample #1 Depth = 13.0 Mean (mm): 0.07, Phi Sorting: 0.34 Silt: 63.37% (ML)
	14					
-32.5	15					
	16		CLAY, little silty layers, dark gray (5Y-4/1), (CL).			
	17					
-35.9	18					
	19		End of Boring			
	20					
	21		Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO
	22					
	23					
	24					

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3831288 Y=275546	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) EMVC-02-12	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
7. THICKNESS OF BURDEN 0.0 FT	16. DATE HOLE Started 08/30/02 14:25 Completed
8. DEPTH DRILLED INTO ROCK N/A	17. ELEVATION TOP OF HOLE -12.5 FT
9. TOTAL DEPTH OF HOLE 19.4 FT	18. TOTAL CORE RECOVERY FOR BORING 66%
	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-12.5	0					
-15.8	1, 2, 3		CLAY, trace sand laminae, 1" layer with some shell hash @ 2.3', 1" organic layer @ 2.1', olive gray (5Y-4/2), (CL).		1	Sample #1 Depth = 1.8 *Mean (mm): 0.013, Phi Sorting: 2.1 *Sand 13.7%, Silt 64.2%, Clay 22.0%
-19.6	4, 5, 6		SILT, trace clay, 1" shelly layer @ 3.4', olive gray (5Y-4/2), (ML).		2	Sample #2 Depth = 4.5 *Mean (mm): 0.012, Phi Sorting: 2.1 *Sand 7.5%, Silt71.5% Clay 20.9%
	7		SAND, fine grained, quartz, trace silt, light olive gray (5Y-6/2), (SP).		3	Sample #3 Depth = 7.2 Mean (mm): 0.15 , Phi Sorting: 0.64 Silt: 4.12% (SW-SM)
-21.2	8		CLAY, little sandy laminae, dark gray (5Y-4/1), (CL).		1	
-22.3	9		SILTY SAND, very fine grained, quartz, little clay laminae, olive gray (5Y-4/2), (ML).		2	
-22.8	10		CLAY, little sand laminae, dark gray (5Y-4/1), (CL).		1	
-23.8	11		SILTY SAND, very fine grained, quartz, trace clay, dark gray (5Y-4/1), (ML).		2	
-25.4	12		CLAY, trace sandy laminae, olive gray (5Y-4/2), (CL).		1	
-31.9	13, 14, 15, 16, 17, 18, 19		No Recovery			
	20, 21, 22, 23, 24		End of Boring Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3830794 Y=273579	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) EMVC-02-13	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
	15. ELEVATION GROUND WATER
6. DIRECTION OF HOLE VERTICAL	16. DATE HOLE Started 08/31/02 14:11 Completed
7. THICKNESS OF BURDEN 0.0 FT	17. ELEVATION TOP OF HOLE -16.2 FT
	18. TOTAL CORE RECOVERY FOR BORING 97%
8. DEPTH DRILLED INTO ROCK N/A	19. SIGNATURE OF GEOLOGIST ML and JB
9. TOTAL DEPTH OF HOLE 19.0 FT	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-16.2	0					
-18.6	1, 2		CLAY, some silty laminae with a gradational increase of silt toward bottom of layer, trace shell hash, olive gray (5Y-4/2), (CL).		1	Sample #1 Depth = 1.6 *Mean (mm): 0.016, Phi Sorting: 2.1 *Sand 16.8%, Silt 66.6%, Clay 16.6%
-20.3	3, 4		SAND, very fine grained, quartz, some silt, trace clay, gray (5Y-5/1), (SM).		2	Sample #2 Depth = 3.0 Mean (mm): 0.09 , Phi Sorting: 0.66 Silt: 30.41% (SM)
-21	4		very fine grained, quartz, trace silt, gray (5Y-5/1), (SW-SM).		3	Sample #3 Depth = 4.4 Mean (mm): 0.1 , Phi Sorting: 0.55 Silt: 12.99% (SM)
-26.2	5, 6, 7, 8, 9, 10		Alternating SILT and CLAY layers, olive gray (5Y-4/2), (CL).		1	
-28.2	11, 12		SILTY CLAY, little sand, olive gray (5Y-4/2), (CL).		4	Sample #4 Depth = 11.0 *Mean (mm): 0.015, Phi Sorting: 2.5 *Sand 20.2%, Silt 57.3% Clay 22.4%
-34	13, 14, 15, 16, 17		CLAY, some silt laminae, olive gray (5Y-5/2), (CL).		1	
-34.7	18		olive gray (5Y-5/2), (CL).			
-35.2	19		No Recovery			
	20		End of Boring			
	21, 22, 23, 24		Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

PROJECT: BARATARIA	HOLE NUMBER: EMVC-02-13

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3828942 Y=273085	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) EMVC-02-14	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
	16. DATE HOLE Started 08/31/02 15:00 Completed
7. THICKNESS OF BURDEN 0.0 FT	17. ELEVATION TOP OF HOLE -18.4 FT
8. DEPTH DRILLED INTO ROCK N/A	18. TOTAL CORE RECOVERY FOR BORING 64%
9. TOTAL DEPTH OF HOLE 19.0 FT	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-18.4	0					
-19.3	1		CLAY, dark gray (5Y-4/1), (CL).		1	Sample #1 Depth = 0.4 *Mean (mm): 0.006 , Phi Sorting: 2.0 *Sand 7.5%, Silt 51.6%, Clay 41.0%
-22	2, 3		some very fine grained silty sand laminae, dark gray (5Y-4/1), (CL).		2	Sample #2 Depth = 1.6 *Mean (mm): 0.007 , Phi Sorting: 2.0 *Sand 7.8%, Silt 61.4%, Clay 30.8%
-22.9	4		CLAYEY SAND, very fine grained, quartz, little silt, 2" clay pocket at 4.2', dark gray (5Y-4/1), (SC).		3	Sample #3 Depth = 3.9 *Mean (mm): 0.019 , Phi Sorting: 2.8 *Sand 38.6%, Silt 40.3%, Clay 21.1%
-26	5, 6, 7		SAND, fine to very fine grained, quartz, little silt, trace clay laminae, olive gray (5Y-5/2), (SM).		4	Sample #4 Depth = 6.5 Mean (mm): 0.09 , Phi Sorting: 0.59 Silt: 24.87% (SM)
-28.8	8, 9, 10		Very fine grained SAND and CLAY mixture, dark gray (5Y-4/1), (SC).		5	Sample #5 Depth = 8.6 *Mean (mm): 0.018, Phi Sorting: 2.5 *Sand 24.6%, Silt 56.9%, Clay 18.5%
-29.8	11		CLAY, trace sand laminae, olive gray (5Y-4/2), (CL).		1	
-30.6	12		Very fine grained SAND and CLAY mixture, dark gray (5Y-4/1), (SC).		5	
-37.4	13, 14, 15, 16, 17, 18, 19		No Recovery			
	20, 21, 22, 23, 24		End of Boring 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3828940 Y=273083	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) EMVC-02-14A	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
7. THICKNESS OF BURDEN 0.0 FT	16. DATE HOLE Started 08/31/02 15:40 Completed
8. DEPTH DRILLED INTO ROCK N/A	17. ELEVATION TOP OF HOLE -18.5 FT
9. TOTAL DEPTH OF HOLE 18.6 FT	18. TOTAL CORE RECOVERY FOR BORING 100%
	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-18.5	0					
	1					
	2					
	3					
	4					
	5					
	6		Jet			
	7					
	8					
	9					
	10					
-29.9	11					
	12		CLAY, some very fine grained silty sand laminae, dark gray (5Y-4/1), (CL).		14S#2	
-32.3	13					
-32.8	14		dark gray (5Y-4/1), (CL).		14S#1	
	15		Very fine grained SAND and CLAY mixture, dark gray (5Y-4/1), (SC).		14S#5	
-35.5	16					
	17		CLAY, trace sandy laminae, dark gray (5Y-4/1), (CL).		14S#1	
-37.2	18					
	19		End of Boring			
	20		Expansion from 18.6'			
	21		1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO
	22					
	23					
	24					

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3831687 Y=274739	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) EMVC-02-15	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
7. THICKNESS OF BURDEN 0.0 FT	16. DATE HOLE Started 09/04/02 08:09 Completed
8. DEPTH DRILLED INTO ROCK N/A	17. ELEVATION TOP OF HOLE -13.5 FT
9. TOTAL DEPTH OF HOLE 19.0 FT	18. TOTAL CORE RECOVERY FOR BORING 97 %
	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-13.5	0					
-15.8	1, 2		CLAY, soft to 1.3', dark gray (5Y-4/1), (CL).		1	
-17.9	3, 4		SILT, some clay laminae, dark gray (5Y-4/1), (ML).		2	Sample #2 Depth = 3.0 *Mean (mm): 0.011, Phi Sorting: 2.2 *Sand 12.7%, Silt 64.1%, Clay 23.3%
-18.7	5		SAND, very fine grained, quartz, little silt, dark gray (5Y-4/1), (SW-SM).		3	Sample #3 Depth = 4.6 Mean (mm): 0.08, Phi Sorting: 0.47 Silt: 19.18% (SM)
-26.6	6, 7, 8, 9, 10, 11, 12, 13		Alternating SILT, CLAY and very fine grained quartz SAND layers/laminae, dark gray (5Y-4/1), (ML).		4	Sample #4 Depth = 8.8 *Mean (mm): 0.032, Phi Sorting: 2.4 *Sand 61.7%, Silt 26.1%, Clay 12.1% Mean (mm): 0.08, Phi Sorting: 0.56 Silt: 62.1% (ML)
-28	14		CLAY, trace silt laminae, dark gray (5Y-4/1), (CL).		1	Sample #1 Depth = 14.0 *Mean (mm): 0.007, Phi Sorting: 2.1 *Sand 7.6%, Silt 60.2%, Clay 32.3%
-30.7	15, 16, 17		SILT, some clay laminae, dark gray (5Y-4/1), (ML).		2	
-32	18		CLAY, trace silt laminae, dark gray (5Y-4/1), (CL).		1	
-32.5	19		No Recovery			
	20, 21, 22, 23, 24		End of Boring Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3833393 Y=272680	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) EMVC-02-16	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
	16. DATE HOLE Started 09/04/02 09:03 Completed
7. THICKNESS OF BURDEN 0.0 FT	17. ELEVATION TOP OF HOLE -15.6 FT
8. DEPTH DRILLED INTO ROCK N/A	18. TOTAL CORE RECOVERY FOR BORING 92 %
9. TOTAL DEPTH OF HOLE 14.5 FT	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-15.6	0					Sample #1 Depth = 0.4
-16.3			CLAY, soft, very dark gray (5Y-3/1), (CL).		1	*Mean (mm): 0.012 , Phi Sorting: 2.1 *Sand 13.1%, Silt 63.5%, Clay 23.5%
-17.4	1		Alternating CLAY and SILTY CLAY layers, dark gray (5Y-4/1), (CL).		2	Sample #2 Depth = 1.4 *Mean (mm): 0.012 , Phi Sorting: 2.3 *Sand 15.8%, Silt 61.1%, Clay 23.1%
-18.6	2		CLAY, dark gray (5Y-4/1), (CL).		3	Sample #3 Depth = 2.5 *Mean (mm): 0.008, Phi Sorting: 2.2 *Sand 8.9%, Silt 60.1%, Clay 31.0%
-21.5	3, 4, 5		SILTY CLAY, dark gray (5Y-4/1), (CL).		4	Sample #4 Depth = 4.5 *Mean (mm): 0.011 , Phi Sorting: 2.4 *Sand 14.5%, Silt 60.2%, Clay 25.2%
-22.2	6		CLAY, trace organics, dark grayish brown (10YR-4/2), (CL).		3	
-22.7	7		Alternating CLAY and SILTY CLAY layers, dark gray (5Y-4/1), (CL).		2	
-25.3	8, 9		CLAY, 1" fine grained sand layer @ 8.0', 1" silty clay layer @ 9.1', 3" very fine grained sand layer @ 9.2', peat layer from 9.5' to 9.7', dark gray (5Y-4/1), (CL).		3	
	10		SAND, very fine grained, quartz, trace silt, gray (5Y-5/1), (SP).		5	
-27.4	11		CLAY, dark gray (5Y-4/1), (CL).		3	
-28.9	12, 13		SAND, fine grained, quartz, trace silt, trace clay laminae, olive gray (5Y-5/2), (SP).		5	Sample #5 Depth = 12.6 Mean (mm): 0.19 , Phi Sorting: 0.52 Silt: 2.45% (SP)
-30.1	14		No Recovery			
	15		End of Boring			
	16, 17, 18, 19, 20, 21, 22, 23, 24		Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3833428 Y=272705	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) EMVC-02-16A	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
	16. DATE HOLE Started Completed 09/05/02 8:08
7. THICKNESS OF BURDEN 0.0 FT	17. ELEVATION TOP OF HOLE -15.6 FT
8. DEPTH DRILLED INTO ROCK N/A	18. TOTAL CORE RECOVERY FOR BORING 98 %
9. TOTAL DEPTH OF HOLE 18.4 FT	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-15.6	0					
	1					
	2					
	3					
	4					
	5		Jet			
	6					
	7					
	8					
	9					
	10					
-26.7	11					
	12		CLAY, olive gray (5Y-5/2), (CL).		1	Sample #1 Depth = 12.0 *Mean (mm): 0.004, Phi Sorting: 1.7 *Sand 5.9% Silt 40.5% Clay 53.6%
-28.3						
	13		SAND, fine grained, quartz, coarser at base of unit, trace silt, 2" clay layer @ 14.2', light olive gray (5Y-6/2), (SP).		2	Sample #2 Depth = 13.5 Mean (mm): 0.14, Phi Sorting: 0.72 Silt: 7.59% (SW-SM)
	14					
-30.8	15					
	16		CLAY, olive gray (5Y-5/2), (CL).		1	
-32.1						Sample #3 Depth = 16.8
-32.5			CLAYEY SAND, fine grained, quartz, dark gray (5Y-4/1), (SC).		3	*Mean (mm): 0.014, Phi Sorting: 1.8 *Sand 12.1% Silt 72.4% Clay 15.5%
	17		SAND, fine grained, quartz, 1" clay burrow @ 17.9', light olive gray (5Y-6/2), (SP).		2	
-33.7						
-34	18		No Recovery			
	19		End of Boring			
	20					
	21		Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO
	22					
	23					
	24					

PROJECT: BARATARIA | HOLE NUMBER: EMVC-02-16A

HOLE NO. EMVC-02-17

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3831941 Y=270239	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) EMVC-02-17	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
7. THICKNESS OF BURDEN 0.0 FT	16. DATE HOLE Started 09/05/02 08:59 Completed
8. DEPTH DRILLED INTO ROCK N/A	17. ELEVATION TOP OF HOLE -20.1 FT
9. TOTAL DEPTH OF HOLE 19.0 FT	18. TOTAL CORE RECOVERY FOR BORING 44 %
	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-20.1	0					
-21.3	1		CLAY, soft, some very fine grained sand laminae, trace shell hash, olive gray (5Y-4/2), (CL).		1	Sample #1 Depth = 0.8 *Mean (mm): 0.016, Phi Sorting: 2.4 *Sand 20.9%, Silt 58.5%, Clay 20.6
	2 3		SAND, fine to very fine grained, quartz, trace silt, trace shell hash, 1" shelly sand layer @ 4.0', olive gray (5Y-4/2), (SP).		2	Sample #2 Depth = 3.0 Mean (mm): 0.13, Phi Sorting: 0.64 Silt: 5.8% (SW-SM)
-24	4					
	5 6 7		SANDY SILT, some silty clay layers, little organic laminae, olive gray (5Y-4/2), (SC).		3	Sample #3 Depth = 6.0 *Mean (mm): 0.024, Phi Sorting: 3.0 *Sand 35.9%, Silt 43.7%, Clay 20.3%
-28.4	8					
	9 10 11 12 13 14 15 16 17 18		No Recovery			
-39.1	19					
	20 21 22 23 24		End of Boring Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

PROJECT: BARATARIA	HOLE NUMBER: EMVC-02-17

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3831927 Y=270212	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) EMVC-02-17A	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
	16. DATE HOLE Started 09/05/02 10:15 Completed
7. THICKNESS OF BURDEN 0.0 FT	17. ELEVATION TOP OF HOLE -20.1 FT
8. DEPTH DRILLED INTO ROCK N/A	18. TOTAL CORE RECOVERY FOR BORING 100 %
9. TOTAL DEPTH OF HOLE 18.4 FT	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-20.1	0					
-27.1	1, 2, 3, 4, 5, 6		Jet			
-32.3	7, 8, 9, 10, 11, 12		SAND, very fine grained, quartz, little silt, some clay, dark gray (5Y-4/1), (SM-SC).		1	Sample #1 Depth = 9.5 *Mean (mm): 0.026, Phi Sorting: 2.9 *Sand 32.6% Silt 49.3% Clay 18.2%
-33.4	13		CLAY, trace very fine grained sand laminae, olive gray (5Y-4/2), (CL).		2	Sample #2 Depth = 12.5 *Mean (mm): 0.009, Phi Sorting: 2.2 *Sand 9.1% Silt 62.8% Clay 28.2%
-37.3	14, 15, 16, 17		SILTY CLAY, some very fine grained quartz sand, dark gray (5Y-4/1), (SM-SC).		1	
-39	18		CLAY, trace very fine grained sand laminae, olive gray (5Y-4/2), (CL).		2	
	19, 20, 21, 22, 23, 24		End of Boring Expansion from 18.4'. Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

HOLE NO. EMVC-02-18

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3832701 Y=271426	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) EMVC-02-18	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
	16. DATE HOLE Started 09/05/02 10:49 Completed
7. THICKNESS OF BURDEN 0.0 FT	17. ELEVATION TOP OF HOLE -18.2 FT
8. DEPTH DRILLED INTO ROCK N/A	18. TOTAL CORE RECOVERY FOR BORING 94 %
9. TOTAL DEPTH OF HOLE 19.0 FT	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-18.2	0					
-19.2			CLAY, soft, trace organics, olive gray (5Y-4/2), (CL).		1	Sample #1 Depth = 0.5 *Mean (mm): 0.007, Phi Sorting: 1.5 *Sand 0.0% Silt 73.0% Clay 26.9%
-19.8	1		SILTY SAND, very fine grained, quartz, trace shell hash, dark gray (5Y-4/1), (SM).		2	Sample #2 Depth = 1.3 *Mean (mm): 0.072, Phi Sorting: 0.8 *Sand 66.6% Silt 29.5% Clay 3.9%
-20.5	2		CLAY, trace very fine grained sand laminae, olive gray (5Y-4/2), (CL).		1	
-21.1					2	Mean (mm): 0.07, Phi Sorting: 0.52 Silt: 54.0% (ML)
	3		SILTY SAND, very fine grained, quartz, 1" organic layer @ 2.2', 1" clay layer @ 2.8', dark gray (5Y-4/1), (SM).			
	4		SAND, fine to very fine grained, quartz, some silt laminae, trace clay laminae, gray (5Y-5/1), (SM).		3	Sample #3 Depth = 4.0 Mean (mm): 0.12, Phi Sorting: 0.70 Silt: 8.45% (SW-SM)
	5					
-24.4	6					
-25.2			CLAY, some silt, trace organics, dark gray (5Y-4/1), (CL).		4	
	7					
	8		SAND, very fine grained, quartz, some silt, trace organics, gray (5Y-5/1), (SM).		5	Sample #5 Depth = 8.5 Mean (mm): 0.08, Phi Sorting: 0.57 Silt: 38.46% (SM)
	9					
-28.6	10					
	11		SILTY CLAY, trace very fine grained sand laminae, dark gray (5Y-4/1), (CL).		4	Sample #4 Depth = 11.0 *Mean (mm): 0.013, Phi Sorting: 2.3 *Sand 17.4% Silt 61.4% Clay 21.3%
	12					
	13					
	14					
-32.8						
	15		CLAY, trace silty sand laminae, dark gray (5Y-4/1), (CL).		1	
	16					
	17					
-36						
	18		No Recovery			
-37.2	19					
			End of Boring			
	20					
	21		Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO
	22					
	23					
	24					

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3830842 Y=274333	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) EMVC-02-19	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
7. THICKNESS OF BURDEN 0.0 FT	16. DATE HOLE Started 09/05/02 11:36 Completed
8. DEPTH DRILLED INTO ROCK N/A	17. ELEVATION TOP OF HOLE -14.9 FT
9. TOTAL DEPTH OF HOLE 19.6 FT	18. TOTAL CORE RECOVERY FOR BORING 61 %
	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-14.9	0					
-16.2	1		CLAY, soft, trace shell hash, very dark gray (5Y-3/1), (CL).		1	Sample #1 Depth = 0.7 *Mean (mm): 0.018, Phi Sorting: 2.4 *Sand 23.3% Silt 57.6% Clay 19.1%
-19.2	2, 3, 4		trace silt laminae from 3.8'-4.2', trace silty burrows, color grades from dark grayish brown (2.5Y-4/2) at the top to dark gray (5Y-4/1) at the bottom, (CL).		2	Sample #2 Depth = 3.2 *Mean (mm): 0.008, Phi Sorting: 2.3 *Sand 13.3% Silt 51.2% Clay 35.4%
-20.4	5		SAND, fine grained, quartz, trace silt, gray (5Y-5/1), (SP).		3	Sample #3 Depth = 5.0 Mean (mm): 0.12, Phi Sorting: 0.59 Silt: 5.7% (SW-SM)
-21.4	6		SILTY CLAY, 1" round partially lithified clay nodule @ 5.6', dark gray (5Y-4/1), (ML).		4	Sample #4 Depth = 6.0 *Mean (mm): 0.024, Phi Sorting: 2.3 *Sand 31.9% Silt 54.4% Clay 13.7%
-21.9	7		CLAY, trace sand laminae, dark gray (5Y-4/1), (CL).		2	
-22.9	8		SAND, fine to very fine grained, quartz, some silt, 1" clay pocket @ 7.7', 1" organic pocket @ 7.2', dark gray (5Y-4/1), (SM).		5	Sample #5 Depth = 7.4 Mean (mm): 0.10, Phi Sorting: 0.71 Silt: 18.89% (SM)
-24.6	9		CLAY, little silty laminae, dark gray (5Y-4/1), (CL).			
-26.8	10, 11, 12		SILTY CLAY, dark gray (5Y-4/1), (CL).		2	
-34.5	13, 14, 15, 16, 17, 18, 19		No Recovery			
	20, 21, 22, 23, 24		End of Boring Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

HOLE NO. EMVC-02-19A

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3830841 Y=274332	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) EMVC-02-19A	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
7. THICKNESS OF BURDEN 0.0 FT	16. DATE HOLE Started 09/05/02 12:07 Completed
8. DEPTH DRILLED INTO ROCK N/A	17. ELEVATION TOP OF HOLE -14.9 FT
9. TOTAL DEPTH OF HOLE 18.6 FT	18. TOTAL CORE RECOVERY FOR BORING 89 %
	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-14.9	0					
	1					
	2					
	3					
	4					
	5		JET			
	6					
	7					
	8					
	9					
-25.4	10					
	11		SILTY CLAY, dark gray (5Y-4/1), (CL).			
-27.4	12					
	13					
	14				19S#2	
	15		CLAY, little silty laminae, dark gray (5Y-4/1), (CL).			
	16					
	17					
-33	18					
-33.5			No Recovery			
	19		End of Boring			
	20					
	21		Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO
	22					
	23					
	24					

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3835900 Y=271017	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) EMVC-02-20	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
	16. DATE HOLE Started 09/05/02 13:54 Completed
7. THICKNESS OF BURDEN 0.0 FT	17. ELEVATION TOP OF HOLE -16.1 FT
8. DEPTH DRILLED INTO ROCK N/A	18. TOTAL CORE RECOVERY FOR BORING 83 %
9. TOTAL DEPTH OF HOLE 19.0 FT	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-16.1	0					
-17.7	1		CLAY, soft from 0.0' to 0.7', olive gray (5Y-4/2), (CL).		1	Sample #1 Depth = 1.0 *Mean (mm): 0.011, Phi Sorting: 2.3 *Sand 13.5% Silt 60.8% Clay 25.7%
-20.1	2, 3, 4		SILTY CLAY, some very fine grained sand, dark gray (5Y-4/1), (SM-SC).		2	Sample #2 Depth = 2.5 *Mean (mm): 0.016, Phi Sorting: 2.4 *Sand 20.6% Silt 59.8% Clay 19.7%
-22.4	5, 6		SAND, fine to very fine grained, quartz, trace silt, olive gray (5Y-4/2), (SP).		3	Sample #3 Depth = 5.0 Mean (mm): 0.16, Phi Sorting: 0.51 Silt: 2.89% (SP)
-23.9	7		SAND, fine grained, quartz, trace silt, gray (5Y-5/1), (SP).		4	Sample #4 Depth = 6.8 Mean (mm): 0.15, Phi Sorting: 0.69 Silt: 5.02% (SW-SM)
-31.8	8, 9, 10, 11, 12, 13, 14, 15		SILTY CLAY, some very fine grained sand, dark gray (5Y-4/1), (SM-SC).		5	Sample #5 Depth = 13.0 *Mean (mm): 0.022, Phi Sorting: 2.5 *Sand 30.0% Silt 53.5% Clay 16.5%
-35.1	16, 17, 18		No Recovery			
	19		End of Boring			
	20, 21, 22, 23, 24		Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3835948 Y=270980	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) EMVC-02-20A	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
7. THICKNESS OF BURDEN 0.0 FT	16. DATE HOLE Started 09/15/02 09:47 Completed
8. DEPTH DRILLED INTO ROCK N/A	17. ELEVATION TOP OF HOLE -16.1 FT
9. TOTAL DEPTH OF HOLE 18.4 FT	18. TOTAL CORE RECOVERY FOR BORING 93 %
	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-16.1	0					
	1					
	2					
	3					
	4					
	5					
	6					
	7		JET			
	8					
	9					
	10					
	11					
	12					
	13					
-30.1	14					
	15		Alternating SILT and CLAY layers, olive gray (5Y-4/2), (ML).		1	Sample #1 Depth = 15.5 *Mean (mm): 0.017 , Phi Sorting: 2.6 *Sand 26.5%, Silt 53.4%, Clay 20.1%
	16					
-33.1	17		SAND, very fine grained, quartz, little silt, olive gray (5Y-4/2), (SM).		2	Sample #2 Depth = 17.5 Mean (mm): 0.09 , Phi Sorting: 0.66 Silt: 20.94% (SM)
-34.2	18					
-34.5			No Recovery			
	19		End of Boring			
	20					
	21		Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO
	22					
	23					
	24					

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3831900 Y=271711	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) EMVC-02-21	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
	16. DATE HOLE Started 09/05/02 14:43 Completed
7. THICKNESS OF BURDEN 0.0 FT	17. ELEVATION TOP OF HOLE -17.9 FT
8. DEPTH DRILLED INTO ROCK N/A	18. TOTAL CORE RECOVERY FOR BORING 99 %
9. TOTAL DEPTH OF HOLE 19.0 FT	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-17.9	0					
-18.7			CLAY, soft, olive gray (5Y-4/2), (CL).		1	
-19.6	1		Alternating CLAY and fine grained quartz SILTY SAND layers, olive gray (5Y-4/2), (CL).		2	
-20.8	2		SAND, very fine grained, quartz, little silt, olive gray (5Y-4/2), (SM).		3	Sample #3 Depth = 2.2 *Mean (mm): 0.033, Phi Sorting: 2.1 *Sand 54.1% Silt 34.6% Clay 11.3% Mean (mm): 0.08, Phi Sorting: 0.61 Silt: 48.01% (ML)
-21.5	3		Alternating CLAY and fine grained quartz SILTY SAND layers, olive gray (5Y-4/2), (CL).		2	
-22.7	4		SAND, very fine grained, quartz, little silt, olive gray (5Y-4/2), (SM).		3	
-25.7	5, 6, 7		Alternating CLAY and fine grained quartz SILTY SAND layers/laminae, olive gray (5Y-4/2), (CL).		2	Sample #2 Depth = 6.6 *Mean (mm): 0.016, Phi Sorting: 2.3 *Sand 22.6% Silt 58.7% Clay 18.8%
-28.3	8, 9, 10		CLAY, little silt laminae, olive gray (5Y-4/2), (CL).		4	Sample #4 Depth = 9.3 *Mean (mm): 0.013, Phi Sorting: 2.4 *Sand 16.9% Silt 60.3% Clay 22.9%
-30.4	11, 12		Alternating CLAY and fine grained SILTY SAND layers/laminae, olive gray (5Y-4/2), (CL).		2	
-32.8	13, 14		CLAY, trace silt laminae, olive gray (5Y-4/2), (CL).		1	Sample #1 Depth = 14.4 *Mean (mm): 0.010, Phi Sorting: 2.5 *Sand 14.9% Silt 52.7% Clay 32.4%
-35.3	15, 16, 17		little silt laminae, olive gray (5Y-4/2), (CL).		4	
-36.8	18		olive gray (5Y-4/2), (CL).		1	
-38.9	19		No Recovery			
	20		End of Boring			
	21, 22, 23, 24		Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3833742 Y=270990	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Eckerd College
4. HOLE NO. (As shown on drawing title and file number) EMVC-02-22	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
	16. DATE HOLE Started 09/05/02 15:15 Completed
7. THICKNESS OF BURDEN 0.0 FT	17. ELEVATION TOP OF HOLE -18.7 FT
8. DEPTH DRILLED INTO ROCK N/A	18. TOTAL CORE RECOVERY FOR BORING 92 %
9. TOTAL DEPTH OF HOLE 19.0 FT	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-18.7	0					
-21.4	1, 2		SAND, fine to very fine grained, quartz, trace silt, trace shell hash, some shell hash from 2.2'-2.4', very dark gray (5Y-3/1), (SW-SM).		1	Sample #1 Depth = 1.0 Mean (mm): 0.12, Phi Sorting: 0.78 Silt: 13.58% (SM)
-22.7	3, 4		SAND, fine grained, quartz, trace silt, little clay laminae, trace shell hash, 2" clay layer @ 3.8', very dark gray (5Y-3/1), (SC).		2	Sample #2 Depth = 3.0 *Mean (mm): 0.012, Phi Sorting: 2.9 *Sand 20.1% Silt 45.6% Clay 34.1% Mean (mm): 0.10, Phi Sorting: 0.81 Silt:25.87% (SM)
-24.9	5, 6		SAND, fine to very fine grained, quartz, trace silt, trace organics, dark gray (5Y-4/1), (SW-SM).		3	Sample #3 Depth = 5.0 Mean (mm): 0.09, Phi Sorting: 0.57 Silt: 15.06% (SM)
-25.7	7		CLAYEY SILT, trace organics, dark gray (5Y-4/1), (ML).		4	
-26.8	8		SAND, fine grained, trace silt, quartz, trace clay laminae, dark gray (5Y-4/1), (SW-SM).		5	Sample #5 Depth = 7.3 Mean (mm): 0.15, Phi Sorting: 0.75 Silt: 10.62% (SW-SM)
-33.1	9, 10, 11, 12, 13, 14		Alternating CLAY and SILT laminae, trace organics, dark gray (5Y-4/1), (ML).		4	Sample #4 Depth = 11.0 *Mean (mm): 0.02, Phi Sorting: 2.0 *Sand 26.9% Silt 59.5% Clay 13.7%
-34.3	15		CLAY, trace silty laminae, dark gray (5Y-4/1), (CL).			
-35.4	16		Alternating CLAY and SILT laminae, trace organics, dark gray (5Y-4/1), (ML).			
-36.1	17		CLAY, trace silty laminae, dark gray (5Y-4/1), (CL).			
-37.7	18		No Recovery			
	19, 20, 21, 22, 23, 24		End of Boring Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

PROJECT: BARATARIA

HOLE NUMBER: EMVC-02-22

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3834858 Y=270176	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) EMVC-02-23	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
	15. ELEVATION GROUND WATER
6. DIRECTION OF HOLE VERTICAL	16. DATE HOLE Started 09/05/02 15:52 Completed
7. THICKNESS OF BURDEN 0.0 FT	17. ELEVATION TOP OF HOLE -17.9 FT
	18. TOTAL CORE RECOVERY FOR BORING 95 %
8. DEPTH DRILLED INTO ROCK N/A	19. SIGNATURE OF GEOLOGIST ML and JB
9. TOTAL DEPTH OF HOLE 19.0 FT	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-17.9	0		CLAY, soft, very dark gray (5Y-3/1), (CL).		1	
-19.3	1		SAND, very fine grained, quartz, little silt, trace shell hash, dark gray (5Y-4/1), (SM).		2	Sample #2 Depth = 1.0 Mean (mm): 0.10, Phi Sorting: 0.62 Silt: 14.29% (SM)
-23.9	2, 3, 4, 5, 6		Alternating CLAY, SILT, and very fine grained SAND laminae, dark gray (5Y-4/1), (SM-SC).		3	Sample #3 Depth = 4.5 *Mean (mm): 0.024, Phi Sorting: 2.1 *Sand 36.9% Silt 50.4% Clay 12.7%
-25.6	7		CLAY, little sandy silt laminae, dark gray (5Y-4/1), (CL).		1	Sample #1 Depth = 7.0 *Mean (mm): 0.018, Phi Sorting: 2.3 *Sand 26.8% Silt 56.4% Clay 16.8%
-29.2	8, 9, 10, 11		Alternating CLAY, SILT, and very fine grained SAND laminae, dark gray (5Y-4/1), (SM-SC).		3	
-31.7	12, 13		CLAY, little sandy silt laminae, dark gray (5Y-4/1), (CL).		1	
-33.9	14, 15, 16		Alternating CLAY, SILT, and very fine grained SAND laminae, dark gray (5Y-4/1), (SM-SC).		3	
-36	17, 18		CLAY, little sandy silt laminae, dark gray (5Y-4/1), (CL).		1	
-36.9	19		No Recovery			
	20, 21, 22, 23, 24		End of Boring Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3831860 Y=271018	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) EMVC-02-24	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
7. THICKNESS OF BURDEN 0.0 FT	16. DATE HOLE Started 09/05/02 16:22 Completed
8. DEPTH DRILLED INTO ROCK N/A	17. ELEVATION TOP OF HOLE -18.7 FT
9. TOTAL DEPTH OF HOLE 19.0 FT	18. TOTAL CORE RECOVERY FOR BORING 99 %
	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-18.7	0					
-20.4	1		CLAY, soft, olive gray (5Y-4/2), (CL).		1	Sample #1 Depth = 1.0 *Mean (mm): 0.011, Phi Sorting: 2.3 *Sand 14.7% Silt 56.1% Clay 29.2%
-21.7	2		SAND, fine to very fine grained, quartz, trace silt, some shell hash from 2.4'-2.6', dark gray (5Y-4/1), (SP).		2	Sample #2 Depth = 2.3 Mean (mm): 0.13, Phi Sorting: 0.54 Silt: 2.83% (SP)
-22.2	3		CLAY, dark gray (5Y-4/1), (CL).		1	
-25.5	4, 5, 6		SAND, very fine grained, quartz, little silt, trace clay laminae, trace organics, gray (5Y-5/1), (SW-SM).		3	Sample #3 Depth = 5.0 Mean (mm): 0.09, Phi Sorting: 0.49 Silt: 20.41% (SM)
-26.7	7		Alternating SILT and CLAY laminae, dark gray (5Y-4/1), (ML).		4	
-28.1	8, 9		CLAY, some silt laminae, dark gray (5Y-4/1), (CL).		1	
-31.7	10, 11, 12		Alternating SANDY SILT and CLAY laminae, dark gray (5Y-4/1), (ML).		4	Sample #4 Depth = 11.0 *Mean (mm): 0.022, Phi Sorting: 2.3 *Sand 35.3% Silt 50.3% Clay 14.4%
-33	13		CLAY, trace silty laminae, dark gray (5Y-4/1), (CL).		1	
-34.2	14, 15		Alternating SILT and CLAY laminae, dark gray (5Y-4/1), (ML).		4	
-34.8	16		CLAY, trace silty laminae, dark gray (5Y-4/1), (CL).		1	
-37.5	17, 18		Alternating SILT and CLAY laminae, dark gray (5Y-4/1), (ML).		4	
	19		No Recovery			
			End of Boring			
	20, 21, 22, 23, 24		Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3832257 Y=272466	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Rossfelder P-3 Electric Vibracorer	12. MANUFACTURER'S DESIGNATION OF DRILL Eckerd College
4. HOLE NO. (As shown on drawing title and file number) EMVC-02-25	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
7. THICKNESS OF BURDEN 0.0 FT	16. DATE HOLE Started 09/05/02 17:14 Completed
8. DEPTH DRILLED INTO ROCK N/A	17. ELEVATION TOP OF HOLE -16.6 FT
9. TOTAL DEPTH OF HOLE 19.0 FT	18. TOTAL CORE RECOVERY FOR BORING 100 %
	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-16.6						
-18.2	0–1		CLAY, trace silty sand laminae, trace organics, dark gray (5Y-4/1), (CL).		1	Sample #1 Depth = 0.5 *Mean (mm): 0.013, Phi Sorting: 3.0 *Sand 22.8% Silt 39.9% Clay 37.2%
-19.7	1–3		little silty sand laminae, dark gray (5Y-4/1), (CL).		2	Sample #2 Depth = 2.5 *Mean (mm): 0.019, Phi Sorting: 2.2 *Sand 24.0% Silt 60.2% Clay 15.8%
-23.1	3–6		Alternating CLAY, SILT and very fine grained SAND laminae, dark gray (5Y-4/1), (SM-SC).		3	Sample #3 Depth = 5.0 *Mean (mm): 0.03, Phi Sorting: 2.1 *Sand 51.2% Silt 38.1% Clay 10.7% Mean (mm): 0.07, Phi Sorting: 0.52 Silt: 54.48%, (ML)
-23.8	6–7		CLAY, trace very fine grained silty sand laminae, dark gray (5Y-4/1), (CL).		1	
-26.9	7–10		Alternating CLAY, SILT and very fine grained SAND laminae, dark gray (5Y-4/1), (SM-SC).		3	
	10–11		CLAY, trace very fine grained silty sand laminae, dark gray (5Y-4/1), (CL).		1	
-31.6	11–14		Alternating CLAY, SILT and very fine grained SAND laminae, dark gray (5Y-4/1), (SM-SC).		3	
-35.6	14–19		CLAY, little very fine grained silty sand layers, dark gray (5Y-4/1), (CL).		2	
	19–24		End of Boring Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT	BARATARIA
2. LOCATION (Coordinates or Station)	X=3835697 Y=271891
3. DRILLING AGENCY:	Eckerd College
4. HOLE NO. (As shown on drawing title and file number)	EMVC-02-26
5. NAME OF DRILLER	Gregg Brooks, PhD
6. DIRECTION OF HOLE	VERTICAL
7. THICKNESS OF BURDEN	0.0 FT
8. DEPTH DRILLED INTO ROCK	N/A
9. TOTAL DEPTH OF HOLE	19.0 FT
10. SIZE AND TYPE OF BIT	3"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	NAVD 88
12. MANUFACTURER'S DESIGNATION OF DRILL	Rossfelder P-3 Electric Vibracorer
13. TOT NO. OF OVERBURDEN SAMPLES TAKEN	Disturbed: 0 Undisturbed: 0
14. TOTAL NO. OF CORE BOXES	1
15. ELEVATION GROUND WATER	
16. DATE HOLE Started / Completed	09/12/02 15:19
17. ELEVATION TOP OF HOLE	-15.0 FT
18. TOTAL CORE RECOVERY FOR BORING	95 %
19. SIGNATURE OF GEOLOGIST	ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-15						
-16.6	0–1		SAND, fine grained, quartz, little silt, trace shell hash, soft clay from 0'-0.1', very dark gray (5Y-3/1), (SM).		1	Sample #1 Depth = 0.3 Mean (mm): 0.12, Phi Sorting: 0.70 Silt: 11.23% (SM)
-18.8	2–3		CLAYEY SAND, quartz, dark gray (5Y-4/1), (SC).		2	Sample #2 Depth = 2.6 *Mean (mm): 0.025, Phi Sorting: 2.6 *Sand 46.7%, Silt 38.0%, Clay 15.3%
-20.4	4–5		Alternating CLAY,and fine grained quartz SAND layers, dark gray (5Y-4/1), (SC).		3	Sample #3 Depth = 4.3 *Mean (mm): 0.02, Phi Sorting: 2.8 *Sand 33.8%, Silt 45.2%, Clay 20.9%
-22.4	6–7		SAND, fine grained, quartz, trace silt, 2" silty pockets @ 5.7' and 7.0', gray (5Y-5/1), (SP).		4	Sample #4 Depth = 6.4 Mean (mm): 0.16, Phi Sorting: 0.59 Silt: 4.35% (SP)
-23.5	8		SAND, fine grained, quartz, trace silt, little organics, clay lamina @ 7.5', gray (5Y-5/1), (SW-SM).		5 2	Sample #5 Depth = 8.8 Mean (mm): 0.11, Phi Sorting: 0.80 Silt: 18.2% (SM)
-24.1	9		CLAYEY SAND, quartz, dark gray (5Y-4/1), (SC).		5	
-25.8	10		SAND, fine grained, quartz, little silt, little organics, gray (5Y-5/1), (SW-SM).		2	
-26.6	11		CLAYEY SAND, quartz, dark gray (5Y-4/1), (SC).		6	
-27.2	12		CLAY, dark gray (5Y-4/1), (CL).		2	
-33	13–17		CLAYEY SAND, quartz, dark gray (5Y-4/1), (SC). CLAY, little sandy laminae, dark gray (5Y-4/1), (CL).		6	Sample #6 Depth = 15.2 *Mean (mm): 0.009, Phi Sorting: 2.5 *Sand 13.1%, Silt 50.7%, Clay 36.3%
-34	18		No Recovery			
	19–24		End of Boring Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3833632 Y=272138	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) EMVC-02-27	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
	15. ELEVATION GROUND WATER
6. DIRECTION OF HOLE VERTICAL	16. DATE HOLE Started 09/12/02 15:58 Completed
7. THICKNESS OF BURDEN 0.0 FT	17. ELEVATION TOP OF HOLE -16.5 FT
8. DEPTH DRILLED INTO ROCK N/A	18. TOTAL CORE RECOVERY FOR BORING 91 %
9. TOTAL DEPTH OF HOLE 19.0 FT	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-16.5	0					
-17.1			SAND, fine grained, quartz, trace silt, trace shell hash, clay from 0'-0.1', olive gray (5Y-4/2), (SW-SM).		1	Sample #1 Depth = 0.4 Mean (mm): 0.14, Phi Sorting: 0.75 Silt: 7.7% (SW-SM)
-24.1	1, 2, 3, 4, 5, 6, 7		CLAY, little sandy laminae, soft from 3.2'-3.8' and 6.0'-6.8', olive gray (5Y-4/2), (CL).		2	Sample #2 Depth = 4.0 *Mean (mm): 0.008, Phi Sorting: 2.2 *Sand 9.7% Silt 61.3% Clay 29.1%
-26.4	8, 9		SAND, fine grained, quartz, trace silt, 1" clayey sand layer @ 8.2', olive gray (5Y-5/2), (SP).		3	Sample #3 Depth = 9.0 Mean (mm): 0.10, Phi Sorting: 0.66 Silt: 16.06% (SM)
-27.9	10, 11		SANDY CLAY, clay layer from 11.1'-11.4', dark gray (5Y-4/1), (CL).		4	Sample #4 Depth = 10.5 *Mean (mm): 0.025, Phi Sorting: 2.1 *Sand 42.7%, Silt 44.8%, Clay 12.5%
-30.7	12, 13, 14		CLAYEY SAND, quartz, 2" fine grained quartz sand layer @ 11.5', dark gray (5Y-4/1), (SC).		5	Sample #5 Depth = 13.0 Mean (mm): 0.08, Phi Sorting: 0.52 Silt: 46.19% (ML)
-32.3	15		SANDY CLAY, dark gray (5Y-4/1), (CL).		4	
-33.7	16, 17		CLAY, trace sandy laminae, dark gray (5Y-4/1), (CL).		2	
-35.5	18		No Recovery			
	19, 20, 21, 22, 23, 24		End of Boring Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3833741 Y=269449	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) EMVC-02-28	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
7. THICKNESS OF BURDEN 0.0 FT	16. DATE HOLE Started 09/12/02 17:10 Completed
8. DEPTH DRILLED INTO ROCK N/A	17. ELEVATION TOP OF HOLE -19.6 FT
9. TOTAL DEPTH OF HOLE 19.0 FT	18. TOTAL CORE RECOVERY FOR BORING 99 %
	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-19.6	0					
-20.3			CLAY, soft, dark gray (5Y-4/1), (CL).		2	
-21.8	1–2		SAND, fine grained, quartz, trace silt, little clay laminae, dark gray (5Y-5/1), (SW-SM).		1	Sample #1 Depth = 1.3 Mean (mm): 0.14, Phi Sorting: 0.65 Silt: 5.12% (SW-SM)
	3–18		CLAY, some silt laminae, trace sand layers, dark gray (5Y-4/1), (CL).		2	Sample #2 Depth = 10.0 *Mean (mm): 0.013, Phi Sorting: 2.2 *Sand 14.8% Silt 64.4% Clay 20.7%
-38.4	19		No Recovery			
			End of Boring			
	20–24					* Data Analyzed by UNO

Note:
1) Soils are field visually classified in accordance with the Unified Soil Classification System.

PROJECT: BARATARIA

HOLE NUMBER: EMVC-02-28

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3835271 Y=270842	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) EMVC-02-29	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
7. THICKNESS OF BURDEN 0.0 FT	16. DATE HOLE Started 09/15/02 08:01 Completed
8. DEPTH DRILLED INTO ROCK N/A	17. ELEVATION TOP OF HOLE -16.9 FT
9. TOTAL DEPTH OF HOLE 19.0 FT	18. TOTAL CORE RECOVERY FOR BORING 89 %
	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-16.9	0					
-18.7	1		CLAY, 1" silty sand layer with trace shell hash from 0'-0.1', olive gray (5Y-4/2), (CL).		1	Sample #1 Depth = 1.0 *Mean (mm): 0.008, Phi Sorting: 1.9 *Sand 6.5% Silt 65.1% Clay 28.4%
-19.9	2, 3		SANDY SILT, olive gray (5Y-4/2), (ML).		2	Sample #2 Depth = 2.5 Mean (mm): 0.08, Phi Sorting: 0.57 Silt: 36.27% (SM)
-22.5	4, 5		Alternating CLAY and SILT laminae, olive gray (5Y-4/2), (CL).		3	Sample #3 Depth = 4.5 *Mean (mm): 0.017, Phi Sorting: 2.4 *Sand 23.4% Silt 58.3% Clay 18.4%
-24.2	6, 7		SAND, fine to very fine grained, quartz, trace silt, gray (5Y-5/1), (SP).		4	Sample #4 Depth = 6.5 Mean (mm): 0.16, Phi Sorting: 0.49 Silt: 2.59% (SP)
-28.4	8, 9, 10, 11		SILTY SAND, quartz, trace organics, olive gray (5Y-5/2), (SM).		5	Sample #5 Depth = 9.0 Mean (mm): 0.09, Phi Sorting: 0.5 Silt: 20.38% (SM)
-33.8	12, 13, 14, 15, 16, 17		Alternating CLAY and SILT laminae, olive gray (5Y-4/2), (CL).		3	
-35.9	18, 19		No Recovery			
	20, 21, 22, 23, 24		End of Boring Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3835952 Y=270034	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) EMVC-02-30	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
	16. DATE HOLE Started 09/15/02 08:50 Completed
7. THICKNESS OF BURDEN 0.0 FT	17. ELEVATION TOP OF HOLE -17.5 FT
8. DEPTH DRILLED INTO ROCK N/A	18. TOTAL CORE RECOVERY FOR BORING 97 %
9. TOTAL DEPTH OF HOLE 19.0 FT	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-17.5	0					
-18.2			SAND, very fine grained, quartz, little silt, trace shell hash, 1" clay pocket @ 0.1', very dark gray (5Y-3/1), (SW-SM).		1	
-18.8	1		CLAY, olive gray (5Y-4/2), (CL).		2	Sample #1 Depth = 1.7 Mean (mm): 0.09, Phi Sorting: 0.68 Silt: 28.12% (SM)
-19.5	2		SAND, very fine grained, quartz, little silt, trace shell hash, dark gray (5Y-4/1), (SW-SM).		1	
			CLAY, olive gray (5Y-4/2), (CL).		2	
	3					
	4					
	5		SILT, very fine grained quartz SAND, and CLAY mixture, olive gray (5Y-4/2), (ML).		3	Sample #3 Depth = 5.0 *Mean (mm): 0.029, Phi Sorting: 1.6 *Sand 33.8%, Silt 56.1%, Clay 10.1%
	6					
	7					
	8					
-26.7	9					
	10					
	11					
	12					
	13		CLAY, trace silty sand laminae, olive gray (5Y-4/2), (CL).		2	Sample #2 Depth = 15.0 *Mean (mm): 0.016, Phi Sorting: 2.6 *Sand 23.7%, Silt 55.4%, Clay 21.0%
	14					
	15					
	16					
	17					
-36	18					
-36.5	19		No Recovery			
			End of Boring			
	20					
	21					* Data Analyzed by UNO
	22					
	23		Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			
	24					

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3830778 Y=272823	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) EMVC-02-31	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
	16. DATE HOLE Started 09/15/02 10:30 Completed
7. THICKNESS OF BURDEN 0.0 FT	17. ELEVATION TOP OF HOLE -17.4 FT
8. DEPTH DRILLED INTO ROCK N/A	18. TOTAL CORE RECOVERY FOR BORING 92 %
9. TOTAL DEPTH OF HOLE 19.0 FT	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-17.4	0		SAND, very fine grained, quartz, trace silt, trace shell hash, very dark gray (5Y-3/1), (SW-SM).		1	Sample #2 Depth = 0.9 *Mean (mm): 0.012, Phi Sorting: 2.3 *Sand 15.4%, Silt 62.5%, Clay 22.1%
-19.1	1		Alternating SANDY SILT and CLAY layers, dark gray (5Y-4/1), (ML).		2	
-22.2	2, 3, 4		SAND, very fine grained, quartz, little silt, 2" clay pocket @ 3.2', trace organics, dark gray (5Y-4/1), (SW-SM).		1	Sample #1 Depth = 3.5 Mean (mm): 0.09, Phi Sorting: 0.69 Silt: 24.22% (SM)
-25.9	5, 6, 7, 8		Alternating CLAY and SILT laminae, organic laminae from 8.3'-8.5', dark gray (5Y-4/1), (CL).		3	Sample #3 Depth = 7.0 *Mean (mm): 0.015, Phi Sorting: 2.3 *Sand 19.3%, Silt 62.0%, Clay 18.7%
-33.5	9, 10, 11, 12, 13, 14, 15, 16		CLAY, little sandy laminae, dark gray (5Y-4/1), (CL).		4	Sample #4 Depth = 11.0 *Mean (mm): 0.008, Phi Sorting: 1.9 *Sand 0.1%, Silt 72.8%, Clay 27.2%
-34.8	17		dark gray (5Y-4/1), (CL).		5	Sample #5 Depth = 16.5 *Mean (mm): 0.008, Phi Sorting: 2.2 *Sand 10.0%, Silt 59.9%, Clay 30.2%
-36.4	18		No Recovery			
	19		End of Boring			
	20, 21, 22, 23, 24		Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

APPENDIX 2
2002 EMPIRE INDIVIDUAL GRANULARMETRIC REPORTS

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-03 S#5
Sample Date: 10/4/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3842191	271480	State Plane 1983 FL East Fee	-26.4 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
ML	5Y-6/1	5Y-4/2	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
53.77	11.2	0.02	83.67	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	0.00	0.00	0.00	0.00
10	-1.00	2.00	0.02	0.04	0.02	0.04
14	-0.50	1.41	0.01	0.02	0.03	0.06
18	0.00	1.00	0.00	0.00	0.03	0.06
25	0.50	0.70	0.02	0.04	0.05	0.09
35	1.00	0.50	0.01	0.02	0.06	0.11
45	1.50	0.35	0.02	0.04	0.08	0.15
60	2.00	0.25	0.04	0.07	0.12	0.22
80	2.50	0.17	0.03	0.06	0.15	0.28
120	3.00	0.12	0.10	0.19	0.25	0.46
170	3.50	0.08	0.58	1.08	0.83	1.54
200	3.75	0.07	2.04	3.79	2.87	5.34
230	4.00	0.06	5.91	10.99	8.78	16.33
Pan	Pan	Pan	44.97	83.63	53.75	99.96

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.73	3.99	4.03	4.1	4.18	4.2	4.24

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	4.05	0.06	0.13	-0.67	1.39
Moment	4.07	0.06	0.17	-0.96	2.61

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-03 S#6
Sample Date: 10/4/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3842191	271480	State Plane 1983 LA South Fe	-28.3 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-5/1	5Y-4/2	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
51.08	34.99	0.02	32.83	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.04	0.02	0.04
18	0.00	1.00	0.00	0.00	0.02	0.04
25	0.50	0.70	0.00	0.00	0.02	0.04
35	1.00	0.50	0.00	0.00	0.02	0.04
45	1.50	0.35	0.00	0.00	0.02	0.04
60	2.00	0.25	0.01	0.02	0.03	0.06
80	2.50	0.17	0.46	0.90	0.49	0.96
120	3.00	0.12	7.81	15.29	8.30	16.25
170	3.50	0.08	16.88	33.05	25.18	49.30
200	3.75	0.07	4.65	9.10	29.83	58.40
230	4.00	0.06	4.48	8.77	34.31	67.17
Pan	Pan	Pan	16.75	32.79	51.06	99.96

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.63	2.99	3.13	3.52	4.06	4.13	4.21

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.50	0.09	0.52	-0.05	0.70
Moment	3.53	0.09	0.63	-0.15	1.27

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-06 S#1
Sample Date: 10/4/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3837653	269110	State Plane 1983 LA South Fe	-17.7 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-5/1	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
66.84	57.47	0.03	14.75	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.08	0.12	0.08	0.12
5	-2.00	4.00	0.00	0.00	0.08	0.12
7	-1.50	2.82	0.17	0.25	0.25	0.37
10	-1.00	2.00	0.12	0.18	0.37	0.55
14	-0.50	1.41	0.19	0.28	0.56	0.84
18	0.00	1.00	0.13	0.19	0.69	1.03
25	0.50	0.70	0.16	0.24	0.85	1.27
35	1.00	0.50	0.09	0.13	0.94	1.41
45	1.50	0.35	0.06	0.09	1.00	1.50
60	2.00	0.25	0.29	0.43	1.29	1.93
80	2.50	0.17	3.86	5.77	5.15	7.70
120	3.00	0.12	20.49	30.66	25.64	38.36
170	3.50	0.08	24.18	36.18	49.82	74.54
200	3.75	0.07	4.38	6.55	54.20	81.09
230	4.00	0.06	2.78	4.16	56.98	85.25
Pan	Pan	Pan	9.83	14.71	66.81	99.96

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.27	2.64	2.78	3.16	3.52	3.92	4.17

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.23	0.11	0.61	0.15	1.06
Moment	3.21	0.11	0.70	0.09	1.43

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-06 S#4
Sample Date: 10/8/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3837653	269110	State Plane 1983 LA South Fe	-19.6 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
ML	5Y-6/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
79.87	34.03	0	59.38	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	0.00	0.00	0.00	0.00
10	-1.00	2.00	0.01	0.01	0.01	0.01
14	-0.50	1.41	0.01	0.01	0.02	0.03
18	0.00	1.00	0.02	0.03	0.04	0.05
25	0.50	0.70	0.03	0.04	0.07	0.09
35	1.00	0.50	0.02	0.03	0.09	0.11
45	1.50	0.35	0.08	0.10	0.17	0.21
60	2.00	0.25	0.12	0.15	0.29	0.36
80	2.50	0.17	0.67	0.84	0.96	1.20
120	3.00	0.12	1.97	2.47	2.93	3.67
170	3.50	0.08	7.96	9.97	10.89	13.63
200	3.75	0.07	9.26	11.59	20.15	25.23
230	4.00	0.06	12.29	15.39	32.44	40.62
Pan	Pan	Pan	47.43	59.38	79.87	100.00

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.07	3.55	3.75	4.04	4.14	4.18	4.23

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.81	0.07	0.33	-1.08	1.19
Moment	3.85	0.07	0.43	-0.84	2.16

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-06 S#5
Sample Date: 10/8/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3837653	269110	State Plane 1983 LA South Fe	-20.9 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
87.94	79.07	0.03	10.96	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.01	0.01	0.01	0.01
25	0.50	0.70	0.01	0.01	0.02	0.02
35	1.00	0.50	0.00	0.00	0.02	0.02
45	1.50	0.35	0.01	0.01	0.03	0.03
60	2.00	0.25	0.01	0.01	0.04	0.05
80	2.50	0.17	0.68	0.77	0.72	0.82
120	3.00	0.12	15.01	17.07	15.73	17.89
170	3.50	0.08	46.30	52.65	62.03	70.54
200	3.75	0.07	10.18	11.58	72.21	82.11
230	4.00	0.06	6.09	6.93	78.30	89.04
Pan	Pan	Pan	9.61	10.93	87.91	99.97

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.62	2.94	3.07	3.3	3.6	3.82	4.14

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.37	0.10	0.45	0.20	1.17
Moment	3.36	0.10	0.53	0.11	1.60

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-07 S#2
Sample Date: 10/8/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3833687	270236	State Plane 1983 LA South Fe	-22.2 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SW-SM	5Y-6/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
93.48	87.4	0	6.78	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	0.11	0.12	0.11	0.12
10	-1.00	2.00	0.06	0.06	0.17	0.18
14	-0.50	1.41	0.07	0.07	0.24	0.26
18	0.00	1.00	0.10	0.11	0.34	0.36
25	0.50	0.70	0.07	0.07	0.41	0.44
35	1.00	0.50	0.06	0.06	0.47	0.50
45	1.50	0.35	0.02	0.02	0.49	0.52
60	2.00	0.25	0.31	0.33	0.80	0.86
80	2.50	0.17	18.91	20.23	19.71	21.08
120	3.00	0.12	40.61	43.44	60.32	64.53
170	3.50	0.08	19.99	21.38	80.31	85.91
200	3.75	0.07	3.94	4.21	84.25	90.13
230	4.00	0.06	2.89	3.09	87.14	93.22
Pan	Pan	Pan	6.34	6.78	93.48	100.00

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.1	2.37	2.55	2.83	3.24	3.46	4.07

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.97	0.13	0.57	0.37	1.15
Moment	2.95	0.13	0.68	0.37	1.73

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-07 S#3
Sample Date: 10/7/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3833687	270236	State Plane 1983 LA South Fe	-23.8 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
77.2	65.65	0.03	15.4	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	3.56	4.61	3.56	4.61
5	-2.00	4.00	0.73	0.95	4.29	5.56
7	-1.50	2.82	2.33	3.02	6.62	8.58
10	-1.00	2.00	1.33	1.72	7.95	10.30
14	-0.50	1.41	0.84	1.09	8.79	11.39
18	0.00	1.00	0.49	0.63	9.28	12.02
25	0.50	0.70	0.24	0.31	9.52	12.33
35	1.00	0.50	0.10	0.13	9.62	12.46
45	1.50	0.35	0.05	0.06	9.67	12.53
60	2.00	0.25	0.19	0.25	9.86	12.77
80	2.50	0.17	9.38	12.15	19.24	24.92
120	3.00	0.12	23.96	31.04	43.20	55.96
170	3.50	0.08	15.90	20.60	59.10	76.55
200	3.75	0.07	3.45	4.47	62.55	81.02
230	4.00	0.06	2.76	3.58	65.31	84.60
Pan	Pan	Pan	11.86	15.36	77.17	99.96

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
-2.59	2.13	2.5	2.9	3.46	3.96	4.17

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.12	0.23	1.48	-1.73	2.88
Moment	2.36	0.19	2.31	-1.49	3.65

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-07 S#4
Sample Date: 10/7/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3833687	270236	State Plane 1983 LA South Fe	-24.4 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
ML	5Y-5/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
93.14	52.25	0.05	45.2	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.30	0.32	0.30	0.32
4	-3.00	8.00	0.00	0.00	0.30	0.32
5	-2.00	4.00	0.02	0.02	0.32	0.34
7	-1.50	2.82	0.10	0.11	0.42	0.45
10	-1.00	2.00	0.08	0.09	0.50	0.54
14	-0.50	1.41	0.12	0.13	0.62	0.67
18	0.00	1.00	0.06	0.06	0.68	0.73
25	0.50	0.70	0.04	0.04	0.72	0.77
35	1.00	0.50	0.03	0.03	0.75	0.81
45	1.50	0.35	0.01	0.01	0.76	0.82
60	2.00	0.25	0.15	0.16	0.91	0.98
80	2.50	0.17	13.99	15.02	14.90	16.00
120	3.00	0.12	16.40	17.61	31.30	33.61
170	3.50	0.08	8.77	9.42	40.07	43.02
200	3.75	0.07	3.87	4.16	43.94	47.18
230	4.00	0.06	7.10	7.62	51.04	54.80
Pan	Pan	Pan	42.05	45.15	93.09	99.95

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.13	2.5	2.76	3.84	4.11	4.16	4.22

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.37	0.10	0.73	-0.71	0.63
Moment	3.39	0.10	0.89	-0.34	1.16

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-07 S#5
Sample Date: 10/7/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3833687	270236	State Plane 1983 LA South Fe	-26.5 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SP	5Y-6/1	5Y-5/2	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
62.34	60.06	0	3.72	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.03	0.05	0.03	0.05
7	-1.50	2.82	0.01	0.02	0.04	0.06
10	-1.00	2.00	0.01	0.02	0.05	0.08
14	-0.50	1.41	0.00	0.00	0.05	0.08
18	0.00	1.00	0.00	0.00	0.05	0.08
25	0.50	0.70	0.01	0.02	0.06	0.10
35	1.00	0.50	0.01	0.02	0.07	0.11
45	1.50	0.35	0.04	0.06	0.11	0.18
60	2.00	0.25	1.13	1.81	1.24	1.99
80	2.50	0.17	38.41	61.61	39.65	63.60
120	3.00	0.12	17.89	28.70	57.54	92.30
170	3.50	0.08	1.85	2.97	59.39	95.27
200	3.75	0.07	0.35	0.56	59.74	95.83
230	4.00	0.06	0.28	0.45	60.02	96.28
Pan	Pan	Pan	2.32	3.72	62.34	100.00

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.02	2.11	2.19	2.39	2.7	2.86	3.45

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.57	0.17	0.40	0.69	1.15
Moment	2.53	0.17	0.51	0.73	2.10

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-08 S#2
Sample Date: 9/30/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3834669	271902	State Plane 1983 LA South Fe	-18.3 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
ML	5Y-6/1	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
70.02	24.48	0	67.1	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.01	0.01	0.01	0.01
25	0.50	0.70	0.02	0.03	0.03	0.04
35	1.00	0.50	0.00	0.00	0.03	0.04
45	1.50	0.35	0.06	0.09	0.09	0.13
60	2.00	0.25	0.00	0.00	0.09	0.13
80	2.50	0.17	0.10	0.14	0.19	0.27
120	3.00	0.12	0.52	0.74	0.71	1.01
170	3.50	0.08	4.90	7.00	5.61	8.01
200	3.75	0.07	9.10	13.00	14.71	21.01
230	4.00	0.06	8.33	11.90	23.04	32.90
Pan	Pan	Pan	46.98	67.10	70.02	100.00

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.28	3.65	3.83	4.06	4.16	4.19	4.23

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.88	0.07	0.28	-1.04	1.20
Moment	3.92	0.07	0.35	-0.79	2.07

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-08 S#4
Sample Date: 10/01/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3834669	271902	State Plane 1983 LA South Fe	-22.3 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/1	5Y-5/2	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
78.21	56.08	0.05	32.9	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.02	0.03	0.02	0.03
35	1.00	0.50	0.01	0.01	0.03	0.04
45	1.50	0.35	0.02	0.03	0.05	0.06
60	2.00	0.25	0.11	0.14	0.16	0.20
80	2.50	0.17	2.25	2.88	2.41	3.08
120	3.00	0.12	6.35	8.12	8.76	11.20
170	3.50	0.08	20.35	26.02	29.11	37.22
200	3.75	0.07	12.22	15.62	41.33	52.84
230	4.00	0.06	11.15	14.26	52.48	67.10
Pan	Pan	Pan	25.68	32.83	78.16	99.94

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.62	3.09	3.27	3.7	4.06	4.13	4.21

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.55	0.09	0.50	-0.39	0.82
Moment	3.58	0.08	0.61	-0.39	1.52

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-08A S#2
Sample Date: 10/01/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3834666	271905	State Plane 1983 LA South Fe	-26.6 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
ML	5Y-6/1	5Y-4/2	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
67.97	38.63	0.16	48.7	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.02	0.03	0.02	0.03
25	0.50	0.70	0.02	0.03	0.04	0.06
35	1.00	0.50	0.01	0.01	0.05	0.07
45	1.50	0.35	0.04	0.06	0.09	0.13
60	2.00	0.25	0.05	0.07	0.14	0.21
80	2.50	0.17	0.27	0.40	0.41	0.60
120	3.00	0.12	1.98	2.91	2.39	3.52
170	3.50	0.08	12.66	18.63	15.05	22.14
200	3.75	0.07	9.85	14.49	24.90	36.63
230	4.00	0.06	9.97	14.67	34.87	51.30
Pan	Pan	Pan	32.94	48.46	67.81	99.76

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.04	3.34	3.55	3.98	4.12	4.17	4.23

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.75	0.07	0.39	-0.76	0.85
Moment	3.77	0.07	0.47	-0.47	1.45

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-08A S#3
Sample Date: 9/30/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3834666	271905	State Plane 1983 LA South Fe	-23.7 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SW-SM	5Y-6/1	5Y-5/2	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
79.51	74.54	0	6.49	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.03	0.04	0.03	0.04
60	2.00	0.25	0.15	0.19	0.18	0.23
80	2.50	0.17	23.03	28.96	23.21	29.19
120	3.00	0.12	32.87	41.34	56.08	70.53
170	3.50	0.08	12.10	15.22	68.18	85.75
200	3.75	0.07	3.35	4.21	71.53	89.96
230	4.00	0.06	2.82	3.55	74.35	93.51
Pan	Pan	Pan	5.16	6.49	79.51	100.00

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.08	2.27	2.43	2.75	3.15	3.44	4.06

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.92	0.13	0.59	0.45	1.13
Moment	2.88	0.14	0.71	0.46	1.73

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-09 S#4
Sample Date: 10/02/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3829719	274358	State Plane 1983 LA South Fe	-20 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
ML	5Y-5/1	5Y-5/2	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
79.73	28.56	0.07	66.46	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.03	0.04	0.03	0.04
60	2.00	0.25	0.01	0.01	0.04	0.05
80	2.50	0.17	0.19	0.24	0.23	0.29
120	3.00	0.12	2.12	2.66	2.35	2.95
170	3.50	0.08	8.96	11.24	11.31	14.19
200	3.75	0.07	6.62	8.30	17.93	22.49
230	4.00	0.06	8.81	11.05	26.74	33.54
Pan	Pan	Pan	52.92	66.37	79.66	99.91

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.09	3.55	3.81	4.06	4.16	4.19	4.23

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.83	0.07	0.33	-1.24	1.34
Moment	3.87	0.07	0.42	-0.88	2.20

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-09 S#5
Sample Date: 9/30/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3829719	274358	State Plane 1983 LA South Fe	-22.6 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-5/1	5Y-5/2	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
62.88	57.23	0	9.84	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.01	0.02	0.01	0.02
60	2.00	0.25	0.01	0.02	0.02	0.03
80	2.50	0.17	1.30	2.07	1.32	2.10
120	3.00	0.12	19.02	30.25	20.34	32.35
170	3.50	0.08	25.60	40.71	45.94	73.06
200	3.75	0.07	6.61	10.51	52.55	83.57
230	4.00	0.06	4.14	6.58	56.69	90.16
Pan	Pan	Pan	6.19	9.84	62.88	100.00

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.55	2.73	2.88	3.22	3.55	3.77	4.12

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.28	0.10	0.50	0.18	0.97
Moment	3.26	0.10	0.58	0.21	1.45

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-10 S#3
Sample Date: 10/1/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3830073	271961	State Plane 1983 LA South Fe	-22.1 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
ML	5Y-6/1	5Y-4/2	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
57.14	38.59	0.04	36.86	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.16	0.28	0.16	0.28
5	-2.00	4.00	0.12	0.21	0.28	0.49
7	-1.50	2.82	0.16	0.28	0.44	0.77
10	-1.00	2.00	0.14	0.25	0.58	1.02
14	-0.50	1.41	0.02	0.04	0.60	1.05
18	0.00	1.00	0.01	0.02	0.61	1.07
25	0.50	0.70	0.02	0.04	0.63	1.10
35	1.00	0.50	0.02	0.04	0.65	1.14
45	1.50	0.35	0.03	0.05	0.68	1.19
60	2.00	0.25	0.01	0.02	0.69	1.21
80	2.50	0.17	0.14	0.25	0.83	1.45
120	3.00	0.12	2.01	3.52	2.84	4.97
170	3.50	0.08	15.71	27.49	18.55	32.46
200	3.75	0.07	9.44	16.52	27.99	48.98
230	4.00	0.06	8.09	14.16	36.08	63.14
Pan	Pan	Pan	21.02	36.79	57.10	99.93

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3	3.2	3.36	3.77	4.08	4.14	4.22

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.67	0.08	0.42	-0.29	0.70
Moment	3.68	0.08	0.49	-0.20	1.21

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-10 S#5
Sample Date: 10/1/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3830073	271961	State Plane 1983 LA South Fe	-27.1 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
ML	5Y-6/1	5Y-4/2	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
66.41	47.73	0.06	34.41	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.02	0.03	0.02	0.03
60	2.00	0.25	0.01	0.02	0.03	0.05
80	2.50	0.17	0.15	0.23	0.18	0.27
120	3.00	0.12	0.49	0.74	0.67	1.01
170	3.50	0.08	14.86	22.38	15.53	23.39
200	3.75	0.07	15.46	23.28	30.99	46.66
230	4.00	0.06	12.57	18.93	43.56	65.59
Pan	Pan	Pan	22.79	34.32	66.35	99.91

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.09	3.33	3.52	3.79	4.07	4.13	4.21

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.71	0.08	0.37	-0.29	0.84
Moment	3.74	0.08	0.43	-0.28	1.38

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-11A S#1
Sample Date: 10/1/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3829938	273315	State Plane 1983 LA South Fe	-30.3 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
ML	5Y-6/1	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
41.6	17.83	0.04	63.37	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	0.02	0.05	0.02	0.05
10	-1.00	2.00	0.01	0.02	0.03	0.07
14	-0.50	1.41	0.05	0.12	0.08	0.19
18	0.00	1.00	0.01	0.02	0.09	0.22
25	0.50	0.70	0.08	0.19	0.17	0.41
35	1.00	0.50	0.03	0.07	0.20	0.48
45	1.50	0.35	0.05	0.12	0.25	0.60
60	2.00	0.25	0.06	0.14	0.31	0.75
80	2.50	0.17	0.10	0.24	0.41	0.99
120	3.00	0.12	0.25	0.60	0.66	1.59
170	3.50	0.08	2.51	6.03	3.17	7.62
200	3.75	0.07	4.35	10.46	7.52	18.08
230	4.00	0.06	7.72	18.56	15.24	36.63
Pan	Pan	Pan	26.32	63.27	41.56	99.90

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.28	3.7	3.84	4.05	4.15	4.19	4.23

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.89	0.07	0.27	-1.01	1.26
Moment	3.92	0.07	0.34	-0.87	2.28

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-12 S#3
Sample Date: 10/1/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3831288	275546	State Plane 1983 LA South Fe	-19.7 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SW-SM	5Y-6/1	5Y-6/2	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
57.09	54.94	0	4.12	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.00	0.00	0.00	0.00
60	2.00	0.25	0.22	0.39	0.22	0.39
80	2.50	0.17	24.84	43.51	25.06	43.90
120	3.00	0.12	21.46	37.59	46.52	81.49
170	3.50	0.08	5.73	10.04	52.25	91.52
200	3.75	0.07	1.46	2.56	53.71	94.08
230	4.00	0.06	1.03	1.80	54.74	95.88
Pan	Pan	Pan	2.35	4.12	57.09	100.00

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.05	2.18	2.28	2.58	2.91	3.13	3.88

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.76	0.15	0.51	0.57	1.19
Moment	2.72	0.15	0.64	0.69	2.09

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-13 S#2
Sample Date: 10/1/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3830794	273579	State Plane 1983 LA South Fe	-19.2 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-5/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
60.64	44.49	0.04	30.41	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.01	0.02	0.01	0.02
45	1.50	0.35	0.00	0.00	0.01	0.02
60	2.00	0.25	0.02	0.03	0.03	0.05
80	2.50	0.17	0.93	1.53	0.96	1.58
120	3.00	0.12	12.09	19.94	13.05	21.52
170	3.50	0.08	18.14	29.91	31.19	51.43
200	3.75	0.07	6.04	9.96	37.23	61.40
230	4.00	0.06	4.97	8.20	42.20	69.59
Pan	Pan	Pan	18.40	30.34	60.60	99.93

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.59	2.86	3.06	3.48	4.04	4.12	4.21

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.45	0.09	0.56	-0.05	0.67
Moment	3.48	0.09	0.66	-0.11	1.20

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-13 S#3
Sample Date: 10/1/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3830794	273579	State Plane 1983 LA South Fe	-20.6 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
54.58	48.57	0.01	12.99	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.00	0.00	0.00	0.00
60	2.00	0.25	0.03	0.05	0.03	0.05
80	2.50	0.17	0.25	0.46	0.28	0.51
120	3.00	0.12	9.46	17.33	9.74	17.85
170	3.50	0.08	27.04	49.54	36.78	67.39
200	3.75	0.07	6.72	12.31	43.50	79.70
230	4.00	0.06	3.99	7.31	47.49	87.01
Pan	Pan	Pan	7.08	12.97	54.57	99.98

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.63	2.95	3.07	3.32	3.65	3.9	4.15

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.39	0.10	0.47	0.20	1.07
Moment	3.38	0.10	0.55	0.08	1.49

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-14 S#4
Sample Date: 10/1/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3828942	273085	State Plane 1983 LA South Fe	-24.9 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/1	5Y-5/2	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
46.81	36.48	0.04	24.87	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.00	0.00	0.00	0.00
60	2.00	0.25	0.00	0.00	0.00	0.00
80	2.50	0.17	0.11	0.23	0.11	0.23
120	3.00	0.12	5.75	12.28	5.86	12.52
170	3.50	0.08	18.66	39.86	24.52	52.38
200	3.75	0.07	5.38	11.49	29.90	63.88
230	4.00	0.06	5.27	11.26	35.17	75.13
Pan	Pan	Pan	11.60	24.78	46.77	99.91

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.69	3.04	3.16	3.47	4	4.09	4.2

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.50	0.09	0.49	0.07	0.73
Moment	3.52	0.09	0.59	-0.10	1.28

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-15 S#3
Sample Date: 10/1/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3831702	274690	State Plane 1983 LA South Fe	-18.1 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/1	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
39.05	33.03	0.01	19.18	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.00	0.00	0.00	0.00
60	2.00	0.25	0.01	0.03	0.01	0.03
80	2.50	0.17	0.11	0.28	0.12	0.31
120	3.00	0.12	1.34	3.43	1.46	3.74
170	3.50	0.08	16.28	41.69	17.74	45.43
200	3.75	0.07	7.81	20.00	25.55	65.43
230	4.00	0.06	6.01	15.39	31.56	80.82
Pan	Pan	Pan	7.48	19.15	39.04	99.97

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.02	3.15	3.25	3.56	3.91	4.04	4.19

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.59	0.08	0.40	0.10	0.74
Moment	3.59	0.08	0.47	0.05	1.20

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-15 S#4
Sample Date: 12/10/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3831687	274739	State Plane 1983 LA South Fe	-22.3 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
ML	5Y-5/1	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
50.4	19.53	0.01	62.1	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.00	0.00	0.00	0.00
60	2.00	0.25	0.00	0.00	0.00	0.00
80	2.50	0.17	0.46	0.91	0.46	0.91
120	3.00	0.12	3.20	6.35	3.66	7.26
170	3.50	0.08	9.70	19.25	13.36	26.51
200	3.75	0.07	2.97	5.89	16.33	32.40
230	4.00	0.06	2.77	5.50	19.10	37.90
Pan	Pan	Pan	31.29	62.08	50.39	99.98

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.82	3.23	3.46	4.05	4.15	4.19	4.23

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.70	0.08	0.45	-0.98	0.84
Moment	3.73	0.08	0.56	-0.55	1.52

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-16 S#5
Sample Date: 10/2/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3833393	272680	State Plane 1983 LA South Fe	-28.2 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SP	5Y-6/1	5Y-5/2	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
53.78	52.51	0.01	2.45	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.17	0.32	0.17	0.32
60	2.00	0.25	7.95	14.78	8.12	15.10
80	2.50	0.17	24.49	45.54	32.61	60.64
120	3.00	0.12	18.10	33.66	50.71	94.29
170	3.50	0.08	1.46	2.71	52.17	97.01
200	3.75	0.07	0.15	0.28	52.32	97.29
230	4.00	0.06	0.14	0.26	52.46	97.55
Pan	Pan	Pan	1.31	2.44	53.77	99.98

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
1.66	2.01	2.11	2.38	2.71	2.85	3.13

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.41	0.19	0.43	0.07	1.00
Moment	2.41	0.19	0.52	-0.02	1.53

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-16A S#2
Sample Date: 10/1/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3833428	272705	State Plane 1983 LA South Fe	-29.1 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SW-SM	5Y-6/1	5Y-6/2	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
71.79	66.77	0.07	7.59	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.06	0.08	0.06	0.08
60	2.00	0.25	1.90	2.65	1.96	2.73
80	2.50	0.17	19.87	27.68	21.83	30.41
120	3.00	0.12	29.90	41.65	51.73	72.06
170	3.50	0.08	10.43	14.53	62.16	86.59
200	3.75	0.07	2.42	3.37	64.58	89.96
230	4.00	0.06	1.76	2.45	66.34	92.41
Pan	Pan	Pan	5.38	7.49	71.72	99.90

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.04	2.24	2.4	2.74	3.1	3.41	4.09

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.90	0.13	0.60	0.46	1.20
Moment	2.86	0.14	0.72	0.50	1.82

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-17 S#2
Sample Date: 10/2/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3831941	270239	State Plane 1983 LA South Fe	-23.1 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SW-SM	5Y-6/1	5Y-4/2	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
56.59	53.86	0.02	5.8	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.27	0.48	0.27	0.48
5	-2.00	4.00	0.00	0.00	0.27	0.48
7	-1.50	2.82	0.00	0.00	0.27	0.48
10	-1.00	2.00	0.02	0.04	0.29	0.51
14	-0.50	1.41	0.01	0.02	0.30	0.53
18	0.00	1.00	0.03	0.05	0.33	0.58
25	0.50	0.70	0.02	0.04	0.35	0.62
35	1.00	0.50	0.02	0.04	0.37	0.65
45	1.50	0.35	0.02	0.04	0.39	0.69
60	2.00	0.25	0.14	0.25	0.53	0.94
80	2.50	0.17	7.72	13.64	8.25	14.58
120	3.00	0.12	25.65	45.33	33.90	59.90
170	3.50	0.08	14.61	25.82	48.51	85.72
200	3.75	0.07	2.86	5.05	51.37	90.78
230	4.00	0.06	1.94	3.43	53.31	94.20
Pan	Pan	Pan	3.26	5.76	56.57	99.96

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.15	2.52	2.61	2.89	3.29	3.47	4.03

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.01	0.12	0.52	0.35	1.14
Moment	2.99	0.13	0.64	0.30	1.75

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-18 S#2
Sample Date: 12/10/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3832701	271426	State Plane 1983 LA South Fe	-19.5 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
ML	5Y-5/1	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
64.13	32.38	0.02	54	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	0.00	0.00	0.00	0.00
10	-1.00	2.00	0.06	0.09	0.06	0.09
14	-0.50	1.41	0.04	0.06	0.10	0.16
18	0.00	1.00	0.03	0.05	0.13	0.20
25	0.50	0.70	0.04	0.06	0.17	0.27
35	1.00	0.50	0.02	0.03	0.19	0.30
45	1.50	0.35	0.02	0.03	0.21	0.33
60	2.00	0.25	0.02	0.03	0.23	0.36
80	2.50	0.17	0.86	1.34	1.09	1.70
120	3.00	0.12	2.86	4.46	3.95	6.16
170	3.50	0.08	9.75	15.20	13.70	21.36
200	3.75	0.07	7.32	11.41	21.02	32.78
230	4.00	0.06	8.48	13.22	29.50	46.00
Pan	Pan	Pan	34.61	53.97	64.11	99.97

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.87	3.32	3.58	4.02	4.13	4.18	4.23

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.72	0.08	0.42	-1.01	1.00
Moment	3.76	0.07	0.52	-0.67	1.77

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-18 S#3
Sample Date: 10/2/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3832701	271426	State Plane 1983 LA South Fe	-22.2 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-5/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
70.1	65.04	0.02	8.45	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	0.00	0.00	0.00	0.00
10	-1.00	2.00	0.01	0.01	0.01	0.01
14	-0.50	1.41	0.00	0.00	0.01	0.01
18	0.00	1.00	0.01	0.01	0.02	0.03
25	0.50	0.70	0.00	0.00	0.02	0.03
35	1.00	0.50	0.01	0.01	0.03	0.04
45	1.50	0.35	0.00	0.00	0.03	0.04
60	2.00	0.25	0.18	0.26	0.21	0.30
80	2.50	0.17	12.94	18.46	13.15	18.76
120	3.00	0.12	30.38	43.34	43.53	62.10
170	3.50	0.08	13.96	19.91	57.49	82.01
200	3.75	0.07	3.66	5.22	61.15	87.23
230	4.00	0.06	3.03	4.32	64.18	91.55
Pan	Pan	Pan	5.90	8.42	70.08	99.97

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.13	2.43	2.57	2.86	3.32	3.6	4.1

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.02	0.12	0.59	0.41	1.08
Moment	3.00	0.12	0.70	0.31	1.59

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-18 S#5
Sample Date: 10/3/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3832701	271426	State Plane 1983 LA South Fe	-26.7 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
59.05	39.54	0.09	38.46	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	0.00	0.00	0.00	0.00
10	-1.00	2.00	0.01	0.02	0.01	0.02
14	-0.50	1.41	0.01	0.02	0.02	0.03
18	0.00	1.00	0.03	0.05	0.05	0.08
25	0.50	0.70	0.03	0.05	0.08	0.14
35	1.00	0.50	0.06	0.10	0.14	0.24
45	1.50	0.35	0.07	0.12	0.21	0.36
60	2.00	0.25	0.09	0.15	0.30	0.51
80	2.50	0.17	0.22	0.37	0.52	0.88
120	3.00	0.12	4.23	7.16	4.75	8.04
170	3.50	0.08	17.96	30.41	22.71	38.46
200	3.75	0.07	6.84	11.58	29.55	50.04
230	4.00	0.06	6.79	11.50	36.34	61.54
Pan	Pan	Pan	22.62	38.31	58.96	99.85

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.79	3.13	3.28	3.75	4.09	4.15	4.22

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.61	0.08	0.47	-0.36	0.72
Moment	3.63	0.08	0.57	-0.29	1.33

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-19 S#3
Sample Date: 10/3/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3830842	274333	State Plane 1983 LA South Fe	-19.9 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SW-SM	5Y-6/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
49.34	46.82	0	5.7	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.00	0.00	0.00	0.00
60	2.00	0.25	0.03	0.06	0.03	0.06
80	2.50	0.17	3.54	7.17	3.57	7.24
120	3.00	0.12	26.17	53.04	29.74	60.28
170	3.50	0.08	12.92	26.19	42.66	86.46
200	3.75	0.07	2.28	4.62	44.94	91.08
230	4.00	0.06	1.59	3.22	46.53	94.30
Pan	Pan	Pan	2.81	5.70	49.34	100.00

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.34	2.58	2.67	2.9	3.28	3.45	4.03

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.06	0.12	0.47	0.51	1.13
Moment	3.04	0.12	0.59	0.48	1.84

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-19 S#5
Sample Date: 12/30/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3830842	274333	State Plane 1983 LA South Fe	-22.3 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
53.25	44	0	18.89	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.01	0.02	0.01	0.02
35	1.00	0.50	0.00	0.00	0.01	0.02
45	1.50	0.35	0.01	0.02	0.02	0.04
60	2.00	0.25	0.02	0.04	0.04	0.08
80	2.50	0.17	3.21	6.03	3.25	6.10
120	3.00	0.12	15.71	29.50	18.96	35.61
170	3.50	0.08	15.43	28.98	34.39	64.58
200	3.75	0.07	4.45	8.36	38.84	72.94
230	4.00	0.06	4.35	8.17	43.19	81.11
Pan	Pan	Pan	10.06	18.89	53.25	100.00

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.41	2.67	2.82	3.25	3.81	4.04	4.18

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.31	0.10	0.61	0.12	0.73
Moment	3.31	0.10	0.71	0.02	1.20

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-20 S#3
Sample Date: 10/3/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3835900	271017	State Plane 1983 LA South Fe	-21.1 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SP	5Y-6/1	5Y-4/2	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
59.43	57.83	0.01	2.89	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.01	0.02	0.01	0.02
60	2.00	0.25	0.18	0.30	0.19	0.32
80	2.50	0.17	20.96	35.27	21.15	35.59
120	3.00	0.12	28.92	48.66	50.07	84.25
170	3.50	0.08	6.27	10.55	56.34	94.80
200	3.75	0.07	0.81	1.36	57.15	96.16
230	4.00	0.06	0.56	0.94	57.71	97.11
Pan	Pan	Pan	1.71	2.88	59.42	99.98

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.07	2.22	2.35	2.65	2.9	3	3.54

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.69	0.15	0.42	0.18	1.09
Moment	2.68	0.16	0.51	0.41	1.81

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-20 S#4
Sample Date: 10/3/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3835900	271017	State Plane 1983 LA South Fe	-22.9 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SW-SM	5Y-6/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
62.93	60.04	0.01	5.02	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.01	0.02	0.01	0.02
35	1.00	0.50	0.01	0.02	0.02	0.03
45	1.50	0.35	0.02	0.03	0.04	0.06
60	2.00	0.25	0.28	0.44	0.32	0.51
80	2.50	0.17	25.45	40.44	25.77	40.95
120	3.00	0.12	24.12	38.33	49.89	79.28
170	3.50	0.08	6.81	10.82	56.70	90.10
200	3.75	0.07	1.65	2.62	58.35	92.72
230	4.00	0.06	1.42	2.26	59.77	94.98
Pan	Pan	Pan	3.15	5.01	62.92	99.98

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.06	2.19	2.3	2.62	2.94	3.22	4

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.82	0.14	0.55	0.61	1.24
Moment	2.76	0.15	0.69	0.70	2.10

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-20A S#2
Sample Date: 12/03/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3835948	270980	State Plane 1983 LA South Fe	-33.6 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-5/1	5Y-4/2	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
45.17	36.38	0.07	20.94	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.03	0.07	0.03	0.07
25	0.50	0.70	0.01	0.02	0.04	0.09
35	1.00	0.50	0.02	0.04	0.06	0.13
45	1.50	0.35	0.02	0.04	0.08	0.18
60	2.00	0.25	0.03	0.07	0.11	0.24
80	2.50	0.17	1.18	2.61	1.29	2.86
120	3.00	0.12	10.96	24.26	12.25	27.12
170	3.50	0.08	14.24	31.53	26.49	58.65
200	3.75	0.07	5.06	11.20	31.55	69.85
230	4.00	0.06	4.16	9.21	35.71	79.06
Pan	Pan	Pan	9.39	20.79	45.10	99.85

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.54	2.77	2.96	3.36	3.89	4.06	4.19

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.39	0.10	0.57	0.05	0.72
Moment	3.40	0.09	0.66	-0.02	1.19

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-21 S#3
Sample Date: 12/10/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3831900	271711	State Plane 1983 LA South Fe	-20.1 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
ML	5Y-5/1	5Y-4/2	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
53.66	29.6	0.02	48.01	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.00	0.00	0.00	0.00
60	2.00	0.25	0.02	0.04	0.02	0.04
80	2.50	0.17	0.61	1.14	0.63	1.17
120	3.00	0.12	5.57	10.38	6.20	11.55
170	3.50	0.08	10.90	20.31	17.10	31.87
200	3.75	0.07	4.62	8.61	21.72	40.48
230	4.00	0.06	6.18	11.52	27.90	51.99
Pan	Pan	Pan	25.74	47.97	53.64	99.96

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.68	3.11	3.33	3.96	4.12	4.17	4.22

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.63	0.08	0.50	-0.82	0.80
Moment	3.66	0.08	0.61	-0.49	1.46

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-22 S#1
Sample Date: 10/3/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3833742	270990	State Plane 1983 LA South Fe	-19.2 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-5/1	5Y-3/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
64.19	55.95	0.02	13.58	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.05	0.08	0.05	0.08
7	-1.50	2.82	0.09	0.14	0.14	0.22
10	-1.00	2.00	0.14	0.22	0.28	0.44
14	-0.50	1.41	0.12	0.19	0.40	0.62
18	0.00	1.00	0.15	0.23	0.55	0.86
25	0.50	0.70	0.10	0.16	0.65	1.01
35	1.00	0.50	0.05	0.08	0.70	1.09
45	1.50	0.35	0.02	0.03	0.72	1.12
60	2.00	0.25	0.23	0.36	0.95	1.48
80	2.50	0.17	12.73	19.83	13.68	21.31
120	3.00	0.12	24.40	38.01	38.08	59.32
170	3.50	0.08	11.86	18.48	49.94	77.80
200	3.75	0.07	2.79	4.35	52.73	82.15
230	4.00	0.06	2.74	4.27	55.47	86.42
Pan	Pan	Pan	8.70	13.55	64.17	99.97

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.09	2.37	2.55	2.88	3.42	3.86	4.16

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.07	0.12	0.69	0.39	0.97
Moment	3.05	0.12	0.78	0.22	1.36

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-22 S#2
Sample Date: 12/10/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3833742	270992	State Plane 1983 LA South Fe	-21.7 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-5/1	5Y-3/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
57.36	43.03	0.02	25.87	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.05	0.09	0.05	0.09
18	0.00	1.00	0.02	0.03	0.07	0.12
25	0.50	0.70	0.02	0.03	0.09	0.16
35	1.00	0.50	0.01	0.02	0.10	0.17
45	1.50	0.35	0.01	0.02	0.11	0.19
60	2.00	0.25	0.01	0.02	0.12	0.21
80	2.50	0.17	5.17	9.01	5.29	9.22
120	3.00	0.12	22.14	38.60	27.43	47.82
170	3.50	0.08	10.97	19.12	38.40	66.95
200	3.75	0.07	2.29	3.99	40.69	70.94
230	4.00	0.06	1.83	3.19	42.52	74.13
Pan	Pan	Pan	14.82	25.84	57.34	99.97

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.27	2.59	2.7	3.06	4.01	4.1	4.2

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.24	0.11	0.67	0.30	0.61
Moment	3.27	0.10	0.81	0.06	1.10

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-22 S#3
Sample Date: 10/2/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3833742	270990	State Plane 1983 LA South Fe	-23.2 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/1	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
53.06	46.18	0.01	15.06	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.02	0.04	0.02	0.04
25	0.50	0.70	0.00	0.00	0.02	0.04
35	1.00	0.50	0.01	0.02	0.03	0.06
45	1.50	0.35	0.05	0.09	0.08	0.15
60	2.00	0.25	0.05	0.09	0.13	0.25
80	2.50	0.17	0.31	0.58	0.44	0.83
120	3.00	0.12	9.34	17.60	9.78	18.43
170	3.50	0.08	24.06	45.34	33.84	63.78
200	3.75	0.07	6.71	12.65	40.55	76.42
230	4.00	0.06	4.52	8.52	45.07	84.94
Pan	Pan	Pan	7.98	15.04	53.05	99.98

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.62	2.93	3.07	3.35	3.72	3.97	4.17

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.41	0.09	0.50	0.16	0.98
Moment	3.40	0.09	0.57	0.03	1.40

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-22 S#5
Sample Date: 10/2/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3833742	270990	State Plane 1983 LA South Fe	-25.5 NAVD 88 Feet

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

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
60.29	54.1	0.02	10.62	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.01	0.02	0.01	0.02
25	0.50	0.70	0.00	0.00	0.01	0.02
35	1.00	0.50	0.01	0.02	0.02	0.03
45	1.50	0.35	0.02	0.03	0.04	0.07
60	2.00	0.25	0.95	1.58	0.99	1.64
80	2.50	0.17	29.98	49.73	30.97	51.37
120	3.00	0.12	18.18	30.15	49.15	81.52
170	3.50	0.08	3.23	5.36	52.38	86.88
200	3.75	0.07	0.71	1.18	53.09	88.06
230	4.00	0.06	0.80	1.33	53.89	89.38
Pan	Pan	Pan	6.38	10.58	60.27	99.97

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.03	2.14	2.23	2.49	2.89	3.23	4.13

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.81	0.14	0.59	0.93	1.31
Moment	2.74	0.15	0.75	0.85	2.26

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-23 S#2
Sample Date: 10/2/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3834858	270176	State Plane 1983 LA South Fe	-18.9 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/1	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
56.47	49.02	0.02	14.29	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	0.00	0.00	0.00	0.00
10	-1.00	2.00	0.04	0.07	0.04	0.07
14	-0.50	1.41	0.03	0.05	0.07	0.12
18	0.00	1.00	0.02	0.04	0.09	0.16
25	0.50	0.70	0.01	0.02	0.10	0.18
35	1.00	0.50	0.02	0.04	0.12	0.21
45	1.50	0.35	0.00	0.00	0.12	0.21
60	2.00	0.25	0.04	0.07	0.16	0.28
80	2.50	0.17	1.27	2.25	1.43	2.53
120	3.00	0.12	17.81	31.54	19.24	34.07
170	3.50	0.08	22.71	40.22	41.95	74.29
200	3.75	0.07	4.10	7.26	46.05	81.55
230	4.00	0.06	2.35	4.16	48.40	85.71
Pan	Pan	Pan	8.05	14.26	56.45	99.96

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.54	2.71	2.86	3.2	3.52	3.9	4.16

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.30	0.10	0.54	0.28	1.00
Moment	3.27	0.10	0.62	0.24	1.40

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-24 S#2
Sample Date: 10/4/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3831860	271018	State Plane 1983 LA South Fe	-21 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SP	5Y-6/1	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
58.68	57.25	0	2.83	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	0.00	0.00	0.00	0.00
10	-1.00	2.00	0.08	0.14	0.08	0.14
14	-0.50	1.41	0.04	0.07	0.12	0.20
18	0.00	1.00	0.02	0.03	0.14	0.24
25	0.50	0.70	0.05	0.09	0.19	0.32
35	1.00	0.50	0.02	0.03	0.21	0.36
45	1.50	0.35	0.02	0.03	0.23	0.39
60	2.00	0.25	0.08	0.14	0.31	0.53
80	2.50	0.17	6.76	11.52	7.07	12.05
120	3.00	0.12	29.61	50.46	36.68	62.51
170	3.50	0.08	16.83	28.68	53.51	91.19
200	3.75	0.07	2.37	4.04	55.88	95.23
230	4.00	0.06	1.14	1.94	57.02	97.17
Pan	Pan	Pan	1.66	2.83	58.68	100.00

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.19	2.54	2.63	2.88	3.22	3.37	3.74

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.94	0.13	0.44	0.22	1.07
Moment	2.94	0.13	0.54	0.12	1.60

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-24 S#3
Sample Date: 10/4/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3831860	271018	State Plane 1983 LA South Fe	-23.7 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
49.09	40.62	0.01	20.41	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.01	0.02	0.01	0.02
25	0.50	0.70	0.00	0.00	0.01	0.02
35	1.00	0.50	0.01	0.02	0.02	0.04
45	1.50	0.35	0.02	0.04	0.04	0.08
60	2.00	0.25	0.04	0.08	0.08	0.16
80	2.50	0.17	0.20	0.41	0.28	0.57
120	3.00	0.12	2.39	4.87	2.67	5.44
170	3.50	0.08	23.08	47.02	25.75	52.45
200	3.75	0.07	7.64	15.56	33.39	68.02
230	4.00	0.06	5.68	11.57	39.07	79.59
Pan	Pan	Pan	10.01	20.39	49.08	99.98

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.95	3.11	3.21	3.47	3.9	4.05	4.19

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.56	0.08	0.42	0.23	0.73
Moment	3.56	0.09	0.49	0.10	1.19

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-25 S#3
Sample Date: 12/12/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3832257	272466	State Plane 1983 LA South Fe	-21.6 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
ML	5Y-5/1	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
61.12	29.72	0.02	54.48	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.02	0.03	0.02	0.03
60	2.00	0.25	0.04	0.07	0.06	0.10
80	2.50	0.17	0.18	0.29	0.24	0.39
120	3.00	0.12	3.20	5.24	3.44	5.63
170	3.50	0.08	13.08	21.40	16.52	27.03
200	3.75	0.07	5.53	9.05	22.05	36.08
230	4.00	0.06	5.77	9.44	27.82	45.52
Pan	Pan	Pan	33.28	54.45	61.10	99.97

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.94	3.24	3.45	4.02	4.14	4.18	4.23

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.72	0.08	0.43	-0.86	0.77
Moment	3.74	0.07	0.52	-0.45	1.36

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-26 S#1
Sample Date: 12/03/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3835697	271891	State Plane 1983 LA South Fe	-15.3 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-5/1	5Y-3/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
57.53	51.31	0.04	11.23	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	0.21	0.37	0.21	0.37
10	-1.00	2.00	0.27	0.47	0.48	0.83
14	-0.50	1.41	0.34	0.59	0.82	1.43
18	0.00	1.00	0.28	0.49	1.10	1.91
25	0.50	0.70	0.20	0.35	1.30	2.26
35	1.00	0.50	0.10	0.17	1.40	2.43
45	1.50	0.35	0.04	0.07	1.44	2.50
60	2.00	0.25	0.23	0.40	1.67	2.90
80	2.50	0.17	5.47	9.51	7.14	12.41
120	3.00	0.12	29.17	50.70	36.31	63.11
170	3.50	0.08	11.18	19.43	47.49	82.55
200	3.75	0.07	2.03	3.53	49.52	86.08
230	4.00	0.06	1.55	2.69	51.07	88.77
Pan	Pan	Pan	6.42	11.16	57.49	99.93

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.11	2.54	2.62	2.87	3.31	3.6	4.14

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.05	0.12	0.57	0.49	1.22
Moment	3.03	0.12	0.70	0.31	1.72

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-26 S#4
Sample Date: 12/03/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3835697	271891	State Plane 1983 LA South Fe	-21.4 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SP	5Y-5/2	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
37.05	35.52	0.04	4.35	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.02	0.05	0.02	0.05
35	1.00	0.50	0.01	0.03	0.03	0.08
45	1.50	0.35	0.02	0.05	0.05	0.13
60	2.00	0.25	0.46	1.24	0.51	1.38
80	2.50	0.17	16.49	44.51	17.00	45.88
120	3.00	0.12	15.08	40.70	32.08	86.59
170	3.50	0.08	2.79	7.53	34.87	94.12
200	3.75	0.07	0.33	0.89	35.20	95.01
230	4.00	0.06	0.24	0.65	35.44	95.65
Pan	Pan	Pan	1.57	4.24	37.01	99.89

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.04	2.16	2.27	2.55	2.86	2.97	3.75

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.69	0.15	0.46	0.50	1.18
Moment	2.66	0.16	0.59	0.74	2.22

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-26 S#5
Sample Date: 12/03/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3835697	271891	State Plane 1983 LA South Fe	-23.8 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/2	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
32.52	27.18	0.09	18.2	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.04	0.12	0.04	0.12
7	-1.50	2.82	0.03	0.09	0.07	0.22
10	-1.00	2.00	0.06	0.18	0.13	0.40
14	-0.50	1.41	0.15	0.46	0.28	0.86
18	0.00	1.00	0.06	0.18	0.34	1.05
25	0.50	0.70	0.16	0.49	0.50	1.54
35	1.00	0.50	0.32	0.98	0.82	2.52
45	1.50	0.35	0.36	1.11	1.18	3.63
60	2.00	0.25	0.27	0.83	1.45	4.46
80	2.50	0.17	2.13	6.55	3.58	11.01
120	3.00	0.12	10.99	33.79	14.57	44.80
170	3.50	0.08	8.71	26.78	23.28	71.59
200	3.75	0.07	1.83	5.63	25.11	77.21
230	4.00	0.06	1.49	4.58	26.60	81.80
Pan	Pan	Pan	5.83	17.93	32.43	99.72

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.04	2.57	2.71	3.1	3.65	4.03	4.18

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.19	0.11	0.69	0.15	0.93
Moment	3.18	0.11	0.80	-0.04	1.40

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-27 S#1
Sample Date: 12/03/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3833631	272138	State Plane 1983 LA South Fe	-16.9 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SW-SM	5Y-5/1	5Y-4/2	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
72.97	67.62	0.01	7.7	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	0.11	0.15	0.11	0.15
10	-1.00	2.00	0.12	0.16	0.23	0.32
14	-0.50	1.41	0.24	0.33	0.47	0.64
18	0.00	1.00	0.30	0.41	0.77	1.06
25	0.50	0.70	0.26	0.36	1.03	1.41
35	1.00	0.50	0.16	0.22	1.19	1.63
45	1.50	0.35	0.08	0.11	1.27	1.74
60	2.00	0.25	0.33	0.45	1.60	2.19
80	2.50	0.17	23.69	32.47	25.29	34.66
120	3.00	0.12	25.21	34.55	50.50	69.21
170	3.50	0.08	11.74	16.09	62.24	85.30
200	3.75	0.07	2.76	3.78	65.00	89.08
230	4.00	0.06	2.35	3.22	67.35	92.30
Pan	Pan	Pan	5.61	7.69	72.96	99.99

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.04	2.21	2.35	2.72	3.18	3.46	4.09

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.91	0.13	0.62	0.43	1.01
Moment	2.87	0.14	0.75	0.44	1.66

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-27 S#3
Sample Date: 12/05/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3833631	272138	State Plane 1983 LA South Fe	-25.5 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/2	5Y-5/2	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
43.58	37.01	0.2	16.06	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.01	0.02	0.01	0.02
60	2.00	0.25	0.01	0.02	0.02	0.05
80	2.50	0.17	0.49	1.12	0.51	1.17
120	3.00	0.12	19.45	44.63	19.96	45.80
170	3.50	0.08	11.89	27.28	31.85	73.08
200	3.75	0.07	2.94	6.75	34.79	79.83
230	4.00	0.06	1.79	4.11	36.58	83.94
Pan	Pan	Pan	6.80	15.60	43.38	99.54

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.54	2.67	2.77	3.08	3.57	4	4.18

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.29	0.10	0.58	0.48	0.83
Moment	3.26	0.10	0.66	0.30	1.28

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-27 S#5
Sample Date: 12/05/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3833631	272138	State Plane 1983 LA South Fe	-29.5 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
ML	5Y-6/1	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
43.84	25.56	0.13	46.19	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	0.00	0.00	0.00	0.00
10	-1.00	2.00	0.01	0.02	0.01	0.02
14	-0.50	1.41	0.01	0.02	0.02	0.05
18	0.00	1.00	0.01	0.02	0.03	0.07
25	0.50	0.70	0.01	0.02	0.04	0.09
35	1.00	0.50	0.01	0.02	0.05	0.11
45	1.50	0.35	0.02	0.05	0.07	0.16
60	2.00	0.25	0.02	0.05	0.09	0.21
80	2.50	0.17	0.09	0.21	0.18	0.41
120	3.00	0.12	2.40	5.47	2.58	5.89
170	3.50	0.08	10.52	24.00	13.10	29.88
200	3.75	0.07	4.89	11.15	17.99	41.04
230	4.00	0.06	5.60	12.77	23.59	53.81
Pan	Pan	Pan	20.12	45.89	43.71	99.70

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.92	3.21	3.4	3.93	4.12	4.16	4.22

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.69	0.08	0.44	-0.65	0.75
Moment	3.71	0.08	0.52	-0.38	1.32

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-28 S#1
Sample Date: 12/05/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3833741	269449	State Plane 1983 LA South Fe	-20.9 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SW-SM	5Y-6/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
49.62	47.27	0.09	5.12	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	0.06	0.12	0.06	0.12
10	-1.00	2.00	0.03	0.06	0.09	0.18
14	-0.50	1.41	0.03	0.06	0.12	0.24
18	0.00	1.00	0.04	0.08	0.16	0.32
25	0.50	0.70	0.04	0.08	0.20	0.40
35	1.00	0.50	0.01	0.02	0.21	0.42
45	1.50	0.35	0.02	0.04	0.23	0.46
60	2.00	0.25	0.19	0.38	0.42	0.85
80	2.50	0.17	11.86	23.90	12.28	24.75
120	3.00	0.12	24.17	48.71	36.45	73.46
170	3.50	0.08	9.04	18.22	45.49	91.68
200	3.75	0.07	0.97	1.95	46.46	93.63
230	4.00	0.06	0.62	1.25	47.08	94.88
Pan	Pan	Pan	2.45	4.94	49.53	99.82

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.09	2.32	2.5	2.76	3.04	3.29	4.01

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.89	0.13	0.53	0.48	1.46
Moment	2.86	0.14	0.65	0.56	2.04

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-29 S#2
Sample Date: 11/20/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3835271	270842	State Plane 1983 LA South Fe	-19.4 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-5/1	5Y-4/2	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
51.73	34.74	0.01	36.27	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.02	0.04	0.02	0.04
35	1.00	0.50	0.00	0.00	0.02	0.04
45	1.50	0.35	0.02	0.04	0.04	0.08
60	2.00	0.25	0.01	0.02	0.05	0.10
80	2.50	0.17	0.20	0.39	0.25	0.48
120	3.00	0.12	4.40	8.51	4.65	8.99
170	3.50	0.08	16.34	31.59	20.99	40.58
200	3.75	0.07	5.29	10.23	26.28	50.80
230	4.00	0.06	6.69	12.93	32.97	63.73
Pan	Pan	Pan	18.75	36.25	51.72	99.98

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.77	3.11	3.25	3.73	4.08	4.14	4.22

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.59	0.08	0.48	-0.34	0.72
Moment	3.61	0.08	0.57	-0.28	1.32

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-29 S#4
Sample Date: 11/20/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3835271	270842	State Plane 1983 LA South Fe	-23.4 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SP	5Y-5/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
73.82	72	0	2.59	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.03	0.04	0.03	0.04
35	1.00	0.50	0.01	0.01	0.04	0.05
45	1.50	0.35	0.01	0.01	0.05	0.07
60	2.00	0.25	0.16	0.22	0.21	0.28
80	2.50	0.17	27.37	37.08	27.58	37.36
120	3.00	0.12	36.38	49.28	63.96	86.64
170	3.50	0.08	6.61	8.95	70.57	95.60
200	3.75	0.07	0.85	1.15	71.42	96.75
230	4.00	0.06	0.49	0.66	71.91	97.41
Pan	Pan	Pan	1.91	2.59	73.82	100.00

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.06	2.21	2.33	2.63	2.88	2.97	3.47

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.67	0.16	0.40	0.16	1.05
Moment	2.65	0.16	0.49	0.37	1.75

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-29 S#5
Sample Date: 11/20/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3835271	270842	State Plane 1983 LA South Fe	-25.9 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-5/1	5Y-5/2	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
54.38	44.47	0.01	20.38	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.03	0.06	0.03	0.06
35	1.00	0.50	0.03	0.06	0.06	0.11
45	1.50	0.35	0.04	0.07	0.10	0.18
60	2.00	0.25	0.02	0.04	0.12	0.22
80	2.50	0.17	0.37	0.68	0.49	0.90
120	3.00	0.12	2.83	5.20	3.32	6.11
170	3.50	0.08	23.89	43.93	27.21	50.04
200	3.75	0.07	8.89	16.35	36.10	66.38
230	4.00	0.06	7.20	13.24	43.30	79.62
Pan	Pan	Pan	11.07	20.36	54.37	99.98

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.89	3.11	3.22	3.5	3.91	4.05	4.19

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.55	0.09	0.43	0.14	0.76
Moment	3.55	0.09	0.50	0.02	1.24

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-30 S#1
Sample Date: 12/05/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3835952	270034	State Plane 1983 LA South Fe	-19.2 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/2	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
42.74	31.91	0.12	28.12	N/A

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	0.06	0.14	0.06	0.14
10	-1.00	2.00	0.12	0.28	0.18	0.42
14	-0.50	1.41	0.13	0.30	0.31	0.73
18	0.00	1.00	0.13	0.30	0.44	1.03
25	0.50	0.70	0.08	0.19	0.52	1.22
35	1.00	0.50	0.05	0.12	0.57	1.33
45	1.50	0.35	0.02	0.05	0.59	1.38
60	2.00	0.25	0.10	0.23	0.69	1.61
80	2.50	0.17	1.51	3.53	2.20	5.15
120	3.00	0.12	6.31	14.76	8.51	19.91
170	3.50	0.08	12.11	28.33	20.62	48.25
200	3.75	0.07	5.01	11.72	25.63	59.97
230	4.00	0.06	5.09	11.91	30.72	71.88
Pan	Pan	Pan	11.90	27.84	42.62	99.72

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.48	2.87	3.09	3.54	4.03	4.11	4.21

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.44	0.09	0.57	-0.21	0.76
Moment	3.47	0.09	0.68	-0.24	1.33

Gradation Analysis Report

Project Name: Barataria
Sample Name: EMVC-02-31 S#1
Sample Date: 12/05/02
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3830778	272823	State Plane 1983 LA South Fe	-20.9 NAVD 88 Feet

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/1	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
52.44	40.64	0.02	24.22	N/A

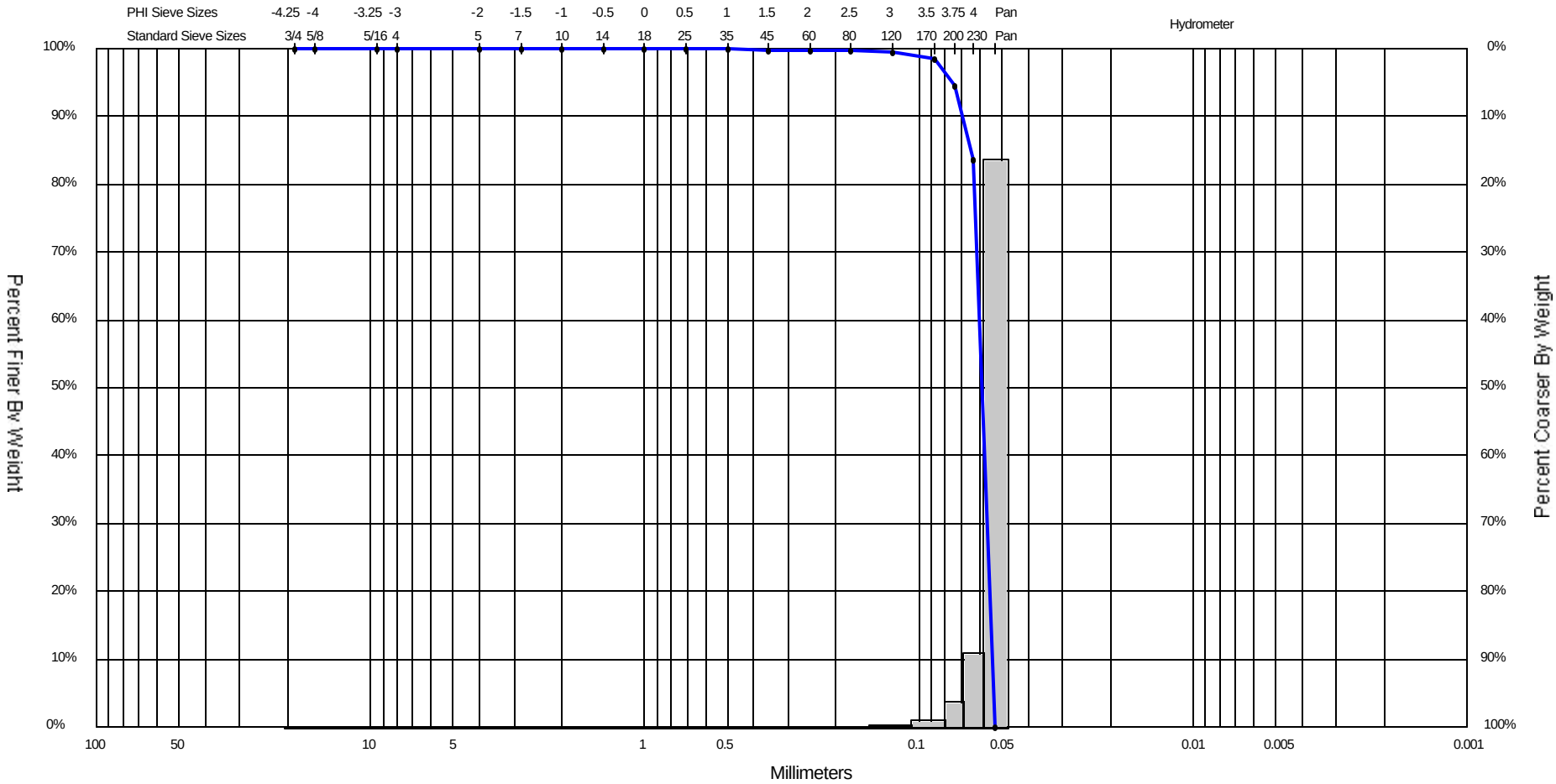
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.03	0.06	0.03	0.06
60	2.00	0.25	0.02	0.04	0.05	0.10
80	2.50	0.17	1.72	3.28	1.77	3.38
120	3.00	0.12	12.94	24.68	14.71	28.05
170	3.50	0.08	14.39	27.44	29.10	55.49
200	3.75	0.07	5.52	10.53	34.62	66.02
230	4.00	0.06	5.12	9.76	39.74	75.78
Pan	Pan	Pan	12.68	24.18	52.42	99.96

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.53	2.76	2.94	3.4	3.98	4.08	4.2

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.39	0.10	0.58	-0.01	0.66
Moment	3.41	0.09	0.69	-0.05	1.15

APPENDIX 3

2002 EMPIRE INDIVIDUAL GRAIN SIZE DISTRIBUTION CURVES/HISTOGRAMS



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-03 S#5		-26.4		ML	83.67	0.06	0.06	-0.96	2.61	0.17
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	10/4/02
Analyzed By:	ID
Easting (X):	3842191
Northing (Y):	271480
Horizontal System:	State Plane 1983 FL East Fee
Vertical System:	NAVD 88 Feet

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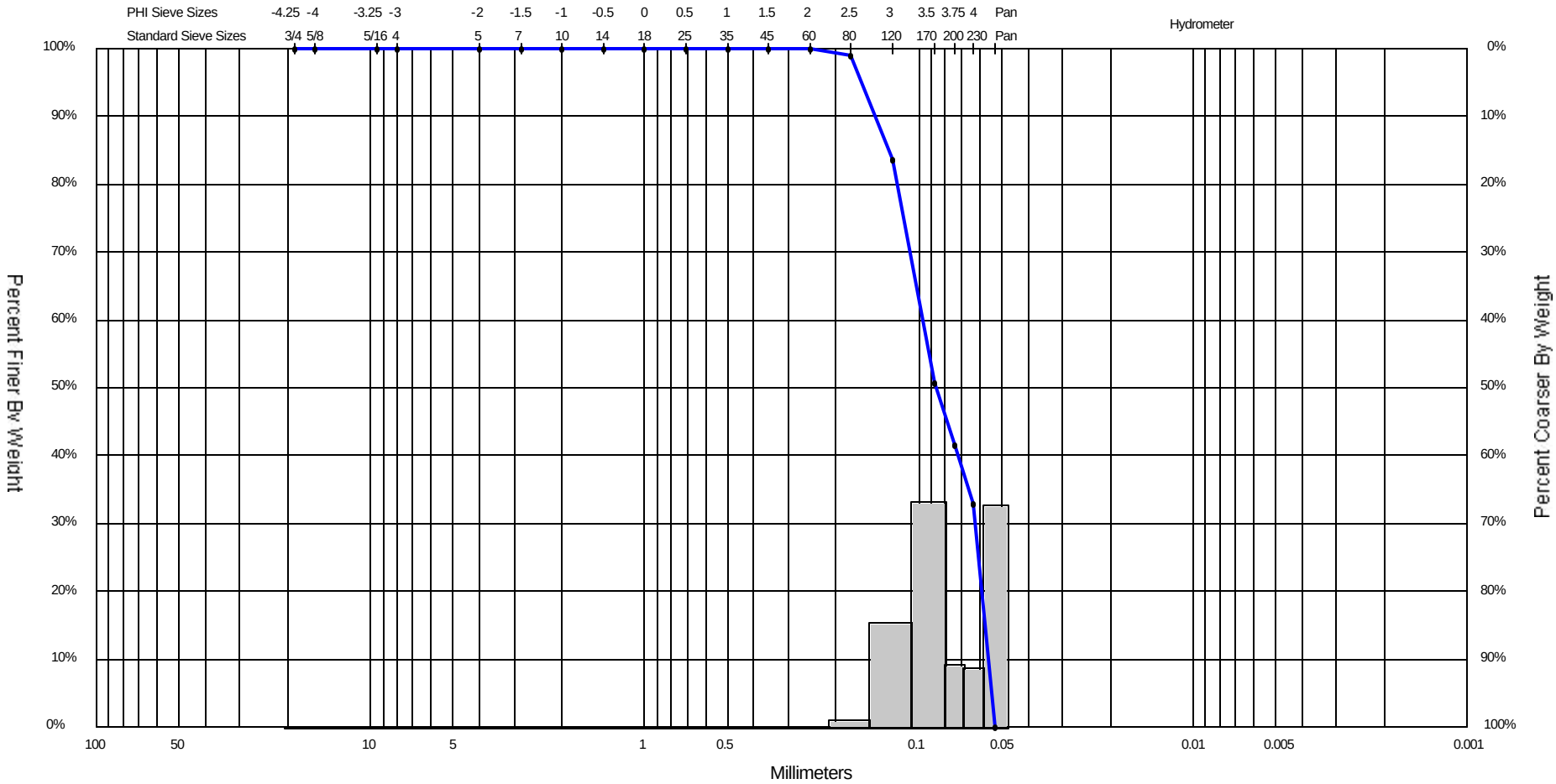

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-03 S#6		-28.3		SM	32.83	0.09	0.09	-0.15	1.27	0.63
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	10/4/02
Analyzed By:	ID
Easting (X):	3842191
Northing (Y):	271480
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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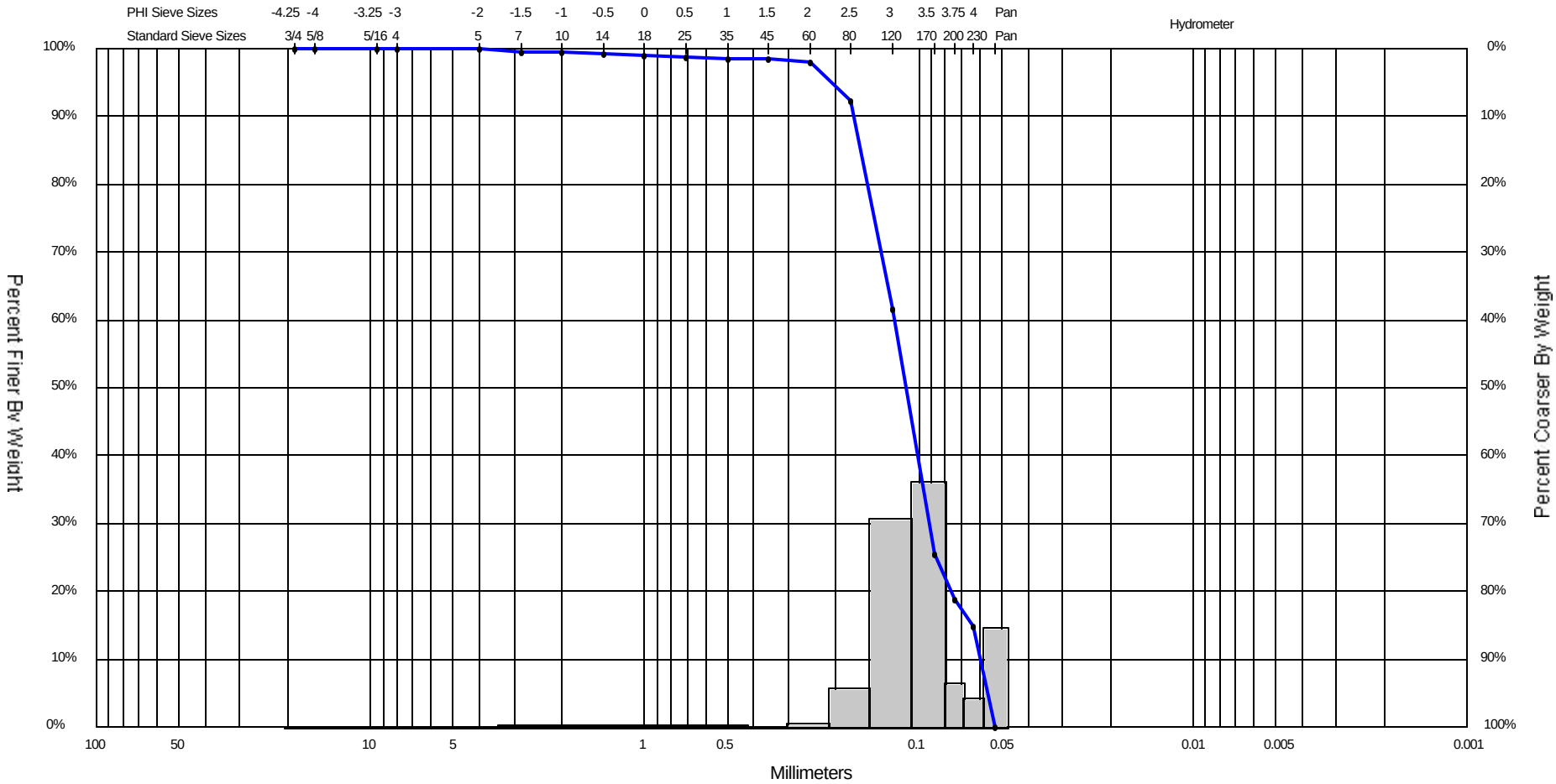

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-06 S#1		-17.7		SM	14.75	0.11	0.11	0.09	1.43	0.70
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	10/4/02
Analyzed By:	ID
Easting (X):	3837653
Northing (Y):	269110
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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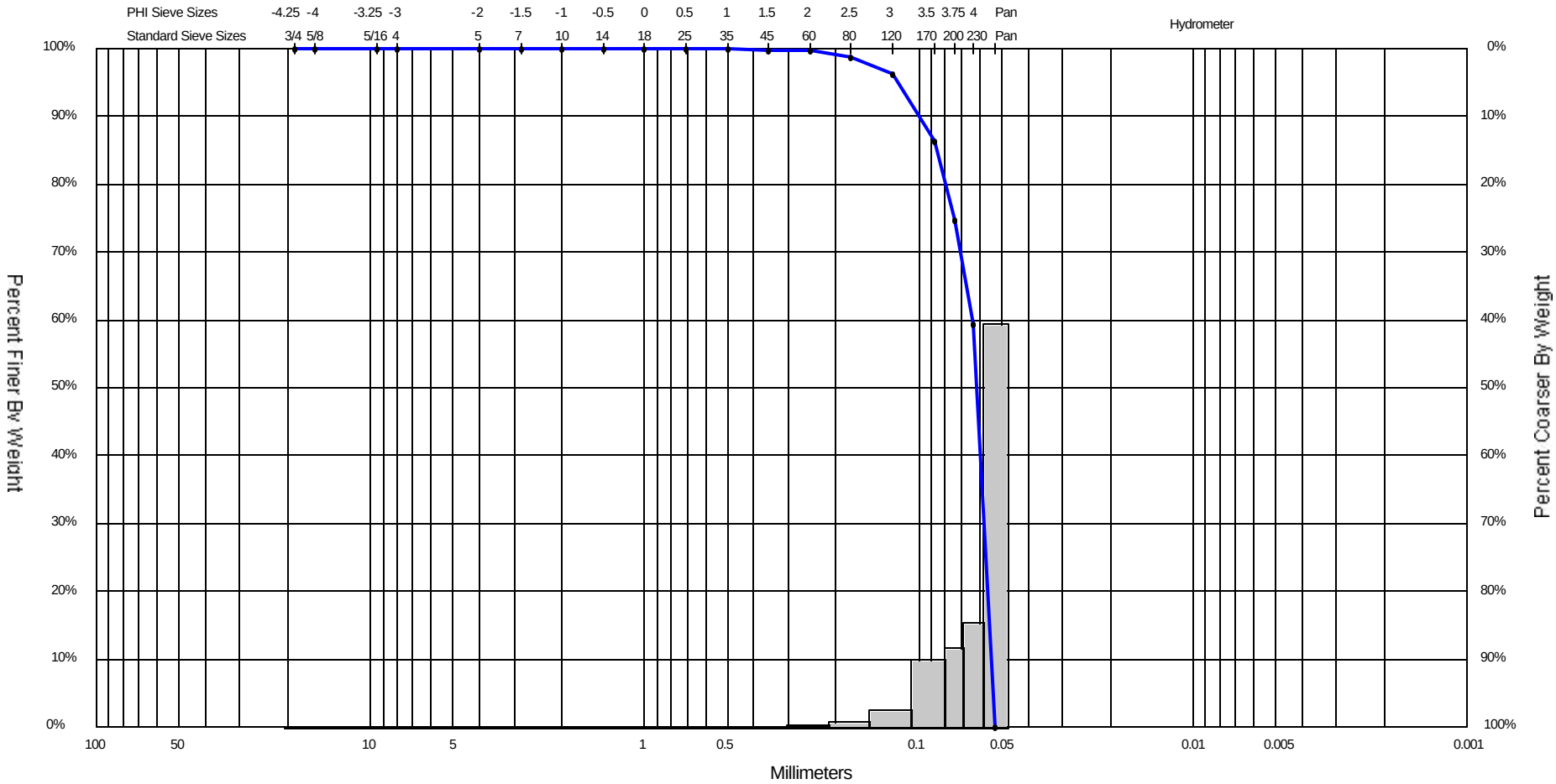

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-06 S#4		-19.6		ML	59.38	0.06	0.07	-0.84	2.16	0.43
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	10/8/02
Analyzed By:	ID
Easting (X):	3837653
Northing (Y):	269110
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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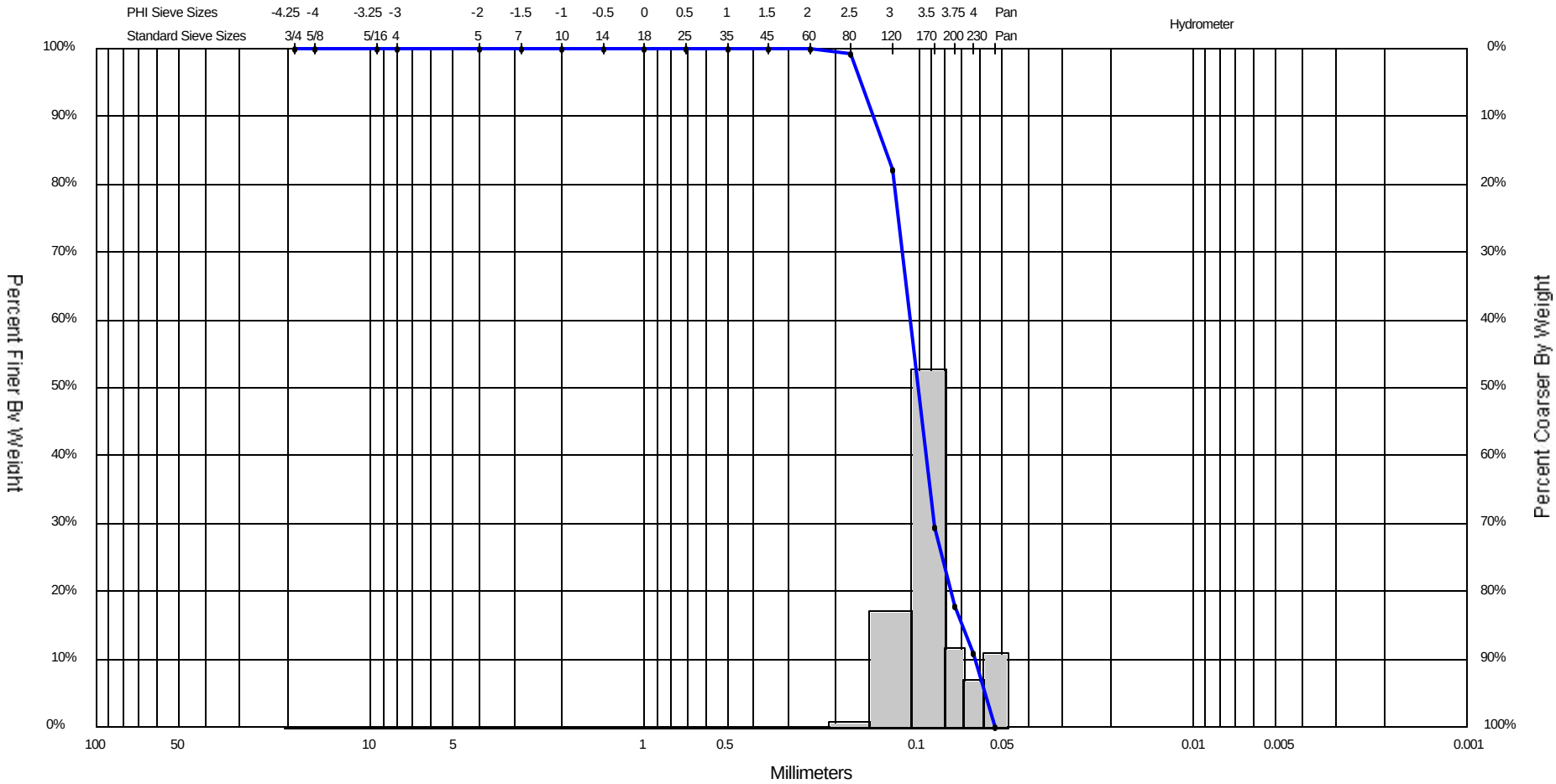

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-06 S#5		-20.9		SM	10.96	0.10	0.10	0.11	1.60	0.53
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	10/8/02
Analyzed By:	ID
Easting (X):	3837653
Northing (Y):	269110
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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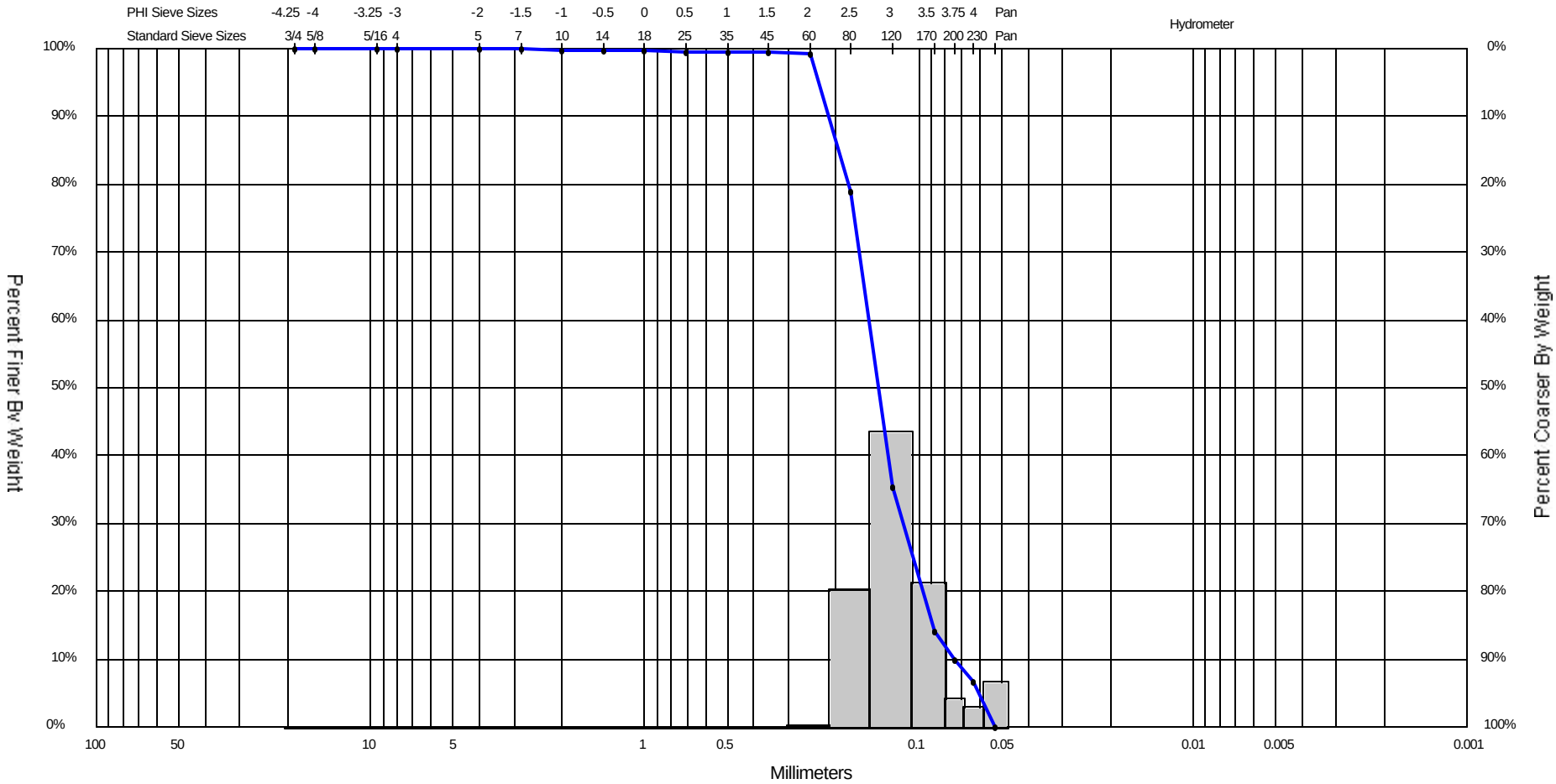

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-07 S#2		-22.2		SW-SM	6.78	0.14	0.13	0.37	1.73	0.68
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	10/8/02
Analyzed By:	ID
Easting (X):	3833687
Northing (Y):	270236
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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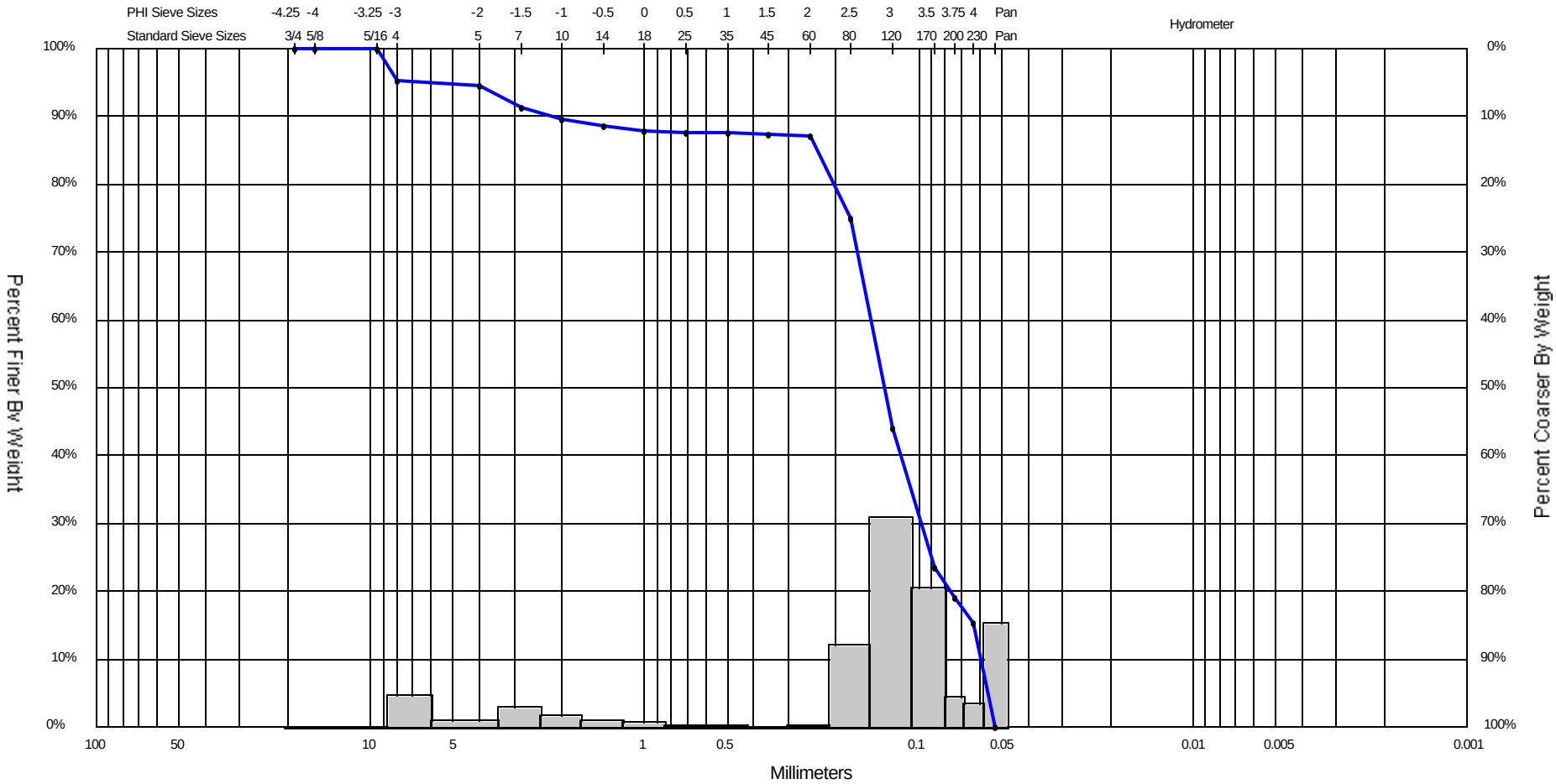

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-07 S#3		-23.8		SM	15.40	0.13	0.19	-1.49	3.65	2.31
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	10/7/02
Analyzed By:	ID
Easting (X):	3833687
Northing (Y):	270236
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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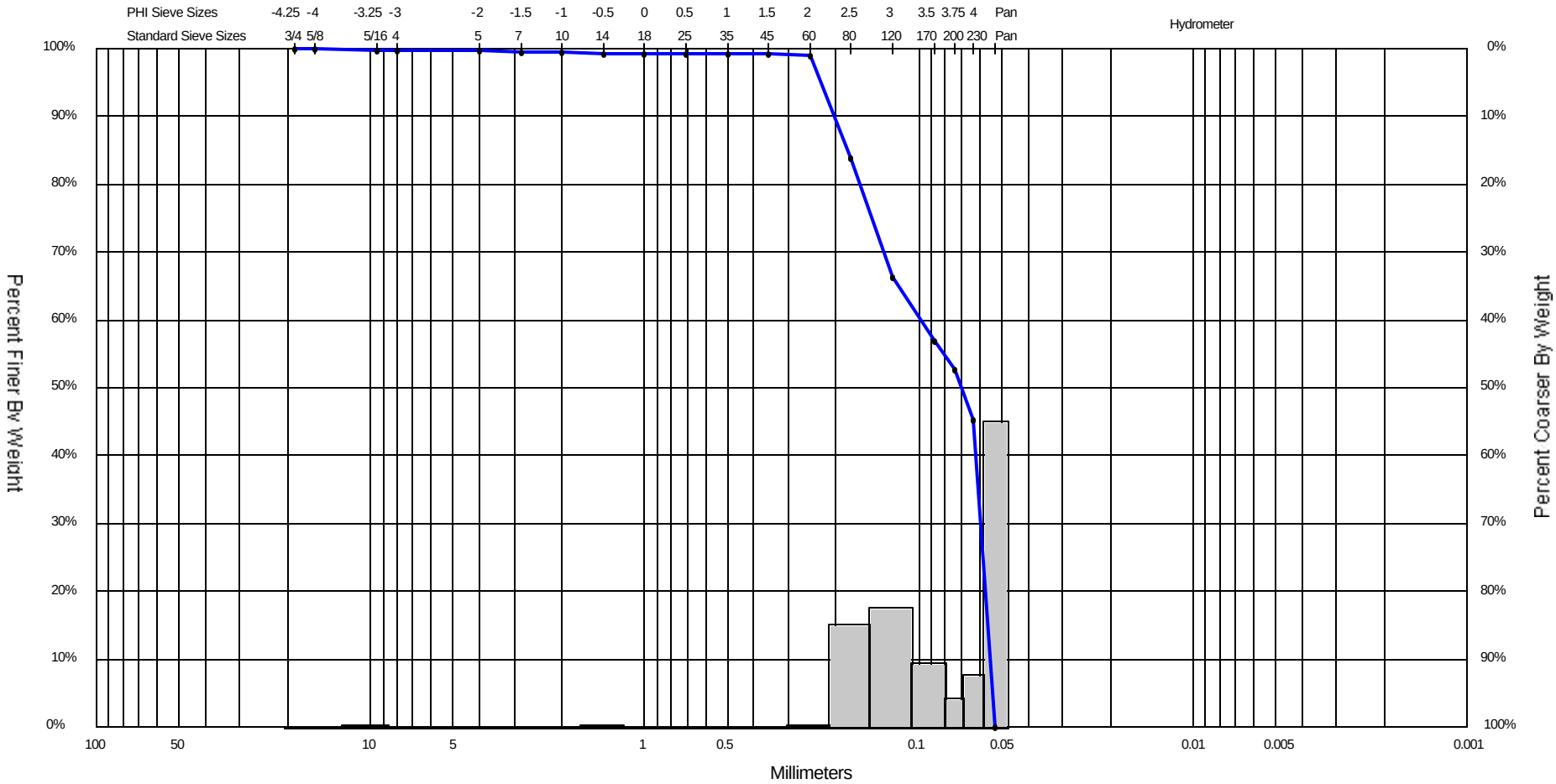

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-07 S#4		-24.4		ML	45.20	0.07	0.10	-0.34	1.16	0.89
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	10/7/02
Analyzed By:	ID
Easting (X):	3833687
Northing (Y):	270236
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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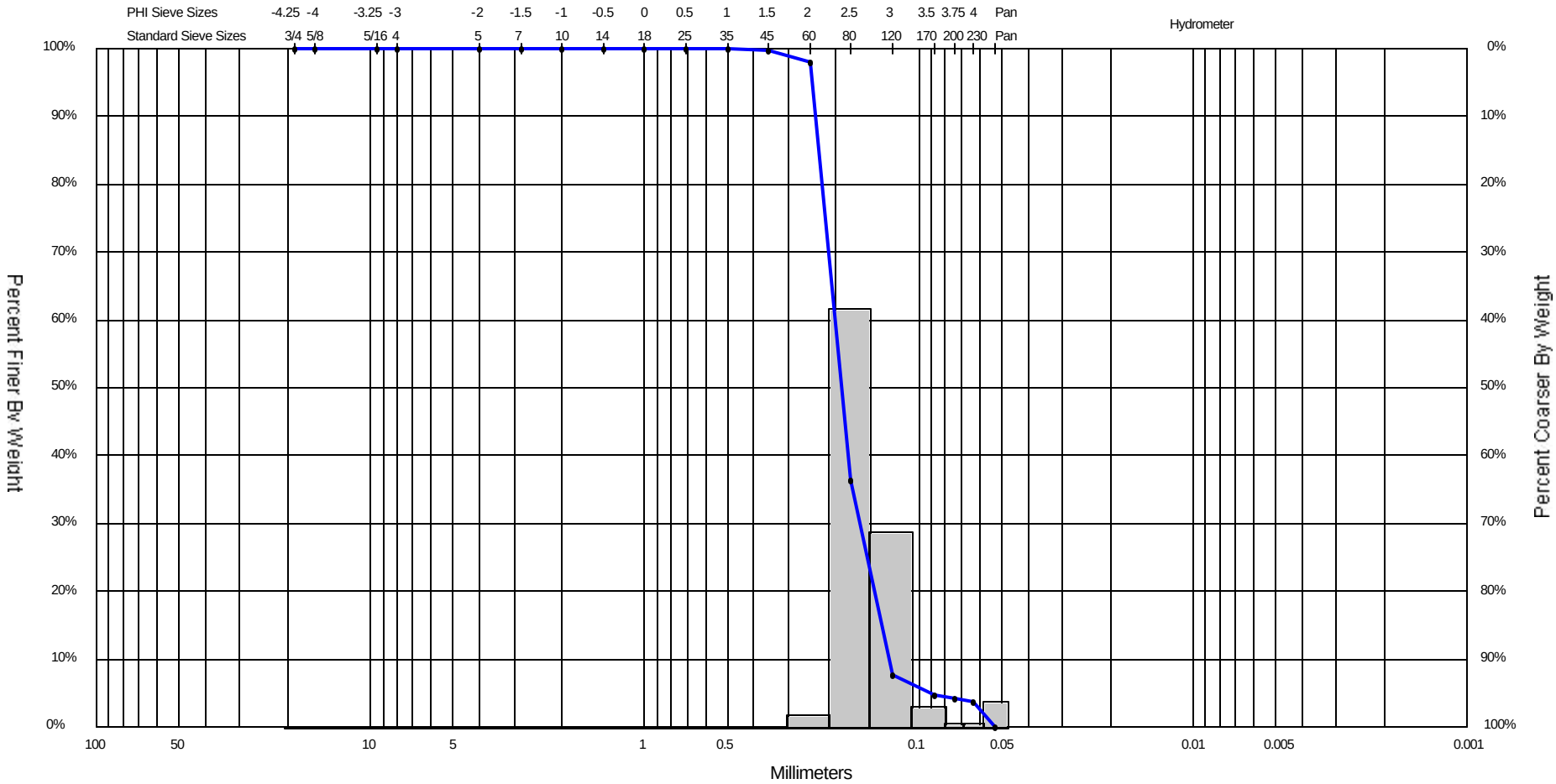

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-07 S#5		-26.5		SP	3.72	0.19	0.17	0.73	2.10	0.51
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	10/7/02
Analyzed By:	ID
Easting (X):	3833687
Northing (Y):	270236
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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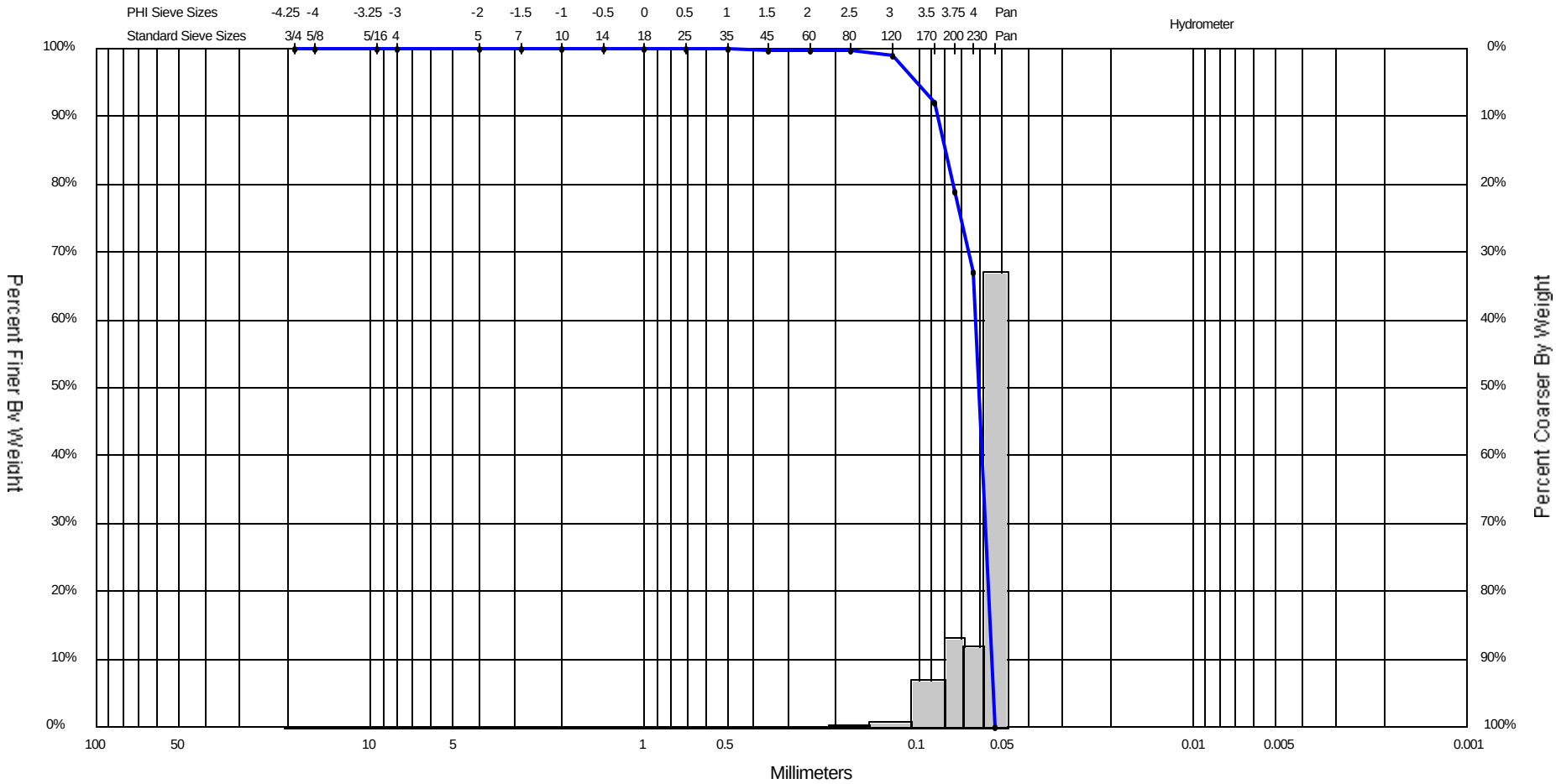

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-08 S#2		-18.3		ML	67.10	0.06	0.07	-0.79	2.07	0.35
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	9/30/02
Analyzed By:	ID
Easting (X):	3834669
Northing (Y):	271902
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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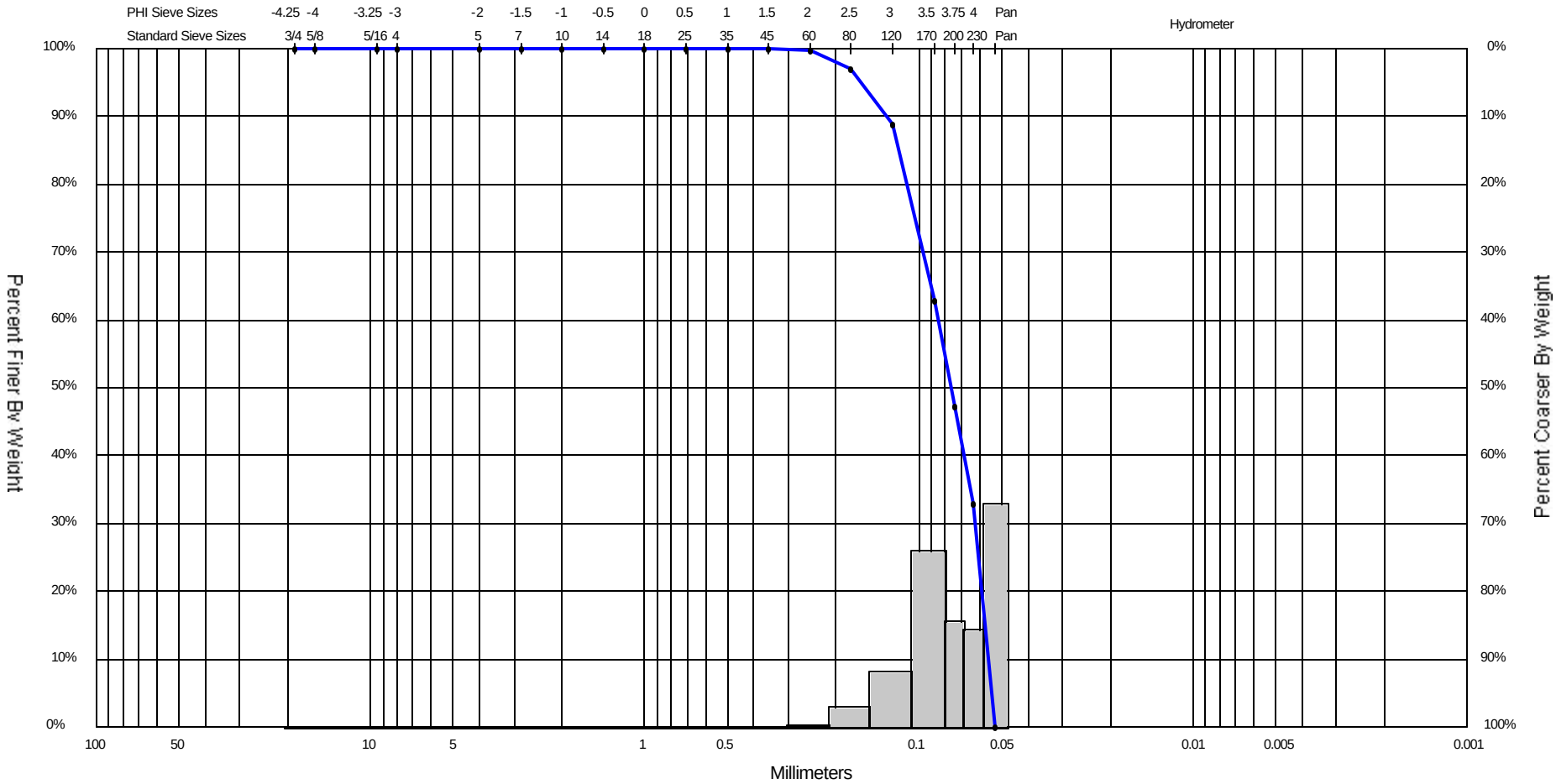

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-08 S#4		-22.3		SM	32.90	0.08	0.08	-0.39	1.52	0.61
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	10/01/02
Analyzed By:	ID
Easting (X):	3834669
Northing (Y):	271902
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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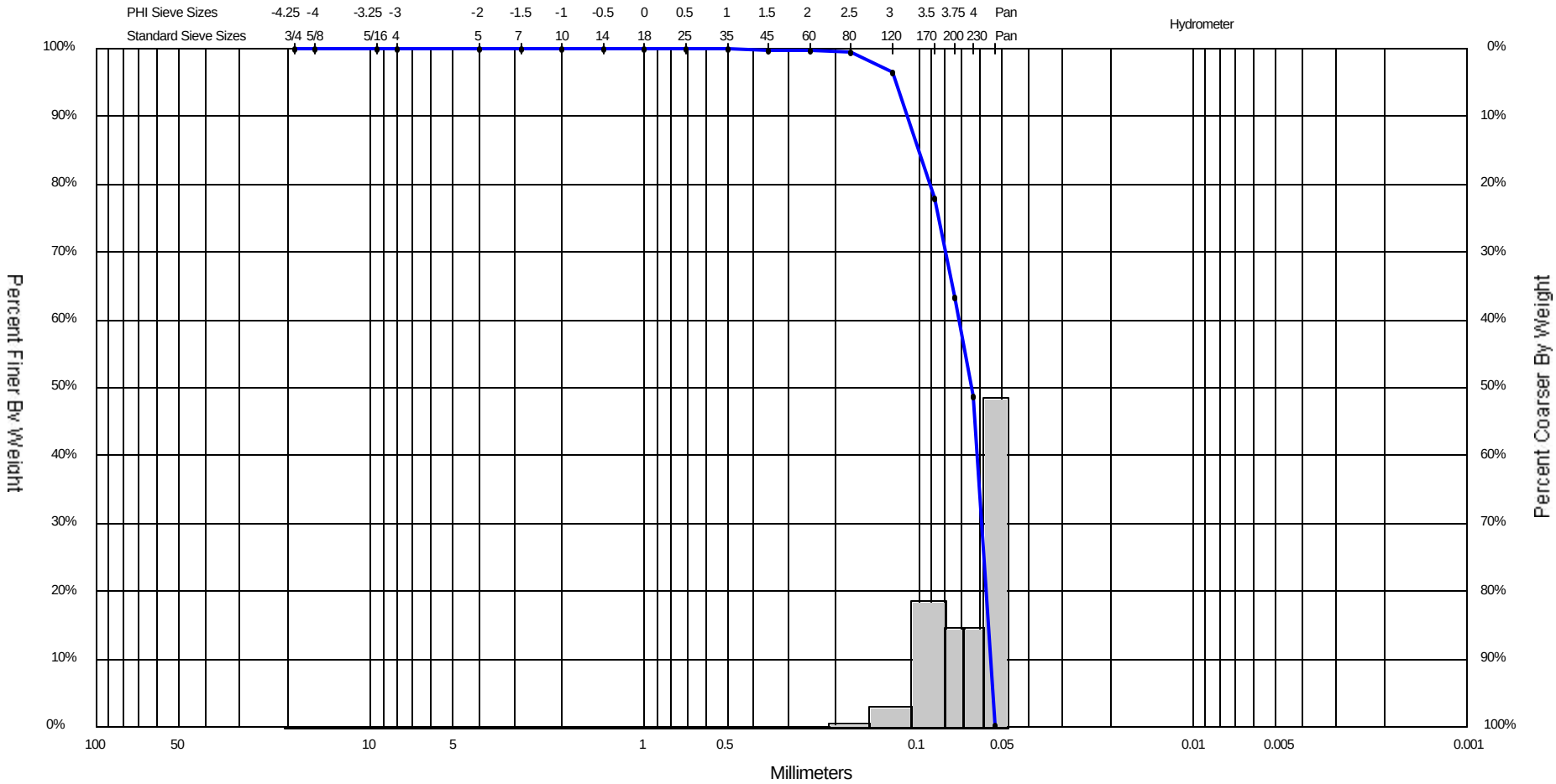

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-08A S#2		-26.6		ML	48.70	0.06	0.07	-0.47	1.45	0.47
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	10/01/02
Analyzed By:	ID
Easting (X):	3834666
Northing (Y):	271905
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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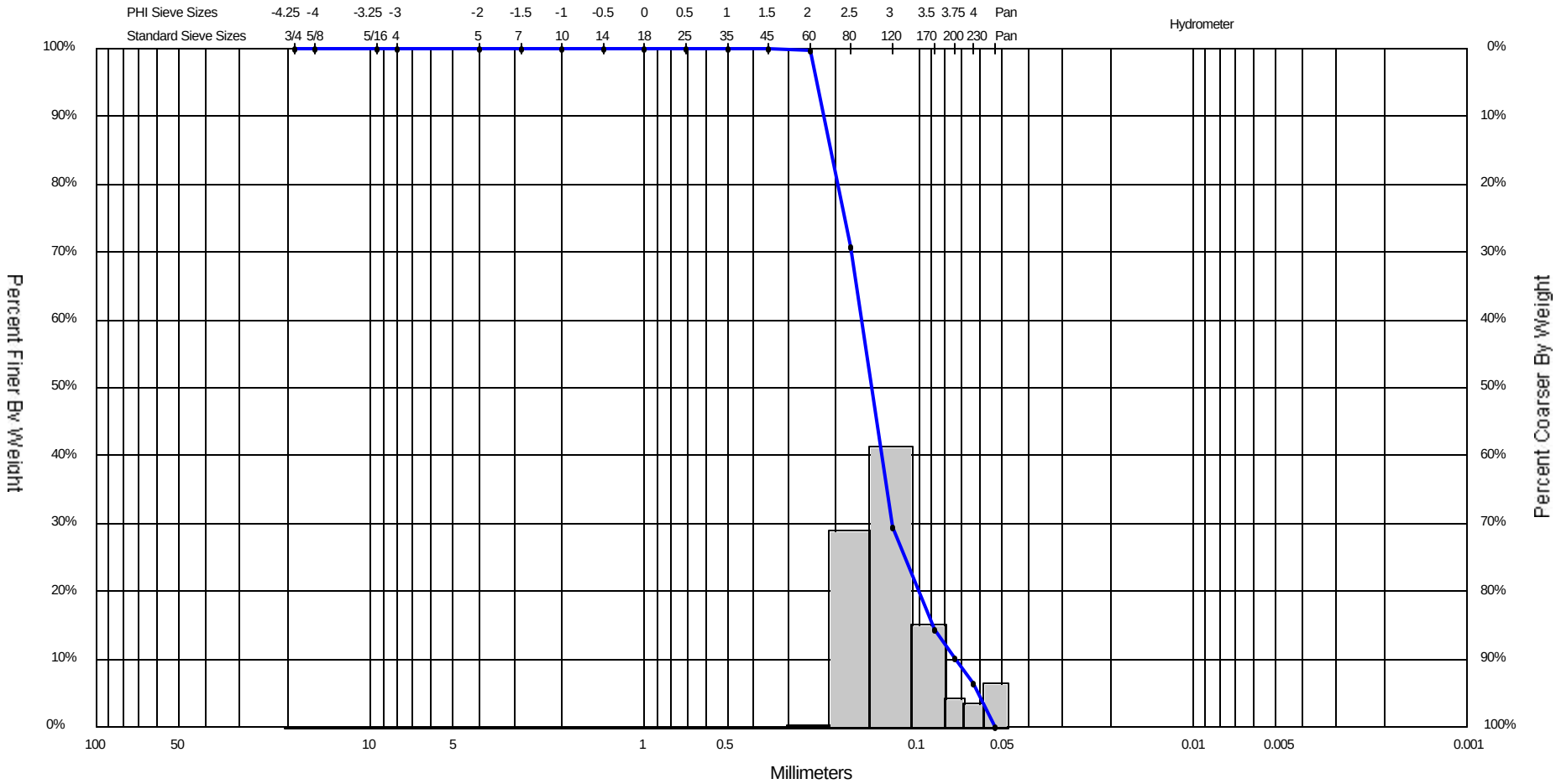

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-08A S#3		-23.7		SW-SM	6.49	0.15	0.14	0.46	1.73	0.71
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	9/30/02
Analyzed By:	ID
Easting (X):	3834666
Northing (Y):	271905
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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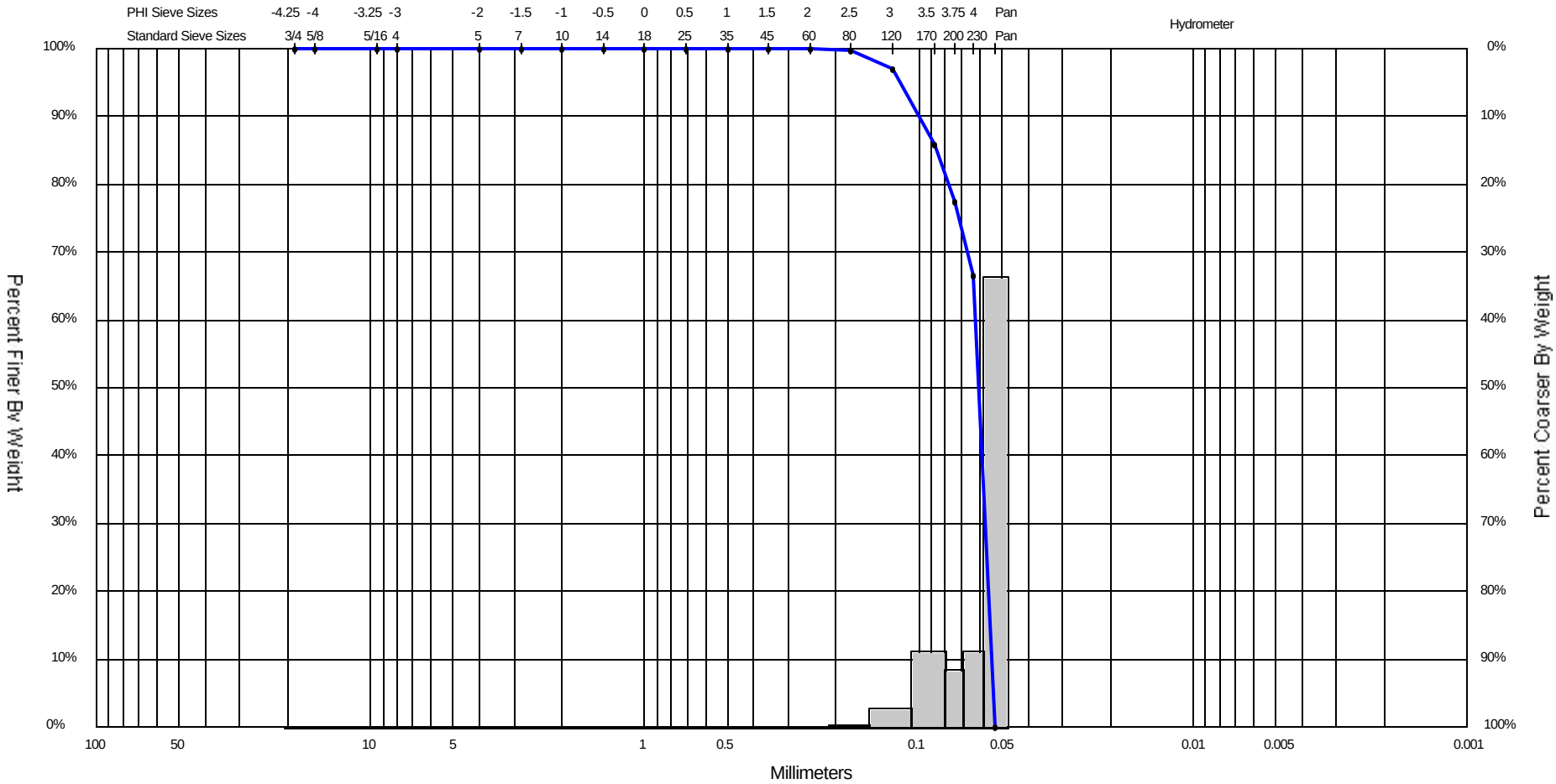

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-09 S#4		-20		ML	66.46	0.06	0.07	-0.88	2.20	0.42
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	10/02/02
Analyzed By:	ID
Easting (X):	3829719
Northing (Y):	274358
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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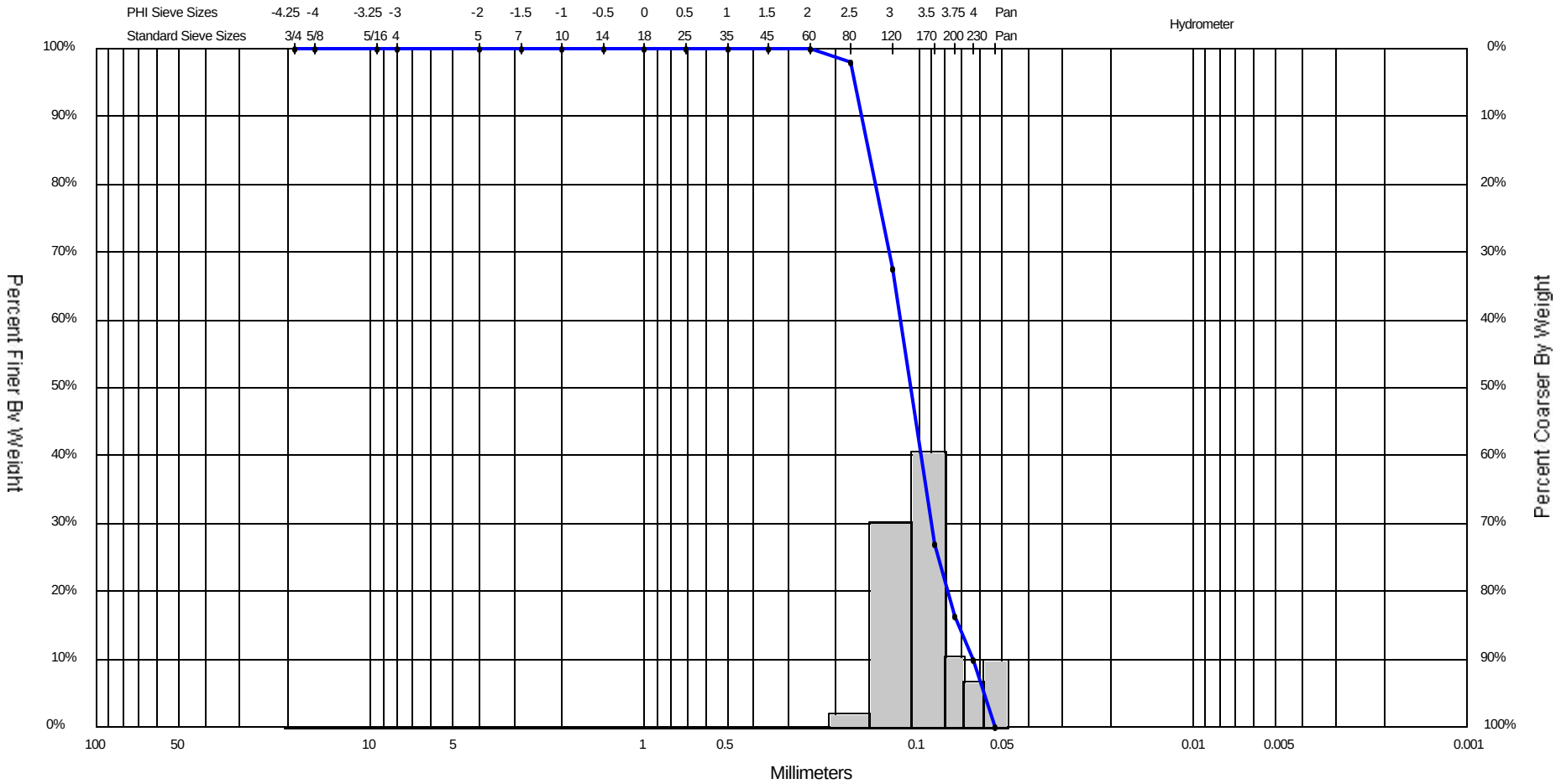

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-09 S#5		-22.6		SM	9.84	0.11	0.10	0.21	1.45	0.58
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	9/30/02
Analyzed By:	ID
Easting (X):	3829719
Northing (Y):	274358
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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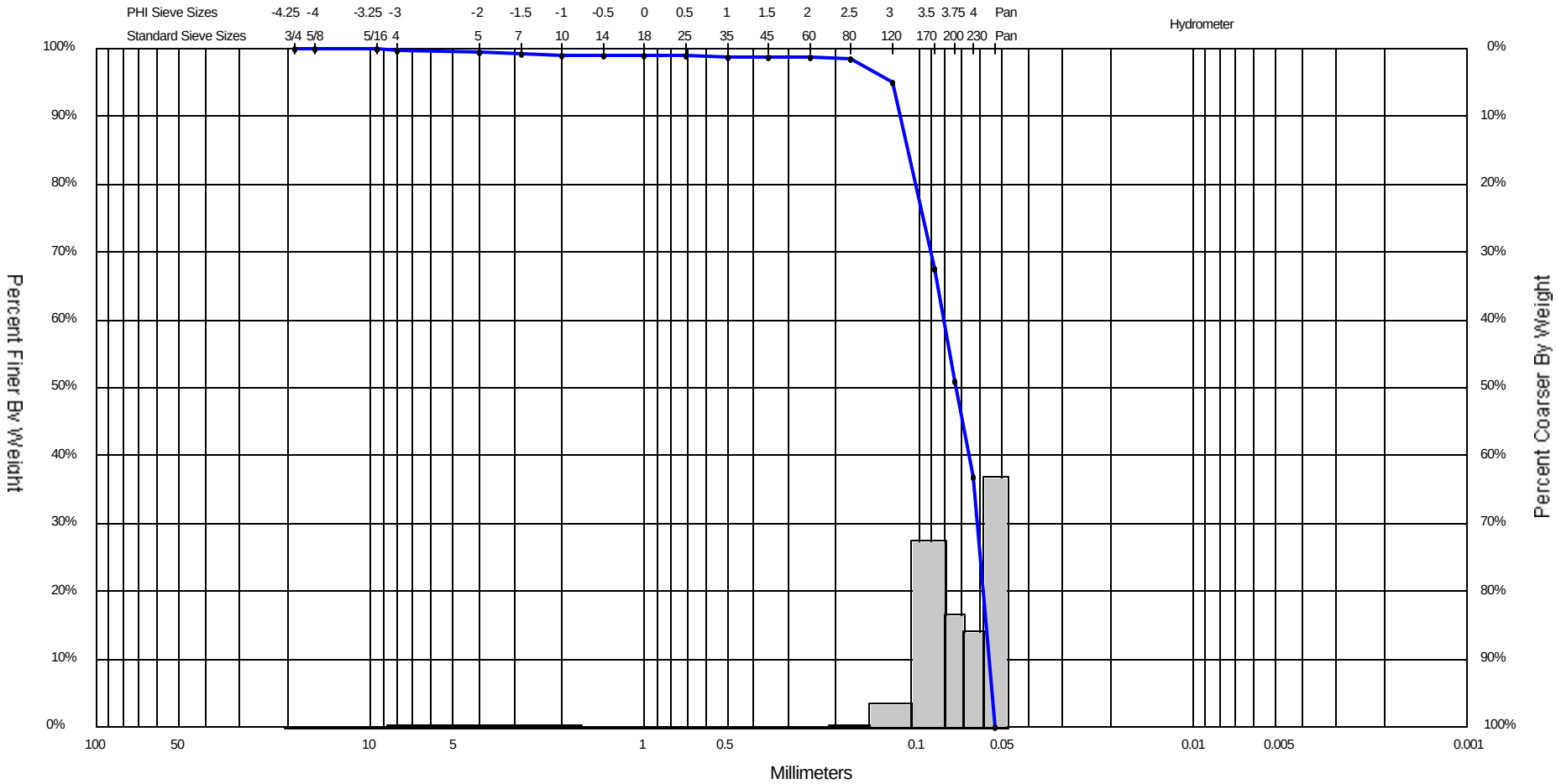

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-10 S#3		-22.1		ML	36.86	0.07	0.08	-0.20	1.21	0.49
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	10/1/02
Analyzed By:	ID
Easting (X):	3830073
Northing (Y):	271961
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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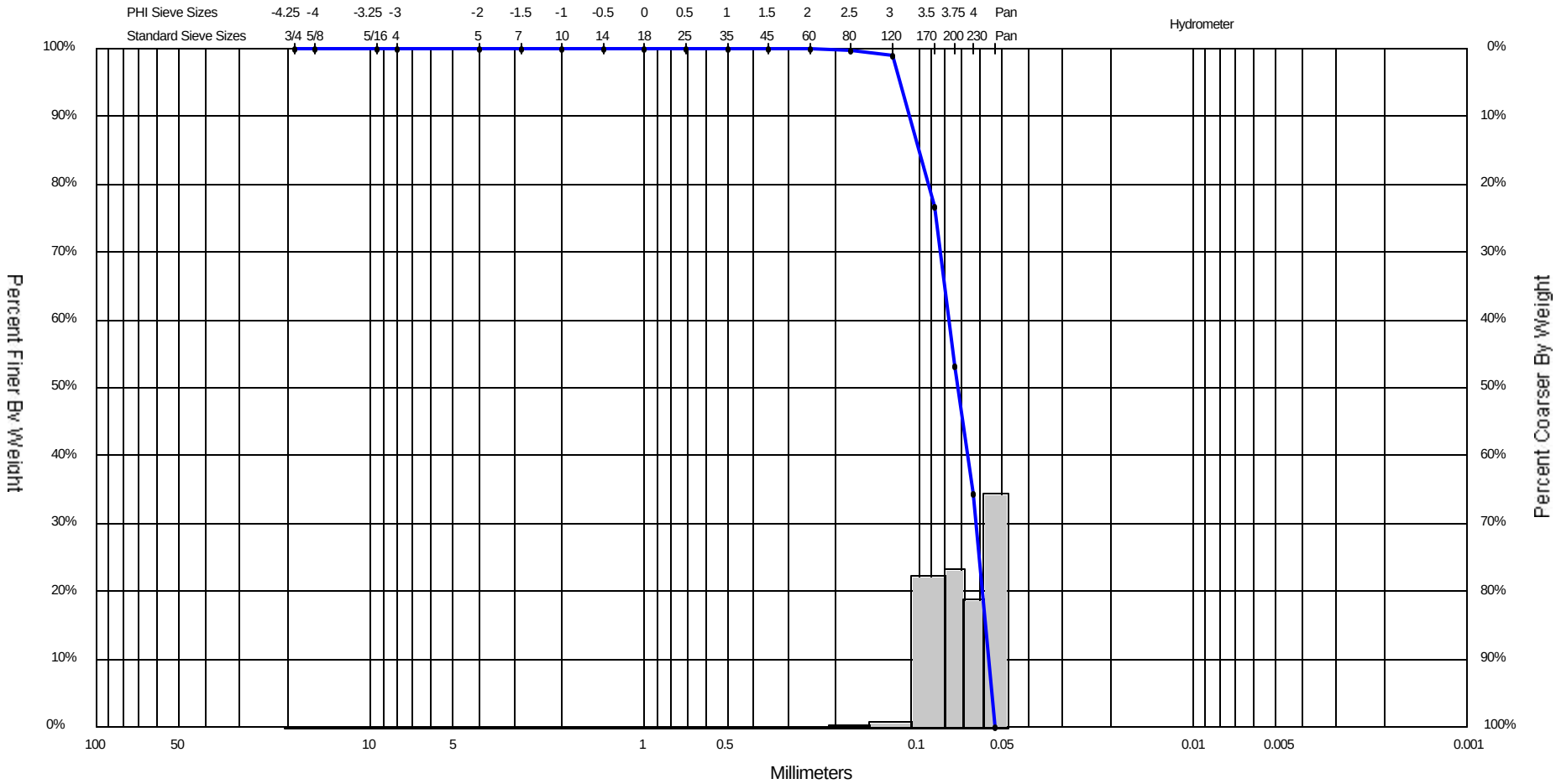

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-10 S#5		-27.1		ML	34.41	0.07	0.08	-0.28	1.38	0.43
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	10/1/02
Analyzed By:	ID
Easting (X):	3830073
Northing (Y):	271961
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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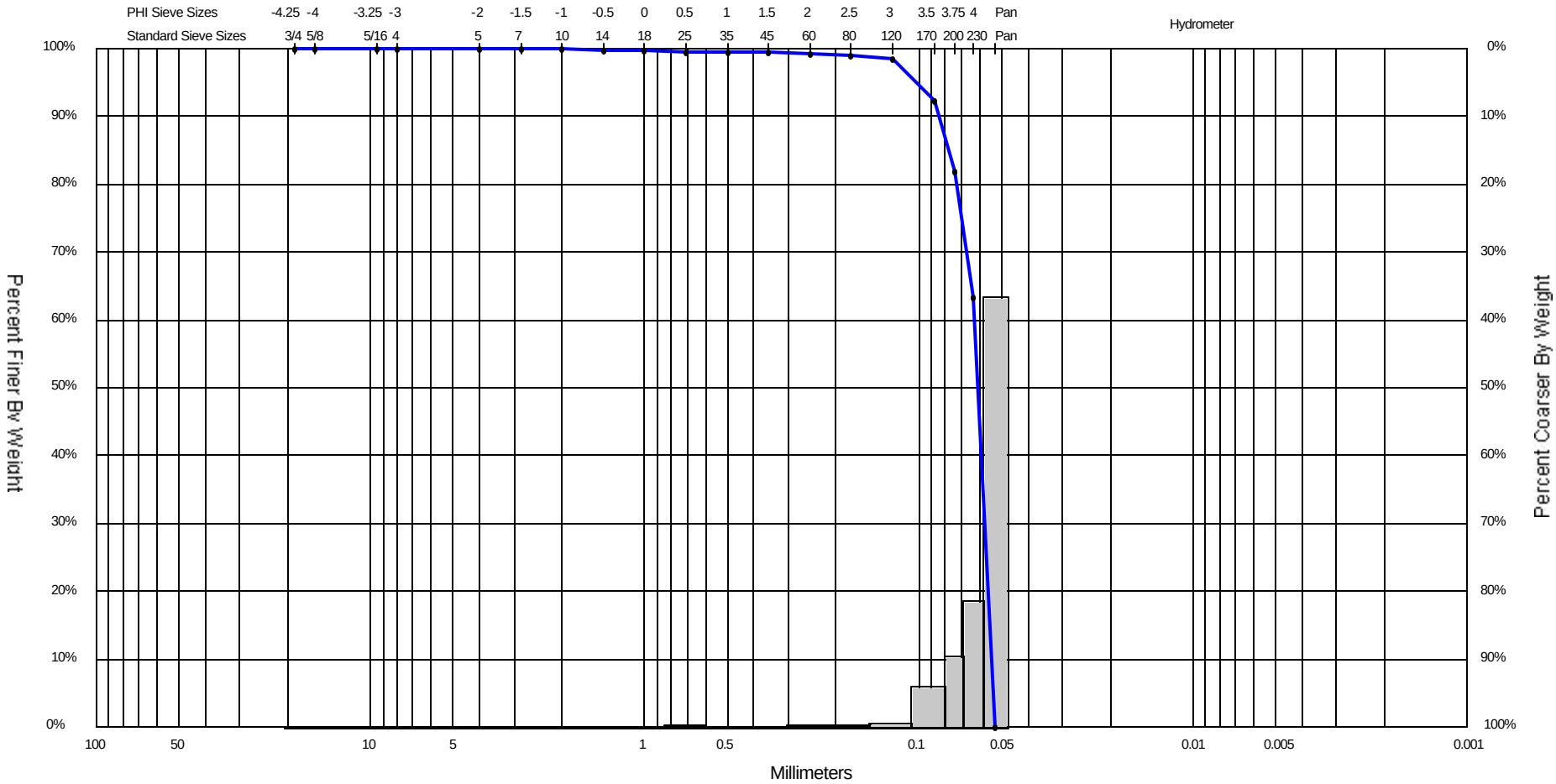

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-11A S#1		-30.3		ML	63.37	0.06	0.07	-0.87	2.28	0.34
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	10/1/02
Analyzed By:	ID
Easting (X):	3829938
Northing (Y):	273315
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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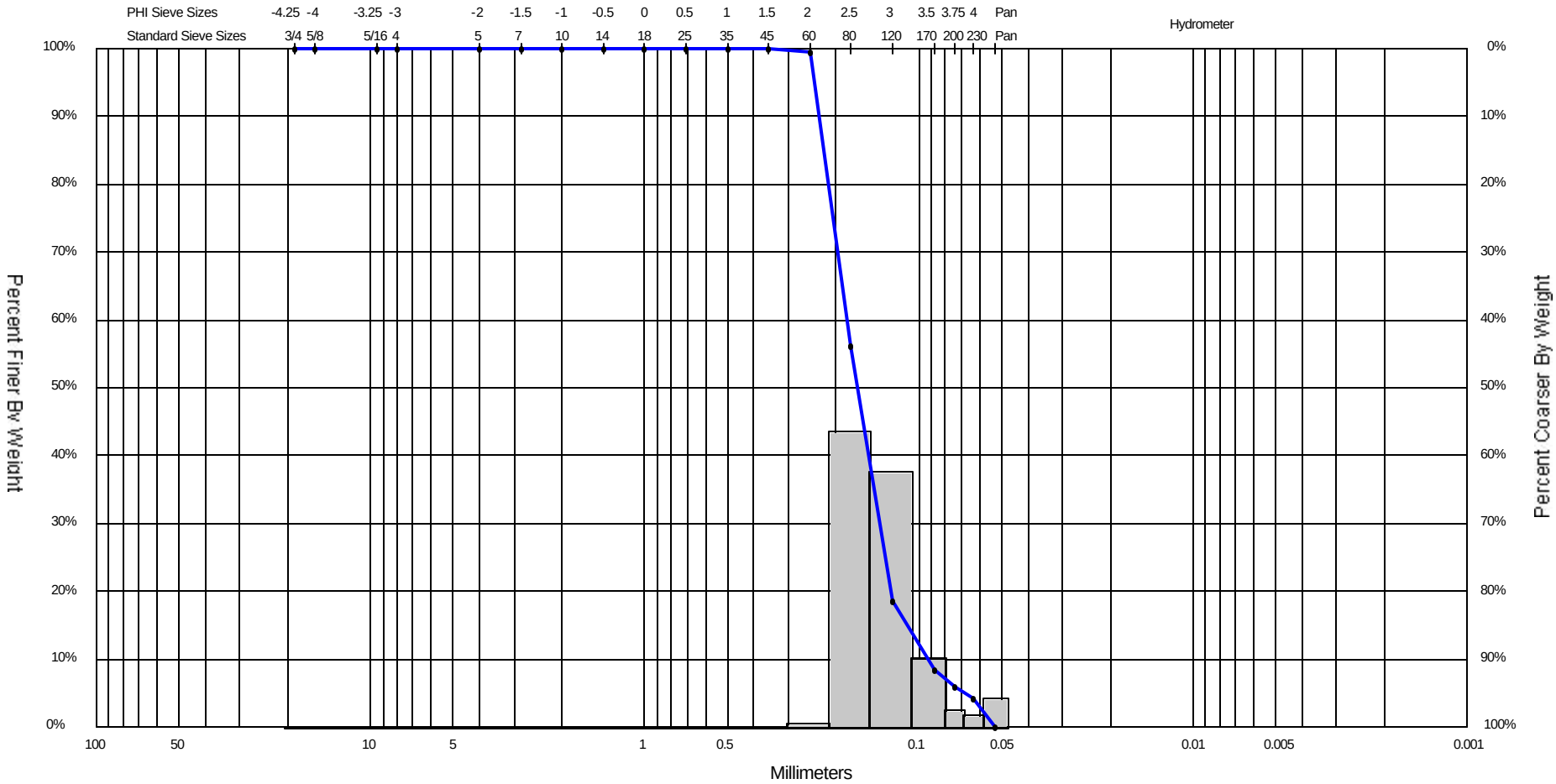

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-12 S#3		-19.7		SW-SM	4.12	0.17	0.15	0.69	2.09	0.64
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	10/1/02
Analyzed By:	ID
Easting (X):	3831288
Northing (Y):	275546
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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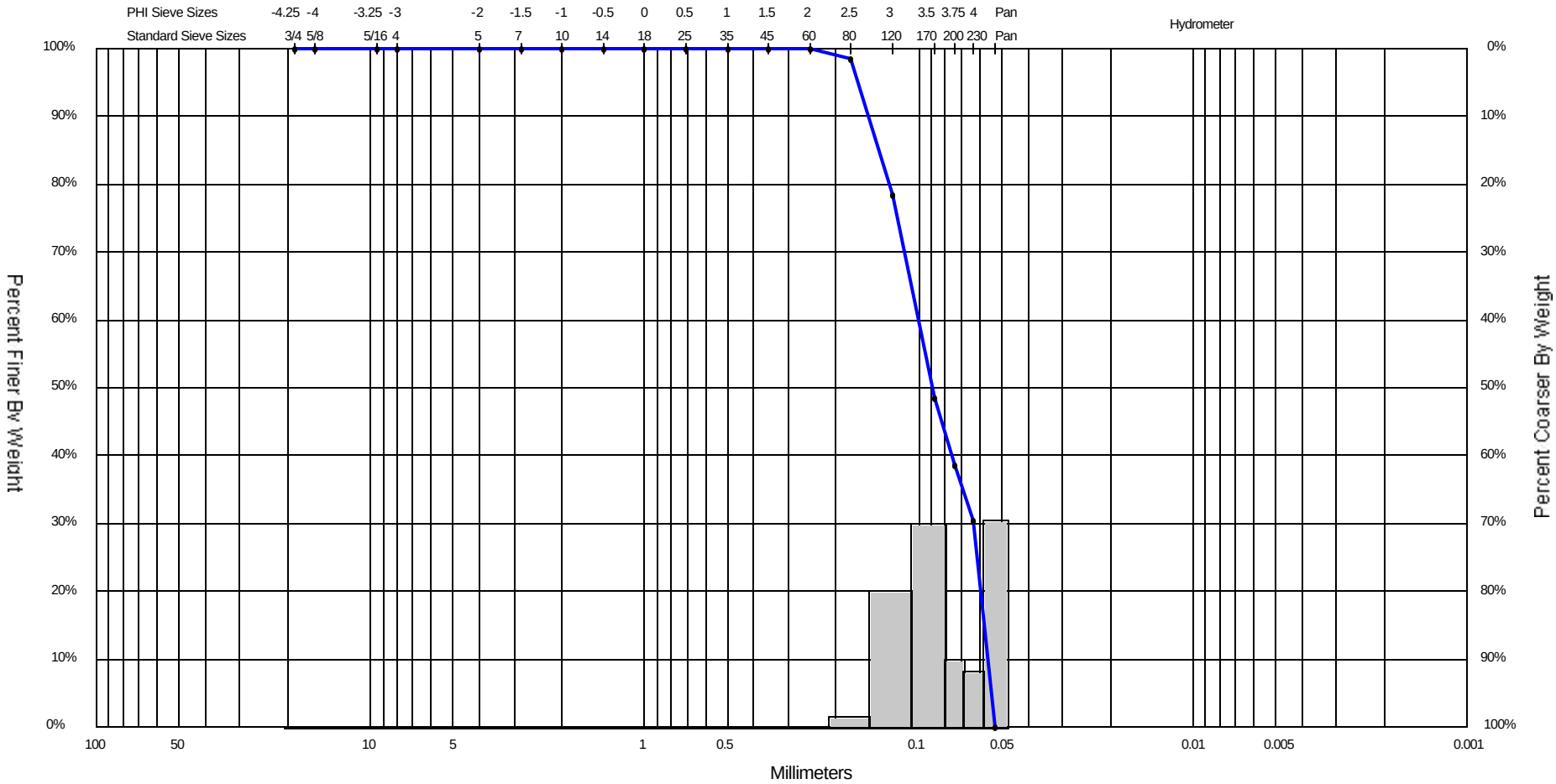

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-13 S#2		-19.2		SM	30.41	0.09	0.09	-0.11	1.20	0.66
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	10/1/02
Analyzed By:	ID
Easting (X):	3830794
Northing (Y):	273579
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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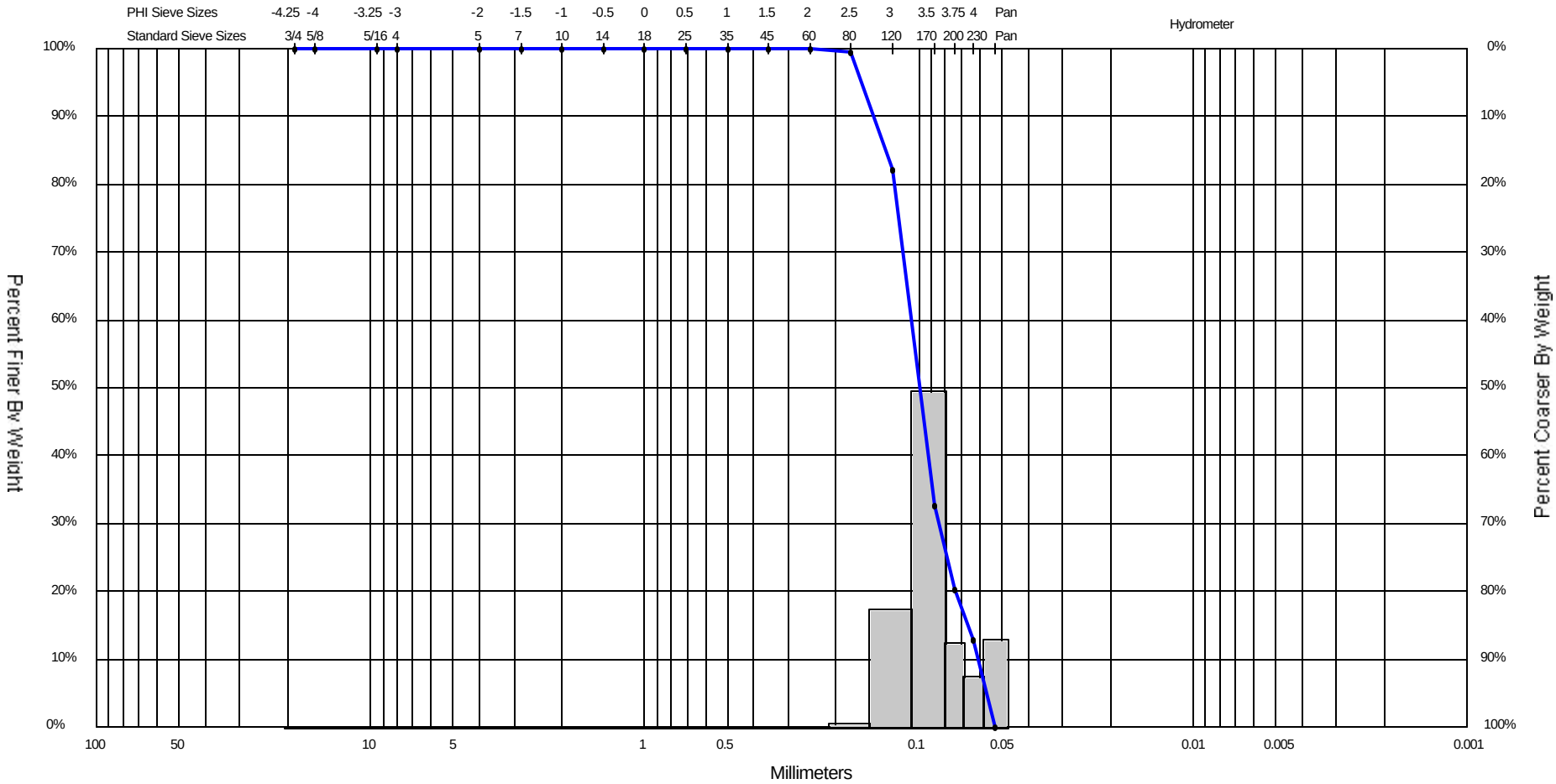

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-13 S#3		-20.6		SM	12.99	0.10	0.10	0.08	1.49	0.55
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	10/1/02
Analyzed By:	ID
Easting (X):	3830794
Northing (Y):	273579
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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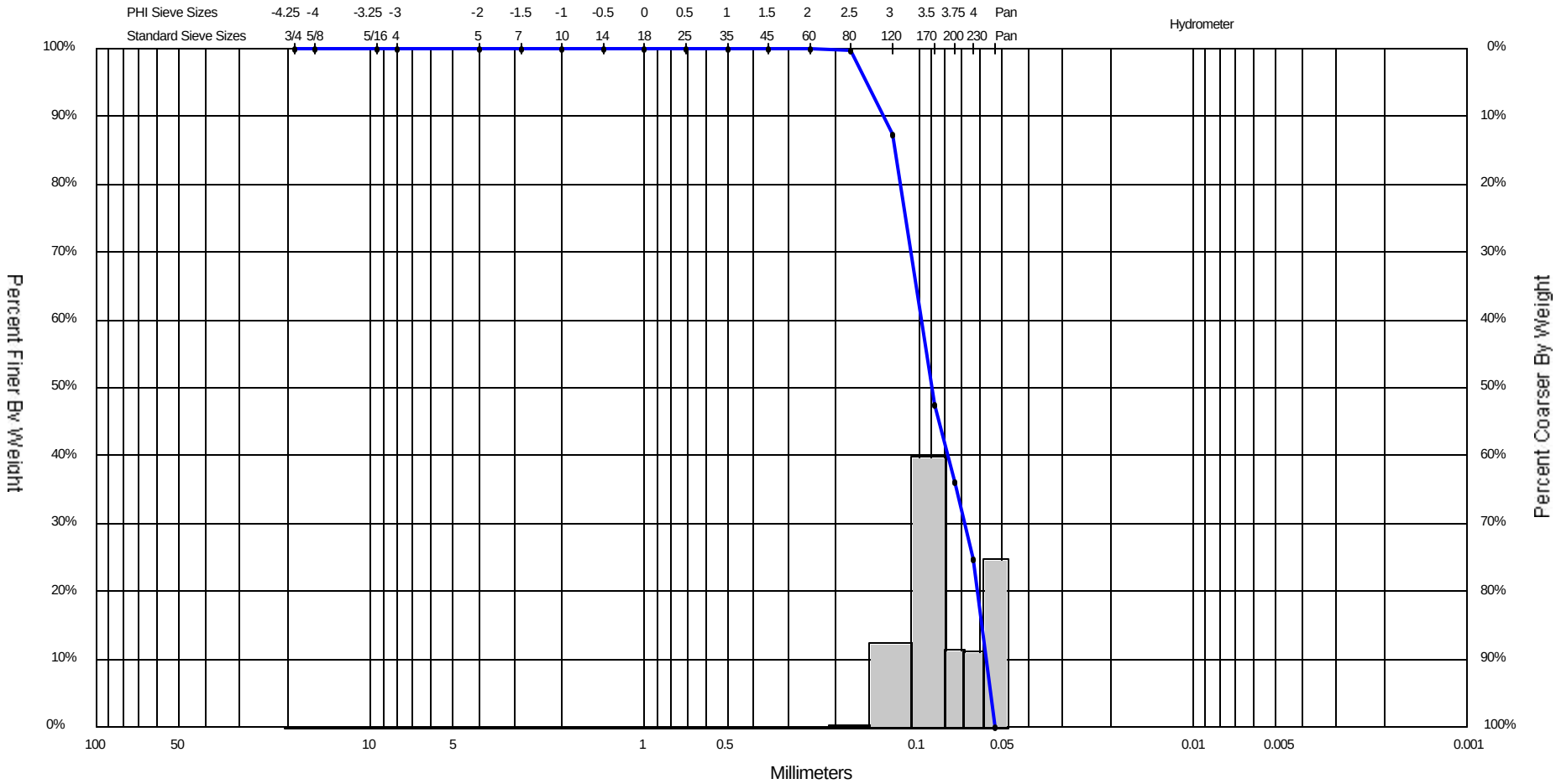

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-14 S#4		-24.9		SM	24.87	0.09	0.09	-0.10	1.28	0.59
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	10/1/02
Analyzed By:	ID
Easting (X):	3828942
Northing (Y):	273085
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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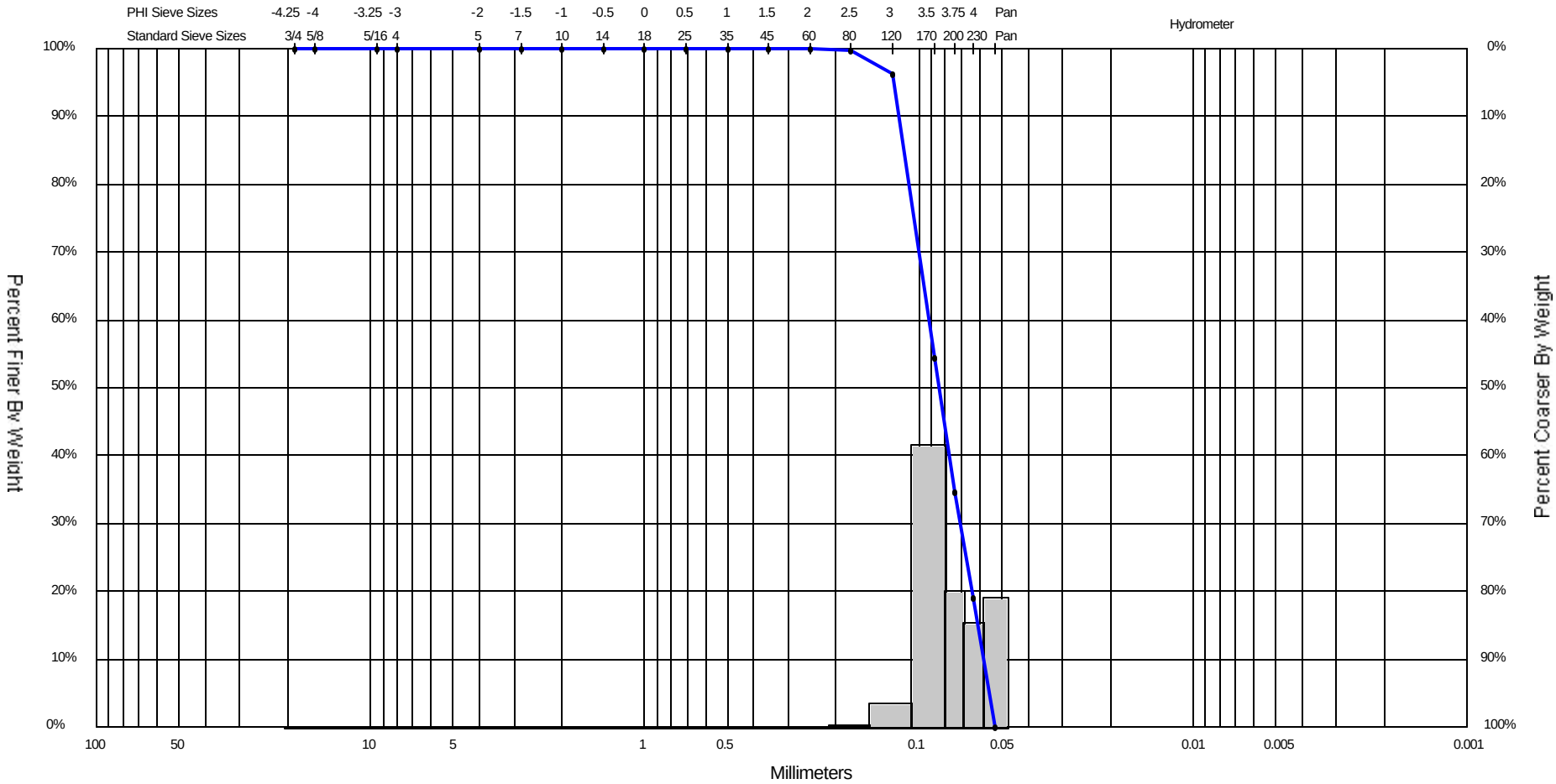

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-15 S#3		-18.1		SM	19.18	0.08	0.08	0.05	1.20	0.47
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	10/1/02
Analyzed By:	ID
Easting (X):	3831702
Northing (Y):	274690
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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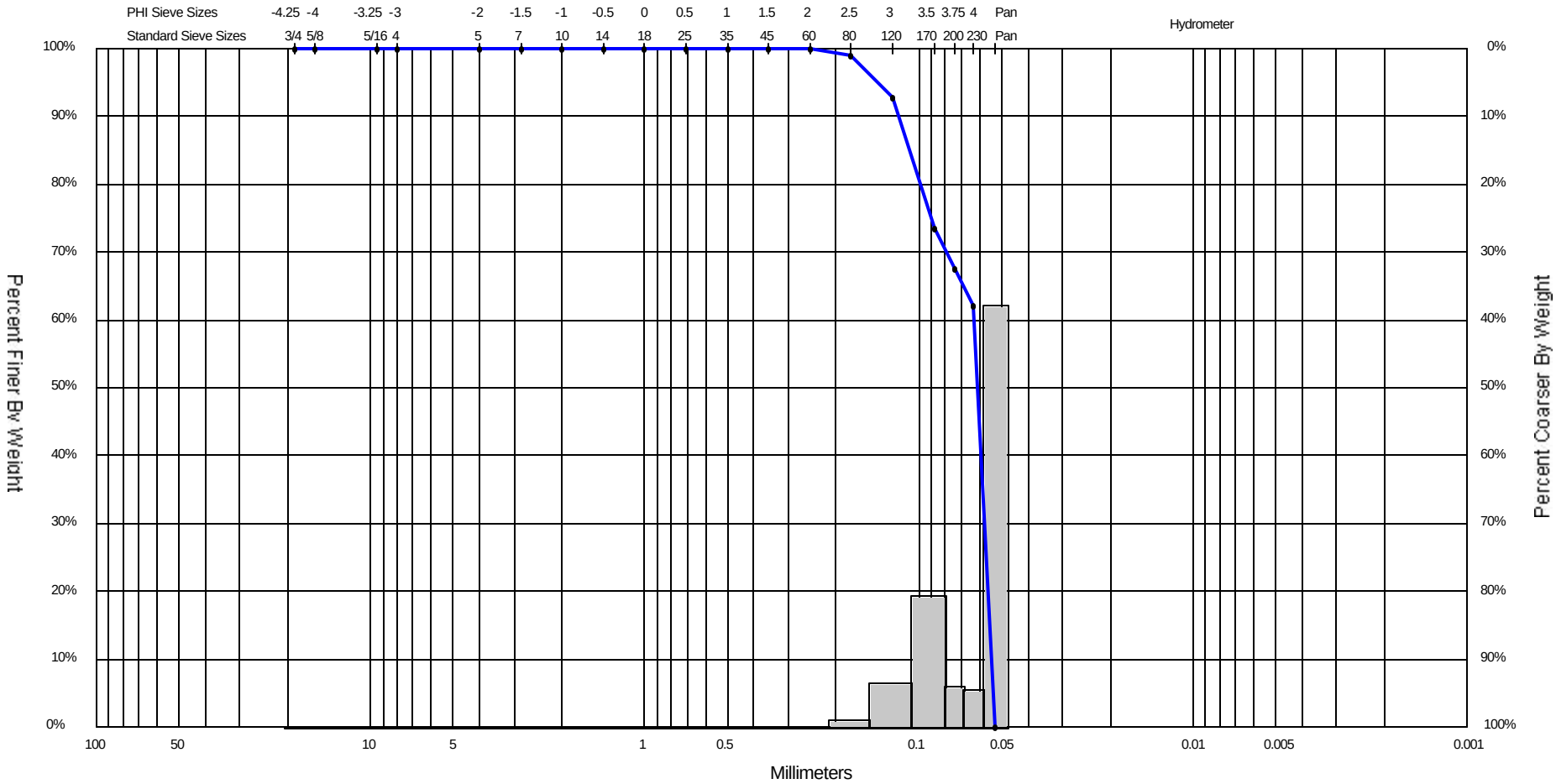

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-15 S#4		-22.3		ML	62.10	0.06	0.08	-0.55	1.52	0.56
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	12/10/02
Analyzed By:	ID
Easting (X):	3831687
Northing (Y):	274739
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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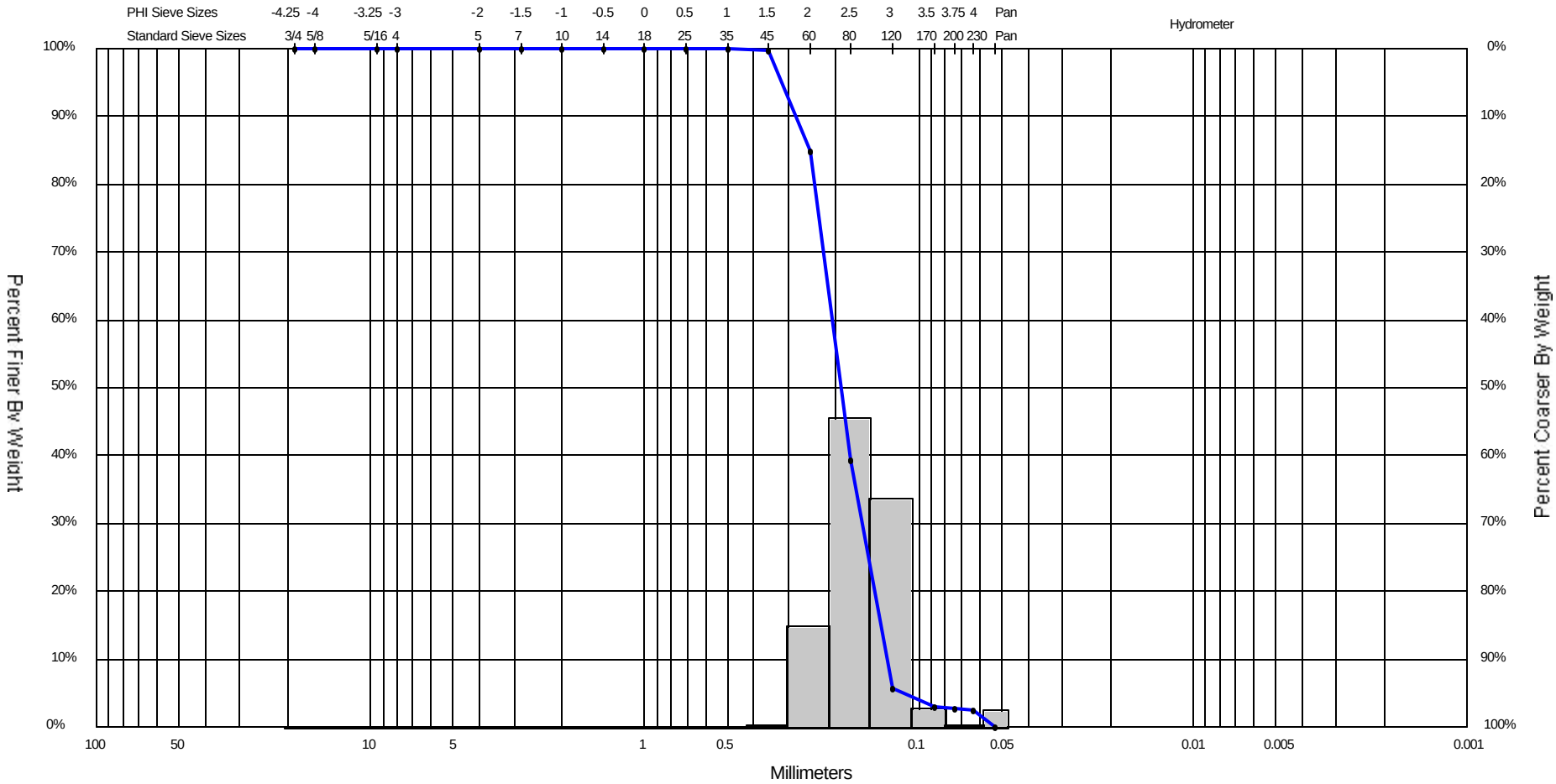

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-16 S#5		-28.2		SP	2.45	0.19	0.19	-0.02	1.53	0.52
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	10/2/02
Analyzed By:	ID
Easting (X):	3833393
Northing (Y):	272680
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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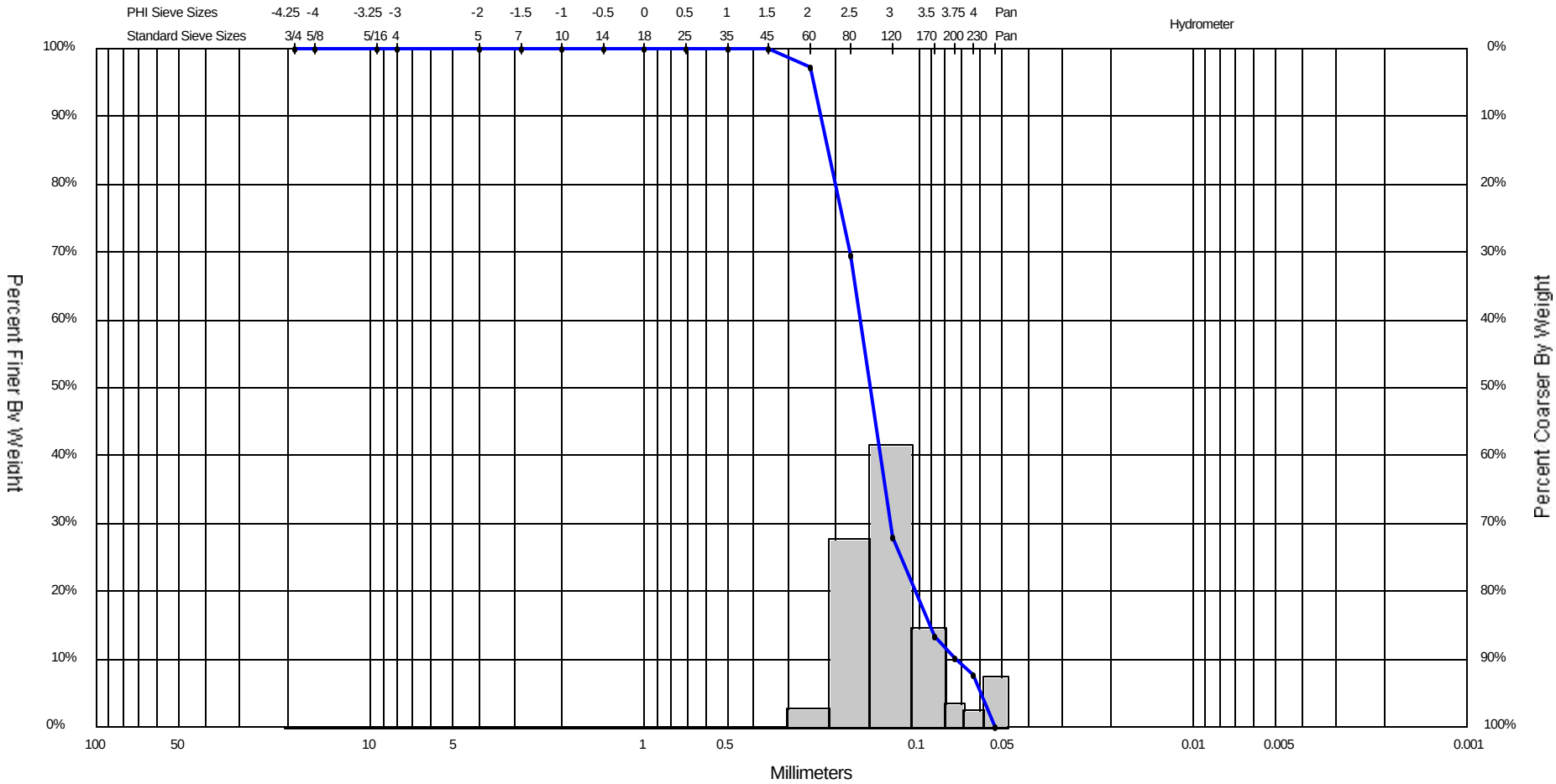

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-16A S#2		-29.1		SW-SM	7.59	0.15	0.14	0.50	1.82	0.72
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	10/1/02
Analyzed By:	ID
Easting (X):	3833428
Northing (Y):	272705
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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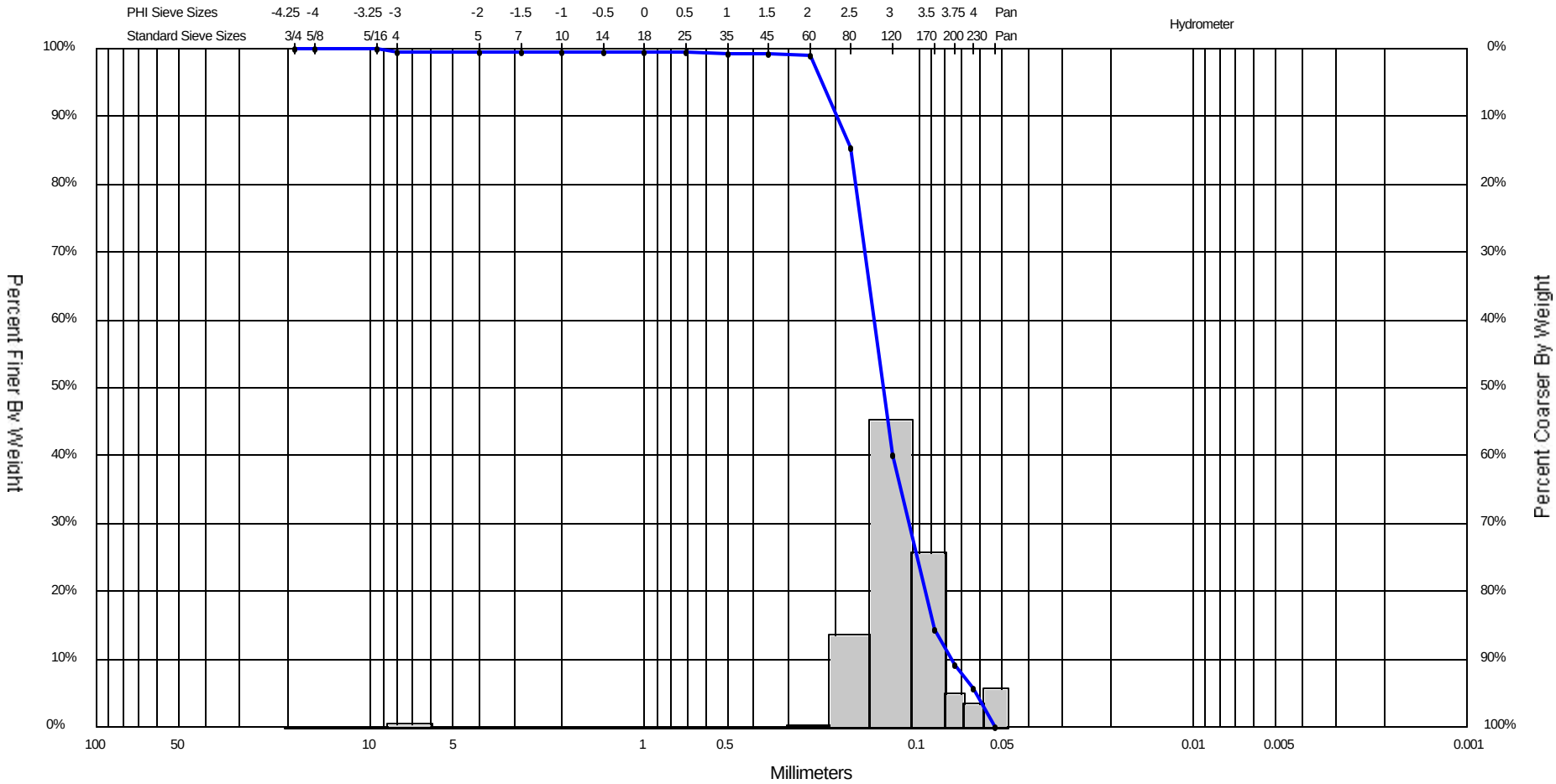

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-17 S#2		-23.1		SW-SM	5.80	0.13	0.13	0.30	1.75	0.64
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	10/2/02
Analyzed By:	ID
Easting (X):	3831941
Northing (Y):	270239
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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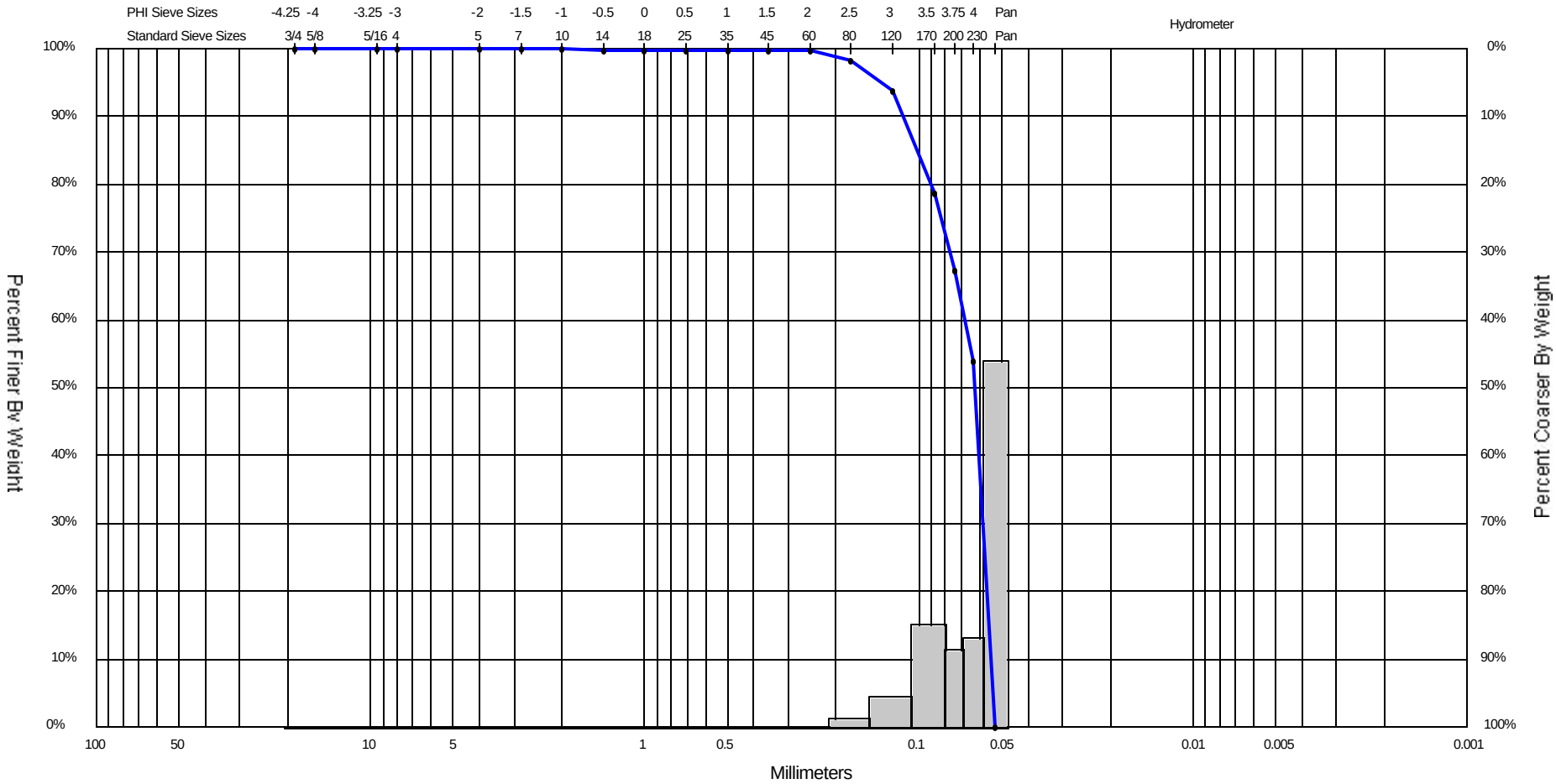

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-18 S#2		-19.5		ML	54.00	0.06	0.07	-0.67	1.77	0.52
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	12/10/02
Analyzed By:	ID
Easting (X):	3832701
Northing (Y):	271426
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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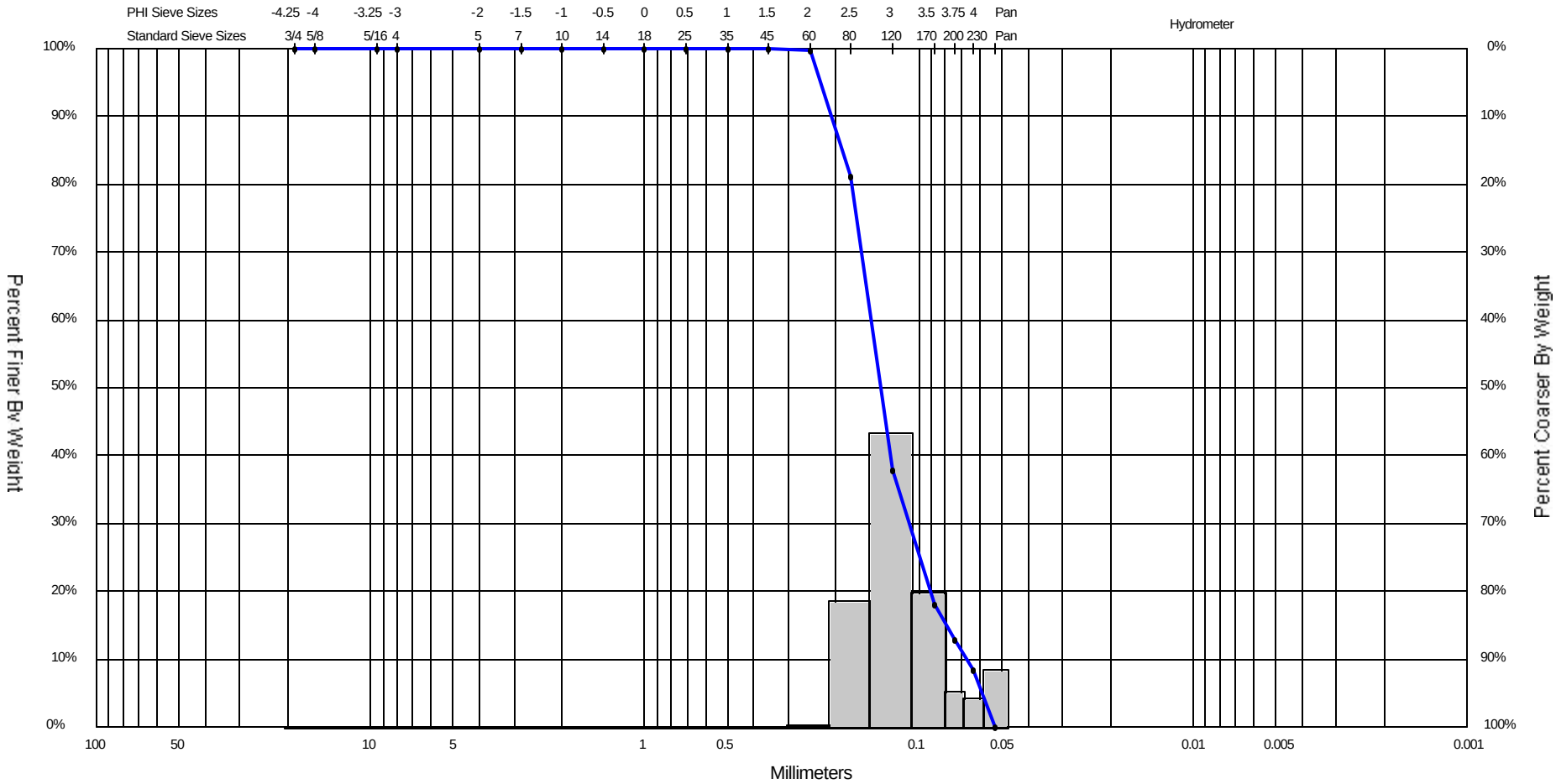

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-18 S#3		-22.2		SM	8.45	0.14	0.12	0.31	1.59	0.70
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	10/2/02
Analyzed By:	ID
Easting (X):	3832701
Northing (Y):	271426
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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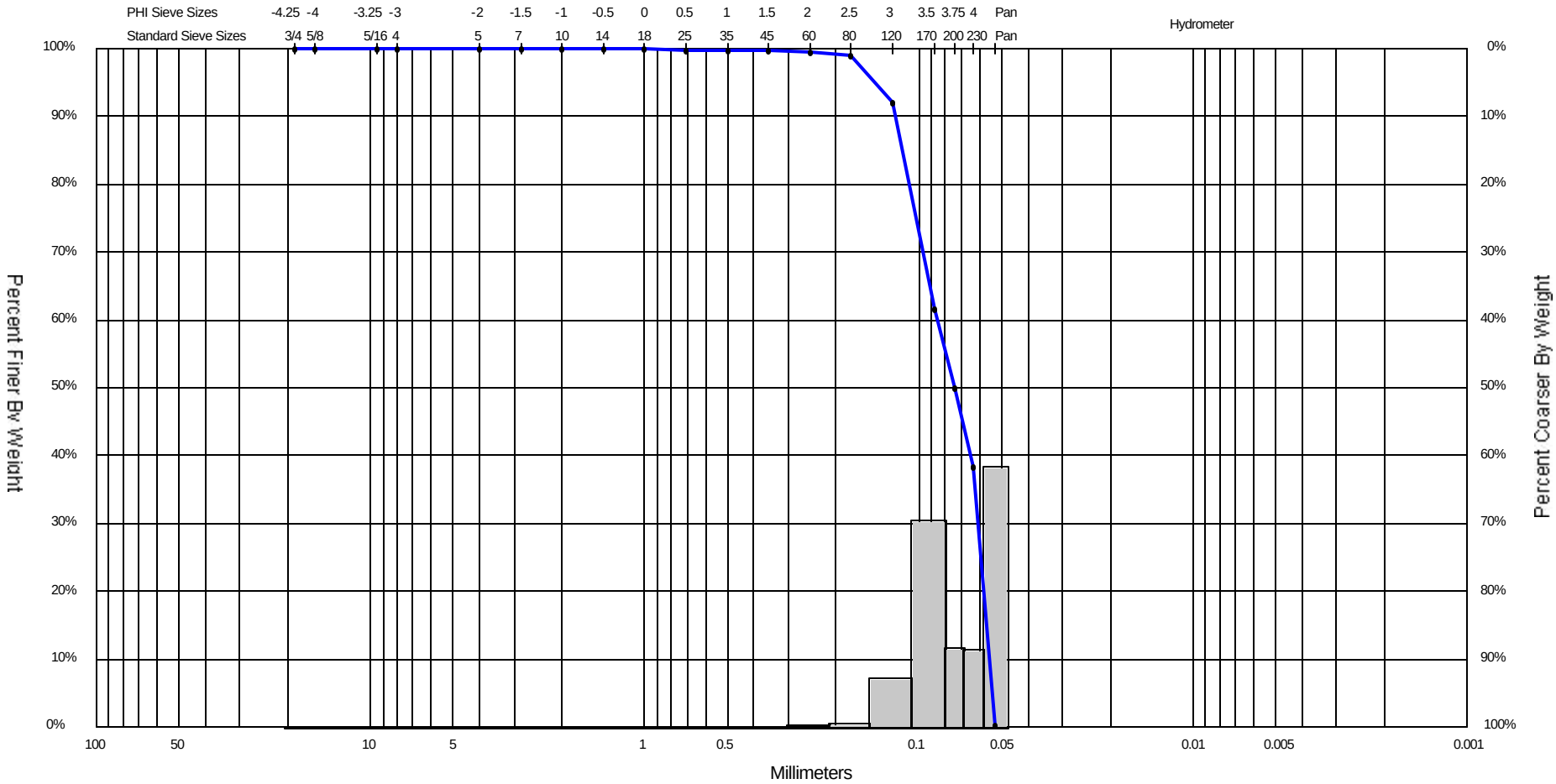

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-18 S#5		-26.7		SM	38.46	0.07	0.08	-0.29	1.33	0.57
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	10/3/02
Analyzed By:	ID
Easting (X):	3832701
Northing (Y):	271426
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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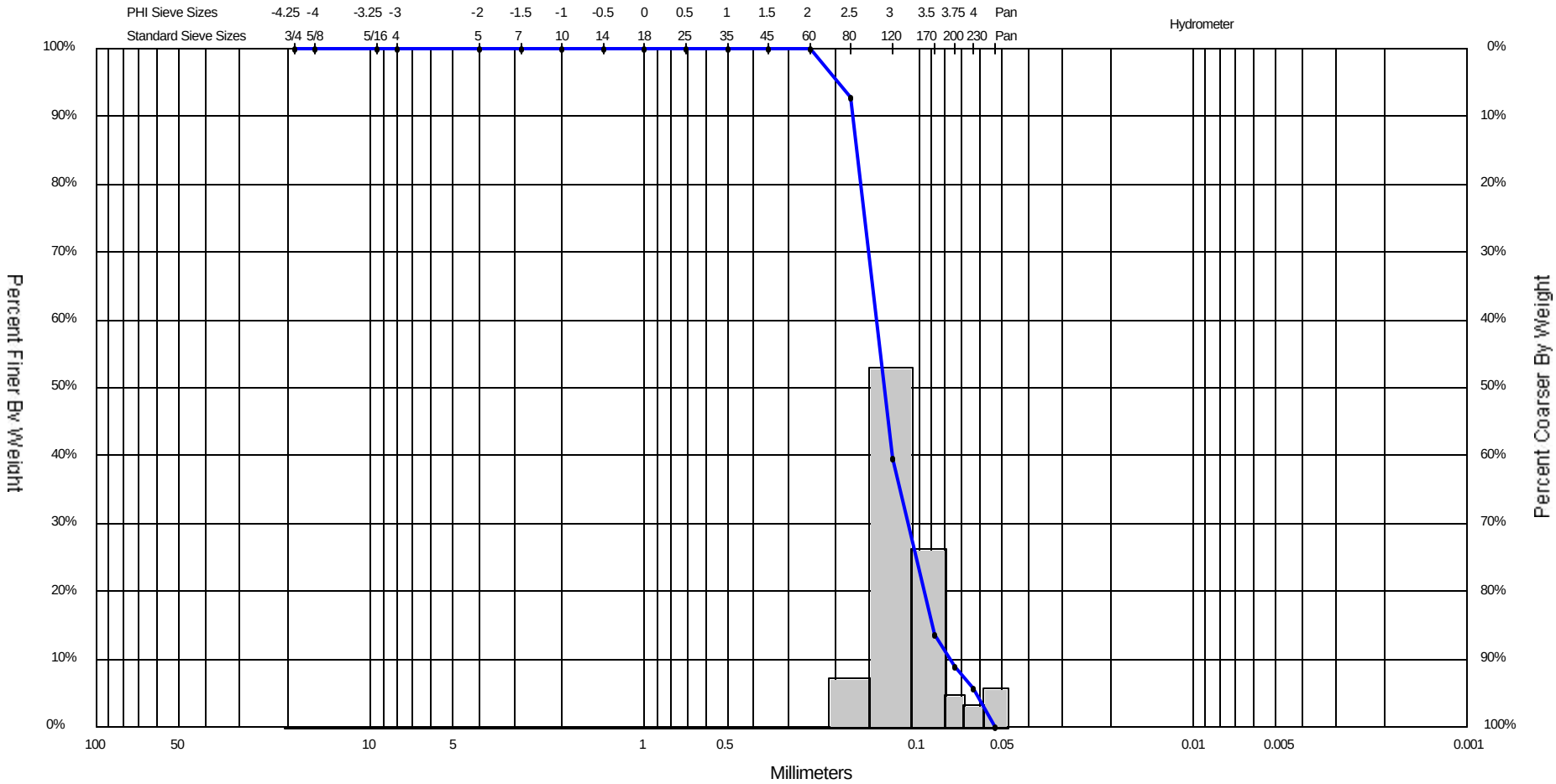

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-19 S#3		-19.9		SW-SM	5.70	0.13	0.12	0.48	1.84	0.59
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	10/3/02
Analyzed By:	ID
Easting (X):	3830842
Northing (Y):	274333
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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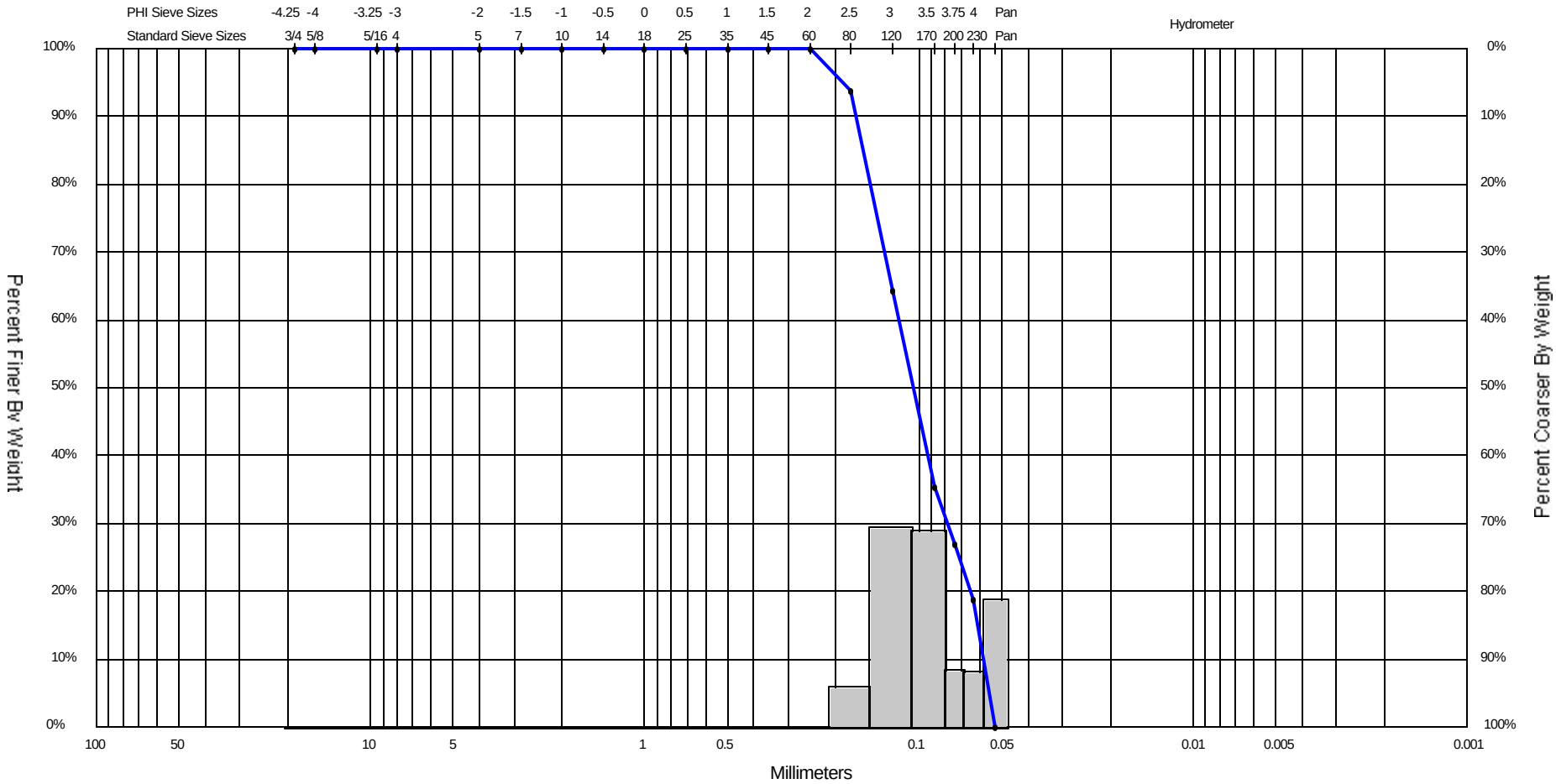

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-19 S#5		-22.3		SM	18.89	0.11	0.10	0.02	1.20	0.71
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	12/30/02
Analyzed By:	ID
Easting (X):	3830842
Northing (Y):	274333
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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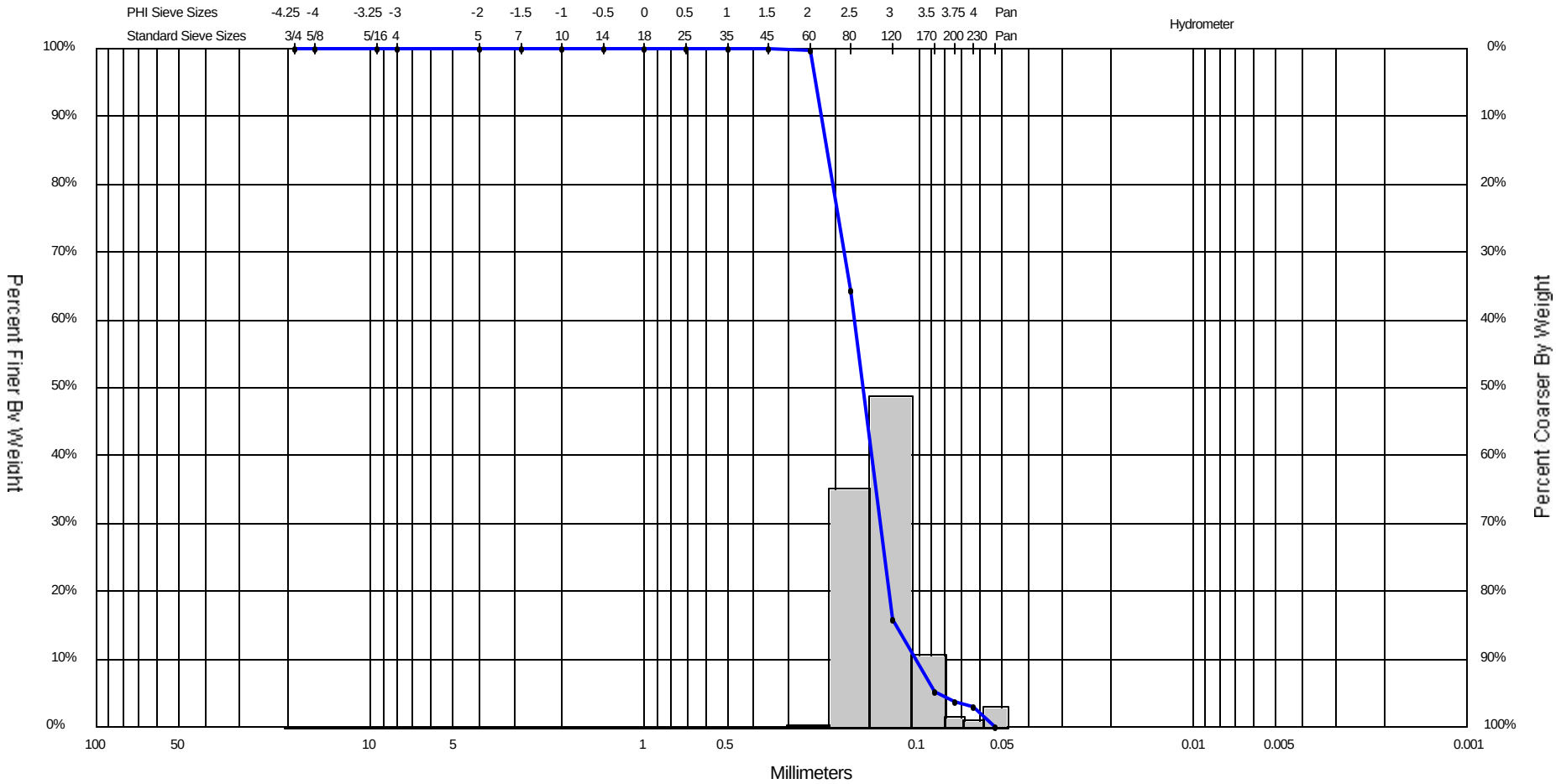

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-20 S#3		-21.1		SP	2.89	0.16	0.16	0.41	1.81	0.51
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	10/3/02
Analyzed By:	ID
Easting (X):	3835900
Northing (Y):	271017
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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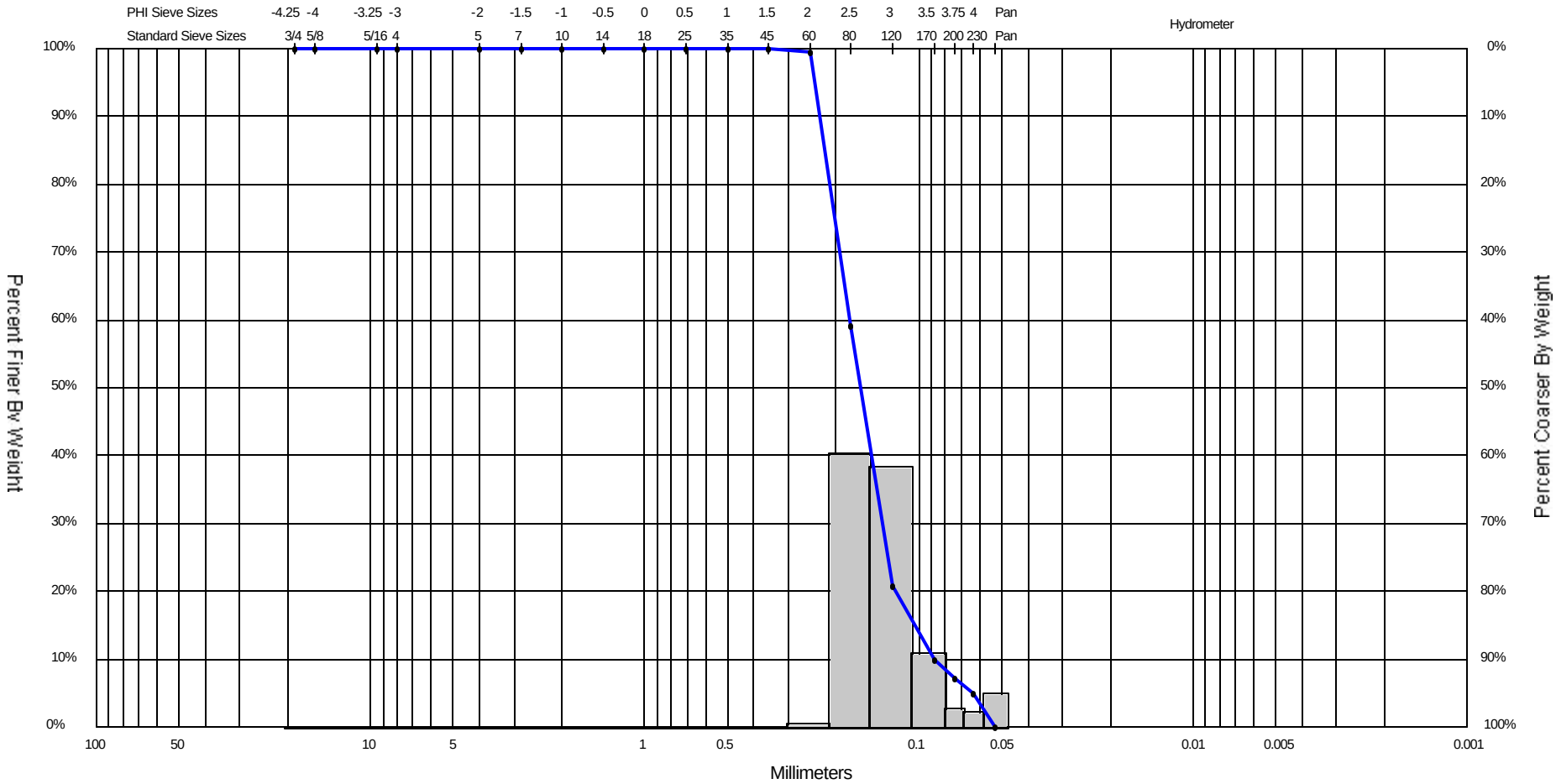

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-20 S#4		-22.9		SW-SM	5.02	0.16	0.15	0.70	2.10	0.69
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	10/3/02
Analyzed By:	ID
Easting (X):	3835900
Northing (Y):	271017
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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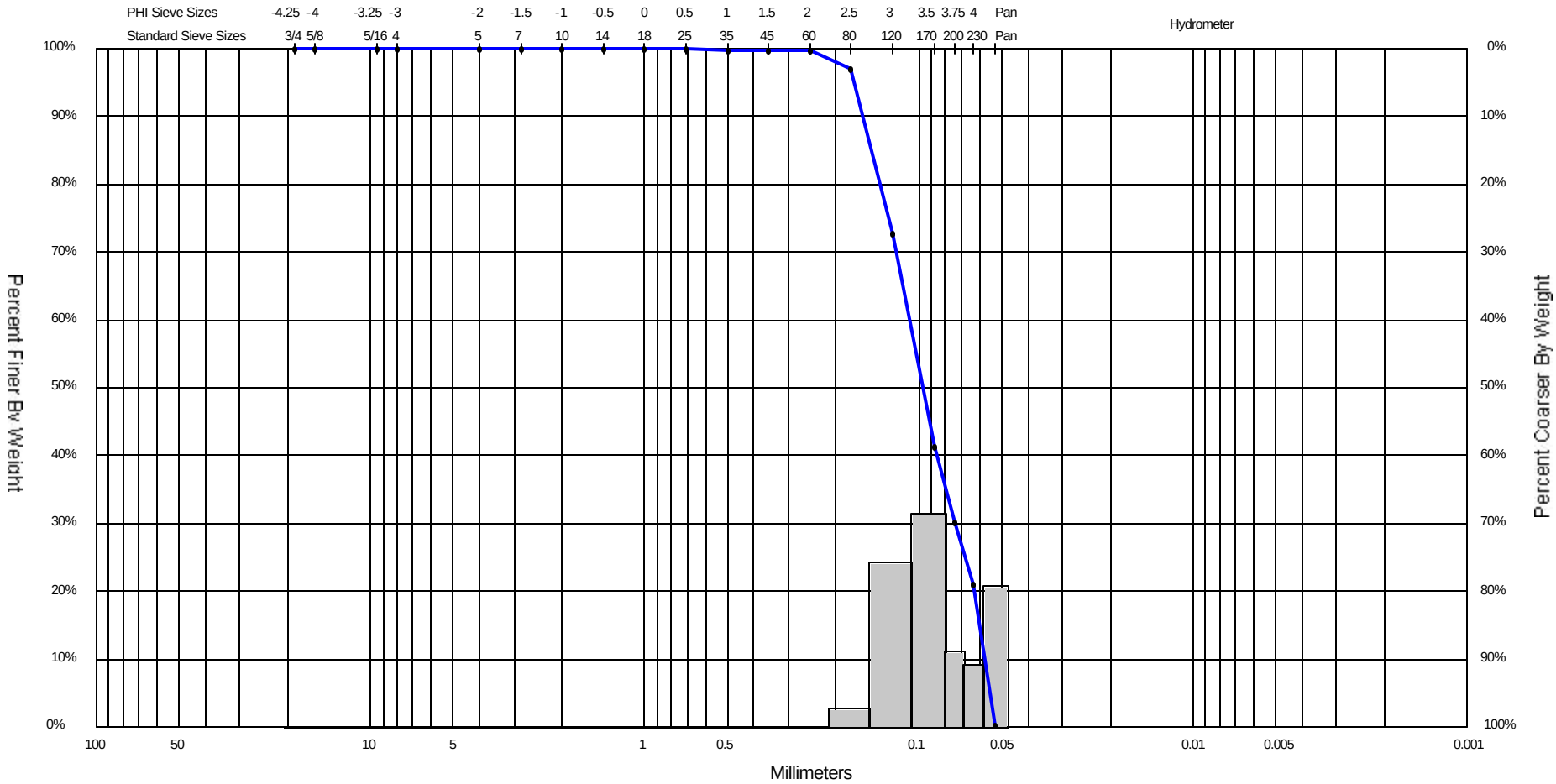

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-20A S#2		-33.6		SM	20.94	0.10	0.09	-0.02	1.19	0.66
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	12/03/02
Analyzed By:	ID
Easting (X):	3835948
Northing (Y):	270980
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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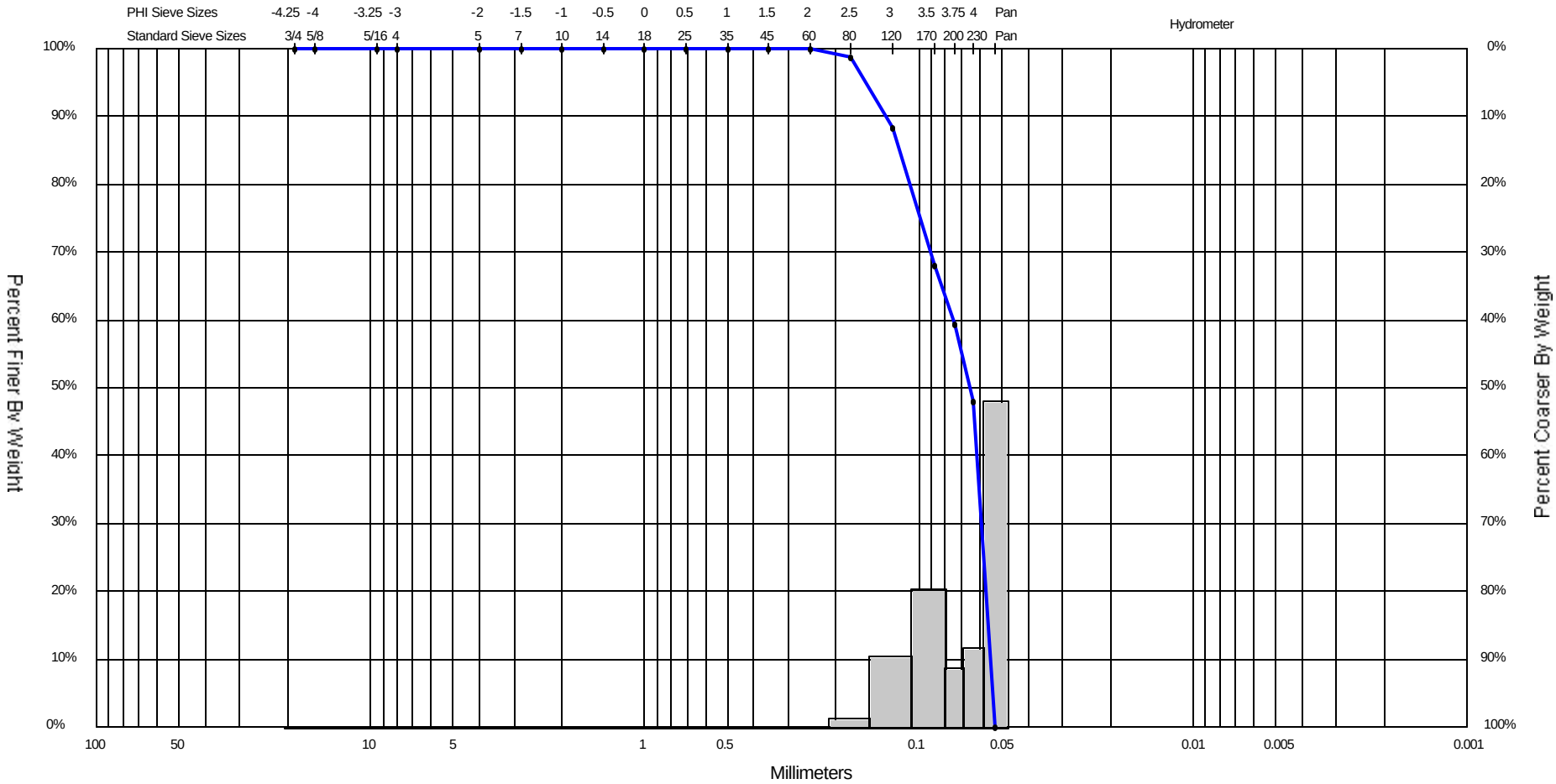

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-21 S#3		-20.1		ML	48.01	0.06	0.08	-0.49	1.46	0.61
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	12/10/02
Analyzed By:	ID
Easting (X):	3831900
Northing (Y):	271711
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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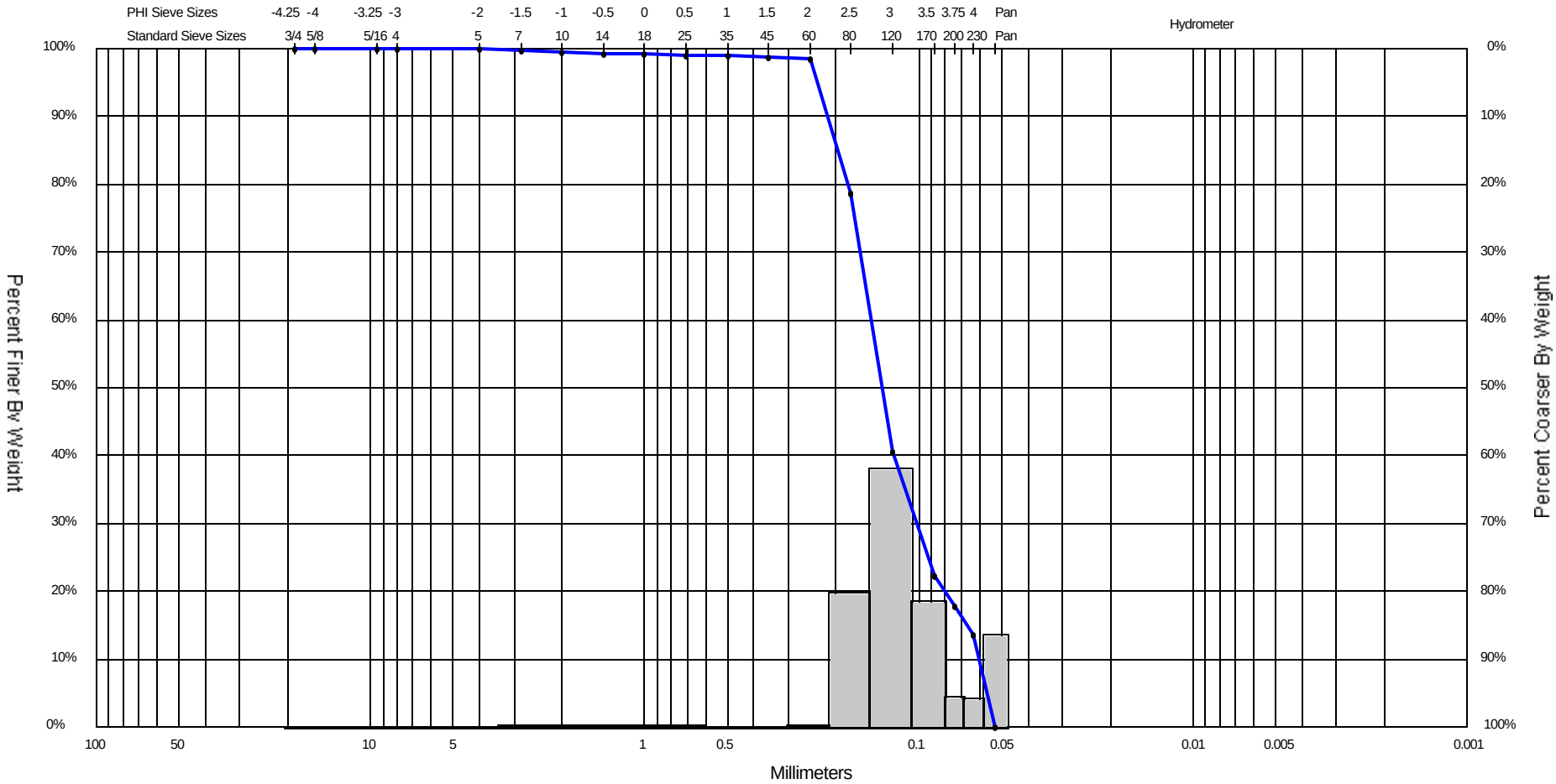

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-22 S#1		-19.2		SM	13.58	0.14	0.12	0.22	1.36	0.78
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	10/3/02
Analyzed By:	ID
Easting (X):	3833742
Northing (Y):	270990
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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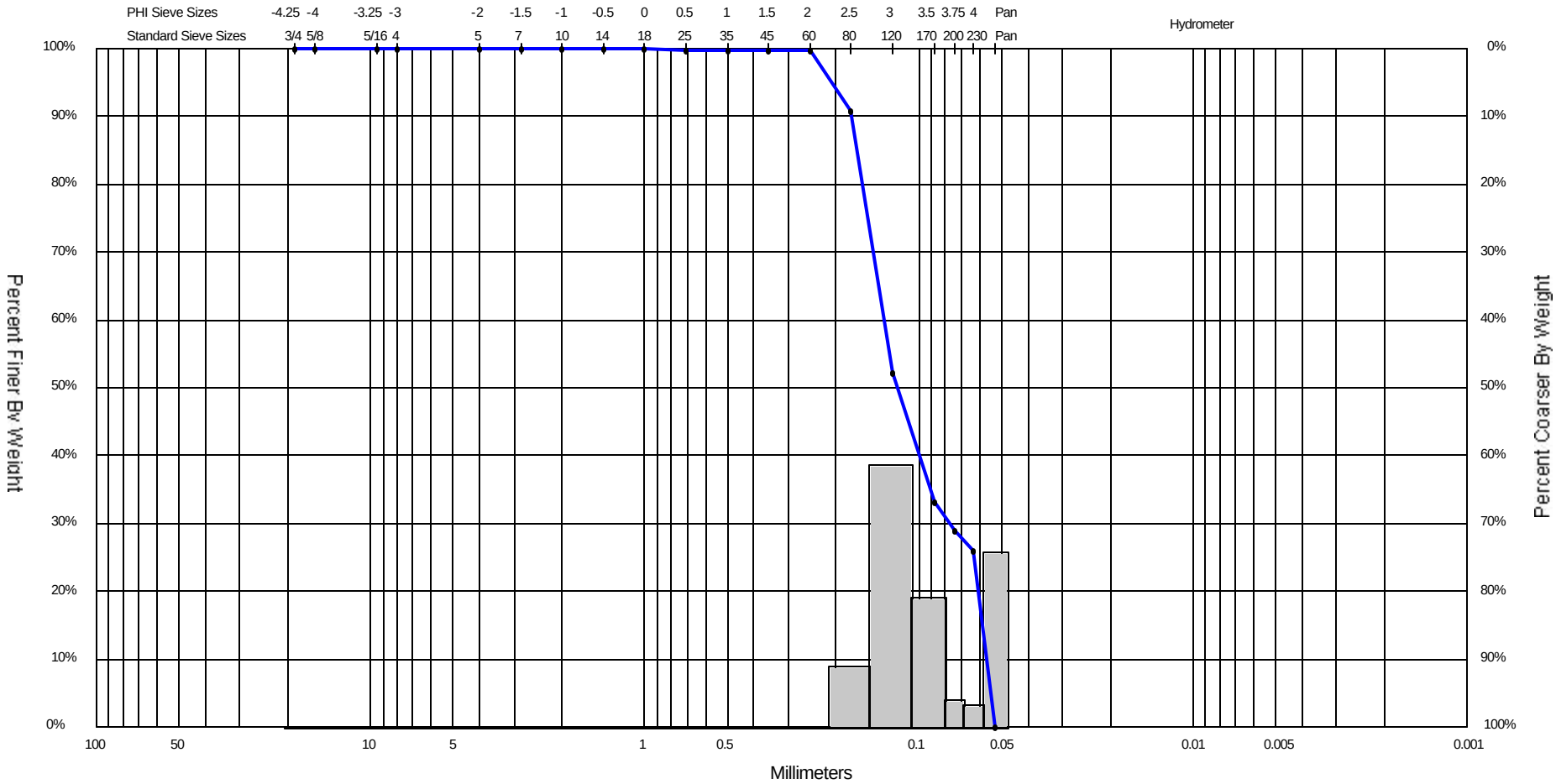

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-22 S#2		-21.7		SM	25.87	0.12	0.10	0.06	1.10	0.81
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	12/10/02
Analyzed By:	ID
Easting (X):	3833742
Northing (Y):	270992
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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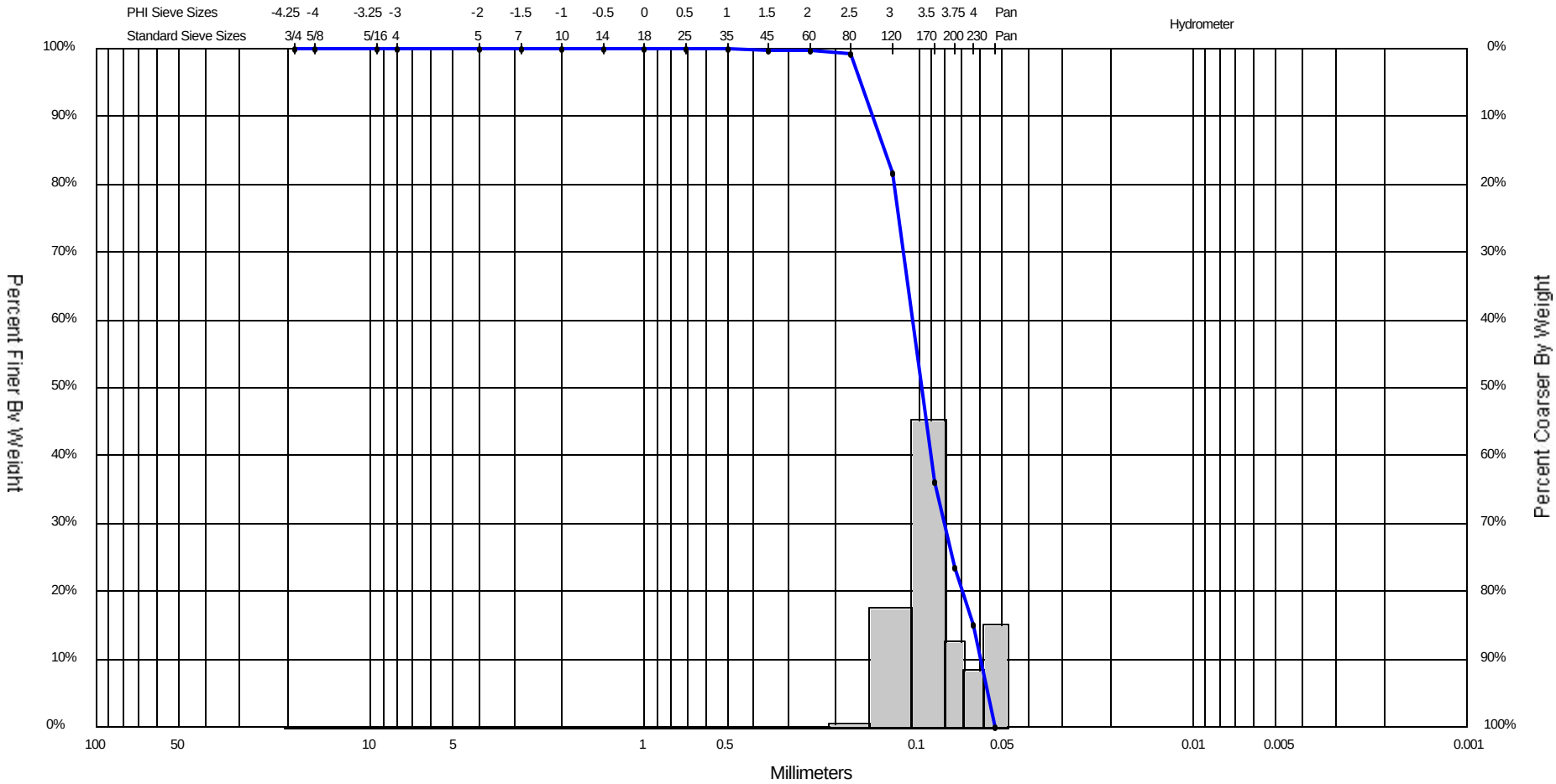

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-22 S#3		-23.2		SM	15.06	0.10	0.09	0.03	1.40	0.57
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	10/2/02
Analyzed By:	ID
Easting (X):	3833742
Northing (Y):	270990
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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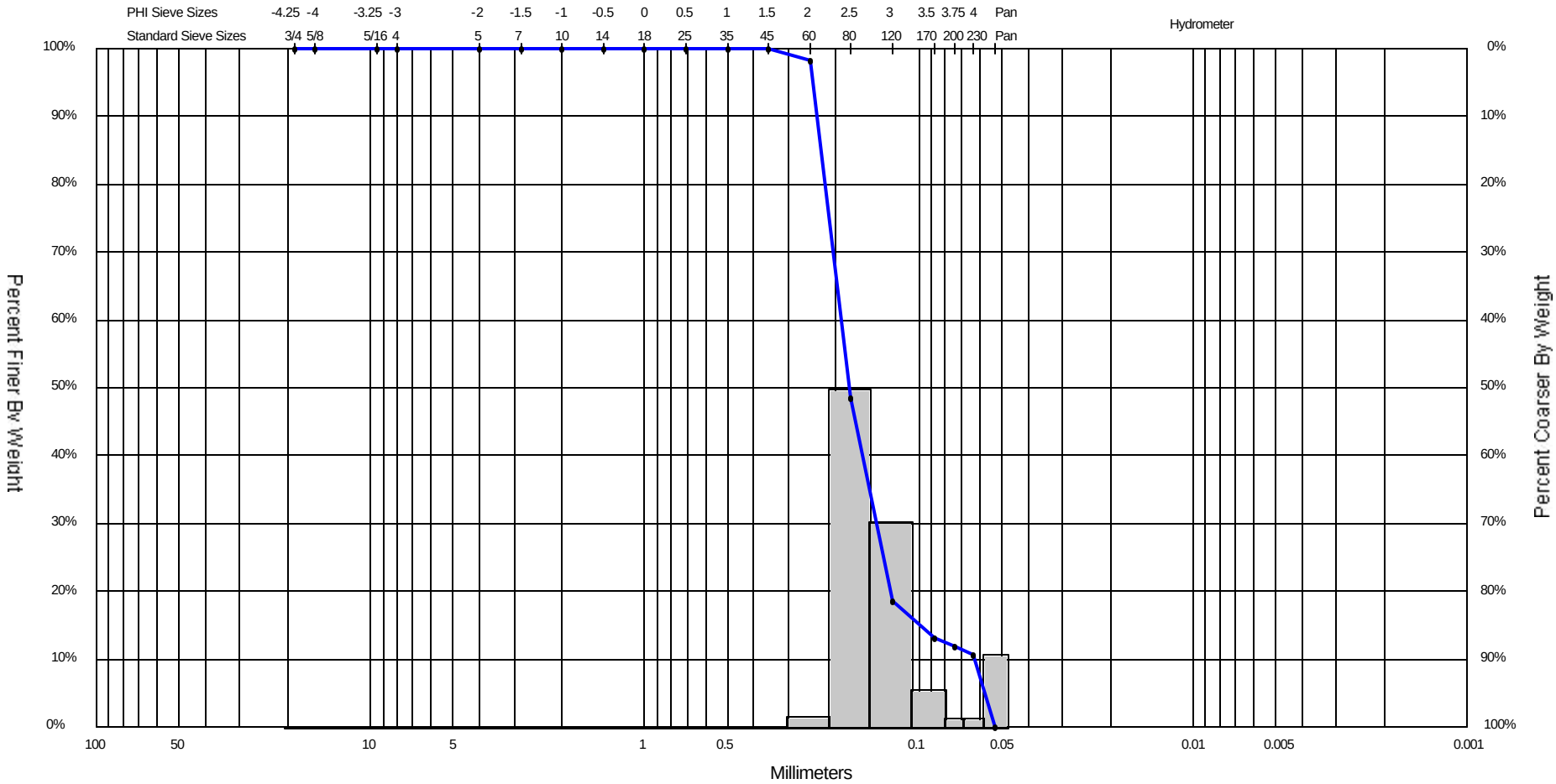

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-22 S#5		-25.5		SW-SM	10.62	0.18	0.15	0.85	2.26	0.75
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	10/2/02
Analyzed By:	ID
Easting (X):	3833742
Northing (Y):	270990
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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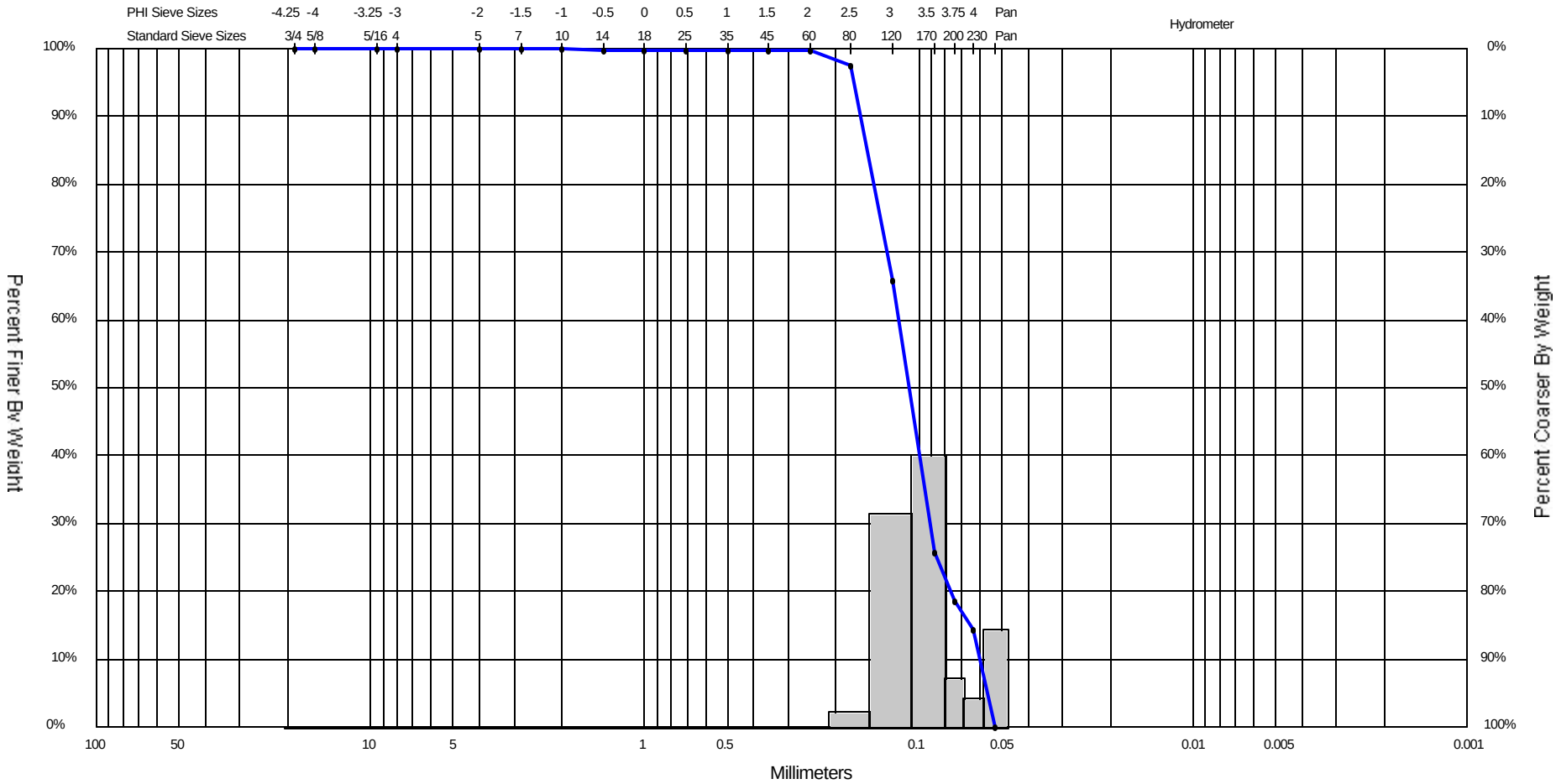

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-23 S#2		-18.9		SM	14.29	0.11	0.10	0.24	1.40	0.62
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	10/2/02
Analyzed By:	ID
Easting (X):	3834858
Northing (Y):	270176
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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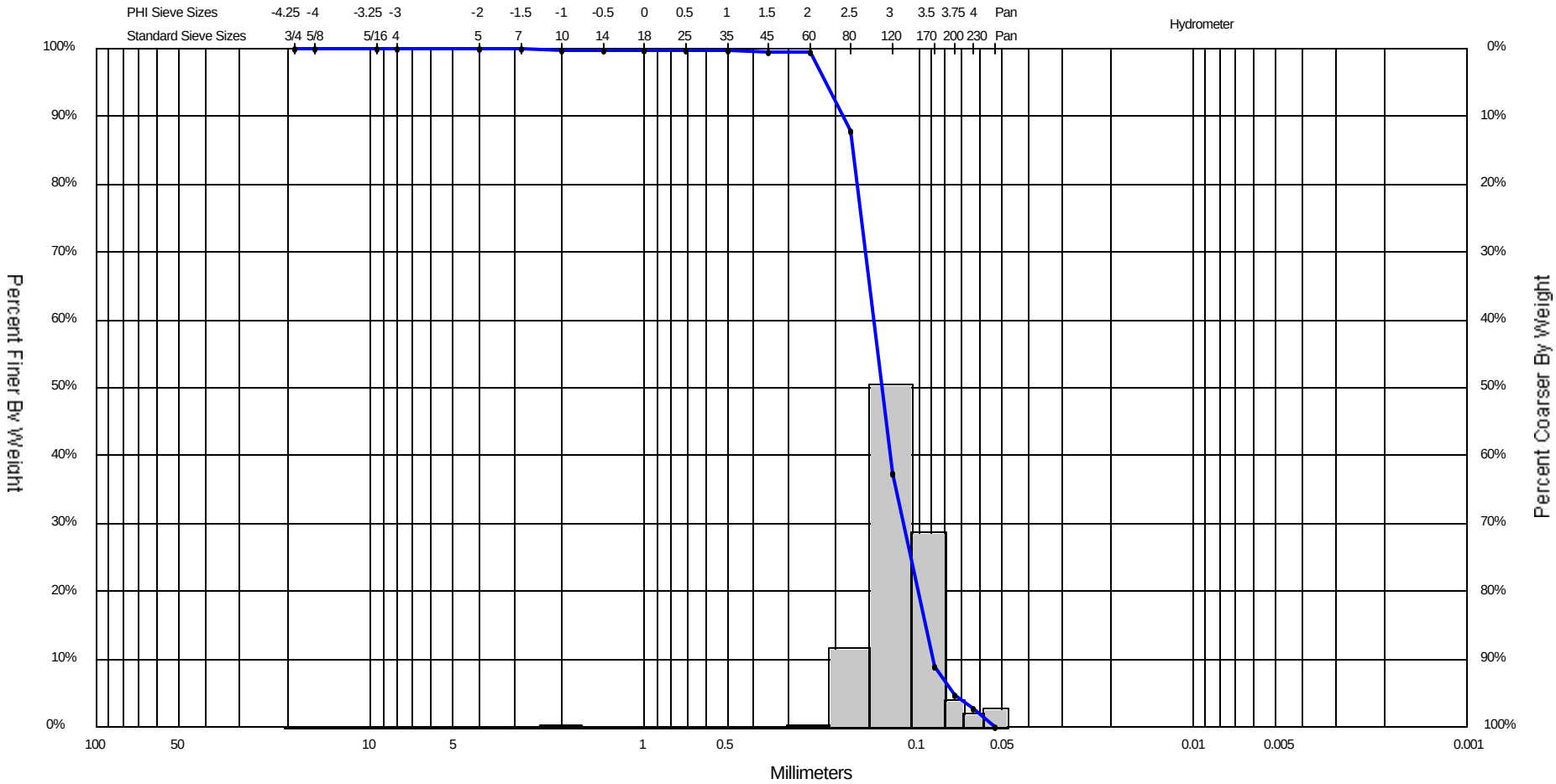

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-24 S#2		-21		SP	2.83	0.14	0.13	0.12	1.60	0.54
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	10/4/02
Analyzed By:	ID
Easting (X):	3831860
Northing (Y):	271018
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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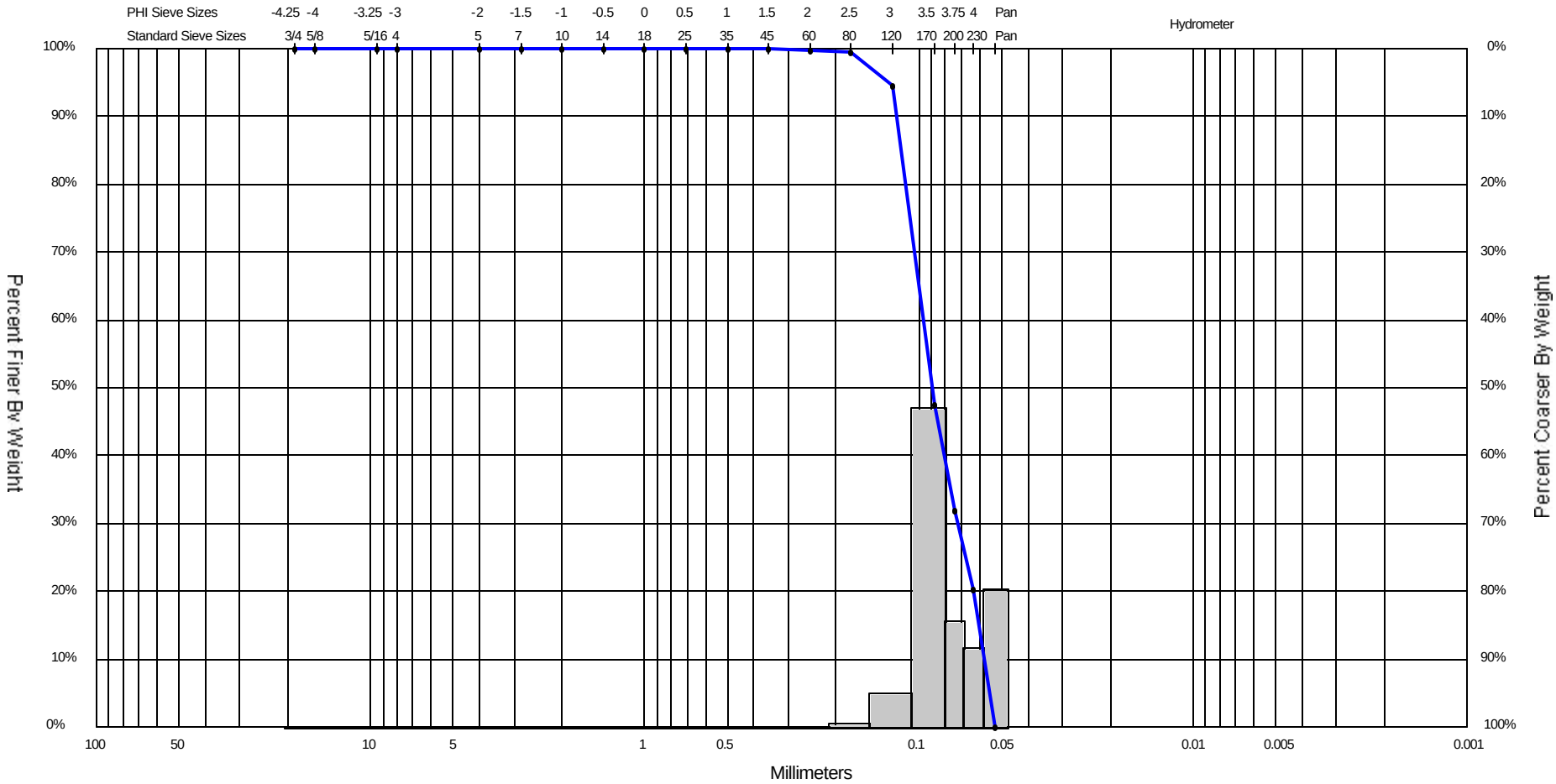

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-24 S#3		-23.7		SM	20.41	0.09	0.09	0.10	1.19	0.49
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	10/4/02
Analyzed By:	ID
Easting (X):	3831860
Northing (Y):	271018
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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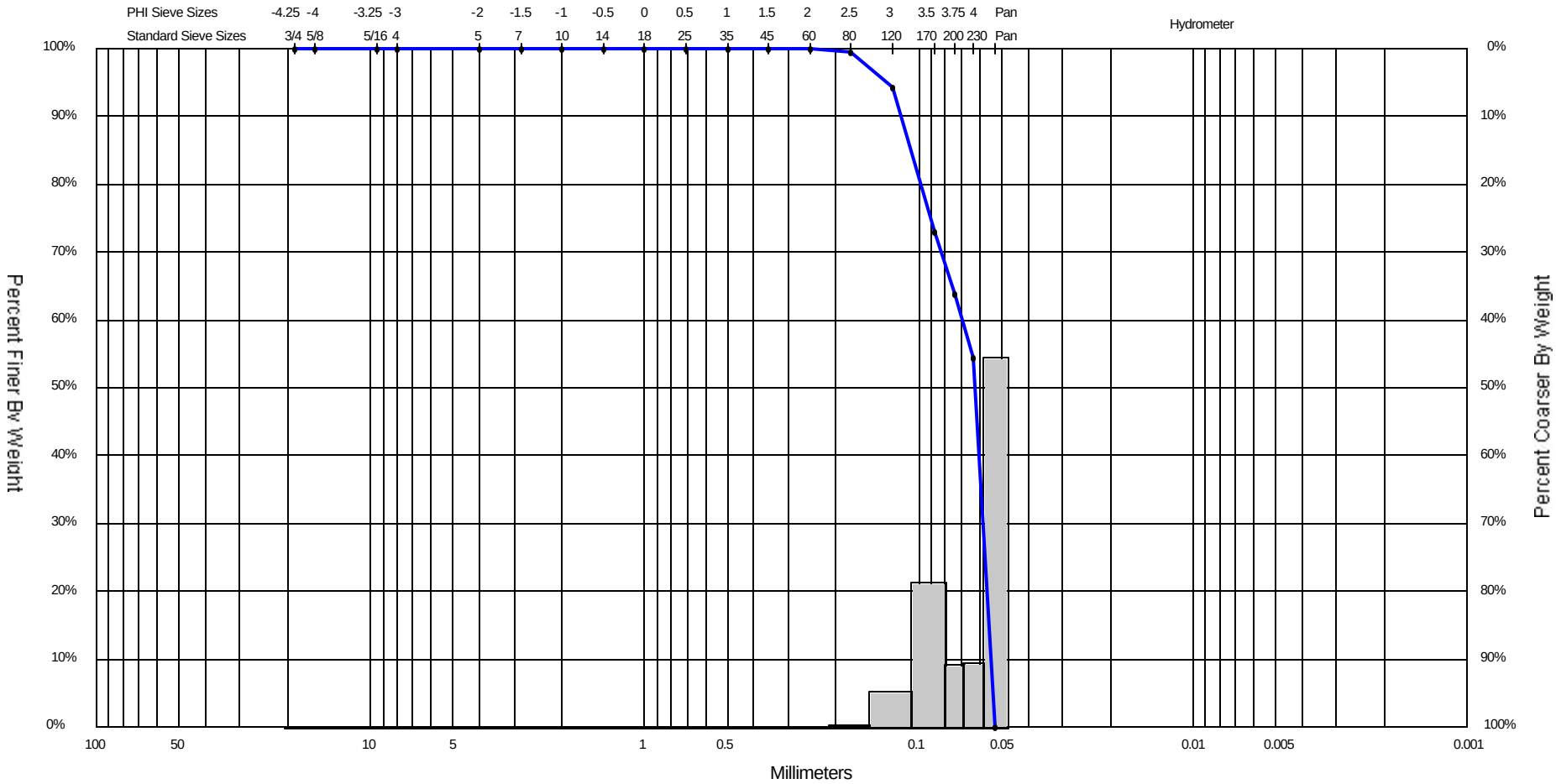

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-25 S#3		-21.6		ML	54.48	0.06	0.07	-0.45	1.36	0.52
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	12/12/02
Analyzed By:	ID
Easting (X):	3832257
Northing (Y):	272466
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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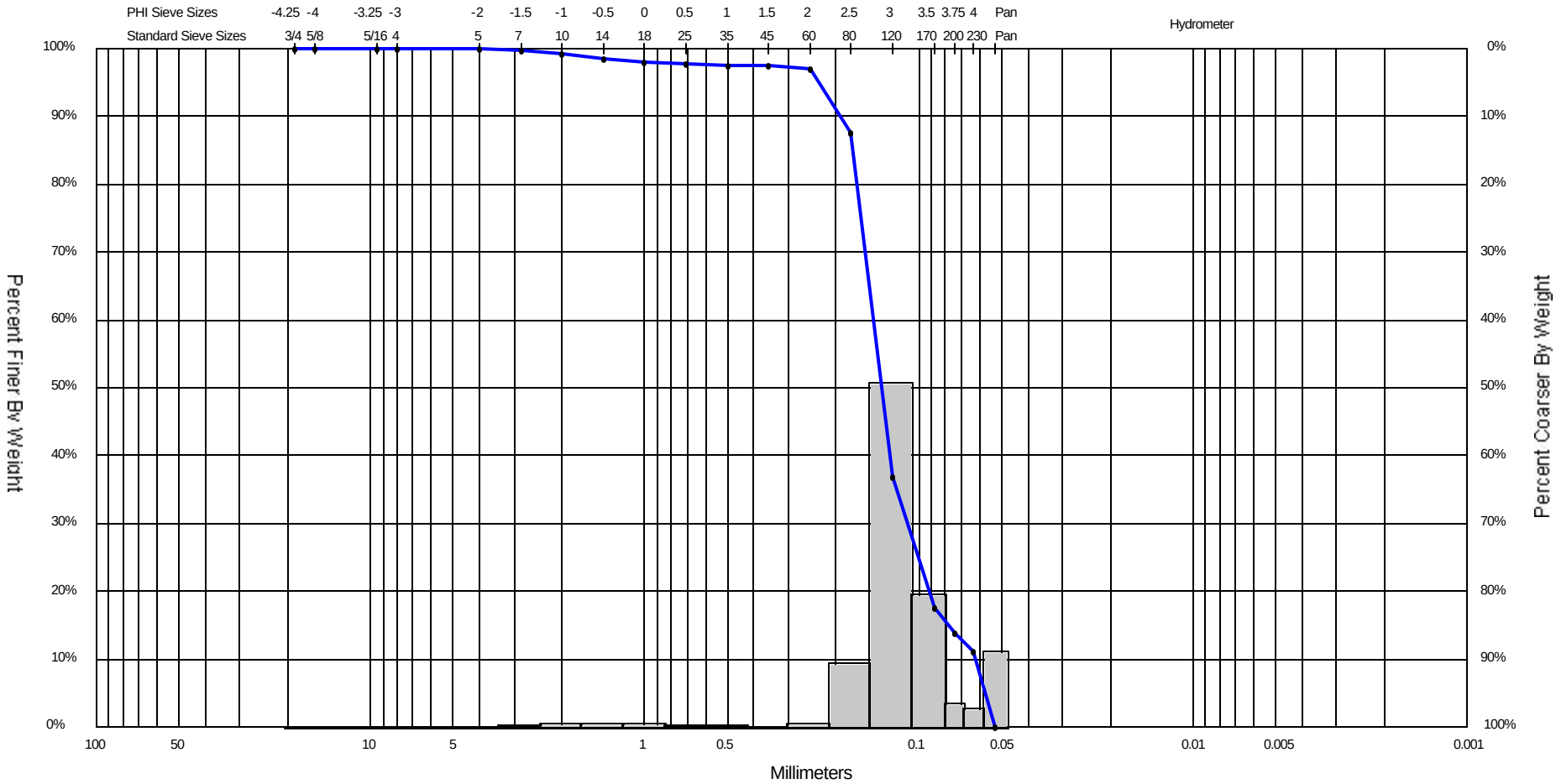

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-26 S#1		-15.3		SM	11.23	0.14	0.12	0.31	1.72	0.70
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	12/03/02
Analyzed By:	ID
Easting (X):	3835697
Northing (Y):	271891
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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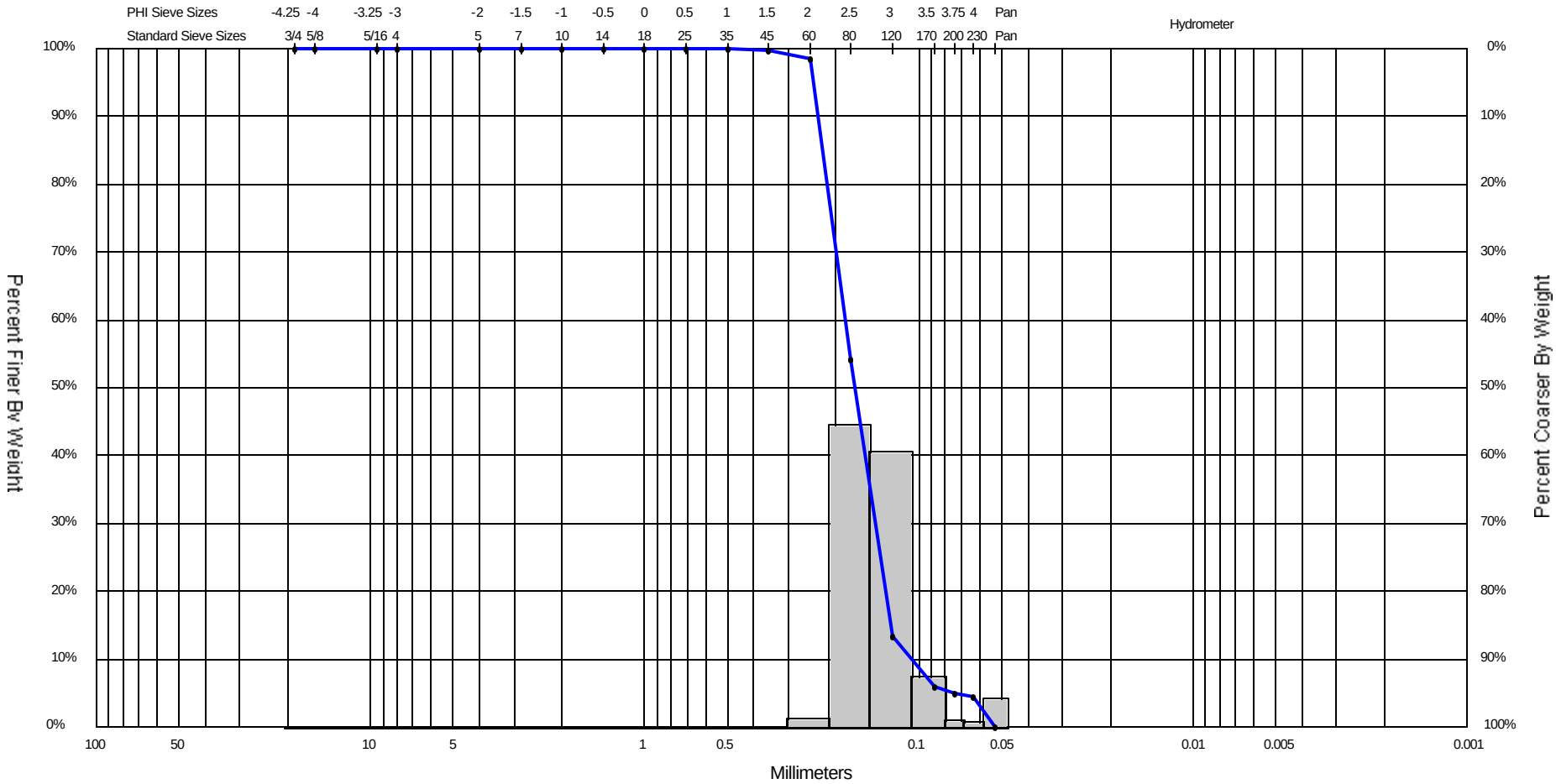

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-26 S#4		-21.4		SP	4.35	0.17	0.16	0.74	2.22	0.59
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	12/03/02
Analyzed By:	ID
Easting (X):	3835697
Northing (Y):	271891
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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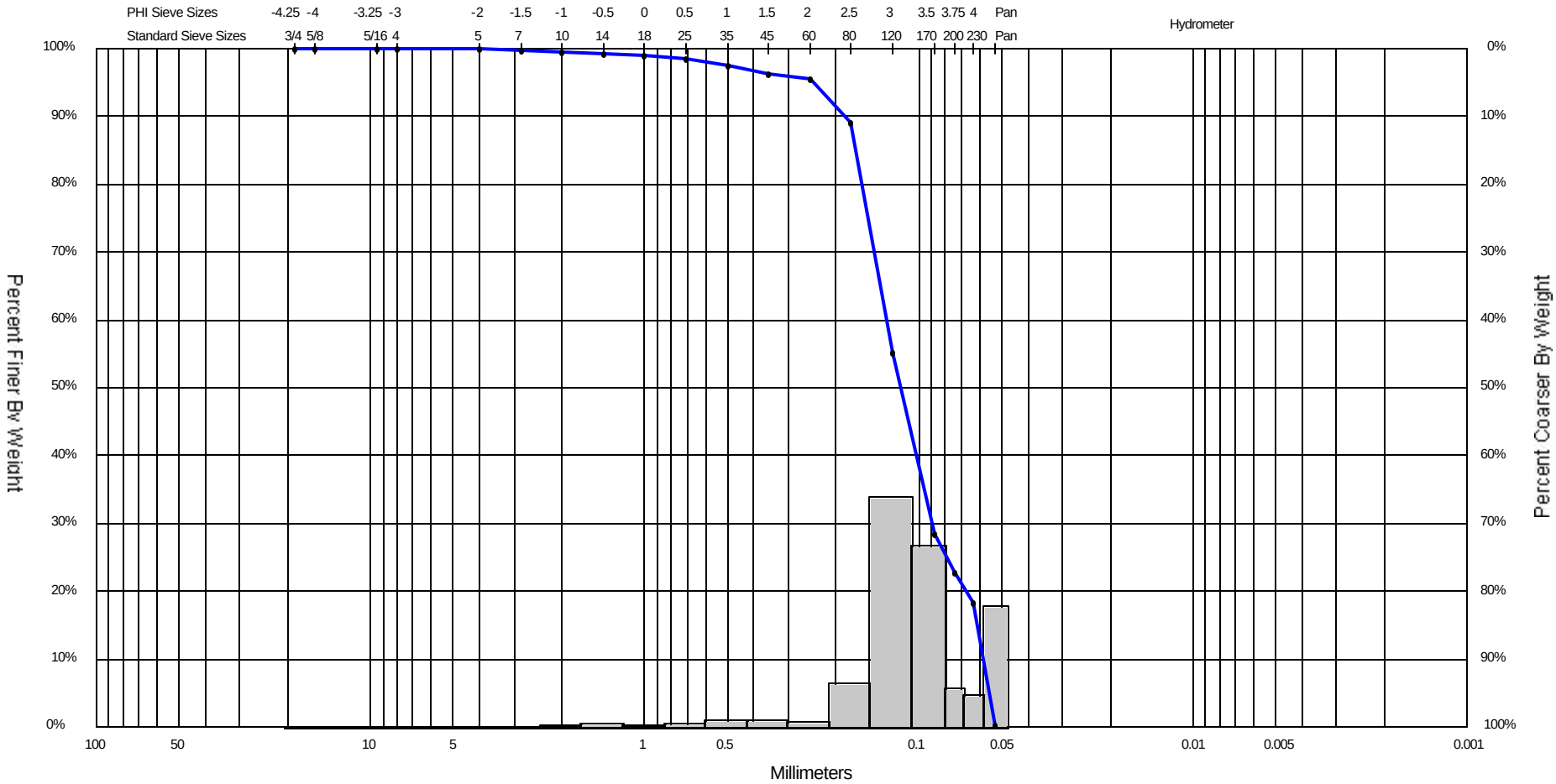

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-26 S#5		-23.8		SM	18.20	0.12	0.11	-0.04	1.40	0.80
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	12/03/02
Analyzed By:	ID
Easting (X):	3835697
Northing (Y):	271891
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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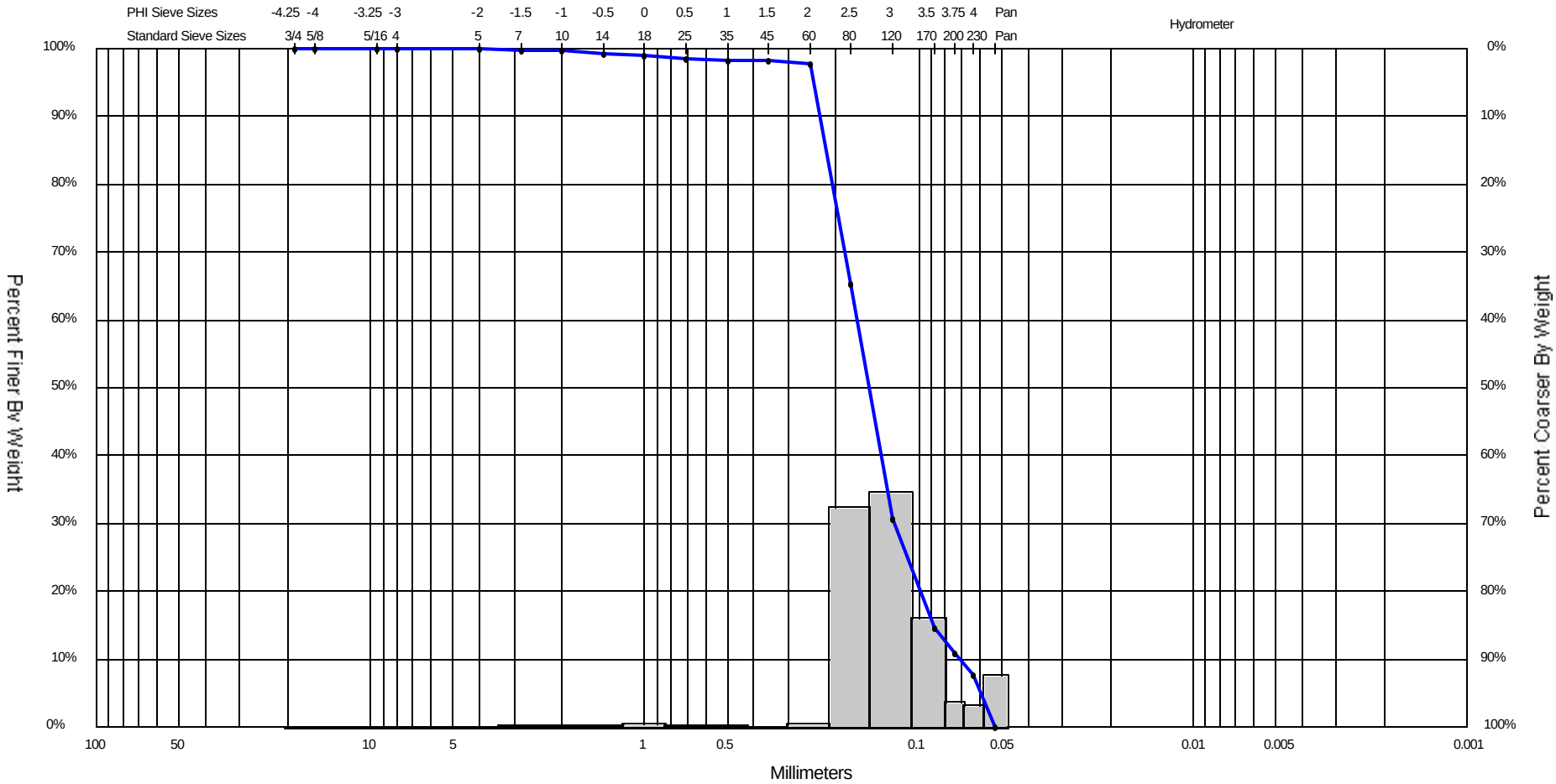

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-27 S#1		-16.9		SW-SM	7.70	0.15	0.14	0.44	1.66	0.75
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	12/03/02
Analyzed By:	ID
Easting (X):	3833631
Northing (Y):	272138
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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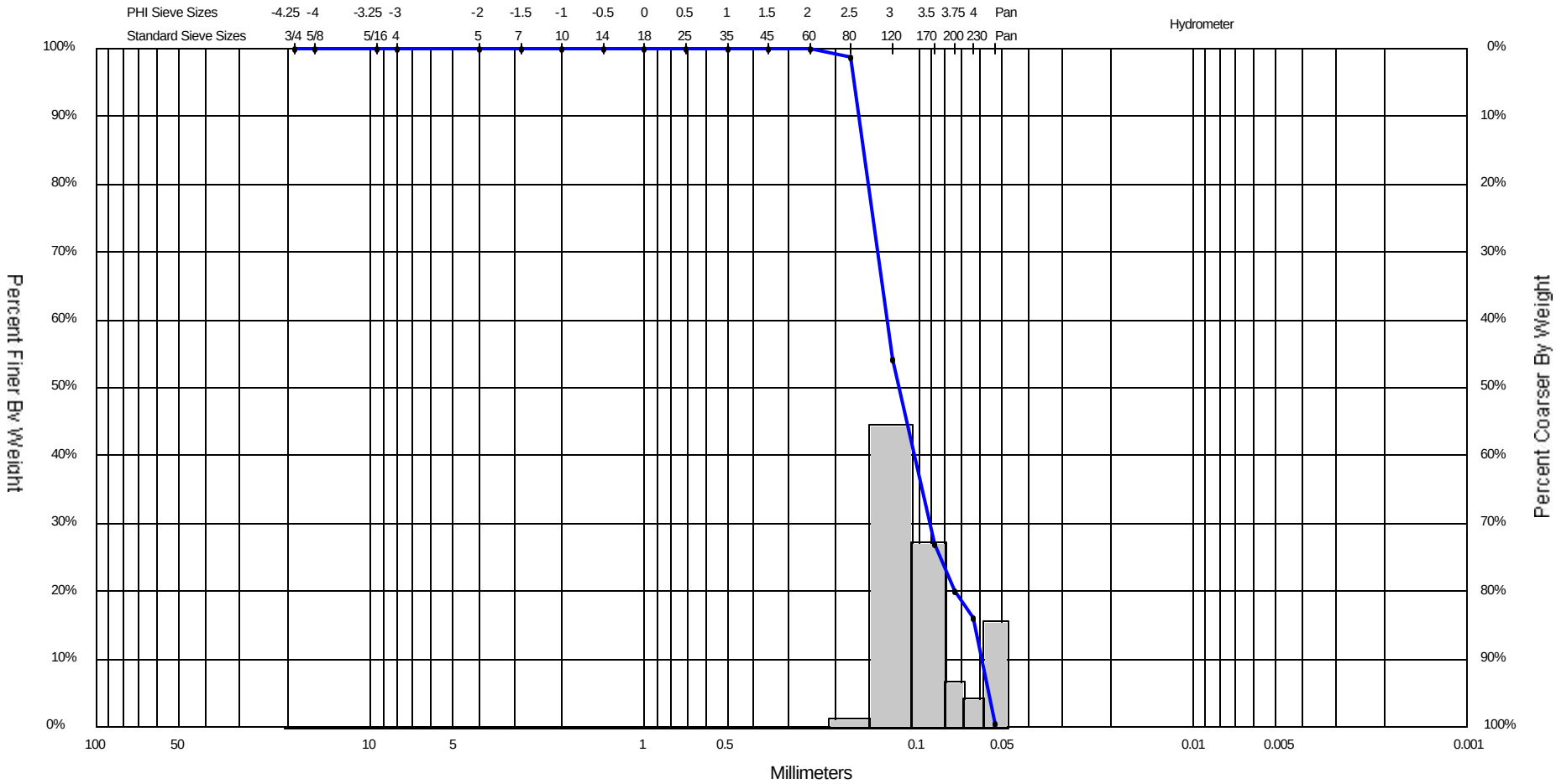

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-27 S#3		-25.5		SM	16.06	0.12	0.10	0.30	1.28	0.66
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	12/05/02
Analyzed By:	ID
Easting (X):	3833631
Northing (Y):	272138
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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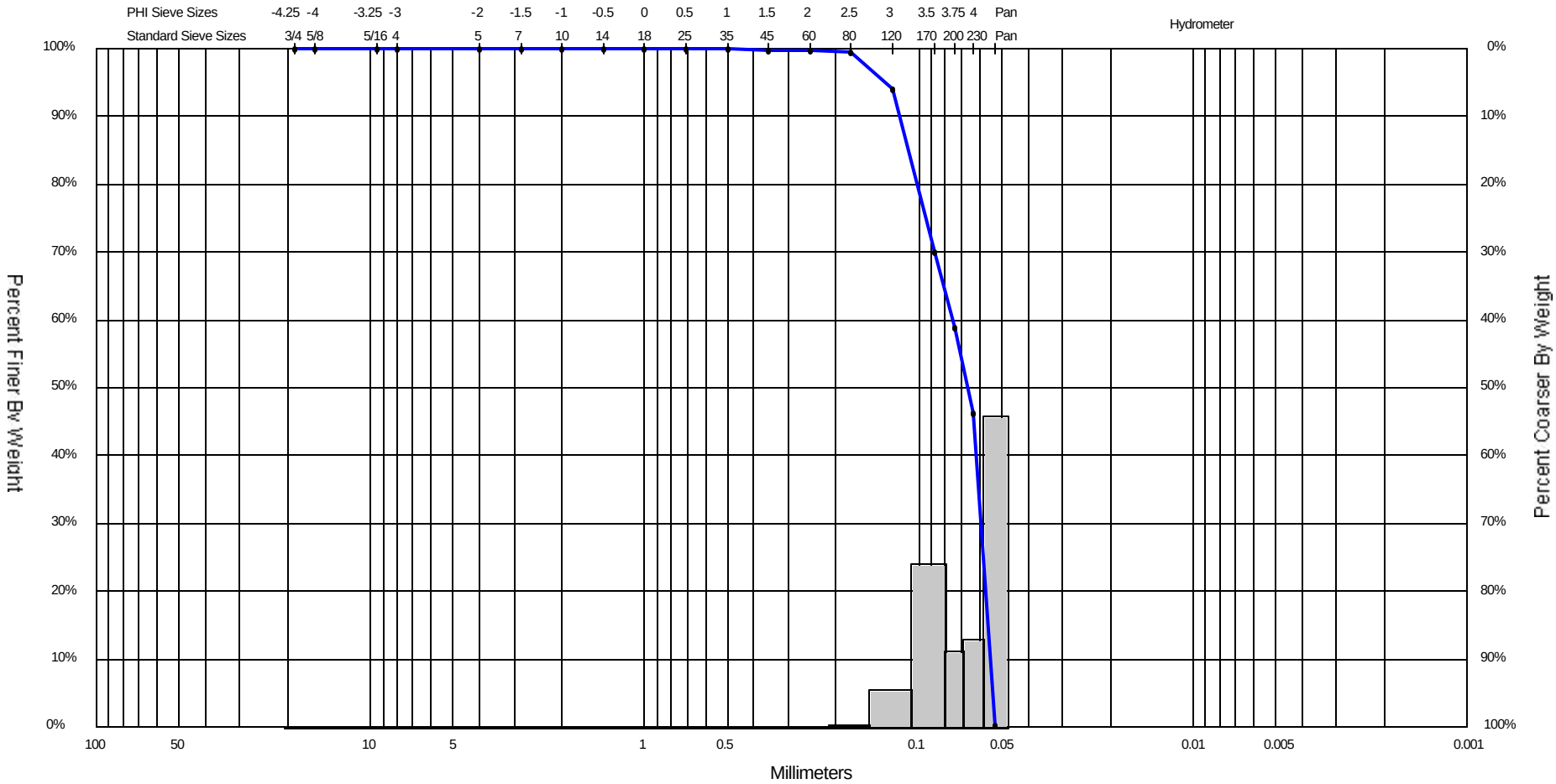

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-27 S#5		-29.5		ML	46.19	0.07	0.08	-0.38	1.32	0.52
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	12/05/02
Analyzed By:	ID
Easting (X):	3833631
Northing (Y):	272138
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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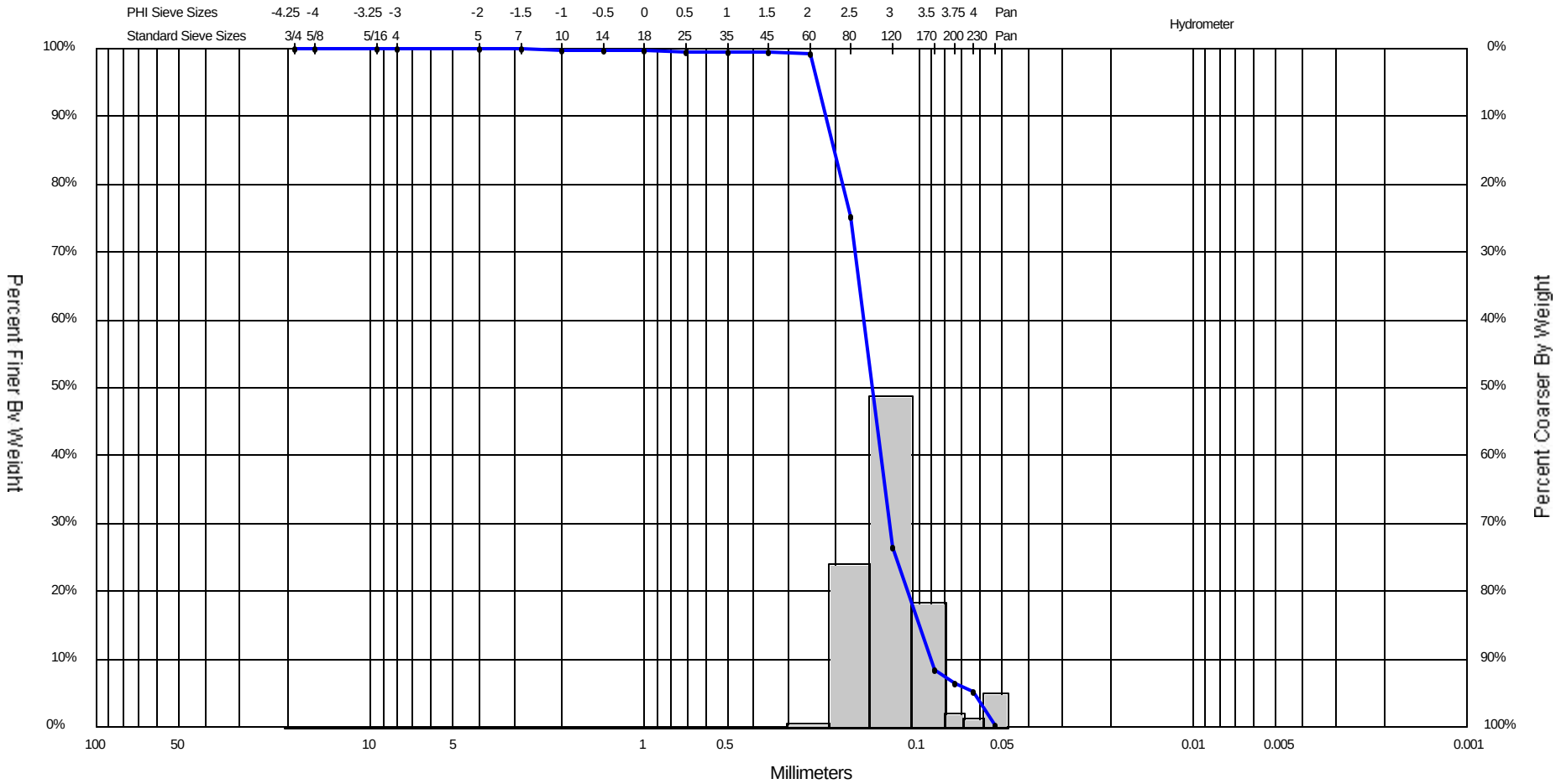

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-28 S#1		-20.9		SW-SM	5.12	0.15	0.14	0.56	2.04	0.65
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	12/05/02
Analyzed By:	ID
Easting (X):	3833741
Northing (Y):	269449
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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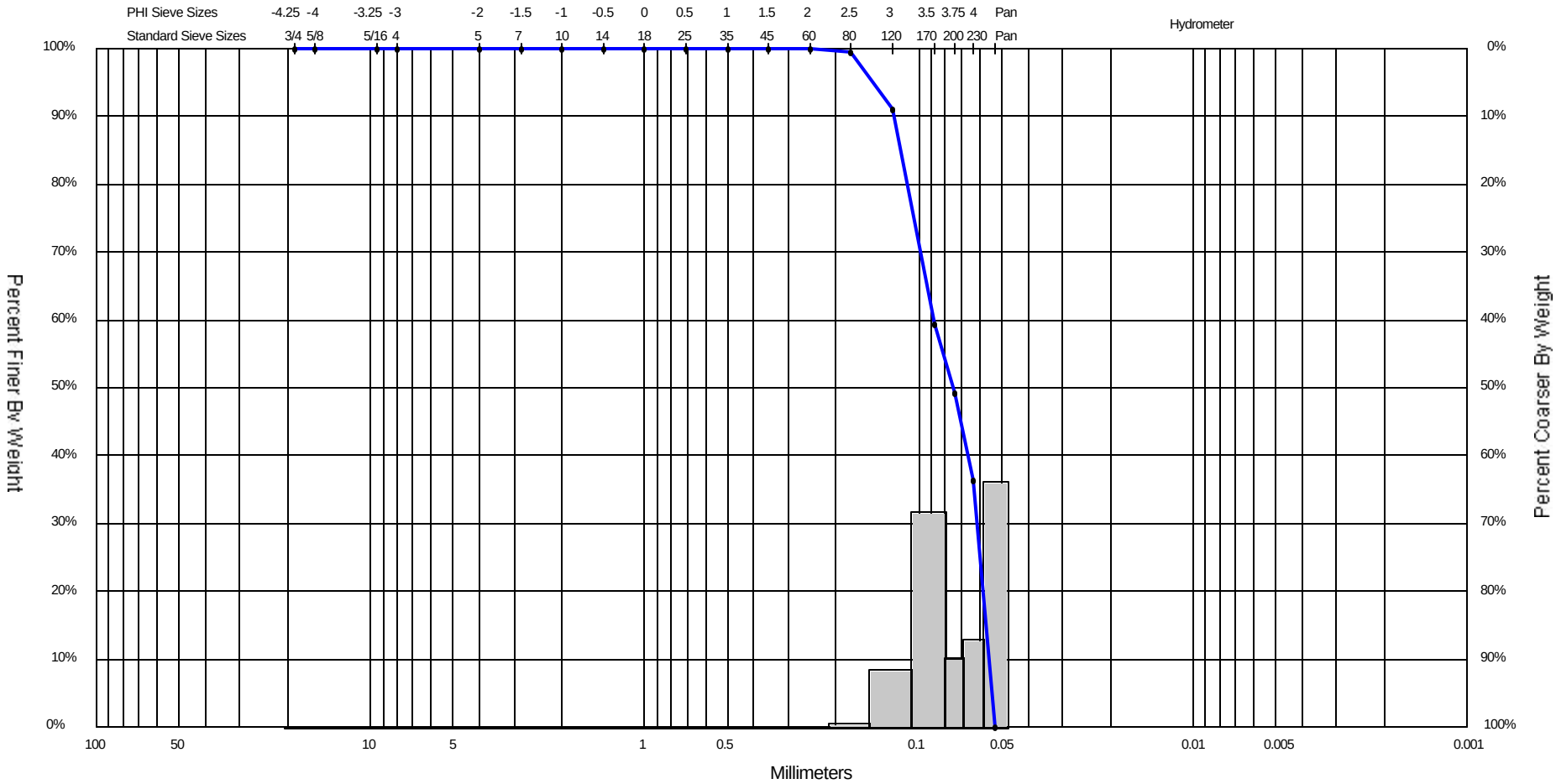

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-29 S#2		-19.4		SM	36.27	0.08	0.08	-0.28	1.32	0.57
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	11/20/02
Analyzed By:	ID
Easting (X):	3835271
Northing (Y):	270842
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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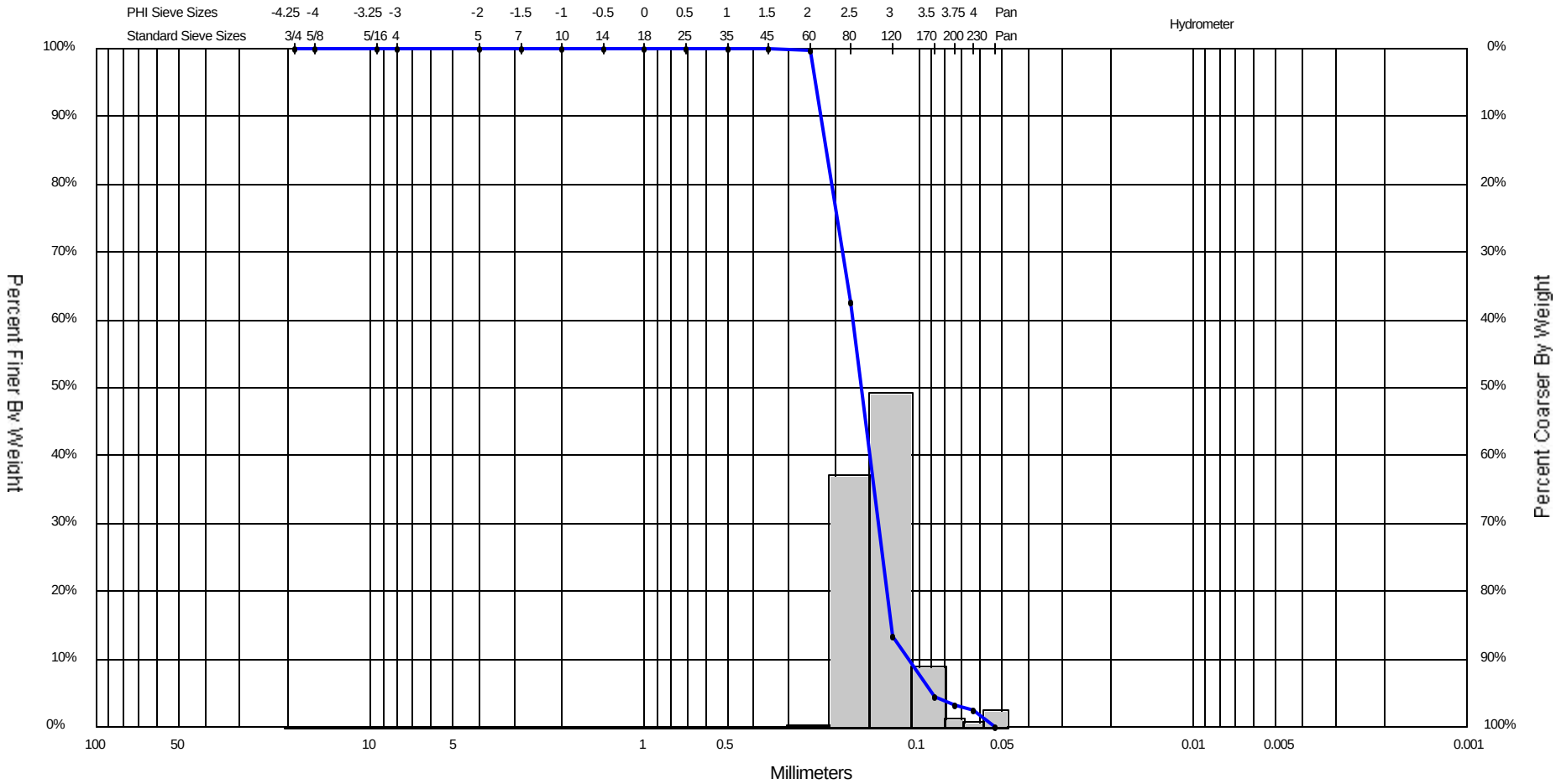

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-29 S#4		-23.4		SP	2.59	0.16	0.16	0.37	1.75	0.49
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	11/20/02
Analyzed By:	ID
Easting (X):	3835271
Northing (Y):	270842
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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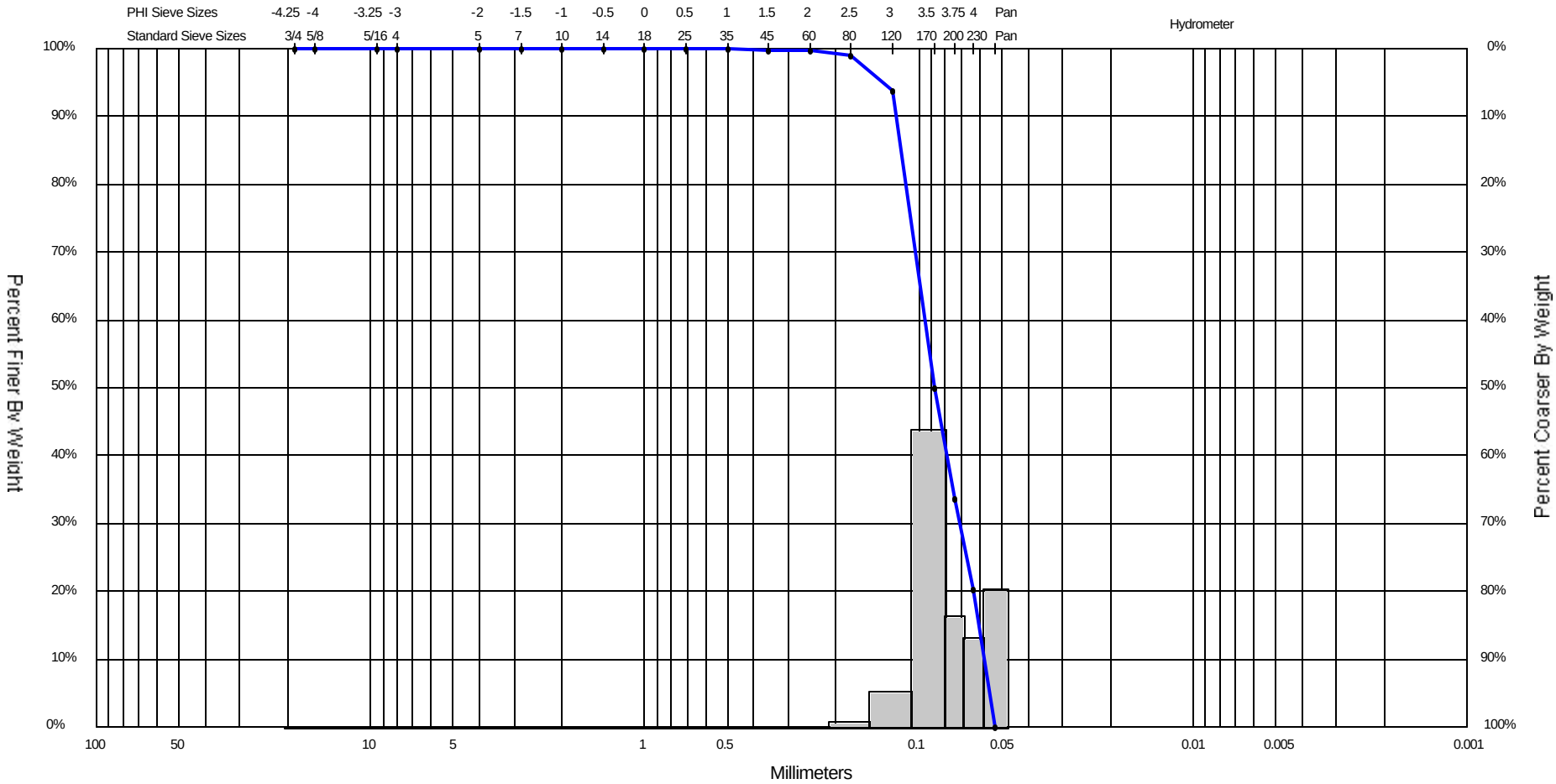

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-29 S#5		-25.9		SM	20.38	0.09	0.09	0.02	1.24	0.50
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	11/20/02
Analyzed By:	ID
Easting (X):	3835271
Northing (Y):	270842
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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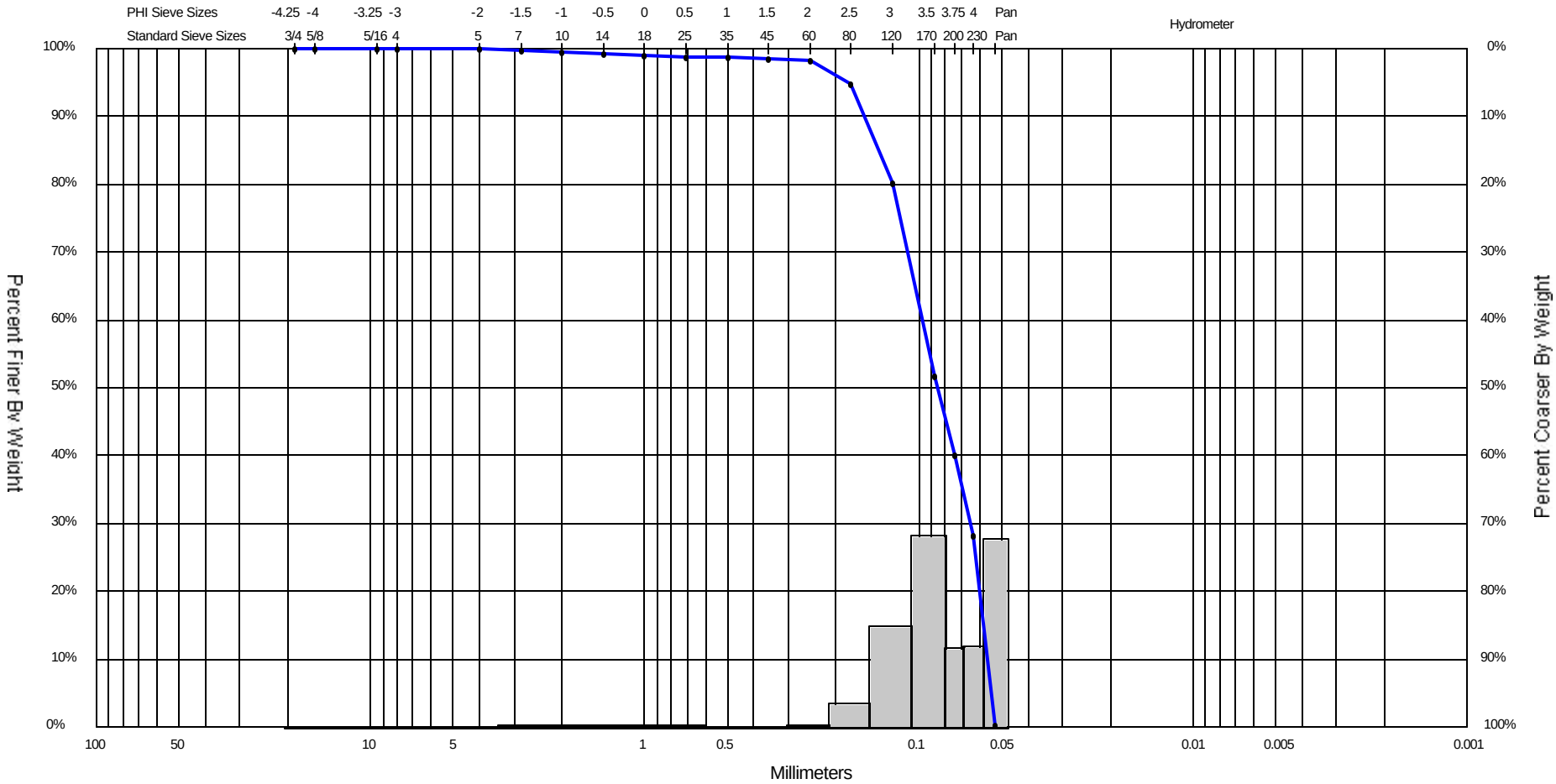

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-30 S#1		-19.2		SM	28.12	0.09	0.09	-0.24	1.33	0.68
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	12/05/02
Analyzed By:	ID
Easting (X):	3835952
Northing (Y):	270034
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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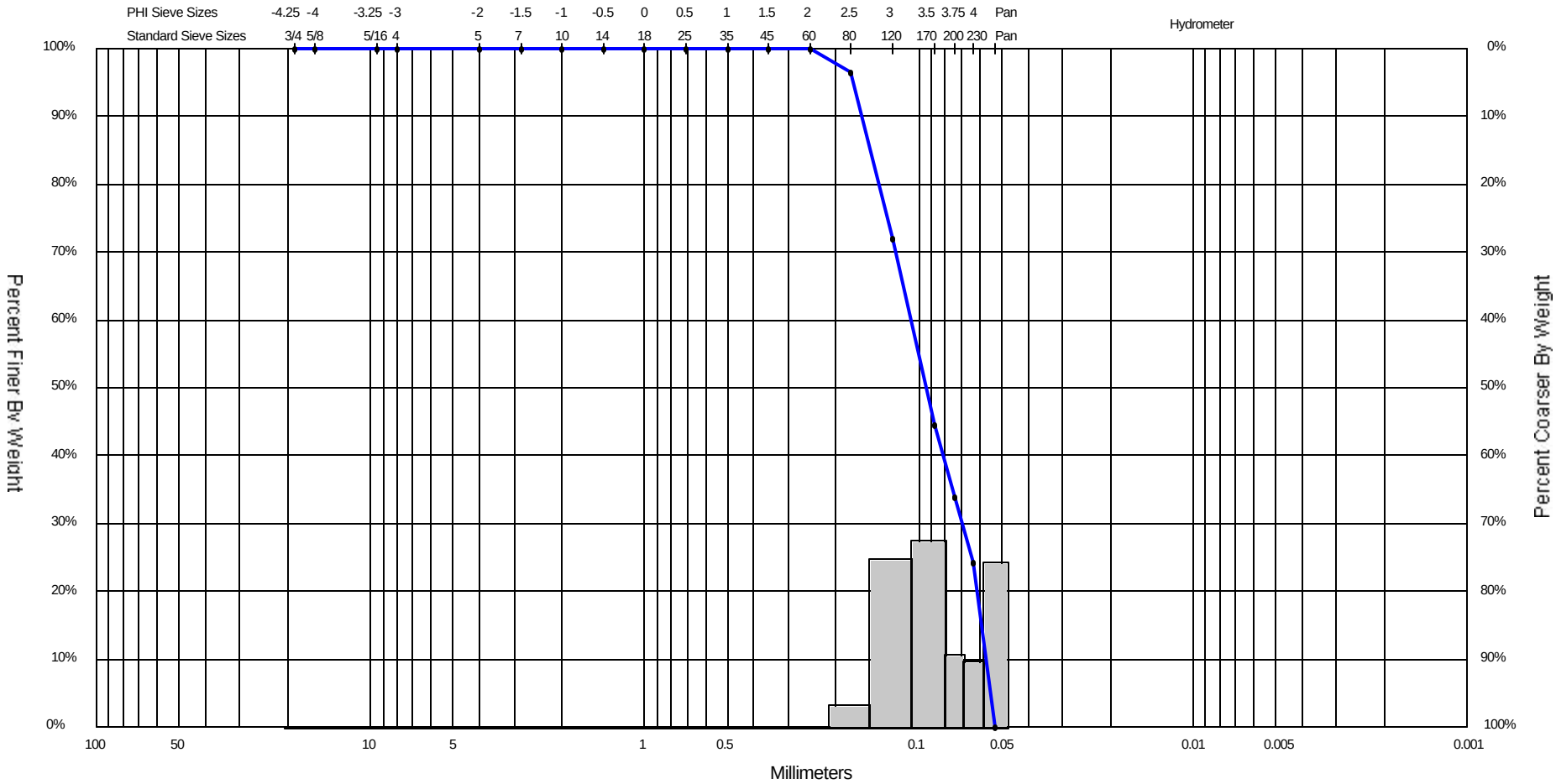

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
EMVC-02-31 S#1		-20.9		SM	24.22	0.09	0.09	-0.05	1.15	0.69
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Barataria
Collection Date:	12/05/02
Analyzed By:	ID
Easting (X):	3830778
Northing (Y):	272823
Horizontal System:	State Plane 1983 LA South Fe
Vertical System:	NAVD 88 Feet

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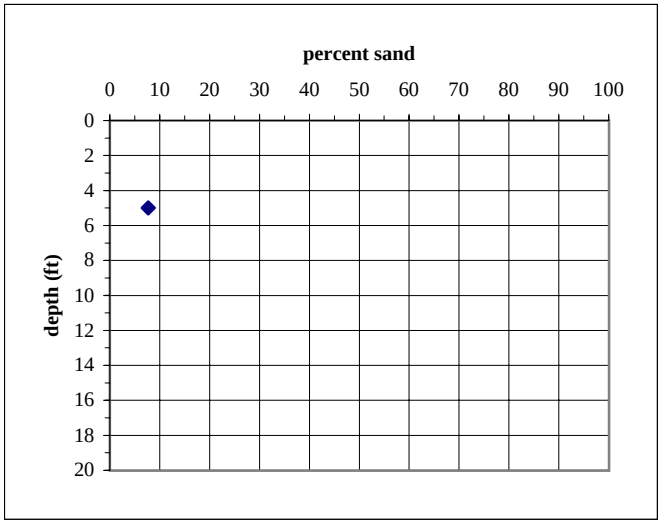
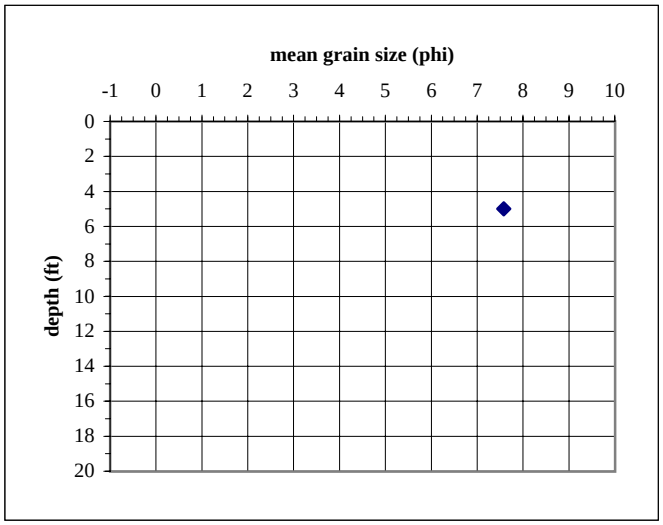
APPENDIX 4
2002 EMPIRE UNO SEDIMENT ANALYSIS

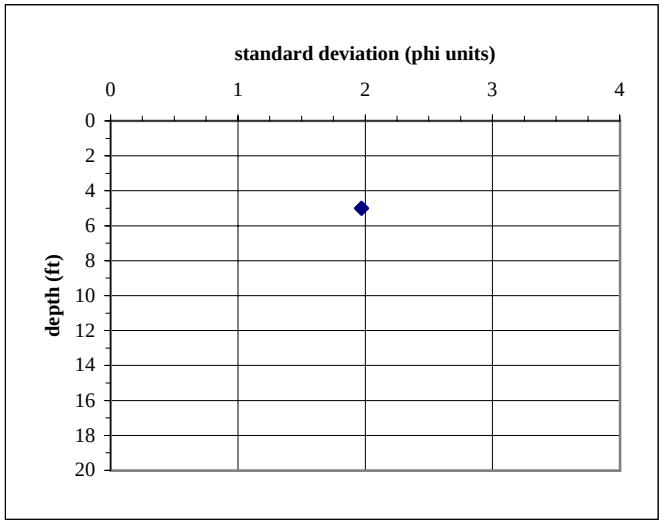
Grainsize Data Table

Core ID **EMVC-02**

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample Mean	Standard Deviation	%Sand	%Silt	%Clay
EMVC-02-01_S#1-050	5.0	mm	0.001	0.001	0.001	0.002	0.005	0.012	0.020	0.041	0.119	0.005		7.7	47.7	44.6
		phi	10.4	10.0	9.6	9.0	7.8	6.4	5.6	4.6	3.1	7.6	2.0			







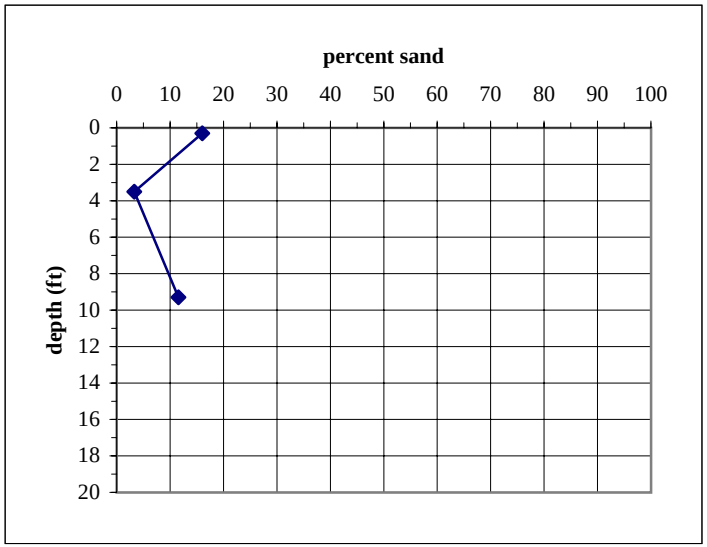
Grainsize Data Table

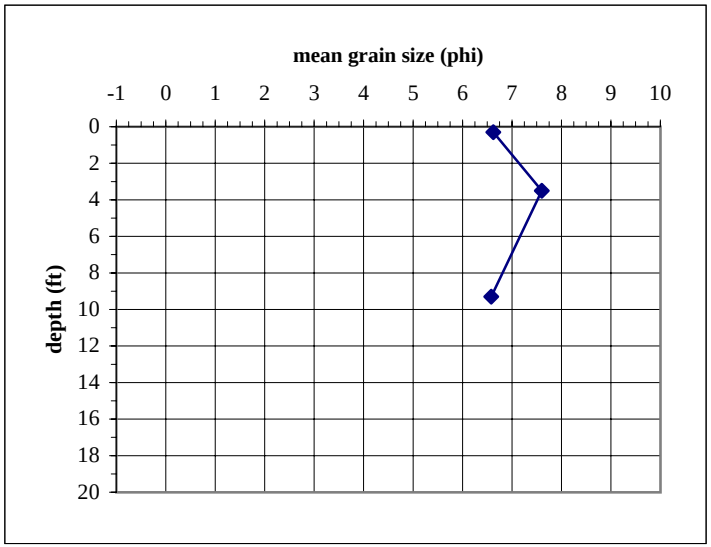
Core ID **EMVC-02**

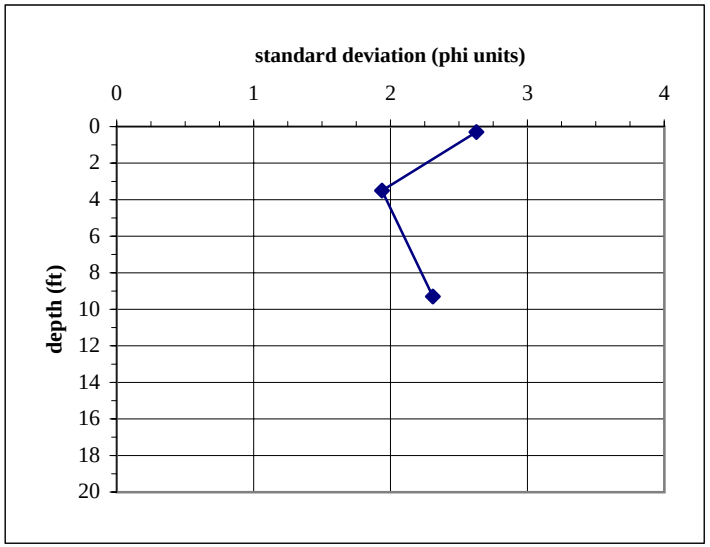
Coastal Planning & Engineering

UNO Coastal Research Laboratory

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample Mean	Standard Deviation	%Sand	%Silt	%Clay
EMVC-02-02_S#1-003	0.3	mm	0.001	0.001	0.002	0.003	0.006	0.022	0.063	0.135	0.169	0.01		16.0	47.4	36.6
		phi	10.3	9.8	9.3	8.6	7.3	5.5	4.0	2.9	2.6	6.6	2.6			
EMVC-02-02_S#2-035	3.5	mm	0.001	0.001	0.001	0.002	0.005	0.013	0.020	0.028	0.046	0.01		3.3	53.3	43.5
		phi	10.4	10.0	9.5	9.0	7.7	6.3	5.7	5.2	4.4	7.6	1.9			
EMVC-02-02_S#3-093	9.3	mm	0.001	0.001	0.002	0.004	0.014	0.037	0.052	0.068	0.122	0.01		11.6	62.5	26.1
		phi	10.1	9.5	8.9	8.1	6.2	4.8	4.3	3.9	3.0	6.6	2.3			



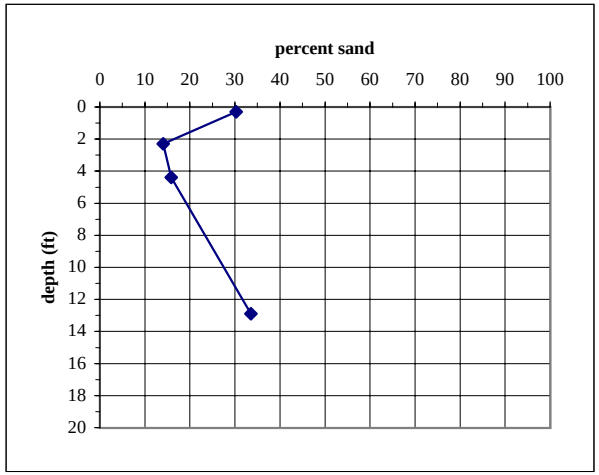


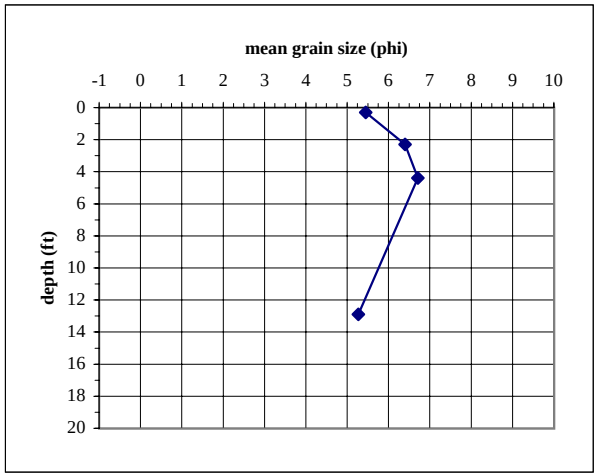


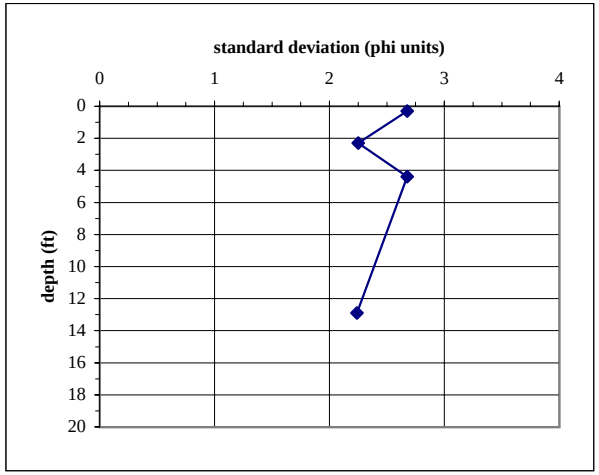
Grainsize Data Table

Core ID **EMVC-02**

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample Mean	Standard Deviation	%Sand	%Silt	%Clay
EMVC-02-03_S#1-003	0.3	mm	0.001	0.002	0.004	0.006	0.019	0.089	0.146	0.194	0.238	0.02		30.3	52.3	17.5
		phi	9.6	8.8	8.1	7.5	5.7	3.5	2.8	2.4	2.1	5.4	2.7			
EMVC-02-03_S#2-023	2.3	mm	0.001	0.002	0.002	0.005	0.016	0.039	0.056	0.091	0.168	0.01		14.0	63.2	22.7
		phi	10.0	9.3	8.7	7.8	5.9	4.7	4.2	3.5	2.6	6.4	2.3			
EMVC-02-03_S#3-044	4.4	mm	0.001	0.001	0.001	0.002	0.006	0.022	0.061	0.134	0.160	0.01		15.8	44.9	39.3
		phi	10.4	9.9	9.4	8.8	7.4	5.5	4.0	2.9	2.6	6.7	2.7			
EMVC-02-03_S#4-129	12.9	mm	0.001	0.003	0.005	0.012	0.035	0.089	0.122	0.156	0.211	0.03		33.6	53.5	13.0
		phi	9.5	8.5	7.5	6.3	4.8	3.5	3.0	2.7	2.2	5.3	2.2			







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Core ID **EMVC-02**

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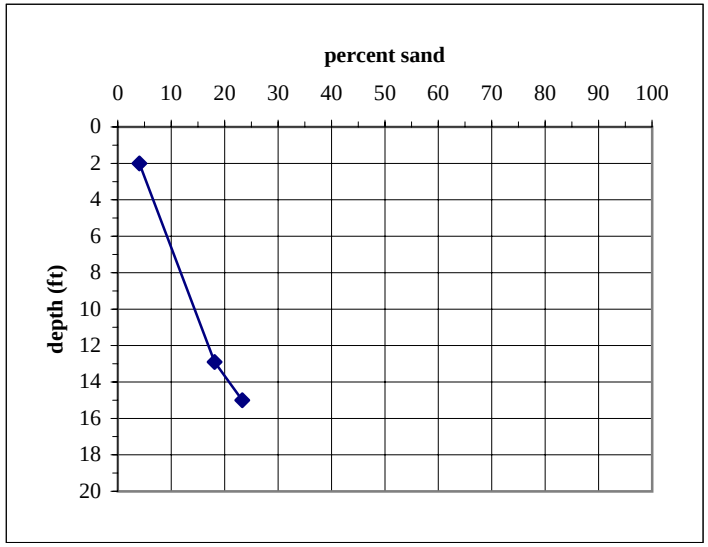
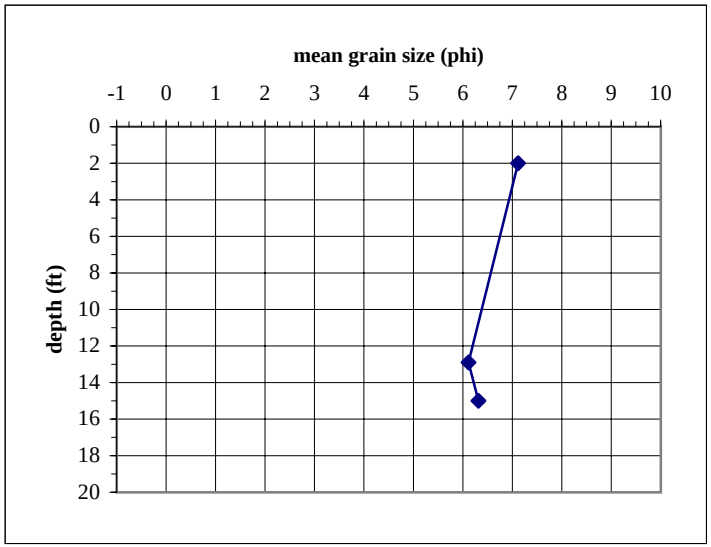
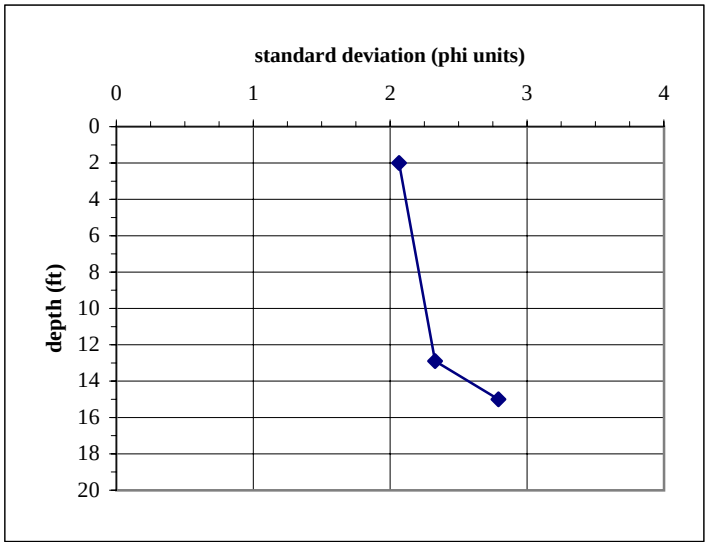
Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample Mean	Standard Deviation	%Sand	%Silt	%Clay
EMVC-02-04_S#1-020	2.0	mm	0.001	0.001	0.002	0.003	0.007	0.020	0.030	0.042	0.058	0.007		4.1	62.0	34.0
		phi	10.3	9.7	9.2	8.5	7.1	5.6	5.1	4.6	4.1	7.1	2.1			
EMVC-02-04_S#2-129	12.9	mm	0.001	0.002	0.003	0.005	0.020	0.046	0.072	0.136	0.188	0.014		18.1	61.5	20.4
		phi	9.9	9.1	8.4	7.6	5.6	4.4	3.8	2.9	2.4	6.1	2.3			
EMVC-02-04_S#3-150	15.0	mm	0.001	0.001	0.002	0.003	0.009	0.058	0.087	0.130	0.185	0.013		23.3	45.6	31.2
		phi	10.2	9.7	9.1	8.4	6.7	4.1	3.5	2.9	2.4	6.3	2.8			







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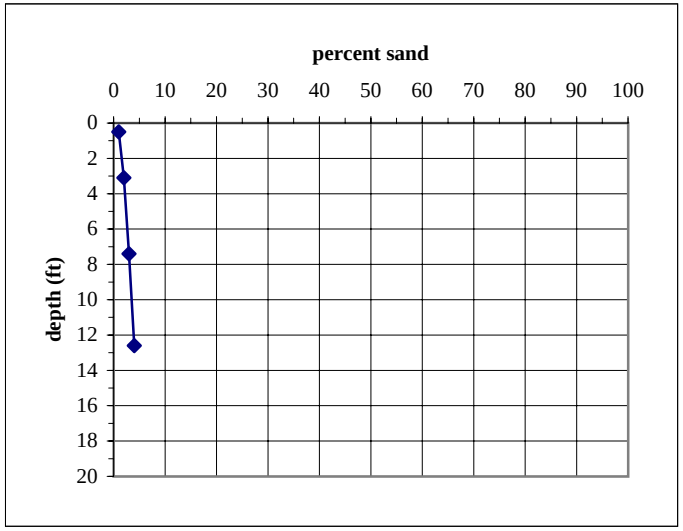
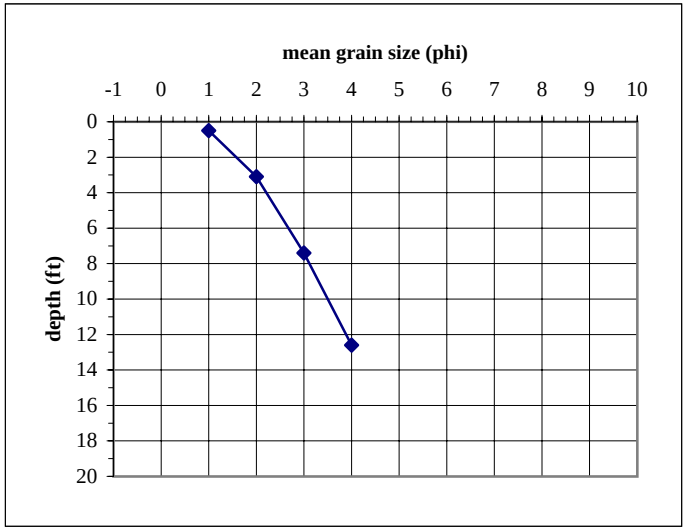
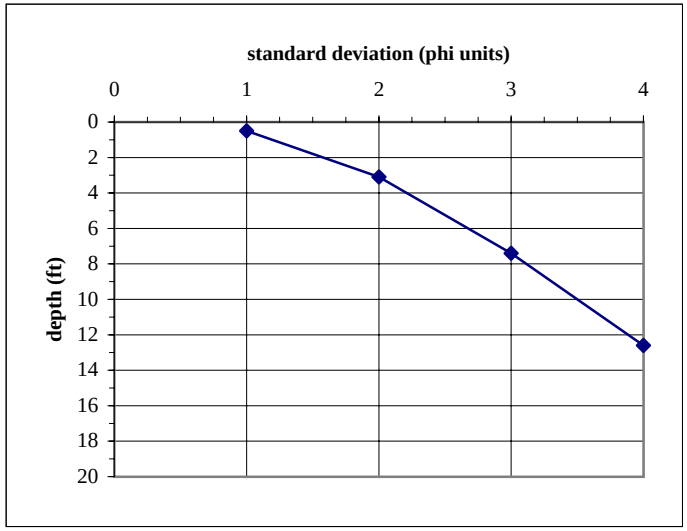
EMVC-02-05_S#1-005	0.5	mm	0.001	0.002	0.003	0.004	0.010	0.029	0.051	0.090	0.155	0.012		13.5	62.3	24.2
		phi	10.0	9.2	8.6	8.0	6.7	5.1	4.3	3.5	2.7	6.4	2.2			
EMVC-02-05_S#2-031	3.1	mm	0.001	0.001	0.001	0.002	0.005	0.014	0.024	0.059	0.140	0.006		9.7	47.6	42.7
		phi	10.4	10.0	9.5	8.9	7.7	6.2	5.4	4.1	2.8	7.4	2.1			
EMVC-02-05_S#3-074	7.4	mm	0.001	0.002	0.004	0.008	0.028	0.065	0.096	0.146	0.203	0.020		26.1	58.0	15.9
		phi	9.7	8.8	8.0	6.9	5.2	3.9	3.4	2.8	2.3	5.7	2.3			
EMVC-02-05_S#4-126	12.6	mm	0.001	0.002	0.002	0.004	0.017	0.040	0.056	0.081	0.141	0.012		13.6	63.6	22.9
		phi	10.0	9.3	8.6	7.8	5.9	4.7	4.2	3.6	2.8	6.4	2.2			







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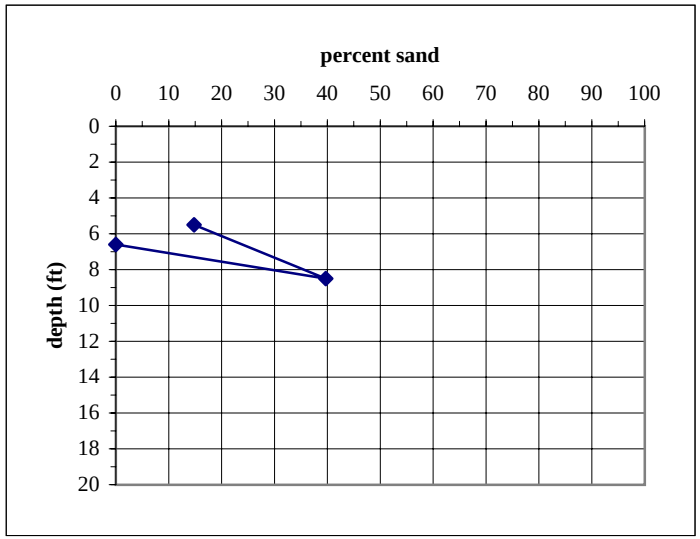
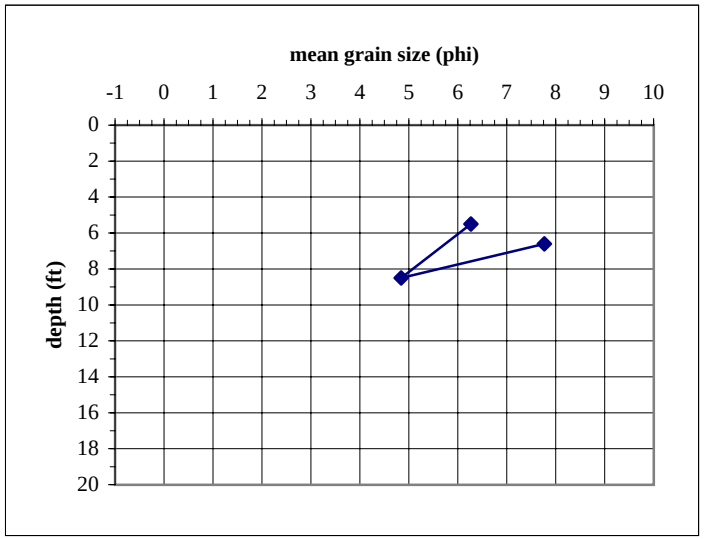
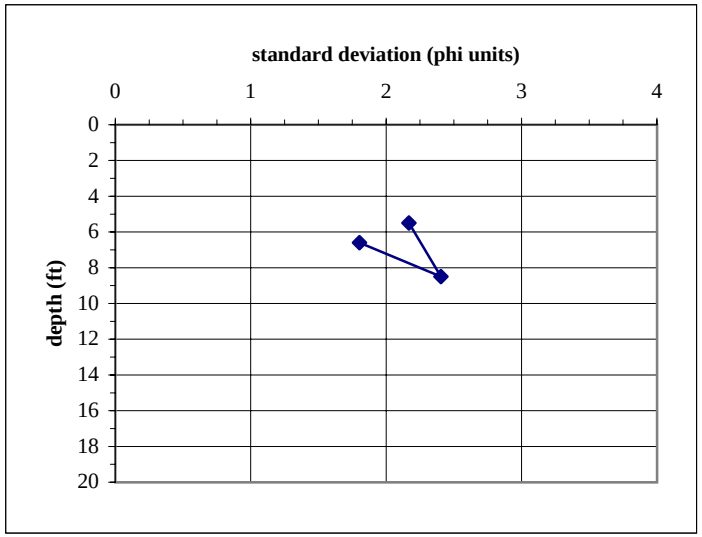
EMVC-02-06_S#2-066	6.6	mm	0.001	0.001	0.001	0.002	0.005	0.011	0.016	0.022	0.031	0.005		0.0	55.6	44.5
		phi	10.4	10.0	9.6	9.0	7.7	6.5	6.0	5.5	5.0	7.8	1.8			
EMVC-02-06_S#3-085	8.5	mm	0.002	0.003	0.007	0.016	0.046	0.115	0.184	0.268	0.443	0.035		39.7	48.8	11.5
		phi	9.3	8.3	7.2	6.0	4.4	3.1	2.4	1.9	1.2	4.8	2.4			
EMVC-02-06_S#6-055	5.5	mm	0.001	0.002	0.003	0.006	0.016	0.037	0.058	0.091	0.152	0.013		14.8	65.6	19.7
		phi	10.0	9.2	8.4	7.5	6.0	4.7	4.1	3.5	2.7	6.3	2.2			







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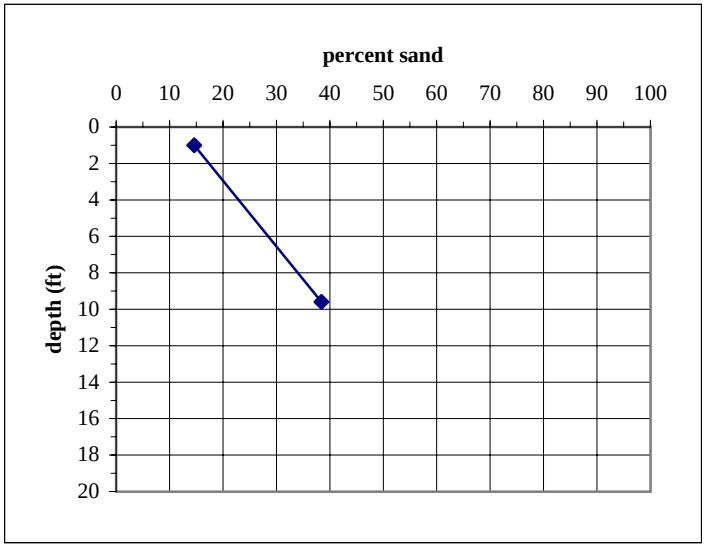
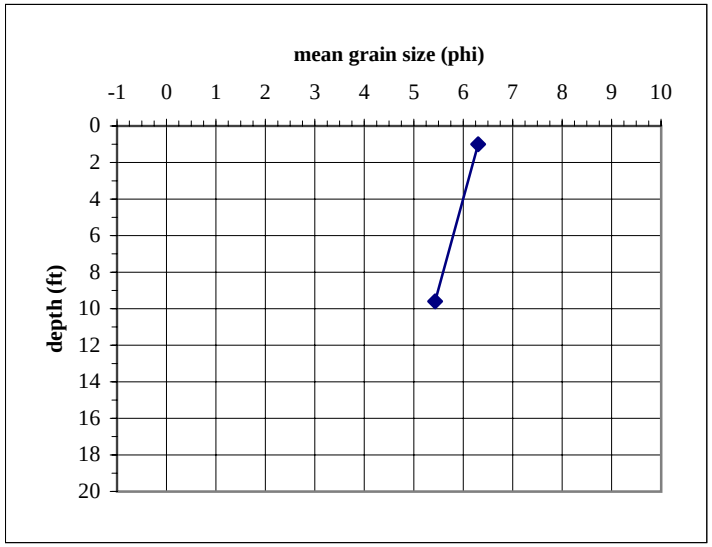
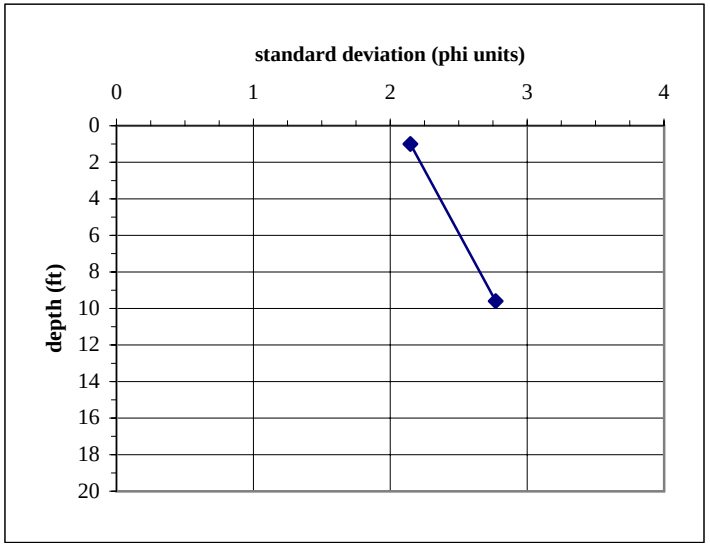
EMVC-02-07_S#1-010	1.0	mm	0.001	0.002	0.003	0.005	0.012	0.033	0.056	0.100	0.161	0.013		14.6	63.8	21.7
		phi	9.9	9.1	8.5	7.8	6.4	4.9	4.2	3.3	2.6	6.3	2.1			
EMVC-02-07_S#6-096	9.6	mm	0.001	0.002	0.003	0.007	0.040	0.107	0.158	0.208	0.281	0.023		38.4	43.7	17.8
		phi	9.7	8.9	8.2	7.2	4.7	3.2	2.7	2.3	1.8	5.4	2.8			







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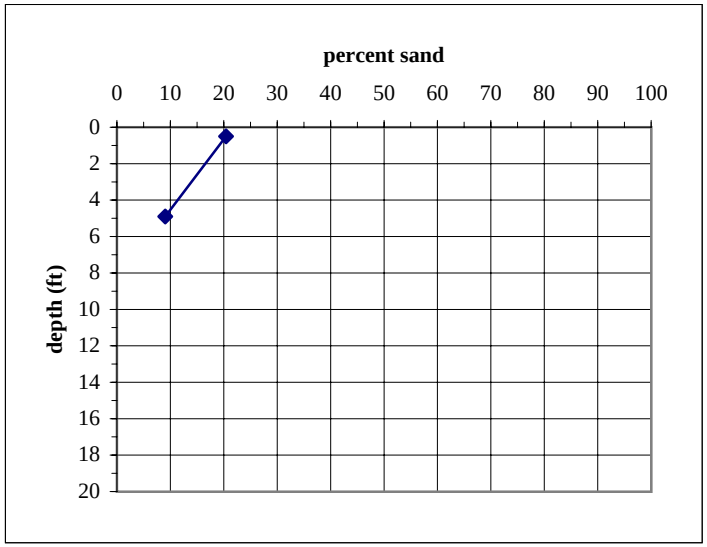
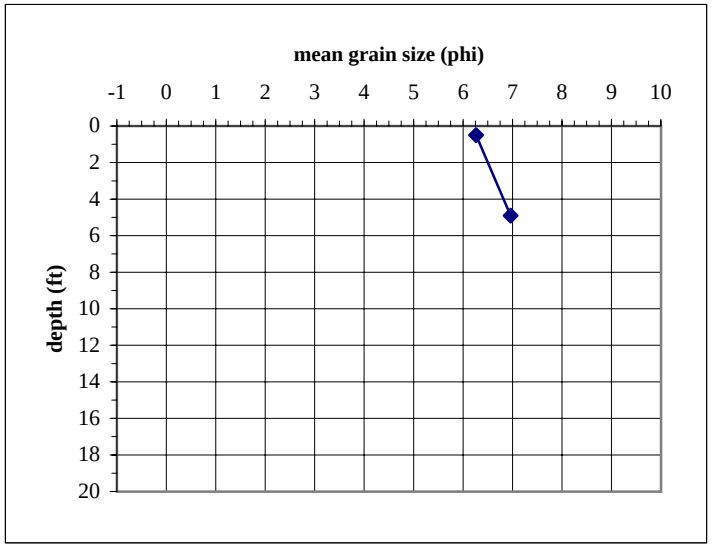
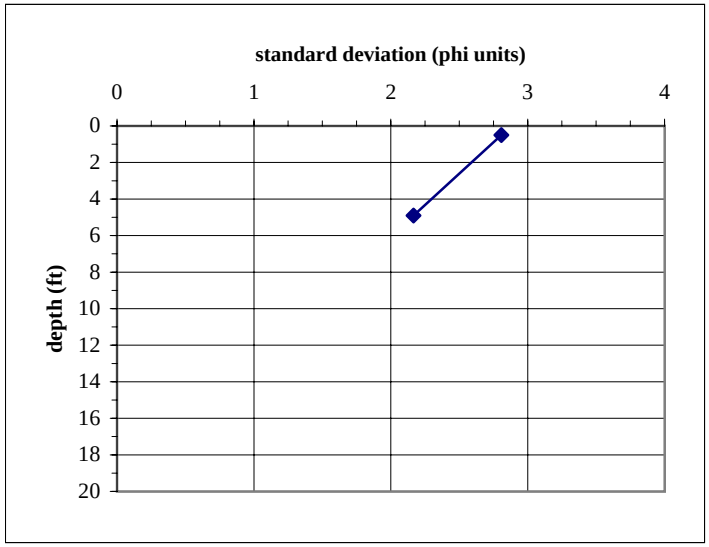
EMVC-02-08_S#1-005	0.5	mm	0.001	0.001	0.002	0.003	0.009	0.044	0.091	0.141	0.171	0.013		20.4	48.0	31.6
		phi	10.2	9.6	9.1	8.4	6.9	4.5	3.5	2.8	2.6	6.3	2.8			
EMVC-02-08_S#3-049	4.9	mm	0.001	0.001	0.002	0.003	0.008	0.023	0.036	0.056	0.128	0.008		9.0	58.5	32.5
		phi	10.2	9.7	9.1	8.5	7.0	5.5	4.8	4.2	3.0	7.0	2.2			







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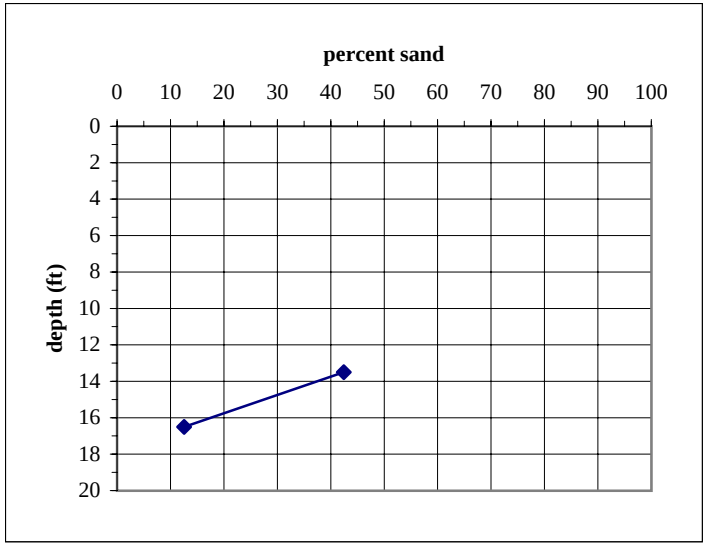
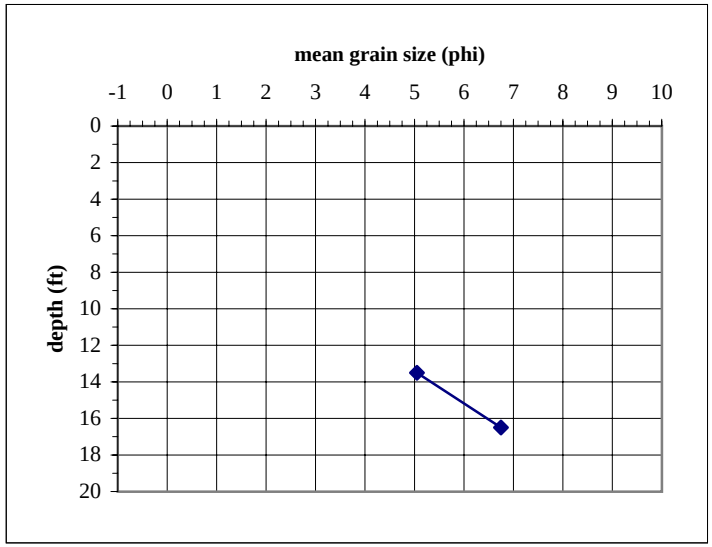
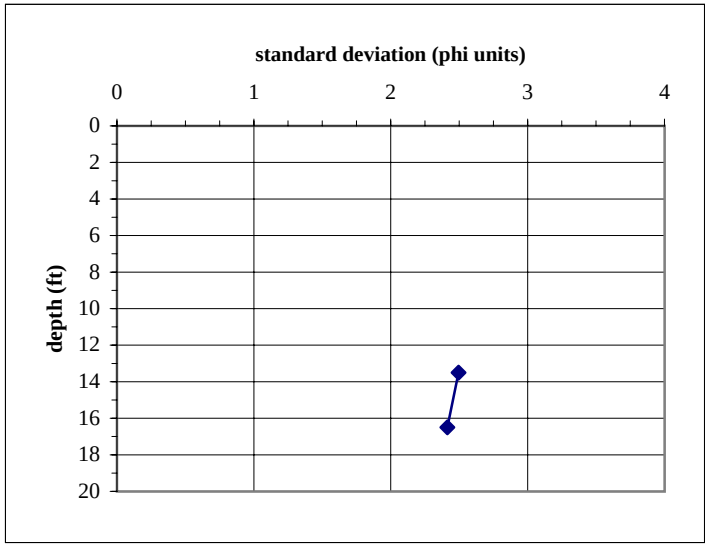
EMVC-02-08a_S#1-165	16.5	mm	0.001	0.001	0.002	0.003	0.009	0.031	0.050	0.082	0.148	0.009		12.6	56.1	31.4
		phi	10.3	9.7	9.2	8.5	6.7	5.0	4.3	3.6	2.8	6.7	2.4			
EMVC-02-08a_S#4-135	13.5	mm	0.001	0.003	0.005	0.013	0.049	0.116	0.170	0.226	0.312	0.030		42.4	44.8	12.8
		phi	9.4	8.4	7.5	6.3	4.3	3.1	2.6	2.1	1.7	5.0	2.5			







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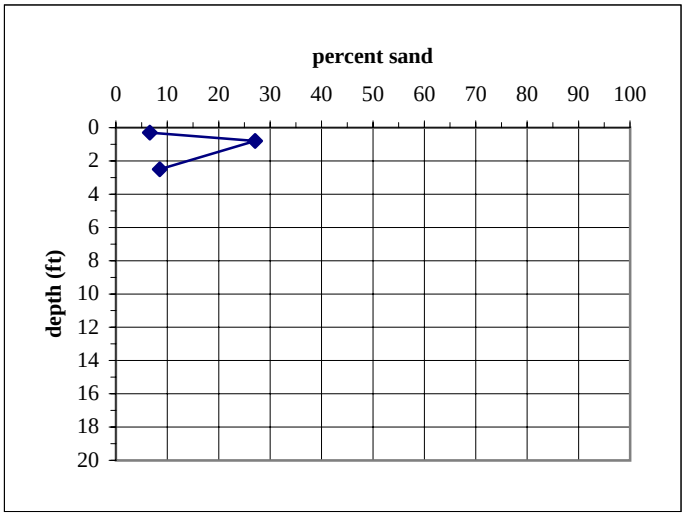
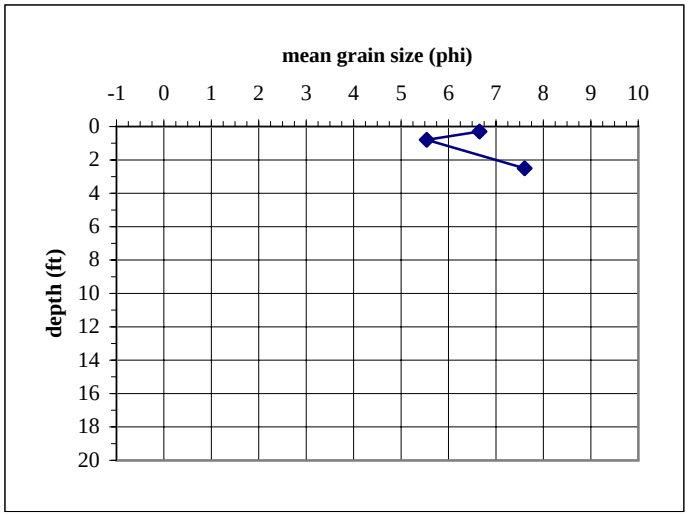
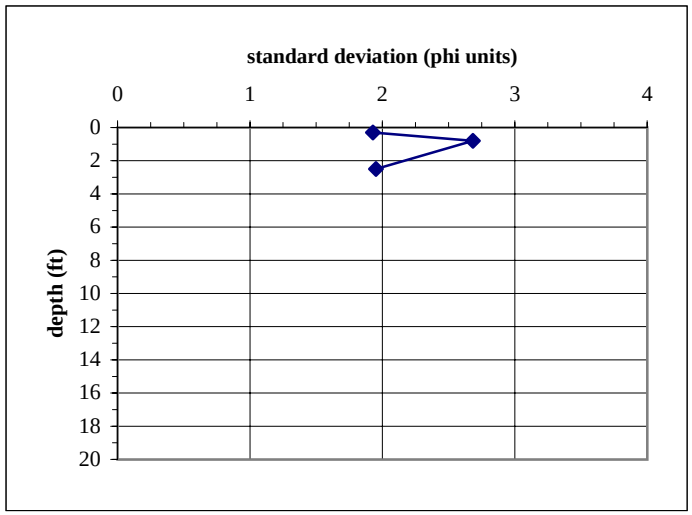
EMVC-02-09_S#1-003	0.3	mm	0.001	0.002	0.003	0.004	0.010	0.025	0.038	0.051	0.069	0.010		6.6	69.1	24.4
		phi	9.9	9.2	8.6	8.0	6.7	5.3	4.7	4.3	3.8	6.7	1.9			
EMVC-02-09_S#2-008	0.8	mm	0.001	0.002	0.003	0.005	0.017	0.073	0.138	0.195	0.243	0.021		27.1	54.2	18.7
		phi	9.7	8.9	8.2	7.5	5.9	3.8	2.9	2.4	2.0	5.5	2.7			
EMVC-02-09_S#3-025	2.5	mm	0.001	0.001	0.001	0.002	0.005	0.012	0.020	0.048	0.132	0.005		8.5	48.3	43.2
		phi	10.5	10.0	9.6	9.0	7.7	6.4	5.7	4.4	2.9	7.6	2.0			







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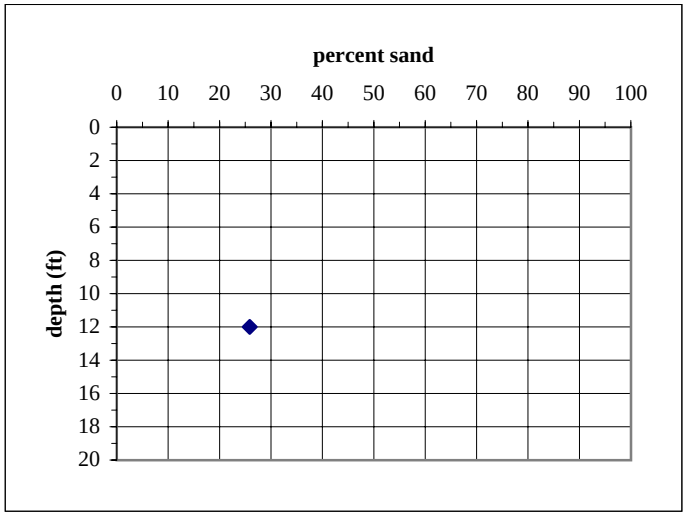
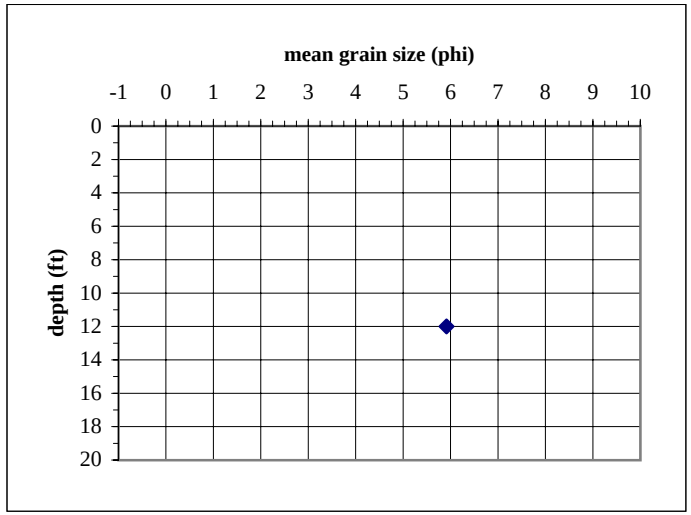
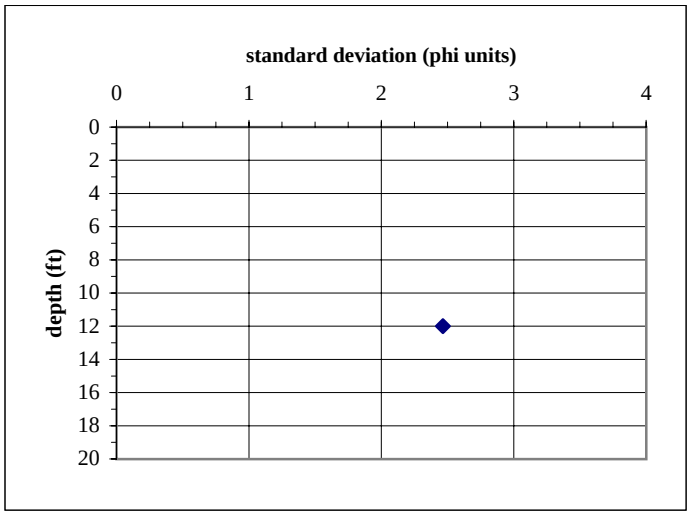
EMVC-02-09a_S#1-120	12.0	mm	0.001	0.002	0.003	0.006	0.026	0.064	0.091	0.131	0.187	0.017		25.9	54.4	19.7
		phi	9.8	9.1	8.4	7.5	5.2	4.0	3.5	2.9	2.4	5.9	2.5			







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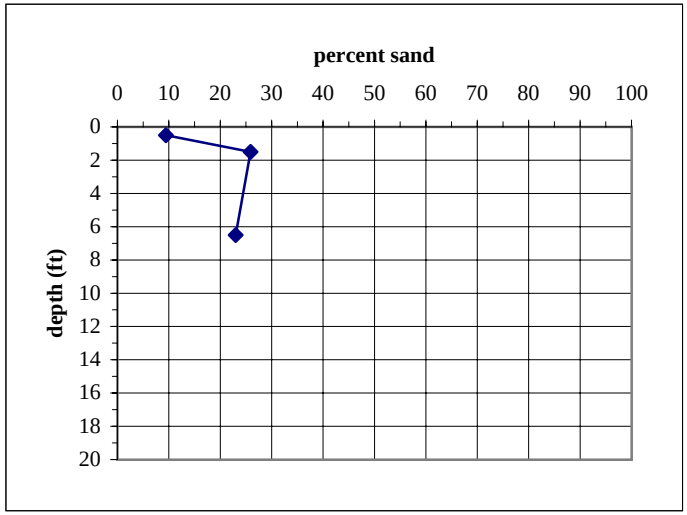
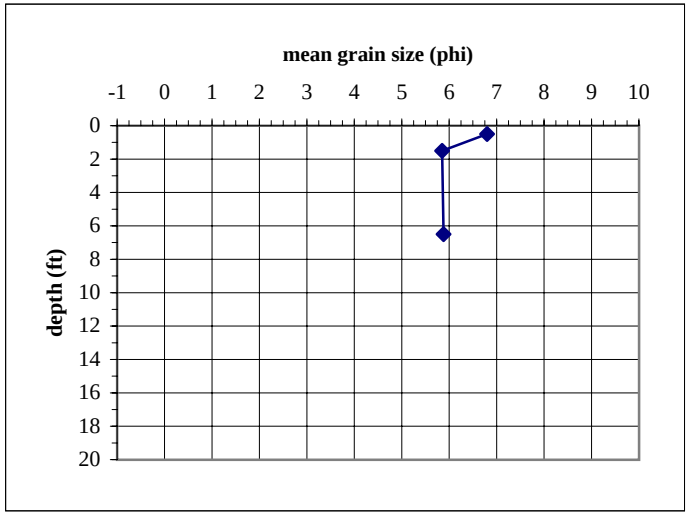
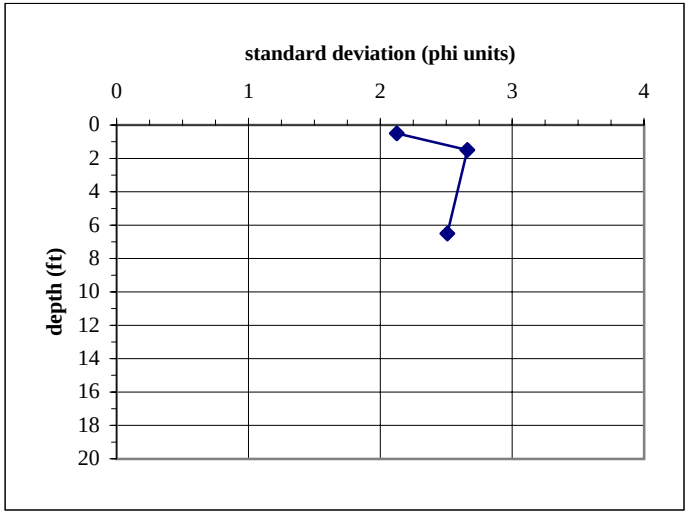
EMVC-02-10_S#1-005	0.5	mm	0.001	0.001	0.002	0.003	0.008	0.023	0.039	0.060	0.112	0.009		9.4	61.4	29.3
		phi	10.2	9.5	8.9	8.3	6.9	5.4	4.7	4.1	3.2	6.8	2.1			
EMVC-02-10_S#2-015	1.5	mm	0.001	0.002	0.003	0.005	0.019	0.065	0.110	0.163	0.207	0.017		25.9	52.5	21.7
		phi	9.9	9.2	8.5	7.7	5.7	3.9	3.2	2.6	2.3	5.9	2.7			
EMVC-02-10_S#4-065	6.5	mm	0.001	0.002	0.003	0.005	0.022	0.057	0.097	0.153	0.216	0.017		23.0	57.1	19.8
		phi	9.8	9.1	8.4	7.5	5.5	4.1	3.4	2.7	2.2	5.9	2.5			







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Core ID **EMVC-02**

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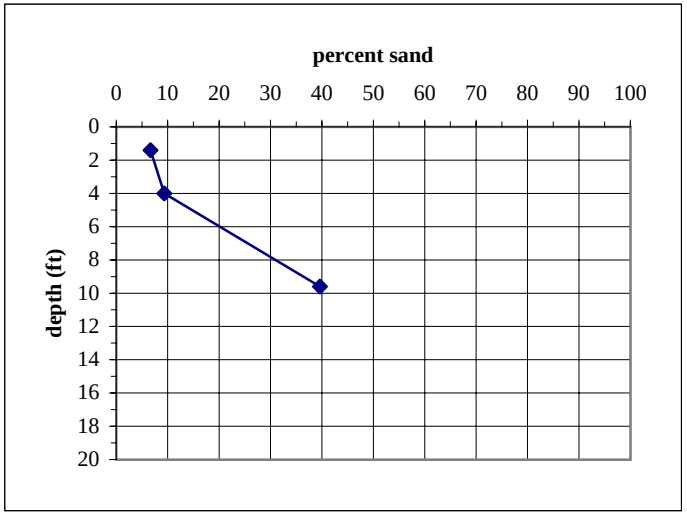
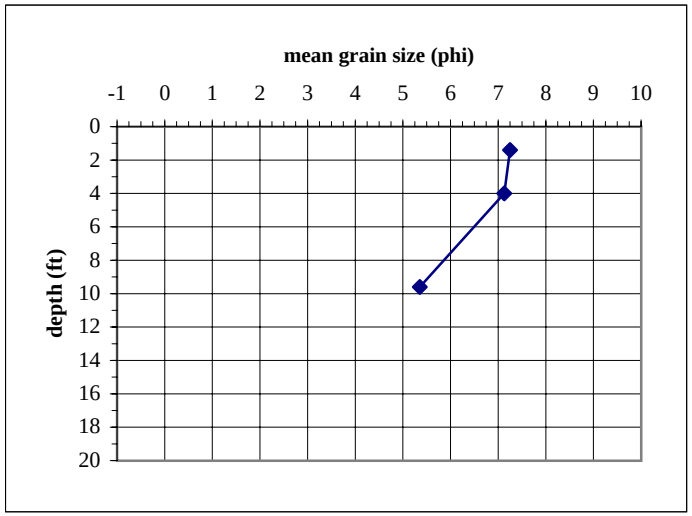
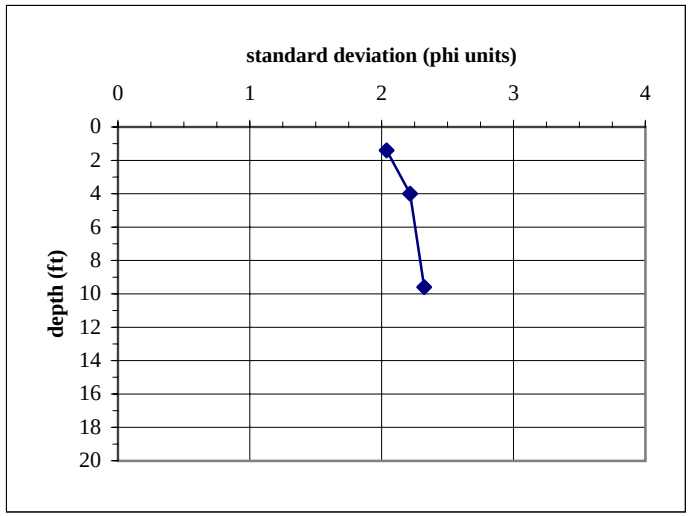
Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample Mean	Standard Deviation	%Sand	%Silt	%Clay
EMVC-02-11_S#1-014	1.4	mm	0.001	0.001	0.002	0.002	0.007	0.017	0.027	0.043	0.092	0.007		6.7	57.5	35.8
		phi	10.3	9.8	9.3	8.6	7.3	5.9	5.2	4.5	3.4	7.3	2.0			
EMVC-02-11_S#2-040	4.0	mm	0.001	0.001	0.002	0.002	0.007	0.020	0.033	0.058	0.125	0.007		9.4	54.0	36.5
		phi	10.3	9.8	9.3	8.7	7.2	5.7	4.9	4.1	3.0	7.1	2.2			
EMVC-02-11_S#3-096	9.6	mm	0.001	0.003	0.005	0.012	0.047	0.094	0.122	0.152	0.203	0.024		39.6	46.8	13.6
		phi	9.4	8.5	7.7	6.4	4.4	3.4	3.0	2.7	2.3	5.4	2.3			



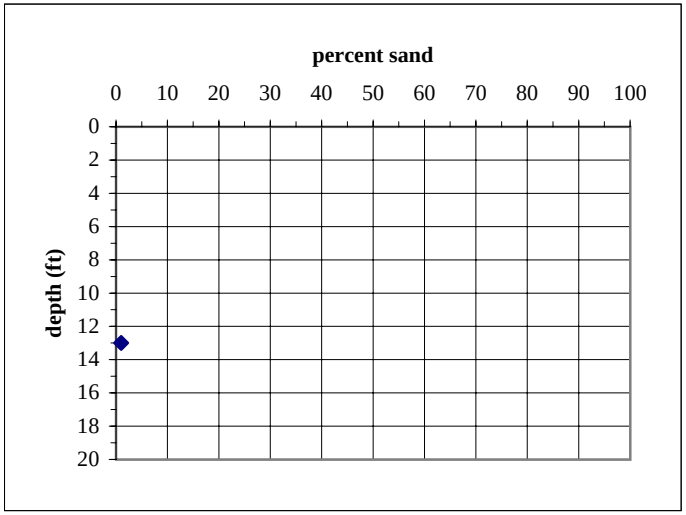


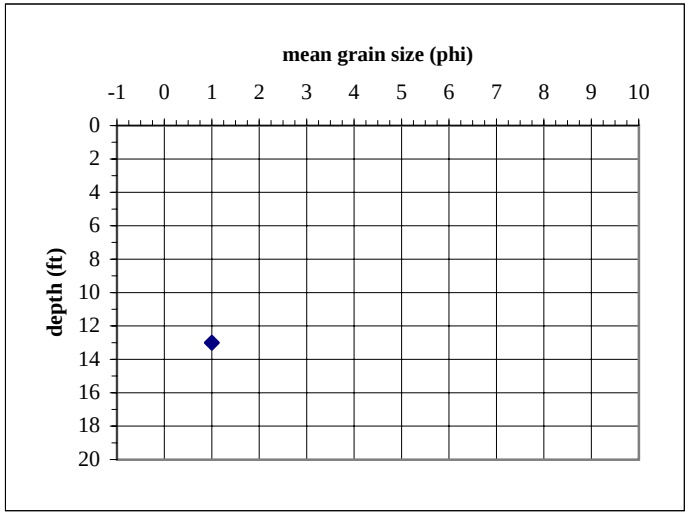


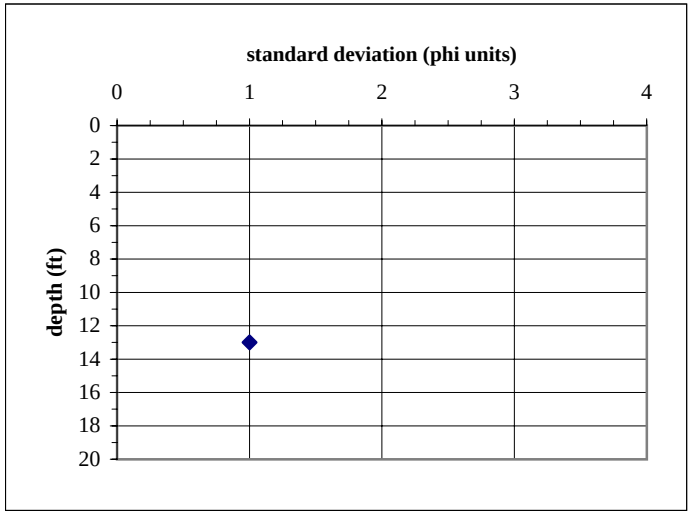
Grainsize Data Table *Coastal Planning & Engineering*

Core ID **EMVC-02** *UNO Coastal Research Laboratory*

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample Mean	Standard Deviation	%Sand	%Silt	%Clay
EMVC-02-11a_S#1-130	13.0	mm	0.001	0.003	0.005	0.013	0.052	0.089	0.112	0.140	0.208	0.024		41.9	44.7	13.4
		phi	9.5	8.5	7.6	6.3	4.3	3.5	3.2	2.8	2.3	5.4	2.2			







Grainsize Data Table *Coastal Planning & Engineering*

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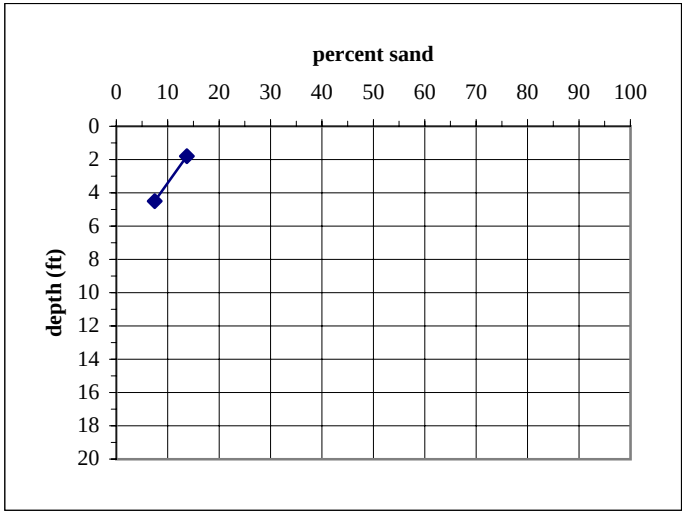
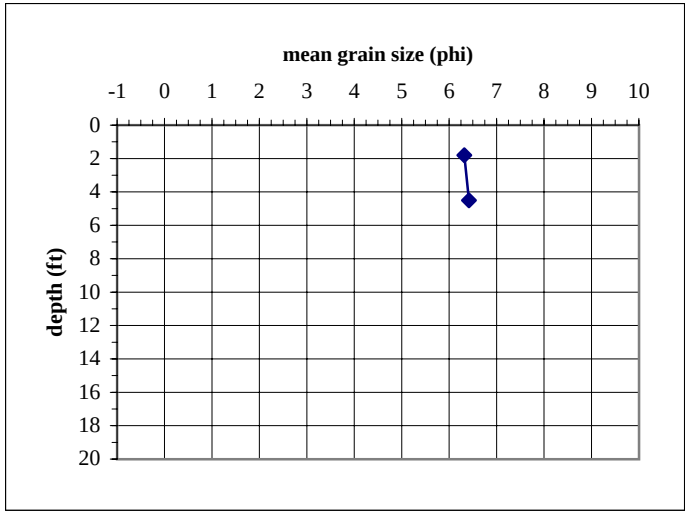
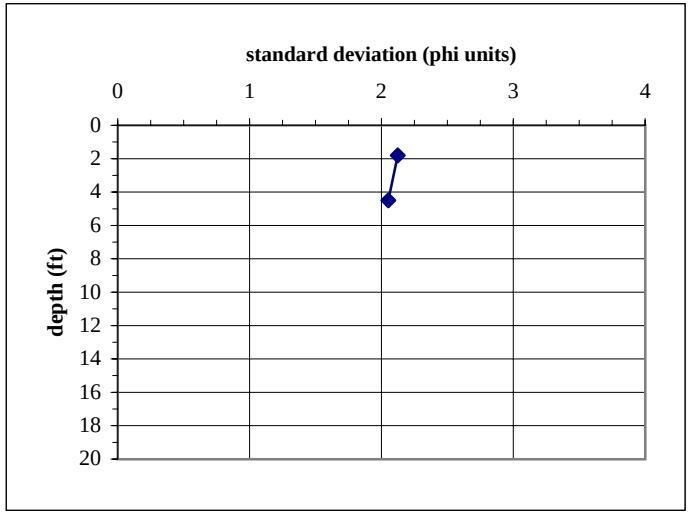
EMVC-02-12_S#1-018	1.8	mm	0.001	0.002	0.003	0.004	0.011	0.033	0.055	0.083	0.136	0.013		13.7	64.2	22.0
		phi	9.8	9.1	8.4	7.8	6.5	4.9	4.2	3.6	2.9	6.3	2.1			
EMVC-02-12_S#2-045	4.5	mm	0.001	0.002	0.003	0.005	0.019	0.039	0.049	0.058	0.068	0.012		7.5	71.5	20.9
		phi	9.9	9.1	8.5	7.6	5.7	4.7	4.4	4.1	3.9	6.4	2.1			







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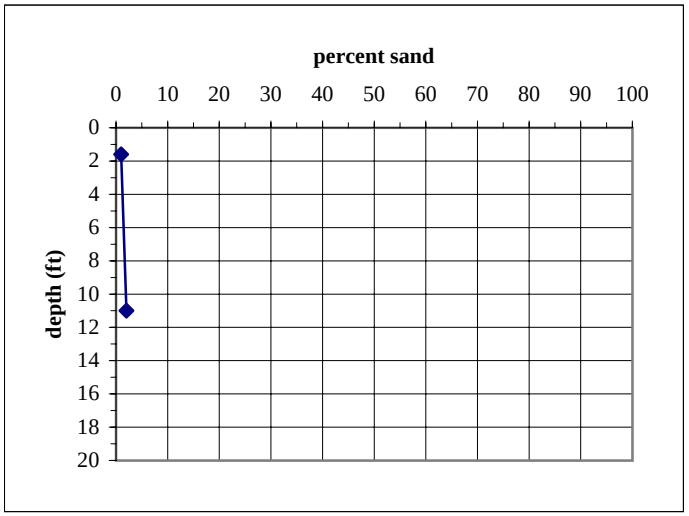
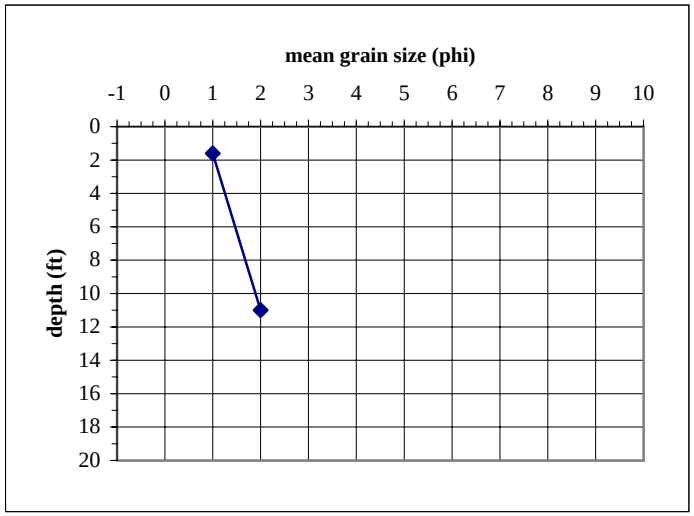
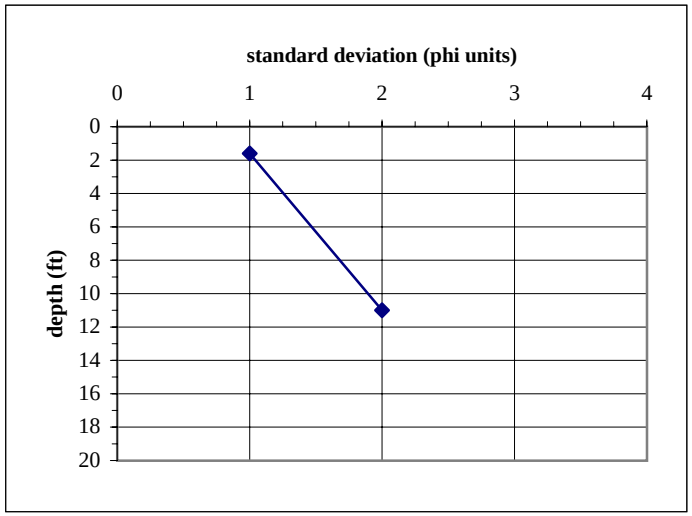
EMVC-02-13_S#1-016	1.6	mm	0.001	0.002	0.004	0.008	0.024	0.046	0.065	0.103	0.176	0.016		16.8	66.6	16.6
		phi	9.7	8.9	8.1	7.0	5.4	4.4	3.9	3.3	2.5	6.0	2.1			
EMVC-02-13_S#4-110	11.0	mm	0.001	0.002	0.003	0.005	0.017	0.047	0.088	0.151	0.203	0.015		20.2	57.3	22.4
		phi	9.9	9.2	8.6	7.8	5.9	4.4	3.5	2.7	2.3	6.1	2.5			







Grainsize Data Table *Coastal Planning & Engineering*

Core ID **EMVC-02** *UNO Coastal Research Laboratory*

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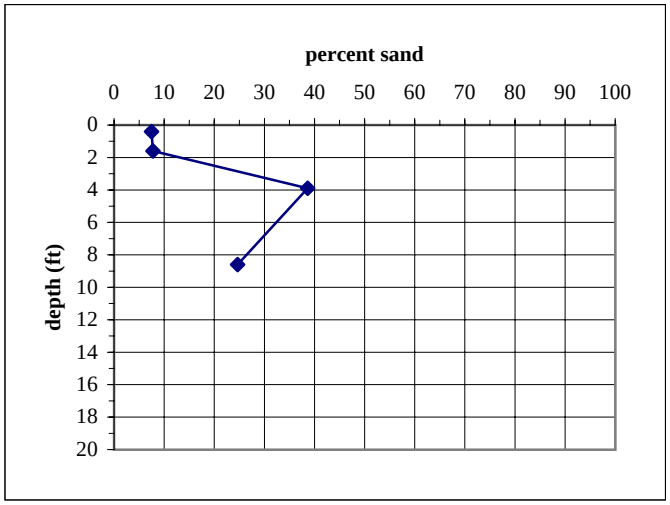
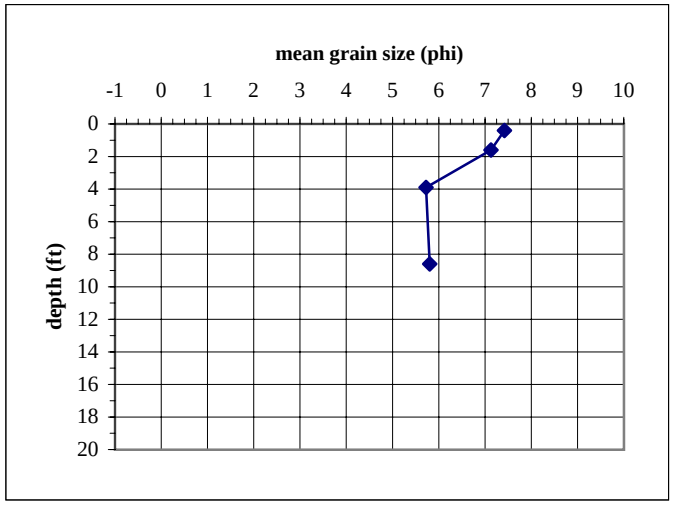
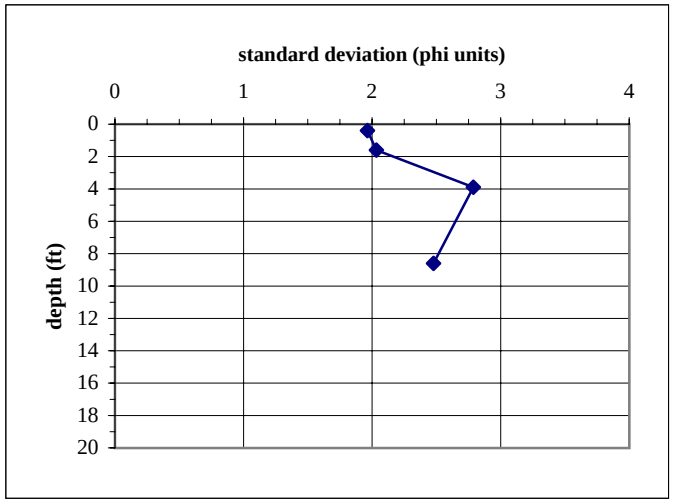
EMVC-02-14_S#1-004	0.4	mm	0.001	0.001	0.001	0.002	0.005	0.013	0.023	0.045	0.112	0.006		7.5	51.6	41.0
		phi	10.3	9.9	9.4	8.8	7.6	6.3	5.5	4.5	3.2	7.4	2.0			
EMVC-02-14_S#2-016	1.6	mm	0.001	0.001	0.002	0.003	0.009	0.020	0.029	0.047	0.136	0.007		7.8	61.4	30.8
		phi	10.3	9.7	9.2	8.4	6.8	5.6	5.1	4.4	2.9	7.1	2.0			
EMVC-02-14_S#3-039	3.9	mm	0.001	0.002	0.003	0.005	0.038	0.094	0.131	0.170	0.204	0.019		38.6	40.3	21.1
		phi	9.9	9.2	8.5	7.6	4.7	3.4	2.9	2.6	2.3	5.7	2.8			
EMVC-02-14_S#5-086	8.6	mm	0.001	0.002	0.003	0.006	0.027	0.062	0.100	0.161	0.205	0.018		24.6	56.9	18.5
		phi	9.8	9.0	8.3	7.3	5.2	4.0	3.3	2.6	2.3	5.8	2.5			







Grainsize Data Table

Coastal Planning & Engineering

Core ID **EMVC-02**

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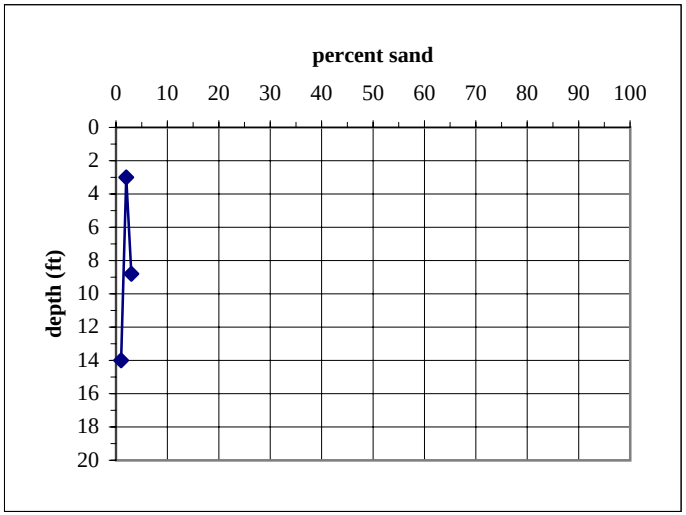
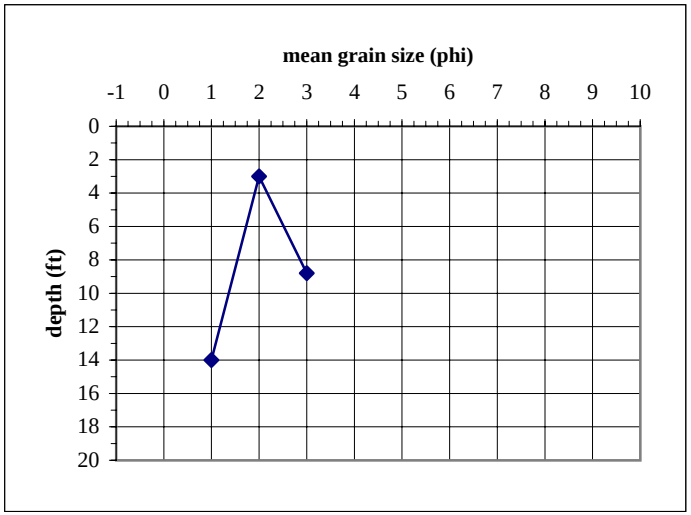
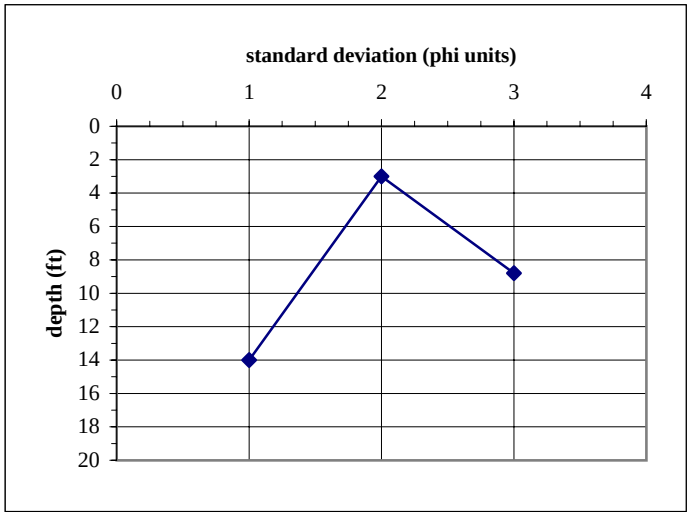
EMVC-02-15_S#1-140	14.0	mm	0.001	0.001	0.002	0.003	0.008	0.020	0.030	0.047	0.118	0.007		7.6	60.2	32.3
		phi	10.3	9.7	9.2	8.5	7.0	5.6	5.1	4.4	3.1	7.1	2.1			
EMVC-02-15_S#2-030	3.0	mm	0.001	0.002	0.002	0.004	0.013	0.031	0.049	0.084	0.159	0.011		12.7	64.1	23.3
		phi	10.0	9.3	8.7	7.9	6.2	5.0	4.3	3.6	2.7	6.5	2.2			
EMVC-02-15_S#4-088	8.8	mm	0.001	0.003	0.006	0.016	0.095	0.141	0.164	0.188	0.227	0.032		61.7	26.1	12.1
		phi	9.5	8.4	7.3	5.9	3.4	2.8	2.6	2.4	2.1	5.0	2.4			







Grainsize Data Table *Coastal Planning & Engineering*

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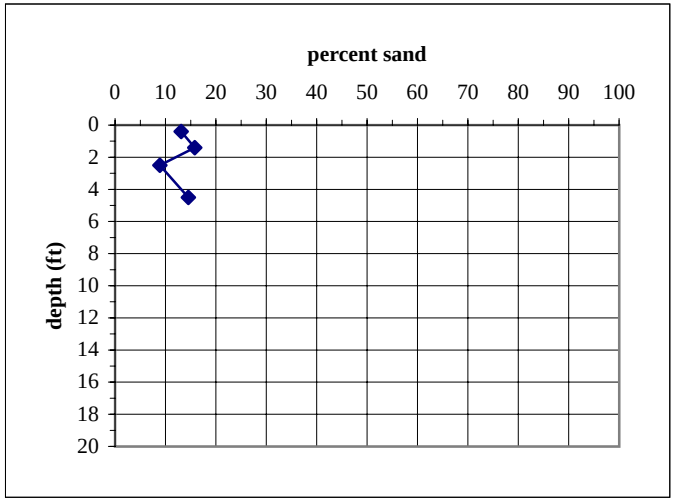
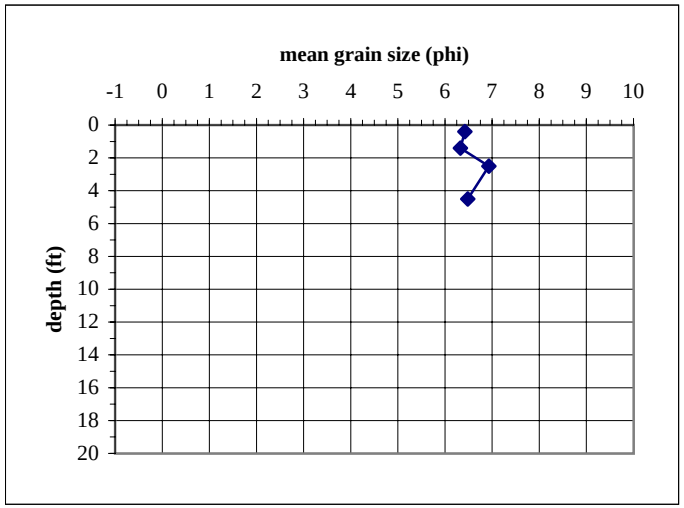
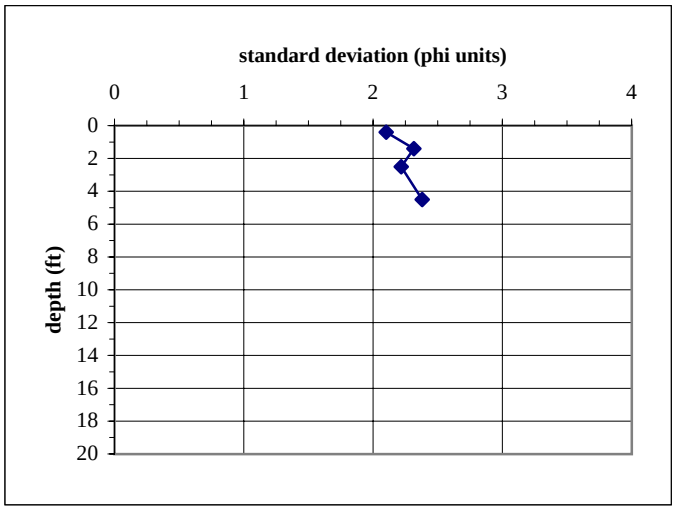
EMVC-02-16_S#1-004	0.4	mm	0.001	0.002	0.003	0.004	0.010	0.028	0.050	0.087	0.153	0.012		13.1	63.5	23.5
		phi	9.9	9.1	8.5	7.9	6.7	5.2	4.3	3.5	2.7	6.4	2.1			
EMVC-02-16_S#2-014	1.4	mm	0.001	0.002	0.003	0.004	0.017	0.046	0.062	0.092	0.156	0.012		15.8	61.1	23.1
		phi	10.0	9.3	8.6	7.8	5.9	4.4	4.0	3.4	2.7	6.3	2.3			
EMVC-02-16_S#3-025	2.5	mm	0.001	0.001	0.002	0.003	0.009	0.025	0.038	0.056	0.124	0.008		8.9	60.1	31.0
		phi	10.3	9.7	9.1	8.4	6.8	5.3	4.7	4.1	3.0	6.9	2.2			
EMVC-02-16_S#4-045	4.5	mm	0.001	0.001	0.002	0.004	0.017	0.042	0.058	0.089	0.157	0.011		14.5	60.2	25.2
		phi	10.1	9.5	8.9	8.0	5.8	4.6	4.1	3.5	2.7	6.5	2.4			







Grainsize Data Table *Coastal Planning & Engineering*

Core ID **EMVC-02** *UNO Coastal Research Laboratory*

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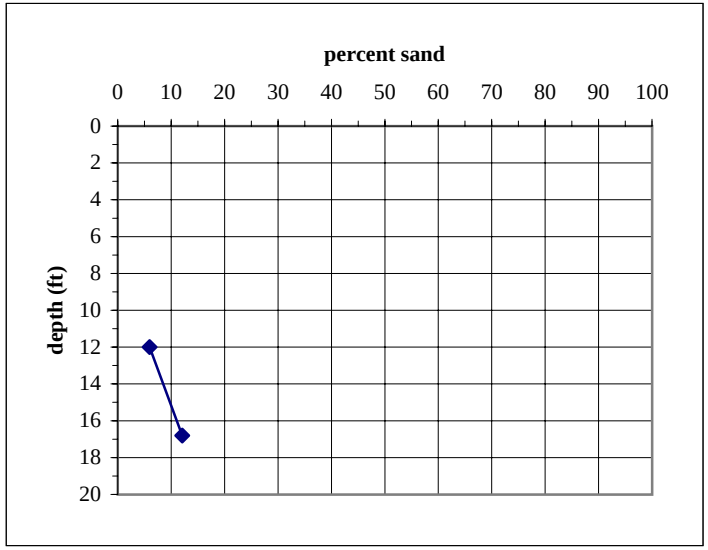
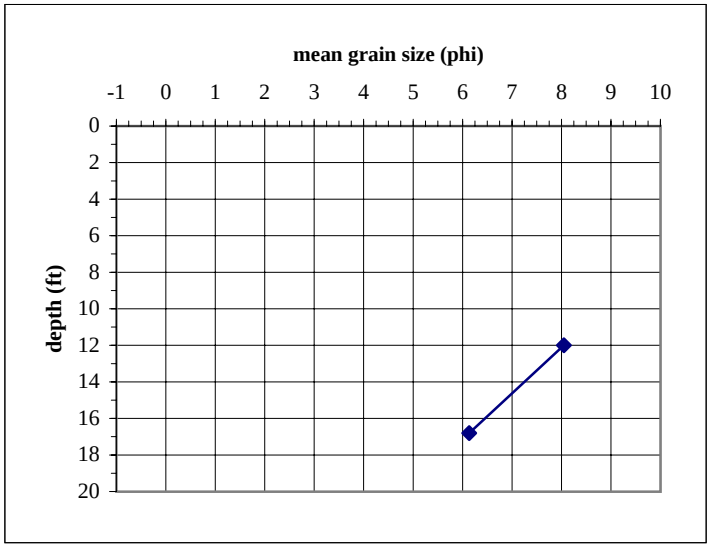
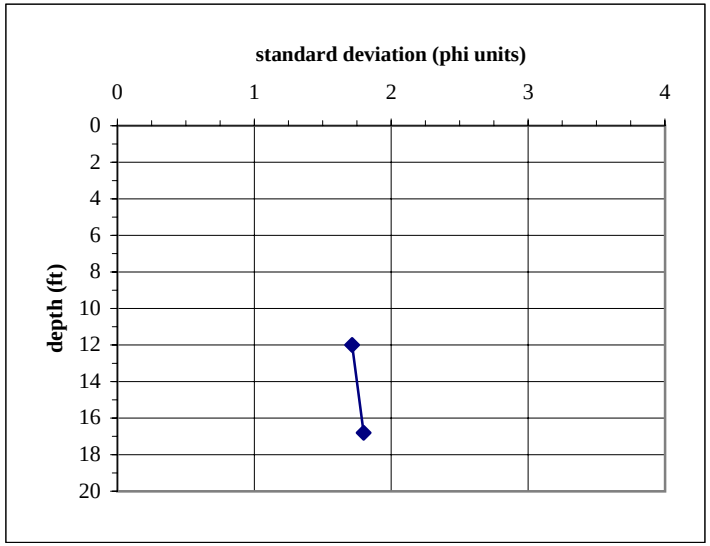
EMVC-02-16a_S#1-120	12.0	mm	0.001	0.001	0.001	0.002	0.004	0.008	0.012	0.027	0.079	0.004		5.9	40.5	53.6
		phi	10.5	10.2	9.8	9.3	8.1	7.0	6.3	5.2	3.7	8.0	1.7			
EMVC-02-16a_S#3-168	16.8	mm	0.001	0.002	0.004	0.008	0.018	0.034	0.050	0.076	0.160	0.014		12.1	72.4	15.5
		phi	9.8	8.9	7.9	7.0	5.8	4.9	4.3	3.7	2.6	6.1	1.8			







