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***FINAL***  
**Sediment Monitoring  
Summary Report  
2006 Remedial Dredging**



**Environmental Monitoring, Sampling, and  
Analysis**

**New Bedford Harbor Superfund Site  
New Bedford Harbor, MA**

**FINAL REPORT**

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**Submitted to:**

**Department of the Army  
U.S. Army Corps of Engineers  
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**Prepared by:**

**Battelle  
397 Washington Street  
Duxbury, MA 02332  
(781) 934-0571**

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**Battelle**  
*The Business of Innovation*

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- Appendix B: PCB Analytical Data
- Appendix C: VOC Analytical Data
- Appendix D: Grain Size and Total Organic Carbon Analytical Data



## EXECUTIVE SUMMARY

Sediment sampling in support of remedial dredging activities in New Bedford Harbor occurred from June through mid-November 2006. In 2006, dredge activities occurred primarily in two areas: 'Area A' encompassing southern sections of Dredged Management Unit (DMU) DMU-1 and DMU-102, and 'Area B' encompassing sections of DMU-2 and DMU-3. Additional dredging activities were conducted in Areas 'C' and 'D' located in DMU-2. Dredging activities targeted removal of sediments to the approximate depth of the target dredge elevation (where PCB concentrations are predicted, based on modeling, to be less than the 10 mg/kg remediation criteria). Sediment cores were collected before, during, and after dredging to evaluate the target dredge elevation through visual characterization and documentation of the elevation of sediment-type transitions. In addition, during portions of the 2006 field season volatile organic compounds (VOCs) were detected in the dredge slurry entering the treatment facilities. This was related to dredging activities along the shoreline near the Aerovox site. The detection of VOCs at the treatment facilities prompted a field sampling event to assess *in situ* VOC concentrations in the sediments near Aerovox. Finally, surficial sediment sampling was conducted at 17 locations associated with the OU3 Pilot Cap Site, a localized area of elevated PCB concentrations located outside the hurricane barrier, to determine the extent of change in PCB concentrations a year after the previous sampling.

Measured transition elevations were within 1-ft of the target dredge elevations (based on visual observation of the transition from overlying black fluidized mud [OL] to native clay [OH] layers) at more than half of the locations sampled prior to dredging. Where the departure from target dredge elevation was greater than 1-ft, it was always in a positive direction (i.e. the actual transition was not as deep as target dredge elevation). These data were used to refine the dredge plan and as a result target dredge depths were reduced, thereby reducing dredging and disposal efforts.

The collection of post-dredge cores revealed the depth of the sediment surface and the overall thickness of OL layers was reduced across all dredged regions. However, the post-dredge cores generally had less distinct visual transitions. The transitions generally occurred over a relatively broad band (>0.5-ft) of mixed sediment and in many cases, the elevation of the post-dredge visual transition also occurred at a deeper elevation than seen pre-dredge.

Samples from the post-dredge cores were also submitted for PCB analysis. However, because no pre-dredge PCB analysis was conducted pre/post dredge comparisons cannot be made. Post-dredge samples were limited to samples collected above the visual transition (where observed) and PCB concentrations ranged from 0.69 mg/kg to 4,400 mg/kg. In general, the highest concentrations remained in the regions due east of Aerovox and to the southeast of Aerovox. This is not surprising considering the proximity of the locations to the contamination source – i.e. these are the traditional hotspot areas. An average of 0.63-ft of overlying sediment remained at the post-dredge locations (range = 0.0 to 2.2-ft). Overall, PCB concentrations were not correlated with the amount of sediment remaining or with percent fines or total organic carbon. However, in areas where little overlying sediment remained, PCBs tended to be relatively low. This was the case on the western half of Area A. In the areas where elevated PCBs were found, the depth of the remaining OL layer was highly variable.

Additional sediment sampling adjacent to the Aerovox site revealed elevated levels of VOCs, primarily consisting of trichloroethene and related degradation products. Highest concentrations



were found at stations closer to the shore and elevated levels were found in sediments collected from both above and below the visual transition level, depending on the collection location. Elevated PCB concentrations were also found in selected samples analyzed from this area and while in most cases the elevated PCB and VOC concentrations were co-located, not enough information was available to evaluate the source or potential flux of VOCs into the sediments or the impact of the VOCs on potential PCB transport into the sediments. Additional studies in this area are proposed for 2007.

Results of sampling at the OU3 Pilot Capping site in 2006 were either similar to or lower than those in the 2005 samples, indicating the cap placement was still effective in these areas.



## 1.0 INTRODUCTION

This report describes the activities conducted in 2006 during sampling in Upper New Bedford Harbor in support of dredging operations as part of the remediation of the New Bedford Harbor Superfund Site. Site background information is presented in Section 1. A description of survey and analytical methods is provided in Section 2. Results of sampling and testing are provided in Section 3. A discussion of the survey results are provided in Section 4.

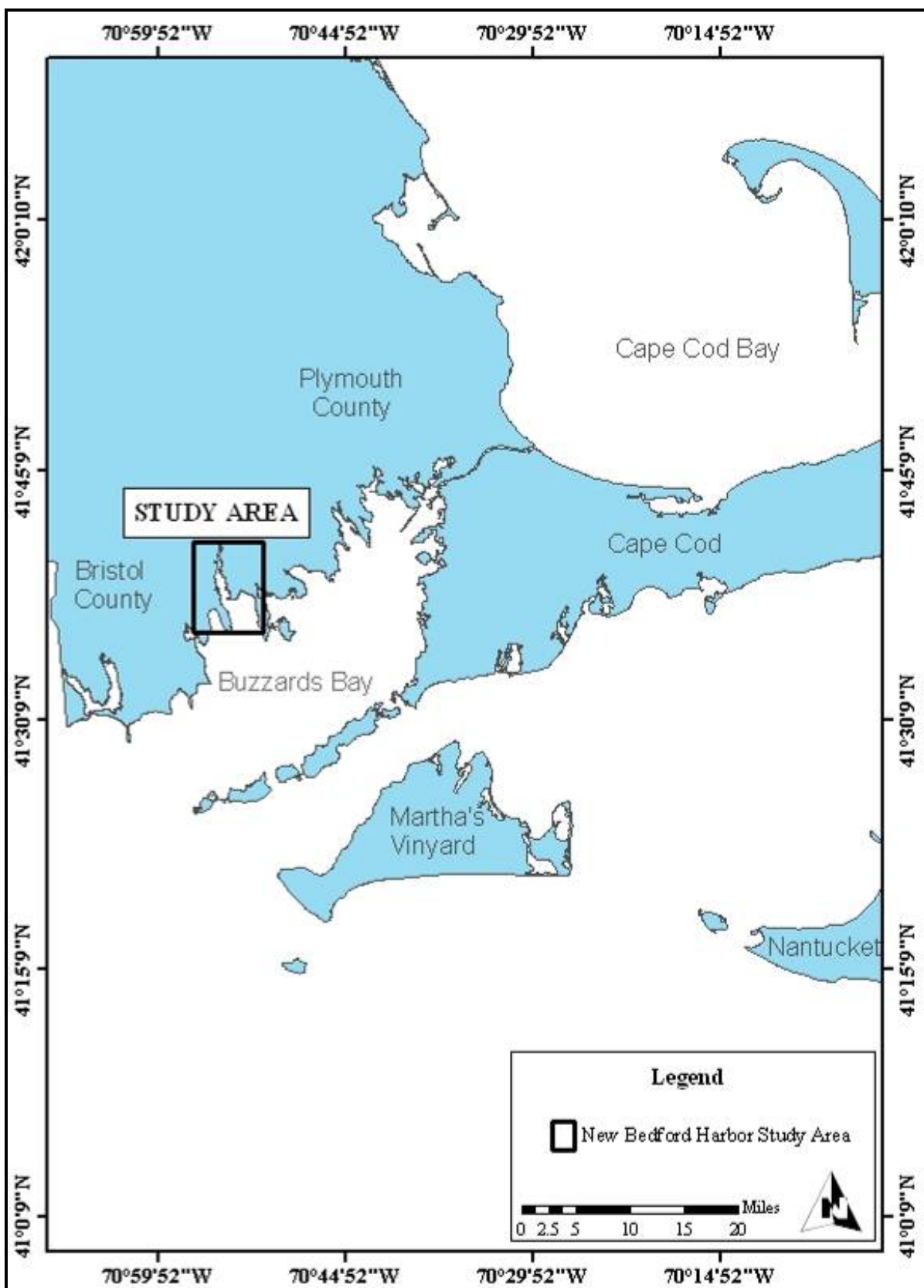
### 1.1 Site Description

The New Bedford Harbor Superfund Site (Site), located in Bristol County, Massachusetts, extends from the shallow northern reaches of the Acushnet River estuary south through the commercial harbor of New Bedford and into 17,000 adjacent acres of Buzzards Bay (Figure 1). Industrial and urban development surrounding the harbor has resulted in sediments becoming contaminated with high concentrations of many pollutants, notably polychlorinated biphenyls (PCBs) and heavy metals. At least two manufacturers in the area used PCBs while producing electronic devices from 1940 to the late 1970s, when the use of PCBs was banned by the EPA. Based on human health concerns and ecological risk assessments, the U.S. Environmental Protection Agency (USEPA) added New Bedford Harbor to the National Priorities List in 1983 as a designated Superfund Site. Through an Interagency Agreement between the USEPA and the U.S. Army Corps of Engineers, New England District (USACE NAE), the USACE is responsible for carrying out the design and implementation of the remedial measures at the site.

Aerovox Inc. in New Bedford, MA used PCBs from c. 1940 to c. 1977 in the manufacture of electrical capacitors and transformers. This facility is considered one of the major sources of historic PCB contamination to New Bedford Harbor. The highest concentrations of PCBs were found in sediments in a 5-acre area in the northern portion of the Acushnet River Estuary adjacent to the Aerovox facility. These ‘hot spot’ sediments, which contained PCBs upwards of 100,000 mg/kg, were removed between 1994 and 1995 as part of USEPA’s first clean-up phase. Full scale remediation dredging was initiated in 2004 and continued in 2005 and 2006. To a lesser extent, PCB contamination in New Bedford Harbor is related to activities at the Cornell-Dubilier mill on the western shore of the outer harbor. In 2005 a 15 acre underwater cap pilot project was implemented near Cornell-Dubilier to cap PCB contaminated sediments (Figure 2).

The Site is divided into a series of DMUs based on contamination levels, contamination sources, topography, and other factors (Figure 3). In 2006, dredge activities were planned for two areas (1) ‘Area A’ located in the southern sections of DMU-1 and DMU-102, and (2) ‘Area B’ located along the boundary of DMU-2 and DMU-3. Additional dredging activities were conducted in Areas ‘C’ and ‘D’ located in DMU-2.

The remediation of this site involves the excavation and dredging of approximately 880,000 cubic yards of PCB contaminated sediment. The majority of contaminated material is being removed utilizing a hydraulic dredge that will pump dredge slurry to the project’s Sawyer Street facility where it will be mechanically processed to remove all sand, gravel, and debris material. The silt and clay size materials will then be pumped to the Area D Dewatering Facility located on Herman Melville Boulevard where it will be mechanically dewatered and transported off-site for disposal.



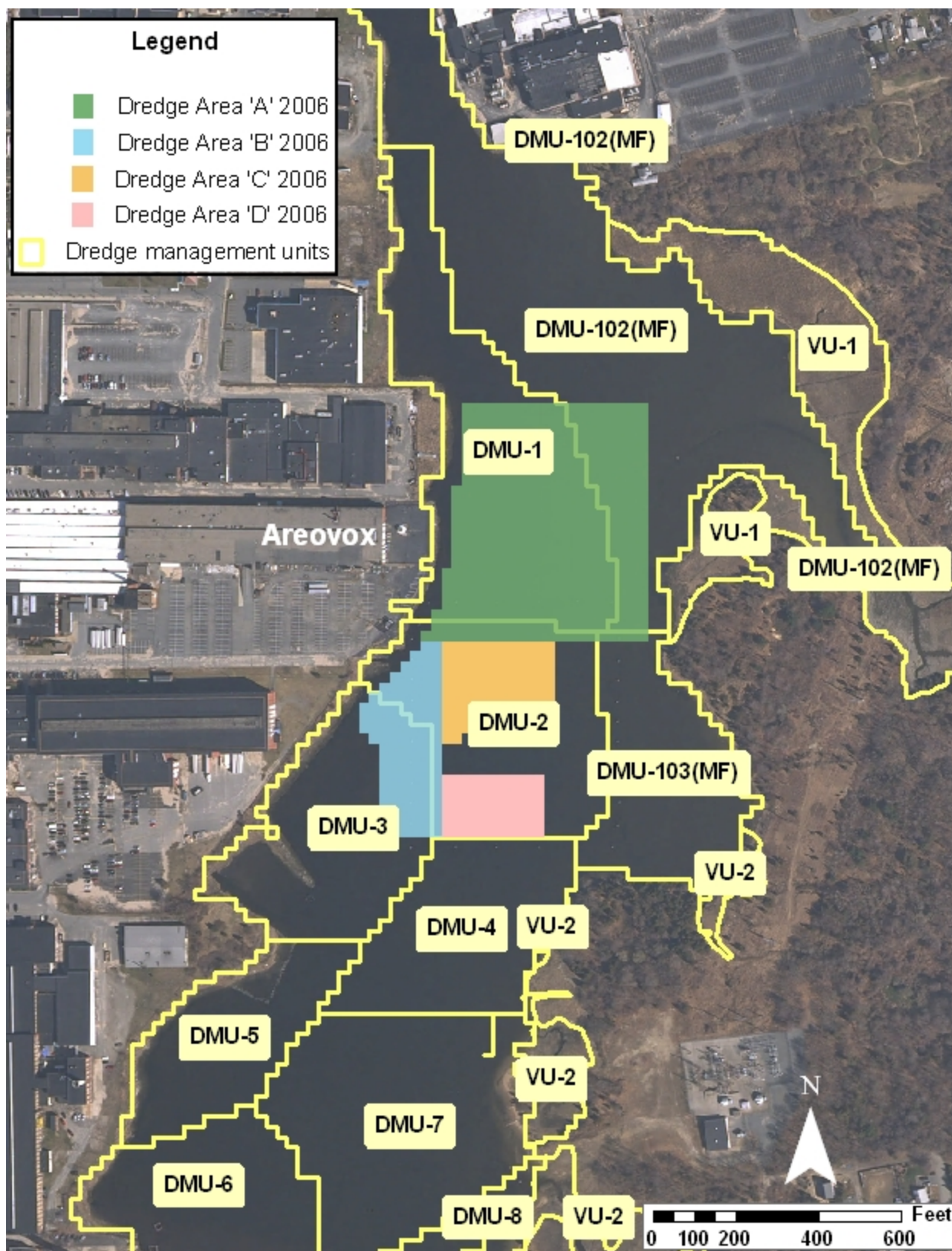
**Figure 1. Location of the Site in Southeastern, MA.**





**Figure 2. Location of the 2006 Dredge Activity Area within New Bedford Harbor.**





**Figure 3. 2006 Dredge Areas.**



## **1.2 Project Objectives**

The primary objectives of this sampling task were to 1) provide sediment thickness and elevation data to assist dredge planning, 2) provide field reconnaissance information during the dredge season to maximize overall dredging productivity, and 3) conduct sampling after the completion of dredging operations to assess the overall performance of the dredging operation and support future needs. In addition, several unplanned sampling events were conducted at the direction of the U.S. Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers – New England District (NAE). These sampling activities included the collection of grab samples from the pilot cap site OU3 near the Cornell-Dubilier mill, and collection of sediment samples for volatile organic compounds (VOC) just offshore from the Aerovox facility.

### **1.2.1 Pre-dredge Sediment Sampling**

The entire upper harbor, including the planned 2006 dredge areas depicted in Figure 3, have been parceled into discrete 25-foot by 25-foot ‘z-blocks’. During remedial design, a geostatistical model was used to predict a target elevation for dredging each z-block. This target dredge elevation represents the elevation where PCB concentrations are predicted to be less than the 10 mg/kg remediation criteria (Figure 4). Using target dredge elevations in combination with bathymetric data, a preliminary dredge plan was developed which estimated the required depth of dredging and the thickness of the overlying sediment to be removed. The pre-dredge sediment sampling plan was designed to confirm these estimates or adjust elevations as needed. Coring locations were placed onto the z-block map to achieve sufficient spatial coverage for making an evaluation of the target dredge elevations. In areas where the target dredge elevations changed substantially within adjacent z-blocks the concentration of sampling locations was increased. Visual characterization data from the pre-dredge cores was used by NAE and Jacobs Engineering Group (Jacobs) to prepare the final 2006 dredge plan.

### **1.2.2 Progress-dredge Sediment Sampling**

Samples were collected during dredge activities to evaluate the progress of dredging operations. These push core samples were collected each week to support verification of dredge effectiveness. Dredging operations were conducted based on opportunity (tides, weather, equipment, etc) and sample locations were determined through weekly discussions between NAE, Battelle, and Jacobs, based on the dredge operations. Samples collected during this activity received visual characterization only (Section 2.2).

### **1.2.3 Post-dredge Sediment Sampling**

Post-dredge sediment sampling was conducted to assess the sediment condition relative to the target dredge elevation for the entire 2006 dredging event and to assist with future site needs. Additional post-dredge locations were sampled to assess the condition of sites dredged in 2004 and 2005. Visual characterization of these samples was used to determine the elevation and thickness of overlying material remaining after the completion of dredging. Chemical analysis was also performed to assess concentration of PCB remaining in the sediments in these areas.

### **1.2.4 Volatile Organic Compound (VOC) Sampling**

During portions of the 2006 field season VOCs were detected in the dredge slurry entering the treatment facilities. This was related to dredging activities along the shoreline near the Aerovox site.

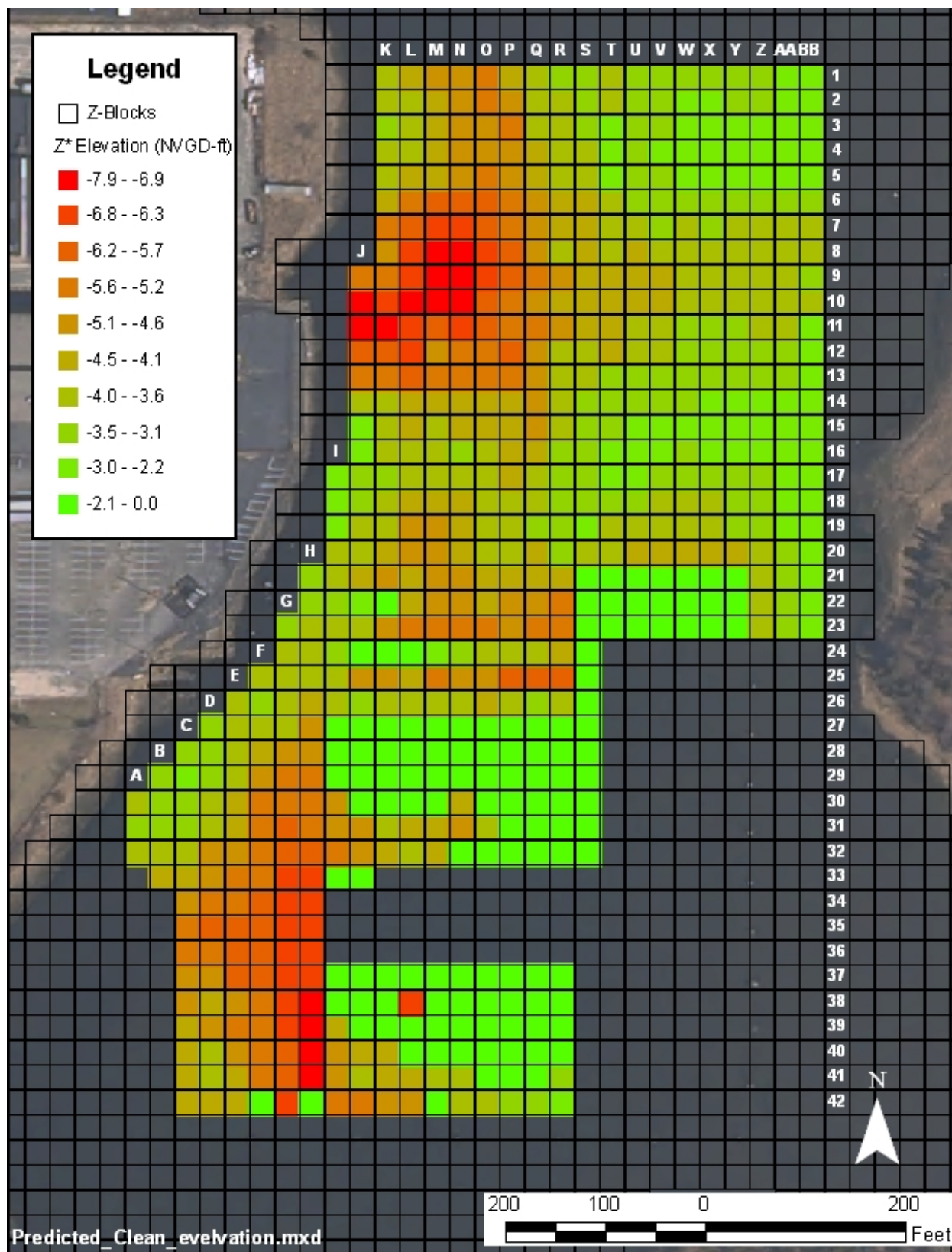




The detection of VOCs at the treatment facilities prompted a field sampling event to assess *in situ* VOC concentrations in the sediments near Aerovox.