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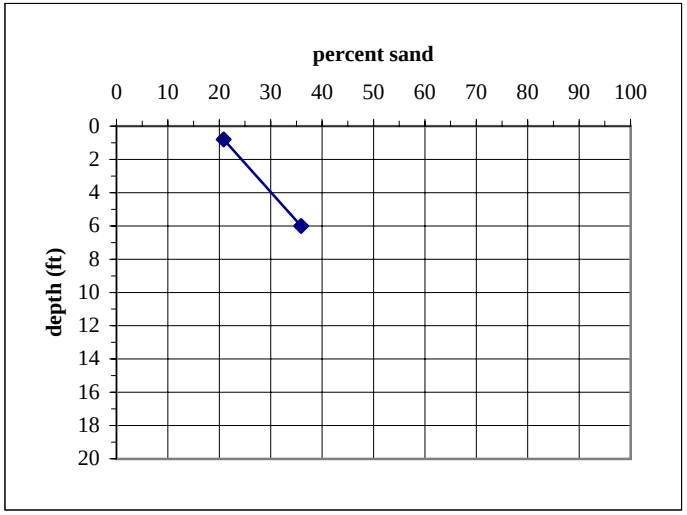
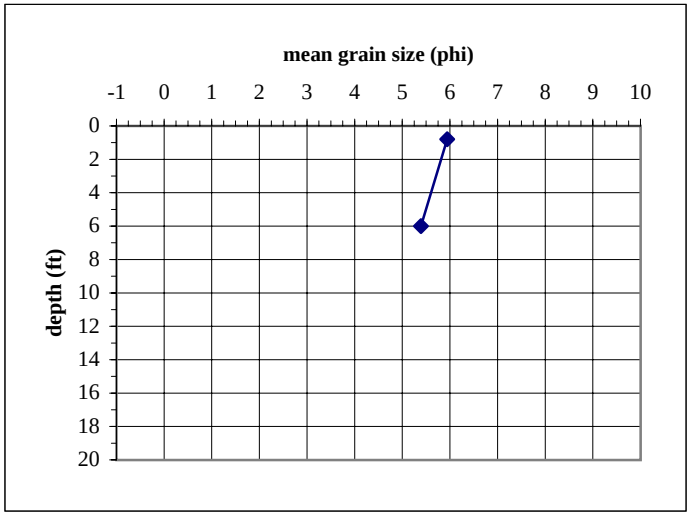
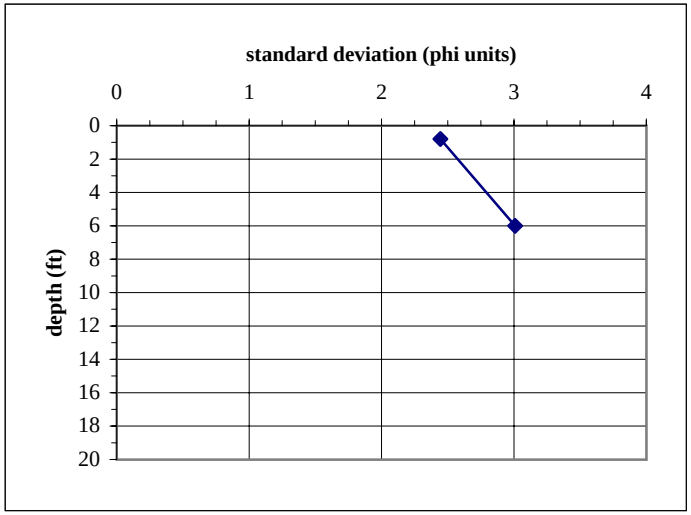
EMVC-02-17_S#1-008	0.8	mm	0.001	0.002	0.003	0.005	0.014	0.049	0.089	0.144	0.193	0.016		20.9	58.5	20.6
		phi	9.8	9.0	8.4	7.7	6.2	4.4	3.5	2.8	2.4	5.9	2.4			
EMVC-02-17_S#3-060	6.0	mm	0.001	0.002	0.003	0.005	0.026	0.121	0.192	0.264	0.416	0.024		35.9	43.7	20.3
		phi	9.8	9.1	8.4	7.6	5.3	3.1	2.4	1.9	1.3	5.4	3.0			







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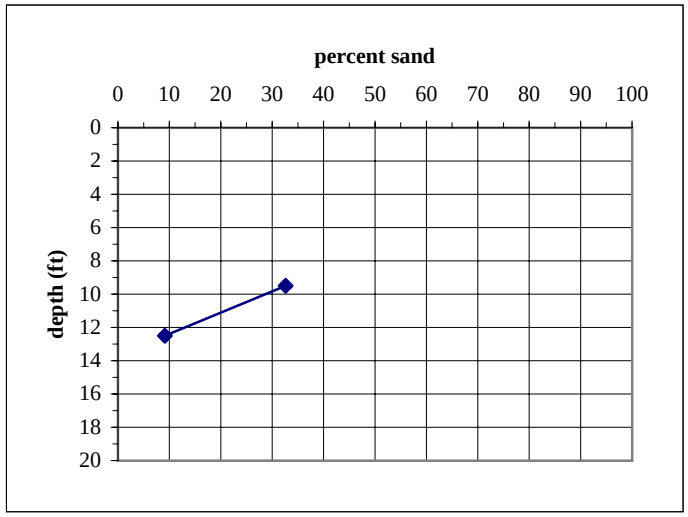
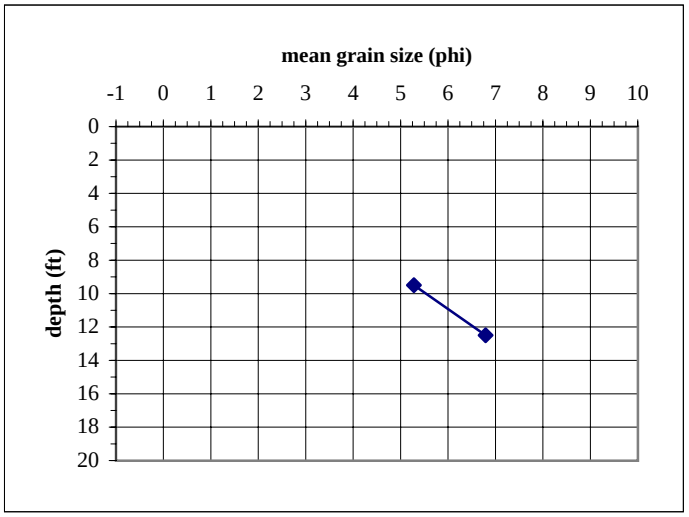
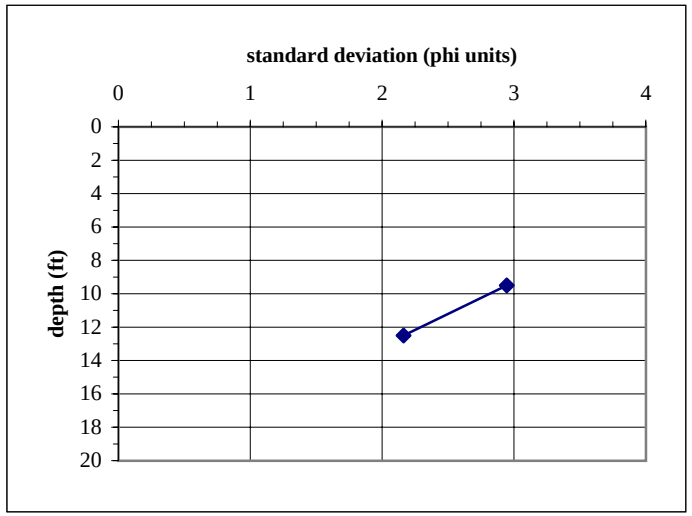
EMVC-02-17a_S#1-095	9.5	mm	0.001	0.002	0.003	0.006	0.028	0.103	0.198	0.302	0.526	0.026		32.6	49.3	18.2
		phi	9.7	8.9	8.2	7.3	5.2	3.3	2.3	1.7	0.9	5.3	2.9			
EMVC-02-17a_S#2-125	12.5	mm	0.001	0.001	0.002	0.003	0.011	0.027	0.040	0.058	0.127	0.009		9.1	62.8	28.2
		phi	10.1	9.5	9.0	8.2	6.6	5.2	4.6	4.1	3.0	6.8	2.2			



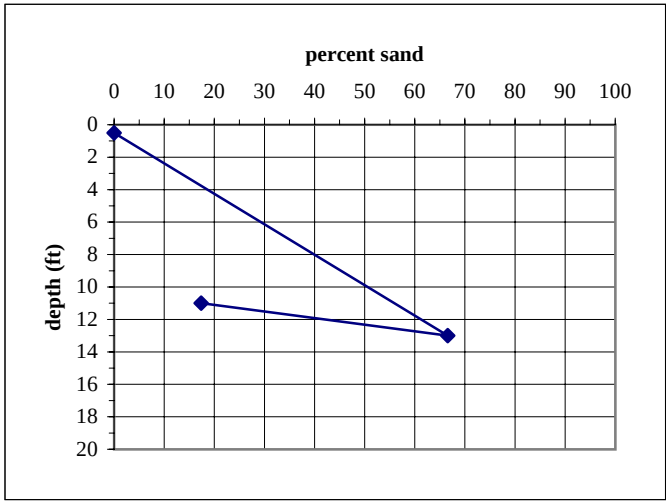


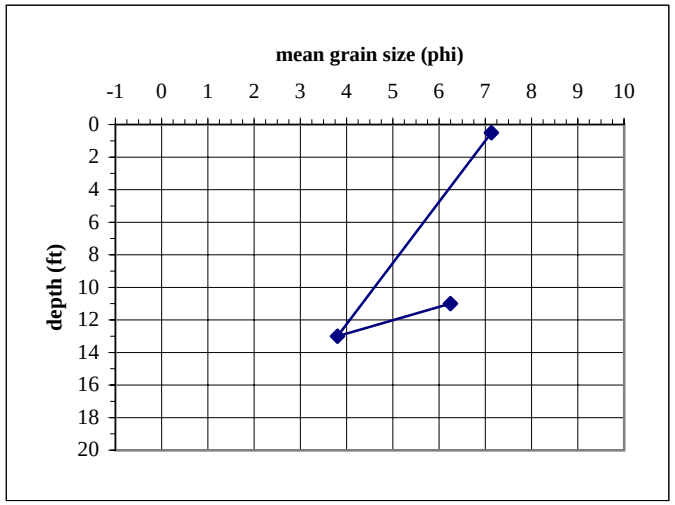


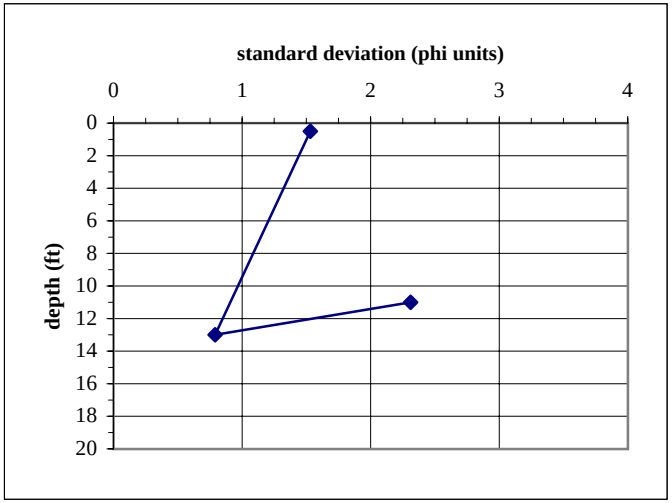
Grainsize Data Table *Coastal Planning & Engineering*

Core ID **EMVC-02** *UNO Coastal Research Laboratory*

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample Mean	Standard Deviation	%Sand	%Silt	%Clay
EMVC-02-18_S#1-005	0.5	mm	0.001	0.002	0.002	0.004	0.008	0.015	0.021	0.027	0.035	0.007		0.0	73.0	26.9
		phi	9.9	9.2	8.7	8.1	7.1	6.1	5.6	5.2	4.8	7.1	1.5			
EMVC-02-18_S#2-130	13.0	mm	0.006	0.026	0.041	0.054	0.078	0.107	0.124	0.142	0.169	0.072		66.6	29.5	3.9
		phi	7.3	5.3	4.6	4.2	3.7	3.2	3.0	2.8	2.6	3.8	0.8			
EMVC-02-18_S#4-110	11.0	mm	0.001	0.002	0.003	0.005	0.024	0.051	0.065	0.085	0.137	0.013		17.4	61.4	21.3
		phi	10.0	9.3	8.6	7.6	5.4	4.3	3.9	3.6	2.9	6.2	2.3			



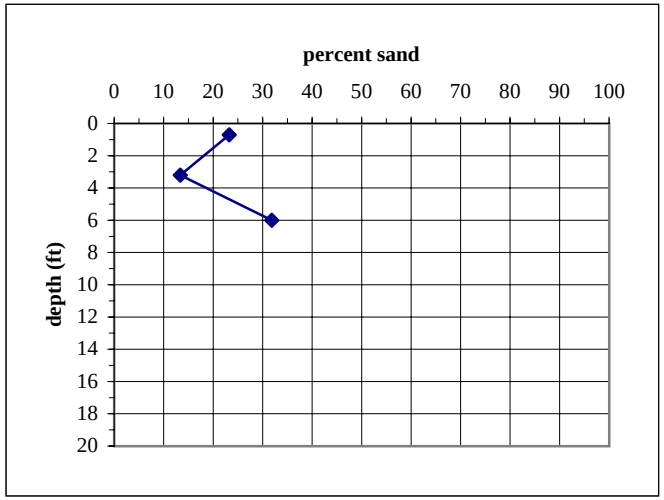


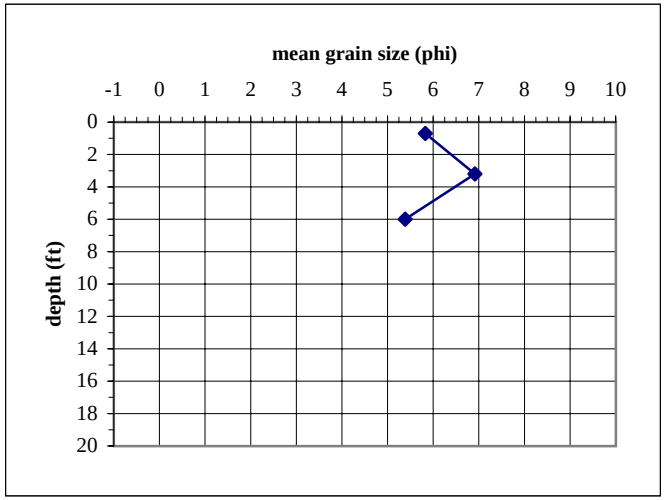


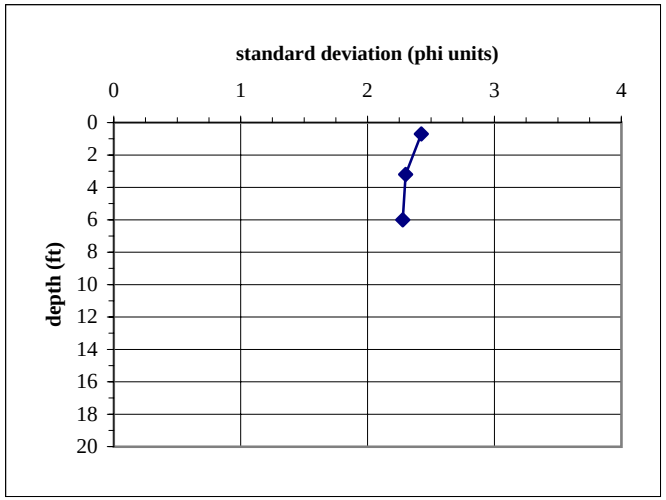
Grainsize Data Table *Coastal Planning & Engineering*

Core ID **EMVC-02** *UNO Coastal Research Laboratory*

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample Mean	Standard Deviation	%Sand	%Silt	%Clay
EMVC-02-19_S#1-007	0.7	mm	0.001	0.002	0.003	0.005	0.015	0.056	0.095	0.130	0.185	0.018		23.3	57.6	19.1
		phi	9.7	8.9	8.3	7.6	6.1	4.2	3.4	2.9	2.4	5.8	2.4			
EMVC-02-19_S#2-032	3.2	mm	0.001	0.001	0.002	0.003	0.006	0.018	0.041	0.102	0.146	0.008		13.3	51.2	35.4
		phi	10.3	9.7	9.2	8.6	7.3	5.8	4.6	3.3	2.8	6.9	2.3			
EMVC-02-19_S#4-060	6.0	mm	0.001	0.003	0.005	0.011	0.034	0.081	0.116	0.148	0.193	0.024		31.9	54.4	13.7
		phi	9.6	8.6	7.7	6.5	4.9	3.6	3.1	2.8	2.4	5.4	2.3			



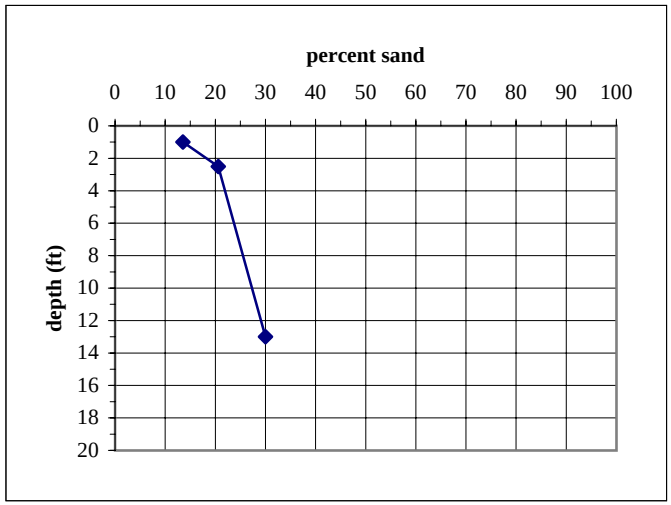


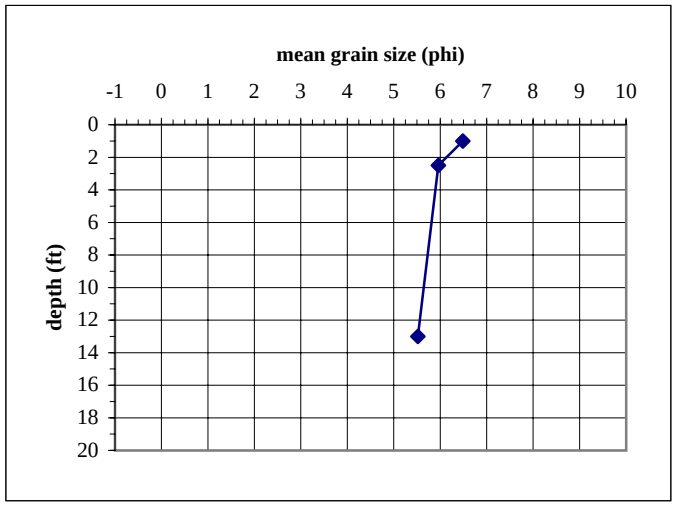


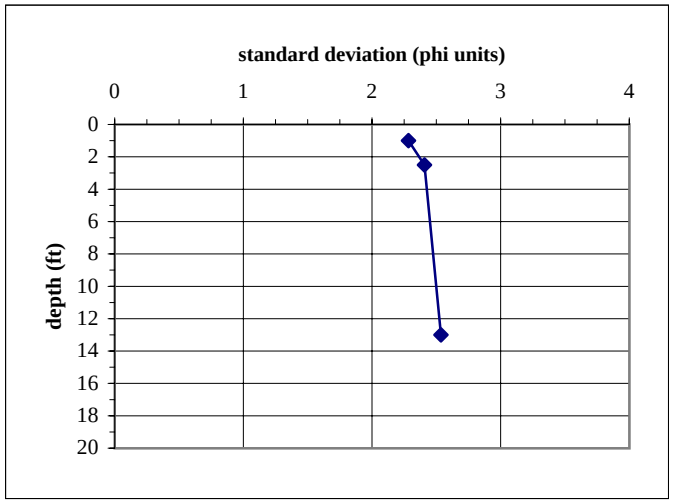
Grainsize Data Table *Coastal Planning & Engineering*

Core ID **EMVC-02** *UNO Coastal Research Laboratory*

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample Mean	Standard Deviation	%Sand	%Silt	%Clay
EMVC-02-20_S#1-010	1.0	mm	0.001	0.001	0.002	0.004	0.011	0.034	0.054	0.081	0.127	0.011		13.5	60.8	25.7
		phi	10.1	9.4	8.8	8.1	6.5	4.9	4.2	3.6	3.0	6.5	2.3			
EMVC-02-20_S#2-025	2.5	mm	0.001	0.002	0.003	0.005	0.020	0.050	0.085	0.134	0.178	0.016		20.6	59.8	19.7
		phi	9.8	9.1	8.4	7.5	5.7	4.3	3.6	2.9	2.5	6.0	2.4			
EMVC-02-20_S#5-130	13.0	mm	0.001	0.002	0.004	0.007	0.029	0.079	0.127	0.177	0.244	0.022		30.0	53.5	16.5
		phi	9.7	8.8	8.1	7.1	5.1	3.7	3.0	2.5	2.0	5.5	2.5			







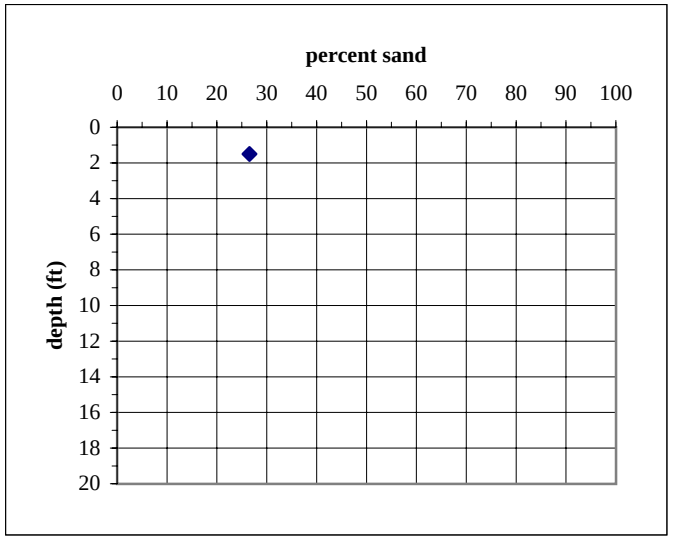
Grainsize Data Table

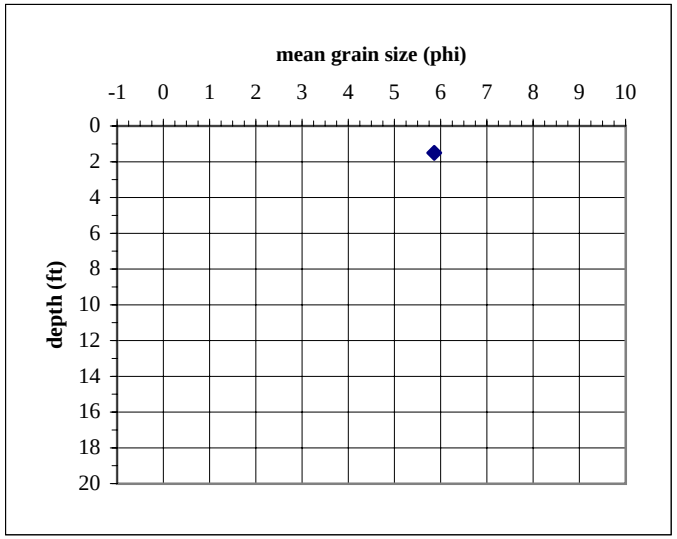
Coastal Planning & Engineering

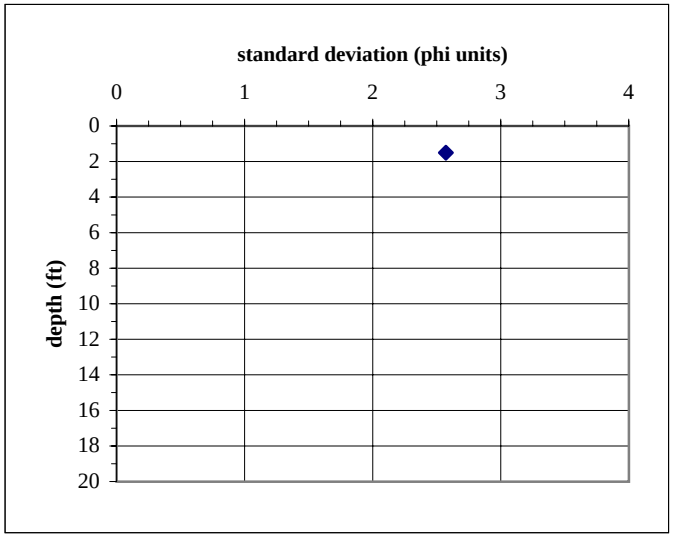
Core ID **EMVC-02**

UNO Coastal Research Laboratory

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample Mean	Standard Deviation	%Sand	%Silt	%Clay
EMVC-02-20a_S#1-015	1.5	mm	0.001	0.002	0.003	0.006	0.025	0.067	0.102	0.138	0.187	0.017		26.5	53.4	20.1
		phi	9.9	9.2	8.4	7.5	5.3	3.9	3.3	2.9	2.4	5.9	2.6			







Grainsize Data Table *Coastal Planning & Engineering*

Core ID **EMVC-02** *UNO Coastal Research Laboratory*

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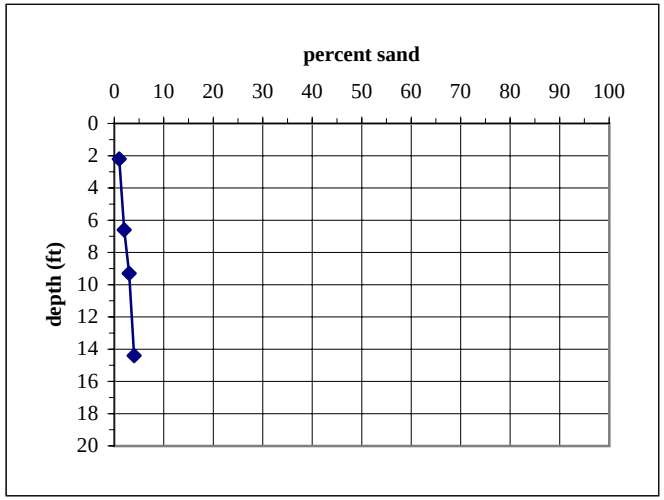
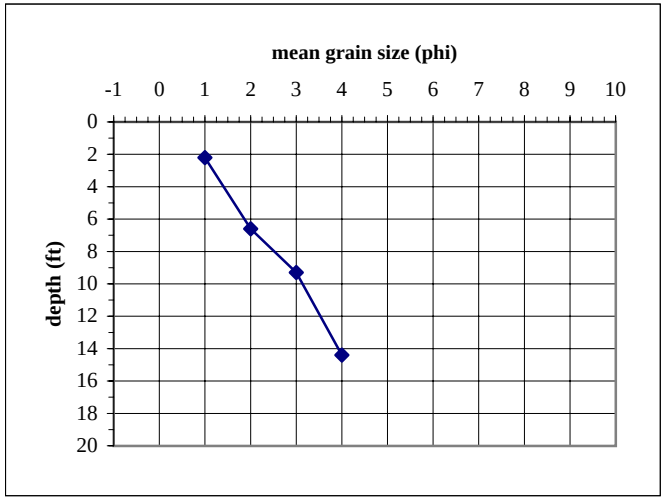
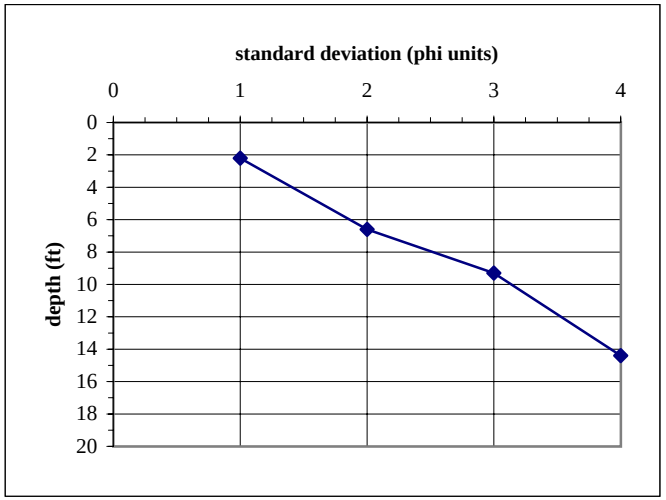
EMVC-02-21_S#3-022	2.2	mm	0.001	0.003	0.008	0.022	0.069	0.116	0.142	0.168	0.204	0.033		54.1	34.6	11.3
		phi	9.4	8.3	7.0	5.5	3.9	3.1	2.8	2.6	2.3	4.9	2.1			
EMVC-02-21_S#2-066	6.6	mm	0.001	0.002	0.003	0.006	0.024	0.058	0.079	0.110	0.168	0.016		22.6	58.7	18.8
		phi	9.8	9.0	8.3	7.4	5.4	4.1	3.7	3.2	2.6	6.0	2.3			
EMVC-02-21_S#4-093	9.3	mm	0.001	0.002	0.003	0.004	0.017	0.045	0.066	0.110	0.166	0.013		16.9	60.3	22.9
		phi	10.0	9.3	8.6	7.8	5.9	4.5	3.9	3.2	2.6	6.3	2.4			
EMVC-02-21_S#1-144	14.4	mm	0.001	0.001	0.002	0.003	0.008	0.029	0.056	0.124	0.162	0.010		14.9	52.7	32.4
		phi	10.2	9.7	9.1	8.5	6.9	5.1	4.2	3.0	2.6	6.6	2.5			



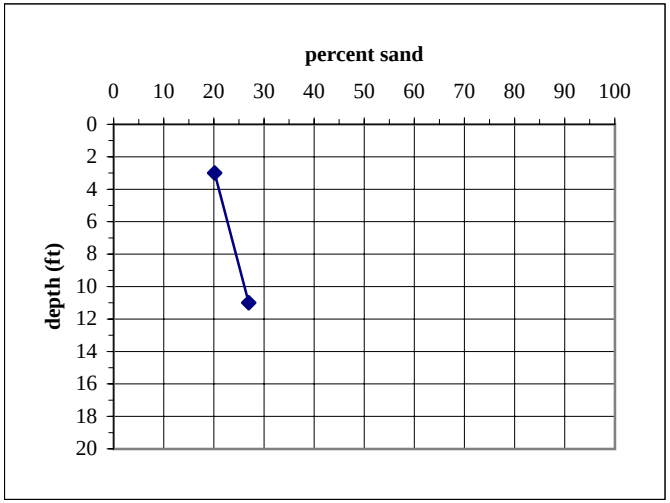


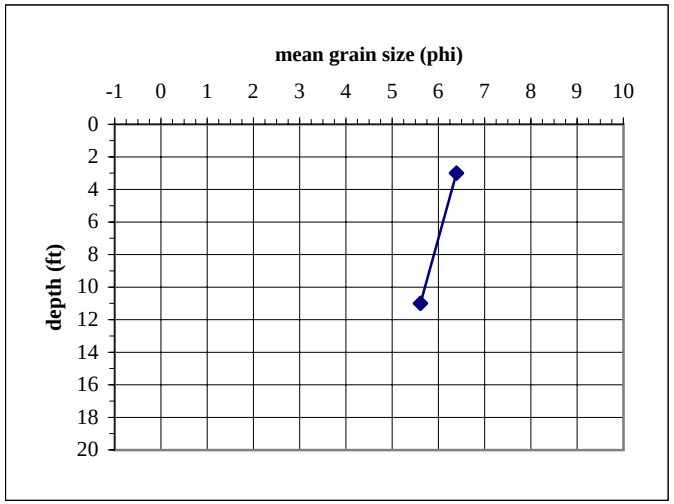


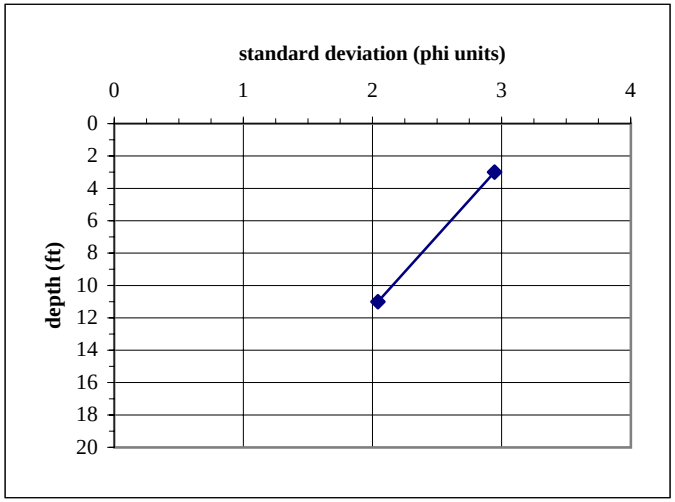
Grainsize Data Table *Coastal Planning & Engineering*

Core ID **EMVC-02** *UNO Coastal Research Laboratory*

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample Mean	Standard Deviation	%Sand	%Silt	%Clay
EMVC-02-22_S#2-030	3.0	mm	0.001	0.001	0.002	0.003	0.008	0.042	0.092	0.139	0.167	0.012		20.1	45.6	34.1
		phi	10.4	9.9	9.3	8.6	6.9	4.6	3.4	2.8	2.6	6.4	2.9			
EMVC-02-22_S#4-110	11.0	mm	0.001	0.003	0.005	0.012	0.036	0.066	0.084	0.108	0.156	0.020		26.9	59.5	13.7
		phi	9.5	8.6	7.7	6.4	4.8	3.9	3.6	3.2	2.7	5.6	2.0			



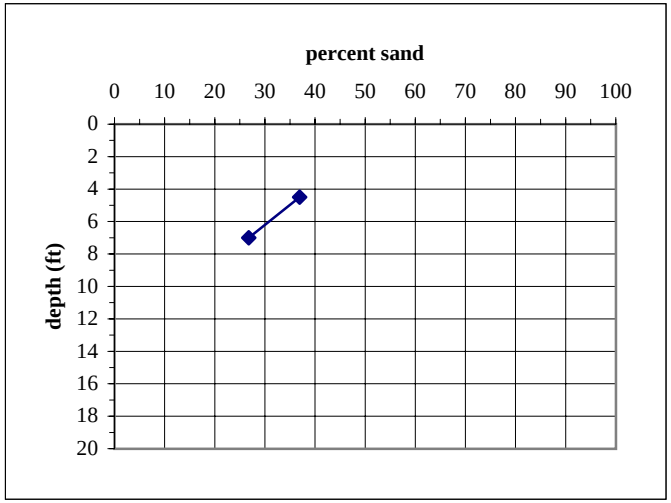


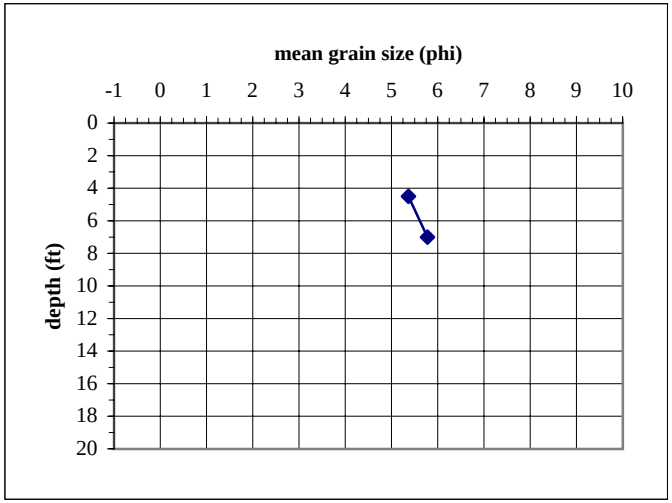


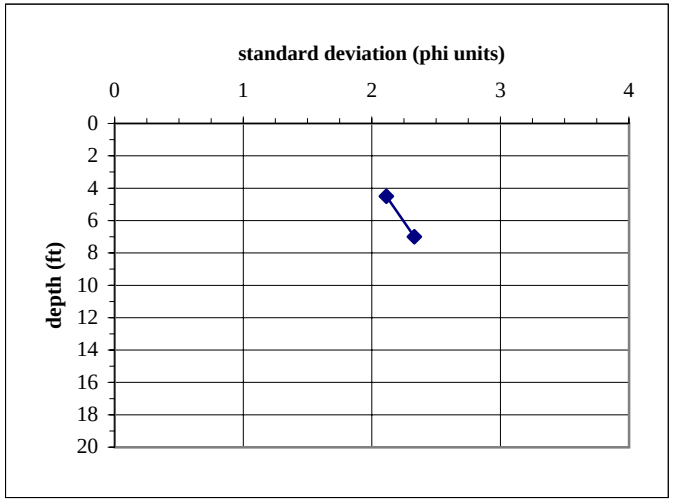
Grainsize Data Table *Coastal Planning & Engineering*

Core ID **EMVC-02** *UNO Coastal Research Laboratory*

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample Mean	Standard Deviation	%Sand	%Silt	%Clay
EMVC-02-23_S#1-070	7.0	mm	0.001	0.002	0.004	0.008	0.033	0.066	0.092	0.126	0.176	0.018		26.8	56.4	16.8
		phi	9.8	8.9	8.1	7.0	4.9	3.9	3.4	3.0	2.5	5.8	2.3			
EMVC-02-23_S#3-045	4.5	mm	0.001	0.003	0.006	0.015	0.047	0.081	0.105	0.138	0.195	0.024		36.9	50.4	12.7
		phi	9.4	8.5	7.5	6.1	4.4	3.6	3.3	2.9	2.4	5.4	2.1			







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Coastal Planning & Engineering

Core ID **EMVC-02**

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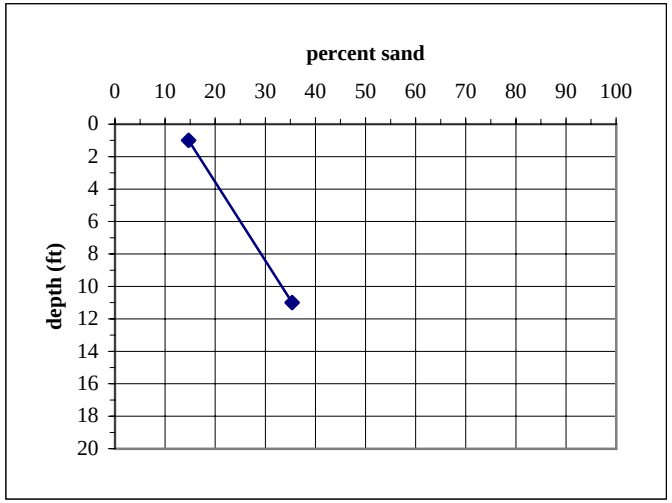
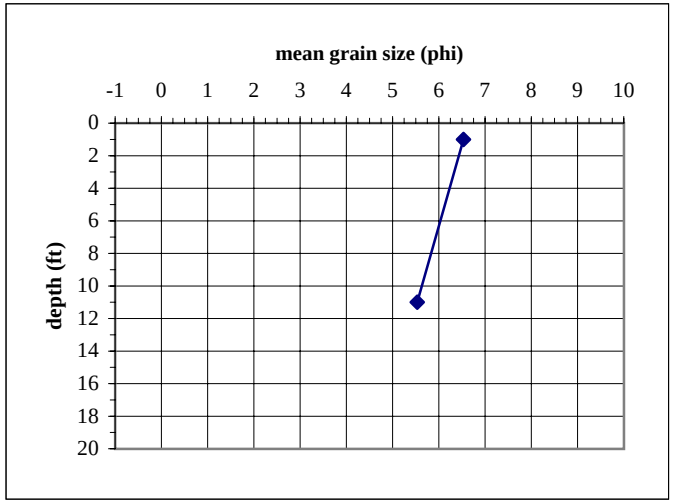
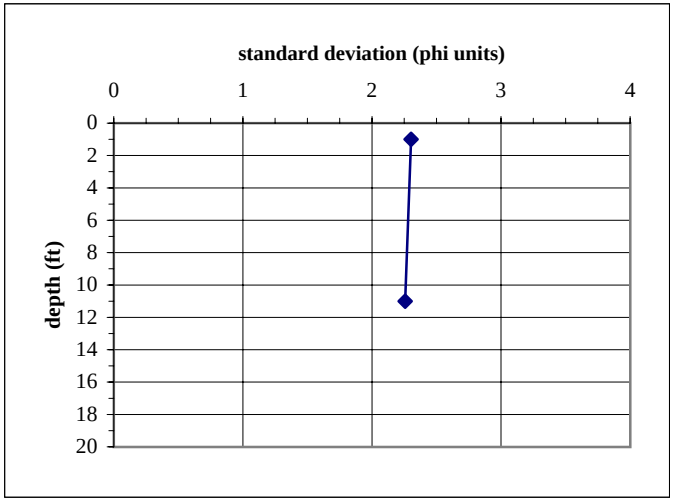
EMVC-02-24_S#1-010	1.0	mm	0.001	0.001	0.002	0.003	0.008	0.022	0.053	0.132	0.168	0.011		14.7	56.1	29.2
		phi	10.1	9.4	8.8	8.2	7.0	5.5	4.2	2.9	2.6	6.5	2.3			
EMVC-02-24_S#4-110	11.0	mm	0.001	0.002	0.005	0.010	0.043	0.080	0.103	0.134	0.194	0.022		35.3	50.3	14.4
		phi	9.6	8.7	7.8	6.6	4.5	3.7	3.3	2.9	2.4	5.5	2.3			







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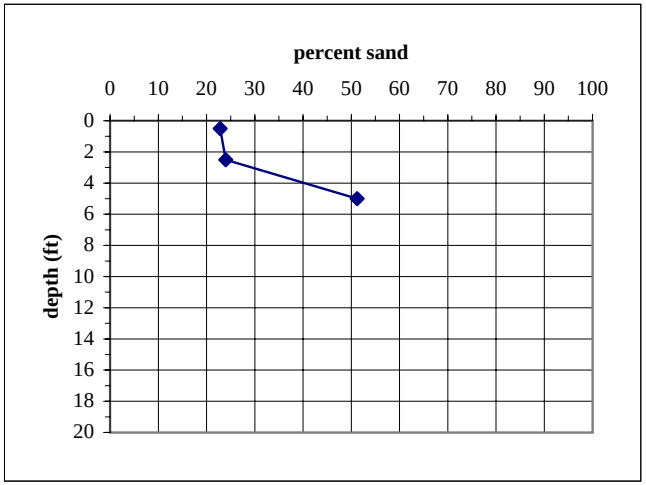
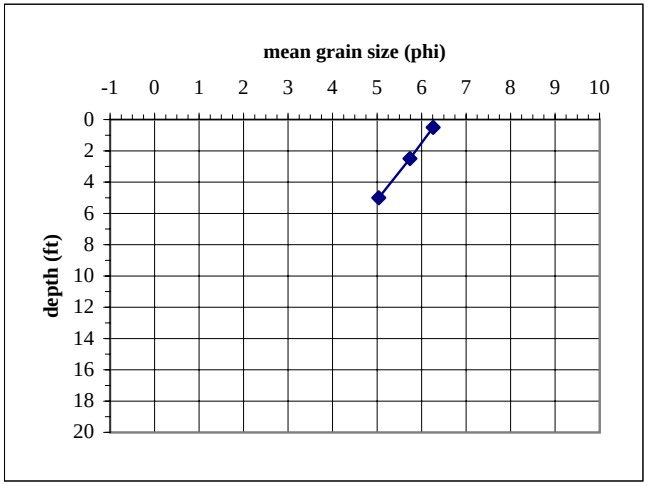
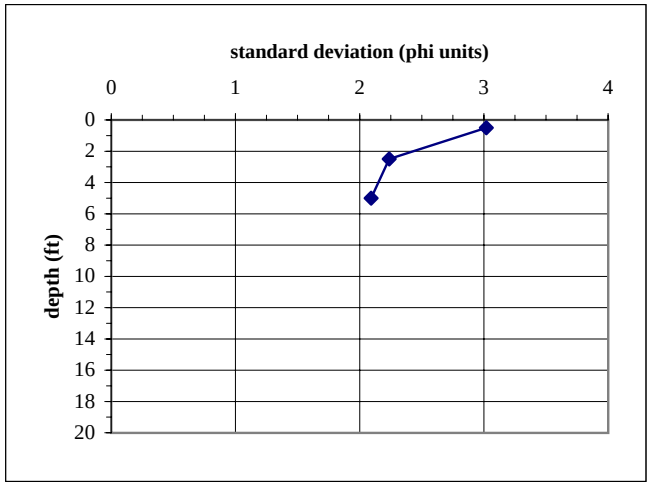
EMVC-02-25_S#1-005	0.5	mm	0.001	0.001	0.002	0.002	0.006	0.051	0.106	0.144	0.171	0.013		22.8	39.9	37.2
		phi	10.3	9.8	9.3	8.7	7.3	4.3	3.2	2.8	2.5	6.3	3.0			
EMVC-02-25_S#2-025	2.5	mm	0.001	0.002	0.004	0.009	0.028	0.060	0.088	0.123	0.173	0.019		24.0	60.2	15.8
		phi	9.8	8.9	8.0	6.8	5.1	4.1	3.5	3.0	2.5	5.7	2.2			
EMVC-02-25_S#3-050	5.0	mm	0.002	0.004	0.007	0.018	0.065	0.109	0.130	0.151	0.187	0.030		51.2	38.1	10.7
		phi	9.2	8.1	7.1	5.8	4.0	3.2	2.9	2.7	2.4	5.0	2.1			







Grainsize Data Table

Coastal Planning & Engineering

Core ID **EMVC-02**

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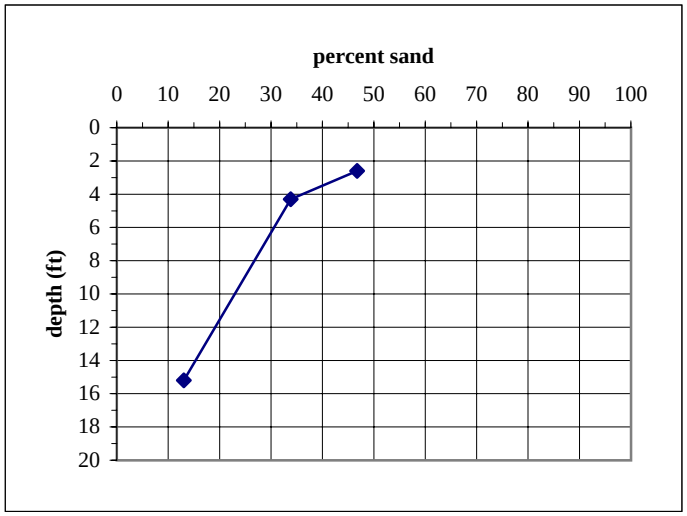
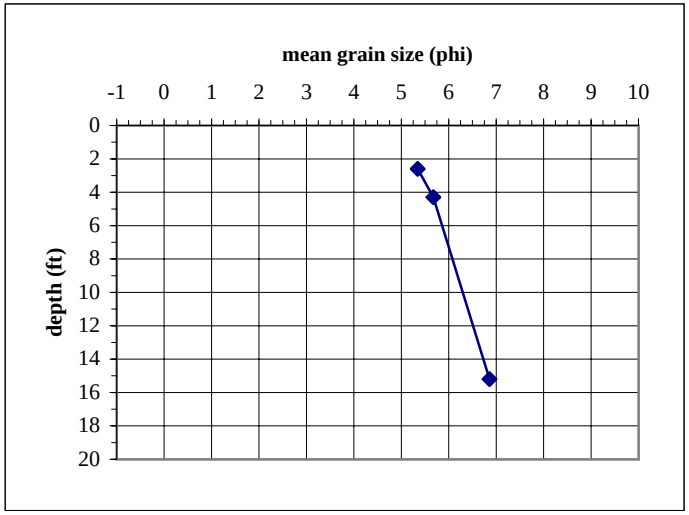
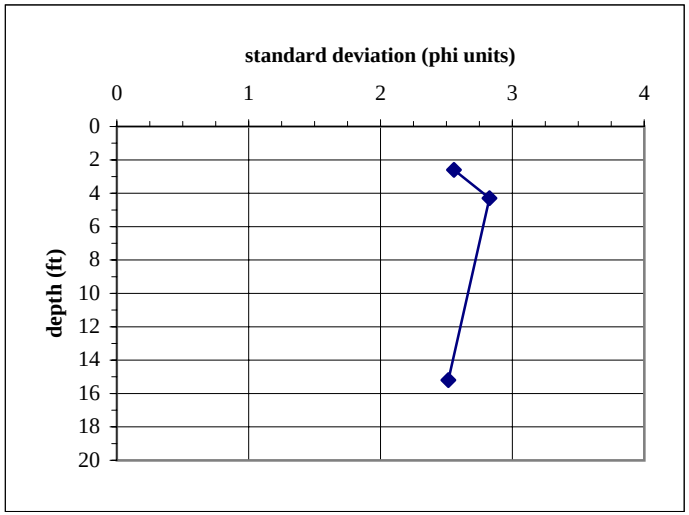
EMVC-02-26_S#2-026	2.6	mm	0.001	0.002	0.004	0.009	0.053	0.118	0.145	0.172	0.215	0.025		46.7	38.0	15.3
		phi	9.7	8.8	7.9	6.7	4.2	3.1	2.8	2.5	2.2	5.3	2.6			
EMVC-02-26_S#3-043	4.3	mm	0.001	0.002	0.003	0.005	0.029	0.097	0.139	0.173	0.216	0.020		33.8	45.2	20.9
		phi	10.0	9.2	8.5	7.6	5.1	3.4	2.9	2.5	2.2	5.7	2.8			
EMVC-02-26_S#6-152	15.2	mm	0.001	0.001	0.002	0.002	0.007	0.025	0.049	0.090	0.144	0.009		13.1	50.7	36.3
		phi	10.4	9.9	9.4	8.7	7.2	5.3	4.3	3.5	2.8	6.9	2.5			







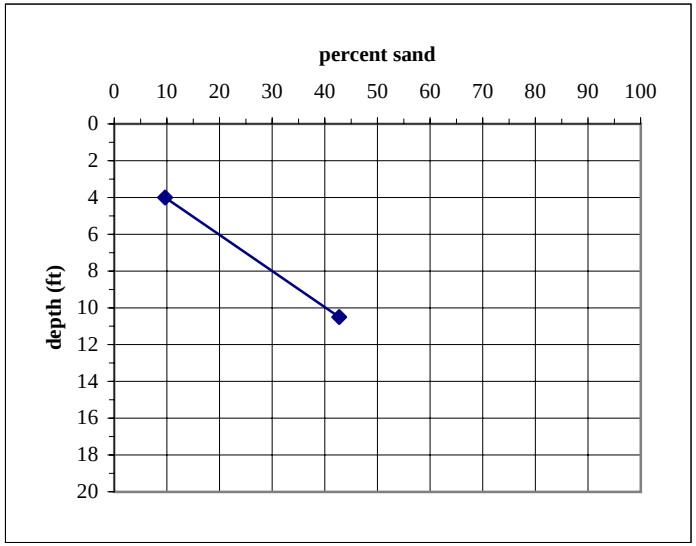
Grainsize Data Table

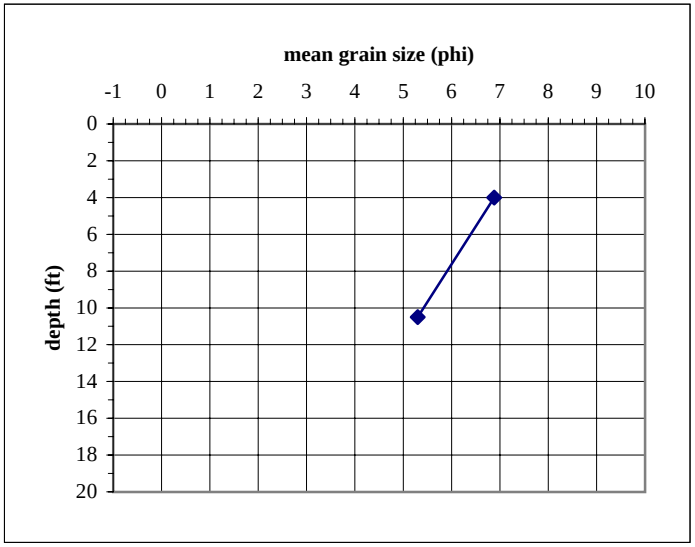
Coastal Planning & Engineering

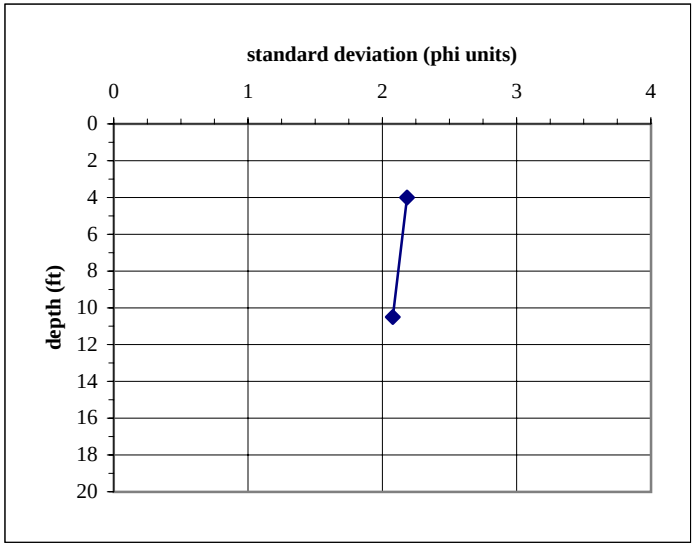
Core ID **EMVC-02**

UNO Coastal Research Laboratory

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample Mean	Standard Deviation	%Sand	%Silt	%Clay
EMVC-02-27_S#2-040	4.0	mm	0.001	0.001	0.002	0.003	0.011	0.025	0.039	0.060	0.133	0.008		9.7	61.3	29.1
		phi	10.2	9.6	9.1	8.3	6.5	5.3	4.7	4.0	2.9	6.9	2.2			
EMVC-02-27_S#4-105	10.5	mm	0.001	0.003	0.006	0.017	0.054	0.088	0.107	0.129	0.172	0.025		42.7	44.8	12.5
		phi	9.5	8.5	7.4	5.9	4.2	3.5	3.2	3.0	2.5	5.3	2.1			







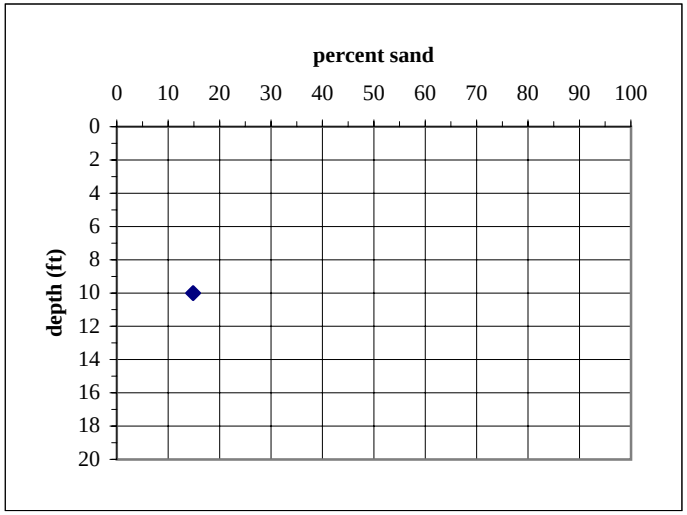
Grainsize Data Table

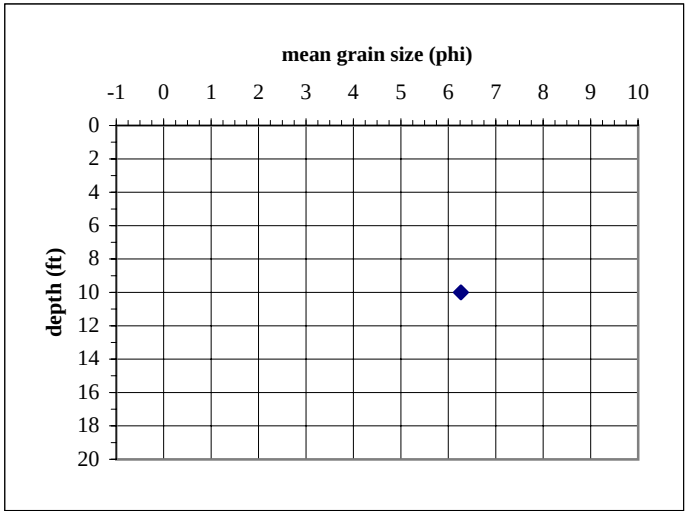
Coastal Planning & Engineering

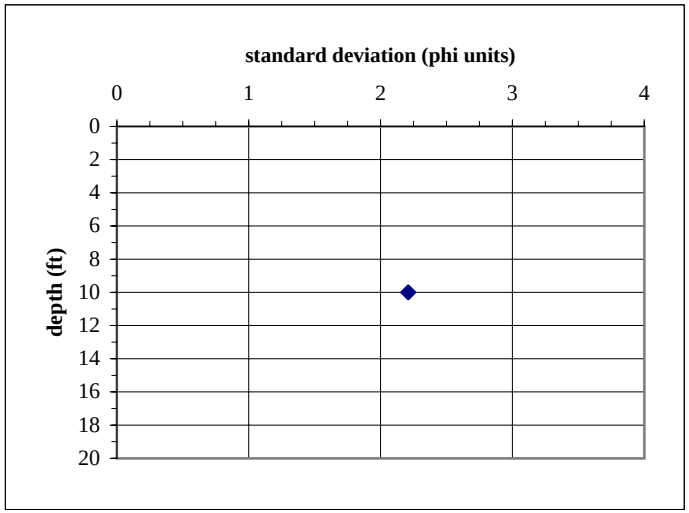
Core ID **EMVC-02**

UNO Coastal Research Laboratory

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample Mean	Standard Deviation	%Sand	%Silt	%Clay
EMVC-02-28_S#2-100	10.0	mm	0.001	0.002	0.003	0.005	0.020	0.046	0.060	0.077	0.115	0.013		14.8	64.4	20.7
		phi	9.9	9.2	8.5	7.6	5.6	4.4	4.1	3.7	3.1	6.3	2.2			



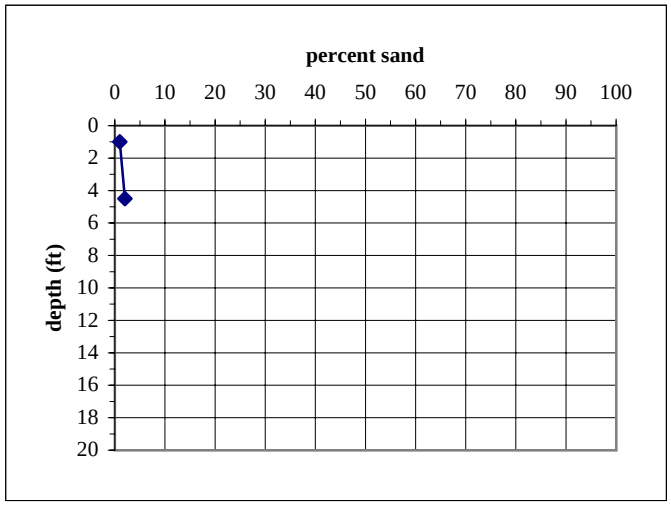


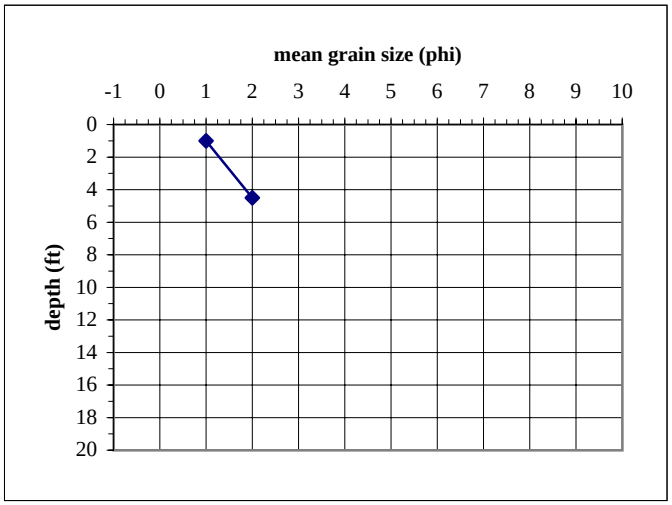


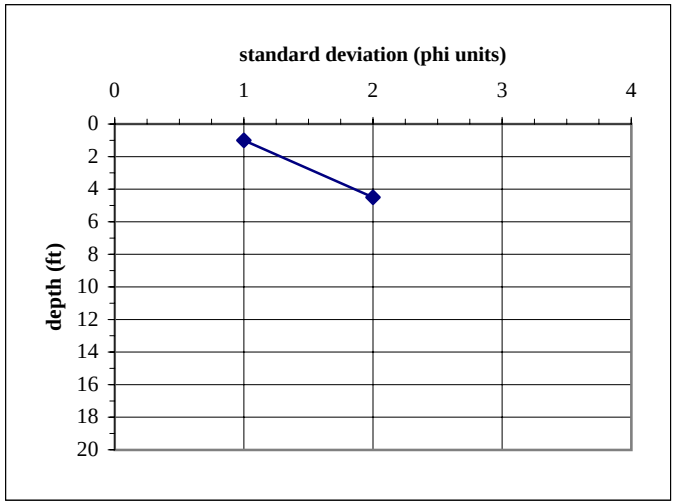
Grainsize Data Table *Coastal Planning & Engineering*

Core ID **EMVC-02** *UNO Coastal Research Laboratory*

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample Mean	Standard Deviation	%Sand	%Silt	%Clay
EMVC-02-29_S#1-010	1.0	mm	0.001	0.001	0.002	0.003	0.008	0.020	0.032	0.048	0.073	0.008		6.5	65.1	28.4
		phi	10.1	9.4	8.8	8.2	7.0	5.7	5.0	4.4	3.8	6.9	1.9			
EMVC-02-29_S#3-045	4.5	mm	0.001	0.002	0.003	0.006	0.028	0.059	0.087	0.131	0.184	0.017		23.4	58.3	18.4
		phi	9.8	9.0	8.3	7.3	5.2	4.1	3.5	2.9	2.4	5.9	2.4			







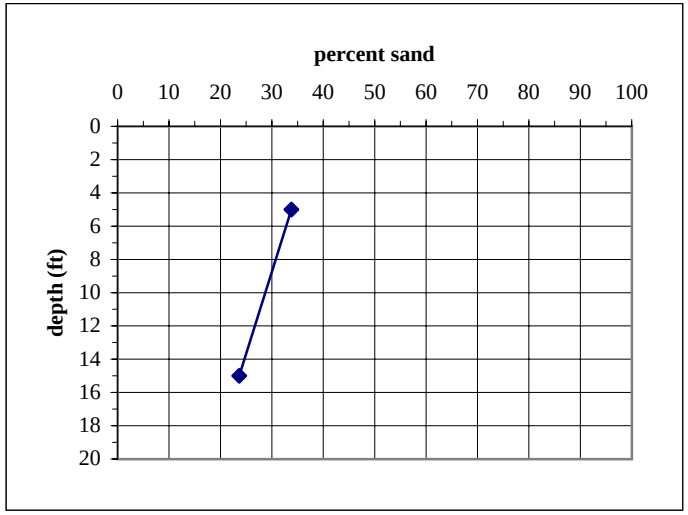
Grainsize Data Table

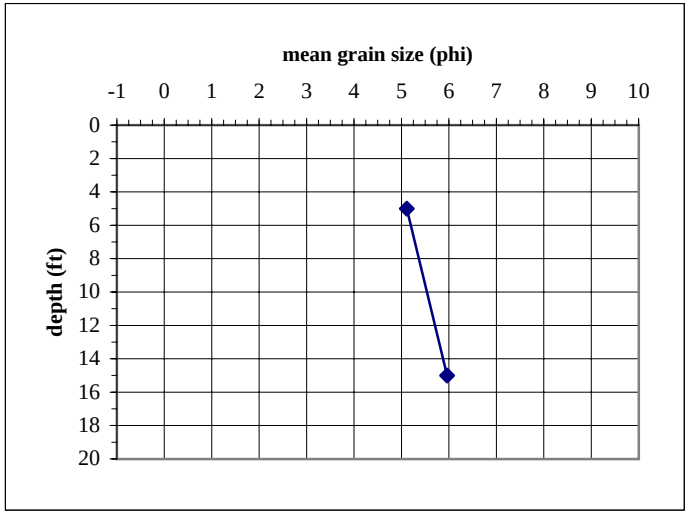
Coastal Planning & Engineering

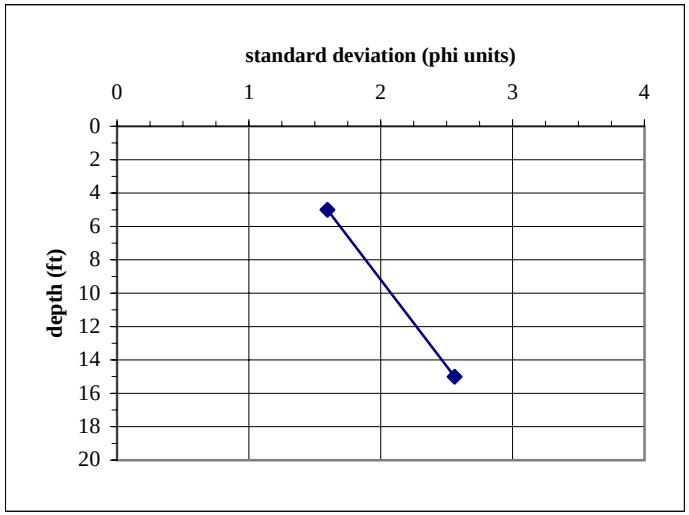
Core ID **EMVC-02**

UNO Coastal Research Laboratory

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample Mean	Standard Deviation	%Sand	%Silt	%Clay
EMVC-02-30_S#2-150	15.0	mm	0.001	0.002	0.003	0.005	0.023	0.059	0.095	0.149	0.190	0.016		23.7	55.4	21.0
		phi	10.0	9.2	8.5	7.6	5.5	4.1	3.4	2.8	2.4	6.0	2.6			
EMVC-02-30_S#3-050	5.0	mm	0.002	0.004	0.010	0.024	0.049	0.072	0.087	0.111	0.178	0.029		33.8	56.1	10.1
		phi	9.2	8.0	6.7	5.4	4.3	3.8	3.5	3.2	2.5	5.1	1.6			



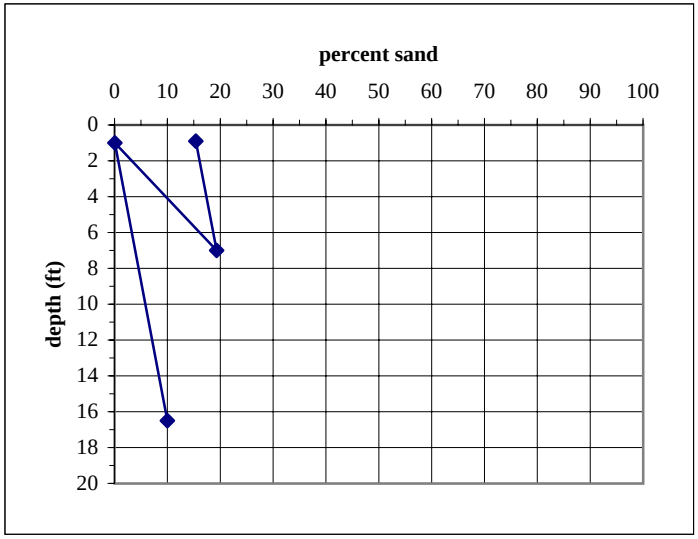


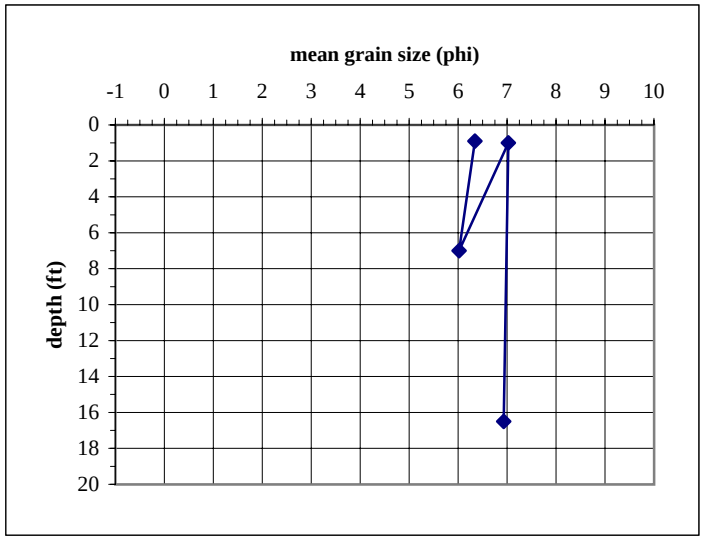


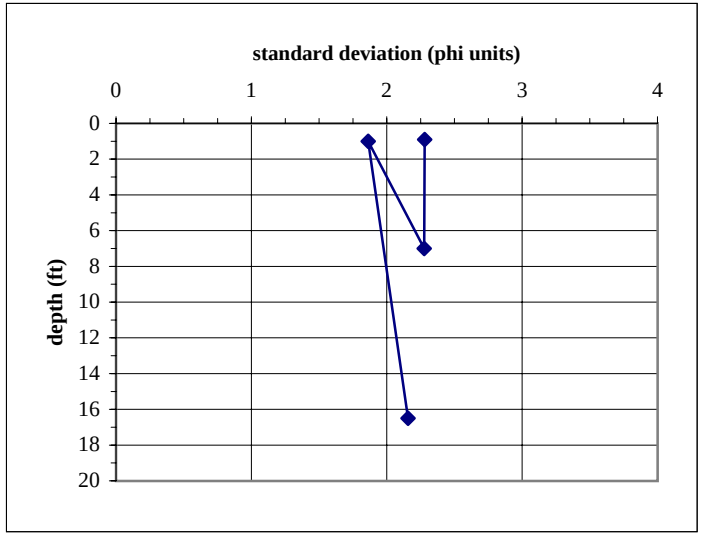
Grainsize Data Table *Coastal Planning & Engineering*

Core ID **EMVC-02** *UNO Coastal Research Laboratory*

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample Mean	Standard Deviation	%Sand	%Silt	%Clay
EMVC-02-31_S#2-009	0.9	mm	0.001	0.002	0.003	0.005	0.015	0.036	0.060	0.097	0.151	0.012		15.4	62.5	22.1
		phi	10.0	9.3	8.6	7.7	6.1	4.8	4.1	3.4	2.7	6.3	2.3			
EMVC-02-31_S#3-070	7.0	mm	0.001	0.002	0.003	0.006	0.022	0.050	0.075	0.116	0.172	0.015		19.3	62.0	18.7
		phi	9.8	9.0	8.3	7.4	5.5	4.3	3.7	3.1	2.5	6.0	2.3			
EMVC-02-31_S#4-010	1.0	mm	0.001	0.001	0.002	0.003	0.011	0.022	0.028	0.034	0.041	0.008		0.1	72.8	27.2
		phi	10.1	9.5	8.9	8.2	6.6	5.5	5.2	4.9	4.6	7.0	1.9			
EMVC-02-31_S#5-165	16.5	mm	0.001	0.001	0.002	0.003	0.009	0.024	0.037	0.062	0.150	0.008		10.0	59.9	30.2
		phi	10.2	9.7	9.1	8.4	6.7	5.4	4.8	4.0	2.7	6.9	2.2			







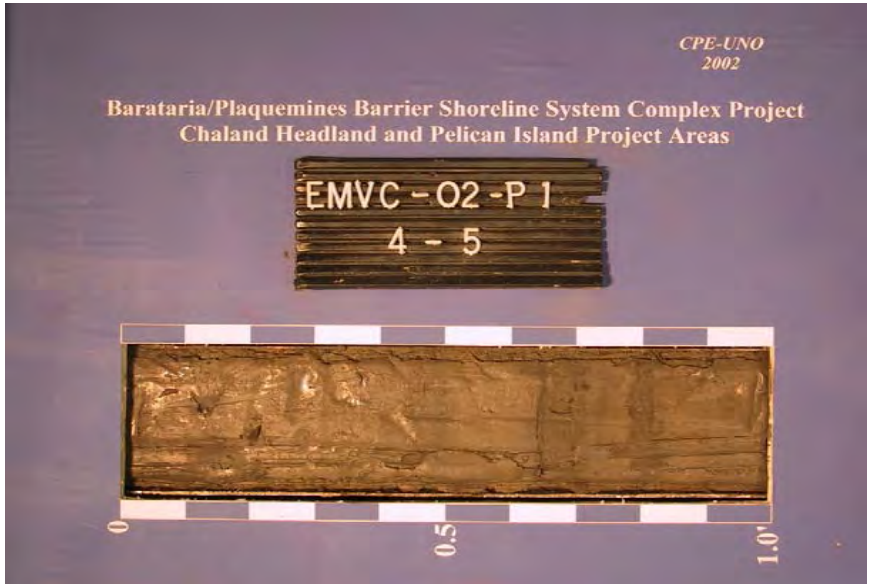
APPENDIX 5
2002 EMPIRE VIBRACORE PHOTOGRAPHS

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC - 02 - P 1
0 - 1
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC - 02 - P 1
1 - 2
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC - 02 - P 1
2 - 3
0
0.5
1.0'

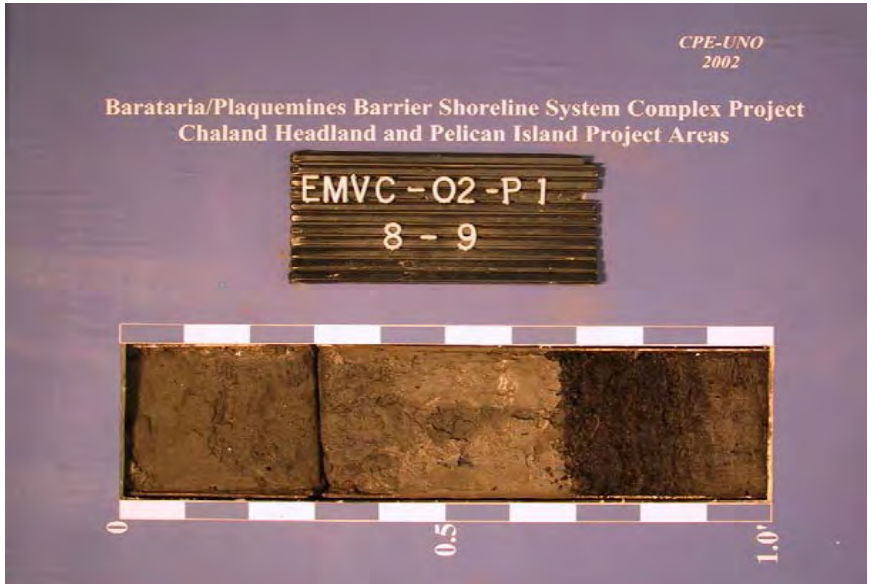
CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC - 02 - P 1
3 - 4
0
0.5
1.0'


CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC - 02 - P 1
4 - 5
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC - 02 - P 1
5 - 6
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC - 02 - P 1
6 - 7
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC - 02 - P 1
7 - 8
0
0.5
1.0'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Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
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8 - 9
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC - 02 - P 1
9 - 10
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC - 02 - P 1
10 - 11
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC - 02 - P 1
11 - 12
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P1
12-13
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P1
13-14
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P1
14-15
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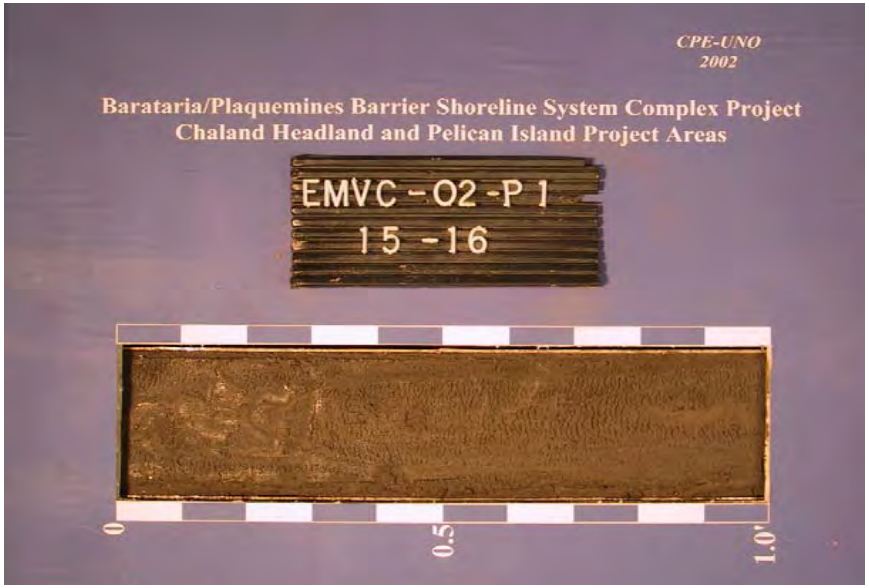
1.0'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Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
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15-16
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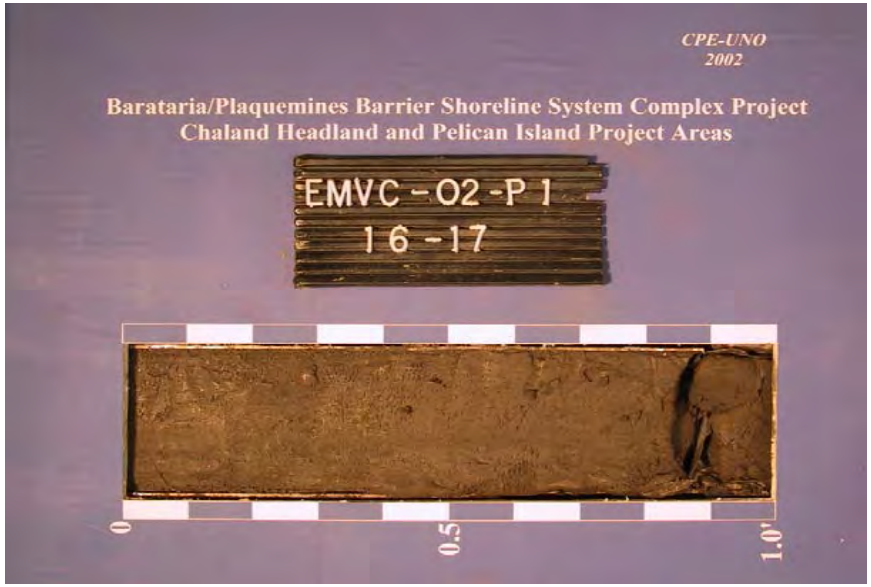
1.0'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Chaland Headland and Pelican Island Project Areas
EMVC-02-P1
16-17
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P1
17-BTM
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-PO2
0-1
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-PO2
1-2
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-PO2
2-3
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-PO2
3-4
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-PO2
4 - 5
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-PO2
5 - 6
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-PO2
6 - 7
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-PO2
7 - 8
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-PO2
8 - 9
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-PO2
9 - 10
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-PO2
10 - 11
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-PO2
11 - 12
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-PO2
12 - 13
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-PO2
13 - 14
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-PO2
14 - 15
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-PO2
15 - 16
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
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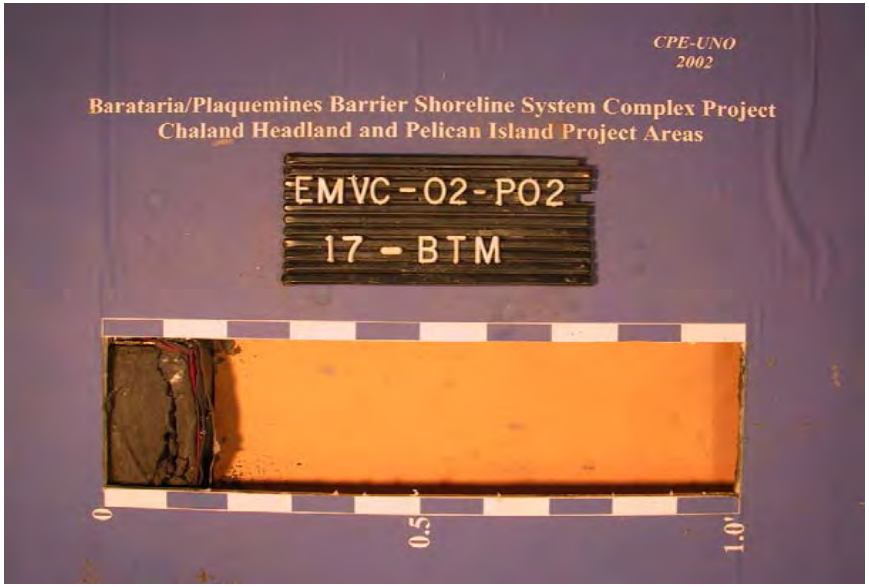
1.0'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2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
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17 - BTM
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02- P3
0 - 1
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02- P3
1 - 2
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02- P3
2 - 3
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02- P3
3 - 4
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02- P3
4 - 5
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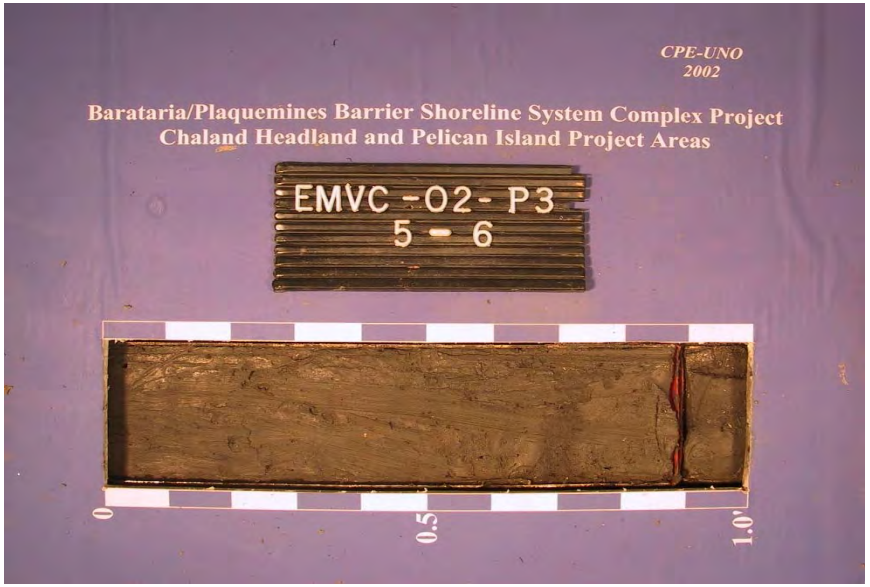
1.0'


CPE-UNO
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Chaland Headland and Pelican Island Project Areas
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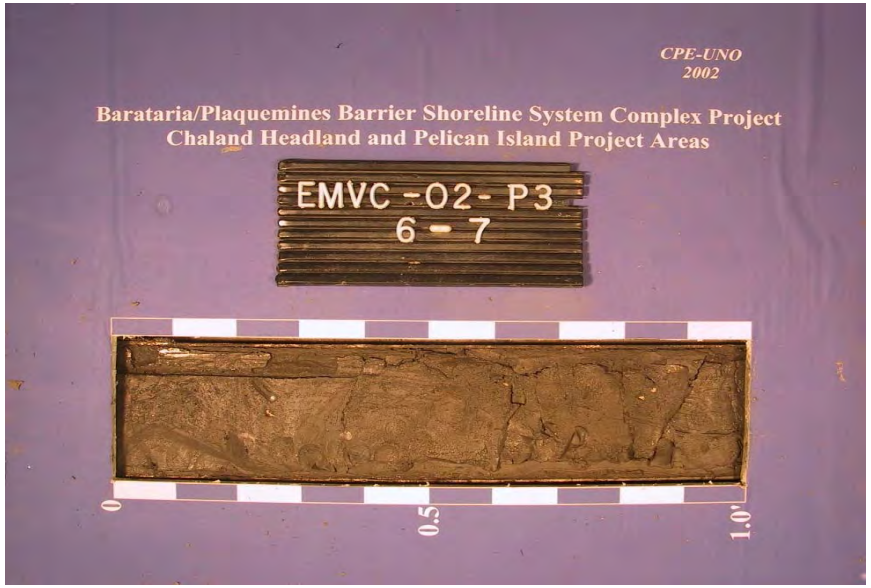
1.0'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Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02- P3
6 - 7
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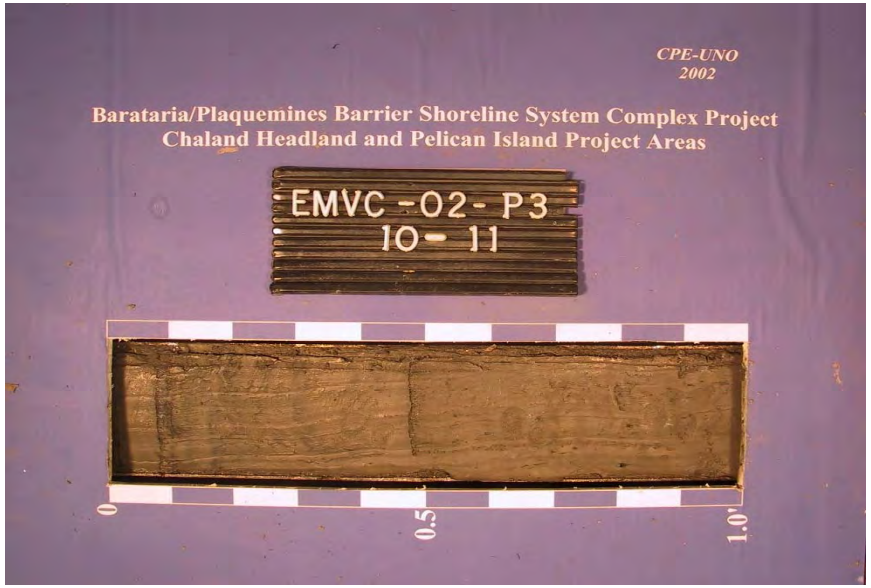
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02- P3
7 - 8
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02- P3
8 - 9
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02- P3
9 - 10
0
0.5
1.0'


CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02- P3
10 - 11
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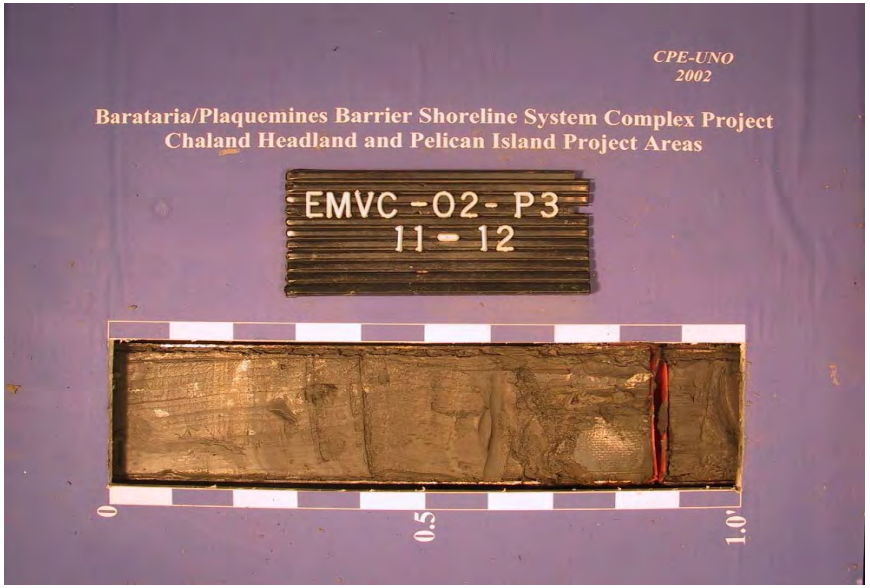

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02- P3
11 - 12
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02- P3
12 - 13
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02- P3
13 - 14
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02- P3
14 - 15
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02- P3
15 - 16
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02- P3
16 - 17
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02- P3
17 - 18
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02- P3
18 - BTM
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2 - 4
0-1
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2 - 4
1-2
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2 - 4
2-3
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2 - 4
3-4
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-4
4-5
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-4
5-6
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-4
6-7
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-4
7-8
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-4
8-9
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-4
9-10
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-4
10-11
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-4
11-12
0
0.5
1.0'

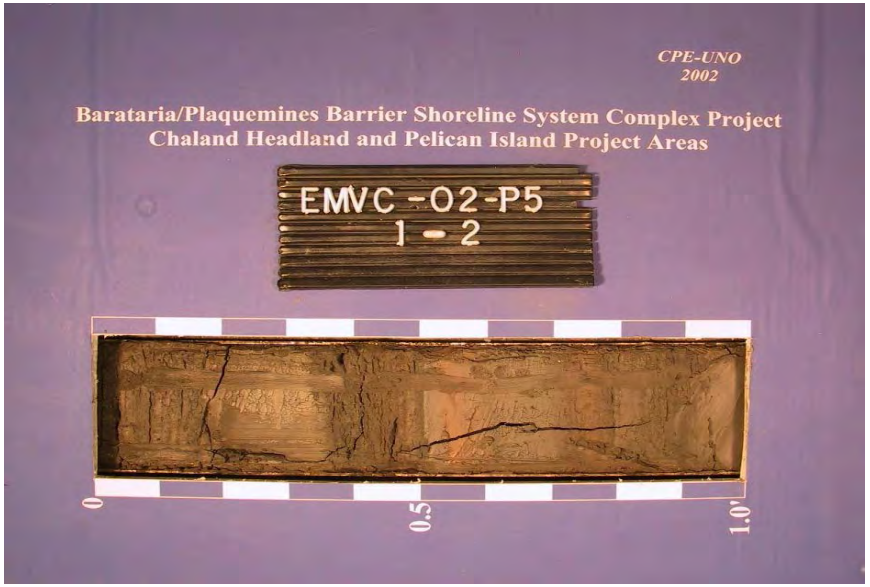
CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-4
12-13
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-4
13-14
0
0.5
1.0'

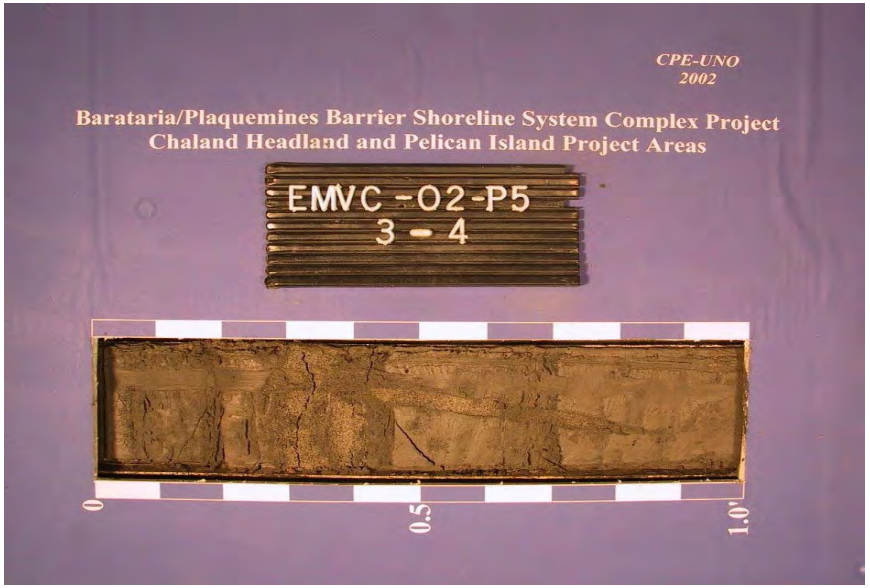
CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-4
14-15
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-4
15-BTM
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P5
0 - 1
0
0.5
1.0'


CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P5
1 - 2
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P5
2 - 3
0
0.5
1.0'

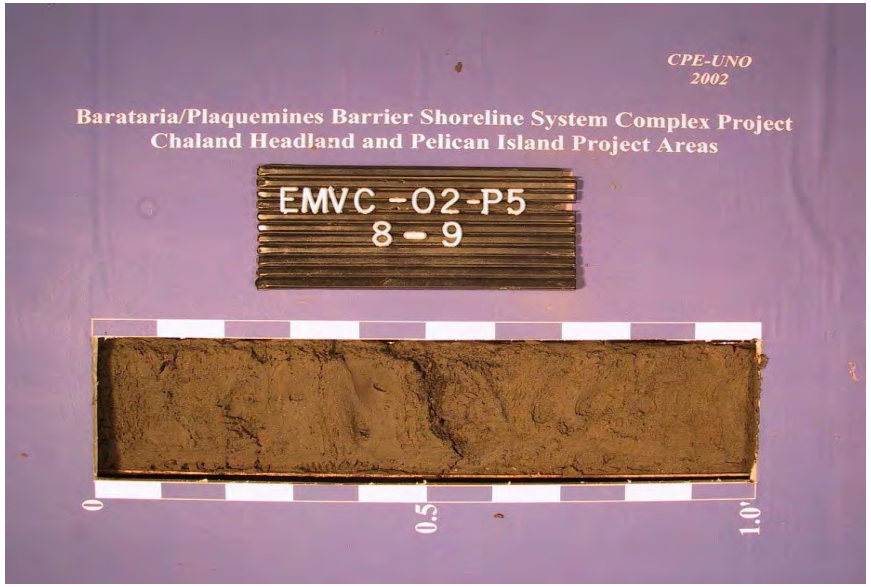

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P5
3 - 4
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P5
4 - 5
0
0.5
1.0'

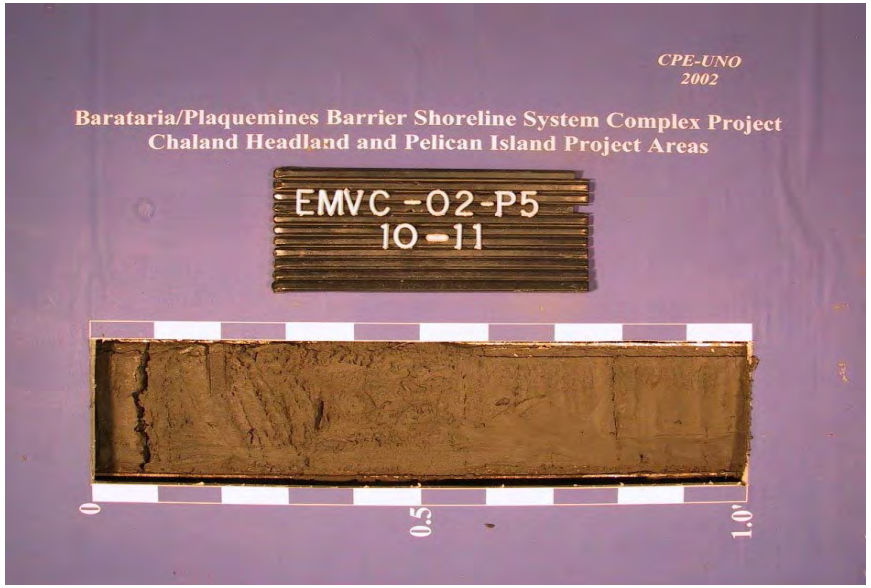
CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P5
5 - 6
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P5
6 - 7
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P5
7 - 8
0
0.5
1.0'


CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P5
8 - 9
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P5
9 - 10
0
0.5
1.0'


CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P5
10 - 11
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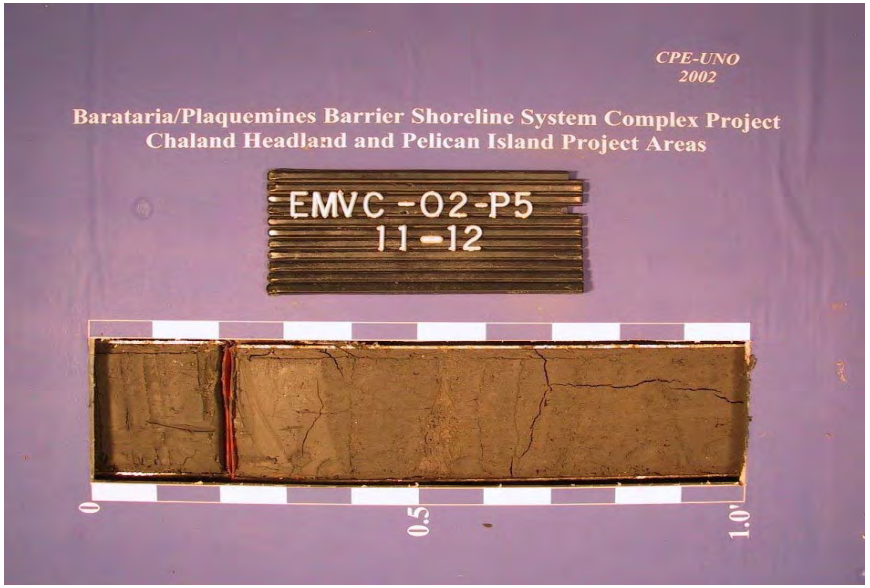
0.5
1.0'


CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P5
11 - 12
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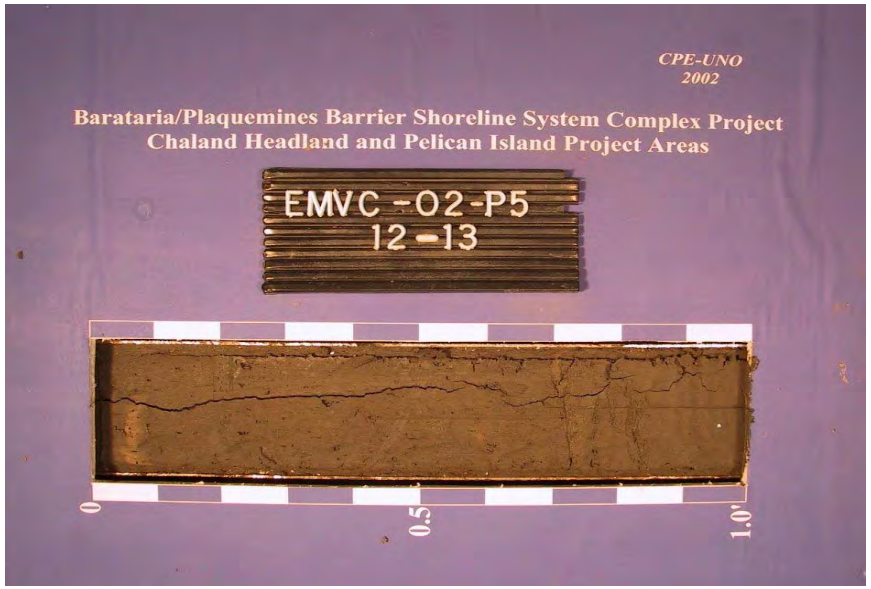
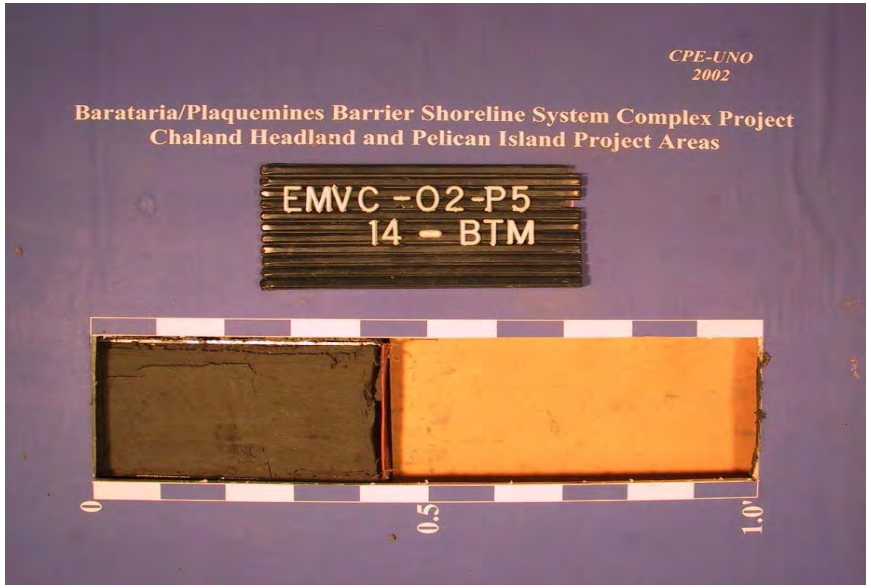
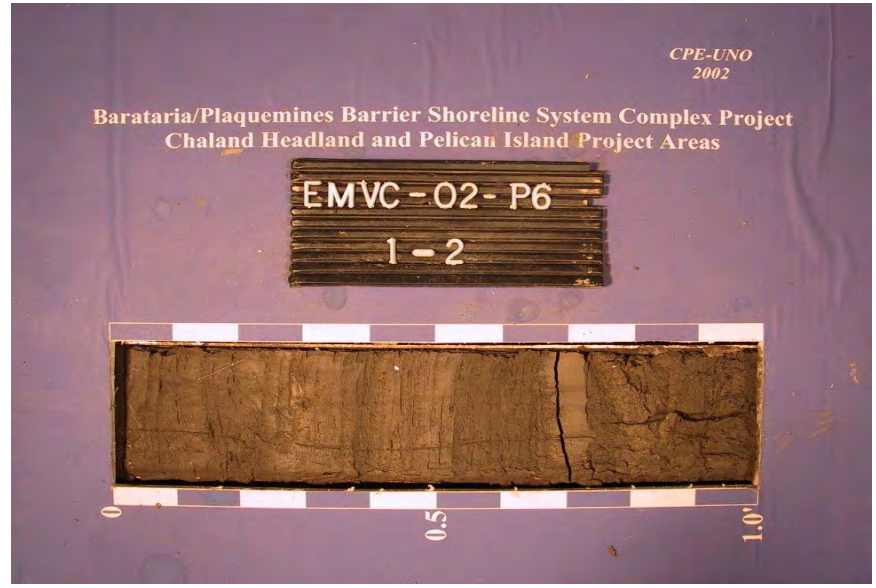
0.5
1.0'


CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P5
12 - 13
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P5
13 - 14
0
0.5
1.0'

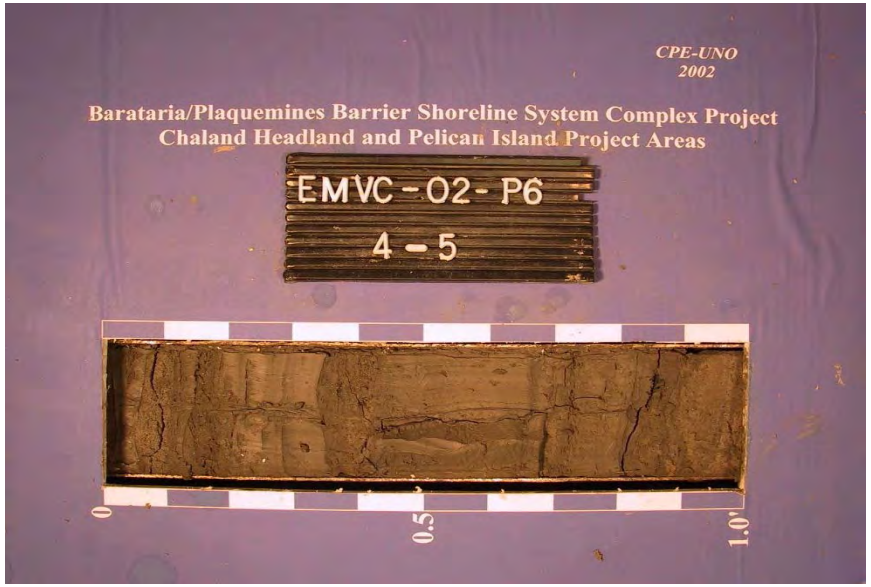

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P5
14 - BTM
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P6
0-1
0
0.5
1.0'


CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P6
1-2
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P6
2-3
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P6
3-4
0
0.5
1.0'


CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P6
4-5
0
0.5
1.0'

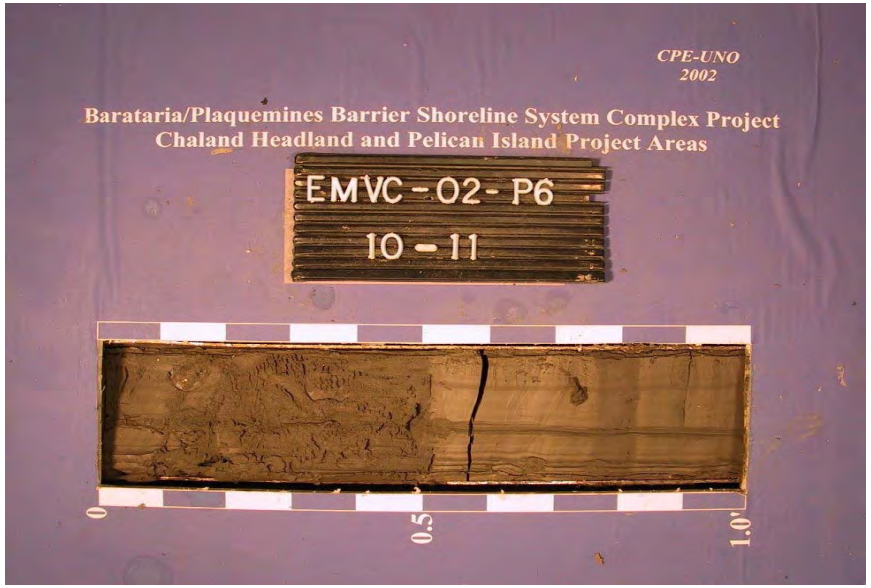
CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P6
5-6
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P6
6-7
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P6
7-8
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P6
8-9
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P6
9-10
0
0.5
1.0'


CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P6
10-11
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0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P6
11-12
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P6
12-13
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P6
13-BTM
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P7
0-1
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P7
1-2
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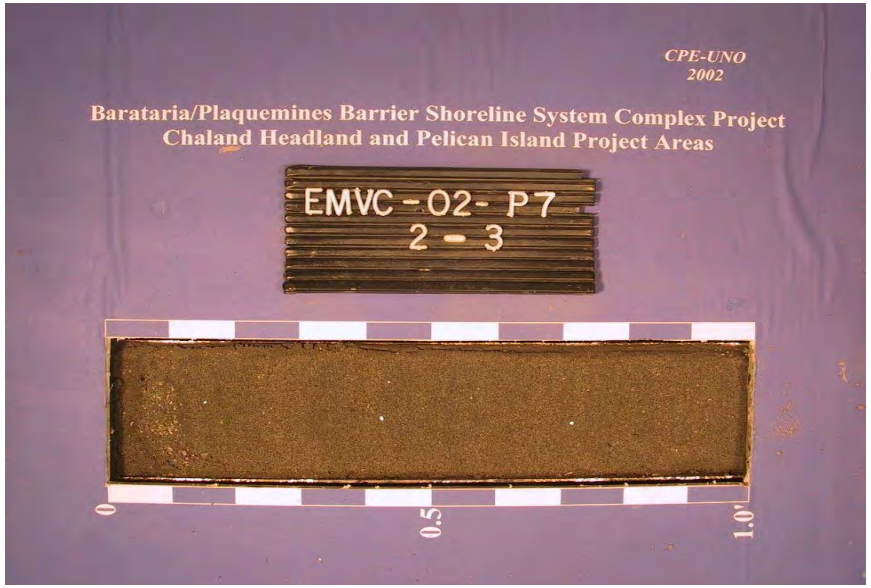
1.0'


CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P7
2-3
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0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P7
3-4
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P7
4-5
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P7
5-6
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P7
6-7
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P7
7-8
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P7
8-9
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P7
9-10
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P7
10-11
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P7
11-12
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P7
12-13
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P7
13-14
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P7
14-15
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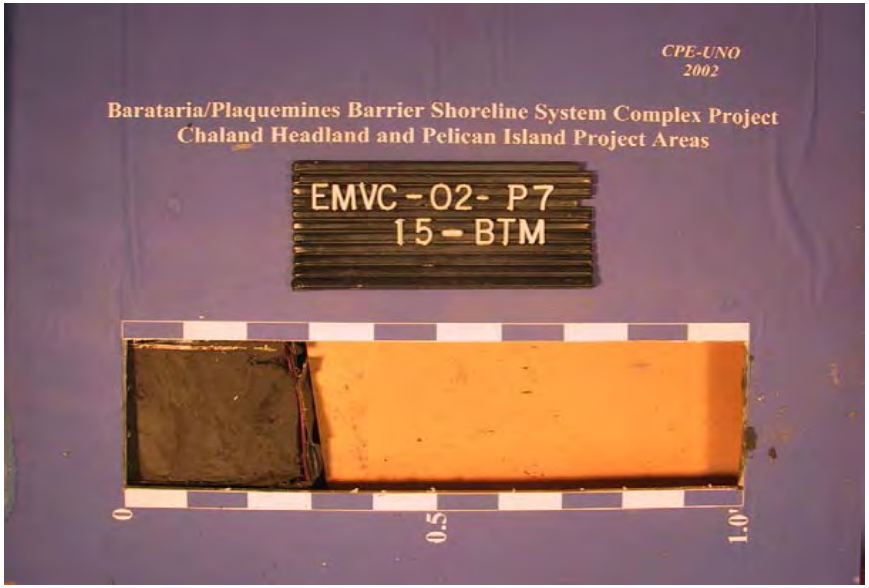
1.0'


CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P7
15-BTM
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P8
0 - 1
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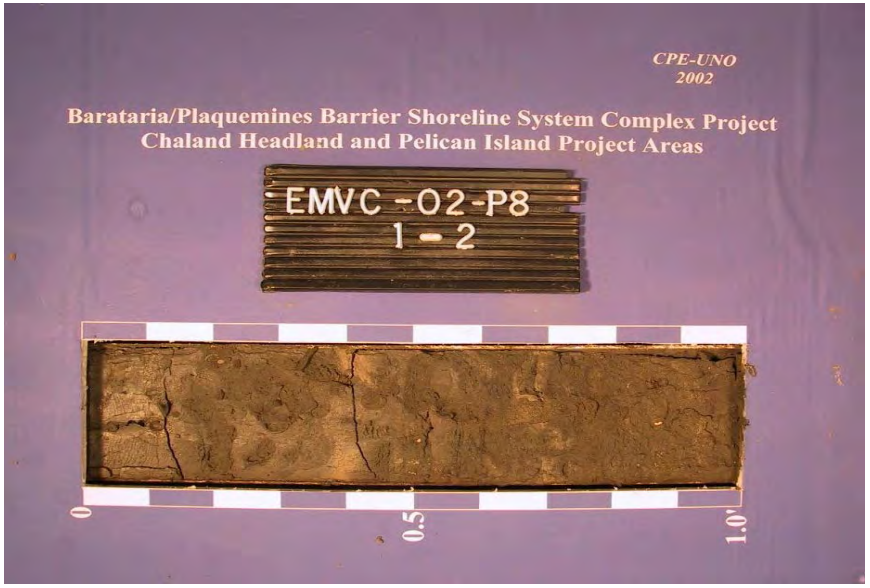
0.5
1.0'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2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P8
1 - 2
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0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P8
2 - 3
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P8
3 - 4
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P8
4 - 5
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P8
5 - 6
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P8
6 - BTM
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-08A
5.8-6.3
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-08A
6.3-7.3
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-08A
7.3-8.3
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-08A
8.3-9.3
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-08A
9.3-10.3
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-08A
10.3-11.3
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-08A
11.3-12.3
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-08A
12.3-13.3
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-08A
13.3-14.3
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-08A
14.3-15.3
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0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-08A
15.3-16.3
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CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-08A
16.3-BTM
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P9
0 - 1
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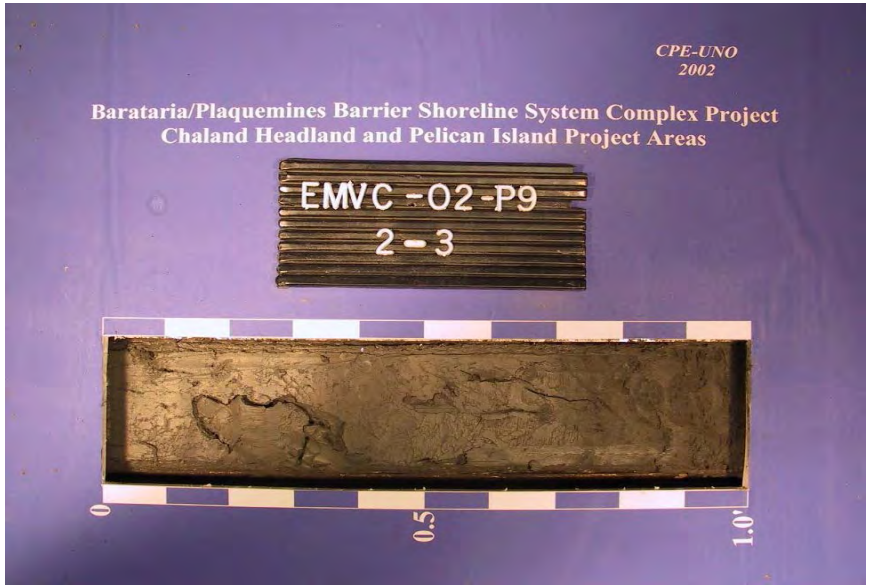
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P9
1 - 2
0
0.5
1.0'


CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P9
2 - 3
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P9
3 - 4
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P9
4 - 5
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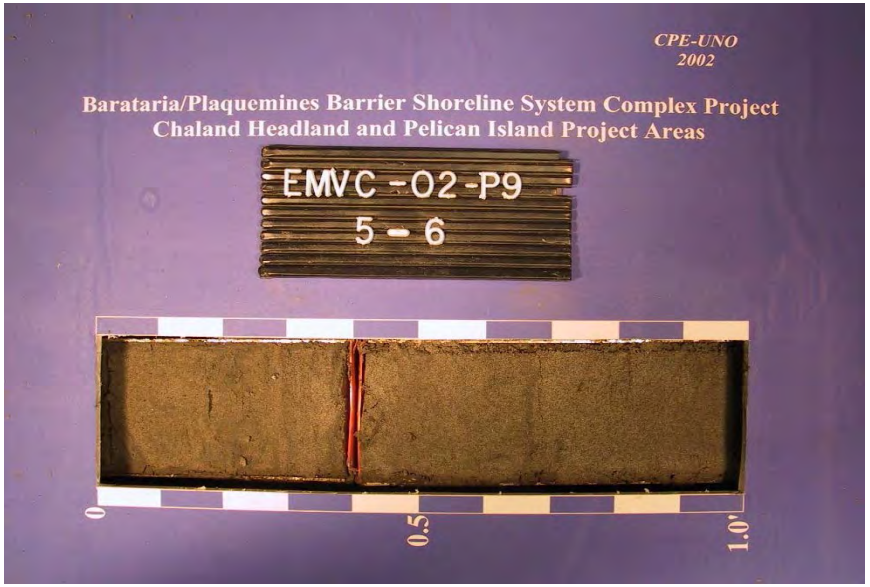
1.0'


CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P9
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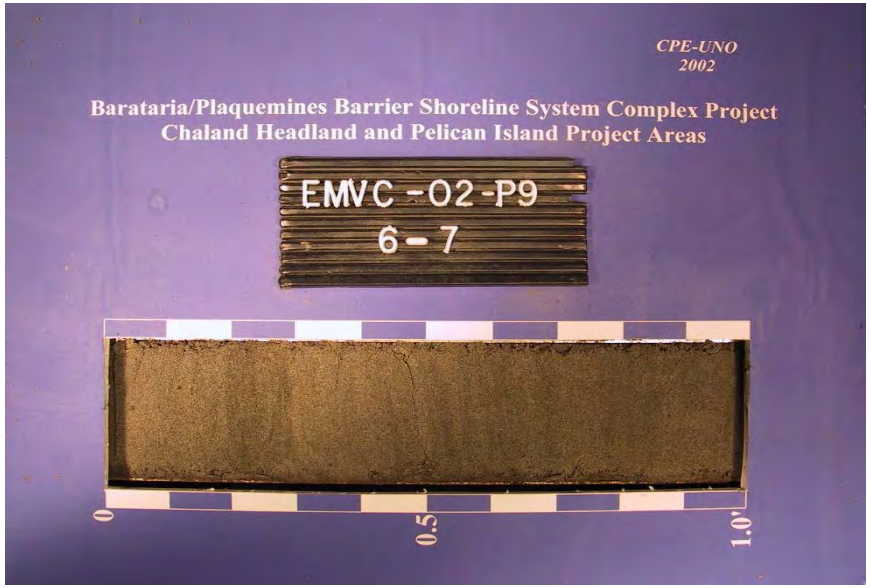
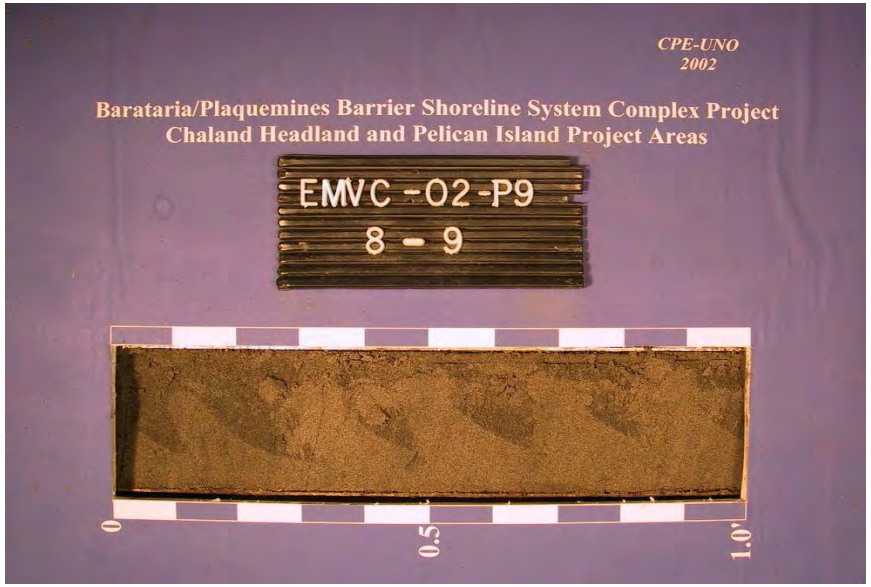
1.0'


CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P9
6 - 7
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P9
7 - 8
0
0.5
1.0'


CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P9
8 - 9
0
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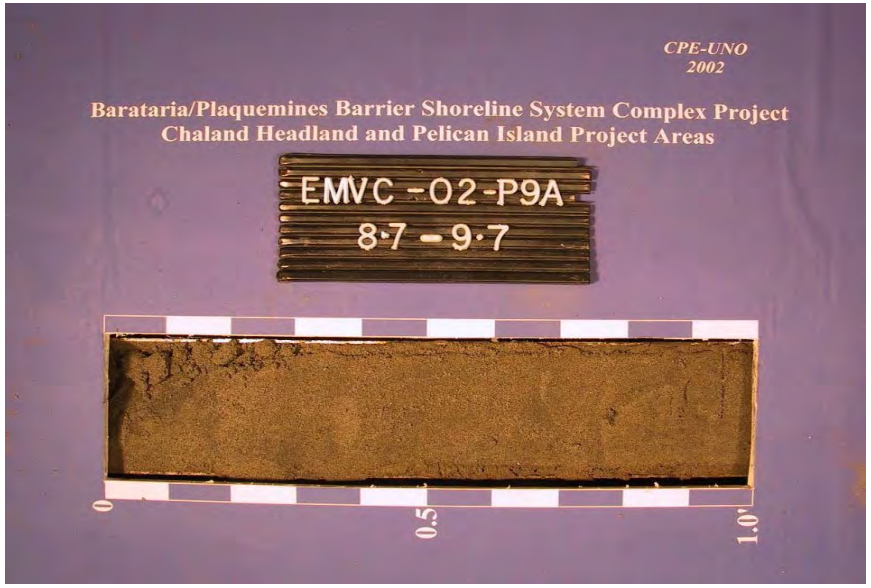
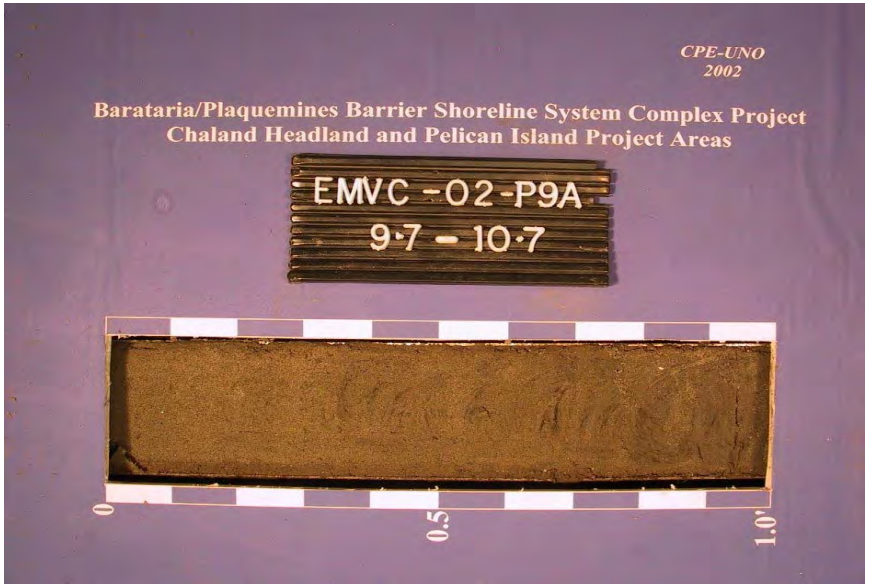
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P9
9 - BTM
0
0.5
1.0'


CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P9A
8·7 - 9·7
0
0.5
1.0'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2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P9A
9·7 - 10·7
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P9A
10·7 - 11·7
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P9A
11·7 - 12·7
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P9A
12·7 - 13·7
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P9A
13·7 - 14·7
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P9A
14·7 - BTM
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P10
0 - 1
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P10
1 - 2
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P10
2 - 3
0
0.5
1.0'

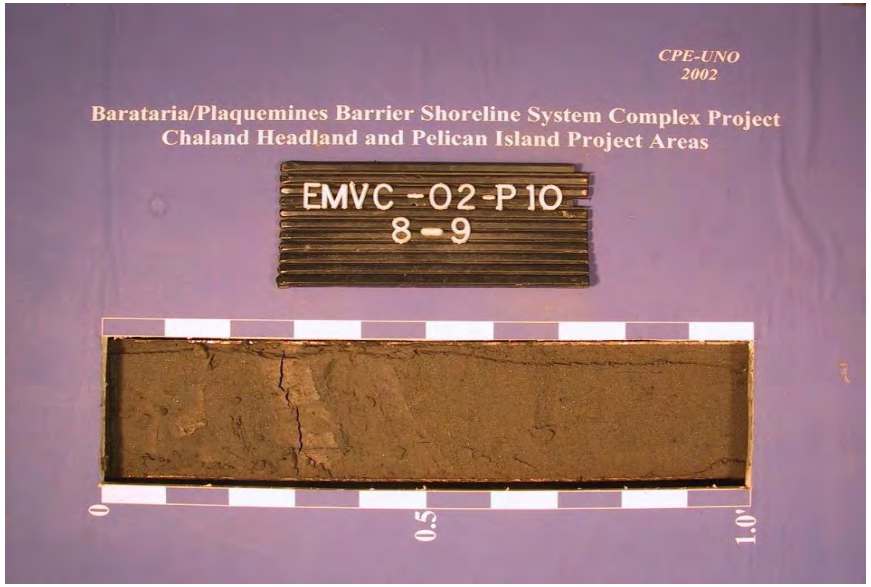
CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P10
3 - 4
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P10
4 - 5
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P10
5 - 6
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P10
6 - 7
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P10
7 - 8
0
0.5
1.0'


CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P10
8-9
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0.5
1.0'

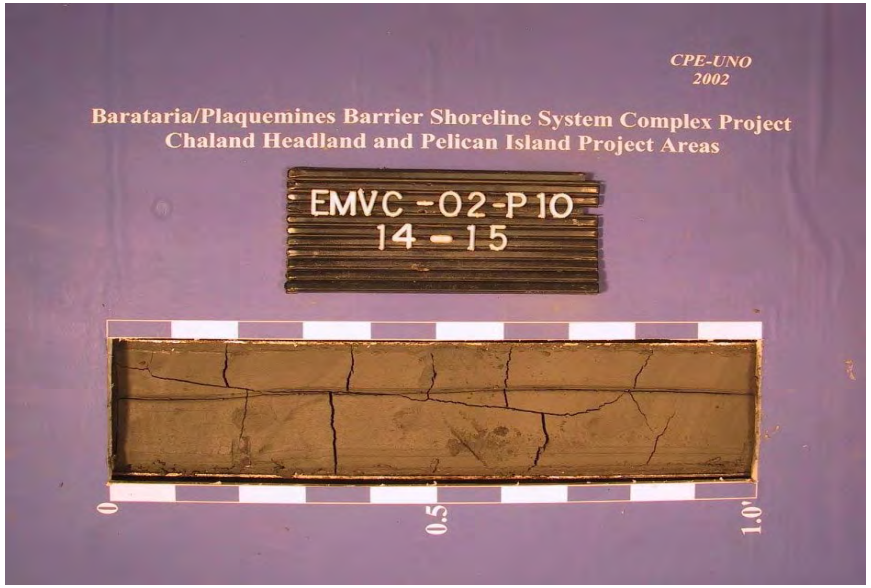
CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P10
9-10
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P10
10-11
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P10
11-12
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P10
12 - 13
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P10
13 - 14
0
0.5
1.0'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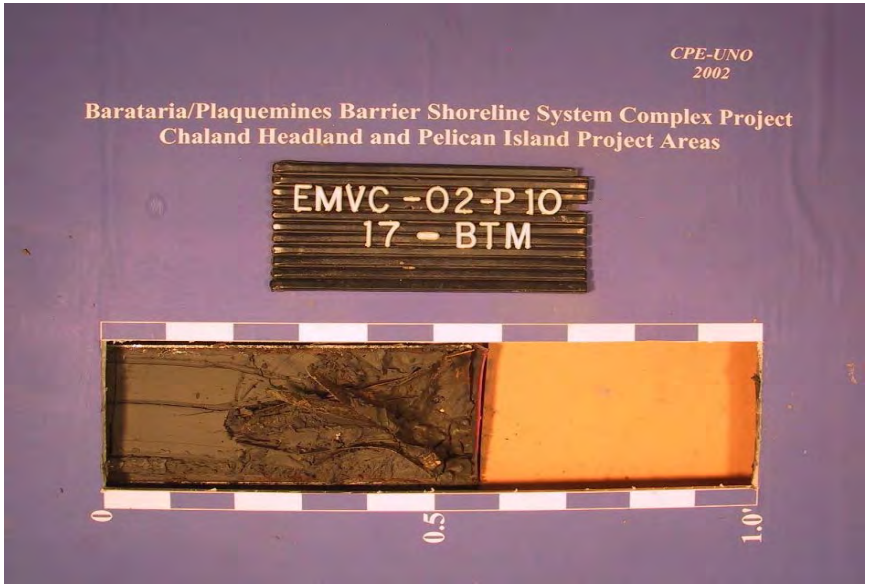
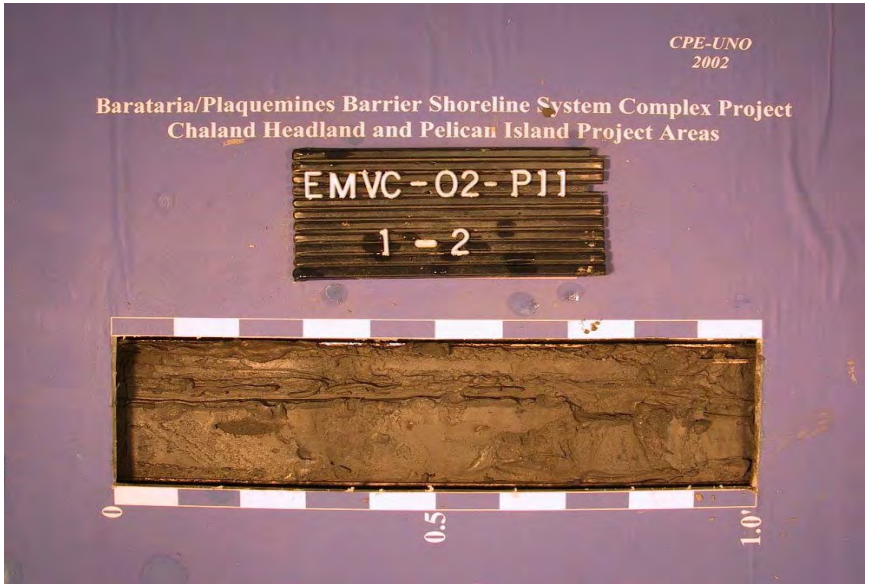
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P10
14 - 15
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P10
15 - 16
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P10
16 - 17
0
0.5
1.0'


CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P10
17 - BTM
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P11
0-1
0
0.5
1.0'


CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P11
1-2
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0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P11
2-3
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P11
3-4
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P11
4-5
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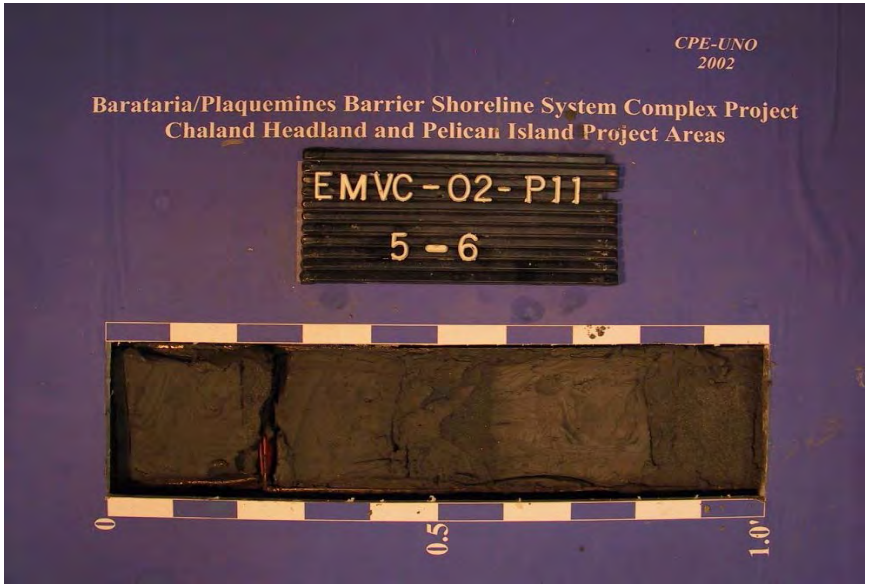
1.0'


CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P11
5-6
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0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P11
6-7
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P11
7-8
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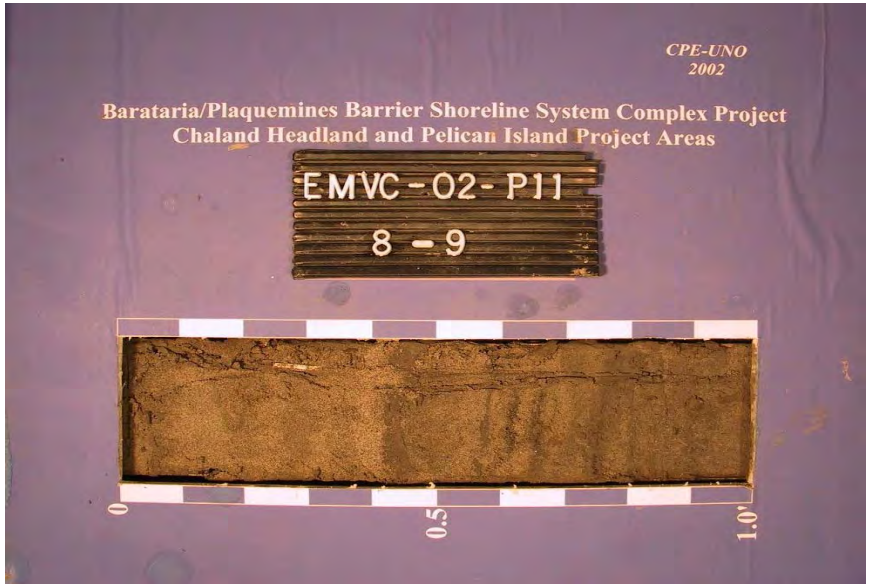
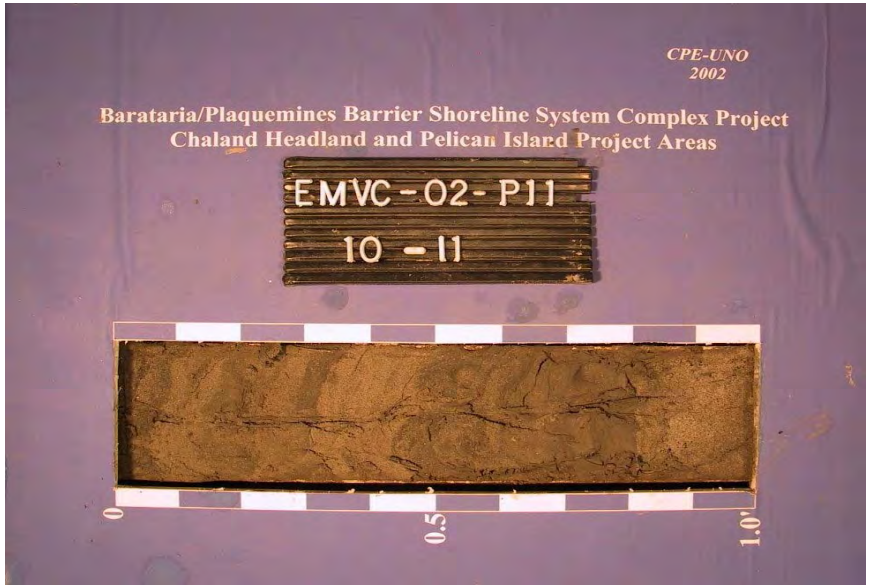
0.5
1.0'


CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P11
8 - 9
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P11
9 - 10
0
0.5
1.0'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2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P11
10 - 11
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P11
11 - 12
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P11
12 - BTM
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P11A
12-13
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P11A
13-14
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P11A
14-15
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P11A
15-16
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P11A
16-17
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P11A
17-18
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P11A
18-BTM
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02- P12
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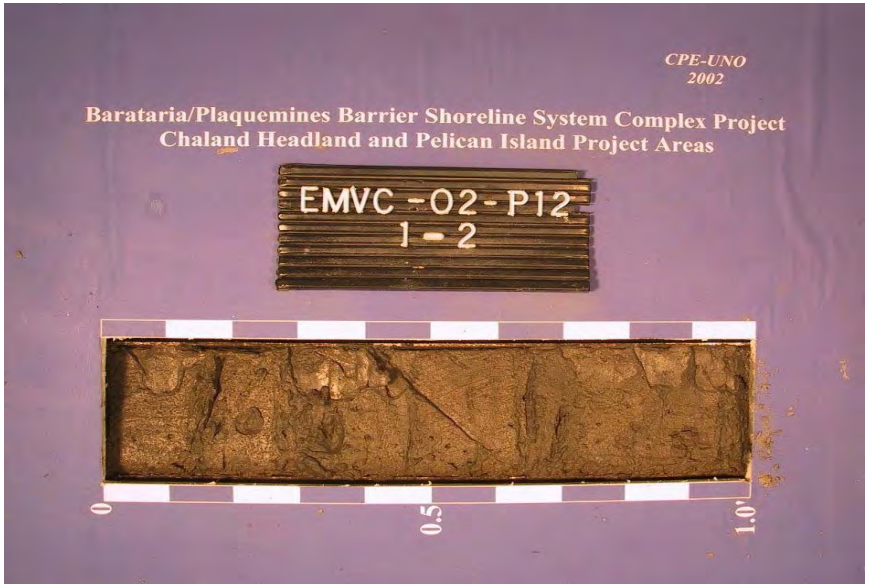
1.0'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2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02- P12
1 - 2
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0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02- P12
2 - 3
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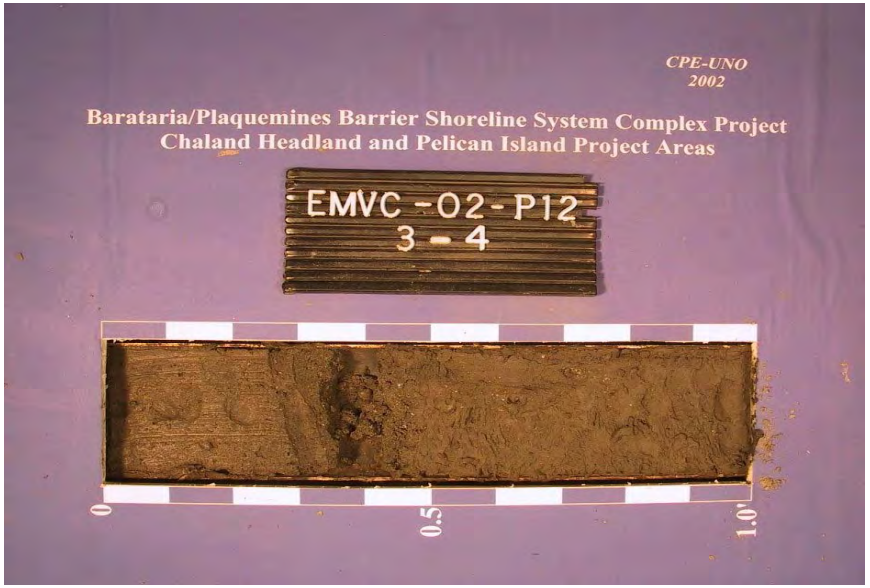
1.0'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2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02- P12
3 - 4
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02- P12
4 - 5
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02- P12
5 - 6
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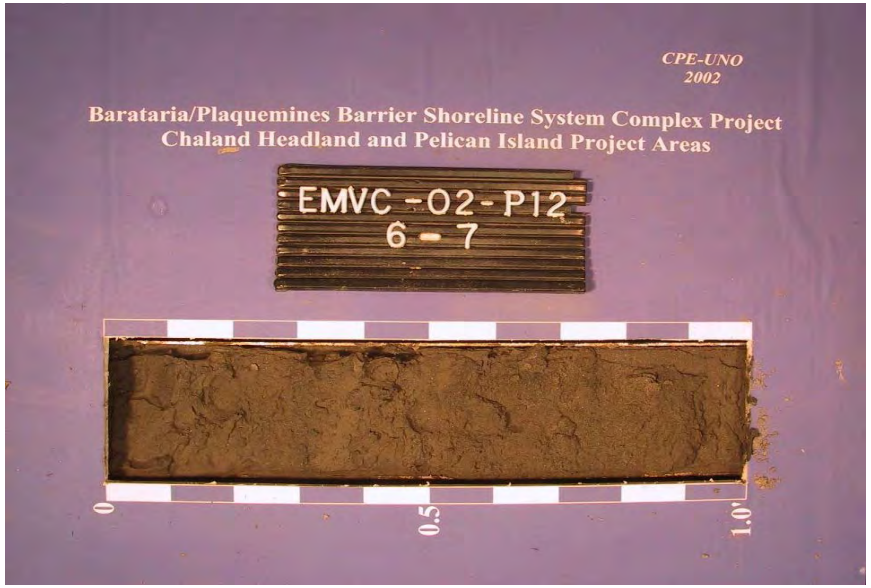
1.0'


CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02- P12
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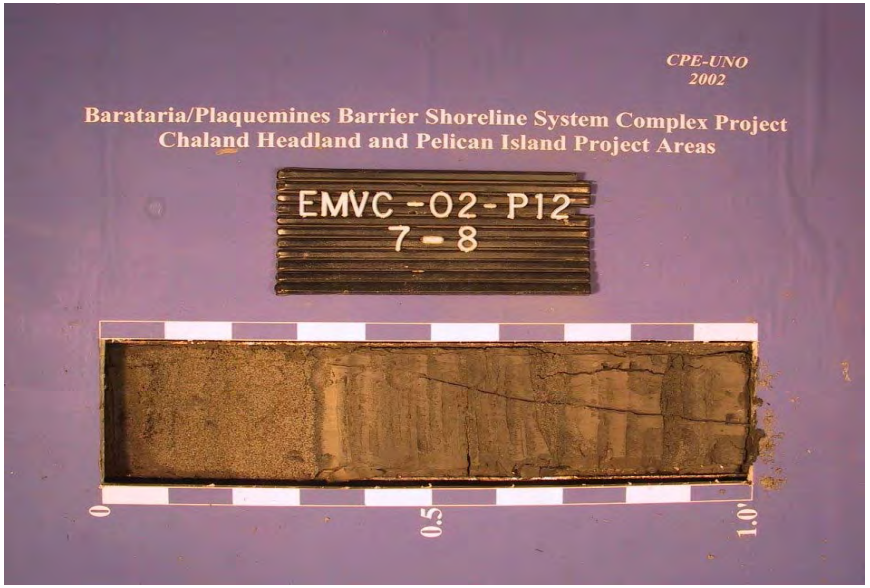
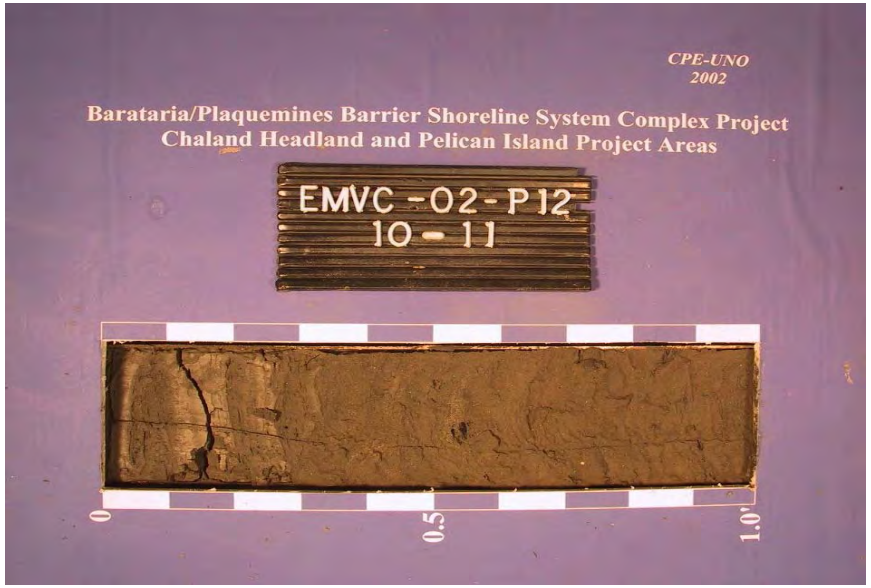
1.0'


CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02- P12
7 - 8
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P12
8 - 9
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P12
9 - 10
0
0.5
1.0'


CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P12
10 - 11
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0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC -02-P12
11 - 12
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-P12
12-BTM
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-13
0-1
0
0.5
1.0

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-13
1-2
0
0.5
1.0

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-13
2-3
0
0.5
1.0

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-13
3-4
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0.5
1.0

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-13
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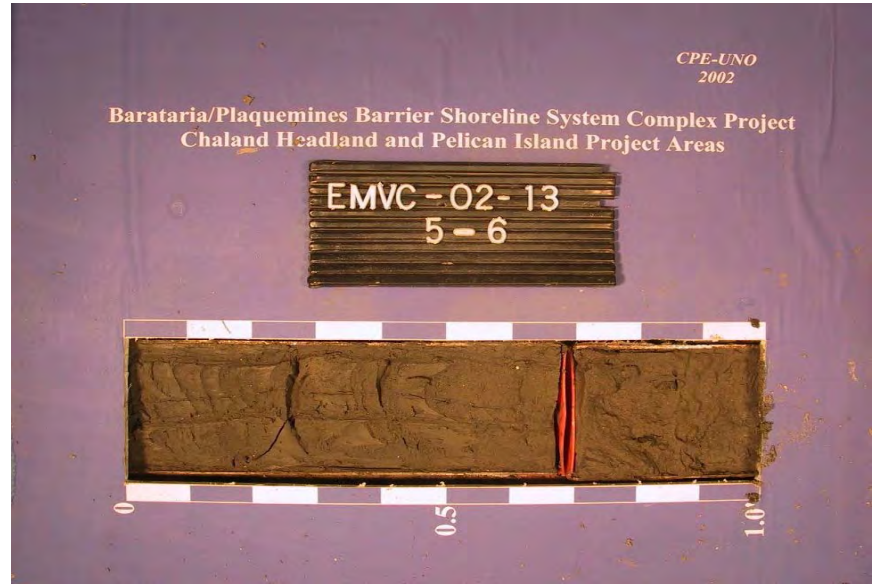
CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-13
5-6
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1.0

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-13
6-7
0
0.5
1.0

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-13
7-8
0
0.5
1.0

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-13
8 - 9
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-13
9 - 10
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-13
10 - 11
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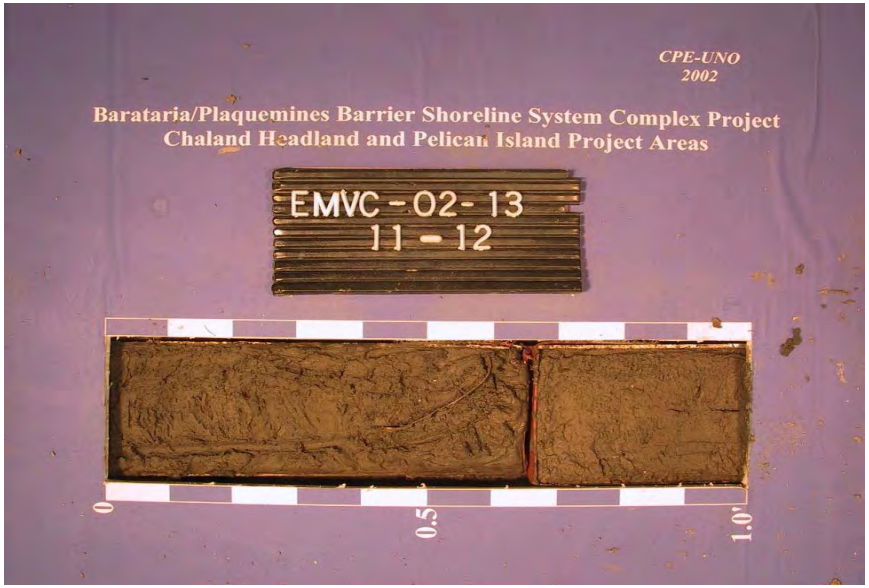
1.0'


CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-13
11 - 12
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0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-13
12-13
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-13
13-14
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-13
14-15
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-13
15-16
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0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-13
16-17
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-13
17-18
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-13
18-BTM
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-14
0-1
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-14
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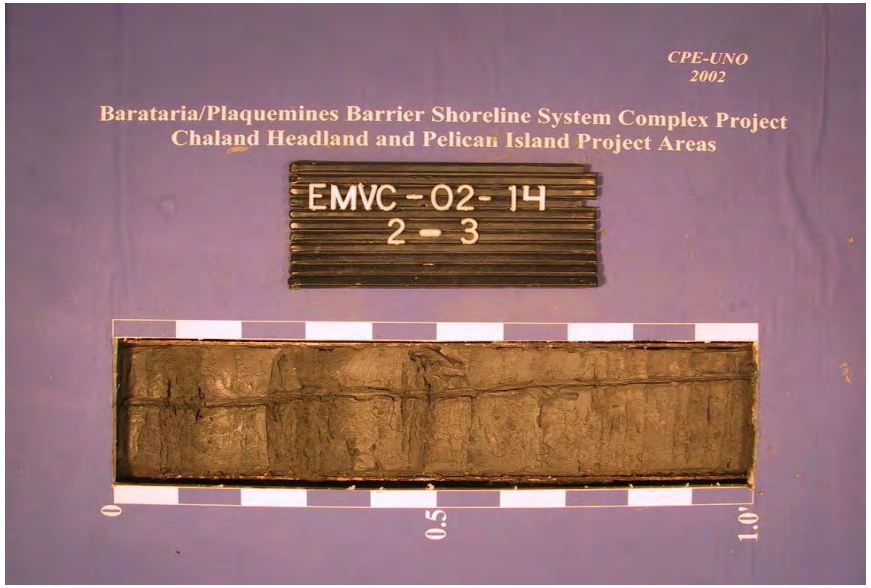
1.0'


CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-14
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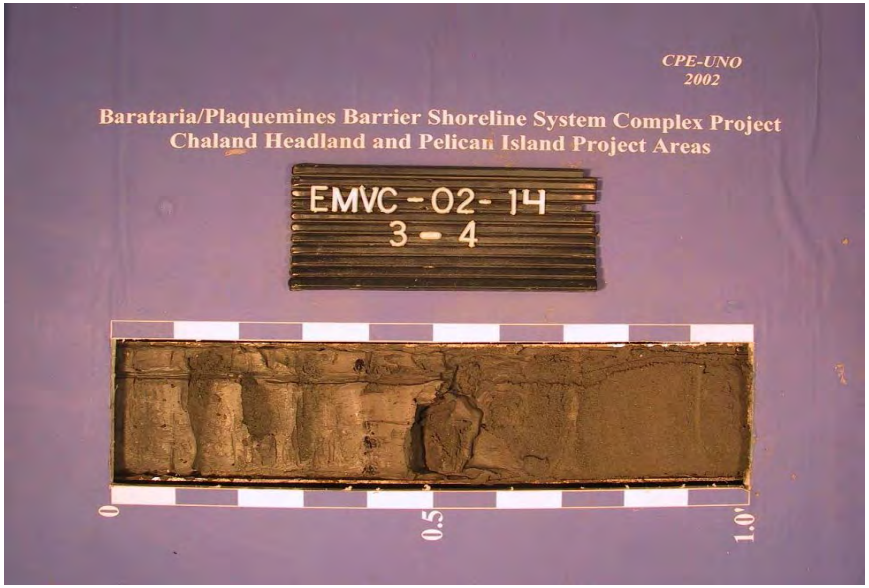
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2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-14
3-4
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-14
4-5
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-14
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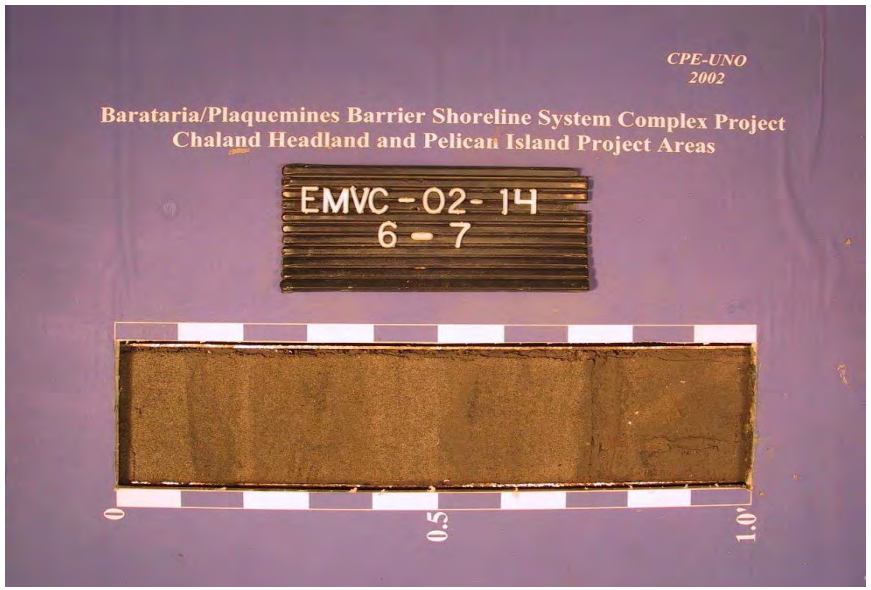
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2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-14
6-7
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-14
7-8
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-14
8-9
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0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-14
9-10
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-14
10-11
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-14
11-12
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-14
12-BTM
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-14A
11·4-12·4
0
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-14A
12·4-13·4
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-14A
13·4-14·4
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0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-14A
14·4-15·4
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-14A
15·4-16·4
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-14A
16·4-17·4
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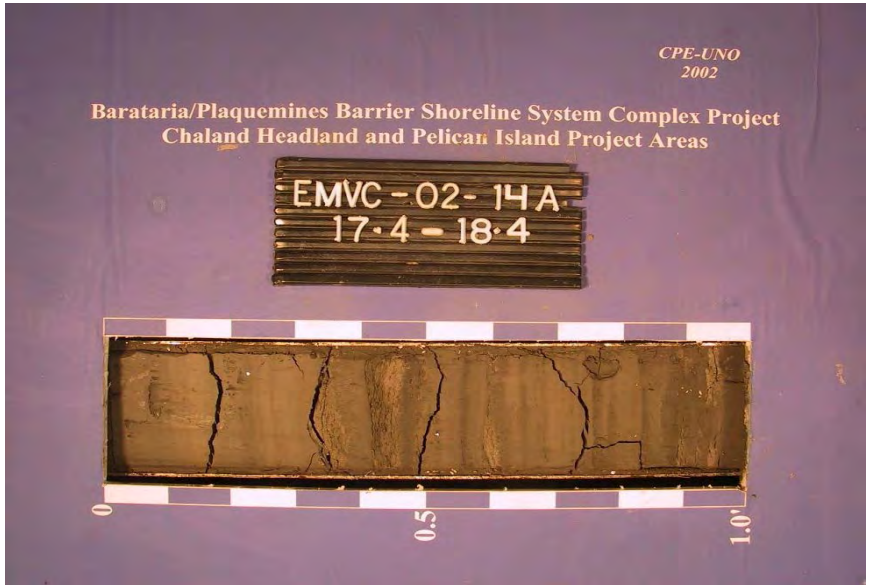
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Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-14A
17·4-18·4
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-14A
18·4-BTM
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0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-15
0-1
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-15
1-2
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-15
2-3
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-15
3-4
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-15
4-5
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-15
5-6
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-15
6-7
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-15
7-8
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-15
8-9
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-15
9-10
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0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-15
10-11
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-15
11-12
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-15
12-13
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-15
13-14
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-15
14-15
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-15
15-16
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-15
16-17
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-15
17-18
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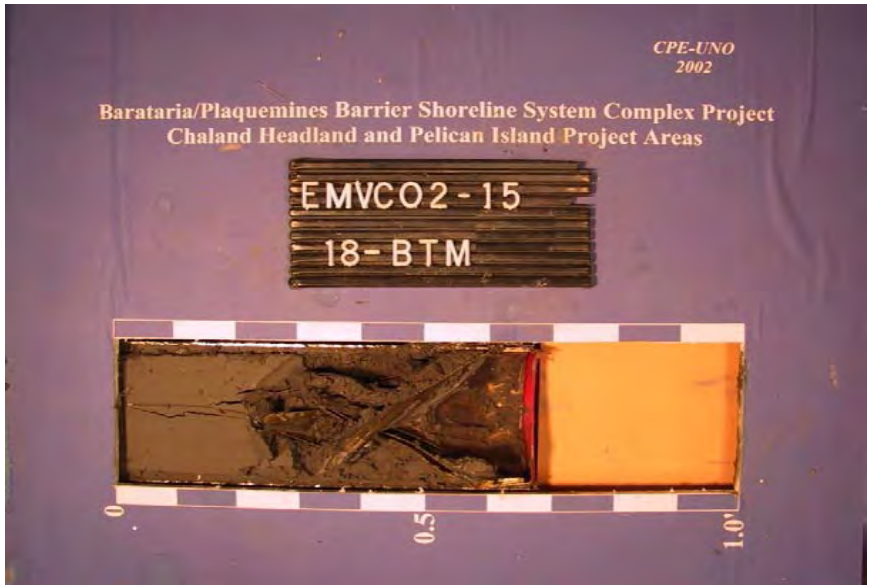
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2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-15
18-BTM
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-16
0-1
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-16
1-2
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-16
2-3
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-16
3-4
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-16
4-5
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-16
5-6
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-16
6-7
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-16
7-8
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-16
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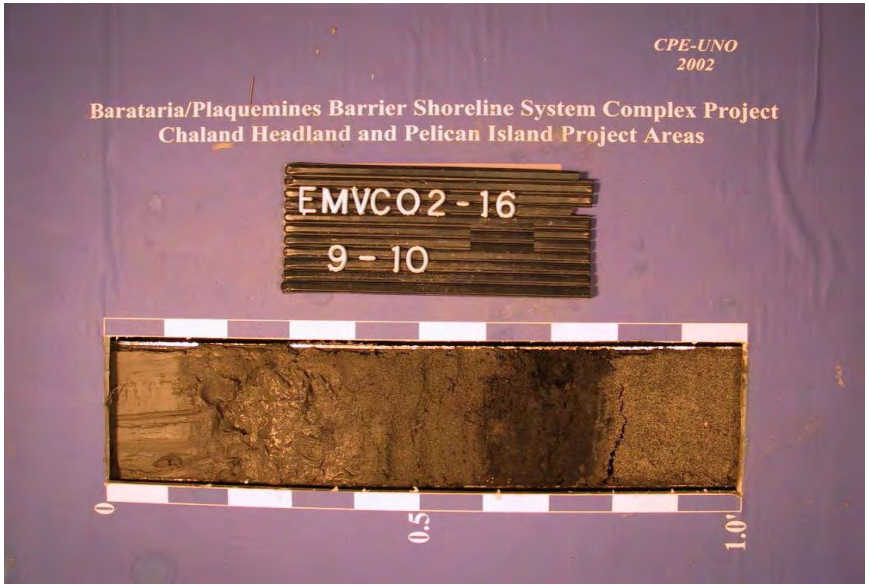
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2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-16
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CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-16
10-11
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-16
11-12
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-16
12-13
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-16
13-BTM
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-16A
11.1-12.1
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-16A
12.1-13.1
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0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-16A
13.1-14.1
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-16A
14.1-15.1
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1.0'

CPE-UNO
2002
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Chaland Headland and Pelican Island Project Areas
EMVC-02-16A
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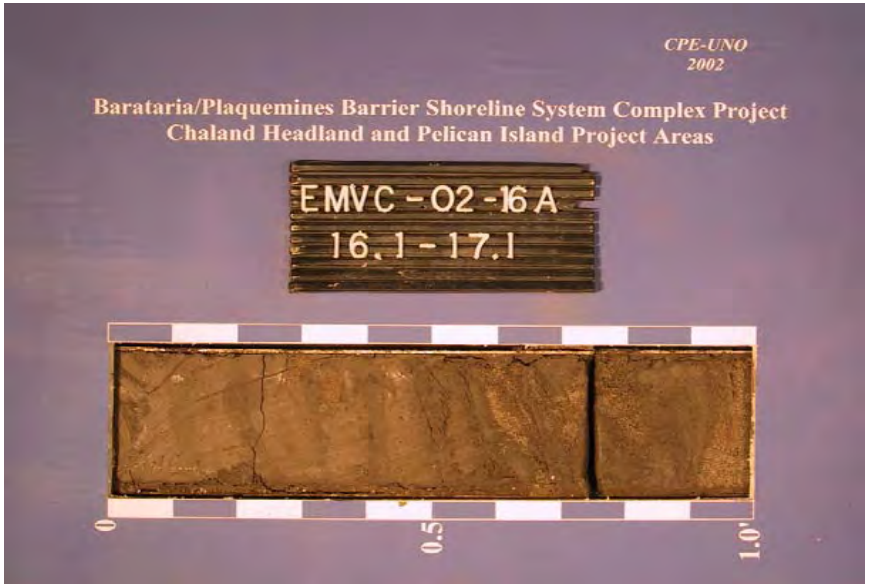
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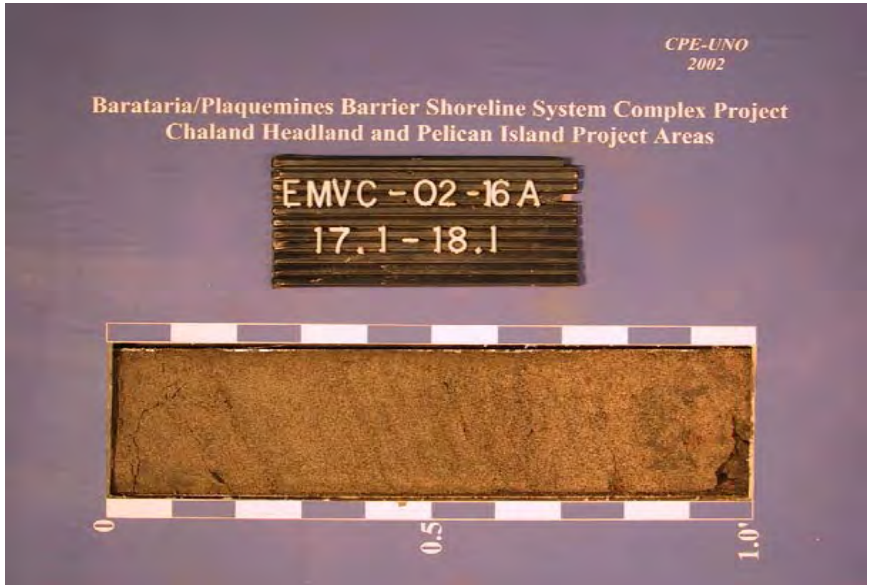
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CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-16A
18.1-BTM
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CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-17
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-17
1-2
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0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-17
2-3
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-17
3-4
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
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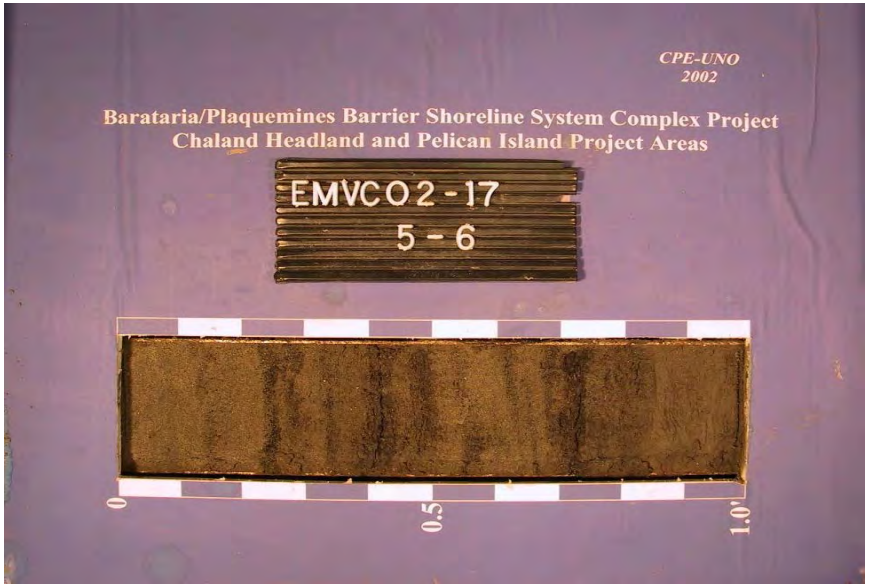
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Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-17
6 - 7
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-17
7 - BTM
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-17A
7-8
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-17A
8-9
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-17A
9-10
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-17A
10-11
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-17A
11-12
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-17A
12-13
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0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-17A
13-14
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0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-17A
14-15
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-17A
15-16
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-17A
16-17
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-17A
17-18
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-17A
18-BTM
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0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-18
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-18
1-2
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-18
2-3
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0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-18
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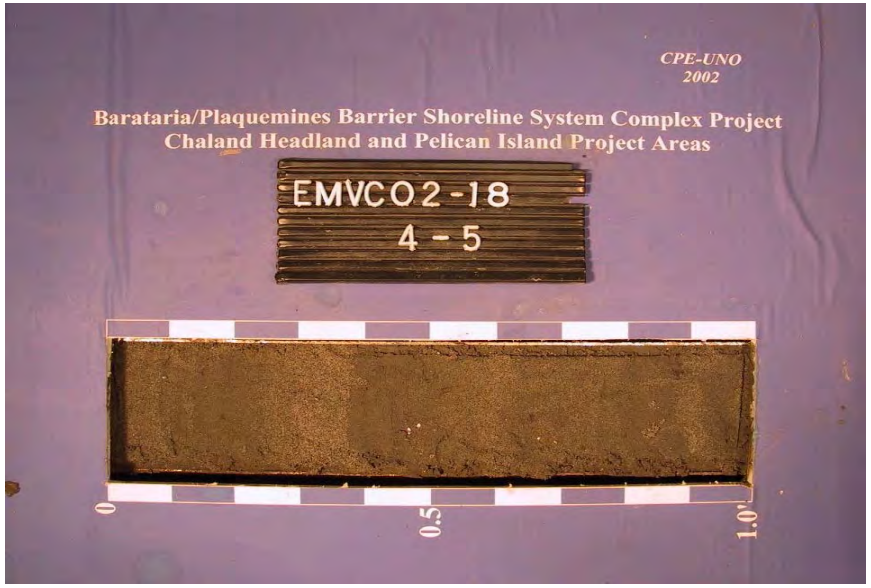
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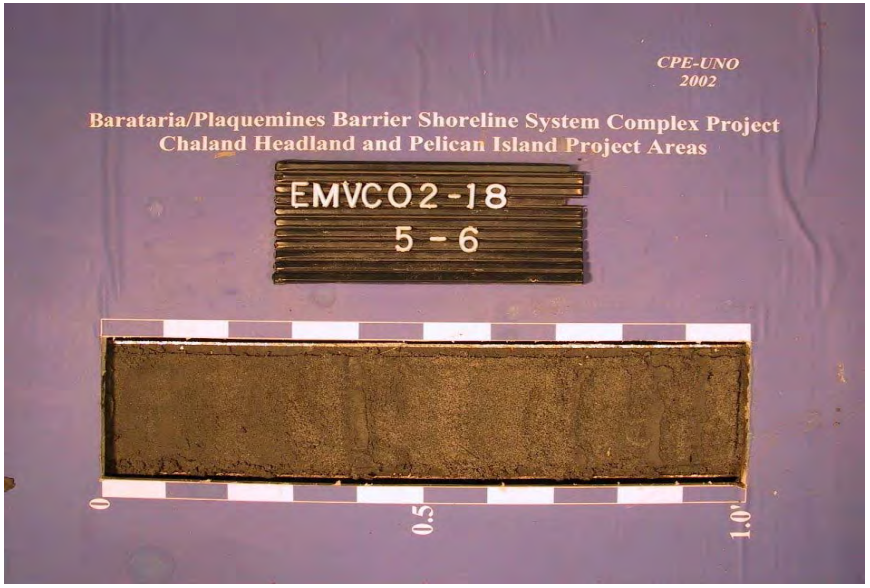
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Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-18
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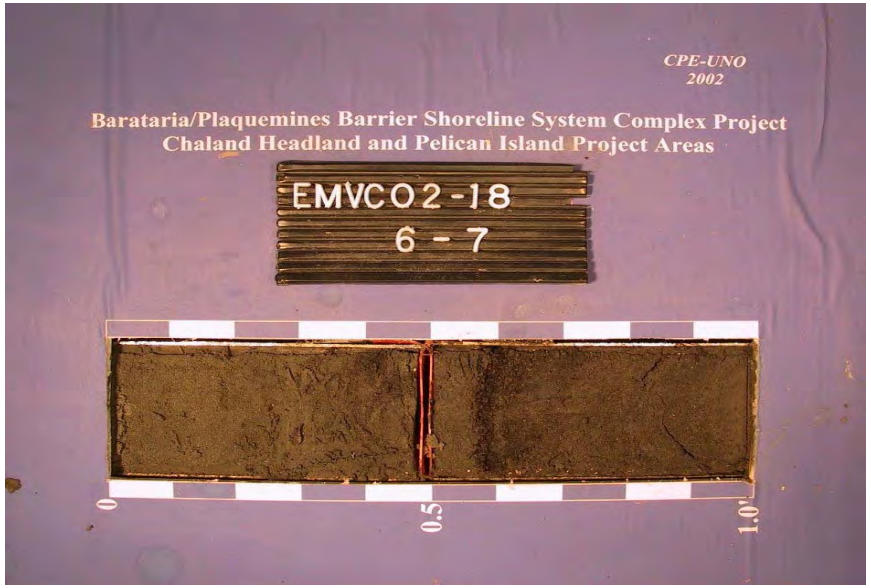
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2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-18
6 - 7
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-18
7 - 8
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0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-18
8 - 9
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-18
9 - 10
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-18
10 - 11
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-18
11 -12
0
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-18
12 -13
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CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-18
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-18
14 -15
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-18
15 -16
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-18
16 -17
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-18
17 - BTM
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-19
0-1
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-19
1-2
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-19
2-3
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-19
3-4
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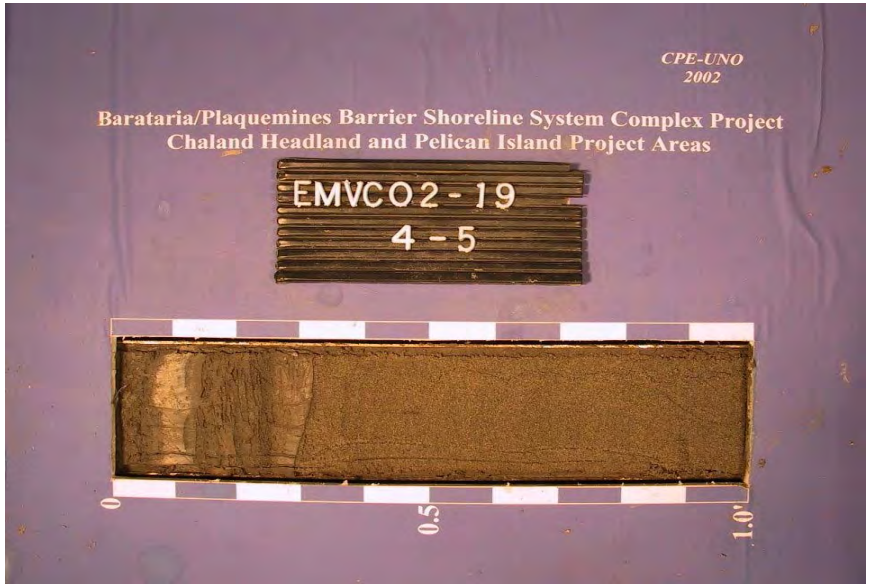
1.0'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2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-19
4-5
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-19
5-6
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-19
6-7
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-19
7-8
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-19
8 - 9
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-19
9 - 10
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-19
10 - 11
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-19
11 - BTM
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC - 02 -19A
10.5 - 11.5
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC - 02 -19A
11.5 - 12.5
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC - 02 -19A
12.5 - 13.5
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC - 02 -19A
13.5 - 14.5
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC - 02 -19A
14.5 -15.5
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC - 02 -19A
15.5 -16.5
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC - 02 -19A
16.5 -17.5
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC - 02 -19A
17.5 - BTM
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-20
0-1
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-20
1-2
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-20
2-3
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-20
3-4
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-20
4-5
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-20
5-6
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-20
6-7
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-20
7-8
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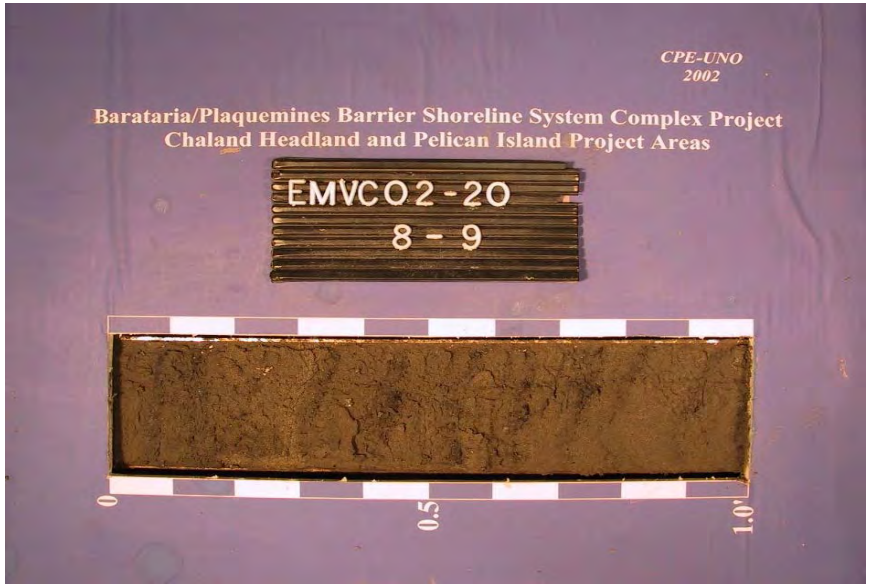
1.0'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Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
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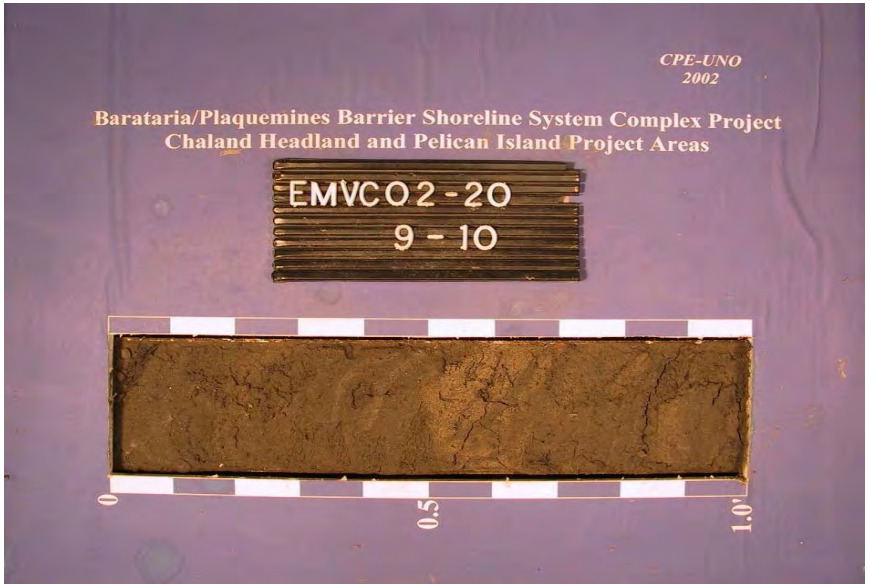
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Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-20
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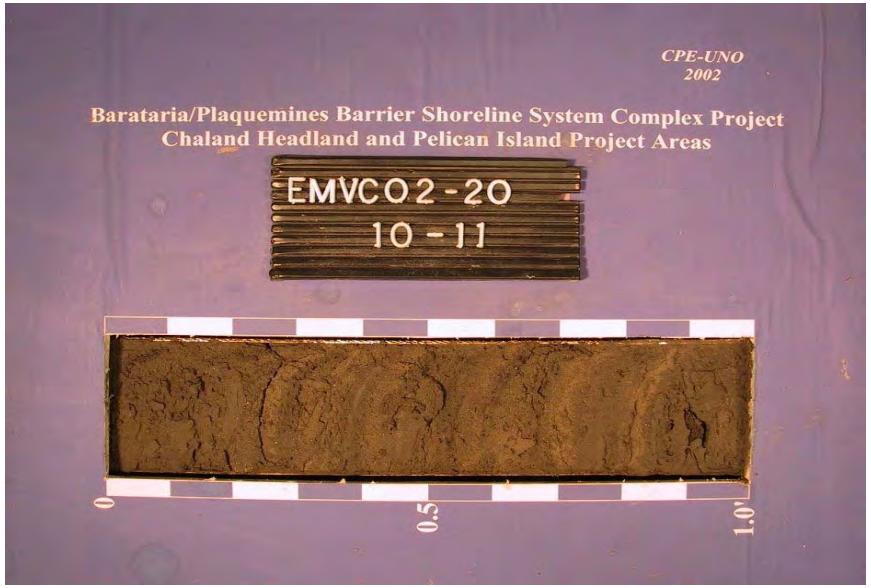
1.0'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2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-20
10 - 11
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0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-20
11 - 12
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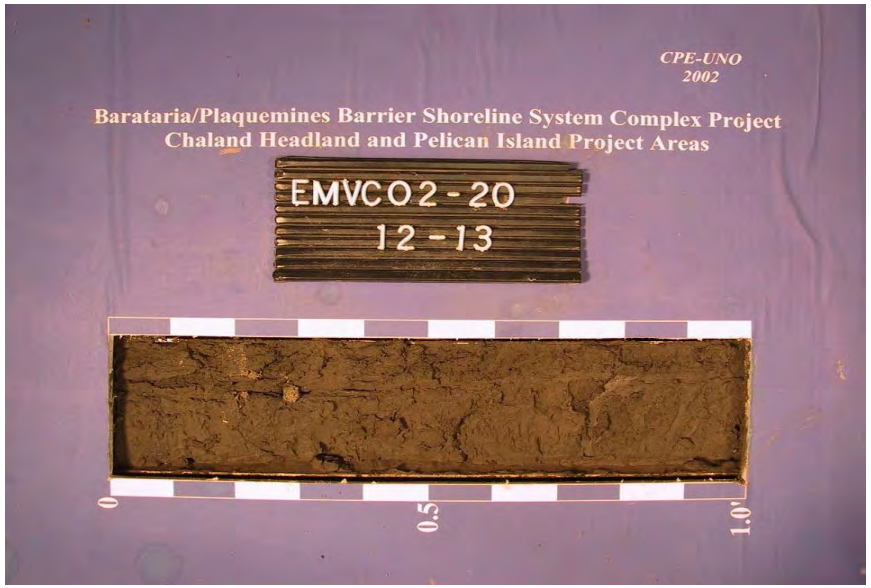
1.0'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Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-20
12-13
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-20
13-14
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-20
14-15
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-20
15-BTM
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-20A
14-15
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-20A
15-16
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-20A
16-17
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-20A
17-18
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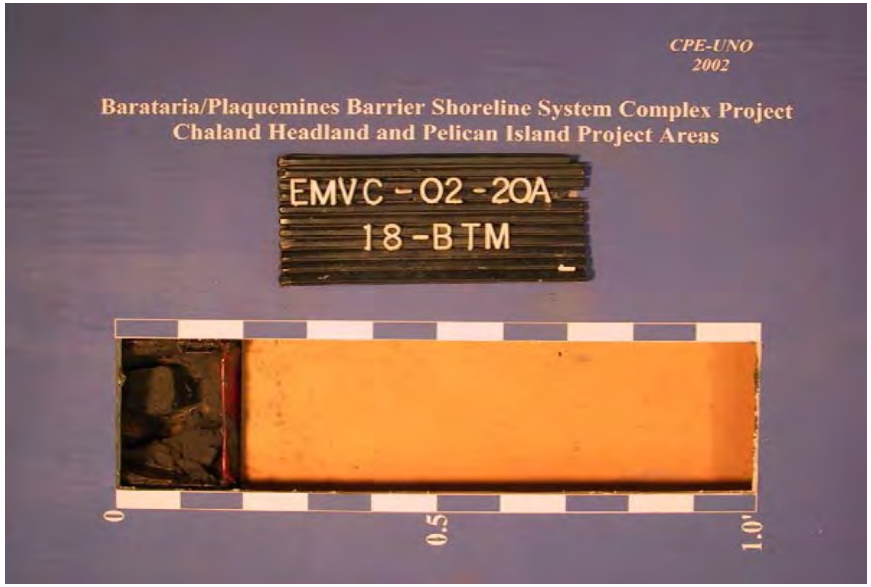
1.0'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Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-20A
18-BTM
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-21
0 - 1
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-21
1 - 2
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-21
2 - 3
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-21
3 - 4
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-21
4 - 5
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-21
5 - 6
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-21
6 - 7
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-21
7 - 8
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-21
8-9
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-21
9-10
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-21
10-11
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-21
11-12
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-21
12-13
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-21
13-14
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-21
14-15
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-21
15-16
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-21
16-17
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-21
17-18
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC-02-21
18 - BTM
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-22
0-1
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-22
1-2
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-22
2-3
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-22
3-4
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-22
4-5
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-22
5-6
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-22
6-7
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-22
7-8
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-22
8-9
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-22
9-10
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-22
10-11
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-22
11-12
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-22
12 -13
0
0.5
1.0'

CPE-UNO
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Chaland Headland and Pelican Island Project Areas
EMVCO2-22
13 -14
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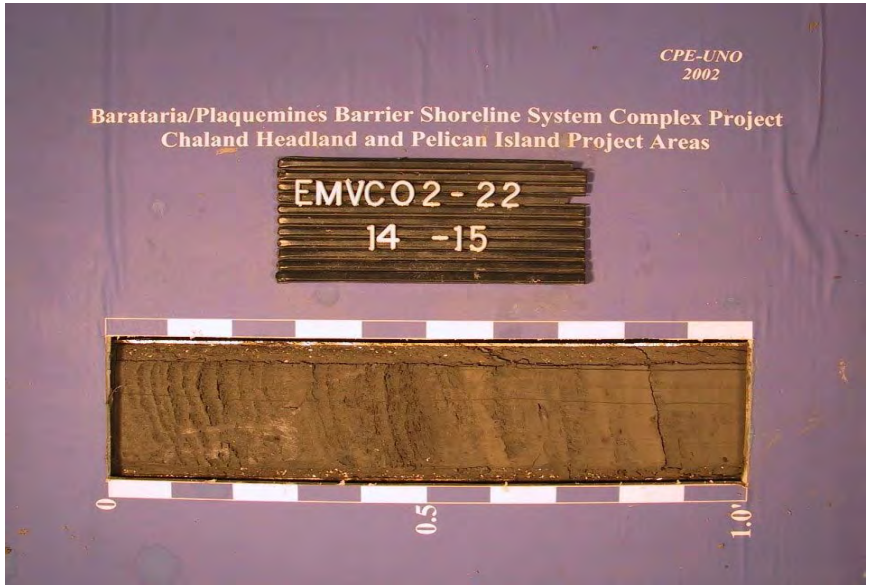
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Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
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14 -15
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-22
15 -16
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-22
16 -17
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-22
17 - BTM
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC - 02 - 23
0 - 1
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC - 02 - 23
1 - 2
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC - 02 - 23
2 - 3
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC - 02 - 23
3 - 4
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC - 02 - 23
4 - 5
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0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC - 02 - 23
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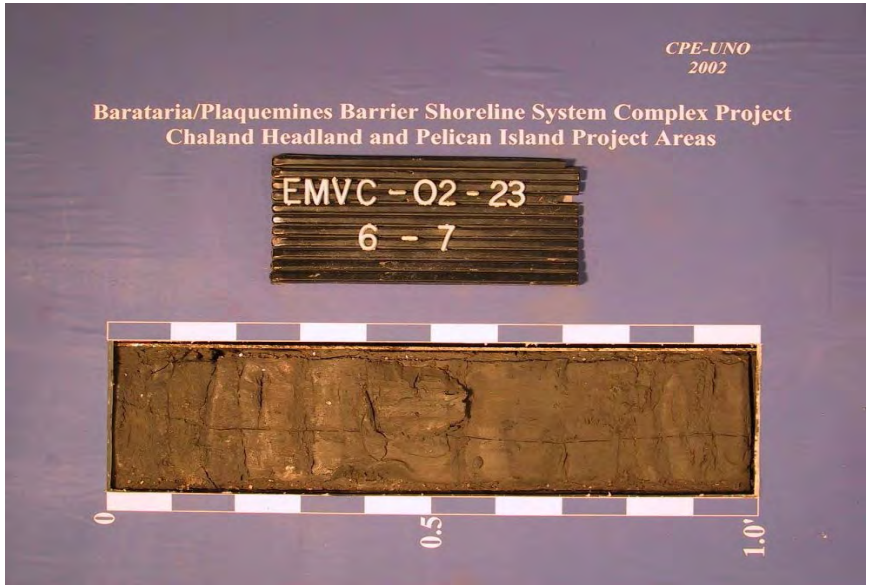
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CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC - 02 - 23
7 - 8
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC - 02 - 23
8 - 9
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC - 02 - 23
9 - 10
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0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC - 02 - 23
10 - 11
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC - 02 - 23
11 - 12
0
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC - 02 - 23
12 - 13
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0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC - 02 - 23
13 - 14
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC - 02 - 23
14 - 15
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC - 02 - 23
15 - 16
0
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1.0'

CPE-UNO
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Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC - 02 - 23
16 - 17
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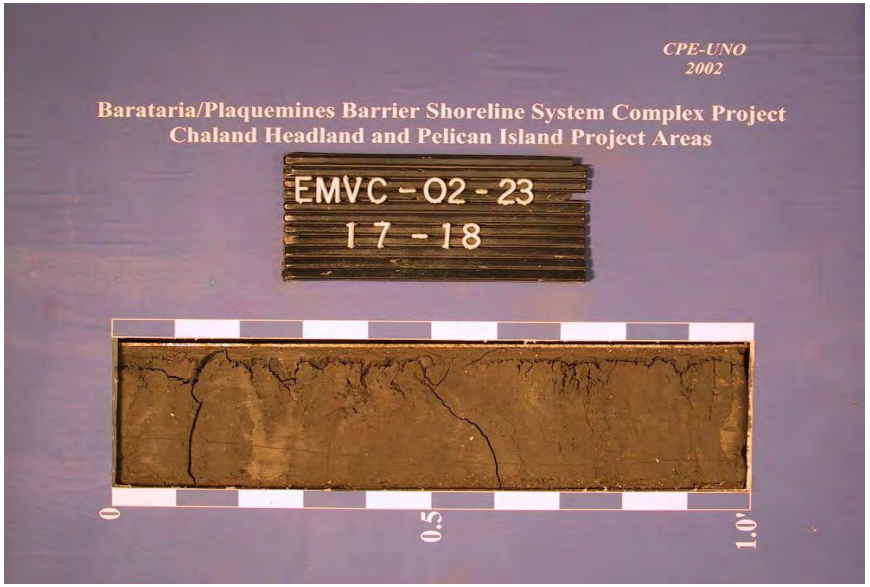
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CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVC - 02 - 23
18 - BTM
0
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-24
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-24
1-2
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-24
2-3
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-24
3-4
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-24
4-5
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
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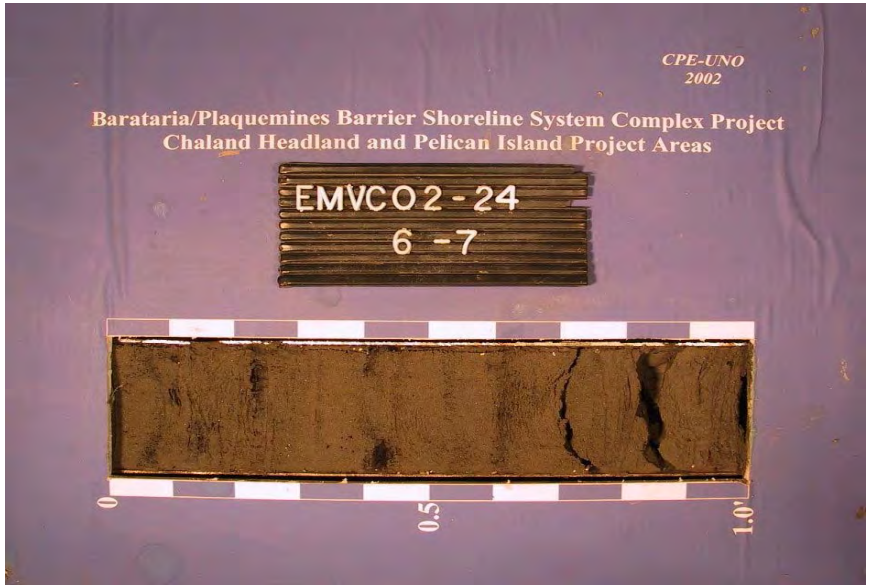
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CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-24
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-24
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-24
9 - 10
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-24
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CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-24
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CPE-UNO
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Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-24
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CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-24
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CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-24
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-24
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CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-24
16 - 17
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CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-24
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CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-24
18 - BTM
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-25
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CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-25
1-2
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-25
2-3
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CPE-UNO
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Chaland Headland and Pelican Island Project Areas
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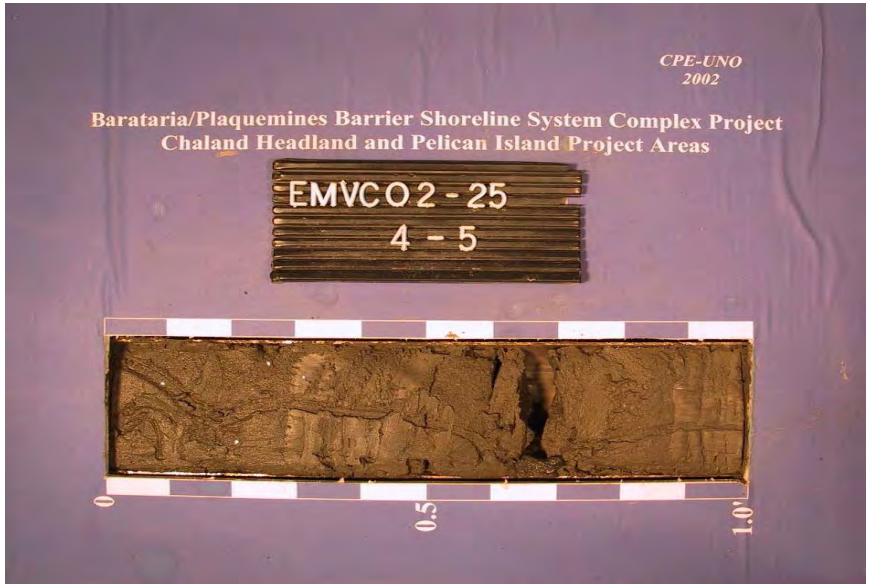
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CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-25
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CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-25
6-7
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-25
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CPE-UNO
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Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-25
8 - 9
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-25
9 - 10
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1.0'

CPE-UNO
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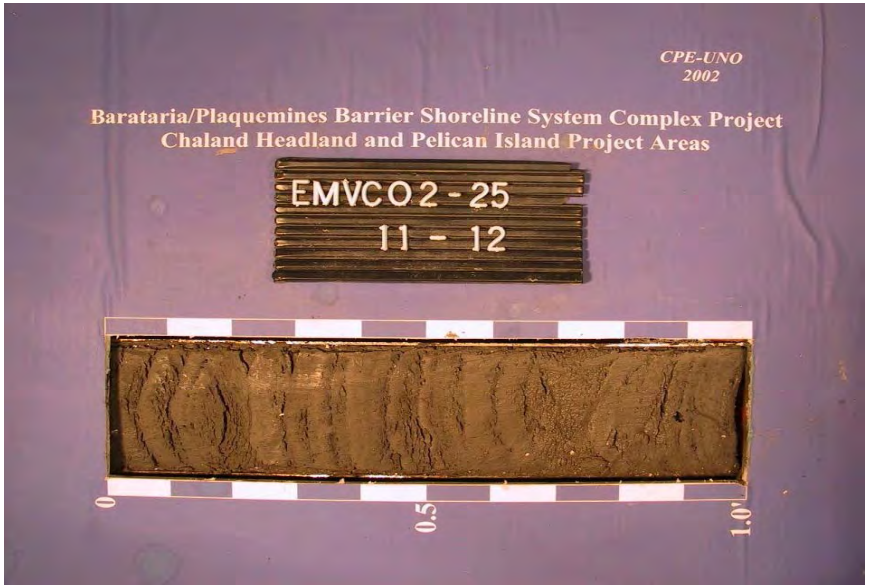
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CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-25
12 - 13
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-25
13 - 14
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1.0'

CPE-UNO
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Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
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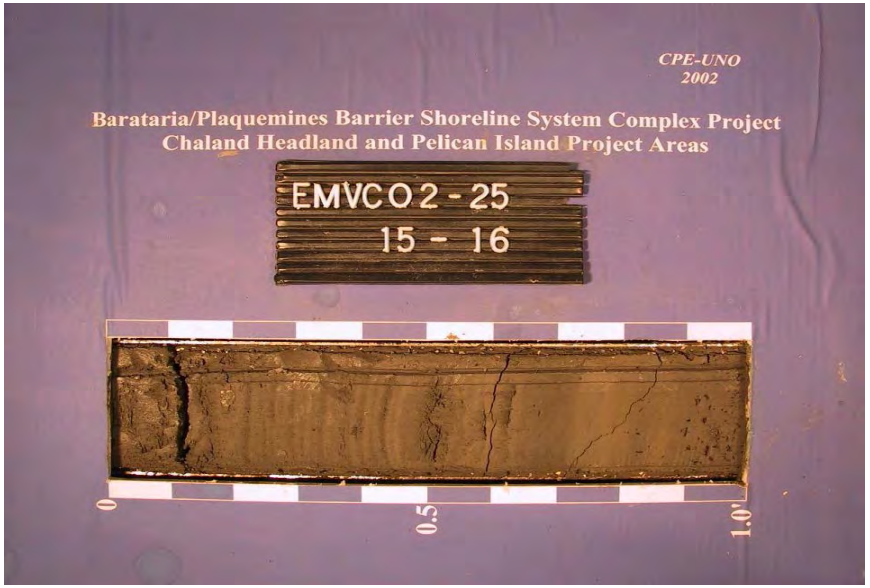
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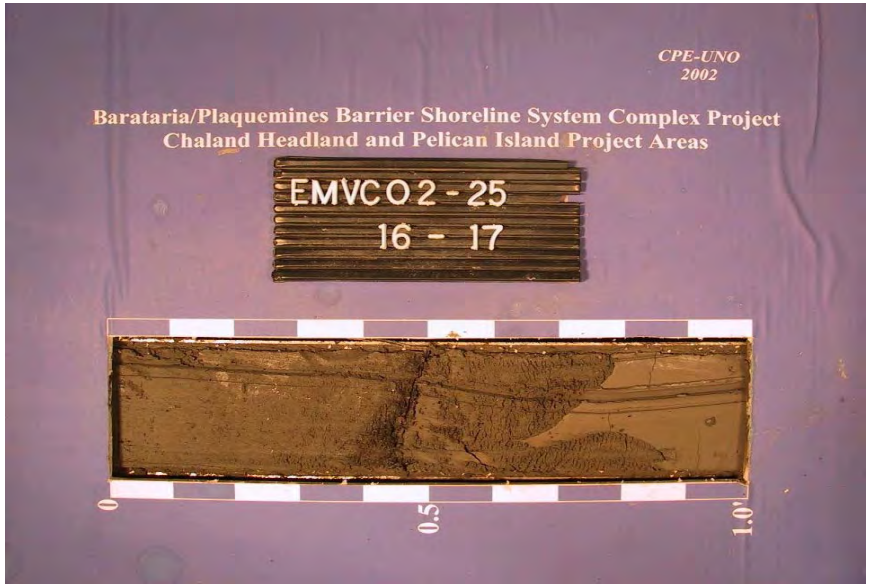
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Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-25
17 - 18
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-25
18 - 19
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-25
19 - BTM
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMV CO2-26
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMV CO2-26
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMV CO2-26
2-3
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMV CO2-26
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMV CO2-26
4 - 5
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMV CO2-26
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMV CO2-26
6 - 7
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMV CO2-26
7 - 8
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMV CO2-26
8-9
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0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMV CO2-26
9-10
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMV CO2-26
10-11
0
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMV CO2-26
11-12
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMV CO2-26
12-13
0
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMV CO2-26
13-14
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMV CO2-26
14-15
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMV CO2-26
15-16
0
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMV CO2-26
16-17
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMV CO2-26
17-18
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMV CO2-27
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1.0'

CPE-UNO
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Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
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Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMV CO2-27
3 -4
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMV CO2-27
4-5
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMV CO2-27
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CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMV CO2-27
6-7
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CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMV CO2-27
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CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMV CO2-27
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Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMV CO2-27
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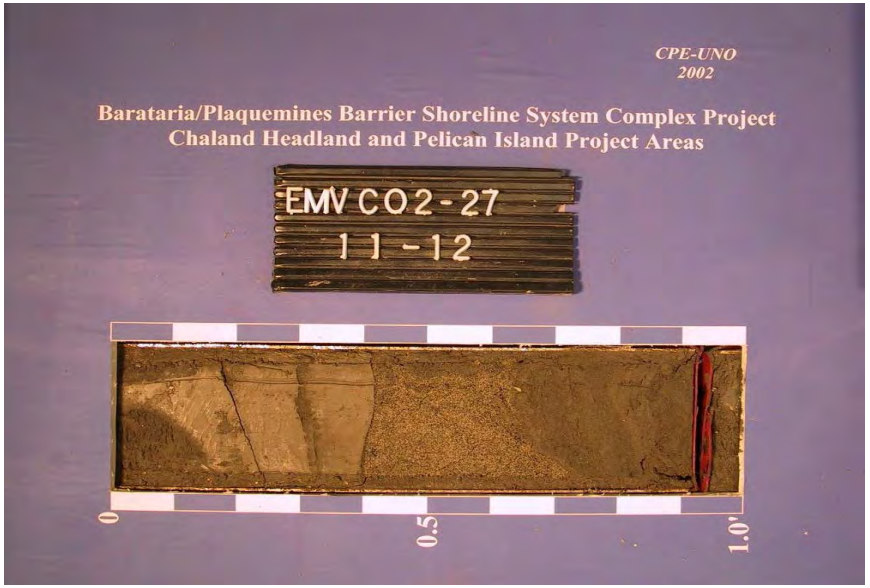
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CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMV CO2-27
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CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
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CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
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CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMV CO2-27
15-16
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMV CO2-27
16 -17
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMV CO2-27
17 - BTM
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CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMV CO2-28
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CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMV CO2-28
1 - 2
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMV CO2-28
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMV CO2-28
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMV CO2-28
4 - 5
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMV CO2-28
5 - 6
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CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMV CO2-28
6 - 7
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMV CO2-28
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMV CO2-28
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CPE-UNO
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Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMV CO2-28
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CPE-UNO
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Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
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CPE-UNO
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Barataria/Plaquemines Barrier Shoreline System Complex Project
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CPE-UNO
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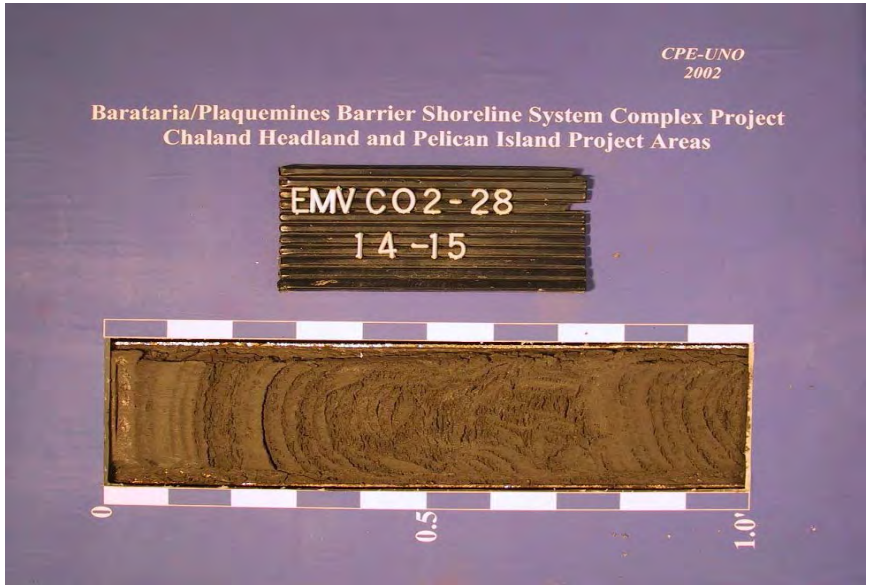
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CPE-UNO
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Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
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CPE-UNO
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Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
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CPE-UNO
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Chaland Headland and Pelican Island Project Areas
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CPE-UNO
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Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMV CO2-28
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CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-29
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-29
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0.5'
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-29
2 - 3
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-29
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1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-29
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CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-29
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CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
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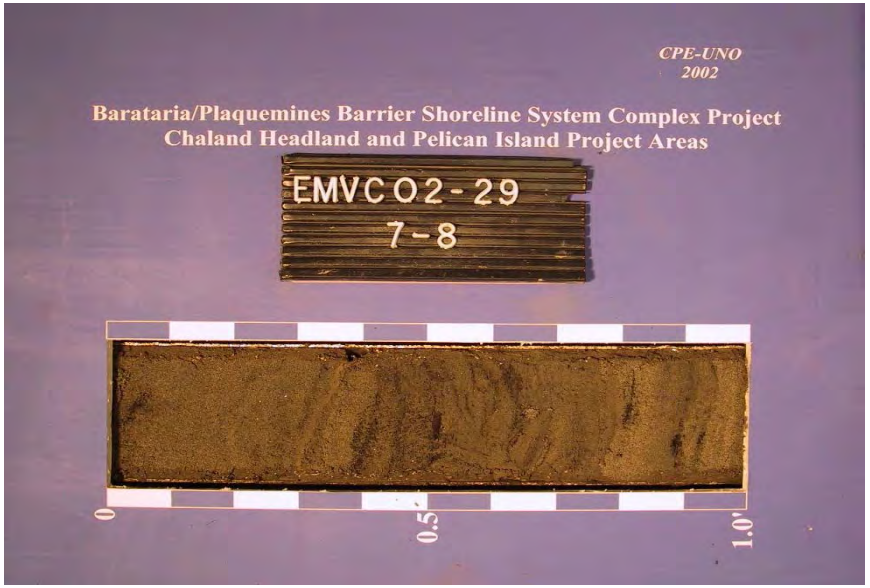
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Chaland Headland and Pelican Island Project Areas
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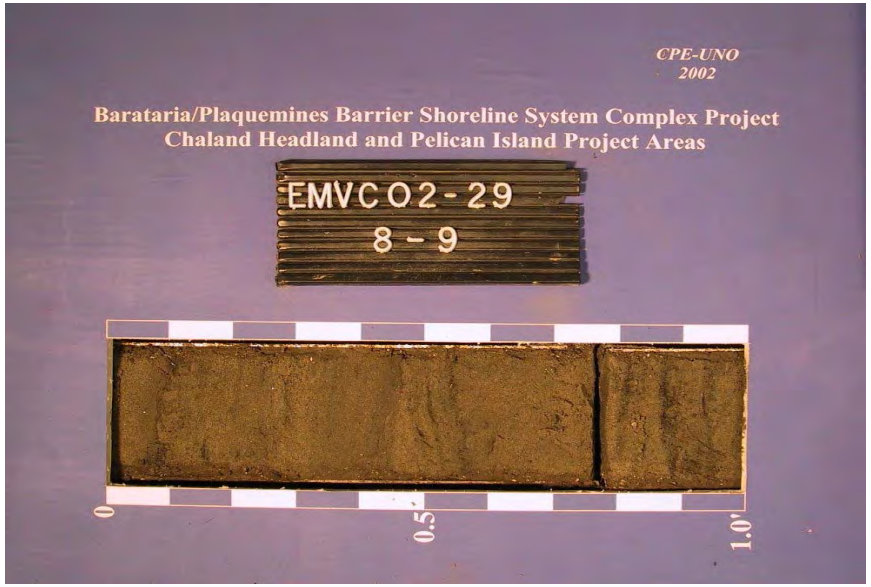
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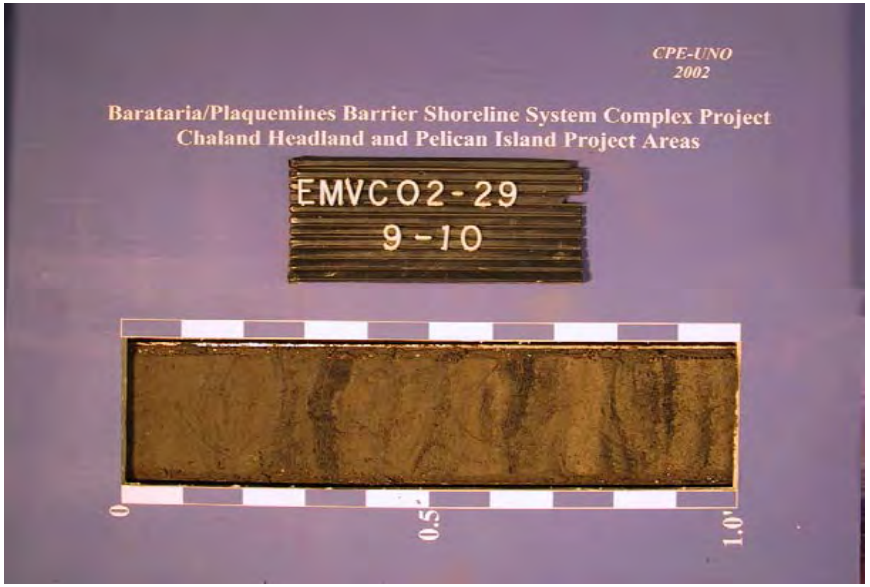
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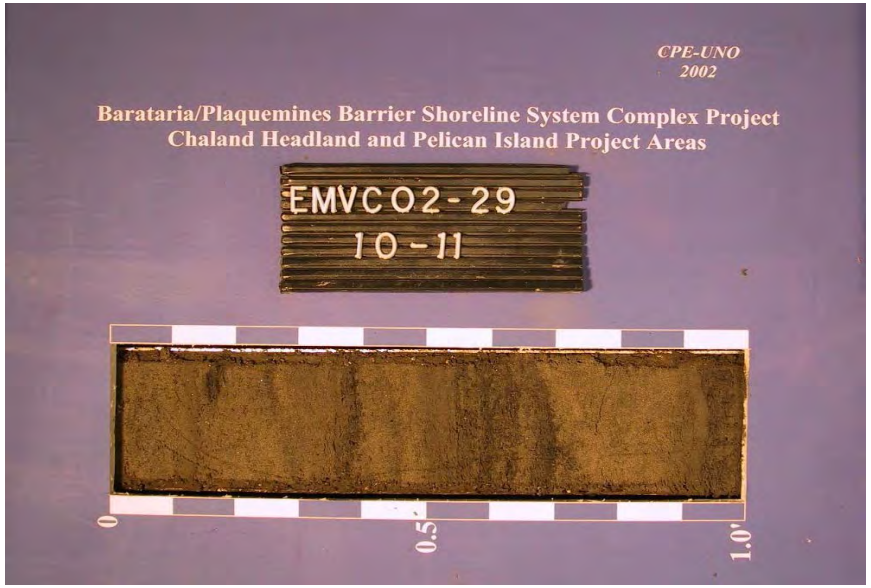
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CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-29
11-12
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CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-29
12 -13
0
0.5'
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-29
13 -14
0
0.5'
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-29
14 -15
0
0.5'
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-29
15 -16
0
0.5'
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-29
16-BTM
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-3O
0 - 1
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-3O
1 - 2
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-3O
2 - 3
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-3O
3 - 4
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-3O
4-5
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-3O
5-6
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-3O
6-7
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-3O
7-8
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-3O
8 - 9
0
0.5
1.0'

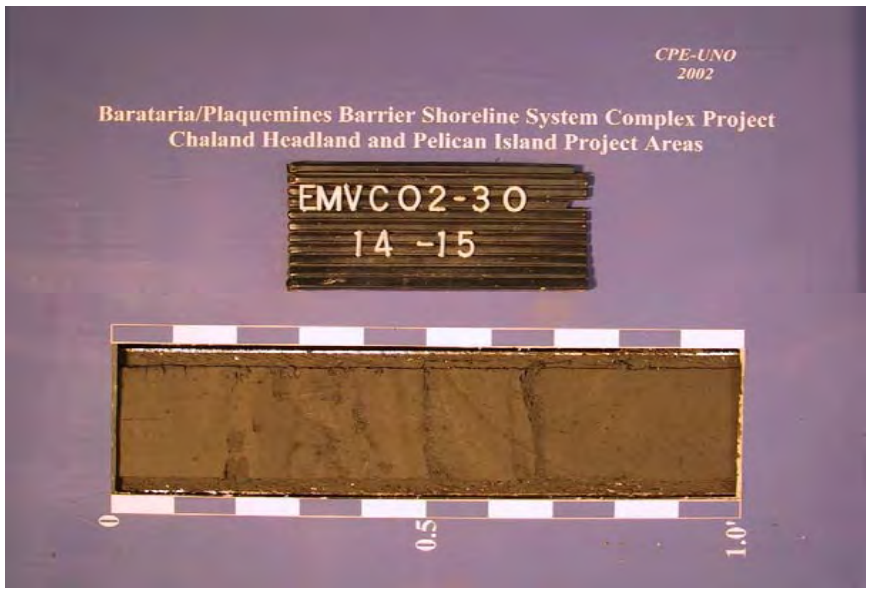
CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-3O
9-10
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-3O
10-11
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-3O
11-12
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-3O
12 -13
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-3O
13 -14
0
0.5
1.0'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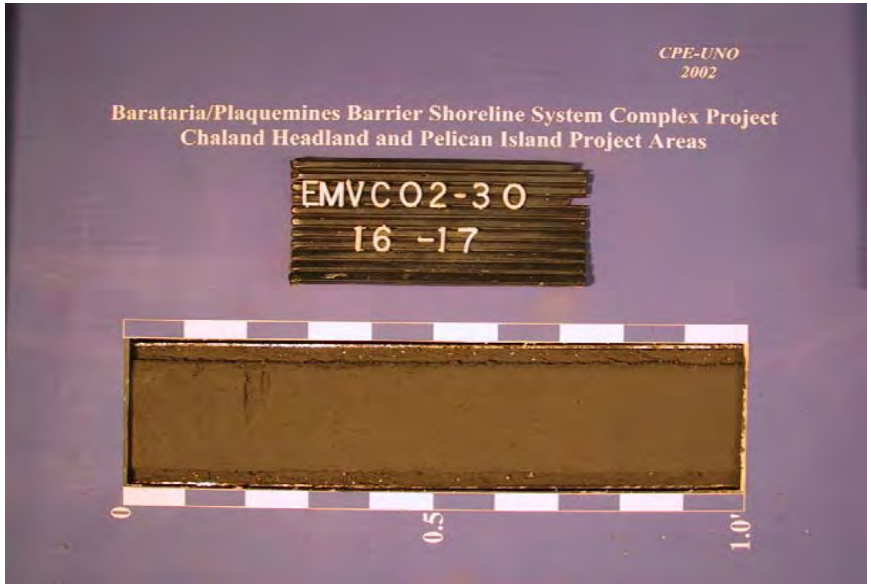
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-3O
14 -15
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-3O
15 -16
0
0.5
1.0'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Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-30
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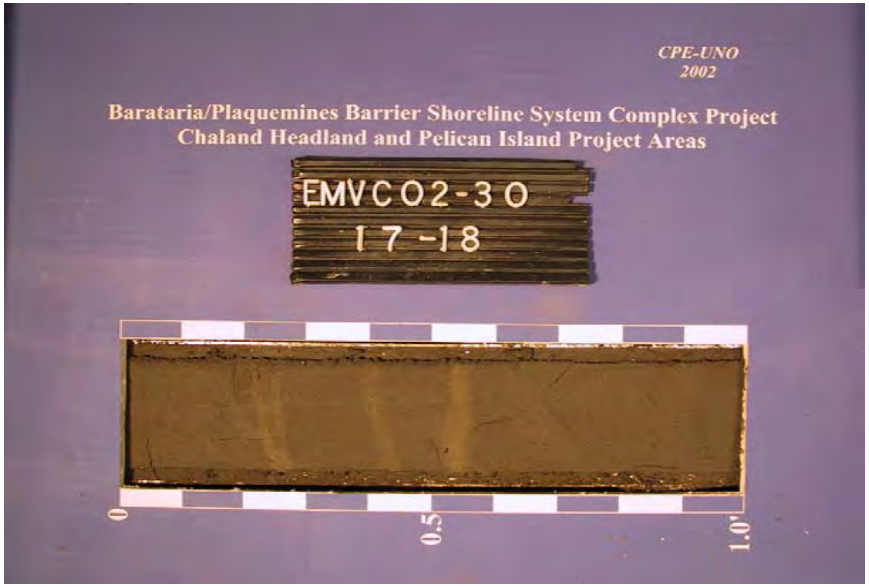
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Chaland Headland and Pelican Island Project Areas
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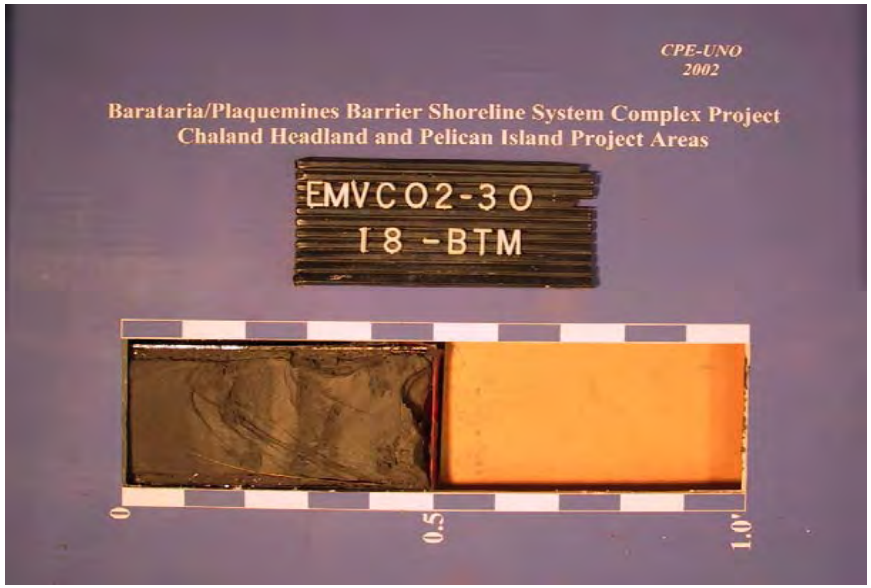
1.0'

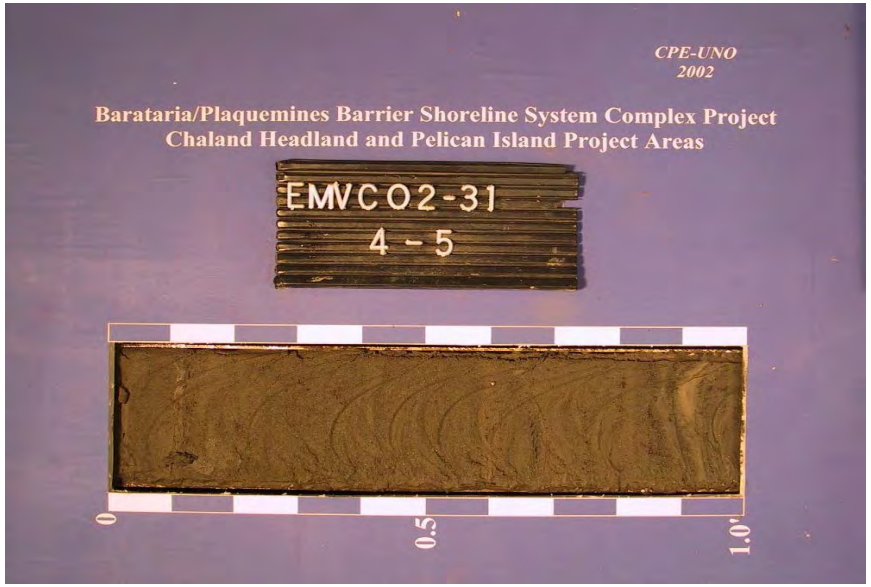

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-30
18 -BTM
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-31
0 - 1
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-31
1 - 2
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-31
2 - 3
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-31
3 - 4
0
0.5
1.0'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2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-31
4 - 5
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-31
5 - 6
0
0.5
1.0'

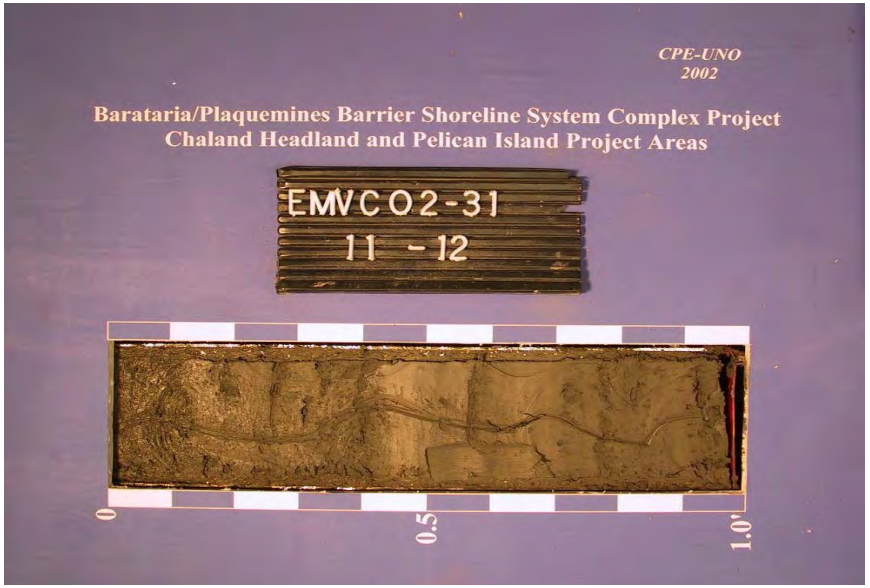
CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-31
6 - 7
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-31
7 - 8
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-31
8 - 9
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-31
9 - 10
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-31
10 - 11
0
0.5
1.0'


CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-31
11 - 12
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-31
12 - 13
0
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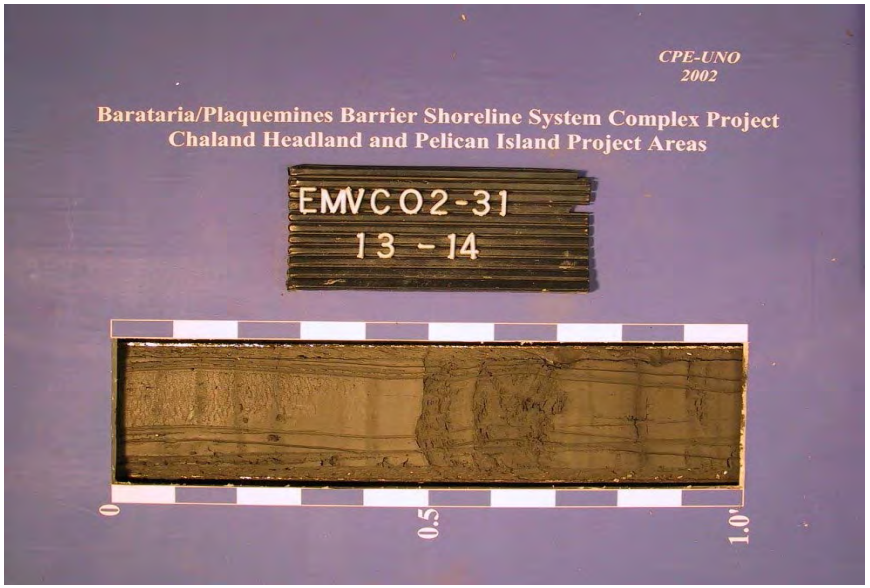
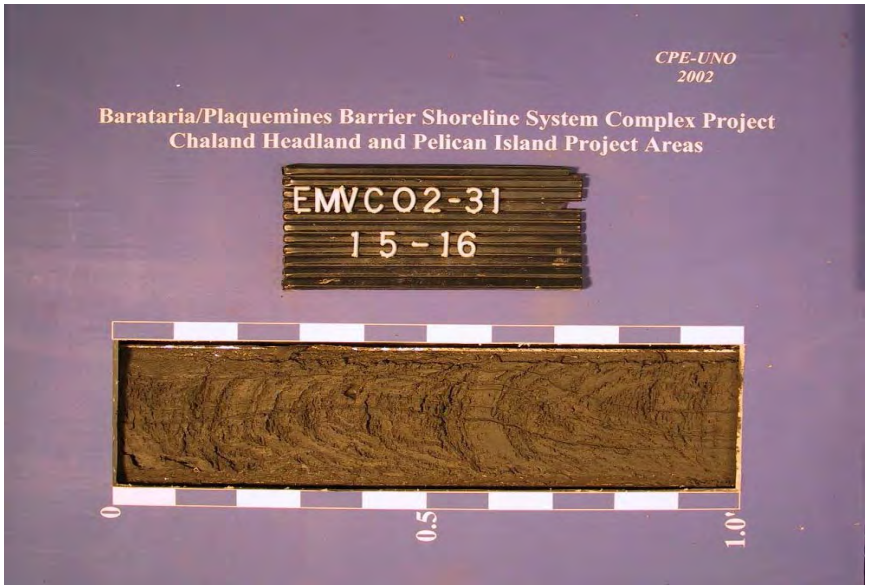
1.0'


CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-31
13 - 14
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-31
14 - 15
0
0.5
1.0'


CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-31
15 - 16
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-31
16 -17
0
0.5
1.0'

CPE-UNO
2002
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
EMVCO2-31
17 -BTM
0
0.5
1.0'

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EMVC-02-P1

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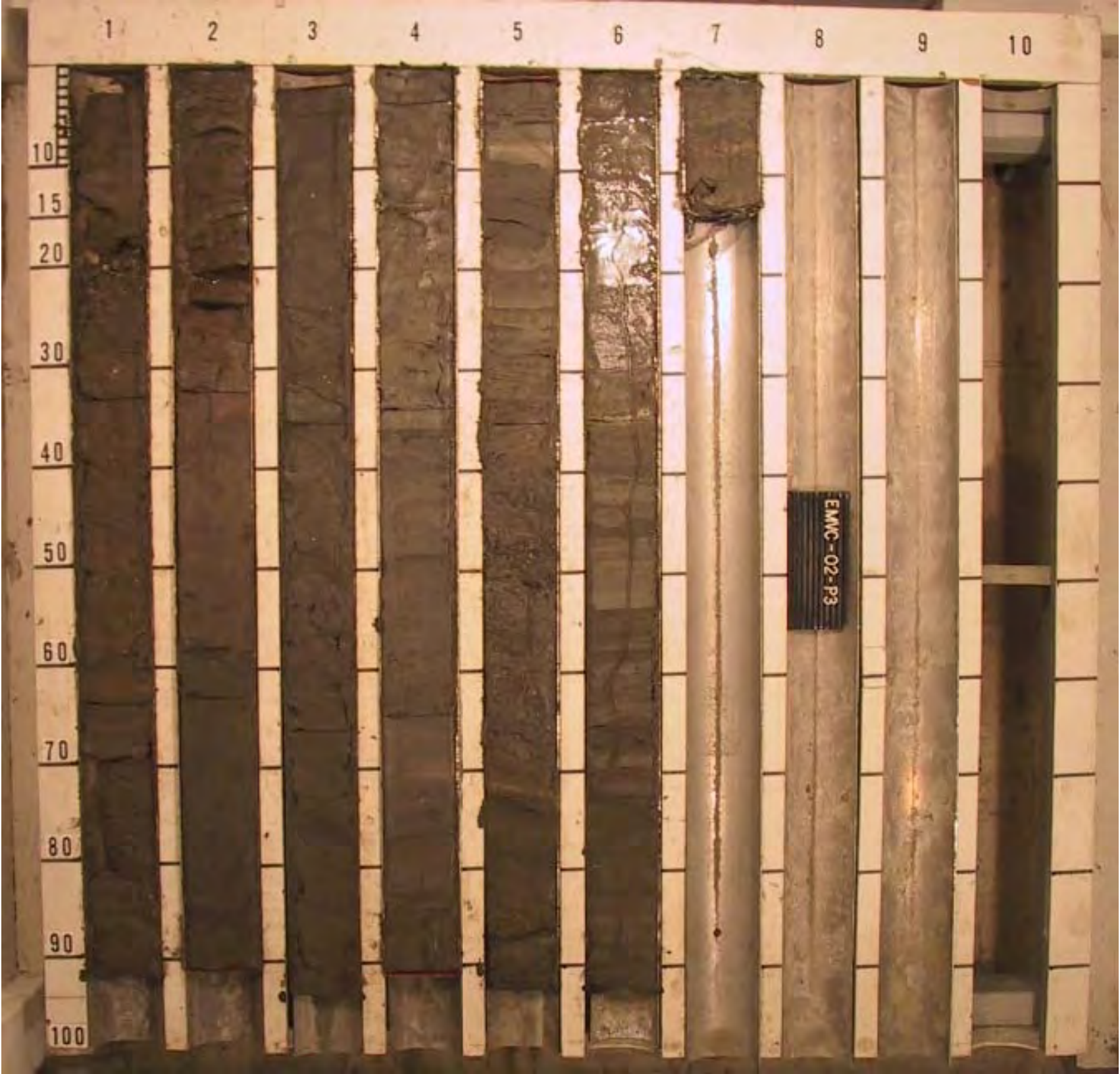
EMVC-02-P2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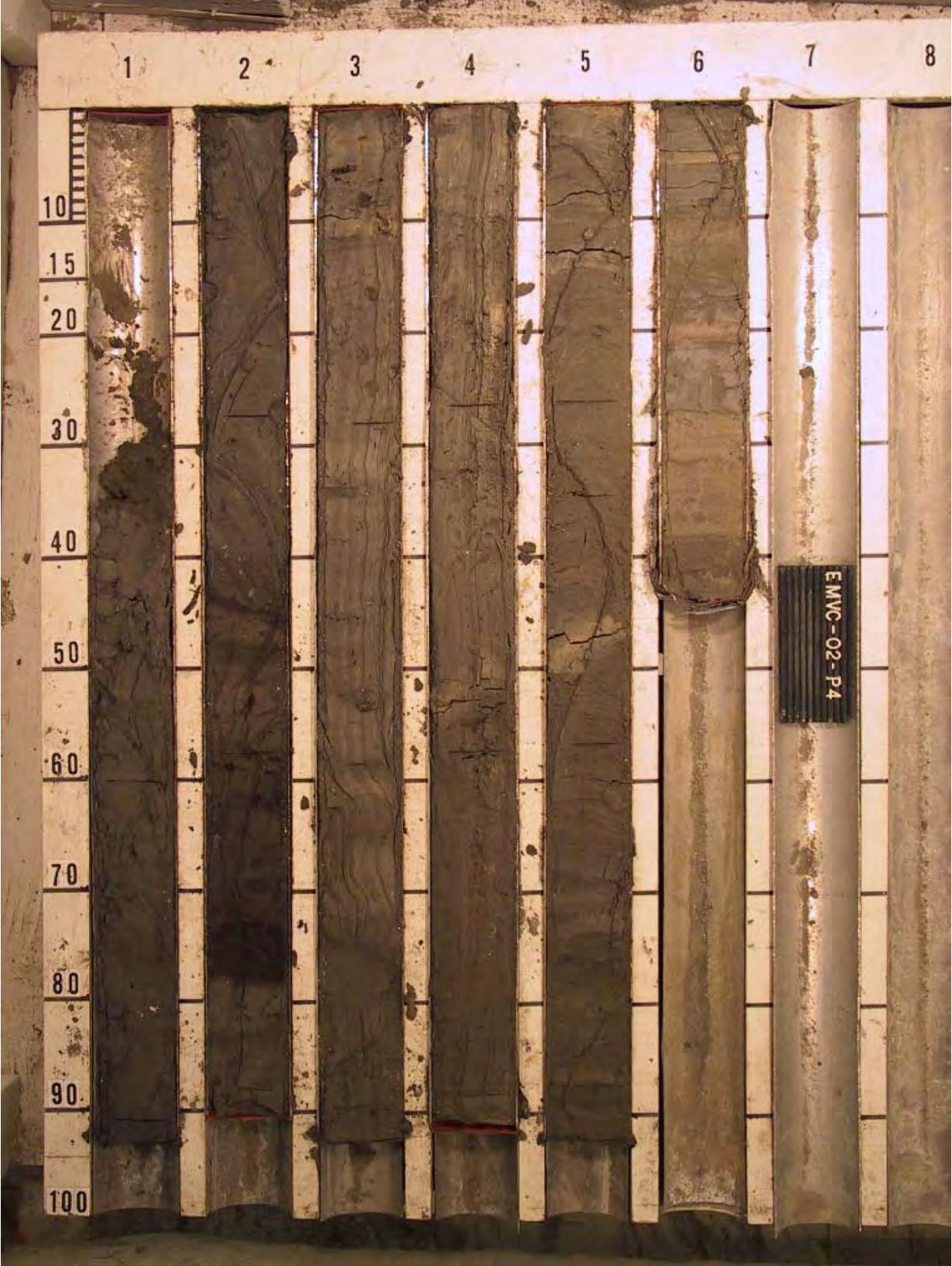
EMVC-02-P3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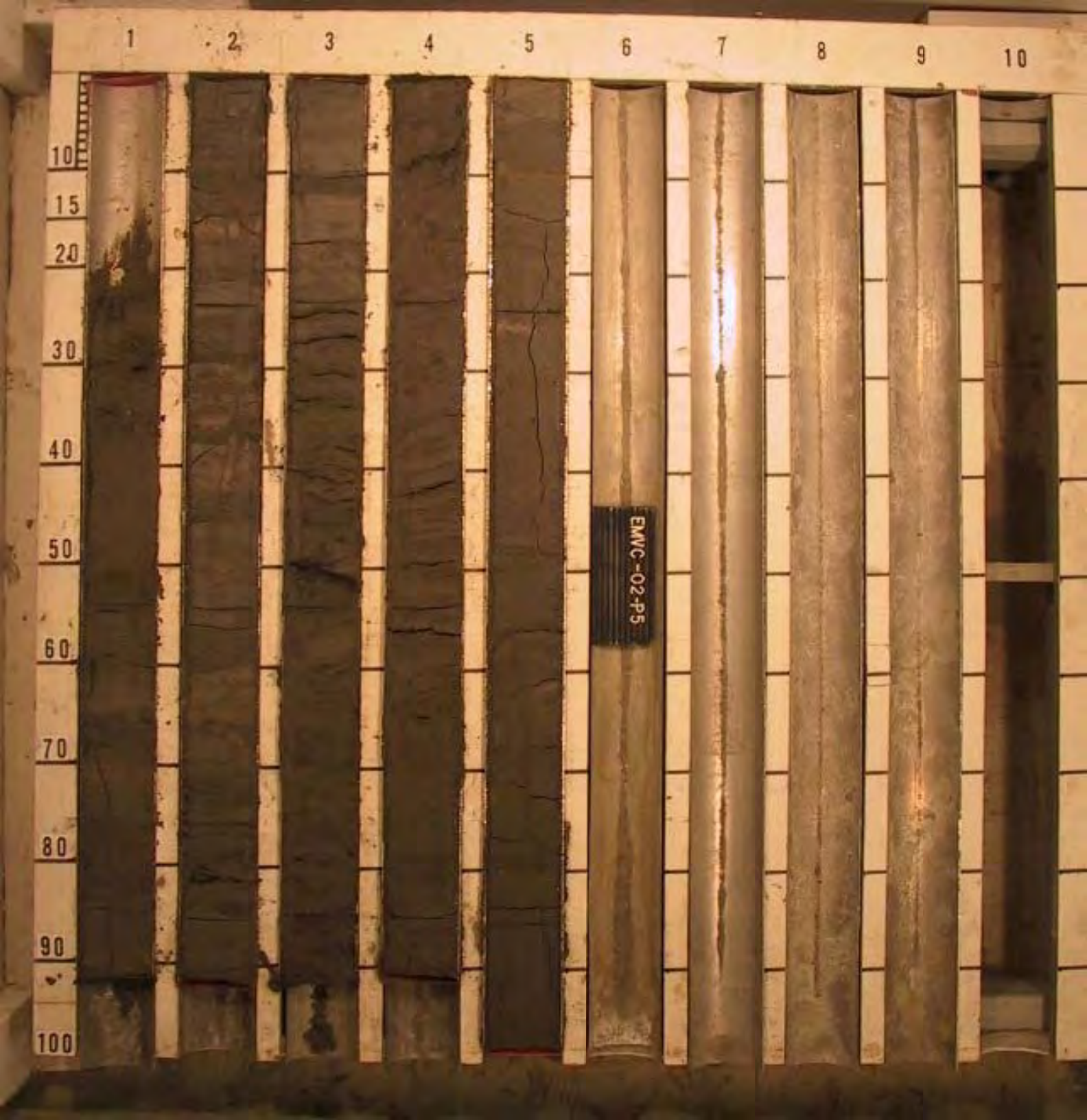
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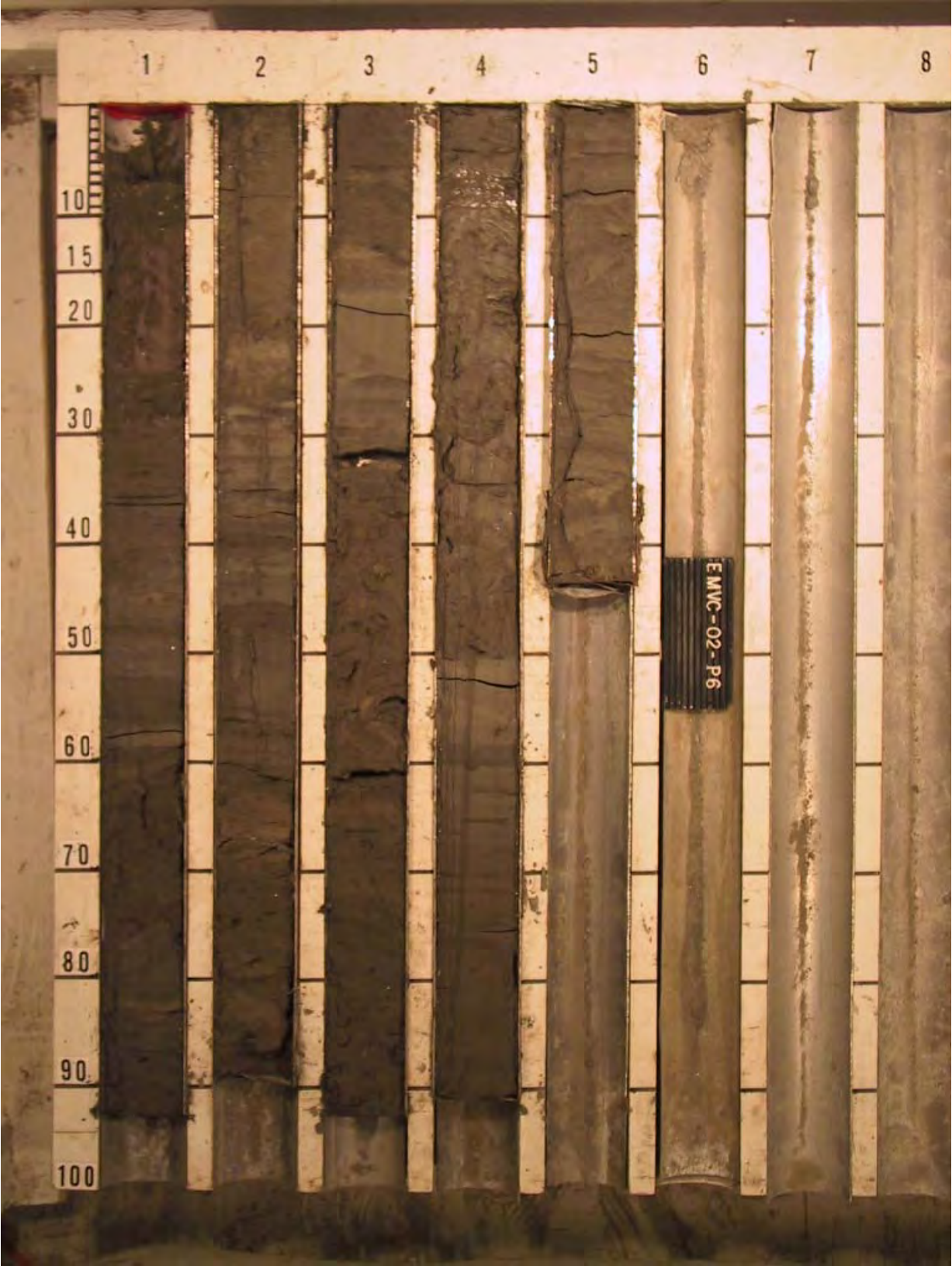
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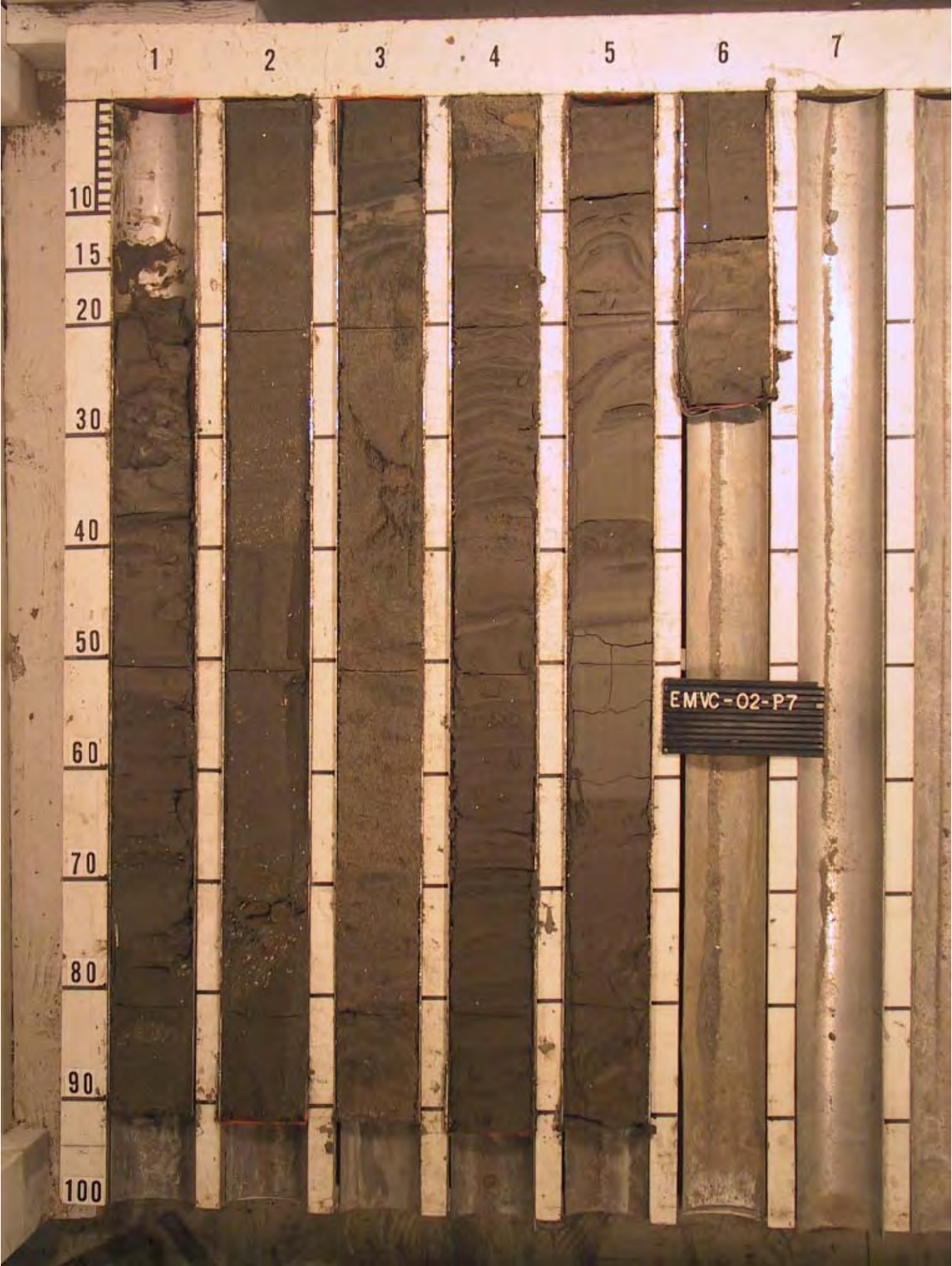
EMVC-02-P6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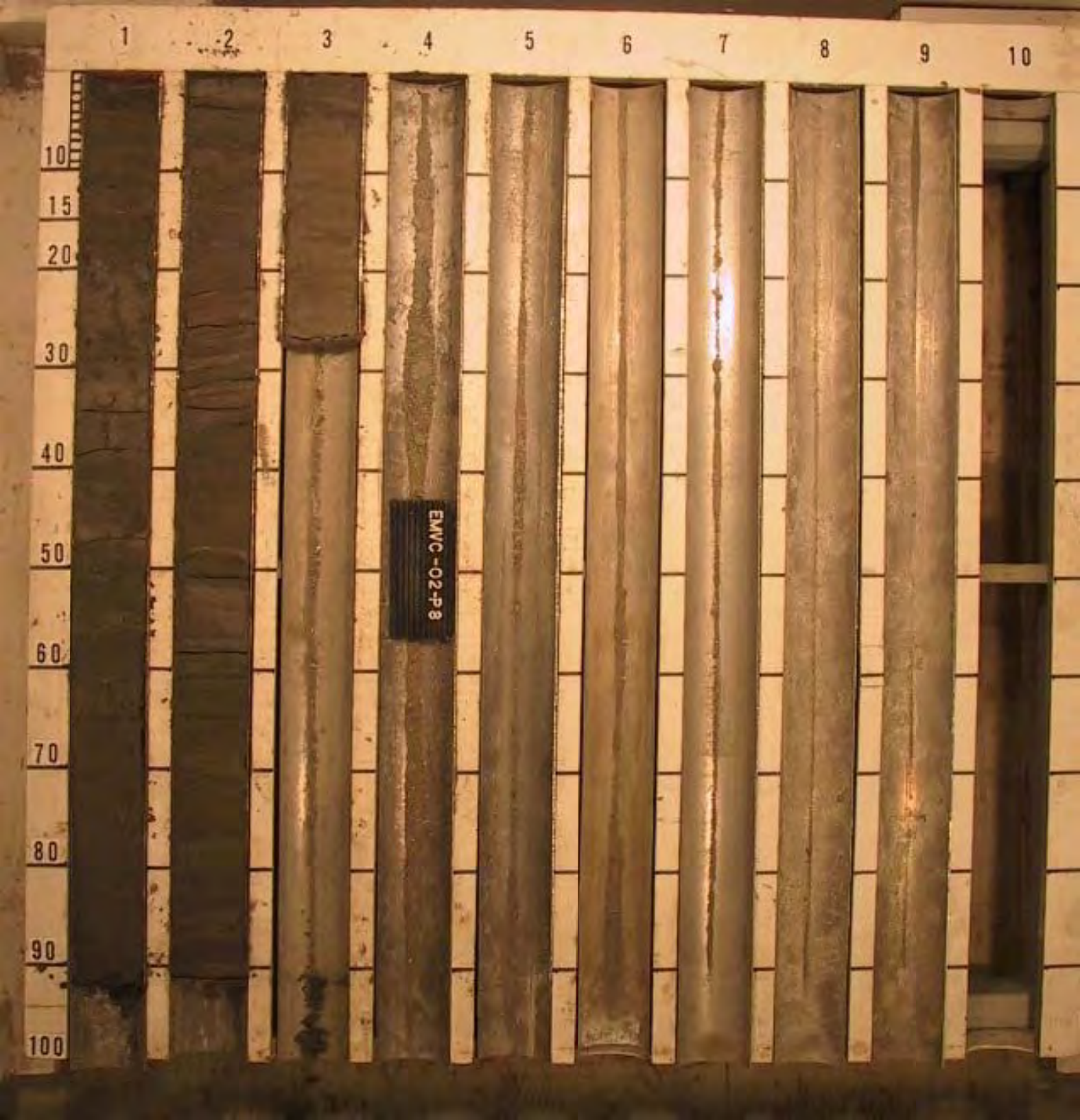
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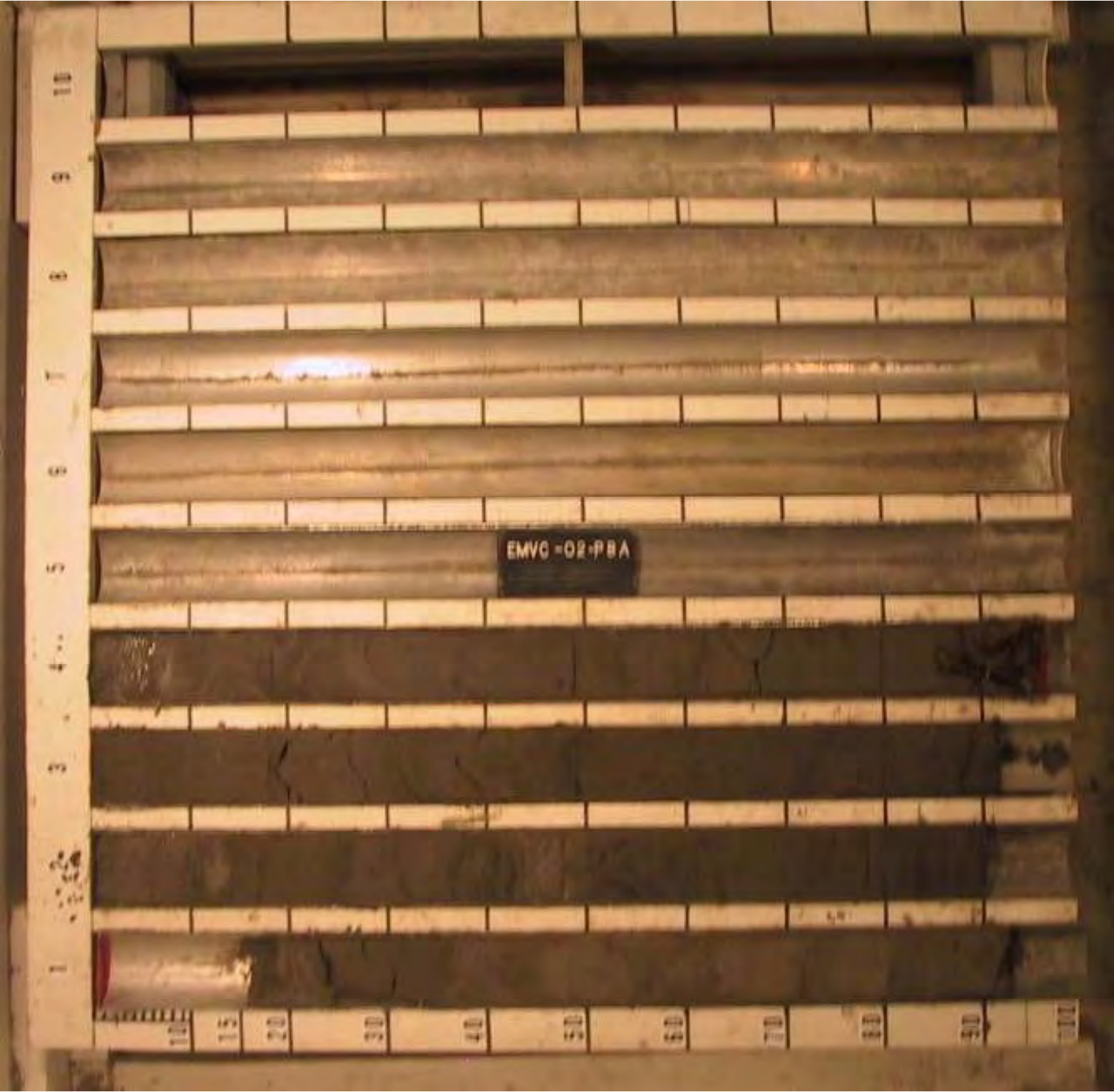
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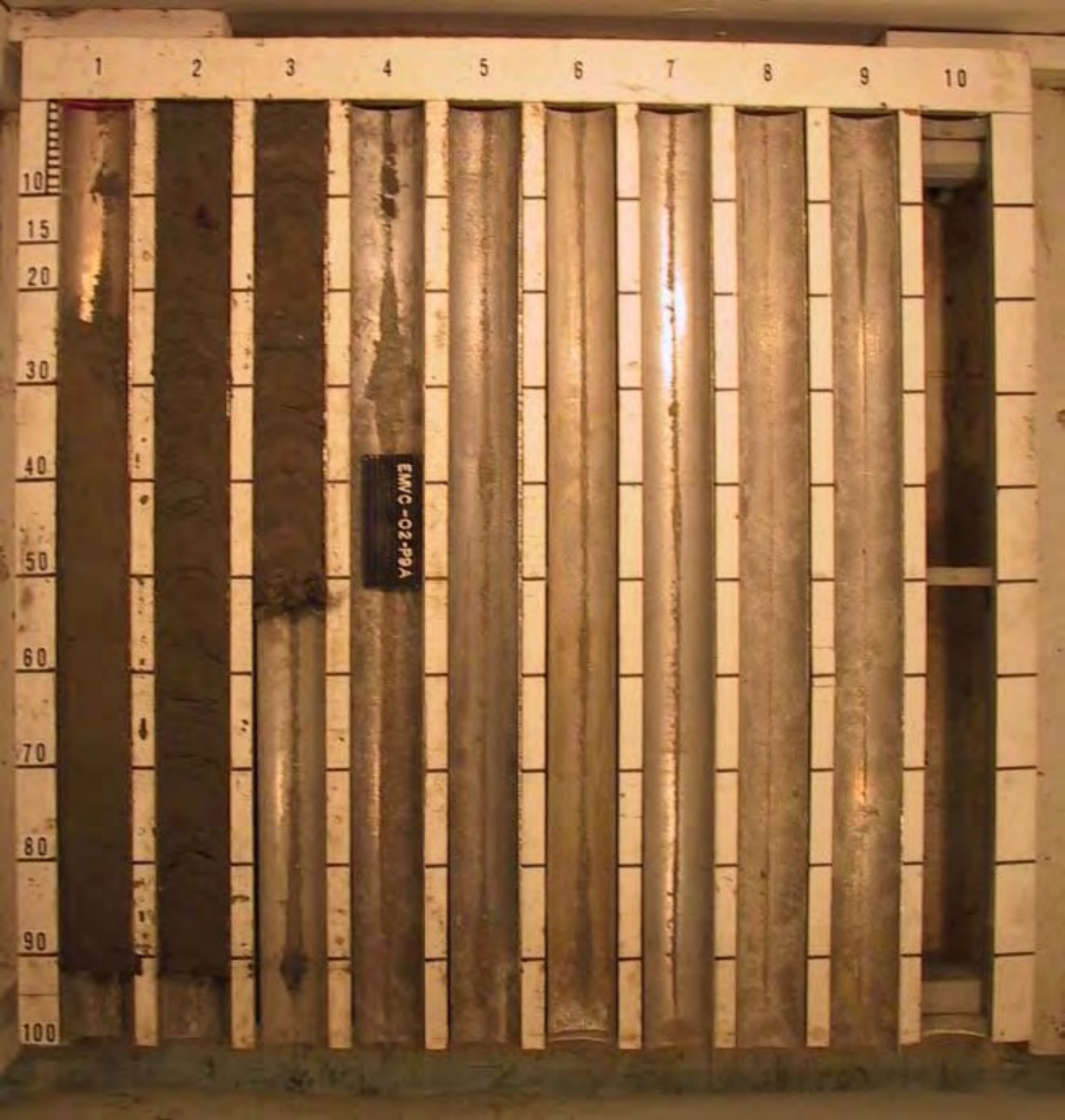
EMVC -02-P9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EMVC -02-P9A

EMVC-02-P10
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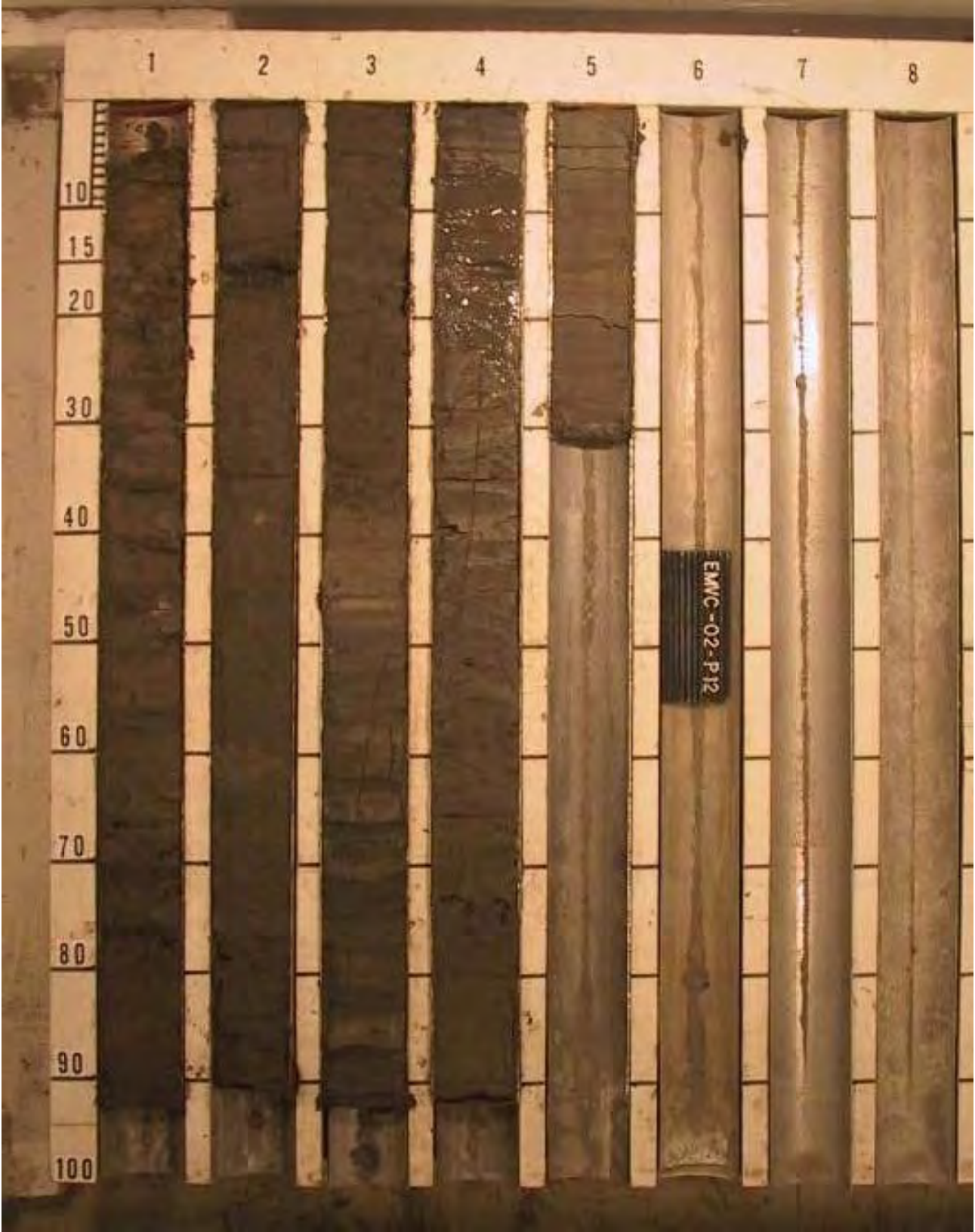
EMVC-02-P11A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EMVC-02-P12

EMVC-02-13
40

EMVC-02-14
54

EMVC-02-14 A
54

EMVCO2 - 15

EMWCO2-16

EMVCO2-16 A
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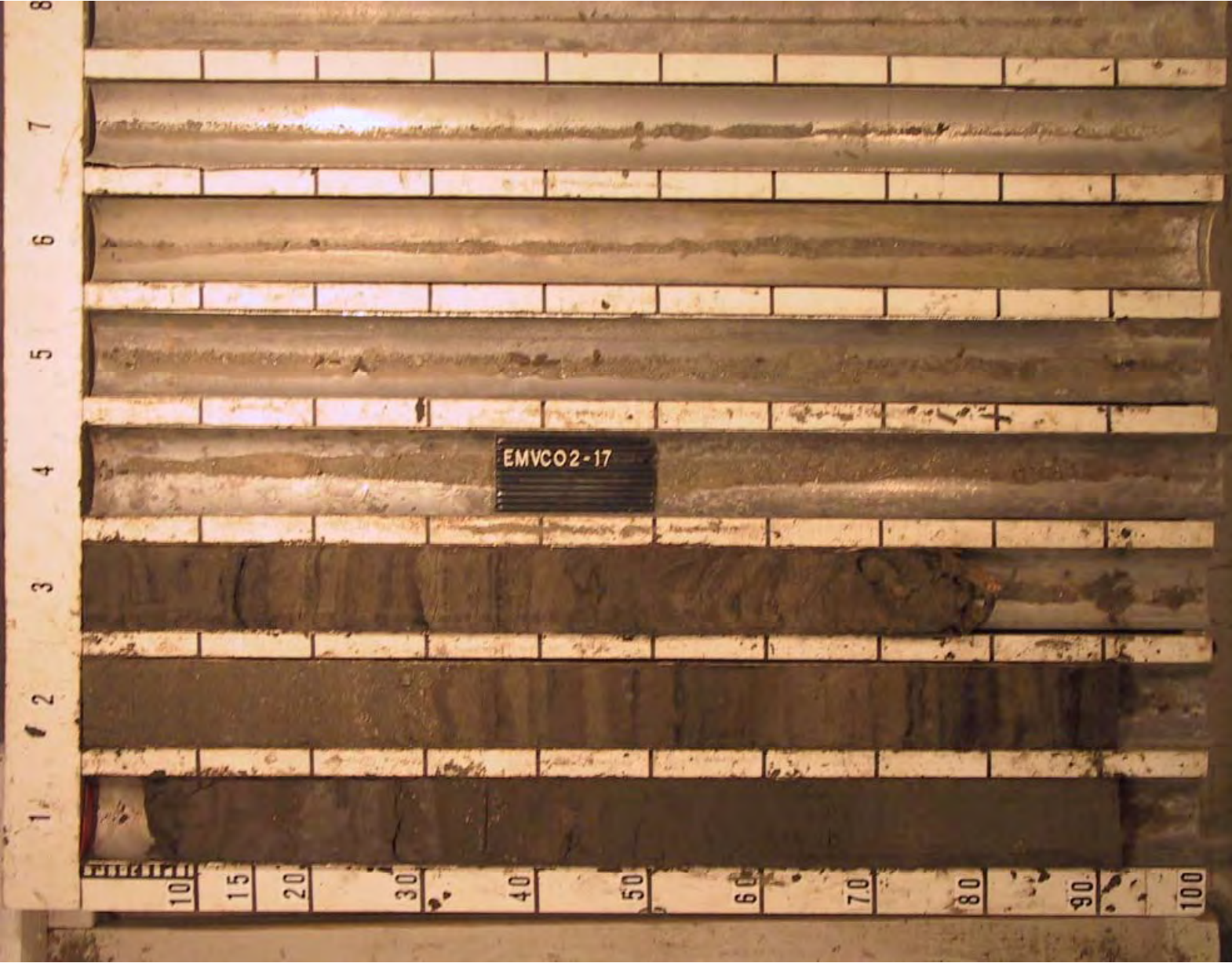
EMVCO2-17

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EMVCO2-17A

EMVCO2-18

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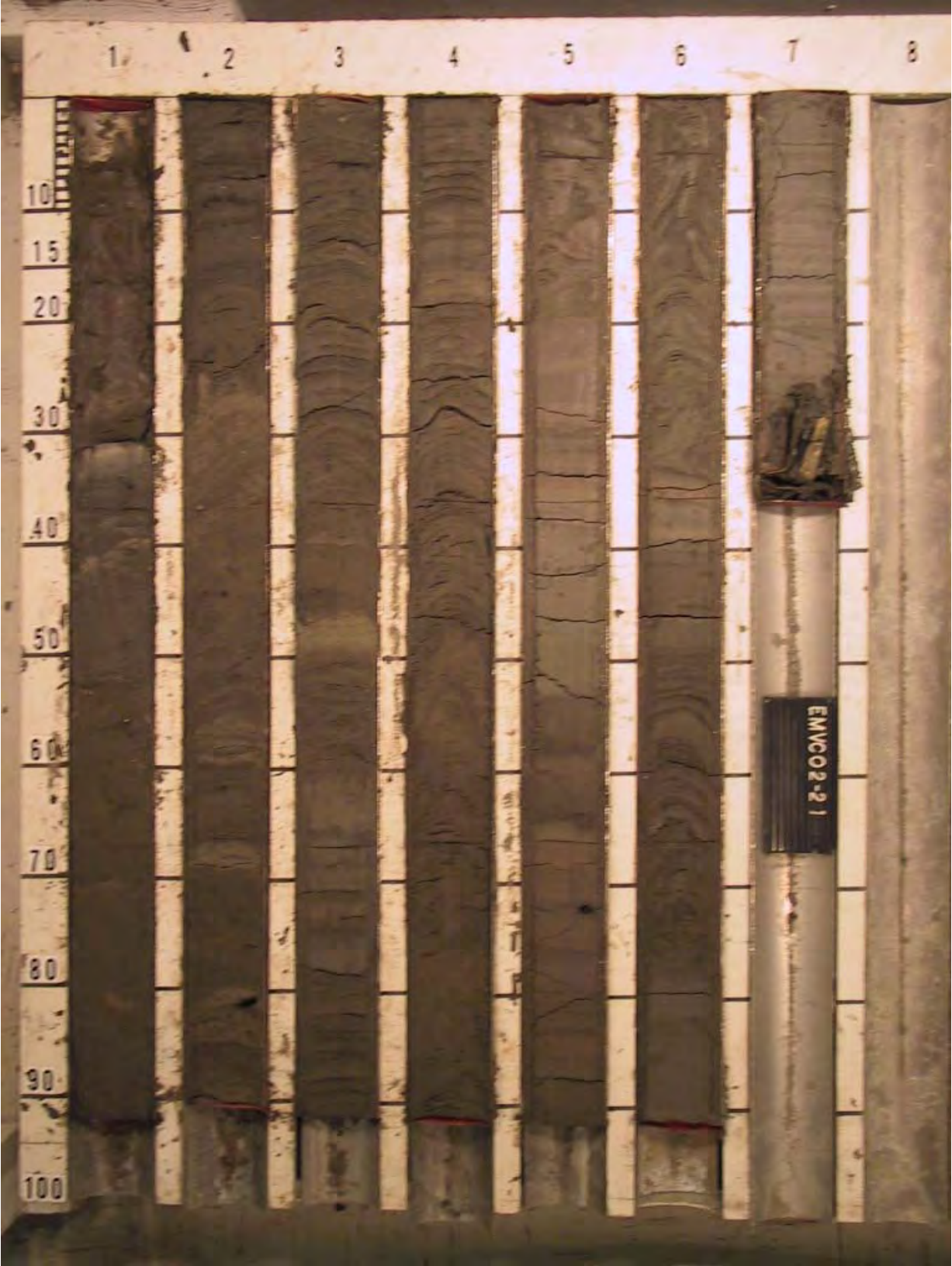
EMVCO2-19A

EMVC02-20

EMVC-02-20A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EMVC02-2 1

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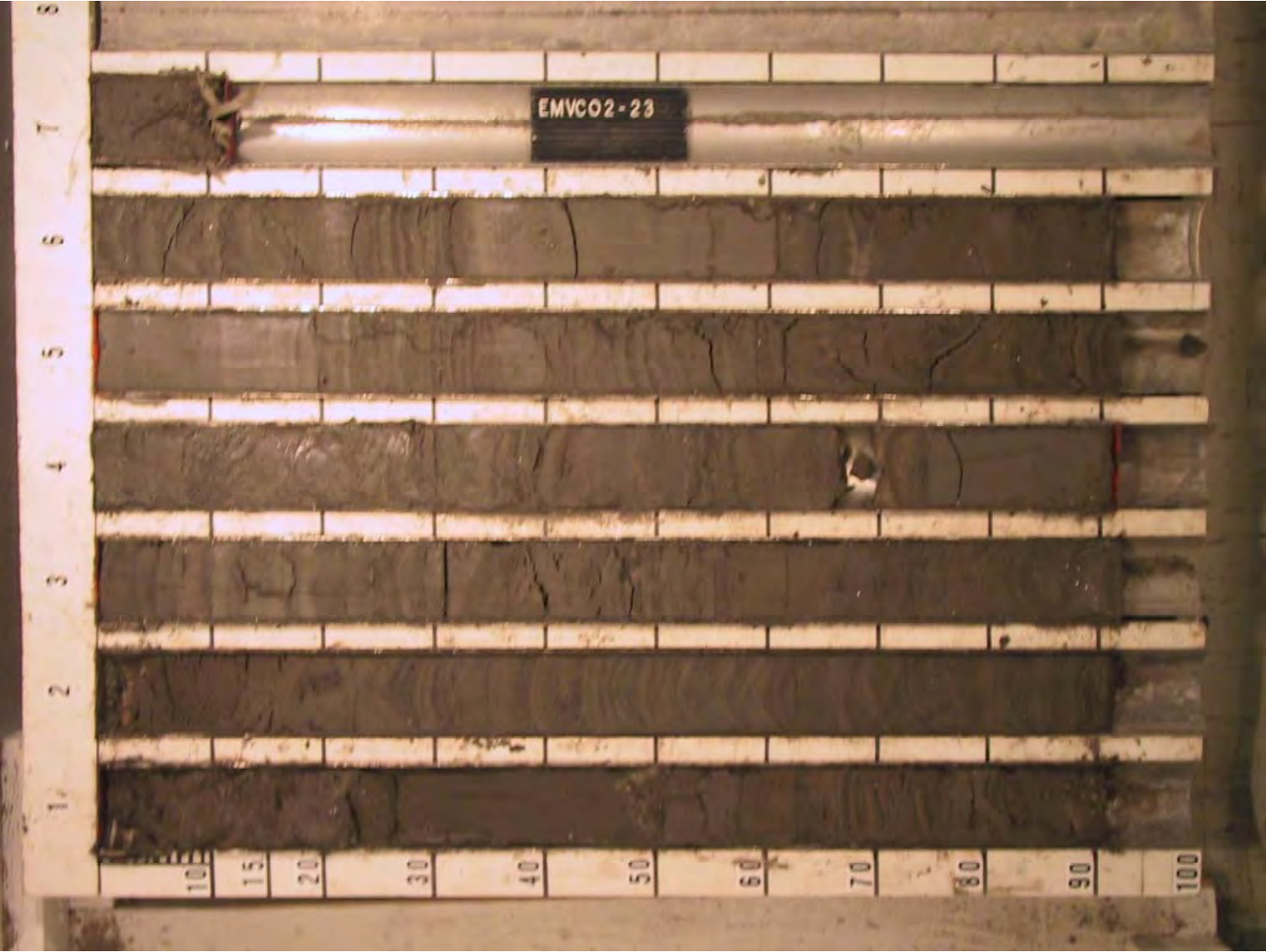
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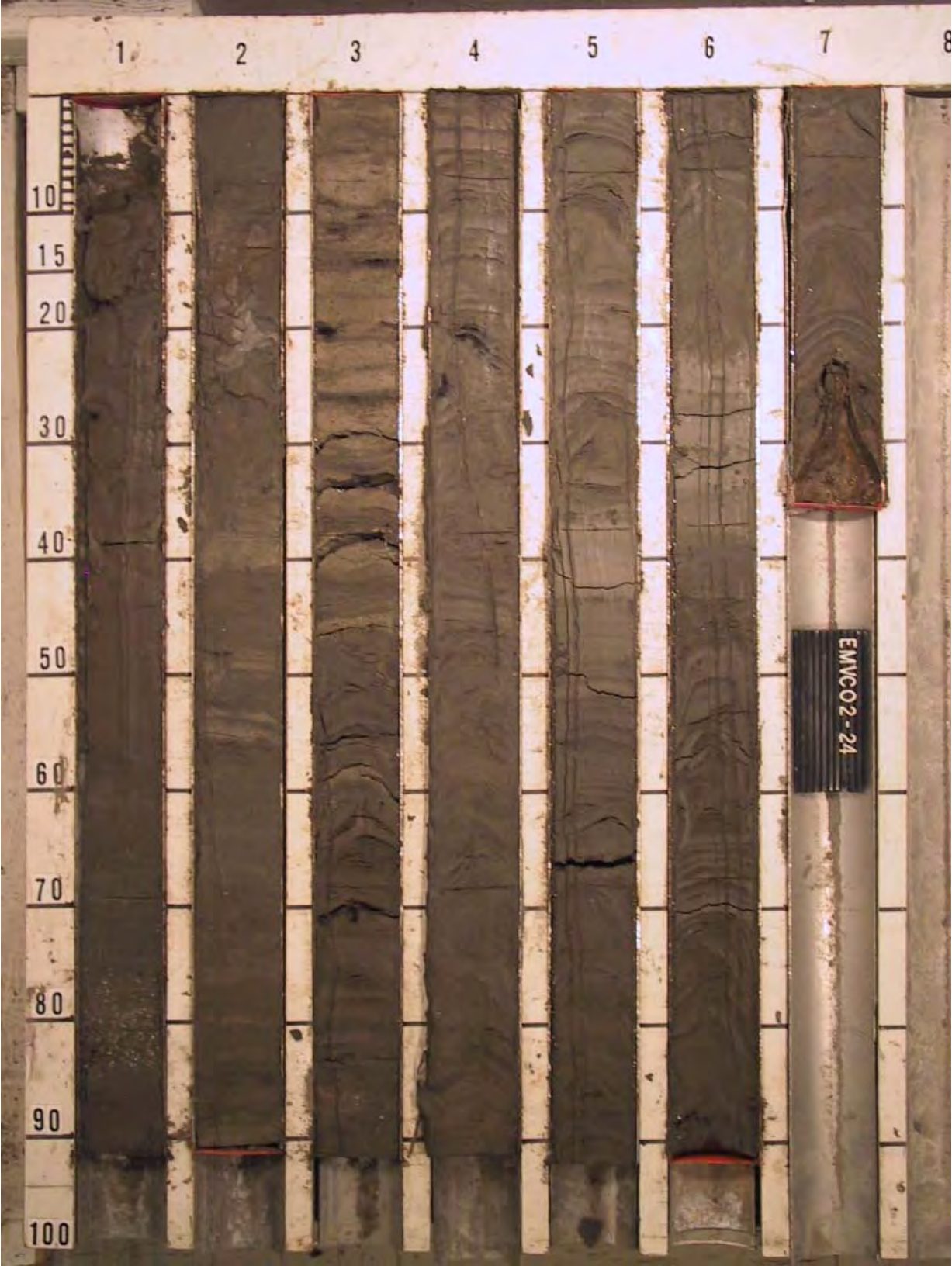
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EMVCO2-24

EMVCO2-25
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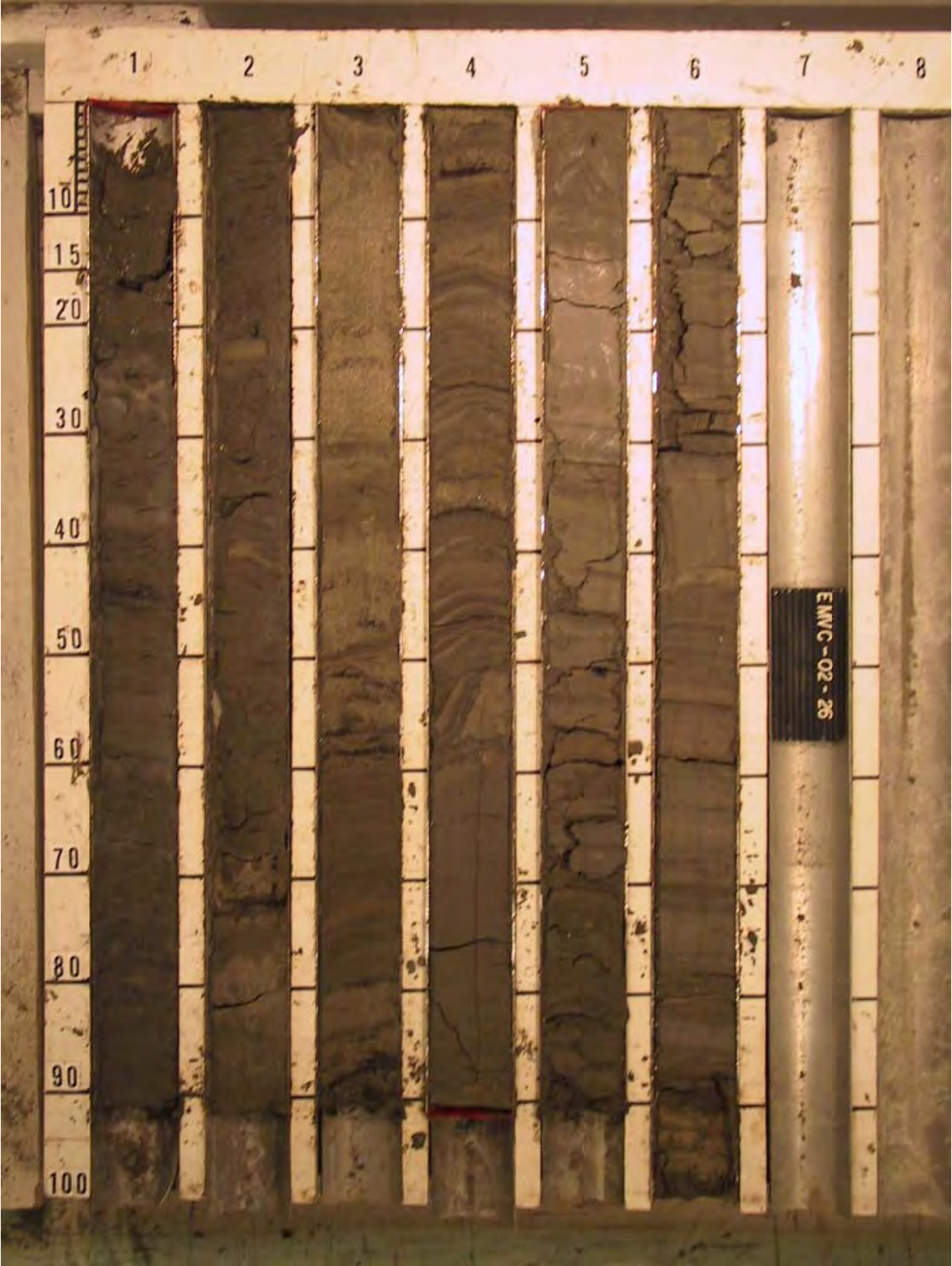
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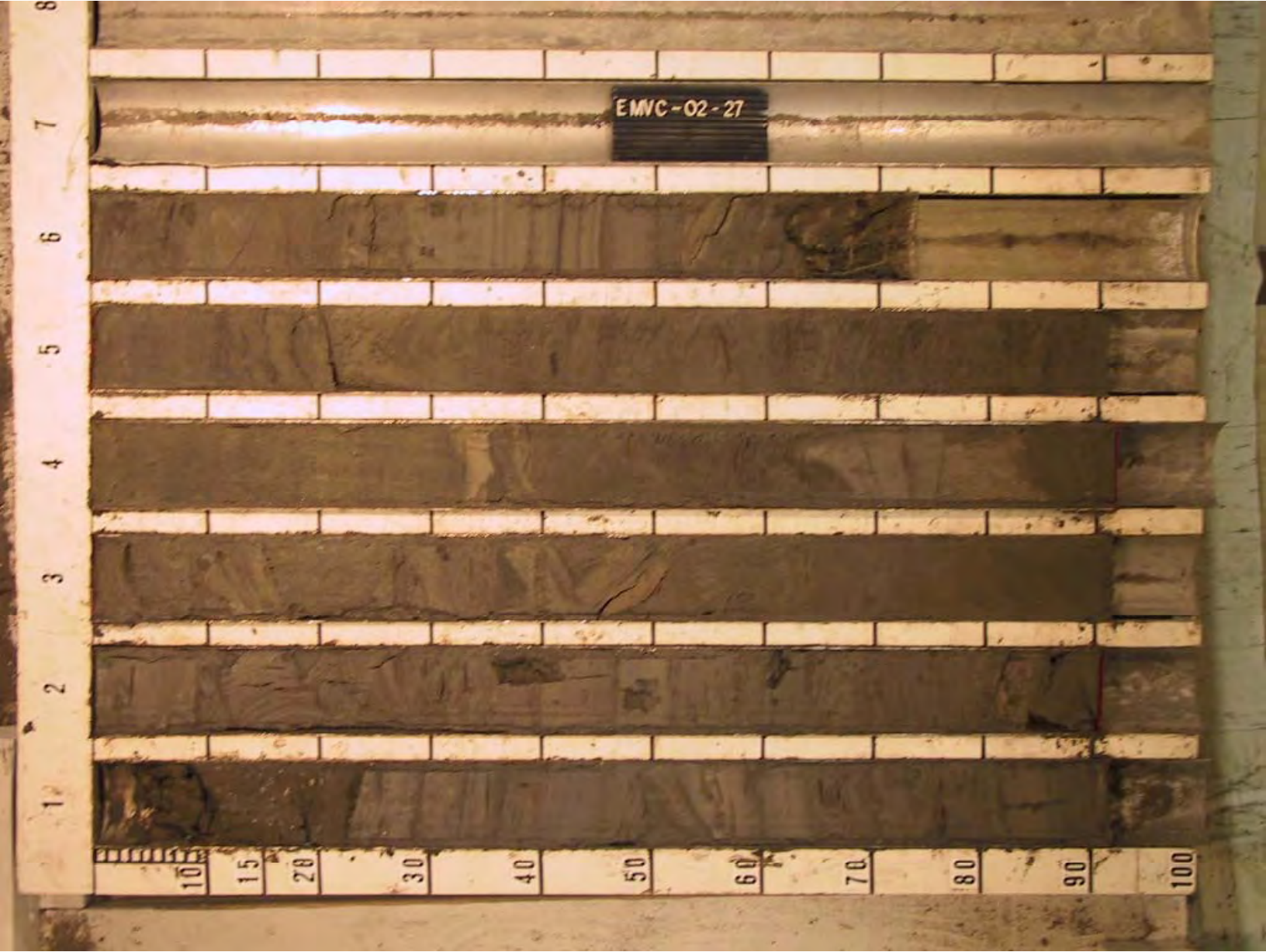
EMVC-02-26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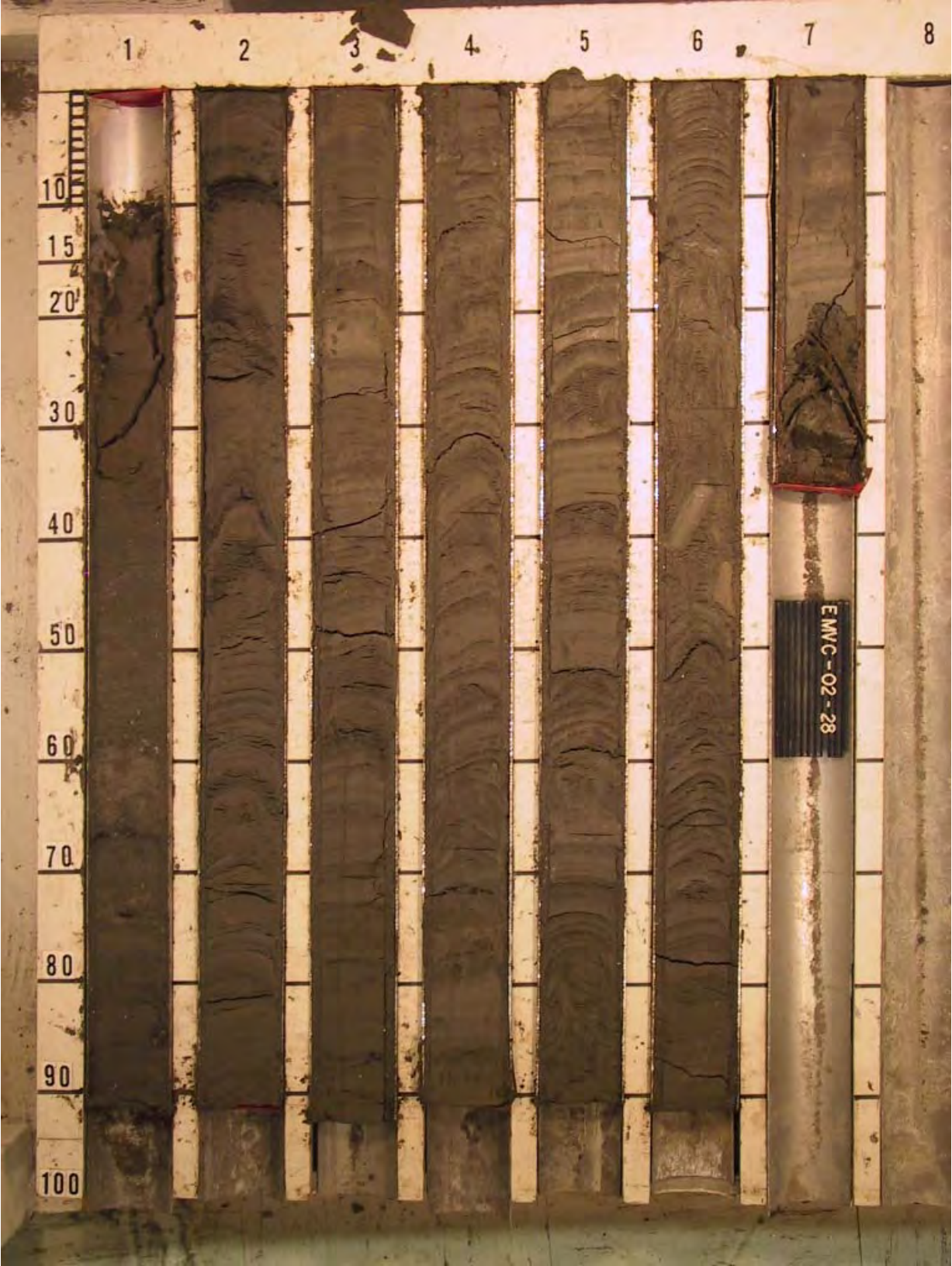
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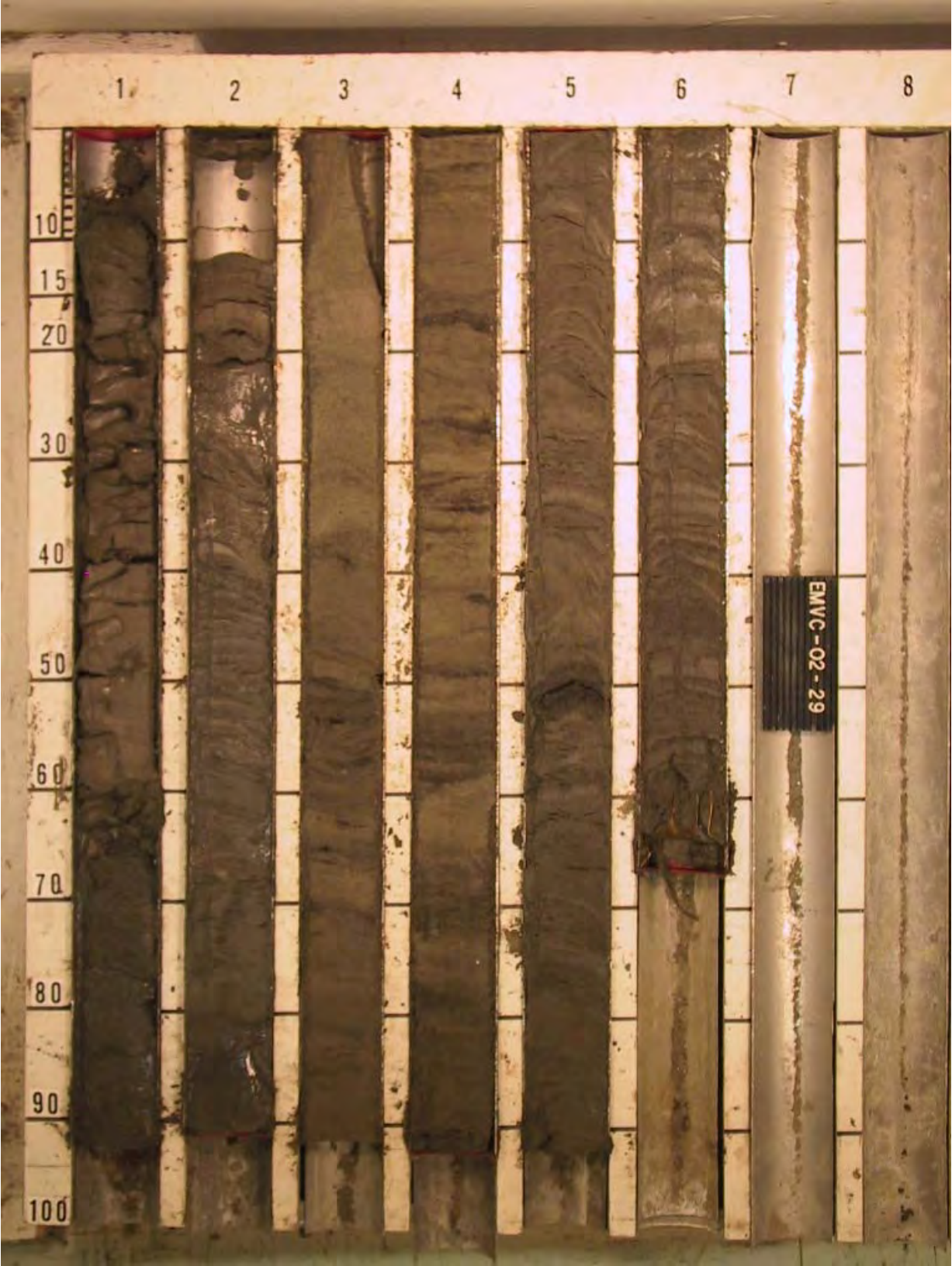
EMVC-02-28


1
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EMVC-02-29

EMVC-02-30
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EMVC-02-31
7
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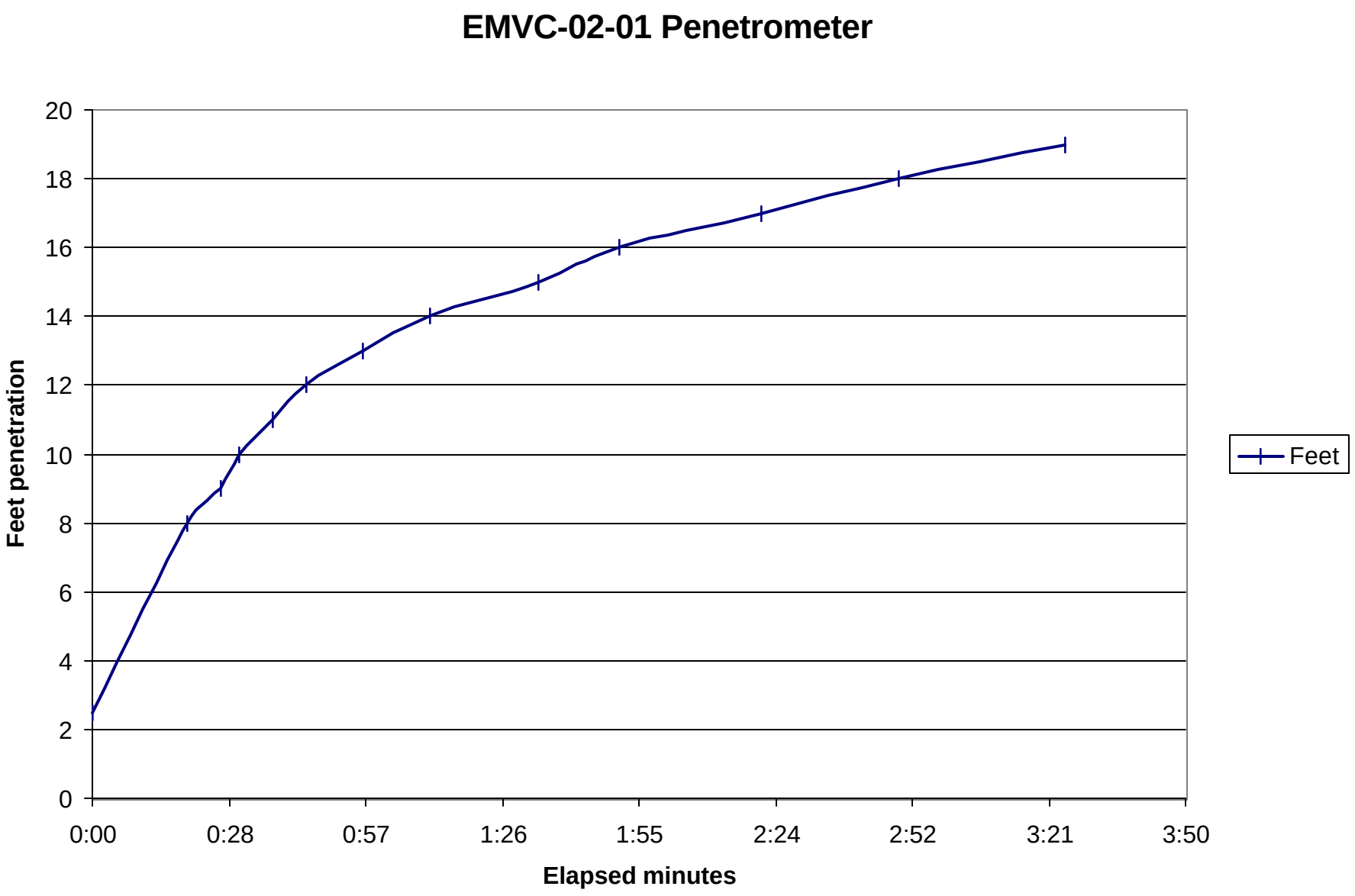
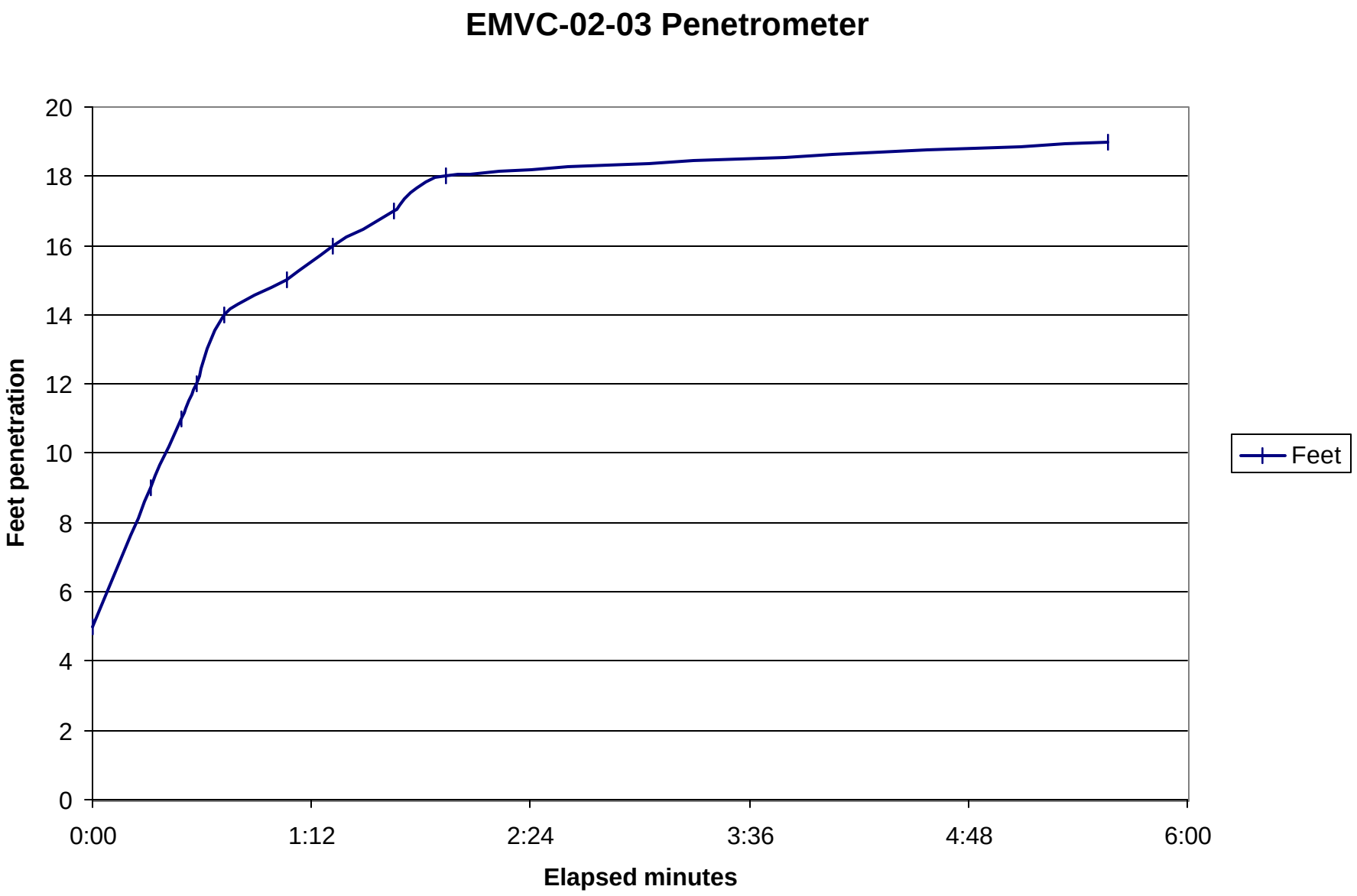
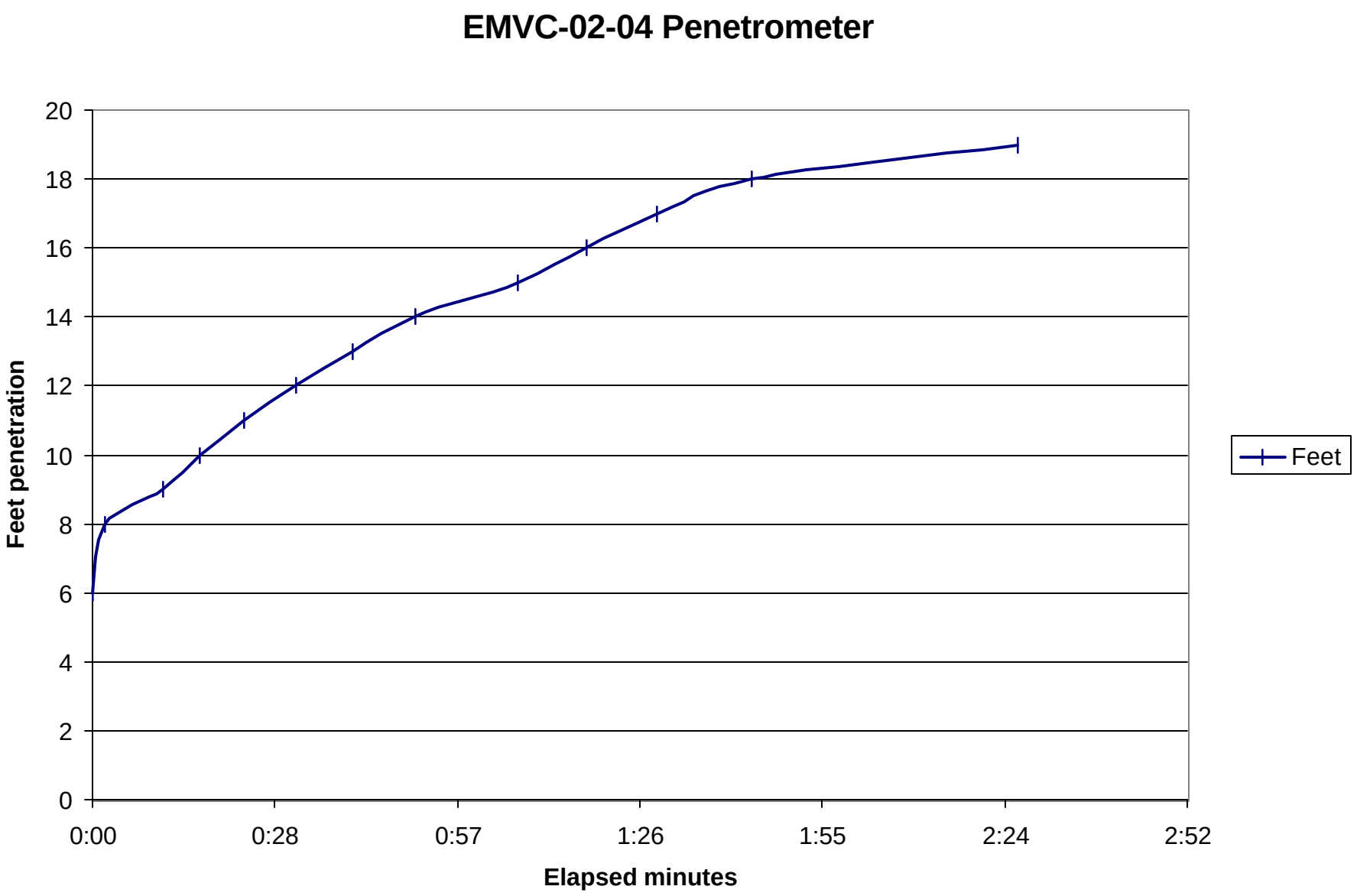
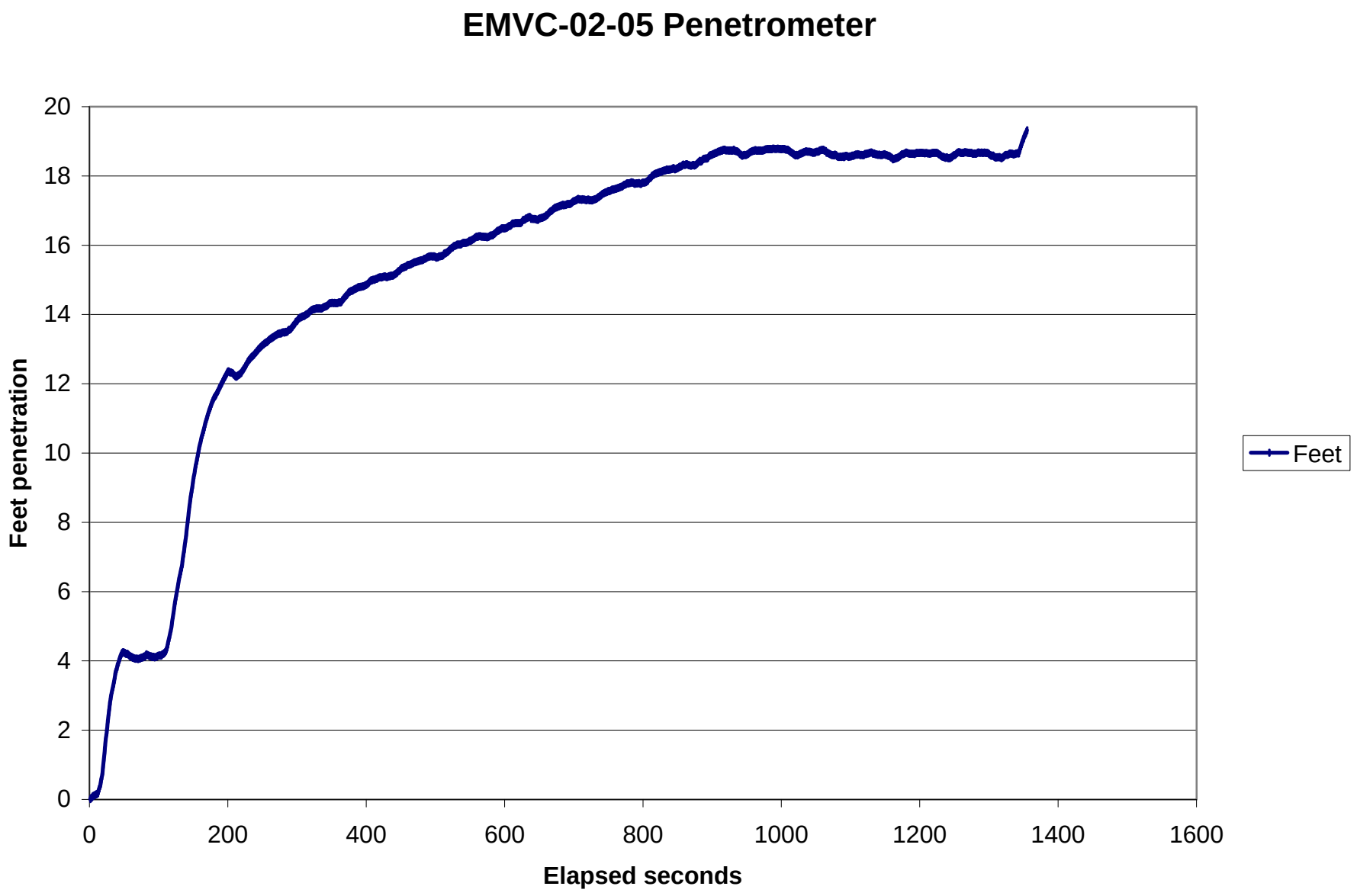
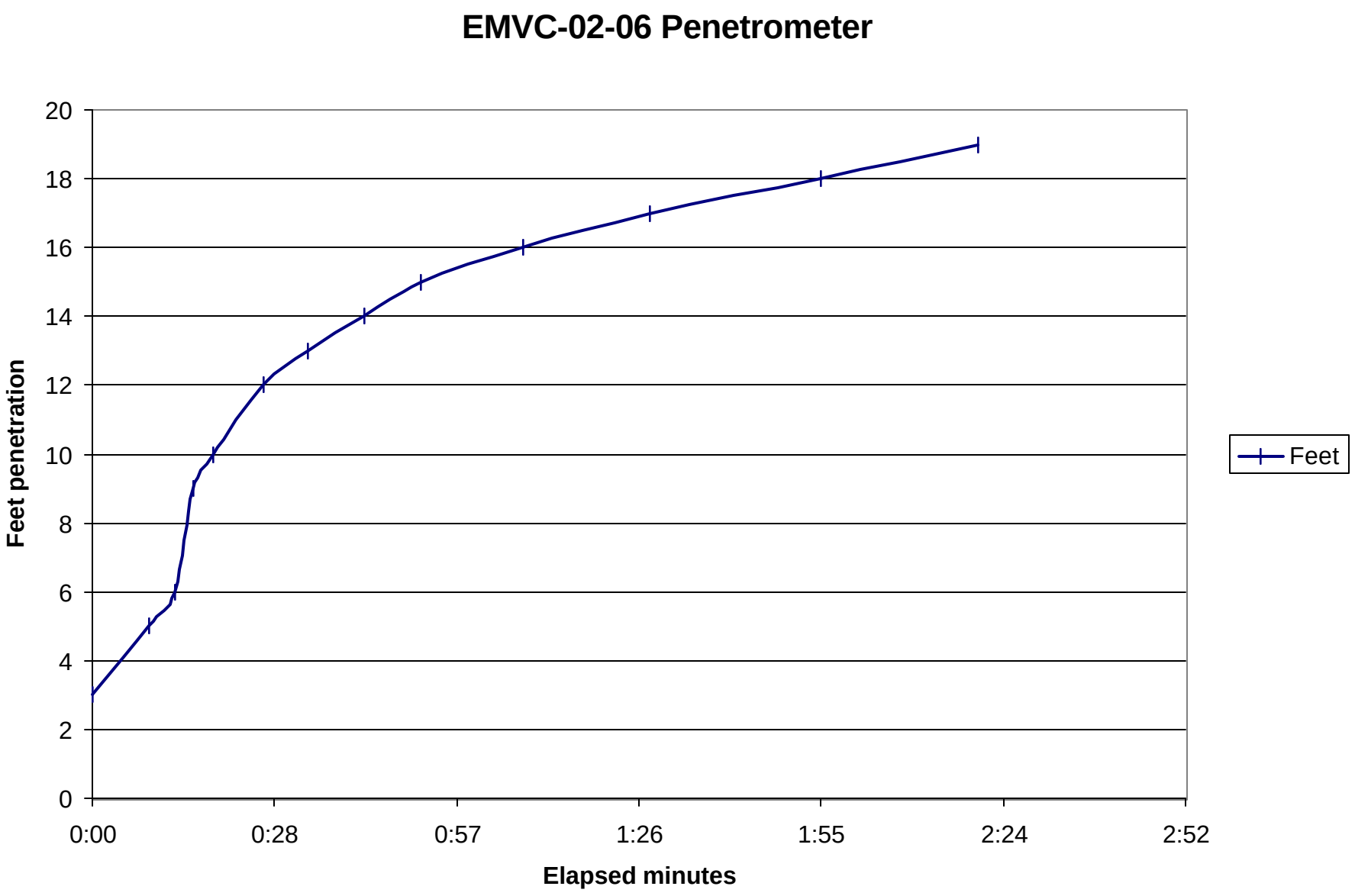
APPENDIX 6
2002 EMPIRE PENETROMETER RECORDS

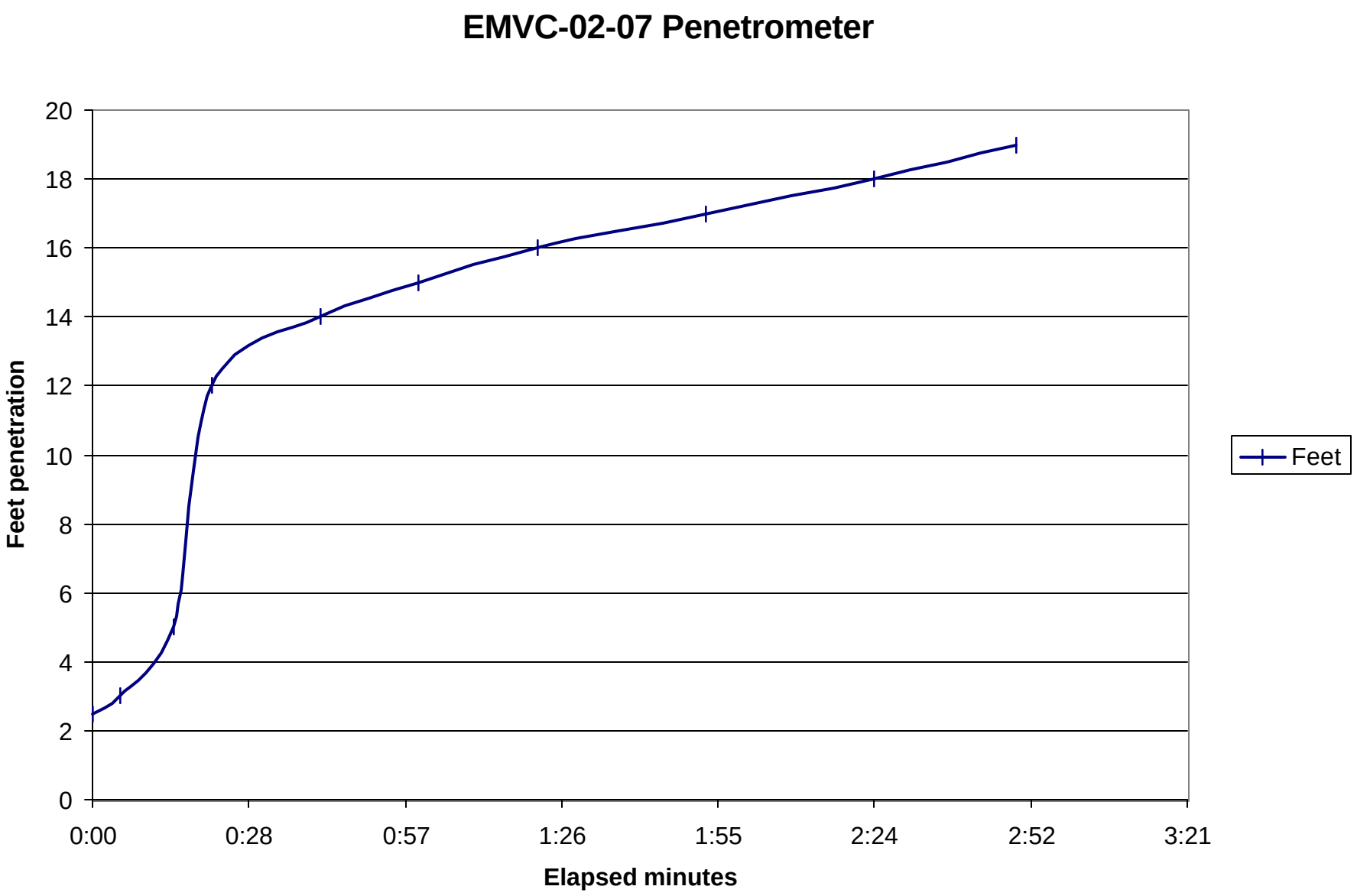

EMVC-02-01 Penetrometer
Feet penetration
20
18
16
14
12
10
8
6
4
2
0
0:00
0:28
0:57
1:26
1:55
2:24
2:52
3:21
3:50
Elapsed minutes
Feet

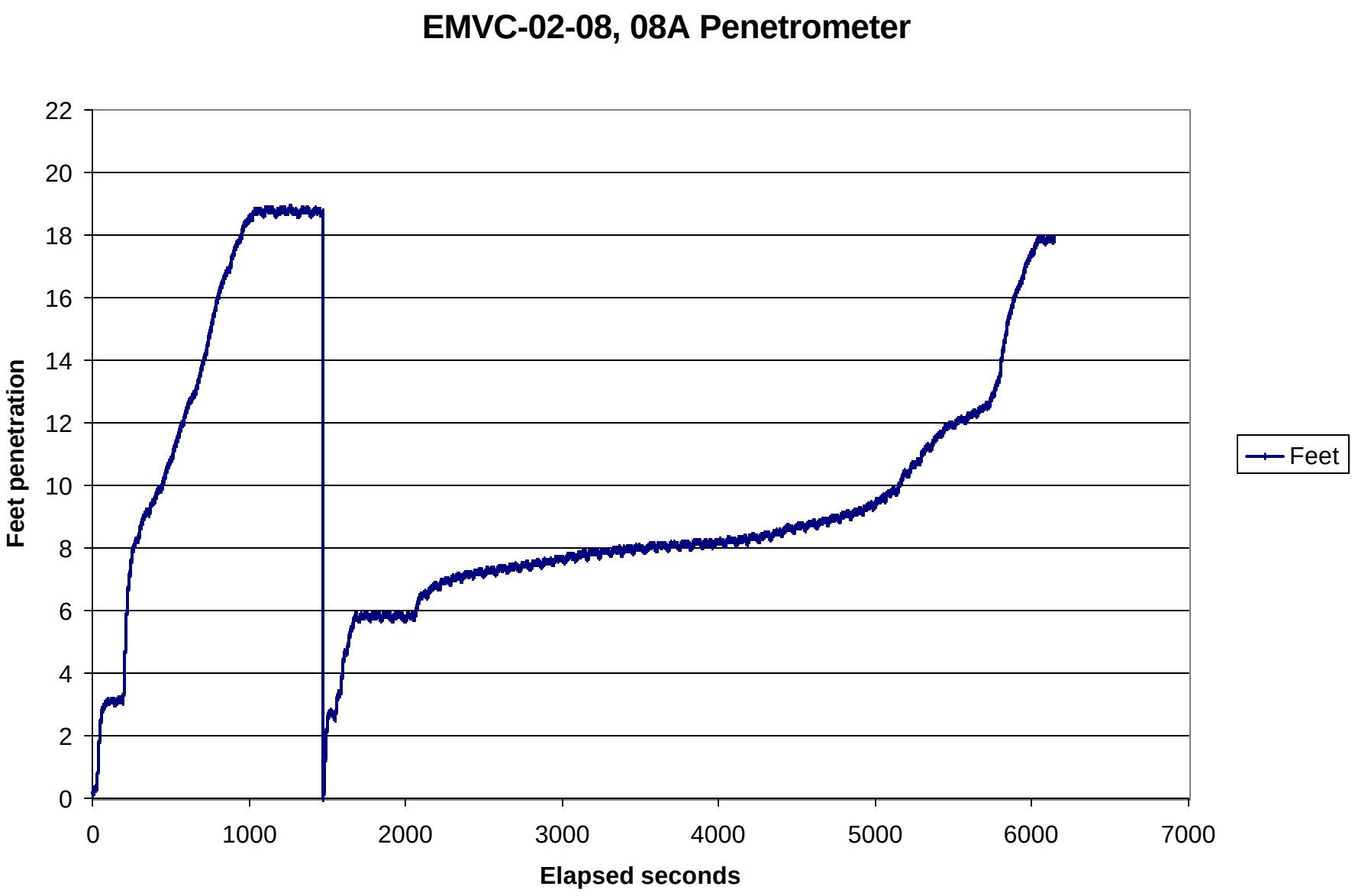

EMVC-02-03 Penetrometer
Feet penetration
20
18
16
14
12
10
8
6
4
2
0
0:00
1:12
2:24
3:36
4:48
6:00
Elapsed minutes
Feet

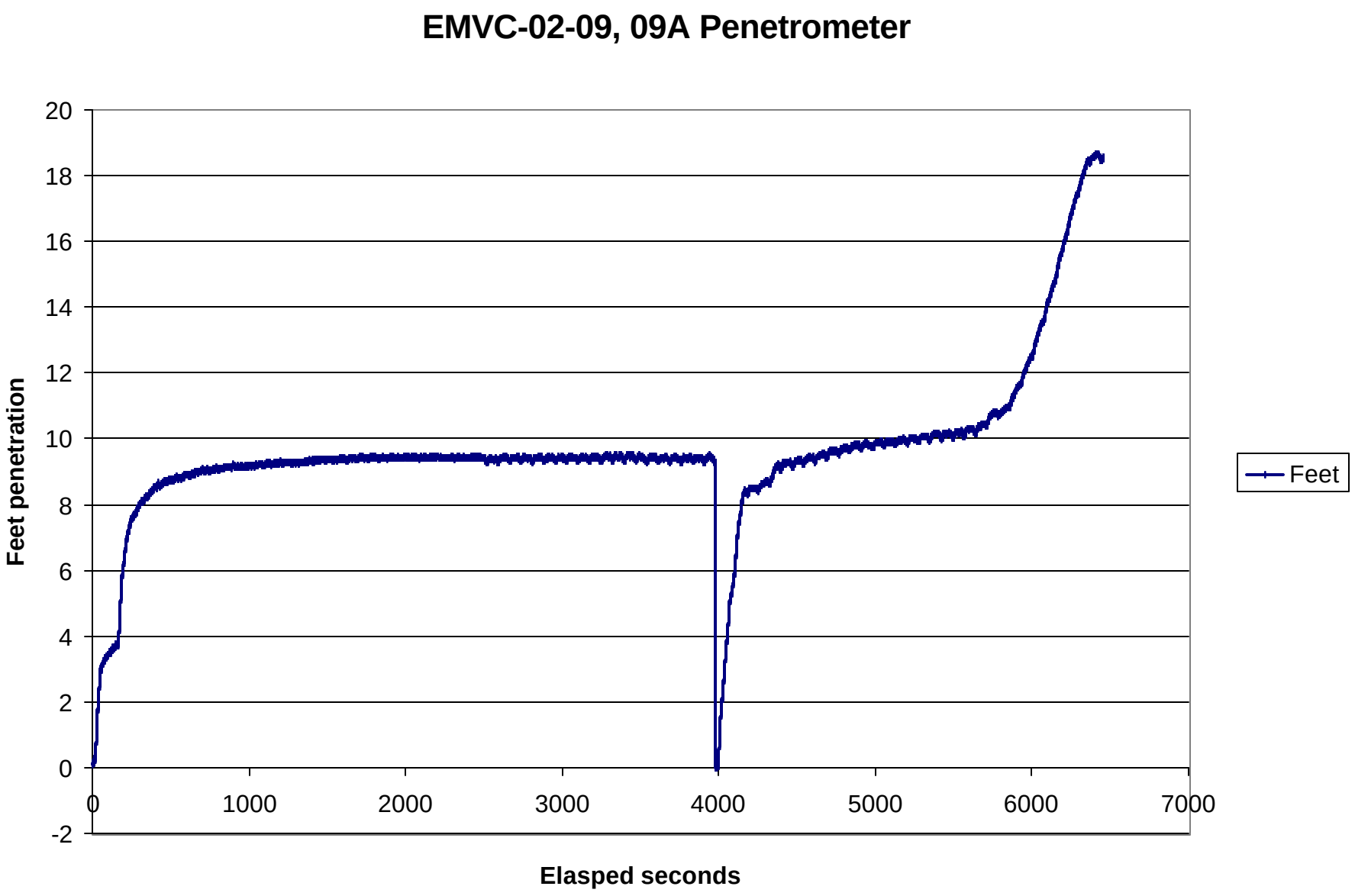

EMVC-02-04 Penetrometer
Feet penetration
20
18
16
14
12
10
8
6
4
2
0
0:00
0:28
0:57
1:26
1:55
2:24
2:52
Elapsed minutes
Feet

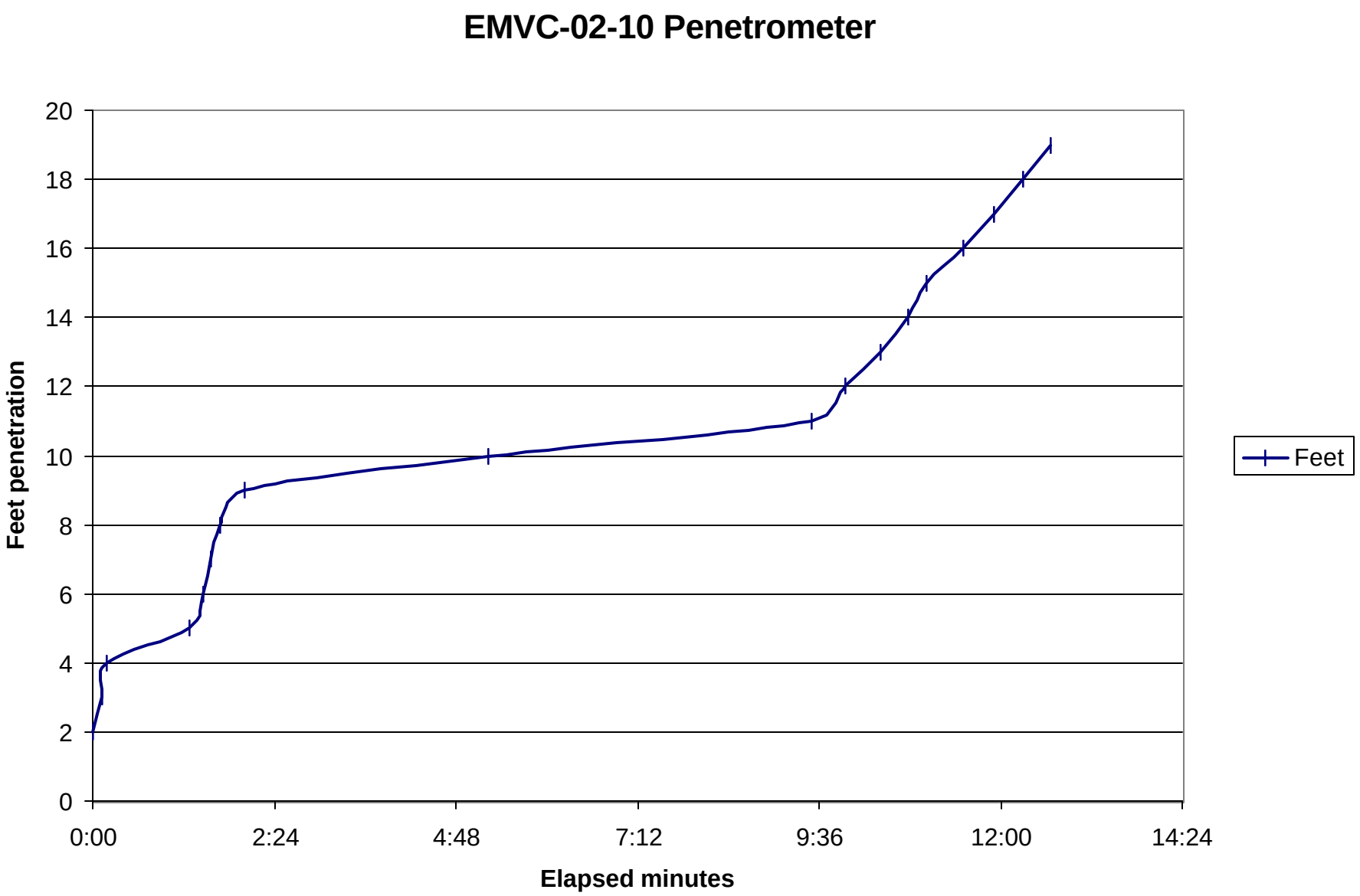

EMVC-02-05 Penetrometer
Feet penetration
Elapsed seconds
0
2
4
6
8
10
12
14
16
18
20
0
200
400
600
800
1000
1200
1400
1600
Feet

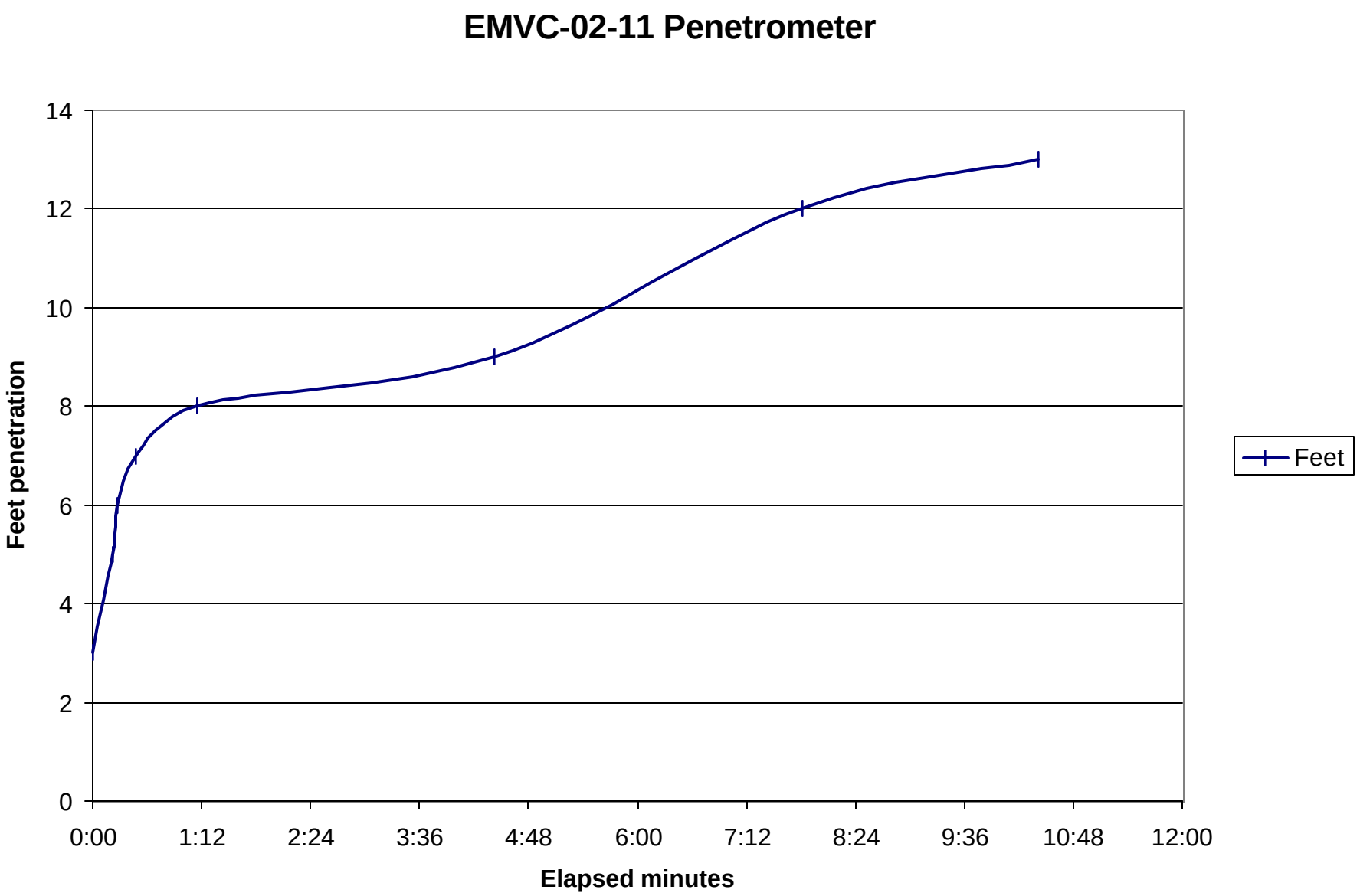

EMVC-02-06 Penetrometer
Feet penetration
20
18
16
14
12
10
8
6
4
2
0
0:00
0:28
0:57
1:26
1:55
2:24
2:52
Elapsed minutes
Feet

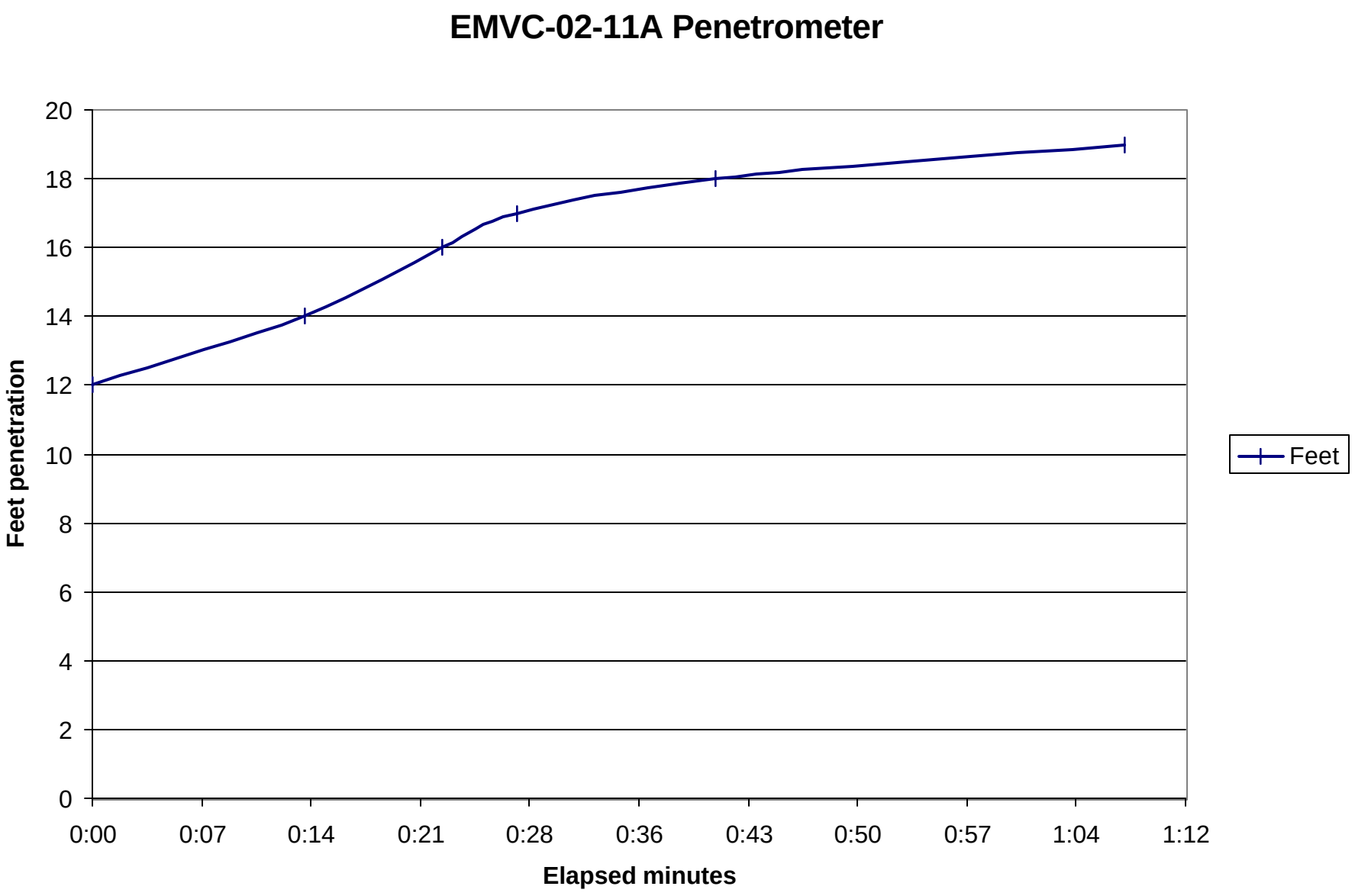

EMVC-02-07 Penetrometer
Feet penetration
20
18
16
14
12
10
8
6
4
2
0
0:00
0:28
0:57
1:26
1:55
2:24
2:52
3:21
Elapsed minutes
Feet

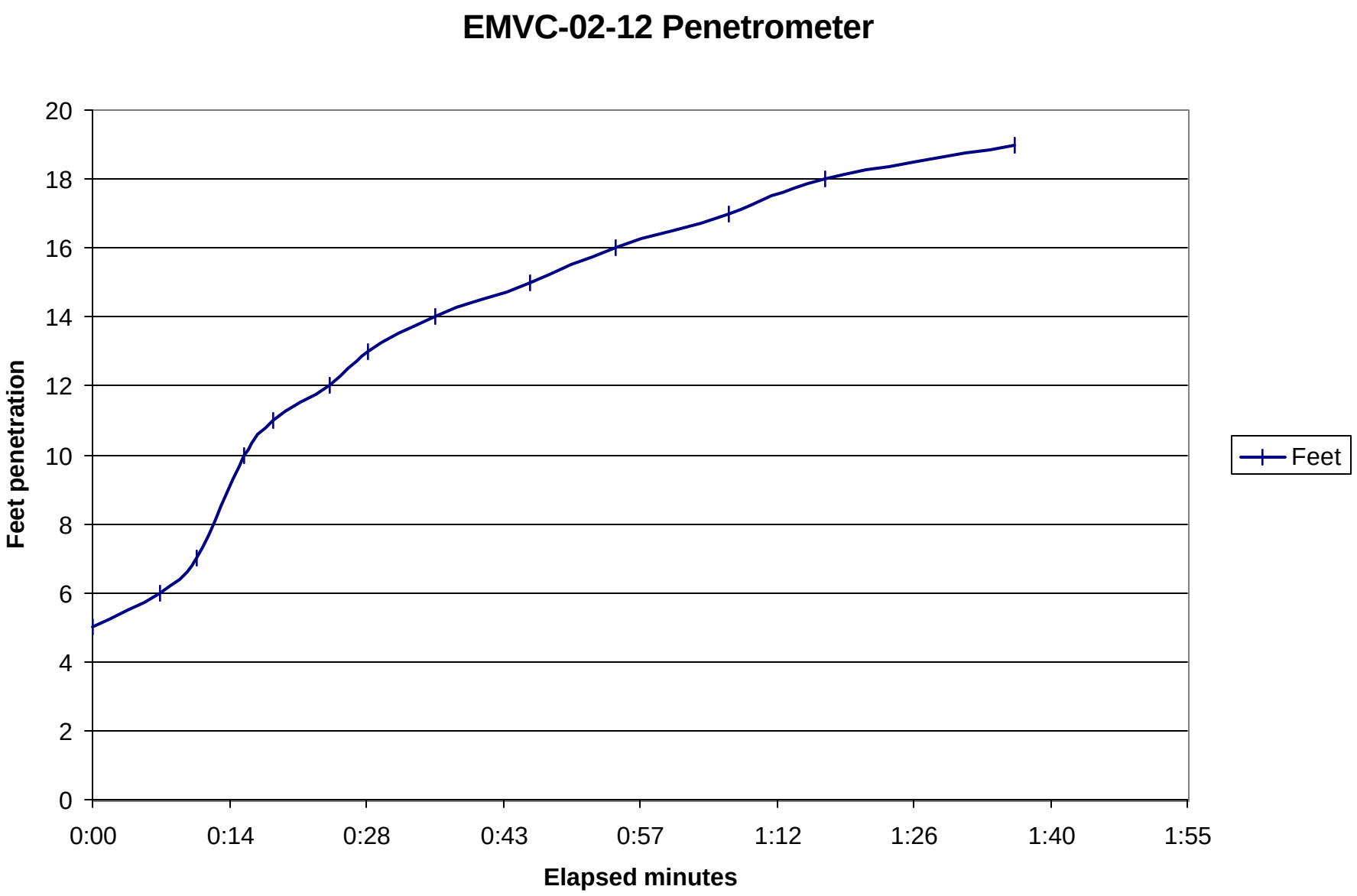

EMVC-02-08, 08A Penetrometer
Feet penetration
22
20
18
16
14
12
10
8
6
4
2
0
0
1000
2000
3000
4000
5000
6000
7000
Elapsed seconds
Feet

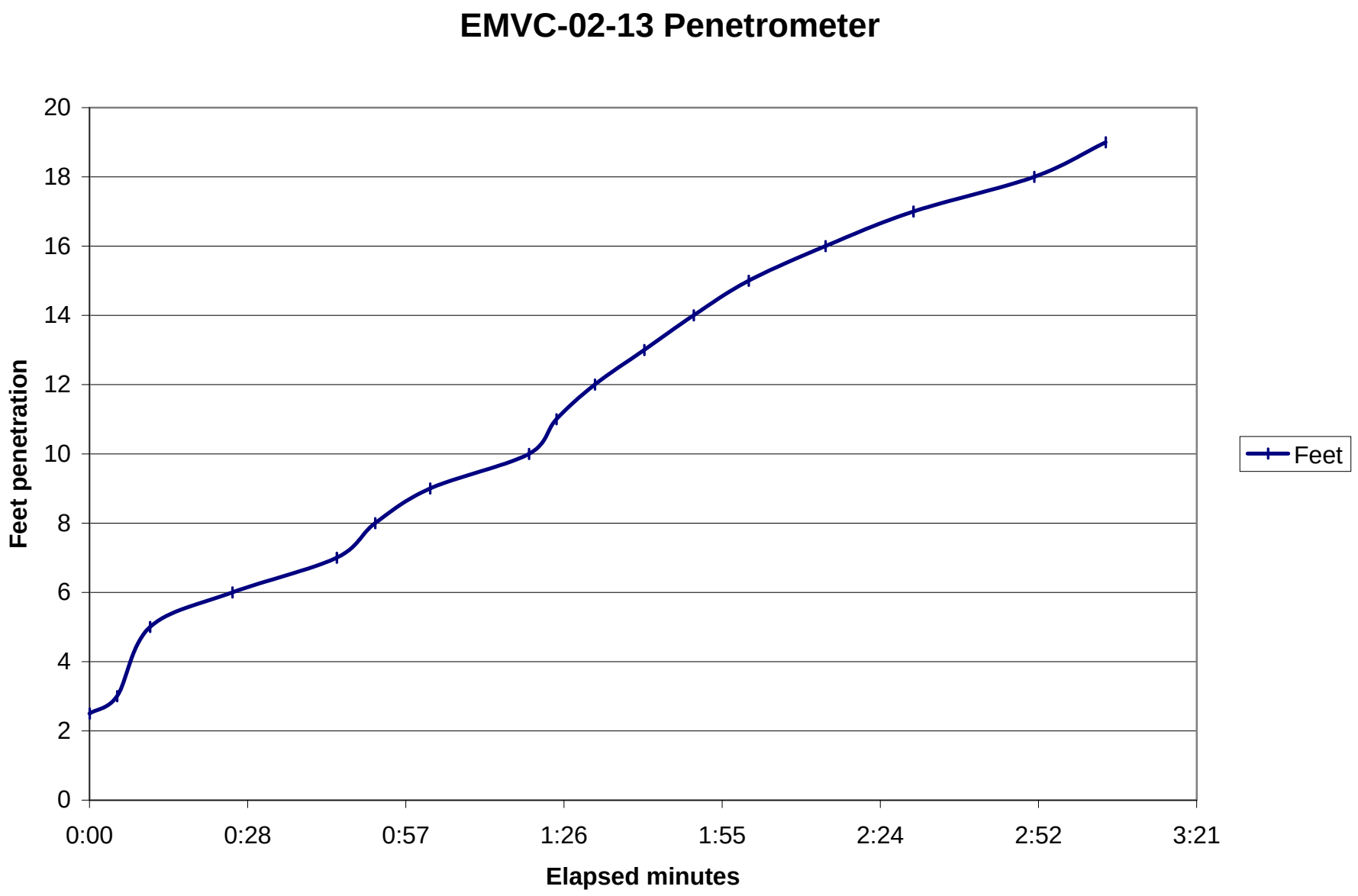

EMVC-02-09, 09A Penetrometer
Feet penetration
20
18
16
14
12
10
8
6
4
2
0
-2
0
1000
2000
3000
4000
5000
6000
7000
Elasped seconds
Feet

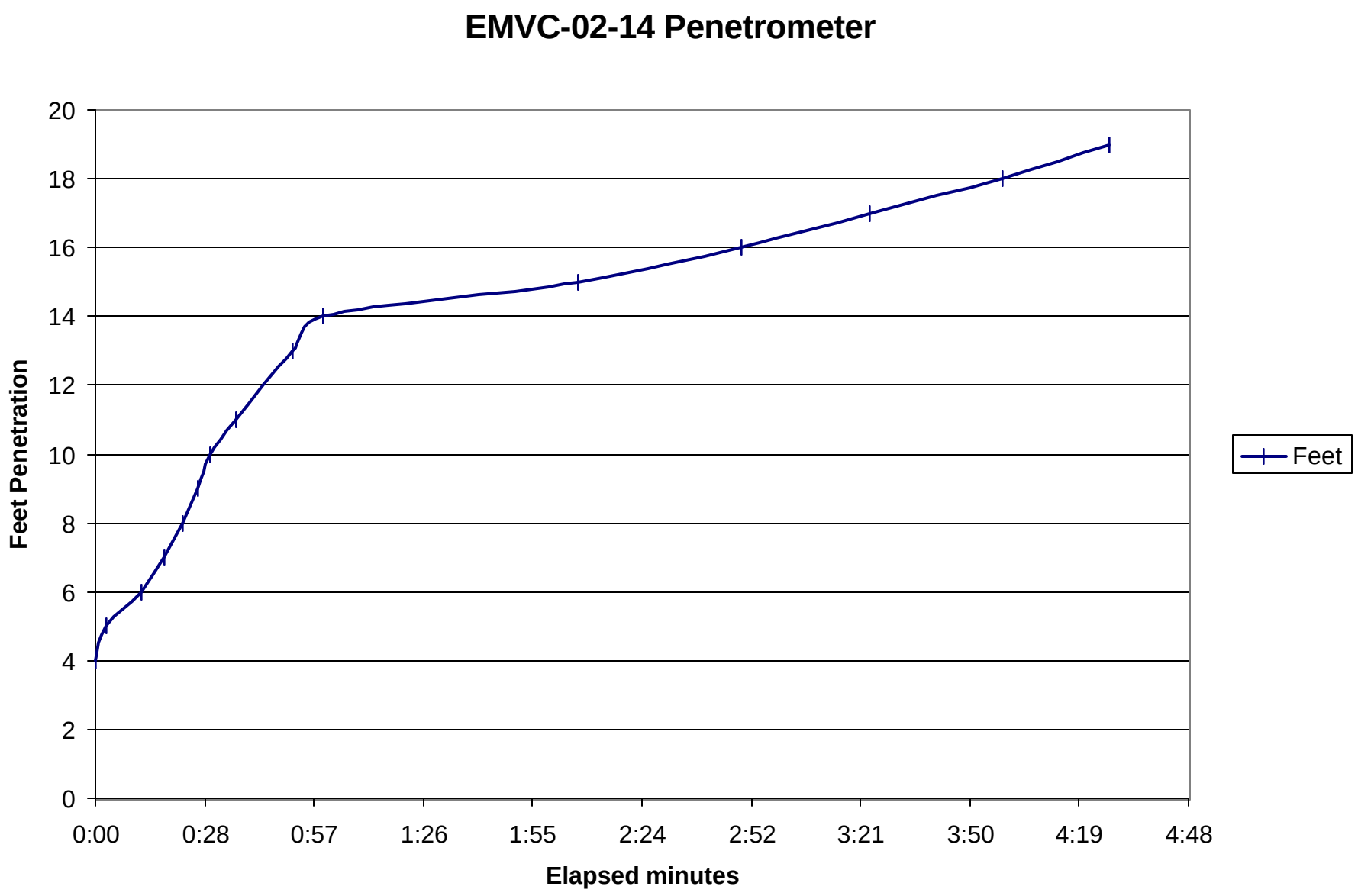

EMVC-02-10 Penetrometer
Feet penetration
20
18
16
14
12
10
8
6
4
2
0
0:00
2:24
4:48
7:12
9:36
12:00
14:24
Elapsed minutes
Feet

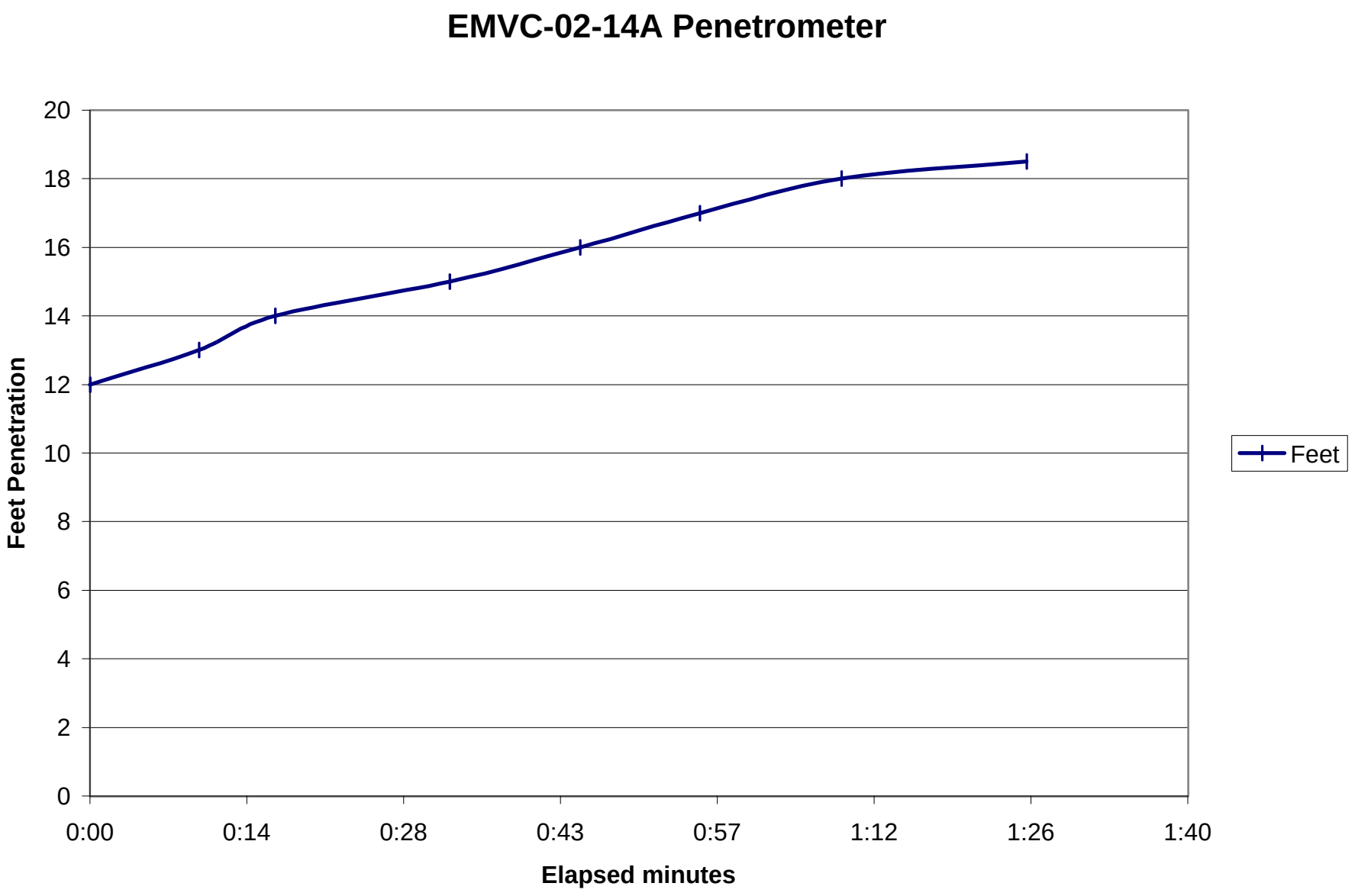

EMVC-02-11 Penetrometer
Feet penetration
14
12
10
8
6
4
2
0
0:00
1:12
2:24
3:36
4:48
6:00
7:12
8:24
9:36
10:48
12:00
Elapsed minutes
Feet

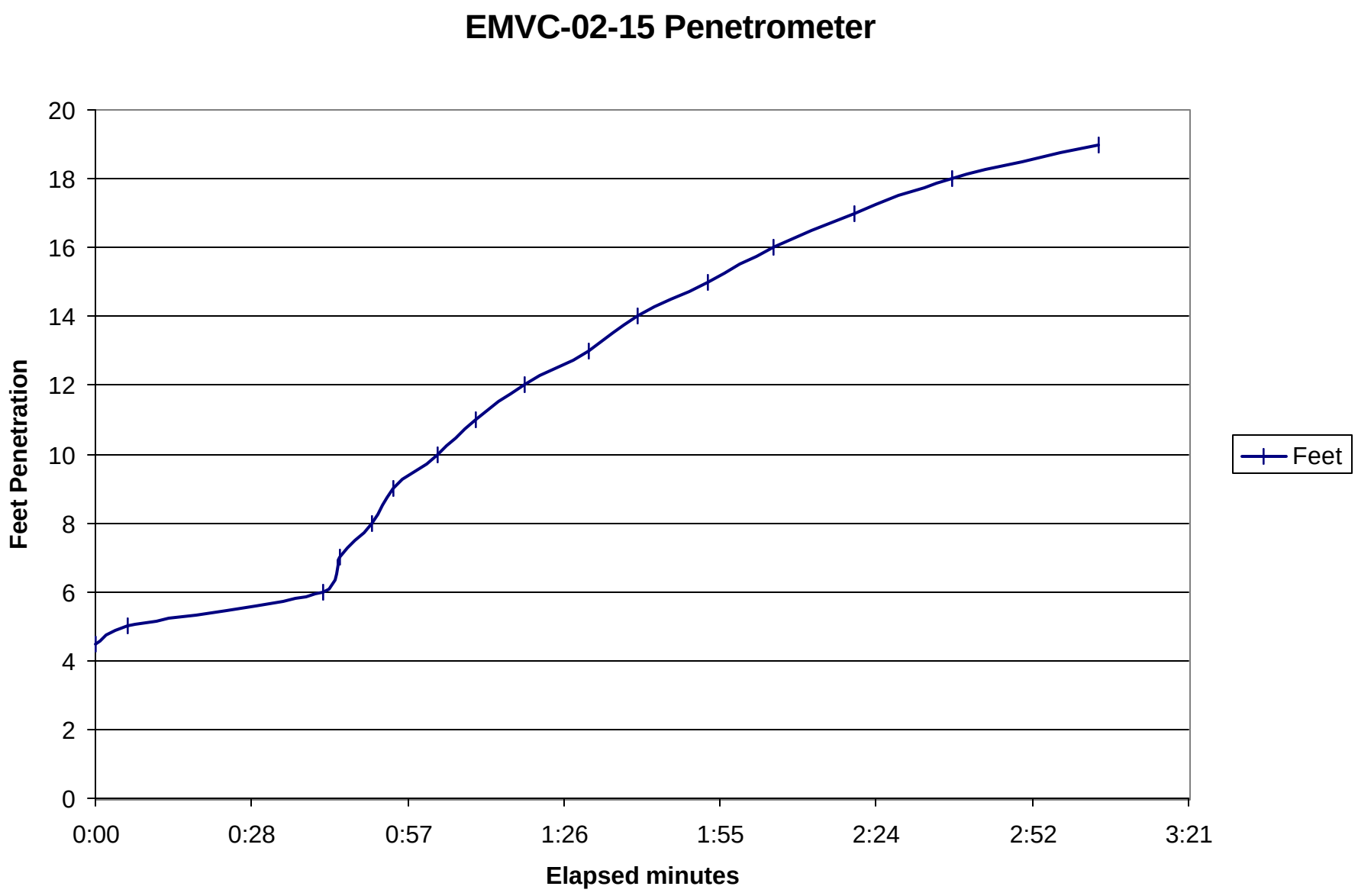

EMVC-02-11A Penetrometer
Feet penetration
20
18
16
14
12
10
8
6
4
2
0
0:00
0:07
0:14
0:21
0:28
0:36
0:43
0:50
0:57
1:04
1:12
Elapsed minutes
Feet

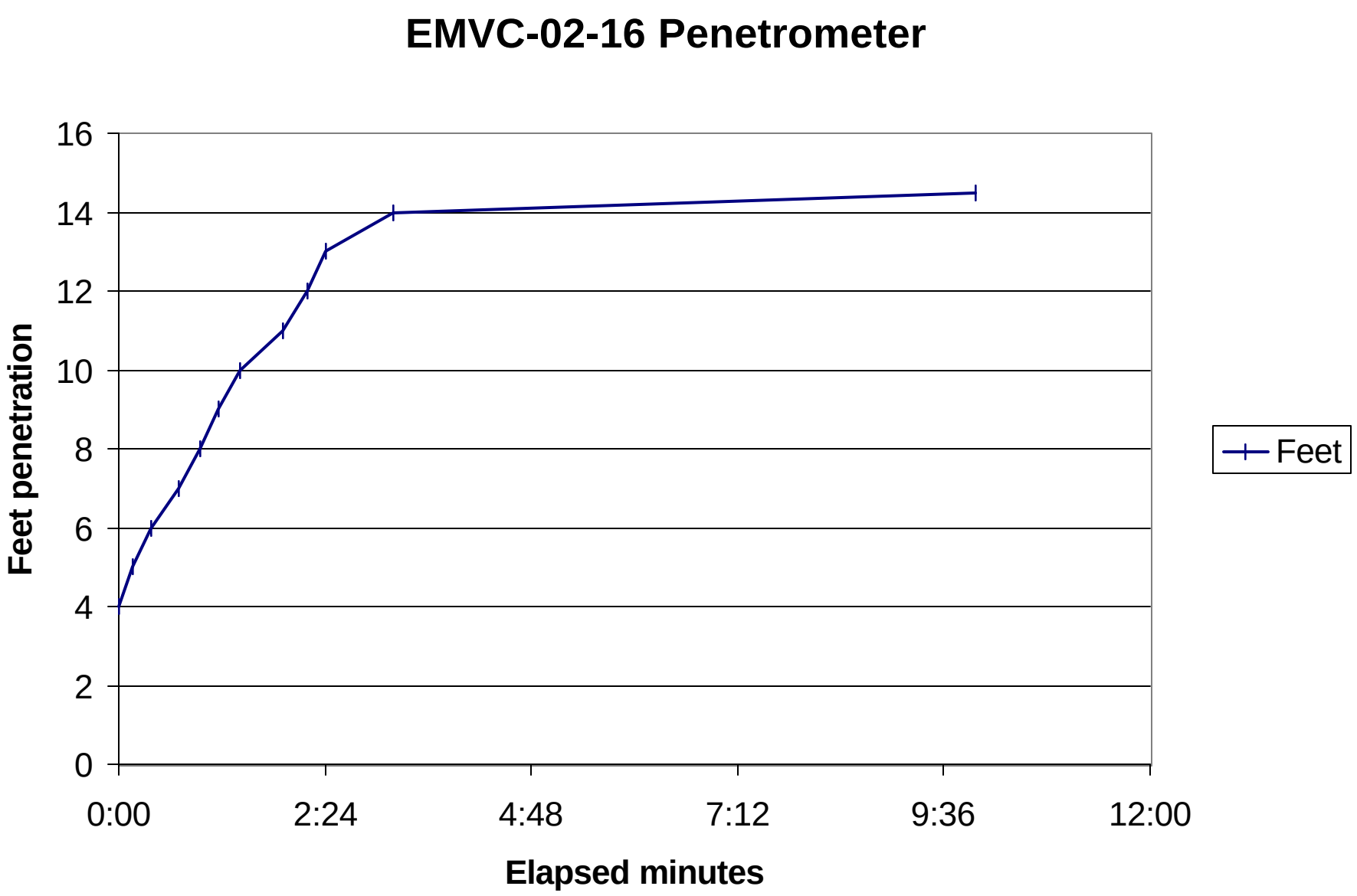

EMVC-02-12 Penetrometer
Feet penetration
20
18
16
14
12
10
8
6
4
2
0
0:00
0:14
0:28
0:43
0:57
1:12
1:26
1:40
1:55
Elapsed minutes
Feet

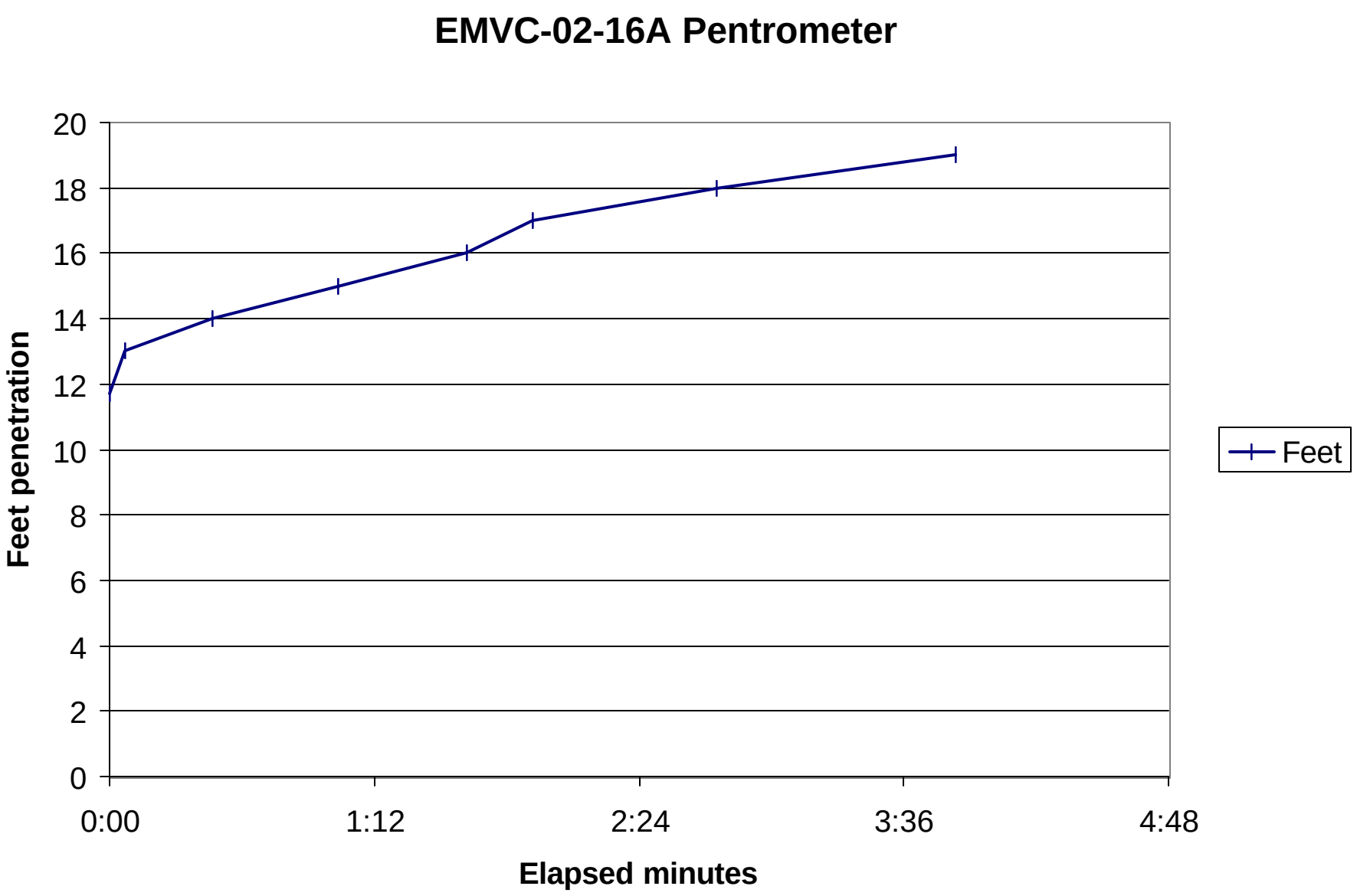

EMVC-02-13 Penetrometer
Feet penetration
20
18
16
14
12
10
8
6
4
2
0
0:00
0:28
0:57
1:26
1:55
2:24
2:52
3:21
Elapsed minutes
Feet

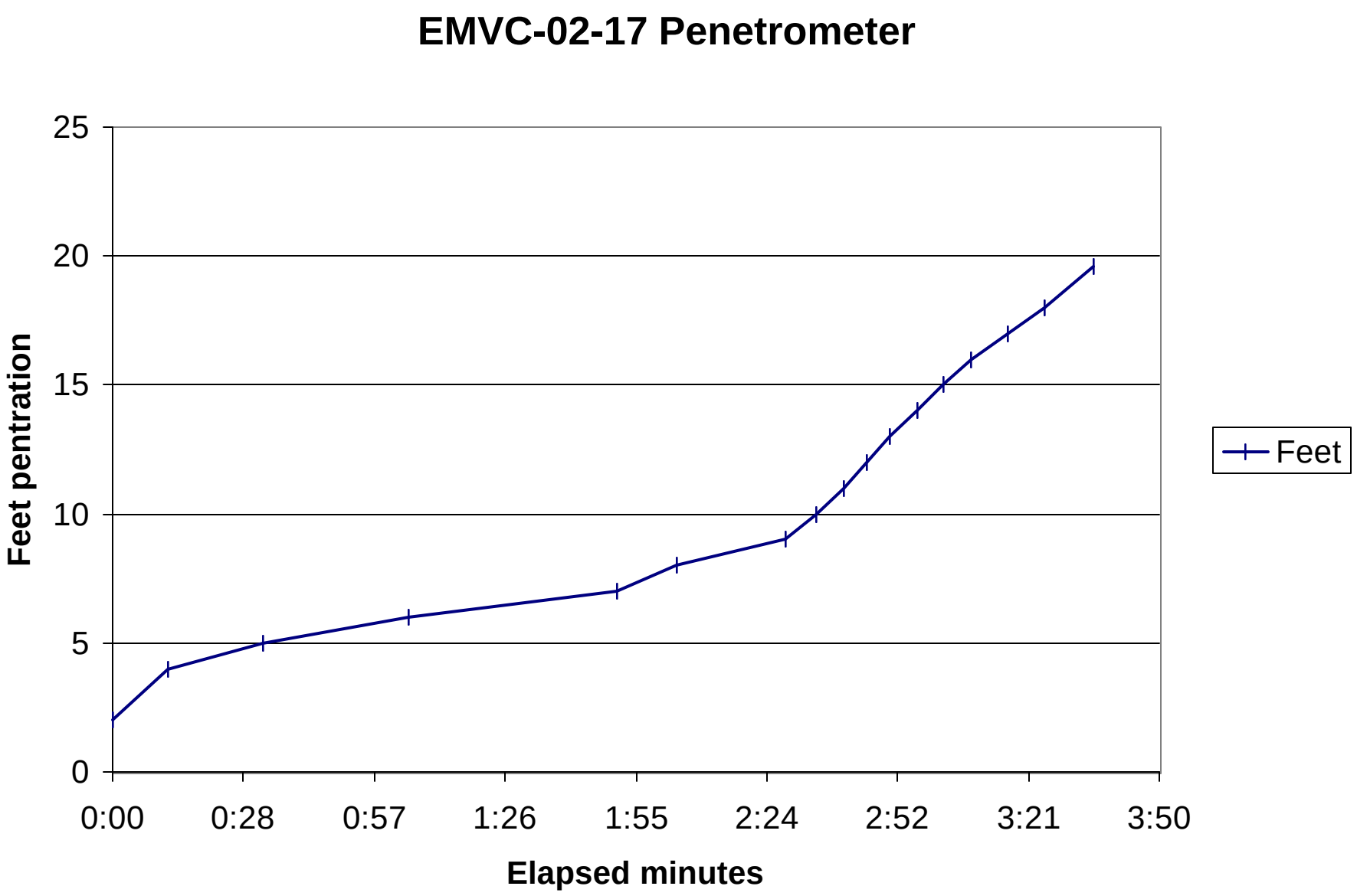

EMVC-02-14 Penetrometer
Feet Penetration
20
18
16
14
12
10
8
6
4
2
0
0:00
0:28
0:57
1:26
1:55
2:24
2:52
3:21
3:50
4:19
4:48
Elapsed minutes
Feet

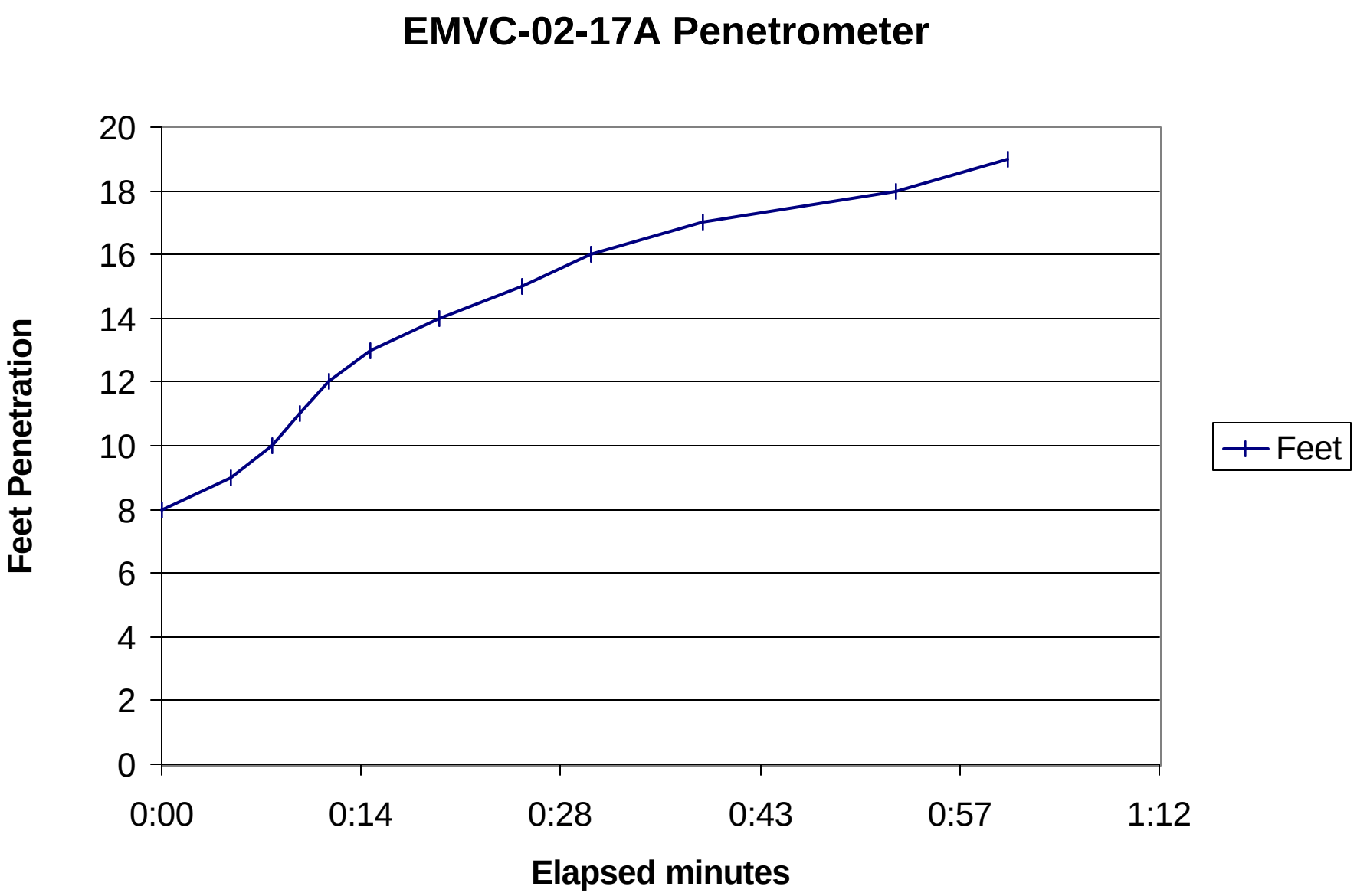

EMVC-02-14A Penetrometer
Feet Penetration
20
18
16
14
12
10
8
6
4
2
0
0:00
0:14
0:28
0:43
0:57
1:12
1:26
1:40
Elapsed minutes
Feet

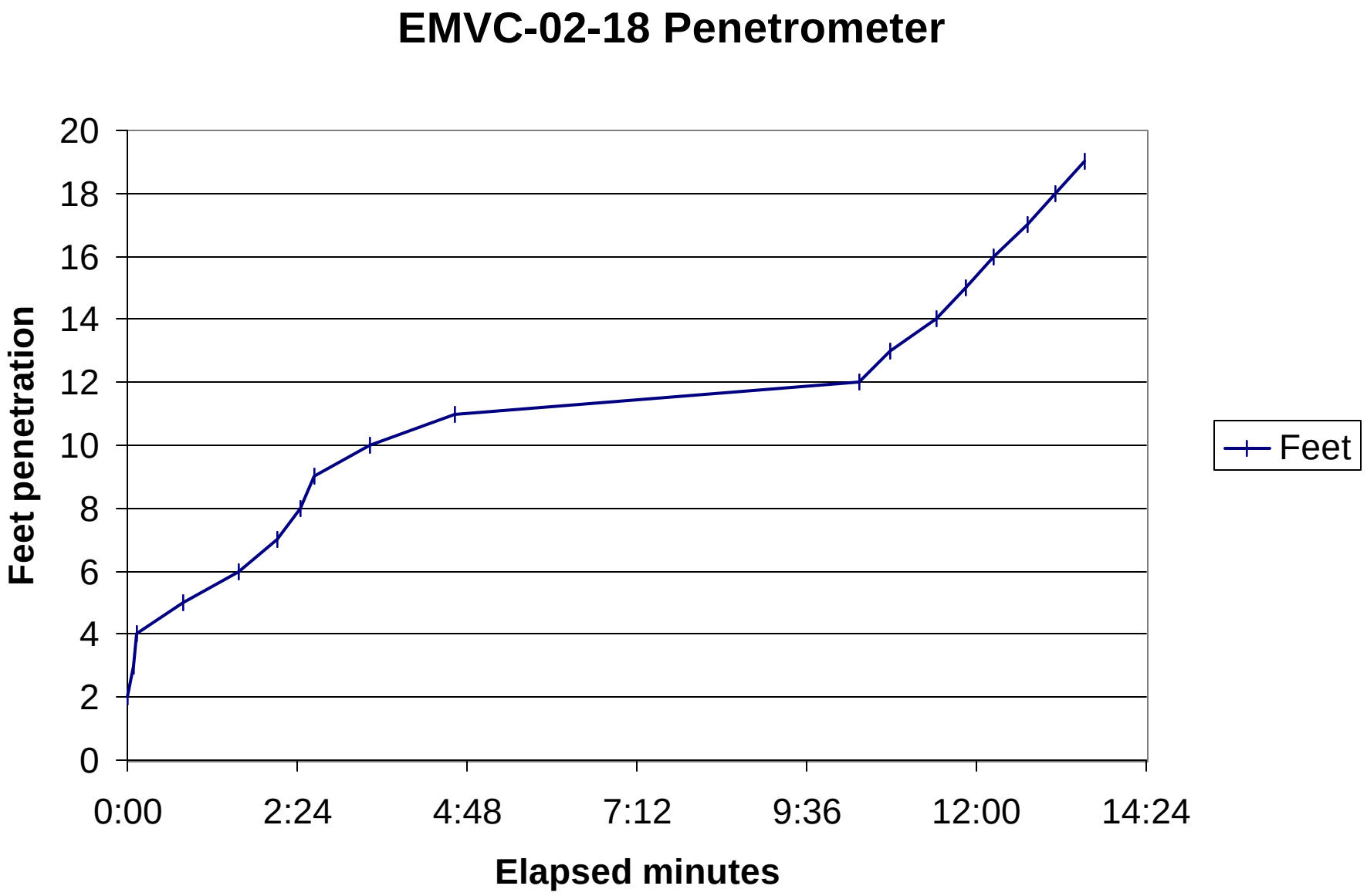

EMVC-02-15 Penetrometer
Feet Penetration
20
18
16
14
12
10
8
6
4
2
0
0:00
0:28
0:57
1:26
1:55
2:24
2:52
3:21
Elapsed minutes
Feet

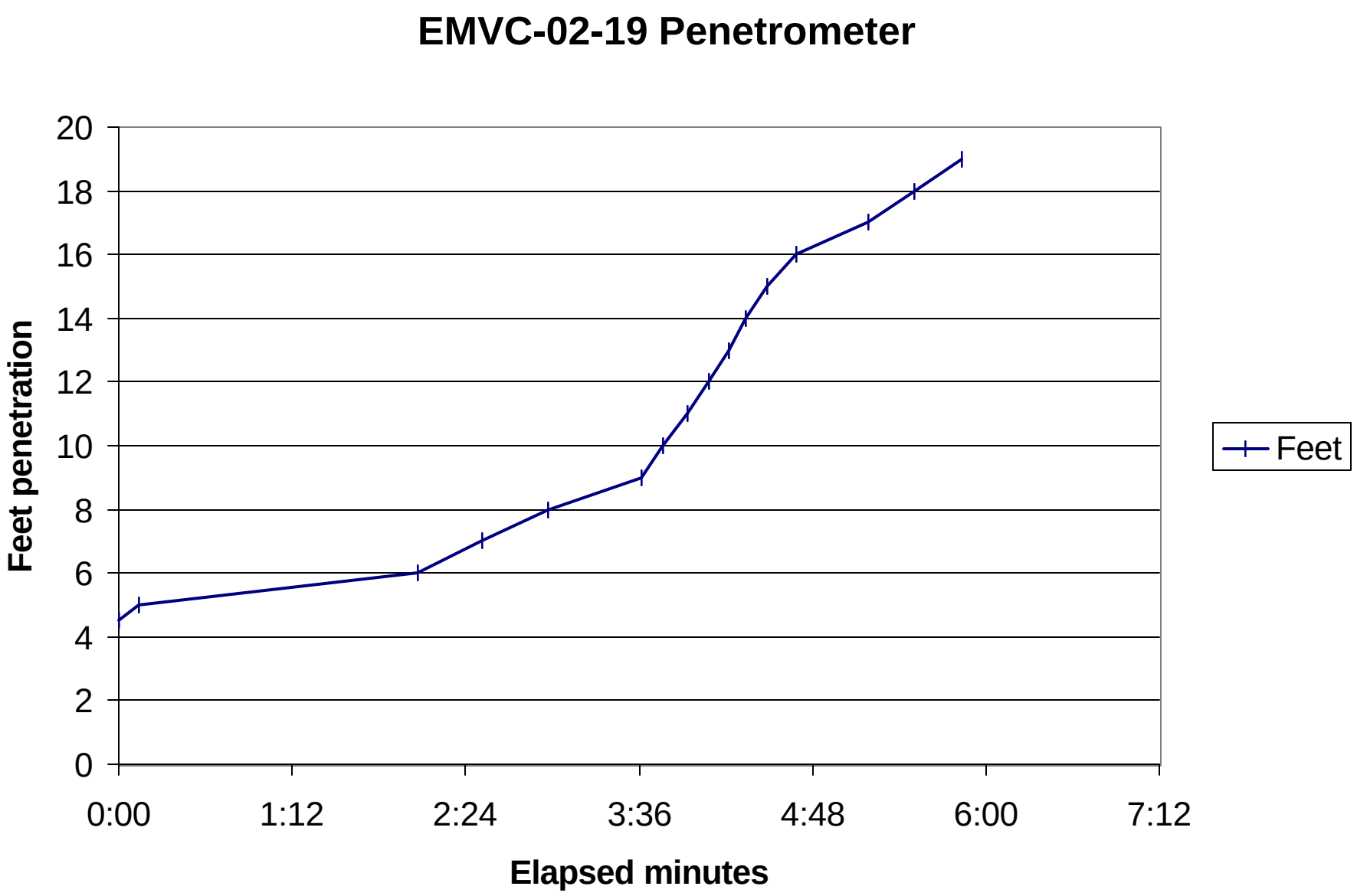

EMVC-02-16 Penetrometer
Feet penetration
16
14
12
10
8
6
4
2
0
0:00
2:24
4:48
7:12
9:36
12:00
Elapsed minutes
Feet

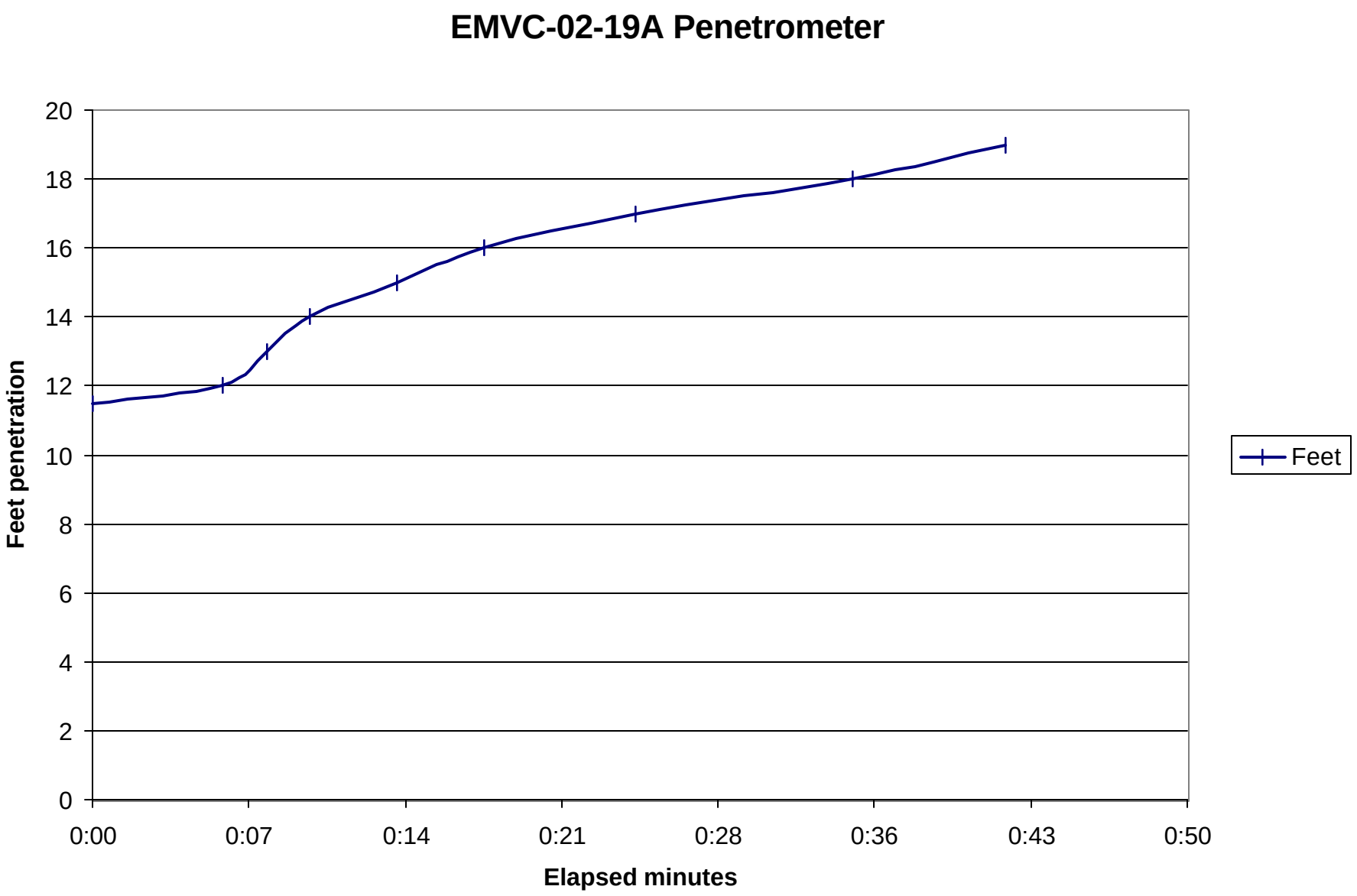

EMVC-02-16A Pentrometer
Feet penetration
20
18
16
14
12
10
8
6
4
2
0
0:00
1:12
2:24
3:36
4:48
Elapsed minutes
Feet

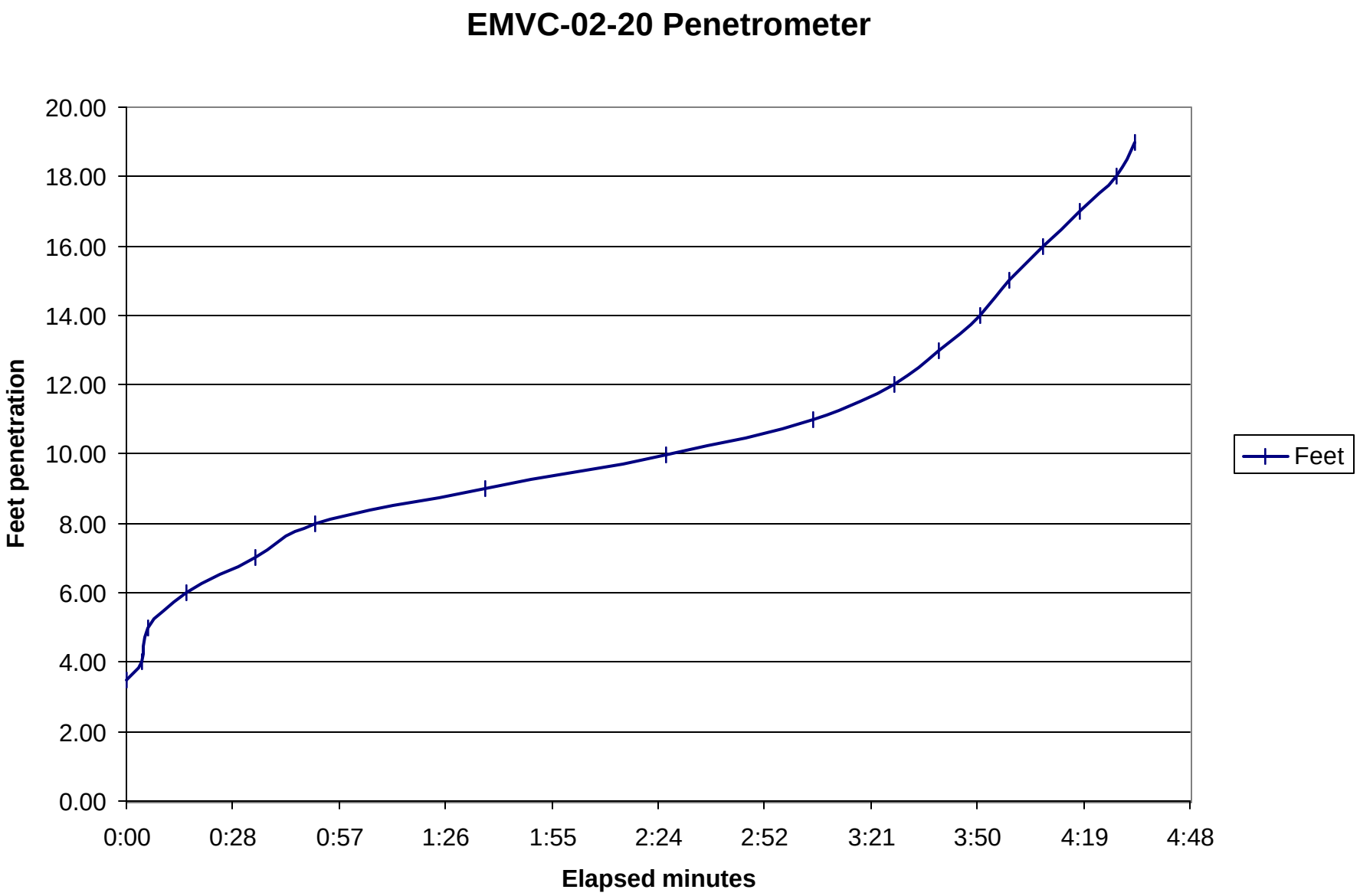

EMVC-02-17 Penetrometer
Feet pentration
25
20
15
10
5
0
0:00
0:28
0:57
1:26
1:55
2:24
2:52
3:21
3:50
Elapsed minutes
Feet

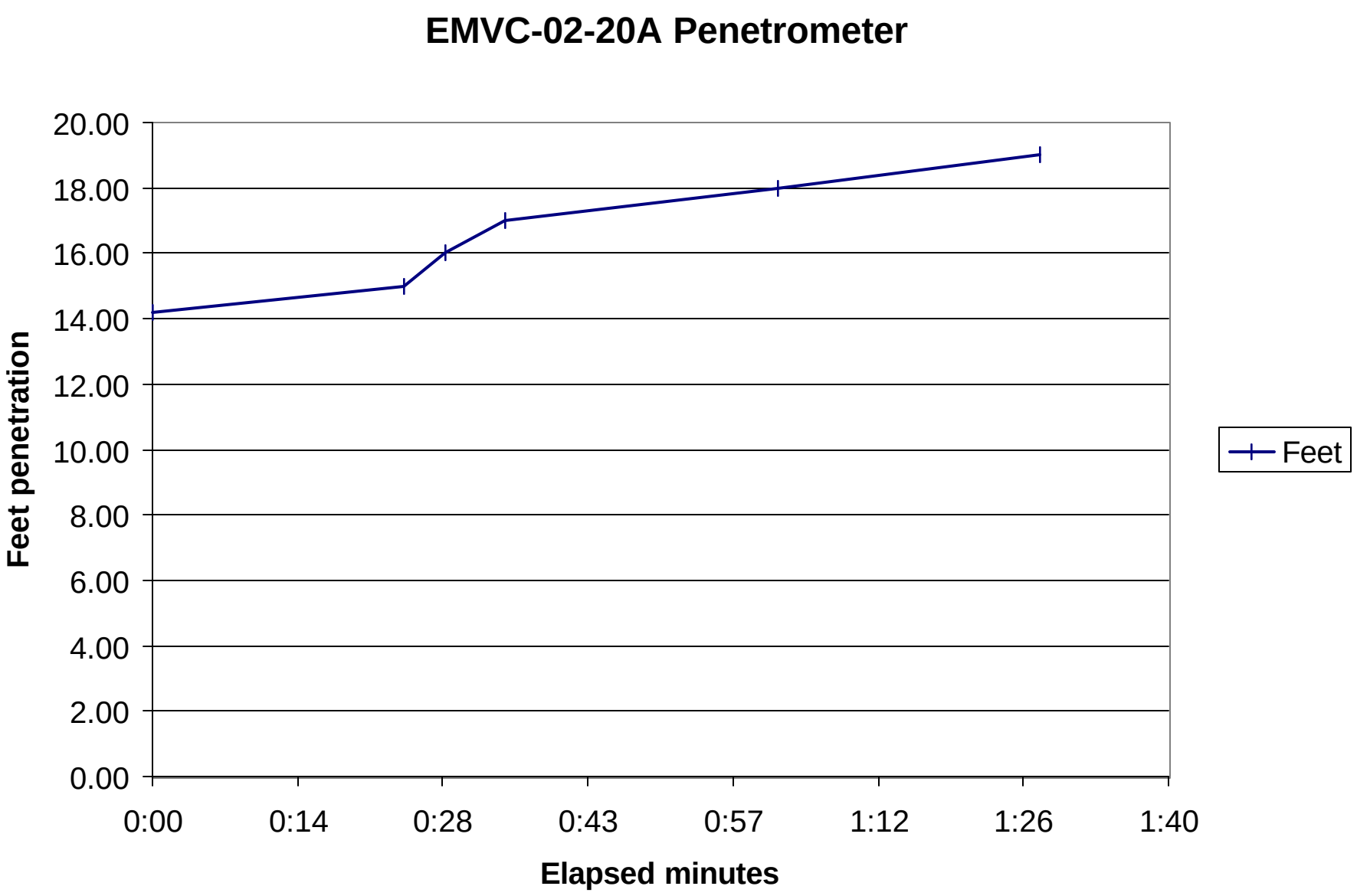

EMVC-02-17A Penetrometer
Feet Penetration
20
18
16
14
12
10
8
6
4
2
0
0:00
0:14
0:28
0:43
0:57
1:12
Elapsed minutes
Feet

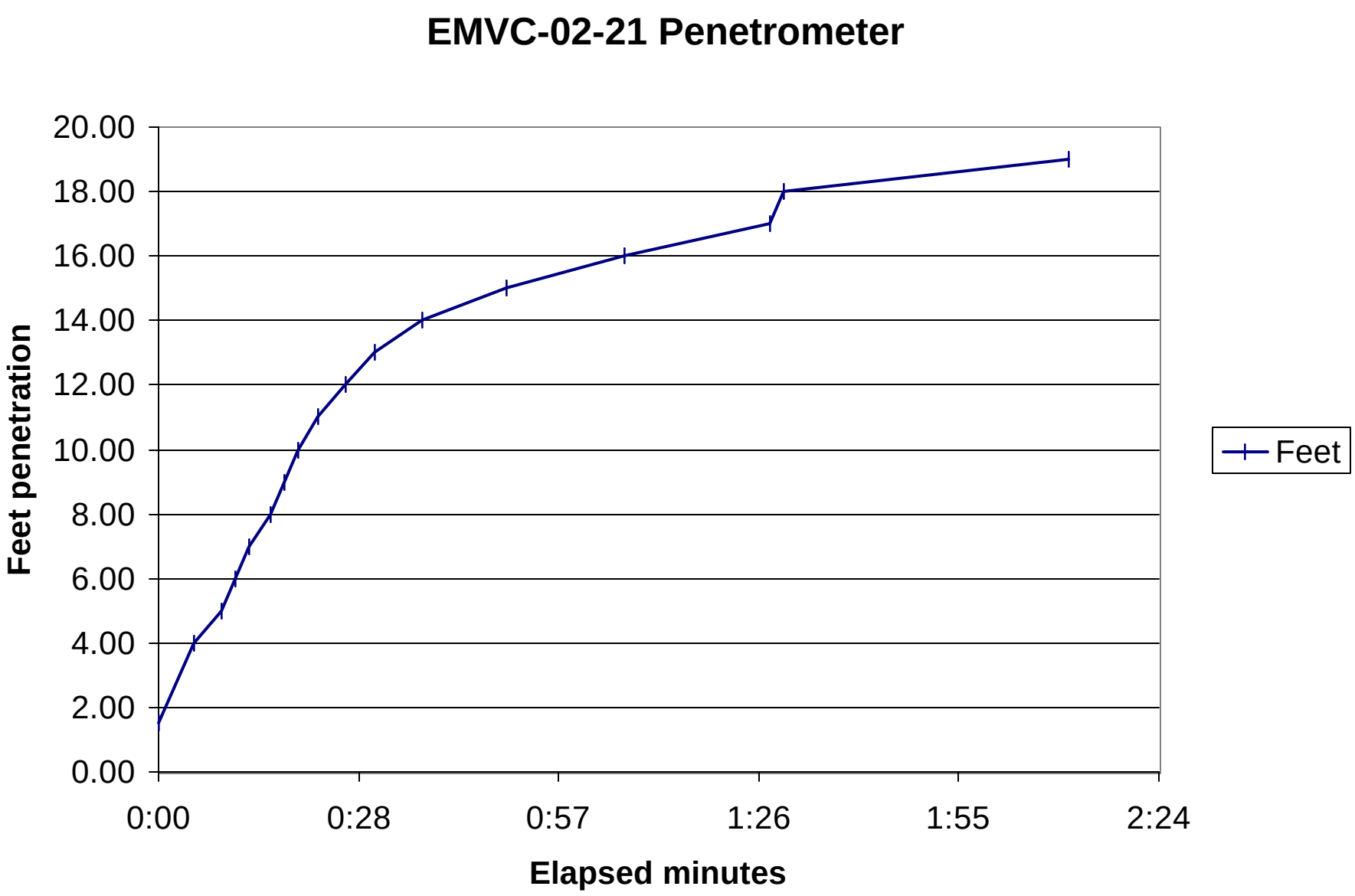

EMVC-02-18 Penetrometer
Feet penetration
20
18
16
14
12
10
8
6
4
2
0
0:00
2:24
4:48
7:12
9:36
12:00
14:24
Elapsed minutes
Feet

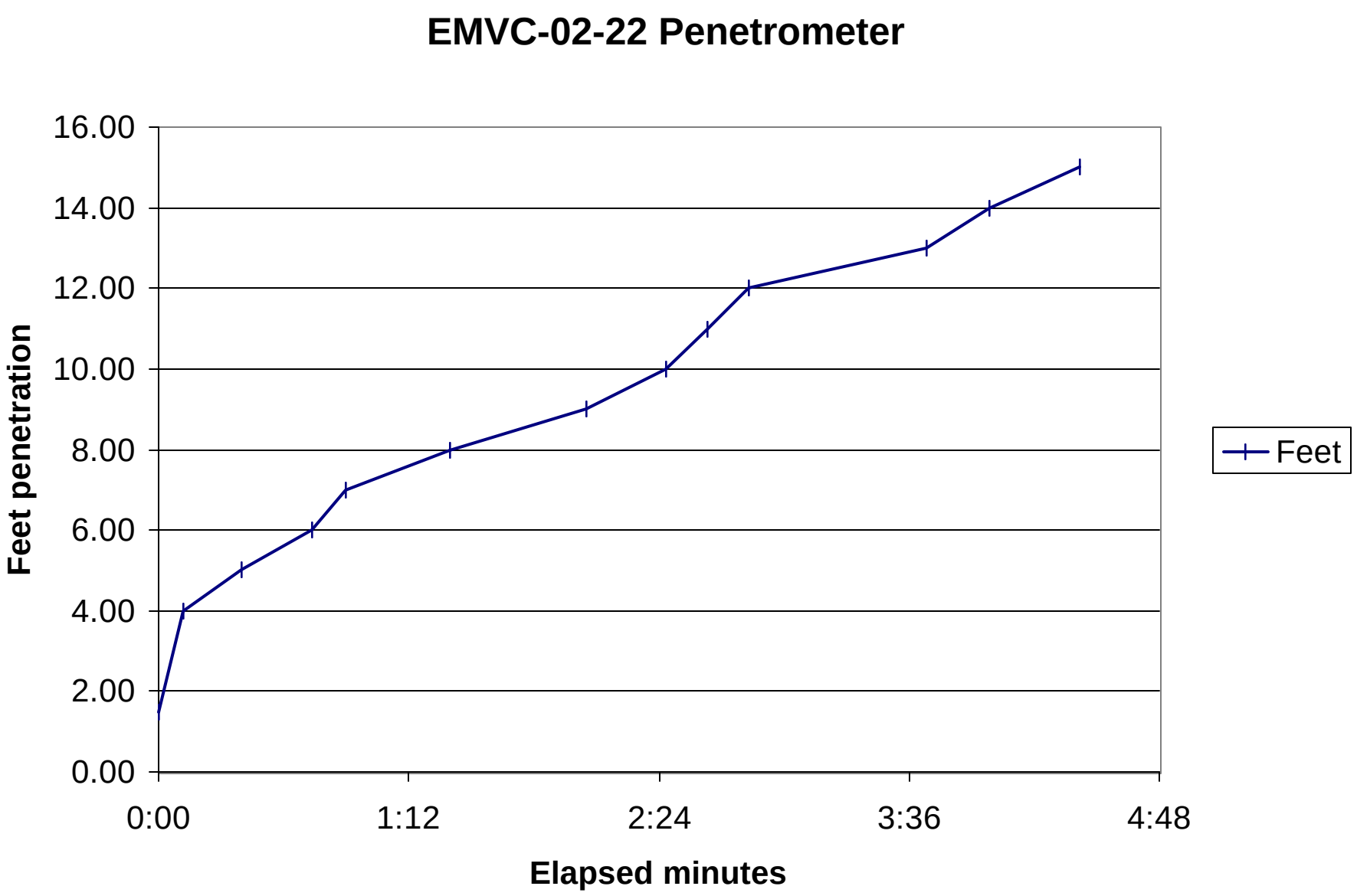

EMVC-02-19 Penetrometer
Feet penetration
20
18
16
14
12
10
8
6
4
2
0
0:00
1:12
2:24
3:36
4:48
6:00
7:12
Elapsed minutes
Feet

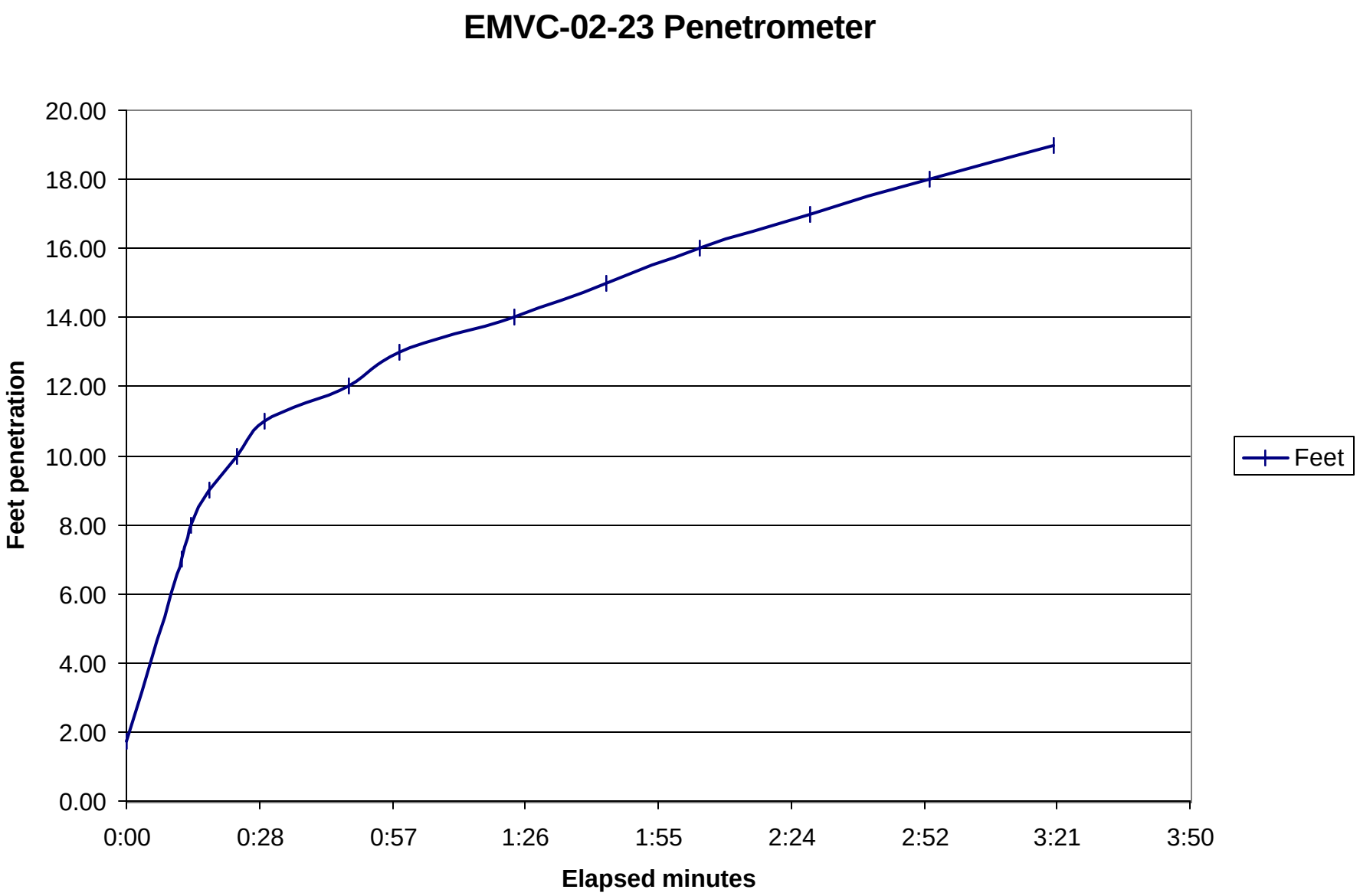

EMVC-02-19A Penetrometer
Feet penetration
20
18
16
14
12
10
8
6
4
2
0
0:00
0:07
0:14
0:21
0:28
0:36
0:43
0:50
Elapsed minutes
Feet

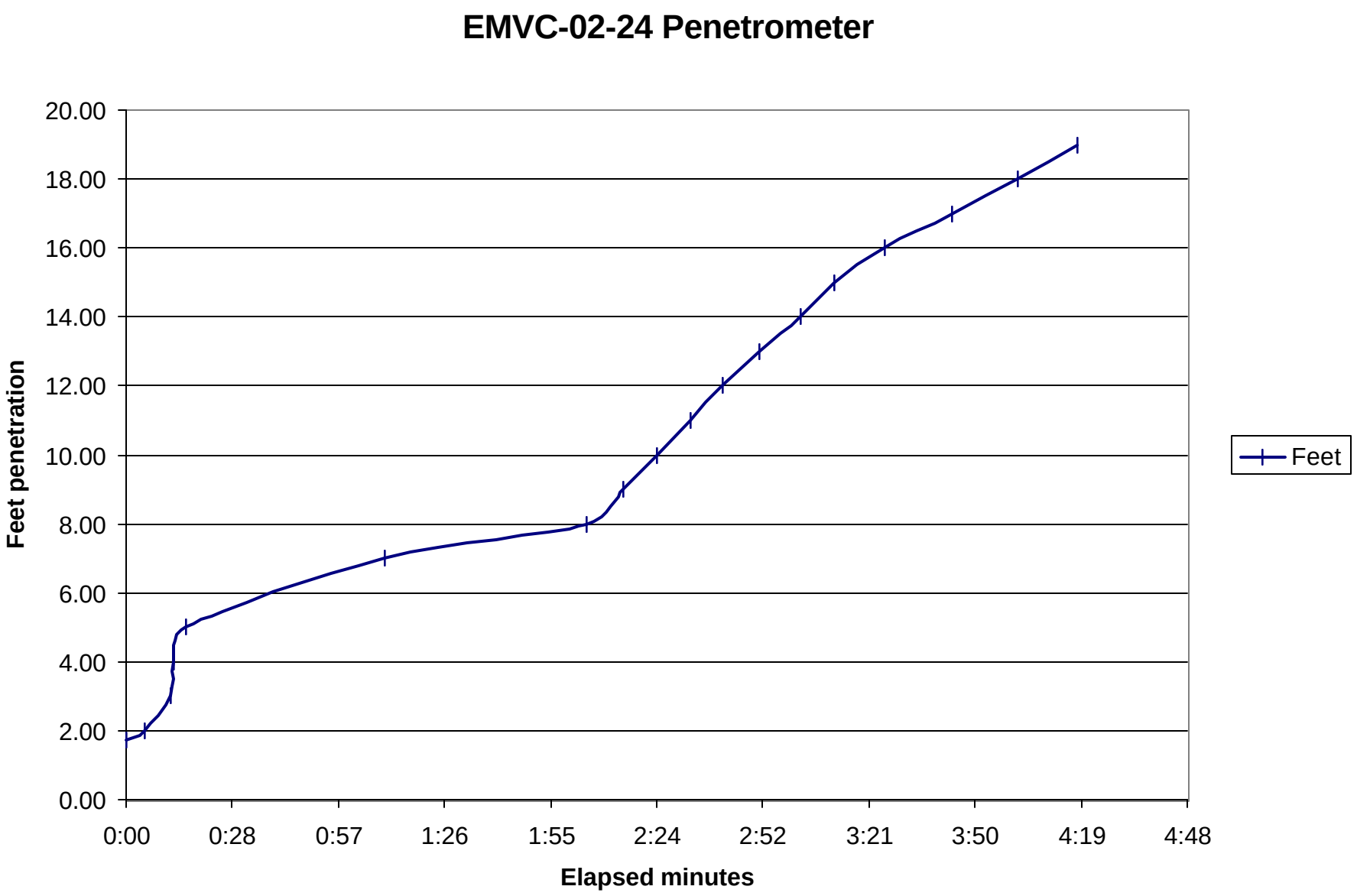

EMVC-02-20 Penetrometer
20.00
18.00
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
Feet penetration
0:00
0:28
0:57
1:26
1:55
2:24
2:52
3:21
3:50
4:19
4:48
Elapsed minutes
Feet

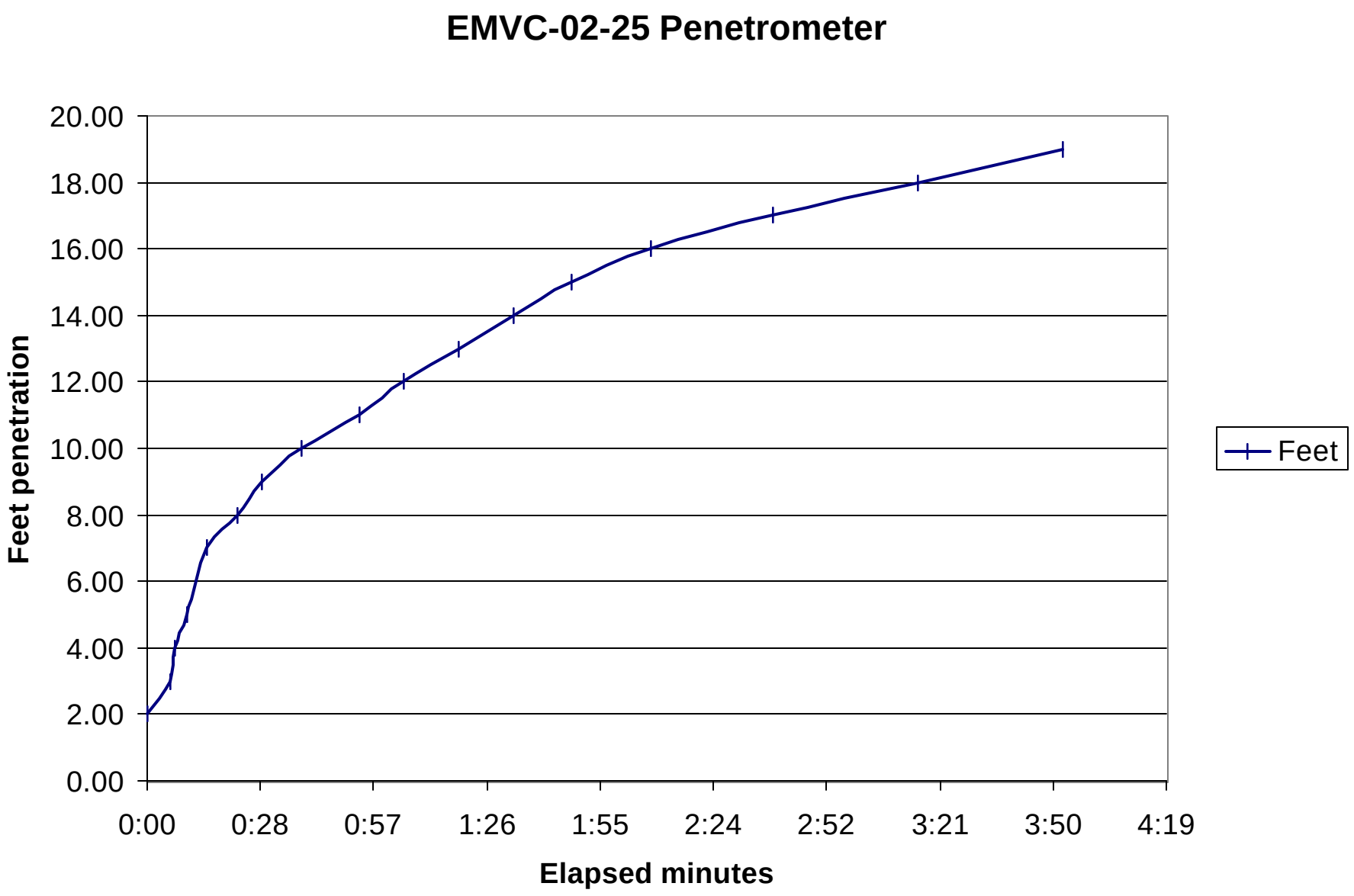

EMVC-02-20A Penetrometer
Feet penetration
20.00
18.00
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
0:00
0:14
0:28
0:43
0:57
1:12
1:26
1:40
Elapsed minutes
Feet

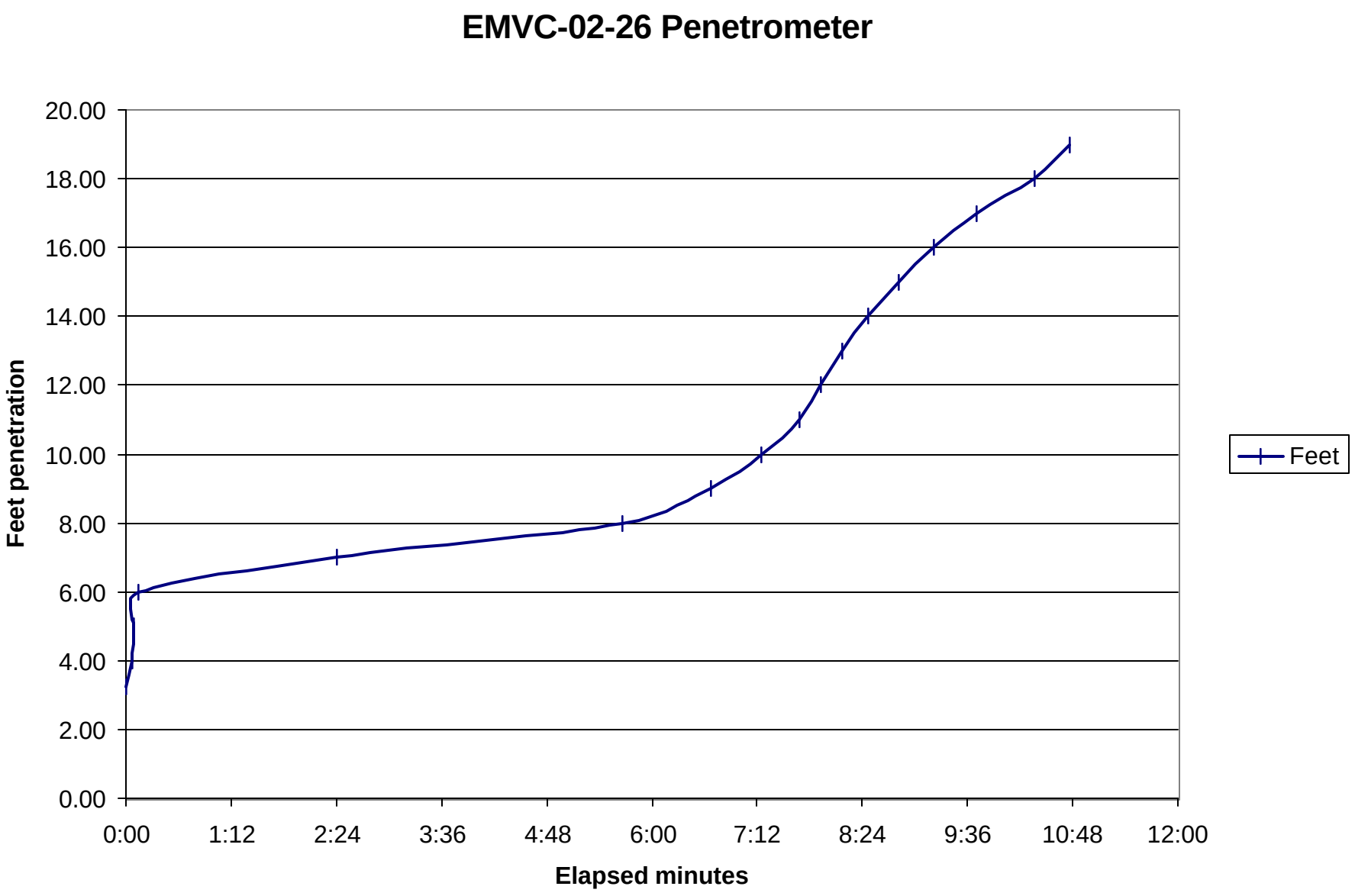

EMVC-02-21 Penetrometer
Feet penetration
20.00
18.00
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
0:00
0:28
0:57
1:26
1:55
2:24
Elapsed minutes
Feet

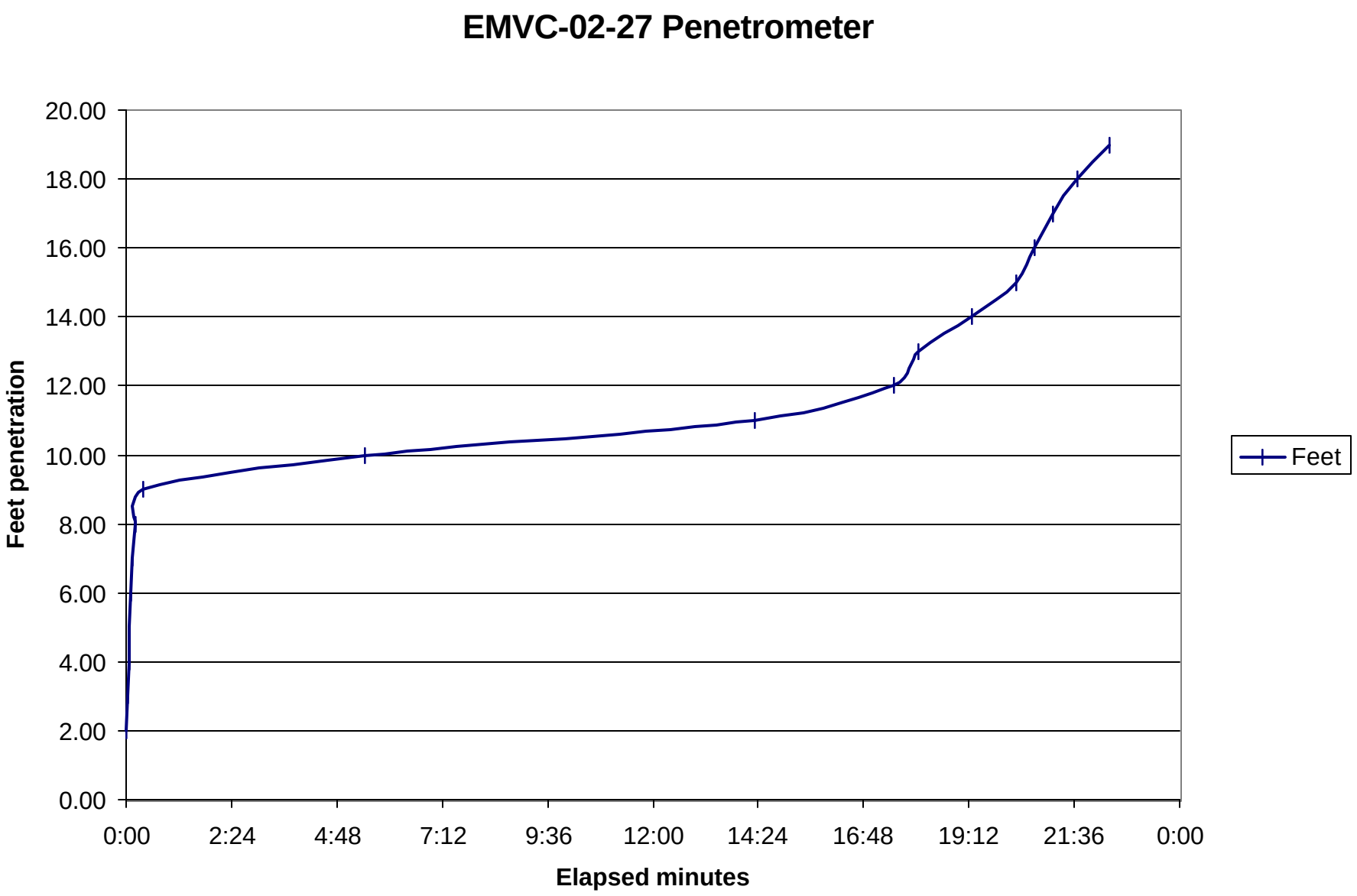

EMVC-02-22 Penetrometer
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
Feet penetration
0:00
1:12
2:24
3:36
4:48
Elapsed minutes
Feet

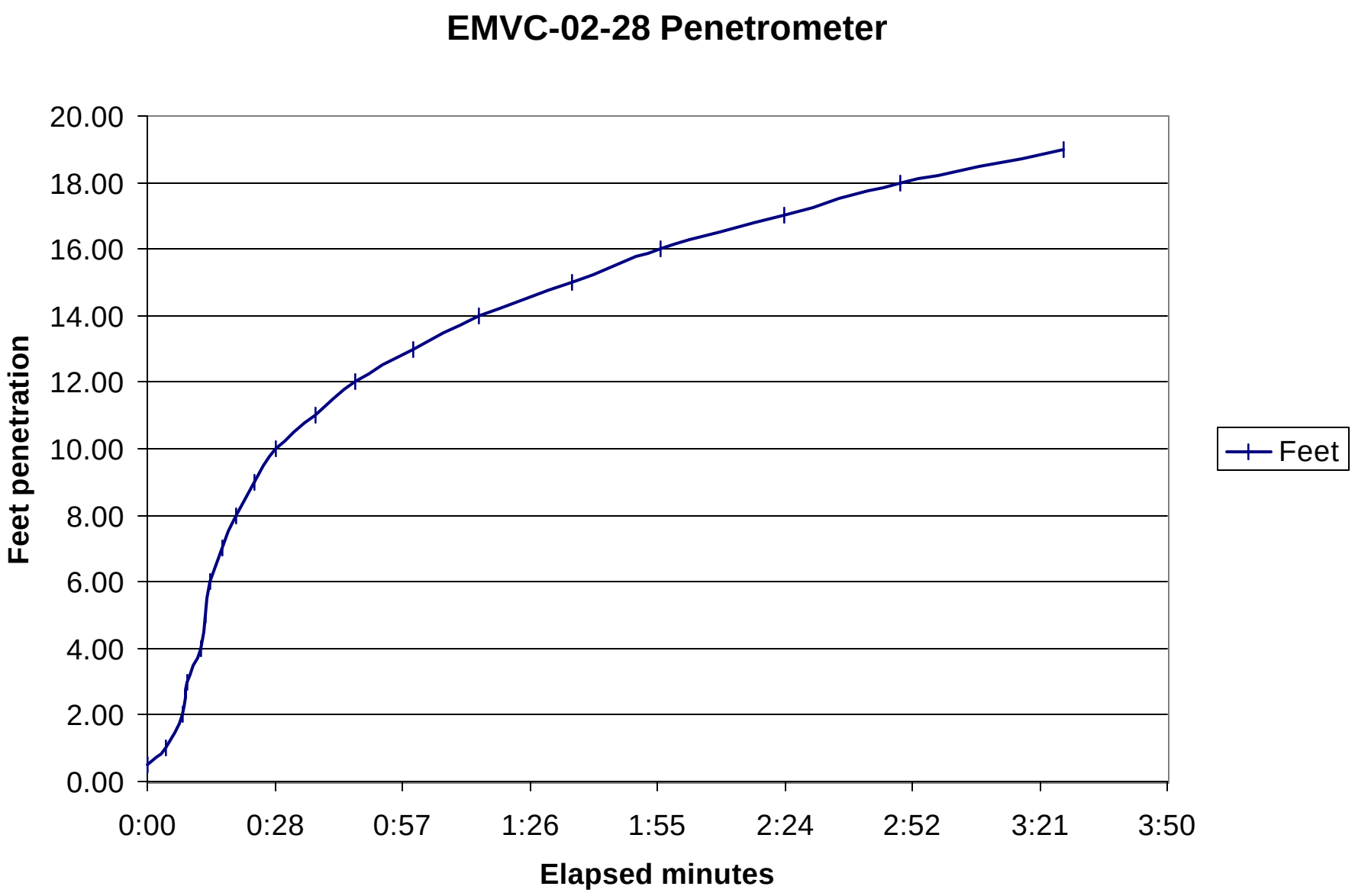

EMVC-02-23 Penetrometer
20.00
18.00
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
Feet penetration
0:00
0:28
0:57
1:26
1:55
2:24
2:52
3:21
3:50
Elapsed minutes
Feet

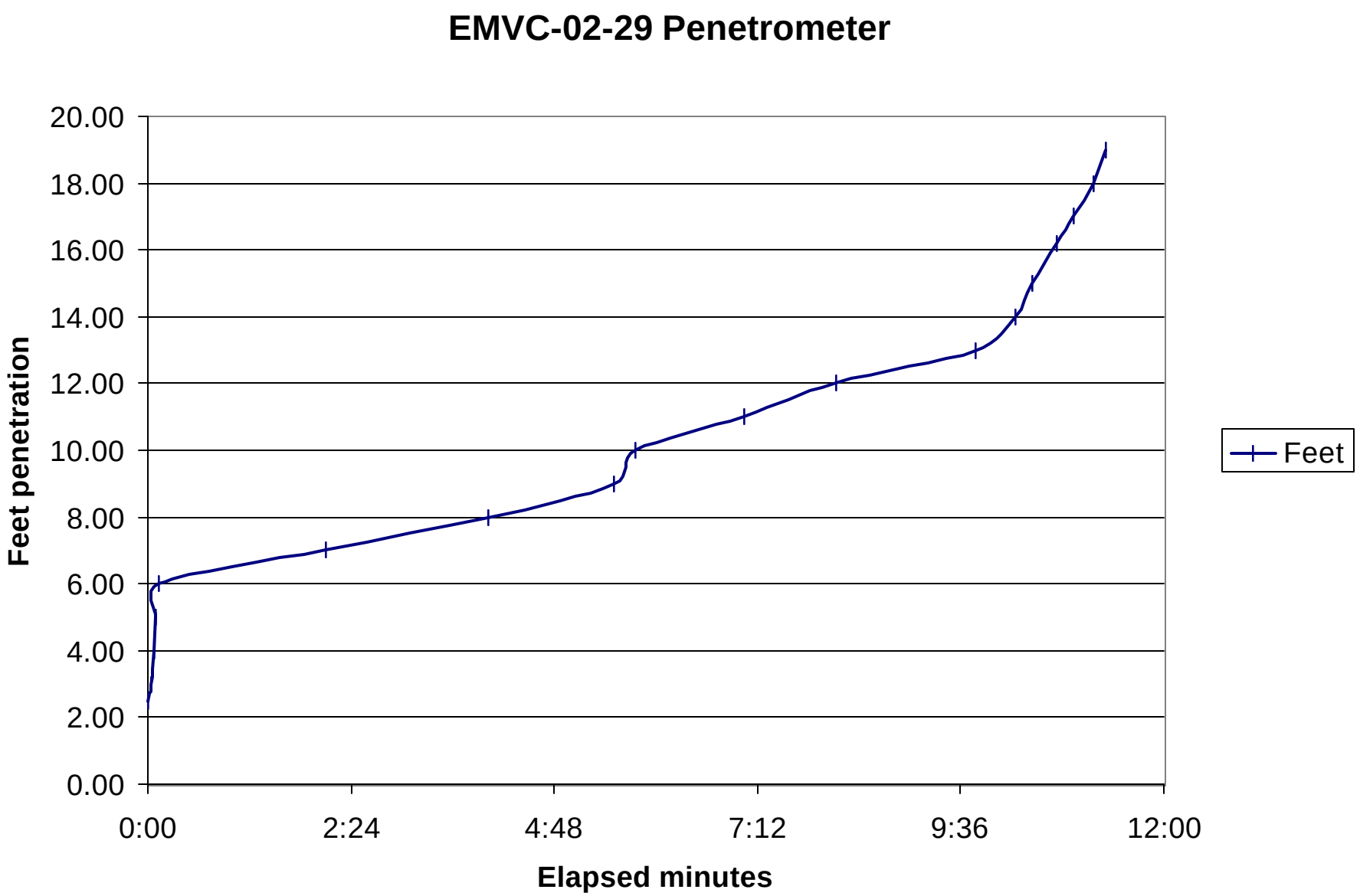

EMVC-02-24 Penetrometer
Feet penetration
20.00
18.00
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
0:00
0:28
0:57
1:26
1:55
2:24
2:52
3:21
3:50
4:19
4:48
Elapsed minutes
Feet

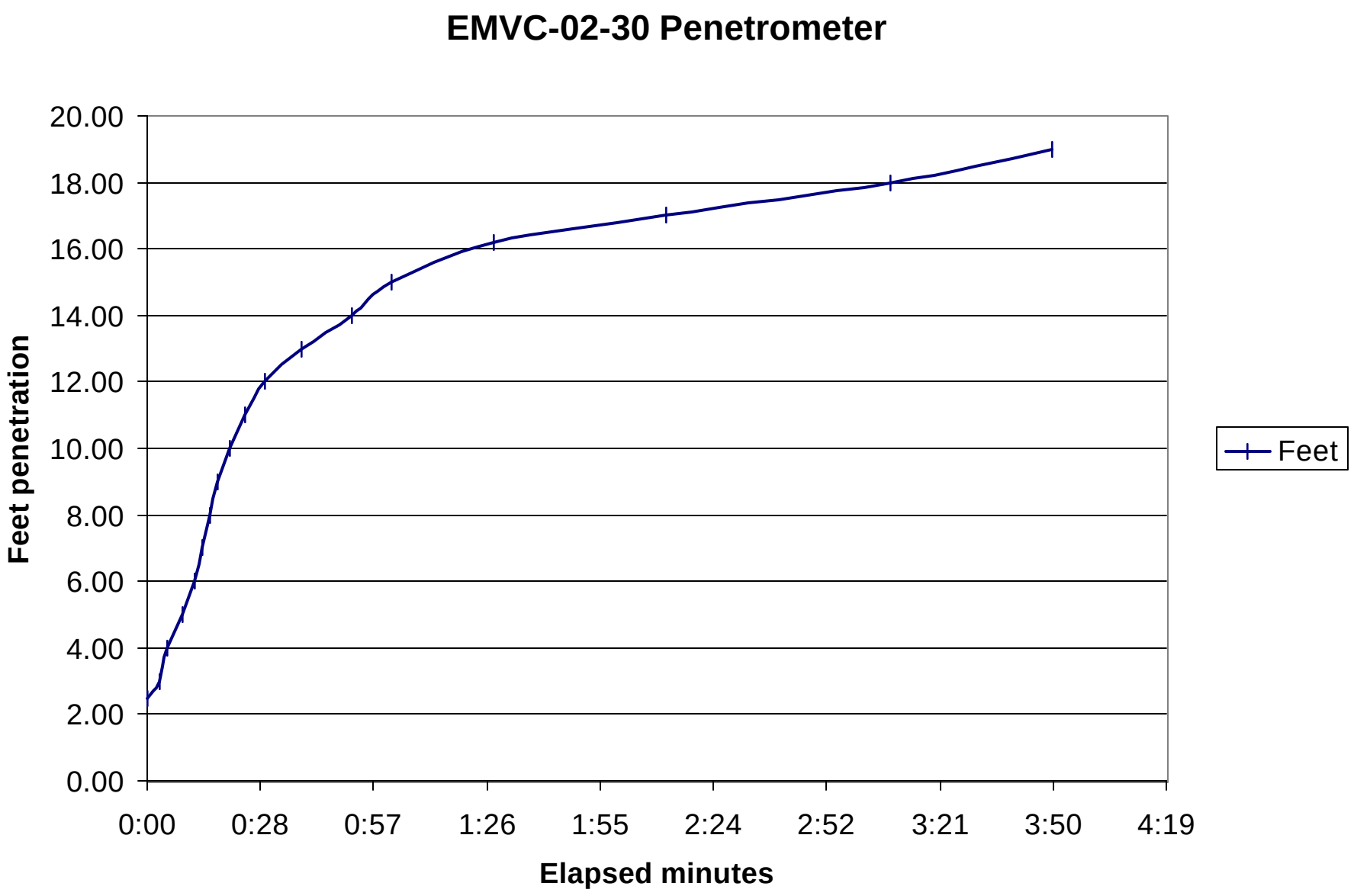

EMVC-02-25 Penetrometer
Feet penetration
20.00
18.00
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
0:00
0:28
0:57
1:26
1:55
2:24
2:52
3:21
3:50
4:19
Elapsed minutes
Feet

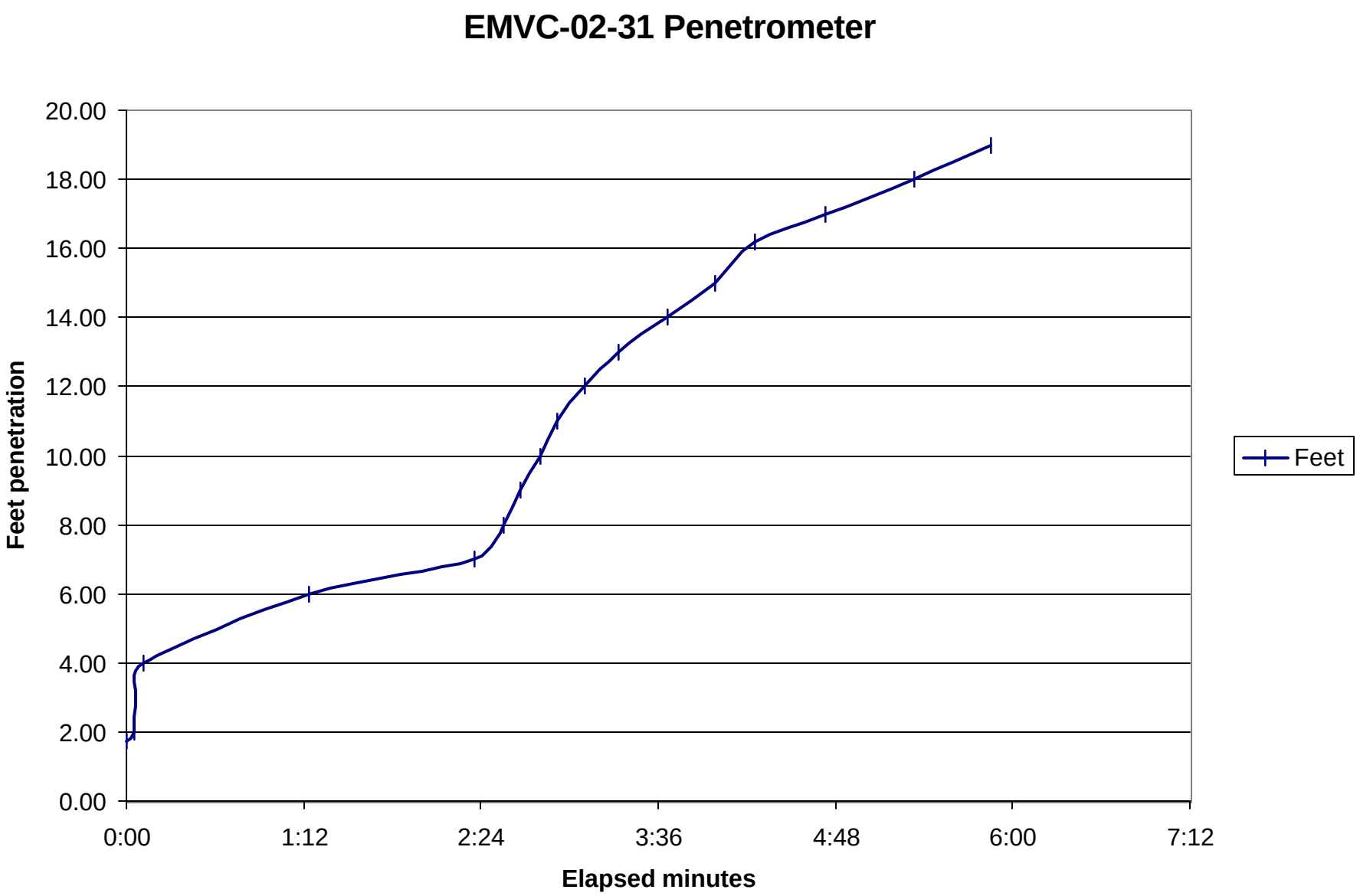

EMVC-02-26 Penetrometer
Feet penetration
20.00
18.00
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
0:00
1:12
2:24
3:36
4:48
6:00
7:12
8:24
9:36
10:48
12:00
Elapsed minutes
Feet


EMVC-02-27 Penetrometer
Feet penetration
20.00
18.00
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
0:00
2:24
4:48
7:12
9:36
12:00
14:24
16:48
19:12
21:36
0:00
Elapsed minutes
Feet


EMVC-02-28 Penetrometer
Feet penetration
20.00
18.00
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
0:00
0:28
0:57
1:26
1:55
2:24
2:52
3:21
3:50
Elapsed minutes
Feet


EMVC-02-29 Penetrometer
Feet penetration
20.00
18.00
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
0:00
2:24
4:48
7:12
9:36
12:00
Elapsed minutes
Feet


EMVC-02-30 Penetrometer
Feet penetration
20.00
18.00
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
0:00
0:28
0:57
1:26
1:55
2:24
2:52
3:21
3:50
4:19
Elapsed minutes
Feet


EMVC-02-31 Penetrometer
20.00
18.00
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
Feet penetration
0:00
1:12
2:24
3:36
4:48
6:00
7:12
Elapsed minutes
Feet

APPENDIX 7
2003 SANDY POINT VIBRACORE LOGS

Coastal Planning & Engineering
2481 N.W. Boca Raton Blvd.
Boca Raton, Florida 33431
Phone # 1-561-391-8102

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 is initially based on visual field examinations and are identified on the core logs under the Classification of Materials Description. Final classifications are based on laboratory sieve analyses and are identified on the core logs in the Legend and under Remarks.

Silty, shelly, etc. — The indicated sediment type is present. The estimated percentage indicated by the Unified Soil Classification System descriptive terms selected to describe the sediment.

Definition of descriptive terms

Clean	Free of silt or clay
Very	To a high degree
Slightly	To a small degree
Isolated	Limited occurrence
Occasional	Infrequently present
Tight	Dense compacted

Grain size terms

Cobbles – above 3”
Gravel – 3” sieve to # 4 sieve
- Coarse – 3” sieve to ¾” sieve
- Fine – ¾” sieve to # 4 sieve

Sand – # 4 sieve to # 200 sieve
- Coarse - # 4 sieve to # 10 sieve
- Medium - # 10 sieve to # 40 sieve
- Fine - # 40 sieve to # 200 sieve

Fine – (silt or clay) < # 200 sieve

Proportional definition of descriptive terms

Descriptive Term	Range of Proportions
Sandy, gravelly, etc.	35 % to 50 %
Some	20 % to 35 %
Little	10 % to 20 %
Trace	1 % to 10 %
Coarse to fine	All sizes
Coarse to medium	10 % fine
Medium to fine	10 % coarse
Coarse	10 % medium and fine
Medium	10 % coarse and fine
Fine	10 % coarse and medium

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

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Legend for Geotechnical Data

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

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

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Legend for Geotechnical Data

The naming convention used by Coastal Planning and Engineering 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: jet probe (JP), vibracore (VC) or surface sample (SS)
- Collection year (yy)
- Identification number
- Sample identification in the case of jet probes or vibracores
- Composite samples are indicated by COMP or SOBC following the identification number. COMP represents a composite developed to characterize beach compatible material. SOBC represents a composite developed to characterize sandy overburden material to be used in marsh design.

Format examples:
A) SPVC-03-01
B) SPVC-03-01 S#2

Example A is a vibracore number 1, collected in the Sandy Point area in the year 2003.

Example B refers to sample number 2 taken from vibracore number 1, which was collected in the Sandy Point area in 2003.

No specific format is followed for area name abbreviations, however, the name of the area is always given in the appendix title page where the data is presented.

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

DRILLING LOG

DIVISION:

INSTALLATION:

1. PROJECT BARATARIA	**10. SIZE AND TYPE OF BIT** 3"
2. LOCATION (Coordinates or Station) X=3855885 Y=230769	**11. DATUM FOR ELEVATION SHOWN** (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	**12. MANUFACTURER'S DESIGNATION OF DRILL** Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) SPVC-03-01	**13. TOT NO. OF OVERBURDEN SAMPLES TAKEN** Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	**14. TOTAL NO. OF CORE BOXES** 1
6. DIRECTION OF HOLE VERTICAL	**15. ELEVATION GROUND WATER**
	16. DATE HOLE Started 06/5/03 0739 Completed
7. THICKNESS OF BURDEN 0.0 FT	**17. ELEVATION TOP OF HOLE**
8. DEPTH DRILLED INTO ROCK N/A	**18. TOTAL CORE RECOVERY FOR BORING** 62.5%
9. TOTAL DEPTH OF HOLE 17.9 FT	**19. SIGNATURE OF GEOLOGIST** ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-35.8	0					
-37.4	1		SANDY CLAY, very dark gray (5Y-3/1), (CL).		1	Sample #1 Depth = 0.8 *Mean (mm): 0.024, Phi Sorting: 1.94 *Sand: 37.04%, Silt: 50.77%, Clay: 12.17%
-38.6	2		SANDY SILT, trace shell hash, dark gray (5Y-4/1), (ML).		2	Sample #2 Depth = 2.20 Mean (mm): 0.09, Phi Sorting: 0.66 Silt: 35.47% (SM)
-42.2	3, 4, 5, 6		CLAY, trace sand laminae, 2.0" fine grained sand layer @ 3.9', dark gray (5Y-4/1), (CL).		3	Sample #3 Depth = 4.6 *Mean (mm): 0.007, Phi Sorting: 1.90 *Sand: 0.00%, Silt: 68.70%, Clay: 31.23%
			SANDY SILT, dark gray (5Y-4/1), (ML).		2	
-44.7	7, 8		CLAY, little sand laminae, dark gray (5Y-4/1), (CL)		4	Sample #4 Depth = 7.6 *Mean (mm): 0.010, Phi Sorting: 2.14 *Sand: 7.86%, Silt: 68.69%, Clay: 23.49%
-45.6	9		SANDY SILT, little clay, dark gray (5Y-4/1), (ML).		2	
-46.1	10		SAND, fine grained, quartz, little silt, gray (5Y-5/1), (SM).		5	Sample #5 Depth = 10.10 Mean (mm): 0.12, Phi Sorting: 0.60 Silt: 11.59% (SM)
-46.6					3	
	11		CLAY, trace sand laminae, dark gray (5Y-4/1), (CL).		5	
	12		SAND, fine grained, quartz, trace clay laminae, trace silt, gray (5Y-5/1), (SM).			
	13, 14, 15, 16, 17		No Recovery			
-53.7	18		End of Boring			
	19, 20, 21, 22, 23, 24		Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

HOLE NO. SPVC-03-01A

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3855882 Y=230767	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) SPVC-03-01A	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
7. THICKNESS OF BURDEN 0.0 FT	16. DATE HOLE Started 06/05/03 Completed 0836
8. DEPTH DRILLED INTO ROCK N/A	17. ELEVATION TOP OF HOLE FT
9. TOTAL DEPTH OF HOLE 17.4 FT	18. TOTAL CORE RECOVERY FOR BORING 98%
	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-35.8	0					
	1					
	2					
	3					
	4		Jetted to 9.4'			
	5					
	6					
	7					
	8					
-45.2	9					
-45.8	10		CLAY, dark gray (5Y-4/1), (CL)		1s#3	
-46.7			SAND, fine grained, trace silt, gray (5Y-5/1), (SP).		6	Sample #6 Depth = 10.4 Mean (mm): 0.13 , Phi Sorting: 0.46 Silt: 4.26% (SW-SM)
	11		CLAY, trace sand laminae, dark gray (5Y-4/1), (CL).		1s#3	
-48.4	12					
	13		SILTY SAND, trace organics, gray (5Y-5/1), (SM).		8	Sample #8 Depth = 14.5 Mean (mm): 0.08, Phi Sorting: 0.55 Silt: 36.81% (SM)
-49.8	14					
-50.6			SILT, trace clay, trace sand, dark gray (5Y-4/1), (ML).		7	Sample #7 Depth = 15.4 *Mean (mm): 0.029, Phi Sorting: 1.51 *Sand: 35.40%, Silt: 55.13%, Clay: 9.49%
	15		SAND, fine grained, little clay laminae, gray (5Y-5/1), (SW-SM).		9	
-52.1	16					Sample #9 Depth = 16.4 Mean (mm): 0.14, Phi Sorting: 0.66 Silt: 7.55% (SW-SM)
-53 -53.2	17		SANDY SILT, trace clay, trace organics, gray (5Y-5/1), (ML).		1s#2	
	18		No Recovery			
			End of Boring			
	19					
	20					
	21		Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO
	22					
	23					
	24					

PROJECT: BARATARIA | HOLE NUMBER: SPVC-03-01A

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3855275 Y=230980	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) SPVC-03-02	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
	16. DATE HOLE Started 06/05/03 Completed 1008
7. THICKNESS OF BURDEN 0.0 FT	17. ELEVATION TOP OF HOLE FT
8. DEPTH DRILLED INTO ROCK N/A	18. TOTAL CORE RECOVERY FOR BORING 100%
9. TOTAL DEPTH OF HOLE 18.5 FT	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-36.5	0					
-38.2	1		SILTY SAND, trace clay, trace shell hash, dark gray (5Y-4/1), (SM).		1	Sample #1 Depth = 1.0 Mean (mm): 0.10, Phi Sorting: 0.76 Silt: 24.72% (SM)
-40	2, 3		SAND, fine grained, quartz, little silt, gray (5Y-5/1), (SM).		2	Sample #2 Depth = 2.5 Mean (mm): 0.10, Phi Sorting: 0.73 Silt: 18.63% (SM)
-42.4	4, 5		SAND, fine grained, quartz, trace silt, trace organics, gray (5Y-5/1), (SP).		3	Sample #3 Depth = 4.8 Mean (mm): 0.14, Phi Sorting: 0.66 Silt: 7.22% (SW-SM)
-43	6		CLAY, trace sand laminae, dark gray (5Y-4/1), (CL)		4	Sample #4 Depth = 6.3 *Mean (mm): 0.006, Phi Sorting: 2.07 *Sand: 1.59%, Silt: 63.05%, Clay: 35.22%
-44.3	7		SILT, 1.0" clay layer at base, dark gray (5Y-4/1), (ML).		5	Sample #5 Depth = 7.3 *Mean (mm): 0.030, Phi Sorting: 1.69 *Sand: 44.75%, Silt: 45.09%, Clay: 10.17%
-45.6	8, 9		SAND, fine grained, quartz, trace silt, trace clay laminae, trace organics, gray (5Y-6/1), (SP).		3	
-46.8	10		CLAY, gray (5Y-5/1), (CL).		4	
-47.6	11		SAND, fine grained, quartz, little clay laminae, gray (5Y-5/1), (SM).		6	Sample #6 Depth = 10.9 Mean (mm): 0.11, Phi Sorting: 0.97 Silt: 47.04% (SM)
			CLAY, dark gray (5Y-4/1), (CL).		4	
-52.4	12, 13, 14, 15		SAND, fine grained, quartz, trace silt, 4.0" sandy clay layer @ 12.5', 0.5" clay layer @ 14.1', trace clay laminae, gray (5Y-6/1), (SP).		7	Sample #7 Depth = 15.0 Mean (mm): 0.16, Phi Sorting: 0.42 Silt: 1.39% (SP)
-55.2	16, 17, 18		SAND, fine grained, quartz, some silt layers, 1.0" organic layers @ 16.1', 16.4 and 16.7', 0.5" clay burrow @ 16.8', gray (5Y-5/1), (SM).		1	
	19, 20, 21, 22, 23, 24		End of Boring Expanision from 18.5' Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

DRILLING LOG

DIVISION:

INSTALLATION:

1. PROJECT BARATARIA	**10. SIZE AND TYPE OF BIT** 3"
2. LOCATION (Coordinates or Station) X=3855493 Y=232415	**11. DATUM FOR ELEVATION SHOWN** (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	**12. MANUFACTURER'S DESIGNATION OF DRILL** Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) SPVC-03-03	**13. TOT NO. OF OVERBURDEN SAMPLES TAKEN** Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	**14. TOTAL NO. OF CORE BOXES** 1
6. DIRECTION OF HOLE VERTICAL	**15. ELEVATION GROUND WATER**
	16. DATE HOLE Started 06/05/03 1052 Completed
7. THICKNESS OF BURDEN 0.0 FT	**17. ELEVATION TOP OF HOLE** FT
8. DEPTH DRILLED INTO ROCK N/A	**18. TOTAL CORE RECOVERY FOR BORING** 97%
9. TOTAL DEPTH OF HOLE 18.5 FT	**19. SIGNATURE OF GEOLOGIST** ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-36.1	0					
-37.4	1		CLAY (soft from 0.0-0.6), little sand laminae, trace shell hash, dark gray (5Y-4/1), (CL).		1	Sample #1 Depth = 0.6 *Mean (mm): 0.010, Phi Sorting: 2.46 *Sand: 12.25%, Silt: 57.41%, Clay: 30.40%
	2 3 4 5		SAND, fine grained, quartz, some silt, gray (5Y-5/1), (SM).		2	Sample #2 Depth = 3.5 Mean (mm): 0.09, Phi Sorting: 0.59 Silt: 21.48% (SM)
-42.3	6					Sample #6 Depth = 6.5 *Mean (mm): 0.092, Phi Sorting: 0.70 *Sand: 80.32%, Silt: 17.33%, Clay: 2.39%
-42.9			SILT, little sand, gray (5Y-6/1), (ML).		6	Mean (mm): 0.08, Phi Sorting: 0.55 Silt: 42.27% (ML)
	7 8 9 10		SAND, fine grained, quartz, little silt, trace clay laminae, 1.0" clay burrow @ 10.9', gray (5Y-6/1), (SM).		3	Sample #3 Depth = 9.0 Mean (mm): 0.09, Phi Sorting: 0.43 Silt: 12.93% (SM)
-47.1	11					
	12 13				4	Sample #4 Depth = 13.7 Mean (mm): 0.14, Phi Sorting: 0.45 Silt: 2.34% (SP)
	14 15 16 17		SAND, fine grained, quartz, fining upwards, trace silt, trace organics, 2.0" sandy clay layer @ 12.3', gray (5Y-6/1), (SP).		5	Sample #5 Depth = 17.3 Mean (mm): 0.15, Phi Sorting: 0.43 Silt: 1.61% (SP)
-54.1						
-54.6	18		No Recovery			
	19 20 21 22 23 24		End of Boring Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3860309 Y=228670	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) SPVC-03-04	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
	16. DATE HOLE Started 06/05/03 Completed 1147
7. THICKNESS OF BURDEN 0.0 FT	17. ELEVATION TOP OF HOLE FT
8. DEPTH DRILLED INTO ROCK N/A	18. TOTAL CORE RECOVERY FOR BORING 93%
9. TOTAL DEPTH OF HOLE 19.0 FT	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-34.7	0					
-35.9	1		CLAY, little sand laminae, trace shell hash, dark gray (5Y-4/1), (CL).		1	Sample #1 Depth = 0.5 *Mean (mm): 0.008, Phi Sorting: 2.38 *Sand: 9.99%, Silt: 54.58%, Clay: 35.34%
-37.5	2		SAND, fine grained, quartz, some silt, trace shell hash, dark gray (5Y-4/1), (SM).		2	Sample #2 Depth = 2.2 Mean (mm): 0.11, Phi Sorting: 0.75 Silt: 18.83% (SM)
-43.4	3 4 5 6 7 8		Fine grained, quartz, little silt, trace shell hash, trace clay laminae, 4.0" clay layer from 6.0'-6.4', 1.0" clay burrow @ 6.6', gray (5Y-5/1), (SW-SM).		3	Sample #3 Depth = 5.6 Mean (mm): 0.10, Phi Sorting: 0.65 Silt: 16.86% (SM)
-44.5	9		SILT, little sand, 0.5" organic layer @ 8.8', dark gray (5Y-4/1), (ML).		4	Sample #4 Depth = 9.0 Mean (mm): 0.08, Phi Sorting: 0.58 Silt: 42.07% (ML)
-46.2	10 11		SAND, fine grained, quartz, trace silt, gray (5Y-6/1), (SP).		5	Sample #5 Depth = 11.0 Mean (mm): 0.14, Phi Sorting: 0.54 Silt: 4.04% (SW-SM)
-47.7	12		SILTY SAND, trace organic laminae, gray (5Y-5/1), (SM).		2	
-52.3	13 14 15 16 17		SAND, fine grained, quartz, some silt/organic layers, gray (5Y-6/1), (SM).		6	Sample #6 Depth = 15.6 Mean (mm): 0.11, Phi Sorting: 0.58 Silt: 8.53% (SM)
-53.7	18		No Recovery			
	19 20 21 22 23 24		End of Boring Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3863175 Y=222287	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) SPVC-03-05	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
	16. DATE HOLE Started 06/05/03 Completed 1246
7. THICKNESS OF BURDEN 0.0 FT	17. ELEVATION TOP OF HOLE FT
8. DEPTH DRILLED INTO ROCK N/A	18. TOTAL CORE RECOVERY FOR BORING 91%
9. TOTAL DEPTH OF HOLE 17.2 FT	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-34.9	0					
-38	1, 2, 3		SAND, fine grained, quartz, little silt, little clay, trace shell hash, dark gray (5Y-4/1), (SC).		1	Sample #1 Depth = 1.5 *Mean (mm): 0.027, Phi Sorting: 2.40 *Sand: 60.52%, Silt: 26.21%, Clay: 13.23% Mean (mm): 1.10, Phi Sorting: 0.72 Silt: 22.54% (SM)
-45.3	4, 5, 6, 7, 8, 9, 10		SAND, fine grained, quartz, trace silt, 0.5" clay layer @ 6.6', 2.0" light yellowish brown (10YR-6/4) clay layer from 7.1-7.3', gray (5Y-6/1), (SP).		2	Sample #2 Depth = 5.5 Mean (mm): 0.14, Phi Sorting: 0.65 Silt: 7.63% (SW-SM) Sample #3 Depth = 10.6 Mean (mm): 0.072, Phi Sorting: 0.94 *Sand: 72.40%, Silt: 21.79%, Clay: 5.76% Mean (mm): 0.09, Phi Sorting: 0.69 Silt: 36.63% (ML)
-45.9	11		SILTY SAND, 0.5" organic layer @ 8.8', gray (5Y-5/1), (SM).		3	
-48.2	12, 13		SAND, fine grained, quartz, fining upwards, trace silt, gray (5Y-5/1), (SP).		4	Sample #4 Depth = 11.4 Mean (mm): 0.13, Phi Sorting: 0.62 Silt: 7.74% (SW-SM)
-50.5	14, 15		SAND, fine grained, quartz, fining upwards, trace silt, 1.0" clay burrow @ 14.6', gray (5Y-5/1), (SP).		5	Sample #5 Depth = 15.3 Mean (mm): 0.17, Phi Sorting: 0.44 Silt: 2.42% (SP)
-52.1	16, 17		No Recovery			
	18, 19, 20, 21, 22, 23, 24		End of Boring Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3863172 Y=222290	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) SPVC-03-05A	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
	16. DATE HOLE Started 06/05/03 Completed 1246
7. THICKNESS OF BURDEN 0.0 FT	17. ELEVATION TOP OF HOLE FT
8. DEPTH DRILLED INTO ROCK N/A	18. TOTAL CORE RECOVERY FOR BORING 86%
9. TOTAL DEPTH OF HOLE 16.6 FT	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-34.9	0					
	1					
	2					
	3					
	4					
	5					
	6					
	7		Jetted to 14.4'			
	8					
	9					
	10					
	11					
	12					
	13					
-49.3	14					Sample #6 Depth = 14.5
			SANDY CLAY, little organics, dark gray (5Y-4/1), (CL).		6	*Mean (mm): 0.009, Phi Sorting: 2.51 *Sand: 13.70%, Silt: 49.95%, Clay: 36.29%
	15		SAND, fine grained, quartz, trace silt, 0.25" clay burrow @ 15.4', gray (5Y-5/1), (SP).		7	Sample #7 Depth = 16.0 Mean (mm): 0.16, Phi Sorting: 0.47 Silt: 2.49% (SP)
-51.2	16					
-51.5			No Recovery			
	17		End of Boring			
	18					
	19					
	20					
	21		Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO
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DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	**10. SIZE AND TYPE OF BIT** 3"
2. LOCATION (Coordinates or Station) X=3863029 Y=223563	**11. DATUM FOR ELEVATION SHOWN** (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	**12. MANUFACTURER'S DESIGNATION OF DRILL** Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) SPVC-03-06	**13. TOT NO. OF OVERBURDEN SAMPLES TAKEN** Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	**14. TOTAL NO. OF CORE BOXES** 1
6. DIRECTION OF HOLE VERTICAL	**15. ELEVATION GROUND WATER**
	16. DATE HOLE Started 06/05/03 1429 Completed
7. THICKNESS OF BURDEN 0.0 FT	**17. ELEVATION TOP OF HOLE** FT
8. DEPTH DRILLED INTO ROCK N/A	**18. TOTAL CORE RECOVERY FOR BORING** 90%
9. TOTAL DEPTH OF HOLE 18.6 FT	**19. SIGNATURE OF GEOLOGIST** ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-34.9	0					
-36.9	1, 2		SILTY SAND, 2.0" clay layer from 1.6'-1.8', dark gray (5Y-4/1), (SM).		1	Sample #1 Depth = 1.0 Mean (mm): 0.11, Phi Sorting: 0.69 Silt: 18.55% (SM)
-39.1	3, 4		SAND, fine grained, quartz, little silt, 2.0" sandy clay layer from 3.8'-4.0', dark gray (5Y-4/1), (SW-SM).		2	Sample #2 Depth = 3.0 Mean (mm): 0.12, Phi Sorting: 0.55 Silt: 6.75% (SW-SM)
-39.7	5		SAND, fine grained, quartz, trace silt, gray (5Y-5/1), (SW-SM).		4	Sample #3 Depth = 5.4 *Mean (mm): 0.007, Phi Sorting: 1.97 *Sand: 1.48%, Silt: 65.28%, Clay: 33.26%
-40.7			CLAY, little sandy layers, dark gray (5Y-4/1), (CL).		3	
-46.2	6, 7, 8, 9, 10, 11		SAND, fine grained, quartz, trace silt, trace organics, 3.0" clay layer from 9.9'-10.2', gray (5Y-6/1), (SW-SM).		4	Sample #4 Depth = 7.0 Mean (mm): 0.16, Phi Sorting: 0.55 Silt: 4.01% (SP)
-51.7	12, 13, 14, 15, 16		SAND, fine grained, quartz, trace silt, trace organics, 5.0" clay layer from 11.4'-11.9', 1.0" clay layers @ 12.7' and 13.0', 2.0" clay layer from 13.6'-13.8', 1.0" clay burrow @ 14.7', gray (5Y-6/1), (SW-SM).		5	Sample #5 Depth = 15.5 Mean (mm): 0.15, Phi Sorting: 0.59 Silt: 3.85% (SW-SM)
-53.5	17, 18		No Recovery			
	19, 20, 21, 22, 23, 24		End of Boring Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

DRILLING LOG

DIVISION:

INSTALLATION:

1. PROJECT BARATARIA	**10. SIZE AND TYPE OF BIT** 3"
2. LOCATION (Coordinates or Station) X=3862989 Y=221283	**11. DATUM FOR ELEVATION SHOWN** (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	**12. MANUFACTURER'S DESIGNATION OF DRILL** Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) SPVC-03-07	**13. TOT NO. OF OVERBURDEN SAMPLES TAKEN** Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	**14. TOTAL NO. OF CORE BOXES** 1
6. DIRECTION OF HOLE VERTICAL	**15. ELEVATION GROUND WATER**
	16. DATE HOLE Started 06/05/03 1518 Completed
7. THICKNESS OF BURDEN 0.0 FT	**17. ELEVATION TOP OF HOLE** FT
8. DEPTH DRILLED INTO ROCK N/A	**18. TOTAL CORE RECOVERY FOR BORING** 95%
9. TOTAL DEPTH OF HOLE 18.5 FT	**19. SIGNATURE OF GEOLOGIST** ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-35.1	0					
-35.9			CLAY, soft, dark gray (5Y-4/1), (CL).		1	Sample #1 Depth = 0.4 *Mean (mm): 0.008, Phi Sorting: 1.91 *Sand: 2.32%, Silt: 68.59%, Clay: 28.97%
	1					
	2					
	3		SAND, fine grained, quartz, little silt, trace shell hash, gray (5Y-5/1), (SM).		2	Sample #2 Depth = 3.0 Mean (mm): 0.12, Phi Sorting: 0.59 Silt: 9.64% (SM)
	4					
	5					
-41.1	6					
	7				3	Sample #3 Depth = 7.0 Mean (mm): 0.13, Phi Sorting: 0.55 Silt: 5.17% (SW-SM)
	8					
	9		SAND, fine grained, quartz, trace silt, trace clay laminae, gray (5Y-6/1), (SW-SM).			
	10				4	Sample #4 Depth = 10.0 Mean (mm): 0.13, Phi Sorting: 0.47 Silt: 4.46% (SW-SM)
	11					
-47.6	12					
	13					
	14		SAND, fine grained, quartz, trace silt, trace clay laminae, 2.0" clay layer from 12.8'-13.0', gray (5Y-6/1), (SW-SM).		5	Sample #5 Depth = 15.0 Mean (mm): 0.15, Phi Sorting: 0.41 Silt: 3.44% (SP)
	15					
	16					
-52.1						
-52.7	17		CLAY, little sand layers, dark gray (5Y-4/1), (CL).		1	
-53.6	18		No Recovery			
	19		End of Boring			
	20					
	21		Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO
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DRILLING LOG

DIVISION:

INSTALLATION:

1. PROJECT BARATARIA	**10. SIZE AND TYPE OF BIT** 3"
2. LOCATION (Coordinates or Station) X=3860805 Y=229535	**11. DATUM FOR ELEVATION SHOWN** (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	**12. MANUFACTURER'S DESIGNATION OF DRILL** Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) SPVC-03-08	**13. TOT NO. OF OVERBURDEN SAMPLES TAKEN** Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	**14. TOTAL NO. OF CORE BOXES** 1
6. DIRECTION OF HOLE VERTICAL	**15. ELEVATION GROUND WATER**
	16. DATE HOLE Started 06/05/03 1613 Completed
7. THICKNESS OF BURDEN 0.0 FT	**17. ELEVATION TOP OF HOLE** FT
	18. TOTAL CORE RECOVERY FOR BORING 87%
8. DEPTH DRILLED INTO ROCK N/A	**19. SIGNATURE OF GEOLOGIST** ML and JB
9. TOTAL DEPTH OF HOLE 18.9 FT	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-33.9	0					
	1, 2, 3, 4, 5, 6		CLAY, trace olive yellow (5Y-6/6) burrows, dark gray (5Y-4/1), (CL).		1	Sample #1 Depth = 3.0 *Mean (mm): 0.004, Phi Sorting: 1.62 *Sand: 2.29%, Silt: 44.20%, Clay: 53.50%
-40	6					
	7, 8, 9		Trace sand/silt laminae, dark gray (5Y-4/1), (CL).		2	Sample #2 Depth = 7.2 *Mean (mm): 0.013, Phi Sorting: 1.59 *Sand: 1.22%, Silt: 83.90%, Clay: 14.96%
-42.9	9					
	10, 11, 12, 13		SILT, trace sand, dark gray (5Y-4/1), (ML).		3	Sample #3 Depth = 11.5 Mean (mm): 0.06, Phi Sorting: 0.15 Silt: 89.7% (ML)
-47.3	13					
	14, 15, 16		SAND, fine grained, quartz, trace silt, gray (5Y-6/1), (SW-SM).		4	Sample #4 Depth = 14.5 Mean (mm): 0.12, Phi Sorting: 0.57 Silt: 6.46% (SW-SM)
-50.4	16					
	17, 18		No Recovery			
-52.8	19					
	20, 21, 22, 23, 24		End of Boring Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

DRILLING LOG

DIVISION:	INSTALLATION: SHEET 1 of 1
1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3862566 Y=224414	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) SPVC-03-09	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
	16. DATE HOLE Started 06/07/03 Completed 1343
7. THICKNESS OF BURDEN 0.0 FT	17. ELEVATION TOP OF HOLE FT
8. DEPTH DRILLED INTO ROCK N/A	18. TOTAL CORE RECOVERY FOR BORING 96%
9. TOTAL DEPTH OF HOLE 19.0 FT	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-34.8						
-37.2	0–2		CLAY, trace sandy laminae, 2.0" silty sand layer from 1.8'-2.0', dark gray (5Y-4/1), (CL).		1	Sample #1 Depth = 1.6 *Mean (mm): 0.006, Phi Sorting: 1.91 *Sand: 1.02%, Silt: 61.76%, Clay: 37.32%
-43.1	3–8		SAND, some silt, gray (5Y-5/1), (SM).		2	Sample #2 Depth = 6.5 Mean (mm): 0.09, Phi Sorting: 0.59 Silt: 16.09% (SM)
-45.6	9–10		SAND, fine grained, quartz, little silt, trace organics, gray (5Y-5/1), (SW-SM).		3	Sample #3 Depth = 10.0 Mean (mm): 0.12, Phi Sorting: 0.56 Silt: 6.63% (SW-SM) Sample #4 Depth = 11.2 *Mean (mm): 0.112, Phi Sorting: 0.68 *Sand: 86.69%, Silt: 10.72%, Clay: 2.48%
-46.3	11		SAND, little silt, dark gray (5Y-4/1), (SM).		4	Mean (mm): 0.08, Phi Sorting: 0.48 Silt: 19.97% (SM)
-49.4	12–14		SAND, fine grained, quartz, trace silt, trace clay laminae, 1.0" clay layer @ 12.3', 0.5" clay burrow @ 14.0', gray (5Y-5/1), (SW-SM).		5	Sample #5 Depth = 13.0 Mean (mm): 0.13, Phi Sorting: 0.70 Silt: 9.68% (SW-SM)
-50.5	15		CLAY, little organic laminae, very dark gray (5Y-3/1), (CL).		1	Sample #6 Depth = 16.0 *Mean (mm): 0.009, Phi Sorting: 2.57 *Sand: 13.49%, Silt: 51.80%, Clay: 34.72%
-51.1	16		CLAYEY SILT, dark gray (5Y-4/1), (ML).		6	
-53	17–18		SAND, some silt, gray (5Y-5/1), (SM).		2	
-53.8	19		No Recovery			
	20–24		End of Boring Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

HOLE NO. SPVC-03-10

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3863105 Y=222927	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) SPVC-03-10	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
7. THICKNESS OF BURDEN 0.0 FT	16. DATE HOLE Started 06/07/03 Completed 1423
8. DEPTH DRILLED INTO ROCK N/A	17. ELEVATION TOP OF HOLE FT
9. TOTAL DEPTH OF HOLE 18.9 FT	18. TOTAL CORE RECOVERY FOR BORING 93%
	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-34.8						
-36	0–1		CLAY, little sand, 1.0" organic layer @ 0.8', very dark gray (5Y-3/1), (CL).		1	Sample #1 Depth = 0.7 *Mean (mm): 0.017, Phi Sorting: 2.63 *Sand: 29.99%, Silt: 49.52%, Clay: 20.50%
	2–5		SAND, fine grained, quartz, some silt, trace clay burrows, trace organics, trace silty laminae, 2.0" sandy clay layer from 3.8'-4.0', color darkens towards bottom, gray (5Y-5/1), to dark gray (5Y-4/1), (SM).		2	Sample #2 Depth = 3.0 Mean (mm): 0.11, Phi Sorting: 0.62 Silt: 9.12% (SW-SM)
	6–10				3	Sample #3 Depth = 8.0 Mean (mm): 0.15, Phi Sorting: 0.67 Silt: 5.78% (SW-SM)
-45.8	11–16		SAND, fine grained, quartz, little silt, trace organics, 2.0" clay layer from12.9'-13.1', 0.5" clay burrow @ 11.9', gray (5Y-5/1), (SW-SM).		4	Sample #4 Depth = 14.0 Mean (mm): 0.17, Phi Sorting: 0.53 Silt: 2.44% (SP)
-51.1	17		Fine grained, quartz, little silt, little organics, gray (5Y-5/1), (SW-SM).		5	Sample #5 Depth = 17.0 Mean (mm): 0.16, Phi Sorting: 0.49 Silt: 3.15% (SP)
-52.4	18		No Recovery			
-53.7	19–24		End of Boring Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

PROJECT: BARATARIA	HOLE NUMBER: SPVC-03-29A

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3862781 Y=221972	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) SPVC-03-11	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
	16. DATE HOLE Started 06/07/03 1515 Completed
7. THICKNESS OF BURDEN 0.0 FT	17. ELEVATION TOP OF HOLE FT
8. DEPTH DRILLED INTO ROCK N/A	18. TOTAL CORE RECOVERY FOR BORING 92%
9. TOTAL DEPTH OF HOLE 19.0 FT	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
35.2	0					
	1, 2, 3		CLAY, some silt laminae, dark gray 5Y-4/1, (CL).		1	Sample #1 Depth = 1.5 *Mean (mm): 0.006, Phi Sorting: 1.83 *Sand: 0.01%, Silt: 62.32%, Clay: 37.73%
31.6						
	4, 5, 6, 7, 8, 9, 10		SAND, fine grained, quartz, little silt, trace clay burrows, trace organics, trace silty laminae, 2.0" sandy clay layer from 3.8'-4.0', color darkens towards bottom, gray (5Y-5/1) to dark gray (5Y-4/1), (SM).		2	Sample #2 Depth = 6.5 Mean (mm): 0.12, Phi Sorting: 0.56 Silt: 6.87% (SW-SM)
24.6						
	11, 12, 13, 14, 15, 16		SAND, fine grained, quartz, silty laminae, 2.0" clay layer @ 14.3', 3.0" clay layer @ 15.5', gray (5Y-5/1), (SW-SM).		3	Sample #3 Depth = 11.5 Mean (mm): 0.11, Phi Sorting: 0.60 Silt: 12.37% (SM)
18.5						
17.8	17		SAND, fine grained, quartz, trace silt. olive gray (5Y-5/2) (SP)		4	Sample #4 Depth = 17.1 Mean (mm): 0.12, Phi Sorting: 0.53 Silt: 4.99% (SW-SM)
	18		No Recovery			
16.2	19					
	20, 21, 22, 23, 24		End of Boring Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

DRILLING LOG

DIVISION:

INSTALLATION:

1. PROJECT BARATARIA	**10. SIZE AND TYPE OF BIT** 3"
2. LOCATION (Coordinates or Station) X=3863508Y=222709	**11. DATUM FOR ELEVATION SHOWN** (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	**12. MANUFACTURER'S DESIGNATION OF DRILL** Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) SPVC-03-12	**13. TOT NO. OF OVERBURDEN SAMPLES TAKEN** Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	**14. TOTAL NO. OF CORE BOXES** 1
6. DIRECTION OF HOLE VERTICAL	**15. ELEVATION GROUND WATER**
	16. DATE HOLE Started 06/07/03 1556 Completed
7. THICKNESS OF BURDEN 0.0 FT	**17. ELEVATION TOP OF HOLE** FT
8. DEPTH DRILLED INTO ROCK N/A	**18. TOTAL CORE RECOVERY FOR BORING** 98%
9. TOTAL DEPTH OF HOLE 18.6FT	**19. SIGNATURE OF GEOLOGIST** ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
34.3	0					
	1		CLAY, trace sandy silt pockets, dark gray (5Y-4/1), brown (7.5YR-4/3) from 0.9' - 2.0', (CL).		1	Sample #1 Depth = 0.6 *Mean (mm): 0.006, Phi Sorting: 2.05 *Sand: 1.46%, Silt: 61.37%, Clay: 37.09%
	2					
31.2	3					Sample #2 Depth = 3.3 Mean (mm): .09, Phi Sorting: 0.48 Silt: 20.77% (SM)
30.7			SANDY SILT, dark gray (5Y-4/1), (ML).		2	
	4		CLAY, trace silty laminae, 2" silt layer @ 4.8, 4" silt layer from 6.8 - 7.2', dark gray (5Y-4/1) with occasional brown (7.5YR-4/3) laminae, (CL).		1	
	5					
	6					
	7					
	8					
	9					
24.2	10					
	11		SAND, fine grained, quartz, trace silt, 2" clay layer 12.1-12.3 clay laminae @ 12.4 and 12.9, olive gray (5Y-5/2), (SW-SM).		3	Sample #3 Depth = 11.0 *Mean (mm): 0.106, Phi Sorting: 0.55 *Sand: 88.30%, Silt: 9.85%, Clay: 1.84% Mean (mm): 0.10, Phi Sorting: 0.60 Silt: 12.68% (SM)
	12					
21.2	13					
			CLAY, 2" sand layer from 13.7-13.9, dark gray (5Y-4/1), (CL)		1	
20.1	14					
			SAND, fine grained, quartz, trace silt, olive gray (5Y-5/2), (SW-SM).		3	
18.9	15					
			CLAY, trace silt laminae, dark grayish brown (10YR-4/2), (CL).		1	
17.8	16				3	
			SAND, fine grained, quartz, trace silt, olive gray (5Y-5/2) (SW-SM).		1	Sample #4 Depth = 17.6 *Mean (mm): 0.023, Phi Sorting: 2.70 *Sand: 63.09%, Silt: 19.89%, Clay: 17.11% Mean (mm): 0.09, Phi Sorting: 0.71 Silt: 29.65% (SM)
17.1	17					
			CLAY, olive gray (5Y-4/2), (CL).		4	
16	18		CLAYEY SAND, olive gray (5Y-5/2), (SC).			
15.7			NO RECOVERY			
	19		End of Boring			
	20					
	21		Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO
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DRILLING LOG

DIVISION:

INSTALLATION:

1. PROJECT BARATARIA	**10. SIZE AND TYPE OF BIT** 3"
2. LOCATION (Coordinates or Station) X=3862466 Y=222735	**11. DATUM FOR ELEVATION SHOWN** (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	**12. MANUFACTURER'S DESIGNATION OF DRILL** Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) SPVC-03-13	**13. TOT NO. OF OVERBURDEN SAMPLES TAKEN** Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	**14. TOTAL NO. OF CORE BOXES** 1
6. DIRECTION OF HOLE VERTICAL	**15. ELEVATION GROUND WATER**
	16. DATE HOLE Started 06/07/03 1706 Completed
7. THICKNESS OF BURDEN 0.0 FT	**17. ELEVATION TOP OF HOLE** FT
8. DEPTH DRILLED INTO ROCK N/A	**18. TOTAL CORE RECOVERY FOR BORING** 98%
9. TOTAL DEPTH OF HOLE 18.6FT	**19. SIGNATURE OF GEOLOGIST** ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-35.6	0					
-37	1		CLAY, dark gray (5Y-4/1), (CL).		1	Sample #1 Depth = 0.8 *Mean (mm): 0.010, Phi Sorting: 2.07 *Sand: 5.77%, Silt: 70.66%, Clay: 23.57%
-38.3	2		SILTY CLAY, dark gray (5Y-4/1), (ML-CL).		2	Sample #2 Depth = 2.0 *Mean (mm): 0.024, Phi Sorting: 1.77 *Sand: 30.74%, Silt: 57.96%, Clay: 11.29%
-39.4	3		CLAY, little silt laminae, dark gray (5Y-4/1), (CL).		1	
-40.3	4		SILTY CLAY, dark gray (5Y-4/1), (ML-CL).		2	Sample #3 Depth = 5.5 *Mean (mm): 0.088, Phi Sorting: 0.57 *Sand: 81.73%, Silt:16.44%, Clay: 1.85%
-42.3	5, 6		SAND some silt, dark gray (5Y-4/1), (SM)		3	Mean (mm): 0.08, Phi Sorting: 0.48 Silt: 23.65% (SM)
-43.7	7, 8		SILTY SAND, some sand, trace organics, olive gray (5Y-5/2), (SM).		4	Sample #4 Depth = 7.0 *Mean (mm): 0.078, Phi Sorting: 0.78 *Sand: 74.38%, Silt: 21.50%, Clay: 4.16% Mean (mm): 0.08, Phi Sorting: 0.45 Silt: 36.56% (SM)
-45.7	9, 10		SILT, some sand, trace clay laminae, little organics concentrated from 8.6'-9.0', gray (5Y-5/1), (ML).		5	Sample #5 Depth = 9.0 *Mean (mm): 0.078, Phi Sorting: 0.93 *Sand: 73.09%, Silt: 22.42%, Clay: 4.38% Mean (mm): 0.07, Phi Sorting: 0.46 Silt: 43.14% (ML)
-46.5	11		CLAY, some silt laminae dark gray (5Y-4/1), (CL).		1	
-47.9	12		CLAYEY SILT, trace organics, dark gray (5Y-4/1), (ML).		6	Sample #6 Depth = 11.5 *Mean (mm): 0.020, Phi Sorting: 1.90 *Sand: 23.57%, Silt: 63.20%, Clay: 13.20%
-53.8	13, 14, 15, 16, 17, 18		SILTY SAND, trace clay laminae, some organics from 15.6-16.1' and from 17.6-18.0', gray (2.5Y-5/1), (ML).		7	Sample #7 Depth = 15.0 *Mean (mm): 0.063, Phi Sorting: 0.81 *Sand: 65.15%, Silt: 30.01%, Clay: 4.70% Mean (mm): 0.07, Phi Sorting: 0.35 Silt: 55.46% (ML)
-54.2			NO RECOVERY			
	19		End of Boring			
	20, 21, 22, 23, 24		Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3855792 Y=228997	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) SPVC-03-14	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
	16. DATE HOLE Started 06/09/03 0730 Completed
7. THICKNESS OF BURDEN 0.0 FT	17. ELEVATION TOP OF HOLE FT
8. DEPTH DRILLED INTO ROCK N/A	18. TOTAL CORE RECOVERY FOR BORING 100%
9. TOTAL DEPTH OF HOLE 19.0FT	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-36.8	0					
-37.6			CLAY, soft, trace sand laminae, dark gray 5Y-4/1, (CL).		1	Sample #1 Depth = 0.5 *Mean (mm): 0.006, Phi Sorting: 1.87 *Sand: 0.96%, Silt: 63.94%, Clay: 35.19%
	1 2 3 4		SAND, little silt 2" clay layer 2.2' - 2.4', very dark gray (5Y-3/1), (SM).		2	Sample #2 Depth = 3.0 *Mean (mm): 0.098, Phi Sorting: 0.61 *Sand: 85.40%, Silt: 12.55%, Clay: 2.11% Mean (mm): 0.09, Phi Sorting: 0.57 Silt: 19.72% (SM)
-41.6						
-43	5 6		CLAYEY SILT, very dark gray (5Y-3/1), (ML-CL).		3	Sample #3 Depth = 5.5 *Mean (mm): 0.040, Phi Sorting: 0.83 *Sand: 24.04%, Silt: 70.99%, Clay: 5.02%
-50	7 8 9 10 11 12 13		SAND, little silt, fining upwards, dark gray (5Y-4/1), (SM).		4	Sample #4 Depth = 11.0 *Mean (mm): 0.079, Phi Sorting: 0.65 *Sand: 74.24%, Silt: 23.56%, Clay: 2.23% Mean (mm): 0.08, Phi Sorting: 0.49 Silt: 39.3% (ML)
-51.8	14		Alternating layers of SAND, SILT and CLAY, dark olive gray 5Y-3/2, (ML-CL).		5	Sample #5 Depth = 14.4 *Mean (mm): 0.018, Phi Sorting: 1.59 *Sand: 9.93%, Silt: 77.31%, Clay: 12.74%
-52.3	15		SAND, fine grained, quartz, trace silt, gray (5Y-5/1), (SW-SM).		6	Sample #6 Depth = 15.3 Mean (mm): 0.14, Phi Sorting: 0.72 Silt: 11.02% (SM)
-53.6	16		CLAY, trace sandy layers/laminae, dark gray (5Y-4/1), (CL).		1	
-54.5	17		SAND, little clay/silt layers/laminae gray (5Y-5/1), (SM).		7	Sample #7 Depth = 17.6 Mean (mm): 0.14, Phi Sorting: 0.79 Silt: 10.63% (SM)
-55.8	18		CLAY, trace sand laminae, very dark gray (5Y-3/1), (CL).		1	
	19 20 21 22 23 24		End of Boring			

Note:

1) Soils are field visually classified in accordance with the Unified Soil Classification System.

* Data Analyzed by UNO

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3855807 Y=230199	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) SPVC-03-15	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
	16. DATE HOLE Started 06/09/03 0808 Completed
7. THICKNESS OF BURDEN 0.0 FT	17. ELEVATION TOP OF HOLE FT
8. DEPTH DRILLED INTO ROCK N/A	18. TOTAL CORE RECOVERY FOR BORING 98%
9. TOTAL DEPTH OF HOLE 19.0FT	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-36.2	0					
-36.9			CLAYEY SILT, dark gray (5Y-4/1), (ML-CL).		1	Sample #1 Depth = 0.3 *Mean (mm): 0.008, Phi Sorting: 2.20 *Sand: 4.49%, Silt: 61.71%, Clay: 33.81%
-38.2	1		CLAY, dark gray (5Y-4/1), (CL).		2	
-39.6	2, 3		SANDY CLAY, firm clay from 3.0 - 3.4'. (5Y-4/1), (CL).		3	Sample #2 Depth = 1.0 *Mean (mm): 0.005, Phi Sorting: 1.81 *Sand: 1.16%, Silt: 57.22%, Clay: 41.59%
-44.5	4, 5, 6, 7, 8		SAND, fine grained, quartz, little silt, gray (5Y-5/2), (SM).		4	Sample #3 Depth = 2.5 *Mean (mm): 0.012, Phi Sorting: 2.18 *Sand: 12.75%, Silt: 66.43%, Clay: 20.80% Sample #4 Depth = 6.5 Mean (mm): 0.10, Phi Sorting: 0.65 Silt: 12.73% (SM)
-48.9	9, 10, 11, 12		SAND, fine grained, quartz, 1/2" micaceous organic layer @ 10.1', gray (5Y-5/1), (SW-SM).		5	Sample #5 Depth = 11.0 Mean (mm): 0.14, Phi Sorting: 0.56 Silt: 3.79% (SW-SM)
-50.3	13		CLAY, trace sandy laminae, dark gray (5Y-4/1), (CL).		2	
-52	14, 15		SAND, fine grained, quartz, trace silt, clayey organics from 14.7-15.0', 1" clay pocket @ 15.4', gray (5Y-5/2), (SW-SM)		5	
-52.5	16		CLAY, some sand laminae, dark gray 5Y-4/1, (CL).		2	
-53.9	17		SANDY SILT, little clay laminae, 1" micaceous organic layer @17.6, gray 5Y-5/2, (ML).		6	Sample #6 Depth = 17.0 *Mean (mm): 0.018, Phi Sorting: 2.38 *Sand: 29.14%, Silt: 53.49%, Clay: 17.41%
-54.9	18		CLAY, some silty laminae, gray (5Y-4/1), (CL).		2	
-55.2	19		NO RECOVERY			
	20		End of Boring			
	21, 22, 23, 24		Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	**10. SIZE AND TYPE OF BIT** 3"
2. LOCATION (Coordinates or Station) X=3855695 Y=231398	**11. DATUM FOR ELEVATION SHOWN** (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	**12. MANUFACTURER'S DESIGNATION OF DRILL** Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) SPVC-03-16	**13. TOT NO. OF OVERBURDEN SAMPLES TAKEN** Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	**14. TOTAL NO. OF CORE BOXES** 1
6. DIRECTION OF HOLE VERTICAL	**15. ELEVATION GROUND WATER**
	16. DATE HOLE Started 06/09/03 0903 Completed
7. THICKNESS OF BURDEN 0.0 FT	**17. ELEVATION TOP OF HOLE** FT
8. DEPTH DRILLED INTO ROCK N/A	**18. TOTAL CORE RECOVERY FOR BORING** 87%
9. TOTAL DEPTH OF HOLE 18.5FT	**19. SIGNATURE OF GEOLOGIST** ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-36.3	0					
-38	1		CLAY, trace silty pockets dark gray (5Y-4/1), (CL).		1	Sample #1 Depth = 1.0 *Mean (mm): 0.004, Phi Sorting: 1.66 *Sand: 0.02%, Silt: 51.60%, Clay: 48.34%
-39.1	2		SAND, fine grained, quartz, some silt, dark gray (5Y-4/1), (SM).		2	Sample #2 Depth = 2.0 *Mean (mm): 0.059, Phi Sorting: 1.48 *Sand: 65.28%, Silt: 27.05%, Clay: 7.68%
-41.9	3, 4, 5		SAND, fine grained, quartz, little silt clay laminae from 3.9 - 4.2' olive gray (5Y-5/2), (SM).		3	Mean (mm): 0.09, Phi Sorting: 0.74 Silt: 34.37% (SM) Sample #3 Depth = 4.5 Mean (mm): 0.13, Phi Sorting: 0.63 Silt: 5.41% (SW-SM)
-44.1	6, 7		SAND, fine grained, quartz, some silt, olive gray (5Y-5/2), (SM).		2	
-48.3	8, 9, 10, 11		fine grained, quartz, little silt, trace clay laminae, olive gray (5Y-5/2), (SM).		4	Sample #4 Depth = 10.0 Mean (mm): 0.10, Phi Sorting: 0.49 Silt: 9.91% (SM)
-51.7	12, 13, 14, 15		SAND, fine grained, quartz, some silty laminae, little clay laminae, trace organics, olive gray (5Y-4/2), (SM-SC).		5	Sample #5 Depth = 13.1 Mean (mm): 0.09, Phi Sorting: 0.67 Silt: 28.58% (SM)
-52.5	16		SAND, fine grained, quartz, little silt, olive gray (5Y-5/2), (SW-SM).		6	Sample #6 Depth = 15.8 Mean (mm): 0.11, Phi Sorting: 0.64 Silt: 10.98% (SM)
-54.8	17, 18		NO RECOVERY			
	19, 20, 21, 22, 23, 24		End of Boring Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

DRILLING LOG

DIVISION:

INSTALLATION:

1. PROJECT BARATARIA	**10. SIZE AND TYPE OF BIT** 3"
2. LOCATION (Coordinates or Station) X=3855693 Y=231933	**11. DATUM FOR ELEVATION SHOWN** (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	**12. MANUFACTURER'S DESIGNATION OF DRILL** Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) SPVC-03-17	**13. TOT NO. OF OVERBURDEN SAMPLES TAKEN** Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	**14. TOTAL NO. OF CORE BOXES** 1
6. DIRECTION OF HOLE VERTICAL	**15. ELEVATION GROUND WATER**
	16. DATE HOLE Started 06/09/03 0903 Completed
7. THICKNESS OF BURDEN 0.0 FT	**17. ELEVATION TOP OF HOLE** FT
8. DEPTH DRILLED INTO ROCK N/A	**18. TOTAL CORE RECOVERY FOR BORING** 100%
9. TOTAL DEPTH OF HOLE 13.6	**19. SIGNATURE OF GEOLOGIST** ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-36	0					
-37.1	1		SILTY CLAY, trace shell hash, very dark gray (5Y-3/1), (CL).		1	Sample #1 Depth = 0.5 *Mean (mm): 0.007, Phi Sorting: 2.10 *Sand: 1.83%, Silt: 60.08%, Clay: 38.18%
-37.9			CLAY, dark gray (5Y-4/1), (CL).		2	
-38.6	2		CLAYEY SILT, very dark gray (5Y-3/1), (ML-CL).		3	Sample #2 Depth = 1.5 *Mean (mm): 0.005, Phi Sorting: 1.84 *Sand: 0.06%, Silt: 58.78%, Clay: 41.09%
-39.9	3		SILT, some sand, dark gray (5Y-4/1), (ML).		4	Sample #3 Depth = 2.3 *Mean (mm): 0.016, Phi Sorting: 2.00 *Sand: 17.02%, Silt: 67.37%, Clay: 15.63%
-42.4	4, 5, 6		SILTY SAND, trace clay laminae, dark gray (5Y-4/1), (SM).		5	Sample #4 Depth = 3.0 *Mean (mm): 0.030, Phi Sorting: 1.67 *Sand: 38.29%, Silt: 52.02%, Clay: 9.67%
-43.4	7		CLAY, little silty sand layers/laminae, very dark gray (5Y-3/1), (CL).		1	Sample #5 Depth = 5.4 *Mean (mm): 0.059, Phi Sorting: 1.17 *Sand: 61.58%, Silt: 33.65%, Clay: 4.69% Mean (mm): 0.09, Phi Sorting: 0.57 Silt: 28.85% (SM)
-49.6	8, 9, 10, 11, 12, 13		SAND, fine grained, some silt layers/laminae, 0.5" organic layer @ 11.2', gray (5Y-5/1), (SM).		6	Sample #6 Depth = 12.1 Mean (mm): 0.11, Phi Sorting: 0.57 Silt: 8.43% (SW-SM)
	14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24		End of Boring Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3855717 Y=231941	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) SPVC-03-17A	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
	16. DATE HOLE Started 06/09/03 0958 Completed
7. THICKNESS OF BURDEN 0.0 FT	17. ELEVATION TOP OF HOLE FT
8. DEPTH DRILLED INTO ROCK N/A	18. TOTAL CORE RECOVERY FOR BORING 100%
9. TOTAL DEPTH OF HOLE 18.3FT	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-36	0					
	1					
	2					
	3					
	4					
	5		Jetted to 10.3'			
	6					
	7					
	8					
	9					
-46.3	10					
	11					
	12					
	13					
	14		SAND, fine grained, quartz, some silt layers/laminae, 0.5" organic layer @ 16.0', gray (5Y-5/1), (SM).		7	Sample #7 Depth = 17.1 Mean (mm): 0.10, Phi Sorting: 0.57 Silt: 11.88% (SM)
	15					
	16					
	17					
-54.4	18					
	19		End of Boring Expansion from 18.3			
	20					
	21		Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			*Data Analyzed by UNO
	22					
	23					
	24					

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3855340 Y=232227	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) SPVC-03-18	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
	16. DATE HOLE Started 06/09/03 1356 Completed
7. THICKNESS OF BURDEN 0.0 FT	17. ELEVATION TOP OF HOLE FT
8. DEPTH DRILLED INTO ROCK N/A	18. TOTAL CORE RECOVERY FOR BORING 100%
9. TOTAL DEPTH OF HOLE 14.9	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-36.1	0					
-37.2	1		CLAY, soft, dark gray (5Y-4/1), (CL).		1	Sample #1 Depth = 0.5 *Mean (mm): 0.008, Phi Sorting: 2.05 *Sand: 3.44%, Silt: 65.49%, Clay: 31.09%
-38			CLAYEY SAND, little clay, dark gray (5Y-4/1), (SC).		2	Sample #2 Depth = 1.5 *Mean (mm): 0.032, Phi Sorting: 1.99 *Sand: 58.30%, Silt: 30.28%, Clay: 11.36% Mean (mm): 0.09, Phi Sorting: 0.62 Silt: 33.7%
-40	2 3		SAND, fine grained, quartz, little silt, trace clay laminae, dark gray (5Y-4/1), (SM).		3	
-41.8	4 5		SANDY SILT, trace organic laminae, dark gray (5Y-4/1), (ML).		4	Sample #4 Depth = 4.5 *Mean (mm): 0.047, Phi Sorting: 1.32 *Sand: 54.03%, Silt: 38.90%, Clay: 7.03% Mean (mm): 0.07, Phi Sorting: 0.46 Silt: 56.52% (ML)
-46.1	6 7 8 9		SAND, fine grained, quartz, some silty laminae, trace organic laminae, olive gray (5Y-5/2), (SM).		3	Sample #3 Depth = 7.5 Mean (mm): 0.08, Phi Sorting: 0.48 Silt: 33.69% (SM)
-51.1	10 11 12 13 14		SAND, fine grained, quartz, some silty laminae, trace organic laminae, olive gray (5Y-5/2), (SW-SM).		5	Sample #5 Depth = 13.8 Mean (mm): 0.12, Phi Sorting: 0.47 Silt: 3.77% (SW-SM)
	15 16 17 18 19 20 21 22 23 24		End of Boring Expansion from 14.9' Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3855339 Y=232228	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) SPVC-03-18A	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
	16. DATE HOLE Started 06/09/03 1437 Completed
7. THICKNESS OF BURDEN 0.0 FT	17. ELEVATION TOP OF HOLE FT
8. DEPTH DRILLED INTO ROCK N/A	18. TOTAL CORE RECOVERY FOR BORING 91%
9. TOTAL DEPTH OF HOLE 18.4	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-36.1	0					
	1					
	2					
	3					
	4					
	5					
	6					
	7		Jetted to 13.7'			
	8					
	9					
	10					
	11					
	12					
	13					
-49.8	14		SAND, fine grained, quartz, trace silt, gray (5Y-5/1), (SW-SM).		6	Sample #6 Depth=15.0 Mean (mm): 0.11, Phi Sorting: 0.50 Silt: 4.34% (SW-SM)
	15					
-51.9	16		fine grained, quartz, trace silty laminae, trace organics, gray (5Y-5/1), (SM).		7	Sample #7 Depth=16.6 Mean (mm): 0.11, Phi Sorting: 0.50 Silt: 5.55% (SW-SM)
	17					
-54.2	18					
-54.5			NO RECOVERY			
	19		End of Boring			
	20					
	21		Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			*Data Analyzed by UNO
	22					
	23					
	24					

DRILLING LOG

DIVISION:

INSTALLATION:

1. PROJECT BARATARIA	**10. SIZE AND TYPE OF BIT** 3"
2. LOCATION (Coordinates or Station) X=3855483 Y=230369	**11. DATUM FOR ELEVATION SHOWN** (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	**12. MANUFACTURER'S DESIGNATION OF DRILL** Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) SPVC-03-19	**13. TOT NO. OF OVERBURDEN SAMPLES TAKEN** Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	**14. TOTAL NO. OF CORE BOXES** 1
6. DIRECTION OF HOLE VERTICAL	**15. ELEVATION GROUND WATER**
	16. DATE HOLE Started 06/09/03 1518 Completed
7. THICKNESS OF BURDEN 0.0 FT	**17. ELEVATION TOP OF HOLE** FT
8. DEPTH DRILLED INTO ROCK N/A	**18. TOTAL CORE RECOVERY FOR BORING** 98%
9. TOTAL DEPTH OF HOLE 18.2	**19. SIGNATURE OF GEOLOGIST** ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-36.3	0					
-39	1, 2		CLAY, some silty layers, shell trace layer @ 0.8', wood pieces @ 2.5, dark gray (5Y-4/1) with brown (7.5Y-4/2) laminae @ 1.2', 1.8' and 2.3', 3" (CL).		1	Sample #1 Depth = 1.5 *Mean (mm): 0.004, Phi Sorting: 1.64 *Sand: 0.00%, Silt: 46.71%, Clay: 53.29%
-40.6	3, 4		SILT, dark gray (5Y-4/1), (ML).		2	Sample #2 Depth = 3.5 *Mean (mm): 0.027, Phi Sorting: 1.31 *Sand: 20.10%, Silt: 70.80%, Clay: 9.04%
-41.1			CLAY, trace organics, dark gray (5Y-4/1), (CL).		1	
-42.4	5, 6		SILTY SAND, fine grained, quartz, dark gray (5Y-4/1), (SM).		3	Sample #3 Depth = 5.5 Mean (mm): 0.13, Phi Sorting: 0.81 Silt: 13.78% (SM)
-43.8	7		SAND, fine grained, quartz, trace silt, clay laminae @ 6.6, olive gray (5Y-5/2), (SW-SM).		4	Sample #4 Depth = 7.0 Mean (mm): 0.16, Phi Sorting: 0.56 Silt: 3.42% (SP)
-45	8		CLAY, trace sandy laminae, dark gray (5Y-4/1), (CL).		1	
-46.2	9		SAND, fine grained, quartz, trace silt, olive gray (5Y-5/2), (SW-SM).		4	
-48.3	10, 11		CLAY, little sand layers, dark gray (5Y-4/1), (CL).		1	
-49.1	12		SANDY SILT, olive gray (5Y-5/2), (ML).		2	
-50.5	13, 14		Alternating SAND and CLAY, laminae, dark gray (5Y-4/1), (SC).		5	Sample #5 Depth = 13.8 *Mean (mm): 0.046, Phi Sorting: 1.38 *Sand: 47.87%, Silt: 45.06%, Clay: 7.07%
-53.1	15, 16		SAND, some silt trace clay laminae, trace organics, gray (5Y-5/1), (SM).		6	Sample #6 Depth = 15.8 Mean (mm): 0.10, Phi Sorting: 0.67 Silt: 20.13% (SM)
-53.8	17		SILT, 1" organic layers @ 17.0 and 17.2, olive gray (5Y-5/2), (ML).		2	
-54.5	18		NO RECOVERY			
	19, 20, 21, 22, 23, 24		End of Boring Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

DRILLING LOG

DIVISION:

INSTALLATION:

1. PROJECT BARATARIA	**10. SIZE AND TYPE OF BIT** 3"
2. LOCATION (Coordinates or Station) X=3856014 Y=229476	**11. DATUM FOR ELEVATION SHOWN** (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	**12. MANUFACTURER'S DESIGNATION OF DRILL** Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) SPVC-03-20	**13. TOT NO. OF OVERBURDEN SAMPLES TAKEN** Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	**14. TOTAL NO. OF CORE BOXES** 1
6. DIRECTION OF HOLE VERTICAL	**15. ELEVATION GROUND WATER**
	16. DATE HOLE Started 06/09/03 1606 Completed
7. THICKNESS OF BURDEN 0.0 FT	**17. ELEVATION TOP OF HOLE** FT
8. DEPTH DRILLED INTO ROCK N/A	**18. TOTAL CORE RECOVERY FOR BORING** 100%
9. TOTAL DEPTH OF HOLE 19.0	**19. SIGNATURE OF GEOLOGIST** ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-36.3	0					
-37.7	1		SOFT CLAY, 3" wood section @ 1.2', dark gray (5Y-4/1), (CL).		1	Sample #1 Depth = 0.5 *Mean (mm): 0.004, Phi Sorting: 1.53 *Sand: 0.00%, Silt: 55.08%, Clay: 44.91%
-42	2, 3, 4, 5		SANDY SILT, trace organics, wood from 4.3 - 4.6' (single piece), dark gray (5Y-4/1), (ML).		2	Sample #2 Depth = 2.5 *Mean (mm): 0.069, Phi Sorting: 0.76 *Sand: 64.08%, Silt: 33.11%, Clay: 2.85% Mean (mm): 0.07, Phi Sorting: 0.44 Silt: 52.7% (ML)
-45.2	6, 7, 8		CLAY, trace sandy laminae, dark gray (5Y-4/1), (CL).		1	
-45.8	9		SAND, fine grained, quartz, some silt, gray (5Y-5/1), (SM).		3	Sample #3 Depth = 9.2 Mean (mm): 0.11, Phi Sorting: 0.82 Silt: 23.28% (SM)
-47.6	10, 11		CLAY, 2" silt pocket @ 10.8', dark gray (5Y-4/1), (CL).		1	
-51.6	12, 13, 14, 15		SAND, fine grained, quartz, little silt, 2" clay layer @11.8, clay laminae @ 14.9, olive gray (5Y-5/2), (SM).		4	Sample #4 Depth = 13.5 Mean (mm): 0.13, Phi Sorting: 0.63 Silt: 6.66% (SW-SM)
-53.2	16		SAND, fine grained, quartz, little silt, olive gray (5Y-5/2), (SW-SM).		5	Sample #5 Depth = 16.0 Mean (mm): 0.18, Phi Sorting: 0.40 Silt: 1.37% (SP)
-55.3	17, 18		SAND, fine grained, quartz, little silt, trace clay laminae, olive gray (5Y-5/2), (SM).		4	
	19, 20, 21, 22, 23, 24		End of Boring Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

DRILLING LOG

DIVISION:

INSTALLATION:

1. PROJECT BARATARIA	**10. SIZE AND TYPE OF BIT** 3"
2. LOCATION (Coordinates or Station) X=3862698 Y=224860	**11. DATUM FOR ELEVATION SHOWN** (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	**12. MANUFACTURER'S DESIGNATION OF DRILL** Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) SPVC-03-21	**13. TOT NO. OF OVERBURDEN SAMPLES TAKEN** Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	**14. TOTAL NO. OF CORE BOXES** 1
6. DIRECTION OF HOLE VERTICAL	**15. ELEVATION GROUND WATER**
	16. DATE HOLE Started 06/10/03 0758 Completed
7. THICKNESS OF BURDEN 0.0 FT	**17. ELEVATION TOP OF HOLE** FT
8. DEPTH DRILLED INTO ROCK N/A	**18. TOTAL CORE RECOVERY FOR BORING** 86%
9. TOTAL DEPTH OF HOLE 18.7	**19. SIGNATURE OF GEOLOGIST** ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-35	0					
-37.9	1, 2		Alternating CLAY and SANDY SILT layers, very dark gray (5Y-3/1), (ML-CL).		1	Sample #1 Depth = 1.8 *Mean (mm): 0.013, Phi Sorting: 2.78 *Sand: 19.29%, Silt: 51.19%, Clay: 29.45%
-40.7	3, 4, 5		CLAY, with some silty sand layers, dark gray (5Y-4/1), (CL).		2	Sample #2 Depth = 5.3 *Mean (mm): 0.007, Phi Sorting: 2.00 *Sand: 2.83%, Silt: 66.66%, Clay: 30.55%
-44.8	6, 7, 8, 9		SAND, fine grained, quartz, little silt, trace organics. 2" organic layer @ 8.8' - 9.0', gray (5Y-5/1), (SM).		3	Sample #3 Depth = 8.0 Mean (mm): 0.12, Phi Sorting: 0.52 Silt: 5.14% (SW-SM)
-45.6	10		CLAY/SILT, little sand, dark gray (5Y-4/1), (ML-CL).		1	
-46.8	11		SAND, fine grained, quartz, little silt, gray (5Y-5/1), (SW-SM).		4	Sample #4 Depth = 14.5 Mean (mm): 0.14, Phi Sorting: 0.43 Silt: 3.65% (SP)
-48.2	12, 13		SAND, fine grained, quartz, little silt, little organics, dark gray (5Y-4/1), (SM).		3	
-51	14, 15		SAND, fine grained, quartz, little silt, trace clay burrows, gray (5Y-5/1), (SW-SM).		4	
-53.7	16, 17, 18		NO RECOVERY			
	19, 20, 21, 22, 23, 24		End of Boring Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

DRILLING LOG

DIVISION:

INSTALLATION:

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3863684Y=223828	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) SPVC-03-22	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
	16. DATE HOLE Started 06/10/03 0852 Completed
7. THICKNESS OF BURDEN 0.0 FT	17. ELEVATION TOP OF HOLE FT
8. DEPTH DRILLED INTO ROCK N/A	18. TOTAL CORE RECOVERY FOR BORING
9. TOTAL DEPTH OF HOLE 18.7	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-34.2	0					
-36.4	1, 2		Alternating CLAY and SILTY SAND layers, trace shell hash, very dark gray (5Y-3/1), (ML-CL).		1	Sample #1 Depth = 1.6 *Mean (mm): 0.004, Phi Sorting: 1.70 *Sand: 0.00% Silt: 52.76%, Clay: 47.32%,
-39.3	3, 4, 5		SAND, fine grained, some silt, 1" clay layer @ 2.7 and 3.5', 2" clay layer @ 3.9-4.1', yellowish brown (10YR-5/6), dark gray (5Y-4/1), (SM).		2	Sample #2 Depth = 3.0 Mean (mm): 0.11, Phi Sorting: 0.58 Silt: 8.76% (SM)
-41.1	6		Alternating, CLAY and SILTY SAND layers, yellowish brown, (10YR-5/6) and dark gray (5Y-4/1), (ML-CL).		1	
-43	7, 8		CLAY, grading to silt, dark gray (5Y-4/1), (ML-CL).		3	Sample #3 Depth = 7.5 *Mean (mm): 0.011, Phi Sorting: 1.88 *Sand: 5.05%, Silt: 75.70%, Clay: 19.28%
-47	9, 10, 11, 12		SAND, fine grained, quartz, some silt, trace clay laminae, gray (5Y-4/1), (SM).		2	
-48.8	13, 14		CLAY, 2" silty sand layer from 13.2-13.4', pale brown (10YR 6/3), (CL).		4	Sample #4 Depth = 14.0 *Mean (mm): 0.004, Phi Sorting: 1.67 *Sand: .0.96%, Silt: 46.34%, Clay: 52.70%
-50.5	15, 16		SILTY SAND, 1" clay layer @ 15.4, dark gray (5Y-4/1), (SM).		5	Sample #5 Depth = 15.8 *Mean (mm): 0.093, Phi Sorting: 0.62 *Sand: 83.16%, Silt: 13.62%, Clay: 3.21% Mean (mm): 0.09, Phi Sorting: 0.53 Silt: 17.85% (SM)
-52.5	17, 18		CLAY, some sandy silt layers, dark gray (5Y-4/1) and yellowish brown (10YR-5/6), (ML-CL).		4	
-52.9			NO RECOVERY			
	19, 20, 21, 22, 23, 24		End of Boring Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

DRILLING LOG

DIVISION:

INSTALLATION:

1. PROJECT BARATARIA	**10. SIZE AND TYPE OF BIT** 3"
2. LOCATION (Coordinates or Station) X=3863027 Y=220636	**11. DATUM FOR ELEVATION SHOWN** (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	**12. MANUFACTURER'S DESIGNATION OF DRILL** Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) SPVC-03-23	**13. TOT NO. OF OVERBURDEN SAMPLES TAKEN** Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	**14. TOTAL NO. OF CORE BOXES** 1
6. DIRECTION OF HOLE VERTICAL	**15. ELEVATION GROUND WATER**
	16. DATE HOLE Started 06/10/03 0949 Completed
7. THICKNESS OF BURDEN 0.0 FT	**17. ELEVATION TOP OF HOLE** FT
8. DEPTH DRILLED INTO ROCK N/A	**18. TOTAL CORE RECOVERY FOR BORING** 96%
9. TOTAL DEPTH OF HOLE 18.9	**19. SIGNATURE OF GEOLOGIST** ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-35.3	0					
-37	1		Alternating CLAY and SILT layers, trace shell hash, very dark gray (5Y-3/1), (ML-CL)		1	Sample #1 Depth = 1.0 *Mean (mm): 0.013, Phi Sorting: 2.58 *Sand: 19.09%, Silt: 52.86%, Clay: 28.03%
-38	2		SAND, some silt, trace shell hash, very dark gray (5Y-3/1), (SM).		2	Sample #2 Depth = 2.0 Mean (mm): 0.09, Phi Sorting: 0.61 Silt: 29.42% (SM)
-44	3, 4, 5, 6, 7, 8		SAND, little silt, 2" clay layers @ 2.7 and 3.3, 3" clay layer @ 7.6', 1" clay layer @ 8.5', very dark gray (5Y-3/1), (SM).		3	Sample #3 Depth = 5.0 Mean (mm): 0.11, Phi Sorting: 0.66 Silt: 15.18% (SM)
-44.8	9		little silt, some organics, very dark gray (5Y-3/1), (SM).		4	Sample #4 Depth = 9.0 Mean (mm): 0.11, Phi Sorting: 0.58 Silt: 9.69% (SM)
	10, 11		SAND, fine grained, quartz, some silt, 2" clay layer @ 12.2', 1/2" clay layer @ 13.4', clay from 14.4-14.7', 1.2" clay layer @ 15.3', clay from 16.2-16.5', 2" clay pockets @ 16.7' and 17.9', dark gray (5Y-4/1), (SM).		5	Sample #5 Depth = 10.0 Mean (mm): 0.12, Phi Sorting: 0.49 Silt: 4.18% (SW-SM)
	12, 13, 14, 15, 16, 17				6	Sample #6 Depth = 14.0 Mean (mm): 0.13, Phi Sorting: 0.53 Silt: 5.50% (SW-SM)
-53.5	18					
-54.2			NO RECOVERY			
	19		End of Boring			
	20, 21, 22, 23, 24		Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	**10. SIZE AND TYPE OF BIT** 3"
2. LOCATION (Coordinates or Station) X=3862629 Y=223158	**11. DATUM FOR ELEVATION SHOWN** (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	**12. MANUFACTURER'S DESIGNATION OF DRILL** Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) SPVC-03-24	**13. TOT NO. OF OVERBURDEN SAMPLES TAKEN** Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	**14. TOTAL NO. OF CORE BOXES** 1
6. DIRECTION OF HOLE VERTICAL	**15. ELEVATION GROUND WATER**
	16. DATE HOLE Started 06/10/03 1042 Completed
7. THICKNESS OF BURDEN 0.0 FT	**17. ELEVATION TOP OF HOLE** FT
8. DEPTH DRILLED INTO ROCK N/A	**18. TOTAL CORE RECOVERY FOR BORING** 95%
9. TOTAL DEPTH OF HOLE 18.8	**19. SIGNATURE OF GEOLOGIST** ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-35.2	0					
-38.1	1, 2		CLAY, some silt laminae/layers, dark gray (5Y-4/1), (CL).		1	Sample #1 Depth = 1.0 *Mean (mm): 0.006, Phi Sorting: 1.97 *Sand: 0.04%, Silt: 65.50%, Clay: 34.50%
-41.8	3, 4, 5, 6		SILT, little sand, dark gray (5Y-4/1), (ML).		2	Sample #2 Depth = 4.0 Mean (mm): 0.10, Phi Sorting: 1.52 Silt: 79.19% (ML)
-49.2	7, 8, 9, 10, 11, 12, 13		SAND, some silt, clay from 7.7' - 7.9', gray (5Y-5/1), (SM).		3	Sample #3 Depth = 9.0 Mean (mm): 0.10, Phi Sorting: 0.58 Silt: 11.13% (SM)
-53	14, 15, 16, 17		little silty organic laminae, gray (5Y-5/1), (SM).		4	Sample #4 Depth = 15.5 *Mean (mm): 0.11, Phi Sorting: 0.63 Silt: 13.26% (SM)
-54	18		NO RECOVERY			
	19, 20, 21, 22, 23, 24		End of Boring Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

DRILLING LOG

DIVISION:	**INSTALLATION:**
SHEET 1 of 1	
1. PROJECT BARATARIA	**10. SIZE AND TYPE OF BIT** 3"
2. LOCATION (Coordinates or Station) X=3863432 Y=223257	**11. DATUM FOR ELEVATION SHOWN** (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	**12. MANUFACTURER'S DESIGNATION OF DRILL** Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) SPVC-03-25	**13. TOT NO. OF OVERBURDEN SAMPLES TAKEN** Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	**14. TOTAL NO. OF CORE BOXES** 1
6. DIRECTION OF HOLE VERTICAL	**15. ELEVATION GROUND WATER**
	16. DATE HOLE Started 06/10/03 1126 Completed
7. THICKNESS OF BURDEN 0.0 FT	**17. ELEVATION TOP OF HOLE** FT
8. DEPTH DRILLED INTO ROCK N/A	**18. TOTAL CORE RECOVERY FOR BORING** 95%
9. TOTAL DEPTH OF HOLE 18.8	**19. SIGNATURE OF GEOLOGIST** ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-34.5	0					
-36.1	1		SAND, little silt, little clay, trace shell hash, dark gray (5Y-4/1), (SM).		1	
-38.1	2, 3		trace silt, 4" clay layer from 2.1 - 2.5', gray (5Y-5/1), (SW-SM).		2	Sample #2 Depth = 3.0 *Mean (mm): 0.120, Phi Sorting: 0.52 *Sand: 91.08%, Silt: 7.19%, Clay: 1.65% Mean (mm): 0.10, Phi Sorting: 0.53 Silt: 9.22%, (SM)
-41	4, 5, 6		CLAY, little silt and sand layers, dark gray (5Y-4/1), (CL).		3	Sample #3 Depth = 5.0 *Mean (mm): 0.011, Phi Sorting: 2.28 *Sand: 11.44%, Silt: 62.53%, Clay: 26.08%
-43.5	7, 8		SAND, trace silt, 4" clay layer 7.3 - 7.7', gray (5Y-5/1), (SM).		4	Sample #4 Depth = 8.0 *Mean (mm): 0.128, Phi Sorting: 0.45 *Sand: 93.29%, Silt: 5.33%, Clay: 1.39% Mean (mm): 0.11, Phi Sorting: 0.56 Silt: 10.09. (SM)
-44.5	9		CLAY, 2" silty sand layer 9.6 - 9.8', yellowish brown (10YR-5/6), (ML-CL).		3	
-46.5	10, 11		SAND, little silt, gray (5Y-5/1), (SM).		1	
-47.6	12		Alternating CLAY and SILTY SAND layers, dark gray (5Y-4/1) and gray (5Y-5/1), (SM-SC).		5	Sample #5 Depth = 12.6 *Mean (mm): 0.118, Phi Sorting: 0.64 *Sand: 86.88%, Silt: 9.63%, Clay: 3.56% Mean (mm): 0.09, Phi Sorting: 0.71 Silt: 31.19%, (SM)
-52.3	13, 14, 15, 16, 17		SAND, little silt, trace organics, 0.5" sandy clay layer @ 15.3, gray (5Y-5/1), (SM).		1	Sample #1 Depth = 14.0 *Mean (mm): 0.130, Phi Sorting: 0.42 *Sand: 93.99% , Silt: 4.42%, Clay: 1.65% Mean (mm): 0.11, Phi Sorting: 0.51 Silt: 7.64% (SW-SM)
-53.3	18		NO RECOVERY			
	19, 20, 21, 22, 23, 24		End of Boring Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

DRILLING LOG

DIVISION:

INSTALLATION:

1. PROJECT BARATARIA	**10. SIZE AND TYPE OF BIT** 3"
2. LOCATION (Coordinates or Station) X=3862579 Y=223816	**11. DATUM FOR ELEVATION SHOWN** (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	**12. MANUFACTURER'S DESIGNATION OF DRILL** Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) SPVC-03-26	**13. TOT NO. OF OVERBURDEN SAMPLES TAKEN** Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	**14. TOTAL NO. OF CORE BOXES** 1
6. DIRECTION OF HOLE VERTICAL	**15. ELEVATION GROUND WATER**
	16. DATE HOLE Started 06/10/03 1225 Completed
7. THICKNESS OF BURDEN 0.0 FT	**17. ELEVATION TOP OF HOLE** FT
8. DEPTH DRILLED INTO ROCK N/A	**18. TOTAL CORE RECOVERY FOR BORING** 96%
9. TOTAL DEPTH OF HOLE 18.6	**19. SIGNATURE OF GEOLOGIST** ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-35	0					
-36	1		Alternating CLAY and SILT layers/laminae, dark gray (5Y-4/1) (ML-CL).		1	Sample #1 Depth = 0.8 *Mean (mm): 0.009, Phi Sorting: 2.20 *Sand: 2.50%, Silt: 66.93%, Clay: 30.64%
-38.2	2, 3		SILT, 1" clay layer @ 3.1', dark gray (5Y-4/1), (ML).		2	Sample #2 Depth = 2.0 Mean (mm): 0.08, Phi Sorting: 0.52 Silt:42.94% (ML)
-41.7	4, 5, 6		SAND, little silt, olive gray (5Y-5/2), (SM).		3	Sample #3 Depth = 5.0 Mean (mm): 0.13, Phi Sorting: 0.53 Silt: 5.53% (SM)
-46.1	7, 8, 9, 10, 11		SAND, some silt, olive gray (5Y-5/2), (SM).		4	Sample #4 Depth = 9.0 Mean (mm): 0.10, Phi Sorting: 0.71 Silt: 17.16% (SM)
-50.8	12, 13, 14, 15		SAND, little silty laminae, olive gray (5Y-5/2), (SM).		5	Sample #5 Depth = 13.0 Mean (mm): 0.18, Phi Sorting: 0.81 Silt: 6.21% (SW-SM)
-52.8	16, 17		Alternating CLAY and SILT layers/laminae, dark gray (5Y-4/1), (ML-CL).		1	
-53.6	18		NO RECOVERY			
	19, 20, 21, 22, 23, 24		End of Boring Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

DRILLING LOG

DIVISION:

INSTALLATION:

1. PROJECT BARATARIA	**10. SIZE AND TYPE OF BIT** 3"
2. LOCATION (Coordinates or Station) X=3863028 Y=224053	**11. DATUM FOR ELEVATION SHOWN** (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	**12. MANUFACTURER'S DESIGNATION OF DRILL** Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) SPVC-03-27	**13. TOT NO. OF OVERBURDEN SAMPLES TAKEN** Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	**14. TOTAL NO. OF CORE BOXES** 1
6. DIRECTION OF HOLE VERTICAL	**15. ELEVATION GROUND WATER**
	16. DATE HOLE Started 06/10/03 1308 Completed
7. THICKNESS OF BURDEN 0.0 FT	**17. ELEVATION TOP OF HOLE** FT
8. DEPTH DRILLED INTO ROCK N/A	**18. TOTAL CORE RECOVERY FOR BORING** 88%
9. TOTAL DEPTH OF HOLE 17.8	**19. SIGNATURE OF GEOLOGIST** ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-34.5	0					
-36.5	1, 2		CLAY, trace sandy laminae, 2" silty sand layer @ 1.1' - 1.3', gray (5Y-4/1) and light olive brown (10YR-5/6), (CL)		1	Sample #1 Depth = 0.9 *Mean (mm): 0.008, Phi Sorting: 2.18 *Sand: 7.74%, Silt: 58.10%, Clay: 34.17%
-39.3	3, 4		SAND, fine grained, quartz, little silt, dark gray (5Y-4/1), (SM).		2	Sample #2 Depth = 3.0 Mean (mm): 0.09, Phi Sorting: 0.56 Silt: 21.91% (SM)
-40.3	5		CLAY, trace silty sand, dark gray (5Y-4/1) and light olive brown (10YR-5/6), (CL).		1	
-43.6	6, 7, 8		SAND, fine grained, quartz, little silt, 0.5" organic layer @ 8.0', gray (5Y-5/1), (SW-SM).		3	Sample #3 Depth = 7.7 Mean (mm): 0.12, Phi Sorting: 0.53 Silt: 4.93% (SW-SM)
-44.6	9		Alternating CLAY and SILT layers, dark gray (5Y-4/1) and gray (5Y-5/1), (SC).		4	Sample #4 Depth = 9.4 *Mean (mm): 0.005, Phi Sorting: 1.72 *Sand: 0.00%, Silt: 57.79%, Clay: 42.04%
	10, 11, 12		SAND, fine grained, quartz, little silt, 2" clay layer from 11.4-11.6', 4" clay layer from 12.6-13.0', 1" organic layer @ 10.3', trace organics, gray (5Y-5/1), (SW-SM).		5	Sample #5 Depth = 11.0 Mean (mm): 0.14, Phi Sorting: 0.63 Silt: 5.41% (SW-SM)
-50.2	13, 14, 15				6	Sample #6 Depth = 14.9 Mean (mm): 0.16, Phi Sorting: 0.59 Silt: 3.98% (SW-SM)
-52.3	16, 17		NO RECOVERY			
	18, 19, 20, 21, 22, 23, 24		End of Boring Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3862766 Y=222525	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) SPVC-03-28	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
	16. DATE HOLE Started 06/10/03 1416 Completed
7. THICKNESS OF BURDEN 0.0 FT	17. ELEVATION TOP OF HOLE FT
8. DEPTH DRILLED INTO ROCK N/A	18. TOTAL CORE RECOVERY FOR BORING
9. TOTAL DEPTH OF HOLE 18.8	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-35.2	0					
-36.2	1		CLAY, soft, 1" sandy pocket @ 0.4, dark grayish brown (5Y-4/2), (CL).		1	Sample #1 Depth = 0.5 *Mean (mm): 0.008, Phi Sorting: 1.81 *Sand: 2.70%, Silt: 67.43%, Clay: 29.91%
	2					
	3				2	Sample #2 Depth = 4.0 Mean (mm): 0.11, Phi Sorting: 0.57 Silt: 11.98% (SM)
	4					
	5					
	6		SAND, some silt, fine grained, quartz, trace shell hash, clay laminae from 7.2'-7.3', 8.7'-9.1' and 12.3'-12.4', trace organics, very dark gray (5Y-3/1), (SM).			
	7					
	8				3	Sample #3 Depth = 8.0 Mean (mm): 0.12, Phi Sorting: 0.59 Silt: 11.44% (SM)
	9					
	10					
	11					
-47.6	12					
	13					
	14					
	15		SAND, fine grained, quartz, trace silt, little organic layers, dark gray (5Y-4/1), (SP).		4	Sample #4 Depth = 15.0 Mean (mm): 0.14, Phi Sorting: 0.46 Silt: 3.94% (SP)
	16					
	17					
-53.7	18					
-54						
	19		NO RECOVERY End of Boring			
	20					
	21		Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO
	22					
	23					
	24					

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3854692 Y=233110	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) SPVC-03-29	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
	16. DATE HOLE Started 06/10/03 Completed 1517
7. THICKNESS OF BURDEN 0.0 FT	17. ELEVATION TOP OF HOLE FT
8. DEPTH DRILLED INTO ROCK N/A	18. TOTAL CORE RECOVERY FOR BORING 97%
9. TOTAL DEPTH OF HOLE 15.6	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-35.8	0					
-36.5			CLAY, soft, dark gray (5Y-4/1), (CL).		1	Sample #1 Depth = 0.4 *Mean (mm): 0.010, Phi Sorting: 2.03 *Sand: 5.59%, Silt: 68.46%, Clay: 25.95%
-37.8	1		Alternating SILT and CLAY layers, dark gray (5Y-4/1), (ML-CL).		2	Sample #2 Depth = 1.2 *Mean (mm): 0.008, Phi Sorting: 2.25 *Sand: 5.67%, Silt: 61.86%, Clay: 32.30%
	2					
	3					
	4					
	5		SAND, some silt, dark gray (5Y-4/1), (SM).		3	Sample #3 Depth = 5.0 Mean (mm): 0.09, Phi Sorting: 0.62 Silt: 28.59% (SM)
	6					
	7					
-44	8					
	9					
	10		SAND, little silt, 1" clay layer with organics @ 10.8', dark gray (5Y-4/1), (SM).		4	Sample #4 Depth = 10.0 Mean (mm): 0.09, Phi Sorting: 0.51 Silt: 12.57% (SM)
	11					
-47.8	12		CLAY, with trace organics, very dark gray (5Y-3/1), (CL).		1	
	13		SAND, fine grained, quartz, little silt, 1" organic layer @ 13.1', dark gray (5Y-4/1), (SM).		5	Sample #5 Depth = 14.0 Mean (mm): 0.12, Phi Sorting: 0.59 Silt: 5.54% (SW-SM)
	14					
-50.9	15					
-51.4			NO RECOVERY			
	16		End of Boring			
	17					
	18					
	19					
	20					
	21		Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO
	22					
	23					
	24					

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3854691 Y=233114	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) SPVC-03-29A	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
	16. DATE HOLE Started 06/10/03 1559 Completed
7. THICKNESS OF BURDEN 0.0 FT	17. ELEVATION TOP OF HOLE FT
8. DEPTH DRILLED INTO ROCK N/A	18. TOTAL CORE RECOVERY FOR BORING 95%
9. TOTAL DEPTH OF HOLE 18.7	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-35.8	0					
	1					
	2					
	3					
	4					
	5					
	6					
	7		Jetted TO 14.5'			
	8					
	9					
	10					
	11					
	12					
	13					
-50.3	14					
	15		SAND, some silt, 2" clayey layer @ 15.4', very dark gray (5Y-3/1), (SM).		6	Sample #6 Depth = 15.0 Mean (mm): 0.13, Phi Sorting: 0.79 Silt: 7.84% (SM)
-51.5	16					
	17		SILTY SAND, dark gray (5Y-4/1), (SM).		29S#4	
-54.3	18					
-54.8	19		NO RECOVERY End of Boring			
	20					
	21		Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO
	22					
	23					
	24					

DRILLING LOG

DIVISION:	**INSTALLATION:**
SHEET 1 of 1	
1. PROJECT BARATARIA	**10. SIZE AND TYPE OF BIT** 3"
2. LOCATION (Coordinates or Station) X=3855322 Y=233895	**11. DATUM FOR ELEVATION SHOWN** (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	**12. MANUFACTURER'S DESIGNATION OF DRILL** Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) SPVC-03-30	**13. TOT NO. OF OVERBURDEN SAMPLES TAKEN** Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	**14. TOTAL NO. OF CORE BOXES** 1
6. DIRECTION OF HOLE VERTICAL	**15. ELEVATION GROUND WATER**
7. THICKNESS OF BURDEN 0.0 FT	**16. DATE HOLE** Started 06/13/03 1057 Completed
8. DEPTH DRILLED INTO ROCK N/A	**17. ELEVATION TOP OF HOLE** FT
9. TOTAL DEPTH OF HOLE 18.8	**18. TOTAL CORE RECOVERY FOR BORING** 89%
	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-35.4	0					
-36.8	1		SAND, little silt, little clay, 2" soft clay at top, very dark gray (5Y-3/1), (SM-SC).		1	Sample #1 Depth = 0.7 *Mean (mm): 0.038, Phi Sorting: 0.66 *Sand: 70.54%, Silt: 19.83%, Clay: 9.60%
-38.2	2		SAND, little silt, 2" clay layer @ 2.8, very dark gray (5Y-3/1), (SM).		2	Mean (mm): 0.10, Phi Sorting: 0.66 Silt: 21.34% (SM) Sample #2 Depth = 2.0
-40.1	3 4		Some silt, dark gray (5Y-4/1), (SM).		3	Mean (mm): 0.10, Phi Sorting: 0.61 Silt: 12.59% (SM) Sample #3 Depth = 4.0 Mean (mm): 0.11, Phi Sorting: 0.65 Silt: 14.72% (SM)
-43.8	5 6 7 8		SAND, fine grained, quartz, trace silt, gray (5Y-5/1), (SW-SM).		4	Sample #4 Depth = 8.0 Mean (mm): 0.14, Phi Sorting: 0.40 Silt: 3.14% (SP)
-47.6	9 10 11 12		SAND, fine grained, quartz, some silt, clay laminae 8.8'- 9.2', clay laminae @ 10.4' and 10.5', gray (5Y-5/1), (SM).		5	Sample #5 Depth = 11.0 Mean (mm): 0.11, Phi Sorting: 0.76 Silt: 17.14% (SM)
			CLAY, dark gray (5Y-4/1), (CL).		6	
-48.9	13		SAND, fine grained, quartz, little silt, gray (5Y-5/1), (SW-SM).		7	Sample #6 Depth = 14.0 *Mean (mm): 0.007, Phi Sorting: 2.17 *Sand: 2.97%, Silt: 62.39%, Clay: 34.66%
-49.7	14		CLAY, trace silty laminae, gray (5Y-5/1), (CL).		6	
-52.1	15 16		SAND, fine grained, quartz, little silt, 1" partially lithified clay nodule @ 16.0', gray (5Y-5/1), (SW-SM).		7	Sample #7 Depth = 15.5 Mean (mm): 0.17, Phi Sorting: 0.50 Silt: 1.75% (SP)
-54.2	17 18		NO RECOVERY			
	19 20 21 22 23 24		End of Boring Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

DRILLING LOG

DIVISION:

INSTALLATION:

1. PROJECT BARATARIA	**10. SIZE AND TYPE OF BIT** 3"
2. LOCATION (Coordinates or Station) X=3855838 Y=234127	**11. DATUM FOR ELEVATION SHOWN** (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	**12. MANUFACTURER'S DESIGNATION OF DRILL** Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) SPVC-03-31	**13. TOT NO. OF OVERBURDEN SAMPLES TAKEN** Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	**14. TOTAL NO. OF CORE BOXES** 1
6. DIRECTION OF HOLE VERTICAL	**15. ELEVATION GROUND WATER**
	16. DATE HOLE Started 06/13/03 1155 Completed
7. THICKNESS OF BURDEN 0.0 FT	**17. ELEVATION TOP OF HOLE** FT
8. DEPTH DRILLED INTO ROCK N/A	**18. TOTAL CORE RECOVERY FOR BORING** 88%
9. TOTAL DEPTH OF HOLE 19.0	**19. SIGNATURE OF GEOLOGIST** ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-35	0					
-36.7	1		CLAY, little silt, dark gray (5Y-4/1), (CL).		1	Sample #1 Depth = 1.0 *Mean (mm): 0.008, Phi Sorting: 2.40 *Sand: 8.61%, Silt: 55.89%, Clay: 35.60%
-37.4	2		SAND, little silt, some clay, very dark gray (5Y-3/1), (SC).		2	Sample #2 Depth = 2.0 *Mean (mm): 0.081, Phi Sorting: 0.85 *Sand: 75.33%, Silt: 20.21%, Clay: 4.40%
-37.9			CLAY, trace shell hash, little silt, dark gray (5Y-4/1), (CL).		1	
-41.6	3 4 5 6		SILTY SAND, trace organics, dark gray (5Y-4/1), (SM).		3	Mean (mm): 0.09, Phi Sorting: 0.61 Silt: 26.43% (SM) Sample #3 Depth = 5.5 *Mean (mm): 0.112, Phi Sorting: 0.57 *Sand: 88.63%, Silt: 9.41%, Clay: 1.92% Mean (mm): 0.10, Phi Sorting: 0.57 Silt: 12.95% (SM)
-48	7 8 9 10 11 12		SAND, fine grained, quartz, little silt, trace clay borrows, trace organics, gray (5Y-5/1), (SW-SM)		4 5	Sample #4 Depth = 9.0 Mean (mm): 0.17, Phi Sorting: 0.46 Silt: 2.59% (SP) Sample #5 Depth = 11.0 Mean (mm): 0.14, Phi Sorting: 0.55 Silt: 2.64% (SP)
-52.8	13 14 15 16 17		SAND, fine grained, quartz, little silt, little silt/clay layers, gray (5Y-5/1), (SM)		6	Sample #6 Depth = 14.0 Mean (mm): 0.11, Phi Sorting: 0.72 Silt: 14.64% (SM)
-54	18		NO RECOVERY			
	19		End of Boring			
	20 21 22 23 24		Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

DRILLING LOG

DIVISION:

INSTALLATION:

1. PROJECT BARATARIA	**10. SIZE AND TYPE OF BIT** 3"
2. LOCATION (Coordinates or Station) X=3855117 Y=233418	**11. DATUM FOR ELEVATION SHOWN** (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	**12. MANUFACTURER'S DESIGNATION OF DRILL** Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) SPVC-03-32	**13. TOT NO. OF OVERBURDEN SAMPLES TAKEN** Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	**14. TOTAL NO. OF CORE BOXES** 1
6. DIRECTION OF HOLE VERTICAL	**15. ELEVATION GROUND WATER**
	16. DATE HOLE Started 06/13/03 Completed 1312
7. THICKNESS OF BURDEN 0.0 FT	**17. ELEVATION TOP OF HOLE** FT
8. DEPTH DRILLED INTO ROCK N/A	**18. TOTAL CORE RECOVERY FOR BORING** 100%
9. TOTAL DEPTH OF HOLE 18.8	**19. SIGNATURE OF GEOLOGIST** ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-35.6						
-36.1	0		SILTY CLAY, very dark gray (5Y-3/1), (ML-CL).		1	Sample #1 Depth =0.3 *Mean (mm): 0.011, Phi Sorting: 2.52 *Sand: 16.67%, Silt: 53.86%, Clay: 29.55%
	1, 2, 3, 4, 5, 6		SAND, some silt, trace shell hash, very dark gray (5Y-3/1), (SM).		2	Sample #2 Depth = 3.0 Mean (mm): 0.09, Phi Sorting: 0.59 Silt: 22.06% (SM)
-42.4	7, 8, 9, 10		SAND, little silt, very dark gray (5Y-3/1), (SM).		3	Sample #3 Depth = 8.0 Mean (mm): 0.12, Phi Sorting: 0.50 Silt: 3.94% (SW-SM)
-45.8			CLAY, some silty laminae, very dark gray (5Y-3/1), (ML-CL).		4	Sample #4 Depth = 10.4 *Mean (mm): 0.005, Phi Sorting: 1.88 *Sand: 0.25%, Silt: 54.78%, Clay: 44.98%
	11, 12		SAND, fine grained, quartz, little silt, dark gray (5Y-4/1), (SW-SM).		5	Sample #5 Depth = 11.5 Mean (mm): 0.15, Phi Sorting: 0.53 Silt: 3.33% (SP)
-48.6	13, 14, 15, 16		Fine grained, quartz, little silt, trace clay laminae, trace organics, dark gray (5Y-4/1), (SW-SM).		6	Sample #6 Depth = 15.0 Mean (mm): 0.16, Phi Sorting: 0.53 Silt:2.83% (SP)
-52	17		SAND, little clay, dark gray (5Y-4/1), (SC).		3	
-53.4	18, 19		SAND, fine grained, quartz, little silt, dark gray (5Y-4/1), (SW-SM).		5	
-55.1	20, 21, 22, 23, 24		End of Boring Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

DRILLING LOG

DIVISION:

INSTALLATION:

1. PROJECT BARATARIA	**10. SIZE AND TYPE OF BIT** 3"
2. LOCATION (Coordinates or Station) X=3854746 Y=233680	**11. DATUM FOR ELEVATION SHOWN** (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	**12. MANUFACTURER'S DESIGNATION OF DRILL** Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) SPVC-03-33	**13. TOT NO. OF OVERBURDEN SAMPLES TAKEN** Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	**14. TOTAL NO. OF CORE BOXES** 1
6. DIRECTION OF HOLE VERTICAL	**15. ELEVATION GROUND WATER**
	16. DATE HOLE Started 06/13/03 1440 Completed
7. THICKNESS OF BURDEN 0.0 FT	**17. ELEVATION TOP OF HOLE** FT
8. DEPTH DRILLED INTO ROCK N/A	**18. TOTAL CORE RECOVERY FOR BORING** 100%
9. TOTAL DEPTH OF HOLE 18.6	**19. SIGNATURE OF GEOLOGIST** ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-35.6	0					
-38.9	1, 2, 3		CLAY, soft, trace silty sand layers, very dark gray (5Y-3/1), (CL).		1	Sample #1 Depth = 1.0 *Mean (mm): 0.014, Phi Sorting: 2.37 *Sand: 20.38%, Silt: 57.67%, Clay: 21.98%
-40.5	4		SILT, trace clay, trace sand, very dark gray (5Y-3/1), (ML).		2	Sample #2 Depth = 4.0 *Mean (mm): 0.028, Phi Sorting: 1.81 *Sand: 37.48%, Silt: 51.43%, Clay: 11.14%
-46.4	5, 6, 7, 8, 9, 10		SAND, little silt, 1" organic layers @ 9.2' and 10.2', dark gray (5Y-4/1), (SM).		3	Sample #3 Depth = 10.0 *Mean (mm): 0.117, Phi Sorting: 0.51 *Sand: 90.83%, Silt: 6.86%, Clay: 2.33% *Mean (mm): 0.11, Phi Sorting: 0.60 Silt: 10.39% (SM)
-48.6	11, 12		SAND, fine grained, quartz, little silt, gray (5Y-5/1), (SM).		4	Sample #4 Depth = 11.6 Mean (mm): 0.12, Phi Sorting: 0.66 Silt: 8.49% (SW-SM)
-49.3	13		CLAY, trace silt laminae, dark gray (5Y-4/1), (CL).		1	
-50.2	14		SAND, little silt, dark gray (5Y-4/1), (SM).		3	
-51.2	15		SAND, fine grained, quartz, little silt, gray (5Y-5/1), (SW-SM).		5	Sample #5 Depth = 15.0 Mean (mm): 0.14, Phi Sorting: 0.67 Silt: 5.85% (SW-SM)
-52.6	16		CLAYEY SILT, little sandy layers, 1.5" silty organic layer @ 16.7-16.9', dark gray (5Y-4/1), (ML-CL).		6	Sample #6 Depth = 16.2 *Mean (mm): 0.021, Phi Sorting: 2.00 *Sand: 33.47%, Silt: 53.09%, Clay: 13.42%
-53.5	17		SAND, fine grained, quartz, little silt, trace clay laminae, gray (5Y-5/1), (SW-SM).		5	
-54.8	18, 19		Alternating SILT and CLAY layers/laminae, little organics, dark gray (5Y-4/1), (ML-CL).		6	
	20, 21, 22, 23, 24		End of Boring Expansion from 18.6' Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3855068 Y=232911	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) SPVC-03-34	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
	16. DATE HOLE Started 06/14/03 Completed 1551
7. THICKNESS OF BURDEN 0.0 FT	17. ELEVATION TOP OF HOLE FT
8. DEPTH DRILLED INTO ROCK N/A	18. TOTAL CORE RECOVERY FOR BORING 98%
9. TOTAL DEPTH OF HOLE 18.0	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-35.9	0					
-38.1	1, 2		Alternating SILT and CLAY laminae, very dark gray (5Y-3/1), (ML-CL).		1	Sample #1 Depth = 1.0 *Mean (mm): 0.019, Phi Sorting: 1.58 *Sand: 13.16%, Silt: 75.08%, Clay: 11.77% Sample #2 Depth = 2.5 *Mean (mm): 0.037, Phi Sorting: 1.47 *Sand: 45.34%, Silt: 45.31%, Clay: 9.35%
-39.1	3		SILT, very dark gray (5Y-3/1), (ML).		2	
			CLAY, gray (5Y-3/1), (CL).		3	
-42.3	4, 5, 6		SILTY SAND, little clay laminae, dark gray (5Y-4/1), (ML).		4	Sample #3 Depth = 3.4 *Mean (mm): 0.014, Phi Sorting: 2.15 *Sand: 16.56%, Silt: 65.08%, Clay: 18.34% Sample #4 Depth = 5.0 *Mean (mm): 0.066, Phi Sorting: 0.97 *Sand: 59.48%, Silt: 36.74%, Clay: 3.77% Mean (mm): 0.08, Phi Sorting: 0.56 Silt: 53.51% (ML)
-46.3	7, 8, 9, 10		SAND, trace silt, trace clay laminae, dark gray (5Y-4/1), (SM).		5	Sample #5 Depth = 8.0 Mean (mm): 0.09, Phi Sorting: 0.53 Silt: 12.75% (SM)
-49.7	11, 12, 13		SILTY SAND, trace organics, gray (5Y-5/1), (SM).		6	Sample #6 Depth = 12.5 Mean (mm): 0.10, Phi Sorting: 0.54 Silt: 9.93% (SM)
-53.5	14, 15, 16, 17		SAND, fine grained, quartz, little silt, organic laminae @ 17.2', gray (5Y-5/1), (SM).		7	Sample #7 Depth = 16.0 Mean (mm): 0.14, Phi Sorting: 0.63 Silt: 5.01% (SW-SM)
-53.9	18		NO RECOVERY			
	19, 20, 21, 22, 23, 24		End of Boring Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

DRILLING LOG

DIVISION:

INSTALLATION:

SHEET 1 of 1

1. PROJECT BARATARIA	10. SIZE AND TYPE OF BIT 3"
2. LOCATION (Coordinates or Station) X=3863189 Y=221706	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) NAVD 88
3. DRILLING AGENCY: Eckerd College	12. MANUFACTURER'S DESIGNATION OF DRILL Rossfelder P-3 Electric Vibracorer
4. HOLE NO. (As shown on drawing title and file number) SPVC-03-35	13. TOT NO. OF OVERBURDEN SAMPLES TAKEN Disturbed: 0 Undisturbed: 0
5. NAME OF DRILLER Gregg Brooks, PhD	14. TOTAL NO. OF CORE BOXES 1
6. DIRECTION OF HOLE VERTICAL	15. ELEVATION GROUND WATER
	16. DATE HOLE Started 06/13/03 Completed 1703
7. THICKNESS OF BURDEN 0.0 FT	17. ELEVATION TOP OF HOLE FT
8. DEPTH DRILLED INTO ROCK N/A	18. TOTAL CORE RECOVERY FOR BORING 92%
9. TOTAL DEPTH OF HOLE 18.8	19. SIGNATURE OF GEOLOGIST ML and JB

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS
-35.1	0					
-36.8	1		SANDY SILT, little clay, trace shell hash, dark gray (5Y-4/1), (ML).		1	Sample #1 Depth = 1.0 *Mean (mm): 0.007, Phi Sorting: 2.10 *Sand: 6.31%, Silt: 53.81%, Clay: 39.76%
-40.9	2, 3, 4, 5		SAND, trace silt, trace organics, trace clay, dark gray (5Y-4/1), (SM).		2	Sample #2 Depth = 3.0 Mean (mm): 0.12, Phi Sorting: 0.57 Silt: 8.2% (SW-SM)
-42.9	6, 7		SAND, fine grained, quartz, 1" organic layer @ 7.3', little clay laminae at base, gray (5Y-5/1), (SW-SM).		3	Sample #3 Depth = 6.8 Mean (mm): 0.12, Phi Sorting: 0.45 Silt: 2.51% (SP)
-46.1	8, 9, 10		SAND, fine grained, quartz, little silt, 1.5" clay layer @ 9.0', 1" clay layer @ 9.8', 3" clayey silt layer at base, gray (5Y-5/1), (SM).		4	Sample #4 Depth = 8.2 Mean (mm): 0.12, Phi Sorting: 0.55 Silt: 6.45% (SW-SM)
-49.3	11, 12, 13, 14		Trace silt, trace organics, gray (5Y-5/1), (SM).		2	
-52.4	15, 16, 17		SAND, fine grained, quartz, little silt, little organics, 1" clay layer at 15.5' and at base, gray (5Y-5/1), (SW-SM).		5	Sample #5 Depth = 16.0 Mean (mm): 0.16, Phi Sorting: 0.47 Silt: 3.51% (SP)
-53.9	18		NO RECOVERY			
	19, 20, 21, 22, 23, 24		End of Boring Note: 1) Soils are field visually classified in accordance with the Unified Soil Classification System.			* Data Analyzed by UNO

APPENDIX 8
2003 SANDY POINT INDIVIDUAL GRANULARMETRIC REPORTS

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-01 S#2
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855885	230769	State Plane 1983 LA South	-38 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/1	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
76.59	53.56	0.02	35.47	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	0.00	0.00	0.00	0.00
10	-1.00	2.00	0.16	0.21	0.16	0.21
14	-0.50	1.41	0.06	0.08	0.22	0.29
18	0.00	1.00	0.06	0.08	0.28	0.37
25	0.50	0.70	0.04	0.05	0.32	0.42
35	1.00	0.50	0.02	0.03	0.34	0.44
45	1.50	0.35	0.02	0.03	0.36	0.47
60	2.00	0.25	0.04	0.05	0.40	0.52
80	2.50	0.17	2.04	2.66	2.44	3.19
120	3.00	0.12	11.61	15.16	14.05	18.34
170	3.50	0.08	17.92	23.40	31.97	41.74
200	3.75	0.07	7.48	9.77	39.45	51.51
230	4.00	0.06	9.97	13.02	49.42	64.53
Pan	Pan	Pan	27.15	35.45	76.57	99.97
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.56	2.92	3.14	3.71	4.07	4.14	4.21

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.51	0.09	0.55	-0.43	0.73
Moment	3.54	0.09	0.66	-0.31	1.31

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-01 S#5
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855885	230769	State Plane 1983 LA South	-45.9 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
61.7	54.89	0.01	11.59	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.08	0.13	0.08	0.13
60	2.00	0.25	0.29	0.47	0.37	0.60
80	2.50	0.17	0.98	1.59	1.35	2.19
120	3.00	0.12	39.10	63.37	40.45	65.56
170	3.50	0.08	10.50	17.02	50.95	82.58
200	3.75	0.07	2.03	3.29	52.98	85.87
230	4.00	0.06	1.57	2.54	54.55	88.41
Pan	Pan	Pan	7.14	11.57	61.69	99.98
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.52	2.61	2.68	2.88	3.28	3.61	4.14

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.15	0.11	0.50	0.86	1.11
Moment	3.10	0.12	0.60	0.65	1.83

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-01A S#6
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855885	230769	State Plane 1983 LA South	-46.2 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SW-SM	5Y-6/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
60.57	58.15	0.01	4.26	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.03	0.05	0.03	0.05
60	2.00	0.25	0.09	0.15	0.12	0.20
80	2.50	0.17	2.19	3.62	2.31	3.81
120	3.00	0.12	43.87	72.43	46.18	76.24
170	3.50	0.08	10.39	17.15	56.57	93.40
200	3.75	0.07	0.77	1.27	57.34	94.67
230	4.00	0.06	0.65	1.07	57.99	95.74
Pan	Pan	Pan	2.57	4.24	60.56	99.98
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.51	2.58	2.65	2.82	2.99	3.23	3.83

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.99	0.13	0.36	0.96	1.57
Moment	2.94	0.13	0.46	0.94	2.46

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-01A S#8
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855885	230769	State Plane 1983 LA South	-50.3 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-5/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
71.63	48.17	0.02	36.81	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.10	0.14	0.10	0.14
60	2.00	0.25	0.08	0.11	0.18	0.25
80	2.50	0.17	0.37	0.52	0.55	0.77
120	3.00	0.12	4.77	6.66	5.32	7.43
170	3.50	0.08	19.22	26.83	24.54	34.26
200	3.75	0.07	11.64	16.25	36.18	50.51
230	4.00	0.06	9.08	12.68	45.26	63.19
Pan	Pan	Pan	26.35	36.79	71.61	99.97
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.82	3.16	3.33	3.74	4.08	4.14	4.22

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.62	0.08	0.46	-0.34	0.76
Moment	3.64	0.08	0.55	-0.30	1.37

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-01A S#9
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855885	230769	State Plane 1983 LA South	-52.2 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SW-SM	5Y-6/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
75.73	70.17	0.02	7.55	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.08	0.11	0.08	0.11
60	2.00	0.25	0.33	0.44	0.41	0.54
80	2.50	0.17	15.99	21.11	16.40	21.66
120	3.00	0.12	42.01	55.47	58.41	77.13
170	3.50	0.08	9.73	12.85	68.14	89.98
200	3.75	0.07	1.13	1.49	69.27	91.47
230	4.00	0.06	0.74	0.98	70.01	92.45
Pan	Pan	Pan	5.70	7.53	75.71	99.97
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.11	2.37	2.53	2.76	2.98	3.27	4.08

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.92	0.13	0.53	0.69	1.80
Moment	2.87	0.14	0.66	0.72	2.30

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-02 S#1
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855275	230980	State Plane 1983 LA South	-37.5 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/1	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
57.24	44.39	0.02	24.72	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.03	0.05	0.03	0.05
45	1.50	0.35	0.02	0.03	0.05	0.09
60	2.00	0.25	0.04	0.07	0.09	0.16
80	2.50	0.17	3.93	6.87	4.02	7.02
120	3.00	0.12	15.90	27.78	19.92	34.80
170	3.50	0.08	12.77	22.31	32.69	57.11
200	3.75	0.07	5.11	8.93	37.80	66.04
230	4.00	0.06	5.29	9.24	43.09	75.28
Pan	Pan	Pan	14.13	24.69	57.22	99.97
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.35	2.66	2.82	3.34	3.99	4.09	4.2

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.33	0.10	0.64	-0.02	0.65
Moment	3.35	0.10	0.76	-0.08	1.17

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-02 S#2
Sample Date: 06/12/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855275	230980	State Plane 1983 LA South	-39 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/1	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
62.49	52.07	0	18.63	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.07	0.11	0.07	0.11
35	1.00	0.50	0.01	0.02	0.08	0.13
45	1.50	0.35	0.01	0.02	0.09	0.14
60	2.00	0.25	0.04	0.06	0.13	0.21
80	2.50	0.17	4.35	6.96	4.48	7.17
120	3.00	0.12	21.27	34.04	25.75	41.21
170	3.50	0.08	15.26	24.42	41.01	65.63
200	3.75	0.07	5.39	8.63	46.40	74.25
230	4.00	0.06	4.45	7.12	50.85	81.37
Pan	Pan	Pan	11.64	18.63	62.49	100.00
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.34	2.63	2.76	3.18	3.78	4.04	4.18

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.27	0.10	0.63	0.18	0.74
Moment	3.27	0.10	0.73	0.05	1.21

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-02 S#3
Sample Date: 06/12/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855275	230980	State Plane 1983 LA South	-41.3 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SW-SM	5Y-6/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
56.93	52.96	0	7.22	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.03	0.05	0.03	0.05
60	2.00	0.25	0.12	0.21	0.15	0.26
80	2.50	0.17	11.49	20.18	11.64	20.45
120	3.00	0.12	31.47	55.28	43.11	75.72
170	3.50	0.08	7.18	12.61	50.29	88.34
200	3.75	0.07	1.30	2.28	51.59	90.62
230	4.00	0.06	1.23	2.16	52.82	92.78
Pan	Pan	Pan	4.11	7.22	56.93	100.00
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.12	2.39	2.54	2.77	2.99	3.33	4.08

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.94	0.13	0.53	0.70	1.78
Moment	2.89	0.14	0.66	0.67	2.20

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-02 S#6
Sample Date: 06/12/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855275	230980	State Plane 1983 LA South	-47.4 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
74.51	39.64	0.02	47.04	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.04	0.05	0.04	0.05
60	2.00	0.25	1.41	1.89	1.45	1.95
80	2.50	0.17	20.35	27.31	21.80	29.26
120	3.00	0.12	14.89	19.98	36.69	49.24
170	3.50	0.08	1.72	2.31	38.41	51.55
200	3.75	0.07	0.41	0.55	38.82	52.10
230	4.00	0.06	0.64	0.86	39.46	52.96
Pan	Pan	Pan	35.03	47.01	74.49	99.97
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.06	2.26	2.42	3.16	4.12	4.17	4.22

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.17	0.11	0.81	0.01	0.52
Moment	3.20	0.11	0.97	-0.01	1.05

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-02 S#7
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855275	230980	State Plane 1983 LA South	-51.5 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SP	5Y-6/1	5Y-6/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
78.51	77.45	0.01	1.39	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.00	0.00	0.00	0.00
60	2.00	0.25	0.38	0.48	0.38	0.48
80	2.50	0.17	20.77	26.46	21.15	26.94
120	3.00	0.12	49.58	63.15	70.73	90.09
170	3.50	0.08	6.09	7.76	76.82	97.85
200	3.75	0.07	0.41	0.52	77.23	98.37
230	4.00	0.06	0.19	0.24	77.42	98.61
Pan	Pan	Pan	1.08	1.38	78.50	99.99
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.09	2.29	2.46	2.68	2.88	2.95	3.32

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.67	0.16	0.35	-0.06	1.21
Moment	2.67	0.16	0.42	0.11	1.69

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-03 S#2
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855493	232415	State Plane 1983 LA South	-39.6 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
68.95	54.67	0.02	21.48	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.00	0.00	0.00	0.00
60	2.00	0.25	0.03	0.04	0.03	0.04
80	2.50	0.17	0.69	1.00	0.72	1.04
120	3.00	0.12	9.32	13.52	10.04	14.56
170	3.50	0.08	25.38	36.81	35.42	51.37
200	3.75	0.07	8.36	12.12	43.78	63.50
230	4.00	0.06	10.36	15.03	54.14	78.52
Pan	Pan	Pan	14.79	21.45	68.93	99.97
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.65	3.02	3.14	3.48	3.94	4.06	4.19

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.48	0.09	0.50	-0.01	0.79
Moment	3.50	0.09	0.59	-0.14	1.34

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-03 S#3
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855493	232415	State Plane 1983 LA South	-45.1 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/1	5Y-6/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
50.18	44.91	0.02	12.93	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.00	0.00	0.00	0.00
60	2.00	0.25	0.00	0.00	0.00	0.00
80	2.50	0.17	0.05	0.10	0.05	0.10
120	3.00	0.12	1.86	3.71	1.91	3.81
170	3.50	0.08	22.75	45.34	24.66	49.14
200	3.75	0.07	12.11	24.13	36.77	73.28
230	4.00	0.06	6.92	13.79	43.69	87.07
Pan	Pan	Pan	6.47	12.89	50.16	99.96
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.01	3.13	3.23	3.51	3.78	3.94	4.15

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.55	0.09	0.38	0.15	0.85
Moment	3.54	0.09	0.43	0.15	1.33

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-03 S#4
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855493	232415	State Plane 1983 LA South	-49.8 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SP	5Y-6/1	5Y-6/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
58.45	57.15	0.01	2.34	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.00	0.00	0.00	0.00
60	2.00	0.25	0.10	0.17	0.10	0.17
80	2.50	0.17	9.30	15.91	9.40	16.08
120	3.00	0.12	36.66	62.72	46.06	78.80
170	3.50	0.08	9.73	16.65	55.79	95.45
200	3.75	0.07	0.89	1.52	56.68	96.97
230	4.00	0.06	0.40	0.68	57.08	97.66
Pan	Pan	Pan	1.36	2.33	58.44	99.98
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.15	2.5	2.57	2.77	2.97	3.16	3.49

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.81	0.14	0.37	0.19	1.37
Moment	2.80	0.14	0.45	0.11	1.80

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-03 S#5
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855493	232415	State Plane 1983 LA South	-53.4 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SP	5Y-6/1	5Y-6/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
65.08	64.07	0.01	1.61	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.04	0.06	0.04	0.06
45	1.50	0.35	0.04	0.06	0.08	0.12
60	2.00	0.25	0.19	0.29	0.27	0.41
80	2.50	0.17	15.25	23.43	15.52	23.85
120	3.00	0.12	42.22	64.87	57.74	88.72
170	3.50	0.08	5.48	8.42	63.22	97.14
200	3.75	0.07	0.57	0.88	63.79	98.02
230	4.00	0.06	0.24	0.37	64.03	98.39
Pan	Pan	Pan	1.04	1.60	65.07	99.98
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.1	2.33	2.51	2.7	2.89	2.96	3.37

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.69	0.15	0.35	-0.01	1.36
Moment	2.70	0.15	0.43	0.15	1.82

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-03 S#6
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855493	232415	State Plane 1983 LA South	-42.6 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
ML	5Y-5/1	5Y-6/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
38.09	23.46	0.01	42.27	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.03	0.08	0.03	0.08
35	1.00	0.50	0.01	0.03	0.04	0.11
45	1.50	0.35	0.01	0.03	0.05	0.13
60	2.00	0.25	0.05	0.13	0.10	0.26
80	2.50	0.17	0.15	0.39	0.25	0.66
120	3.00	0.12	2.90	7.61	3.15	8.27
170	3.50	0.08	6.88	18.06	10.03	26.33
200	3.75	0.07	5.94	15.59	15.97	41.93
230	4.00	0.06	6.02	15.80	21.99	57.73
Pan	Pan	Pan	16.09	42.24	38.08	99.97
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.79	3.21	3.46	3.88	4.1	4.16	4.22

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.65	0.08	0.45	-0.69	0.92
Moment	3.69	0.08	0.55	-0.53	1.62

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-04 S#2
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3860308	228670	State Plane 1983 LA South	-36.9 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/1	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
62.5	51.58	0.02	18.83	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.03	0.05	0.03	0.05
60	2.00	0.25	0.26	0.42	0.29	0.46
80	2.50	0.17	5.11	8.18	5.40	8.64
120	3.00	0.12	23.18	37.09	28.58	45.73
170	3.50	0.08	15.50	24.80	44.08	70.53
200	3.75	0.07	3.70	5.92	47.78	76.45
230	4.00	0.06	2.95	4.72	50.73	81.17
Pan	Pan	Pan	11.75	18.80	62.48	99.97
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.28	2.6	2.72	3.09	3.69	4.04	4.18

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.24	0.11	0.65	0.28	0.81
Moment	3.23	0.11	0.75	0.11	1.25

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-04 S#3
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3860308	228670	State Plane 1983 LA South	-40.3 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
62.09	52.25	0.01	16.86	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.00	0.00	0.00	0.00
60	2.00	0.25	0.06	0.10	0.06	0.10
80	2.50	0.17	0.81	1.30	0.87	1.40
120	3.00	0.12	22.97	36.99	23.84	38.40
170	3.50	0.08	19.82	31.92	43.66	70.32
200	3.75	0.07	4.75	7.65	48.41	77.97
230	4.00	0.06	3.21	5.17	51.62	83.14
Pan	Pan	Pan	10.46	16.85	62.08	99.98
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.55	2.7	2.82	3.18	3.65	4.01	4.18

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.32	0.10	0.58	0.31	0.80
Moment	3.30	0.10	0.65	0.20	1.24

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-04 S#4
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3860308	228670	State Plane 1983 LA South	-43.7 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
ML	5Y-6/1	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
63.59	40.68	0	42.07	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.00	0.00	0.00	0.00
60	2.00	0.25	0.04	0.06	0.04	0.06
80	2.50	0.17	0.60	0.94	0.64	1.01
120	3.00	0.12	5.52	8.68	6.16	9.69
170	3.50	0.08	14.85	23.35	21.01	33.04
200	3.75	0.07	7.70	12.11	28.71	45.15
230	4.00	0.06	8.13	12.79	36.84	57.93
Pan	Pan	Pan	26.75	42.07	63.59	100.00
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.73	3.14	3.33	3.84	4.1	4.15	4.22

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.62	0.08	0.48	-0.59	0.79
Moment	3.64	0.08	0.58	-0.42	1.45

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-04 S#5
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3860308	228670	State Plane 1983 LA South	-45.7 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SW-SM	5Y-6/1	5Y-6/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
65.3	62.76	0.01	4.04	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.00	0.00	0.00	0.00
60	2.00	0.25	0.12	0.18	0.12	0.18
80	2.50	0.17	11.07	16.95	11.19	17.14
120	3.00	0.12	39.10	59.88	50.29	77.01
170	3.50	0.08	10.71	16.40	61.00	93.42
200	3.75	0.07	0.98	1.50	61.98	94.92
230	4.00	0.06	0.68	1.04	62.66	95.96
Pan	Pan	Pan	2.63	4.03	65.29	99.98
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.14	2.47	2.57	2.77	2.98	3.21	3.77

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.87	0.14	0.43	0.44	1.60
Moment	2.85	0.14	0.54	0.45	2.05

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-04 S#6
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3863029	223563	State Plane 1983 LA South	-50.3 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/1	5Y-6/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
62.62	57.77	0.02	8.53	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.10	0.16	0.10	0.16
60	2.00	0.25	0.21	0.34	0.31	0.50
80	2.50	0.17	2.19	3.50	2.50	3.99
120	3.00	0.12	25.28	40.37	27.78	44.36
170	3.50	0.08	23.19	37.03	50.97	81.40
200	3.75	0.07	3.68	5.88	54.65	87.27
230	4.00	0.06	2.63	4.20	57.28	91.47
Pan	Pan	Pan	5.32	8.50	62.60	99.97
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.51	2.65	2.76	3.08	3.41	3.61	4.1

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.19	0.11	0.48	0.35	1.00
Moment	3.16	0.11	0.58	0.41	1.65

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-05 S#1
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3863175	222287	State Plane 1983 LA South	-36.4 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-3/1	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
49.51	38.82	0	22.54	1.55

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.45	0.91	0.45	0.91
5	-2.00	4.00	0.04	0.08	0.49	0.99
7	-1.50	2.82	0.10	0.20	0.59	1.19
10	-1.00	2.00	0.03	0.06	0.62	1.25
14	-0.50	1.41	0.03	0.06	0.65	1.31
18	0.00	1.00	0.03	0.06	0.68	1.37
25	0.50	0.70	0.05	0.10	0.73	1.47
35	1.00	0.50	0.02	0.04	0.75	1.51
45	1.50	0.35	0.03	0.06	0.78	1.58
60	2.00	0.25	0.05	0.10	0.83	1.68
80	2.50	0.17	1.41	2.85	2.24	4.52
120	3.00	0.12	20.73	41.87	22.97	46.39
170	3.50	0.08	11.60	23.43	34.57	69.82
200	3.75	0.07	2.26	4.56	36.83	74.39
230	4.00	0.06	1.52	3.07	38.35	77.46
Pan	Pan	Pan	11.16	22.54	49.51	100.00
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.51	2.64	2.74	3.08	3.8	4.07	4.19

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.30	0.10	0.61	0.41	0.66
Moment	3.29	0.10	0.72	0.19	1.12

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-05 S#2
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855275	230980	State Plane 1983 LA South	-40.4 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SW-SM	5Y-5/1	5Y-6/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
78.92	73.02	0	7.63	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.10	0.13	0.10	0.13
60	2.00	0.25	0.40	0.51	0.50	0.63
80	2.50	0.17	16.65	21.10	17.15	21.73
120	3.00	0.12	46.14	58.46	63.29	80.20
170	3.50	0.08	7.87	9.97	71.16	90.17
200	3.75	0.07	0.99	1.25	72.15	91.42
230	4.00	0.06	0.75	0.95	72.90	92.37
Pan	Pan	Pan	6.02	7.63	78.92	100.00
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.1	2.36	2.53	2.74	2.96	3.19	4.09

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.90	0.13	0.51	0.72	1.90
Moment	2.85	0.14	0.65	0.80	2.47

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-05 S#3
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3863175	222287	State Plane 1983 LA South	-45.5 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
ML	5Y-4/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
35.65	23.61	0.01	36.63	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.02	0.06	0.02	0.06
35	1.00	0.50	0.03	0.08	0.05	0.14
45	1.50	0.35	0.01	0.03	0.06	0.17
60	2.00	0.25	0.01	0.03	0.07	0.20
80	2.50	0.17	0.64	1.80	0.71	1.99
120	3.00	0.12	7.70	21.60	8.41	23.59
170	3.50	0.08	3.82	10.72	12.23	34.31
200	3.75	0.07	5.37	15.06	17.60	49.37
230	4.00	0.06	4.99	14.00	22.59	63.37
Pan	Pan	Pan	13.05	36.61	35.64	99.97
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.57	2.82	3.07	3.76	4.08	4.14	4.22

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.50	0.09	0.58	-0.51	0.67
Moment	3.52	0.09	0.69	-0.28	1.18

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-05 S#4
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855275	230980	State Plane 1983 LA South	-46.3 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SW-SM	5Y-5/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
75.07	69.48	0.01	7.74	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.03	0.04	0.03	0.04
60	2.00	0.25	0.11	0.15	0.14	0.19
80	2.50	0.17	10.34	13.77	10.48	13.96
120	3.00	0.12	47.53	63.31	58.01	77.27
170	3.50	0.08	9.53	12.69	67.54	89.97
200	3.75	0.07	0.90	1.20	68.44	91.17
230	4.00	0.06	0.82	1.09	69.26	92.26
Pan	Pan	Pan	5.80	7.73	75.06	99.99
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.17	2.52	2.59	2.78	2.98	3.26	4.09

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.97	0.13	0.48	0.86	1.99
Moment	2.91	0.13	0.62	0.80	2.48

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-05 S#5
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855275	230980	State Plane 1983 LA South	-50.2 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SP	5Y-5/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
63.35	61.85	0.01	2.42	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.00	0.00	0.00	0.00
60	2.00	0.25	0.72	1.14	0.72	1.14
80	2.50	0.17	31.97	50.47	32.69	51.60
120	3.00	0.12	26.44	41.74	59.13	93.34
170	3.50	0.08	2.17	3.43	61.30	96.76
200	3.75	0.07	0.27	0.43	61.57	97.19
230	4.00	0.06	0.25	0.39	61.82	97.58
Pan	Pan	Pan	1.52	2.40	63.34	99.98
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.04	2.15	2.24	2.48	2.78	2.89	3.24

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.56	0.17	0.37	0.28	0.91
Moment	2.55	0.17	0.44	0.33	1.54

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-05A S#7
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3863171	222290	State Plane 1983 LA South	-50.9 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SP	5Y-5/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
55.78	54.44	0.01	2.49	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.04	0.07	0.04	0.07
60	2.00	0.25	0.35	0.63	0.39	0.70
80	2.50	0.17	23.56	42.24	23.95	42.94
120	3.00	0.12	26.77	47.99	50.72	90.93
170	3.50	0.08	2.97	5.32	53.69	96.25
200	3.75	0.07	0.33	0.59	54.02	96.84
230	4.00	0.06	0.37	0.66	54.39	97.51
Pan	Pan	Pan	1.38	2.47	55.77	99.98
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.05	2.18	2.29	2.57	2.83	2.93	3.38

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.62	0.16	0.39	0.19	1.00
Moment	2.61	0.16	0.47	0.37	1.70

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-06 S#1
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3863029	223563	State Plane 1983 LA South	-45.9 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/1	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
90.41	74.49	0.02	18.55	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.04	0.04	0.04	0.04
35	1.00	0.50	0.01	0.01	0.05	0.06
45	1.50	0.35	0.01	0.01	0.06	0.07
60	2.00	0.25	0.05	0.06	0.11	0.12
80	2.50	0.17	2.84	3.14	2.95	3.26
120	3.00	0.12	46.95	51.93	49.90	55.19
170	3.50	0.08	18.42	20.37	68.32	75.57
200	3.75	0.07	2.77	3.06	71.09	78.63
230	4.00	0.06	2.55	2.82	73.64	81.45
Pan	Pan	Pan	16.75	18.53	90.39	99.98
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.52	2.62	2.71	2.95	3.49	4.03	4.18

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.26	0.10	0.61	0.69	0.88
Moment	3.21	0.11	0.69	0.40	1.31

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-06 S#2
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3863029	223563	State Plane 1983 LA South	-37.9 NAVD 88 Ft

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

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
56.58	53.07	0.02	6.75	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.02	0.04	0.02	0.04
45	1.50	0.35	0.00	0.00	0.02	0.04
60	2.00	0.25	0.08	0.14	0.10	0.18
80	2.50	0.17	0.80	1.41	0.90	1.59
120	3.00	0.12	30.26	53.48	31.16	55.07
170	3.50	0.08	18.55	32.79	49.71	87.86
200	3.75	0.07	1.72	3.04	51.43	90.90
230	4.00	0.06	1.33	2.35	52.76	93.25
Pan	Pan	Pan	3.80	6.72	56.56	99.96
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.53	2.63	2.72	2.95	3.3	3.44	4.07

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.13	0.11	0.43	0.59	1.07
Moment	3.09	0.12	0.55	0.66	2.00

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-06 S#4
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3863029	223563	State Plane 1983 LA South	-41.9 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SP	5Y-6/1	5Y-6/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
72.12	69.3	0.01	4.01	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.01	0.01	0.01	0.01
35	1.00	0.50	0.01	0.01	0.02	0.03
45	1.50	0.35	0.00	0.00	0.02	0.03
60	2.00	0.25	0.27	0.37	0.29	0.40
80	2.50	0.17	36.24	50.25	36.53	50.65
120	3.00	0.12	26.95	37.37	63.48	88.02
170	3.50	0.08	4.86	6.74	68.34	94.76
200	3.75	0.07	0.42	0.58	68.76	95.34
230	4.00	0.06	0.47	0.65	69.23	95.99
Pan	Pan	Pan	2.88	3.99	72.11	99.99
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.05	2.16	2.24	2.49	2.83	2.95	3.6

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.65	0.16	0.43	0.54	1.10
Moment	2.62	0.16	0.55	0.67	2.06

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-06 S#5
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3863029	223563	State Plane 1983 LA South	-50.4 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SW-SM	5Y-6/1	5Y-6/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
68.83	66.37	0	3.85	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.01	0.01	0.01	0.01
35	1.00	0.50	0.00	0.00	0.01	0.01
45	1.50	0.35	0.01	0.01	0.02	0.03
60	2.00	0.25	1.14	1.66	1.16	1.69
80	2.50	0.17	21.86	31.76	23.02	33.44
120	3.00	0.12	34.13	49.59	57.15	83.03
170	3.50	0.08	6.72	9.76	63.87	92.79
200	3.75	0.07	1.41	2.05	65.28	94.84
230	4.00	0.06	0.90	1.31	66.18	96.15
Pan	Pan	Pan	2.65	3.85	68.83	100.00
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.05	2.23	2.37	2.67	2.92	3.05	3.78

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.75	0.15	0.47	0.33	1.28
Moment	2.72	0.15	0.59	0.61	2.12

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-07 S#2
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3862989.25	221282	State Plane 1983 LA South	-38.1 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
56.21	50.97	0	9.64	0.12

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.06	0.11	0.06	0.11
35	1.00	0.50	0.01	0.02	0.07	0.12
45	1.50	0.35	0.01	0.02	0.08	0.14
60	2.00	0.25	0.02	0.04	0.10	0.18
80	2.50	0.17	1.54	2.74	1.64	2.92
120	3.00	0.12	32.41	57.66	34.05	60.58
170	3.50	0.08	12.64	22.49	46.69	83.06
200	3.75	0.07	2.52	4.48	49.21	87.55
230	4.00	0.06	1.58	2.81	50.79	90.36
Pan	Pan	Pan	5.42	9.64	56.21	100.00
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.52	2.61	2.69	2.91	3.32	3.55	4.12

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.14	0.11	0.48	0.72	1.04
Moment	3.10	0.12	0.59	0.62	1.84

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-07 S#3
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3862989.25	221282	State Plane 1983 LA South	-42.1 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SW-SM	5Y-6/1	5Y-6/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
68.86	65.44	0.01	5.17	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.01	0.01	0.01	0.01
60	2.00	0.25	0.02	0.03	0.03	0.04
80	2.50	0.17	4.74	6.88	4.77	6.93
120	3.00	0.12	48.58	70.55	53.35	77.48
170	3.50	0.08	9.51	13.81	62.86	91.29
200	3.75	0.07	1.19	1.73	64.05	93.01
230	4.00	0.06	1.25	1.82	65.30	94.83
Pan	Pan	Pan	3.55	5.16	68.85	99.99
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.36	2.56	2.63	2.81	2.98	3.24	4.01

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.99	0.13	0.42	1.02	1.91
Moment	2.94	0.13	0.55	0.96	2.62

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-07 S#4
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3862989.25	221282	State Plane 1983 LA South	-45.1 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SW-SM	5Y-6/1	5Y-6/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
68.12	65.24	0.01	4.46	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.00	0.00	0.00	0.00
60	2.00	0.25	0.03	0.04	0.03	0.04
80	2.50	0.17	2.25	3.30	2.28	3.35
120	3.00	0.12	52.14	76.54	54.42	79.89
170	3.50	0.08	7.74	11.36	62.16	91.25
200	3.75	0.07	2.19	3.21	64.35	94.47
230	4.00	0.06	0.73	1.07	65.08	95.54
Pan	Pan	Pan	3.03	4.45	68.11	99.99
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.51	2.58	2.64	2.8	2.97	3.18	3.87

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.99	0.13	0.36	1.10	1.71
Moment	2.94	0.13	0.47	1.07	2.73

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-07 S#5
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3862989.25	221282	State Plane 1983 LA South	-50.1 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SP	5Y-6/1	5Y-6/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
70.95	68.53	0	3.44	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.00	0.00	0.00	0.00
60	2.00	0.25	0.24	0.34	0.24	0.34
80	2.50	0.17	8.18	11.53	8.42	11.87
120	3.00	0.12	52.61	74.15	61.03	86.02
170	3.50	0.08	6.51	9.18	67.54	95.19
200	3.75	0.07	0.56	0.79	68.10	95.98
230	4.00	0.06	0.41	0.58	68.51	96.56
Pan	Pan	Pan	2.44	3.44	70.95	100.00
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.2	2.53	2.59	2.76	2.93	2.99	3.49

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.79	0.14	0.31	0.22	1.56
Moment	2.78	0.15	0.41	0.36	2.22

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-08 S#3
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3860805	229535	State Plane 1983 LA South	-45.4 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
ML	5Y-7/1	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
67.21	8.63	0.01	89.7	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.00	0.00	0.00	0.00
60	2.00	0.25	0.01	0.01	0.01	0.01
80	2.50	0.17	0.01	0.01	0.02	0.03
120	3.00	0.12	0.12	0.18	0.14	0.21
170	3.50	0.08	0.20	0.30	0.34	0.51
200	3.75	0.07	1.78	2.65	2.12	3.15
230	4.00	0.06	4.80	7.14	6.92	10.30
Pan	Pan	Pan	60.28	89.69	67.20	99.99
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.81	4.02	4.04	4.11	4.18	4.21	4.24

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	4.08	0.06	0.11	-0.50	1.24
Moment	4.09	0.06	0.15	-0.79	2.33

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-08 S#4
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3860805	229535	State Plane 1983 LA South	-48.4 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SW-SM	5Y-6/1	5Y-6/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
62.65	58.88	0.01	6.46	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.00	0.00	0.00	0.00
60	2.00	0.25	0.10	0.16	0.10	0.16
80	2.50	0.17	3.40	5.43	3.50	5.59
120	3.00	0.12	37.77	60.29	41.27	65.87
170	3.50	0.08	14.39	22.97	55.66	88.84
200	3.75	0.07	1.69	2.70	57.35	91.54
230	4.00	0.06	1.25	2.00	58.60	93.54
Pan	Pan	Pan	4.04	6.45	62.64	99.98
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.45	2.59	2.66	2.87	3.2	3.39	4.06

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.07	0.12	0.45	0.74	1.23
Moment	3.03	0.12	0.57	0.73	2.13

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-09 S#2
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3862565	224414	State Plane 1983 LA South	-41.3 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
71.96	62.31	0.02	16.09	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.00	0.00	0.00	0.00
60	2.00	0.25	0.03	0.04	0.03	0.04
80	2.50	0.17	0.38	0.53	0.41	0.57
120	3.00	0.12	14.22	19.76	14.63	20.33
170	3.50	0.08	17.39	24.17	32.02	44.50
200	3.75	0.07	20.69	28.75	52.71	73.25
230	4.00	0.06	7.67	10.66	60.38	83.91
Pan	Pan	Pan	11.56	16.06	71.94	99.97
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.61	2.89	3.1	3.55	3.79	4	4.17

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.44	0.09	0.51	-0.28	0.92
Moment	3.44	0.09	0.59	-0.15	1.34

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-09 S#3
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3862565	224414	State Plane 1983 LA South	-44.8 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SW-SM	5Y-6/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
67.58	63.22	0.03	6.63	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.01	0.01	0.01	0.01
35	1.00	0.50	0.01	0.01	0.02	0.03
45	1.50	0.35	0.02	0.03	0.04	0.06
60	2.00	0.25	0.03	0.04	0.07	0.10
80	2.50	0.17	3.51	5.19	3.58	5.30
120	3.00	0.12	41.99	62.13	45.57	67.43
170	3.50	0.08	14.22	21.04	59.79	88.47
200	3.75	0.07	1.91	2.83	61.70	91.30
230	4.00	0.06	1.40	2.07	63.10	93.37
Pan	Pan	Pan	4.45	6.58	67.55	99.96
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.47	2.59	2.66	2.86	3.18	3.39	4.06

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.07	0.12	0.44	0.80	1.25
Moment	3.03	0.12	0.56	0.78	2.18

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-09 S#4
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3862566	224414	State Plane 1983 LA South	-46 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-4/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
39.6	32.36	0.02	19.97	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.03	0.08	0.03	0.08
60	2.00	0.25	0.04	0.10	0.07	0.18
80	2.50	0.17	0.11	0.28	0.18	0.45
120	3.00	0.12	2.05	5.18	2.23	5.63
170	3.50	0.08	15.64	39.49	17.87	45.13
200	3.75	0.07	9.86	24.90	27.73	70.03
230	4.00	0.06	3.96	10.00	31.69	80.03
Pan	Pan	Pan	7.89	19.92	39.58	99.95
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.94	3.13	3.25	3.55	3.87	4.05	4.19

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.57	0.08	0.42	0.06	0.81
Moment	3.57	0.08	0.48	0.02	1.27

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-09 S#5
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3862565	224414	State Plane 1983 LA South	-47.8 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SW-SM	5Y-6/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
56.5	51.19	0.01	9.68	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.01	0.02	0.01	0.02
45	1.50	0.35	0.00	0.00	0.01	0.02
60	2.00	0.25	0.08	0.14	0.09	0.16
80	2.50	0.17	11.47	20.30	11.56	20.46
120	3.00	0.12	35.26	62.41	46.82	82.87
170	3.50	0.08	0.39	0.69	47.21	83.56
200	3.75	0.07	3.18	5.63	50.39	89.19
230	4.00	0.06	0.64	1.13	51.03	90.32
Pan	Pan	Pan	5.46	9.66	56.49	99.98
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.12	2.39	2.54	2.74	2.94	3.52	4.12

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.98	0.13	0.59	0.98	2.05
Moment	2.91	0.13	0.70	0.65	1.98

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-10 S#2
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3863104	222927	State Plane 1983 LA South	-37.8 NAVD 88 Ft

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

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
79.19	72.23	0.01	9.12	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.03	0.04	0.03	0.04
60	2.00	0.25	0.07	0.09	0.10	0.13
80	2.50	0.17	3.05	3.85	3.15	3.98
120	3.00	0.12	48.15	60.80	51.30	64.78
170	3.50	0.08	7.72	9.75	59.02	74.53
200	3.75	0.07	11.13	14.05	70.15	88.58
230	4.00	0.06	1.82	2.30	71.97	90.88
Pan	Pan	Pan	7.21	9.10	79.18	99.99
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.51	2.6	2.67	2.88	3.51	3.67	4.11

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.15	0.11	0.51	0.66	0.79
Moment	3.14	0.11	0.62	0.42	1.43

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-10 S#3
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3863104	222927	State Plane 1983 LA South	-42.8 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SW-SM	5Y-6/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
65.17	61.47	0.01	5.78	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.02	0.03	0.02	0.03
60	2.00	0.25	0.25	0.38	0.27	0.41
80	2.50	0.17	22.97	35.25	23.24	35.66
120	3.00	0.12	31.57	48.44	54.81	84.10
170	3.50	0.08	5.23	8.03	60.04	92.13
200	3.75	0.07	0.74	1.14	60.78	93.26
230	4.00	0.06	0.62	0.95	61.40	94.22
Pan	Pan	Pan	3.76	5.77	65.16	99.98
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.07	2.22	2.35	2.65	2.91	3	4.03

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.79	0.14	0.49	0.54	1.45
Moment	2.75	0.15	0.67	0.92	2.62

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-10 S#4
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3863104	222927	State Plane 1983 LA South	-48.8 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SP	5Y-6/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
65.22	63.71	0.02	2.44	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.00	0.00	0.00	0.00
60	2.00	0.25	1.04	1.59	1.04	1.59
80	2.50	0.17	35.53	54.48	36.57	56.07
120	3.00	0.12	24.77	37.98	61.34	94.05
170	3.50	0.08	0.24	0.37	61.58	94.42
200	3.75	0.07	1.86	2.85	63.44	97.27
230	4.00	0.06	0.19	0.29	63.63	97.56
Pan	Pan	Pan	1.57	2.41	65.20	99.97
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.03	2.13	2.21	2.44	2.75	2.87	3.55

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.61	0.16	0.41	0.61	1.17
Moment	2.57	0.17	0.53	0.76	2.21

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-10 S#5
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3863104	222927	State Plane 1983 LA South	-51.8 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SP	5Y-5/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
67.27	65.26	0.02	3.15	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.26	0.39	0.26	0.39
60	2.00	0.25	0.45	0.67	0.71	1.06
80	2.50	0.17	26.20	38.95	26.91	40.00
120	3.00	0.12	32.86	48.85	59.77	88.85
170	3.50	0.08	4.55	6.76	64.32	95.61
200	3.75	0.07	0.45	0.67	64.77	96.28
230	4.00	0.06	0.38	0.56	65.15	96.85
Pan	Pan	Pan	2.10	3.12	67.25	99.97
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.05	2.19	2.31	2.6	2.86	2.95	3.45

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.65	0.16	0.40	0.18	1.04
Moment	2.63	0.16	0.49	0.40	1.77

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-11 S#2
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3862780	221972	State Plane 1983 LA South	-41.7 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SW-SM	5Y-5/1	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
74.63	69.72	0.01	6.87	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.03	0.04	0.03	0.04
60	2.00	0.25	0.12	0.16	0.15	0.20
80	2.50	0.17	2.74	3.67	2.89	3.87
120	3.00	0.12	51.90	69.54	54.79	73.42
170	3.50	0.08	10.14	13.59	64.93	87.00
200	3.75	0.07	3.36	4.50	68.29	91.50
230	4.00	0.06	1.21	1.62	69.50	93.13
Pan	Pan	Pan	5.12	6.86	74.62	99.99
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.51	2.59	2.65	2.83	3.06	3.39	4.07

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.08	0.12	0.44	1.12	1.57
Moment	3.01	0.12	0.56	0.94	2.39

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-11 S#3
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3862780	221972	State Plane 1983 LA South	-46.7 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-5/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
67.98	60.38	0.01	12.37	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.02	0.03	0.02	0.03
60	2.00	0.25	0.03	0.04	0.05	0.07
80	2.50	0.17	0.69	1.02	0.74	1.09
120	3.00	0.12	28.13	41.38	28.87	42.47
170	3.50	0.08	25.27	37.17	54.14	79.64
200	3.75	0.07	3.07	4.52	57.21	84.16
230	4.00	0.06	2.36	3.47	59.57	87.63
Pan	Pan	Pan	8.40	12.36	67.97	99.99
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.55	2.68	2.79	3.1	3.44	3.74	4.15

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.24	0.11	0.51	0.42	1.01
Moment	3.21	0.11	0.60	0.39	1.55

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-11 S#4
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3862780	221972	State Plane 1983 LA South	-52.3 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SW-SM	5Y-5/1	5Y-5/2	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
72.08	68.87	0.01	4.99	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.01	0.01	0.01	0.01
35	1.00	0.50	0.01	0.01	0.02	0.03
45	1.50	0.35	0.01	0.01	0.03	0.04
60	2.00	0.25	0.02	0.03	0.05	0.07
80	2.50	0.17	1.27	1.76	1.32	1.83
120	3.00	0.12	49.29	68.38	50.61	70.21
170	3.50	0.08	12.07	16.75	62.68	86.96
200	3.75	0.07	3.87	5.37	66.55	92.33
230	4.00	0.06	1.93	2.68	68.48	95.01
Pan	Pan	Pan	3.59	4.98	72.07	99.99
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.52	2.6	2.67	2.85	3.14	3.41	4

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.08	0.12	0.43	0.90	1.28
Moment	3.03	0.12	0.53	0.79	2.13

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-12 S#2
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3863507	222709	State Plane 1983 LA South	-37.6 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/1	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
70.93	57.78	0	20.77	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.05	0.07	0.05	0.07
35	1.00	0.50	0.01	0.01	0.06	0.08
45	1.50	0.35	0.00	0.00	0.06	0.08
60	2.00	0.25	0.00	0.00	0.06	0.08
80	2.50	0.17	0.06	0.08	0.12	0.17
120	3.00	0.12	2.50	3.52	2.62	3.69
170	3.50	0.08	37.37	52.69	39.99	56.38
200	3.75	0.07	10.16	14.32	50.15	70.70
230	4.00	0.06	6.05	8.53	56.20	79.23
Pan	Pan	Pan	14.73	20.77	70.93	100.00
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.01	3.12	3.2	3.44	3.88	4.06	4.19

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.56	0.08	0.41	0.35	0.72
Moment	3.56	0.09	0.48	0.18	1.18

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-12 S#3
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3863508	222709	State Plane 1983 LA South	-45.3 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-5/2	5Y-5/2	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
41.4	36.55	0.02	12.68	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.03	0.07	0.03	0.07
60	2.00	0.25	0.03	0.07	0.06	0.14
80	2.50	0.17	0.22	0.53	0.28	0.68
120	3.00	0.12	13.55	32.73	13.83	33.41
170	3.50	0.08	16.31	39.40	30.14	72.80
200	3.75	0.07	3.63	8.77	33.77	81.57
230	4.00	0.06	2.38	5.75	36.15	87.32
Pan	Pan	Pan	5.23	12.63	41.38	99.95
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.57	2.73	2.87	3.21	3.56	3.86	4.15

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.30	0.10	0.52	0.25	0.94
Moment	3.28	0.10	0.60	0.22	1.39

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-12 S#4
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3863508	222709	State Plane 1983 LA South	-51.9 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-4/1	5Y-5/2	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
53.32	37.7	0.02	29.65	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.05	0.09	0.05	0.09
60	2.00	0.25	0.04	0.08	0.09	0.17
80	2.50	0.17	0.40	0.75	0.49	0.92
120	3.00	0.12	17.68	33.16	18.17	34.08
170	3.50	0.08	14.97	28.08	33.14	62.15
200	3.75	0.07	3.11	5.83	36.25	67.99
230	4.00	0.06	1.26	2.36	37.51	70.35
Pan	Pan	Pan	15.79	29.61	53.30	99.96
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.56	2.73	2.86	3.28	4.04	4.12	4.21

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.38	0.10	0.60	0.17	0.57
Moment	3.40	0.09	0.71	0.05	1.07

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-13 S#3
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
2862466	222735	State Plane 1983 LA South	-41.1 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-3/1	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
44.74	35.44	0.01	23.65	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.02	0.04	0.02	0.04
35	1.00	0.50	0.01	0.02	0.03	0.07
45	1.50	0.35	0.01	0.02	0.04	0.09
60	2.00	0.25	0.01	0.02	0.05	0.11
80	2.50	0.17	0.01	0.02	0.06	0.13
120	3.00	0.12	1.17	2.62	1.23	2.75
170	3.50	0.08	19.61	43.83	20.84	46.58
200	3.75	0.07	8.41	18.80	29.25	65.38
230	4.00	0.06	4.91	10.97	34.16	76.35
Pan	Pan	Pan	10.57	23.63	44.73	99.98
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.03	3.15	3.25	3.55	3.97	4.08	4.2

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.60	0.08	0.41	0.15	0.67
Moment	3.60	0.08	0.48	0.06	1.14

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-13 S#4
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
2862466	222735	State Plane 1983 LA South	-42.6 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-4/2	5Y-5/2	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
41.68	27.77	0.03	36.56	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.02	0.05	0.02	0.05
35	1.00	0.50	0.01	0.02	0.03	0.07
45	1.50	0.35	0.01	0.02	0.04	0.10
60	2.00	0.25	0.05	0.12	0.09	0.22
80	2.50	0.17	0.10	0.24	0.19	0.46
120	3.00	0.12	0.63	1.51	0.82	1.97
170	3.50	0.08	9.45	22.67	10.27	24.64
200	3.75	0.07	10.60	25.43	20.87	50.07
230	4.00	0.06	5.57	13.36	26.44	63.44
Pan	Pan	Pan	15.21	36.49	41.65	99.93
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.07	3.31	3.5	3.75	4.08	4.14	4.22

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.70	0.08	0.38	-0.18	0.82
Moment	3.72	0.08	0.45	-0.24	1.36

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-13 S#5
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
2862466	222735	State Plane 1983 LA South	-44.6 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
ML	5Y-4/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
33.73	20.35	0.02	43.14	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.07	0.21	0.07	0.21
45	1.50	0.35	0.11	0.33	0.18	0.53
60	2.00	0.25	0.10	0.30	0.28	0.83
80	2.50	0.17	0.18	0.53	0.46	1.36
120	3.00	0.12	0.64	1.90	1.10	3.26
170	3.50	0.08	6.82	20.22	7.92	23.48
200	3.75	0.07	6.47	19.18	14.39	42.66
230	4.00	0.06	4.79	14.20	19.18	56.86
Pan	Pan	Pan	14.53	43.08	33.71	99.94
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.04	3.32	3.52	3.88	4.11	4.16	4.22

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.72	0.08	0.39	-0.52	0.82
Moment	3.75	0.07	0.46	-0.38	1.41

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-13 S#7
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
2862466	222735	State Plane 1983 LA South	-50.6 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
ML	5Y-4/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
34.62	18.88	0	55.46	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.04	0.12	0.04	0.12
35	1.00	0.50	0.01	0.03	0.05	0.14
45	1.50	0.35	0.01	0.03	0.06	0.17
60	2.00	0.25	0.02	0.06	0.08	0.23
80	2.50	0.17	0.08	0.23	0.16	0.46
120	3.00	0.12	0.17	0.49	0.33	0.95
170	3.50	0.08	2.40	6.93	2.73	7.89
200	3.75	0.07	5.67	16.38	8.40	24.26
230	4.00	0.06	7.02	20.28	15.42	44.54
Pan	Pan	Pan	19.20	55.46	34.62	100.00
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.29	3.62	3.76	4.02	4.14	4.18	4.23

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.87	0.07	0.28	-0.80	1.01
Moment	3.89	0.07	0.35	-0.64	1.82

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-14 S#2
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855792	228997	State Plane 1983 LA South	-39.8 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-3/1	5Y-3/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
45.74	38.09	0.02	19.72	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.00	0.00	0.00	0.00
60	2.00	0.25	0.03	0.07	0.03	0.07
80	2.50	0.17	0.37	0.81	0.40	0.87
120	3.00	0.12	6.10	13.34	6.50	14.21
170	3.50	0.08	13.87	30.32	20.37	44.53
200	3.75	0.07	11.19	24.46	31.56	69.00
230	4.00	0.06	5.16	11.28	36.72	80.28
Pan	Pan	Pan	9.00	19.68	45.72	99.96
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.65	3.03	3.18	3.56	3.88	4.05	4.19

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.49	0.09	0.49	-0.17	0.89
Moment	3.51	0.09	0.57	-0.20	1.42

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-14 S#4
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855792	228997	State Plane 1983 LA South	-47.8 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
ML	5Y-3/1	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
35.34	24.12	0.01	39.3	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.00	0.00	0.00	0.00
60	2.00	0.25	0.00	0.00	0.00	0.00
80	2.50	0.17	0.02	0.06	0.02	0.06
120	3.00	0.12	1.21	3.42	1.23	3.48
170	3.50	0.08	9.36	26.49	10.59	29.97
200	3.75	0.07	1.61	4.56	12.20	34.52
230	4.00	0.06	9.25	26.17	21.45	60.70
Pan	Pan	Pan	13.88	39.28	35.33	99.97
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.03	3.24	3.41	3.9	4.09	4.15	4.22

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.71	0.08	0.41	-0.55	0.71
Moment	3.72	0.08	0.49	-0.30	1.22

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-14 S#6
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855791	228997	State Plane 1983 LA South	-52.1 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-5/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
72.75	65.1	0.01	11.02	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.02	0.03	0.02	0.03
60	2.00	0.25	0.27	0.37	0.29	0.40
80	2.50	0.17	20.14	27.68	20.43	28.08
120	3.00	0.12	35.93	49.39	56.36	77.47
170	3.50	0.08	5.42	7.45	61.78	84.92
200	3.75	0.07	1.48	2.03	63.26	86.96
230	4.00	0.06	1.47	2.02	64.73	88.98
Pan	Pan	Pan	8.01	11.01	72.74	99.99
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.08	2.28	2.44	2.72	2.97	3.44	4.14

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.93	0.13	0.60	0.72	1.59
Moment	2.87	0.14	0.72	0.65	2.00

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-14 S#7
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855792	228997	State Plane 1983 LA South	-54.4 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-5/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
78.77	70.89	0.02	10.63	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.00	0.00	0.00	0.00
60	2.00	0.25	2.21	2.81	2.21	2.81
80	2.50	0.17	33.98	43.14	36.19	45.94
120	3.00	0.12	21.39	27.16	57.58	73.10
170	3.50	0.08	8.12	10.31	65.70	83.41
200	3.75	0.07	2.12	2.69	67.82	86.10
230	4.00	0.06	2.58	3.28	70.40	89.37
Pan	Pan	Pan	8.35	10.60	78.75	99.97
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.03	2.15	2.26	2.57	3.09	3.56	4.13

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.89	0.14	0.67	0.69	1.03
Moment	2.83	0.14	0.79	0.53	1.64

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-15 S#4
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855807	230199	State Plane 1983 LA South	-42.7 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-5/1	5Y-5/2	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
67.1	59.86	0.02	12.73	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.02	0.03	0.02	0.03
45	1.50	0.35	0.02	0.03	0.04	0.06
60	2.00	0.25	0.07	0.10	0.11	0.16
80	2.50	0.17	3.69	5.50	3.80	5.66
120	3.00	0.12	18.80	28.02	22.60	33.68
170	3.50	0.08	24.25	36.14	46.85	69.82
200	3.75	0.07	6.85	10.21	53.70	80.03
230	4.00	0.06	4.86	7.24	58.56	87.27
Pan	Pan	Pan	8.52	12.70	67.08	99.97
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.44	2.68	2.85	3.23	3.63	3.89	4.15

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.28	0.10	0.56	0.12	0.90
Moment	3.27	0.10	0.65	0.09	1.34

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-15 S#5
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855807	230199	State Plane 1983 LA South	-47.2 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SW-SM	5Y-5/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
69.07	66.78	0	3.79	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.03	0.04	0.03	0.04
35	1.00	0.50	0.00	0.00	0.03	0.04
45	1.50	0.35	0.03	0.04	0.06	0.09
60	2.00	0.25	0.08	0.12	0.14	0.20
80	2.50	0.17	12.81	18.55	12.95	18.75
120	3.00	0.12	39.55	57.26	52.50	76.01
170	3.50	0.08	11.63	16.84	64.13	92.85
200	3.75	0.07	1.26	1.82	65.39	94.67
230	4.00	0.06	1.06	1.53	66.45	96.21
Pan	Pan	Pan	2.62	3.79	69.07	100.00
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.13	2.43	2.55	2.77	2.99	3.24	3.8

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.87	0.14	0.46	0.44	1.57
Moment	2.84	0.14	0.56	0.46	2.00

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-16 S#2
Sample Date: 6/7/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855695	231398	State Plane 1983 LA South	-38.3 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-5/1	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
60.57	40.39	0.01	34.37	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.03	0.05	0.03	0.05
35	1.00	0.50	0.01	0.02	0.04	0.07
45	1.50	0.35	0.01	0.02	0.05	0.08
60	2.00	0.25	0.01	0.02	0.06	0.10
80	2.50	0.17	3.08	5.09	3.14	5.18
120	3.00	0.12	17.16	28.33	20.30	33.51
170	3.50	0.08	10.75	17.75	31.05	51.26
200	3.75	0.07	4.99	8.24	36.04	59.50
230	4.00	0.06	3.71	6.13	39.75	65.63
Pan	Pan	Pan	20.81	34.36	60.56	99.98
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.48	2.69	2.85	3.46	4.07	4.13	4.21

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.40	0.09	0.62	-0.11	0.58
Moment	3.41	0.09	0.74	-0.09	1.10

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-16 S#3
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855695	231398	State Plane 1983 LA South	-40.8 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SW-SM	5Y-6/1	5Y-5/2	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
66.55	63.1	0.02	5.41	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.04	0.06	0.04	0.06
35	1.00	0.50	0.03	0.05	0.07	0.11
45	1.50	0.35	0.03	0.05	0.10	0.15
60	2.00	0.25	0.06	0.09	0.16	0.24
80	2.50	0.17	10.50	15.78	10.66	16.02
120	3.00	0.12	33.71	50.65	44.37	66.67
170	3.50	0.08	13.69	20.57	58.06	87.24
200	3.75	0.07	3.22	4.84	61.28	92.08
230	4.00	0.06	1.67	2.51	62.95	94.59
Pan	Pan	Pan	3.58	5.38	66.53	99.97
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.15	2.5	2.59	2.84	3.2	3.42	4.02

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.99	0.13	0.51	0.47	1.25
Moment	2.96	0.13	0.63	0.41	1.85

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-16 S#4
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855695	231398	State Plane 1983 LA South	-46.3 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/1	5Y-5/2	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
71.66	67.76	0	9.91	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.02	0.03	0.02	0.03
35	1.00	0.50	0.01	0.01	0.03	0.04
45	1.50	0.35	0.03	0.04	0.06	0.08
60	2.00	0.25	0.01	0.01	0.07	0.10
80	2.50	0.17	0.35	0.49	0.42	0.59
120	3.00	0.12	9.48	13.23	9.90	13.82
170	3.50	0.08	42.46	59.25	52.36	73.07
200	3.75	0.07	8.82	12.31	61.18	85.38
230	4.00	0.06	3.38	4.72	64.56	90.09
Pan	Pan	Pan	7.10	9.91	71.66	100.00
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.67	3.02	3.09	3.31	3.54	3.72	4.12

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.37	0.10	0.40	0.26	1.34
Moment	3.35	0.10	0.49	0.20	1.83

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-16 S#5
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855695	231398	State Plane 1983 LA South	-49.4 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/1	5Y-4/2	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
77.04	57.79	0.01	28.58	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.04	0.05	0.04	0.05
60	2.00	0.25	0.26	0.34	0.30	0.39
80	2.50	0.17	4.39	5.70	4.69	6.09
120	3.00	0.12	7.22	9.37	11.91	15.46
170	3.50	0.08	25.18	32.68	37.09	48.14
200	3.75	0.07	8.89	11.54	45.98	59.68
230	4.00	0.06	9.04	11.73	55.02	71.42
Pan	Pan	Pan	22.01	28.57	77.03	99.99
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.4	3.01	3.15	3.54	4.03	4.11	4.21

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.45	0.09	0.55	-0.20	0.83
Moment	3.49	0.09	0.67	-0.37	1.59

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-16 S#6
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855694	231397	State Plane 1983 LA South	-52.1 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/1	5Y-5/2	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
76.2	68.6	0.02	10.98	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.03	0.04	0.03	0.04
60	2.00	0.25	0.05	0.07	0.08	0.10
80	2.50	0.17	2.79	3.66	2.87	3.77
120	3.00	0.12	36.86	48.37	39.73	52.14
170	3.50	0.08	5.50	7.22	45.23	59.36
200	3.75	0.07	19.91	26.13	65.14	85.49
230	4.00	0.06	2.69	3.53	67.83	89.02
Pan	Pan	Pan	8.35	10.96	76.18	99.97
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.51	2.63	2.72	2.98	3.65	3.74	4.14

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.20	0.11	0.52	0.49	0.72
Moment	3.19	0.11	0.64	0.30	1.29

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-17 S#5
Sample Date: 6/7/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855693	231933	State Plane 1983 LA South	-41.4 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-4/2	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
48.77	35.34	0.01	28.85	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.02	0.04	0.02	0.04
35	1.00	0.50	0.01	0.02	0.03	0.06
45	1.50	0.35	0.01	0.02	0.04	0.08
60	2.00	0.25	0.02	0.04	0.06	0.12
80	2.50	0.17	0.05	0.10	0.11	0.23
120	3.00	0.12	4.36	8.94	4.47	9.17
170	3.50	0.08	21.00	43.06	25.47	52.22
200	3.75	0.07	6.07	12.45	31.54	64.67
230	4.00	0.06	3.16	6.48	34.70	71.15
Pan	Pan	Pan	14.06	28.83	48.76	99.98
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.77	3.08	3.18	3.47	4.03	4.11	4.21

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.53	0.09	0.48	0.13	0.69
Moment	3.55	0.09	0.57	-0.06	1.23

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-17 S#6
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855693	231933	State Plane 1983 LA South	-48.1 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SW-SM	5Y-6/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
69.48	63.96	0.01	8.43	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.03	0.04	0.03	0.04
35	1.00	0.50	0.02	0.03	0.05	0.07
45	1.50	0.35	0.02	0.03	0.07	0.10
60	2.00	0.25	0.05	0.07	0.12	0.17
80	2.50	0.17	1.20	1.73	1.32	1.90
120	3.00	0.12	30.79	44.31	32.11	46.21
170	3.50	0.08	25.29	36.40	57.40	82.61
200	3.75	0.07	3.77	5.43	61.17	88.04
230	4.00	0.06	2.45	3.53	63.62	91.57
Pan	Pan	Pan	5.85	8.42	69.47	99.99
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.53	2.66	2.76	3.05	3.4	3.56	4.1

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.18	0.11	0.46	0.41	1.01
Moment	3.15	0.11	0.57	0.48	1.75

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-17a S#7
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855717	231940	State Plane 1983 LA South	-53.1 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
58.68	52.41	0	11.88	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.00	0.00	0.00	0.00
60	2.00	0.25	0.02	0.03	0.02	0.03
80	2.50	0.17	0.33	0.56	0.35	0.60
120	3.00	0.12	14.64	24.95	14.99	25.55
170	3.50	0.08	26.29	44.80	41.28	70.35
200	3.75	0.07	6.74	11.49	48.02	81.83
230	4.00	0.06	3.69	6.29	51.71	88.12
Pan	Pan	Pan	6.97	11.88	58.68	100.00
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.59	2.81	2.99	3.27	3.6	3.84	4.14

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.33	0.10	0.49	0.17	1.04
Moment	3.32	0.10	0.57	0.14	1.45

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-18 S#2
Sample Date: 6/7/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855340	232227	State Plane 1983 LA South	-37.6 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-4/1	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
55.69	38.1	0	33.7	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.04	0.07	0.04	0.07
35	1.00	0.50	0.01	0.02	0.05	0.09
45	1.50	0.35	0.01	0.02	0.06	0.11
60	2.00	0.25	0.05	0.09	0.11	0.20
80	2.50	0.17	0.48	0.86	0.59	1.06
120	3.00	0.12	7.73	13.88	8.32	14.94
170	3.50	0.08	14.95	26.85	23.27	41.78
200	3.75	0.07	8.91	16.00	32.18	57.78
230	4.00	0.06	4.74	8.51	36.92	66.30
Pan	Pan	Pan	18.77	33.70	55.69	100.00
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.64	3.02	3.19	3.63	4.06	4.13	4.21

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.53	0.09	0.52	-0.24	0.73
Moment	3.56	0.09	0.62	-0.25	1.33

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-18 S#3
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855340	232227	State Plane 1983 LA South	-43.6 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/1	5Y-5/2	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
70.62	49.29	0	33.69	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.02	0.03	0.02	0.03
35	1.00	0.50	0.01	0.01	0.03	0.04
45	1.50	0.35	0.01	0.01	0.04	0.06
60	2.00	0.25	0.02	0.03	0.06	0.08
80	2.50	0.17	0.18	0.25	0.24	0.34
120	3.00	0.12	2.14	3.03	2.38	3.37
170	3.50	0.08	21.82	30.90	24.20	34.27
200	3.75	0.07	12.43	17.60	36.63	51.87
230	4.00	0.06	10.20	14.44	46.83	66.31
Pan	Pan	Pan	23.79	33.69	70.62	100.00
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.03	3.2	3.35	3.72	4.06	4.13	4.21

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.66	0.08	0.41	-0.18	0.68
Moment	3.67	0.08	0.48	-0.14	1.18

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-18 S#4
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855340	232227	State Plane 1983 LA South	-40.6 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
ML	5Y-3/1	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
43.68	20.85	0	56.52	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.04	0.09	0.04	0.09
35	1.00	0.50	0.01	0.02	0.05	0.11
45	1.50	0.35	0.01	0.02	0.06	0.14
60	2.00	0.25	0.06	0.14	0.12	0.27
80	2.50	0.17	0.22	0.50	0.34	0.78
120	3.00	0.12	1.81	4.14	2.15	4.92
170	3.50	0.08	5.65	12.93	7.80	17.86
200	3.75	0.07	5.97	13.67	13.77	31.52
230	4.00	0.06	5.22	11.95	18.99	43.48
Pan	Pan	Pan	24.69	56.52	43.68	100.00
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3	3.43	3.63	4.03	4.14	4.18	4.23

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.77	0.07	0.37	-0.97	0.99
Moment	3.81	0.07	0.46	-0.66	1.79

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-18 S#5
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855340	232227	State Plane 1983 LA South	-49.9 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SW-SM	5Y-6/1	5Y-5/2	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
66.93	64.54	0.01	3.77	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.00	0.00	0.00	0.00
60	2.00	0.25	0.05	0.07	0.05	0.07
80	2.50	0.17	0.58	0.87	0.63	0.94
120	3.00	0.12	31.61	47.23	32.24	48.17
170	3.50	0.08	27.77	41.49	60.01	89.66
200	3.75	0.07	3.17	4.74	63.18	94.40
230	4.00	0.06	1.23	1.84	64.41	96.23
Pan	Pan	Pan	2.51	3.75	66.92	99.99
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.54	2.66	2.75	3.02	3.32	3.43	3.83

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.10	0.12	0.39	0.27	0.93
Moment	3.08	0.12	0.47	0.35	1.59

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-18A S#6
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855339	232228	State Plane 1983 LA South	-51.1 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SW-SM	5Y-6/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
70.68	68.13	0.02	4.34	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.02	0.03	0.02	0.03
35	1.00	0.50	0.02	0.03	0.04	0.06
45	1.50	0.35	0.03	0.04	0.07	0.10
60	2.00	0.25	0.04	0.06	0.11	0.16
80	2.50	0.17	0.70	0.99	0.81	1.15
120	3.00	0.12	28.28	40.01	29.09	41.16
170	3.50	0.08	32.38	45.81	61.47	86.97
200	3.75	0.07	3.36	4.75	64.83	91.72
230	4.00	0.06	2.78	3.93	67.61	95.66
Pan	Pan	Pan	3.05	4.32	70.66	99.97
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.55	2.69	2.8	3.1	3.37	3.47	3.96

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.15	0.11	0.41	0.20	1.01
Moment	3.13	0.11	0.50	0.39	1.72

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-18A S#7
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855339	232228	State Plane 1983 LA South	-52.7 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SW-SM	5Y-4/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
57.31	54.48	0.01	5.55	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.00	0.00	0.00	0.00
60	2.00	0.25	0.24	0.42	0.24	0.42
80	2.50	0.17	1.92	3.35	2.16	3.77
120	3.00	0.12	11.45	19.98	13.61	23.75
170	3.50	0.08	33.02	57.62	46.63	81.36
200	3.75	0.07	5.46	9.53	52.09	90.89
230	4.00	0.06	2.04	3.56	54.13	94.45
Pan	Pan	Pan	3.17	5.53	57.30	99.98
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.53	2.81	3.01	3.23	3.44	3.57	4.02

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.23	0.11	0.42	0.04	1.41
Moment	3.23	0.11	0.50	0.16	1.81

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-19 S#3
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855483	230369	State Plane 1983 LA South	-41.8 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/1	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
58.35	50.66	0.01	13.78	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.06	0.10	0.06	0.10
35	1.00	0.50	0.01	0.02	0.07	0.12
45	1.50	0.35	0.05	0.09	0.12	0.21
60	2.00	0.25	2.82	4.83	2.94	5.04
80	2.50	0.17	12.04	20.63	14.98	25.67
120	3.00	0.12	24.33	41.70	39.31	67.37
170	3.50	0.08	7.68	13.16	46.99	80.53
200	3.75	0.07	1.68	2.88	48.67	83.41
230	4.00	0.06	1.64	2.81	50.31	86.22
Pan	Pan	Pan	8.03	13.76	58.34	99.98
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2	2.27	2.48	2.79	3.29	3.8	4.16

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.00	0.12	0.71	0.45	1.10
Moment	2.97	0.13	0.81	0.28	1.44

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-19 S#4
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855483	230369	State Plane 1983 LA South	-43.3 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SP	5Y-5/1	5Y-5/2	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
64.09	62.13	0.02	3.42	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.02	0.03	0.02	0.03
45	1.50	0.35	0.03	0.05	0.05	0.08
60	2.00	0.25	2.43	3.79	2.48	3.87
80	2.50	0.17	26.78	41.78	29.26	45.65
120	3.00	0.12	21.71	33.87	50.97	79.53
170	3.50	0.08	9.92	15.48	60.89	95.01
200	3.75	0.07	0.54	0.84	61.43	95.85
230	4.00	0.06	0.47	0.73	61.90	96.58
Pan	Pan	Pan	2.17	3.39	64.07	99.97
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.01	2.15	2.25	2.56	2.93	3.14	3.5

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.67	0.16	0.48	0.31	0.90
Moment	2.65	0.16	0.56	0.29	1.44

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-19 S#6
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855483	230369	State Plane 1983 LA South	-52.1 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-5/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
70.05	57.47	0.02	20.13	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.00	0.00	0.00	0.00
60	2.00	0.25	0.07	0.10	0.07	0.10
80	2.50	0.17	1.44	2.06	1.51	2.16
120	3.00	0.12	20.47	29.22	21.98	31.38
170	3.50	0.08	21.34	30.46	43.32	61.84
200	3.75	0.07	6.57	9.38	49.89	71.22
230	4.00	0.06	6.06	8.65	55.95	79.87
Pan	Pan	Pan	14.08	20.10	70.03	99.97
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.55	2.74	2.89	3.31	3.86	4.05	4.19

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.37	0.10	0.58	0.12	0.69
Moment	3.37	0.10	0.67	0.04	1.16

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-20 S#2
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3856014	229476	State Plane 1983 LA South	-38.8 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
ML	5Y-3/1	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
47.15	25.15	0.01	52.7	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.03	0.06	0.03	0.06
35	1.00	0.50	0.01	0.02	0.04	0.08
45	1.50	0.35	0.01	0.02	0.05	0.11
60	2.00	0.25	0.01	0.02	0.06	0.13
80	2.50	0.17	0.01	0.02	0.07	0.15
120	3.00	0.12	0.83	1.76	0.90	1.91
170	3.50	0.08	8.19	17.37	9.09	19.28
200	3.75	0.07	6.56	13.91	15.65	33.19
230	4.00	0.06	6.65	14.10	22.30	47.30
Pan	Pan	Pan	24.84	52.68	47.14	99.98
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.09	3.41	3.6	4.01	4.13	4.17	4.23

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.78	0.07	0.36	-0.84	0.88
Moment	3.81	0.07	0.44	-0.53	1.54

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-20 S#3
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3856014	229476	State Plane 1983 LA South	-45.5 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
77.36	59.94	0.02	23.28	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.00	0.00	0.00	0.00
60	2.00	0.25	0.16	0.21	0.16	0.21
80	2.50	0.17	9.38	12.13	9.54	12.33
120	3.00	0.12	36.93	47.74	46.47	60.07
170	3.50	0.08	7.51	9.71	53.98	69.78
200	3.75	0.07	2.66	3.44	56.64	73.22
230	4.00	0.06	2.71	3.50	59.35	76.72
Pan	Pan	Pan	17.99	23.25	77.34	99.97
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.2	2.54	2.63	2.89	3.88	4.08	4.2

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.18	0.11	0.69	0.47	0.66
Moment	3.20	0.11	0.82	0.13	1.12

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-20 S#4
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3856014	229476	State Plane 1983 LA South	-49.8 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SW-SM	5Y-6/1	5Y-5/2	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
75.52	70.94	0.01	6.66	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.00	0.00	0.00	0.00
60	2.00	0.25	0.36	0.48	0.36	0.48
80	2.50	0.17	12.04	15.94	12.40	16.42
120	3.00	0.12	44.05	58.33	56.45	74.75
170	3.50	0.08	10.59	14.02	67.04	88.77
200	3.75	0.07	2.00	2.65	69.04	91.42
230	4.00	0.06	1.45	1.92	70.49	93.34
Pan	Pan	Pan	5.02	6.65	75.51	99.99
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.14	2.49	2.57	2.79	3.01	3.33	4.06

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.96	0.13	0.50	0.73	1.81
Moment	2.91	0.13	0.63	0.66	2.25

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-20 S#5
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3856014	229476	State Plane 1983 LA South	-52.3 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SP	5Y-6/1	5Y-5/2	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
86.88	85.71	0.01	1.37	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.04	0.05	0.04	0.05
60	2.00	0.25	3.20	3.68	3.24	3.73
80	2.50	0.17	56.05	64.51	59.29	68.24
120	3.00	0.12	22.78	26.22	82.07	94.46
170	3.50	0.08	3.04	3.50	85.11	97.96
200	3.75	0.07	0.35	0.40	85.46	98.37
230	4.00	0.06	0.23	0.26	85.69	98.63
Pan	Pan	Pan	1.18	1.36	86.87	99.99
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.01	2.1	2.16	2.36	2.63	2.8	3.08

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.47	0.18	0.34	0.45	0.94
Moment	2.45	0.18	0.40	0.39	1.52

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-21 S#3
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3863684	223828	State Plane 1983 LA South	-43 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SW-SM	5Y-5/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
71.24	67.67	0	5.14	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.03	0.04	0.03	0.04
35	1.00	0.50	0.03	0.04	0.06	0.08
45	1.50	0.35	0.00	0.00	0.06	0.08
60	2.00	0.25	0.02	0.03	0.08	0.11
80	2.50	0.17	1.37	1.92	1.45	2.04
120	3.00	0.12	48.78	68.47	50.23	70.51
170	3.50	0.08	14.79	20.76	65.02	91.27
200	3.75	0.07	1.64	2.30	66.66	93.57
230	4.00	0.06	0.92	1.29	67.58	94.86
Pan	Pan	Pan	3.66	5.14	71.24	100.00
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.52	2.6	2.67	2.85	3.11	3.32	4.01

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.06	0.12	0.41	0.93	1.38
Moment	3.01	0.12	0.52	0.91	2.40

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-21 S#4
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3863684	223828	State Plane 1983 LA South	-49.5 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SP	5Y-5/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
72.41	69.91	0.01	3.65	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.02	0.03	0.02	0.03
45	1.50	0.35	0.01	0.01	0.03	0.04
60	2.00	0.25	0.05	0.07	0.08	0.11
80	2.50	0.17	8.11	11.20	8.19	11.31
120	3.00	0.12	53.33	73.65	61.52	84.96
170	3.50	0.08	6.89	9.52	68.41	94.48
200	3.75	0.07	1.05	1.45	69.46	95.93
230	4.00	0.06	0.31	0.43	69.77	96.35
Pan	Pan	Pan	2.63	3.63	72.40	99.99
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.22	2.53	2.59	2.76	2.93	2.99	3.59

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.82	0.14	0.32	0.34	1.66
Moment	2.80	0.14	0.43	0.54	2.38

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-22 S#2
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3863684	223828	State Plane 1983 LA South	-37.2 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/1	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
75.76	69.82	0.01	8.76	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.00	0.00	0.00	0.00
60	2.00	0.25	0.00	0.00	0.00	0.00
80	2.50	0.17	0.37	0.49	0.37	0.49
120	3.00	0.12	36.96	48.79	37.33	49.27
170	3.50	0.08	23.52	31.05	60.85	80.32
200	3.75	0.07	4.97	6.56	65.82	86.88
230	4.00	0.06	3.30	4.36	69.12	91.24
Pan	Pan	Pan	6.63	8.75	75.75	99.99
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.55	2.66	2.75	3.01	3.41	3.64	4.11

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.19	0.11	0.48	0.53	0.96
Moment	3.16	0.11	0.58	0.46	1.62

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-22 S#5
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3863684	223828	State Plane 1983 LA South	-50 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-3/1	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
59.82	49.95	0.01	17.85	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.01	0.02	0.01	0.02
35	1.00	0.50	0.01	0.02	0.02	0.03
45	1.50	0.35	0.01	0.02	0.03	0.05
60	2.00	0.25	0.01	0.02	0.04	0.07
80	2.50	0.17	0.08	0.13	0.12	0.20
120	3.00	0.12	6.01	10.05	6.13	10.25
170	3.50	0.08	24.53	41.01	30.66	51.25
200	3.75	0.07	12.88	21.53	43.54	72.79
230	4.00	0.06	5.60	9.36	49.14	82.15
Pan	Pan	Pan	10.67	17.84	59.81	99.98
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.74	3.07	3.18	3.48	3.81	4.03	4.18

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.50	0.09	0.46	0.03	0.94
Moment	3.50	0.09	0.53	-0.06	1.41

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-23 S#2
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3863027	220636	State Plane 1983 LA South	-37.3 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/1	5Y-3/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
81.31	59.33	0.02	29.42	0.57

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	0.00	0.00	0.00	0.00
10	-1.00	2.00	0.21	0.26	0.21	0.26
14	-0.50	1.41	0.10	0.12	0.31	0.38
18	0.00	1.00	0.08	0.10	0.39	0.48
25	0.50	0.70	0.03	0.04	0.42	0.52
35	1.00	0.50	0.04	0.05	0.46	0.57
45	1.50	0.35	0.03	0.04	0.49	0.60
60	2.00	0.25	0.05	0.06	0.54	0.66
80	2.50	0.17	0.92	1.13	1.46	1.80
120	3.00	0.12	8.41	10.34	9.87	12.14
170	3.50	0.08	33.68	41.42	43.55	53.56
200	3.75	0.07	3.99	4.91	47.54	58.47
230	4.00	0.06	9.85	12.11	57.39	70.58
Pan	Pan	Pan	23.90	29.39	81.29	99.98
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.65	3.05	3.16	3.46	4.04	4.11	4.21

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.50	0.09	0.50	0.09	0.72
Moment	3.52	0.09	0.61	-0.12	1.30

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-23 S#3
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3863027	220636	State Plane 1983 LA South	-40.3 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-5/1	5Y-3/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
81.56	69.96	0.01	15.18	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.01	0.01	0.01	0.01
60	2.00	0.25	0.02	0.02	0.03	0.04
80	2.50	0.17	1.15	1.41	1.18	1.45
120	3.00	0.12	42.83	52.51	44.01	53.96
170	3.50	0.08	17.78	21.80	61.79	75.76
200	3.75	0.07	3.59	4.40	65.38	80.16
230	4.00	0.06	3.80	4.66	69.18	84.82
Pan	Pan	Pan	12.37	15.17	81.55	99.99
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.53	2.64	2.72	2.96	3.48	3.96	4.17

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.25	0.10	0.58	0.67	0.88
Moment	3.21	0.11	0.66	0.40	1.33

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-23 S#4
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3863027	220636	State Plane 1983 LA South	-44.3 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-5/1	5Y-3/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
75.65	68.99	1.01	9.69	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.02	0.03	0.02	0.03
60	2.00	0.25	0.02	0.03	0.04	0.05
80	2.50	0.17	0.85	1.12	0.89	1.18
120	3.00	0.12	32.42	42.86	33.31	44.03
170	3.50	0.08	28.74	37.99	62.05	82.02
200	3.75	0.07	3.37	4.45	65.42	86.48
230	4.00	0.06	2.90	3.83	68.32	90.31
Pan	Pan	Pan	6.32	8.35	74.64	98.66
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.54	2.67	2.78	3.08	3.41	3.61	4.14

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.21	0.11	0.48	0.41	1.04
Moment	3.18	0.11	0.58	0.48	1.74

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-23 S#5
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3863027	220636	State Plane 1983 LA South	-45.3 NAVD 88 Ft

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

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
72.79	69.96	0	4.18	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.00	0.00	0.00	0.00
60	2.00	0.25	0.04	0.05	0.04	0.05
80	2.50	0.17	1.72	2.36	1.76	2.42
120	3.00	0.12	36.34	49.92	38.10	52.34
170	3.50	0.08	27.38	37.62	65.48	89.96
200	3.75	0.07	2.84	3.90	68.32	93.86
230	4.00	0.06	1.43	1.96	69.75	95.82
Pan	Pan	Pan	3.04	4.18	72.79	100.00
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.53	2.64	2.73	2.98	3.3	3.42	3.9

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.09	0.12	0.40	0.40	0.98
Moment	3.07	0.12	0.49	0.47	1.73

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-23 S#6
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3863027	220636	State Plane 1983 LA South	-49.3 NAVD 88 Ft

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

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
72.37	68.58	0.02	5.5	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.03	0.04	0.03	0.04
60	2.00	0.25	0.04	0.06	0.07	0.10
80	2.50	0.17	3.32	4.59	3.39	4.68
120	3.00	0.12	50.21	69.38	53.60	74.06
170	3.50	0.08	12.80	17.69	66.40	91.75
200	3.75	0.07	0.92	1.27	67.32	93.02
230	4.00	0.06	1.07	1.48	68.39	94.50
Pan	Pan	Pan	3.96	5.47	72.35	99.97
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.5	2.58	2.65	2.83	3.03	3.28	4.02

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.04	0.12	0.41	1.09	1.64
Moment	2.98	0.13	0.53	1.02	2.62

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-24 S#2
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3862629	223158	State Plane 1983 LA South	-39.2 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
ML	5Y-6/1	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
75.79	24.44	5.82	79.19	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.01	0.01	0.01	0.01
60	2.00	0.25	0.02	0.03	0.03	0.04
80	2.50	0.17	0.01	0.01	0.04	0.05
120	3.00	0.12	0.13	0.17	0.17	0.22
170	3.50	0.08	5.59	7.38	5.76	7.60
200	3.75	0.07	3.34	4.41	9.10	12.01
230	4.00	0.06	6.67	8.80	15.77	20.81
Pan	Pan	Pan	54.20	71.51	69.97	92.32
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.32	3.86	4.01	4.1	4.19	4.22	0

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.10	0.12	-0.41	-11.61	-7.79
Moment	3.39	0.10	1.52	-1.74	4.10

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-24 S#3
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3862629	223158	State Plane 1983 LA South	-44.2 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
63.71	58.01	0.59	11.13	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.01	0.02	0.01	0.02
35	1.00	0.50	0.01	0.02	0.02	0.03
45	1.50	0.35	0.01	0.02	0.03	0.05
60	2.00	0.25	0.09	0.14	0.12	0.19
80	2.50	0.17	1.64	2.57	1.76	2.76
120	3.00	0.12	16.15	25.35	17.91	28.11
170	3.50	0.08	29.35	46.07	47.26	74.18
200	3.75	0.07	5.43	8.52	52.69	82.70
230	4.00	0.06	3.93	6.17	56.62	88.87
Pan	Pan	Pan	6.50	10.20	63.12	99.07
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.54	2.76	2.94	3.24	3.52	3.8	4.15

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.30	0.10	0.50	0.20	1.12
Moment	3.28	0.10	0.58	0.20	1.52

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-24 S#4
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3862629	223158	State Plane 1983 LA South	-50.7 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
42.53	37.1	0.01	13.26	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.00	0.00	0.00	0.00
60	2.00	0.25	0.03	0.07	0.03	0.07
80	2.50	0.17	1.24	2.92	1.27	2.99
120	3.00	0.12	15.82	37.20	17.09	40.18
170	3.50	0.08	13.34	31.37	30.43	71.55
200	3.75	0.07	4.62	10.86	35.05	82.41
230	4.00	0.06	1.84	4.33	36.89	86.74
Pan	Pan	Pan	5.63	13.24	42.52	99.98
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.53	2.67	2.8	3.16	3.58	3.84	4.16

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.27	0.10	0.54	0.28	0.85
Moment	3.25	0.11	0.63	0.23	1.35

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-25 S#1
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3863432	223257	State Plane 1983 LA South	-35.3 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SW-SM	5Y-4/2	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
50.16	46.6	0.02	7.64	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.04	0.08	0.04	0.08
35	1.00	0.50	0.01	0.02	0.05	0.10
45	1.50	0.35	0.01	0.02	0.06	0.12
60	2.00	0.25	0.02	0.04	0.08	0.16
80	2.50	0.17	0.23	0.46	0.31	0.62
120	3.00	0.12	12.43	24.78	12.74	25.40
170	3.50	0.08	27.80	55.42	40.54	80.82
200	3.75	0.07	4.25	8.47	44.79	89.29
230	4.00	0.06	1.54	3.07	46.33	92.36
Pan	Pan	Pan	3.81	7.60	50.14	99.96
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.59	2.81	2.99	3.22	3.45	3.59	4.09

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.26	0.10	0.42	0.18	1.35
Moment	3.25	0.11	0.51	0.31	1.84

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-25 S#2
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3863432	223257	State Plane 1983 LA South	-37.5 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-5/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
46.85	43.24	0.01	9.22	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.01	0.02	0.01	0.02
35	1.00	0.50	0.01	0.02	0.02	0.04
45	1.50	0.35	0.01	0.02	0.03	0.06
60	2.00	0.25	0.01	0.02	0.04	0.09
80	2.50	0.17	0.08	0.17	0.12	0.26
120	3.00	0.12	11.60	24.76	11.72	25.02
170	3.50	0.08	23.73	50.65	35.45	75.67
200	3.75	0.07	4.71	10.05	40.16	85.72
230	4.00	0.06	2.37	5.06	42.53	90.78
Pan	Pan	Pan	4.31	9.20	46.84	99.98
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.6	2.82	3	3.25	3.49	3.71	4.11

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.30	0.10	0.45	0.20	1.26
Moment	3.28	0.10	0.53	0.24	1.67

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-25 S#4
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3863432	223257	State Plane 1983 LA South	-42.5 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-4/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
64.73	58.68	0.01	10.09	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.00	0.00	0.00	0.00
60	2.00	0.25	0.04	0.06	0.04	0.06
80	2.50	0.17	0.22	0.34	0.26	0.40
120	3.00	0.12	21.55	33.29	21.81	33.69
170	3.50	0.08	29.67	45.84	51.48	79.53
200	3.75	0.07	4.46	6.89	55.94	86.42
230	4.00	0.06	2.26	3.49	58.20	89.91
Pan	Pan	Pan	6.52	10.07	64.72	99.98
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.57	2.73	2.87	3.18	3.45	3.66	4.13

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.25	0.10	0.47	0.26	1.10
Moment	3.23	0.11	0.56	0.36	1.67

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-25 S#5
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3863432	223257	State Plane 1983 LA South	-47.1 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-5/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
48.26	33.36	0.01	31.19	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.00	0.00	0.00	0.00
60	2.00	0.25	0.06	0.12	0.06	0.12
80	2.50	0.17	0.43	0.89	0.49	1.02
120	3.00	0.12	16.02	33.20	16.51	34.21
170	3.50	0.08	13.45	27.87	29.96	62.08
200	3.75	0.07	2.26	4.68	32.22	66.76
230	4.00	0.06	0.99	2.05	33.21	68.81
Pan	Pan	Pan	15.04	31.16	48.25	99.98
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.56	2.73	2.86	3.28	4.05	4.12	4.21

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.38	0.10	0.60	0.17	0.57
Moment	3.40	0.09	0.71	0.05	1.07

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-26 S#2
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3862579	223816	State Plane 1983 LA South	-37 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
ML	5Y-6/1	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
76.25	48.11	0.03	42.94	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.05	0.07	0.05	0.07
35	1.00	0.50	0.02	0.03	0.07	0.09
45	1.50	0.35	0.00	0.00	0.07	0.09
60	2.00	0.25	0.05	0.07	0.12	0.16
80	2.50	0.17	0.14	0.18	0.26	0.34
120	3.00	0.12	4.08	5.35	4.34	5.69
170	3.50	0.08	19.21	25.19	23.55	30.89
200	3.75	0.07	9.30	12.20	32.85	43.08
230	4.00	0.06	10.66	13.98	43.51	57.06
Pan	Pan	Pan	32.71	42.90	76.22	99.96
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.94	3.2	3.38	3.87	4.1	4.16	4.22

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.68	0.08	0.43	-0.54	0.73
Moment	3.70	0.08	0.52	-0.33	1.29

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-26 S#3
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3862579	223816	State Plane 1983 LA South	-40 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SW-SM	5Y-6/1	5Y-5/2	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
42.85	40.61	0.05	5.53	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.01	0.02	0.01	0.02
35	1.00	0.50	0.01	0.02	0.02	0.05
45	1.50	0.35	0.00	0.00	0.02	0.05
60	2.00	0.25	0.01	0.02	0.03	0.07
80	2.50	0.17	1.33	3.10	1.36	3.17
120	3.00	0.12	31.39	73.26	32.75	76.43
170	3.50	0.08	6.69	15.61	39.44	92.04
200	3.75	0.07	0.63	1.47	40.07	93.51
230	4.00	0.06	0.41	0.96	40.48	94.47
Pan	Pan	Pan	2.32	5.41	42.80	99.88
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.51	2.59	2.65	2.82	2.99	3.24	4.02

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.04	0.12	0.39	1.22	1.82
Moment	2.98	0.13	0.53	1.11	2.80

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-26 S#4
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3862579	223816	State Plane 1983 LA South	-44 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/1	5Y-5/2	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
72.84	62.91	0	17.16	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.01	0.01	0.01	0.01
25	0.50	0.70	0.02	0.03	0.03	0.04
35	1.00	0.50	0.01	0.01	0.04	0.05
45	1.50	0.35	0.03	0.04	0.07	0.10
60	2.00	0.25	0.17	0.23	0.24	0.33
80	2.50	0.17	0.74	1.02	0.98	1.35
120	3.00	0.12	35.83	49.19	36.81	50.54
170	3.50	0.08	8.03	11.02	44.84	61.56
200	3.75	0.07	6.63	9.10	51.47	70.66
230	4.00	0.06	8.87	12.18	60.34	82.84
Pan	Pan	Pan	12.50	17.16	72.84	100.00
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.54	2.65	2.74	2.99	3.84	4.02	4.18

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.27	0.10	0.59	0.52	0.61
Moment	3.28	0.10	0.71	0.22	1.08

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-26 S#5
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3862579	223816	State Plane 1983 LA South	-48 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SW-SM	5Y-5/1	5Y-5/2	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
65.59	61.6	0	6.21	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.04	0.06	0.04	0.06
35	1.00	0.50	0.00	0.00	0.04	0.06
45	1.50	0.35	0.03	0.05	0.07	0.11
60	2.00	0.25	13.21	20.14	13.28	20.25
80	2.50	0.17	33.07	50.42	46.35	70.67
120	3.00	0.12	12.32	18.78	58.67	89.45
170	3.50	0.08	1.66	2.53	60.33	91.98
200	3.75	0.07	1.13	1.72	61.46	93.70
230	4.00	0.06	0.06	0.09	61.52	93.79
Pan	Pan	Pan	4.07	6.21	65.59	100.00
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
1.62	1.89	2.05	2.3	2.62	2.85	4.05

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.54	0.17	0.61	0.86	1.75
Moment	2.48	0.18	0.81	0.94	2.63

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-27 S#2
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3863028	224053	State Plane 1983 LA South	-37.5 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-5/1	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
60.2	49.85	0	21.91	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.01	0.02	0.01	0.02
45	1.50	0.35	0.00	0.00	0.01	0.02
60	2.00	0.25	0.02	0.03	0.03	0.05
80	2.50	0.17	0.11	0.18	0.14	0.23
120	3.00	0.12	6.51	10.81	6.65	11.05
170	3.50	0.08	21.12	35.08	27.77	46.13
200	3.75	0.07	11.60	19.27	39.37	65.40
230	4.00	0.06	7.64	12.69	47.01	78.09
Pan	Pan	Pan	13.19	21.91	60.20	100.00
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.72	3.07	3.2	3.55	3.94	4.07	4.19

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.52	0.09	0.47	-0.08	0.82
Moment	3.53	0.09	0.56	-0.16	1.36

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-27 S#3
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3863028	224053	State Plane 1983 LA South	-42.2 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SW-SM	5Y-5/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
87.24	83.21	0	4.93	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.03	0.03	0.03	0.03
60	2.00	0.25	0.10	0.11	0.13	0.15
80	2.50	0.17	4.19	4.80	4.32	4.95
120	3.00	0.12	55.80	63.96	60.12	68.91
170	3.50	0.08	19.59	22.46	79.71	91.37
200	3.75	0.07	1.80	2.06	81.51	93.43
230	4.00	0.06	1.43	1.64	82.94	95.07
Pan	Pan	Pan	4.30	4.93	87.24	100.00
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.5	2.59	2.66	2.85	3.14	3.34	3.99

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.05	0.12	0.41	0.82	1.27
Moment	3.01	0.12	0.53	0.83	2.26

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-27 S#5
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3863028	224053	State Plane 1983 LA South	-45.5 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SW-SM	5Y-5/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
82.44	78.27	0.04	5.41	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.01	0.01	0.01	0.01
35	1.00	0.50	0.01	0.01	0.02	0.02
45	1.50	0.35	0.09	0.11	0.11	0.13
60	2.00	0.25	0.02	0.02	0.13	0.16
80	2.50	0.17	17.35	21.05	17.48	21.20
120	3.00	0.12	47.50	57.62	64.98	78.82
170	3.50	0.08	10.98	13.32	75.96	92.14
200	3.75	0.07	1.07	1.30	77.03	93.44
230	4.00	0.06	0.95	1.15	77.98	94.59
Pan	Pan	Pan	4.42	5.36	82.40	99.95
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.12	2.38	2.53	2.75	2.97	3.19	4.02

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.89	0.13	0.49	0.64	1.80
Moment	2.85	0.14	0.63	0.74	2.38

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-27 S#6
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3863028	224053	State Plane 1983 LA South	-49.4 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SW-SM	5Y-5/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
100.35	96.56	0.02	3.98	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.29	0.29	0.29	0.29
35	1.00	0.50	0.00	0.00	0.29	0.29
45	1.50	0.35	0.06	0.06	0.35	0.35
60	2.00	0.25	1.46	1.45	1.81	1.80
80	2.50	0.17	39.33	39.19	41.14	41.00
120	3.00	0.12	44.86	44.70	86.00	85.70
170	3.50	0.08	8.71	8.68	94.71	94.38
200	3.75	0.07	0.61	0.61	95.32	94.99
230	4.00	0.06	1.04	1.04	96.36	96.02
Pan	Pan	Pan	3.97	3.96	100.33	99.98
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.04	2.18	2.3	2.6	2.88	2.98	3.75

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.71	0.15	0.46	0.39	1.20
Moment	2.68	0.16	0.59	0.69	2.19

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-28 S#2
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3862766	222525	State Plane 1983 LA South	-39.2 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-5/1	5Y-3/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
74.93	66.62	0.08	11.98	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.01	0.01	0.01	0.01
35	1.00	0.50	0.02	0.03	0.03	0.04
45	1.50	0.35	0.02	0.03	0.05	0.07
60	2.00	0.25	0.03	0.04	0.08	0.11
80	2.50	0.17	0.42	0.56	0.50	0.67
120	3.00	0.12	27.68	36.94	28.18	37.61
170	3.50	0.08	32.53	43.41	60.71	81.02
200	3.75	0.07	3.54	4.72	64.25	85.75
230	4.00	0.06	1.70	2.27	65.95	88.02
Pan	Pan	Pan	8.90	11.88	74.85	99.89
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.56	2.71	2.83	3.14	3.43	3.66	4.15

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.24	0.11	0.48	0.33	1.08
Moment	3.21	0.11	0.57	0.41	1.69

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-28 S#3
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3862766	222525	State Plane 1983 LA South	-43.2 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/1	5Y-3/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
79.37	70.75	0.06	11.44	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.01	0.01	0.01	0.01
35	1.00	0.50	0.00	0.00	0.01	0.01
45	1.50	0.35	0.01	0.01	0.02	0.03
60	2.00	0.25	0.04	0.05	0.06	0.08
80	2.50	0.17	3.65	4.60	3.71	4.67
120	3.00	0.12	47.52	59.87	51.23	64.55
170	3.50	0.08	15.46	19.48	66.69	84.02
200	3.75	0.07	1.85	2.33	68.54	86.36
230	4.00	0.06	1.75	2.20	70.29	88.56
Pan	Pan	Pan	9.02	11.36	79.31	99.92
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.5	2.59	2.67	2.88	3.27	3.5	4.14

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.12	0.11	0.47	0.79	1.12
Moment	3.08	0.12	0.59	0.71	2.01

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-28 S#4
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3862766	222525	State Plane 1983 LA South	-50.2 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SP	5Y-6/1	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
96.77	94.01	0.91	3.94	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.02	0.02	0.02	0.02
45	1.50	0.35	0.00	0.00	0.02	0.02
60	2.00	0.25	0.08	0.08	0.10	0.10
80	2.50	0.17	10.01	10.34	10.11	10.45
120	3.00	0.12	71.27	73.65	81.38	84.10
170	3.50	0.08	9.73	10.05	91.11	94.15
200	3.75	0.07	1.12	1.16	92.23	95.31
230	4.00	0.06	0.73	0.75	92.96	96.06
Pan	Pan	Pan	2.90	3.00	95.86	99.06
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.24	2.54	2.6	2.77	2.94	3	3.68

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.85	0.14	0.33	0.46	1.75
Moment	2.82	0.14	0.46	0.70	2.54

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-29 S#3
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3854692	233110	State Plane 1983 LA South	-40.8 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/1	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
78.04	58.96	0.09	28.59	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.01	0.01	0.01	0.01
35	1.00	0.50	0.01	0.01	0.02	0.03
45	1.50	0.35	0.01	0.01	0.03	0.04
60	2.00	0.25	0.02	0.03	0.05	0.06
80	2.50	0.17	0.04	0.05	0.09	0.12
120	3.00	0.12	13.03	16.70	13.12	16.81
170	3.50	0.08	27.49	35.23	40.61	52.04
200	3.75	0.07	7.23	9.26	47.84	61.30
230	4.00	0.06	7.89	10.11	55.73	71.41
Pan	Pan	Pan	22.22	28.47	77.95	99.88
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.65	2.98	3.12	3.47	4.03	4.11	4.21

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.48	0.09	0.52	0.02	0.70
Moment	3.51	0.09	0.62	-0.10	1.24

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-29 S#4
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3854692	233110	State Plane 1983 LA South	-45.8 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/1	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
81.96	73.59	0.39	12.57	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.01	0.01	0.01	0.01
35	1.00	0.50	0.00	0.00	0.01	0.01
45	1.50	0.35	0.00	0.00	0.01	0.01
60	2.00	0.25	0.02	0.02	0.03	0.04
80	2.50	0.17	0.09	0.11	0.12	0.15
120	3.00	0.12	10.34	12.62	10.46	12.76
170	3.50	0.08	45.79	55.87	56.25	68.63
200	3.75	0.07	10.08	12.30	66.33	80.93
230	4.00	0.06	5.33	6.50	71.66	87.43
Pan	Pan	Pan	9.91	12.09	81.57	99.52
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.69	3.03	3.11	3.33	3.63	3.87	4.16

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.42	0.09	0.43	0.28	1.15
Moment	3.40	0.09	0.51	0.13	1.59

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-29 S#5
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3854692	233110	State Plane 1983 LA South	-49.8 NAVD 88 Ft

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

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
75.67	72.63	0.67	5.54	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.07	0.09	0.07	0.09
25	0.50	0.70	0.01	0.01	0.08	0.11
35	1.00	0.50	0.01	0.01	0.09	0.12
45	1.50	0.35	0.00	0.00	0.09	0.12
60	2.00	0.25	0.12	0.16	0.21	0.28
80	2.50	0.17	6.22	8.22	6.43	8.50
120	3.00	0.12	27.25	36.01	33.68	44.51
170	3.50	0.08	31.49	41.61	65.17	86.12
200	3.75	0.07	4.10	5.42	69.27	91.54
230	4.00	0.06	2.21	2.92	71.48	94.46
Pan	Pan	Pan	3.52	4.65	75.00	99.11
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.29	2.6	2.73	3.07	3.37	3.47	4.03

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.09	0.12	0.48	0.09	1.12
Moment	3.08	0.12	0.59	0.23	1.75

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-29a S#6
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3854691	233114	State Plane 1983 LA South	-50.8 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/1	5Y-3/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
107.13	100.19	0.36	7.84	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.03	0.03	0.03	0.03
35	1.00	0.50	0.03	0.03	0.06	0.06
45	1.50	0.35	0.06	0.06	0.12	0.11
60	2.00	0.25	0.30	0.28	0.42	0.39
80	2.50	0.17	41.85	39.06	42.27	39.46
120	3.00	0.12	9.14	8.53	51.41	47.99
170	3.50	0.08	33.71	31.47	85.12	79.45
200	3.75	0.07	8.90	8.31	94.02	87.76
230	4.00	0.06	4.71	4.40	98.73	92.16
Pan	Pan	Pan	8.04	7.50	106.77	99.66
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.06	2.2	2.31	3.03	3.43	3.64	4.09

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.00	0.12	0.67	-0.05	0.75
Moment	2.97	0.13	0.79	0.12	1.29

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-30 S#1
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855322	233895	State Plane 1983 LA South	-36.1 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-4/1	5Y-3/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
62.61	50.44	0.02	21.34	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.02	0.03	0.02	0.03
35	1.00	0.50	0.04	0.06	0.06	0.10
45	1.50	0.35	0.02	0.03	0.08	0.13
60	2.00	0.25	0.09	0.14	0.17	0.27
80	2.50	0.17	0.97	1.55	1.14	1.82
120	3.00	0.12	17.32	27.66	18.46	29.48
170	3.50	0.08	17.82	28.46	36.28	57.95
200	3.75	0.07	8.44	13.48	44.72	71.43
230	4.00	0.06	4.53	7.24	49.25	78.66
Pan	Pan	Pan	13.34	21.31	62.59	99.97
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.56	2.76	2.92	3.36	3.87	4.06	4.19

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.39	0.10	0.57	0.05	0.70
Moment	3.39	0.10	0.66	0.00	1.17

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-30 S#2
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855322	233895	State Plane 1983 LA South	-37.4 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-4/1	5Y-3/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
91.49	81.61	0.1	12.59	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.03	0.03	0.03	0.03
35	1.00	0.50	0.02	0.02	0.05	0.05
45	1.50	0.35	0.02	0.02	0.07	0.08
60	2.00	0.25	0.10	0.11	0.17	0.19
80	2.50	0.17	2.39	2.61	2.56	2.80
120	3.00	0.12	25.94	28.35	28.50	31.15
170	3.50	0.08	36.06	39.41	64.56	70.57
200	3.75	0.07	7.92	8.66	72.48	79.22
230	4.00	0.06	7.49	8.19	79.97	87.41
Pan	Pan	Pan	11.42	12.48	91.39	99.89
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.54	2.73	2.89	3.24	3.63	3.9	4.15

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.31	0.10	0.54	0.18	0.90
Moment	3.30	0.10	0.61	0.14	1.33

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-30 S#3
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855322	233895	State Plane 1983 LA South	-39.4 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/1	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
66.39	58.01	0.02	14.72	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.09	0.14	0.09	0.14
35	1.00	0.50	0.04	0.06	0.13	0.20
45	1.50	0.35	0.09	0.14	0.22	0.33
60	2.00	0.25	0.21	0.32	0.43	0.65
80	2.50	0.17	1.57	2.36	2.00	3.01
120	3.00	0.12	26.75	40.29	28.75	43.30
170	3.50	0.08	19.26	29.01	48.01	72.32
200	3.75	0.07	5.63	8.48	53.64	80.80
230	4.00	0.06	2.98	4.49	56.62	85.28
Pan	Pan	Pan	9.75	14.69	66.37	99.97
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.52	2.66	2.77	3.12	3.58	3.93	4.17

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.28	0.10	0.57	0.38	0.83
Moment	3.25	0.11	0.65	0.26	1.29

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-30 S#4
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855322	233895	State Plane 1983 LA South	-43.4 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SP	5Y-6/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
54.1	52.51	0.01	3.14	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.02	0.04	0.02	0.04
60	2.00	0.25	0.10	0.18	0.12	0.22
80	2.50	0.17	4.07	7.52	4.19	7.74
120	3.00	0.12	39.07	72.22	43.26	79.96
170	3.50	0.08	8.19	15.14	51.45	95.10
200	3.75	0.07	0.70	1.29	52.15	96.40
230	4.00	0.06	0.25	0.46	52.40	96.86
Pan	Pan	Pan	1.69	3.12	54.09	99.98
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.32	2.56	2.62	2.79	2.97	3.13	3.5

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.86	0.14	0.32	0.36	1.40
Moment	2.84	0.14	0.40	0.36	1.89

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-30 S#5
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855322	233895	State Plane 1983 LA South	-46.4 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-5/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
51.11	42.99	0.02	17.14	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.11	0.22	0.11	0.22
60	2.00	0.25	0.34	0.67	0.45	0.88
80	2.50	0.17	5.66	11.07	6.11	11.95
120	3.00	0.12	17.95	35.12	24.06	47.07
170	3.50	0.08	13.52	26.45	37.58	73.53
200	3.75	0.07	2.97	5.81	40.55	79.34
230	4.00	0.06	1.80	3.52	42.35	82.86
Pan	Pan	Pan	8.74	17.10	51.09	99.96
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.19	2.56	2.69	3.06	3.56	4.02	4.18

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.20	0.11	0.67	0.28	0.93
Moment	3.18	0.11	0.76	0.12	1.34

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-30 S#7
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855322	233895	State Plane 1983 LA South	-50.9 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SP	5Y-6/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
61.22	60.28	0.05	1.75	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.02	0.03	0.02	0.03
35	1.00	0.50	0.00	0.00	0.02	0.03
45	1.50	0.35	0.02	0.03	0.04	0.07
60	2.00	0.25	2.89	4.72	2.93	4.79
80	2.50	0.17	30.66	50.08	33.59	54.87
120	3.00	0.12	21.01	34.32	54.60	89.19
170	3.50	0.08	4.70	7.68	59.30	96.86
200	3.75	0.07	0.59	0.96	59.89	97.83
230	4.00	0.06	0.26	0.42	60.15	98.25
Pan	Pan	Pan	1.02	1.67	61.17	99.92
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2	2.11	2.2	2.45	2.79	2.92	3.38

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.57	0.17	0.41	0.41	0.95
Moment	2.55	0.17	0.50	0.44	1.67

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-31 S#2
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855838	234127	State Plane 1983 LA South	-37 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-4/1	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
54.11	42.4	0.01	26.43	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.04	0.07	0.04	0.07
35	1.00	0.50	0.02	0.04	0.06	0.11
45	1.50	0.35	0.01	0.02	0.07	0.13
60	2.00	0.25	0.02	0.04	0.09	0.17
80	2.50	0.17	0.31	0.57	0.40	0.74
120	3.00	0.12	8.16	15.08	8.56	15.82
170	3.50	0.08	19.17	35.43	27.73	51.25
200	3.75	0.07	7.87	14.54	35.60	65.79
230	4.00	0.06	4.21	7.78	39.81	73.57
Pan	Pan	Pan	14.29	26.41	54.10	99.98
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.64	3	3.13	3.48	4.01	4.1	4.2

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.49	0.09	0.51	0.01	0.72
Moment	3.51	0.09	0.61	-0.13	1.28

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-31 S#3
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855838	234127	State Plane 1983 LA South	-40.5 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-4/1	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
65.54	58.06	0.01	12.95	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.00	0.00	0.00	0.00
60	2.00	0.25	0.05	0.08	0.05	0.08
80	2.50	0.17	0.32	0.49	0.37	0.56
120	3.00	0.12	15.99	24.40	16.36	24.96
170	3.50	0.08	30.02	45.80	46.38	70.77
200	3.75	0.07	6.99	10.67	53.37	81.43
230	4.00	0.06	3.68	5.61	57.05	87.05
Pan	Pan	Pan	8.48	12.94	65.53	99.98
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.59	2.82	3	3.27	3.6	3.86	4.15

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.34	0.10	0.50	0.20	1.07
Moment	3.33	0.10	0.57	0.15	1.45

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-31 S#4
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855838	234127	State Plane 1983 LA South	-44 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SP	5Y-6/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
49.09	47.84	0	2.59	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.00	0.00	0.00	0.00
60	2.00	0.25	1.81	3.69	1.81	3.69
80	2.50	0.17	26.23	53.43	28.04	57.12
120	3.00	0.12	17.49	35.63	45.53	92.75
170	3.50	0.08	1.95	3.97	47.48	96.72
200	3.75	0.07	0.26	0.53	47.74	97.25
230	4.00	0.06	0.08	0.16	47.82	97.41
Pan	Pan	Pan	1.27	2.59	49.09	100.00
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.01	2.12	2.2	2.43	2.75	2.88	3.28

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.54	0.17	0.38	0.40	0.94
Moment	2.52	0.17	0.46	0.42	1.64

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-31 S#5
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
2855838	234127	State Plane 1983 LA South	-46 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SP	5Y-6/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
50.02	48.8	0.01	2.64	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.00	0.00	0.00	0.00
60	2.00	0.25	0.23	0.46	0.23	0.46
80	2.50	0.17	9.05	18.09	9.28	18.55
120	3.00	0.12	23.99	47.96	33.27	66.51
170	3.50	0.08	12.92	25.83	46.19	92.34
200	3.75	0.07	1.79	3.58	47.98	95.92
230	4.00	0.06	0.72	1.44	48.70	97.36
Pan	Pan	Pan	1.31	2.62	50.01	99.98
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.13	2.43	2.57	2.83	3.16	3.34	3.69

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.88	0.14	0.46	0.17	1.07
Moment	2.88	0.14	0.55	0.11	1.55

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-31 S#6
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855838	234127	State Plane 1983 LA South	-49 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
53.63	47.22	0.02	14.64	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.00	0.00	0.00	0.00
60	2.00	0.25	0.03	0.06	0.03	0.06
80	2.50	0.17	4.45	8.30	4.48	8.35
120	3.00	0.12	20.25	37.76	24.73	46.11
170	3.50	0.08	12.72	23.72	37.45	69.83
200	3.75	0.07	4.63	8.63	42.08	78.46
230	4.00	0.06	3.70	6.90	45.78	85.36
Pan	Pan	Pan	7.83	14.60	53.61	99.96
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.3	2.6	2.72	3.08	3.65	3.95	4.17

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.22	0.11	0.62	0.28	0.82
Moment	3.21	0.11	0.72	0.12	1.27

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-32 S#2
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855117	233418	State Plane 1983 LA South	-38.6 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-6/1	5Y-3/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
55.12	44.37	0.02	22.06	0.13

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.07	0.13	0.07	0.13
35	1.00	0.50	0.01	0.02	0.08	0.15
45	1.50	0.35	0.01	0.02	0.09	0.16
60	2.00	0.25	0.01	0.02	0.10	0.18
80	2.50	0.17	0.40	0.73	0.50	0.91
120	3.00	0.12	8.20	14.88	8.70	15.78
170	3.50	0.08	19.41	35.21	28.11	51.00
200	3.75	0.07	8.84	16.04	36.95	67.04
230	4.00	0.06	6.01	10.90	42.96	77.94
Pan	Pan	Pan	12.14	22.02	55.10	99.96
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.64	3	3.13	3.49	3.93	4.07	4.19

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.48	0.09	0.50	-0.02	0.80
Moment	3.49	0.09	0.59	-0.14	1.33

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-32 S#3
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855117	233418	State Plane 1983 LA South	-43.6 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SW-SM	5Y-5/1	5Y-3/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
57.8	55.88	0.02	3.94	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.00	0.00	0.00	0.00
60	2.00	0.25	0.03	0.05	0.03	0.05
80	2.50	0.17	2.87	4.97	2.90	5.02
120	3.00	0.12	31.57	54.62	34.47	59.64
170	3.50	0.08	17.32	29.97	51.79	89.60
200	3.75	0.07	2.47	4.27	54.26	93.88
230	4.00	0.06	1.26	2.18	55.52	96.06
Pan	Pan	Pan	2.26	3.91	57.78	99.97
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.5	2.6	2.68	2.91	3.26	3.41	3.88

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.06	0.12	0.41	0.51	0.99
Moment	3.03	0.12	0.50	0.51	1.74

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-32 S#5
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855117	233418	State Plane 1983 LA South	-47.1 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SP	5Y-6/1	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
57.3	55.51	0.01	3.33	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.07	0.12	0.07	0.12
60	2.00	0.25	0.40	0.70	0.47	0.82
80	2.50	0.17	18.15	31.68	18.62	32.50
120	3.00	0.12	28.43	49.62	47.05	82.11
170	3.50	0.08	7.08	12.36	54.13	94.47
200	3.75	0.07	0.83	1.45	54.96	95.92
230	4.00	0.06	0.43	0.75	55.39	96.67
Pan	Pan	Pan	1.90	3.32	57.29	99.98
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.07	2.24	2.38	2.68	2.93	3.08	3.59

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.73	0.15	0.44	0.21	1.14
Moment	2.71	0.15	0.53	0.38	1.78

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-32 S#6
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855117	233418	State Plane 1983 LA South	-50.6 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SP	5Y-5/1	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
52.22	50.83	0.02	2.83	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.04	0.08	0.04	0.08
60	2.00	0.25	1.00	1.91	1.04	1.99
80	2.50	0.17	18.35	35.14	19.39	37.13
120	3.00	0.12	23.95	45.86	43.34	83.00
170	3.50	0.08	6.18	11.83	49.52	94.83
200	3.75	0.07	0.85	1.63	50.37	96.46
230	4.00	0.06	0.37	0.71	50.74	97.17
Pan	Pan	Pan	1.46	2.80	52.20	99.96
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.04	2.2	2.33	2.64	2.91	3.04	3.53

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.69	0.15	0.44	0.18	1.04
Moment	2.67	0.16	0.53	0.34	1.68

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-33 S#3
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3854746	233680	State Plane 1983 LA South	-45.6 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-4/1	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
48.9	44.29	0.02	10.39	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.03	0.06	0.03	0.06
35	1.00	0.50	0.01	0.02	0.04	0.08
45	1.50	0.35	0.01	0.02	0.05	0.10
60	2.00	0.25	0.04	0.08	0.09	0.18
80	2.50	0.17	0.70	1.43	0.79	1.62
120	3.00	0.12	19.23	39.33	20.02	40.94
170	3.50	0.08	14.64	29.94	34.66	70.88
200	3.75	0.07	6.76	13.82	41.42	84.70
230	4.00	0.06	2.40	4.91	43.82	89.61
Pan	Pan	Pan	5.06	10.35	48.88	99.96
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.54	2.68	2.8	3.15	3.57	3.74	4.13

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.25	0.11	0.50	0.25	0.84
Moment	3.23	0.11	0.60	0.25	1.40

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-33 S#4
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3854746	233680	State Plane 1983 LA South	-47.2 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SW-SM	5Y-6/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
51.26	47.12	0.01	8.49	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.04	0.08	0.04	0.08
60	2.00	0.25	0.21	0.41	0.25	0.49
80	2.50	0.17	7.08	13.81	7.33	14.30
120	3.00	0.12	24.14	47.09	31.47	61.39
170	3.50	0.08	11.93	23.27	43.40	84.67
200	3.75	0.07	2.24	4.37	45.64	89.04
230	4.00	0.06	1.27	2.48	46.91	91.51
Pan	Pan	Pan	4.34	8.47	51.25	99.98
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.16	2.52	2.61	2.88	3.29	3.49	4.1

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.03	0.12	0.54	0.43	1.17
Moment	3.01	0.12	0.66	0.38	1.81

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-33 S#5
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3854746	233680	State Plane 1983 LA South	-50.6 NAVD 88 Ft

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

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
44.77	42.29	0.02	5.85	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.01	0.02	0.01	0.02
35	1.00	0.50	0.03	0.07	0.04	0.09
45	1.50	0.35	0.02	0.04	0.06	0.13
60	2.00	0.25	0.61	1.36	0.67	1.50
80	2.50	0.17	12.64	28.23	13.31	29.73
120	3.00	0.12	22.02	49.18	35.33	78.91
170	3.50	0.08	5.12	11.44	40.45	90.35
200	3.75	0.07	1.10	2.46	41.55	92.81
230	4.00	0.06	0.60	1.34	42.15	94.15
Pan	Pan	Pan	2.60	5.81	44.75	99.96
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.06	2.26	2.42	2.71	2.96	3.22	4.04

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.86	0.14	0.54	0.55	1.49
Moment	2.81	0.14	0.67	0.70	2.20

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-34 S#4
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855068	232911	State Plane 1983 LA South	-40.9 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
ML	5Y-5/1	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
60.33	30.43	0.02	53.51	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.03	0.05	0.03	0.05
35	1.00	0.50	0.01	0.02	0.04	0.07
45	1.50	0.35	0.01	0.02	0.05	0.08
60	2.00	0.25	0.01	0.02	0.06	0.10
80	2.50	0.17	0.18	0.30	0.24	0.40
120	3.00	0.12	4.72	7.82	4.96	8.22
170	3.50	0.08	11.13	18.45	16.09	26.67
200	3.75	0.07	6.38	10.58	22.47	37.25
230	4.00	0.06	5.58	9.25	28.05	46.49
Pan	Pan	Pan	32.26	53.47	60.31	99.97
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.79	3.21	3.45	4.02	4.13	4.18	4.23

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.68	0.08	0.46	-0.95	0.87
Moment	3.72	0.08	0.56	-0.56	1.55

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-34 S#5
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855068	232911	State Plane 1983 LA South	-43.9 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-5/1	5Y-4/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
64.14	57.24	0.02	12.75	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.02	0.03	0.02	0.03
45	1.50	0.35	0.01	0.02	0.03	0.05
60	2.00	0.25	0.02	0.03	0.05	0.08
80	2.50	0.17	0.19	0.30	0.24	0.37
120	3.00	0.12	9.11	14.20	9.35	14.58
170	3.50	0.08	33.00	51.45	42.35	66.03
200	3.75	0.07	8.70	13.56	51.05	79.59
230	4.00	0.06	4.91	7.66	55.96	87.25
Pan	Pan	Pan	8.16	12.72	64.12	99.97
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.66	3.01	3.1	3.34	3.67	3.89	4.15

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.41	0.09	0.45	0.22	1.08
Moment	3.40	0.09	0.53	0.06	1.53

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-34 S#6
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855068	232911	State Plane 1983 LA South	-48.4 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SM	5Y-5/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
54.56	50.19	0.02	9.93	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.00	0.00	0.00	0.00
60	2.00	0.25	0.04	0.07	0.04	0.07
80	2.50	0.17	0.14	0.26	0.18	0.33
120	3.00	0.12	11.71	21.46	11.89	21.79
170	3.50	0.08	24.01	44.01	35.90	65.80
200	3.75	0.07	9.54	17.49	45.44	83.28
230	4.00	0.06	3.70	6.78	49.14	90.07
Pan	Pan	Pan	5.40	9.90	54.54	99.96
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.61	2.87	3.04	3.32	3.63	3.78	4.12

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.34	0.10	0.46	0.06	1.04
Moment	3.34	0.10	0.54	0.08	1.52

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-34 S#7
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3855068	232911	State Plane 1983 LA South	-51.9 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SW-SM	5Y-6/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
53.08	50.49	0.03	5.01	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.07	0.13	0.07	0.13
35	1.00	0.50	0.02	0.04	0.09	0.17
45	1.50	0.35	0.04	0.08	0.13	0.24
60	2.00	0.25	0.59	1.11	0.72	1.36
80	2.50	0.17	11.85	22.32	12.57	23.68
120	3.00	0.12	31.55	59.44	44.12	83.12
170	3.50	0.08	5.16	9.72	49.28	92.84
200	3.75	0.07	0.81	1.53	50.09	94.37
230	4.00	0.06	0.33	0.62	50.42	94.99
Pan	Pan	Pan	2.63	4.95	53.05	99.94
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.08	2.33	2.51	2.72	2.93	3.05	4

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.84	0.14	0.47	0.57	1.87
Moment	2.80	0.14	0.63	0.84	2.60

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-35 S#2
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3863189	221706	State Plane 1983 LA South	-38.1 NAVD 88 Ft

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

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
53.42	49.54	0.02	8.2	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.04	0.07	0.04	0.07
35	1.00	0.50	0.01	0.02	0.05	0.09
45	1.50	0.35	0.01	0.02	0.06	0.11
60	2.00	0.25	0.02	0.04	0.08	0.15
80	2.50	0.17	2.06	3.86	2.14	4.01
120	3.00	0.12	32.17	60.22	34.31	64.23
170	3.50	0.08	12.20	22.84	46.51	87.06
200	3.75	0.07	1.56	2.92	48.07	89.99
230	4.00	0.06	0.97	1.82	49.04	91.80
Pan	Pan	Pan	4.36	8.16	53.40	99.96
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.51	2.6	2.67	2.88	3.24	3.43	4.1

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.10	0.12	0.45	0.78	1.16
Moment	3.06	0.12	0.57	0.76	2.12

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-35 S#3
Sample Date: 06/07/03
Analyzed By: ID

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3863189	221706	State Plane 1983 LA South	-41.9 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SP	5Y-6/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
50.54	49.45	0.03	2.51	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.00	0.00	0.00	0.00
60	2.00	0.25	0.03	0.06	0.03	0.06
80	2.50	0.17	0.31	0.61	0.34	0.67
120	3.00	0.12	23.95	47.39	24.29	48.06
170	3.50	0.08	19.63	38.84	43.92	86.90
200	3.75	0.07	4.15	8.21	48.07	95.11
230	4.00	0.06	1.20	2.37	49.27	97.49
Pan	Pan	Pan	1.24	2.45	50.51	99.94
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.55	2.66	2.76	3.02	3.35	3.46	3.75

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.09	0.12	0.38	0.21	0.83
Moment	3.08	0.12	0.45	0.21	1.38

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-35 S#4
Sample Date: 06/07/03
Analyzed By: ID

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Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3863189	221706	State Plane 1983 LA South	-43.3 NAVD 88 Ft

USCS:	Dry Munsel:	Wet Munsel:	Comments:
SW-SM	5Y-6/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
72.25	67.77	0	6.45	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.04	0.06	0.04	0.06
35	1.00	0.50	0.01	0.01	0.05	0.07
45	1.50	0.35	0.01	0.01	0.06	0.08
60	2.00	0.25	0.05	0.07	0.11	0.15
80	2.50	0.17	2.84	3.93	2.95	4.08
120	3.00	0.12	49.18	68.07	52.13	72.15
170	3.50	0.08	12.74	17.63	64.87	89.79
200	3.75	0.07	1.77	2.45	66.64	92.24
230	4.00	0.06	0.95	1.31	67.59	93.55
Pan	Pan	Pan	4.66	6.45	72.25	100.00
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.51	2.59	2.65	2.84	3.08	3.34	4.06

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	3.06	0.12	0.42	1.02	1.49
Moment	3.01	0.12	0.55	0.95	2.48

Gradation Analysis Report

Project Name: Sandy Point
Sample Name: SPVC-03-35 S#5
Sample Date: 06/07/03
Analyzed By: ID

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2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

Easting:	Northing:	Coordinate System:	Elevation:
3863189	221706	State Plane 1983 LA South	-51.1 NAVD 88 Ft

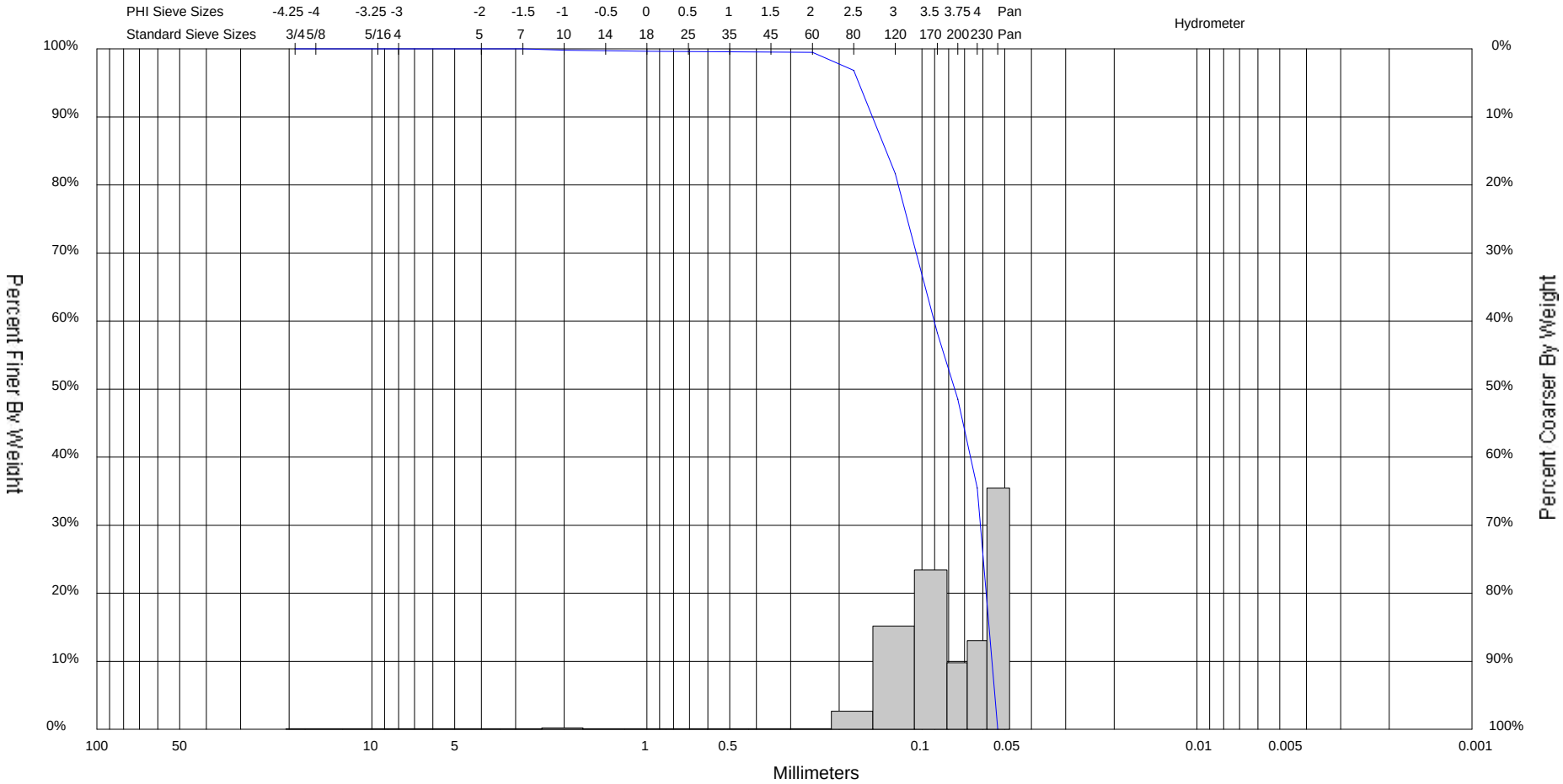
USCS:	Dry Munsel:	Wet Munsel:	Comments:
SP	5Y-5/1	5Y-5/1	

Dry Weight:	Wash Weight:	Sieve Loss:	Percent Silt:	Estimated Percent Shell Content:
71.53	69.12	0.02	3.51	0

Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	Grams Retained	% Weight Retained	Cum. Grams Retained	C. % Weight Retained
3/4	-4.25	19.02	0.00	0.00	0.00	0.00
5/8	-4.00	16.00	0.00	0.00	0.00	0.00
5/16	-3.25	9.51	0.00	0.00	0.00	0.00
4	-3.00	8.00	0.00	0.00	0.00	0.00
5	-2.00	4.00	0.00	0.00	0.00	0.00
7	-1.50	2.82	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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.70	0.00	0.00	0.00	0.00
35	1.00	0.50	0.02	0.03	0.02	0.03
45	1.50	0.35	0.02	0.03	0.04	0.06
60	2.00	0.25	0.24	0.34	0.28	0.39
80	2.50	0.17	21.19	29.62	21.47	30.02
120	3.00	0.12	42.64	59.61	64.11	89.63
170	3.50	0.08	4.18	5.84	68.29	95.47
200	3.75	0.07	0.45	0.63	68.74	96.10
230	4.00	0.06	0.28	0.39	69.02	96.49
Pan	Pan	Pan	2.49	3.48	71.51	99.97
Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
2.08	2.26	2.42	2.67	2.88	2.95	3.46

Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Graphic	2.68	0.16	0.38	0.09	1.23
Moment	2.67	0.16	0.47	0.35	1.87

APPENDIX 9
2003 SANDY POINT INDIVIDUAL GRAIN SIZE DISTRIBUTION CURVES/HISTOGRAMS



Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-01 S#2		-38		SM	35.47	0.08	0.09	-0.31	1.31	0.66
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855885
Northing (Y):	230769
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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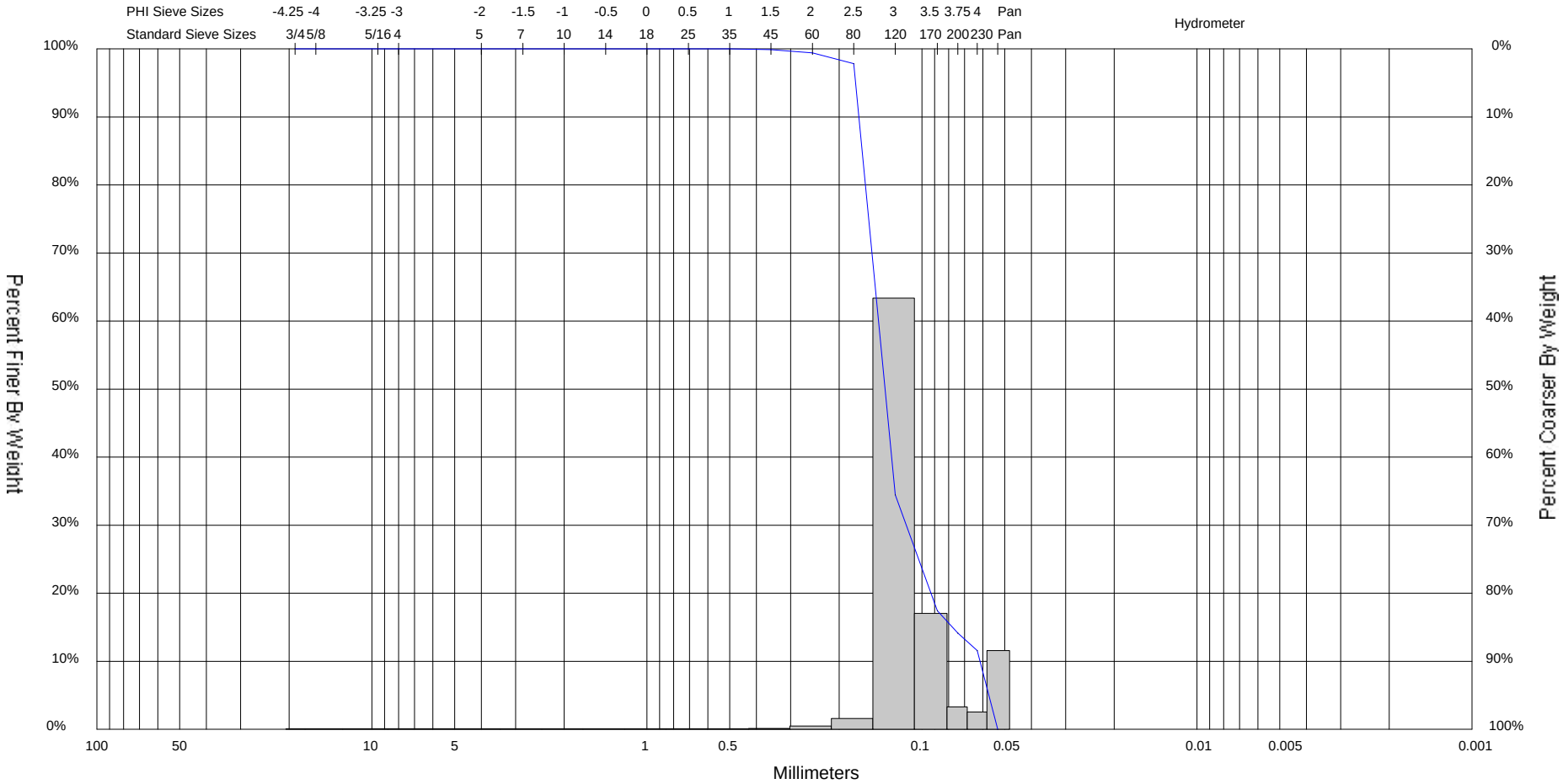

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-01 S#5		-45.9		SM	11.59	0.14	0.12	0.65	1.83	0.60
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855885
Northing (Y):	230769
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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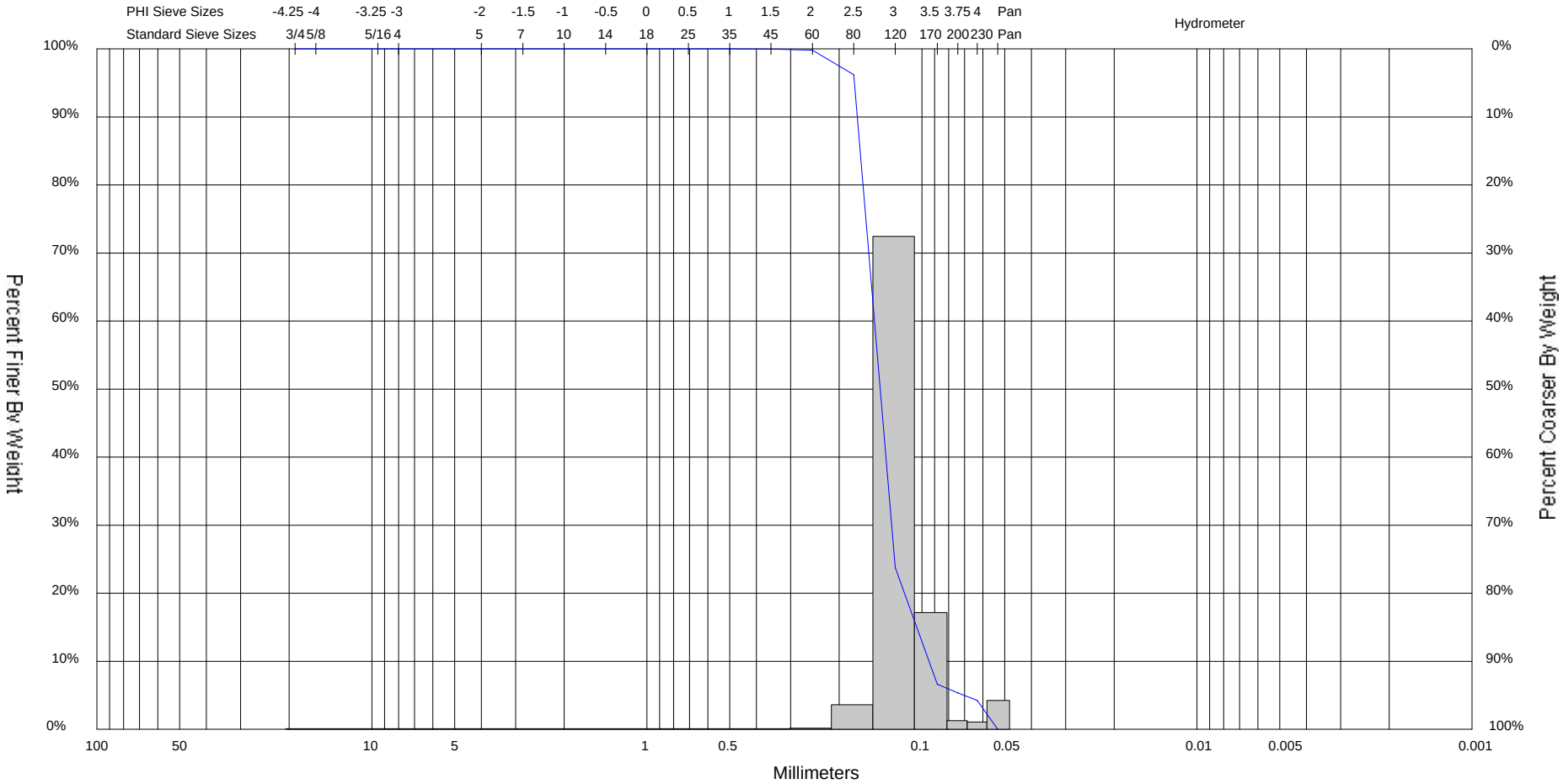

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-01A S#6		-46.2		SW-SM	4.26	0.14	0.13	0.94	2.46	0.46
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855885
Northing (Y):	230769
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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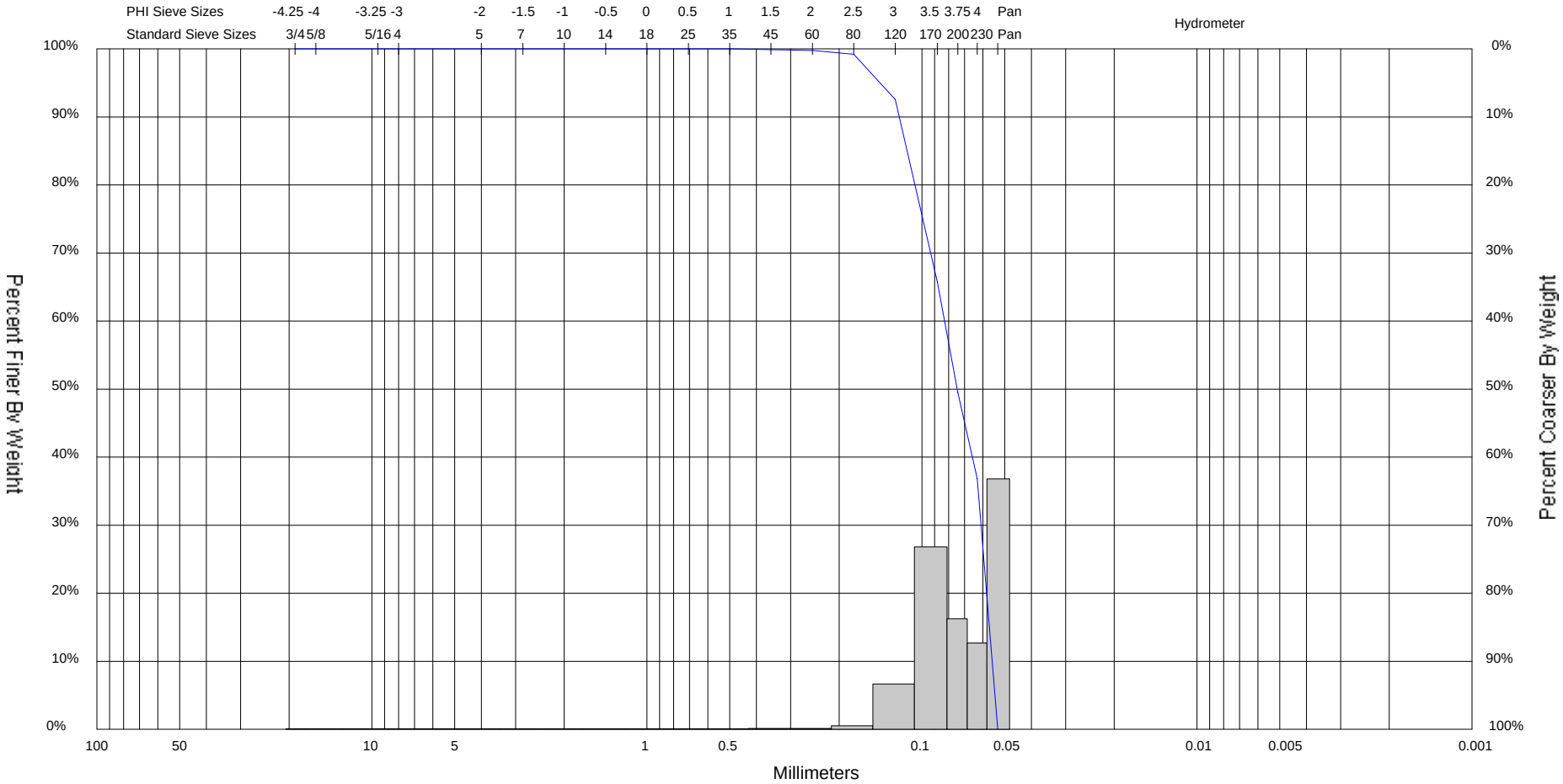

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-01A S#8		-50.3		SM	36.81	0.07	0.08	-0.30	1.37	0.55
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855885
Northing (Y):	230769
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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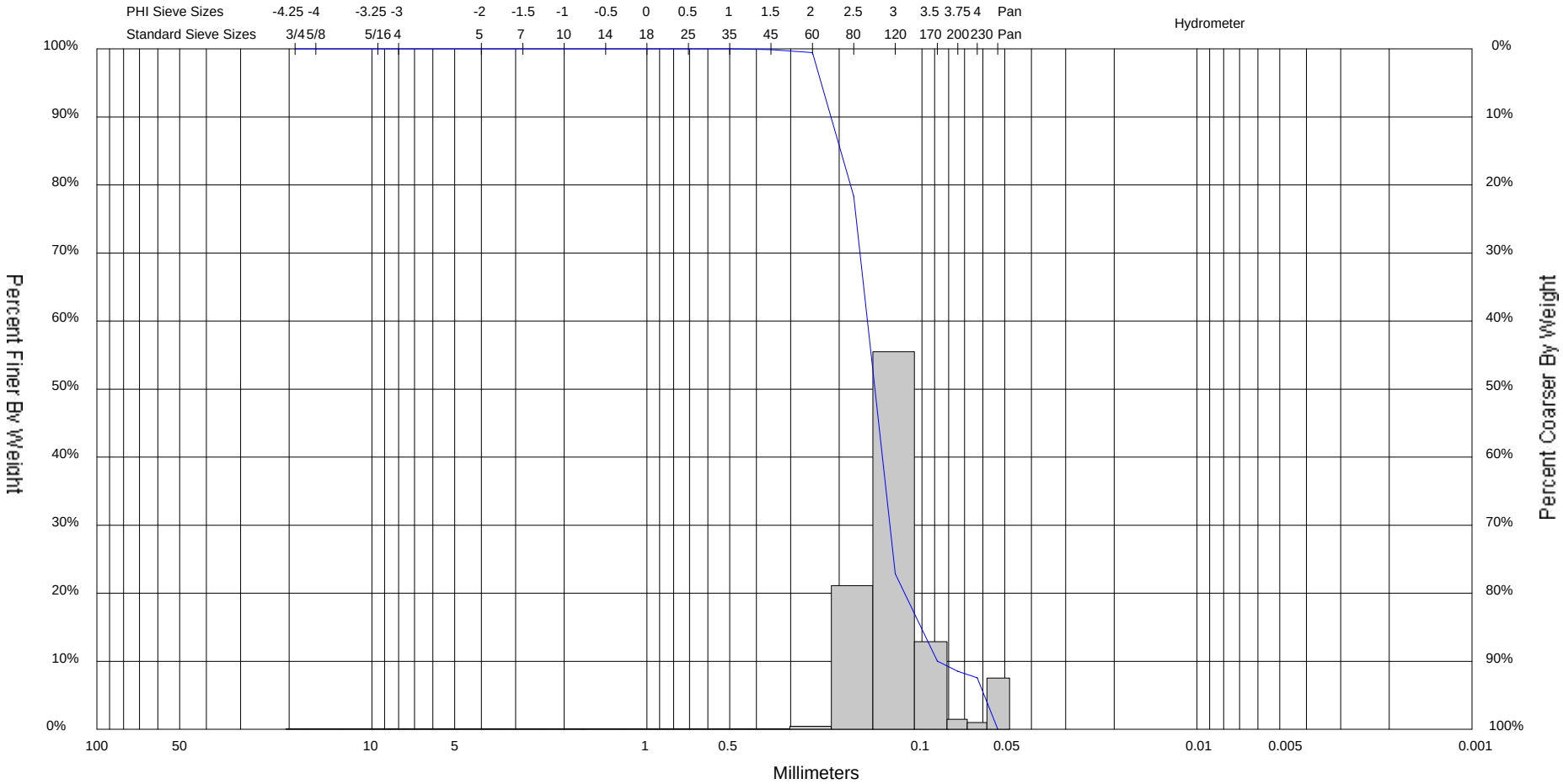

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-01A S#9		-52.2		SW-SM	7.55	0.15	0.14	0.72	2.30	0.66
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855885
Northing (Y):	230769
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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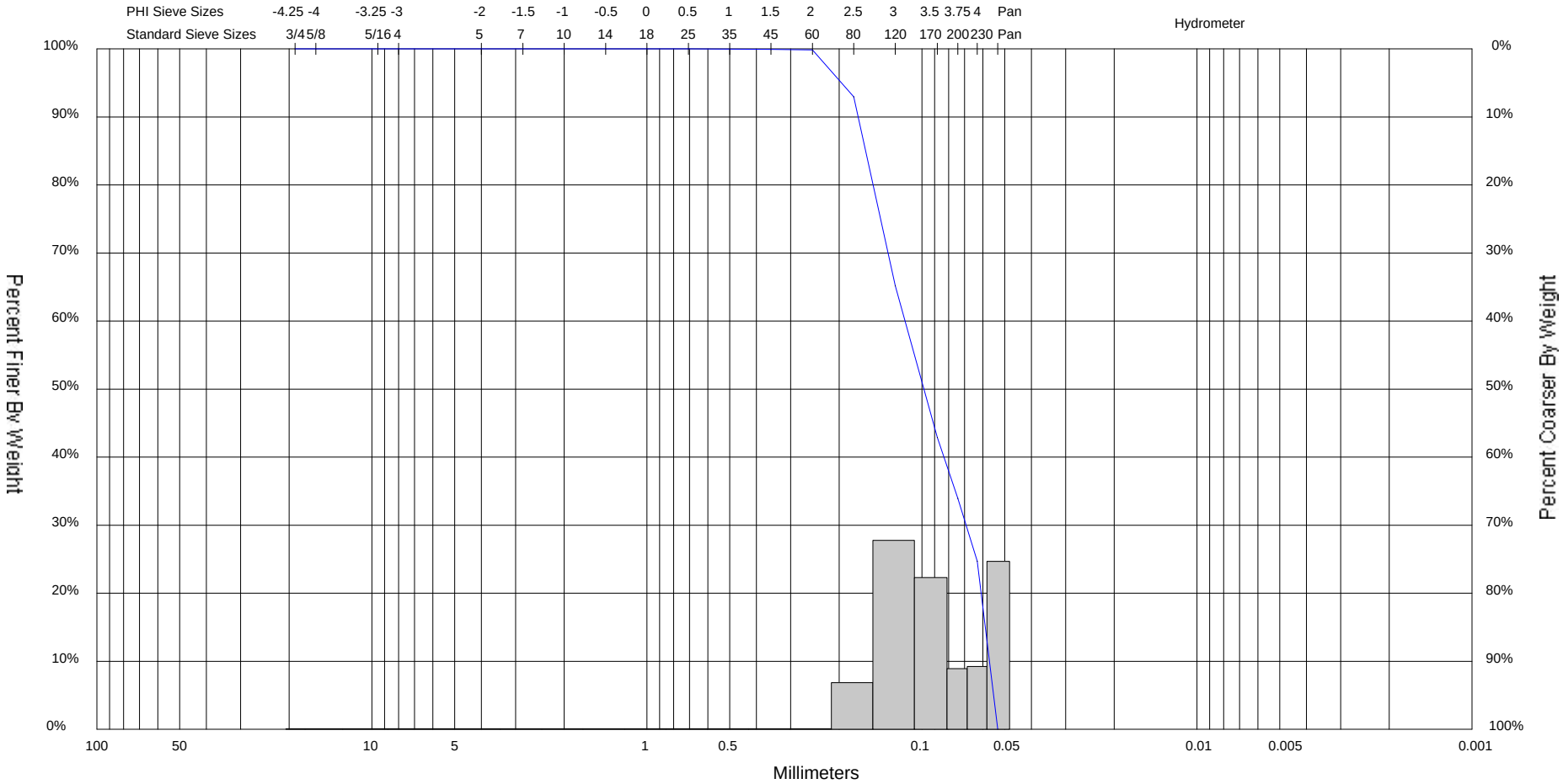

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-02 S#1		-37.5		SM	24.72	0.10	0.10	-0.08	1.17	0.76
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855275
Northing (Y):	230980
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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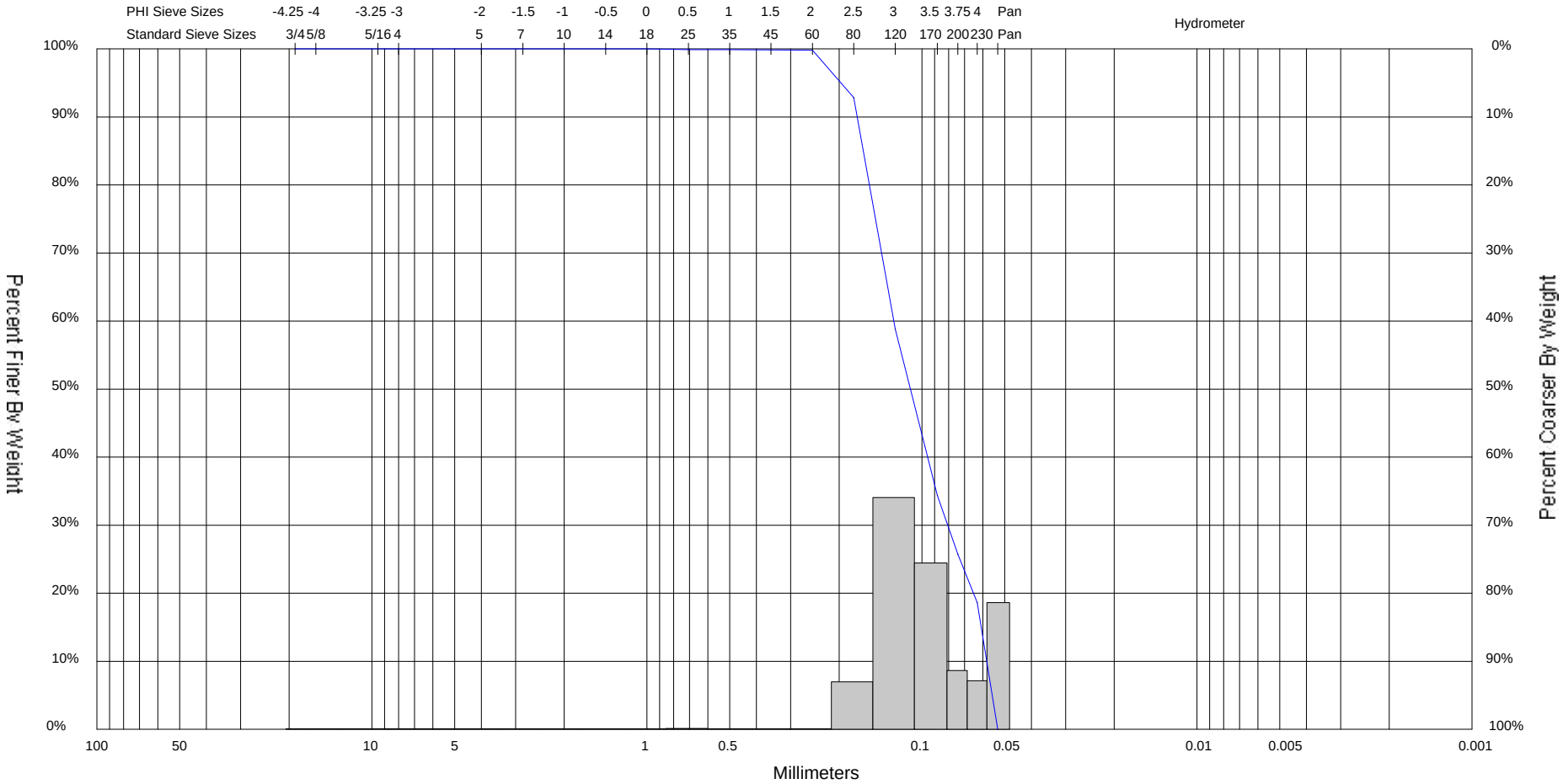

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-02 S#2		-39		SM	18.63	0.11	0.10	0.05	1.21	0.73
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/12/03
Analyzed By:	ID
Easting (X):	3855275
Northing (Y):	230980
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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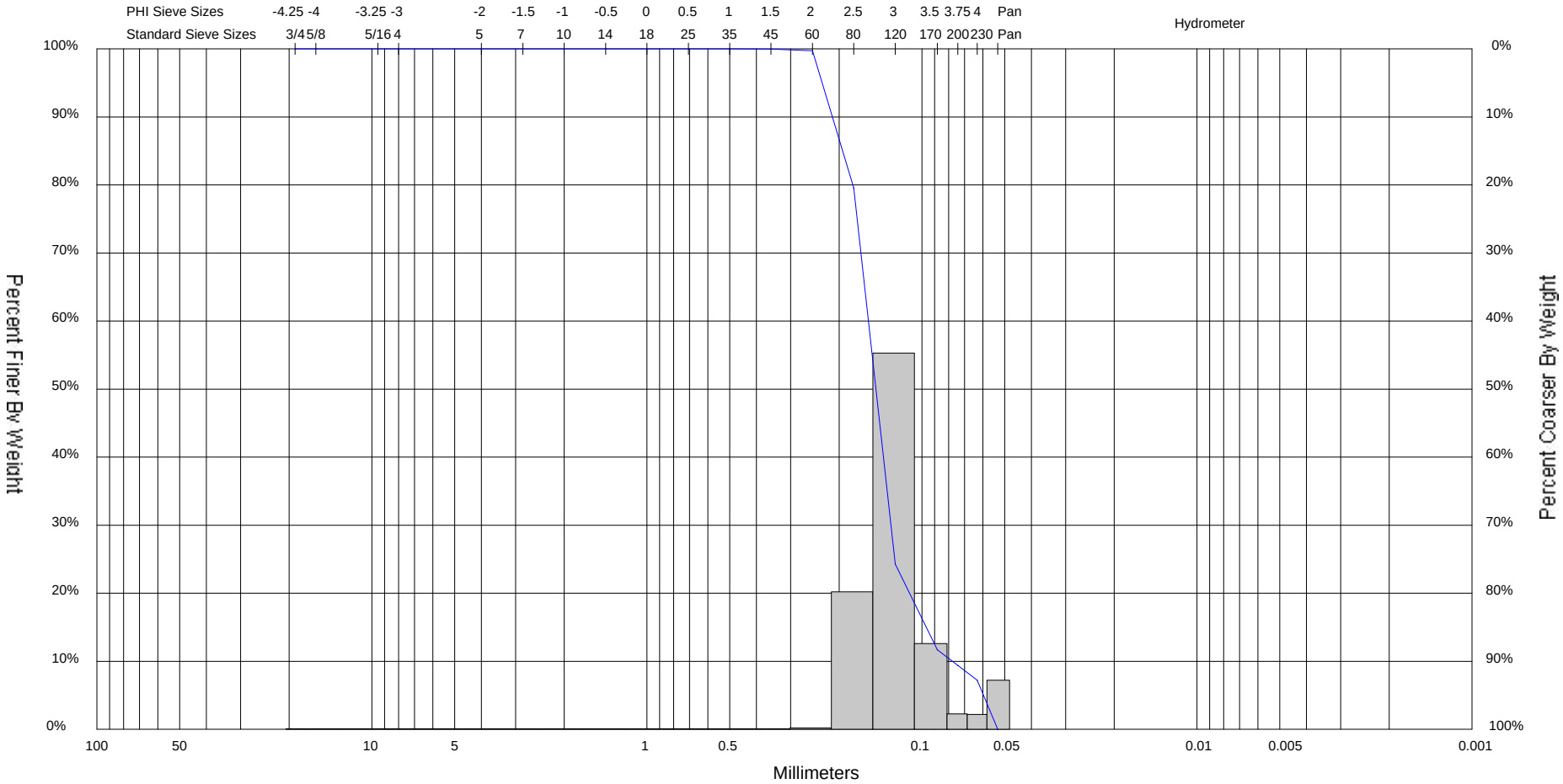

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-02 S#3		-41.3		SW-SM	7.22	0.15	0.14	0.67	2.20	0.66
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/12/03
Analyzed By:	ID
Easting (X):	3855275
Northing (Y):	230980
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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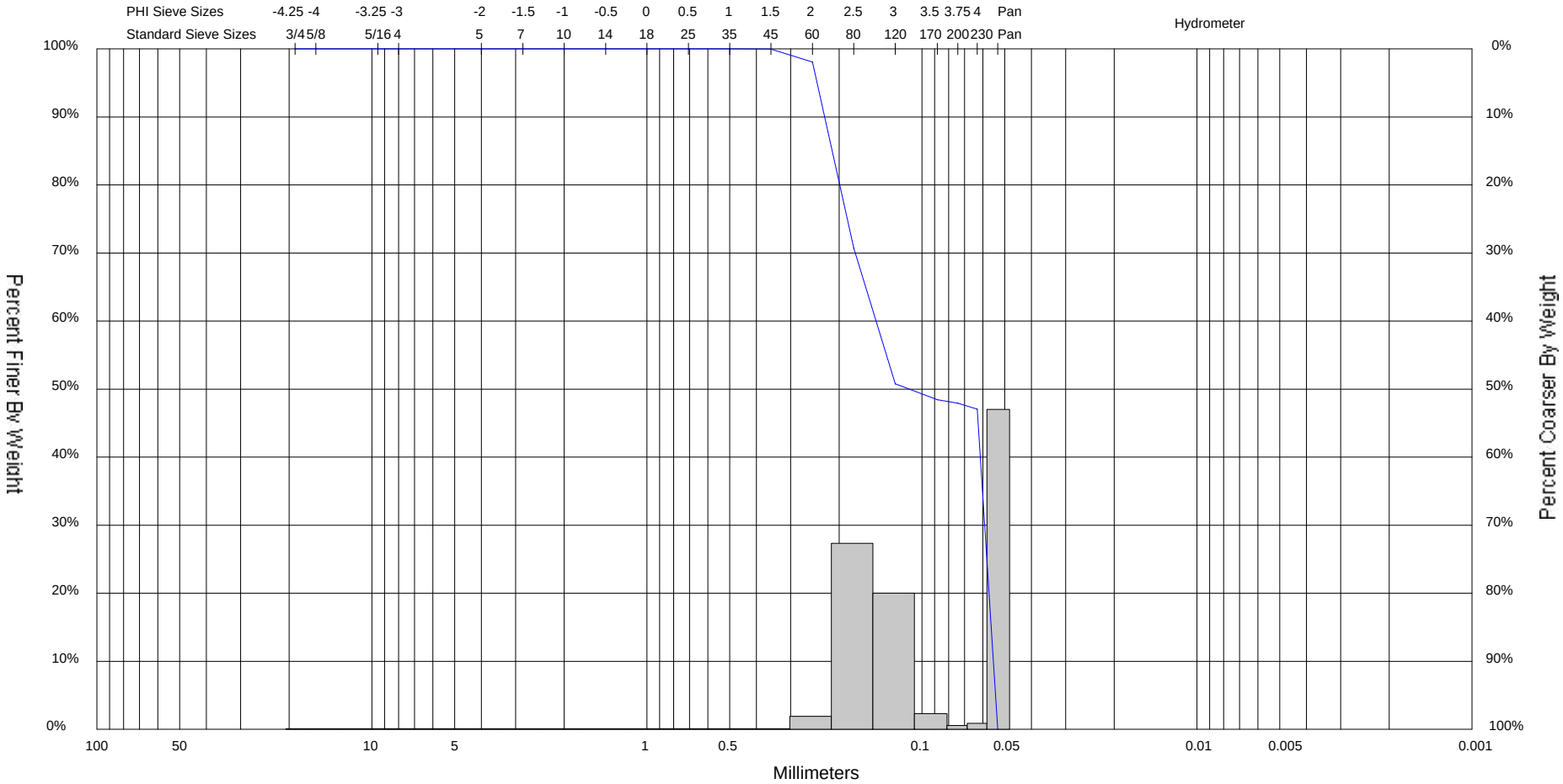

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-02 S#6		-47.4		SM	47.04	0.11	0.11	-0.01	1.05	0.97
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/12/03
Analyzed By:	ID
Easting (X):	3855275
Northing (Y):	230980
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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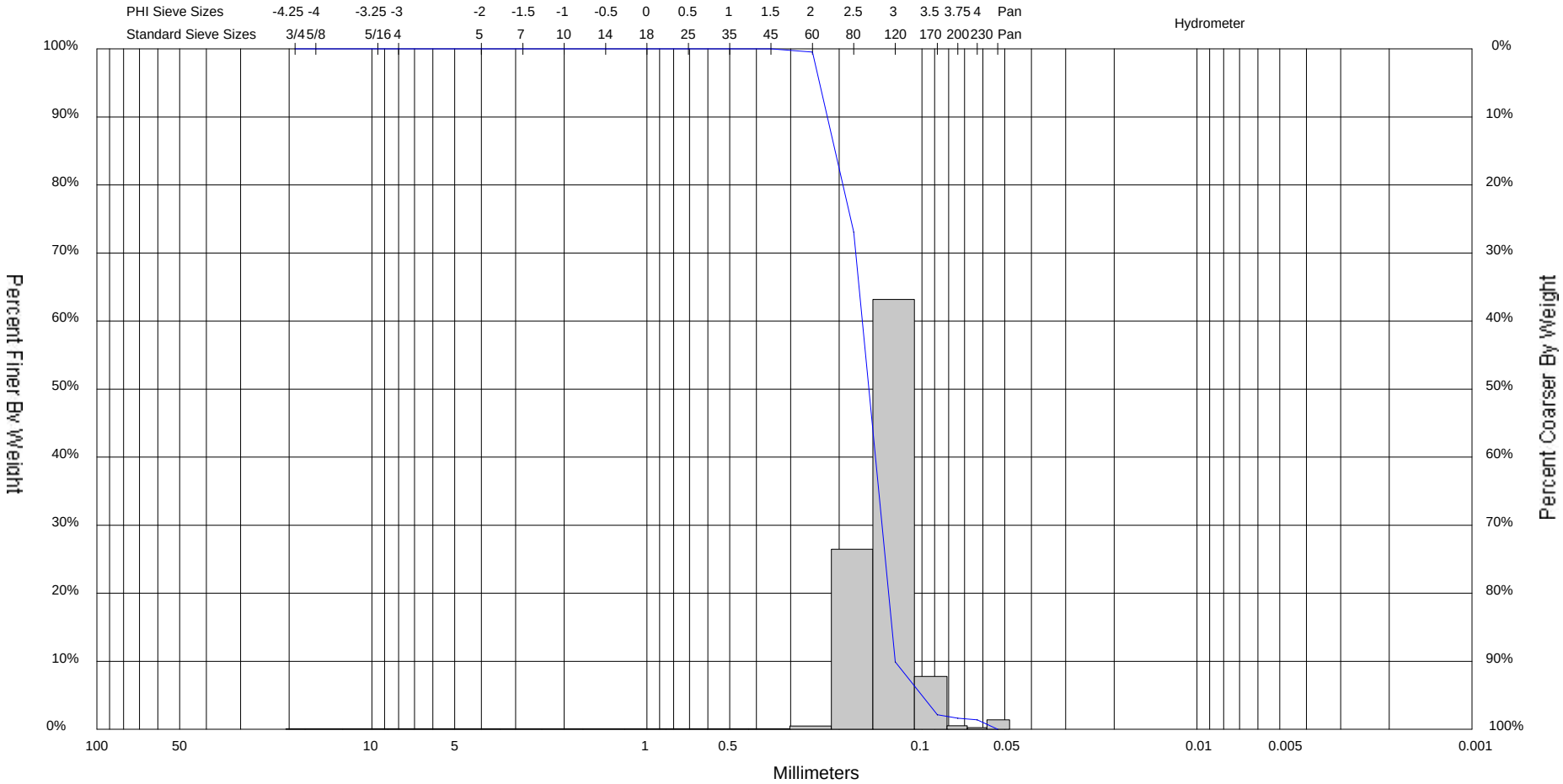

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-02 S#7		-51.5		SP	1.39	0.16	0.16	0.11	1.69	0.42
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855275
Northing (Y):	230980
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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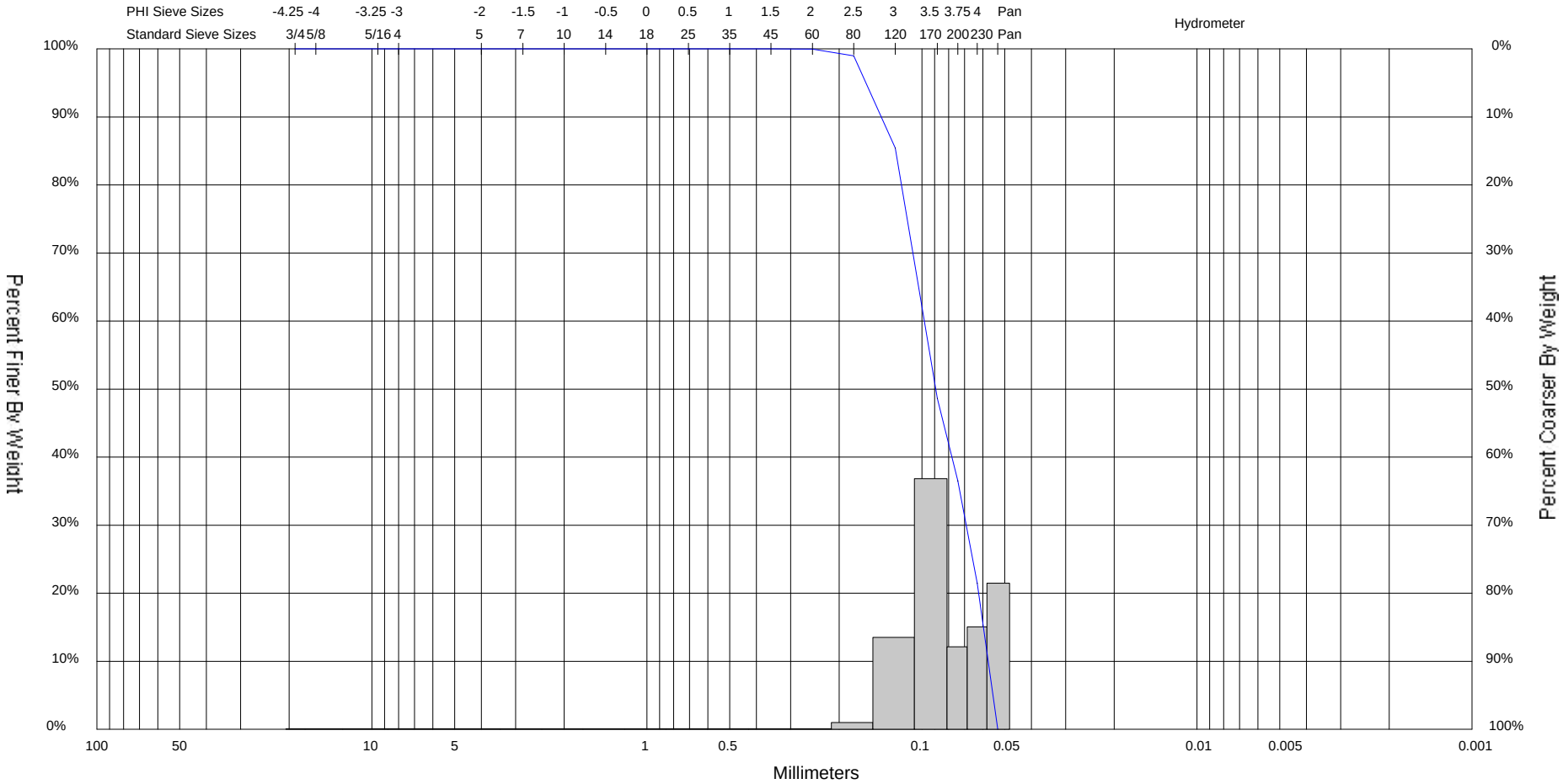

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-03 S#2		-39.6		SM	21.48	0.09	0.09	-0.14	1.34	0.59
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855493
Northing (Y):	232415
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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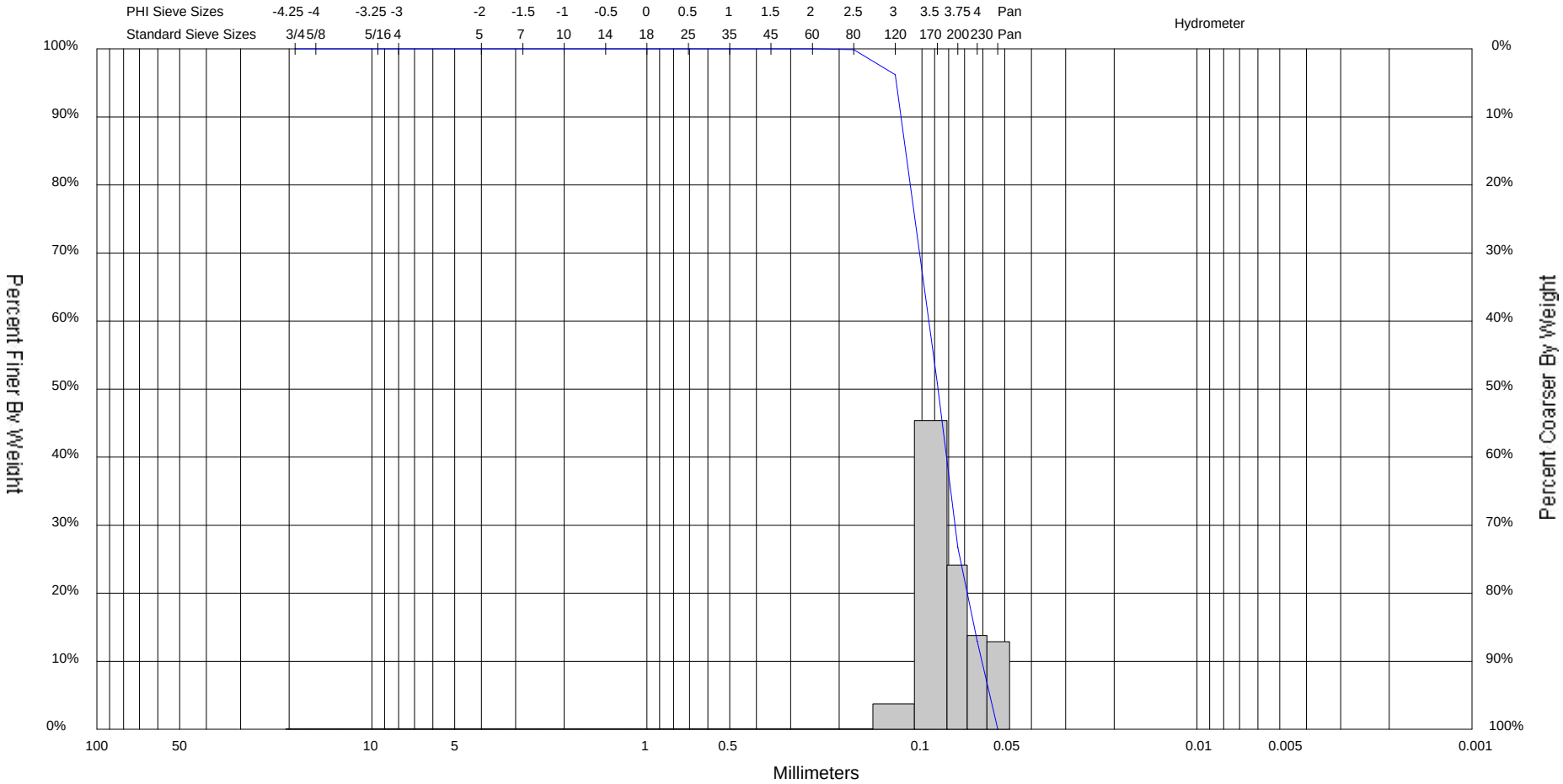

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-03 S#3		-45.1		SM	12.93	0.09	0.09	0.15	1.33	0.43
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855493
Northing (Y):	232415
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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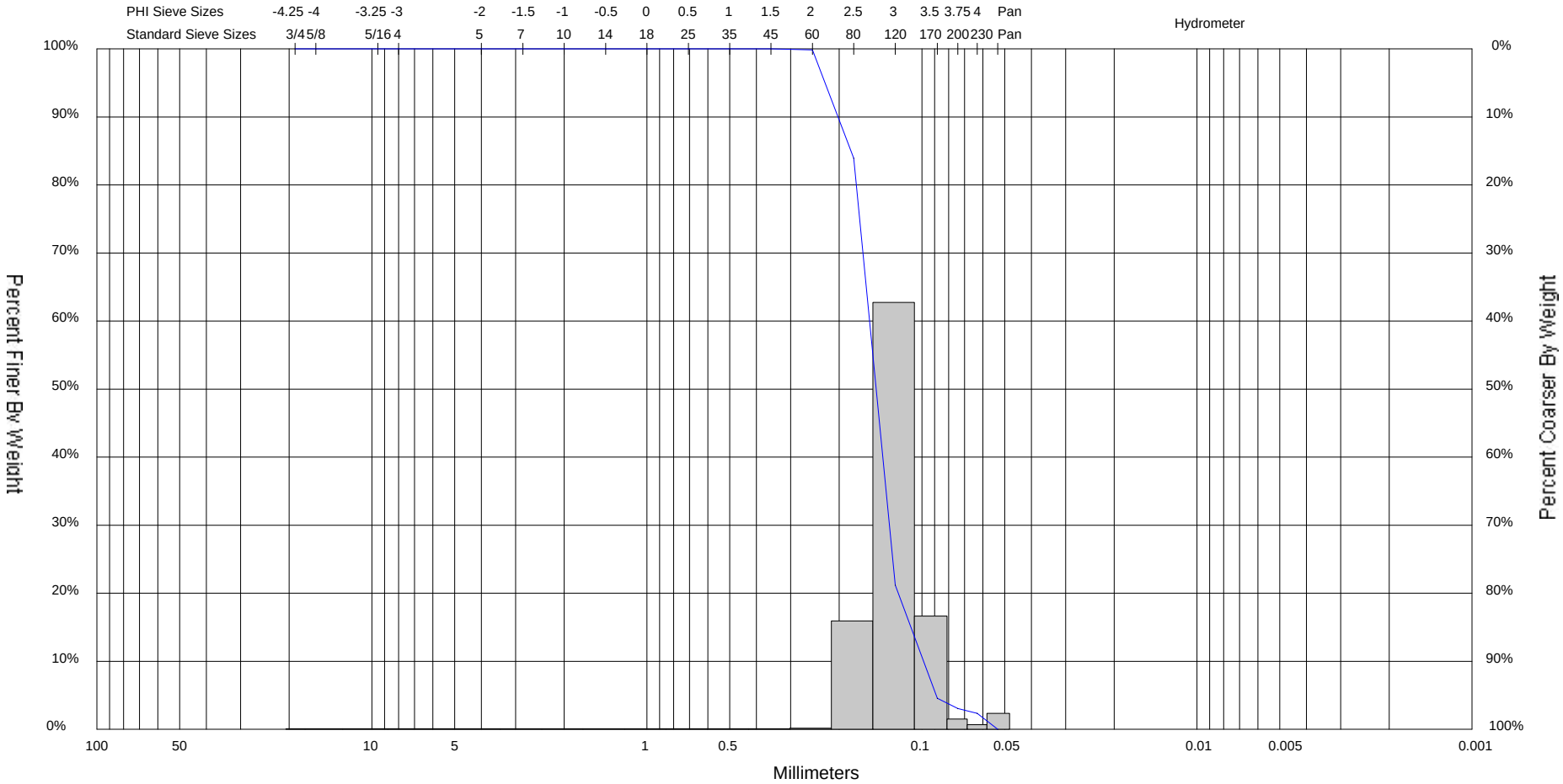

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-03 S#4		-49.8		SP	2.34	0.15	0.14	0.11	1.80	0.45
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855493
Northing (Y):	232415
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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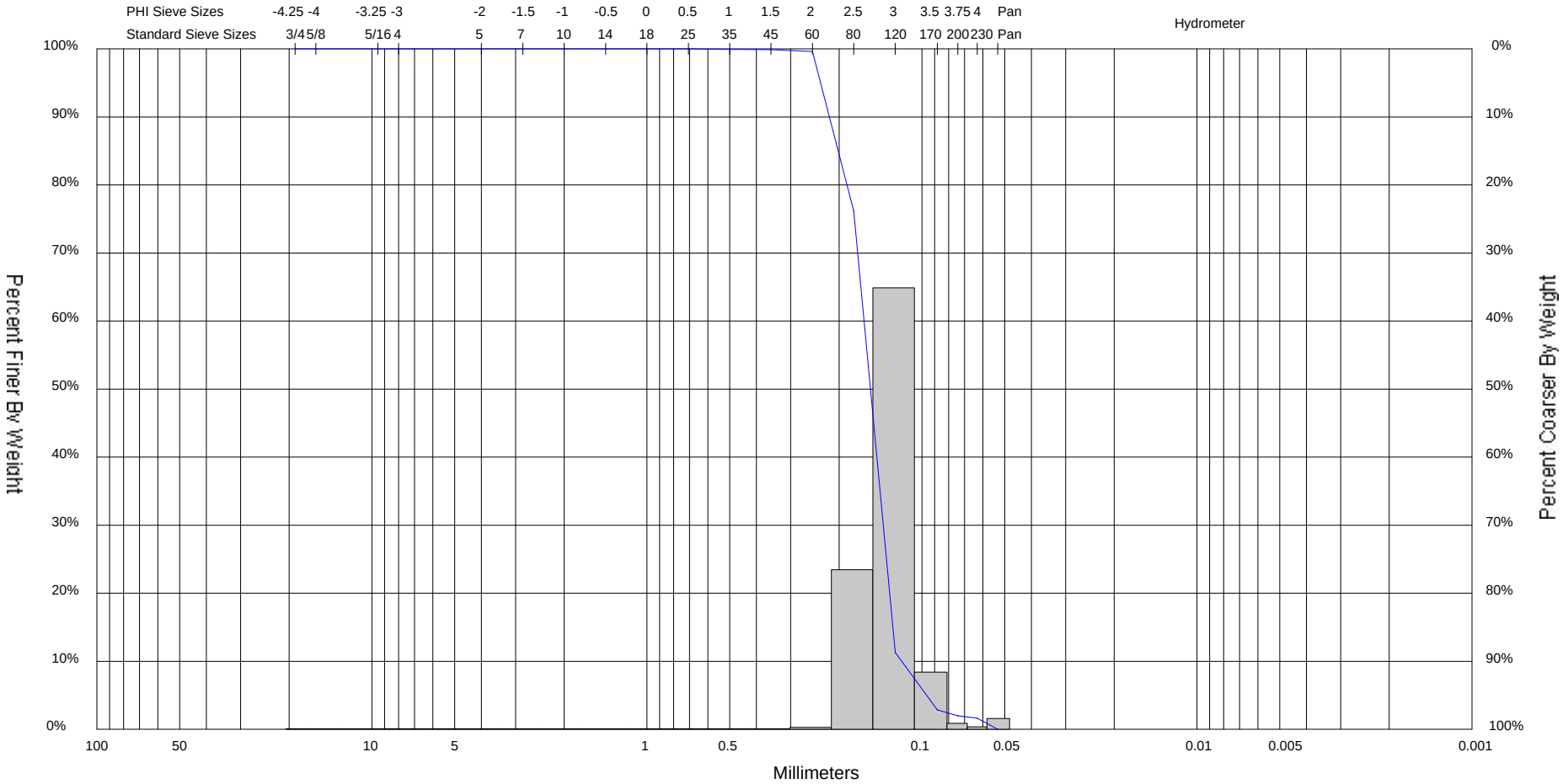

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-03 S#5		-53.4		SP	1.61	0.15	0.15	0.15	1.82	0.43
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855493
Northing (Y):	232415
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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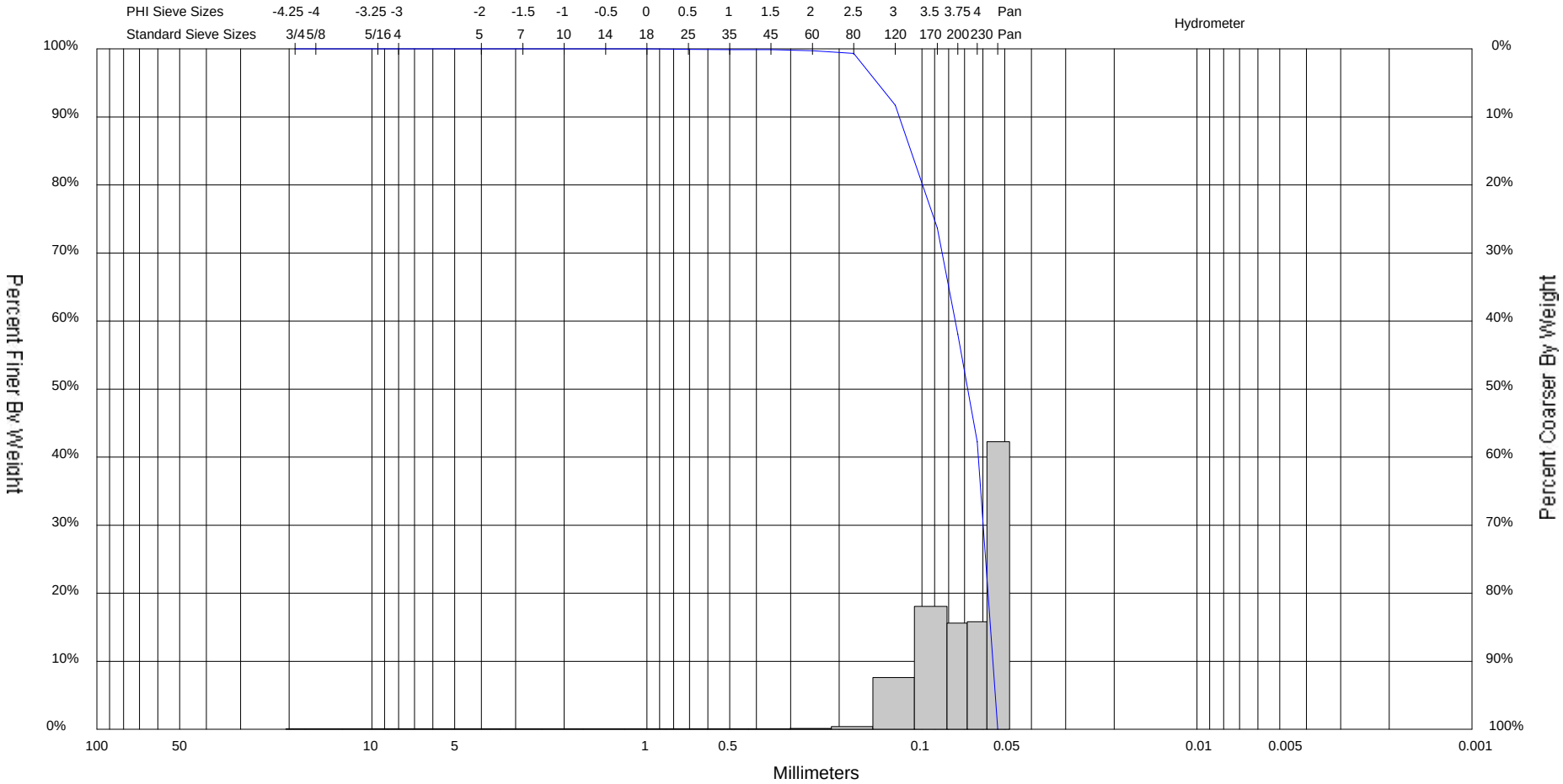

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-03 S#6		-42.6		ML	42.27	0.07	0.08	-0.53	1.62	0.55
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855493
Northing (Y):	232415
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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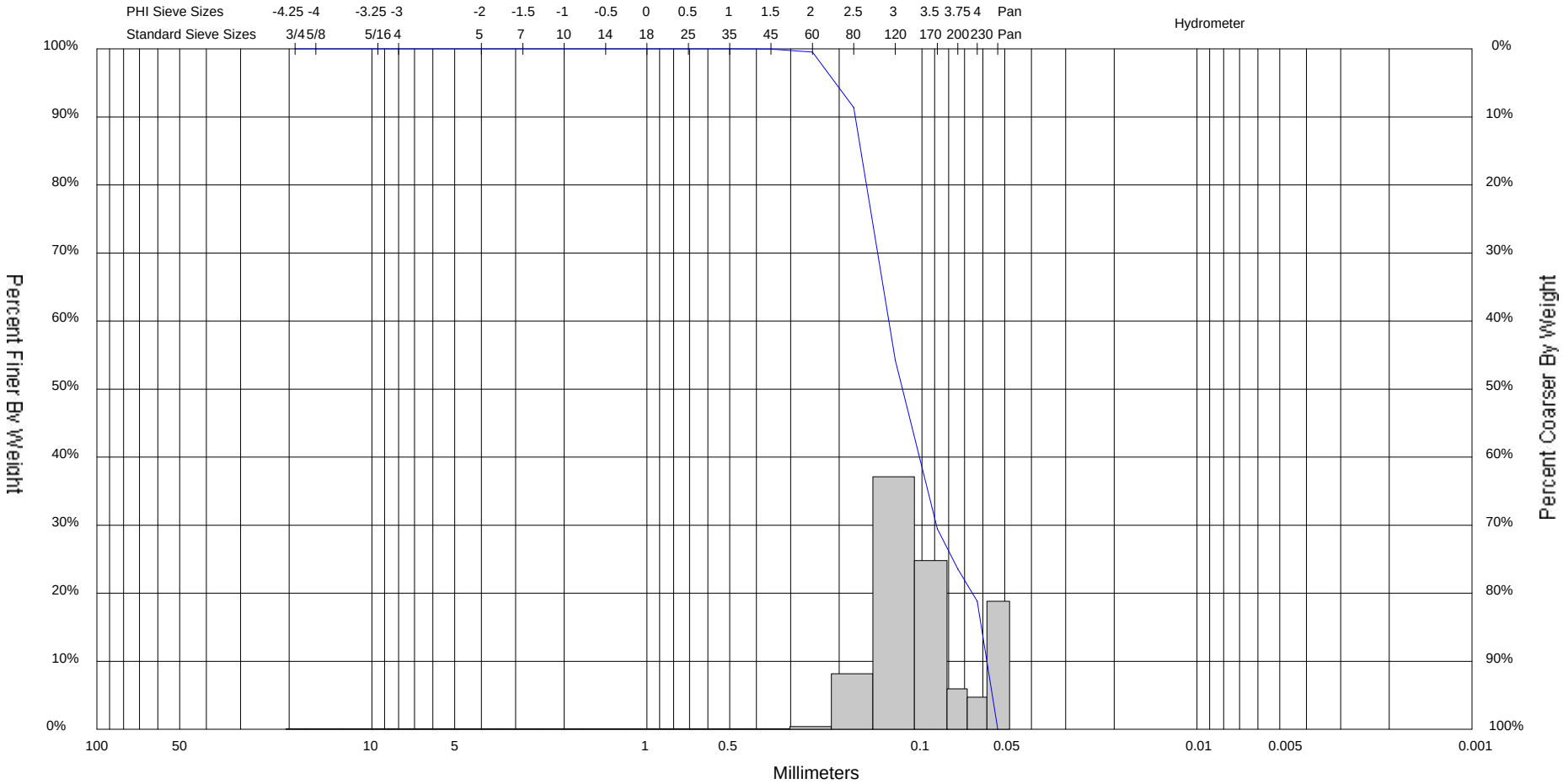

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-04 S#2		-36.9		SM	18.83	0.12	0.11	0.11	1.25	0.75
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3860308
Northing (Y):	228670
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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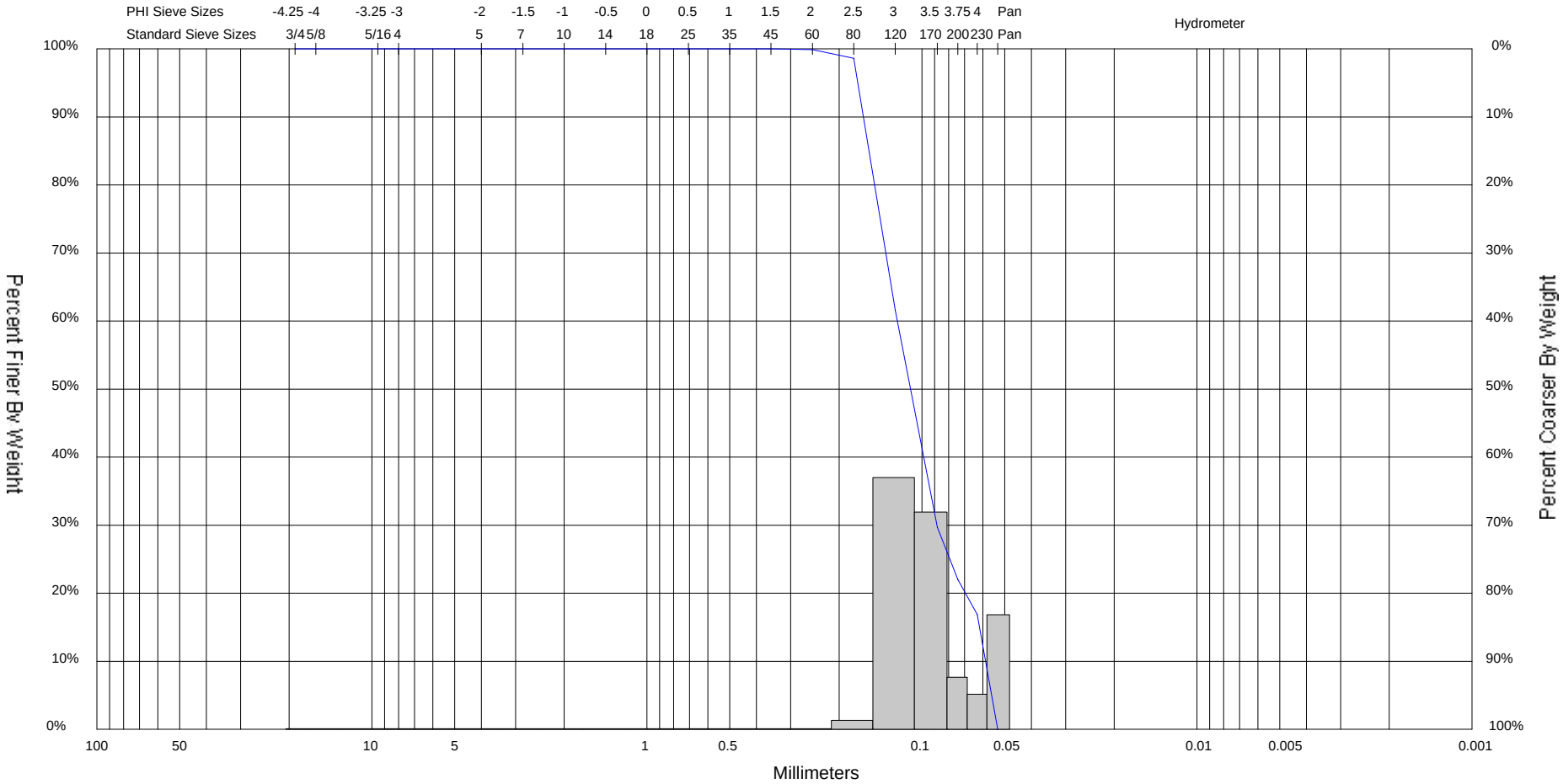

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-04 S#3		-40.3		SM	16.86	0.11	0.10	0.20	1.24	0.65
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3860308
Northing (Y):	228670
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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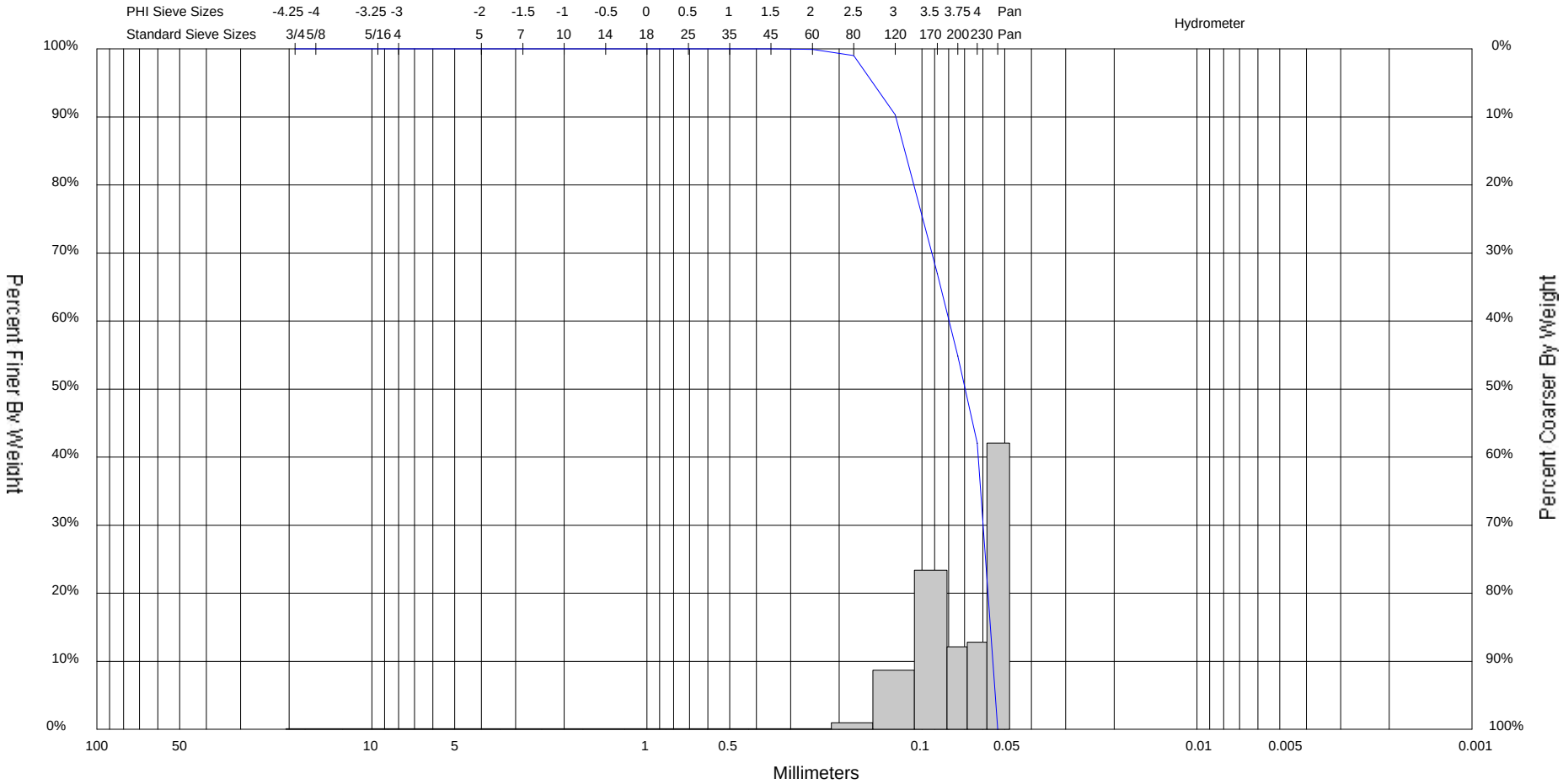

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-04 S#4		-43.7		ML	42.07	0.07	0.08	-0.42	1.45	0.58
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3860308
Northing (Y):	228670
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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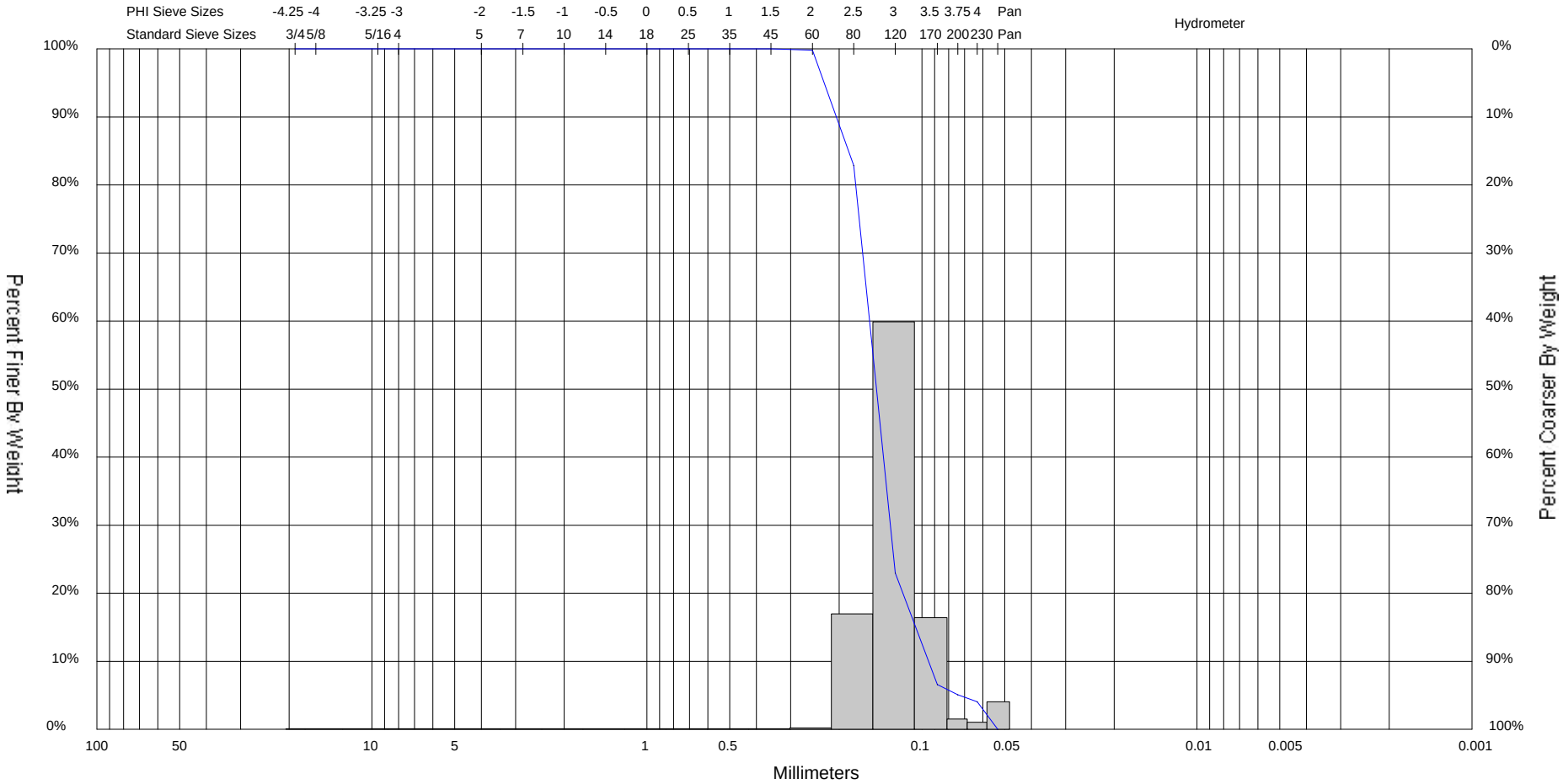

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-04 S#5		-45.7		SW-SM	4.04	0.15	0.14	0.45	2.05	0.54
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3860308
Northing (Y):	228670
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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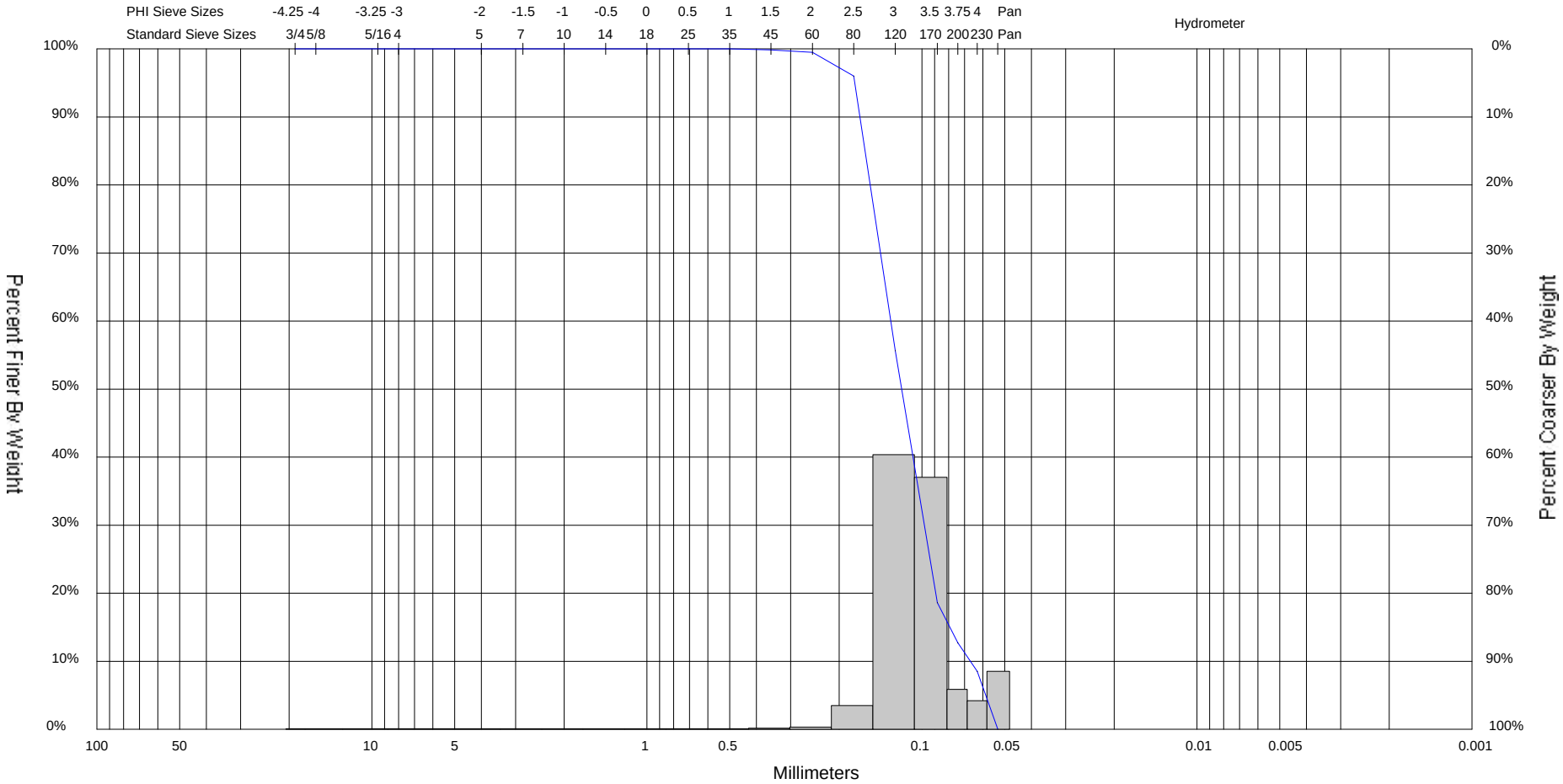

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-04 S#6		-50.3		SM	8.53	0.12	0.11	0.41	1.65	0.58
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3863029
Northing (Y):	223563
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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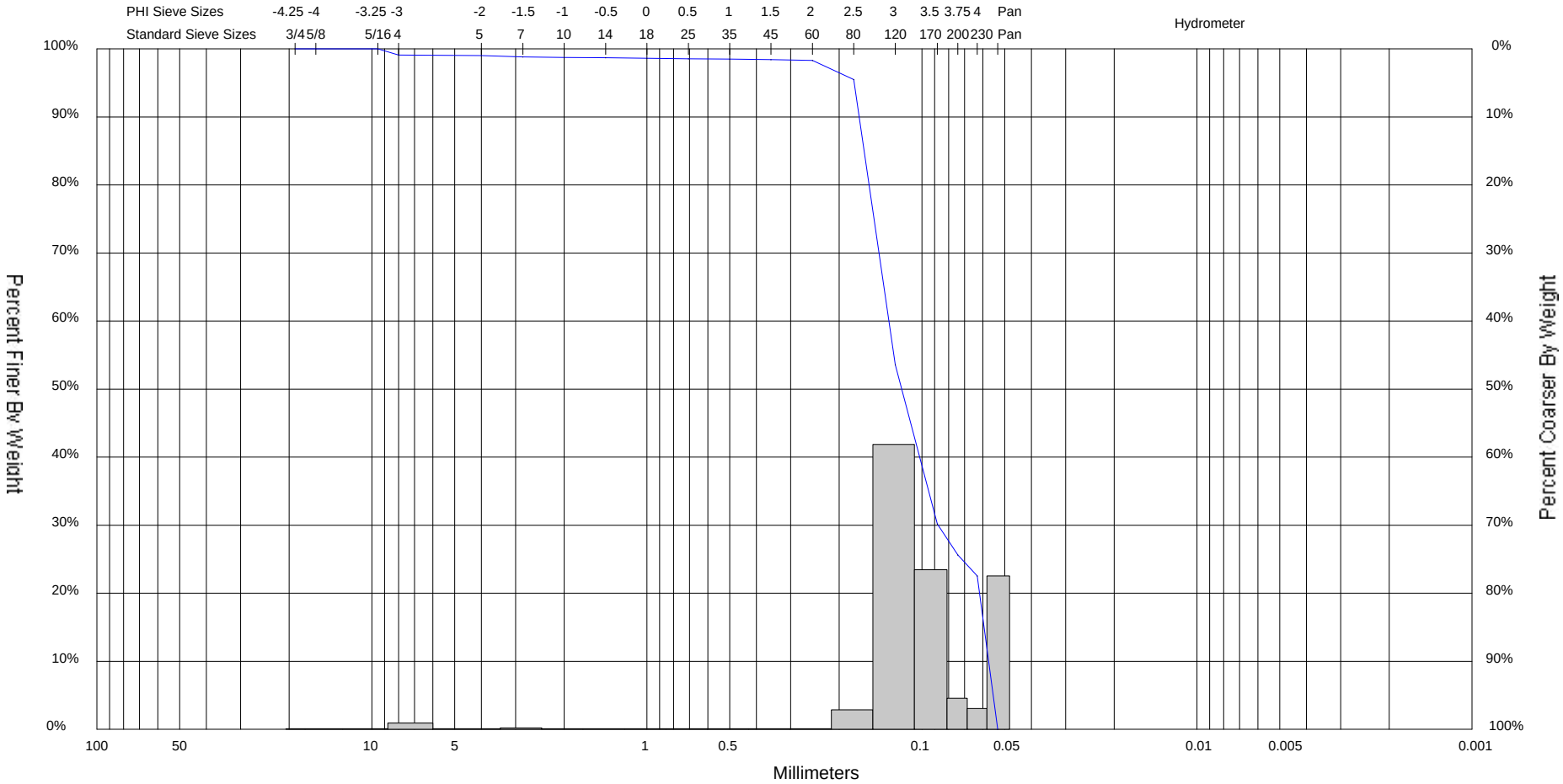

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-05 S#1		-36.4		SM	22.54	0.12	0.10	0.19	1.12	0.72
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3863175
Northing (Y):	222287
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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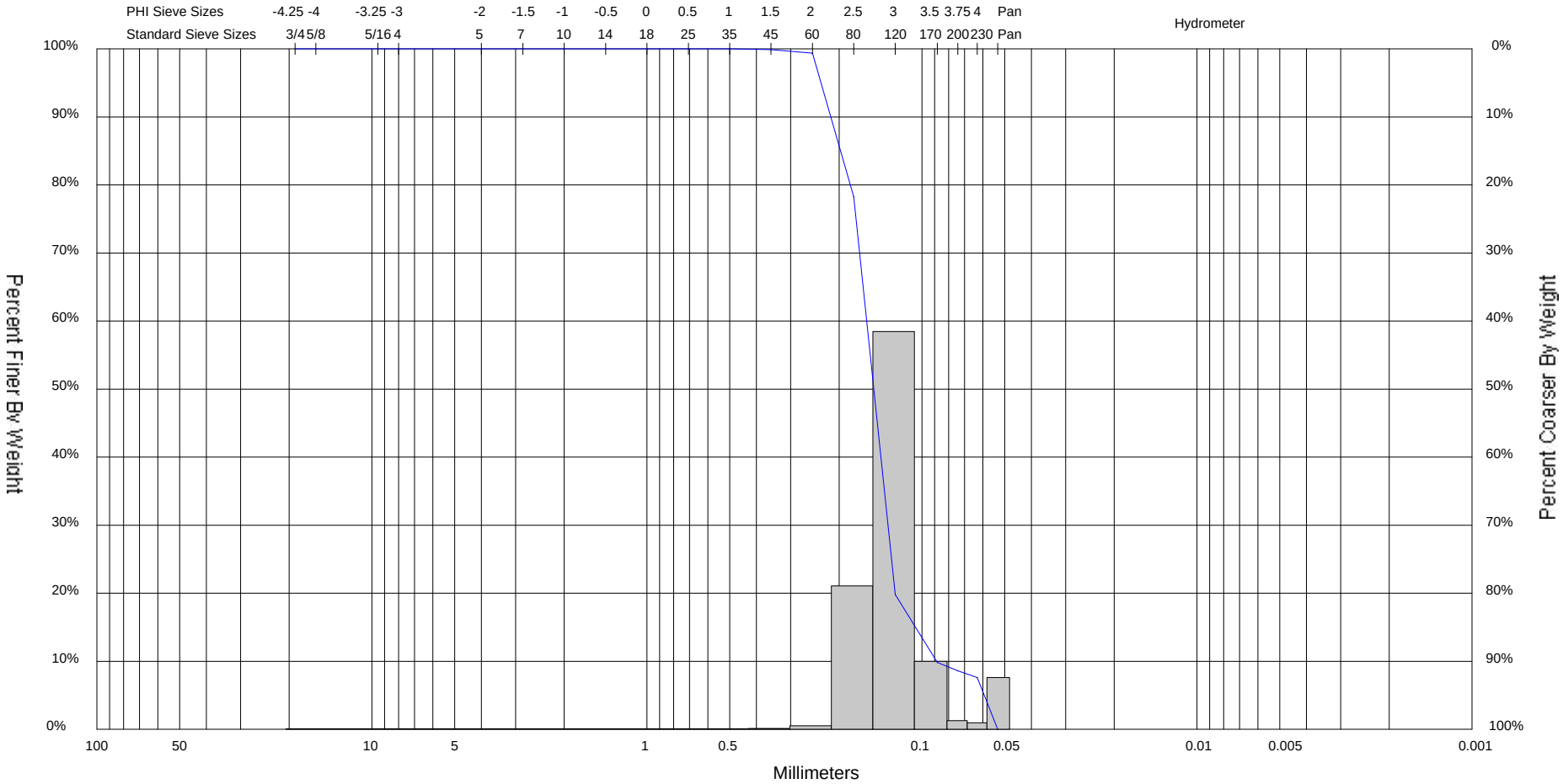

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-05 S#2		-40.4		SW-SM	7.63	0.15	0.14	0.80	2.47	0.65
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855275
Northing (Y):	230980
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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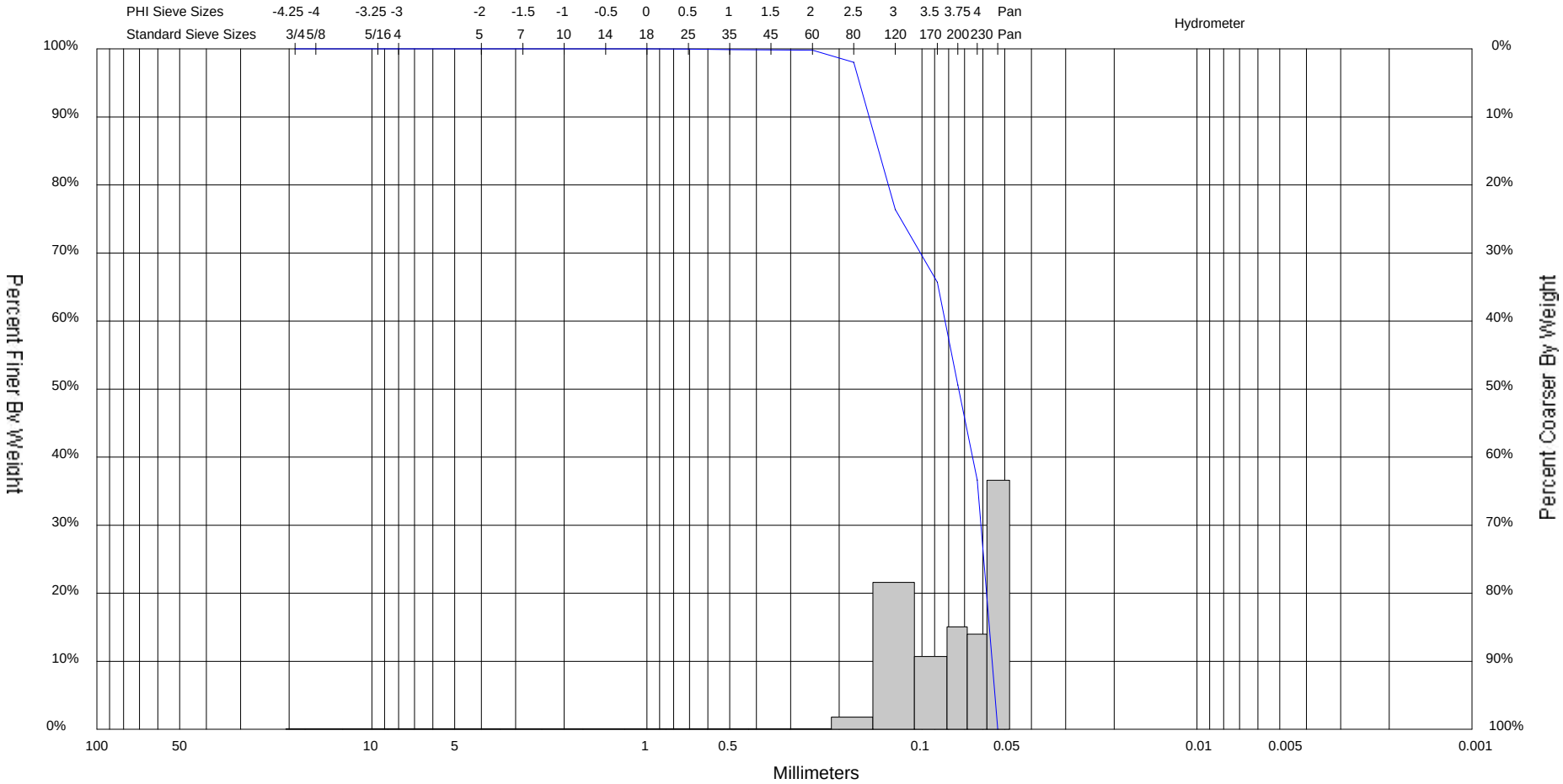

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-05 S#3		-45.5		ML	36.63	0.07	0.09	-0.28	1.18	0.69
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3863175
Northing (Y):	222287
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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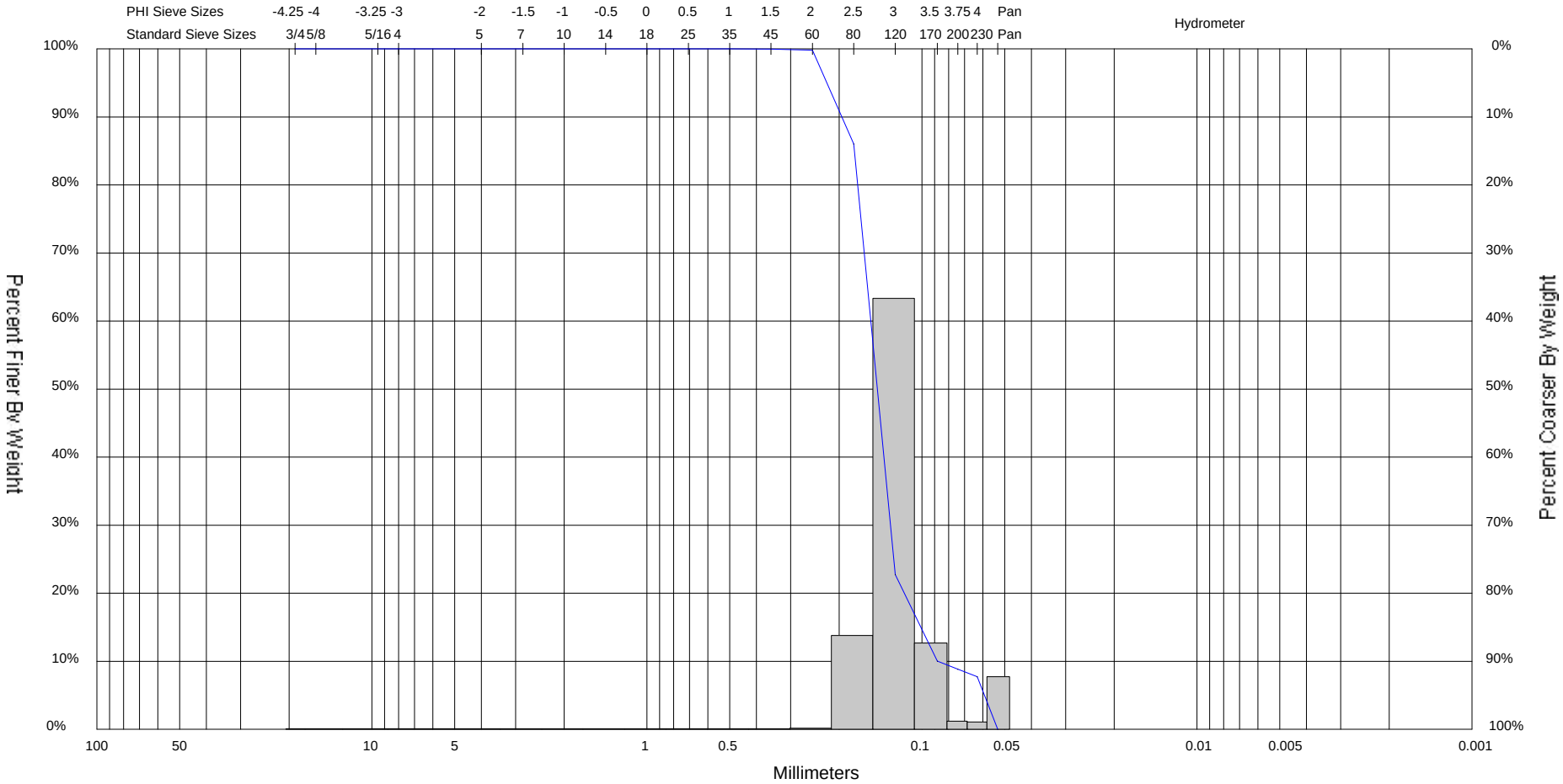

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-05 S#4		-46.3		SW-SM	7.74	0.15	0.13	0.80	2.48	0.62
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855275
Northing (Y):	230980
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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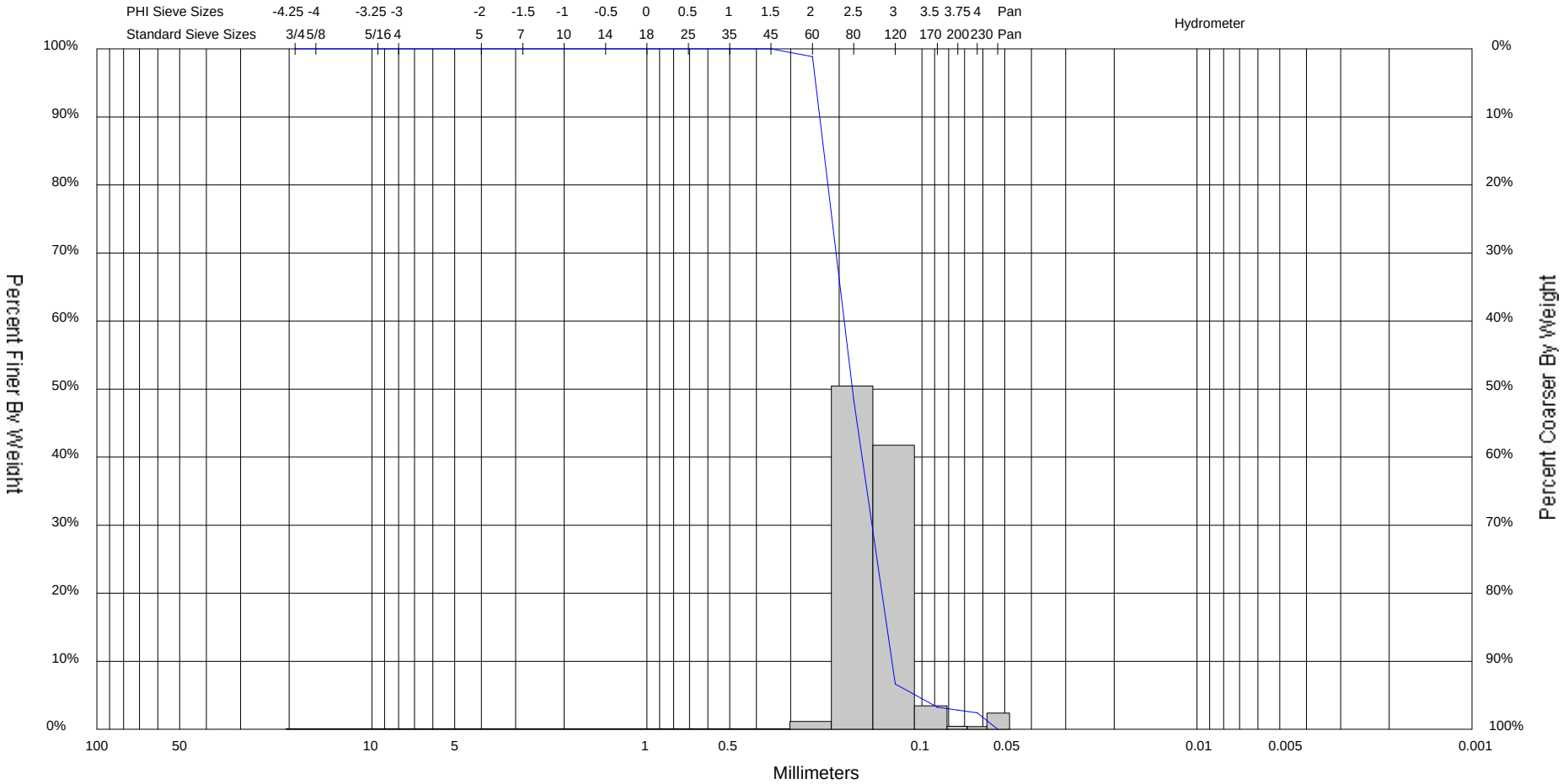

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-05 S#5		-50.2		SP	2.42	0.18	0.17	0.33	1.54	0.44
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855275
Northing (Y):	230980
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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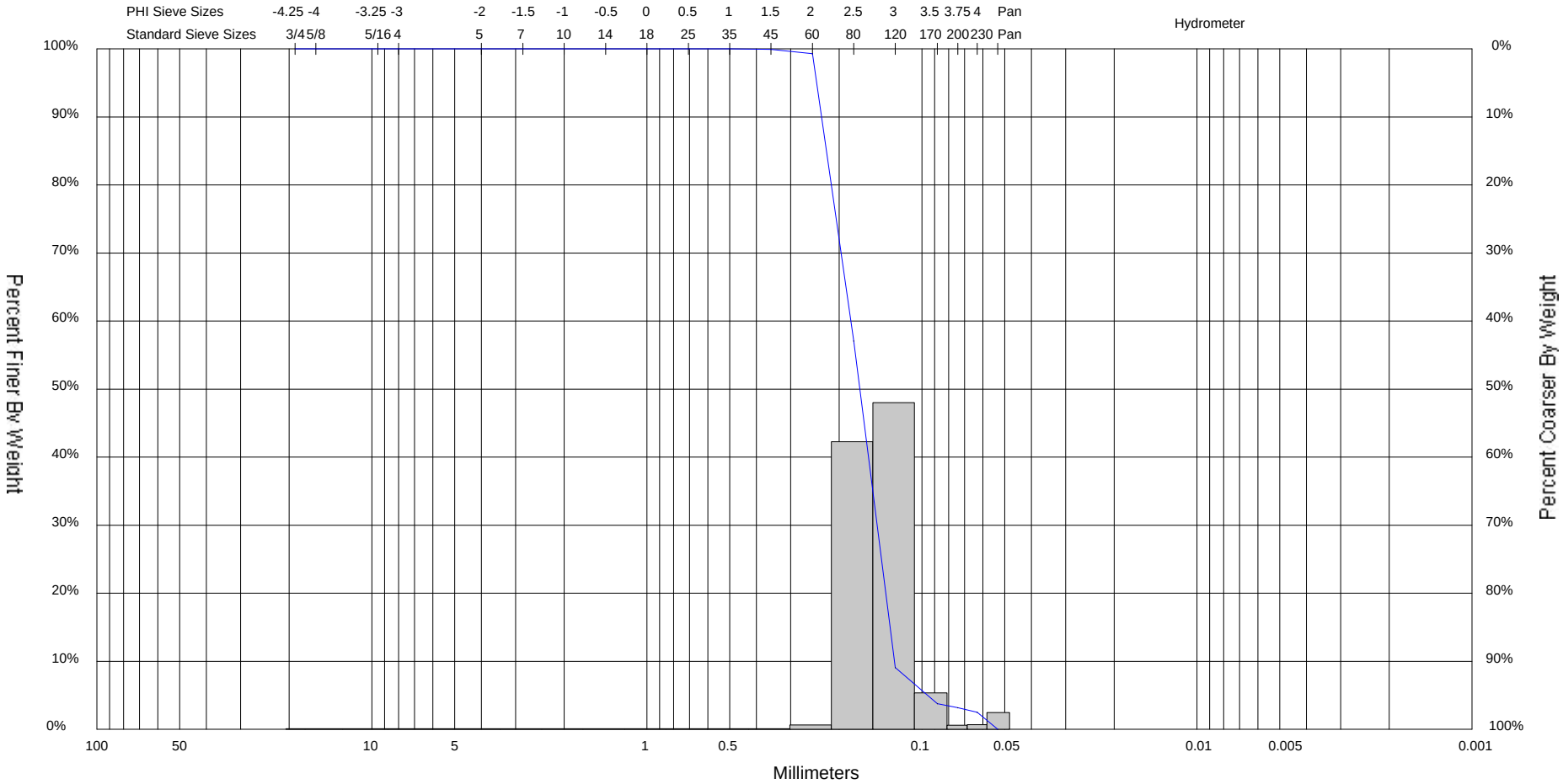

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-05A S#7		-50.9		SP	2.49	0.17	0.16	0.37	1.70	0.47
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3863171
Northing (Y):	222290
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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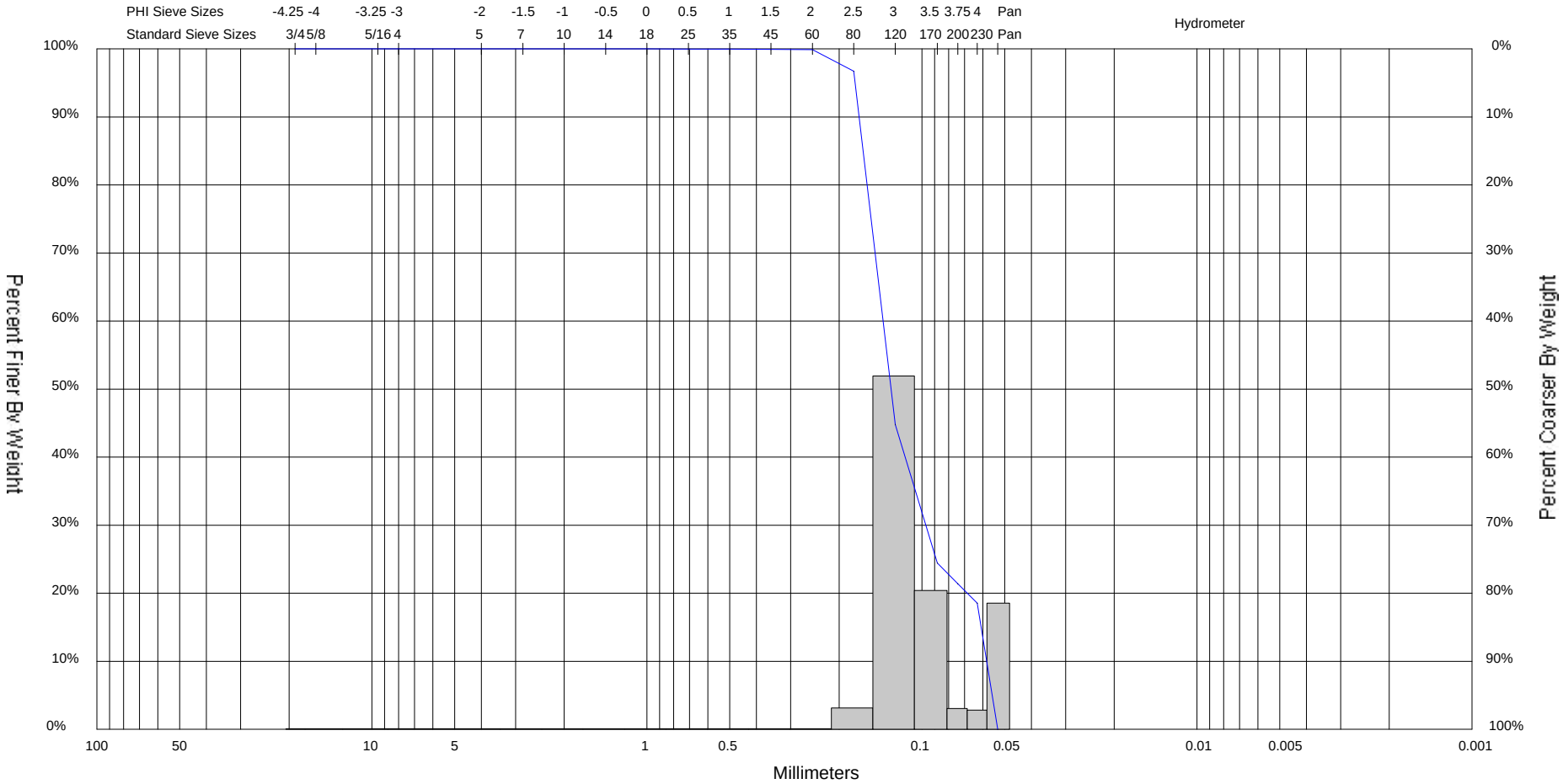

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-06 S#1		-45.9		SM	18.55	0.13	0.11	0.40	1.31	0.69
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3863029
Northing (Y):	223563
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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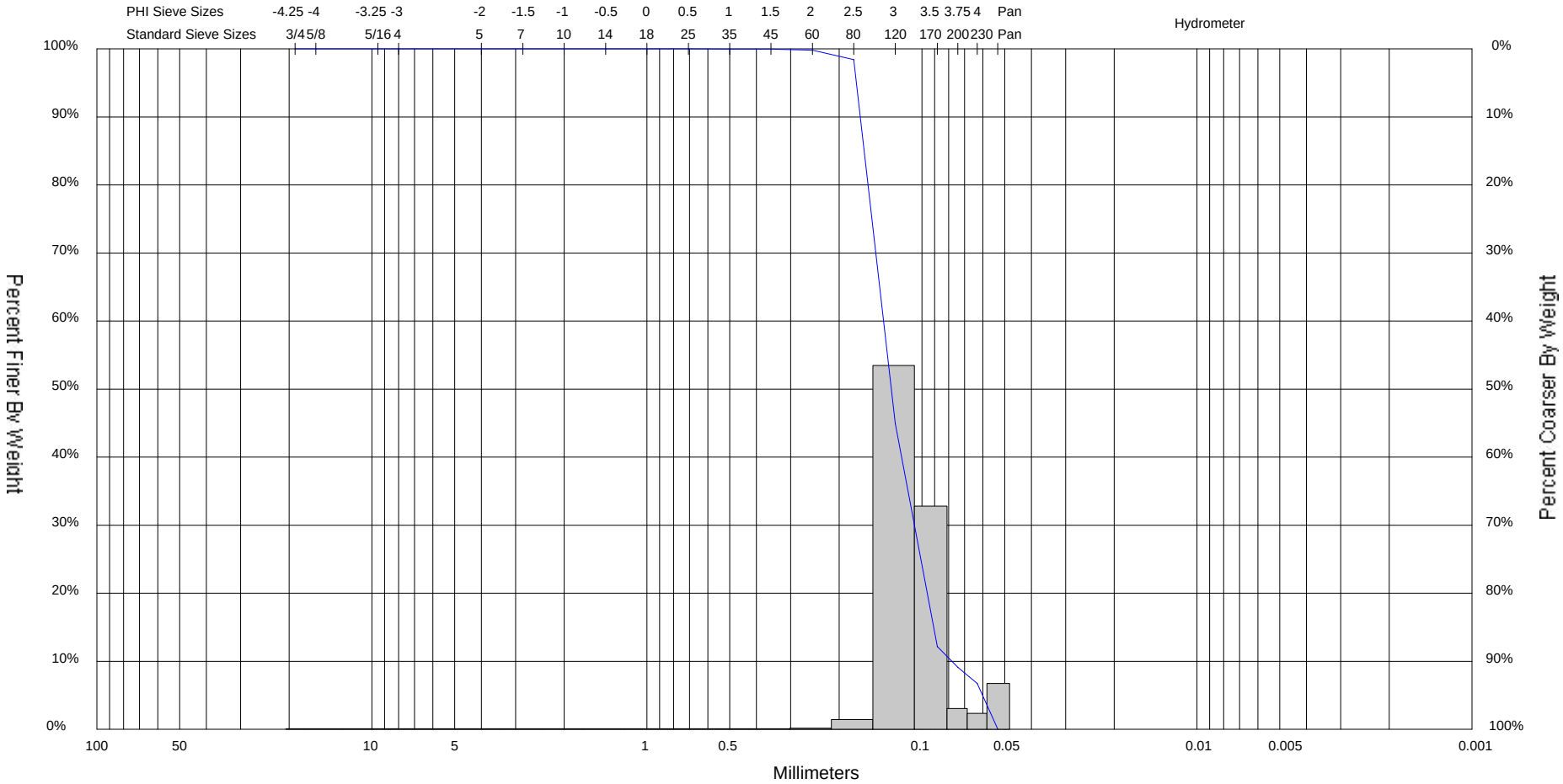

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-06 S#2		-37.9		SW-SM	6.75	0.13	0.12	0.66	2.00	0.55
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3863029
Northing (Y):	223563
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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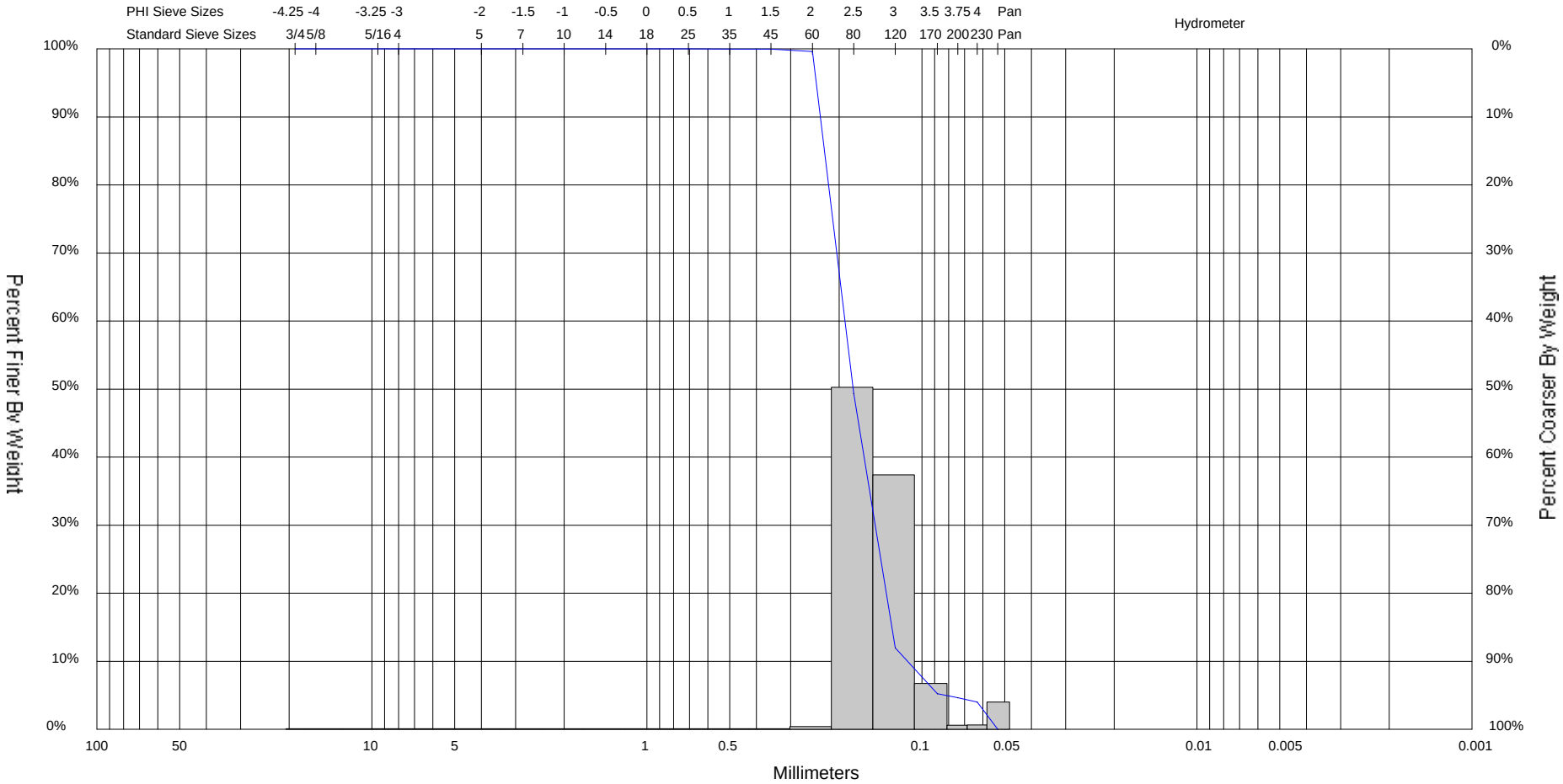

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-06 S#4		-41.9		SP	4.01	0.18	0.16	0.67	2.06	0.55
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3863029
Northing (Y):	223563
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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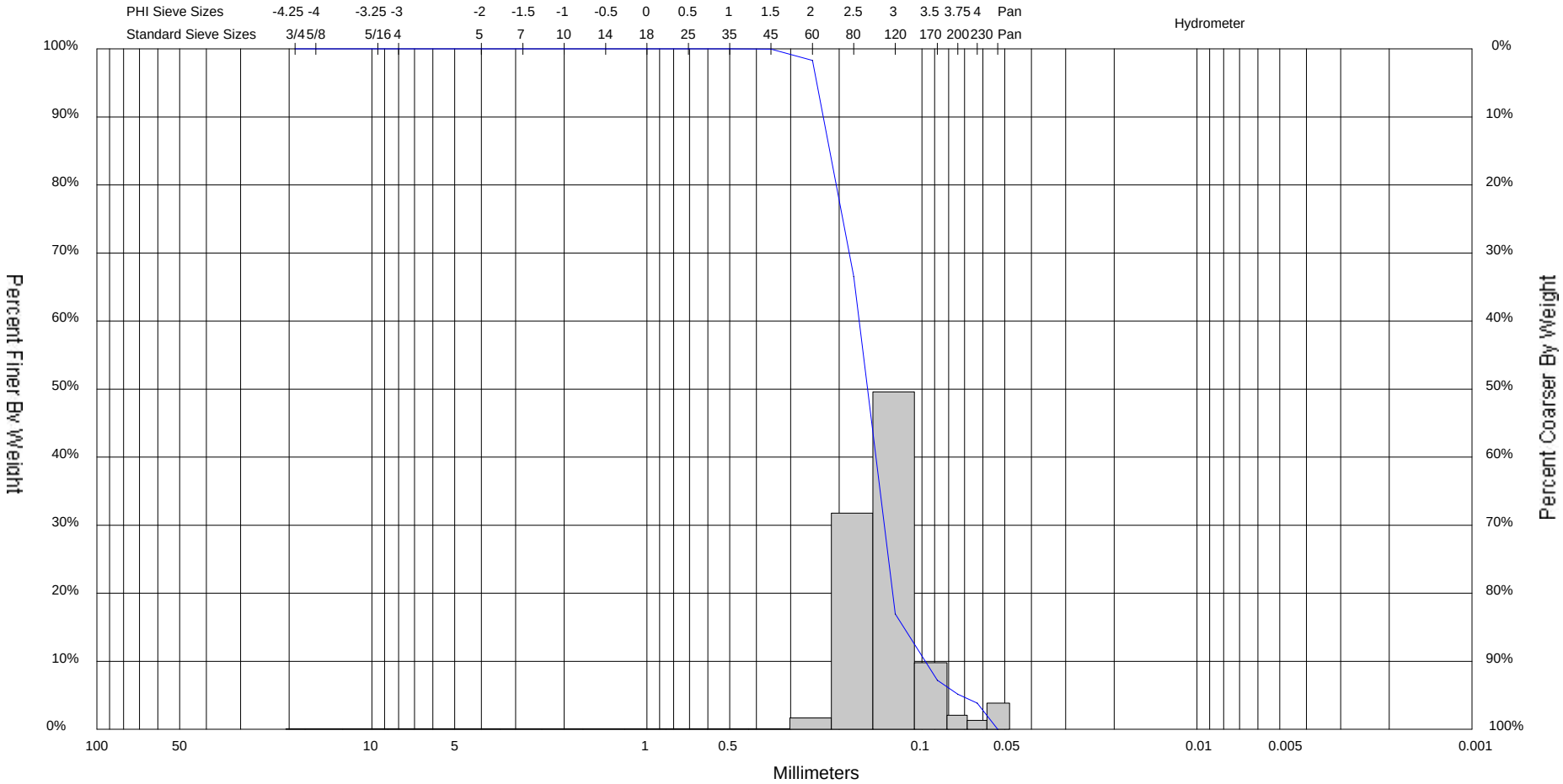

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-06 S#5		-50.4		SW-SM	3.85	0.16	0.15	0.61	2.12	0.59
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3863029
Northing (Y):	223563
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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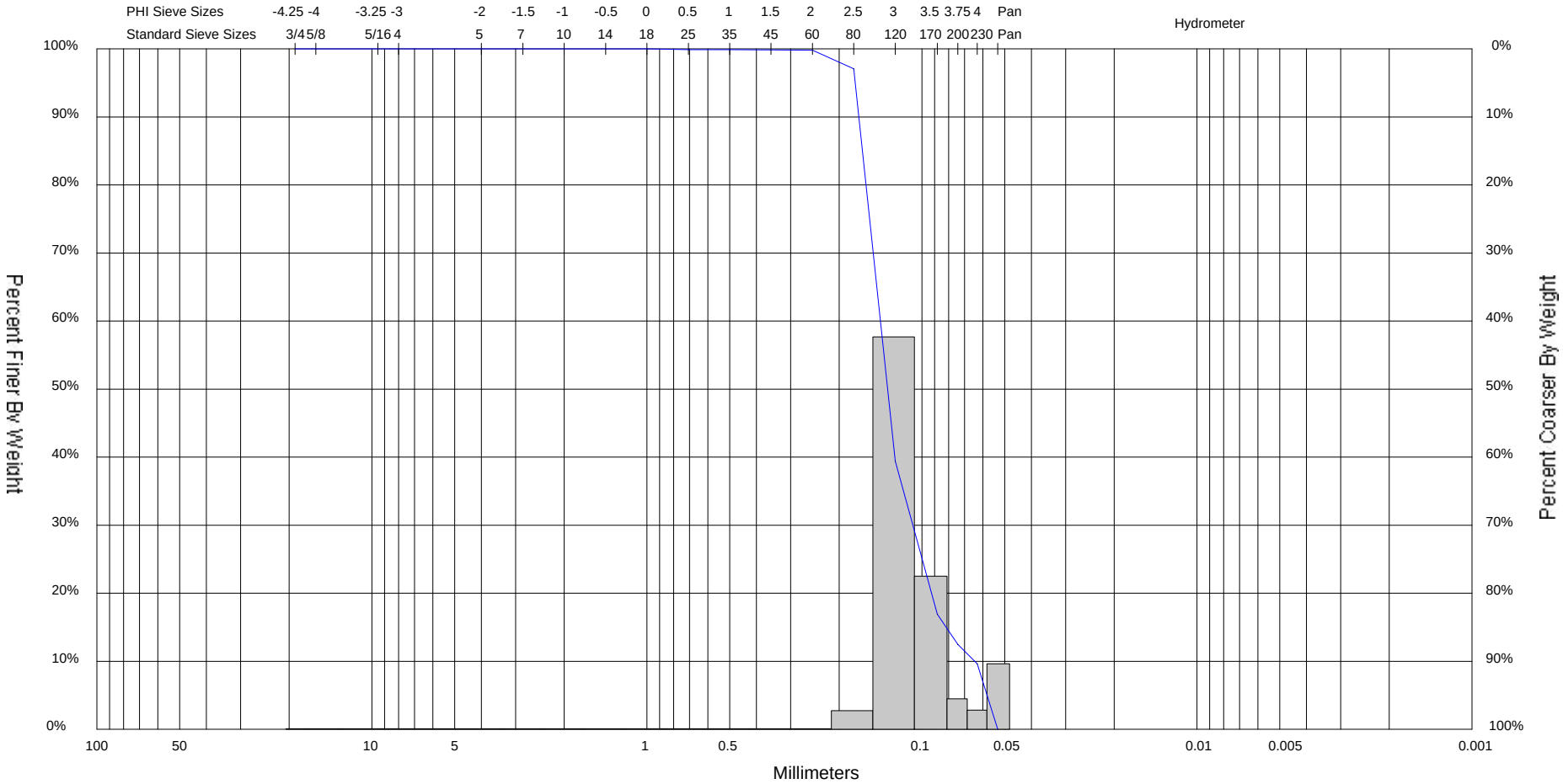

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-07 S#2		-38.1		SM	9.64	0.13	0.12	0.62	1.84	0.59
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3862989.25
Northing (Y):	221282
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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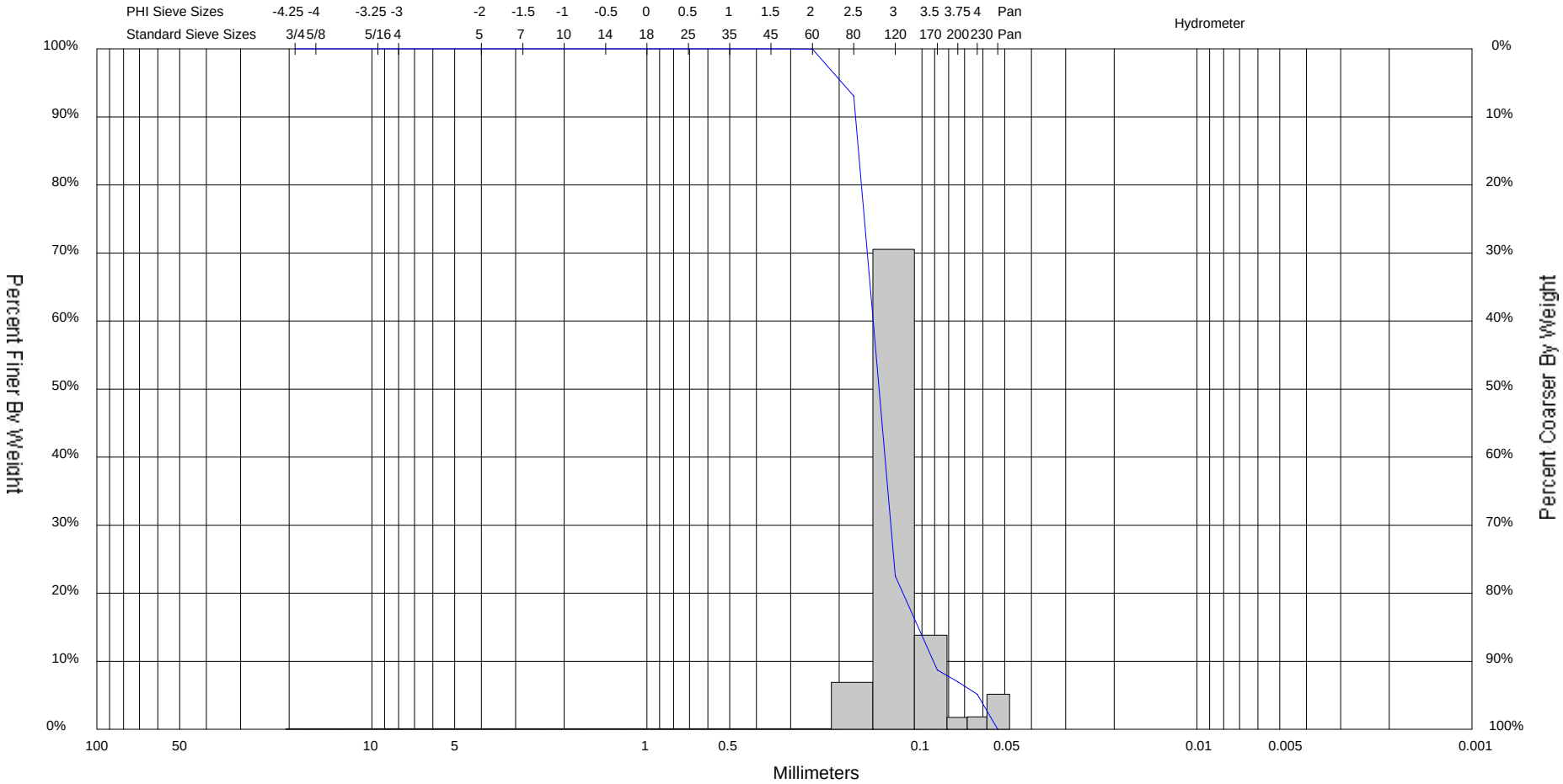

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-07 S#3		-42.1		SW-SM	5.17	0.14	0.13	0.96	2.62	0.55
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3862989.25
Northing (Y):	221282
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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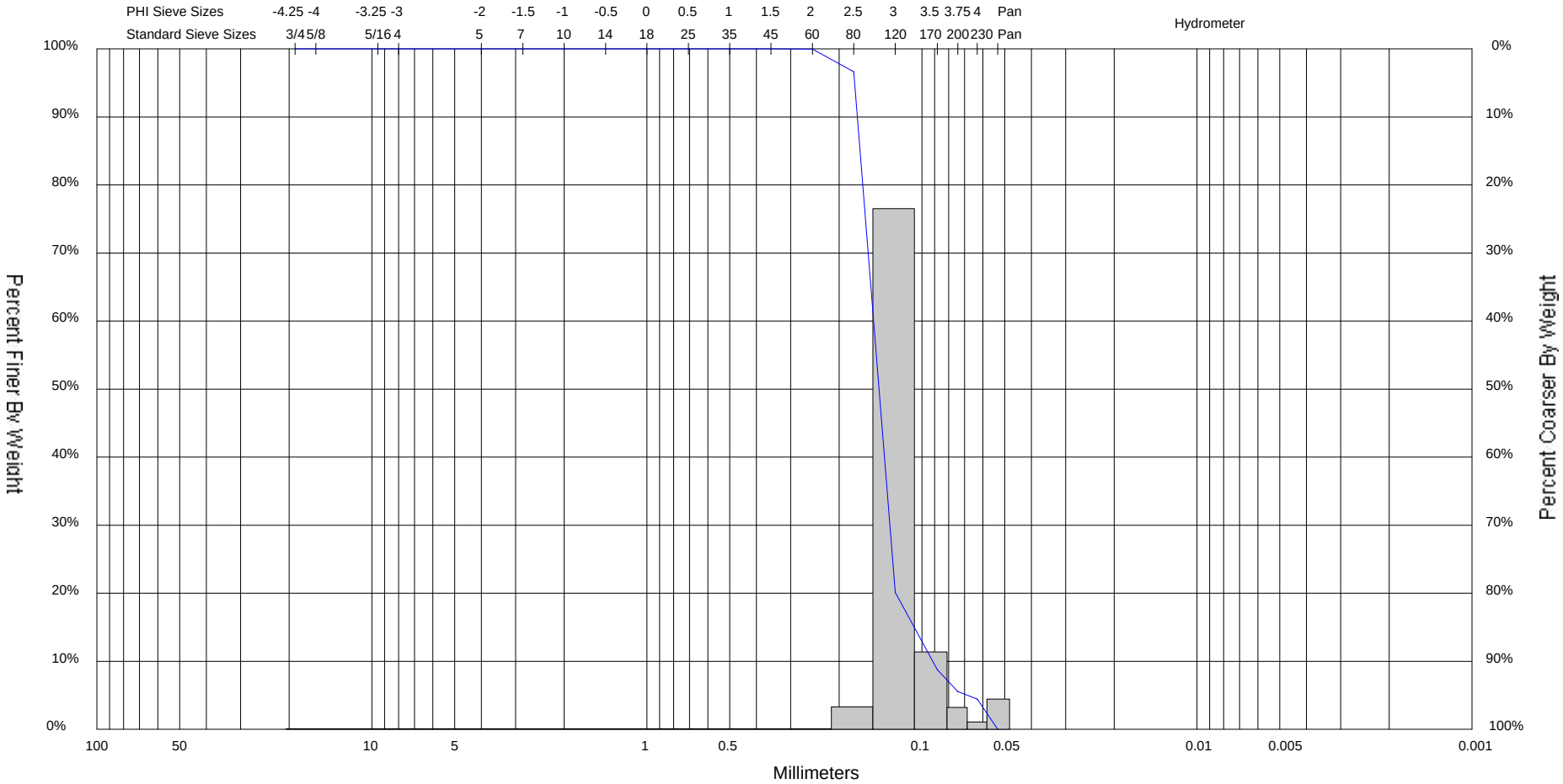

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-07 S#4		-45.1		SW-SM	4.46	0.14	0.13	1.07	2.73	0.47
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3862989.25
Northing (Y):	221282
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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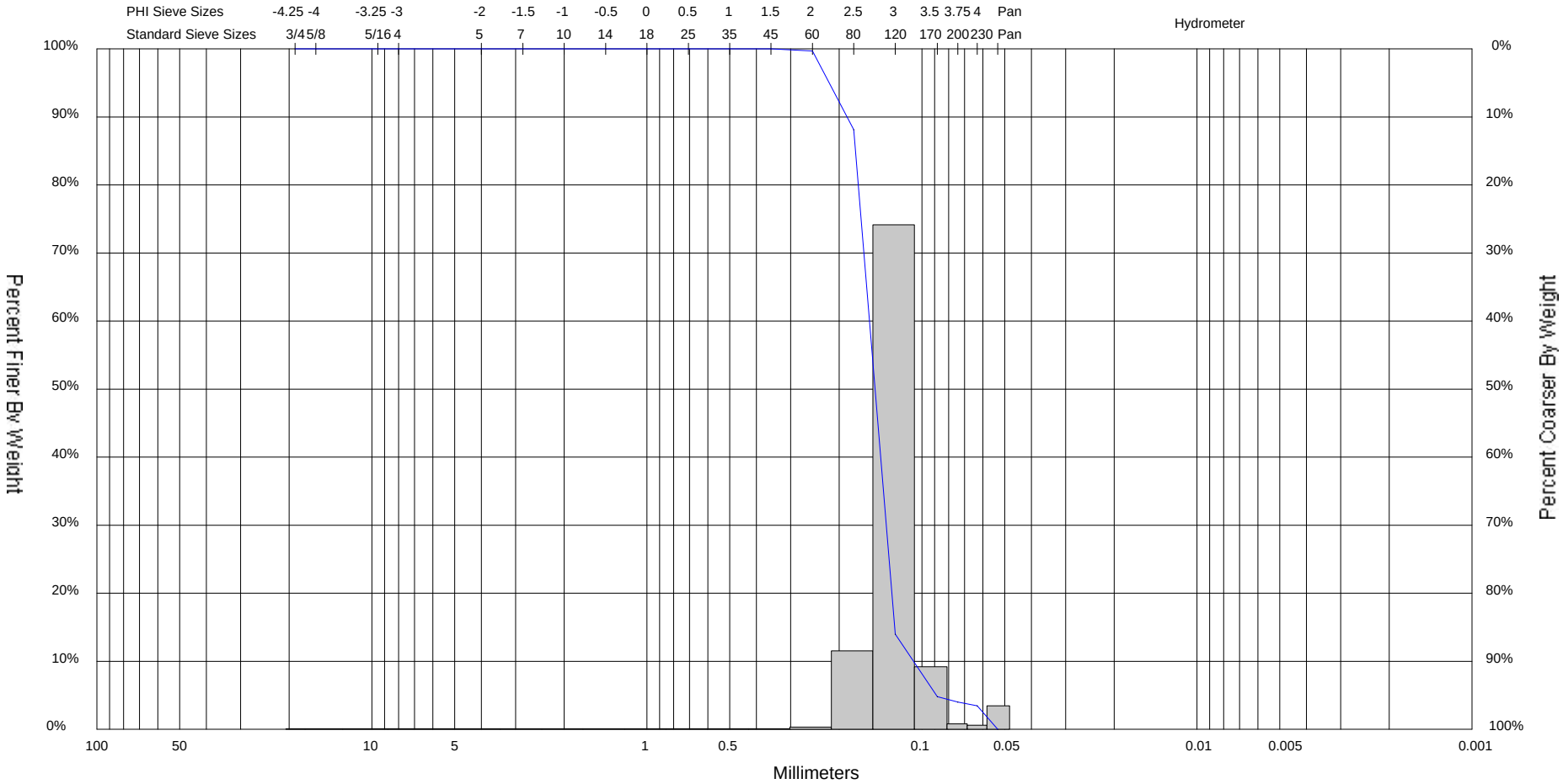

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-07 S#5		-50.1		SP	3.44	0.15	0.15	0.36	2.22	0.41
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3862989.25
Northing (Y):	221282
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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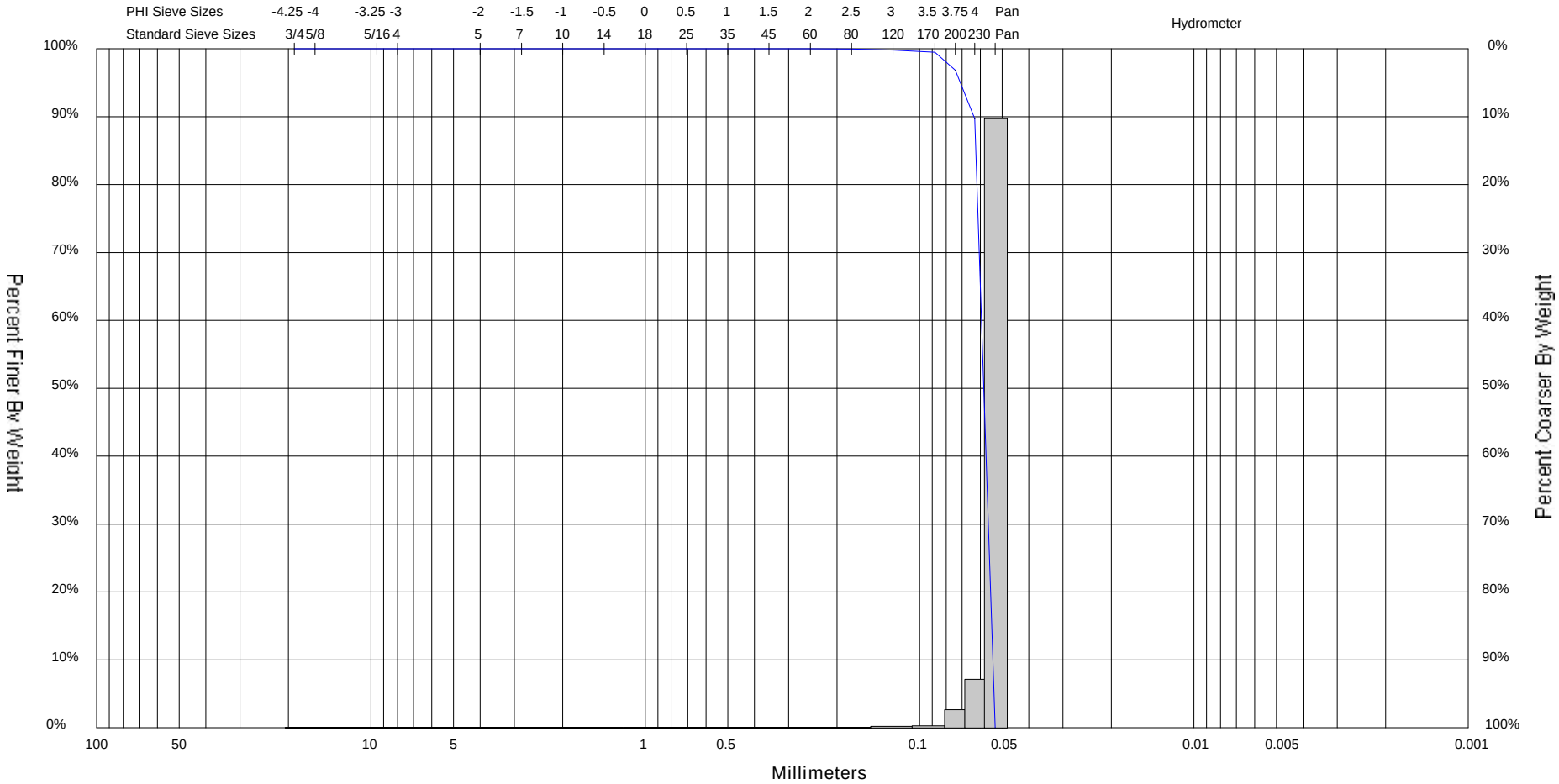

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-08 S#3		-45.4		ML	89.70	0.06	0.06	-0.79	2.33	0.15
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3860805
Northing (Y):	229535
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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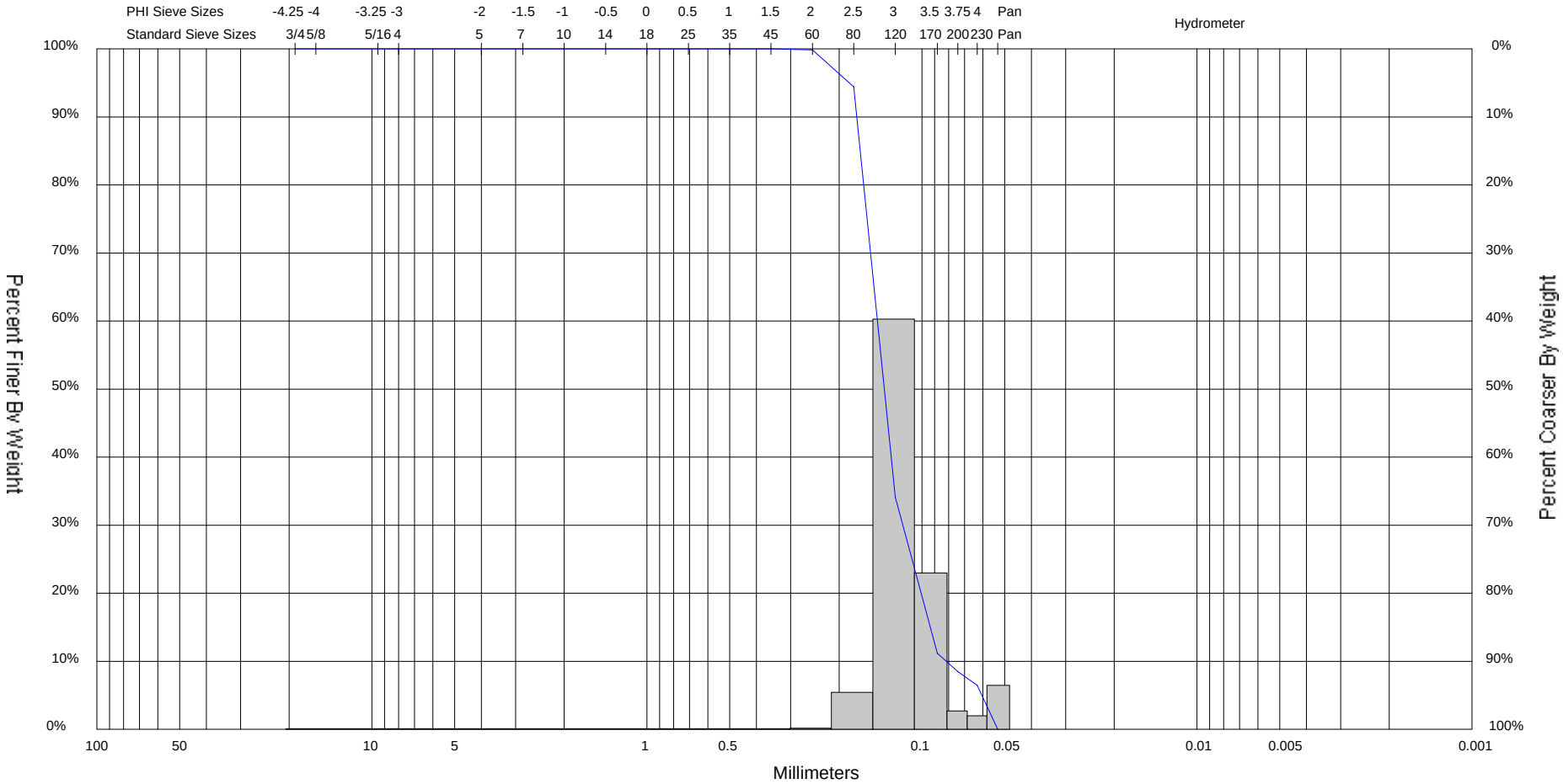

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-08 S#4		-48.4		SW-SM	6.46	0.14	0.12	0.73	2.13	0.57
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3860805
Northing (Y):	229535
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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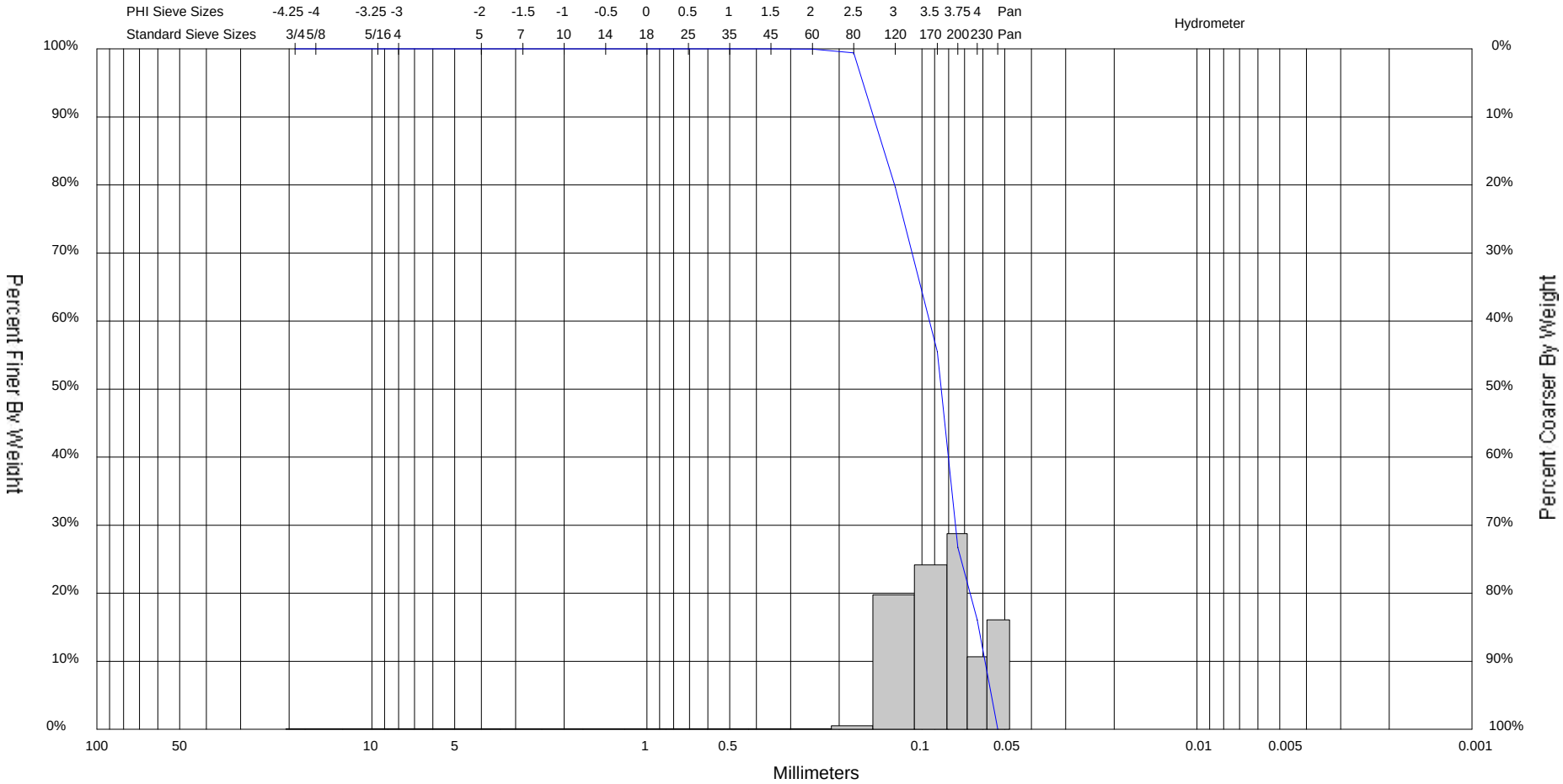

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-09 S#2		-41.3		SM	16.09	0.09	0.09	-0.15	1.34	0.59
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3862565
Northing (Y):	224414
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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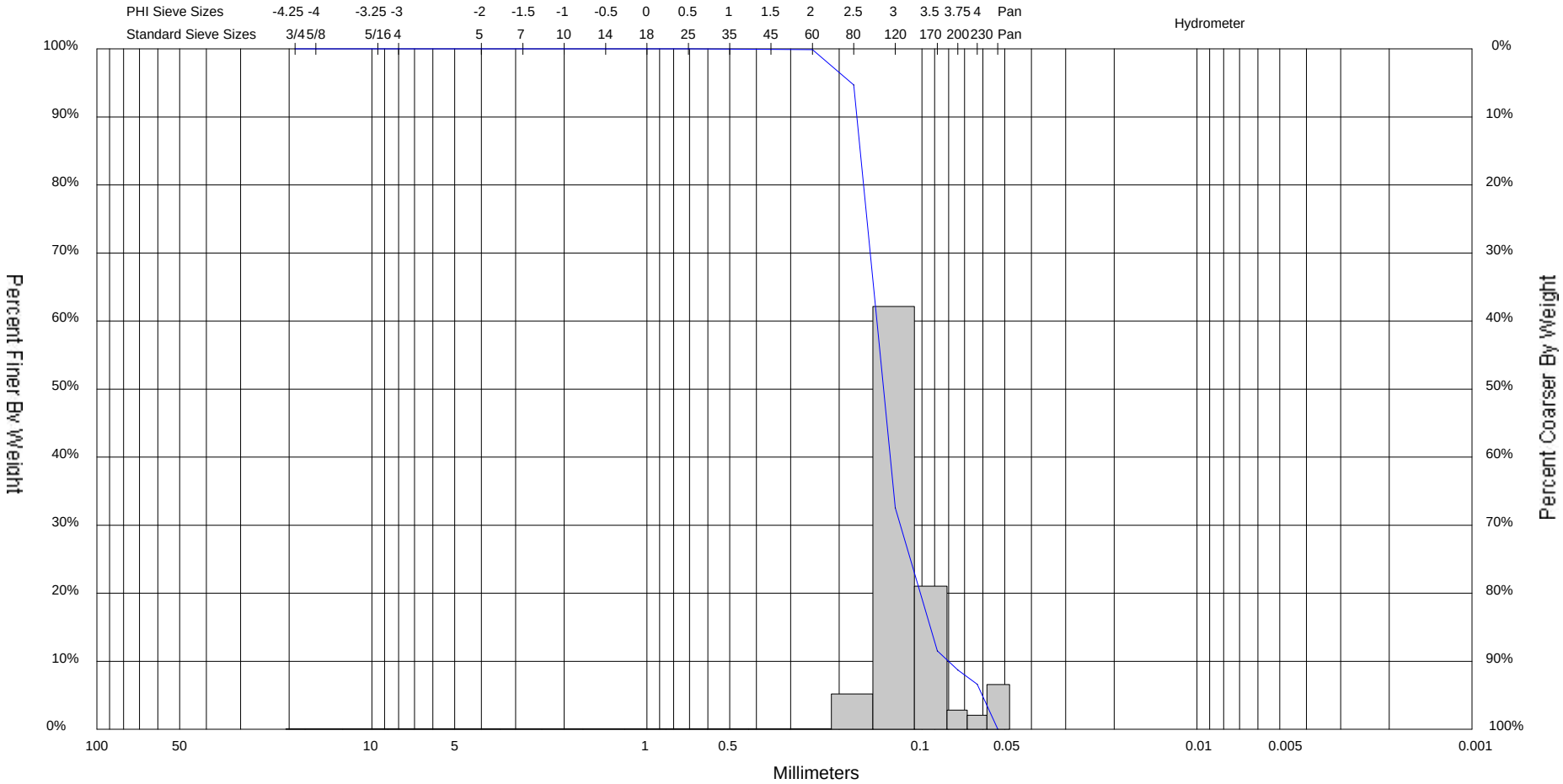

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-09 S#3		-44.8		SW-SM	6.63	0.14	0.12	0.78	2.18	0.56
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3862565
Northing (Y):	224414
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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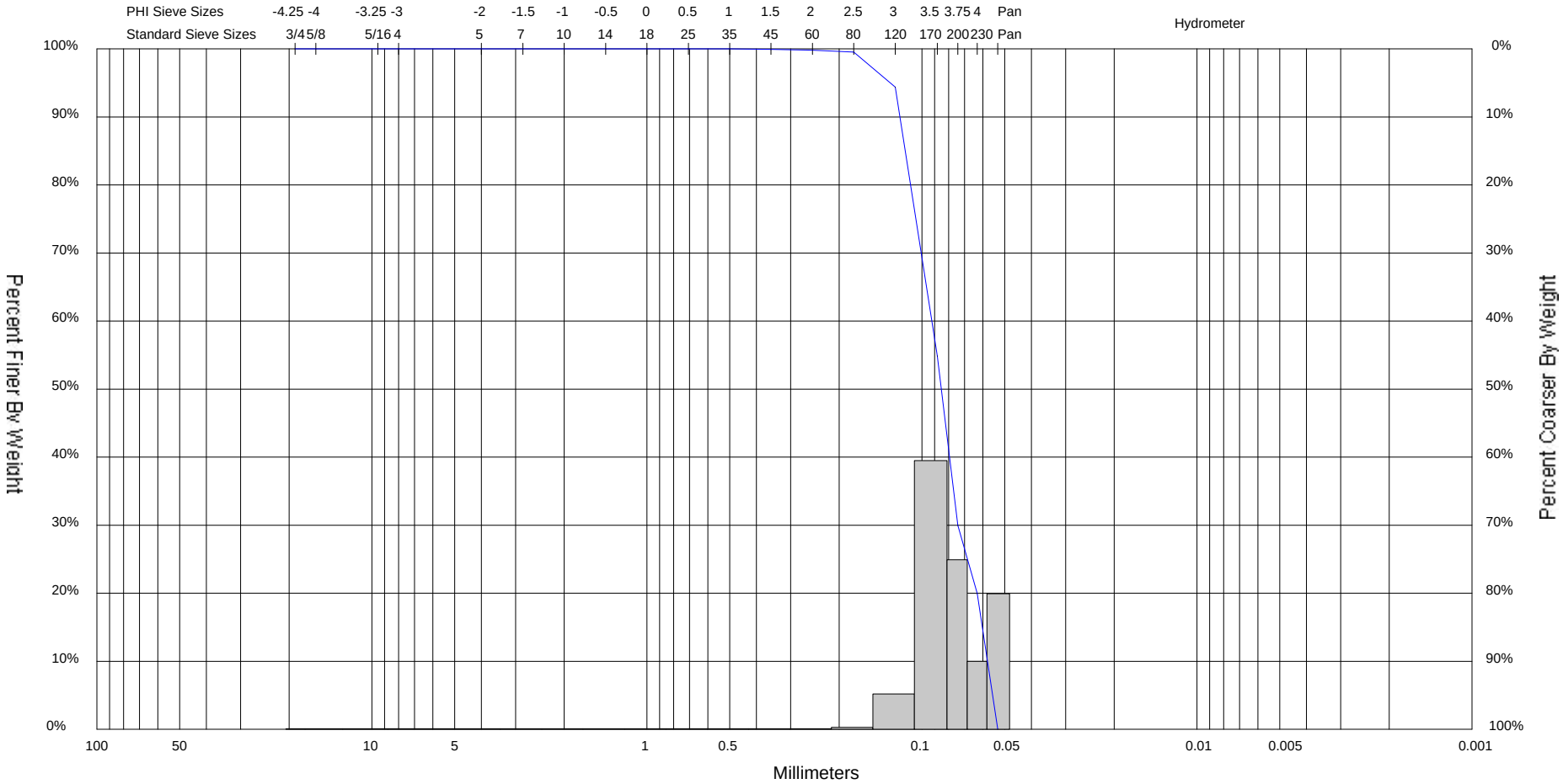

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-09 S#4		-46		SM	19.97	0.09	0.08	0.02	1.27	0.48
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3862566
Northing (Y):	224414
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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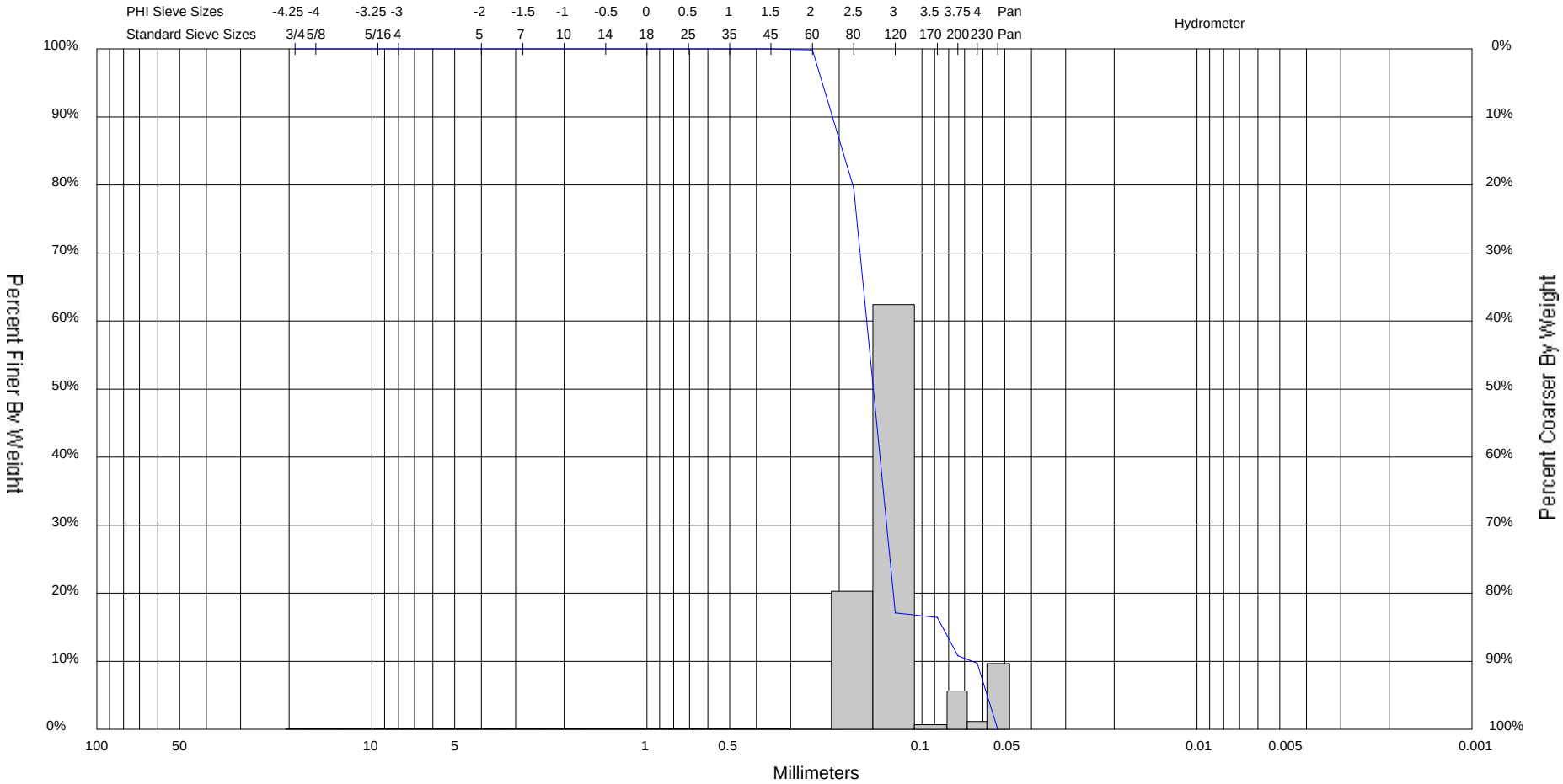

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-09 S#5		-47.8		SW-SM	9.68	0.15	0.13	0.65	1.98	0.70
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3862565
Northing (Y):	224414
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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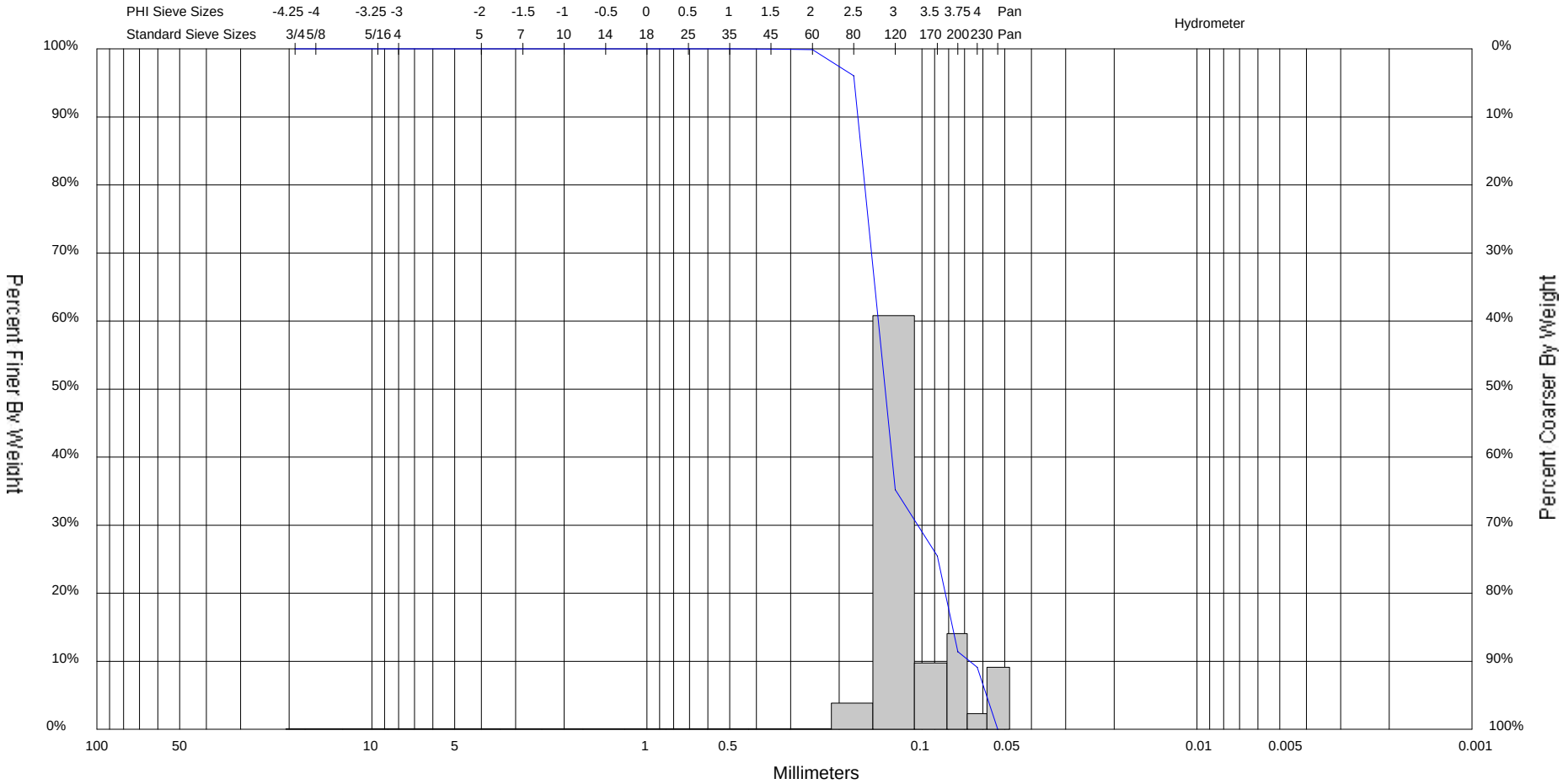

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-10 S#2		-37.8		SW-SM	9.12	0.14	0.11	0.42	1.43	0.62
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3863104
Northing (Y):	222927
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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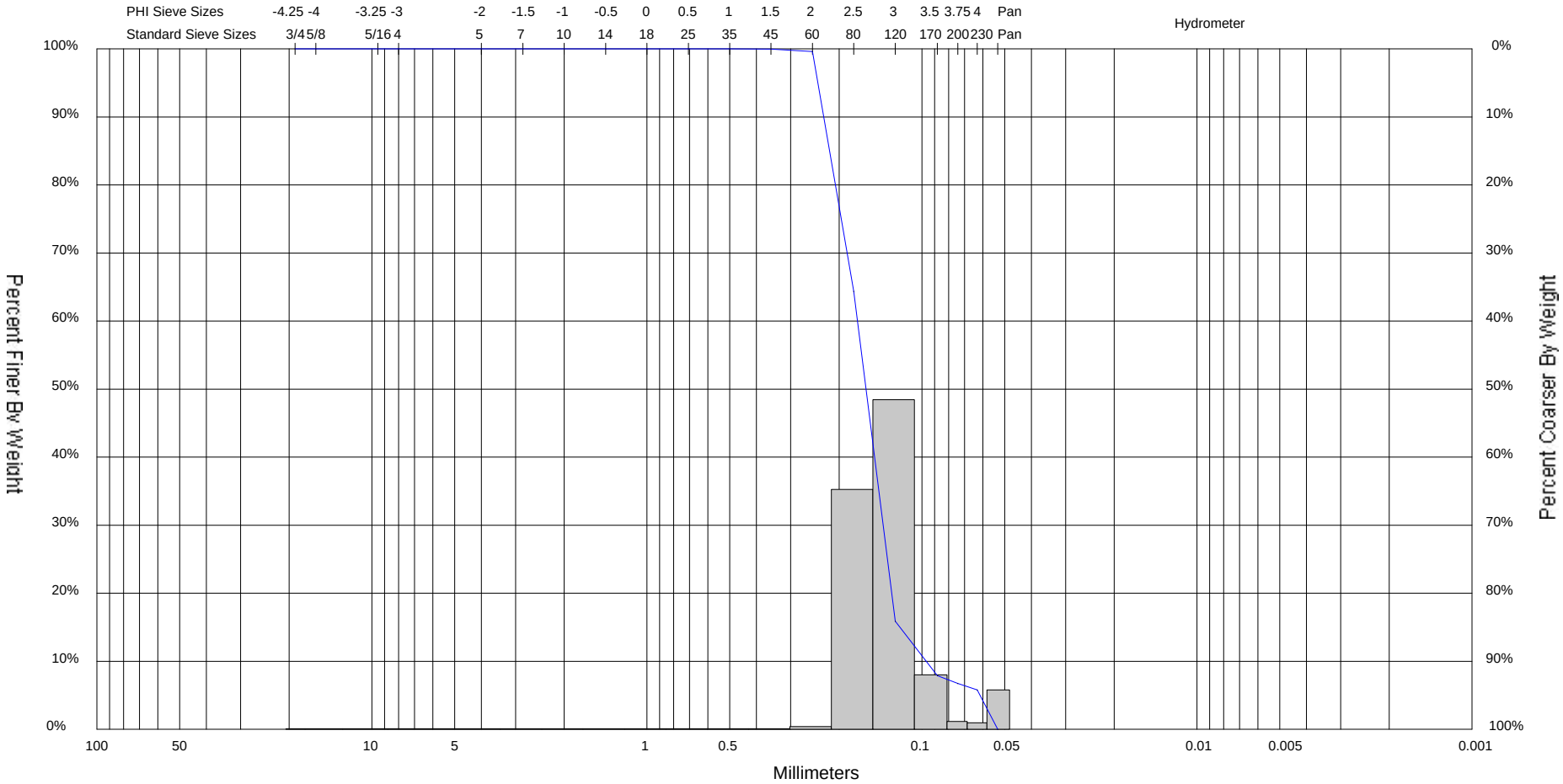

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-10 S#3		-42.8		SW-SM	5.78	0.16	0.15	0.92	2.62	0.67
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3863104
Northing (Y):	222927
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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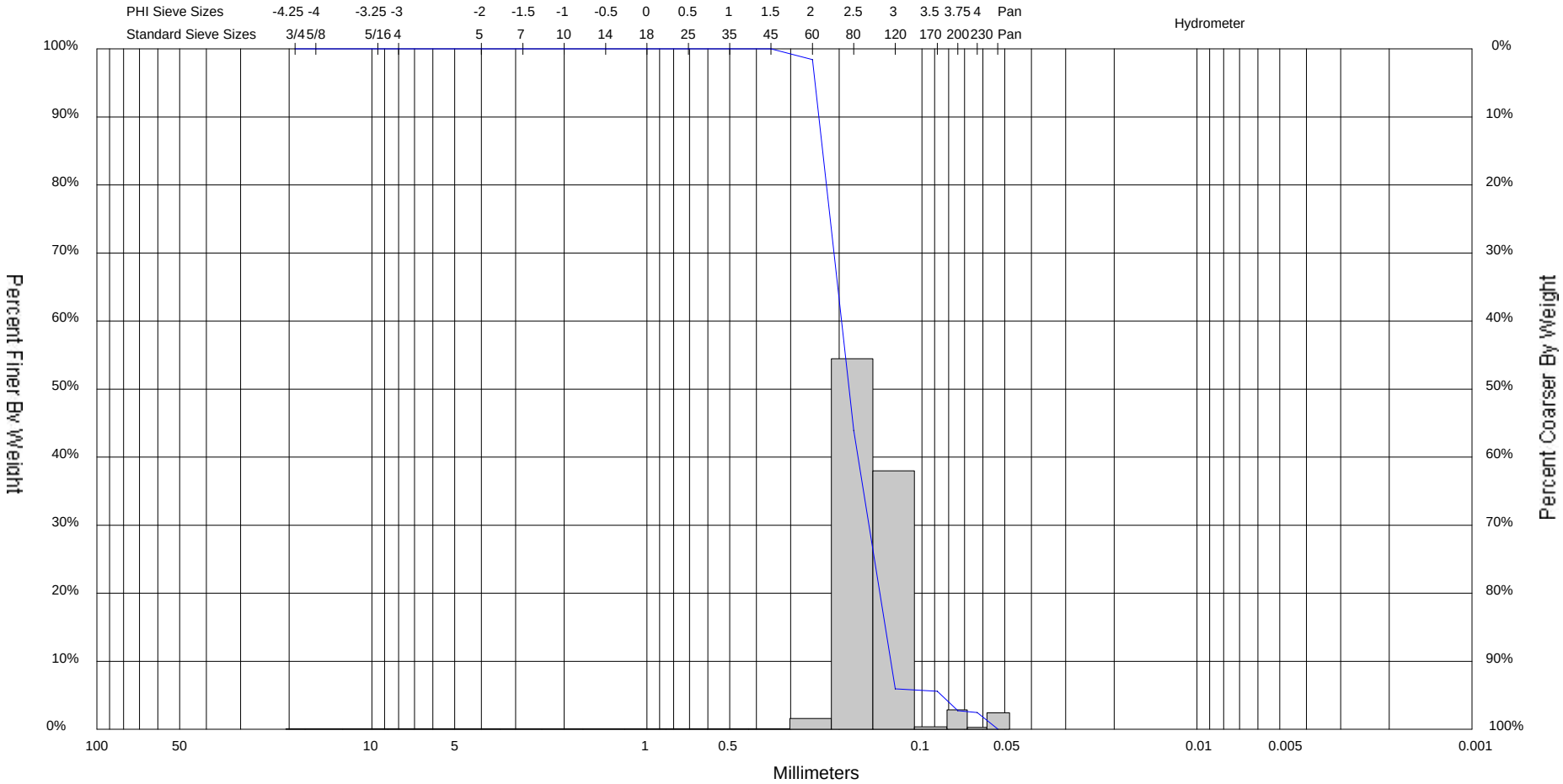

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-10 S#4		-48.8		SP	2.44	0.18	0.17	0.76	2.21	0.53
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3863104
Northing (Y):	222927
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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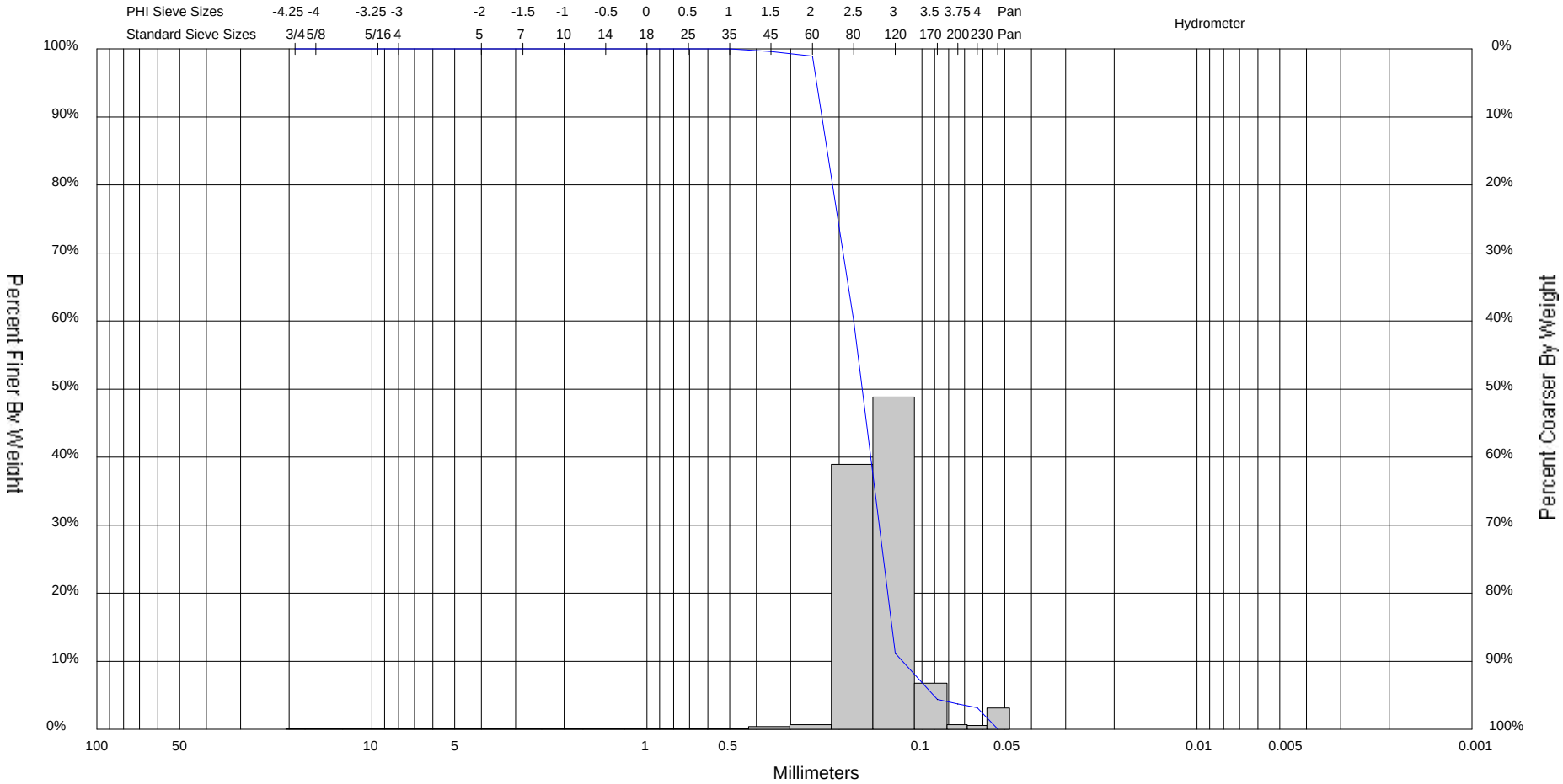

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-10 S#5		-51.8		SP	3.15	0.16	0.16	0.40	1.77	0.49
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3863104
Northing (Y):	222927
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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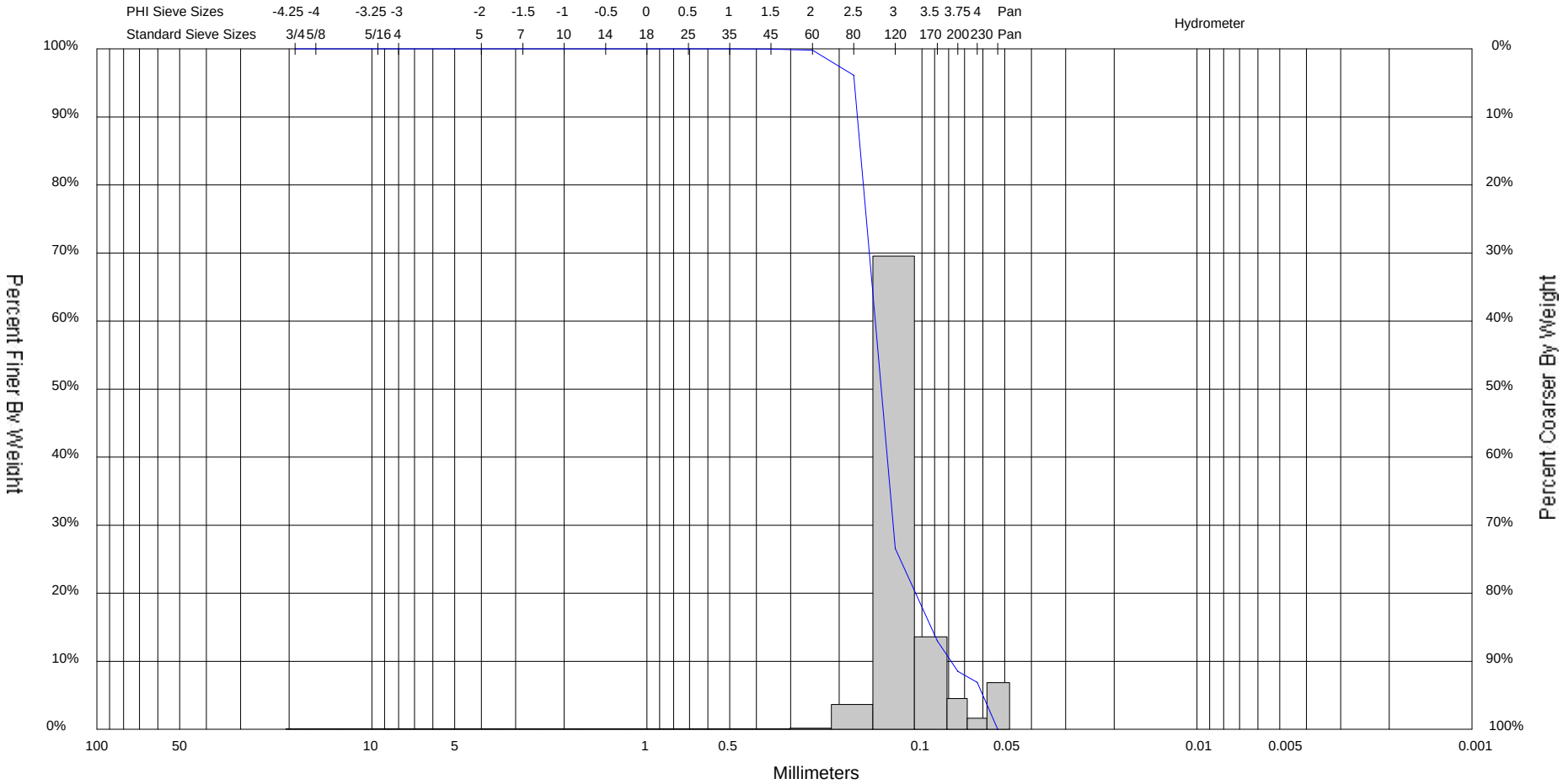

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-11 S#2		-41.7		SW-SM	6.87	0.14	0.12	0.94	2.39	0.56
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3862780
Northing (Y):	221972
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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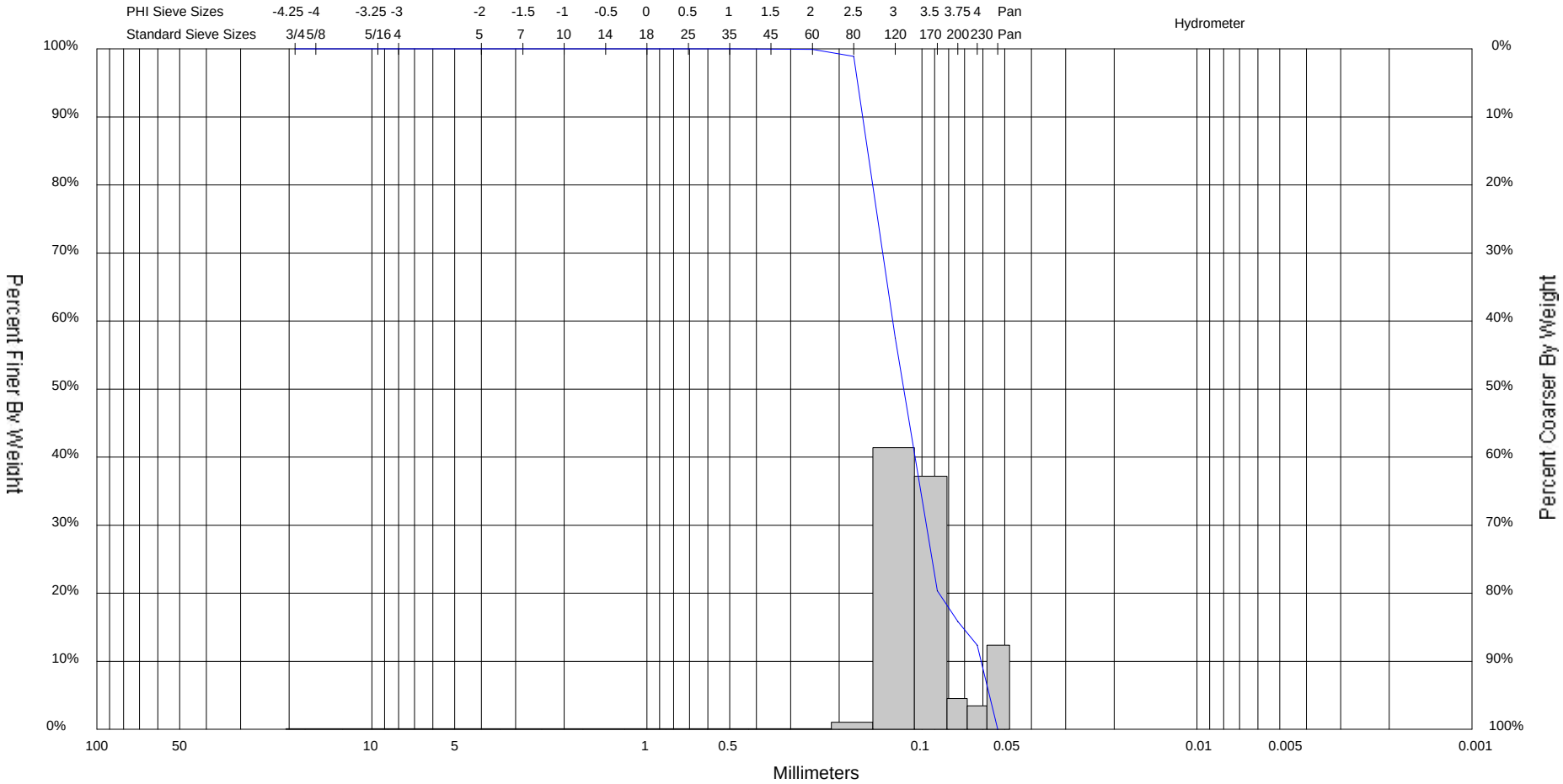