### **1.2.5 OU3 Pilot Cap Site Sampling**

The OU3 Pilot Cap Site is a localized area of elevated PCB concentrations located outside the hurricane barrier in New Bedford, MA (Figure 2). In 2005 the OU3 Pilot Cap Site was capped with parent material dredged during the construction of a navigational dredged material Confined Aquatic Disposal (CAD) cell in New Bedford Harbor. Sampling was conducted at 17 locations to determine the extent of change in PCB concentrations a year after the previous sampling. Surficial sediments were collected by grab sampling at these locations and were submitted for PCB analysis.



**Figure 4. 2006 Planned Dredge Areas With Z-blocks and Target Dredge Elevations.**



## 2.0 METHODS

The Battelle Quality Assurance Project Plan (QAPP) (Battelle, June 2006a) and the Sediment Monitoring Field Sampling Plan (FSP) (Battelle, July 2006b) contain additional details on survey/sampling methods. Sediment Sampling Log sheets along with summary tables of sample collection stations, collection dates and times and station coordinates are provided in Appendix A.

### 2.1 Sediment Collections

#### 2.1.1 Pre-, Progress, and Post-Dredging Push Core Collections

Figure 5 shows the pre-dredge, progress dredge, and post-dredge core sample locations. Sampling of sediments was conducted with a push-core sampling device utilizing 3-inch diameter Lexan™ core barrels. The sampling device was designed to securely hold one end of a pre-cut length of core barrel. Core lengths were targeted so that penetration exceeded the expected depth of the target dredge elevation by at least one foot. A piston assembly inside the core barrel was used to create suction during retrieval of the sample to prevent sediment loss from the bottom of the barrel.

Once the individual components of the push core sampler were assembled, sample collection was achieved as follows. The core assembly was measured from the bottom of the core to the top of the assembly. The piston assembly was positioned just inside the leading end of the core liner and the piston line was held loosely on deck. The device was lowered into the water until the leading end of the core bore barrel contacted the sediment surface. The piston attachment line was then tied off securely on the deck, thus fixing the elevation of piston assembly. In driving the push-core into the sediment, the piston created a syringe effect as the core liner was driven past the fixed elevation of the piston. The core liner was then driven to the maximum depth of either refusal or the limiting depth allowed by the length of the piston attachment line. When retrieving the core assembly (with sample) tension was held on the piston line so that the piston and sample were not pulled back down the core liner by suction from the sediments. The sampler was recovered onto the deck. The bottom end of the core barrel was fitted with a plastic cap, after which the sediment on the external body of the sampler was rinsed off. After thoroughly cleaning the sampling device the core liner was removed from the socket assembly, the piston assembly was then removed, and the top of the core liner was fitted with a plastic end cap.

Upon recovery, the core was examined for acceptability. The goal of the dredge area sampling was to identify visual transitions. If it did not appear that a clear transition layer was captured, the field team used professional judgment to determine the cause. Possible causes included; 1) the core was not long/deep enough to capture transition layers, 2) smearing of overlying sediments obscured the transition, and 3) the entire core was composed of the characteristic native material. In cases 1 and 2 the collection of a second core (longer for case 1) at the same location was conducted. In case 3 the field team repositioned slightly and collected a second core. Other factors which were considered in determining acceptability included: 1) too much water at the top of the core, 2) signs of significant compaction at the top of the core, and 3) signs of loss of sediment from the bottom of the core. Because of the wide range of possible scenarios, overall core acceptability was based on the experience and judgment of the Chief Scientist and the field team. All decision making was documented on the Sediment Sampling Log sheets (Attachment A).



Determination of the accurate vertical elevation of the samples was critical in achieving the objectives of the project. Elevation of the water levels, sediment-water interface, apparent target dredge elevation, and other sediment transition zones were all critical measurements for this project (see Section 3 and Appendix A). The project elevation datum is MLW NGVD-29. A series of measurements were conducted for each sample to correct elevations for tidal fluctuations. All measurements were recorded as  $\pm 0.1$  feet. The required measurements and techniques are listed below. See Figure 6 for graphical depiction of the measurements.

- A = Water depth.** Recorded the water depth using either a lead line or a measuring pole.
- B = Length of push core assembly.** Prior to deployment, the full length of the push core assembly from the top of the handle to the bottom edge of the core liner was recorded.
- C = Water surface to top of core assembly handle.** Once the core assembly was fully inserted (refusal or full core penetration), the length of the assembly remaining above the water surface was recorded.
- D = Core Length.** Measured and recorded core length. Measured from bottom up.
- E = Surveyed elevation.** Prior to operations the dredge contractor installed a fixed sheet pile with markings indicating a survey elevation (NGVD 29). Recorded this elevation. This elevation was the reference point for all elevation calculations.
- F = Water surface from surveyed elevation.** After sample collection navigated the vessel to the fixed sheet pile with surveyed elevations (position to be determined). Recorded the distance from the water surface to the surveyed elevation.

From these measurements a number of calculations were made to determine true elevations (NGVD 29):

$E - F = \text{Elevation of water surface (G)}.$

$G - (B - C) = \text{Elevation of bottom of core (H)}.$

The  $H$  elevation (bottom of core) was used to determine the elevation of all visual transitions, including apparent target dredge elevation. i.e:

$H + (\text{distance to visual transition}) = \text{Elevation of visual transition (target dredge elevation)}$

And;

$H + D = \text{Elevation of sediment water interface (I)}.$

The elevation of the sediment water interface was also calculated from:

$G - A = \text{Elevation of sediment water interface (I}_2\text{)}.$

$I$  and  $I_2$  were compared at each station. In soft sediments the sediment water interface may have been difficult to discern from soundings (i.e. it is difficult to feel). Additionally, the sediment water interface within a core was subject to compaction during collection, settling after recovery, and other factors which may have impacted the accuracy of elevation measurements. If  $I$  and  $I_2$  varied by more than 1.0 foot, the core was discarded and a new sample collected.

Once the core was deemed acceptable, a Sediment Sampling Log sheet was completed. The log form included date and time, sample coordinates, sample ID, sediment characteristics, and any other descriptive information. The field measurements required for determining vertical elevation of the

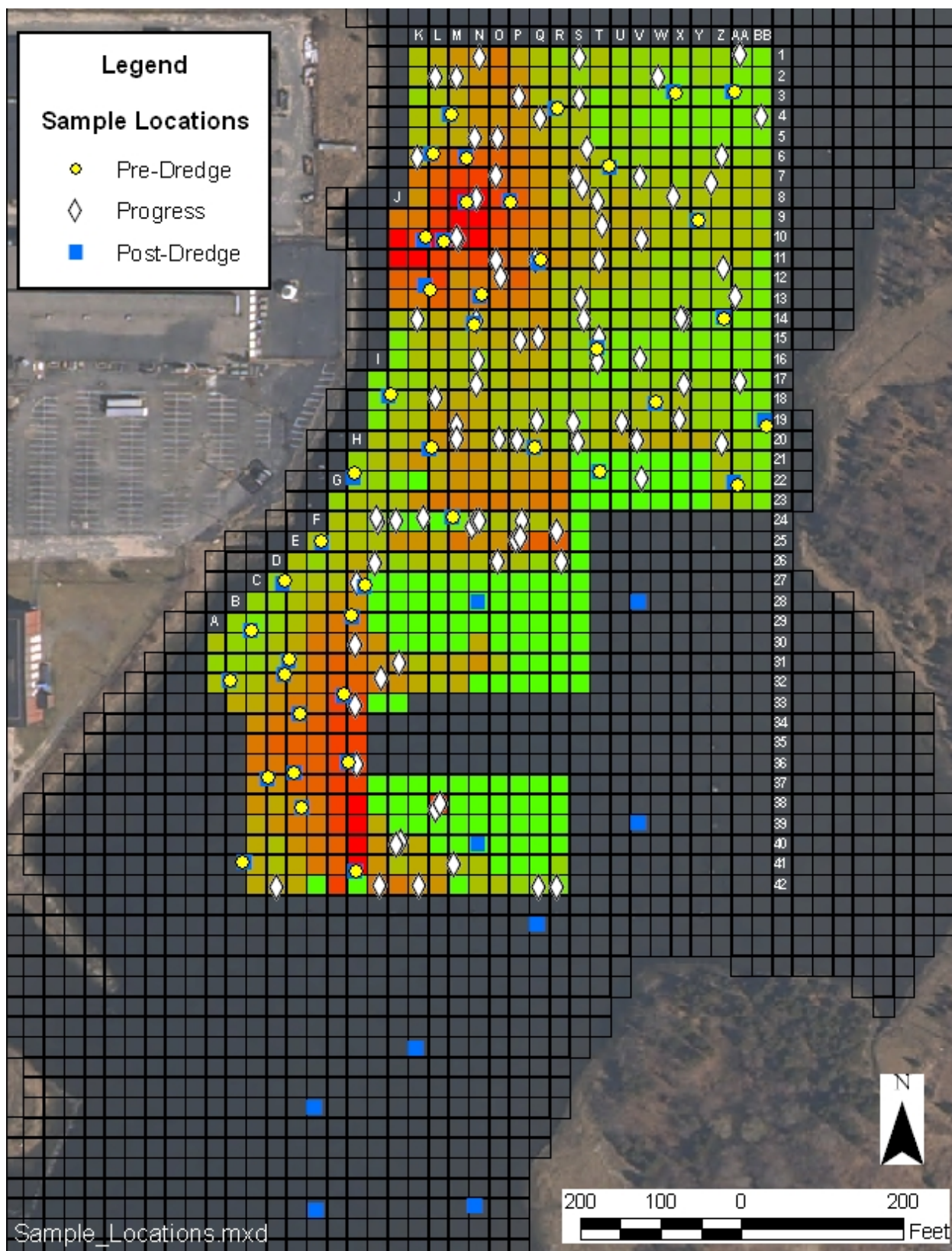


sediment-water interface and each transitional layer was also included on the Sediment Sampling Log sheet. These measurements are described in more detail below. The Sediment Sampling Log sheets are provided in Appendix A. The core barrel was labeled with a sample ID, date, and the orientation for the top of the core. Chain of Custody for each core section was initiated in the field. Core samples were capped tightly and stored on ice in coolers in the field. Aliquot samples and intact archive cores were maintained in the freezers in the Sawyer St. field trailer.

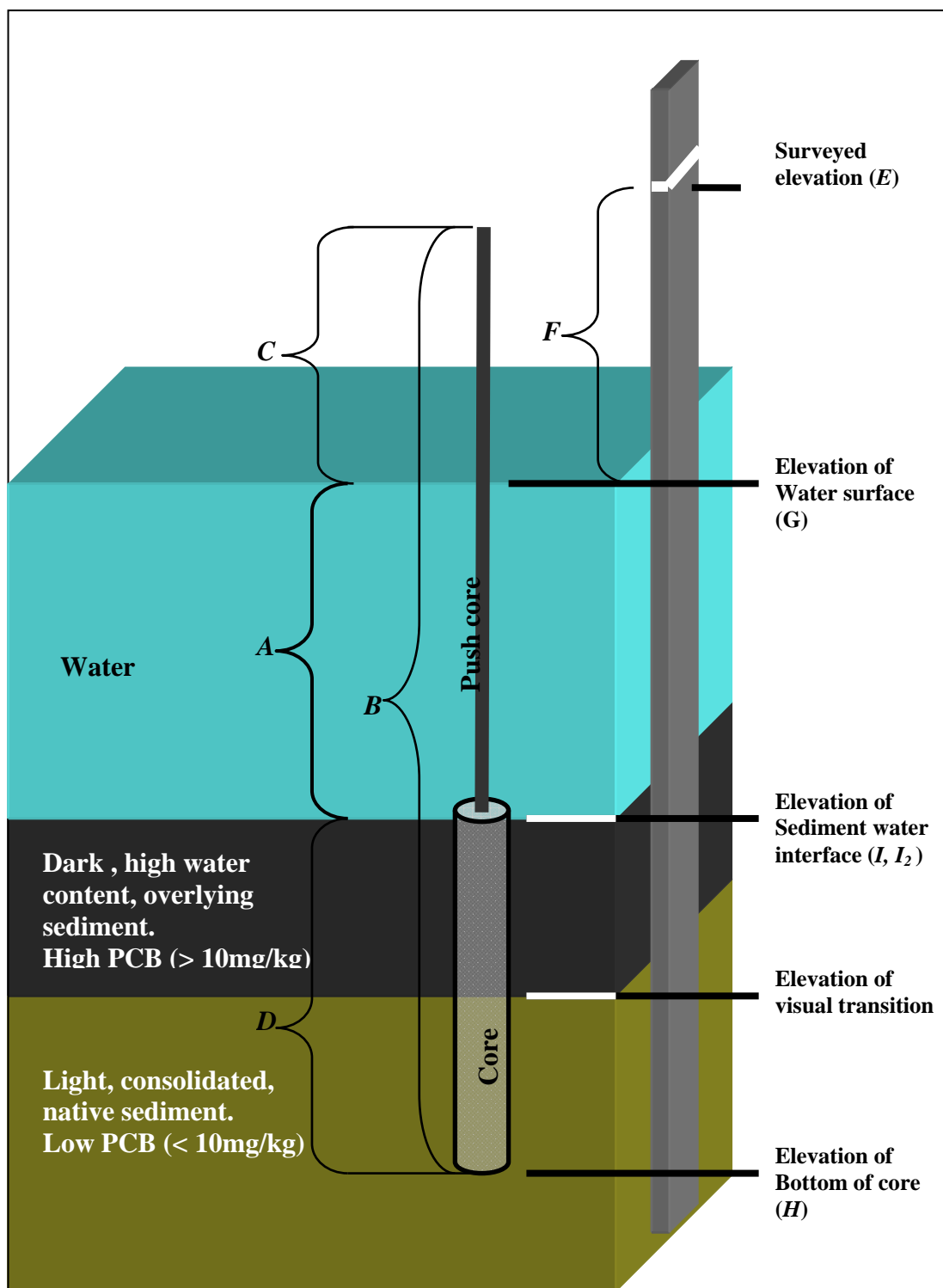
### **2.1.2 VOC Sediment Core Collections**

The Battelle field team worked in conjunction with a field team from Jacobs Engineering Group to collect VOC samples near Aerovox to assess the spatial extent and range of concentrations of VOCs in sediments planned for dredging. A series of locations were pre-selected to characterize the North-South and East-West extent of elevated VOCs. These locations are shown on Figure 7. At each location, a push core was collected as described above. Once the core was on deck the core was visually characterized and the sediment transition layer identified. Samples were collected from just above and just below the transition layer. The core was cut open at the target sampling location. A 5ml syringe was used to extract sediment samples. For each sample a series of subsamples were collected into pre-preserved vials prepared by the analytical laboratory (Alpha – Woods Hole Group). One vial contained methanol preservative, two of the vials contained deionized water preservative, and one vial contained no preservative. These replicate vials allowed the lab to select the appropriate sample based on interferences seen during the analysis. During the field collection a separate aliquot was also taken by the Jacobs field team for immediate head space analysis using a portable Photo Ionization Detector (PID). The head space analysis was used to establish presence/absence and approximate levels of VOC in each sample. This information was used to select samples for analysis. Of the thirty collected samples, 20 were selected for analysis. Based on results from the VOC analysis a second field effort was conducted to revisit a subset of the VOC sampling sites and collect sediment samples for PCB analysis.





**Figure 5. Pre-Dredge, Progress, and Post-Dredge sample Locations.**



**Figure 6. Graphical Depiction of Required Measurements.**



**Figure 7. VOC Sample Locations Near Aerovox.**





### 2.1.3 Sediment Grab Collections (OU3)

Grab sampling was conducted at 17 sample locations at the OU3 Pilot Capping site to collect surficial sediments for PCB analysis (Figure 2). A 0.04m<sup>2</sup> modified Van Veen grab was used to collect sediment samples. Sample locations were based on stations previously visited by ENSR/AECom on August 25, 2005, shortly after the completion of capping activities (ENSR 2006). Bathymetric data collected just after the capping event revealed a series of ridges and valleys formed by placement of cap materials along an east-west axis. At the time of the 2005 bathymetry and sampling as much as a 4-foot difference in elevation existed amongst the topography at this site. The 2005 sediment sampling locations were positioned to achieve good spatial coverage over the site and to obtain data representative of the high and low spots existing in the sediment cap at that time. The 2006 sampling target coordinates were taken from the 2005 sampling event; however, it was expected that local currents and wave action may have resulted in a general smoothing of the topography over the past year. To achieve representative collections of both ridge and valley locations, the vessel transited towards a target station on a heading that was perpendicular to the orientation of the ridges. As the target coordinates were approached the Ridges and valleys were clearly discernable on the fathometer of the vessel. Depending on the station, either a valley or a ridge was targeted. As the appropriate feature emerged on the fathometer, a 10 lbs lead weight attached to a line and surface float was thrown overboard to mark the feature. The vessel then transited back towards the location to confirm that the marker did, in fact, accurately mark the feature. If it did not, the method was repeated until successful (usually this was unnecessary). Once the feature was accurately marked, the sample was collected from that location and the actual sample coordinates were recorded. The top 3" from each sample was homogenized and subsampled. One field duplicate sample was collected.

## 2.2 Sample Processing

### 2.2.1 Photodocumentation

In general, it has been shown at the site that dark, high water content, organic silts in the upper portion of the sediment are related to elevated PCBs (FWENC 2001, FWENC 2002, ENSR 2005, ENSR 2006). These sediments fall under the "OL" description in the Unified Soil Classification System. At the site these contaminated OL sediments generally overlie lighter colored, more consolidated native clays which have lower PCBs concentrations. The use of this visual transition as a general indicator of the vertical location of contamination provides a rapid and inexpensive method to assess dredge targets and performance.

To document this visual transition, all cores collected during all phases of sediment sampling were documented with digital photographs. The file name of each photo taken was recorded on the Sediment Sampling Log forms. Digital photographs of the cores were uploaded to the New Bedford Harbor project database. These photographs are linked in the database to the location information and to the analytical results and can be viewed individually.

Each photograph contained the following elements in the frame:

- *The sediment core.* Photographing was done through the clear liner. Alternatively, for cores that were examined on deck with no collection of analytical subsamples, the cores were



extruded from the core liner on deck for photographing. Also, for cores that did receive additional subsample processing, the core liners were cut open longitudinally to expose the sediment for sampling and photographing.

- *Measurement reference.* A tape measure (or equivalent) marked in decimal feet ran parallel to length of the core.
- *Sample identifier.* A card, paper, whiteboard, or equivalent was placed next to the core with the following written information:
  - o Sample ID
  - o Station location
  - o Date
  - o Time
  - o Indication of the top vs. bottom of the core

### 2.2.2 Sediment Sample Processing

During pre and post-dredge sampling activities the cores were kept intact in the liners and returned to the Sawyer St. field trailer for photodocumentation and visual characterization. No Progress cores were retained. Depending on the objectives and requirements of each survey type sediment samples received varying degrees of processing as described below.

**Pre-Dredge Cores.** The cores collected during the pre-dredge surveys were stored on ice in on the boat until transfer to the field trailer for processing. At the trailer each core was visually characterized and photodocumented. The pre-dredge sampling plan included a subset of cores to be selected for PCB analysis. However, based on determinations by the project team no samples were selected for analysis. Instead, each of the cores was frozen and held in the field freezer for possible analysis at a later date.