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-11 S#3		-46.7		SM	12.37	0.12	0.11	0.39	1.55	0.60
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3862780
Northing (Y):	221972
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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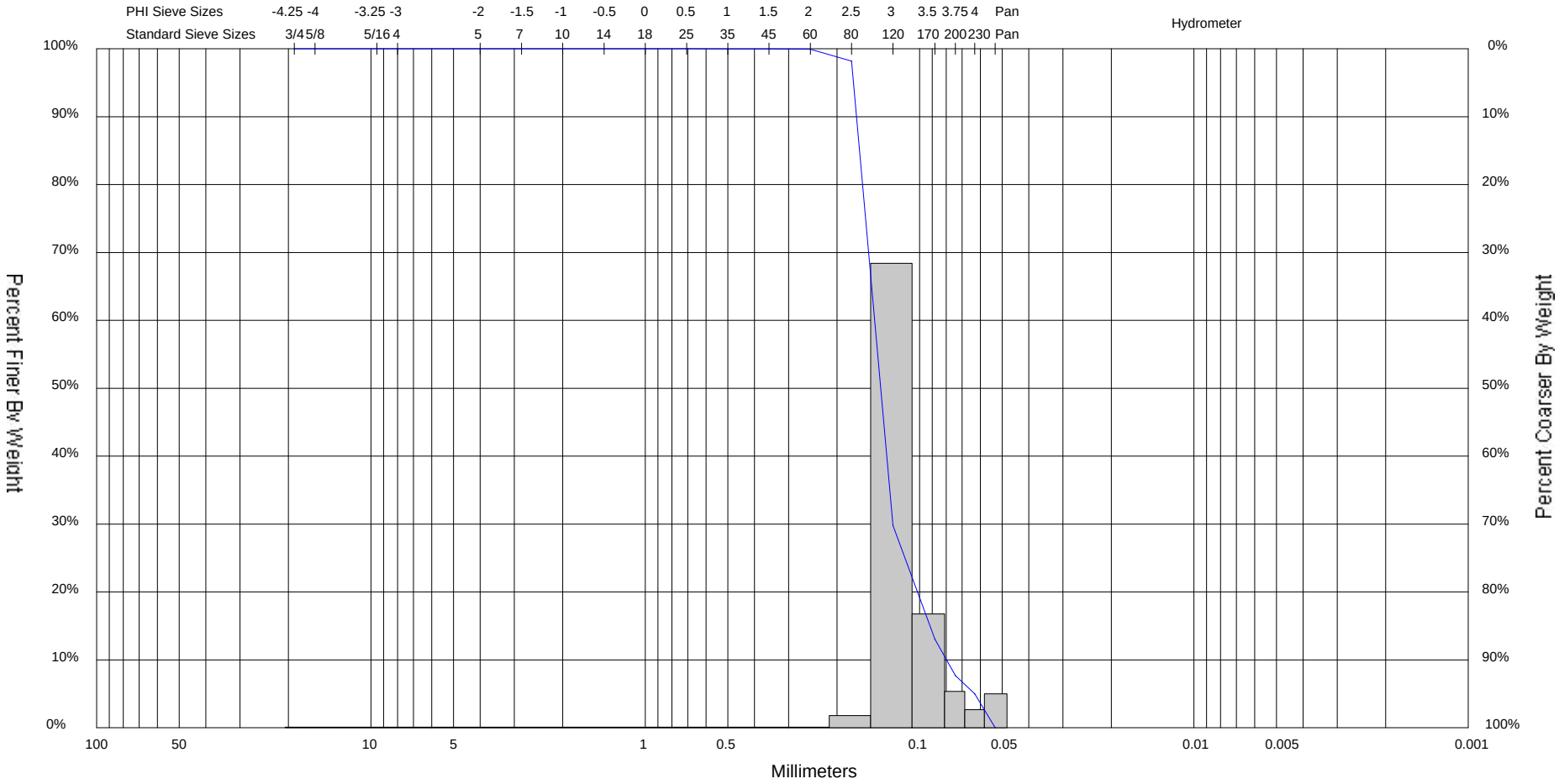

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-11 S#4		-52.3		SW-SM	4.99	0.14	0.12	0.79	2.13	0.53
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3862780
Northing (Y):	221972
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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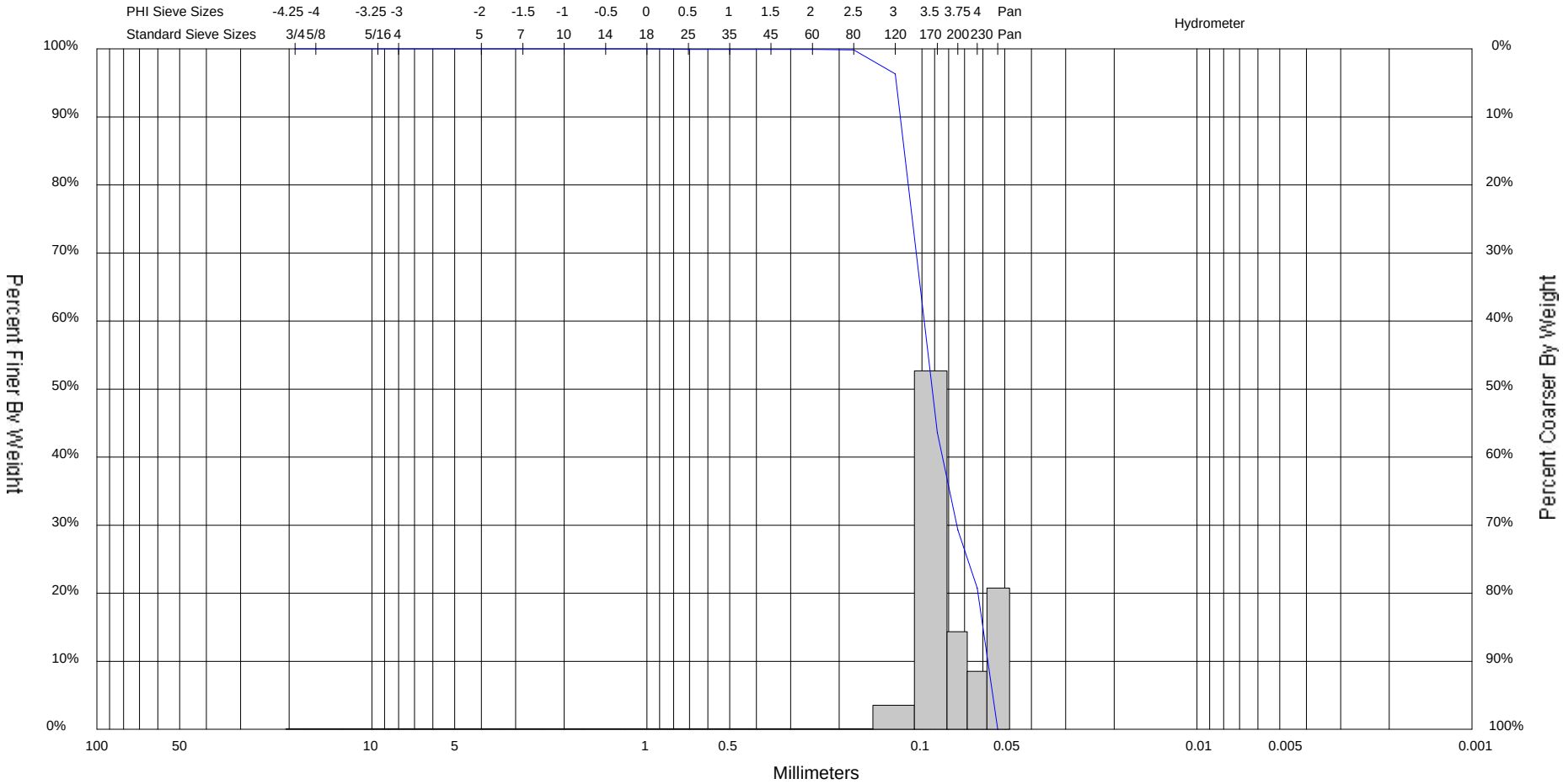

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-12 S#2		-37.6		SM	20.77	0.09	0.09	0.18	1.18	0.48
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3863507
Northing (Y):	222709
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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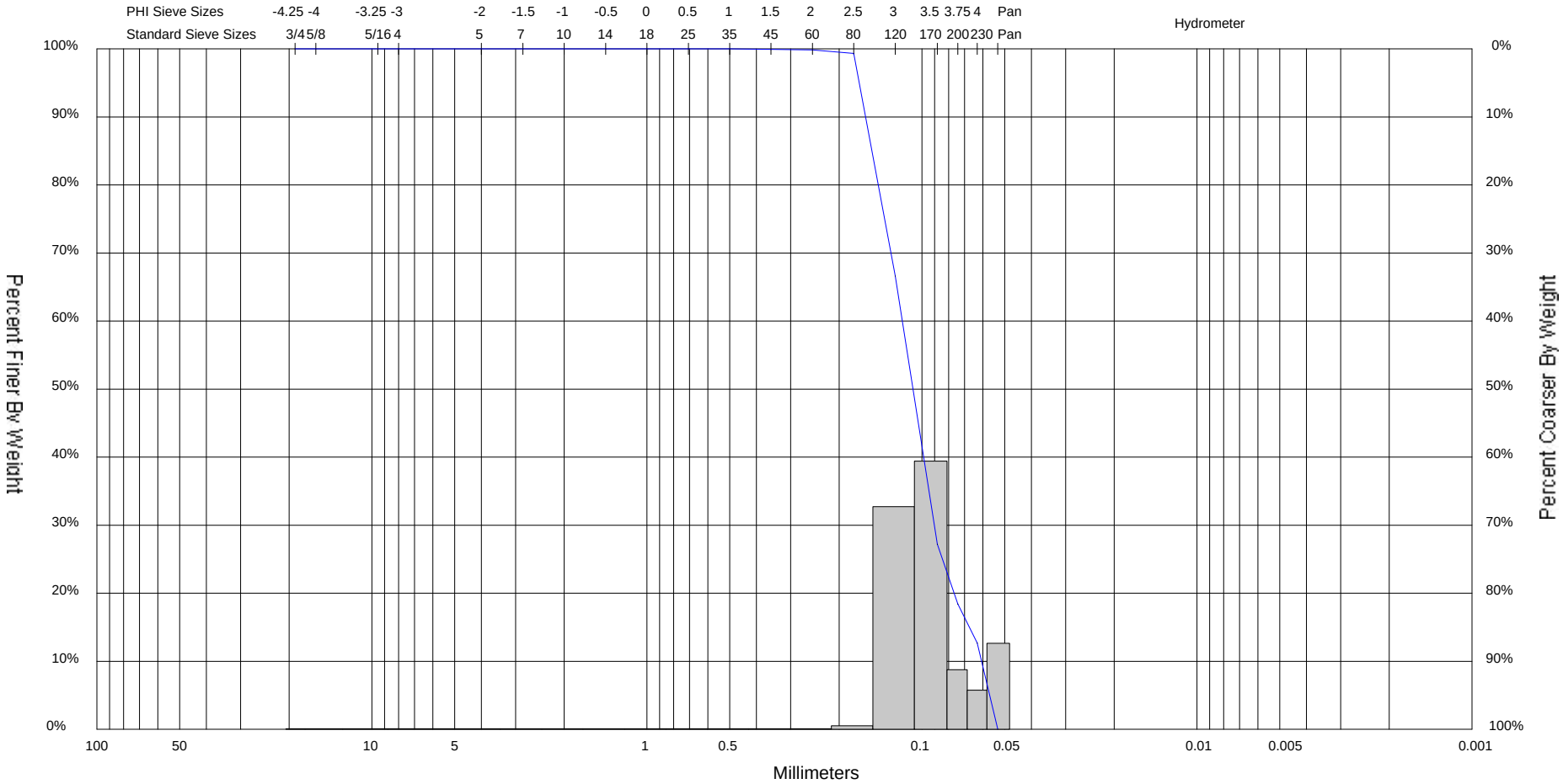

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-12 S#3		-45.3		SM	12.68	0.11	0.10	0.22	1.39	0.60
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3863508
Northing (Y):	222709
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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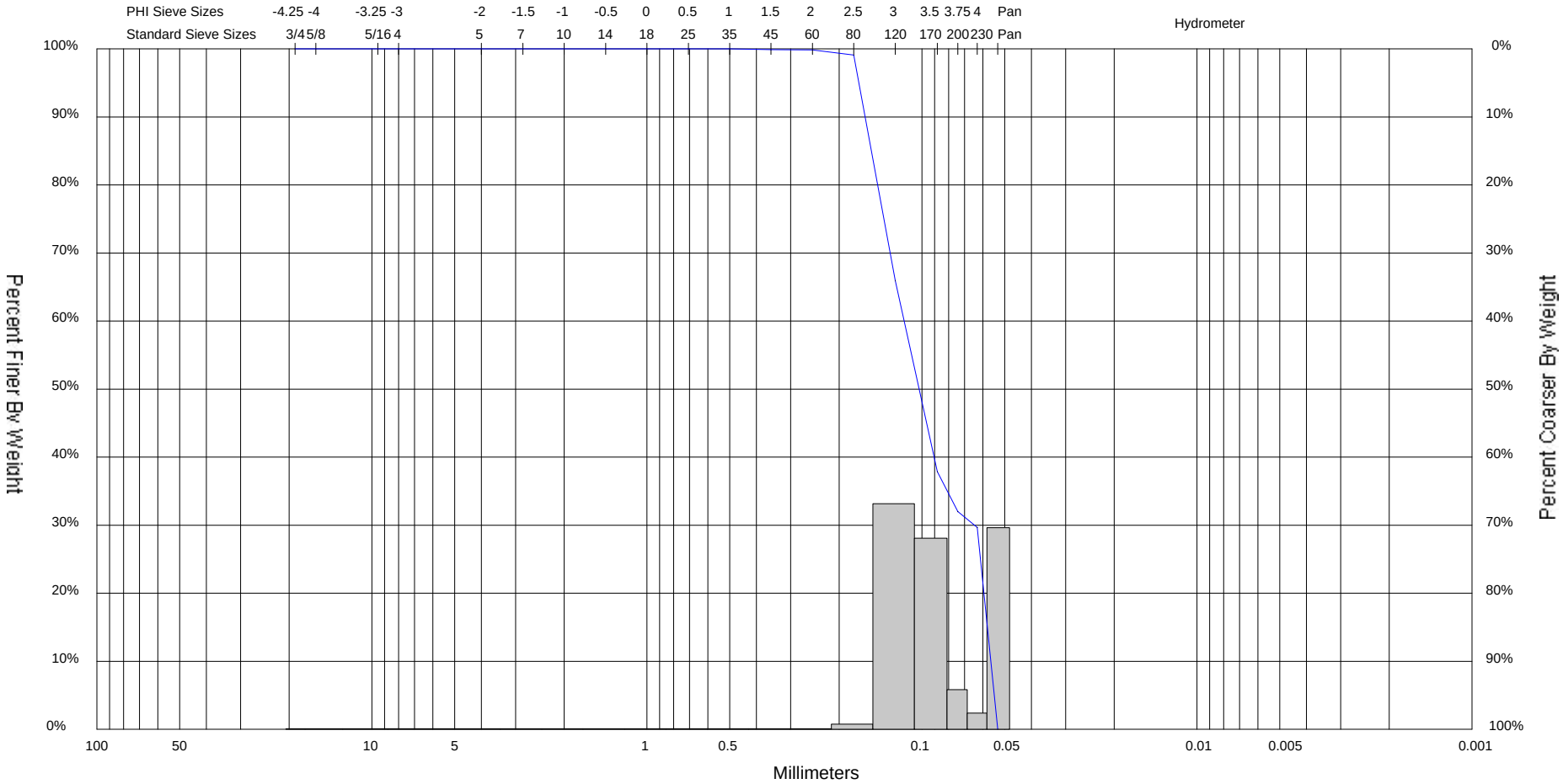

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-12 S#4		-51.9		SM	29.65	0.10	0.09	0.05	1.07	0.71
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3863508
Northing (Y):	222709
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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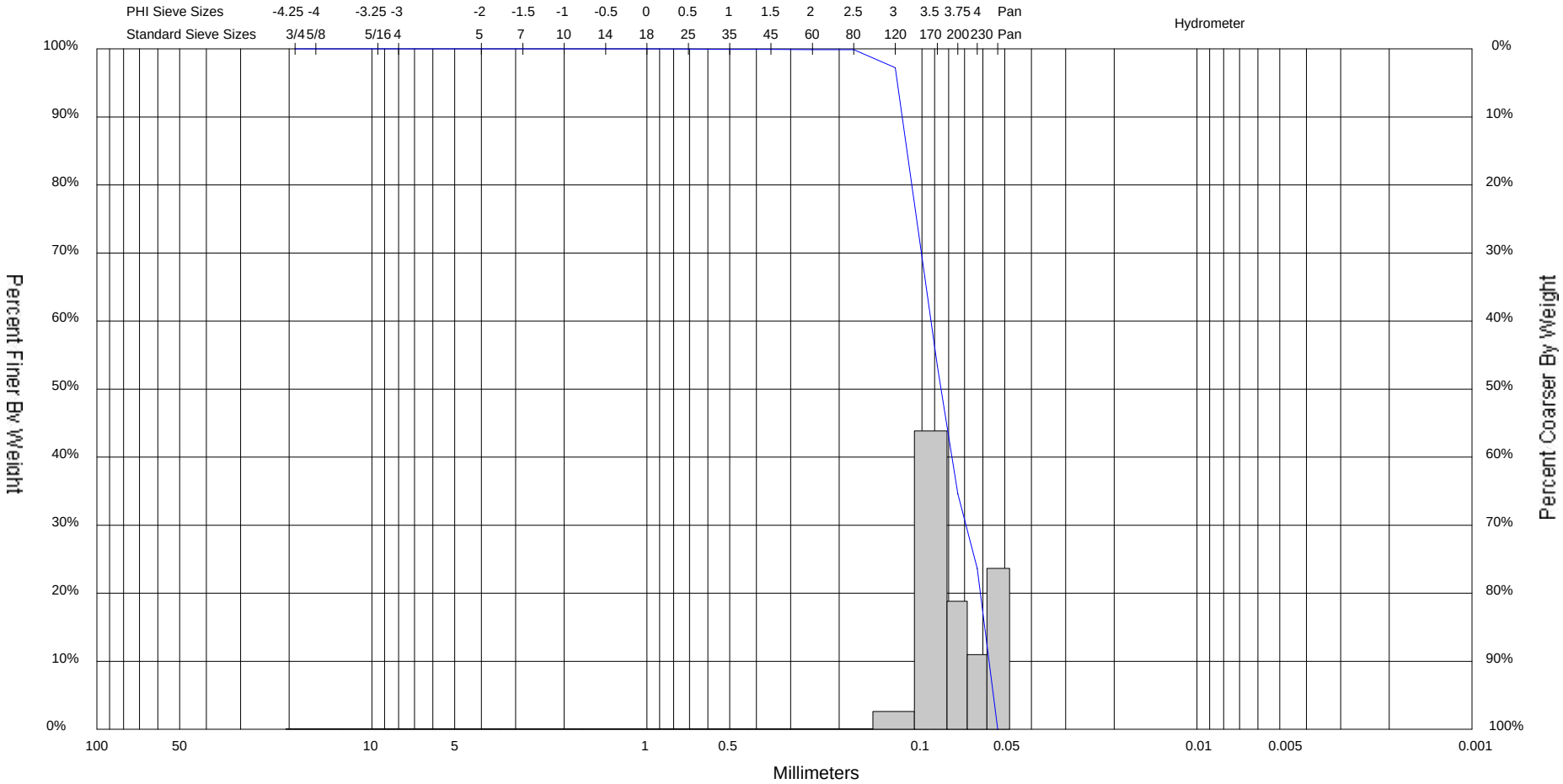

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-13 S#3		-41.1		SM	23.65	0.09	0.08	0.06	1.14	0.48
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	2862466
Northing (Y):	222735
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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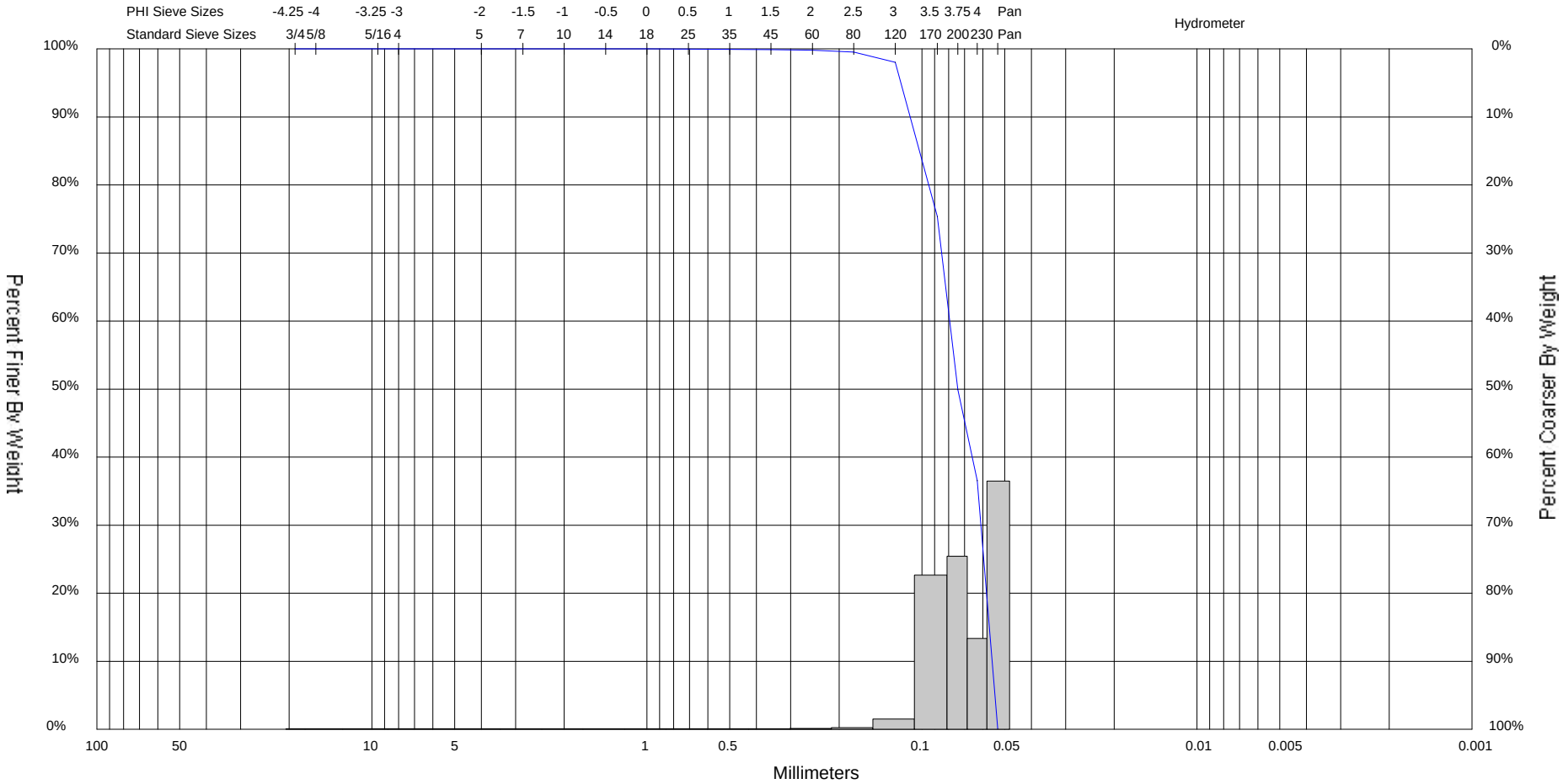

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-13 S#4		-42.6		SM	36.56	0.07	0.08	-0.24	1.36	0.45
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	2862466
Northing (Y):	222735
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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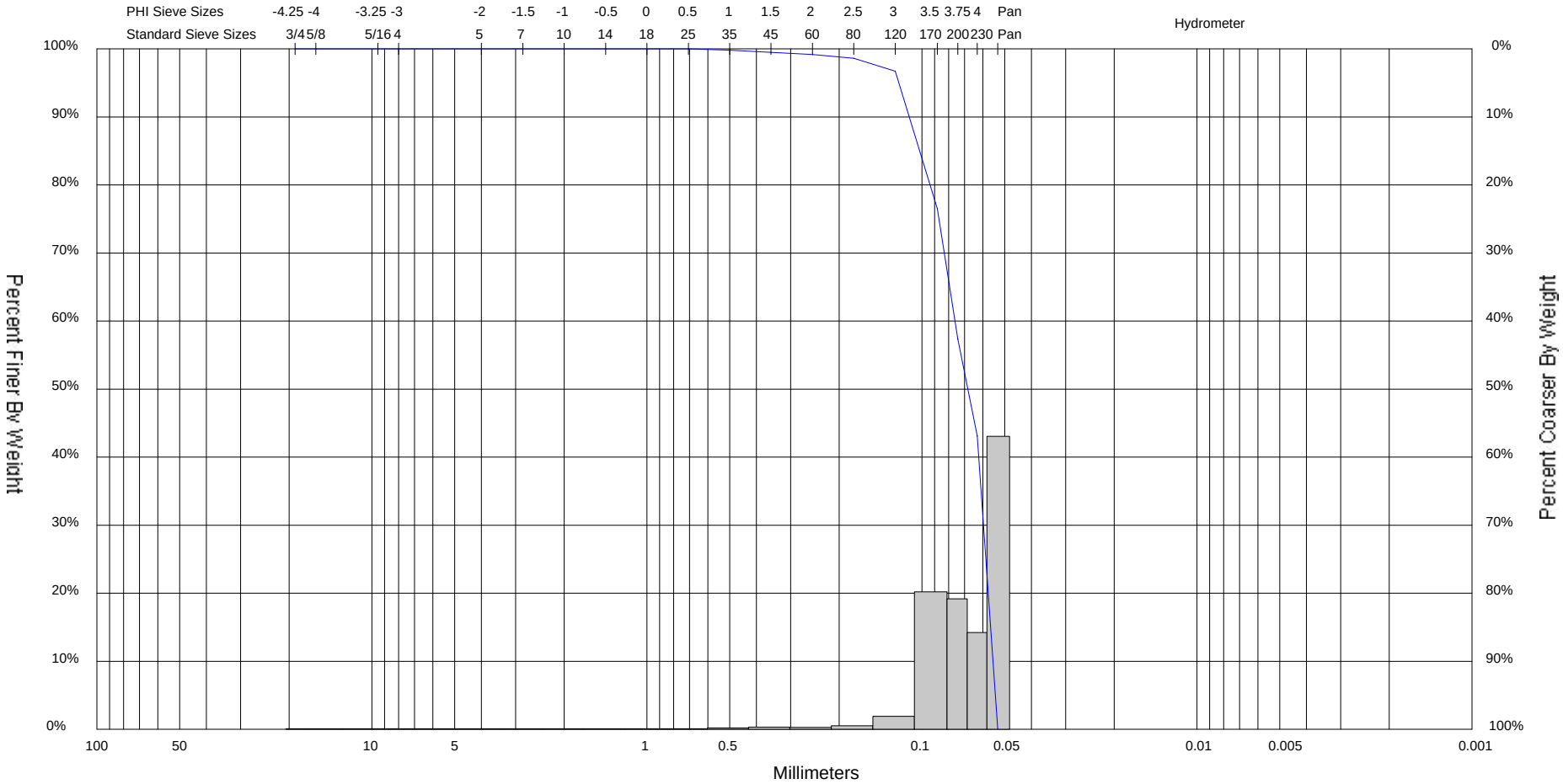

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-13 S#5		-44.6		ML	43.14	0.07	0.07	-0.38	1.41	0.46
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	2862466
Northing (Y):	222735
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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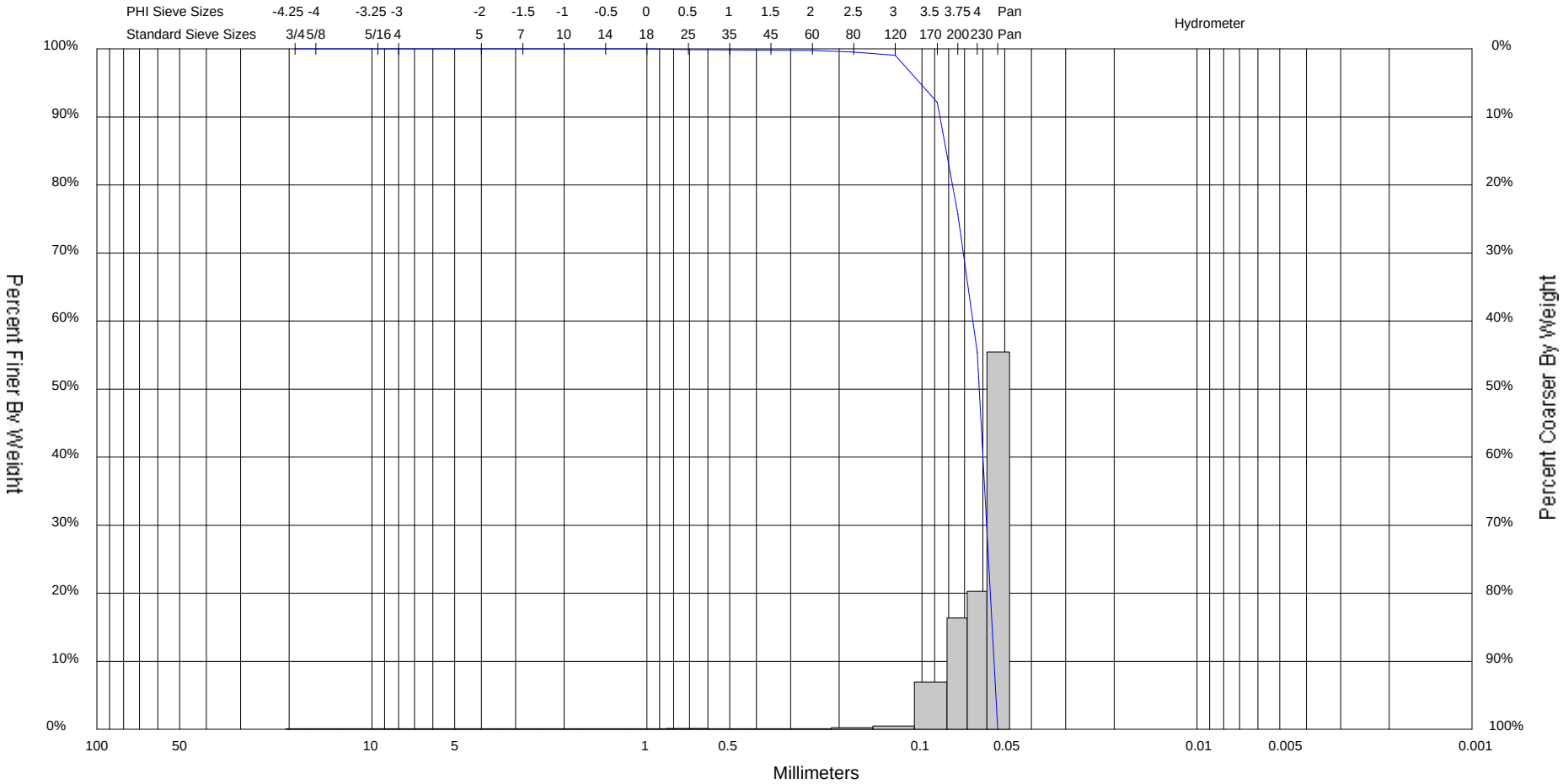

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-13 S#7		-50.6		ML	55.46	0.06	0.07	-0.64	1.82	0.35
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	2862466
Northing (Y):	222735
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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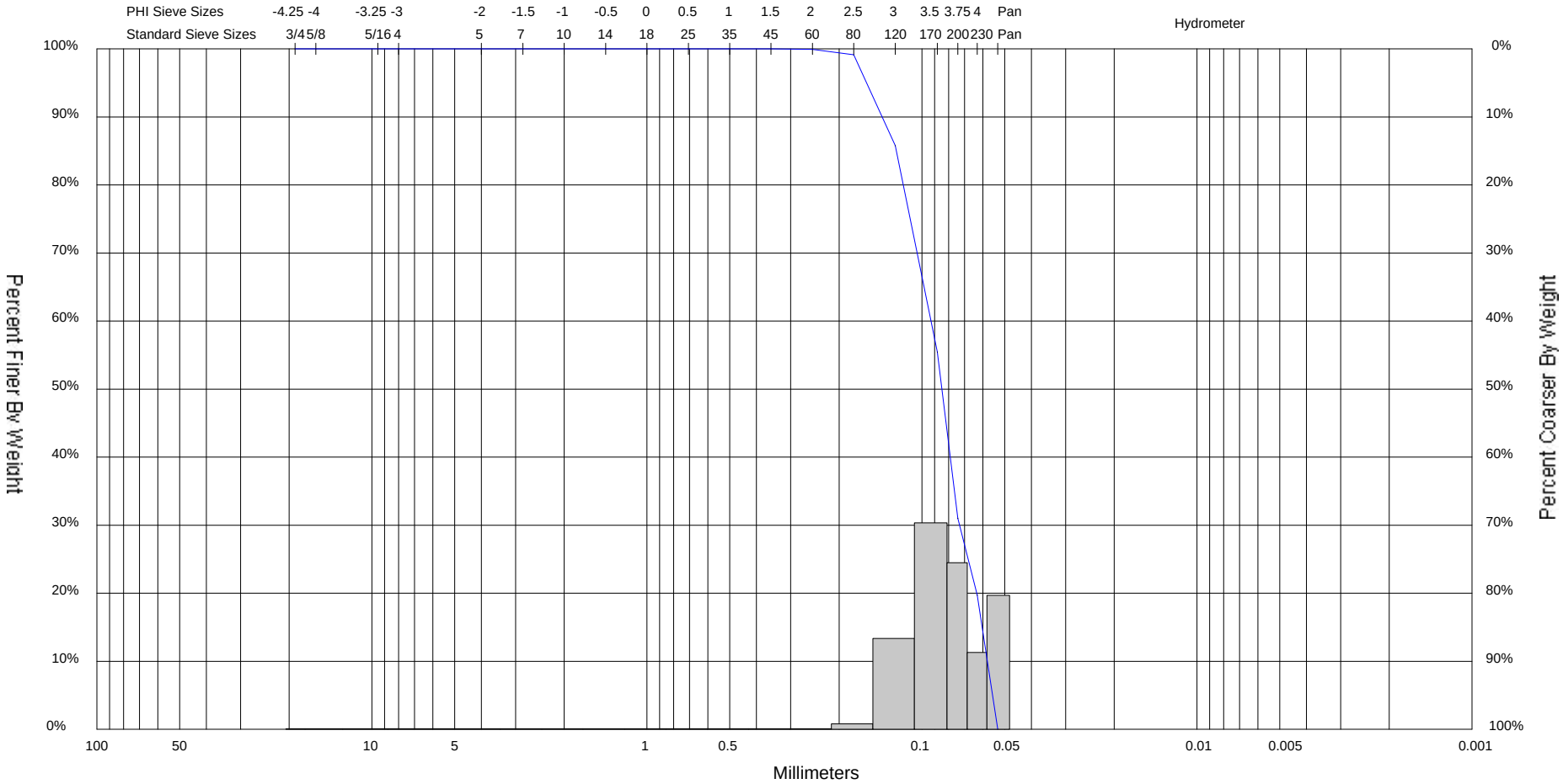

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-14 S#2		-39.8		SM	19.72	0.08	0.09	-0.20	1.42	0.57
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855792
Northing (Y):	228997
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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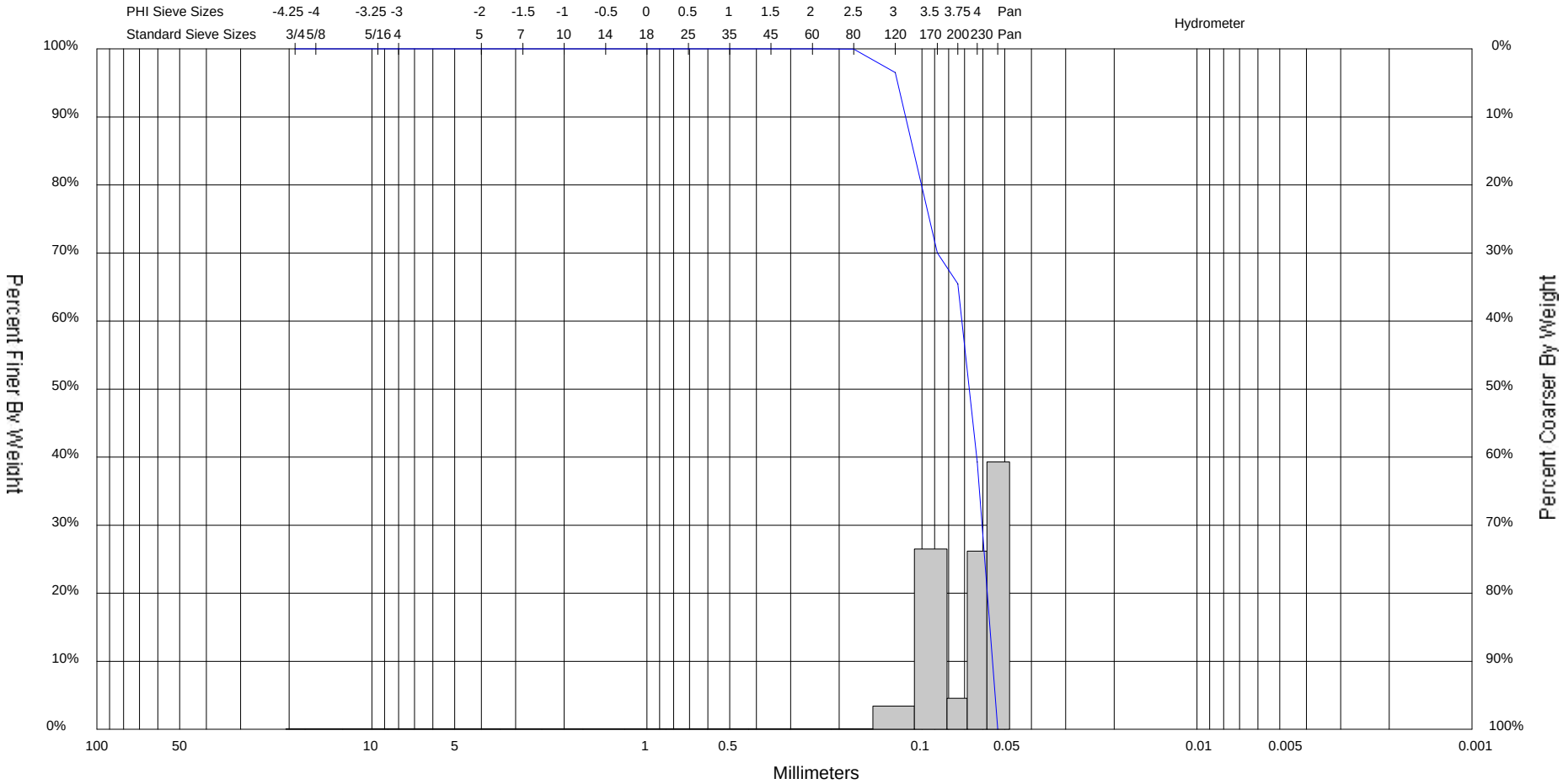

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-14 S#4		-47.8		ML	39.30	0.07	0.08	-0.30	1.22	0.49
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855792
Northing (Y):	228997
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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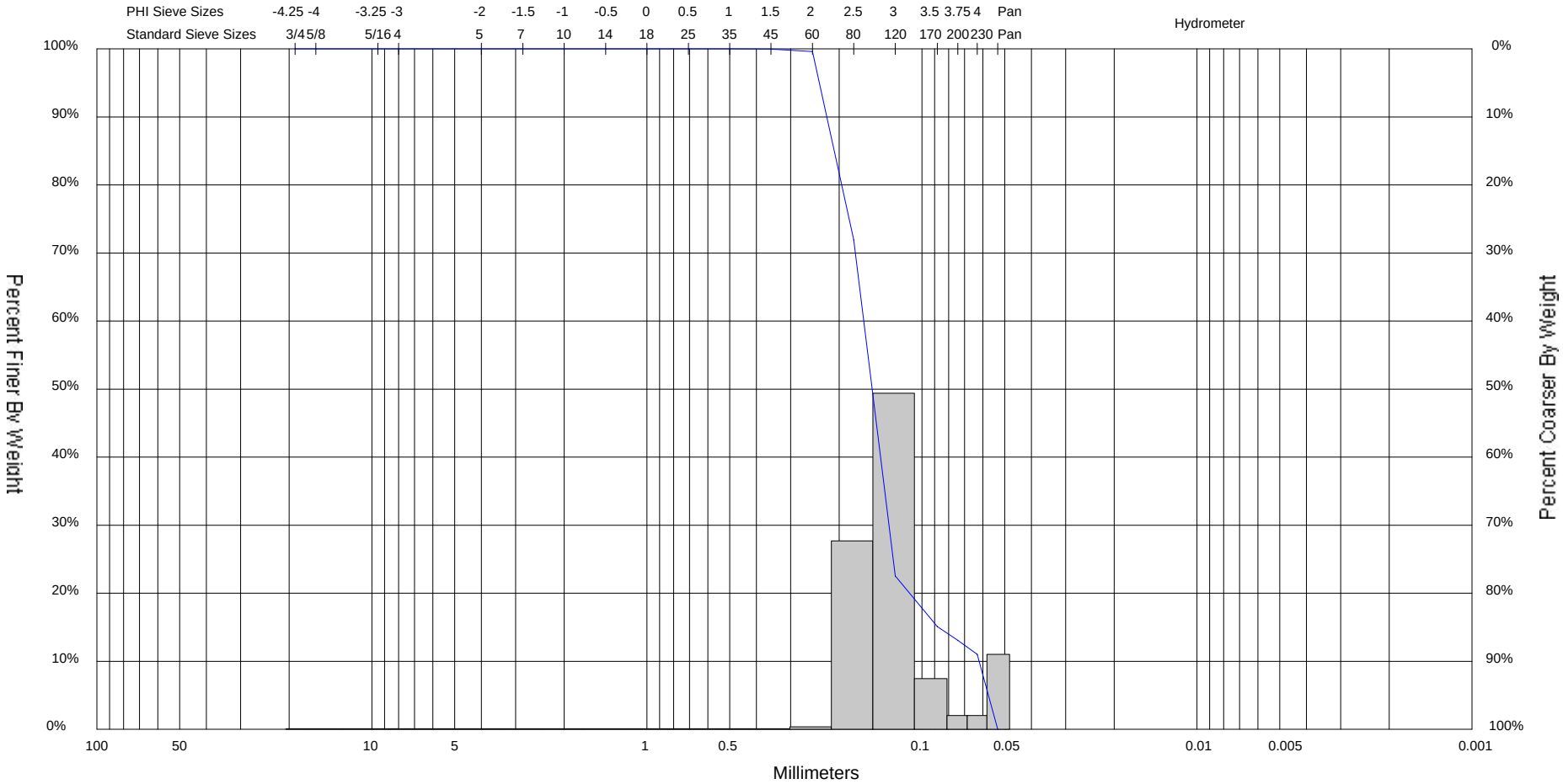

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-14 S#6		-52.1		SM	11.02	0.15	0.14	0.65	2.00	0.72
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855791
Northing (Y):	228997
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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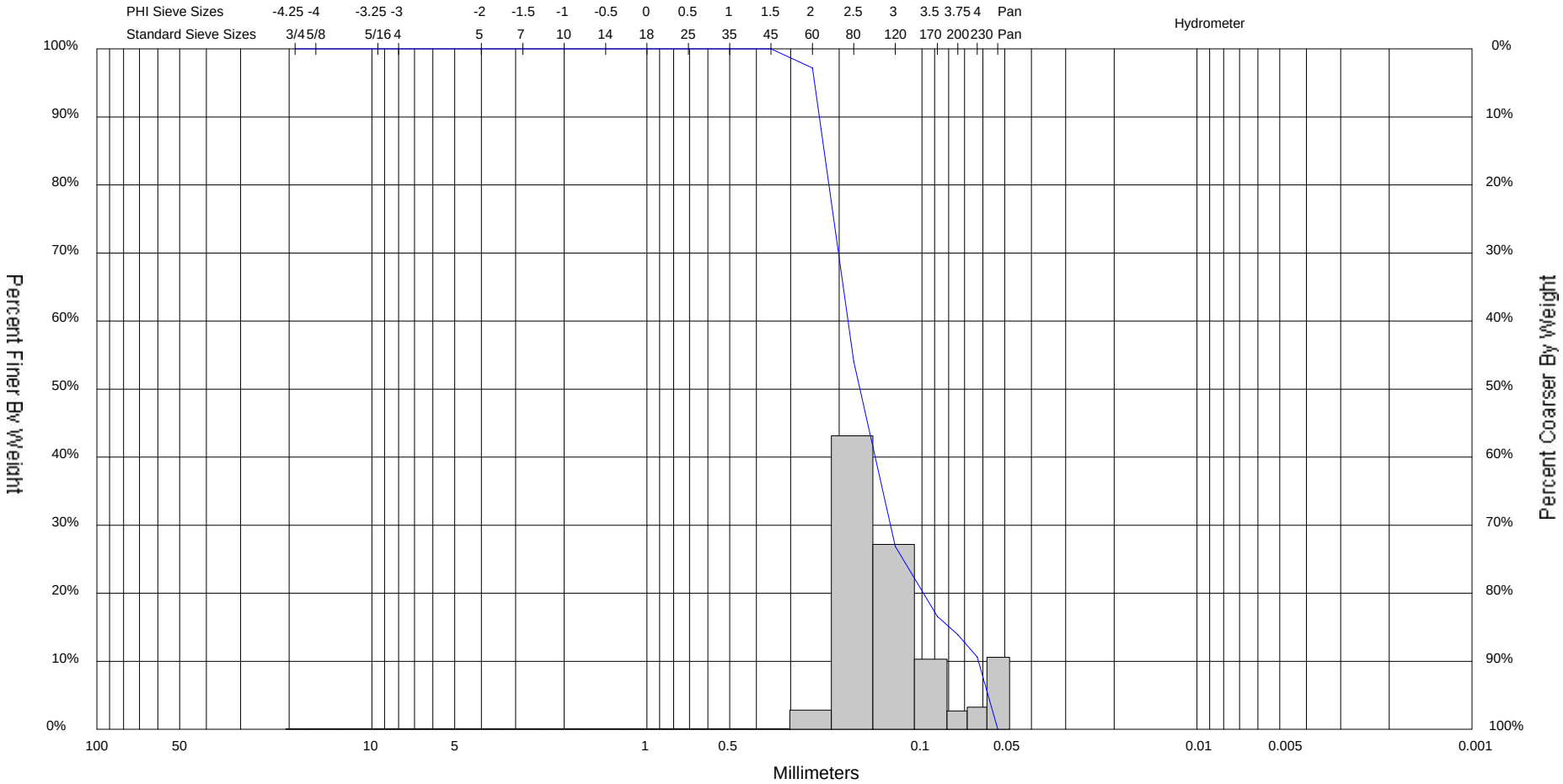

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-14 S#7		-54.4		SM	10.63	0.17	0.14	0.53	1.64	0.79
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855792
Northing (Y):	228997
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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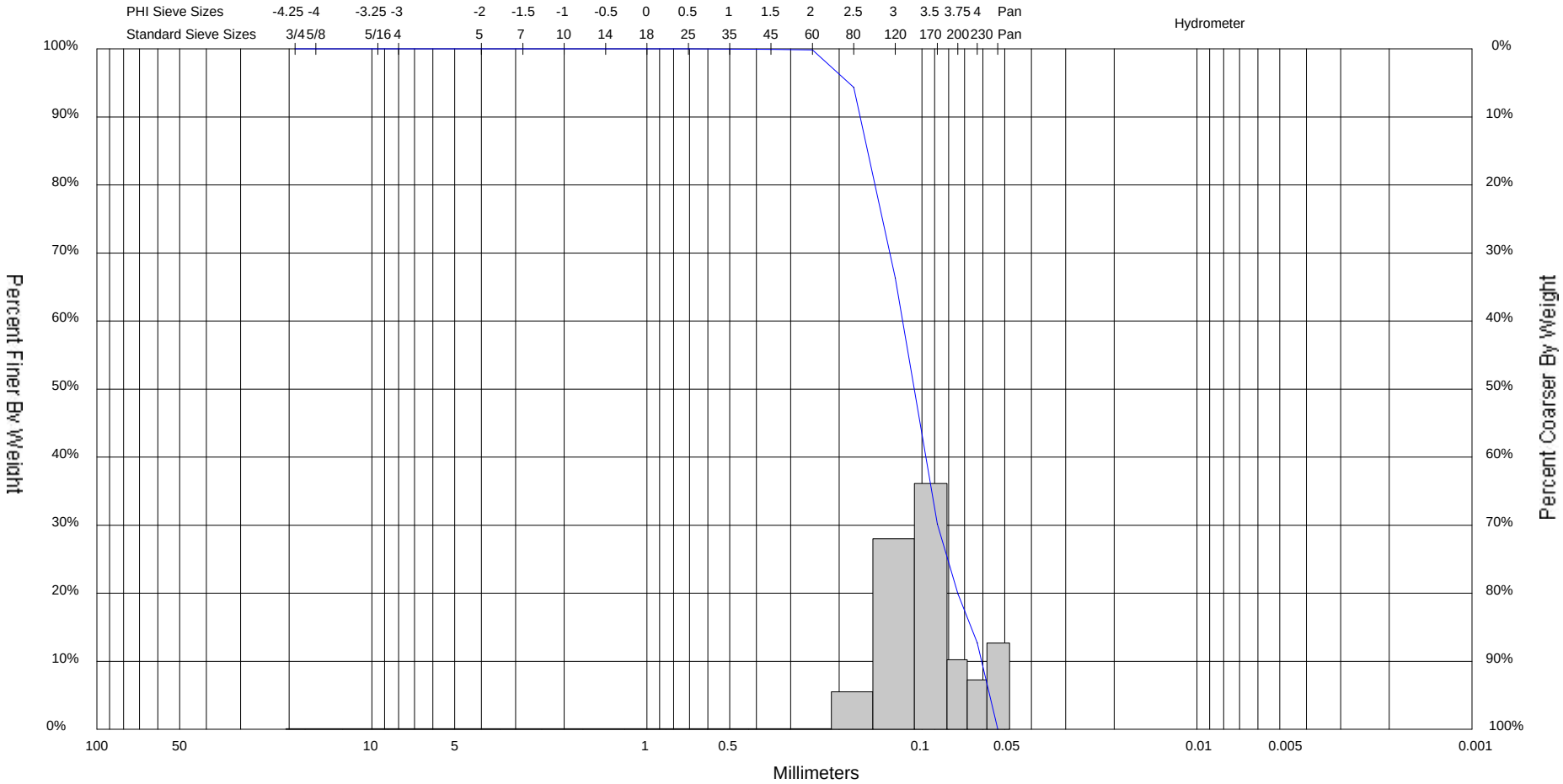

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-15 S#4		-42.7		SM	12.73	0.11	0.10	0.09	1.34	0.65
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855807
Northing (Y):	230199
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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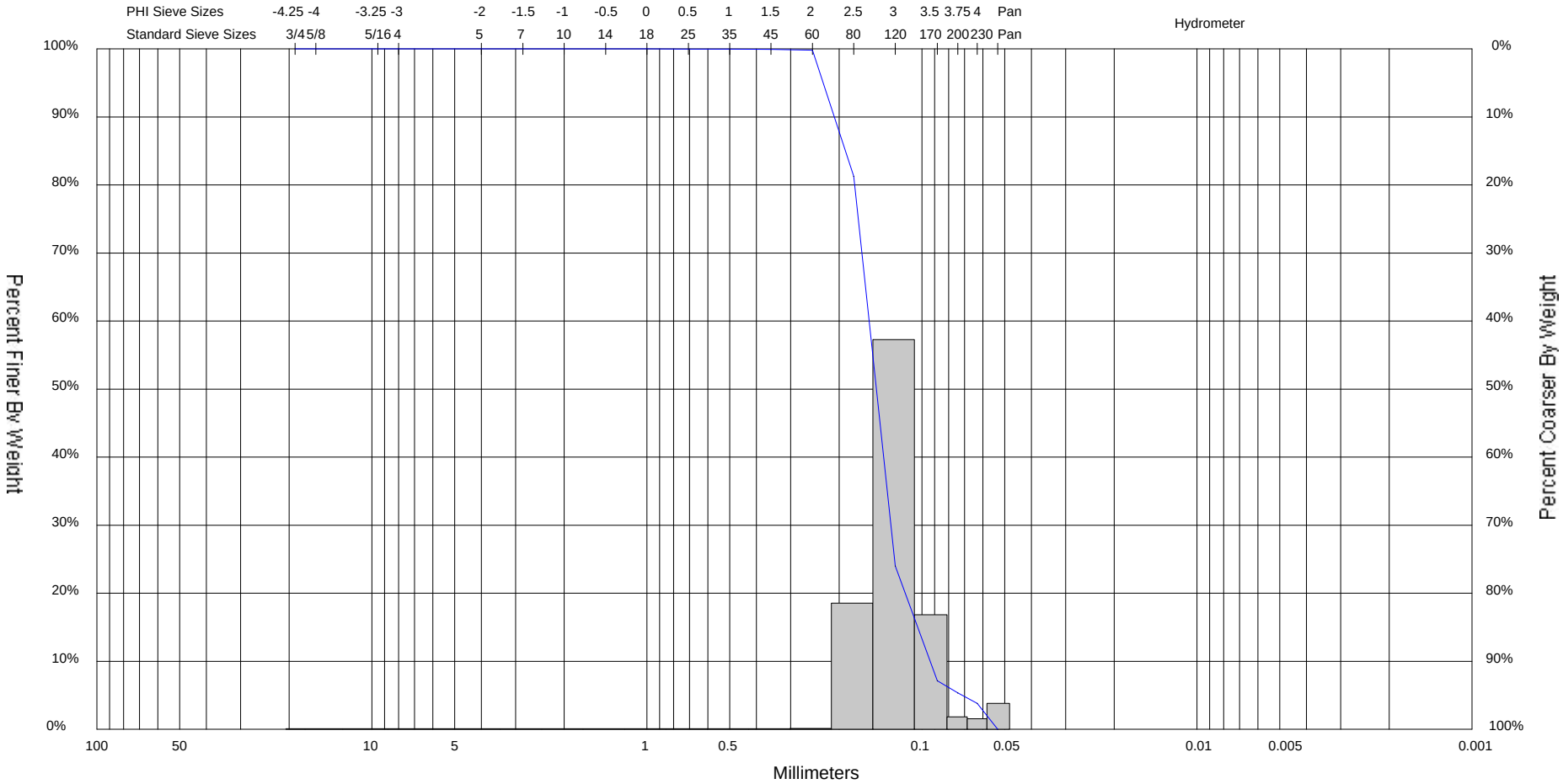

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-15 S#5		-47.2		SW-SM	3.79	0.15	0.14	0.46	2.00	0.56
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855807
Northing (Y):	230199
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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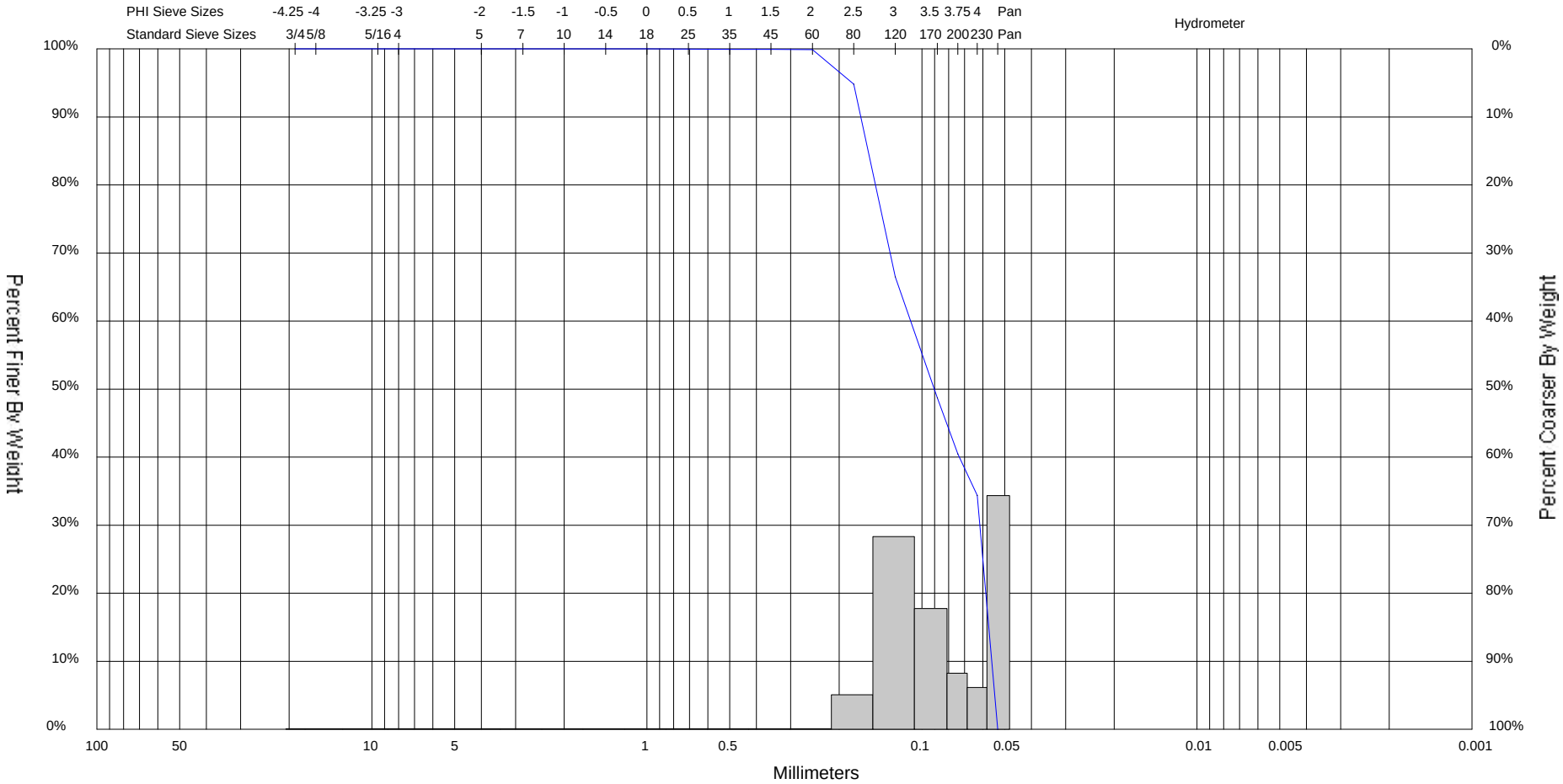

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-16 S#2		-38.3		SM	34.37	0.09	0.09	-0.09	1.10	0.74
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	6/7/03
Analyzed By:	ID
Easting (X):	3855695
Northing (Y):	231398
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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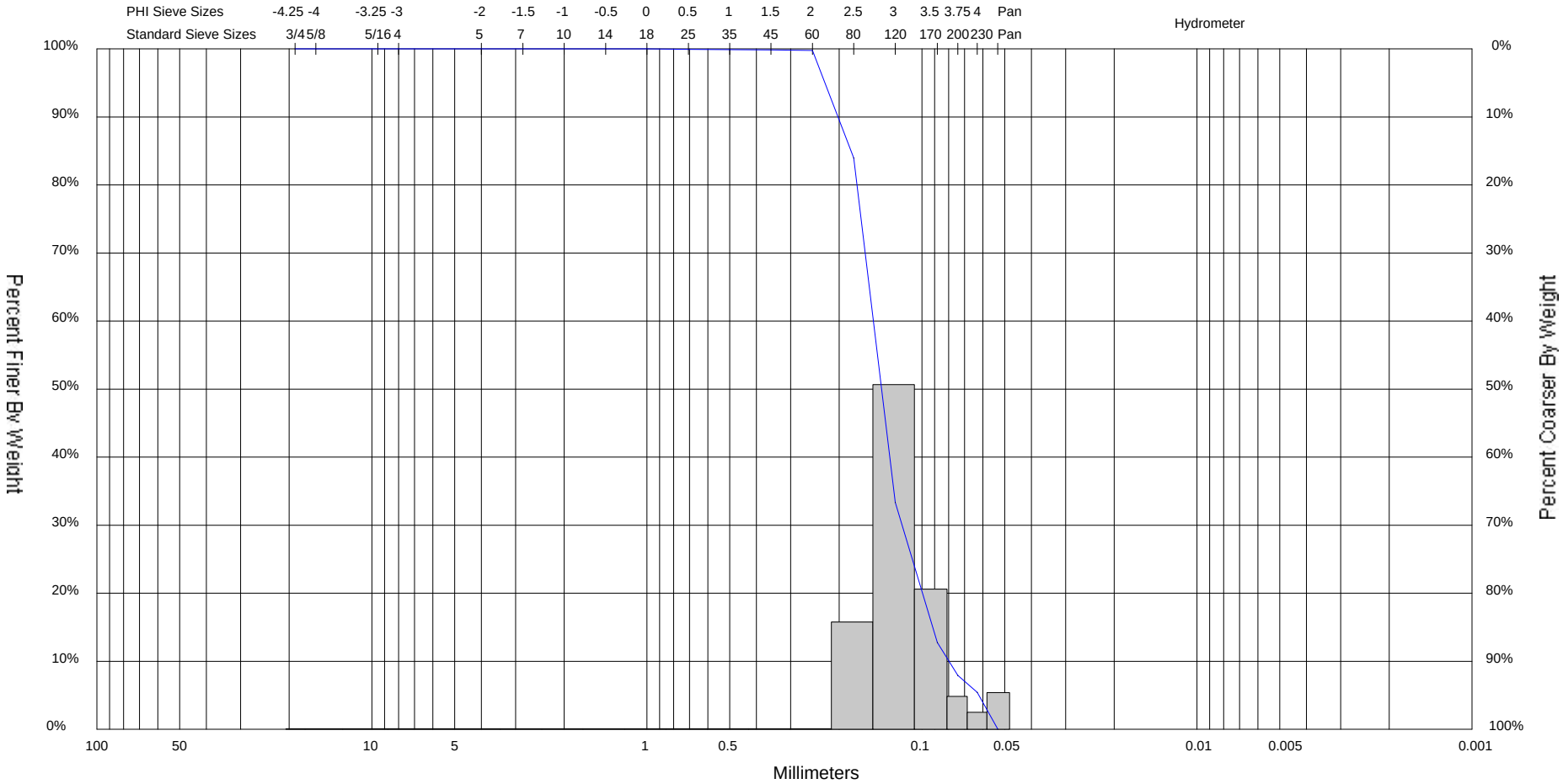

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-16 S#3		-40.8		SW-SM	5.41	0.14	0.13	0.41	1.85	0.63
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855695
Northing (Y):	231398
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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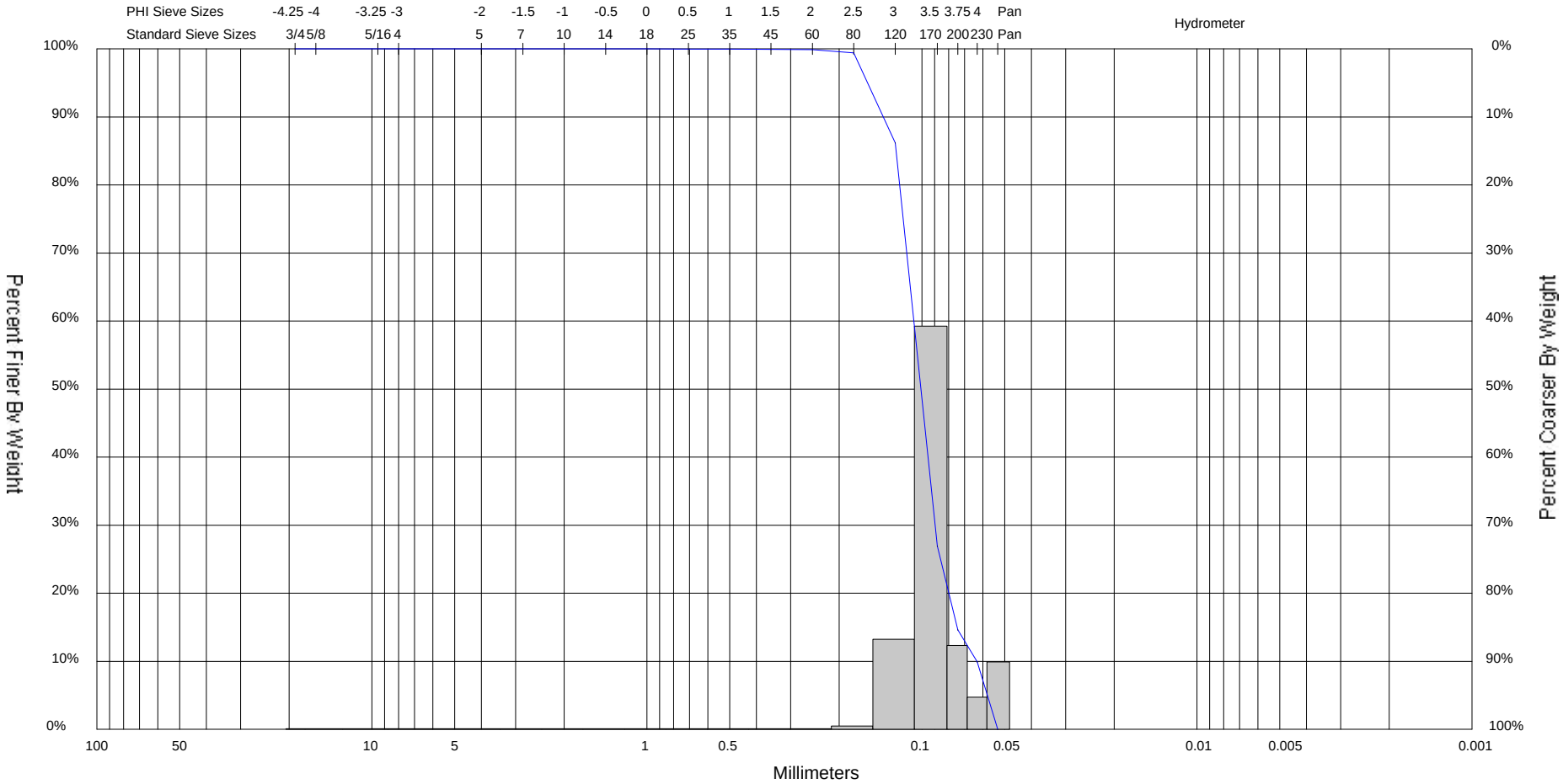

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-16 S#4		-46.3		SM	9.91	0.10	0.10	0.20	1.83	0.49
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855695
Northing (Y):	231398
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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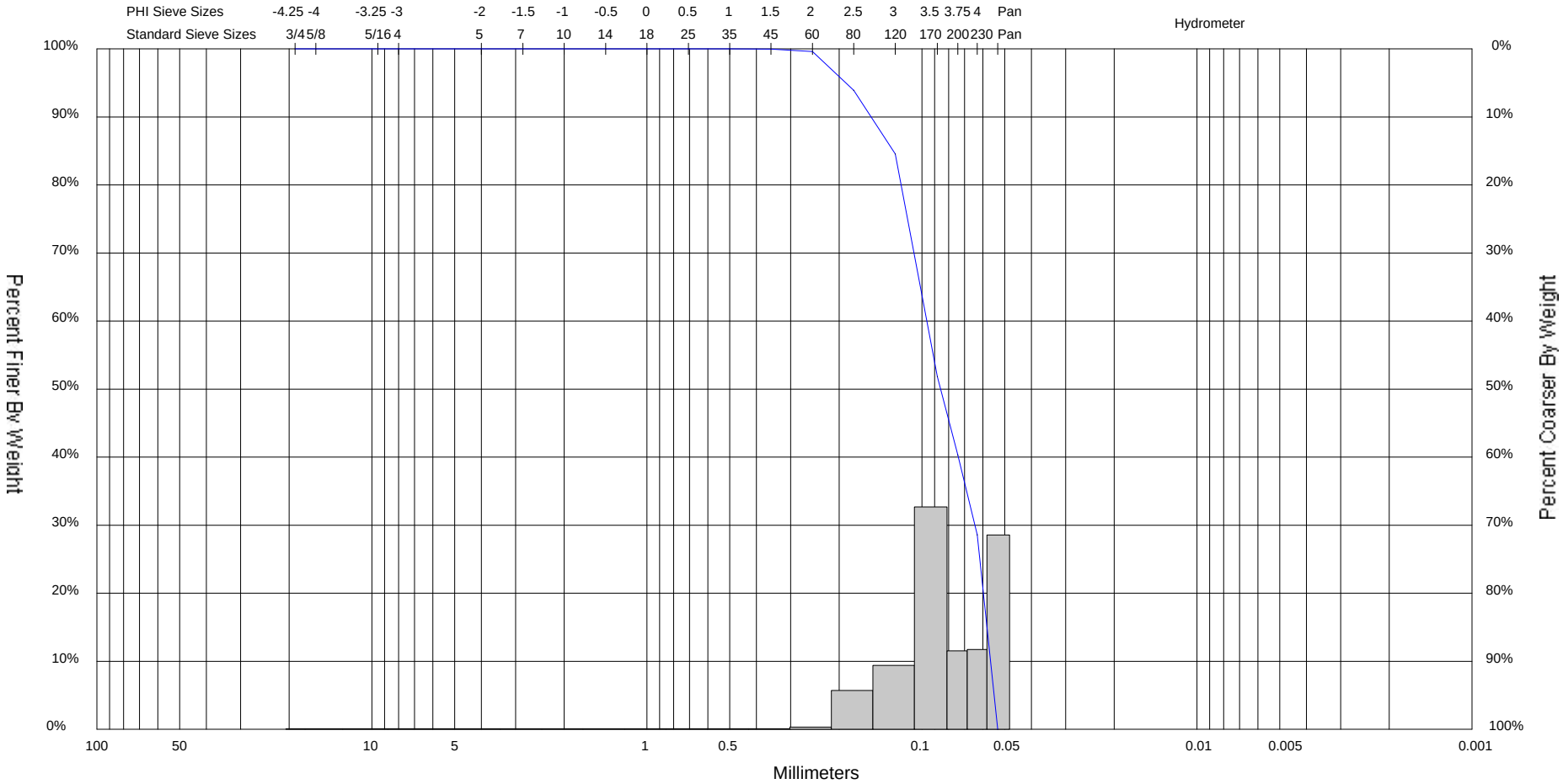

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-16 S#5		-49.4		SM	28.58	0.09	0.09	-0.37	1.59	0.67
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855695
Northing (Y):	231398
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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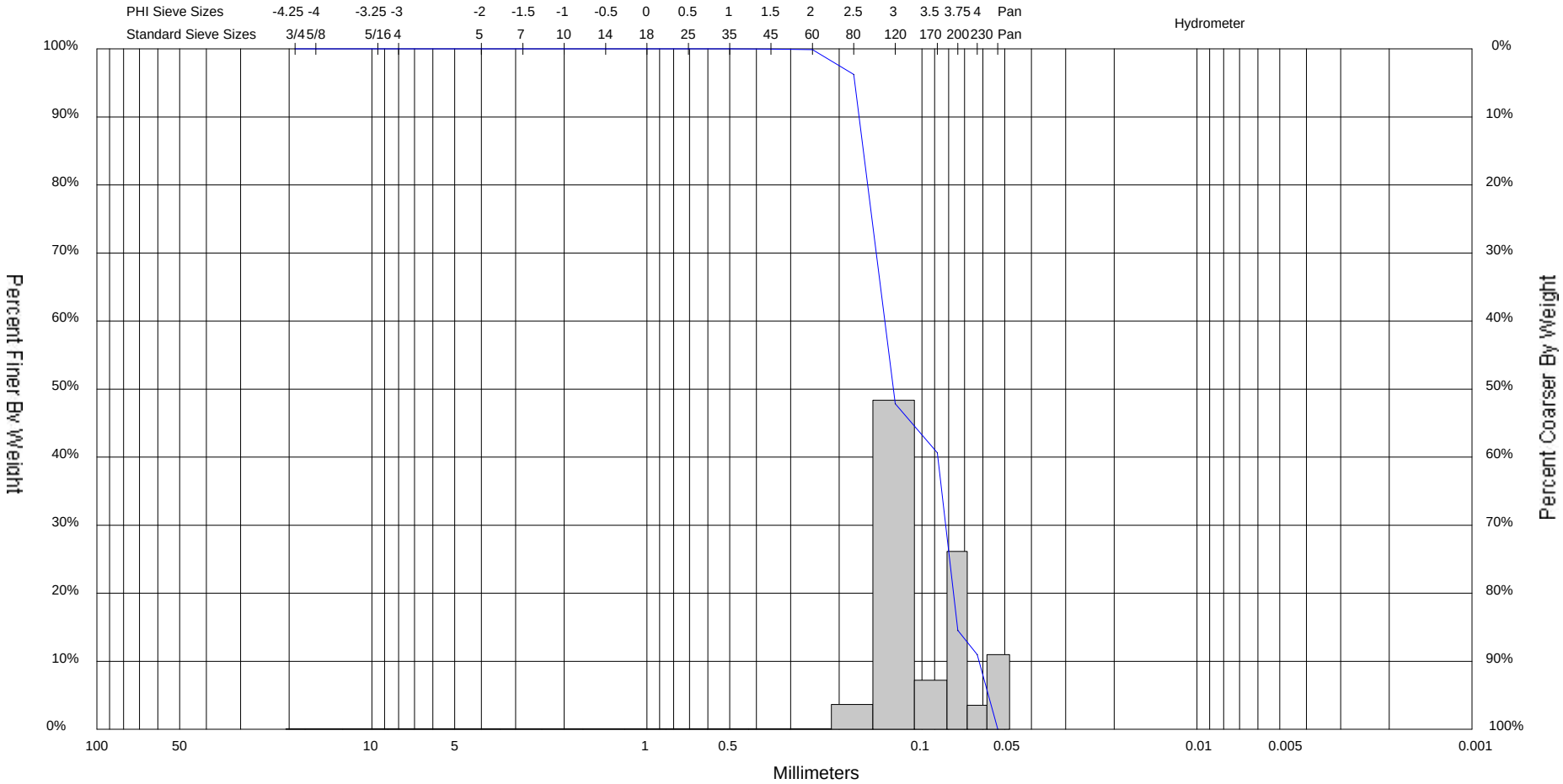

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-16 S#6		-52.1		SM	10.98	0.13	0.11	0.30	1.29	0.64
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855694
Northing (Y):	231397
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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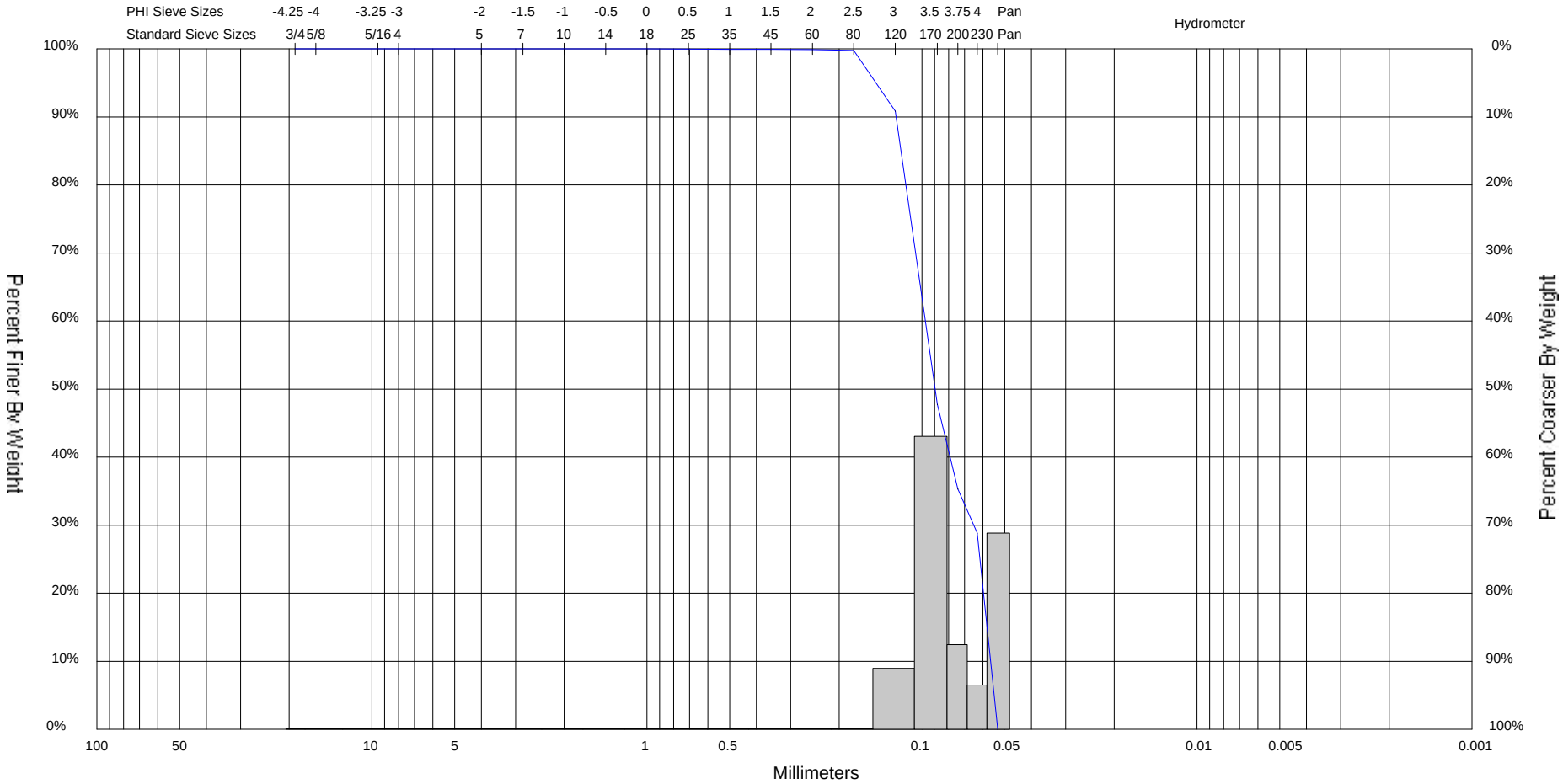

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-17 S#5		-41.4		SM	28.85	0.09	0.09	-0.06	1.23	0.57
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	6/7/03
Analyzed By:	ID
Easting (X):	3855693
Northing (Y):	231933
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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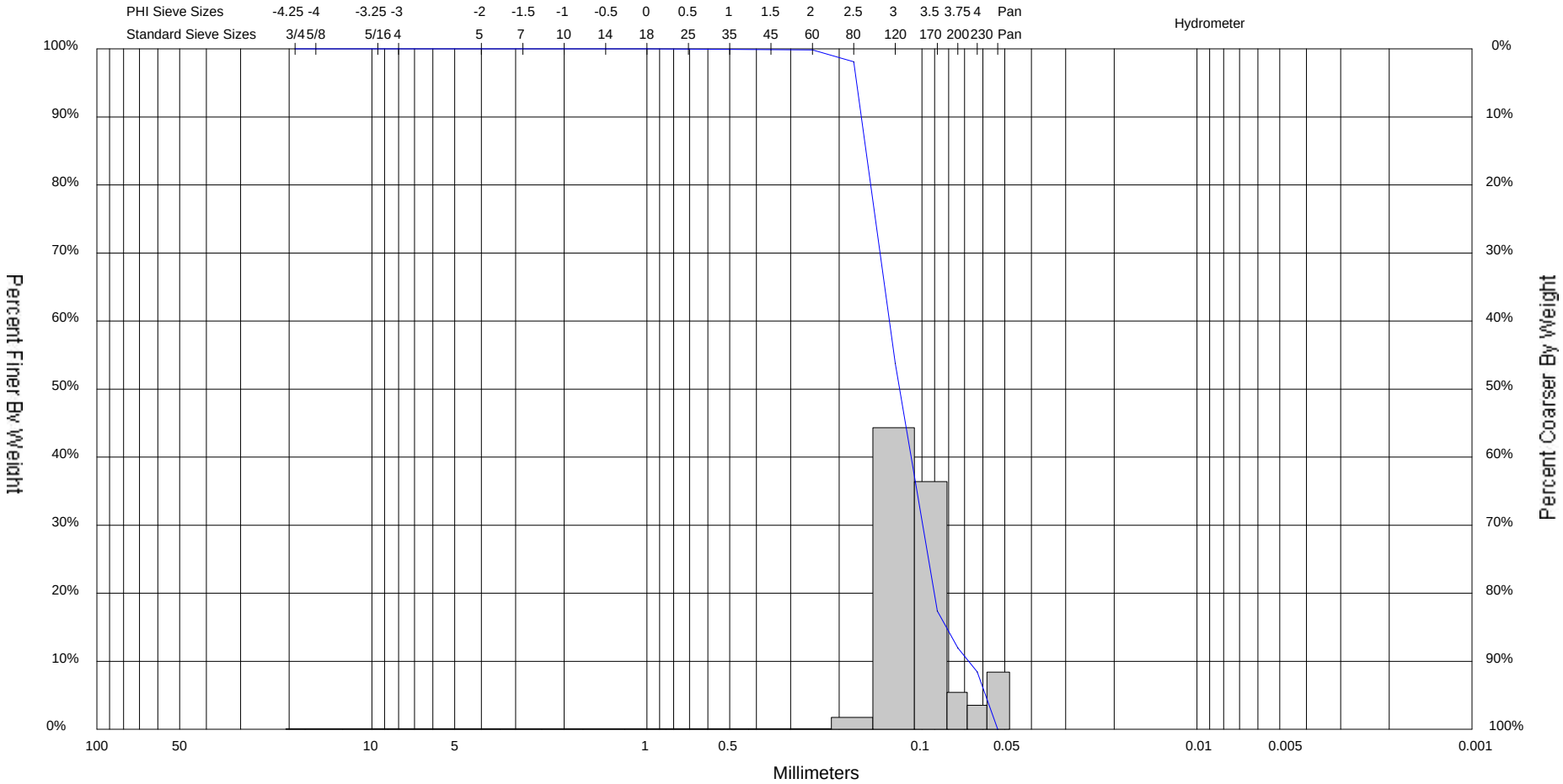

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-17 S#6		-48.1		SW-SM	8.43	0.12	0.11	0.48	1.75	0.57
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855693
Northing (Y):	231933
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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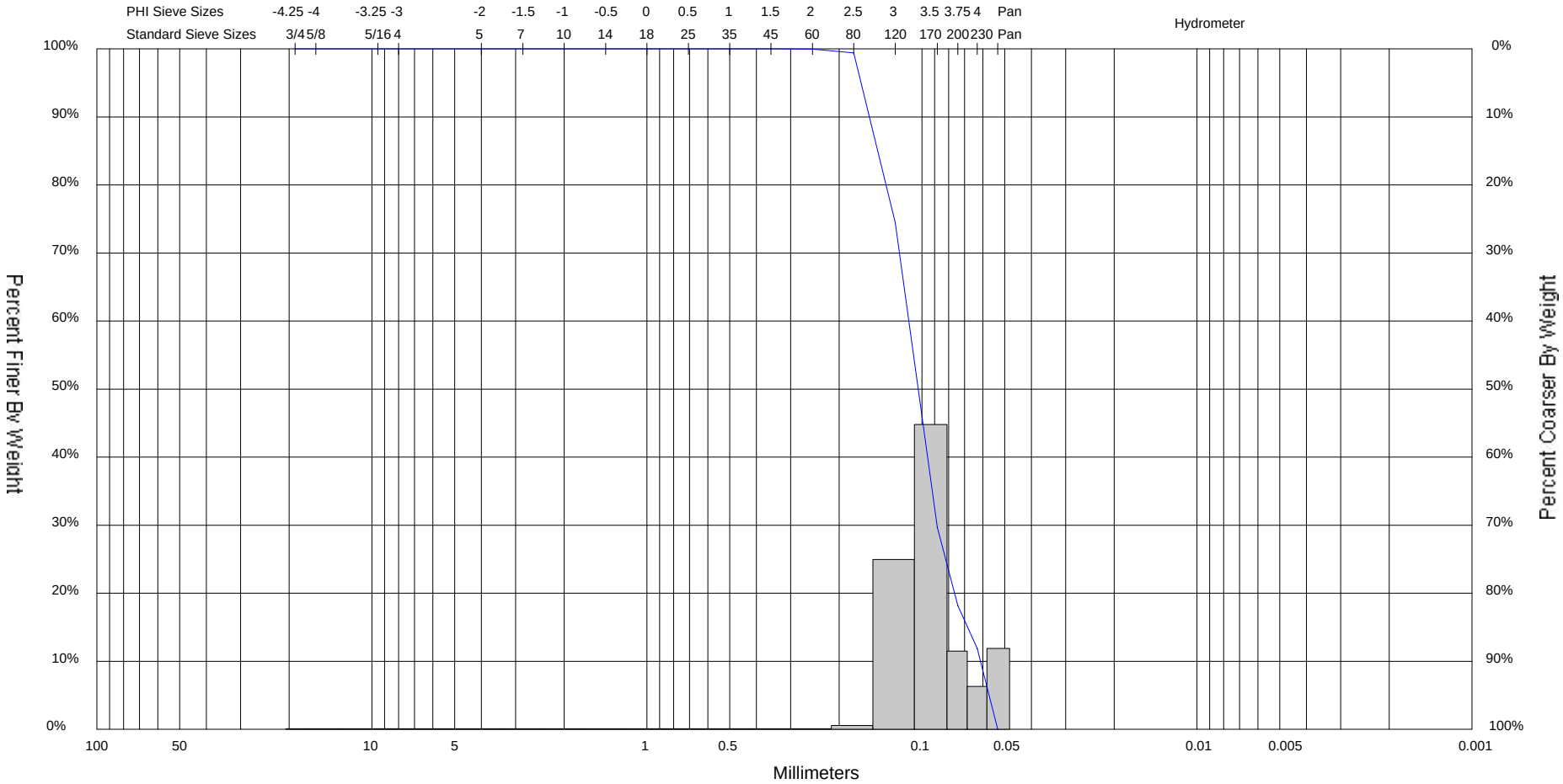

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-17a S#7		-53.1		SM	11.88	0.10	0.10	0.14	1.45	0.57
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855717
Northing (Y):	231940
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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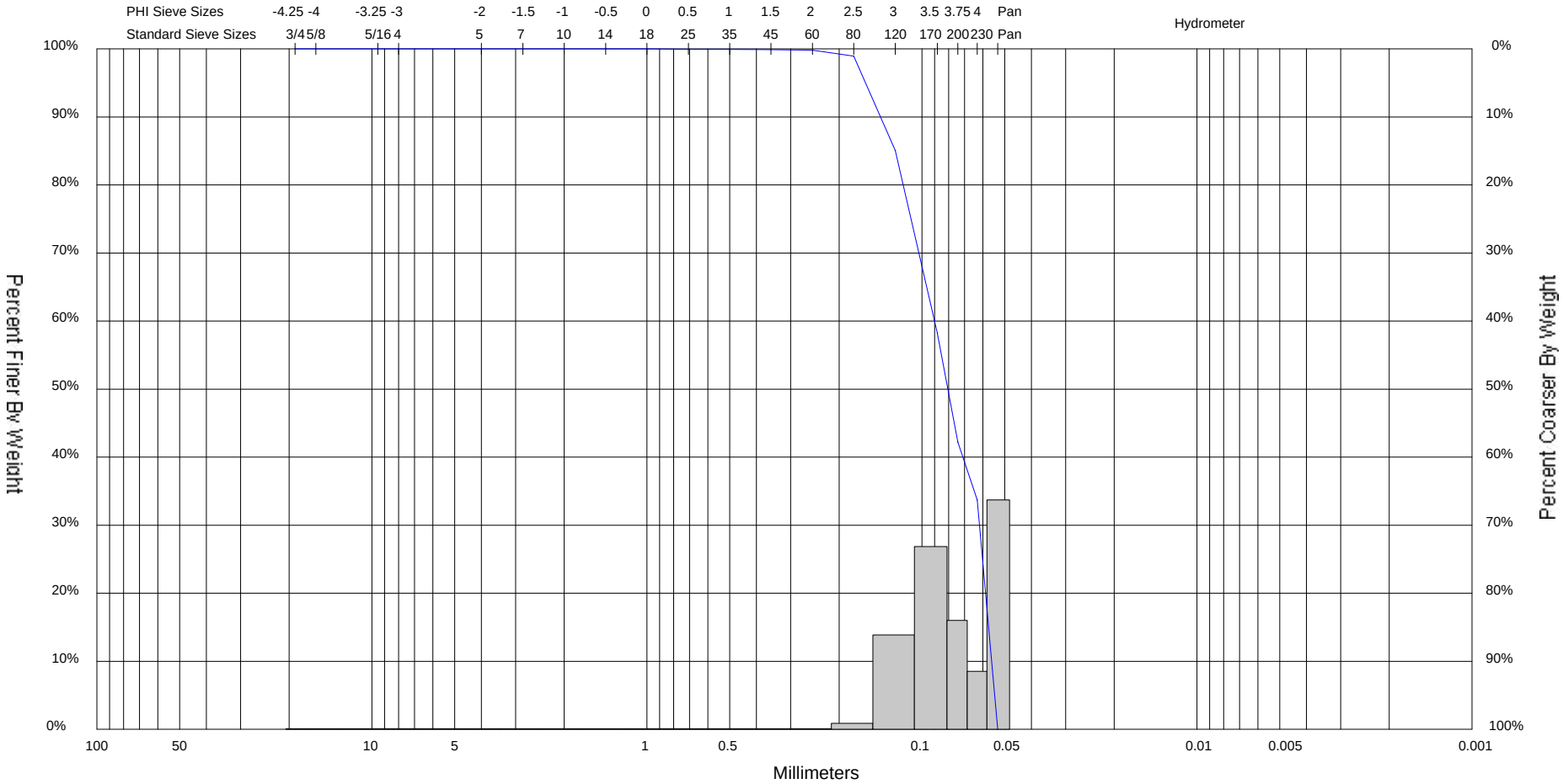

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-18 S#2		-37.6		SM	33.70	0.08	0.09	-0.25	1.33	0.62
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	6/7/03
Analyzed By:	ID
Easting (X):	3855340
Northing (Y):	232227
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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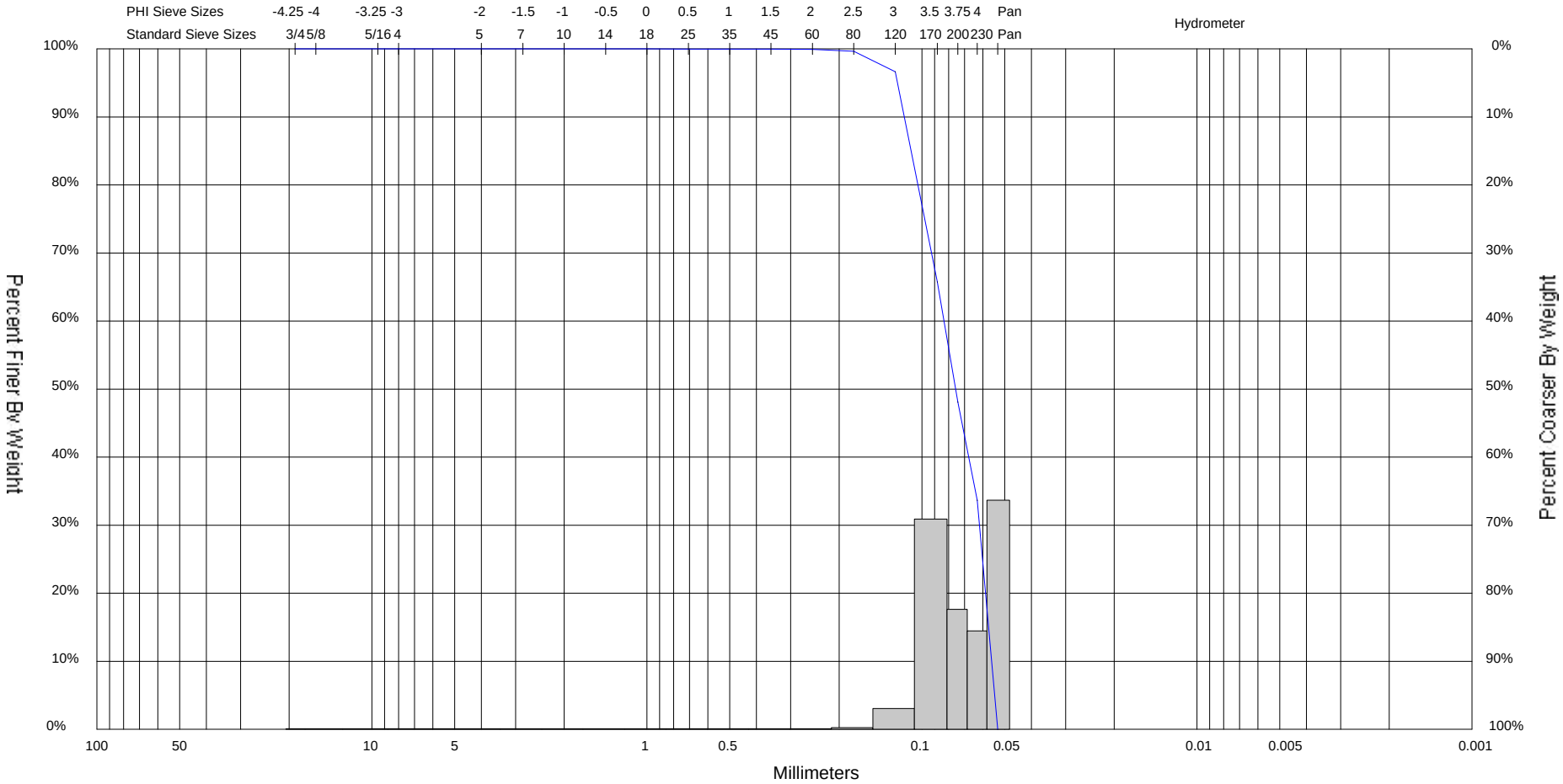

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-18 S#3		-43.6		SM	33.69	0.08	0.08	-0.14	1.18	0.48
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855340
Northing (Y):	232227
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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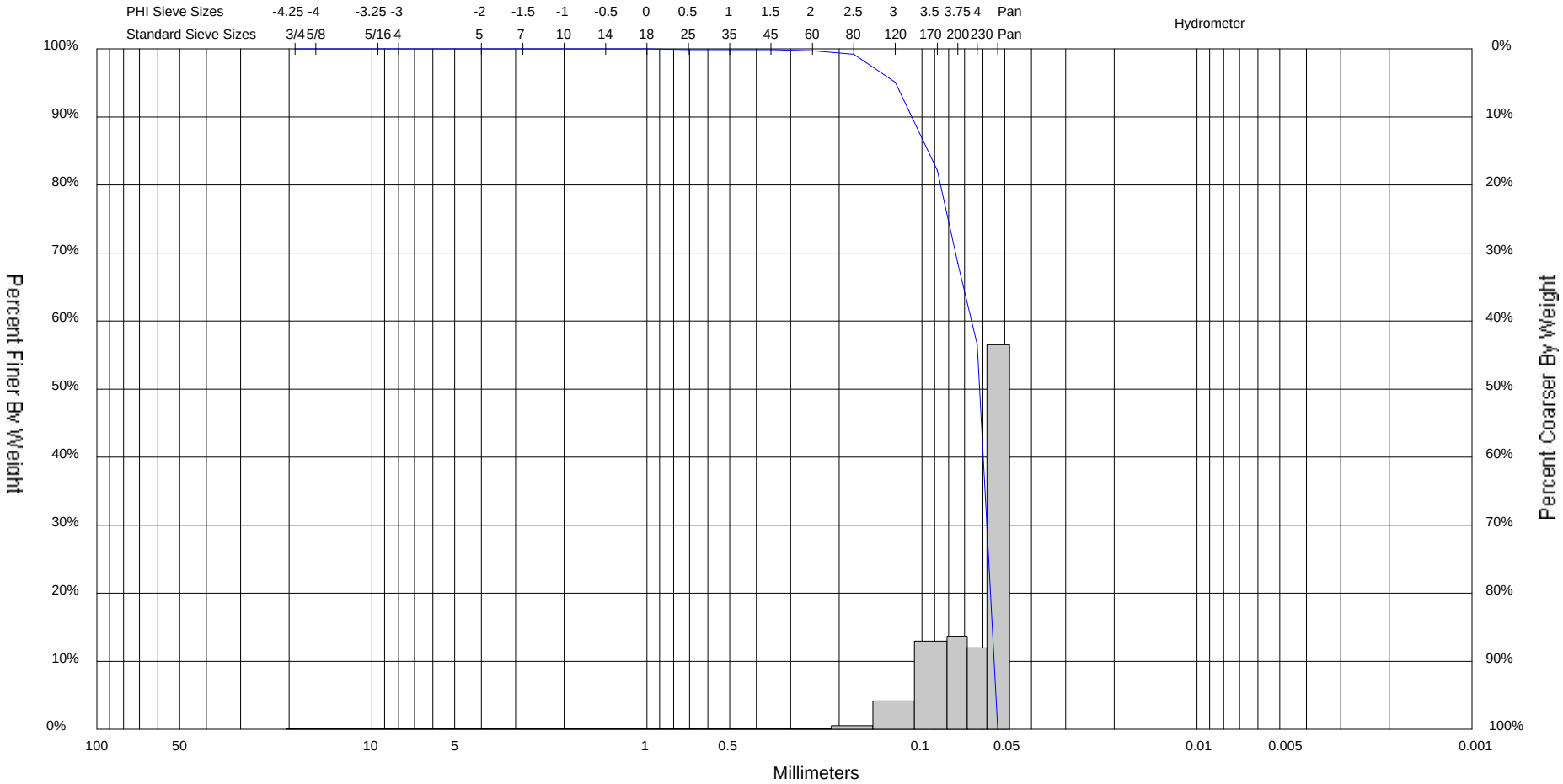

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-18 S#4		-40.6		ML	56.52	0.06	0.07	-0.66	1.79	0.46
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855340
Northing (Y):	232227
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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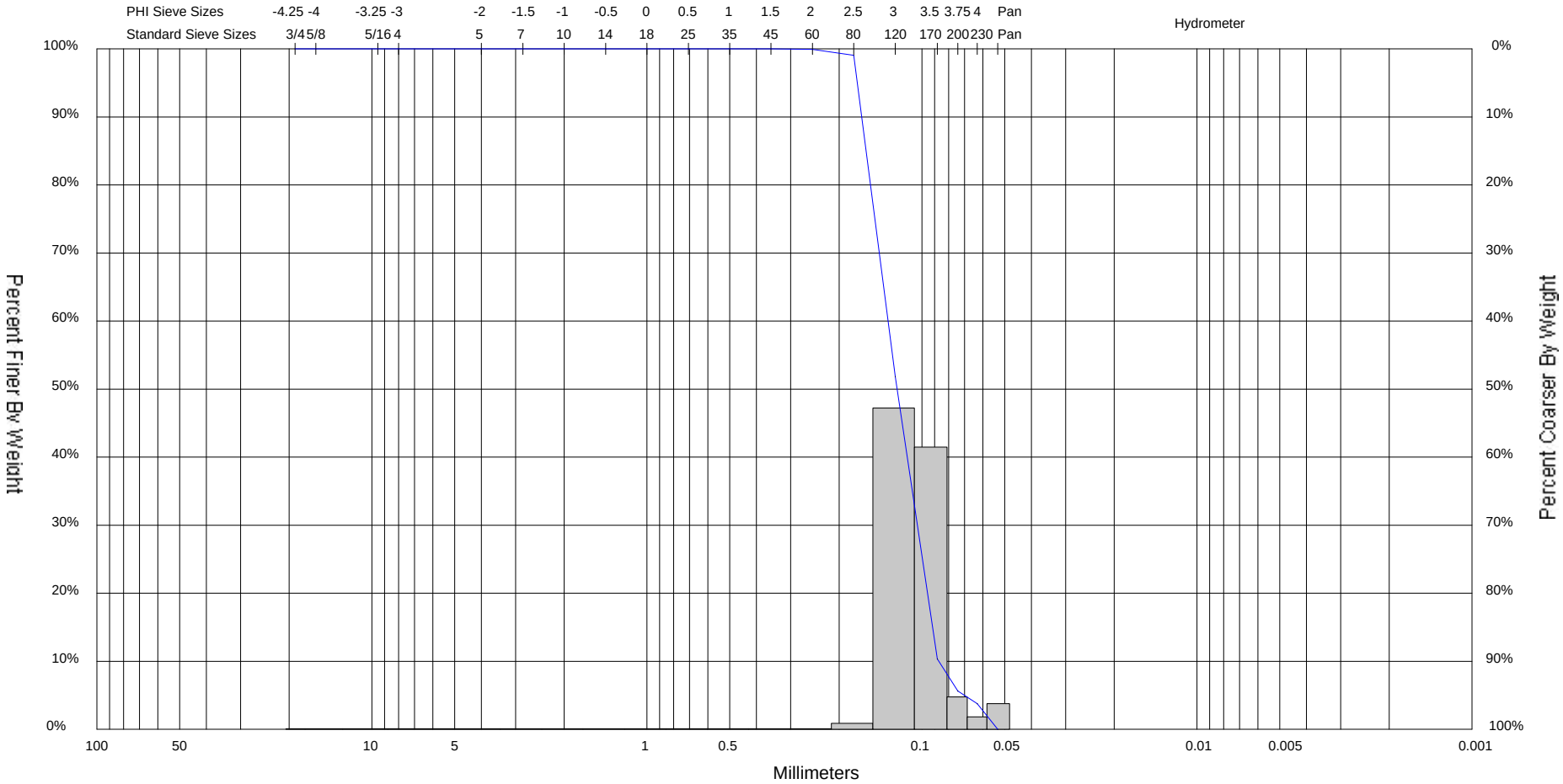

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-18 S#5		-49.9		SW-SM	3.77	0.12	0.12	0.35	1.59	0.47
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855340
Northing (Y):	232227
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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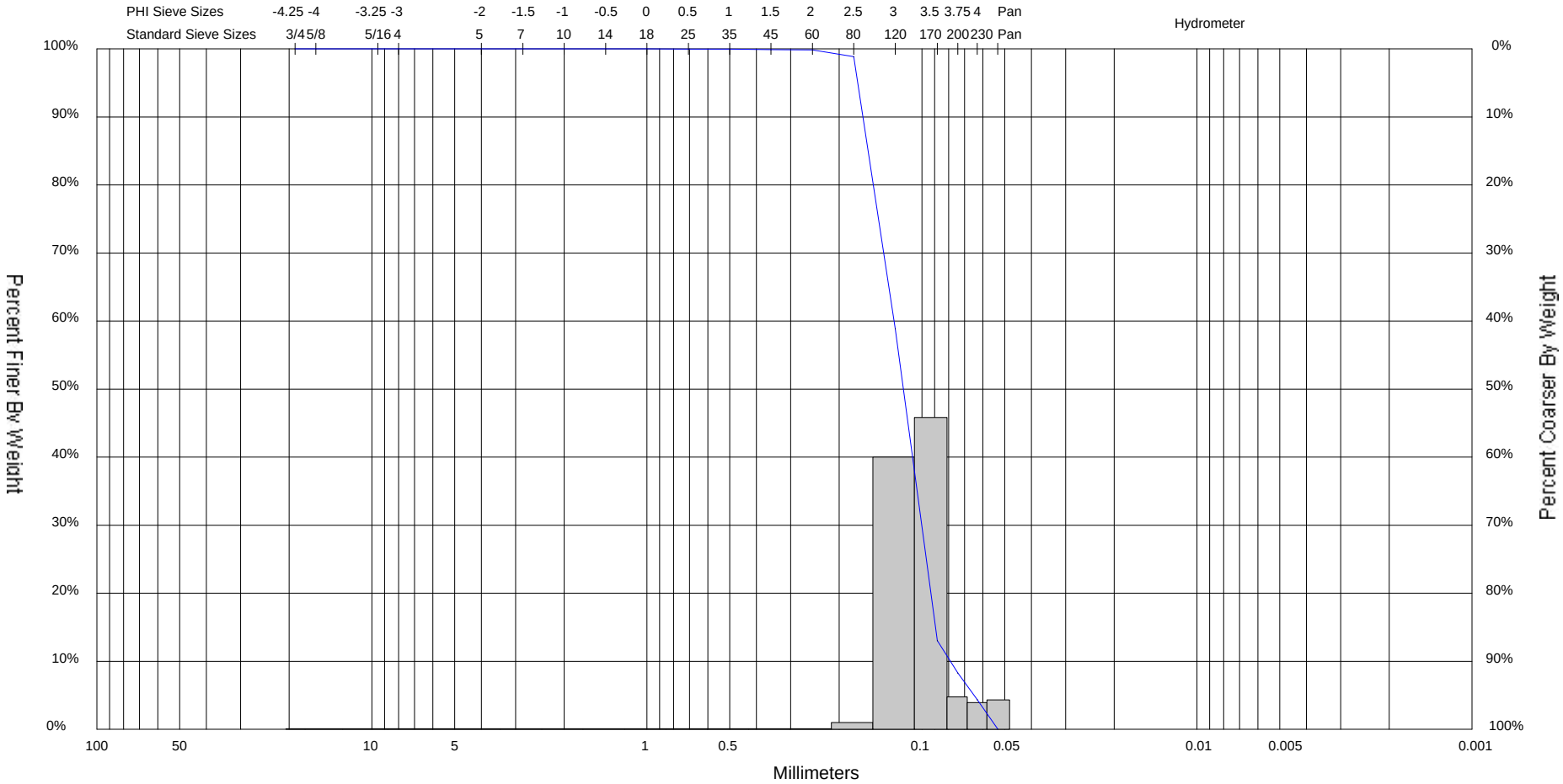

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-18A S#6		-51.1		SW-SM	4.34	0.12	0.11	0.39	1.72	0.50
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855339
Northing (Y):	232228
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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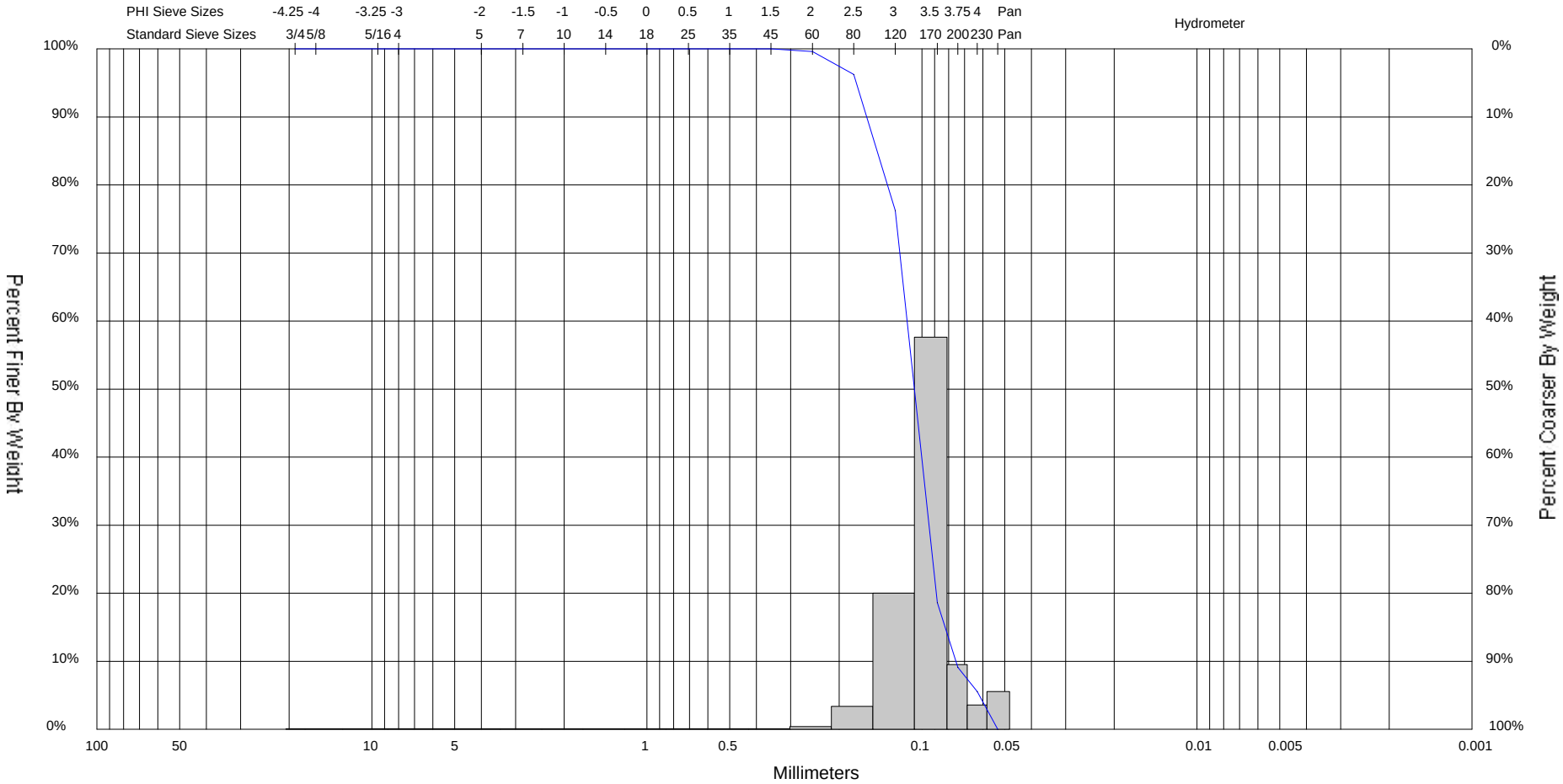

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-18A S#7		-52.7		SW-SM	5.55	0.11	0.11	0.16	1.81	0.50
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855339
Northing (Y):	232228
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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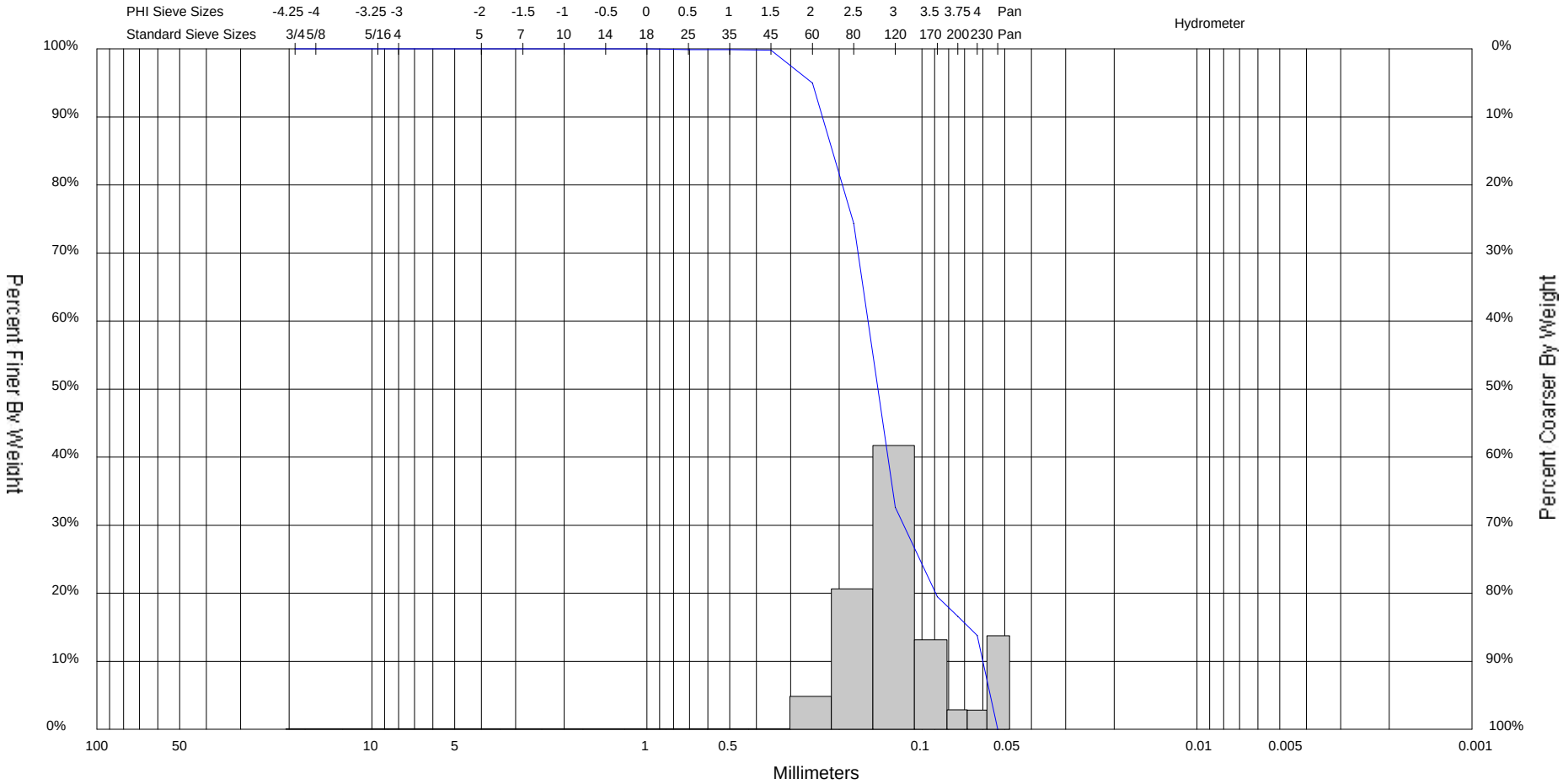

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-19 S#3		-41.8		SM	13.78	0.14	0.13	0.28	1.44	0.81
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855483
Northing (Y):	230369
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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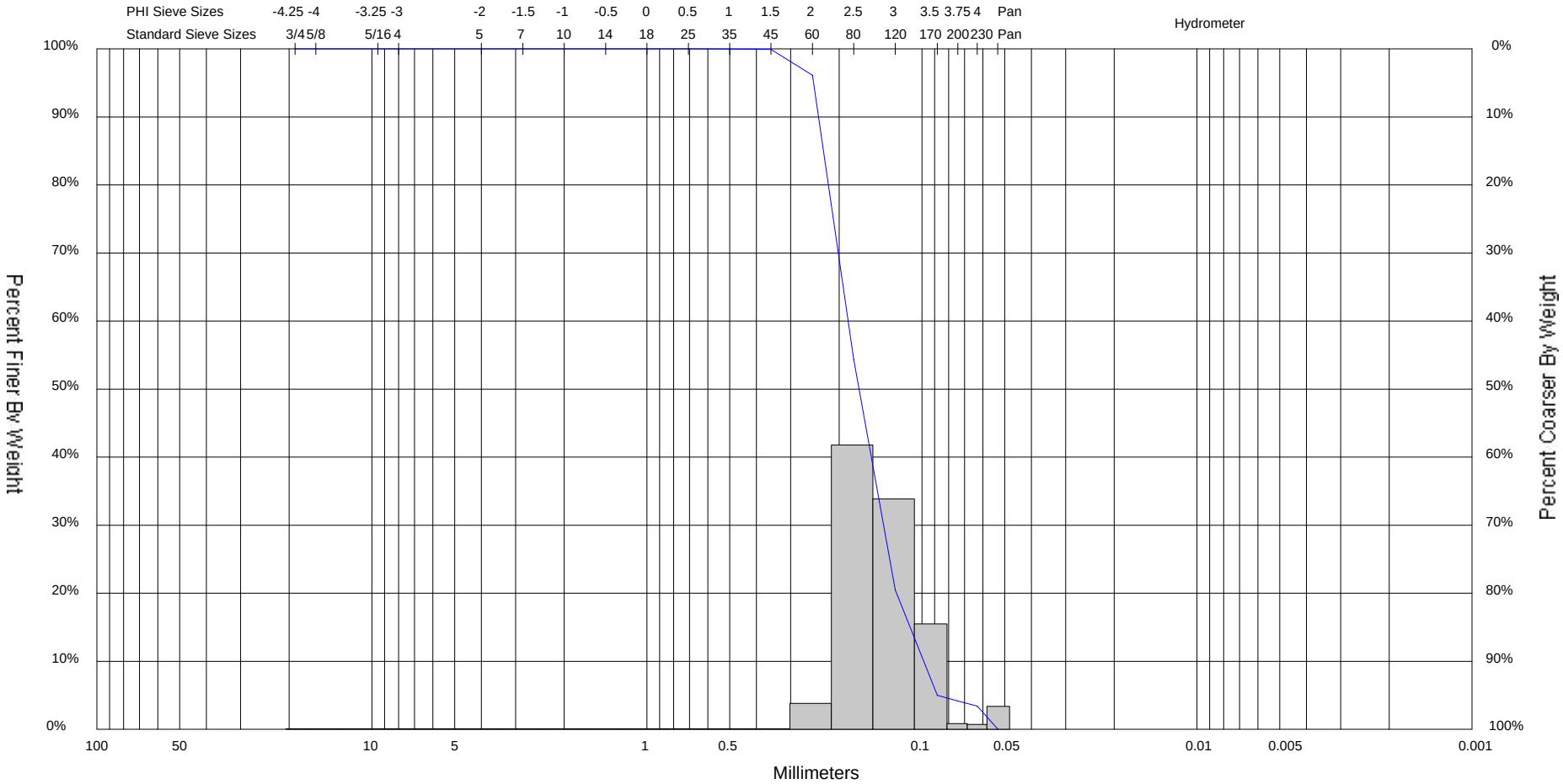

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-19 S#4		-43.3		SP	3.42	0.17	0.16	0.29	1.44	0.56
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855483
Northing (Y):	230369
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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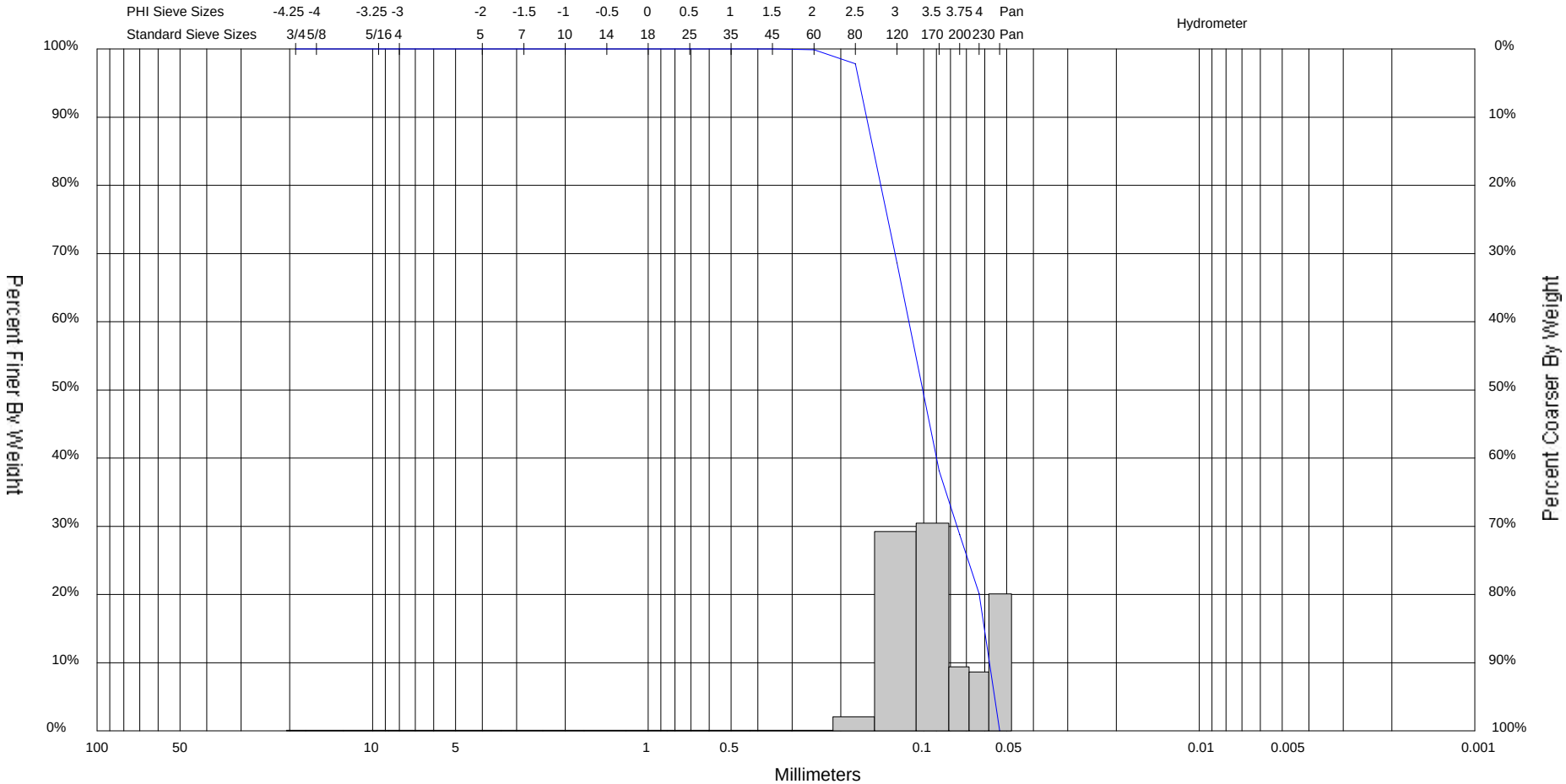

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-19 S#6		-52.1		SM	20.13	0.10	0.10	0.04	1.16	0.67
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855483
Northing (Y):	230369
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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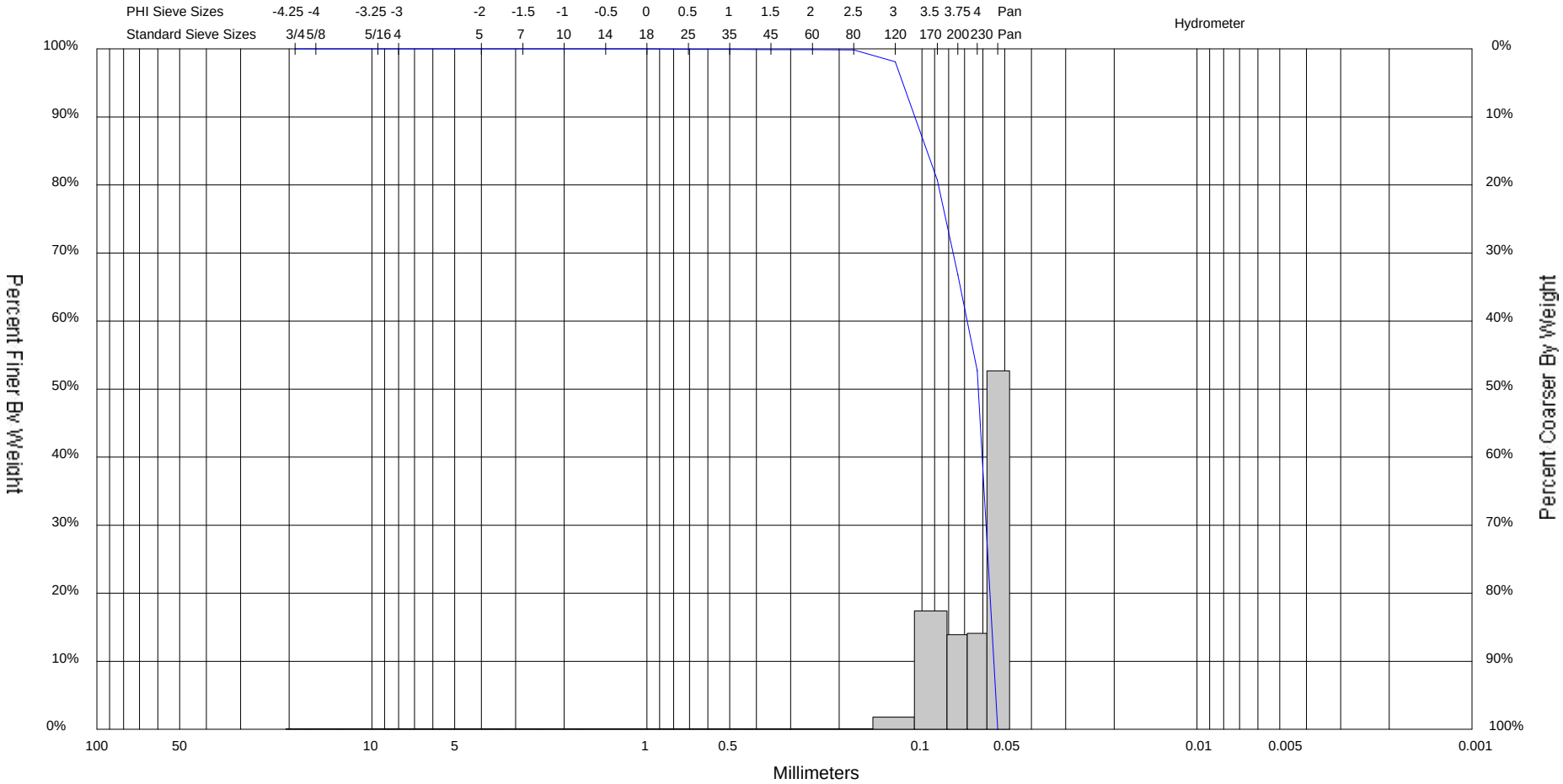

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-20 S#2		-38.8		ML	52.70	0.06	0.07	-0.53	1.54	0.44
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3856014
Northing (Y):	229476
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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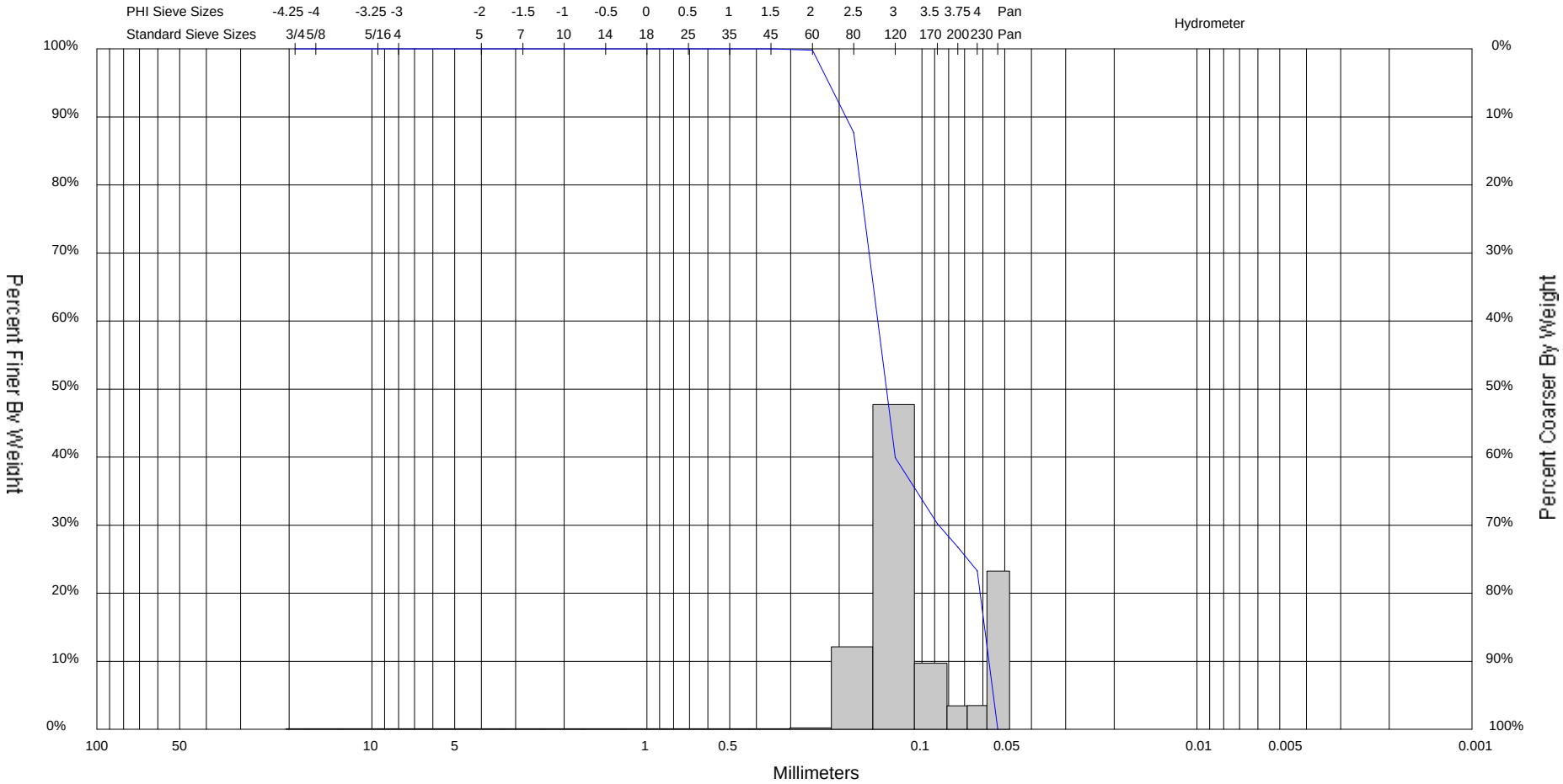

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-20 S#3		-45.5		SM	23.28	0.13	0.11	0.13	1.12	0.82
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3856014
Northing (Y):	229476
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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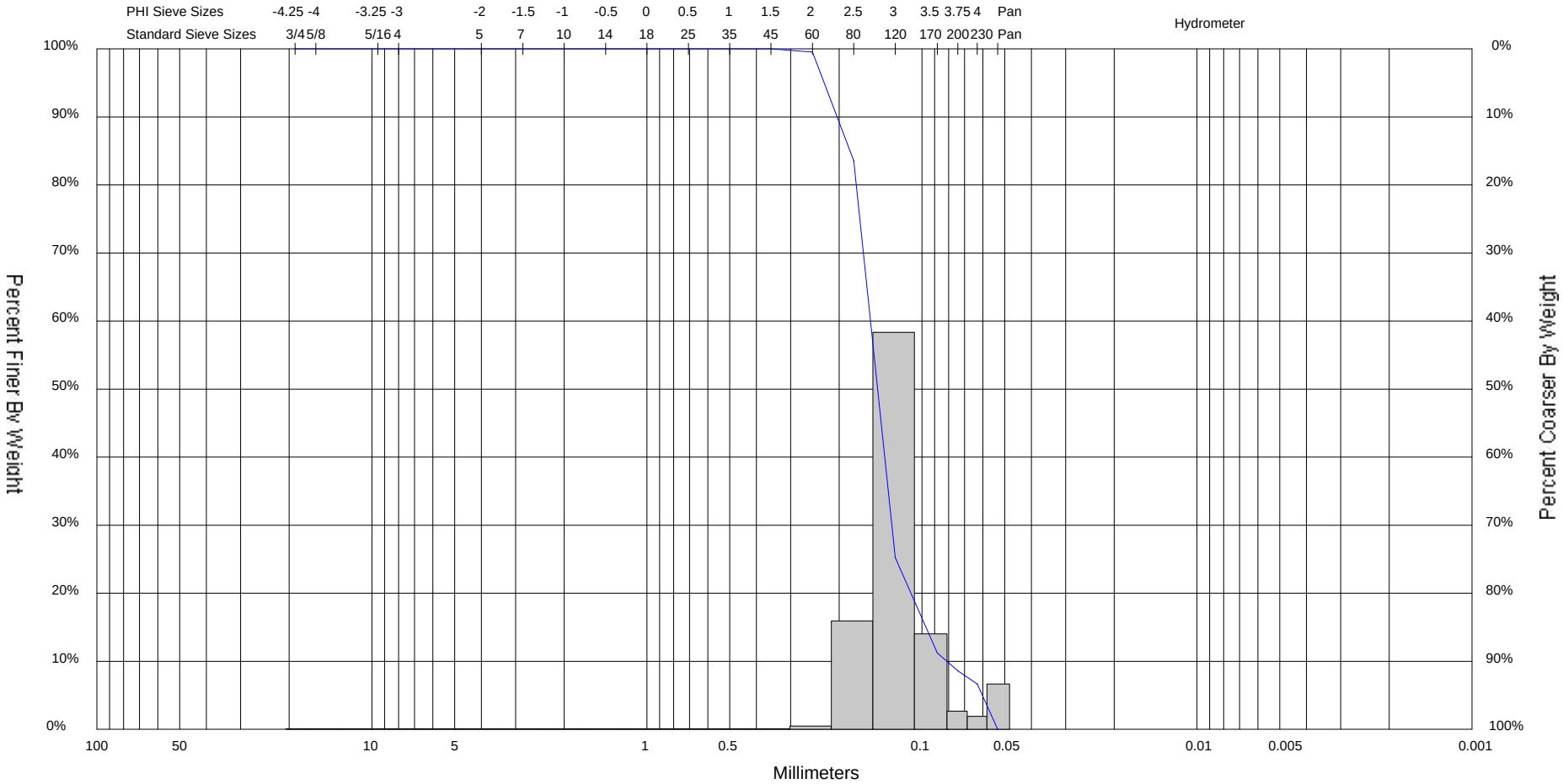

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-20 S#4		-49.8		SW-SM	6.66	0.14	0.13	0.66	2.25	0.63
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3856014
Northing (Y):	229476
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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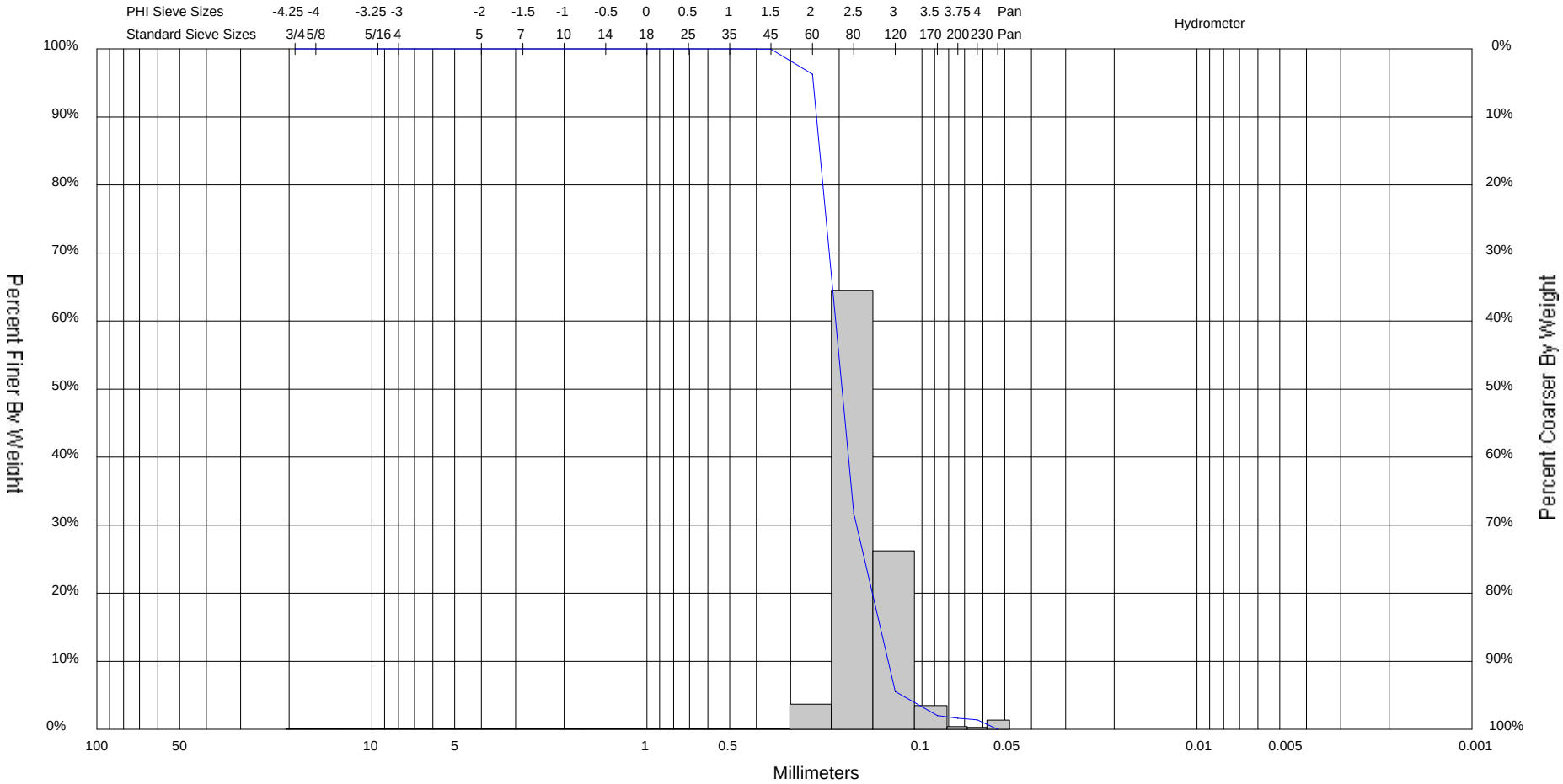

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-20 S#5		-52.3		SP	1.37	0.19	0.18	0.39	1.52	0.40
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3856014
Northing (Y):	229476
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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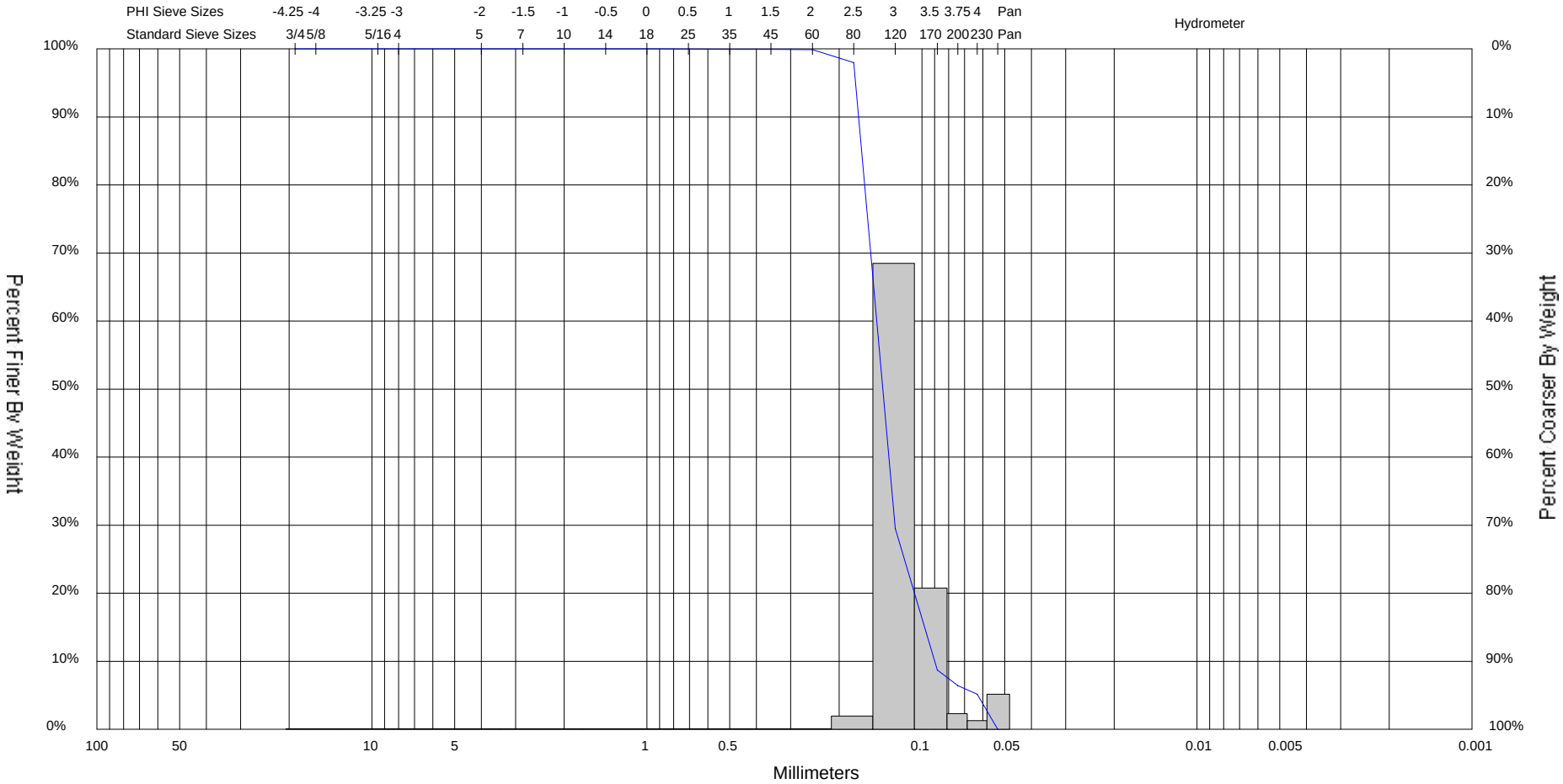

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-21 S#3		-43		SW-SM	5.14	0.14	0.12	0.91	2.40	0.52
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3863684
Northing (Y):	223828
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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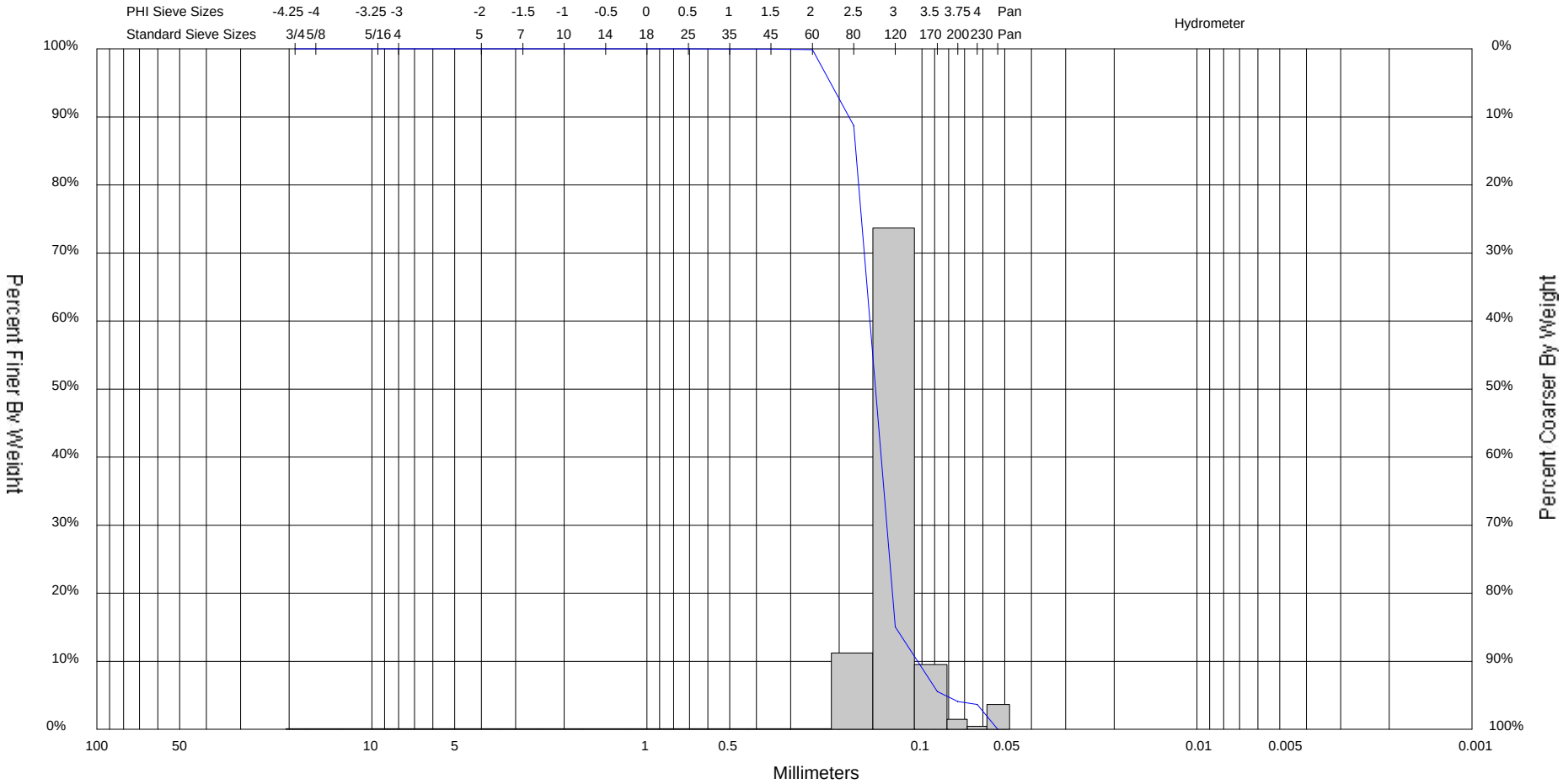

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-21 S#4		-49.5		SP	3.65	0.15	0.14	0.54	2.38	0.43
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3863684
Northing (Y):	223828
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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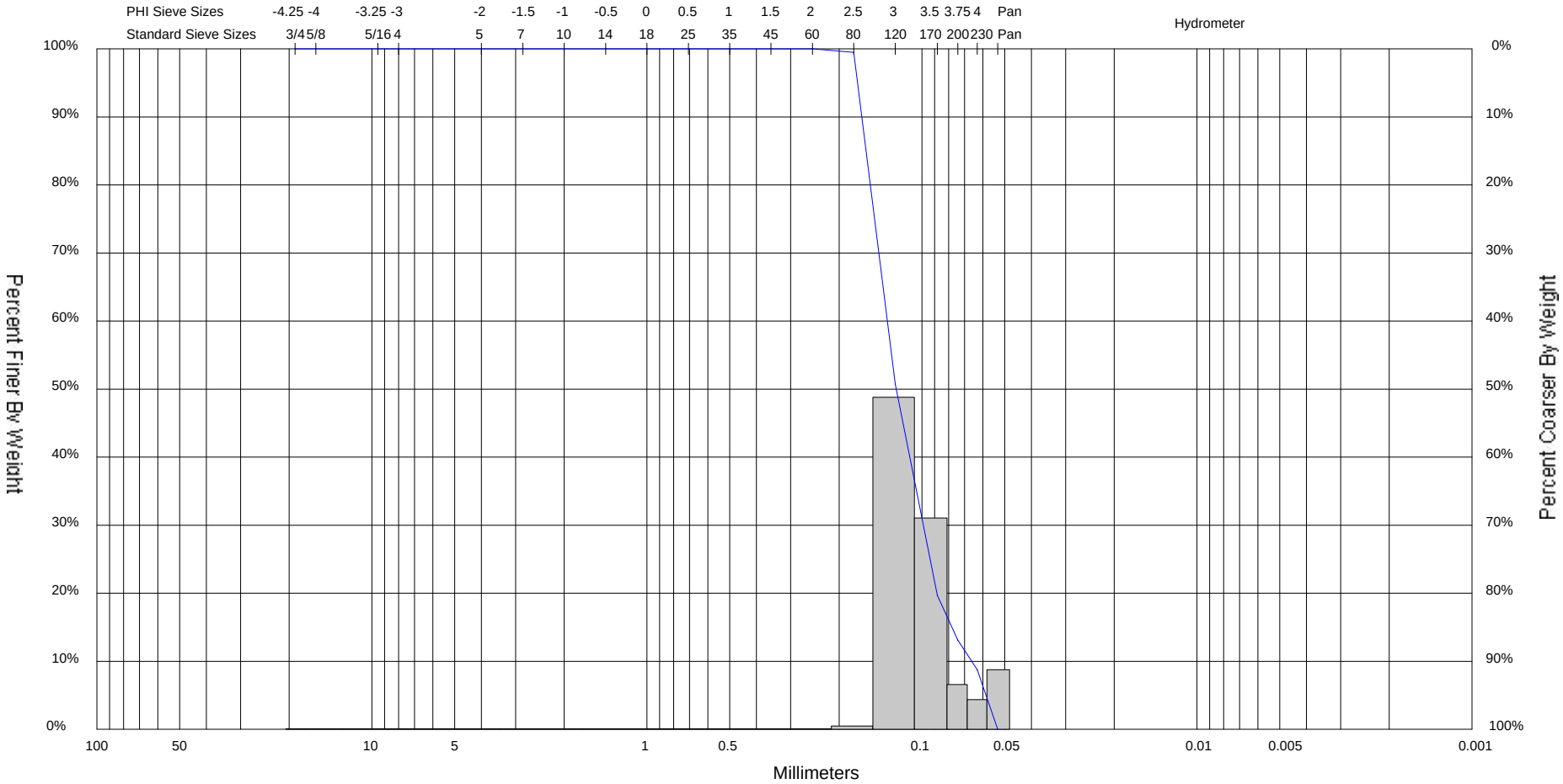

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-22 S#2		-37.2		SM	8.76	0.12	0.11	0.46	1.62	0.58
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3863684
Northing (Y):	223828
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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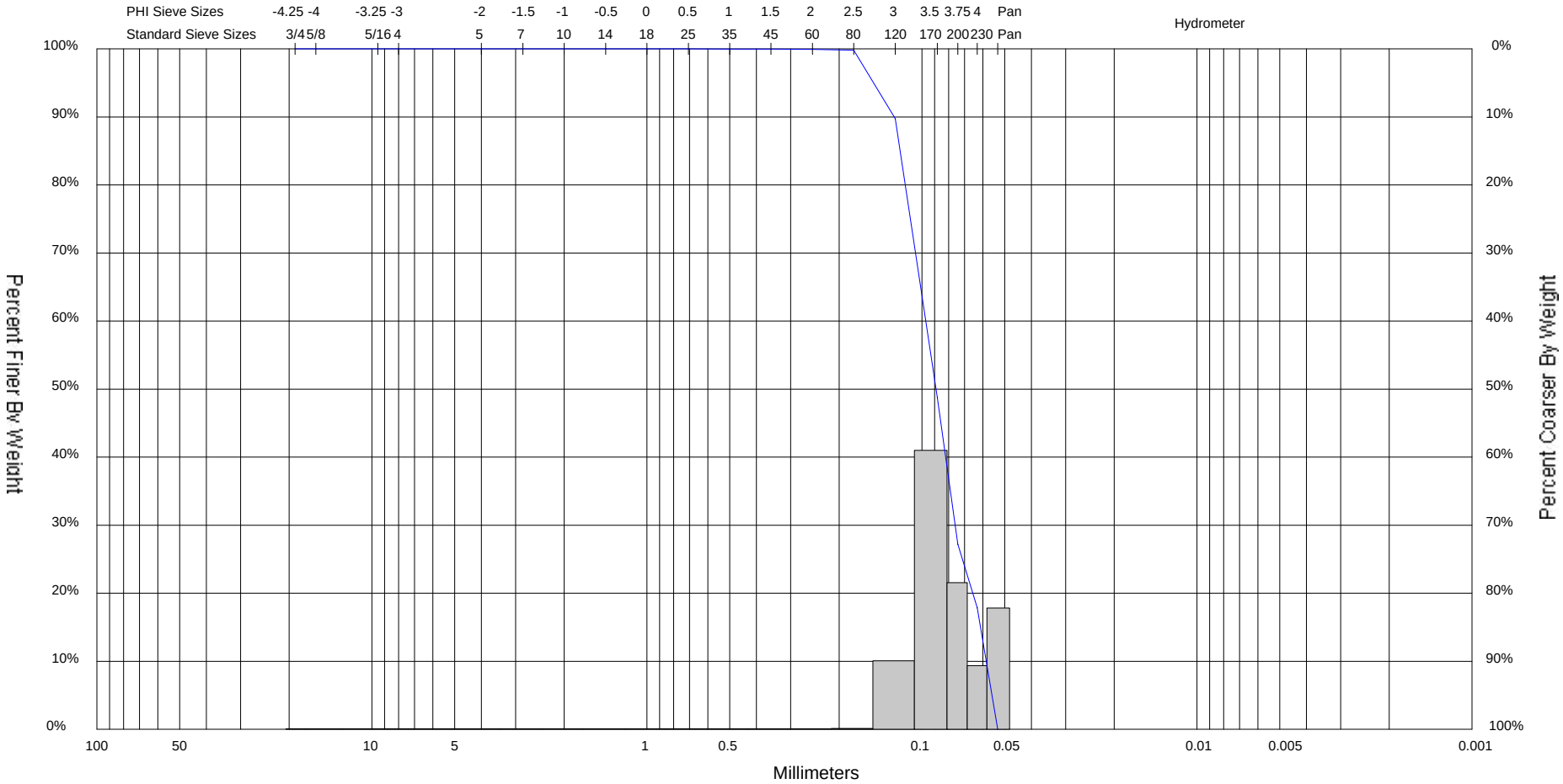

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-22 S#5		-50		SM	17.85	0.09	0.09	-0.06	1.41	0.53
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3863684
Northing (Y):	223828
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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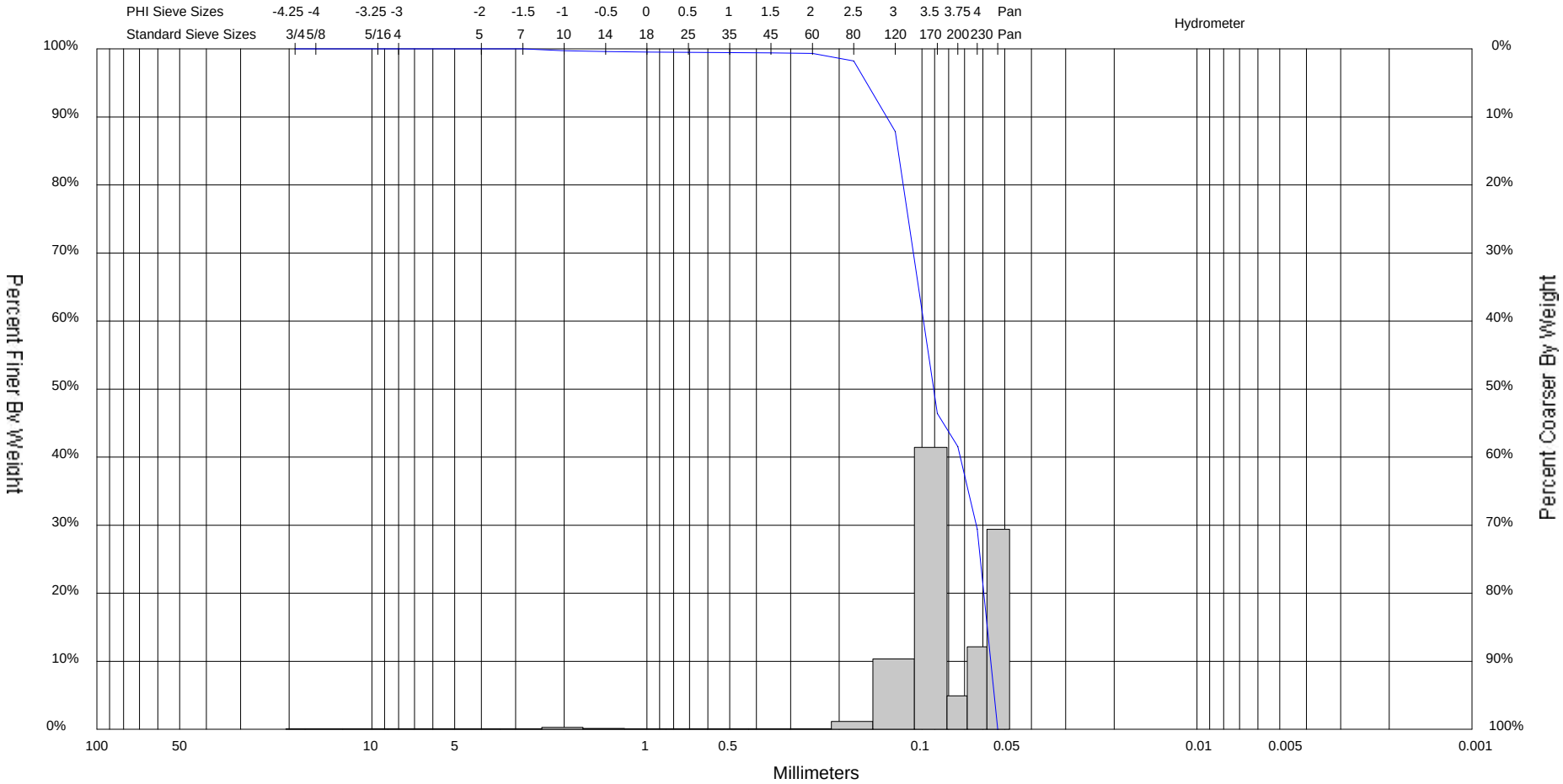

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-23 S#2		-37.3		SM	29.42	0.09	0.09	-0.12	1.30	0.61
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3863027
Northing (Y):	220636
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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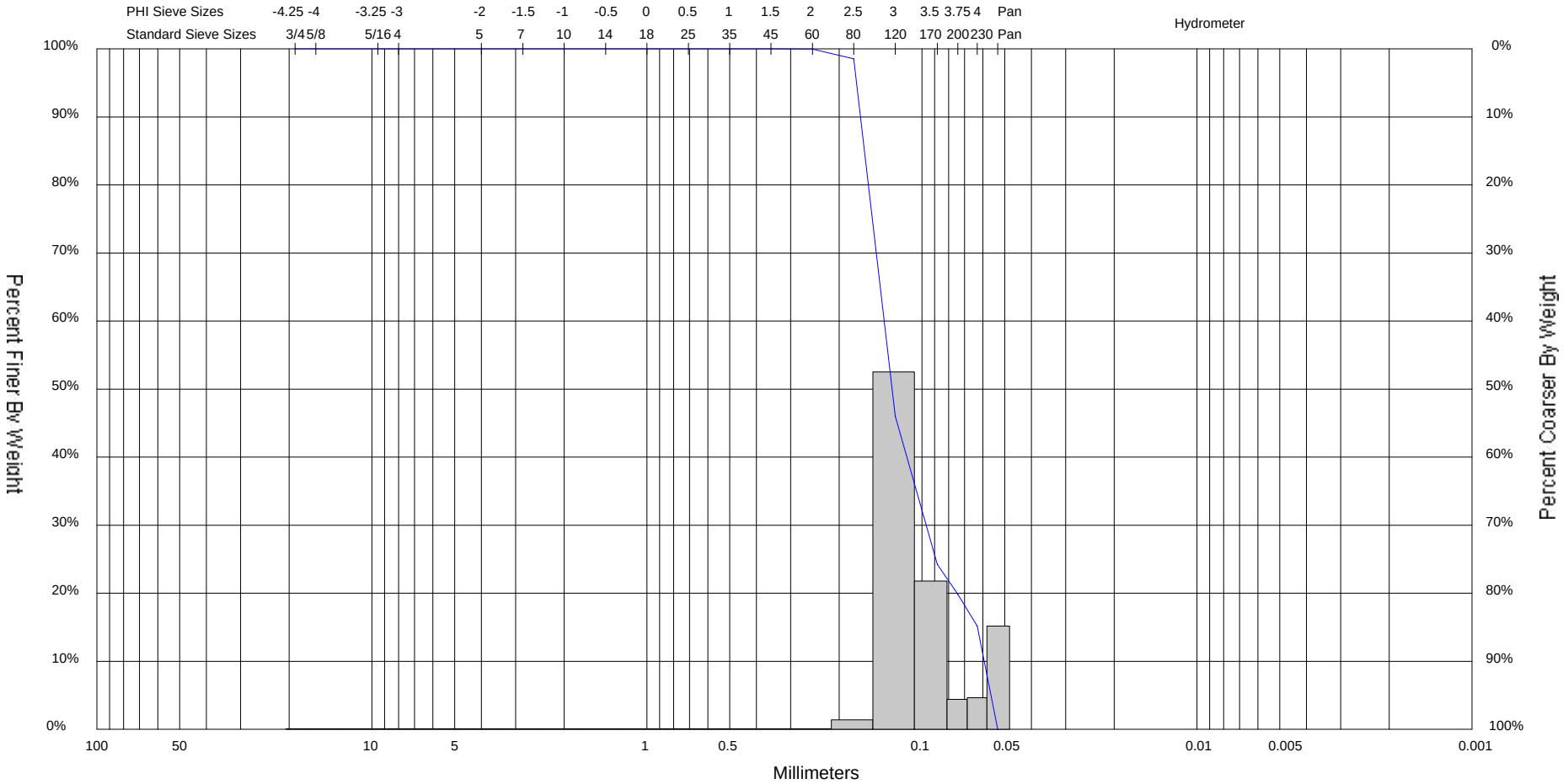

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-23 S#3		-40.3		SM	15.18	0.13	0.11	0.40	1.33	0.66
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3863027
Northing (Y):	220636
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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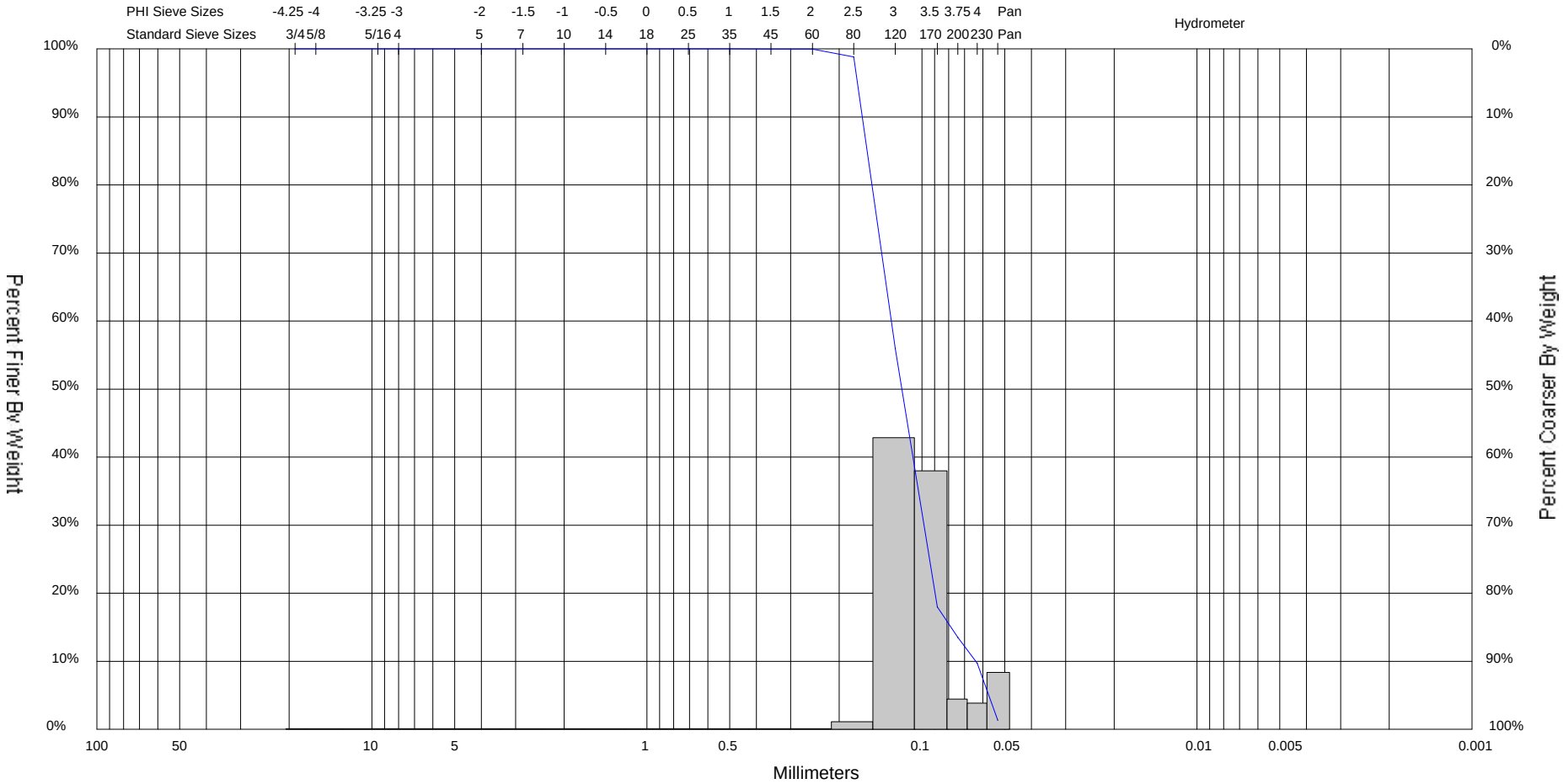

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-23 S#4		-44.3		SM	9.69	0.12	0.11	0.48	1.74	0.58
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3863027
Northing (Y):	220636
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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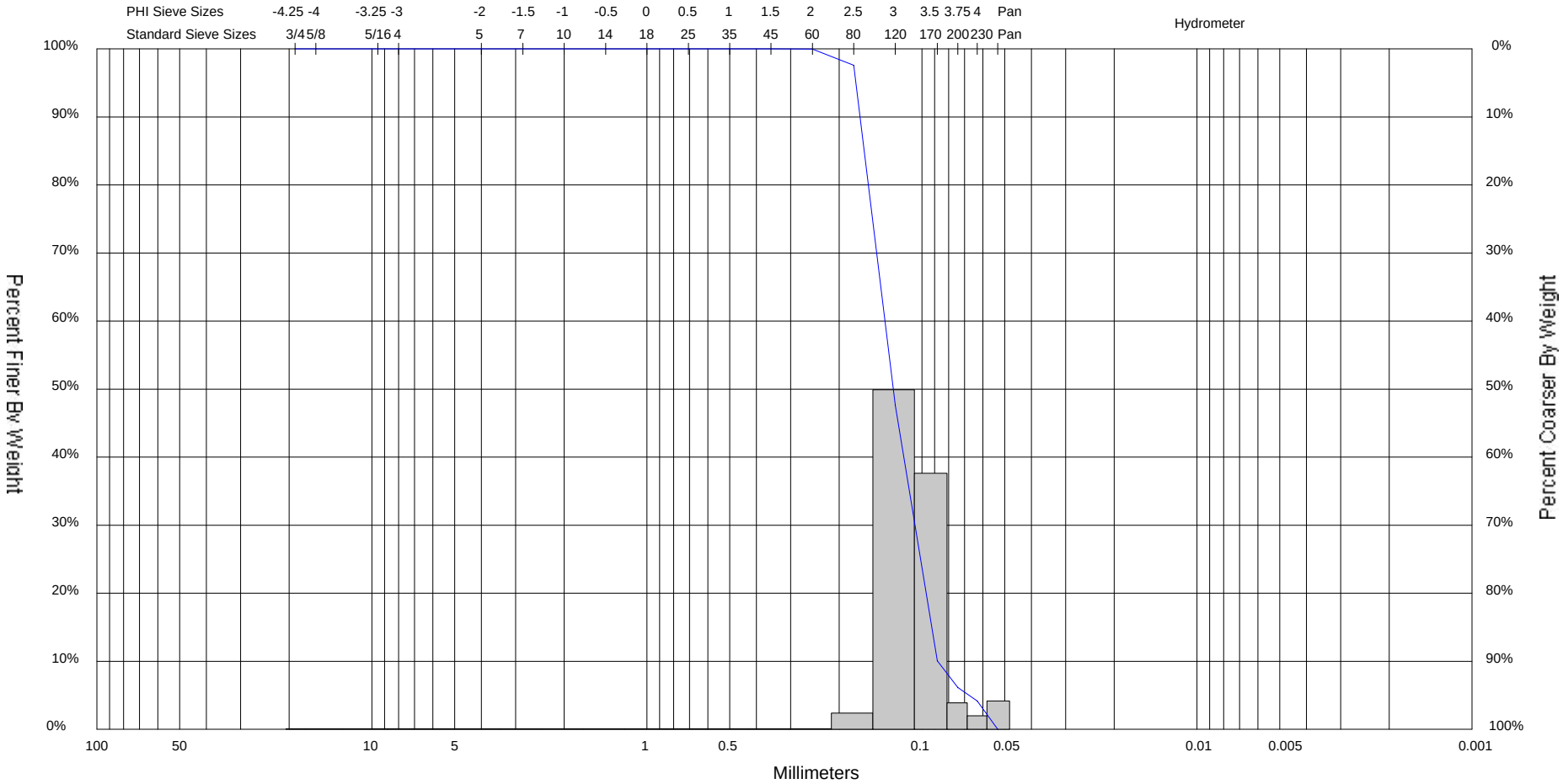

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-23 S#5		-45.3		SW-SM	4.18	0.13	0.12	0.47	1.73	0.49
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3863027
Northing (Y):	220636
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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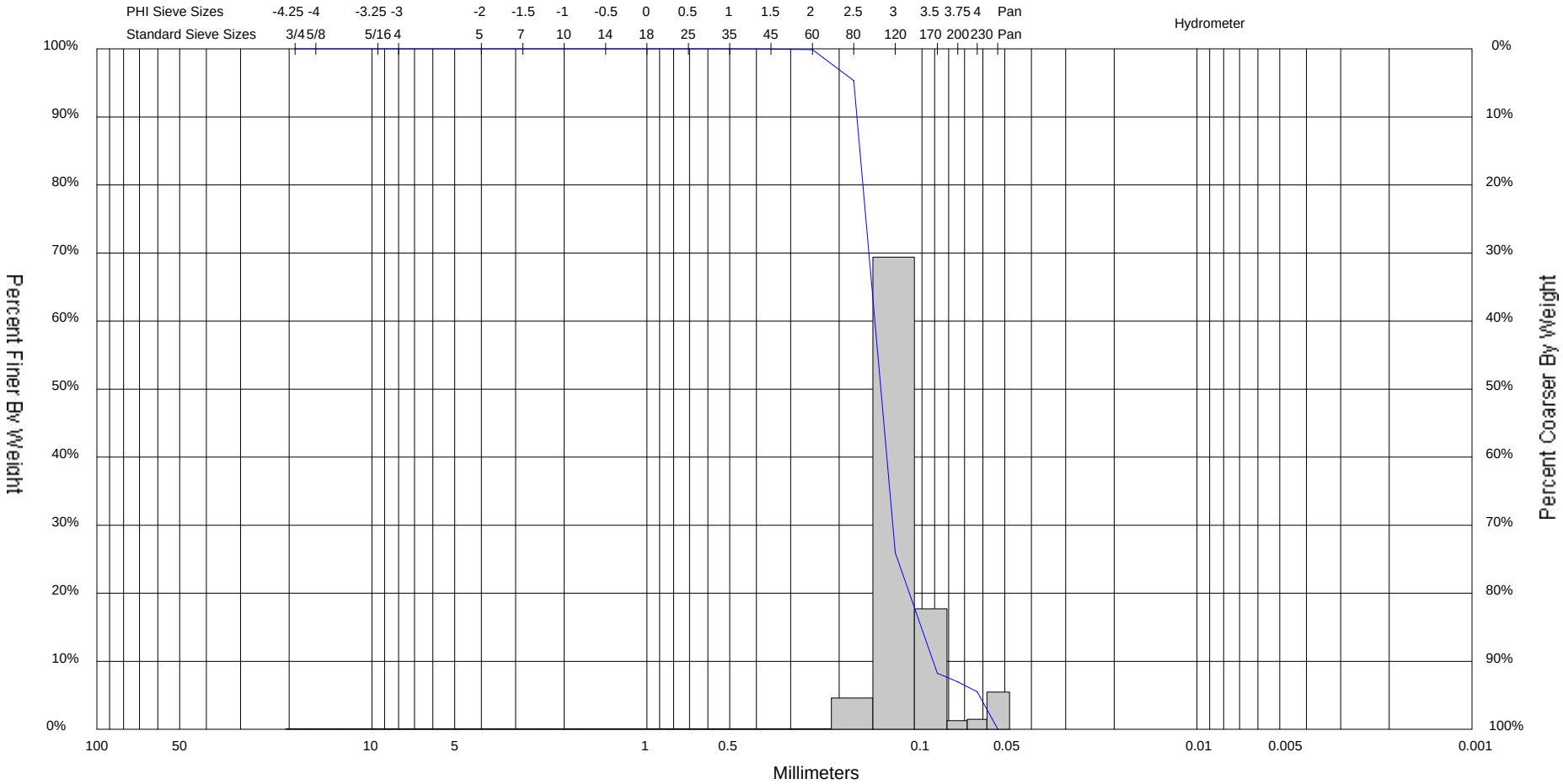

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-23 S#6		-49.3		SW-SM	5.50	0.14	0.13	1.02	2.62	0.53
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3863027
Northing (Y):	220636
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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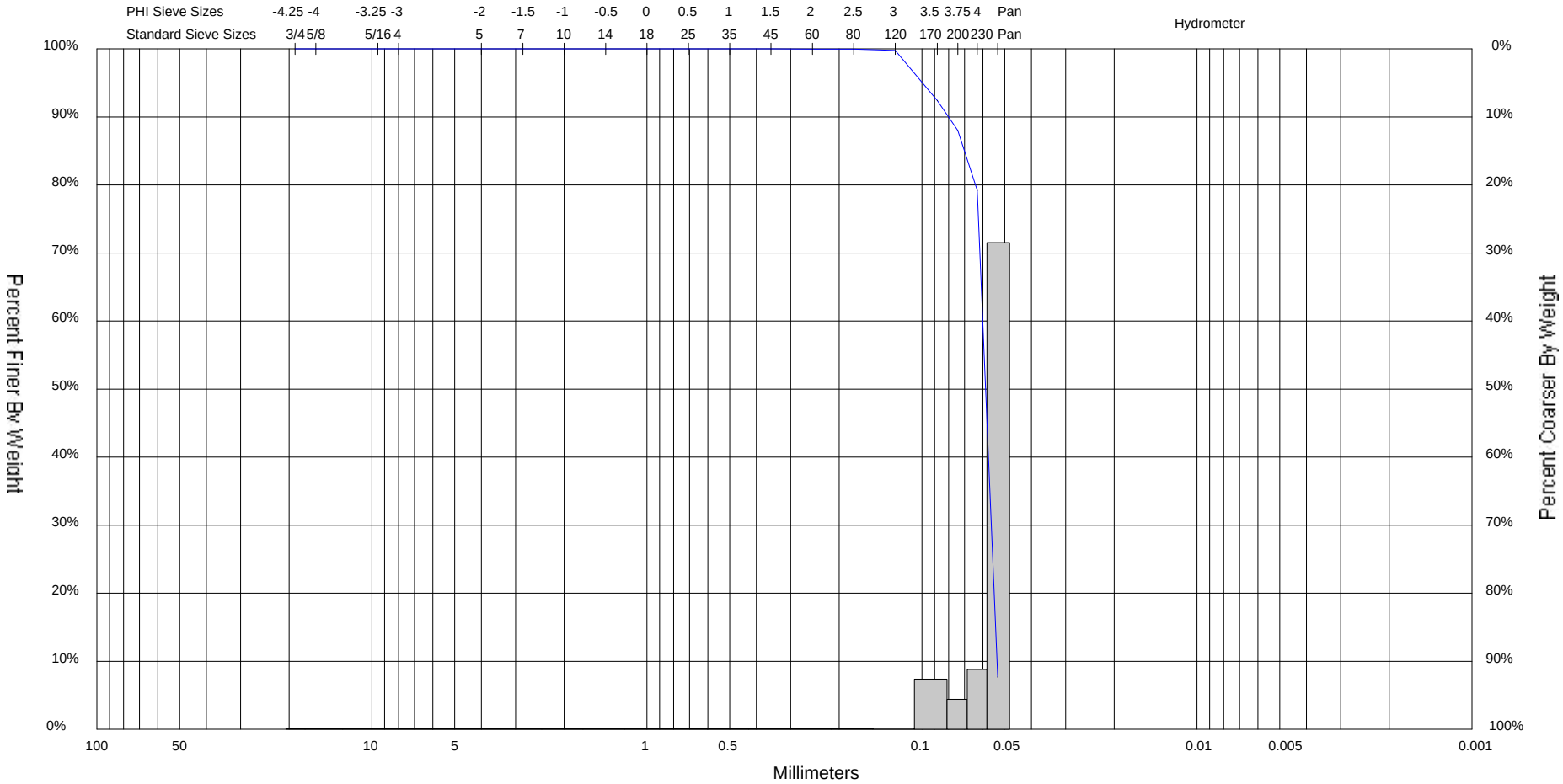

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-24 S#2		-39.2		ML	79.19	0.06	0.10	-1.74	4.10	1.52
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3862629
Northing (Y):	223158
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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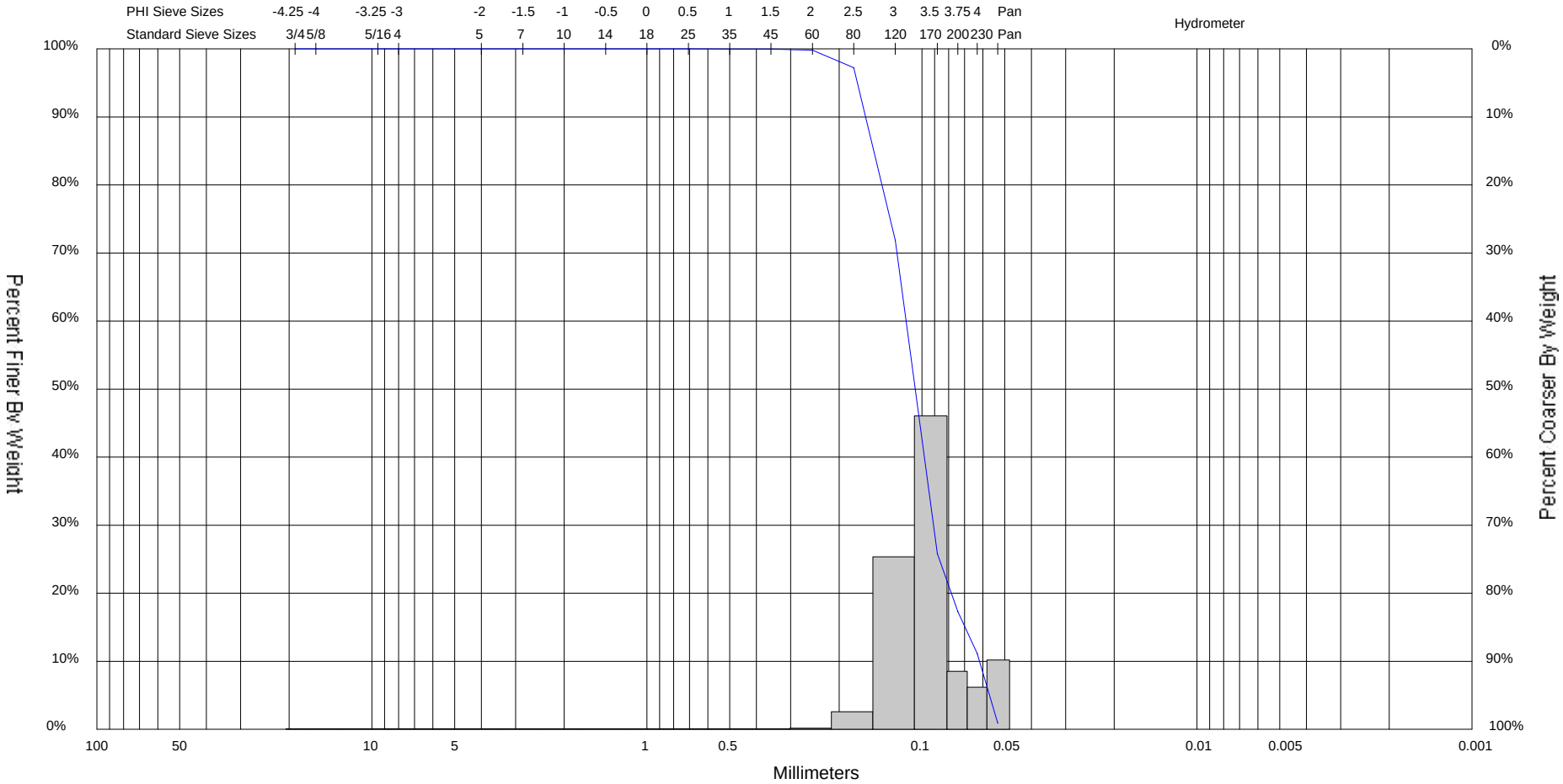

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-24 S#3		-44.2		SM	11.13	0.11	0.10	0.20	1.52	0.58
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3862629
Northing (Y):	223158
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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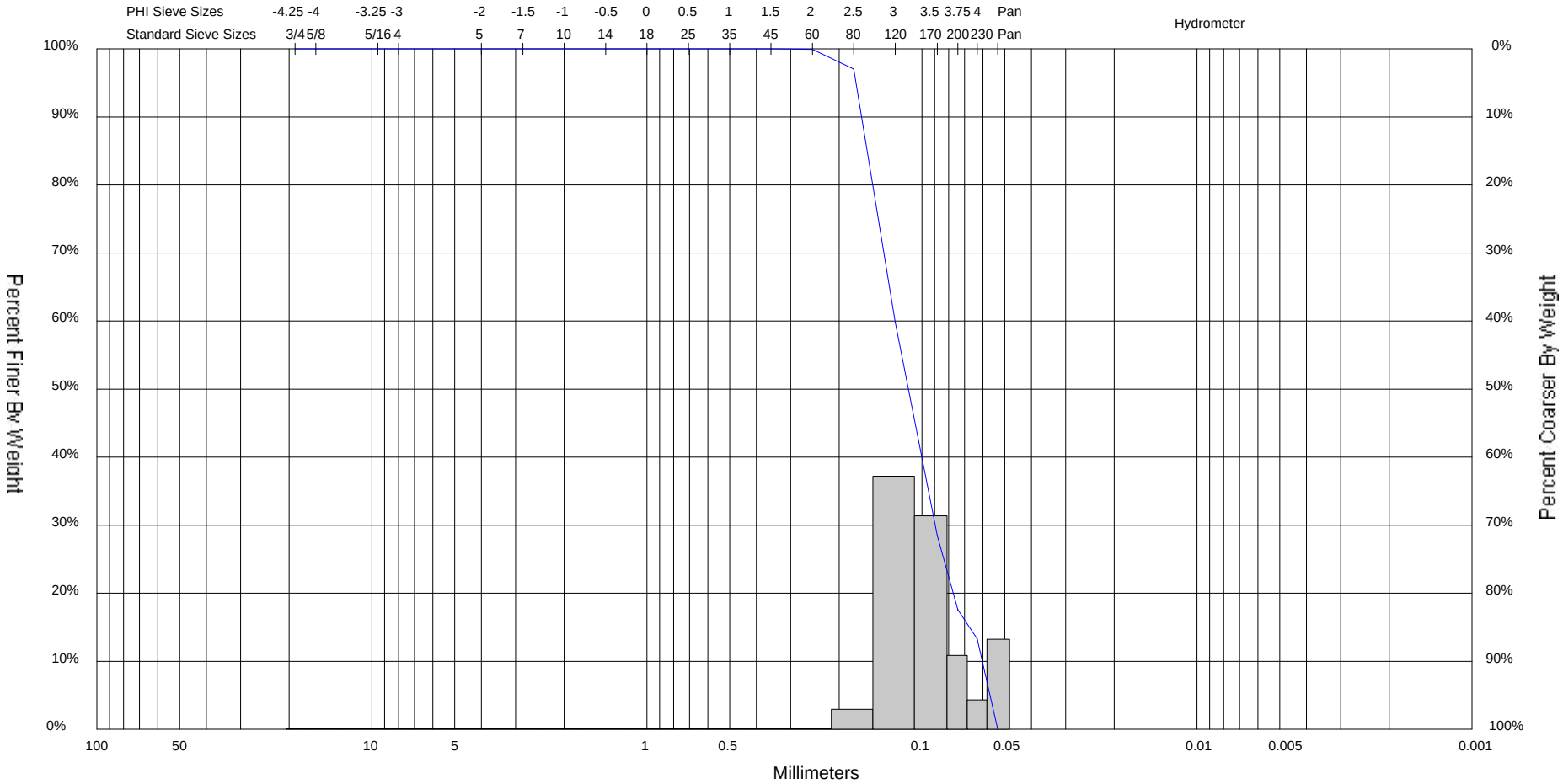

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-24 S#4		-50.7		SM	13.26	0.11	0.11	0.23	1.35	0.63
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3862629
Northing (Y):	223158
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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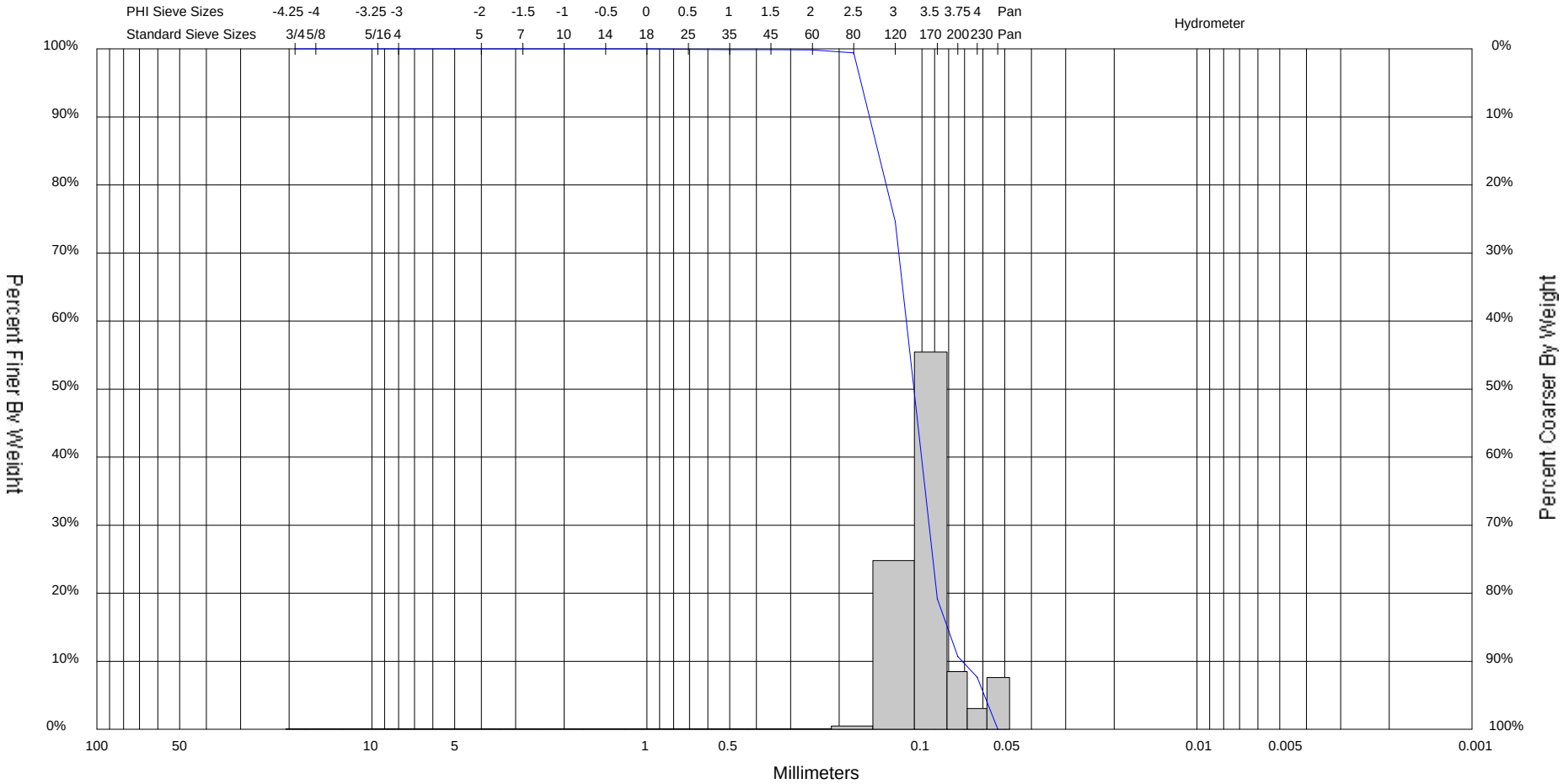

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-25 S#1		-35.3		SW-SM	7.64	0.11	0.11	0.31	1.84	0.51
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3863432
Northing (Y):	223257
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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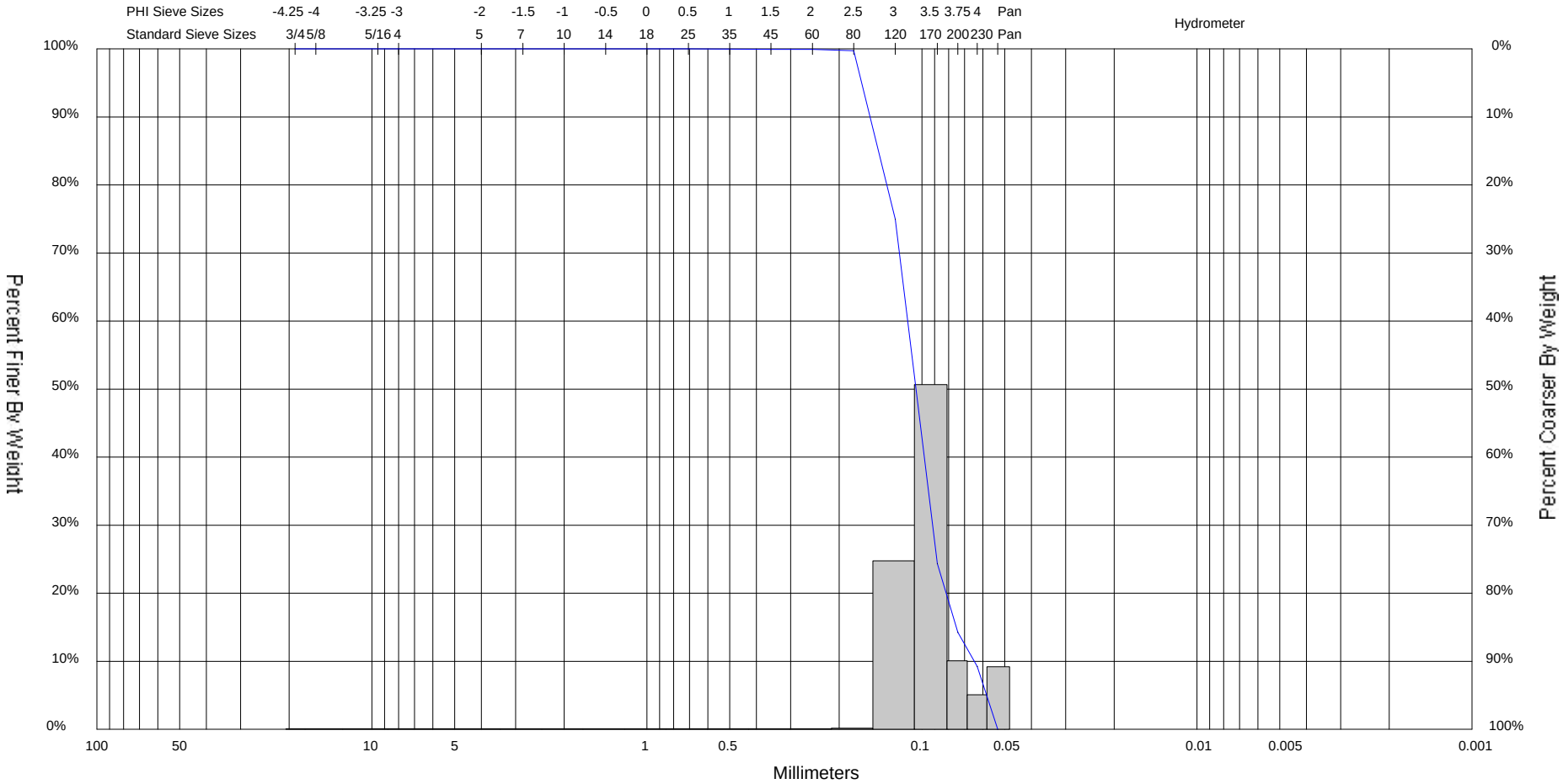

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-25 S#2		-37.5		SM	9.22	0.11	0.10	0.24	1.67	0.53
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3863432
Northing (Y):	223257
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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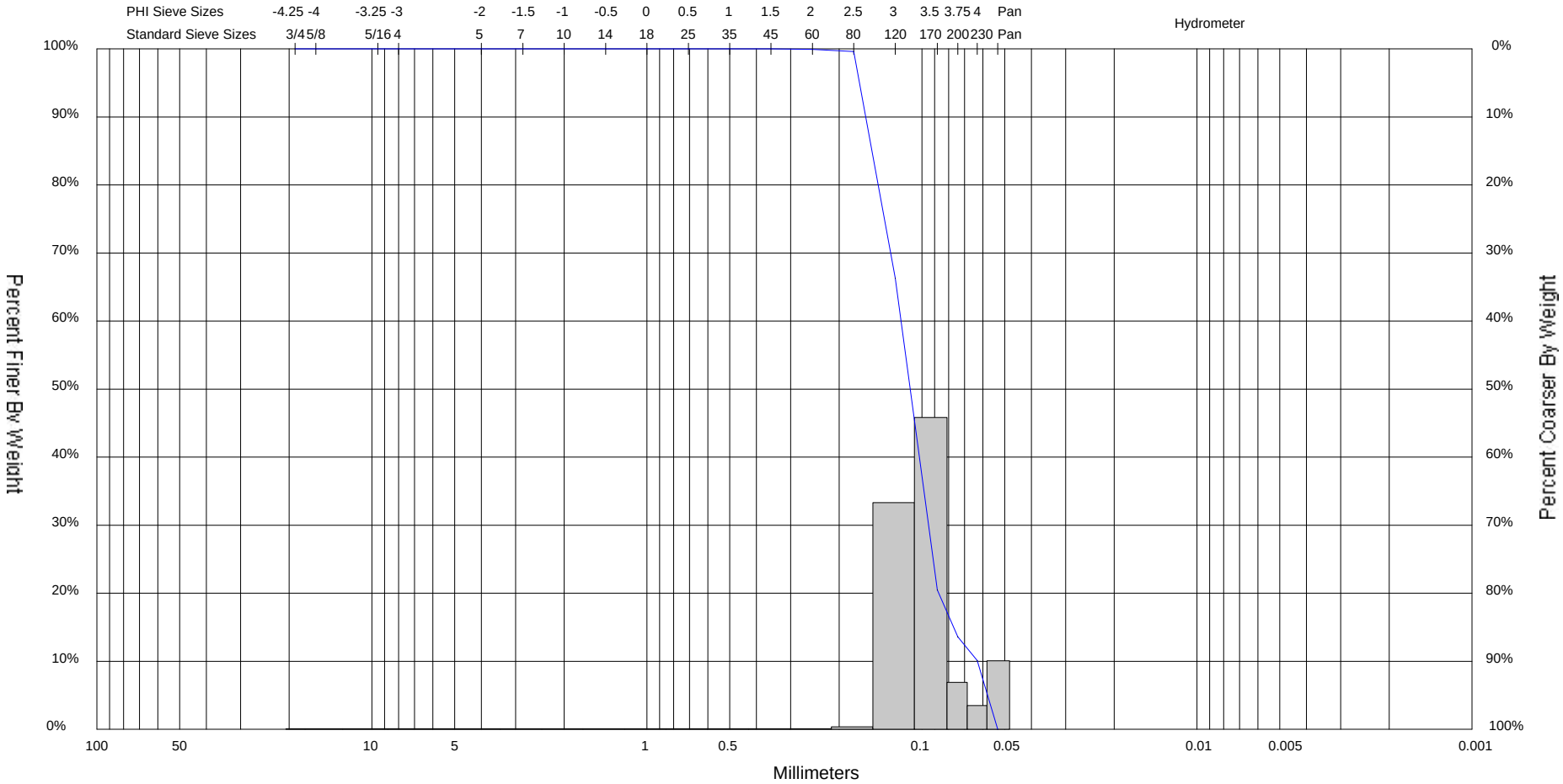

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-25 S#4		-42.5		SM	10.09	0.11	0.11	0.36	1.67	0.56
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3863432
Northing (Y):	223257
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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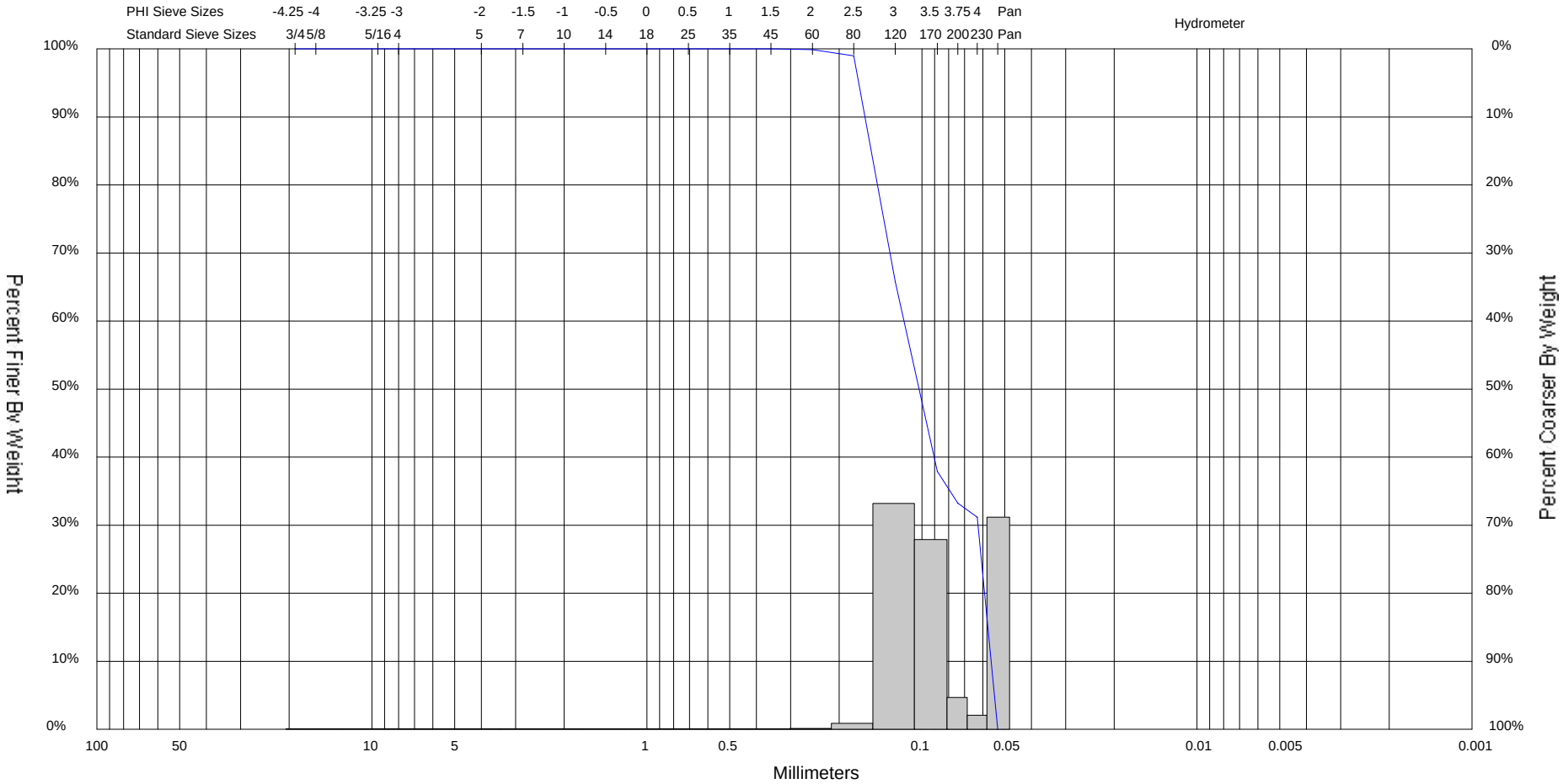

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-25 S#5		-47.1		SM	31.19	0.10	0.09	0.05	1.07	0.71
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3863432
Northing (Y):	223257
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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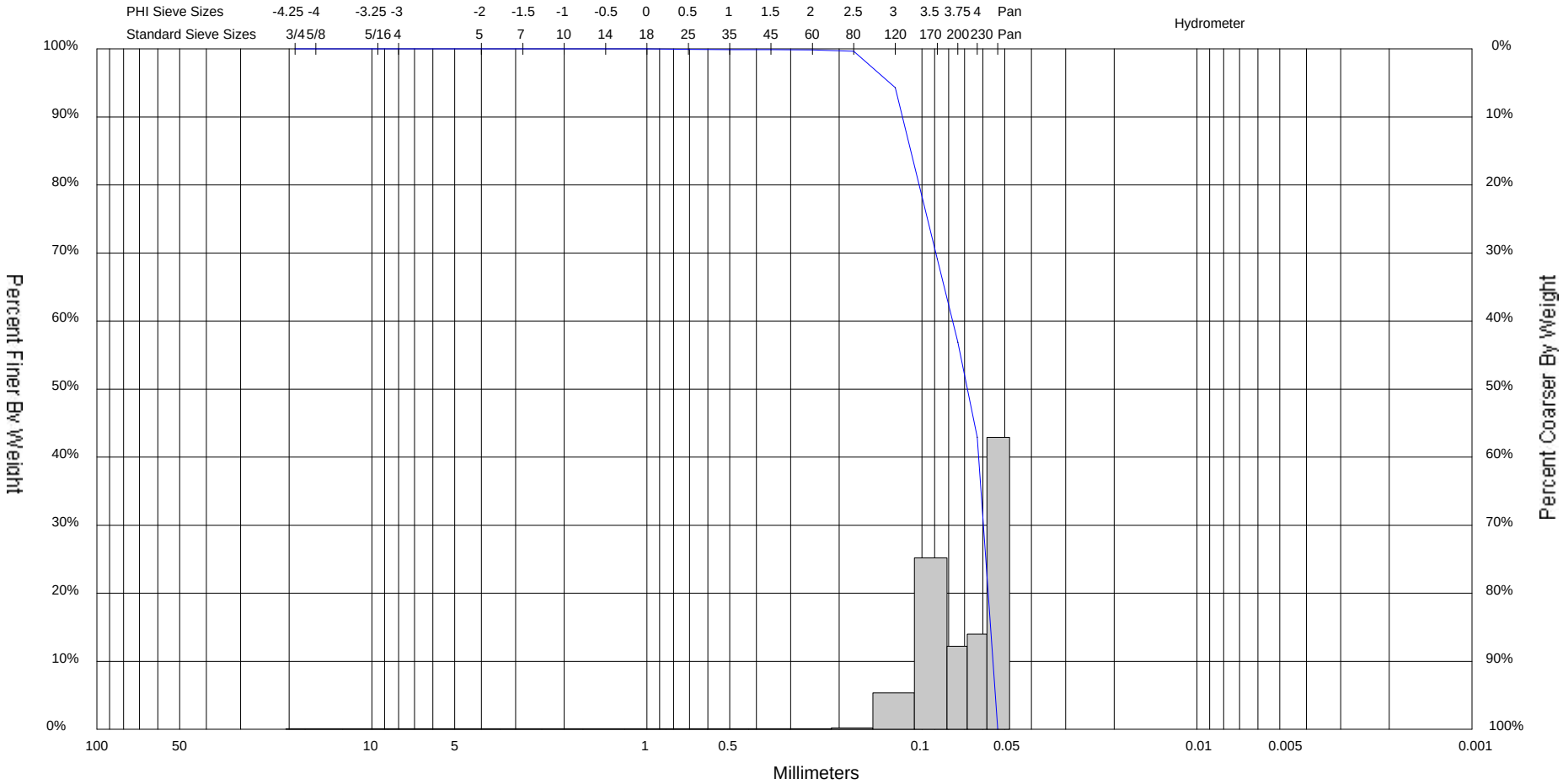

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-26 S#2		-37		ML	42.94	0.07	0.08	-0.33	1.29	0.52
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3862579
Northing (Y):	223816
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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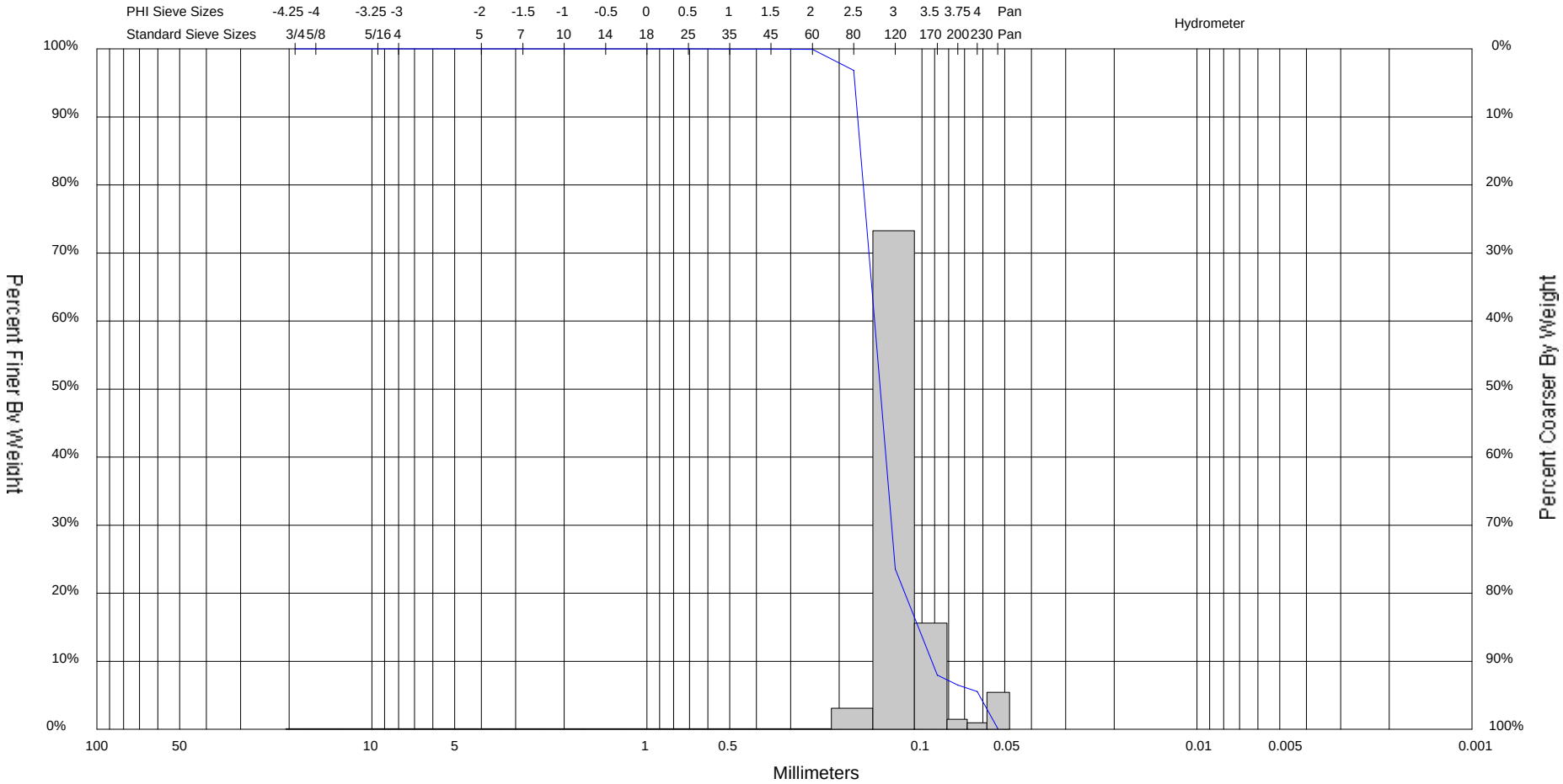

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-26 S#3		-40		SW-SM	5.53	0.14	0.13	1.11	2.80	0.53
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3862579
Northing (Y):	223816
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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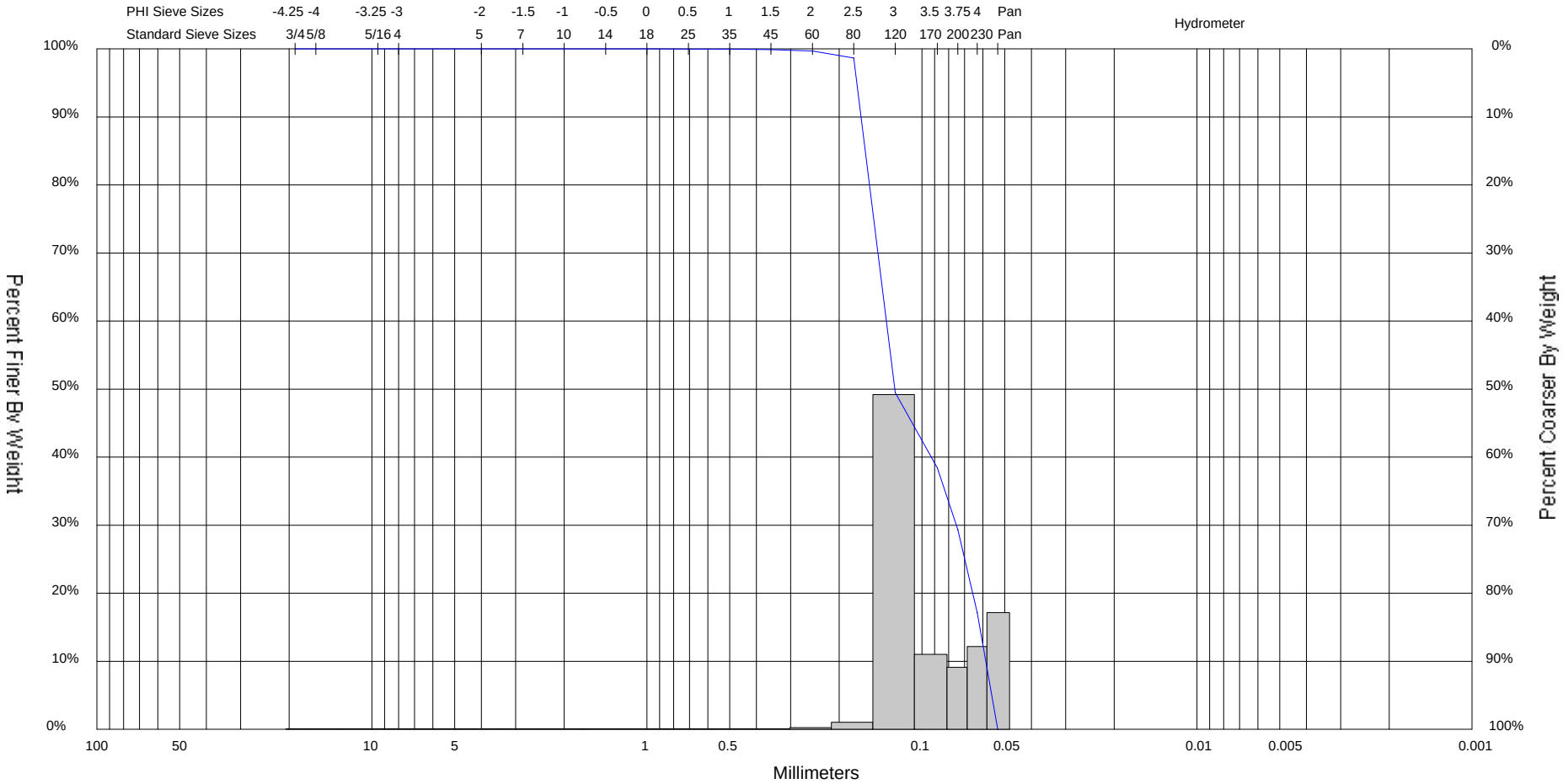

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-26 S#4		-44		SM	17.16	0.13	0.10	0.22	1.08	0.71
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3862579
Northing (Y):	223816
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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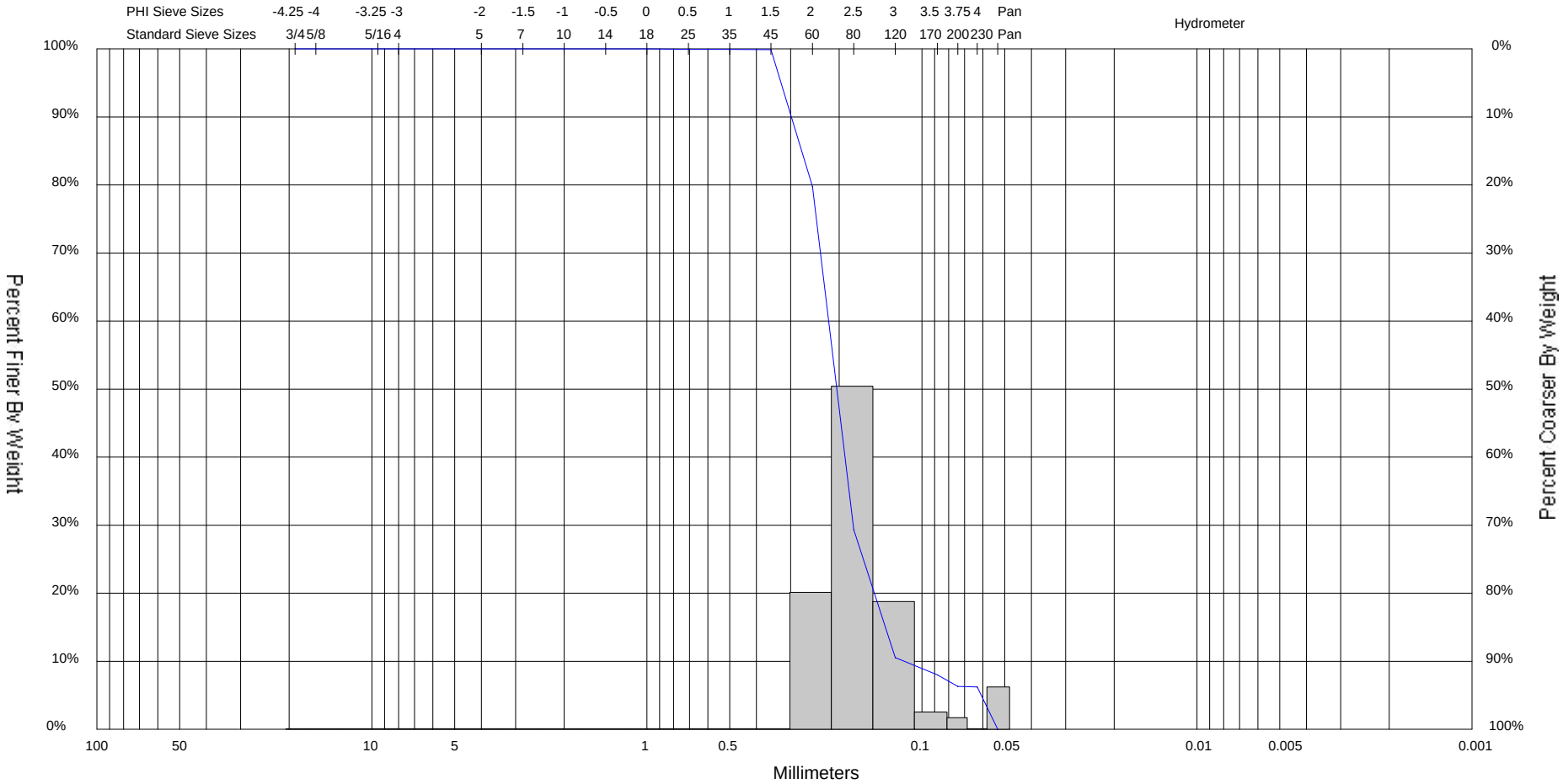

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-26 S#5		-48		SW-SM	6.21	0.20	0.18	0.94	2.63	0.81
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3862579
Northing (Y):	223816
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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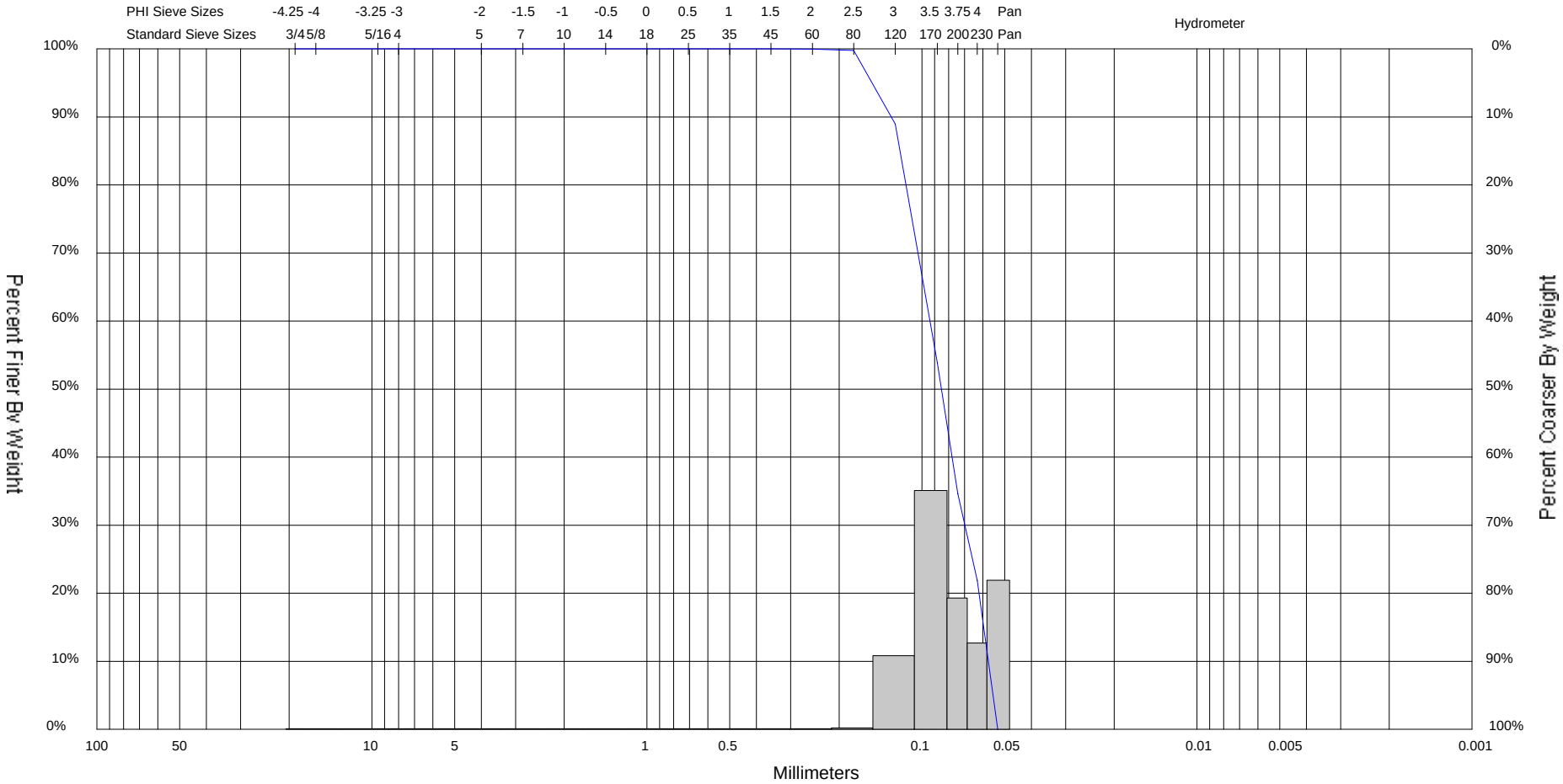

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-27 S#2		-37.5		SM	21.91	0.09	0.09	-0.16	1.36	0.56
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3863028
Northing (Y):	224053
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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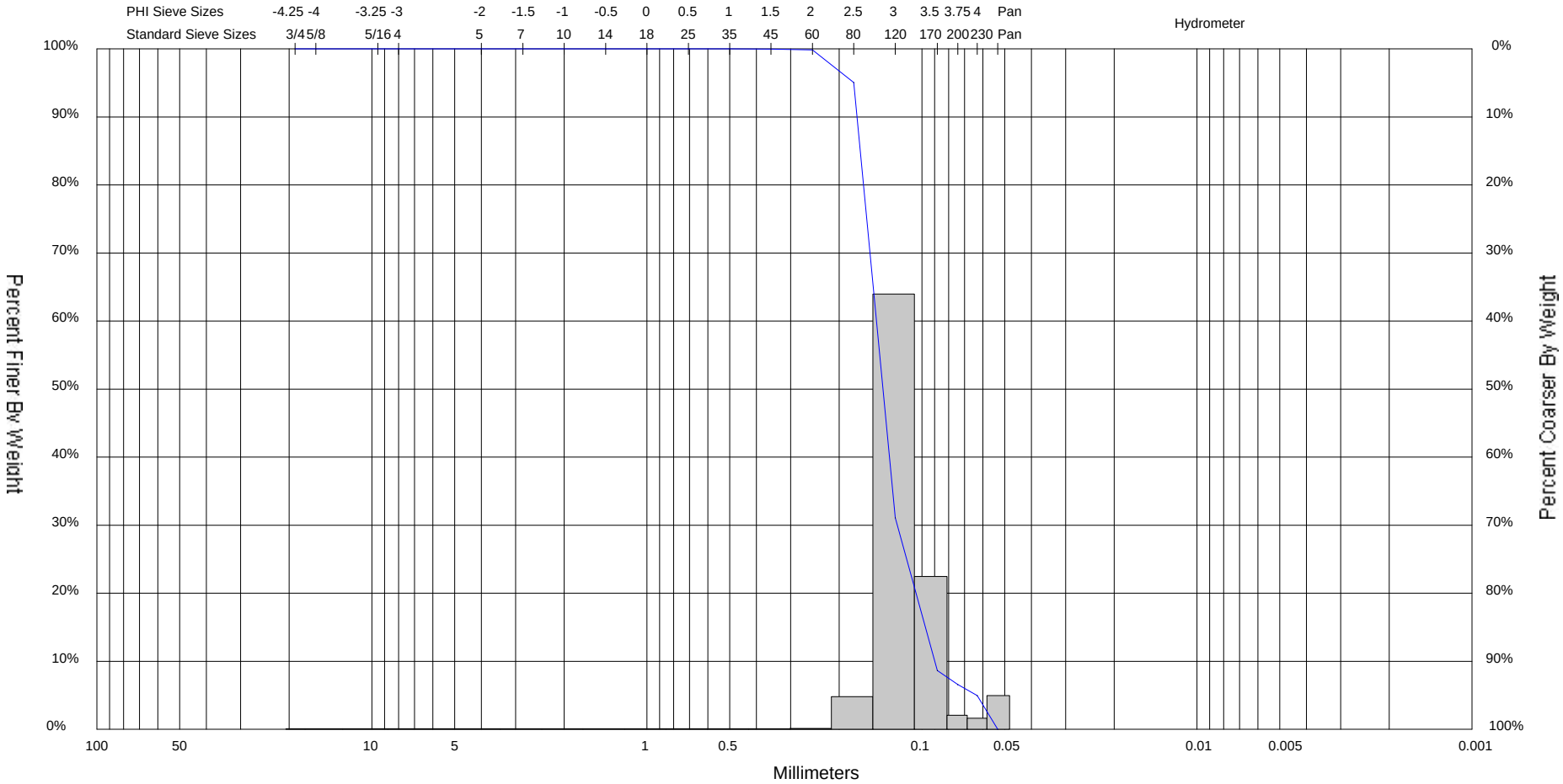

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-27 S#3		-42.2		SW-SM	4.93	0.14	0.12	0.83	2.26	0.53
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3863028
Northing (Y):	224053
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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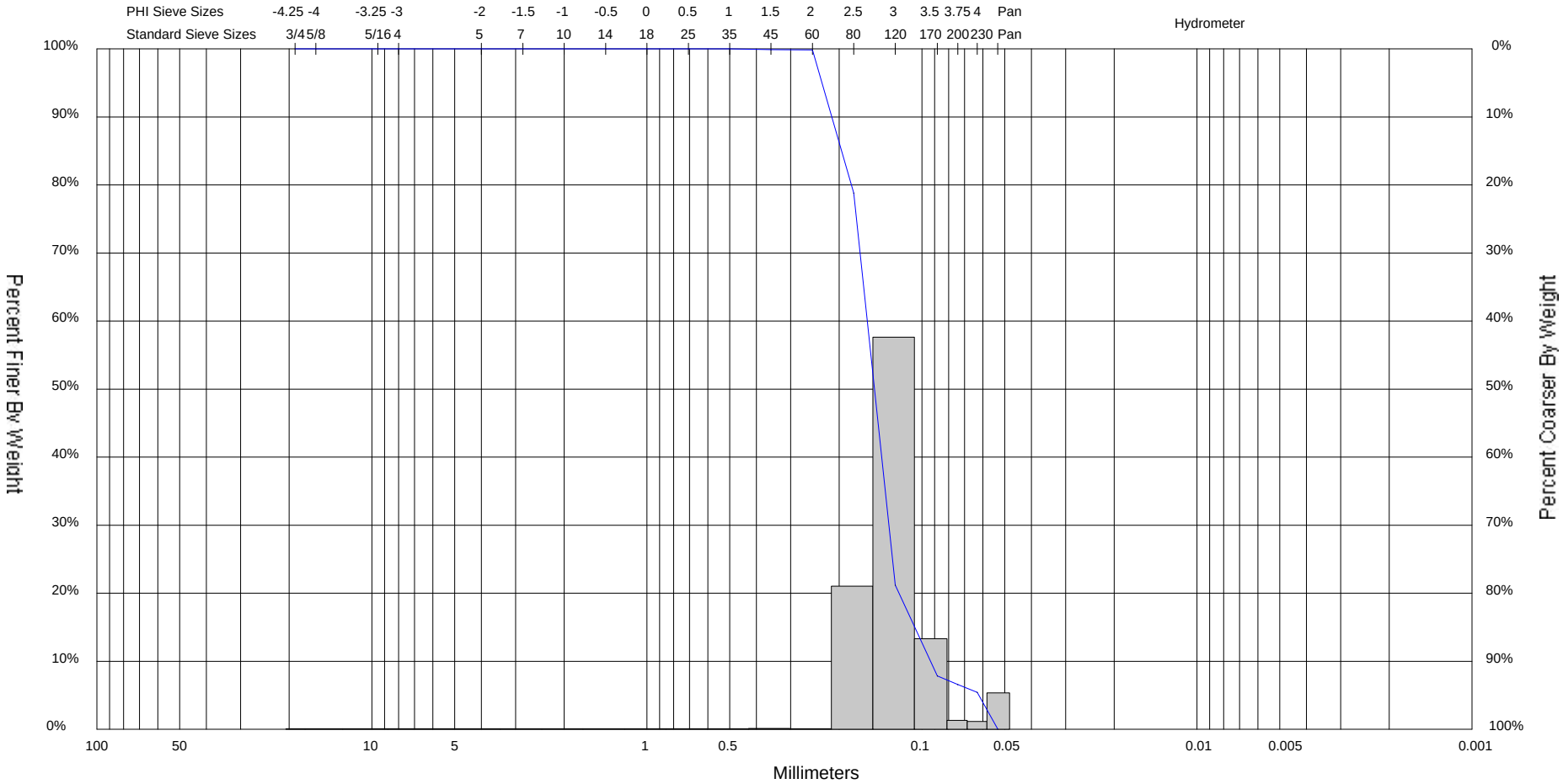

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-27 S#5		-45.5		SW-SM	5.41	0.15	0.14	0.74	2.38	0.63
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3863028
Northing (Y):	224053
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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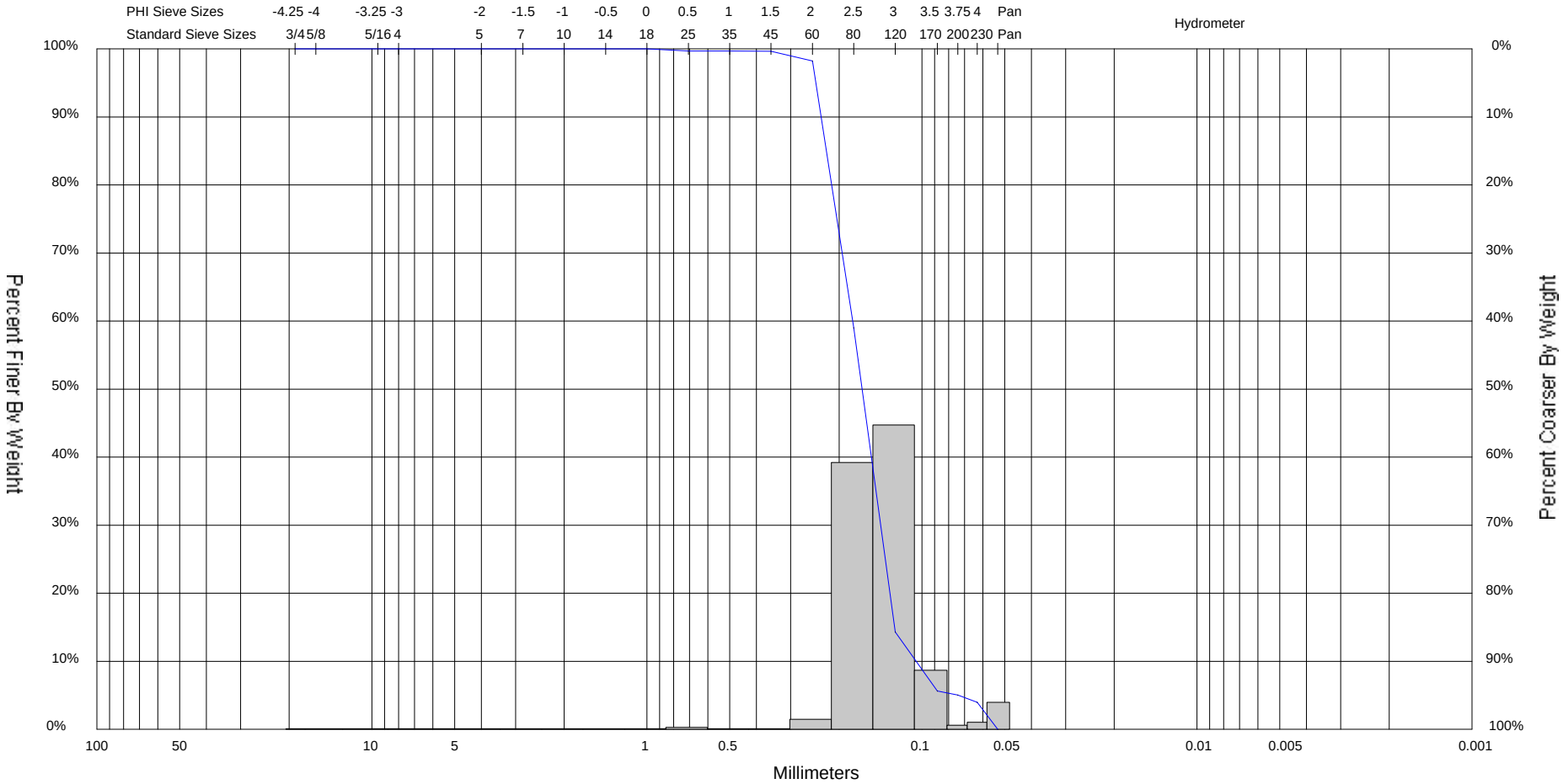

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-27 S#6		-49.4		SW-SM	3.98	0.16	0.16	0.69	2.19	0.59
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3863028
Northing (Y):	224053
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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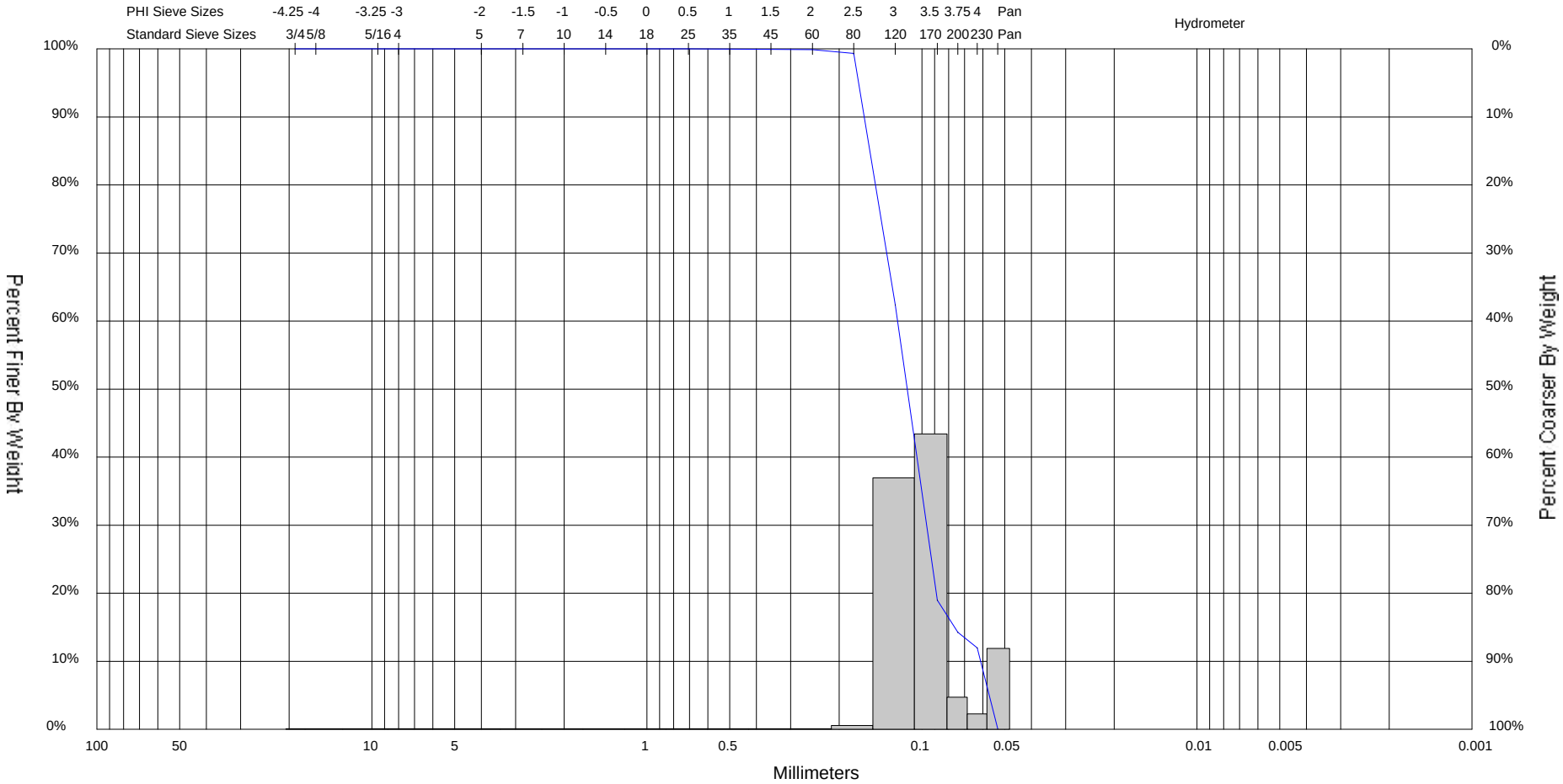

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-28 S#2		-39.2		SM	11.98	0.11	0.11	0.41	1.69	0.57
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3862766
Northing (Y):	222525
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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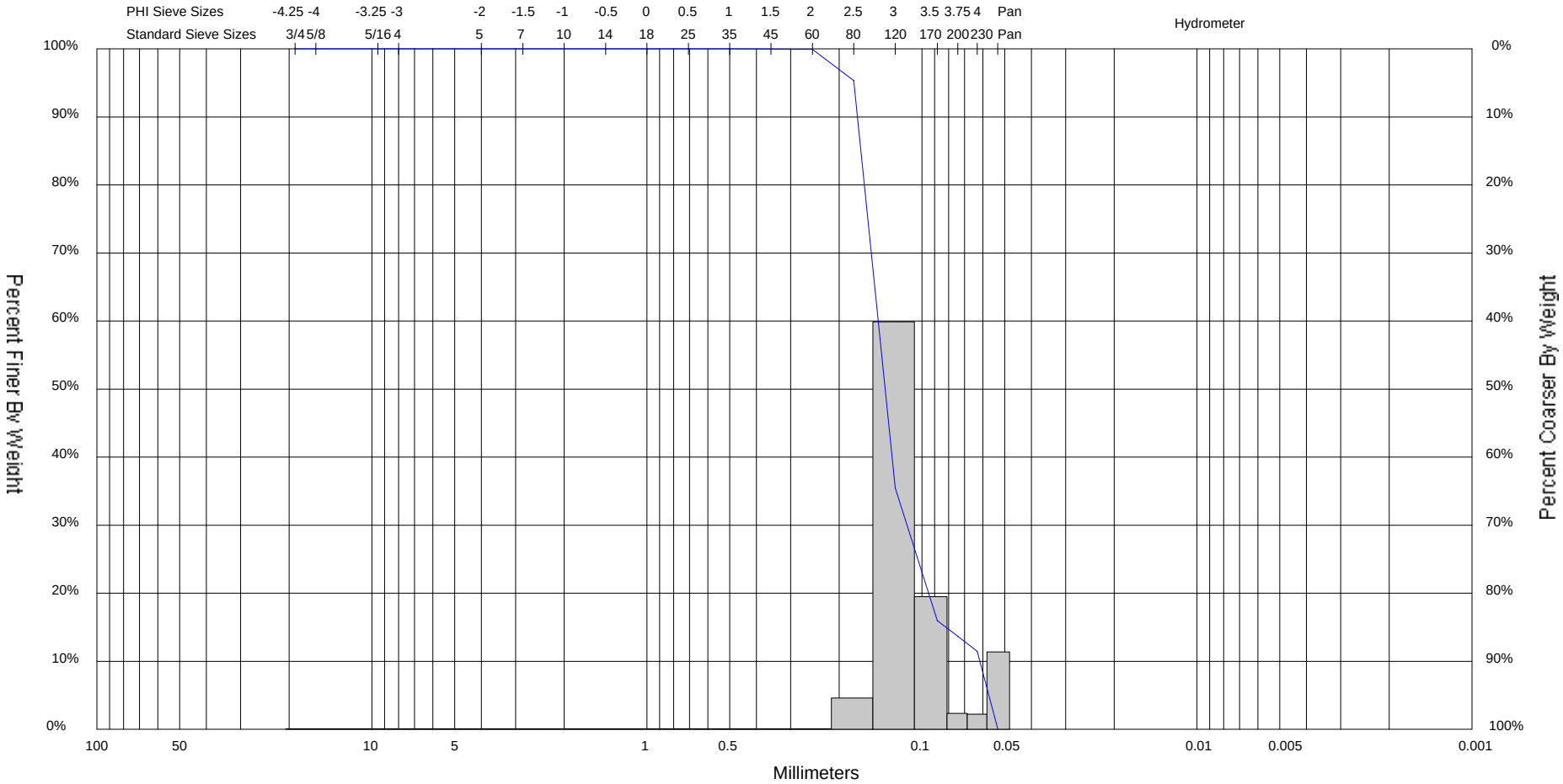

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-28 S#3		-43.2		SM	11.44	0.14	0.12	0.71	2.01	0.59
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3862766
Northing (Y):	222525
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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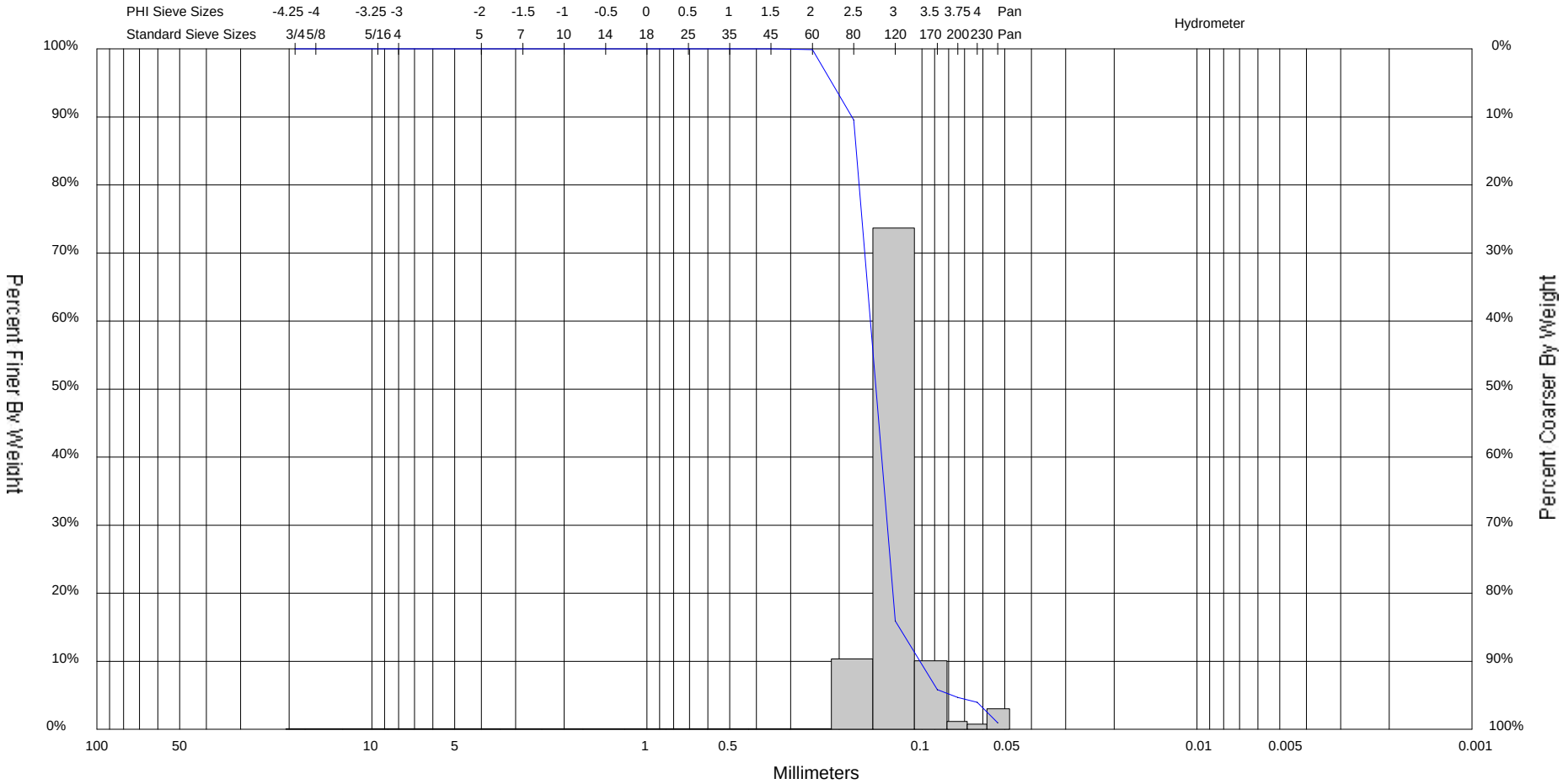

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-28 S#4		-50.2		SP	3.94	0.15	0.14	0.70	2.54	0.46
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3862766
Northing (Y):	222525
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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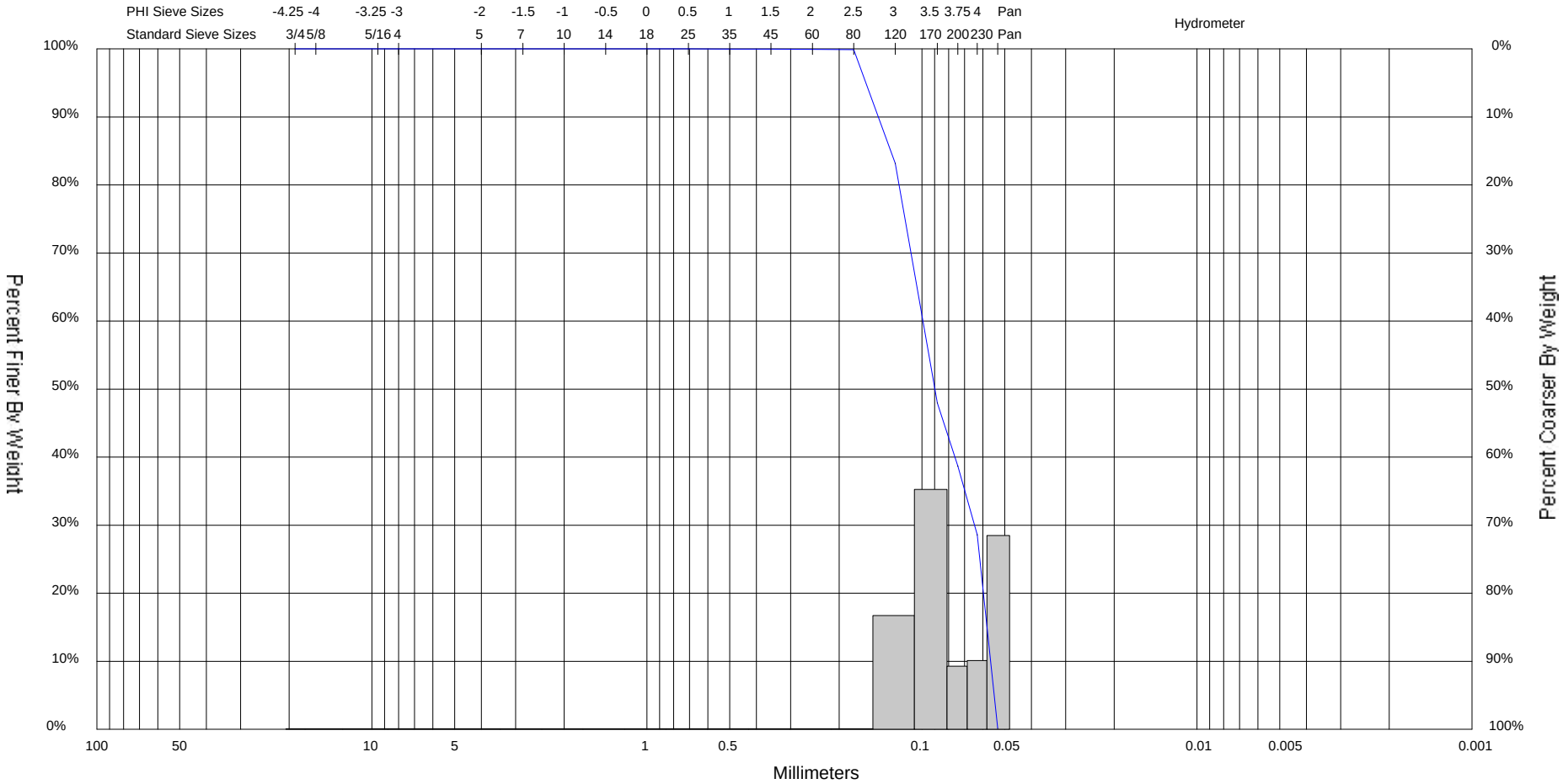

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-29 S#3		-40.8		SM	28.59	0.09	0.09	-0.10	1.24	0.62
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3854692
Northing (Y):	233110
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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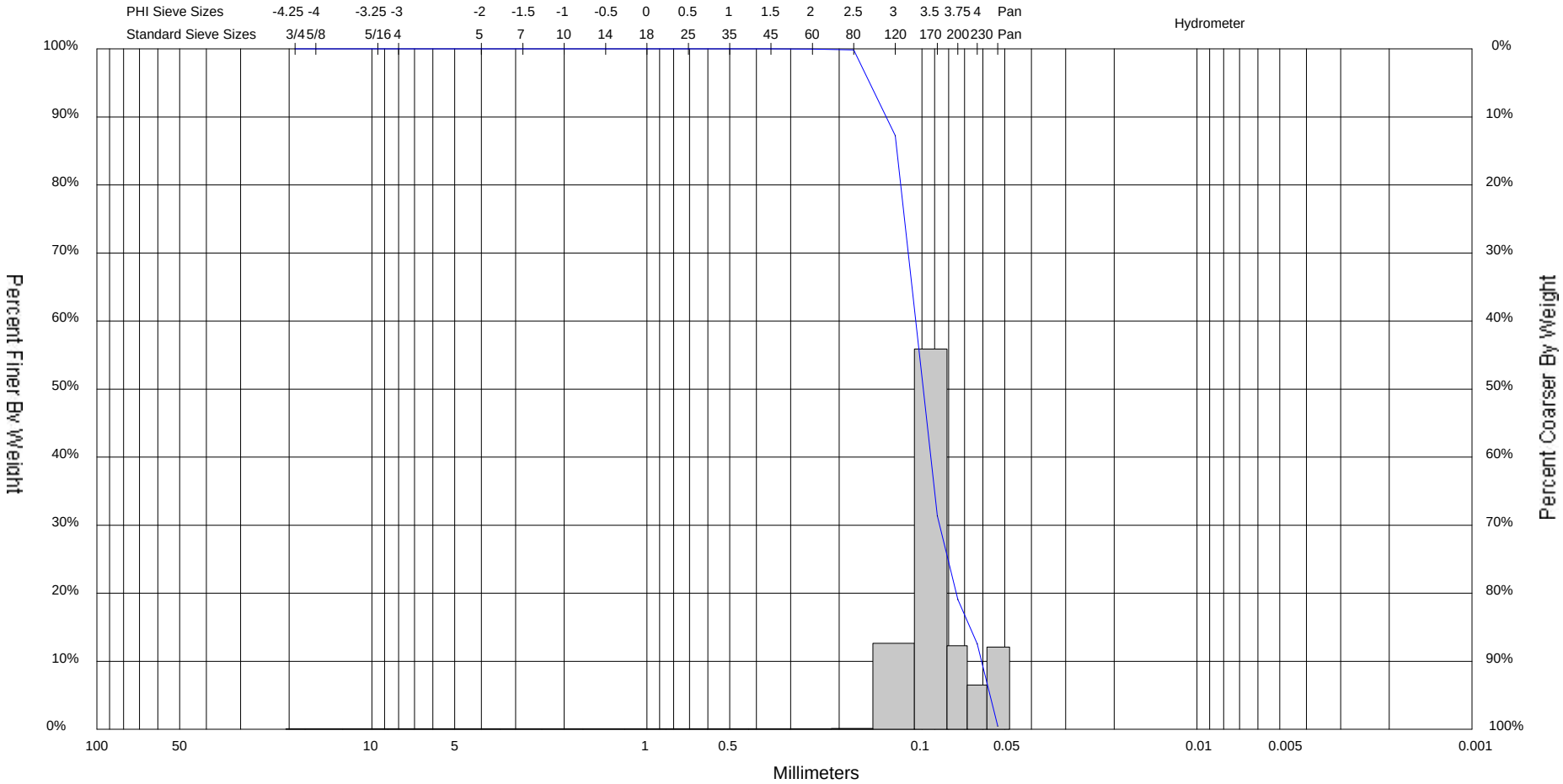

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-29 S#4		-45.8		SM	12.57	0.10	0.09	0.13	1.59	0.51
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3854692
Northing (Y):	233110
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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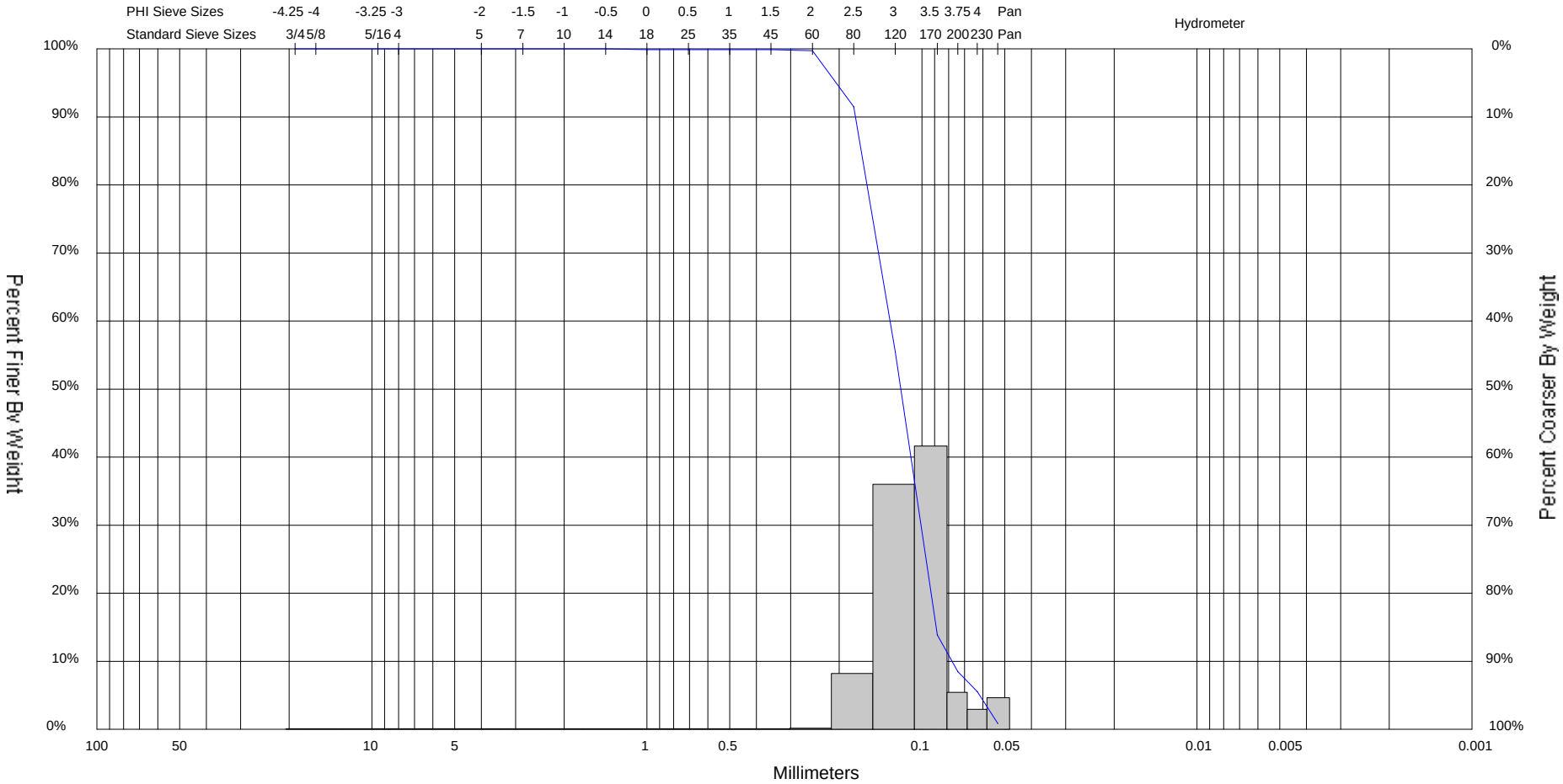

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-29 S#5		-49.8		SW-SM	5.54	0.12	0.12	0.23	1.75	0.59
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3854692
Northing (Y):	233110
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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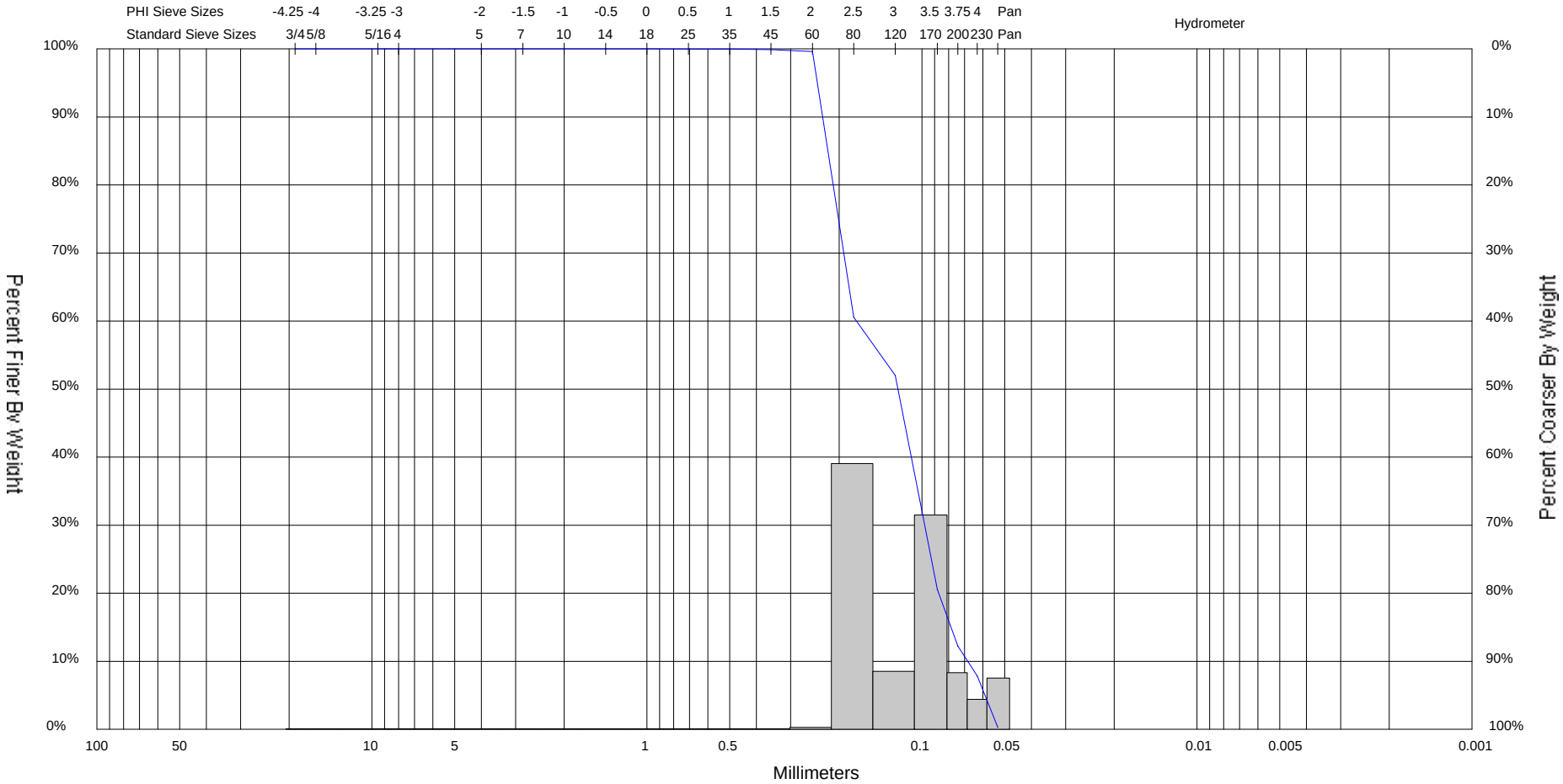

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-29a S#6		-50.8		SM	7.84	0.12	0.13	0.12	1.29	0.79
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3854691
Northing (Y):	233114
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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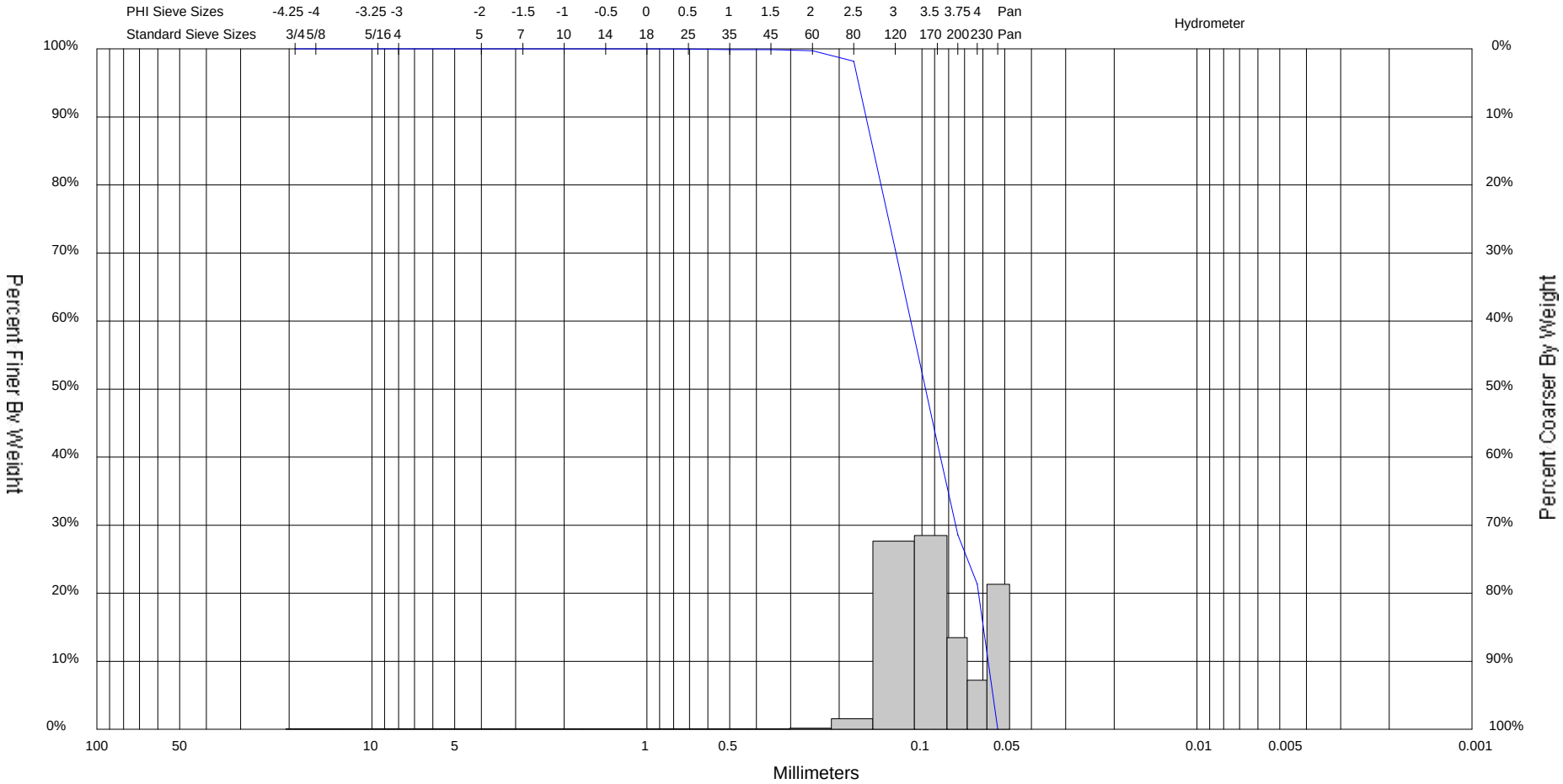

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-30 S#1		-36.1		SM	21.34	0.10	0.10	0.00	1.17	0.66
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855322
Northing (Y):	233895
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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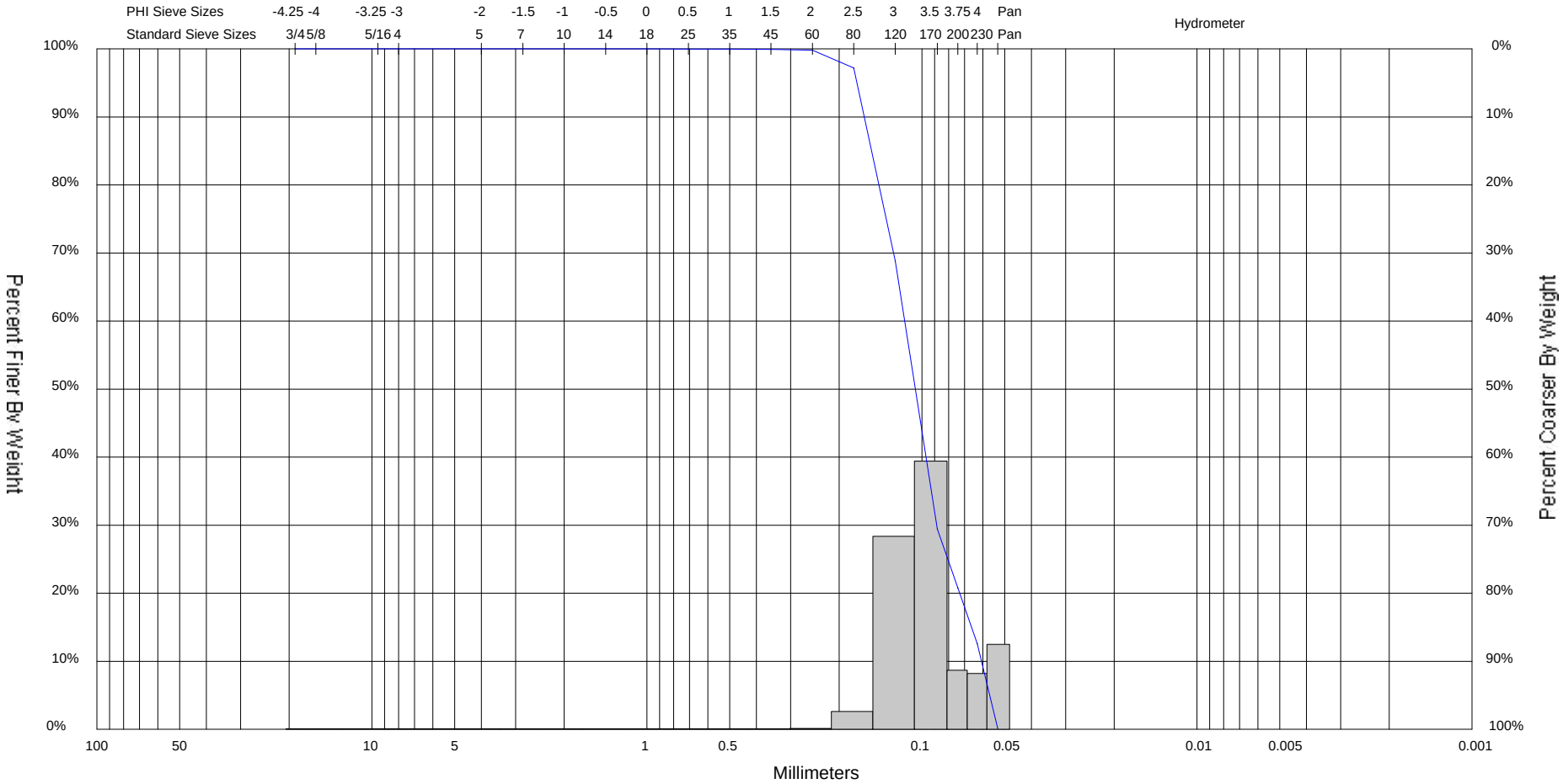

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-30 S#2		-37.4		SM	12.59	0.11	0.10	0.14	1.33	0.61
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855322
Northing (Y):	233895
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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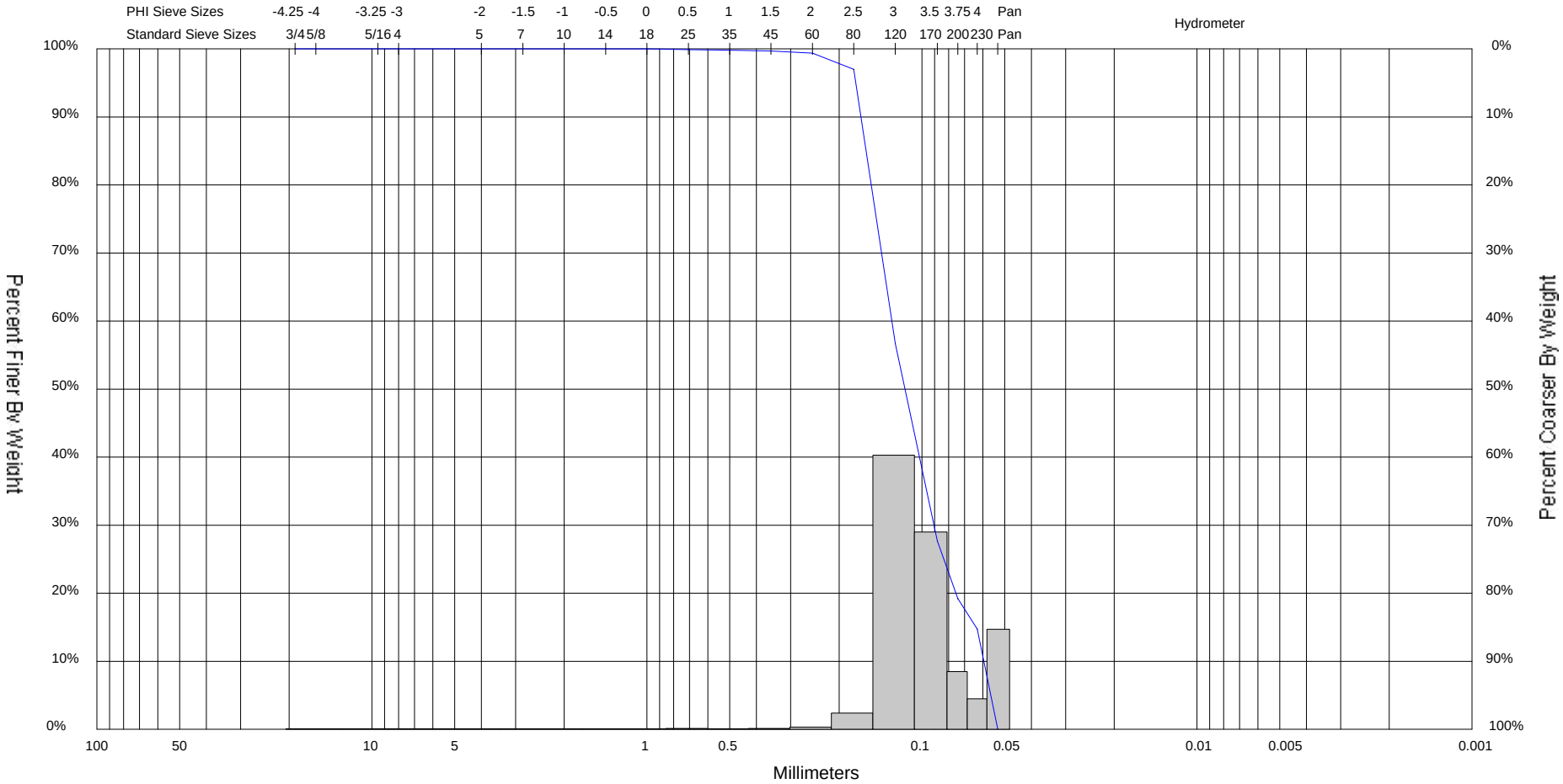

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-30 S#3		-39.4		SM	14.72	0.12	0.11	0.26	1.29	0.65
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855322
Northing (Y):	233895
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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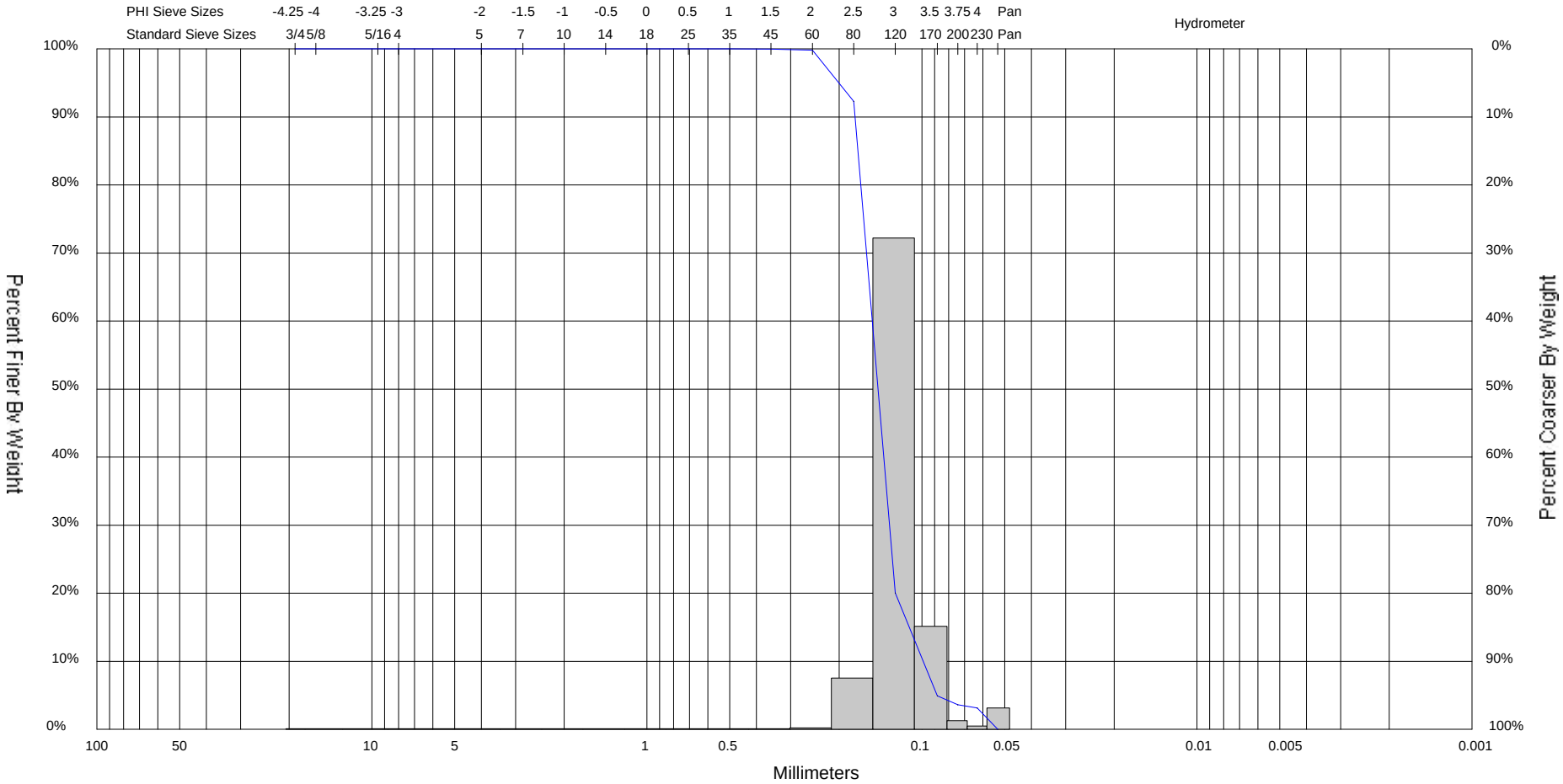

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-30 S#4		-43.4		SP	3.14	0.14	0.14	0.36	1.89	0.40
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855322
Northing (Y):	233895
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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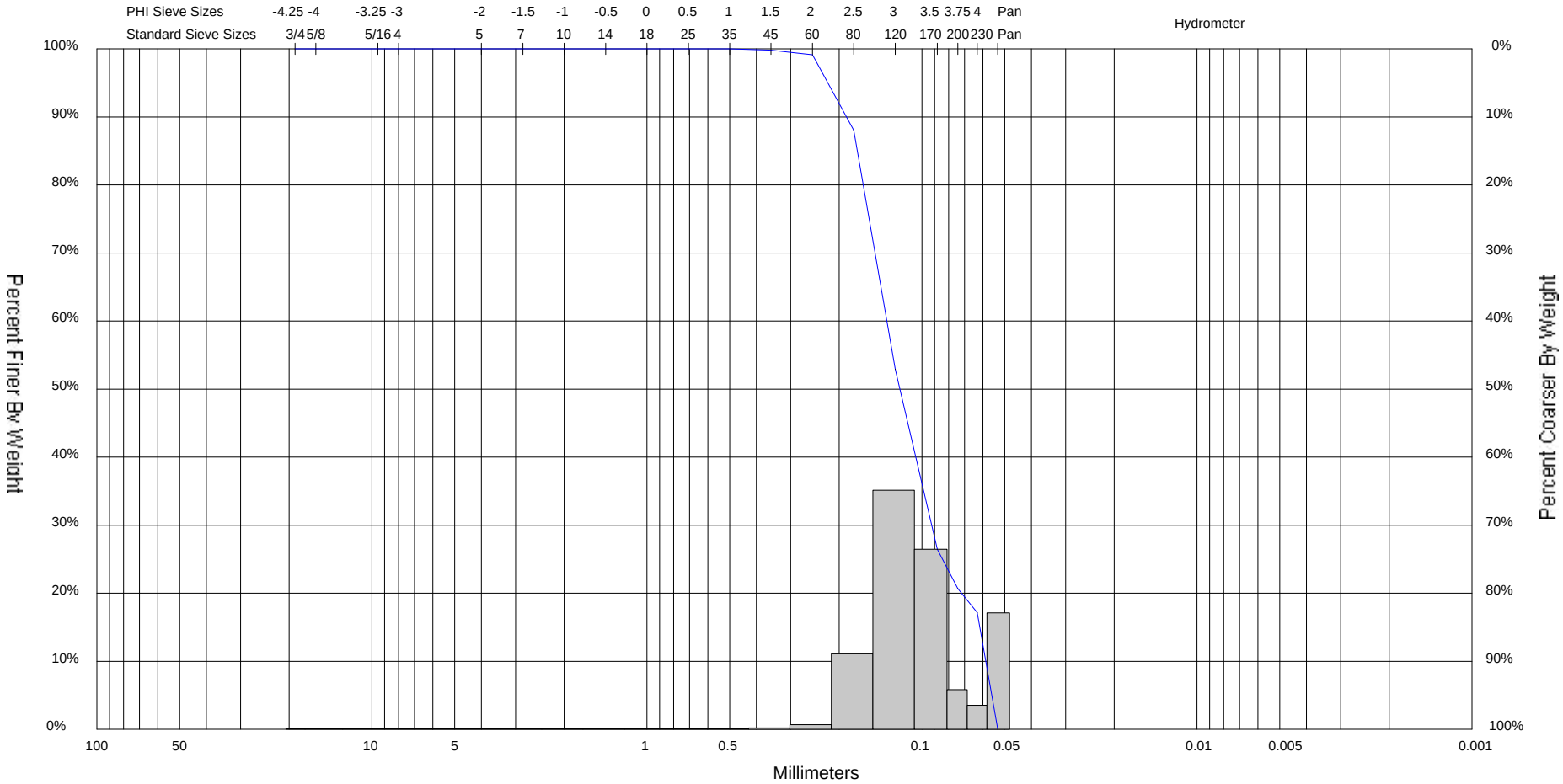

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-30 S#5		-46.4		SM	17.14	0.12	0.11	0.12	1.34	0.76
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855322
Northing (Y):	233895
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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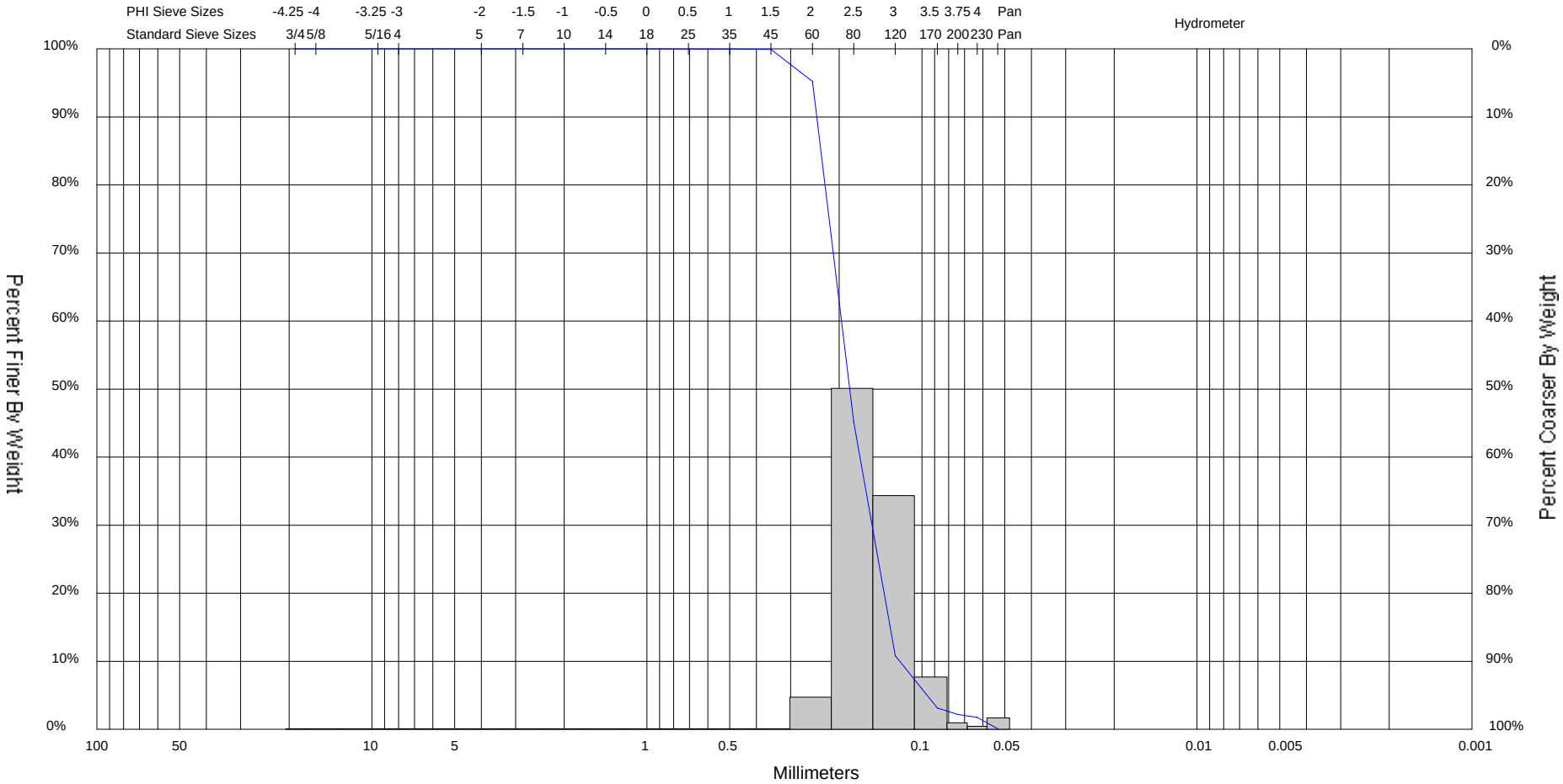

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-30 S#7		-50.9		SP	1.75	0.18	0.17	0.44	1.67	0.50
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855322
Northing (Y):	233895
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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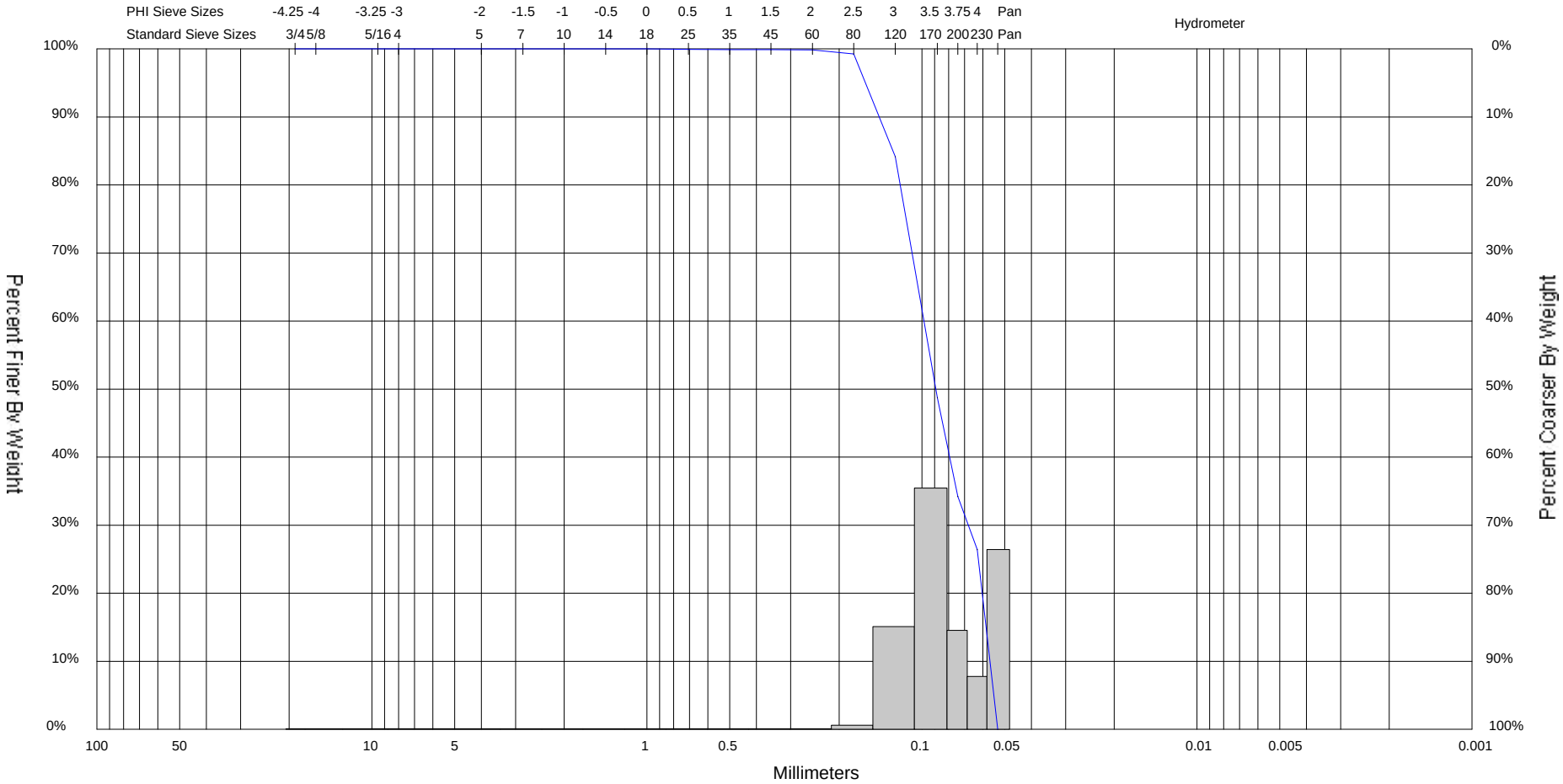

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-31 S#2		-37		SM	26.43	0.09	0.09	-0.13	1.28	0.61
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855838
Northing (Y):	234127
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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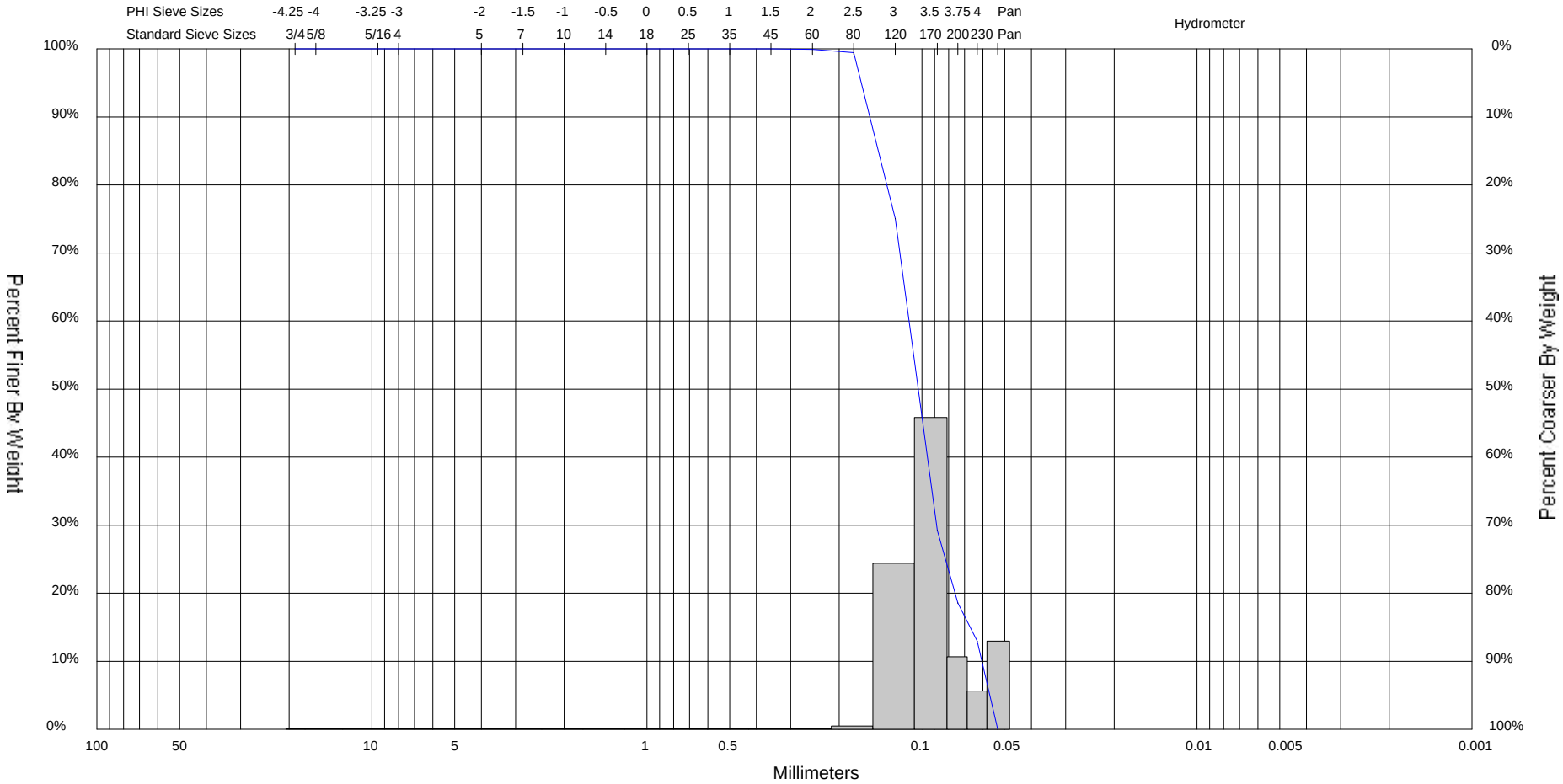

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-31 S#3		-40.5		SM	12.95	0.10	0.10	0.15	1.45	0.57
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855838
Northing (Y):	234127
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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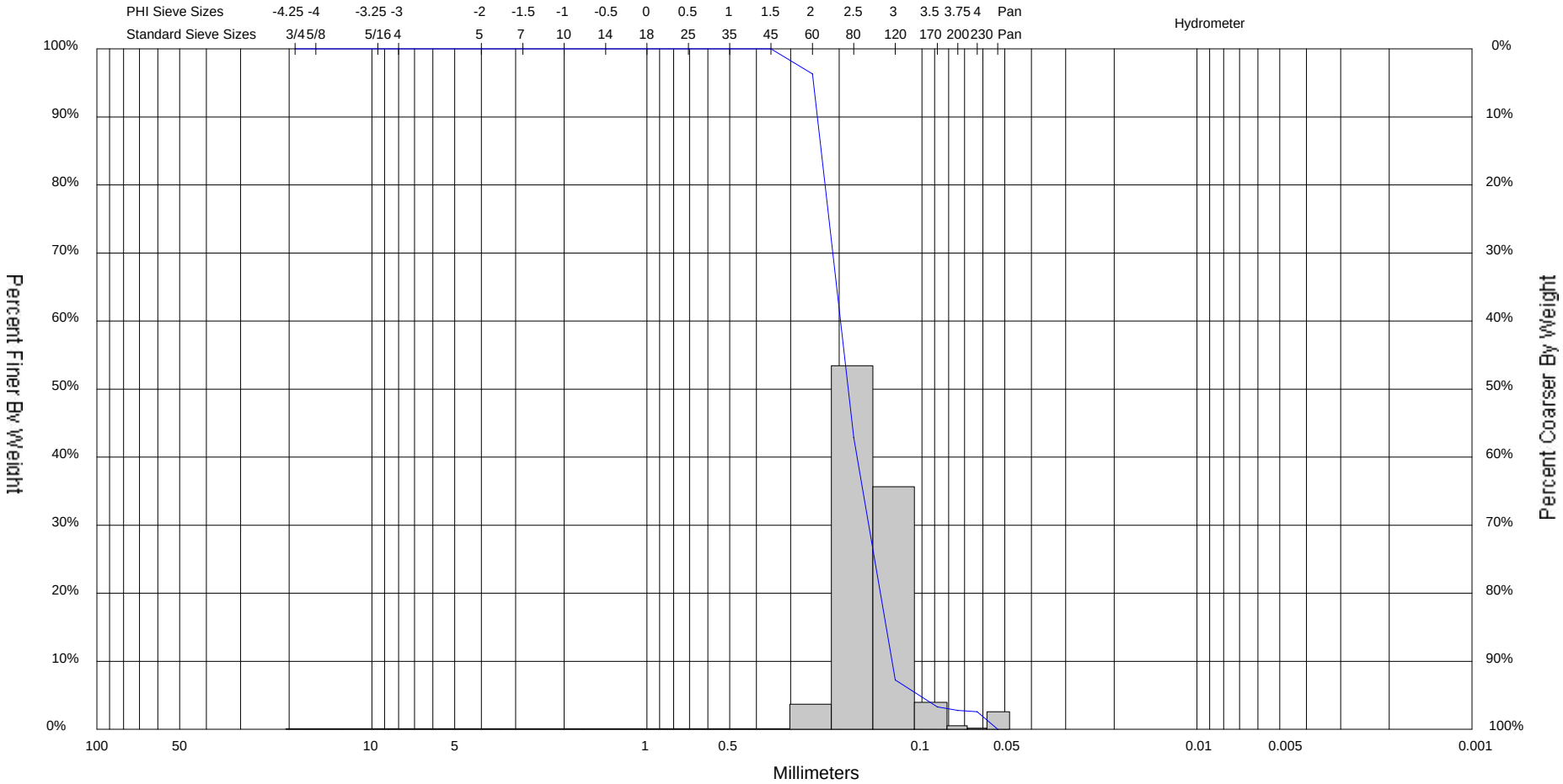

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-31 S#4		-44		SP	2.59	0.19	0.17	0.42	1.64	0.46
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855838
Northing (Y):	234127
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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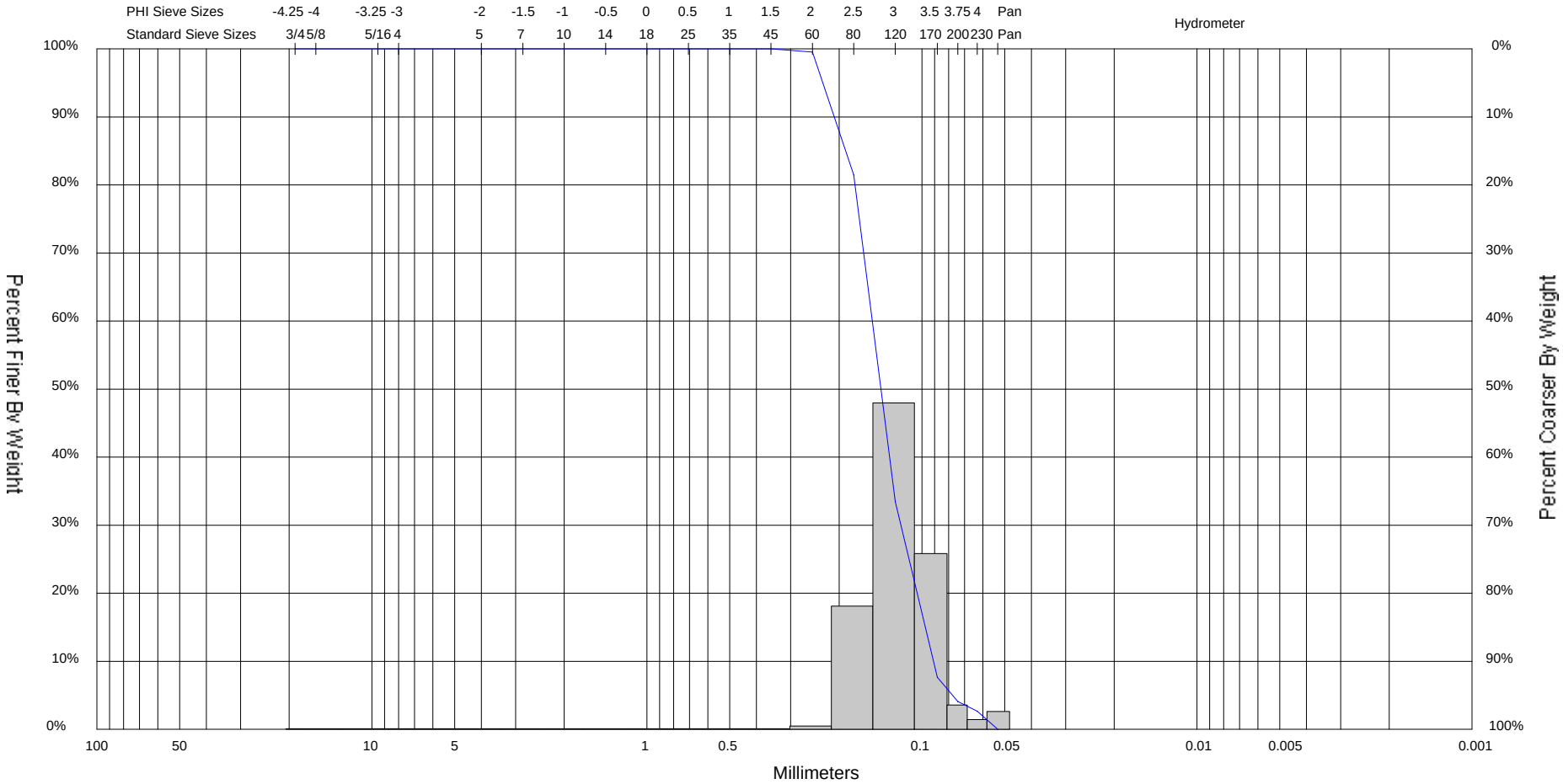

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-31 S#5		-46		SP	2.64	0.14	0.14	0.11	1.55	0.55
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	2855838
Northing (Y):	234127
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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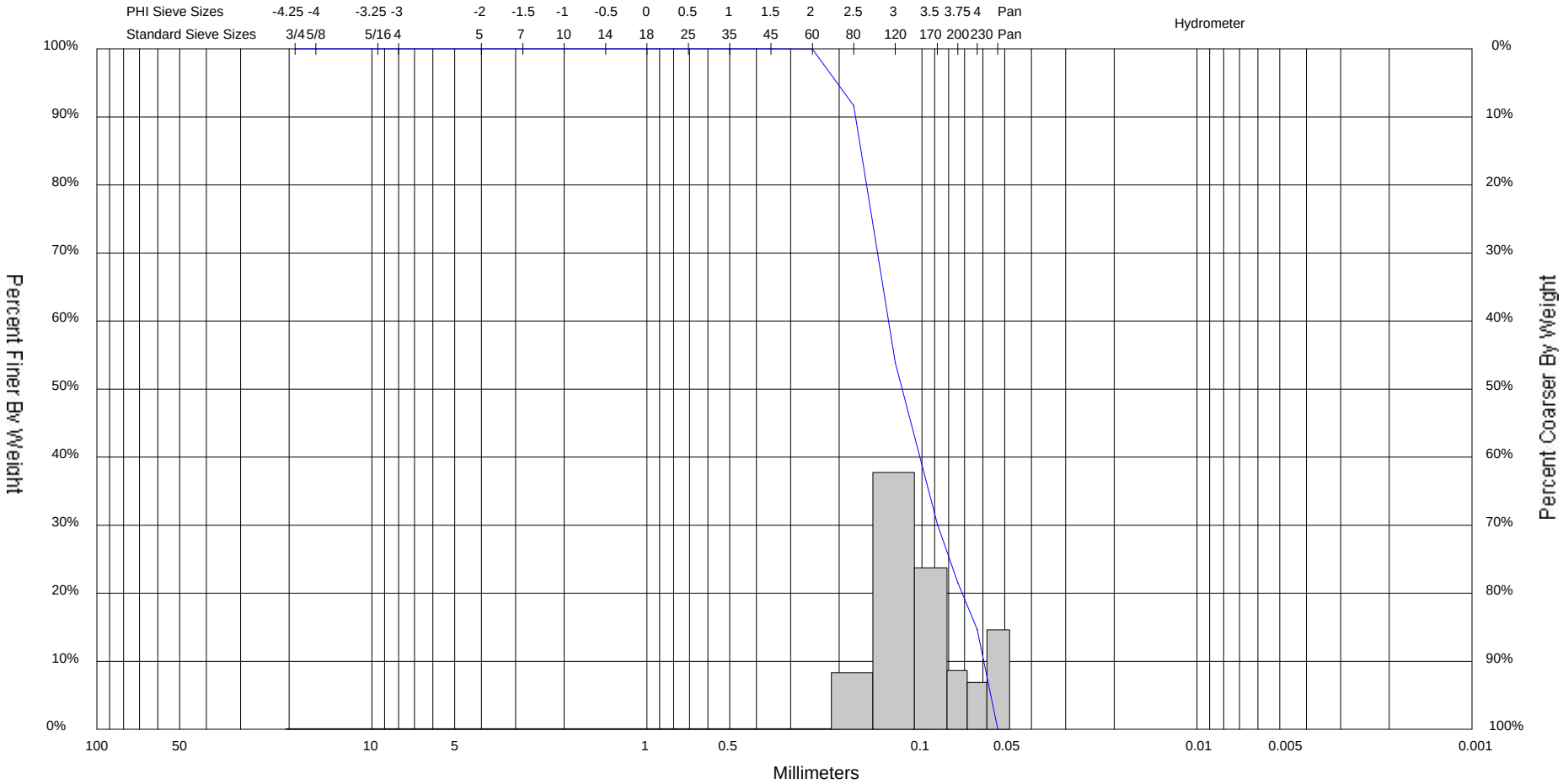

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-31 S#6		-49		SM	14.64	0.12	0.11	0.12	1.27	0.72
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855838
Northing (Y):	234127
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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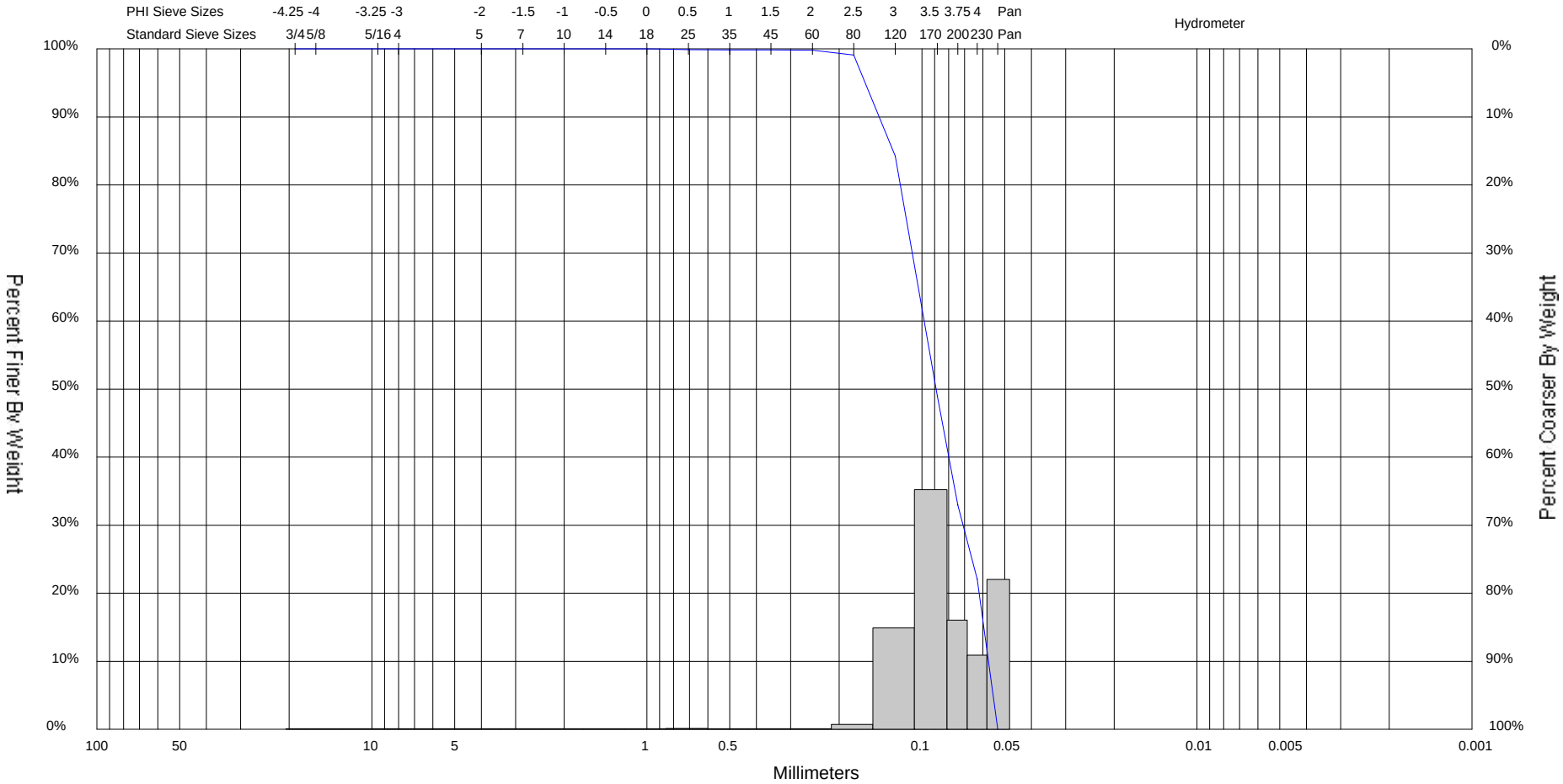

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-32 S#2		-38.6		SM	22.06	0.09	0.09	-0.14	1.33	0.59
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855117
Northing (Y):	233418
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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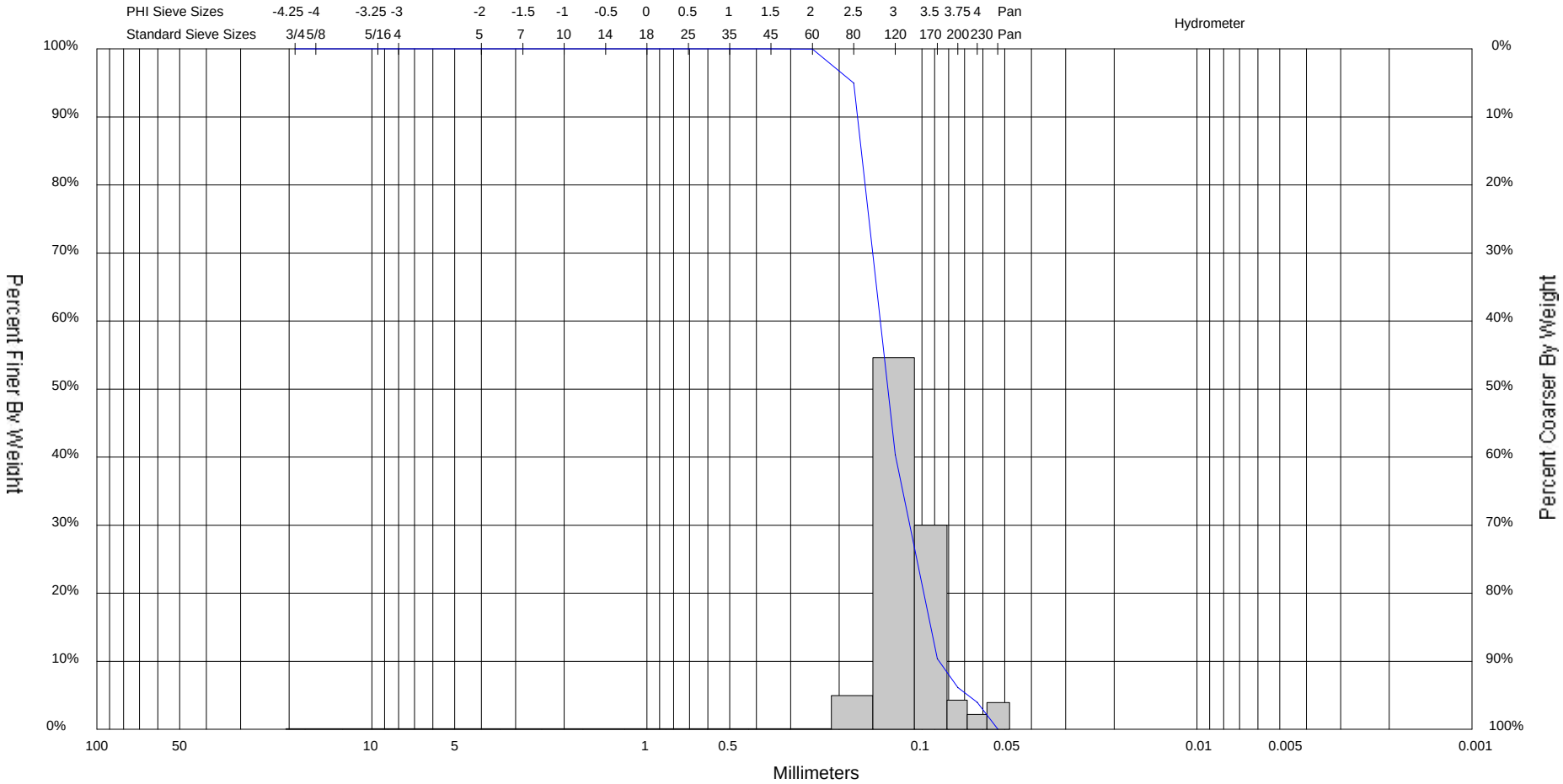

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-32 S#3		-43.6		SW-SM	3.94	0.13	0.12	0.51	1.74	0.50
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855117
Northing (Y):	233418
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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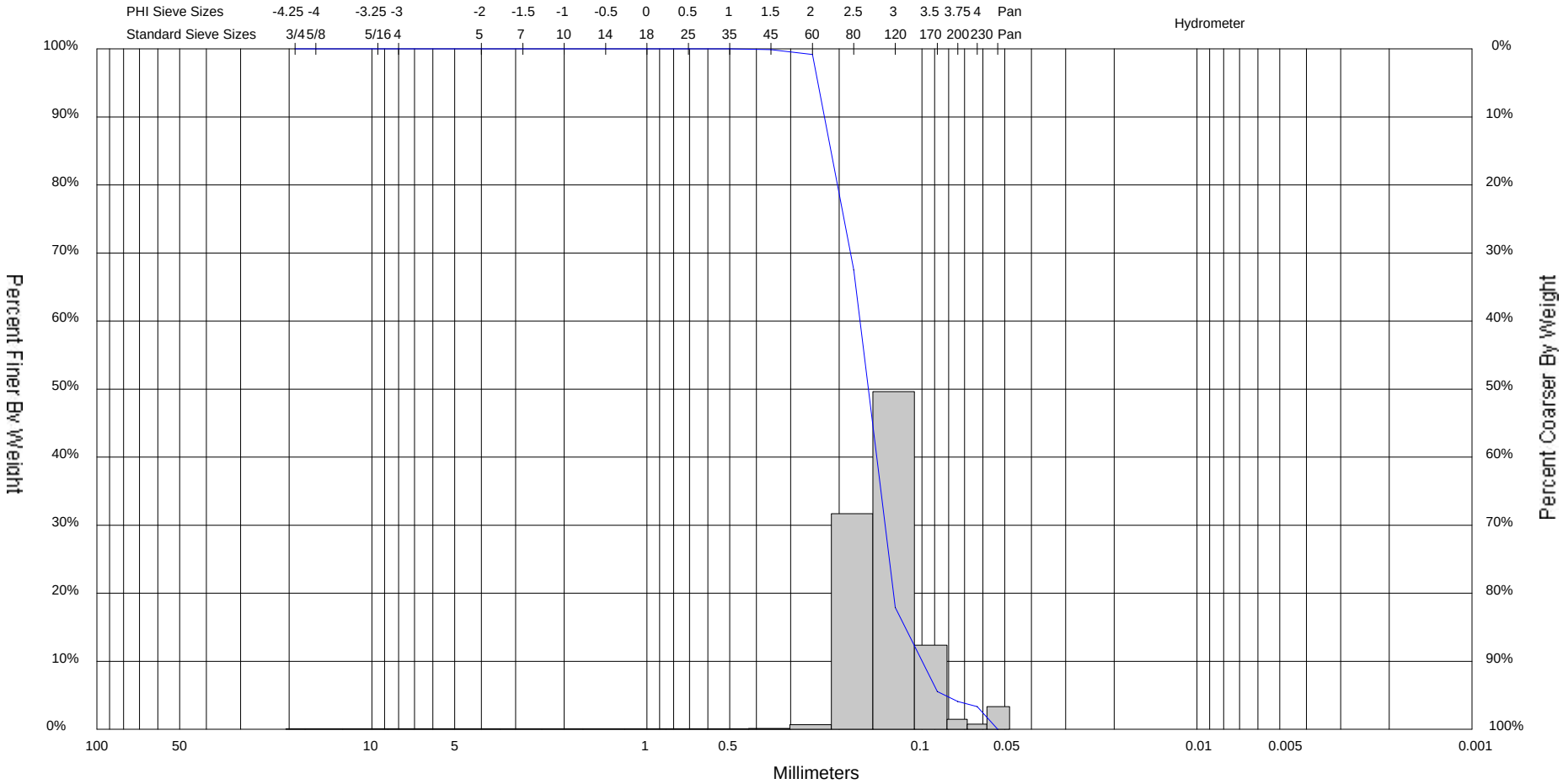

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-32 S#5		-47.1		SP	3.33	0.16	0.15	0.38	1.78	0.53
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855117
Northing (Y):	233418
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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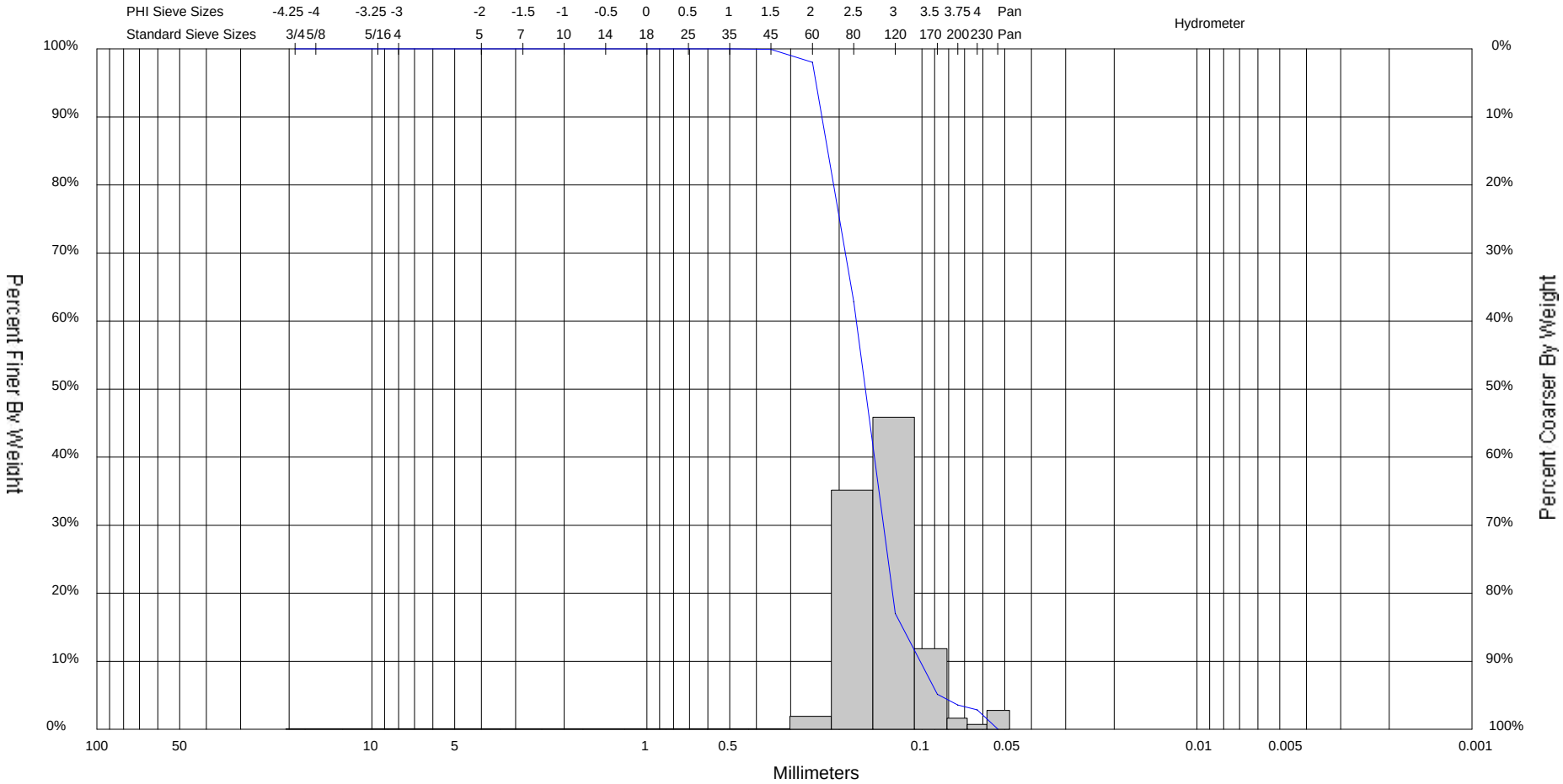

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-32 S#6		-50.6		SP	2.83	0.16	0.16	0.34	1.68	0.53
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855117
Northing (Y):	233418
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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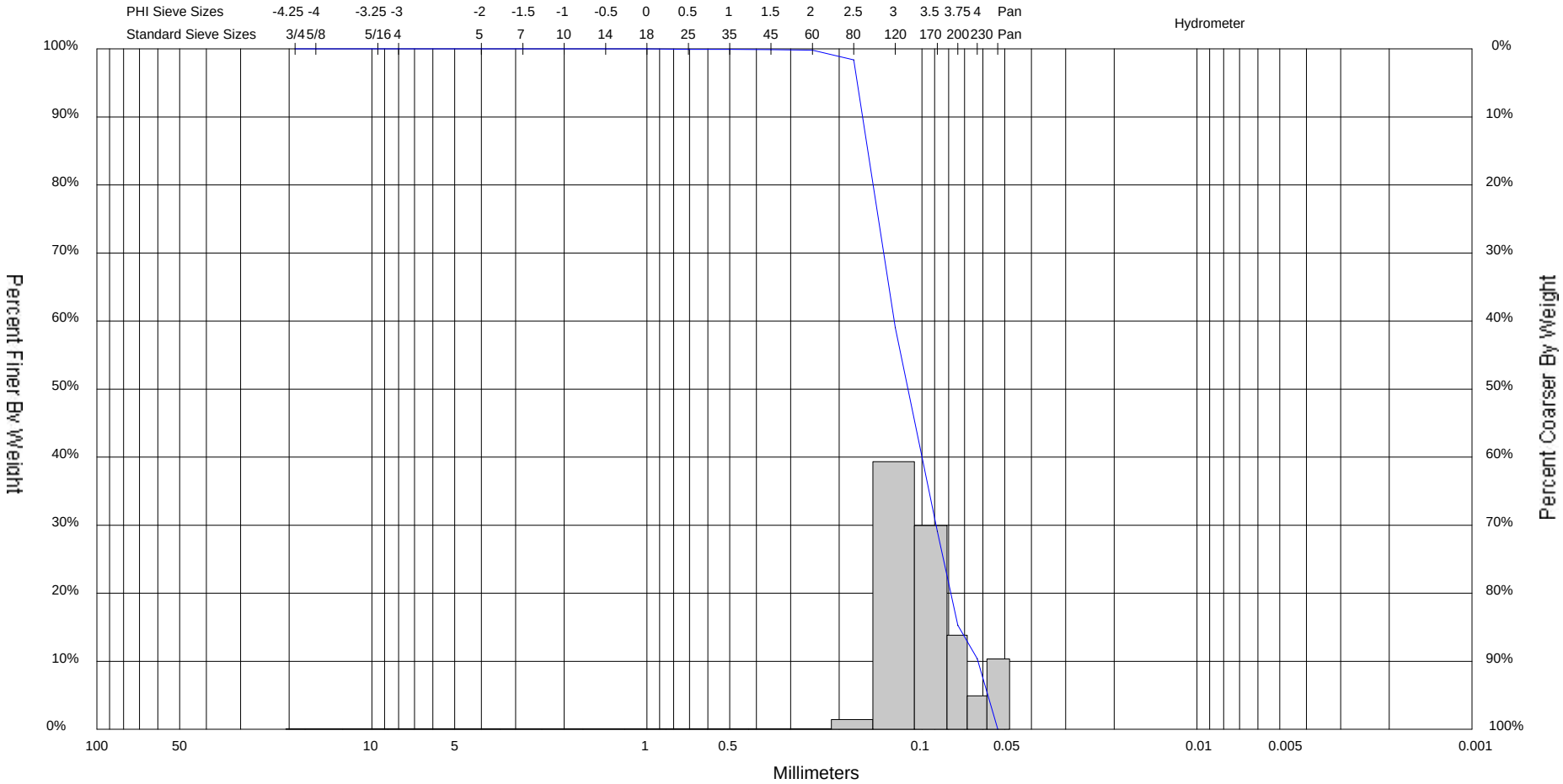

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-33 S#3		-45.6		SM	10.39	0.11	0.11	0.25	1.40	0.60
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3854746
Northing (Y):	233680
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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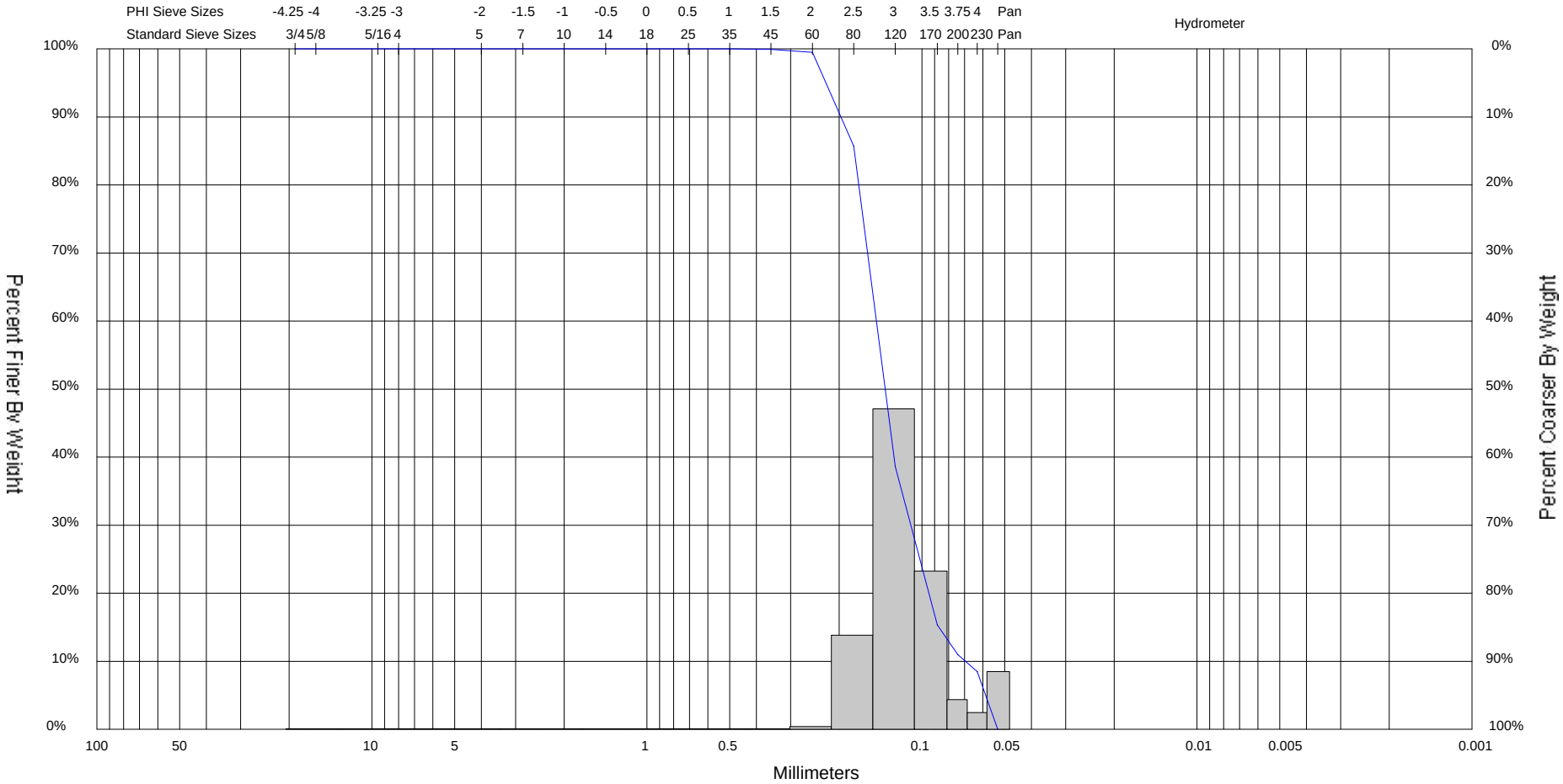

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-33 S#4		-47.2		SW-SM	8.49	0.14	0.12	0.38	1.81	0.66
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3854746
Northing (Y):	233680
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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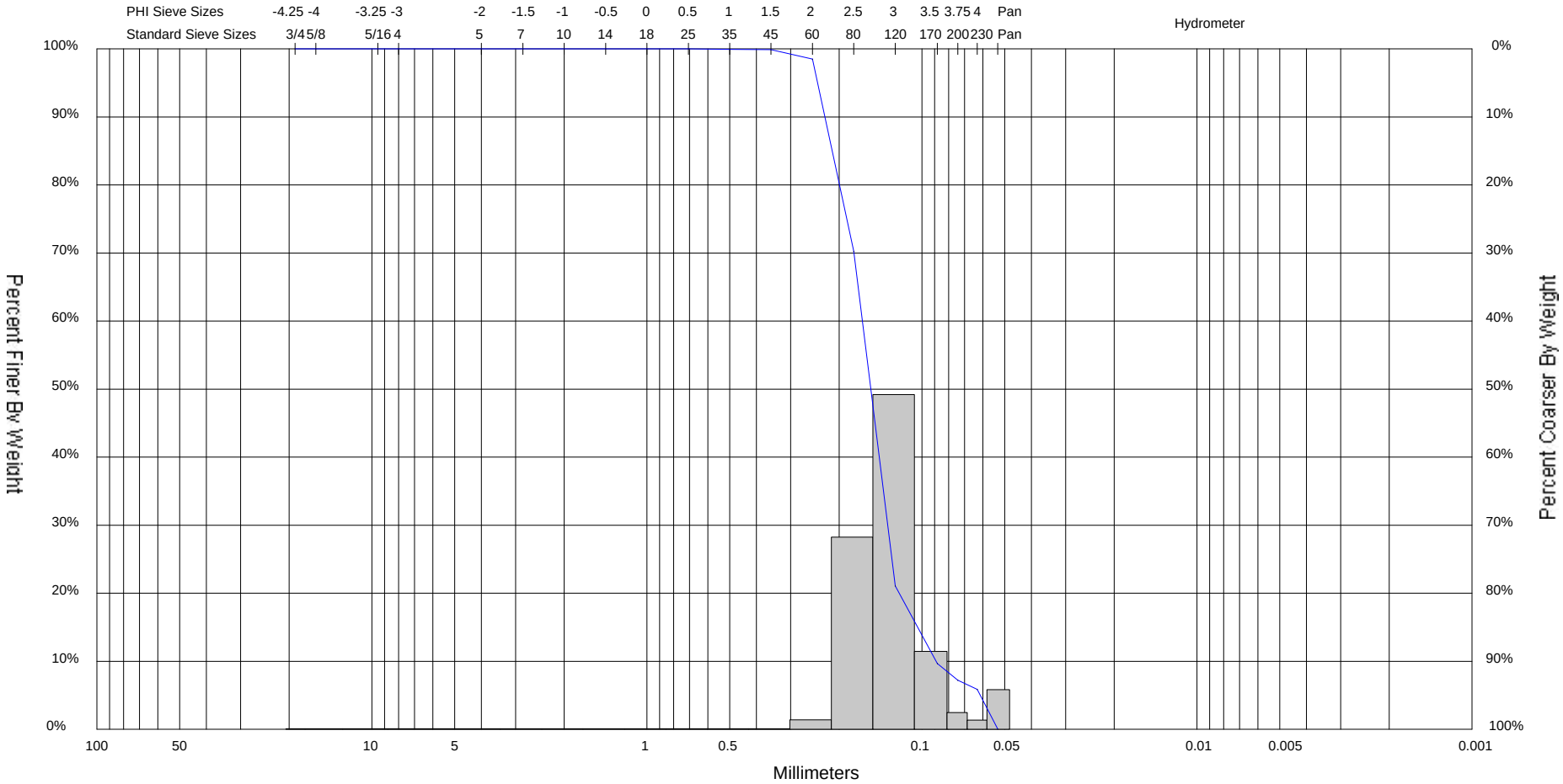

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-33 S#5		-50.6		SW-SM	5.85	0.15	0.14	0.70	2.20	0.67
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3854746
Northing (Y):	233680
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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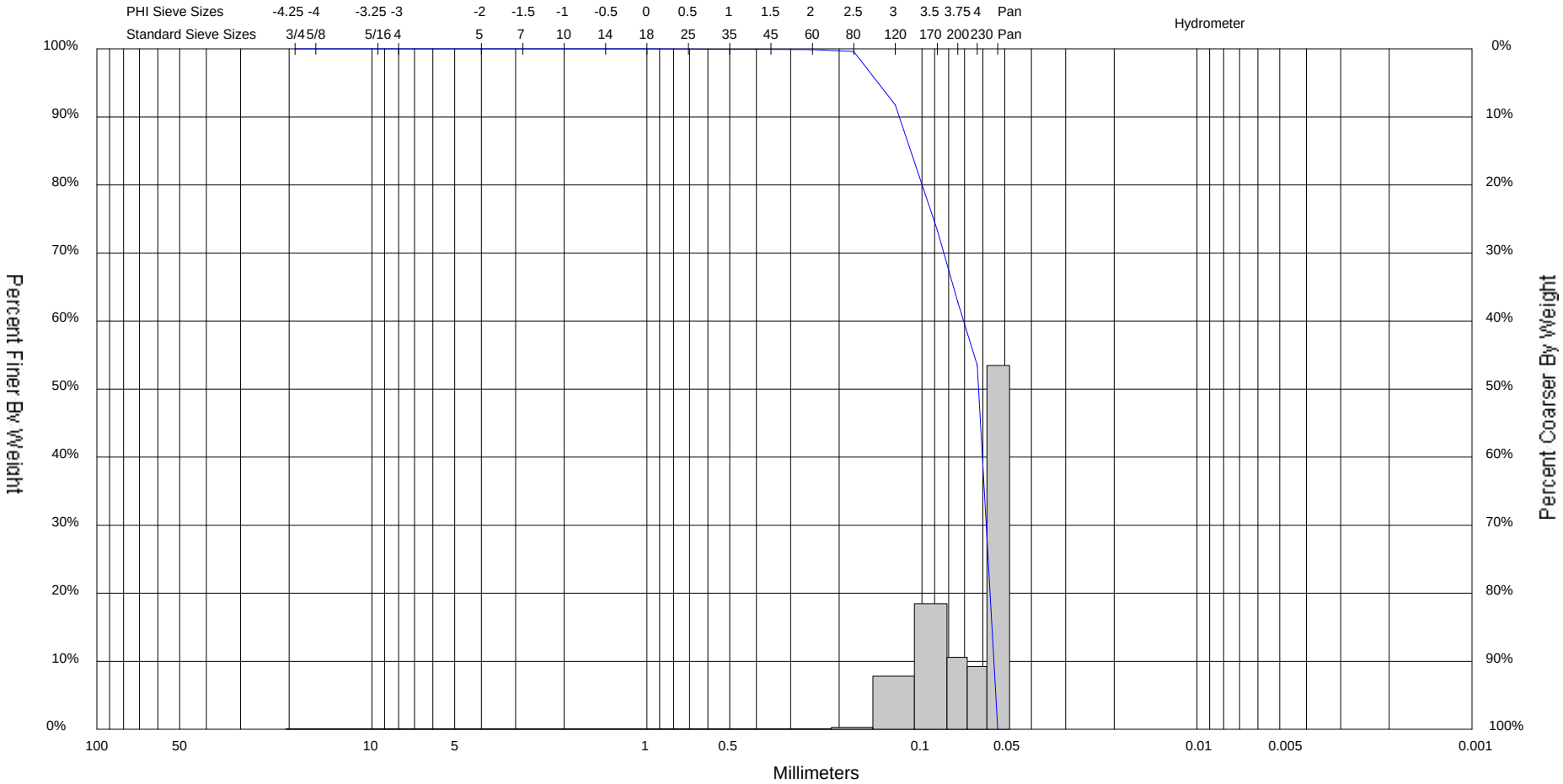

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-34 S#4		-40.9		ML	53.51	0.06	0.08	-0.56	1.55	0.56
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855068
Northing (Y):	232911
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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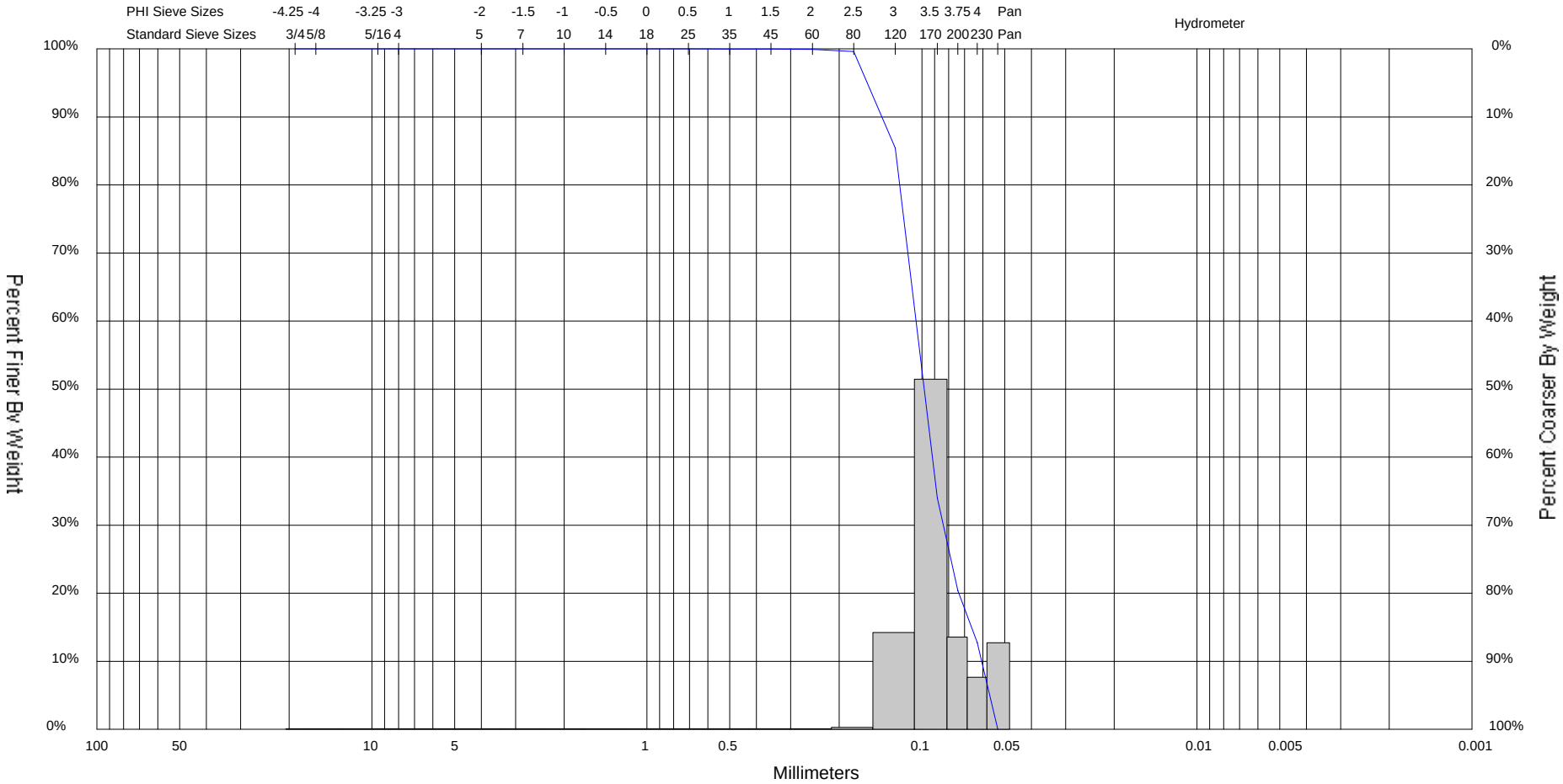

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-34 S#5		-43.9		SM	12.75	0.10	0.09	0.06	1.53	0.53
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855068
Northing (Y):	232911
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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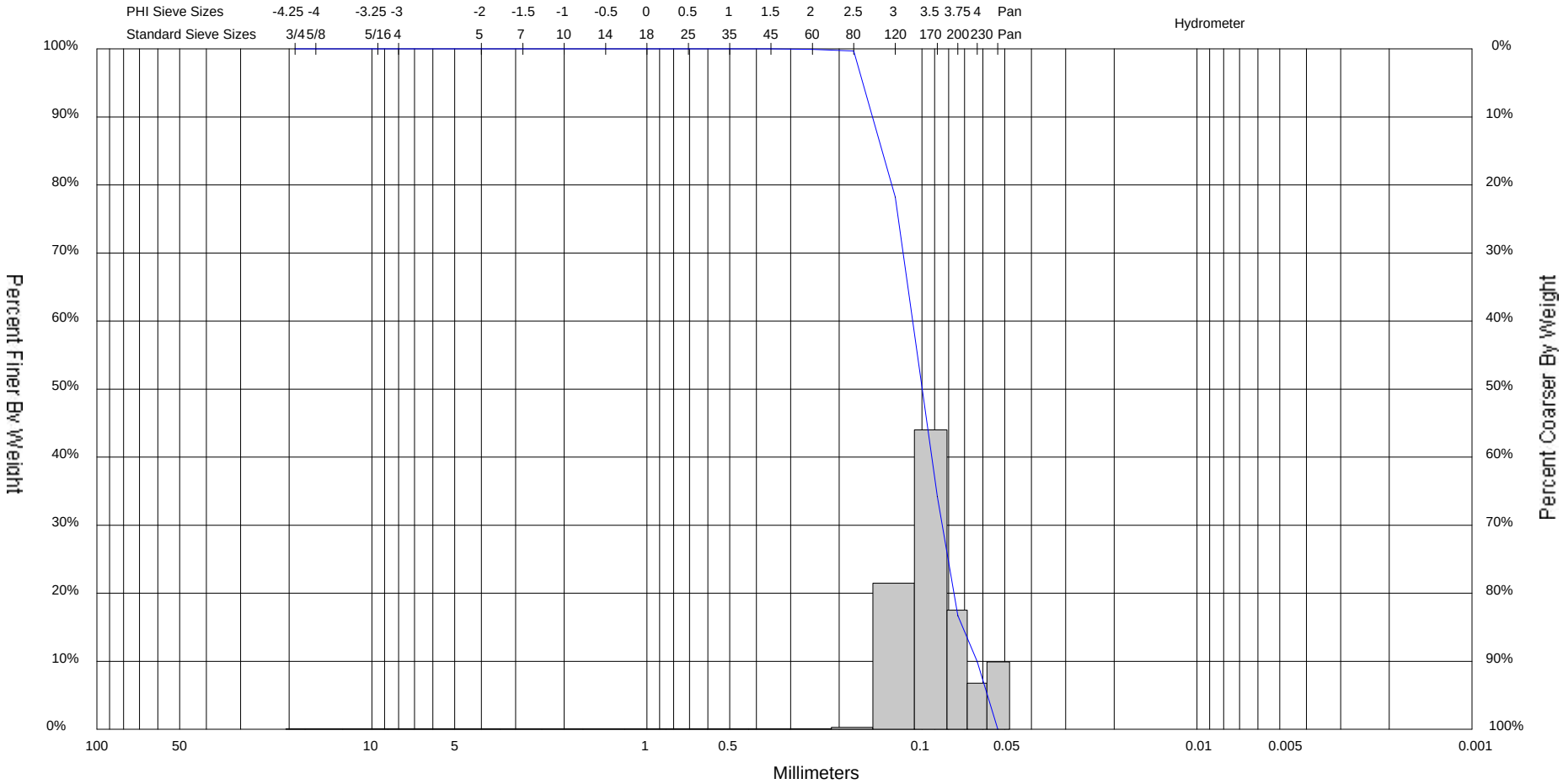

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-34 S#6		-48.4		SM	9.93	0.10	0.10	0.08	1.52	0.54
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855068
Northing (Y):	232911
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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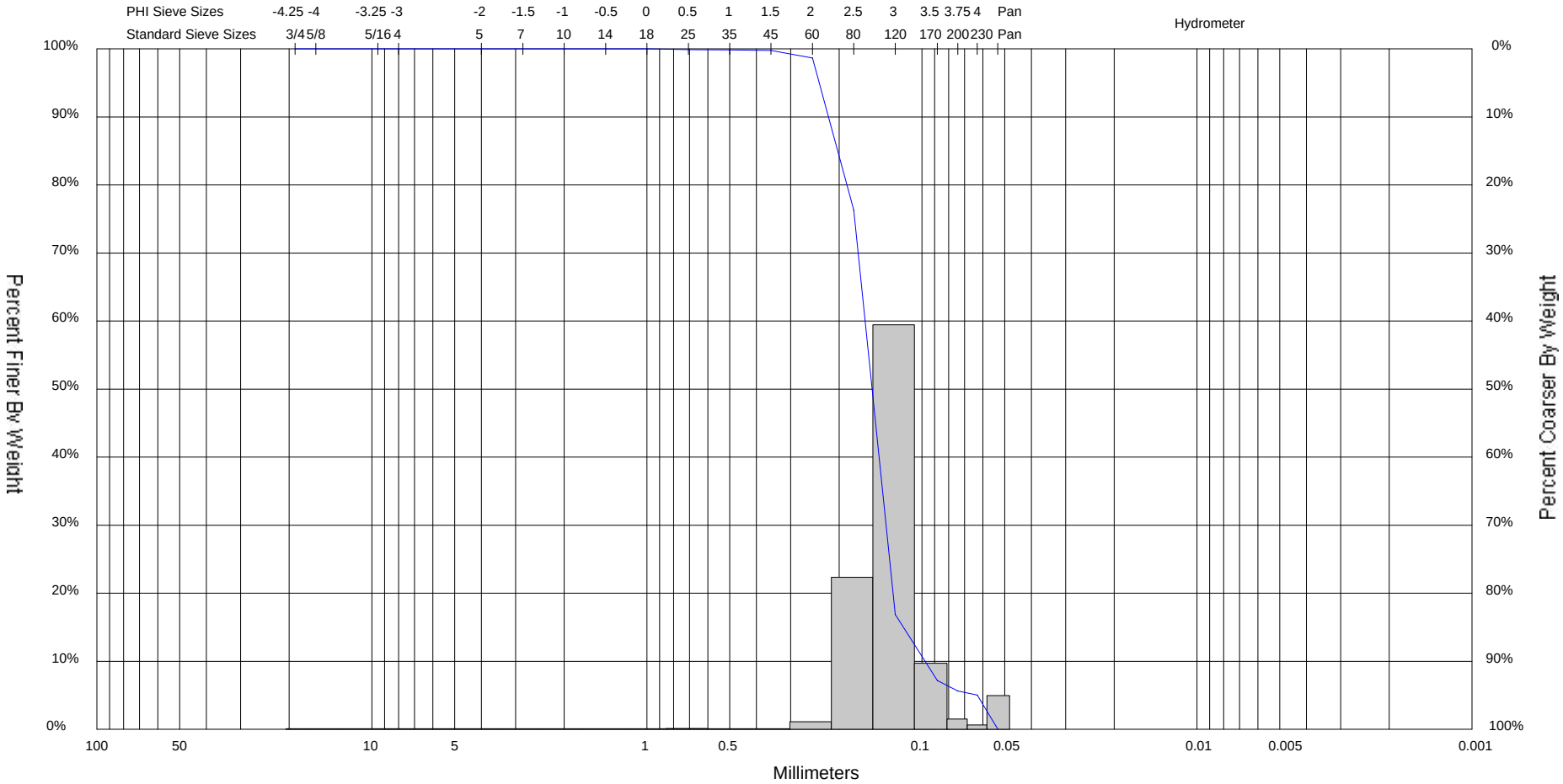

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-34 S#7		-51.9		SW-SM	5.01	0.15	0.14	0.84	2.60	0.63
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3855068
Northing (Y):	232911
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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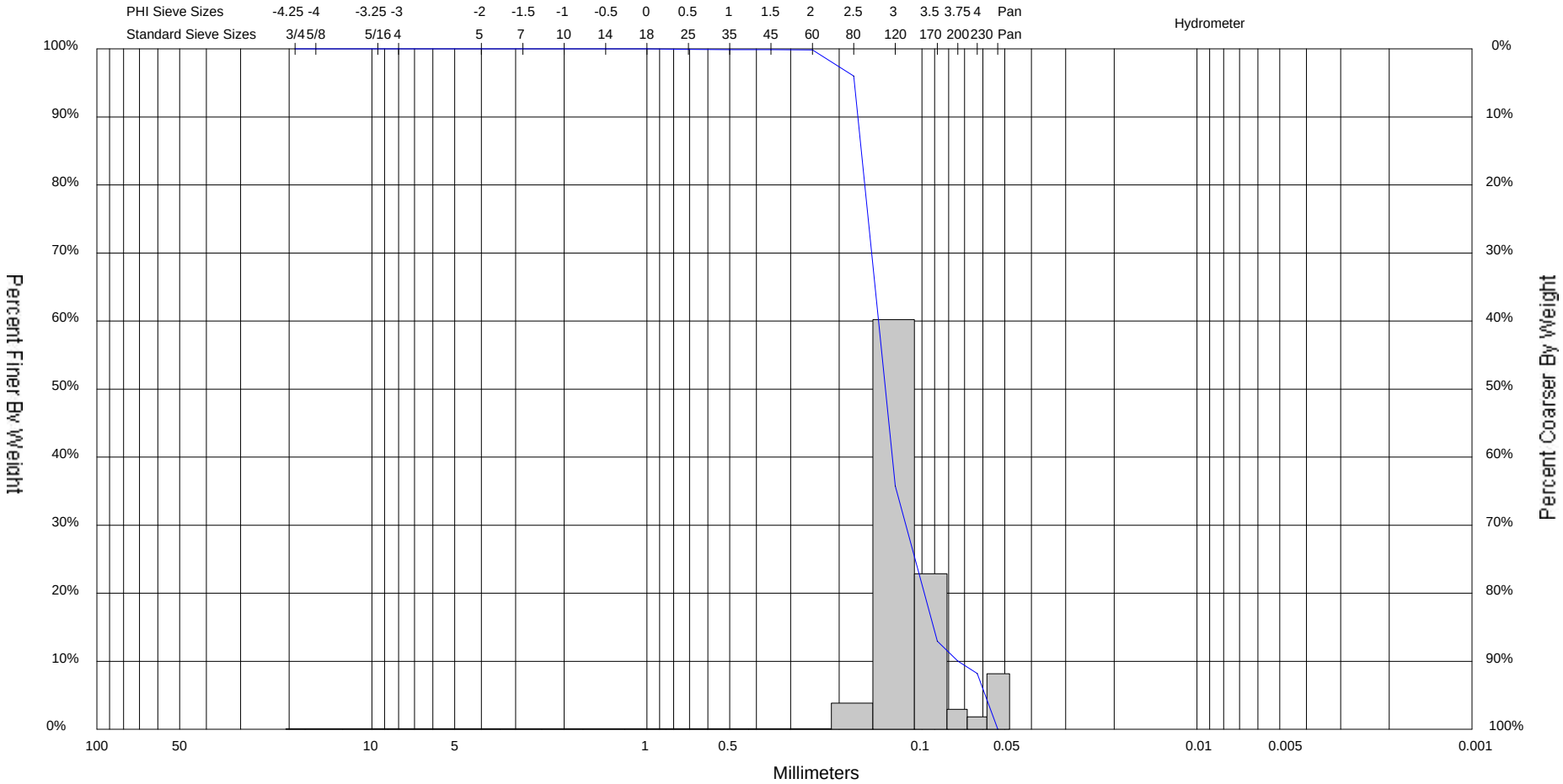

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-35 S#2		-38.1		SW-SM	8.20	0.14	0.12	0.76	2.12	0.57
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3863189
Northing (Y):	221706
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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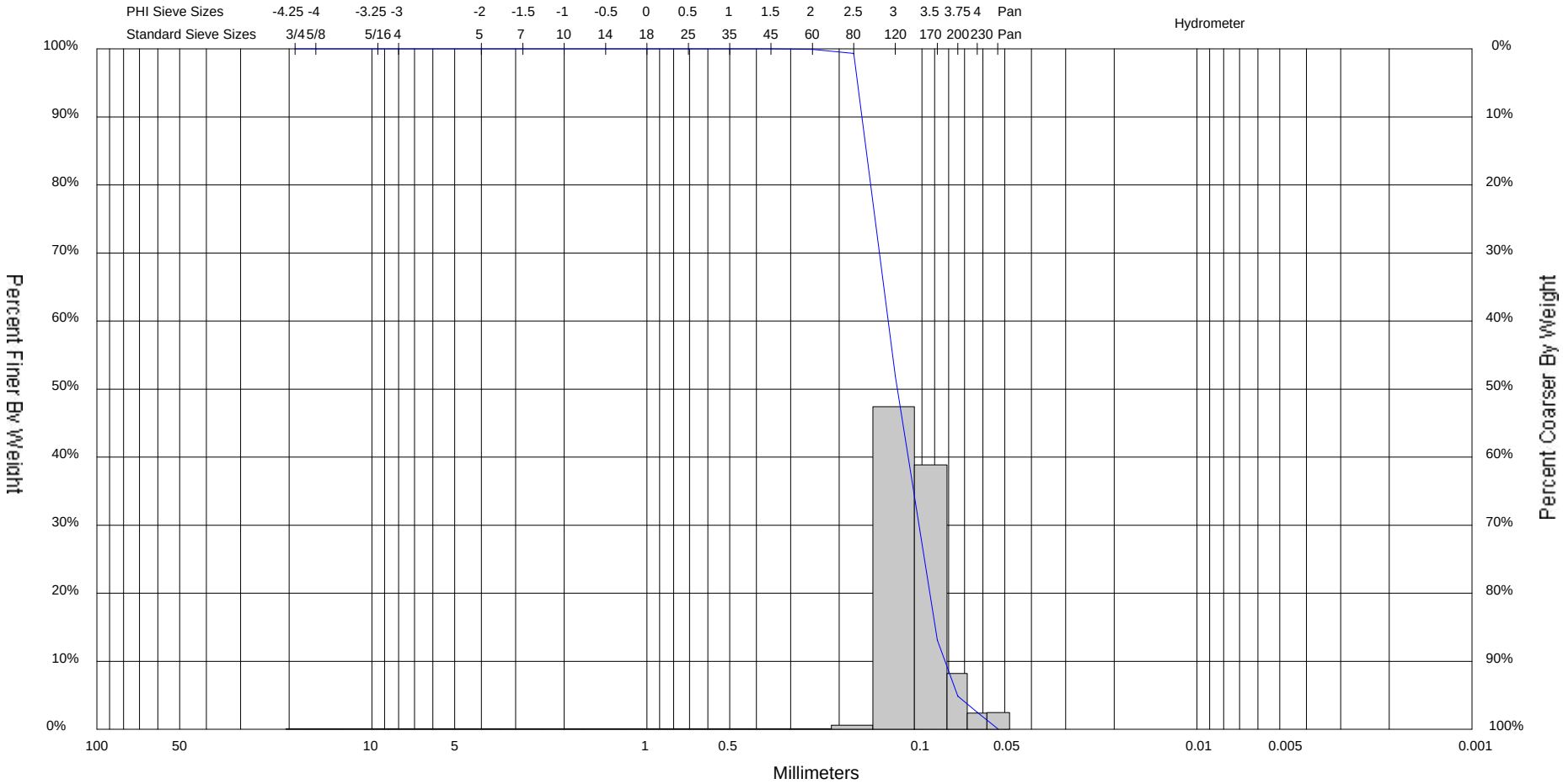

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-35 S#3		-41.9		SP	2.51	0.12	0.12	0.21	1.38	0.45
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3863189
Northing (Y):	221706
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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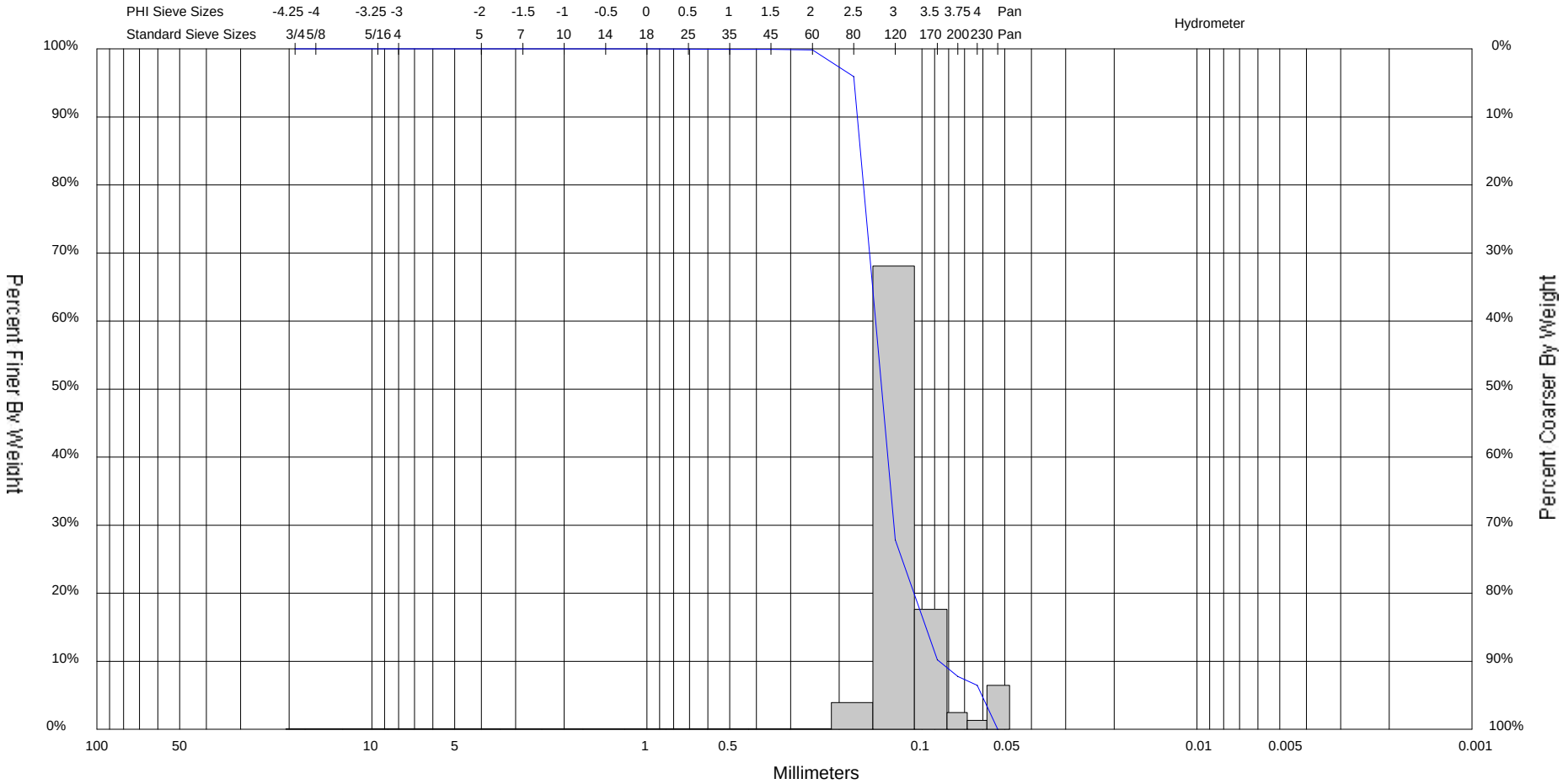

Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-35 S#4		-43.3		SW-SM	6.45	0.14	0.12	0.95	2.48	0.55
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3863189
Northing (Y):	221706
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

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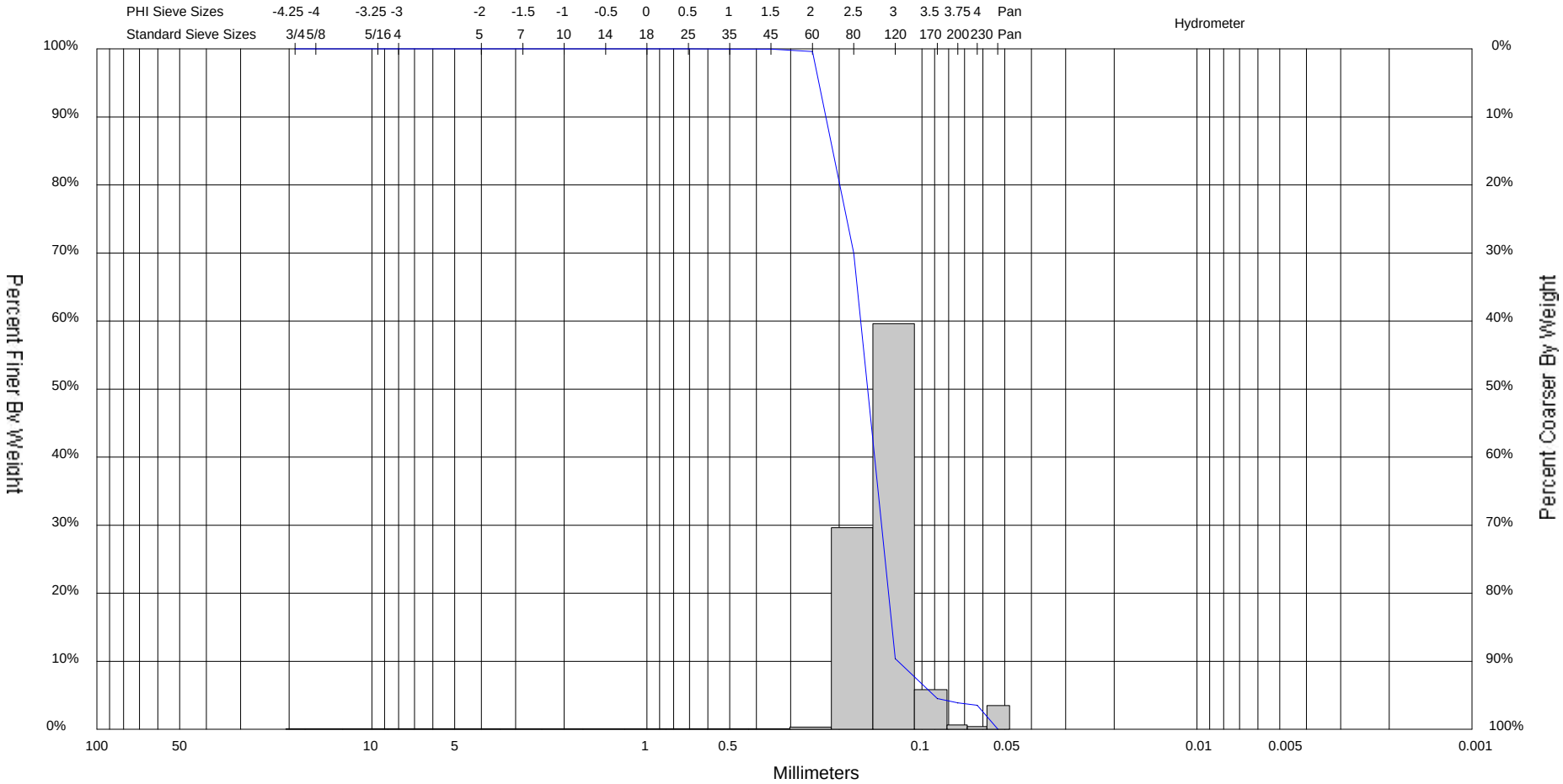


Gravel		Sand			Silt and Clay
Coarse	Fine	Coarse	Medium	Fine	

Sample	Symbol	Elev.	Comments	USCS	% Silt	Median	Mean	Skew	Kurt	Sort
SPVC-03-35 S#5		-51.1		SP	3.51	0.16	0.16	0.35	1.87	0.47
Incremental % Weight		N/A	Use Left Hand Scale							

Sample Information	
Project Name:	Sandy Point
Collection Date:	06/07/03
Analyzed By:	ID
Easting (X):	3863189
Northing (Y):	221706
Horizontal System:	State Plane 1983 LA South
Vertical System:	NAVD 88 Ft

COASTAL PLANNING & ENGINEERING, INC.

Coastal Planning & Engineering, Inc.
2481 N.W. Boca Raton Blvd.
Boca Raton, FL 33431

ph 561 391-8102 **fax 561 391-9116**

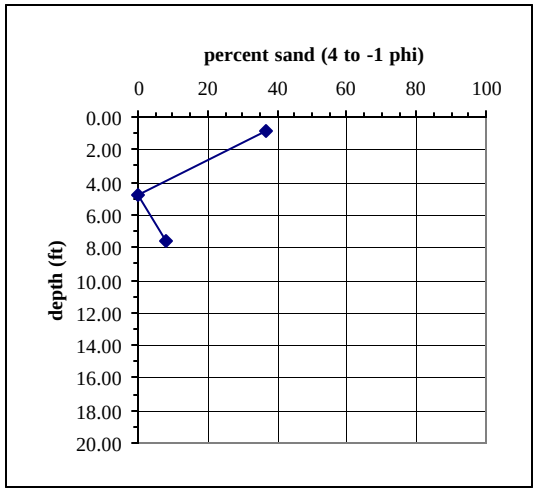
APPENDIX 10
2003 SANDY POINT UNO SEDIMENT ANALYSIS

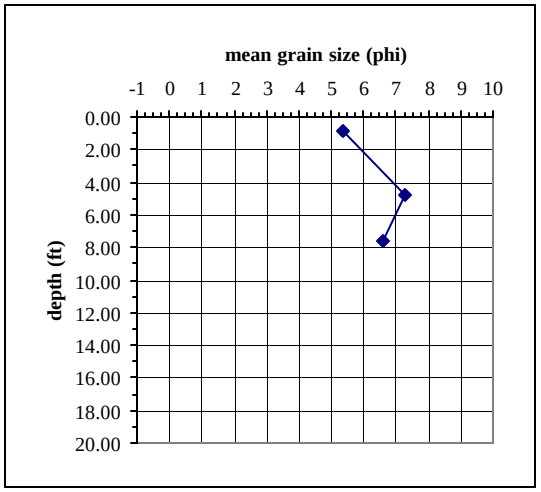
Sandy Point, Louisiana **Coastal Planning and Engineering/UNO Coastal Research Laboratory**

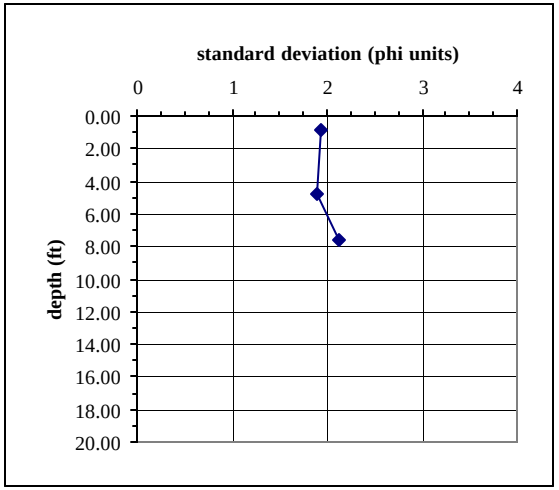
Grainsize Data Table

Core ID SPVC-03-01

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample mean grain size	Standard Deviation	%Sand	%Silt	%Clay
SPVC-03-01_S#1-08	0.80	mm	0.001	0.003	0.006	0.024	0.051	0.077	0.094	0.110	0.128	0.024		37.04	50.77	12.17
		phi	9.44	8.40	7.30	5.40	4.30	3.70	3.42	3.19	2.97	5.36	1.94			
SPVC-03-01_S#3-48	4.80	mm	0.001	0.001	0.002	0.003	0.009	0.019	0.024	0.029	0.033	0.007		0.00	68.70	31.23
		phi	10.25	9.71	9.17	8.45	6.79	5.70	5.36	5.13	4.92	7.26	1.90			
SPVC-03-01_S#4-76	7.60	mm	0.001	0.001	0.002	0.004	0.016	0.033	0.045	0.06	0.074	0.010		7.86	68.69	23.49
		phi	10.08	9.43	8.75	7.86	5.96	4.90	4.48	4.15	3.76	6.62	2.14			





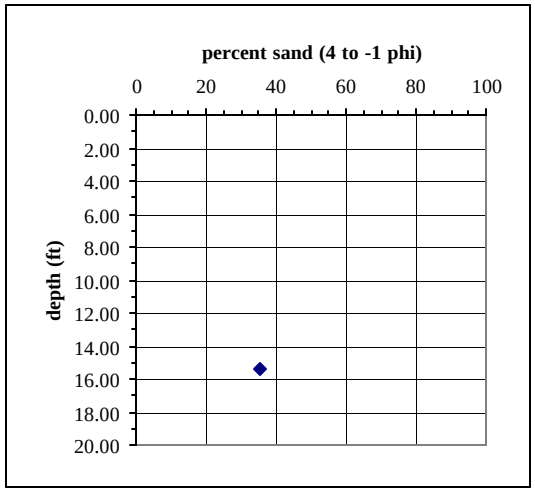


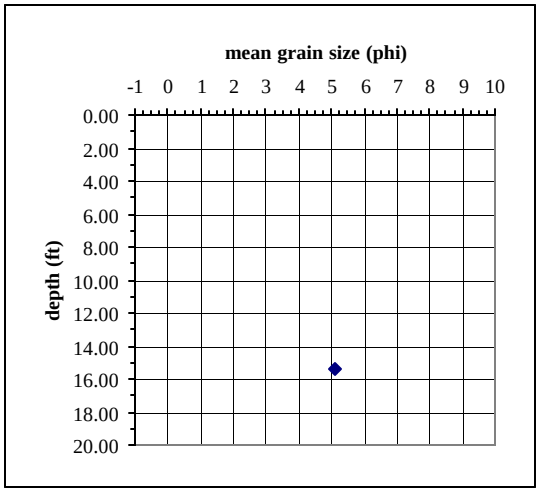
Sandy Point, Louisiana **Coastal Planning and Engineering/UNO Coastal Research Laboratory**

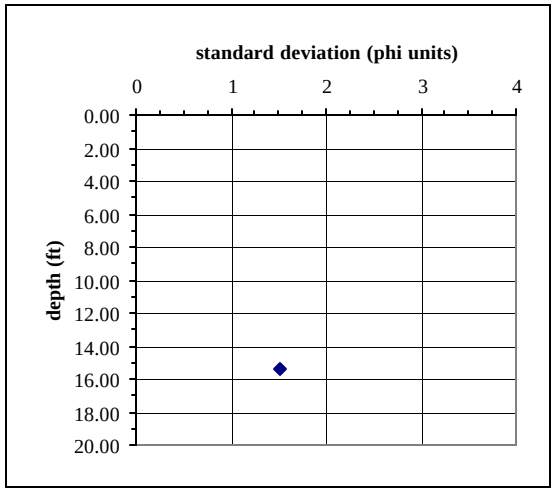
Grainsize Data Table

Core ID SPVC-03-01A

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample mean grain size	Standard Deviation	%Sand	%Silt	%Clay
SPVC-03-01A_S#7-154	15.4	mm	0.002	0.004	0.010	0.025	0.050	0.072	0.081	0.089	0.098	0.029		35.40	55.13	9.49
		phi	9.1	7.9	6.6	5.3	4.3	3.8	3.6	3.5	3.35	5.13	1.51			





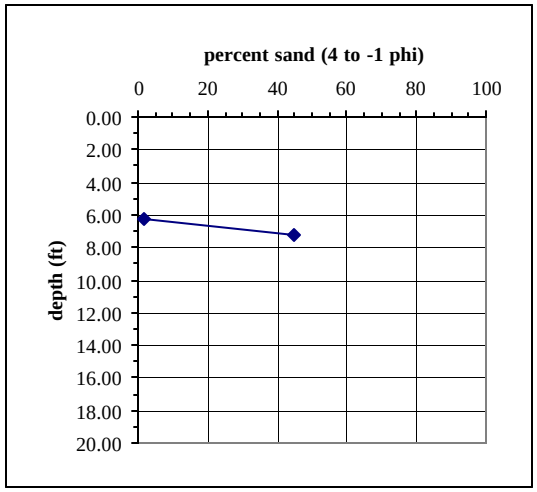


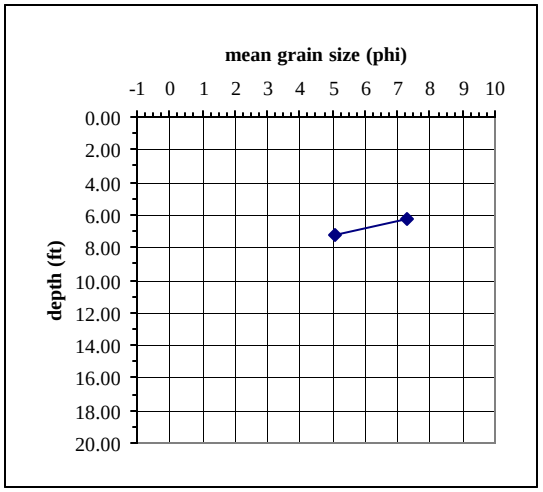
Sandy Point, Louisiana **Coastal Planning and Engineering/UNO Coastal Research Laboratory**

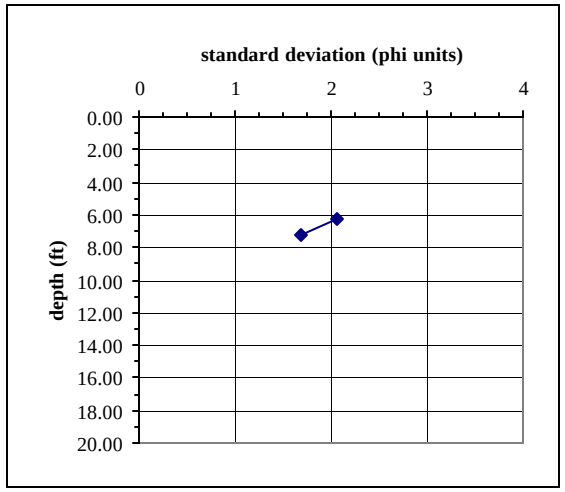
Grainsize Data Table

Core ID SPVC-03-02

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample mean grain size	Standard Deviation	%Sand	%Silt	%Clay
SPVC-03-02_S#4-63	6.30	mm	0.001	0.001	0.002	0.002	0.007	0.019	0.027	0.036	0.049	0.006		1.59	63.05	35.22
		phi	10.37	9.88	9.37	8.69	7.11	5.74	5.24	4.80	4.36	7.30	2.07			
SPVC-03-02_S#5-73	7.30	mm	0.002	0.004	0.009	0.027	0.058	0.084	0.096	0.107	0.119	0.030		44.75	45.09	10.17
		phi	9.25	8.04	6.76	5.22	4.12	3.58	3.38	3.23	3.07	5.07	1.69			





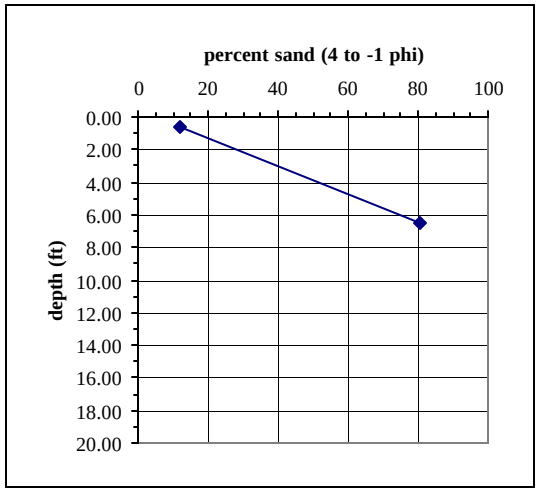


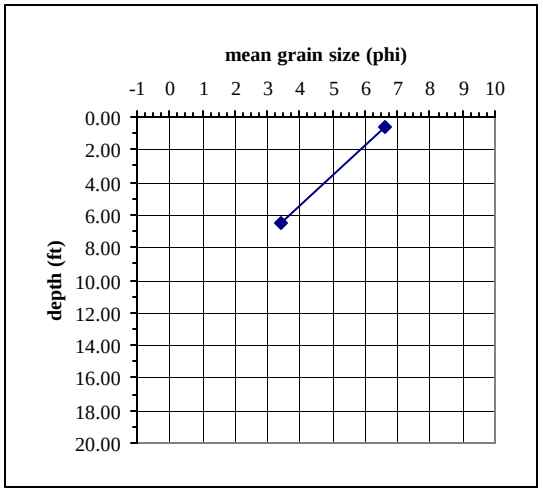
Sandy Point, Louisiana **Coastal Planning and Engineering/UNO Coastal Research Laboratory**

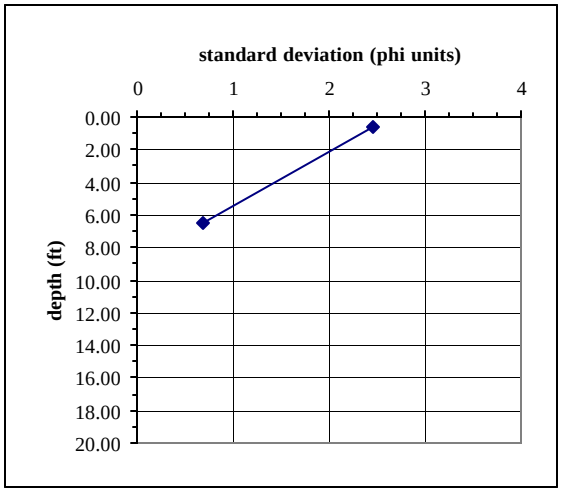
Grainsize Data Table

Core ID SPVC-03-03

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample mean grain size	Standard Deviation	%Sand	%Silt	%Clay
SPVC-03-03_S#1-06	0.60	mm	0.001	0.001	0.002	0.003	0.011	0.039	0.055	0.068	0.083	0.010		12.25	57.41	30.40
		phi	10.24	9.67	9.10	8.39	6.54	4.67	4.19	3.88	3.59	6.65	2.46			
SPVC-03-03_S#6-65	6.50	mm	0.020	0.045	0.057	0.069	0.098	0.133	0.149	0.162	0.176	0.092		80.32	17.33	2.39
		phi	5.61	4.49	4.13	3.85	3.35	2.91	2.74	2.62	2.50	3.44	0.70			





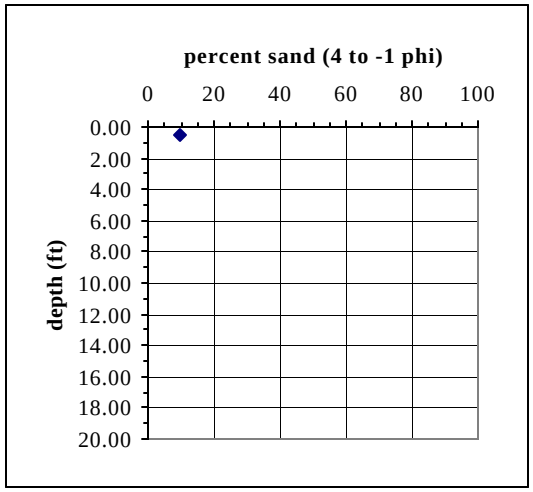


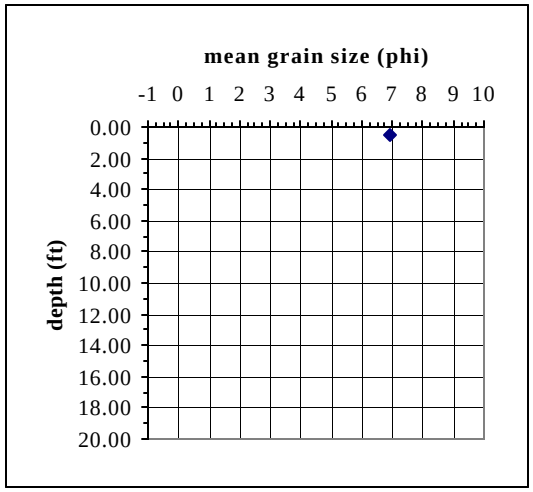
Sandy Point, Louisiana **Coastal Planning and Engineering/UNO Coastal Research Laboratory**

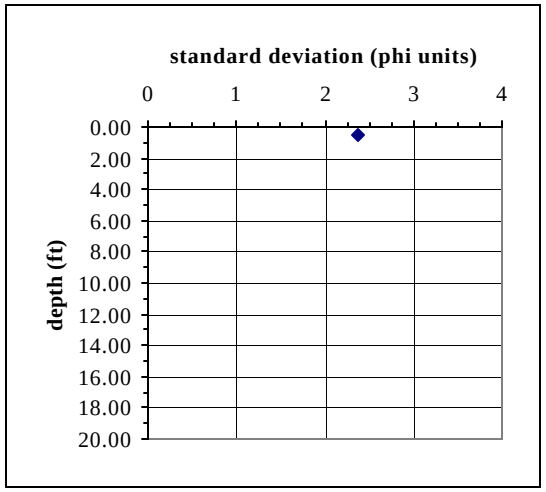
Grainsize Data Table

Core ID SPVC-03-04

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample mean grain size	Standard Deviation	%Sand	%Silt	%Clay
SPVC-03-04_S#1-05	0.50	mm	0.001	0.001	0.002	0.003	0.007	0.024	0.044	0.062	0.091	0.008		9.99	54.58	35.34
		phi	10.34	9.81	9.29	8.63	7.18	5.36	4.52	4.00	3.46	6.90	2.38			





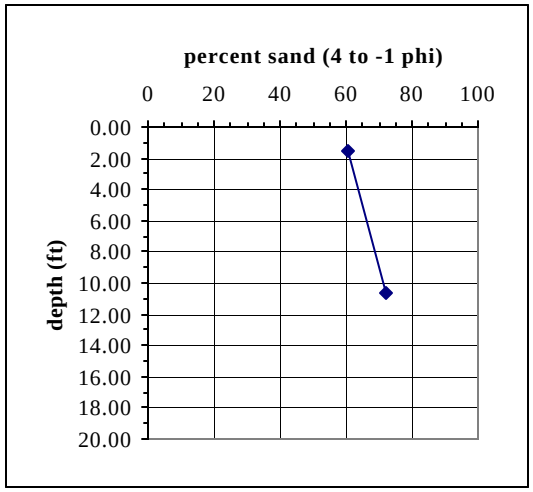


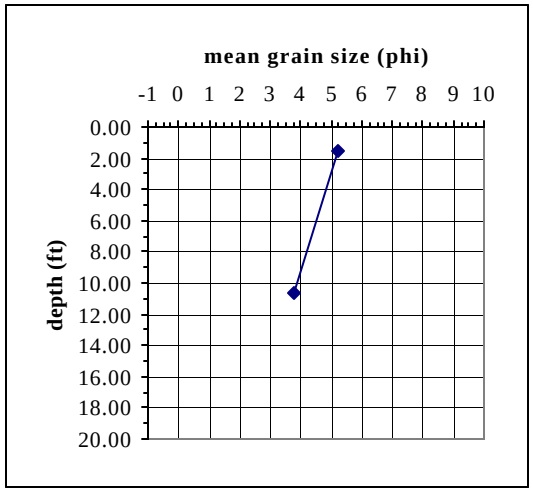
Sandy Point, Louisiana **Coastal Planning and Engineering/UNO Coastal Research Laboratory**

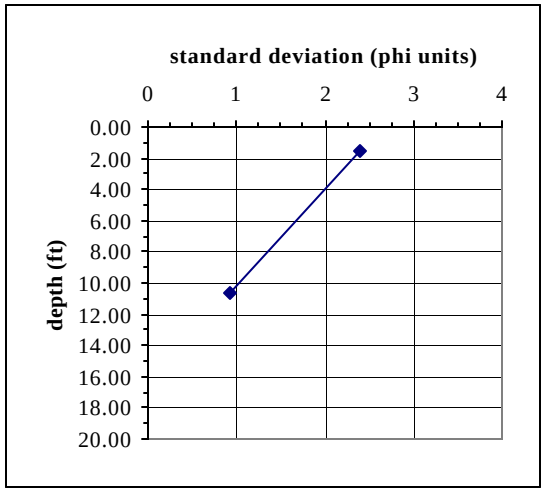
Grainsize Data Table

Core ID SPVC-03-05

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample mean grain size	Standard Deviation	%Sand	%Silt	%Clay
SPVC-03-05_S#1-15	1.50	mm	0.001	0.003	0.005	0.012	0.094	0.129	0.142	0.152	0.163	0.027		60.52	26.21	13.23
		phi	9.44	8.49	7.62	6.33	3.42	2.95	2.82	2.72	2.62	5.22	2.40			
SPVC-03-05_S#3-106	10.60	mm	0.003	0.011	0.038	0.059	0.086	0.118	0.139	0.153	0.167	0.072		72.40	21.79	5.76
		phi	8.29	6.48	4.73	4.08	3.55	3.08	2.85	2.70	2.58	3.79	0.94			





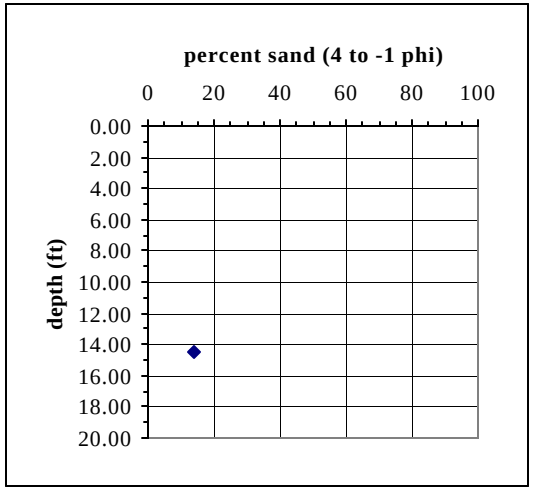


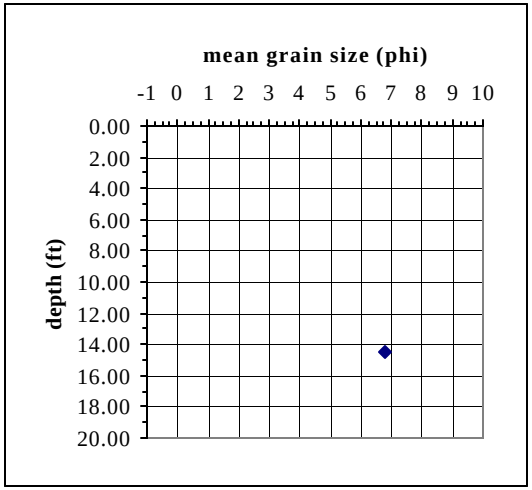
Sandy Point, Louisiana **Coastal Planning and Engineering/UNO Coastal Research Laboratory**

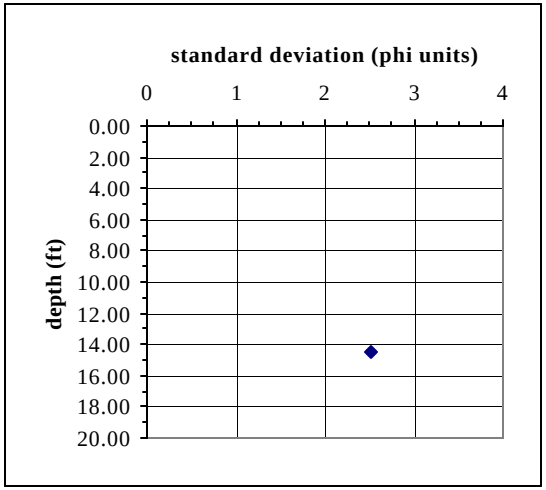
Grainsize Data Table

Core ID SPVC-03-05A

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample mean grain size	Standard Deviation	%Sand	%Silt	%Clay
SPVC-03-05A_S#6-145	14.50	mm	0.001	0.001	0.002	0.002	0.007	0.023	0.052	0.080	0.105	0.009		13.70	49.95	36.29
		phi	10.31	9.79	9.29	8.66	7.23	5.42	4.27	3.65	3.26	6.78	2.51			





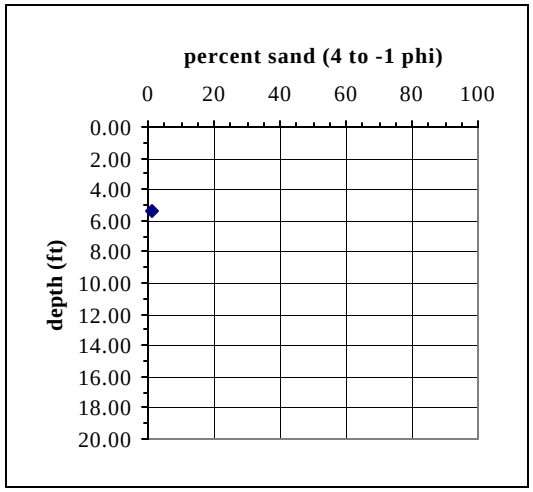


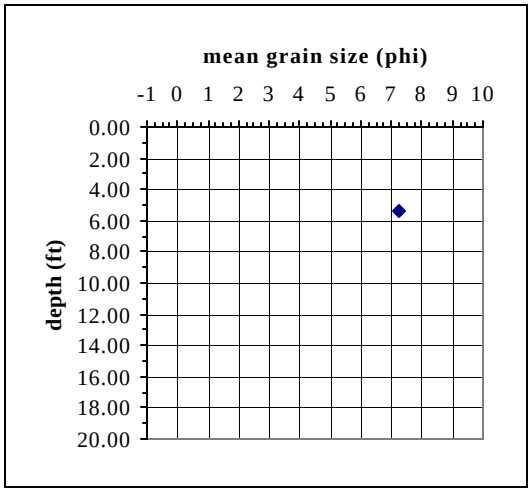
Sandy Point, Louisiana **Coastal Planning and Engineering/UNO Coastal Research Laboratory**

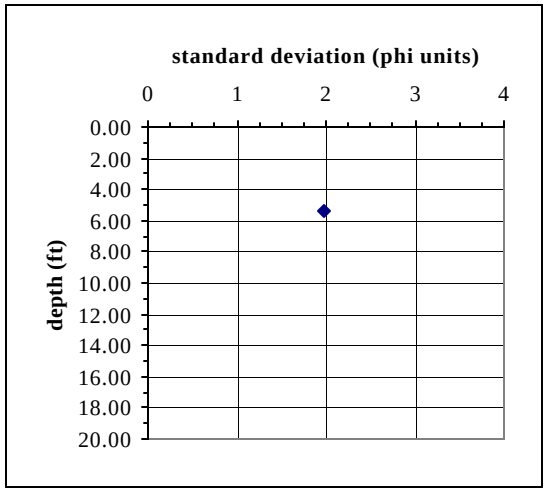
Grainsize Data Table

Core ID SPVC-03-06

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample mean grain size	Standard Deviation	%Sand	%Silt	%Clay
SPVC-03-06_S#3-54	5.40	mm	0.001	0.001	0.002	0.003	0.008	0.019	0.026	0.033	0.046	0.007		1.48	65.28	33.26
		phi	10.27	9.74	9.22	8.55	6.99	5.71	5.29	4.91	4.44	7.25	1.97			





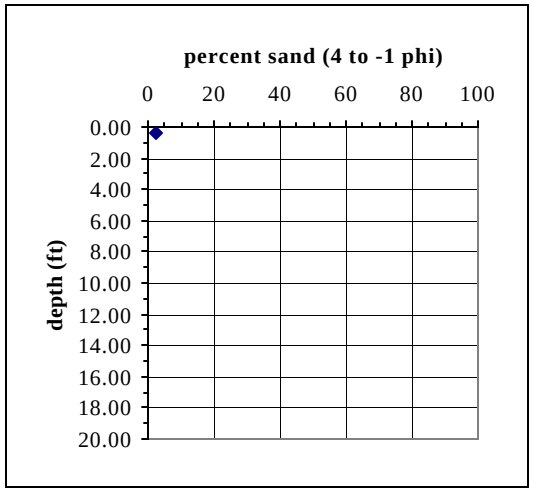


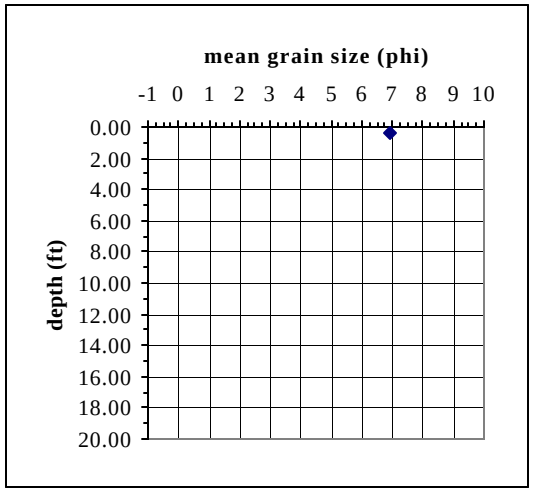
Sandy Point, Louisiana **Coastal Planning and Engineering/UNO Coastal Research Laboratory**

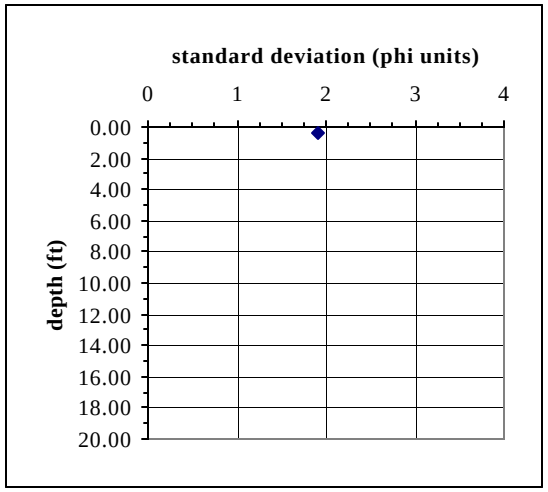
Grainsize Data Table

Core ID SPVC-03-07

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample mean grain size	Standard Deviation	%Sand	%Silt	%Clay
SPVC-03-07_S#1-04	0.40	mm	0.001	0.001	0.002	0.003	0.008	0.020	0.031	0.042	0.054	0.008		2.32	68.59	28.97
		phi	10.09	9.44	8.86	8.23	6.99	5.64	5.03	4.57	4.22	6.95	1.91			





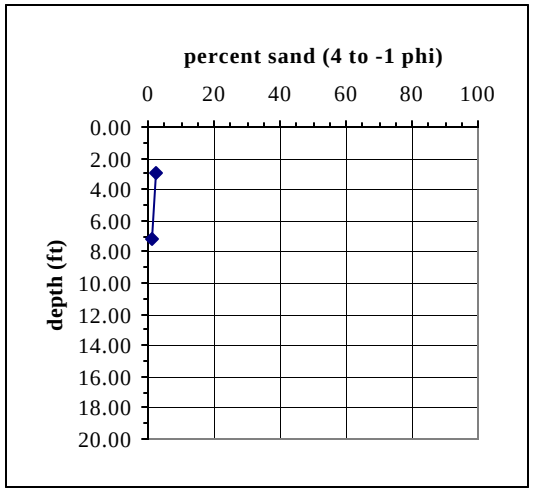


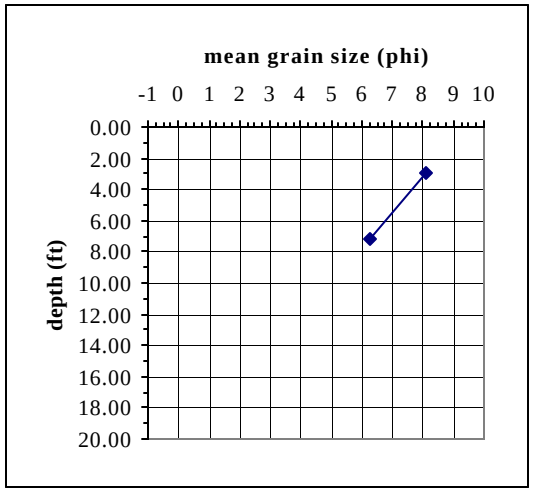
Sandy Point, Louisiana **Coastal Planning and Engineering/UNO Coastal Research Laboratory**

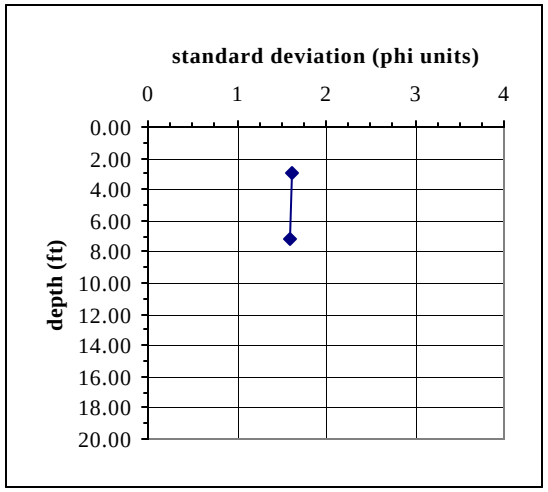
Grainsize Data Table

Core ID SPVC-03-08

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample mean grain size	Standard Deviation	%Sand	%Silt	%Clay
SPVC-03-08_S#1-30	3.00	mm	0.001	0.001	0.001	0.002	0.004	0.007	0.011	0.017	0.047	0.004		2.29	44.20	53.50
		phi	10.53	10.13	9.74	9.24	8.14	7.08	6.51	5.84	4.40	8.13	1.62			
SPVC-03-08_S#2-72	7.20	mm	0.001	0.002	0.004	0.009	0.020	0.033	0.039	0.045	0.052	0.013		1.22	83.90	14.96
		phi	9.69	8.79	7.85	6.85	5.61	4.94	4.68	4.48	4.27	6.26	1.59			





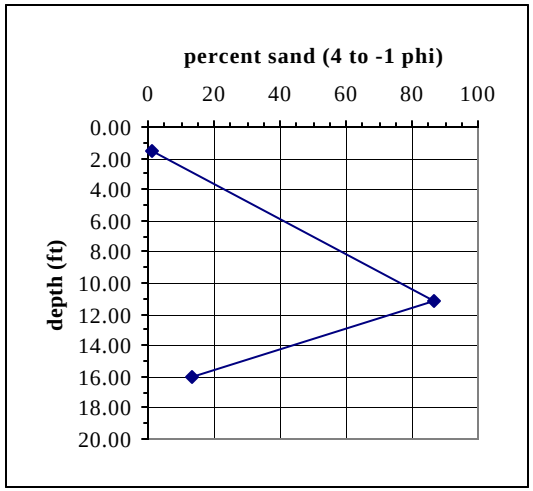


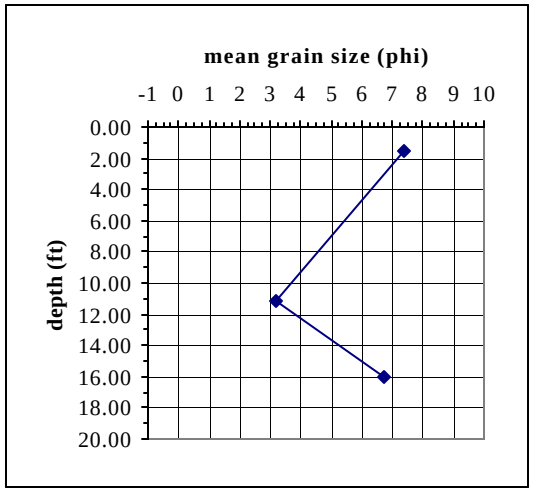
Sandy Point, Louisiana **Coastal Planning and Engineering/UNO Coastal Research Laboratory**

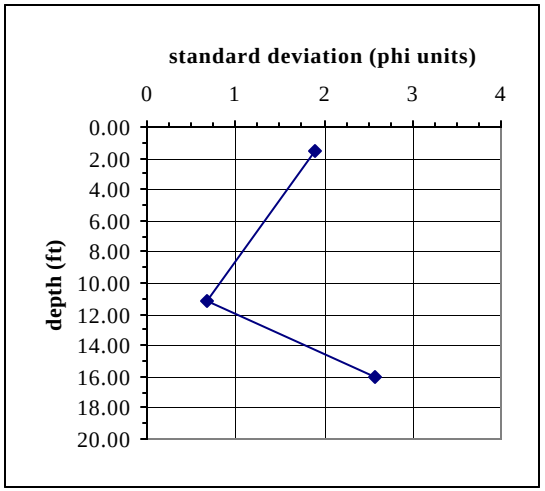
Grainsize Data Table

Core ID SPVC03-09

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample mean grain size	Standard Deviation	%Sand	%Silt	%Clay
SPVC-03-09_S#1-16	1.60	mm	0.001	0.001	0.002	0.002	0.006	0.015	0.022	0.031	0.044	0.006		1.02	61.76	37.32
		phi	10.30	9.80	9.31	8.71	7.35	6.04	5.50	5.02	4.49	7.41	1.91			
SPVC-03-09_S#4-112	11.20	mm	0.016	0.051	0.070	0.086	0.118	0.155	0.178	0.209	0.266	0.112		86.69	10.72	2.48
		phi	5.99	4.29	3.84	3.53	3.09	2.69	2.49	2.26	1.91	3.16	0.68			
SPVC-03-09_S#6-160	16.00	mm	0.001	0.001	0.002	0.002	0.008	0.036	0.055	0.075	0.094	0.009		13.49	51.80	34.72
		phi	10.35	9.84	9.32	8.65	6.95	4.81	4.19	3.73	3.40	6.75	2.57			





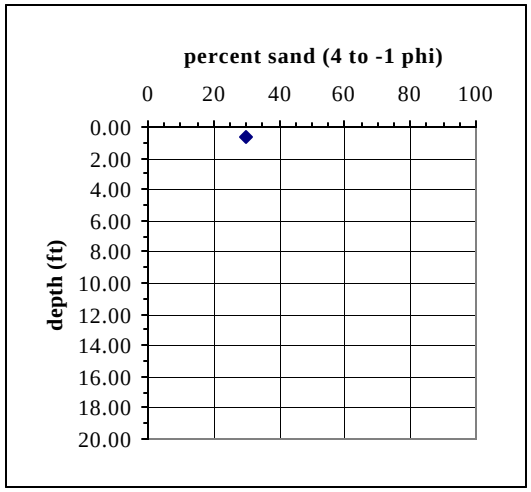


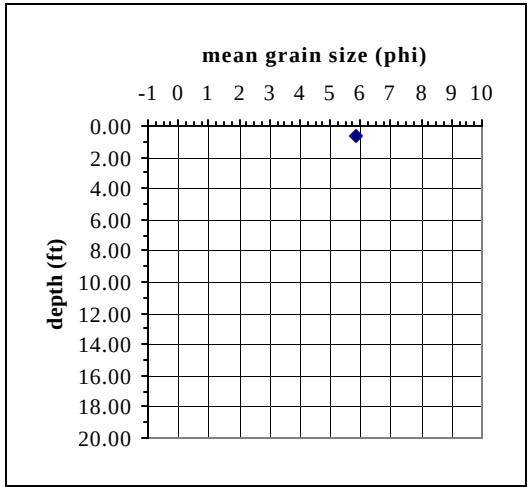
Sandy Point, Louisiana **Coastal Planning and Engineering/UNO Coastal Research Laboratory**

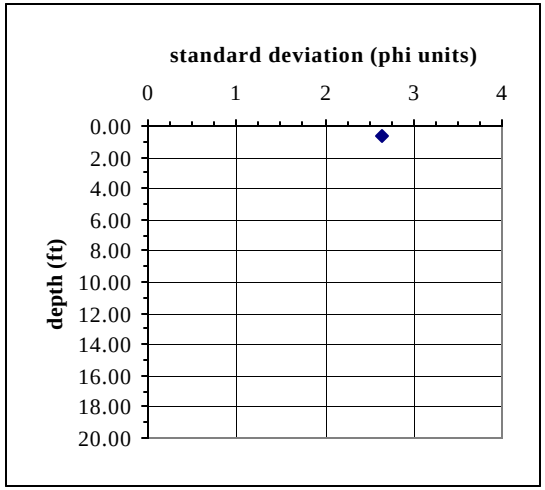
Grainsize Data Table

Core ID SPVC-03-10

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample mean grain size	Standard Deviation	%Sand	%Silt	%Clay
SPVC-03-10_S#1-07	0.70	mm	0.001	0.002	0.003	0.005	0.030	0.078	0.108	0.125	0.141	0.017		29.99	49.52	20.50
		phi	9.94	9.20	8.47	7.55	5.07	3.69	3.21	3.00	2.83	5.84	2.63			





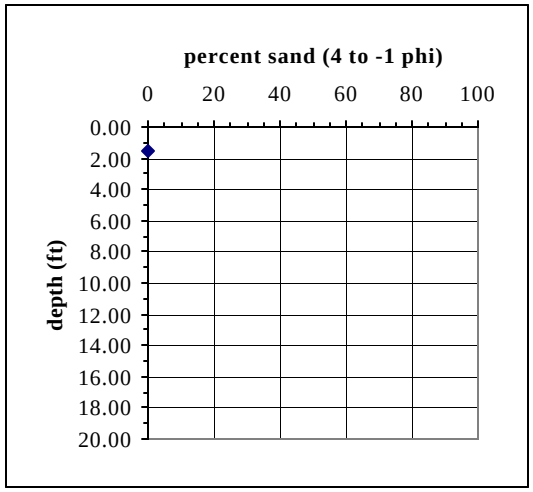


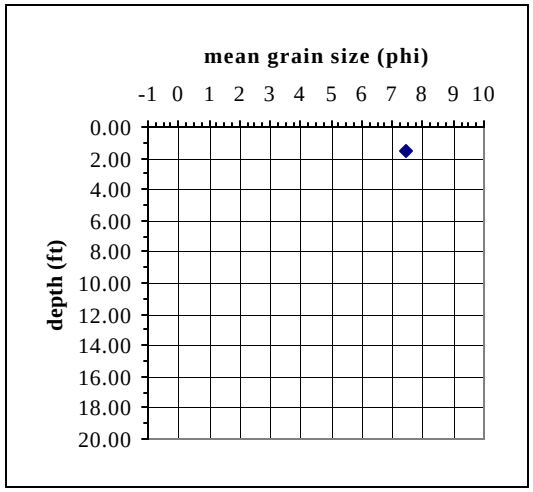
Sandy Point, Louisiana **Coastal Planning and Engineering/UNO Coastal Research Laboratory**

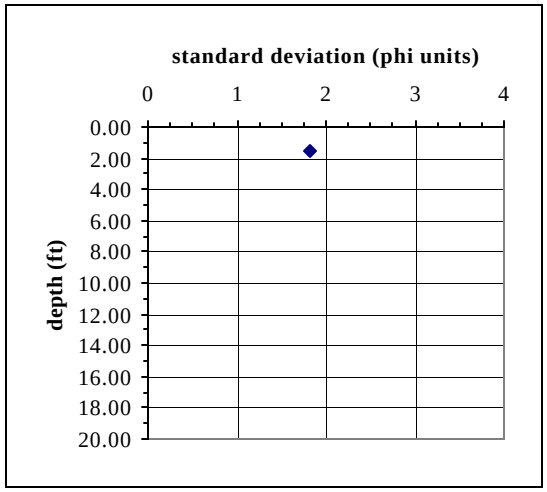
Grainsize Data Table

Core ID SPVC-03-11

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample mean grain size	Standard Deviation	%Sand	%Silt	%Clay
SPVC-03-11_S#1-15	1.50	mm	0.001	0.001	0.002	0.002	0.006	0.014	0.020	0.026	0.035	0.006		0.01	62.32	37.73
		phi	10.30	9.79	9.30	8.70	7.39	6.14	5.65	5.26	4.84	7.48	1.83			





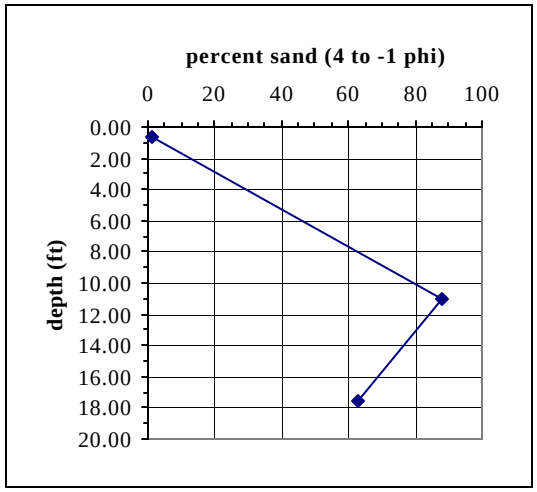


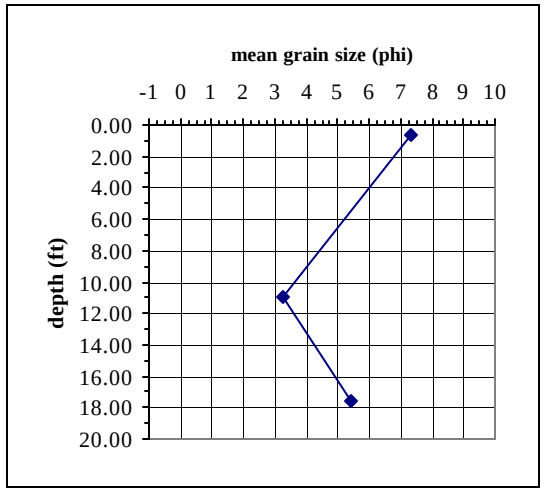
Sandy Point, Louisiana **Coastal Planning and Engineering/UNO Coastal Research Laboratory**

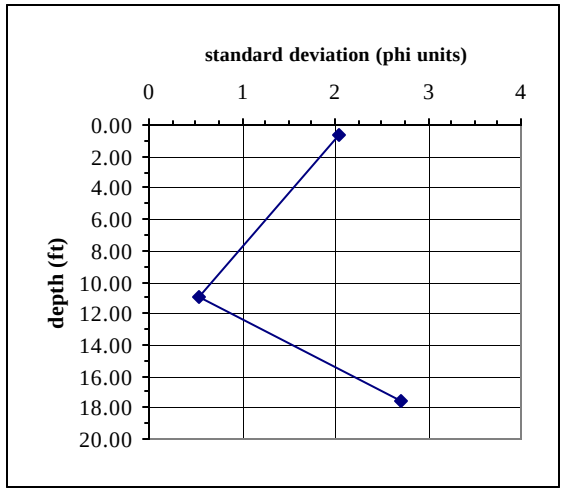
Grainsize Data Table

Core ID SPVC-03-12

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample mean grain size	Standard Deviation	%Sand	%Silt	%Clay
SPVC-03-12_S#1-06	0.60	mm	0.001	0.001	0.002	0.002	0.006	0.018	0.026	0.036	0.048	0.006		1.46	61.37	37.09
		phi	10.34	9.85	9.35	8.73	7.28	5.81	5.26	4.82	4.37	7.31	2.05			
SPVC-03-12_S#3-110	11.00	mm	0.033	0.058	0.073	0.089	0.120	0.145	0.155	0.163	0.173	0.106		88.30	9.85	1.84
		phi	4.91	4.12	3.78	3.49	3.06	2.79	2.69	2.62	2.53	3.23	0.55			
SPVC-03-12_S#4-176	17.60	mm	0.001	0.002	0.004	0.008	0.110	0.139	0.149	0.159	0.171	0.023		63.09	19.89	17.11
		phi	9.75	8.95	8.14	6.91	3.18	2.85	2.74	2.66	2.55	5.44	2.70			





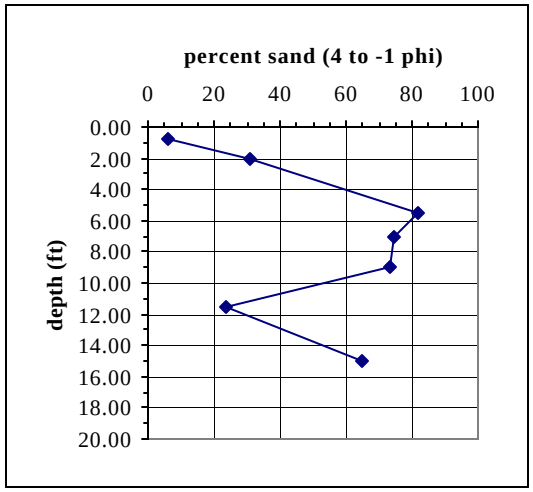


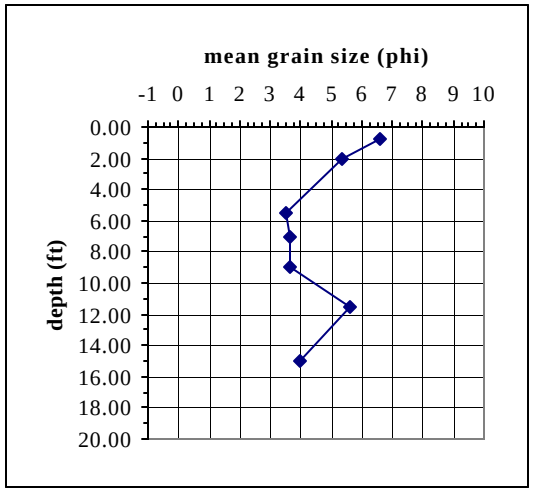
Sandy Point, Louisiana **Coastal Planning and Engineering/UNO Coastal Research Laboratory**

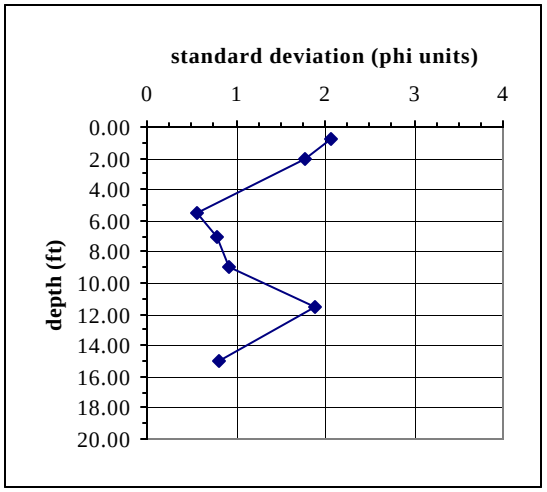
Grainsize Data Table

Core ID SPVC-03-13

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample mean grain size	Standard Deviation	%Sand	%Silt	%Clay
SPVC-03-13_S#1-08	0.80	mm	0.001	0.002	0.002	0.004	0.014	0.033	0.043	0.053	0.065	0.010		5.77	70.66	23.57
		phi	9.98	9.30	8.66	7.89	6.17	4.93	4.52	4.24	3.95	6.59	2.07			
SPVC-03-13_S#2-20	2.00	mm	0.002	0.003	0.007	0.018	0.044	0.069	0.083	0.096	0.111	0.024		30.74	57.96	11.29
		phi	9.35	8.25	7.13	5.80	4.51	3.85	3.58	3.38	3.17	5.36	1.77			
SPVC-03-13_S#3-55	5.50	mm	0.032	0.048	0.059	0.071	0.096	0.119	0.130	0.139	0.149	0.088		81.73	16.44	1.85
		phi	4.96	4.38	4.08	3.82	3.39	3.07	2.94	2.85	2.75	3.51	0.57			
SPVC-03-13_S#4-70	7.00	mm	0.005	0.023	0.045	0.062	0.089	0.118	0.134	0.154	0.191	0.078		74.38	21.50	4.16
		phi	7.60	5.46	4.46	4.02	3.49	3.08	2.90	2.70	2.39	3.68	0.78			
SPVC-03-13_S#5-90	9.00	mm	0.005	0.020	0.041	0.060	0.092	0.126	0.149	0.587	0.821	0.078		73.09	22.42	4.38
		phi	7.70	5.63	4.60	4.07	3.45	2.99	2.75	0.77	0.28	3.67	0.93			
SPVC-03-13_S#6-115	11.50	mm	0.001	0.003	0.005	0.013	0.033	0.060	0.076	0.090	0.105	0.020		23.57	63.20	13.20
		phi	9.63	8.61	7.51	6.31	4.91	4.05	3.72	3.48	3.25	5.62	1.90			
SPVC-03-13_S#7-150	15.00	mm	0.004	0.017	0.036	0.052	0.076	0.099	0.111	0.120	0.130	0.063		65.15	30.01	4.70
		phi	7.86	5.92	4.79	4.26	3.72	3.33	3.18	3.06	2.94	3.98	0.81			





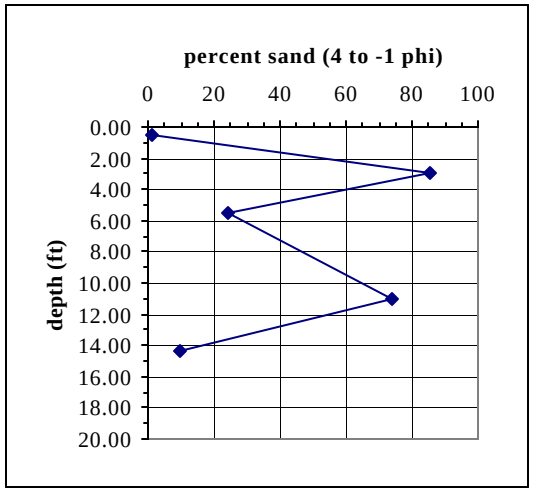


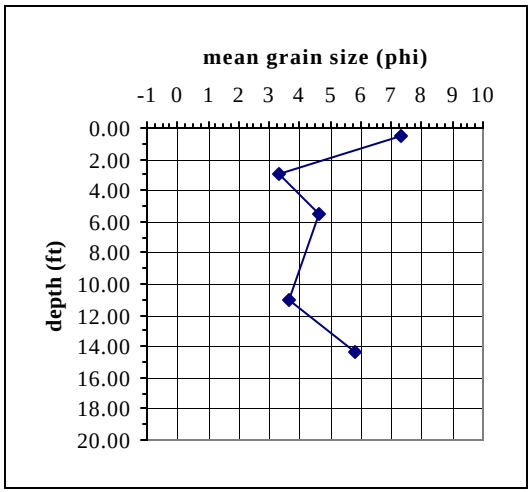
Sandy Point, Louisiana **Coastal Planning and Engineering/UNO Coastal Research Laboratory**

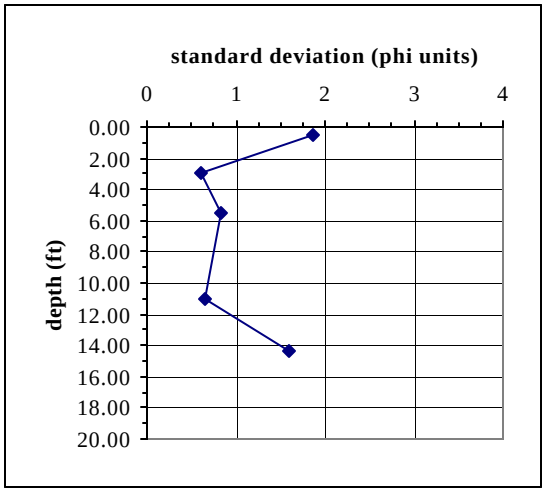
Grainsize Data Table

Core ID SPVC-03-14

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample mean grain size	Standard Deviation	%Sand	%Silt	%Clay
SPVC-03-14_S#1-05	0.50	mm	0.001	0.001	0.002	0.003	0.006	0.015	0.023	0.033	0.046	0.006		0.96	63.94	35.19
		phi	10.29	9.75	9.20	8.55	7.33	6.07	5.46	4.93	4.43	7.33	1.87			
SPVC-03-14_S#2-30	3.00	mm	0.035	0.054	0.065	0.076	0.103	0.134	0.150	0.163	0.179	0.098		85.40	12.55	2.11
		phi	4.85	4.22	3.95	3.71	3.28	2.90	2.74	2.61	2.48	3.35	0.61			
SPVC-03-14_S#3-55	5.50	mm	0.004	0.015	0.023	0.030	0.045	0.062	0.071	0.081	0.092	0.040		24.04	70.99	5.02
		phi	8.02	6.08	5.46	5.07	4.48	4.02	3.81	3.63	3.44	4.64	0.83			
SPVC-03-14_S#4-110	11.00	mm	0.026	0.041	0.050	0.062	0.087	0.114	0.124	0.132	0.141	0.079		74.24	23.56	2.23
		phi	5.29	4.62	4.31	4.02	3.52	3.14	3.01	2.92	2.82	3.66	0.65			
SPVC-03-14_S#5-144	14.40	mm	0.001	0.003	0.006	0.013	0.029	0.045	0.054	0.062	0.075	0.018		9.93	77.31	12.74
		phi	9.60	8.55	7.40	6.27	5.12	4.48	4.22	4.00	3.73	5.81	1.59			





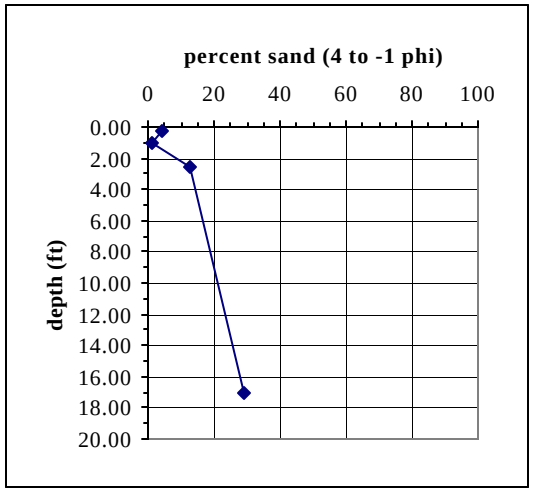


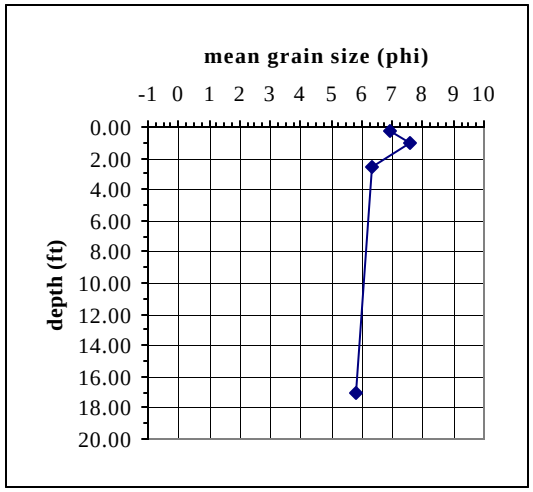
Sandy Point, Louisiana **Coastal Planning and Engineering/UNO Coastal Research Laboratory**

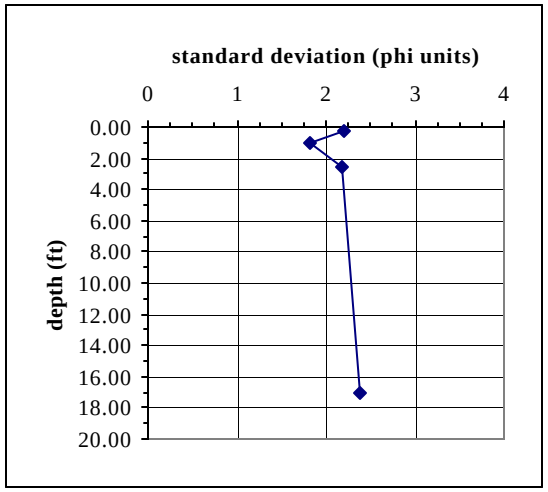
Grainsize Data Table

Core ID SPVC-03-15

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample mean grain size	Standard Deviation	%Sand	%Silt	%Clay
SPVC-03-15_S#1-03	0.30	mm	0.001	0.001	0.002	0.003	0.007	0.023	0.037	0.049	0.061	0.008		4.49	61.71	33.81
		phi	10.24	9.68	9.14	8.51	7.15	5.44	4.75	4.34	4.03	6.95	2.20			
SPVC-03-15_S#2-10	1.00	mm	0.001	0.001	0.001	0.002	0.005	0.012	0.018	0.026	0.043	0.005		1.16	57.22	41.59
		phi	10.35	9.87	9.41	8.85	7.62	6.35	5.78	5.29	4.56	7.60	1.81			
SPVC-03-15_S#3-25	2.50	mm	0.001	0.002	0.003	0.005	0.020	0.043	0.056	0.070	0.092	0.012		12.75	66.43	20.80
		phi	9.96	9.24	8.51	7.59	5.62	4.53	4.16	3.84	3.45	6.34	2.18			
SPVC-03-15_S#6-170	17.00	mm	0.001	0.002	0.003	0.007	0.032	0.071	0.094	0.114	0.134	0.018		29.14	53.49	17.41
		phi	9.88	9.03	8.18	7.10	4.98	3.82	3.41	3.14	2.90	5.80	2.38			





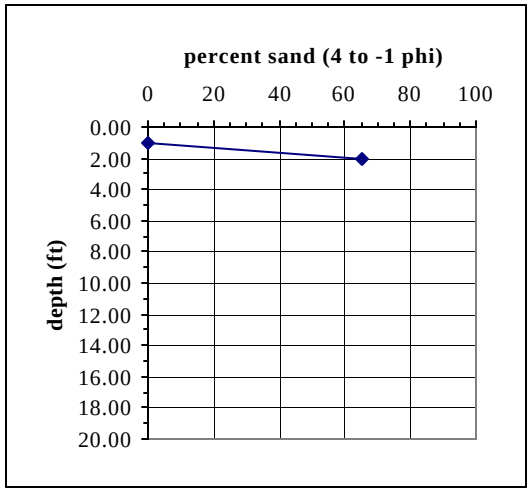


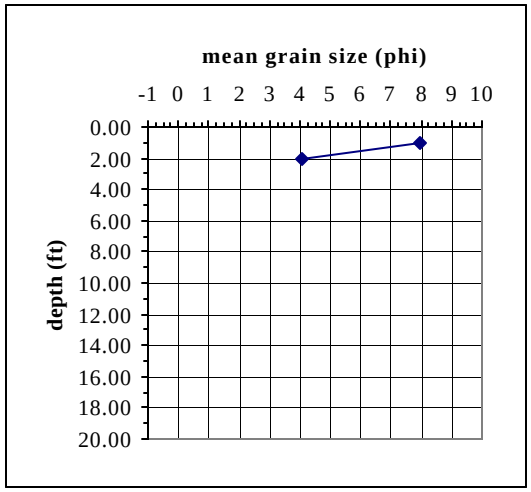
Sandy Point, Louisiana **Coastal Planning and Engineering/UNO Coastal Research Laboratory**

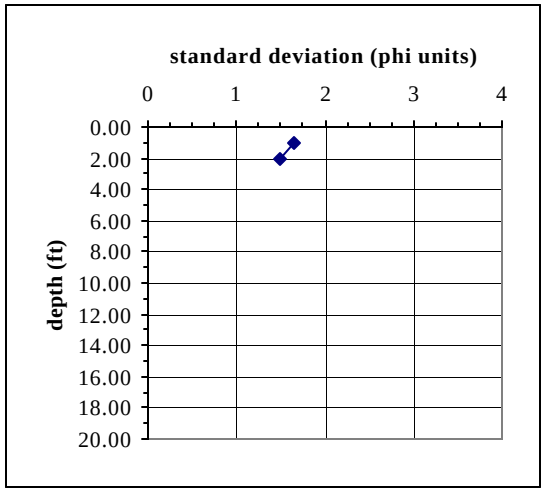
Grainsize Data Table

Core ID SPVC-03-16

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample mean grain size	Standard Deviation	%Sand	%Silt	%Clay
SPVC-03-16_S#1-10	1.00	mm	0.001	0.001	0.001	0.002	0.004	0.009	0.013	0.017	0.025	0.004		0.02	51.60	48.34
		phi	10.47	10.04	9.62	9.09	7.93	6.82	6.30	5.88	5.34	7.96	1.66			
SPVC-03-16_S#2-20	2.00	mm	0.002	0.006	0.021	0.044	0.094	0.147	0.165	0.179	0.194	0.059		65.28	27.05	7.68
		phi	8.85	7.28	5.56	4.51	3.42	2.76	2.60	2.48	2.36	4.08	1.48			





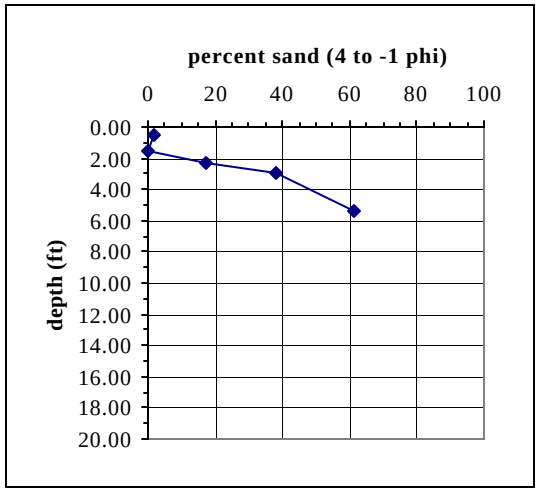


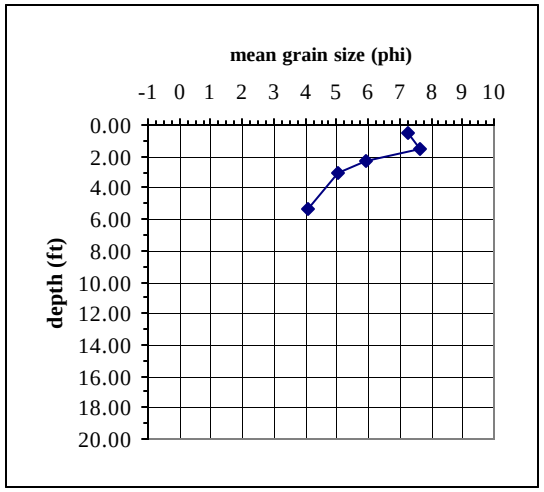
Sandy Point, Louisiana **Coastal Planning and Engineering/UNO Coastal Research Laboratory**

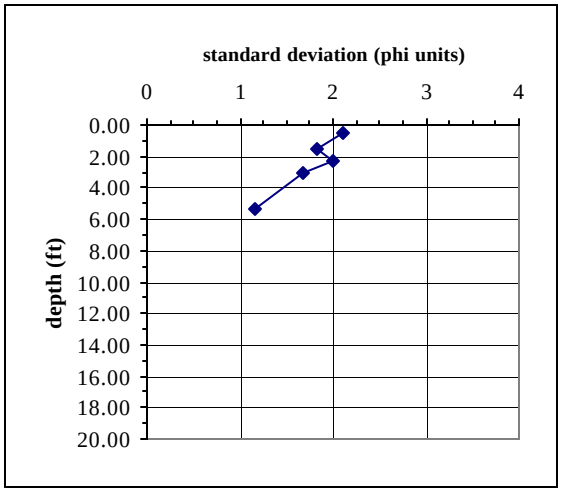
Grainsize Data Table

Core ID SPVC-03-17

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample mean grain size	Standard Deviation	%Sand	%Silt	%Clay
SPVC-03-17_S#1-05	0.50	mm	0.001	0.001	0.002	0.002	0.006	0.019	0.028	0.039	0.051	0.007		1.83	60.08	38.18
		phi	10.34	9.85	9.37	8.76	7.35	5.75	5.16	4.69	4.29	7.26	2.10			
SPVC-03-17_S#2-15	1.50	mm	0.001	0.001	0.001	0.002	0.005	0.013	0.018	0.024	0.036	0.005		0.06	58.78	41.09
		phi	10.40	9.93	9.46	8.87	7.57	6.31	5.79	5.36	4.81	7.63	1.84			
SPVC-03-17_S#3-23	2.30	mm	0.001	0.002	0.004	0.008	0.025	0.051	0.064	0.077	0.097	0.016		17.02	67.37	15.63
		phi	9.75	8.86	7.95	6.89	5.30	4.29	3.96	3.69	3.36	5.96	2.00			
SPVC-03-17_S#4-30	3.00	mm	0.002	0.004	0.009	0.019	0.048	0.081	0.095	0.107	0.121	0.030		38.29	52.02	9.67
		phi	9.19	7.92	6.74	5.70	4.38	3.63	3.39	3.22	3.05	5.07	1.67			
SPVC-03-17_S#5-54	5.40	mm	0.004	0.015	0.026	0.041	0.083	0.120	0.134	0.144	0.155	0.059		61.58	33.65	4.69
		phi	7.84	6.09	5.25	4.61	3.60	3.06	2.90	2.80	2.69	4.07	1.17			





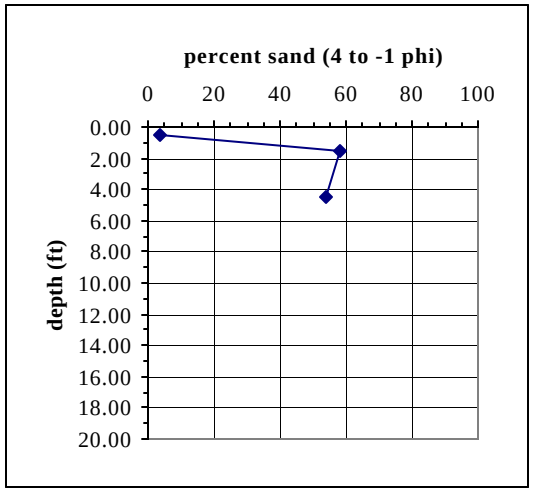


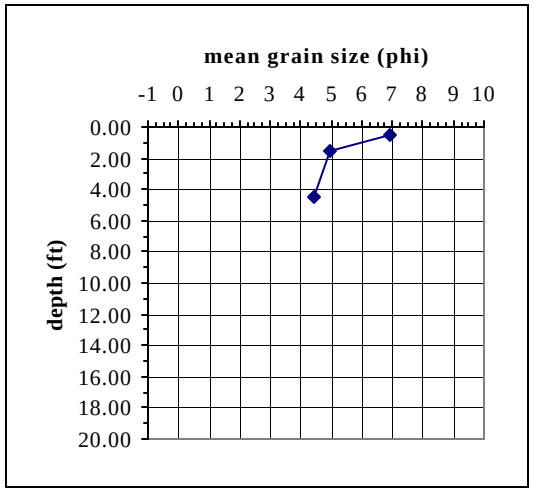
Sandy Point, Louisiana **Coastal Planning and Engineering/UNO Coastal Research Laboratory**

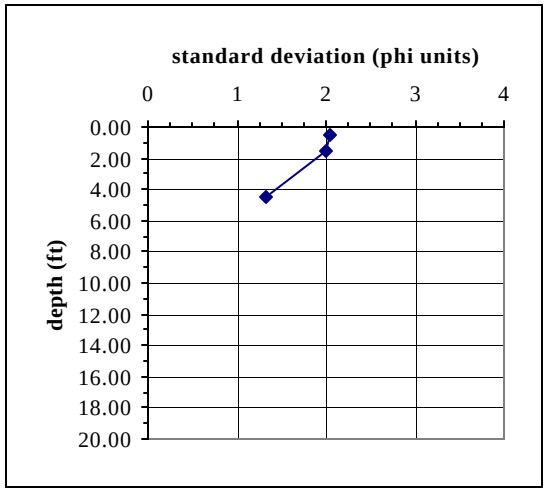
Grainsize Data Table

Core ID SPVC-03-18

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample mean grain size	Standard Deviation	%Sand	%Silt	%Clay
SPVC-03-18_S#1-05	0.50	mm	0.001	0.001	0.002	0.003	0.007	0.021	0.034	0.046	0.058	0.008		3.44	65.49	31.09
		phi	10.15	9.54	8.98	8.34	7.07	5.56	4.87	4.44	4.11	6.93	2.05			
SPVC-03-18_S#2-15	1.50	mm	0.001	0.003	0.008	0.031	0.075	0.112	0.127	0.140	0.154	0.032		58.30	30.28	11.36
		phi	9.43	8.29	6.96	4.99	3.74	3.15	2.97	2.84	2.70	4.97	1.99			
SPVC-03-18_S#4-45	4.50	mm	0.003	0.007	0.019	0.037	0.067	0.101	0.118	0.132	0.149	0.047		54.03	38.90	7.03
		phi	8.64	7.16	5.73	4.75	3.90	3.31	3.08	2.92	2.74	4.41	1.32			





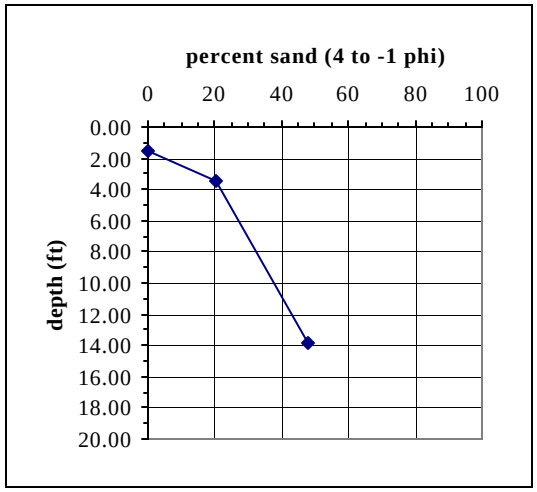


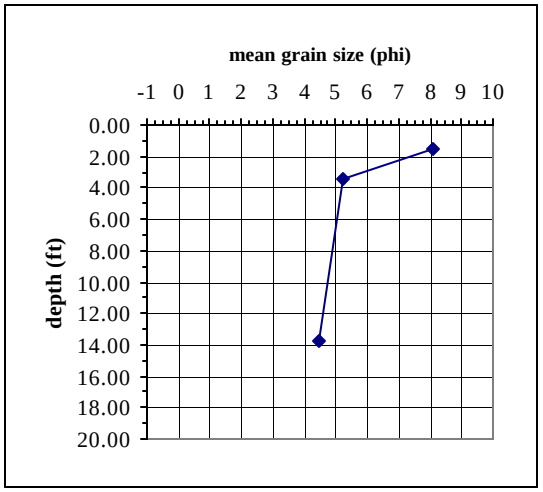
Sandy Point, Louisiana **Coastal Planning and Engineering/UNO Coastal Research Laboratory**

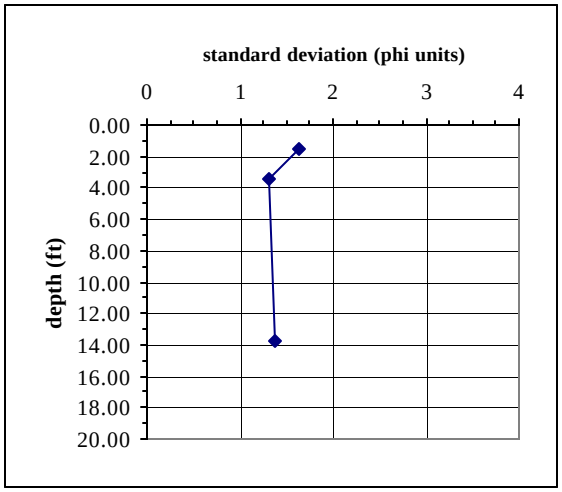
Grainsize Data Table

Core ID SPVC-03-19

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample mean grain size	Standard Deviation	%Sand	%Silt	%Clay
SPVC-03-19_S#1-15	1.50	mm	0.001	0.001	0.001	0.002	0.004	0.008	0.011	0.016	0.024	0.004		0.00	46.71	53.29
		phi	10.53	10.13	9.74	9.24	8.13	7.03	6.46	5.95	5.35	8.10	1.64			
SPVC-03-19_S#2-35	3.50	mm	0.002	0.005	0.011	0.021	0.040	0.058	0.067	0.074	0.083	0.027		20.10	70.80	9.04
		phi	9.09	7.76	6.53	5.58	4.66	4.11	3.90	3.75	3.59	5.22	1.31			
SPVC-03-19_S#5-138	13.80	mm	0.003	0.007	0.018	0.033	0.060	0.095	0.119	0.148	0.207	0.046		47.87	45.06	7.07
		phi	8.62	7.22	5.83	4.92	4.05	3.39	3.07	2.76	2.27	4.45	1.38			





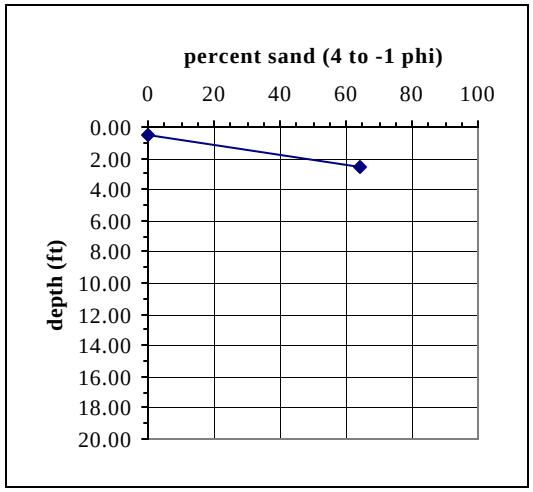


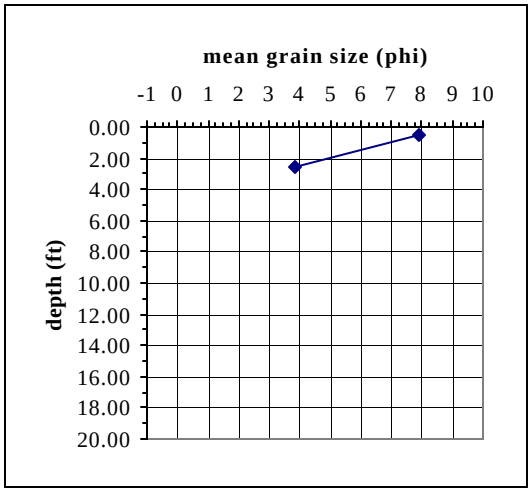
Sandy Point, Louisiana **Coastal Planning and Engineering/UNO Coastal Research Laboratory**

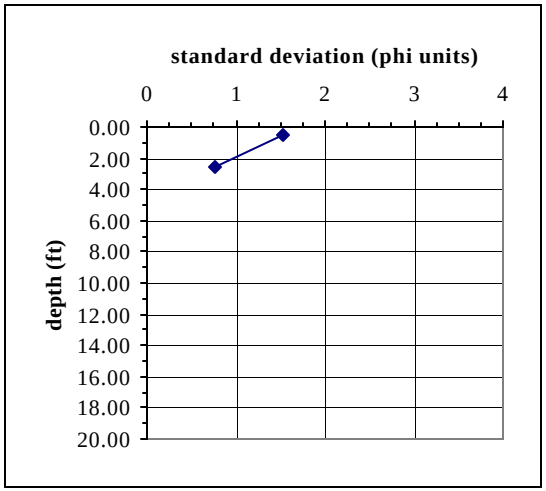
Grainsize Data Table

Core ID SPVC-03-20

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample mean grain size	Standard Deviation	%Sand	%Silt	%Clay
SPVC-03-20_S#1-05	0.50	mm	0.001	0.001	0.001	0.002	0.004	0.009	0.012	0.015	0.018	0.004		0.00	55.08	44.91
		phi	10.38	9.90	9.44	8.89	7.81	6.85	6.38	6.03	5.78	7.91	1.53			
SPVC-03-20_S#2-25	2.50	mm	0.016	0.032	0.041	0.051	0.076	0.104	0.117	0.128	0.139	0.069		64.08	33.11	2.85
		phi	5.99	4.98	4.61	4.28	3.71	3.26	3.09	2.97	2.85	3.85	0.76			





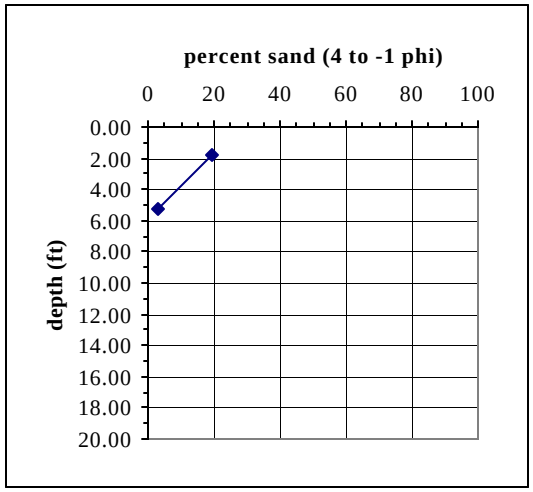


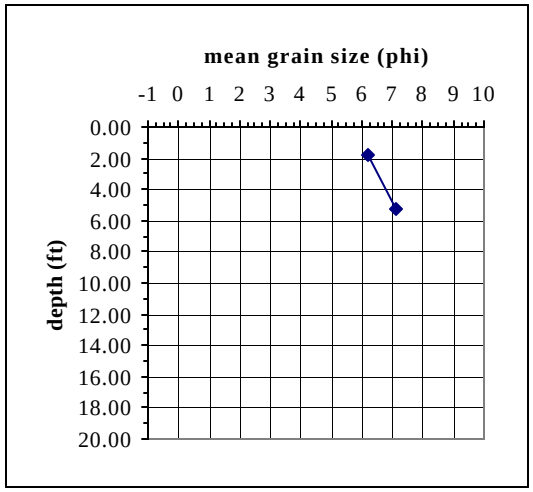
Sandy Point, Louisiana **Coastal Planning and Engineering/UNO Coastal Research Laboratory**

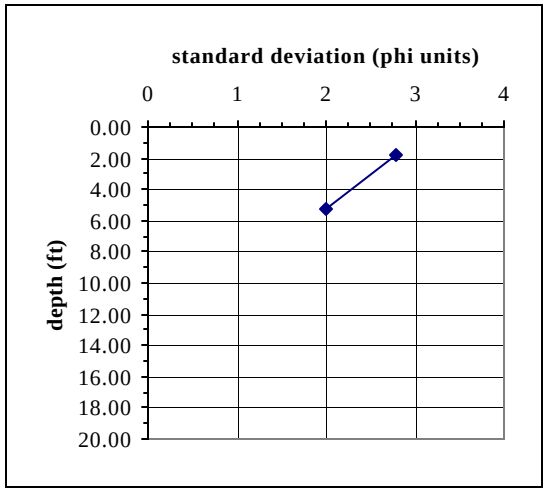
Grainsize Data Table

Core ID SPVC-03-21

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample mean grain size	Standard Deviation	%Sand	%Silt	%Clay
SPVC-03-21_S#1-18	1.80	mm	0.001	0.001	0.002	0.003	0.010	0.042	0.093	0.116	0.133	0.013		19.29	51.19	29.45
		phi	10.16	9.57	9.00	8.31	6.68	4.59	3.43	3.11	2.91	6.21	2.78			
SPVC-03-21_S#2-53	5.30	mm	0.001	0.001	0.002	0.003	0.009	0.021	0.029	0.039	0.053	0.007		2.83	66.66	30.55
		phi	10.23	9.67	9.11	8.40	6.82	5.57	5.11	4.70	4.25	7.11	2.00			





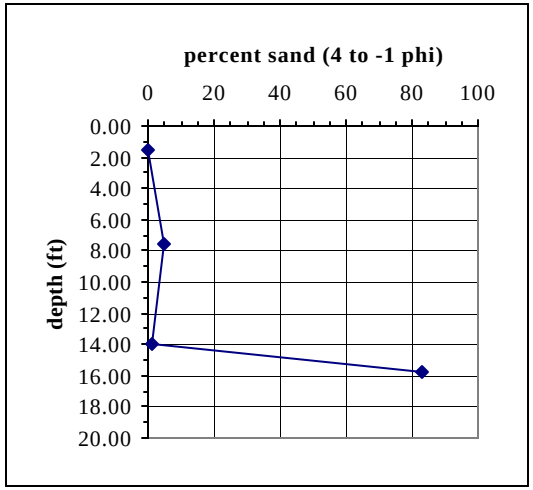


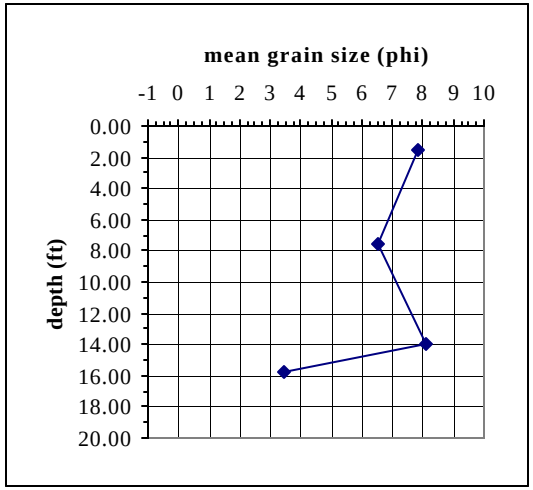
Sandy Point, Louisiana **Coastal Planning and Engineering/UNO Coastal Research Laboratory**

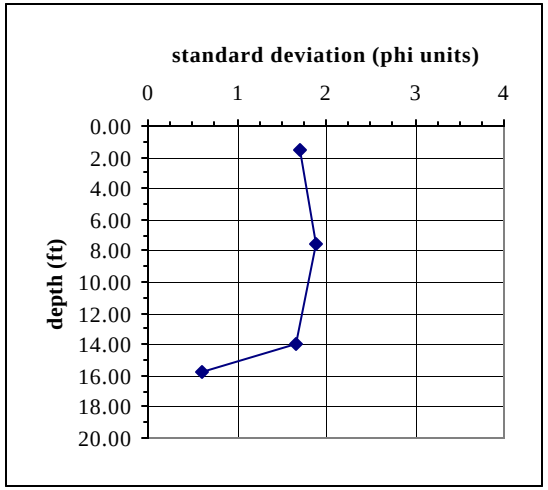
Grainsize Data Table

Core ID SPVC-03-22

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample mean grain size	Standard Deviation	%Sand	%Silt	%Clay
SPVC-03-22_S#1-16	1.60	mm	0.001	0.001	0.001	0.002	0.004	0.010	0.014	0.019	0.026	0.004		0.00	52.76	47.32
		phi	10.44	10.00	9.57	9.04	7.89	6.72	6.16	5.72	5.27	7.87	1.70			
SPVC-03-22_S#3-75	7.50	mm	0.001	0.002	0.003	0.006	0.017	0.032	0.041	0.050	0.063	0.011		5.05	75.70	19.28
		phi	9.90	9.15	8.38	7.42	5.86	4.98	4.62	4.33	4.00	6.50	1.88			
SPVC-03-22_S#4-140	14.00	mm	0.001	0.001	0.001	0.002	0.004	0.008	0.012	0.018	0.036	0.004		0.96	46.34	52.70
		phi	10.53	10.14	9.75	9.25	8.11	6.99	6.41	5.83	4.78	8.08	1.67			
SPVC-03-22_S#5-158	15.80	mm	0.013	0.044	0.061	0.076	0.104	0.130	0.143	0.154	0.166	0.093		83.16	13.62	3.21
		phi	6.30	4.51	4.04	3.71	3.27	2.94	2.81	2.70	2.60	3.43	0.62			





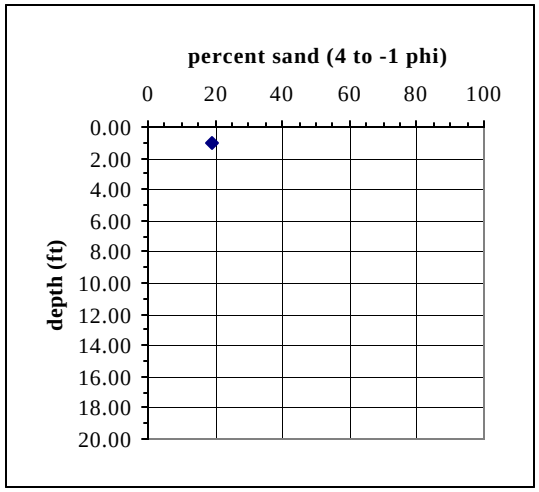


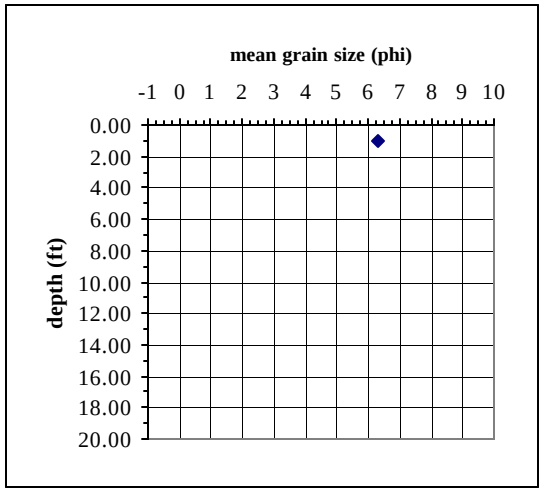
Sandy Point, Louisiana **Coastal Planning and Engineering/UNO Coastal Research Laboratory**

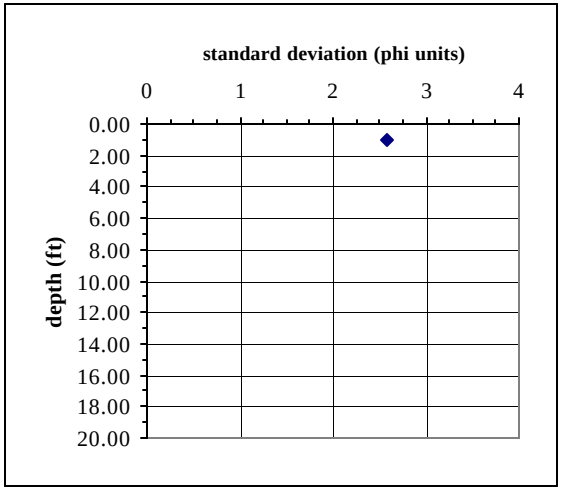
Grainsize Data Table

Core ID SPVC-03-23

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample mean grain size	Standard Deviation	%Sand	%Silt	%Clay
SPVC-03-23_S#1-10	1.00	mm	0.001	0.001	0.002	0.003	0.010	0.044	0.076	0.100	0.118	0.013		19.09	52.86	28.03
		phi	10.13	9.49	8.88	8.20	6.71	4.52	3.71	3.33	3.09	6.30	2.58			





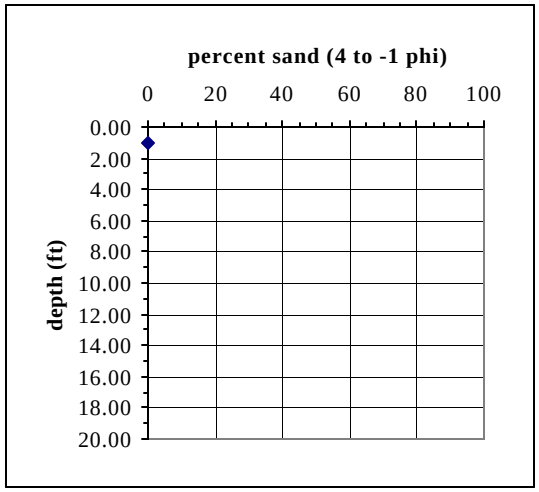


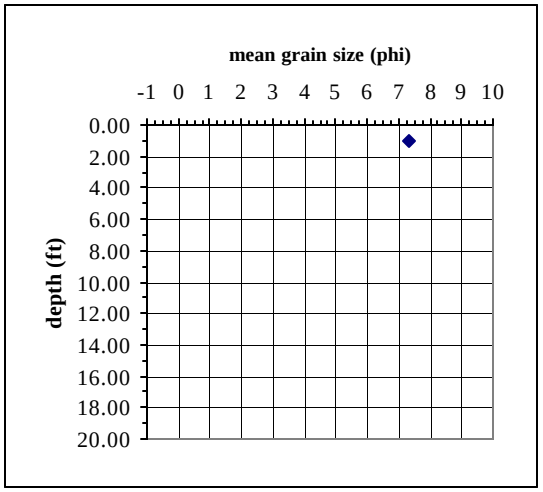
Sandy Point, Louisian **Coastal Planning and Engineering/UNO Coastal Research Laboratory**

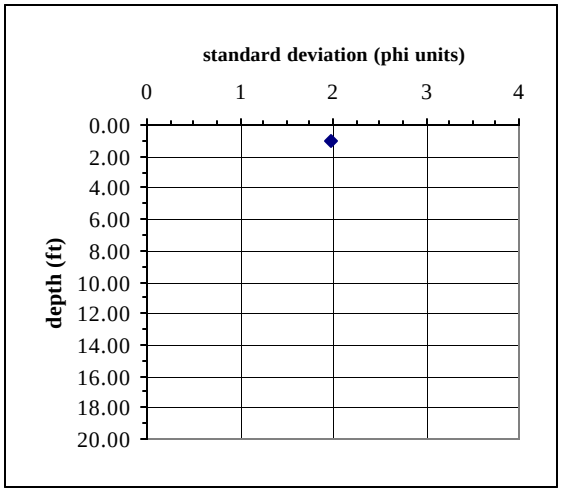
Grainsize Data Table

Core ID SPVC-03-24

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample mean grain size	Standard Deviation	%Sand	%Silt	%Clay
SPVC-03-24_S#1-10	1.00	mm	0.001	0.001	0.002	0.003	0.008	0.019	0.025	0.031	0.039	0.006		0.04	65.50	34.50
		phi	10.31	9.79	9.29	8.62	7.05	5.75	5.34	5.01	4.69	7.31	1.97			





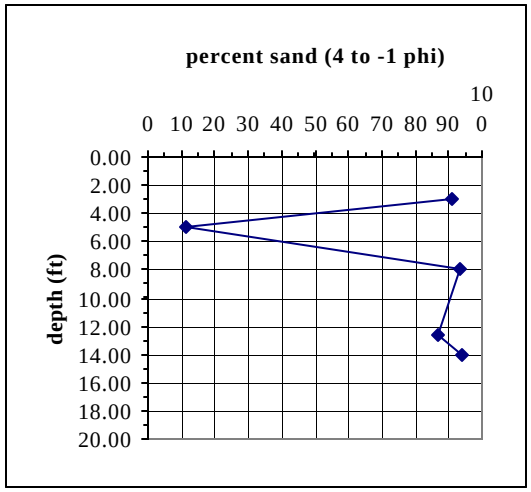


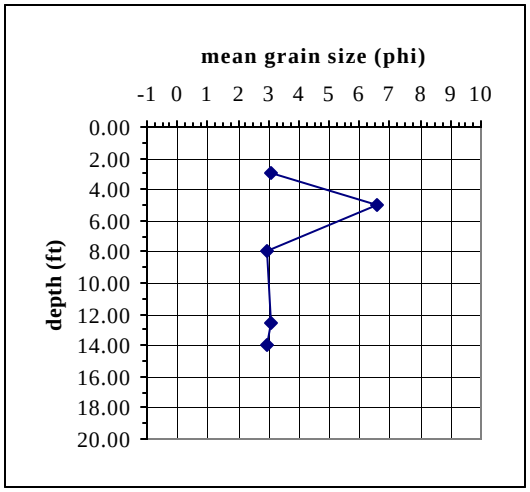
Sandy Point, Louisiana **Coastal Planning and Engineering/UNO Coastal Research Laboratory**

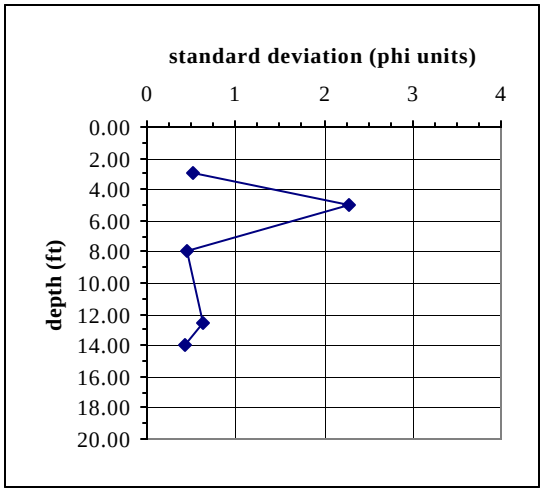
Grainsize Data Table

Core ID SPVC-03-25

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample mean grain size	Standard Deviation	%Sand	%Silt	%Clay
SPVC-03-25_S#2-30	3.00	mm	0.043	0.067	0.084	0.100	0.130	0.159	0.172	0.184	0.198	0.120		91.08	7.19	1.65
		phi	4.55	3.90	3.57	3.32	2.95	2.66	2.54	2.44	2.34	3.05	0.52			
SPVC-03-25_S#3-50	5.00	mm	0.001	0.001	0.002	0.004	0.012	0.036	0.051	0.067	0.091	0.011		11.44	62.53	26.08
		phi	10.08	9.45	8.84	8.08	6.33	4.80	4.28	3.89	3.46	6.56	2.28			
SPVC-03-25_S#4-80	8.00	mm	0.053	0.077	0.094	0.108	0.135	0.162	0.175	0.186	0.199	0.128		93.29	5.33	1.39
		phi	4.24	3.69	3.41	3.21	2.88	2.62	2.52	2.42	2.33	2.96	0.45			
SPVC-03-25_S#5-126	12.60	mm	0.008	0.046	0.076	0.104	0.139	0.170	0.184	0.194	0.208	0.118		86.88	9.63	3.56
		phi	6.90	4.43	3.72	3.27	2.84	2.56	2.45	2.37	2.26	3.08	0.64			
SPVC-03-25_S#1-140	14.00	mm	0.053	0.083	0.097	0.110	0.135	0.161	0.174	0.185	0.197	0.130		93.99	4.42	1.65
		phi	4.23	3.60	3.37	3.19	2.89	2.63	2.53	2.44	2.35	2.95	0.42			





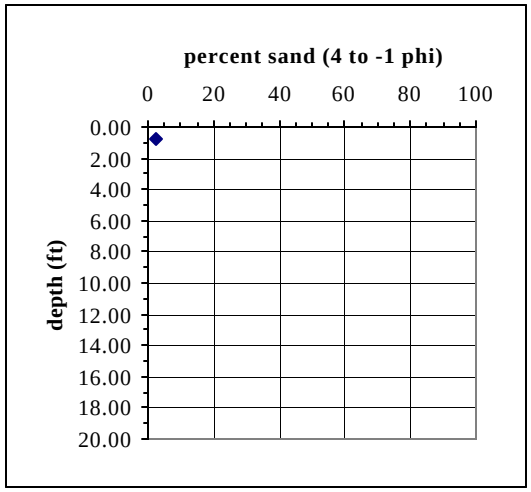


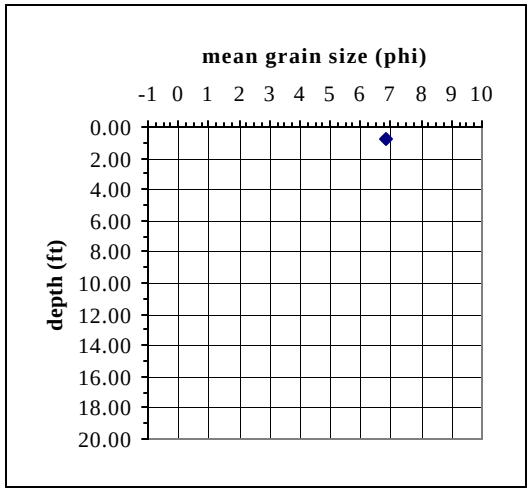
Sandy Point, Louisiana **Coastal Planning and Engineering/UNO Coastal Research Laboratory**

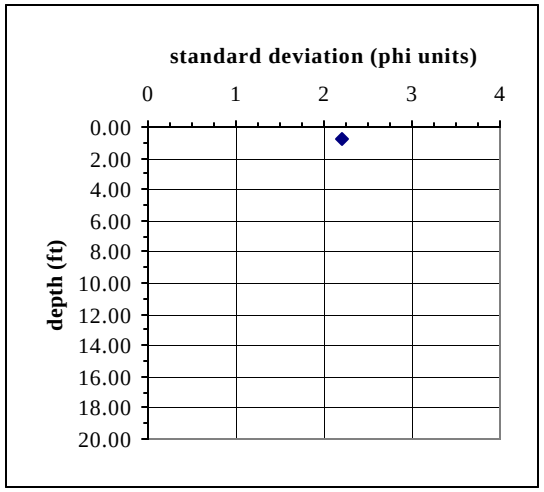
Grainsize Data Table

Core ID SPVC-03-26

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample mean grain size	Standard Deviation	%Sand	%Silt	%Clay
SPVC-03-26_S#1-08	0.80	mm	0.001	0.001	0.002	0.003	0.009	0.029	0.039	0.048	0.056	0.009		2.50	66.93	30.64
		phi	10.21	9.64	9.07	8.37	6.78	5.13	4.66	4.39	4.15	6.86	2.20			





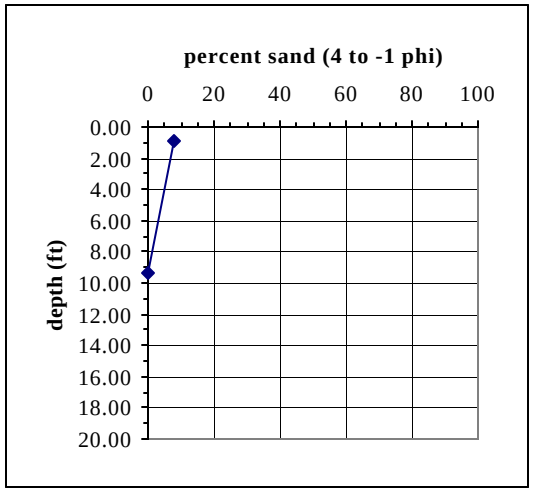


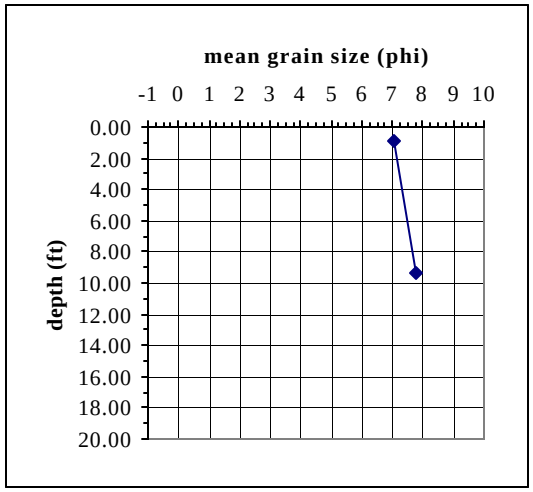
Sandy Point, Louisiana **Coastal Planning and Engineering/UNO Coastal Research Laboratory**

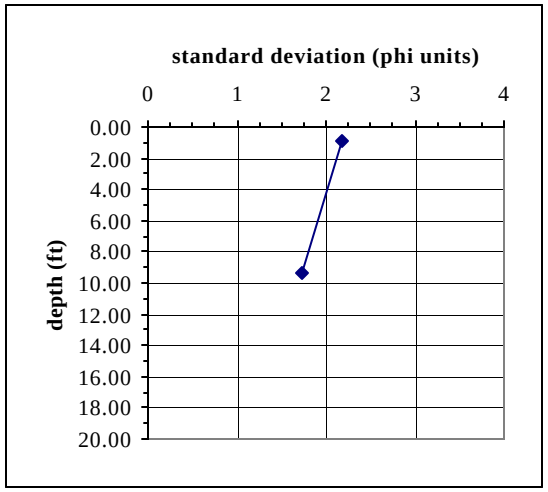
Grainsize Data Table

Core ID SPVC-03-27

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample mean grain size	Standard Deviation	%Sand	%Silt	%Clay
SPVC-03-27_S#1-09	0.90	mm	0.001	0.001	0.002	0.003	0.007	0.022	0.035	0.052	0.088	0.008		7.74	58.10	34.17
		phi	10.28	9.74	9.21	8.56	7.09	5.50	4.84	4.28	3.51	7.03	2.18			
SPVC-03-27_S#4-94	9.40	mm	0.001	0.001	0.001	0.002	0.005	0.011	0.015	0.020	0.027	0.005		0.00	57.79	42.04
		phi	10.40	9.94	9.48	8.90	7.63	6.49	6.04	5.68	5.22	7.76	1.72			





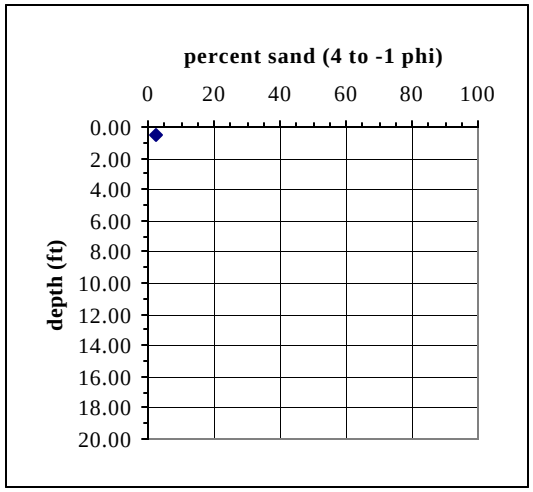


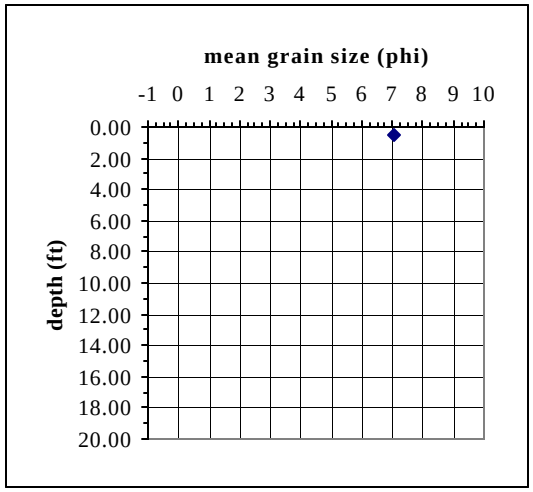
Sandy Point, Louisiana **Coastal Planning and Engineering/UNO Coastal Research Laboratory**

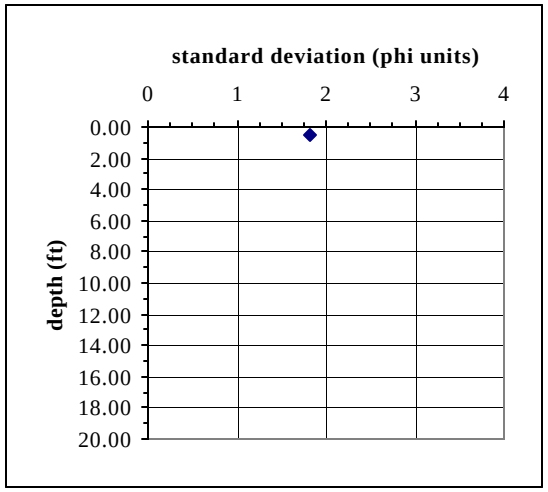
Grainsize Data Table

Core ID SPVC-03-28

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample mean grain size	Standard Deviation	%Sand	%Silt	%Clay
SPVC-03-28_S#1-05	0.50	mm	0.001	0.001	0.002	0.003	0.007	0.017	0.026	0.039	0.054	0.008		2.70	67.43	29.91
		phi	10.06	9.42	8.86	8.26	7.12	5.90	5.24	4.68	4.22	7.05	1.81			





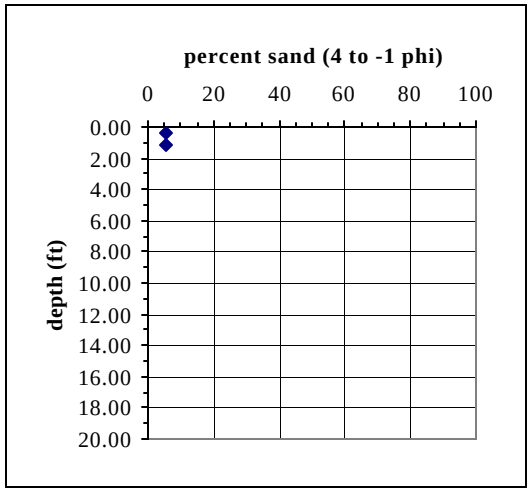


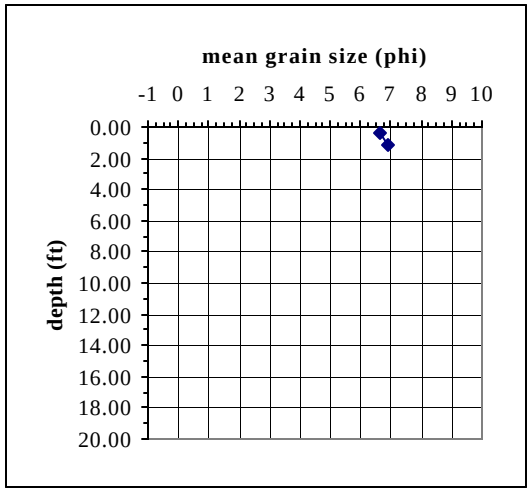
Sandy Point, Louisiana **Coastal Planning and Engineering/UNO Coastal Research Laboratory**

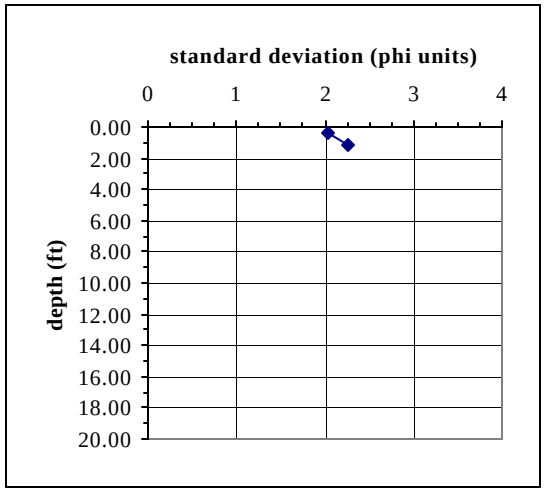
Grainsize Data Table

Core ID SPVC-03-29

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample mean grain size	Standard Deviation	%Sand	%Silt	%Clay
SPVC-03-29_S#1-04	0.40	mm	0.001	0.002	0.002	0.004	0.009	0.027	0.040	0.052	0.064	0.010		5.59	68.46	25.95
		phi	9.99	9.30	8.70	8.06	6.74	5.23	4.63	4.27	3.96	6.67	2.03			
SPVC-03-29_S#2-12	1.20	mm	0.001	0.001	0.002	0.003	0.008	0.027	0.040	0.051	0.065	0.008		5.67	61.86	32.30
		phi	10.25	9.70	9.16	8.48	6.90	5.23	4.66	4.29	3.95	6.91	2.25			





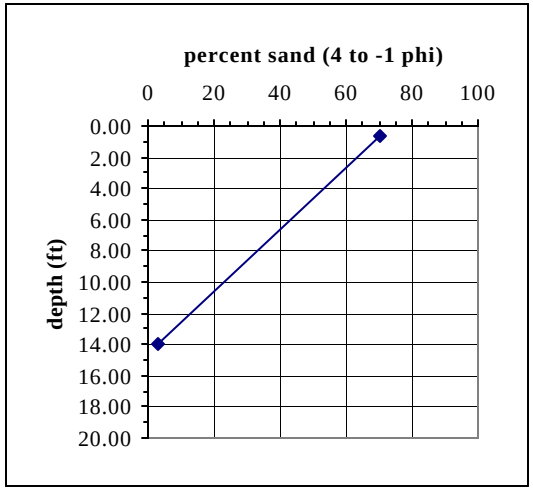


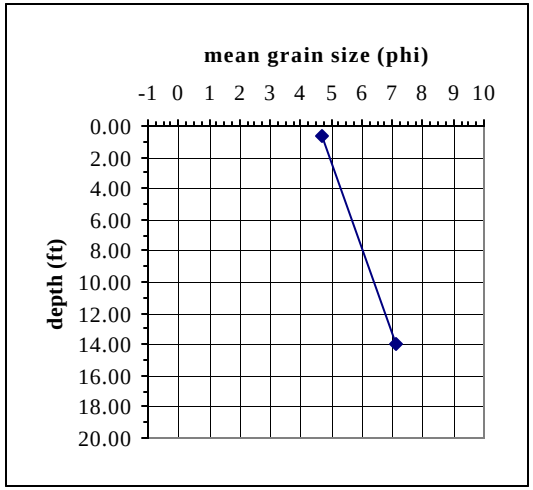
Sandy Point, Louisiana **Coastal Planning and Engineering/UNO Coastal Research Laboratory**

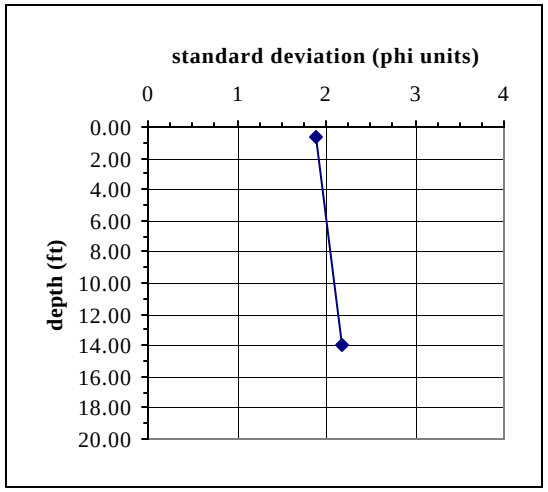
Grainsize Data Table

Core ID SPVC-03-30

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample mean grain size	Standard Deviation	%Sand	%Silt	%Clay
SPVC-03-30_S#1-07	0.70	mm	0.002	0.004	0.010	0.048	0.099	0.130	0.140	0.146	0.155	0.038		70.54	19.83	9.60
		phi	9.08	7.92	6.61	4.37	3.34	2.94	2.84	2.78	2.69	4.72	1.88			
SPVC-03-30_S#6-140	14.00	mm	0.001	0.001	0.002	0.003	0.008	0.022	0.032	0.043	0.055	0.007		2.97	62.39	34.66
		phi	10.33	9.82	9.31	8.64	7.02	5.52	4.97	4.55	4.17	7.14	2.17			





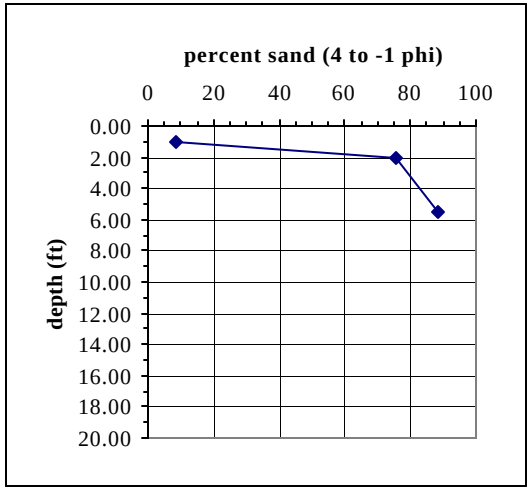


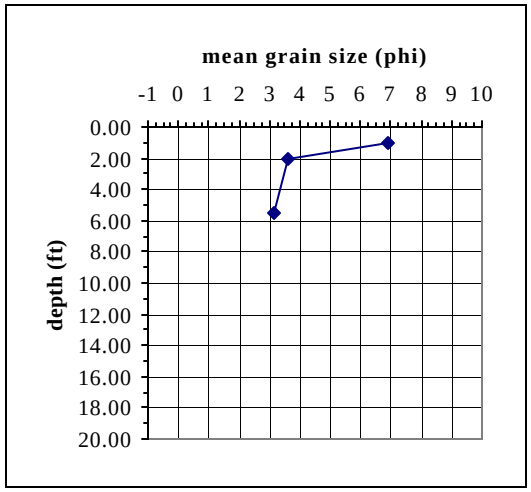
Sandy Point, Louisiana **Coastal Planning and Engineering/UNO Coastal Research Laboratory**

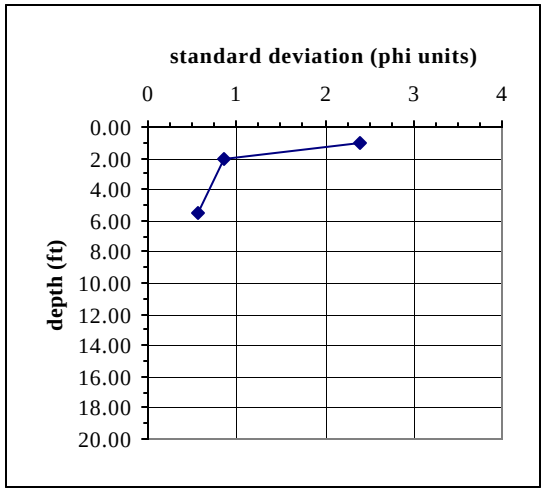
Grainsize Data Table

Core ID SPVC-03-31

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample mean grain size	Standard Deviation	%Sand	%Silt	%Clay
SPVC-03-31_S#1-10	1.00	mm	0.001	0.001	0.002	0.003	0.007	0.027	0.045	0.058	0.076	0.008		8.61	55.89	35.60
		phi	10.32	9.80	9.28	8.64	7.16	5.21	4.49	4.10	3.73	6.89	2.40			
SPVC-03-31_S#2-20	2.00	mm	0.005	0.025	0.045	0.063	0.101	0.134	0.147	0.157	0.168	0.081		75.33	20.21	4.40
		phi	7.67	5.29	4.47	3.98	3.31	2.90	2.77	2.67	2.58	3.62	0.85			
SPVC-03-31_S#3-55	5.50	mm	0.034	0.058	0.075	0.092	0.122	0.152	0.166	0.178	0.193	0.112		88.63	9.41	1.92
		phi	4.89	4.11	3.73	3.44	3.03	2.72	2.59	2.49	2.38	3.16	0.57			





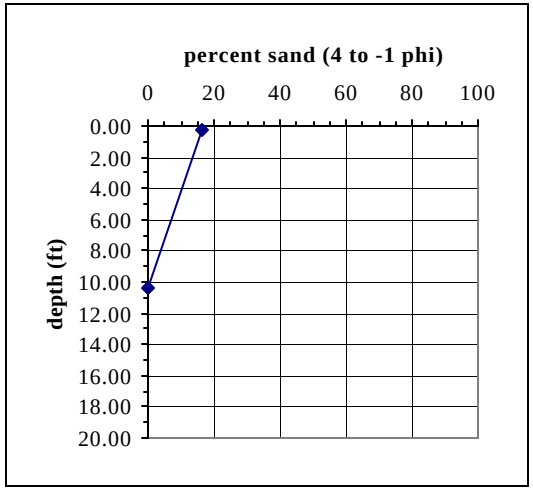


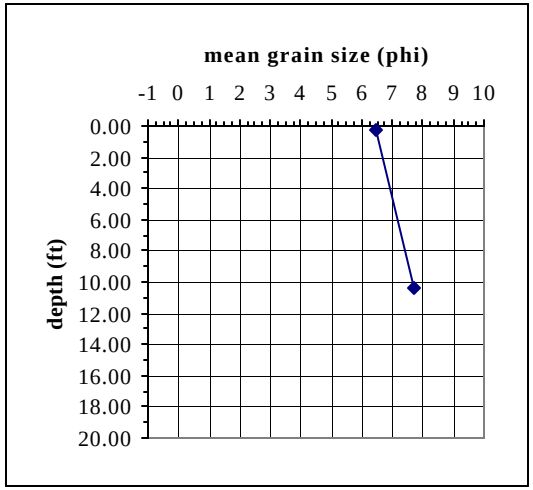
Sandy Point, Louisiana **Coastal Planning and Engineering/UNO Coastal Research Laboratory**

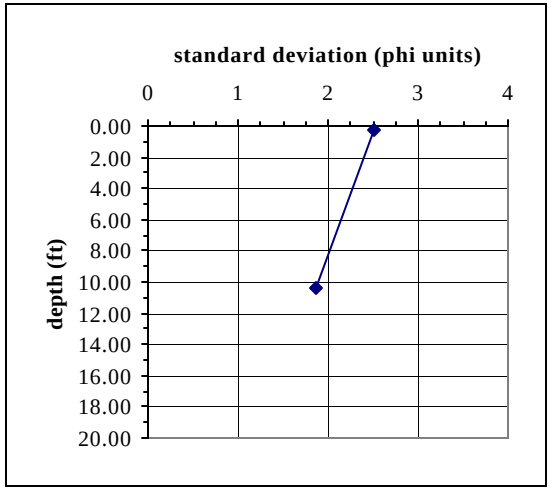
Grainsize Data Table

Core ID SPVC-03-32

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample mean grain size	Standard Deviation	%Sand	%Silt	%Clay
SPVC-03-32_S#1-03	0.30	mm	0.001	0.001	0.002	0.003	0.010	0.043	0.064	0.083	0.101	0.011		16.67	53.86	29.55
		phi	10.19	9.59	9.00	8.30	6.67	4.54	3.96	3.59	3.30	6.48	2.52			
SPVC-03-32_S#4-104	10.40	mm	0.001	0.001	0.001	0.002	0.005	0.011	0.018	0.025	0.039	0.005		0.25	54.78	44.98
		phi	10.46	10.02	9.59	9.02	7.77	6.46	5.83	5.33	4.70	7.71	1.88			





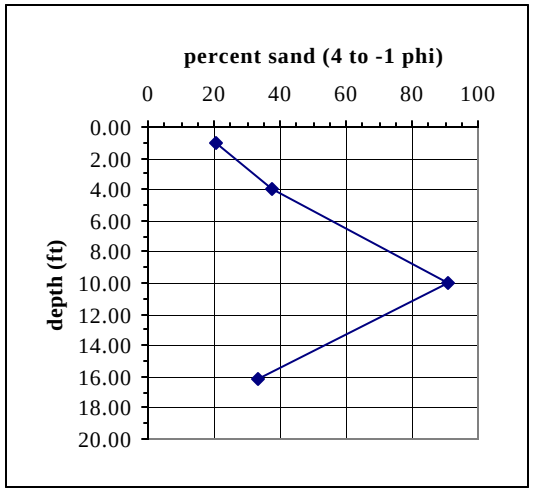


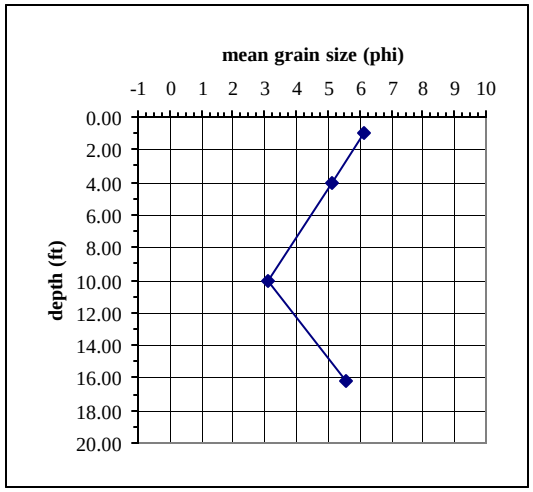
Sandy Point, Louisiana **Coastal Planning and Engineering/UNO Coastal Research Laboratory**

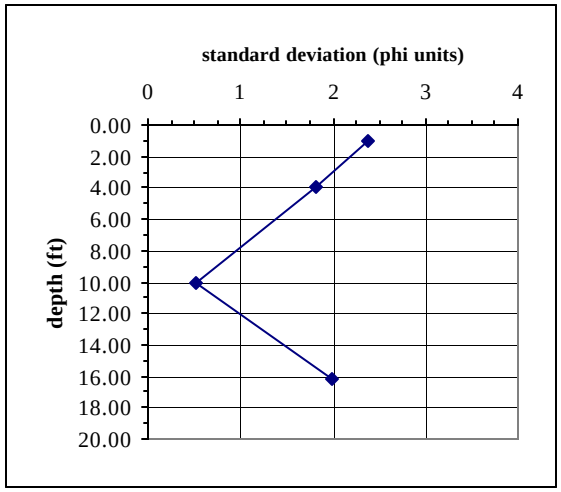
Grainsize Data Table

Core ID SPVC-03-33

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample mean grain size	Standard Deviation	%Sand	%Silt	%Clay
SPVC-03-33_S#1-10	1.00	mm	0.001	0.002	0.003	0.005	0.015	0.052	0.074	0.095	0.121	0.014		20.38	57.67	21.98
		phi	9.94	9.18	8.50	7.78	6.09	4.26	3.75	3.40	3.04	6.13	2.37			
SPVC-03-33_S#2-40	4.00	mm	0.001	0.003	0.008	0.021	0.049	0.081	0.099	0.115	0.132	0.028		37.48	51.43	11.14
		phi	9.42	8.26	6.96	5.56	4.35	3.63	3.34	3.12	2.92	5.15	1.81			
SPVC-03-33_S#3-100	10.00	mm	0.027	0.066	0.082	0.097	0.125	0.154	0.167	0.177	0.190	0.117		90.83	6.86	2.33
		phi	5.21	3.93	3.60	3.37	3.00	2.70	2.59	2.50	2.40	3.09	0.51			
SPVC-03-33_S#6-162	16.20	mm	0.001	0.003	0.005	0.014	0.045	0.072	0.083	0.092	0.104	0.021		33.47	53.09	13.42
		phi	9.55	8.58	7.58	6.20	4.47	3.80	3.59	3.44	3.27	5.59	2.00			





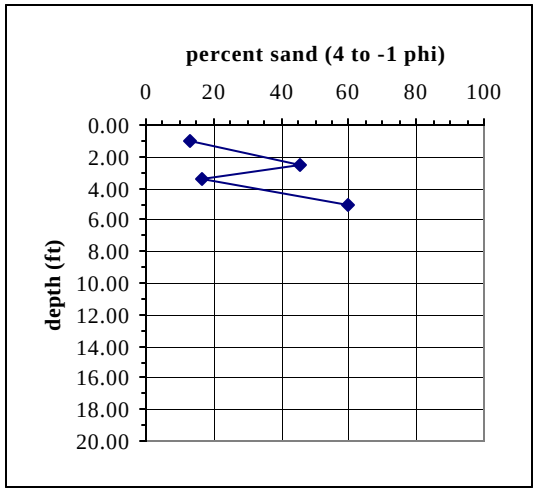


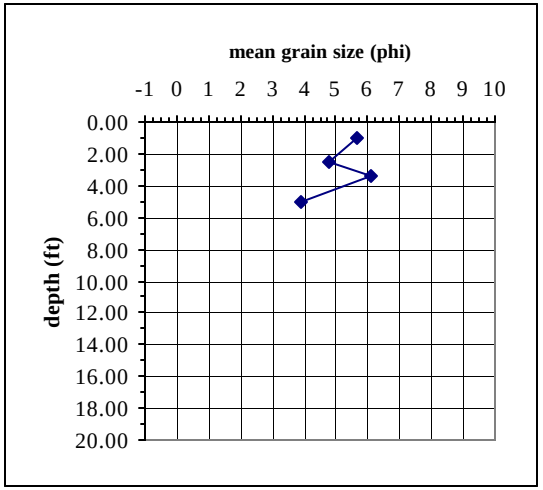
Sandy Point, Louisiana **Coastal Planning and Engineering/UNO Coastal Research Laboratory**

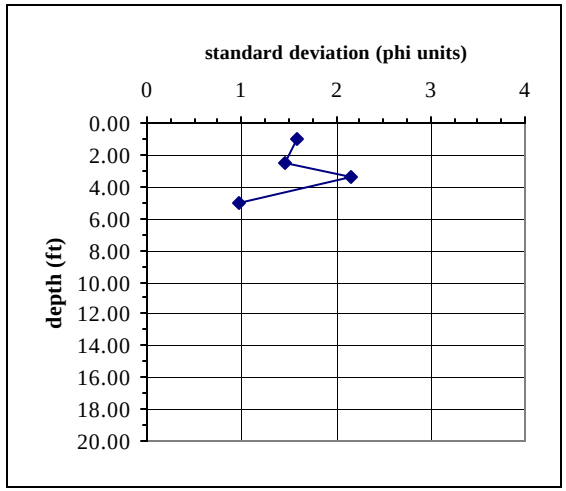
Grainsize Data Table

Core ID SPVC-03-34

Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample mean grain size	Standard Deviation	%Sand	%Silt	%Clay
SPVC-03-34_S#1-10	1.00	mm	0.001	0.003	0.007	0.014	0.032	0.049	0.058	0.068	0.082	0.019		13.16	75.08	11.77
		phi	9.42	8.34	7.27	6.15	4.98	4.35	4.10	3.87	3.61	5.68	1.58			
SPVC-03-34_S#2-25	2.50	mm	0.002	0.004	0.013	0.028	0.058	0.088	0.102	0.114	0.129	0.037		45.34	45.31	9.35
		phi	9.26	7.81	6.23	5.15	4.12	3.51	3.29	3.13	2.95	4.76	1.47			
SPVC-03-34_S#3-34	3.40	mm	0.001	0.002	0.003	0.006	0.024	0.050	0.063	0.075	0.089	0.014		16.56	65.08	18.34
		phi	9.87	9.09	8.29	7.27	5.41	4.31	3.98	3.73	3.48	6.13	2.15			
SPVC-03-34_S#4-50	5.00	mm	0.007	0.023	0.034	0.045	0.073	0.109	0.129	0.148	0.171	0.066		59.48	36.74	3.77
		phi	7.12	5.45	4.89	4.46	3.77	3.19	2.95	2.76	2.55	3.92	0.97			





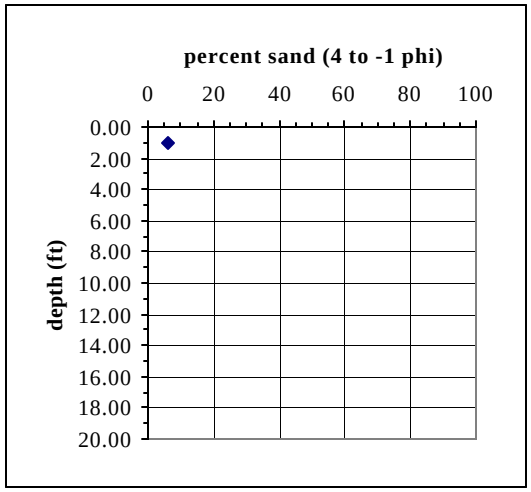


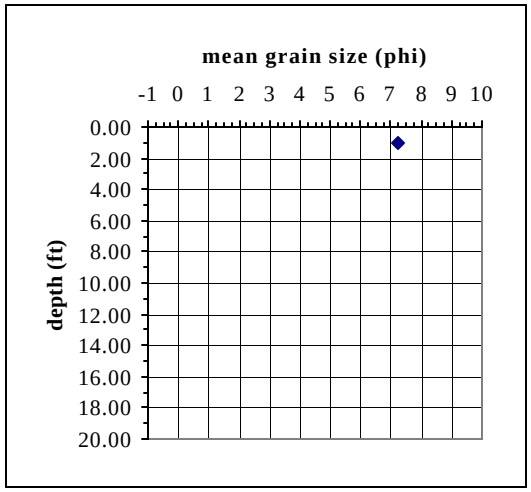
Sandy Point, Louisiana **Coastal Planning and Engineering/UNO Coastal Research Laboratory**

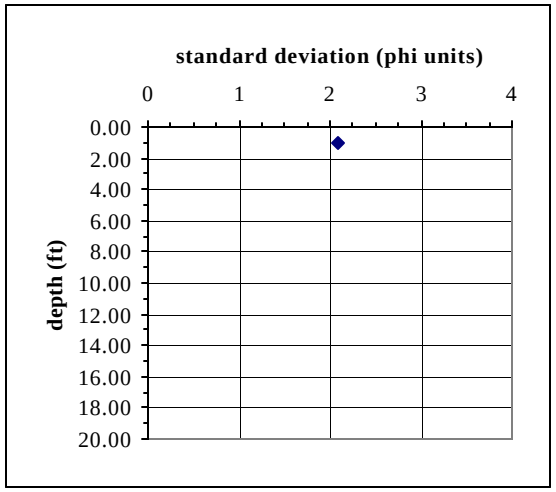
Grainsize Data Table

Core ID SPVC-03-35

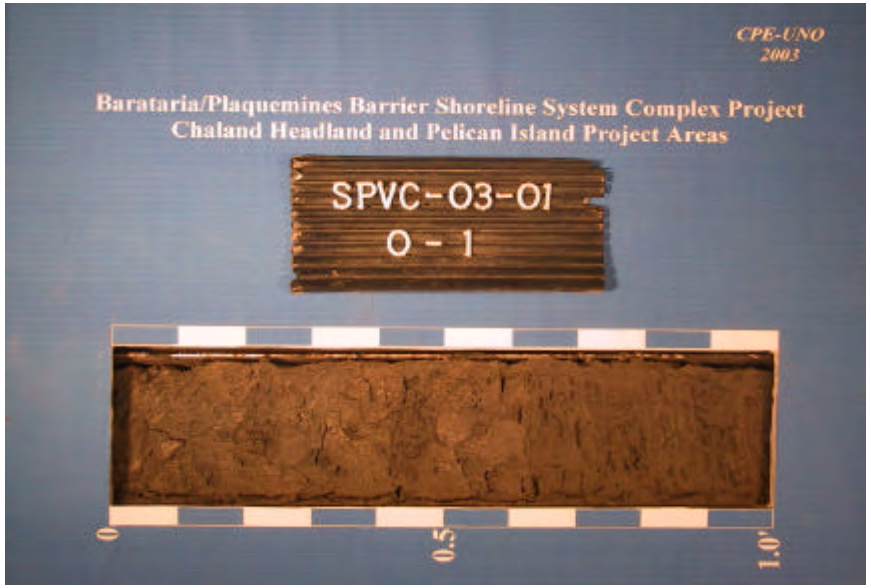
Sample I.D.	Sample depth in core(ft)	Units	5% sample finer than	10% sample finer than	16% sample finer than	25% sample finer than	50% sample finer than	75% sample finer than	84% sample finer than	90% sample finer than	95% sample finer than	Sample mean grain size	Standard Deviation	%Sand	%Silt	%Clay
SPVC-03-35_S#1-10	1.00	mm	0.001	0.001	0.002	0.002	0.005	0.015	0.028	0.046	0.072	0.007		6.31	53.81	39.76
		phi	10.33	9.83	9.36	8.77	7.52	6.02	5.16	4.43	3.80	7.26	2.10			







APPENDIX 11
2003 SANDY POINT VIBRACORE PHOTOGRAPHS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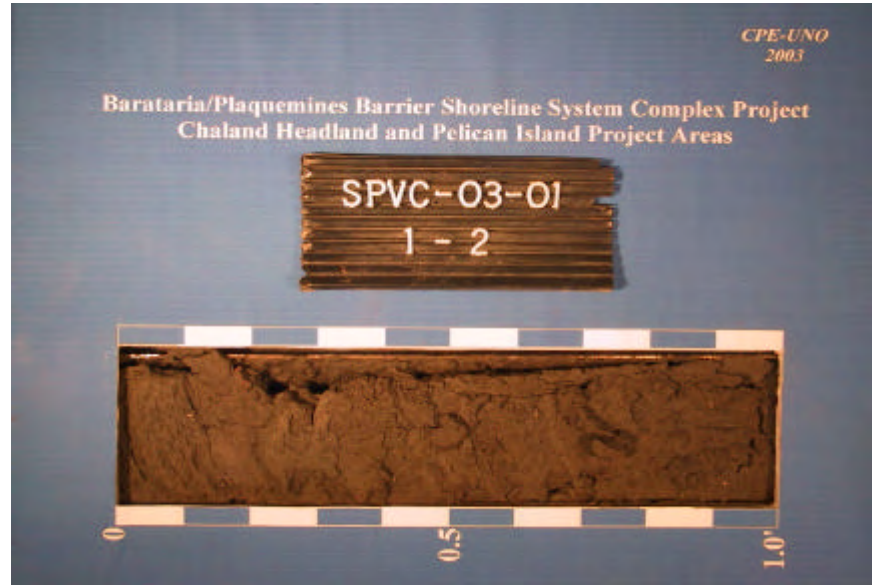
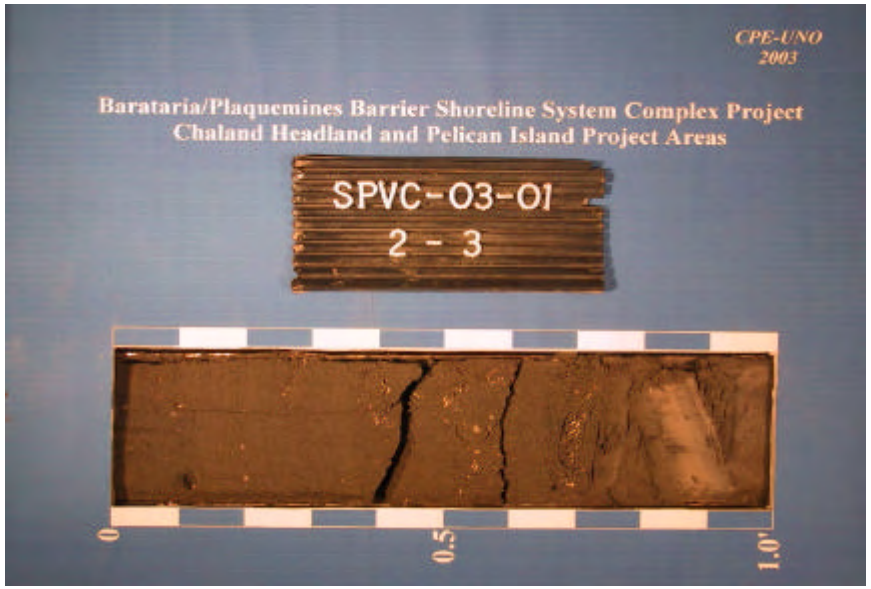
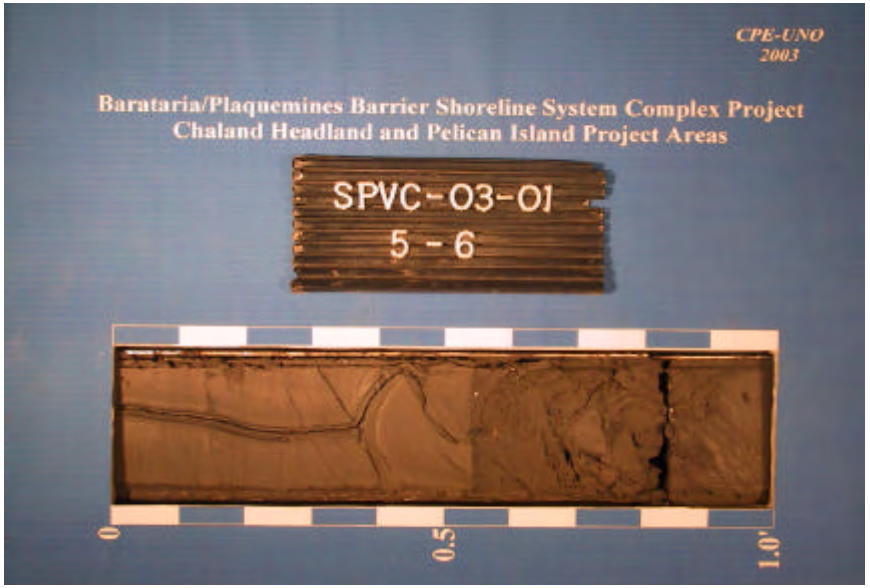
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-01
0 - 1
0
0.5
1.0'

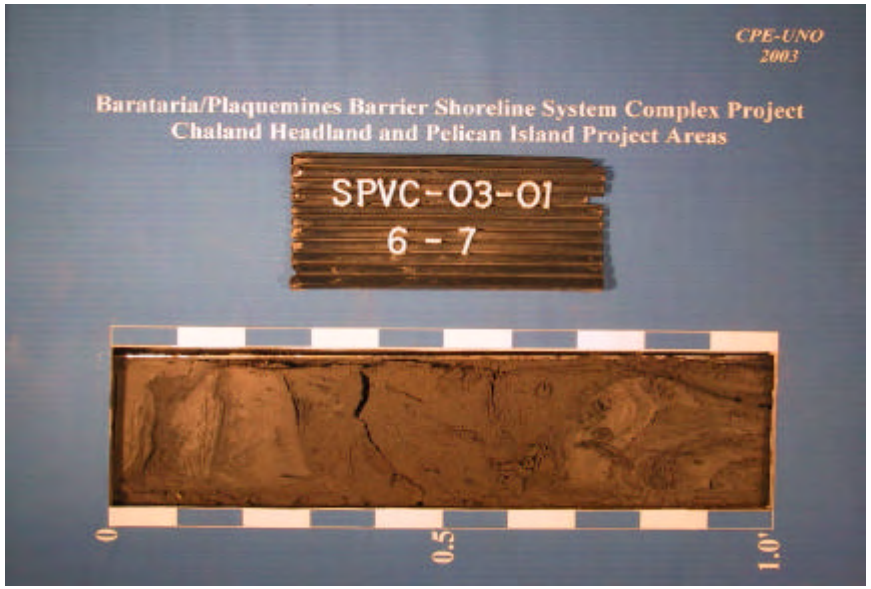

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-01
1 - 2
0
0.5
1.0'

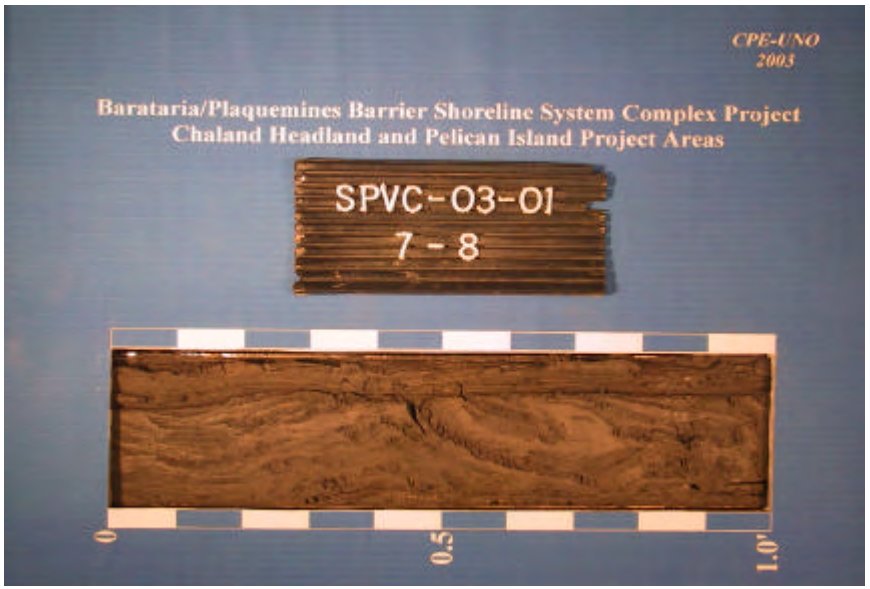

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-01
2 - 3
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-01
3 - 4
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-01
4 - 5
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-01
5 - 6
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-01
6 - 7
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-01
7 - 8
0
0.5
1.0'

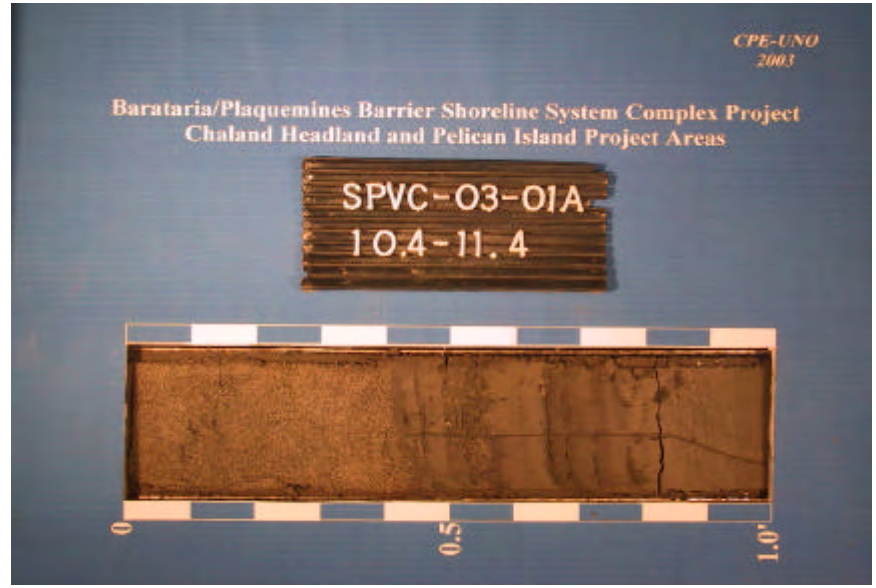
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-01
8 - 9
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-01
9 - 10
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-01
10 - 11
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-01
11 - 11.2
0
0.5
1.0'

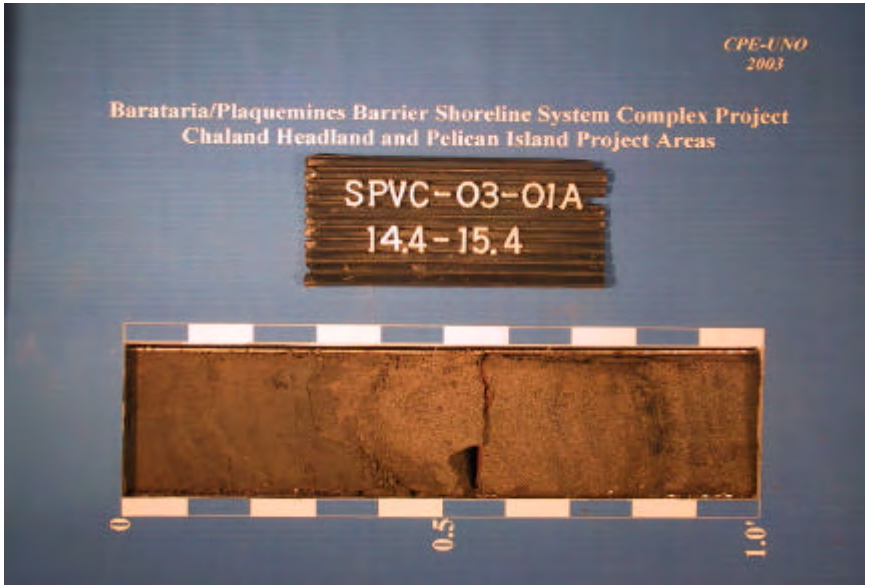
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-01A
9.4-10.4
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-01A
10.4-11.4
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-01A
11.4-12.4
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-01A
12.4-13.4
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-01A
13.4-14.4
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-01A
14.4-15.4
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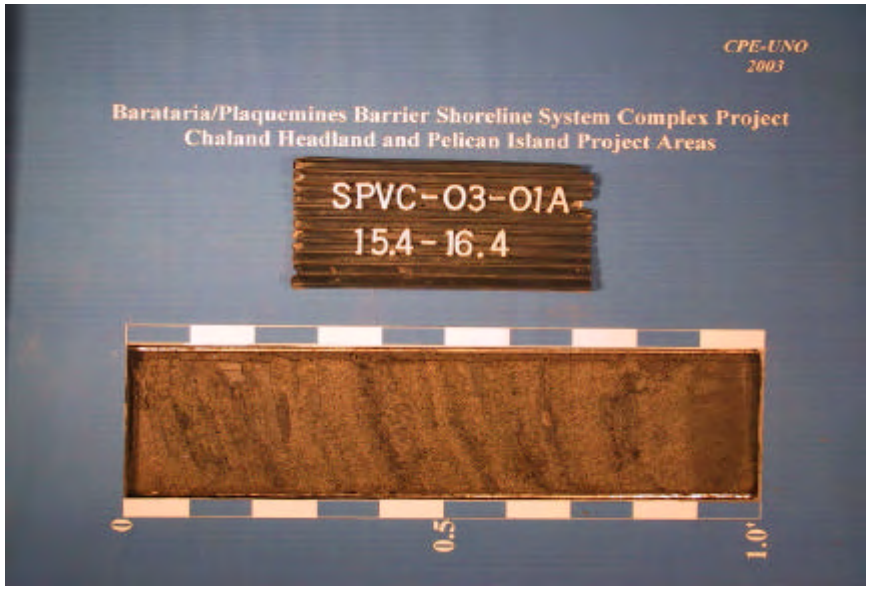
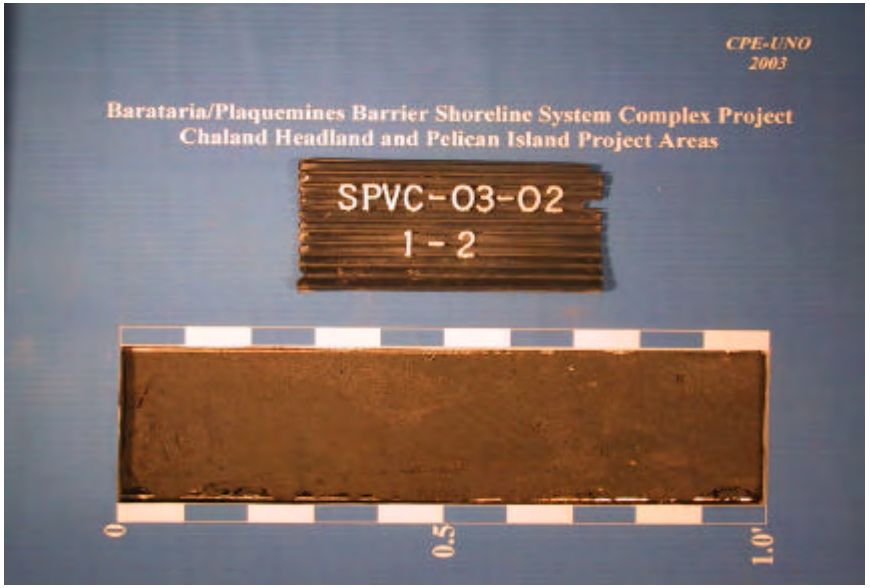
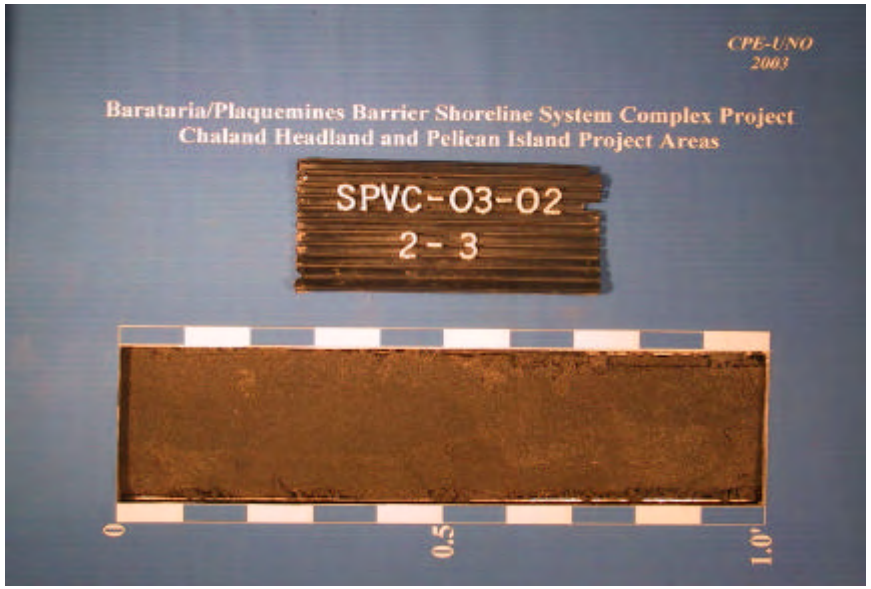
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-01A
15.4-16.4
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-01A
16.4-17.2
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-02
0 - 1
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-02
1 - 2
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-02
2 - 3
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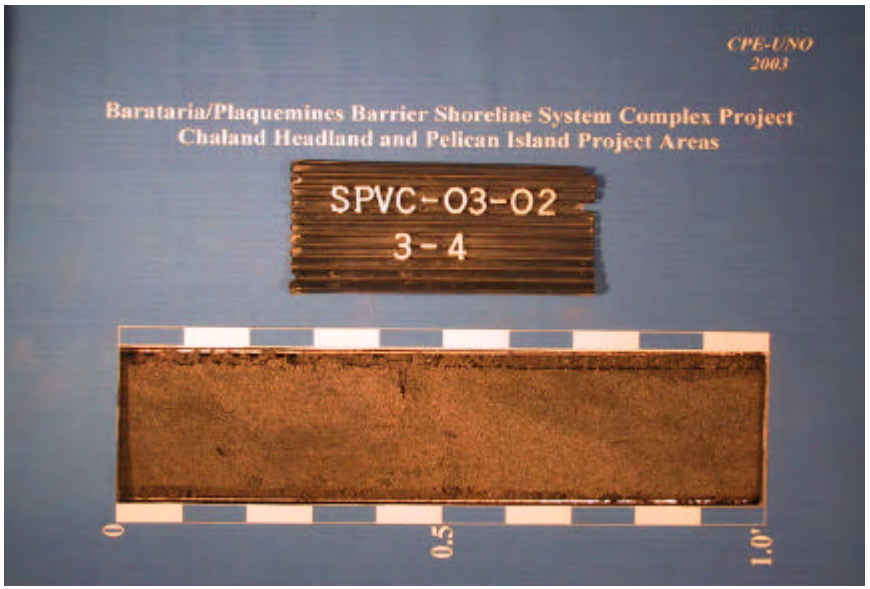
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-02
3 - 4
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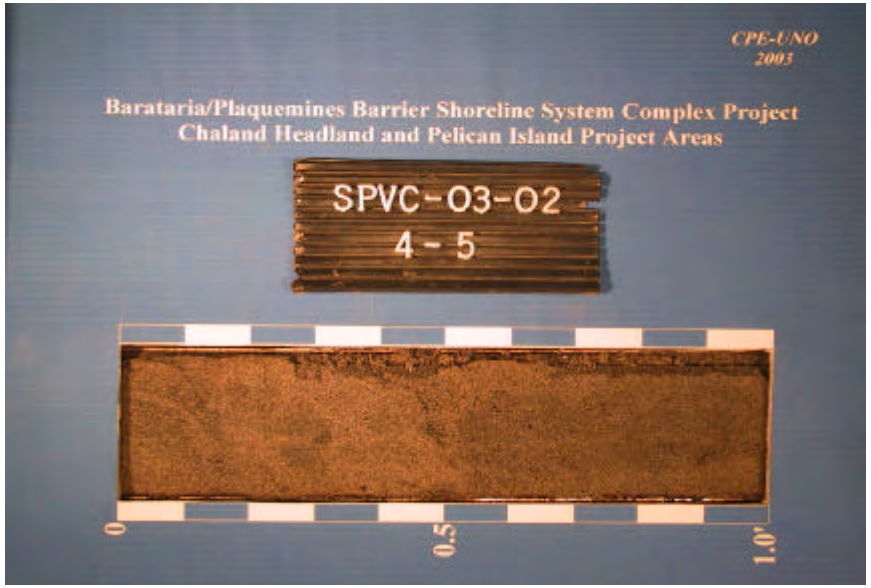
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-02
4 - 5
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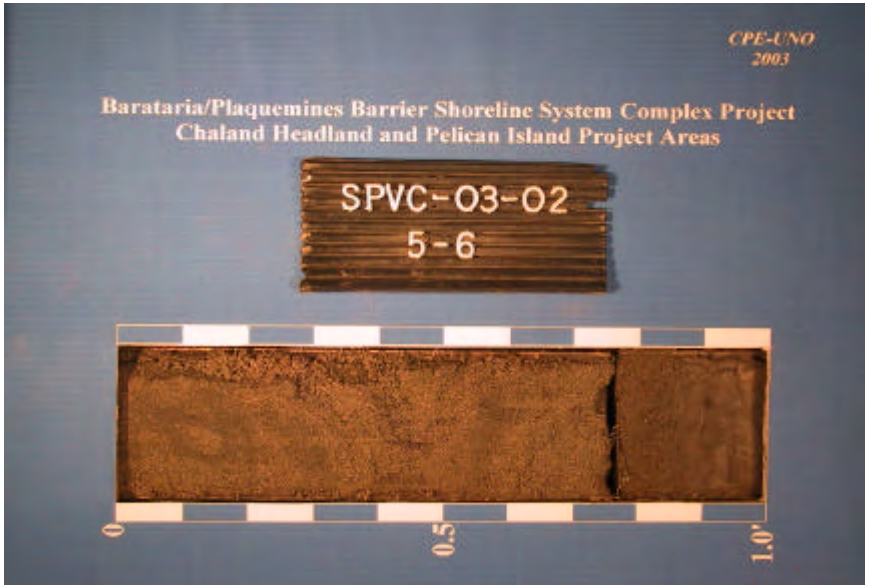
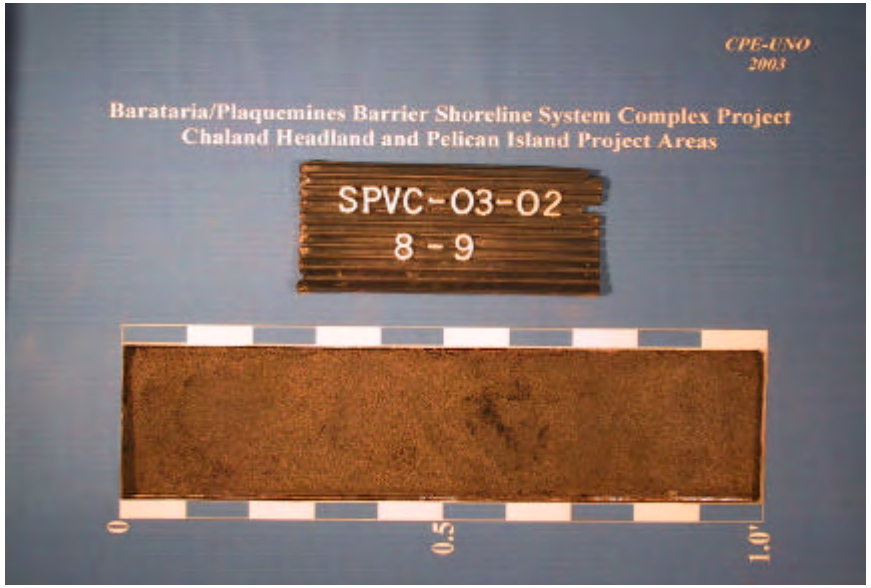
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-02
5 - 6
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-02
6 - 7
0
0.5
1.0'

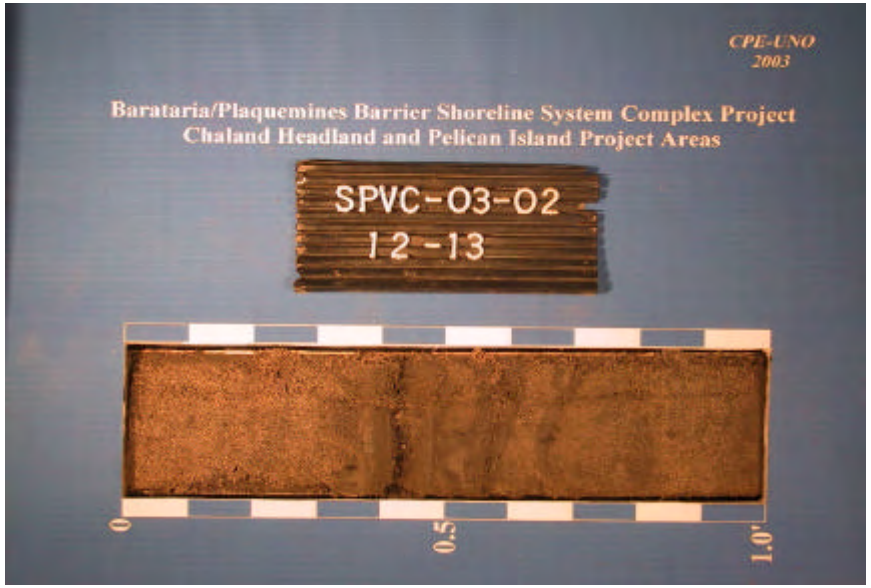
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-02
7-8
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-02
8 - 9
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-02
9 - 10
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-02
10 - 11
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-02
11 - 12
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-02
12-13
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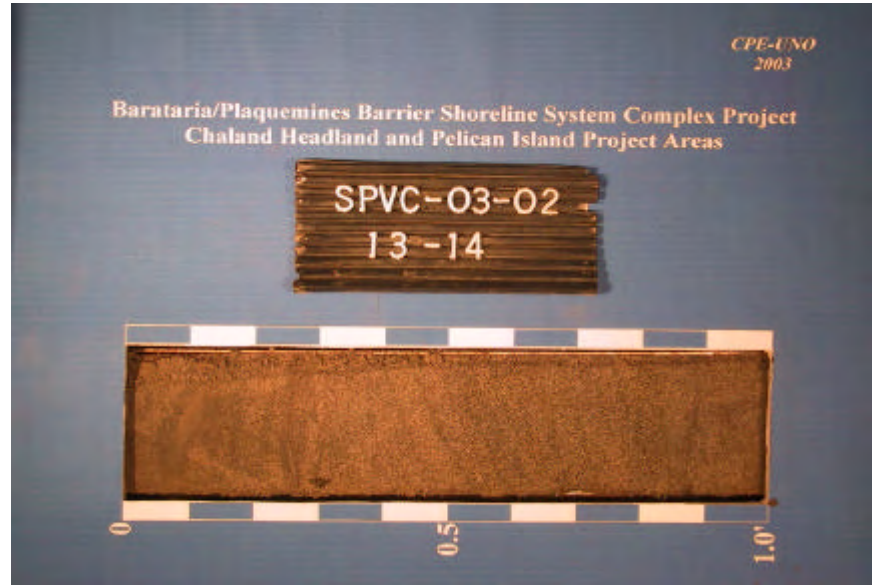
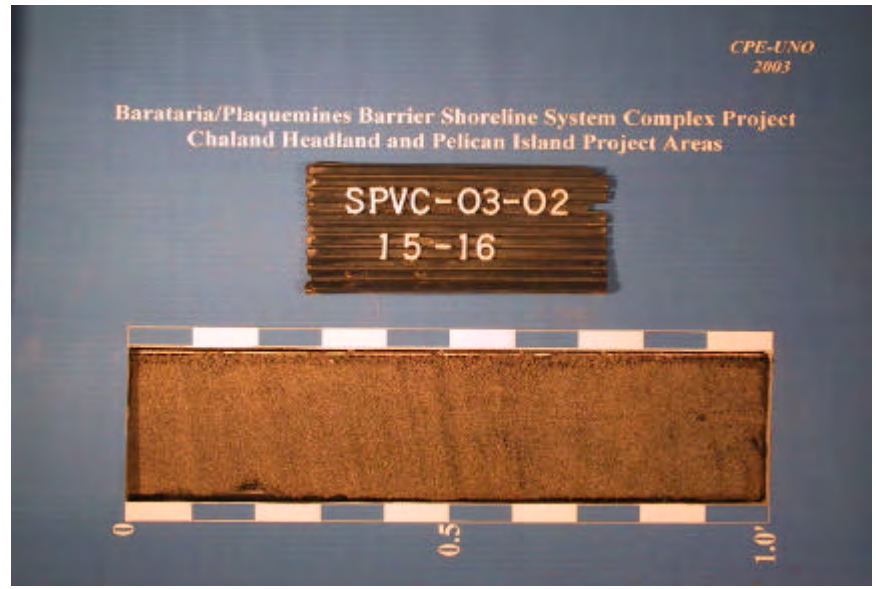
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-02
13-14
0
0.5
1.0'

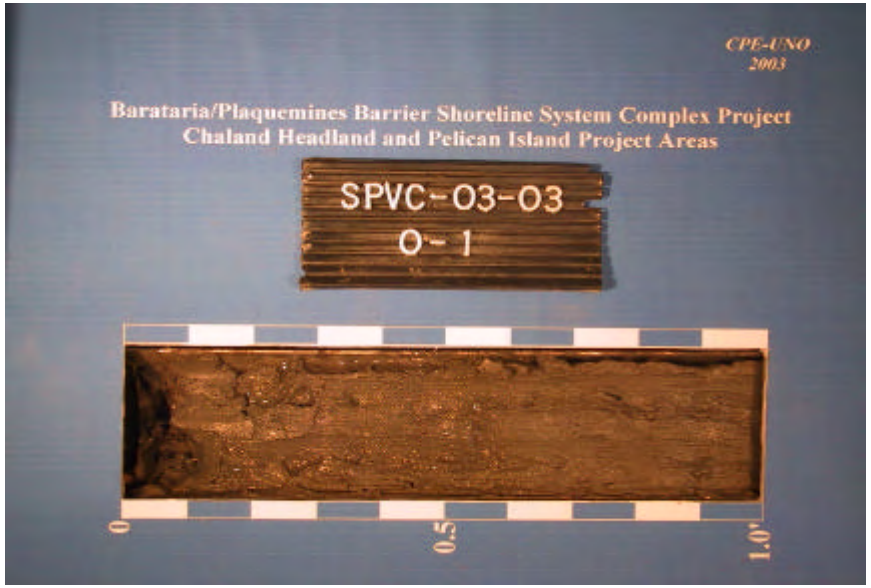
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-02
14-15
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-02
15-16
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-02
16 -17
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-02
17 -18
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-02
18 -18.7
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-03
0-1
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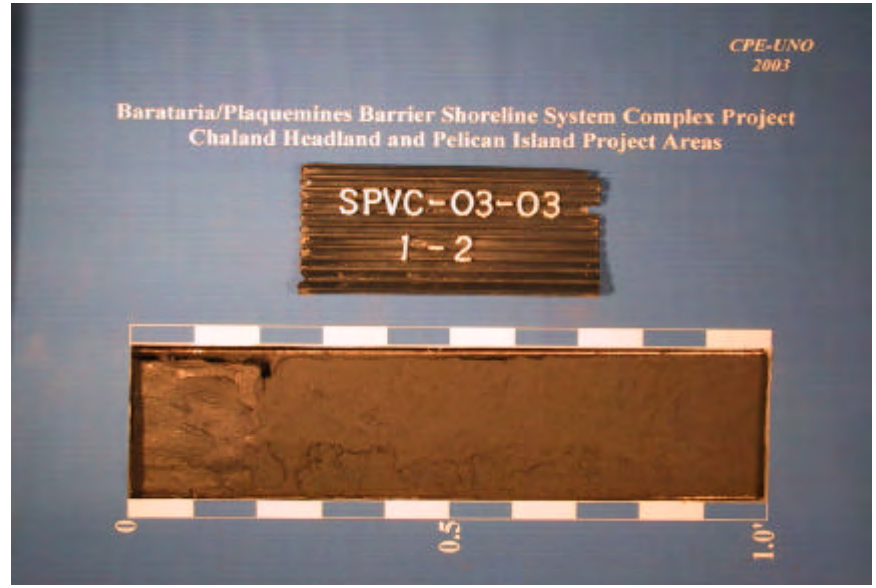
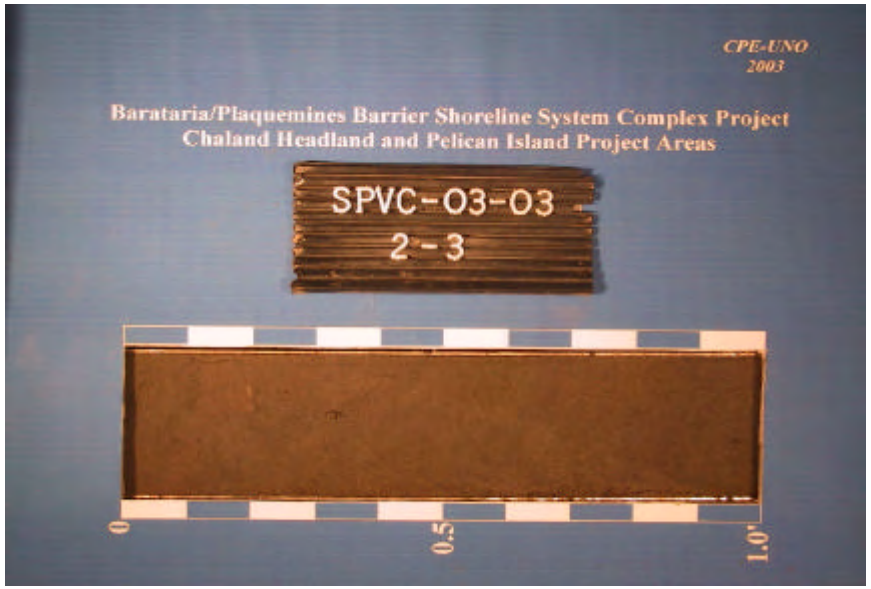
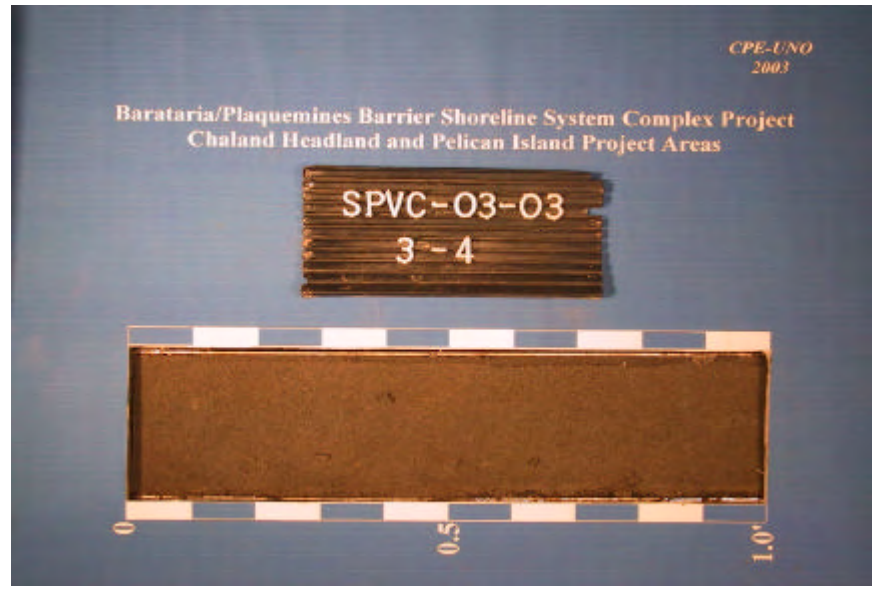
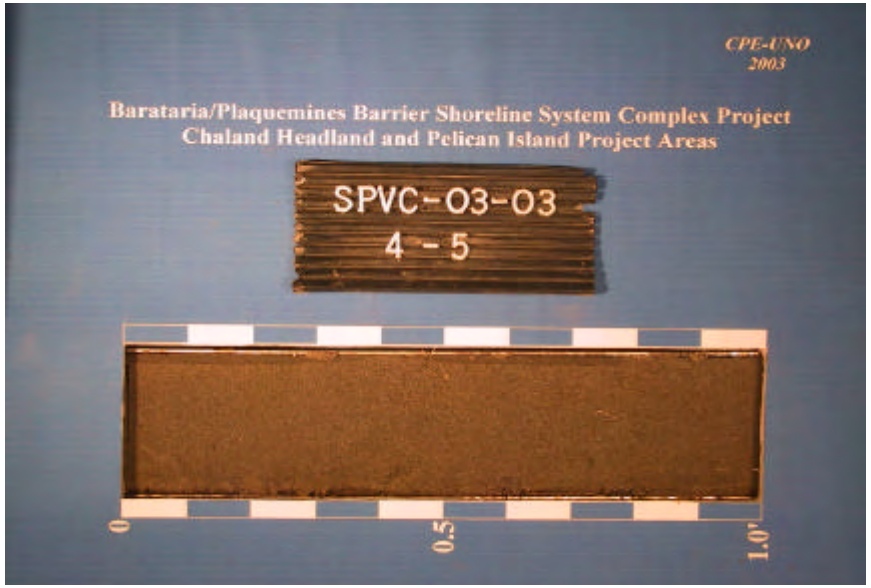
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-03
1-2
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-03
2-3
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-03
3-4
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-03
4 - 5
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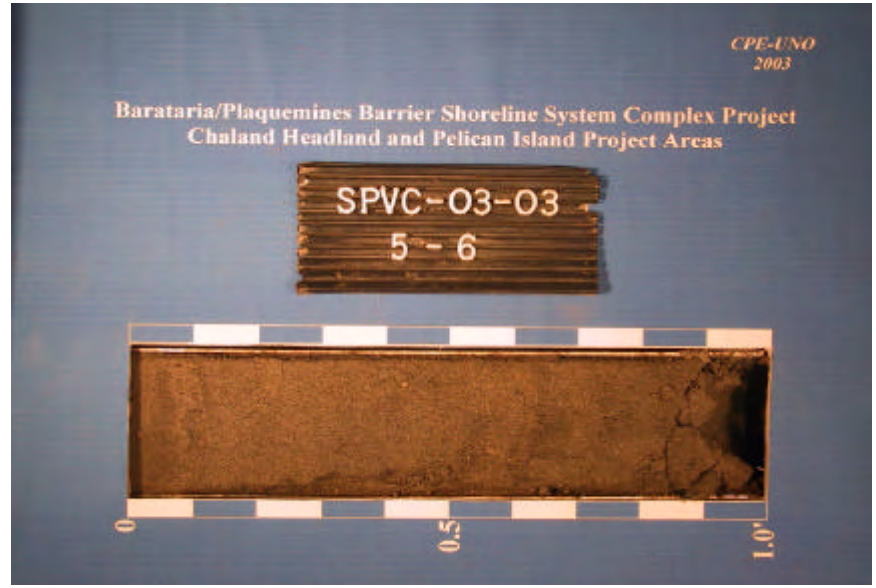
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-03
5 - 6
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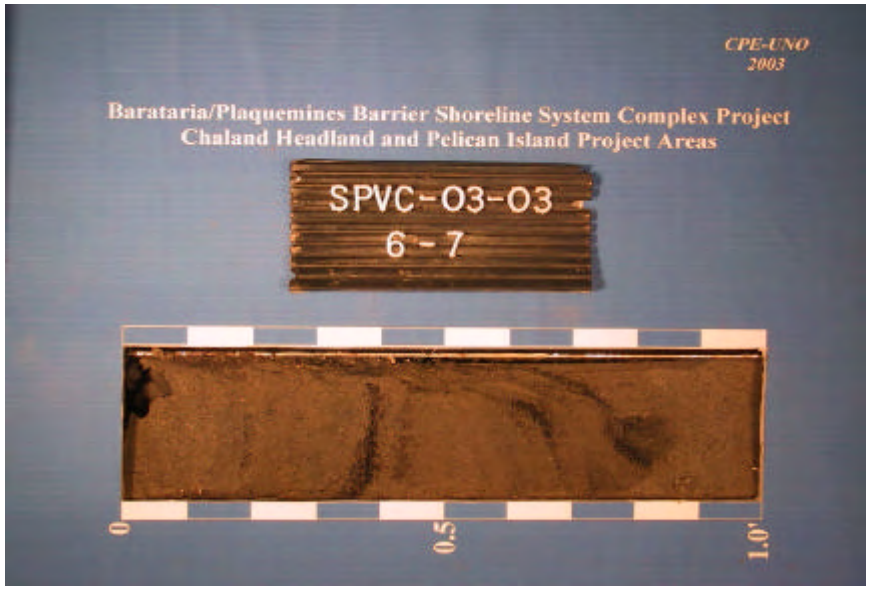
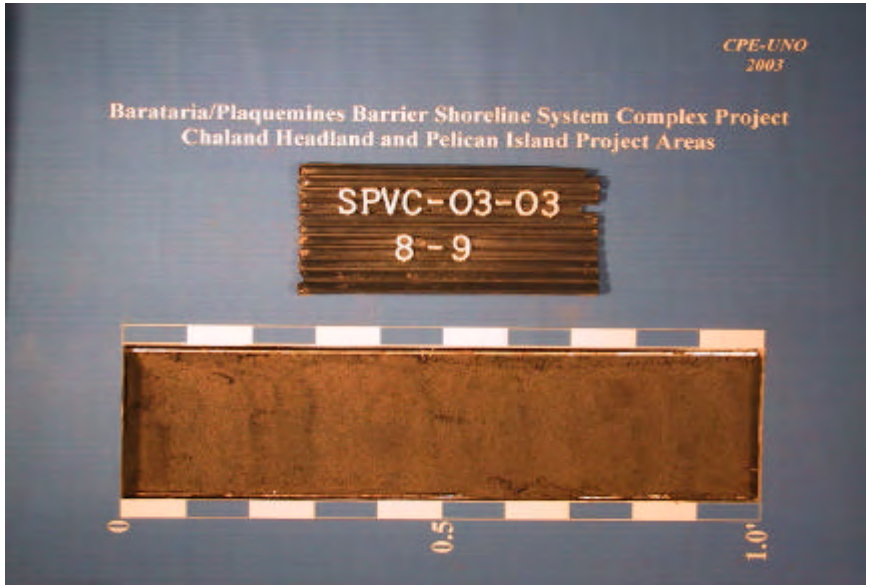
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-03
6 - 7
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-03
7 - 8
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-03
8-9
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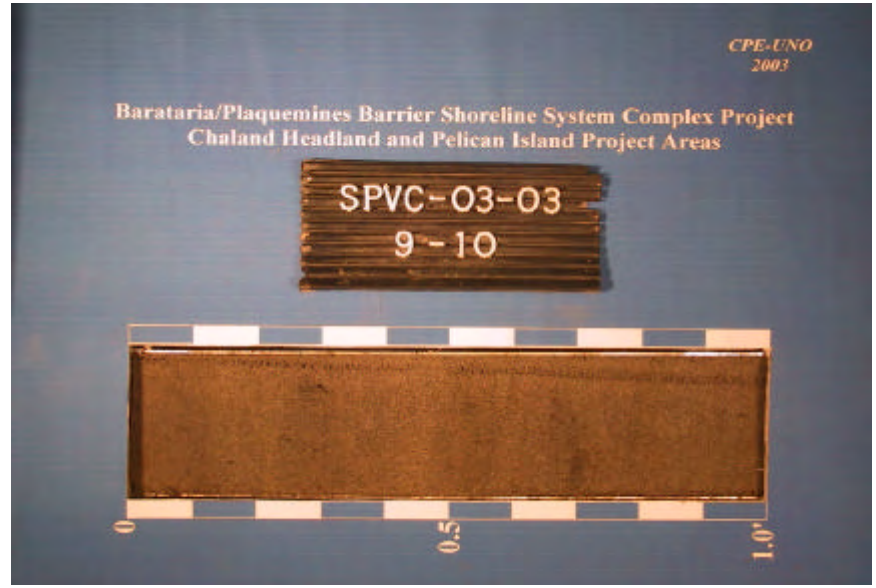
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-03
9-10
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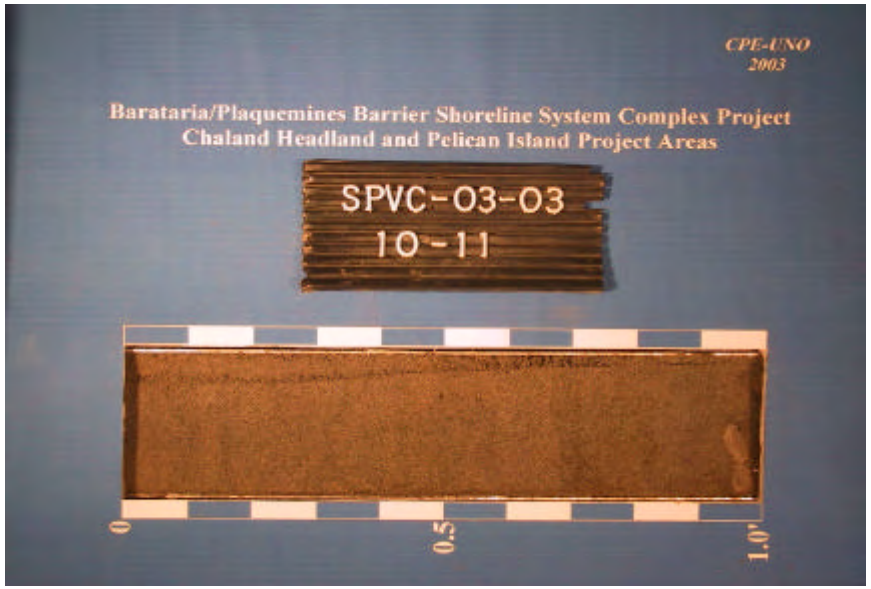
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-03
10-11
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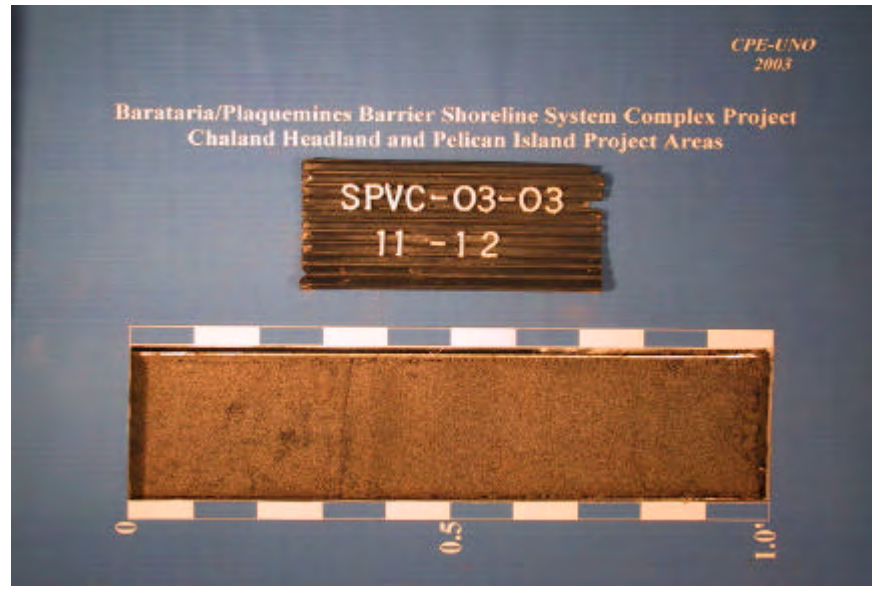
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-03
11-12
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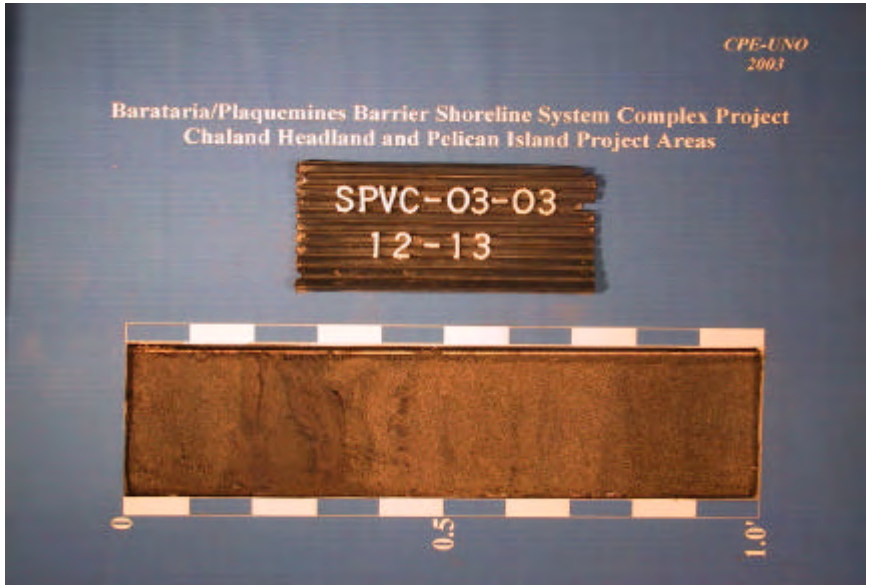
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-03
12-13
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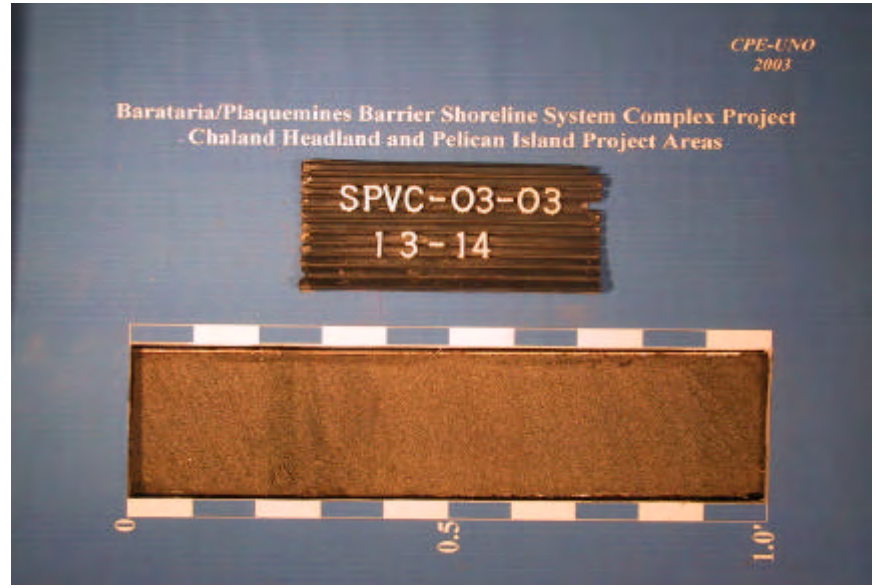
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-03
13-14
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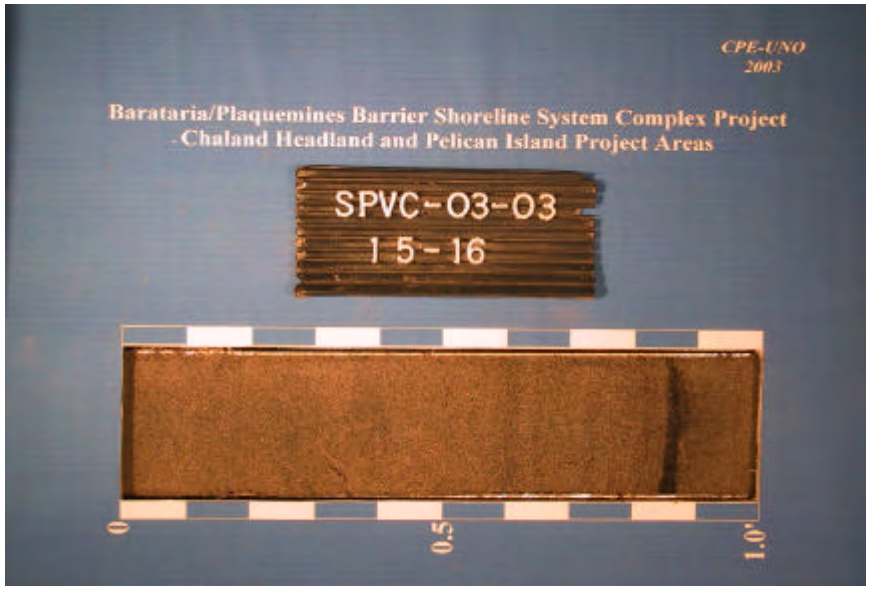
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-03
15-16
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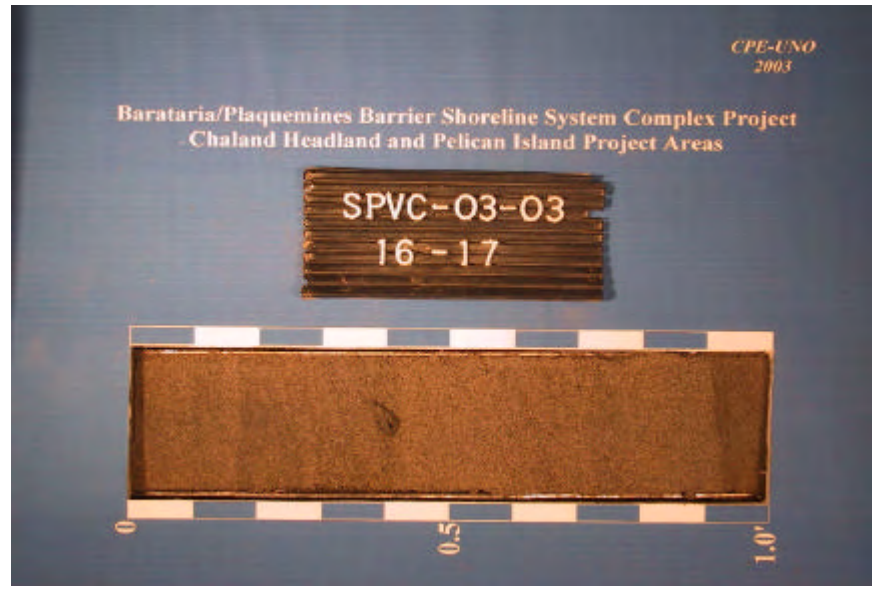
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-03
16-17
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-03
17-18
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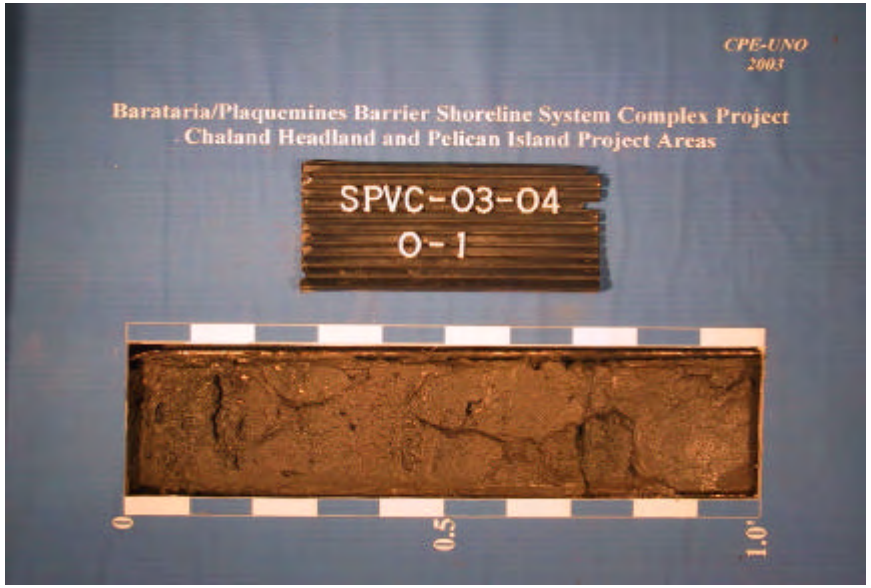
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-04
0-1
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1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-04
1-2
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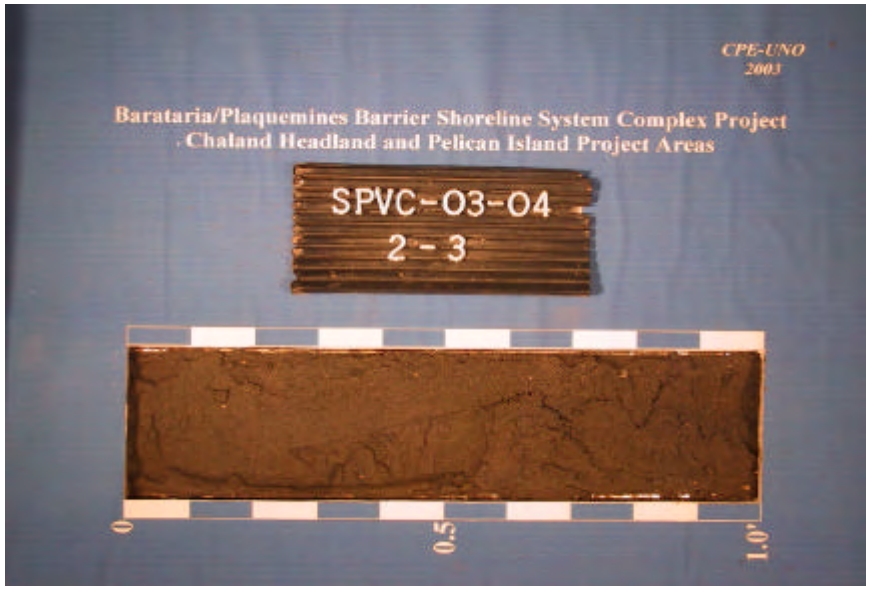
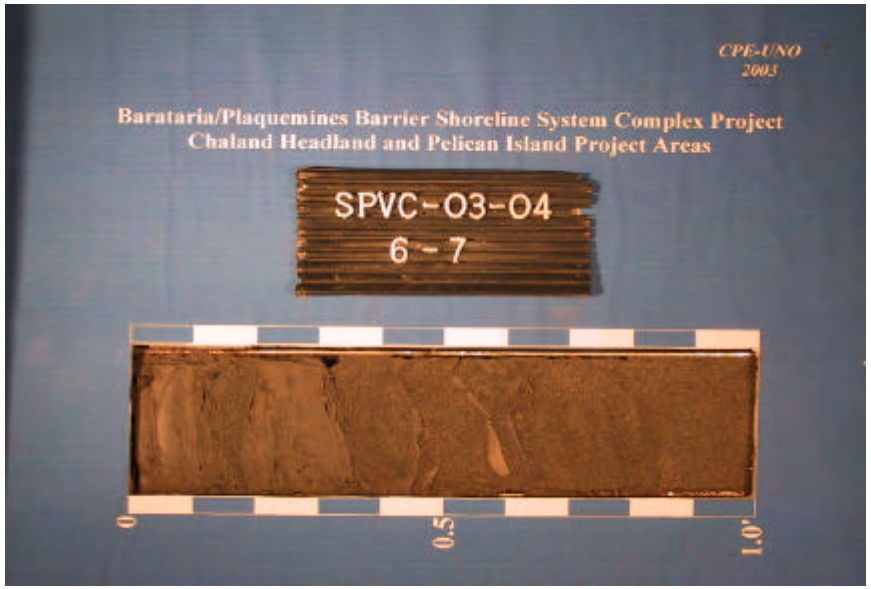
1.0'

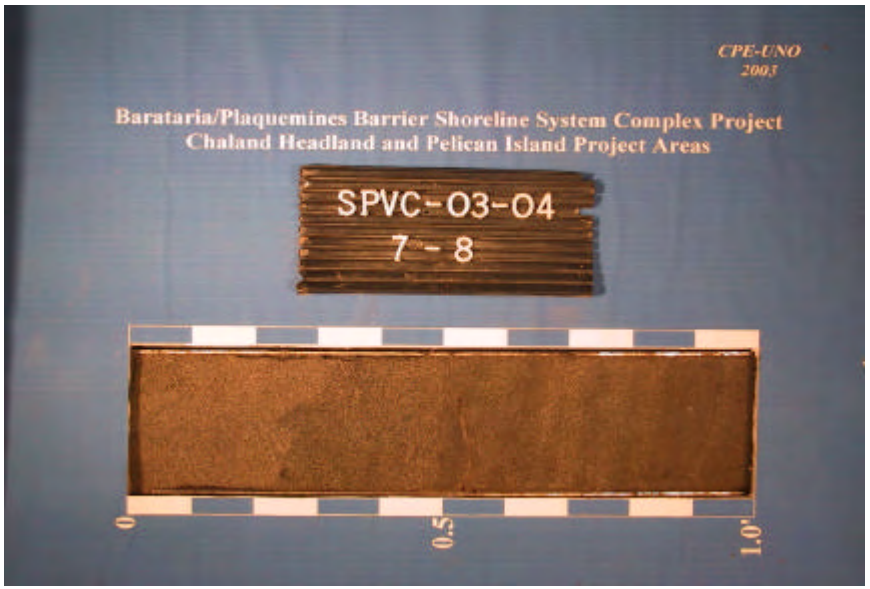

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-04
2-3
0
0.5
1.0'

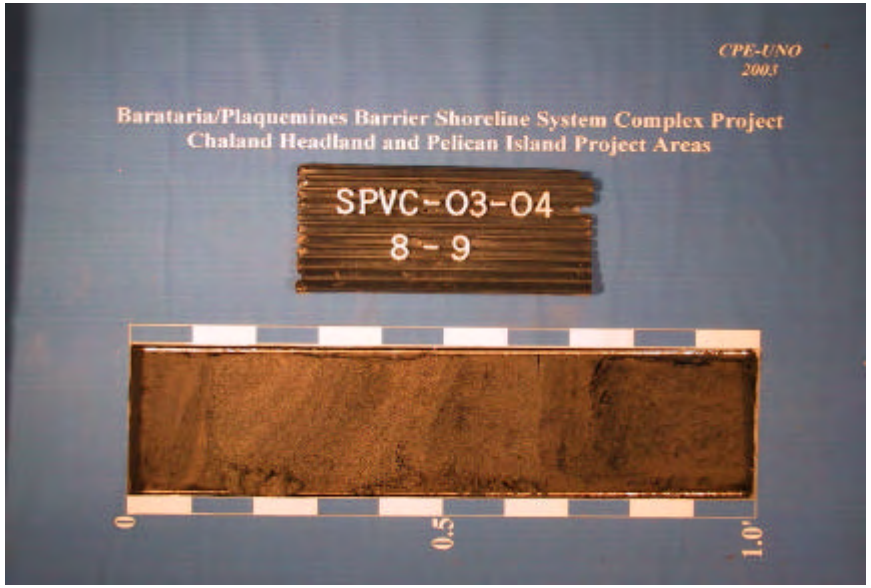
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-04
3-4
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-04
4 - 5
0
0.5
1.0'

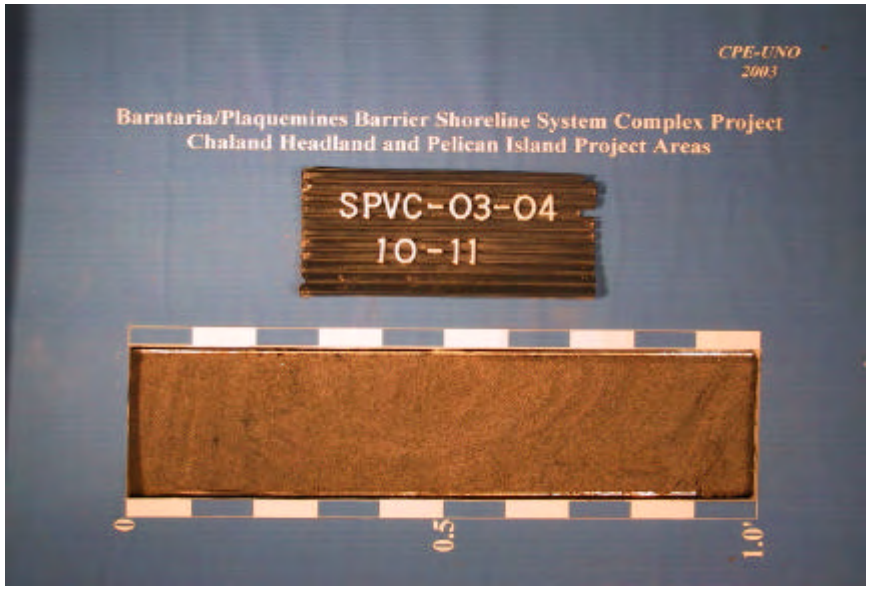
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-04
5 - 6
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-04
6 - 7
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-04
7 - 8
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-04
8 - 9
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-04
9-10
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-04
10-11
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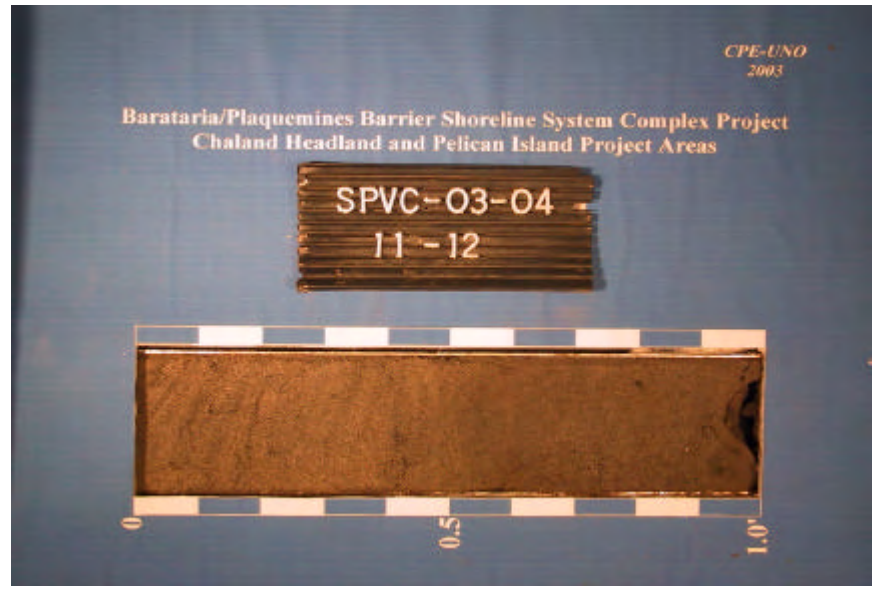
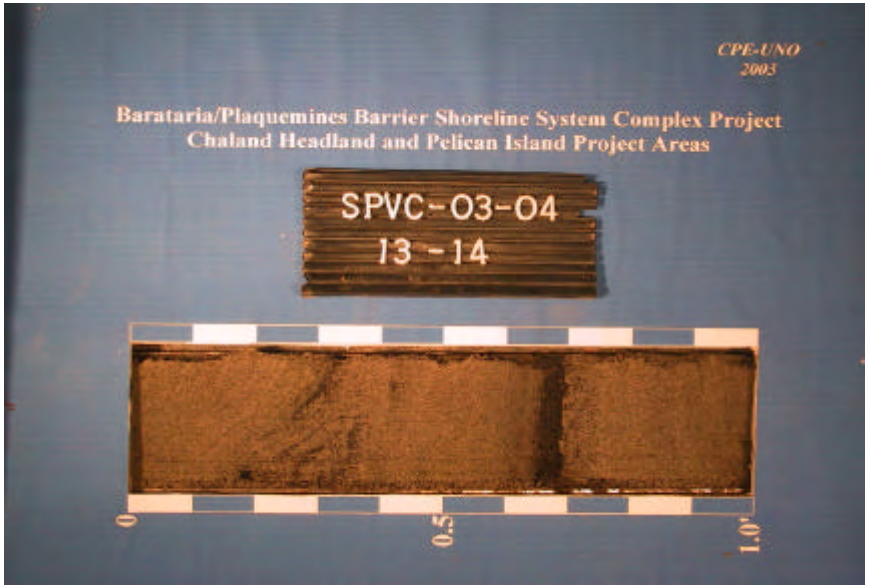
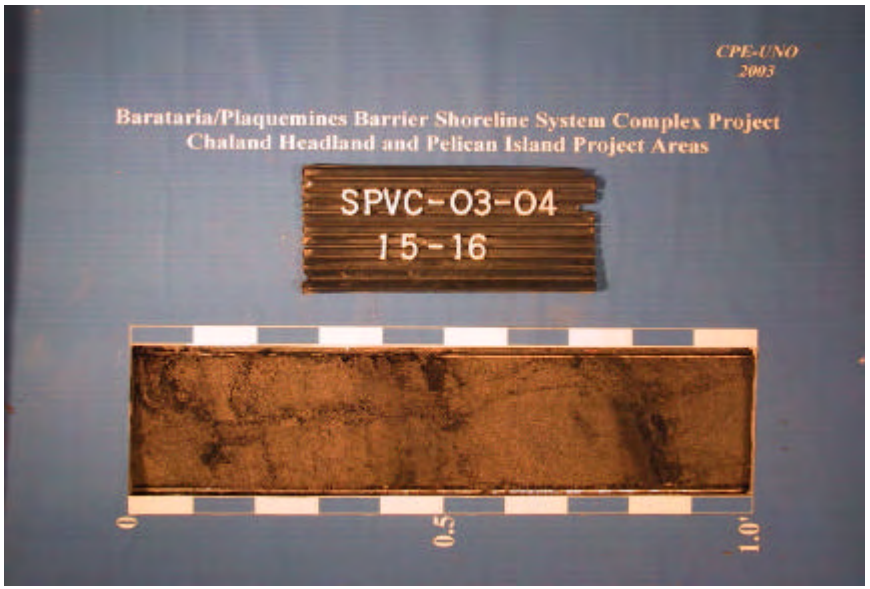
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-04
11 - 12
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-04
12 - 13
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-04
13 - 14
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-04
14 - 15
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-04
15 - 16
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-04
16 - 17
0
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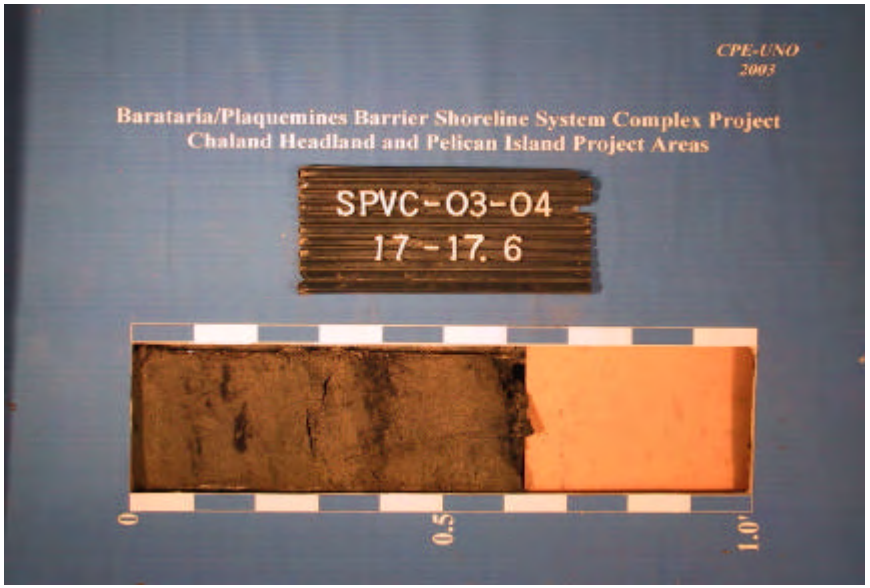
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-04
17 - 17. 6
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-05
0-1
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-05
1 - 2
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-05
2 - 3
0
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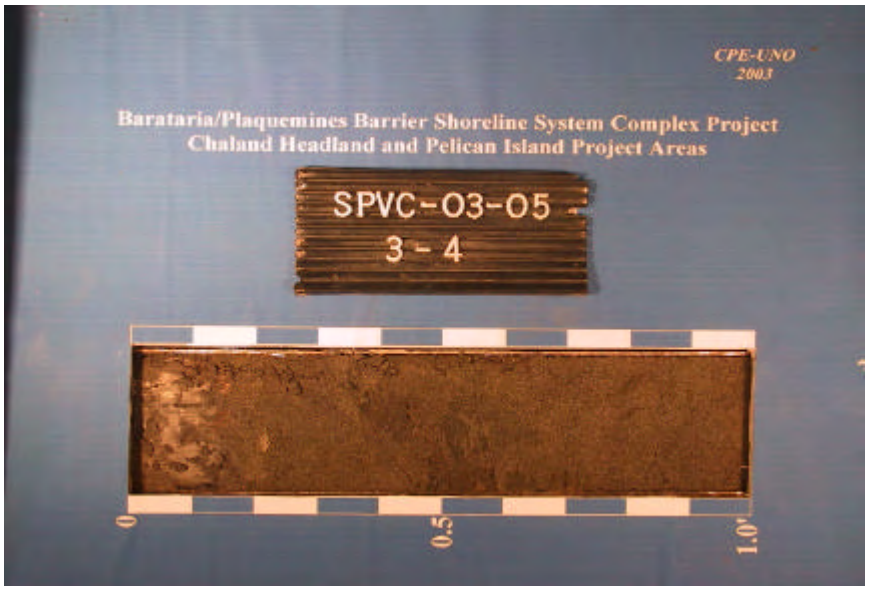
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-05
3 - 4
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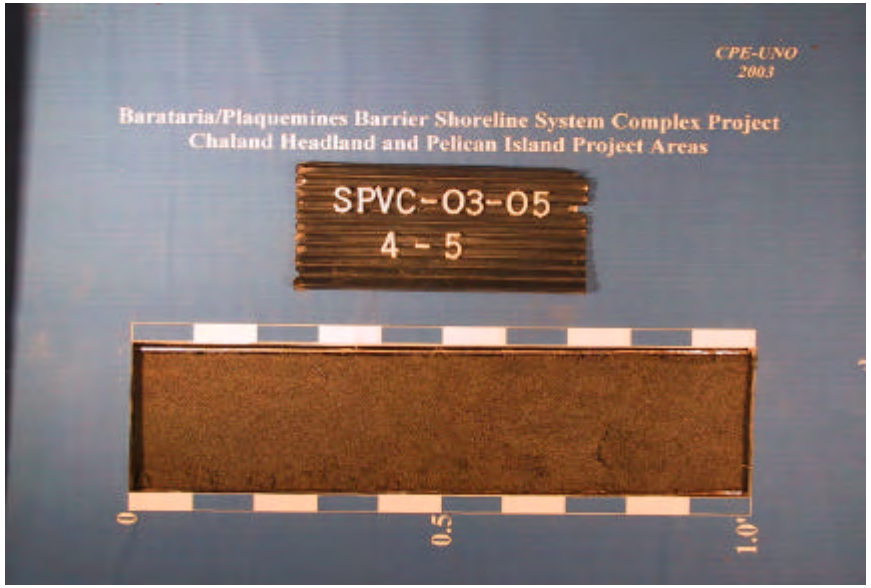
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-05
4 - 5
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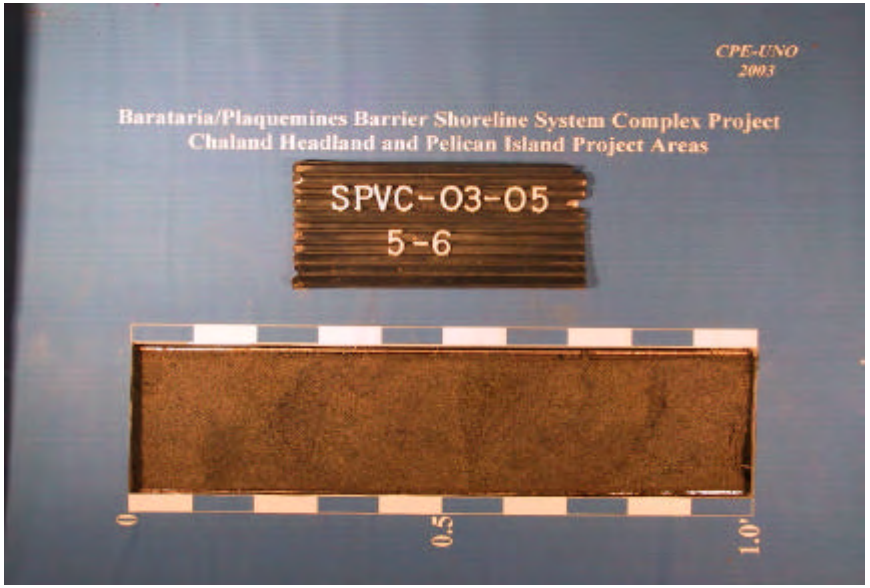
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-05
5-6
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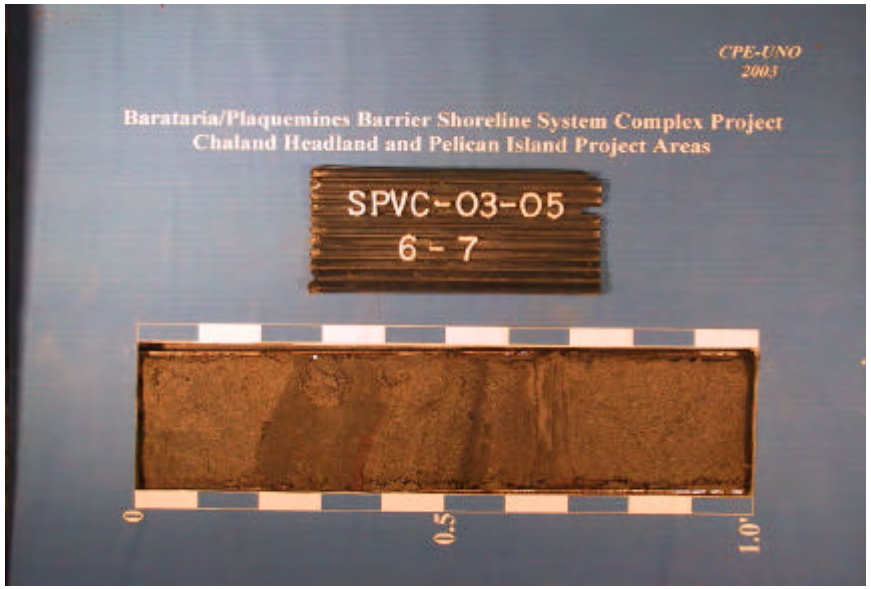

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-05
6 - 7
0
0.5
1.0'

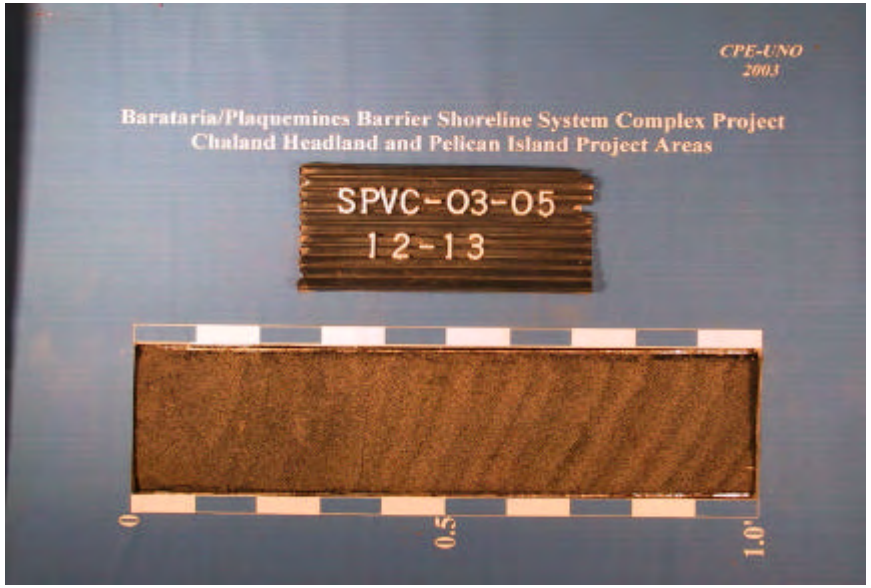
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-05
7 - 8
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-05
8 - 9
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-05
9 - 10
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-05
10 - 11
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-05
11 - 12
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-05
12-13
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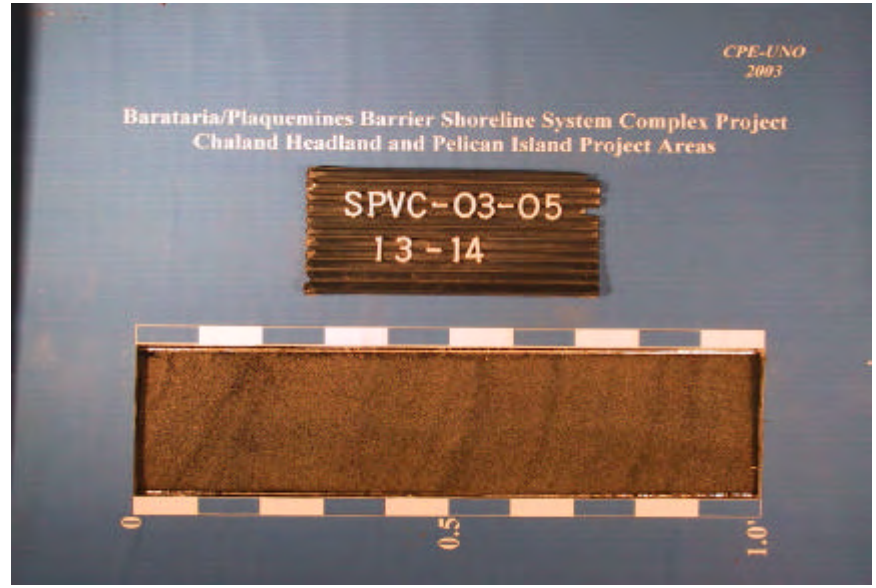
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-05
13-14
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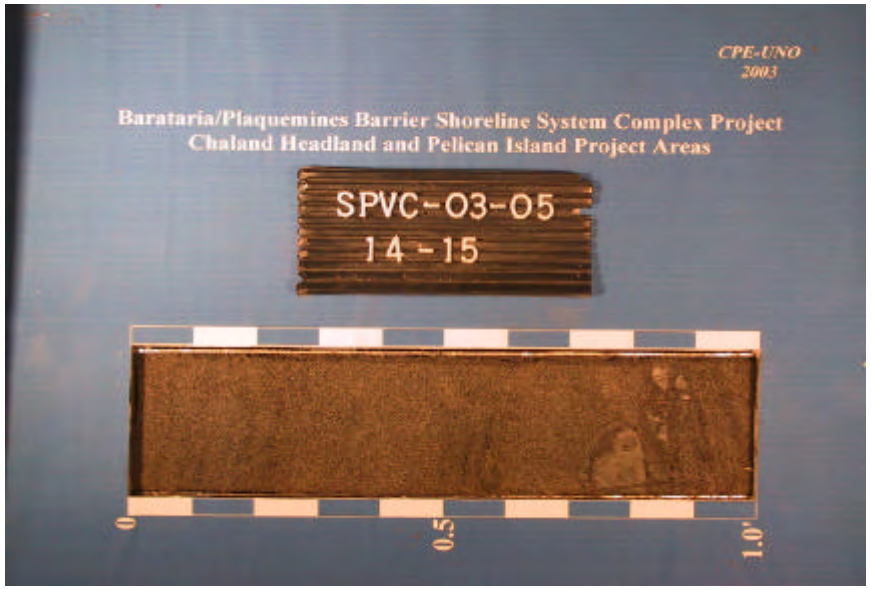
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-05
14-15
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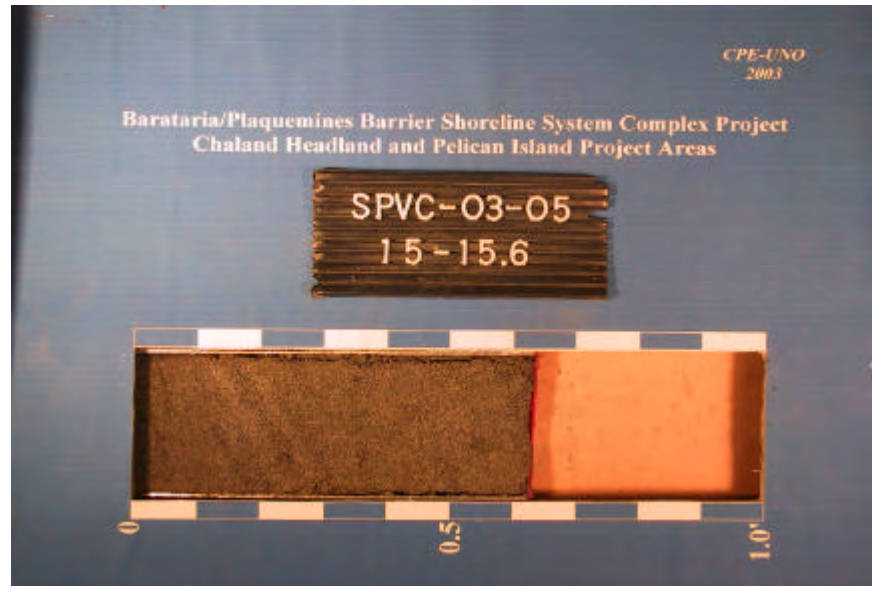
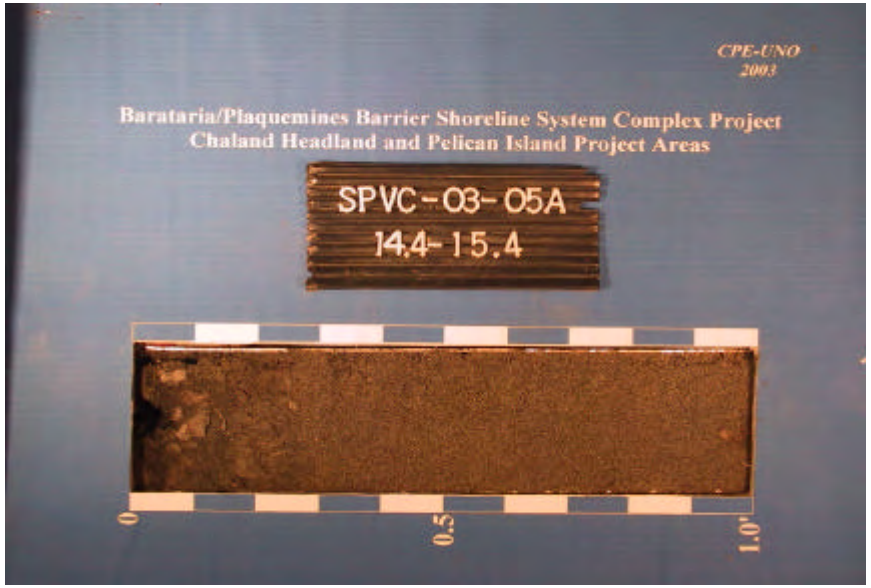
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-05
15-15.6
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-05A
14.4-15.4
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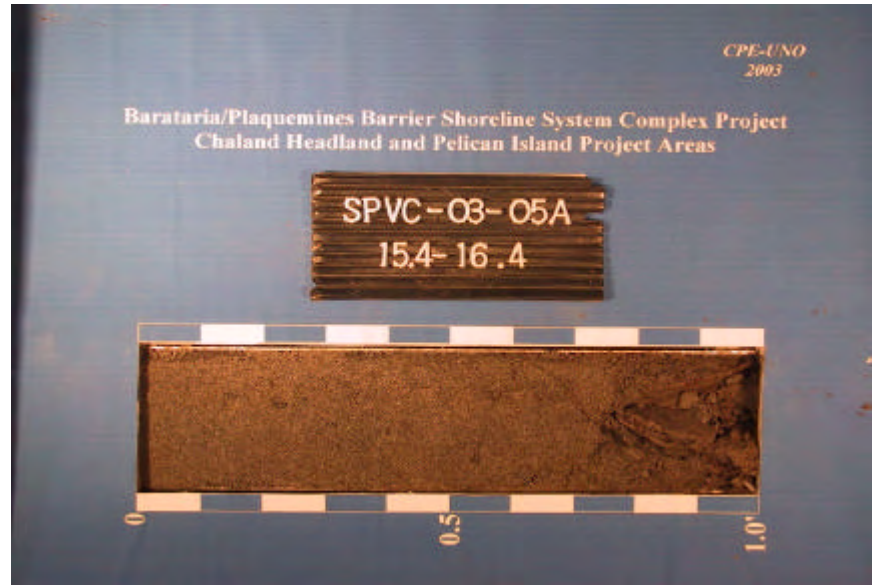
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-05A
15.4-16.4
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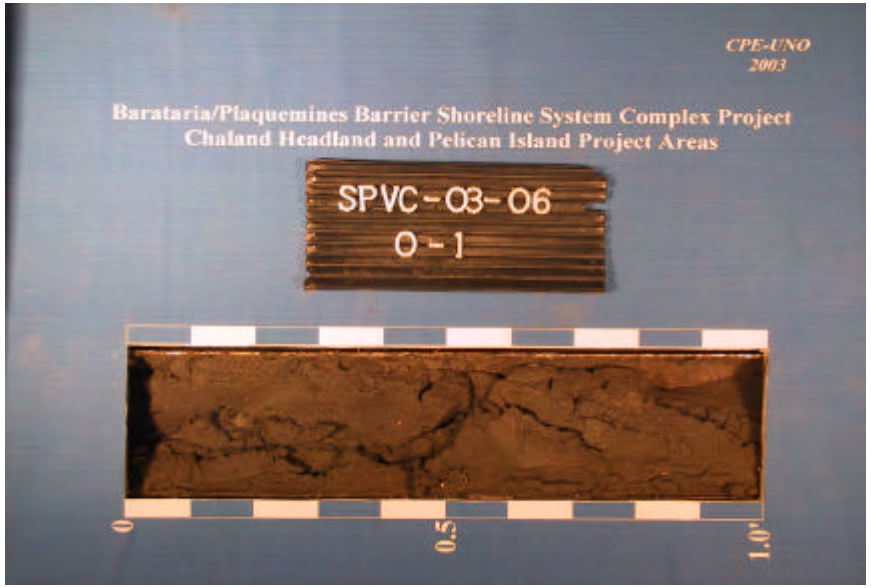
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-06
0-1
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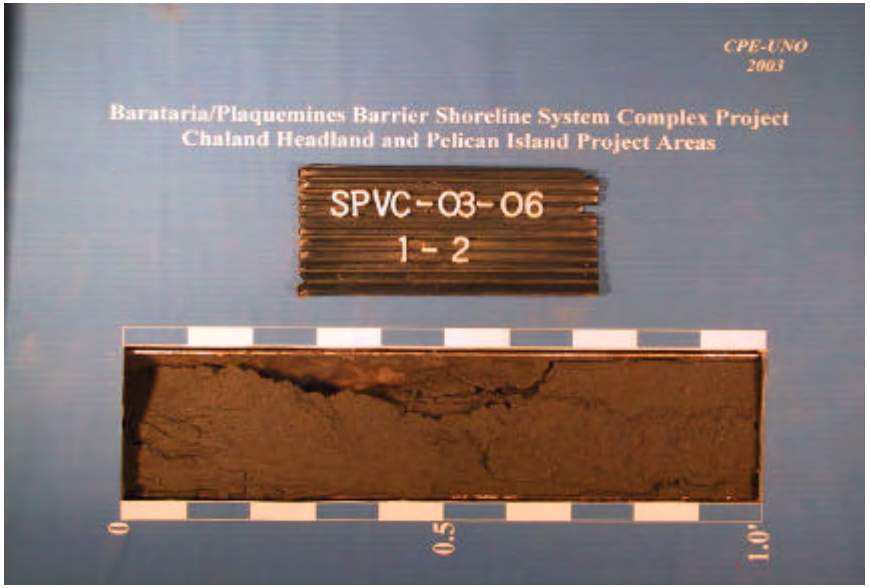
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-06
1-2
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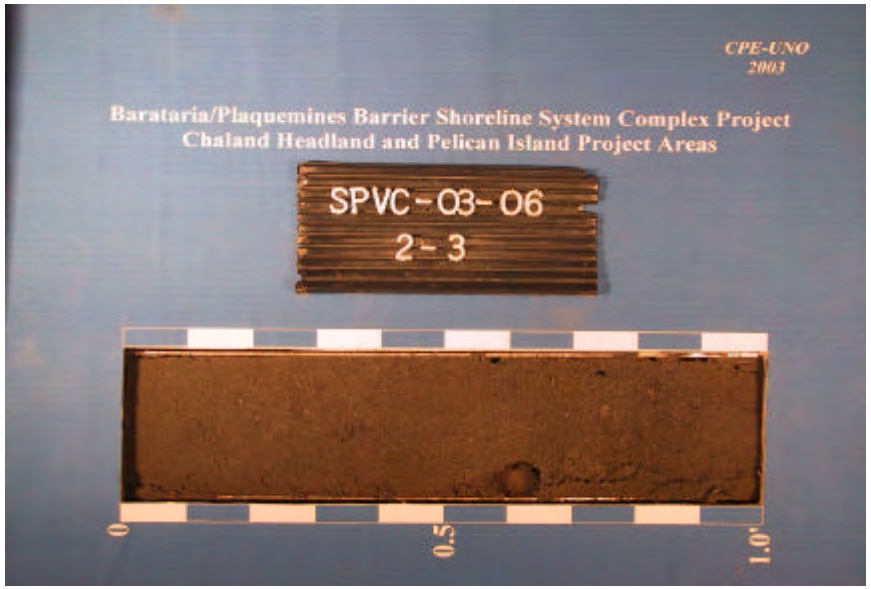
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-06
2-3
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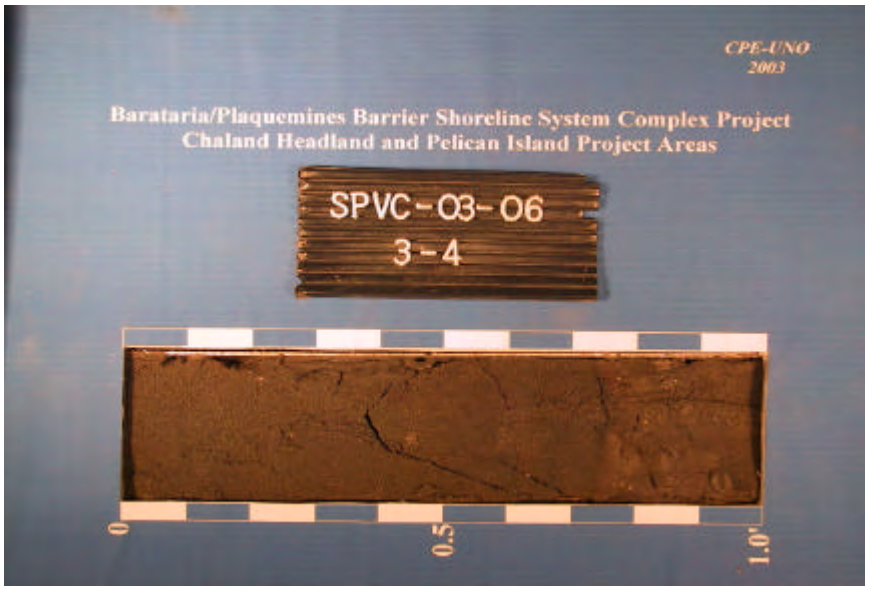
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-06
3-4
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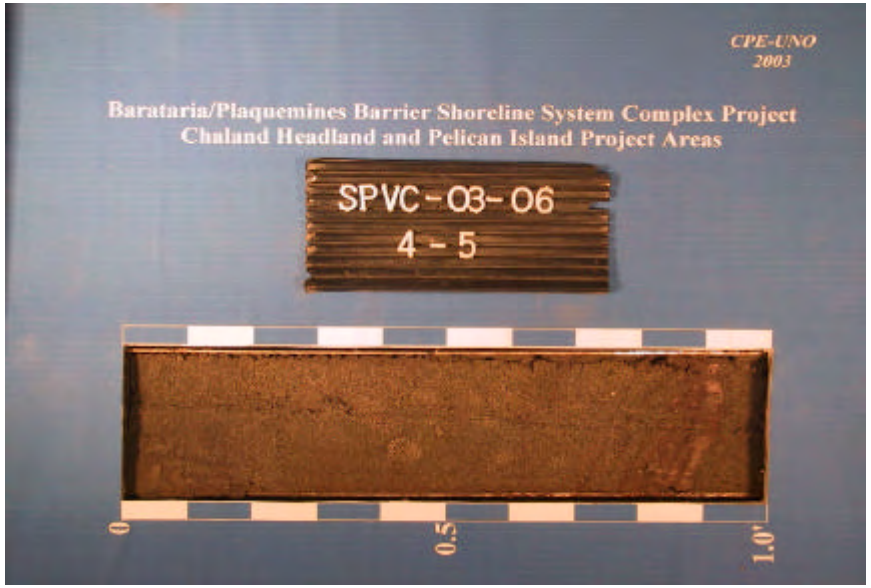
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-06
4 - 5
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-06
5 - 6
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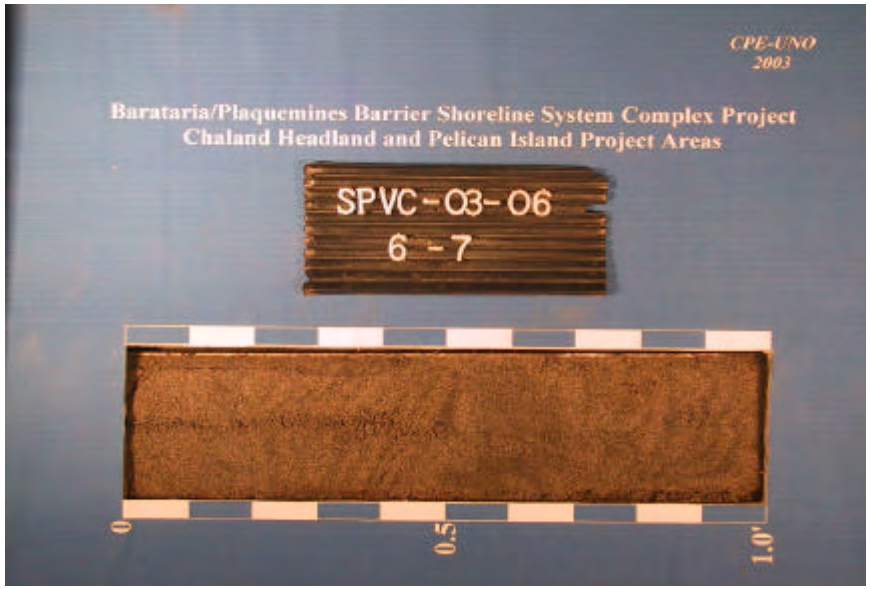
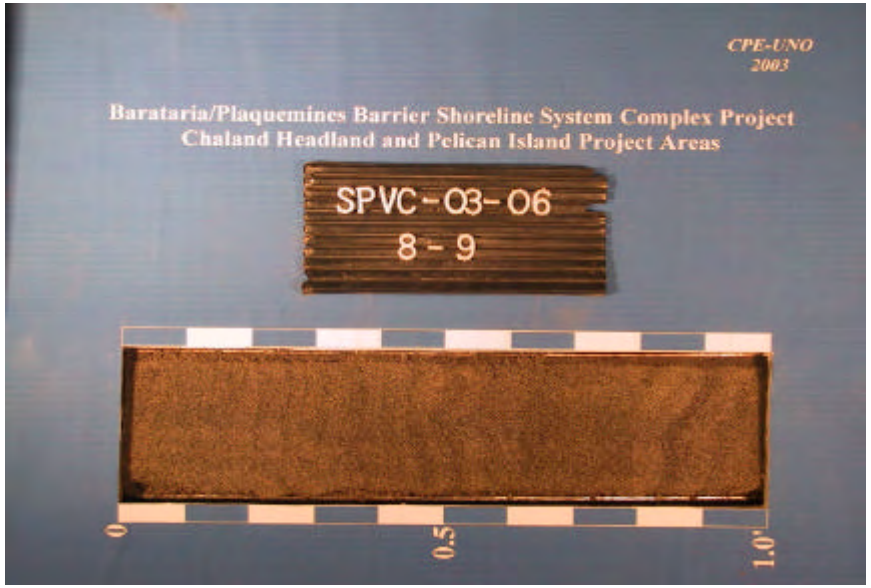
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-06
6 - 7
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-06
7 - 8
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-06
8-9
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-06
9-10
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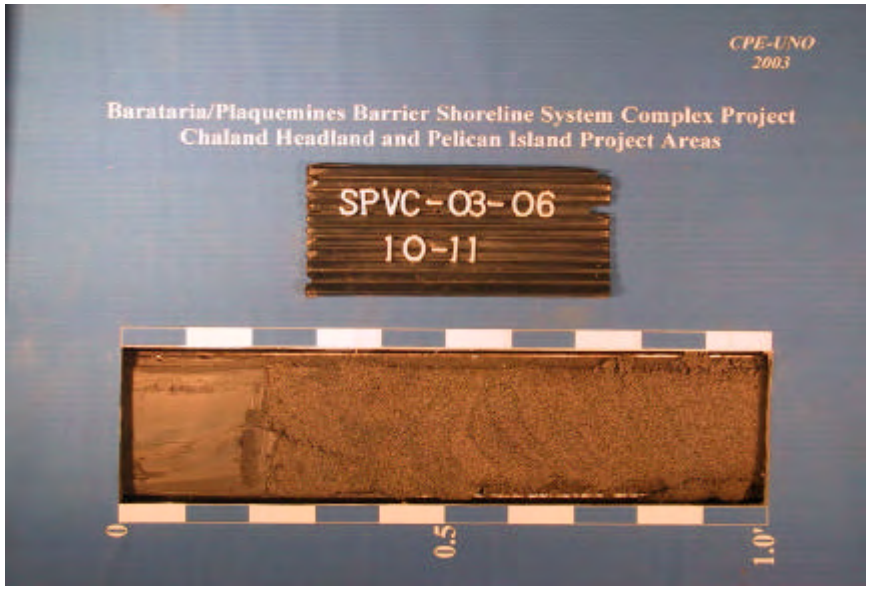
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-06
10-11
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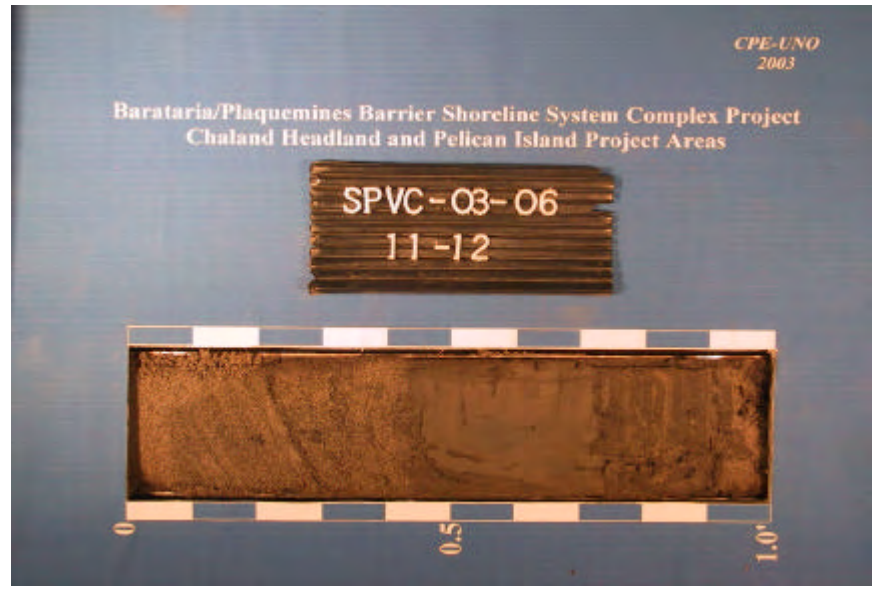
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-06
11-12
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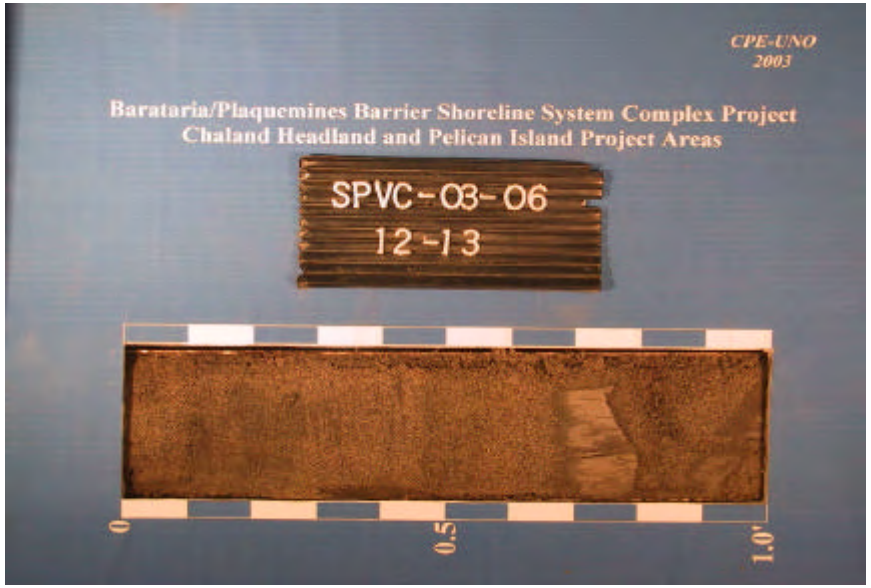
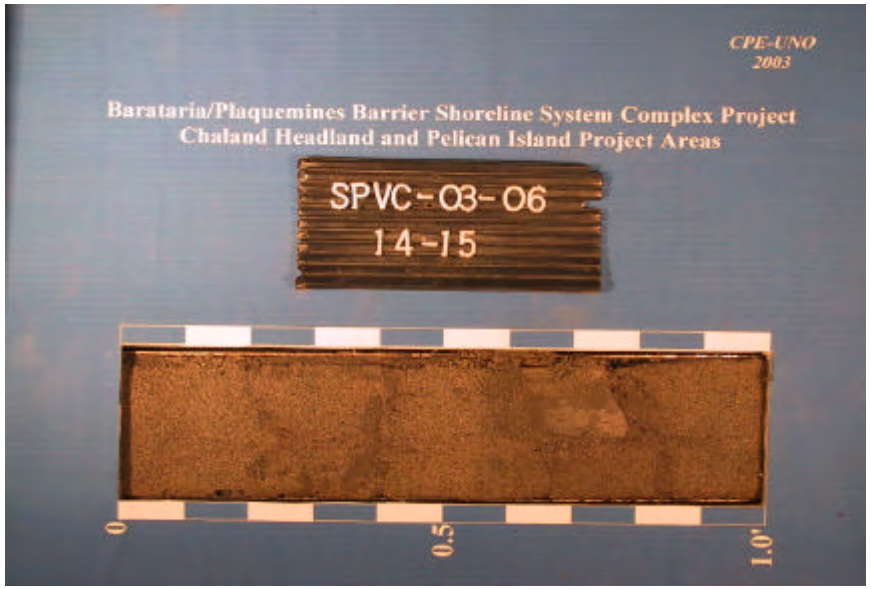
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-06
12-13
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-06
13-14
0
0.5
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-06
14-15
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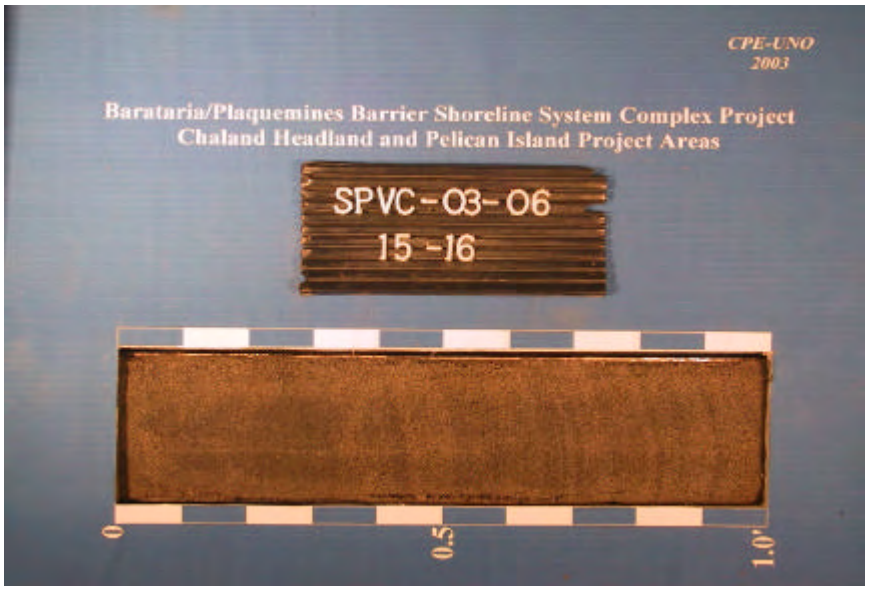
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-06
15-16
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1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-06
16-16.8
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-07
0-1
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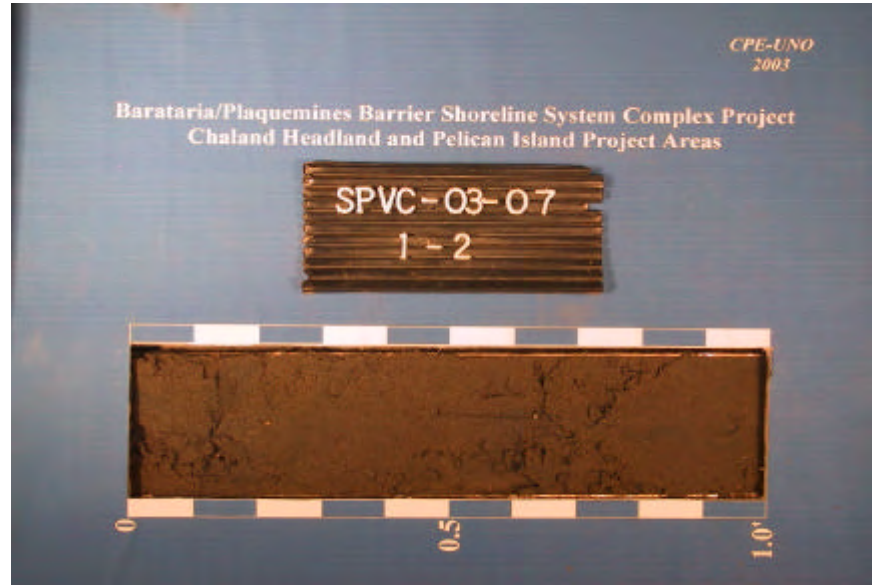
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-07
1-2
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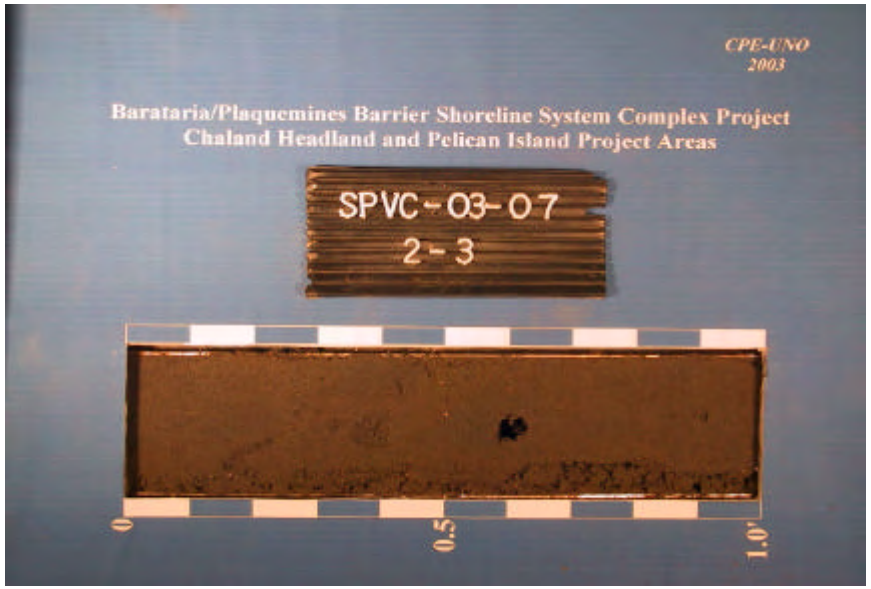
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-07
2-3
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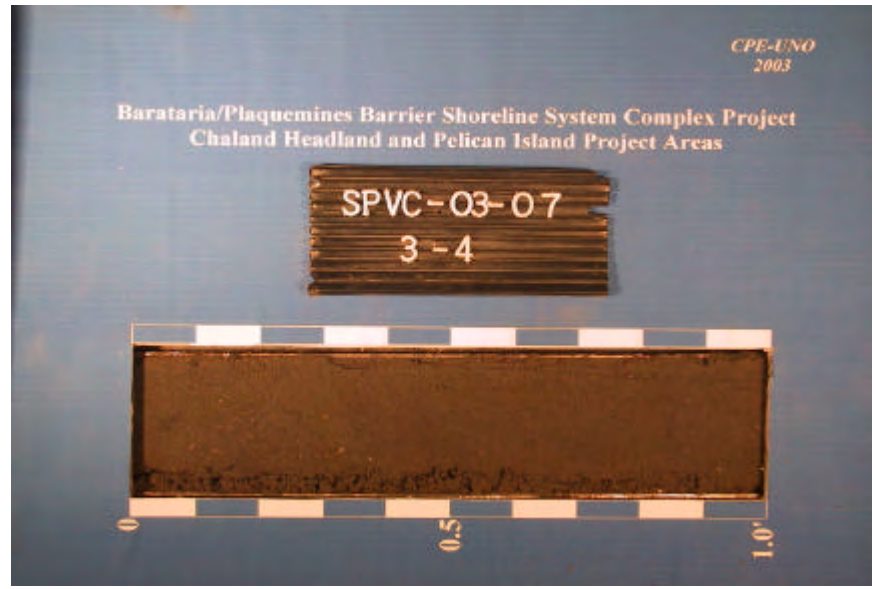
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-07
3-4
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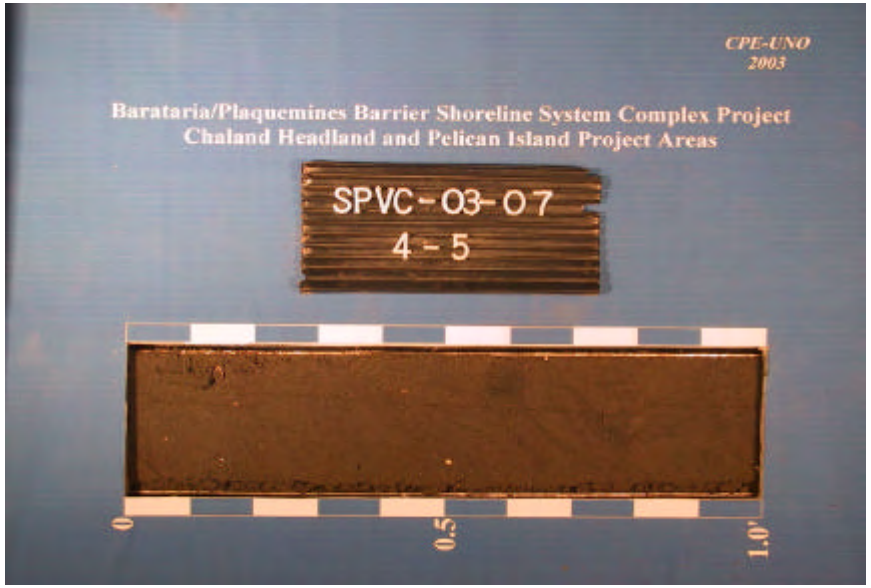
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-07
4-5
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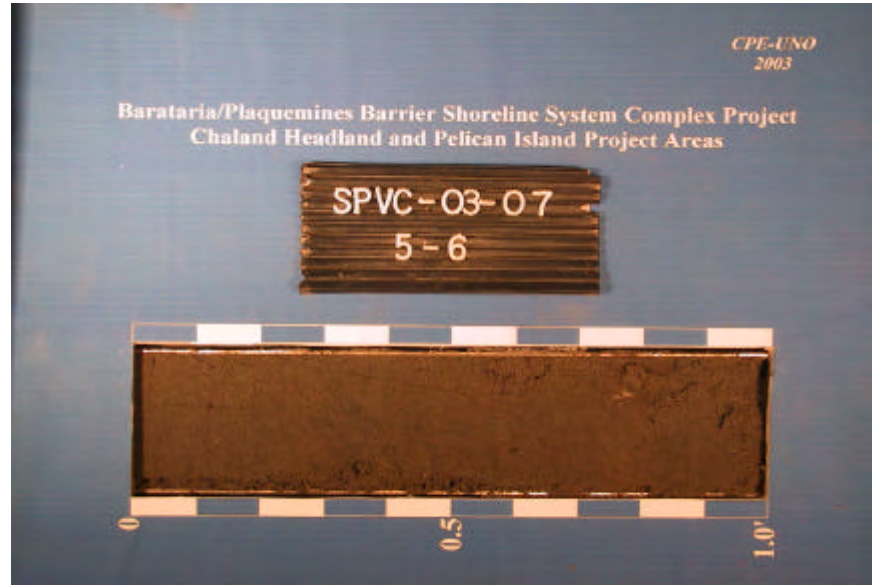
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-07
5-6
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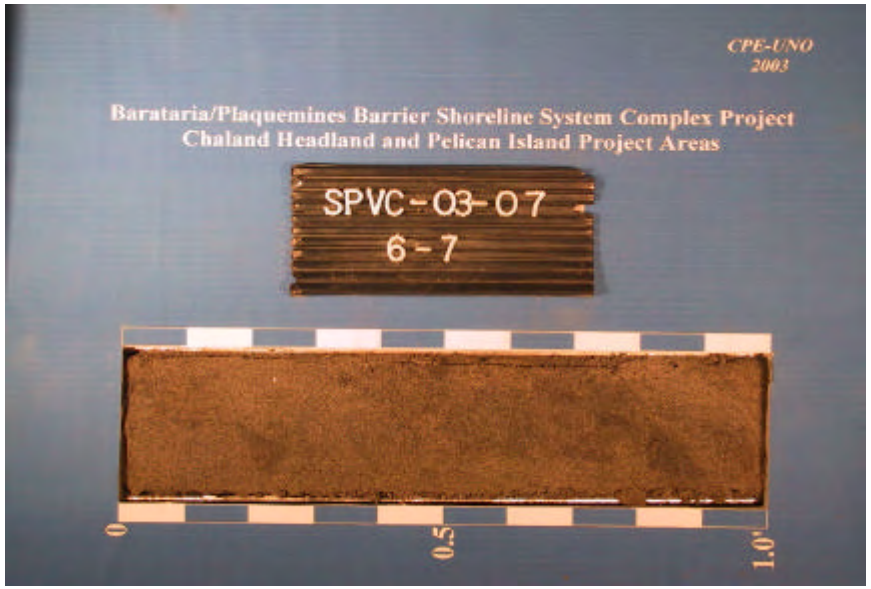
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-07
6-7
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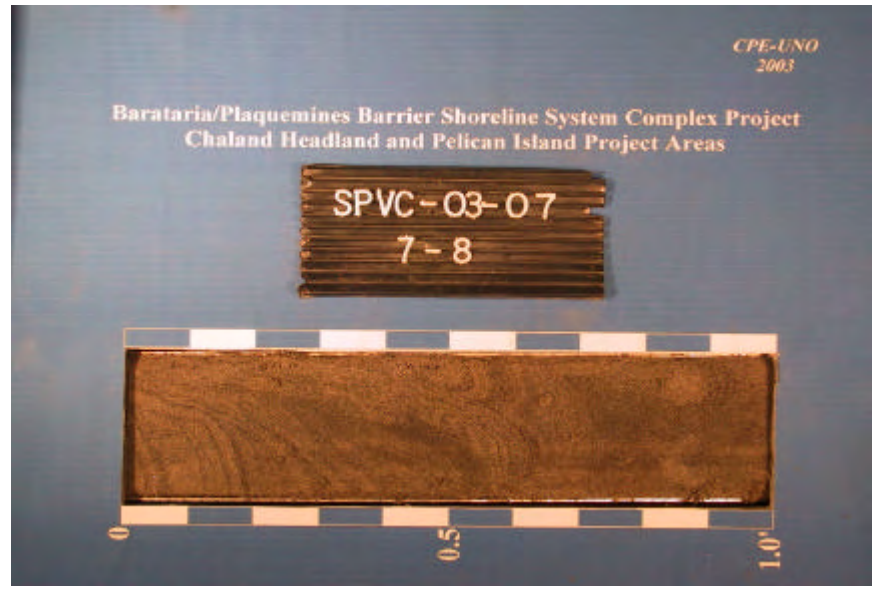
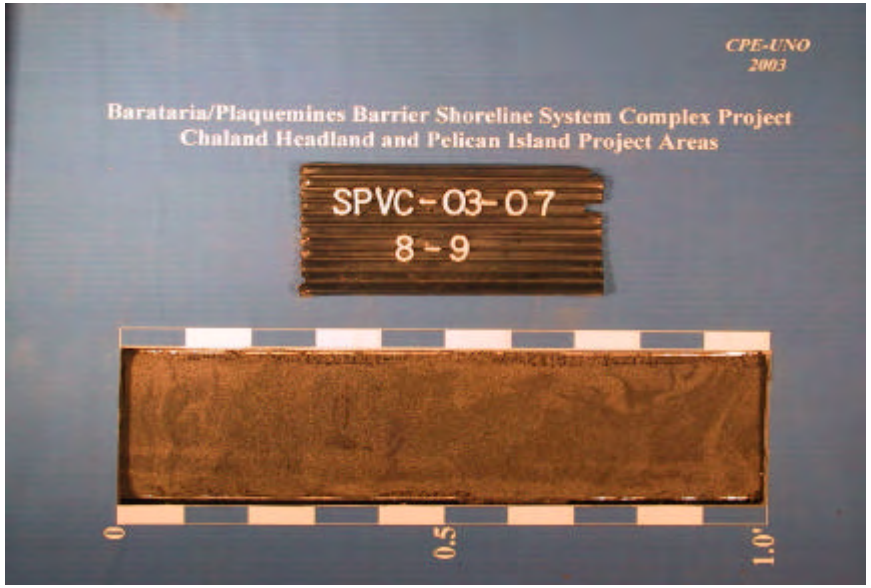
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-07
7-8
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-07
8-9
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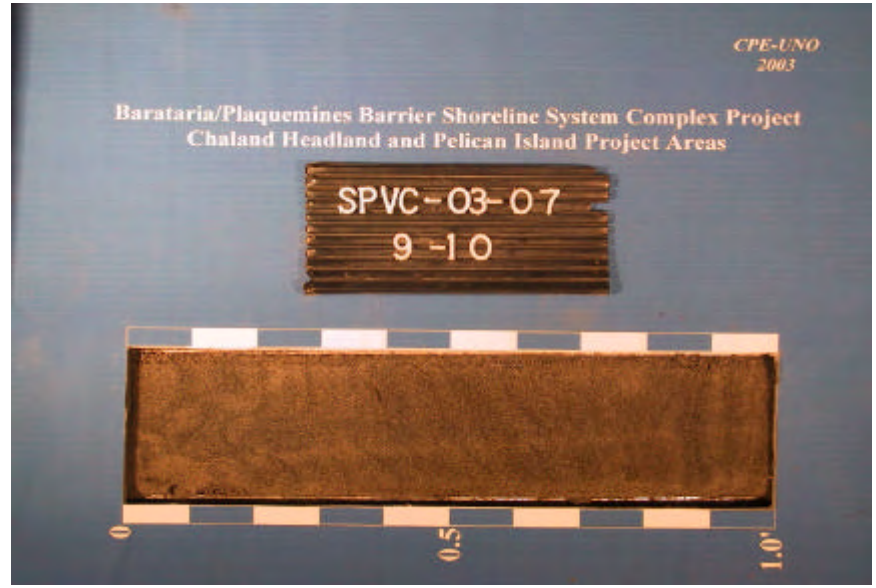
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-07
9-10
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-07
10-11
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-07
11-12
0
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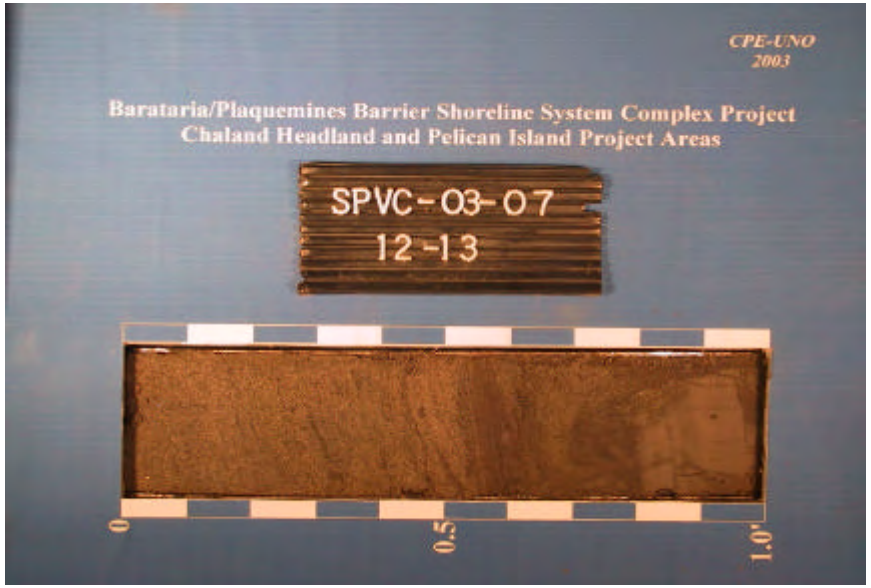
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-07
12-13
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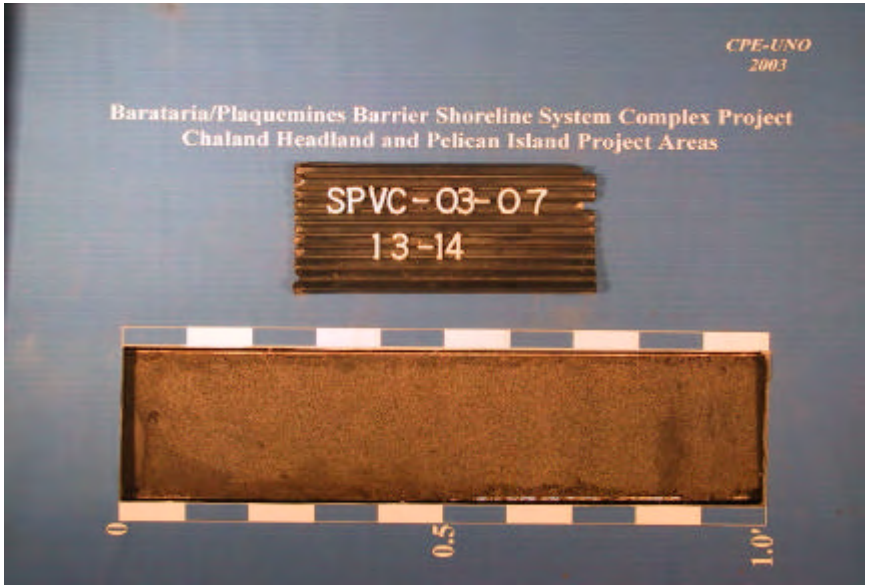
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-07
13-14
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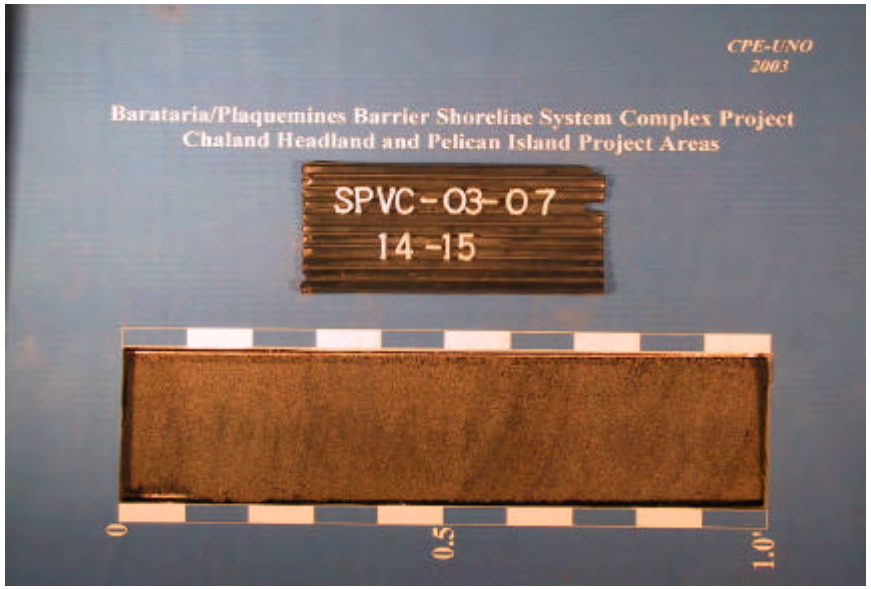
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-07
14-15
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0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-07
15-16
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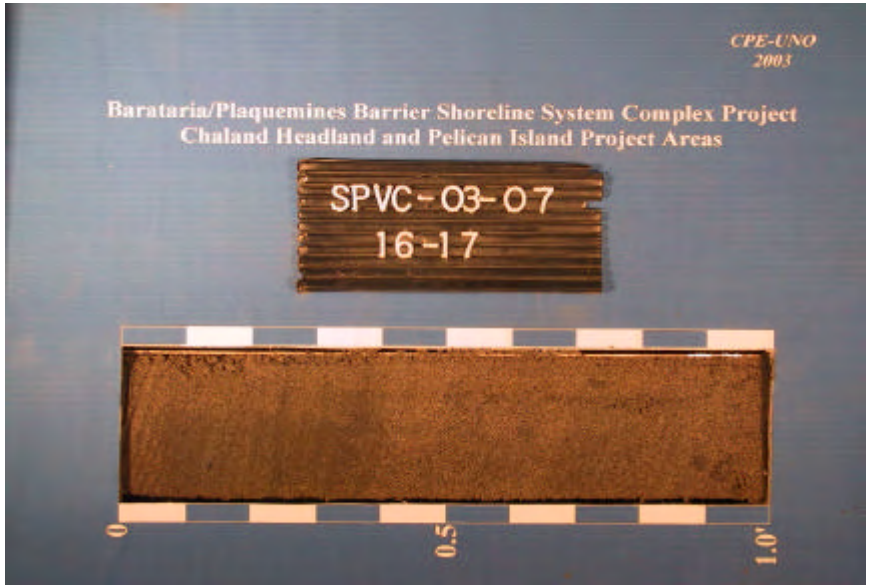
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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-07
16-17
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0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-07
17-17.6
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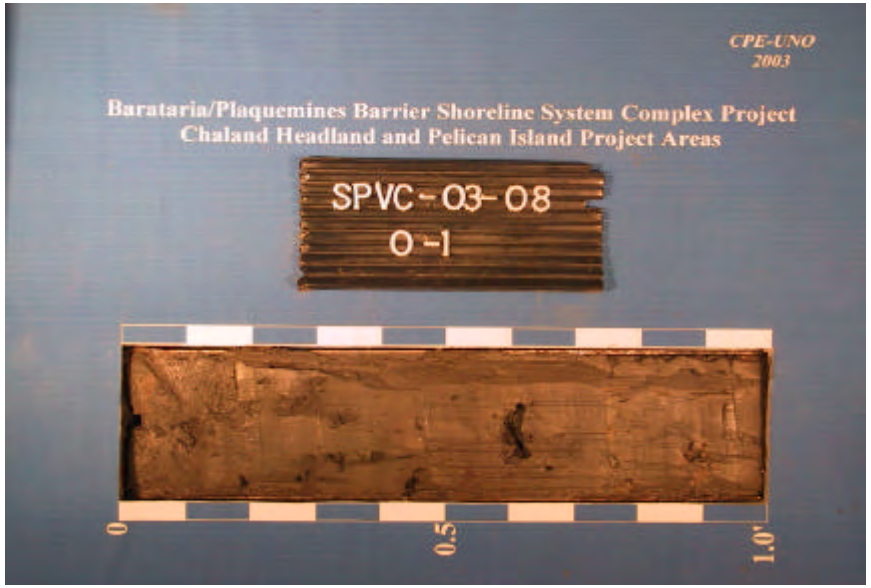
0.5
1.0'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Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-08
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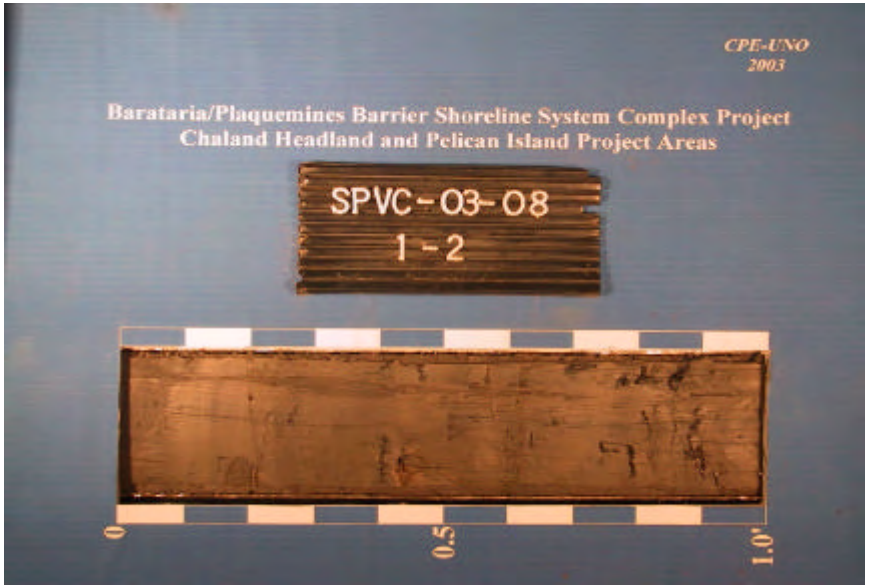
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-08
1-2
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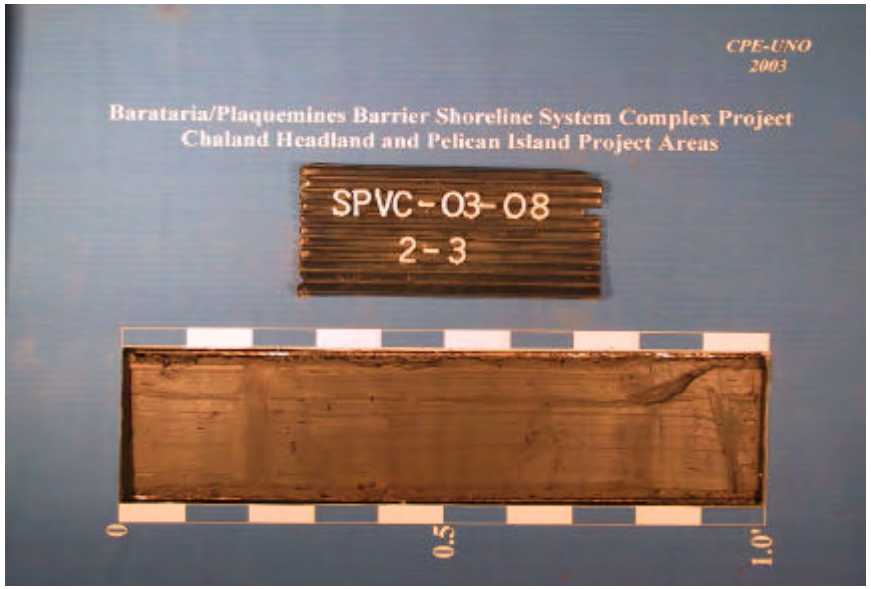
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-08
2-3
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-08
3-4
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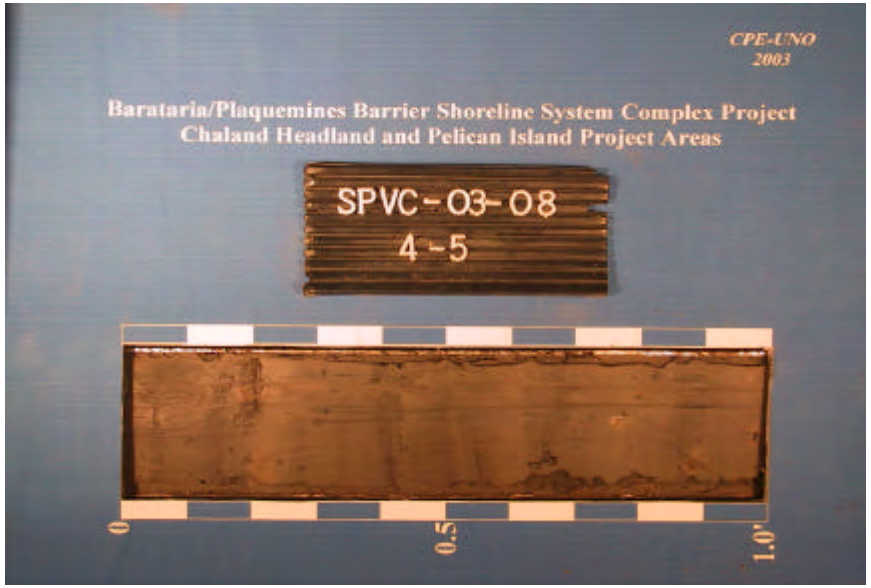
1.0'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Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-08
4-5
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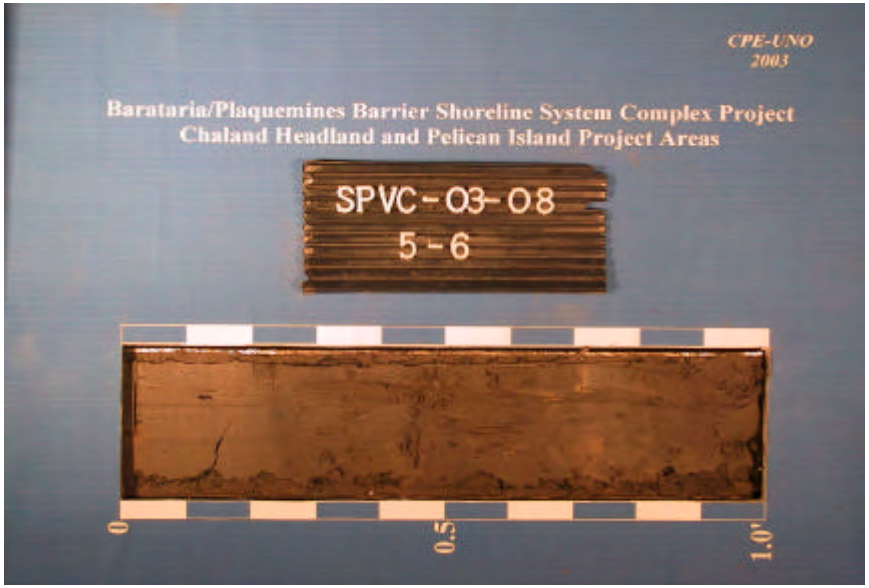
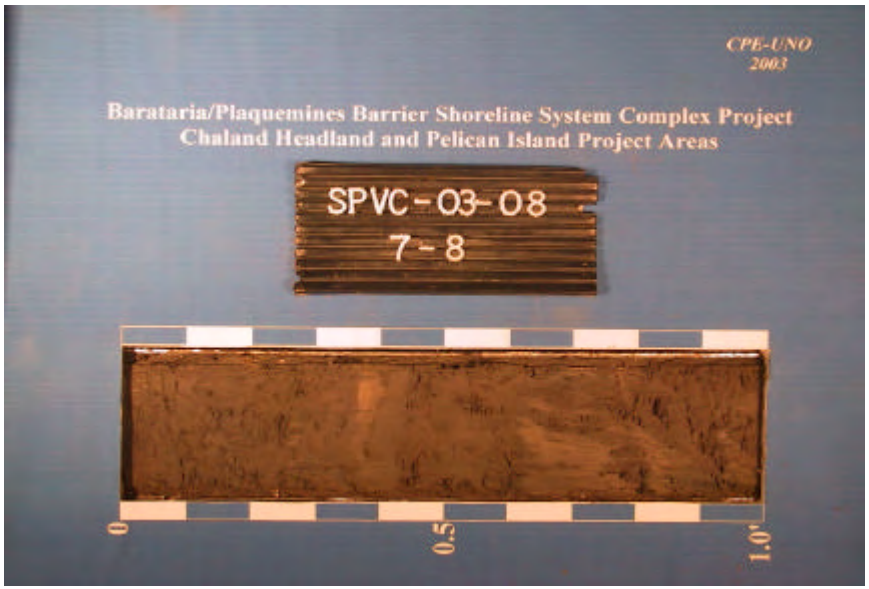
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-08
5-6
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-08
6-7
0
0.5
1.0'

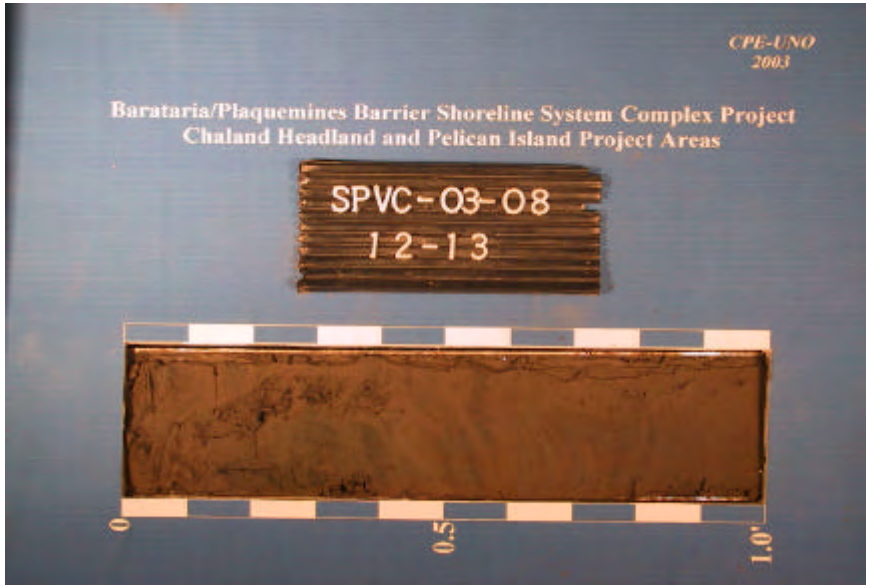

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-08
7-8
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-08
8-9
0
0.5
1.0'

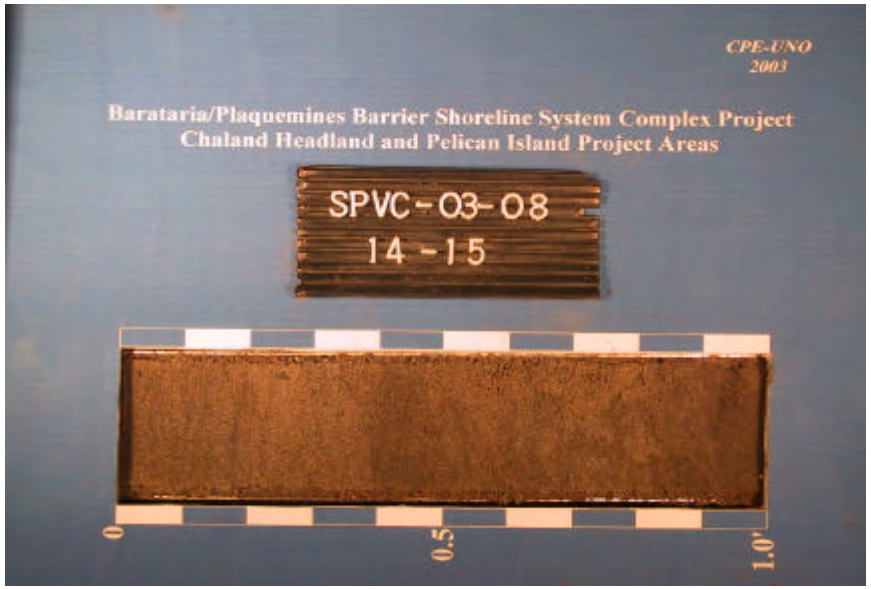
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-08
9-10
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-08
10-11
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-08
11-12
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-08
12-13
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-08
13-14
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-08
14-15
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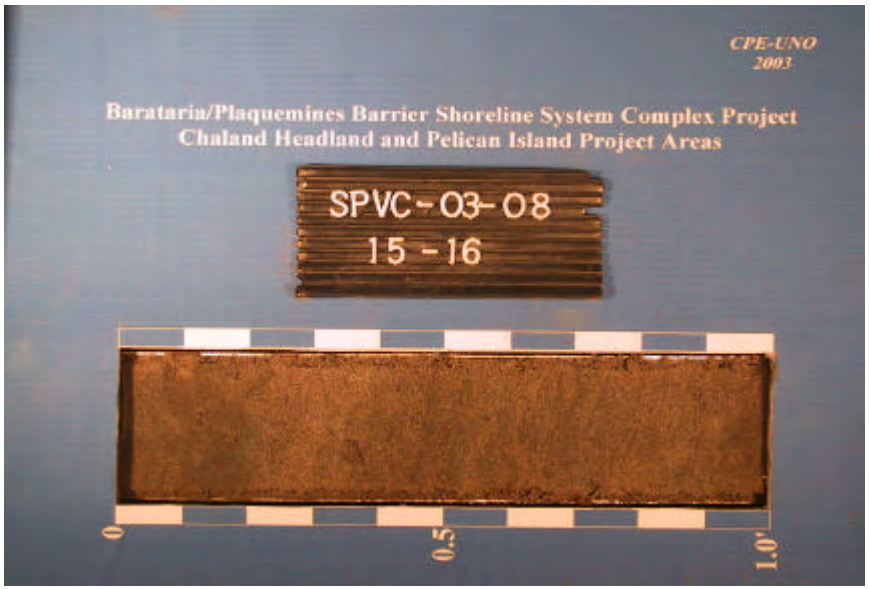
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-08
15-16
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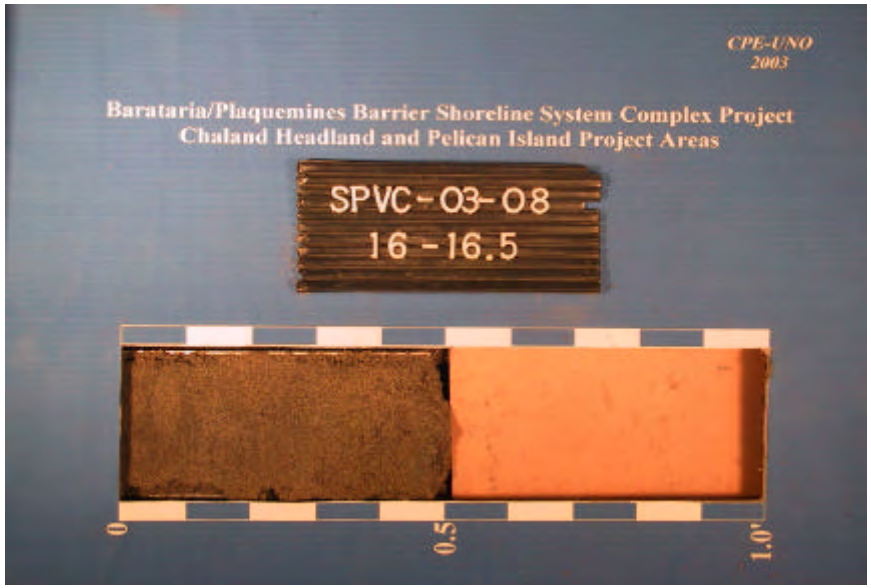
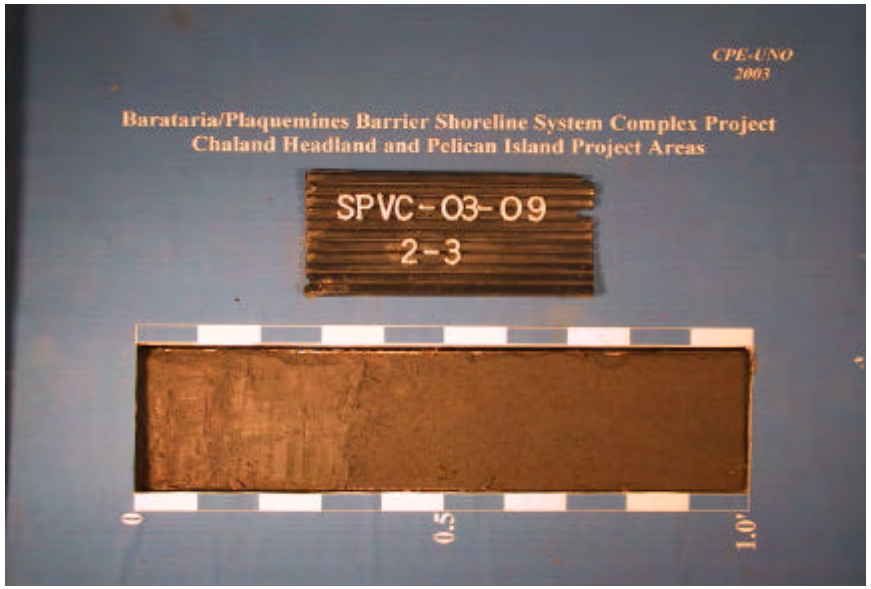
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-08
16-16.5
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-09
0-1
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-09
1-2
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-09
2-3
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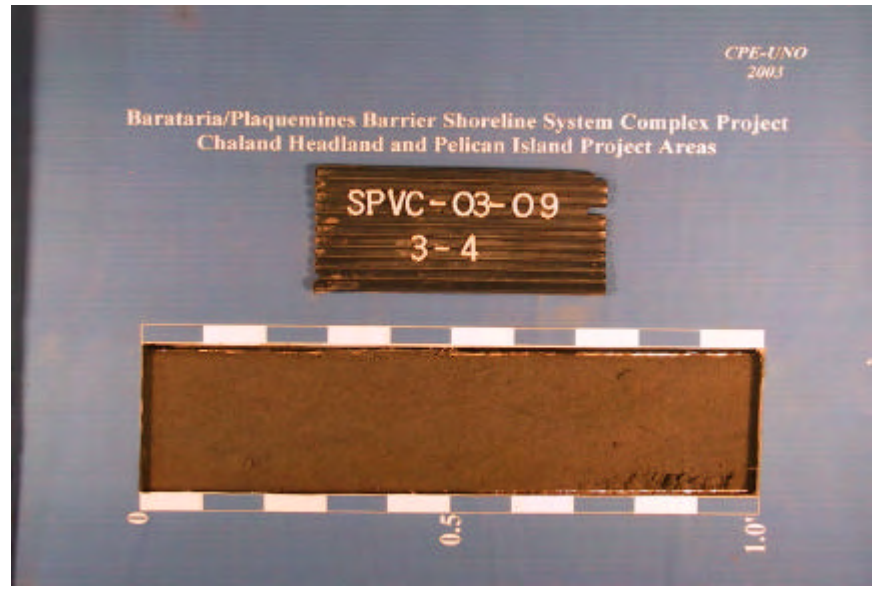
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-09
3-4
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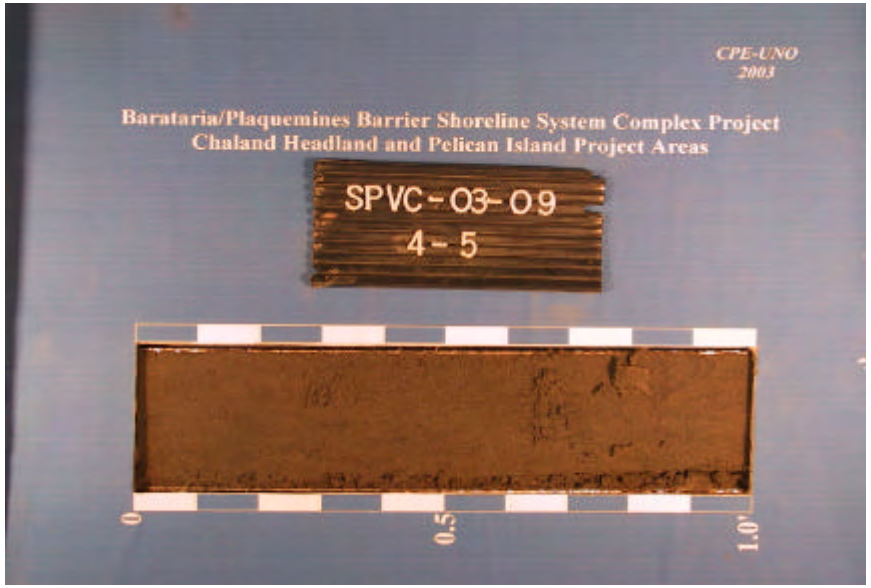
0.5
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-09
4-5
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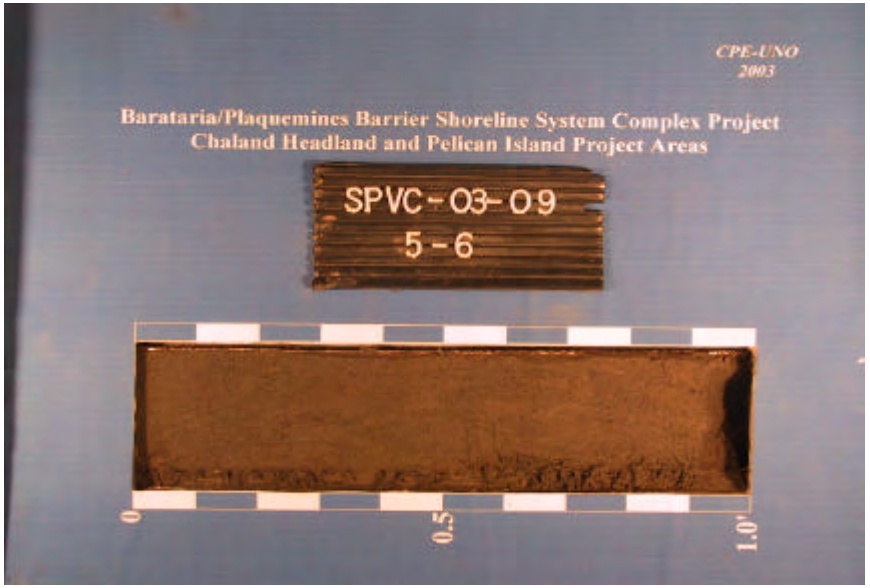
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-09
5-6
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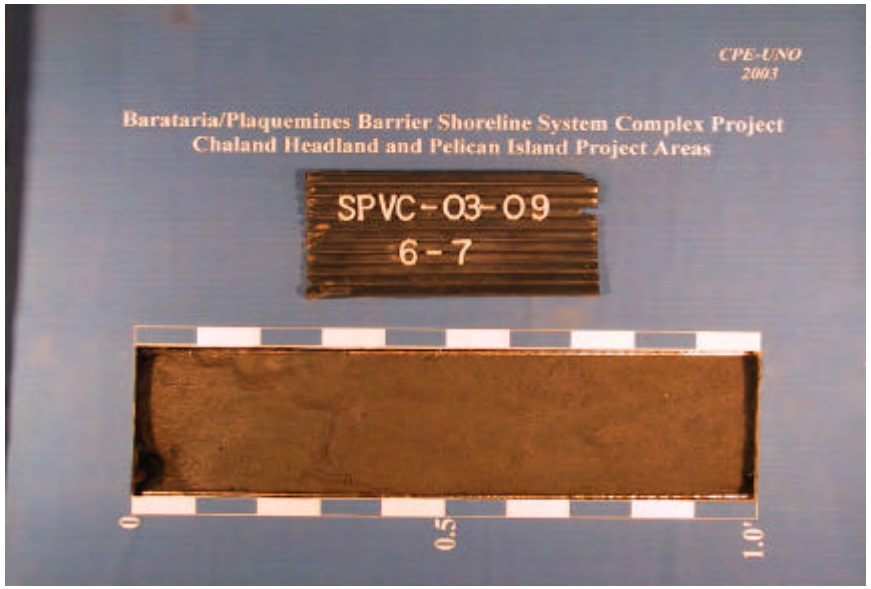
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-09
6-7
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-09
7-8
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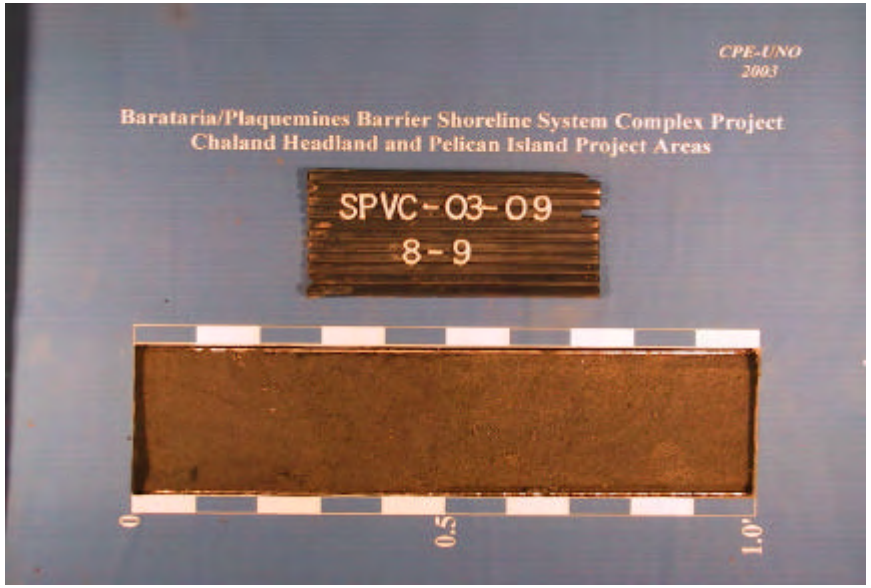
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-09
8-9
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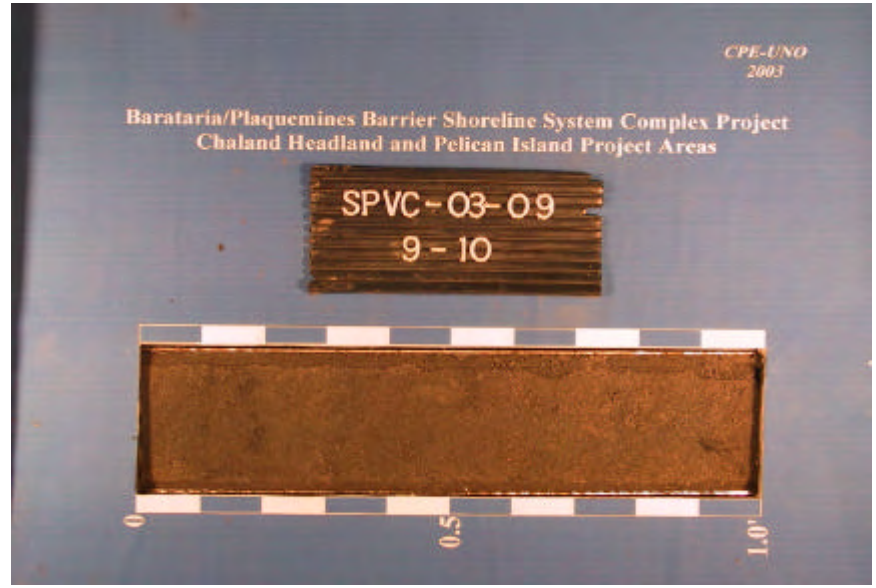
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-09
9-10
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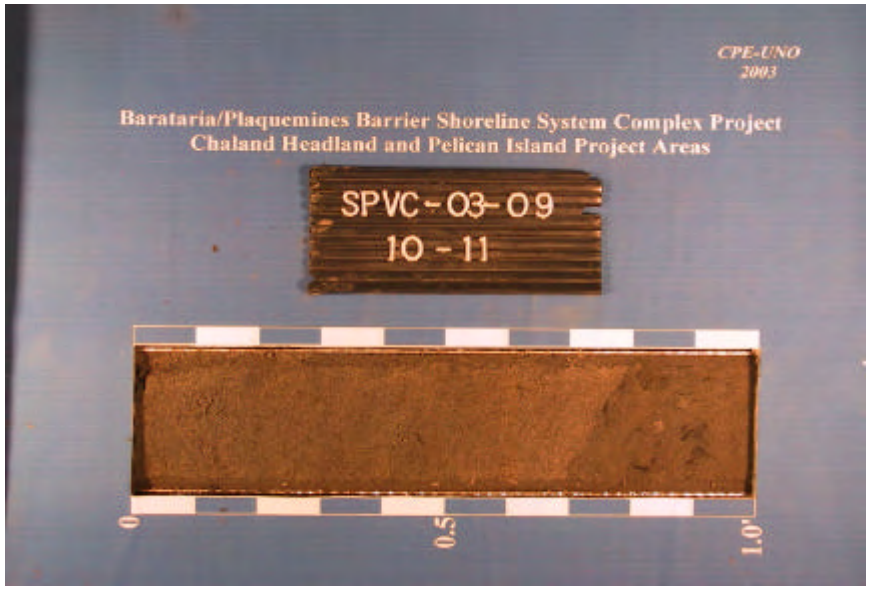
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-09
10-11
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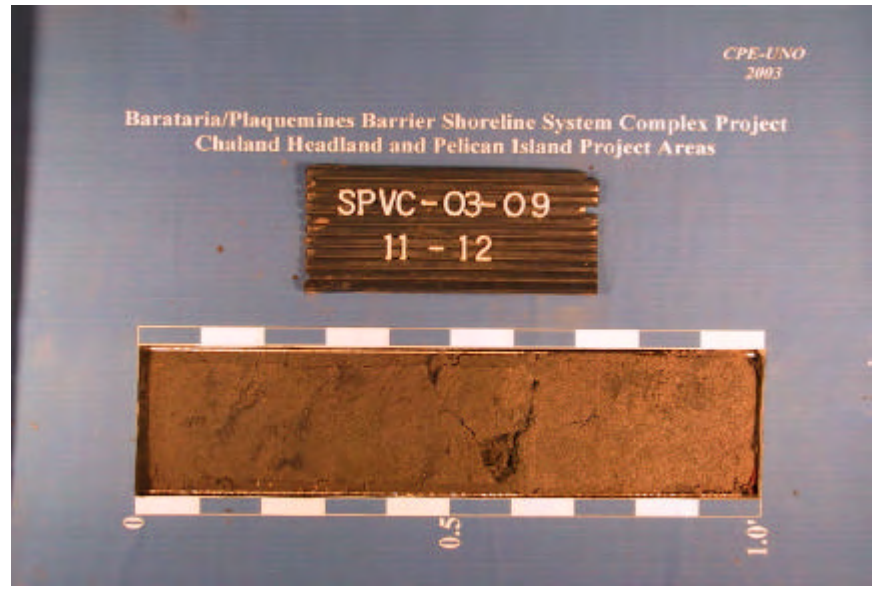
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-09
11-12
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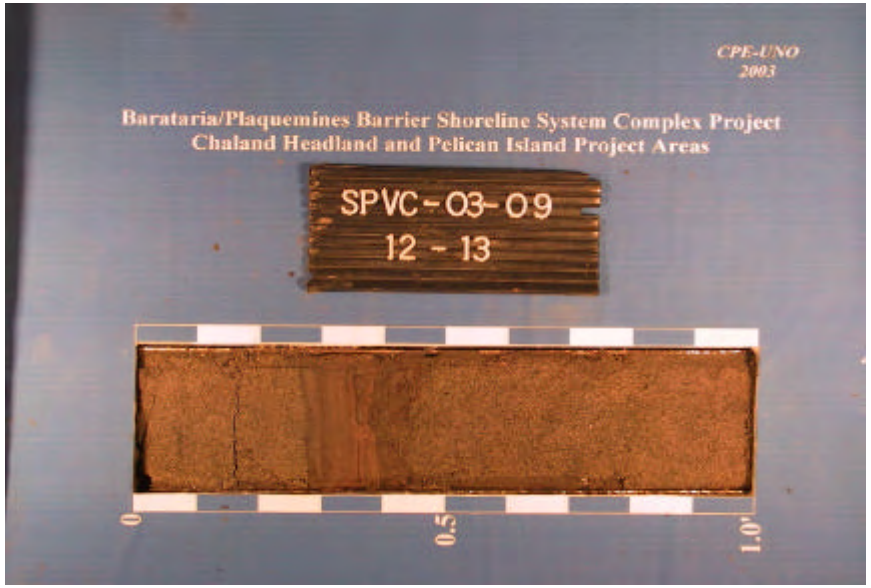
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-09
12 - 13
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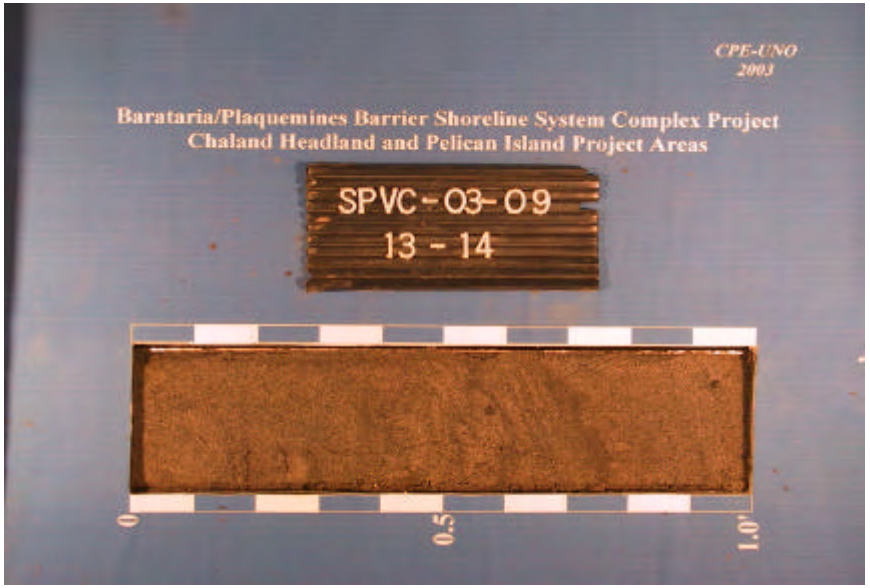
1.0'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Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-09
13 - 14
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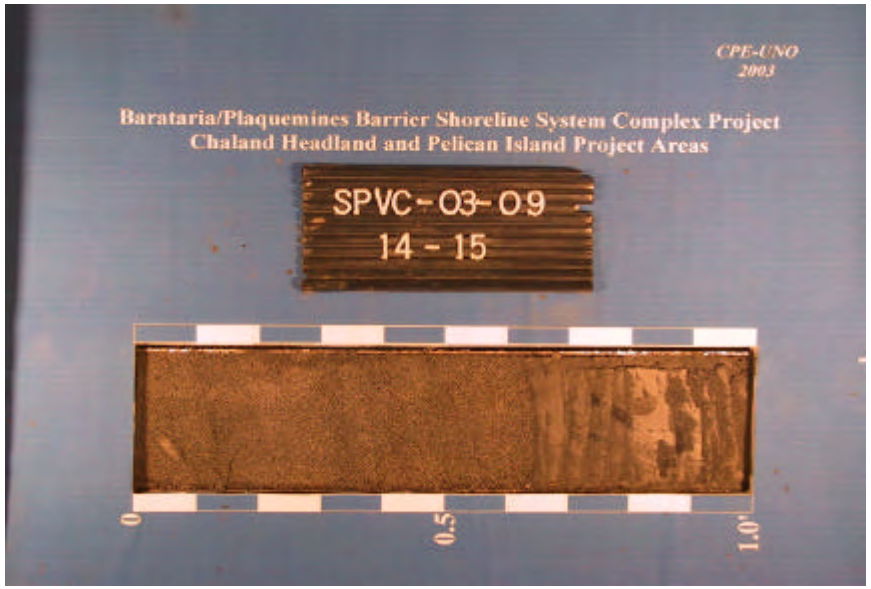
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-09
14 - 15
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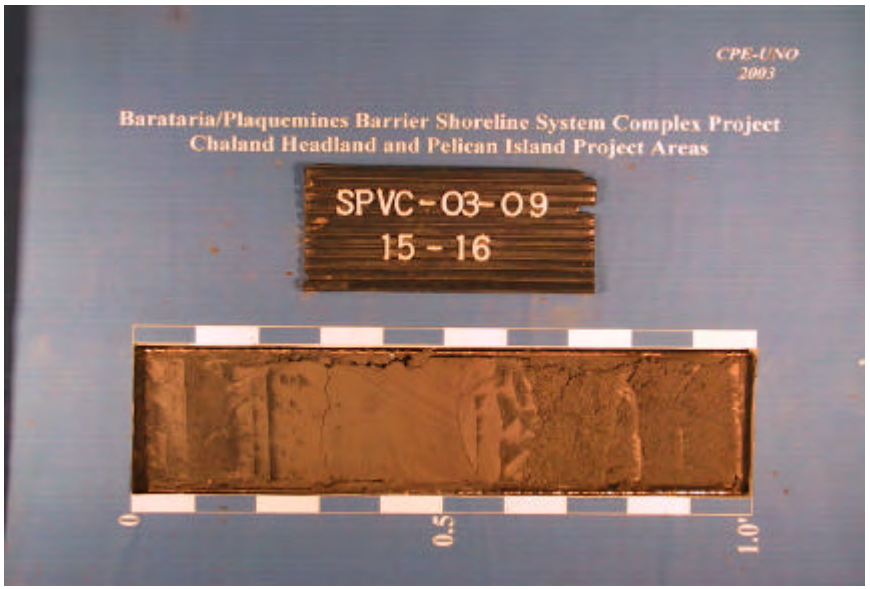
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-09
15 - 16
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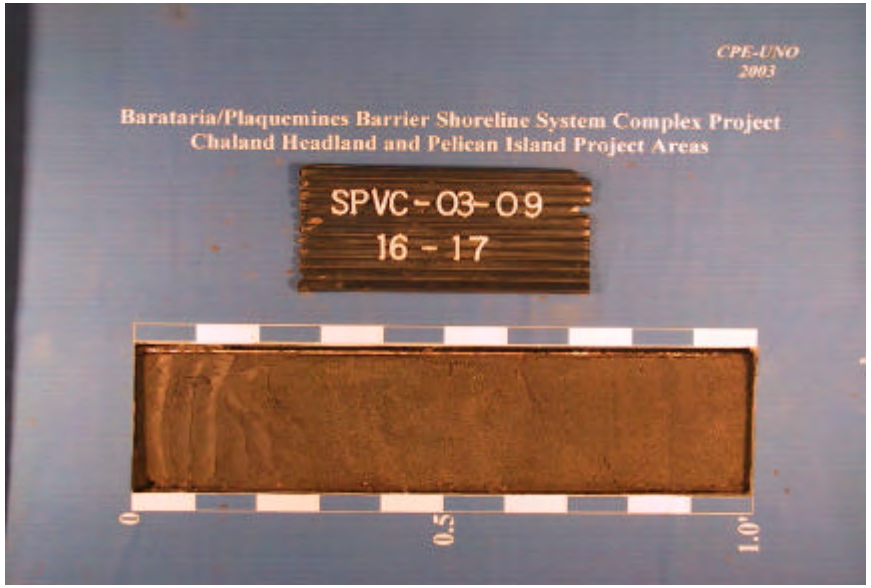
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-09
16 - 17
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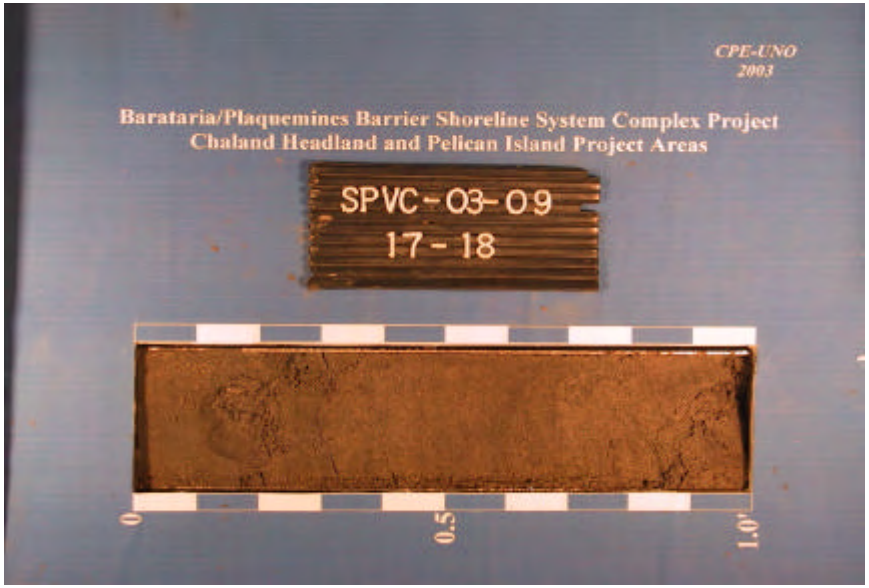
1.0'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Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-09
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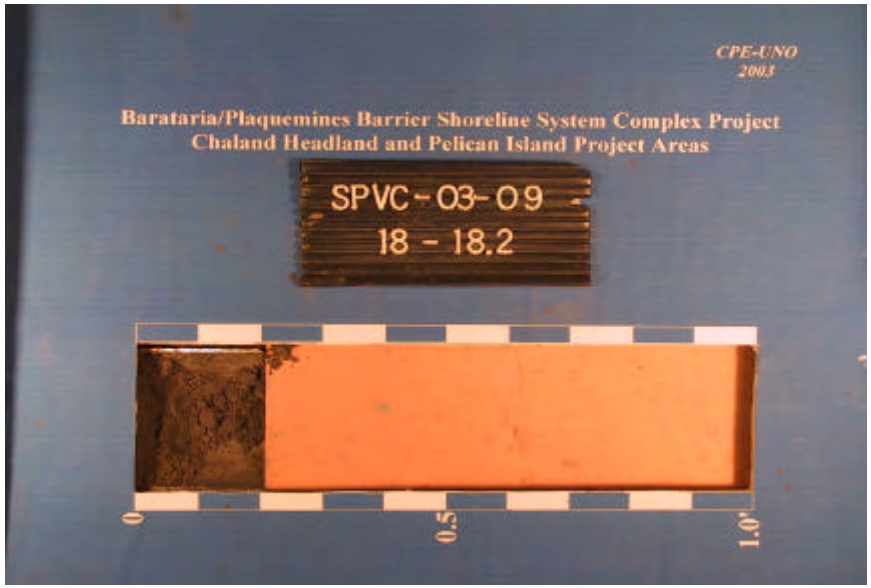
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-09
18 - 18.2
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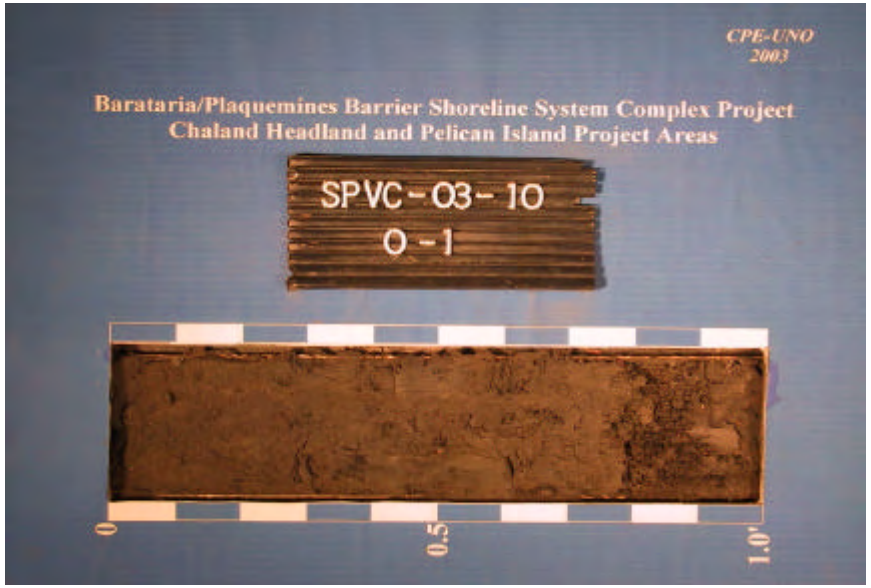
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-10
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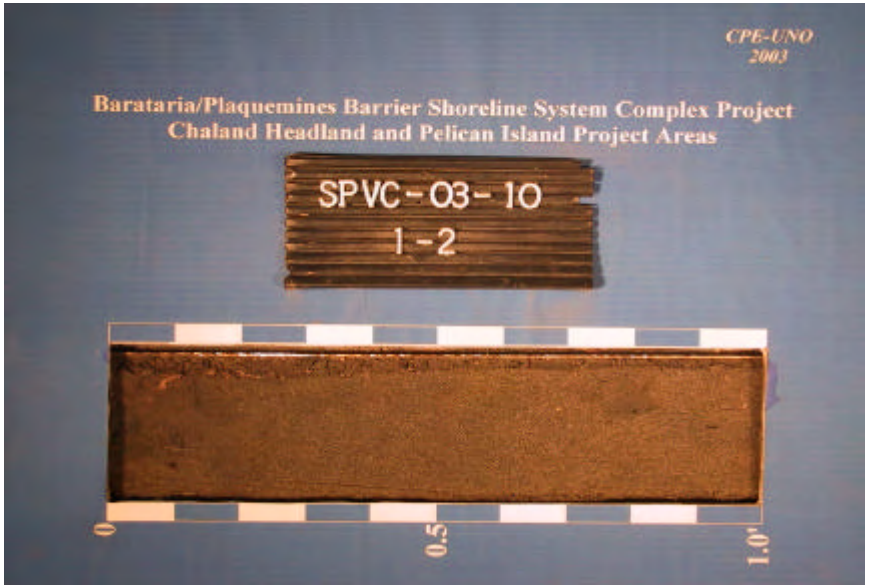
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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-10
1-2
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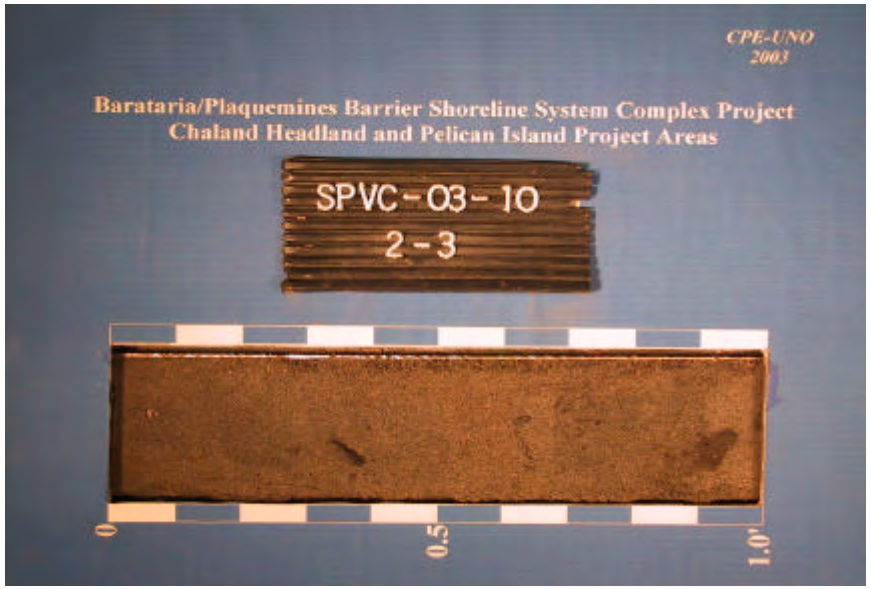
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-10
2-3
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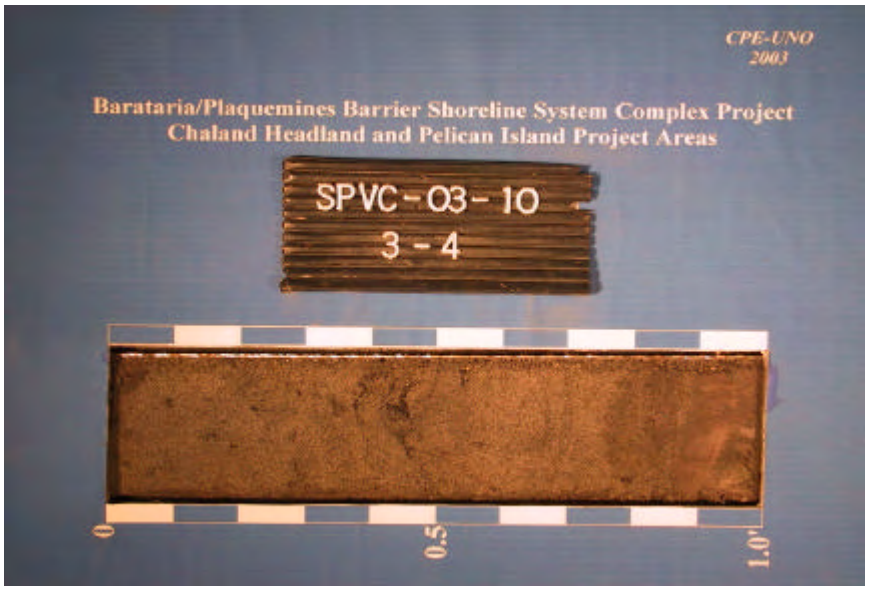
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-10
3-4
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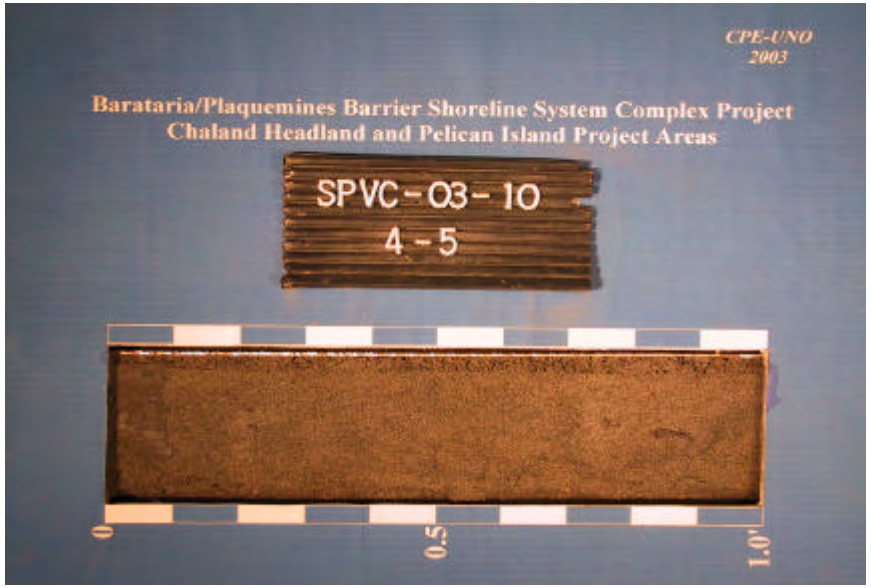
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-10
4-5
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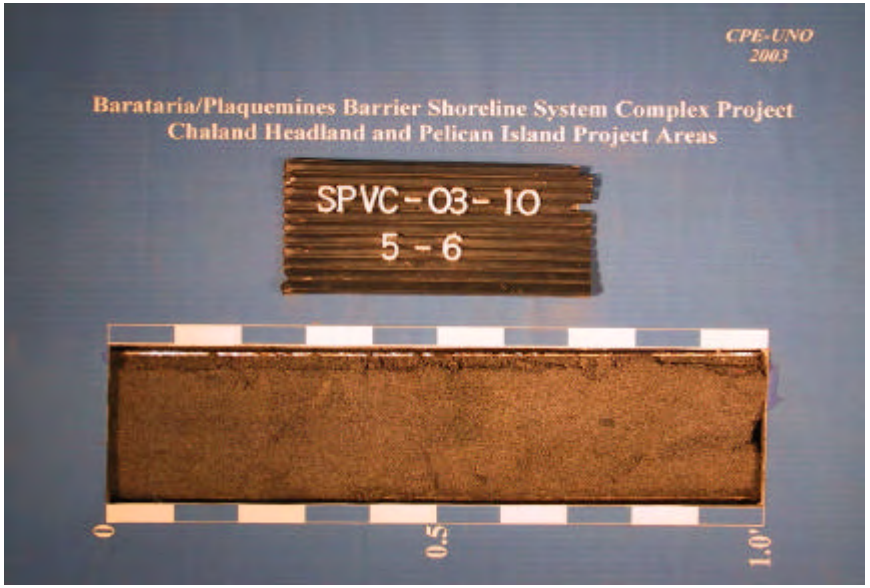
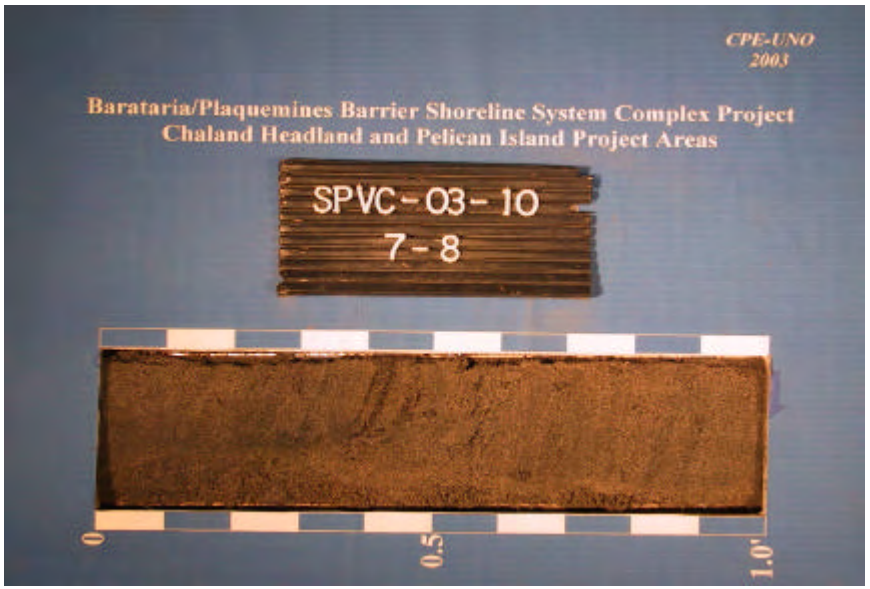
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-10
5-6
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-10
6-7
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-10
7-8
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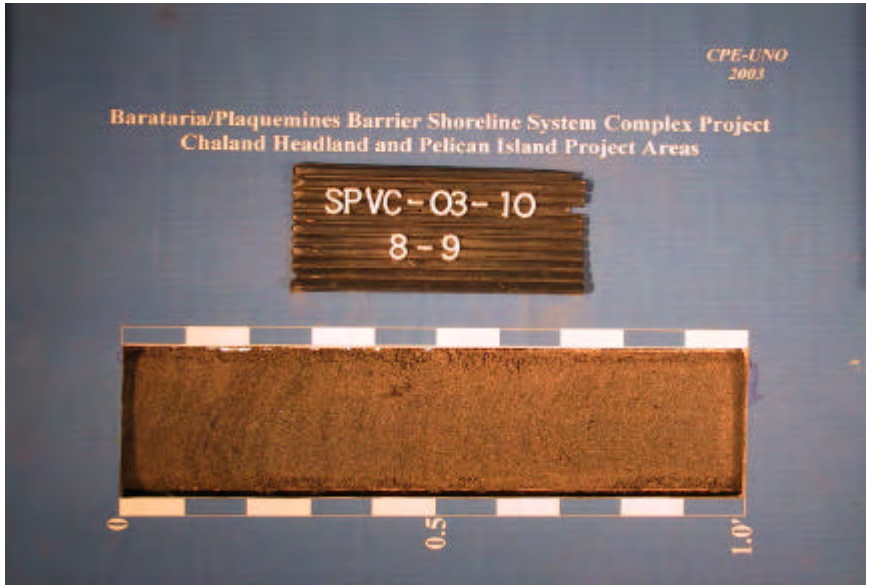
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-10
8-9
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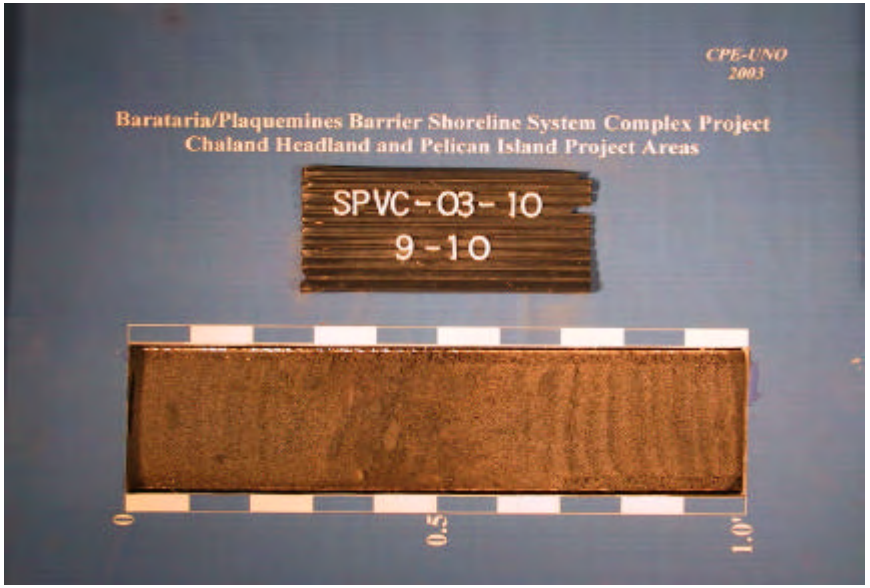
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-10
9-10
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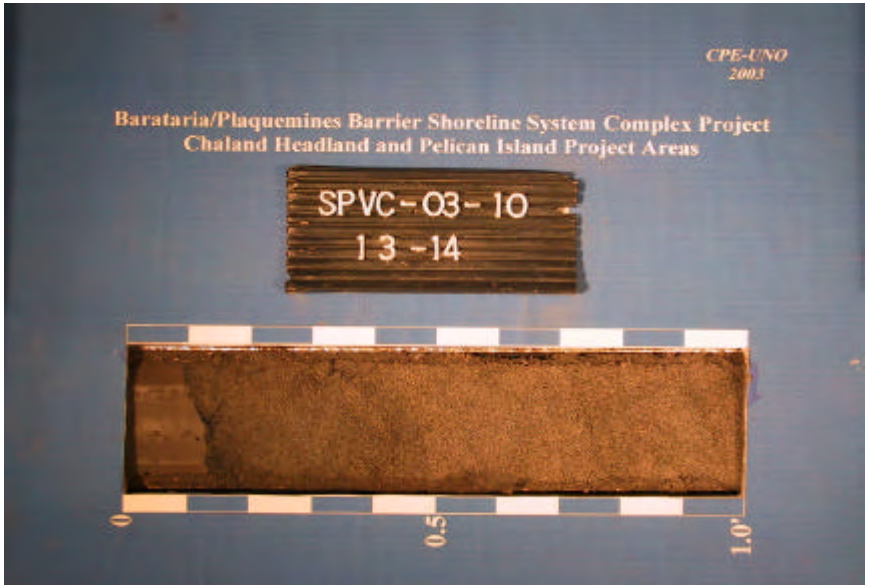
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-10
10-11
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-10
11-12
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-10
12-13
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-10
13-14
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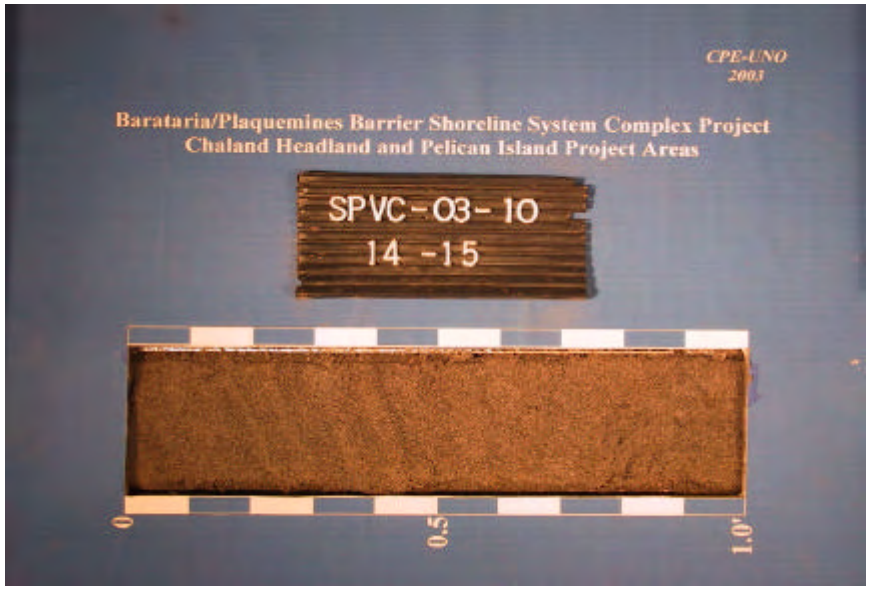
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-10
14-15
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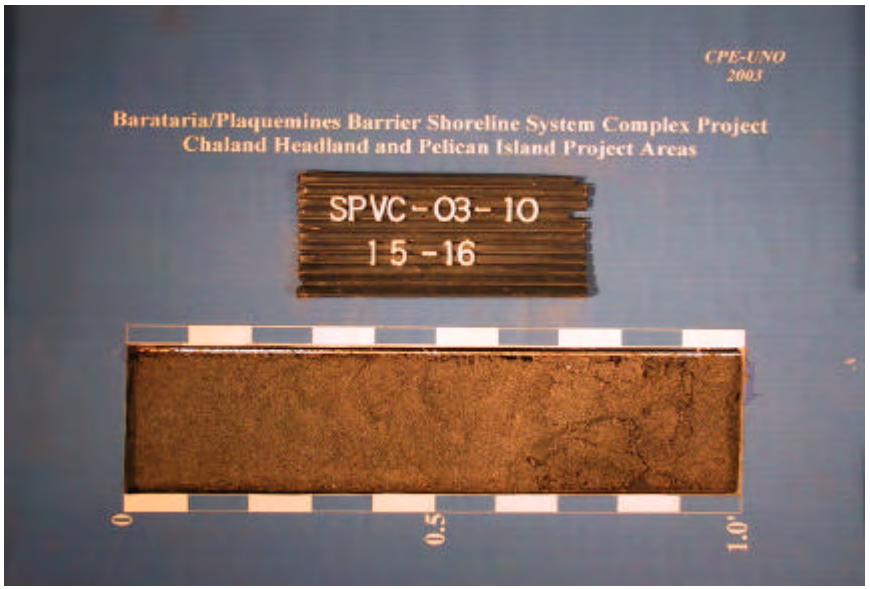
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-10
15-16
0
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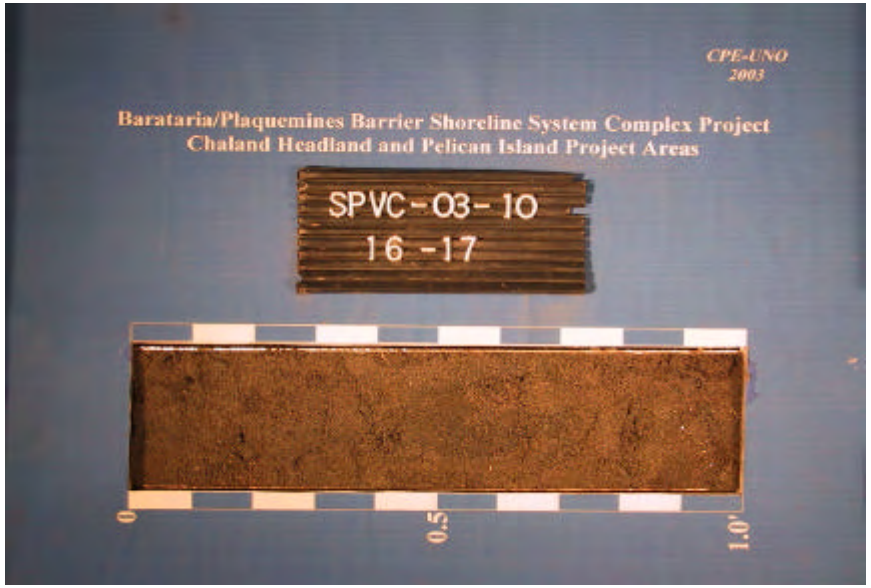
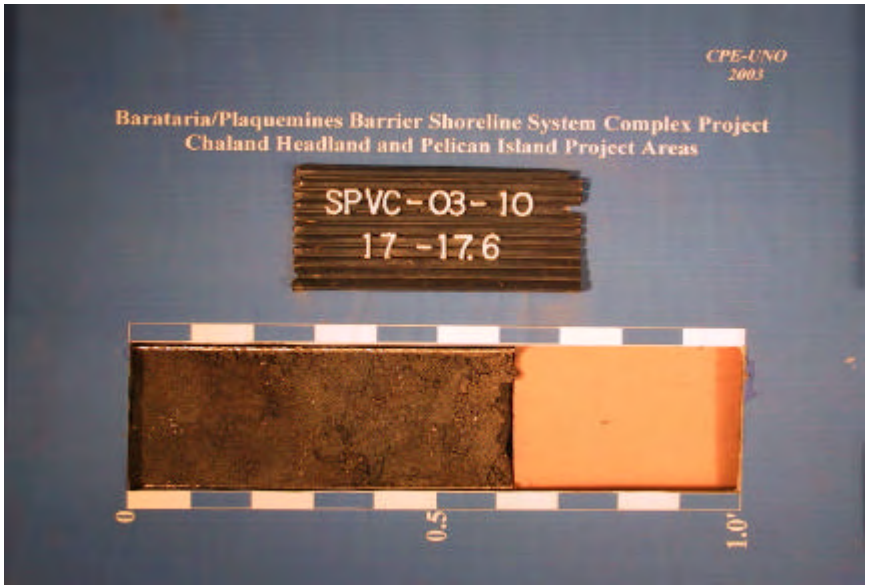
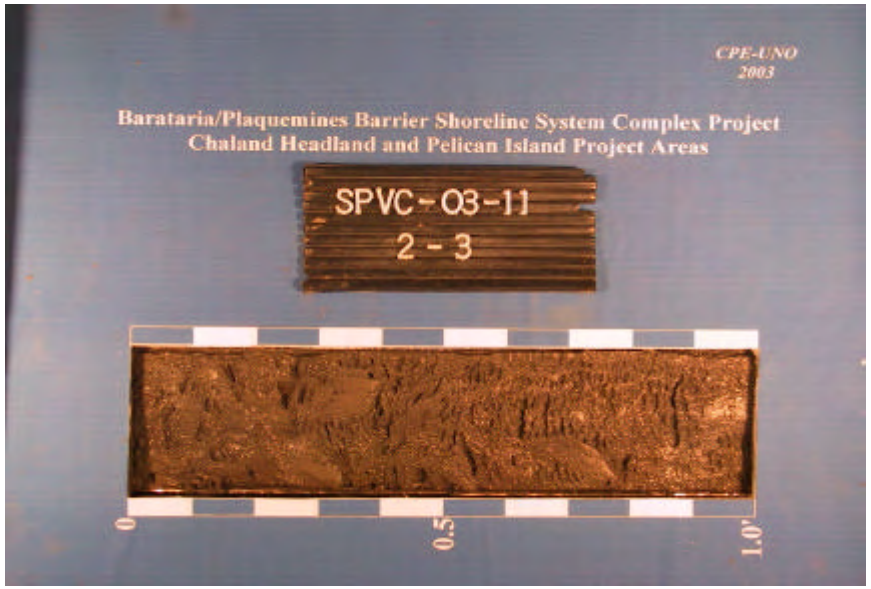
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-10
16 -17
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-10
17 -17.6
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-11
0-1
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-11
1-2
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-11
2-3
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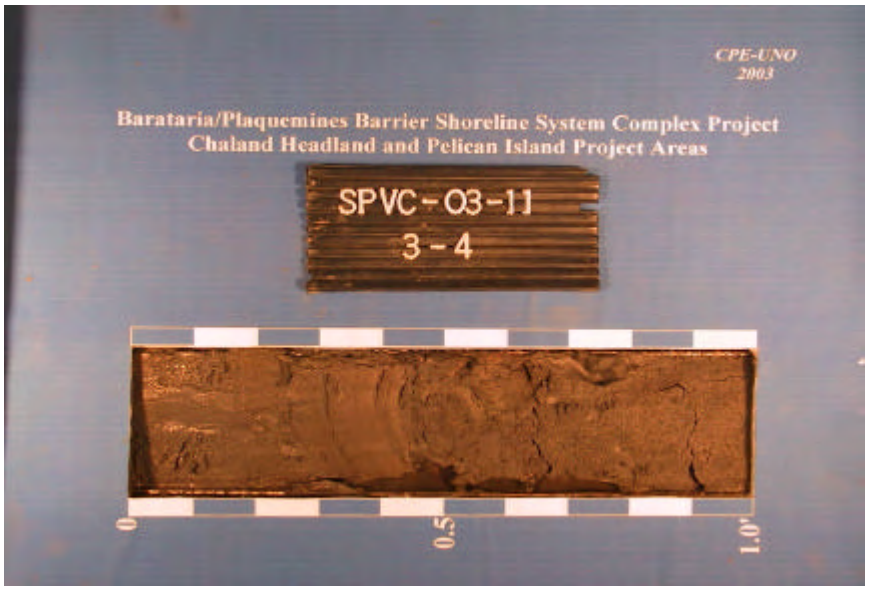
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-11
3-4
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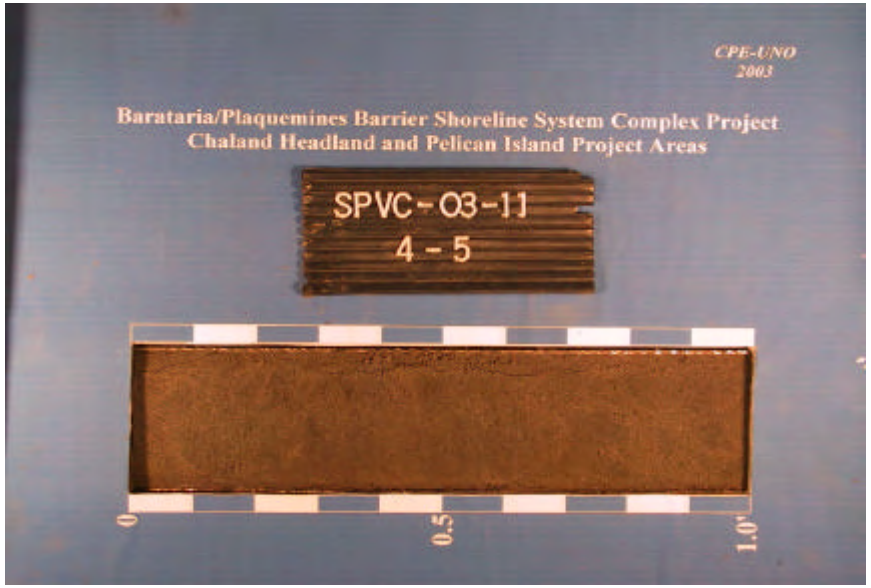
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-11
4-5
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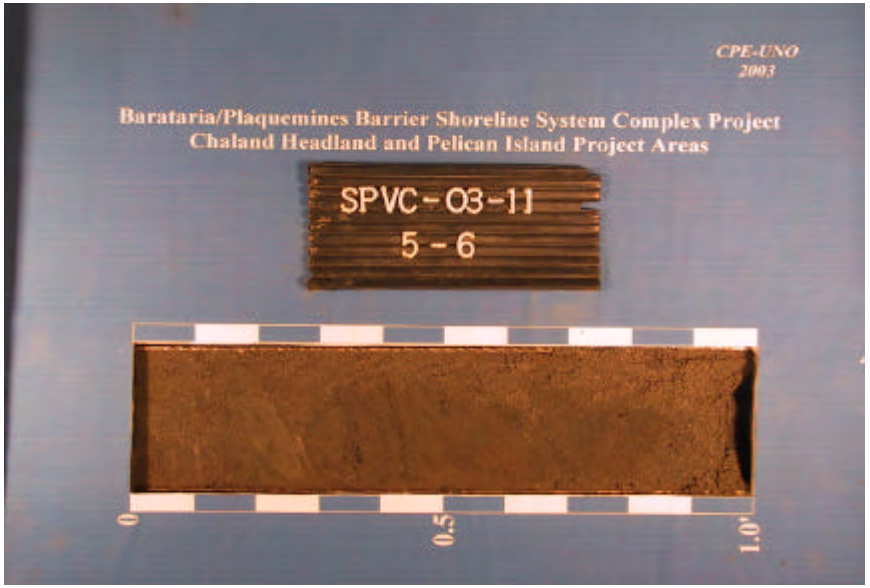
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-11
5-6
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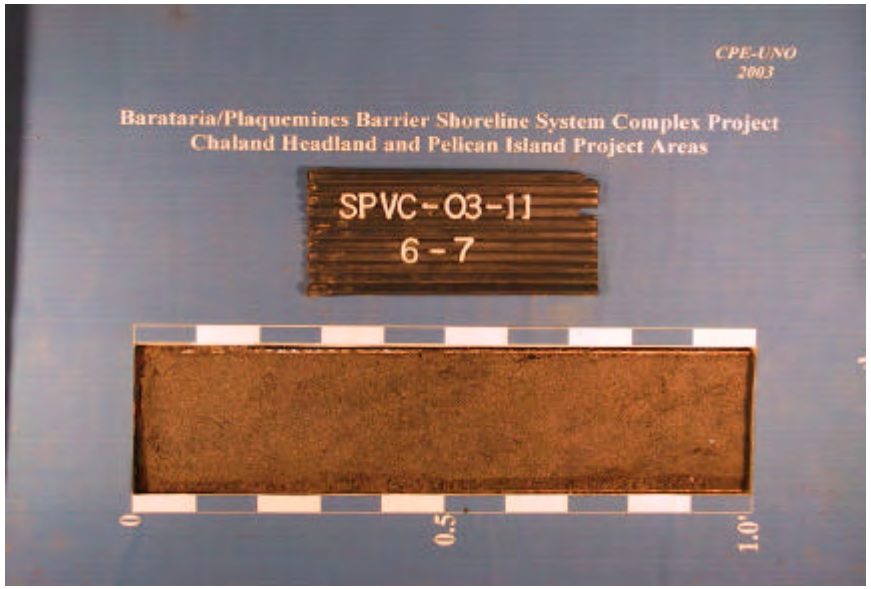
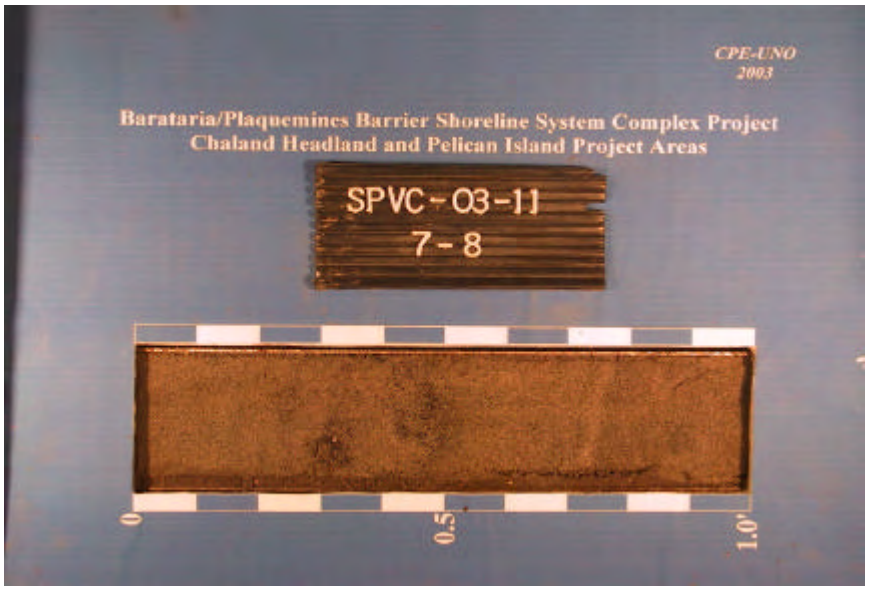
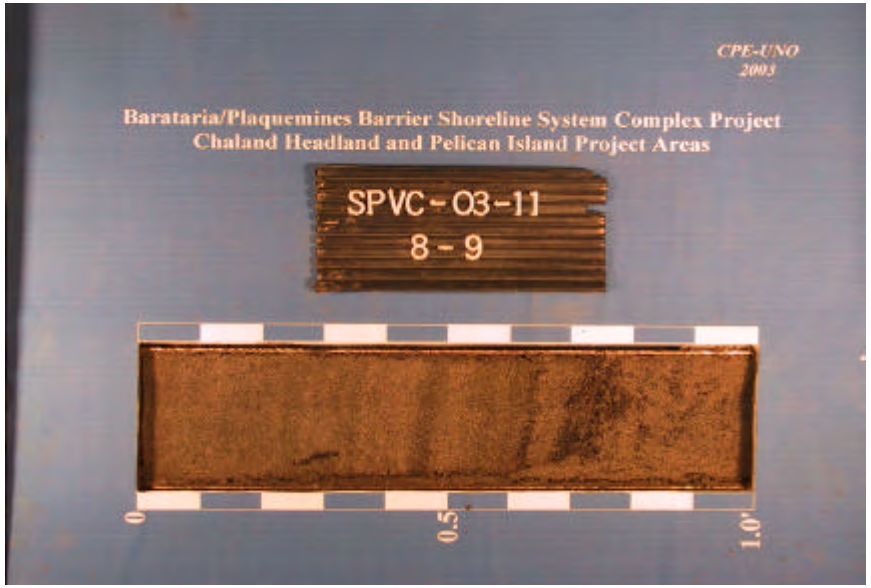
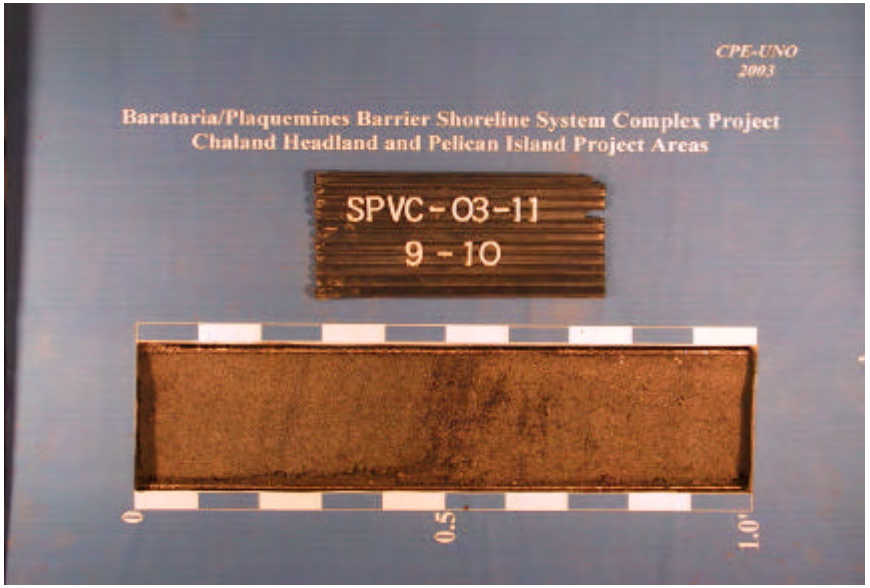
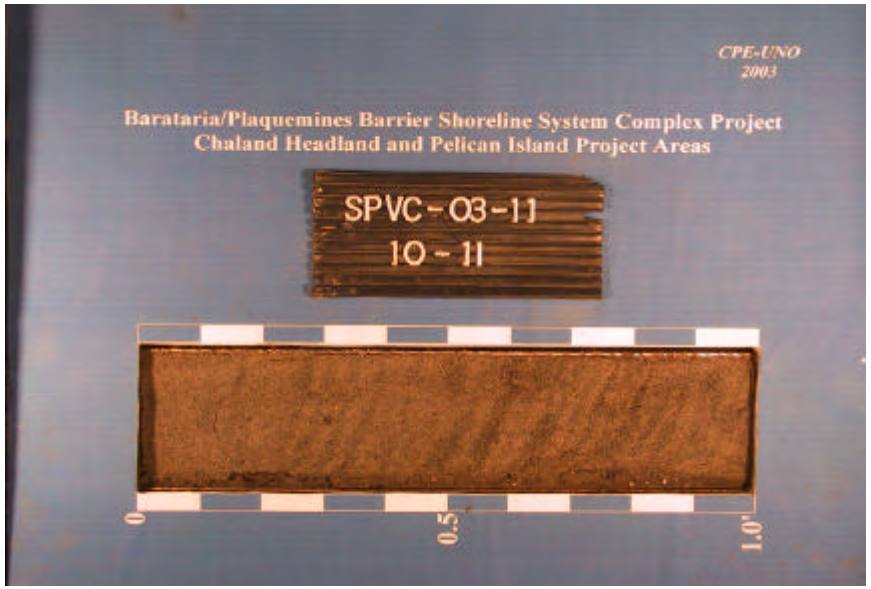
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-11
6-7
0
0.5
1.0'

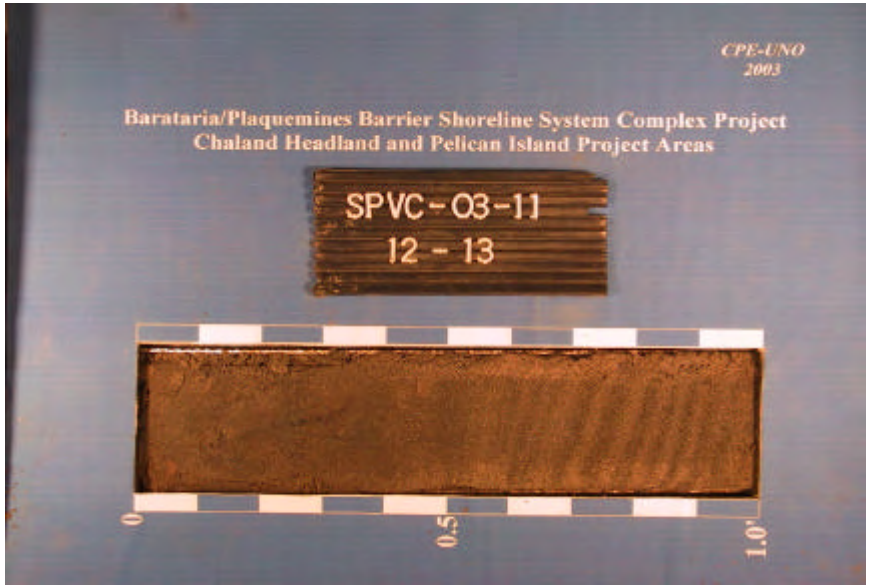

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-11
7-8
0
0.5
1.0'

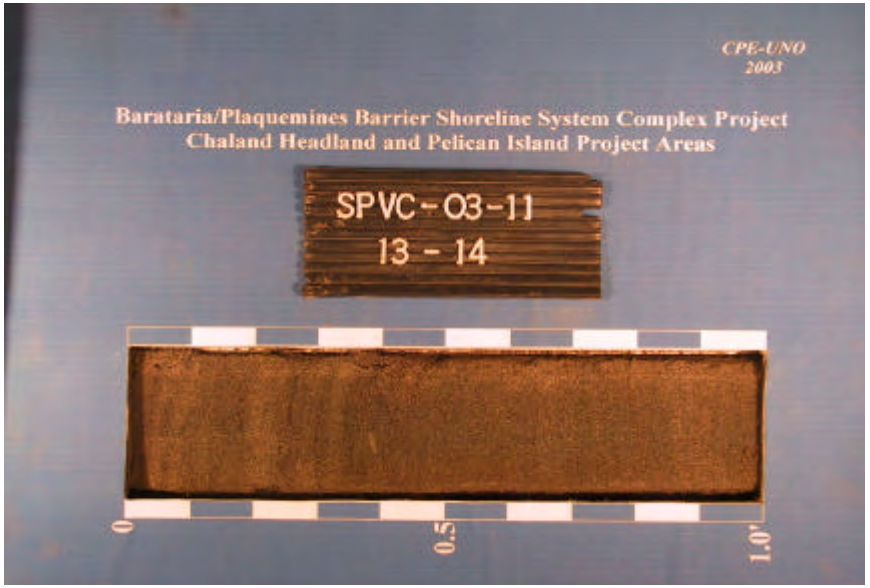

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-11
8 - 9
0
0.5'
1.0'

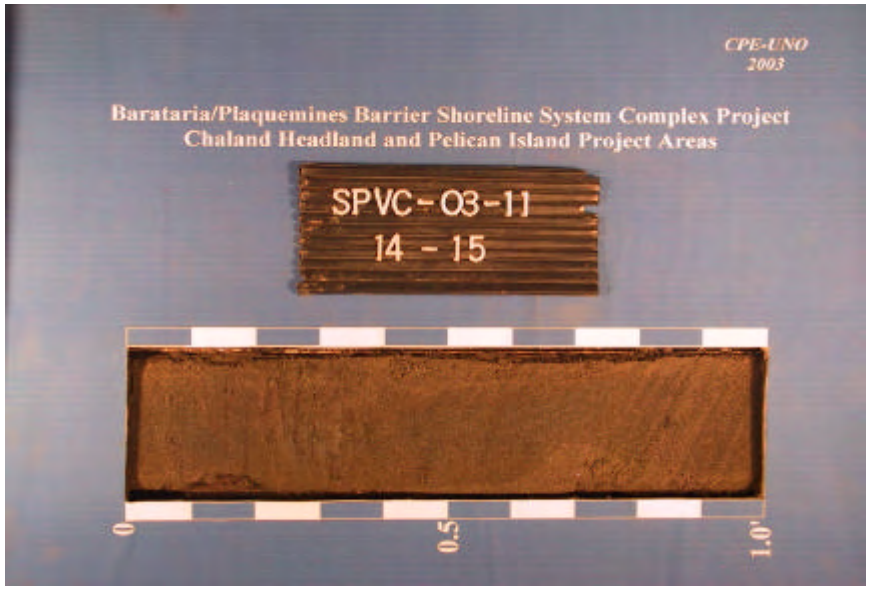

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-11
9 - 10
0
0.5'
1.0'

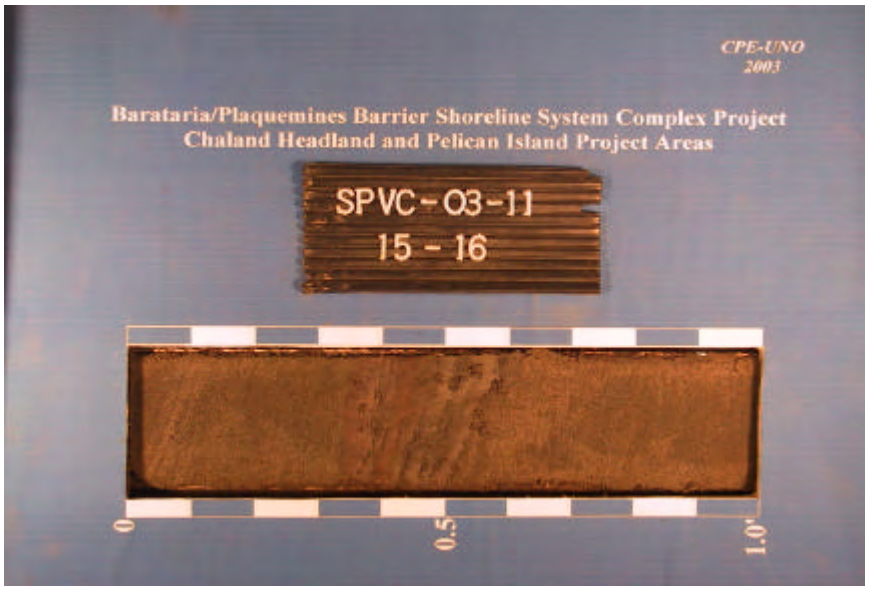

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-11
10 - 11
0
0.5'
1.0'

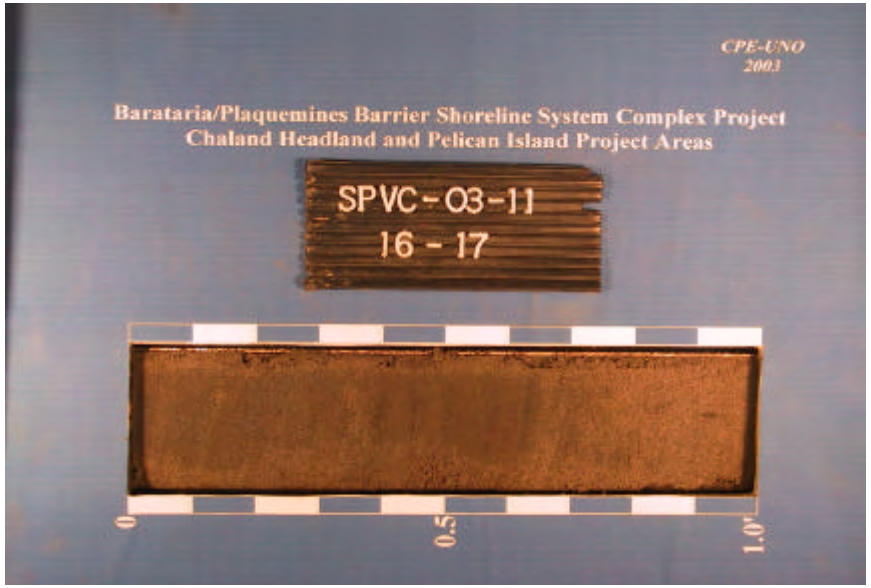
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-11
11 - 12
0
0.5'
1.0'

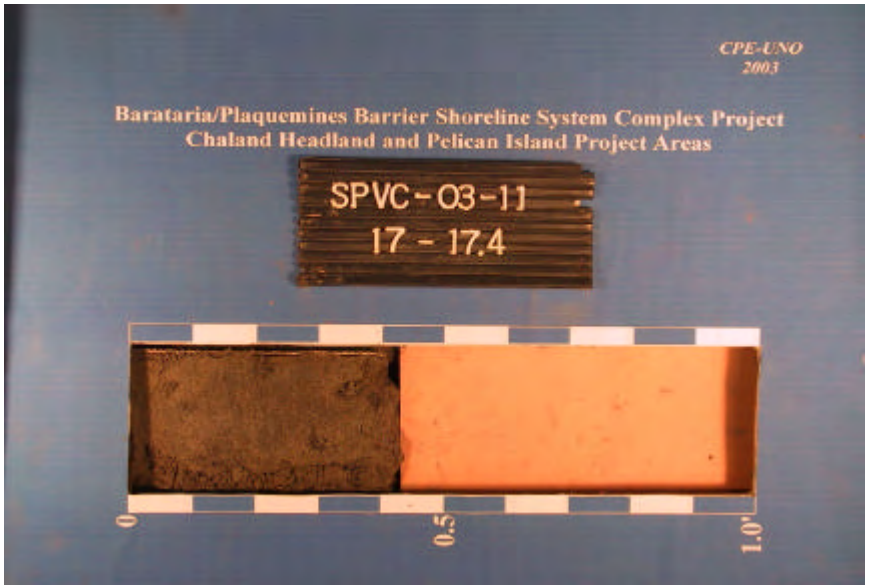

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-11
12 - 13
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-11
13 - 14
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-11
14 - 15
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-11
15 - 16
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-11
16 - 17
0
0.5
1.0'

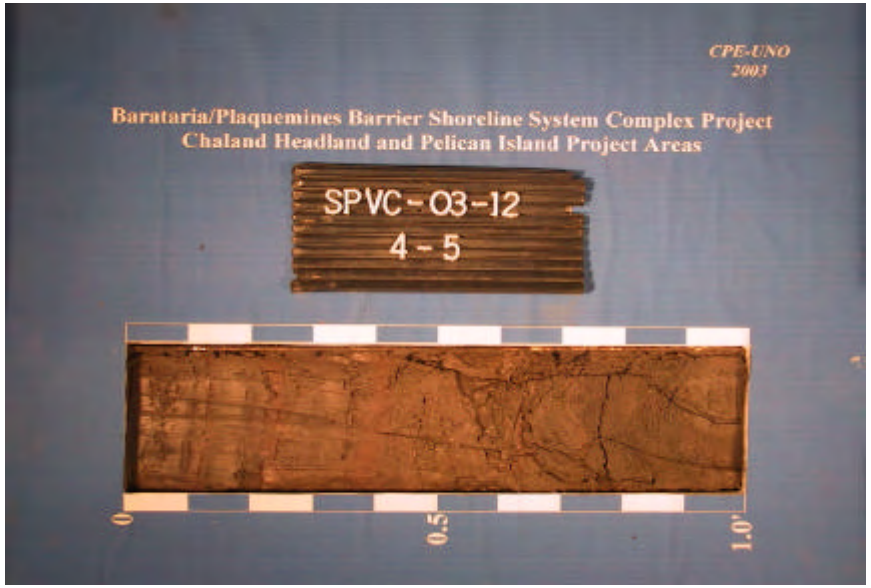

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-11
17 - 17.4
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-12
0 - 1
0
0.5
1.0'

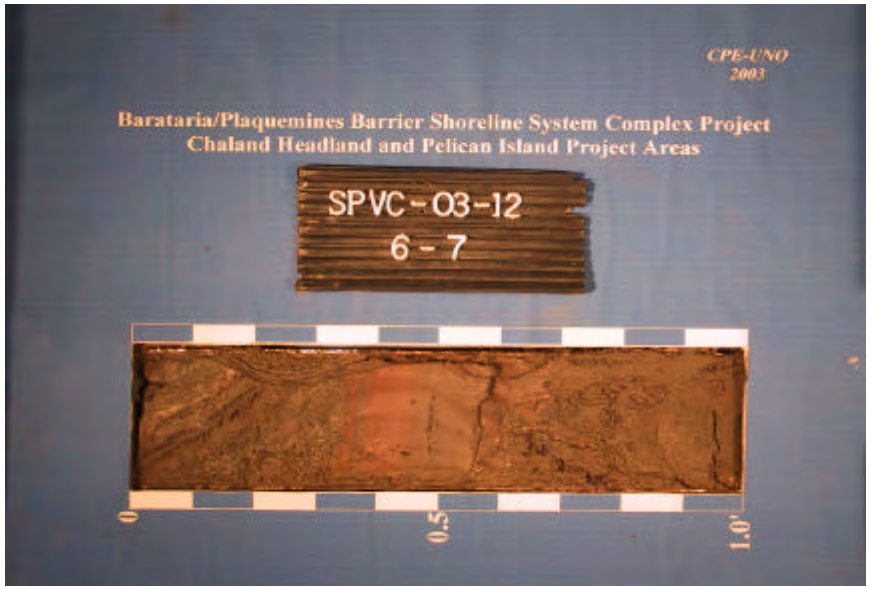
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-12
1 - 2
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-12
2 - 3
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-12
3 - 4
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-12
4-5
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-12
5-6
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-12
6-7
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-12
7-8
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-12
8 - 9
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-12
9 - 10
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-12
10 - 11
0
0.5
1.0'

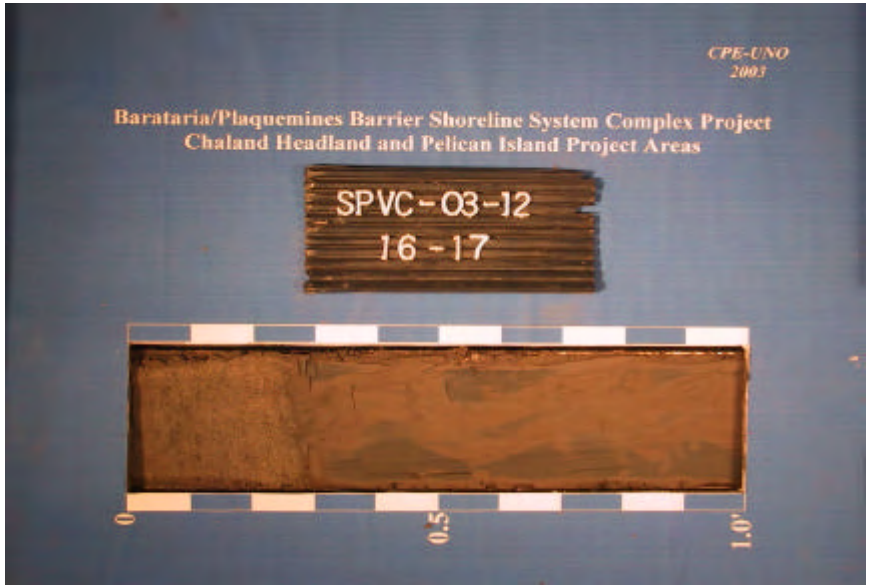
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-12
11 - 12
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-12
12-13
0
0.5
1.0'

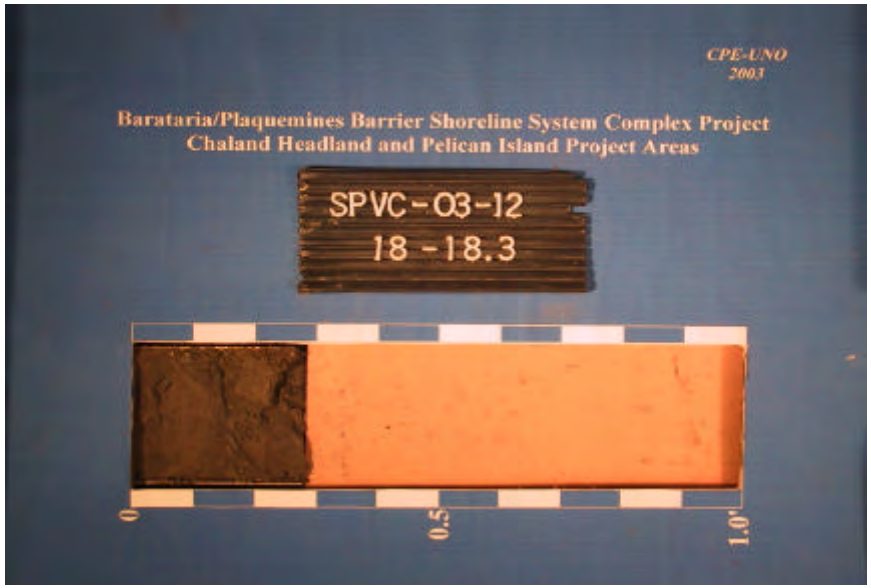
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-12
13-14
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-12
14-15
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-12
15-16
0
0.5
1.0'

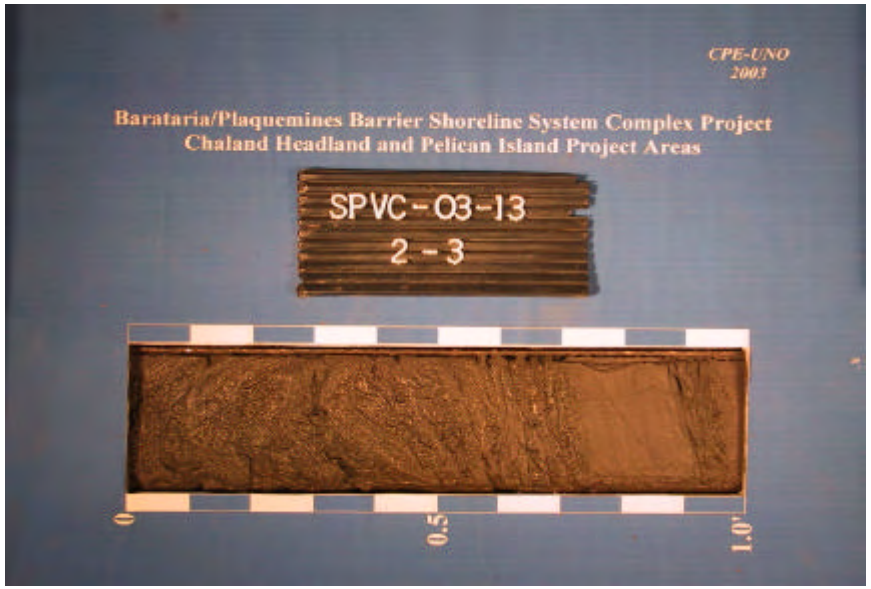

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-12
16 - 17
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-12
17 - 18
0
0.5
1.0'

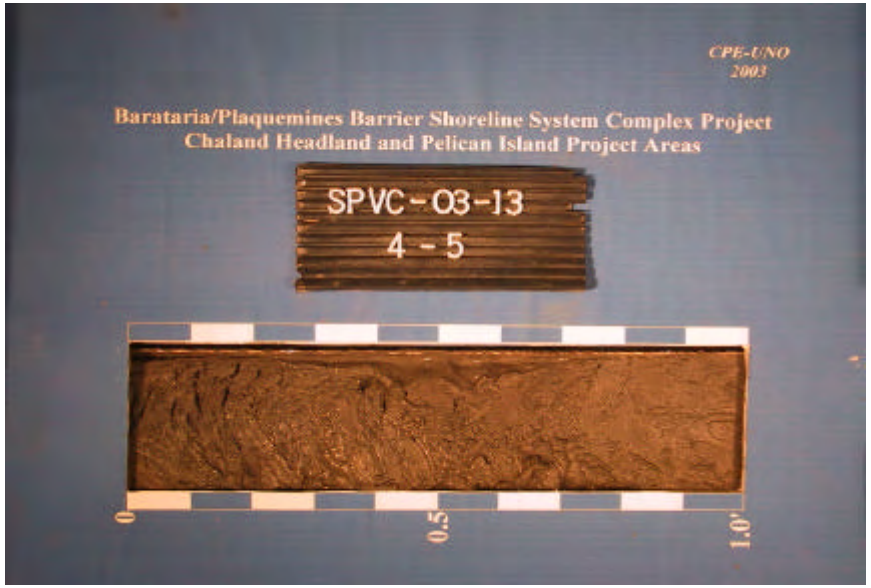

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-12
18 - 18.3
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-13
0-1
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-13
1-2
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-13
2-3
0
0.5
1.0'

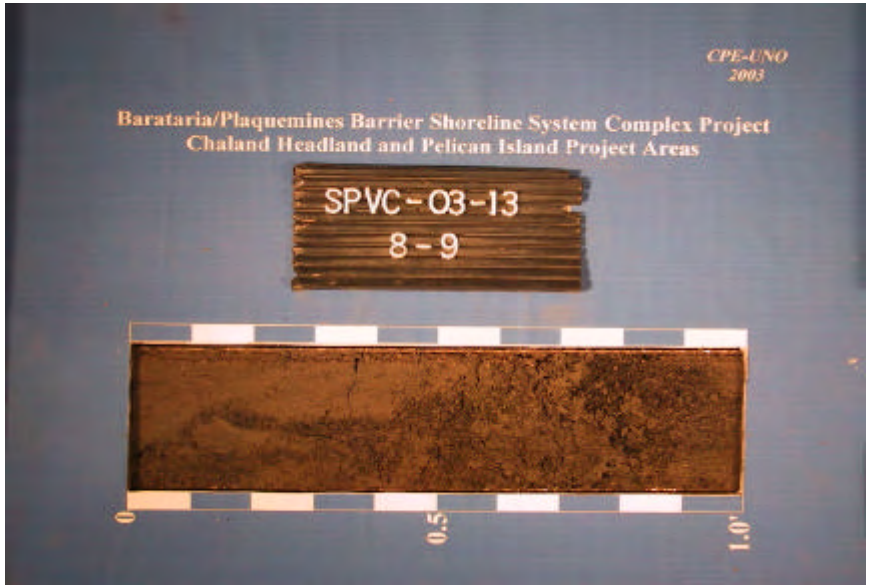
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-13
3-4
0
0.5
1.0'

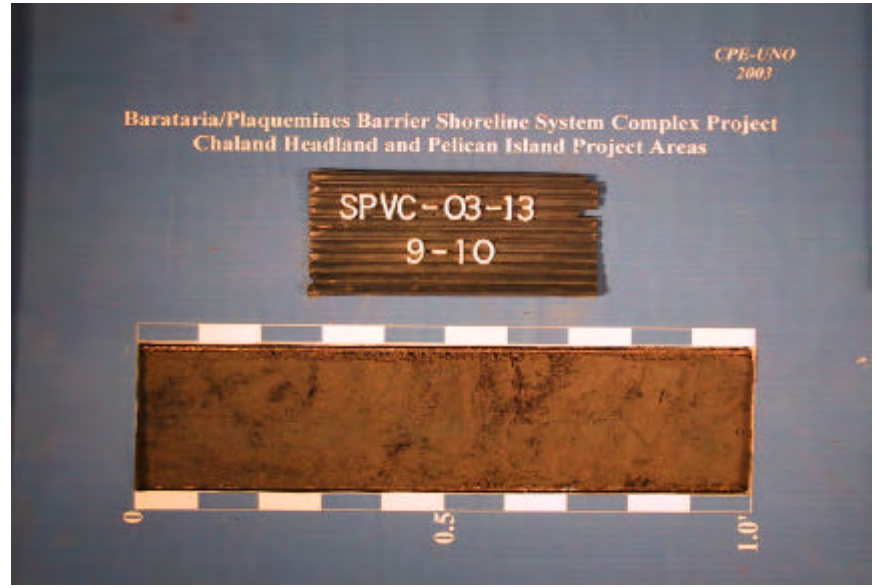

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-13
4 - 5
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-13
5 - 6
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-13
6 - 7
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-13
7 - 8
0
0.5
1.0'

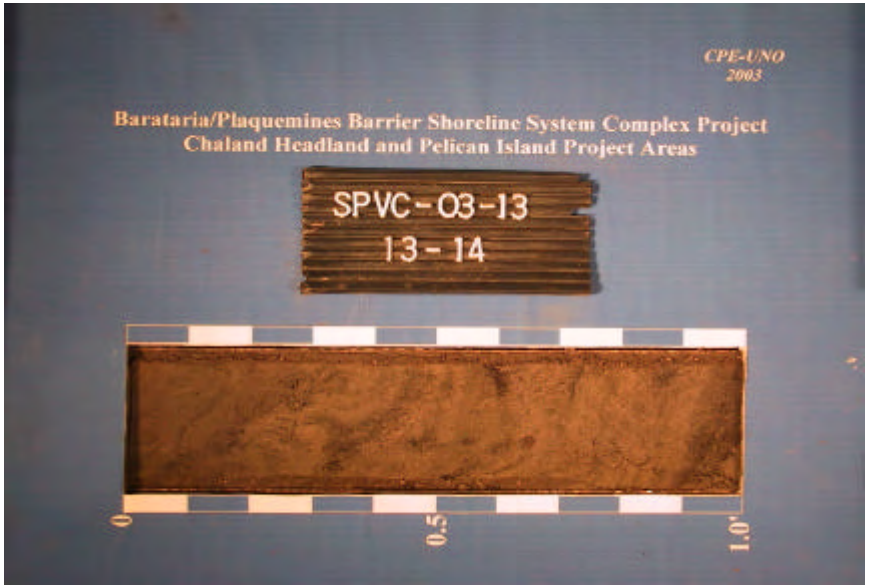

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-13
8-9
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-13
9-10
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-13
10-11
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-13
11-12
0
0.5
1.0'

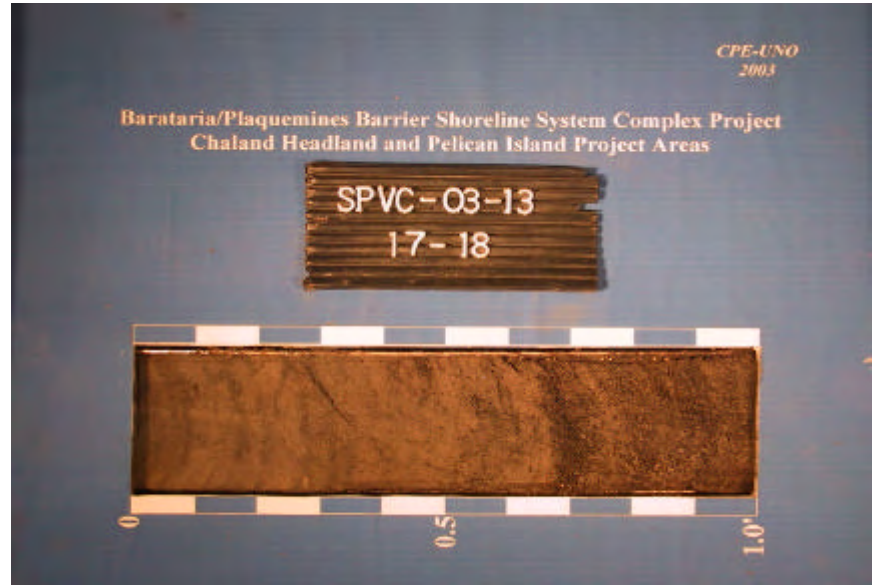
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-13
12-13
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-13
13-14
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-13
14-15
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-13
15-16
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-13
16-17
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-13
17-18
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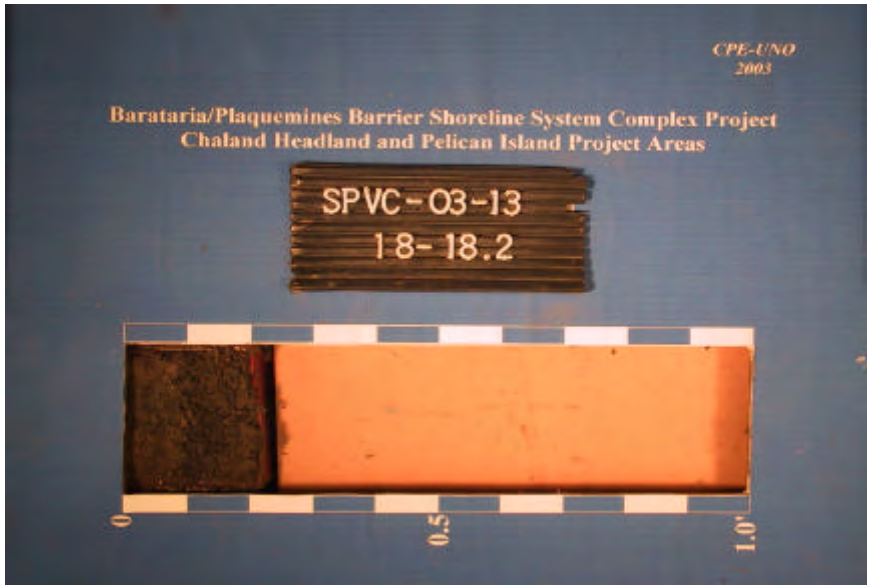
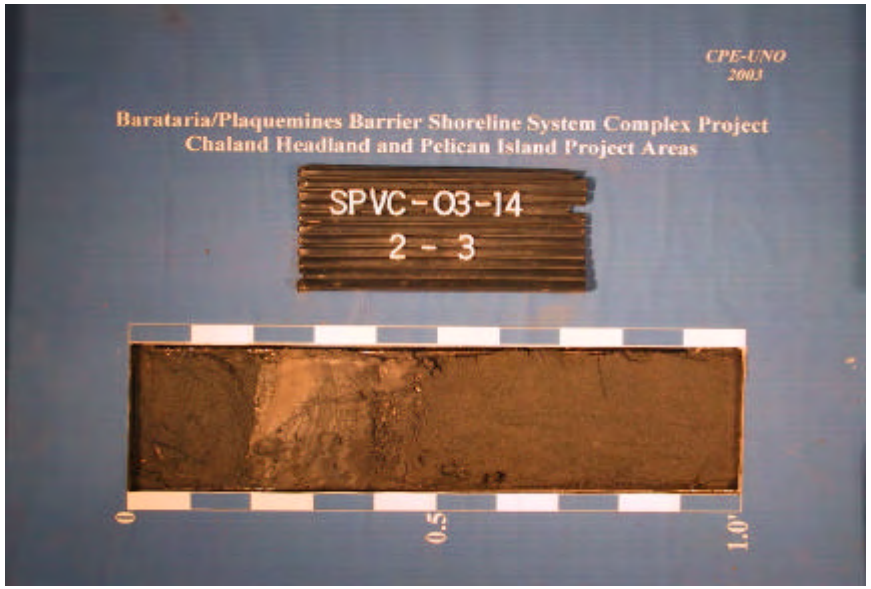
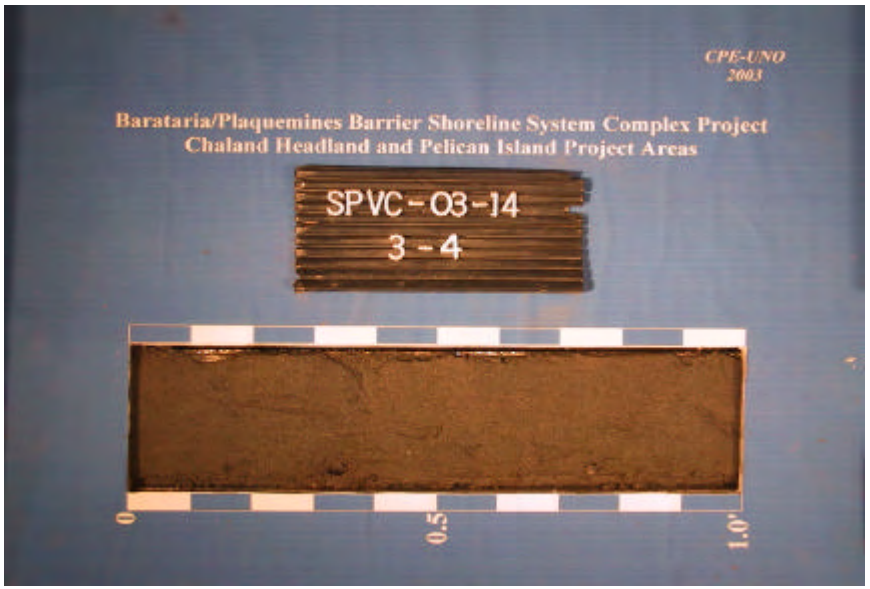
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-13
18-18.2
0
0.5
1.0'

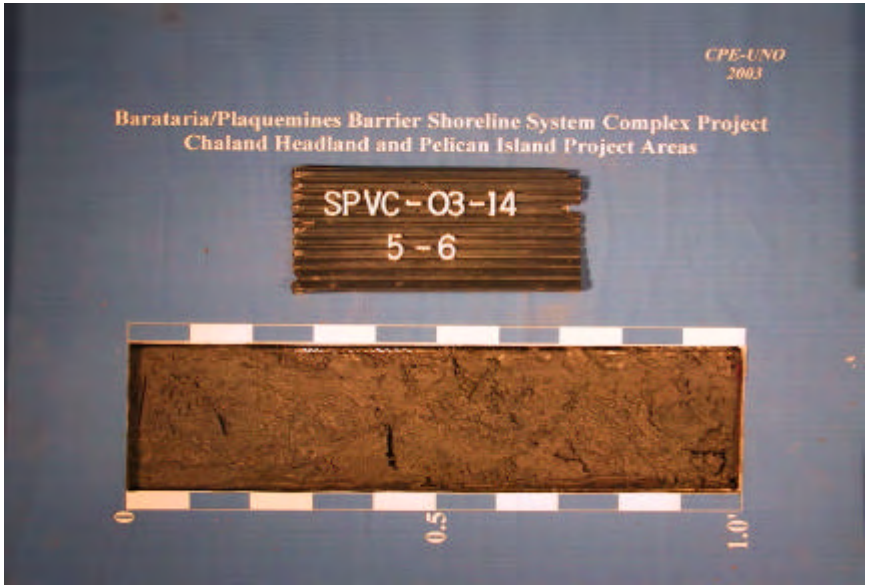
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-14
0 - 1
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-14
1 - 2
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-14
2 - 3
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-14
3 - 4
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-14
4 - 5
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-14
5 - 6
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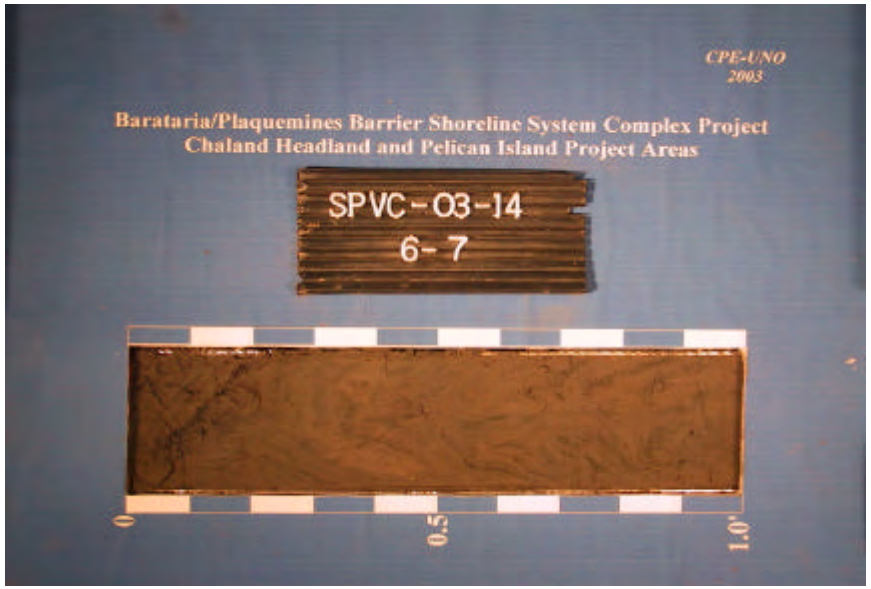
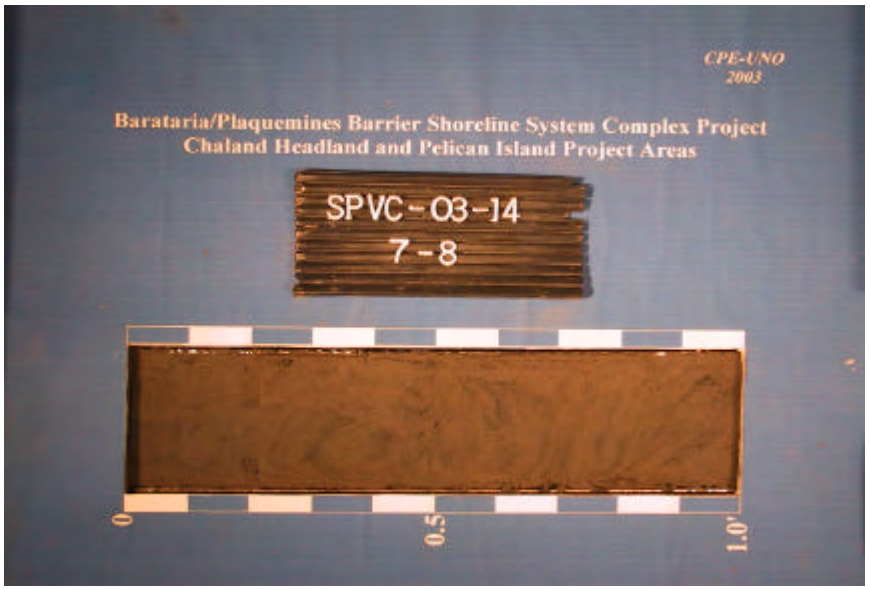
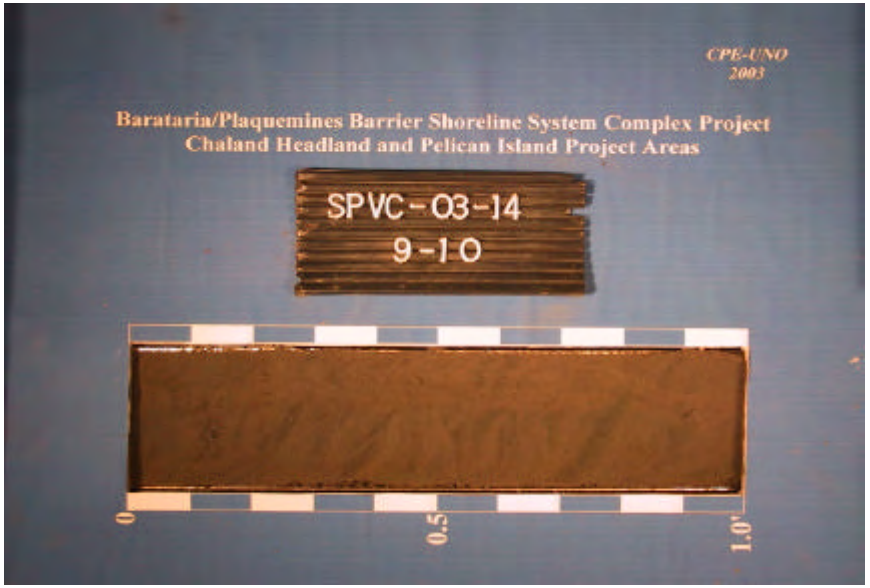
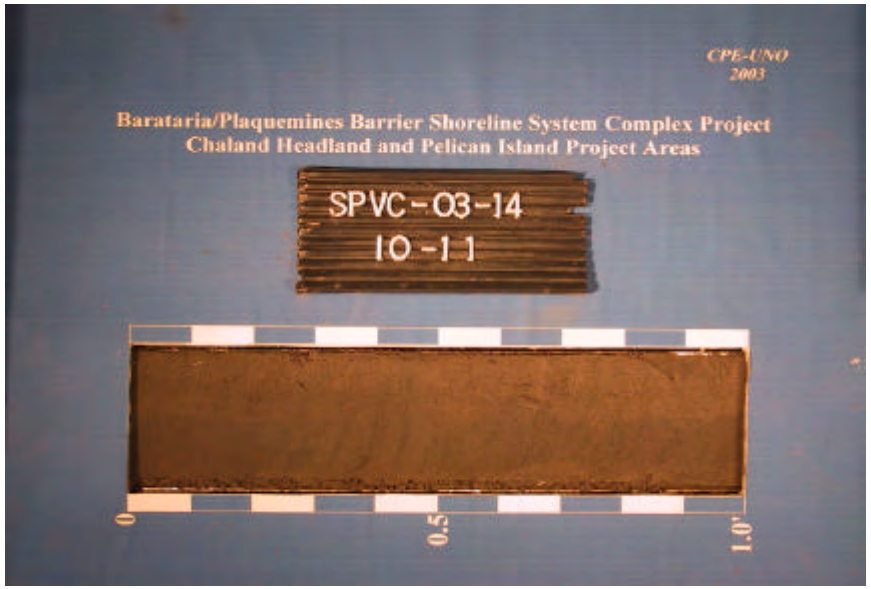
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-14
6- 7
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-14
7 - 8
0
0.5
1.0'

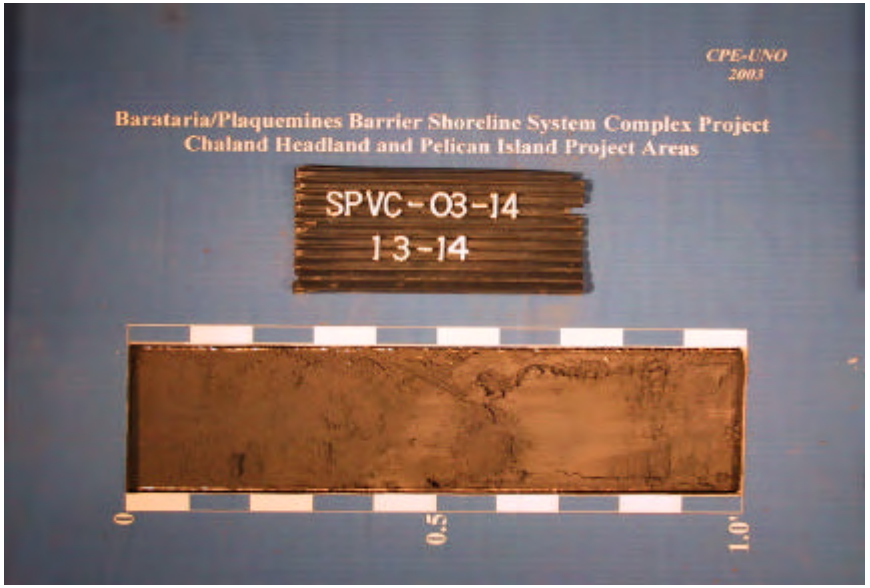
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-14
8-9
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-14
9-10
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-14
10-11
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-14
11-12
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-14
12-13
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-14
13-14
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-14
14-15
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-14
15-16
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-14
16-17
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-14
17-18
0
0.5
1.0'

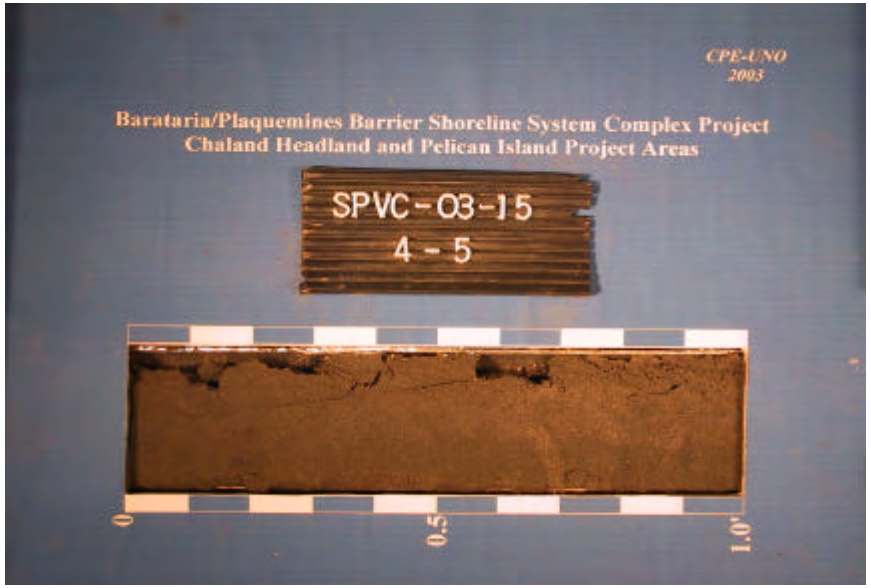
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-14
18-19
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-15
0-1
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-15
1-2
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-15
2-3
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-15
3-4
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-15
4 - 5
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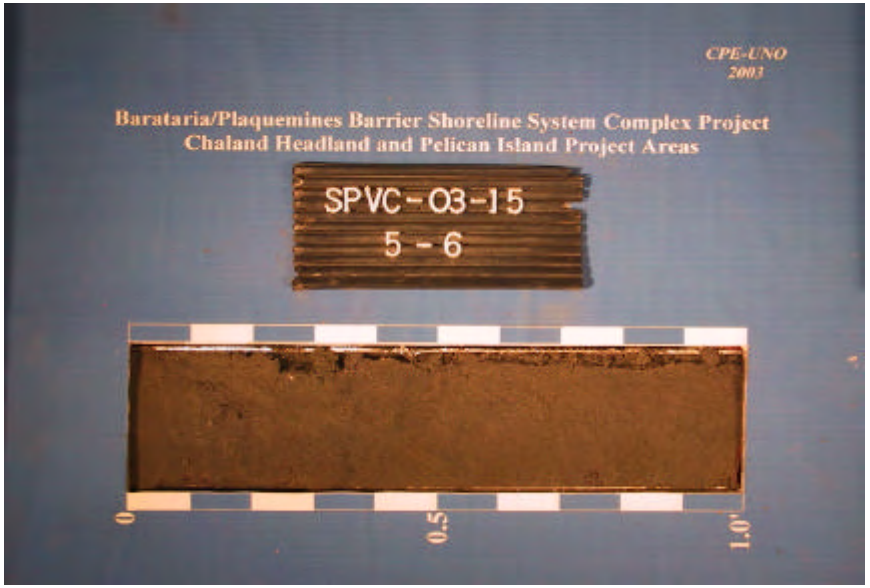
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-15
5 - 6
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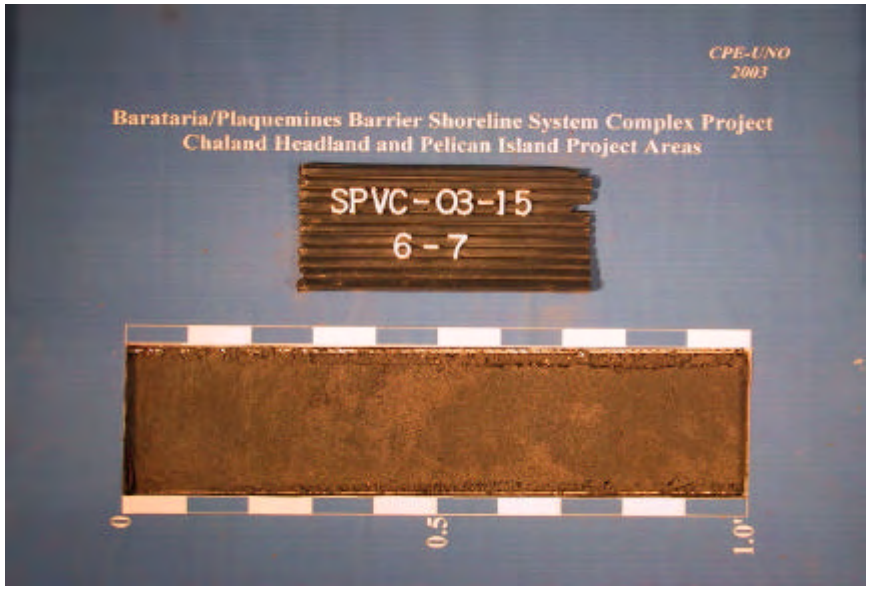
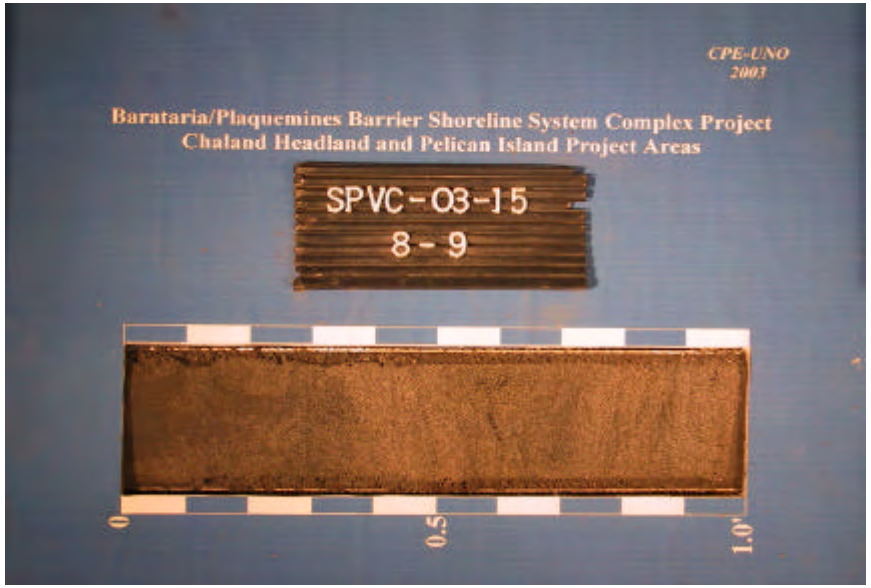
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-15
6 - 7
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-15
7 - 8
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-15
8-9
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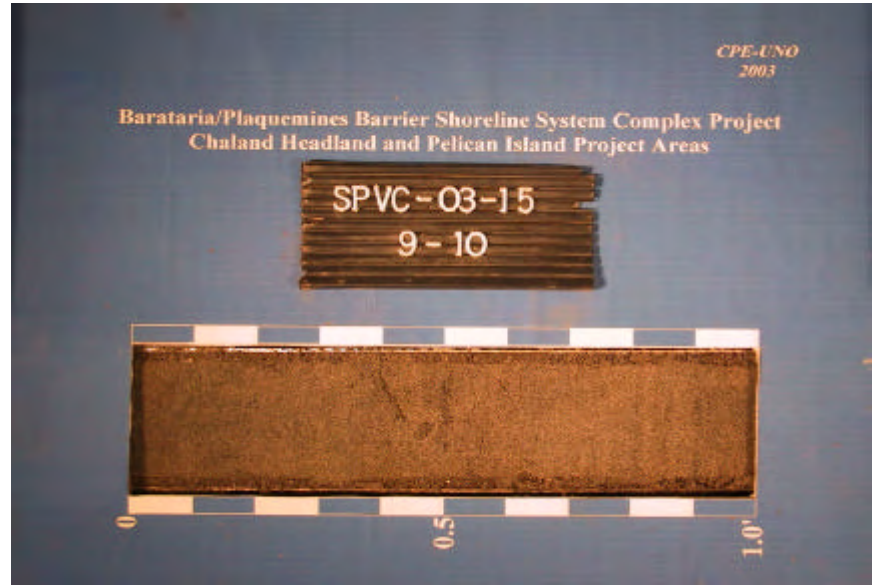
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-15
9-10
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-15
10-11
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-15
11-12
0
0.5
1.0'

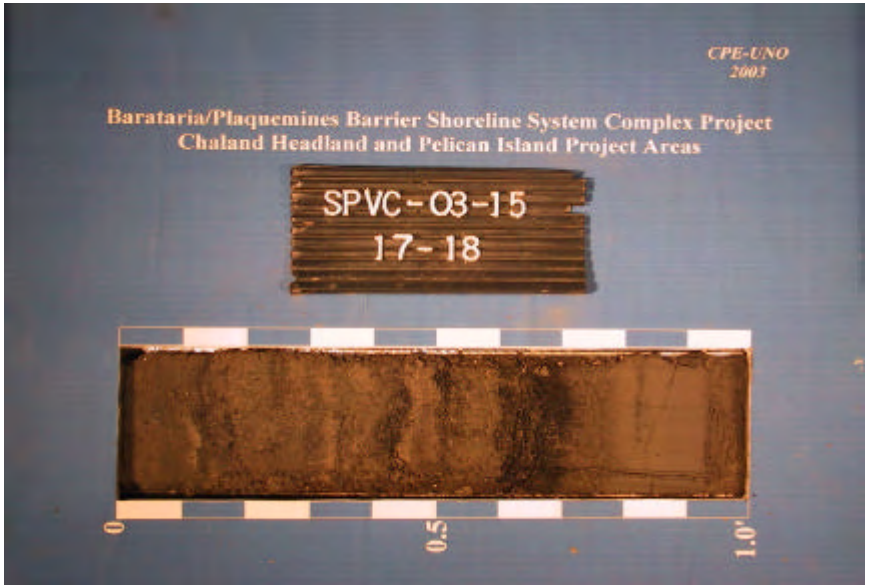
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-15
12-13
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-15
13-14
0
0.5
1.0'

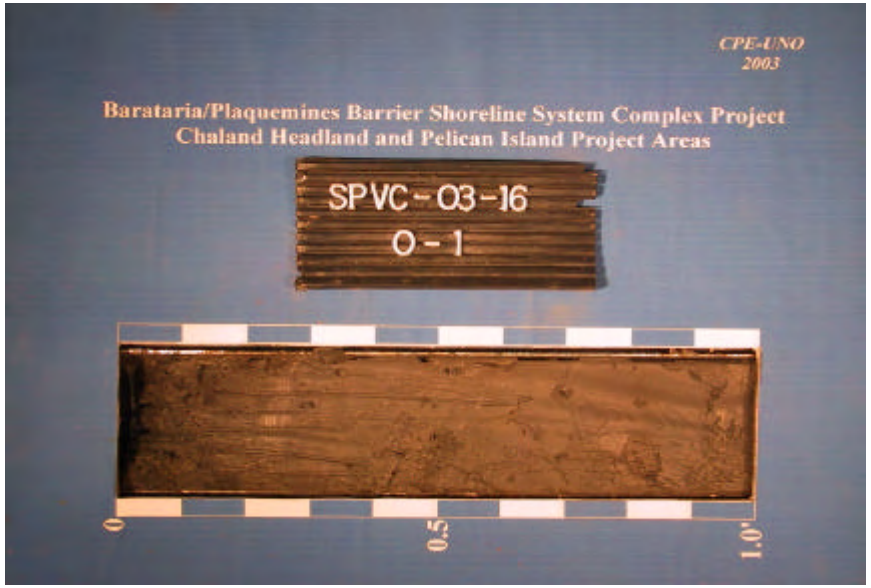
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-15
14-15
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-15
15-16
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-15
16-17
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-15
17-18
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-15
18-18.7
0
0.5
1.0'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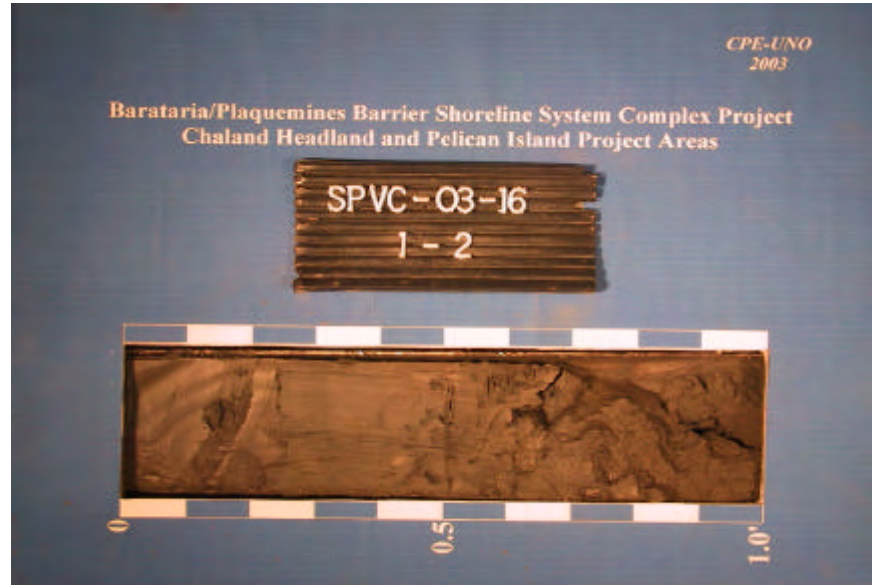
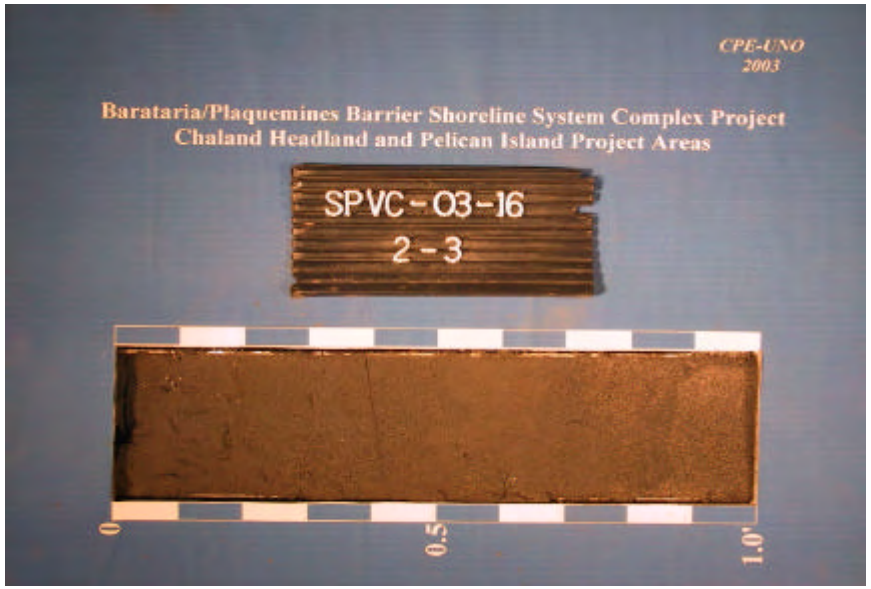
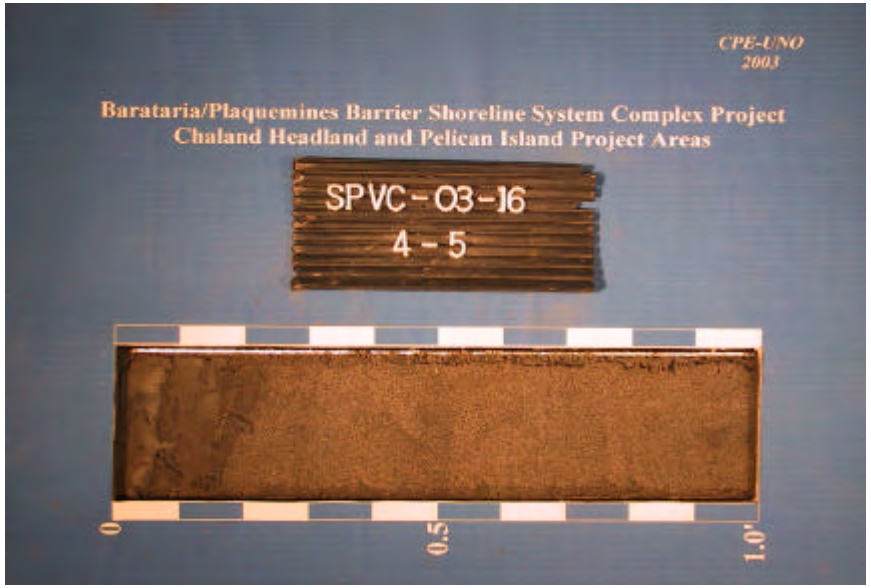
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-16
0-1
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-16
1-2
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-16
2-3
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-16
3-4
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-16
4-5
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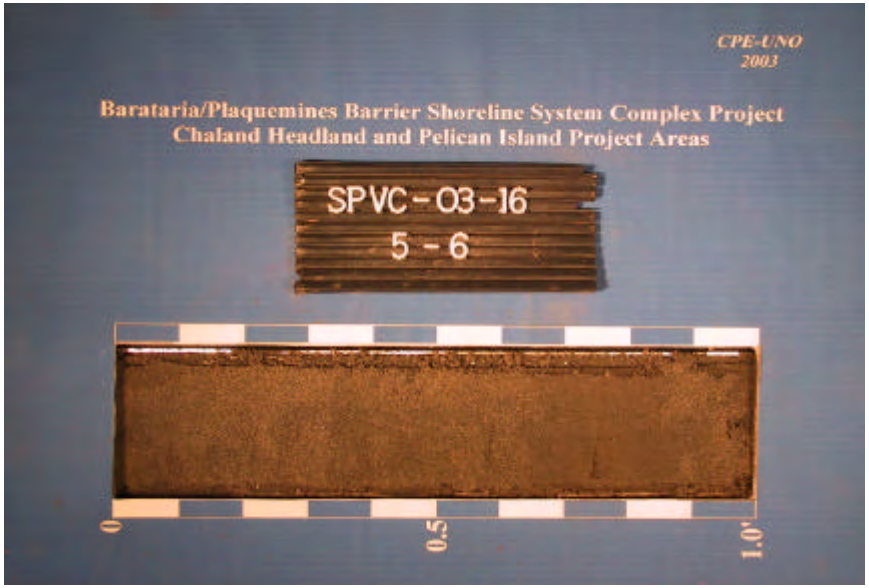
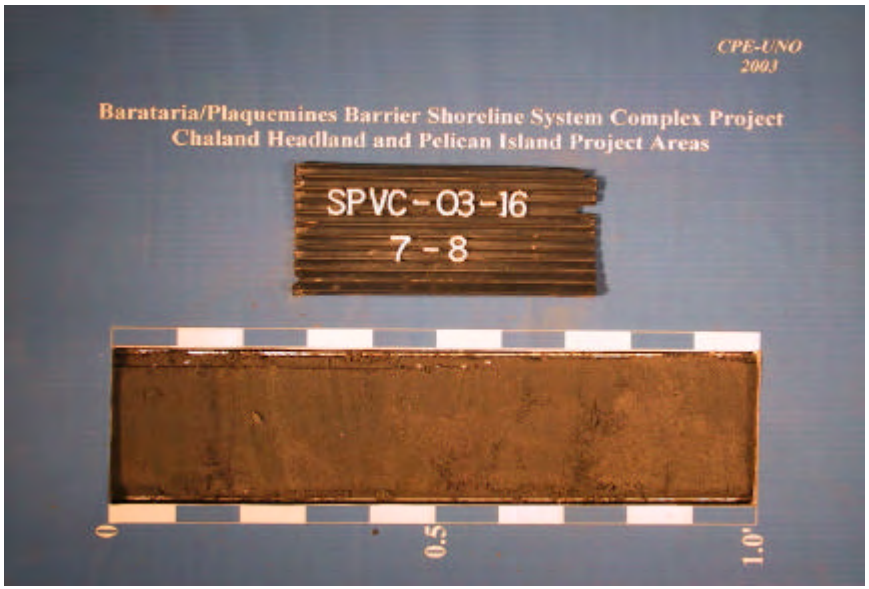
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-16
5-6
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-16
6-7
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-16
7-8
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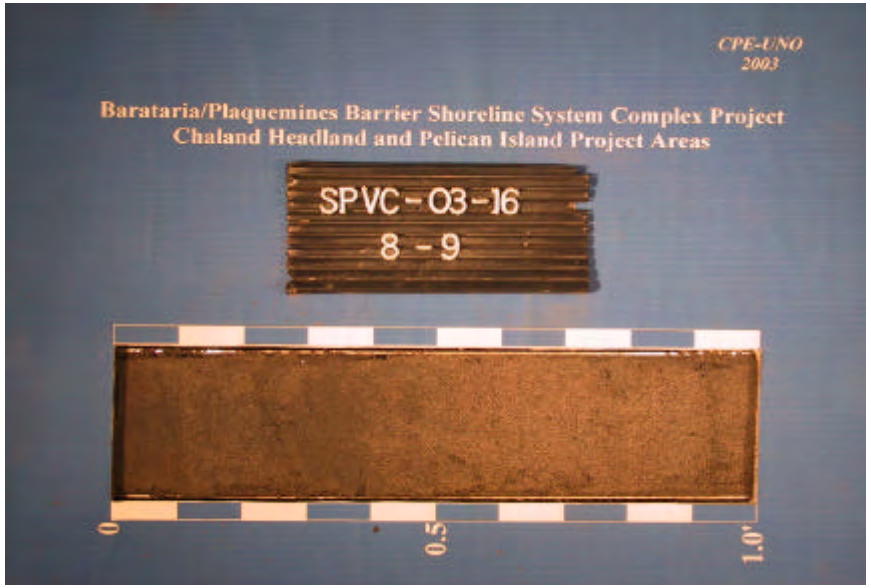
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-16
8 - 9
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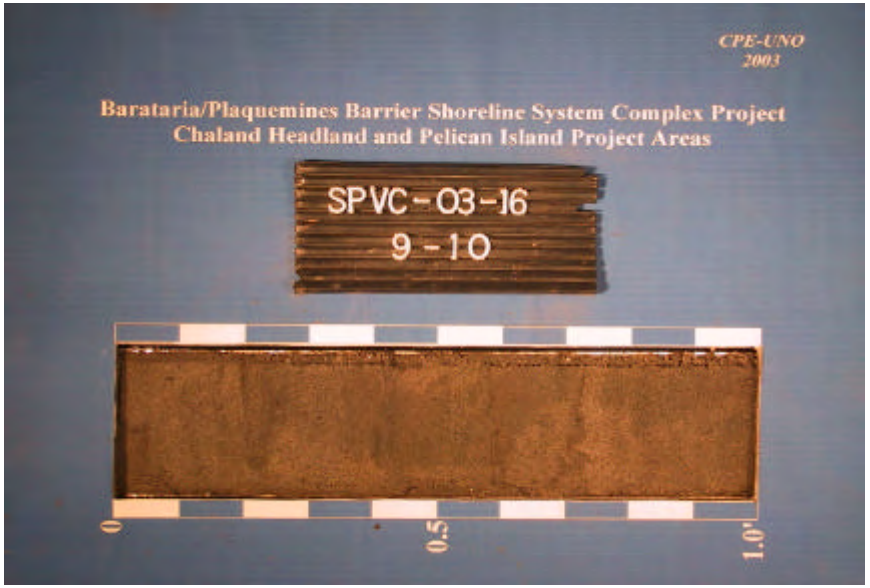
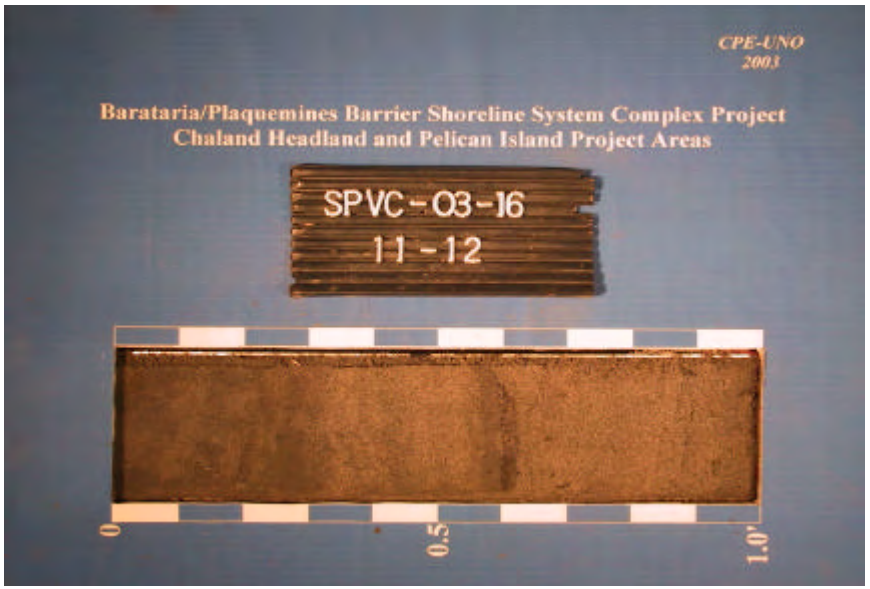
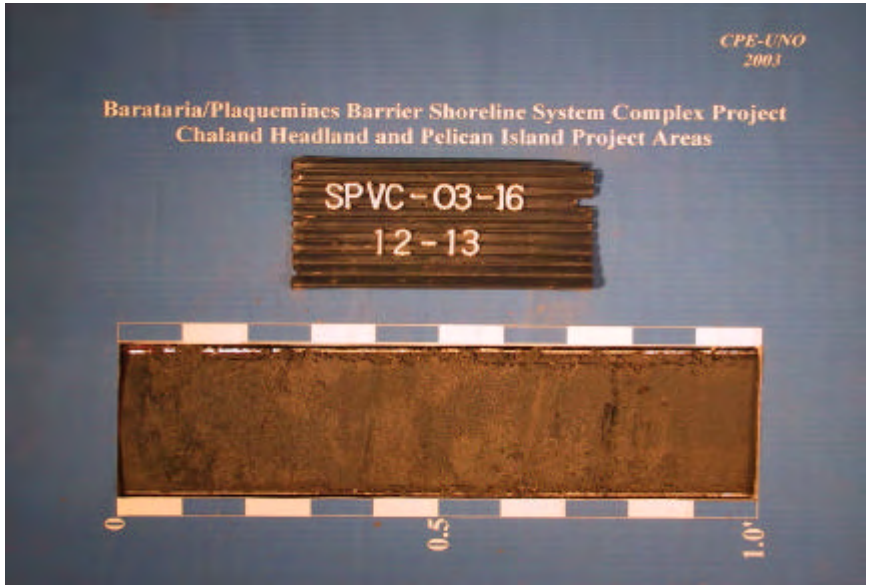
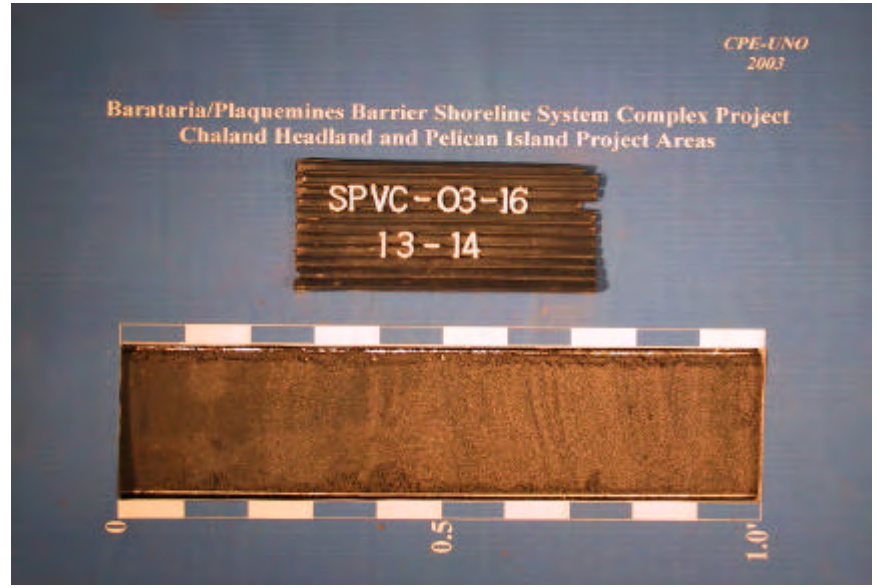
1.0'

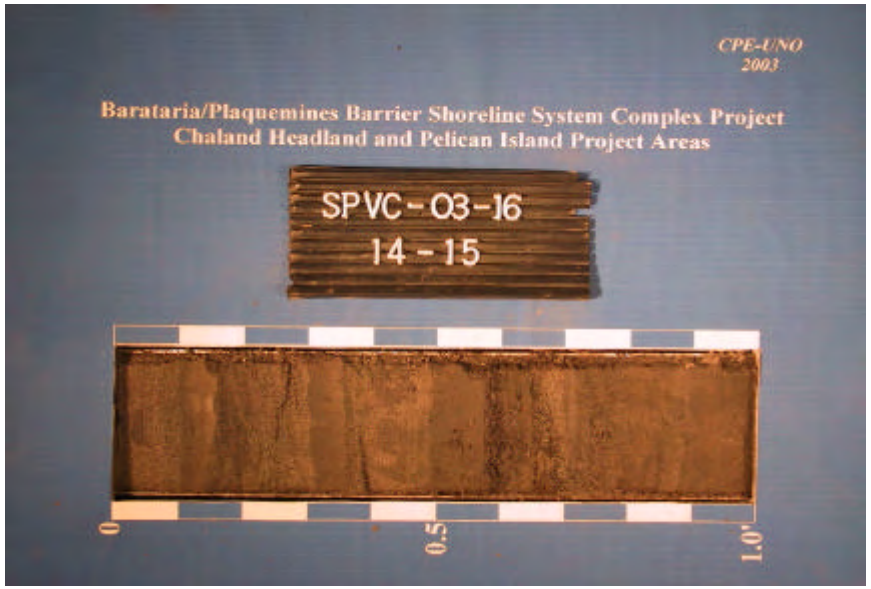

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-16
9 - 10
0
0.5
1.0'

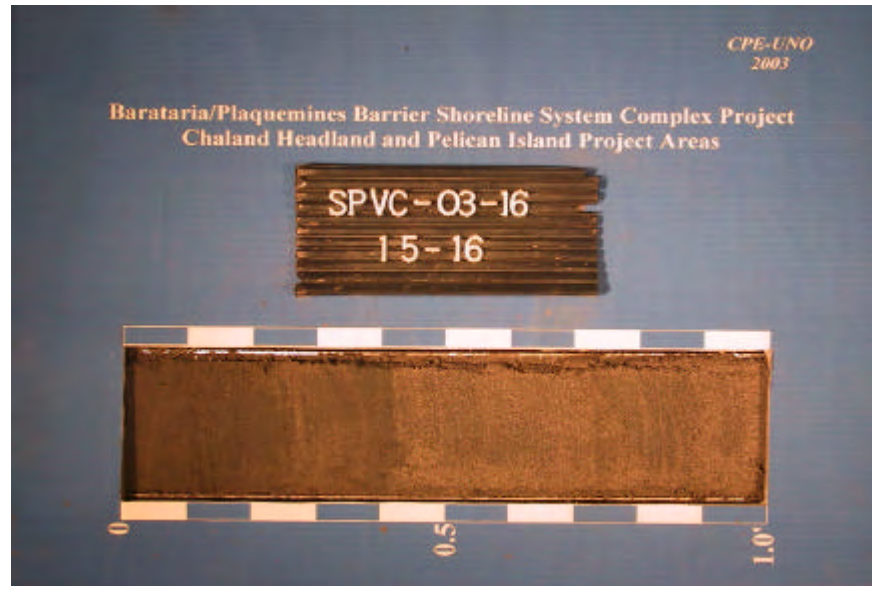
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-16
10 - 11
0
0.5
1.0'

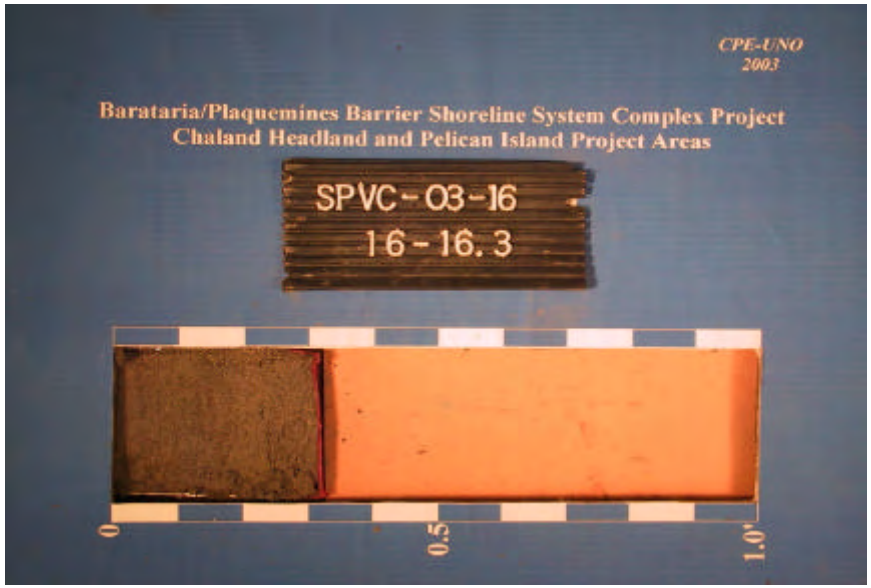

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-16
11 - 12
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-16
12-13
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-16
13-14
0
0.5
1.0'

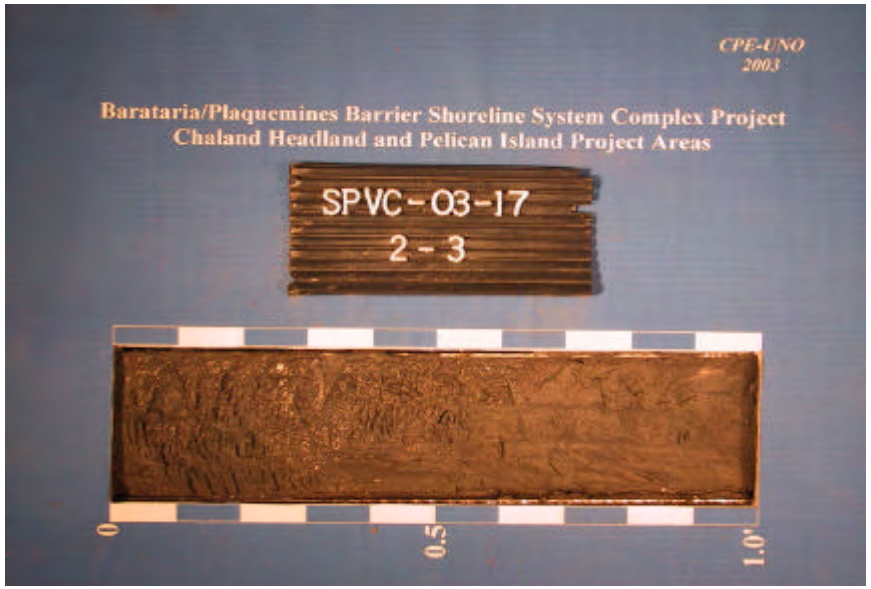

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-16
14-15
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-16
15-16
0
0.5
1.0'

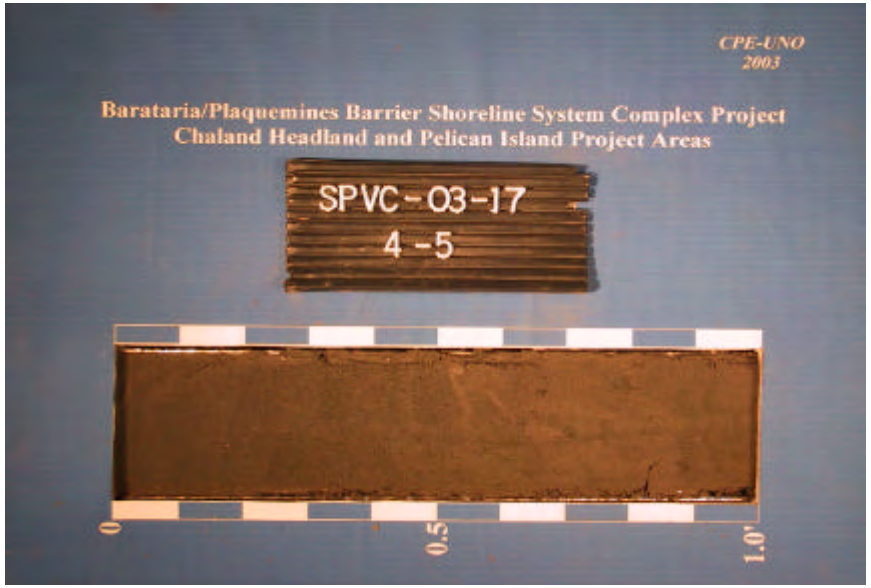

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-16
16-16.3
0
0.5
1.0'

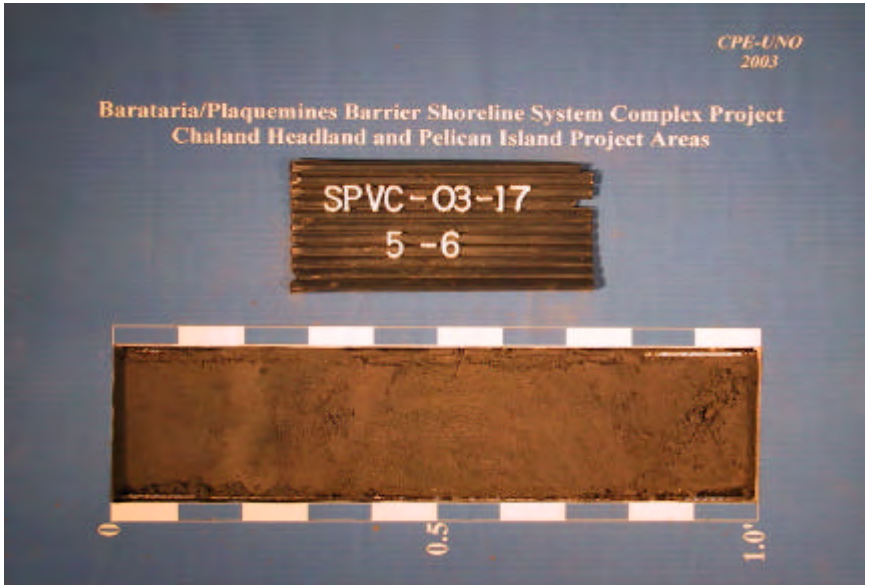
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-17
0-1
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-17
1-2
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-17
2-3
0
0.5
1.0'

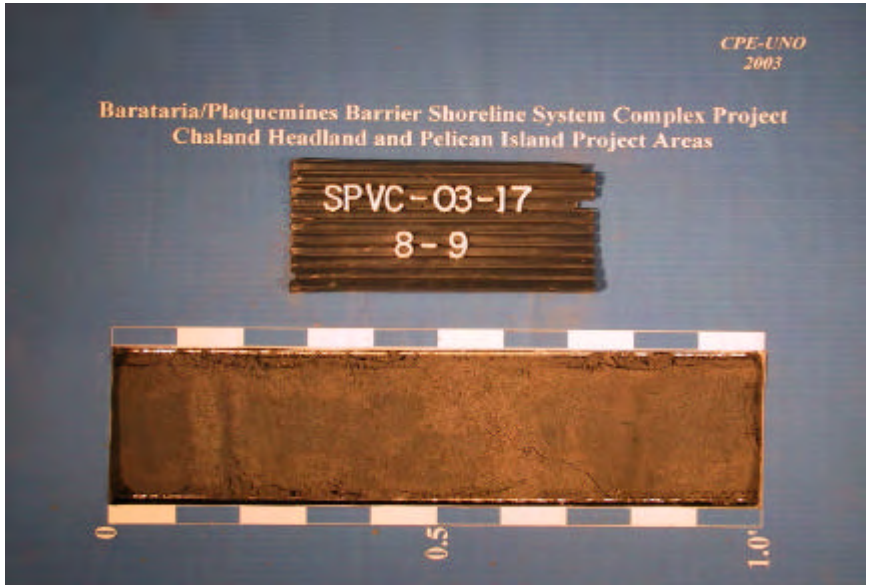
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-17
3-4
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-17
4-5
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-17
5-6
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-17
6-7
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-17
7-8
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-17
8-9
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-17
9-10
0
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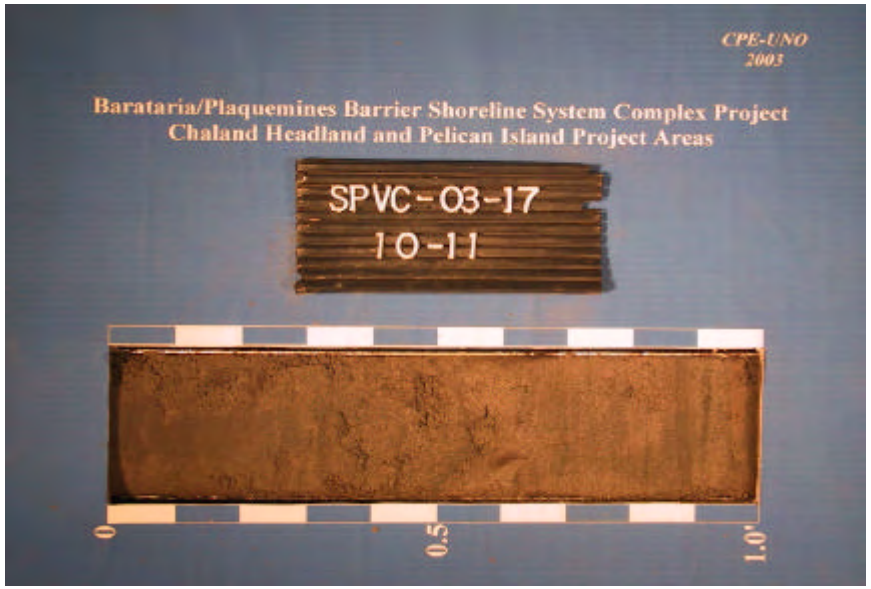
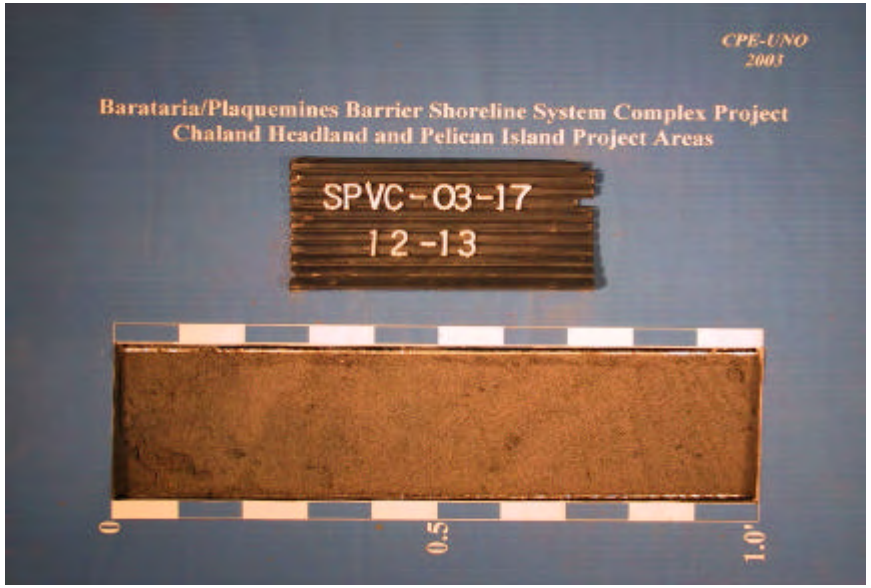
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-17
10-11
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-17
11-12
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-17
12-13
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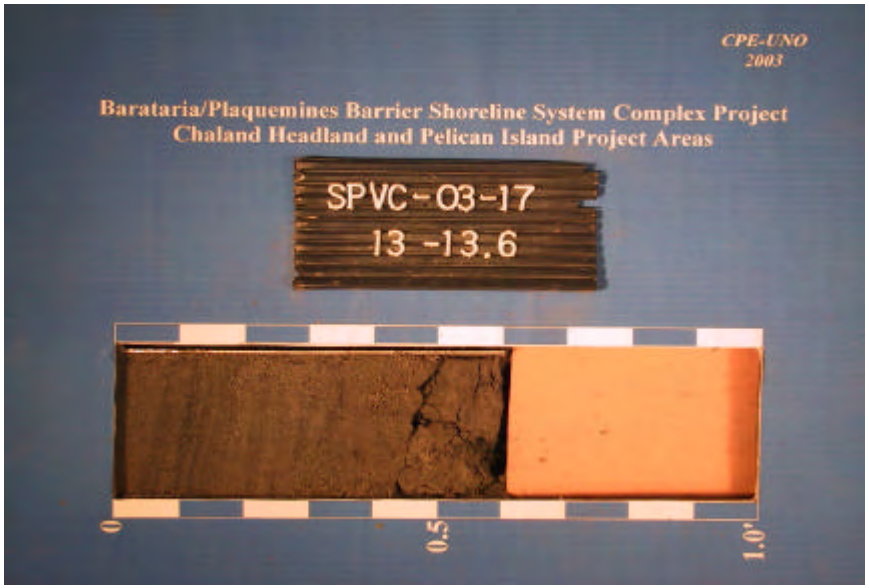
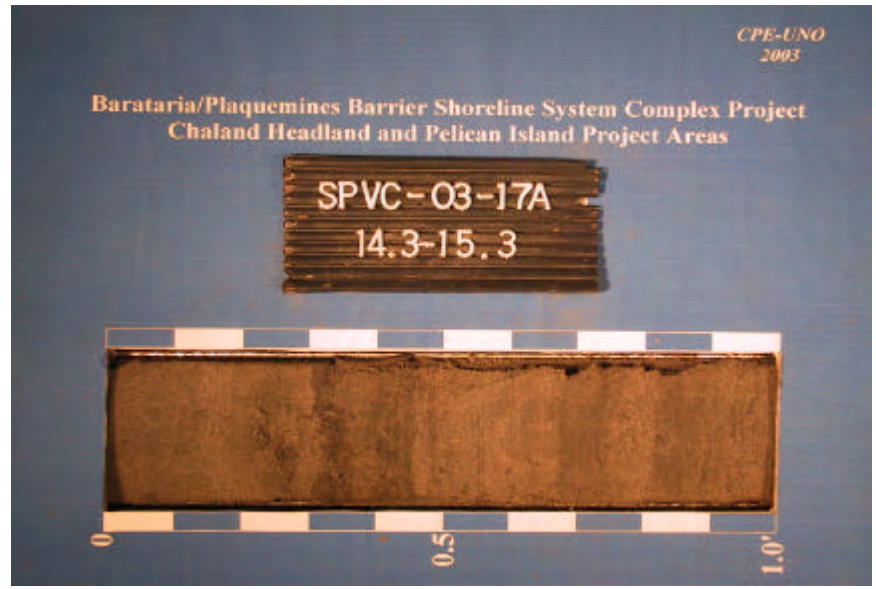
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-17
13-13.6
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-17A
10.3-11.3
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-17A
11.3-12.3
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-17A
13.3-14.3
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-17A
14.3-15.3
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-17A
15.3-16.3
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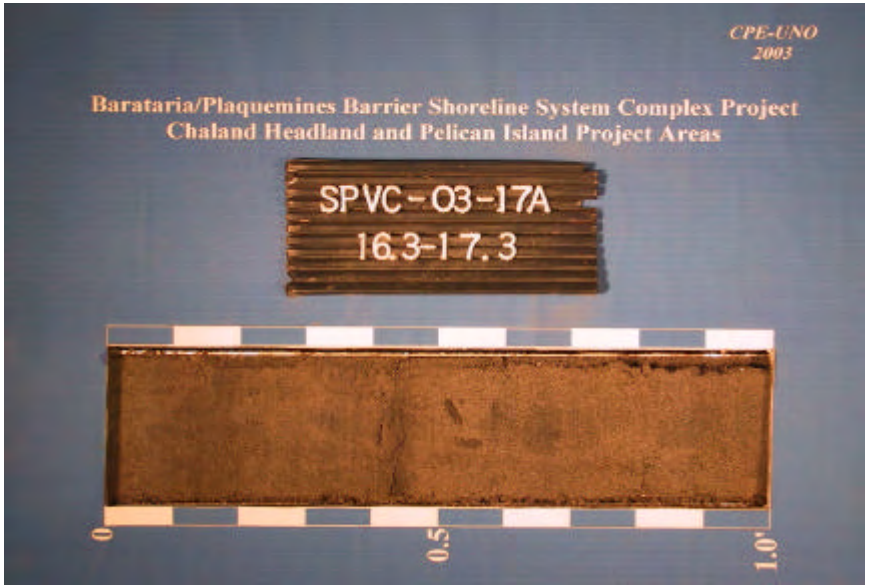
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-17A
16.3-17.3
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-17A
17.3-18.3
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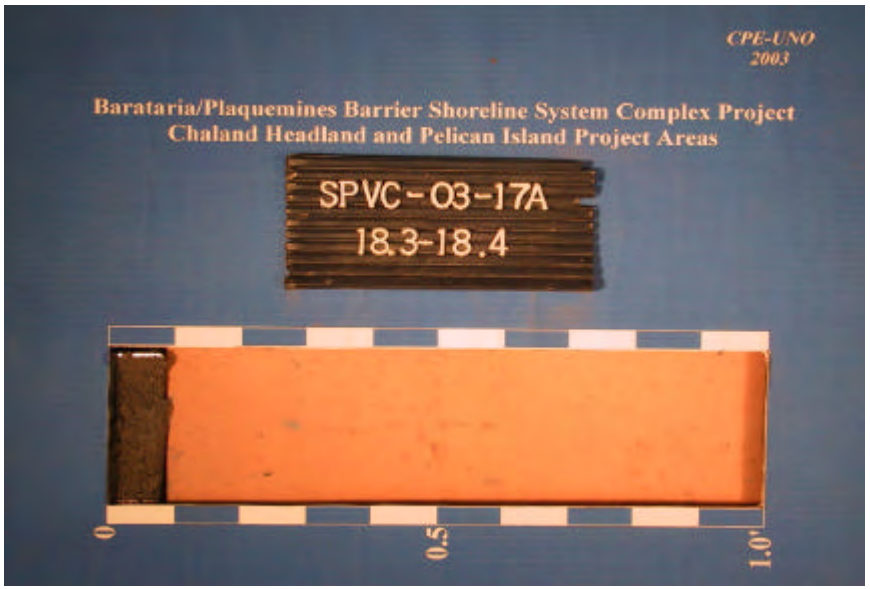
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-17A
18.3-18.4
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-18
0-1
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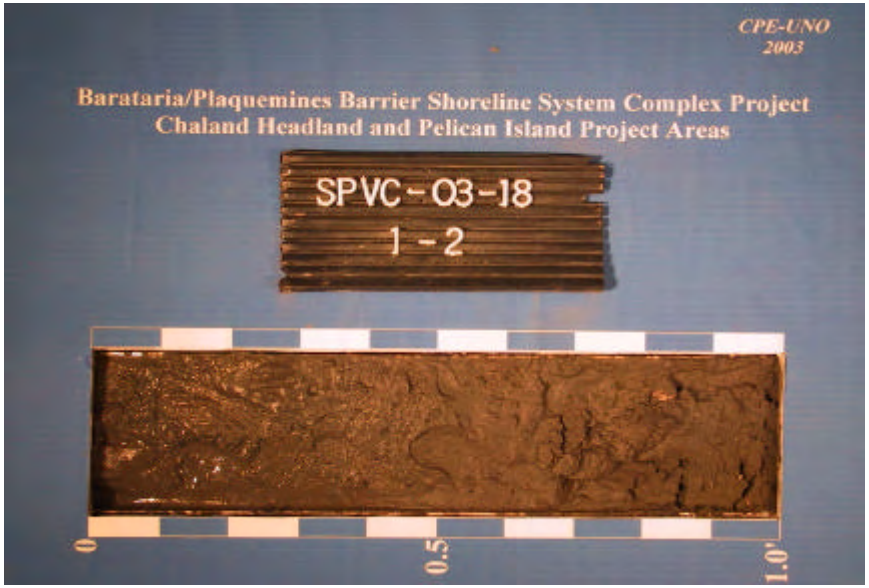
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-18
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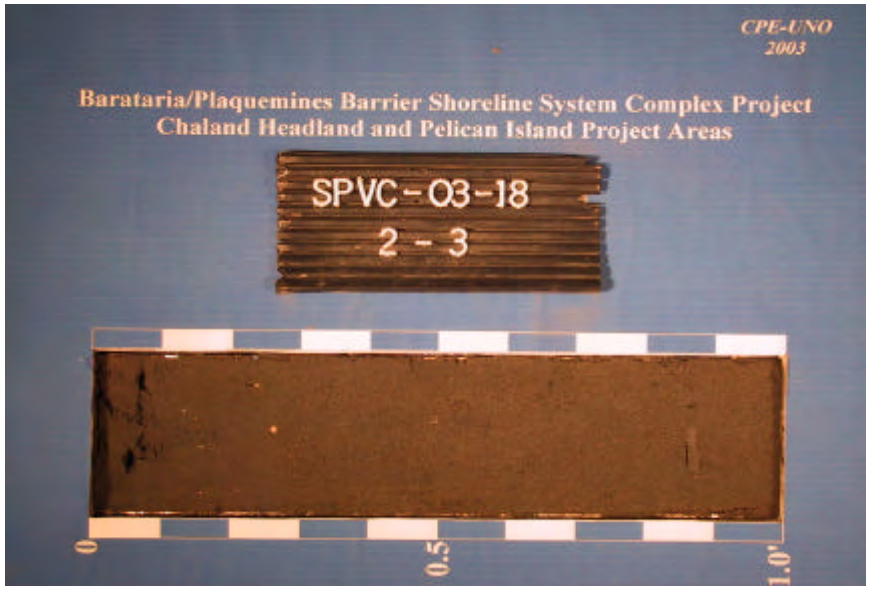
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-18
2-3
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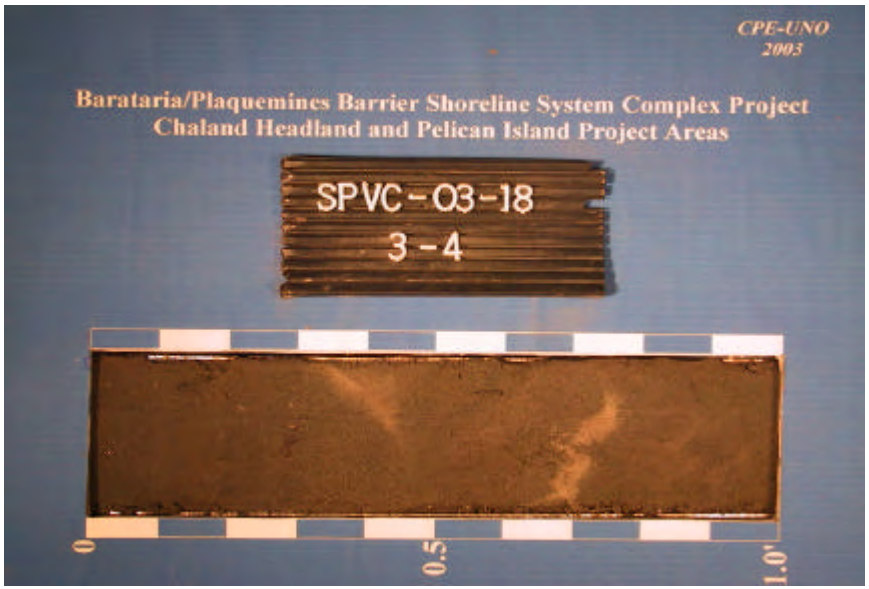
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-18
3-4
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-18
4-5
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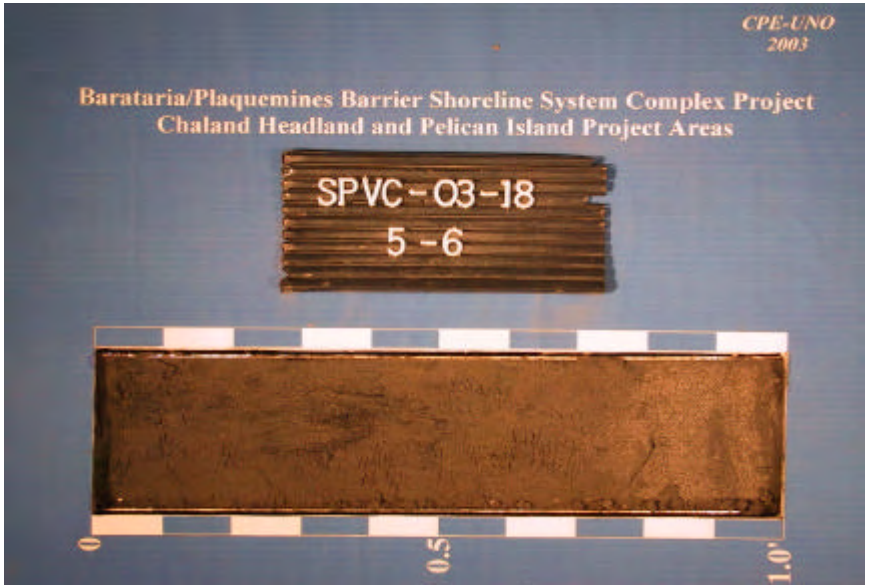
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-18
5-6
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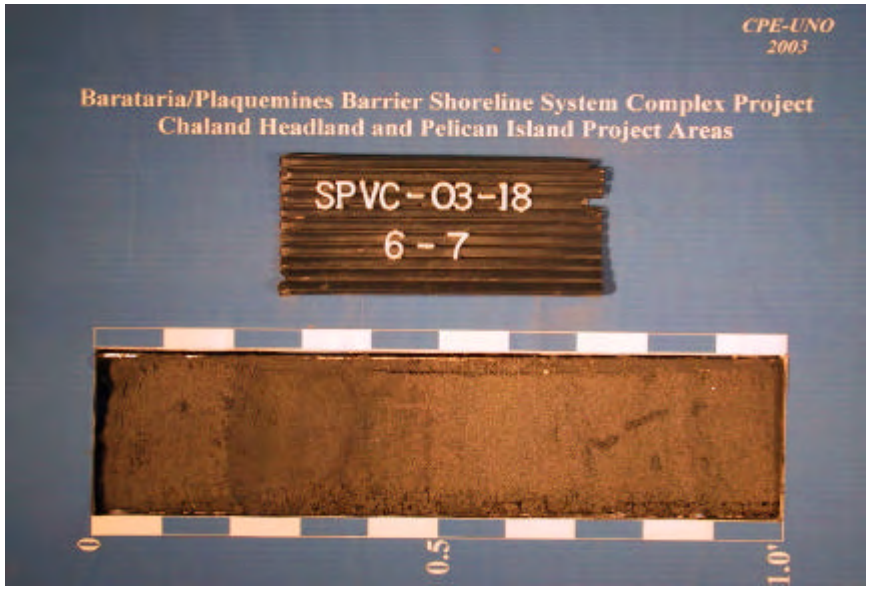
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-18
6-7
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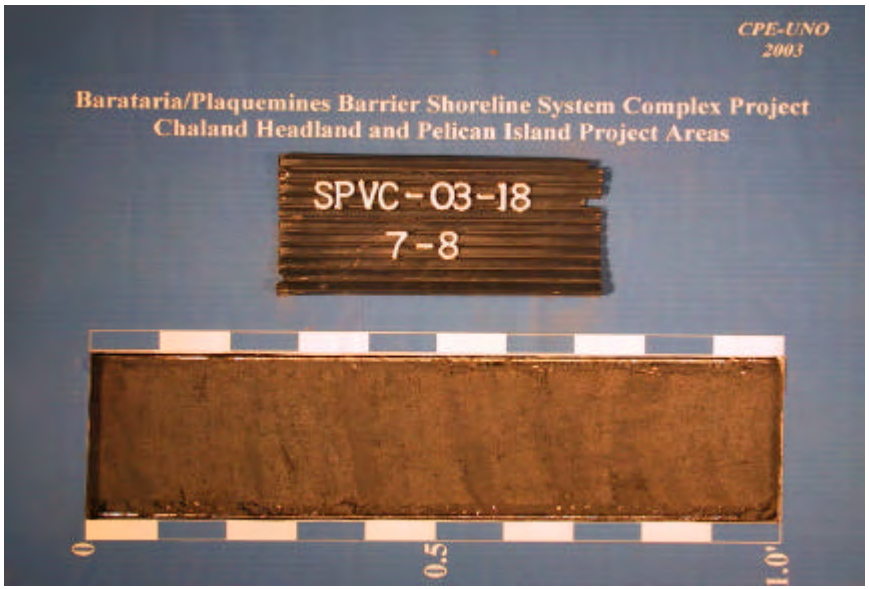
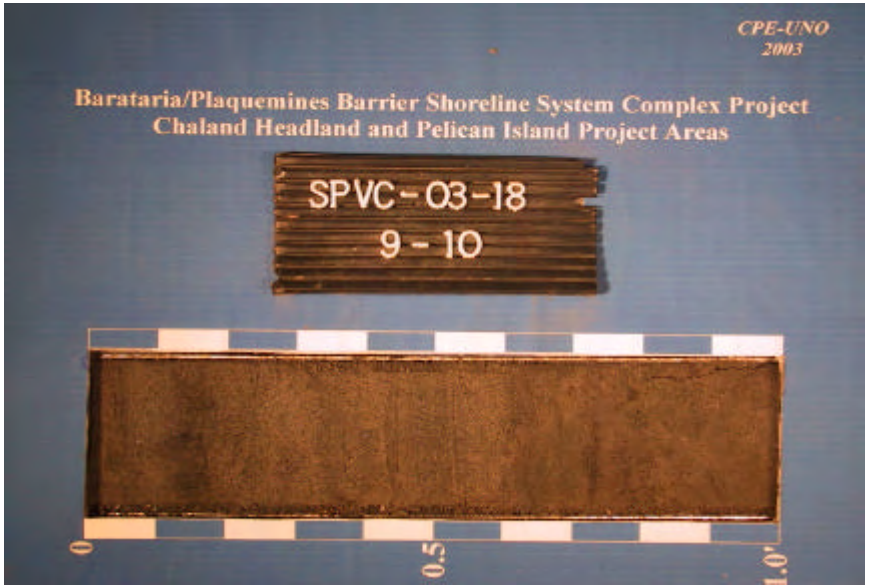
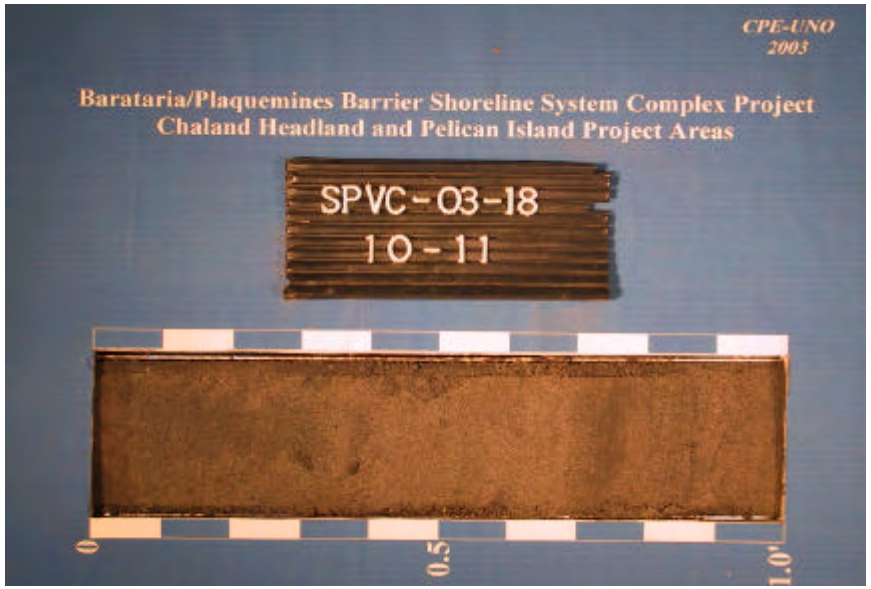
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-18
7-8
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-18
8-9
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-18
9-10
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-18
10-11
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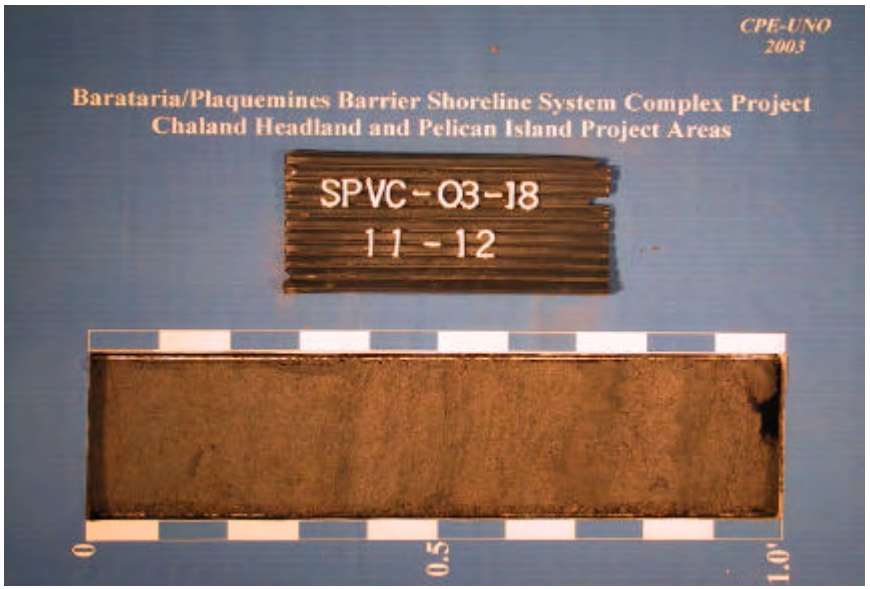
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-18
11-12
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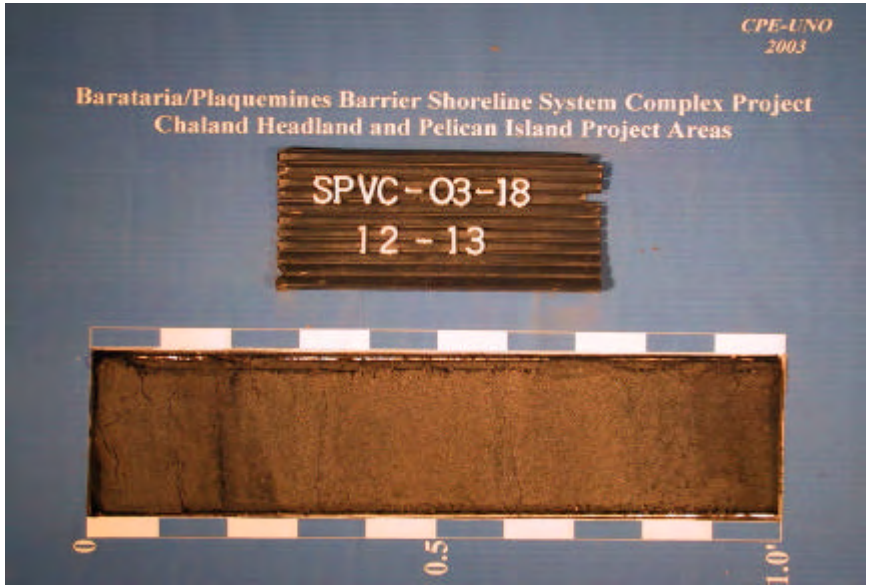
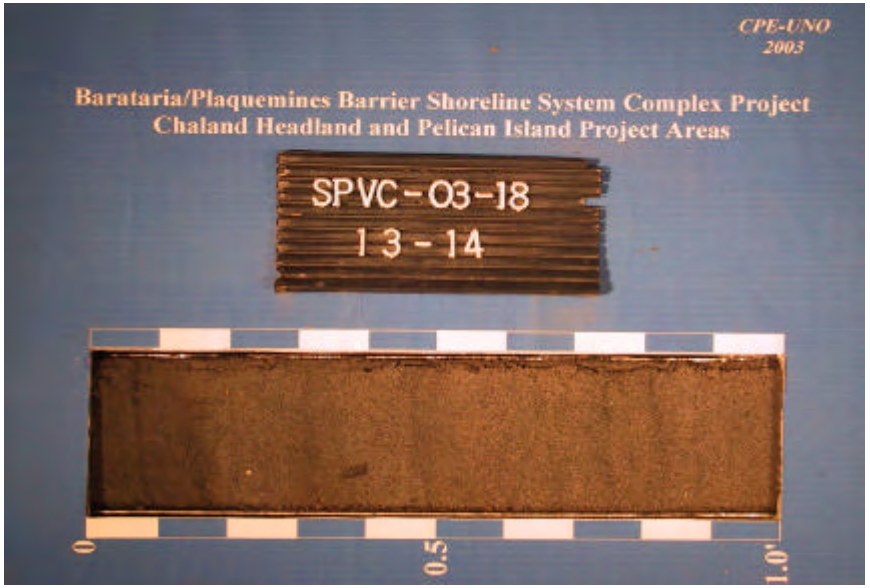
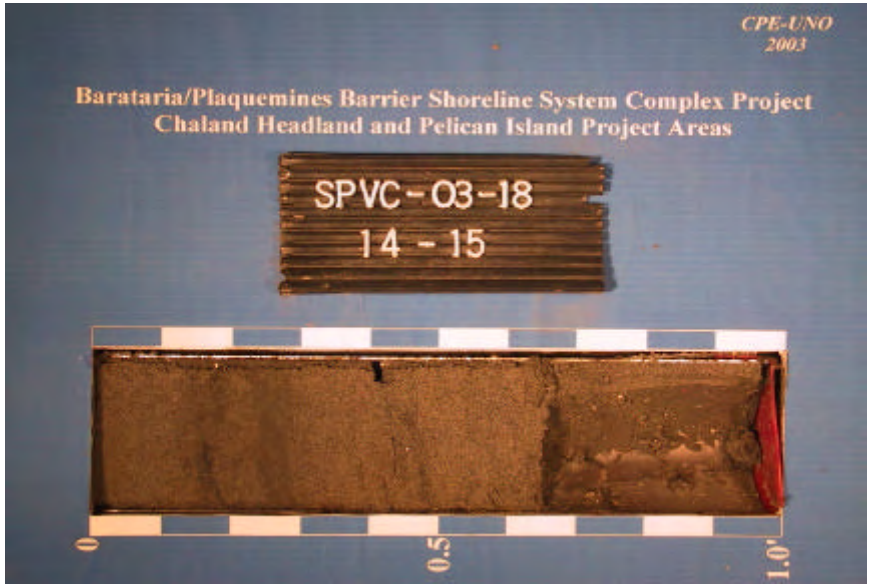
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-18
12 - 13
0
0.5
1.0'

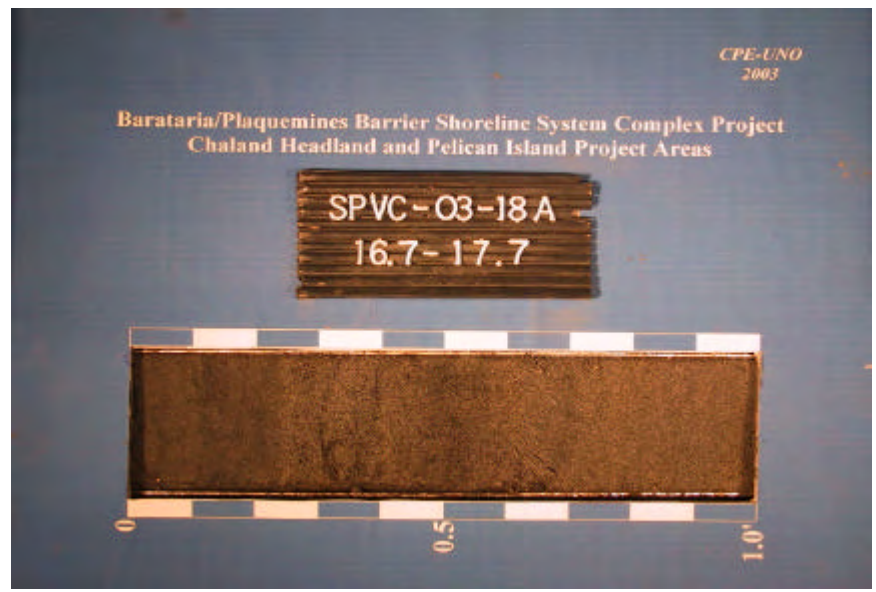

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-18
13 - 14
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-18
14 - 15
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-18A
13.7-14.7
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-18A
14.7-15.7
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-18A
15.7-16.7
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-18A
16.7-17.7
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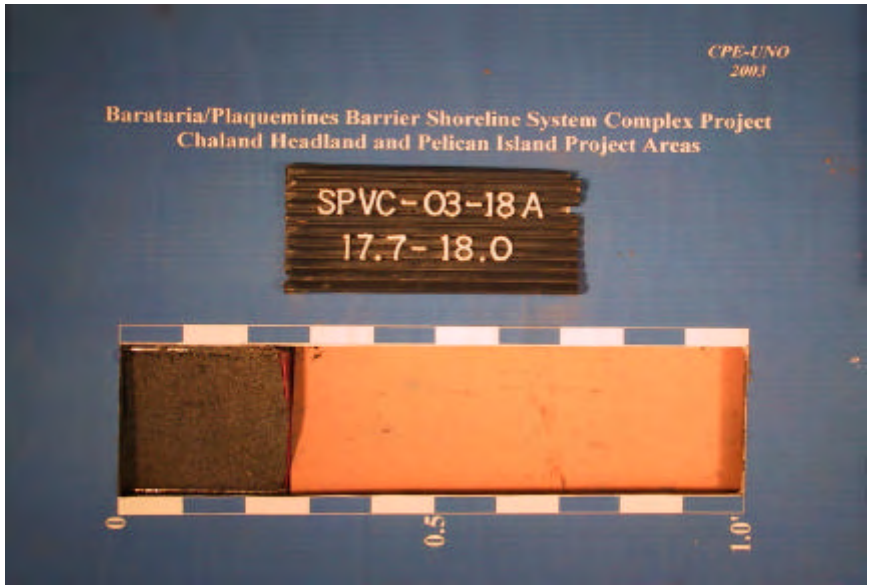
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-18A
17.7-18.0
0
0.5'
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-19
0-1
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-19
1-2
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-19
2-3
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-19
3-4
0
0.5
1.0'

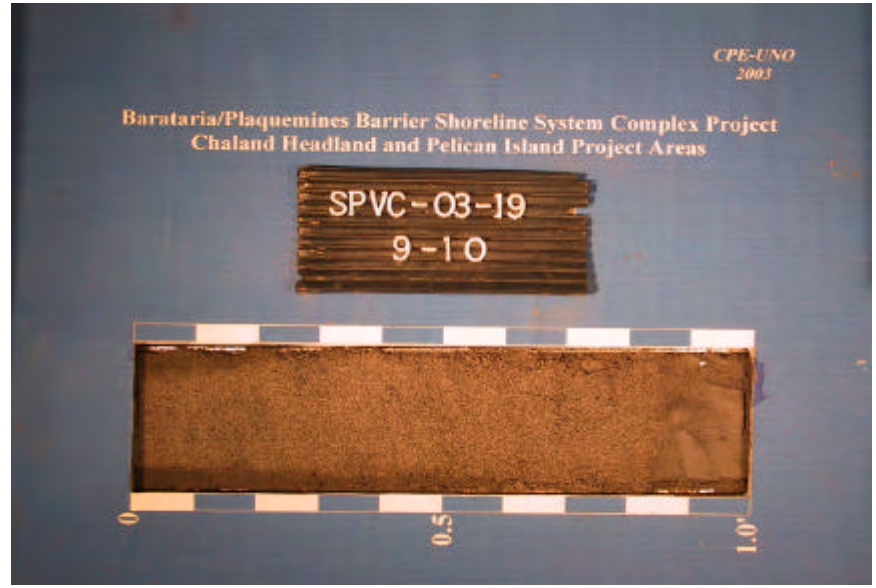
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-19
4 - 5
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-19
5 - 6
0
0.5
1.0'

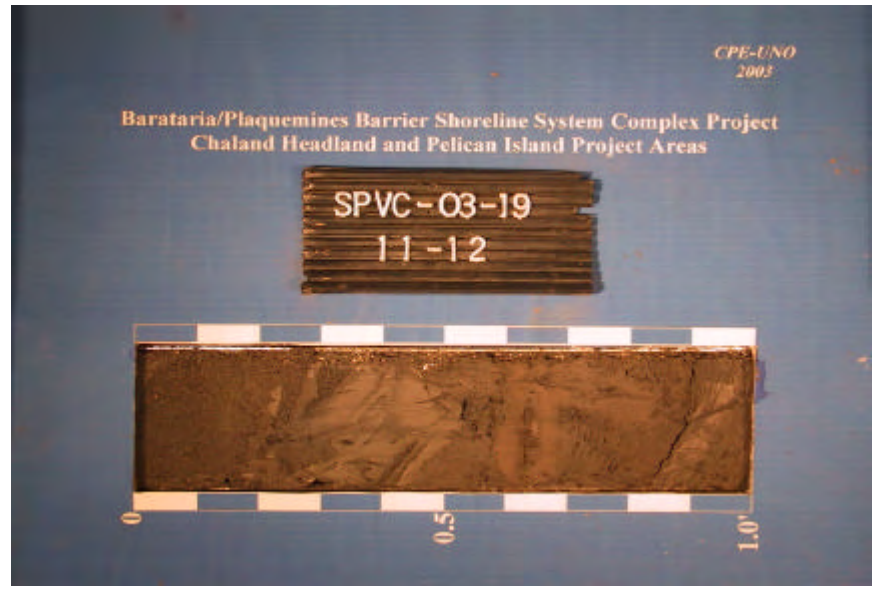
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-19
6 - 7
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-19
7 - 8
0
0.5
1.0'

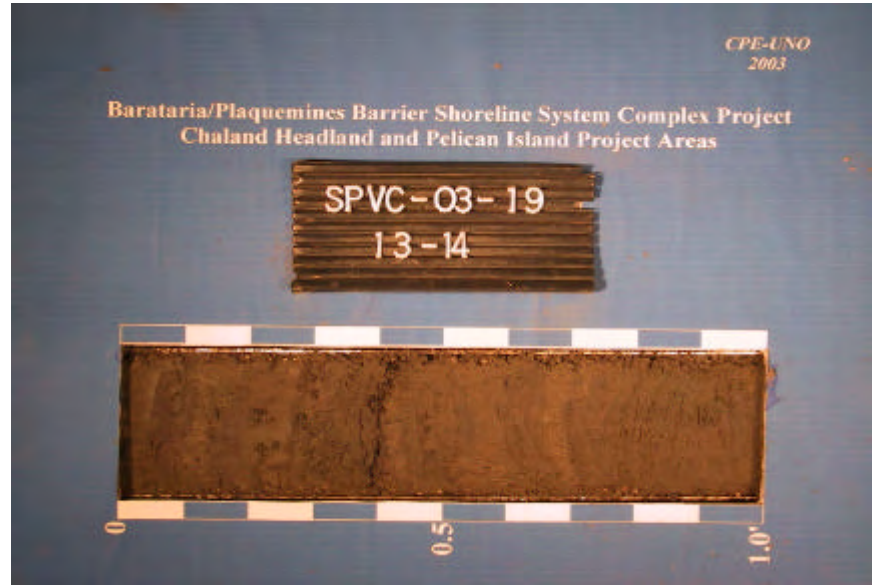
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-19
8-9
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-19
9-10
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-19
10-11
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-19
11-12
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-19
12-13
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-19
13-14
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-19
14-15
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-19
15-16
0
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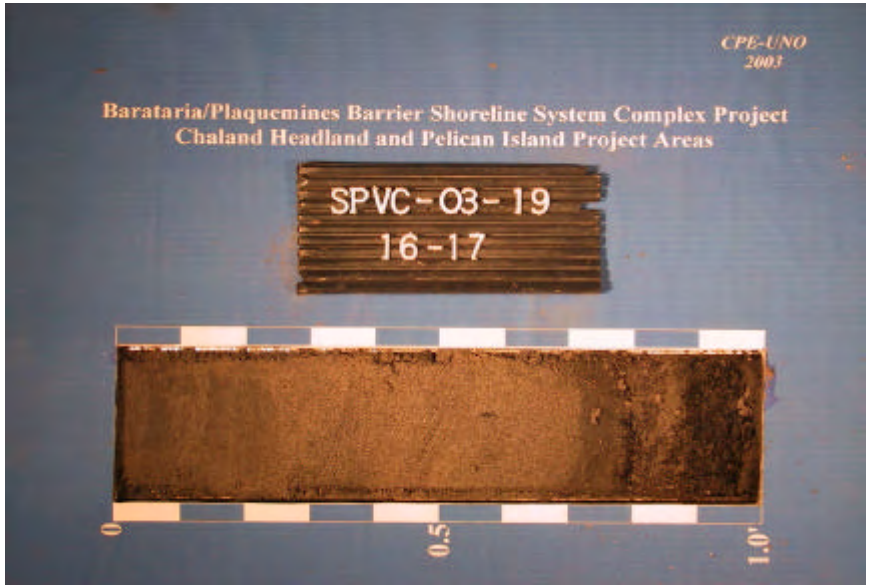
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-19
16-17
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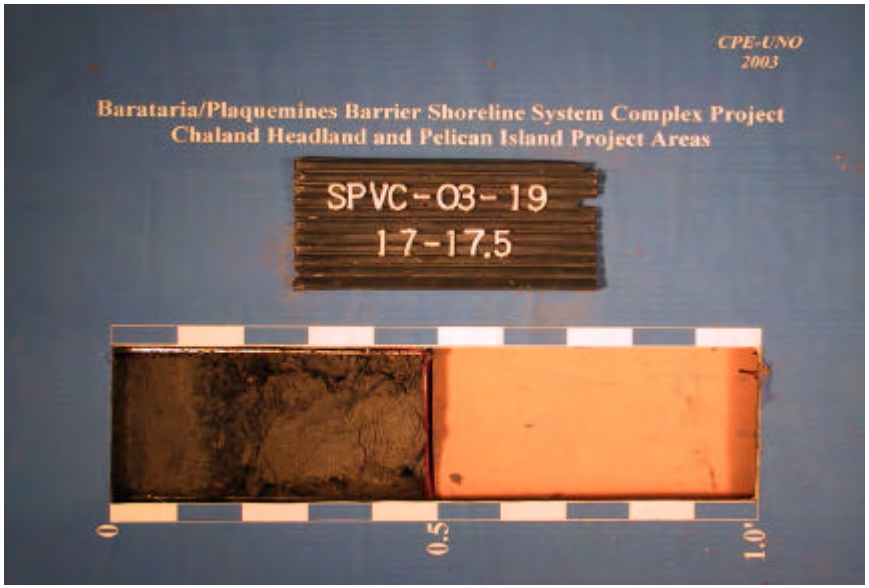
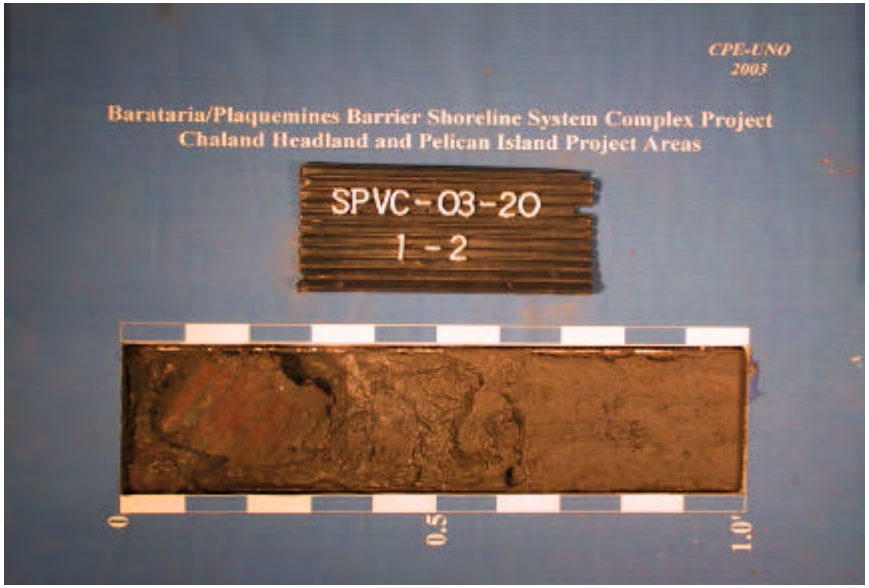
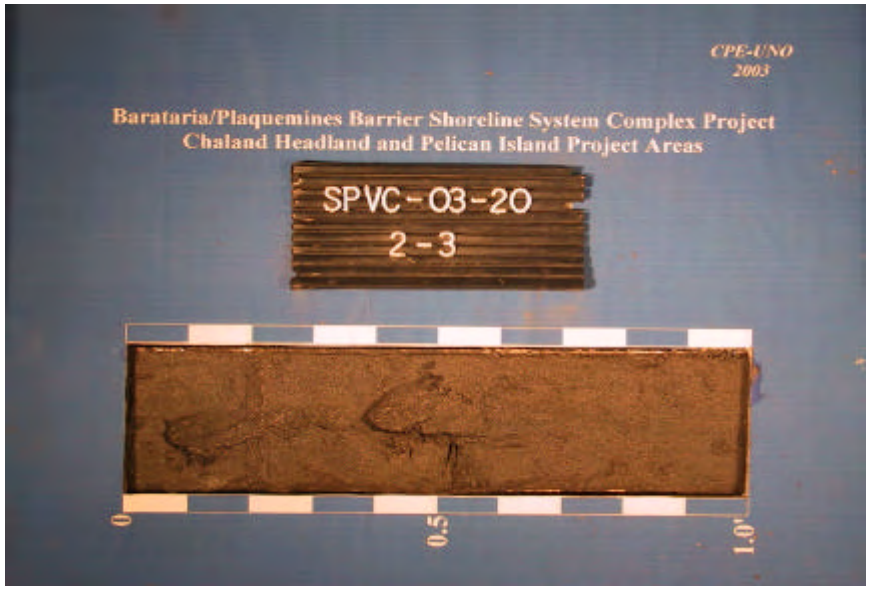
1.0'