**Progress Sample Cores.** All cores collected during the progress dredging survey were processed immediately on the deck of the sampling barge. No analytical samples were required during this phase, so these cores received visual characterization only (with photodocumentation).

**Post-Dredge Sample Cores.** All samples collected during these phases were returned to the field trailer. Each core was photographed through the core liner as described above. Additionally, each core was subsampled for PCB, grain size, and total organic carbon (TOC) analysis. Based in the visual characterization a 6-inch segment above the visual interface was collected for analysis. A 6-inch segment below the visual interface was also sampled and archived for potential future analysis. The sediment was removed from the core using a disposable plastic spoon and homogenized in a disposable aluminum bowl. Processing equipment was used for one sample each then disposed of. This approach limited potential for cross-contamination and reduced the use of solvents. The sediment was then placed in the appropriate containers and preserved as described in the QAPP (Battelle 2006a)

A subset of the samples was selected for PCB homologue analysis (Table 1). Sediments for homologue analysis were taken from the same sample jar as the PCB congener samples. The field team assigned samples for homologue analysis based on horizontal location within the sampling site to achieve a representative distribution of samples across the area.



**VOC Sample Cores.** Sediment samples collected for VOC analysis were processed aboard the sampling barge. This process is described in the field collection methods of section 2.1.2.

**Sediment Grab Collections (OU3).** No sample processing was required for these samples beyond the field sampling methods described in section 2.1.3.

## 2.3 Analytical

See the QAPP Addendum *Environmental Monitoring, Sampling, and Analysis at the New Bedford Harbor Superfund Site, New Bedford, MA* for detailed analytical requirements (Battelle, 2006a). Table 1 summarizes the number of samples collected and analyzed for each phase of sampling. Results for each analysis are summarized in Section 3 and full analytical results are provided in Appendices B through D.

### 2.3.1 PCB Analysis

The analysis of 18 NOAA PCB congeners and PCB homologue groups in sediment/soil samples were conducted by Battelle Duxbury laboratory. Sediment/soil samples were extracted following modified EPA Method 3545. Samples were air-dried overnight to ensure percent solids in the samples were >50%. Approximately 5 g of air-dried sample was spiked with surrogates and extracted using Accelerated Solvent Extraction (ASE). The extracts for the first batch of sediments analyzed (batch 06-0320) were concentrated, processed through activated copper, alumina cleanup column, concentrated, and further purified by GPC/HPLC. The extracts for the remaining sediment batches (06-0378, 06-0381, 06-0385, and 06-0386) received activated copper treatment and disposable Florisil column clean-up after ASE extraction. Analytical results indicated that the sediment samples processed through different clean-up procedures did not show significant differences in surrogate recoveries and matrix interference, suggesting that all clean-up procedures are sufficient and effective. In response to expected high concentrations of PCBs in these samples, most of the sample extracts were pre-diluted prior to analysis to prevent detrimental contamination on the analytical instrument. However, most of the extracts still required further dilution in order to resolve concentrations for compounds that exceeded the calibration range during the initial analyses.

The post-Florisil extract was concentrated and fortified with internal standards (IS). All extracts were analyzed for 18 NOAA PCB congeners using gas chromatography/electron capture detector (GC/ECD), following modified EPA Method 8082. Sample data were quantified by the method of internal standards, using the spiked IS compounds. Positive congener results were confirmed by a secondary column confirmation analysis with the higher of the two results reported, unless analyst discretion required otherwise (e.g. the result without an interference signal was reported).

Extracts selected for PCB homologue analysis (approximately 7.5% of all the samples) were analyzed using gas chromatography/mass spectrometry (GC/MS), following modified EPA Method 1668A. Sample data were quantified by the method of internal standards, using the IS compounds.

Analytical quality control included analysis of a laboratory control sample (LCS), a matrix spike and matrix spike duplicate (MS/MSD), an analytical duplicate and a method blank.



### 2.3.2 VOC Analysis

Volatile Organic Compounds (VOCs) were analyzed by Alpha Woods Hole Labs in Raynham, MA. Samples were extracted following EPA Method 5035 and analyzed by Gas Chromatography/Mass Spectrometry (GC/MS) following EPA Method 8260B. One trip blank was also submitted along with the field samples. Analytical quality control included analysis of a laboratory control sample, and laboratory control sample duplicate (LCS, LCSD), a matrix spike and matrix spike duplicate (MS/MSD), an analytical duplicate and a method blank.

### 2.3.3 Grain Size and Total Organic Carbon Analysis

Grain size analyses were performed according to ASTM Method D422 and reported as percent gravel, sand, silt and clay. Quality control for grain size analyses included analysis of an analytical duplicate. Total Organic Carbon (TOC) was analyzed by EPA Method 9060 and reported as percent dry weight. Quality control for TOC included analysis of an analytical duplicate. Both analyses were performed by Applied Marine Sciences of League City, Texas.

**Table 1. Number of Sample Collected During Each Phase of Sampling.**

Survey Type	Number of Push Cores	Number of Grabs	Number of PCB Congener Samples	Number of PCB Homologues Samples	GS Samples	VOC Samples	TOC Samples
Pre-Dredge	43	0	0	0	0	0	0
Progress Dredge	94	0	0	0	0	0	0
Post-Dredge	57	0	57	9	57	0	57
OU3	0	17	18	1	0	0	0
VOC Sampling	16	0	8	0	0	20	0



## 3.0 RESULTS

### 3.1 Field Activities

#### 3.1.1 Dredging and Field Monitoring Summary

Dredging was conducted from mid-August to mid-October. Dredging was initiated in Area A, which is located in the southern sections of DMU-1 and DMU-102. The eastern portion of Area A (in DMU-102) is intertidal. As a result, dredging could not always be conducted during lower tides. To maintain efficiency a second dredge was set up on stand-by in Area B (located along the boundary of DMU-2, DMU-3, and DMU-4) or in Areas C and D of DMU-2 (Figure 3). When low water prevented dredging in Area A, dredge crews moved over to the second dredge. This approach meant that the dredging location was variable from day to day and even within days. Based on weekly bathymetric data and the progress sediment core samples discussed in this report dredgers frequently returned to previously dredged areas to perform dredge passes. Dredging in Areas A and B were primarily conducted in a North-South orientation, while dredging in Areas C and D were primarily conducted East-West.

Dredging was performed using a Mud Cat<sup>TM</sup> hydraulic dredge equipped with a horizontal auger (Figure 8). The dredge was propelled by winching itself along a traverse cable which spans the dredge area to opposite sides of the perimeter cable. As a pass is completed, support crews relocated the cable to position for the next pass. The auger on the dredge is eight-ft wide. Six foot wide dredge passes were conducted. This provided two feet of overlap into the previous pass to capture any residual sediment which may have sloughed into the



**Figure 8. Mud Cat<sup>TM</sup> Hydraulic Dredge.**

new cut. Dredge material was pumped through a pipeline to a booster pump, then to the desanding facility at Sawyer Street.

Following desanding, the remaining fine material was pumped via a separate pipeline to the dewatering, treatment, and handling facility in the Lower Harbor. In total, the 2006 dredging removed over 20,000 cubic yards of material.

The hydraulic dredge can not handle large debris which is common in this portion of the harbor. Debris removal was accomplished by ‘raking’ the bottom with a barge-mounted excavator (Figure 9). Barges secured to the side of the debris removal platform stored the debris and were moved offsite as needed. Support boats were used throughout the operation to transport crews, maintain dredges, handle the pipeline, and move barges.



**Figure 9. Debris Removal Excavator.**





Dredging related sediment sampling included sediment core collections prior to, during and upon completion of dredging activities. In addition to these dredge related sampling events additional sediment sampling efforts were conducted in 2006. This included the collection of VOC and PCB samples near the Aerovox facility and the sediment grab samples at the OU3 Pilot Cap site outside the New Bedford hurricane barrier. Results from all of these sampling activities are provided below.

### **3.1.2 Pre-Dredge Sediment Sampling**

Pre-dredge sediment sampling was conducted at forty three locations from June 20 – 22, 2006. Visual characterization of these samples was used to support the 2006 dredge plan. Results from the pre-dredge sampling effort consisted of vertical elevation data based on physical measurements and visual characterization of the sediment cores. No analysis was conducted on the pre-dredge samples. However, pre-dredge samples are been stored frozen and may be analyzed at a later date if warranted. Results from the pre-dredge coring event were supplied to Jacobs Engineering in May of 2006 to support the development of the dredge plan. Table 2 lists the relevant elevation data from the pre-dredge sampling event. The table provides a comparison of predicted versus measured elevations of: A) the visual transition between native and OL sediment layers, B) the sediment surface (i.e. sediment/water interface), and C) the amount of contaminated material to be dredged (calculated as the difference between A and B). Field collection and characterization logs for each core are provided in Appendix A. Digital photographs of the cores were uploaded to the New Bedford Harbor project database. These photographs are linked in the database to the location information and to the analytical results and can be viewed individually.

A total of 43 cores were collected during the pre-dredge event. Core locations spanned the horizontal extent of the planned dredge areas for 2006. In areas where the target dredge elevation was predicted to change rapidly over small horizontal distances, there was an increase in the sample density. In general, the target dredge elevation predictions were fairly consistent with visual assessments of the transition layer between native and contaminated material. However, in some cases there were fairly large departures for the predicted elevations (>1-ft). Figure 10 shows the target dredge elevation with an overlay showing the difference between this value and the actual elevation of the visual transition. These departures were generally in a positive direction. (i.e. target dredge elevation had over-predicted depth of the transition). In almost all cases this effect was seen where the target dredge elevation is predicted to be particularly deep. This is the case in the two former hot-spot areas that lie directly east and to the southeast of the Aerovox facility.

The physical characteristics of the pre-dredge cores were typical of sediments previously described at the Site. The cores were generally comprised of two distinct layers. The overlying layer is comprised of a very fine-grained loose black organic silt with very high moisture content ('OL' in the Unified Soil Classification System (USCS)). This layer ranged from about 0.4 to 3.1-ft of OL, with an average of 1.4-ft. Below this OL layer the sediment type was generally a moderately stiff olive-gray clay ('OH' in the USCS). Only 4 pre-dredge cores did not fit this general description (F36, Y08, U06, and G25). These cores were primarily sandy sediment with a mixed content of silt, clay, shells, and occasional wood chips. These cores were spread out over the sampling area, and did not appear to be characteristic of any particular area or feature but rather display the occasional patchiness of the sediment types. Figure 11 shows the thickness of the OL layer overlayed on the target dredge elevations. As expected increased sediment thickness relates to deeper target dredge elevation depths with thicker OL layers on the western side of the river. In these thicker OL layers



on the western side of the river, the upper sediments were often associated with oil sheens, oil smearing on the core barrel, and odors typical of hydrogen sulfide or hydrocarbons.

**Table 2. Elevation Data From the Pre-Dredge Sampling Event.**

Station (Z Block)	Predicted Elevations			Measured Elevations (ft)			Differences (Predicted vs Measured) (ft)		
	Target Depth Elevation (NGVD ft)	Predicted Elevation of Sediment surface (NGVD ft)	Predicted Sediment Thickness to be Dredged (ft)	Measured Elevation of Visual Transition (Native to OL) (NGVD ft)	Measured Elevation of Sediment Surface (NGVD ft)	Measured Sediment Thickness Remaining (ft)	Actual vs. Predicted Transition Elevation (NGVD ft)	Actual vs. Predicted Sediment Surface Elevation (NGVD ft)	Actual vs. Predicted Sediment Thickness (ft)
C29	-3	-1.80	1.2	-3.30	-2.10	1.20	-0.30	-0.30	0.00
C41	-4.2	-2.70	1.5	-4.05	-2.55	1.50	0.15	0.15	0.00
D36	-5.5	-2.40	3.1	-4.30	-2.60	1.70	1.20	-0.20	-1.40
E27	-3.6	-1.80	1.8	-3.20	-2.00	1.20	0.40	-0.20	-0.60
E30	-4.2	-1.90	2.3	-3.55	-2.05	1.50	0.65	-0.15	-0.80
E32	-4.8	-2.10	2.7	-3.30	-2.20	1.10	1.50	-0.10	-1.60
E33	-5.4	-2.10	3.3	-3.70	-2.30	1.40	1.70	-0.20	-1.90
F36	-6	-2.60	3.4	-4.90	-3.40	1.50	1.10	-0.80	-1.90
F38	-5.6	-2.60	3	-4.15	-2.55	1.60	1.45	0.05	-1.40
G25	-4	-1.60	2.4	-1.90 <sup>a</sup>	-1.90	0.0 <sup>a</sup>	2.10 <sup>a</sup>	-0.30 <sup>a</sup>	-2.40 <sup>a</sup>
H24	-3.6	-1.90	1.7	-3.55	-1.65	1.90	0.05	0.25	0.20
H27	-4.7	-2.40	2.3	-4.20	-2.80	1.40	0.50	-0.40	-0.90
H29	-5.4	-2.20	3.2	-4.30	-2.80	1.50	1.10	-0.60	-1.70
H32	-6.1	-2.40	3.7	-4.05	-2.90	1.15	2.05	-0.50	-2.55
H36	-6.7	-3.00	3.7	-4.50	-3.00	1.50	2.20	0.00	-2.20
H41	-7.2	-3.90	3.3	-5.35	-3.10	2.25	1.85	0.80	-1.05
J17	-3.1	-2.10	1	-3.45	-1.65	1.80	-0.35	0.45	0.80
L5	-4.1	-1.7	2.4	-4.3	-2.8	1.5	-0.2	-1.1	-0.9
L9	-6.5	-1.60	4.9	-5.15	-2.45	2.70	1.35	-0.85	-2.20
L12	-6.3	-1.90	4.4	-6.50	-3.70	2.80	-0.20	-1.80	-1.60
L20	-4.8	-2.60	2.2	-5.50	-3.90	1.60	-0.70	-1.30	-0.60
M3	-4.2	-2.2	2	-3.35	-1.95	1.4	0.85	0.25	-0.6
M10	-6.9	-1.90	5	-5.30	-2.20	3.10	1.60	-0.30	-1.90
M23	-5.3	-2.80	2.5	-4.65	-3.35	1.30	0.65	-0.55	-1.20
N6	-5.7	-2.2	3.5	-4.9	-3	1.9	0.8	-0.8	-1.6
N8	-7.5	-2.2	5.3	-5.95	-4.85	1.1	1.55	-2.65	-4.2
N14	-4.5	-2.7	1.8	-4.9	-3.35	1.55	-0.4	-0.65	-0.25
O12	-5.4	-2.40	3	-3.90	-3.20	0.70	1.50	-0.80	-2.30
P8	-5.9	-2.7	3.2	-5.5	-4.5	1	0.4	-1.8	-2.2
Q21	-4.1	-2.80	1.3	-3.55	-2.30	1.25	0.55	0.50	-0.05
R3	-3.7	-1.8	1.9	-2.95	-2.05	0.9	0.75	-0.25	-1
R11	-5	-2.00	3	-4.50	-3.70	0.80	0.50	-1.70	-2.20



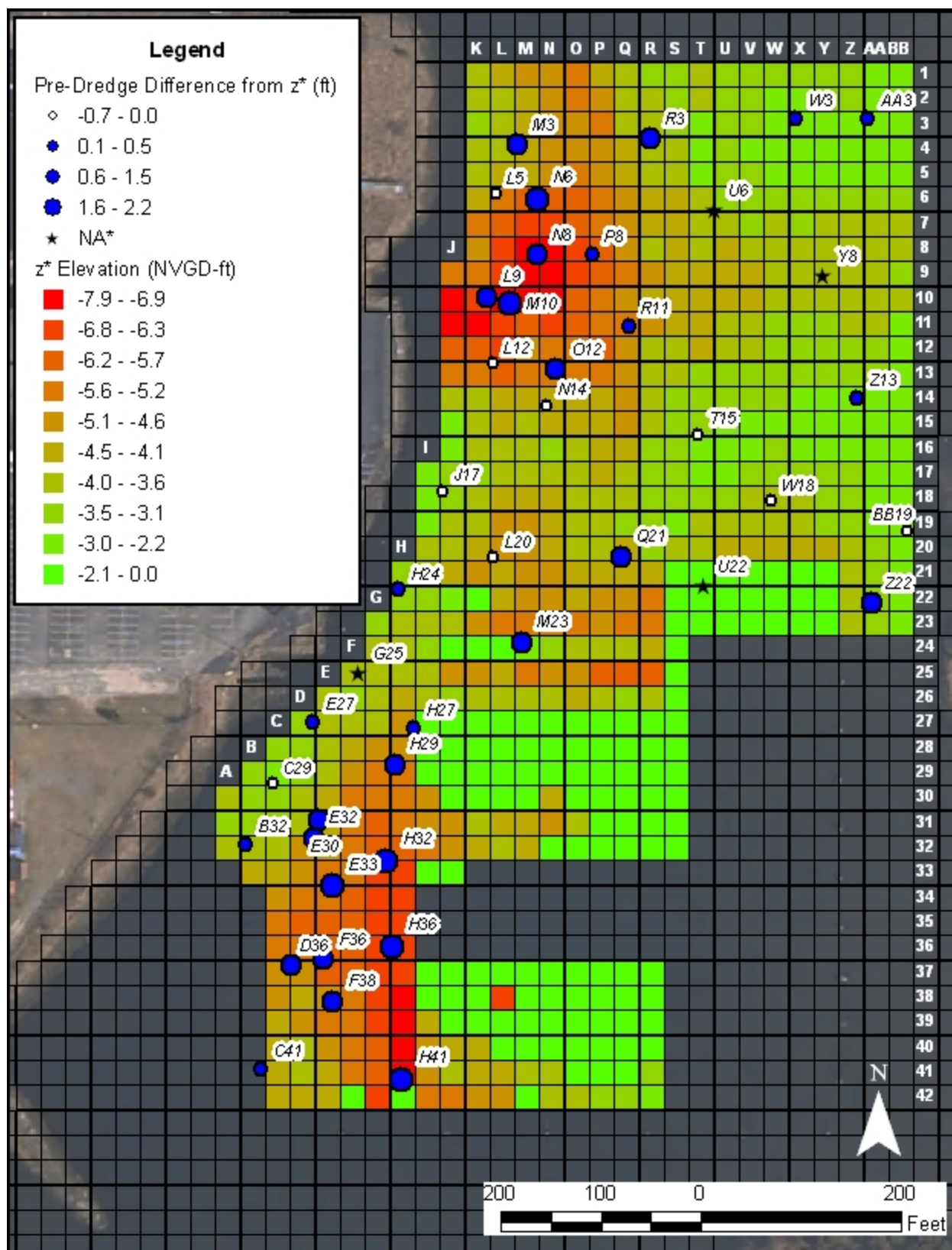
**Table 2 (cont). Elevation Data From the Pre-Dredge Sampling Event.**

Station (Z Block)	Predicted Elevations			Measured Elevations (ft)			Differences (Predicted vs Measured) (ft)		
	Target Depth Elevation (NGVD ft)	Predicted Elevation of Sediment surface (NGVD ft)	Predicted Sediment Thickness to be Dredged (ft)	Measured Elevation of Visual Transition (Native to OL) (NGVD ft)	Measured Elevation of Sediment Surface (NGVD ft)	Measured Sediment Thickness Remaining (ft)	Actual vs. Predicted Transition Elevation (NGVD ft)	Actual vs. Predicted Sediment Surface Elevation (NGVD ft)	Actual vs. Predicted Sediment Thickness (ft)
T15	-3.3	-2.00	1.3	-3.60	-2.50	1.10	-0.30	-0.50	-0.20
U6	-3.5	-1.70	1.8	-2.50 <sup>a</sup>	-2.50	0.0 <sup>a</sup>	1.00 <sup>a</sup>	-0.80 <sup>a</sup>	-1.80 <sup>a</sup>
U22	<sup>b</sup>	<sup>b</sup>	<sup>b</sup>	-5.95	-5.55	0.40	<sup>b</sup>	<sup>b</sup>	<sup>b</sup>
W3	-2.8	-1.7	1.1	-2.5	-1.7	0.8	0.3	0	-0.3
W18	-3.7	-2.00	1.7	-3.80	-2.70	1.10	-0.10	-0.70	-0.60
Y8	-3.8	-1.5	2.3	-1.90 <sup>a</sup>	-1.90	0.0 <sup>a</sup>	1.90 <sup>a</sup>	-0.40 <sup>a</sup>	-2.30 <sup>a</sup>
Z13	-3.3	-1.60	1.7	-3.00	-1.70	1.30	0.30	-0.10	-0.40
Z22	-4	-1.90	2.1	-2.80	-1.70	1.10	1.20	0.20	-1.00
AA3	-2.7	-1.5	1.2	-2.6	-1.7	0.9	0.1	-0.2	-0.3
B32	-3.6	-1.90	1.7	-3.10	-2.00	1.10	0.50	-0.10	-0.60
BB19	-2.6	-1.60	1	-2.75	-2.10	0.65	-0.15	-0.50	-0.35

<sup>a</sup> – No OL was present. No visual transition was present. Sediment-water interface is used as the measured depth of the transition with 0.0-ft of contaminated sediment remaining.

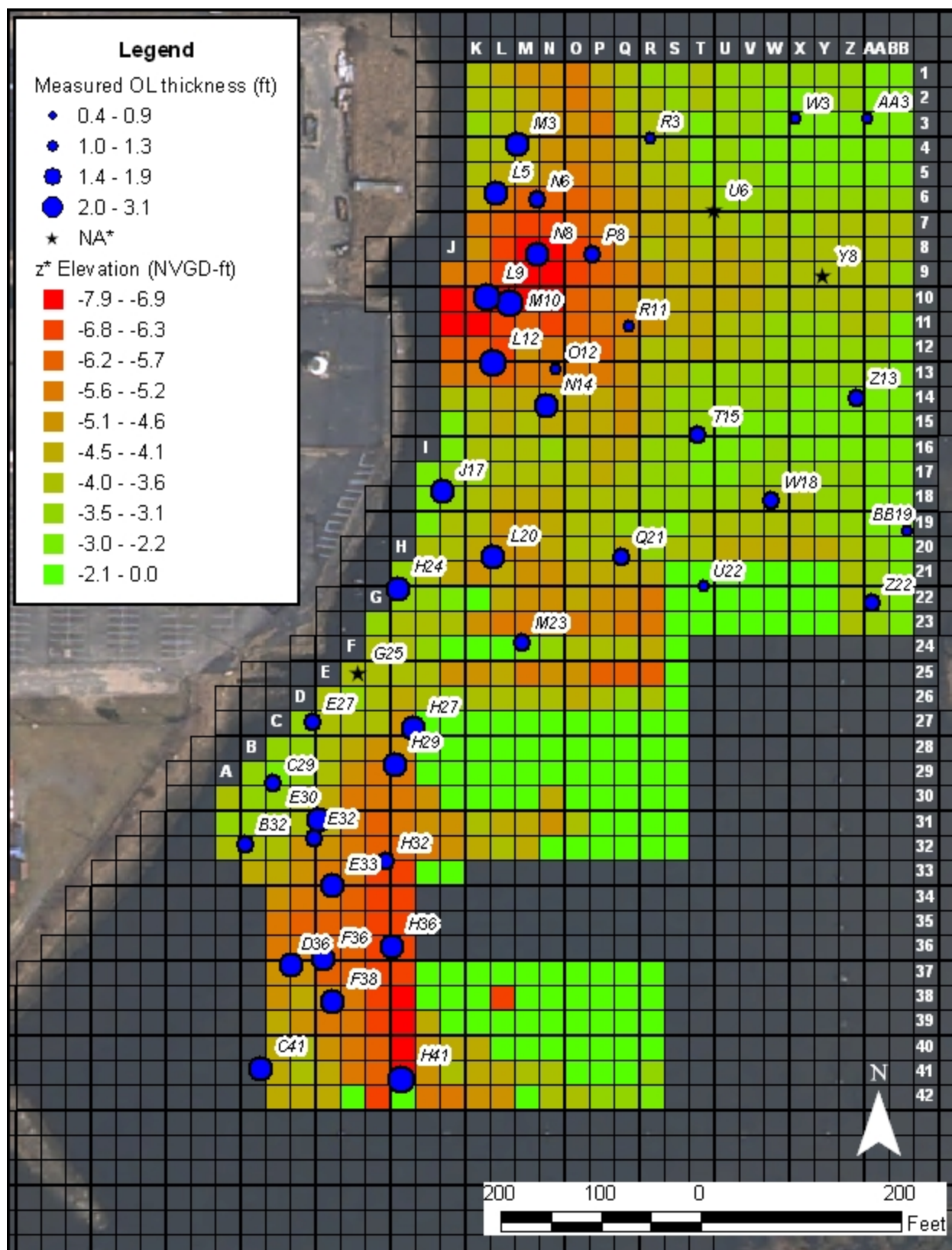
<sup>b</sup> – No target dredge elevation value was available for this z-block.





\*Stations Y8, Z6, and G25 had no visual transition to compare to predicted clean elevation.  
Data for the predicted clean elevation of station U22 was incomplete.

**Figure 10. Pre-Dredge Transition Elevations Compared to Target Dredge Elevation.**



\*Stations Y8, Z6, and G25 had no visual transition to compare to predicted clean elevation.

**Figure 11. Pre-Dredge Thickness of OL Layer.**



### 3.1.3 Progress Dredge Sediment Sampling

Progress dredge samples were collected as needed during the 2006 dredge season to provide feedback regarding dredge progress and success. In general, this sampling was conducted during each week of the dredge season, although during the early stages or when progress was slow, this sampling was not required. This sampling was conducted to provide feedback to the dredge operators regarding the performance of dredge activities conducted during that week. Core samples received visual characterization and elevation measurements directly aboard the sampling barge. No samples were retained for chemical analysis. Following collection of each core, the sediment was shaken out of the core barrel at the station. Characterization and elevation measurements were targeted at identifying the elevation of the sediment-water interface and the visual transition from OL to OH. This information helped dredge operators confirm the amount and depth of remaining contaminated sediment. These elevation measurements were also useful in determining if areas were overdredged. Based on progress dredge core results and the weekly bathymetric survey, dredge operators returned to areas to remove any remaining material. Figure 5 shows the location of the progress samples and Table 3 list the field data collected during each of the progress dredge events. However, it should be noted that because additional passes were conducted following the progress coring, this data is not indicative of the sediment condition at the completion of the 2006 dredge season. Field collection and characterization logs for each core are provided in Appendix A. Digital photographs of the cores were uploaded to the New Bedford Harbor project database. These photographs are linked in the database to the location information and to the analytical results and can be viewed individually.

**Table 3. Elevation Data From the Progress Dredge Sampling Events.**

Station (Z Block)	Target Dredge Elevation (NGVD ft)	Measured Elevation of Visual Transition (Native to OL) (NGVD ft)	Measured Elevation of Sediment Surface (NGVD ft)	Measured Sediment Thickness Remaining (ft)	Actual vs. Predicted Transition Elevation (ft)
D42	-4.40	-5.05	-4.90	0.15	-0.65
H27	-4.10	-4.15	-2.45	1.70	-0.05
H30	-4.10	-4.10	-2.50	1.60	0.00
H33	-4.70	-4.20	-2.40	1.80	0.50
H36	-4.60	-4.20	-2.70	1.50	0.40
I24	-3.40	-4.10	-2.60	1.50	-0.70
I24	-3.40	-2.90	-2.90	0.00	0.50
I26	-3.30	-4.05	-3.60	0.45	-0.75
I32	-3.50	-3.45	-2.30	1.15	0.05
I42	-5.20	-5.55	-5.10	0.45	-0.35
J24	-2.80	-4.85	-3.85	1.00	-2.05
J31	-3.20	-4.45	-3.60	0.85	-1.25
J40	-4.20	-5.60	-4.80	0.80	-1.40
J40	-4.20	-4.45	-3.30	1.15	-0.25
K6	-4.40	-5.10	-4.80	0.30	-0.70
K14	-4.10	-3.80	-3.55	0.25	0.30
K24	-3.30	-5.40	-5.20	0.20	-2.10



**Table 3 (cont.). Elevation Data From the Progress Dredge Sampling Events.**

Station (Z Block)	Target Dredge Elevation (NGVD ft)	Measured Elevation of Visual Transition (Native to OL) (NGVD ft)	Measured Elevation of Sediment Surface (NGVD ft)	Measured Sediment Thickness Remaining (ft)	Actual vs. Predicted Transition Elevation (ft)
K42	-4.60	-6.50	-5.70	0.80	-1.90
L2	-4.00	-3.90	-3.60	0.30	0.10
L18	-4.70	-5.00	-4.40	0.60	-0.30
L38	-6.30	-6.50	-6.40	0.10	-0.20
L38	-6.30	-4.60	-4.40	0.20	1.70
M2	-4.30	-4.50	-4.00	0.50	-0.20
M10	-5.30	-5.10	-3.80	1.30	0.20
M10	-5.30	-6.00	-4.80	1.20	-0.70
M19	-5.30	-5.25	-4.05	1.20	0.05
M20	-5.40	-5.50	-5.00	0.50	-0.10
M41	-3.90	-4.55	-4.10	0.45	-0.65
N1	-5.10	-4.90	-4.80	0.10	0.20
N5	-4.20	-5.10	-4.30	0.80	-0.90
N8	-6.30	-6.70	-6.70	0.00	-0.40
N14	-4.40	-5.00	-3.70	1.30	-0.60
N16	-3.60	-5.30	-5.10	0.20	-1.70
N17	-4.10	-4.60	-4.00	0.60	-0.50
N24	-4.80	-4.80	-4.55	0.25	0.00
N24	-4.80	-5.30	-4.80	0.50	-0.50
N24	-4.80	-5.20	-4.20	1.00	-0.40
O5	-4.40	-4.80	-3.90	0.90	-0.40
O7	-5.30	-5.40	-3.50	1.90	-0.10
O11	-4.60	-4.90	-3.50	1.40	-0.30
O12	-4.20	-4.50	-4.00	0.50	-0.30
O20	-3.60	-3.70	-3.20	0.50	-0.10
O26	-4.30	-3.60	-2.90	0.70	0.70
P3	-5.40	-5.30	-4.10	1.20	0.10
P15	-4.50	-4.50	-3.60	0.90	0.00
P20	-3.50	-4.20	-3.50	0.70	-0.70
P24	-4.80	-5.70	-5.70	0.00	-0.90
P25	-5.80	-4.60	-4.00	0.60	1.20
P25	-5.80	-5.40	-4.50	0.90	0.40
Q4	-3.40	-3.70	-3.30	0.40	-0.30
Q11	-4.40	-3.65	-3.50	0.15	0.75
Q15	-5.00	-3.95	-3.60	0.35	1.05
Q19	-2.80	-3.65	-3.50	0.15	-0.85
Q42	-3.20	-4.00	-3.50	0.50	-0.80
R24	-4.60	-5.10	-5.00	0.10	-0.50
R26	-3.60	-4.90	-4.40	0.50	-1.30
R42	-3.00	-3.65	-3.50	0.15	-0.65



**Table 3 (cont). Elevation Data From the Progress Dredge Sampling Events.**

Station (Z Block)	Target Dredge Elevation (NGVD ft)	Measured Elevation of Visual Transition (Native to OL) (NGVD ft)	Measured Elevation of Sediment Surface (NGVD ft)	Measured Sediment Thickness Remaining (ft)	Actual vs. Predicted Transition Elevation (ft)
S1	-3.30	-4.05	-4.05	0.00	-0.75
S3	-3.50	-3.70	-3.60	0.10	-0.20
S7	-3.00	-4.15	-4.05	0.10	-1.15
S7	-3.00	-4.70	-3.85	0.85	-1.70
S11	-3.40	-4.15	-2.35	1.80	-0.75
S13	-3.70	-4.00	-3.50	0.50	-0.30
S13	-3.70	-3.70	-3.20	0.50	0.00
S15	-3.30	-4.20	-3.80	0.40	-0.90
S19	-3.30	-5.65	-3.95	1.70	-2.35
S20	-4.20	-4.90	-4.20	0.70	-0.70
T6	-2.65	-2.05	-2.05	0.00	0.60
T8	-2.70	-4.15	-3.55	0.60	-1.45
T9	-2.90	-5.25	-4.40	0.85	-2.35
T11	-3.20	-3.80	-3.20	0.60	-0.60
T15	-3.60	-3.40	-2.40	1.00	0.20
T16	-3.30	-4.50	-4.10	0.40	-1.20
U19	-4.40	-3.65	-3.10	0.55	0.75
V7	-2.80	-4.75	-3.70	1.05	-1.95
V10	-2.80	-3.10	-2.60	0.50	-0.30
V16	-3.00	-5.10	-3.60	1.50	-2.10
V20	-5.00	-6.15	-5.45	0.70	-1.15
V22	-5.20	-5.90	-5.45	0.45	-0.70
W2	-2.80	-5.35	-4.95	0.40	-2.55
X8	-2.70	-3.80	-3.40	0.40	-1.10
X14	-2.90	-3.10	-3.00	0.10	-0.20
X14	-2.90	-3.40	-2.90	0.50	-0.50
X17	-3.20	-3.20	-2.90	0.30	0.00
X19	-3.50	-3.90	-3.80	0.10	-0.40
Z11	-3.50	-3.70	-3.20	0.50	-0.20
Z6	-3.90	-3.60	-3.50	0.10	0.30
Z7	-2.90	-2.60	-2.60	0.00	0.30
Z20	-3.70	-4.00	-3.60	0.40	-0.30
AA1	-2.50	-3.50	-3.10	0.40	-1.00
AA1	-2.50	-3.60	-3.25	0.35	-1.10
AA13	-3.20	-3.40	-3.15	0.25	-0.20
AA17	-2.80	-2.85	-2.50	0.35	-0.05
BB4	-2.50	-2.40	-2.40	0.00	0.10





### 3.1.4 Post-Dredge Sediment Sampling

The post-dredge sampling event was conducted from October 31 to November 7, 2006 following the completion of dredge activities. This effort was conducted to verify the final sediment condition at the end of the 2006 dredge season. The majority of stations represented a revisit of pre-dredge locations for direct comparison of dredging performance. Additionally, cores were collected from the 2004 and 2005 dredge areas. A total of 57 cores were collected during the post-dredge event. Of these samples 48 were revisits of the pre-dredge stations (including 5 duplicates) and 9 were in previously dredged areas. Table 4 lists the elevation data collected for the post-dredge core samples. The average thickness of remaining contaminated sediment in the post-dredge cores is 0.63-ft, with a range of 0.0 to 2.2-ft (based in visual characterization only).

The post-dredge core results were compared to the pre-dredge cores to assess the success of the 2006 dredge efforts. Table 5 compares the elevations of visual transition as well as the sediment-water interface for each core during both events. The final two columns of the table describe any changes in the elevation of the transition (i.e. if dredging occurred below the pre-dredge transition layer) and the depth of sediment dredged at each location during the 2006 season. This comparison ranged from -3.4-ft to 2.2-ft. Negative values in the comparison of transition elevations indicate that the post-dredge transition is deeper than pre-dredge. This generally suggests that dredging related activities occurred deeper than the transition identified pre-dredge. However, horizontal variability is also present, and pre/post-dredge cores may not be perfectly correlated. This is particularly pronounced in areas where the target dredge elevation changes rapidly over short horizontal distances. Positive values in the elevation comparison column of Table 5 are clearly an expression of this horizontal variability (i.e. transition elevation can not become shallower due to dredging), and the negative values may also contain some degree of this uncertainty. Overall it appears that dredging activity resulted in only a slight increase in the target dredge elevation (mean = -0.35-ft, median = -0.25-ft).

The final column in Table 5 indicates the depth of material removed during dredging at each of the distinct sample locations. As described above horizontal variability accounts for some error in these measurements. This is clearly expressed as negative values in this column, but also results in an unknown margin of uncertainty in the positive results. The negative values can not be considered true values (i.e. negative amounts of sediments dredged), however the values are presented as a reference for the degree of uncertainty in these measurements. The average depth of contaminated sediment dredged at the sample locations was 1.12-ft.

The physical characteristics of the post-dredge cores had the same general characteristics as seen in the pre-dredge events. There were typically two distinct layers (OL overlying OH). However, as expected there were noticeable differences. As indicated by the elevation results discussed above, the overall thickness of the OL was clearly decreased. The visual transition zone in many of the post-dredge cores was noticeably different from the pre-dredge cores. There were fewer cores with sharp demarcations between the OL and OH layers, and these blurred transitions tended to be thicker (>0.5-ft) than seen in pre-dredge cores.

Each post-dredge core was subsampled for PCB, grain size, and total organic carbon (TOC) analysis. Based on the visual characterization a 6-inch segment above the visual interface was collected for



analysis. Analytical results are discussed in subsequent sections. Field collection and characterization logs for each core are provided in Appendix A. Digital photographs of the cores were uploaded to the New Bedford Harbor project database. These photographs are linked in the database to the location information and to the analytical results and can be viewed individually.

**Table 4. Elevation Data From the Post Dredge Sampling Event.**

Station (Z Block)	Target Dredge Elevation (NGVD ft)	Measured Elevation of Visual Transition (Native to OL) (NGVD ft)	Measured Elevation of Sediment Surface (NGVD ft)	Measured Sediment Thickness Remaining (ft)	Actual vs. Predicted Transition Elevation (ft)
B32 <sup>b</sup>	-2.90	-3.20	-2.20	1.00	-0.30
C29 <sup>b</sup>	-3.10	-3.10	-2.10	1.00	0.00
C41 <sup>b</sup>	-3.70	-3.90	-3.00	0.90	-0.20
C41-DUP <sup>b</sup>	-3.70	-4.00	-2.90	1.10	-0.30
D36 <sup>b</sup>	-4.50	-4.00	-3.60	0.40	0.50
E27 <sup>b</sup>	-3.20	-3.60	-3.50	0.10	-0.40
E30 <sup>b</sup>	-3.50	-4.90	-4.40	0.50	-1.40
E32 <sup>b</sup>	-3.50	-4.50	-4.50	0.00	-1.00
E33 <sup>b</sup>	-3.80	-3.80	-3.30	0.50	0.00
F36 <sup>b</sup>	-4.50	-4.60	-4.60	0.00	-0.10
F38 <sup>b</sup>	-4.50	-4.70	-4.40	0.30	-0.20
F53	<sup>a</sup>	-6.40	-4.50	1.90	<sup>a</sup>
F58	<sup>a</sup>	-6.30	-5.90	0.40	<sup>a</sup>
G25 <sup>b</sup>	-2.50	-3.00	-2.70	0.30	-0.50
H24	-3.40	-3.50	-1.30	2.20	-0.10
H27	-4.10	-4.30	-4.10	0.20	-0.20
H29	-4.40	-4.40	-4.20	0.20	0.00
H32	-4.00	-4.90	-4.00	0.90	-0.90
H36 <sup>b</sup>	-4.60	-4.70	-4.50	0.20	-0.10
H41	-5.20	-5.30	-5.10	0.20	-0.10
J17 <sup>b</sup>	-3.40	-3.80	-3.30	0.50	-0.40
K50	<sup>a</sup>	-5.90	-5.40	0.50	<sup>a</sup>
L5 <sup>b</sup>	-4.10	-5.10	-4.50	0.60	-1.00
L9 <sup>b</sup>	-5.00	-5.80	-5.50	0.30	-0.80
L12 <sup>b</sup>	-6.20	-5.90	-5.60	0.30	0.30
L20 <sup>b</sup>	-5.40	-5.40	-4.20	1.20	0.00
L20-DUP <sup>b</sup>	-5.40	-5.60	-4.30	1.30	-0.20
M3 <sup>b</sup>	-4.20	-4.80	-4.00	0.80	-0.60
M10 <sup>b</sup>	-5.30	-5.30	-4.60	0.70	0.00
M10-DUP <sup>b</sup>	-5.30	-5.30	-4.60	0.70	0.00
M23 <sup>b</sup>	-4.80	-4.00	-3.00	1.00	0.80
M23-DUP <sup>b</sup>	-4.80	-4.20	-3.10	1.10	0.60
N6 <sup>b</sup>	-4.80	-5.60	-5.30	0.30	-0.80
N8 <sup>b</sup>	-6.30	-6.30	-5.60	0.70	0.00
N8-DUP <sup>b</sup>	-6.30	-6.30	-5.60	0.70	0.00
N14	-4.40	-4.70	-4.40	0.30	-0.30



**Table 4 (cont). Elevation Data From the Post Dredge Sampling Event.**

Station (Z Block)	Target Dredge Elevation (NGVD ft)	Measured Elevation of Visual Transition (Native to OL) (NGVD ft)	Measured Elevation of Sediment Surface (NGVD ft)	Measured Sediment Thickness Remaining (ft)	Actual vs. Predicted Transition Elevation (ft)
N28	a	-6.40	-5.10	1.30	a
N40	a	-5.10	-3.90	1.20	a
N58	a	-4.30	-3.20	1.10	a
O12	-4.20	-4.50	-4.20	0.30	-0.30
P8	-5.40	-5.60	-4.60	1.00	-0.20
Q21	-3.90	-3.80	-3.20	0.60	0.10
Q44	a	-3.90	-3.50	0.40	a
R3	-3.60	-3.70	-3.10	0.60	-0.10
R11	-4.20	-4.50	-3.50	1.00	-0.30
T15	-3.60	-3.90	-3.40	0.50	-0.30
U6	-3.50	-3.80	-2.80	1.00	-0.30
U22	-5.00	-5.90	-5.10	0.80	-0.90
V28	a	-6.50	-5.80	0.70	a
V39	a	-4.00	-3.80	0.20	a
W3	-2.70	-3.00	-3.00	0.00	-0.30
W18	-3.80	-4.30	-3.60	0.70	-0.50
Y8	-2.80	-3.60	-3.60	0.00	-0.80
Z13	-3.20	-3.30	-3.10	0.20	-0.10
Z22	-3.60	-3.70	-3.10	0.60	-0.10
AA3	-2.70	-2.90	-2.90	0.00	-0.20
BB19	-2.60	-2.70	-2.50	0.20	-0.10

<sup>a</sup> – No data

<sup>b</sup> – Target Dredge Elevation was not reached at this location.