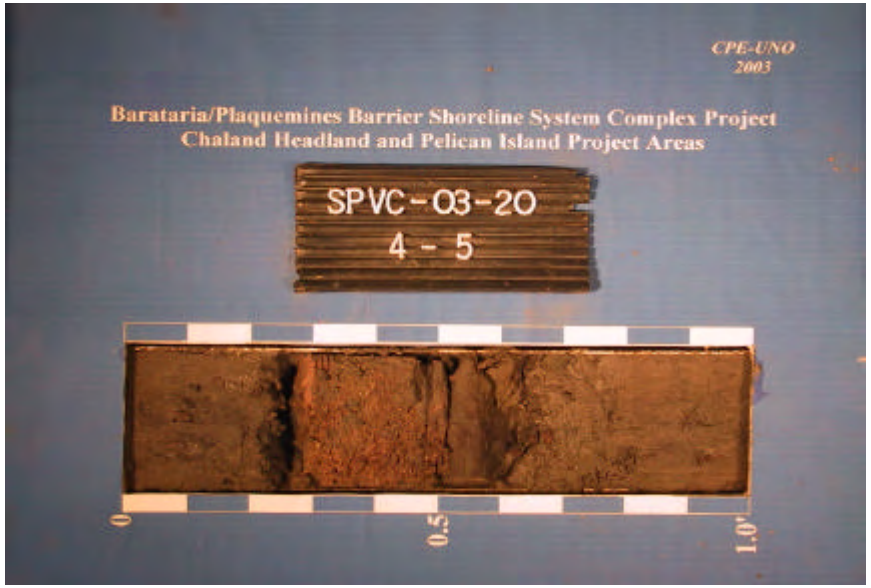

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-19
17-17.5
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-20
0-1
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-20
1-2
0
0.5
1.0'

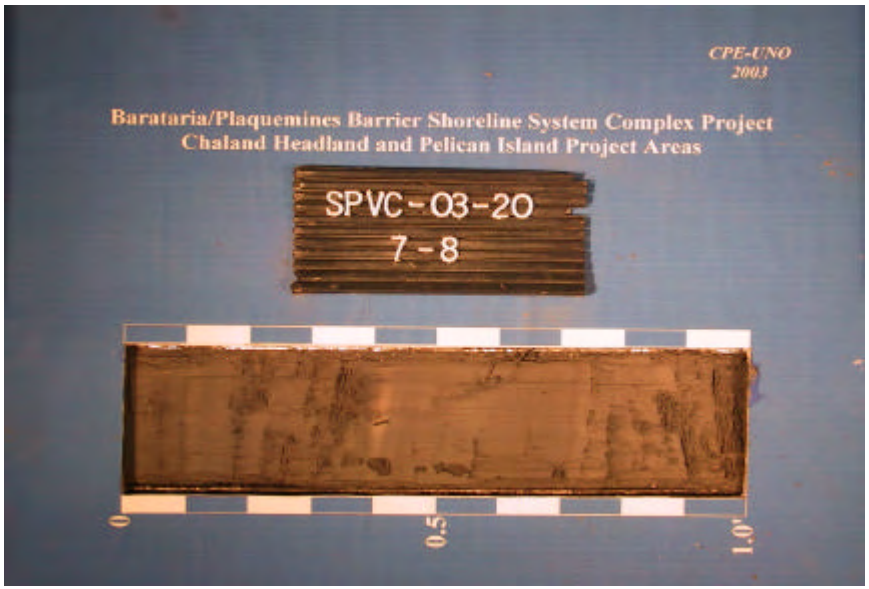

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-20
2-3
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-20
3-4
0
0.5
1.0'

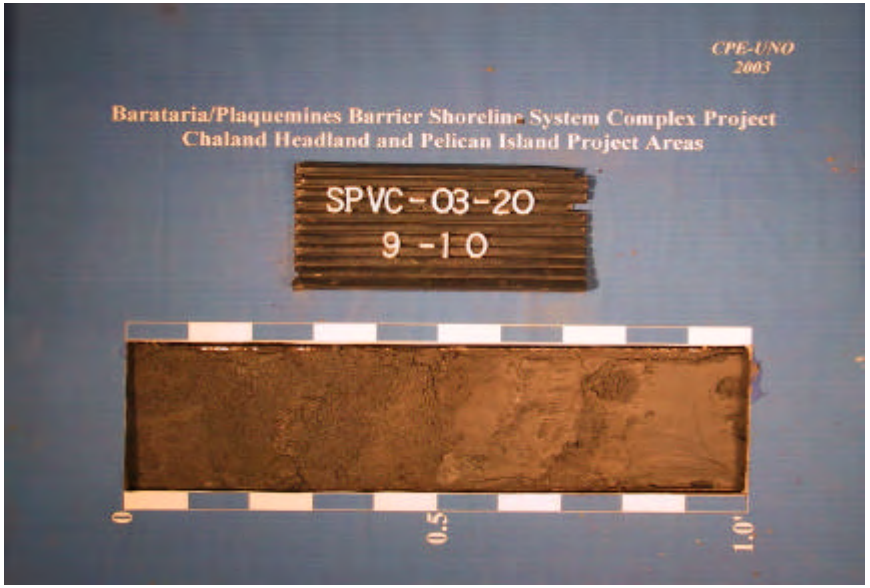

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-20
4 - 5
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-20
5 - 6
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-20
6 - 7
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-20
7 - 8
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-20
8-9
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-20
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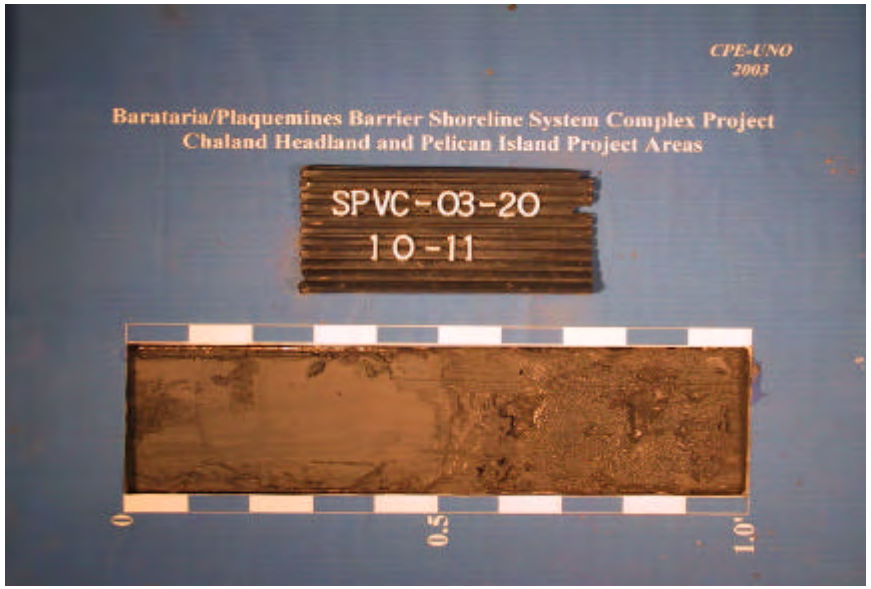
CPE-UNO
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Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
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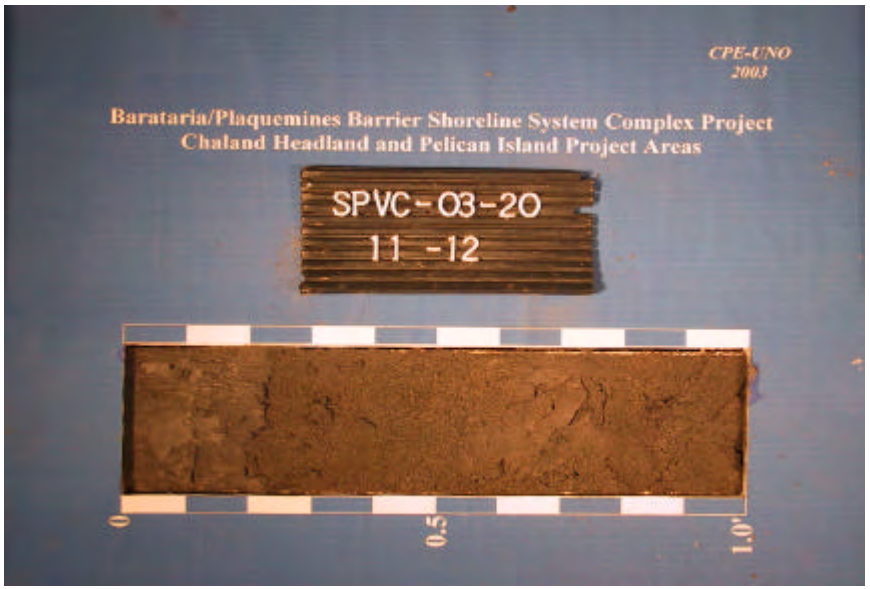
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Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-20
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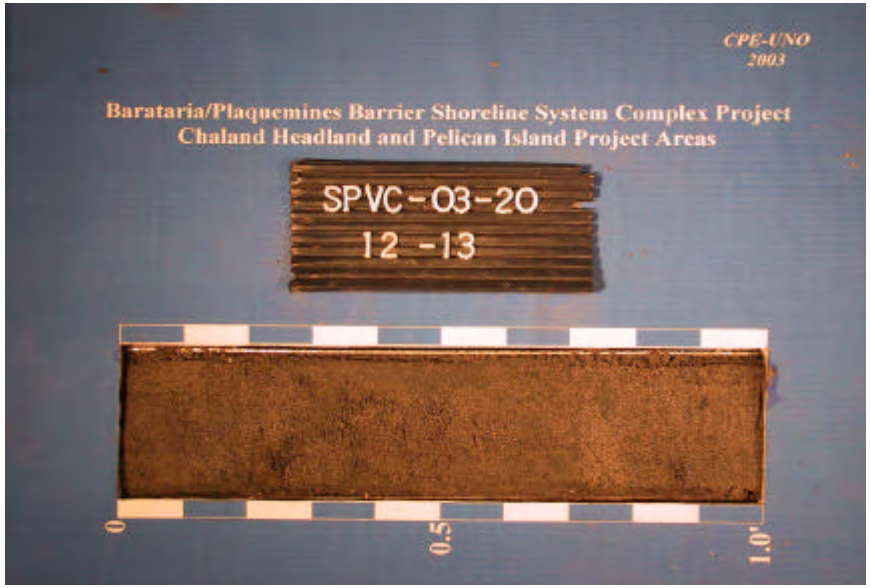
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Chaland Headland and Pelican Island Project Areas
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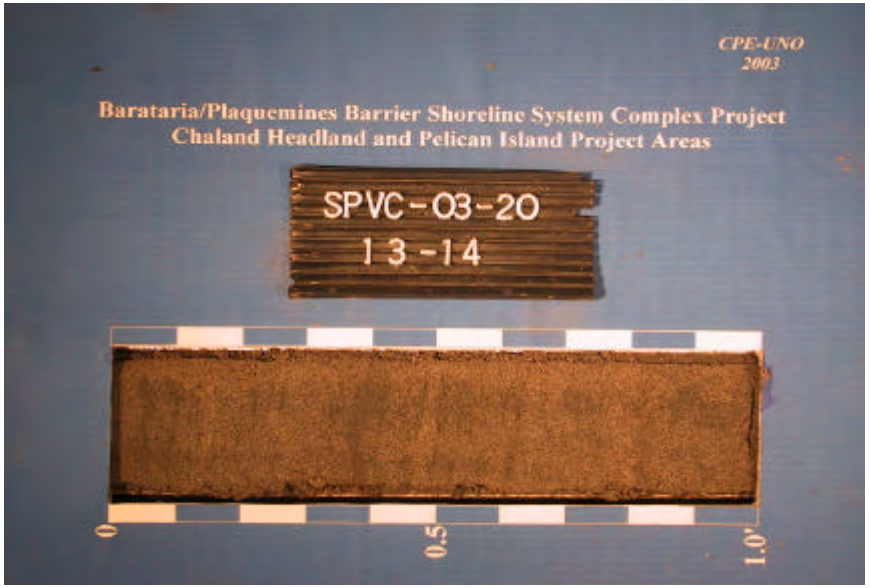
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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-20
13 -14
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1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-20
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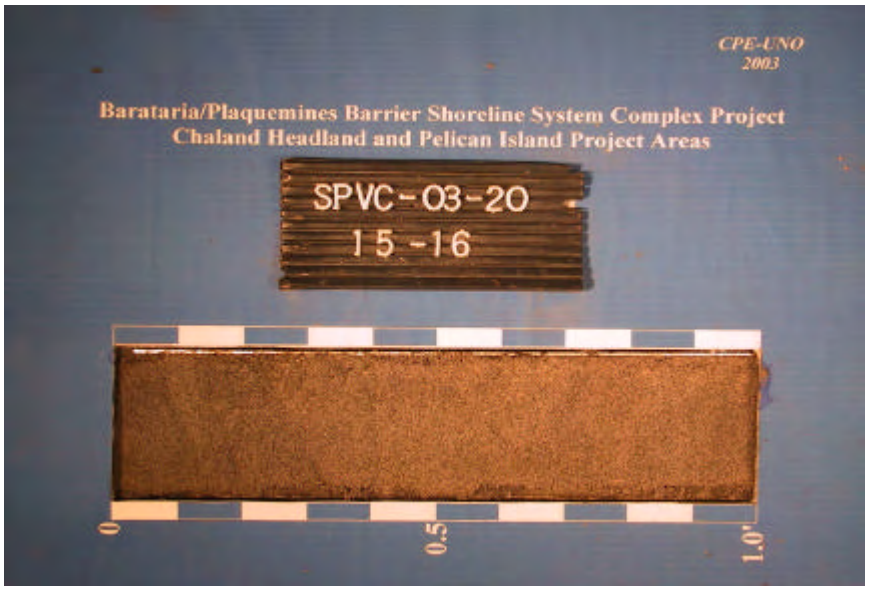
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Chaland Headland and Pelican Island Project Areas
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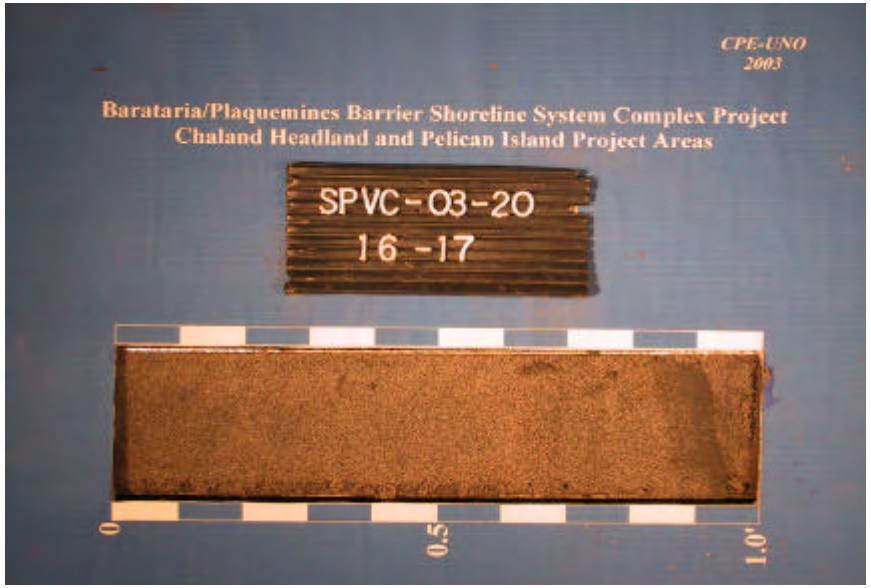
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Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
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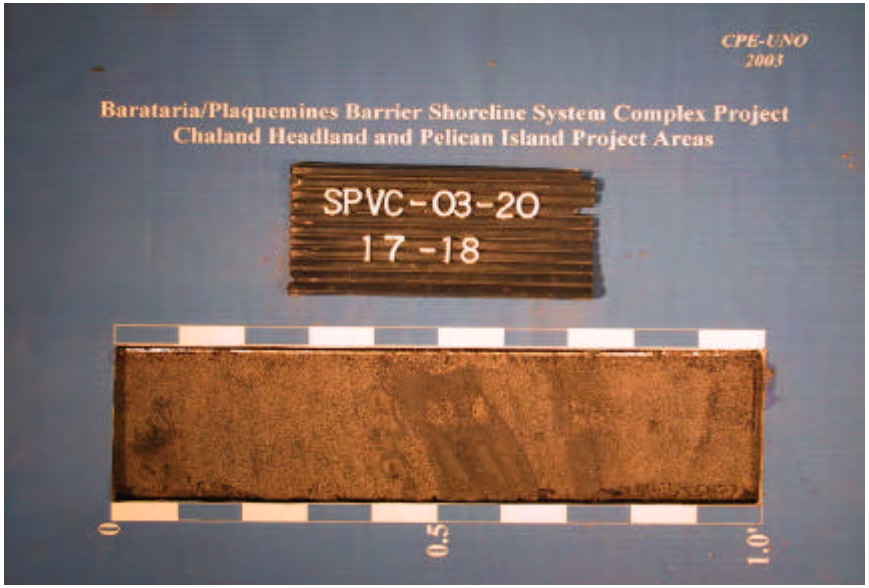
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Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-20
17-18
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1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-20
18-19
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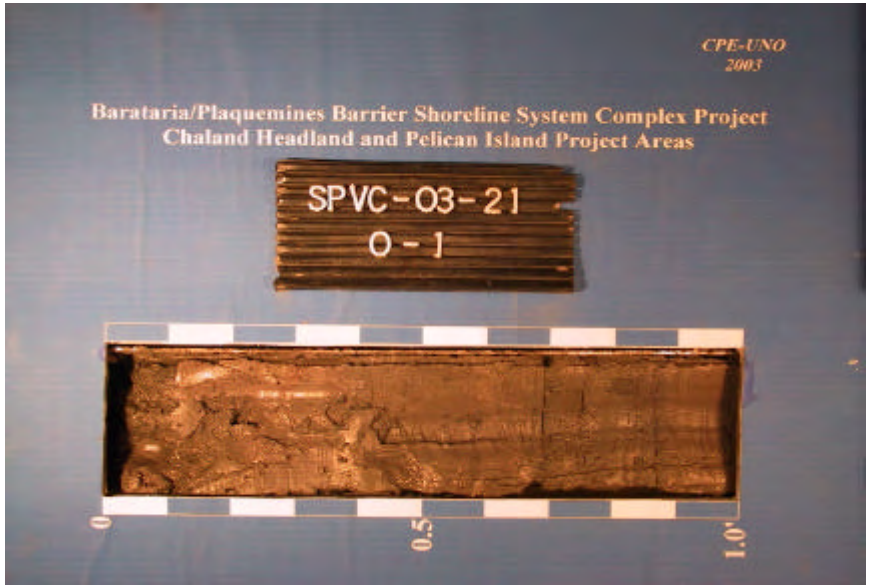
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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-21
0-1
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1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-21
1-2
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-21
2-3
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-21
3-4
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-21
4-5
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-21
5-6
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-21
6-7
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-21
7-8
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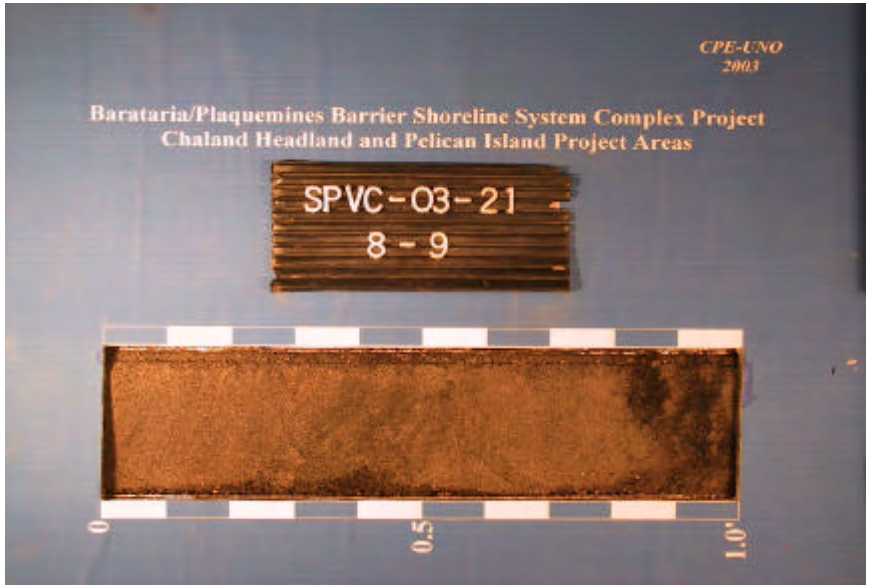
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-21
8-9
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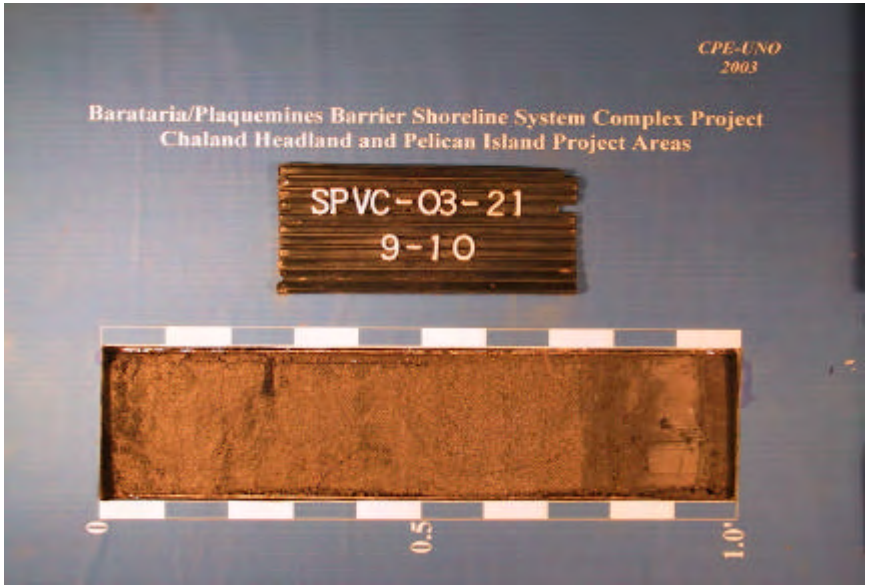
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-21
9-10
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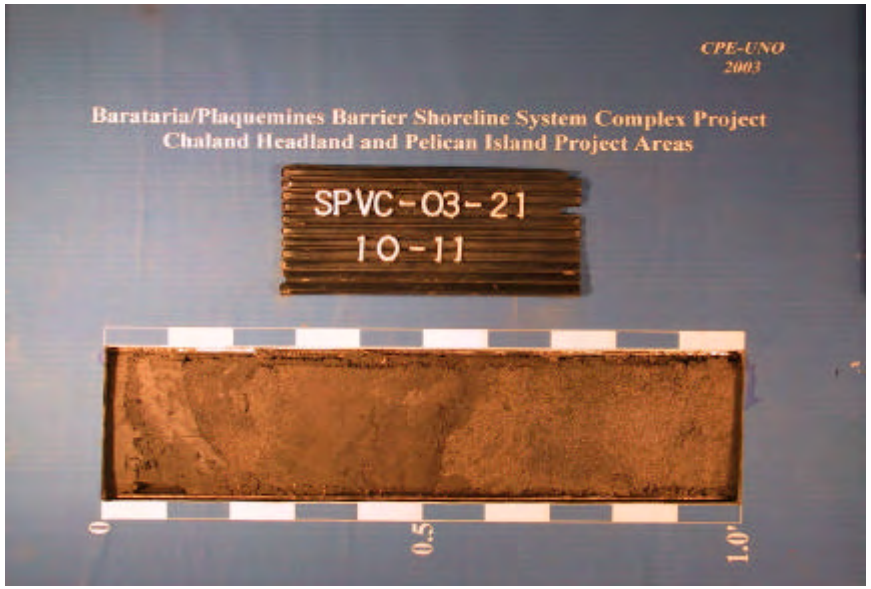
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-21
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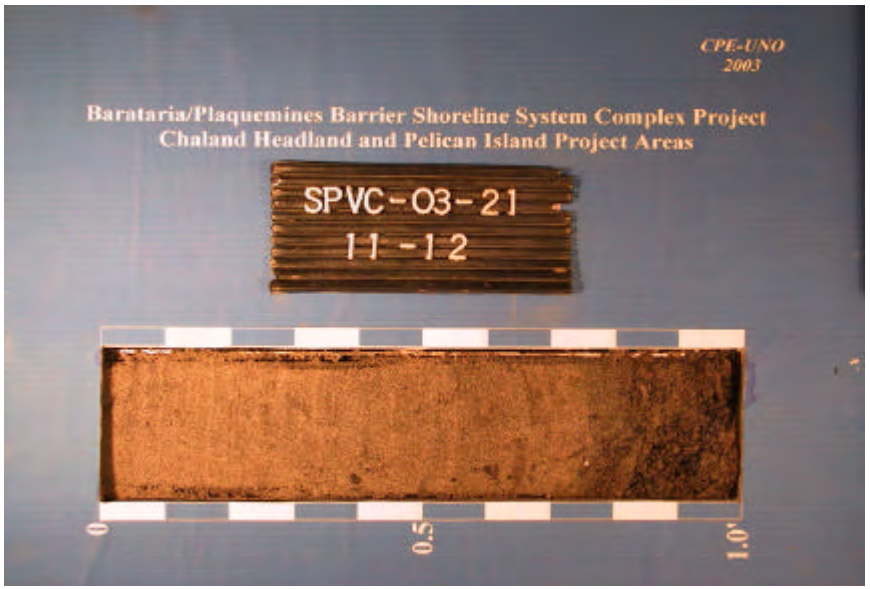
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-21
11-12
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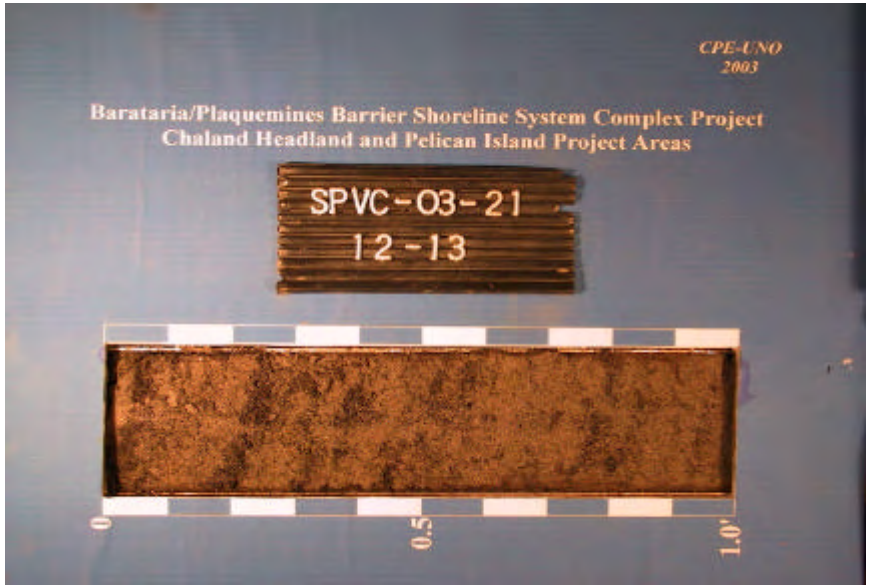
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-21
12-13
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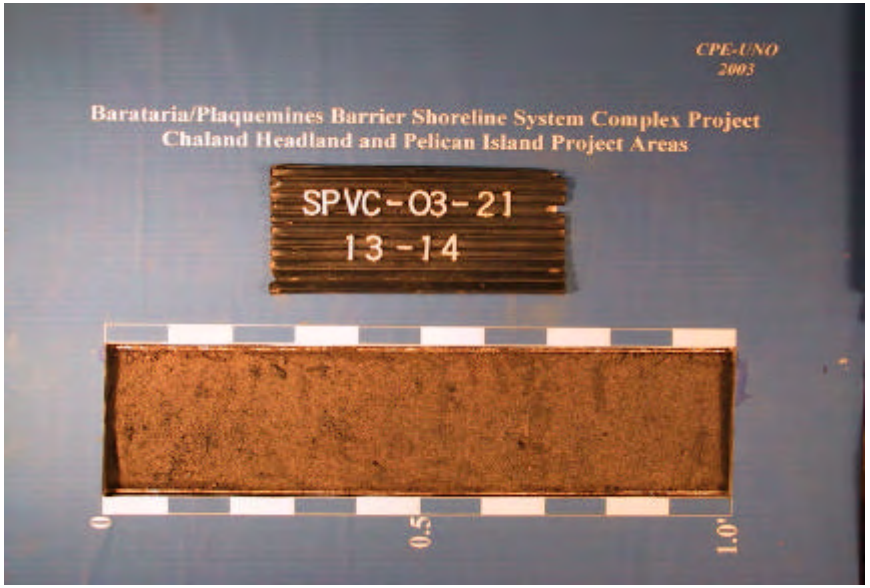
0.5
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-21
13-14
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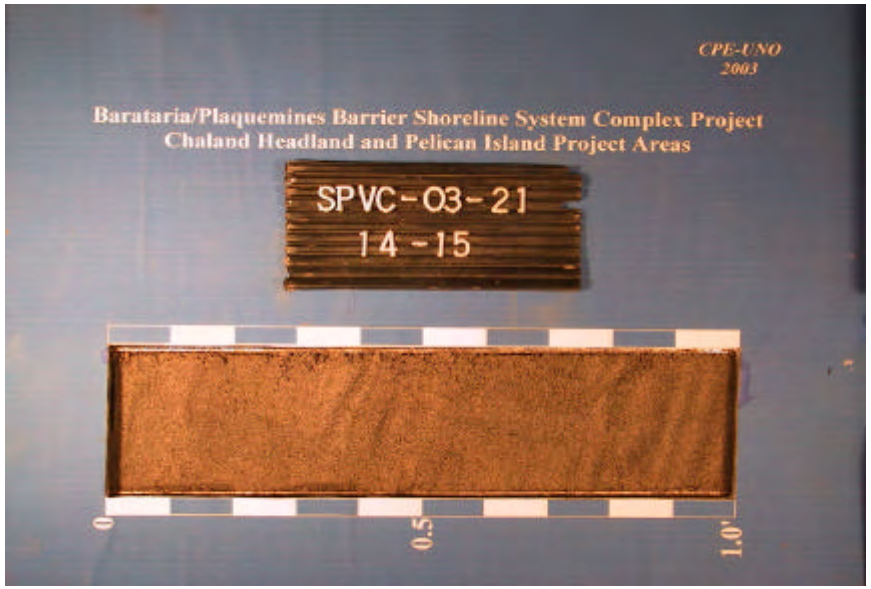
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-21
14-15
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1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-21
15-16
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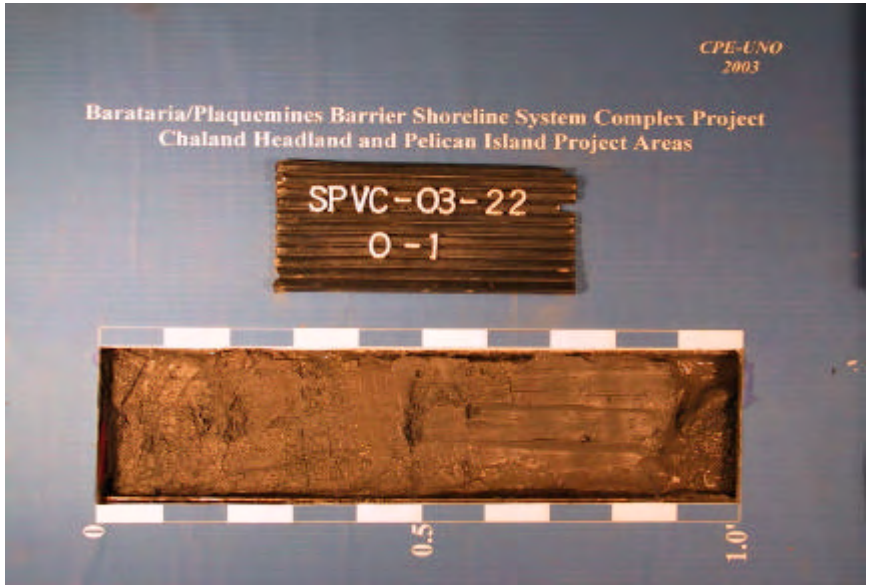
0.5
1.0'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Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-22
0-1
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0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-22
1-2
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-22
2-3
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-22
3-4
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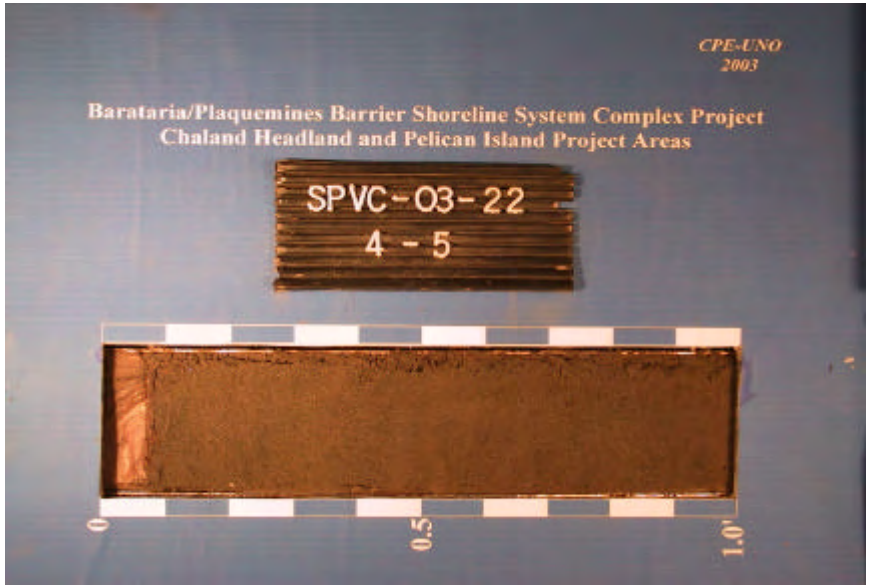
1.0'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2003
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Chaland Headland and Pelican Island Project Areas
SPVC-03-22
4 - 5
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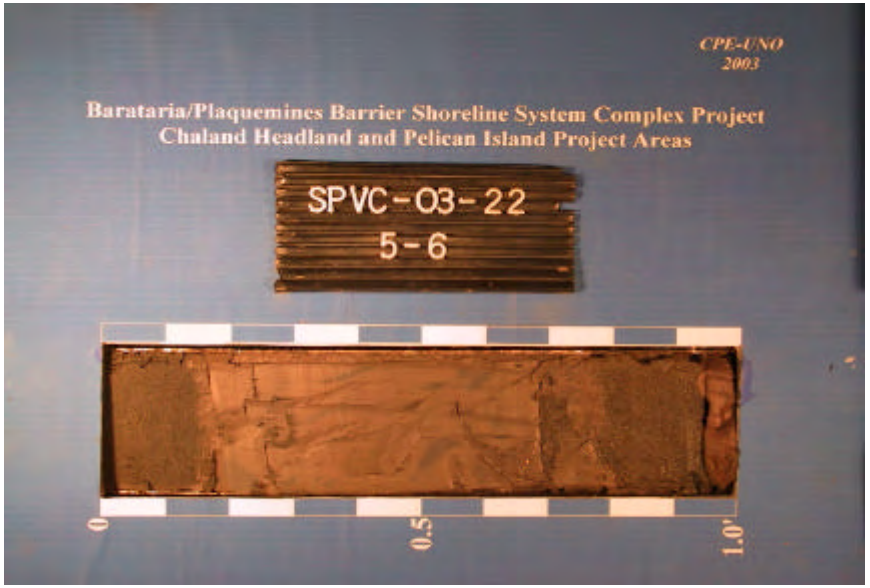
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-22
5-6
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0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-22
6-7
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-22
7-8
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-22
8-9
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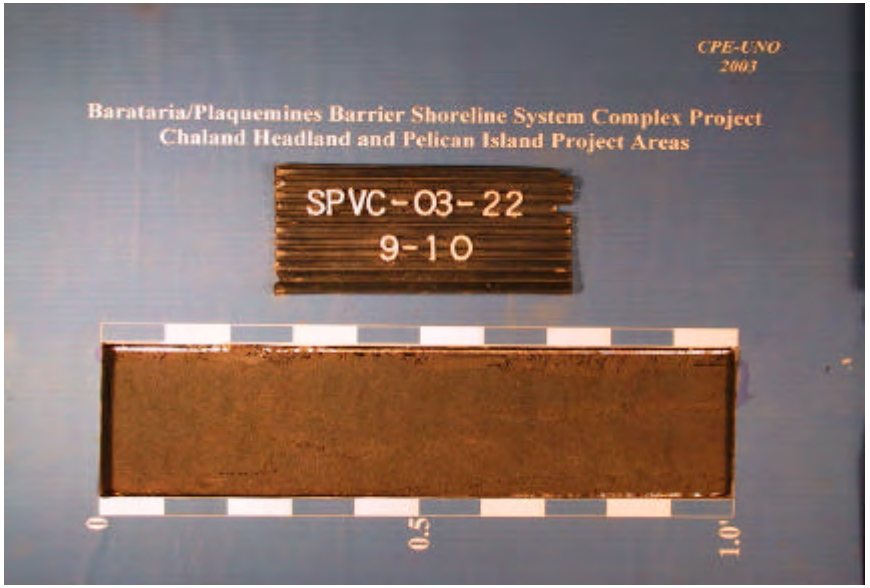
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-22
9-10
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1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-22
10-11
0
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1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-22
11-12
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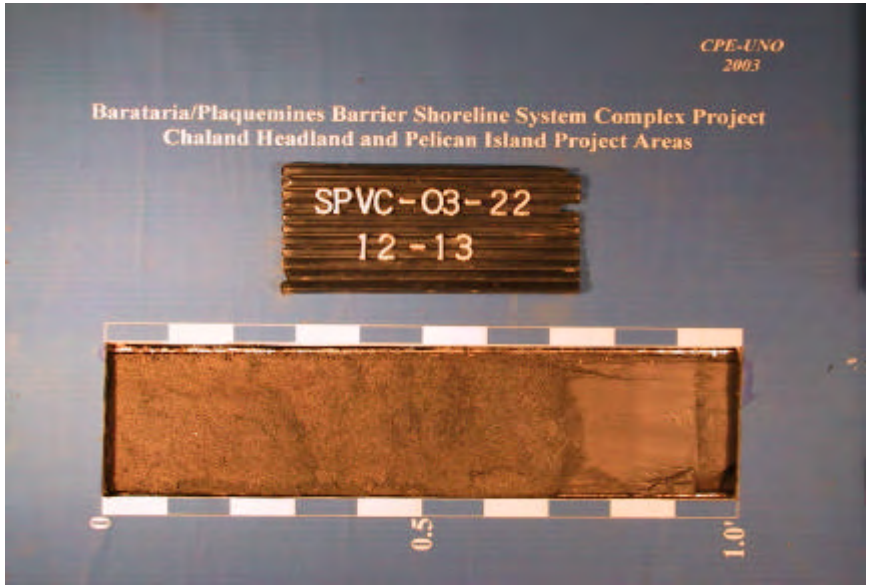
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-22
12-13
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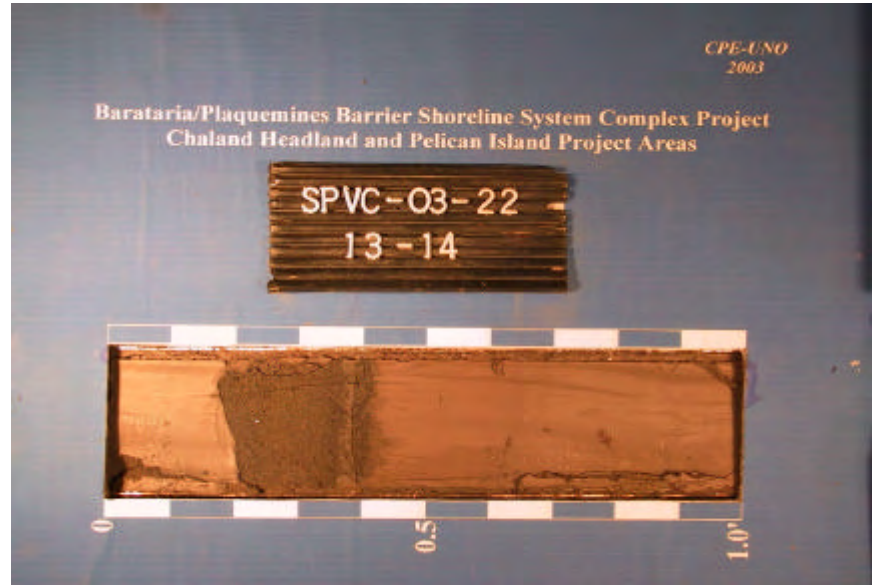
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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-22
13-14
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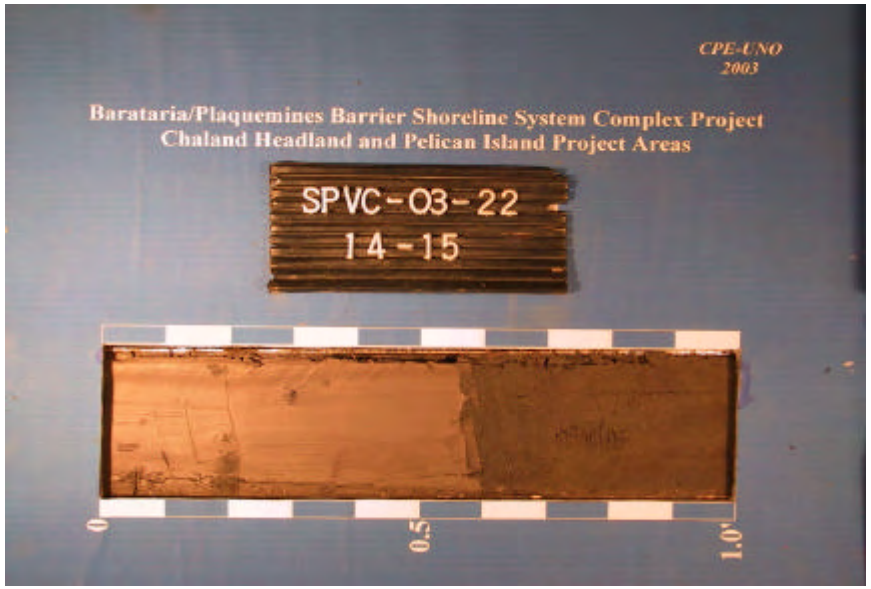
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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-22
14-15
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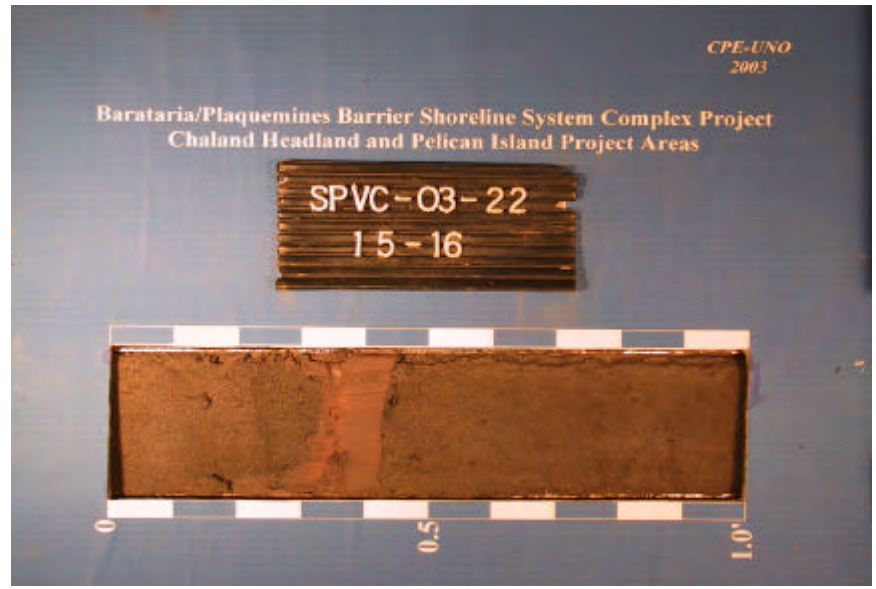
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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-22
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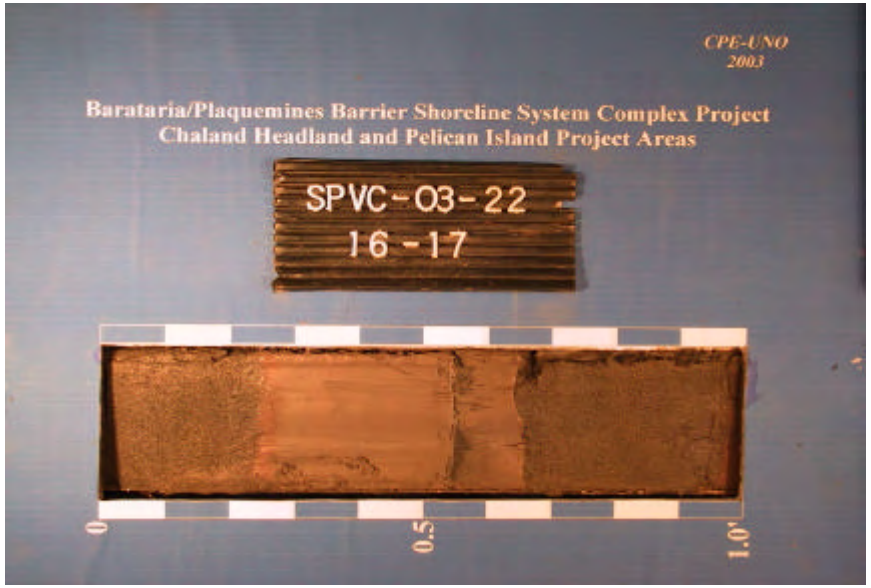
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-22
16-17
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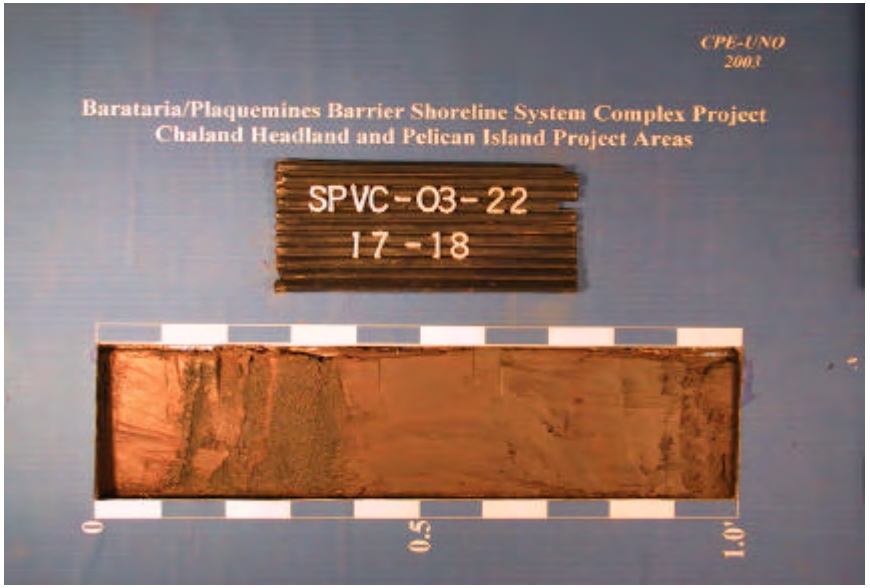
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-22
17-18
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1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-22
18-18.3
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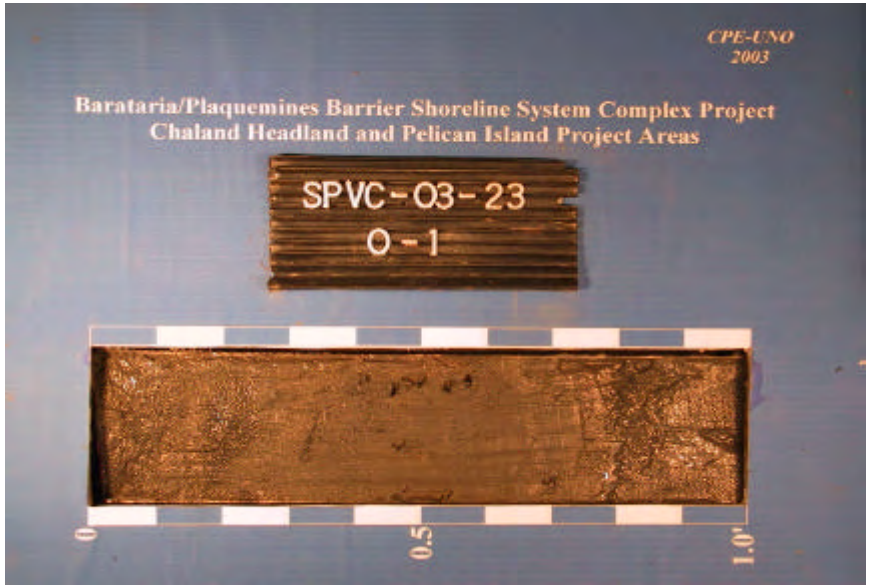
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-23
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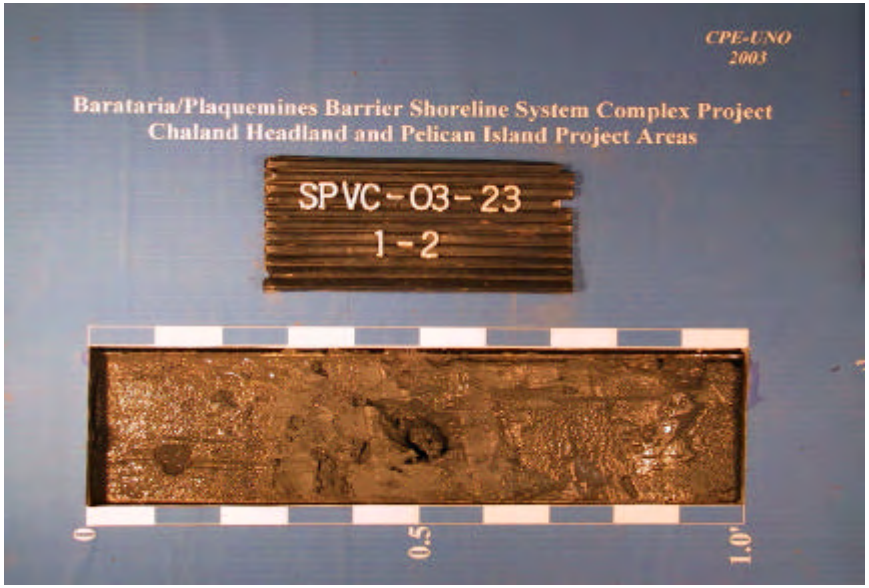
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-23
1-2
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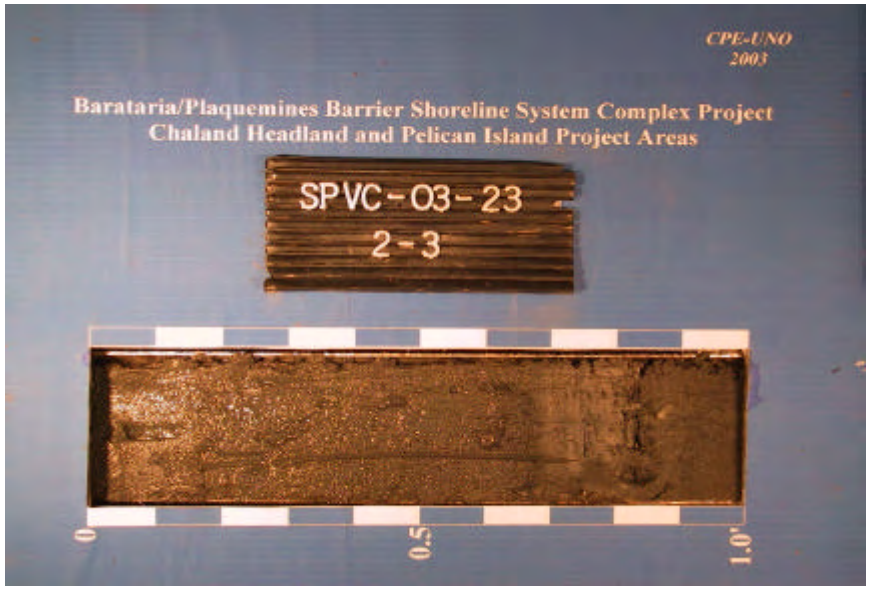
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-23
2-3
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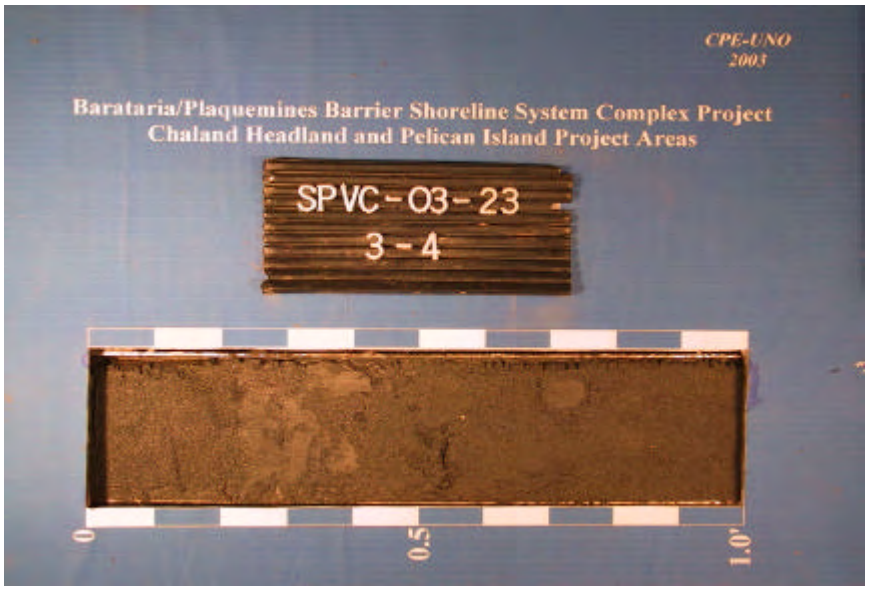
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-23
3-4
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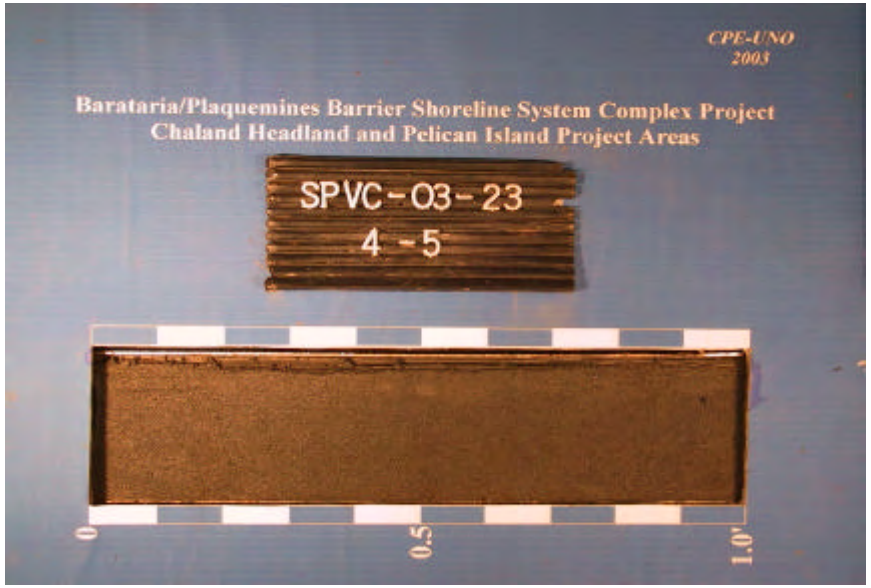
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-23
4-5
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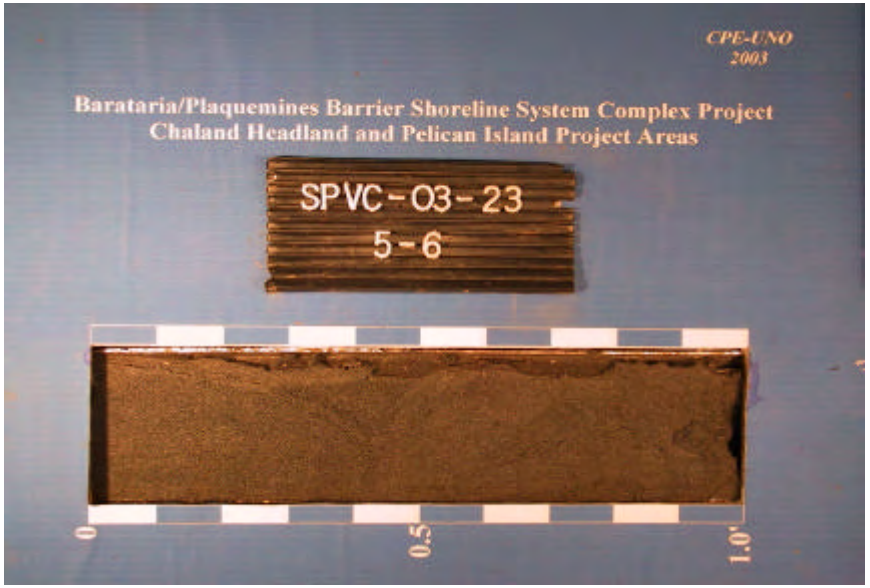
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-23
5-6
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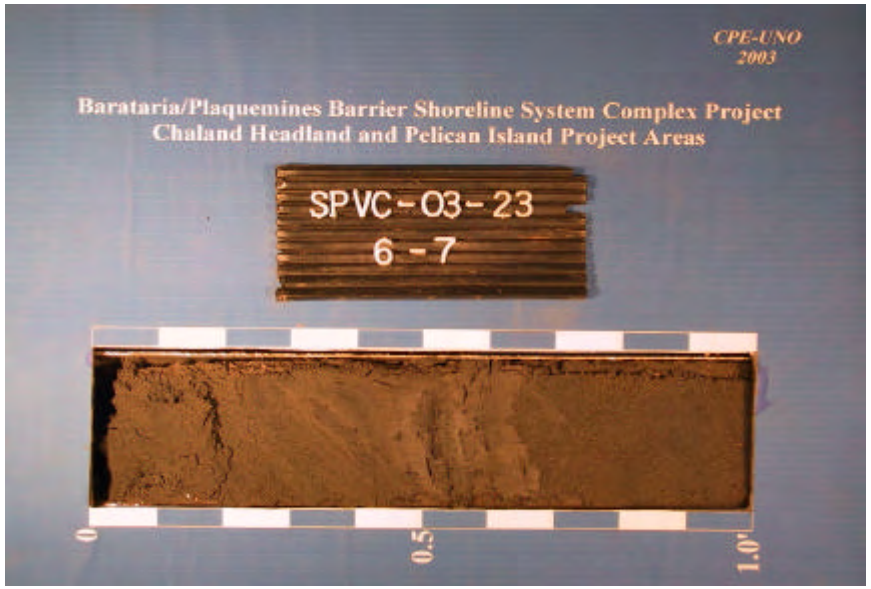
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-23
6-7
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-23
7-8
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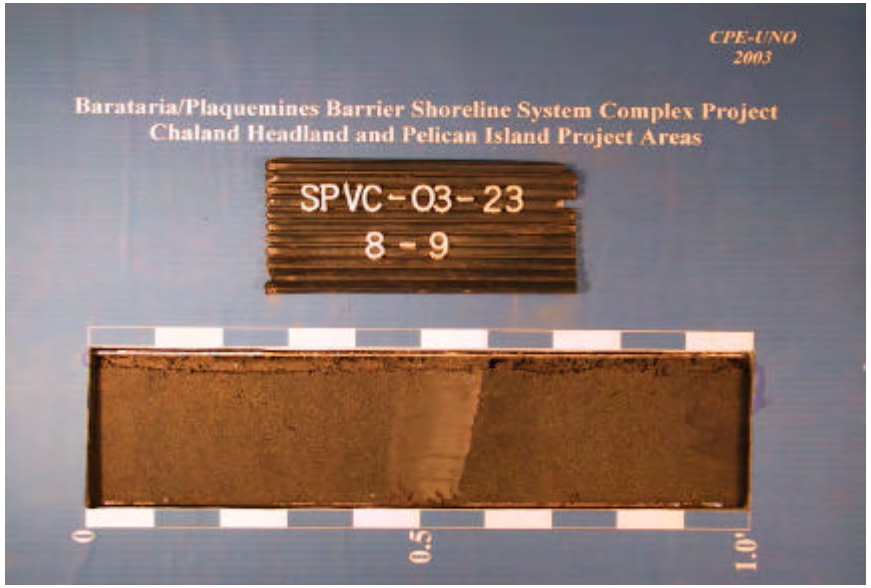
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-23
8 - 9
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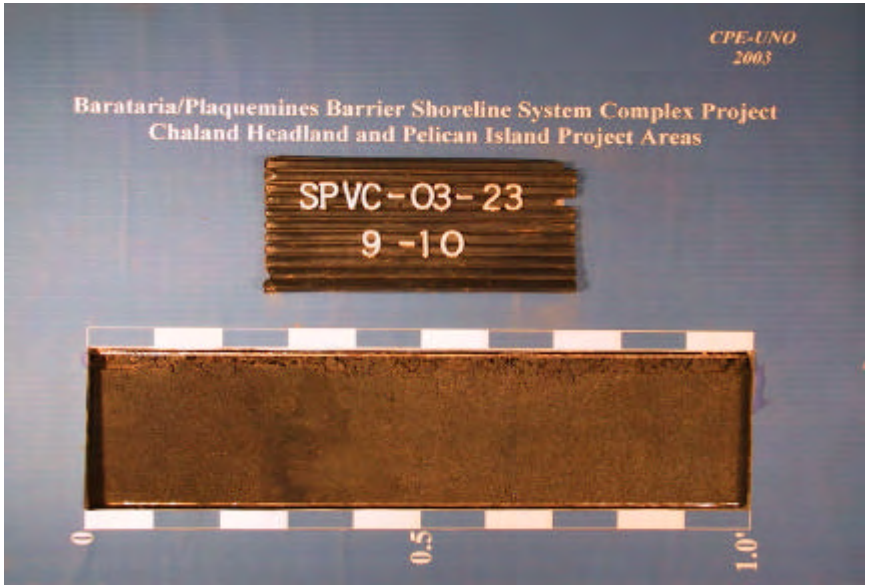
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-23
9 -10
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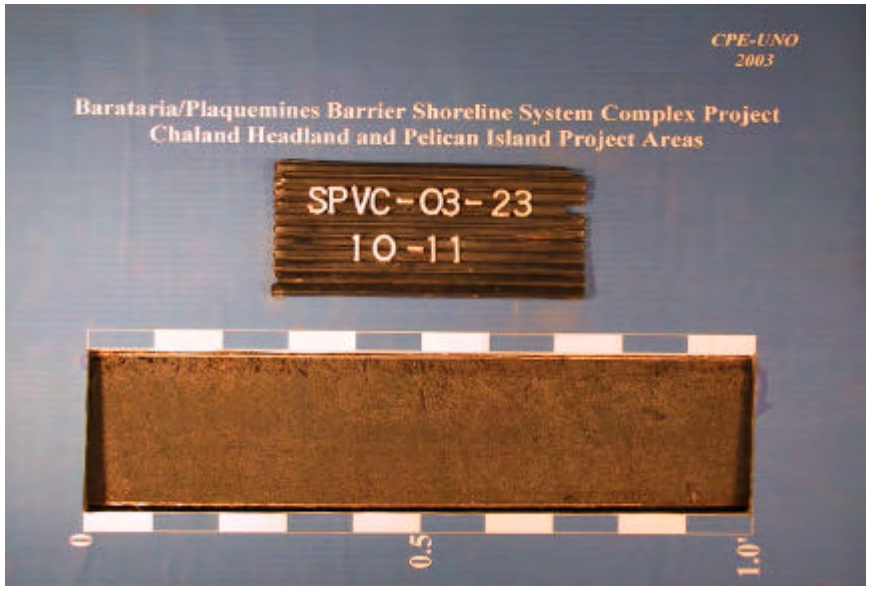
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-23
10 -11
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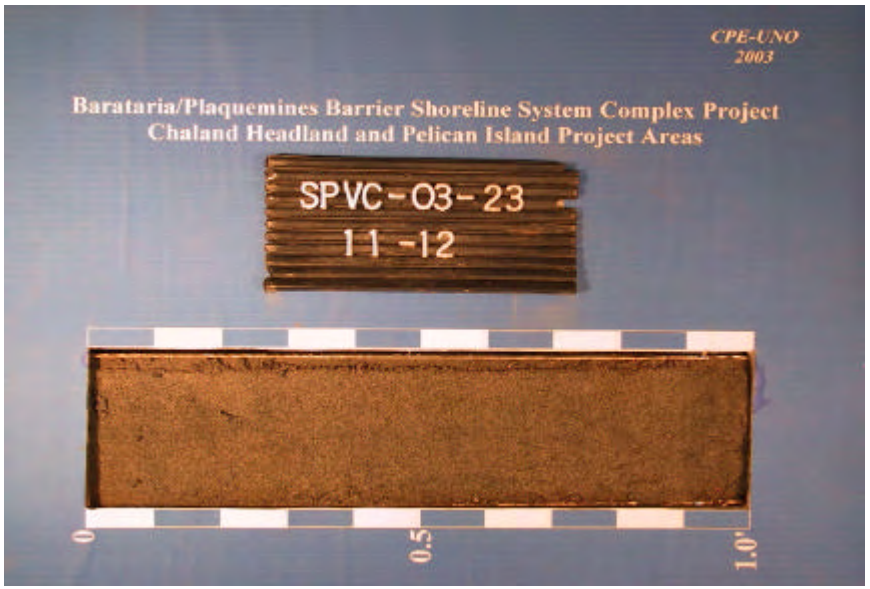
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-23
11 -12
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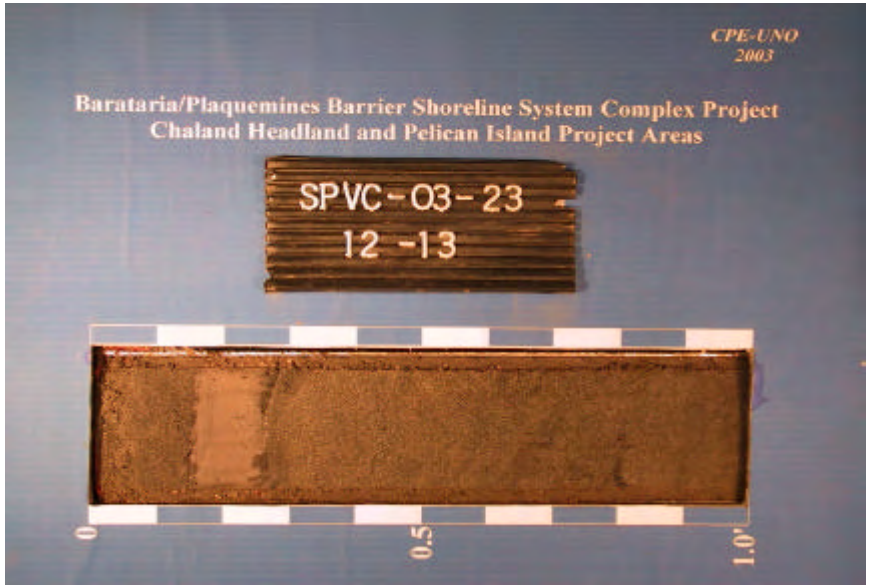
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-23
12 -13
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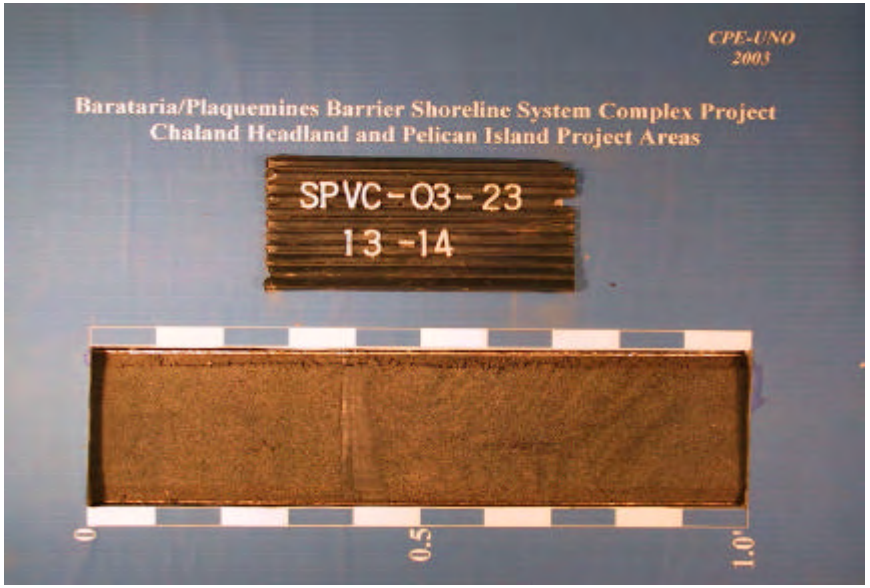
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-23
13 -14
0
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1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-23
14 -15
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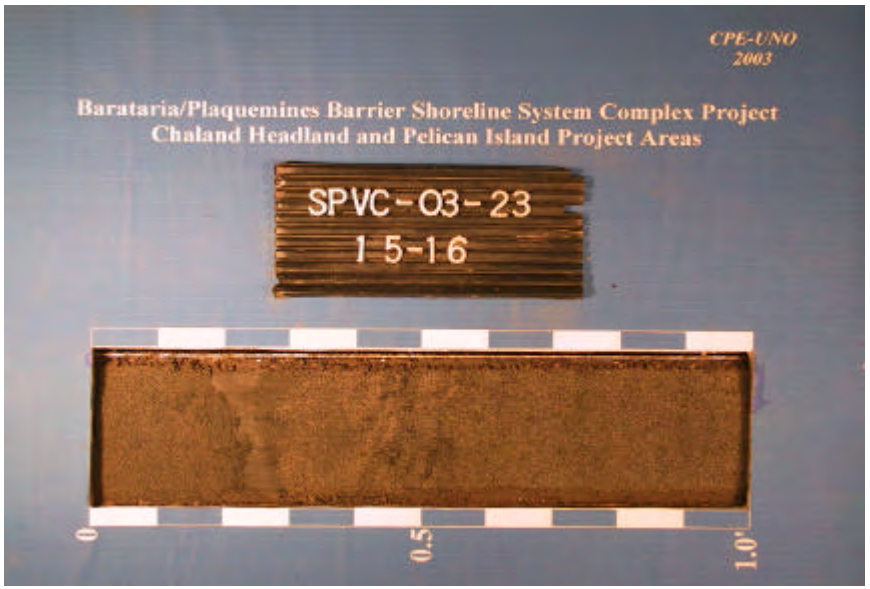
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-23
15-16
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1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-23
16-17
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-23
17-18
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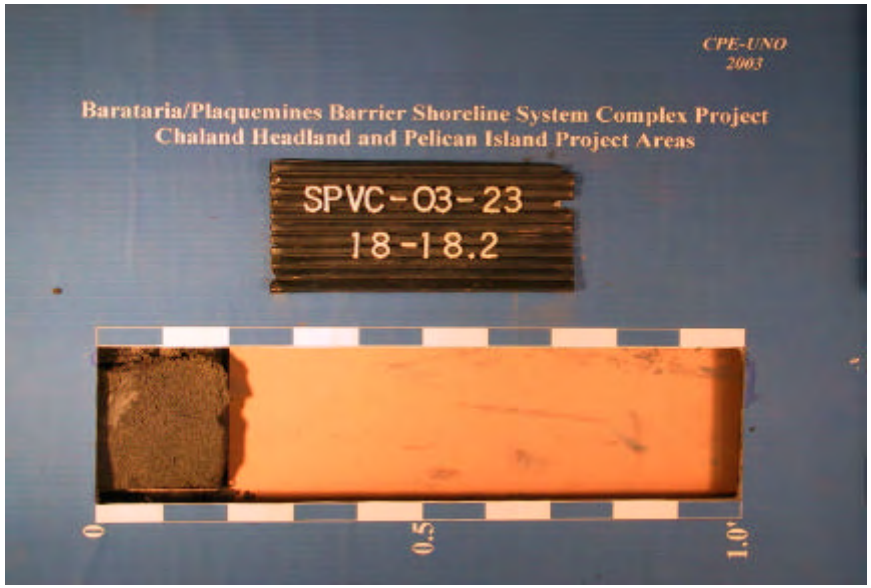
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Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-23
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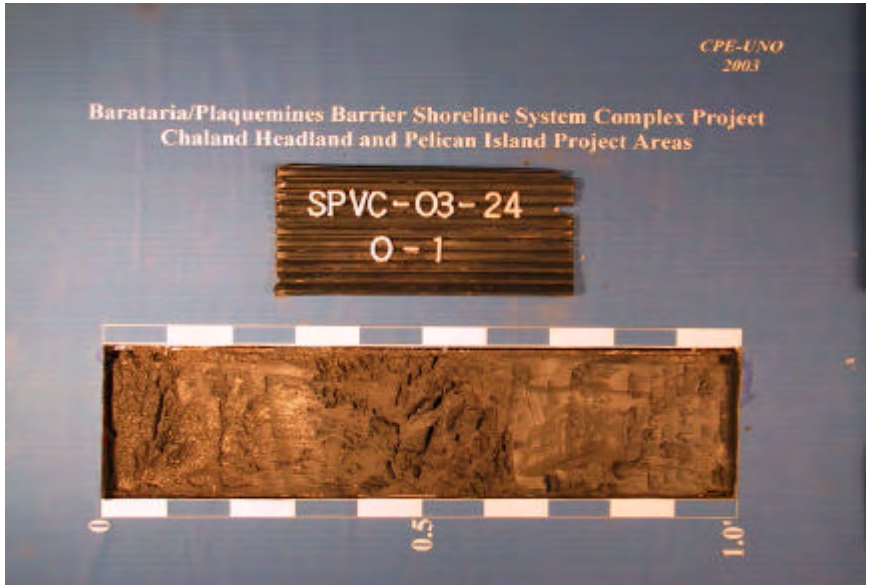
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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-24
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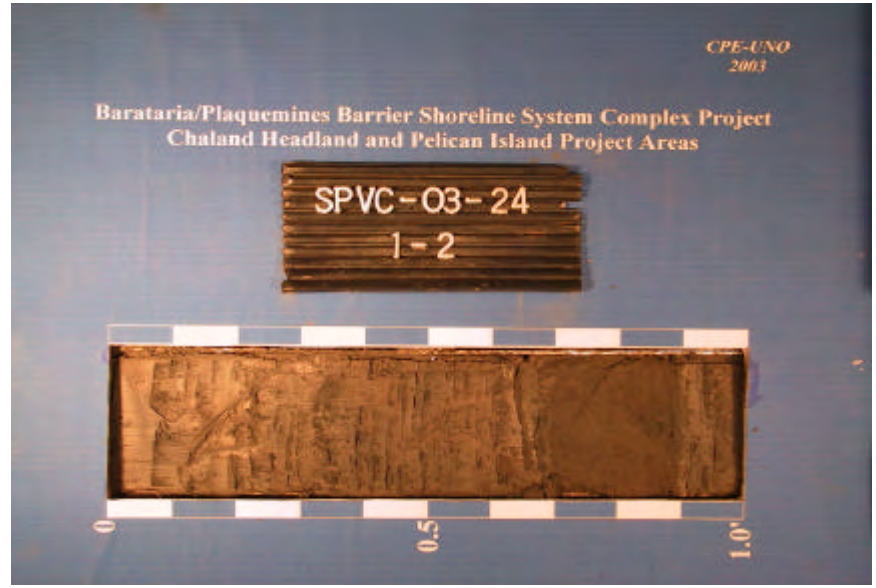
CPE-UNO
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Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-24
1-2
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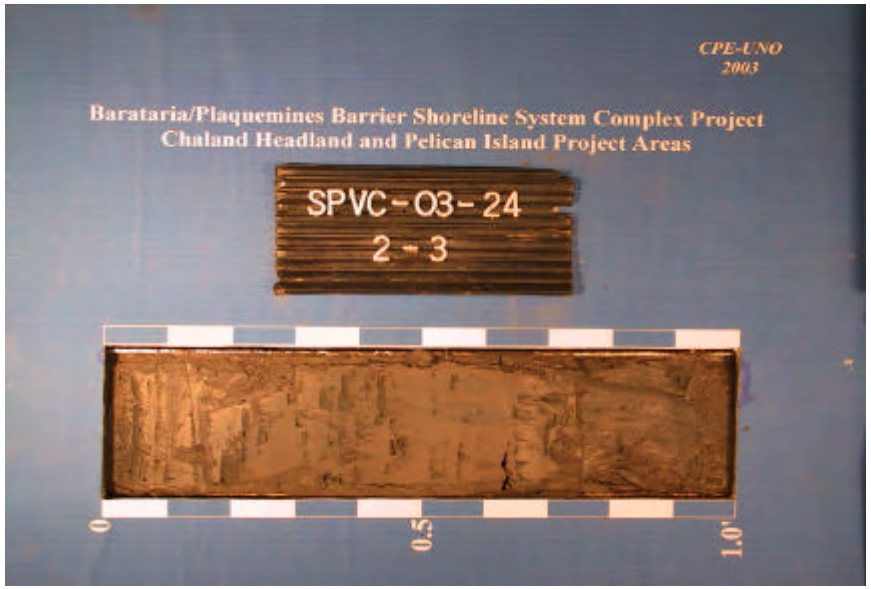
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-24
2-3
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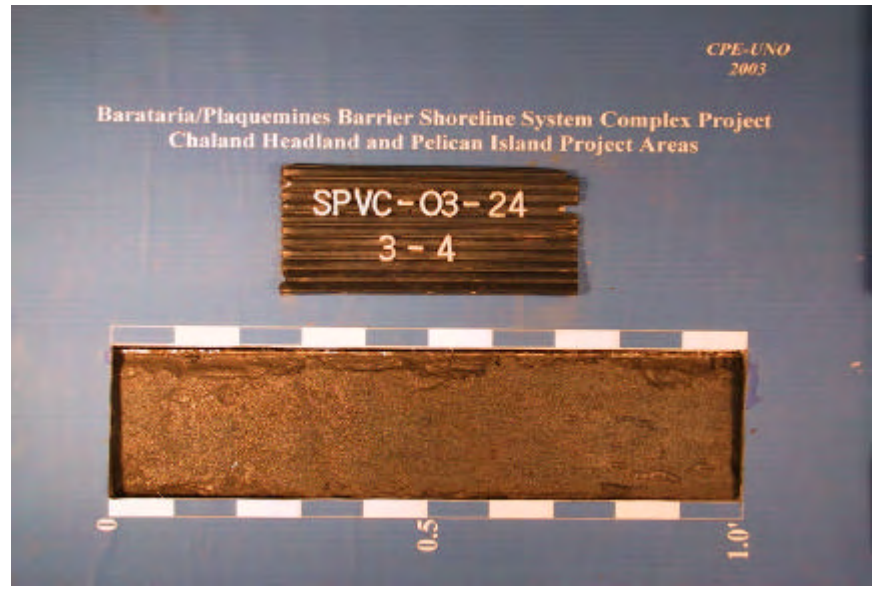
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-24
3-4
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-24
4 - 5
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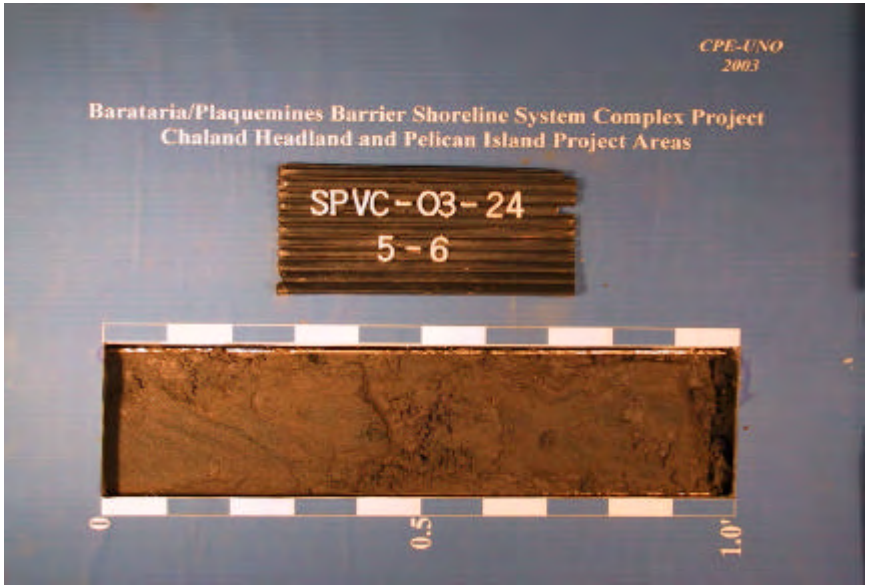
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-24
5 - 6
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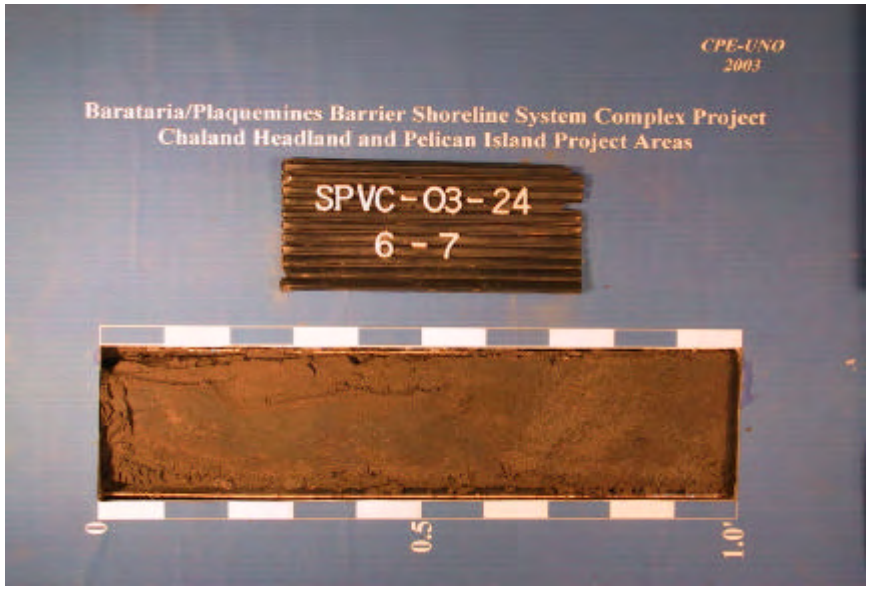
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-24
6 - 7
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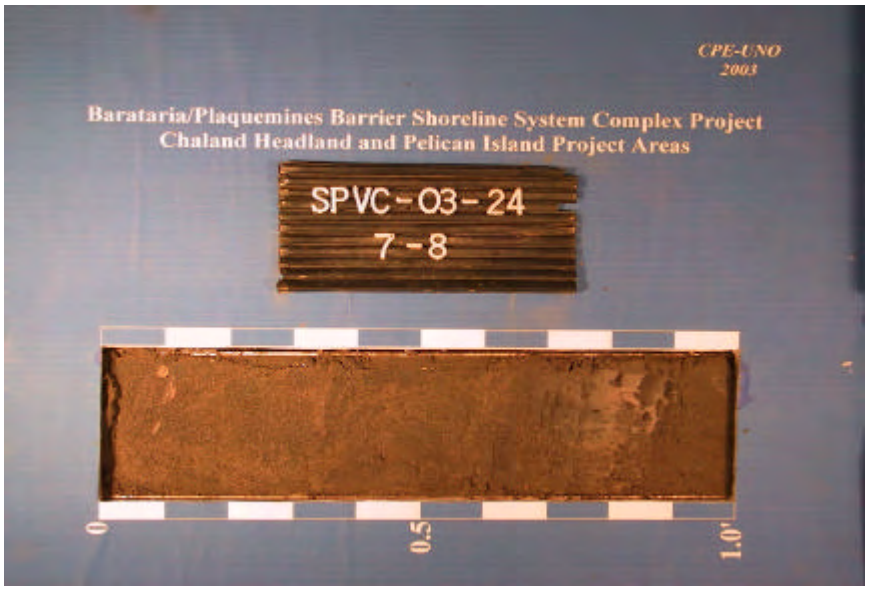
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-24
7 - 8
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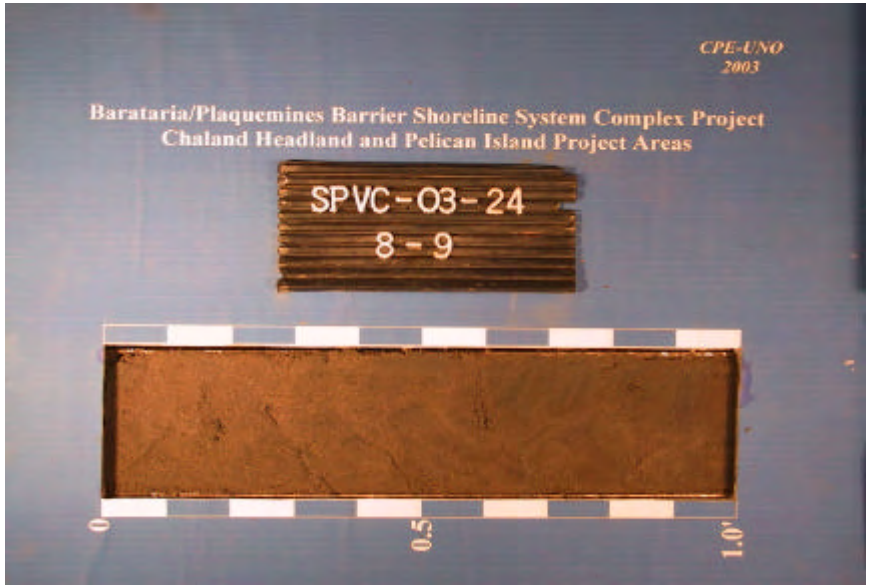
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-24
8-9
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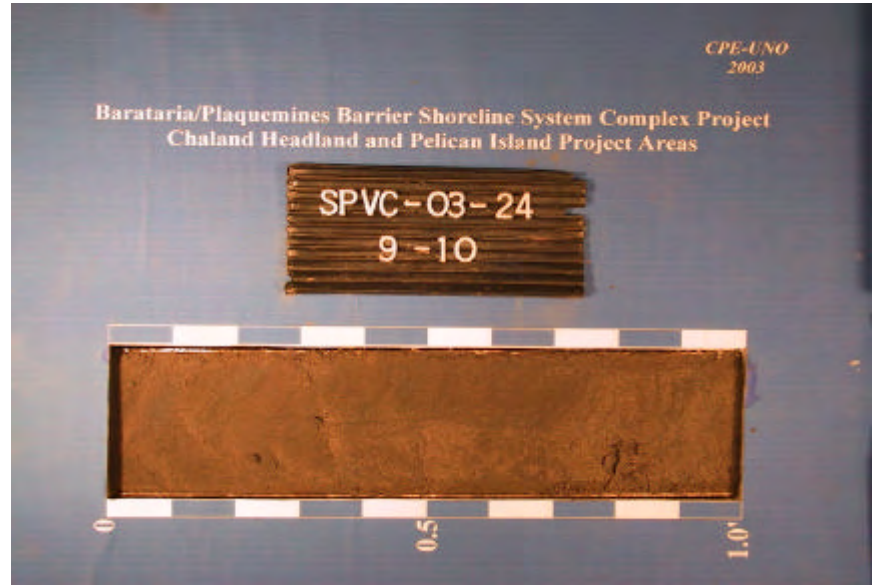
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-24
9-10
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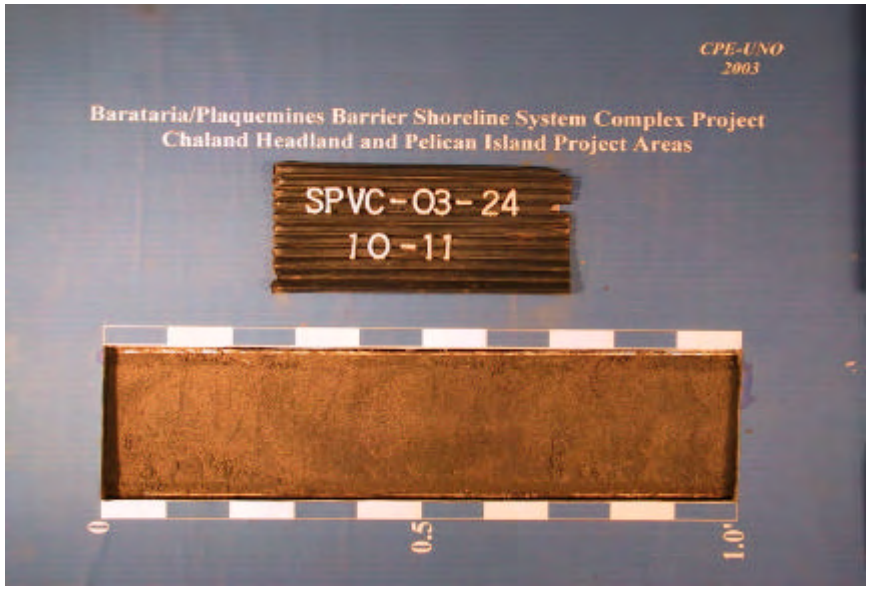
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-24
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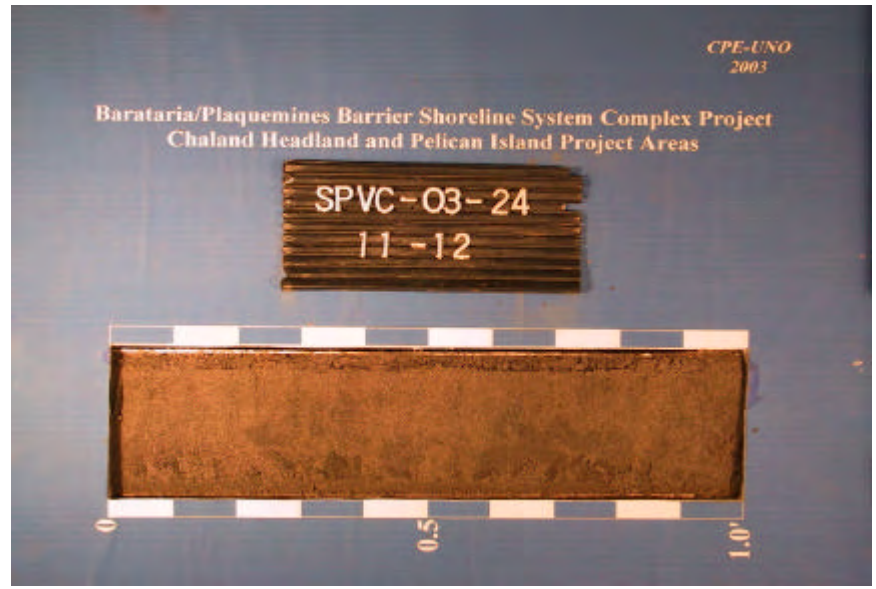
1.0'

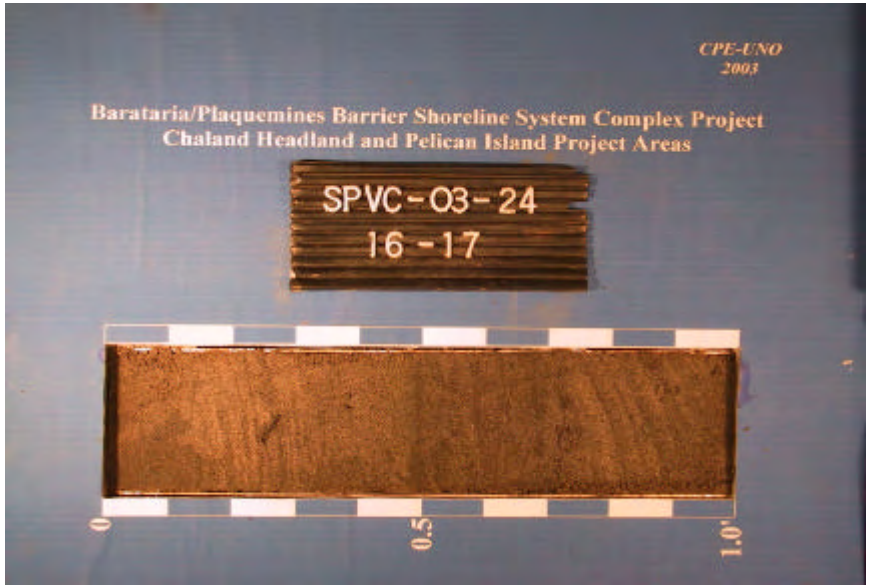

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-24
11-12
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-24
12-13
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-24
13-14
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-24
14-15
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-24
15-16
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-24
16-17
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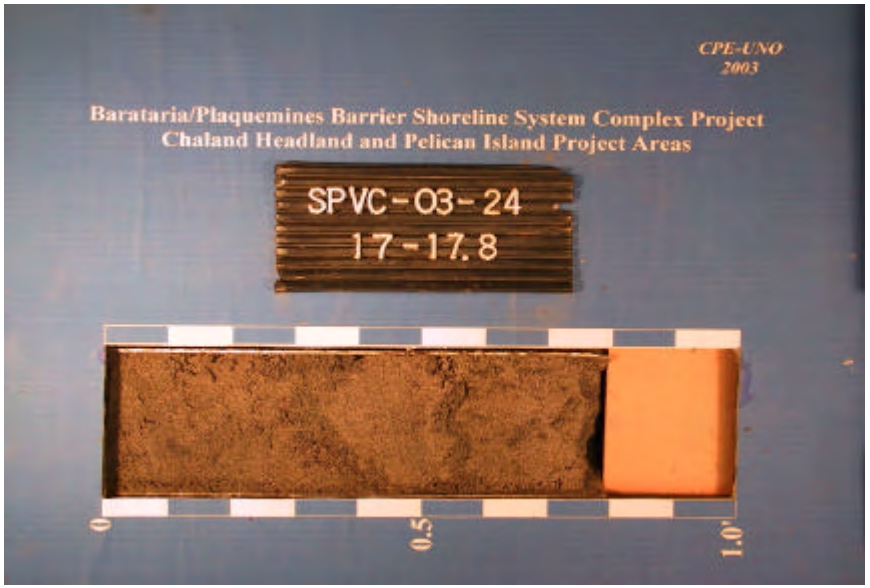
0.5
1.0'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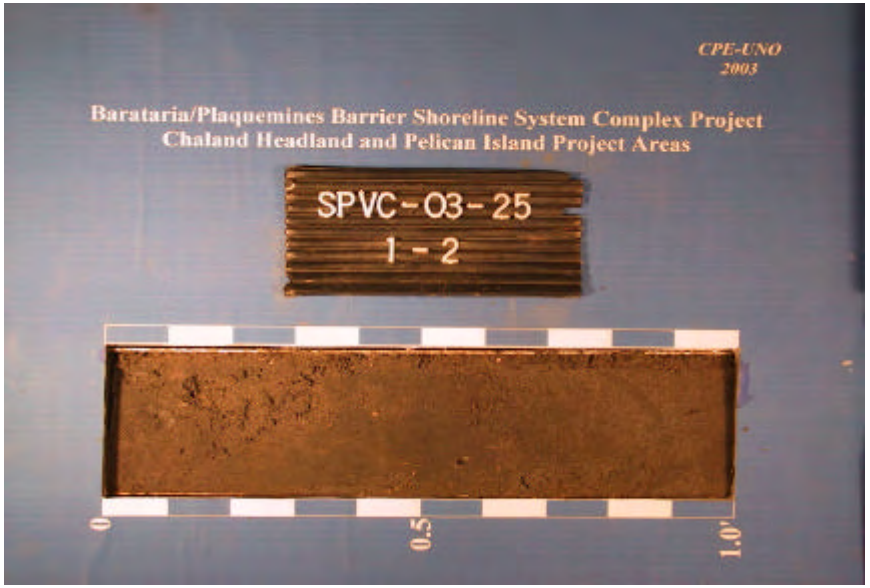
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-24
17-17.8
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-25
0-1
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-25
1-2
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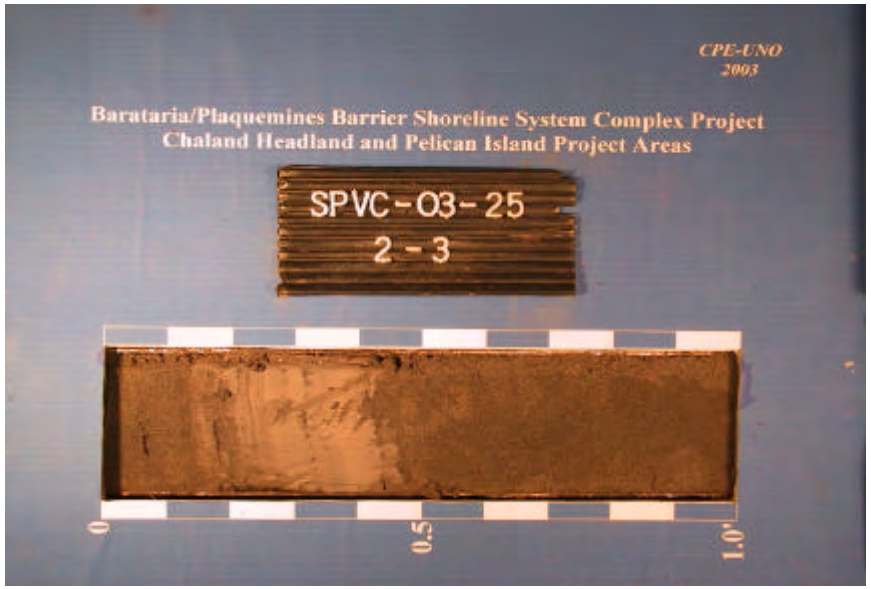
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-25
2-3
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-25
3-4
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-25
4-5
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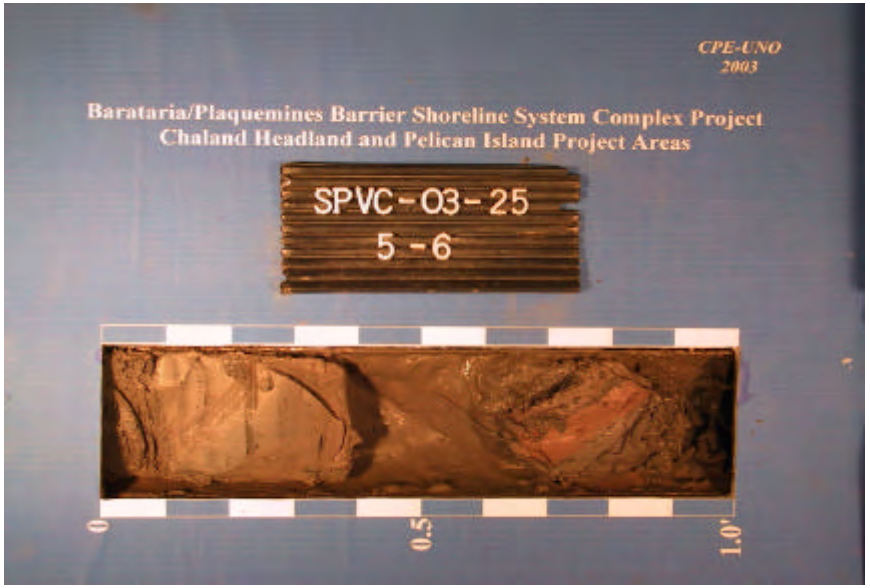
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-25
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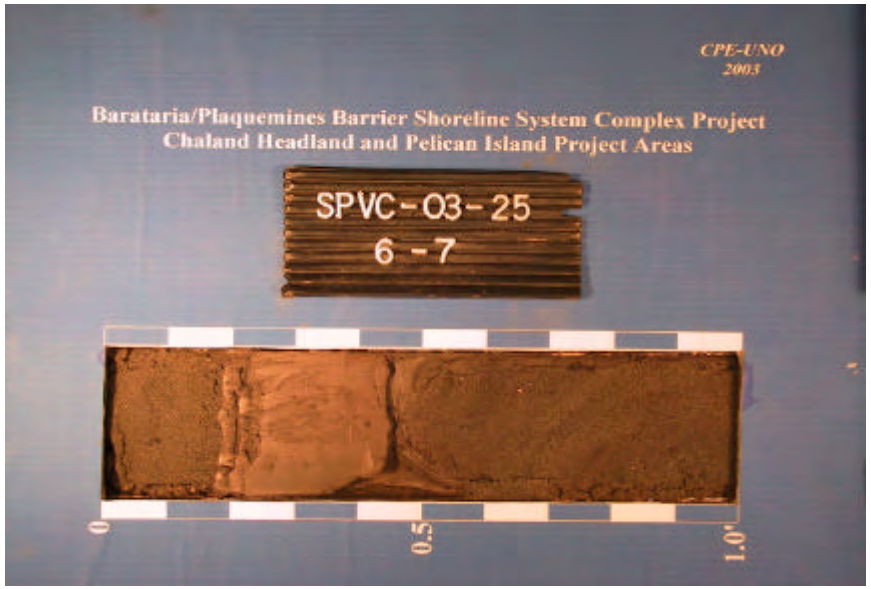
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-25
6-7
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-25
7-8
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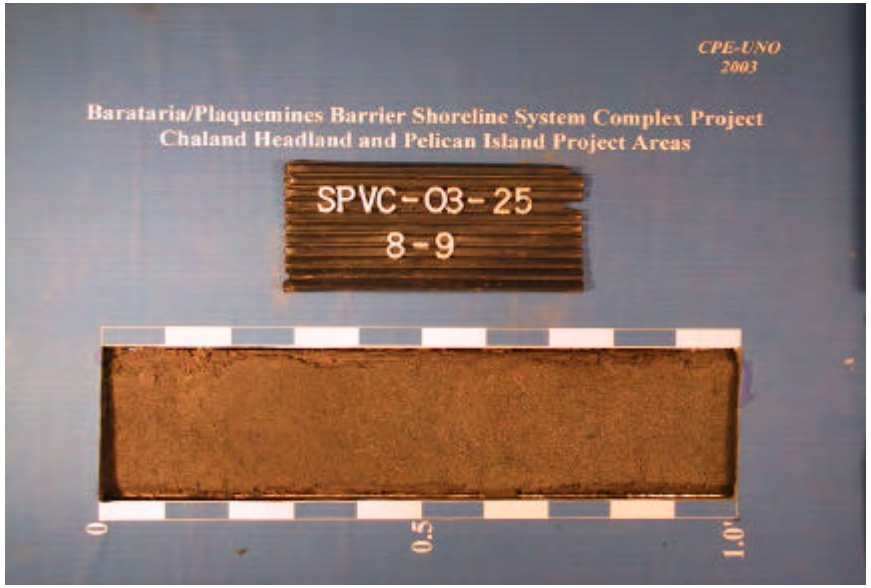
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-25
8-9
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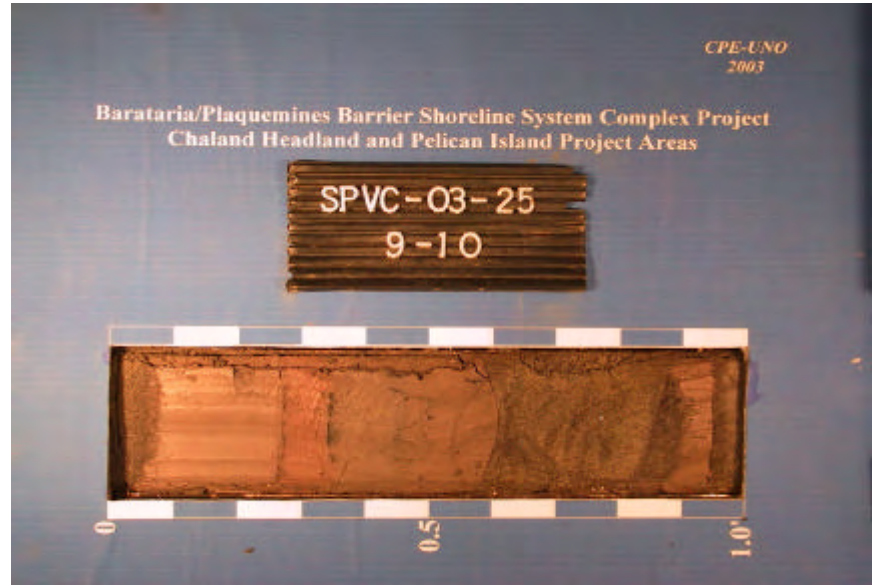
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-25
9-10
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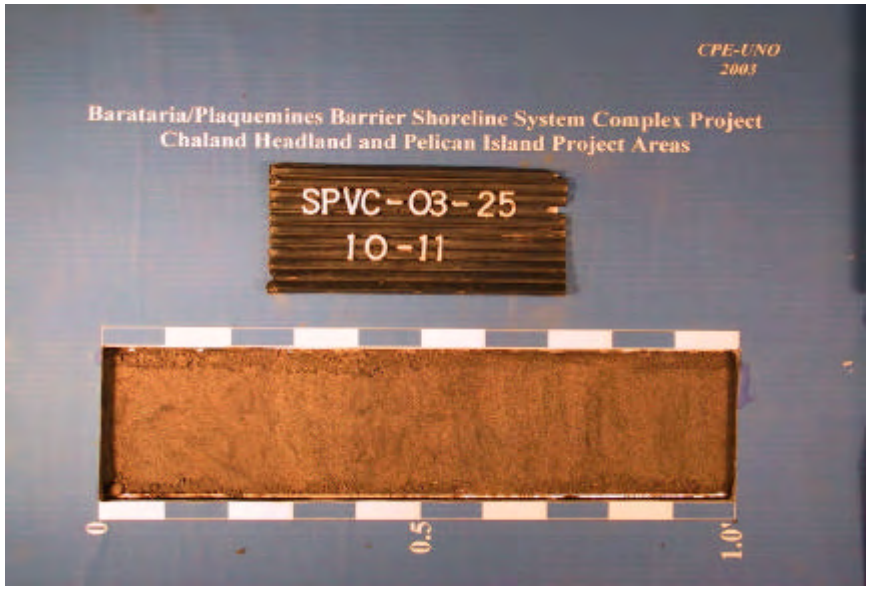
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-25
10-11
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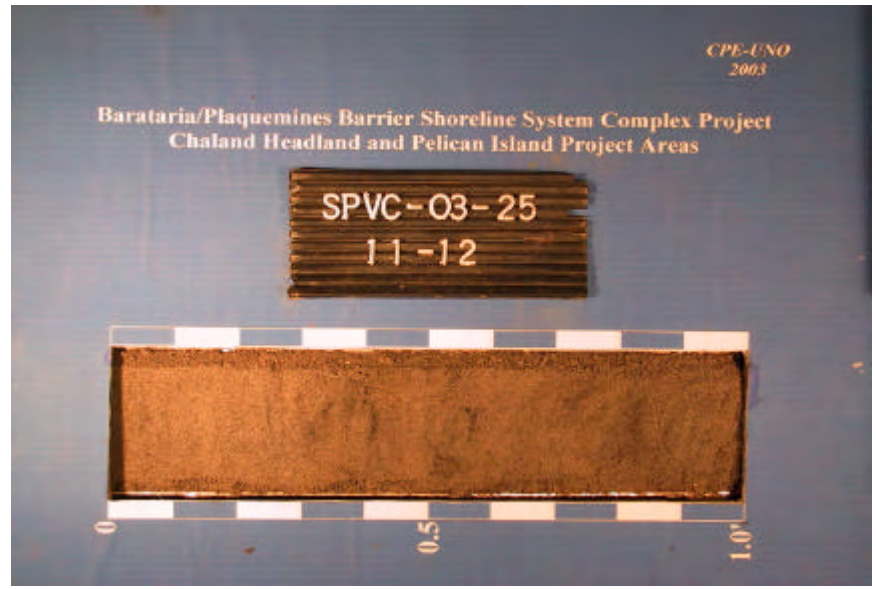
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-25
11-12
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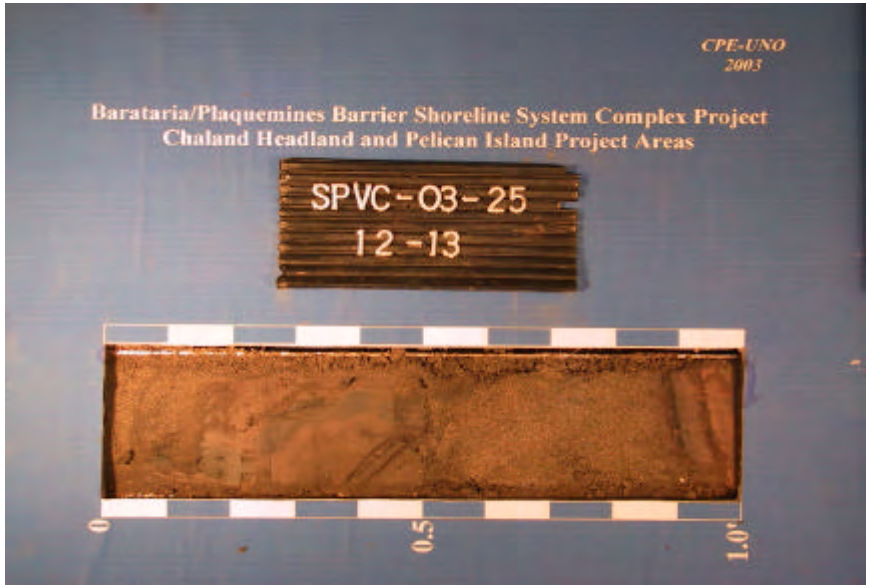
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-25
12-13
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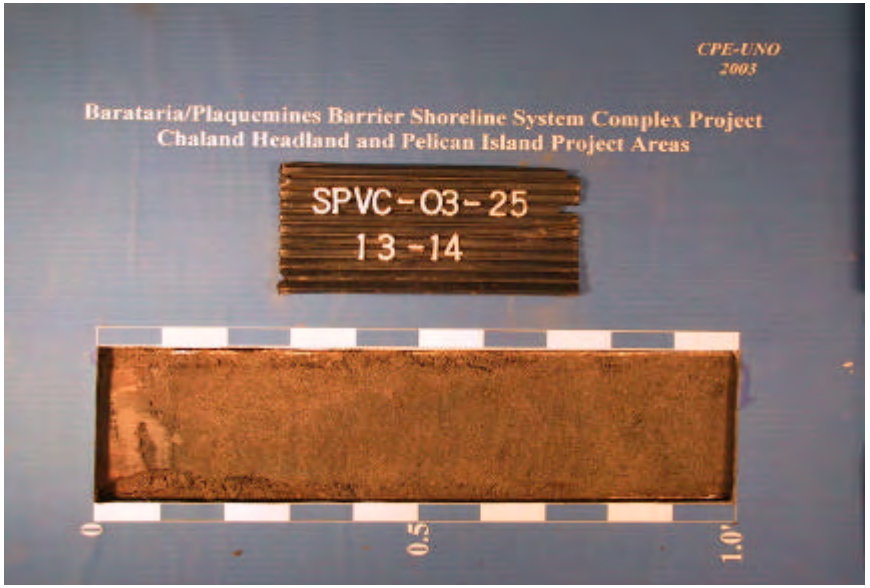
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-25
13-14
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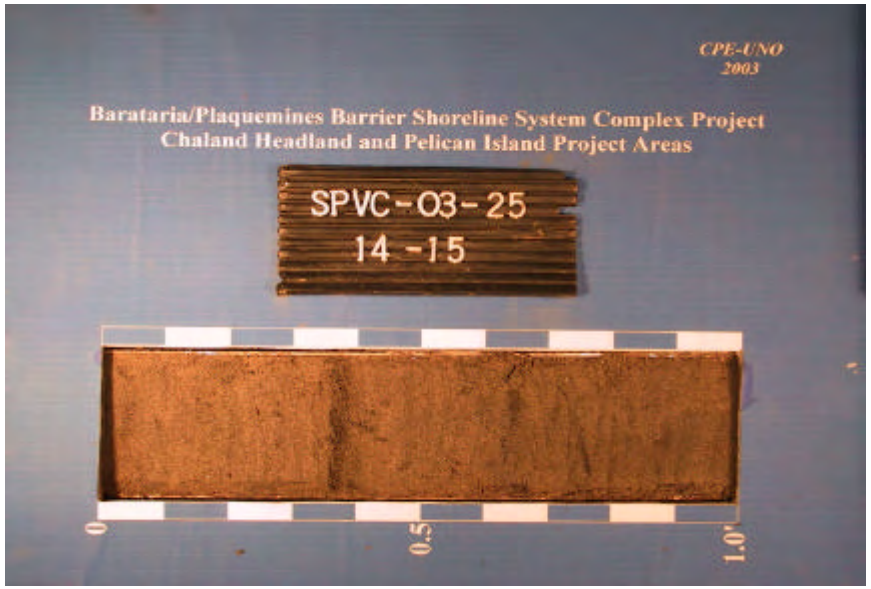
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-25
14-15
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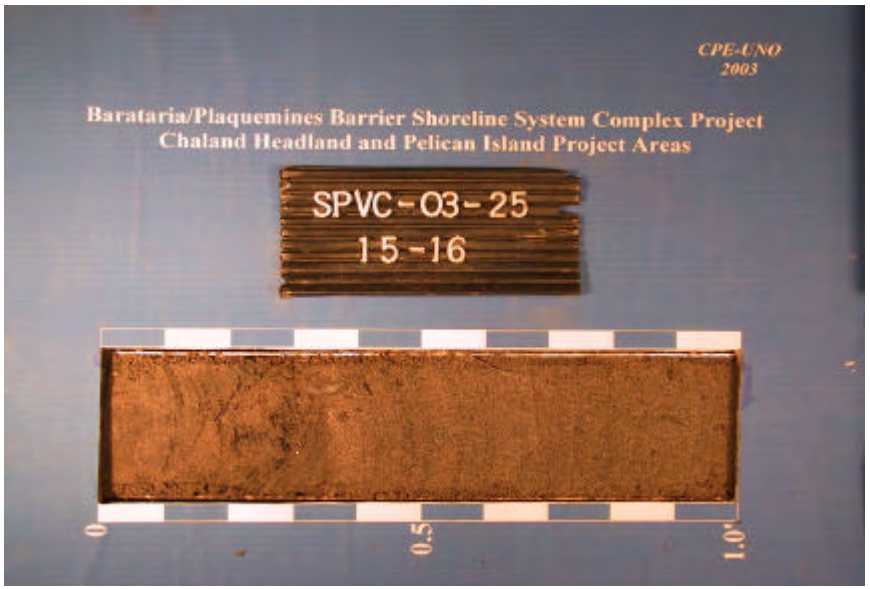
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-25
15-16
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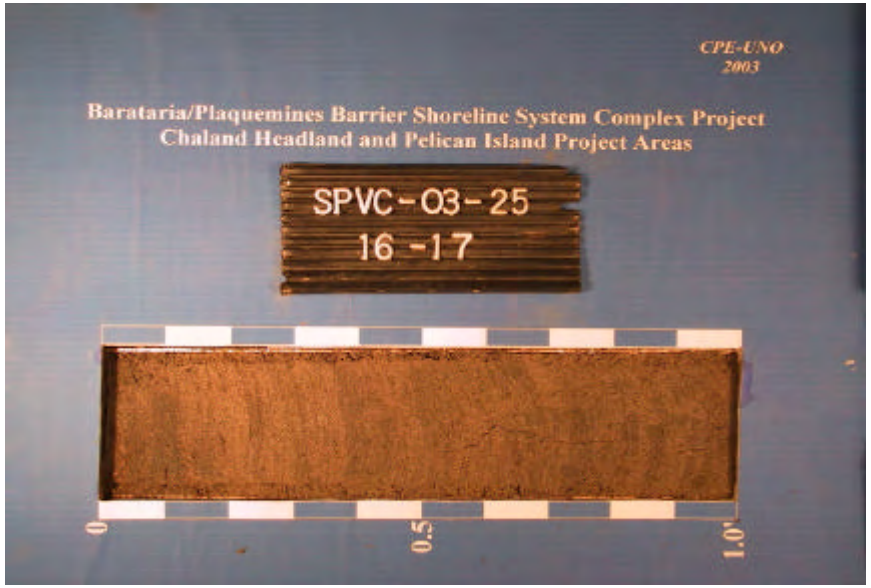
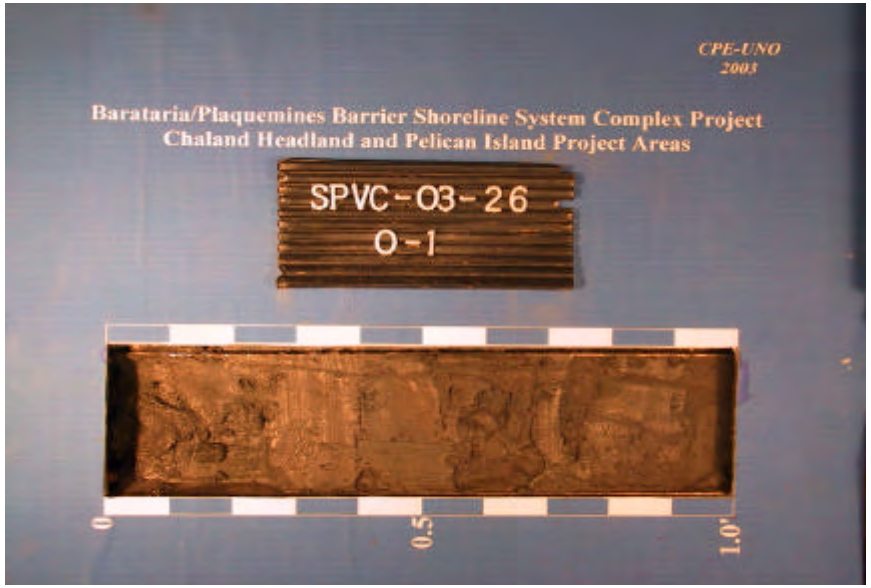
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-25
16 -17
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-25
17-17.8
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-26
0-1
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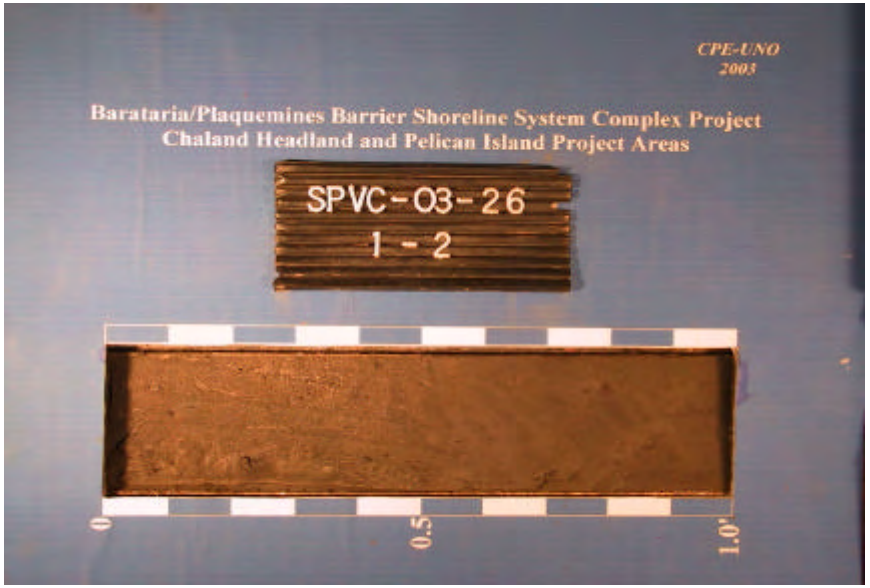
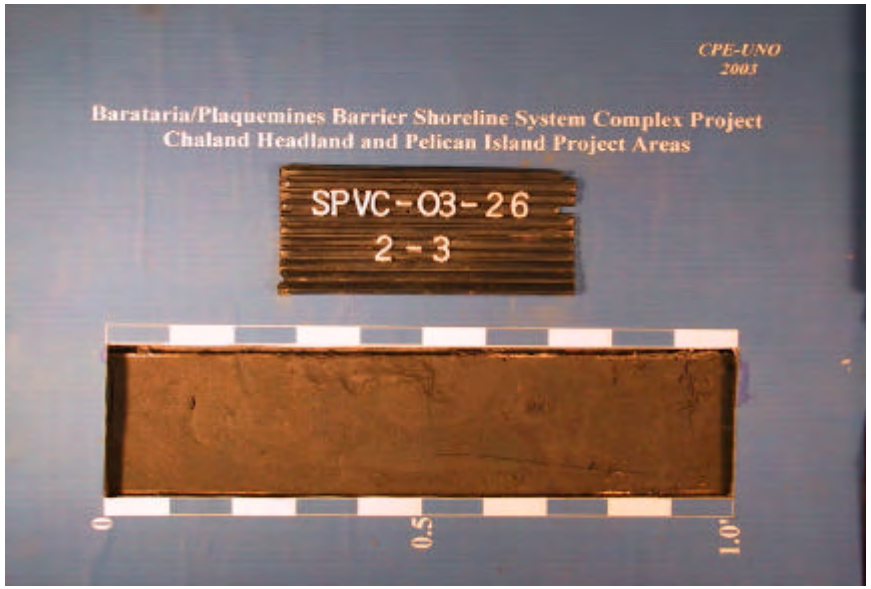
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-26
1-2
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-26
2-3
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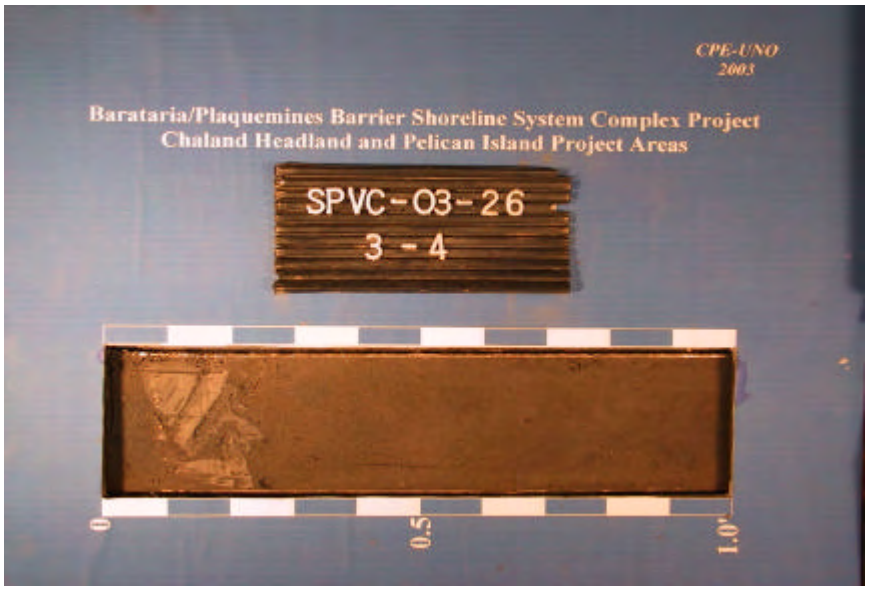
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-26
3-4
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-26
4-5
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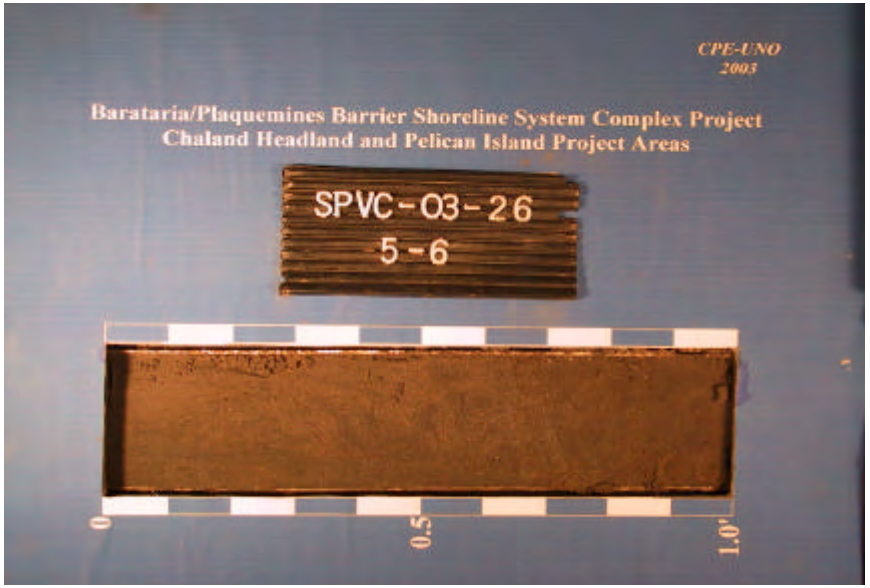
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-26
5-6
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-26
6-7
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-26
7-8
0
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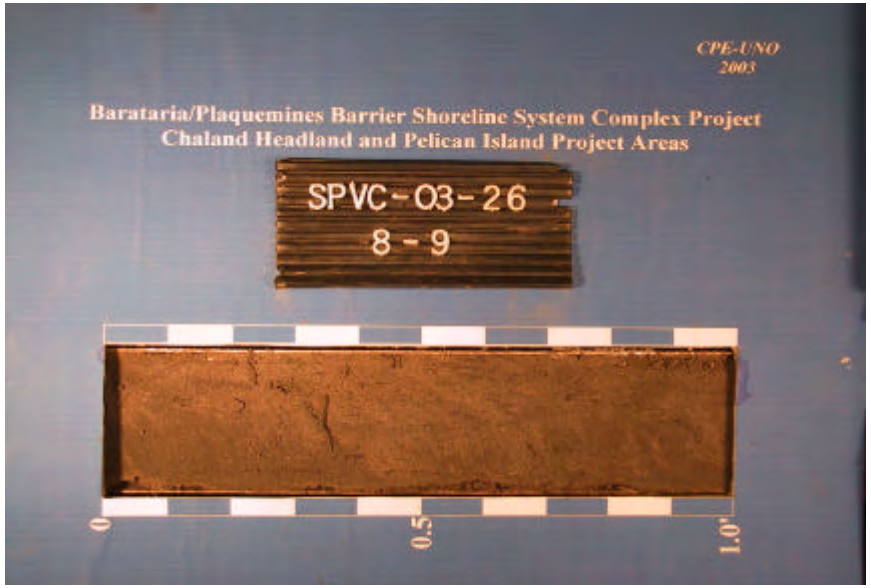
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-26
8-9
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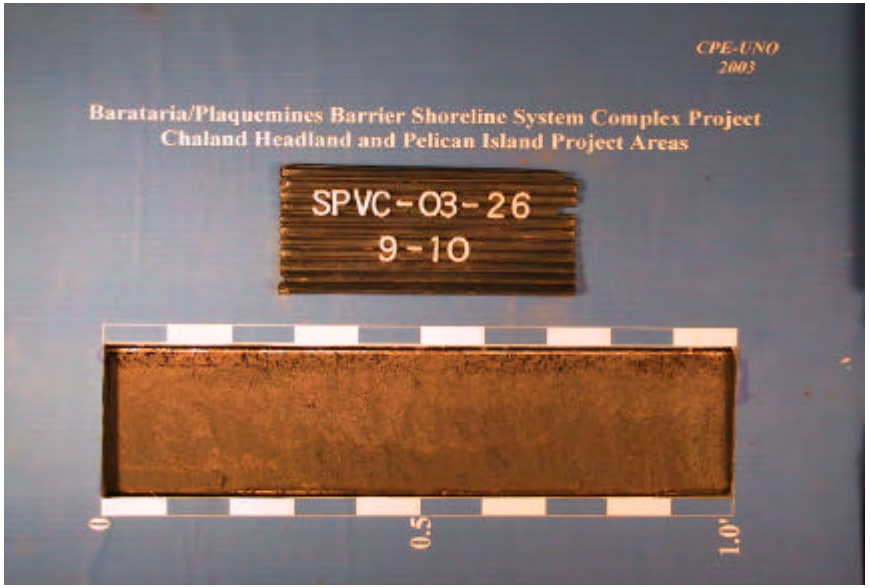
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-26
9-10
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-26
10-11
0
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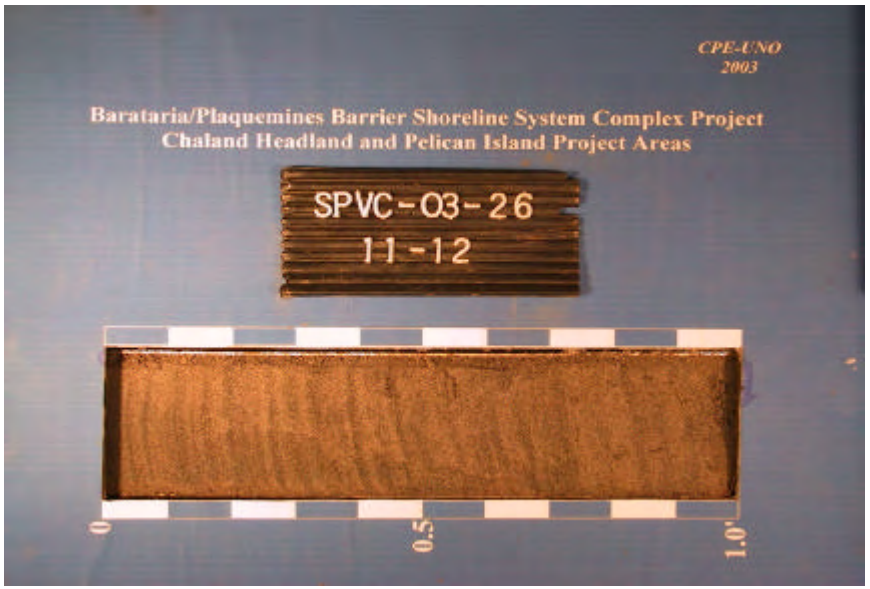
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-26
11-12
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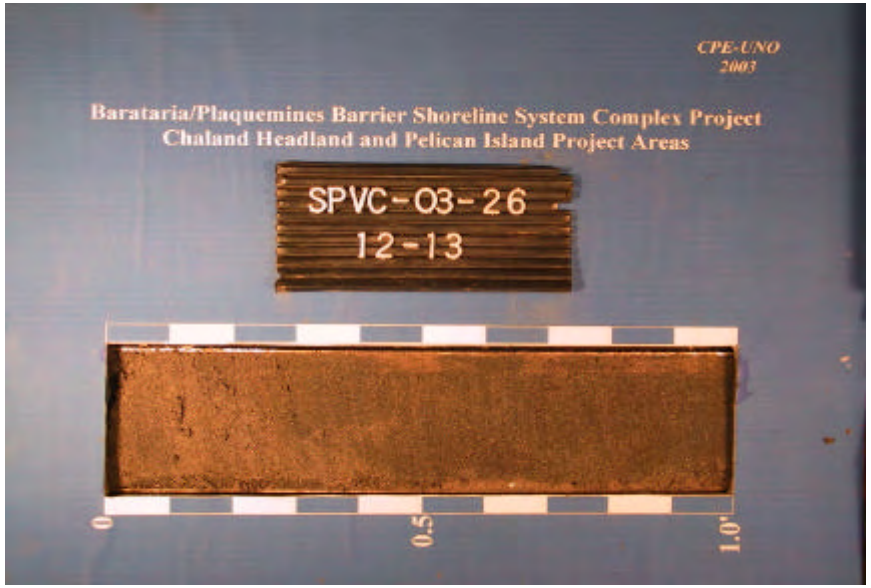
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-26
12-13
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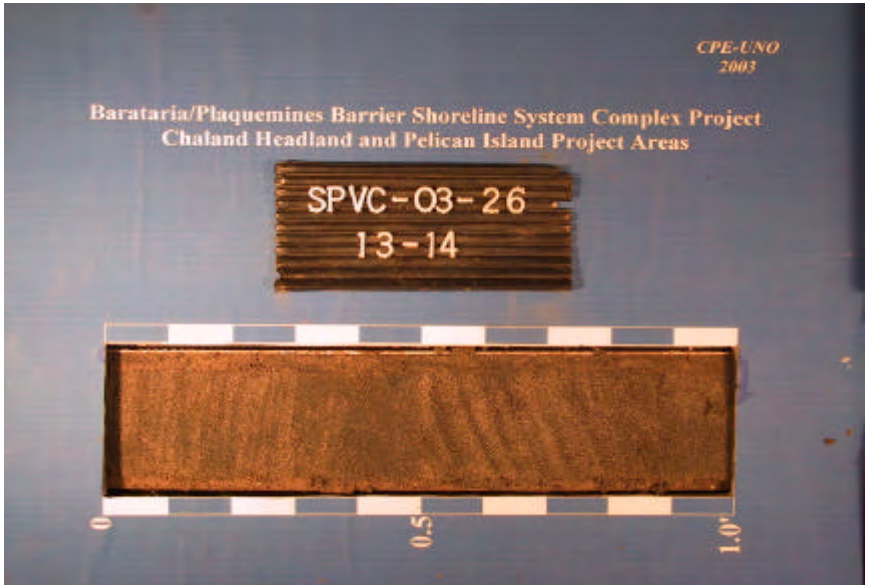
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-26
13-14
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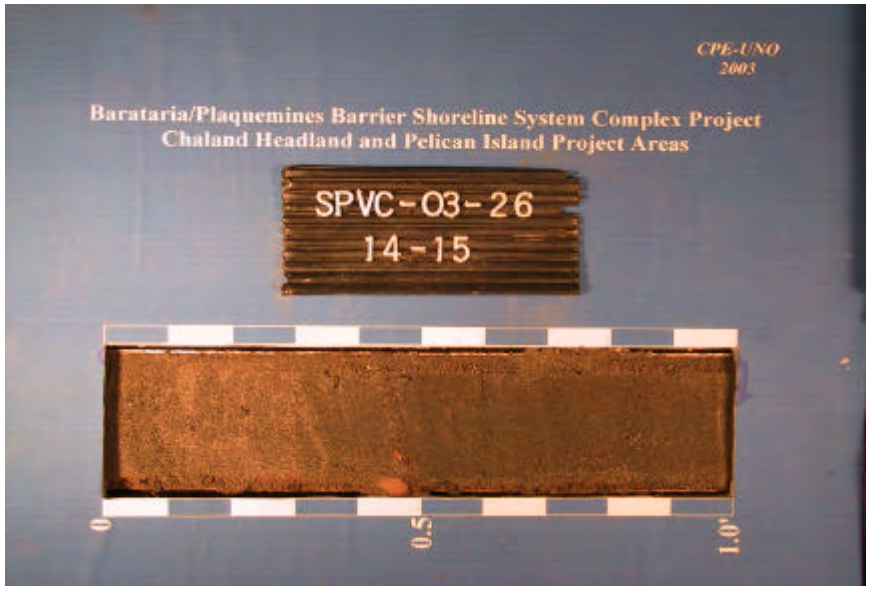
CPE-UNO
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Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-26
14-15
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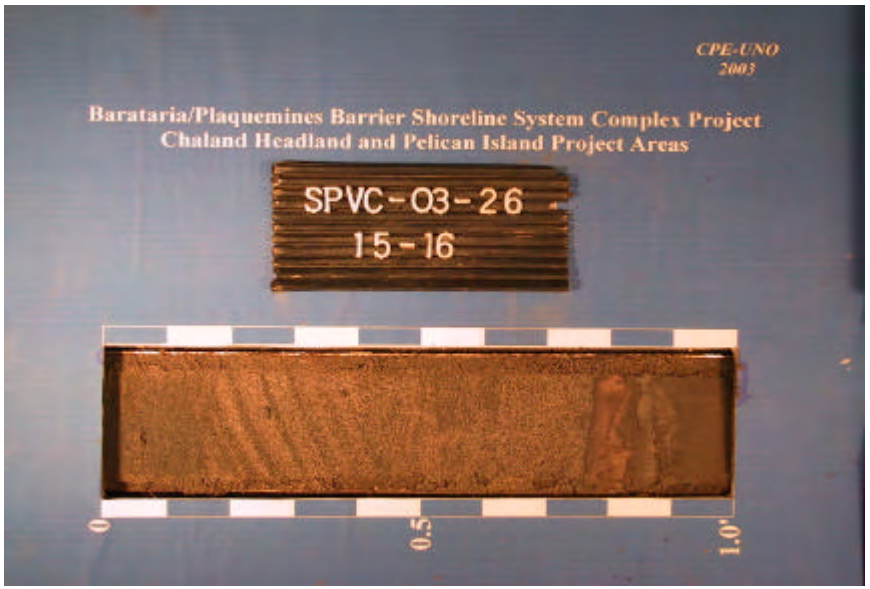
CPE-UNO
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Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-26
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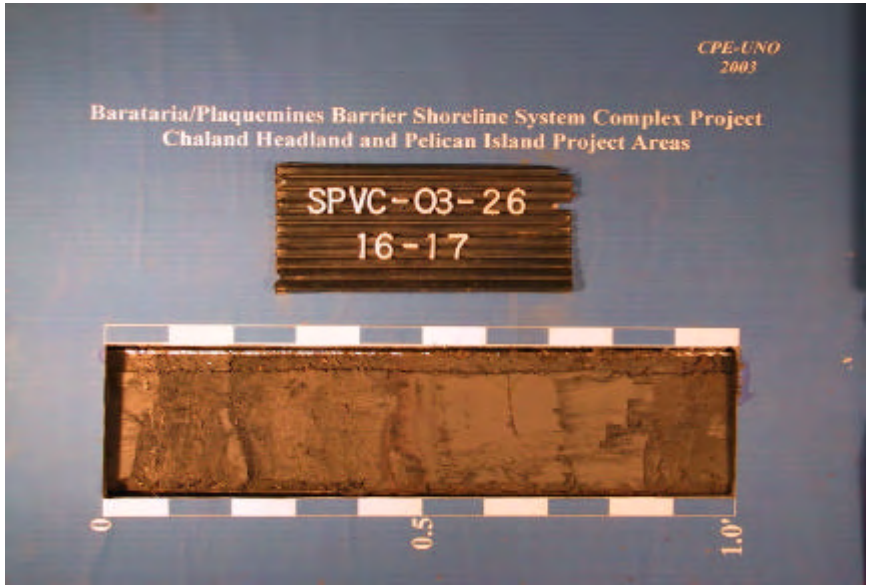
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-26
16-17
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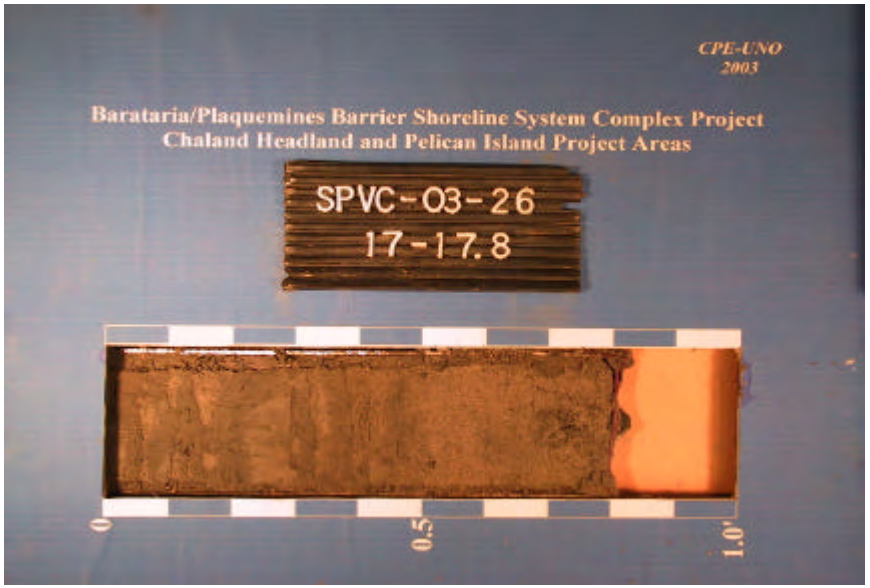
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-26
17-17.8
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-27
0-1
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-27
1-2
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-27
2-3
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-27
3-4
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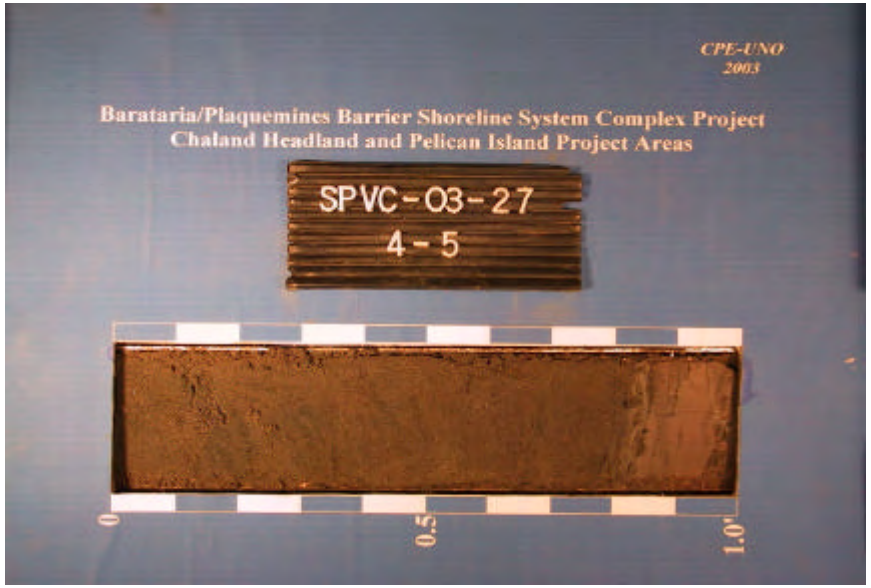
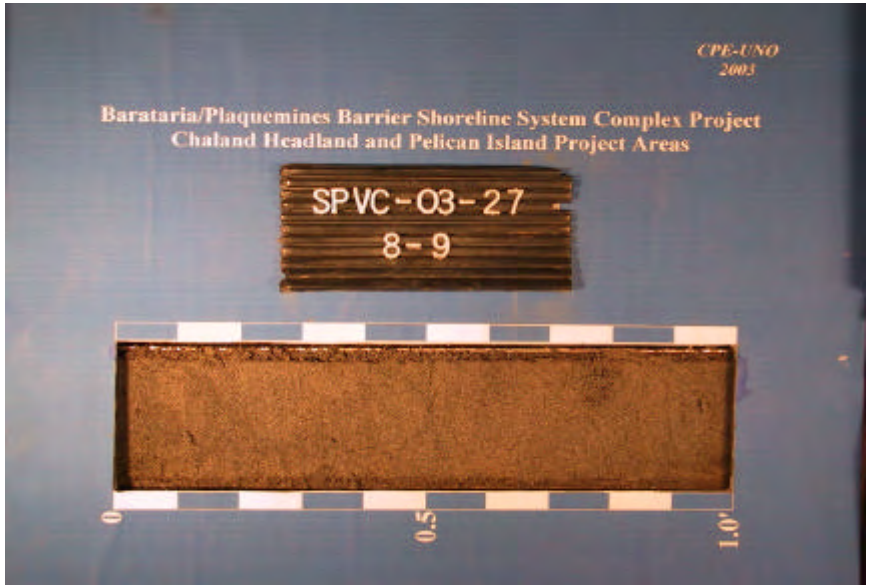
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-27
4-5
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-27
5-6
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-27
6-7
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-27
7-8
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-27
8-9
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-27
9-10
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-27
10-11
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-27
11-12
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-27
12 -13
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-27
13 -14
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-27
14 -15
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-27
15 -15.7
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-28
0-1
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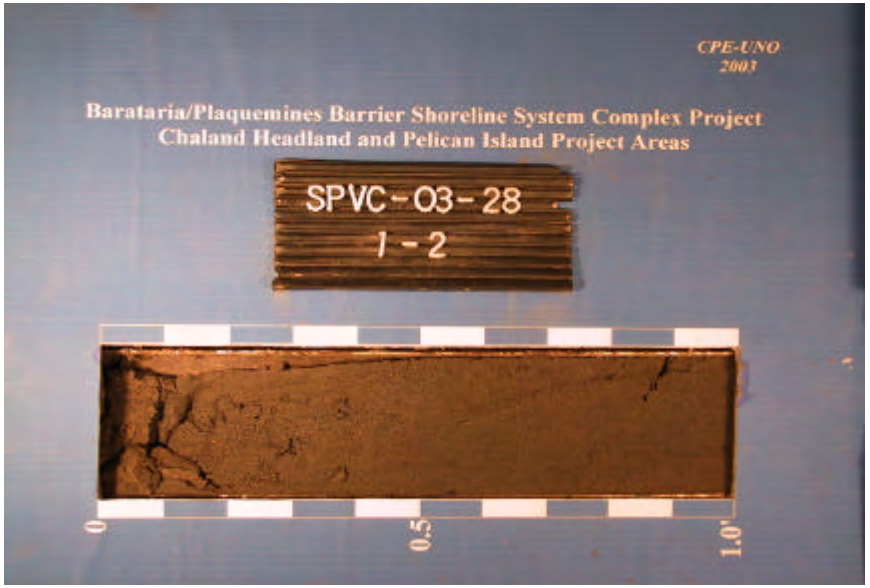
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-28
1-2
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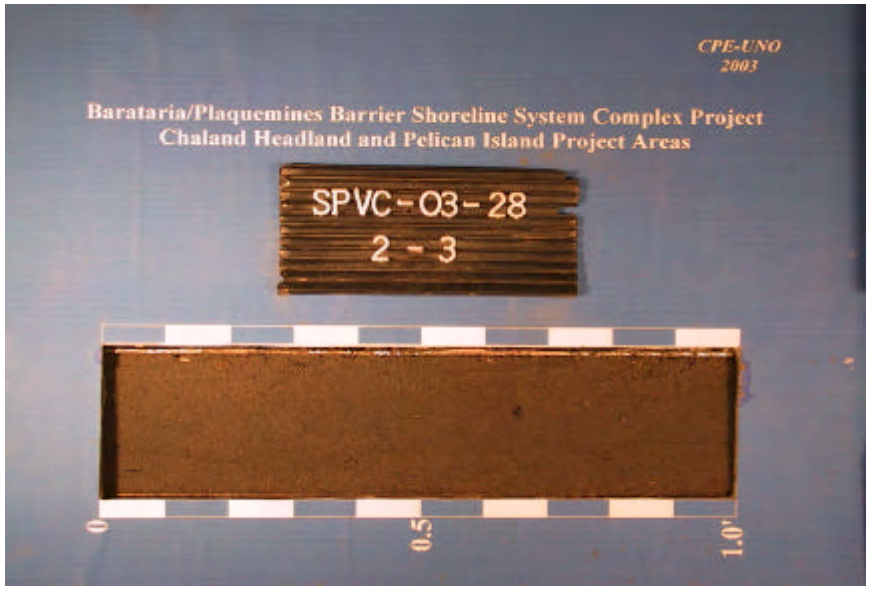
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-28
2-3
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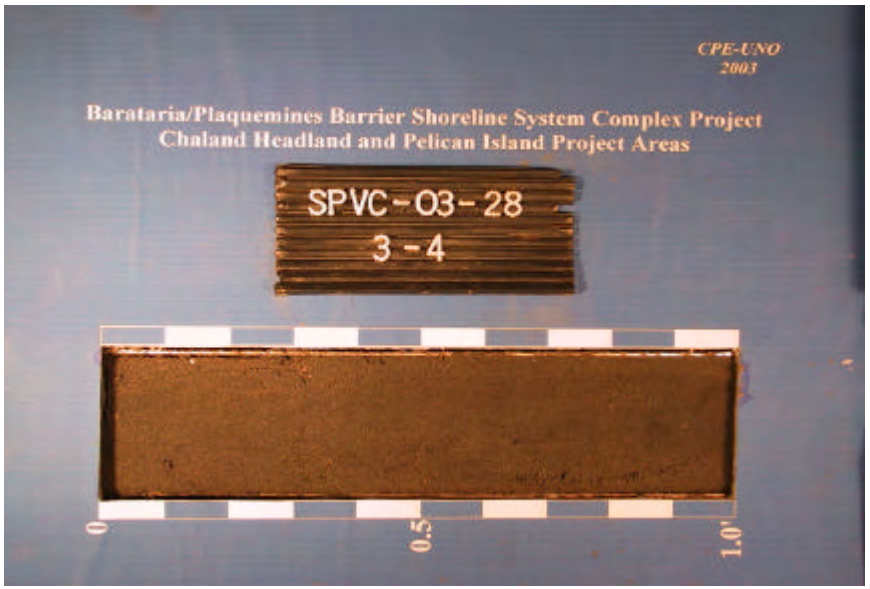
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-28
3-4
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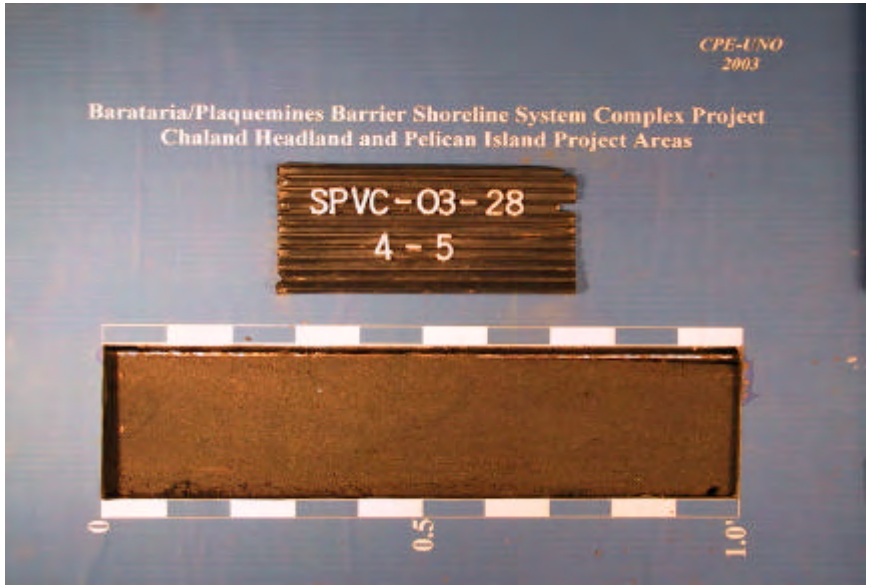
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-28
4-5
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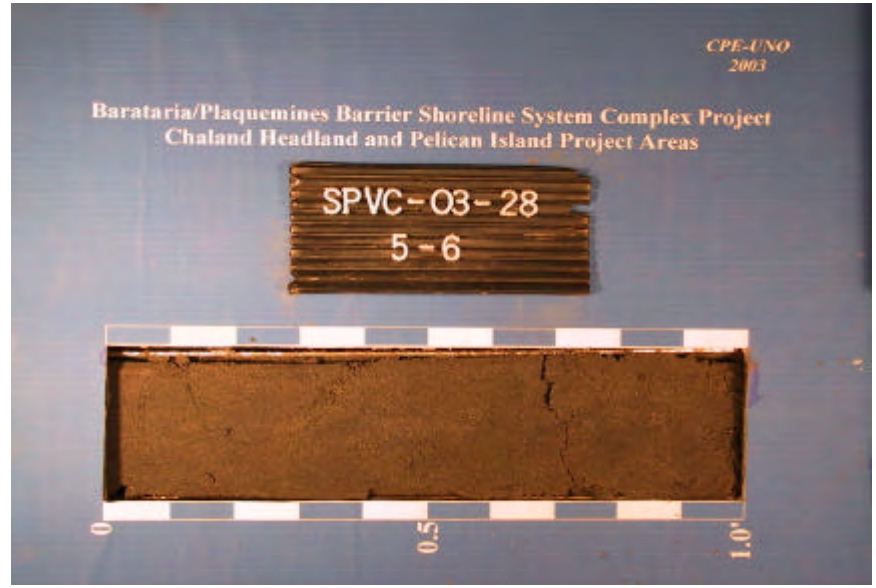
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-28
5-6
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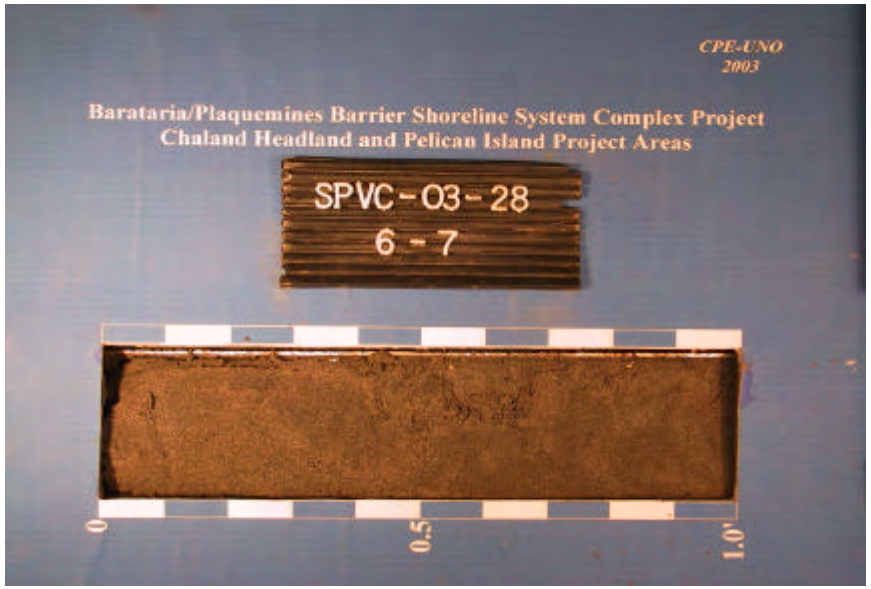
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-28
6-7
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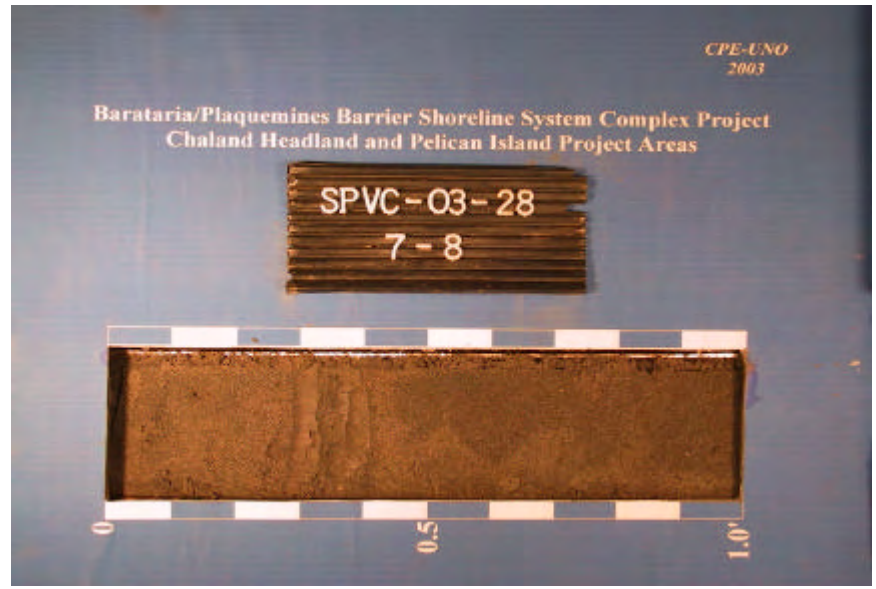
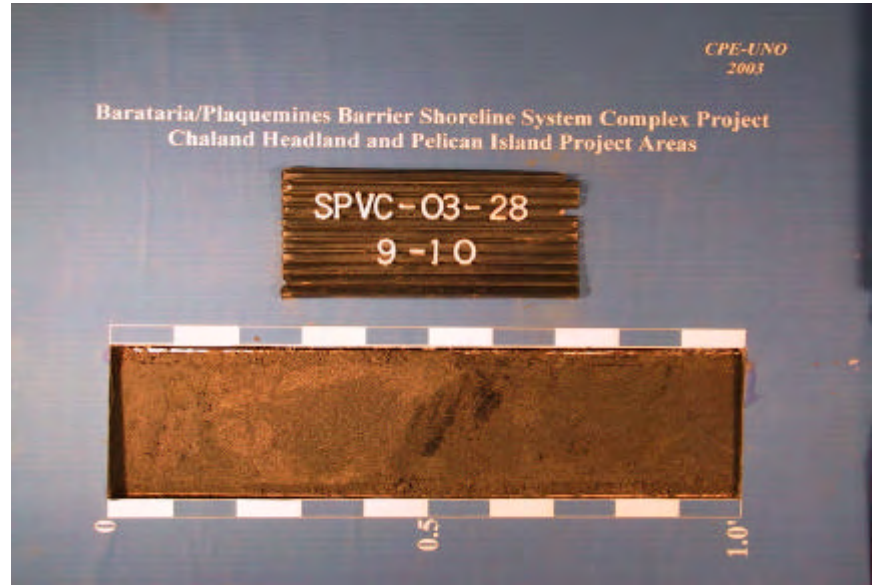
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-28
7-8
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-28
8-9
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-28
9-10
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-28
10-11
0
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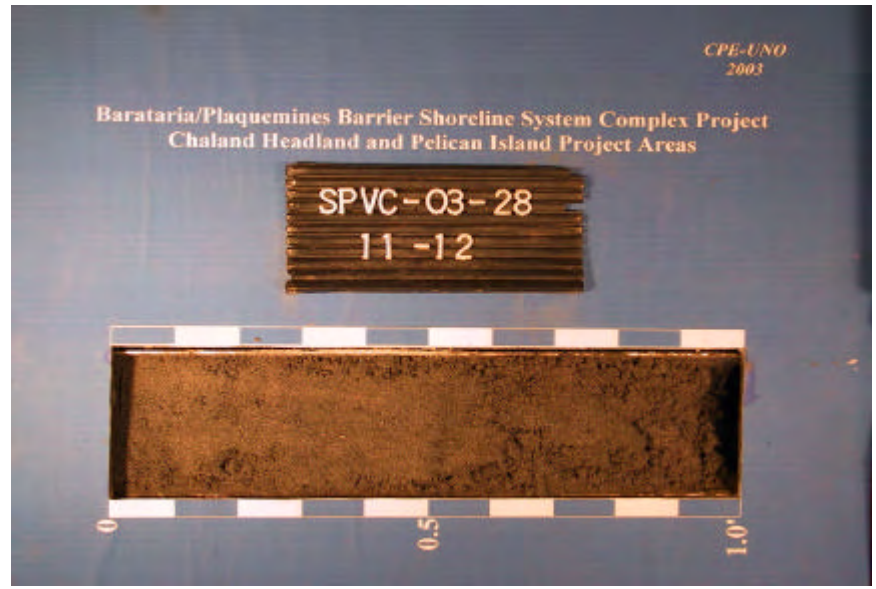
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-28
11-12
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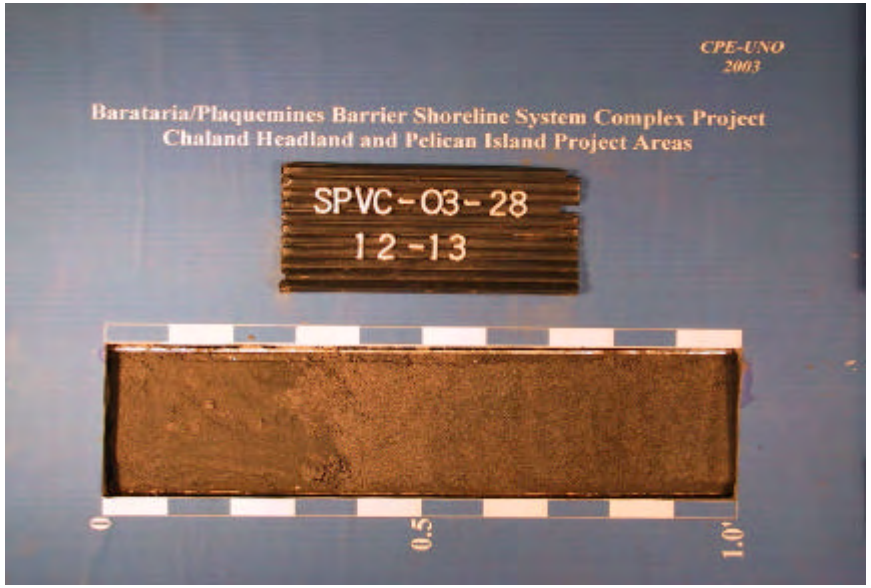
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-28
12-13
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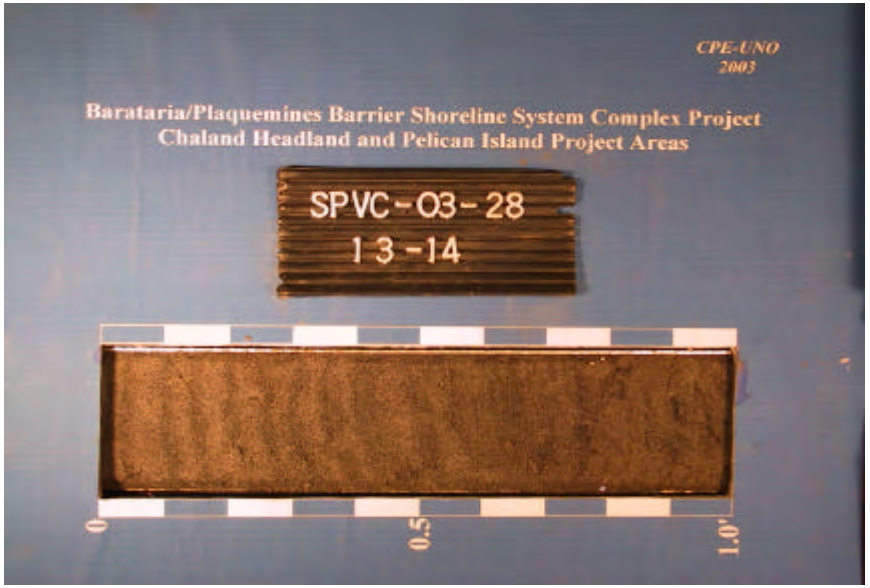
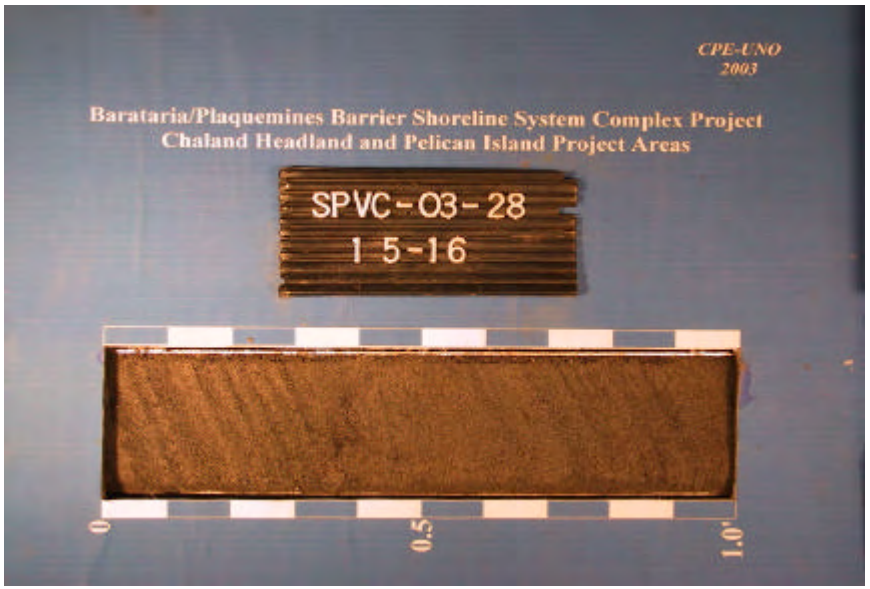
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-28
13-14
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-28
14-15
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-28
15-16
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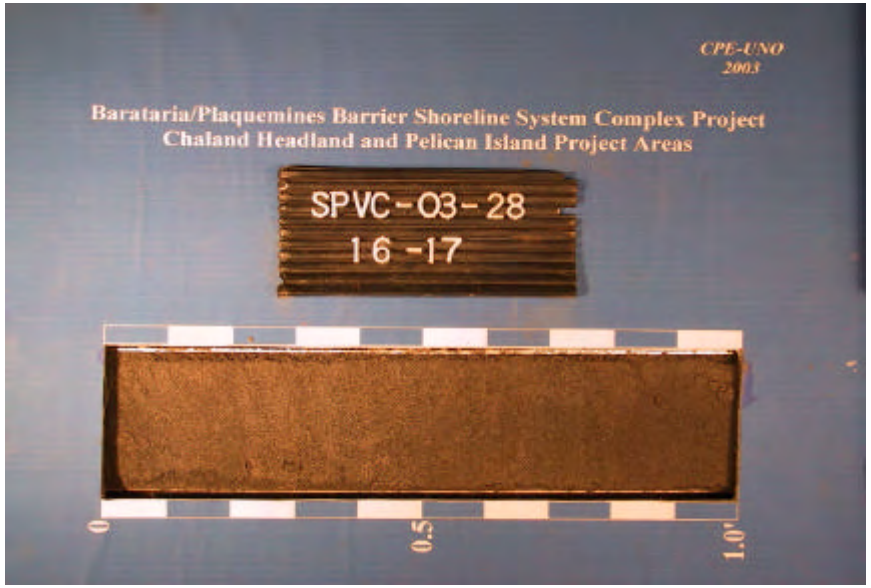
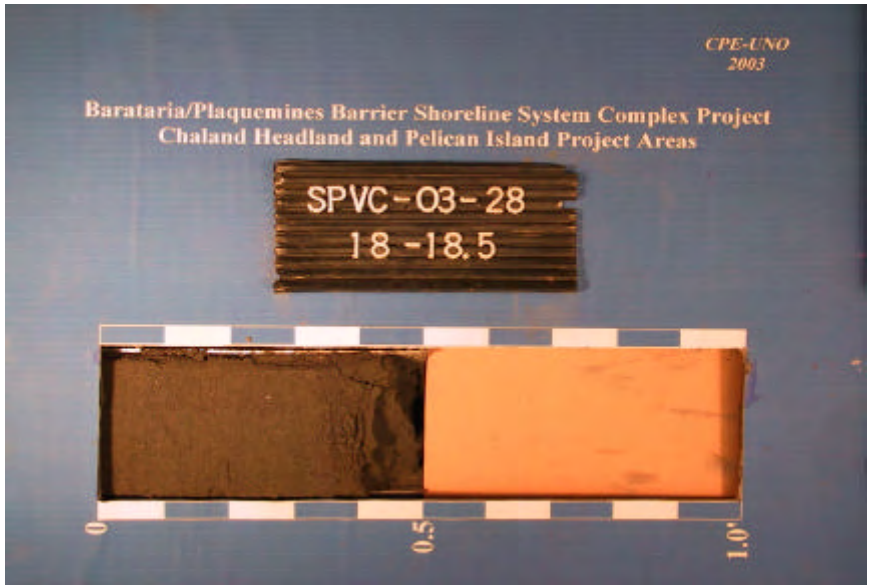
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-28
16-17
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-28
17-18
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-28
18-18.5
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-29
0-1
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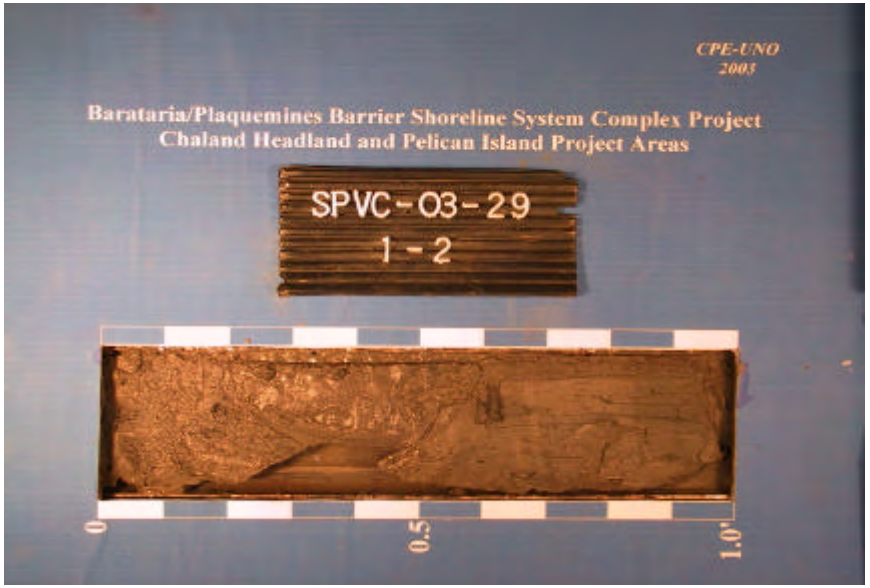
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-29
1-2
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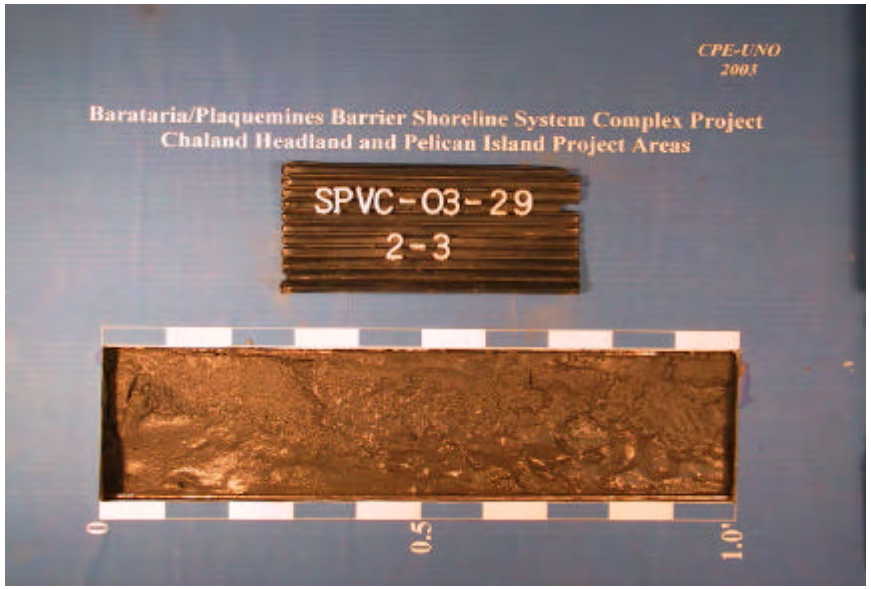
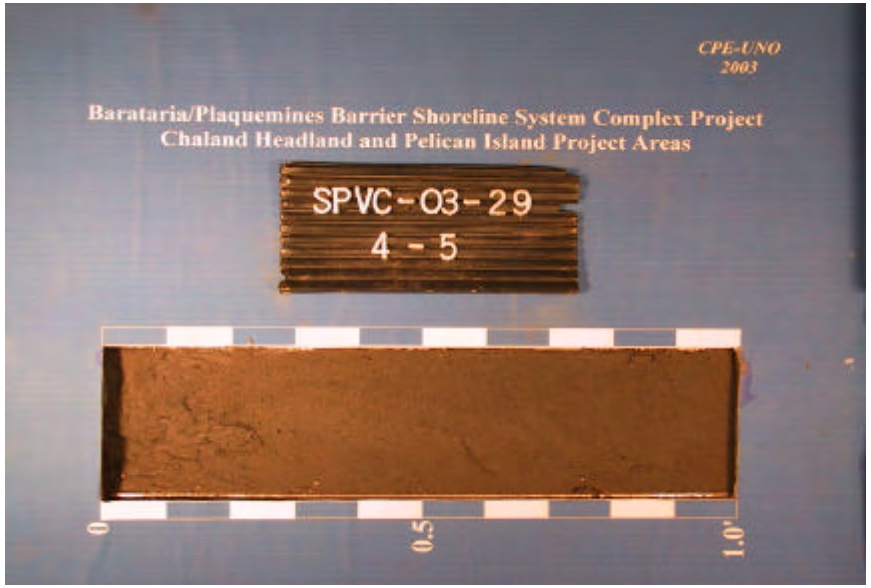
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-29
2-3
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-29
3-4
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-29
4 - 5
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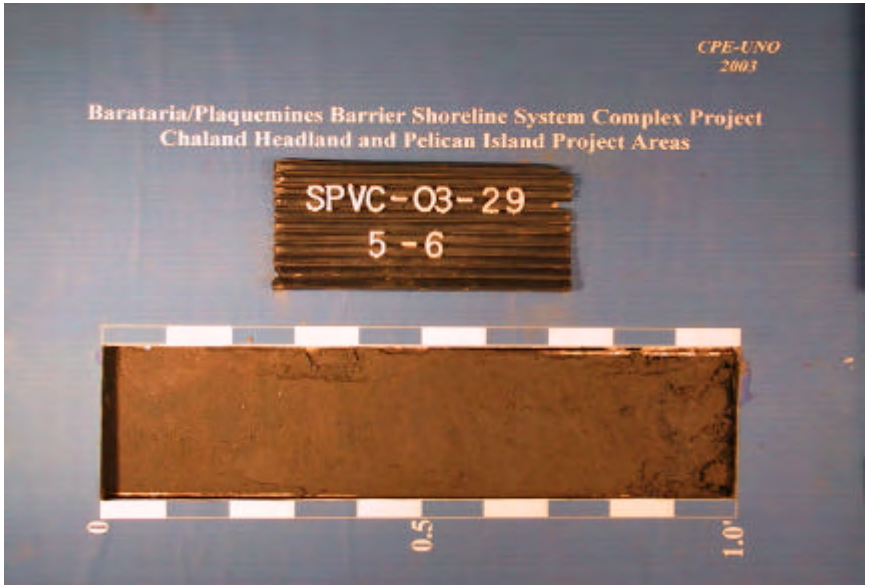
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-29
5 - 6
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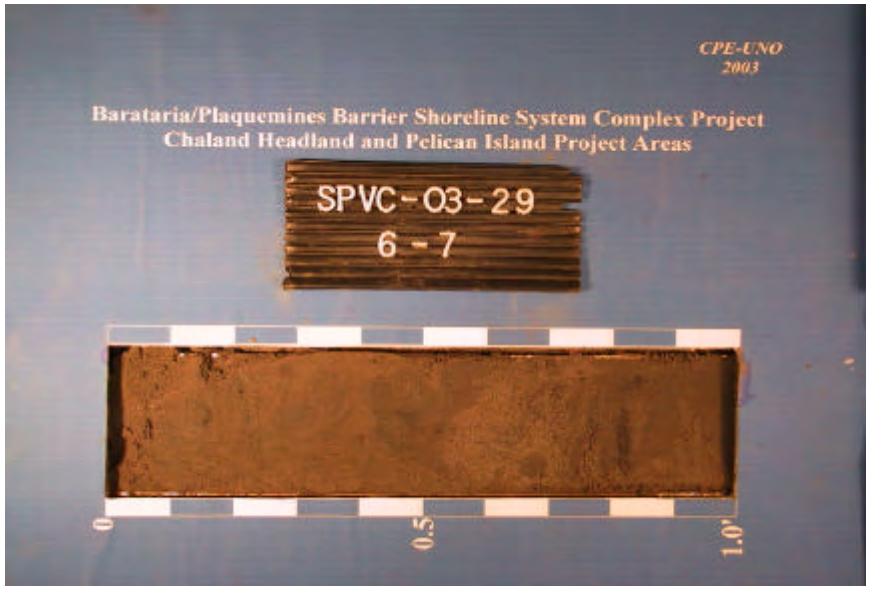
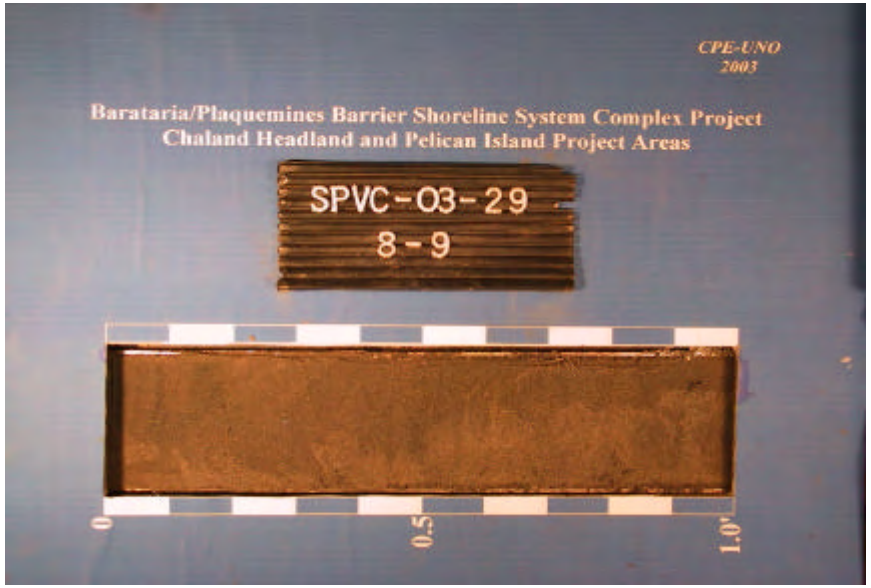
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-29
6 - 7
0
0.5
1.0'

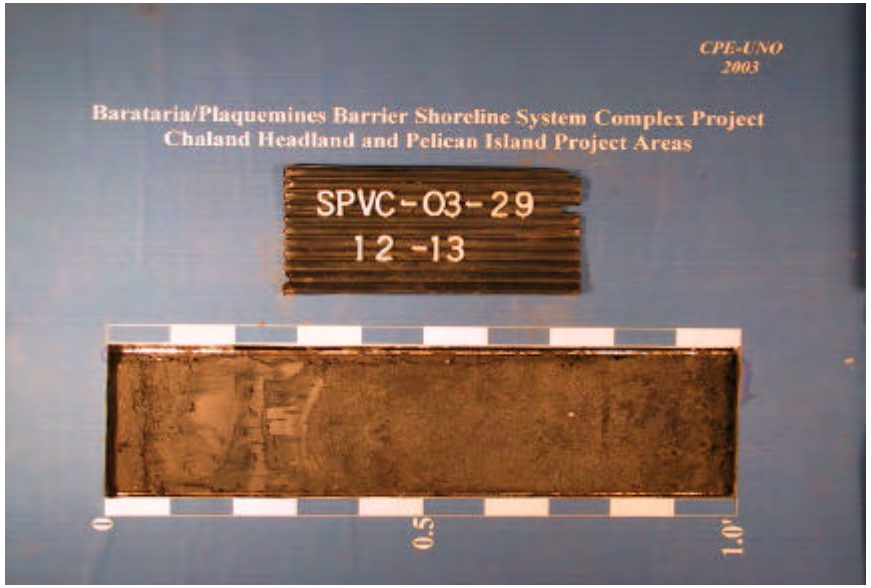
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-29
7 - 8
0
0.5
1.0'

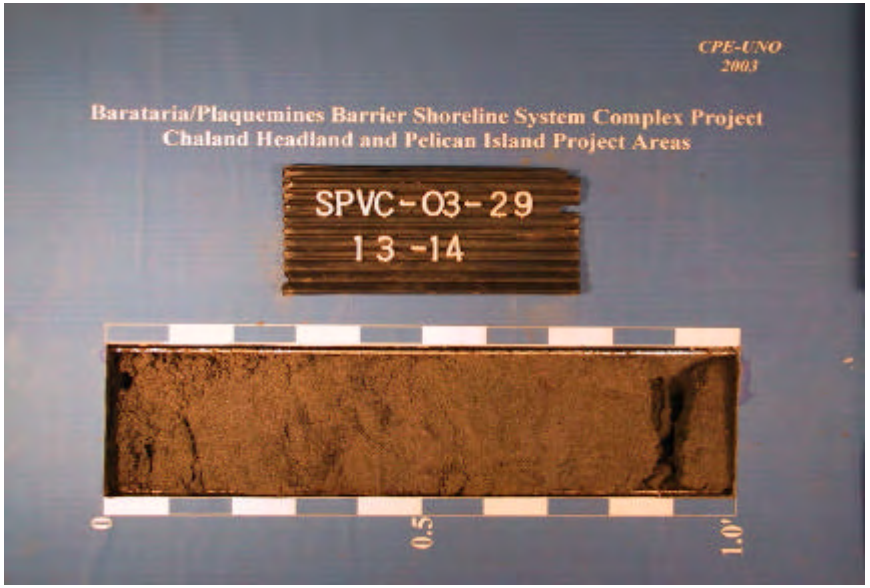

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-29
8-9
0
0.5
1.0'

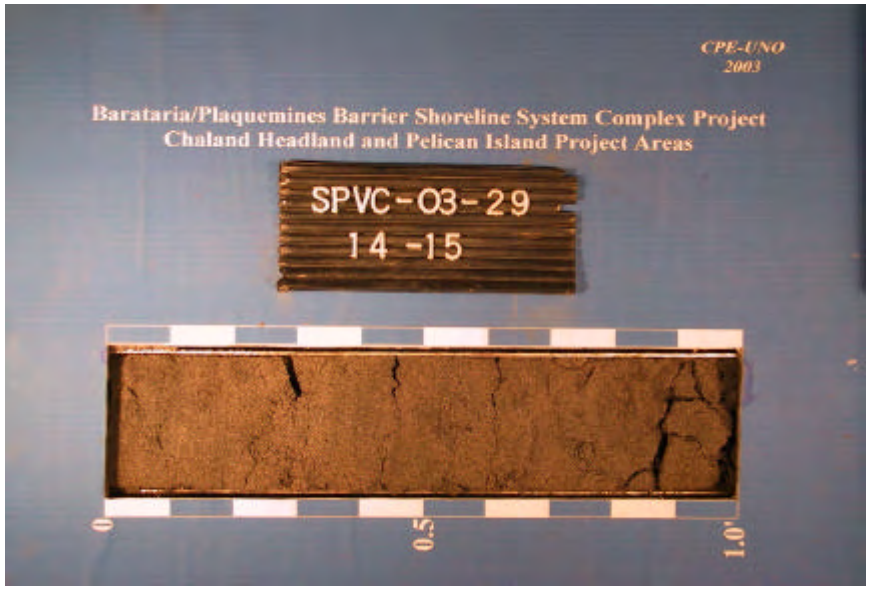
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-29
9-10
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-29
10-11
0
0.5
1.0'

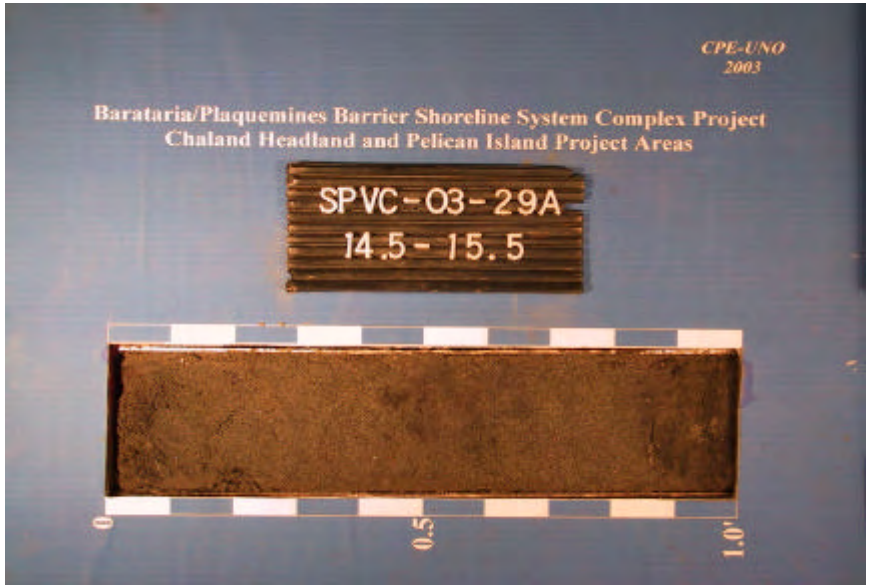
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-29
11-12
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-29
12 -13
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-29
13 -14
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-29
14 -15
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-29
15 -15.1
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-29A
14.5-15.5
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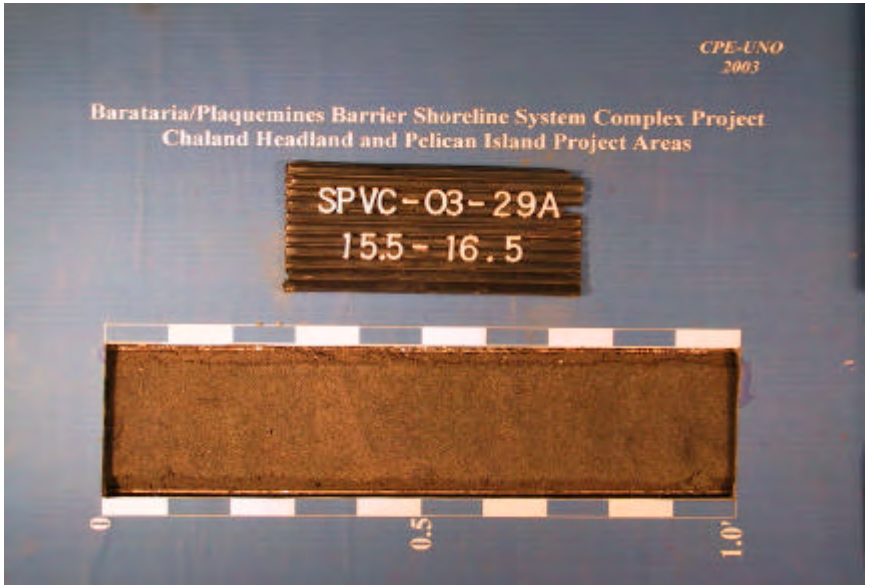
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-29A
15.5-16.5
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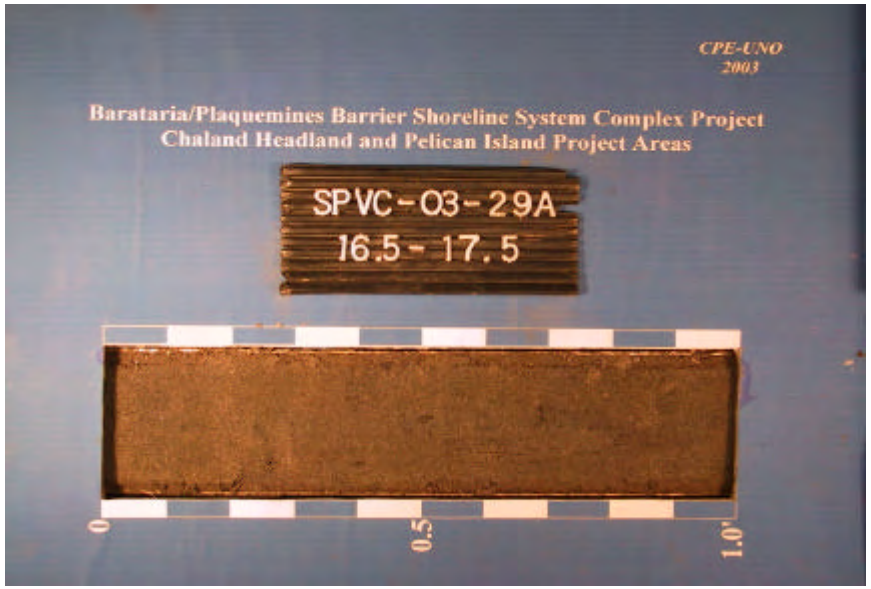
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-29A
16.5-17.5
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-29A
17.5-18.5
0
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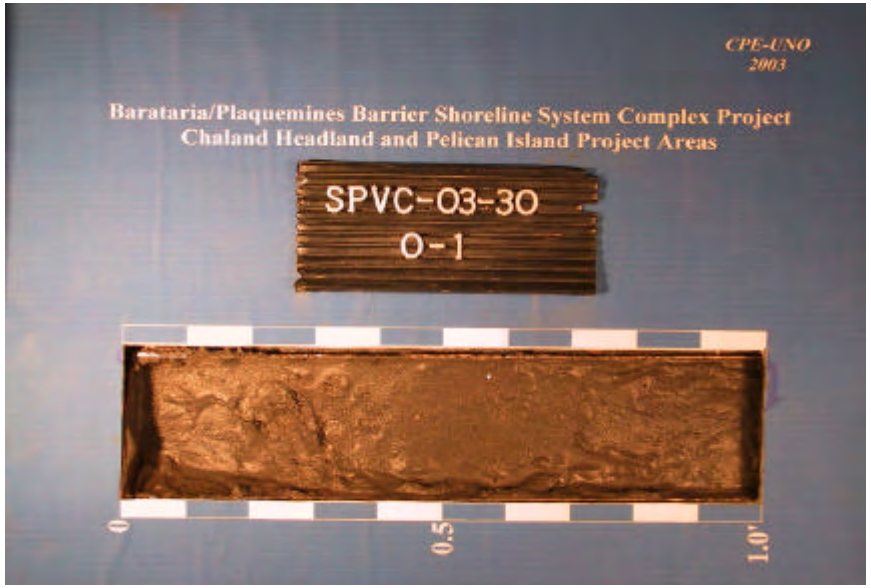
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-30
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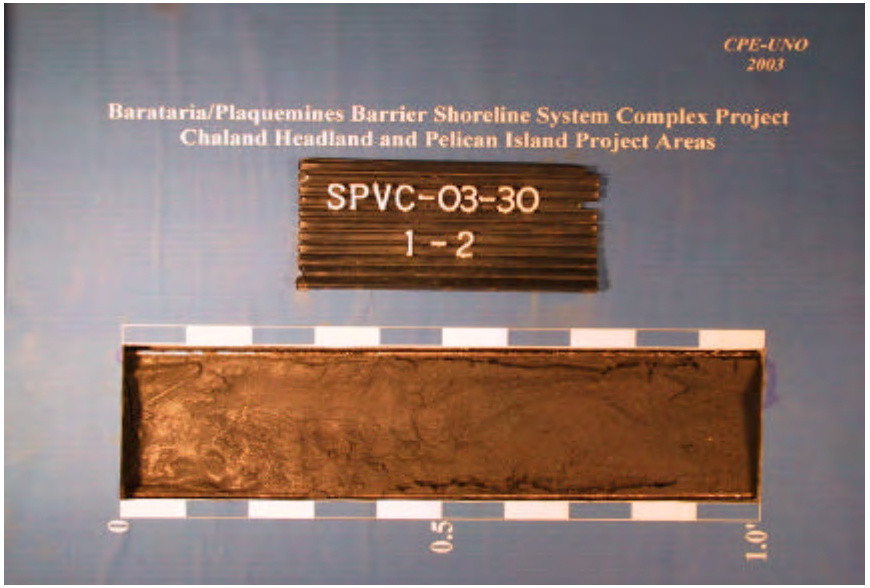
1.0'


CPE-UNO
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Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-30
1-2
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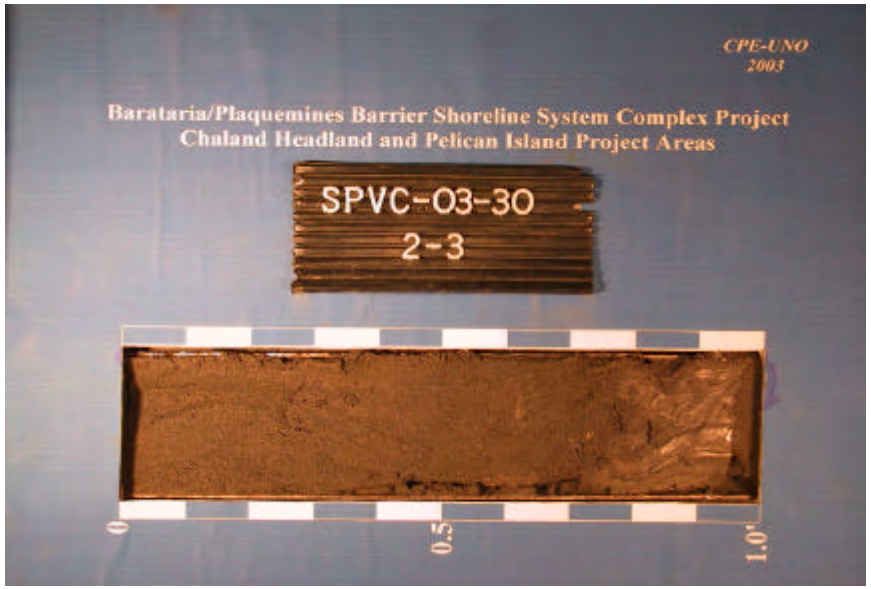
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-30
2-3
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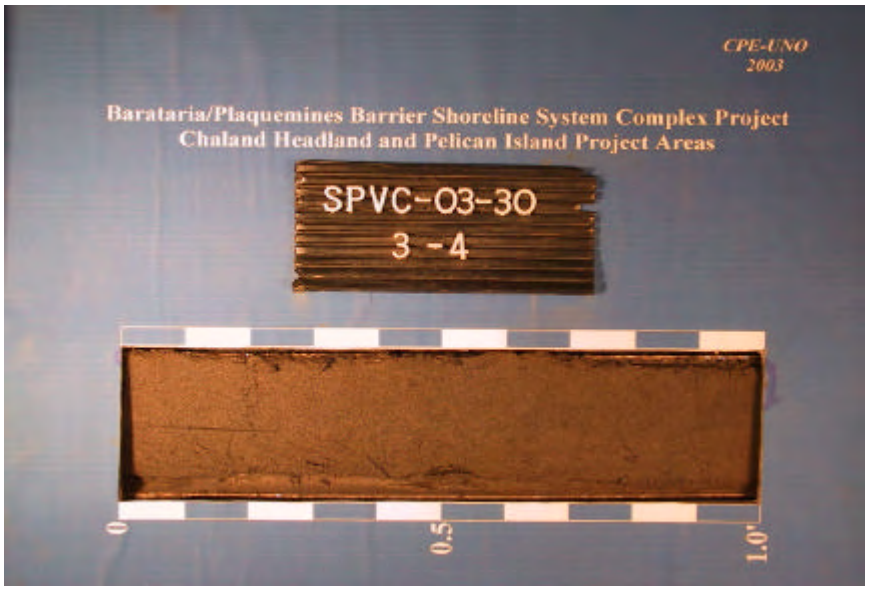
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-30
3-4
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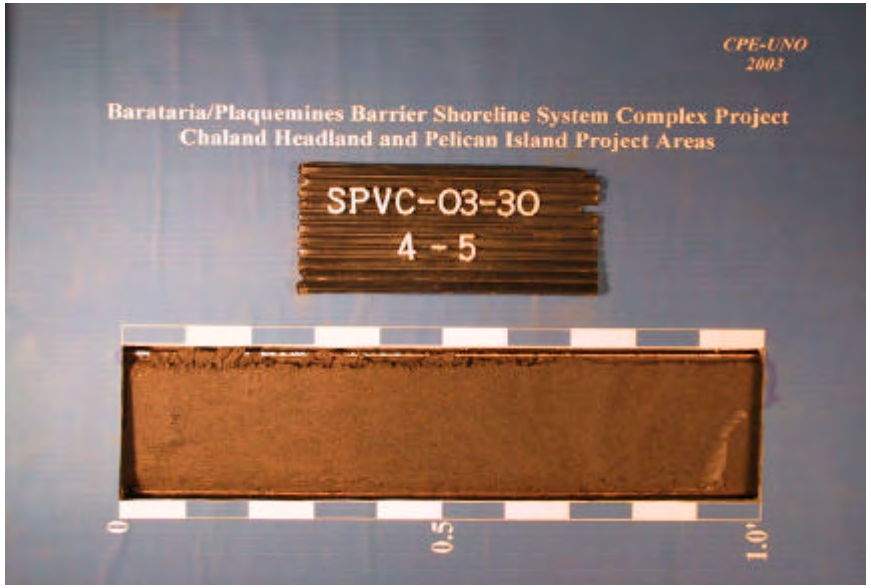
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-30
4 - 5
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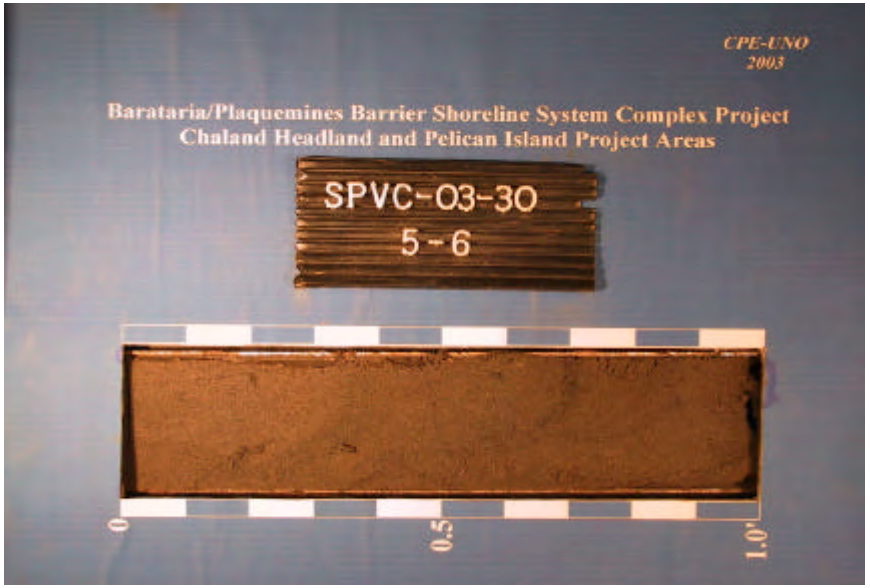
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-30
5 - 6
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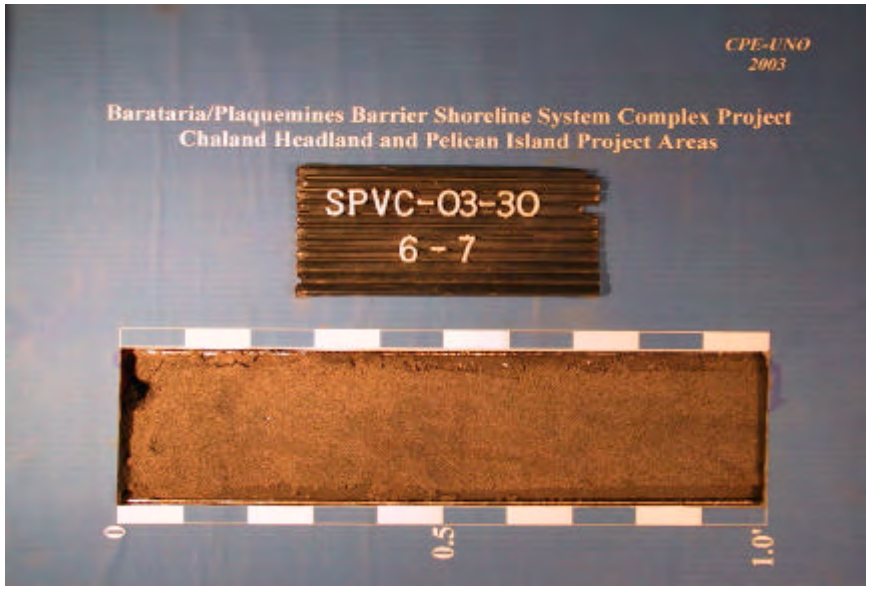
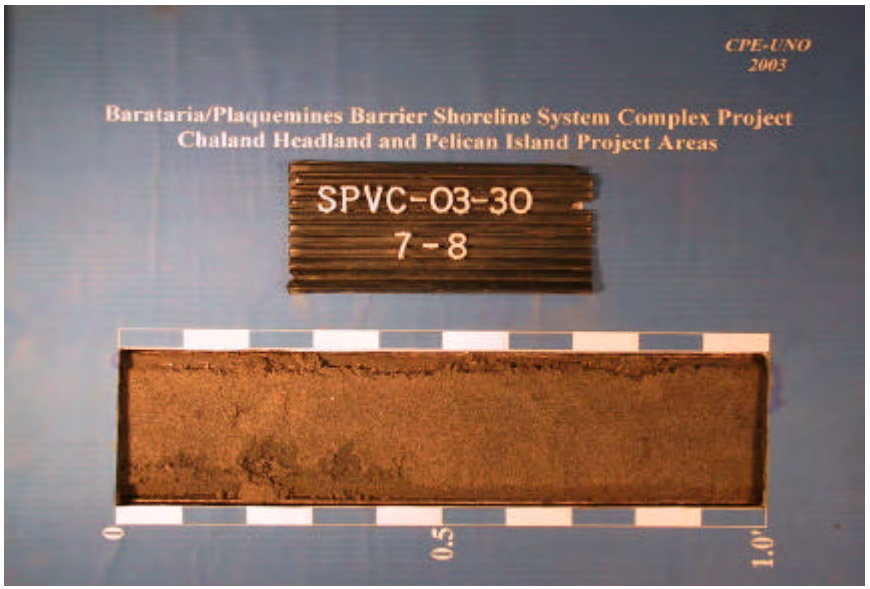
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-30
6 - 7
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-30
7 - 8
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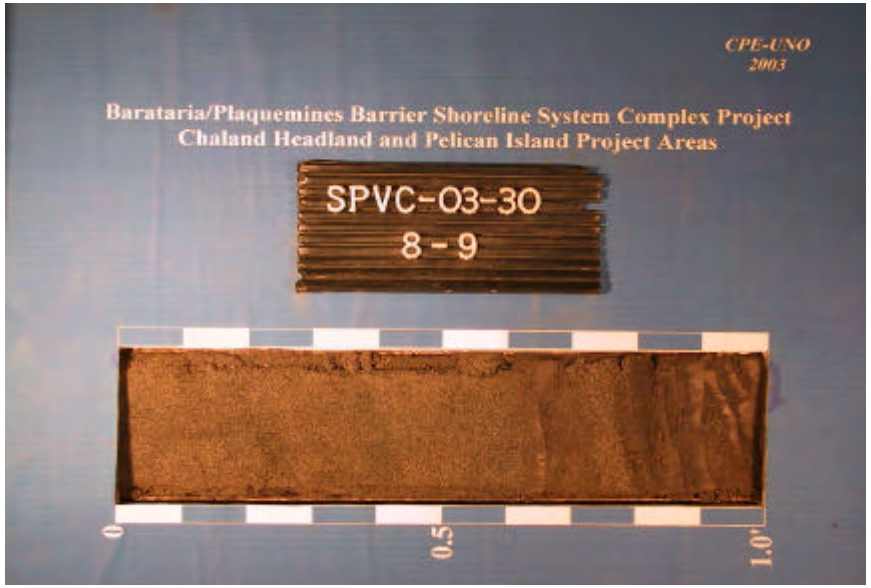
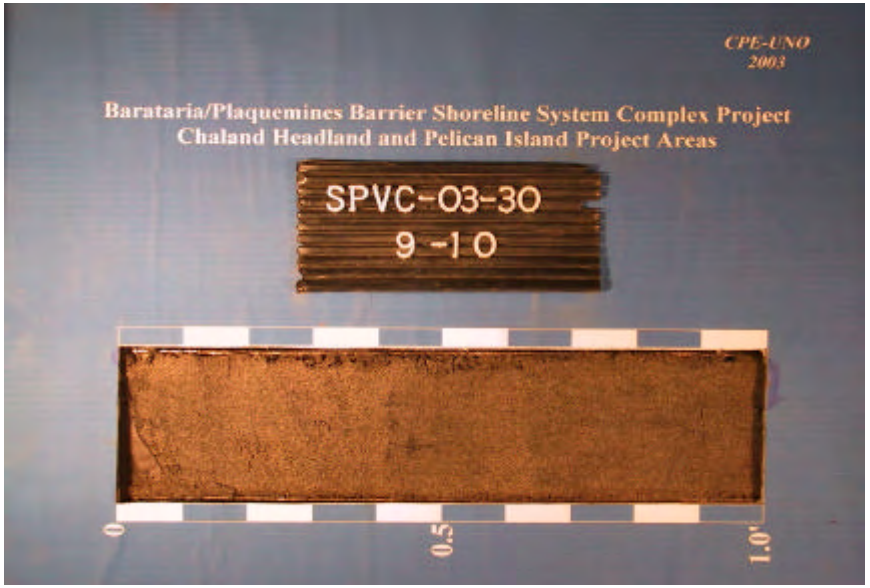
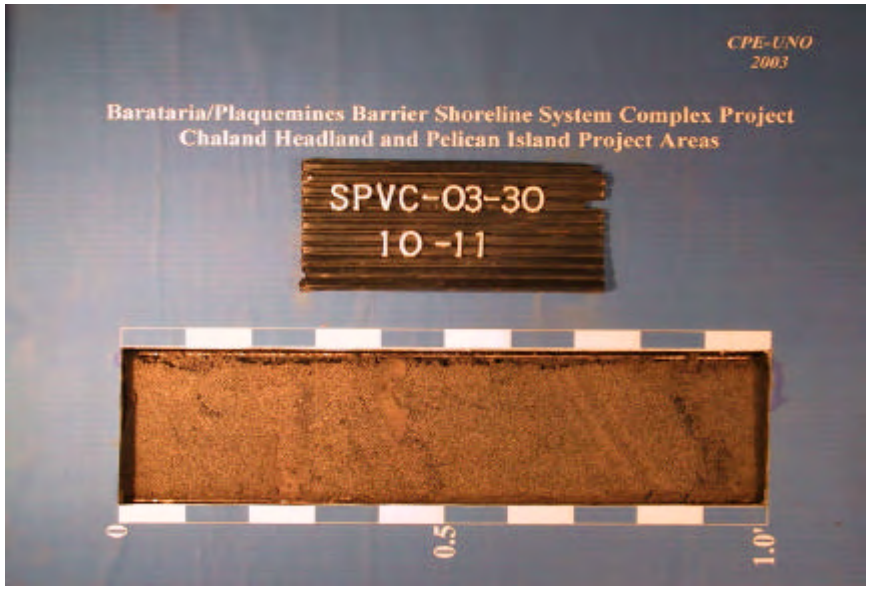
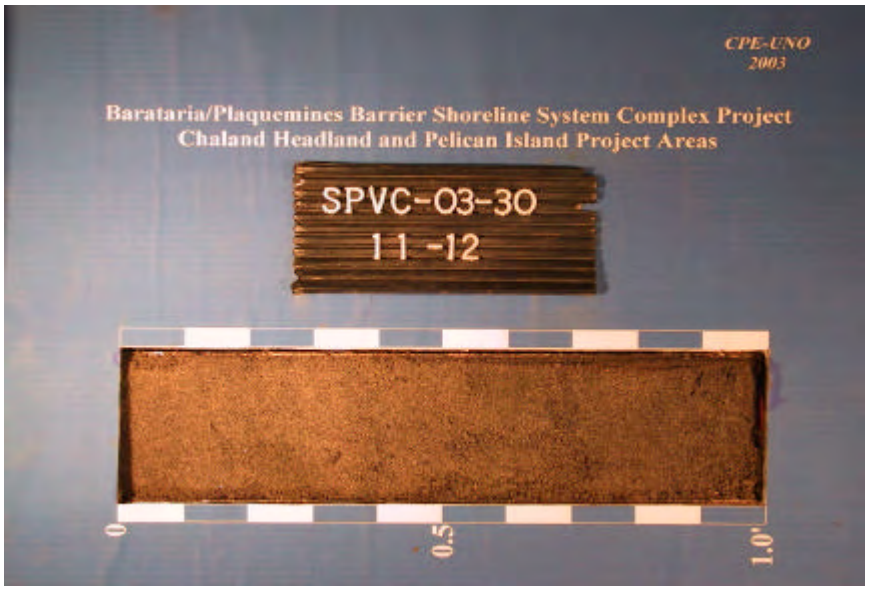
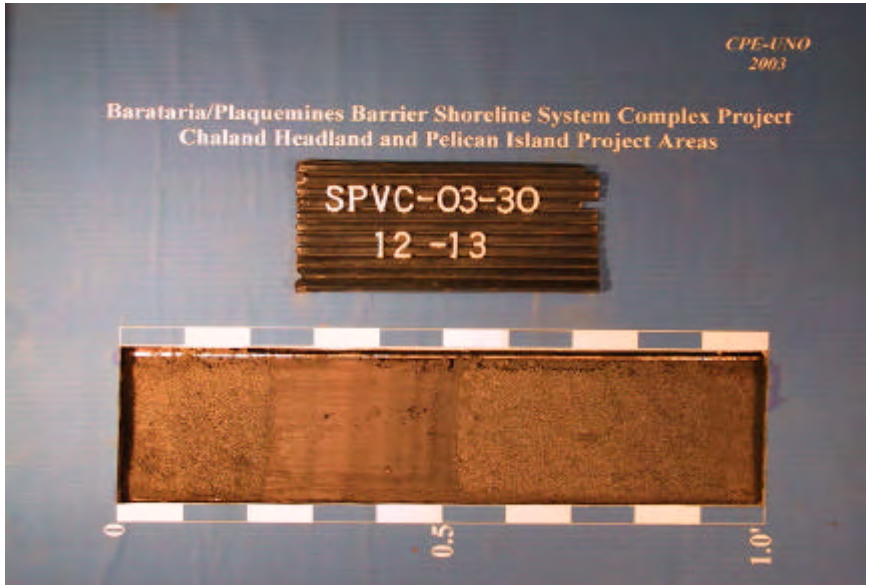
1.0'

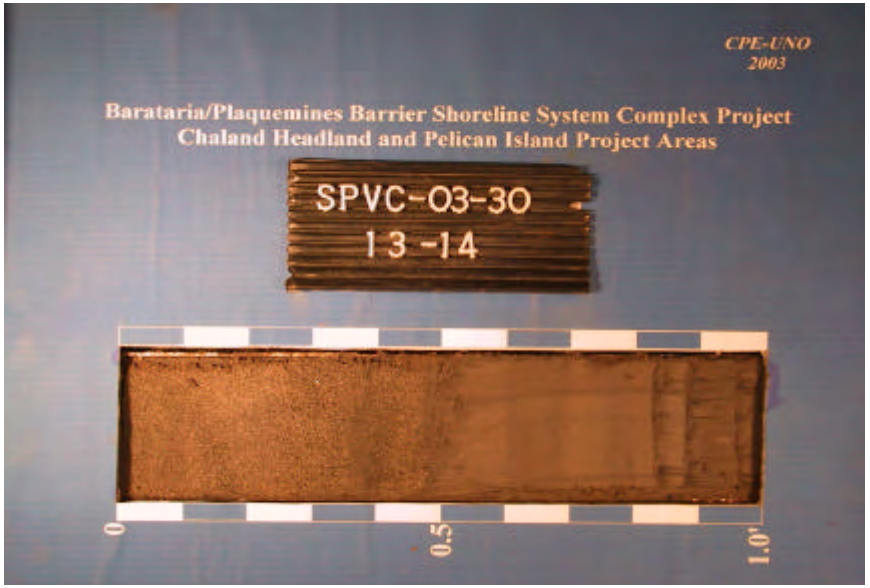

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-30
8 - 9
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-30
9 -10
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-30
10 -11
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-30
11 -12
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-30
12 -13
0
0.5
1.0'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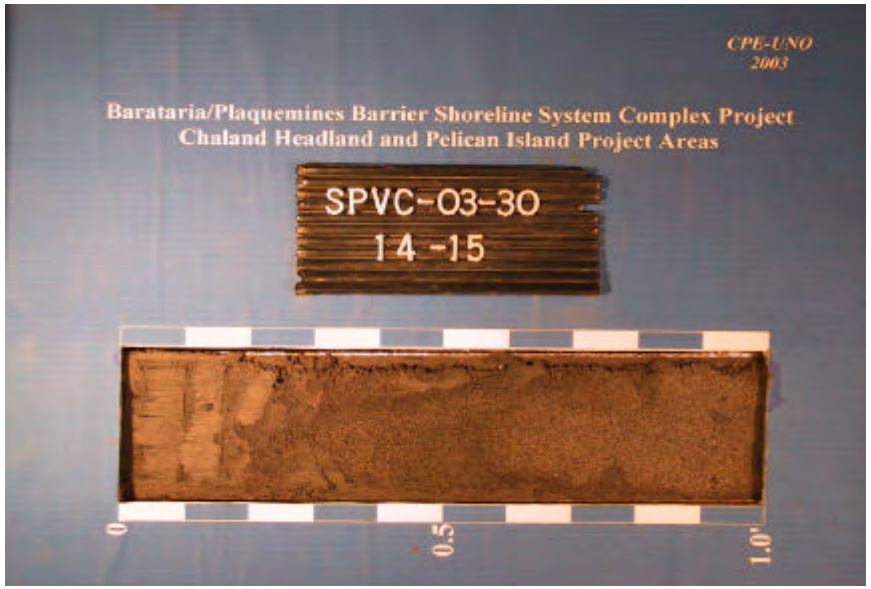
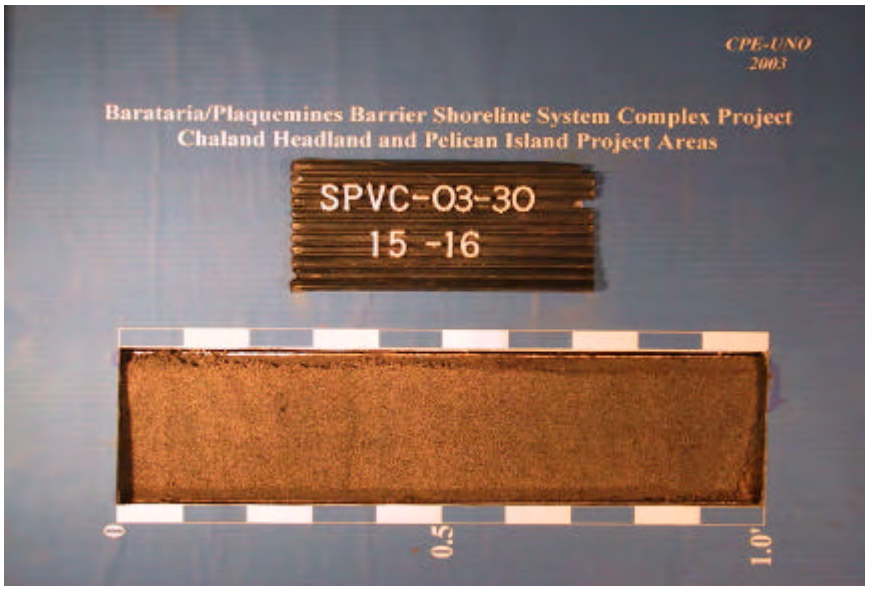
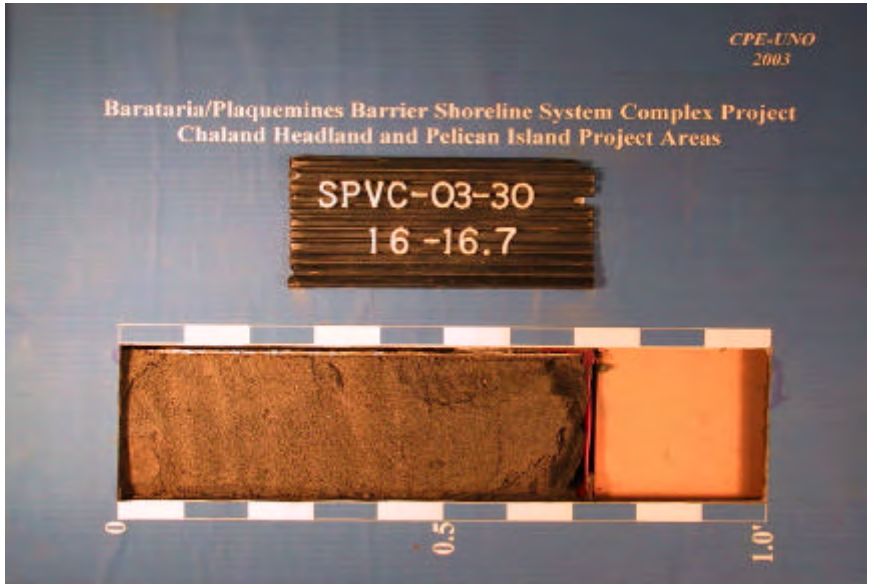
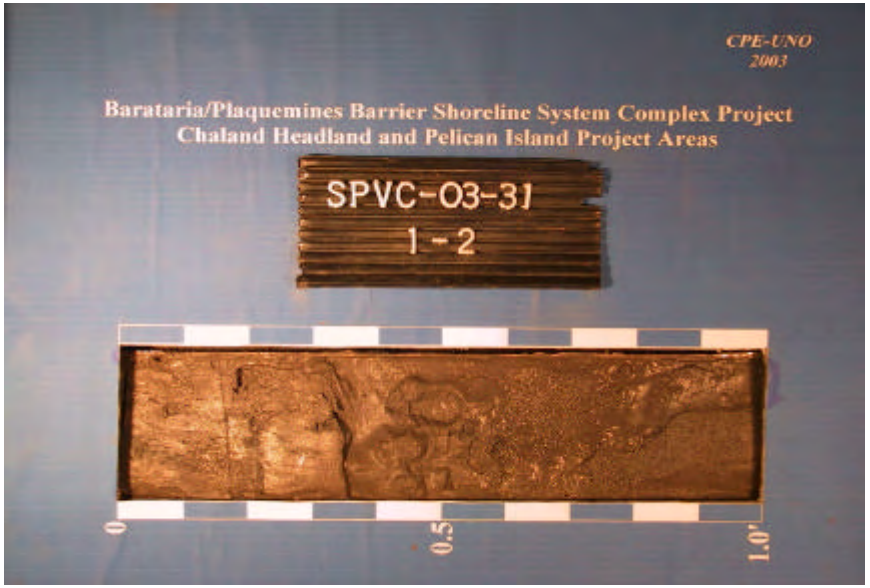
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-30
13 -14
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-30
14 -15
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-30
15 -16
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-30
16 -16.7
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-31
0-1
0
0.5
1.0'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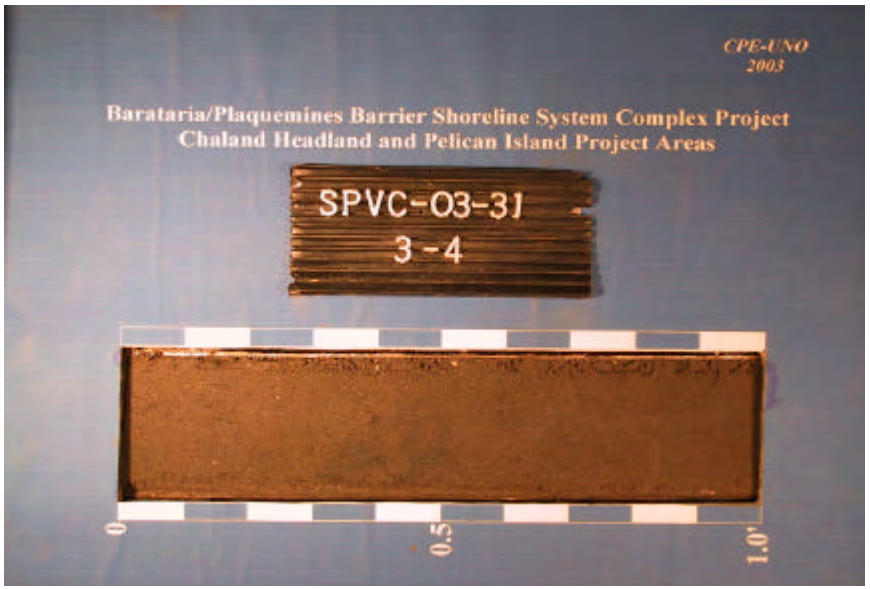
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-31
1-2
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-31
2-3
0
0.5
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-31
3-4
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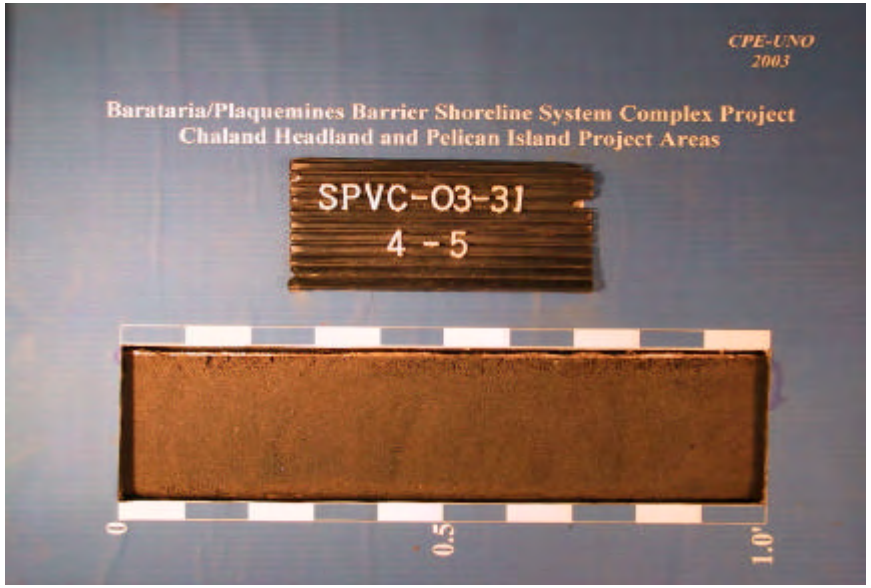
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-31
4 - 5
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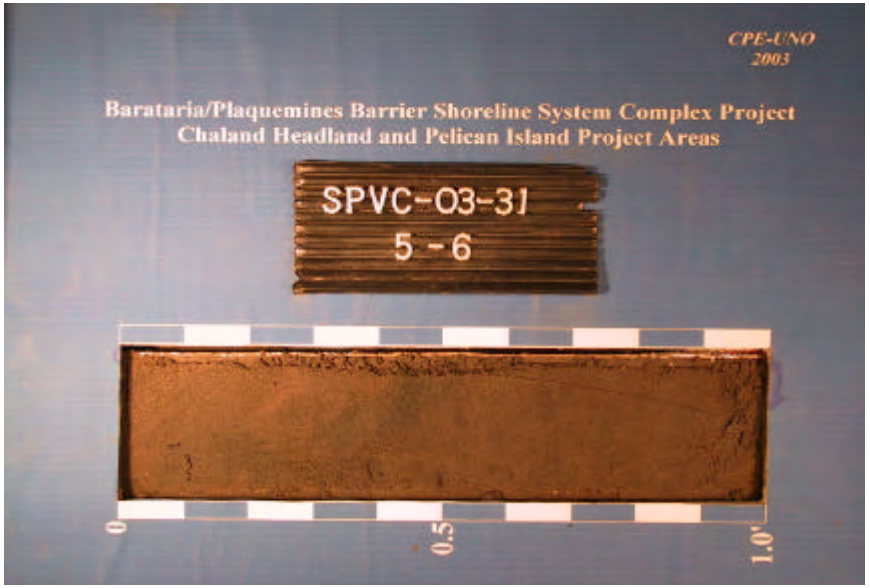
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-31
5 - 6
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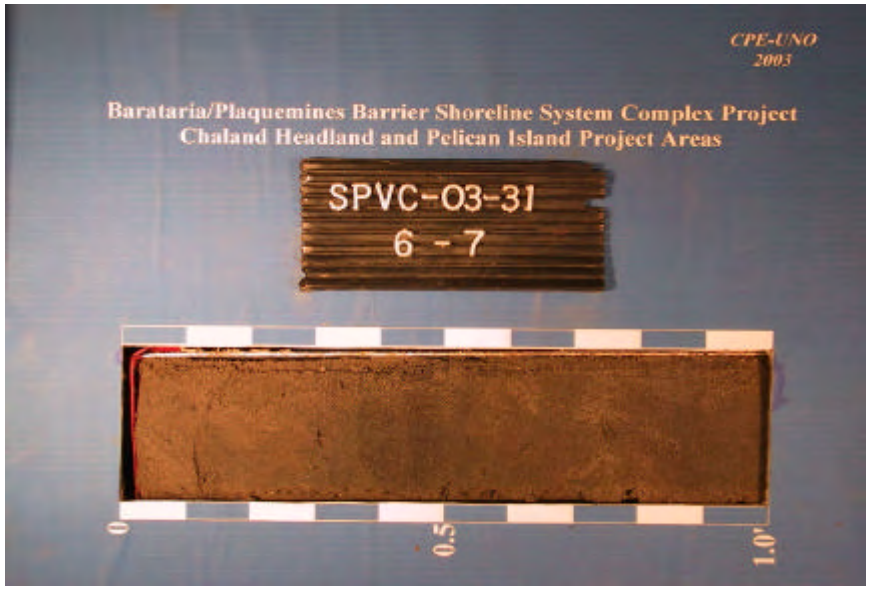
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-31
6 - 7
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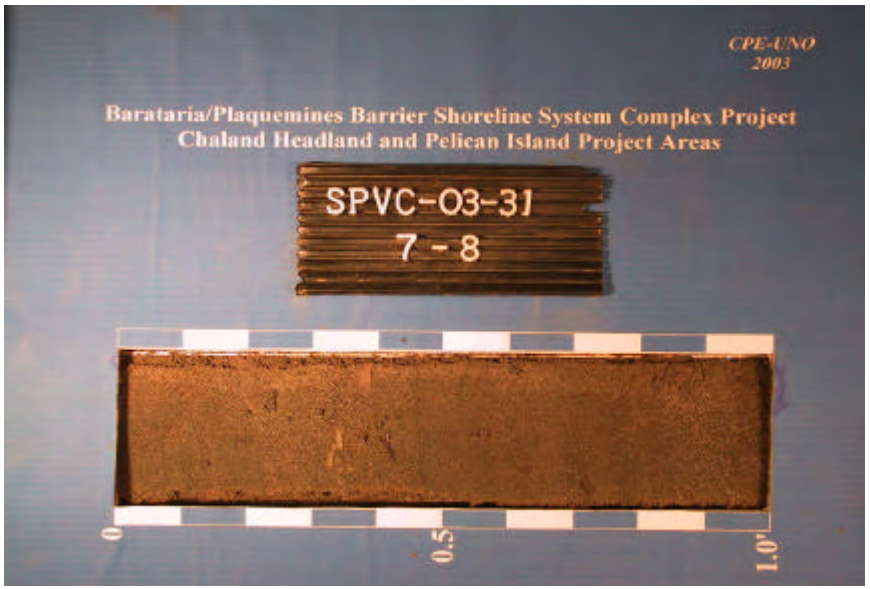
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-31
7 - 8
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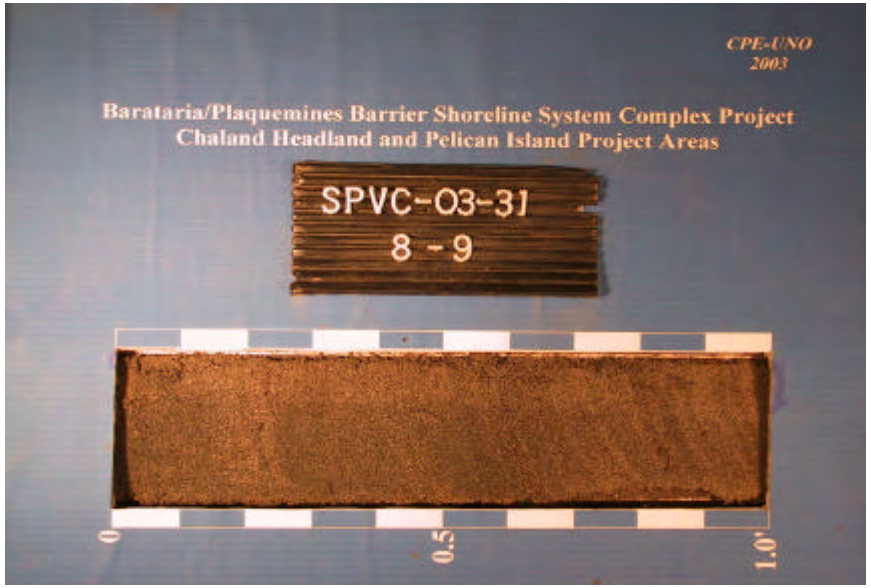
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-31
8 - 9
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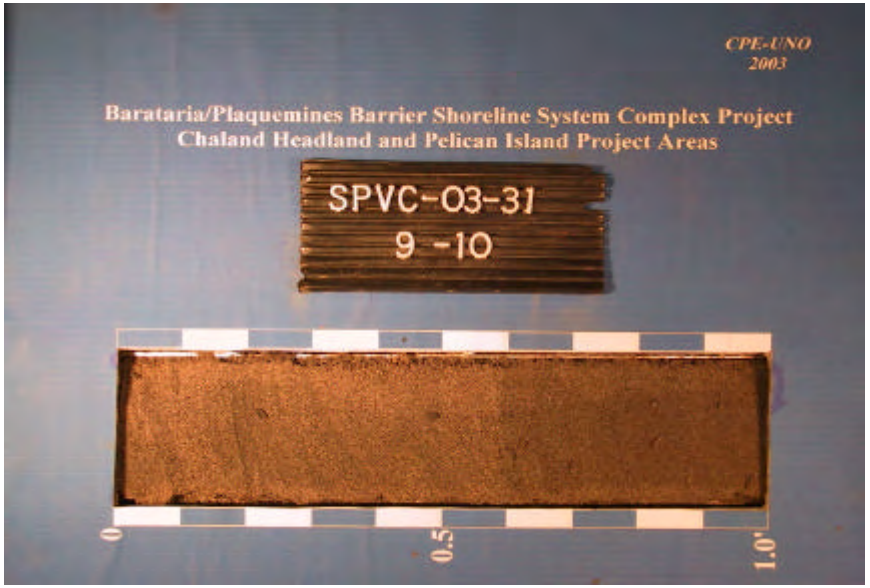
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-31
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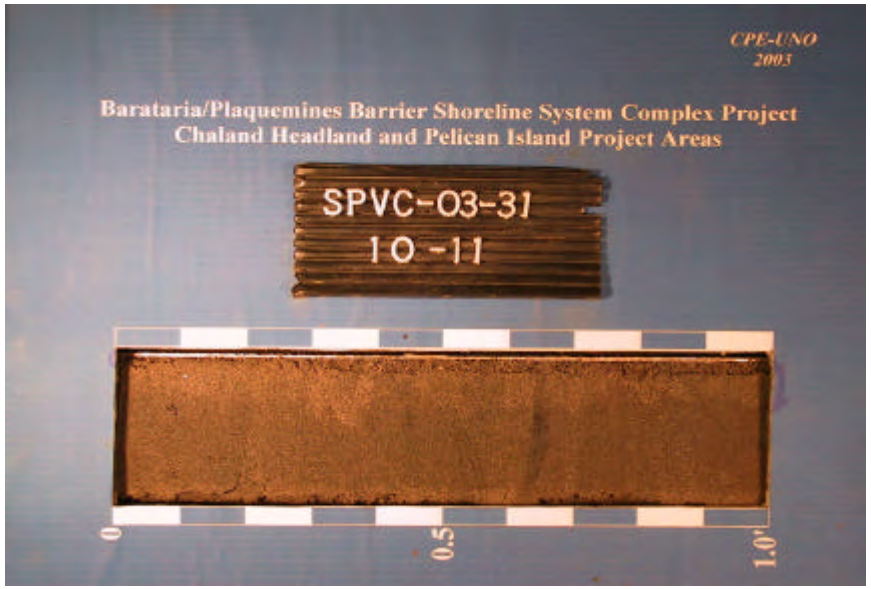
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Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-31
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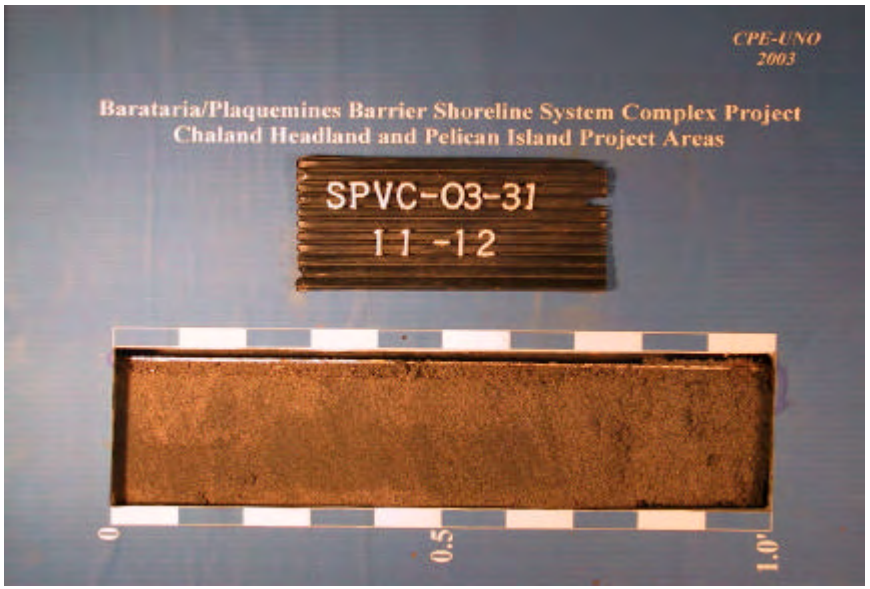
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-31
11 -12
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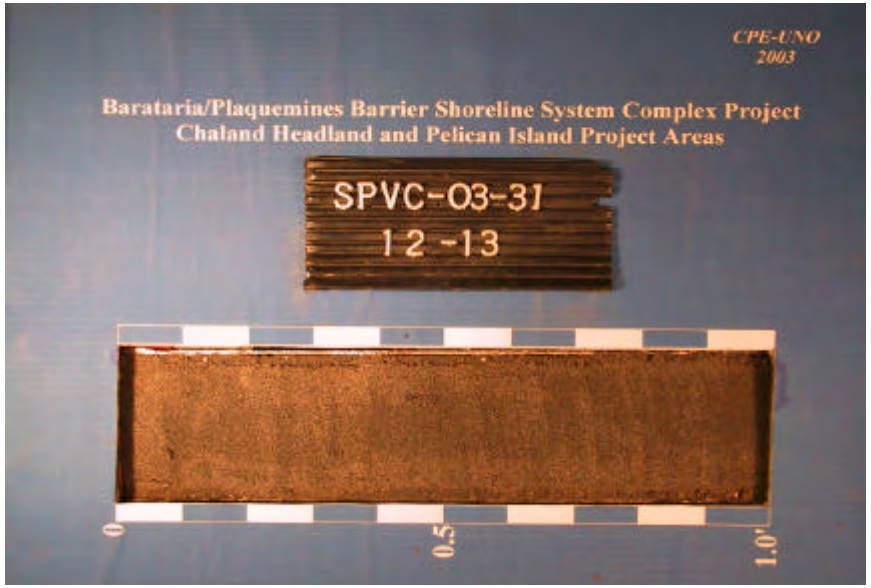
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-31
12 -13
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-31
13 -14
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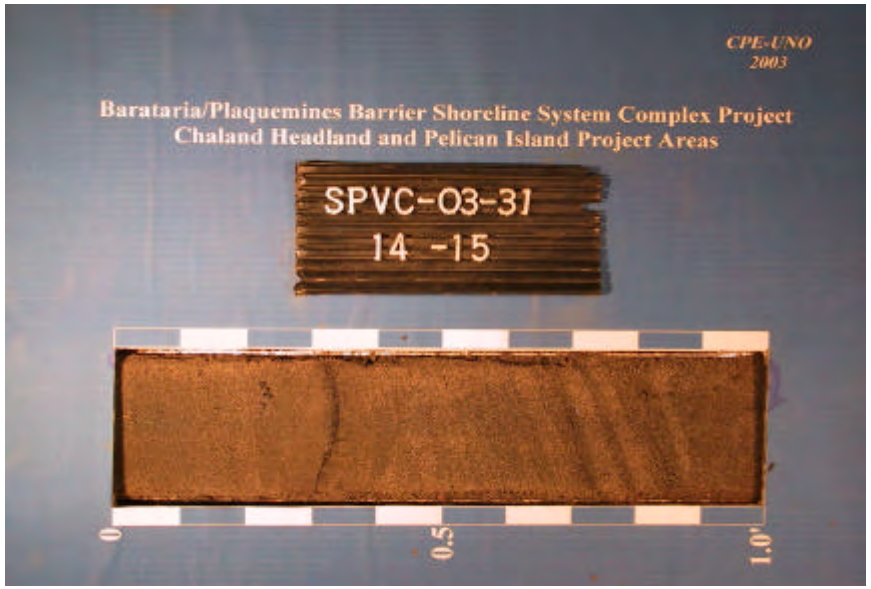
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-31
14 -15
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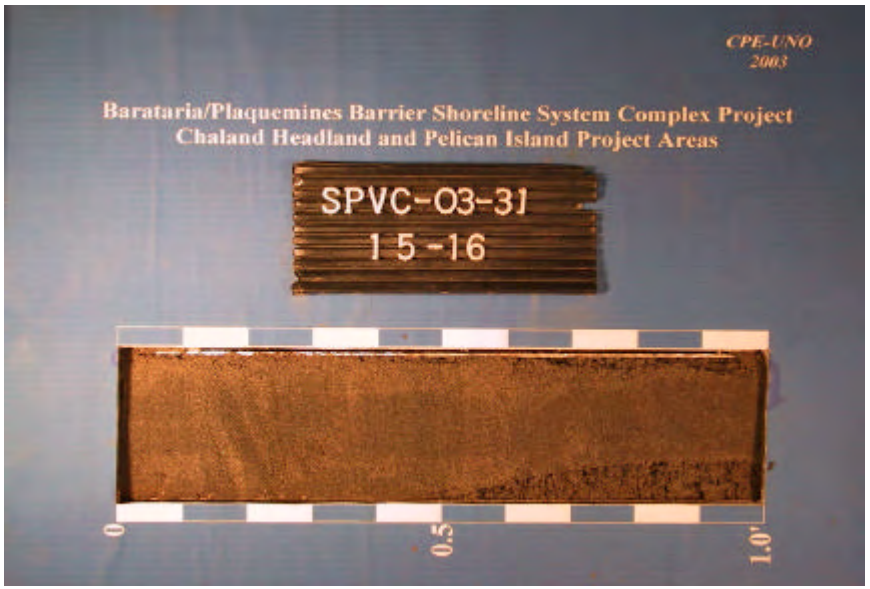
1.0'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Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-31
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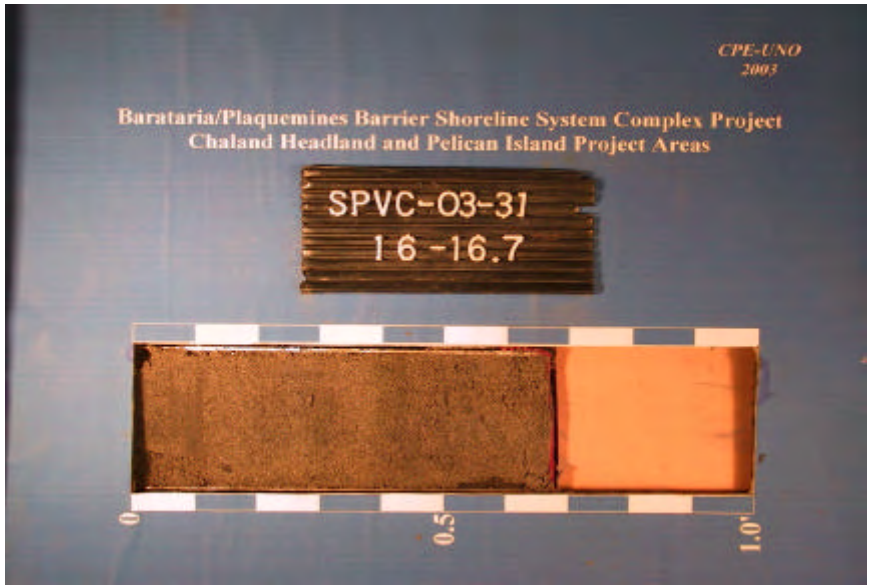
1.0'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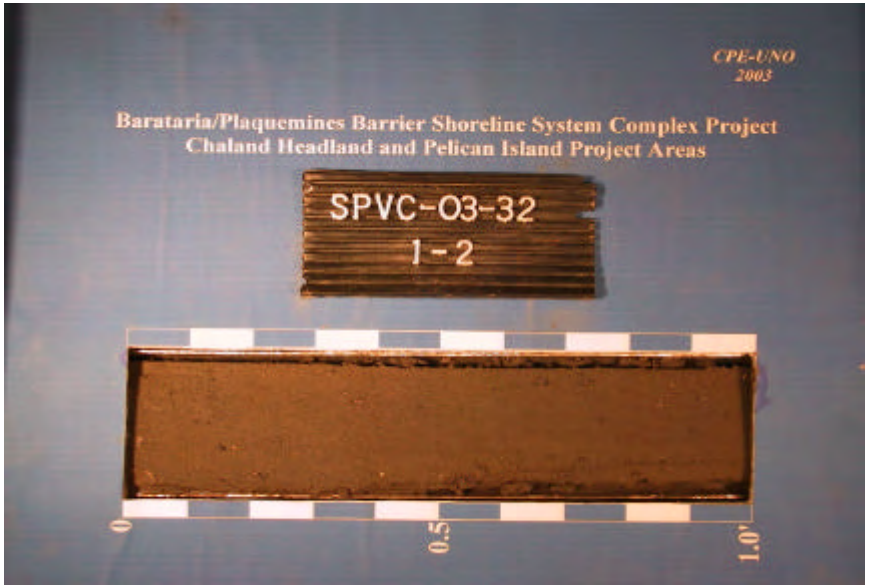
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-31
16 -16.7
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-32
0-1
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-32
1-2
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-32
2-3
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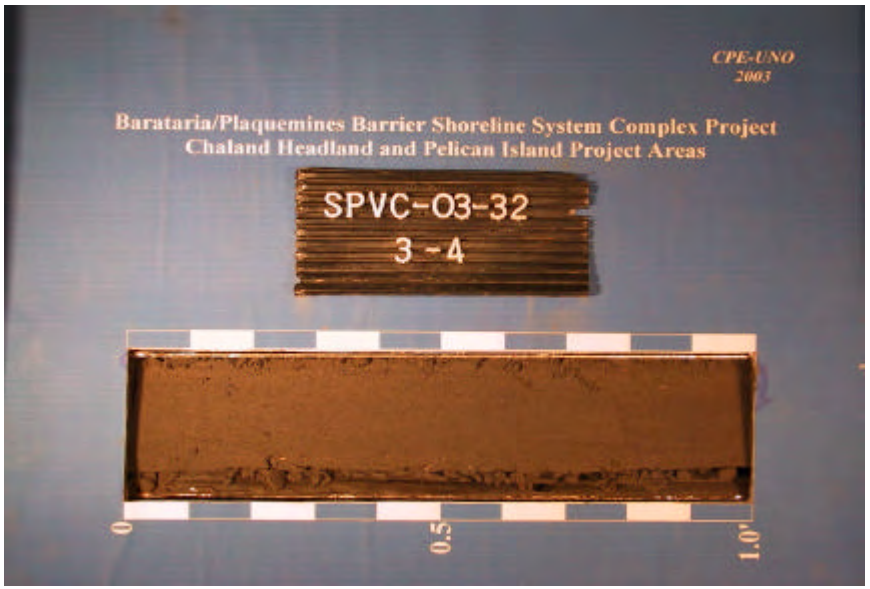
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-32
3-4
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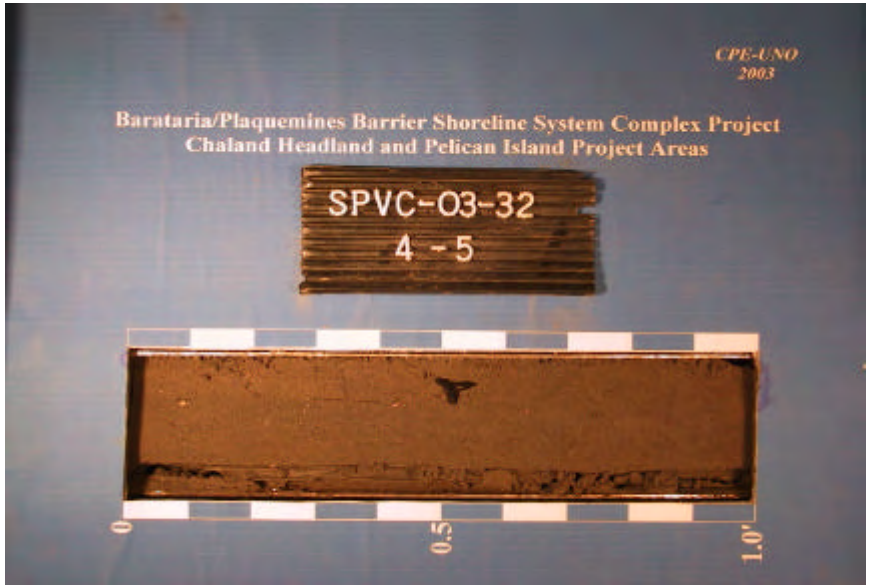
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-32
4 - 5
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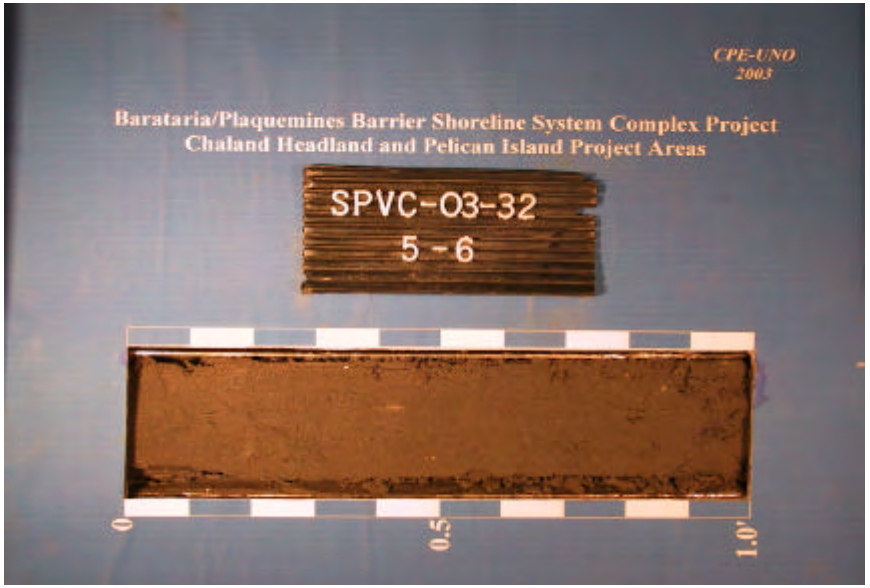
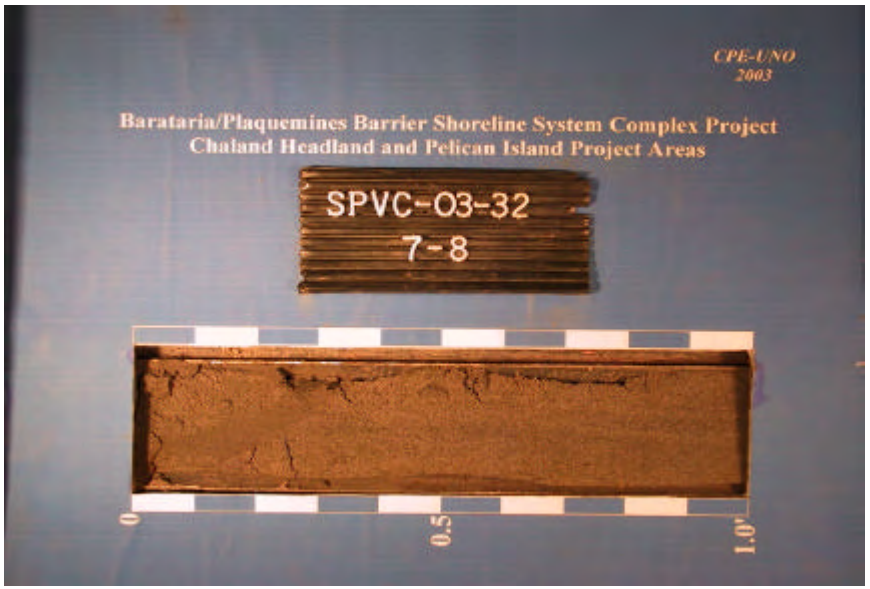
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-32
5 - 6
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-32
6 - 7
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-32
7 - 8
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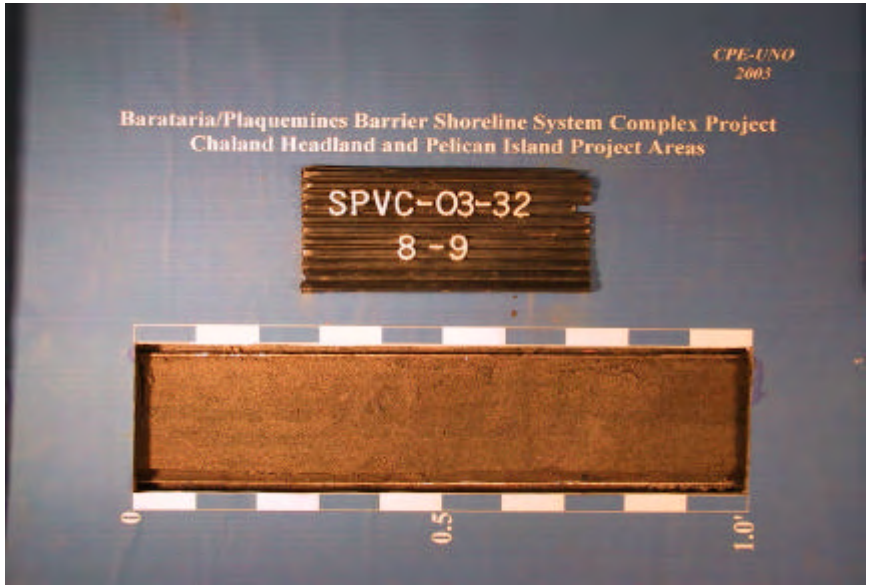
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-32
8 - 9
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-32
9 - 10
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-32
10 - 11
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-32
11 - 12
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-32
12 - 13
0
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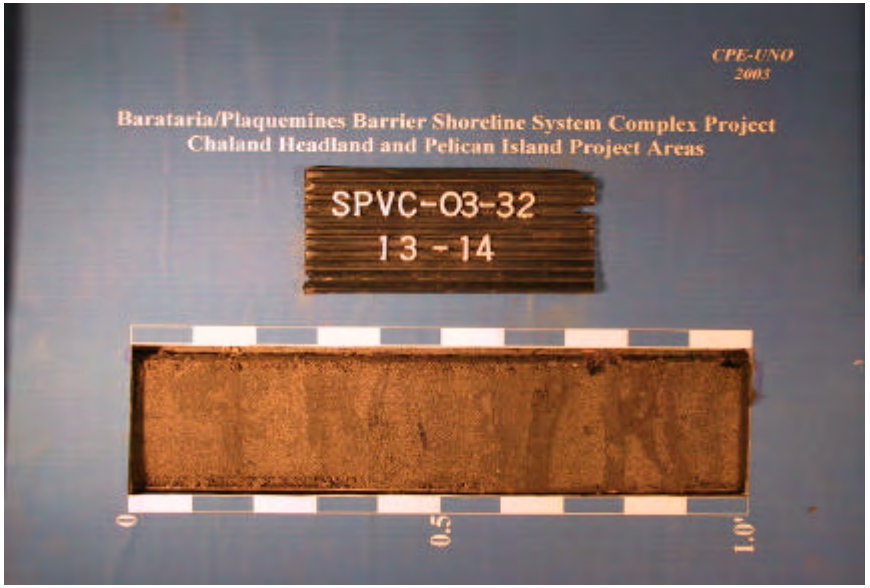
1.0'

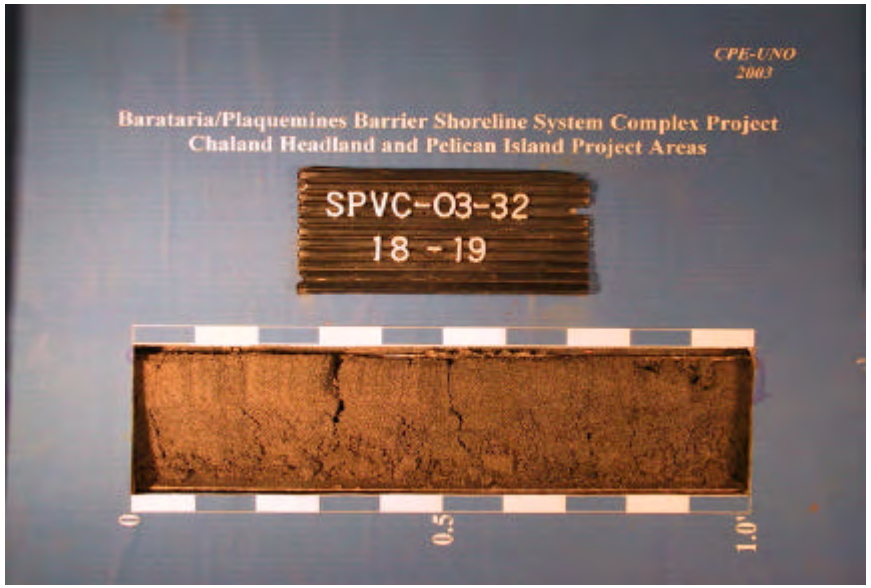

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-32
13 - 14
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-32
14 - 15
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-32
15 - 16
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-32
16 - 17
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-32
17 - 18
0
0.5
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-32
18 - 19
0
0.5
1.0'

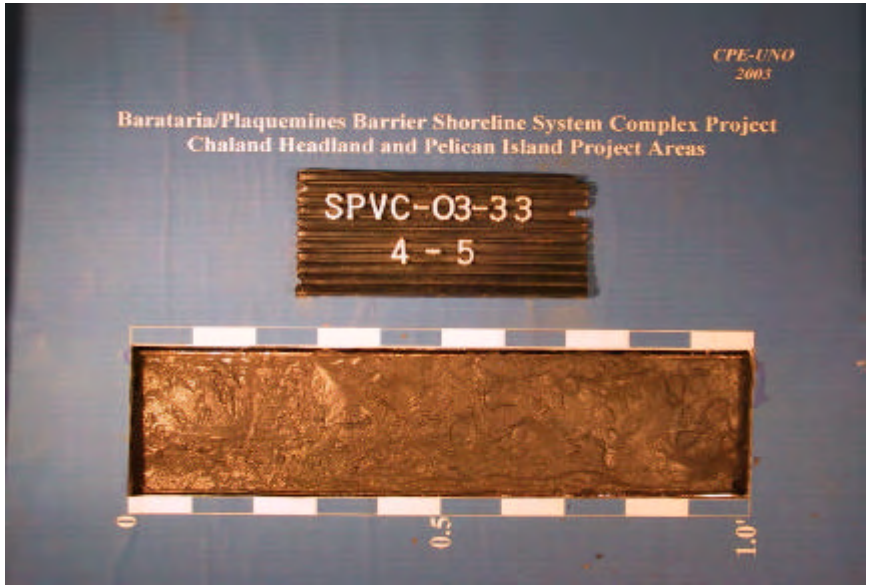
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-32
19 - 19.5
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-33
0-1
0
0.5
1.0'

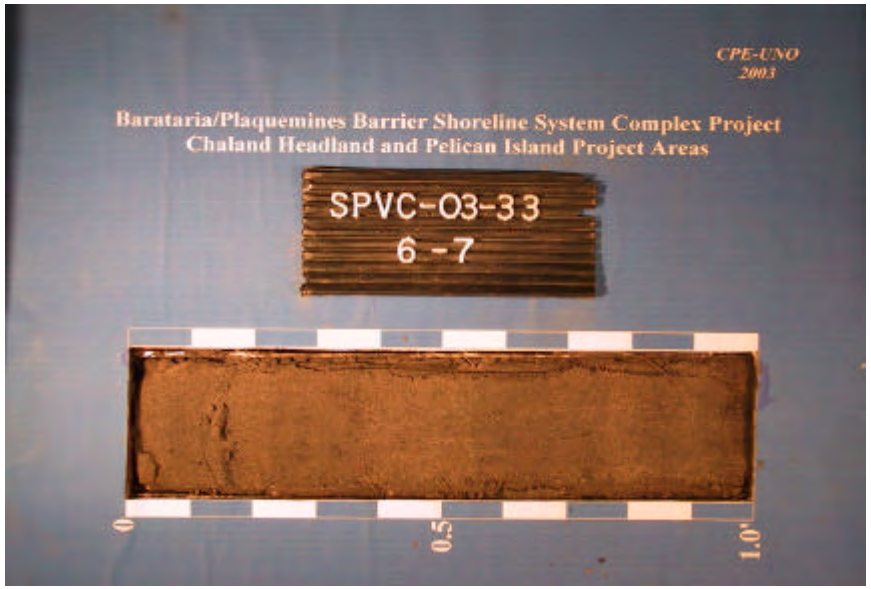
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-33
1-2
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-33
2-3
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-33
3-4
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-33
4 - 5
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-33
5 - 6
0
0.5
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-33
6 - 7
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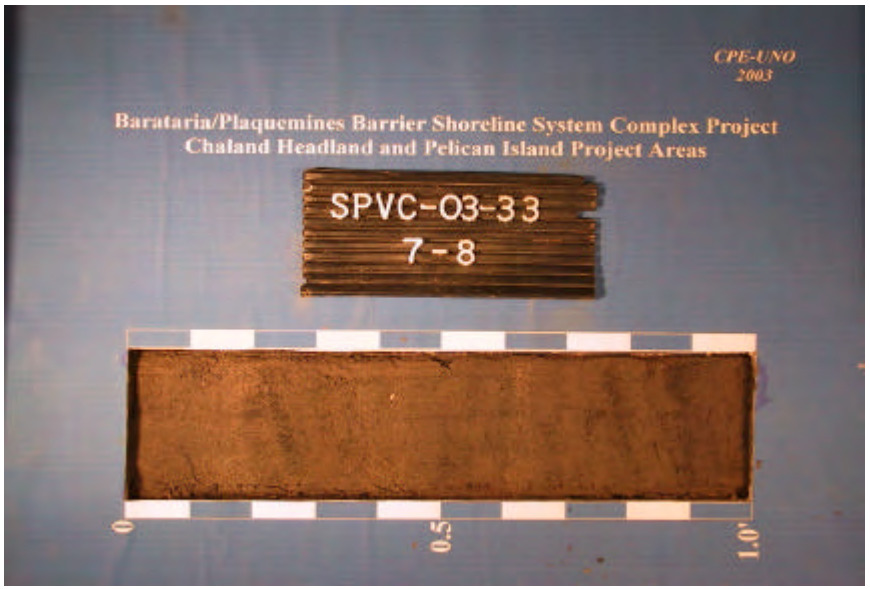
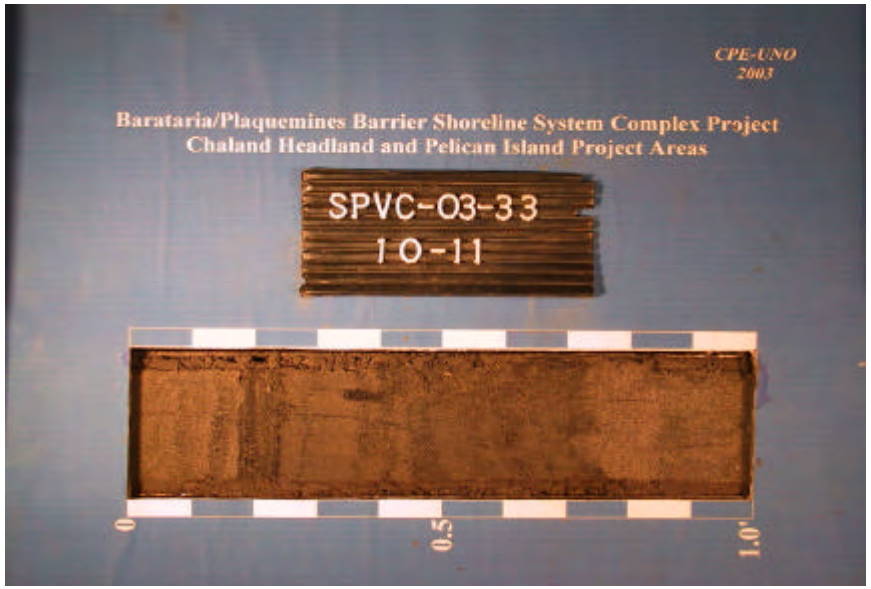
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-33
7 - 8
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-33
8-9
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-33
9-10
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-33
10-11
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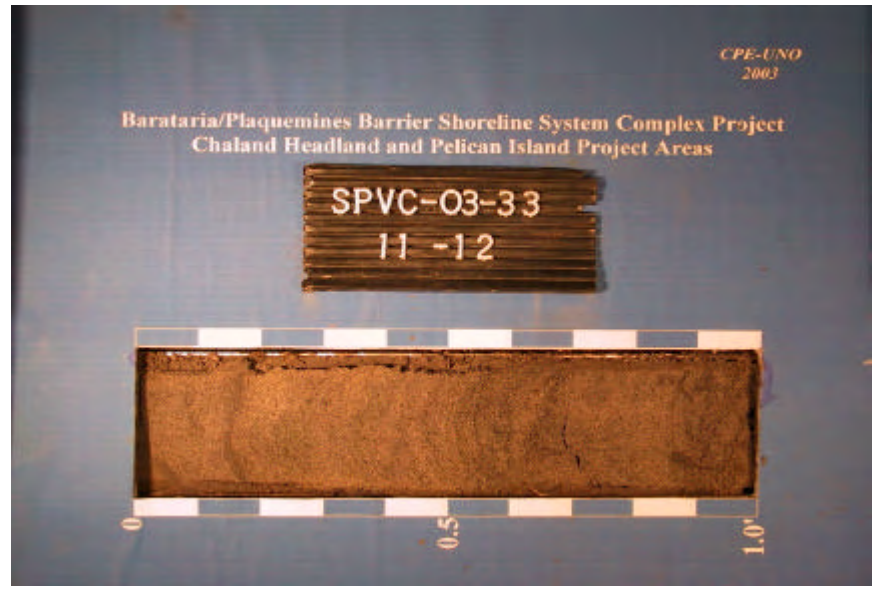
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-33
11-12
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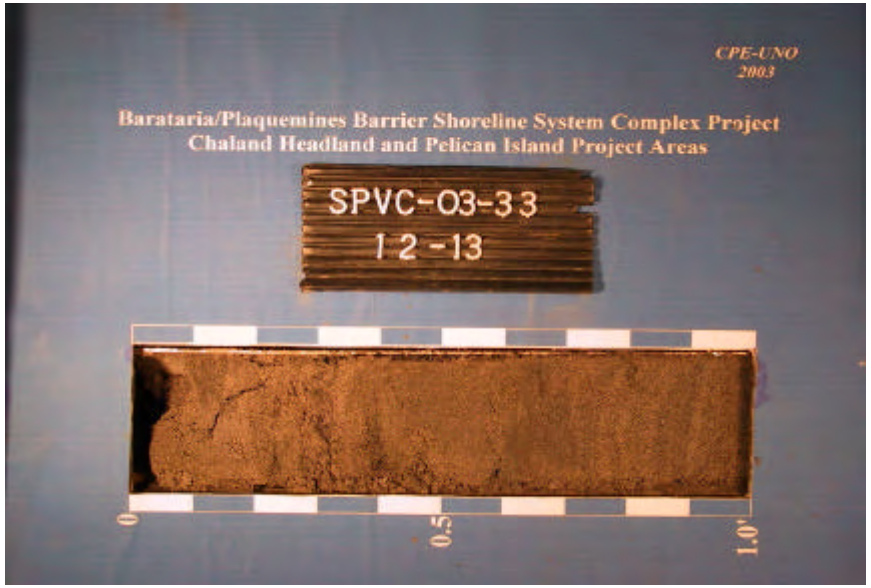
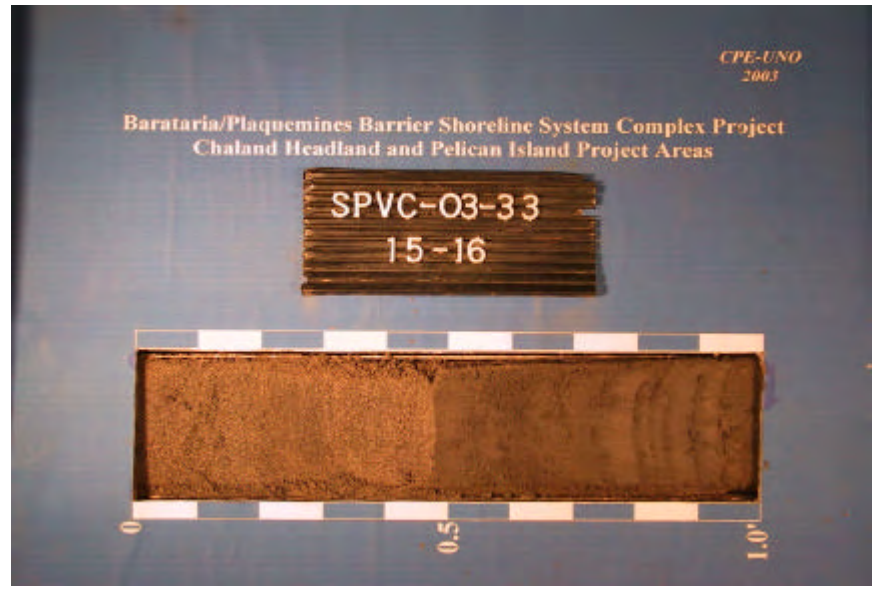
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-33
12-13
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-33
13-14
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-33
14-15
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-33
15-16
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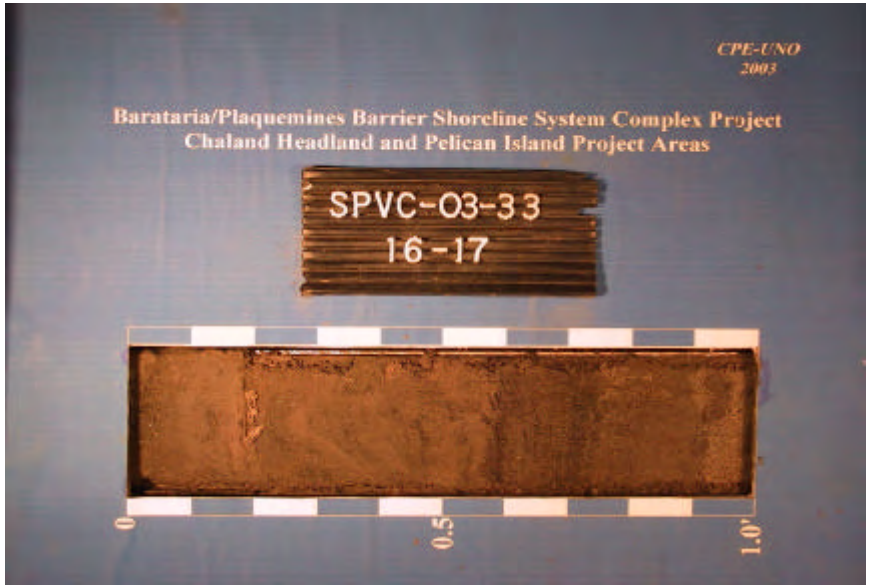
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-33
16-17
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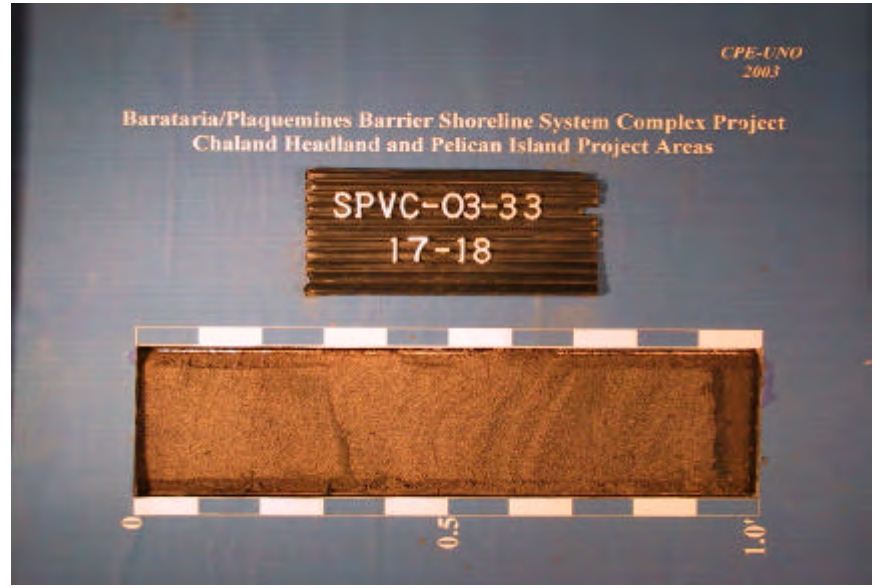
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-33
17-18
0
0.5
1.0'

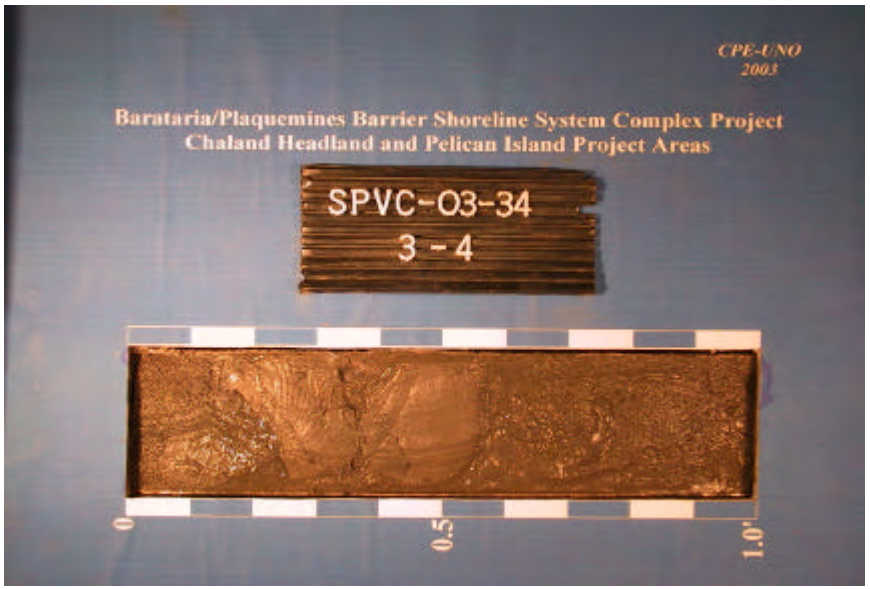
CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-33
18-19
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-33
19-19.2
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-34
0 - 1
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-34
1 - 2
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-34
2 - 3
0
0.5
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-34
3 - 4
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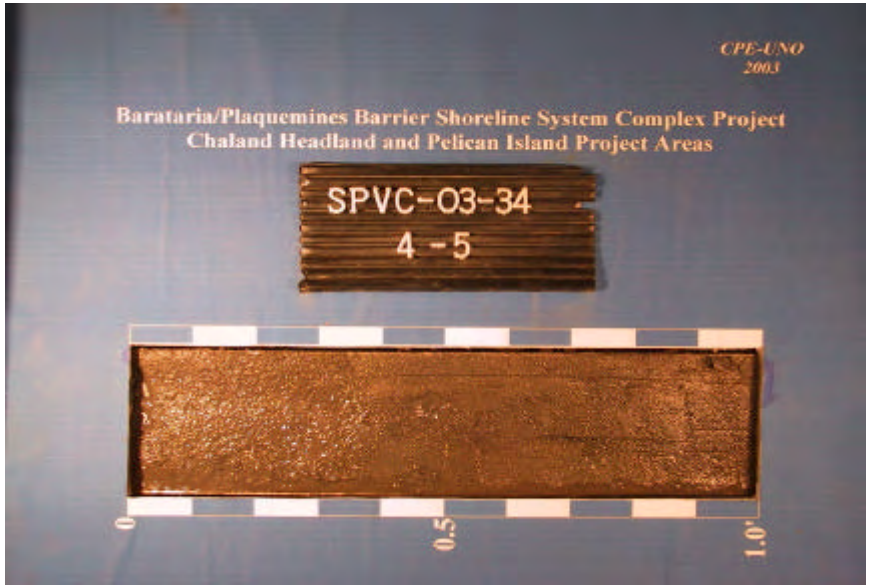
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-34
4 - 5
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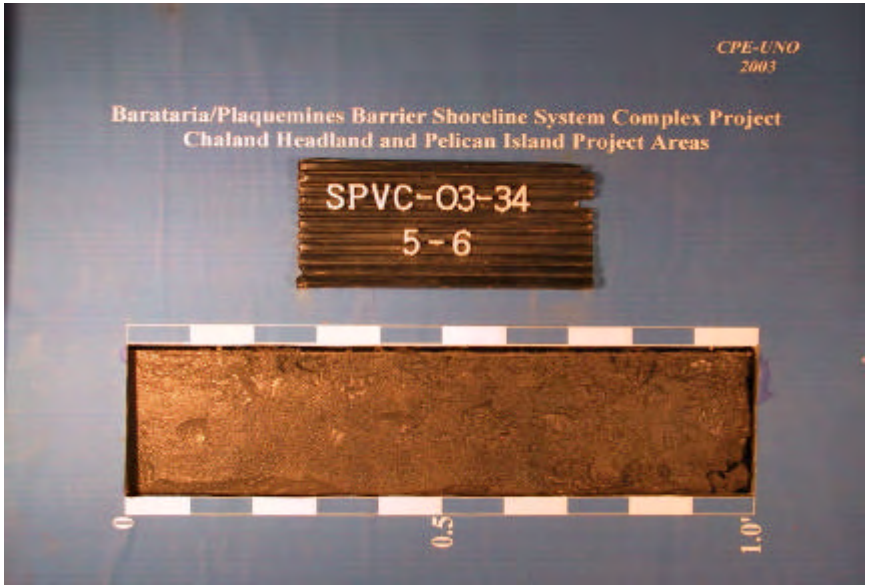
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-34
5 - 6
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-34
6 - 7
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-34
7-8
0
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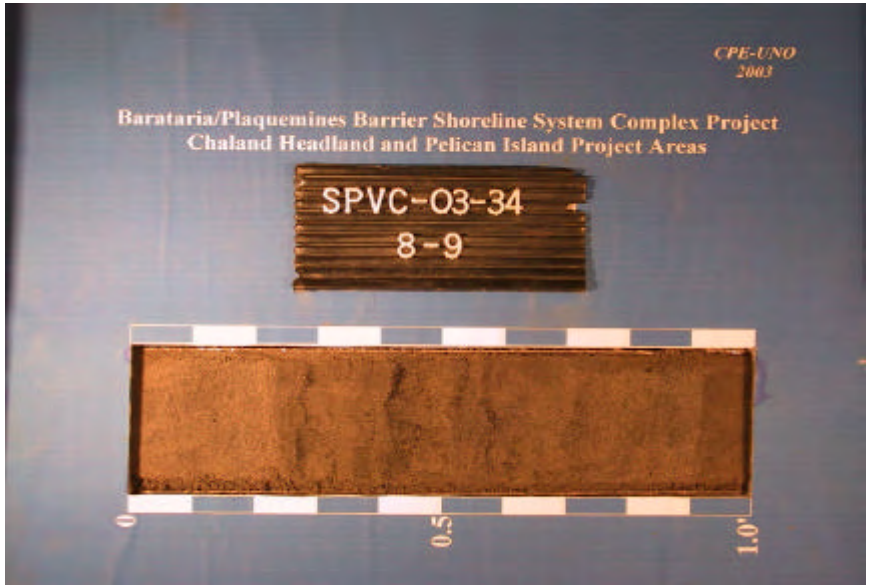
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-34
8-9
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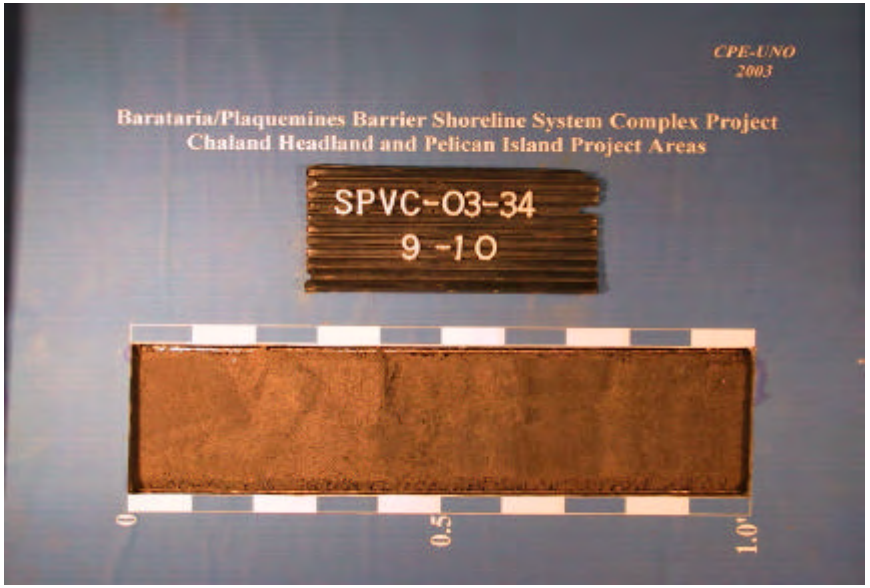
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-34
9-10
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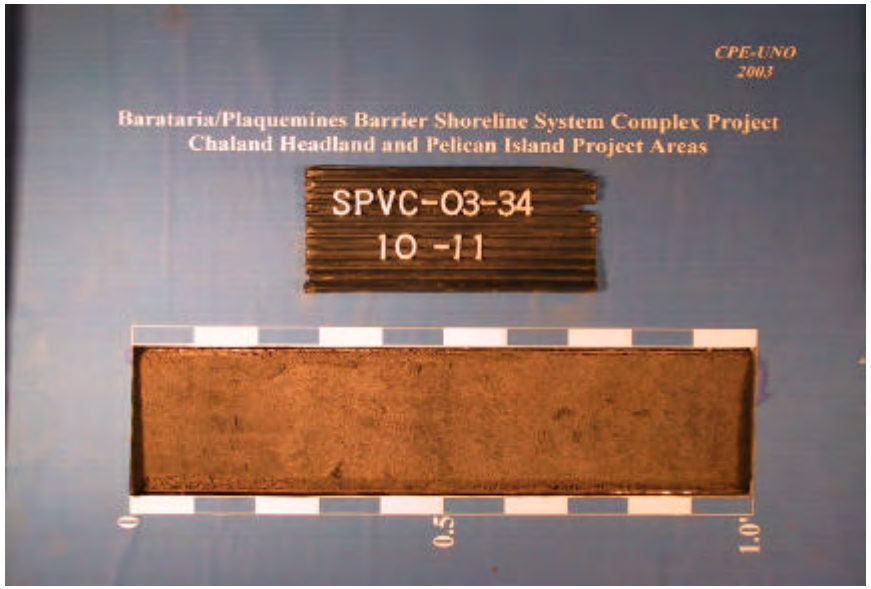
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-34
10-11
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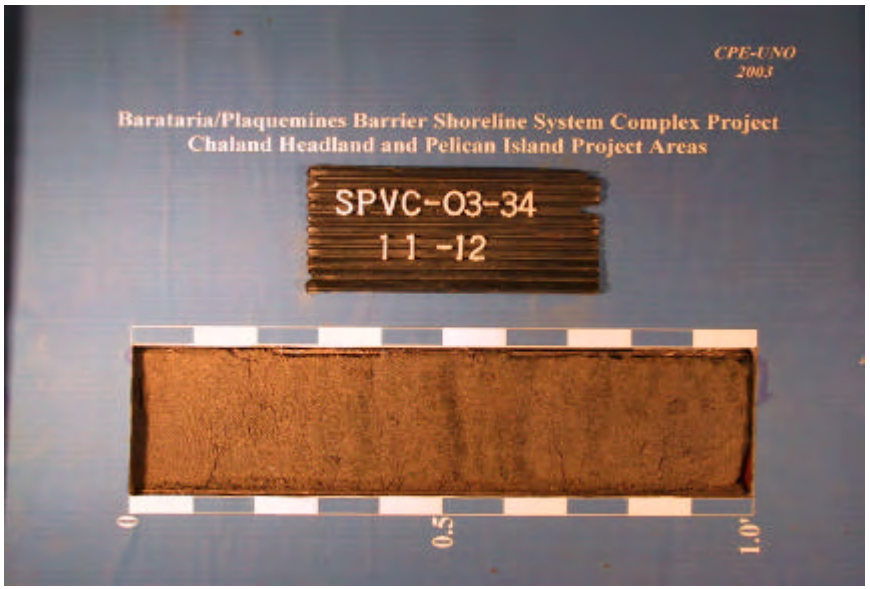
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-34
11-12
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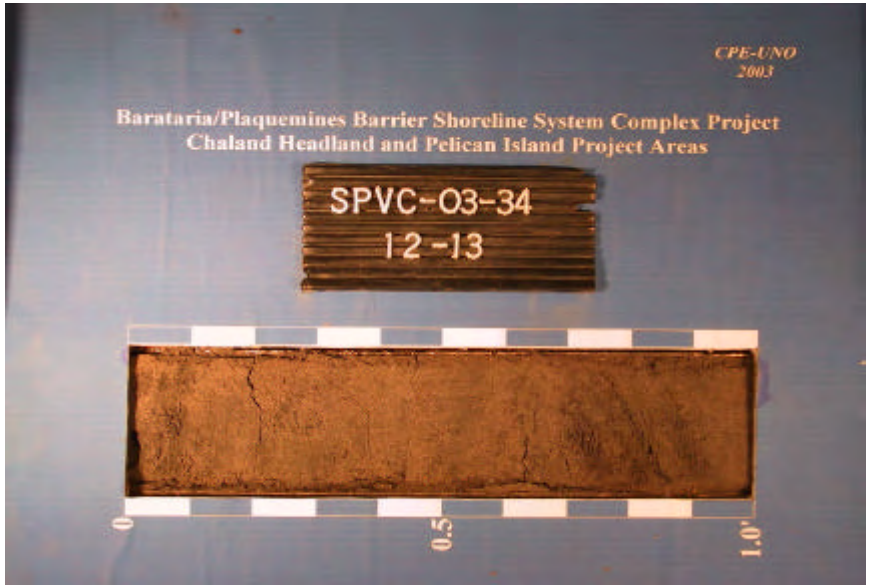
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-34
12-13
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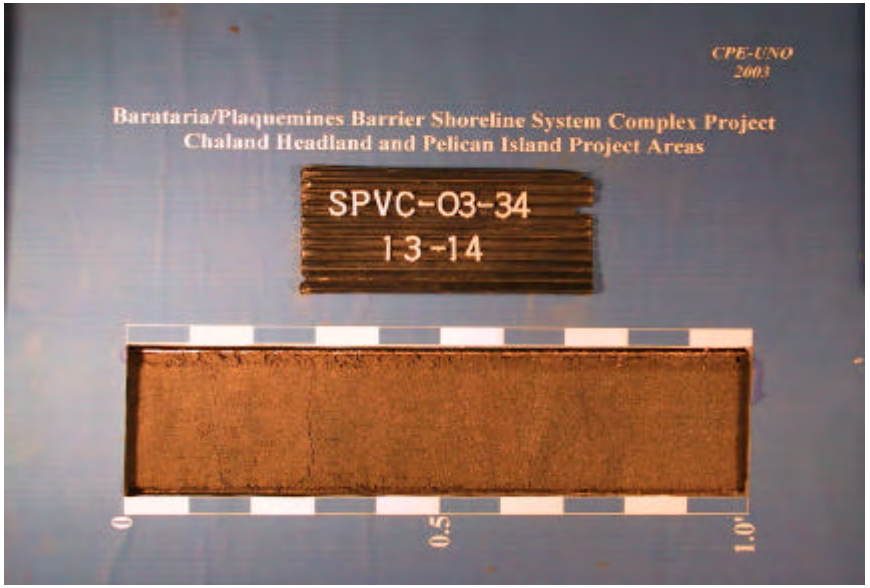
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-34
13-14
0
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1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-34
14-15
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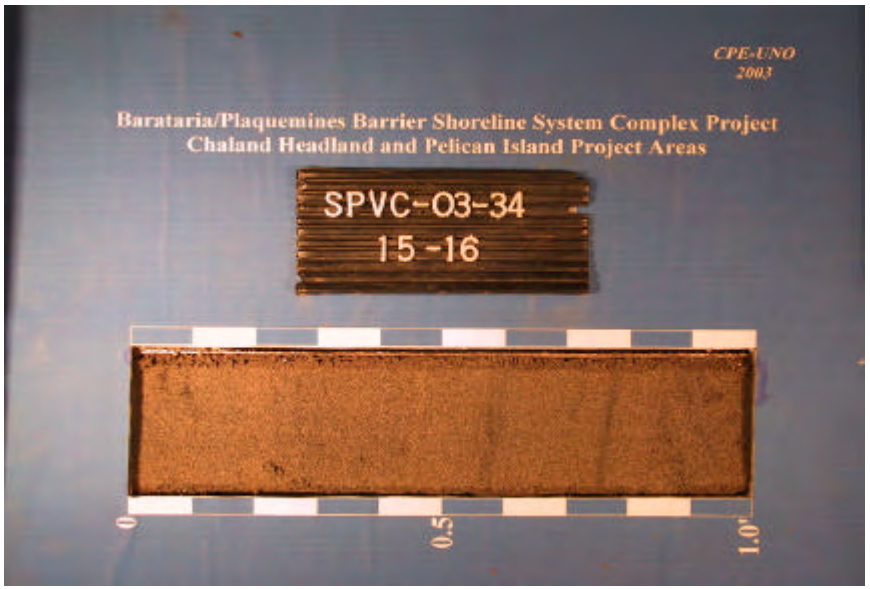
1.0'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Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-34
15-16
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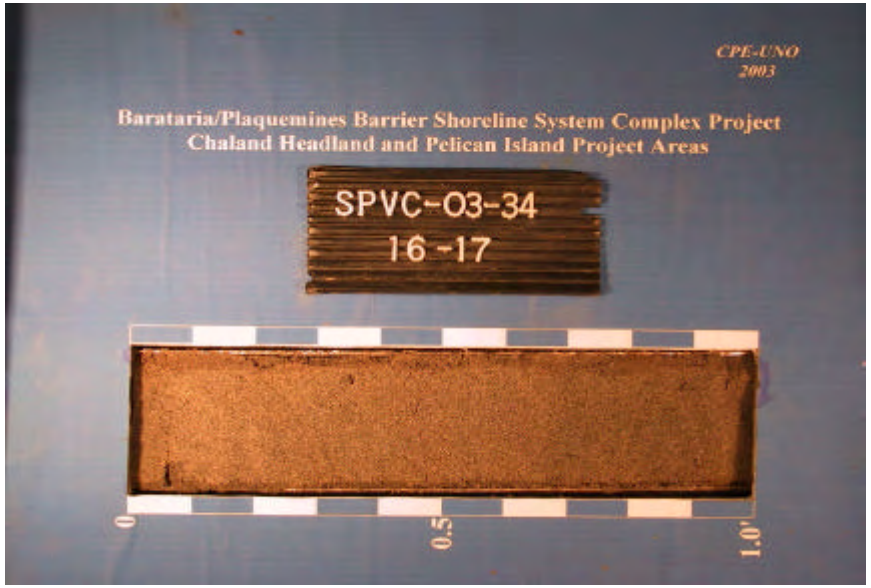
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-34
16 -17
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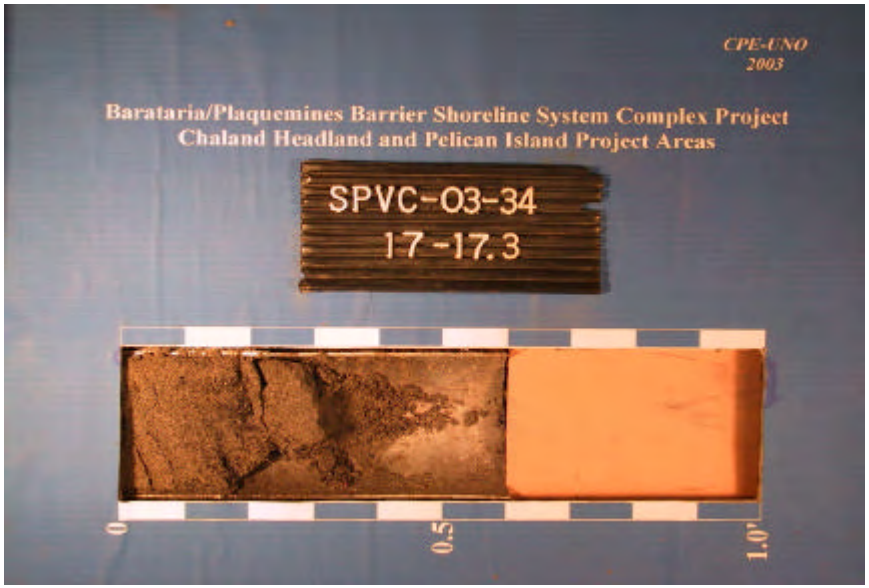
1.0'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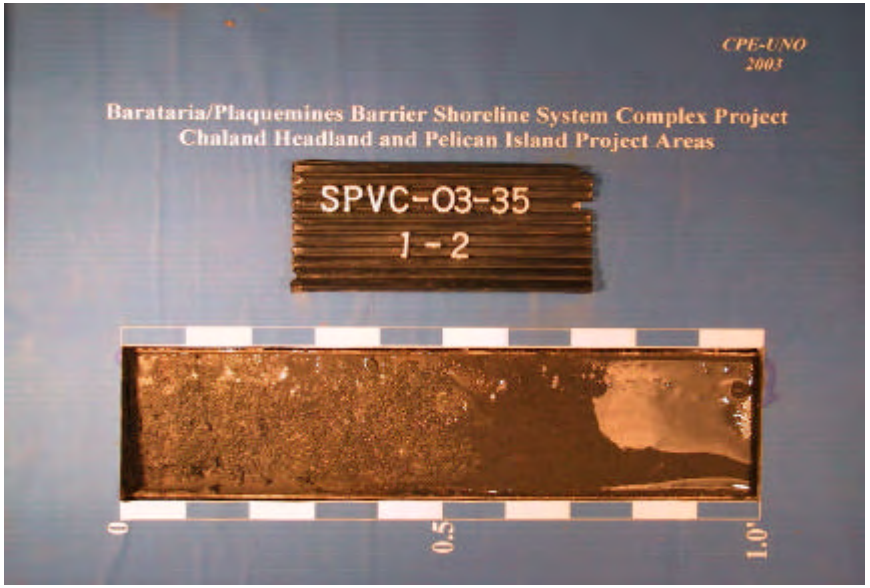
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-34
17 -17.3
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-35
0 - 1
0
0.5
1.0'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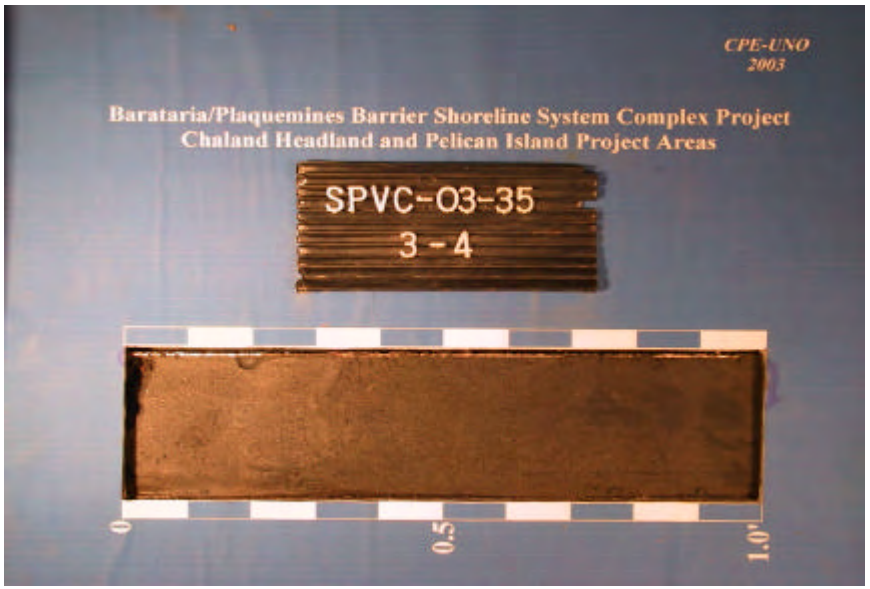
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-35
1 - 2
0
0.5
1.0'

CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-35
2 - 3
0
0.5
1.0'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2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-35
3 - 4
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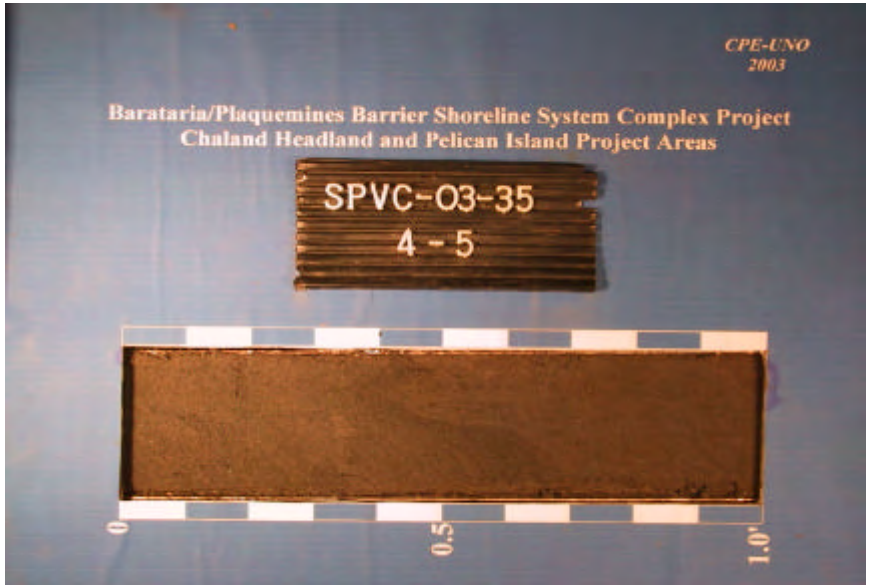
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-35
4 - 5
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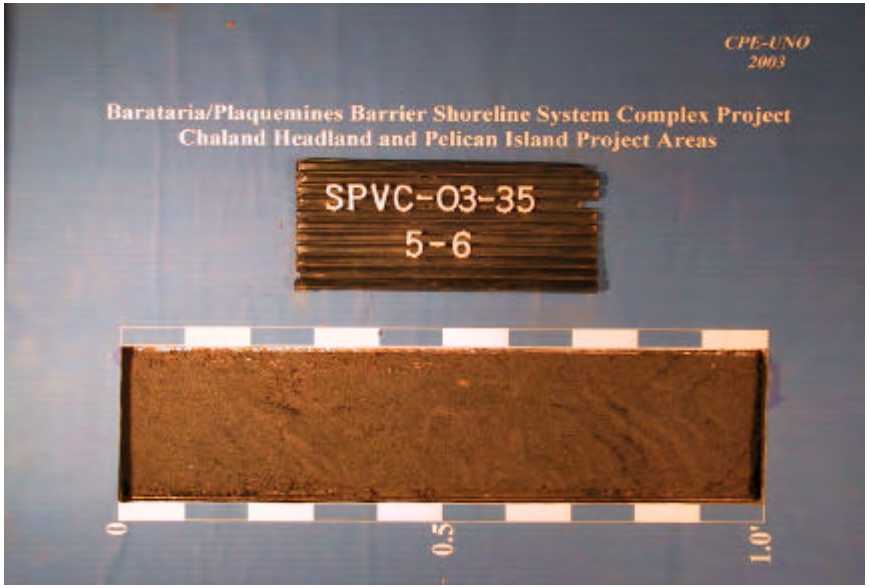
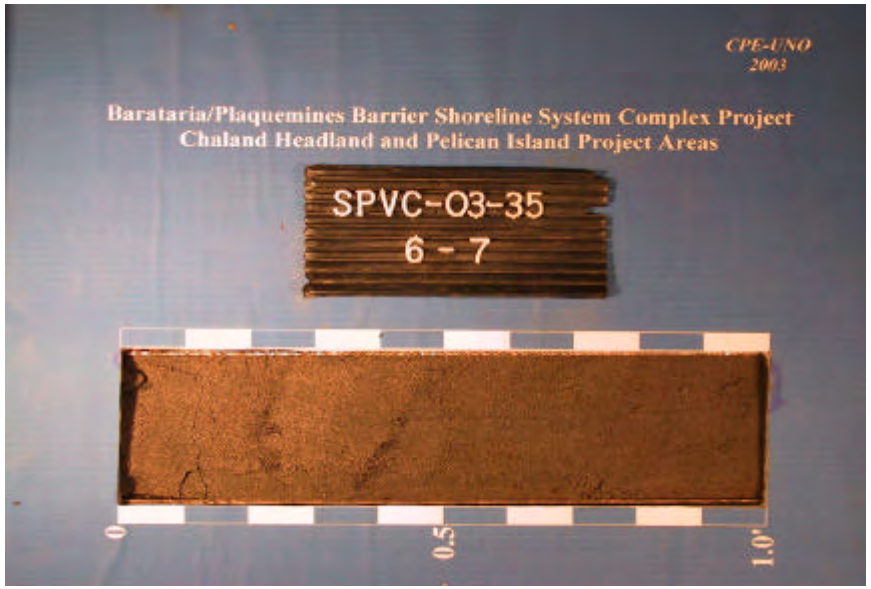
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-35
5 - 6
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-35
6 - 7
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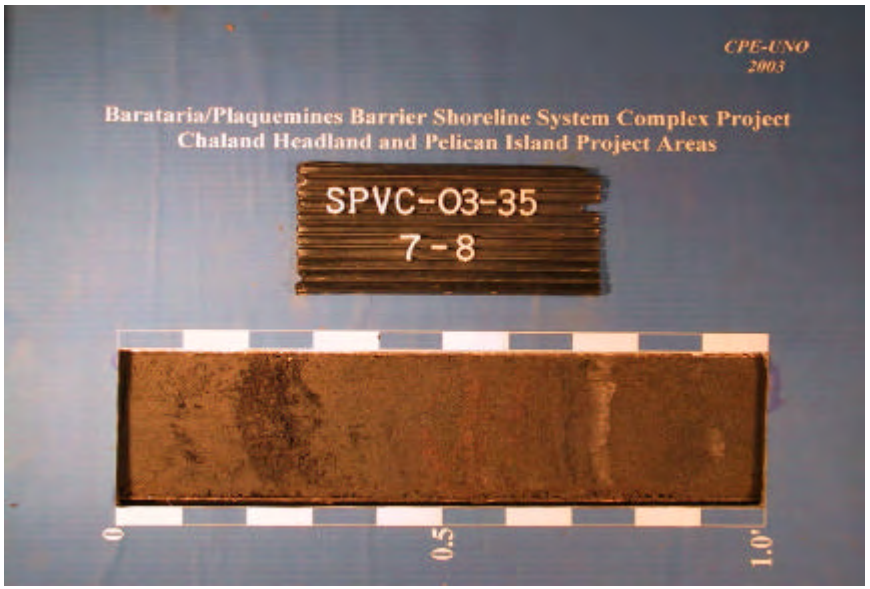
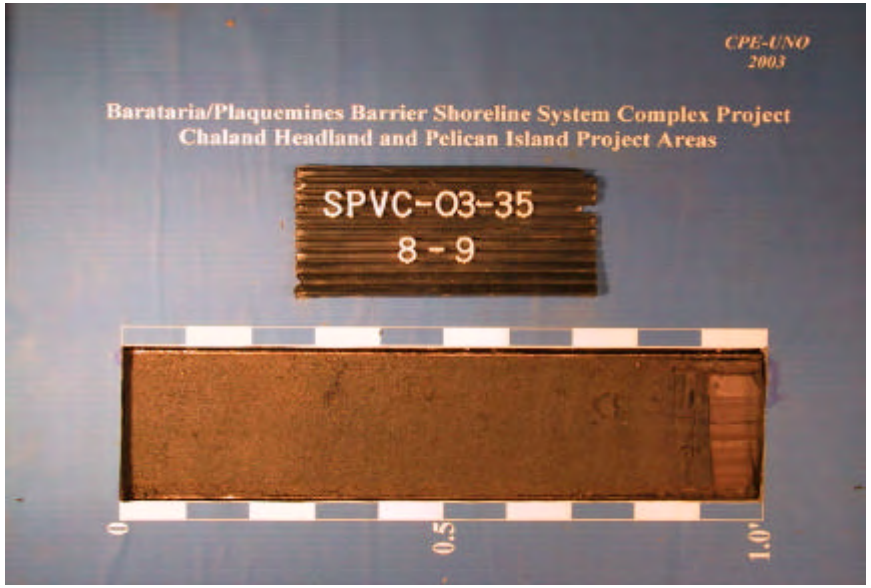
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-35
7 - 8
0
0.5
1.0'


CPE-UNO
2003
Barataria/Plaquemines Barrier Shoreline System Complex Project
Chaland Headland and Pelican Island Project Areas
SPVC-03-35
8 - 9
0
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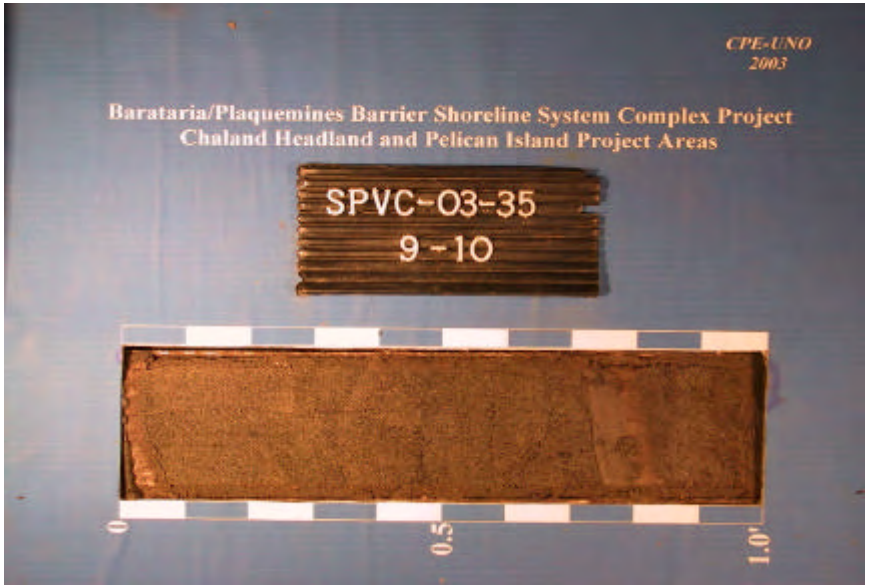
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Chaland Headland and Pelican Island Project Areas
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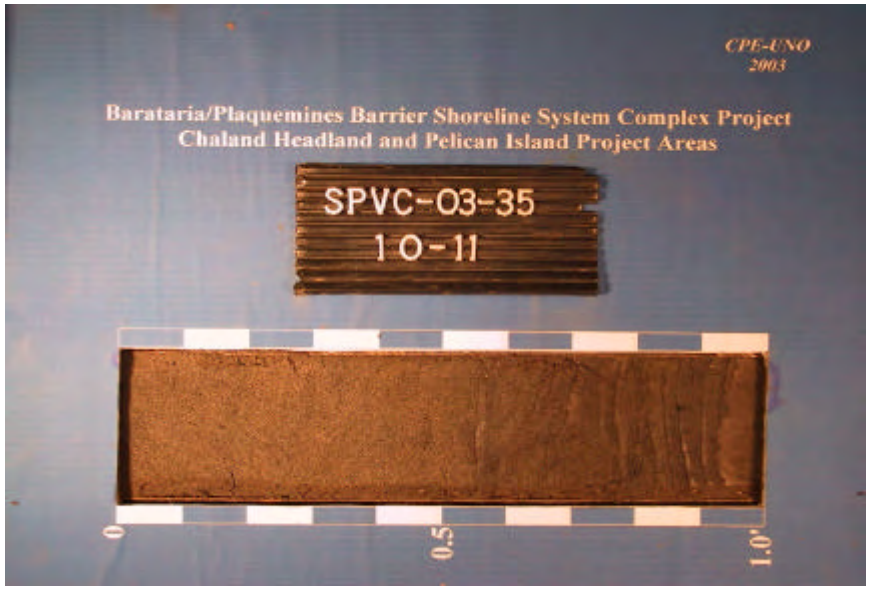
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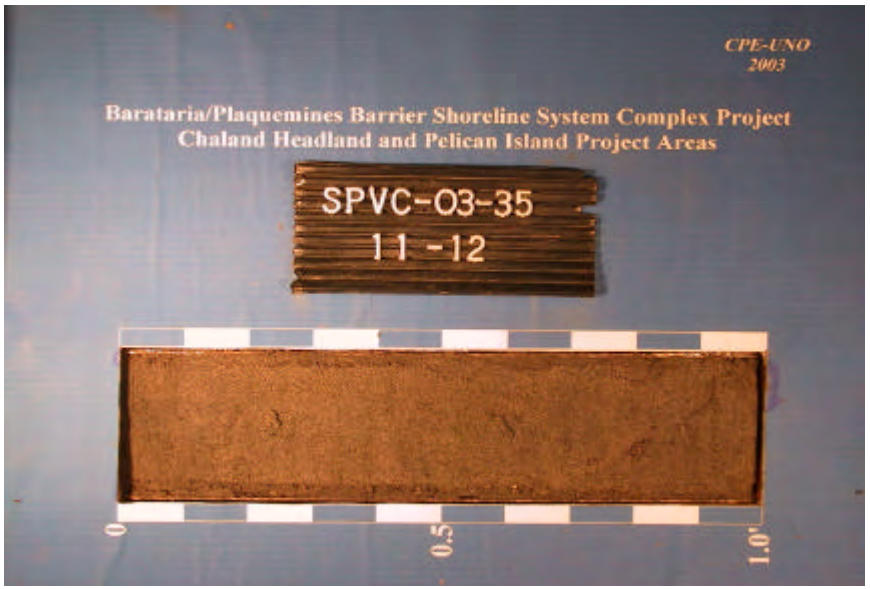
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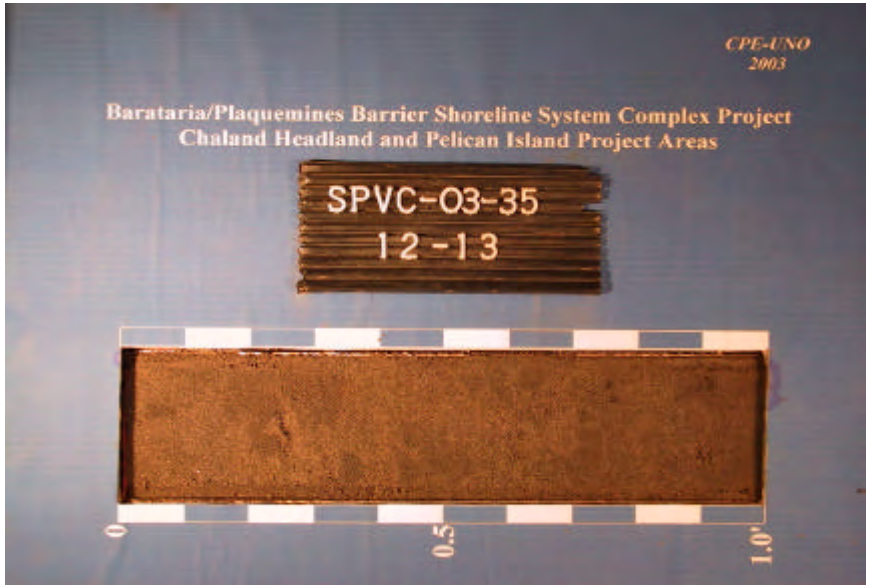
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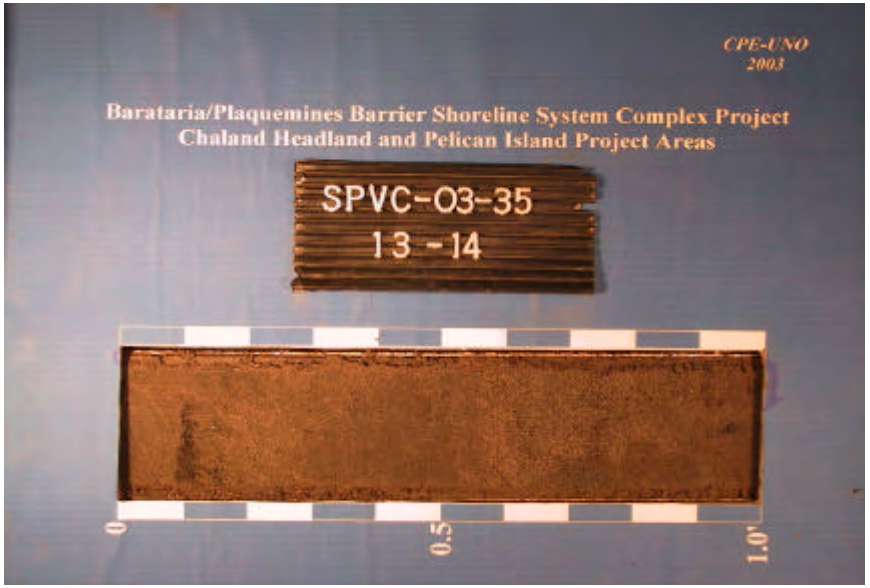
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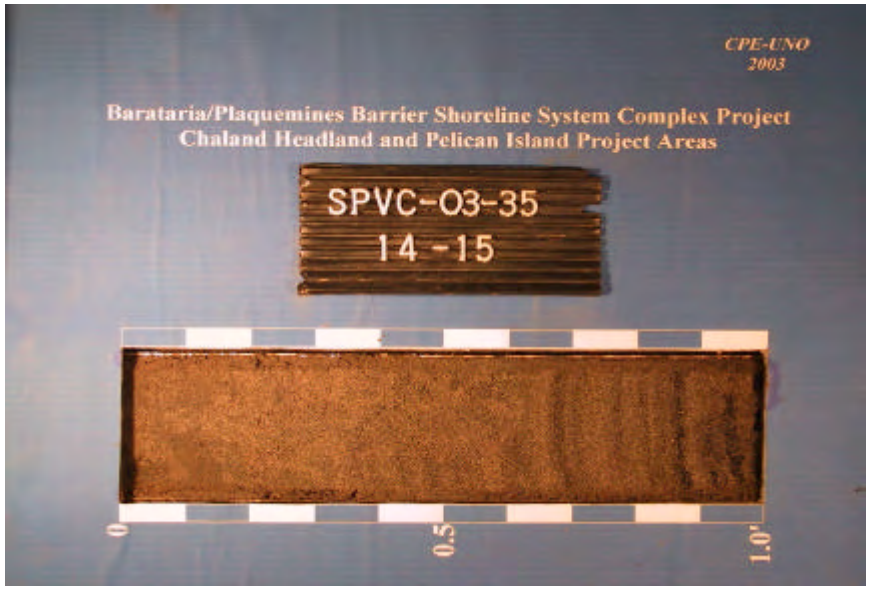
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CPE-UNO
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Chaland Headland and Pelican Island Project Areas
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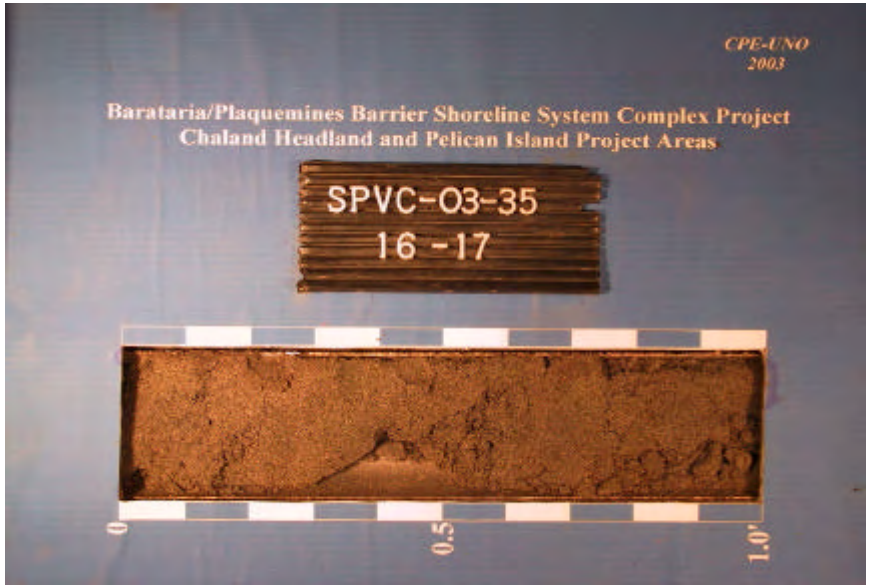
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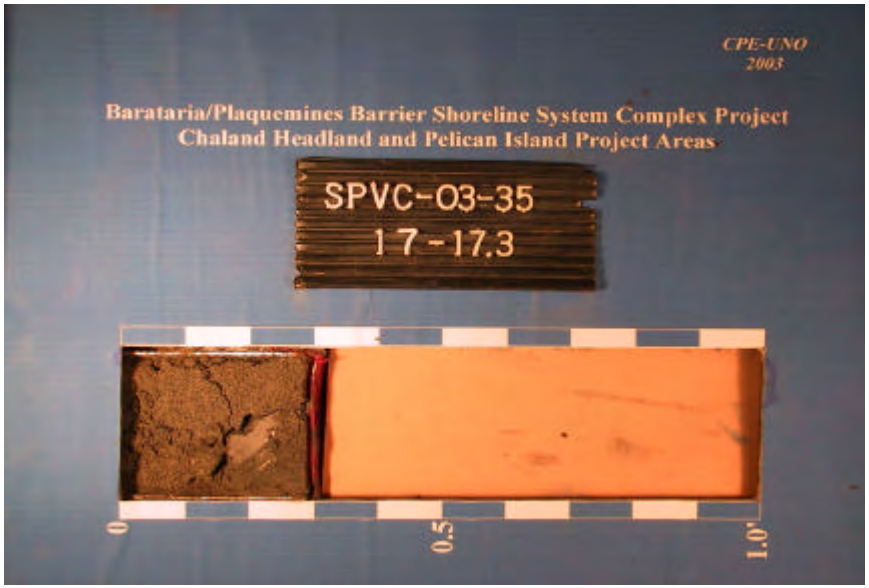
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Chaland Headland and Pelican Island Project Areas
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SPVC-03-01

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SPVC-03-01A

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SPVC-03-02

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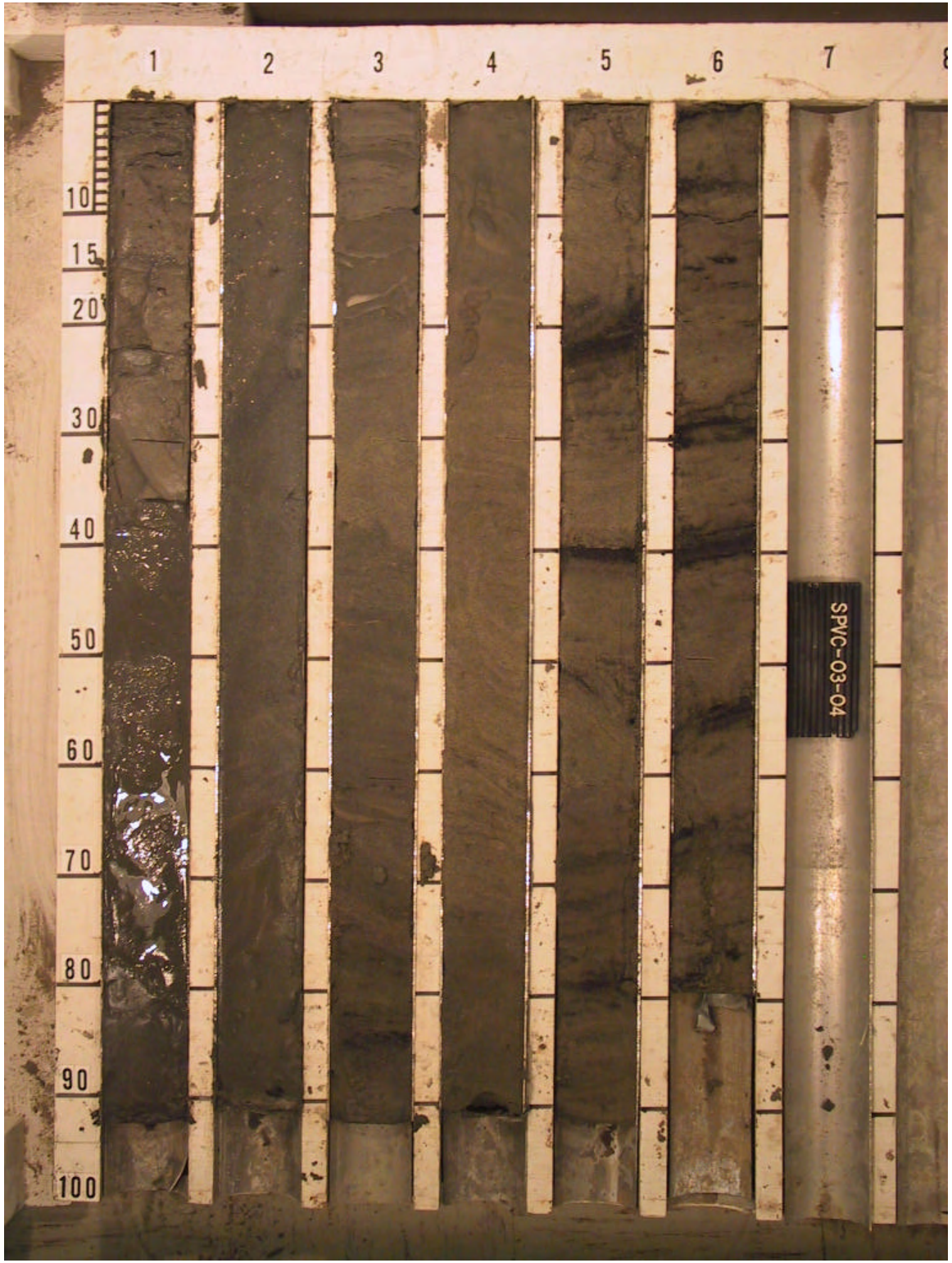
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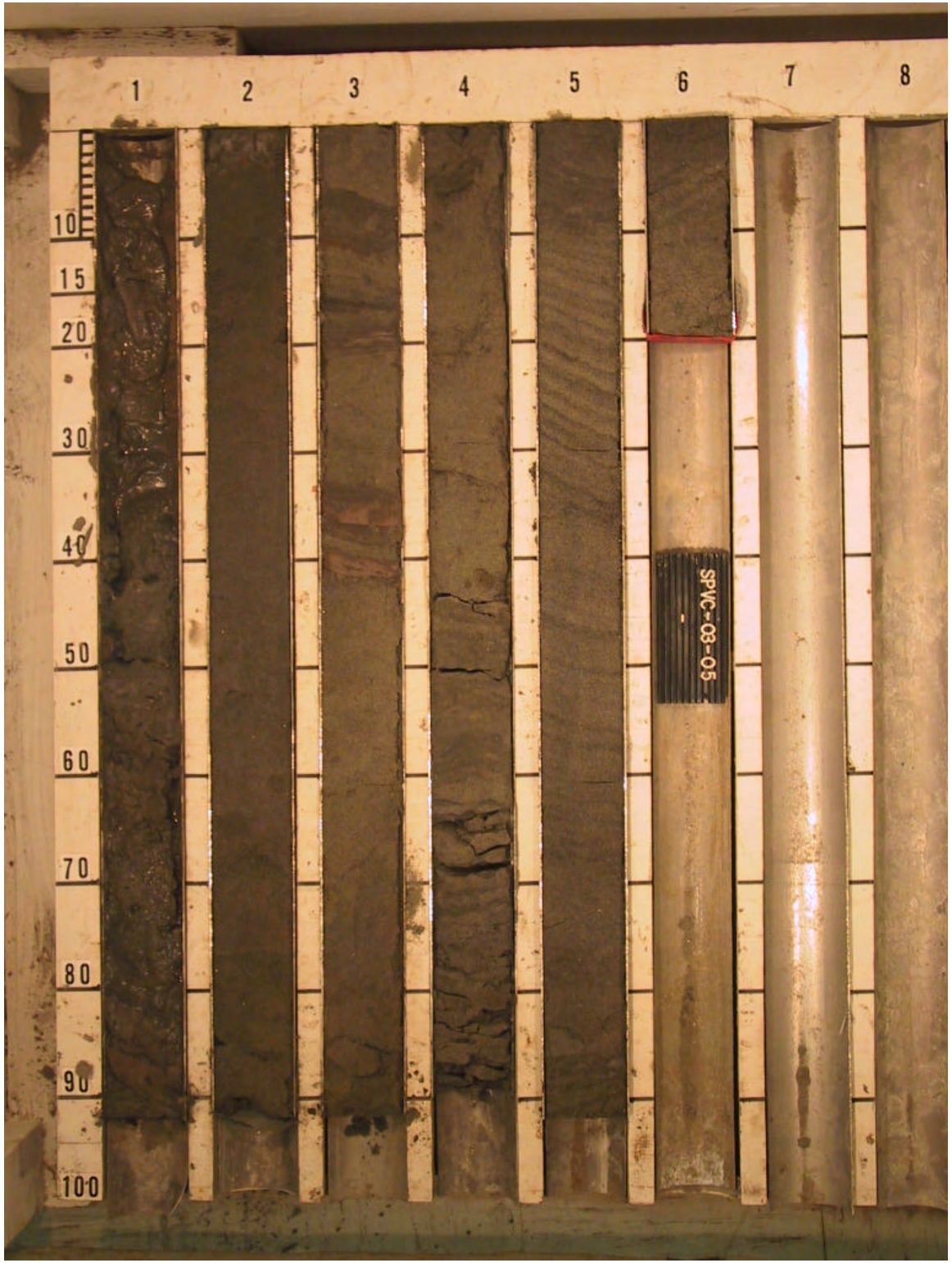
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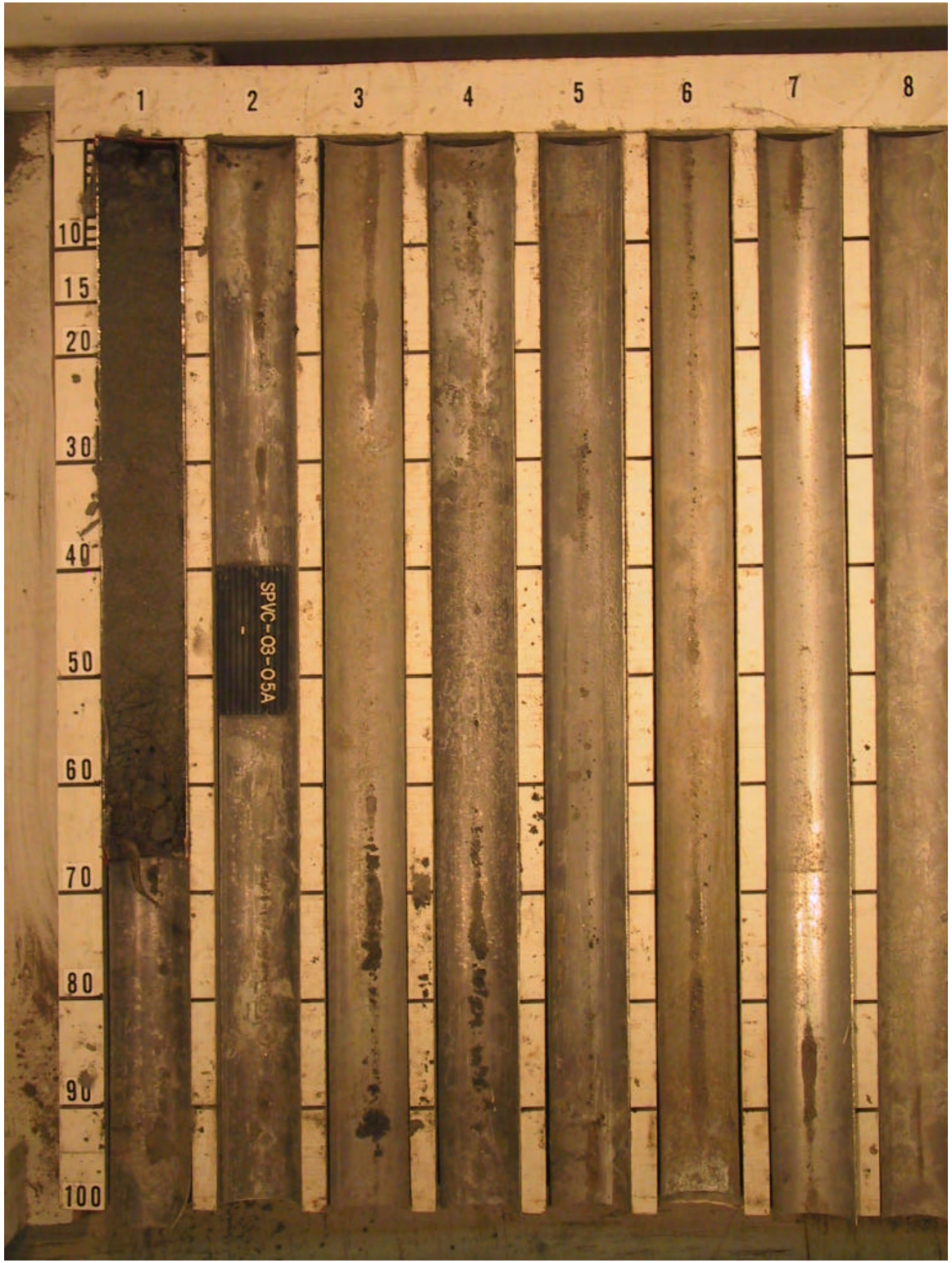
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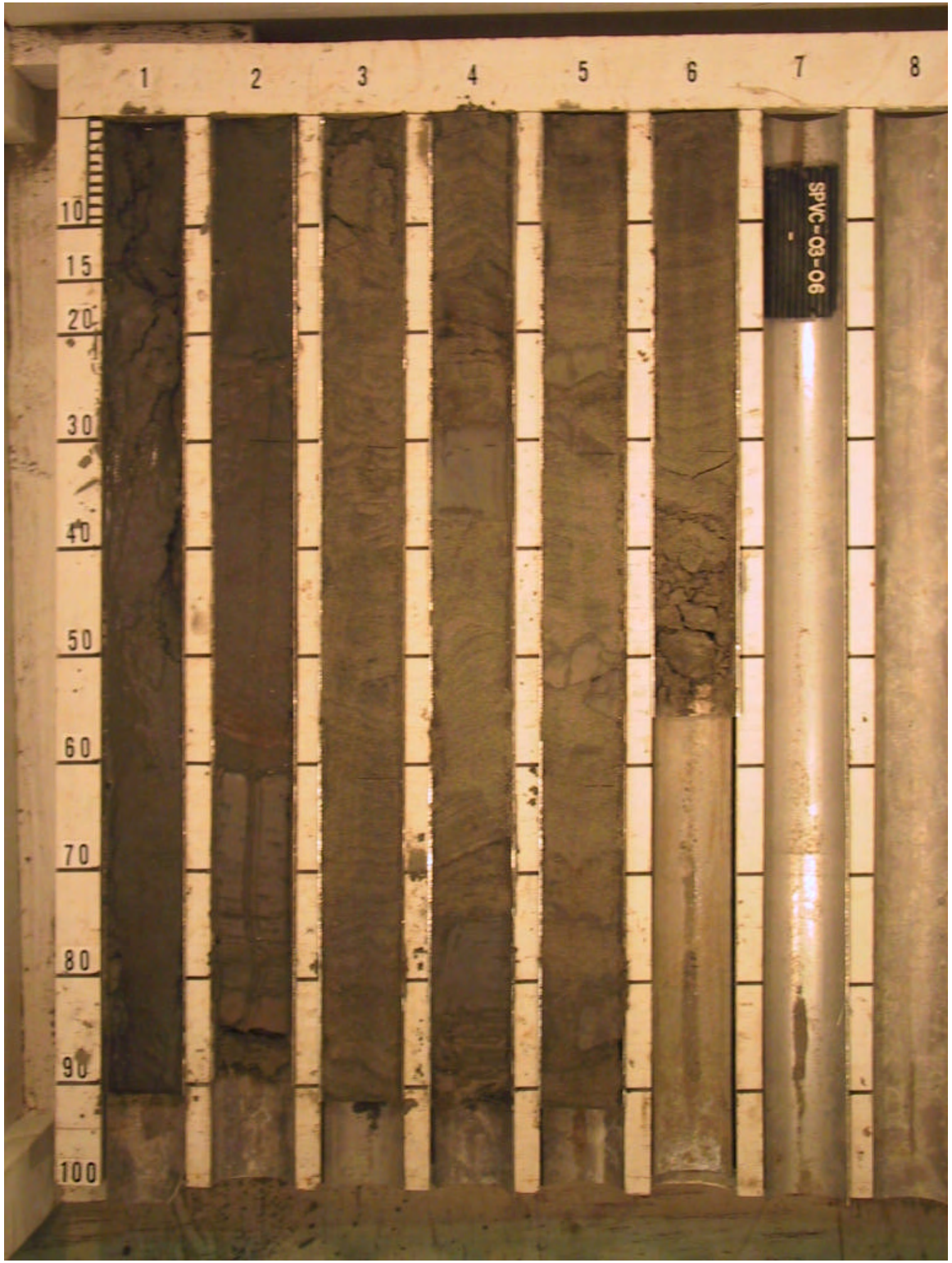
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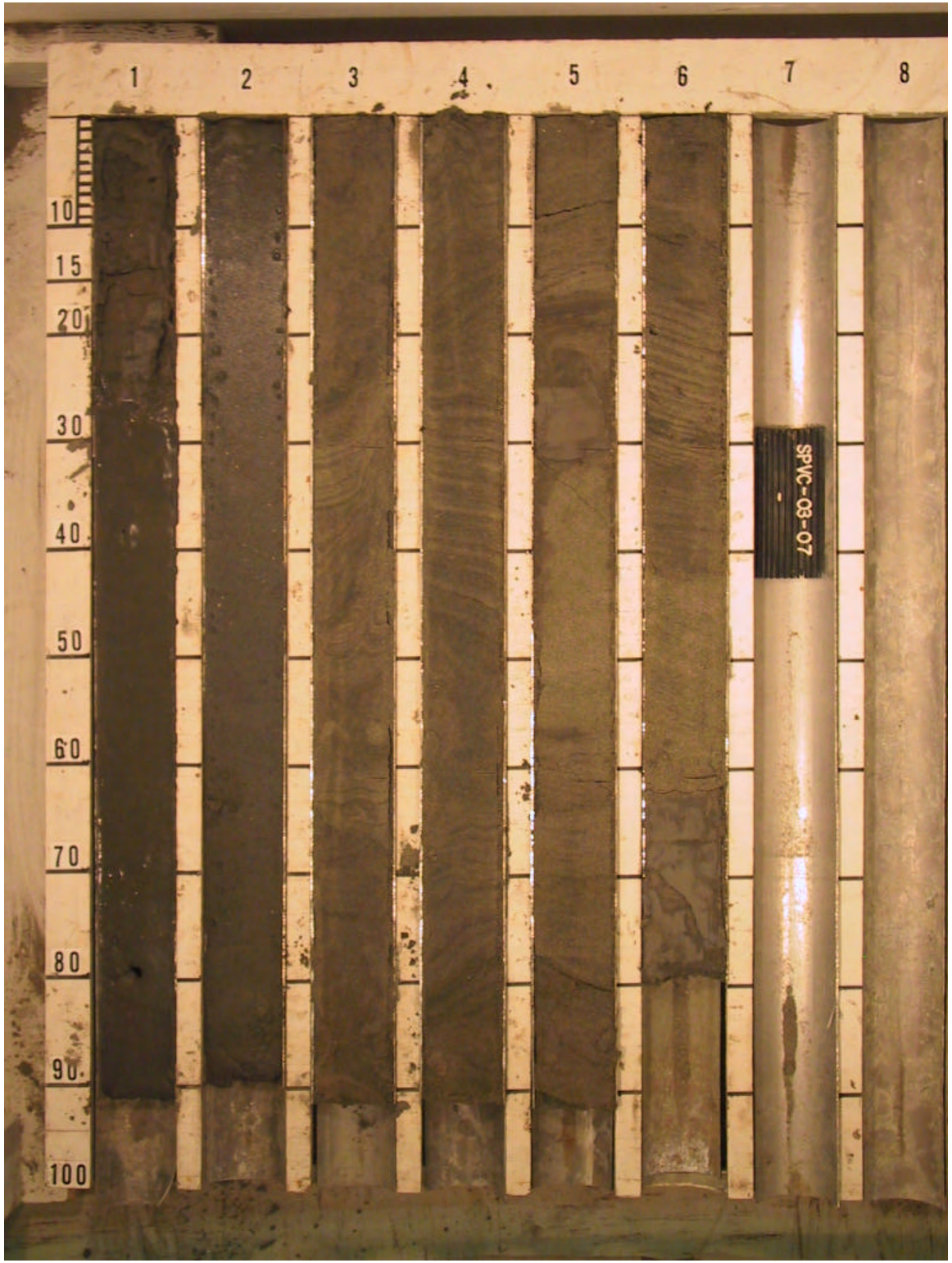
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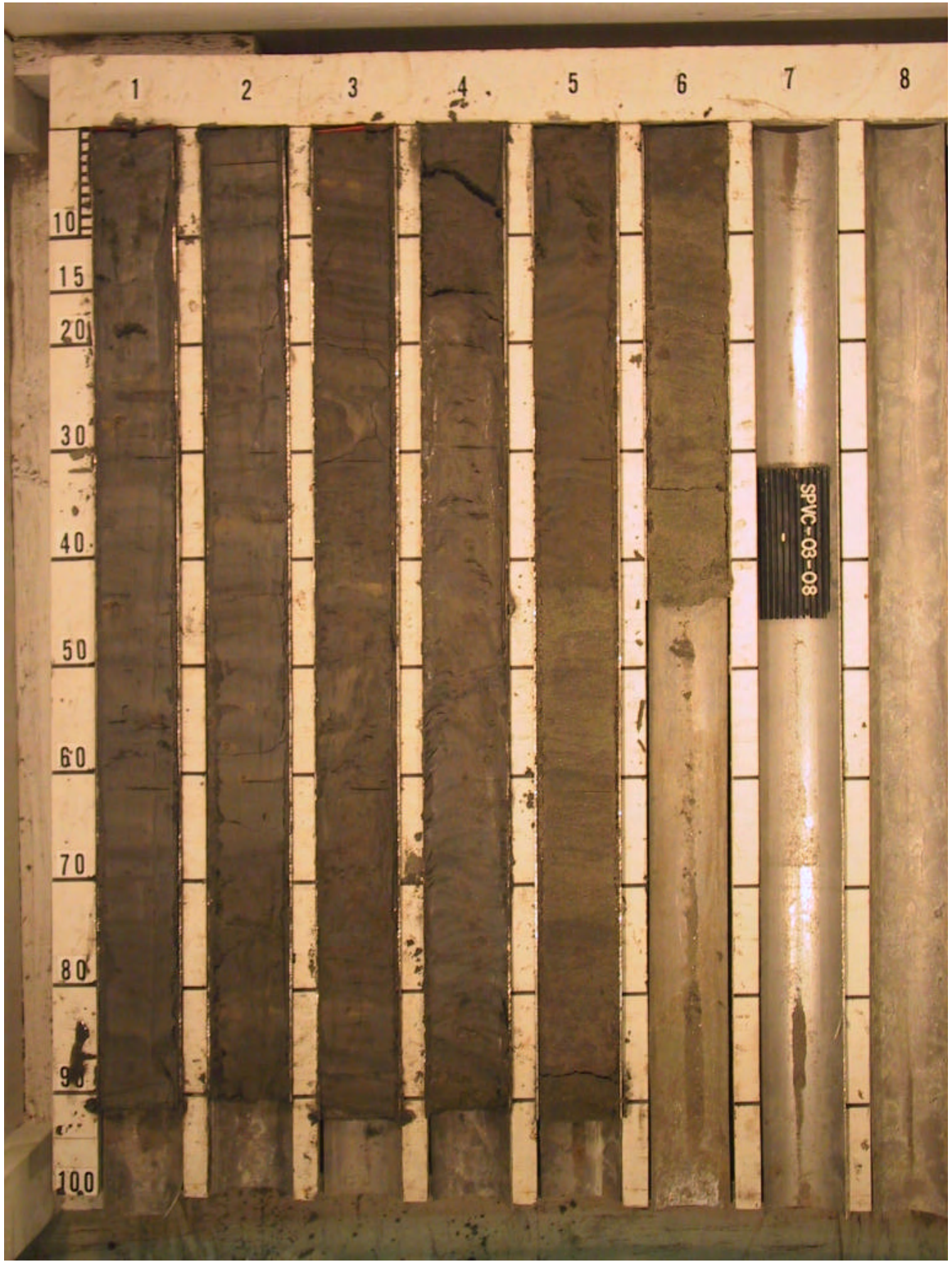
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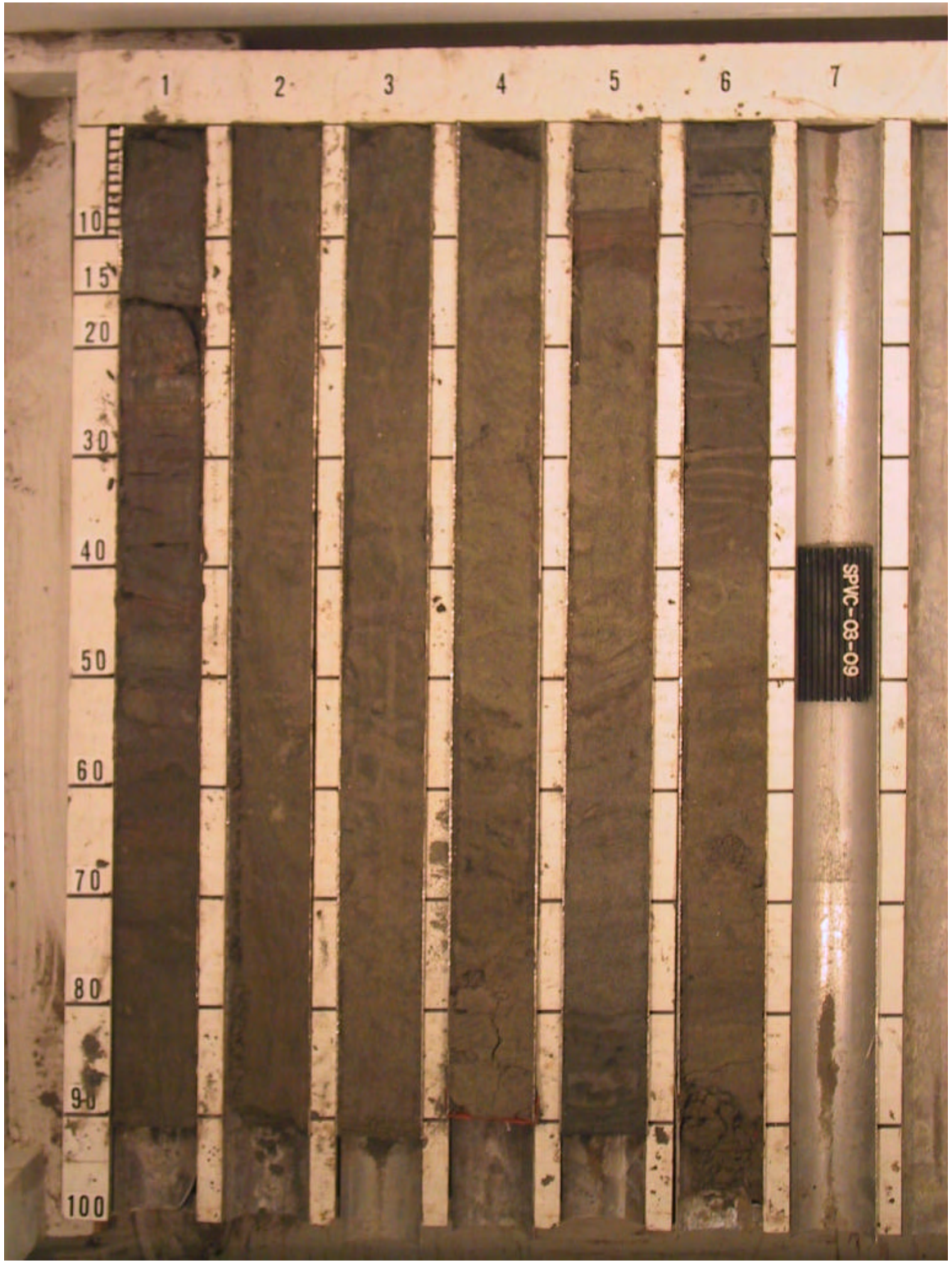
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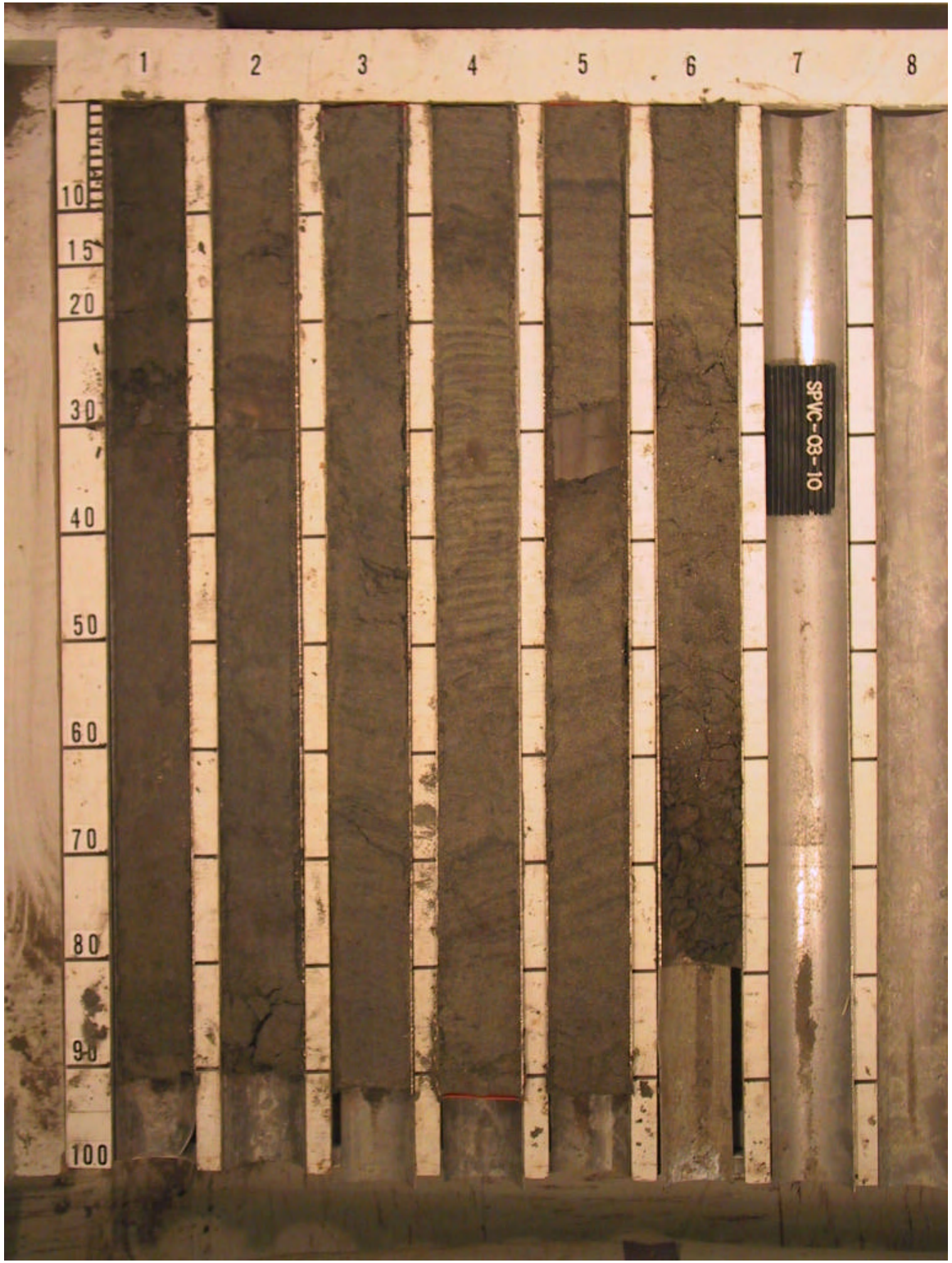
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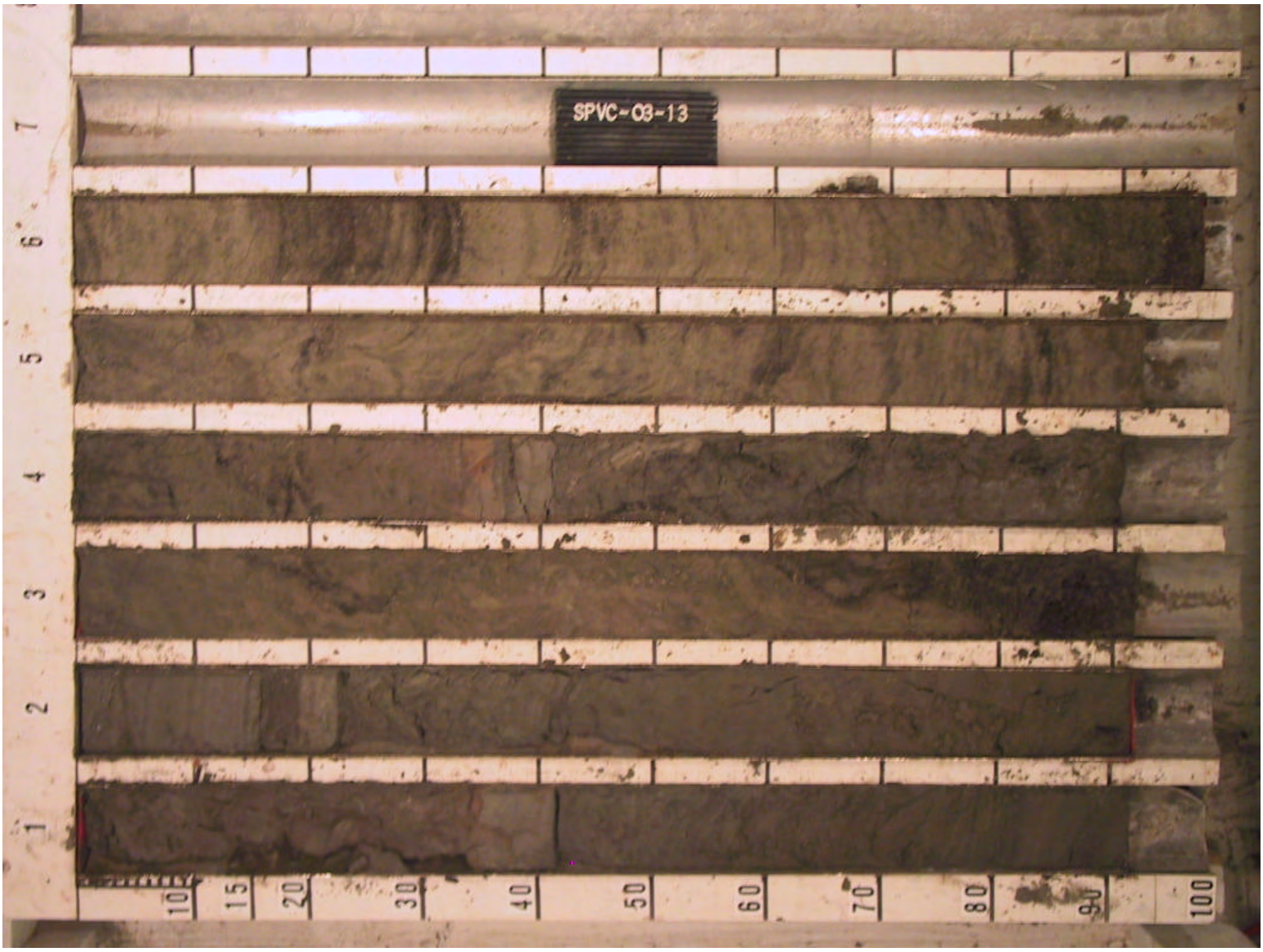
SPVC-03-12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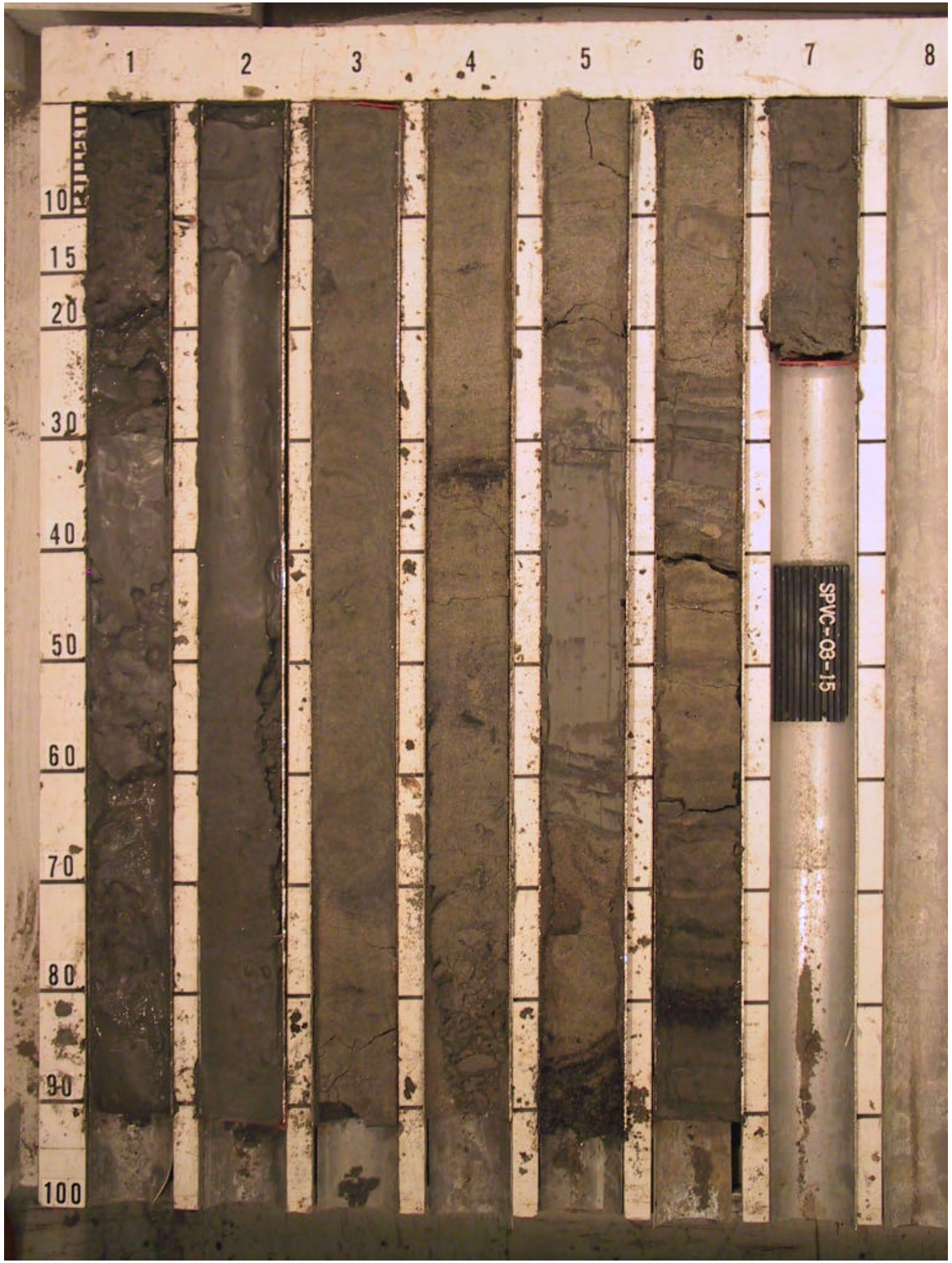
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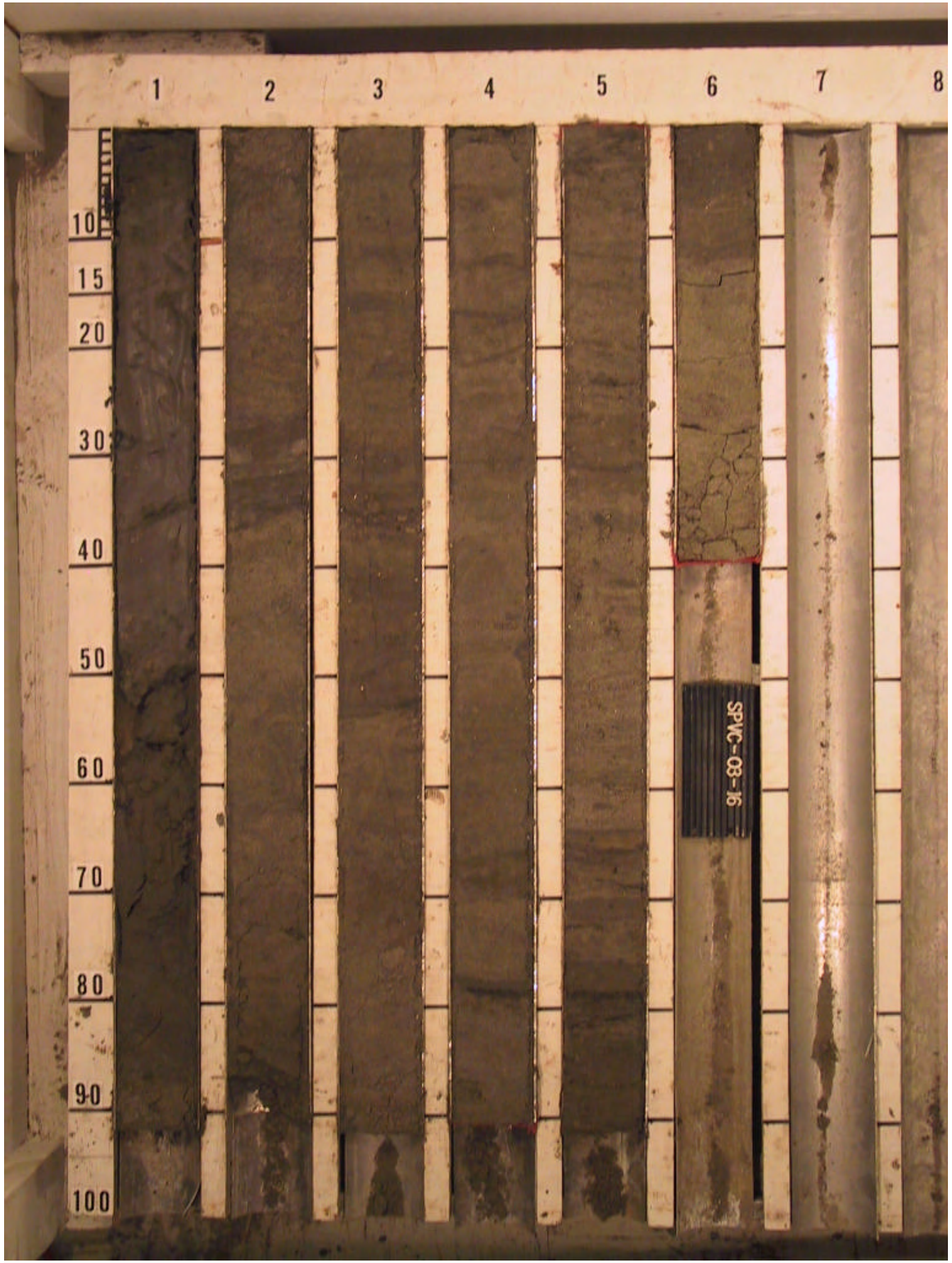
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SPVC-03-17

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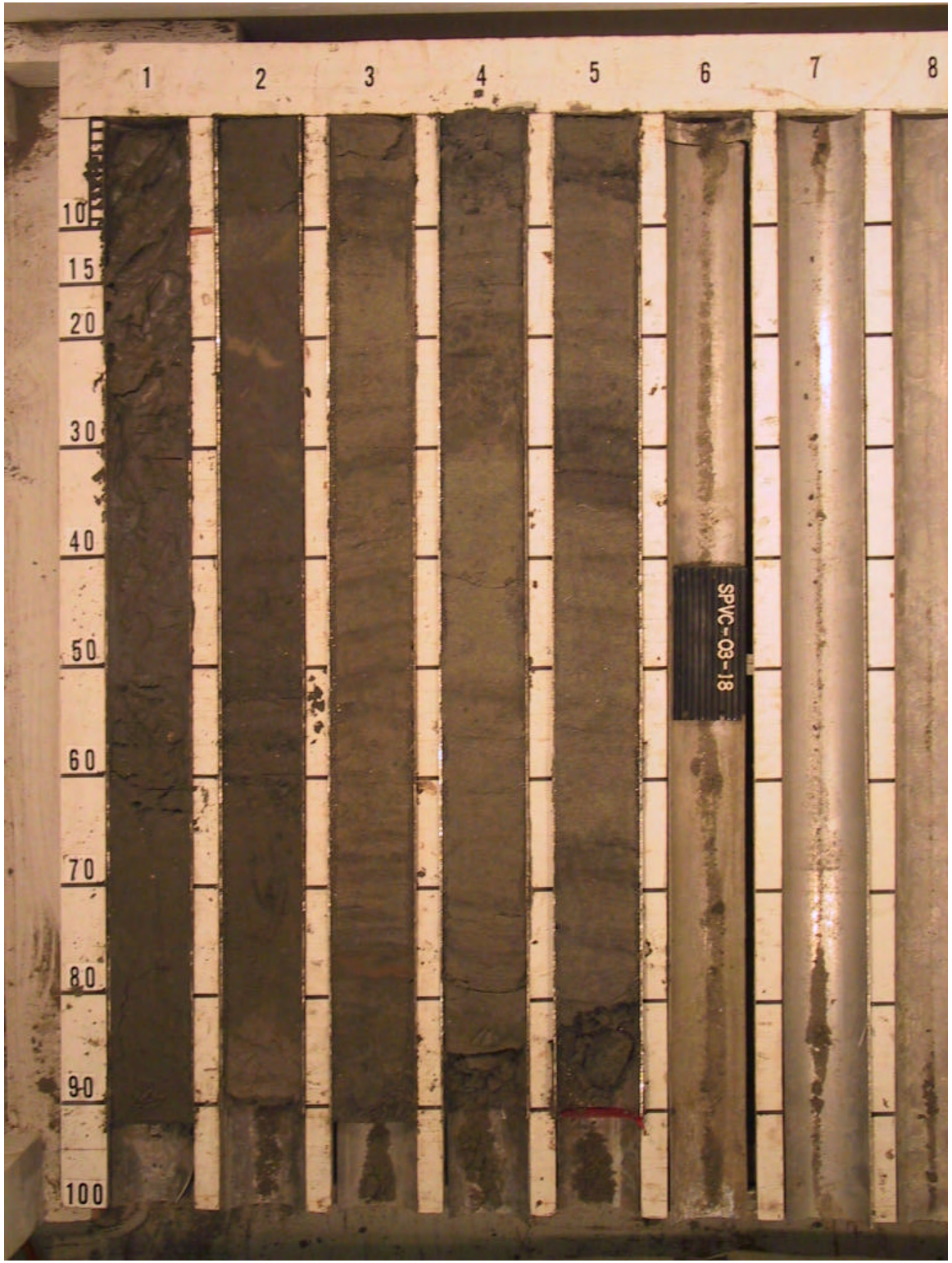
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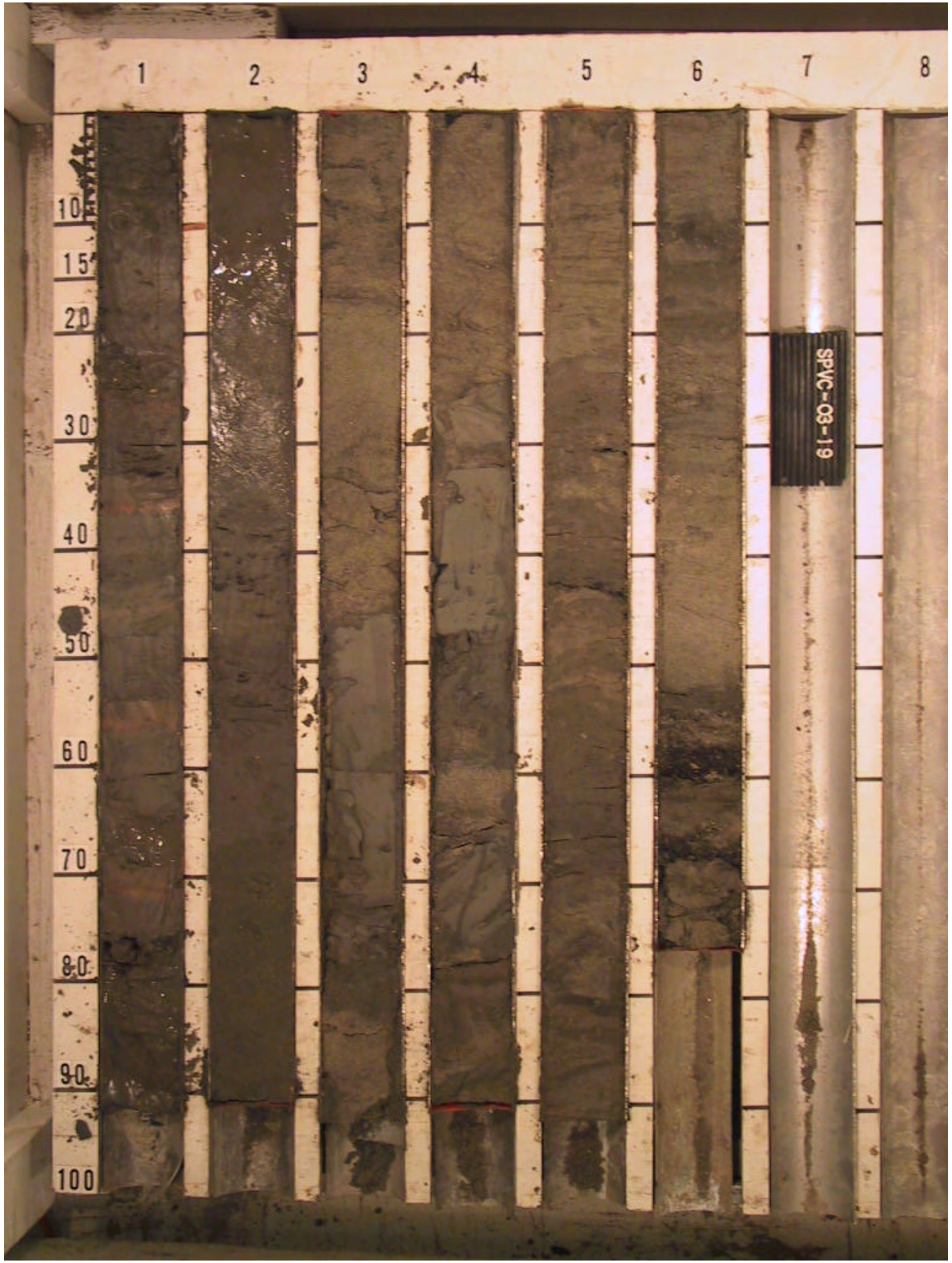
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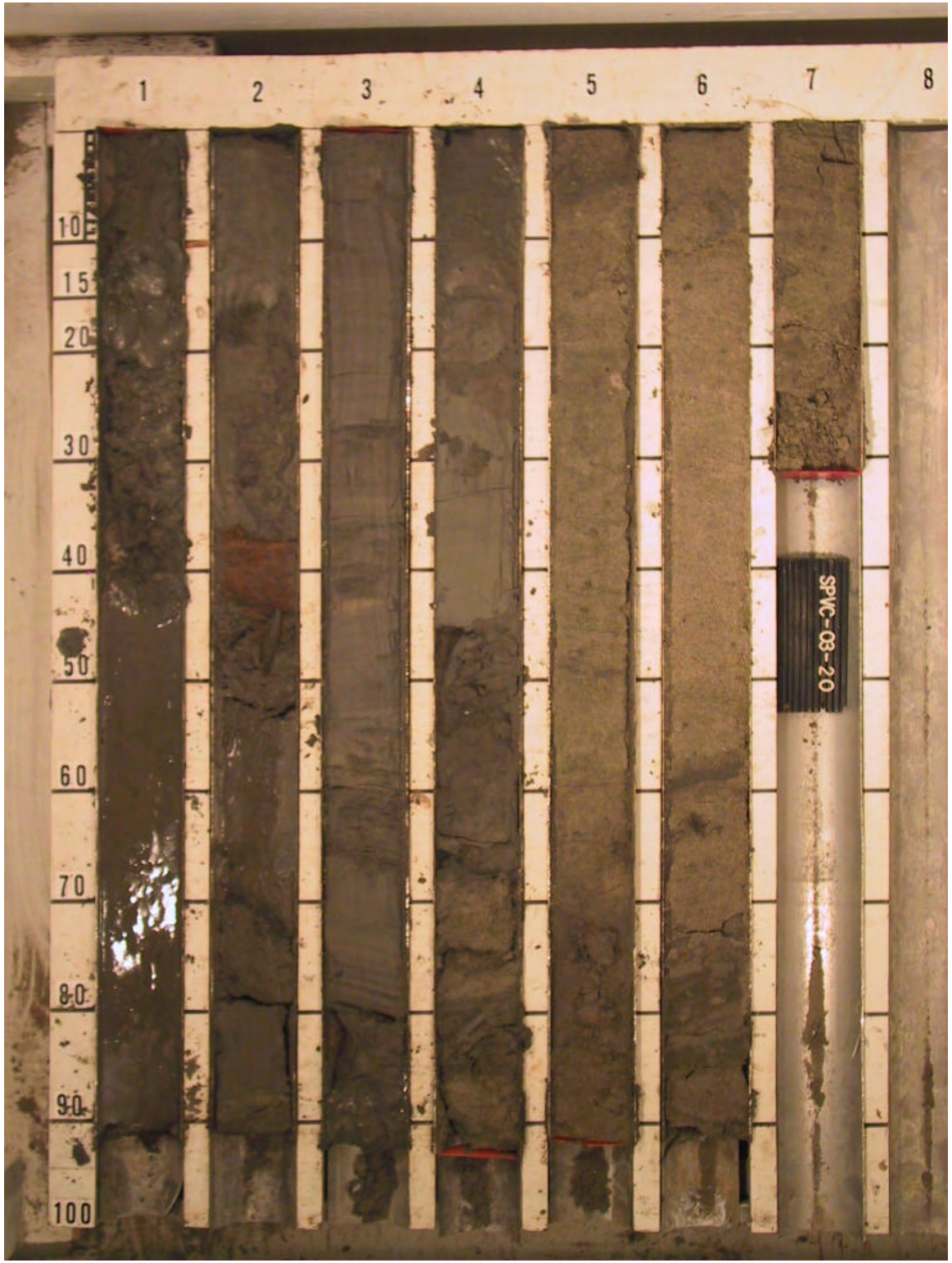
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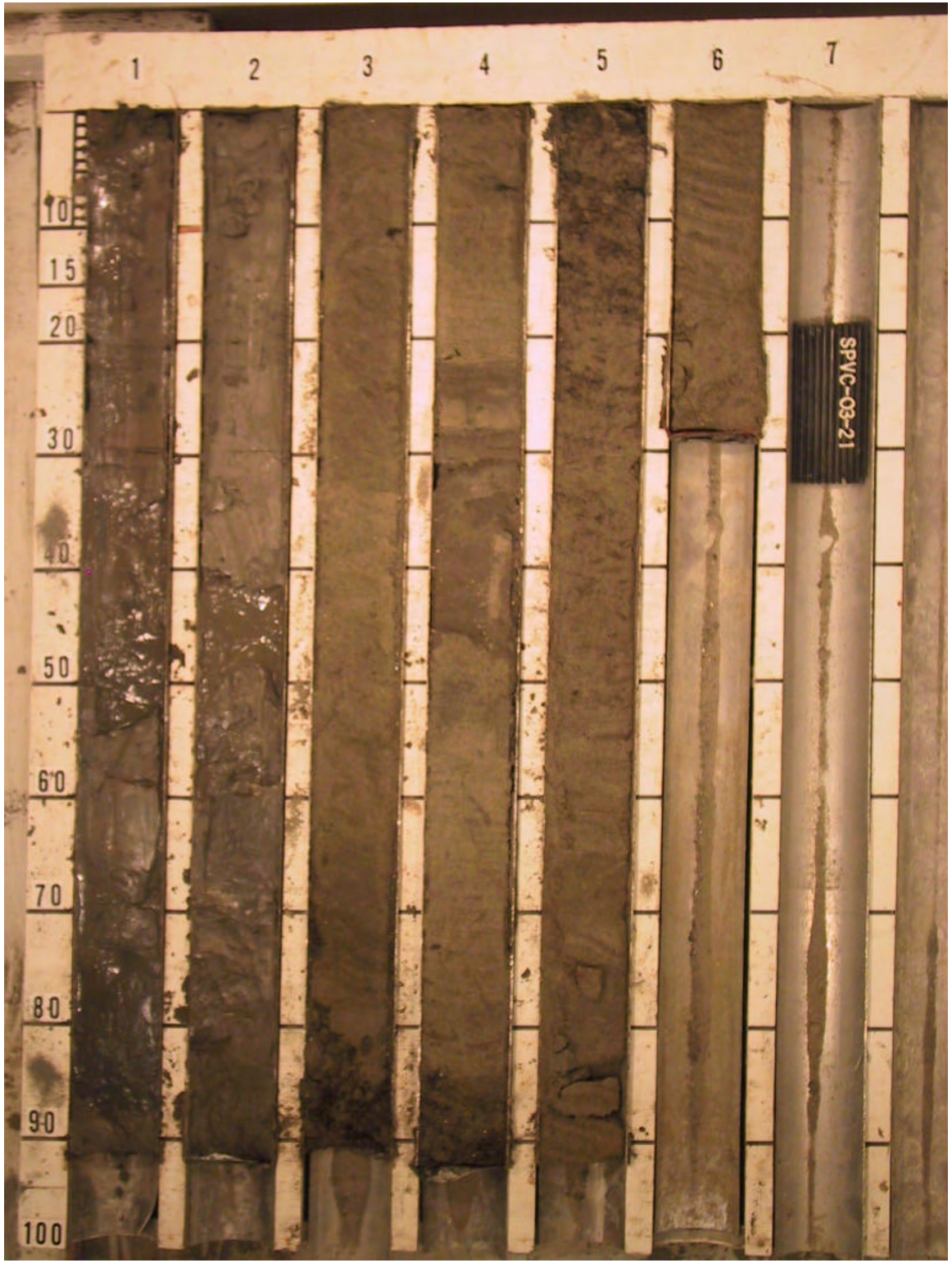
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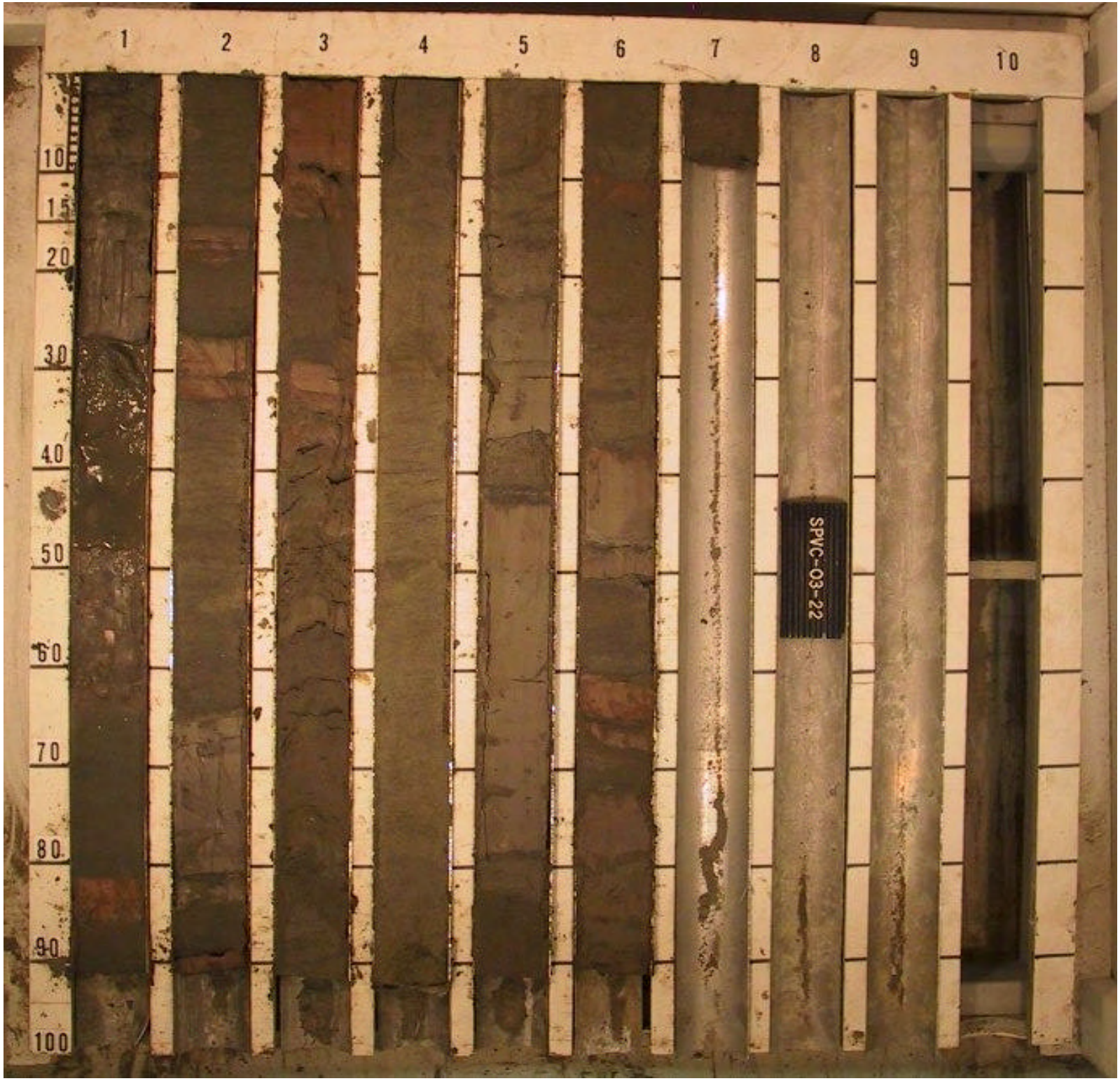
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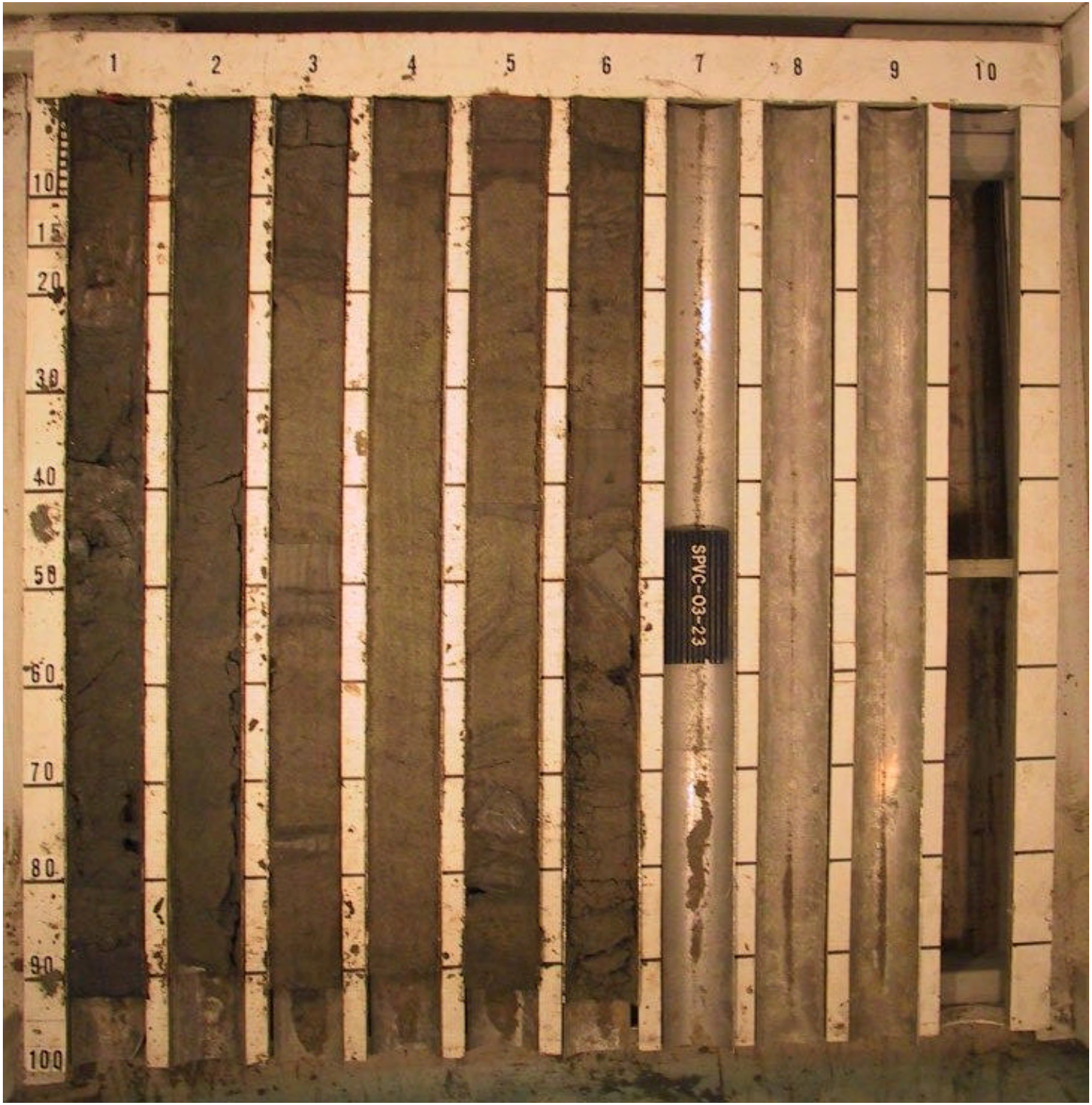
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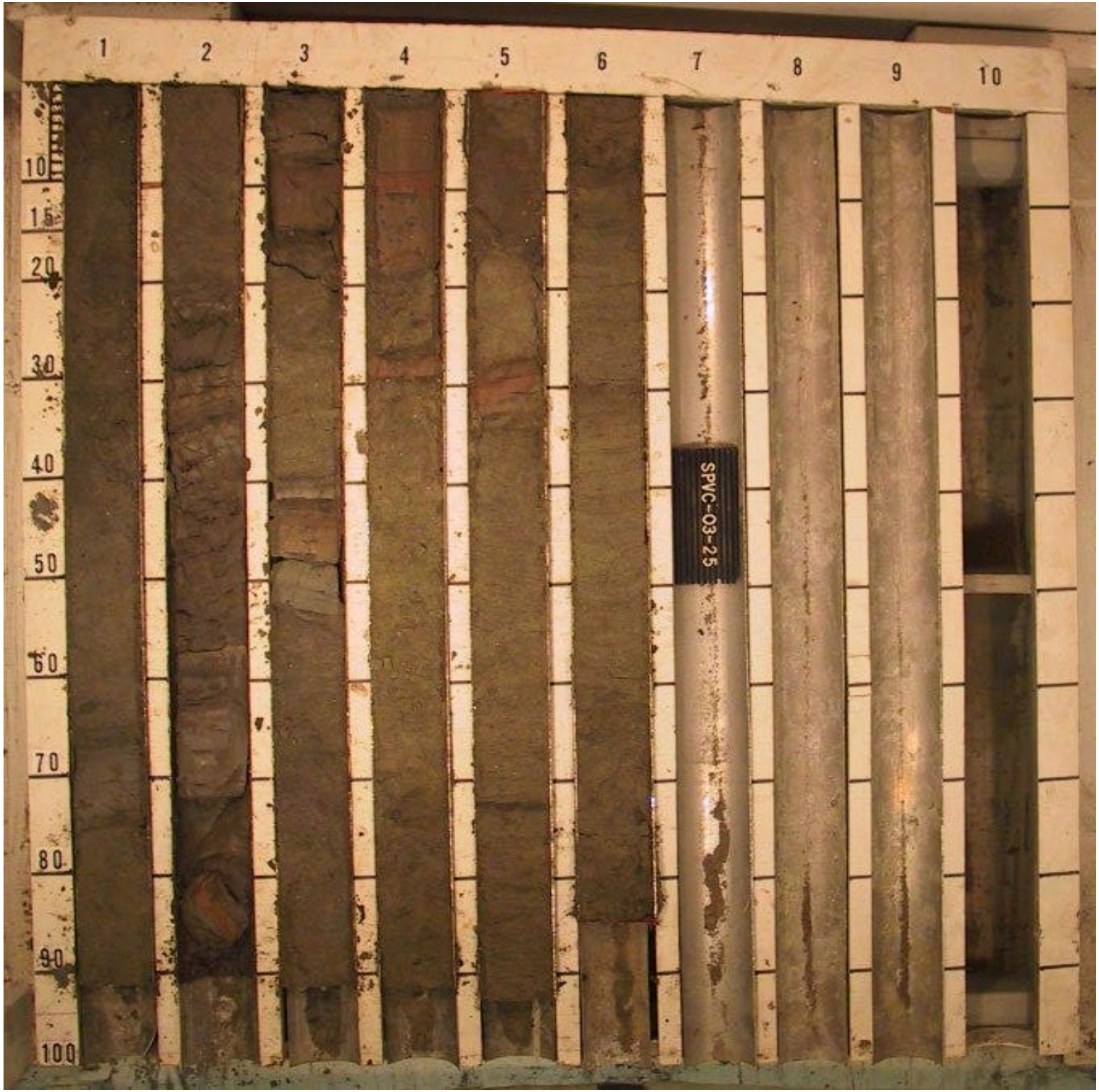
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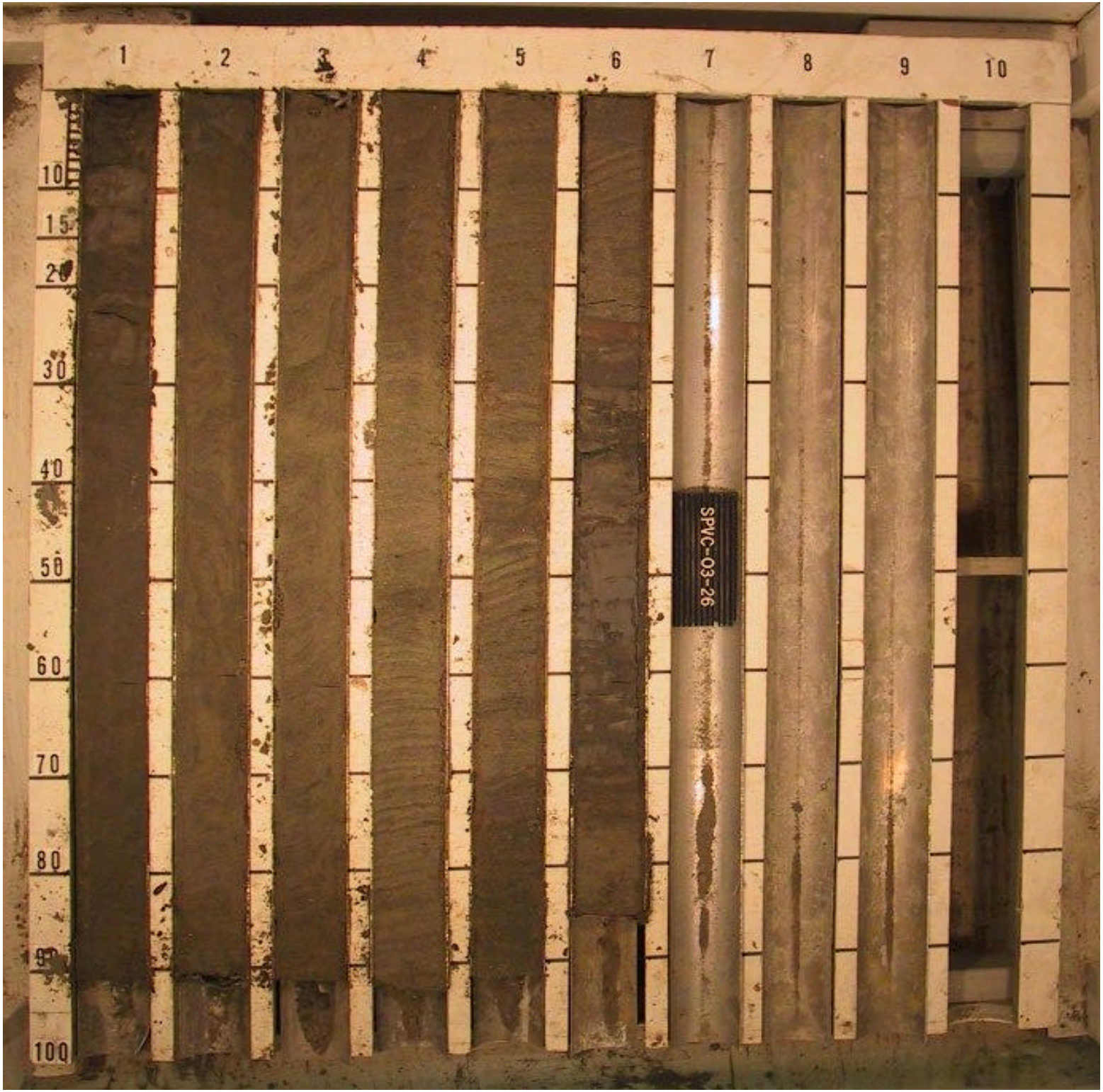
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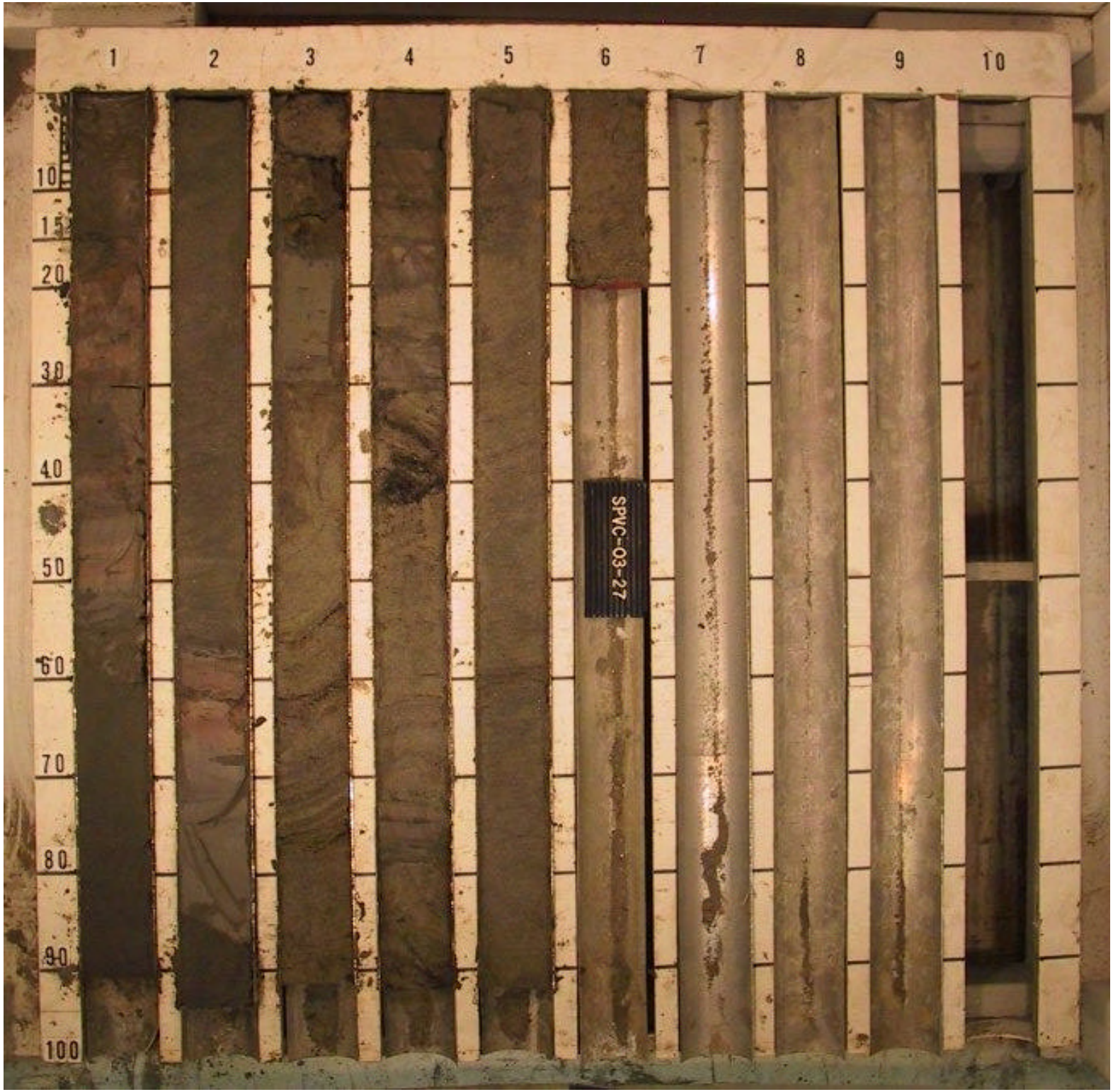
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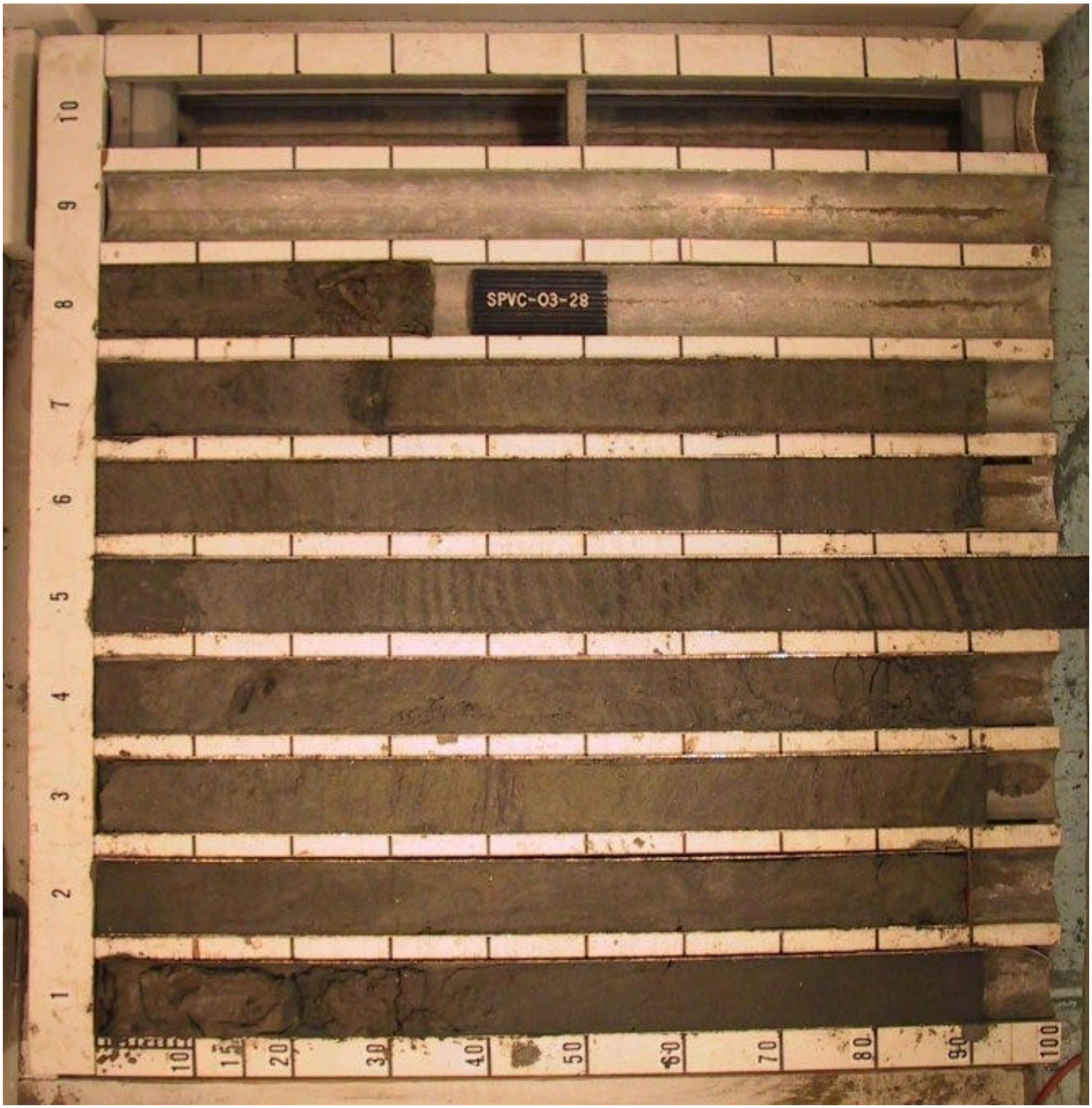
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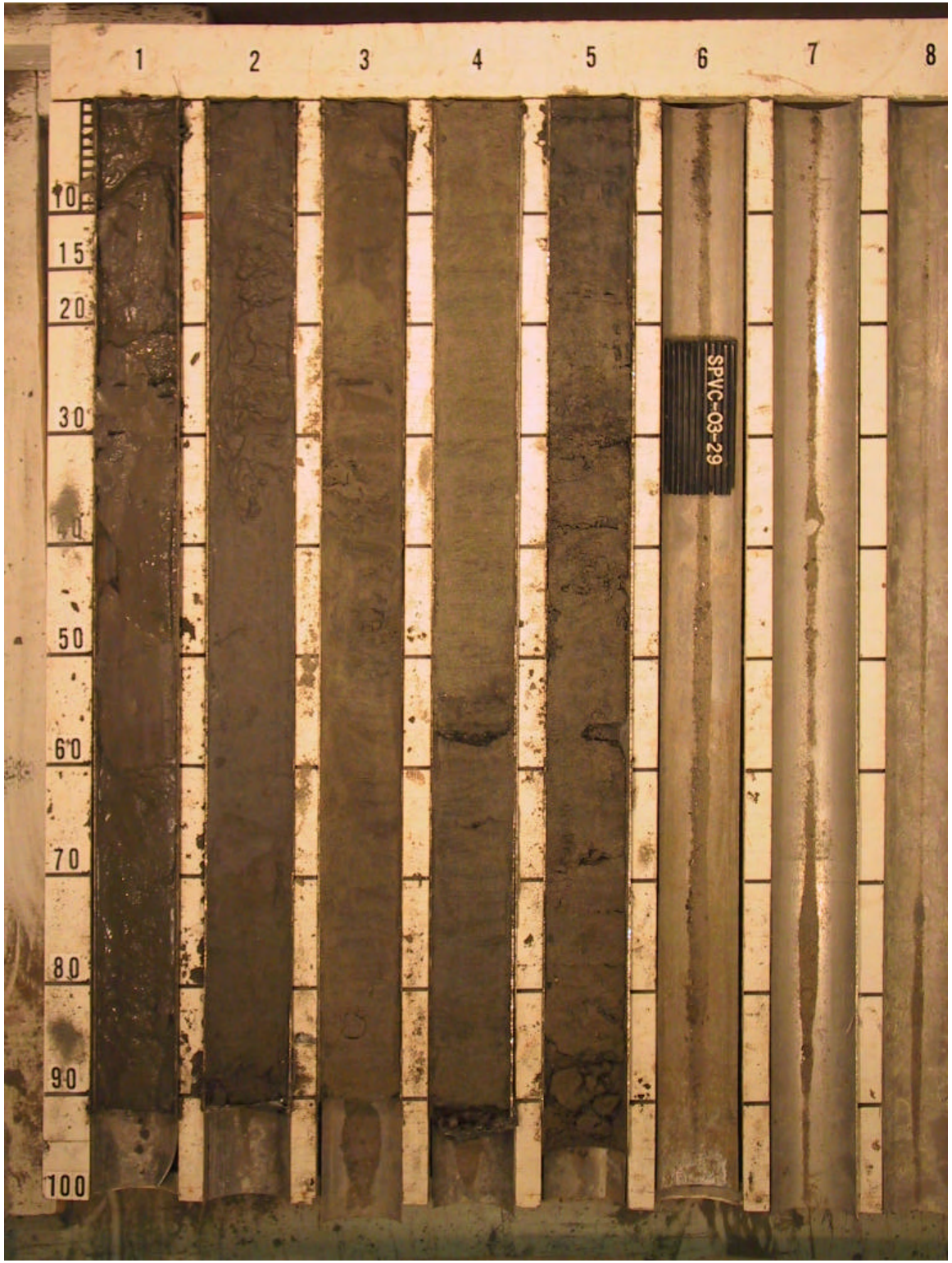
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SPVC-03-29

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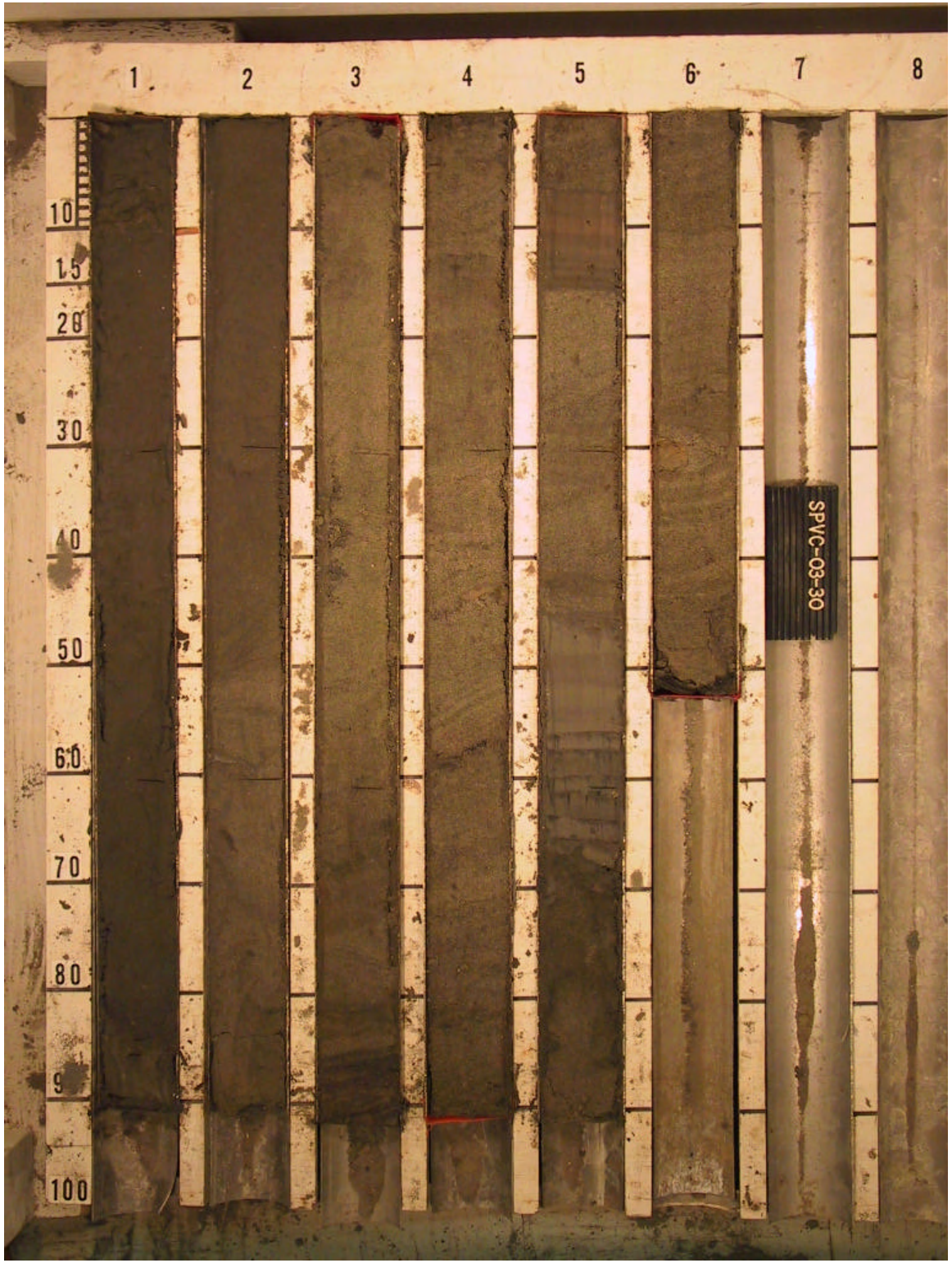
SPVC-03-29A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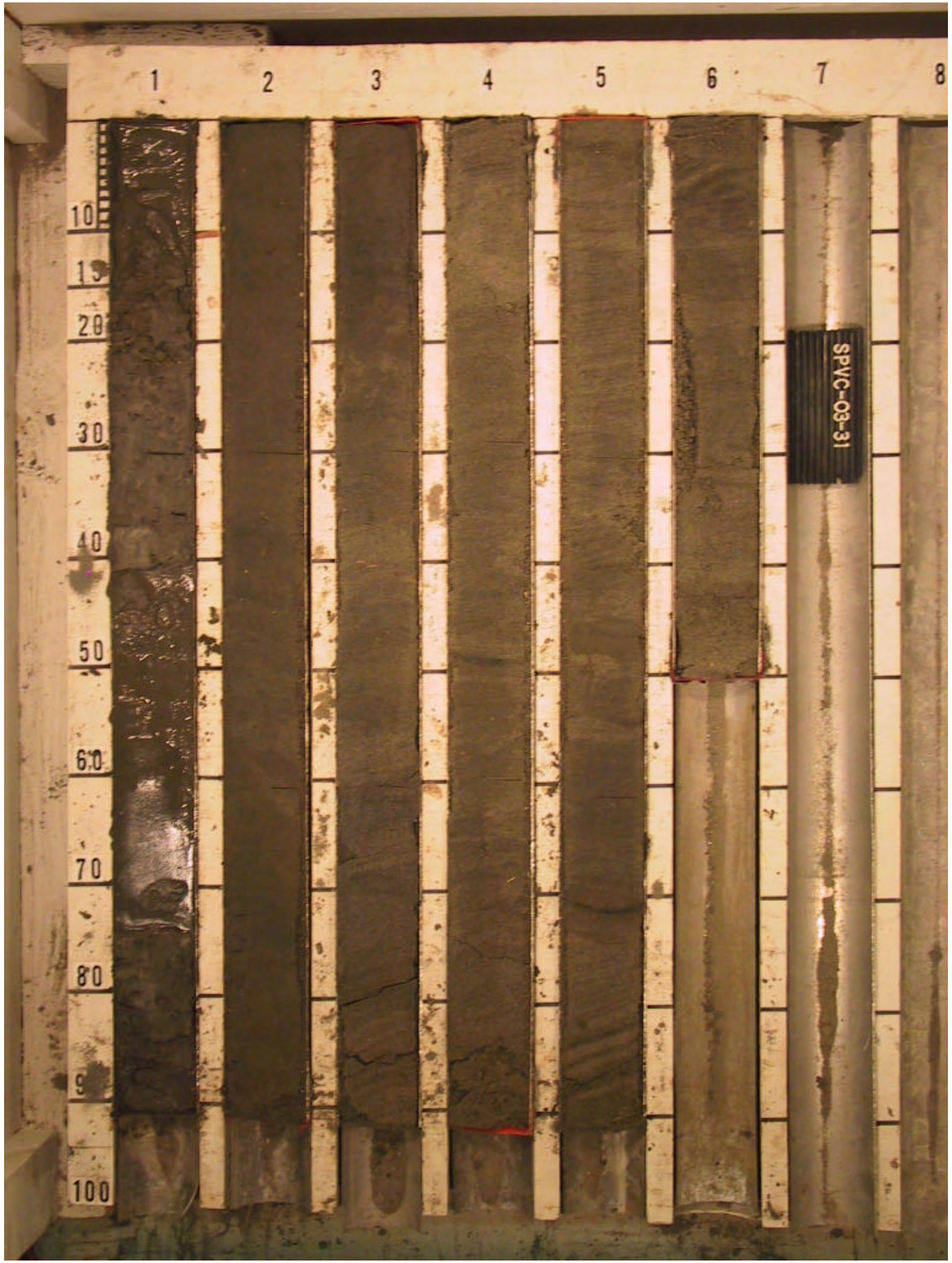
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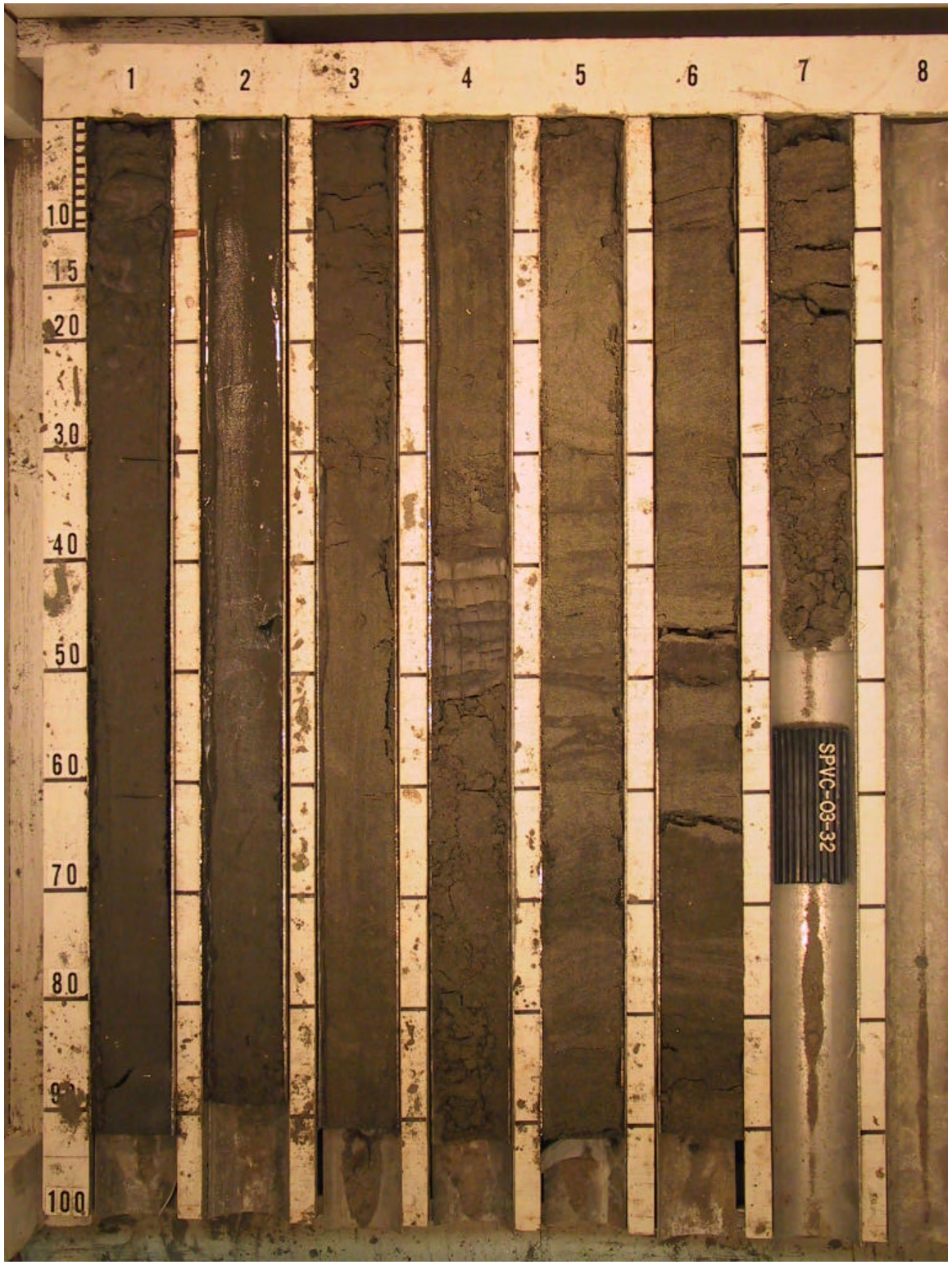
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SPVC-03-32

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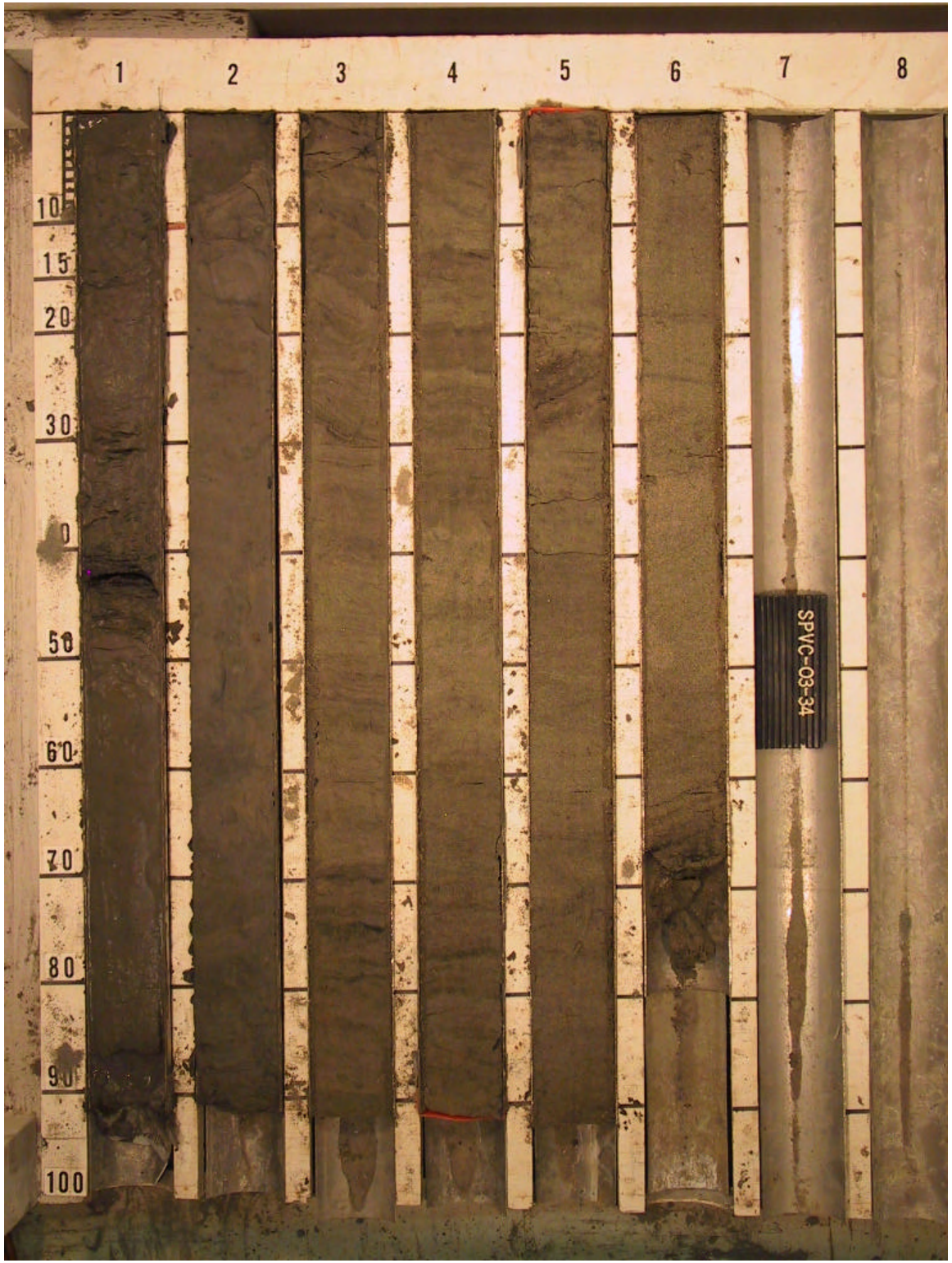
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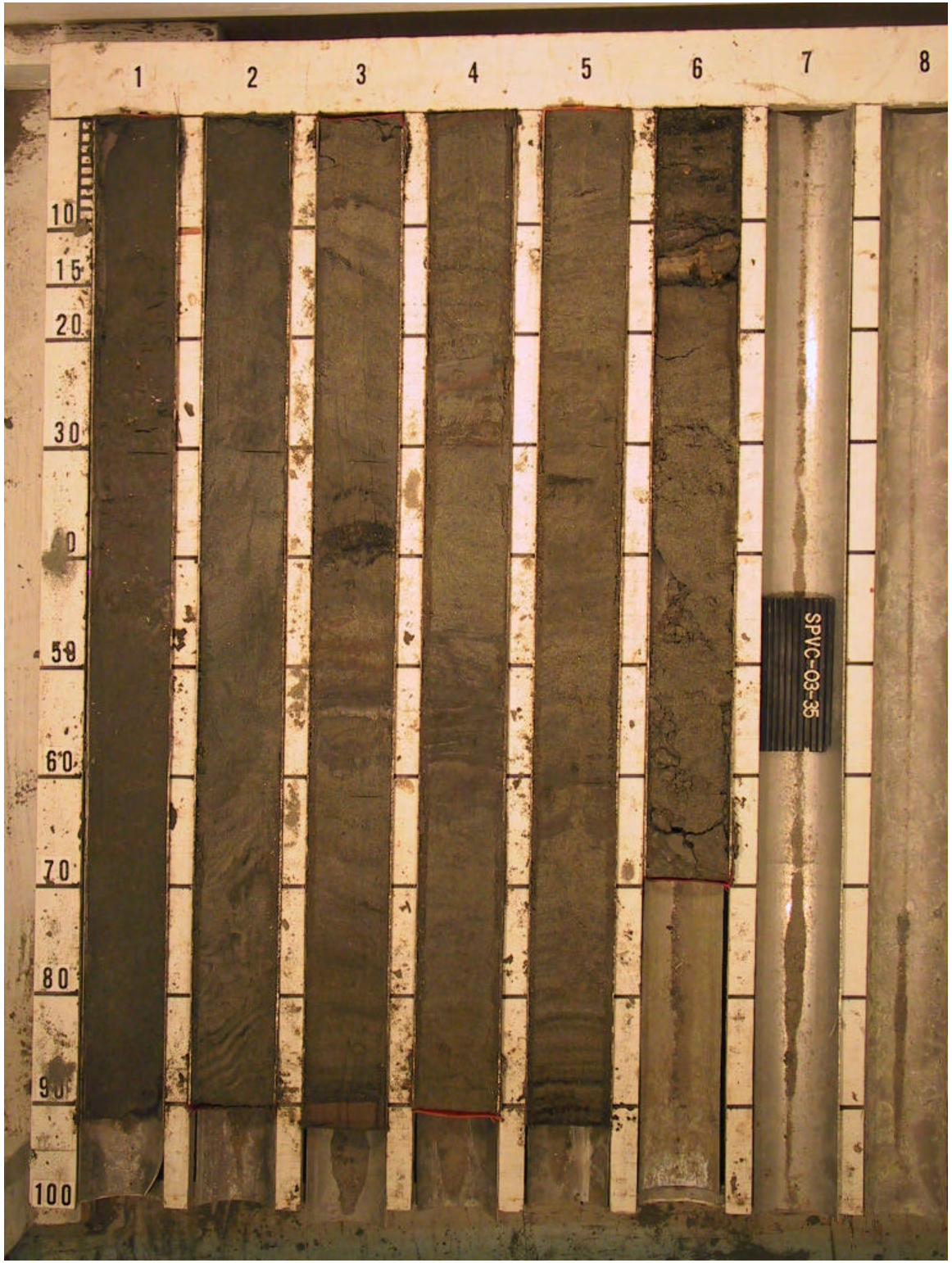
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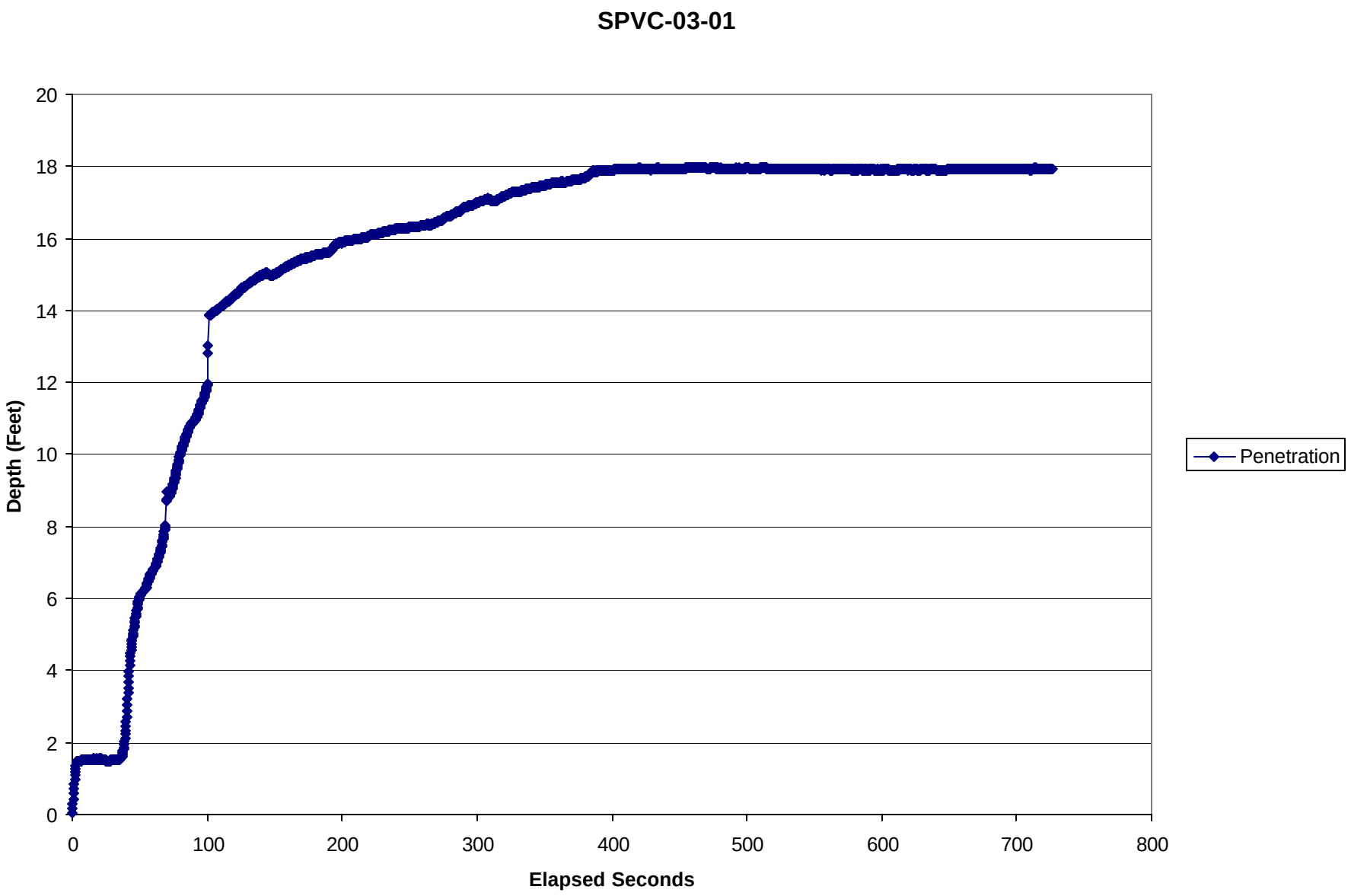
APPENDIX 12
2003 SANDY POINT PENETROMETER RECORDS


SPVC-03-01
Depth (Feet)
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18
16
14
12
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4
2
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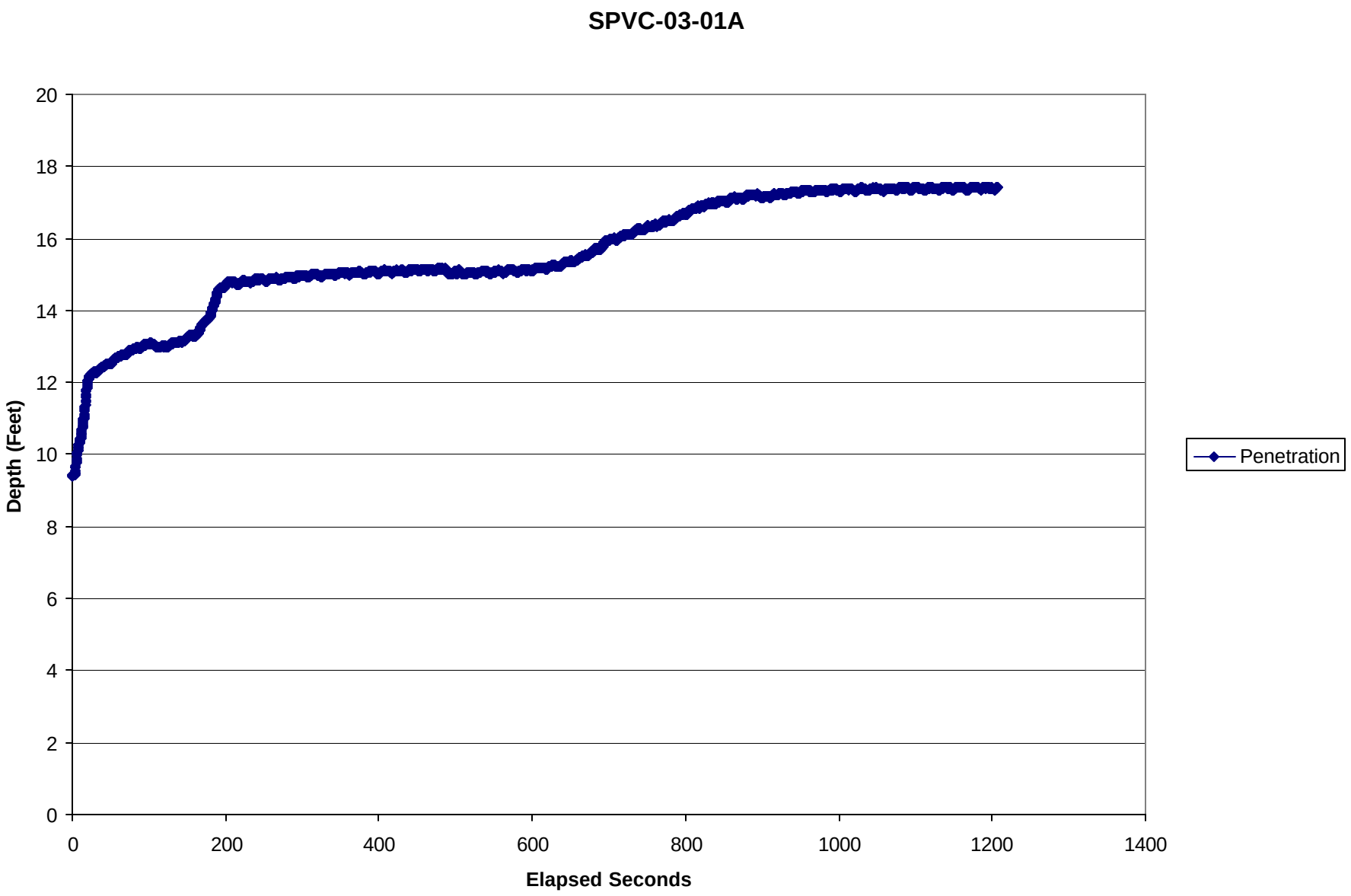
100
200
300
400
500
600
700
800
Elapsed Seconds
Penetration


SPVC-03-01A
Depth (Feet)
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18
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2
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200
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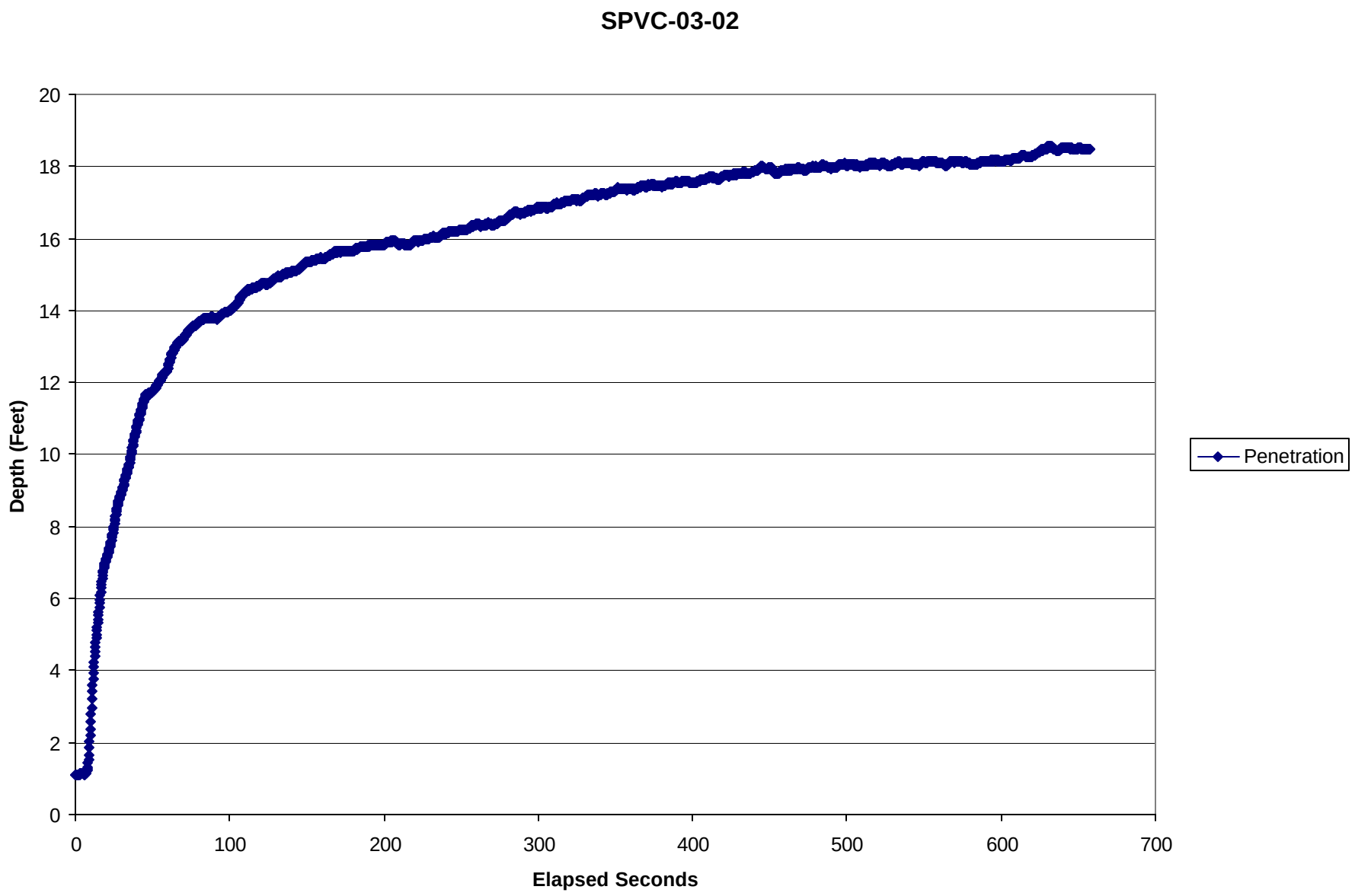
600
800
1000
1200
1400
Elapsed Seconds
Penetration


SPVC-03-02
Depth (Feet)
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500
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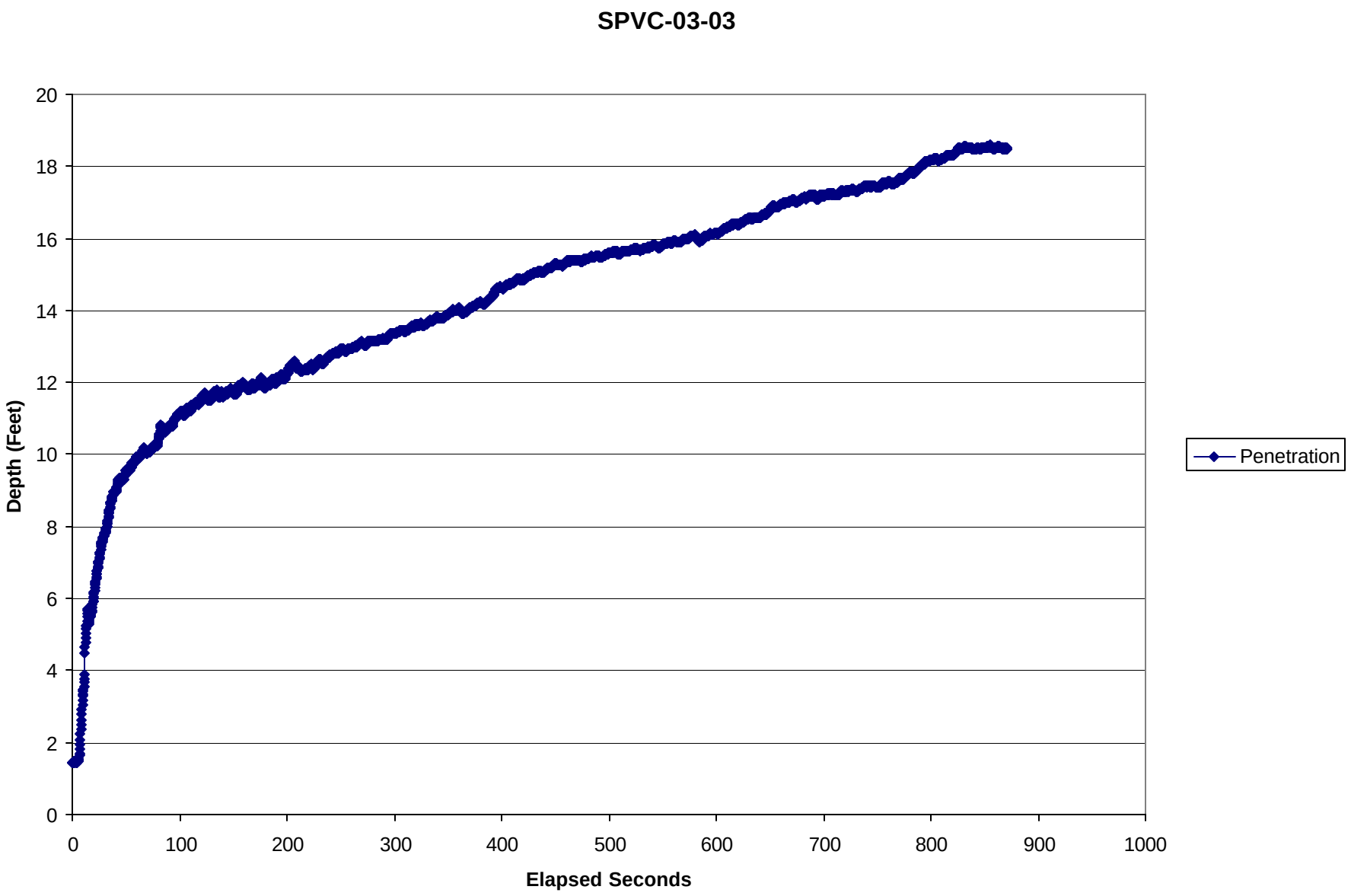
700
Elapsed Seconds
Penetration


SPVC-03-03
Depth (Feet)
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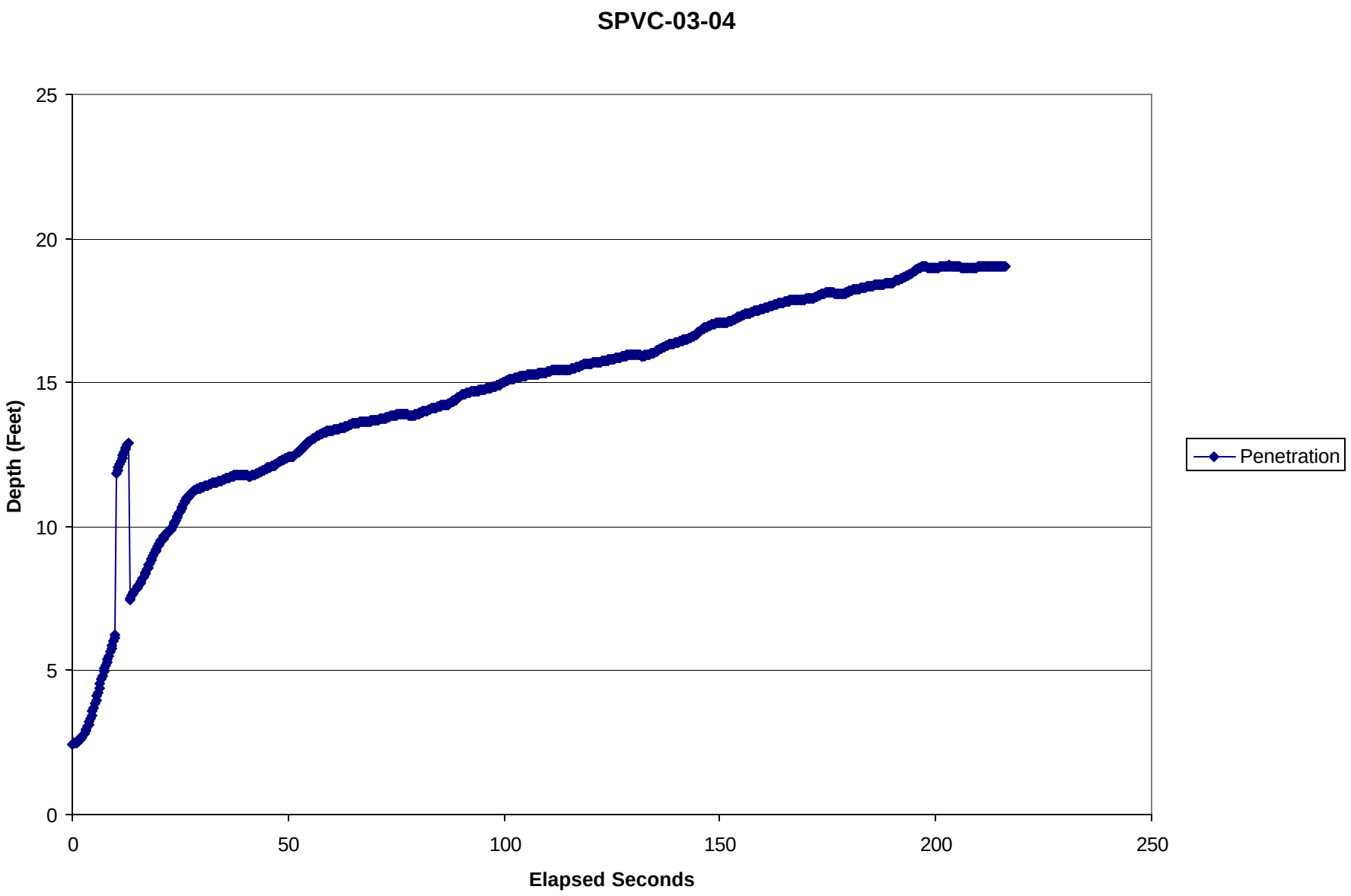
18
16
14
12
10
8
6
4
2
0
0
100
200
300
400
500
600
700
800
900
1000
Elapsed Seconds
Penetration


SPVC-03-04
25
20
15
10
5
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Depth (Feet)
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50
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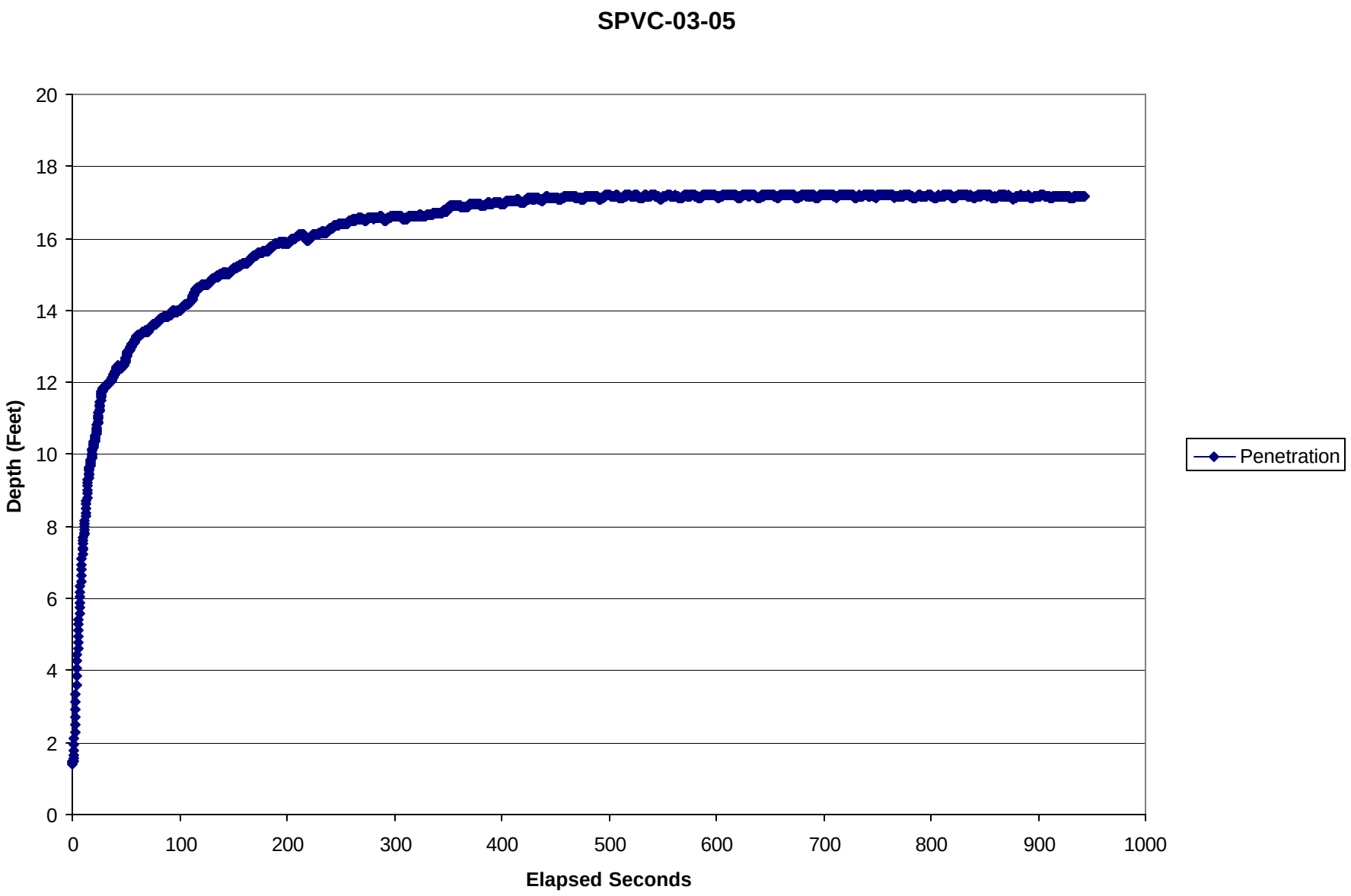
Elapsed Seconds
Penetration


SPVC-03-05
Depth (Feet)
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18
16
14
12
10
8
6
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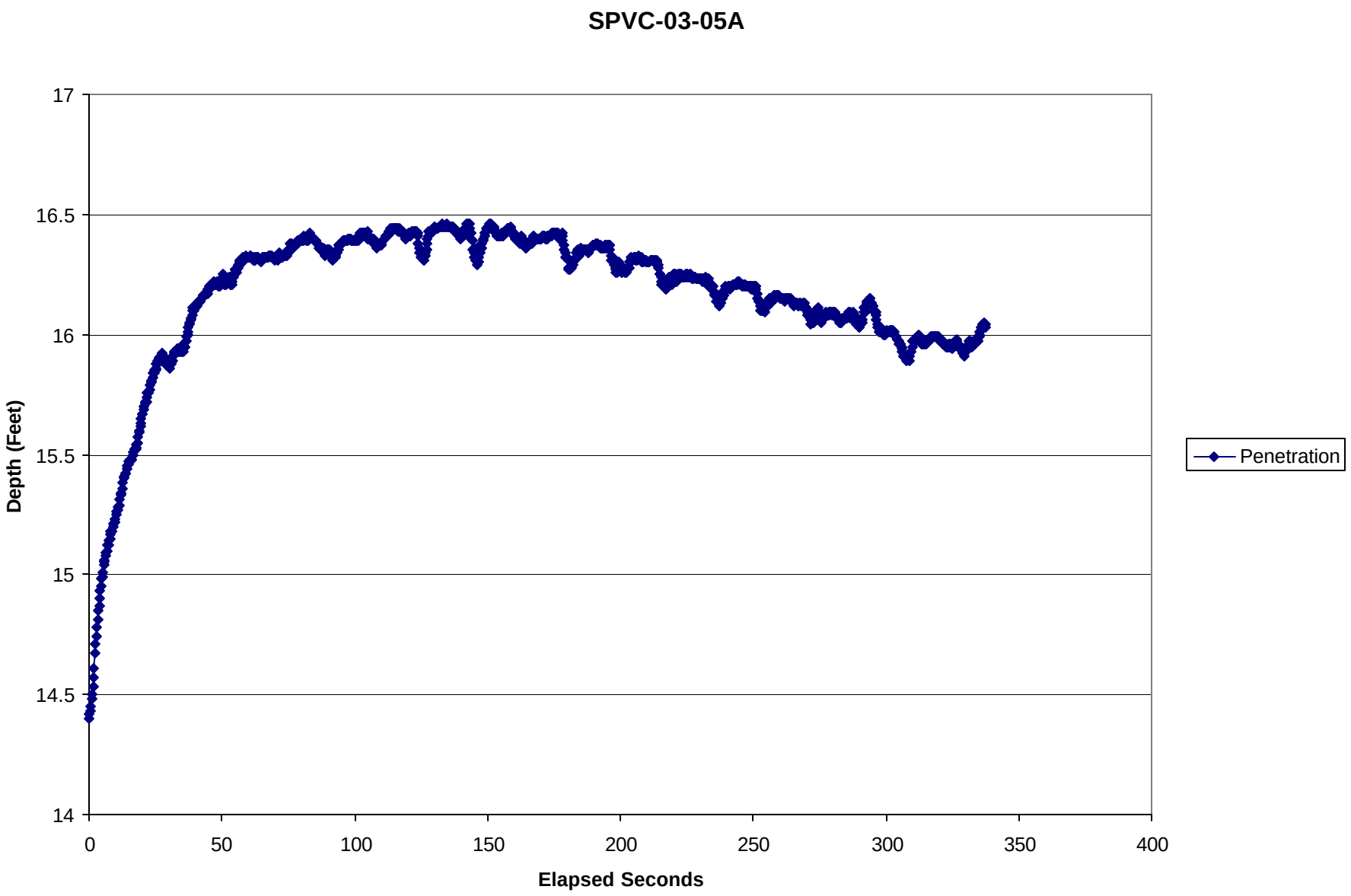
100
200
300
400
500
600
700
800
900
1000
Elapsed Seconds
Penetration


SPVC-03-05A
17
16.5
16
15.5
15
14.5
14
Depth (Feet)
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50
100
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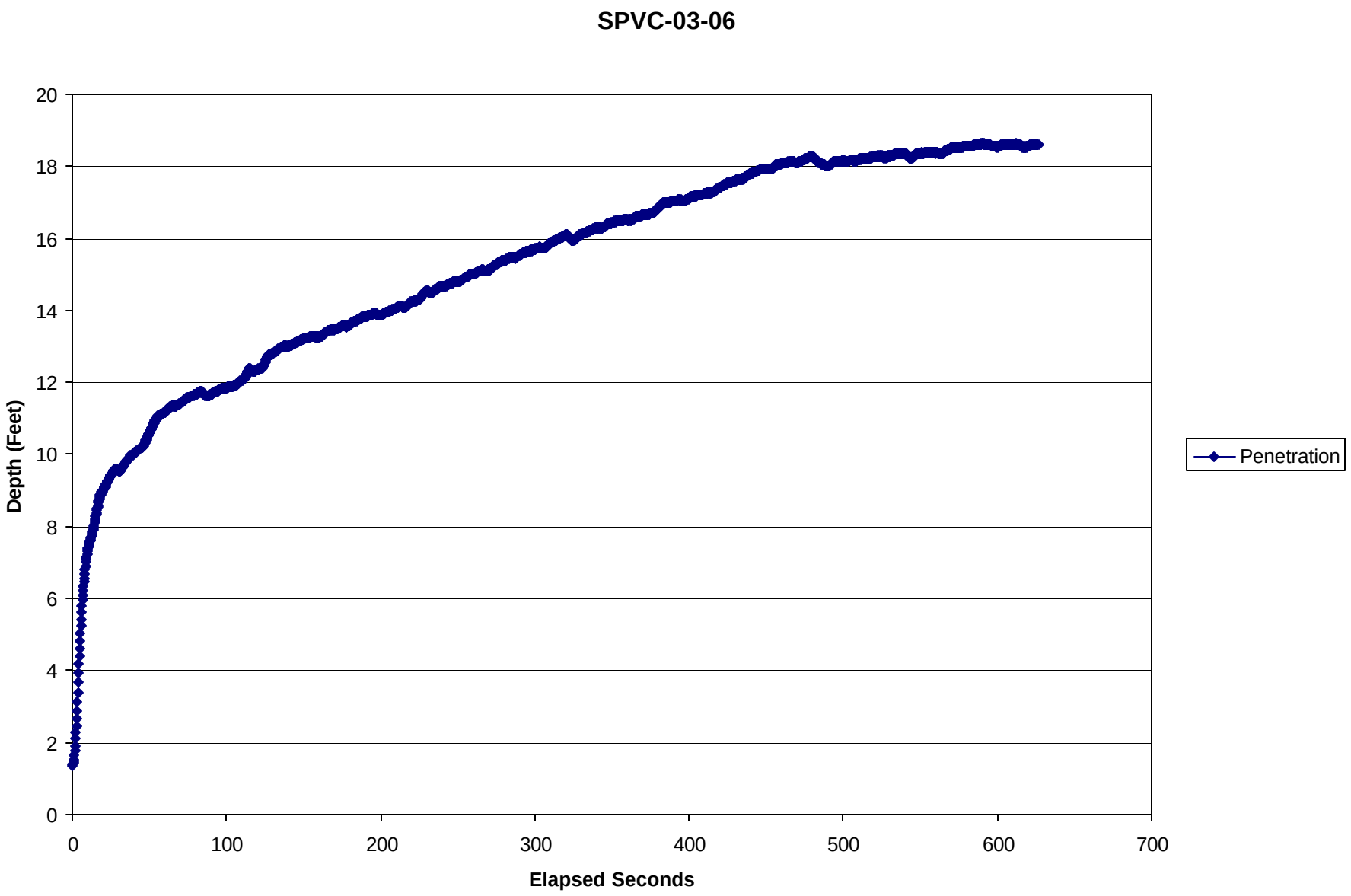
200
250
300
350
400
Elapsed Seconds
Penetration


SPVC-03-06
Depth (Feet)
20
18
16
14
12
10
8
6
4
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0
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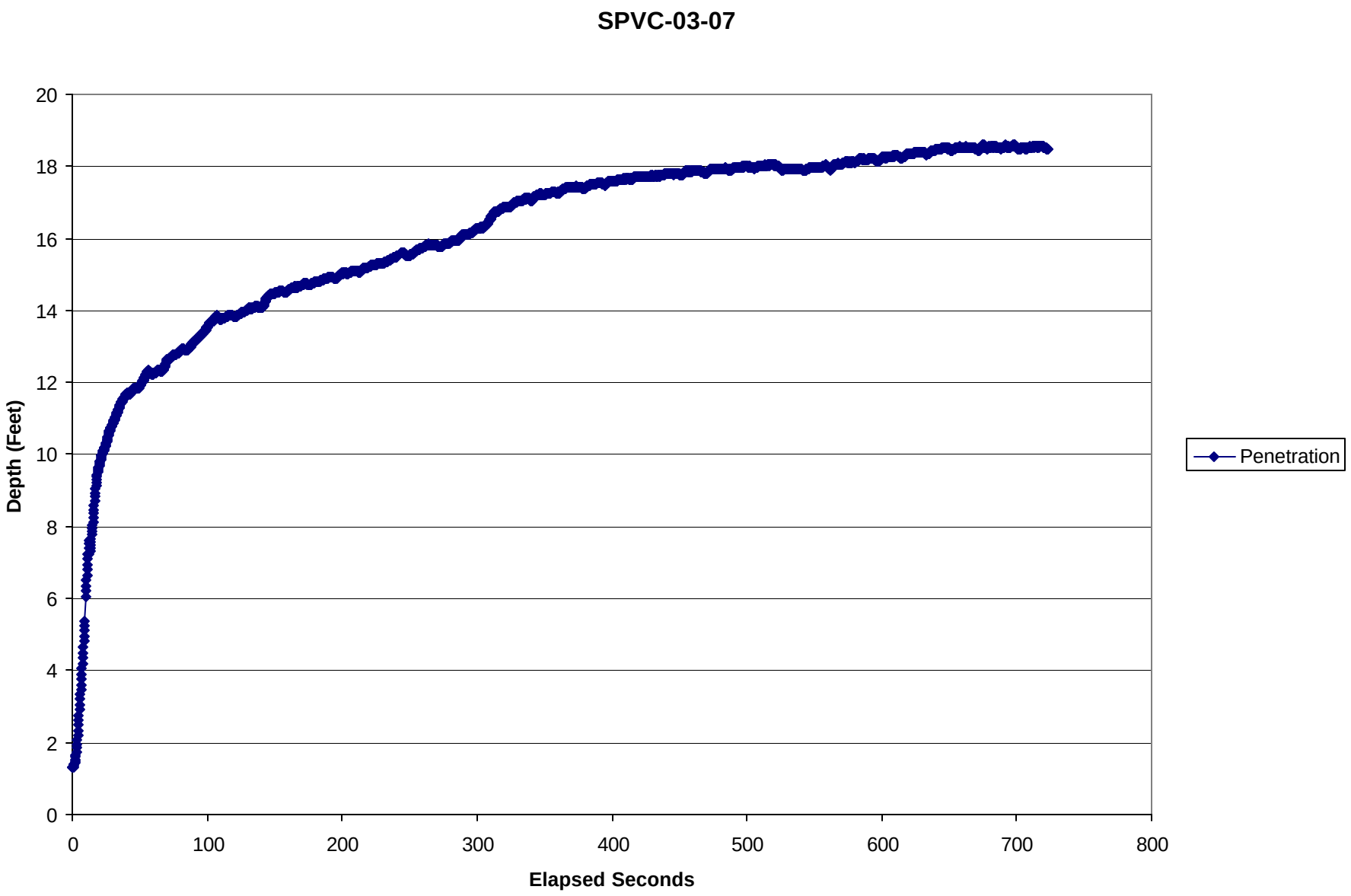
300
400
500
600
700
Elapsed Seconds
Penetration


SPVC-03-07
Depth (Feet)
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18
16
14
12
10
8
6
4
2
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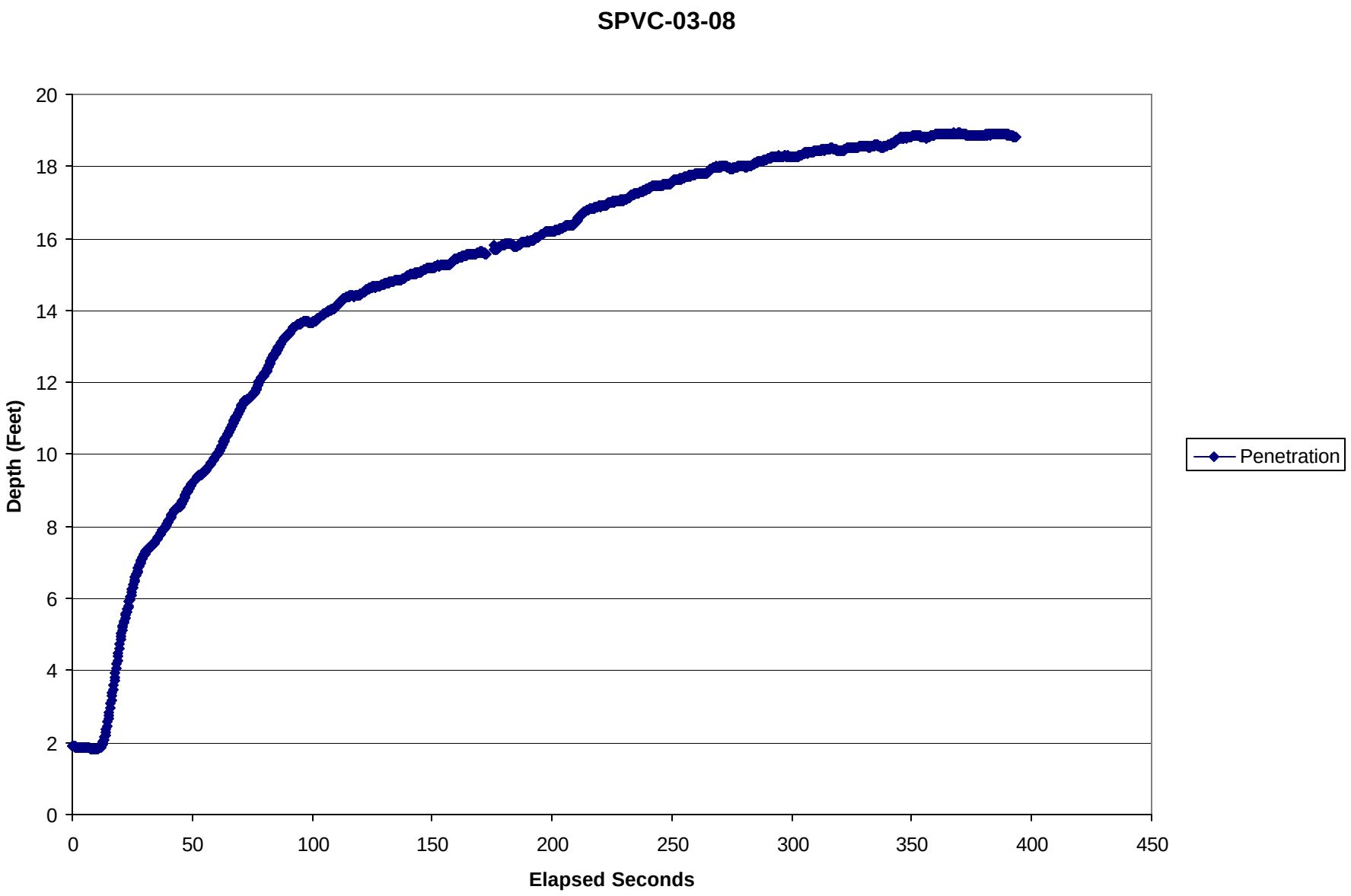
0
100
200
300
400
500
600
700
800
Elapsed Seconds
Penetration


SPVC-03-08
Depth (Feet)
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18
16
14
12
10
8
6
4
2
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0
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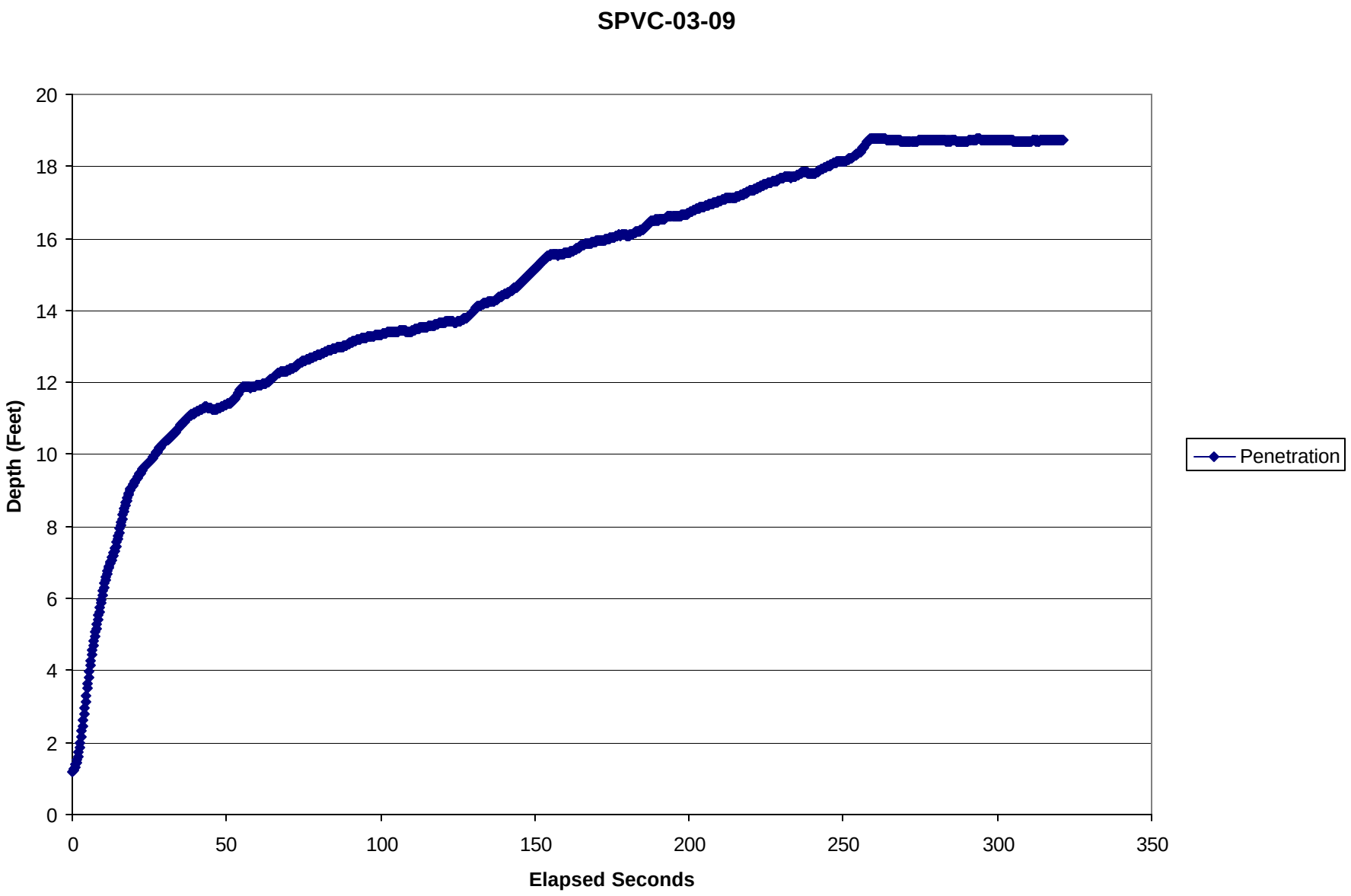
100
150
200
250
300
350
400
450
Elapsed Seconds
Penetration


SPVC-03-09
Depth (Feet)
20
18
16
14
12
10
8
6
4
2
0
0
50
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150
200
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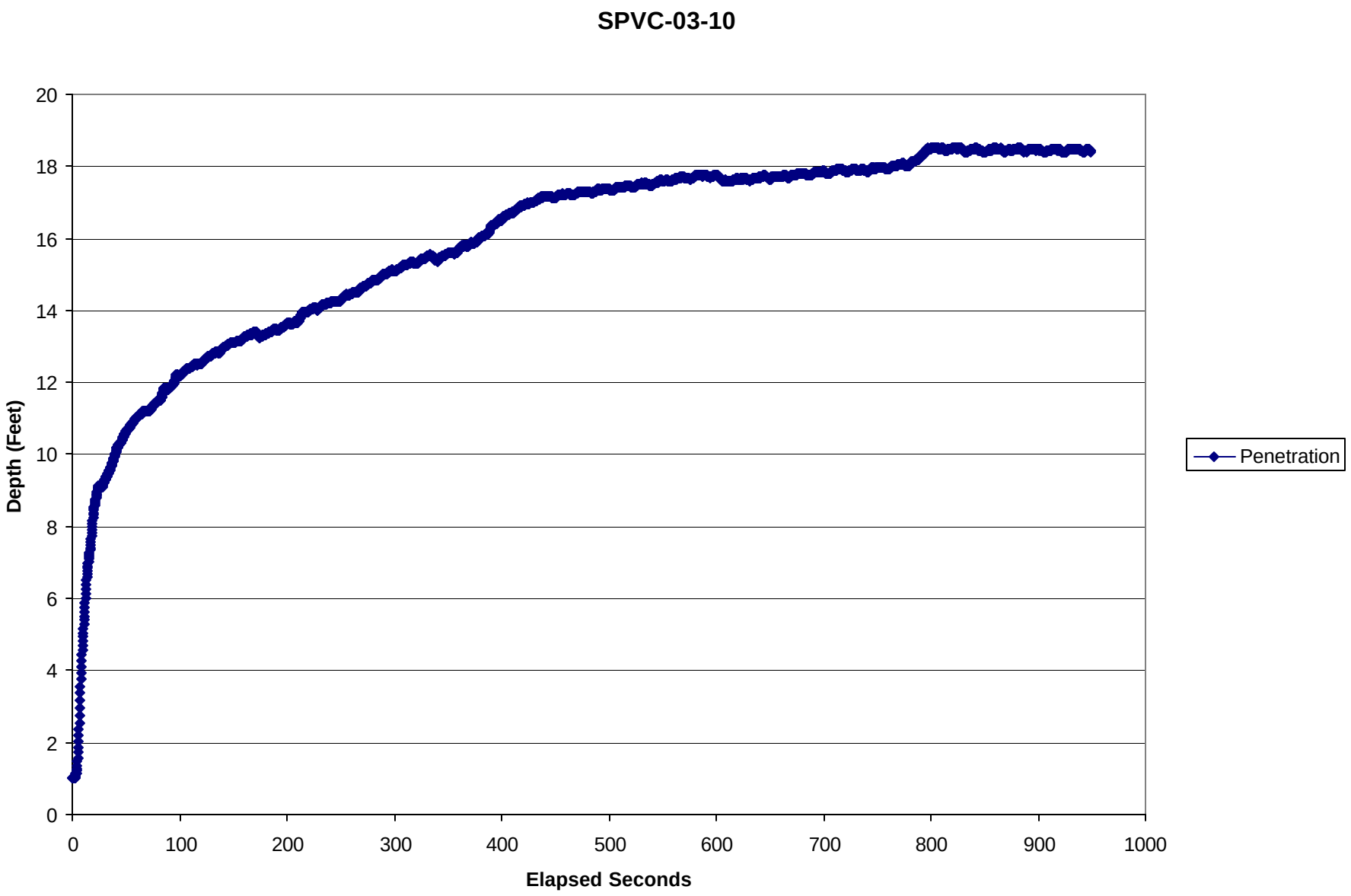
300
350
Elapsed Seconds
Penetration


SPVC-03-10
Depth (Feet)
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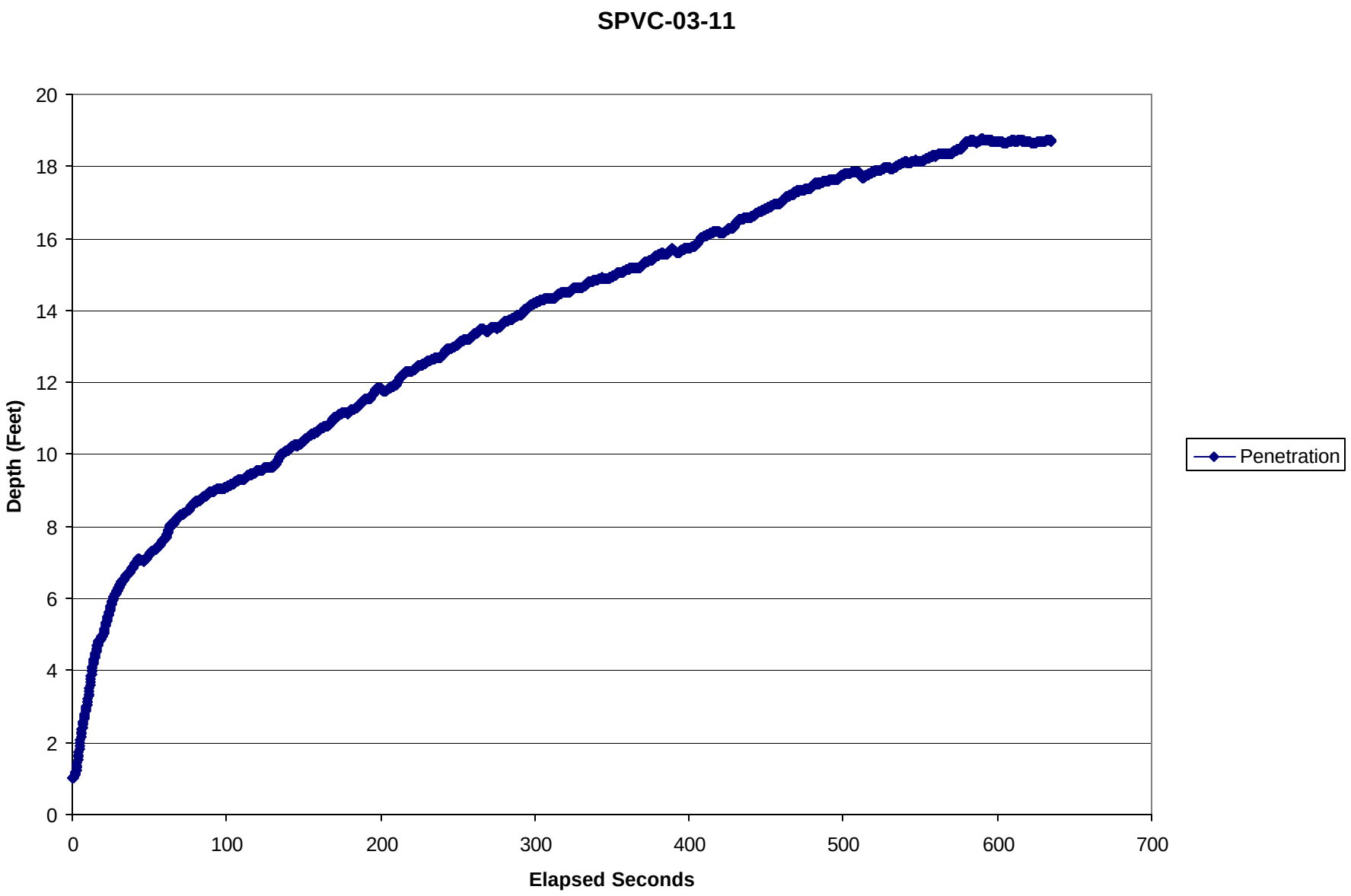
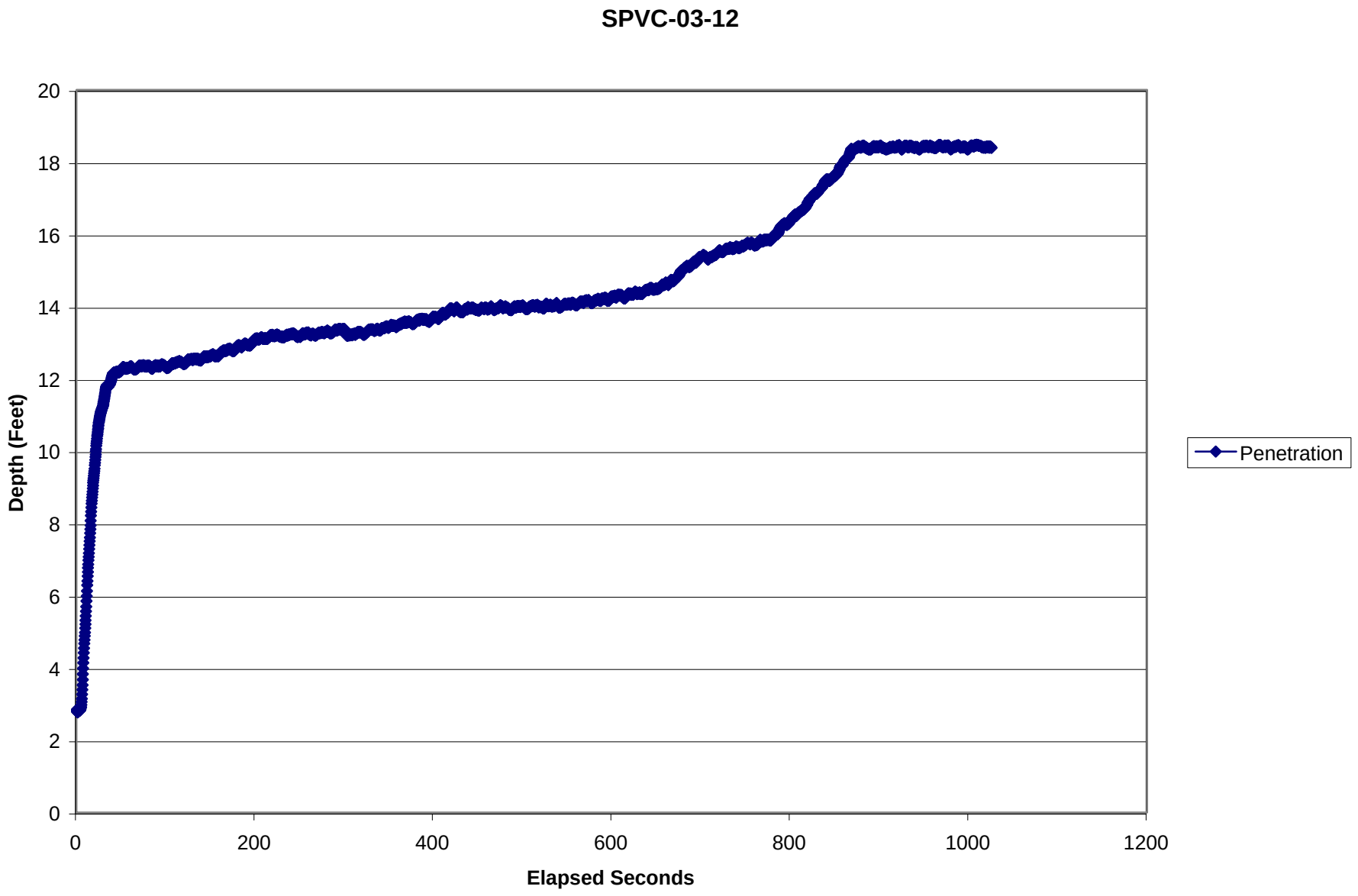
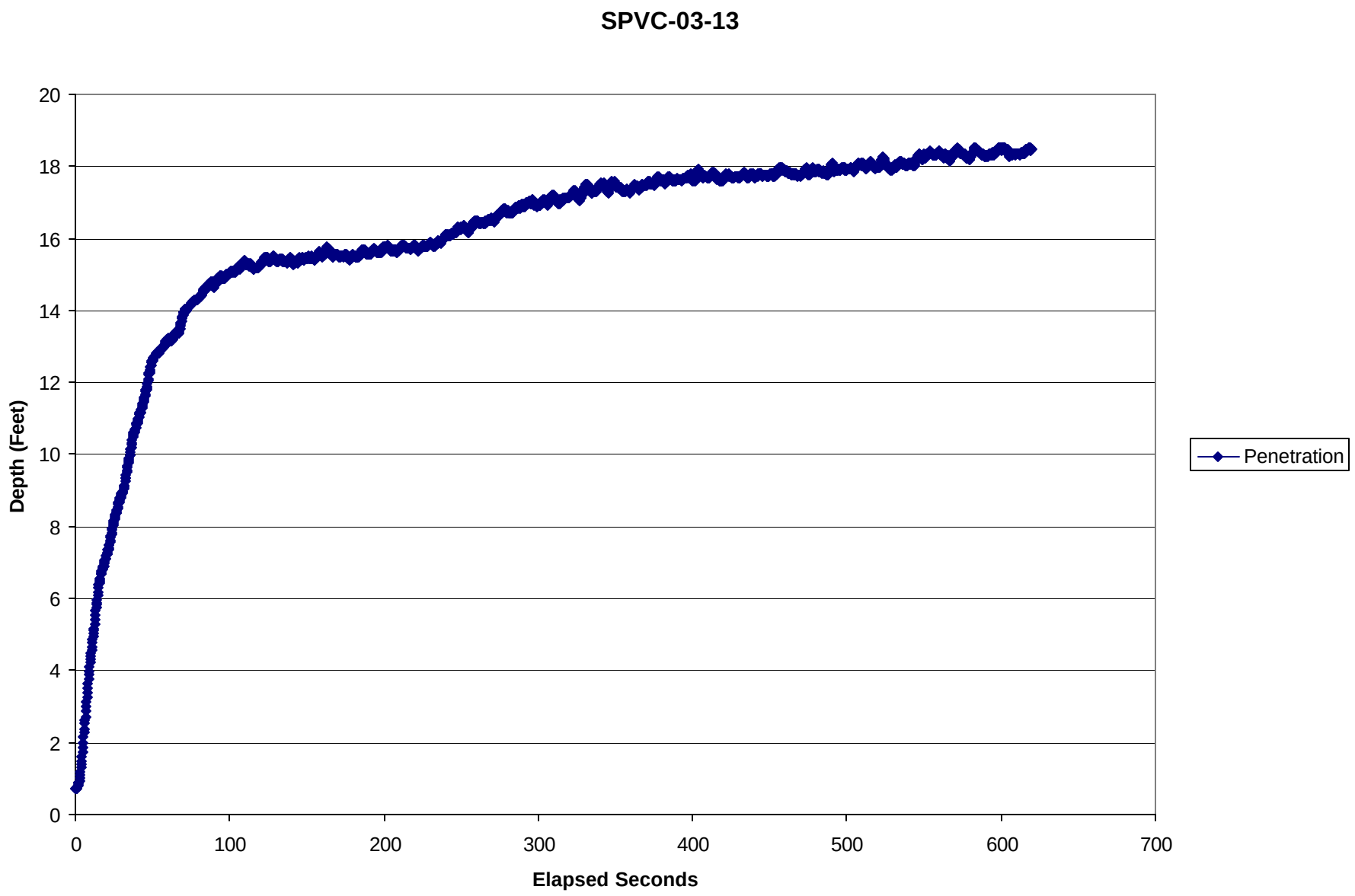
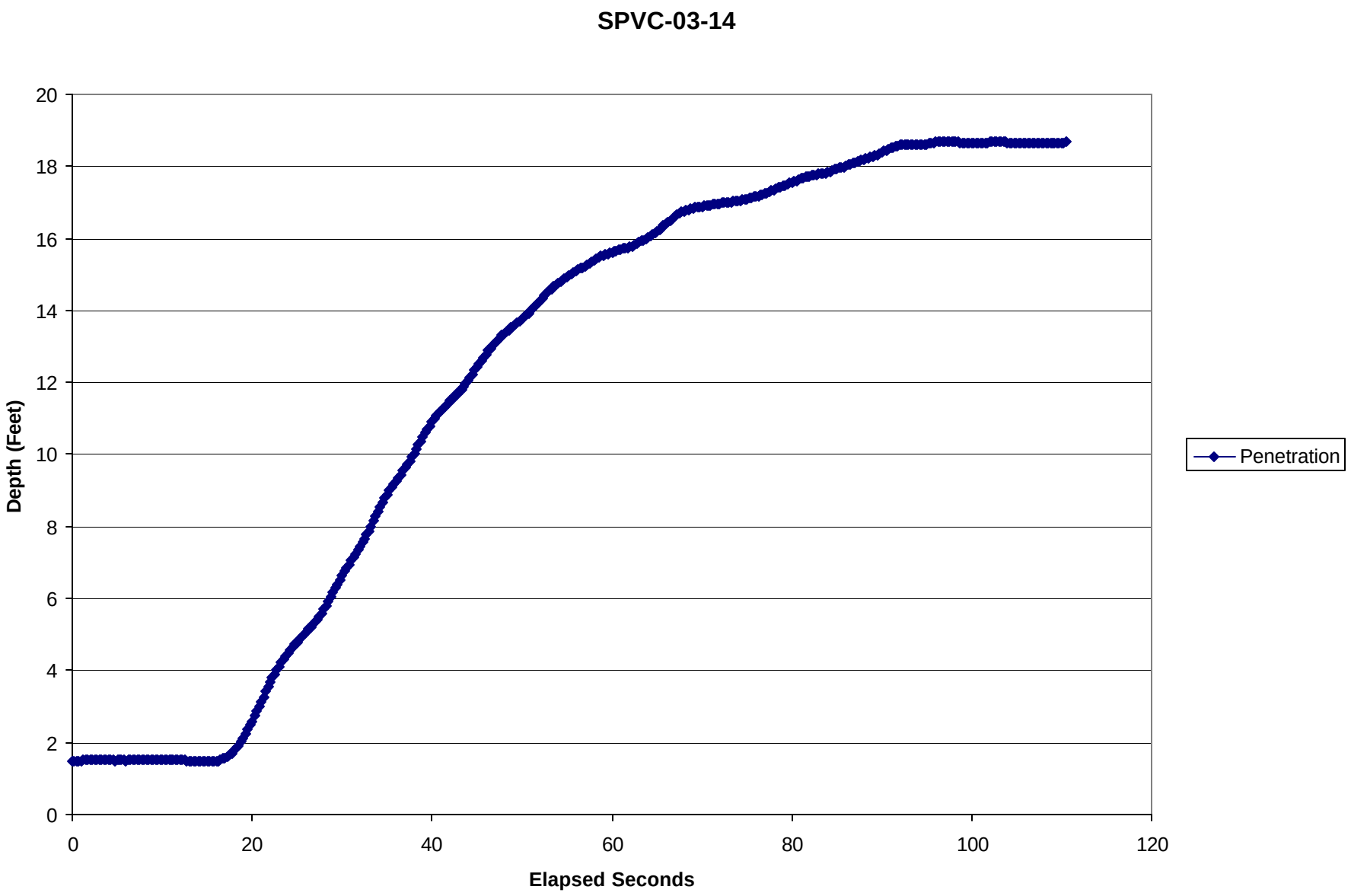
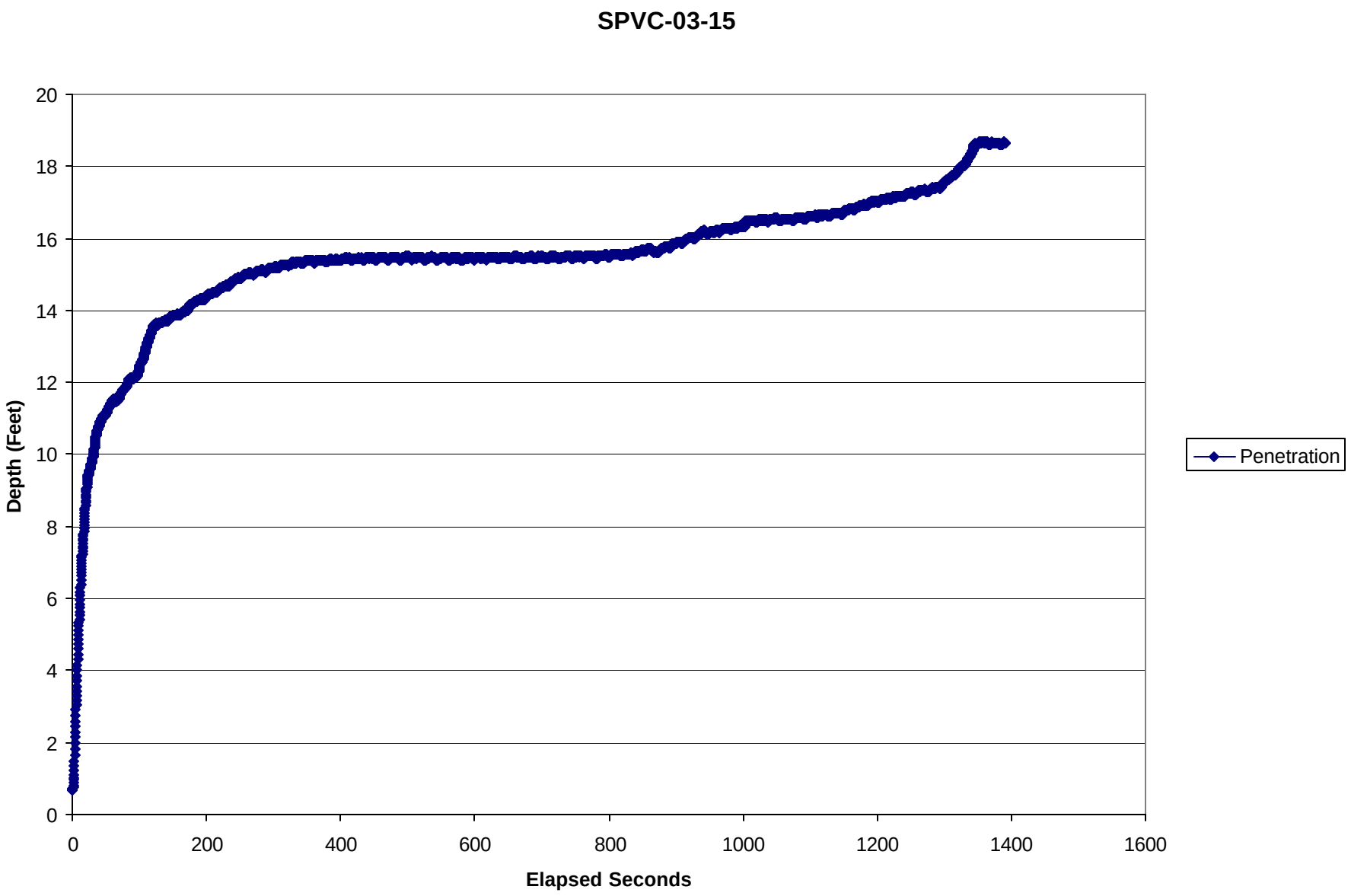
18
16
14
12
10
8
6
4
2
0
0
100
200
300
400
500
600
700
800
900
1000
Elapsed Seconds
Penetration

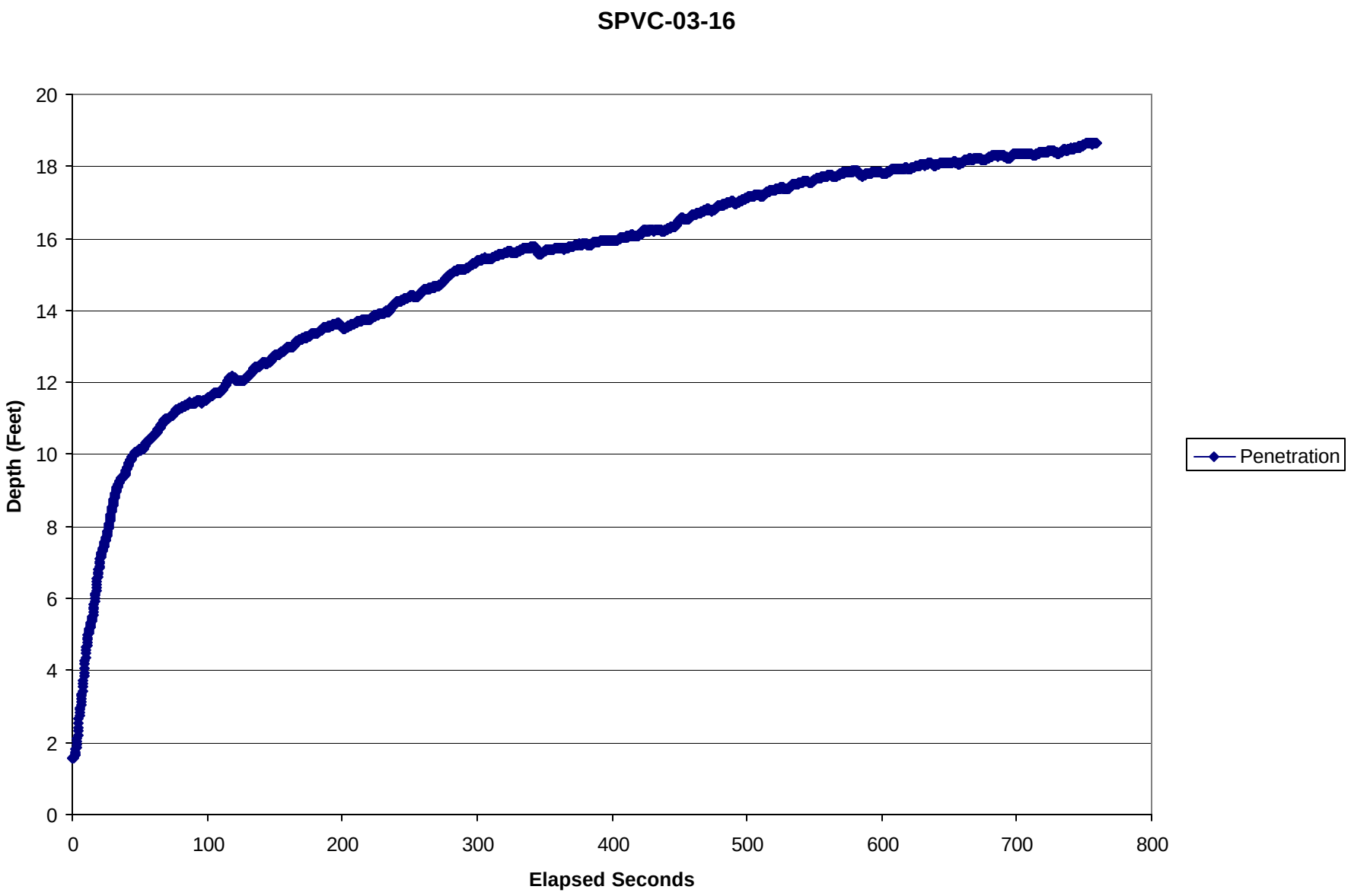

SPVC-03-11
Depth (Feet)
20
18
16
14
12
10
8
6
4
2
0
0
100
200
300
400
500
600
700
Elapsed Seconds
Penetration

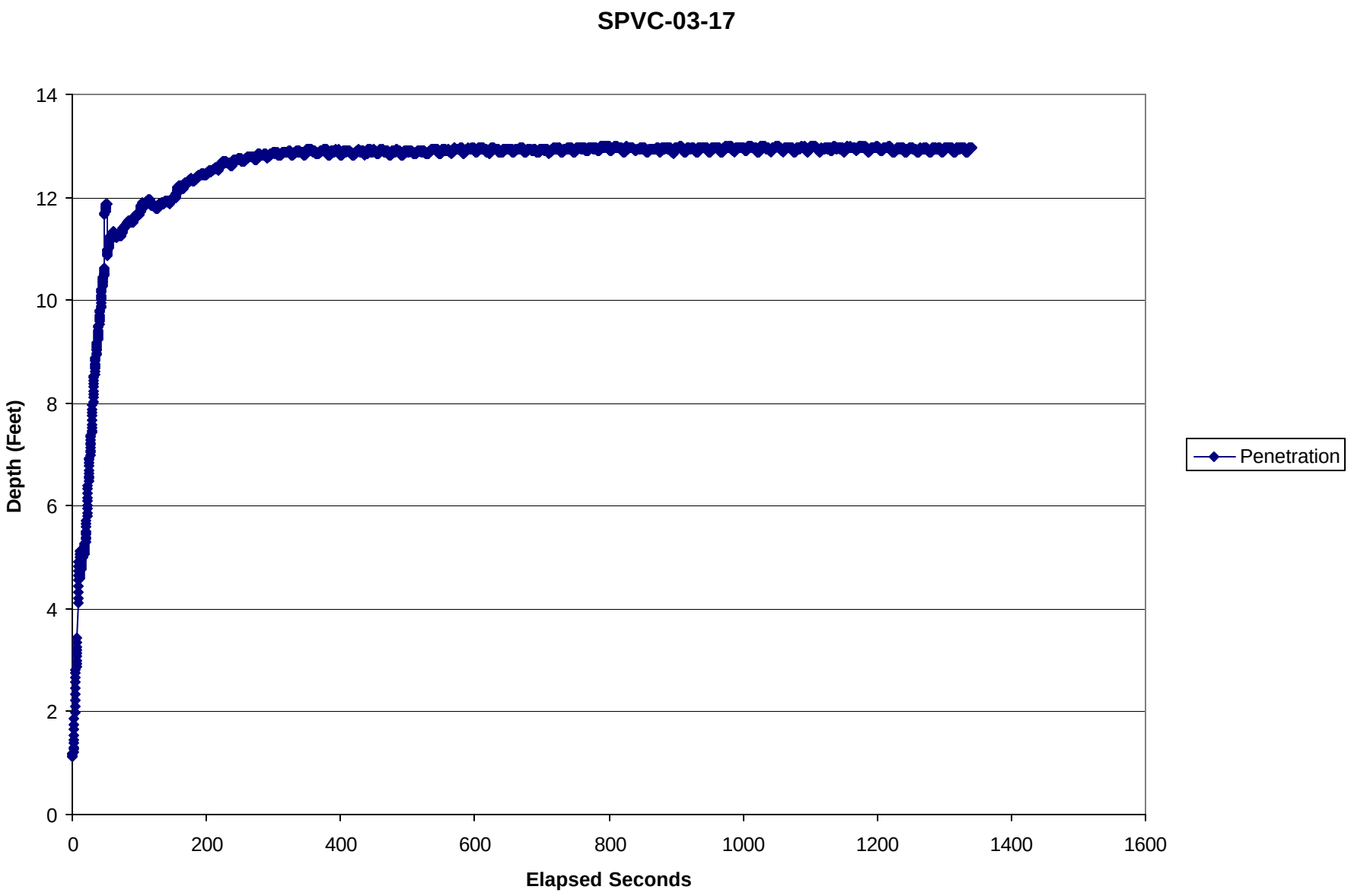

SPVC-03-12
Depth (Feet)
20
18
16
14
12
10
8
6
4
2
0
0
200
400
600
800
1000
1200
Elapsed Seconds
Penetration

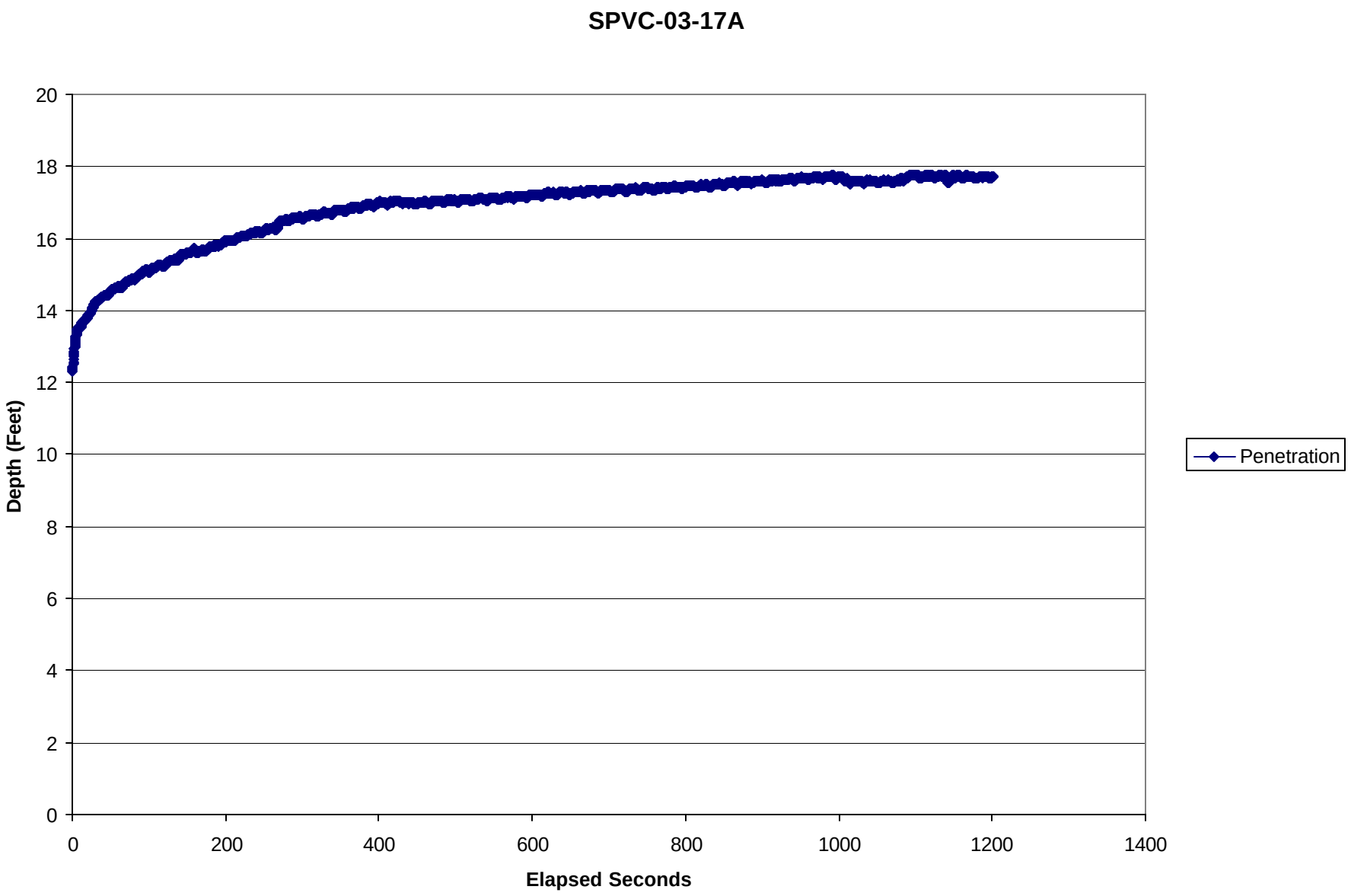

SPVC-03-13
Depth (Feet)
20
18
16
14
12
10
8
6
4
2
0
0
100
200
300
400
500
600
700
Elapsed Seconds
Penetration

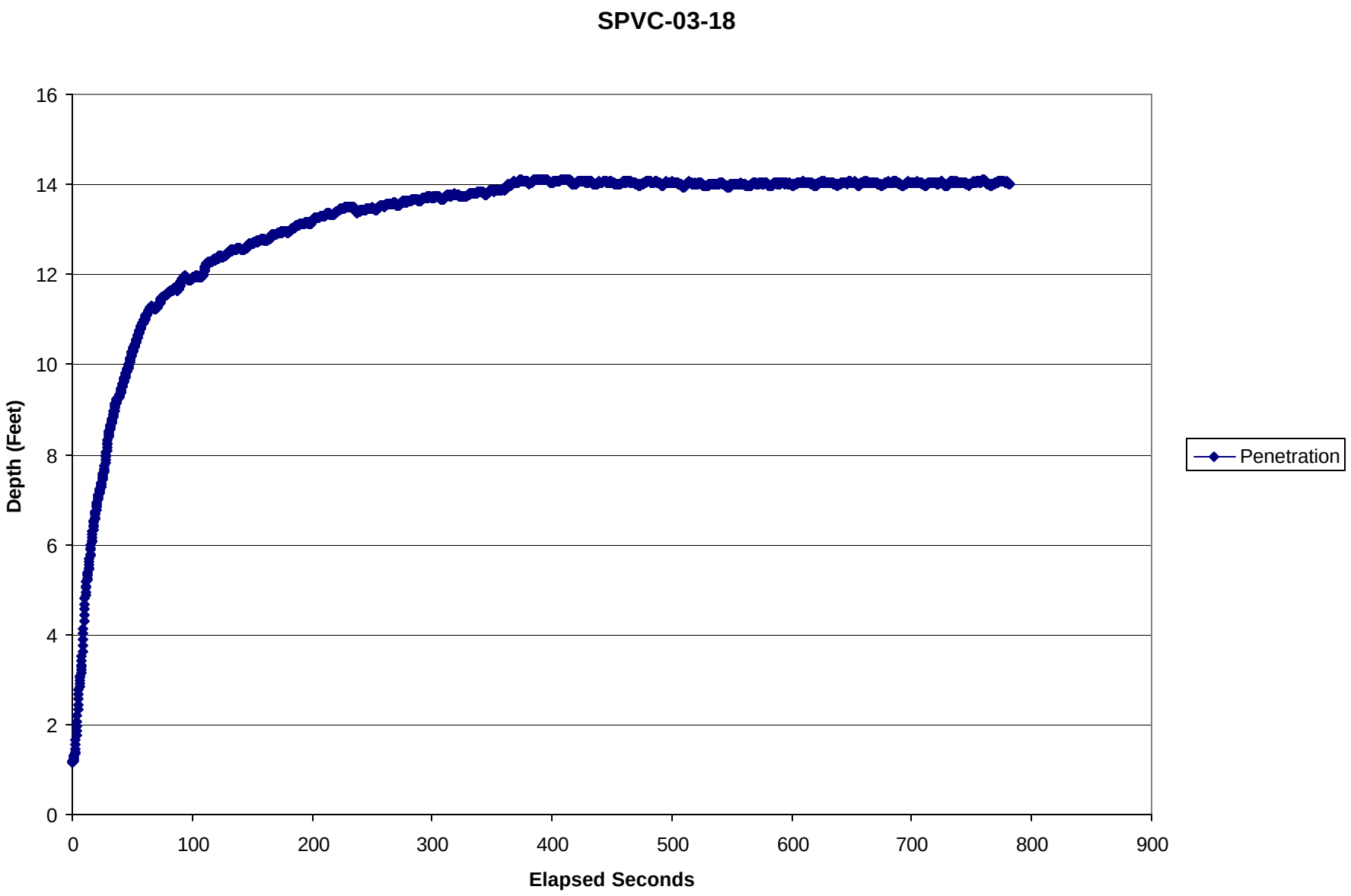

SPVC-03-14
Depth (Feet)
20
18
16
14
12
10
8
6
4
2
0
0
20
40
60
80
100
120
Elapsed Seconds
Penetration

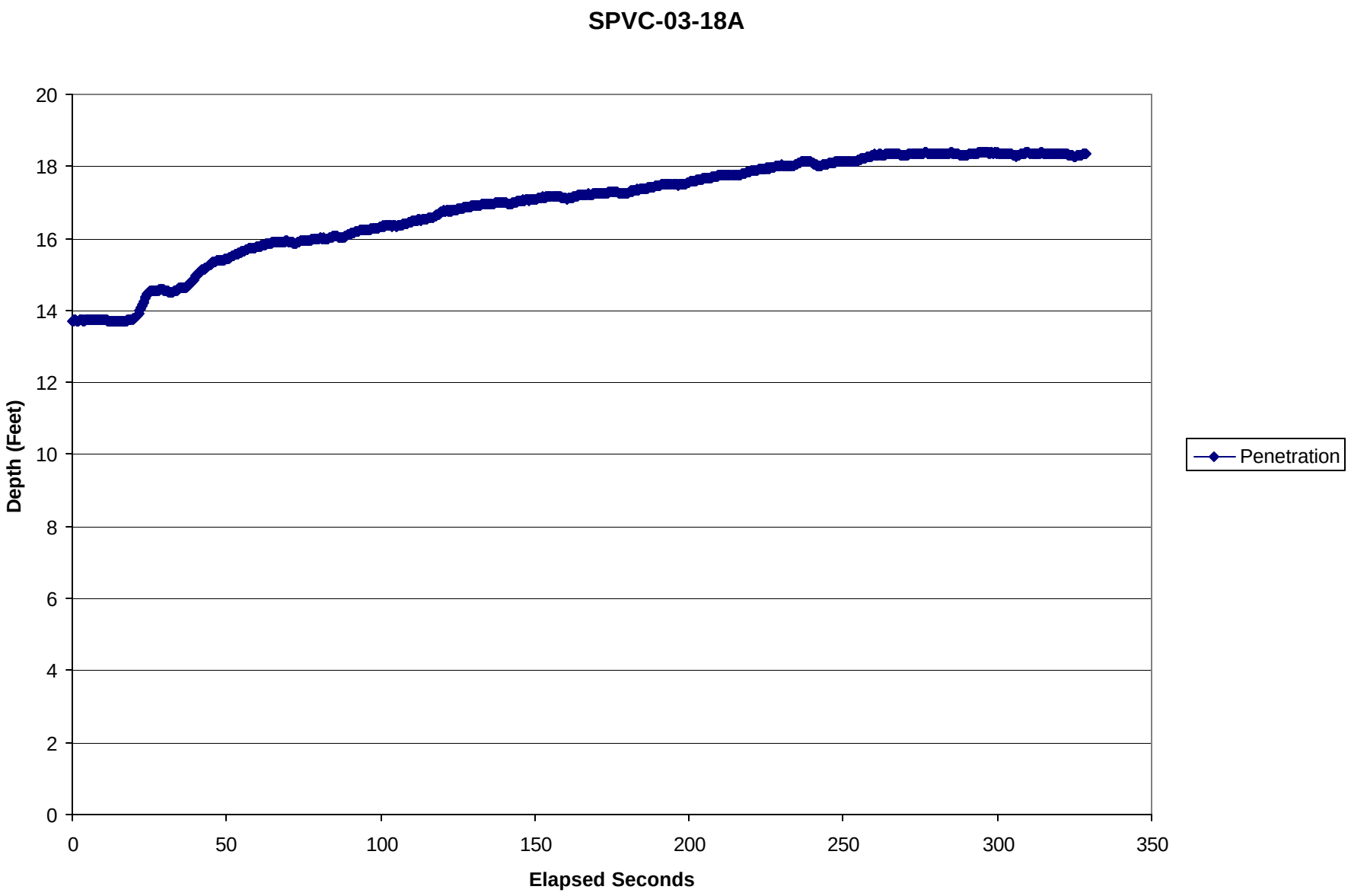

SPVC-03-15
Depth (Feet)
20
18
16
14
12
10
8
6
4
2
0
0
200
400
600
800
1000
1200
1400
1600
Elapsed Seconds
Penetration

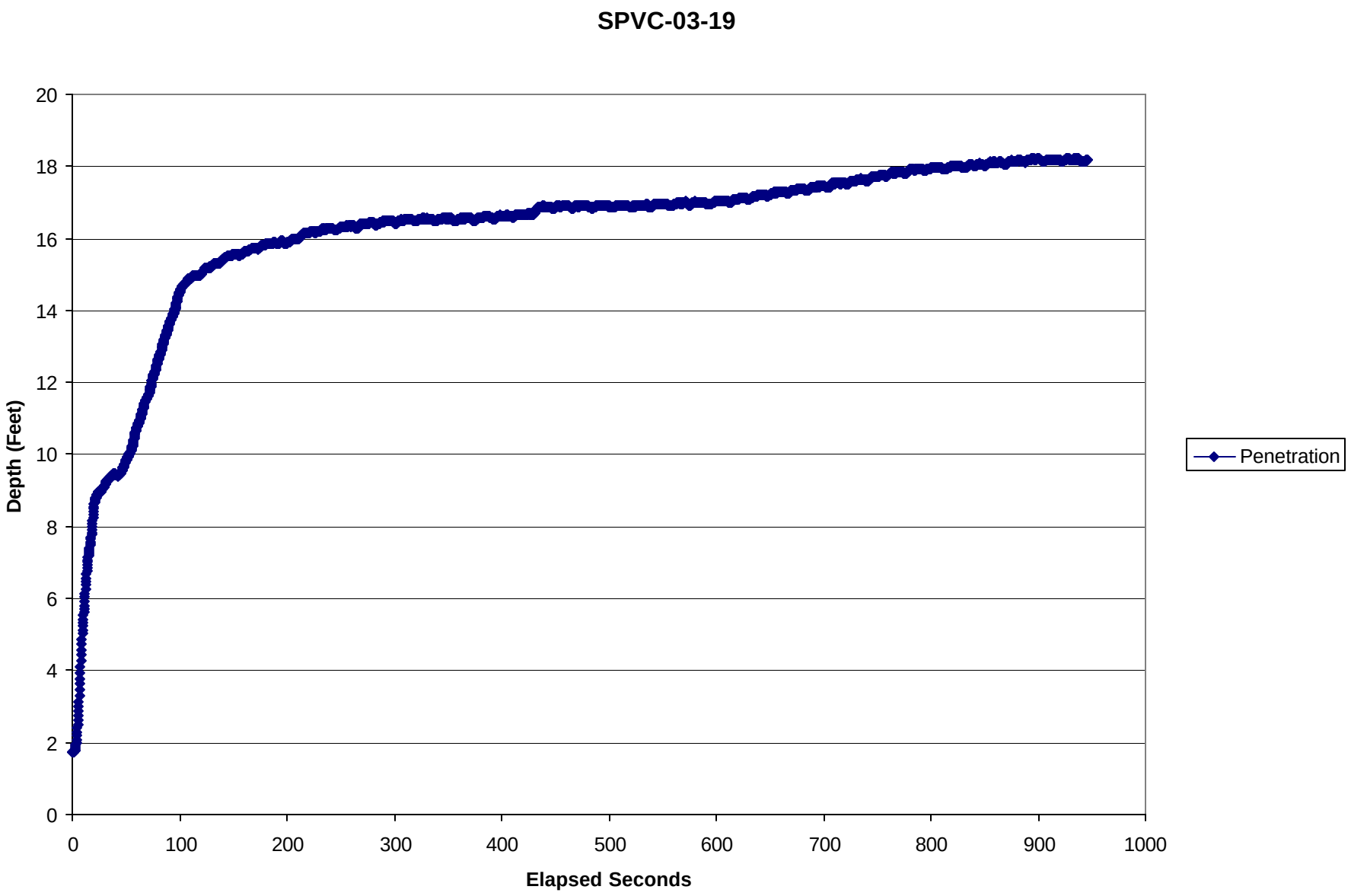

SPVC-03-16
Depth (Feet)
20
18
16
14
12
10
8
6
4
2
0
0
100
200
300
400
500
600
700
800
Elapsed Seconds
Penetration

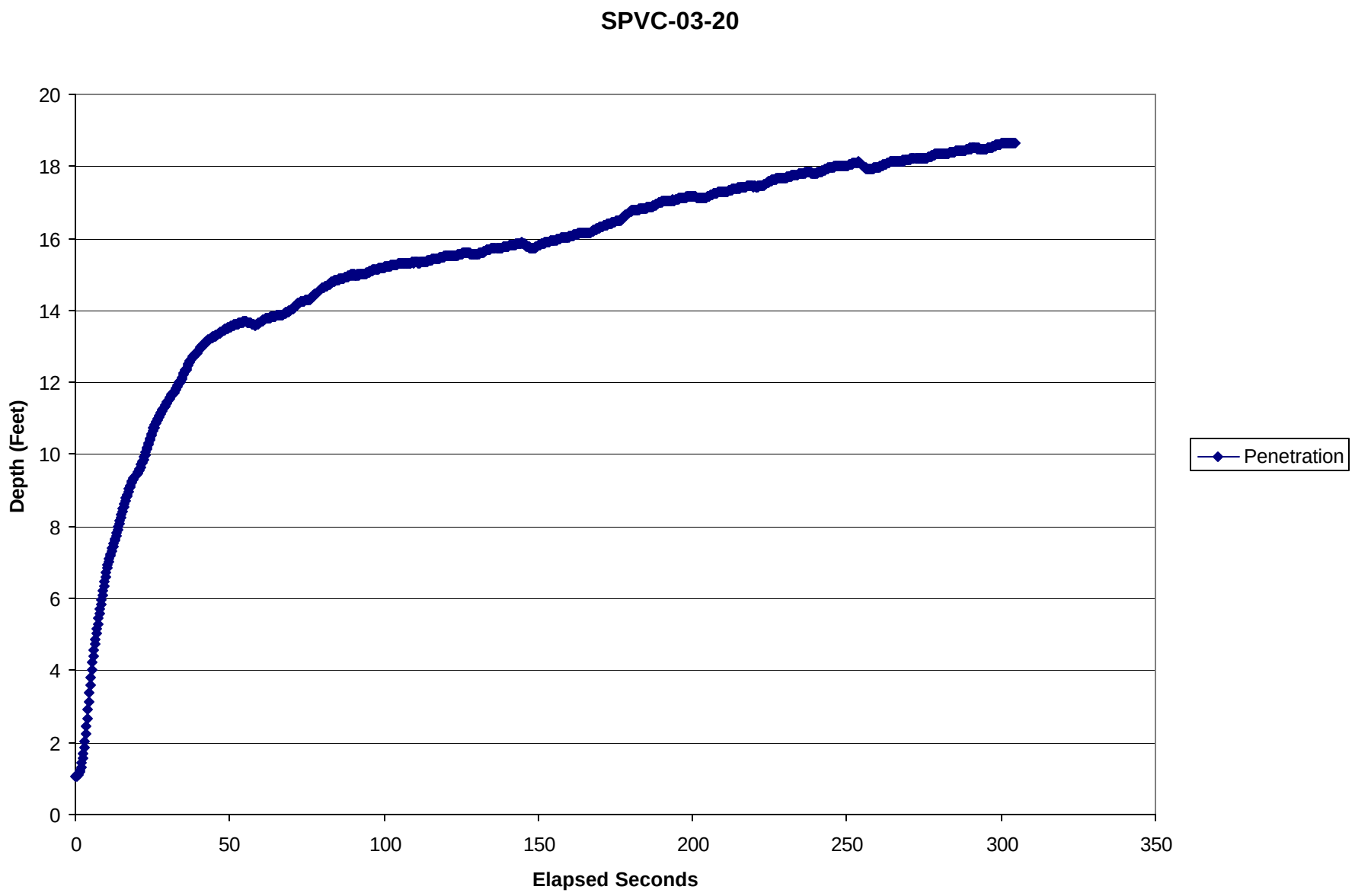

SPVC-03-17
Depth (Feet)
14
12
10
8
6
4
2
0
0
200
400
600
800
1000
1200
1400
1600
Elapsed Seconds
Penetration

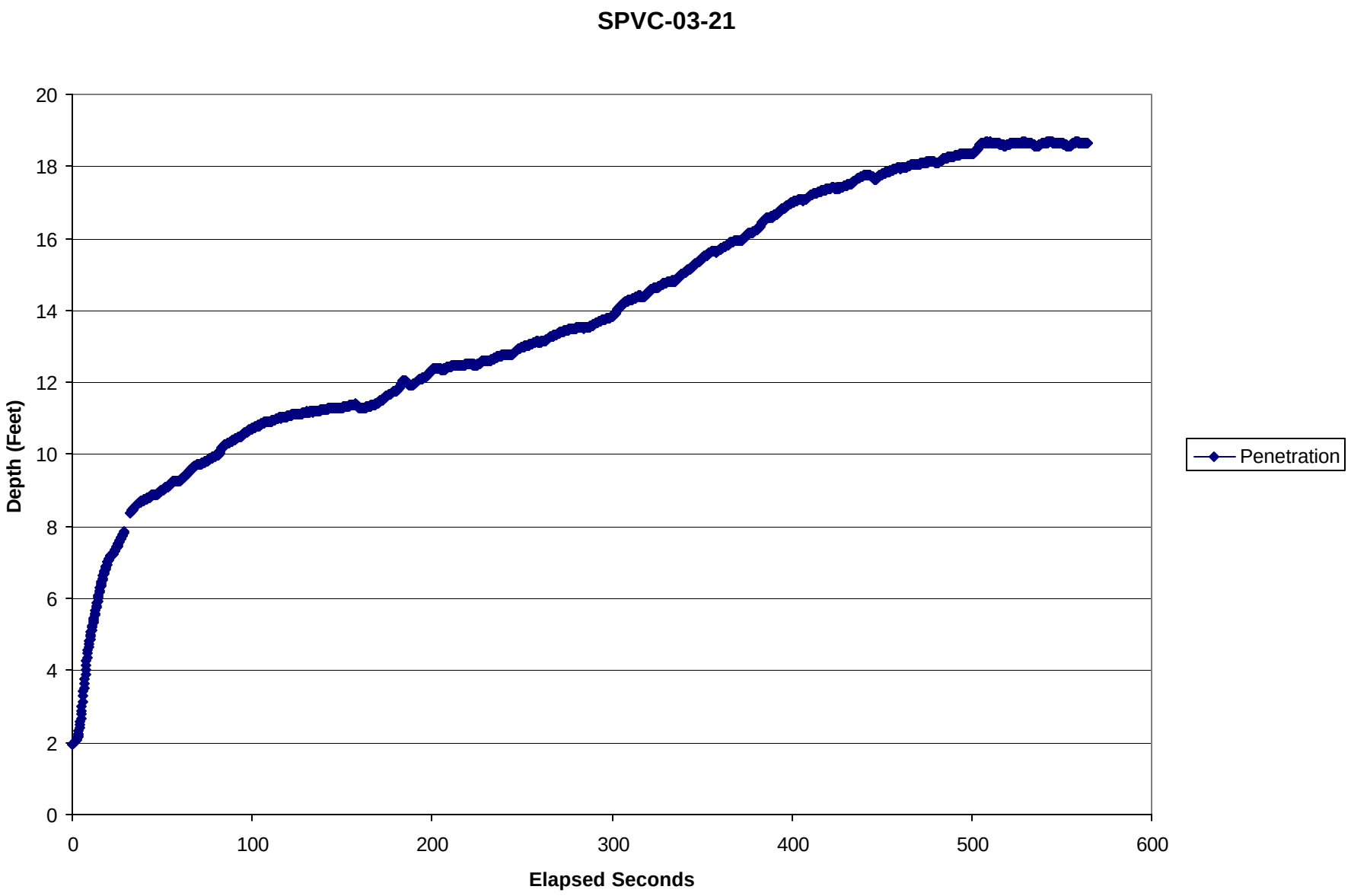

SPVC-03-17A
Depth (Feet)
20
18
16
14
12
10
8
6
4
2
0
0
200
400
600
800
1000
1200
1400
Elapsed Seconds
Penetration

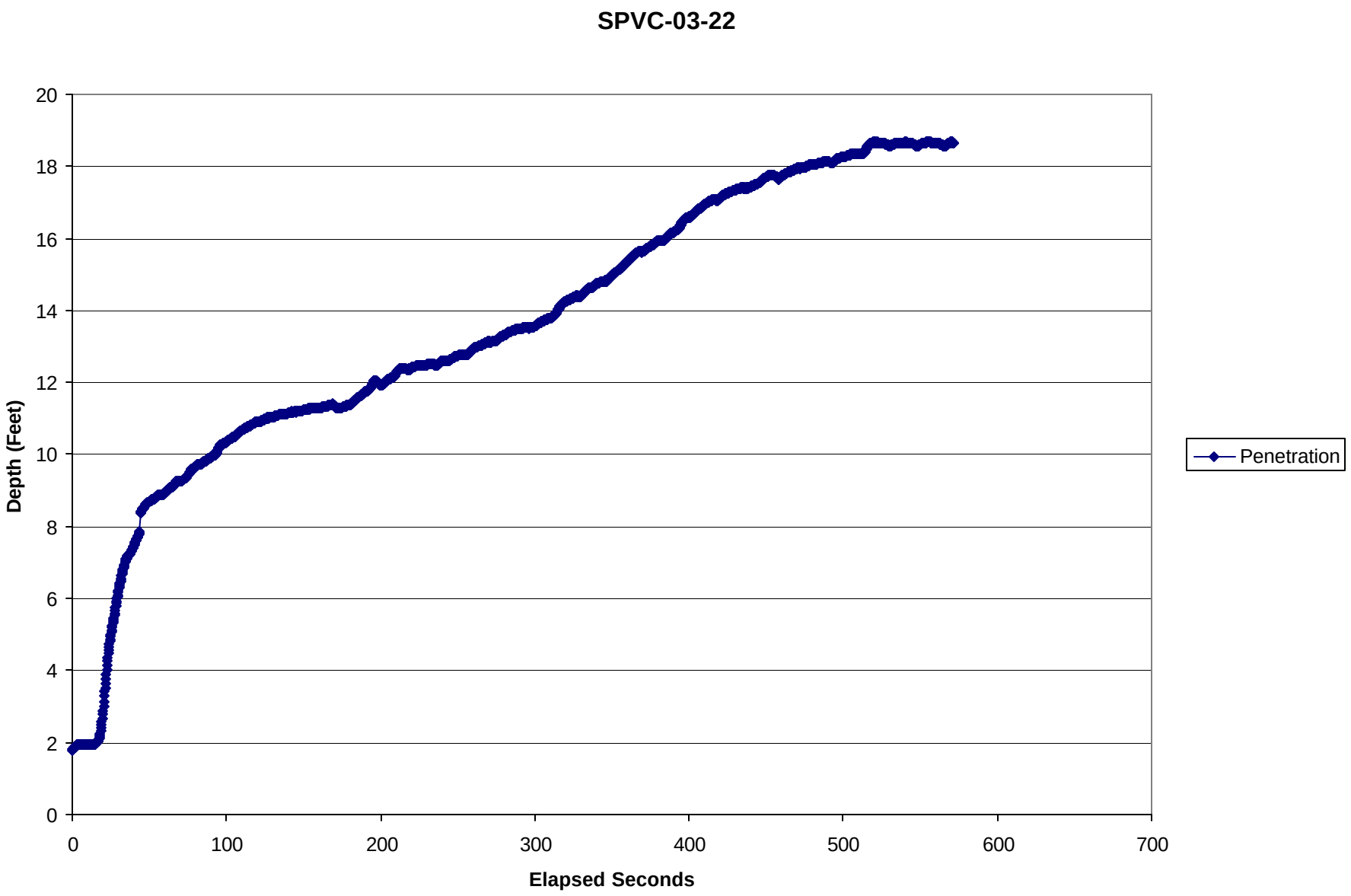

SPVC-03-18
Depth (Feet)
16
14
12
10
8
6
4
2
0
0
100
200
300
400
500
600
700
800
900
Elapsed Seconds
Penetration

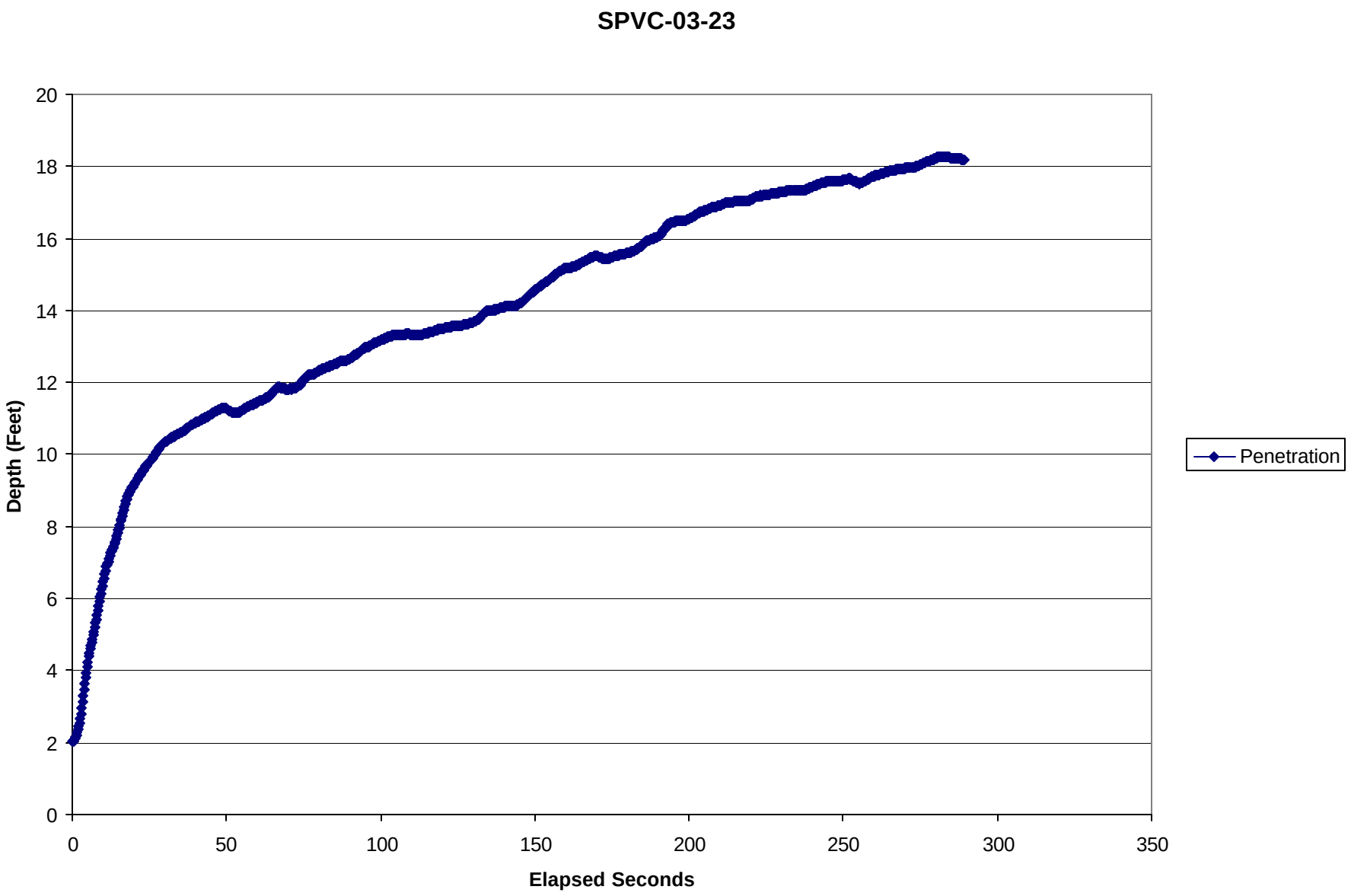

SPVC-03-18A
Depth (Feet)
20
18
16
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
Elapsed Seconds
Penetration

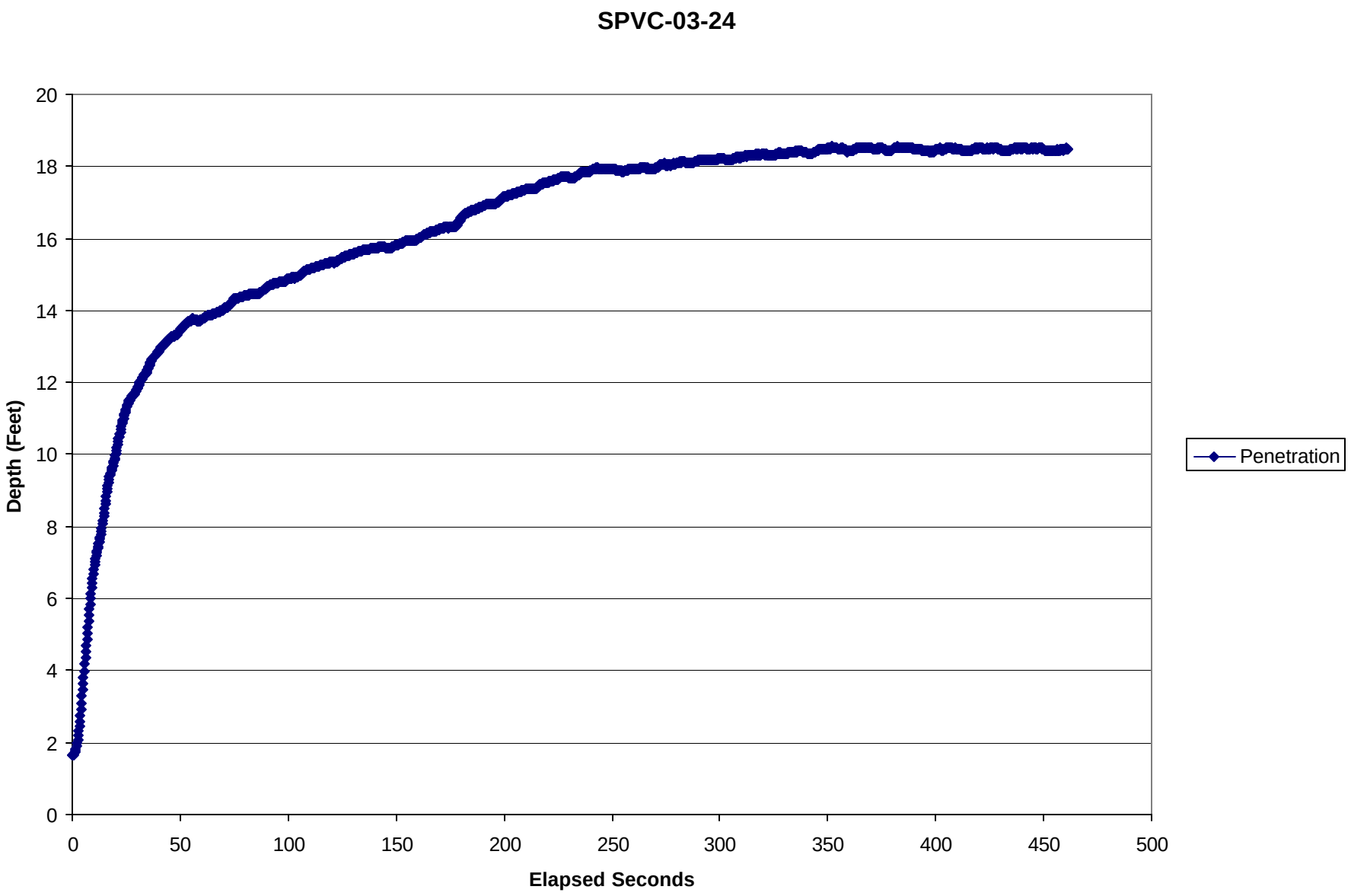

SPVC-03-19
Depth (Feet)
20
18
16
14
12
10
8
6
4
2
0
0
100
200
300
400
500
600
700
800
900
1000
Elapsed Seconds
Penetration

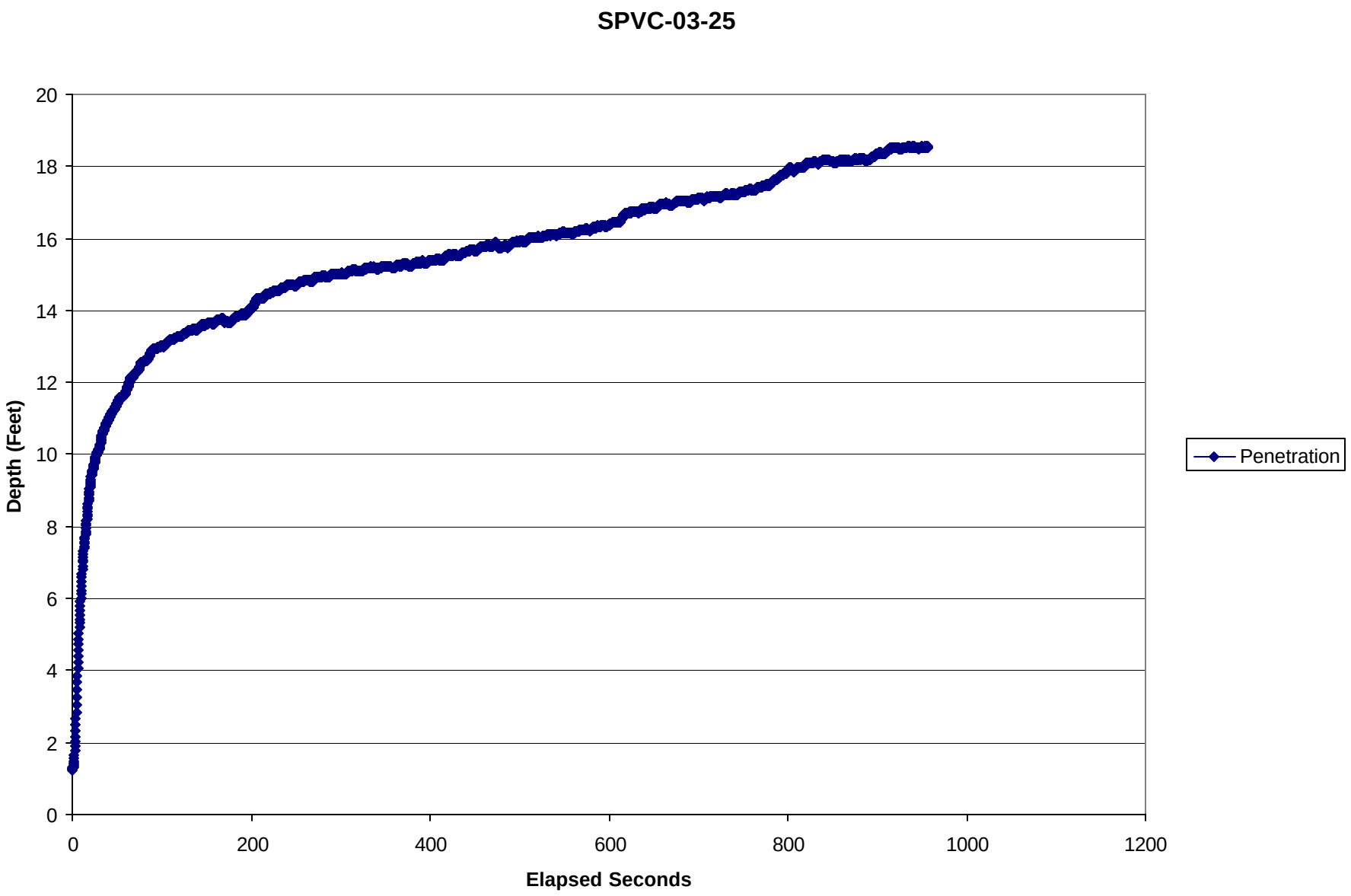

SPVC-03-20
Depth (Feet)
20
18
16
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
Elapsed Seconds
Penetration


SPVC-03-21
Depth (Feet)
20
18
16
14
12
10
8
6
4
2
0
0
100
200
300
400
500
600
Elapsed Seconds
Penetration


SPVC-03-22
Depth (Feet)
20
18
16
14
12
10
8
6
4
2
0
0
100
200
300
400
500
600
700
Elapsed Seconds
Penetration


SPVC-03-23
Depth (Feet)
20
18
16
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
Elapsed Seconds
Penetration


SPVC-03-24
Depth (Feet)
20
18
16
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
400
450
500
Elapsed Seconds
Penetration


SPVC-03-25
Depth (Feet)
20
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12
10
8
6
4
2
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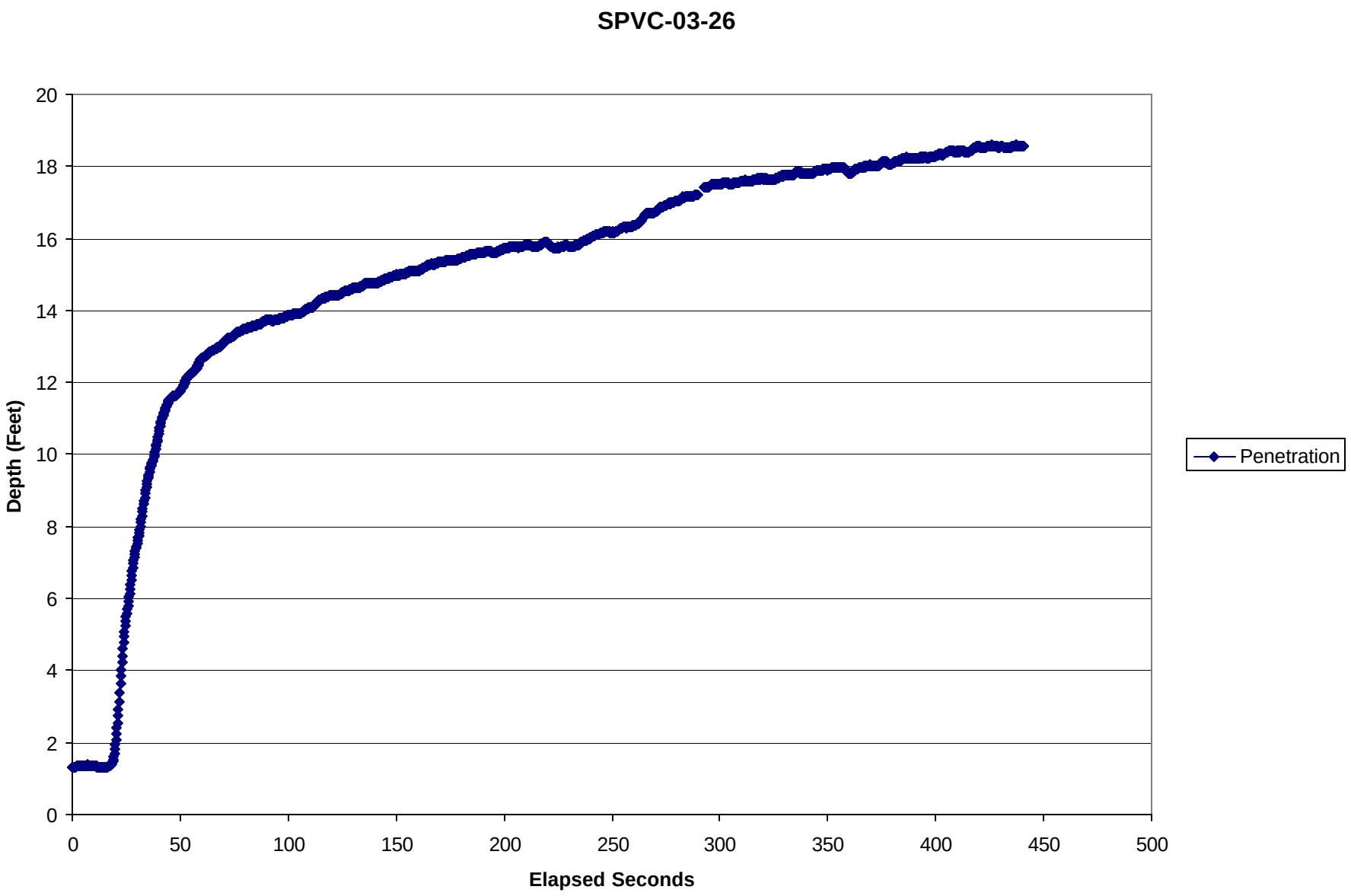
200
400
600
800
1000
1200
Elapsed Seconds
Penetration


SPVC-03-26
Depth (Feet)
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18
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14
12
10
8
6
4
2
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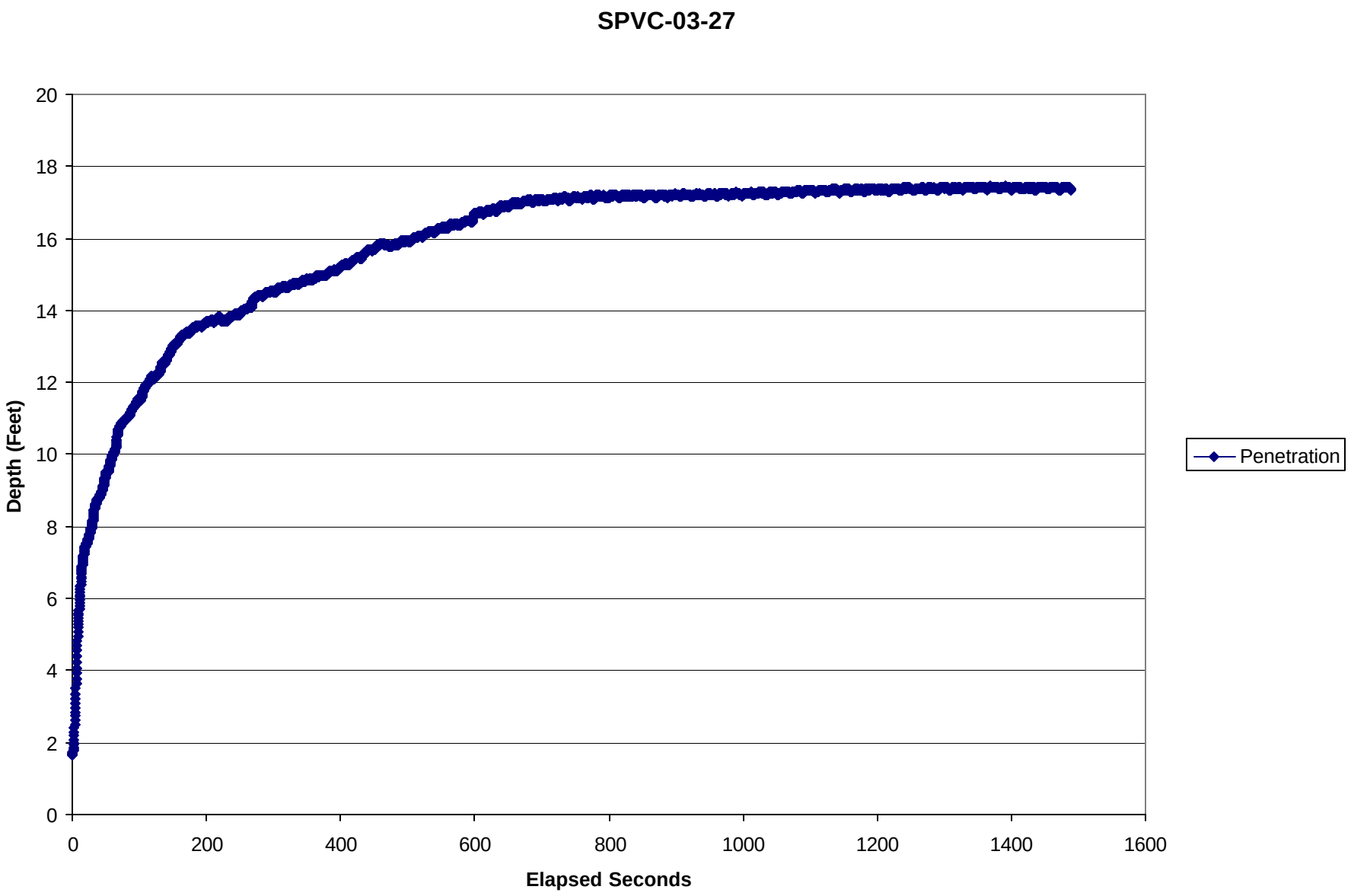
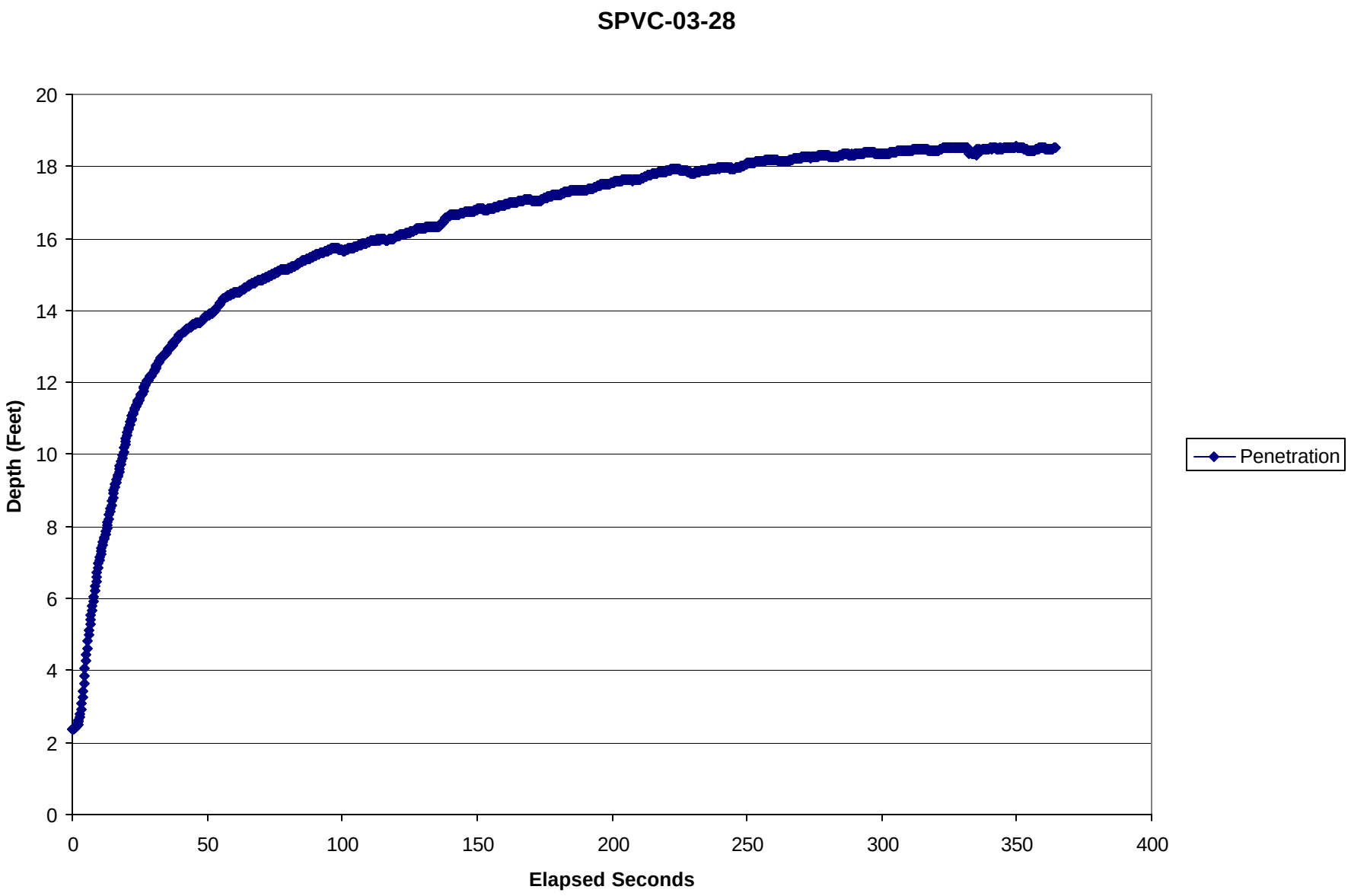
100
150
200
250
300
350
400
450
500
Elapsed Seconds
Penetration


SPVC-03-27
Depth (Feet)
20
18
16
14
12
10
8
6
4
2
0
0
200
400
600
800
1000
1200
1400
1600
Elapsed Seconds
Penetration


SPVC-03-28
Depth (Feet)
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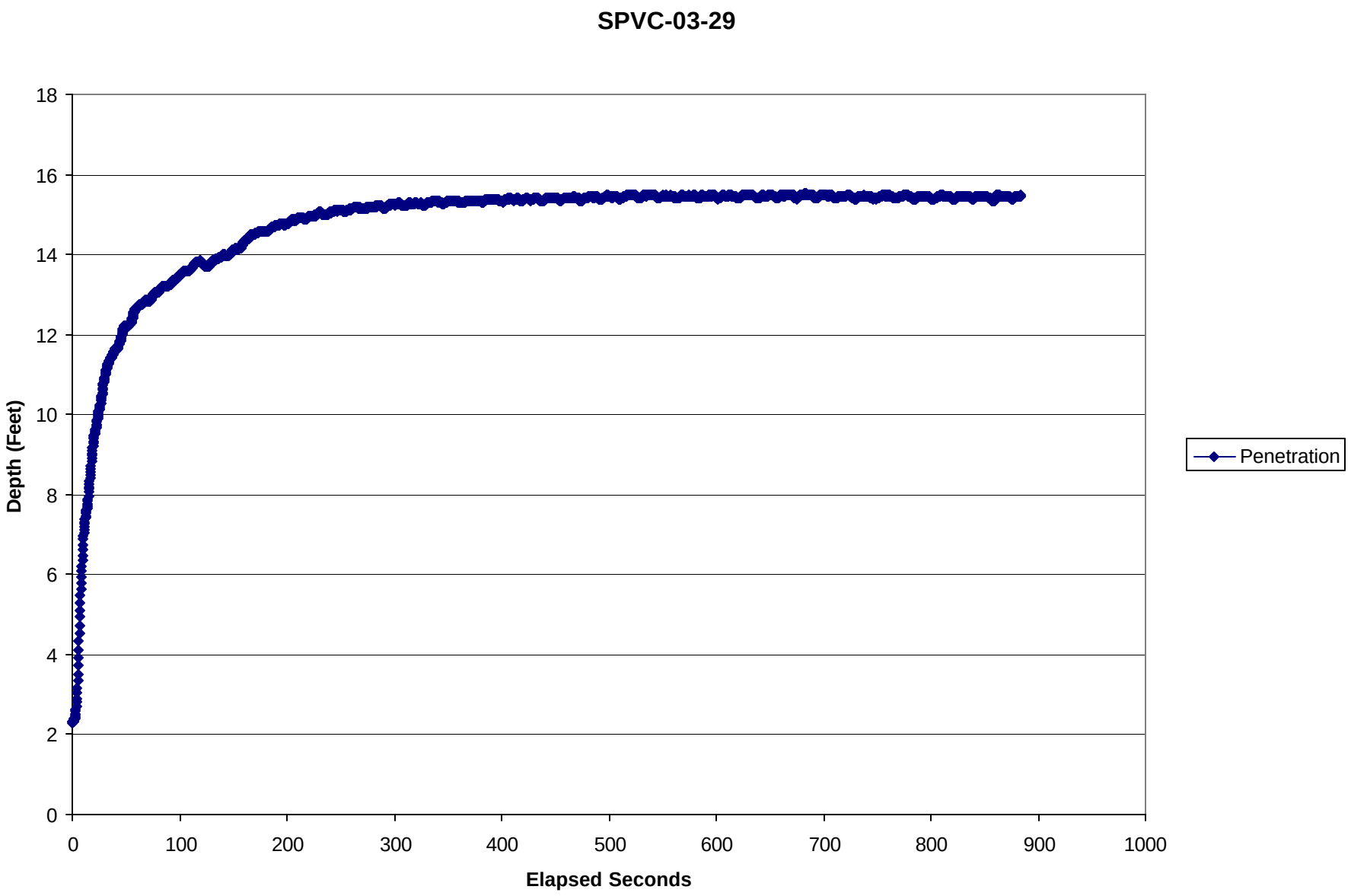
18
16
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
400
Elapsed Seconds
Penetration


SPVC-03-29
Depth (Feet)
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16
14
12
10
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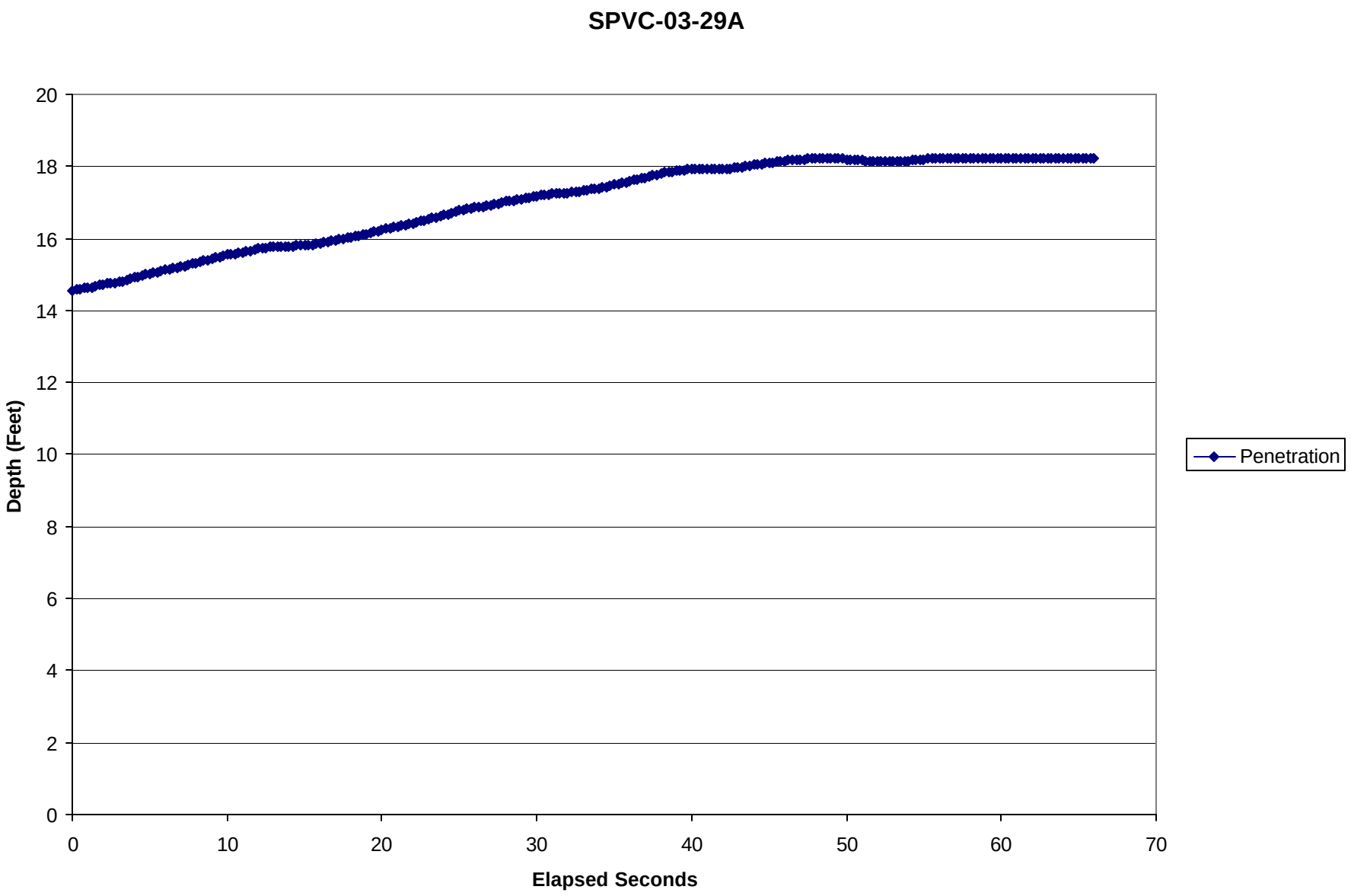
6
4
2
0
0
100
200
300
400
500
600
700
800
900
1000
Elapsed Seconds
Penetration


SPVC-03-29A
Depth (Feet)
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18
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12
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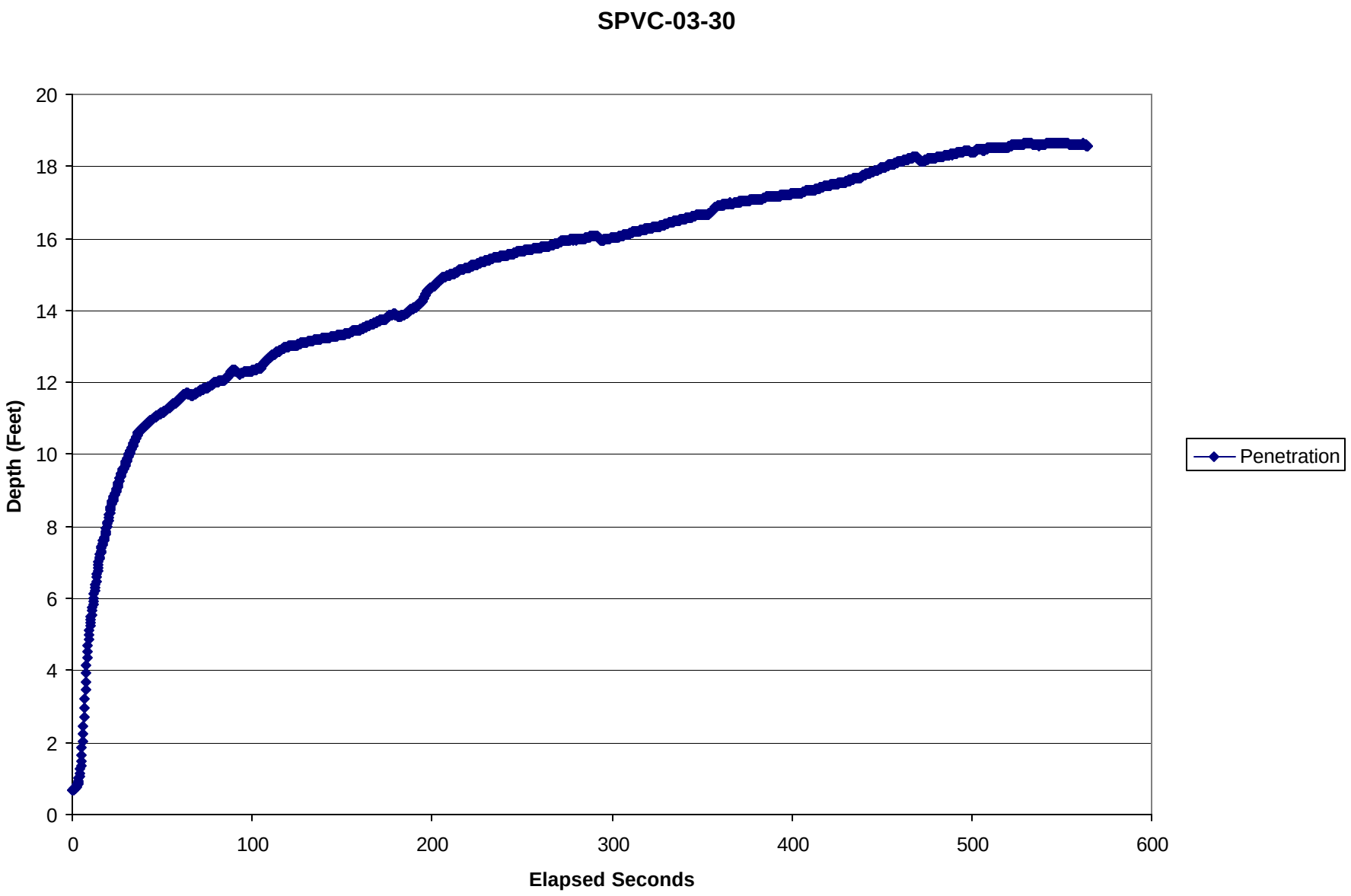
8
6
4
2
0
0
10
20
30
40
50
60
70
Elapsed Seconds
Penetration


SPVC-03-30
Depth (Feet)
20
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8
6
4
2
0
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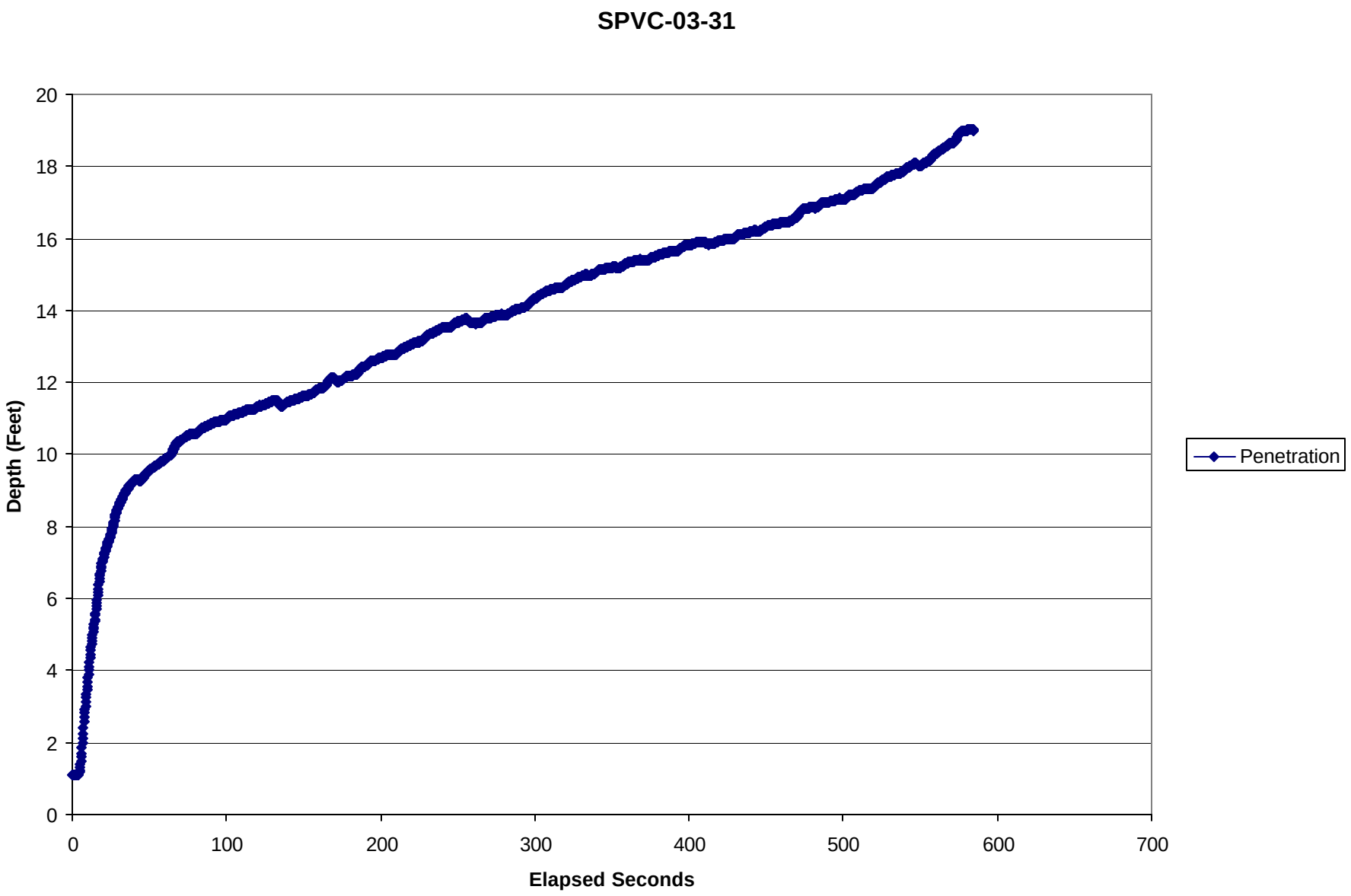
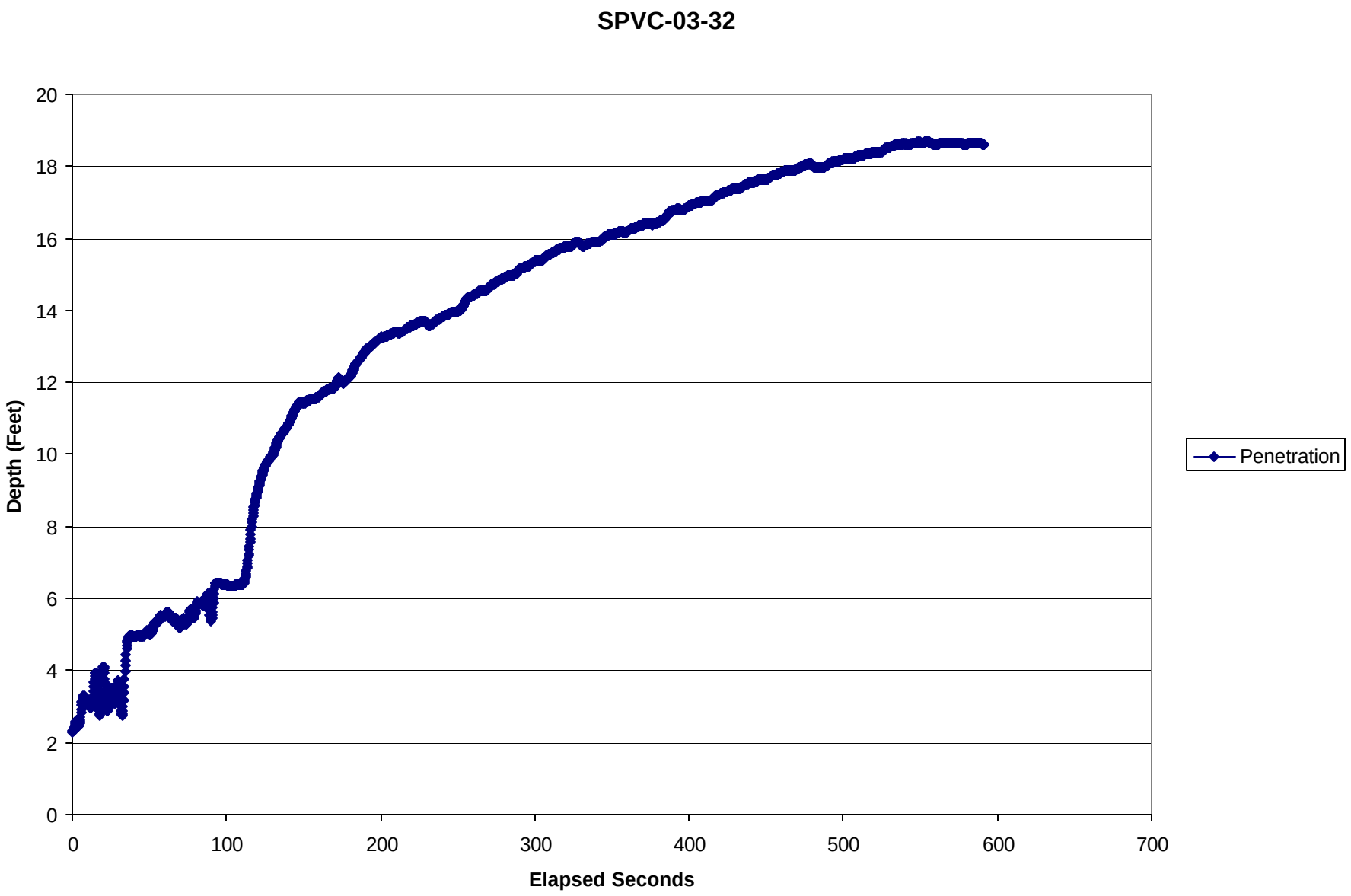
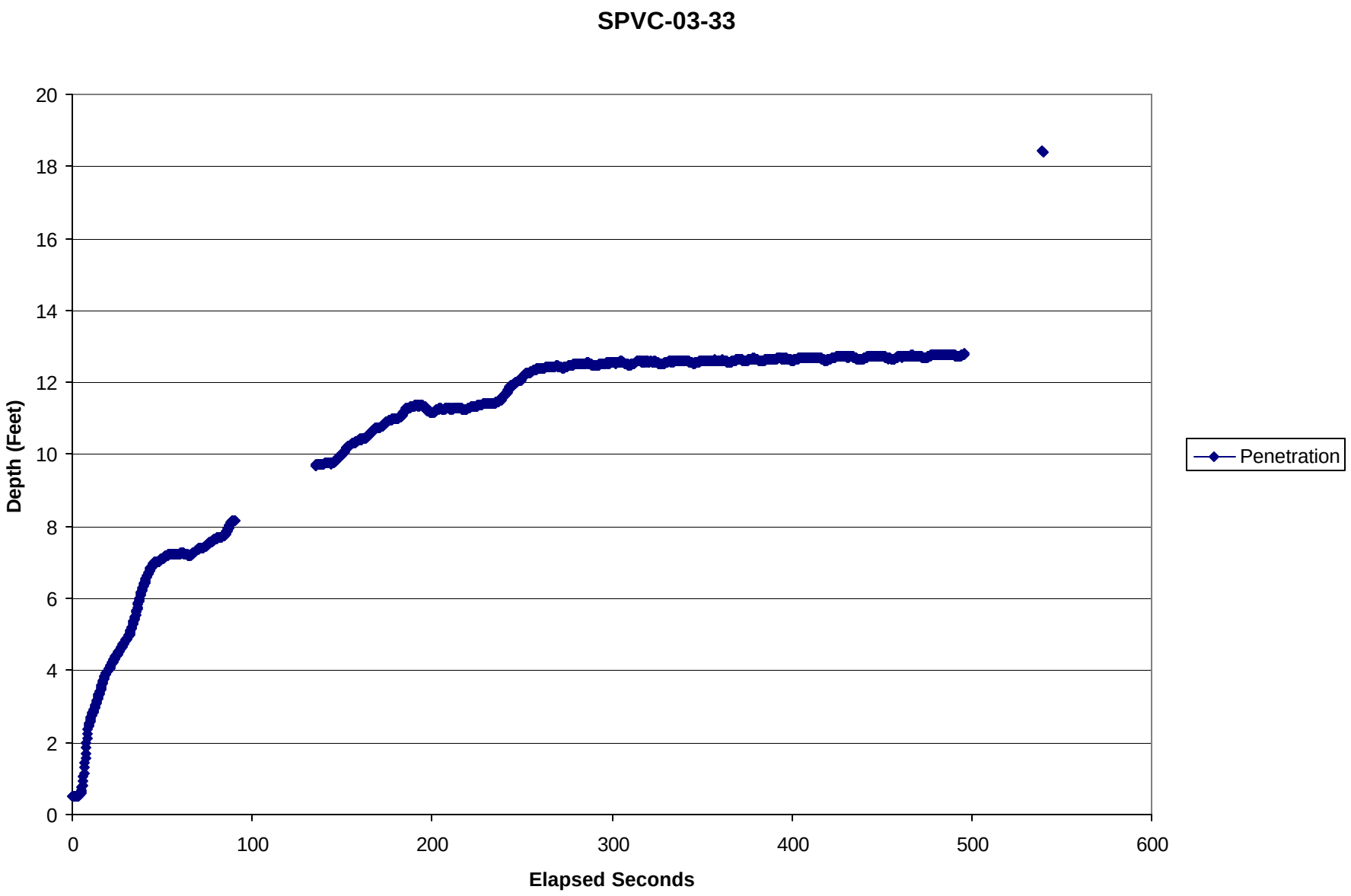
100
200
300
400
500
600
Elapsed Seconds
Penetration


SPVC-03-31
Depth (Feet)
Elapsed Seconds
Penetration
0
2
4
6
8
10
12
14
16
18
20
0
100
200
300
400
500
600
700


SPVC-03-32
Depth (Feet)
20
18
16
14
12
10
8
6
4
2
0
0
100
200
300
400
500
600
700
Elapsed Seconds
Penetration


SPVC-03-33
Depth (Feet)
20
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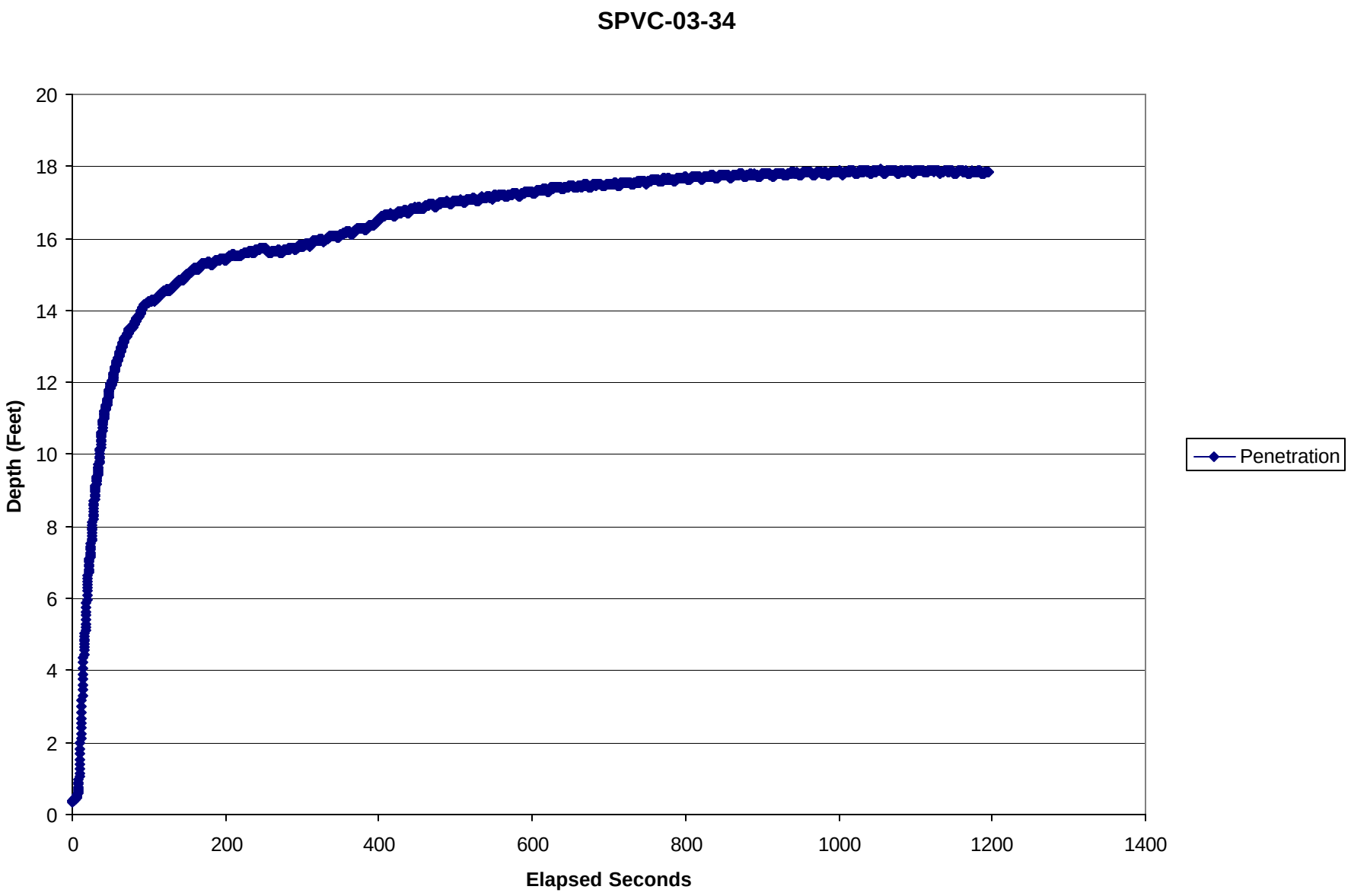
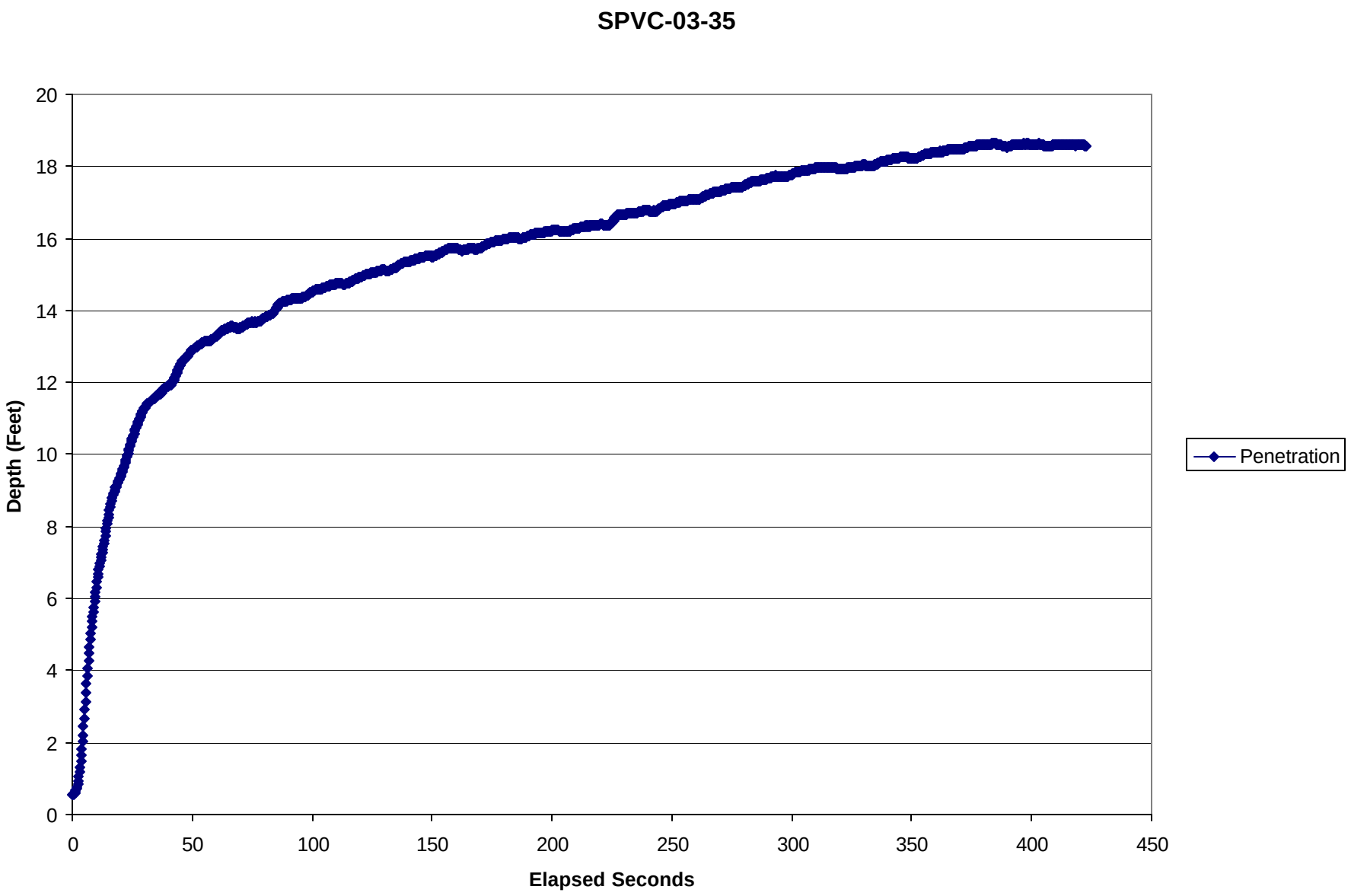
16
14
12
10
8
6
4
2
0
0
100
200
300
400
500
600
Elapsed Seconds
Penetration


SPVC-03-34
Depth (Feet)
20
18
16
14
12
10
8
6
4
2
0
0
200
400
600
800
1000
1200
1400
Elapsed Seconds
Penetration


SPVC-03-35
Depth (Feet)
20
18
16
14
12
10
8
6
4
2
0
0
50
100
150
200
250
300
350
400
450
Elapsed Seconds
Penetration

APPENDIX 13
2005 SANDY POINT VIBRACORE LOGS

Coastal Planning & Engineering
2481 N.W. Boca Raton Blvd.
Boca Raton, Florida 33431
Phone # 1-561-391-8102

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 is initially based on visual field examinations and are identified on the core logs under the Classification of Materials Description. Final classifications are based on laboratory sieve analyses and are identified on the core logs in the Legend and under Remarks.

Silty, shelly, etc. — The indicated sediment type is present. The estimated percentage indicated by the Unified Soil Classification System descriptive terms selected to describe the sediment.

Definition of descriptive terms

Clean	Free of silt or clay
Very	To a high degree
Slightly	To a small degree
Isolated	Limited occurrence
Occasional	Infrequently present
Tight	Dense compacted

Grain size terms

Cobbles – above 3”
Gravel – 3” sieve to # 4 sieve
- Coarse – 3” sieve to ¾” sieve
- Fine – ¾” sieve to # 4 sieve

Sand – # 4 sieve to # 200 sieve
- Coarse - # 4 sieve to # 10 sieve
- Medium - # 10 sieve to # 40 sieve
- Fine - # 40 sieve to # 200 sieve

Fine – (silt or clay) < # 200 sieve

Proportional definition of descriptive terms

Descriptive Term	Range of Proportions
Sandy, gravelly, etc.	35 % to 50 %
Some	20 % to 35 %
Little	10 % to 20 %
Trace	1 % to 10 %
Coarse to fine	All sizes
Coarse to medium	10 % fine
Medium to fine	10 % coarse
Coarse	10 % medium and fine
Medium	10 % coarse and fine
Fine	10 % coarse and medium

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

Coastal Planning & Engineering
2481 N.W. Boca Raton Blvd.
Boca Raton, Florida 33431
Phone # 1-561-391-8102

Legend for Geotechnical Data

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

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

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Legend for Geotechnical Data

The naming convention used by Coastal Planning and Engineering 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: jet probe (JP), vibracore (VC) or surface sample (SS)
- Collection year (yy)
- Identification number
- Sample identification in the case of jet probes or vibracores
- Composite samples are indicated by COMP or SOBC following the identification number. COMP represents a composite developed to characterize beach compatible material. SOBC represents a composite developed to characterize sandy overburden material to be used in marsh design.

Format examples:
A) SPVC-05-01
B) SPVC-05-04 S#3

Example A is a vibracore number 1, collected in the Sandy Point area in the year 2005.

Example B refers to sample number 3 taken from vibracore number 4, which was collected in the Sandy Point area in 2005.

No specific format is followed for area name abbreviations, however, the name of the area is always given in the appendix title page where the data is presented.

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

Boring Designation SPVC-05-01

DRILLING LOG

DIVISION	
INSTALLATION	
SHEET 1 OF 1 SHEETS	
1. PROJECT	Sandy Point 2005 Sand Search Sandy Point, Louisiana
2. BORING DESIGNATION	SPVC-05-01
LOCATION COORDINATES	X = 3,863,462 Y = 225,058
3. DRILLING AGENCY	GFA International
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Fred Kaub
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	0.0 Ft.
7. DEPTH DRILLED INTO ROCK	0.0 Ft.
8. TOTAL DEPTH OF BORING	27.2 Ft.
9. SIZE AND TYPE OF BIT	3.5 In.
10. COORDINATE SYSTEM/DATUM	Louisiana South State Plane
HORIZONTAL	NAD 1983
VERTICAL	NAVD 88
11. MANUFACTURER'S DESIGNATION OF DRILL	Pneumatic Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	
DISTURBED	
UNDISTURBED (UD)	
13. TOTAL NUMBER CORE BOXES	
14. ELEVATION GROUND WATER	
15. DATE BORING	STARTED 08-12-05 17:43
COMPLETED	08-12-05 18:10
16. ELEVATION TOP OF BORING	-34.0 Ft.
17. TOTAL RECOVERY FOR BORING	27.2 Ft.
18. SIGNATURE AND TITLE OF INSPECTOR	KW

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-34.0	0.0					
-36.4	2.4		SAND, fine grained, quartz, little silt, trace organics, trace shell hash, very dark gray (5Y-3/1), (SM).			
-37.0	3.0					
-38.3	4.3		Sandy CLAY, trace organics, dark gray (5Y-4/1), (CL).			
-38.7	4.7					
			SAND, fine grained, quartz, trace organics, trace shell hash, trace silt, dark gray (5Y-4/1), (SP).			
			Sandy CLAY, trace organics, organic laminae throughout, dark gray (5Y-4/1), (CL).			
-46.4	12.4		SAND, fine grained, quartz, trace silt, dark gray (5Y-4/1) clay lens from 11.0'-11.1', wood fragment (0.25 x3") @ 11.2', dark gray (5Y-4/1), (SP).			
-46.9	12.9					
			CLAY, brown (10YR-4/3), (CL).			
			SAND, fine grained, quartz, trace silt, organic laminae from 17.2'-17.5', and @ 20.6'; partially lithified clay ball @ 16.1' and 20.9', olive gray (5Y-4/2), (SP).		1	Sample #1, Depth = 20.6' Mean (mm): 0.16, Phi Sorting: 0.37 Shell: 0%, Fines (230): 3.52% (SP)
-57.3	23.3					
			SAND, fine grained, quartz, trace silt, organic lamina @ 26.3', partially lithified clay ball @ 24.6', olive gray (5Y-4/2), (SP-SM).		2	Sample #2, Depth = 26.0' Mean (mm): 0.14, Phi Sorting: 0.32 Shell: 0%, Fines (230): 3.94% (SP-SM)
-61.2	27.2					
			End of Boring			

0 5 10 15 20 25 30 35 40 45 50 55

FLORIDA DEP ROSS SANDY_POINT_05.GPJ FL DEP ROSS.GDT 9/13/05

SAJ FORM 1836 **MODIFIED FOR THE FLORIDA DEP**
JUN 02 JUN 04

Boring Designation SPVC-05-01A

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS

1. PROJECT Sandy Point 2005 Sand Search Sandy Point, Louisiana	9. SIZE AND TYPE OF BIT: 3.5 In.
	10. COORDINATE SYSTEM/DATUM: Louisiana South State Plane; HORIZONTAL: NAD 1983; VERTICAL: NAVD 88
2. BORING DESIGNATION: SPVC-05-01A; LOCATION COORDINATES: X = 3,863,470 Y = 225,052	11. MANUFACTURER'S DESIGNATION OF DRILL: Pneumatic Vibracore; ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: GFA International; CONTRACTOR FILE NO.	12. TOTAL SAMPLES; DISTURBED; UNDISTURBED (UD)
4. NAME OF DRILLER: Fred Kaub	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED; DEG. FROM VERTICAL; BEARING	14. ELEVATION GROUND WATER
	15. DATE BORING: STARTED 08-13-05 07:40; COMPLETED 08-13-05 07:58
6. THICKNESS OF OVERBURDEN: 0.0 Ft.	16. ELEVATION TOP OF BORING: -34.0 Ft.
7. DEPTH DRILLED INTO ROCK: 0.0 Ft.	17. TOTAL RECOVERY FOR BORING: 18.5 Ft.
8. TOTAL DEPTH OF BORING: 40.0 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: KW

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-34.0	0.0		Jetted to 21.0'.			
-55.0	21.0		SAND, fine to medium grained, quartz, trace silt, partially lithified clay ball @ 24.3'; organic laminae from 23.8'-24.1', 25.3'-25.6', at 31.5', and 32.0'- 32.6'; dark gray (5Y-4/1) clay pockets (2"x3") @ 28.2', (0.75"x1") @ 33.6', and (2"x1") @ 35.4'; brown (10YR-4/3) clay pockets (2"x 3") @ 29.0' and (2"x1") @ 35.4', olive gray (5Y-4/2), (SP-SM).		1	Sample #1, Depth = 38.7' Mean (mm): 0.16, Phi Sorting: 0.40 Shell: 0%, Fines (230): 5.79% (SP-SM)
-73.5	39.5					
-74.0	40.0		No Recovery. End of Boring			

0 5 10 15 20 25 30 35 40 45 50 55

FLORIDA DEP ROSS SANDY_POINT_05.GPJ FL DEP ROSS.GDT 9/13/05

SAJ FORM 1836 MODIFIED FOR THE FLORIDA DEP
JUN 02 JUN 04

Boring Designation SPVC-05-02

DRILLING LOG

DIVISION	
INSTALLATION	
SHEET 1 OF 1 SHEETS	
1. PROJECT	Sandy Point 2005 Sand Search Sandy Point, Louisiana
2. BORING DESIGNATION	SPVC-05-02
LOCATION COORDINATES	X = 3,863,243 Y = 224,562
3. DRILLING AGENCY	GFA International
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Fred Kaub
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	0.0 Ft.
7. DEPTH DRILLED INTO ROCK	0.0 Ft.
8. TOTAL DEPTH OF BORING	28.0 Ft.
9. SIZE AND TYPE OF BIT	3.5 In.
10. COORDINATE SYSTEM/DATUM	Louisiana South State Plane
HORIZONTAL	NAD 1983
VERTICAL	NAVD 88
11. MANUFACTURER'S DESIGNATION OF DRILL	Pneumatic Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	
DISTURBED	
UNDISTURBED (UD)	
13. TOTAL NUMBER CORE BOXES	
14. ELEVATION GROUND WATER	
15. DATE BORING	STARTED 08-13-05 09:39
COMPLETED	08-13-05 09:59
16. ELEVATION TOP OF BORING	-34.4 Ft.
17. TOTAL RECOVERY FOR BORING	25.3 Ft.
18. SIGNATURE AND TITLE OF INSPECTOR	KW

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-34.4	0.0					
-38.7	4.3		CLAY, trace sand, olive gray (5Y-4/2), (CL).			
-39.2	4.8		SAND, fine grained, quartz, little silt, trace organics, dark gray (5Y-4/1), (SP-SM).			
-41.0	6.6		CLAY, trace sand, olive gray (5Y-4/2), (CL).			
-41.4	7.0		SAND, fine grained, quartz, trace organics, trace silt, dark gray (5Y-4/1), (SP-SM).			
-42.2	7.8		CLAY, trace sand, olive gray (5Y-4/2), (CL).			
-59.7	25.3		SAND, fine grained, quartz, trace organics, trace silt, olive gray (5Y-4/2) clay pockets (1"x2") @ 9.4' and 17.8', (1"x1") @ 23.8'; organic laminae from 18.4'-19.4' and 25.0'-25.2', dark gray (5Y-4/1), (SP-SM).		1	Sample #1, Depth = 24.8' Mean (mm): 0.16, Phi Sorting: 0.35 Shell: 0%, Fines (230): 5.05% (SP-SM)
-62.4	28.0		No Recovery.			
			End of Boring			

0 5 10 15 20 25 30 35 40 45 50 55

FLORIDA DEP ROSS SANDY_POINT_05.GPJ FL DEP ROSS.GDT 9/13/05

SAJ FORM 1836 **MODIFIED FOR THE FLORIDA DEP**
JUN 02 JUN 04

Boring Designation SPVC-05-02A

DRILLING LOG

DIVISION		INSTALLATION	SHEET 1 OF 1 SHEETS
1. PROJECT: Sandy Point 2005 Sand Search, Sandy Point, Louisiana		9. SIZE AND TYPE OF BIT: 3.5 In.	
		10. COORDINATE SYSTEM/DATUM: Louisiana South State Plane	HORIZONTAL: NAD 1983 / VERTICAL: NAVD 88
2. BORING DESIGNATION: SPVC-05-02A	LOCATION COORDINATES: X = 3,863,254 Y = 224,574	11. MANUFACTURER'S DESIGNATION OF DRILL: Pneumatic Vibracore	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: GFA International	CONTRACTOR FILE NO.	12. TOTAL SAMPLES	DISTURBED / UNDISTURBED (UD)
4. NAME OF DRILLER: Fred Kaub		13. TOTAL NUMBER CORE BOXES	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL / BEARING	14. ELEVATION GROUND WATER	
		15. DATE BORING	STARTED: 08-13-05 11:01 / COMPLETED: 08-13-05 11:18
6. THICKNESS OF OVERBURDEN: 0.0 Ft.		16. ELEVATION TOP OF BORING: -34.4 Ft.	
7. DEPTH DRILLED INTO ROCK: 0.0 Ft.		17. TOTAL RECOVERY FOR BORING: 24 Ft.	
8. TOTAL DEPTH OF BORING: 40.0 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR: KW	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS (Depths and elevations based on measured values)	% REC.	BOX OR SAMPLE	REMARKS
-34.4	0.0					
			Jetted to 16.0'.			
-50.4	16.0					
-51.7	17.3		Jetted material.			
-56.7	22.3		SAND, fine grained, quartz, trace organics, trace silt, olive gray (5Y-4/2), (SP).		1	Sample #1, Depth = 20.0' Mean (mm): 0.17, Phi Sorting: 0.37 Shell: 0%, Fines (230): 3.75% (SP)
-57.8	23.4		CLAY, olive gray (5Y-4/2) sand pocket (2"x3") @ 22.8', black (5Y-2.5/1), (CL).			
-61.7	27.3		SAND, fine grained, quartz, trace organics, trace silt, organic pockets (1"x2") @ 24.8' and (1"x1") @ 25.3', olive gray (5Y-4/2), (SP).		2	Sample #2, Depth = 25.6' Mean (mm): 0.16, Phi Sorting: 0.36 Shell: 0%, Fines (230): 3.75% (SP)
-62.1	27.7		CLAY, trace sand, black (5Y-2.5/1), (CL).		2	
-63.3	28.9		SAND, fine grained, quartz, trace organics, trace silt, olive gray (5Y-4/2), (SP).		2	
-63.5	29.1					
-64.1	29.7		CLAY, trace sand, black (5Y-2.5/1), (CL).		3	Sample #3, Depth = 32.0' Mean (mm): 0.15, Phi Sorting: 0.38 Shell: 0%, Fines (230): 9.47% (SP-SM)
-64.4	30.0		SAND, fine grained, quartz, trace organics, trace silt, olive gray (5Y-4/2), (SP).			
-68.0	33.6					
-68.3	33.9		CLAY, trace sand, black (5Y-2.5/1), (CL).		3	
-70.8	36.4		SAND, fine grained, quartz, trace organics, trace silt, muddy sand pocket (1"x2") @ 32.1', (SP-SM).			
-72.4	38.0					
-73.7	39.3		CLAY, trace sand, black (5Y-2.5/1), (CL).		3	
-74.0	39.6		SAND, fine grained, quartz, trace organics, trace silt, clay laminae from 34.9'-35.2', black (5Y-2.5/1) clay pocket (1"x3") @ 35.6', olive gray (5Y-4/2), (SP-SM).		3	
-74.4	40.0		CLAY, trace sand, olive gray (5Y-4/2) sand lenses (0.75") @ 36.6' and (1.5") @ 36.8', black (5Y-2.5/1), (CL).			
			SAND, fine grained, quartz, trace organics, trace silt, olive gray (5Y-4/2), (SP-SM).			
			CLAY, trace sand, black (5Y-2.5/1), (CL).			
			SAND, fine grained, quartz, trace organics, trace silt, olive gray (5Y-4/2), (SP-SM).			
			End of Boring			

0 5 10 15 20 25 30 35 40 45 50 55

FLORIDA DEP ROSS SANDY_POINT_05.GPJ FL DEP ROSS.GDT 9/13/05

Boring Designation SPVC-05-03

DRILLING LOG

DIVISION		INSTALLATION	SHEET 1 OF 1 SHEETS
1. PROJECT: Sandy Point 2005 Sand Search, Sandy Point, Louisiana		9. SIZE AND TYPE OF BIT: 3.5 In.	
		10. COORDINATE SYSTEM/DATUM: Louisiana South State Plane	HORIZONTAL: NAD 1983 / VERTICAL: NAVD 88
2. BORING DESIGNATION: SPVC-05-03	LOCATION COORDINATES: X = 3,862,756 Y = 224,268	11. MANUFACTURER'S DESIGNATION OF DRILL: Pneumatic Vibracore	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: GFA International	CONTRACTOR FILE NO.	12. TOTAL SAMPLES	DISTURBED / UNDISTURBED (UD)
4. NAME OF DRILLER: Fred Kaub		13. TOTAL NUMBER CORE BOXES	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL / BEARING	14. ELEVATION GROUND WATER	
		15. DATE BORING	STARTED: 08-13-05 13:01 / COMPLETED: 08-13-05 13:10
6. THICKNESS OF OVERBURDEN: 0.0 Ft.		16. ELEVATION TOP OF BORING: -34.7 Ft.	
7. DEPTH DRILLED INTO ROCK: 0.0 Ft.		17. TOTAL RECOVERY FOR BORING: 27.7 Ft.	
8. TOTAL DEPTH OF BORING: 29.0 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR: KW	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS (Depths and elevations based on measured values)	% REC.	BOX OR SAMPLE	REMARKS
-34.7	0.0					
-37.9	3.2		CLAY, trace sand, black (5Y-2.5/1), (CL).			
-38.6	3.9		SAND, fine grained, quartz, trace silt, dark gray (5Y-4/1), (SP).			
-41.1	6.4		CLAY, trace sand, black (5Y-2.5/1), (CL).			
-43.3	8.6		SAND, fine grained, quartz, little silt, trace organics, clay pockets (1"x1") @ 7.1', (2"x1") @ 7.2', (2"x2") @ 7.4', (3"x3") @ 7.6', very dark gray (5Y-3/1), (SM).			
-46.4	11.7		SAND, fine grained, quartz, little silt, trace organics, organic pocket (1"x2") @ 9.2'; black (5Y-2.5/1) clay lenses (0.75") @ 11.4' and 11.6', dark gray (5Y-4/1), (SM).		1	
-51.5	16.8		SAND, fine grained, quartz, trace silt, organic pocket (1"x2") @ 13.6'; black (5Y-2.5/1) clay lens (3.5") @ 14.6' and clay pockets (1"x2") @ 15.2' and 15.3'; dark grayish brown (10YR-4/2) clay pocket (2"x0.5") @ 15.9', olive gray (5Y-4/2), (SP-SM).			
-52.1	17.4					
-54.4	19.7				1	
-55.1	20.4					
-62.4	27.7		CLAY, trace sand, dark olive gray (5Y-3/2) sand pocket (1"x0.75") @ 7.2', black (5Y-2.5/1), (CL). SAND, fine grained, quartz, trace silt, olive gray (5Y-4/2), (SP). CLAY, trace sand, olive gray (5Y-4/2) sand pocket (2"x3") @19.9', black (5Y-2.5/1), (CL).		1	Sample #1, Depth = 26.5' Mean (mm): 0.14, Phi Sorting: 0.37 Shell: 0%, Fines (230): 4.46% (SP-SM)
-63.7	29.0		SAND, fine grained, quartz, trace organics, trace silt, olive gray (5Y-4/2), (SP-SM).			
			No Recovery.			
			End of Boring			

0 5 10 15 20 25 30 35 40 45 50 55

FLORIDA DEP ROSS SANDY_POINT_05.GPJ FL DEP ROSS.GDT 9/13/05

SAJ FORM 1836 JUN 02 **MODIFIED FOR THE FLORIDA DEP** JUN 04

Boring Designation SPVC-05-03A

DRILLING LOG

DIVISION	
INSTALLATION	
SHEET 1 OF 1 SHEETS	
1. PROJECT	Sandy Point 2005 Sand Search Sandy Point, Louisiana
2. BORING DESIGNATION	SPVC-05-03A
LOCATION COORDINATES	X = 3,862,762 Y = 224,262
3. DRILLING AGENCY	GFA International
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Fred Kaub
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	0.0 Ft.
7. DEPTH DRILLED INTO ROCK	0.0 Ft.
8. TOTAL DEPTH OF BORING	40.0 Ft.
9. SIZE AND TYPE OF BIT	3.5 In.
10. COORDINATE SYSTEM/DATUM	Louisiana South State Plane
HORIZONTAL	NAD 1983
VERTICAL	NAVD 88
11. MANUFACTURER'S DESIGNATION OF DRILL	Pneumatic Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	
DISTURBED	
UNDISTURBED (UD)	
13. TOTAL NUMBER CORE BOXES	
14. ELEVATION GROUND WATER	
15. DATE BORING	STARTED 08-13-05 14:18
COMPLETED	08-13-05 14:33
16. ELEVATION TOP OF BORING	-34.7 Ft.
17. TOTAL RECOVERY FOR BORING	18.7 Ft.
18. SIGNATURE AND TITLE OF INSPECTOR	KW

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-34.7	0.0					
			Jetted to 21.3'.			
-56.0	21.3					
-57.5	22.8		Jetted material.			
-62.4	27.7		SAND, fine grained, quartz, trace organics, trace shell hash, trace silt, very dark gray (5Y-3/1) sand pocket with little mud (3"x3") from 25.8'-26.1'; brown (10YR-4/3) clay pocket (1"x2") @ 27.5', olive gray (5Y-4/2), (SP-SM).		1	Sample #1, Depth = 24.6' Mean (mm): 0.14, Phi Sorting: 0.38 Shell: 0%, Fines (230): 4.32% (SP-SM)
-63.1	28.4		CLAY, trace sand, black (5Y-2.5/1), (CL).			
-65.6	30.9		SAND, fine grained, quartz, trace organics, trace silt, olive gray (5Y-4/2), (SP-SM).		2	Sample #2, Depth = 30.0' Mean (mm): 0.15, Phi Sorting: 0.36 Shell: 0%, Fines (230): 10.16% (SP-SM)
-67.2	32.5		CLAY, trace sand, olive gray (5Y-4/2) sand pocket (1"x1") @ 32.2', black (5Y-2.5/1), (CL).			
-68.6	33.9		SAND, fine grained, quartz, little silt, trace organics, black (5Y-2.5/1) sandy clay pocket (3"x2") @ 33.6', very dark gray (5Y-3/1), (SM).		3	Sample #3, Depth = 33.0' Mean (mm): 0.12, Phi Sorting: 0.47 Shell: 0%, Fines (230): 19.96% (SM)
-69.3	34.6					
-70.9	36.2				4	Sample #4, Depth = 35.5' Mean (mm): 0.11, Phi Sorting: 0.35 Shell: 0%, Fines (230): 11.83% (SM)
-73.4	38.7		CLAY, trace sand, sand laminae from 34.4'-34.6', black (5Y-2.5/1), (CL).			
-74.7	40.0		SAND, fine grained, quartz, little silt, very dark gray (5Y-3/1), (SM).		2	
			CLAY, trace sand, olive gray (5Y-4/2) sand pocket (3"x3") @ 37.6' and sand lens (0.25") @ 38.3', black (5Y-2.5/1), (CL).			
			SAND, fine grained, quartz, trace organics, trace silt, olive gray (5Y-4/2), (SP-SM).			
			End of Boring			

0 5 10 15 20 25 30 35 40 45 50 55

FLORIDA DEP ROSS SANDY_POINT_05.GPJ FL DEP ROSS.GDT 9/13/05

SAJ FORM 1836 **MODIFIED FOR THE FLORIDA DEP**
JUN 02 JUN 04

Boring Designation SPVC-05-04

DRILLING LOG

DIVISION		INSTALLATION	SHEET 1 OF 1 SHEETS
1. PROJECT: Sandy Point 2005 Sand Search, Sandy Point, Louisiana		9. SIZE AND TYPE OF BIT: 3.5 In.	
		10. COORDINATE SYSTEM/DATUM: Louisiana South State Plane	HORIZONTAL: NAD 1983 / VERTICAL: NAVD 88
2. BORING DESIGNATION: SPVC-05-04	LOCATION COORDINATES: X = 3,863,008 Y = 223,777	11. MANUFACTURER'S DESIGNATION OF DRILL: Pneumatic Vibracore	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: GFA International	CONTRACTOR FILE NO.	12. TOTAL SAMPLES	DISTURBED / UNDISTURBED (UD)
4. NAME OF DRILLER: Fred Kaub		13. TOTAL NUMBER CORE BOXES	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL / BEARING	14. ELEVATION GROUND WATER	
		15. DATE BORING	STARTED: 08-13-05 15:39 / COMPLETED: 08-13-05 15:55
6. THICKNESS OF OVERBURDEN: 0.0 Ft.		16. ELEVATION TOP OF BORING: -34.7 Ft.	
7. DEPTH DRILLED INTO ROCK: 0.0 Ft.		17. TOTAL RECOVERY FOR BORING: 32.4 Ft.	
8. TOTAL DEPTH OF BORING: 40.0 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR: KW	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS (Depths and elevations based on measured values)	% REC.	BOX OR SAMPLE	REMARKS
-34.7	0.0					
-37.7	3.0		SAND, fine grained, quartz, trace organics, trace shell hash, trace silt, trace whole shell, black (5Y-2.5/1) clay pocket (3"x2") @ 2.6', very dark gray (5Y-3/1), (SP-SM).			
-38.5	3.8		CLAY, trace sand, black (5Y-2.5/1), (CL).			
-48.4	13.7		SAND, fine grained, quartz, trace organics, trace silt, black (5Y-2.5/1) clay layers from 5.0'-5.2', (1") @ 8.1' and 9.2', (2") @ 9.4', from 10.3'-10.5' and 10.7'-10.9'; black (5Y-2.5/1) clay pocket (2"x1") @ 9.3'; brown (10YR-4/3) clay pockets (3"x1") @ 13.2', (2"x2") @ 13.5', and (1.5"x2") @ 13.7'; organic laminae @ 5.7', 6.2' and 8.7', dark gray (5Y-4/1), (SP).			
-49.2	14.5		CLAY, trace organics, trace sand, brown (10YR-4/3) from 13.7'-14.0' and black (5Y-2.5/1) from 14.0'-14.5', black (5Y-2.5/1), (CL).			
-49.9	15.2		SAND, fine grained, quartz, little silt, organic lamina @ 15.0', very dark gray (5Y-3/1), (SP-SM).			
-55.4	20.7		SAND, fine grained, quartz, trace organics, trace silt, organic lamina @ 16.7'; black (5Y-2.5/1) clay pockets (3"x2") @ 18.0' and (3"x3") @ 18.8' and clay layer from 20.5'-20.7'; rock fragment (3"x1.5") @ 19.6', dark gray (5Y-4/1), (SP).		1	Sample #1, Depth = 22.0' Mean (mm): 0.16, Phi Sorting: 0.37 Shell: 0%, Fines (230): 2.73% (SP)
-58.3	23.6				1	Sample #2, Depth = 26.2' Mean (mm): 0.14, Phi Sorting: 0.51 Shell: 0%, Fines (230): 24.89% (SM)
-58.6	23.9				2	Sample #3, Depth = 32.0' Mean (mm): 0.17, Phi Sorting: 0.37 Shell: 0%, Fines (230): 4.49% (SP)
-60.7	26.0				3	
-61.2	26.5					
-67.1	32.4		SAND, fine grained, quartz, trace organics, trace silt, olive gray (5Y-4/2), (SP). CLAY, trace sand, black (5Y-2.5/1), (CL). SAND, fine grained, quartz, trace organics, trace silt, black (5Y-2.5/1) clay layer from 25.8'-26.0', olive gray (5Y-4/2), (SP).			
-74.7	40.0		SAND, fine grained, quartz, some silt, trace organics, very dark gray (5Y-3/1), (SM). SAND, fine grained, quartz, trace organics, trace silt, dark grayish brown (10YR-4/2) clay layer (1.5") @ 26.5'; olive gray (5Y-4/2) clay pocket (3"x1.5") @ 28.7' and 28.9', (2.5"x1") @ 31.3', and (1.5"x3") @ 32.4', dark gray (5Y-4/1), (SP). No Recovery.			
			End of Boring			

0 5 10 15 20 25 30 35 40 45 50 55

FLORIDA DEP ROSS SANDY_POINT_05.GPJ FL DEP ROSS.GDT 9/13/05

SAJ FORM 1836 JUN 02 **MODIFIED FOR THE FLORIDA DEP** JUN 04

Boring Designation SPVC-05-04A

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS

1. PROJECT Sandy Point 2005 Sand Search Sandy Point, Louisiana	9. SIZE AND TYPE OF BIT: 3.5 In.
	10. COORDINATE SYSTEM/DATUM: Louisiana South State Plane; HORIZONTAL: NAD 1983; VERTICAL: NAVD 88
2. BORING DESIGNATION: SPVC-05-04A; LOCATION COORDINATES: X = 3,863,011 Y = 223,776	11. MANUFACTURER'S DESIGNATION OF DRILL: Pneumatic Vibracore; ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: GFA International; CONTRACTOR FILE NO.	12. TOTAL SAMPLES; DISTURBED; UNDISTURBED (UD)
4. NAME OF DRILLER: Fred Kaub	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED; DEG. FROM VERTICAL; BEARING	14. ELEVATION GROUND WATER
	15. DATE BORING: STARTED 08-13-05 16:30; COMPLETED 08-13-05 16:51
6. THICKNESS OF OVERBURDEN: 0.0 Ft.	16. ELEVATION TOP OF BORING: -34.7 Ft.
7. DEPTH DRILLED INTO ROCK: 0.0 Ft.	17. TOTAL RECOVERY FOR BORING: 18.4 Ft.
8. TOTAL DEPTH OF BORING: 40.0 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: KW

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-34.7	0.0					
			Jetted to 20.6'.			
-55.3	20.6					
-55.9	21.2		CLAY, trace sand, black (5Y-2.5/1), (CL).			
-56.3	21.6		SAND, fine grained, quartz, trace organics, trace silt, dark gray (5Y-4/1), (SP-SM).		1	
-57.0	22.3		CLAY, trace sand, sand laminae throughout; brown (10YR-4/3) clay pocket @ 22.1', black (5Y-2.5/1), (CL).		1	Sample #1, Depth = 24.0' Mean (mm): 0.15, Phi Sorting: 0.35 Shell: 0%, Fines (230): 3.98% (SP-SM)
-60.4	25.7		SAND, fine grained, quartz, trace silt, black (5Y-2.5/1) clay pocket (1"x1.5") @ 22.5'; brown (10YR-4/3) clay pocket (1"x2") @ 25.6', olive gray (5Y-4/2), (SP-SM).			
-64.6	29.9		CLAY, trace sand, brown (10YR-4/3) from 25.7'-27.1'; olive gray (5Y-4/2) sand pocket (1.5"x1.5") @ 26.6'; very dark gray (5Y-3/1) silty sand pocket (3"x2") @ 29.8', very dark gray (5Y-3/1), (CL).		1	
-66.7	32.0					
-67.4	32.7				2	Sample #2, Depth = 34.0' Mean (mm): 0.15, Phi Sorting: 0.42 Shell: 0%, Fines (230): 3.04% (SP)
-70.3	35.6					
-70.8	36.1		SAND, fine grained, quartz, trace organics, trace silt, dark grayish brown (10YR-4/2) clay pocket (2"x2") @ 31.8', dark gray (5Y-4/1), (SP-SM).		3	Sample #3, Depth = 38.2' Mean (mm): 0.16, Phi Sorting: 0.37 Shell: 0%, Fines (230): 3.79% (SP)
-73.7	39.0					
-74.7	40.0		CLAY, trace sand, black (5Y-2.5/1), (CL).			
			SAND, quartz, trace organics, trace silt, black (5Y-2.5/1) clay pocket (3"x2") @ 34.8', olive gray (5Y-4/2), (SP).			
			CLAY, trace sand, black (5Y-2.5/1), (CL).			
			SAND, quartz, trace organics, trace silt, black (5Y-2.5/1) clay pocket (1"x1.5") @ 37.4'; organic laminae from 37.8'-38.1', olive gray (5Y-4/2), (SP).			
			No Recovery.			
			End of Boring			

0 5 10 15 20 25 30 35 40 45 50 55

FLORIDA DEP ROSS SANDY_POINT_05.GPJ FL DEP ROSS.GDT 9/13/05

Boring Designation SPVC-05-05

DRILLING LOG

DIVISION	
INSTALLATION	
SHEET 1 OF 1 SHEETS	
1. PROJECT	Sandy Point 2005 Sand Search Sandy Point, Louisiana
2. BORING DESIGNATION	SPVC-05-05
LOCATION COORDINATES	X = 3,862,583 Y = 223,106
3. DRILLING AGENCY	GFA International
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Fred Kaub
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	0.0 Ft.
7. DEPTH DRILLED INTO ROCK	0.0 Ft.
8. TOTAL DEPTH OF BORING	40.0 Ft.
9. SIZE AND TYPE OF BIT	3.5 In.
10. COORDINATE SYSTEM/DATUM	Louisiana South State Plane
HORIZONTAL	NAD 1983
VERTICAL	NAVD 88
11. MANUFACTURER'S DESIGNATION OF DRILL	Pneumatic Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	
DISTURBED	
UNDISTURBED (UD)	
13. TOTAL NUMBER CORE BOXES	
14. ELEVATION GROUND WATER	
15. DATE BORING	STARTED 08-13-05 18:09
COMPLETED	08-13-05 18:18
16. ELEVATION TOP OF BORING	-35.3 Ft.
17. TOTAL RECOVERY FOR BORING	37.6 Ft.
18. SIGNATURE AND TITLE OF INSPECTOR	KW

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-35.3	0.0					
-37.4	2.1		CLAY, trace sand, sand laminae from 1.2'-2.1'; brown (10YR-4/3) clay pocket @ 1.2', black (5Y-2.5/1), (CL).			
-38.8	3.5		SAND, fine grained, quartz, some silt, black (5Y-2.5/1) clay pocket (3"x2.5") @ 3.1', very dark gray (5Y-3/1), (SM).			
-43.1	7.8		SAND, fine grained, quartz, trace organics, trace silt, dark gray (5Y-4/1), (SP).			
-43.8	8.5		CLAY, trace sand, sand laminae @ 7.9' and 8.3', very dark gray (5Y-3/1), (CL).			
-57.7	22.4		SAND, fine grained, quartz, little silt, trace organics, organic pocket (2"x2") @ 15.4'; organic layer from 16.0'-16.4'; organic laminae from 16.4'-16.6', dark gray (5Y-4/1), (SM).		2	
-58.5	23.2		CLAY, trace sand, sand pocket (1"x2") @ 22.8', black (5Y-2.5/1), (CL).			
-60.6	25.3		Silty SAND, fine grained, quartz, trace organics, very dark gray (5Y-3/1), (ML).		1	Sample #1, Depth = 24.6' Mean (mm): 0.09, Phi Sorting: 0.33 Shell: 0%, Fines (230): 48.95% (ML)
-61.7	26.4		CLAY, trace sand, sand laminae throughout; sand pocket (1"x1") @ 25.6', very dark gray (5Y-3/1), (CL).		2	Sample #2, Depth = 28.0' Mean (mm): 0.12, Phi Sorting: 0.34 Shell: 0%, Fines (230): 10.49% (SM)
-65.7	30.4		SAND, fine grained, quartz, little silt, trace organics, clay pocket @ 30.3', dark gray (5Y-4/1), (SM).			
-72.9	37.6		CLAY, trace sand, sand laminae throughout; sand pockets (1"x1") @ 30.8', (3"x2") @ 31.8', and (1"x2") @ 35.1', (CL).			
-75.3	40.0		No Recovery.			
			End of Boring			

0 5 10 15 20 25 30 35 40 45 50 55

FLORIDA DEP ROSS SANDY_POINT_05.GPJ FL DEP ROSS.GDT 9/13/05

SAJ FORM 1836 **MODIFIED FOR THE FLORIDA DEP**
JUN 02 JUN 04

Boring Designation SPVC-05-06

DRILLING LOG

DIVISION		INSTALLATION	SHEET 1 OF 1 SHEETS
1. PROJECT Sandy Point 2005 Sand Search Sandy Point, Louisiana		9. SIZE AND TYPE OF BIT: 3.5 In.	
		10. COORDINATE SYSTEM/DATUM: Louisiana South State Plane	HORIZONTAL: NAD 1983 / VERTICAL: NAVD 88
2. BORING DESIGNATION: SPVC-05-06	LOCATION COORDINATES: X = 3,863,353 Y = 222,037	11. MANUFACTURER'S DESIGNATION OF DRILL: Pneumatic Vibracore	☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: GFA International	CONTRACTOR FILE NO.	12. TOTAL SAMPLES	DISTURBED / UNDISTURBED (UD)
4. NAME OF DRILLER: Fred Kaub		13. TOTAL NUMBER CORE BOXES	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL / BEARING	14. ELEVATION GROUND WATER	
		15. DATE BORING	STARTED: 08-14-05 07:11 / COMPLETED: 08-14-05 07:20
6. THICKNESS OF OVERBURDEN: 0.0 Ft.		16. ELEVATION TOP OF BORING: -34.8 Ft.	
7. DEPTH DRILLED INTO ROCK: 0.0 Ft.		17. TOTAL RECOVERY FOR BORING: 26 Ft.	
8. TOTAL DEPTH OF BORING: 30.0 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR: KW	

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-34.8	0.0					
-38.0	3.2		SAND, fine grained, quartz, little silt, trace shell fragments, trace shell hash, shell fragment (0.75"x0.75") @ 1.2', very dark gray (5Y-3/1), (SP-SM).			
-38.3	3.5		CLAY, trace sand, brown (10YR-4/3) from 3.2'-3.3'; sand pocket (1"x1") @ 3.4', black (5Y-2.5/1), (CL).			
-41.4	6.6					
-41.9	7.1		SAND, fine grained, quartz, trace organics, trace silt, brown (10YR-4/3) clay pocket (2"x2") @ 5.9'; black (5Y-2.5/1) clay pocket (2"x3") @ 6.1', very dark gray (5Y-3/1), (SP-SM).			
			CLAY, trace sand, brown (10YR-4/3), (CL).			
			SAND, fine grained, quartz, trace organics, trace silt, brown (10YR-4/3) clay lenses (0.25") @ 7.2' and (0.5") @ 8.7'; black (5Y-2.5/1) clay lens (0.75") @ 9.0'; black (5Y-2.5/1) clay pockets (2"x2") @ 9.3', (0.5"x2") @ 12.3', (2"x2") @ 19.2'; brown (10YR-4/3) clay pockets (1"x1") @ 11.9' and 16.7'; organic laminae @ 21.0', 22.1'-22.3', and 24.6'-24.9', (SM).		1	Sample #1, Depth = 24.2' Mean (mm): 0.12, Phi Sorting: 0.40 Shell: 0%, Fines (230): 10.84% (SM)
-60.8	26.0					
			No Recovery.			
-64.8	30.0					
			End of Boring			

0 5 10 15 20 25 30 35 40 45 50 55

FLORIDA DEP ROSS SANDY_POINT_05.GPJ FL DEP ROSS.GDT 9/13/05

Boring Designation SPVC-05-06A

DRILLING LOG

DIVISION	
INSTALLATION	
SHEET 1 OF 1 SHEETS	
1. PROJECT	Sandy Point 2005 Sand Search Sandy Point, Louisiana
2. BORING DESIGNATION	SPVC-05-06A
LOCATION COORDINATES	X = 3,863,352 Y = 222,034
3. DRILLING AGENCY	GFA International
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Fred Kaub
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	0.0 Ft.
7. DEPTH DRILLED INTO ROCK	0.0 Ft.
8. TOTAL DEPTH OF BORING	40.0 Ft.
9. SIZE AND TYPE OF BIT	3.5 In.
10. COORDINATE SYSTEM/DATUM	Louisiana South State Plane
HORIZONTAL	NAD 1983
VERTICAL	NAVD 88
11. MANUFACTURER'S DESIGNATION OF DRILL	Pneumatic Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	
DISTURBED	
UNDISTURBED (UD)	
13. TOTAL NUMBER CORE BOXES	
14. ELEVATION GROUND WATER	
15. DATE BORING	STARTED 08-14-05 07:53
COMPLETED	08-14-05 08:12
16. ELEVATION TOP OF BORING	-34.8 Ft.
17. TOTAL RECOVERY FOR BORING	21 Ft.
18. SIGNATURE AND TITLE OF INSPECTOR	KW

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-34.8	0.0		Jetted to 19.0'.			
-53.8	19.0					
-54.8	20.0		Jetted material.			
-60.0	25.2		SAND, fine grained, quartz, trace organics, trace silt, organic pocket (3"x2") @ 20.1' and (2"x2") @ 21.0'; wood fragment (2"x0.75") @ 20.2'; brown (10YR-4/3) clay pocket (2"x3") @ 22.2'; organic laminae @ 23.7' and 24.6', dark gray (5Y-4/1), (SM).		1	Sample #1, Depth = 24.5' Mean (mm): 0.11, Phi Sorting: 0.36 Shell: 0%, Fines (230): 8.56% (SM)
-61.2	26.4					
-63.1	28.3		CLAY, trace sand, sand laminae @ 25.3', 25.6', and 26.2', black (5Y-2.5/1), (CL).		1	
-63.9	29.1					
-64.5	29.7		SAND, fine grained, quartz, trace organics, trace silt, very dark gray (5Y-3/1) clay pocket (1"x1.5") @ 28.0'; organic lamina @ 28.3', olive gray (5Y-4/2), (SM).		2	Sample #2, Depth = 29.3' Mean (mm): 0.15, Phi Sorting: 0.34 Shell: 0%, Fines (230): 6.58% (SP-SM)
-65.4	30.6				3	Sample #3, Depth = 31.4' Mean (mm): 0.15, Phi Sorting: 0.35 Shell: 0%, Fines (230): 3.76% (SP)
-67.9	33.1		CLAY, trace sand, black (5Y-2.5/1), (CL).			
-68.7	33.9					
-69.3	34.5		SAND, fine grained, quartz, trace organics, trace silt, very dark gray (5Y-3/1) clay pocket (1"x1.5") @ 29.5', very dark gray (5Y-3/1), (SP-SM).		3	
-74.8	40.0		CLAY, trace sand, sand laminae from 30.3'-30.6', very dark gray (5Y-3/1), (CL).			
			SAND, fine grained, quartz, trace organics, trace silt, very dark gray (5Y-3/1) clay pocket (3"x1.5") @ 32.4'; clay lamina @ 22.7', olive gray (5Y-4/2), (SP).			
			CLAY, trace sand, dark gray (5Y-4/1) sand pocket (1"x1") @ 33.6', very dark gray (5Y-3/1), (CL).			
			SAND, fine grained, quartz, trace silt, very dark gray clay pocket (1"x1") @ 34.2', dark gray (5Y-4/1), (SP).			
			CLAY, trace organics, trace sand, sand lamina @ 36.5'; sand pocket (1"x2") @ 37.5', very dark gray (5Y-3/1), (CL).			

0 5 10 15 20 25 30 35 40 45 50 55

FLORIDA DEP ROSS SANDY_POINT_05.GPJ FL DEP ROSS.GDT 9/13/05

SAJ FORM 1836 **MODIFIED FOR THE FLORIDA DEP**
JUN 02 JUN 04

Boring Designation SPVC-05-07

DRILLING LOG

DIVISION	
INSTALLATION	
SHEET 1 OF 1 SHEETS	
1. PROJECT	Sandy Point 2005 Sand Search Sandy Point, Louisiana
2. BORING DESIGNATION	SPVC-05-07
LOCATION COORDINATES	X = 3,862,891 Y = 221,721
3. DRILLING AGENCY	GFA International
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Fred Kaub
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	0.0 Ft.
7. DEPTH DRILLED INTO ROCK	0.0 Ft.
8. TOTAL DEPTH OF BORING	40.0 Ft.
9. SIZE AND TYPE OF BIT	3.5 In.
10. COORDINATE SYSTEM/DATUM	Louisiana South State Plane
HORIZONTAL	NAD 1983
VERTICAL	NAVD 88
11. MANUFACTURER'S DESIGNATION OF DRILL	Pneumatic Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	
DISTURBED	
UNDISTURBED (UD)	
13. TOTAL NUMBER CORE BOXES	
14. ELEVATION GROUND WATER	
15. DATE BORING	STARTED 08-14-05 09:21
COMPLETED	08-14-05 09:37
16. ELEVATION TOP OF BORING	-35.3 Ft.
17. TOTAL RECOVERY FOR BORING	33 Ft.
18. SIGNATURE AND TITLE OF INSPECTOR	KW

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-35.3	0.0					
-37.3	2.0		SAND, fine grained, quartz, little silt, trace organics, very dark gray (5Y-3/1), (SP-SM).			
-50.4	15.1		SAND, fine grained, quartz, trace organics, trace silt, very dark gray (5Y-3/1) clay pockets (0.75"x0.75") @ 10.2', (0.75"x2.5") @ 11.1', (1"x2") @ 12.0', and (3"x3") @ 12.6'; partially lithified clay ball @ 14.1'; very dark gray (5Y-3/1) clay pocket (0.5"x1.5") @ 14.8'; brown (10YR-4/3) clay pocket (2"x3") @ 15.1', very dark gray (5Y-3/1), (SP).			
-63.1	27.8		SAND, fine grained, quartz, little silt, dark gray (5Y-4/1) clay pocket (1"x1.5") @ 15.6'; very dark gray (5Y-3/1) clay pockets (3"x1.5") @ 15.7', (3"x3") @ 18.0', (0.5"x2.5") @ 23.3', (1.5"x1.5") @ 23.5', and (3"x1.5") @ 23.7'; brown (10YR-4/3) clay pocket (3"x2.5") @ 21.7', (SM).		1	Sample #1, Depth = 27.5' Mean (mm): 0.10, Phi Sorting: 0.36 Shell: 0%, Fines (230): 20.06% (SM)
-68.3	33.0		CLAY, little sand, clay distribution is mottled very dark gray (5Y-3/1) and brown (10YR-4/3) with olive gray (5Y-4/2) sand, (CL).			
-75.3	40.0		No Recovery.			
			End of Boring			

0 5 10 15 20 25 30 35 40 45 50 55

FLORIDA DEP ROSS SANDY_POINT_05.GPJ FL DEP ROSS.GDT 9/13/05

SAJ FORM 1836 **MODIFIED FOR THE FLORIDA DEP**
JUN 02 JUN 04

Boring Designation SPVC-05-07A

DRILLING LOG

DIVISION	
INSTALLATION	
SHEET 1 OF 1 SHEETS	
1. PROJECT	Sandy Point 2005 Sand Search Sandy Point, Louisiana
2. BORING DESIGNATION	SPVC-05-07A
LOCATION COORDINATES	X = 3,862,895 Y = 221,719
3. DRILLING AGENCY	GFA International
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Fred Kaub
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	0.0 Ft.
7. DEPTH DRILLED INTO ROCK	0.0 Ft.
8. TOTAL DEPTH OF BORING	40.0 Ft.
9. SIZE AND TYPE OF BIT	3.5 In.
10. COORDINATE SYSTEM/DATUM	Louisiana South State Plane
HORIZONTAL	NAD 1983
VERTICAL	NAVD 88
11. MANUFACTURER'S DESIGNATION OF DRILL	Pneumatic Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	
DISTURBED	
UNDISTURBED (UD)	
13. TOTAL NUMBER CORE BOXES	
14. ELEVATION GROUND WATER	
15. DATE BORING	STARTED 08-14-05 10:19
COMPLETED	08-14-05 10:36
16. ELEVATION TOP OF BORING	-35.3 Ft.
17. TOTAL RECOVERY FOR BORING	15.8 Ft.
18. SIGNATURE AND TITLE OF INSPECTOR	KW

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-35.3	0.0		Jetted to 24.2'.			
-59.5	24.2					
-60.1	24.8		CLAY, trace sand, clay distribution is mottled brown (10YR-4/3) and, very dark gray (5Y-3/1), (CL).		1	Sample #1, Depth = 25.1' Mean (mm): 0.13, Phi Sorting: 0.36 Shell: 0%, Fines (230): 5.01% (SP-SM)
-61.8	26.5		SAND, fine grained, quartz, trace organics, trace silt, very dark gray (5Y-3/1) clay pockets (4"x2.5") @ 25.9', (2"x2") @ 26.4', olive gray (5Y-4/2), (SP-SM).			
-63.9	28.6		CLAY, trace sand, very dark gray (5Y-3/1), (CL).		2	Sample #2, Depth = 31.0' Mean (mm): 0.10, Phi Sorting: 0.36 Shell: 0%, Fines (230): 21.62% (SM)
-70.1	34.8		SAND, fine grained, quartz, some silt, trace organics, organic lamina @ 33.3', olive gray (5Y-4/2), (SM).			
-75.3	40.0		CLAY, little sand, clay distribution is mottled very dark gray (5Y-3/1) and brown (10YR-4/3) with olive gray (5Y-4/2) sand, (CL).			
			End of Boring			

0 5 10 15 20 25 30 35 40 45 50 55

FLORIDA DEP ROSS SANDY_POINT_05.GPJ FL DEP ROSS.GDT 9/13/05

SAJ FORM 1836 JUN 02 **MODIFIED FOR THE FLORIDA DEP** JUN 04

Boring Designation SPVC-05-08

DRILLING LOG

DIVISION	
INSTALLATION	
SHEET 1 OF 1 SHEETS	
1. PROJECT	Sandy Point 2005 Sand Search Sandy Point, Louisiana
2. BORING DESIGNATION	SPVC-05-08
LOCATION COORDINATES	X = 3,863,001 Y = 221,064
3. DRILLING AGENCY	GFA International
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Fred Kaub
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	0.0 Ft.
7. DEPTH DRILLED INTO ROCK	0.0 Ft.
8. TOTAL DEPTH OF BORING	40.0 Ft.
9. SIZE AND TYPE OF BIT	3.5 In.
10. COORDINATE SYSTEM/DATUM	Louisiana South State Plane
HORIZONTAL	NAD 1983
VERTICAL	NAVD 88
11. MANUFACTURER'S DESIGNATION OF DRILL	Pneumatic Vibracore
☐ AUTO HAMMER ☐ MANUAL HAMMER	
12. TOTAL SAMPLES	
DISTURBED	
UNDISTURBED (UD)	
13. TOTAL NUMBER CORE BOXES	
14. ELEVATION GROUND WATER	
15. DATE BORING	STARTED 08-14-05 11:36
COMPLETED	08-14-05 11:52
16. ELEVATION TOP OF BORING	-35.2 Ft.
17. TOTAL RECOVERY FOR BORING	34 Ft.
18. SIGNATURE AND TITLE OF INSPECTOR	KW

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-35.2	0.0					
-39.9	4.7		SAND, fine grained, quartz, trace organics, trace shell hash, trace silt, very dark gray (5Y-3/1) clay pocket (1"x1.5") @ 4.5', very dark gray (5Y-3/1), (SP-SM).			
-54.4	19.2		SAND, fine grained, quartz, trace organics, trace silt, organic laminae @ 10.9' and 17.9'; very dark gray (5Y-3/1) clay pockets (2.5"x1.5") @ 15.7', (1.5"x2.5") @ 18.2', and (1"x1.5") @ 18.4', olive gray (5Y-4/2), (SP-SM).		1	
-54.7	19.5		CLAY, trace sand, very dark gray (5Y-3/1), (CL).			
-59.3	24.1		SAND, fine grained, quartz, trace silt, very dark gray (5Y-3/1) clay pocket (3"x2") @ 22.5', olive gray (5Y-4/2), (SP-SM).		1	Sample #1, Depth = 21.7' Mean (mm): 0.14, Phi Sorting: 0.33 Shell: 0%, Fines (230): 4.57% (SP-SM)
-60.2	25.0					
-61.7	26.5		CLAY, trace sand, very dark gray (5Y-3/1), (CL).		1	
-63.1	27.9		SAND, fine grained, quartz, trace organics, trace silt, olive gray (5Y-4/2), (SP-SM).			
-64.4	29.2				1	
-65.2	30.0		CLAY, trace sand, dark gray (5Y-4/1) sand pocket (3"x2") @ 16.7'; sand lamina @ 27.7', very dark gray (5Y-3/1), (CL).			
-66.3	31.1				1	
-67.4	32.2					
-69.2	34.0		SAND, fine grained, quartz, trace organics, trace silt, dark gray (5Y-4/1) clay pocket (2"x3") @ 28.5', (SP-SM).		2	Sample #2, Depth = 33.3' Mean (mm): 0.14, Phi Sorting: 0.30 Shell: 0%, Fines (230): 4.18% (SP-SM)
			CLAY, trace sand, sand pockets (0.75"x0.75") @ 29.3' and 29.8', very dark gray (5Y-3/1), (CL).			
-75.2	40.0		SAND, fine grained, quartz, trace organics, trace silt, olive gray (5Y-4/2), (SP-SM).			
			CLAY, trace sand, very dark gray (5Y-3/1), (CL).			
			SAND, fine grained, quartz, trace organics, trace silt, very dark gray (5Y-3/1) clay pocket (1"x2.5") @ 33.9', olive gray (5Y-4/2), (SP-SM).			
			No Recovery.			
			End of Boring			

0 5 10 15 20 25 30 35 40 45 50 55

FLORIDA DEP ROSS SANDY_POINT_05.GPJ FL DEP ROSS.GDT 9/13/05

Boring Designation SPVC-05-08A

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1 OF 1 SHEETS

1. PROJECT Sandy Point 2005 Sand Search Sandy Point, Louisiana	9. SIZE AND TYPE OF BIT: 3.5 In.
	10. COORDINATE SYSTEM/DATUM: Louisiana South State Plane; HORIZONTAL: NAD 1983; VERTICAL: NAVD 88
2. BORING DESIGNATION: SPVC-05-08A; LOCATION COORDINATES: X = 3,863,000 Y = 221,069	11. MANUFACTURER'S DESIGNATION OF DRILL: Pneumatic Vibracore; ☐ AUTO HAMMER ☐ MANUAL HAMMER
3. DRILLING AGENCY: GFA International; CONTRACTOR FILE NO.	12. TOTAL SAMPLES; DISTURBED; UNDISTURBED (UD)
4. NAME OF DRILLER: Fred Kaub	13. TOTAL NUMBER CORE BOXES
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED; DEG. FROM VERTICAL; BEARING	14. ELEVATION GROUND WATER
	15. DATE BORING: STARTED 08-14-05 12:29; COMPLETED 08-14-05 12:37
6. THICKNESS OF OVERBURDEN: 0.0 Ft.	16. ELEVATION TOP OF BORING: -35.2 Ft.
7. DEPTH DRILLED INTO ROCK: 0.0 Ft.	17. TOTAL RECOVERY FOR BORING: 15.3 Ft.
8. TOTAL DEPTH OF BORING: 40.0 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: KW

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS Depths and elevations based on measured values	% REC.	BOX OR SAMPLE	REMARKS
-35.2	0.0		Jetted to 24.7'.			
-59.9	24.7					
			SAND, fine grained, quartz, trace silt, very dark gray (5Y-3/1) clay pocket (0.75"x0.75") @ 29.2' and (7"x3.5") @ 25.9'; dark olive gray (5Y-3/2) clay pocket (0.75"x0.75") @ 30.0' and 32.0', olive gray (5Y-4/2), (SP-SM).		1	Sample #1, Depth = 33.0' Mean (mm): 0.14, Phi Sorting: 0.32 Shell: 0%, Fines (230): 6.91% (SP-SM)
-73.1	37.9					
-75.2	40.0		CLAY, trace sand, olive gray (5Y-4/2) sand pocket (2"x2.5") @ 38.8', very dark gray (5Y-3/1), (CL).			
			End of Boring			

0 5 10 15 20 25 30 35 40 45 50 55

FLORIDA DEP ROSS SANDY_POINT_05.GPJ FL DEP ROSS.GDT 9/13/05

SAJ FORM 1836 JUN 02 MODIFIED FOR THE FLORIDA DEP JUN 04

APPENDIX 14
2005 SANDY POINT INDIVIDUAL GRANULARMETRIC REPORTS

Granularmetric Report

Depths and elevations based on measured values

Project Name: Sandy Point 2005 Sand Search

Sample Name: SPVC-05-01 #1

Analysis Date: 08-19-05

Analyzed By: AS

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
3,863,462	225,058	Louisiana South State Plane	-54.6 NAVD 88

USCS:	Munsell:	Comments:
SP	Wet - 5Y-4/2 Dry - 5Y-6/2 Washed - 5Y-6/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
65.70	63.58	0.04	0.23	#200 - 4.06 #230 - 3.52			0

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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.02	0.03	0.02	0.03
25	0.50	0.71	0.03	0.05	0.05	0.08
35	1.00	0.50	0.11	0.17	0.16	0.24
45	1.50	0.35	0.26	0.40	0.42	0.64
60	2.00	0.25	0.95	1.45	1.37	2.09
80	2.50	0.18	18.98	28.89	20.35	30.97
120	3.00	0.13	35.87	54.60	56.22	85.57
170	3.50	0.09	6.06	9.22	62.28	94.79
200	3.75	0.07	0.75	1.14	63.03	95.94
230	4.00	0.06	0.36	0.55	63.39	96.48

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.55	2.99	2.90	2.67	2.40	2.24	2.05

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.64	0.16	0.37	-0.38	6.62

Granularmetric Report

Depths and elevations based on measured values

Project Name: Sandy Point 2005 Sand Search

Sample Name: SPVC-05-01 #2

Analysis Date: 08-27-05

Analyzed By: AS

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
3,863,462	225,058	Louisiana South State Plane	-60.0 NAVD 88

USCS:	Munsell:	Comments:
SP-SM	Wet - 5Y-4/2 Dry - 5Y-6/2 Washed - 5Y-6/2	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
64.04	61.90	0.30	0.12	#200 - 5.03 #230 - 3.94			0

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	0.02	0.01	0.02
18	0.00	1.00	0.01	0.02	0.02	0.03
25	0.50	0.71	0.01	0.02	0.03	0.05
35	1.00	0.50	0.06	0.09	0.09	0.14
45	1.50	0.35	0.12	0.19	0.21	0.33
60	2.00	0.25	0.37	0.58	0.58	0.91
80	2.50	0.18	3.64	5.68	4.22	6.59
120	3.00	0.13	44.13	68.91	48.35	75.50
170	3.50	0.09	11.45	17.88	59.80	93.38
200	3.75	0.07	1.02	1.59	60.82	94.97
230	4.00	0.06	0.70	1.09	61.52	96.06

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.76	3.24	3.00	2.81	2.63	2.57	2.36

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	2.83	0.14	0.32	-0.48	11.73

Granularmetric Report

Depths and elevations based on measured values

Project Name: Sandy Point 2005 Sand Search

Sample Name: SPVC-05-01A #1

Analysis Date: 08-27-05

Analyzed By: AS

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
3,863,470	225,052	Louisiana South State Plane	-72.7 NAVD 88

USCS:	Munsell:	Comments:
SP-SM	Wet - 5Y-4/2 Dry - 5Y-6/2 Washed - 5Y-6/2	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
66.83	63.10	0.14	0.00	#200 - 6.73 #230 - 5.79			0

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	0.03	0.02	0.03
10	-1.00	2.00	0.01	0.01	0.03	0.04
14	-0.50	1.41	0.05	0.07	0.08	0.12
18	0.00	1.00	0.03	0.04	0.11	0.16
25	0.50	0.71	0.02	0.03	0.13	0.19
35	1.00	0.50	0.16	0.24	0.29	0.43
45	1.50	0.35	0.17	0.25	0.46	0.69
60	2.00	0.25	0.77	1.15	1.23	1.84
80	2.50	0.18	15.84	23.70	17.07	25.54
120	3.00	0.13	38.00	56.86	55.07	82.40
170	3.50	0.09	6.52	9.76	61.59	92.16
200	3.75	0.07	0.74	1.11	62.33	93.27
230	4.00	0.06	0.63	0.94	62.96	94.21

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.08	2.93	2.72	2.49	2.30	2.07

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.67	0.16	0.4	-1.45	16.86

Granularmetric Report

Depths and elevations based on measured values

Project Name: Sandy Point 2005 Sand Search

Sample Name: SPVC-05-02 #1

Analysis Date: 08-18-05

Analyzed By: AS

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
3,863,243	224,562	Louisiana South State Plane	-59.2 NAVD 88

USCS:	Munsell:	Comments:
SP-SM	Wet - 5Y-4/1 Dry - 5Y-6/2 Washed - 5Y-6/2	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
66.94	63.89	0.16	0.25	#200 - 5.99 #230 - 5.05			0

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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.71	0.00	0.00	0.00	0.00
35	1.00	0.50	0.01	0.01	0.01	0.01
45	1.50	0.35	0.10	0.15	0.11	0.16
60	2.00	0.25	0.51	0.76	0.62	0.93
80	2.50	0.18	23.36	34.90	23.98	35.82
120	3.00	0.13	34.34	51.30	58.32	87.12
170	3.50	0.09	3.83	5.72	62.15	92.84
200	3.75	0.07	0.78	1.17	62.93	94.01
230	4.00	0.06	0.63	0.94	63.56	94.95

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	2.97	2.88	2.64	2.34	2.22	2.06

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	2.61	0.16	0.35	0.57	4.58

Granularmetric Report

Depths and elevations based on measured values

Project Name: Sandy Point 2005 Sand Search

Sample Name: SPVC-05-02A #1

Analysis Date: 08-30-05

Analyzed By: AS

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
3,863,254	224,574	Louisiana South State Plane	-54.4 NAVD 88

USCS:	Munsell:	Comments:
SP	Wet - 5Y-4/2 Dry - 2.5Y-6/2 Washed - 2.5Y-7/3	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
68.47	66.09	0.19	0.00	#200 - 4.54 #230 - 3.75			0

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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.71	0.03	0.04	0.03	0.04
35	1.00	0.50	0.03	0.04	0.06	0.09
45	1.50	0.35	0.05	0.07	0.11	0.16
60	2.00	0.25	2.23	3.26	2.34	3.42
80	2.50	0.18	28.48	41.59	30.82	45.01
120	3.00	0.13	30.53	44.59	61.35	89.60
170	3.50	0.09	3.43	5.01	64.78	94.61
200	3.75	0.07	0.58	0.85	65.36	95.46
230	4.00	0.06	0.54	0.79	65.90	96.25

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.61	2.94	2.84	2.56	2.26	2.15	2.02

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.54	0.17	0.37	0.34	4.88

Granularmetric Report

Depths and elevations based on measured values

Project Name: Sandy Point 2005 Sand Search

Sample Name: SPVC-05-02A #2

Analysis Date: 08-31-05

Analyzed By: AS

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
3,863,254	224,574	Louisiana South State Plane	-60.0 NAVD 88

USCS:	Munsell:	Comments:
SP	Wet - 5Y-4/2 Dry - 2.5Y-5/2 Washed - 2.5Y-6/3	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
68.45	66.38	0.30	0.29	#200 - 4.43 #230 - 3.75			0

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	0.00	0.00	0.01	0.01
25	0.50	0.71	0.03	0.04	0.04	0.06
35	1.00	0.50	0.04	0.06	0.08	0.12
45	1.50	0.35	0.07	0.10	0.15	0.22
60	2.00	0.25	0.47	0.69	0.62	0.91
80	2.50	0.18	20.64	30.15	21.26	31.06
120	3.00	0.13	36.59	53.46	57.85	84.51
170	3.50	0.09	6.63	9.69	64.48	94.20
200	3.75	0.07	0.94	1.37	65.42	95.57
230	4.00	0.06	0.46	0.67	65.88	96.25

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.65	3.00	2.91	2.68	2.40	2.25	2.07

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.65	0.16	0.36	0.06	5.99

Granularmetric Report

Depths and elevations based on measured values

Project Name: Sandy Point 2005 Sand Search

Sample Name: SPVC-05-02A #3

Analysis Date: 08-27-05

Analyzed By: AS

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
3,863,254	224,574	Louisiana South State Plane	-66.4 NAVD 88

USCS:	Munsell:	Comments:
SP-SM	Wet - 5Y-4/2 Dry - 5Y-6/2 Washed - 5Y-6/2	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
67.46	61.49	0.32	0.15	#200 - 10.21 #230 - 9.47			0

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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.71	0.00	0.00	0.00	0.00
35	1.00	0.50	0.01	0.01	0.01	0.01
45	1.50	0.35	0.07	0.10	0.08	0.12
60	2.00	0.25	1.06	1.57	1.14	1.69
80	2.50	0.18	14.44	21.41	15.58	23.10
120	3.00	0.13	34.45	51.07	50.03	74.16
170	3.50	0.09	9.15	13.56	59.18	87.73
200	3.75	0.07	1.39	2.06	60.57	89.79
230	4.00	0.06	0.50	0.74	61.07	90.53

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.36	3.03	2.76	2.52	2.33	2.08

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.72	0.15	0.38	0.15	3.7

Granularmetric Report

Depths and elevations based on measured values

Project Name: Sandy Point 2005 Sand Search

Sample Name: SPVC-05-03 #1

Analysis Date: 08-19-05

Analyzed By: AS

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
3,862,756	224,268	Louisiana South State Plane	-61.2 NAVD 88

USCS:	Munsell:	Comments:
SP-SM	Wet - 5Y-4/2 Dry - 5Y-6/1 Washed - 5Y-6/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
67.44	64.84	0.29	0.18	#200 - 6.48 #230 - 4.46			0

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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.71	0.01	0.01	0.01	0.01
35	1.00	0.50	0.01	0.01	0.02	0.03
45	1.50	0.35	0.07	0.10	0.09	0.13
60	2.00	0.25	0.43	0.64	0.52	0.77
80	2.50	0.18	7.33	10.87	7.85	11.64
120	3.00	0.13	40.02	59.34	47.87	70.98
170	3.50	0.09	12.83	19.02	60.70	90.01
200	3.75	0.07	2.37	3.51	63.07	93.52
230	4.00	0.06	1.36	2.02	64.43	95.54

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.93	3.34	3.11	2.82	2.61	2.54	2.19

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.84	0.14	0.37	0.28	4.55

Granularmetric Report

Depths and elevations based on measured values

Project Name: Sandy Point 2005 Sand Search

Sample Name: SPVC-05-03A #1

Analysis Date: 08-31-05

Analyzed By: AS

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
3,862,762	224,262	Louisiana South State Plane	-59.3 NAVD 88

USCS:	Munsell:	Comments:
SP-SM	Wet - 5Y-4/2 Dry - 5Y-5/2 Washed - 5Y-6/2	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
60.44	58.59	0.64	0.20	#200 - 6.11 #230 - 4.32			0

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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.01	0.02	0.01	0.02
25	0.50	0.71	0.00	0.00	0.01	0.02
35	1.00	0.50	0.00	0.00	0.01	0.02
45	1.50	0.35	0.02	0.03	0.03	0.05
60	2.00	0.25	0.28	0.46	0.31	0.51
80	2.50	0.18	8.44	13.96	8.75	14.48
120	3.00	0.13	32.82	54.30	41.57	68.78
170	3.50	0.09	12.69	21.00	54.26	89.77
200	3.75	0.07	2.49	4.12	56.75	93.89
230	4.00	0.06	1.08	1.79	57.83	95.68

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.91	3.36	3.15	2.83	2.60	2.51	2.16

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.84	0.14	0.38	0.24	4

Granularmetric Report

Depths and elevations based on measured values

Project Name: Sandy Point 2005 Sand Search

Sample Name: SPVC-05-03A #2

Analysis Date: 08-31-05

Analyzed By: AS

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
3,862,762	224,262	Louisiana South State Plane	-64.7 NAVD 88

USCS:	Munsell:	Comments:
SP-SM	Wet - 5Y-4/2 Dry - 5Y-6/2 Washed - 5Y-7/2	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
67.72	61.51	0.54	0.19	#200 - 11.10 #230 - 10.16			0

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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.71	0.02	0.03	0.02	0.03
35	1.00	0.50	0.00	0.00	0.02	0.03
45	1.50	0.35	0.02	0.03	0.04	0.06
60	2.00	0.25	0.37	0.55	0.41	0.61
80	2.50	0.18	13.27	19.60	13.68	20.20
120	3.00	0.13	37.29	55.06	50.97	75.27
170	3.50	0.09	7.73	11.41	58.70	86.68
200	3.75	0.07	1.50	2.22	60.20	88.90
230	4.00	0.06	0.64	0.95	60.84	89.84

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.38	3.00	2.77	2.54	2.39	2.11

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.73	0.15	0.36	0.34	4.61

Granularmetric Report

Depths and elevations based on measured values

Project Name: Sandy Point 2005 Sand Search

Sample Name: SPVC-05-03A #3

Analysis Date: 08-31-05

Analyzed By: AS

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
3,862,762	224,262	Louisiana South State Plane	-67.7 NAVD 88

USCS:	Munsell:	Comments:
SM	Wet - 5Y-3/1 Dry - 5Y-5/2 Washed - 5Y-6/2	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
67.79	55.64	1.26	0.18	#200 - 24.16 #230 - 19.96			0

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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.01	0.01	0.01	0.01
25	0.50	0.71	0.01	0.01	0.02	0.03
35	1.00	0.50	0.02	0.03	0.04	0.06
45	1.50	0.35	0.09	0.13	0.13	0.19
60	2.00	0.25	0.32	0.47	0.45	0.66
80	2.50	0.18	7.15	10.55	7.60	11.21
120	3.00	0.13	17.24	25.43	24.84	36.64
170	3.50	0.09	20.14	29.71	44.98	66.35
200	3.75	0.07	6.43	9.49	51.41	75.84
230	4.00	0.06	2.85	4.20	54.26	80.04

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
		3.73	3.22	2.77	2.59	2.21

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	3.02	0.12	0.47	-0.38	3.36

Granularmetric Report

Depths and elevations based on measured values

Project Name: Sandy Point 2005 Sand Search

Sample Name: SPVC-05-03A #4

Analysis Date: 08-19-05

Analyzed By: AS

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
3,862,762	224,262	Louisiana South State Plane	-70.2 NAVD 88

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

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
64.85	57.90	0.70	0.03	#200 - 16.24 #230 - 11.83			0

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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.02	0.03	0.02	0.03
25	0.50	0.71	0.00	0.00	0.02	0.03
35	1.00	0.50	0.02	0.03	0.04	0.06
45	1.50	0.35	0.04	0.06	0.08	0.12
60	2.00	0.25	0.22	0.34	0.30	0.46
80	2.50	0.18	0.57	0.88	0.87	1.34
120	3.00	0.13	14.28	22.02	15.15	23.36
170	3.50	0.09	32.13	49.55	47.28	72.91
200	3.75	0.07	7.04	10.86	54.32	83.76
230	4.00	0.06	2.86	4.41	57.18	88.17

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.76	3.55	3.27	3.02	2.83	2.58

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	3.18	0.11	0.35	-0.85	7.93

Granularmetric Report

Depths and elevations based on measured values

Project Name: Sandy Point 2005 Sand Search

Sample Name: SPVC-05-04 #1

Analysis Date: 08-19-05

Analyzed By: AS

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
3,863,008	223,777	Louisiana South State Plane	-56.7 NAVD 88

USCS:	Munsell:	Comments:
SP	Wet - 5Y-4/2 Dry - 5Y-6/1 Washed - 5Y-6/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
63.48	62.00	0.21	0.06	#200 - 3.50 #230 - 2.73			0

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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.71	0.01	0.02	0.01	0.02
35	1.00	0.50	0.08	0.13	0.09	0.14
45	1.50	0.35	0.40	0.63	0.49	0.77
60	2.00	0.25	1.44	2.27	1.93	3.04
80	2.50	0.18	19.55	30.80	21.48	33.84
120	3.00	0.13	34.93	55.03	56.41	88.86
170	3.50	0.09	4.28	6.74	60.69	95.60
200	3.75	0.07	0.57	0.90	61.26	96.50
230	4.00	0.06	0.49	0.77	61.75	97.27

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.46	2.96	2.87	2.65	2.36	2.21	2.03

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.61	0.16	0.37	-0.19	5.44

Granularmetric Report

Depths and elevations based on measured values

Project Name: Sandy Point 2005 Sand Search

Sample Name: SPVC-05-04 #2

Analysis Date: 08-31-05

Analyzed By: AS

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
3,863,008	223,777	Louisiana South State Plane	-60.9 NAVD 88

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

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
65.16	49.74	0.80	0.00	#200 - 28.68 #230 - 24.89			0

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	0.06	0.09	0.06	0.09
18	0.00	1.00	0.07	0.11	0.13	0.20
25	0.50	0.71	0.10	0.15	0.23	0.35
35	1.00	0.50	0.09	0.14	0.32	0.49
45	1.50	0.35	0.09	0.14	0.41	0.63
60	2.00	0.25	0.58	0.89	0.99	1.52
80	2.50	0.18	8.08	12.40	9.07	13.92
120	3.00	0.13	20.63	31.66	29.70	45.58
170	3.50	0.09	14.54	22.31	44.24	67.89
200	3.75	0.07	2.23	3.42	46.47	71.32
230	4.00	0.06	2.47	3.79	48.94	75.11

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
		3.99	3.10	2.67	2.53	2.14

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.88	0.14	0.51	-1.06	8.99

Granularmetric Report

Depths and elevations based on measured values

Project Name: Sandy Point 2005 Sand Search

Sample Name: SPVC-05-04 #3

Analysis Date: 08-19-05

Analyzed By: AS

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
3,863,008	223,777	Louisiana South State Plane	-66.7 NAVD 88

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

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
65.31	62.61	0.14	0.14	#200 - 4.56 #230 - 4.49			0

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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.01	0.02	0.01	0.02
25	0.50	0.71	0.00	0.00	0.01	0.02
35	1.00	0.50	0.03	0.05	0.04	0.06
45	1.50	0.35	0.20	0.31	0.24	0.37
60	2.00	0.25	1.32	2.02	1.56	2.39
80	2.50	0.18	27.08	41.46	28.64	43.85
120	3.00	0.13	27.24	41.71	55.88	85.56
170	3.50	0.09	5.57	8.53	61.45	94.09
200	3.75	0.07	0.88	1.35	62.33	95.44
230	4.00	0.06	0.05	0.08	62.38	95.51

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.67	2.98	2.87	2.57	2.27	2.16	2.03

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.56	0.17	0.37	0.23	4.05

Granularmetric Report

Depths and elevations based on measured values

Project Name: Sandy Point 2005 Sand Search

Sample Name: SPVC-05-04A #1

Analysis Date: 08-31-05

Analyzed By: AS

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
3,863,011	223,776	Louisiana South State Plane	-58.7 NAVD 88

USCS:	Munsell:	Comments:
SP-SM	Wet - 5Y-4/2 Dry - 5Y-6/2 Washed - 5Y-6/2	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
68.41	66.17	0.26	0.32	#200 - 5.60 #230 - 3.98			0

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	0.02	0.03	0.02	0.03
14	-0.50	1.41	0.00	0.00	0.02	0.03
18	0.00	1.00	0.02	0.03	0.04	0.06
25	0.50	0.71	0.01	0.01	0.05	0.07
35	1.00	0.50	0.02	0.03	0.07	0.10
45	1.50	0.35	0.10	0.15	0.17	0.25
60	2.00	0.25	0.49	0.72	0.66	0.96
80	2.50	0.18	8.07	11.80	8.73	12.76
120	3.00	0.13	45.63	66.70	54.36	79.46
170	3.50	0.09	8.66	12.66	63.02	92.12
200	3.75	0.07	1.56	2.28	64.58	94.40
230	4.00	0.06	1.11	1.62	65.69	96.02

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.84	3.18	2.97	2.78	2.59	2.52	2.17

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.78	0.15	0.35	-0.36	12.36

Granularmetric Report

Depths and elevations based on measured values

Project Name: Sandy Point 2005 Sand Search

Sample Name: SPVC-05-04A #2

Analysis Date: 08-31-05

Analyzed By: AS

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
3,863,011	223,776	Louisiana South State Plane	-68.7 NAVD 88

USCS:	Munsell:	Comments:
SP	Wet - 5Y-4/2 Dry - 5Y-6/2 Washed - 5Y-6/2	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
68.80	66.99	0.28	0.00	#200 - 4.52 #230 - 3.04			0

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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.01	0.01	0.01	0.01
25	0.50	0.71	0.05	0.07	0.06	0.09
35	1.00	0.50	0.20	0.29	0.26	0.38
45	1.50	0.35	0.23	0.33	0.49	0.71
60	2.00	0.25	1.21	1.76	1.70	2.47
80	2.50	0.18	10.98	15.96	12.68	18.43
120	3.00	0.13	37.38	54.33	50.06	72.76
170	3.50	0.09	14.08	20.47	64.14	93.23
200	3.75	0.07	1.55	2.25	65.69	95.48
230	4.00	0.06	1.02	1.48	66.71	96.96

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.70	3.27	3.05	2.79	2.56	2.42	2.08

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	2.78	0.15	0.42	-0.57	6.28

Granularmetric Report

Depths and elevations based on measured values

Project Name: Sandy Point 2005 Sand Search

Sample Name: SPVC-05-04A #3

Analysis Date: 08-27-05

Analyzed By: AS

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
3,863,011	223,776	Louisiana South State Plane	-72.9 NAVD 88

USCS:	Munsell:	Comments:
SP	Wet - 5Y-4/2 Dry - 5Y-6/2 Washed - 5Y-6/2	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
65.67	63.45	0.25	0.03	#200 - 4.49 #230 - 3.79			0

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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.02	0.03	0.02	0.03
25	0.50	0.71	0.00	0.00	0.02	0.03
35	1.00	0.50	0.02	0.03	0.04	0.06
45	1.50	0.35	0.03	0.05	0.07	0.11
60	2.00	0.25	0.90	1.37	0.97	1.48
80	2.50	0.18	18.99	28.92	19.96	30.39
120	3.00	0.13	34.81	53.01	54.77	83.40
170	3.50	0.09	6.83	10.40	61.60	93.80
200	3.75	0.07	1.12	1.71	62.72	95.51
230	4.00	0.06	0.46	0.70	63.18	96.21

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.68	3.03	2.92	2.68	2.41	2.25	2.06

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	2.66	0.16	0.37	0.17	4.91

Granularmetric Report

Depths and elevations based on measured values

Project Name: Sandy Point 2005 Sand Search

Sample Name: SPVC-05-05 #1

Analysis Date: 08-19-05

Analyzed By: AS

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
3,862,583	223,106	Louisiana South State Plane	-59.9 NAVD 88

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

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
63.66	46.52	13.90	0.19	#200 - 66.31 #230 - 48.95			0

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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.71	0.00	0.00	0.00	0.00
35	1.00	0.50	0.01	0.02	0.01	0.02
45	1.50	0.35	0.02	0.03	0.03	0.05
60	2.00	0.25	0.04	0.06	0.07	0.11
80	2.50	0.18	0.12	0.19	0.19	0.30
120	3.00	0.13	1.01	1.59	1.20	1.89
170	3.50	0.09	14.17	22.26	15.37	24.14
200	3.75	0.07	6.08	9.55	21.45	33.69
230	4.00	0.06	11.05	17.36	32.50	51.05

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
			3.98	3.52	3.32	3.07

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	3.51	0.09	0.33	-0.87	6.03

Granularmetric Report

Depths and elevations based on measured values

Project Name: Sandy Point 2005 Sand Search

Sample Name: SPVC-05-05 #2

Analysis Date: 08-19-05

Analyzed By: AS

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
3,862,583	223,106	Louisiana South State Plane	-63.3 NAVD 88

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

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
63.59	58.08	1.09	0.11	#200 - 14.37 #230 - 10.49			0

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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.71	0.01	0.02	0.01	0.02
35	1.00	0.50	0.01	0.02	0.02	0.03
45	1.50	0.35	0.01	0.02	0.03	0.05
60	2.00	0.25	0.16	0.25	0.19	0.30
80	2.50	0.18	0.56	0.88	0.75	1.18
120	3.00	0.13	28.56	44.91	29.31	46.09
170	3.50	0.09	22.78	35.82	52.09	81.92
200	3.75	0.07	2.36	3.71	54.45	85.63
230	4.00	0.06	2.47	3.88	56.92	89.51

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.64	3.40	3.05	2.77	2.66	2.54

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	3.03	0.12	0.34	0.3	4.3

Granularmetric Report

Depths and elevations based on measured values

Project Name: Sandy Point 2005 Sand Search

Sample Name: SPVC-05-06 #1

Analysis Date: 08-27-05

Analyzed By: AS

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
3,863,353	222,037	Louisiana South State Plane	-59.0 NAVD 88

USCS:	Munsell:	Comments:
SM	Wet - 5Y-2.5/1 Dry - 5Y-6/2 Washed - 5Y-6/2	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
65.78	59.51	0.75	0.17	#200 - 13.83 #230 - 10.84			0

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	0.05	0.03	0.05
7	-1.50	2.83	0.05	0.08	0.08	0.12
10	-1.00	2.00	0.01	0.02	0.09	0.14
14	-0.50	1.41	0.00	0.00	0.09	0.14
18	0.00	1.00	0.04	0.06	0.13	0.20
25	0.50	0.71	0.03	0.05	0.16	0.24
35	1.00	0.50	0.05	0.08	0.21	0.32
45	1.50	0.35	0.04	0.06	0.25	0.38
60	2.00	0.25	0.08	0.12	0.33	0.50
80	2.50	0.18	0.36	0.55	0.69	1.05
120	3.00	0.13	29.29	44.53	29.98	45.58
170	3.50	0.09	24.13	36.68	54.11	82.26
200	3.75	0.07	2.57	3.91	56.68	86.17
230	4.00	0.06	1.97	2.99	58.65	89.16

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.61	3.40	3.06	2.77	2.67	2.54

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	3.01	0.12	0.4	-3.19	40.78

Granularmetric Report

Depths and elevations based on measured values

Project Name: Sandy Point 2005 Sand Search

Sample Name: SPVC-05-06A #1

Analysis Date: 08-31-05

Analyzed By: AS

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
3,863,352	222,034	Louisiana South State Plane	-59.3 NAVD 88

USCS:	Munsell:	Comments:
SM	Wet - 5Y-4/1 Dry - 5Y-6/2 Washed - 5Y-6/2	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
69.37	65.00	1.57	0.00	#200 - 14.01 #230 - 8.56			0

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	0.02	0.03	0.02	0.03
14	-0.50	1.41	0.00	0.00	0.02	0.03
18	0.00	1.00	0.01	0.01	0.03	0.04
25	0.50	0.71	0.03	0.04	0.06	0.09
35	1.00	0.50	0.05	0.07	0.11	0.16
45	1.50	0.35	0.11	0.16	0.22	0.32
60	2.00	0.25	0.20	0.29	0.42	0.61
80	2.50	0.18	0.47	0.68	0.89	1.28
120	3.00	0.13	11.22	16.17	12.11	17.46
170	3.50	0.09	38.39	55.34	50.50	72.80
200	3.75	0.07	9.15	13.19	59.65	85.99
230	4.00	0.06	3.78	5.45	63.43	91.44

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.71	3.54	3.29	3.07	2.95	2.61

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	3.23	0.11	0.36	-1.9	18.13

Granularmetric Report

Depths and elevations based on measured values

Project Name: Sandy Point 2005 Sand Search

Sample Name: SPVC-05-06A #2

Analysis Date: 08-19-05

Analyzed By: AS

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
3,863,352	222,034	Louisiana South State Plane	-64.1 NAVD 88

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

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
63.70	59.78	0.19	0.13	#200 - 7.38 #230 - 6.58			0

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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.71	0.05	0.08	0.05	0.08
35	1.00	0.50	0.05	0.08	0.10	0.16
45	1.50	0.35	0.23	0.36	0.33	0.52
60	2.00	0.25	0.98	1.54	1.31	2.06
80	2.50	0.18	7.31	11.48	8.62	13.53
120	3.00	0.13	41.51	65.16	50.13	78.70
170	3.50	0.09	8.25	12.95	58.38	91.65
200	3.75	0.07	0.62	0.97	59.00	92.62
230	4.00	0.06	0.51	0.80	59.51	93.42

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.20	2.97	2.78	2.59	2.52	2.13

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.75	0.15	0.34	-0.7	8.52

Granularmetric Report

Depths and elevations based on measured values

Project Name: Sandy Point 2005 Sand Search

Sample Name: SPVC-05-06A #3

Analysis Date: 08-31-05

Analyzed By: AS

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
3,863,352	222,034	Louisiana South State Plane	-66.2 NAVD 88

USCS:	Munsell:	Comments:
SP	Wet - 5Y-4/2 Dry - 5Y-5/2 Washed - 5Y-6/2	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
68.44	66.11	0.21	0.04	#200 - 4.53 #230 - 3.76			0

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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.02	0.03	0.02	0.03
25	0.50	0.71	0.00	0.00	0.02	0.03
35	1.00	0.50	0.00	0.00	0.02	0.03
45	1.50	0.35	0.01	0.01	0.03	0.04
60	2.00	0.25	0.82	1.20	0.85	1.24
80	2.50	0.18	15.56	22.74	16.41	23.98
120	3.00	0.13	39.44	57.63	55.85	81.60
170	3.50	0.09	8.65	12.64	64.50	94.24
200	3.75	0.07	0.84	1.23	65.34	95.47
230	4.00	0.06	0.53	0.77	65.87	96.24

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.65	3.09	2.94	2.73	2.51	2.32	2.08

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.7	0.15	0.35	0.07	5.11

Granularmetric Report

Depths and elevations based on measured values

Project Name: Sandy Point 2005 Sand Search

Sample Name: SPVC-05-07 #1

Analysis Date: 08-19-05

Analyzed By: AS

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
3,862,891	221,721	Louisiana South State Plane	-62.8 NAVD 88

USCS:	Munsell:	Comments:
SM	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 (%):	Shells (%):
62.67	53.48	3.23	0.24	#200 - 31.64 #230 - 20.06			0

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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.71	0.00	0.00	0.00	0.00
35	1.00	0.50	0.00	0.00	0.00	0.00
45	1.50	0.35	0.01	0.02	0.01	0.02
60	2.00	0.25	0.09	0.14	0.10	0.16
80	2.50	0.18	0.19	0.30	0.29	0.46
120	3.00	0.13	9.58	15.29	9.87	15.75
170	3.50	0.09	25.98	41.46	35.85	57.20
200	3.75	0.07	6.99	11.15	42.84	68.36
230	4.00	0.06	7.26	11.58	50.10	79.94

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
		3.89	3.41	3.11	3.00	2.65

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	3.29	0.10	0.36	-0.18	3.09

Granularmetric Report

Depths and elevations based on measured values

Project Name: Sandy Point 2005 Sand Search

Sample Name: SPVC-05-07A #1

Analysis Date: 08-19-05

Analyzed By: AS

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
3,862,895	221,719	Louisiana South State Plane	-60.4 NAVD 88

USCS:	Munsell:	Comments:
SP-SM	Wet - 5Y-4/2 Dry - 5Y-6/2 Washed - 5Y-6/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
63.81	61.07	0.31	0.24	#200 - 7.26 #230 - 5.01			0

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	0.02	0.01	0.02
10	-1.00	2.00	0.00	0.00	0.01	0.02
14	-0.50	1.41	0.00	0.00	0.01	0.02
18	0.00	1.00	0.00	0.00	0.01	0.02
25	0.50	0.71	0.00	0.00	0.01	0.02
35	1.00	0.50	0.03	0.05	0.04	0.06
45	1.50	0.35	0.16	0.25	0.20	0.31
60	2.00	0.25	0.59	0.92	0.79	1.24
80	2.50	0.18	1.67	2.62	2.46	3.86
120	3.00	0.13	39.47	61.86	41.93	65.71
170	3.50	0.09	14.51	22.74	56.44	88.45
200	3.75	0.07	2.74	4.29	59.18	92.74
230	4.00	0.06	1.43	2.24	60.61	94.99

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.40	3.20	2.87	2.67	2.60	2.51

Moment Statistics	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
	2.91	0.13	0.36	-0.24	10.26

Granularmetric Report

Depths and elevations based on measured values

Project Name: Sandy Point 2005 Sand Search

Sample Name: SPVC-05-07A #2

Analysis Date: 08-27-05

Analyzed By: AS

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
3,862,895	221,719	Louisiana South State Plane	-66.3 NAVD 88

USCS:	Munsell:	Comments:
SM	Wet - 5Y-4/2 Dry - 5Y-6/2 Washed - 5Y-6/2	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
62.59	52.64	3.54	0.06	#200 - 33.58 #230 - 21.62			0

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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.01	0.02	0.01	0.02
25	0.50	0.71	0.00	0.00	0.01	0.02
35	1.00	0.50	0.04	0.06	0.05	0.08
45	1.50	0.35	0.08	0.13	0.13	0.21
60	2.00	0.25	0.16	0.26	0.29	0.46
80	2.50	0.18	0.33	0.53	0.62	0.99
120	3.00	0.13	4.25	6.79	4.87	7.78
170	3.50	0.09	23.95	38.26	28.82	46.05
200	3.75	0.07	12.75	20.37	41.57	66.42
230	4.00	0.06	7.49	11.97	49.06	78.38

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
		3.93	3.55	3.22	3.11	2.80

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	3.38	0.10	0.36	-1.42	10.06

Granularmetric Report

Depths and elevations based on measured values

Project Name: Sandy Point 2005 Sand Search

Sample Name: SPVC-05-08 #1

Analysis Date: 08-19-05

Analyzed By: AS

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
3,863,001	221,064	Louisiana South State Plane	-56.9 NAVD 88

USCS:	Munsell:	Comments:
SP-SM	Wet - 5Y-4/2 Dry - 5Y-6/2 Washed - 5Y-6/2	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
38.05	36.55	0.13	0.29	#200 - 5.78 #230 - 4.57			0

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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.01	0.03	0.01	0.03
25	0.50	0.71	0.00	0.00	0.01	0.03
35	1.00	0.50	0.02	0.05	0.03	0.08
45	1.50	0.35	0.07	0.18	0.10	0.26
60	2.00	0.25	0.35	0.92	0.45	1.18
80	2.50	0.18	2.76	7.25	3.21	8.44
120	3.00	0.13	25.70	67.54	28.91	75.98
170	3.50	0.09	6.13	16.11	35.04	92.09
200	3.75	0.07	0.81	2.13	35.85	94.22
230	4.00	0.06	0.46	1.21	36.31	95.43

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.91	3.25	2.99	2.81	2.62	2.56	2.26

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.82	0.14	0.33	-0.14	8.27

Granularmetric Report

Depths and elevations based on measured values

Project Name: Sandy Point 2005 Sand Search

Sample Name: SPVC-05-08 #2

Analysis Date: 08-19-05

Analyzed By: AS

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
3,863,001	221,064	Louisiana South State Plane	-68.5 NAVD 88

USCS:	Munsell:	Comments:
SP-SM	Wet - 5Y-4/2 Dry - 5Y-6/1 Washed - 5Y-6/1	

Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
63.39	61.31	0.39	0.28	#200 - 5.35 #230 - 4.18			0

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	0.00	0.00	0.00	0.00
18	0.00	1.00	0.00	0.00	0.00	0.00
25	0.50	0.71	0.01	0.02	0.01	0.02
35	1.00	0.50	0.00	0.00	0.01	0.02
45	1.50	0.35	0.02	0.03	0.03	0.05
60	2.00	0.25	0.07	0.11	0.10	0.16
80	2.50	0.18	2.46	3.88	2.56	4.04
120	3.00	0.13	41.48	65.44	44.04	69.47
170	3.50	0.09	14.07	22.20	58.11	91.67
200	3.75	0.07	1.89	2.98	60.00	94.65
230	4.00	0.06	0.74	1.17	60.74	95.82

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
3.82	3.33	3.12	2.85	2.66	2.59	2.51

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.88	0.14	0.3	0.63	5.21

Granularmetric Report

Depths and elevations based on measured values

Project Name: Sandy Point 2005 Sand Search

Sample Name: SPVC-05-08A #1

Analysis Date: 08-31-05

Analyzed By: AS

Coastal Planning & Engineering
2481 NW Boca Raton Blvd, Boca Raton
FL 33431
ph (561) 391-8102
fax (561) 391-9116

Easting (ft):	Northing (ft):	Coordinate System:	Elevation (ft):
3,863,000	221,069	Louisiana South State Plane	-68.2 NAVD 88

USCS:	Munsell:	Comments:
SP-SM	Wet - 5Y-4/2 Dry - 5Y-6/2 Washed - 5Y-6/2	

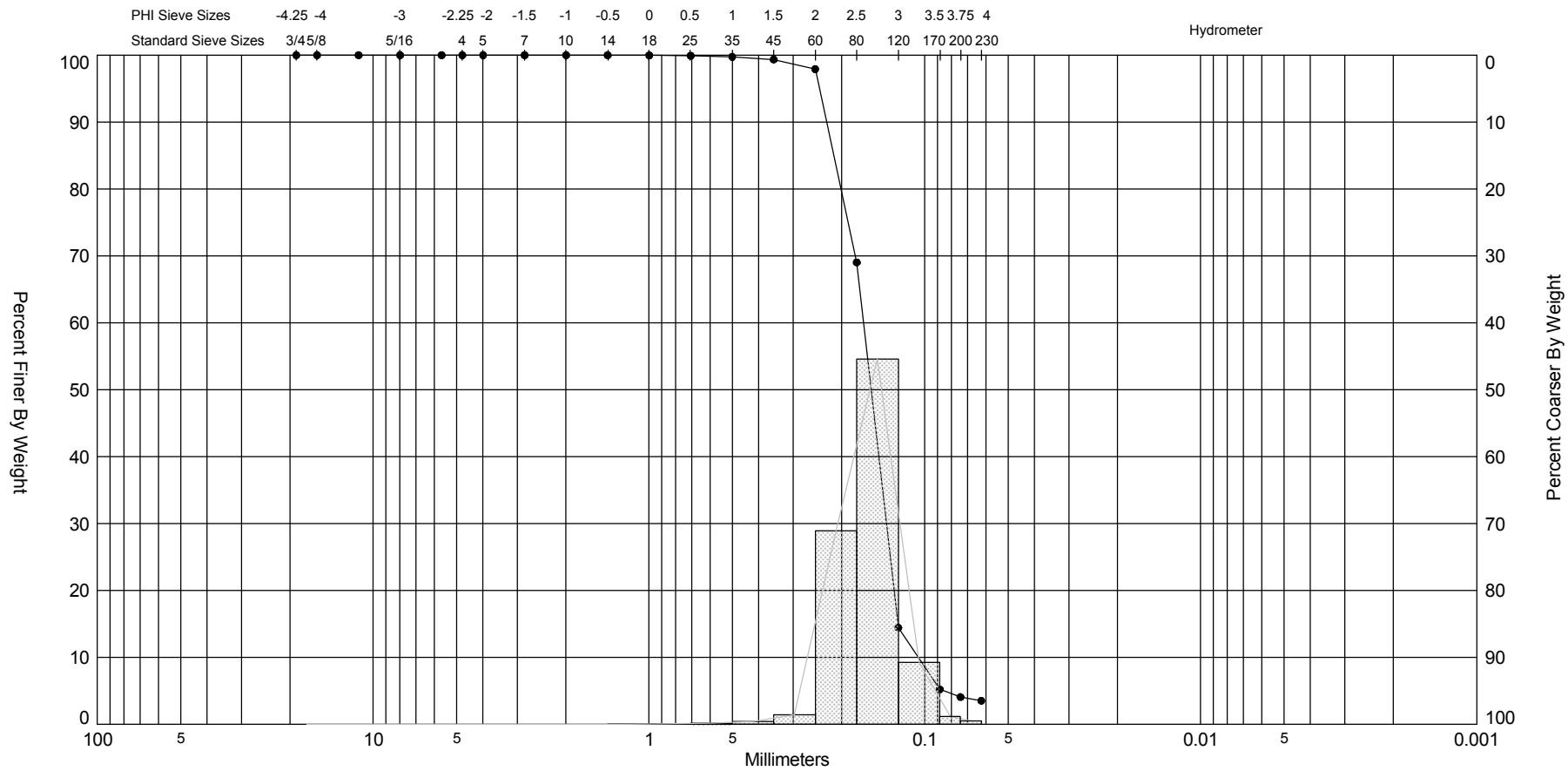
Dry Weight (g):	Wash Weight (g):	Pan Retained (g):	Sieve Loss (%):	Fines (%):	Organics (%):	Carbonates (%):	Shells (%):
65.88	61.86	0.48	0.08	#200 - 7.91 #230 - 6.91			0

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	0.02	0.01	0.02
18	0.00	1.00	0.00	0.00	0.01	0.02
25	0.50	0.71	0.01	0.02	0.02	0.03
35	1.00	0.50	0.02	0.03	0.04	0.06
45	1.50	0.35	0.02	0.03	0.06	0.09
60	2.00	0.25	0.13	0.20	0.19	0.29
80	2.50	0.18	4.70	7.13	4.89	7.42
120	3.00	0.13	43.12	65.45	48.01	72.87
170	3.50	0.09	10.90	16.55	58.91	89.42
200	3.75	0.07	1.76	2.67	60.67	92.09
230	4.00	0.06	0.66	1.00	61.33	93.09

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95
	3.34	3.06	2.83	2.63	2.57	2.33

Moment	Mean Phi	Mean mm	Sorting	Skewness	Kurtosis
Statistics	2.83	0.14	0.32	0.2	8.45

APPENDIX 15
2005 SANDY POINT INDIVIDUAL GRAIN SIZE DISTRIBUTION CURVES/HISTOGRAMS



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
SPVC-05-01 #1	—●—	-54.6	SP	#200 - 4.06 #230 - 3.52			2.67	2.64	-0.38	6.62	0.37

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Sandy Point 2005 Sand Search
Analysis Date:	08-19-05
Analyzed By:	AS
Easting (X, ft):	3,863,462
Northing (Y, ft):	225,058
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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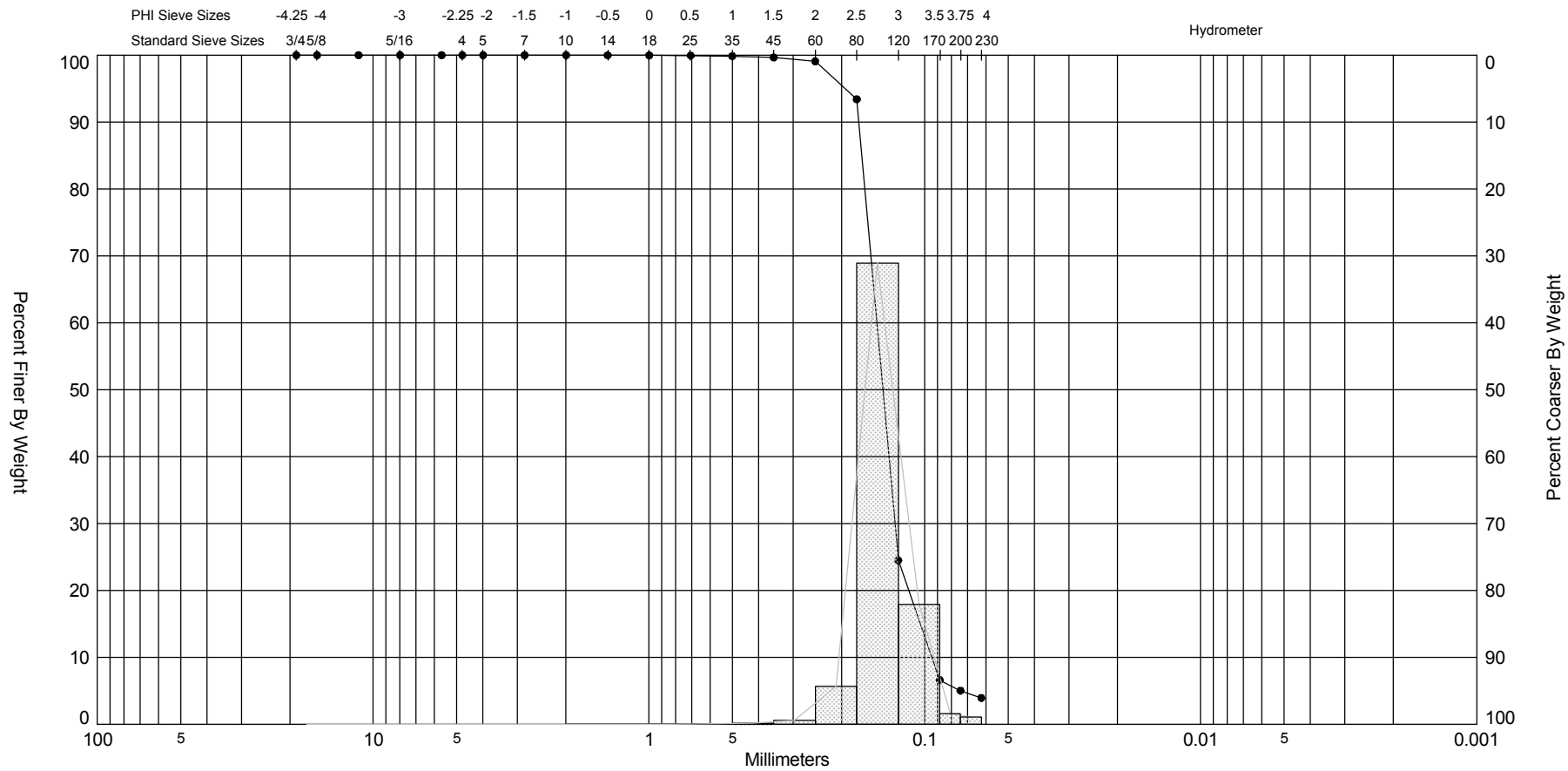

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
SPVC-05-01 #2	—●—	-60.0	SP-SM	#200 - 5.03 #230 - 3.94			2.81	2.83	-0.48	11.73	0.32

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Sandy Point 2005 Sand Search
Analysis Date:	08-27-05
Analyzed By:	AS
Easting (X, ft):	3,863,462
Northing (Y, ft):	225,058
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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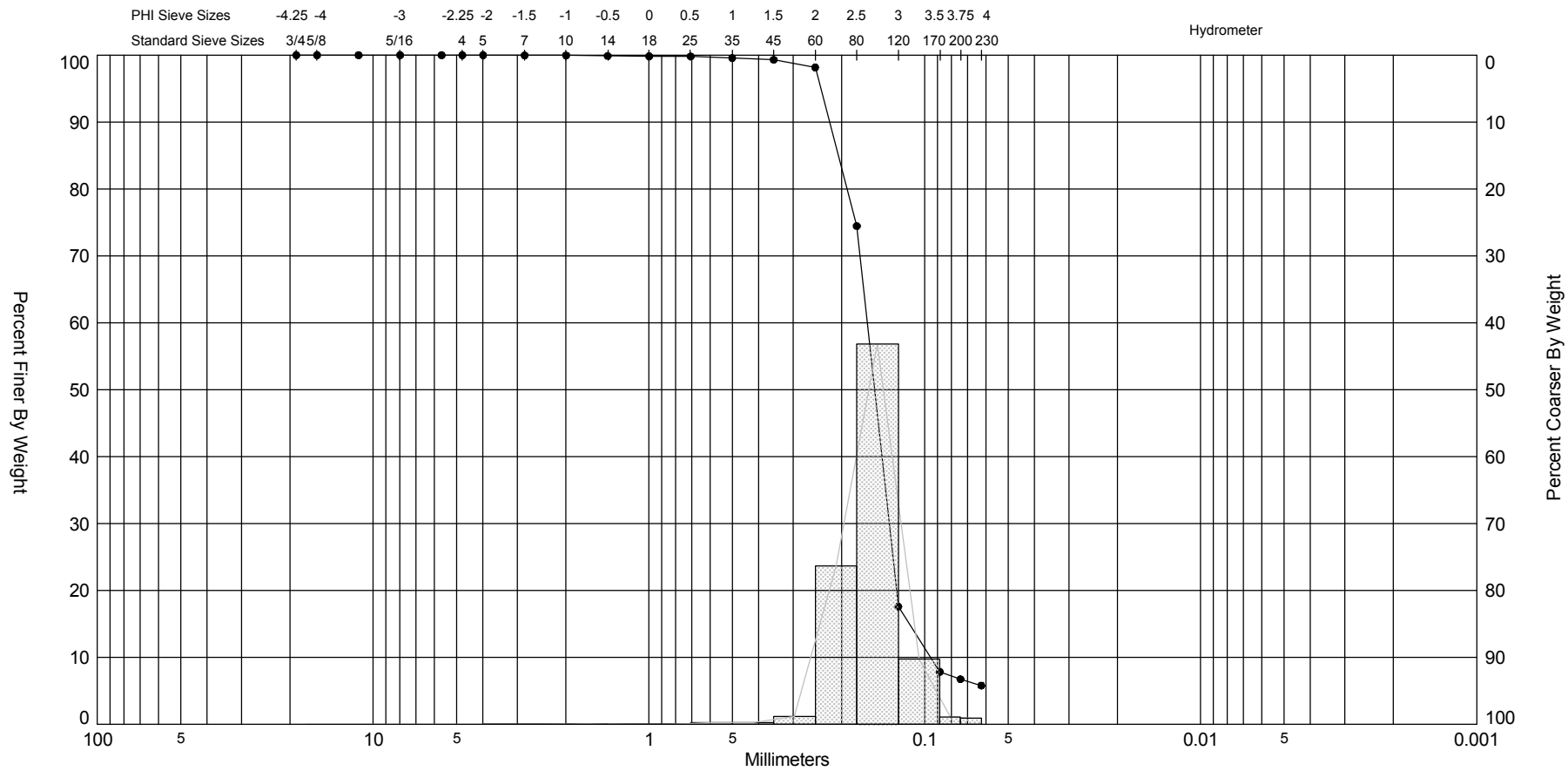

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
SPVC-05-01A #1	—●—	-72.7	SP-SM	#200 - 6.73 #230 - 5.79			2.72	2.67	-1.45	16.86	0.4

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Sandy Point 2005 Sand Search
Analysis Date:	08-27-05
Analyzed By:	AS
Easting (X, ft):	3,863,470
Northing (Y, ft):	225,052
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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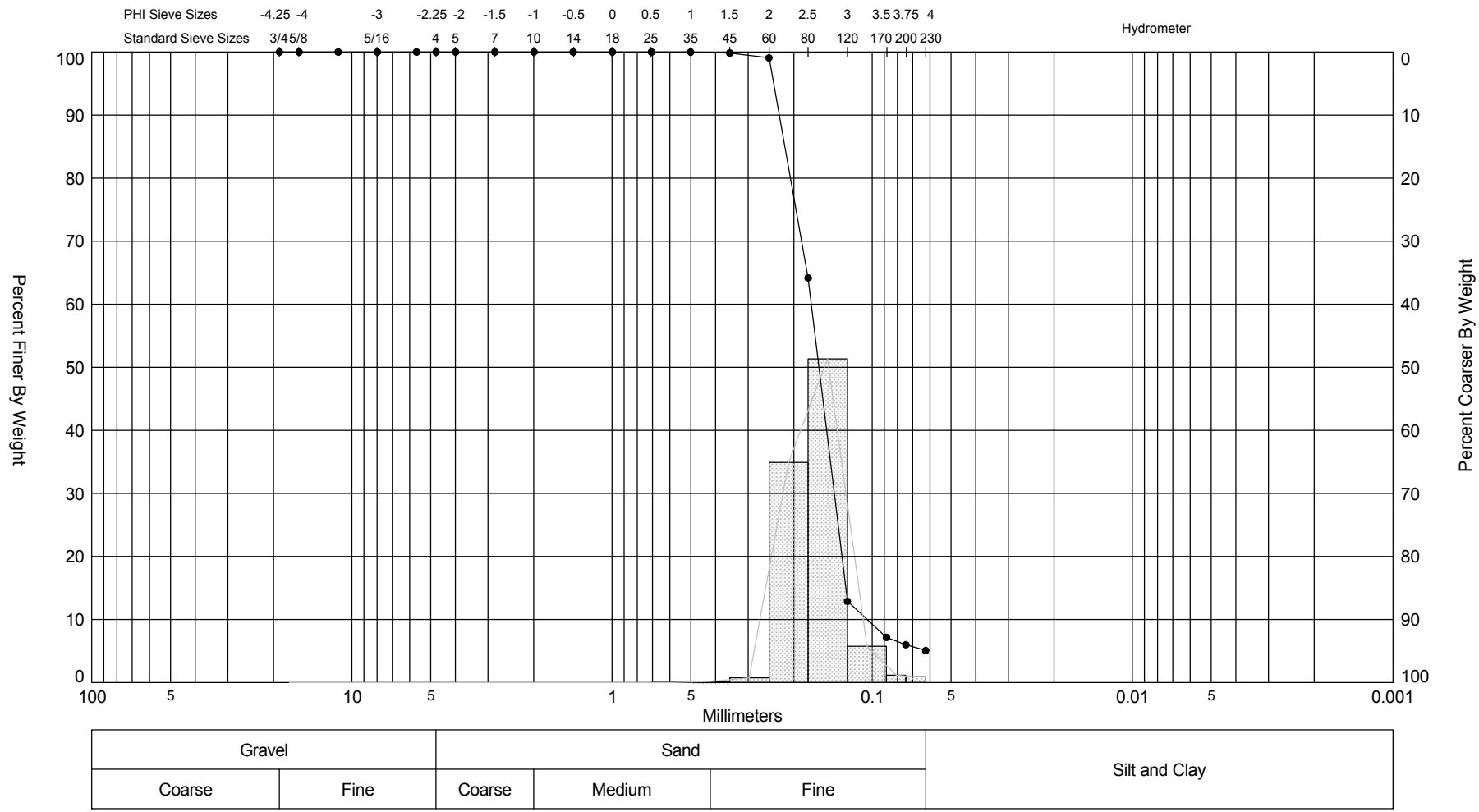

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
SPVC-05-02 #1	—●—	-59.2	SP-SM	#200 - 5.99 #230 - 5.05			2.64	2.61	0.57	4.58	0.35

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Sandy Point 2005 Sand Search
Analysis Date:	08-18-05
Analyzed By:	AS
Easting (X, ft):	3,863,243
Northing (Y, ft):	224,562
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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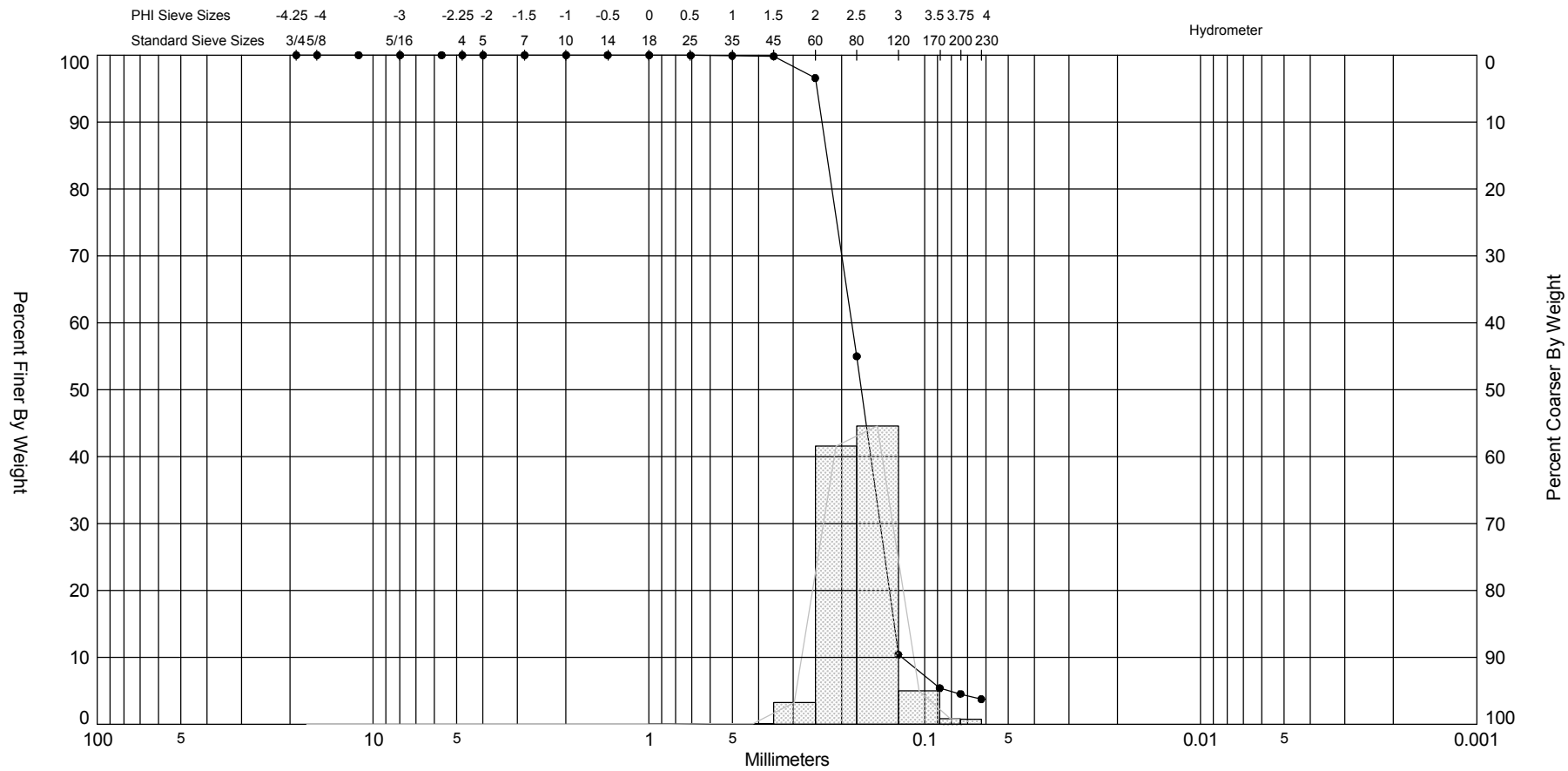

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
SPVC-05-02A #1	—●—	-54.4	SP	#200 - 4.54 #230 - 3.75			2.56	2.54	0.34	4.88	0.37

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Sandy Point 2005 Sand Search
Analysis Date:	08-30-05
Analyzed By:	AS
Easting (X, ft):	3,863,254
Northing (Y, ft):	224,574
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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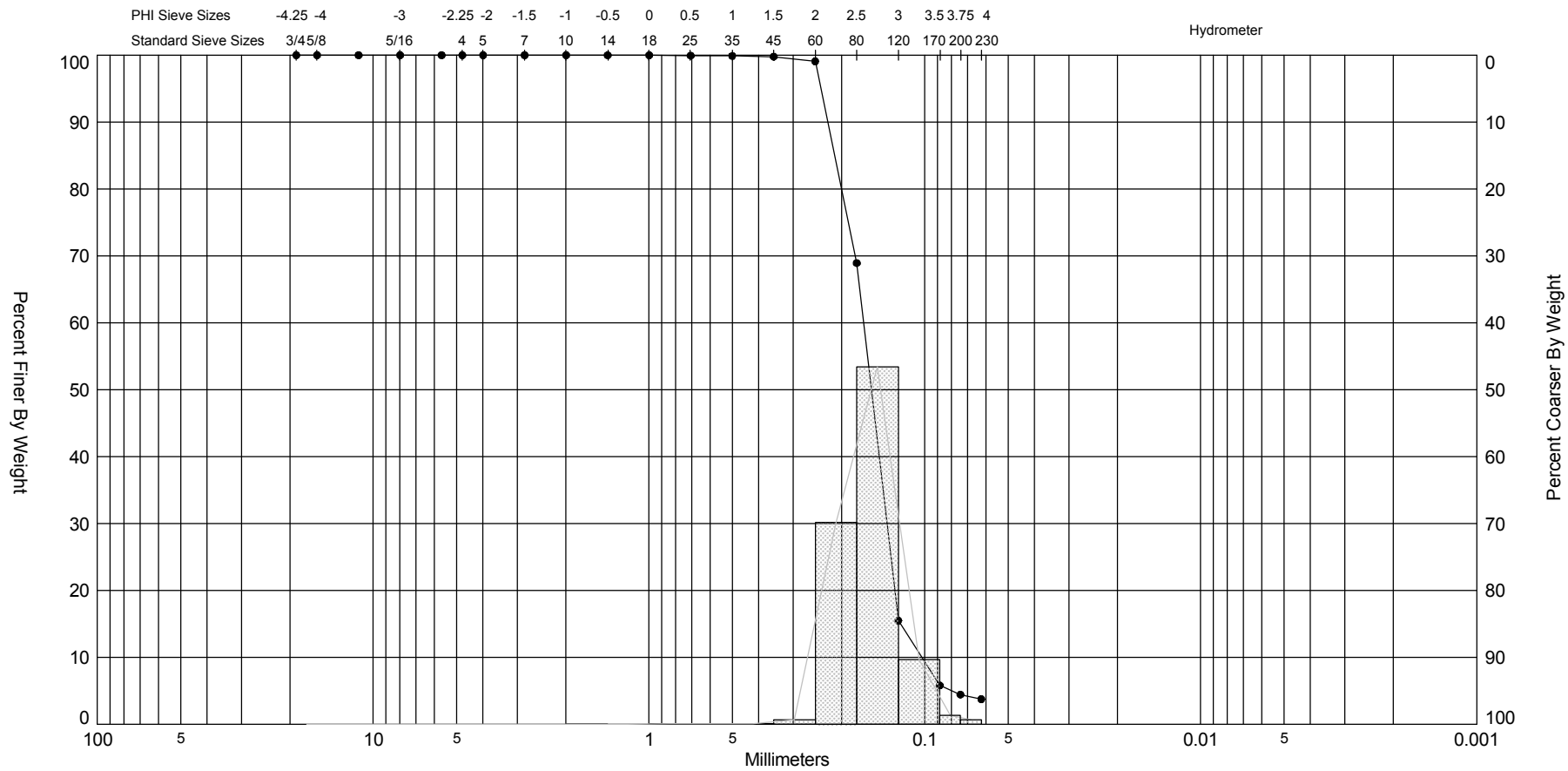

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
SPVC-05-02A #2	—●—	-60.0	SP	#200 - 4.43 #230 - 3.75			2.68	2.65	0.06	5.99	0.36

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Sandy Point 2005 Sand Search
Analysis Date:	08-31-05
Analyzed By:	AS
Easting (X, ft):	3,863,254
Northing (Y, ft):	224,574
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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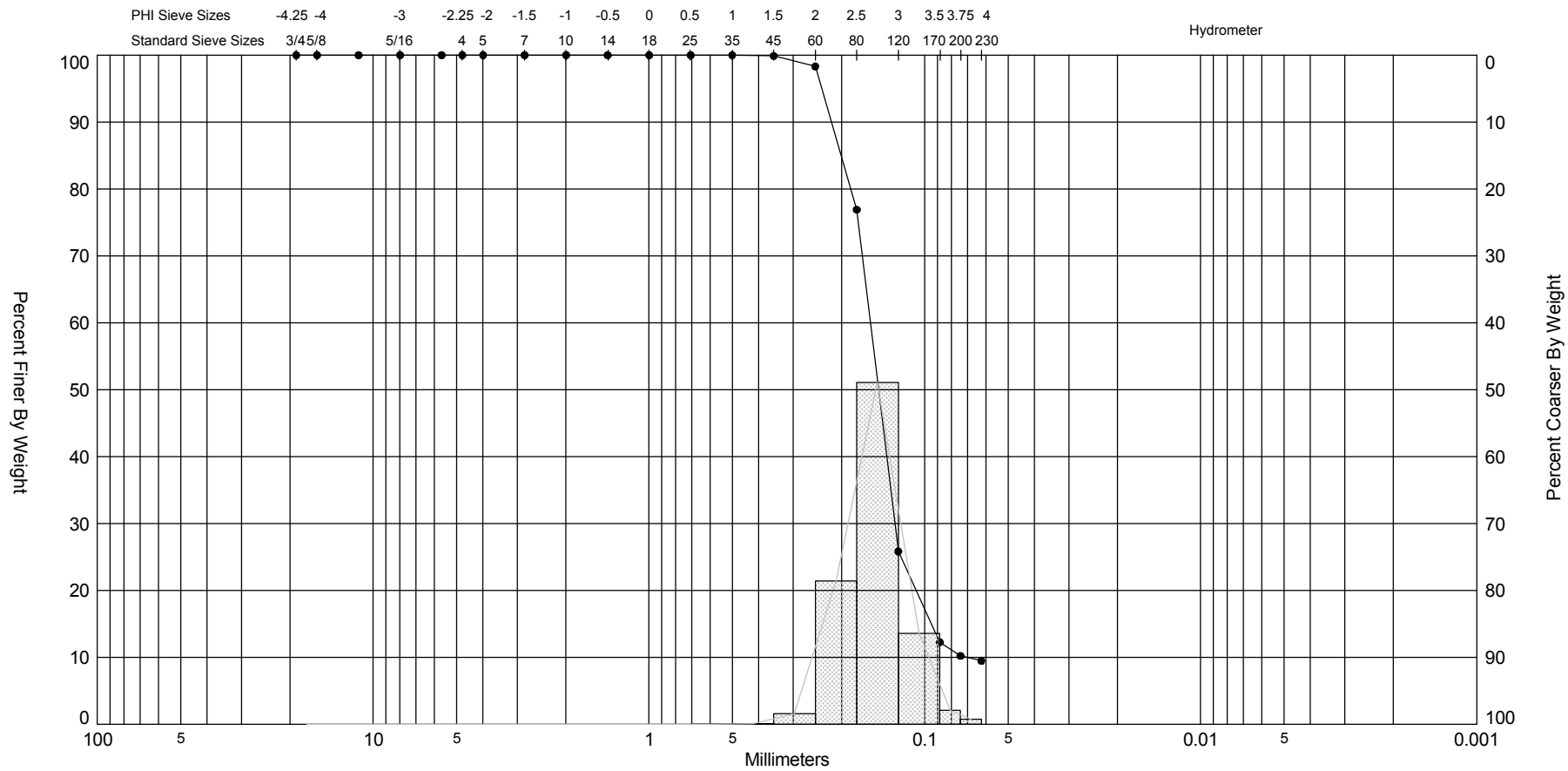

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
SPVC-05-02A #3	—●—	-66.4	SP-SM	#200 - 10.21 #230 - 9.47			2.76	2.72	0.15	3.7	0.38

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Sandy Point 2005 Sand Search
Analysis Date:	08-27-05
Analyzed By:	AS
Easting (X, ft):	3,863,254
Northing (Y, ft):	224,574
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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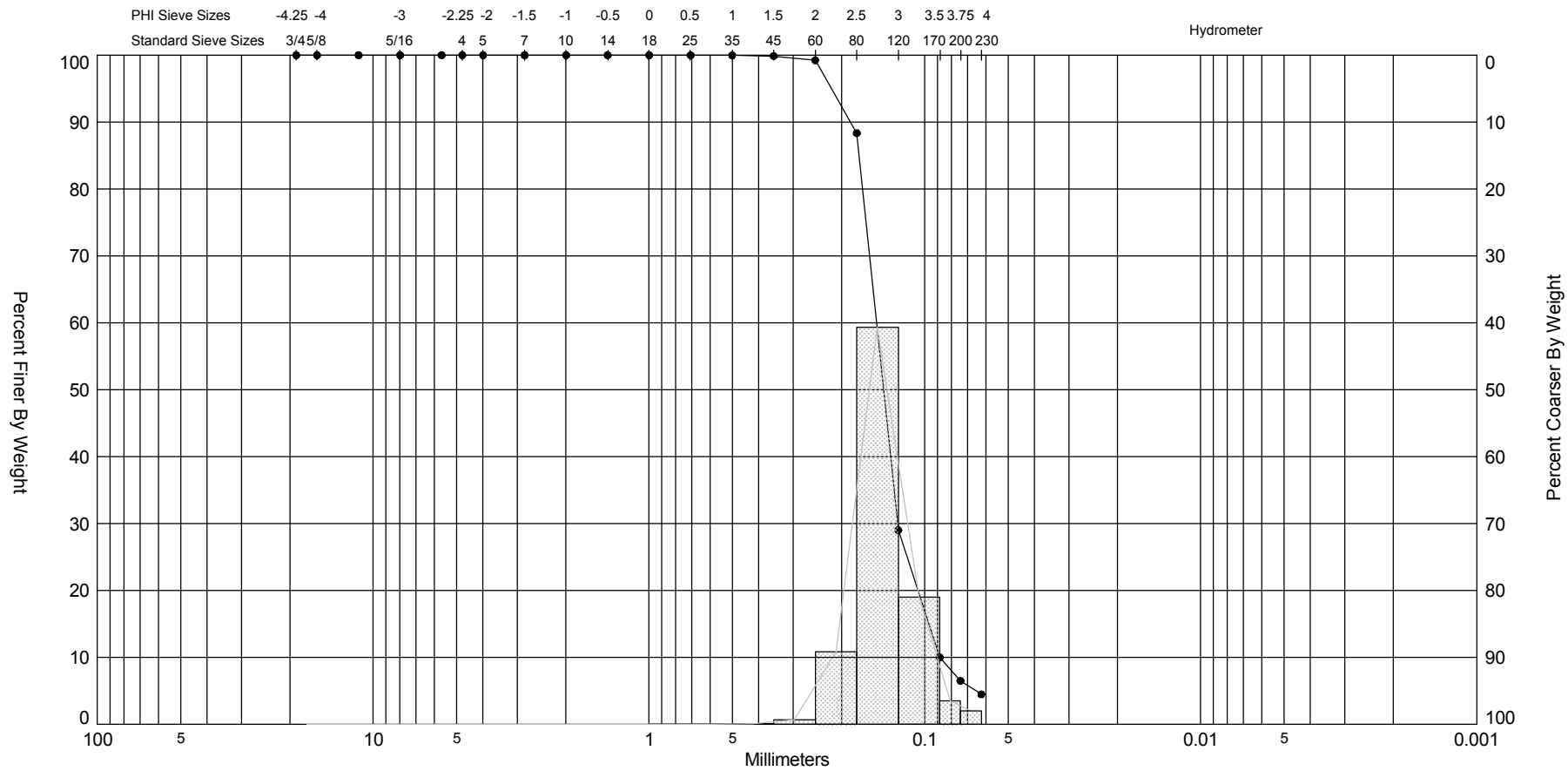
SIEVE ANALYSIS SANDY_POINT_05.GPJ FL DEP ROSS.GDT 9/13/05



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
SPVC-05-03 #1	—●—	-61.2	SP-SM	#200 - 6.48 #230 - 4.46			2.82	2.84	0.28	4.55	0.37

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Sandy Point 2005 Sand Search
Analysis Date:	08-19-05
Analyzed By:	AS
Easting (X, ft):	3,862,756
Northing (Y, ft):	224,268
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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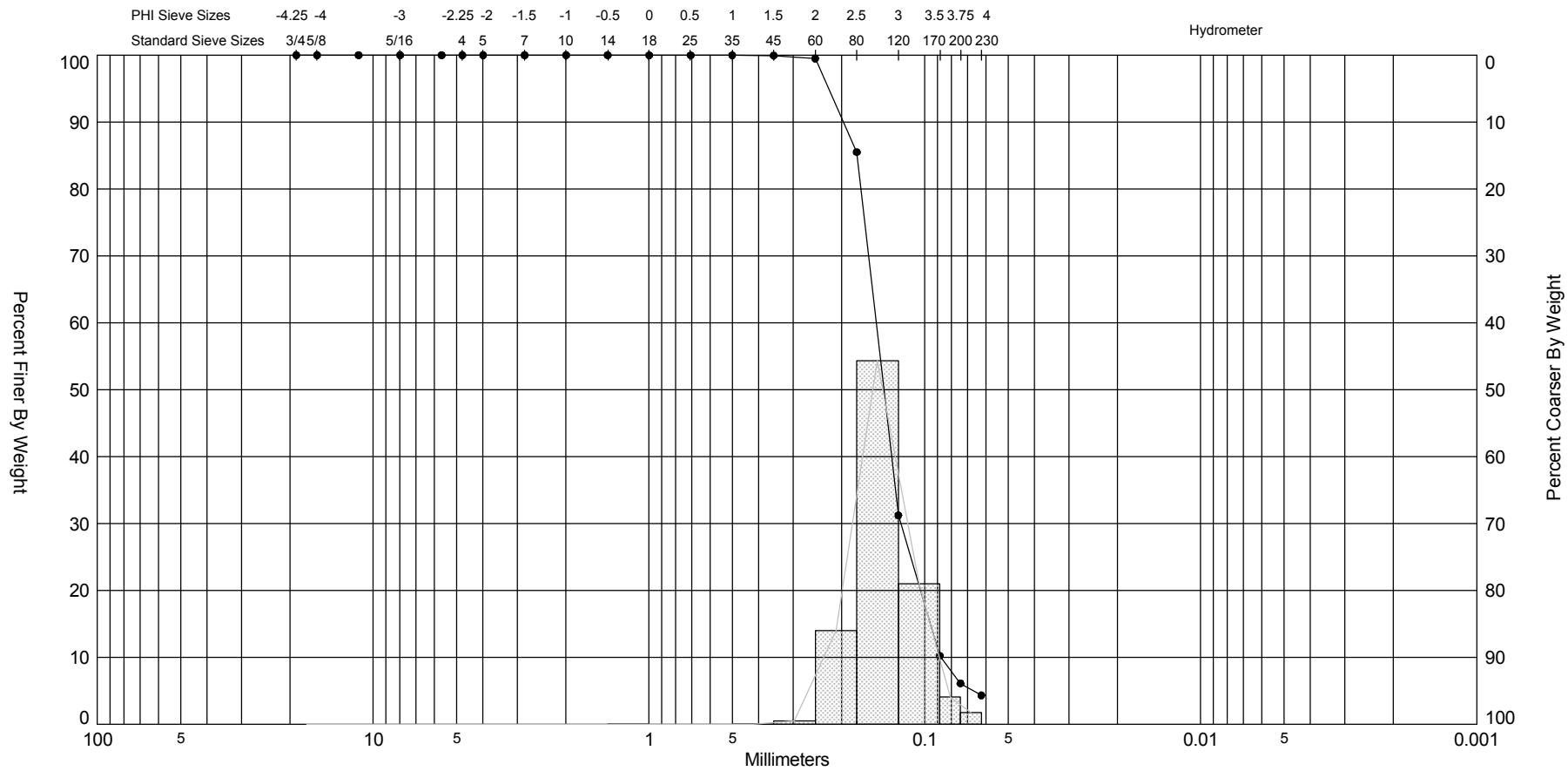

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
SPVC-05-03A #1	—●—	-59.3	SP-SM	#200 - 6.11 #230 - 4.32			2.83	2.84	0.24	4	0.38

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Sandy Point 2005 Sand Search
Analysis Date:	08-31-05
Analyzed By:	AS
Easting (X, ft):	3,862,762
Northing (Y, ft):	224,262
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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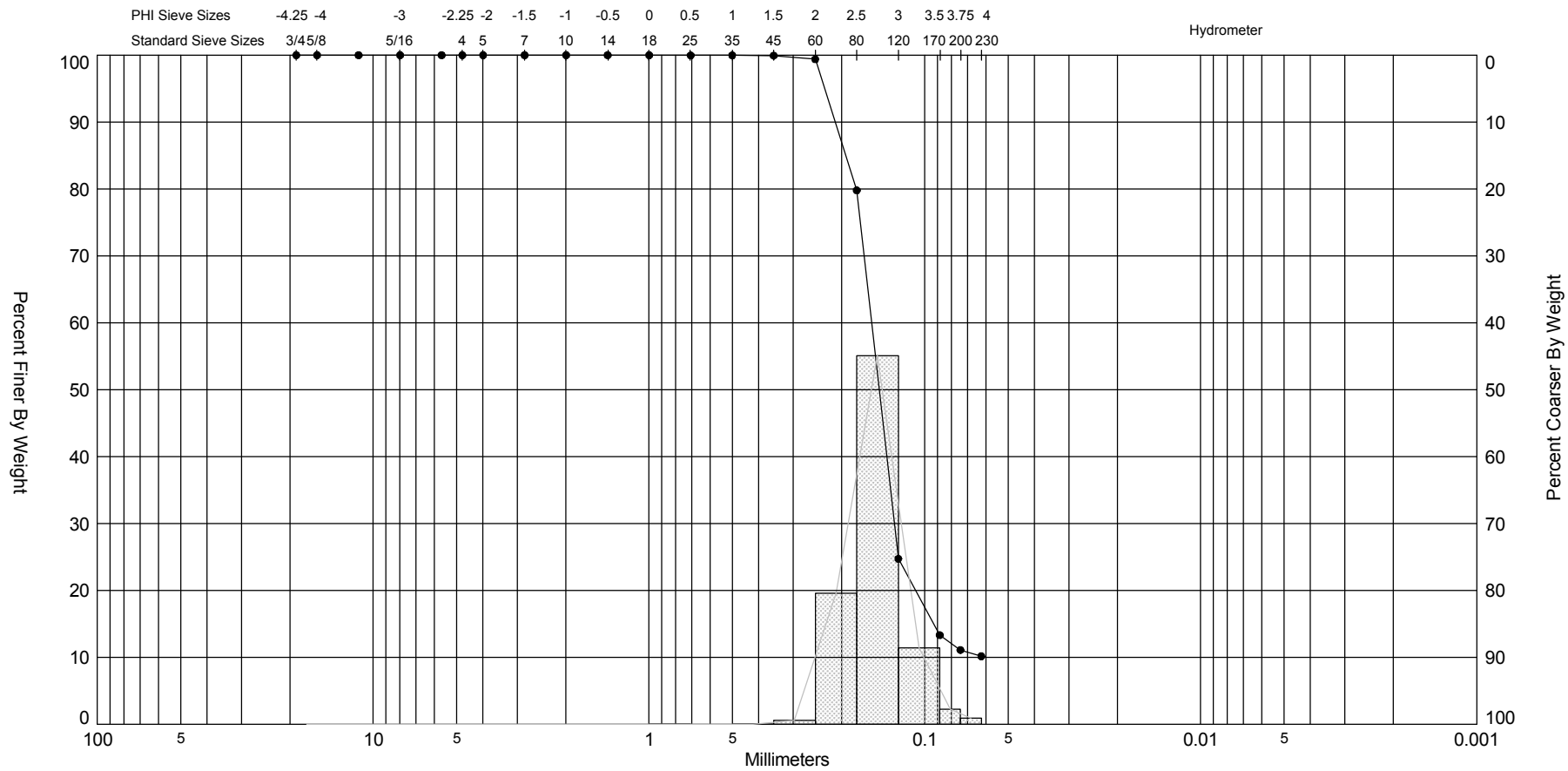

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
SPVC-05-03A #2	—●—	-64.7	SP-SM	#200 - 11.10 #230 - 10.16			2.77	2.73	0.34	4.61	0.36

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Sandy Point 2005 Sand Search
Analysis Date:	08-31-05
Analyzed By:	AS
Easting (X, ft):	3,862,762
Northing (Y, ft):	224,262
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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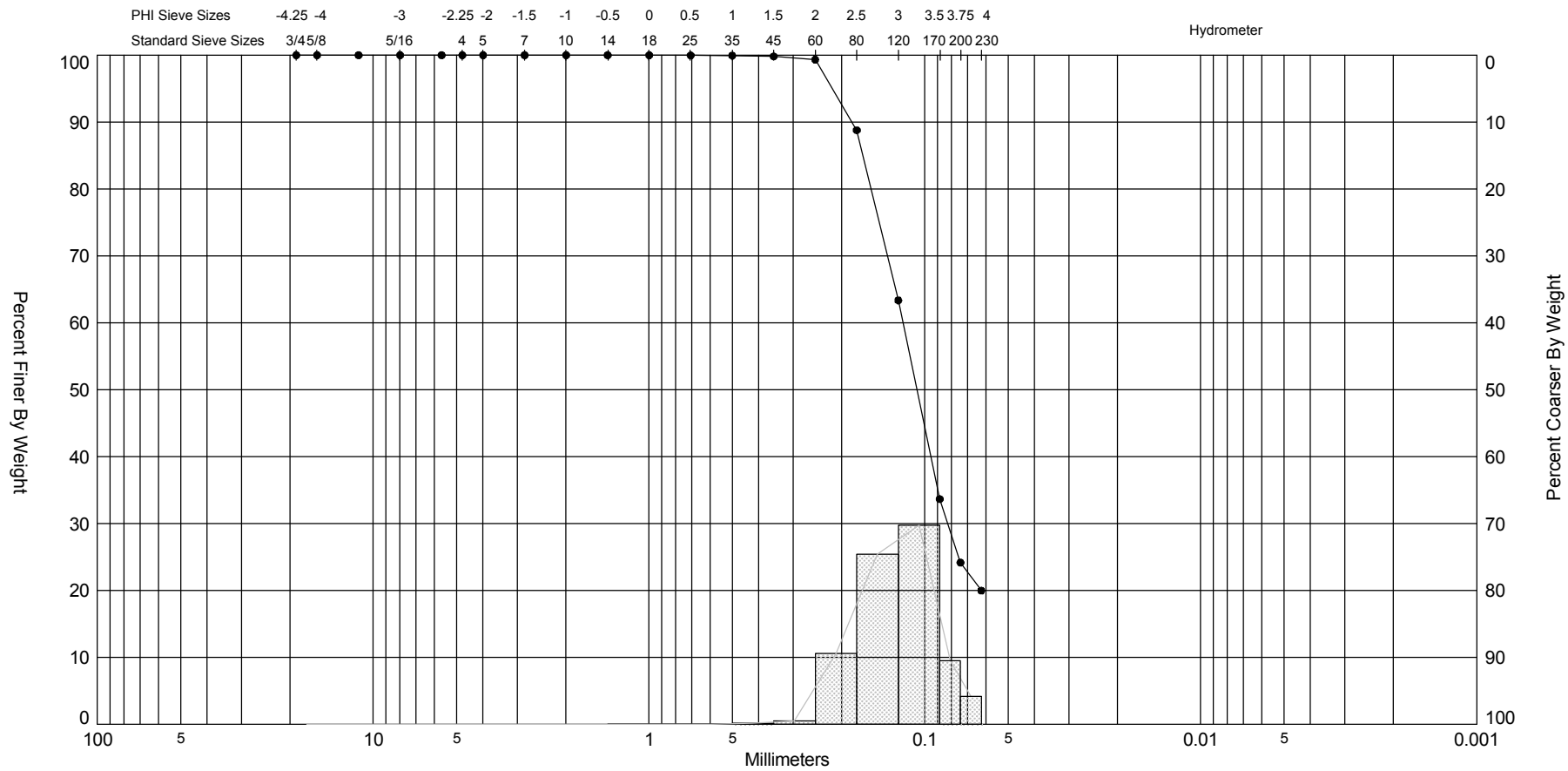

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
SPVC-05-03A #3	—●—	-67.7	SM	#200 - 24.16 #230 - 19.96			3.22	3.02	-0.38	3.36	0.47

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Sandy Point 2005 Sand Search
Analysis Date:	08-31-05
Analyzed By:	AS
Easting (X, ft):	3,862,762
Northing (Y, ft):	224,262
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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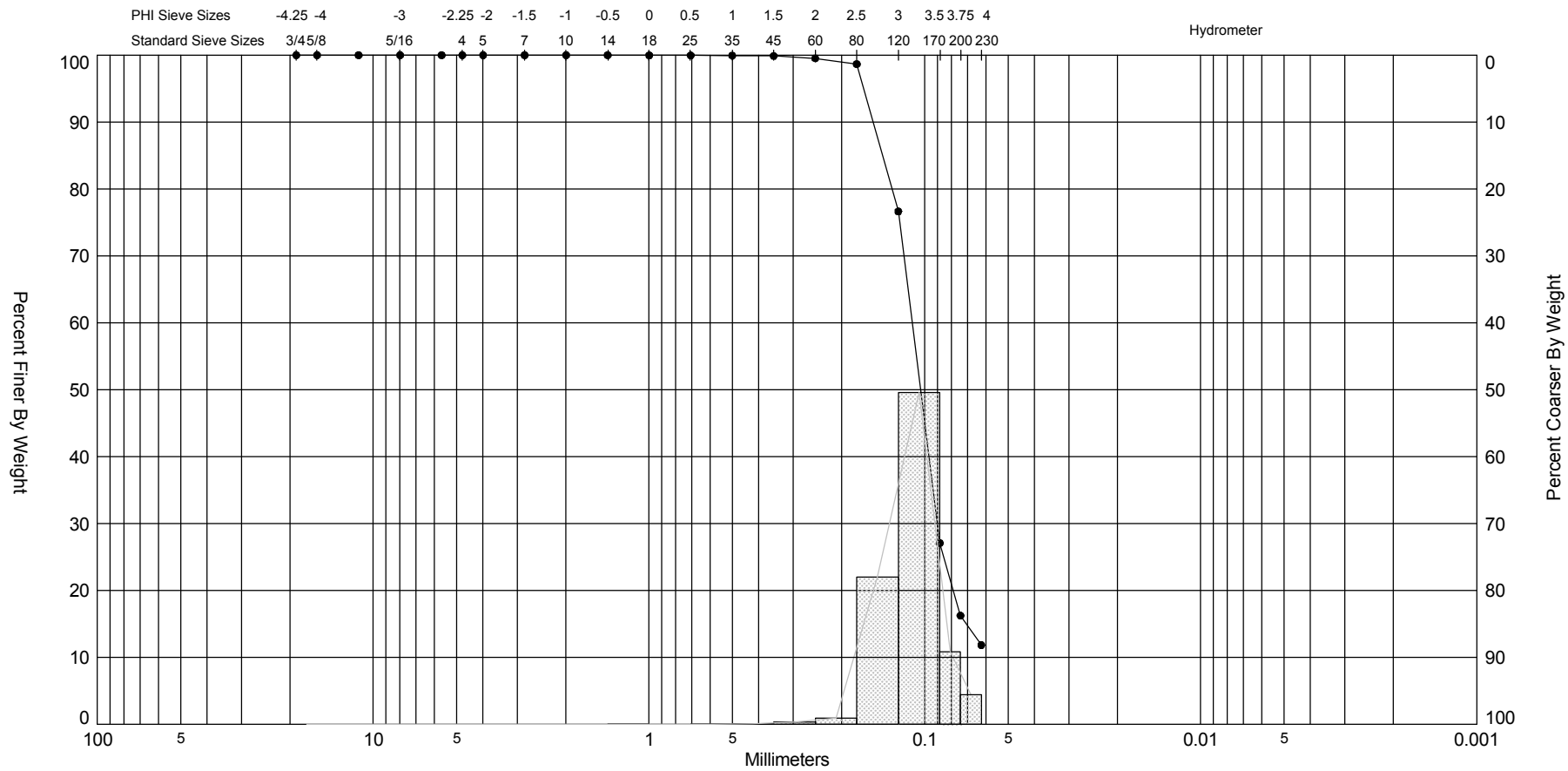

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
SPVC-05-03A #4	—●—	-70.2	SM	#200 - 16.24 #230 - 11.83			3.27	3.18	-0.85	7.93	0.35

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Sandy Point 2005 Sand Search
Analysis Date:	08-19-05
Analyzed By:	AS
Easting (X, ft):	3,862,762
Northing (Y, ft):	224,262
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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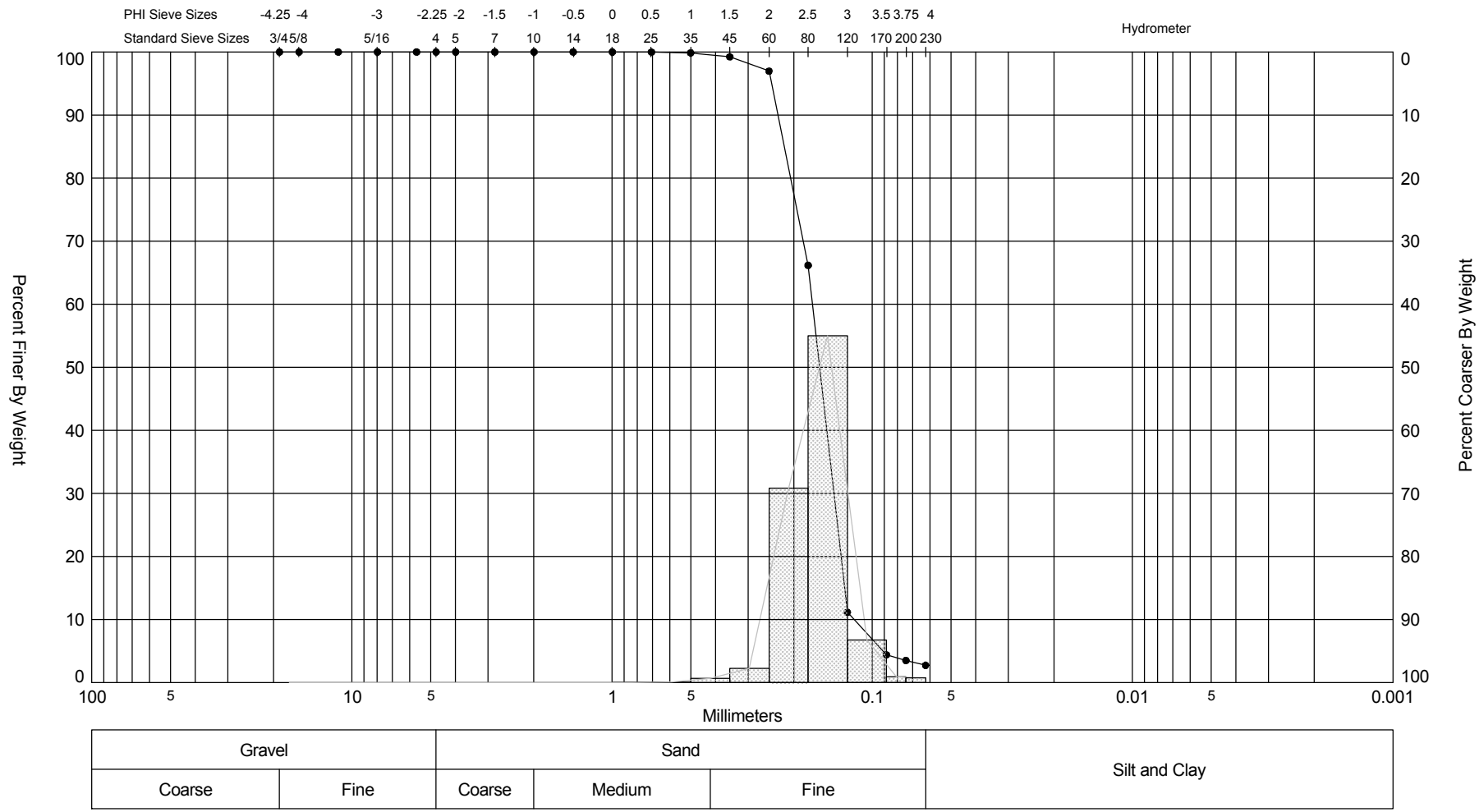

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
SPVC-05-04 #1	—●—	-56.7	SP	#200 - 3.50 #230 - 2.73			2.65	2.61	-0.19	5.44	0.37

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Sandy Point 2005 Sand Search
Analysis Date:	08-19-05
Analyzed By:	AS
Easting (X, ft):	3,863,008
Northing (Y, ft):	223,777
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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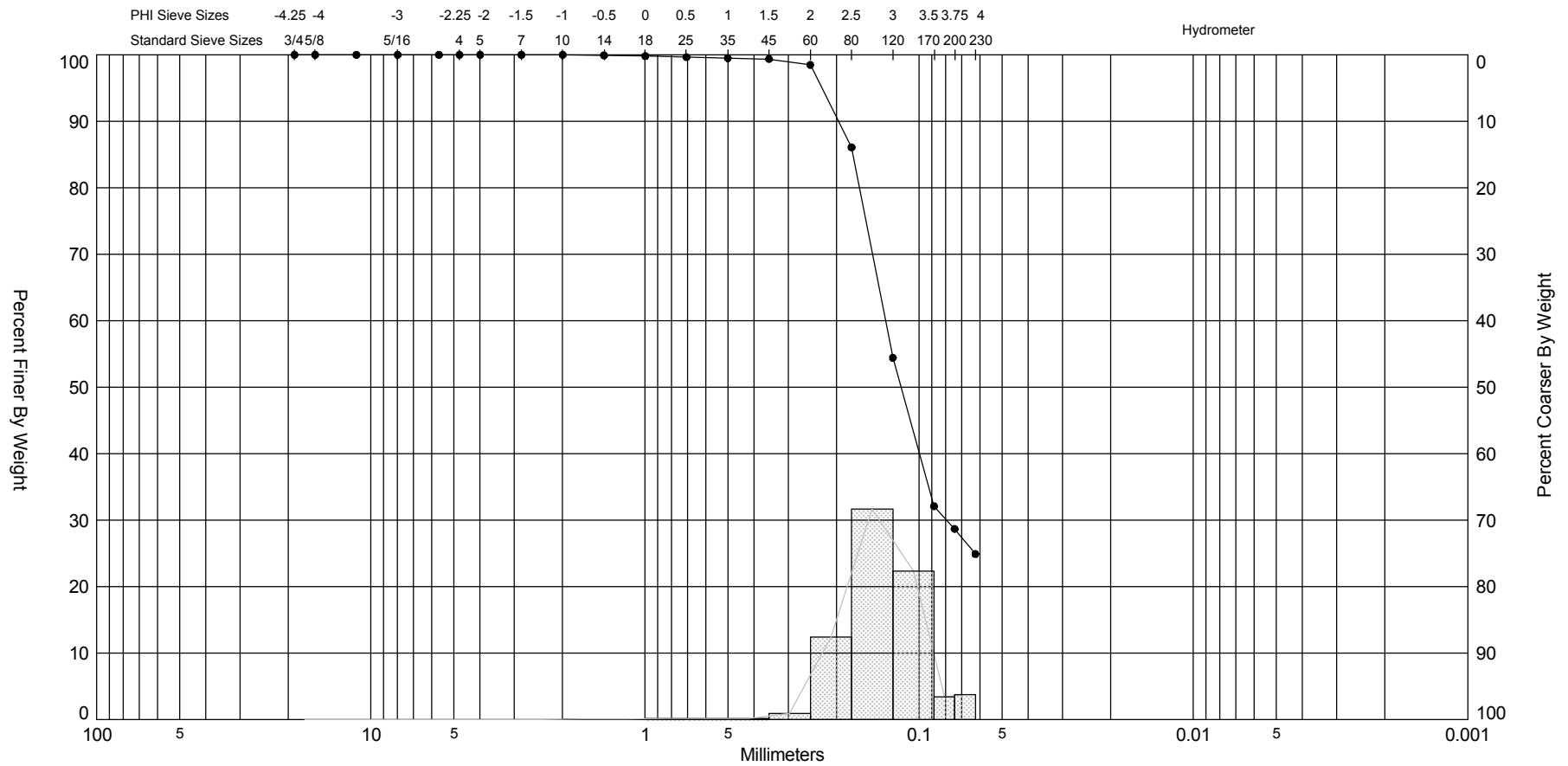

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
SPVC-05-04 #2	—●—	-60.9	SM	#200 - 28.68 #230 - 24.89			3.1	2.88	-1.06	8.99	0.51

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Sandy Point 2005 Sand Search
Analysis Date:	08-31-05
Analyzed By:	AS
Easting (X, ft):	3,863,008
Northing (Y, ft):	223,777
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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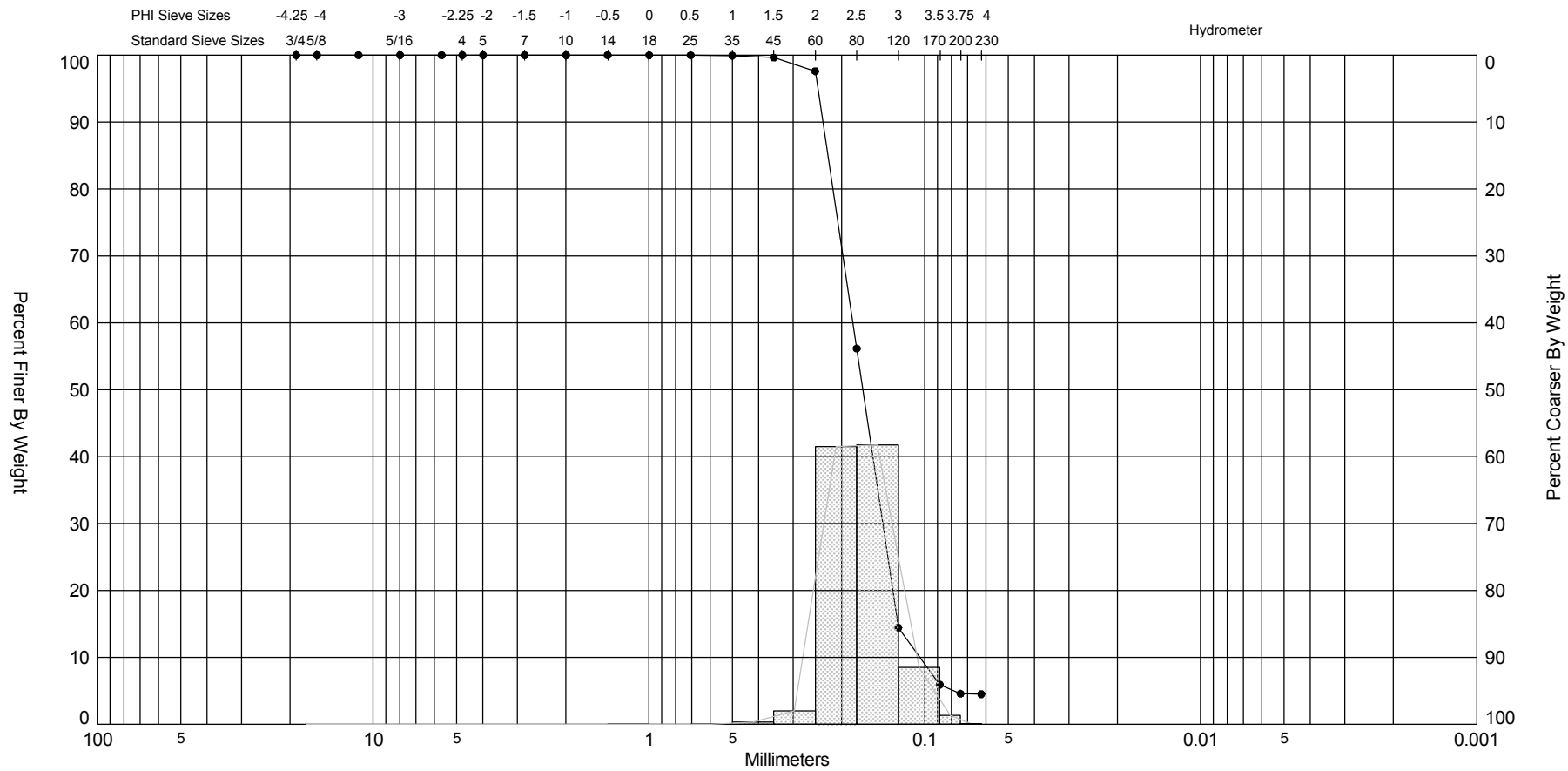

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
SPVC-05-04 #3	—●—	-66.7	SP	#200 - 4.56 #230 - 4.49			2.57	2.56	0.23	4.05	0.37

Sample Information	
Project Name:	Sandy Point 2005 Sand Search
Analysis Date:	08-19-05
Analyzed By:	AS
Easting (X, ft):	3,863,008
Northing (Y, ft):	223,777
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

Comments:

Depths and elevations based on measured values

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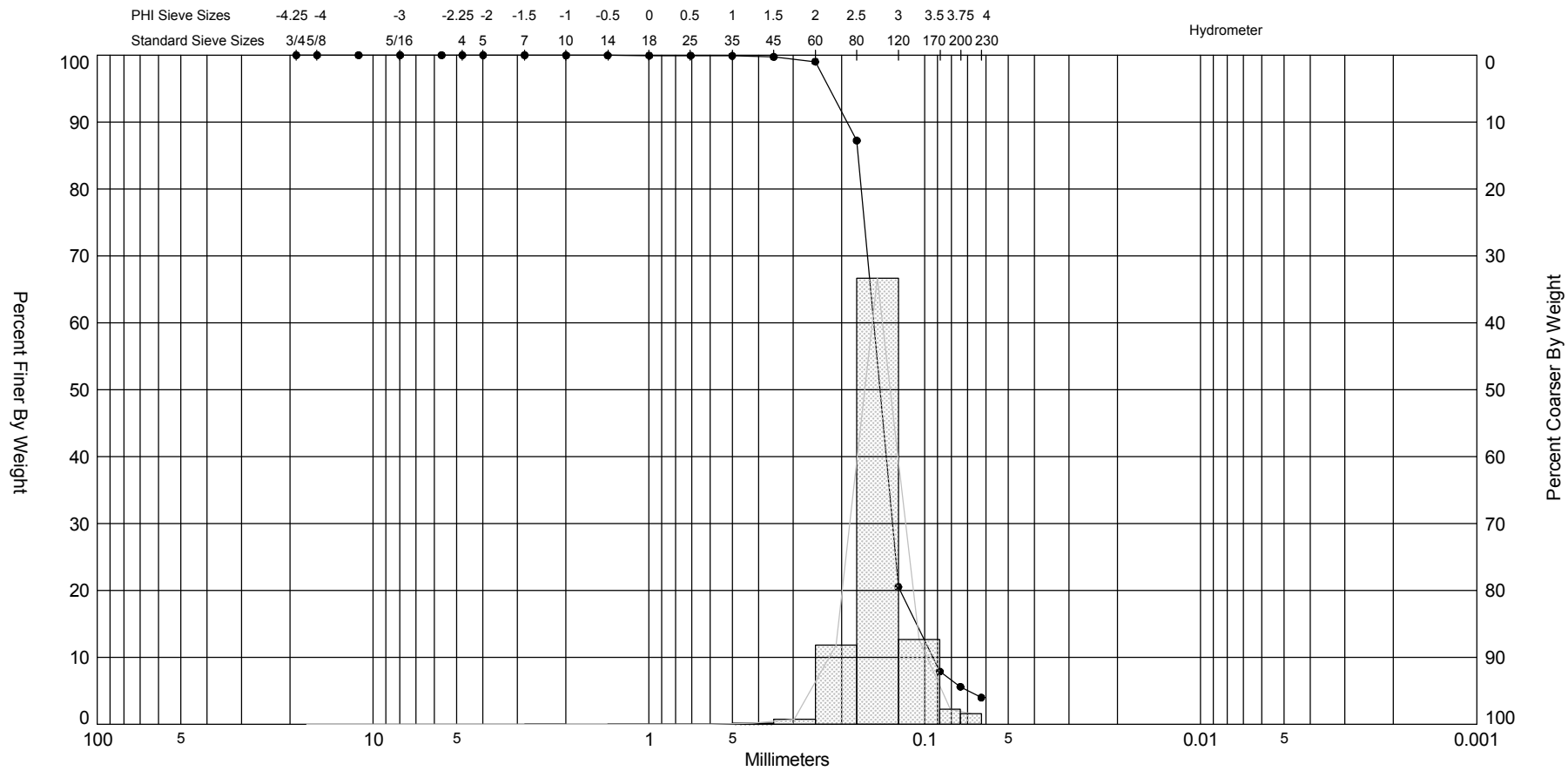

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
SPVC-05-04A #1	—●—	-58.7	SP-SM	#200 - 5.60 #230 - 3.98			2.78	2.78	-0.36	12.36	0.35

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Sandy Point 2005 Sand Search
Analysis Date:	08-31-05
Analyzed By:	AS
Easting (X, ft):	3,863,011
Northing (Y, ft):	223,776
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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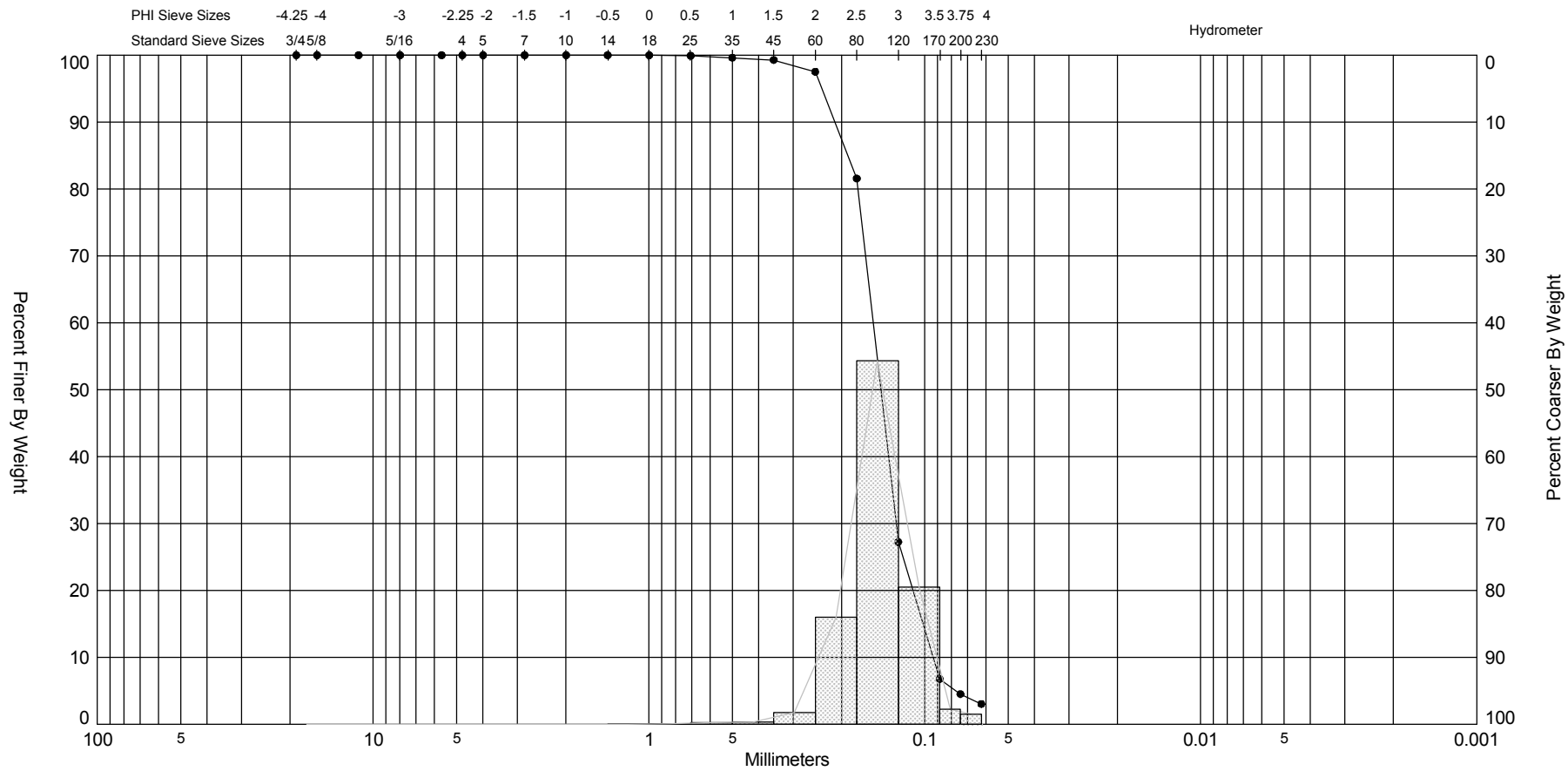

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
SPVC-05-04A #2	—●—	-68.7	SP	#200 - 4.52 #230 - 3.04			2.79	2.78	-0.57	6.28	0.42

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Sandy Point 2005 Sand Search
Analysis Date:	08-31-05
Analyzed By:	AS
Easting (X, ft):	3,863,011
Northing (Y, ft):	223,776
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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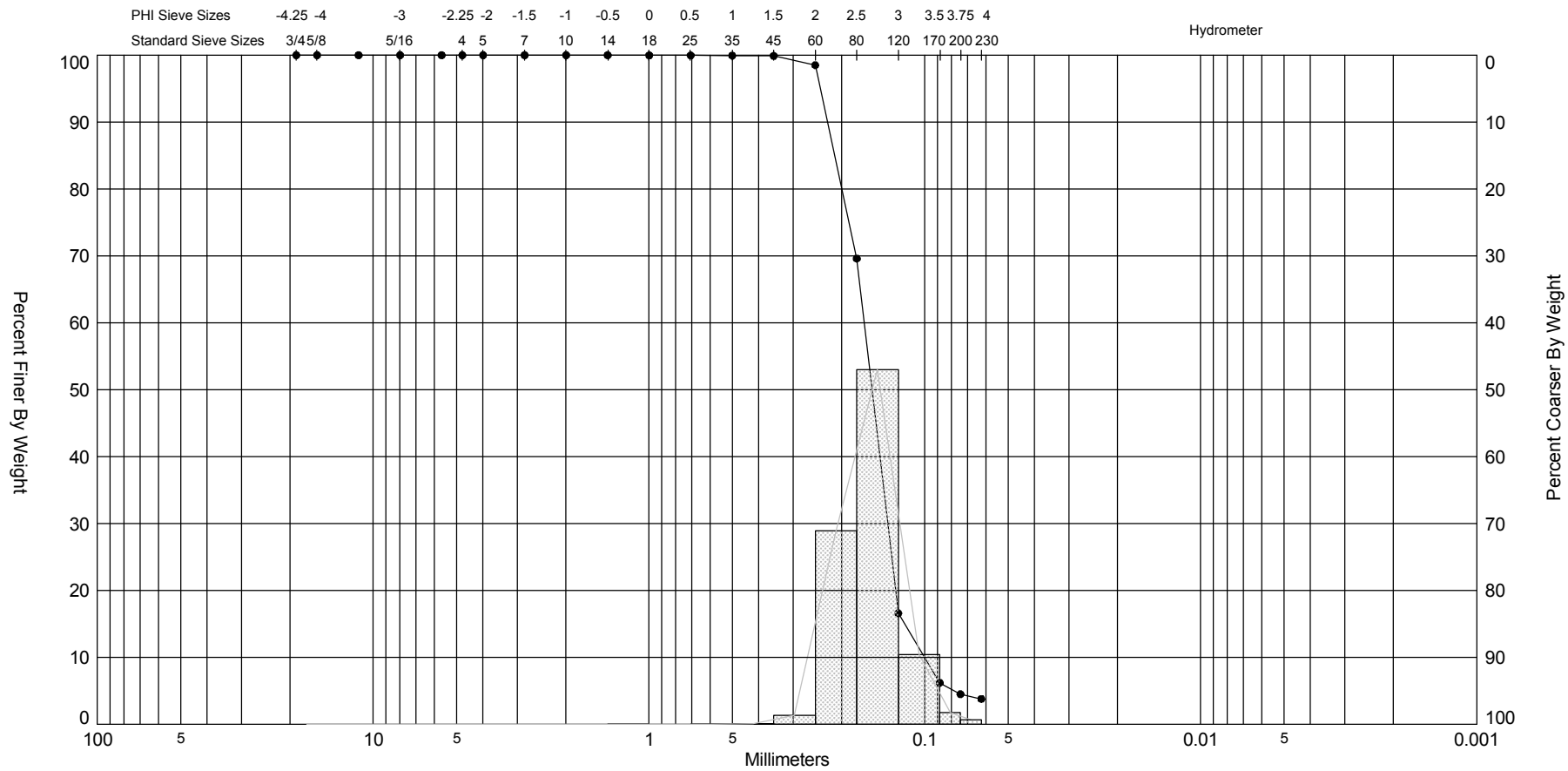

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
SPVC-05-04A #3	—●—	-72.9	SP	#200 - 4.49 #230 - 3.79			2.68	2.66	0.17	4.91	0.37

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Sandy Point 2005 Sand Search
Analysis Date:	08-27-05
Analyzed By:	AS
Easting (X, ft):	3,863,011
Northing (Y, ft):	223,776
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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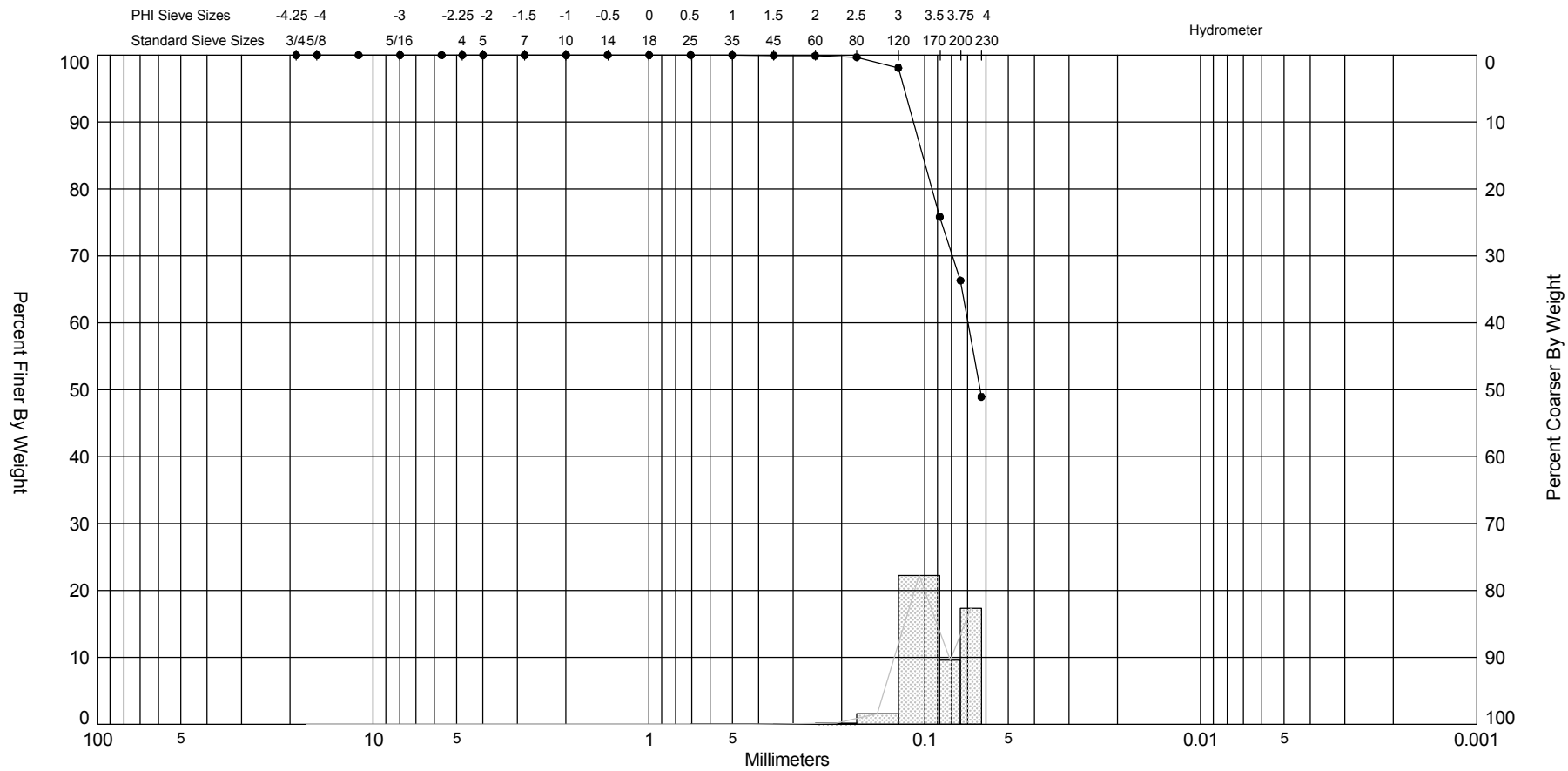

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
SPVC-05-05 #1	—●—	-59.9	ML	#200 - 66.31 #230 - 48.95			3.98	3.51	-0.87	6.03	0.33

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Sandy Point 2005 Sand Search
Analysis Date:	08-19-05
Analyzed By:	AS
Easting (X, ft):	3,862,583
Northing (Y, ft):	223,106
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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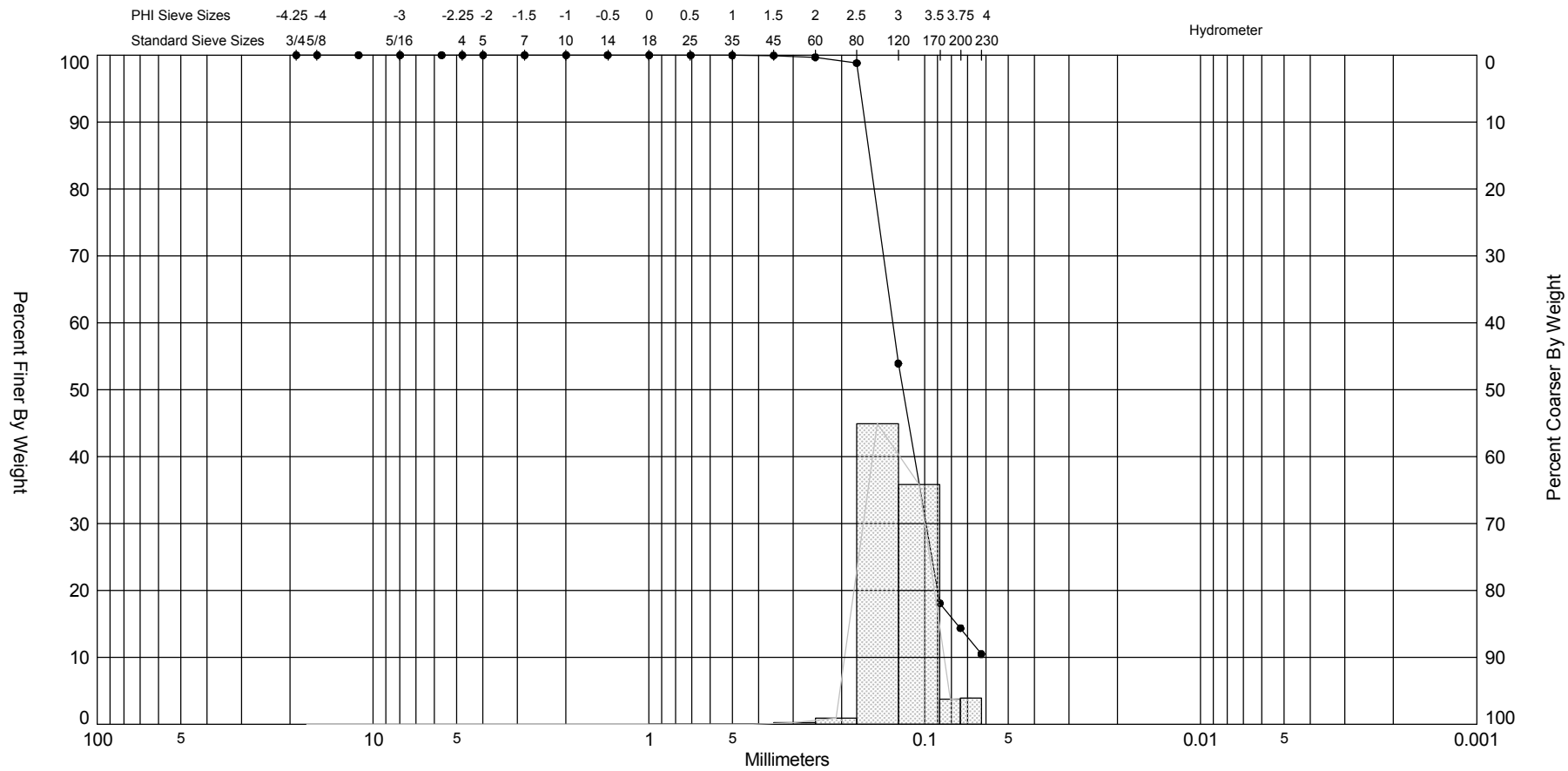

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
SPVC-05-05 #2	—●—	-63.3	SM	#200 - 14.37 #230 - 10.49			3.05	3.03	0.3	4.3	0.34

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Sandy Point 2005 Sand Search
Analysis Date:	08-19-05
Analyzed By:	AS
Easting (X, ft):	3,862,583
Northing (Y, ft):	223,106
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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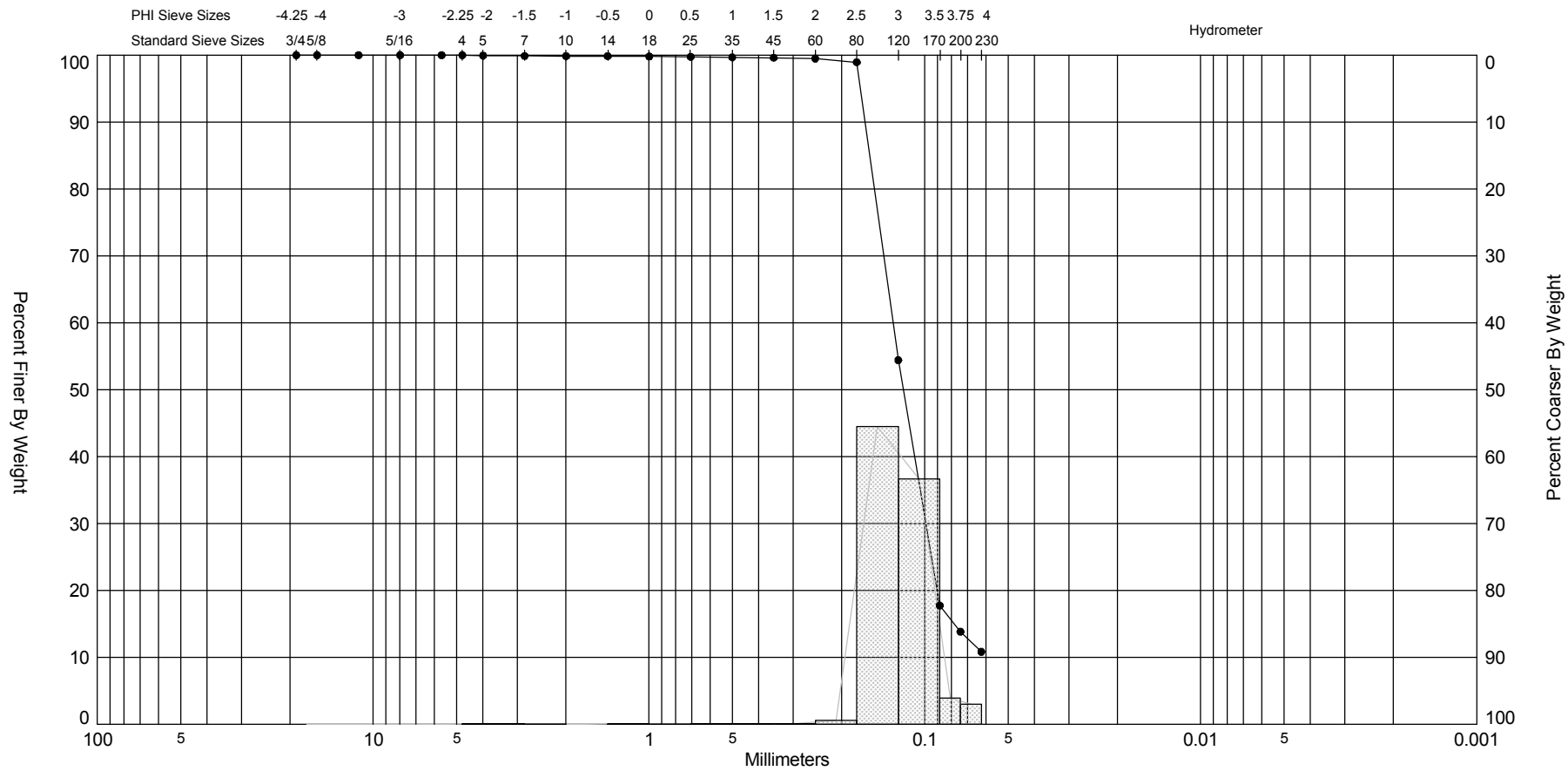

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
SPVC-05-06 #1	—●—	-59.0	SM	#200 - 13.83 #230 - 10.84			3.06	3.01	-3.19	40.78	0.4

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Sandy Point 2005 Sand Search
Analysis Date:	08-27-05
Analyzed By:	AS
Easting (X, ft):	3,863,353
Northing (Y, ft):	222,037
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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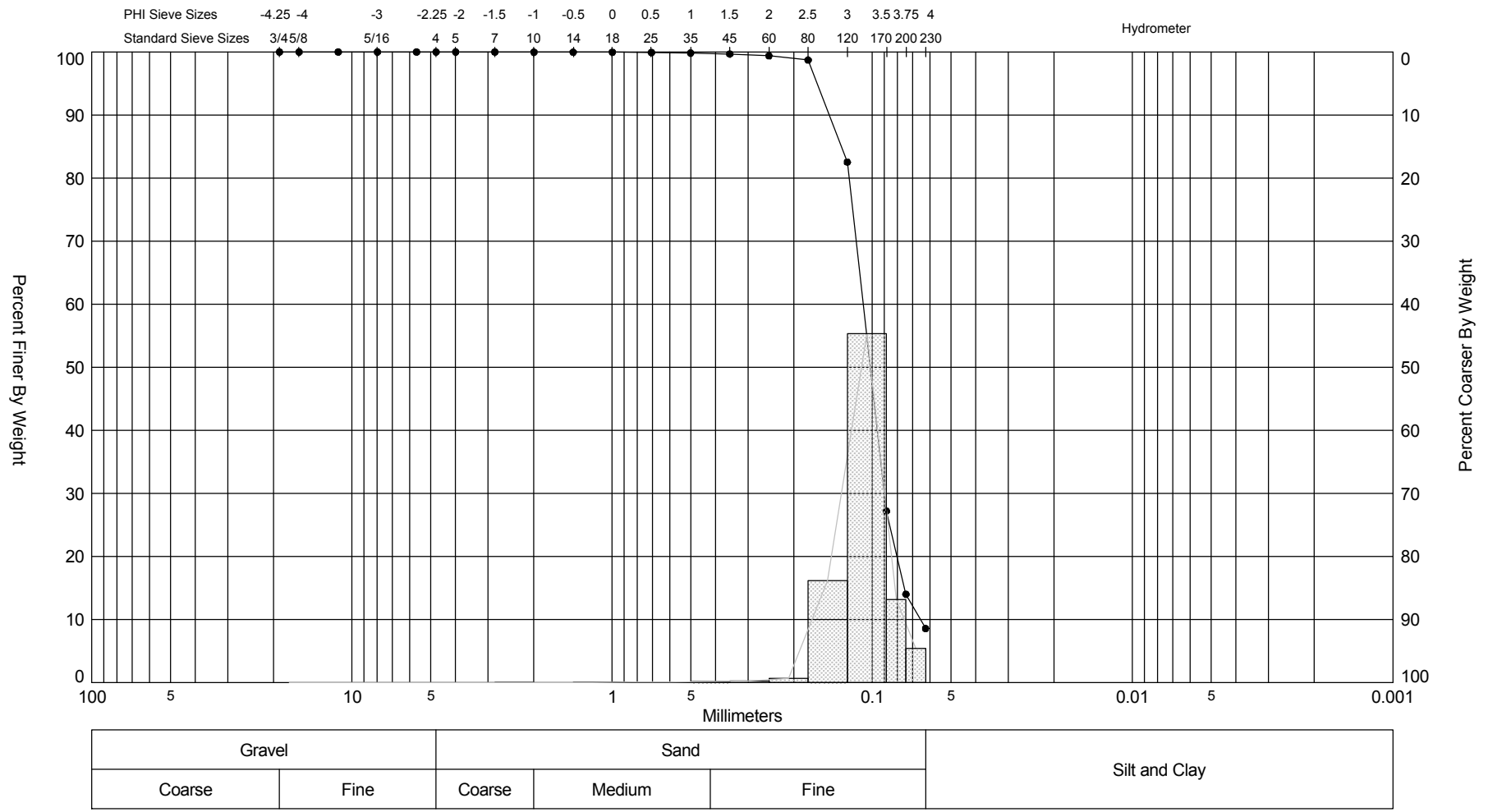

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
SPVC-05-06A #1	—●—	-59.3	SM	#200 - 14.01 #230 - 8.56			3.29	3.23	-1.9	18.13	0.36

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Sandy Point 2005 Sand Search
Analysis Date:	08-31-05
Analyzed By:	AS
Easting (X, ft):	3,863,352
Northing (Y, ft):	222,034
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

Coastal Planning & Engineering
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FL 33431
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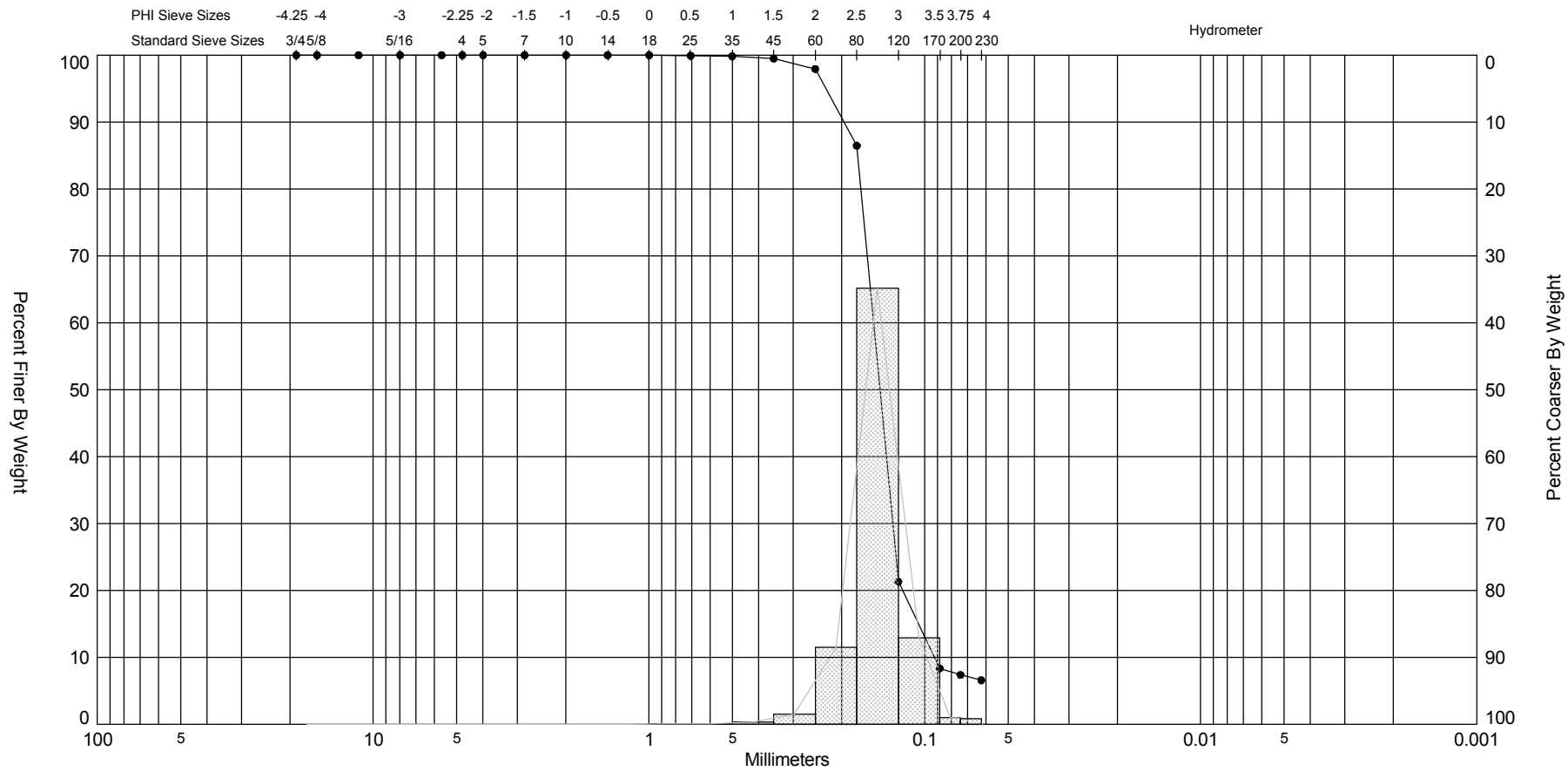
fax (561) 391-9116



Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
SPVC-05-06A #2	—●—	-64.1	SP-SM	#200 - 7.38 #230 - 6.58			2.78	2.75	-0.7	8.52	0.34

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Sandy Point 2005 Sand Search
Analysis Date:	08-19-05
Analyzed By:	AS
Easting (X, ft):	3,863,352
Northing (Y, ft):	222,034
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

Coastal Planning & Engineering
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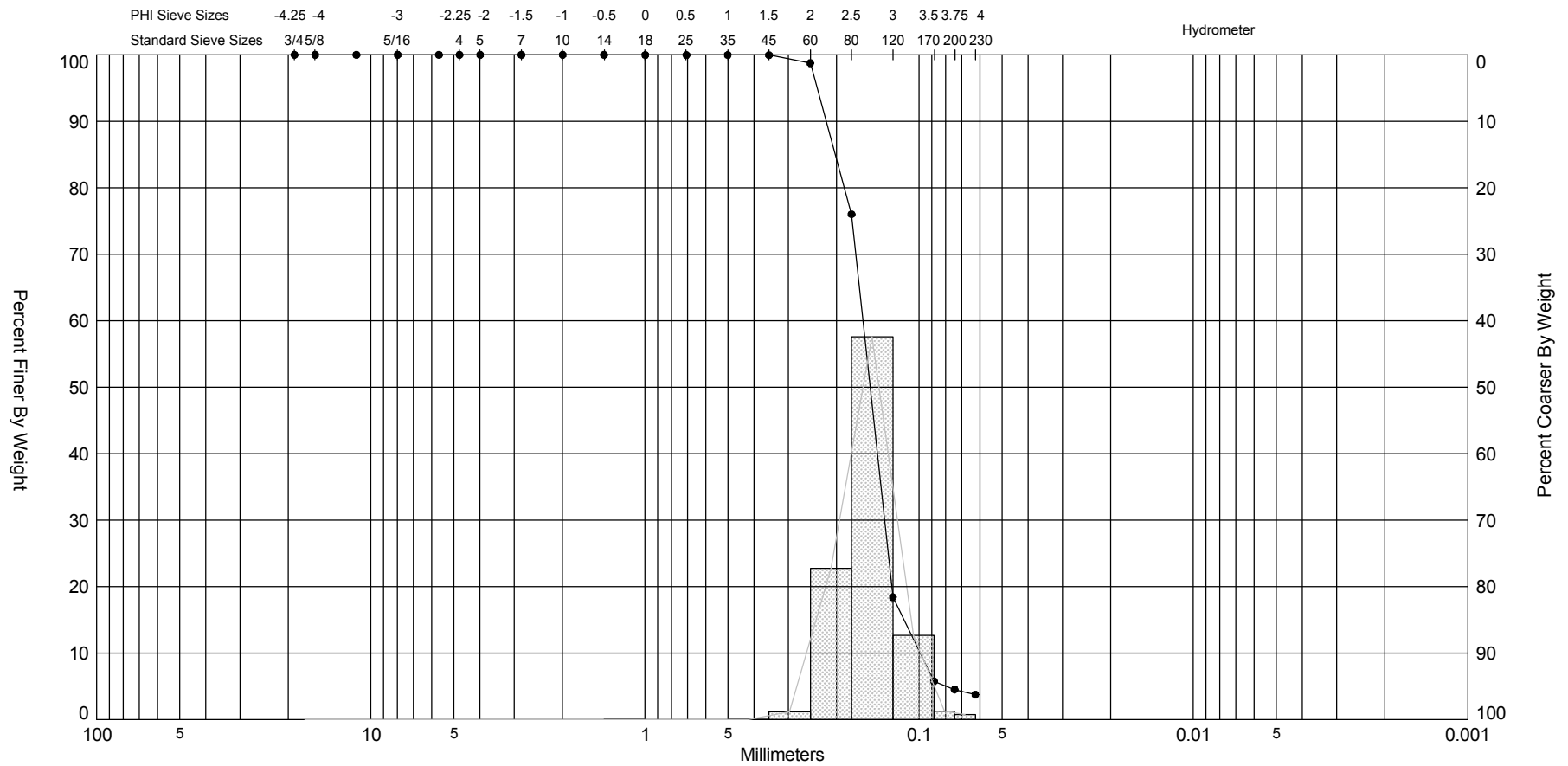

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
SPVC-05-06A #3	—●—	-66.2	SP	#200 - 4.53 #230 - 3.76			2.73	2.7	0.07	5.11	0.35

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Sandy Point 2005 Sand Search
Analysis Date:	08-31-05
Analyzed By:	AS
Easting (X, ft):	3,863,352
Northing (Y, ft):	222,034
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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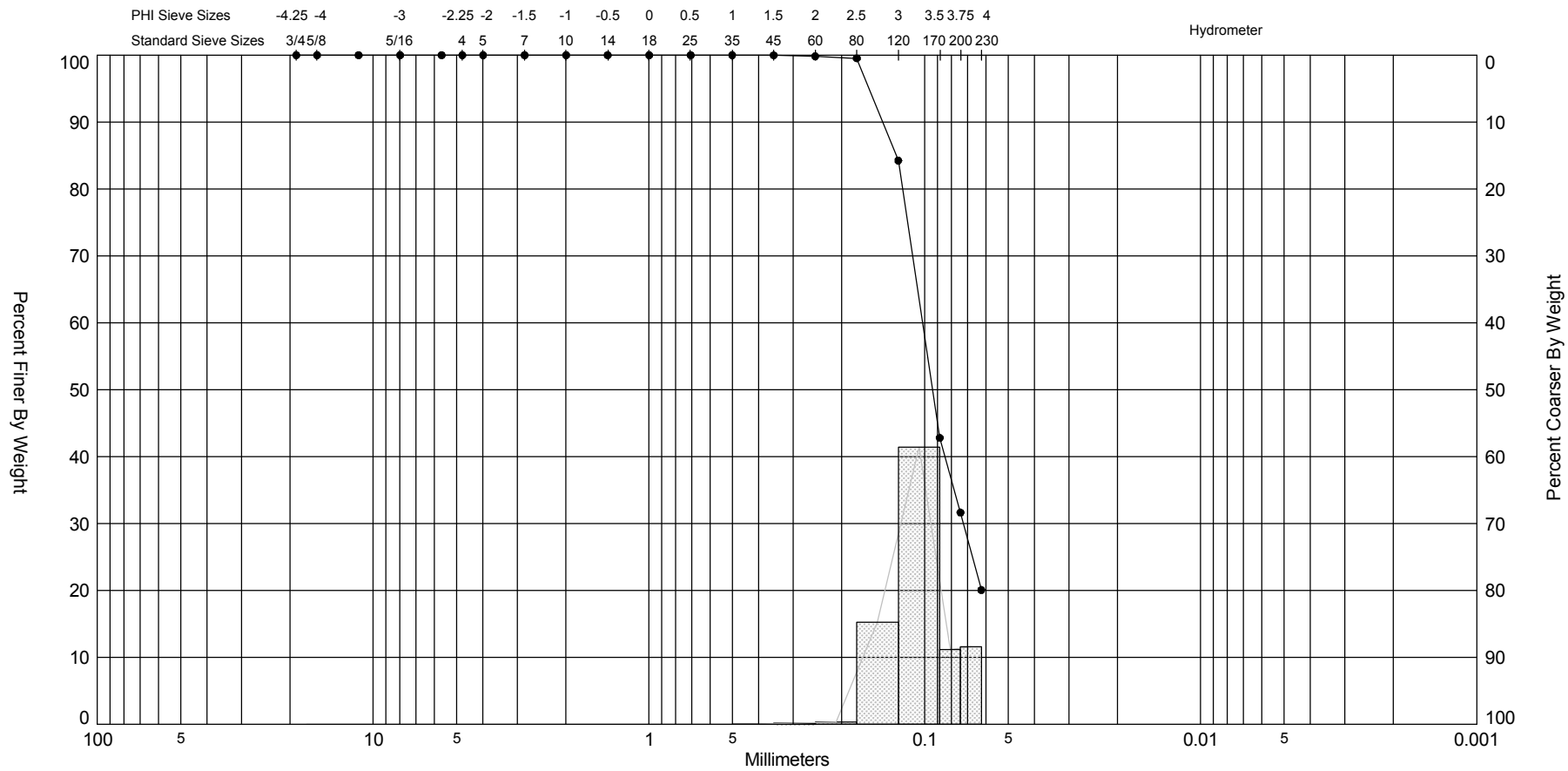

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
SPVC-05-07 #1	—●—	-62.8	SM	#200 - 31.64 #230 - 20.06			3.41	3.29	-0.18	3.09	0.36

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Sandy Point 2005 Sand Search
Analysis Date:	08-19-05
Analyzed By:	AS
Easting (X, ft):	3,862,891
Northing (Y, ft):	221,721
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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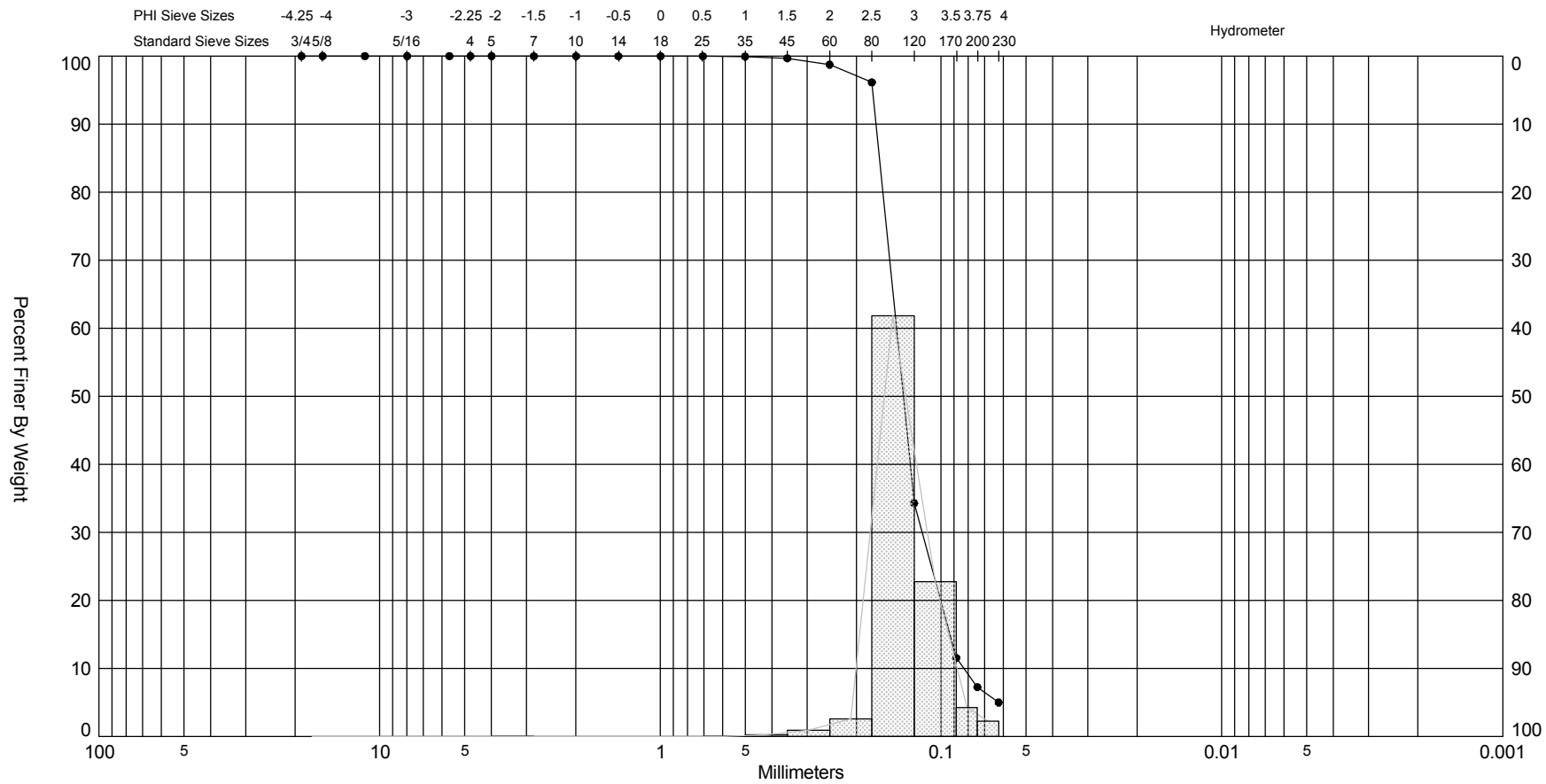

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
SPVC-05-07A #1	—●—	-60.4	SP-SM	#200 - 7.26 #230 - 5.01			2.87	2.91	-0.24	10.26	0.36

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Sandy Point 2005 Sand Search
Analysis Date:	08-19-05
Analyzed By:	AS
Easting (X, ft):	3,862,895
Northing (Y, ft):	221,719
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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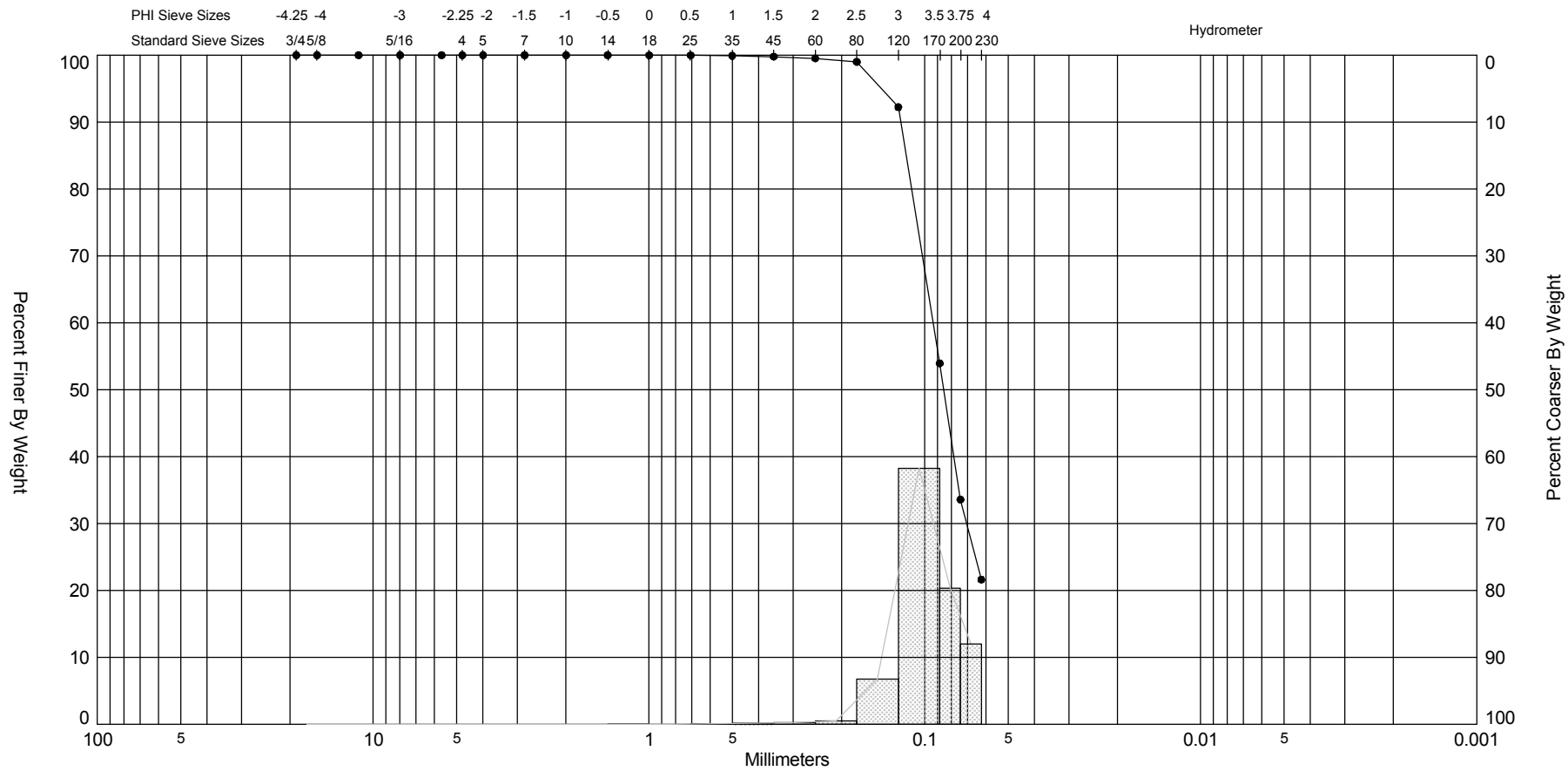

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
SPVC-05-07A #2	—●—	-66.3	SM	#200 - 33.58 #230 - 21.62			3.55	3.38	-1.42	10.06	0.36

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Sandy Point 2005 Sand Search
Analysis Date:	08-27-05
Analyzed By:	AS
Easting (X, ft):	3,862,895
Northing (Y, ft):	221,719
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

Coastal Planning & Engineering
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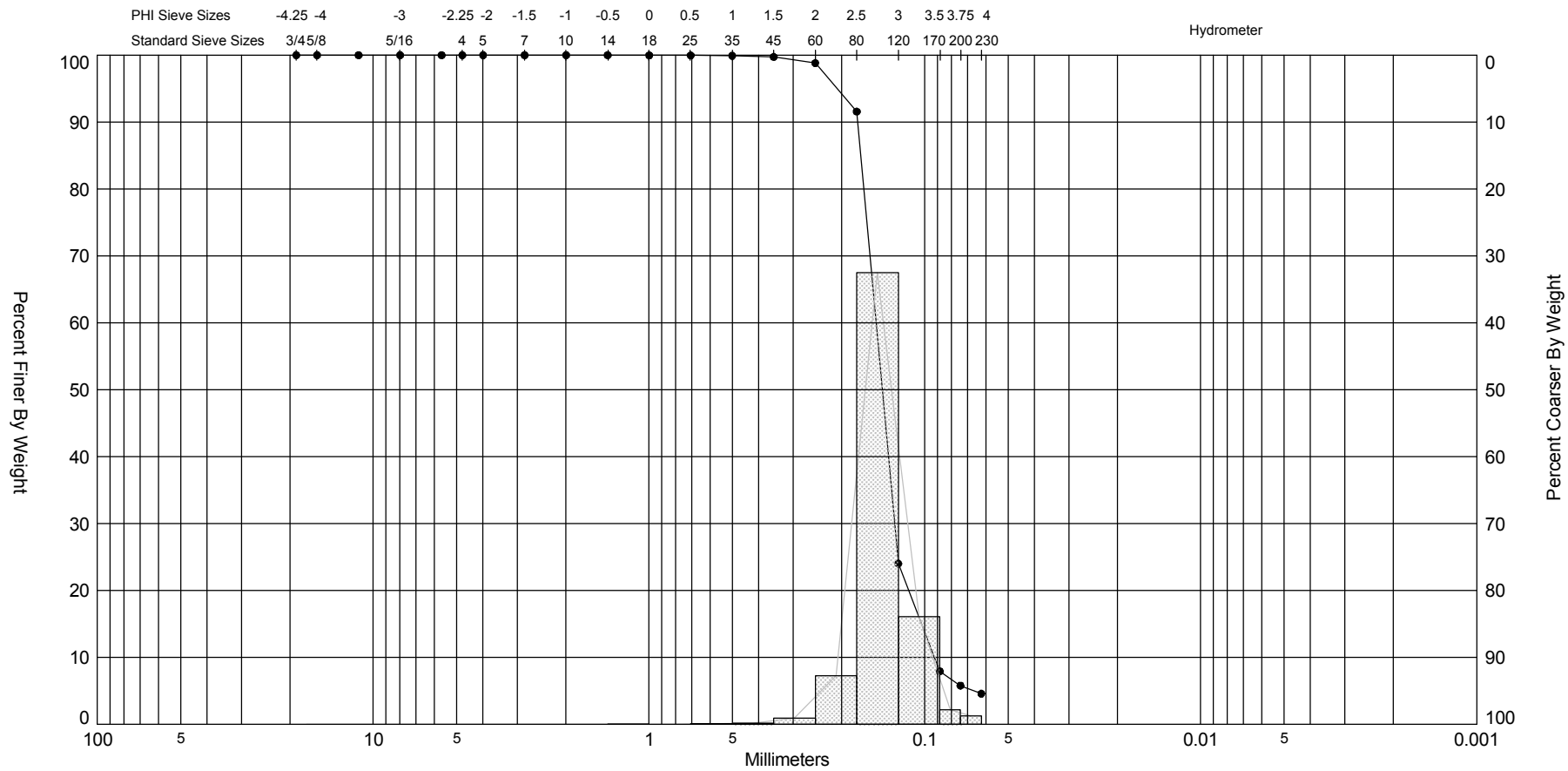

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
SPVC-05-08 #1	—●—	-56.9	SP-SM	#200 - 5.78 #230 - 4.57			2.81	2.82	-0.14	8.27	0.33

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Sandy Point 2005 Sand Search
Analysis Date:	08-19-05
Analyzed By:	AS
Easting (X, ft):	3,863,001
Northing (Y, ft):	221,064
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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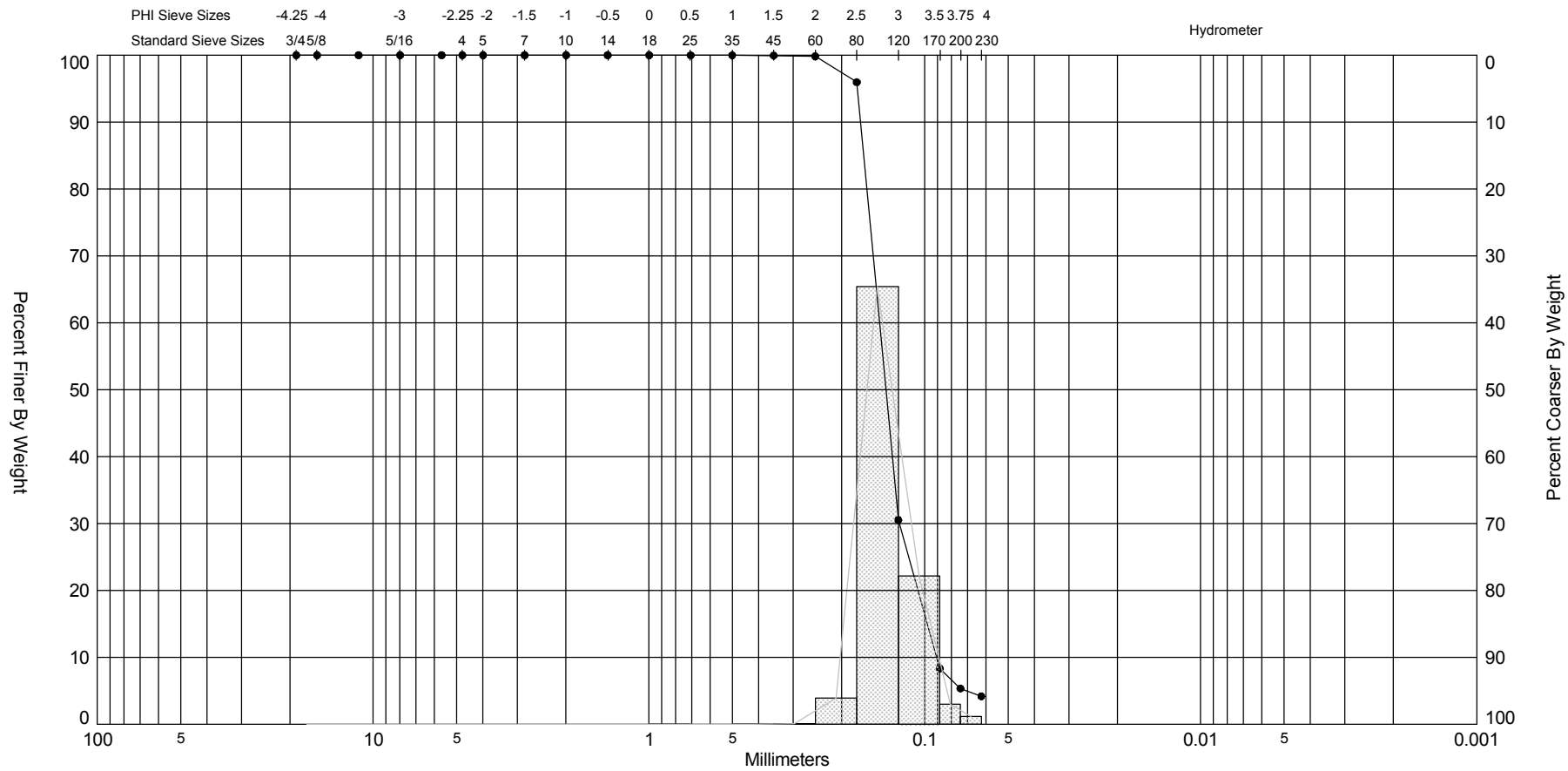

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
SPVC-05-08 #2	—●—	-68.5	SP-SM	#200 - 5.35 #230 - 4.18			2.85	2.88	0.63	5.21	0.3

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Sandy Point 2005 Sand Search
Analysis Date:	08-19-05
Analyzed By:	AS
Easting (X, ft):	3,863,001
Northing (Y, ft):	221,064
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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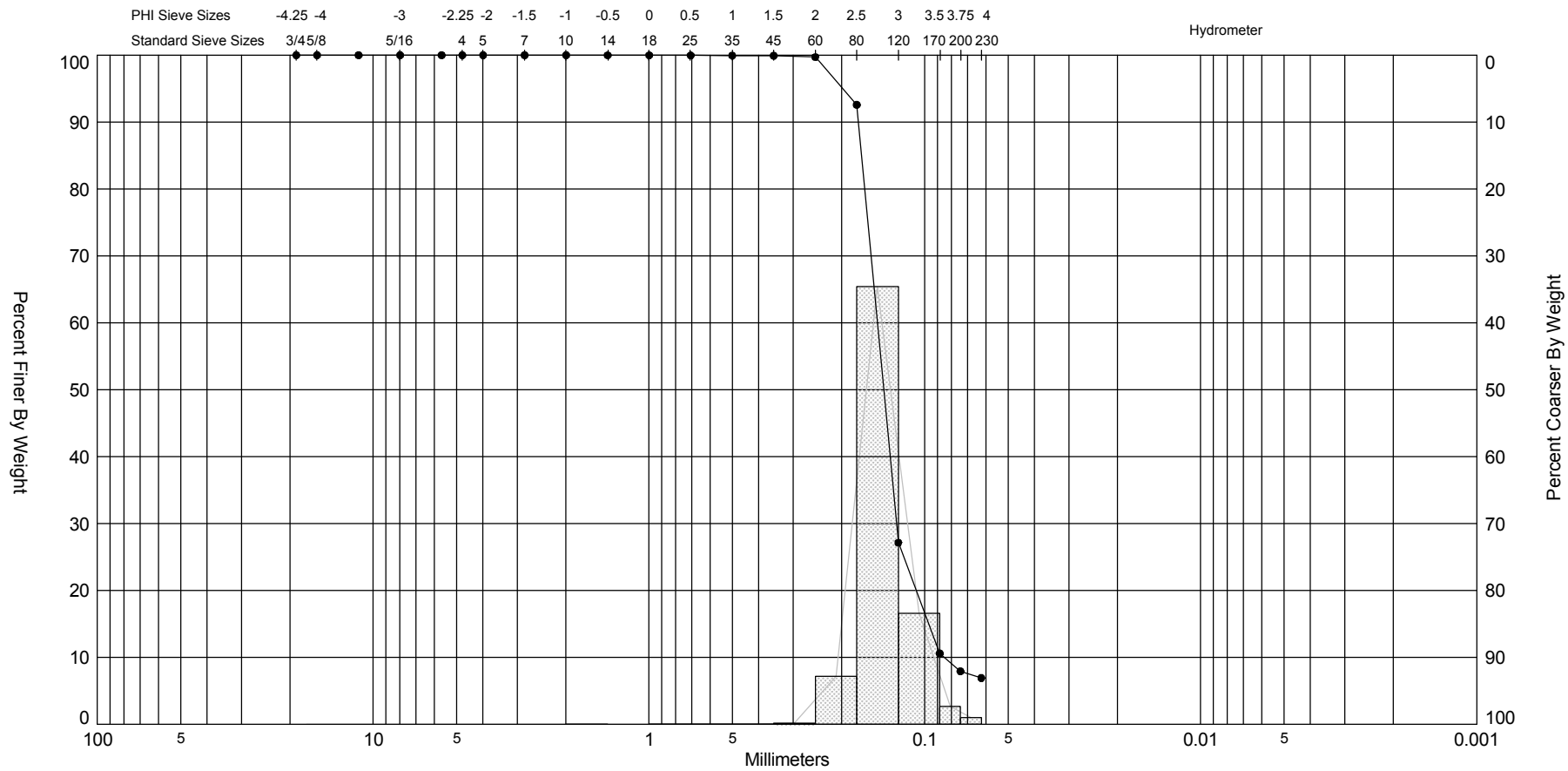

Sample	Symbol	Elev. (ft)	USCS	% Fines	% Organics	% Carbonates	Median	Mean	Skew	Kurt	Sort
SPVC-05-08A #1	—●—	-68.2	SP-SM	#200 - 7.91 #230 - 6.91			2.83	2.83	0.2	8.45	0.32

Comments:

Depths and elevations based on measured values

Sample Information	
Project Name:	Sandy Point 2005 Sand Search
Analysis Date:	08-31-05
Analyzed By:	AS
Easting (X, ft):	3,863,000
Northing (Y, ft):	221,069
Horizontal System:	NAD 1983
Vertical System:	NAVD 88

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FL 33431
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fax (561) 391-9116

APPENDIX 16
2005 SANDY POINT VIBRACORE PHOTOGRAPHS

CPE
SANDY POINT, LA
SPVC-05-01
0.0 - 2.0

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SANDY POINT, LA
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JETTED TO 21'
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SPVC-05-04A
JETTED TO 20.6'
24.6 - 26.6

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SANDY POINT, LA
SPVC-05-04A
JETTED TO 20.6'
26.6 - 28.6

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SANDY POINT, LA
SPVC-05-04A
JETTED TO 20.6'
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CPE
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SANDY POINT, LA
SPVC-05-04A
JETTED TO 20.6'
30.6 - 32.6

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COASTAL PLANNING & ENGINEERING, INC.
SANDY POINT, LA
SPVC-05-04A
JETTED TO 20.6'
32.6 - 34.6

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COASTAL PLANNING & ENGINEERING, INC.
SANDY POINT, LA
SPVC-05-04A
JETTED TO 20.6'
34.6 - 36.6

SANDY POINT, LA
SPVC-05-04A
JETTED TO 20.6'
36.6 - 37.0

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APPENDIX III

SURVEY DATA FORMATS

SURVEY DATA FORMATS

Format 1:

Louisiana Department of Natural Resources
Strategic Online Natural Resources Information System
SONRIS 2000
Coastal Restoration Division
(See http://www.savelawetlands.org/site/Descriptors.pdf)

This format is an ASCII comma-delimited format. The arrangement of the columns is as follows:

1. Project Number: Alphanumeric value assigned to a project by LDNR used for identification purposes.
2. Station Number: Alphanumeric value assigned to a station by LDNR used for identification purposes. For survey data, the station is actually the center of the area where surveying occurs.
3. Group: A classification given to a group of stations that share a common characteristic. For this project, the Group name is the name of the profile line.
4. Status: Generally describes whether data were collected in the Pre- or Post-construction period.
5. Date (mm/dd/yyyy): Date the data where collected.
6. Time (hh:mm:ss): Time the data where collected.
7. Point Number: Identification number assigned to data point by survey team. In many cases data are collected at points along transects and a station might consist of several transects.
8. Easting utm83 (m): Horizontal coordinate.
9. Northing utm83 (m): Horizontal coordinate.
10. Elevation NAVD88 (m): Elevation relative to North American Vertical Datum of 1988.

Example:

```
BA38-1,38-1, SG1,Post-cons.,06/01/2004,13:00,01,829997.02,3241533.14,-0.91
BA38-1,38-1, SG1,Post-cons.,06/01/2004,13:00,02,829991.87,3241512.72,-1.13
BA38-1,38-1, SG1,Post-cons.,06/01/2004,13:00,03,829991.52,3241511.46,-1.07
BA38-1,38-1, SG1,Post-cons.,06/01/2004,13:00,04,829988.26,3241498.42,-2.23
BA38-1,38-1, SG1,Post-cons.,06/01/2004,13:00,05,829985.45,3241487.40,-2.74
BA38-1,38-1, SG1,Post-cons.,06/01/2004,13:00,06,829985.16,3241486.17,-3.60
BA38-1,38-1, SG1,Post-cons.,06/01/2004,13:00,07,829985.02,3241485.56,-3.63
BA38-1,38-1, SG1,Post-cons.,06/01/2004,13:00,08,829982.27,3241474.66,-3.90
BA38-1,38-1, SG1,Post-cons.,06/01/2004,13:00,09,829982.18,3241474.51,-3.90
BA38-1,38-1, SG1,Post-cons.,06/01/2004,13:00,10,829980.30,3241467.10,-4.24
BA38-1,38-1, SG1,Post-cons.,06/01/2004,13:00,11,829979.81,3241465.17,-4.30
BA38-1,38-1, SG1,Post-cons.,06/01/2004,13:00,12,829978.51,3241459.81,-4.24
BA38-1,38-1, SG1,Post-cons.,06/01/2004,13:00,13,829976.63,3241452.34,-4.63
BA38-1,38-1, SG1,Post-cons.,06/01/2004,13:00,14,829976.34,3241451.27,-4.57
BA38-1,38-1, SG1,Post-cons.,06/01/2004,13:00,15,829974.89,3241445.75,-4.72
```

Format 2:

U.S. Army Corps of Engineers
Beach Morphology Analysis Program - Free Format

This format is an ASCII format listing the profile line name, the number of points on each profile, and the distance and elevation values:

<Profile Name #1	Easting of Origin	Northing of Origin,	Azimuth of Origin	Date>
<Number of Points>				
<Distance Value #1>	<Elevation Value #1>			
<Distance Value #2>	<Elevation Value #2>			
<Distance Value #3>	<Elevation Value #3>			
<Distance Value #4>	<Elevation Value #4>			
(etc.)				
<Profile Name #2	Easting of Origin	Northing of Origin,	Azimuth of Origin	Date>
<Number of Points>				
<Distance Value #1>	<Elevation Value #1>			
<Distance Value #2>	<Elevation Value #2>			
<Distance Value #3>	<Elevation Value #3>			
<Distance Value #4>	<Elevation Value #4>			
(etc.)				

All of the above values are to be reported in State Plane NAD83 / NAVD88 feet. Meters or UTM coordinates are not acceptable. Distance values may be calculated according to the following formula:

Distance Value = [(Easting of Point) – (Easting of Origin)]·sin(Azimuth of Origin) + [(Northing of Point) – (Northing of Origin)]·cos(Azimuth of Origin)

Example:

```
SG01     3831677.3  278768.2   195.0   06-01-2004
6
 -154.2  -1.1
 -133.7   3.0
  197.4   3.0
  332.4   6.0
  542.4   6.0
  938.4  -2.8
SG02_PI1 3832115.0  278650.1   195.0   06-01-2004
5
 -553.1   3.0
  113.9   3.0
  248.9   6.0
  458.9   6.0
  936.5  -4.6
SG03     3832553.5  278531.7   195.0   06-01-2004
6
 -454.4   1.5
 -447.0   3.0
   54.6   3.0
  189.6   6.0
  399.6   6.0
  873.6  -4.5
```

Format 3:

X, Y, Z, Profile Line Comma Delimited format

This format is an ASCII comma-delimited format. The arrangement of the columns is as follows

1. Easting (State Plane NAD83, feet)
2. Northing (State Plane NAD83, feet)
3. Elevation (Elevation relative to North American Vertical Datum of 1988 in feet)
4. Profile Line Name

Example:

```
3832117.8,       280412.5,           -3.0,       SG1
3832100.0,       280345.8,           -3.7,       SG1
3832098.8,       280341.7,           -3.5,       SG1
3832087.5,       280299.1,           -7.3,       SG1
3832077.8,       280263.1,           -9.0,       SG1
3832076.8,       280259.1,          -11.8,       SG1
3832076.3,       280257.1,          -11.9,       SG1
3832066.8,       280221.5,          -12.8,       SG1
3832066.5,       280221.0,          -12.8,       SG1
3832060.0,       280196.8,          -13.9,       SG1
3832058.3,       280190.5,          -14.1,       SG1
3832053.8,       280173.0,          -13.9,       SG1
3832047.3,       280148.6,          -15.2,       SG1
3832046.3,       280145.1,          -15.0,       SG1
3832041.3,       280127.1,          -15.5,       SG1
```

APPENDIX IV

STE GEOTECHNICAL REPORT

REPORT OF

GEOTECHNICAL INVESTIGATION
BARATARIA BARRIER ISLAND
RESTORATION COMPLEX
PROJECT BA-38
CHALAND AND PELICAN HEADLANDS
PLAQUEMINES PARISH, LOUISIANA

FOR

LOUISIANA DEPARTMENT OF
NATURAL RESOURCES
BATON ROUGE, LOUISIANA

AND

C-K ASSOCIATES, INC.
ENGINEERS
BATON ROUGE, LOUISIANA

STE
Soil Testing Engineers, Inc.
Geotechnical, Environmental & Materials Consultants

Baton Rouge, LA • Lake Charles, LA • New Orleans, LA

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316 HIGHLANDIA DRIVE (70810) • P.O. BOX 83710 (70884) • BATON ROUGE, LOUISIANA
PHONE (225) 752-4790 • FAX (225) 752-4878 • www.steofla.com

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CHING N. TSAI, Ph.D.
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KENNETH A. FLUKER, MS
STEVE M. MEUNIER
KELLIE T. MCNAMARA
BEYONG SEOCK LIM, Ph.D.

REGISTERED PROFESSIONAL ENGINEERS

October 30, 2003

Louisiana Department of Natural Resources
c/o C-K Associates, Inc.
17170 Perkins Road
Baton Rouge, Louisiana 70810

Attn: Mr. Brant Richard, P.E.

Re: Geotechnical Services
DNR Contract No. 2503-02-29
Engineering Assistance for Coastal Restoration Projects
Barataria Barrier Island Restoration Complex
Chaland and Pelican Headlands
Project BA-38
Plaquemines Parish, Louisiana
STE File: 03-1114

Gentlemen:

Soil Testing Engineers, Inc. (STE) has completed the geotechnical investigation for this project and is pleased to submit the findings of the investigation together with the resulting evaluations and recommendations. Details are presented in the attached report.

Should you have any questions concerning this report, please contact this office. We appreciate the opportunity to serve you on this project, and look forward to working with you again in the future.

Sincerely,
Soil Testing Engineers, Inc.

Dr. Gordon P. Boutwell, P.E.
Senior Consultant

Ching Nien Tsai, P.D., P.E.
Chief Engineer

STATE OF LOUISIANA
CHING-NIEN TSAI
REG. No. 23092
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

GPB/CNT/lf

GEOTECHNICAL, ENVIRONMENTAL & MATERIALS CONSULTANTS
LAKE CHARLES, LOUISIANA • (337) 474-1340 METAIRIE, LOUISIANA • (504) 835-2593

STE
Soil Testing Engineers, Inc.

REPORT OF GEOTECHNICAL INVESTIGATION BARATARIA BARRIER ISLAND RESTORATION COMPLEX PROJECT BA-38 PLAQUEMINES PARISH, LOUISIANA

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APPENDIX A - FIELD INVESTIGATION AND LABORATORY TESTING

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REPORT OF GEOTECHNICAL INVESTIGATION BARATARIA BARRIER ISLAND RESTORATION COMPLEX PROJECT BA-38 PLAQUEMINES PARISH, LOUISIANA

EXECUTIVE SUMMARY

The principal findings of this investigation are summarized below for convenience. Details are contained in the main body of this report, plus its Appendix.

A - CHALAND HEADLAND

A.1 Project. The Chaland Headland portion of the project will raise some 590 acres by providing an encircling levee totaling some 6 miles in length, then filling the encircled area. The south (gulf) side levee location has not yet been fixed.

A.2 Scope of Work. This consisted of drilling 10 borings in the construction area plus two more in the borrow area, plus laboratory testing, and engineering analyses to determine stability of slopes, settlement amounts and rates, sedimentation times for the area fill, and cut/fill ratios.

A.3 Subsurface Conditions. All of the soils mentioned are of Holocene (Recent) origin. In the construction area, about 3% of the soils to -25 feet NAVD are PT or OH, 63% are the more granular SM, SC, and ML, and 34% the cohesive CH and CL types. Below that level, about half is granular and half cohesive. The cohesive soils are relatively weak and compressible.

A.4 Slope Stability. Side slopes of 1(V):4(H) can be used for levees having up to 3 feet of freeboard, and side slopes of 1(V):6(H) can be used for those having up to 6 feet of freeboard. These slopes maintain a safety factor of at least 1.3 against failure.

A.5 Levee Settlements. Settlements of the levee are composed of weight-induced consolidation on the foundation soils, self-weight or internal settlement (negligible), and geologic subsidence. The amounts of movement depend on the levee freeboard and water depth. However, the net long-term settlements without geologic subsidence are on the order of 10% of the total levee height (freeboard plus water). Geologic subsidence adds about 6 inches over the 20-year project life.

A.6 Dewatering Time. About 2/3 of the hydraulically placed area fill will settle out of suspension in a few days. The majority of the remainder should settle out in 1 to 2 months.

A.7 Deposition Area Settlements. Unlike the levee settlements, self-weight consolidation also matters for the area fill. The total long-term settlements without geologic subsidence are about 20 to 25% of the as-completed fill thickness. Geologic subsidence adds about 6 inches over the 20-year project life.

A.8 Cut/Fill Ratios. For the levees, 1.3 to 1.5 cubic yards of cut will produce 1.0 cubic yard of in-place material. In the case of the area fill, this reduces to about 1.1 cubic yards of cut to achieve 1.0 cubic yard of in-place fill.

B - PELICAN HEADLAND

B.1 Project. The Pelican Headland portion of the project will raise some 630 acres by providing an encircling levee totaling some 6 miles in length, then filling the encircled area. The south (gulf) side levee location has not yet been fixed.

B.2 Scope of Work. This consisted of drilling 10 borings in the construction area plus two more in the borrow area, plus laboratory testing, and engineering analyses to determine stability of slopes, settlement amounts and rates, sedimentation times for the area fill, and cut/fill ratios.

B.3 Subsurface Conditions. All of the soils mentioned are of Holocene (Recent) origin. Most of the soils are of the cohesive types; little sand or silt was encountered. In general, the soils from mudline to around -10 feet NAVD are very soft Organic Clays (OH) and Peat (PT). Below that level are predominately very soft to soft Clays (CH), whose strength increases somewhat with depth.

B.4 Slope Stabilities. The soils underlying the Pelican Headland area are weaker than those in the Chaland area. In general, side slopes of 1(V):4(H) will be acceptable for levees with up to 3 feet of freeboard, except for the South and North Levees. There, side slopes of 1(V):8(H) are indicated for levees not on the beach ridge. Reference must be made to Table 3.2-1 for design.

B.5 Levee Settlements. In general, the weight-related settlements will range from 40 to 50% of the total height (freeboard plus water depth) for the lower levees, i.e., those with total heights up to about 6 feet. This drops to about 20-25% of the total height for taller levees. Again, geologic subsidence adds about 6 inches of "settlement" over the 20-year life of the project.

B.6 Dewatering Time. Due to the high proportion of very fine (clay-sized) particles, the area fill will require some 2 to 4 weeks to essentially complete its dewatering.

B.7 Deposition Area Settlements. The total long-term weight-related settlements will be some 45 to 60% of the as-completed area fill thickness. Again, geologic subsidence adds about 6 inches of "settlement" over the 20-year life of the project.

B.8 Cut/Fill Ratios. For the levees, 1.5 to 1.8 cubic yards of cut will produce 1.0 cubic yard of in-place material. In the case of the area fill, this reduces to about 1.3 cubic yards of cut to achieve 1.0 cubic yard of in-place fill.

REPORT OF GEOTECHNICAL INVESTIGATION BARATARIA BARRIER ISLAND RESTORATION COMPLEX PROJECT BA-38 PLAQUEMINES PARISH, LOUISIANA

The findings of this investigation, together with the analyses and conclusions based on them, are discussed below. Following the Introduction section, the Chaland and Pelican Headlands are discussed separately. The field and laboratory investigations are described in Appendix A.

1.0 INTRODUCTION

1.1 OVERALL DESCRIPTIONS

1.1.1 General. The Barataria Barrier Island Restoration Complex Project covered by this investigation consists of two parts: the Chaland Headland area and the Pelican Headland area. Both will consist of encircling the existing headlands with levees, which will retain hydraulic fill used to build up the headlands to resist erosion and assist in dune and marsh creation. The general location of the project is illustrated on Figure G-1.

Information on land loss rates in this area was available from studies by Penland (2003). They indicate that the shoreline at Scofield Bayou in the project area averaged about 10 feet per year for the period 1884-1985, but increased to 21 feet per year for the period 1985-2002. Geologic subsidence in this area was furnished by LDNR as about 6 inches in 20 years.

The objective of this project is to reduce erosion rates in the project area and create dune and marsh habitat. The project consists of construction of a beach berm, dune platform and marsh platform in both the Pass La Mer to Chaland Pass and the Pelican Island areas. Construction of the features is to be completed using a hydraulic dredge for material placement and bucket dredge for containment. The various project features include protection of barrier islands from an encroaching shoreline by reducing the rates of erosion along the western end and creating more land along the northern shoreline. Specifics of this project involve construction of earthen levees and filling the areas between the earthen levees and the existing barrier islands. At this time, the gulf side (S) levees may be built over the existing dune line or may be built just offshore. No detailed survey information on surface topography is currently available. The dredge borrow areas are located at Quatre Bayou and the Empire & Scofield Borrow areas.

1.1.2 Chaland Headland Area. This area is illustrated on Figure C-1. It is centered at roughly N29°-18'-46.6", W89°-45'-36.2", lying between Pass La Mer and Pass Chaland. The project area is roughly 2.9 miles E-W and 0.2 to 0.5 miles N-S. There will be approximately 3.0 miles of gulfside (S) levee and 3.5 miles of marshside (N) levee. The total area enclosed is roughly 590 acres.

1.1.3 Pelican Headland Area. This area is illustrated on Figure P-1. It is centered at roughly N29°-15'-09", W89°-35'-10". The project area is roughly 2.5 miles E-W and 0.4 to 0.5 miles N-S. There will be approximately 2.6 miles of gulfside (S) levee, 0.6 miles of levee along Bayou Fontanelle on the W end, 0.4 miles of levee along Scofield Bayou on the E end, and 2.3 miles of marshside (N) levee. The total area enclosed is roughly 630 acres.

1.2 SCOPE OF WORK

STE's scope of work consisted of the following items:

- For the Chaland Headland area, drill twelve soil borings (two for the borrow area) to depths ranging from 20 to 70 feet.
- For the Pelican Headland area, drill twelve soil borings (two for the borrow area) to depths ranging from 20 to 80 feet. Two borrow pit borings originally included (S-1 and S-2) were deleted from the project.
- Perform laboratory tests to determine classification, strength, and compressibility characteristics for engineering analyses.
- Perform slope stability and settlement analyses for the proposed levees.
- Analyze settlements which will be caused by placement of the hydraulic fill.

1.3 LIMITATIONS

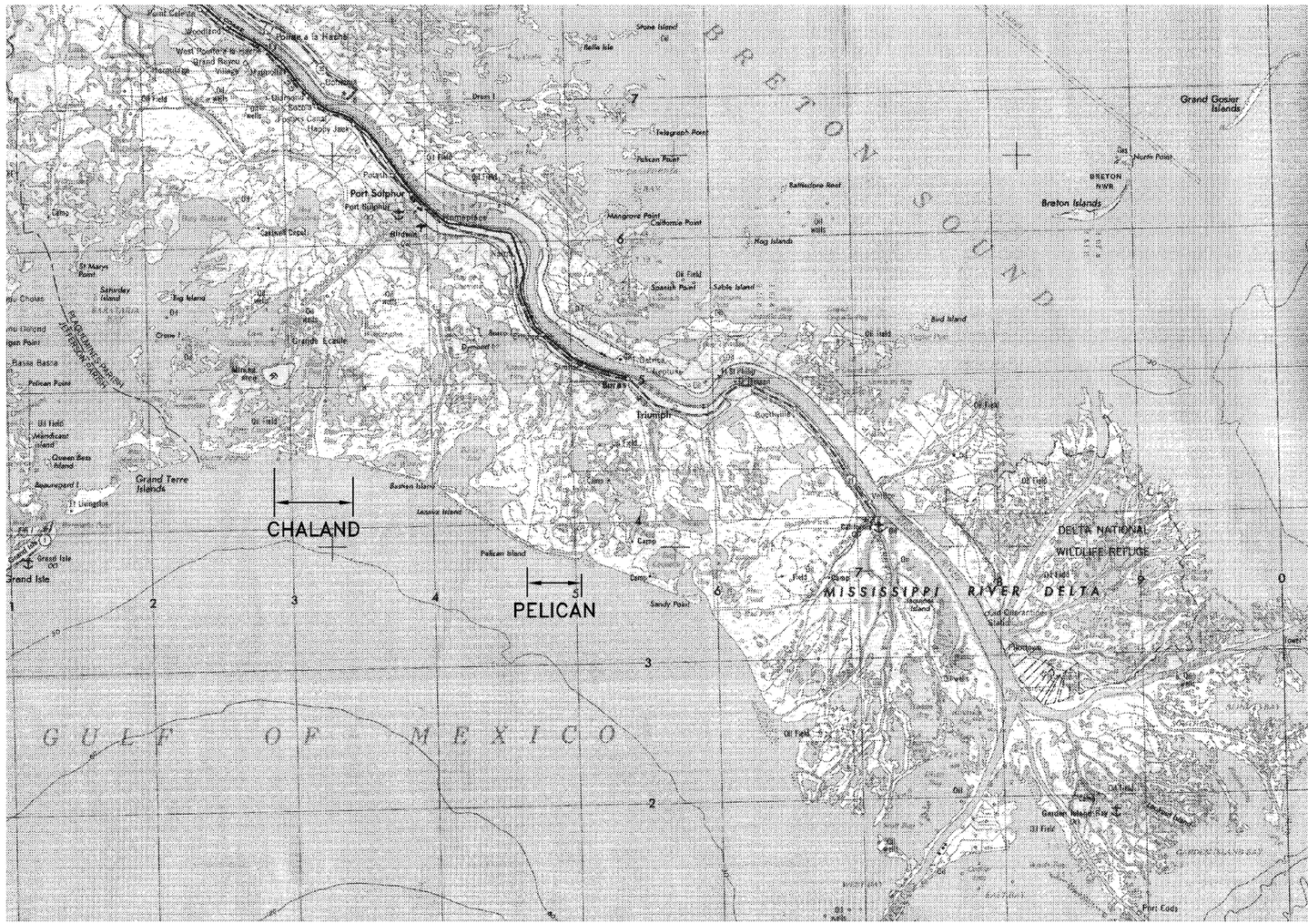
The analyses and recommendations presented in this report are based on the results of the investigation, and the furnished information as provided by the Louisiana Department of Natural Resources. While it is not too likely that conditions will differ greatly from those observed in the borings, it is always possible that variations can occur between or away from the widely spaced borehole locations. If it becomes apparent during construction that subsurface conditions differing significantly from those discussed in Section 2 are being encountered, this office should be notified at once so that their effects can be determined and any remedial measures necessary prescribed. Also, should the nature of the project change considerably, these recommendations may have to be re-evaluated.

This report has been prepared for the exclusive use of the Department of Natural Resources and their consultants for the purpose of designing the proposed Barataria Barrier Island Restoration Project as generally described in Section 1.1. The recommendations provided are site specific and are not intended for use at any other site.

1.4 REPORT ORGANIZATION.

The main body of this report is divided into three sections: this Introduction (Section 1.0), the Chaland Headland area (Section 2.0), and the Pelican Headland area (Section 3.0). Within Sections 2.0 and 3.0, the report is divided into subsections based on the scope of work mentioned in Section 1.2.

Oct 29, 2003 – 3:51pm



0 (miles) 10±

SCALE

REFERENCE:
USGS NH 16-7 of Breton Sound, LA,
1957 edition, revised 1973.

BARATARIA BARRIER ISLAND RESTORATION COMPLEX
(CHALAND & PELICAN HEADLANDS)
PROJECT BA-38
PLAQUEMINES PARISH, LOUISIANA

for
LOUISIANA DEPARTMENT OF NATURAL RESOURCES
BATON ROUGE, LOUISIANA

C-K & ASSOCIATES, INC.
ENGINEERS
BATON ROUGE, LOUISIANA

STE
Soil Testing Engineers, Inc.
Baton Rouge, LA Lake Charles, LA Metairie, LA

Project Engineer:	Drawn by:	Checked by:
G.P. Boutwell	DMS	
File No.: 03-1114	Date: 10-21-03	Figure No.: G-1

Title:
VICINITY MAP

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Oct 29, 2003 – 4:05pm

LEGEND

- NATURAL LEVEE
- POINT BAR
- CREVASSE SPLAY
- BARRIER BEACH
- [illegible]
- MANGROVE SWAMPS, INT MARSH COMPLEX
- INTERDISTRIBUTARY
- INTRADELTA
- LAND [illegible]
- LAND LOSS [illegible]
- LAND LOSS AND SHORELINE CHANGE DUE TO BARRIER ISLAND MIGRATION AND EROSION
- INDEFINITE CONTACT
- ELEVATION OF UPPER INDEFINED PLEISTOCENE SURFACE [illegible]
- BCR NO USED TO CONTOUR UPPER FINE GRAINED PLEISTOCENE SURFACE
- BCR NOS USED ON CROSS SECTIONS

REFERENCE:
USA/COE "Distribution of Deltaic and Marine Deposits," of Empire, LA (1987) and Ft. Livingston, LA (1990).

BARATARIA BARRIER ISLAND SHORELINE RESTORATION

(PELICAN HEADLAND)

PROJECT BA-38

PLAQUEMINES PARISH, LOUISIANA

for

LOUISIANA DEPARTMENT OF NATURAL RESOURCES

BATON ROUGE, LOUISIANA

STE
Soil Testing Engineers, Inc.
Baton Rouge, LA Lake Charles, LA Metairie, LA

Project Engineer:	Drawn by:	Checked by:
G.P. Boutwell	DMS	
File No.: 03–1114	Date: 10–14–03	Figure No.: G-2

Title: **GEOLOGIC MAPPING**

P:\2003\03-1114\CADD\031114-G2 GEOLOGIC MAPPING.DWG

- 2.1 and 3.1: These sections discuss the site, geology, and soil conditions for the Chaland and Pelican areas, respectively.
- 2.2 and 3.2: These sections present the engineering analyses (methodologies and results) for the Chaland and Pelican areas, respectively.

The field and laboratory programs for both areas are covered in Appendix A.

2.0 CHALAND HEADLAND AREA

2.1 GEOLOGICAL AND SOIL CONDITIONS

2.1.1 Site and Geology Conditions. This site is bounded on the west by Pass La Mer and on the east by Pass Chaland; see Figures G-1 and G-2. The surface is either water (at about 0 feet NAVD), marshland (at undefined elevations less than +5 feet NAVD), or, along the south side, a barrier beach (again, elevations undefined). Reference is made to Figure G-2 and the sources cited on that figure. Even there, the subsurface geology is poorly defined. A Barrier Beach some 300 feet wide is shown along the south (gulf) shore. An Abandoned Course some 500 feet wide follows an old N-S bayou which crosses the area near its center. A profile on the "Ft. Livingston" USA/COE geologic map passes about 2 miles inland from the site. It indicates Holocene marsh deposits to around elevation -200 feet NAVD, followed by Holocene-Pleistocene sand to around -320 feet NAVD, where Pleistocene-age clays begin. The marsh deposits frequently have sand bodies (relict beaches) in the -20 to -50 feet NAVD range. Barrier Beach sands typically extend to about -10 feet NAVD.

2.1.2 Soil Conditions - Project Construction Area. Ten (10) borings were made to determine the subsurface conditions in the Chaland Headland project area. All of these borings were given a "C" - number (C, CF, or CS as designated by LDNR); their approximate locations are illustrated on Figure C-1. Global Positioning System (GPS) coordinates taken during drilling are shown on the individual logs of the borings in Appendix A. Soil profiles are given on Figures C-2 through C-4. The borings can be divided into three groups having roughly similar characteristics for ease of comprehension.

2.1.2.1 Borings CF-5, CF-7, and C-10. The average soil conditions at these three borings on the west end of the project can be summarized as shown on Table 2.1-1, below.

TABLE 2.1-1
SOILS DATA: WEST END OF SITE

Depth* (feet)	Soil Type	LL (%)	PI (%)	W (%)	DD (%)	Su (ksf)	N (b/f)	Content (%) of Sand/Silt/Clay
0-3	Water	-	-	-	-	0	0	0/0/0
3-9	CL, CH	30	13	45	73	0.16	NT	44/29/27
9-18	SM, SC	NT	NT	27	90	3.01	12	55/34/11
18-24+	CH	59	36	53	NT	0.21	3	NT

* Below waterline
LL: Liquid Limit
PI: Plas. Index
W: Water Content
DD: Dry Density
Su: Undrained Shear Strength
N: Standard Penetration Resistance
NT: Not Tested

2.1.2.2 Borings CS-1, CS-2, CS-3, CS-4, CS-6, and CS-9. These borings cover most of the remaining project area. The average soil conditions at these borings can be summarized as shown in Table 2.1-2, below:

TABLE 2.1-2
SOILS DATA: MOST OF SITE

Depth* (feet)	Soil Type	LL (%)	PI (%)	W (%)	DD (%)	Su (ksf)	N (b/f)	Content (%) of Sand/Silt/Clay
0-5	Water	-	-	-	-	0	0	0/0/0
5-7	PT, OH	172	115	176	40	0.09	NT	NT
7-19	SM, SC	NT	NT	28	92	2.74	23	61/31/8
19-30	CL, CH	60	37	44	82	0.45	5	1/44/55
30-44	ML, SC	NT	NT	30	84	1.58	13	51/40/9
44-73+	CH, CL	66	46	43	73	0.36	NT	NT

Notes: Same as Table 2.1-1

Also, it should be noted that the (PT, OH) stratum was not present at CS-3, CF-4, and CF-6. The deeper (ML, SC) stratum was not present at CF-9.

2.1.2.3 *Boring CF-8.* This boring is on the extreme east end of the project area. Its average soil conditions can be summarized as shown in Table 2.1-3, below:

TABLE 2.1-3
SOILS DATA: EAST END OF SITE

Depth* (feet)	Soil Type	LL (%)	PI (%)	W (%)	DD (%)	Su (ksf)	N (b/f)	Content (%) of Sand/Silt/Clay
0-6	Water	-	-	-	-	0	0	0
6-8	SM	NT	NT	46	NT	NT	NT	82/11/7
8-14	CL	29	11	51	NT	NT	3	NT
14-26+	ML	NT	NT	30	NT	NT	9	43/50/7

Notes: Same as Table 2.1-1

2.1.3 Soil Conditions - Borrow Area (Borings Q-1 and Q-2). These borings were located approximately 1 mile offshore (south) and 2.5 miles west of the project construction area; see Figure C-1. A soil profile is given as Figure C-5. The average soil conditions at these two borings can be summarized as shown in Table 2.1-4, below:

TABLE 2.1-4
SOILS DATA: BORROW PIT BORINGS

Depth* (feet)	Soil Type	LL (%)	PI (%)	W (%)	DD (%)	Su (ksf)	N (b/f)	Content (%) of Sand/Silt/Clay
0-12	Water	-	-	-	-	0	0	0/0/0
12-15	CH, CL	54	28	51	62	0.15	NT	NT
15-29	SM, ML	NT	NT	34	NT	NT	13	52/40/8
29-31+	CH	63	40	40	83	0.50	6	NT

Notes: Same as Table 2.1-1

It should be noted that the two clay strata (CH, CL and CH) were found only in Boring Q-2.

2.1.4 Limitations. The descriptions given above are (1) averages and (2) based on boreholes spaced 600 to 2000 feet apart. The soils can be expected to vary between borehole locations. For details at a particular location consult the individual logs of the borings in Appendix A.

2.2 ENGINEERING ANALYSES

This section presents the methodologies used in the analyses, their results, and recommendations for geotechnical construction.

2.2.1 Assignments. The engineering assignments given to STE were outlined in STE's proposal to C-K dated July 2, 2003. They can be summarized as follows:

2.2.1.1 New Earthen Containment Levees. The most significant items for design are stability and settlement. These include maximum allowable construction elevation, crown width, and side slopes (stability) plus settlements (1) during a 1-year construction period and (2) time to settle to average marsh elevation. The settlements are to be computed for five different fill (levee) heights.

2.2.1.2 Dredge Borrow and Fill. These are primarily settlement-related items such as fill settlements (maximum fill: 0.5 feet below as-built levee tops) over 20 years, and fill-related items such as suitability of the borrow area soils, dewatering times, and cut/fill ratios.

These various items are covered in the following sections.

2.2.2 Levee Stability Analysis. This section presents the methodology used in the slope stability analyses for the Chaland Headland levees, the cases analyzed, and the results.

2.2.2.1 Slope Stability Analysis - General. A slope has two types of forces acting on it. The soil weight and any seepage forces try to make the soil slide; these are called the "driving forces." The weight of soil below the waterline is its "effective" or, buoyant weight. Therefore, a foot of soil above water has 2 to 3 times the driving force of a foot of soil below water. The strength of the soil tries to keep it from sliding; this is called the "resisting force." Both depend on the geometry of the situation: the "Failure surface." The procedure is to isolate a block of soil (mentally), and compute the resisting and driving forces. Their ratio is called the "safety factor," and is the measure of stability. In practice, one analyses many soil blocks until the block yielding the lowest safety factor is found. This is assumed to govern, and the safety factor for the slope is the lowest safety factor determined. The calculations for any but the simplest conditions are quite laborious. They are therefore now performed on a digital computer, using a proven code such as PCSTABL, XSTABL, UTEXAS3, etc. For this project, the slope stability analyses were performed using XSTABL marketed by Interactive Software Designs, Inc. This program evolved from PCSTABL by Purdue University. The program is capable of searching for the minimum safety factor with an easy to use interface. The Bishop method of analysis was used for this project. The accepted measure of a slope's stability is its "safety factor," as defined above. Typical acceptable safety factors common in practice are:

Low Water Condition:	1.3 - 1.5
Rapid Drawdown Condition:	1.0 - 1.1

The rapid drawdown case is not applicable for this project due to the nature of the tidal conditions at the proposed structures.

2.2.2.2 Cases Analysed. Since the soil strengths are the dominant factor in slope stability, the levee area was divided into three sections having similar soil conditions (See Section 2.1). As mentioned in Section 1.1.1, the gulfside (south) levee may be built either atop the existing beach "ridge" or slightly offshore of it; the decision has not yet been finalized. Also, neither soil data nor detailed elevations are available on the beach "ridge." Therefore, certain assumptions had to be made for levees so located. The cases analysed are summarized below:

- West Levee: Borings CF-5, C-7, C-10
- North/East Levee: Borings C-7, C-9, CS-1, CS-3, CS-2, CS-4, CF-8
- South Levee: Borings C-10, CS-3, CF-6
  - Levee on Beach Ridge (with assumptions)
  - Levee offshore of beach

In each area, analyses were made for the following levee geometries:

- Initial Freeboard: 1.0, 1.5, 2.0, and 3.0 feet at least
- Water Depth: 2 to 6 feet
- Side Slopes: 1(V):4(H), 1(V):6(H) and 1(V):8(H)
- Crown Widths: 5, 10, and 20 feet.

The levees were considered to be of two material types: dredged silt/sand and dredged clay. This was done to account for variability in the borrow pit area (See Section 2.1.3 and the logs of borings Q-1 and Q-2). The lower safety factor obtained for the two materials was assumed to govern and is tabulated below.

The Beach Ridge was assumed to be 2 feet above sea level, and, for conservatism, to extend no deeper than 5 feet below sea level (-5 feet NAVD).

2.2.2.3 Results. The results of illustrative stability analyses are presented on Figures C-6 and C-6A (West), C-7 and C-7A (North/East), C-8 (South-on Ridge), and C-9 (South-offshore) for the steeper slopes [1(V):4(H) and 1(V):6(H)]. In general, the crown widths of the levees had only a nominal effect on stability. The results can be summarized as in Table 2.2-1 below. The safety factors for the deeper water conditions govern. Since most of those safety factors exceeded the desired 1.3, the other water conditions are not presented.

TABLE 2.2-1
LEVEE SAFETY FACTORS - CHALAND HEADLAND

Levee Area	Initial Freeboard (ft.)	Safety Factor for Side Slope		
		1(V):4(H)	1(V):6(H)	1(V):8(H)
West	1.0	1.8	2.4	3.1
	1.5	1.7	2.1	2.9
	2.0	1.5	2.0	2.6
	3.0	1.3	1.7	2.3
North & East	1.0	2.1	2.7	3.5
	1.5	1.9	2.5	3.2
	2.0	1.6	2.3	3.0
	3.0	1.5	2.1	2.6
	6.0	**1.2**	1.7	2.2
South (Ridge)	1.0	>3.0	>3.0	>3.0
	1.5	>3.0	>3.0	>3.0
	2.0	>3.0	>3.0	>3.0
	4.0	2.9	>2.9	>2.9
	5.0	2.4	>2.4	>2.4
	6.0	1.9	>1.9	>1.9
South (Water)	1.0	2.4	>2.4	>2.4
	1.5	2.3	>2.3	>2.3
	2.0	2.0	>2.0	>2.0
	4.0	**1.2**	1.6	2.0
	5.0	**1.0**	1.4	1.7

Bold: SF less than desired 1.3

2.2.2.4 Summary of Stability Results. The soils in the Chaland Headland area are relatively strong, which leads to good stability. The safety factors are acceptable for:

- All levees with 3 feet of freeboard or less, using 1(V):4(H) side slopes.
- All levees with up to 6 feet of freeboard using 1(V):6(H) side slopes.

2.2.2.5 Strengthening. It is clear that designs with about 6 or more feet of freeboard will usually have safety factors less than desired (See Table 2.2-1). Geotextile reinforcement is indicated for such conditions. The geotextile should have an allowable tensile strength of at least 1,000 pounds per lineal foot (measured perpendicular to the levee centerline). It should extend under the full width of the levee. Should levees exceeding 6 feet of freeboard be needed, contact this office for specific analyses and designs.

2.2.2.6 Levee Borrow. It is often desirable to obtain the borrow material for the levees from near the levee. Excavating this material from too close to the levee toe can affect the stability of the levee adversely. It is therefore recommended that the edge of the borrow pit not be closer to the levee toe than about 20 feet plus the depth of the borrow excavation.

Also, the near-surface soils are occasionally Peats (Pt) to around 2 feet below ground surface. Peats should be spoiled or used in general fill, and not used for levee construction. The materials encountered in the Borrow Area (especially in Boring Q-2) are suitable for levee construction. Granular materials which would be good for levee construction were also encountered near the surface at most of the borings except CF-6 and the west end of the project (CF-5, CF-7, and C-10).

2.2.3 Levee Settlement Analyses. The assignments relative to Chaland Headland levee settlements were given in Section 3.2.1. They require calculating both the total amounts of settlement which will occur after a very long time, and the time-rates at which these movements will occur. Levee settlement is composed of three parts:

- Settlement in the foundation soils due to the weight of the levee,
- Settlement within the levee itself due to self-weight consolidation (minor), and
- Geological Subsidence. This rate was furnished by LDNR as about 6 inches in 20 years, or 0.025 feet per year.

2.2.3.1 Analyses - Total Amount of Settlement due to Levee Weight. The total amount of settlement depends on the geometry and intensity of the applied load (levee fill) and on the compressibilities of the underlying soil strata. As settlement progresses, the net intensity of the applied load decreases. This is especially true for levees built in water. The maximum possible settlement is that calculated without taking this phenomenon into account, and forms the basis for calculations which do use load intensity decrease. Note that this decrease occurs if the levees are not periodically rebuilt to their initial elevations.

The actual settlement calculations were performed using the computer code VSTRESS, originally developed by the Corps of Engineers, and SETOFF as developed by Ensoft, Inc. These programs calculate one-dimensional settlement based on either Boussinesq or Westergaard stress distributions. The Boussinesq stress distribution was used for these analyses. For the soil types that had consolidation tests, actual consolidation curves were used in the calculations. Published correlations were used for other soil types to obtain consolidation indices using Atterberg Limits and moisture content values.

2.2.3.2 Cases Analysed. Since the clayey soils (PT, OH, CH, CL) are highly compressible (See Table A-1 in Appendix A), they contribute far more to settlement than do the less compressible granular soils (ML, SC, SM). Therefore, calculations were made for the generalized conditions corresponding to:

- CS-1 and CS-3 (Large amounts of organic soil)
- CS-2 (Intermediate amount of granular soil)
- CS-4 and CF-7 (Small amount of granular soil)

The deeper soil conditions, below about 40 feet, were taken as those of the 70+ foot boring, C-9. Calculations were made for crown widths of 5 to 20 feet, and using the average levee slope [1(V):6(H)]. On the West, North/East levees, levee heights above water were taken as 1, 2, 3, and 4 feet, with water depths of 0, 2, 4, and 6 feet. The South levee had 2 general cases (on the "ridge" and offshore) as discussed in Section 2.2.2. For the ridge, the levee heights were taken as 1, 2, and 3 feet above ground level. The settlements for the potential offshore location were calculated for levee heights of 1, 2, 3, and 4 feet above water, with water depths of 2, 4, 6, 8, and 10 feet.

2.2.3.3 Effect of Settlement on Further Settlement. Most of these levees will or may be constructed in water. The levees are originally built to some level above water, and produce a stress level which includes the *total* weight of levee material above water. As settlement proceeds, some of the material which was originally above water becomes submerged. That material now exerts pressure due to its *buoyant* weight, which is less than its total weight. The net result is that the pressure decreases and the real settlement is less than would be predicted using the total weight. There are two other factors which must be considered:

- If the levee heights are rebuilt, settlement will tend to reach the "total weight" movements.

- At most locations, the levee will be underlain by a substantial amount of granular soils, which consolidate rapidly. The movements due to these soils will probably occur during construction, so that the "total weight" movements in these granular materials (only) will be realized during construction.

2.2.3.4 Total Settlements due to Levee Weight. The starting point is the "raw" settlement computed using the total unit weight for above-water fill. For the observable post-construction settlements, these must be reduced by the movements occurring in the granular layers during construction, termed "adjusted" settlement. Then, the effect of the remaining long-term settlement on the applied pressure must be considered (See Section 2.2.3.3). This is termed the "net" settlement.

The results of these analyses are presented below. Table 2.2-2 provides the settlement data for the West and North/East levees, Table 2.2-3 gives the settlements for the South levee if constructed on the Beach Ridge, and Table 2.2-4 gives the settlements if the South levee were constructed offshore.

TABLE 2.2-2
LONG-TERM SETTLEMENTS: WEST AND NORTH/EAST LEVEES

Geometry Situation		Centerline Settlement (feet) due to Levee Weight									
		CS-1 + CS-3			CS-2			CS-4 + CF-7			Avg. Net
Water (ft.)	Height[a] (ft.)	Raw	Adj.	Net	Raw	Adj.	Net	Raw	Adj.	Net	
0	1	0.49	0.25	0.22	0.17	0.09	0.08	0.21	0.16	0.15	0.15
	2	0.75	0.41	0.38	0.31	0.17	0.16	0.44	0.35	0.31	0.28
	3	1.00	0.57	0.51	0.45	0.26	0.24	0.69	0.55	0.49	0.41
	4	1.24	0.70	0.64	0.60	0.36	0.33	0.94	0.78	0.69	0.55
2	1	0.74	0.44	0.40	0.30	0.19	0.17	0.44	0.29	0.25	0.27
	2	0.99	0.59	0.54	0.44	0.27	0.25	0.67	0.45	0.40	0.40
	3	1.22	0.73	0.69	0.59	0.37	0.34	0.93	0.62	0.55	0.53
	4	1.45	0.87	0.80	0.74	0.46	0.44	1.19	0.80	0.69	0.64
4	1	0.99	0.59	0.51	0.45	0.28	0.24	0.68	0.46	0.37	0.37
	2	1.21	0.72	0.65	0.59	0.37	0.32	0.92	0.62	0.51	0.49
	3	1.50	0.90	0.80	0.74	0.46	0.41	1.18	0.79	0.65	0.62
	4	1.89	1.13	0.96	0.89	0.55	0.50	1.44	0.96	0.79	0.75
6	1	1.21	0.72	0.64	0.60	0.36	0.35	0.93	0.77	0.68	0.56
	2	1.49	0.90	0.81	0.74	0.45	0.43	1.18	0.97	0.86	0.70
	3	1.77	1.10	0.98	0.90	0.55	0.51	1.44	1.18	1.05	0.85
	4	2.02	1.30	1.15	1.05	0.65	0.60	1.69	1.39	1.23	0.99

[A] As-Built height above water level

TABLE 2.2-3
LONG-TERM SETTLEMENTS: SOUTH LEVEE ON BEACH RIDGE

Geometry Situation		Centerline Settlement (feet) due to Levee Weight		
Water (ft.)	Height[b] (ft.)	Raw	Adj.	Net
0	1	0.23	0.14	0.13
	2	0.43	0.27	0.25
	3	0.60	0.38	0.41
	4	0.86	0.51	0.48

[b] Above ground surface (+2 feet NGVD)
CS-1 conditions govern

TABLE 2.2-4
LONG-TERM SETTLEMENTS: SOUTH LEVEE OFFSHORE

Geometry Situation		Centerline Settlement (feet) due to Levee Weight		
Water (ft.)	Height[a] (ft.)	Raw	Adj.	Net
2	1	0.56	0.34	0.30
	2	0.78	0.47	0.42
	3	0.99	0.60	0.58
	4	1.24	0.74	0.68
4	1	0.78	0.47	0.40
	2	0.99	0.59	0.53
	3	1.22	0.73	0.65
	4	1.46	0.88	0.77
6	1	1.00	0.60	0.50
	2	1.22	0.73	0.62
	3	1.46	0.88	0.74
	4	1.68	1.01	0.90

8	1	1.23	0.74	0.59
	2	1.46	0.88	0.72
	3	1.68	1.01	0.89
	4	1.89	1.13	1.02
10	1	1.77	1.17	1.10
	2	2.02	1.25	1.19
	3	2.24	1.32	1.26
	4	2.45	1.45	1.36

CS-1 conditions govern

In the above Tables 2.2-2 through 2.2-4, the "Net" settlements should be used to evaluate long-term performance unless the levees are raised by additional fill at some time in the future. In the latter case, the "Adjusted" settlements would be more appropriate.