**Table 5. Comparison of Pre-dredge and Post-dredge Elevations.**

Station (Z Block)	Pre-dredge			Post-dredge			Comparison	
	Measured Elevation of Visual Transition (NGVD ft)	Measured Elevation of Sediment Surface (NGVD ft)	Measured Sediment Thickness Remaining (ft)	Measured Elevation of Visual Transition (NGVD ft)	Measured Elevation of Sediment Surface (NGVD ft)	Measured Sediment Thickness Remaining (ft)	Pre-Post Difference In Transition Elevation <sup>a</sup> (ft)	Amount of Sediment Dredged <sup>b</sup> (ft)
B32 <sup>c</sup>	-3.10	-2.00	1.10	-3.20	-2.20	1.00	-0.10	0.20
C29 <sup>c</sup>	-3.30	-2.10	1.20	-3.10	-2.10	1.00	0.20	0.00
C41 <sup>c</sup>	-4.05	-2.55	1.50	-3.90	-3.00	0.90	0.15	0.45
D36 <sup>c</sup>	-4.30	-2.60	1.70	-4.00	-3.60	0.40	0.30	1.00
E27 <sup>c</sup>	-3.20	-2.00	1.20	-3.60	-3.50	0.10	-0.40	1.50
E30 <sup>c</sup>	-3.55	-2.05	1.50	-4.90	-4.40	0.50	-1.35	2.35
E32 <sup>c</sup>	-3.30	-2.20	1.10	-4.50	-4.50	0.00	-1.20	2.30
E33 <sup>c</sup>	-3.70	-2.30	1.40	-3.80	-3.30	0.50	-0.10	1.00





**Table 5 (cont). Comparison of Pre-dredge and Post-dredge Elevations.**

	Pre-dredge			Post-dredge			Comparison	
<b>Station (Z Block)</b>	<b>Measured Elevation of Visual Transition (NGVD ft)</b>	<b>Measured Elevation of Sediment Surface (NGVD ft)</b>	<b>Measured Sediment Thickness Remaining (ft)</b>	<b>Measured Elevation of Visual Transition (NGVD ft)</b>	<b>Measured Elevation of Sediment Surface (NGVD ft)</b>	<b>Measured Sediment Thickness Remaining (ft)</b>	<b>Pre-Post Difference In Transition Elevation<sup>a</sup> (ft)</b>	<b>Amount of Sediment Dredged<sup>b</sup> (ft)</b>
F36 <sup>c</sup>	-4.90	-3.40	1.50	-4.60	-4.60	0.00	0.30	1.20
F38 <sup>c</sup>	-4.15	-2.55	1.60	-4.70	-4.40	0.30	-0.55	1.85
G25 <sup>c</sup>	-1.90	-1.90	0.00	-3.00	-2.70	0.30	-1.10	0.80
H24	-3.55	-1.65	1.90	-3.50	-1.30	2.20	0.05	-0.35
H27	-4.20	-2.80	1.40	-4.30	-4.10	0.20	-0.10	1.30
H29	-4.30	-2.80	1.50	-4.40	-4.20	0.20	-0.10	1.40
H32	-4.05	-2.90	1.15	-4.90	-4.00	0.90	-0.85	1.10
H36 <sup>c</sup>	-4.50	-3.00	1.50	-4.70	-4.50	0.20	-0.20	1.50
H41	-5.35	-3.10	2.25	-5.30	-5.10	0.20	0.05	2.00
J17 <sup>c</sup>	-3.45	-1.65	1.80	-3.80	-3.30	0.50	-0.35	1.65
L5 <sup>c</sup>	-4.30	-2.80	1.50	-5.10	-4.50	0.60	-0.80	1.70
L9 <sup>c</sup>	-5.15	-2.45	2.70	-5.80	-5.50	0.30	-0.65	3.05
L12 <sup>c</sup>	-6.50	-3.70	2.80	-5.90	-5.60	0.30	0.60	1.90
L20 <sup>c</sup>	-5.50	-3.90	1.60	-5.40	-4.20	1.20	0.10	0.30
M3 <sup>c</sup>	-3.35	-1.95	1.40	-4.80	-4.00	0.80	-1.45	2.05
M10 <sup>c</sup>	-5.30	-2.20	3.10	-5.30	-4.60	0.70	0.00	2.40
M23 <sup>c</sup>	-4.65	-3.35	1.30	-4.00	-3.00	1.00	0.65	-0.35
N6 <sup>c</sup>	-4.90	-3.00	1.90	-5.60	-5.30	0.30	0.35	0.45
N8 <sup>c</sup>	-5.95	-4.85	1.10	-6.30	-5.60	0.70	-1.40	2.60
N14	-4.90	-3.35	1.55	-4.70	-4.40	0.30	0.20	1.05
O12	-3.90	-3.20	0.70	-4.50	-4.20	0.30	-0.60	1.00
P8	-5.50	-4.50	1.00	-5.60	-4.60	1.00	-0.10	0.10
Q21	-3.55	-2.30	1.25	-3.80	-3.20	0.60	-0.25	0.90
R3	-2.95	-2.05	0.90	-3.70	-3.10	.60	-1.55	1.45
R11	-4.50	-3.70	0.80	-4.50	-3.50	1.00	0.80	-0.60
T15	-3.60	-2.50	1.10	-3.90	-3.40	0.50	-0.30	0.90
U6	-2.50	-2.50	0.00	-3.80	-2.8	1.00	-3.40	2.60
U22	-5.95	-5.55	0.40	-5.90	-5.10	0.80	2.15	-2.75
W3	-2.50	-1.70	0.80	-3.00	-3.00	0.00	-0.50	1.30
W18	-3.80	-2.70	1.10	-4.30	-3.60	0.70	-0.50	0.90
Y8	-1.90	-1.90	0.00	-3.60	-3.60	0.00	-1.70	1.70
Z13	-3.00	-1.70	1.30	-3.30	-3.10	0.20	-0.30	1.40
Z22	-2.80	-1.70	1.10	-3.70	-3.10	0.60	-0.90	1.40
AA3	-2.60	-1.70	0.90	-2.90	-2.90	0.00	-0.30	1.20
BB19	-2.75	-2.10	0.65	-2.70	-2.50	0.20	0.05	0.40

<sup>a</sup> – Negative values indicate that the post-dredge transition elevation is deeper than pre-dredge. However, horizontal variability is also present, and pre/post-dredge cores may not be perfectly correlated, such as instances with a positive value in this column

<sup>b</sup> – As described in footnote 'a', horizontal variability accounts for some error in these measurements. This is clearly expressed as negative values in this column, but also results in an unknown margin of error in the positive results. Although negative values can not be considered 'real' dredge amounts, they are presented as an indication of the degree of potential variability in the measurements.

<sup>c</sup> – Target Dredge Elevation was not reached at this location.



### 3.1.5 VOC Sampling

Sampling for VOCs was conducted at 16 locations on the western side of the river, near the Aerovox facility. At each location samples were collected from at least two depths; 1) above the visual transition, and 2) below the visual transition. The headspace readings conducted by Jacobs Engineering were used to identify a subset of the samples to be submitted for analysis. Table 6 lists the samples selected for analysis. Sediments near the Aerovox shoreline were very oily and had strong odors which were not readily identifiable.

**Table 6. VOC Samples Selected for Laboratory Analysis.**

<b>Station ID</b>	<b>Analytical Sample ID (Suffix 'T' = sample from top layer (Suffix 'B' = sample from Bottom layer)</b>	<b>Elevation of transition (OL/OH) (NGVD ft)</b>	<b>Elevation of Sample (NGVD ft)</b>
2 voc	S-06C-0002-T	-3.8	-3.4
4 voc	S-06C-0004-T	-4.5	-3.7
6 voc	S-06C-0006-B	-2.5	-2.8
6 voc	S-06C-0006-T	-2.5	-1.8
7 voc	S-06C-0007-B	-4.8	-5.0
7 voc	S-06C-0007-T	-4.8	-4.0
8 voc	S-06C-0008-B	-2.6	-3.2
8 voc	S-06C-0008-T	-2.6	-1.2
9 voc	S-06C-0009-B	-5.4	-5.8
9 voc	S-06C-0009-T	-5.4	-4.9
10 voc	S-06C-0010-B	-3.75	-4.0
10 voc	S-06C-0010-T	-3.75	-3.3
11 voc	S-06C-0011-B	-2.9	-3.2
11 voc	S-06C-0011-T	-2.9	-1.2
12 voc	S-06C-0012-B	-5.5	-5.8
12 voc	S-06C-0012-T	-5.5	-3.8
13 voc	S-06C-0013-T	-4.2	-3.7
13 voc	S-06C-0013-T	-4.2	-3.7
15 voc	S-06C-0015-B	-2.9	-3.2
15 voc	S-06C-0015-T	-2.9	-2.75

### 3.1.6 OU3 Sampling

Grab samples collected at the OU3 Pilot Cap Site were collected from either ridges or valleys as described in Section 2.2. Although no detailed bathymetry was conducted in 2006, based on water depths and field observations from fathometer readings it appears that the locations of these ridges and valleys has changed very little. Sediments from all samples were generally similar, although there was some variation between the ridge samples and the valley samples. All of the samples had a thin (<1cm) light brown surface coating representative of an active algal layer. All samples were mostly fine sand. Based on the visual characterizations, the valley locations tended to have somewhat higher silt content than the ridge locations although this was not universally true. Field collection and characterization logs for each core are provided in Appendix A.



## 3.2 Analytical

### 3.2.1 PCB Analyses

For chemical analysis, 57 post-dredging sediment samples (52 field samples + 5 field duplicate), 8 sediment samples from the Aerovox area, and 18 surface sediment samples (17 field samples + 1 field duplicate) from the OU3 Pilot Cap Site were analyzed for PCB congeners. Out of these 83 samples for congener analysis, 11 samples were selected by the Battelle field team to be analyzed for PCB homologue groups. Sample analyses were performed by Battelle Duxbury laboratory. Detailed analytical results, including concentrations for individual 18 congeners and total PCBs (calculated as sum of 18 congeners times the site specific factor of 2.6) for all the samples, as well as concentrations for individual homologue groups and total PCBs (calculated as sum of homologue groups) for the selected samples, are presented in Appendix B.

Note that for congener-based results, the final total PCB concentrations presented represent the sum of the 18 NOAA congeners times the site-specific factor of 2.6. For the homolog-based results, the final total PCB concentration represents the sum of the 10 homolog group concentrations. For both congener and homologue data, non-detect results were treated as 0 mg/kg, and not included in the calculation of total PCBs.

#### 3.2.1.1 PCB Congeners

##### 2006 Post-Dredging Sediments

Table 7 summarizes the total PCB concentrations in the post-dredging sediment samples analyzed for PCB congeners. Total PCBs in these samples ranged from 0.69 mg/kg to 4,400 mg/kg. Sampling locations and total PCB results (based on congener analysis) for the samples are also presented in Figure 12.

**Table 7. Total PCB Concentrations in 2006 Post-Dredging Sediment Samples.**

Station ID	Sample ID	PCB Conc. <sup>a</sup> (mg/kg)	Sample Depth Below Mudline (ft)
B32 <sup>b</sup>	S-06D-0B32-00-05	720	0.0-0.5
C29 <sup>b</sup>	S-06D-0C29-05-10	440	0.5-1.0
C41 <sup>b</sup>	S-06D-0C41-04-09	200	0.4-0.9
C41-DUP <sup>b</sup>	S-06D-0C41-04-09-DUP	200	0.4-0.9
D36 <sup>b</sup>	S-06D-0D36-00-05	980	0.0-0.5
E27 <sup>b</sup>	S-06D-0E27-00-05	250	0.0-0.5
E30 <sup>b</sup>	S-06D-0E30-00-05	300	0.0-0.5
E32 <sup>b</sup>	S-06D-0E32-00-05	310	0.0-0.5
E33 <sup>b</sup>	S-06D-0E33-00-05	1800	0.0-0.5
F36 <sup>b</sup>	S-06D-0F36-00-05	780	0.0-0.5
F38 <sup>b</sup>	S-06D-0F38-00-05	4400	0.0-0.5
F53	S-06D-0F53-14-19	0.87	1.4-1.9
F58	S-06D-0F58-00-05	420	0.0-0.5
G25 <sup>b</sup>	S-06D-0G25-00-05	630	0.0-0.5
H24	S-06D-0H24-22-27	6.1	2.2-2.7



**Table 7 (cont). Total PCB Concentrations in 2006 Post-Dredging Sediment Samples.**

Station ID	Sample ID	PCB Conc. <sup>a</sup> (mg/kg)	Sample Depth Below Mudline (ft)
H27	S-06D-0H27-00-05	260	0.0-0.5
H29	S-06D-0H29-00-05	100	0.0-0.5
H32	S-06D-0H32-00-05	90	0.0-0.5
H36 <sup>b</sup>	S-06D-0H36-00-05	2200	0.0-0.5
H41	S-06D-0H41-00-05	14	0.0-0.5
J17 <sup>b</sup>	S-06D-0J17-00-05	1800	0.0-0.5
K50	S-06D-0K50-00-05	0.81	0.0-0.5
L5 <sup>b</sup>	S-06D-0L05-00-06	6.3	0.0-0.6
L9 <sup>b</sup>	S-06D-0L09-00-03	260	0.0-0.3
L12 <sup>b</sup>	S-06D-0L12-00-03	85	0.0-0.3
L20 <sup>b</sup>	S-06D-0L20-07-12	850	0.7-1.2
L20-DUP <sup>b</sup>	S-06D-0L20-07-12-DUP	1100	0.7-1.2
M3 <sup>b</sup>	S-06D-0M03-03-08	93	0.3-0.8
M10 <sup>b</sup>	S-06D-0M10-02-07	1900	0.2-0.7
M10-DUP	S-06D-0M10-02-07-DUP	2000	0.2-0.7
M23 <sup>b</sup>	S-06D-0M23-05-10	260	0.5-1.0
M23-DUP <sup>b</sup>	S-06D-0M23-05-10-DUP	310	0.5-1.0
N6 <sup>b</sup>	S-06D-0N06-00-05	130	0.0-0.5
N8 <sup>b</sup>	S-06D-0N08-00-17	860	0.0-1.7
N8-DUP <sup>b</sup>	S-06D-0N08-00-17-DUP	2300	0.0-1.7
N14	S-06D-0N14-00-05	280	0.0-0.5
N28	S-06D-0N28-08-13	320	0.8-1.3
N40	S-06D-0N40-07-12	850	0.7-1.2
N58	S-06D-0N58-00-05	27	0.0-0.5
O12	S-06D-0O12-00-05	1100	0.0-0.5
P8	S-06D-0P08-05-10	99	0.5-1.0
Q21	S-06D-0Q21-00-06	150	0.0-0.6
Q44	S-06D-0Q44-00-05	580	0.0-0.5
R3	S-06D-0R03-00-13	190	0.0-1.3
R11	S-06D-0R11-10-15	0.69	1.0-1.5
T15	S-06D-0T15-00-05	160	0.0-0.5
U6	S-06D-0U06-05-14	110	0.5-1.4
U22	S-06D-0U22-02-07	610	0.2-0.7
V28	S-06D-0V28-02-07	330	0.2-0.7
V39	S-06D-0V39-00-05	68	0.0-0.5
W3	S-06D-0W03-00-05	86	0.0-0.5
W18	S-06D-0W18-00-06	90	0.0-0.6
Y8	S-06D-0Y08-00-06	94	0.0-0.6
Z13	S-06D-0Z13-00-02	220	0.0-0.2
Z22	S-06D-0Z22-00-06	4.9	0.0-0.6
AA3	S-06D-AA03-00-05	21	0.0-0.5
BB19	S-06D-BB19-00-06	64	0.0-0.6

<sup>a</sup> – Sum of 18 congeners x 2.6

<sup>b</sup> – Target Dredge Elevation was not reached at this location.

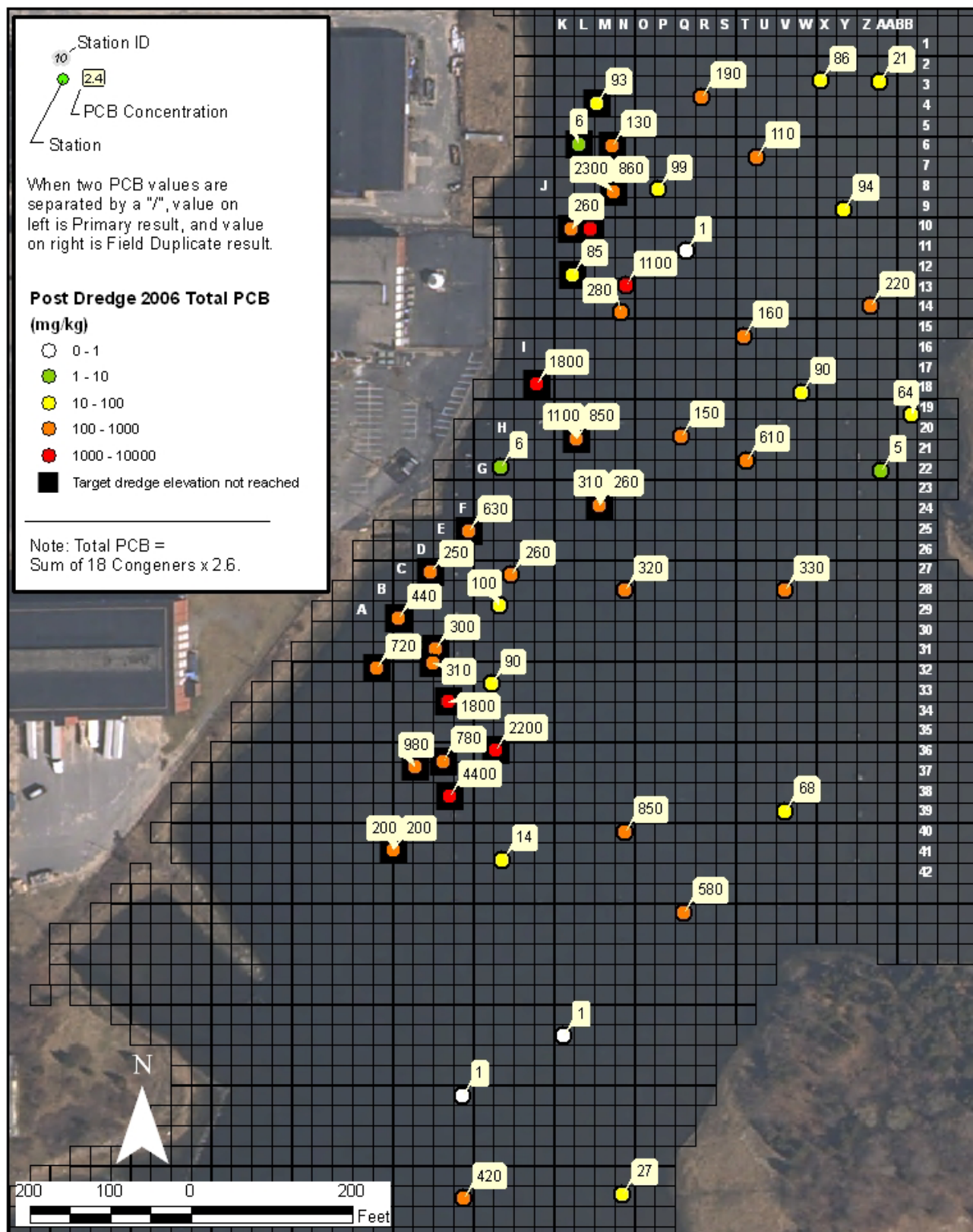


Figure 12. Post-Dredge PCB Congener Results.