2.2.3.5 Geologic Subsidence. The only other significant source of settlement will be that due to geologic subsidence. This rate was furnished by LDNR as about 0.025 feet per year. This is of little consequence for the first few years, but becomes significant over long periods. For example, the movement due to geologic subsidence is 0.1 feet in the first 4 years, but increases to 0.5 feet at the end of the estimated project life at 20 years after construction.

2.2.3.6 Analyses - Time Rate of Settlement due to Levee Weight. The time-rate of settlement as observed at the ground surface depends on several factors, as discussed below:

- Soil Rate Parameter (c_v). This is intrinsic to each soil type, but varies with the total vertical pressure in the soil layer. In general, settlement within the granular soils (ML, SC, SM) will occur virtually during construction.

- Drainage Path Length (L). Consolidation is a process of squeezing water out of the soil voids. The water has to go somewhere, and that is to either the surface or a relatively permeable layer (such as a silt layer in a clay mass).

- Vertical Distribution of the Total Settlement. The time rate applies to each layer; the contribution of each layer is its own ultimate settlement multiplied by its degree of consolidation at a particular time.

Like other problems in time-dependent flow in soils, the analysis for the time-rate of consolidation is inherently inaccurate. Normally, settlement occurs faster than the prediction.

Calculations were made for the soil conditions at the locations cited in Section 2.3.3.2. The results were normalized by dividing the "Net" settlements at various times by the ultimate (long-term) "Net" settlement. This approach accounts directly for the settlements which occur in the more granular materials during construction. Settlement rates were analyzed for the tallest and the lowest levee heights and averaged. In general, the lower levees settle slightly faster than the taller levees where there are deep clays. This is because the taller levees exert greater stress in the deeper materials. The percentages of settlement completed in 1 year are typically 5-10% higher than given in Table 2.2-5 for the low levees, and 5-10% lower than given for the taller levees. The percentages of settlement given in Table 2.2-5 should be applied to the "Net" total settlements given in Tables 2.2-2 through 2.2-4.

TABLE 2.2-5
NET RATES OF WEIGHT-INDUCED SETTLEMENT

Time (years)[d]	Percentage of Weight - Induced Settlement Complete			
	CS-1	CS-2	CS-4	Average
0.0	0	0	0	0
0.5	66	56	47	56
1.0	75	62	62	66
2.0	78	72	75	75
5.0	87	88	91	89
10.0	96	93	97	95
20.0	99	99	99	99

[d]: After construction is complete

2.2.3.7 Time to Reach Marsh Elevation. The average marsh elevation is assumed to be approximately +1 feet NAVD, equal to about one foot above water level at the site. It is assumed that the initial levee top elevation will be up to 4 feet above the site water level, or +5 feet NAVD. The "Net" settlement data from Sections 2.2.3.4 (no rebuilding) was analyzed. If the levees are built at least 1 foot above marsh elevation, they will not ever settle below that elevation under their own weight. The geologic subsidence rate, however, must be considered. It adds about 0.025 feet per year. Hence, levees originally set 1 foot above marsh elevation will settle below marsh elevation due to the combination of their weight-induced settlement and the geologic subsidence, but only if the water depth exceeds 6 feet. In this case, the time required is for levees originally built to 1 foot above marsh elevation is about 10 to 20 years, depending on water depth. Levees with an initial height of 2 or more feet will not settle below +1 feet NAVD during the 20-year life of the project.

2.2.3.8 Applicability. Borings with similar soil conditions, should have similar total settlements and similar time-rates. The soil conditions below the bottoms of the 20-foot

borings are unknown and must be "guesstimated." It is recommended that the settlements at borings other than those where full-depth calculations could be and were made be taken as follows:

TABLE 2.2-6
BOREHOLE MATCHING FOR SETTLEMENT

Boring No.	Settlement from Boring No. [C]	Boring No.	Settlement from Boring No. [C]
CS-1	CS-1	CF-6	CS-1
CS-2	CS-2	CF-7	CS-4
CS-3	CS-1	CF-8	CS-2
CS-4	CS-4	C-9	CS-2
CF-5	CS-4	C-10	CS-2

[C]: Data from Tables 2.2-2 through 2.2-5

2.2.4 Suitability of Borrow Area Soil. As shown in Section 2.1.3, the soils in the borrow pit area are predominately granular (SM, ML). These are good fill materials. About 64% of the soils are silts or sands. The clays in the borrow area are not highly organic, and are suitable for both levee and area fills. Over most of the construction area, there is a 2 to 4 foot thick layer of Peat (PT) and Organic Clay (OH) which is suitable for area fill but should not be used in levee construction if at all possible. The majority of the remaining material is suitable for both types of construction.

2.2.5 Dewatering Time for Area Fill. When soil particles are in suspensions with low concentration of solids, particles settle as individual entities, and there is no significant interaction with neighboring particles (Type I settling). With increasing solids concentration, the particles coalesce or flocculate. By coalescing, the particles increase in mass and settle at a faster rate (Type II settling). With further increase in concentration, the interparticle forces are sufficient to hinder the neighboring particles (Type III settling). Finally, the soil particles settle to form a structure (Type IV settling). The dredging operation typically creates a soil suspension with 5 to 10 percent solids. At this concentration range, the clayey portion of the soils settles at a rate close to Type III. Types I and II settling are applicable for the more granular fills on this project. These two types are typically used for sediment transport modeling. Type IV settling is typically simulated with the diffusion equation using either Terzaghi or Gibson consolidation theory and is discussed in Section 2.2.6.

The dewatering time varies with type of soils and salinity of the water and is often determined using a column test. In this case, however, the bulk of the borrow material will be relatively granular soil. Settling velocities for such materials are commonly calculated using Stokes' Law (see, e.g., ASTM D422). Velocities for various particle size groups were calculated following D422 and are given in

Table 2.2-7, together with an estimate of the percentage of the Q-1 plus Q-2 borrow material falling into each size group.

TABLE 2.2-7
PARTICLE SETTLING VELOCITIES

Partiate Group	Size Range (mm)	Settling Velocity (ft./day)	Portion of Borrow (%)
Medium Sand	0.2-0.4	>1000	1
Fine Sand	0.07-0.2	>1000	5
Coarse Silt	0.02-0.07	330	56
Fine Silt	0.005-0.02	24	2
Clay	<0.005	1-6	36

Clearly, the granular portion (64%) of the fill will settle out of suspension in a period of a few days or less. The clay portion (36%) would theoretically be kept in suspension by Brownian movement. However results from a column test performed on similar materials from the Barataria Landbridge Project (BA-36) indicate it will actually flocculate and settle out in a period of less than about 1 to 2 months.

2.2.6 Settlements Induced by Area Fill. The area fill within the deposition areas will induce two types of settlements:

- Settlements within the deposition areas
- Additional settlements at the perimeter levees.

In addition, the surface of the Area Fill will exhibit settlement from two other sources: consolidation within the fill itself and geologic subsidence.

The settlements induced by the weight of the Area Fill are described below.

2.2.6.1 Method of Analyses. The calculations were made in the manner outlined in Section 2.2.3.1. The settlement data contained in the table in Section 2.2.3.4 indicated that the variations in settlement along the boring locations are typically within the ±25% accuracy commonly achieved in settlement analyses. Therefore, the computations were performed for the soil conditions at the same borings (CS-1, CS-2, and CS-4) to bound the additional levee settlements.

2.2.6.2 Settlements within Deposition Areas. The major consideration here is the loading which will occur as the soil grains settle out of suspension in the introduced water. It has

been assumed that sediment-laden water will be added periodically until the sediment surface is approximately 0.5 feet below the design long-term levee crests. Various sediment heights were also checked for completeness. The applied loading will be the resulting sediment thickness multiplied by the unit weight of the sediment. The latter was taken from earlier Column Tests and the densities observed for the shallow granular sediments in the boreholes; the design value was 70 lb/cu.ft. Net settlements adjusted for the effects of settlement on applied loading as described in Section 2.2.3.3 were used. The resulting settlement values are tabulated below:

TABLE 2.2-8
LONG-TERM AREA SETTLEMENTS DUE TO WEIGHT OF GENERAL FILL

Boring	Additional Area Settlement Due to General Fill (feet)			
	Elev. +1.0[f]	Elev. +1.5[f]	Elev. +2.0[f]	Elev.+3.0[f]
CS-1	0.22	0.26	0.32	0.44
CS-2	0.12	0.15	0.18	0.22
CS-4	0.12	0.16	0.21	0.30
Average	0.15	0.19	0.24	0.32

[f]: Design top of sediment (ft. NAVD); min. 0.5 feet freeboard. Marsh Elevation: 0.0 ft. NAVD
Settlements calculated for 30+ feet from levee

The values tabulated above are valid for relatively uniformly loaded areas at least 30 feet away from the toes of the levees. In the zones closer to the levees, the settlements can be approximated (if necessary) by interpolating between the values given above and those for additional levee settlements given in Section 2.2.6.4.

As described in Section 2.2.5, Type I and Type II settling will dominate even at the solids concentration expected from the dredging operation. However, the time to complete the two processes will be relatively short as compared to Type III settling process. The next step is dewatering (Type III), during which the unit weight of the newly-placed sediments change from the buoyant to the total state. Given these complications, a time-rate analysis is only an approximation. However, it is estimated that the settlement rates will be approximately as follows. Upon completion of final filling (5 year estimate), about 30% to 40% of the tabulated within fill settlement values will be completed (See Table 2.2-9). Another 20% to 30% will occur during the dewatering period, leaving 30 to 50% to take place after dewatering is complete. Figure C-11 presents the rate of settlement estimated without considering the dewatering time. Figure C-11A includes the dewatering (consolidation) within the fill itself, and C-11B adds the effect of geologic subsidence.

2.2.6.3 Overall Settlement Rate. The overall settlement rate is the combination of the effects from the three major sources:

- Settlement due to weight of Area Fill,
- Self-Weight Consolidation within the fill, and
- Geologic Subsidence.

These are combined in Table 2.2-9, below:

TABLE 2.2-9
AVERAGE POST-CONSTRUCTION AREA SETTLEMENT

Initial Fill Top Elevation (ft.NAVD)	Time After Construction (years)	Post-Construction Settlement (feet) due to			Total Post-Construction Settlement (feet)
		Soils Below Fill	Within Fill	Geologic Subsidence	
+1.0	0.5	0.08	0.03	0.01	0.12
	1.0	0.09	0.06	0.02	0.17
	2.0	0.11	0.08	0.05	0.24
	5.0	0.13	0.09	0.12	0.34
	10.0	0.14	0.10	0.25	0.49
	20.0	0.15	0.10	0.50	0.75
+1.5	0.5	0.10	0.02	0.01	0.13
	1.0	0.12	0.05	0.02	0.19
	2.0	0.14	0.09	0.05	0.28
	5.0	0.16	0.13	0.12	0.41
	10.0	0.18	0.14	0.25	0.57
	20.0	0.19	0.15	0.50	0.84
+2.0	0.5	0.13	0.02	0.01	0.16
	1.0	0.16	0.03	0.02	0.21
	2.0	0.18	0.07	0.05	0.30
	5.0	0.21	0.15	0.12	0.48
	10.0	0.22	0.18	0.25	0.65
	20.0	0.23	0.19	0.50	0.92
+3.0	0.5	0.17	0.02	0.01	0.20
	1.0	0.21	0.03	0.02	0.26
	2.0	0.24	0.05	0.05	0.34
	5.0	0.28	0.12	0.12	0.52
	10.0	0.30	0.21	0.25	0.76
	20.0	0.31	0.27	0.50	1.08

The total, overall rate is presented graphically for the various initial Area Fill elevations on Figure C-10.

2.2.6.4 Settlement Effects on Levees. The weight of the new sediments adjacent to the levees will cause additional settlements of these levees. These movements were calculated for the two borings (CS-1 and CS-4) showing the least and most compressible soil conditions along the levees in order to "bound" the movements. They indicated total, long-term centerline adjusted settlements of the levees of around 0.1 feet at both locations. These movements will occur at approximately the rates given for the Depositional Areas in Section 2.2.6.2.

2.2.7 Cut/Fill Ratios. Two cases should be considered here. The first is the amount of cut necessary to create a given amount of levee fill. The levee fill is assumed to be placed mechanically (i.e., with draglines or similar equipment), not hydraulically. The general fill will be placed hydraulically, and will therefore have a cut/fill ratio different from that applicable to mechanically placed fill. Both cases are described below.

2.2.7.1 Levee Fill. Reference is made to the descriptions of the soil conditions along the levees given in Section 2.1.2. Overall, about 36% of the cut material will be clay (CH), which is not as suitable for levee construction as the more granular materials. The shrinkage of the more suitable SM and ML soils from pit to levee will depend primarily on transport losses and loss of water content. The former (transport) is best obtained from experienced contractors, but is expected to be on the order of 25%. The water loss shrinkage is estimated as 10% to 15% of the pit volume. Overall, then, preliminary estimate can be based on about 1.3 to 1.5 cubic yards of suitable cut to produce 1.0 cubic yard of levee fill.

2.2.7.2 Area Fill. It is very difficult to determine the cut/fill ratios for the hydraulically placed area fill. As discussed in Section 2.2.5, sedimentation or settlement occur in stages, thereby the volume of fill changes. A reasonable assumption of the initial fill height is when the density of the fill reaches the end of Type III settling (fast) or beginning of the Type IV settling (slow). The fill soil volume then can be related to the density and cut/fill ratio determined. Based on a column test performed for the Barataria Landbridge Project (BA-36). The cut/fill ratio is approximately 1.1, i.e., 1.1 cubic yards of suitable cut should produce 1.0 cubic yard of in-place area fill.

2.2.8 Erosion Protection. A large portion of the levees will consist of ML, SC, and SM soils, which are highly erodible. Erosion protection will be required, especially on the gulf side of the South levee. It must be flexible to withstand the anticipated settlements; rip-rap is indicated. A filter fabric is recommended against the fill to prevent washing of the fines. It should be a non-woven geotextile having a weight of at least 8 ounces per square yard (ASTM D3776) an Equivalent Opening Size around 0.05 mm as determined by ASTM D4751, and a grab strength of at least 125 lb. by ASTM D4632. The 6 to 12 inch layer of riprap adjacent to the fabric should be 6 inch maximum stone. The remainder of the riprap should be sized according to the appropriate methods for the wave action anticipated.

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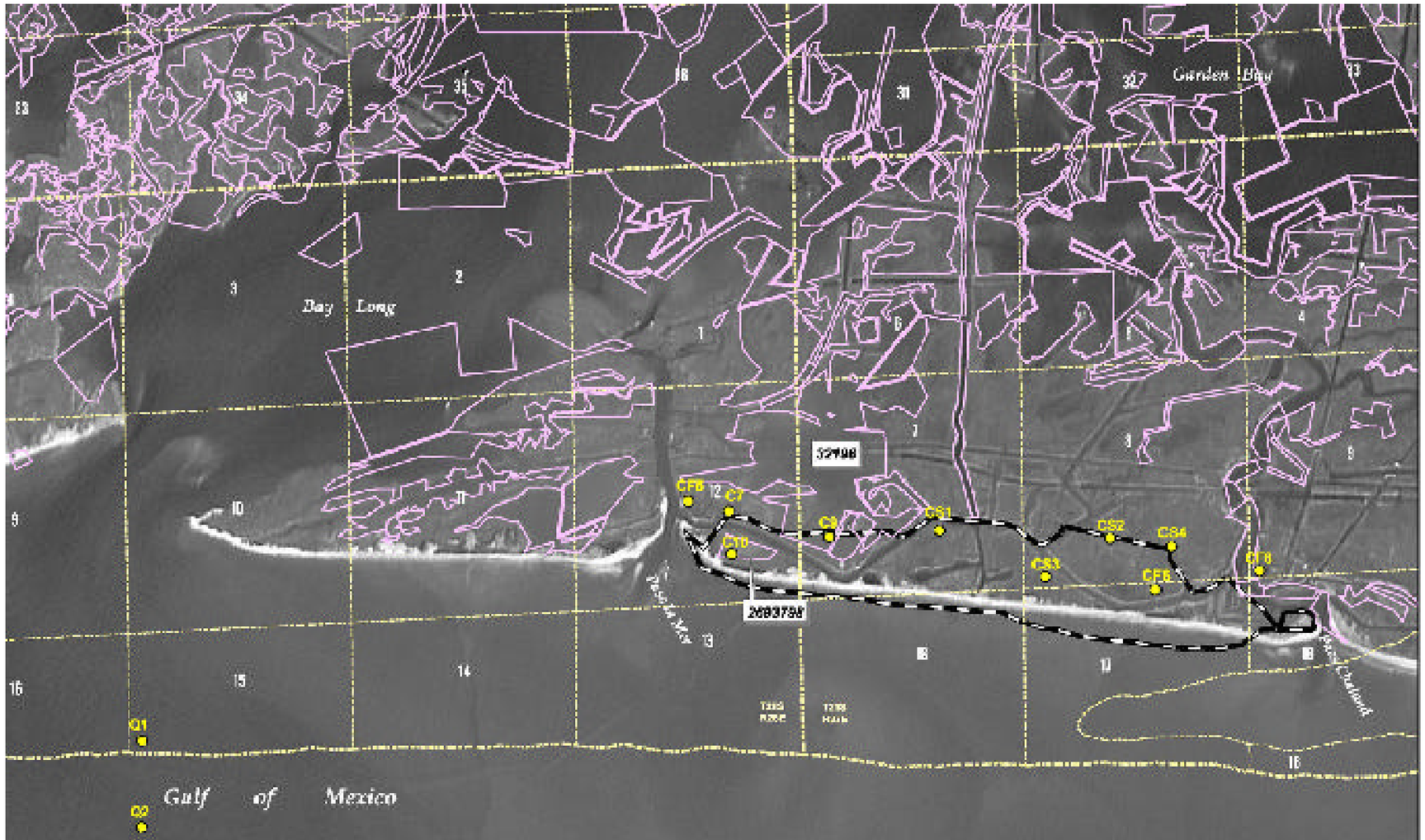

ID	Northing	Easting	x	y	Depth
Q1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Q2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CS1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CS2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CS3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CS4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CF5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CF6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Boring Locations Intersecting with Active Oyster Leases:

Boring ID	Lease ID	Exp. Date	Lease Holder	Phone Number
C9	32106	9/1/2026	Grasshopper Oysters, Inc.	(504) 667-8746
C10	2694798	9/1/2013	Sandra Tullier et al	(985) 594-3808

REFERENCE:
MAP ID: USGS–NWRC 2003–04–0305

BARATARIA BARRIER ISLAND RESTORATION COMPLEX
(CHALAND HEADLAND)
PROJECT BA-38)
PLAQUEMINES PARISH, LOUISIANA

for
LOUISIANA DEPARTMENT OF NATURAL RESOURCES
BATON ROUGE, LOUISIANA

C-K & ASSOCIATES, INC.
ENGINEERS
BATON ROUGE, LOUISIANA

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Soil Testing Engineers, Inc.
Baton Rouge, LA Lake Charles, LA Metairie, LA

Project Engineer:	Drawn by:	Checked by:
G.P. Boutwell	DMS	
File No.: 03–1114	Date: 9–18–03	Figure No.: C-1

Title:
BORING PLAN

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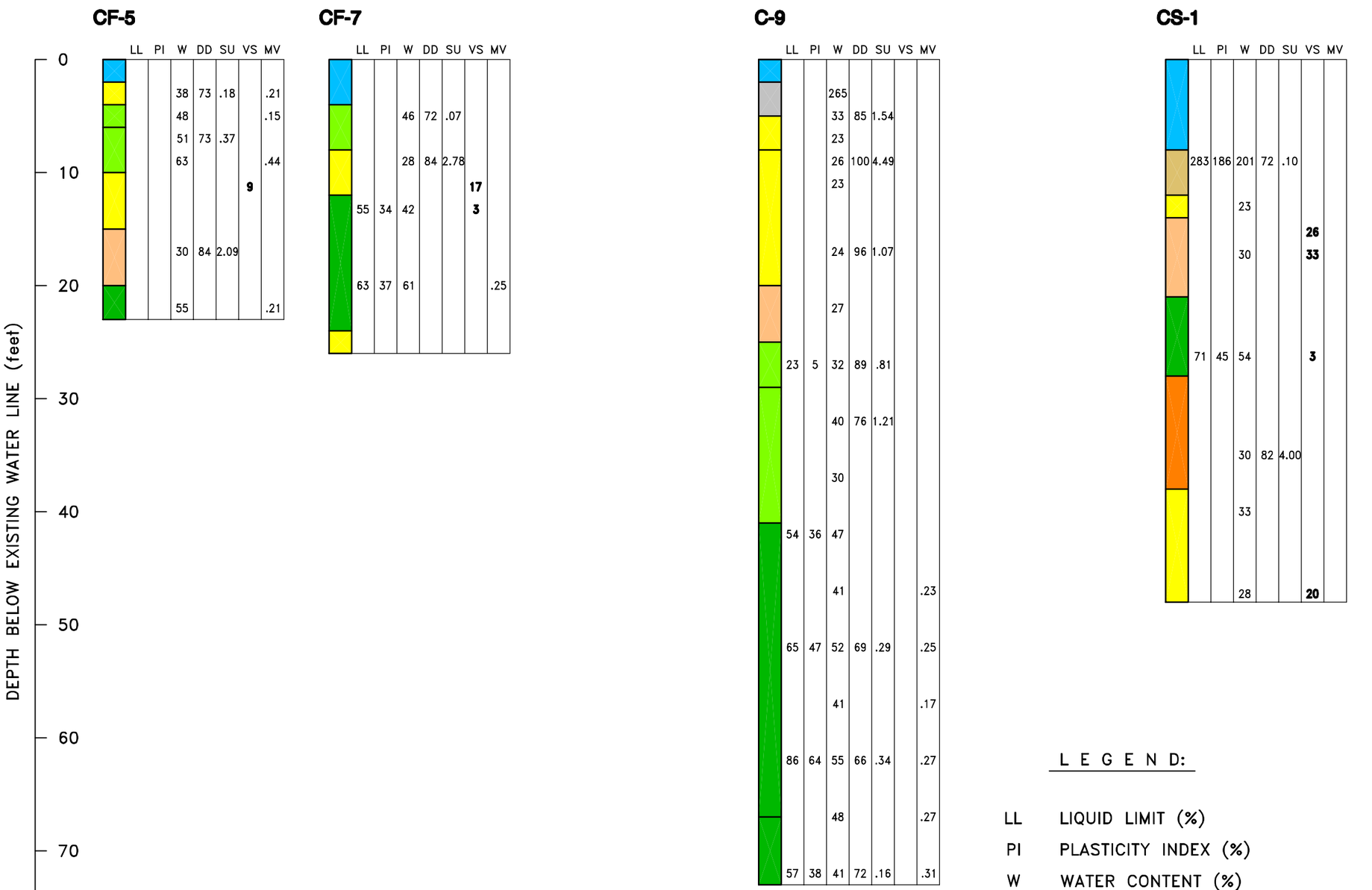

SYMBOL	SOIL TYPE
	WATER
	PEAT
	ORGANIC CLAY (OH)
	CLAY (CH)
	SILTY CLAY or SANDY CLAY (CL)
	CLAYEY SAND (SC)
	SANDY SILT, CLAYEY SILT (ML)
	SILTY SAND (SM)

L E G E N D:

LL LIQUID LIMIT (%)
PI PLASTICITY INDEX (%)
W WATER CONTENT (%)
DD DRY DENSITY (pcf)
SU UNDRAINED SHEAR STRENGTH (ksf)
VS FIELD VANE SHEAR (ksf)
NOTE: **BOLD** = Standard Penetration Resistance (blows/foot)
MV MINIATURE LAB VANE SHEAR (ksf)

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ENGINEERS
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Project Engineer:	Drawn by:	Checked by:
G.P. Boutwell	DMS	
File No.: 03-1114	Date: 9-22-03	Figure No.: C-2

Title: **SOIL PROFILE CF-5, CF-7, C-9 & CS-1**

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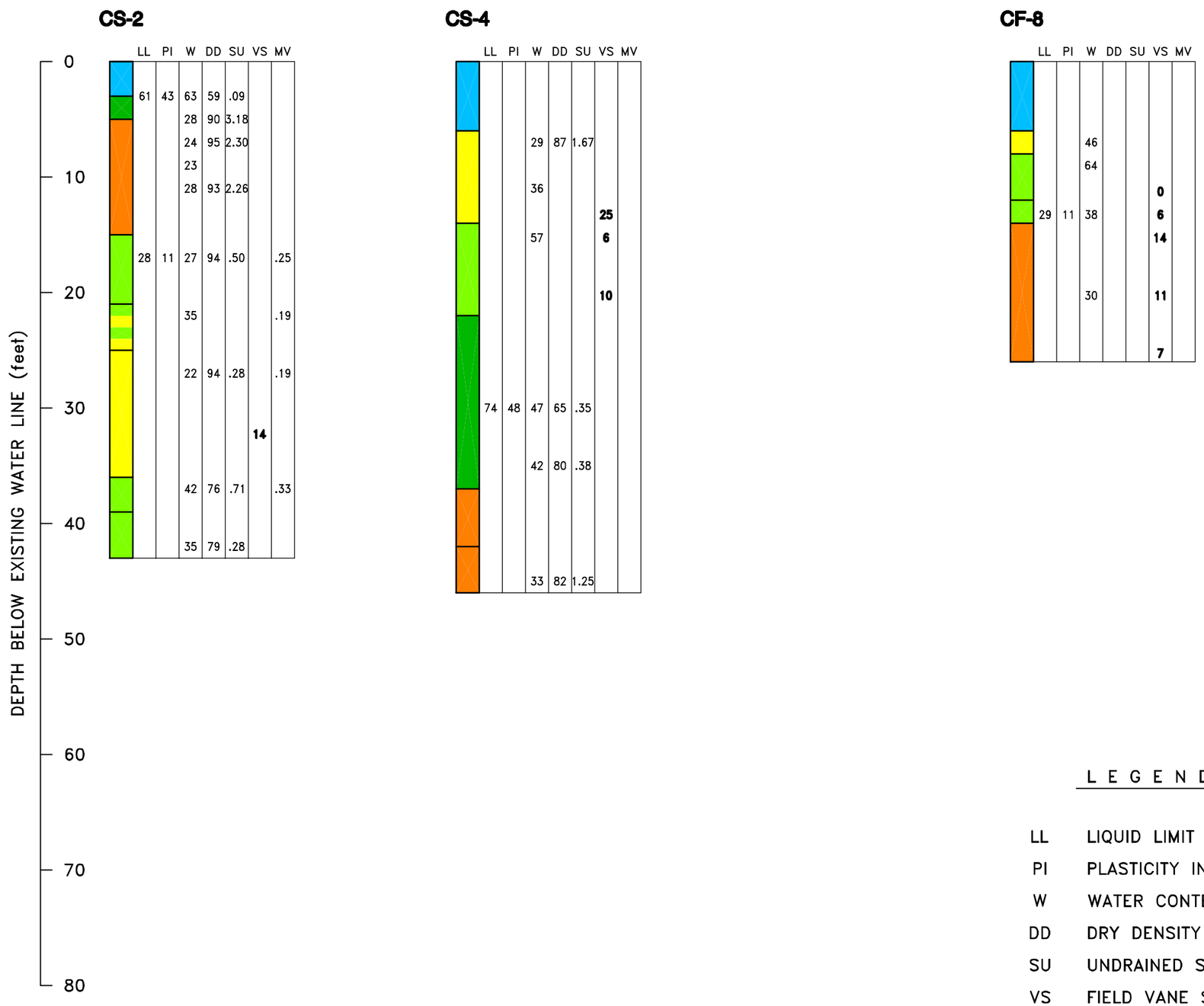

SYMBOL	SOIL TYPE
	WATER
	PEAT
	ORGANIC CLAY (OH)
	CLAY (CH)
	SILTY CLAY or SANDY CLAY (CL)
	CLAYEY SAND (SC)
	SANDY SILT, CLAYEY SILT (ML)
	SILTY SAND (SM)

L E G E N D:

LL	LIQUID LIMIT (%)
PI	PLASTICITY INDEX (%)
W	WATER CONTENT (%)
DD	DRY DENSITY (pcf)
SU	UNDRAINED SHEAR STRENGTH (ksf)
VS	FIELD VANE SHEAR (ksf)
	NOTE: **BOLD** = Standard Penetration Resistance (blows/foot)
MV	MINIATURE LAB VANE SHEAR (ksf)

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G.P. Boutwell	DMS	
File No.: 03-1114	Date: 9-22-03	Figure No.: C-3

Title: **SOIL PROFILE CS-2, CS-4 & CF-8**

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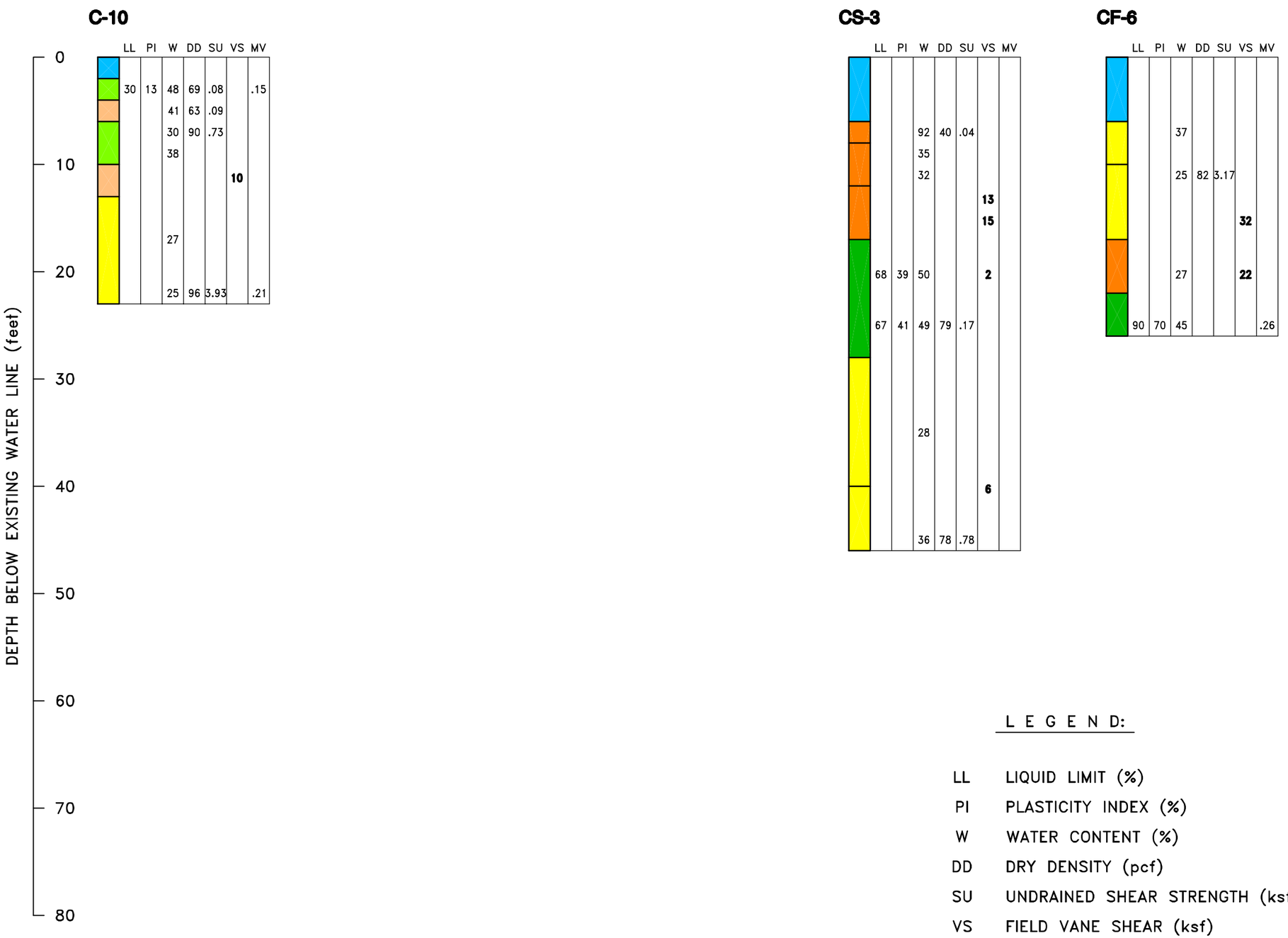

SYMBOL	SOIL TYPE
	WATER
	PEAT
	ORGANIC CLAY (OH)
	CLAY (CH)
	SILTY CLAY or SANDY CLAY (CL)
	CLAYEY SAND (SC)
	SANDY SILT, CLAYEY SILT (ML)
	SILTY SAND (SM)

L E G E N D:

LL	LIQUID LIMIT (%)
PI	PLASTICITY INDEX (%)
W	WATER CONTENT (%)
DD	DRY DENSITY (pcf)
SU	UNDRAINED SHEAR STRENGTH (ksf)
VS	FIELD VANE SHEAR (ksf)
	NOTE: **BOLD** = Standard Penetration Resistance (blows/foot)
MV	MINIATURE LAB VANE SHEAR (ksf)

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G.P. Boutwell	DMS	
File No.: 03-1114	Date: 9-22-03	Figure No.: C-4

Title: **SOIL PROFILE C-10, CS-3 & CF-6**

Oct 29, 2003 - 3:47pm

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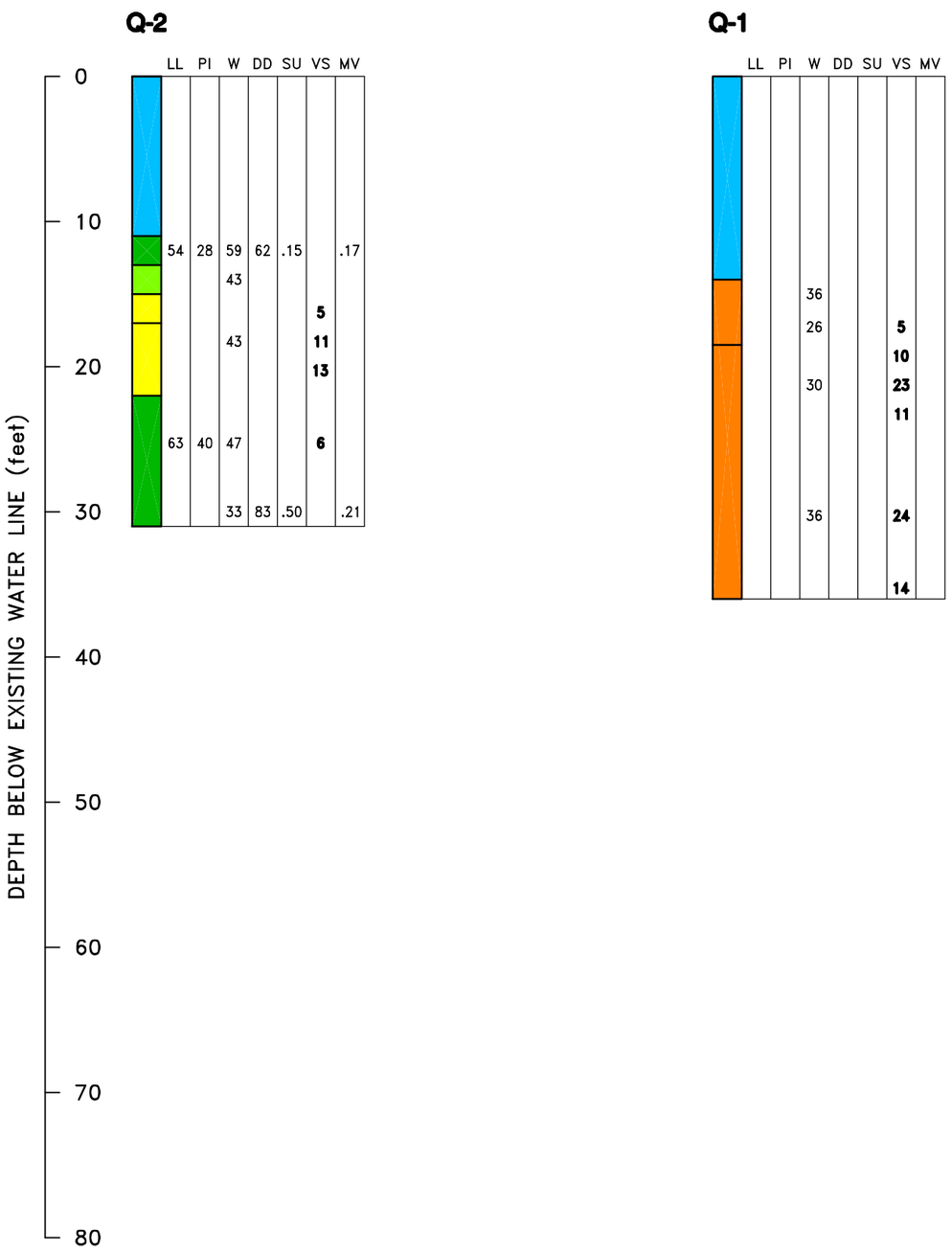

SYMBOL	SOIL TYPE
	WATER
	PEAT
	ORGANIC CLAY (OH)
	CLAY (CH)
	SILTY CLAY or SANDY CLAY (CL)
	CLAYEY SAND (SC)
	SANDY SILT, CLAYEY SILT (ML)
	SILTY SAND (SM)

L E G E N D:

LL LIQUID LIMIT (%)
PI PLASTICITY INDEX (%)
W WATER CONTENT (%)
DD DRY DENSITY (pcf)
SU UNDRAINED SHEAR STRENGTH (ksf)
VS FIELD VANE SHEAR (ksf)
NOTE: **BOLD** = Standard Penetration Resistance (blows/foot)
MV MINIATURE LAB VANE SHEAR (ksf)

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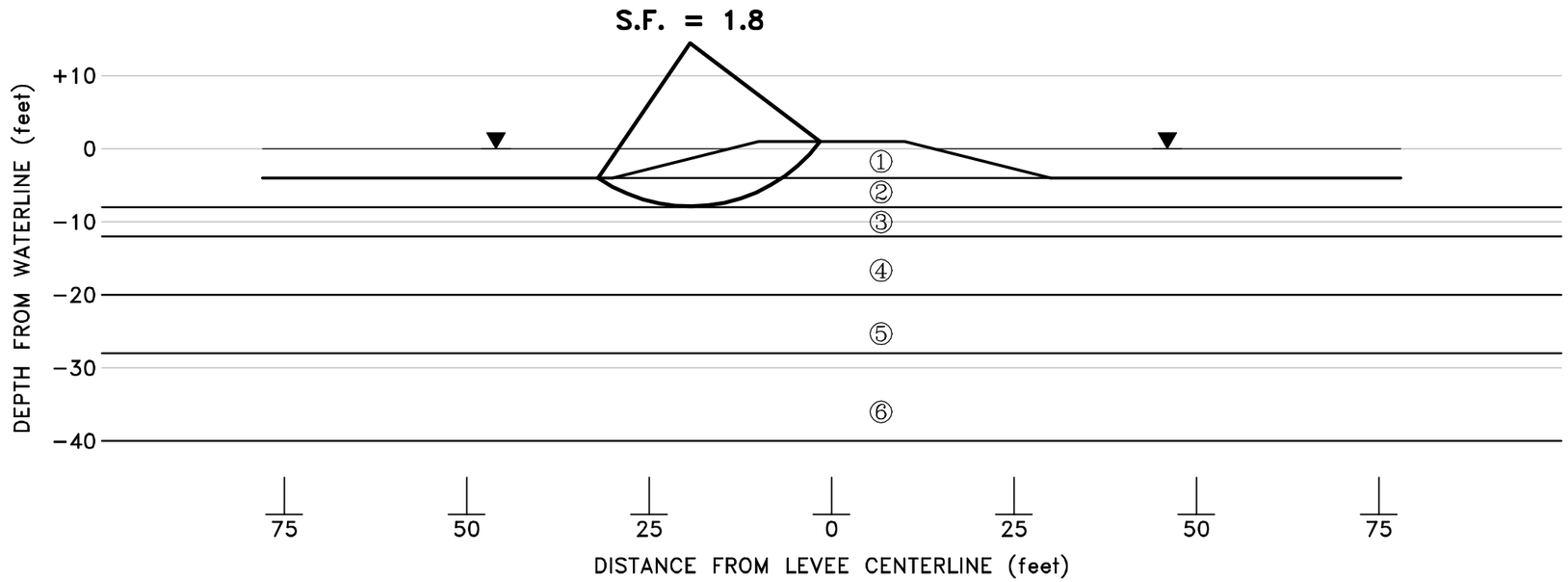
File No.: 03-1114	Date: 9-22-03	Figure No.: C-5

Title: **SOIL PROFILE Q-1 & Q-2**

Oct 29, 2003 - 3:47pm

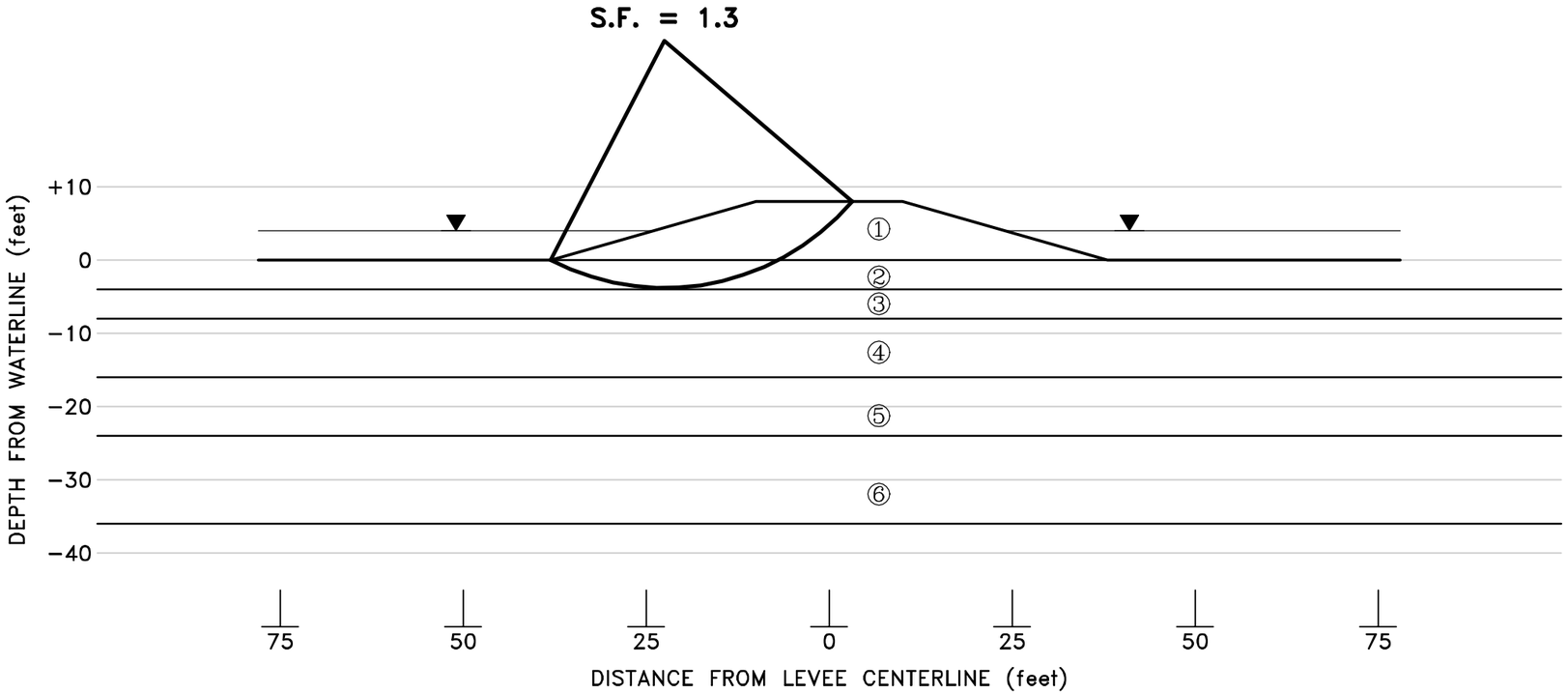
P:\2003\03-1114\CADD\031114-C5 PROFILE Q2 Q1.DWG



1 FOOT FREEBOARD, 1(V):4(H) SLOPES

SOIL	COHESION (psf)	UNIT WEIGHT (pcf)	FRICTION ANGLE (degrees)
1[a]	100	100	0
1[a]	50	110	22
2	70	105	0
3	0	108	28
4	300	105	0
5	50	117	22
6	280	106	0

a: Analyzed for both fill types. Lowest SF illustrated.



3 FOOT FREEBOARD, 1(V):4(H) SLOPES

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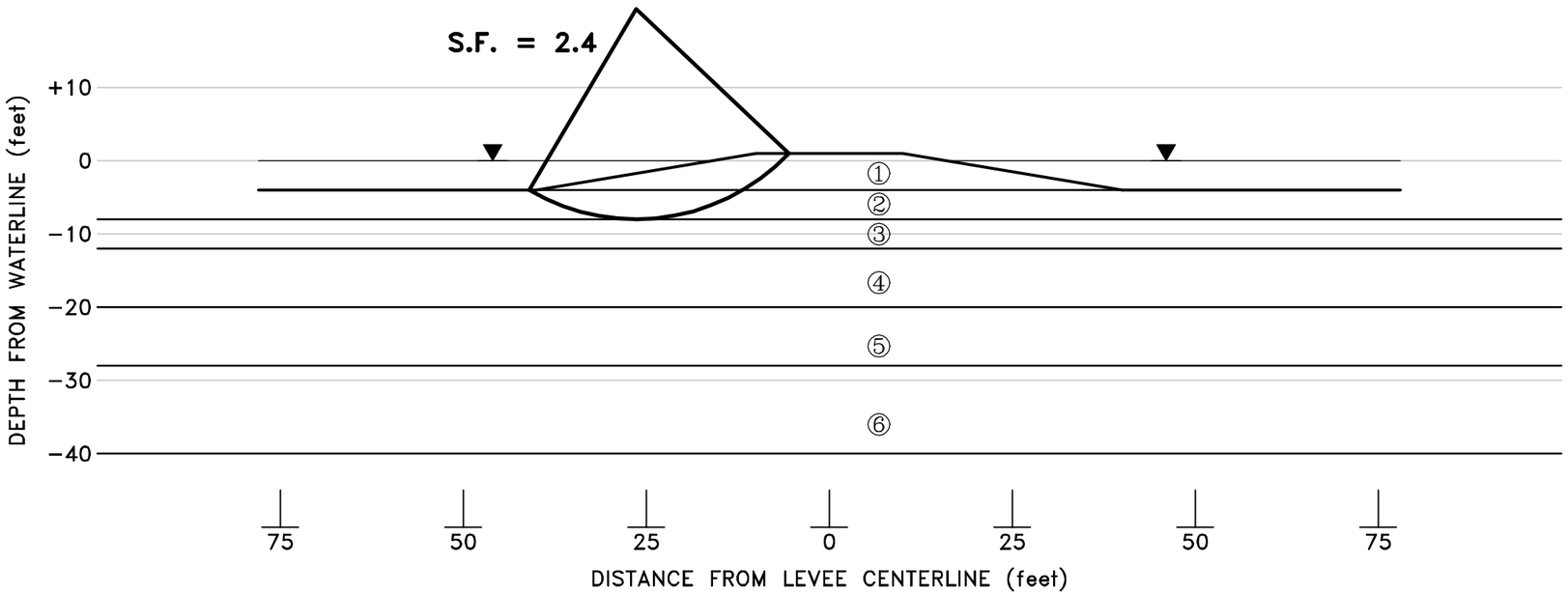
File No.: 03−1114	Date: 10−29−03	Figure No.: C-6

Title: **STABILITY ANALYSES WEST LEVEE**

Oct 29, 2003 − 3:48pm

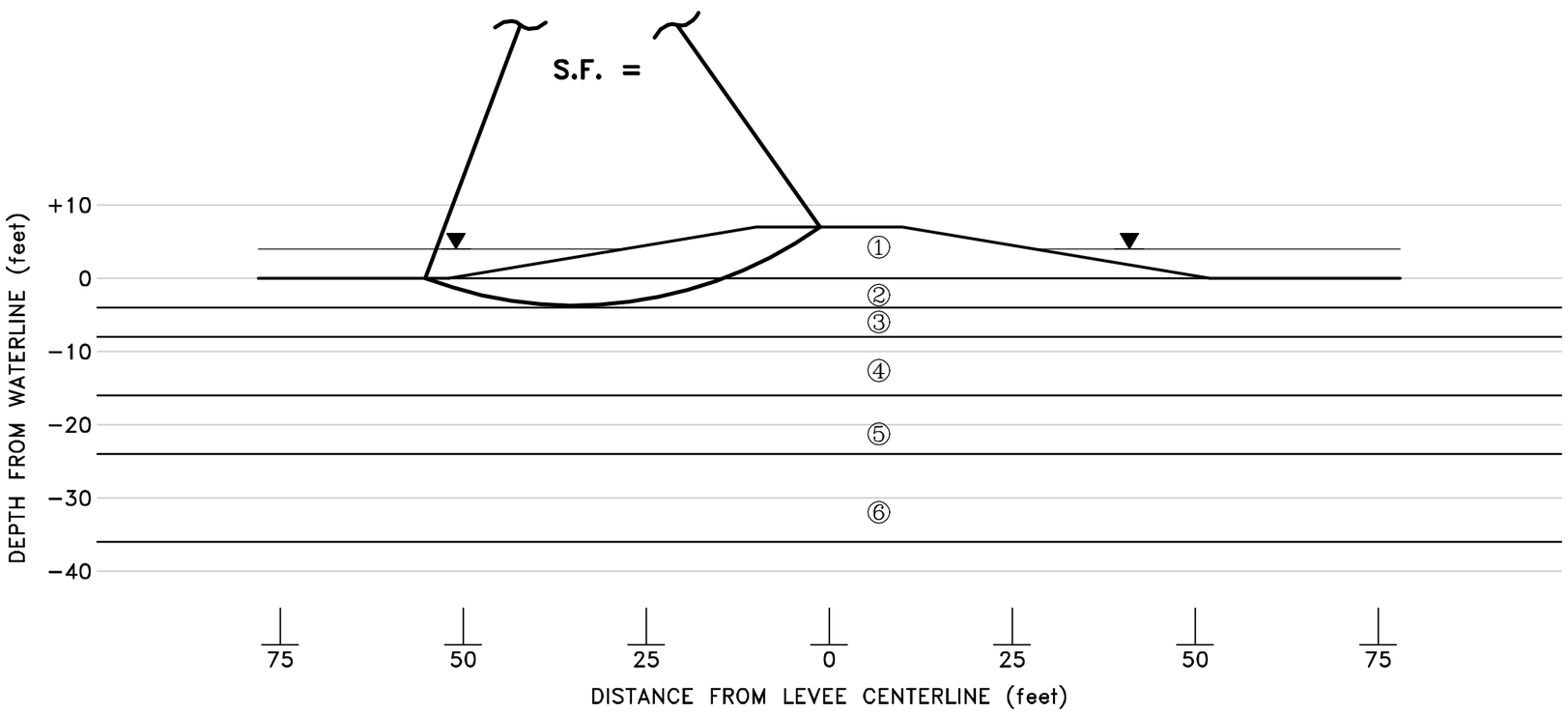
P:\2003\03−1114\CADD\031114−C6 WEST LEVEE STABILITY.DWG



1 FOOT FREEBOARD, 1(V):6(H) SLOPES

SOIL	COHESION (psf)	UNIT WEIGHT (pcf)	FRICTION ANGLE (degrees)
1[a]	100	100	0
1[a]	50	110	22
2	70	105	0
3	0	108	28
4	300	105	0
5	50	117	22
6	280	106	0

a: Analyzed for both fill types. Lowest SF illustrated.



3 FOOT FREEBOARD, 1(V):6(H) SLOPES

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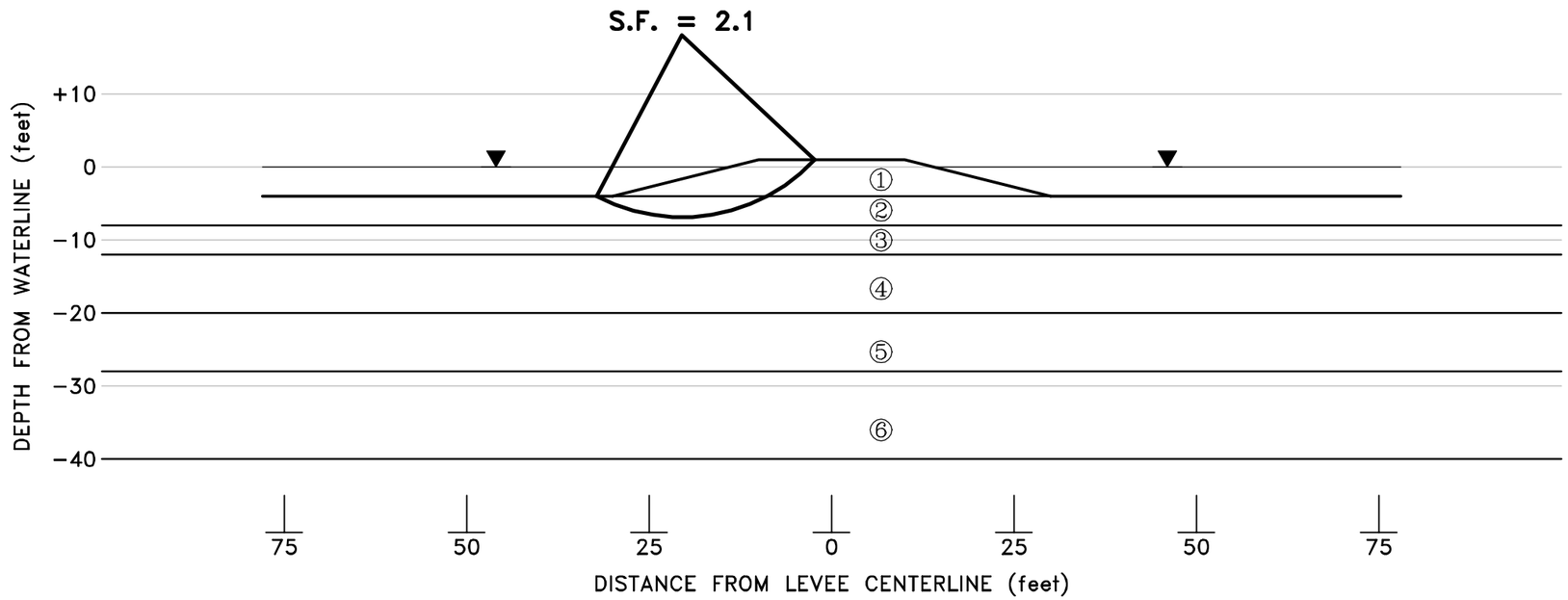
File No.: 03−1114	Date: 10−29−03	Figure No.: C-6A

Title: **STABILITY ANALYSES WEST LEVEE**

Oct 29, 2003 − 3:49pm

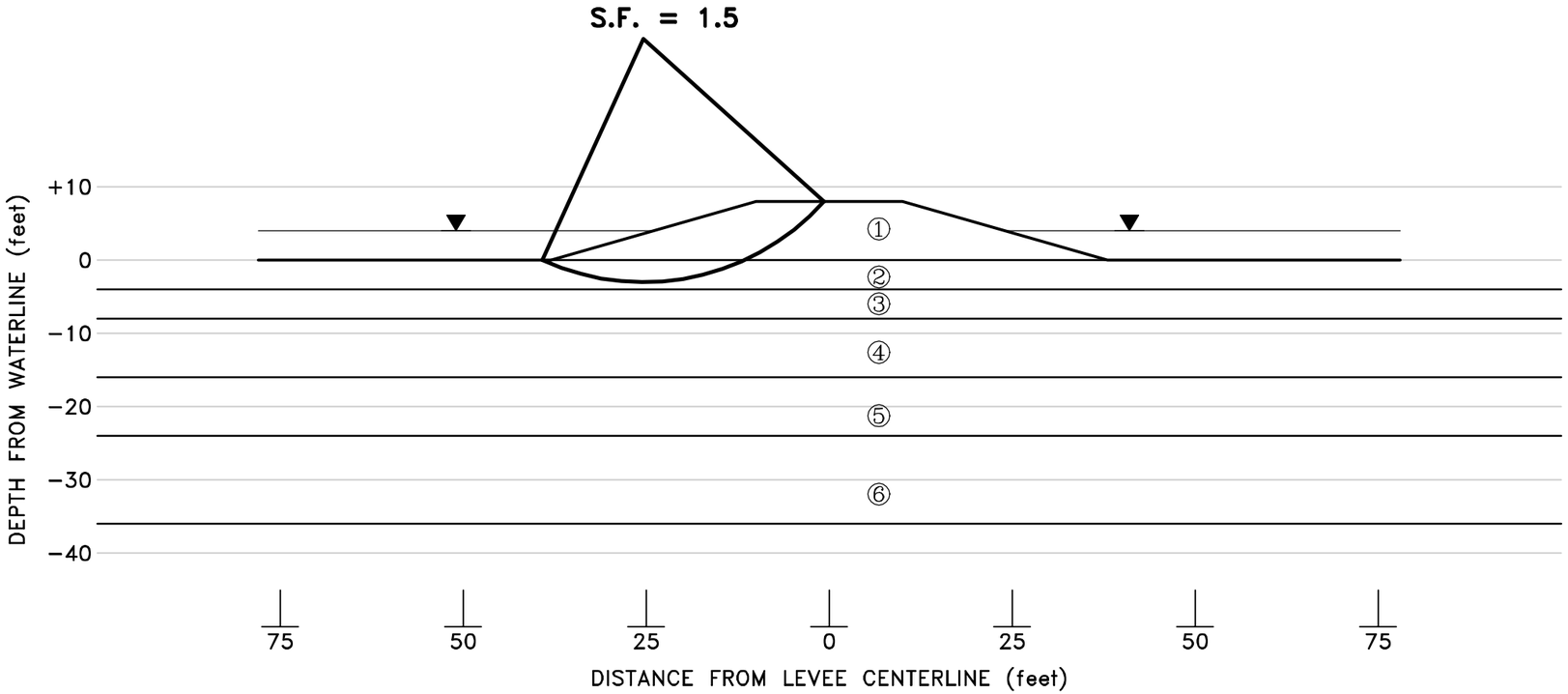
P:\2003\03−1114\CADD\031114−C6A WEST LEVEE STABILITY.DWG



1 FOOT FREEBOARD, 1(V):4(H) SLOPES

SOIL	COHESION (psf)	UNIT WEIGHT (pcf)	FRICTION ANGLE (degrees)
1[a]	100	100	0
1[a]	50	110	22
2	100	90	0
3	0	110	26
4	100	120	28
5	350	104	0
6	0	107	24

a: Analyzed for both fill types. Lowest SF illustrated.



3 FOOT FREEBOARD, 1(V):4(H) SLOPES

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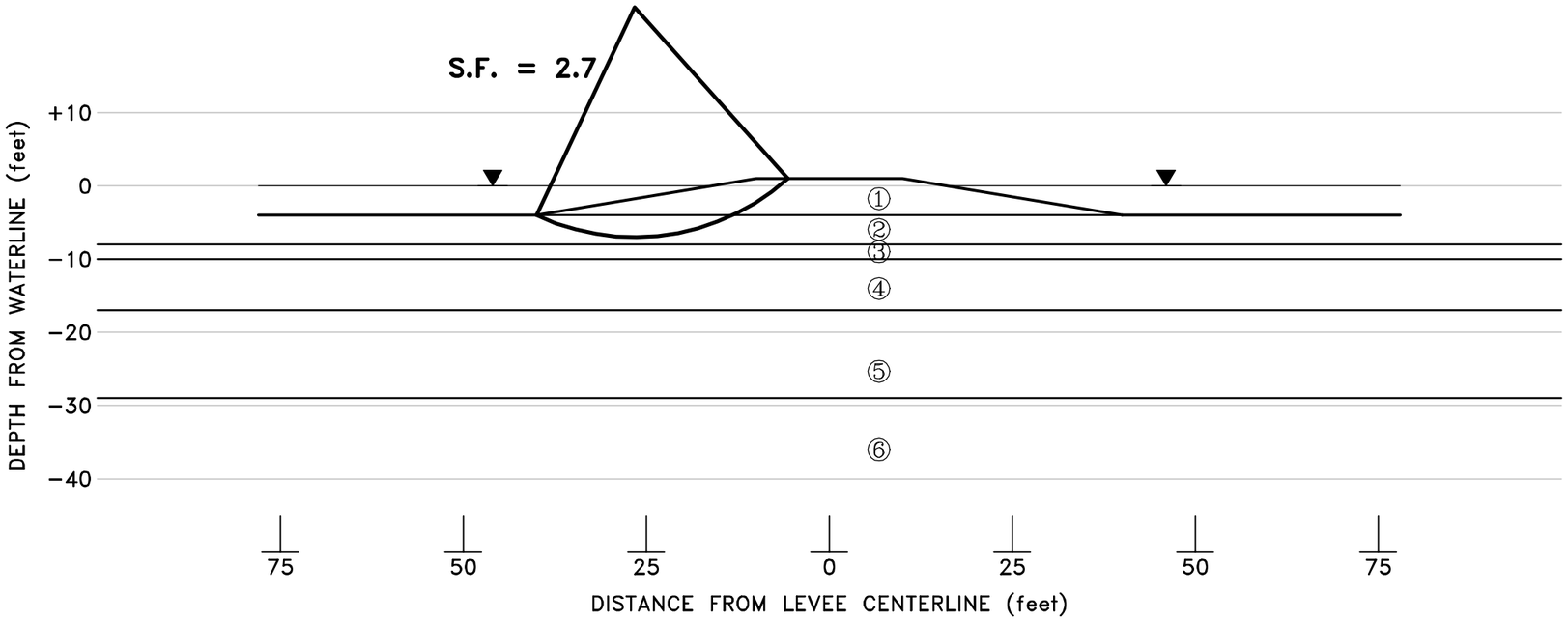
File No.: 03−1114	Date: 10−29−03	Figure No.: C-7

Title: **STABILITY ANALYSES NORTH/EAST LEVEE**

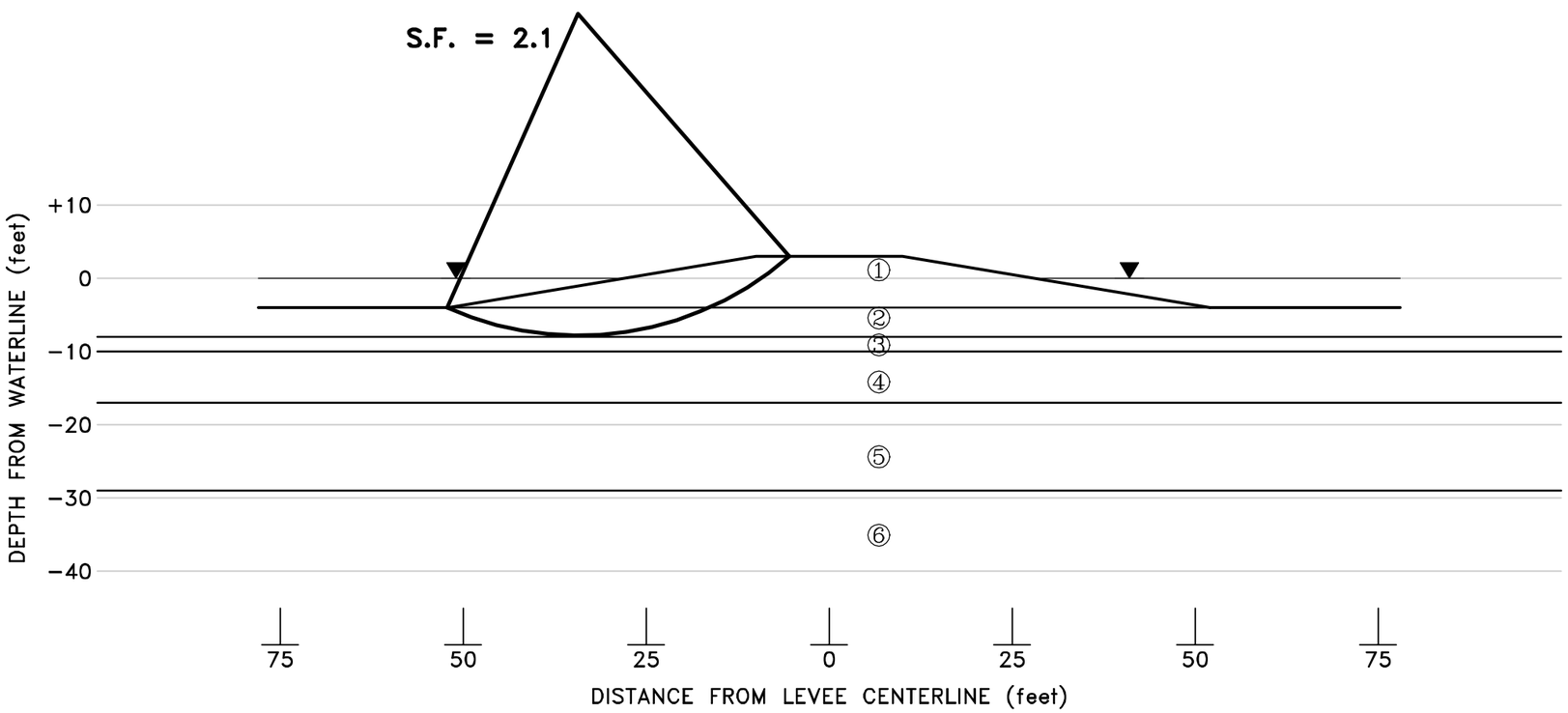
Oct 30, 2003 − 1:09pm
P:\2003\03−1114\CADD\031114−C7 NORTH−EAST LEVEE STABILITY.DWG



1 FOOT FREEBOARD, 1(V):6(H) SLOPES

SOIL	COHESION (psf)	UNIT WEIGHT (pcf)	FRICTION ANGLE (degrees)
1[a]	100	100	0
1[a]	50	110	22
2	100	90	0
3	0	110	26
4	100	120	28
5	350	104	0
6	0	107	24

a: Analyzed for both fill types. Lowest SF illustrated.



3 FOOT FREEBOARD, 1(V):6(H) SLOPES

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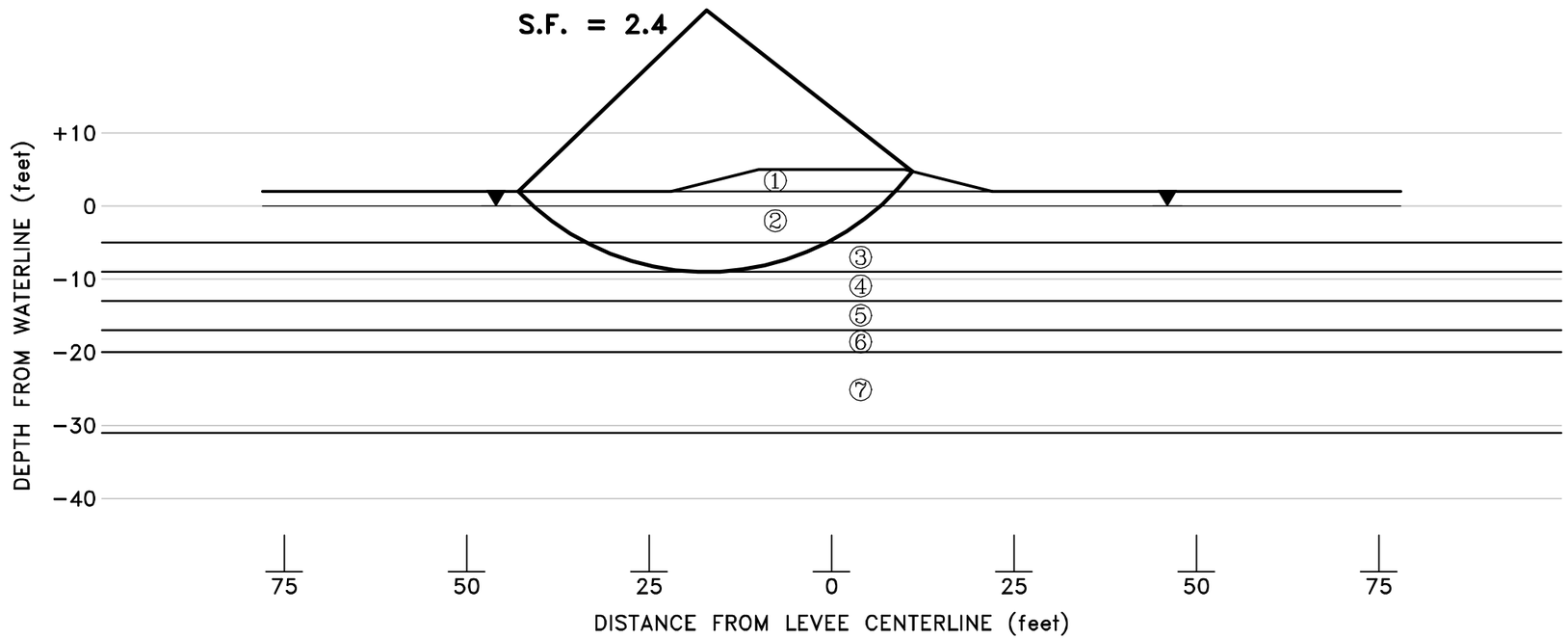
G.P. Boutwell	DMS	
File No.: 03−1114	Date: 10−29−03	Figure No.: C-7A

Title: **STABILITY ANALYSES NORTH/EAST LEVEE**

Oct 30, 2003 − 1:09pm

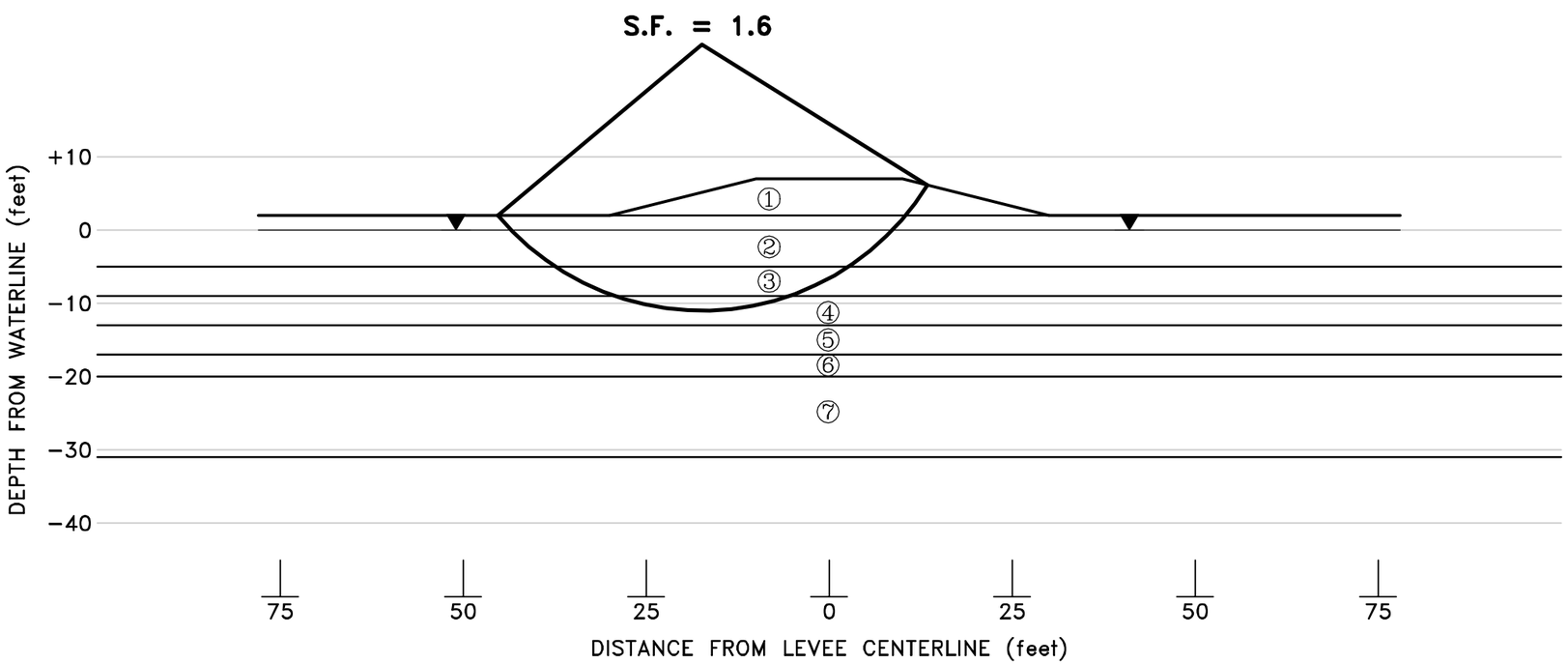
P:\2003\03−1114\CADD\031114−C7A NORTH−EAST LEVEE STABILITY.DWG



LEVEE TOP 3 FEET ABOVE RIDGE (5 FOOT FREEBOARD) 1(V):4(H) SLOPES

SOIL	COHESION (psf)	UNIT WEIGHT (pcf)	FRICTION ANGLE (degrees)
1[a]	100	100	0
1[a]	50	110	22
2	0	112	26
3	80	89	0
4	370	113	0
5	50	110	22
6	0	110	28
7	170	117	0

a: Analyzed for both fill types. Lowest SF illustrated.



LEVEE TOP 5 FEET ABOVE RIDGE (7 FOOT FREEBOARD) 1(V):4(H) SLOPES

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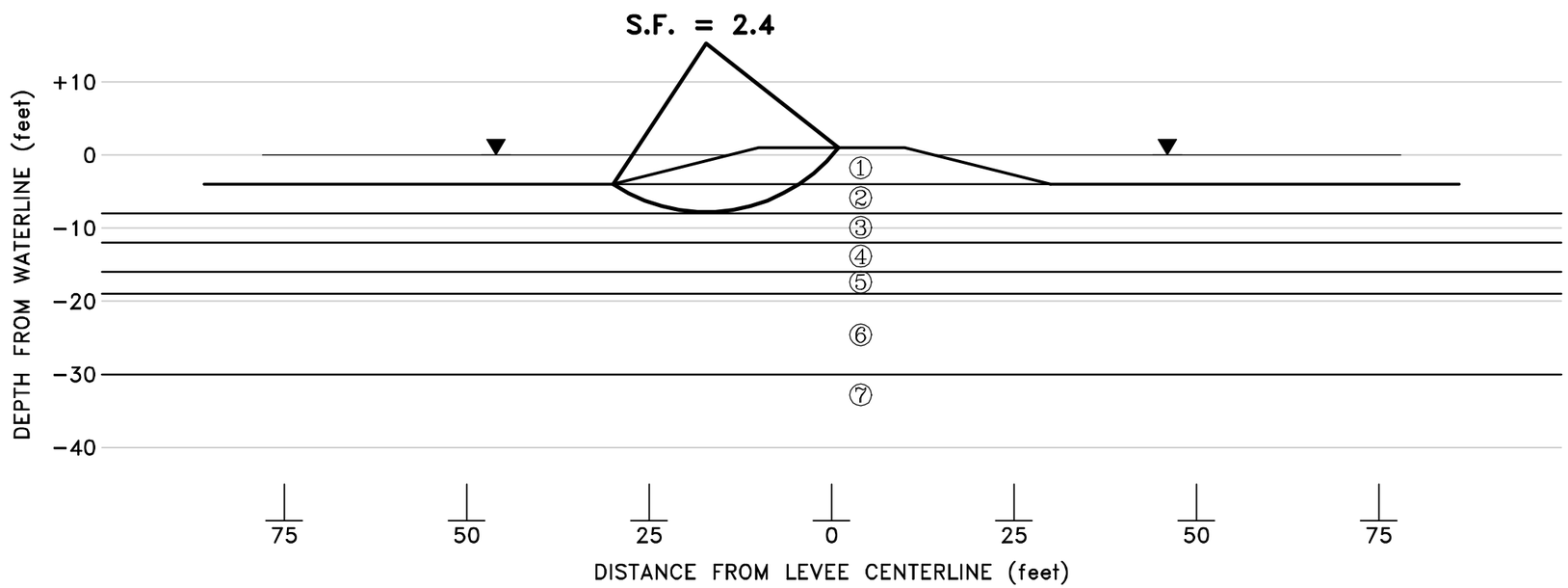
File No.: 03−1114	Date: 10−29−03	Figure No.: C-8

Title: **STABILITY ANALYSES**
SOUTH LEVEE ON BEACH RIDGE

Oct 29, 2003 − 3:48pm

P:\2003\03−1114\CADD\031114−C8 SOUTH LEVEE STABILITY.DWG



1 FOOT FREEBOARD 1(V):4(H) SLOPES

SOIL	COHESION (psf)	UNIT WEIGHT (pcf)	FRICTION ANGLE (degrees)
1[a]	100	100	0
1[a]	50	110	22
2	80	89	0
3	370	113	0
4	50	110	22
5	0	110	28
6	170	117	0
7	0	106	28

a: Analyzed for both fill types.
Lowest SF illustrated.

3 FEET FREEBOARD 1(V):4(H) SLOPES

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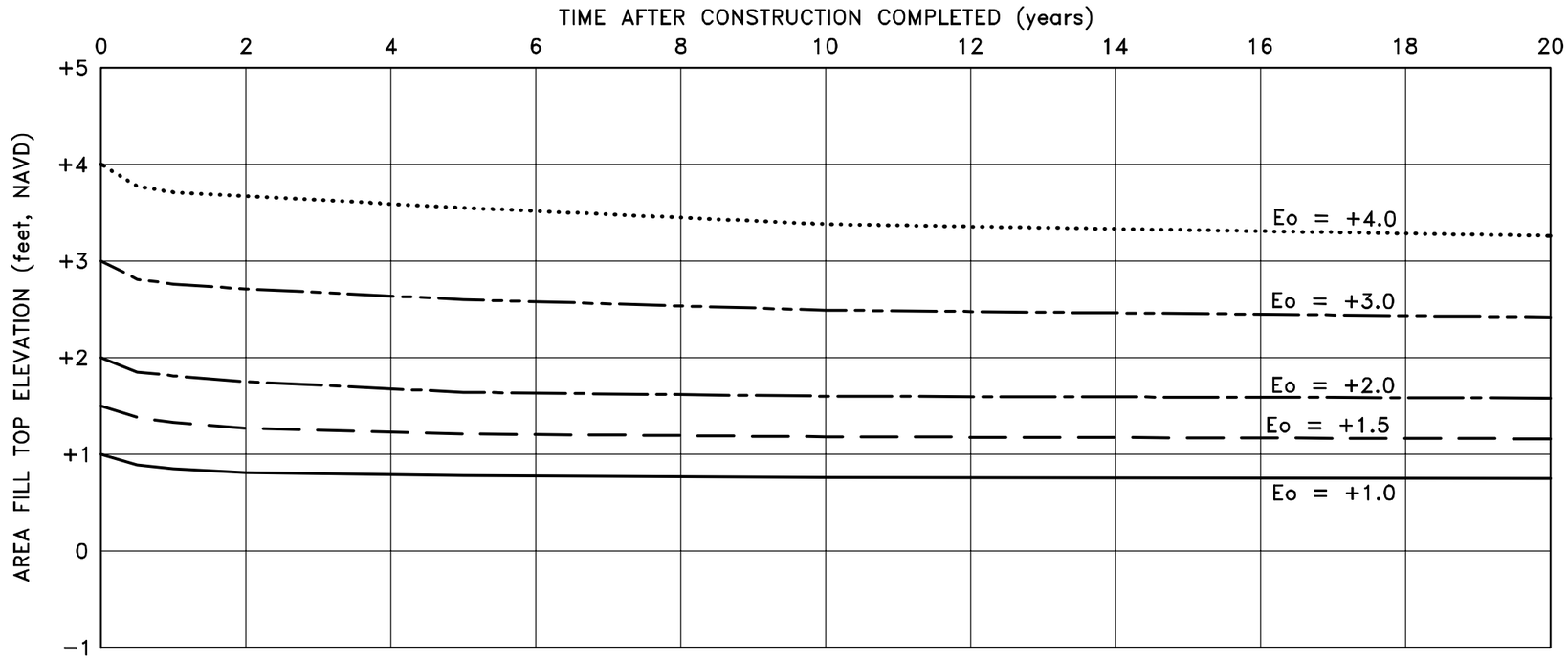
G.P. Boutwell	DMS	
File No.: 03−1114	Date: 10−29−03	Figure No.: C-9

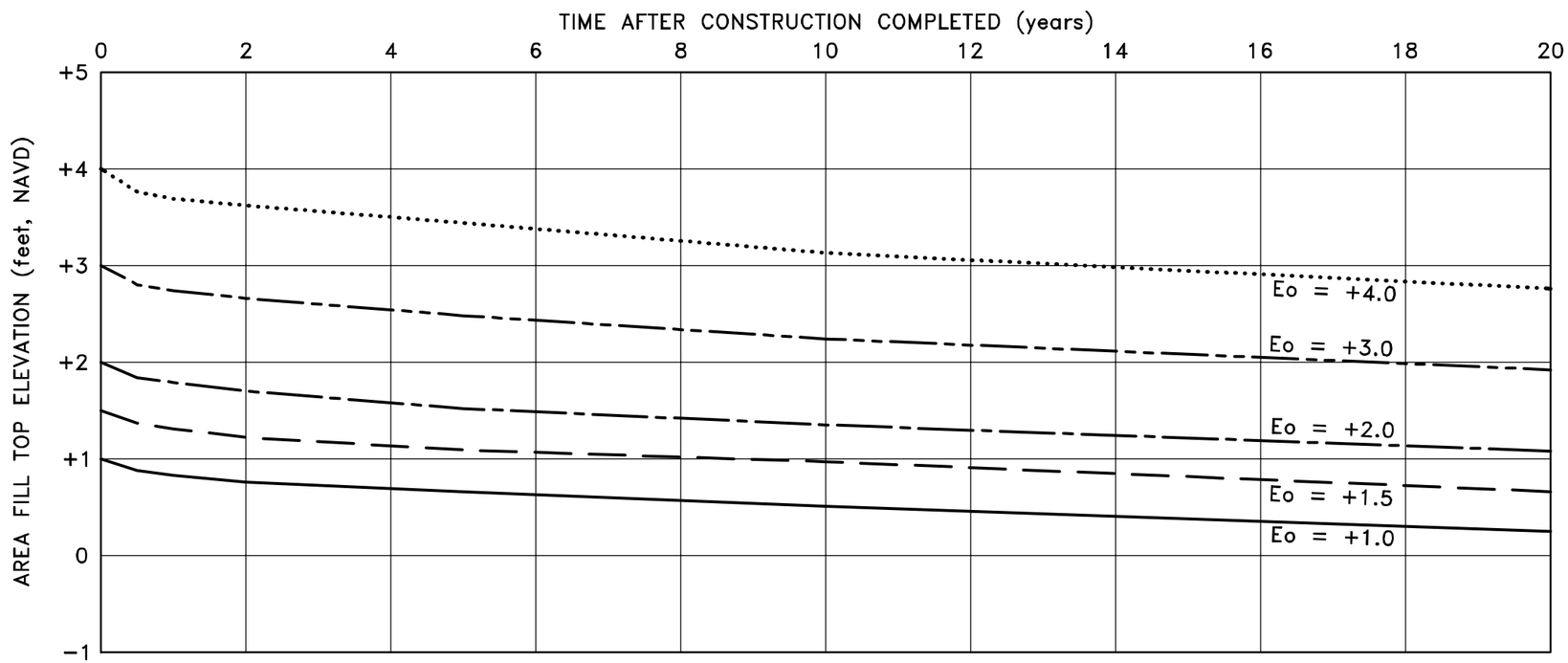
Title: **STABILITY ANALYSES SOUTH LEVEE - OFFSHORE**

Oct 29, 2003 – 3:50pm

P:\2003\03-1114\CADD\031114-C9 SOUTH LEVEE STABILITY.DWG



WITHOUT GEOLOGIC SUBSIDENCE



WITH GEOLOGIC SUBSIDENCE

NOTES:

1. Settlements include both self–weight consolidation and weight–induced settlements in foundation soils.

2. Geologic subsidence rate furnished by LDNR = 0.5 ft./20 yr.

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File No.: 03–1114	Date: 10–29–03	Figure No.: **C-10**

Title: **TIME-SETTLEMENT CURVES: AREA FILL**

Oct 29, 2003 – 3:50pm

P:\2003\03–1114\CADD\031114–C10 TIME SETTLEMENT.DWG

3.0 PELICAN HEADLAND AREA

3.1 GEOLOGICAL AND SOIL CONDITIONS

3.1.1 Site and Geology Conditions. This site is bounded on the west by Bayou Fontanelle and on the east by Scofield Bayou; see Figures G-1 and G-2. The surface is either water (at about 0 feet NAVD), marshland (at undefined elevations less than 5 feet NAVD), or, along the eastern tip of the south side, a barrier beach (again, elevations undefined). Reference is made to Figure G-2 and the sources cited on that figure. It indicates that the former barrier beach has generally been last to island migration and erosion. Abandoned courses traverse the project area in an essentially N-S direction about 1 mile east of Bayou Fontanelle and at English Bayou, roughly 0.7 miles west of Scofield Bayou.

STE was unable to find a published geological section close to the site. However, it appears that Holocene deposits will be found to below Elevation -200 feet NAVD, where Pleistocene-age materials begin. It must be assumed that the beach ridge exists to about Elevation -10 feet NAVD similarly to the data noted for Chaland Headland in Section 2.1.1.

3.1.2 Soil Conditions - Project Construction Area. Ten (10) borings were made to determine the subsurface conditions in the Pelican Headland project area. All of these borings were given a "P"-number (P, PF, or PS as designated by LDNR); their approximate locations are given on Figure P-I. Global Positioning System (GPS) coordinates taken during drilling are shown on the individual logs of the borings in Appendix A. The borings can be divided into three groups having roughly similar characteristics for ease of comparison.

3.1.2.1 Borings PS-1, PS-2, PF-5, PF-6, and P-9. These borings cover most of the project construction area, except for an apparent old N-S channel through the western part (See Section 3.1.2.2), and the far east end of the project construction area (See Section 3.1.2.3). The average conditions at these five borings can be summarized as shown in Table 3.1-1, below.

TABLE 3.1-1
SOILS DATA: MAJORITY OF SITE

Depth* (feet)	Soil Type	LL (%)	PI (%)	W (%)	DD (%)	Su (ksf)	N (b/f)	Content (%) of Sand/Silt/Clay
0-4	Water	-	-	-	-	0	0	0/0/0
4-11	OH	125	93	124	38	0.08	NT	NT
11-22	CH	81	57	71	57	0.11	NT	NT
22-26	ML, SM	33	14	36	79	0.57	NT	NT
26-42	CH	93	63	61	63	0.23	NT	NT
42-47	SM	NT	NT	NT	NT	0.23	NT	NT
47-78	CH	NT	NT	54	64	0.33	NT	NT
78-81+	SM	NT	NT	NT	NT	NT	60	NT

* Below waterline
LL: Liquid Limit
PI: Plas. Index
W: Water Content
DD: Dry Density
Su: Undrained Shear Strength
N: Standard Penetration Resistance
NT: Not Tested

3.1.2.2 Borings P-7 and P-8. These two borings apparently fall in an old N-S channel which passes through the site some 3500-4000 feet east of Bayou Fontanelle. The average soil conditions at these 23 feet deep borings are given in Table 3.1-2, below:

TABLE 3.1-2
SOILS DATA: BORINGS P-7 AND P-8

Depth* (feet)	Soil Type	LL (%)	PI (%)	W (%)	DD (%)	Su (ksf)	N (b/f)	Content (%) of Sand/Silt/Clay
0-3	Water	-	-	-	-	0	0	0/0/0
3-6	OH, PT	134	101	180	29	0.06	NT	NT
6-9	CH	98	70	76	49	0.09	NT	NT
9-21	MS, SM	NT	NT	29	90	0.68	NT	14/72/14
21-23	CL	NT	NT	39	77	0.21	NY	NT

Notes: Same as Table 3.1-1

The soils below the 23 foot level are probably similar to those in the nearby deeper borings, PS-1 and P-9. For a general description of the likely deeper soils, see Section 3.1.1.1.

3.1.2.3 Borings PS-3 and PF-4. These two borings are located on the far east and the project construction area, adjacent to Scofield Bayou. The average conditions at these two relatively deep borings are given in Table 3.1-3, below:

TABLE 3.1-3
SOILS DATA: BORINGS PS-3 AND PF-4

Depth* (feet)	Soil Type	LL (%)	PI (%)	W (%)	DD (%)	Su (ksf)	N (b/f)	Content (%) of Sand/Silt/Clay
0-12	Water	-	-	-	-	0	0	0/0/0
12-28	OH	139	103	115	38	0.16	NT	NT
28-30	CH	71	47	61	NT	NT	NT	NT
30-46	ML, SC	NT	NT	28	92	1.96	6	NT
46-53	CL	49	28	39	77	0.19	NT	NT
53-61+	CH	NT	NT	NT	NT	NT	4	NT

Notes: Same as Table 3.1-1

3.1.3 Soil Conditions - Borrow Area (Borings E-1 and E-2). Originally four borings were planned, two each in two different potential borrow areas. Borings S-1 and S-2 were to have been located some 2 miles south of Bayou Conquette, but were deleted. Borings E-1 and E-2 were drilled. These borings were located approximately 1 1/2 miles offshore (south) and 0.5 miles west of the project construction area; see Figure P-1. A soil profile is given as Figure P-4. The average soil conditions at these two borings can be summarized as shown in Table 3.1-4, below:

TABLE 3.1-4
SOILS DATA: BORROW PIT BORINGS

Depth* (feet)	Soil Type	LL (%)	PI (%)	W (%)	DD (%)	Su (ksf)	N (b/f)	Content (%) of Sand/Silt/Clay
0-30	Water	-	-	-	-	0	0	0/0/0
30-32	CH	68	43	57	NT	0.10	NT	NT
32-35	ML, SM	27	6	34	NT	NT	21	35/56/9
35-48	CL	38	18	44	NT	0.15	8	NT
48-53+	CH	72	50	54	NT	0.16	NT	NT

Notes: Same as Table 3.1-1

3.1.4 Limitations. The descriptions given above are (1) averages and (2) based on boreholes spaced 1000 to 3500 feet apart. The soils can be expected to vary between borehole locations. For details at a particular location consult the individual logs of the borings in Appendix A.

3.2 ENGINEERING ANALYSES

This section presents the methodologies used in the analyses, their results, and recommendations for geotechnical construction.

3.2.1 Assignments. The engineering assignments given to STE for the Pelican Headland area were outlined in STE's proposal to C-K dated July 2, 2003. They can be summarized as follows:

3.2.1.1 New Earthen Containment Levees. The most significant items for design are stability and settlement. These include maximum allowable construction elevation, crown width, and side slopes (stability) plus settlements (1) during a 1-year construction period and (2) time to settle to average marsh elevation. The settlements are to be computed for five different fill (levee) heights.

3.2.1.2 Dredge Borrow and Fill. These are primarily settlement-related items such as fill settlements (maximum fill: 0.5 feet below as-built levee tops) over 20 years, and fill-related items such as suitability of the borrow area soils, dewatering times, and cut/fill ratios.

These various items are covered in the following sections.

3.2.2 Levee Stability Analysis. This section presents the methodology used in the slope stability analyses for the Pelican Headland area levees, the cases analyzed, and the results.

3.2.2.1 Slope Stability Analysis - General. A slope has two types of forces acting on it. The soil weight and any seepage forces try to make the soil slide; these are called the "driving forces." The weight of soil below the waterline is its "effective" or, buoyant weight. Therefore, a foot of soil above water has 2 to 3 times the driving force of a foot of soil below water. The strength of the soil tries to keep it from sliding; this is called the "resisting force." Both depend on the geometry of the situation: the "Failure surface." The procedure is to isolate a block of soil (mentally), and compute the resisting and driving forces. Their ratio is called the "safety factor," and is the measure of stability. In practice, one analyses many soil blocks until the block yielding the lowest safety factor is found. This is assumed to govern, and the safety factor for the slope is the lowest safety factor determined. The calculations for any but the simplest conditions are quite laborious. They are therefore now performed on a digital computer, using a proven code such as PCSTABL, XSTABL, UTEXAS3, etc. For this project, the slope stability analyses were performed using XSTABL marketed by Interactive Software Designs, Inc. This program evolved from PCSTABL by Purdue University. The program is capable of searching for the minimum safety factor with an easy to use interface. The Bishop method of analysis was used for this project. The accepted measure of a slope's stability is its "safety factor," as defined above. Typical acceptable safety factors common in practice are:

Low Water Condition:	1.3 - 1.5
Rapid Drawdown Condition:	1.0 - 1.1

The rapid drawdown case is not applicable for this project due to the nature of the tidal conditions at the proposed structures.

3.2.2.2 Cases Analysed. Since the soil strengths are the dominant factor in slope stability, the levee area was divided into four sections having similar soil conditions (See Section 3.1). As mentioned in Section 1.1.1, the gulfside (south) levee may be built either atop the existing beach "ridge" or slightly offshore of it; the decision has not yet been finalized. Also, neither soil data nor detailed elevations are available on the beach "ridge." Therefore, certain assumptions had to be made for levees so located. The cases analysed are summarized below:

- West Levee: Borings PS-1 and PF-6
- North Levee: Borings P-7, P-8, P-10, and PS-3
- East Levee: Borings PS-3 and PS-4
- South Levee: Borings PF-6, P-5, PS-2, PF-5, and PF-4
  - Levee on Beach Ridge (with assumptions)
  - Levee offshore of beach

In each area, analyses were made for the following levee geometries:

- Initial Freeboard: 1.0, 1.5, 2.0, and 3.0 feet at least
- Water Depth: Per borings (0 to 10 feet)

- Side Slopes: 1(V):4(H), 1(V):6(H) and 1(V):8(H)
- Crown Widths: 5, 10, and 20 feet.

The soils in the borrow area are predominately cohesive materials (See Section 3.1.3 and the logs of borings E-1 and E-2). The levee fill material was therefore assumed to be a dredged clay. Calculations were also made for silt/sand fill; the lower safety factor was assumed to govern.

The Beach Ridge was assumed to be at about sea level, and, for conservatism, to extend no deeper than 5 feet below sea level (-5 feet NAVD).

3.2.2.3 Results. The results of the stability analyses for the Pelican Headland area are presented on Figures P-5 and P-5A (West), P-6 and P-6A (North), P-7 and P-7A (East), P-8 (South-on Ridge), and P-9 and P-9A (South-offshore) for the flatter slopes [1(V):6(H) and 1(V):8(H)]. In general, the crown widths of the levees had only a nominal effect on stability. The results can be summarized as in the table below:

TABLE 3.2-1
LEVEE SAFETY FACTORS

Levee Area	Initial Freeboard (ft.)	Safety Factor for Side Slope			
		1(V):4(H)	1(V):6(H)	1(V):8(H)	Remarks
West	1.0	1.8	>1.8	>1.8	4' Water
	1.5	1.5	>1.8	>1.8	4' Water
	2.0	**0.9**	**1.0**	**1.1**	4' Water
	2.0	1.7	>1.7	>1.7	2' Water
	3.0	<0.9	**1.0**	**1.1**	2' Water
	3.0	1.3	1.3	>1.3	2' Water
North	1.0	**0.8**	**0.9**	**1.0**	8' Water
	1.0	**0.9**	**1.0**	**1.2**	6' Water
	1.0	**1.1**	**1.2**	1.4	4' Water
	1.0	1.7	1.8	1.9	2' Water
	1.5	**0.8**	**0.9**	**1.0**	8' Water
	1.5	**0.9**	**1.0**	**1.1**	6' Water
	1.5	**1.0**	**1.1**	1.3	4' Water
	1.5	1.5	1.6	1.6	2' Water
	2.0	**0.8**	**0.9**	**1.0**	6' Water
	2.0	**1.0**	**1.1**	**1.2**	4' Water
	2.0	1.3	1.4	1.5	2' Water
	3.0	**0.8**	**1.0**	**1.1**	4' Water
	3.0	**1.1**	**1.2**	1.3	2' Water

East	1.0	1.6	>1.6	>1.6	10' Water
	1.0	2.9	>2.9	>2.9	2' Water
	1.5	1.9	>1.9	>1.9	2' Water
	2.0	1.4	>1.4	>1.4	10' Water
	2.0	1.5	>1.5	>1.5	2' Water
	3.0	**1.2**	1.3	1.5	10' Water
	3.0	1.4	>1.4	>1.4	3' Water
	4.0	**1.1**	**1.2**	1.3	10' Water
	4.0	**1.2**	1.4	1.5	6' Water
	4.0	1.3	1.5	1.7	2' Water
South (Ridge)	1.0[a]	1.8	2.3	2.8	0' Water
	1.5[a]	1.7	2.2	2.7	0' Water
	2.0[a]	1.7	2.1	2.4	0' Water
	3.0	1.7	1.8	1.8	0' Water
	4.0	1.4	1.4	1.5	0' Water
South (Water)	1.0	**1.1**	**1.1**	**1.2**	4' Water
	1.0	1.7	1.7	1.8	2' Water
	1.0	>2.0	>2.0	>2.0	0' Water
	1.5	**1.0**	**1.0**	**1.1**	4' Water
	1.5	1.4	1.5	1.6	2' Water
	1.5	>2.0	>2.0	>2.0	0' Water
	2.0	**0.9**	**1.0**	**1.0**	4' Water
	2.0	1.3	1.4	1.4	2' Water
	2.0	>2.0	>2.0	>2.0	0' Water
	3.0	**0.8**	**0.8**	**0.9**	4' Water
	3.0	**1.1**	**1.2**	1.3	2' Water
	3.0	1.7	1.7	1.8	0' Water

Bold: SF less than desired 1.3

3.2.2.4 Summary of Stability Results. The soils in the Pelican Headland area are weaker than those in the Chaland Headland area. The Pelican area conditions are more typical of the region. These weak soils have an adverse effect on stability. Acceptable safety factors were achieved without reinforcement only for:

- Levees on the Beach Ridge, up to about 4 feet high above the ridge level, using 1(V):4(H) side slopes.
- Levees with up to 3 feet of freeboard, provided that the water depth did not exceed 2 to 3 feet. See Table 3.2-1 for details.

3.2.2.5 Strengthening. It is clear that designs with freeboards exceeding about 3 feet and those in deeper water (over 2 feet) will usually have safety factors less than desired. Geotextile reinforcement is indicated for such conditions. The geotextile should have an

allowable tensile strength of at least 1,000 pounds per lineal foot (measured perpendicular to the levee centerline). It should extend under the full width of the levee.

3.2.2.6 Levee Borrow. It is often desirable to obtain the borrow material for the levees from near the levee. Excavating this material from too close to the levee toe can affect the stability of the levee adversely. It is therefore recommended that the edge of the borrow pit not be closer to the levee toe than about 20 feet plus the depth of the borrow excavation.

The soils encountered in the borrow pit borings (E-1 and E-2) were discussed in Section 3.2.1, and were presented graphically on Figure P-4. These are primarily fine-grained cohesive soils; only 13% of the materials encountered were relatively granular. The CL and CH soils found in these borings are not as suitable for fill purposes as the more granular soils found in the Chaland Headland borrow area (See Section 2.2.4). However, they are better than the PT and OH soils found on other projects.

3.2.3 Levee Settlement Analyses. The assignments relative to levee settlements in the Pelican Headland area were given in Section 3.2.1. They require calculating both the total amounts of settlement which will occur after a very long time, and the time-rates at which these movements will occur. Levee settlement is composed of three parts:

- Settlement in the foundation soils due to the weight of the levee,
- Settlement within the levee itself due to self-weight consolidation (minor), and
- Geological Subsidence. This rate was furnished by LDNR as about 0.025 feet per year.

3.2.3.1 Analyses - Total Amount of Settlement due to Levee Weight. The total amount of settlement depends on the geometry and intensity of the applied load (levee fill) and on the compressibilities of the underlying soil strata. As settlement progresses, the net intensity of the applied load decreases. This is especially true for levees built in water. The maximum possible settlement is that calculated without taking this phenomenon into account, and forms the basis for calculations which do use load intensity decrease. Note that this decrease occurs if the levees are not periodically rebuilt to their initial elevations.

The actual settlement calculations were performed using the computer code VSTRESS, originally developed by the Corps of Engineers, and SETOFF as developed by Ensoft, Inc. These programs calculate one-dimensional settlement based on either Boussinesq or Westergaard stress distributions. The Boussinesq stress distribution was used for these analyses. For the soil types that had consolidation tests, actual consolidation curves were used in the calculations. Published correlations were used for other soil types to obtain consolidation indices using Atterberg Limits and moisture content values.

3.2.3.2 Cases Analysed. Since the clayey soils (PT, OH, CH, CL), and especially the organic types (PT, OH), are highly compressible (See Table A-1 in Appendix A), they contribute far more to settlement than do the less compressible granular soils (ML, SC, SM). Therefore, calculations were made for the generalized conditions corresponding to:

- PS-2, PS-3, and PF-4 (Large amounts of organic soil)
- PS-1, PF-5, P-9, and P-10 (Large amounts of clays)
- P-7 and P-8 (Large amounts of near-surface granular soils)

The soil conditions below the 23 foot bottoms of Borings P-7 and P-8 were assumed to be similar to those of the nearby, deeper PS-1. In all cases, the soils below about the 45 foot depth were assumed to be similar to those of the deepest boring on-site, P-9. Calculations were made for crown widths of 5 to 20 feet, and using the average levee slope [1(V):6(H)]. On the West, North, and East levees, levee heights above water were taken as 1, 2, 3, and 4 feet, with water depths of 0, 2, 4, 6, 8, and 10 feet. The South levee had 2 general cases (on the "ridge" and offshore) as discussed in Section 3.2.2. For the ridge, the levee heights were taken as 1, 2, and 3 feet above ground level.

3.2.3.3 Effect of Settlement on Further Settlement. Most of these levees will or may be constructed in water. The levees are originally built to some level above water, and produce a stress level which includes the *total* weight of levee material above water. As settlement proceeds, some of the material which was originally above water becomes submerged. That material now exerts pressure due to its *buoyant* weight, which is less than its total weight. The net result is that the pressure decreases and the real settlement is less than would be predicted using the total weight. There are two other factors which must be considered:

- If the levee heights are rebuilt, settlement will tend to reach the "total weight" movements.

- At most locations, the levee will be underlain by a substantial amount of granular soils, which consolidate rapidly. The movements due to these soils will probably occur during construction, so that the "total weight" movements in these granular materials (only) will be realized during construction.

3.2.3.4 Total Settlements due to Levee Weight. The starting point is the "raw" settlement computed using the total unit weight for above-water fill. For the observable post-construction settlements, these must be reduced by the movements occurring in the granular layers during construction, termed "adjusted" settlement. Then, the effect of the remaining long-term settlement on the applied pressure must be considered (See Section 3.2.3.3). This is termed the "net" settlement.

The results of these analyses are presented below. Table 3.2-2 provides the settlement data for the levees built over marsh or water, and Table 3.2.3 gives the settlements for the South levee if it is constructed on the beach ridge.

TABLE 3.2-2
LONG-TERM SETTLEMENTS: LEVEES NOT ON BEACH RIDGE

Geometry Situation		Centerline Settlement (feet)									
		PS-2, PS-3, PF-4			PS-1, PF-5, P-9, P-10			P-7 and P-8			Avg. Net
Water (ft.)	Height[a] (ft.)	Raw	Adj.	Net	Raw	Adj.	Net	Raw	Adj.	Net	
0	1	0.84	0.72	0.55	0.81	0.68	0.50	0.72	0.61	0.50	0.52
	2	1.46	1.24	0.94	1.42	1.19	0.90	1.21	1.05	0.81	0.88
	3	2.06	1.74	1.33	2.00	1.73	1.31	1.68	1.44	1.13	1.26
	4	2.66	2.24	1.70	2.58	2.23	1.66	2.13	1.81	1.46	1.61
2	1	1.37	1.16	1.10	1.29	1.07	0.82	1.07	0.91	0.77	0.90
	2	1.90	1.70	1.40	1.82	1.58	1.19	1.50	1.27	1.05	1.21
	3	2.49	2.04	1.67	2.39	1.99	1.57	1.89	1.56	1.30	1.51
	4	3.08	2.38	1.96	2.96	2.41	1.91	2.25	1.83	1.56	1.81
4	1	1.78	1.53	1.21	1.70	1.49	1.23	1.28	1.04	0.87	1.10
	2	2.26	1.86	1.52	2.17	1.93	1.54	1.63	1.37	1.11	1.39
	3	2.82	2.27	1.86	2.73	2.33	1.85	1.99	1.65	1.38	1.70
	4	3.38	2.68	2.12	3.29	2.64	2.15	2.31	1.89	1.63	1.97
6	1	2.04	1.74	1.45	1.93	1.63	1.39	1.49	1.21	1.11	1.32
	2	2.52	2.12	1.72	2.42	1.91	1.62	1.83	1.56	1.30	1.55
	3	2.96	2.36	1.98	2.87	2.17	1.96	2.05	1.70	1.52	1.82
	4	3.40	2.60	2.25	3.32	2.67	2.11	2.39	1.97	1.70	2.02
8	1	2.25	1.85	1.53	2.12	1.70	1.40	1.72	1.49	1.30	1.41
	2	2.61	2.15	1.81	2.50	2.05	1.66	2.10	1.76	1.52	1.66
	3	3.10	2.50	2.08	2.96	2.36	1.94	2.37	2.00	1.73	1.92
	4	3.47	2.70	2.35	3.42	2.75	2.23	2.61	2.24	1.95	2.18
10	1	2.48	2.08	1.83	2.15	1.77	1.44	1.90	1.62	1.45	1.73
	2	2.84	2.39	2.01	2.53	2.11	1.72	2.18	1.82	1.61	1.78

	3	3.19	2.64	2.27	3.02	2.47	2.02	2.42	2.02	1.80	2.03
	4	3.54	2.89	2.53	3.51	2.82	2.31	2.65	2.32	1.98	2.27

[A] As-Built height above water level

TABLE 3.2-3
LONG-TERM SETTLEMENTS: SOUTH LEVEE ON BEACH RIDGE

Geometry Situation		Centerline Settlement (feet)									
		PS-2, PS-3. PF-4			PS-1, PF-5, P-9, P-10			P-7 and P-8			Avg. Net
Water (ft.)	Height[b] (ft.)	Raw	Adj.	Net	Raw	Adj.	Net	Raw	Adj.	Net	
0	1	0.67	0.48	0.37	0.57	0.46	0.33	0.48	0.41	0.34	0.35
	2	1.09	0.93	0.71	1.06	0.90	0.67	0.90	0.78	0.61	0.66
	3	1.65	1.39	1.06	1.58	1.36	1.04	1.34	1.15	0.90	1.00
	4	2.20	1.83	1.39	2.14	1.86	1.36	1.75	1.47	1.21	1.32

[b]: Above ground surface (+2 feet NGVD)

In the above Tables 3.2-2 and 3.2-3, the "Net" settlements should be used to evaluate long-term performance unless the levees are raised by additional fill at some time in the future. In the latter case, the "Adjusted" settlements would be more appropriate.

3.2.3.5 Geological Subsidence. The only other significant source of settlement will be that due to geological subsidence. This rate was furnished by LDNR as about 0.025 feet per year. This is of little consequence for the first few years, but becomes significant over long periods. For example, the movement due to geological subsidence is estimated as 0.1 feet in the first 4 years, but increases to 0.5 feet at the end of the estimated project life at 20 years after construction.

3.2.3.6 Analyses - Time Rate of Settlement due to Levee Weight. The time-rate of settlement as observed at the ground surface depends on several factors, as discussed below:

- Soil Rate Parameter (c_v). This is intrinsic to each soil type, but varies with the total vertical pressure in the soil layer. In general, settlement within the granular soils (ML, SC, SM) will occur virtually during construction.

- Drainage Path Length (L). Consolidation is a process of squeezing water out of the soil voids. The water has to go somewhere, and that is to either the surface or a relatively permeable layer (such as a silt layer in a clay mass).

- Vertical Distribution of the Total Settlement. The time rate applies to each layer; the contribution of each layer is its own ultimate settlement multiplied by its degree of consolidation at a particular time.

Like other problems in time-dependent flow in soils, the analysis for the time-rate of consolidation is inherently inaccurate. Normally, settlement occurs faster than the prediction.

Calculations were made for the soil conditions at the locations cited in Section 3.3.3.2. The results were normalized by dividing the "Net" settlements at various times by the ultimate (long-term) "Net" settlement. This approach accounts directly for the settlements which occur during construction. Settlement rates were analyzed for the tallest and the lowest levee heights and averaged. The percentages of settlement given in Table 3.2-4 should be applied to the "Net" total settlements given in Tables 3.2-2 and 3.2-3.

TABLE 3.2-4
NET RATES OF WEIGHT-INDUCED SETTLEMENT

Time (years)[d]	Percentage of Weight-Induced Settlement Complete			
	PS-2, PS-3, PS-4	PS-1, PF-5, P-9, P-10	P-7 and P-8	Avg.
0.0	0	0	0	0
0.5	37	52	43	44
1.0	61	66	57	61
2.0	80	79	70	76
5.0	93	89	84	88
10.0	96	95	90	93
20.0	98	98	96	97

[d]: After construction is complete

3.2.3.7 Time to Reach Marsh Elevation. The average desired marsh elevation is assumed to be approximately +1.0 feet NAVD, equal to about one foot above water level at the site. It is assumed that the initial levee top elevation will be up to 4 feet above the site water level, or +4 feet NAVD. The "Net" settlement data from Sections 3.2.3.4 (no rebuilding) and the time-rate information in Sections 3.2.3.5 and 3.2.3.5 was analyzed. The analysis showed that, even with geologic subsidence, levees with initial top elevations of +2 feet NAVD or more will never settle below +1 feet NAVD unless the water depth exceeds 6 feet. If the water depth exceeds 6 feet, the times range from 10 to 20 years.

3.2.4 Suitability of Borrow Area Soil. The soils encountered in the Borrow Area for the Pelican Headland were presented in Section 3.1.3. Only about 13% of the soils encountered were the more

preferable granular types (SM, ML). The remainder were cohesive (CH, CL), but not highly organic. They are suitable for levee and area fill construction. In the main construction area, however, there is not only a lack of granular soil, but a substantial layer of organic soils (OH, PT) which averages some 7 to 8 feet thick and is located just below the mudline. If at all possible, these organic soils should not be used for levee construction. They are suitable for area fill.

3.2.5 Dewatering Time for Area Fill. When soil particles are in suspensions with low concentration of solids, particles settle as individual entities, and there is no significant interaction with neighboring particles (Type I settling). With increasing solids concentration, the particles coalesce or flocculate. By coalescing, the particles increase in mass and settle at a faster rate (Type II settling). With further increase in concentration, the interparticle forces are sufficient to hinder the neighboring particles (Type III settling). Finally, the soil particles settle to form a structure (Type IV settling). The dredging operation typically creates a soil suspension with 5 to 10 percent solids. At this concentration range, the clayey portion of the soils settles at a rate close to Type III. Types I and II settling are applicable for the more granular fills on this project. These two types are typically used for sediment transport modeling. Type IV settling is typically simulated with the diffusion equation using either Terzaghi or Gibson consolidation theory and is discussed in Section 2.2.6.

The dewatering time varies with type of soils and salinity of the water and is often determined using a column test. In this case, however, the bulk of the borrow material will be relatively granular soil. Settling velocities for such materials are commonly calculated using Stokes' Law (see, e.g., ASTM D422). Velocities for various particle size groups were calculated following D422 and are given in Table 3.2-5, together with an estimate of the percentage of the E-1 plus E-2 borrow material falling into each size group.

TABLE 3.2-5
PARTICLE SETTLING VELOCITIES

Partiate Group	Size Range (mm)	Settling Velocity (ft./day)	Portion of Borrow (%)
Medium Sand	0.2-0.4	>1000	0
Fine Sand	0.07-0.2	>1000	26
Coarse Silt	0.02-0.07	330	22
Fine Silt	0.005-0.02	24	28
Clay	<0.005	1-6	24

The time-sedimentation rate was computed from a column test performed for the Barataria Landbridge Project (BA-36) and the above data. Some 90% of the pumped fill should decant its water (i.e., sediment out) in a period of 1 to 2 months or less.

3.2.6 Settlements Induced by Area Fill. The area fill within the Pelican Headland deposition areas will induce two types of settlements:

- Settlements within the deposition areas
- Additional settlements at the perimeter levees.

In addition, the surface of the Area Fill will exhibit settlement from two other sources: consolidation within the fill itself and geologic subsidence.

The settlements induced by weight of the Area Fill are described below.

3.2.6.1 Method of Analyses. The calculations were made in the manner outlined in Section 3.2.3.1. The settlement data contained in the tables in Section 3.2.3.4 indicate that the variations in settlement among the boring locations are typically within the ± 25% accuracy commonly achieved in settlement analyses. Therefore, the computations were performed for the soil conditions at the same boring groups to bound the additional levee settlements.

3.2.6.2 Settlements within Deposition Areas. The major consideration here is the loading which will occur as the soil grains settle out of suspension in the introduced water. It has been assumed that sediment-laden water will be added periodically until the sediment surface is approximately 0.5 feet below the design long-term levee crests. Various sediment heights were also checked for completeness. The applied loading will be the resulting sediment thickness multiplied by the unit weight of the sediment. The latter was taken from earlier Column Tests and the densities observed for the shallow sediments in the boreholes; the design value was 70 lb.cu.ft. Net settlements adjusted for the effects of settlement on applied loading as described in Section 3.2.3.3 were used. The resulting settlement values are presented in Table 3.2-6 below:

TABLE 3.2-6
LONG-TERM AREA SETTLEMENTS DUE TO WEIGHT OF GENERAL FILL

Boring	Additional Area Settlement Due to General Fill (feet)			
	Elev. +1.0[f]	Elev. +1.5[f]	Elev. +2.0[f]	Elev. +3.0[f]
PS-2, etc.	0.40	0.56	0.71	1.02
PS-1, etc.	0.42	0.60	0.75	1.05
P-7 & P-8	0.40	0.53	0.66	0.94
Average	0.41	0.56	0.71	1.00

[f]: Design top of sediment (ft. NAVD); min. 0.5 feet freeboard. Marsh elevation assumed as 0.0 feet NAVD.
Settlements calculated for 30+ feet from levee

The values tabulated above are valid for relatively uniformly loaded areas at least 30 feet away from the toes of the levees. In the zones closer to the levees, the settlements can be approximated (if necessary) by interpolating between the values given above and those for additional levee settlements given in Section 3.2.6.3.

As described in Section 3.2.5, Type I and Type II settling will dominate even at the solids concentration expected from the dredging operation. However, the time to complete the two processes will be relatively short as compared to Type III settling process. The next step is dewatering (Type III), during which the unit weight of the sediments change from the buoyant to the total state. Given these complications, a time-rate analysis is only an approximation. However, it is estimated that the settlement rates will be approximately as follows. Upon completion of final filling (5 year estimate), about 30% to 40% of the tabulated within-fill settlement values will be completed (See Table 3.2-7). Another 10% to 20% will occur during the dewatering period, leaving 40 to 60% to take place after dewatering is complete. Figure P-10 presents the rate of settlement estimated including the dewatering (consolidation) within the fill itself, and also adds the effect of geologic subsidence.

3.2.6.3 Overall Settlement Rate. The overall settlement rate is the combination of the effects from the three major sources:

- Settlement due to weight of Area Fill,
- Self-Weight Consolidation within the fill, and,
- Geologic Subsidence (0.025 feet per year).

These are combined in Table 3.2-7 below:

TABLE 3.2-7
AVERAGE POST-CONSTRUCTION AREA SETTLEMENT

Initial Fill Top Elevation (ft.NAVD)	Time After Construction (years)	Post-Construction Settlement (feet) due to			Total Post-Construction Settlement (feet)
		Soils Below Fill	Within Fill	Geologic Subsidence	
+1.0	0.5	0.18	0.03	0.01	0.22
	1.0	0.25	0.06	0.02	0.33
	2.0	0.31	0.12	0.05	0.48
	5.0	0.36	0.18	0.12	0.66
	10.0	0.38	0.20	0.25	0.83
	20.0	0.39	0.20	0.50	1.09

+1.5	0.5	0.24	0.03	0.01	0.28
	1.0	0.34	0.06	0.02	0.42
	2.0	0.42	0.12	0.05	0.59
	5.0	0.49	0.18	0.12	0.79
	10.0	0.52	0.27	0.25	1.04
	20.0	0.54	0.29	0.50	1.33
+2.0	0.5	0.31	0.02	0.01	0.34
	1.0	0.43	0.04	0.02	0.49
	2.0	0.53	0.08	0.05	0.66
	5.0	0.62	0.16	0.12	0.90
	10.0	0.66	0.24	0.25	1.15
	20.0	0.68	0.36	0.50	1.54
+3.0	0.5	0.44	0.02	0.01	0.47
	1.0	0.61	0.04	0.02	0.67
	2.0	0.76	0.06	0.05	0.87
	5.0	0.88	0.12	0.12	1.12
	10.0	0.93	0.24	0.25	1.42
	20.0	0.97	0.36	0.50	1.83

The total, overall rate is presented graphically for the various initial Area Fill elevations on Figure P-10. This figure shows the anticipated fill top elevations over time, both for the case of no geologic subsidence and considering geologic subsidence.

3.2.6.4 Settlement Effects on Levees. The weight of the new sediments adjacent to the levees will cause additional settlements of these levees. These movements were calculated for the two boring groups showing the least and most compressible soil conditions along the levees in order to "bound" the movements. They indicated total, long-term centerline adjusted settlements of the levees of 0.4 to 0.6 feet. These movements will occur at approximately the rates given for the Depositional Areas in Section 3.2.6.2.

3.2.7 Cut/Fill Ratios. Two cases should be considered here. The first is the amount of cut necessary to create a given amount of levee fill. The levee fill is assumed to be placed mechanically (i.e., with draglines or similar equipment), not hydraulically. The general fill will be placed hydraulically, and will therefore have a cut/fill ratio different from that applicable to mechanically placed fill. Both cases are described below.

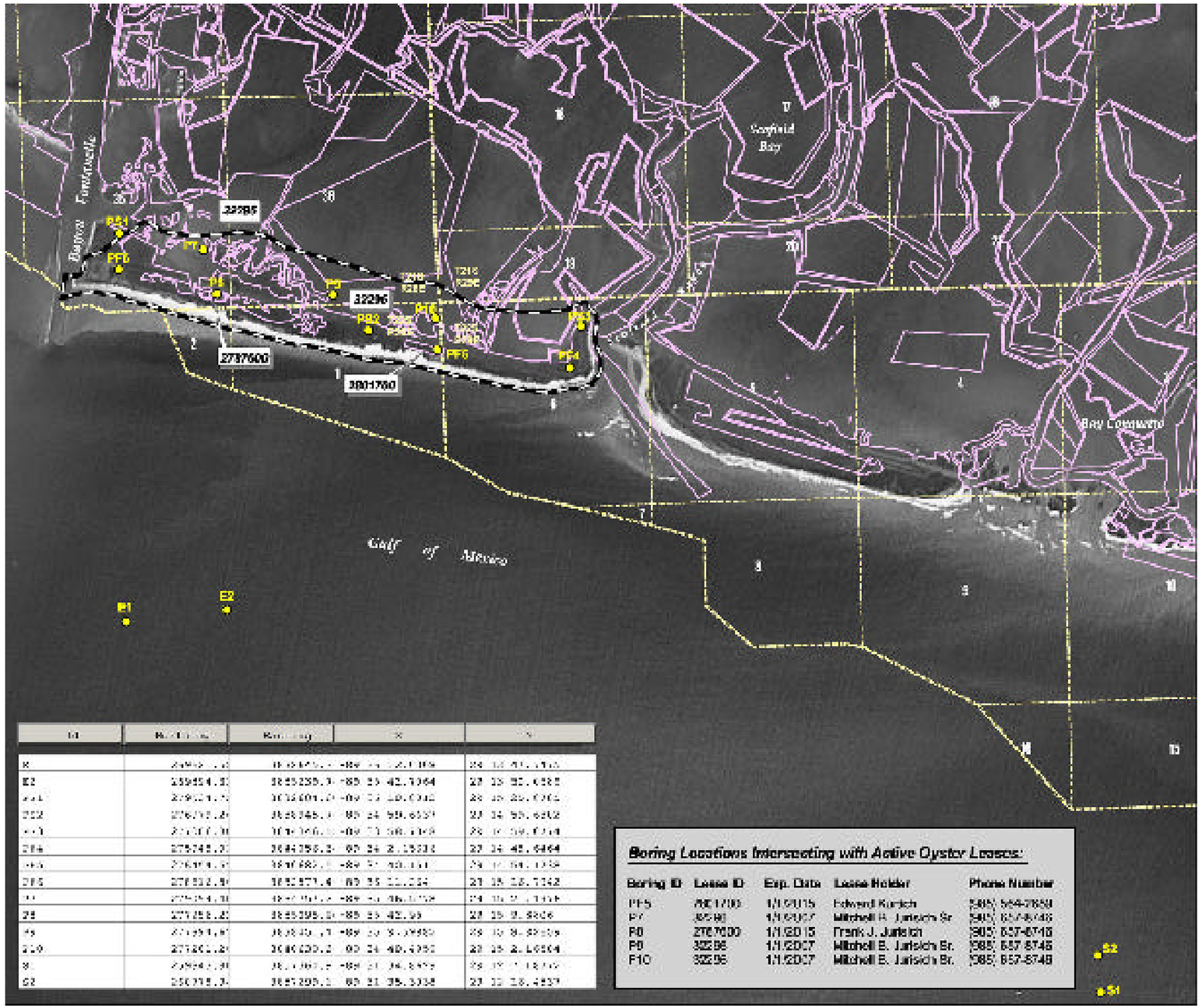
3.2.7.1 Levee Fill. Reference is made to the descriptions of the soil conditions along the levees given in Section 3.1.2, and to the material use recommendations in Section 3.2.4. Overall, about 10% of the cut material will be Peat (Pt), which is not recommended for levee construction. The shrinkage of the more suitable SM, ML, CL, and CH soils from pit to levee will depend primarily on transport losses and loss of water content. The former (transport)

is best obtained from experienced contractors, but is expected to be on the order of 25%. The water loss shrinkage is estimated as 10% to 15% of the pit volume. Overall, then, preliminary estimate can be based on about 1.5 to 1.8 cubic yards of suitable cut to produce 1.0 cubic yard of levee fill.

3.2.7.2 Area Fill. It is very difficult to determine the cut/fill ratios for the hydraulically placed area fill. As discussed in Section 3.2.5, sedimentation or settlement occurs in stages, thereby the volume of fill changes. A reasonable assumption of the initial fill height is when the density of the fill reaches the end of Type III settling (fast) or beginning of the Type IV settling (slow). The fill soil volume then can be related to the density and cut/fill ratio determined. The borrow area soils for the Pelican Headland area are similar to but dryer than those for which a Column Test was performed on the Barataria Landbridge Project (BA-36). Based on that test, and adjusting for the soils' water contents, the cut/fill ratio is expected to be about 1.3, i.e., 1.3 cubic yards of suitable cut should produce 1.0 cubic yard of in-place area fill. Note that the borrow soils for BA-36 project contains substantial higher organic content. The cut and fill ratio was adjusted empirically.

3.2.8 Erosion Protection. A large portion of the levees will consist of ML, SC, and SM soils, which are highly erodible. Erosion protection will be required, especially on the gulf side of the South levee. It must be flexible to withstand the anticipated settlements; rip-rap is indicated. A filter fabric is recommended against the fill to prevent washing of the fines. It should be a non-woven geotextile having a weight of at least 8 ounces per square yard (ASTM D3776) an Equivalent Opening Size around 0.05 mm as determined by ASTM D4751, and a grab strength of at least 125 lb. by ASTM D4632. The 6 to 12 inch layer of riprap adjacent to the fabric should be 6 inch maximum store. The remainder of the riprap should be sized according to the appropriate methods for the wave action anticipated.

Oct 29, 2003 – 3:52pm



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E2	259454.3	3845235.3	-89 33 42.7364	29 15 32.4525
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
PF2	276[illegible].2	3843346.1	-89 34 59.6537	29 14 55.6402
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
PF4	275748.3	3844356.3	-89 34 2.15031	29 14 45.4464
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
PF5	275532.9	3845371.4	-89 33 11.224	29 14 38.7342
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
P8	275255.2	3845395.3	-89 33 42.99	29 14 9.8826
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
PF10	27[illegible].2	3846[illegible].2	-89 34 40.4[illegible]	29 14 2.6504
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
S2	256375.3	3847395.1	-89 31 35.3338	29 13 38.4437

Boring Locations Intersecting with Active Oyster Leases:

Boring ID	Lease ID	Exp. Date	Lease Holder	Phone Number
PF5	3001700	1/1/2015	Edward Kunich	(985) 564-7659
P7	32296	1/1/2007	Mitchell B. Jurisich Sr	(985) 657-8746
P8	2787600	1/1/2015	Frank J. Jurisich	(985) 657-8746
P9	32295	1/1/2007	Mitchell B. Jurisich Sr.	(985) 657-8746
P10	32295	1/1/2007	Mitchell B. Jurisich Sr.	(985) 657-8746

0.2 0 0.2 0.4 0.6 0.8 1 Mile

REFERENCE:
MAP ID: USGS–NWRC 2003–04–0306

P:\2003\03-1114\CADD\031114-P1 PELICAN BORING PLAN.DWG

BARATARIA BARRIER ISLAND RESTORATION COMPLEX
(PELICAN HEADLAND)
PROJECT BA-38
PLAQUEMINES PARISH, LOUISIANA

for

LOUISIANA DEPARTMENT OF NATURAL RESOURCES
BATON ROUGE, LOUISIANA

C-K & ASSOCIATES, INC.
ENGINEERS
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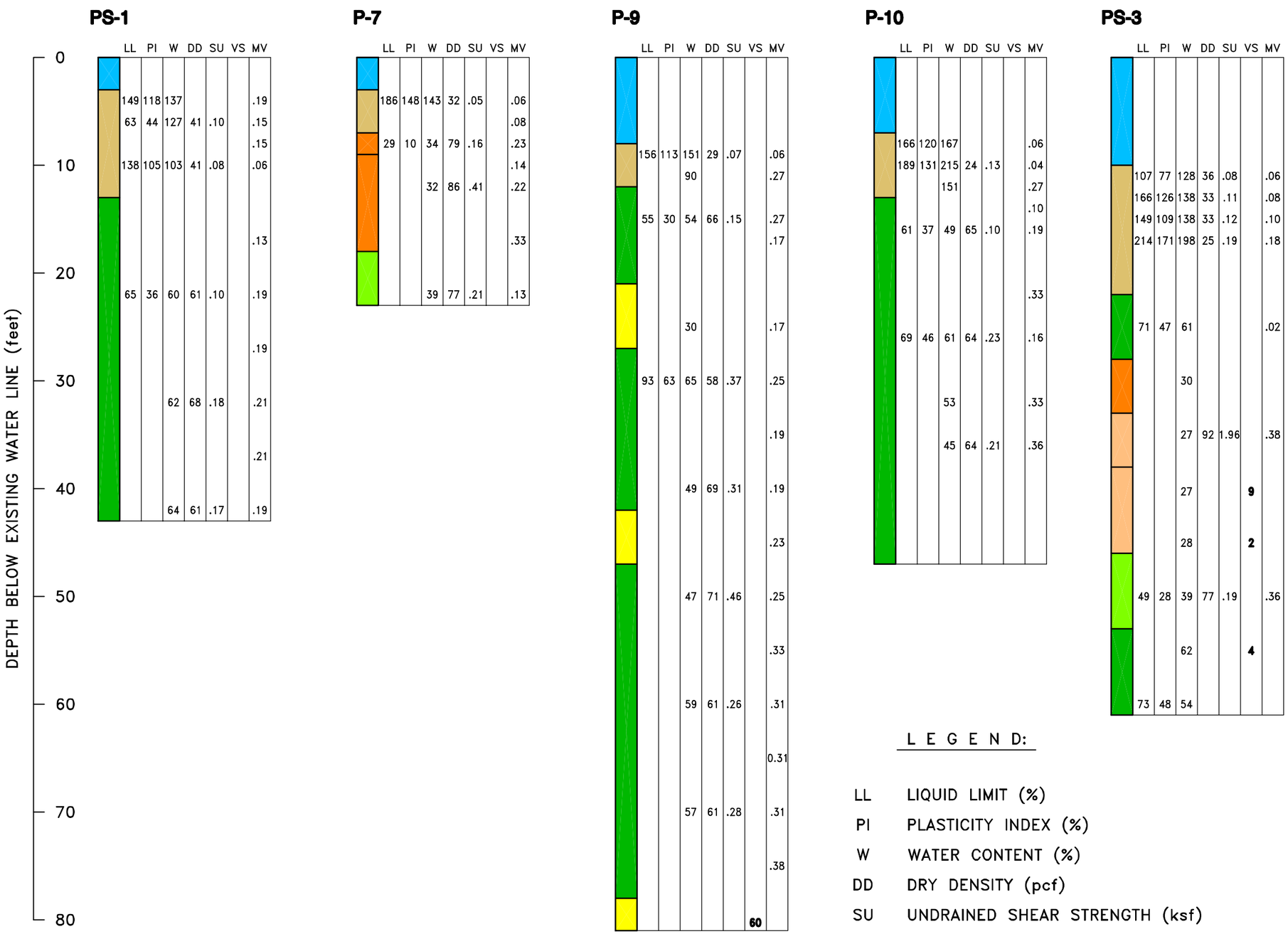
Project Engineer:	Drawn by:	Checked by:
G.P. Boutwell	DMS	
File No.: 03–1114	Date: 9–22–03	Figure No.: P-1

Title:
BORING PLAN



SYMBOL	SOIL TYPE
	WATER
	PEAT
	ORGANIC CLAY (OH)
	CLAY (CH)
	SILTY CLAY or SANDY CLAY (CL)
	CLAYEY SAND (SC)
	SANDY SILT, CLAYEY SILT (ML)
	SILTY SAND (SM)

L E G E N D:

LL LIQUID LIMIT (%)
PI PLASTICITY INDEX (%)
W WATER CONTENT (%)
DD DRY DENSITY (pcf)
SU UNDRAINED SHEAR STRENGTH (ksf)
VS FIELD VANE SHEAR (ksf)
NOTE: **BOLD** = Standard Penetration Resistance (blows/foot)
MV MINIATURE LAB VANE SHEAR (ksf)

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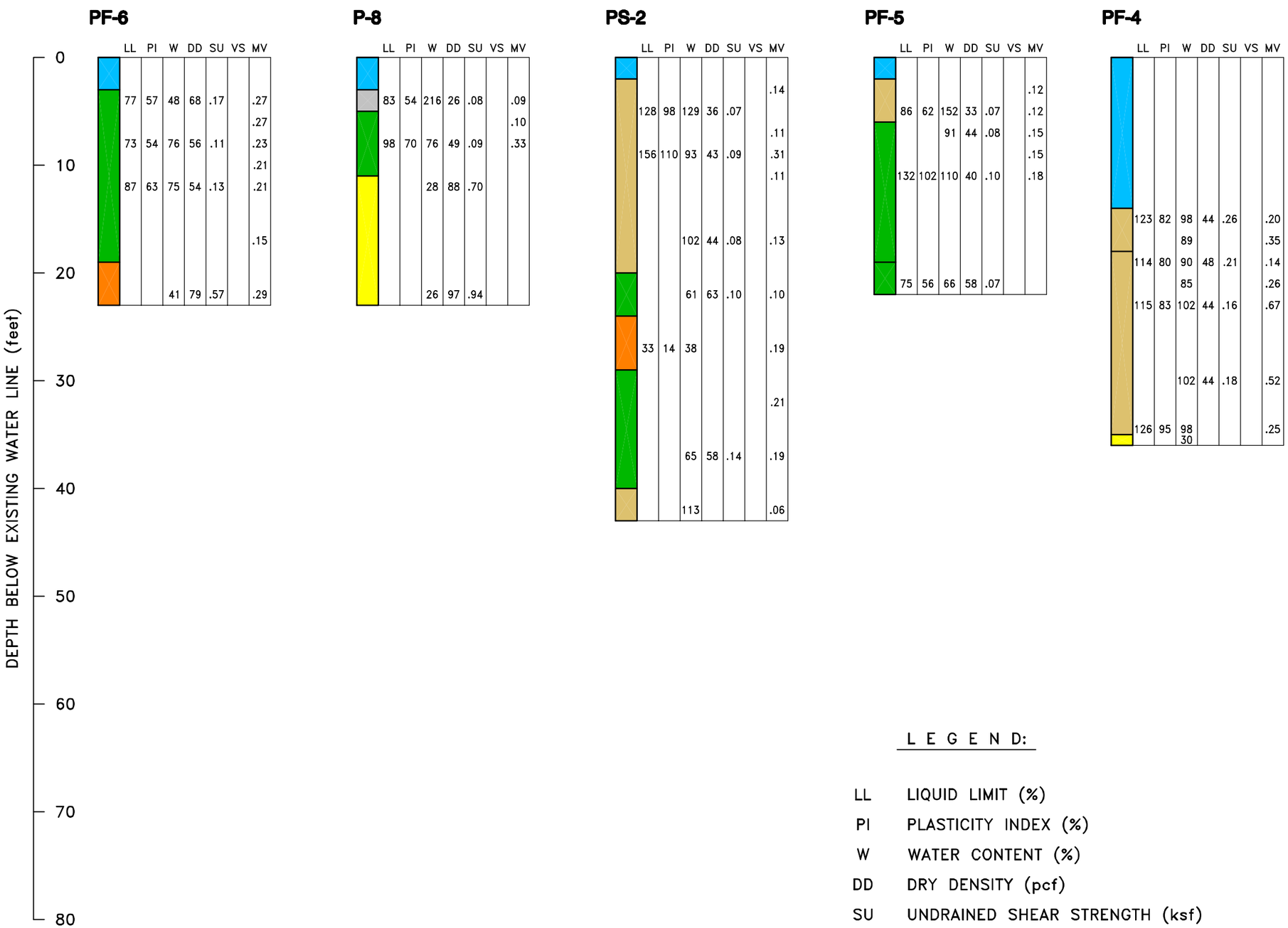
Project Engineer:	Drawn by:	Checked by:
G.P. Boutwell	DMS	
File No.: 03-1114	Date: 9-22-03	Figure No.: P-2

Title: **SOIL PROFILE**
PS-1, P-7, P-9, P-10 & PS-3

Oct 29, 2003 - 3:52pm

P:\2003\03-1114\CADD\031114-P2 PROFILE PS1 P7 P9 P10 PS3.DWG



SYMBOL	SOIL TYPE
	WATER
	PEAT
	ORGANIC CLAY (OH)
	CLAY (CH)
	SILTY CLAY or SANDY CLAY (CL)
	CLAYEY SAND (SC)
	SANDY SILT, CLAYEY SILT (ML)
	SILTY SAND (SM)

L E G E N D:

LL	LIQUID LIMIT (%)
PI	PLASTICITY INDEX (%)
W	WATER CONTENT (%)
DD	DRY DENSITY (pcf)
SU	UNDRAINED SHEAR STRENGTH (ksf)
VS	FIELD VANE SHEAR (ksf)
	NOTE: **BOLD** = Standard Penetration Resistance (blows/foot)
MV	MINIATURE LAB VANE SHEAR (ksf)

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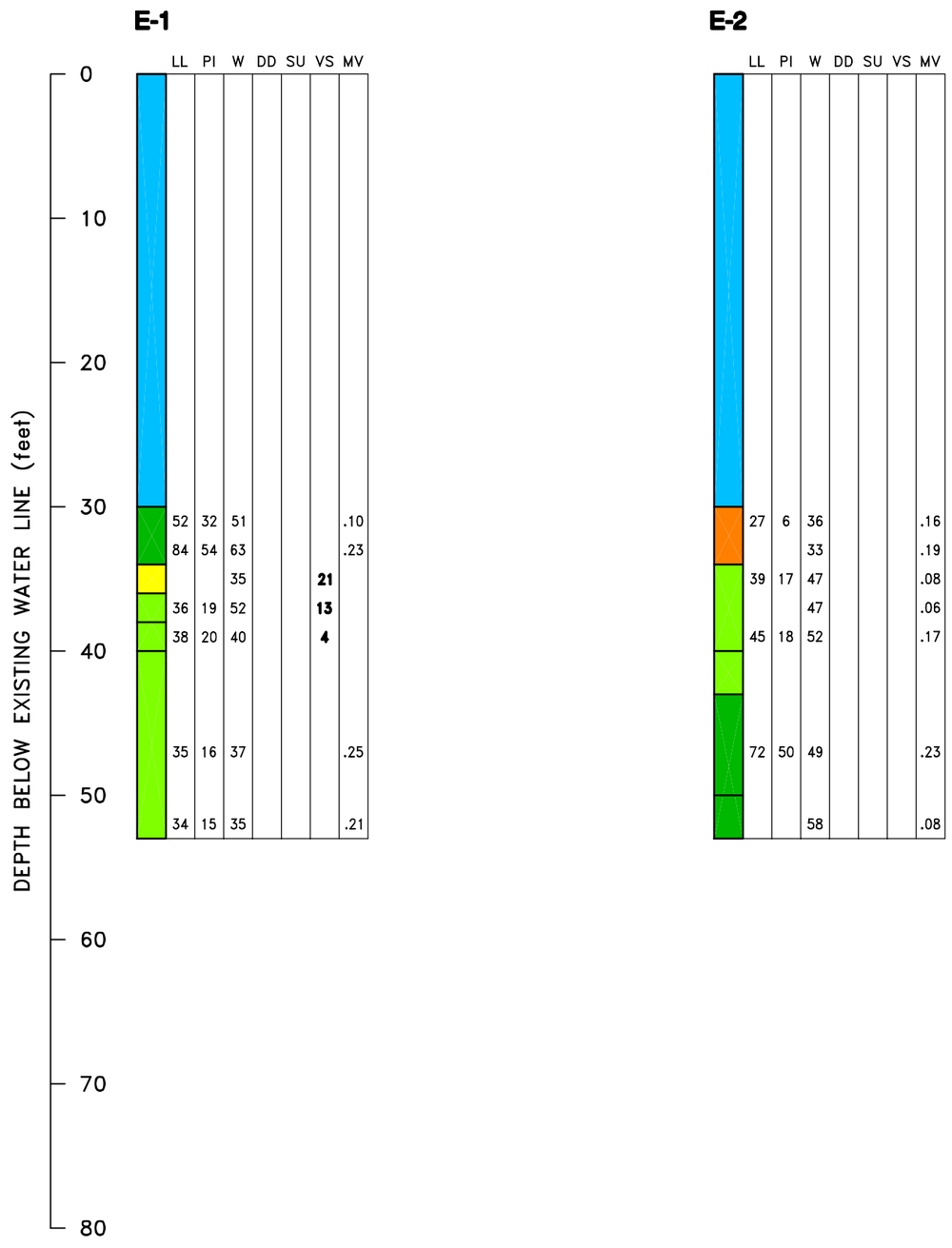
Project Engineer:	Drawn by:	Checked by:
G.P. Boutwell	DMS	
File No.: 03–1114	Date: 9–22–03	Figure No.: **P-3**

Title: **SOIL PROFILE**
PF-6, P-8, PS-2, PF-5 & PF-4

Oct 29, 2003 – 3:53pm

P:\2003\03-1114\CADD\031114-P3 PROFILE PF6 P8 PS2 PF5 PF4.DWG



SYMBOL	SOIL TYPE
	WATER
	PEAT
	ORGANIC CLAY (OH)
	CLAY (CH)
	SILTY CLAY or SANDY CLAY (CL)
	CLAYEY SAND (SC)
	SANDY SILT, CLAYEY SILT (ML)
	SILTY SAND (SM)

L E G E N D:

LL	LIQUID LIMIT (%)
PI	PLASTICITY INDEX (%)
W	WATER CONTENT (%)
DD	DRY DENSITY (pcf)
SU	UNDRAINED SHEAR STRENGTH (ksf)
VS	FIELD VANE SHEAR (ksf)
	NOTE: **BOLD** = Standard Penetration Resistance (blows/foot)
MV	MINIATURE LAB VANE SHEAR (ksf)

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G.P. Boutwell	DMS	
File No.: 03-1114	Date: 9-23-03	Figure No.: **P-4**

Title: **SOIL PROFILE E-1 & E-2**

Oct 29, 2003 - 3:53pm

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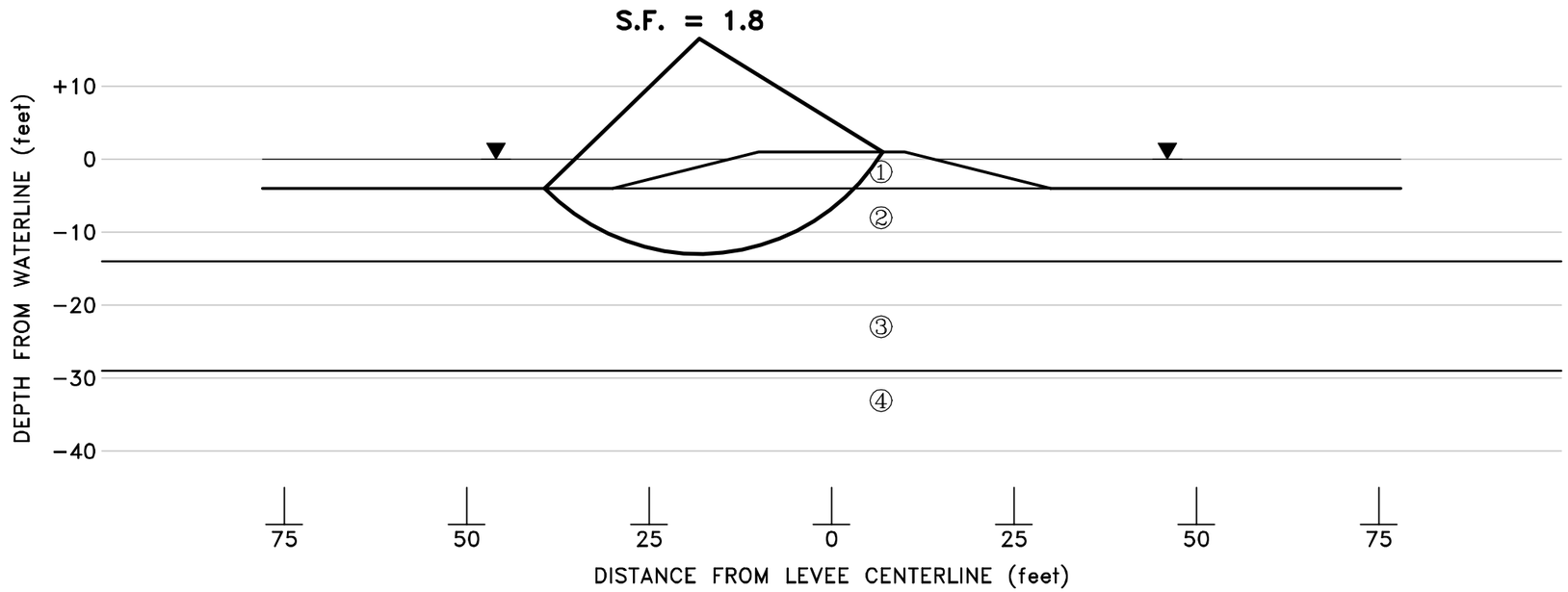
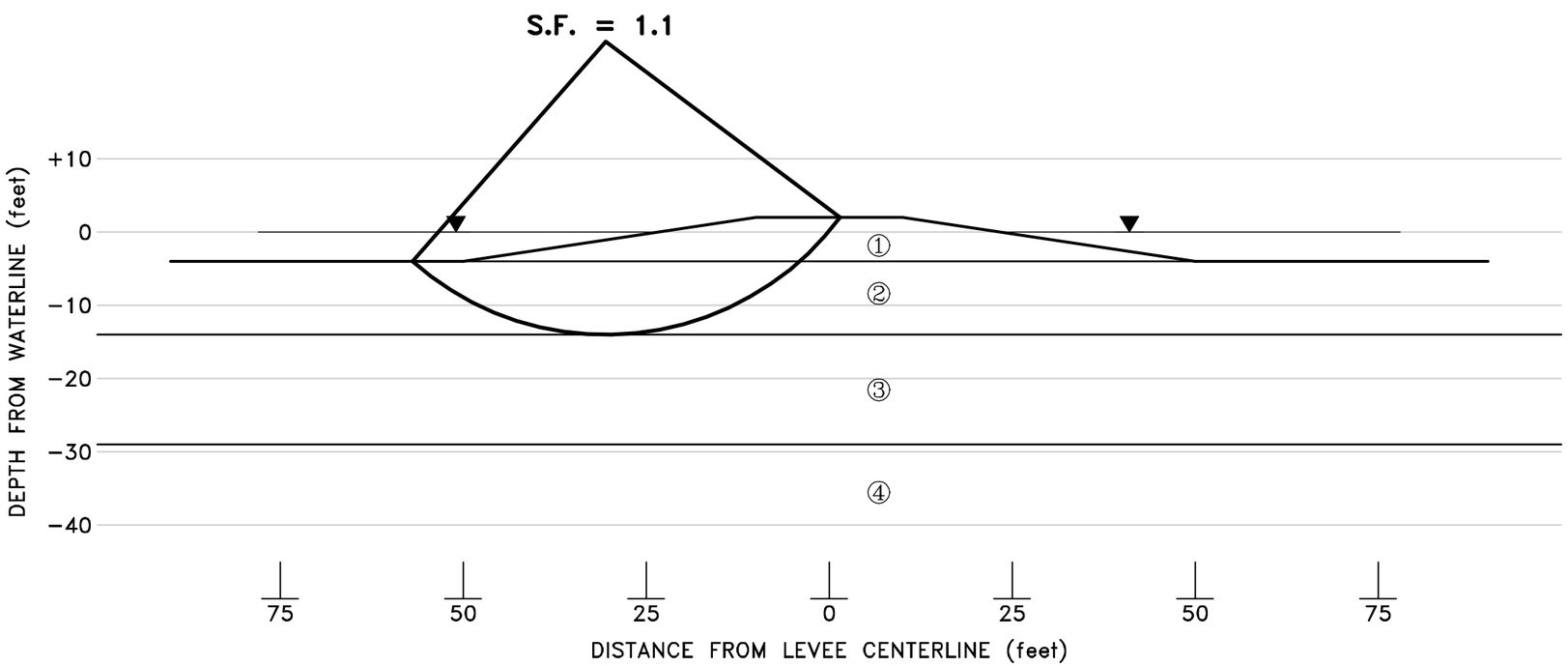


1 FOOT FREEBOARD, 4 FEET WATER, 1(V):4(H) SLOPES

SOIL	COHESION (psf)	UNIT WEIGHT (pcf)	FRICTION ANGLE (degrees)
1[a]	100	100	0
1[a]	50	110	22
2	80	84	0
3	90	89	0
4	170	105	0

a: Analyzed for both fill types.
Lowest SF illustrated.



2 FOOT FREEBOARD, 4 FEET WATER, 1(V):8(H) SLOPES

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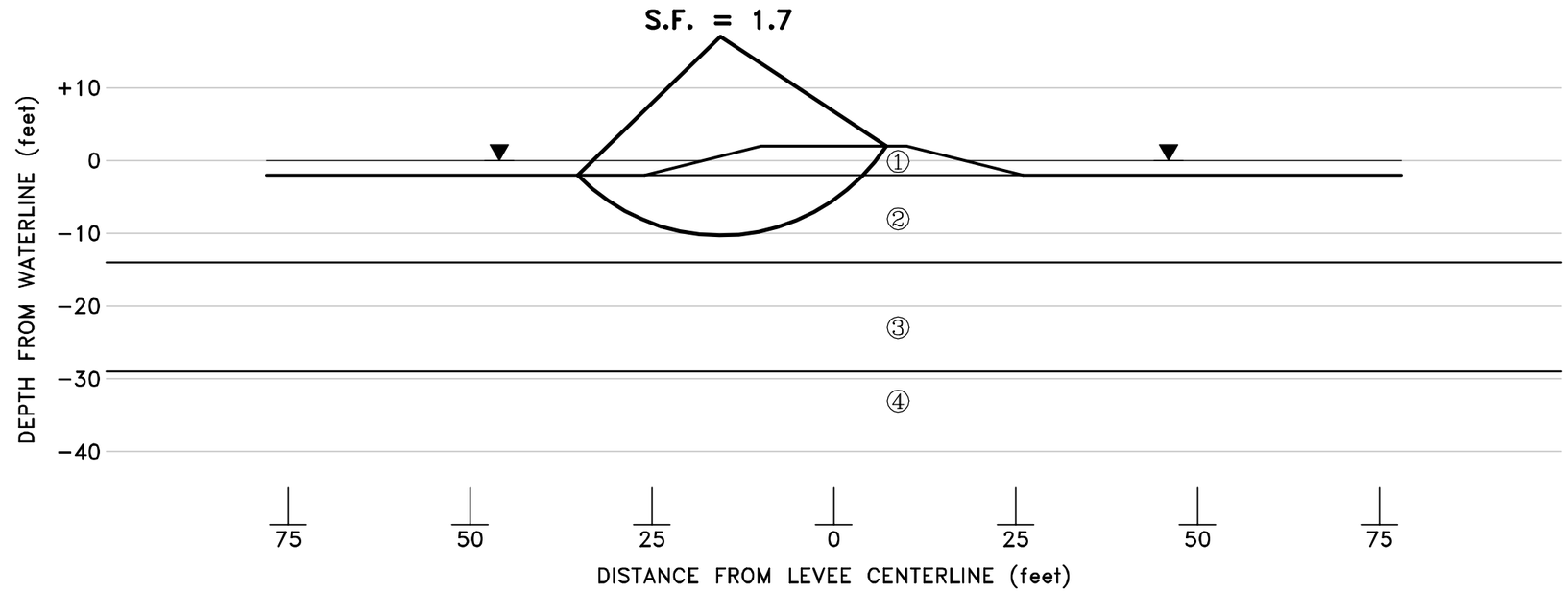
Project Engineer:	Drawn by:	Checked by:
G.P. Boutwell	DMS	
File No.: 03-1114	Date: 10-29-03	Figure No.: P-5

Title: **STABILITY ANALYSES WEST LEVEE**

Oct 29, 2003 - 3:54pm

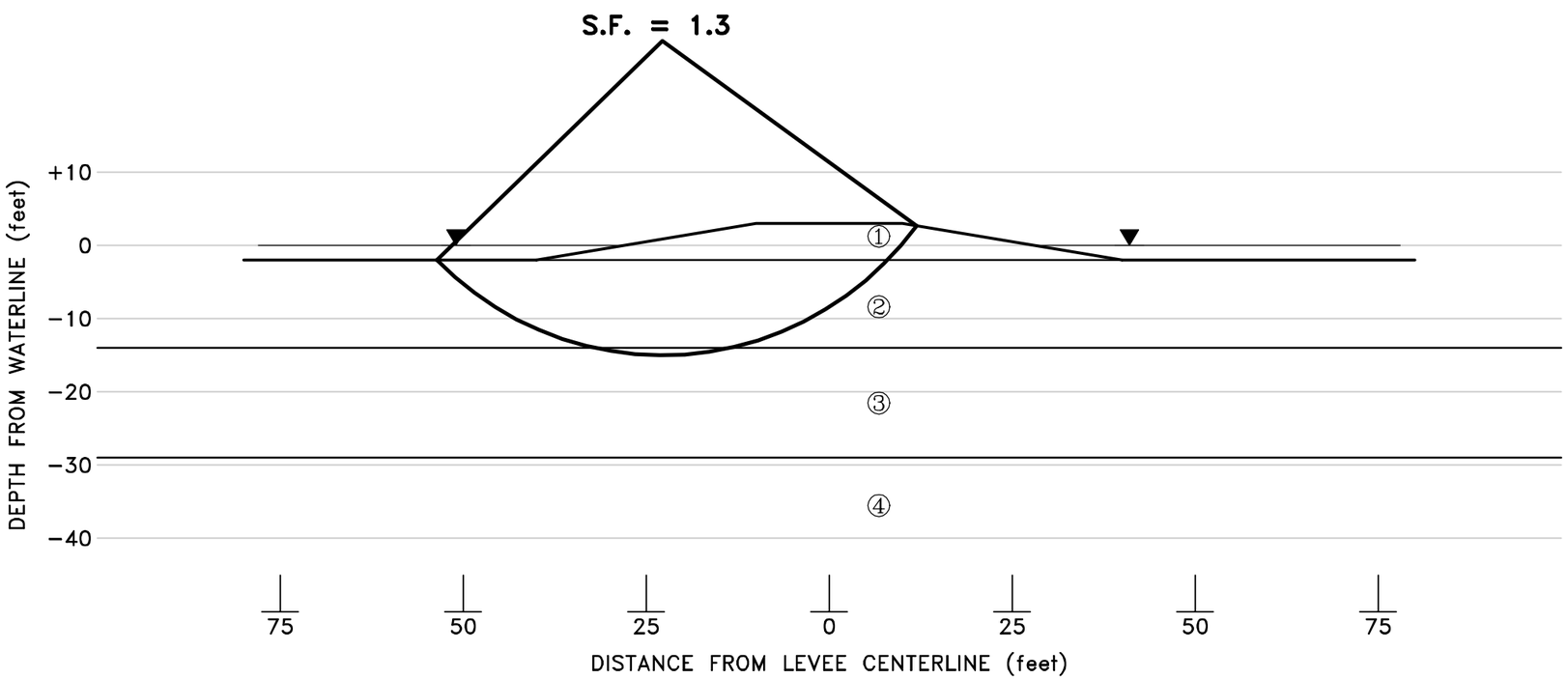
P:\2003\03-1114\CADD\031114-P5 WEST LEVEE STABILITY.DWG



2 FOOT FREEBOARD, 2 FEET WATER, 1(V):4(H) SLOPES

SOIL	COHESION (psf)	UNIT WEIGHT (pcf)	FRICTION ANGLE (degrees)
1[a]	100	100	0
1[a]	50	110	22
2	80	84	0
3	90	89	0
4	170	105	0

a: Analyzed for both fill types.
Lowest SF illustrated.



3 FOOT FREEBOARD, 2 FEET WATER, 1(V):6(H) SLOPES

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Project Engineer:	Drawn by:	Checked by:
G.P. Boutwell	DMS	
File No.: 03-1114	Date: 10-29-03	Figure No.: P-5A

Title: **STABILITY ANALYSES WEST LEVEE**

Oct 29, 2003 - 3:59pm

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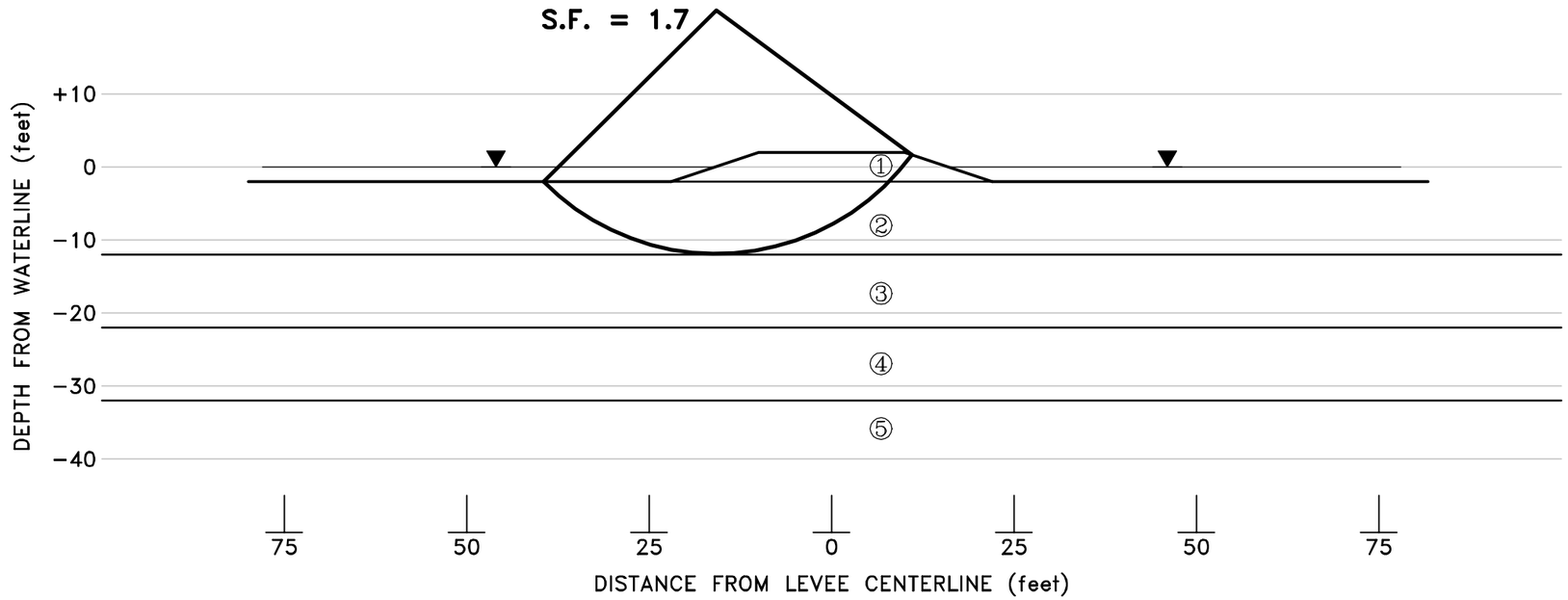
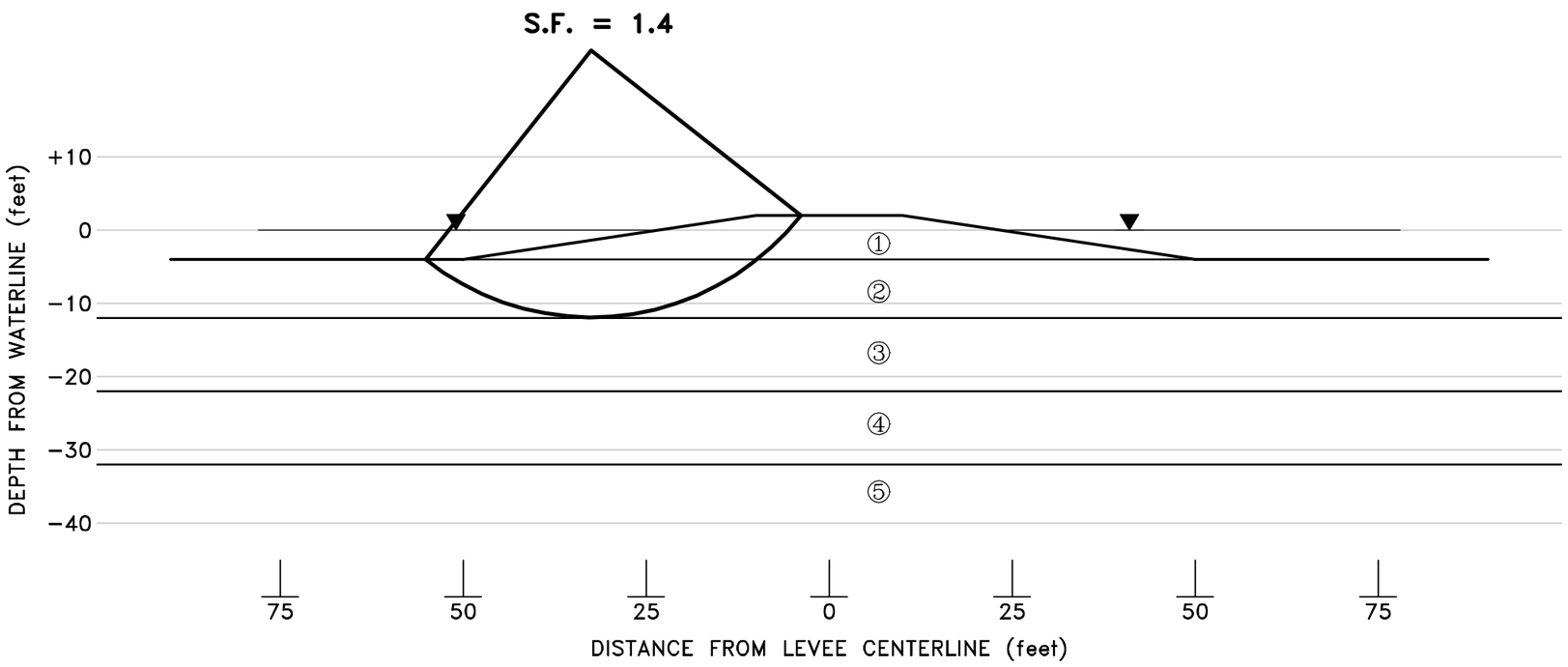


1 FOOT FREEBOARD, 2 FEET WATER, 1(V):4(H) SLOPES

SOIL	COHESION (psf)	UNIT WEIGHT (pcf)	FRICTION ANGLE (degrees)
1[a]	100	100	0
1[a]	50	110	22
2	85	81	0
3	120	88	0
4	200	100	0
5	240	99	0

a: Analyzed for both fill types.
Lowest SF illustrated.



1 FOOT FREEBOARD, 4 FEET WATER, 1(V):8(H) SLOPES

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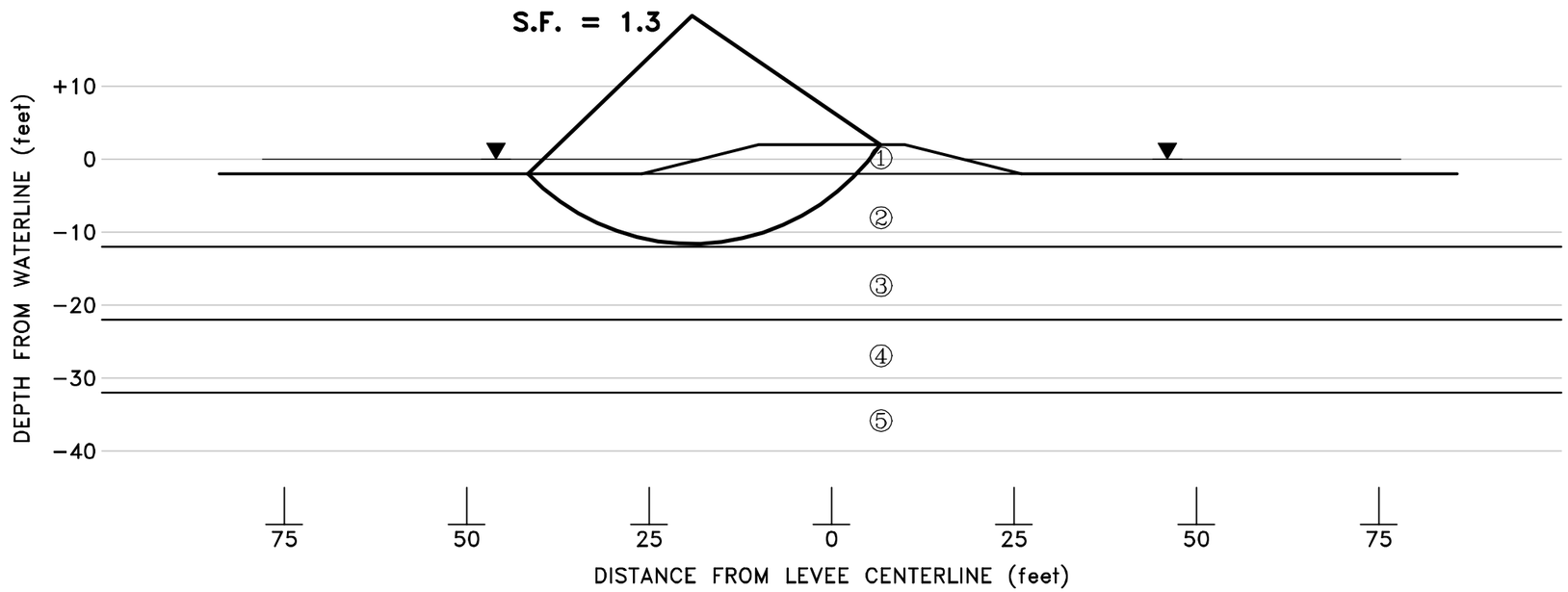
G.P. Boutwell	DMS	
File No.: 03-1114	Date: 10-29-03	Figure No.: P-6

Title: **STABILITY ANALYSES NORTH LEVEE**

Oct 29, 2003 – 3:58pm

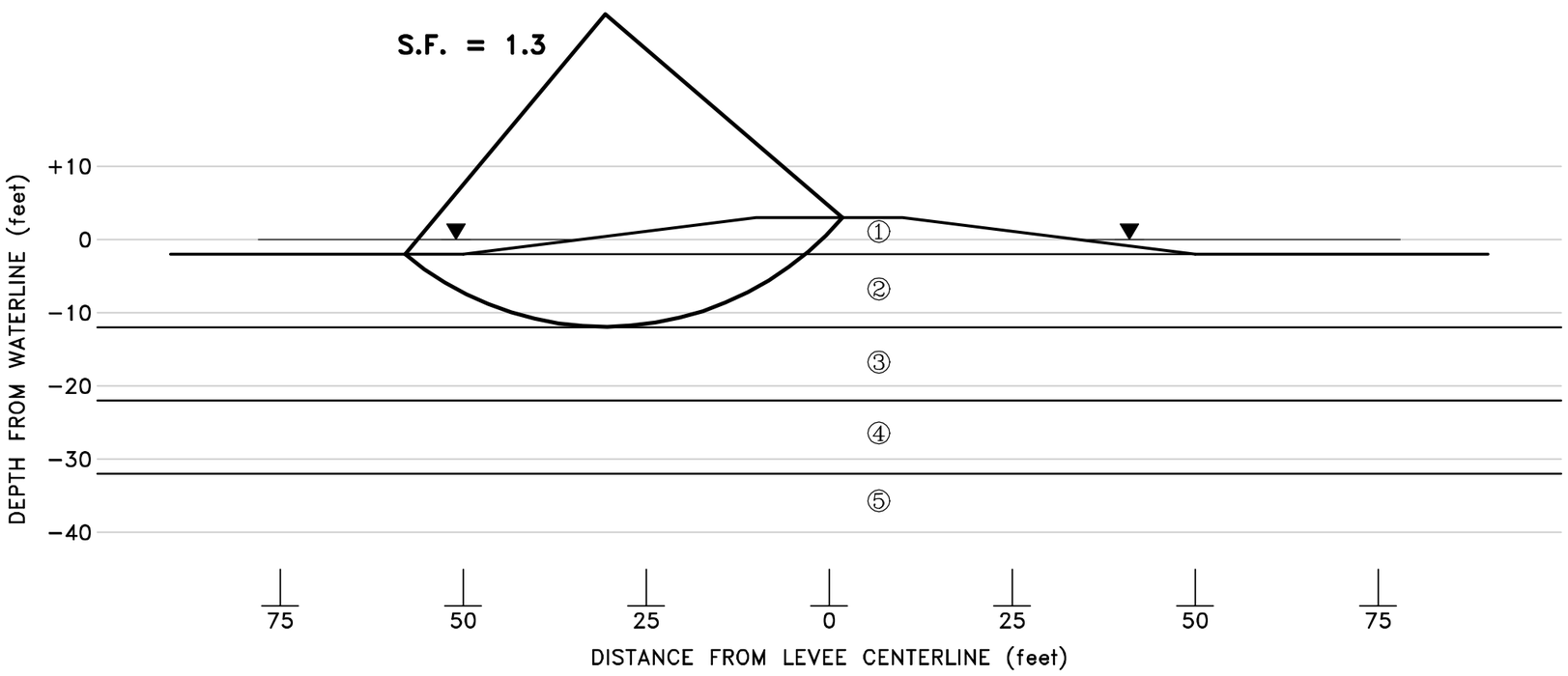
P:\2003\03-1114\CADD\031114-P6 NORTH LEVEE STABILITY.DWG



2 FOOT FREEBOARD, 2 FEET WATER, 1(V):4(H) SLOPES

SOIL	COHESION (psf)	UNIT WEIGHT (pcf)	FRICTION ANGLE (degrees)
1[a]	100	100	0
1[a]	50	110	22
2	85	81	0
3	120	88	0
4	200	100	0
5	240	99	0

a: Analyzed for both fill types.
Lowest SF illustrated.



3 FOOT FREEBOARD, 2 FEET WATER, 1(V):8(H) SLOPES

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Project Engineer:	Drawn by:	Checked by:
G.P. Boutwell	DMS	
File No.: 03-1114	Date: 10-29-03	Figure No.: P-6A

Title: **STABILITY ANALYSES NORTH LEVEE**

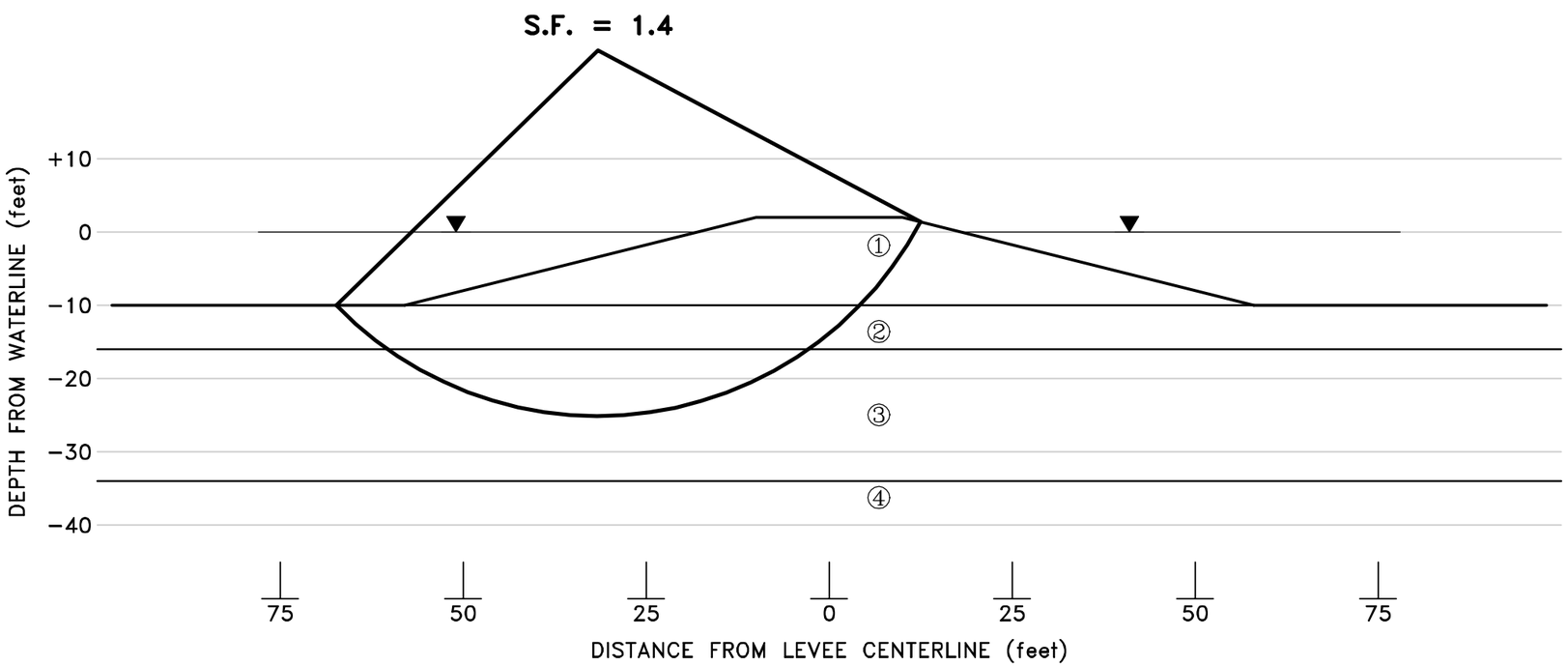
Oct 29, 2003 – 3:58pm

P:\2003\03-1114\CADD\031114-P6A NORTH LEVEE STABILITY.DWG

1 FOOT FREEBOARD, 10 FEET WATER, 1(V):4(H) SLOPES

SOIL	COHESION (psf)	UNIT WEIGHT (pcf)	FRICTION ANGLE (degrees)
1[a]	100	100	0
1[a]	50	110	22
2	100	80	0
3	160	84	0
4	100	110	24

a: Analyzed for both fill types.
Lowest SF illustrated.



2 FOOT FREEBOARD, 10 FEET WATER, 1(V):4(H) SLOPES

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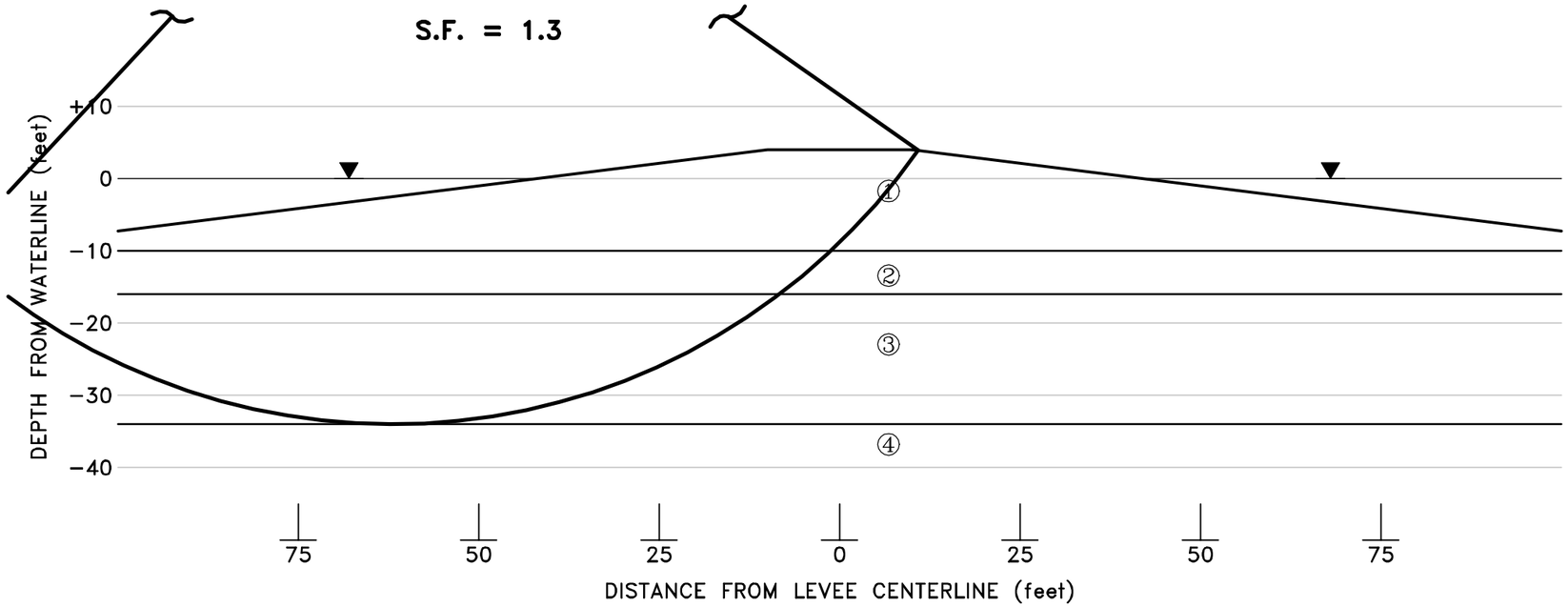
Project Engineer:	Drawn by:	Checked by:
G.P. Boutwell	DMS	
File No.: 03−1114	Date: 10−29−03	Figure No.: P-7

Title: **STABILITY ANALYSES EAST LEVEE**

Oct 29, 2003 − 3:58pm

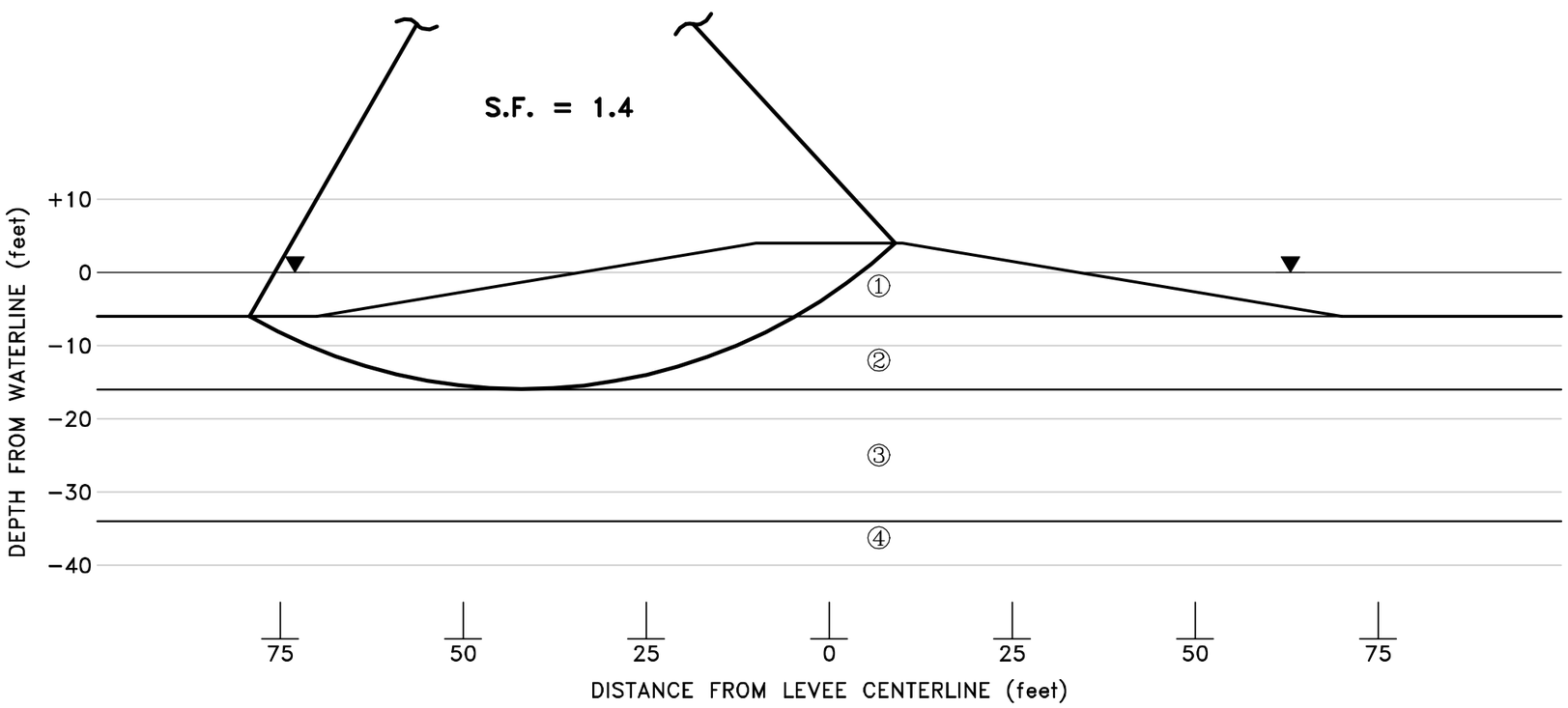
P:\2003\03−1114\CADD\031114−P7 EAST LEVEE STABILITY.DWG



4 FOOT FREEBOARD, 10 FEET WATER, 1(V):8(H) SLOPES

SOIL	COHESION (psf)	UNIT WEIGHT (pcf)	FRICTION ANGLE (degrees)
1[a]	100	100	0
1[a]	50	110	22
2	100	80	0
3	160	84	0
4	100	110	24

a: Analyzed for both fill types.
Lowest SF illustrated.



4 FOOT FREEBOARD, 6 FEET WATER, 1(V):6(H) SLOPES

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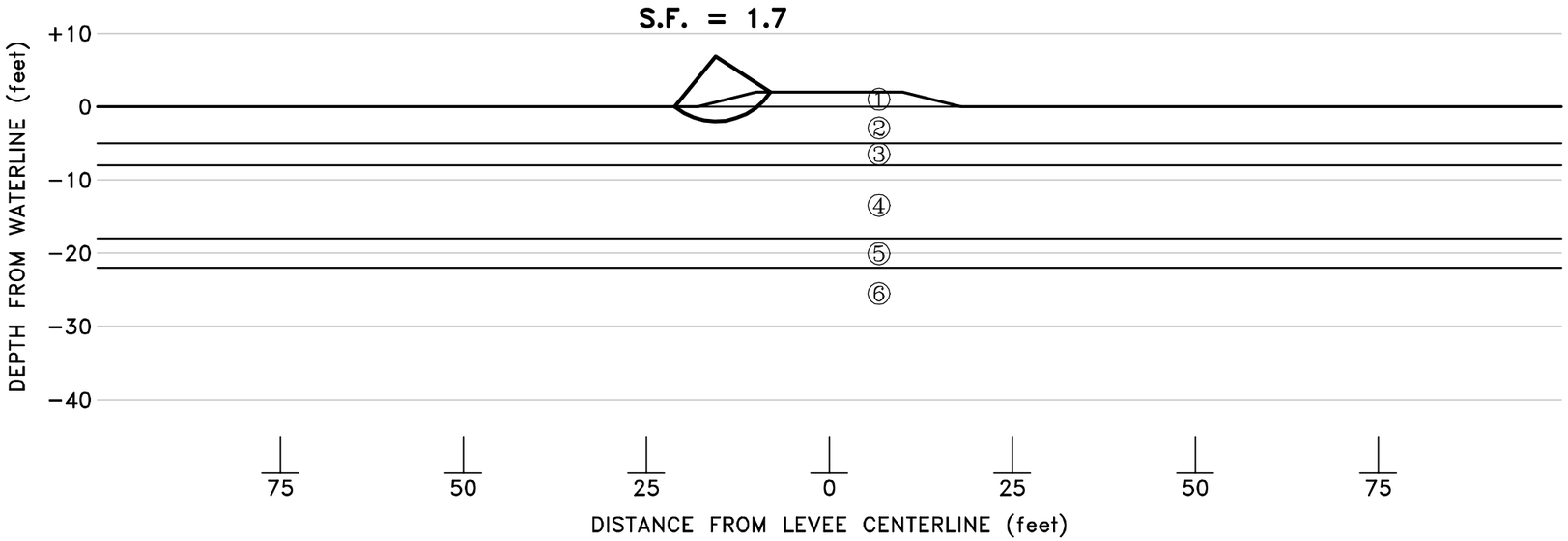
Project Engineer:	Drawn by:	Checked by:
G.P. Boutwell	DMS	
File No.: 03−1114	Date: 10−29−03	Figure No.: P-7A

Title: **STABILITY ANALYSES EAST LEVEE**

Oct 29, 2003 − 3:55pm

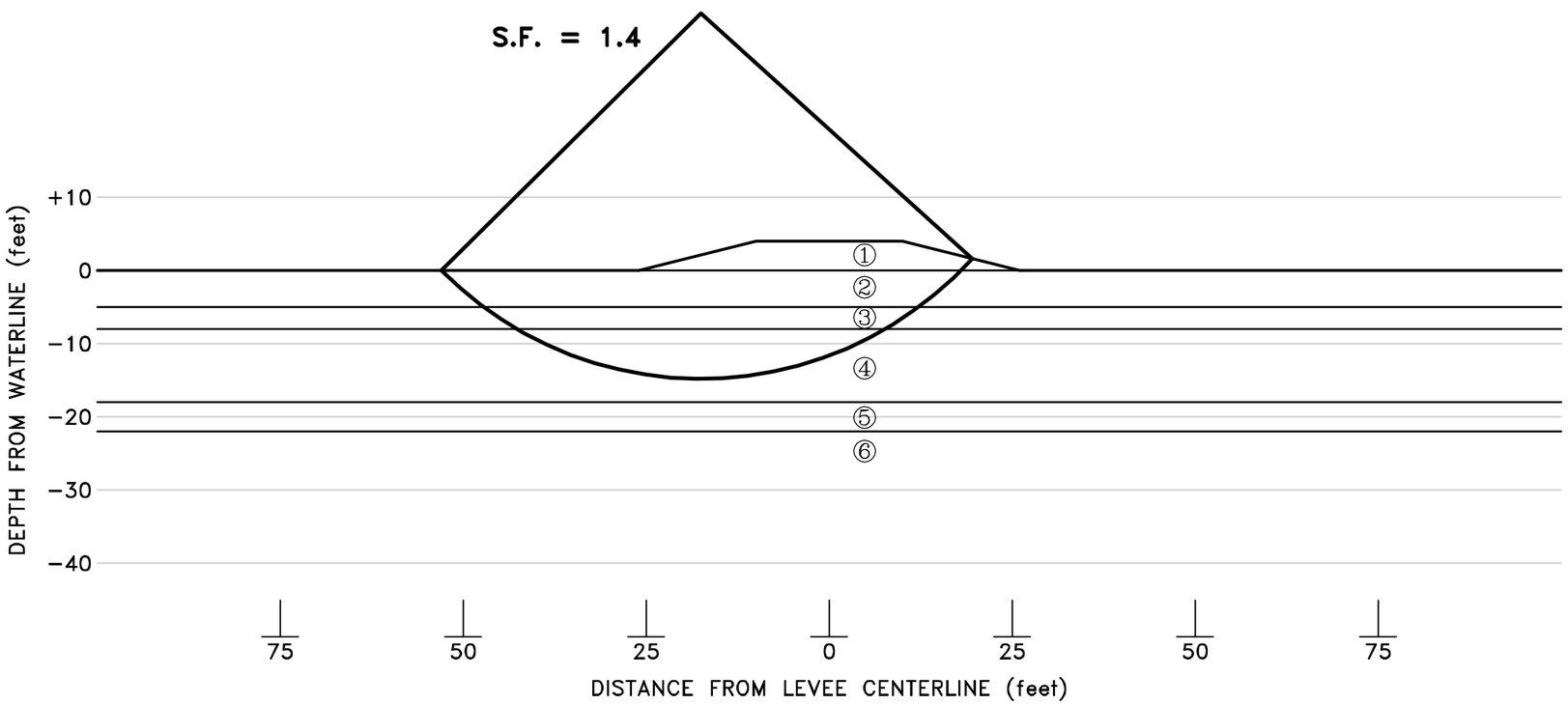
P:\2003\03−1114\CADD\031114−P7A EAST LEVEE STABILITY.DWG



FREEBOARD 2 FEET ABOVE RIDGE, 1(V):4(H) SLOPES

SOIL	COHESION (psf)	UNIT WEIGHT (pcf)	FRICTION ANGLE (degrees)
1[a]	0	110	26
2	0	110	24
3	80	83	0
4	90	84	0
5	100	96	0
6	160	92	0

a: Analyzed for both fill types.
Lowest SF illustrated.



FREEBOARD 4 FEET ABOVE RIDGE, 1(V):4(H) SLOPES

BARATARIA BARRIER ISLAND RESTORATION COMPLEX
(PELICAN HEADLAND)
PROJECT BA-38
PLAQUEMINES PARISH, LOUISIANA
for
LOUISIANA DEPARTMENT OF NATURAL RESOURCES
BATON ROUGE, LOUISIANA

C-K & ASSOCIATES, INC.
ENGINEERS
BATON ROUGE, LOUISIANA

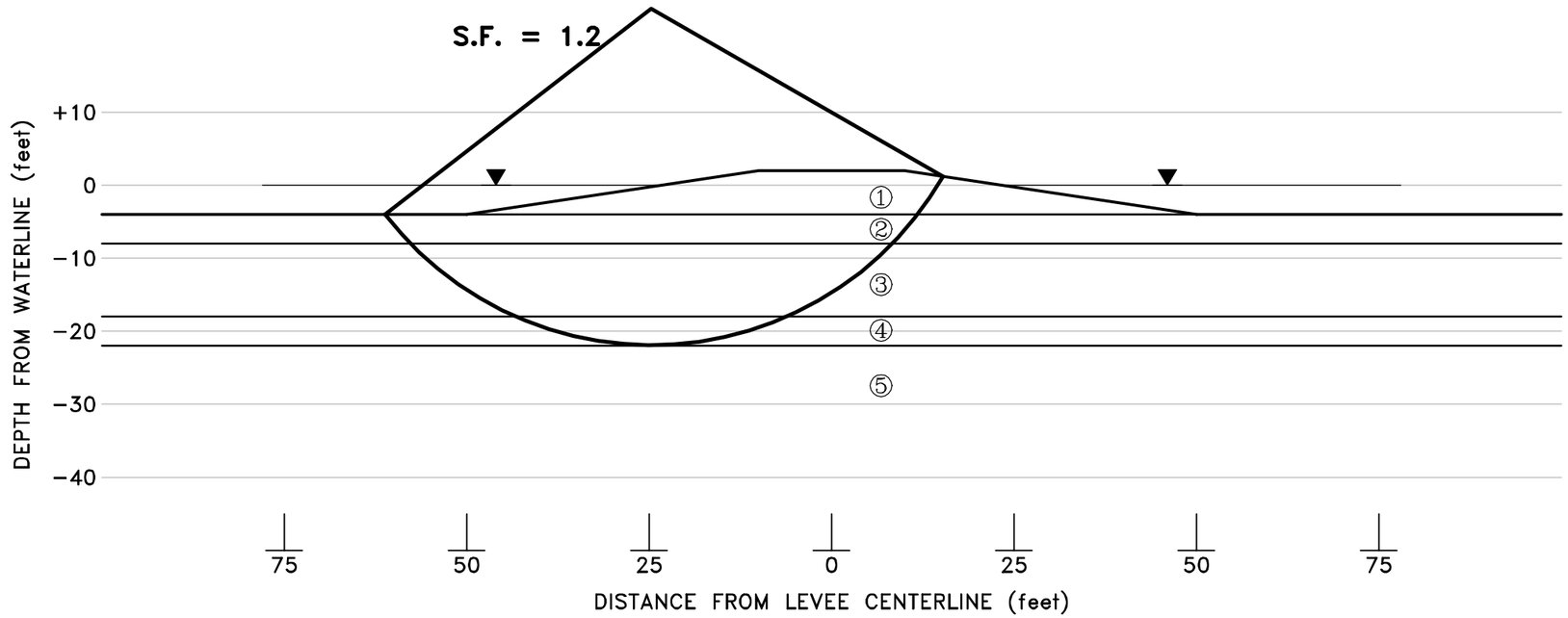
STE
Soil Testing Engineers, Inc.
Baton Rouge, LA Lake Charles, LA Metairie, LA

Project Engineer:	Drawn by:	Checked by:
G.P. Boutwell	DMS	
File No.: 03–1114	Date: 10–29–03	Figure No.: **P-8**

Title: **STABILITY ANALYSES**
SOUTH LEVEE ON BEACH RIDGE

Oct 29, 2003 – 3:55pm

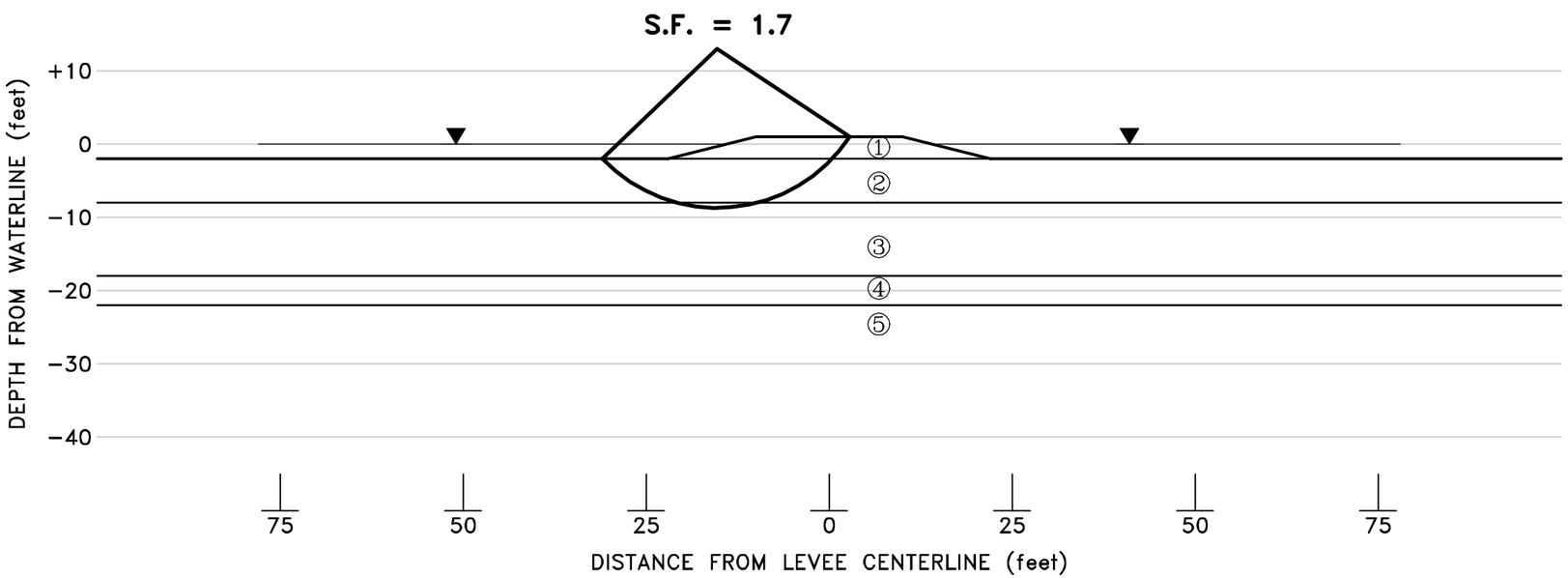
P:\2003\03–1114\CADD\031114–P8 SOUTH LEVEE STABILITY.DWG



1 FOOT FREEBOARD, 4 FEET WATER, 1(V):8(H) SLOPES

SOIL	COHESION (psf)	UNIT WEIGHT (pcf)	FRICTION ANGLE (degrees)
1[a]	100	100	0
1[a]	50	110	22
2	80	83	0
3	90	84	0
4	100	96	0
5	160	92	0

a: Analyzed for both fill types.
Lowest SF illustrated.



1 FOOT FREEBOARD, 2 FEET WATER, 1(V):4(H) SLOPES

BARATARIA BARRIER ISLAND RESTORATION COMPLEX
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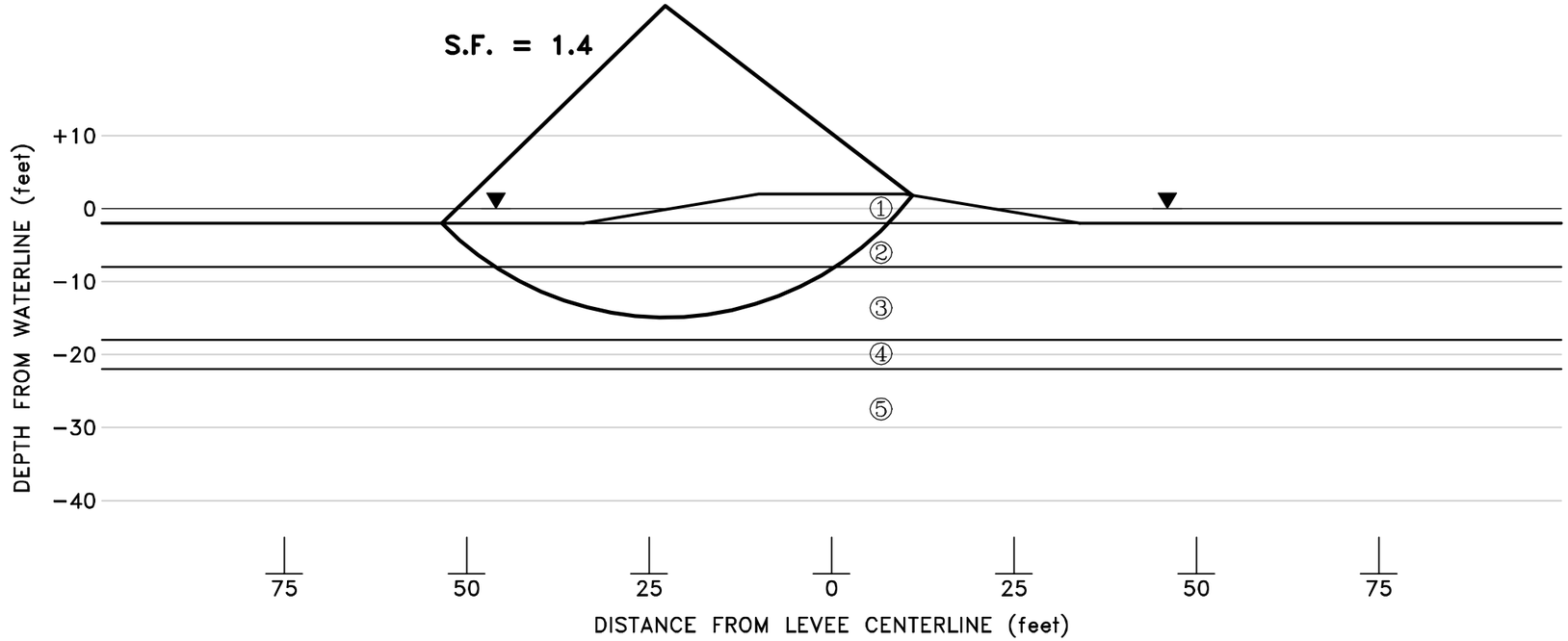
Baton Rouge, LA Lake Charles, LA Metairie, LA

Project Engineer:	Drawn by:	Checked by:
G.P. Boutwell	DMS	
File No.: 03-1114	Date: 10-29-03	Figure No.: P-9

Title: **STABILITY ANALYSES SOUTH LEVEE - OFFSHORE**

Oct 29, 2003 - 3:55pm

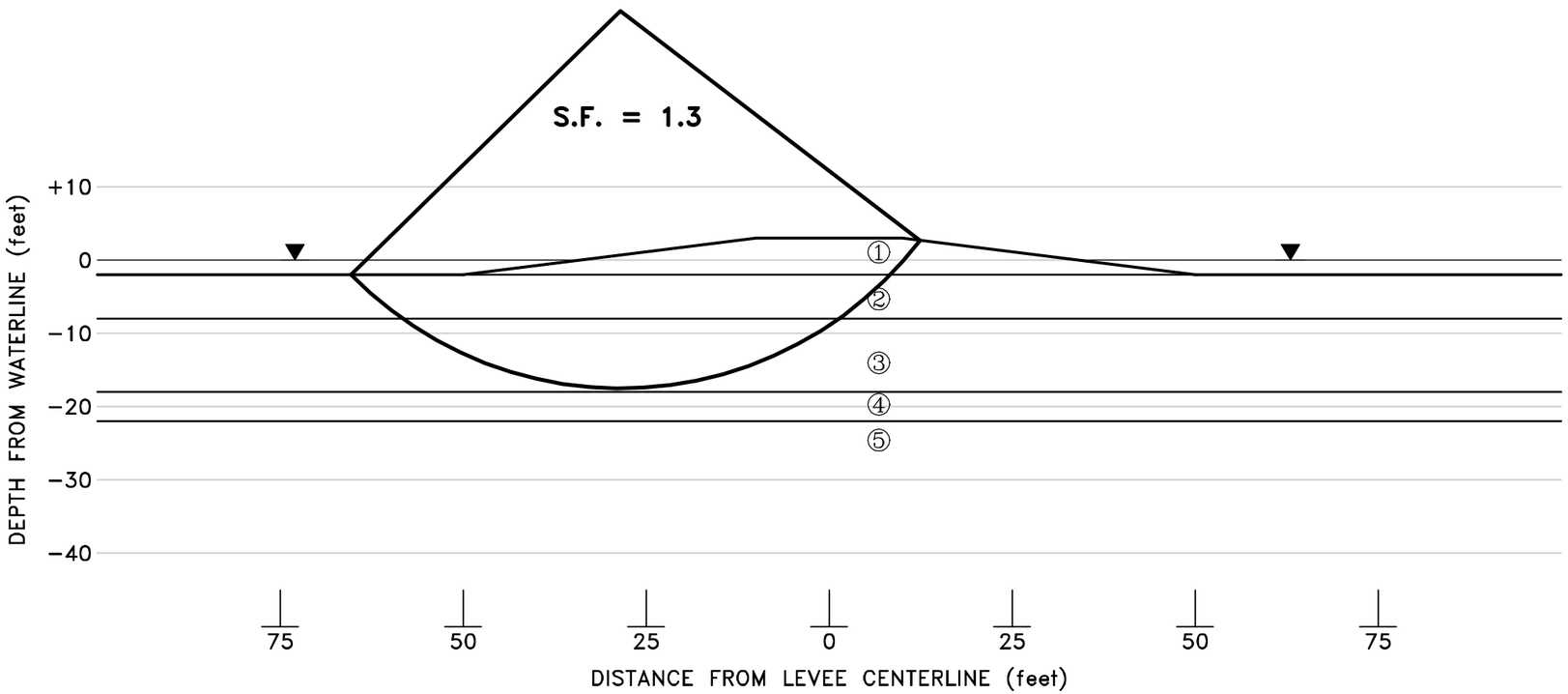
P:\2003\03-1114\CADD\031114-P9 SOUTH LEVEE STABILITY.DWG



2 FOOT FREEBOARD, 2 FEET WATER, 1(V):6(H) SLOPES

SOIL	COHESION (psf)	UNIT WEIGHT (pcf)	FRICTION ANGLE (degrees)
1[a]	100	100	0
1[a]	50	110	22
2	80	83	0
3	90	84	0
4	100	96	0
5	160	92	0

a: Analyzed for both fill types.
Lowest SF illustrated.



3 FOOT FREEBOARD, 2 FEET WATER, 1(V):8(H) SLOPES

BARATARIA BARRIER ISLAND RESTORATION COMPLEX
(PELICAN HEADLAND)
PROJECT BA-38
PLAQUEMINES PARISH, LOUISIANA
for
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BATON ROUGE, LOUISIANA

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Soil Testing Engineers, Inc.
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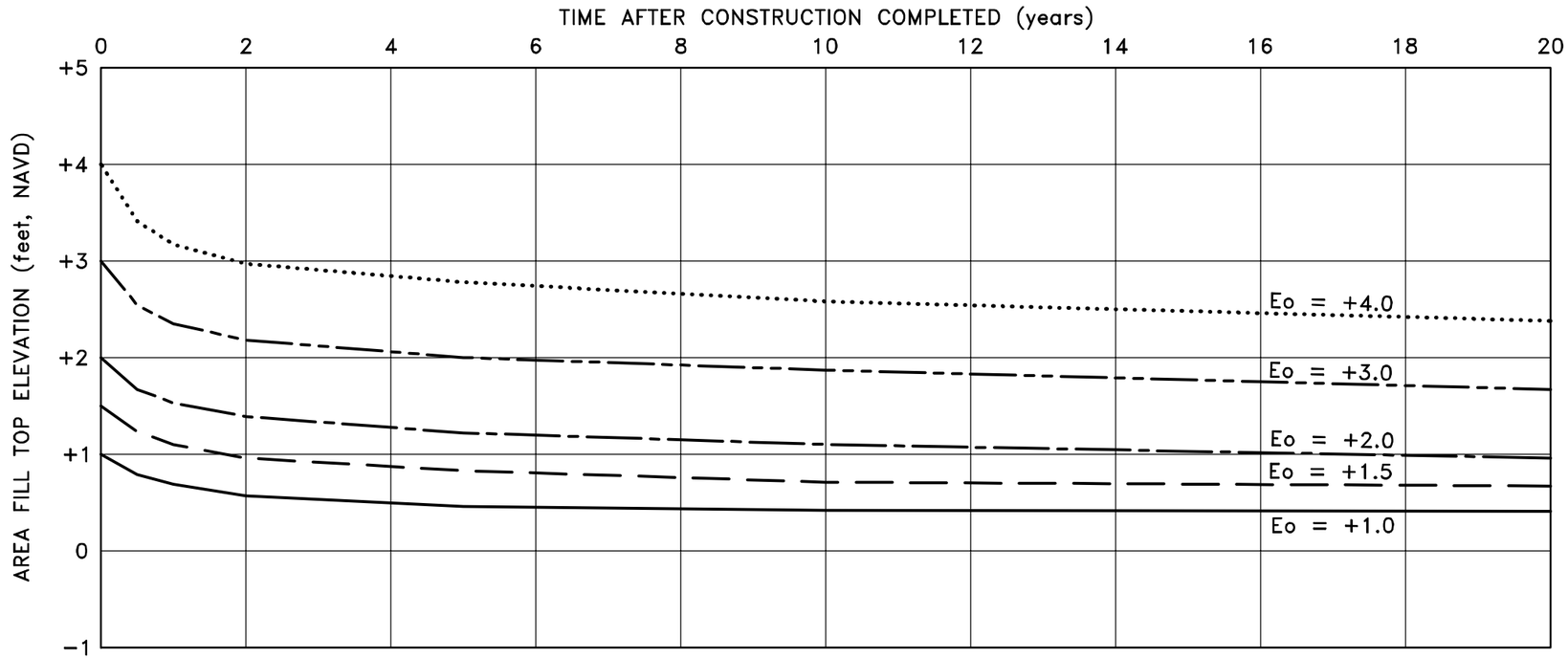
Project Engineer:	Drawn by:	Checked by:
G.P. Boutwell	DMS	
File No.: 03–1114	Date: 10–29–03	Figure No.: **P-9A**

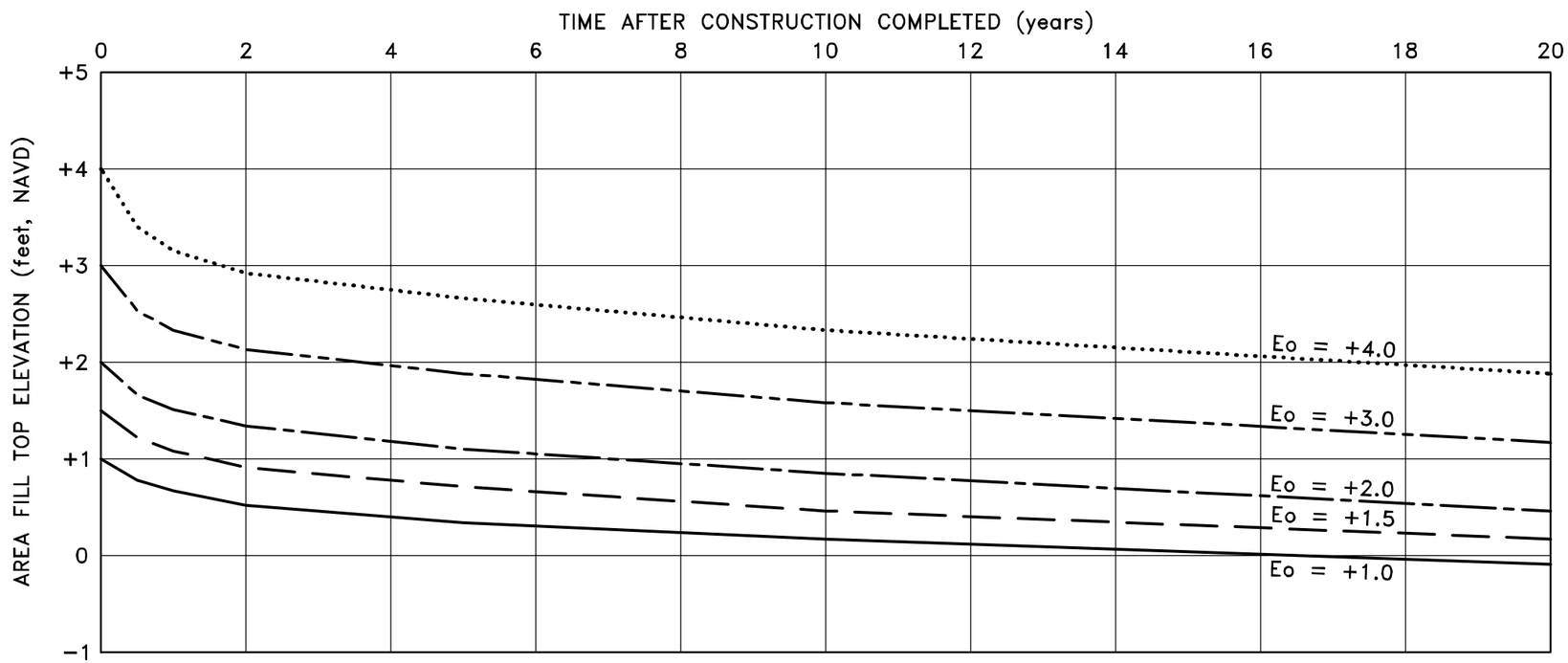
Title: **STABILITY ANALYSES SOUTH LEVEE - OFFSHORE**

Oct 29, 2003 – 3:59pm

P:\2003\03-1114\CADD\031114-P9A SOUTH LEVEE STABILITY.DWG



WITHOUT GEOLOGIC SUBSIDENCE



WITH GEOLOGIC SUBSIDENCE

NOTES:

1. Settlements include both self–weight consolidation and weight–induced settlements in foundation soils.

2. Geologic subsidence rate furnished by LDNR = 0.5 ft./20 yr.

BARATARIA BARRIER ISLAND RESTORATION COMPLEX
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PROJECT BA-38
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BATON ROUGE, LOUISIANA

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ENGINEERS
BATON ROUGE, LOUISIANA

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Project Engineer:	Drawn by:	Checked by:
G.P. Boutwell	DMS	
File No.: 03–1114	Date: 10–29–03	Figure No.: **P-10**

Title: **TIME-SETTLEMENT CURVES: AREA FILL**

Oct 29, 2003 – 3:59pm

P:\2003\03–1114\CADD\031114–P10 TIME SETTLEMENT.DWG

REPORT OF GEOTECHNICAL INVESTIGATION
BARATARIA BARRIER ISLAND RESTORATION
PROJECT BA-36
PLAQUEMINES PARISH, LOUISIANA

APPENDIX A

FIELD AND LABORATORY PROCEDURES

The following paragraphs describe the field and laboratory procedures used for this investigation Soil Boring Logs are included with this appendix. The boring logs, tables, and figures in this Appendix provide the field and laboratory data collected.

A.1 FIELD EXPLORATION

Twenty-four soil borings were drilled for this project to depths of 22 to 81 feet below water or ground surface. These borings were drilled during the period September 3 through September 26, 2003. The approximate locations of the borings are shown on the Boring Plans, Figures C-1 and P-1. The locations were established by LDNR personnel and physically located by C-K Associates, Inc. and STE. The borings totaled 955 lineal feet, 240 feet of which were continuously sampled. Logs of the borings, corrected to reflect the laboratory test results, are attached to this Appendix.

A.1.1 Sampling Procedures - Undisturbed Samples. In these cohesive and semi-cohesive soils, relatively undisturbed samples were secured using a three-inch diameter, thin wall steel tube sampler, essentially following ASTM D1587. In this sampling procedure, the borehole is advanced to the desired level, and the tube is lowered to the bottom of the boring. It is then pushed about two feet into the undisturbed soil in one continuous stroke. The sample and tube are retrieved from the borehole and detached from the drill string. The tube is then sealed to minimize disturbance and moisture loss, and protected for transportation to the laboratory.

After any laboratory vane shear tests are performed, the samples are extruded in the laboratory by a hydraulic piston onto a rigid sample catcher to minimize disturbance. The sample is then visually classified. The classification includes description of soil color, strength estimates, identification of structural conditions (layering, seams, etc.) and variations (organics, oxide inclusions, etc.). A pocket penetrometer strength test is performed.

A.1.2 Sampling Procedures - Standard Penetration Tests. In the less cohesive materials, standard penetration tests were performed; these tests provide a measure of the in situ characteristics of the soil and secure a disturbed sample. In this test, a 2 inch OD, 1.37ID, heavy-walled "split Spoon" sampler is driven into the undisturbed soil at the bottom of the borehole with a drop hammer weighing 140 pounds and having a stroke of 30 inches. It is first seated 6 inches, then driven an additional two, 6-inch increments. The "Penetration Resistance" is the number of such blows required to drive the spoon the final 12 inches. It is recorded on the boring log in the following manner:

4 b/f
2-2-2

where the figures A-B-C indicate the number of blows required for each 6 inch increment.

A.1.3 Soil Classifications. The soil classifications are given on the attached logs. The materials' strength group, color, and material type are presented. The strength groups are in accordance with normal procedures as given in, e.g., *Mitchell (1993)*. The material type is based on the primary and secondary constituents (gravel, sand, silt, clay). The letters in parentheses represent the Unified Soil Classification (ASTM D2487 supplemented by ASTM D2488).

A.1.4 Grouting. Each borehole was grouted upon completion. The grout mixture was prepared in its own tub (not the mud tank used for drilling). The typical grout mix was 28 pounds of bentonite and 14 sacks of Portland cement per 100 gallons of water. After the grout was thoroughly mixed, it was pumped to the bottom of the borehole through the drill stem which was placed to the bottom of the hole. The grout mixture was circulated in the borehole to assure that the drilling fluid had been replaced with grout. After the circulation, the drill stem was withdrawn and grout fluid from the tub was used to replace the volume of the drill stem as it was withdrawn.

A.2 LABORATORY TESTING

The various types of laboratory testing performed on samples from the boring program are described below. The samples actually tested were selected by the Project Engineer to provide the information necessary for both evaluation of the soils and design.

A.2.1 Classification Testing - Atterberg Limits. These tests were necessary to determine the actual soil types more accurately than can be done by visual/manual methods. For cohesive soils, only Atterberg Limits Determinations were necessary. These parameters are used in classifying the semi-cohesive and cohesive materials, i.e., SC, ML, CL, CH, OL and OH under ASTM D2487. The actual procedure followed ASTM D4318; it consists of determining the water content corresponding to:

* Liquid Limit (LL) - Where the soil changes behavior from that of a plastic solid to that of a viscous liquid.

* Plastic Limit (PL) - Where the soil changes behavior from that of an elastic (rigid) solid to that of a plastic (deformable) solid.

* Plasticity Index (PI)- The difference between the above limits: PI = LL - PL.

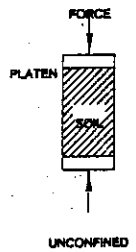
Sixty-four (64) of these tests were performed on the samples. The results are presented in the appropriate columns of the boring logs.

A.2.2 Classification - Particle Size Analyses. The information from these tests is used in classifying the less cohesive (more granular) soils such as PL and SM types. The test consists of two parts

- Sieve Analyses, where the sample is washed over progressively finer sieves, ending with the #200 (0.074 mm). The dry weight retained above each sieve is determined.
- Hydrometer Analysis, where the sample is suspended in water, and the particle sized are determined using the sedimentation rates and Stokes' Law.

This procedure is given in more detail in ASTM D422. There were thirty (30) such tests. Their results are summarized on the Logs of Borings, and presented graphically on figures, the Grain Size Analysis, all of which are attached to this Appendix A.

A.2.3 Strength Testing. The strength test program consisted of unconsolidated undrained (UU) triaxial compression tests. These tests provided data for slope stability analysis/design. In this test, a cylindrical sample (typically 3 inches in diameter and 6 inches high) is encased in a rubber membrane and then placed between two solid, flat end pieces ("platens"). Lateral pressure is applied to the sample by air pressure acting against the membrane. Stress is applied parallel to the long axis of the sample by advancing the end platens in a strain-controlled manner. Both the stress and corresponding axial strain are measured. The peak strength is the maximum axial stress measured before the axial strain reaches the commonly accepted value of 10%. These procedures conform essentially to ASTM D2850. A diagram for this test is given on the sketch below:



SKETCH A-1 - STRENGTH TESTING

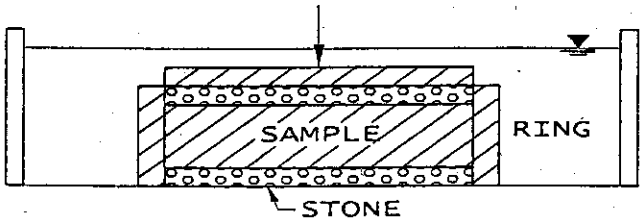
Eighty-four (84) of these tests were performed on the samples.

The results of these tests are presented in the appropriate columns of the attached boring logs.

A.2.4 Laboratory Vane Shear Testing. These tests were performed in the laboratory before the samples were extruded from their Shelby Tubes. The procedures are essentially those described for the field test in Section A.1.3, but a much smaller vane (1 inch blade diameter x 2 inches long) is used. This test conforms to the manufacture's recommendations and essentially to ASTM D4648. A total

of 8 such tests was performed; their results are given on the attached Logs of Borings.

A.2.5 Consolidation Testing. These tests provide data on the compressibility and time-rate of settlement characteristics of the natural soils. In this test, a thin (0.8 inch) cylinder of the soil is trimmed into a 2.5 inch diameter, thick-walled ring. The sample and ring are submerged in water, and various one-dimensional vertical loads applied as illustrated in the sketch below.



SKETCH A-2 - CONSOLIDATION TESTING

Each load is maintained until 100% consolidation occurs under that load; the next load is then applied. This procedure conforms essentially to ASTM D2435. The results of the fifteen (15) such tests performed on the samples are presented graphically on the Consolidation Test figures, and are summarized on Table A-2. In addition, Specific Gravity Determinations were made for all samples subjected to Consolidation Testing. The procedures conformed essentially to ASTM D854.

STE
Soil Testing Engineers, Inc.

BARATARIA BARRIER ISLAND RESTORATION COMPLEX
PROJECT BA-38
PLAQUEMINE PARISH, LA
DNR CONTRACT NO. 2503-02-29
TABLE A-1
SUMMARY OF CONSOLIDATION TESTS

BORING NO.	DEPTH (feet)	LL (%)	PI (%)	W_o (%)	DD_o (pcf)	p_c (tsf)	C'_c (decimal)	SOIL TYPE
CS-1	34-36	-	NP	30	89	1.30	0.04	ML(S)
CS-2	16-18	28	11	51	68	0.64	0.18	CL
CS-3	10-12	-	NP	38	86	2.20	0.04	ML(S)
CS-4	29-31	74	48	53	62	0.58	0.24	CH
CF-7	8-10	-	NP	25	101	1.50	0.03	SM
CF-7	19-21	63	37	63	57	0.63	0.24	CH
C-9	8-10	-	NP	23	99	0.80	0.03	SM
C-9	41-43	64	36	44	75	0.72	0.18	CH
PS-1	5-7	63	44	45	31	0.39	0.37	OH
PS-2	26-28	33	14	34	84	1.60	0.08	ML(C)
PS-3	24-26	71	47		70	0.51	0.14	CH
PS-3	59-61	73	48	51	67	1.26	0.21	CH
PF-4	18-20	114	80	94	46	0.59	0.27	OH
P-9	29-31	93	63	54	62	0.64	0.27	CH

LL = Liquid Limit (D4318)
PI = Plas. Index (D4318)
W_o = Initial Water Content (D2216)
DD_o = Initial Dry Density (D2937)

p_c = Preconsolidation Pressure (Casagrande Method)
C'_c = Compression Index = $C_c/(1+e_o)$
NP = Non-Plastic

DESCRIPTION OF TERMS AND SYMBOLS USED ON SOIL BORING LOG

STE
Soil Testing Engineers, Inc.

FIELD DATA				LABORATORY DATA								
Ground Water Level	Depth (feet)	Samples	Field Test Results	Compressive Strength (tsf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL	PL	PI	Other	Soil Type	DESCRIPTION

5

10

15

20

25

30

35

40

Ground Water Levels

Long-Term Depth
Depth to water after boring is completed (time noted).

Short-Term Depth
Depth to water after initial water encountered prior to proceeding with boring (time noted).

Initially Encountered
Depth where free water was initially encountered during augering.

Sampling/Field Data

3.5 (P) — **Undisturbed**
3" dia. Tube sample

Pocket Penetrometer (P)
Penetration resistance (tons/sq. ft.).

Torvane (T)
Shearing resistance (tons/sq. ft.)

13 b/f (3-7-6) — **Split Spoon**
Std. penetration test

Std. Penetration
No. of blows per foot (blows per each six inch increments).

Auger
Disturbed (auger) collected in accordance with ASTM D-1452.

No Recovery
Sampling attempted but no sample retrieved.

DESCRIPTION

Description
Classifications are based on visual observations by field & lab representatives as well as results of laboratory data (when available).

Laboratory Data

Compressive Strength
Value based on peak compressive strength. Determined by unconfined compression test unless otherwise noted.

Dry Unit Weight
As determined by method similar to ASTM D-2937.

Water Content
As determined by pertinent portions of ASTM D-2216.

Atterberg Limits
LL : Liquid Limit
PL : Plastic Limit
PI : Plasticity Index
(= Liquid Limit - Plastic Limit)

Other
Results of other tests such as consolidation, permeability, grain size or notes associated with testing program.

Soil Type
Graphical representation of soil type. In accordance with USCS Symbols.

Ground Water Level Data	Boring Advancement Method	Notes
	Boring Abandonment Method	

Form LOGTERMS

Strata Boundaries May Not Be Exact

Barataria Barrier Island Restoration Complex Project
BA-38 (Chaland Headland)
Plaquemines Parish, LA
DNR Contract No. 2503-02-29

LOG OF SOIL BORING CS-1

STE
Soil Testing Engineers, Inc.

Sheet 1 of 2

C-K Associates, Inc.
Baton Rouge, LA

LELAP Certificate No. 02052

File: 03-1114
Date: 09/04/03
Logged by: K. Moody
Driller: MASA
Rig: Barge

Location: Lat. 29° 18' 54.7"
Long. 89° 45' 51.4"

Surface Elevation: N/A (ft., NGVD)

FIELD DATA				LABORATORY DATA								
Ground Water Level	Depth (feet)	Samples	Field Test Results	Compressive Strength (tsf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI	Mini Vane Shear (ksf) / Other	Soil Type	Description
	5											Water Mudline at 8.0 ft.
	10			0.10t1	201	26	283	97	186			Very soft gray ORGANIC CLAY (OH) w/peat
					23							Loose gray SILTY SAND (SM)
	15		26 b/f 8-9-17									Firm to dense gray CLAYEY SAND (SC) w/shells
			33 b/f 11-15-18		30					GS1		
	20											
	25		3 b/f 1-1-2		54		71	26	45			Soft gray CLAY (CH) w/shells
	30											Firm gray SANDY SILT (ML)
	35		0.5 (P) 1.0 (P)	4.00t2	30	82				GS2		-- w/shells
	40											Firm gray SILTY SAND (SM) w/shells

Continued Next Page

Ground Water Level Data

VS = Vane Shear (ksf)

Deck to Water 4 ft.
Water to Mudline 8 ft.

Boring Advancement Method

4" Dia. Rotary Wash:
8 to 48 ft.

Boring Abandonment Method

Borehole grouted upon completion

Notes

t: Unconsolidated, Undrained Triaxial Compression Test
t1: Lateral Pressure = 9.1 psi
GS: Particle Size Analysis
GS1: Gravel = 0%, Sand = 76%, Silt = 10%, Clay = 14%
GS2: Gravel = 0%, Sand = 13%, Silt = 79%, Clay = 8%

Strata Boundaries May Not Be Exact

Barataria Barrier Island Restoration Complex Project
BA-38 (Chaland Headland)
Plaquemines Parish, LA
DNR Contract No. 2503-02-29

LOG OF SOIL BORING CS-1

STE
Soil Testing Engineers, Inc.

Sheet 2 of 2

File: 03-1114
Date: 09/04/03
Logged by: K. Moody
Driller: MASA
Rig: Barge

C-K Associates, Inc.
Baton Rouge, LA

LELAP Certificate No. 02052

Location: Lat. 29° 18' 54.7"
Long. 89° 45' 51.4"

Surface Elevation: N/A (ft., NGVD)

FIELD DATA				LABORATORY DATA								
Ground Water Level	Depth (feet)	Samples	Field Test Results	Compressive Strength (tsf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI	Mini Vane Shear (ksf) / Other	Soil Type	Description
					33							Firm gray SILTY SAND (SM) w/trace of clay and shells
	45											
			20 b/f 5-6-14		28					GS3		
												Boring completed at 48 ft.
	50											
	55											
	60											
	65											
	70											
	75											
	80											

Ground Water Level Data	Boring Advancement Method	Notes
	4" Dia. Rotary Wash: 8 to 48 ft.	t: Unconsolidated, Undrained Triaxial Compression Test t2: Lateral Pressure = 27.3 psi GS: Particle Size Analysis GS3: Gravel = <1%, Sand = 84%, Silt = 10%, Clay = 6%
	Boring Abandonment Method	
	Borehole grouted upon completion	Strata Boundaries May Not Be Exact

Barataria Barrier Island Restoration Complex Project
BA-38 (Chaland Headland)
Plaquemines Parish, LA
DNR Contract No. 2503-02-29

LOG OF SOIL BORING CS-2

STE
Soil Testing Engineers, Inc.

Sheet 1 of 2

File: 03-1114
Date: 09/23/03
Logged by: K. Moody
Driller: Omni
Rig: Airboat

C-K Associates, Inc.
Baton Rouge, LA

LELAP Certificate No. 02052

Location: Lat. 29° 18' 50.5"
Long. 89° 45' 04.6"

Surface Elevation: N/A (ft., NGVD)

FIELD DATA				LABORATORY DATA								
Ground Water Level	Depth (feet)	Samples	Field Test Results	Compressive Strength (tsf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI	Mini Vane Shear (ksf) / Other	Soil Type	Description
												Water Mudline at 2.0 ft.
		■	0.25 (P)	0.09t1	63	59	61	18	43			Very soft dark gray CLAY (CH) w/organic matter and 2-inch sand layer
	5	■	0.5 (P)	3.18t2	28	90				GS1		Firm gray SANDY SILT (ML)
		■	0.25 (P)	2.30t3	24	95						
		■	No (P)		23							
	10	■	0.25 (P)	2.26t4	28	93				GS2		-- w/clay pockets at 10 to 12 ft.
	15	■	0.5 (P)	0.50t5	27	94	28	17	11	0.25 SG		Medium gray SILTY CLAY (CL) -- w/1-inch sand layer at 17 ft.
	20	■	0.5 (P)		35					0.19		Alternate layers of 4-inches Soft gray SILTY CLAY (CL) and 3-inches Loose gray SILTY SAND (SM)
	25	■	0.5 (P)	0.28t6	22	94				0.19 GS3		Firm gray SILTY SAND (SM) -- w/clay pockets at 26 to 28 ft.
	30	▨	14 b/f 12-9-5									
	35	■	0.75 (P)	0.71t7	42	76				0.33		Medium gray SILTY CLAY (CL) -- w/sand seams at 36 to 38 ft.
	40											Soft gray SILTY CLAY (CL)

Continued Next Page

Ground Water Level Data

VS = Vane Shear (ksf)

Deck to Water 2 ft.
Water to Mudline 2 ft.

Boring Advancement Method

4" Dia. Rotary Wash:
2 to 43 ft.

Boring Abandonment Method

Borehole grouted upon completion

Notes

t: Unconsolidated, Undrained Triaxial Compression Test
Lateral Pressure
t1 = 3.5 psi t2 = 4.9 psi t3 = 6.3 psi
t4 = 9.1 psi t5 = 13.3 psi t6 = 20.3 psi
t7 = 27.3 psi
GS: Particle Size Analysis
GS1: Gravel = 0%, Sand = 43%, Silt = 45%, Clay = 12%
GS2: Gravel = 0%, Sand = 44%, Silt = 50%, Clay = 6%
GS3: Gravel = 0%, Sand = 72%, Silt = 22%, Clay = 6%
SG: Specific Gravity = 2.74

Strata Boundaries May Not Be Exact

Barataria Barrier Island Restoration Complex Project
BA-38 (Chaland Headland)
Plaquemines Parish, LA
DNR Contract No. 2503-02-29

LOG OF SOIL BORING CS-2

STE
Soil Testing Engineers, Inc.

Sheet 2 of 2

File: 03-1114
Date: 09/23/03
Logged by: K. Moody
Driller: Omni
Rig: Airboat

C-K Associates, Inc.
Baton Rouge, LA

LELAP Certificate No. 02052

Location: Lat. 29° 18' 50.5"
Long. 89° 45' 04.6"

Surface Elevation: N/A (ft., NGVD)

FIELD DATA				LABORATORY DATA								
Ground Water Level	Depth (feet)	Samples	Field Test Results	Compressive Strength (tsf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI	Mini Vane Shear (ksf) / Other	Soil Type	Description
			0.25 (P)	0.28t8	35	79						Soft gray SILTY CLAY (CL)
	45											Boring completed at 43 ft.
	50											
	55											
	60											
	65											
	70											
	75											
	80											

Ground Water Level Data	Boring Advancement Method	Notes
	4" Dia. Rotary Wash: 2 to 43 ft.	t: Unconsolidated, Undrained Triaxial Compression Test t8: Lateral Pressure = 30.8 psi
	Boring Abandonment Method Borehole grouted upon completion	

Strata Boundaries May Not Be Exact

Barataria Barrier Island Restoration Complex Project
BA-38 (Chaland Headland)
Plaquemines Parish, LA
DNR Contract No. 2503-02-29

LOG OF SOIL BORING CS-3

STE
Soil Testing Engineers, Inc.

Sheet 1 of 2

LELAP Certificate No. 02052

File: 03-1114
Date: 09/04/03
Logged by: K. Moody
Driller: MASA
Rig: Barge

C-K Associates, Inc.
Baton Rouge, LA

Location: Lat. 29° 18' 41.8"
Long. 89° 45' 19.9"

Surface Elevation: N/A (ft., NGVD)

FIELD DATA				LABORATORY DATA								
Ground Water Level	Depth (feet)	Samples	Field Test Results	Compressive Strength (tsf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI	Mini Vane Shear (ksf) / Other	Soil Type	Description
												Water
	5											Mudline at 6.0 ft.
				0.04t1	92	40				GS1		Very loose gray CLAYEY SILT (ML)
	10				35 32					GS2		Loose gray SANDY SILT (ML)
	15		13 b/f 5-7-6 15 b/f 8-9-6		32							Firm gray SANDY SILT (ML)
	20		2 b/f 1-1-1		50		68	29	39			Very soft gray CLAY (CH)
	25		0.25 (P)	0.17t2	49	79	67	26	41	0.23		
	30											Loose to firm gray SILTY SAND (SM)
	35				28					GS3		
	40											

Continued Next Page

Ground Water Level Data

VS = Vane Shear (ksf)

Deck to Water 4 ft.
Water to Mudline 6 ft.

Boring Advancement Method

4" Dia. Rotary Wash:
6 to 46 ft.

Boring Abandonment Method

Borehole grouted upon completion

Notes

t: Unconsolidated, Undrained Triaxial Compression Test
t1: Lateral Pressure = 7.7 psi
t2: Lateral Pressure = 20.3 psi
GS: Particle Size Analysis
GS1: Gravel = 0%, Sand = 76%, Silt - 10%, Clay = 14%
GS2: Gravel = 0%, Sand = 31%, Silt = 63%, Clay = 6%
GS3: Gravel = <1%, Sand = 84%, Silt = 10%, Clay = 6%

Strata Boundaries May Not Be Exact

Barataria Barrier Island Restoration Complex Project
BA-38 (Chaland Headland)
Plaquemines Parish, LA
DNR Contract No. 2503-02-29

LOG OF SOIL BORING CS-3

STE
Soil Testing Engineers, Inc.

File: 03-1114
Date: 09/04/03
Logged by: K. Moody
Driller: MASA
Rig: Barge

C-K Associates, Inc.
Baton Rouge, LA

LELAP Certificate No. 02052

Location: Lat. 29° 18' 41.8"
Long. 89° 45' 19.9"

Surface Elevation: N/A (ft., NGVD)

FIELD DATA				LABORATORY DATA								
Ground Water Level	Depth (feet)	Samples	Field Test Results	Compressive Strength (tsf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI	Mini Vane Shear (ksf) / Other	Soil Type	Description
			6 b/f 3-3-3									Loose gray SILTY SAND (SM) w/clay pockets
	45		1.0 (P)	0.78t3	36	78						
												Boring completed at 46 ft.
	50											
	55											
	60											
	65											
	70											
	75											
	80											

Ground Water Level Data	Boring Advancement Method	Notes
	4" Dia. Rotary Wash: 6 to 46 ft.	t: Unconsolidated, Undrained Triaxial Compression Test t3: Lateral Pressure = 34.3 psi
	Boring Abandonment Method Borehole grouted upon completion	

Strata Boundaries May Not Be Exact

Barataria Barrier Island
Restoration Complex Project
BA-38 (Chaland Headland)
Plaquemines Parish, LA
DNR Contract No. 2503-02-29

LOG OF SOIL BORING CS-4

STE
Soil Testing Engineers, Inc.

File: 03-1114
Date: 09/05/03
Logged by: K. Moody
Driller: MASA
Rig: Barge

C-K Associates, Inc.
Baton Rouge, LA

LELAP Certificate No. 02052

Location: Lat. 29° 18' 45.2"
Long. 89° 44' 47.8"

Surface Elevation: N/A (ft., NGVD)

FIELD DATA				LABORATORY DATA								
Ground Water Level	Depth (feet)	Samples	Field Test Results	Compressive Strength (tsf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI	Mini Vane Shear (ksf) / Other	Soil Type	Description
												Water
	5											Mudline at 6.0 ft.
				1.67t1	29	87				GS1		Firm gray SILTY SAND (SM) -- w/organic matter at 6 to 8 ft.
	10				36							
			25 b/f 10-12-13									-- w/trace of clay at 12 to 14 ft.
	15		6 b/f 3-3-3		57					GS2		Medium gray SILTY CLAY (CL)
	20		10 b/f 6-7-3									
												Soft gray CLAY (CH)
	25											
	30			0.35t2	47	65	74	26	48	CS		
	35		0.75 (P) 0.5 (P)	0.38t3	38 42	80						-- w/shell fragments at 34 to 36 ft.
												Loose gray VERY CLAYEY SILT (ML-CL)
	40											

Continued Next Page

Ground Water Level Data

VS = Vane Shear (ksf)

Deck to Water 4 ft.
Water to Mudline 6 ft.

Boring Advancement Method

4" Dia. Rotary Wash:
6 to 46 ft.

Boring Abandonment Method

Borehole grouted upon completion

Notes

t: Unconsolidated, Undrained Triaxial Compression Test
t1: Lateral Pressure = 7.7 psi
t2: Lateral Pressure = 23.8 psi
t3: Lateral Pressure = 27.3 psi
GS: Particle Size Analysis
GS1: Gravel = 0%, Sand = 84%, Silt = 12%, Clay = 4%
GS2: Gravel = 0%, Sand = <1%, Silt = 44%, Clay = 55%
CS: See Consolidation Curve

Strata Boundaries May Not Be Exact

Barataria Barrier Island
Restoration Complex Project
BA-38 (Chaland Headland)
Plaquemines Parish, LA
DNR Contract No. 2503-02-29

LOG OF SOIL BORING CS-4

STE
Soil Testing Engineers, Inc.

File: 03-1114
Date: 09/05/03
Logged by: K. Moody
Driller: MASA
Rig: Barge

C-K Associates, Inc.
Baton Rouge, LA

Sheet 2 of 2

LELAP Certificate No. 02052

Location: Lat. 29° 18' 45.2"
Long. 89° 44' 47.8"

Surface Elevation: N/A (ft., NGVD)

FIELD DATA				LABORATORY DATA								
Ground Water Level	Depth (feet)	Samples	Field Test Results	Compressive Strength (tsf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI	Mini Vane Shear (ksf) / Other	Soil Type	Description
			0.75 (P)							GS3		Loose gray VERY CLAYEY SILT (ML-CL)
												Firm gray SANDY SILT (ML)
	45			1.25t4	33	82				GS4		
												Boring completed at 46 ft.
	50											
	55											
	60											
	65											
	70											
	75											
	80											

Ground Water Level Data	Boring Advancement Method	Notes
	4" Dia. Rotary Wash: 6 to 46 ft.	GS: Particle Size Analysis GS3: Gravel = 0%, Sand = 8%, Silt = 70%, Clay = 22% GS4: Gravel = 0%, Sand = 43%, Silt = 49%, Clay = 7% t: Unconsolidated, Undrained Triaxial Compression Test t4: Lateral Pressure = 34.3 psi
	Boring Abandonment Method	
	Borehole grouted upon completion	Strata Boundaries May Not Be Exact

Barataria Barrier Island Restoration Complex Project
BA-38 (Chaland Headland)
Plaquemines Parish, LA
DNR Contract No. 2503-02-29

LOG OF SOIL BORING CF-5

STE
Soil Testing Engineers, Inc.

Sheet 1 of 1

File: 03-1114
Date: 09/22/03
Logged by: K. Moody
Driller: Omni
Rig: Airboat

C-K Associates, Inc.
Baton Rouge, LA

LELAP Certificate No. 02052

Location: Lat. 29° 14' 00.2"
Long. 89° 47' 00.2"

Surface Elevation: N/A (ft., NGVD)

FIELD DATA				LABORATORY DATA								
Ground Water Level	Depth (feet)	Samples	Field Test Results	Compressive Strength (tsf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL	PL	PI	Mini Vane Shear (ksf) / Other	Soil Type	Description
												Water Mudline at 2.0 ft.
			0.25 (P)	0.18t1	38	73				0.21 GS1		Very loose dark gray SILTY SAND (SM) w/grass and clay
	5		0.25 (P)		48					0.15		Very soft dark gray SILTY CLAY (CL) w/grass roots
			0.25 (P)	0.37t2	51	73				GS2		Soft gray SANDY CLAY (CL) w/peat pockets
			0.25 (P)		63					0.44		
	10		9 b/f 4-6-3									Loose gray SILTY SAND (SM)
	15		0.75 (P)	2.09t3	30	84						Firm gray CLAYEY SAND (SC)
	20		0.25 (P)		55					0.21		Soft gray CLAY (CH)
	25											Boring completed at 23 ft.
	30											
	35											
	40											

Ground Water Level Data

VS = Vane Shear (ksf)

Deck to Water 2 ft.
Water to Mudline 2 ft.

Boring Advancement Method

4" Dia. Rotary Wash:
2 to 23 ft.

Boring Abandonment Method

Borehole grouted upon completion

Notes

t: Unconsolidated, Undrained Triaxial Compression Test
t1: Lateral Pressure = 3.5 psi
t2: Lateral Pressure = 6.3 psi
t3: Lateral Pressure = 13.3 psi
GS: Particle Size Analysis
GS1: Gravel = <1%, Sand = 72%, Silt = 17%, Clay = 11%
GS2: Gravel = 0%, Sand = 42%, Silt = 30%, Clay = 28%

Strata Boundaries May Not Be Exact

Barataria Barrier Island
Restoration Complex Project
BA-38 (Chaland Headland)
Plaquemines Parish, LA
DNR Contract No. 2503-02-29

C-K Associates, Inc.
Baton Rouge, LA

LOG OF SOIL BORING CF-6

STE
Soil Testing Engineers, Inc.

Sheet 1 of 1

LELAP Certificate No. 02052

File: 03-1114
Date: 09/05/03
Logged by: K. Moody
Driller: MASA
Rig: Barge

Location: Lat. 29° 18' 34.5"
Long. 89° 44' 57.0"
Surface Elevation: N/A (ft., NGVD)

FIELD DATA				LABORATORY DATA								
Ground Water Level	Depth (feet)	Samples	Field Test Results	Compressive Strength (tsf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL	PL	PI	Mini Vane Shear (ksf) / Other	Soil Type	Description
	5											Water Mudline at 6.0 ft.
					37							Loose gray SILTY SAND (SM) w/trace of clay and organic matter
	10			3.17T1	25	82				GS1		Dense gray SAND (SP)
	15		32 b/f 11-15-17									
	20		22 b/f 9-11-11		27					GS2		Firm gray SANDY SILT (ML)
	25		0.25 (P) 0.5 (P)		45		90	20	70	0.26		Soft gray CLAY (CH) w/trace of sand
	30											Boring completed at 26 ft.
	35											
	40											

Ground Water Level Data

VS = Vane Shear (ksf)

Deck to Water 4 ft.
Water to Mudline 6 ft.

Boring Advancement Method

4" Dia. Rotary Wash:
6 to 26 ft.

Boring Abandonment Method

Borehole grouted upon completion

Notes

t: Unconsolidated, Undrained Triaxial Compression Test
t1: Lateral Pressure = 10.5 PSI
GS: Particle Size Analysis
GS1: Gravel = 0%, Sand = 93%, Silt = 6%, Clay = 1%
GS2: Gravel = 0%, Sand = 40%, Silt = 57%, Clay = 3%

Strata Boundaries May Not Be Exact

Barataria Barrier Island Restoration Complex Project
BA-38 (Chaland Headland)
Plaquemines Parish, LA
DNR Contract No. 2503-02-29

LOG OF SOIL BORING CF-7

STE
Soil Testing Engineers, Inc.

Sheet 1 of 1

File: 03-1114
Date: 09/04/03
Logged by: K. Moody
Driller: MASA
Rig: Barge

C-K Associates, Inc.
Baton Rouge, LA

LELAP Certificate No. 02052

Location: Lat. 29° 18' 58.3"
Long. 89° 46' 48.0"

Surface Elevation: N/A (ft., NGVD)

FIELD DATA				LABORATORY DATA								
Ground Water Level	Depth (feet)	Samples	Field Test Results	Compressive Strength (tsf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI	Mini Vane Shear (ksf) / Other	Soil Type	Description
												Water
												Mudline at 4.0 ft.
	5			0.07t1	46	72				GS1		Very soft gray SANDY CLAY (CL) -- w/shell fragments at 4 to 6 ft.
	10			2.78t2	28	84				GS2 SG		Firm gray SILTY SAND (SM)
			17 b/f 11-8-9									
			3 b/f 1-1-2		42		55	21	34			Soft gray CLAY (CH)
	15											
	20		1.0 (P) 0.5 (P)		61		63	26	37	0.25		
	25											Loose gray SILTY SAND (SM)
												Boring completed at 26 ft.
	30											
	35											
	40											

Ground Water Level Data

VS = Vane Shear (ksf)

Deck to Water 4 ft.
Water to Mudline 4 ft.

Boring Advancement Method

4" Dia. Rotary Wash:
4 to 26 ft.

Boring Abandonment Method

Borehole grouted upon completion

Notes

t: Unconsolidated, Undrained Triaxial Compression Test
t1: Lateral Pressure = 6.3 psi
t2: Lateral Pressure = 9.1 psi
GS: Particle Size Analysis
GS1: Gravel = 7%, Sand = 40%, Silt = 28%, Clay = 25%
GS2: Gravel = 0 %, Sand = 56%, Silt = 39%, Clay = 5%
SG: Specific Gravity = 2.64

Strata Boundaries May Not Be Exact

Barataria Barrier Island
Restoration Complex Project
BA-38 (Chaland Headland)
Plaquemines Parish, LA
DNR Contract No. 2503-02-29

LOG OF SOIL BORING CF-8

STE
Soil Testing Engineers, Inc.

Sheet 1 of 1

File: 03-1114
Date: 09/05/03
Logged by: K. Moody
Driller: MASA
Rig: Barge

C-K Associates, Inc.
Baton Rouge, LA

LELAP Certificate No. 02052

Location: Lat. 29° 18' 37.1"
Long. 89° 44' 24.1"

Surface Elevation: N/A (ft., NGVD)

FIELD DATA				LABORATORY DATA								
Ground Water Level	Depth (feet)	Samples	Field Test Results	Compressive Strength (tsf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI	Mini Vane Shear (ksf) / Other	Soil Type	Description
												Water
	5											Mudline at 6.0 ft.
					46					GS1		Very loose gray SILTY SAND (SM) w/shell fragments and peat
					64							Very soft gray SANDY CLAY (CL) w/shell fragments and organic matter
	10		WOH									
			6 b/f 1-3-3		38		29	18	11			Medium gray SANDY CLAY (CL) w/shell fragments
	15		14 b/f 6-7-7									Firm gray SANDY SILT (ML)
	20		11 b/f 3-4-7		30					GS2		
	25		7 b/f 6-4-3									-- loose below 24 ft.
												Boring completed at 26 ft.
	30											
	35											
	40											

Ground Water Level Data

VS = Vane Shear (ksf)

Deck to Water 4 ft.
Water to Mudline 6 ft.

Boring Advancement Method

4" Dia. Rotary Wash:
6 to 26 ft.

Boring Abandonment Method

Borehole grouted upon completion

Notes

GS: Particle Size Analysis
GS1: Gravel = 0%, Sand = 82%, Silt = 11%, Clay = 7%
GS2: Gravel = 0%, Sand = 43%, Silt = 50%, Clay = 7%
WOH: Weight of Hammer

Strata Boundaries May Not Be Exact

Barataria Barrier Island
Restoration Complex Project
BA-38 (Chaland Headland)
Plaquemines Parish, LA
DNR Contract No. 2503-02-29

LOG OF SOIL BORING C-9

STE
Soil Testing Engineers, Inc.

File: 03-1114
Date: 09/22/03
Logged by: K. Moody
Driller: Omni
Rig: Airboat

C-K Associates, Inc.
Baton Rouge, LA

Sheet 1 of 2

LELAP Certificate No. 02052

Location: Lat. 29° 18' 53.2"
Long. 89° 41' 19.6"

Surface Elevation: N/A (ft., NGVD)

FIELD DATA				LABORATORY DATA								
Ground Water Level	Depth (feet)	Samples	Field Test Results	Compressive Strength (tsf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL	PL	PI	Mini Vane Shear (ksf) / Other	Soil Type	Description
												Water Mudline at 2.0 ft.
			0.25 (P)		265							Very soft dark gray PEAT (PT)
	5		0.25 (P)	1.54t1	33	85				GS1		Firm gray SILTY SAND (SM)
			0.75 (P)		23							
			1.5 (P)	4.49t2 m	26	100				SG1 GS2		Dense gray SILTY SAND (SM) w/trace of clay
	10		1.5 (P)		23							
	15		1.5 (P)	1.07t3	24	96						
	20		0.75 (P)		27							Firm gray CLAYEY SAND (SC)
	25		0.5 (P)	0.81t4	32	89	23	18	5			Medium gray VERY SANDY CLAY (CL-SC)
	30		0.25 (P)	1.21t5	40	76						Stiff gray SANDY CLAY (CL)
	35		1.0 (P)		30							
	40											

Continued Next Page

Ground Water Level Data

VS = Vane Shear (ksf)

Deck to Water 2 ft.
Water to Mudline 2 ft.

Boring Advancement Method

4" Dia. Rotary Wash:
2 to 73 ft.

Boring Abandonment Method

Borehole grouted upon completion

Notes

t: Unconsolidated, Undrained Triaxial Compression Test
Lateral Pressure
t1 = 4.9 psi t2 = 7.7 psi t3 = 13.3 psi
t4 = 20.3 psi t5 = 23.8 psi
GS: Particle Size Analysis
GS1: Gravel = 0%, Sand = 68%, Silt = 26%, Clay = 6%
GS2: Gravel = 0%, Sand = 54%, Silt = 32%, Clay = 14%
m: Machine Limit
SG: Specific Gravity
SG1 = 2.64

Strata Boundaries May Not Be Exact

Barataria Barrier Island
Restoration Complex Project
BA-38 (Chaland Headland)
Plaquemines Parish, LA
DNR Contract No. 2503-02-29

LOG OF SOIL BORING C-9

STE
Soil Testing Engineers, Inc.

Sheet 2 of 2

LELAP Certificate No. 02052

File: 03-1114
Date: 09/22/03
Logged by: K. Moody
Driller: Omni
Rig: Airboat

C-K Associates, Inc.
Baton Rouge, LA

Location: Lat. 29° 18' 53.2"
Long. 89° 41' 19.6"
Surface Elevation: N/A (ft., NGVD)

FIELD DATA				LABORATORY DATA								
Ground Water Level	Depth (feet)	Samples	Field Test Results	Compressive Strength (tsf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI	Mini Vane Shear (ksf) / Other	Soil Type	Description
												Stiff gray SANDY CLAY (CL)
		■	0.75 (P)		47		54	18	36	SG2		Soft gray CLAY (CH)
	45											
		■	0.5 (P)		41					0.23		
	50											
		■	0.5 (P)	0.29t6	52	69	65	18	47	0.25		
	55											
		■	0.75 (P)		41					0.17		
	60											
		■	0.5 (P)	0.34t7	55	66	86	22	64	0.27		
	65											
		■	0.25 (P)		48					0.27		
	70											Very soft gray CLAY (CH)
		■	0.25 (P)	0.16t8	41	72	57	19	38	0.31		
	75											Boring completed at 73 ft.
	80											

Ground Water Level Data	Boring Advancement Method	Notes
	4" Dia. Rotary Wash: 2 to 73 ft.	SG: Specific Gravity SG2 = 2.66 t: Unconsolidated, Undrained Triaxial Compression Test t6: Lateral Pressure = 37.8 PSI t7: Lateral Pressure = 44.8 PSI t8: Lateral Pressure = 51.8 PSI
	Boring Abandonment Method	
	Borehole grouted upon completion	Strata Boundaries May Not Be Exact

Barataria Barrier Island
Restoration Complex Project
BA-38 (Chaland Headland)
Plaquemines Parish, LA
DNR Contract No. 2503-02-29

LOG OF SOIL BORING C-10

STE
Soil Testing Engineers, Inc.

Sheet 1 of 1

LELAP Certificate No. 02052

C-K Associates, Inc.
Baton Rouge, LA

File: 03-1114
Date: 09/22/03
Logged by: K. Moody
Driller: Omni
Rig: Airboat

Location: Lat. 29° 18' 48.0"
Long. 89° 46' 47.0"
Surface Elevation: N/A (ft., NGVD)

FIELD DATA				LABORATORY DATA								
Ground Water Level	Depth (feet)	Samples	Field Test Results	Compressive Strength (tsf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL	PL	PI	Mini Vane Shear (ksf) / Other	Soil Type	Description
												Water Mudline at 2.0 ft.
			0.25 (P)	0.08t1	48	69	30	17	13	0.15		Very soft gray SILTY CLAY (CL) w/shells and organic matter
	5		0.25 (P)	0.09t2	41	63				GS		Loose gray CLAYEY SAND (SC)
			0.5 (P)	0.73t3	30	90						Medium gray VERY SILTY CLAY (CL-ML)
			1.0 (P)		38							-- w/shells at 8 to 10 ft.
	10		10 b/f 6-5-5									Firm gray CLAYEY SAND (SC)
	15		No (P)		27							Firm gray SILTY SAND (SM)
	20		1.0 (P)	3.93t4	25	96						-- w/trace of clay at 21 to 23 ft.
	25											Boring completed at 23 ft.
	30											
	35											
	40											

Ground Water Level Data

VS = Vane Shear (ksf)

Deck to Water 2 ft.
Water to Mudline 2 ft.

Boring Advancement Method

4" Dia. Rotary Wash:
2 to 23 ft.

Boring Abandonment Method

Borehole grouted upon completion

Notes

t: Unconsolidated, Undrained Triaxial Compression Test
t1: Lateral Pressure = 3.5 psi
t2: Lateral Pressure = 4.9 psi
t3: Lateral Pressure = 6.3 psi
41: Lateral Pressure = 16.8 psi
GS: Particle Size Analysis
Gravel = <1%, Sand = 53%, Silt = 30%, Clay = 17%

Strata Boundaries May Not Be Exact

Barataria Barrier Island
Restoration Complex Project
BA-38 (Chaland Headland)
Plaquemines Parish, LA
DNR Contract No. 2503-02-29

LOG OF SOIL BORING Q-1

STE
Soil Testing Engineers, Inc.

File: 03-1114
Date: 09/03/03
Logged by: K. Moody
Driller: MASA
Rig: Barge

C-K Associates, Inc.
Baton Rouge, LA

Sheet 1 of 1

LELAP Certificate No. 02052

Location: Lat. 29° 18' 06.2"
Long. 89° 49' 30.8"

Surface Elevation: N/A (ft., NGVD)

FIELD DATA				LABORATORY DATA								
Ground Water Level	Depth (feet)	Samples	Field Test Results	Compressive Strength (tsf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI	Mini Vane Shear (ksf) / Other	Soil Type	Description
												Water
	5											
	10											Mudline at 14.0 ft.
	15				35					GS1		Loose gray SANDY SILT (ML) w/shell fragments
			5 b/f 3-2-3		26							
			10 b/f 3-5-5									Firm gray SANDY SILT (ML) w/shell fragments
	20		23 b/f 8-9-14		30					GS2		
			11 b/f 7-6-5									
	25											
	30		24 b/f 8-10-14		36							
	35		14 b/f 8-5-9									
												Boring completed at 36 ft.
	40											

Ground Water Level Data	Boring Advancement Method	Notes
VS = Vane Shear (ksf) Deck to Water 4 ft. Water to Mudline 14 ft.	4" Dia. Rotary Wash: 4 to 36 ft. **Boring Abandonment Method** Borehole grouted upon completion	GS: Particle Size Analysis GS1: Gravel = 0%, Sand = 46%, Silt = 48%, Clay = 6% GS2: Gravel = 0%, Sand = 44%, Silt = 48%, Clay = 8% Strata Boundaries May Not Be Exact

Barataria Barrier Island
Restoration Complex Project
BA-38 (Chaland Headland)
Plaquemines Parish, LA
DNR Contract No. 2503-02-29

LOG OF SOIL BORING Q-2

STE
Soil Testing Engineers, Inc.

Sheet 1 of 1

LELAP Certificate No. 02052

C-K Associates, Inc.
Baton Rouge, LA

File: 03-1114
Date: 09/03/03
Logged by: K. Moody
Driller: MASA
Rig: Barge

Location: Lat. 29° 17' 45.4"
Long. 89° 49' 32.5"
Surface Elevation: N/A (ft., NGVD)

FIELD DATA				LABORATORY DATA								
Ground Water Level	Depth (feet)	Samples	Field Test Results	Compressive Strength (tsf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI	Mini Vane Shear (ksf) / Other	Soil Type	Description
												Water
	5											
	10											Mudline at 11.0 ft.
		■	0.25 (P) 0.75 (P)	0.15t1	59	62	54	26	28	0.17		Very soft gray CLAY (CH) w/shell fragments
		■	0.25 (P) 1.0 (P)		43							Very soft gray SANDY CLAY (CL) w/shell fragments
	15	X	5 b/f 5-3-2									Loose gray SILTY SAND (SM)
		X	11 b/f 2-3-8		30					GS		Firm gray SILTY SAND (SM) w/trace of clay and shell fragments
	20	X	13 b/f 5-7-6									
	25	X	6 b/f 2-2-4		47		63	23	40			Medium gray CLAY (CH) w/trace of sand
	30	■		0.50t2	33	83				0.21		
	35											Boring completed at 31 ft.
	40											

Ground Water Level Data

VS = Vane Shear (ksf)

Deck to Water 4 ft.
Water to Mudline 11 ft.

Boring Advancement Method

4" Dia. Rotary Wash:
11 to 31 ft.

Boring Abandonment Method

Borehole grouted upon completion

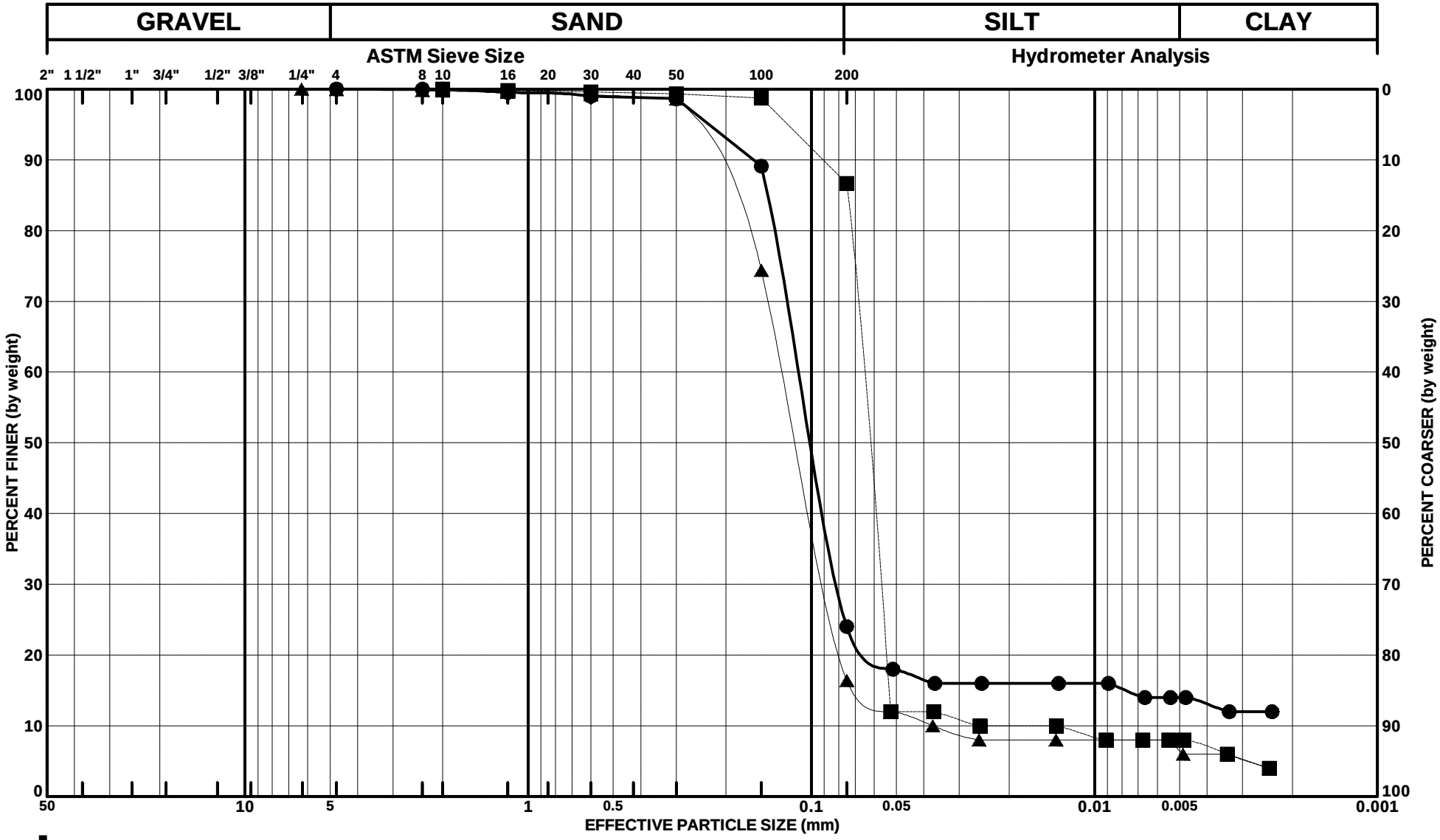
Notes

t: Unconsolidated, Undrained Triaxial Compression Test
t1: Lateral Pressure = 11.2 psi
t2: Lateral Pressure = 23.8 psi
GS: Particle Size Analysis
Gravel = 0%, Sand = 65%, Silt = 25%, Clay = 10%

Strata Boundaries May Not Be Exact

LELAP Certificate No. 02052

Boring No.	Depth (ft.)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
● CS-1	28.5 - 30.0	0.0	76.0	10.1	14.0
■ CS-1	46.0 - 48.0	0.0	13.4	78.6	8.0
▲ CS-1	58.5 - 60.0	0.1	83.5	9.9	6.5



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Soil Testing Engineers, Inc.

Barataria Barrier Island Restoration Complex Project BA-38 (Chaland Headland)

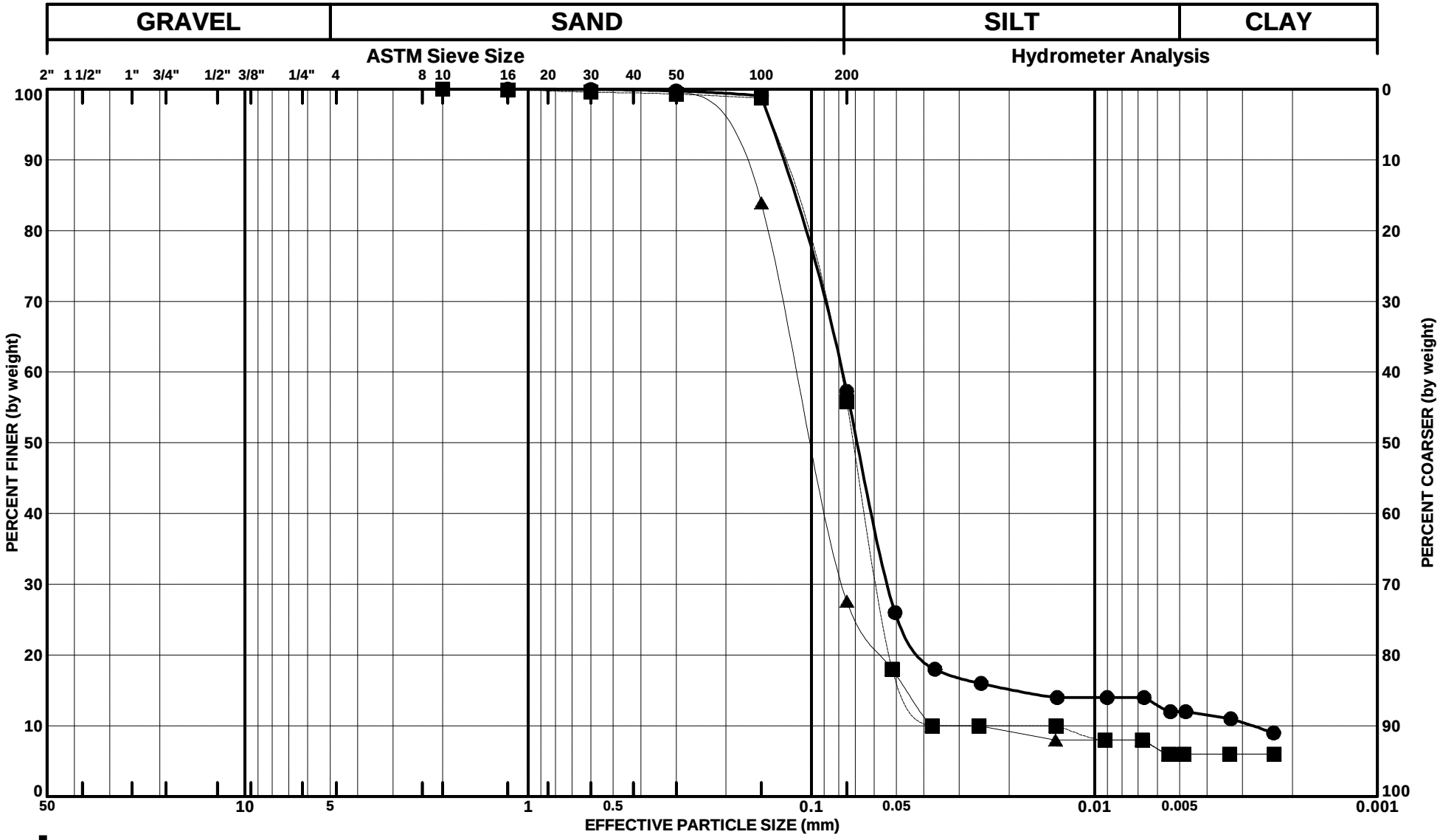
GRAIN SIZE ANALYSIS

File No.: 03-1114
Date: 09/11/2003

GRAINSZ 031114C.GPJ GRAINSZ.GDT 10/29/03

LELAP Certificate No. 02052

Boring No.	Depth (ft.)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
● CS-2	4.0 - 6.0	0.0	42.7	45.3	12.0
■ CS-2	10.0 - 12.0	0.0	44.2	49.8	6.0
▲ CS-2	26.0 - 28.0	0.0	72.4	21.6	6.0



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Soil Testing Engineers, Inc.

Barataria Barrier Island Restoration Complex Project BA-38 (Chaland Headland)

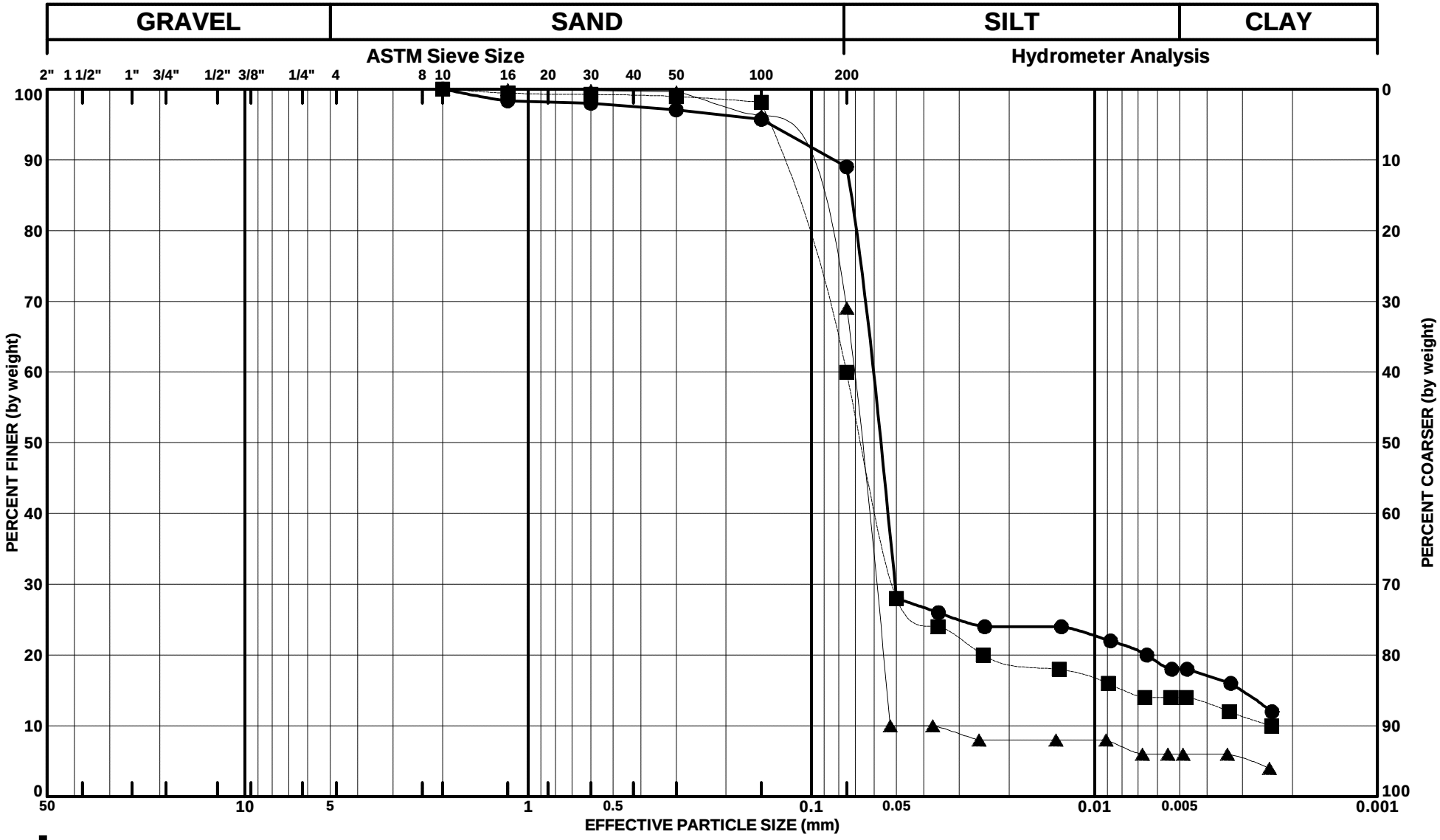
GRAIN SIZE ANALYSIS

File No.: 03-1114
Date: 09/29/2003

GRAINSZ 031114C.GPJ GRAINSZ.GDT 10/29/03

LELAP Certificate No. 02052

Boring No.	Depth (ft.)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
● CS-3	16.0 - 18.0	0.0	11.0	71.0	18.0
■ CS-3	20.0 - 22.0	0.0	40.1	45.9	14.0
▲ CS-3	44.0 - 46.0	0.0	30.9	63.1	6.0



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Soil Testing Engineers, Inc.

Barataria Barrier Island Restoration Complex Project BA-38 (Chaland Headland)

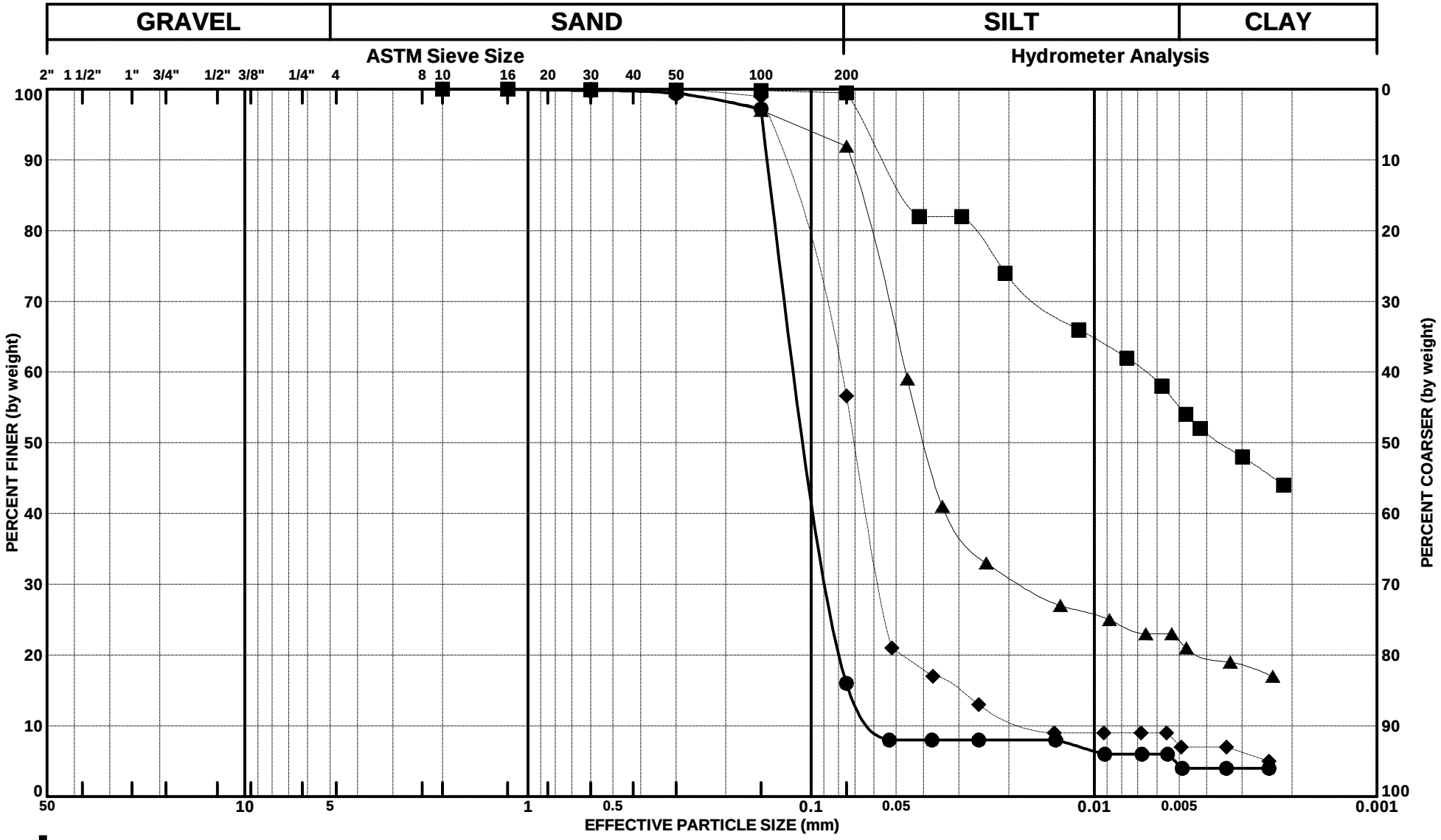
GRAIN SIZE ANALYSIS

File No.: 03-1114
Date: 09/11/2003

GRAINSZ 031114C.GPJ GRAINSZ.GDT 10/29/03

LELAP Certificate No. 02052

Boring No.	Depth (ft.)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
● CS-4	16.0 - 18.0	0.0	84.0	11.6	4.4
■ CS-4	24.5 - 26.0	0.0	0.6	44.3	55.1
▲ CS-4	49.0 - 51.0	0.0	8.1	70.0	21.9
◆ CS-4	54.0 - 56.0	0.0	43.4	49.3	7.3



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Soil Testing Engineers, Inc.

Barataria Barrier Island Restoration Complex Project BA-38 (Chaland Headland)

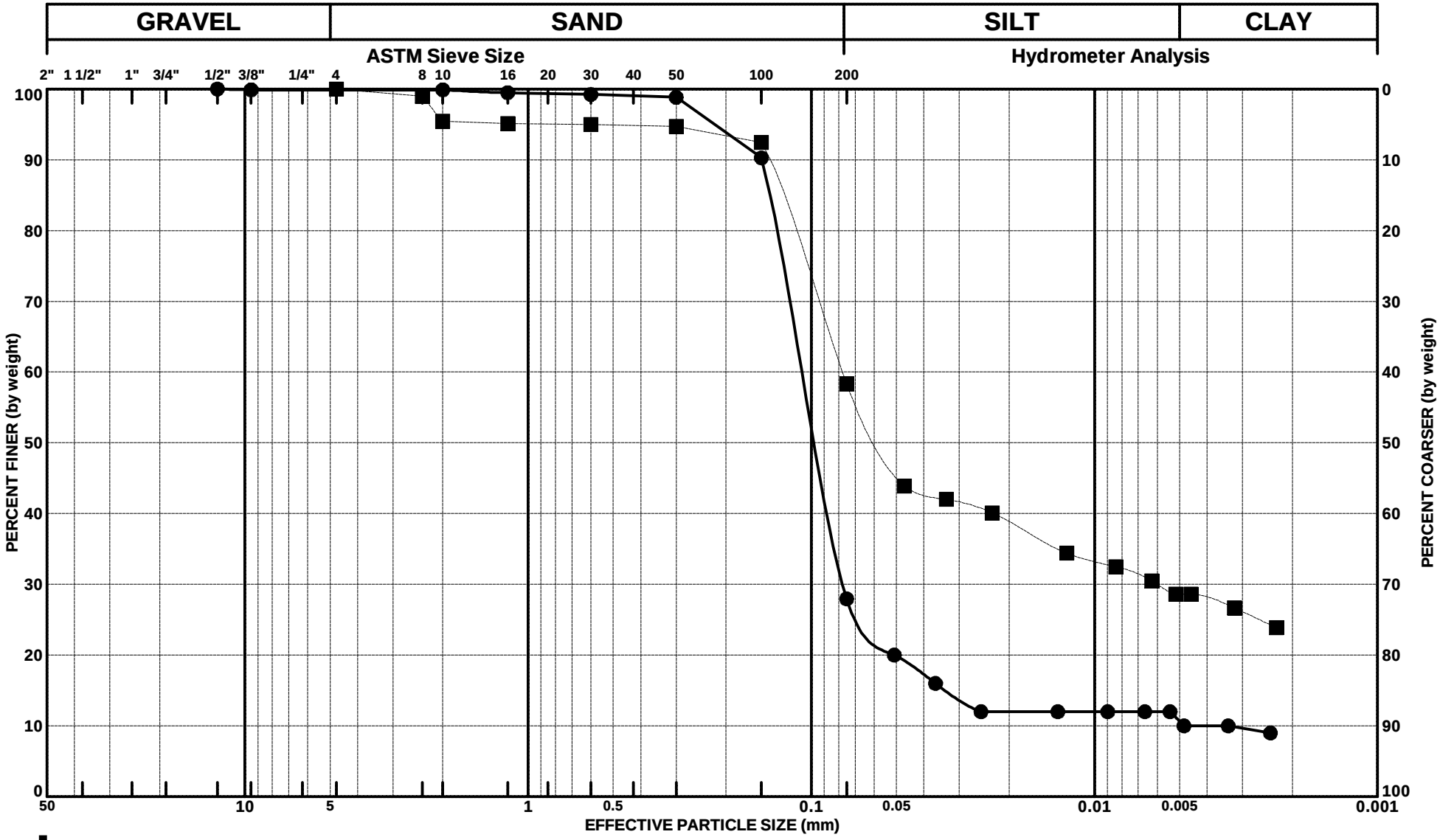
GRAIN SIZE ANALYSIS

File No.: 03-1114
Date: 09/12/2003

GRAINSZ 031114C.GPJ GRAINSZ.GDT 10/29/03

LELAP Certificate No. 02052

Boring No.	Depth (ft.)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
● CF-5	2.0 - 4.0	0.1	71.9	17.3	10.6
■ CF-5	6.0 - 8.0	0.0	41.7	29.7	28.6



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Soil Testing Engineers, Inc.

Barataria Barrier Island Restoration Complex Project BA-38 (Chaland Headland)

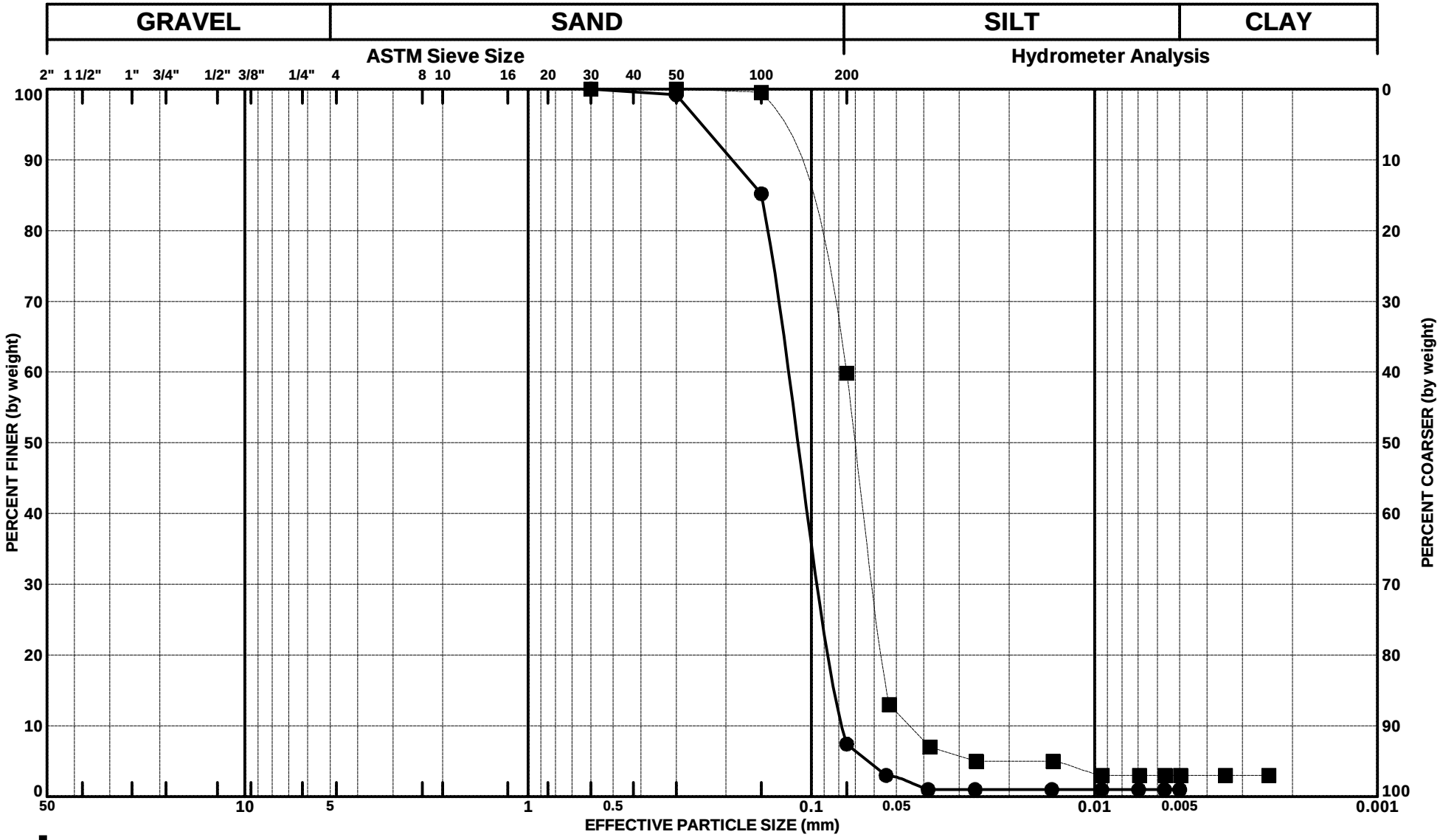
GRAIN SIZE ANALYSIS

File No.: 03-1114
Date: 10/01/2003

GRAINSZ 031114C.GPJ GRAINSZ.GDT 10/29/03

LELAP Certificate No. 02052

Boring No.	Depth (ft.)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
● CF-6	20.0 - 22.0	0.0	92.6	6.4	1.0
■ CF-6	29.5 - 31.0	0.0	40.2	56.8	3.0



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Barataria Barrier Island Restoration Complex Project BA-38 (Chaland Headland)

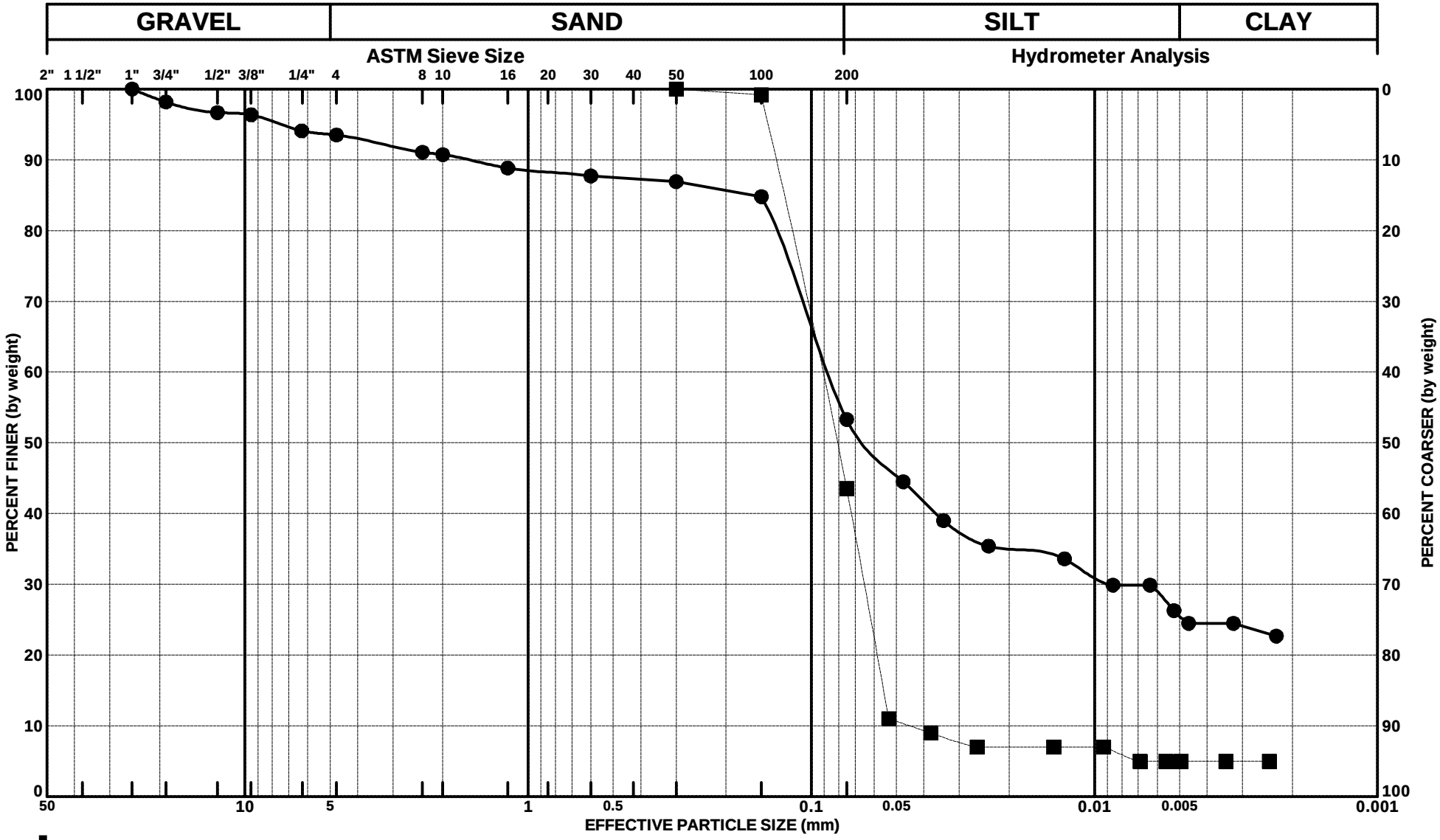
GRAIN SIZE ANALYSIS

File No.: 03-1114
Date: 09/12/2003

GRAINSZ 031114C.GPJ GRAINSZ.GDT 10/29/03

LELAP Certificate No. 02052

Boring No.	Depth (ft.)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
● CF-7	12.0 - 14.0	6.5	40.2	27.7	25.6
■ CF-7	16.0 - 18.0	0.0	56.4	38.6	5.0



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Barataria Barrier Island Restoration Complex Project BA-38 (Chaland Headland)

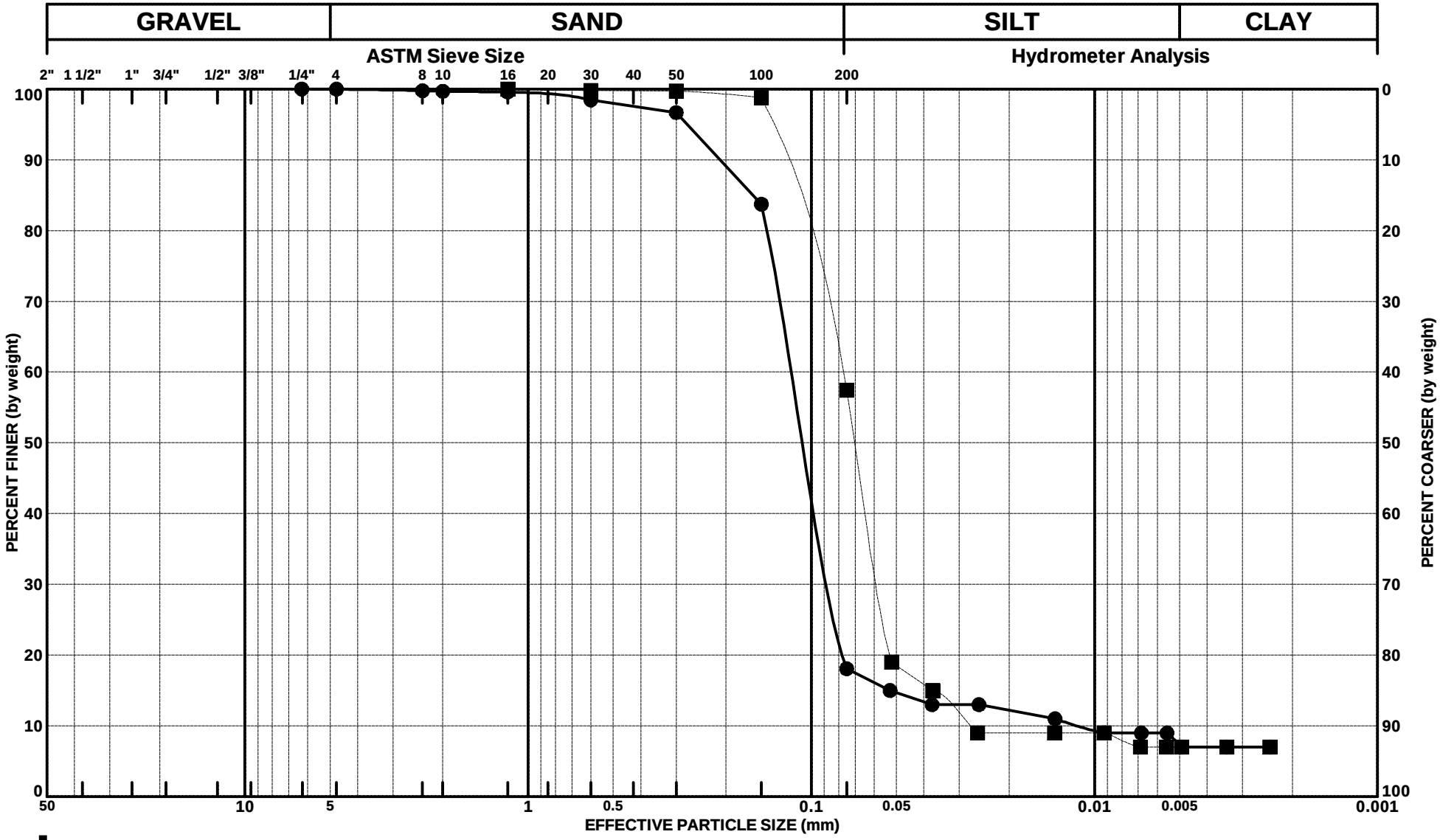
GRAIN SIZE ANALYSIS

File No.: 03-1114
Date: 09/12/2003

GRAINSZ 031114C.GPJ GRAINSZ.GDT 10/29/03

LELAP Certificate No. 02052

Boring No.	Depth (ft.)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
● CF-8	16.0 - 18.0	0.0	81.9	10.8	7.3
■ CF-8	29.5 - 31.0	0.0	42.6	50.4	7.0



ASTM D422

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Soil Testing Engineers, Inc.

Barataria Barrier Island Restoration Complex Project BA-38 (Chaland Headland)

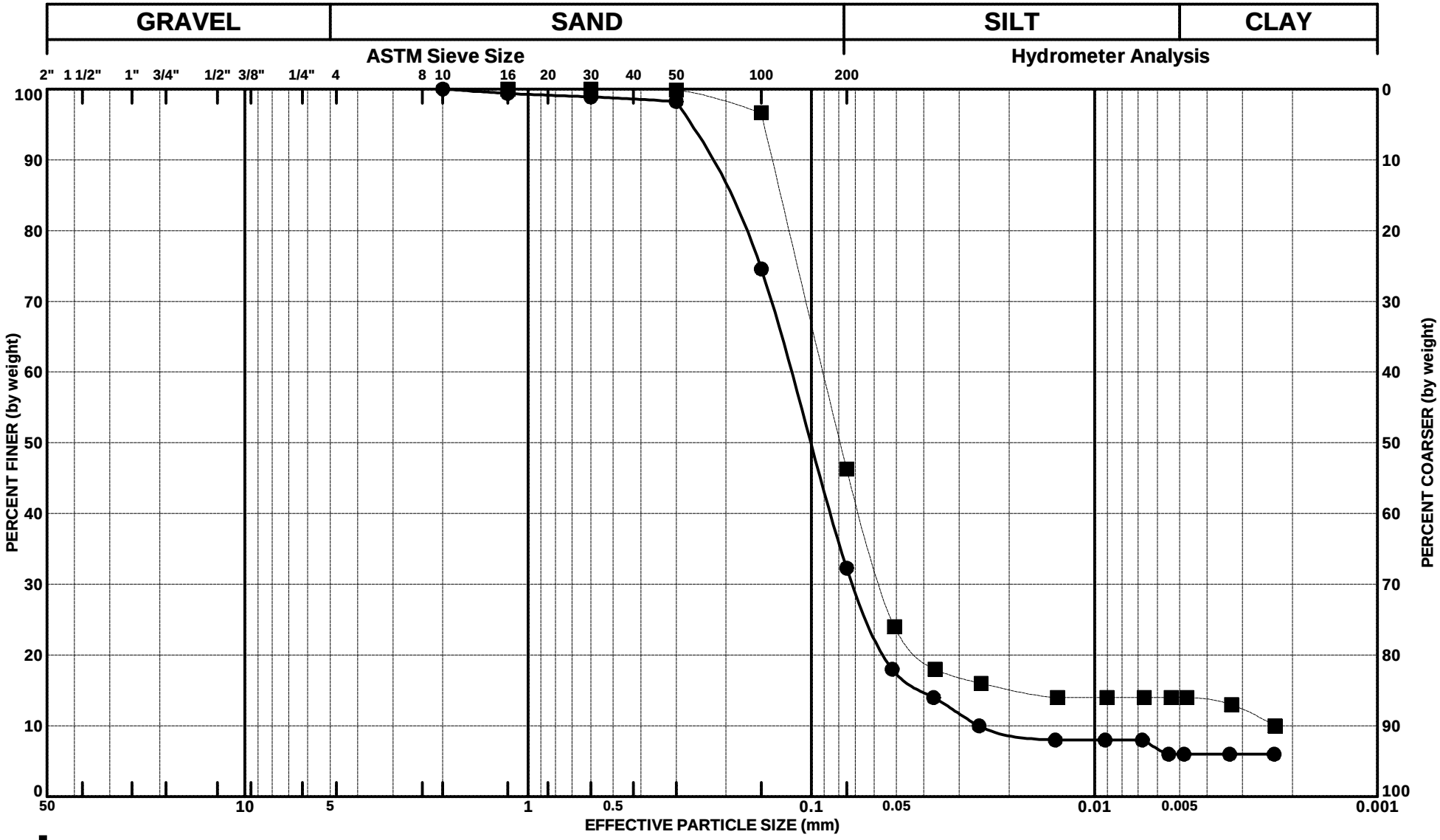
GRAIN SIZE ANALYSIS

File No.: 03-1114
Date: 09/12/2003

GRAINSZ 031114C.GPJ GRAINSZ.GDT 10/29/03

LELAP Certificate No. 02052

Boring No.	Depth (ft.)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
● C-9	4.0 - 6.0	0.0	67.7	26.3	6.0
■ C-9	8.0 - 10.0	0.0	53.7	32.3	14.0



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Barataria Barrier Island Restoration Complex Project BA-38 (Chaland Headland)

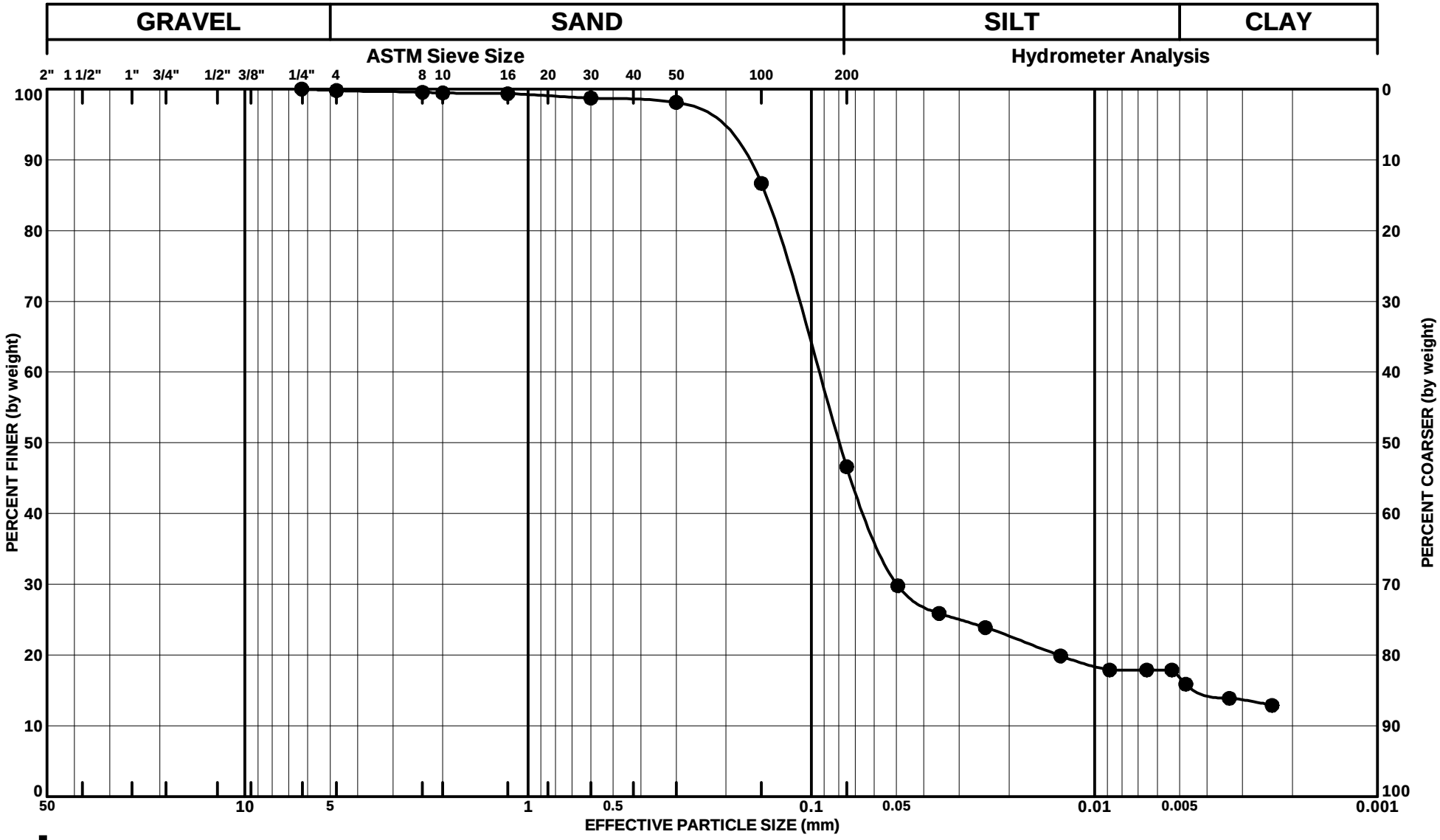
GRAIN SIZE ANALYSIS

File No.: 03-1114
Date: 09/29/2003

GRAINSZ 031114C.GPJ GRAINSZ.GDT 10/29/03

LELAP Certificate No. 02052

Boring No.	Depth (ft.)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
● C-10	4.0 - 6.0	0.2	53.2	29.9	16.8



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Barataria Barrier Island Restoration Complex Project BA-38 (Chaland Headland)

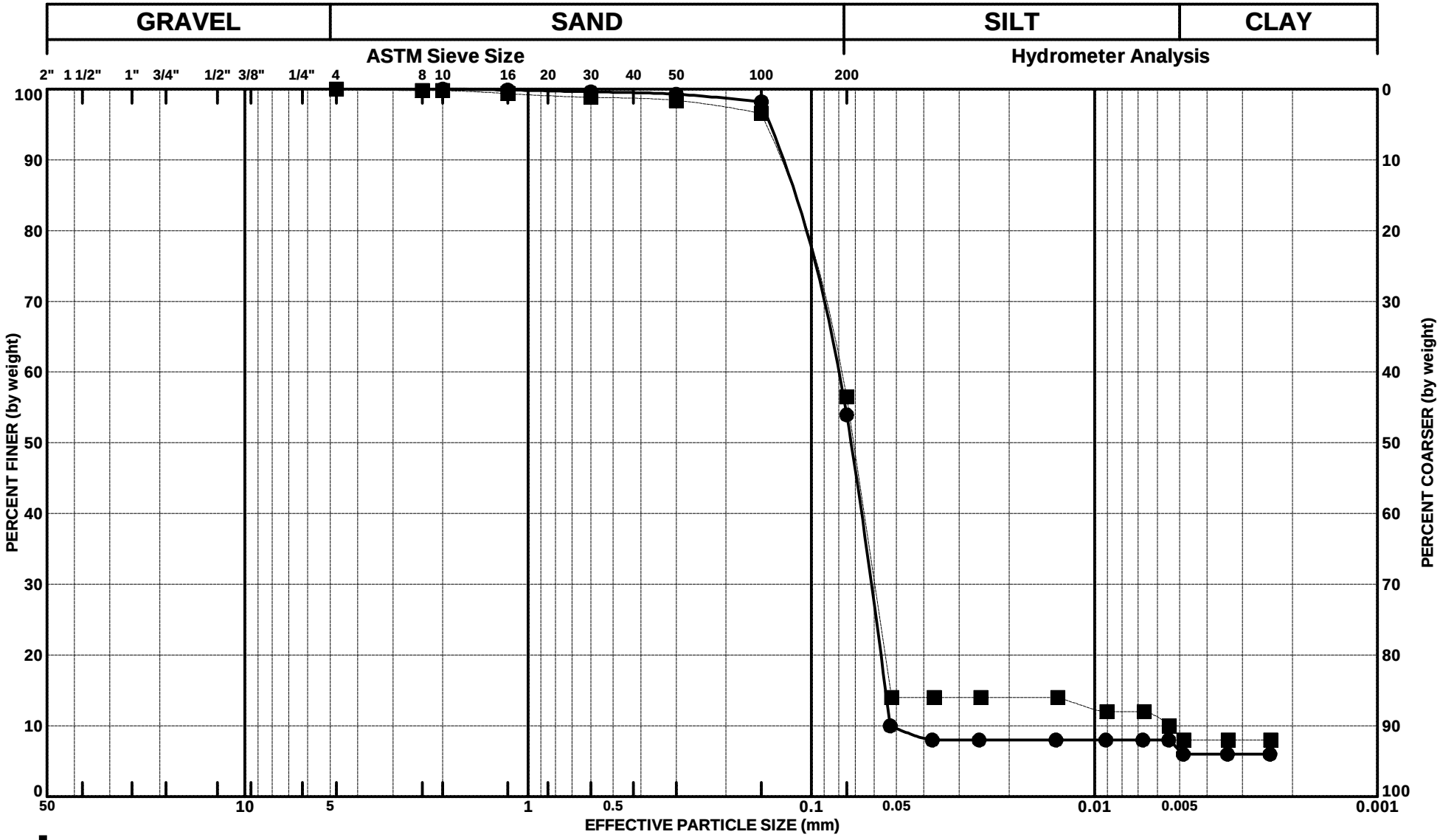
GRAIN SIZE ANALYSIS

File No.: 03-1114
Date: 10/01/2003

GRAINSZ 031114C.GPJ GRAINSZ.GDT 10/29/03

LELAP Certificate No. 02052

Boring No.	Depth (ft.)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
● Q-1	18.0 - 20.0	0.0	46.1	47.5	6.5
■ Q-1	24.5 - 26.0	0.0	43.5	47.9	8.6



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Barataria Barrier Island Restoration Complex Project BA-38 (Chaland Headland)

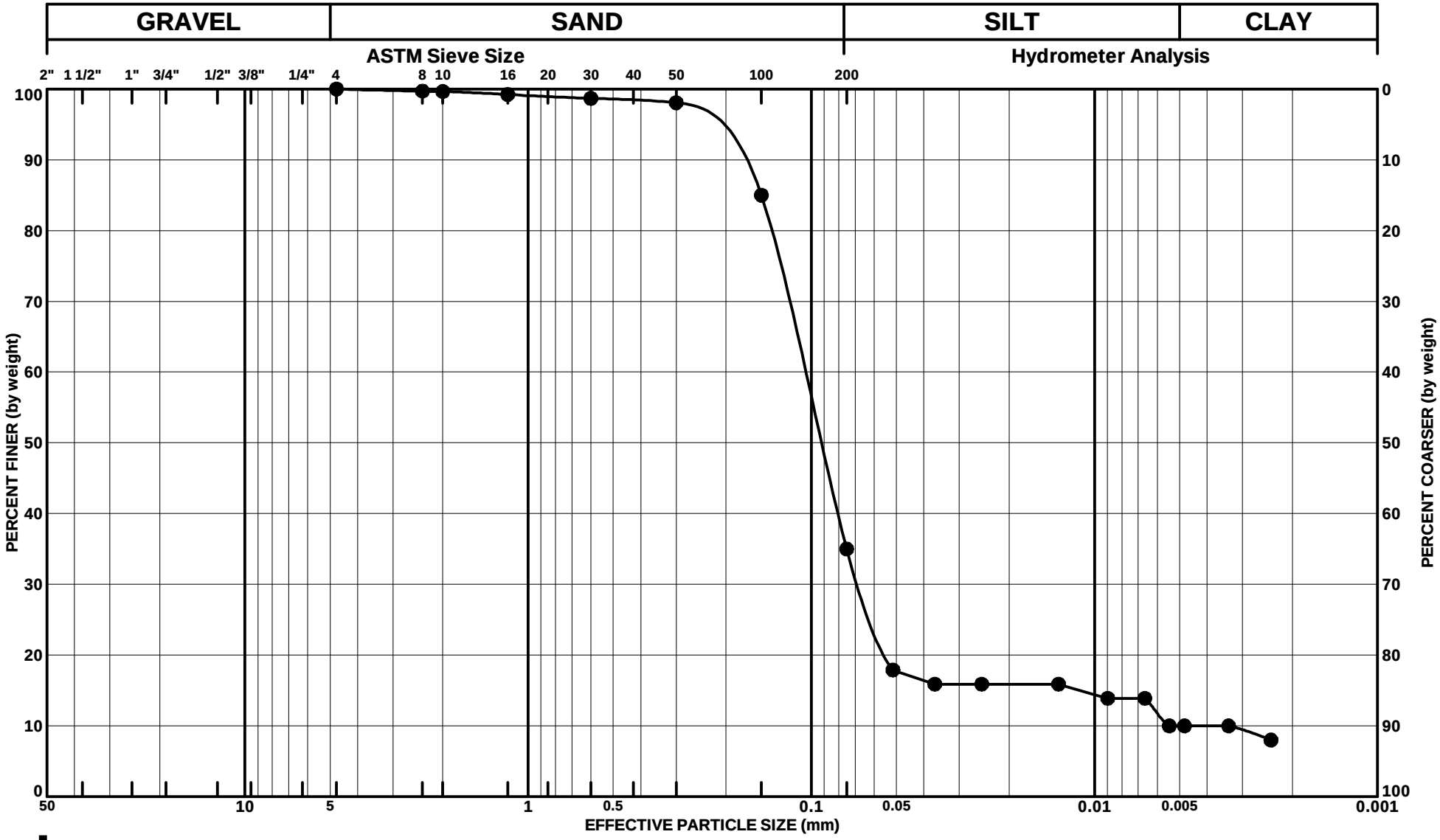
GRAIN SIZE ANALYSIS

File No.: 03-1114
Date: 09/11/2003

GRAINSZ 031114C.GPJ GRAINSZ.GDT 10/29/03

LELAP Certificate No. 02052

Boring No.	Depth (ft.)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
● Q-2	21.5 - 23.0	0.0	65.0	25.0	10.0



ASTM D422

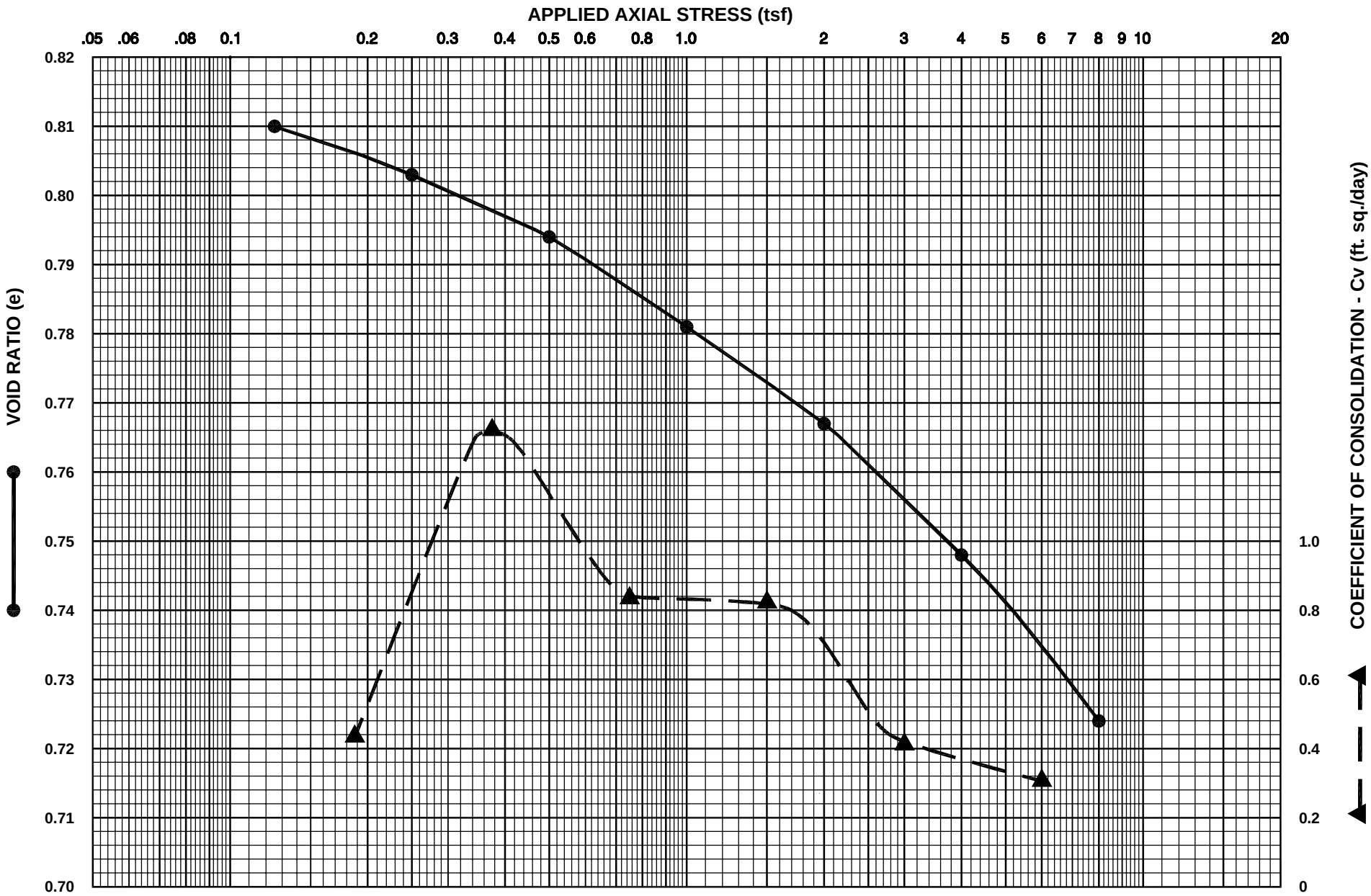
STE
Soil Testing Engineers, Inc.

Barataria Barrier Island Restoration Complex Project BA-38 (Chaland Headland)

GRAIN SIZE ANALYSIS

File No.: 03-1114
Date: 09/11/2003

GRAINSZ 031114C.GPJ GRAINSZ.GDT 10/29/03



CONSOLIDATION TEST

SAMPLE IDENTIFICATION

BORING NO.: CS-1
DEPTH (feet): 36-38
MATERIAL: Gray SANDY SILT

FILE NO.: 03-1114

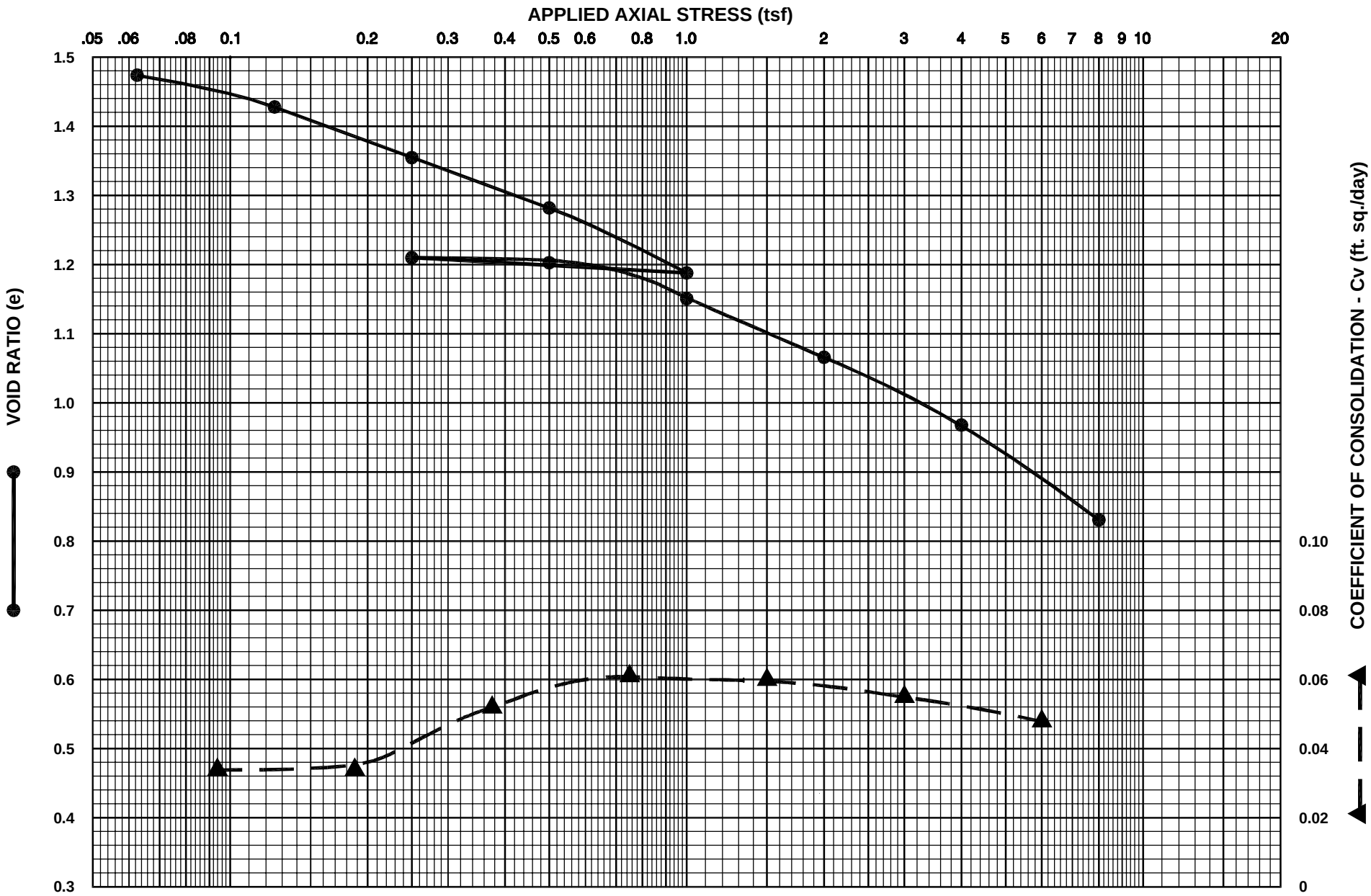
STE
Soil Testing Engineers, Inc.

CLASSIFICATION DATA

INITIAL MOISTURE CONTENT (%) = 30.2
INITIAL DRY DENSITY (lbs./cu.ft.) = 88.7
FINAL MOISTURE CONTENT (%) = 31.9

FIGURE NO.:

Eo = 0.822 Gs = 2.59



CONSOLIDATION TEST

SAMPLE IDENTIFICATION

BORING NO.: CS-2
DEPTH (feet): 16-18
MATERIAL: Gray SILTY CLAY

FILE NO.: 03-1114

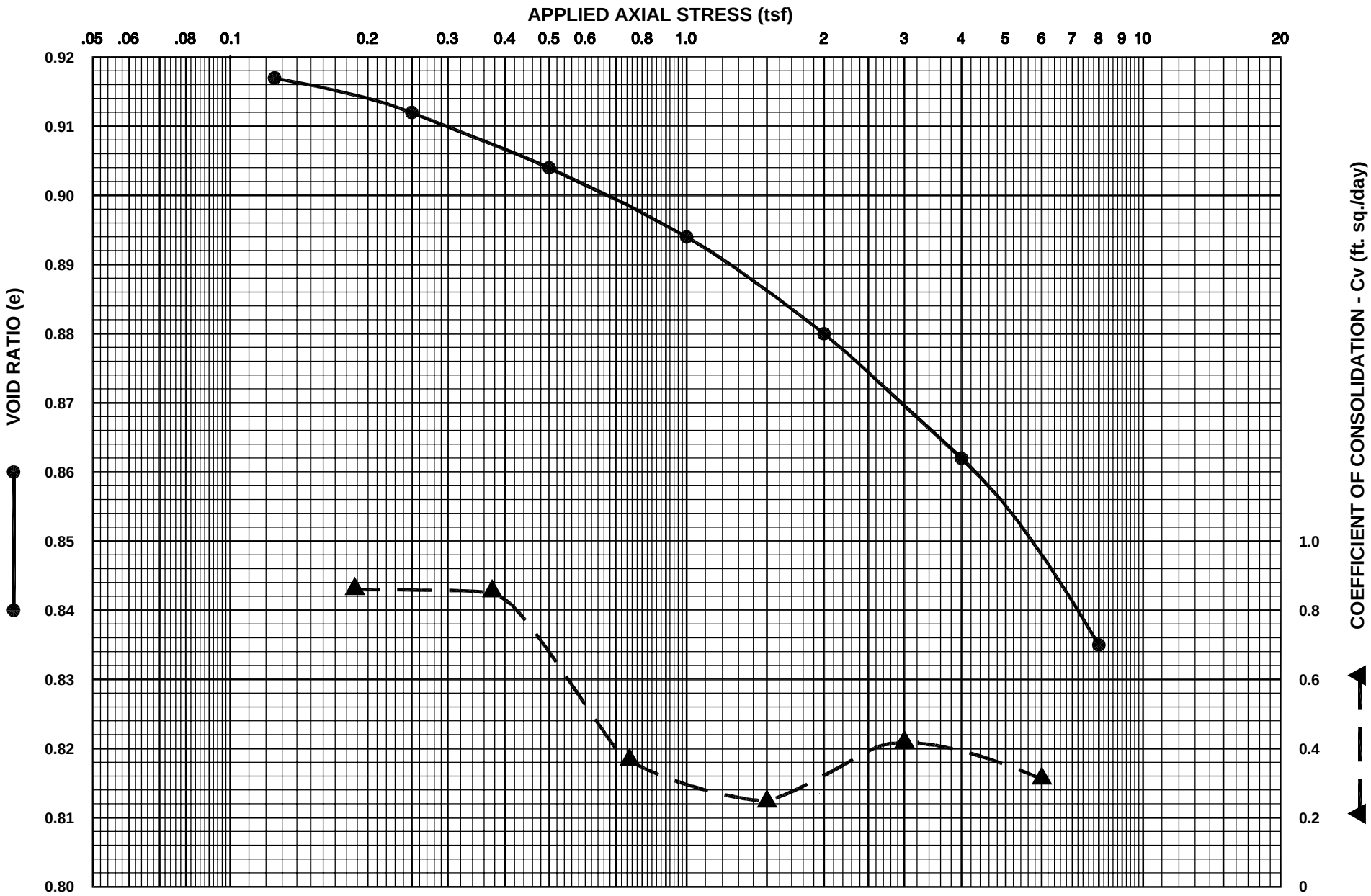
STE
Soil Testing Engineers, Inc.

CLASSIFICATION DATA

INITIAL MOISTURE CONTENT (%) =	51.3	LL = 28
INITIAL DRY DENSITY (lbs./cu.ft.) =	68.0	PL = 17
FINAL MOISTURE CONTENT (%) =	33.9	PI = 11

FIGURE NO.:

Eo = 1.217 Gs = 2.66



CONSOLIDATION TEST

SAMPLE IDENTIFICATION

BORING NO.: CS-3
DEPTH (feet): 10-12
MATERIAL: Gray SILTY SAND w/clay seams
FILE NO.: 03-1114

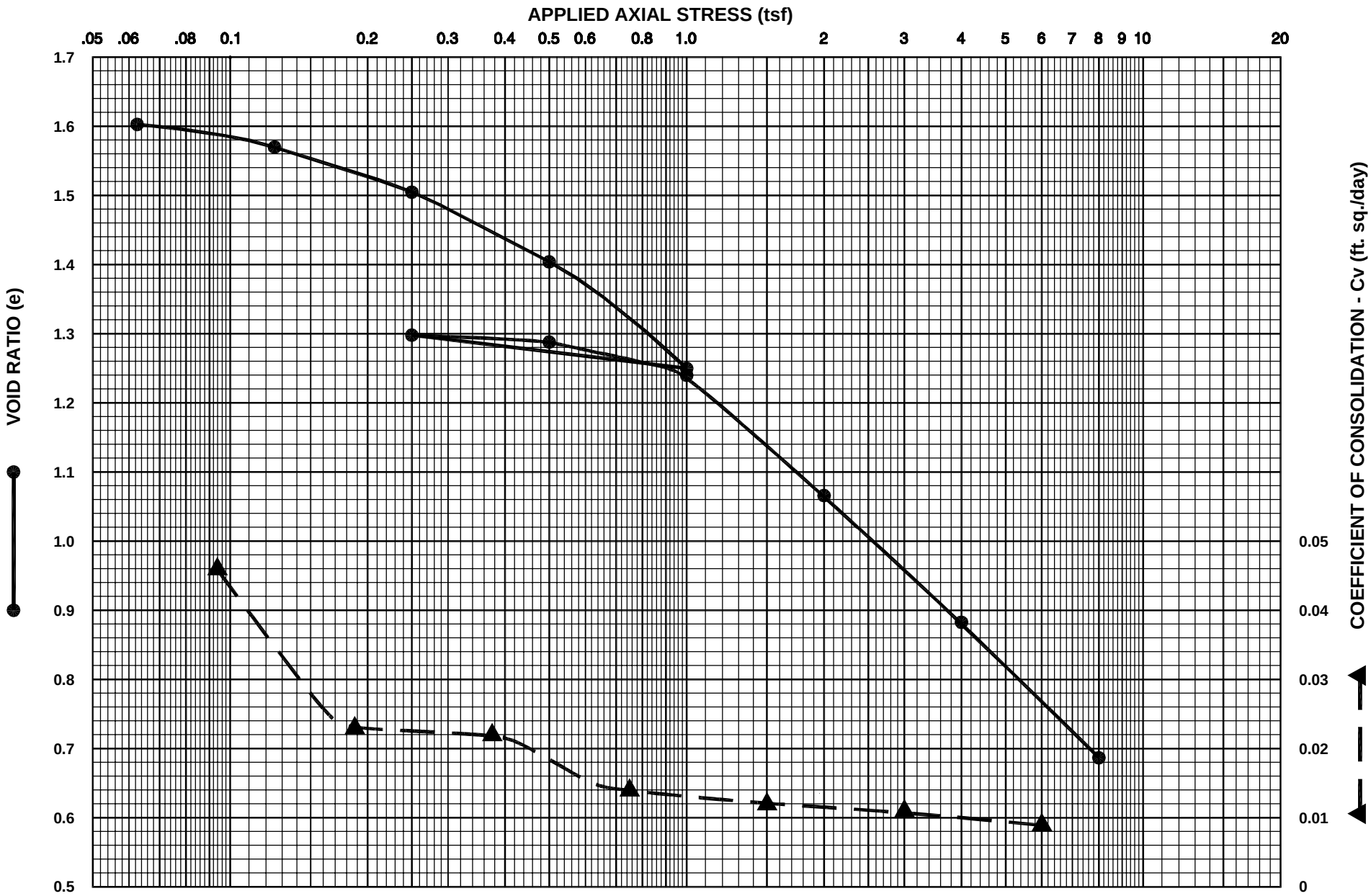
STE
Soil Testing Engineers, Inc.

CLASSIFICATION DATA

INITIAL MOISTURE CONTENT (%) = 37.9
INITIAL DRY DENSITY (lbs./cu.ft.) = 86.1
FINAL MOISTURE CONTENT (%) = 29.8

FIGURE NO.:

Eo = 0.921 Gs = 2.65



CONSOLIDATION TEST

SAMPLE IDENTIFICATION

BORING NO.: CS-4
DEPTH (feet): 29-31
MATERIAL: Gray CLAY

FILE NO.: 03-1114

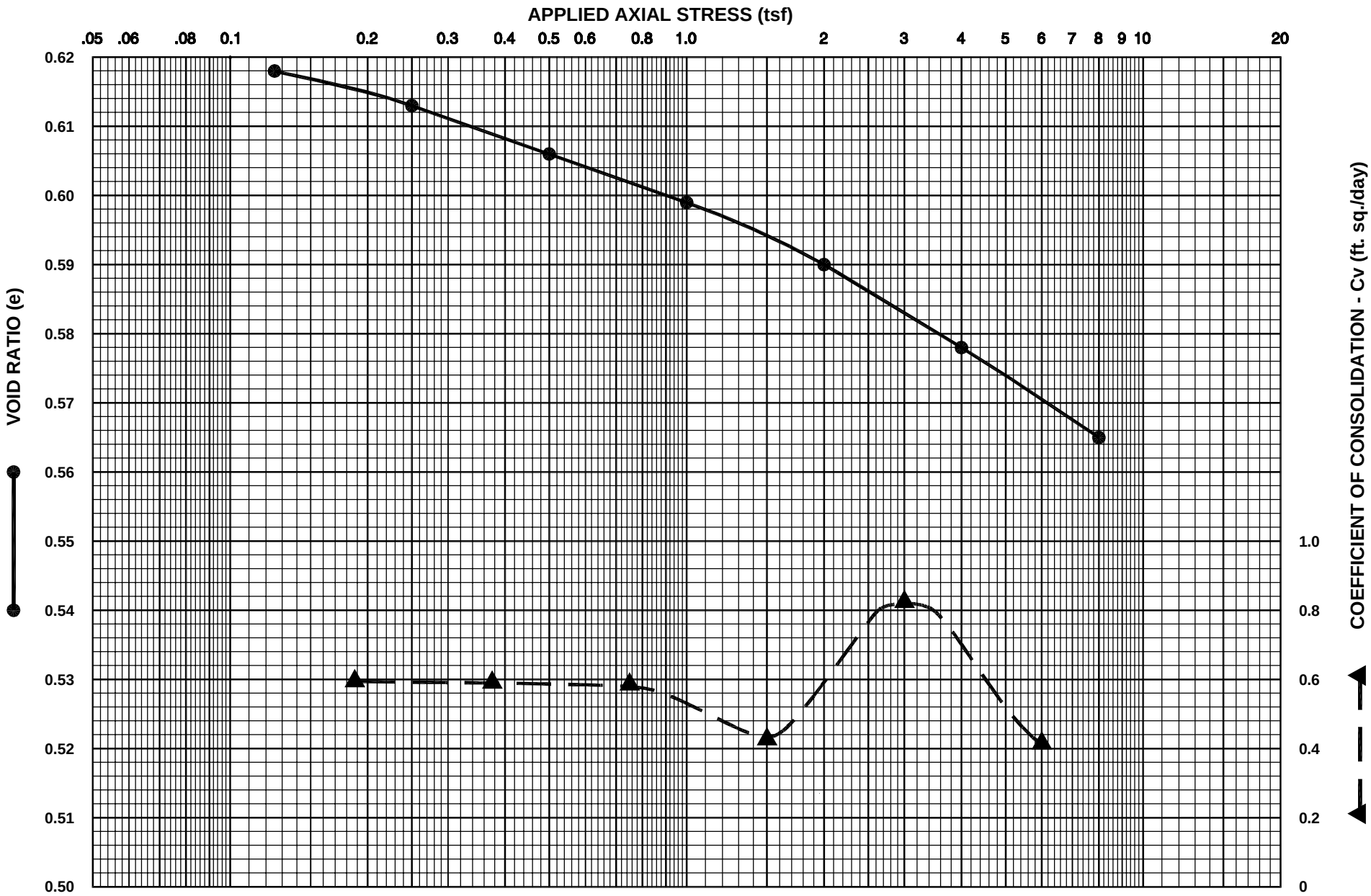
STE
Soil Testing Engineers, Inc.

CLASSIFICATION DATA

INITIAL MOISTURE CONTENT (%) =	53.3	LL = 74
INITIAL DRY DENSITY (lbs./cu.ft.) =	61.8	PL = 26
FINAL MOISTURE CONTENT (%) =	40.9	PI = 48

FIGURE NO.:

Eo = 1.625 Gs = 2.6



CONSOLIDATION TEST

SAMPLE IDENTIFICATION

BORING NO.: CF-7
DEPTH (feet): 8-10
MATERIAL: Gray SILTY SAND

FILE NO.: 03-1114

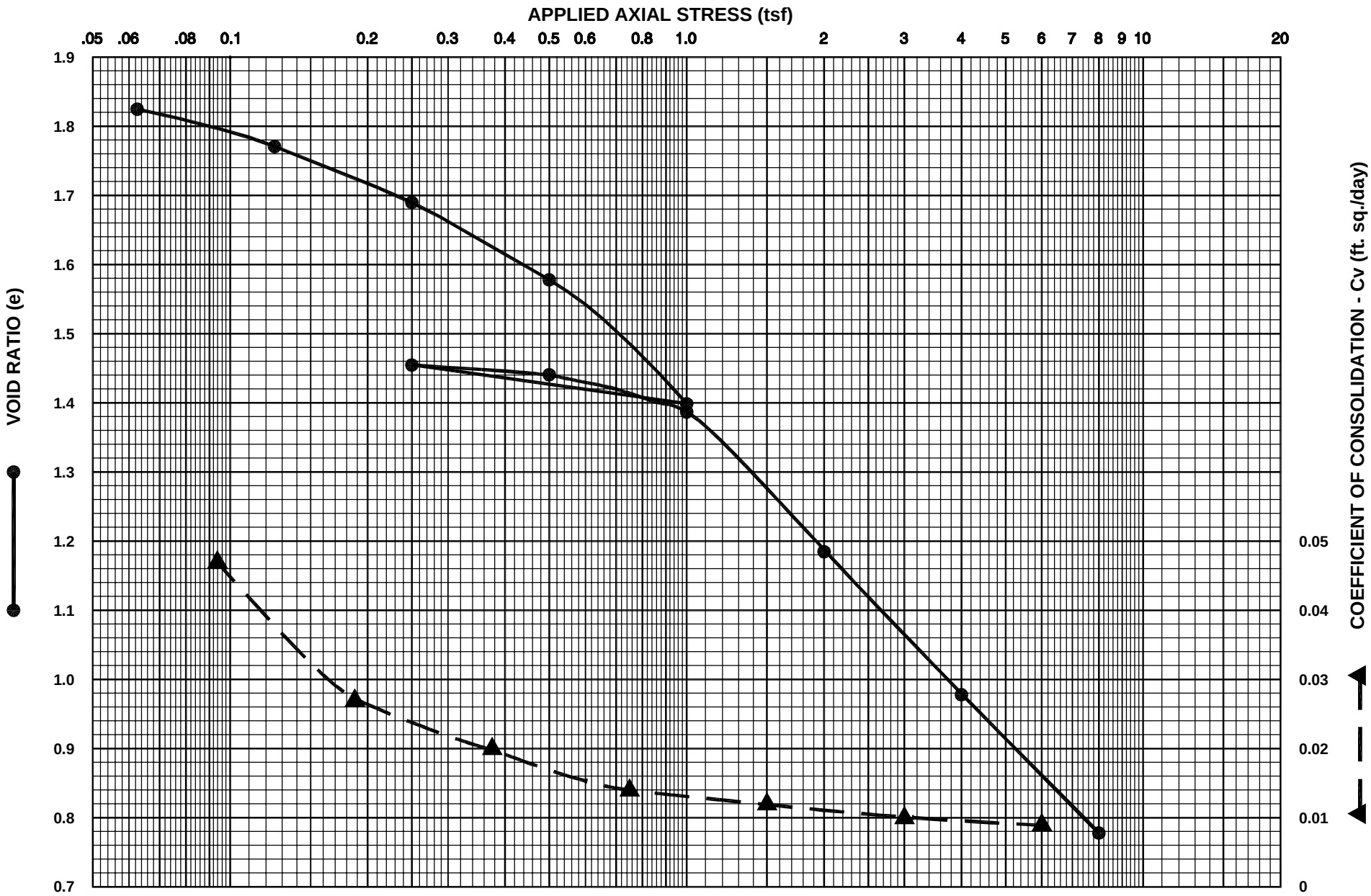
STE
Soil Testing Engineers, Inc.

CLASSIFICATION DATA

INITIAL MOISTURE CONTENT (%) = 24.8
INITIAL DRY DENSITY (lbs./cu.ft.) = 101.4
FINAL MOISTURE CONTENT (%) = 21.8

FIGURE NO.:

Eo = 0.625 Gs = 2.64



CONSOLIDATION TEST

SAMPLE IDENTIFICATION

BORING NO.: CF-7
DEPTH (feet): 19-21
MATERIAL: Gray CLAY w/sand seams
FILE NO.: 03-1114

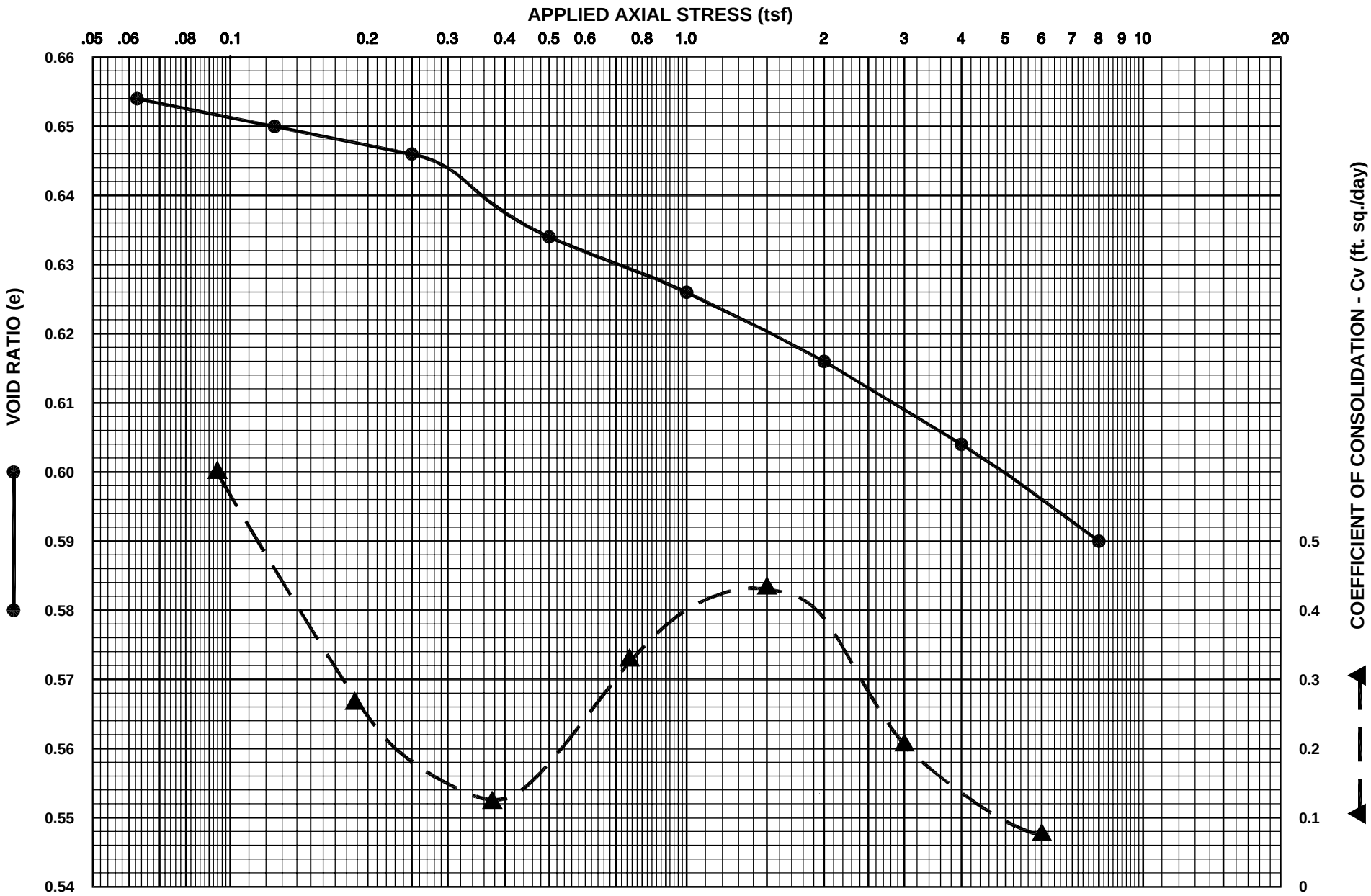
STE
Soil Testing Engineers, Inc.

CLASSIFICATION DATA

INITIAL MOISTURE CONTENT (%) =	63.0	LL = 63
INITIAL DRY DENSITY (lbs./cu.ft.) =	56.7	PL = 26
FINAL MOISTURE CONTENT (%) =	40.9	PI = 37

FIGURE NO.:

Eo = 1.863 Gs = 2.6



CONSOLIDATION TEST

SAMPLE IDENTIFICATION

BORING NO.: C-9
DEPTH (feet): 8-10
MATERIAL: Gray SILTY SAND

FILE NO.: 03-1114

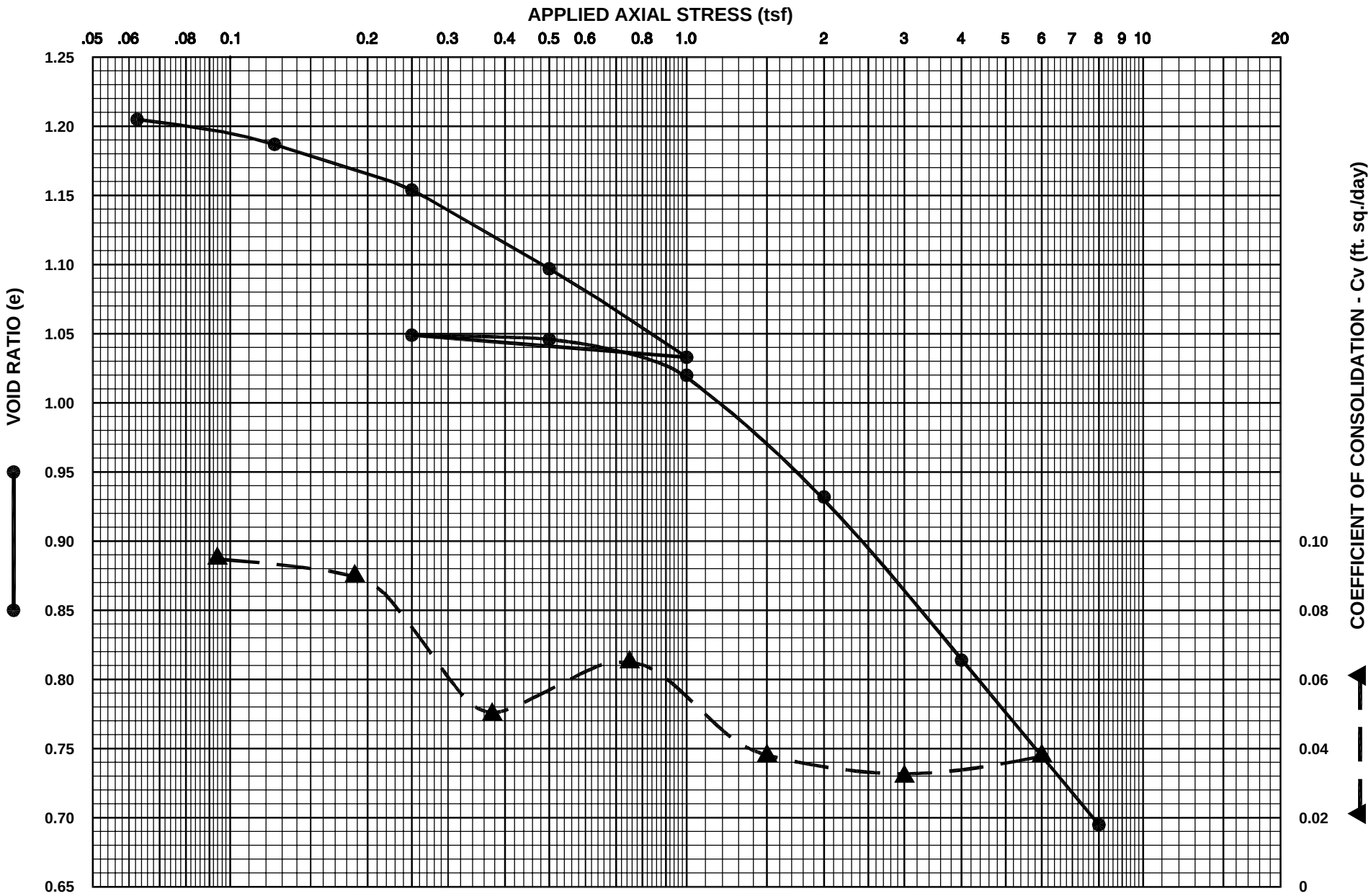
STE
Soil Testing Engineers, Inc.

CLASSIFICATION DATA

INITIAL MOISTURE CONTENT (%) = 23.3
INITIAL DRY DENSITY (lbs./cu.ft.) = 99.4
FINAL MOISTURE CONTENT (%) = 21.6

FIGURE NO.:

Eo = 1.217 Gs = 2.66



CONSOLIDATION TEST

SAMPLE IDENTIFICATION

BORING NO.: C-9
DEPTH (feet): 41-43
MATERIAL: Gray SANDY CLAY

FILE NO.: 03-1114

STE
Soil Testing Engineers, Inc.

CLASSIFICATION DATA

INITIAL MOISTURE CONTENT (%) =	44.0	LL = 54
INITIAL DRY DENSITY (lbs./cu.ft.) =	74.9	PL = 18
FINAL MOISTURE CONTENT (%) =	31.9	PI = 36

FIGURE NO.:

Eo = 1.217 Gs = 2.66

Barataria Barrier Island Restoration Complex Project
BA-38 (Pelican Headland)
Plaquemines Parish, LA
DNR Contract No. 2503-02-29

LOG OF SOIL BORING PS-1

STE
Soil Testing Engineers, Inc.

File: 03-1114
Date: 09/24/03
Logged by: K. Moody
Driller: oMNI
Rig: Airboat

C-K Associates, Inc.
Baton Rouge, LA

Sheet 1 of 2

LELAP Certificate No. 02052

Location: Lat. 29° 15' 26.3"
Long. 89° 36' 10.9"

Surface Elevation: N/A (ft., NGVD)

FIELD DATA				LABORATORY DATA								
Ground Water Level	Depth (feet)	Samples	Field Test Results	Compressive Strength (tsf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI	Mini Vane Shear (ksf) / Other	Soil Type	Description
												Water
												Mudline at 3.0 ft.
			0.25 (P)		137		149	31	118	0.19		Very soft gray ORGANIC CLAY (OH)
	5		0.5 (P)	0.10t1	127	41	63	19	44	0.15 CS,SG		-- w/peat and vertical sand seams at 5 to 7 ft.
			0.25 (P)							0.15		
	10		0.25 (P)	0.08t2	103	41	138	33	105			-- w/sand seams at 9 to 11 ft.
			0.25 (P)									
	15											Very soft gray CLAY (CH)
			0.25 (P)							0.13		
	20											
			0.25 (P)	0.10t3	60	61	65	29	36	0.19		
	25											
			0.25 (P)							0.19		
	30											
			0.25 (P)	0.18t4	62	68				0.21		
	35											
			0.25 (P)							0.21		
	40											

Continued Next Page

Ground Water Level Data

VS = Vane Shear (ksf)

Deck to Water 2 ft.
Water to Mudline 3 ft.

Boring Advancement Method

4" Dia. Rotary Wash:
3 to 43 ft.

Boring Abandonment Method

Borehole grouted upon completion

Notes

t: Unconsolidated, Undrained Triaxial Compression Test
t1: Lateral Pressure = 5.6 psi
t2: Lateral Pressure = 8.4 psi
t3: Lateral Pressure = 16.8 psi
t4: Lateral Pressure = 23.8 psi
CS: See Consolidation Curve
SG: Specific Gravity = 2.55

Strata Boundaries May Not Be Exact

Barataria Barrier Island Restoration Complex Project
BA-38 (Pelican Headland)
Plaquemines Parish, LA
DNR Contract No. 2503-02-29

LOG OF SOIL BORING PS-1

STE
Soil Testing Engineers, Inc.

File: 03-1114
Date: 09/24/03
Logged by: K. Moody
Driller: oMNI
Rig: Airboat

C-K Associates, Inc.
Baton Rouge, LA

LELAP Certificate No. 02052

Location: Lat. 29° 15' 26.3"
Long. 89° 36' 10.9"

Surface Elevation: N/A (ft., NGVD)

FIELD DATA				LABORATORY DATA								
Ground Water Level	Depth (feet)	Samples	Field Test Results	Compressive Strength (tsf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI	Mini Vane Shear (ksf) / Other	Soil Type	Description
			0.25 (P)	0.17t5	64	61				0.19		Very soft gray CLAY (CH)
	45											Boring completed at 43 ft.
	50											
	55											
	60											
	65											
	70											
	75											
	80											

Ground Water Level Data	Boring Advancement Method	Notes
	4" Dia. Rotary Wash: 3 to 43 ft.	t: Unconsolidated, Undrained Triaxial Compression Test t5: Lateral Pressure = 30.8 psi
	Boring Abandonment Method Borehole grouted upon completion	

Strata Boundaries May Not Be Exact

Barataria Barrier Island
Restoration Complex Project
BA-38 (Pelican Headland)
Plaquemines Parish, LA
DNR Contract No. 2503-02-29

C-K Associates, Inc.
Baton Rouge, LA

LOG OF SOIL BORING PS-2

STE
Soil Testing Engineers, Inc.

Sheet 1 of 2

LELAP Certificate No. 02052

File: 03-1114
Date: 09/26/03
Logged by: K. Moody
Driller: Omni
Rig: Airboat

Location: Lat. 29° 15' 00.7"
Long. 89° 34' 59.5"
Surface Elevation: N/A (ft., NGVD)

FIELD DATA				LABORATORY DATA								
Ground Water Level	Depth (feet)	Samples	Field Test Results	Compressive Strength (tsf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL	PL	PI	Mini Vane Shear (ksf) / Other	Soil Type	Description
												Water Mudline at 2.0 ft.
			0.25 (P)							0.14		Very soft dark gray ORGANIC CLAY (OH) -- w/peat and shells at 2 to 4 ft.
	5		0.25 (P)	0.07t1	129	36	128	30	98			
			0.25 (P)							0.11		
			0.25 (P)	0.09t2	93	43	156	46	110	0.31		-- w/peat layer at 9 ft.
	10		0.0 (P)							0.11		
	15		0.0 (P)	0.08t3	102	44				0.13		
	20		0.0 (P)	0.10t4	61	63				0.10		Very soft gray CLAY (CH) w/1-inch silt and sand layers
	25		0.5 (P)		38		33	19	14	0.19 CS,SG		Loose gray CLAYEY SILT (ML)
	30		0.5 (P)							0.21		Very soft gray CLAY (CH) -- w/silt seams at 31 to 33 ft.
	35		0.25 (P)	0.14t5	65	58				0.19		
	40											

Continued Next Page

Ground Water Level Data

VS = Vane Shear (ksf)

Deck to Water 2 ft.
Water to Mudline 2 ft.

Boring Advancement Method

4" Dia. Rotary Wash:
2 to 43 ft.

Boring Abandonment Method

Borehole grouted upon completion

Notes

t: Unconsolidated, Undrained Triaxial Compression Test
t1: Lateral Pressure = 4.9 psi
t2: Lateral Pressure = 7.7 psi
t3: Lateral Pressure = 13.8 psi
t4: Lateral Pressure = 16.8 psi
t5: Lateral Pressure = 27.3 psi
CS: See Consolidation Curve
SG: Specific Gravity = 2.67

Strata Boundaries May Not Be Exact

Barataria Barrier Island
Restoration Complex Project
BA-38 (Pelican Headland)
Plaquemines Parish, LA
DNR Contract No. 2503-02-29

LOG OF SOIL BORING PS-2

STE
Soil Testing Engineers, Inc.

Sheet 2 of 2

File: 03-1114
Date: 09/26/03
Logged by: K. Moody
Driller: Omni
Rig: Airboat

C-K Associates, Inc.
Baton Rouge, LA

LELAP Certificate No. 02052

Location: Lat. 29° 15' 00.7"
Long. 89° 34' 59.5"

Surface Elevation: N/A (ft., NGVD)

FIELD DATA				LABORATORY DATA								
Ground Water Level	Depth (feet)	Samples	Field Test Results	Compressive Strength (tsf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI	Mini Vane Shear (ksf) / Other	Soil Type	Description
			0.0 (P)		113					0.06		Very soft gray ORGANIC CLAY (OH) w/peat
	45											Boring completed at 43 ft.
	50											
	55											
	60											
	65											
	70											
	75											
	80											

Ground Water Level Data	Boring Advancement Method	Notes
	4" Dia. Rotary Wash: 2 to 43 ft.	
	Boring Abandonment Method Borehole grouted upon completion	

Strata Boundaries May Not Be Exact

Barataria Barrier Island Restoration Complex Project
BA-38 (Pelican Headland)
Plaquemines Parish, LA
DNR Contract No. 2503-02-29

LOG OF SOIL BORING PS-3

STE
Soil Testing Engineers, Inc.

File: 03-1114
Date: 09/10/03
Logged by: K. Moody
Driller: MASA
Rig: Barge

C-K Associates, Inc.
Baton Rouge, LA

Sheet 1 of 2

LELAP Certificate No. 02052

Location: Lat. 29° 14' 59.3"
Long. 89° 33' 59.1"

Surface Elevation: N/A (ft., NGVD)

FIELD DATA				LABORATORY DATA								
Ground Water Level	Depth (feet)	Samples	Field Test Results	Compressive Strength (tsf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI	Mini Vane Shear (ksf) / Other	Soil Type	Description
												Water
	5											
	10											Mudline at 10.0 ft.
			0.0 (P)	0.08t1	128	36	107	30	77	0.06		Very soft dark gray ORGANIC CLAY (OH) w/peat, roots, and shell pockets
			0.0 (P)	0.11t2	138	33	166	40	126	0.08		
	15		0.0 (P)	0.12t3	138	33	149	40	109	0.10		
			0.0 (P)	0.19t4	198	25	214	43	171	0.18		
	20		0.0 (P) VS									
	25		No (P)		61		71	24	47	0.02 SG1,CS		Very soft gray CLAY (CH) w/trace of organic matter
	30		No (P)		30							Loose gray CLAYEY SILT (ML)
	35		0.5 (P)	1.96t5	27	92				0.38		Firm gray CLAYEY SAND (SC)
	40											Loose gray CLAYEY SAND (SC)

Continued Next Page

Ground Water Level Data

VS = Vane Shear (ksf)

Deck to Water 4 ft.
Water to Mudline 10 ft.

Boring Advancement Method

4" Dia. Rotary Wash:
10 to 61 ft.

Boring Abandonment Method

Borehole grouted upon completion

Notes

t: Unconsolidated, Undrained Triaxial Compression Test
t1: Lateral Pressure = 10.5 psi
t2: Lateral Pressure = 11.9 psi
t3: Lateral Pressure = 13.3 psi
t4: Lateral Pressure = 14.7 psi
t5: Lateral Pressure = 27.3 psi
SG: Specific Gravity
SG1 = 2.71
CS: See Consolidation Curve
WOH: Weight of Hammer

Strata Boundaries May Not Be Exact

Barataria Barrier Island
Restoration Complex Project
BA-38 (Pelican Headland)
Plaquemines Parish, LA
DNR Contract No. 2503-02-29

C-K Associates, Inc.
Baton Rouge, LA

LOG OF SOIL BORING PS-3

STE
Soil Testing Engineers, Inc.

Sheet 2 of 2

LELAP Certificate No. 02052

File: 03-1114
Date: 09/10/03
Logged by: K. Moody
Driller: MASA
Rig: Barge

Location: Lat. 29° 14' 59.3"
Long. 89° 33' 59.1"
Surface Elevation: N/A (ft., NGVD)

FIELD DATA				LABORATORY DATA								
Ground Water Level	Depth (feet)	Samples	Field Test Results	Compressive Strength (tsf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI	Mini Vane Shear (ksf) / Other	Soil Type	Description
			9 b/f 3-3-6		27							Loose gray CLAYEY SAND (SC)
	45		2 b/f 1-1-1		28							-- very loose below 44 ft.
	50		0.5 (P)	0.19t6	39	77	49	21	28	0.36		Very soft gray SLIGHTLY SILTY CLAY (CL-CH)
	55		4 b/f 1-2-2		62							Soft gray CLAY (CH)
	60				54		73	25	48	SG2		
												Boring completed at 61 ft.
	65											
	70											
	75											
	80											

Ground Water Level Data	Boring Advancement Method	Notes
	4" Dia. Rotary Wash: 10 to 61 ft.	t: Unconsolidated, Undrained Triaxial Compression Test t6: Lateral Pressure = 37.8 psi SG: Specific Gravity SG2 = 2.75
	Boring Abandonment Method	
	Borehole grouted upon completion	Strata Boundaries May Not Be Exact

Barataria Barrier Island
Restoration Complex Project
BA-38 (Pelican Headland)
Plaquemines Parish, LA
DNR Contract No. 2503-02-29

C-K Associates, Inc.
Baton Rouge, LA

LOG OF SOIL BORING PF-4

STE
Soil Testing Engineers, Inc.

Sheet 1 of 1

LELAP Certificate No. 02052

File: 03-1114
Date: 09/09/03
Logged by: K. Moody
Driller: MASA
Rig: Barge

Location: Lat. 29° 14' 48.6"
Long. 89° 33' 53.9"
Surface Elevation: N/A (ft., NGVD)

FIELD DATA				LABORATORY DATA								
Ground Water Level	Depth (feet)	Samples	Field Test Results	Compressive Strength (tsf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL	PL	PI	Mini Vane Shear (ksf) / Other	Soil Type	Description
												Water
	5											
	10											Mudline at 14.0 ft.
	15	■	0.5 (P)	0.26t1	98	44	123	41	82	0.20		Soft gray ORGANIC CLAY (OH) w/wood and roots
		■	0.75 (P)		89					0.35		
		■	0.25 (P)	0.21t2	90	48	114	34	80	0.14 SG,CS		Very soft gray ORGANIC CLAY (OH) -- w/roots at 18 to 20 ft.
	20	■	0.25 (P)		85					0.26		-- w/sand pockets and shells at 20 to 22 ft.
		■	0.5 (P)	0.16t3	102	44	115	32	83	0.67		-- w/wood and shells at 22 to 24 ft.
	25											
	30	■	0.5 (P)	0.18t4	102	44				0.52		-- w/wood at 29 to 31 ft.
	35	■	0.75 (P)		98		126	31	95	0.25		
		■			30							Firm gray SILTY SAND (SM)
												Boring completed at 36 ft.
	40											

Ground Water Level Data

VS = Vane Shear (ksf)

Deck to Water 4 ft.
Water to Mudline 14 ft.

Boring Advancement Method

4" Dia. Rotary Wash:
14 to 36 ft.

Boring Abandonment Method

Borehole grouted upon completion

Notes

t: Unconsolidated, Undrained Triaxial Compression Test
t1: Lateral Pressure = 13.3 psi
t2: Lateral Pressure = 16.1 psi
t3: Lateral Pressure = 18.9 psi
t4: Lateral Pressure = 23.8 psi
SG: Specific Gravity = 2.71
CS: See Consolidation Curve

Strata Boundaries May Not Be Exact

Barataria Barrier Island Restoration Complex Project
BA-38 (Pelican Headland)
Plaquemines Parish, LA
DNR Contract No. 2503-02-29

LOG OF SOIL BORING PF-5

STE
Soil Testing Engineers, Inc.

File: 03-1114
Date: 09/25/03
Logged by: K. Moody
Driller: Omni
Rig: Airboat

C-K Associates, Inc.
Baton Rouge, LA

Sheet 1 of 1

LELAP Certificate No. 02052

Location: Lat. 29° 14' 55.6"
Long. 89° 34' 39.9"

Surface Elevation: N/A (ft., NGVD)

FIELD DATA				LABORATORY DATA								
Ground Water Level	Depth (feet)	Samples	Field Test Results	Compressive Strength (tsf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI	Mini Vane Shear (ksf) / Other	Soil Type	Description
												Water Mudline at 2.0 ft.
			0.25 (P)							0.12		Very soft dark gray ORGANIC CLAY (OH) w/peat
	5		0.25 (P)	0.07t1	152	33	86	24	62	0.12		
			0.5 (P)	0.08t2	91	44				0.15		Very soft dark gray CLAY (CH) -- w/silt pockets at 6 to 8 ft.
			0.25 (P)							0.15		
	10		0.25 (P)	0.10t3	110	40	132	30	102	0.18		-- w/peat layers at 10 to 12 ft.
	15		0.25 (P)									
	20		No (P)	0.07t4	66	58	75	19	56			Very soft gray CLAY (CH) w/roots
	25											Boring completed at 22 ft.
	30											
	35											
	40											

Ground Water Level Data	Boring Advancement Method	Notes
VS = Vane Shear (ksf) Deck to Water 2 ft. Water to Mudline 2 ft.	4" Dia. Rotary Wash: 2 to 22 ft. **Boring Abandonment Method** Borehole grouted upon completion	t: Unconsolidated, Undrained Triaxial Compression Test t1: Lateral Pressure = 4.9 psi t2: Lateral Pressure = 6.3 psi t3: Lateral Pressure = 7.7 psi t4: Lateral Pressure = 16.8 psi Strata Boundaries May Not Be Exact

03-1114 LOG01 BARATARIA LDNR 9-16-2003 031114P.GPJ LOG01.GDT 10/29/03

Barataria Barrier Island
Restoration Complex Project
BA-38 (Pelican Headland)
Plaquemines Parish, LA
DNR Contract No. 2503-02-29

C-K Associates, Inc.
Baton Rouge, LA

LOG OF SOIL BORING PF-6

STE
Soil Testing Engineers, Inc.

Sheet 1 of 1

LELAP Certificate No. 02052

File: 03-1114
Date: 09/24/03
Logged by: K. Moody
Driller: Omni
Rig: Airboat

Location: Lat. 29° 15' 18.7"
Long. 89° 36' 10.7"
Surface Elevation: N/A (ft., NGVD)

FIELD DATA				LABORATORY DATA								
Ground Water Level	Depth (feet)	Samples	Field Test Results	Compressive Strength (tsf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI	Mini Vane Shear (ksf) / Other	Soil Type	Description
												Water
												Mudline at 3.0 ft.
			0.5 (P)	0.17t1	48	68	77	20	57	0.27		Very soft gray CLAY (CH) -- w/sand pockets at 3 to 5 ft.
	5		0.5 (P)							0.27		
			0.5 (P)	0.11t2	76	56	73	19	54	0.23 SG		-- w/sand seams, wood, and roots at 7 to 9 ft.
	10		0.7 (P)							0.21		
			0.5 (P)	0.13t3	75	54	87	24	63	0.21		-- w/sand pockets at 11 to 13 ft.
	15											
			0.5 (P)							0.15		
	20											Loose gray CLAYEY SILT (ML) w/ 1/2-inch clay layers
			0.4 (P)	0.57t4	41	79				0.29		
												Boring completed at 23 ft.
	25											
	30											
	35											
	40											

Ground Water Level Data

VS = Vane Shear (ksf)

Deck to Water 2 ft.
Water to Mudline 3 ft.

Boring Advancement Method

4" Dia. Rotary Wash:
3 to 23 ft.

Boring Abandonment Method

Borehole grouted upon completion

Notes

t: Unconsolidated, Undrained Triaxial Compression Test
t1: Lateral Pressure = 4.2 psi
t2: Lateral Pressure = 7.0 psi
t3: Lateral Pressure = 9.8 psi
t4: Lateral Pressure = 16.8 psi

Strata Boundaries May Not Be Exact

Barataria Barrier Island
Restoration Complex Project
BA-38 (Pelican Headland)
Plaquemines Parish, LA
DNR Contract No. 2503-02-29

LOG OF SOIL BORING P-7

STE
Soil Testing Engineers, Inc.

File: 03-1114
Date: 09/26/03
Logged by: K. Moody
Driller: Omni
Rig: Airboat

C-K Associates, Inc.
Baton Rouge, LA

Sheet 1 of 1

LELAP Certificate No. 02052

Location: Lat. 29° 15' 22.1"
Long. 89° 35' 46.5"

Surface Elevation: N/A (ft., NGVD)

FIELD DATA				LABORATORY DATA								
Ground Water Level	Depth (feet)	Samples	Field Test Results	Compressive Strength (tsf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI	Mini Vane Shear (ksf) / Other	Soil Type	Description
												Water
												Mudline at 3.0 ft.
			0.0 (P)	0.05t1	143	32	186	38	148	0.06		Very soft dark gray ORGANIC CLAY (OH) w/peat
	5		0.1 (P)							0.08		
			1.25 (P)	0.16t2	34	79	29	19	10	0.23		Very loose gray CLAYEY SILT (ML)
	10		0.75 (P)							0.14		Loose gray SANDY SILT (ML)
			0.75 (P)	0.41t3	32	86				0.22 GS		-- w/clay seams at 11 to 13 ft.
	15		1.0 (P)							0.33		
	20											Very soft gray SILTY CLAY (CL)
			0.5 (P)	0.21t4	39	77				0.13		-- w/sand layer at 21 ft.
	25											Boring completed at 23 ft.
	30											
	35											
	40											

Ground Water Level Data

VS = Vane Shear (ksf)

Deck to Water 2 ft.
Water to Mudline 3 ft.

Boring Advancement Method

4" Dia. Rotary Wash:
3 to 23 ft.

Boring Abandonment Method

Borehole grouted upon completion

Notes

t: Unconsolidated, Undrained Triaxial Compression Test
t1: Lateral Pressure = 4.2 psi
t2: Lateral Pressure = 7.0 psi
t3: Lateral Pressure = 9.8 psi
t4: Lateral Pressure = 16.8 psi
GS: Particle Size Analysis
Gravel = 0%, Sand = 14%, Silt = 72%, Clay = 14%

Strata Boundaries May Not Be Exact

Barataria Barrier Island Restoration Complex Project
BA-38 (Pelican Headland)
Plaquemines Parish, LA
DNR Contract No. 2503-02-29

LOG OF SOIL BORING P-8

STE
Soil Testing Engineers, Inc.

Sheet 1 of 1

File: 03-1114
Date: 09/24/03
Logged by: K. Moody
Driller: Omni
Rig: Airboat

C-K Associates, Inc.
Baton Rouge, LA

LELAP Certificate No. 02052

Location: Lat. 29° 15' 11.2"
Long. 89° 35' 44.9"

Surface Elevation: N/A (ft., NGVD)

FIELD DATA				LABORATORY DATA								
Ground Water Level	Depth (feet)	Samples	Field Test Results	Compressive Strength (tsf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI	Mini Vane Shear (ksf) / Other	Soil Type	Description
												Water
												Mudline at 3.0 ft.
			0.0 (P)	0.08t1	216	26	83	29	54	0.09		Very soft dark gray PEAT (PT) w/sand pockets
	5		0.25 (P)							0.10		Very soft gray CLAY (CH)
			0.75 (P)	0.09t2	76	49	98	28	70	0.33 CS,SG		-- w/roots, wood, and peat 7 to 9 ft.
	10		0.5 (P)									
			0.6 (P)	0.70t3	28	88						Loose gray SILTY SAND (SM) -- w/clay pockets at 11 to 13 ft.
	15		1.0 (P)									
	20											
			1.0 (P)	0.94t4	26	97						-- w/clay seams at 21 to 23 ft.
	25											Boring completed at 23 ft.
	30											
	35											
	40											

Ground Water Level Data

VS = Vane Shear (ksf)

Deck to Water 2 ft.
Water to Mudline 3 ft.

Boring Advancement Method

4" Dia. Rotary Wash:
3 to 23 ft.

Boring Abandonment Method

Borehole grouted upon completion

Notes

t: Unconsolidated, Undrained Triaxial Compression Test
t1: Lateral Pressure = 4.2 psi
t2: Lateral Pressure = 7.0 psi
t3: Lateral Pressure = 9.8 psi
t4: Lateral Pressure = 16.8 psi
CS: See Consolidation Curve

Strata Boundaries May Not Be Exact

Barataria Barrier Island
Restoration Complex Project
BA-38 (Pelican Headland)
Plaquemines Parish, LA
DNR Contract No. 2503-02-29

C-K Associates, Inc.
Baton Rouge, LA

LOG OF SOIL BORING P-9

STE
Soil Testing Engineers, Inc.

Sheet 1 of 3

LELAP Certificate No. 02052

File: 03-1114
Date: 09/11/03
Logged by: K. Moody
Driller: MASA
Rig: Barge

Location: Lat. 29° 15' 08.9"
Long. 89° 35' 09.4"
Surface Elevation: N/A (ft., NGVD)

FIELD DATA				LABORATORY DATA								
Ground Water Level	Depth (feet)	Samples	Field Test Results	Compressive Strength (tsf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI	Mini Vane Shear (ksf) / Other	Soil Type	Description
	5											Water Mudline at 8.0 ft.
	10		0.0 (P) 0.0 (P)	0.07t1	151 90	29	156	43	113	0.06 0.27		Very soft gray ORGANIC CLAY (OH) -- w/peat at 8 to 10 ft.
	15 20		VS 0.5 (P) 0.0 (P)	0.15t2	54	66	55	25	30	0.27 0.17		Very soft gray CLAY (CH) -- w/organic matter at 16 to 18 ft.
	25		1.0 (P)		30					0.17		Loose gray SILTY SAND (SM) w/clay seams
	30 35 40		0.5 (P) 0.5 (P)	0.37t3	65	58	93	30	63	0.25 SG,CS 0.19		Soft gray CLAY (CH) -- w/trace of organic matter at 34 to 36 ft.

Continued Next Page

Ground Water Level Data

VS = Vane Shear (ksf)

Deck to Water 4 ft.
Water to Mudline 8 ft.

Boring Advancement Method

4" Dia. Rotary Wash:
8 to 81 ft.

Boring Abandonment Method

Borehole grouted upon completion

Notes

t: Unconsolidated, Undrained Triaxial Compression Test
t1: Lateral Pressure = 9.1 psi
t2: Lateral Pressure = 13.3 psi
t3: Lateral Pressure = 23.8 psi
SG: Specific Gravity = 2.78
CS: See Consolidation Curve

Strata Boundaries May Not Be Exact

Barataria Barrier Island
Restoration Complex Project
BA-38 (Pelican Headland)
Plaquemines Parish, LA
DNR Contract No. 2503-02-29

C-K Associates, Inc.
Baton Rouge, LA

LOG OF SOIL BORING P-9

STE
Soil Testing Engineers, Inc.

Sheet 2 of 3

LELAP Certificate No. 02052

File: 03-1114
Date: 09/11/03
Logged by: K. Moody
Driller: MASA
Rig: Barge

Location: Lat. 29° 15' 08.9"
Long. 89° 35' 09.4"
Surface Elevation: N/A (ft., NGVD)

FIELD DATA				LABORATORY DATA								
Ground Water Level	Depth (feet)	Samples	Field Test Results	Compressive Strength (tsf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL	PL	PI	Mini Vane Shear (ksf) / Other	Soil Type	Description
			0.5 (P)	0.31t4	49	69				0.19		Soft gray CLAY (CH)
	45		0.0 (P)							0.23		Loose gray SILTY SAND (SM) w/clay layers
												Soft gray and brown CLAY (CH)
	50		1.0 (P)	0.46t5	47	71				0.25		
	55		1.0 (P)							0.33		
	60		0.5 (P)	0.26t6	59	61				0.31		
	65		1.0 (P)							0.31		
	70		0.5 (P)	0.28t7	57	61				0.31		
	75		0.5 (P)							0.38		
												Very dense gray SILTY SAND (SM) w/clay pockets
	80											

Continued Next Page

Ground Water Level Data

Boring Advancement Method

4" Dia. Rotary Wash:
8 to 81 ft.

Boring Abandonment Method

Borehole grouted upon completion

Notes

t: Unconsolidated, Undrained Triaxial Compression Test
t4: Lateral Pressure = 30.8 psi
t5: Lateral Pressure = 37.8 psi
t6: Lateral Pressure = 44.8 psi
t7: Lateral Pressure = 51.8 psi

Strata Boundaries May Not Be Exact

Barataria Barrier Island Restoration Complex Project
BA-38 (Pelican Headland)
Plaquemines Parish, LA
DNR Contract No. 2503-02-29

LOG OF SOIL BORING P-9

STE
Soil Testing Engineers, Inc.

Sheet 3 of 3

File: 03-1114
Date: 09/11/03
Logged by: K. Moody
Driller: MASA
Rig: Barge

C-K Associates, Inc.
Baton Rouge, LA

LELAP Certificate No. 02052

Location: Lat. 29° 15' 08.9"
Long. 89° 35' 09.4"

Surface Elevation: N/A (ft., NGVD)

FIELD DATA				LABORATORY DATA								
Ground Water Level	Depth (feet)	Samples	Field Test Results	Compressive Strength (tsf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI	Mini Vane Shear (ksf) / Other	Soil Type	Description
		X	60 b/f 27-28-32									Very dense gray SILTY SAND (SM)
												Boring completed at 81 ft.
	85											
	90											
	95											
	100											
	105											
	110											
	115											
	120											

Ground Water Level Data	Boring Advancement Method	Notes
	4" Dia. Rotary Wash: 8 to 81 ft.	
	Boring Abandonment Method	
	Borehole grouted upon completion	Strata Boundaries May Not Be Exact

Barataria Barrier Island
Restoration Complex Project
BA-38 (Pelican Headland)
Plaquemines Parish, LA
DNR Contract No. 2503-02-29

LOG OF SOIL BORING P-10

STE
Soil Testing Engineers, Inc.

File: 03-1114
Date: 09/10/03
Logged by: K. Moody
Driller: MASA
Rig: Barge

C-K Associates, Inc.
Baton Rouge, LA

Sheet 1 of 2

LELAP Certificate No. 02052

Location: Lat. 29° 15' 02.3"
Long. 89° 34' 40.4"

Surface Elevation: N/A (ft., NGVD)

FIELD DATA				LABORATORY DATA								
Ground Water Level	Depth (feet)	Samples	Field Test Results	Compressive Strength (tsf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI	Mini Vane Shear (ksf) / Other	Soil Type	Description
												Water
	5											Mudline at 7.0 ft.
		■	0.0 (P)		167		166	46	120	0.06		Very soft gray ORGANIC CLAY (OH)
	10	■	0.0 (P)	0.13t1	215	24	189	58	131	0.04		
		■	0.0 (P)		151					0.27		
		■	0.0 (P)							0.10		Very soft gray CLAY (CH) -- w/wood and organic matter at 13 to 17 ft.
	15	■	0.0 (P)	0.10t2	49	65	61	24	37	0.19		
	20	■	0.0 (P)							0.33		
	25	■	1.0 (P)	0.23t3	61	64	69	23	46	0.16		-- w/silt seams at 25 to 27 ft.
	30	■	No (P)		53					0.33		
	35	■	No (P)	0.21t4	45	64				0.36		
	40											

Continued Next Page

Ground Water Level Data

VS = Vane Shear (ksf)

Deck to Water 3 ft.
Water to Mudline 7 ft.

Boring Advancement Method

4" Dia. Rotary Wash:
7 to 47 ft.

Boring Abandonment Method

Borehole grouted upon completion

Notes

t: Unconsolidated, Undrained Triaxial Compression Test
t1: Lateral Pressure = 9.7 psi
t2: Lateral Pressure = 13.3 psi
t3: Lateral Pressure = 20.3 psi
t4: Lateral Pressure = 27.3 psi

Strata Boundaries May Not Be Exact

Barataria Barrier Island
Restoration Complex Project
BA-38 (Pelican Headland)
Plaquemines Parish, LA
DNR Contract No. 2503-02-29

LOG OF SOIL BORING P-10

STE
Soil Testing Engineers, Inc.

File: 03-1114
Date: 09/10/03
Logged by: K. Moody
Driller: MASA
Rig: Barge

C-K Associates, Inc.
Baton Rouge, LA

LELAP Certificate No. 02052

Location: Lat. 29° 15' 02.3"
Long. 89° 34' 40.4"

Surface Elevation: N/A (ft., NGVD)

FIELD DATA				LABORATORY DATA								
Ground Water Level	Depth (feet)	Samples	Field Test Results	Compressive Strength (tsf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI	Mini Vane Shear (ksf) / Other	Soil Type	Description
			No (P)									Very soft gray CLAY (CH)
	45		No (P)									
	50											Boring completed at 47 ft.
	55											
	60											
	65											
	70											
	75											
	80											

Ground Water Level Data	Boring Advancement Method	Notes
	4" Dia. Rotary Wash: 7 to 47 ft.	
	Boring Abandonment Method Borehole grouted upon completion	Strata Boundaries May Not Be Exact

Barataria Barrier Island
Restoration Complex Project
BA-38 (Pelican Headland)
Plaquemines Parish, LA
DNR Contract No. 2503-02-29

LOG OF SOIL BORING E-1

STE
Soil Testing Engineers, Inc.

File: 03-1114
Date: 09/09/03
Logged by: K. Moody
Driller: MASA
Rig: Barge

C-K Associates, Inc.
Baton Rouge, LA

Sheet 1 of 2

LELAP Certificate No. 02052

Location:

Surface Elevation: N/A (ft., NGVD)

FIELD DATA				LABORATORY DATA								
Ground Water Level	Depth (feet)	Samples	Field Test Results	Compressive Strength (tsf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL	PL	PI	Mini Vane Shear (ksf) / Other	Soil Type	Description
												Water
	5											
	10											
	15											
	20											
	25											
	30											Mudline at 30.0 ft.
			0.5 (P)		51		52	20	32	0.10		Very soft gray CLAY (CH) w/ 1/4-inch sand layers 6-inches apart
			0.5 (P)		63		84	30	54	0.23		
	35		21 b/f 14-11-10							GS		Firm gray SILTY SAND (SM)
			13 b/f 10-7-6		52		36	17	19			Medium gray SILTY CLAY (CL)
			4 b/f 2-2-2		40		38	18	20			Soft gray SILTY CLAY (CL)
	40											

Continued Next Page

Ground Water Level Data

VS = Vane Shear (ksf)

Deck to Water 2 ft.
Water to Mudline 30 ft.

Boring Advancement Method

4" Dia. Rotary Wash:
30 to 53 ft.

Boring Abandonment Method

Borehole grouted upon completion

Notes

GS: Particle Size Analysis
Gravel = 0%, Sand = 66%, Silt = 30%, Clay = 4%

Strata Boundaries May Not Be Exact

Barataria Barrier Island
Restoration Complex Project
BA-38 (Pelican Headland)
Plaquemines Parish, LA
DNR Contract No. 2503-02-29

C-K Associates, Inc.
Baton Rouge, LA

LOG OF SOIL BORING E-1

STE
Soil Testing Engineers, Inc.

Sheet 2 of 2

LELAP Certificate No. 02052

File: 03-1114
Date: 09/09/03
Logged by: K. Moody
Driller: MASA
Rig: Barge

Location:

Surface Elevation: N/A (ft., NGVD)

FIELD DATA				LABORATORY DATA								
Ground Water Level	Depth (feet)	Samples	Field Test Results	Compressive Strength (tsf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI	Mini Vane Shear (ksf) / Other	Soil Type	Description
												Soft to very soft gray SILTY CLAY (CL)
	45											
		■	1.0 (P)		37		35	19	16	0.25		
	50											
		■	1.0 (P)		35		34	19	15	0.21		
												Boring completed at 53 ft.
	55											
	60											
	65											
	70											
	75											
	80											

Ground Water Level Data	Boring Advancement Method	Notes
	4" Dia. Rotary Wash: 30 to 53 ft.	
	Boring Abandonment Method	
	Borehole grouted upon completion	Strata Boundaries May Not Be Exact

Barataria Barrier Island
Restoration Complex Project
BA-38 (Pelican Headland)
Plaquemines Parish, LA
DNR Contract No. 2503-02-29

LOG OF SOIL BORING E-2

STE
Soil Testing Engineers, Inc.

File: 03-1114
Date: 09/09/03
Logged by: K. Moody
Driller: MASA
Rig: Barge

C-K Associates, Inc.
Baton Rouge, LA

Sheet 1 of 2

LELAP Certificate No. 02052

Location: Lat. 29° 13' 50.2"
Long. 89° 35' 44.1"

Surface Elevation: N/A (ft., NGVD)

FIELD DATA				LABORATORY DATA								
Ground Water Level	Depth (feet)	Samples	Field Test Results	Compressive Strength (tsf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL	PL	PI	Mini Vane Shear (ksf) / Other	Soil Type	Description
												Water
	5											
	10											
	15											
	20											
	25											
	30											Mudline at 30.0 ft.
			1.5 (P)		36		27	21	6	0.16		Loose gray VERY CLAYEY SILT (ML-CL)
			1.0 (P)		33					0.19 GS		
	35		0.25 (P)		47		39	22	17	0.08		Very soft gray SILTY CLAY (CL) w/sand layers
			0.25 (P)		47					0.06		
			0.5 (P)		52		45	27	18	0.17		
	40											

Continued Next Page

Ground Water Level Data

VS = Vane Shear (ksf)

Deck to Water 2 ft.
Water to Mudline 30 ft.

Boring Advancement Method

4" Dia. Rotary Wash:
30 to 53 ft.

Boring Abandonment Method

Borehole grouted upon completion

Notes

GS: Particle Size Analysis
Gravel = 0%, Sand = 4%, Silt = 83%, Clay = 13%

Strata Boundaries May Not Be Exact

Barataria Barrier Island Restoration Complex Project
BA-38 (Pelican Headland)
Plaquemines Parish, LA
DNR Contract No. 2503-02-29

LOG OF SOIL BORING E-2

STE
Soil Testing Engineers, Inc.

File: 03-1114
Date: 09/09/03
Logged by: K. Moody
Driller: MASA
Rig: Barge

C-K Associates, Inc.
Baton Rouge, LA

Sheet 2 of 2

LELAP Certificate No. 02052

Location: Lat. 29° 13' 50.2"
Long. 89° 35' 44.1"

Surface Elevation: N/A (ft., NGVD)

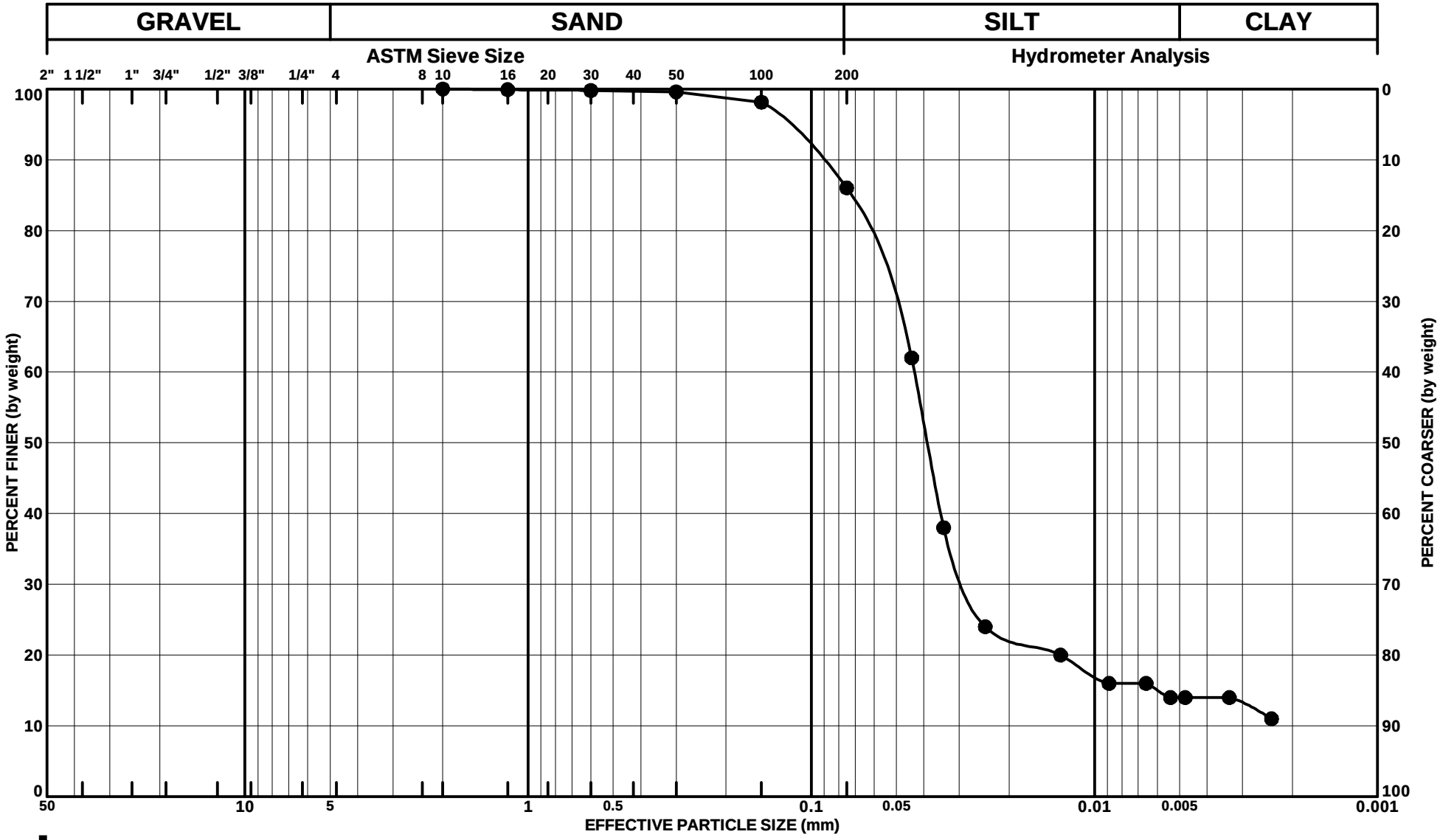
FIELD DATA				LABORATORY DATA								
Ground Water Level	Depth (feet)	Samples	Field Test Results	Compressive Strength (tsf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI	Mini Vane Shear (ksf) / Other	Soil Type	Description
												Very soft gray SILTY CLAY (CL)
	45		0.75 (P)		49		72	22	50	0.23		Soft gray CLAY (CH)
	50		0.25 (P)		58					0.08		Very soft gray CLAY (CH)
												Boring completed at 53 ft.
	55											
	60											
	65											
	70											
	75											
	80											

Ground Water Level Data	Boring Advancement Method	Notes
	4" Dia. Rotary Wash: 30 to 53 ft.	
	Boring Abandonment Method Borehole grouted upon completion	

Strata Boundaries May Not Be Exact

LELAP Certificate No. 02052

Boring No.	Depth (ft.)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
● P-7	11.0 - 13.0	0.0	14.0	72.0	14.0



ASTM D422

STE
Soil Testing Engineers, Inc.

Barataria Barrier Island Restoration Complex Project BA-38 (Pelican Headland)

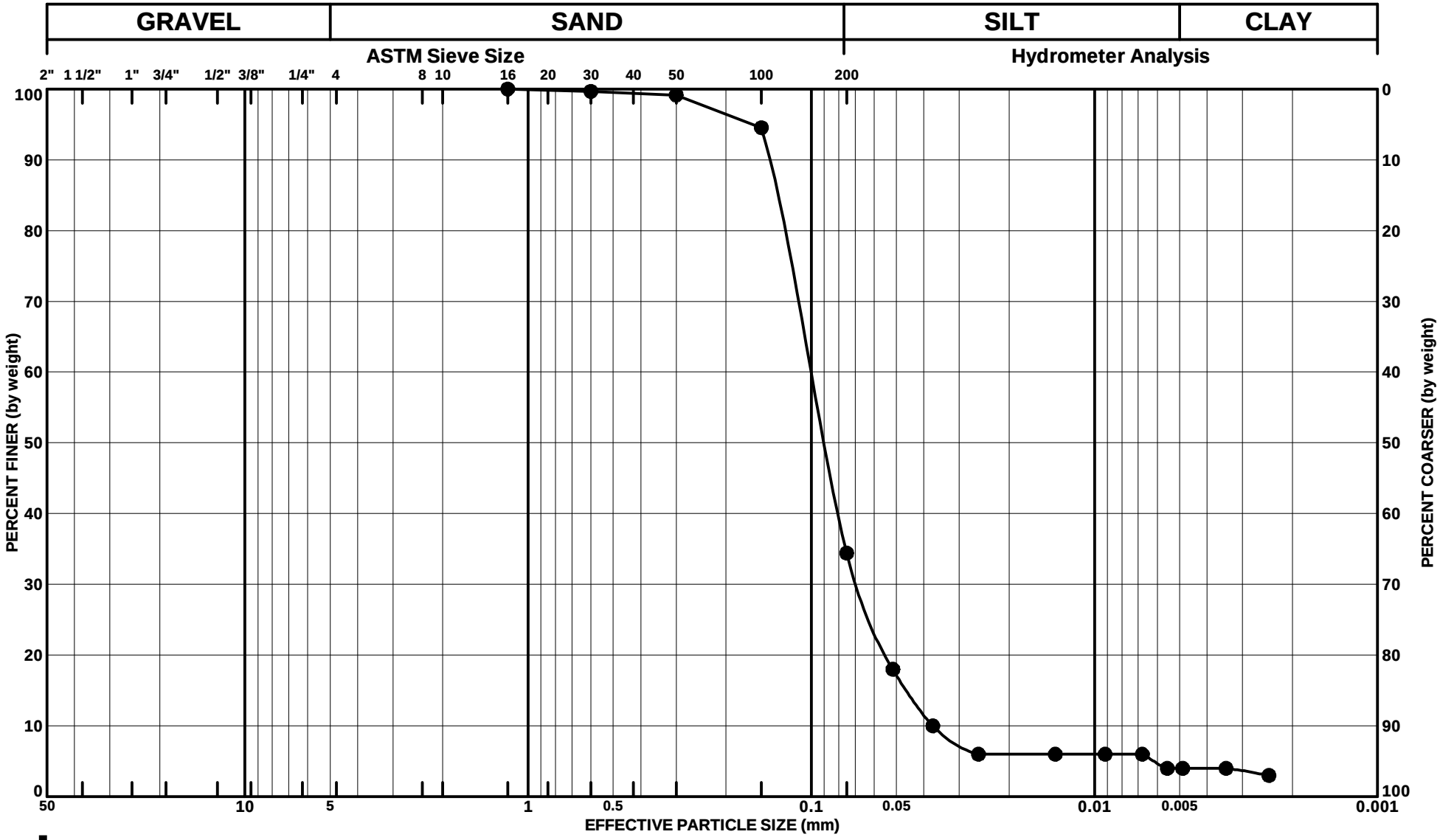
GRAIN SIZE ANALYSIS

File No.: 03-1114
Date: 10/01/2003

GRAINSZ 031114P.GPJ GRAINSZ.GDT 10/29/03

LELAP Certificate No. 02052

Boring No.	Depth (ft.)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
● E-1	38.5 - 40.0	0.0	65.6	30.4	4.0



ASTM D422

GRAIN SIZE ANALYSIS

STE
Soil Testing Engineers, Inc.

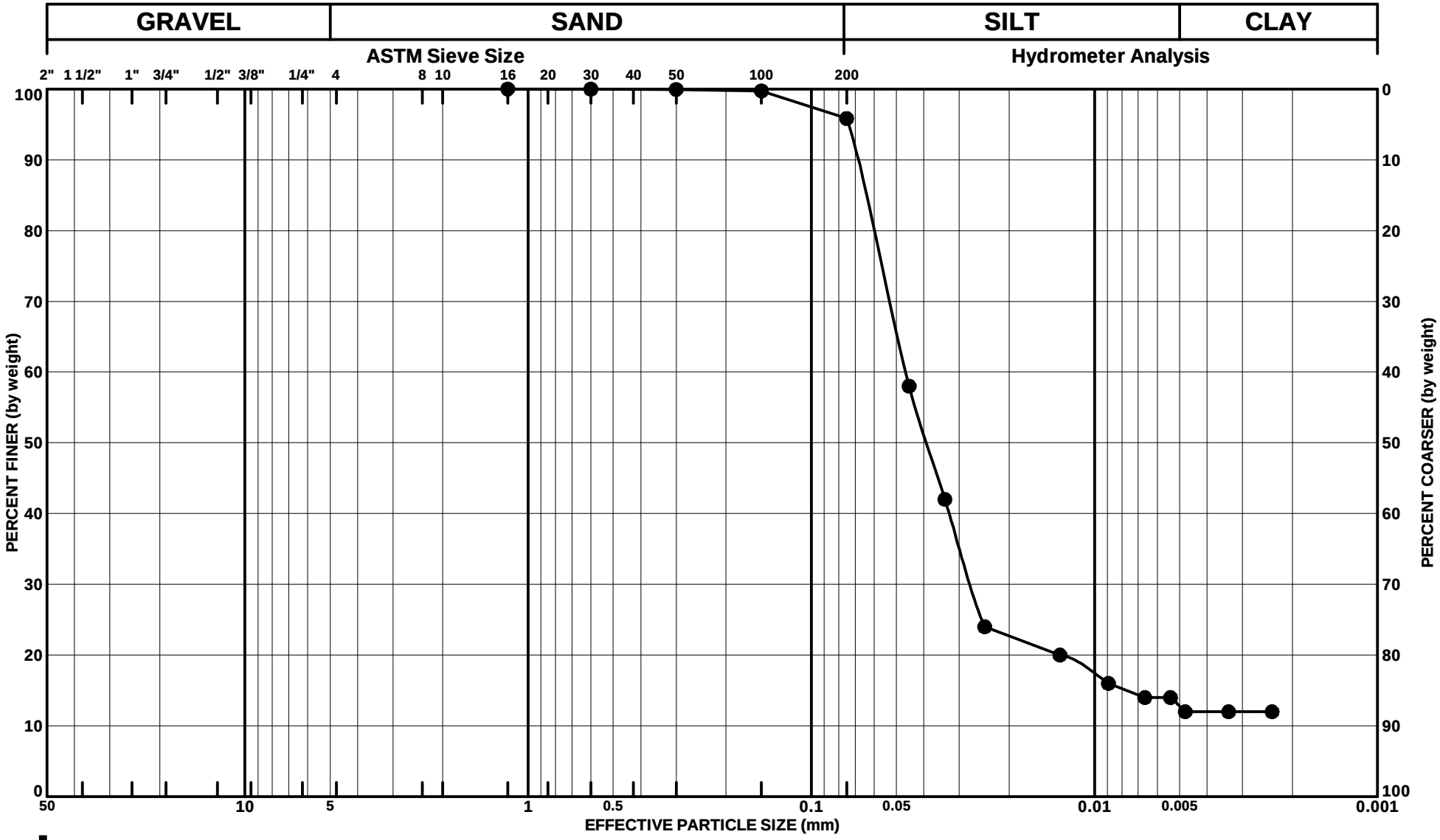
Barataria Barrier Island Restoration Complex Project BA-38 (Pelican Headland)

File No.: 03-1114
Date: 09/12/2003

GRAINSZ 031114P.GPJ GRAINSZ.GDT 10/29/03

LELAP Certificate No. 02052

Boring No.	Depth (ft.)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
● E-2	36.0 - 38.0	0.0	4.2	83.1	12.7



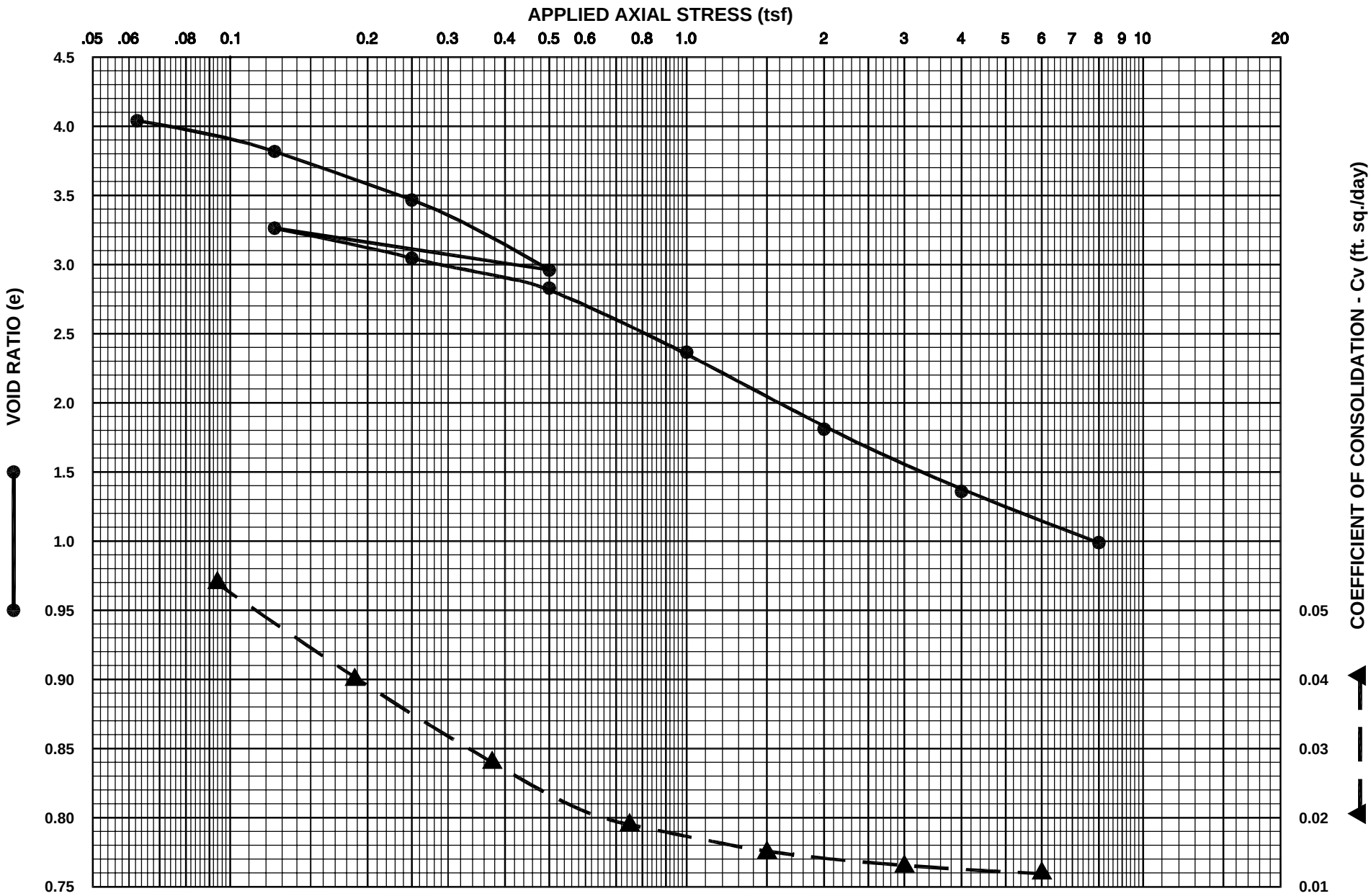
STE
Soil Testing Engineers, Inc.

Barataria Barrier Island Restoration Complex Project BA-38 (Pelican Headland)

GRAIN SIZE ANALYSIS

File No.: 03-1114
Date: 09/12/2003

GRAINSZ 031114P.GPJ GRAINSZ.GDT 10/29/03



CONSOLIDATION TEST

SAMPLE IDENTIFICATION

BORING NO.: PS-1
DEPTH (feet): 5-7
MATERIAL: Gray ORGANIC CLAY w/peat
FILE NO.: 03-1114

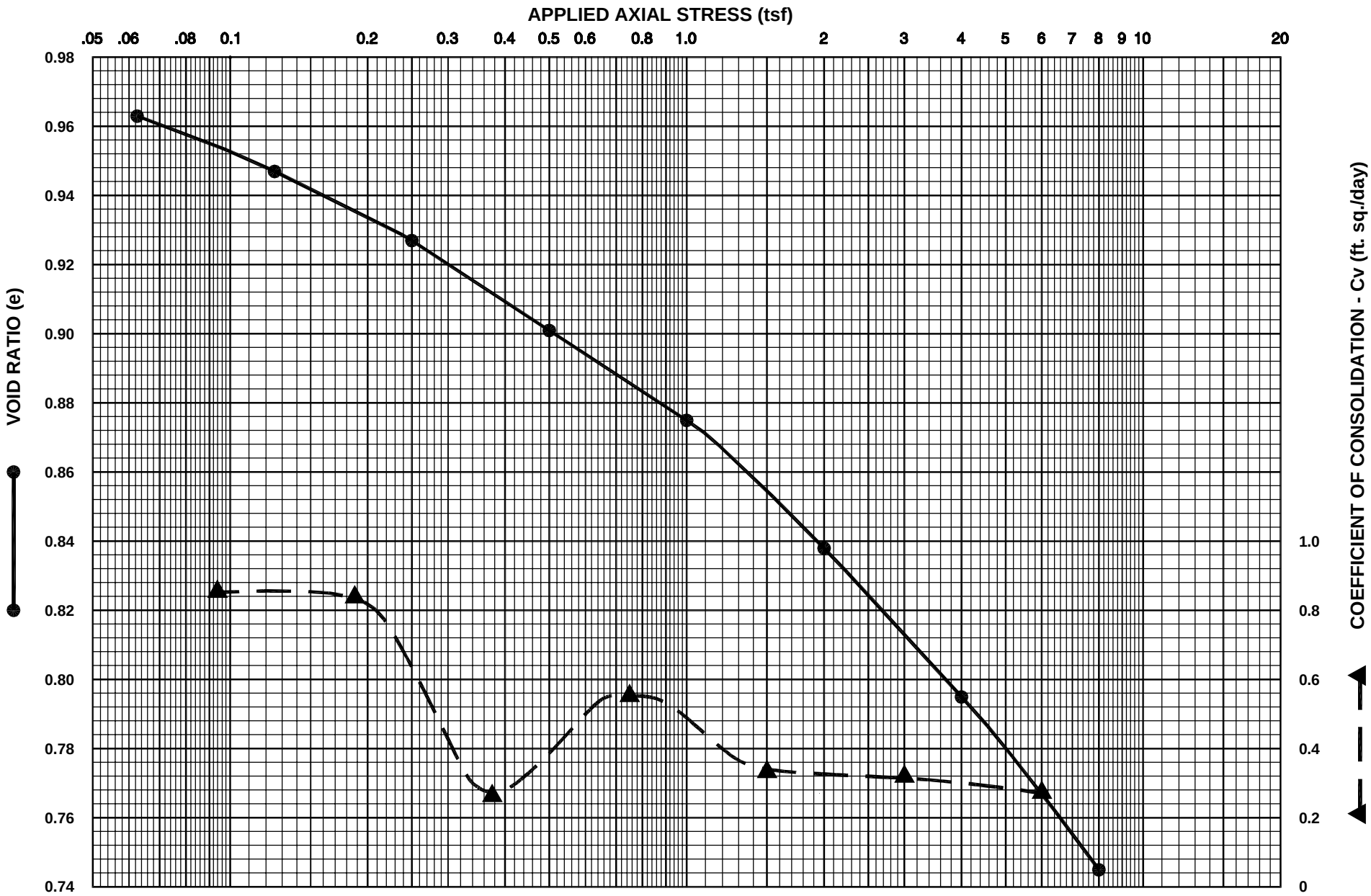
STE
Soil Testing Engineers, Inc.

CLASSIFICATION DATA

INITIAL MOISTURE CONTENT (%) =	144.6	LL = 63
INITIAL DRY DENSITY (lbs./cu.ft.) =	30.6	PL = 19
FINAL MOISTURE CONTENT (%) =	63.8	PI = 44

FIGURE NO.:

Eo = 4.203 Gs = 2.55



CONSOLIDATION TEST

SAMPLE IDENTIFICATION

BORING NO.: PS-2
DEPTH (feet): 26-28
MATERIAL: Gray CLAYEY SILT w/fine sand
FILE NO.: 03-1114

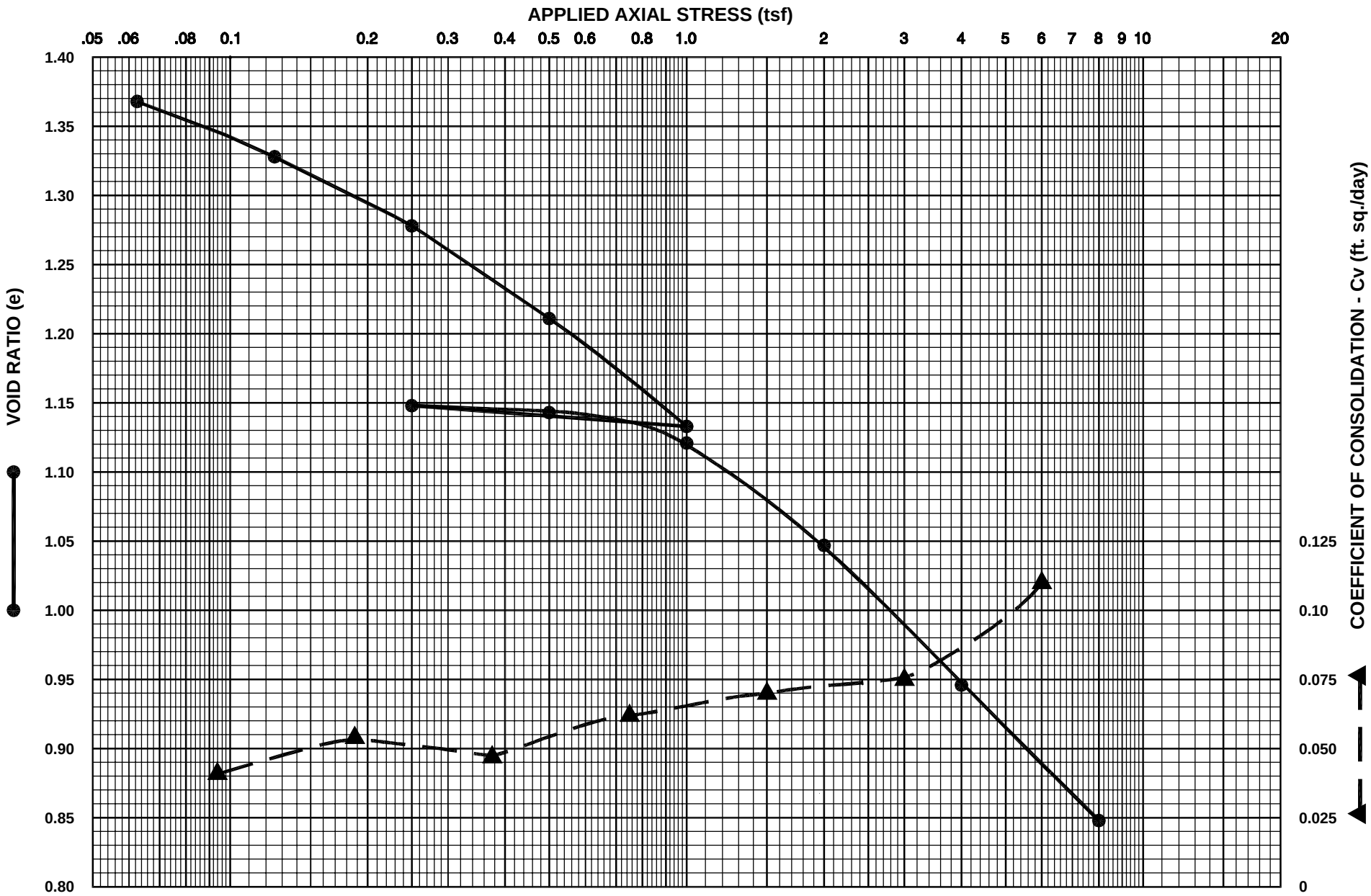
STE
Soil Testing Engineers, Inc.

CLASSIFICATION DATA

INITIAL MOISTURE CONTENT (%) = 33.6
INITIAL DRY DENSITY (lbs./cu.ft.) = 84.5
FINAL MOISTURE CONTENT (%) = 31.3

FIGURE NO.:

Eo = 0.972 Gs = 2.67



CONSOLIDATION TEST

SAMPLE IDENTIFICATION

BORING NO.: PS-3
DEPTH (feet): 24-26
MATERIAL: Gray CLAY w/wood
FILE NO.: 03-1114

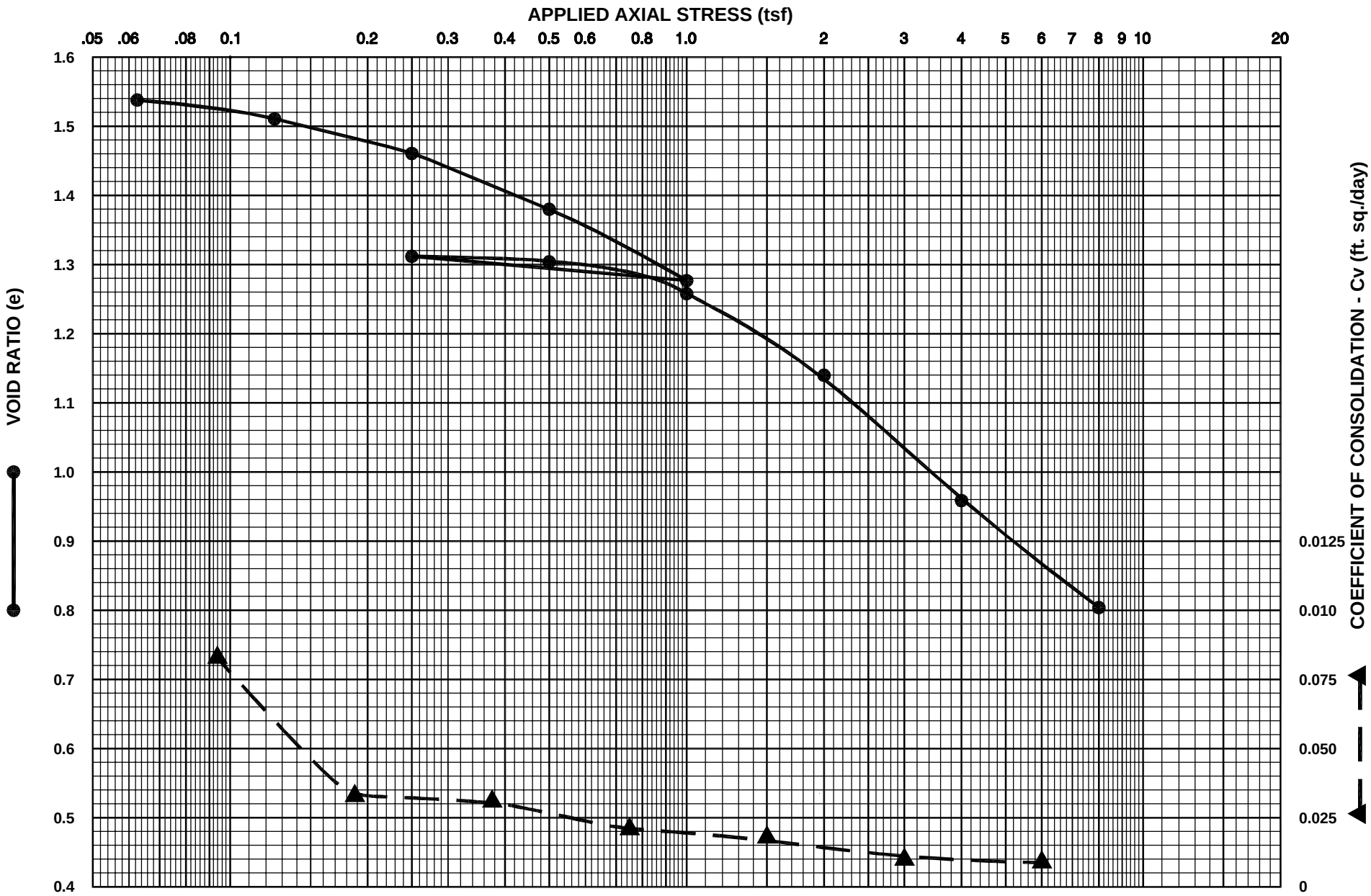
STE
Soil Testing Engineers, Inc.

CLASSIFICATION DATA

INITIAL MOISTURE CONTENT (%) =	28.1	LL = 71
INITIAL DRY DENSITY (lbs./cu.ft.) =	69.9	PL = 24
FINAL MOISTURE CONTENT (%) =	44.0	PI = 47

FIGURE NO.:

Eo = 1.420 Gs = 2.71



CONSOLIDATION TEST

SAMPLE IDENTIFICATION

BORING NO.: PS-3
DEPTH (feet): 59-61
MATERIAL: Gray CLAY w/silt seams
FILE NO.: 03-1114

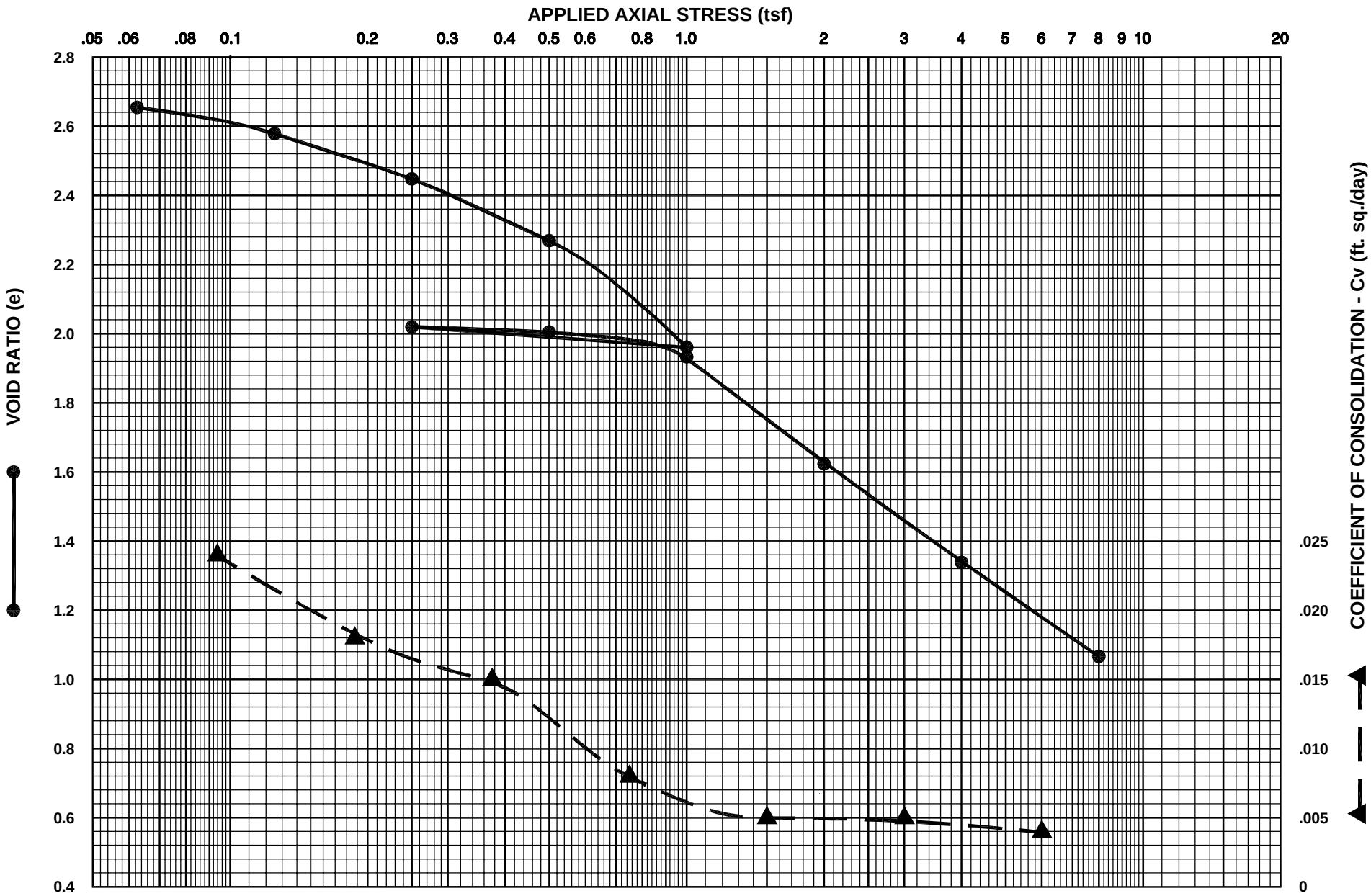
STE
Soil Testing Engineers, Inc.

CLASSIFICATION DATA

INITIAL MOISTURE CONTENT (%) =	51.1	LL = 73
INITIAL DRY DENSITY (lbs./cu.ft.) =	67.4	PL = 25
FINAL MOISTURE CONTENT (%) =	34.0	PI = 48

FIGURE NO.:

Eo = 1.863 Gs = 2.6



CONSOLIDATION TEST

SAMPLE IDENTIFICATION

BORING NO.: PF-4
DEPTH (feet): 18-20
MATERIAL: Gray CLAY w/peat pockets & sand traces
FILE NO.: 03-1114

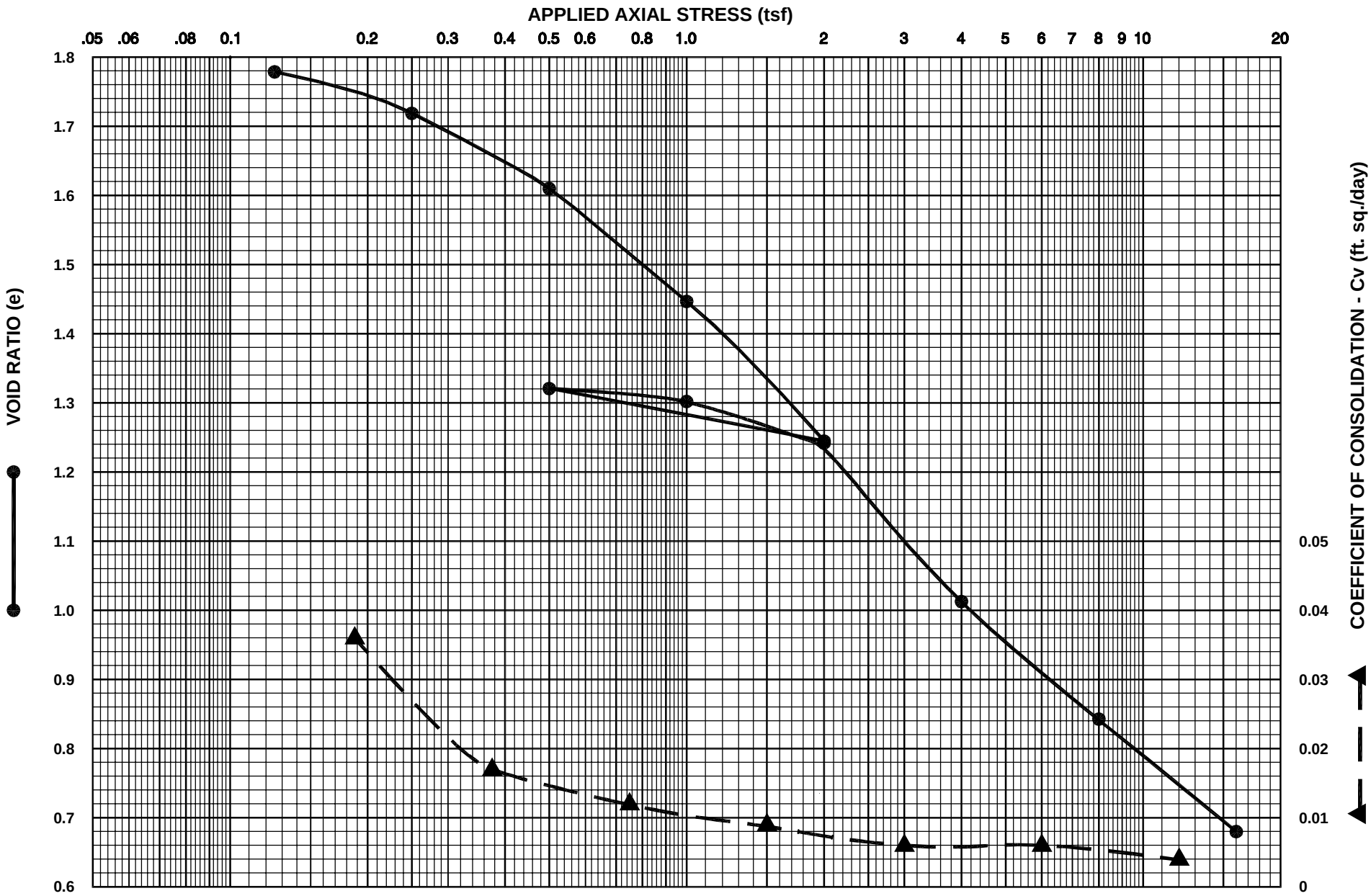
STE
Soil Testing Engineers, Inc.

CLASSIFICATION DATA

INITIAL MOISTURE CONTENT (%) =	94.3	LL = 114
INITIAL DRY DENSITY (lbs./cu.ft.) =	45.5	PL = 34
FINAL MOISTURE CONTENT (%) =	46.5	PI = 80

FIGURE NO.:

Eo = 2.721 Gs = 2.71



CONSOLIDATION TEST

SAMPLE IDENTIFICATION

BORING NO.: P-9
DEPTH (feet): 29-31
MATERIAL: Gray CLAY

FILE NO.: 03-1114

STE
Soil Testing Engineers, Inc.

CLASSIFICATION DATA

INITIAL MOISTURE CONTENT (%) =	54.2	LL = 93
INITIAL DRY DENSITY (lbs./cu.ft.) =	62.0	PL = 30
FINAL MOISTURE CONTENT (%) =	25.1	PI = 63

FIGURE NO.:

Eo = 1.420 Gs = 2.71

APPENDIX V

SUMMARY OF ELECTRONIC DATA

SUMMARY OF ELECTRONIC DATA

The following documents and data are available:

1. Construction Plans (PDF)
2. Construction Specifications (PDF)
3. Project Area Pre-Construction Survey Data (ASCII)
4. Borrow Area Pre-Construction Survey Data (ASCII)
5. Primary Dike Fill Densities (ASCII)
6. Primary Dike Fill Source Densities (ASCII)