### **Aerovox Sediments**

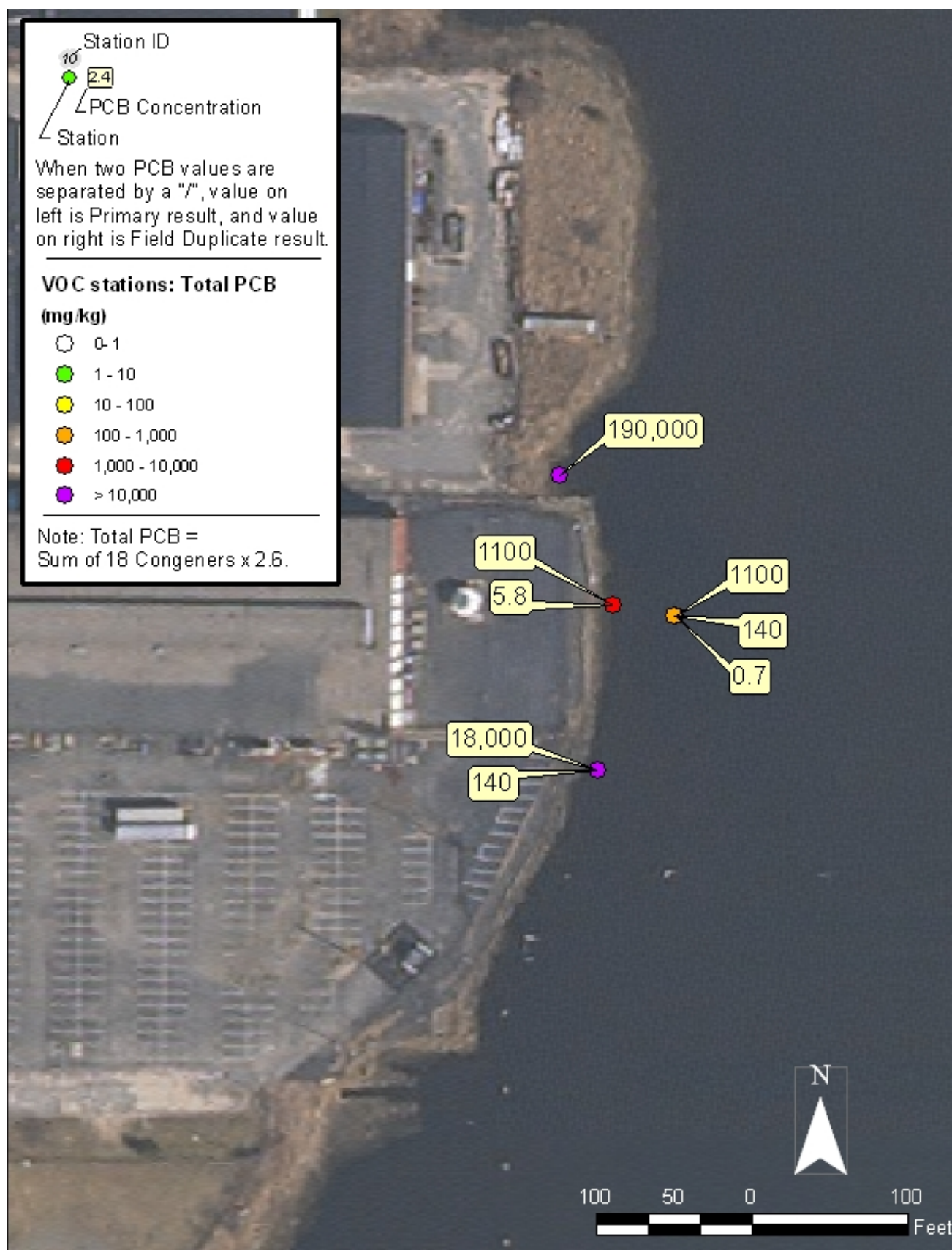
Table 8 summarizes the total PCB concentrations in Aerovox sediment samples analyzed for PCB congeners. Total PCBs in these samples ranged from 0.7 mg/kg to 190,000 mg/kg. Higher concentrations were observed in samples collected above the visual transition with the highest concentrations found in the sample collected just offshore of the northeast corner of the Aerovox property. Sampling locations and total PCB results (based on congener analysis) for the samples are also presented in Figure 13. The VOC results of this sampling effort are discussed in Section 3.2.3.

**Table 8. Total PCB Concentrations in Aerovox Sediment Samples.**

Station ID	Sample ID <sup>a</sup>	PCB Conc. <sup>b</sup> (mg/kg)
8100206	S-06C-0008-B	5.8
8100206	S-06C-0008-T	1100
9100206	S-06C-0009-B	0.7
9100206	S-06C-0009-T	1100
11100206	S-06C-0011-B	140
11100206	S-06C-0011-T	18000
05A101306	S-06C-0005A-T	190000
9101306	S-06C-0009-D	140

<sup>a</sup> – T and B indicate “Top” and “Bottom” 6-inches relative to the visual transition; D indicates sample collected deeper than 6-inches below visual transition.

<sup>b</sup> – Sum of 18 congeners x 2.6



**Figure 13. PCB Congener Results Associated with VOC sample Locations.**



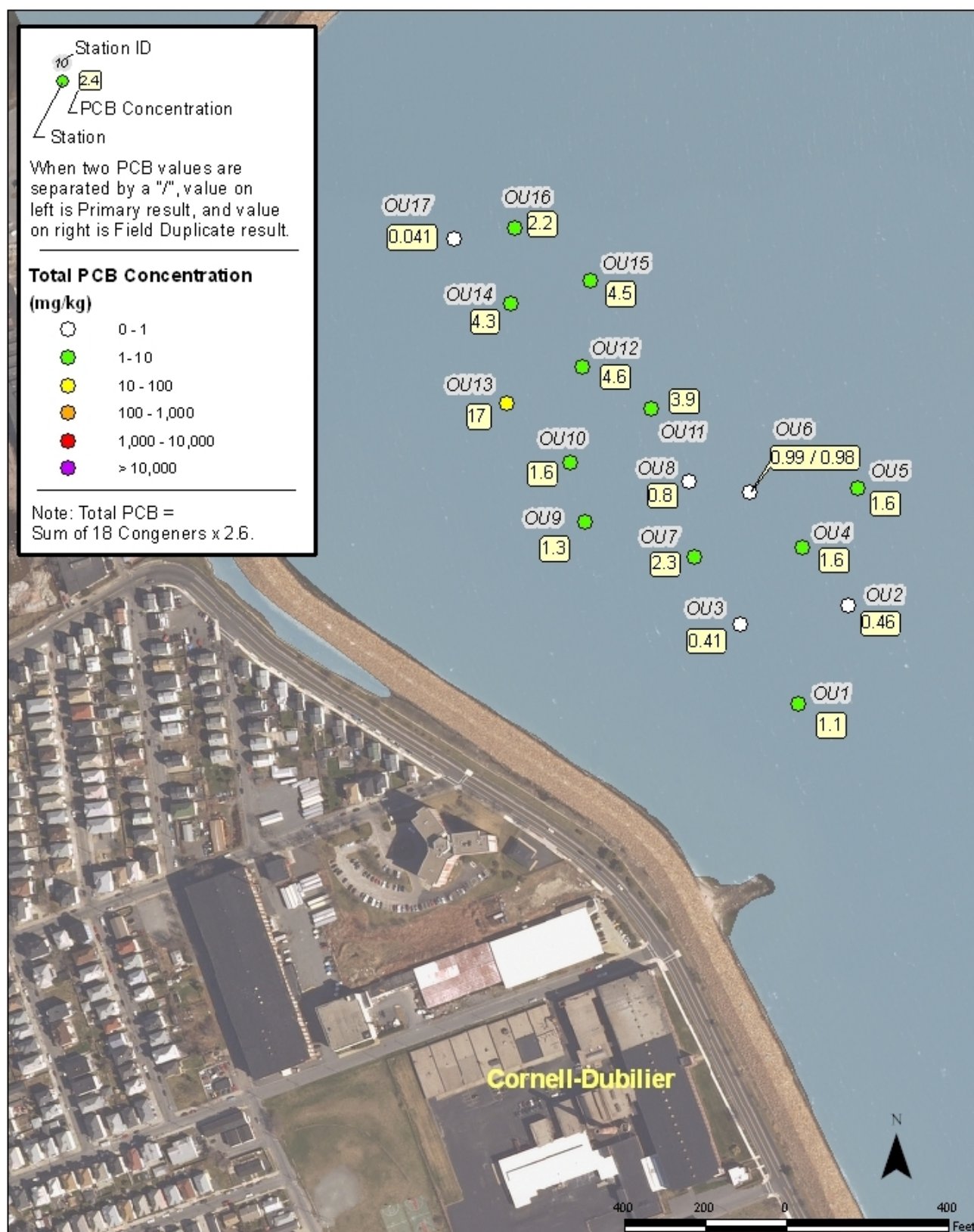
### **OU3 Pilot Cap Site Sediments**

Table 9 summarizes the total PCB concentrations in the surface sediment samples collected from the OU3 Pilot Cap Site outside the hurricane barrier. Total PCBs in these samples ranged from 0.041 mg/kg to 17 mg/kg. Sampling locations and total PCB results (based on congener analysis) for the samples are also presented in Figure 14.

**Table 9. Total PCB Concentrations in OU3 Pilot Cap Site Sediment Samples.**

Station ID	Sample ID	PCB Conc. <sup>a</sup> (mg/kg)
OU1	S-06B-OU01-00-03	1.1
OU2	S-06B-OU02-00-03	0.46
OU3	S-06B-OU03-00-03	0.41
OU4	S-06B-OU04-00-03	1.6
OU5	S-06B-OU05-00-03	1.6
OU6	S-06B-OU06-00-03	0.99
OU6	S-06B-OU06-00-03 Dup	0.98
OU7	S-06B-OU07-00-03	2.3
OU8	S-06B-OU08-00-03	0.8
OU9	S-06B-OU09-00-03	1.3
OU10	S-06B-OU10-00-03	1.6
OU11	S-06B-OU11-00-03	3.9
OU12	S-06B-OU12-00-03	4.6
OU13	S-06B-OU13-00-03	17
OU14	S-06B-OU14-00-03	4.3
OU15	S-06B-OU15-00-03	4.5
OU16	S-06B-OU16-00-03	2.2
OU17	S-06B-OU17-00-03	0.041

<sup>a</sup> – Sum of 18 congeners x 2.6



**Figure 14. PCB Congener Results at OU3 Locations.**





### 3.2.1.2 Homologues

Out of the 83 samples collected from the post-dredging sampling event, Aerovox area, and OU3 Pilot Cap Site for PCB congener analysis, 11 samples were selected for PCB homologue group analysis. Total PCB concentrations calculated by homologue results and the corresponding total PCB concentrations calculated by congener results for the 11 samples are presented in Table 10. Also included in Table 10 are the congener and homologue results for the 4 North of Wood Street samples that were discussed separately in the North of Wood Street Sediment Report (Battelle 2007). As indicated in Table 10, total PCB concentrations calculated by congener results are in general comparable to those calculated by homologue results. However, for this data set of 15 samples, with the exception of the one outer harbor sample, total PCBs calculated by congener results were all somewhat lower than those calculated by homologue results, with the difference increasing with decreasing total PCB concentration in the sample.

**Table 10. Total PCB Concentrations Calculated by Congener and Homologue Results.**

Sampling Area	Sample ID	Total PCBs Calculated by Congener Results <sup>a</sup> (mg/kg)	Total PCBs Calculated by Homologue Results <sup>b</sup> (mg/kg)
Post-Dredging	S-06D-0W18-00-06	90	110
Post-Dredging	S-06D-0L20-07-12	850	970
Post-Dredging	S-06D-0L20-07-12-DUP	1100	1200
Post-Dredging	S-06D-0Z22-00-06	4.9	7.1
Post-Dredging	S-06D-0C41-04-09	200	230
Post-Dredging	S-06D-0C41-04-09-DUP	200	210
Post-Dredging	S-06D-0E33-00-05	1800	2100
Post-Dredging	S-06D-0H24-22-27	6.1	9.7
Post-Dredging	S-06D-0E30-00-05	300	360
OU3	S-06B-OU16-00-03	2.2	1.7
Aerovox	S-06C-0009-B	0.7	1.7
North of Wood St	S-06D-C006028-00-05	18	19
North of Wood St	S-06D-C006028-00-05-DUP	9.4	11
North of Wood St	S-06D-06NWS34-00-05	3.3	3.9
North of Wood St	S-06D-06NWS38-00-05	0.15	0.29

<sup>a</sup> – Sum of 18 congeners x 2.6, non-detect = 0 mg/kg.

<sup>b</sup> – Sum of 10 homologue groups, non-detect = 0 mg/kg

### 3.2.2 Congener QA/QC Results

One procedural blank, laboratory control sample (LCS), matrix spike (MS), and matrix spike duplicate (MSD) were extracted and analyzed as QC samples for every batch of 20 field samples. In addition, extraction efficiency was measured by recoveries of surrogate compounds that were spiked into the samples prior to extraction. Overall, the quality of the data was found to be acceptable. In the MS and MSD samples, due to the highly-contaminated nature of the background samples, some of the target compounds were not spiked at a concentration > 5x background. Therefore the MS/MSD result associated with these compounds could not be used for data evaluation. In some samples, surrogate compounds were recovered slightly above the QC criteria of 40% - 120%, probably due to interference from the highly-contaminated native samples. Additionally, surrogate





compounds were sometimes “diluted-out” due to the dilutions performed on the sample extracts. In general, the impact of these minor QC exceedences on the overall data quality is minimal.

### 3.2.3 VOC Analyses

VOCs were analyzed in 20 sediment samples collected adjacent to the Aerovox site (Figure 6). Samples were collected from each core corresponding to the 6 inches of sediment on top (T) of or below (B) the visual transition from native to overlying material. A summary of the results for the complete list of VOCs list analyzed is presented in Appendix C. VOC compounds detected were limited to tetrachloroethene, trichloroethene (TCE) and related degradation products at most stations along with isolated detection of some petroleum related VOCs such as ethylbenzene and toluene. (stations 7, 8, 9 10 and 12) (Table 11). Figure 15 shows the concentrations of the three most prevalent VOCs at each sampling location for both top and bottom samples.

The highest VOC concentrations were found in sediments collected above the visual transition at station 08, just offshore of the Aerovox building. The primary VOC found in sediments at station 08 was trichloroethene (TCE), at a concentration of 23,300 mg/kg (ppm). Dichloroethenes (DCE) and vinylchloride (VC) as well as ethylbenzene and chlorobenzenes were also found in this sample. Relatively low concentrations of VOCs were detected in sediments collected from below the visual transition at Station 08. Lower concentrations of TCE were detected in sediments above the visual transition at stations 06 and 11, located to the north and south of station 08 and at station 12 in both top and bottom samples. VOCs were detected at lower and variable concentrations at all of the remaining stations with the exception of Station 02, the northernmost station sampled.

Overall, the quality of the data was found to be acceptable. Some quality control (QC) exceedences were noted including several samples with high surrogate recoveries, possibly attributed to matrix interference and the fact that these samples had greater than 50% moisture content. Analytical duplicate results showed several compounds exceeding relative percent difference (RPD) limits, most likely due to the non-homogeneity of the sample. Matrix spike results indicated good recoveries with the exception of 2 compounds, 1,1-dichloroethene and benzene, which were recovered under the lower limit of 70%. Most samples required dilution prior to analysis. Values reported were taken from the sample analyzed within the calibration range for that compound. A trip blank was also analyzed. Acetone, a common laboratory contaminant, was the only VOC detected in the trip blank. Acetone was also detected at similar levels in the procedural blank analyzed with that sample.



**Table 11. VOC Detections in Sediments (mg/kg dry weight).**

Sample ID	S-06C-0002-T	S-06C-0004-T	S-06C-0006-B	S-06C-0006-T	S-06C-0007-B	S-06C-0007-T	S-06C-0008-B	S-06C-0008-T	S-06C-0009-B	S-06C-0009-T	S-06C-0010-B	S-06C-0010-T	S-06C-0011-B	S-06C-0011-T	S-06C-0012-B	S-06C-0012-T	S-06C-0013-B	S-06C-0013-T	S-06C-0015-B	S-06C-0015-T
Station	02T	04T	06B	06T	07B	07T	08B	08T	09B	09T	10B	10T	11B	11T	12B	12T	13B	13T	15B	15T
Cis-1,2-Dichloroethene	ND	0.828	80.4	614	419	8.25	0.546	854	222	102	62	14.2	2350	3.68	415	2920	0.544	11.6	251	40.9
Ethylbenzene	ND	ND	ND	ND	0.348	ND	ND	33.4	1.88	ND	ND	0.516	ND	ND	ND	32.3	ND	ND	ND	ND
Styrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.03	ND	ND	ND	ND
P/M Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.5	ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	239	0.884	ND	ND	ND	ND	3.1	ND	60.6	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	0.747	ND	ND	17.8	0.612	ND	ND	ND	ND	ND	ND	8.69	ND	ND	ND	ND
Trans-1,2-Dichloroethene	ND	ND	0.901	3.28	1.31	ND	ND	ND	1.47	ND	0.373	0.678	20.6	ND	1.5	8.05	ND	ND	3.06	0.685
Trichloroethene	ND	0.309	4.73	42.9	ND	0.28	3.6	23300	510	ND	0.247	ND	ND	42.3	289	1830	0.202	1.93	0	1.59
Vinyl Chloride	ND	ND	5.95	20	32.6	1.84	ND	22.2	1.23	23.8	8.14	31.5	318	3.64	39.6	192	ND	3.94	60	19.6
1,1-Dichloroethene	ND	ND	ND	ND	0.293	ND	ND	ND	ND	ND	ND	ND	4.77	ND	4.81	2.7	ND	ND	ND	ND
1,2-Dichlorobenzene	ND	ND	ND	ND	0.267	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	ND	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.26	0	ND	ND	ND	ND
1,2,3-Trichlorobenzene	ND	ND	ND	ND	11.2	0.205	ND	60.2	ND	ND	0.369	ND	ND	ND	ND	14.3	ND	0.473	ND	ND
1,2,4-Trichlorobenzene	ND	ND	0.838	4.55	16.7	0.781	ND	469	ND	ND	1.5	0.245	ND	5.19	ND	105	0.415	3.84	ND	0.452
1,3-Dichlorobenzene	ND	ND	0.654	ND	ND	ND	ND	ND	ND	ND	1.57	ND	4.73	ND	4.78	ND	0.552	ND	0.784	
1,4-Dichlorobenzene	ND	0.238	0.709	ND	0.737	0.301	ND	ND	ND	ND	6.57	ND	17.6	ND	9.29	ND	1.33	ND	3.67	

ND indicates Not Detected



**Figure 15. VOC Results Near the Aerovox site.**



### 3.2.4 Grain Size and Total Organic Carbon Analyses

Grain Size and TOC results are provided in Table 12. TOC values ranged from <1% at station BB19 to 18.3% at Station B32 with an average TOC of 5.6%. Grain size results indicated that on the average, samples were approximately 28% clay, 48% silt. Sand and gravel content were more variable though the majority of the samples contained less than 20% sand and only 5 stations contained more than 15% gravel and those stations were limited to the perimeters of dredge area A.

Field duplicates were collected at four locations (indicated by 'REP'). Relative percent differences were calculated for grain size and TOC results. RPDs for TOC ranged from 7 to 28%. RPDs for the various grain size fractions ranged from 3 to 38% for the clay through sand fractions. RPD for gravel measurements were considerably higher ranging from 0 to 200%. In general, field duplicates indicate that representative samples are being collected from a given location.

**Table 12. Summary of Grain Size and TOC Results.**

		QC		Clay	Silt	Sand	Gravel	TOC
Station ID	Collected	Code	Sample ID	% dry wt.	% dry wt.	% dry wt.	% dry wt.	% dry wt.
B32	11/7/2006	SA	S-06D-0B32-00-05	31.9	60.5	7.6	0.0	18.3
C29	11/3/2006	SA	S-06D-0C29-05-10	32.8	56.3	8.7	2.2	7.8
C41	11/3/2006	SA	S-06D-0C41-04-09	34.6	46.4	12.0	7.0	3.6
C41-DUP	11/3/2006	REP <sup>a</sup>	S-06D-0C41-04-09-DUP	36.5	50.2	13.3	0.0	3.1
D36	11/7/2006	SA	S-06D-0D36-00-05	32.2	52.3	11.6	4.0	4.2
E27	11/3/2006	SA	S-06D-0E27-00-05	29.4	50.3	14.2	6.1	7.1
E30	11/7/2006	SA	S-06D-0E30-00-05	34.0	57.0	9.0	0.0	4.5
E32	11/7/2006	SA	S-06D-0E32-00-05	30.8	59.9	8.6	0.8	4.8
E33	11/3/2006	SA	S-06D-0E33-00-05	25.1	63.3	11.9	0.5	11.4
F36	11/3/2006	SA	S-06D-0F36-00-05	32.5	58.2	7.0	2.2	4.0
F38	11/3/2006	DUP <sup>b</sup>	S-06D-0F38-00-05	26.0	58.3	15.6	3.1	7.0
F53	11/8/2006	SA	S-06D-0F53-14-19	25.6	41.2	26.4	6.7	9.2
F58	11/8/2006	SA	S-06D-0F58-00-05	37.7	54.6	5.2	2.5	6.9
G25	11/3/2006	SA	S-06D-0G25-00-05	10.3	11.1	66.4	12.2	3.8
H24	11/3/2006	SA	S-06D-0H24-22-27	40.0	55.4	4.6	0.0	11.9
H27	11/3/2006	SA	S-06D-0H27-00-05	33.3	56.4	10.3	0.0	4.0
H29	11/3/2006	SA	S-06D-0H29-00-05	36.9	58.6	4.5	0.0	3.4
H32	11/3/2006	SA	S-06D-0H32-00-05	39.4	54.3	6.3	0.0	3.2
H36	11/3/2006	SA	S-06D-0H36-00-05	23.8	52.5	20.3	3.4	7.9
H41	11/3/2006	SA	S-06D-0H41-00-05	40.9	55.6	2.7	0.8	6.4
J17	11/2/2006	SA	S-06D-0J17-00-05	19.6	36.6	42.0	1.8	4.1
K50	11/8/2006	SA	S-06D-0K50-00-05	15.6	32.7	48.6	3.1	1.7
L5	10/31/2006	SA	S-06D-0L05-00-06	31.4	63.4	5.2	0.0	3.2
L9	11/1/2006	SA	S-06D-0L09-00-03	19.9	45.8	4.5	29.9	3.7
L12	11/1/2006	SA	S-06D-0L12-00-03	27.1	44.2	25.2	3.5	9.9
L20	11/2/2006	SA	S-06D-0L20-07-12	37.8	56.4	5.9	0.0	7.5
L20-DUP	11/2/2006	REP	S-06D-0L20-07-12-DUP	34.8	59.8	5.5	0.0	5.6
M3	10/31/2006	SA	S-06D-0M03-03-08	32.8	57.8	7.3	2.1	4.2
M10	11/1/2006	SA	S-06D-0M10-02-07	31.8	53.3	9.4	5.5	4.8
M23	11/3/2006	SA	S-06D-0M23-05-10	11.3	22.8	65.1	0.8	4.3



**Table 12 (cont). Summary of Grain Size and TOC Results.**

		QC		Clay	Silt	Sand	Gravel	TOC
Station ID	Collected	Code	Sample ID	% dry wt.	% dry wt.	% dry wt.	% dry wt.	% dry wt.
M23-DUP	11/3/2006	REP	S-06D-0M23-05-10-DUP	10.9	25.4	63.4	0.3	5.0
N6	10/31/2006	SA	S-06D-0N06-00-05	25.6	45.3	9.1	19.9	4.4
N8	10/31/2006	SA	S-06D-0N08-00-17	32.2	59.8	6.8	1.2	5.4
N8-DUP	10/31/2006	REP	S-06D-0N08-00-17-DUP	24.2	40.8	6.2	28.9	5.8
N14	11/2/2006	SA	S-06D-0N14-00-05	34.7	55.3	10.0	0.0	4.3
N28	11/7/2006	SA	S-06D-0N28-08-13	42.1	55.2	2.8	0.0	9.1
N40	11/7/2006	SA	S-06D-0N40-07-12	36.4	57.5	6.1	0.0	8.4
N58	11/8/2006	SA	S-06D-0N58-00-05	5.3	7.7	80.9	6.1	0.9
O12	11/2/2006	SA	S-06D-0O12-00-05	34.9	53.0	9.1	3.0	4.6
P8	10/31/2006	SA	S-06D-0P08-05-10	28.3	57.1	11.8	2.8	3.2
Q21	11/2/2006	SA	S-06D-0Q21-00-06	17.7	29.4	43.7	9.1	5.2
Q44	11/8/2006	DUP	S-06D-0Q44-00-05	25.3	58.0	17.5	0.0	9.3
R3	10/31/2006	SA	S-06D-0R03-00-13	21.7	43.5	22.0	12.8	4.5
R11	11/1/2006	DUP	S-06D-0R11-10-15	27.9	57.4	11.3	4.9	3.1
T15	11/1/2006	SA	S-06D-0T15-00-05	25.2	31.9	37.4	5.6	5.3
U6	10/31/2006	SA	S-06D-0U06-05-14	28.9	58.7	12.5	0.0	6.9
U22	11/2/2006	SA	S-06D-0U22-02-07	28.9	54.1	9.8	7.2	5.2
V28	11/7/2006	SA	S-06D-0V28-02-07	34.3	62.7	2.8	0.2	7.1
V39	11/7/2006	SA	S-06D-0V39-00-05	35.6	55.4	8.3	0.6	3.8
W3	10/31/2006	SA	S-06D-0W03-00-05	20.3	37.3	11.5	30.9	8.2
W18	11/1/2006	SA	S-06D-0W18-00-06	24.1	53.1	7.5	15.3	3.7
Y8	10/31/2006	SA	S-06D-0Y08-00-06	19.8	27.2	19.0	34.1	5.5
Z13	11/1/2006	SA	S-06D-0Z13-00-02	37.9	52.5	7.8	1.8	4.7
Z22	11/2/2006	SA	S-06D-0Z22-00-06	30.9	57.0	9.1	3.1	3.6
AA3	10/31/2006	SA	S-06D-AA03-00-05	17.2	30.9	10.4	41.5	6.0
BB19	11/1/2006	SA	S-06D-BB19-00-06	7.3	14.7	60.4	17.7	0.8

<sup>a</sup> – REP indicates a Field Duplicate

<sup>b</sup> – DUP indicates Analytical Replicate





## 4.0 DISCUSSION

### 4.1 Vertical Elevation Results Related to Dredging

The collection of pre-dredge core samples for visual characterization provided information necessary for effective dredge planning. Site-wide geostatistical modeling based on historical PCB data has been used to develop an estimation of the vertical elevation of PCB contamination in the sediments (target dredge elevation). The dredge plan for each year is based on the target dredge elevations and contours within the planned footprint of dredging. Changes in sediment condition over time or uncertainties in the model can result in a discrepancy between the target dredge elevation estimates and the existing features at the site. Elevation data based on visual characterization of cores collected in June of 2006 were used to refine the dredge plan in terms of target dredge depths and sediment thickness.

Of the 43 cores that were collected prior to dredging, 26 had a visual transition elevation that was less than  $\pm 1$ -ft of the target dredge elevation (Table 2). The rest of the samples had a  $>1$ -ft departure from the target dredge elevation. In all cases where the departure from the target dredge elevation was  $> 1$ -ft, it was in a positive direction (i.e. the actual transition was not as deep as predicted by the target dredge elevation). The discrepancies from the target dredge elevation were fairly consistent based on location. In regions where the target dredge elevation was predicted to be fairly consistent over large areas, the target dredge elevation predictions were generally accurate. However, in areas where the target dredge elevation was expected to change rapidly over short distances or was particularly deep, such as near Aerovox, visual characterization of sediments suggested that the target dredge elevation depths were over estimated. These data were used to refine the dredge plan and as a result target dredge depths were reduced, thereby reducing dredging and disposal efforts. However, these adjustments were strictly based on the visual characterization of sediments and the transition from oily black depositional material to native clays. As the remediation project continues, the relationship of this visual characterization to actual PCB concentrations will need to be continually reevaluated. At this point in the program, this method appears to be a relatively inexpensive and simple means to determine dredge depths thus maximizing funding towards remedial efforts.

During the course of dredging operators use benchmarked dGPS information for horizontal and vertical control. This allows for accurate dredging operations and minimizes both ineffective under-dredging and expensive over-dredging. However, variables such as wind and debris, can result in incomplete dredging along dredge lines. The use of weekly bathymetric surveys and sediment core collections serve as good checks for dredge performance and provide feedback to operators regarding areas requiring a dredge pass.

The collection of post-dredge cores provides a characterization of the post-dredge sediment condition relative to the pre-dredge condition as well as setting a baseline for recently dredged areas. This baseline informs the planning process for subsequent years and provides feedback regarding redeposition of sediments as a result of dredging or natural processes. Comparison of the visual characterization of the pre and post-dredge cores revealed a number of things. First, the depth of the sediment surface and the overall thickness of OL layers was reduced across all dredged regions. These were clear and expected results of the dredging. Other post-dredge observations related to the visual transition between sediment types. The post-dredge cores generally had less distinct visual



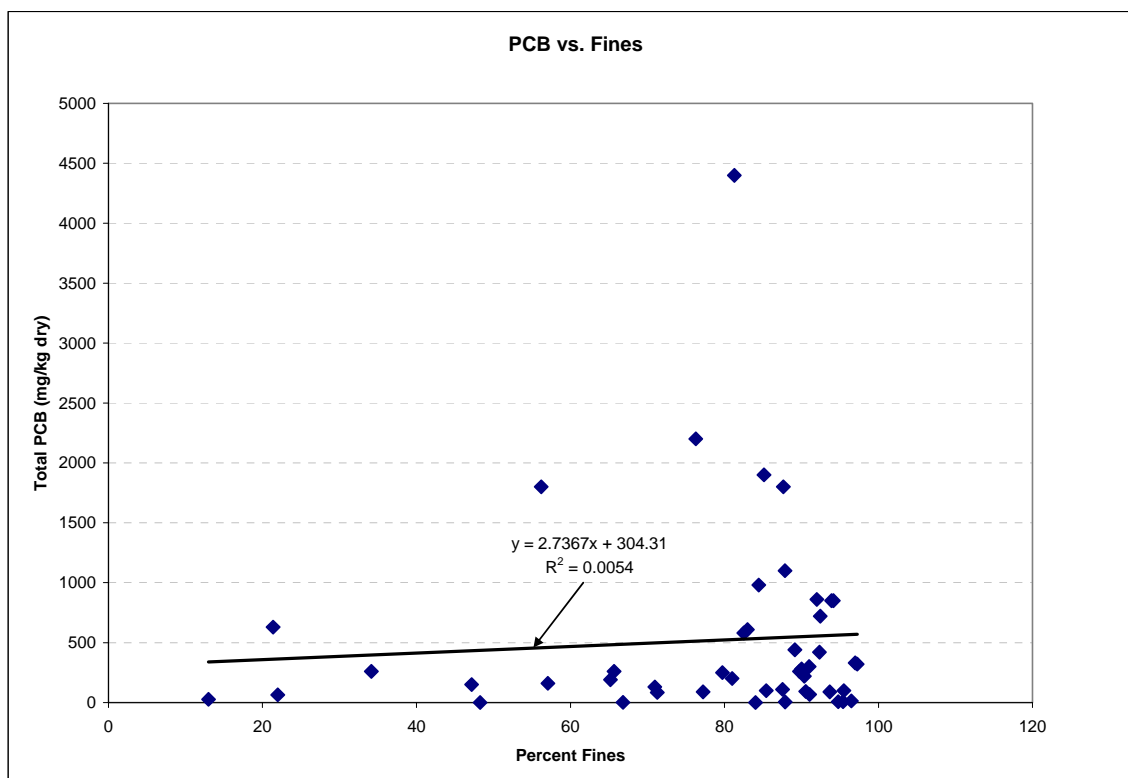
transitions. The transitions generally occurred over a relatively broad band ( $>0.5$ -ft) of mixed sediment. In most of these cases it appeared that the visual transition zone may have been disturbed during the debris removal process. In many cases, the elevation of the post-dredge visual transition also occurred at a deeper elevation than seen pre-dredge. As discussed in section 3.1.4, horizontal variability is also present, and pre/post-dredge cores may not be perfectly correlated. This is particularly pronounced in areas where the target dredge elevation changes rapidly over short horizontal distances. Overall it appears that dredging activity resulted in only a slight increase in the target dredge elevation (mean =  $-0.35$ -ft, median =  $-0.25$ -ft).

The post-dredge core results were compared to the pre-dredge cores to assess the success of the 2006 dredge efforts. Table 5 compares the elevations of visual transition as well as the sediment-water interface for each core during both events. The final two columns of the table describe any changes in the elevation of the transition (i.e. if dredging occurred below the pre-dredge transition layer) and the depth of sediment dredged at each location during the 2006 season. This comparison ranged from  $-3.4$ -ft to  $2.2$ -ft. Negative values in the comparison of transition elevations indicate that the post-dredge transition is deeper than pre-dredge. This generally suggests that dredging related activities occurred deeper than the transition identified pre-dredge.

Samples from the post-dredge cores were also submitted for PCB analysis. However, because no pre-dredge PCB analysis was conducted pre/post dredge comparisons cannot be made. No samples have been collected in comparable location since prior to 2002. Although samples were collected from similar locations during the planning and remedial design stages of the program, significant dredging activities have been performed since then reducing the ability to directly relate PCB sample concentrations. Post-dredge PCB concentrations ranged from  $0.69$  mg/kg to  $4,400$  mg/kg (Table 13). In general, the highest concentrations remained in the regions due east of Aerovox and to the southeast of Aerovox. An average of  $0.63$ -ft of overlying sediment above the visual transition layer remained at the Post-dredge locations (range =  $0.0$  to  $2.2$ -ft). Overall, PCB concentrations were not correlated with the amount of sediment remaining. However, in areas where little overlying sediment remained, PCBs tended to be relatively low. This was the case on the western half of Area A. In the areas where elevated PCBs were found, the depth of the remaining OL layer was highly variable. It is suspected that even small amounts of redeposited or mixed contaminants contribute a large PCB signal in these areas.

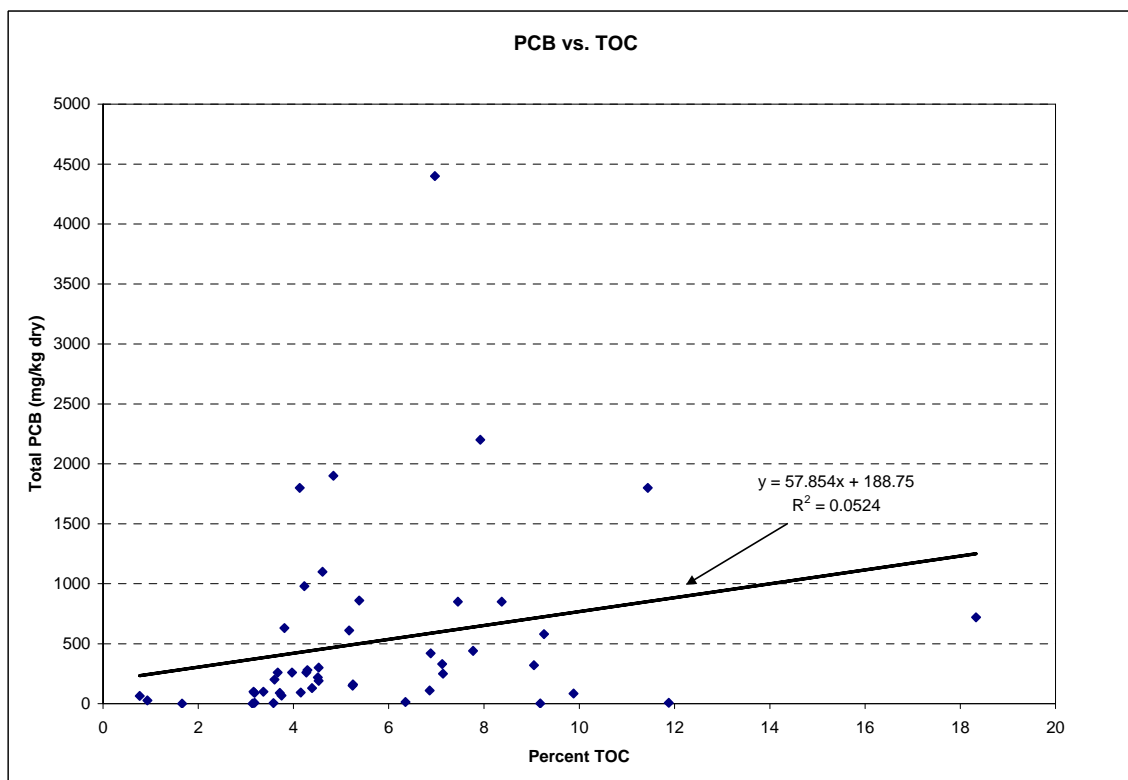
## **4.2 PCBs, Grain Size and TOC in Post Dredge Samples**

Figures 16 and 17 present XY plots of Total PCB concentrations versus percent fines (silt plus clay) and TOC. The plots indicate that no significant relationship exists between PCBs and these parameters in samples collected post dredging. Grain size results (Table 12) indicate that the post-dredge samples include a wide range of sediment types. All but 5 of the samples analyzed represent sediment remaining above the visual transition. These 5 ‘native samples’ (those samples collected from stations with no visual transition) ranged from silty clay to silty gravel and contained PCB concentrations ranging from  $21$  to  $780$  mg/kg. Post-dredge samples representing material remaining above the visual transition ranged from sandy silts to silty clays and contained PCB concentrations ranging from less than  $1$  mg/kg to  $4400$  mg/kg. While the highest PCBs were generally found in the sediments with higher percent fines, the overall lack of correlation of PCBs in these samples to either grain size or TOC is characteristic of mixed, disturbed sediments.



Note: Native Sediments Excluded

**Figure 16. Total PCB Concentrations vs. Percent Fines.**



Note: Native Sediments Excluded

**Figure 17. Total PCB Concentrations vs. Percent TOC.**



### 4.3 VOC Samples

Elevated VOC concentrations were detected in a number of sediment samples collected adjacent to the Aerovox site. The highest concentrations appear to be isolated just offshore of the Aerovox facility (Figure 18). The highest concentrations of VOCs observed are attributable primarily to trichloroethene, a chlorinated solvent used to remove grease from metal parts. High concentrations of the breakdown products of trichloroethene were also found at stations closest to the shoreline including dichloroethenes and vinylchloride. PCBs are soluble in VOCs such as these and it is possible that movement of these VOCs into the harbor could facilitate the movement of PCBs. Figure 18 shows Total VOCs (sum of detected VOCs) and Total PCBs at a limited number of stations adjacent to the Aerovox facility and shows that the highest PCB concentrations observed in the sediments were also found along the shore. It is notable that the one sample collected from more than 6 inches below the visual transition (sample S06C-0009-D) had a total PCB concentration of 140 mg/kg. Additionally, more than half of the samples from the below the visual transition exhibited higher sums of TCE, DCE, and vinyl chloride than the corresponding samples above the visual transition. Results from this study are not adequate to characterize the extent of VOCs in the harbor or the impact of VOCs on PCB transport; however, additional studies are scheduled for 2007 to investigate VOC and related PCB flux into the harbor.



**Figure 18. Total VOC and PCB Results near the Aerovox site.**





#### 4.4 Comparison between 2005 and 2006 Sediment PCBs at OU3 Pilot Cap Site

The OU3 Pilot Cap Site is a localized area of elevated PCB concentrations located outside the hurricane barrier in New Bedford, MA. In 2005 the OU3 Pilot Cap Site was capped with parent material dredged during the construction of a Confined Aquatic Disposal (CAD) cell in New Bedford Harbor. On August 25, 2005, shortly after the completion of capping activities, ENSR/AECom conducted a sediment sampling effort to collect surficial grab samples (top 3") at 17 stations to determine the effectiveness of cap placement in lowering ambient surficial PCB concentrations. In September 2006, Battelle revisited these 17 locations to determine the extent of change in PCB concentrations a year after the previous sampling.

Total PCB results for sediment samples collected during the ENSR/AECom August 2005 and Battelle September 2006 sampling events are compared in Table 13. At most of the sampling stations, total PCB concentrations in the 2006 samples were either similar to or lower than those in the 2005 samples, indicating the cap placement was still effective in these areas. Some extent of increase in PCB concentrations were observed in samples collected from Stations OU4 (from 0.5 mg/kg to 1.6 mg/kg), OU11 (from 0.4 mg/kg to 3.6 mg/kg), and OU13 (from 8.9 mg/kg to 17 mg/kg).

**Table 13. 2005 and 2006 Sediment PCB Results at OU3 Pilot Cap Site.**

	Ridge or Valley Location	ENSR Aug. 2005 Sampling	Battelle Sept. 2006 Sampling
		PCB Conc. <sup>a</sup> (mg/kg)	PCB Conc. <sup>a</sup> (mg/kg)
OU1	Ridge	1.2	1.1
OU2	Valley	1.1	0.46
OU3	Valley	1.5	0.41
OU4	Ridge	0.5	1.6
OU5	Ridge	1.9	1.6
OU6	Valley	3.2	0.99
OU7	Valley	3.8	2.3
OU8	Valley	3.3	0.8
OU9	Valley	2.1	1.3
OU10	Valley	1.6	1.6
OU11	Ridge	0.4	3.9
OU12	Valley	6.8	4.6
OU13	Valley	8.9	17
OU14	Valley	9.8	4.3
OU15	Ridge	3.5	4.5
OU16	Valley	3.2	2.2
OU17	Ridge	0.4	0.041

<sup>a</sup> – Sum of 18 congeners x 2.6



## 5.0 REFERENCES

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## **Appendix A**

### **Daily Operations Logs, Sampling and Core Characterization Logs**

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## **Summary Tables**

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## Appendix A – Sample Collection Locations, Date, Time and Coordinates

**Table A-1. Listing of Collection Data from the Pre-Dredge Core Surveys.**

<b>Station (Z Block)</b>	<b>Collection Date</b>	<b>Collection Time</b>	<b>Northing (NAD 83 MA, ft)</b>	<b>Easting (NAD 83 MA, ft)</b>
N8	6/20/2006	10:50	2707069	815760
P8	6/20/2006	11:19	2707070	815815
N6	6/20/2006	11:45	2707124	815760
L5	6/20/2006	12:03	2707130	815719
M3	6/20/2006	12:28	2707178	815741
R3	6/20/2006	12:45	2707185	815873
W3	6/20/2006	13:00	2707205	816019
AA3	6/20/2006	13:12	2707205	816092
Y8	6/20/2006	13:42	2707047	816047
Z13	6/20/2006	14:04	2706926	816080
BB19	6/20/2006	14:22	2706792	816131
Z22	6/20/2006	14:43	2706719	816095
W18	6/20/2006	15:00	2706822	815994
N14	6/21/2006	9:42	2706918	815770
O12	6/21/2006	9:53	2706954	815779
L20	6/21/2006	10:08	2706765	815717
M23	6/21/2006	10:26	2706680	815745
H27	6/21/2006	10:40	2706595	815636
H29	6/21/2006	11:00	2706558	815618
H32	6/21/2006	11:12	2706461	815610
H36	6/21/2006	11:25	2706376	815615
H41	6/21/2006	12:02	2706242	815625
C41	6/21/2006	12:18	2706254	815484
F38	6/21/2006	12:32	2706321	815556
D36	6/21/2006	13:03	2706357	815515
U22	6/21/2006	13:18	2706736	815926
Q21	6/21/2006	13:40	2706766	815844
T15	6/21/2006	13:55	2706888	815921
J17	6/21/2006	14:12	2706832	815666
H24	6/21/2006	14:31	2706734	815621
R11	6/22/2006	12:47	2706997	815852
M10	6/22/2006	12:58	2707020	815733
L9	6/22/2006	13:18	2707026	815710
L12	6/22/2006	13:32	2706960	815716
U6	6/22/2006	13:45	2707113	815938
G25	6/22/2006	13:58	2706649	815581
E27	6/22/2006	14:10	2706600	815536
E30	6/22/2006	14:19	2706503	815541
E32	6/22/2006	14:29	2706485	815537
E33	6/22/2006	14:40	2706436	815555
B32	6/22/2006	14:55	2706478	815468
C29	6/22/2006	15:06	2706539	815495
F36	6/22/2006	15:24	2706363	815547

**Table A-2. Listing of Collection Data from the Progress Dredge Core Surveys.**

<b>Station (Z Block)</b>	<b>Collection Date</b>	<b>Collection Time</b>	<b>Northing (NAD 83 MA, ft)</b>	<b>Easting (NAD 83 MA, ft)</b>
K24	8/24/2006	10:27	2706680	815708
N24	8/24/2006	10:38	2706668	815768
R24	8/24/2006	10:57	2706663	815872
S3	8/24/2006	11:19	2707198	815901
S7	8/24/2006	11:49	2707088	815906
S11	8/24/2006	12:18	2707885	814250
T06	8/24/2006	12:35	2707137	815910
T08	8/24/2006	12:53	2707070	815924
T09	8/24/2006	13:13	2707040	815929
S19	8/24/2006	13:29	2706797	815894
U19	8/25/2006	9:00	2706797	815953
T11	8/25/2006	9:18	2706998	815925
S15	8/25/2006	9:30	2706925	815907
I24	8/31/2006	11:22	2706675	815652
N24	8/31/2006	11:38	2706676	815773
P24	8/31/2006	11:49	2706675	815830
P25	8/31/2006	12:00	2706652	815823
S1	8/31/2006	12:24	2707250	815901
W2	8/31/2006	12:36	2707224	815999
V7	8/31/2006	12:50	2707101	815976
V10	8/31/2006	13:04	2707024	815979
S13	8/31/2006	13:15	2706949	815904
T16	8/31/2006	13:25	2706873	815924
S20	8/31/2006	13:34	2706773	815899
V22	8/31/2006	13:51	2706727	815978
S7	8/31/2006	14:14	2707102	815898
V16	8/31/2006	14:25	2706876	815975
V20	8/31/2006	14:32	2706775	815973
AA1	9/8/2006	8:39	2707252	816100
BB4	9/8/2006	8:53	2707175	816126
AA13	9/8/2006	9:12	2706954	816093
AA17	9/8/2006	9:23	2706849	816100
Z11	9/8/2006	9:33	2706989	816079
Z7	9/8/2006	9:42	2707093	816064
Z6	9/8/2006	9:57	2707127	816077
J24	9/8/2006	10:15	2706677	815675
I26	9/8/2006	10:23	2706624	815649
O26	9/8/2006	10:33	2706625	815800
R26	9/8/2006	10:42	2706625	815878
P25	9/8/2006	10:52	2706656	815828
X19	9/8/2006	11:24	2706802	816025
X8	9/8/2006	11:39	2707077	816016
X14	9/8/2006	12:03	2706924	816030
AA1	9/14/2006	10:08	2707253	816099
Z20	9/14/2006	10:22	2706771	816078
X17	9/14/2006	10:41	2706844	816030
T15	9/14/2006	10:52	2706902	815926
X14	9/14/2006	11:04	2706928	816026
S13	9/14/2006	11:16	2706952	815903
I24	9/14/2006	11:29	2706679	815650
N24	9/14/2006	11:40	2706675	815778

Station (Z Block)	Collection Date	Collection Time	Northing (NAD 83 MA, ft)	Easting (NAD 83 MA, ft)
L38	9/14/2006	11:54	2706318	815724
J40	9/14/2006	12:15	2706279	815680
Q42	9/14/2006	12:25	2706223	815851
K42	9/14/2006	12:38	2706224	815703
Q4	9/21/2006	8:20	2707174	815853
Q11	9/21/2006	8:42	2706999	815847
Q15	9/21/2006	8:55	2706902	815850
Q19	9/21/2006	9:10	2706799	815849
J31	9/21/2006	9:46	2706499	815679
R42	9/21/2006	10:06	2706223	815873
I32	9/21/2006	10:30	2706481	815657
D42	9/21/2006	10:54	2706222	815527
I42	9/21/2006	11:12	2706225	815654
L38	9/21/2006	11:26	2706325	815728
J40	9/21/2006	11:37	2706276	815675
M41	9/21/2006	11:54	2706250	815746
M2	10/6/2006	8:15	2707225	815750
N5	10/6/2006	8:39	2707149	815772
O7	10/6/2006	9:01	2707103	815799
M10	10/6/2006	9:20	2707025	815751
O11	10/6/2006	9:32	2706998	815799
N14	10/6/2006	9:47	2706923	815774
N17	10/6/2006	10:02	2706845	815773
M19	10/6/2006	10:15	2706794	815750
O20	10/6/2006	10:31	2706776	815802
H27	10/6/2006	10:48	2706599	815626
H30	10/6/2006	11:03	2706522	815625
H33	10/6/2006	11:20	2706447	815625
H36	10/6/2006	11:33	2706374	815626
N1	10/12/2006	10:19	2707249	815778
L2	10/12/2006	10:38	2707225	815724
P3	10/12/2006	10:51	2707200	815827
O5	10/12/2006	11:09	2707150	815801
K6	10/12/2006	11:23	2707125	815700
N8	10/12/2006	11:37	2707075	815774
M10	10/12/2006	11:57	2707026	815750
O12	10/12/2006	12:15	2706977	815803
P15	10/12/2006	12:31	2706899	815829
K14	10/12/2006	12:52	2706925	815701
N16	10/12/2006	13:05	2706874	815775
L18	10/12/2006	13:17	2706828	815724
M20	10/12/2006	13:29	2706776	815750
P20	10/12/2006	13:45	2706775	815825



**Table A-3. Listing of Collection Data from the Post-Dredge Core Surveys.**

<b>Station (Z Block)</b>	<b>Collection Date</b>	<b>Collection Time</b>	<b>Northing (NAD 83 MA ft)</b>	<b>Easting (NAD 83 MA ft)</b>
M3	10/31/2006	9:41	2707178	815741
R3	10/31/2006	11:06	2707186	815871
W3	10/31/2006	11:21	2707206	816018
AA3	10/31/2006	11:33	2707205	816091
U6	10/31/2006	11:48	2707112	815939
Y8	10/31/2006	12:06	2707047	816047
P8	10/31/2006	12:22	2707071	815816
L5	10/31/2006	12:35	2707128	815718
N6	10/31/2006	12:47	2707126	815760
N8	10/31/2006	13:02	2707069	815761
N8-DUP	10/31/2006	13:09	2707069	815761
L9	11/1/2006	10:40	2707023	815709
R11	11/1/2006	10:59	2706995	815851
M10	11/1/2006	11:18	2707022	815733
M10-DUP	11/1/2006	11:27	2707022	815733
T15	11/1/2006	11:49	2706890	815923
L12	11/1/2006	12:15	2706966	815711
W18	11/1/2006	12:30	2706820	815994
Z13	11/1/2006	13:26	2706927	816080
BB19	11/1/2006	13:41	2706799	816130
L20	11/2/2006	10:51	2706763	815715
L20-DUP	11/2/2006	10:56	2706763	815715
O12	11/2/2006	11:33	2706952	815777
Q21	11/2/2006	12:32	2706766	815845
J17	11/2/2006	13:37	2706830	815666
U22	11/2/2006	14:06	2706736	815926
Z22	11/2/2006	14:19	2706723	816092
N14	11/2/2006	14:43	2706919	815771
H24	11/3/2006	7:48	2706728	815622
G25	11/3/2006	8:14	2706648	815582
E27	11/3/2006	8:30	2706597	815534
C29	11/3/2006	8:55	2706540	815494
C41	11/3/2006	9:13	2706253	815488
C41-DUP	11/3/2006	9:17	2706253	815488
M23	11/3/2006	9:37	2706680	815744
M23-DUP	11/3/2006	9:45	2706680	815744
H27	11/3/2006	10:01	2706594	815635
H32	11/3/2006	10:12	2706459	815610
H29	11/3/2006	10:37	2706556	815620
E33	11/3/2006	10:51	2706437	815556
F36	11/3/2006	11:11	2706363	815550
H41	11/3/2006	11:24	2706241	815624
F38	11/3/2006	11:39	2706320	815558
H36	11/3/2006	11:52	2706377	815615
D36	11/7/2006	8:24	2706356	815515
B32	11/7/2006	8:44	2706478	815468
E32	11/7/2006	9:14	2706485	815537
E30	11/7/2006	9:32	2706502	815541
N28	11/7/2006	9:57	2706575	815775
V28	11/7/2006	10:16	2706575	815974
V39	11/7/2006	10:32	2706301	815974
N40	11/7/2006	10:53	2706276	815775
F53	11/8/2006	9:16	2705949	815574
F58	11/8/2006	9:47	2705822	815575
N58	11/8/2006	10:08	2705827	815773
K50	11/8/2006	10:23	2706023	815700
Q44	11/8/2006	10:43	2706176	815849

**Table A-4. Listing of Collection Data from the VOC Core Surveys.**

VOC Core Collections				
Station	Collection Date	Collection Time	Northing (NAD 83 MA ft)	Easting (NAD 83 MA ft)
16voc	10/2/2006	10:56	2706752	815725
13voc	10/2/2006	11:35	2706851	815729
10voc	10/2/2006	11:52	2706951	815725
7voc	10/2/2006	12:10	2707049	815726
4voc	10/2/2006	12:35	2707149	815726
2voc	10/2/2006	12:44	2707249	815724
1voc	10/2/2006	13:02	2707248	815684
3voc	10/2/2006	13:25	2707149	815669
6voc	10/2/2006	13:51	2707043	815675
9voc	10/2/2006	14:47	2706949	815676
12voc	10/2/2006	15:10	2706849	815674
15voc	10/2/2006	15:40	2706749	815676
14voc	10/2/2006	15:58	2706753	815621
11voc	10/2/2006	16:16	2706850	815626
8voc	10/2/2006	16:40	2706956	815635
5voc	10/2/2006	17:10	2707047	815649
PCB Core Collections				
8voc	10/13/2006	12:05	2706955	815645
9voc	10/13/2006	12:45	2706949	815675
5Avoc	10/13/2006	13:25	2707040	815601
11voc	10/13/2006	13:55	2706852	815627

**Table A-5. Listing of Collection Data from the OU3 Grab Survey.**

OU3 Grab Collections				
Station	Collection Date	Collection Time	Northing (NAD 83 MA, ft)	Easting (NAD 83 MA, ft)
OU4	9/13/2006	9:03	2686039	818041
OU5	9/13/2006	9:15	2686187	818177
OU6	9/13/2006	9:31	2686174	817913
OU7	9/13/2006	9:45	2686017	817776
OU8	9/13/2006	9:59	2686203	817760
OU9	9/13/2006	10:13	2686101	817504
OU10	9/13/2006	10:27	2686249	817468
OU11	9/13/2006	10:41	2686383	817668
OU12	9/13/2006	10:59	2686484	817498
OU13	9/13/2006	11:12	2686395	817313
OU14	9/13/2006	11:23	2686642	817322
OU15	9/13/2006	11:38	2686698	817517
OU16	9/13/2006	11:52	2686830	817330
OU17	9/13/2006	12:03	2686802	817183
OU3	9/13/2006	12:15	2685849	817889
OU2	9/13/2006	12:29	2685897	818155
OU1	9/13/2006	12:40	2685652	818032

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# **Pre-Dredge Core Characterization Logs**

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[illegible]

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>		Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel:	
		Client: <b>USACE NAE</b>		Chief Scientist:	

Station ID: <b>P8</b>	Time On Station: <b>1108</b>	All measurements are $\pm 0.1$ feet
Core Sample ID: <b>S-06A-0P08-00-28</b>	Northing (NAD 83): <b>41° 40.488'</b>	Water Depth (A): <b>2.95'</b>
Logged by: <b>LM</b>	Easting (NAD 83): <b>70° 54.938'</b>	Length of push core assembly (B): <b>4.9' / 7.9'</b>
Collection Mechanism: <b>Push-Core</b>	GPS Accuracy: <b>8'</b>	Water surface to top of handle (C): <b>0.9'</b>
Date: <b>6-26-06</b>	Predicted Tide (ft):	Length of core (from bottom) (D): <b>3.8' 2.8' ①</b>
Revised Station ID: <b>P8062006</b>	Time of Collection: <b>11:19</b>	Surveyed elevation (NVGD 29) (E): <b>Water -0.3</b>
	Time Depart Station: <b>11:23</b>	Water surface from surveyed elevation (F):

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): E - F	<b>-0.3' measured at Tideboard</b>
(H) Elevation of the bottom of the core (NVGD): G - (B - C)	<b>-7.3'</b>
(Z*) Elevation of visual transition (NVGD): H + (distance to visual transition)	<b>-5.5'</b>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D	<b>-4.5'</b>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A	<b>-4.25'</b>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-4.5' 2.8'		Oily Black Silt	Black	Oily Soft	fine			
-5.5' 1.8'		med Sand	DK Grey	Sand	med			Oily at Transition
-7.3' 0.0'		Clay	olive gray	med Cohesion	fine			

File ID of digital photograph(s): **0108, 0109**  
 Comments:  
**① Core settled, remeasured AM 6/20/06**

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <u>New Bedford Harbor Environmental Monitoring</u>			Project #: <u>G606422</u>	
		Location: <u>New Bedford, MA</u>			Vessel:	
		Client: <u>USACE NAE</u>			Chief Scientist:	

Station ID: <u>N6</u>	Time On Station: <u>11:33</u>	All measurements are $\pm 0.1$ feet
Core Sample ID: <u>S-06A-ON06-00-39</u>	Northing (NAD 83): <u>41° 40.497'</u>	Water Depth (A): <u>1.8'</u>
Logged by: <u>AM</u>	Easting (NAD 83): <u>70° 54.950'</u>	Length of push core assembly (B): <u>4.5' / 7.5'</u>
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>9'</u>	Water surface to top of handle (C): <u>0.9'</u>
Date: <u>6-20-06</u>	Predicted Tide (ft):	Length of core (from bottom) (D): <u>3.9'</u>
Revised Station ID: <u>N6062006</u>	Time of Collection: <u>11:45</u>	Surveyed elevation (NVGD 29) (E): <u>-0.3 water N6</u>
	Time Depart Station: <u>11:52</u>	Water surface from surveyed elevation (F):

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>-0.3 NVGD from Tide board</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>-6.9</u>
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<u>-4.9</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>-3.0</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>-2.1</u>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Length (ft)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-3.0	3.9		Silt and Sand	Black and Brown	Soft to Grainy	med sand			
-4.9	2.0		clay	olive grey	med cohesion fine				
-6.9	0.0								

File ID of digital photograph(s):  
 Comments:  
 - 1.35' from bottom to transition Remeasured AM 6/20/06  
 - 2.0' from bottom to transition Remeasured AM 6/20/06  
 - Clear, 80's, SW ~5 Knts

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <u>New Bedford Harbor Environmental Monitoring</u>		Project #: <u>G606422</u>	
		Location: <u>New Bedford, MA</u>		Vessel:	
		Client: <u>USACE NAE</u>		Chief Scientist:	

Station ID: <u>L5</u>	Time On Station: <u>1155</u>	All measurements are $\pm 0.1$ feet
Core Sample ID: <u>S-06A-0605-00-29</u>	Northing (NAD 83): <u>41° 40.498'</u>	Water Depth (A): <u>2.5'</u>
Logged by: <u>dm</u>	Easting (NAD 83): <u>70° 54.959'</u>	Length of push core assembly (B): <u>3.5' / 6.5'</u>
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>9'</u>	Water surface to top of handle (C): <u>0.9'</u>
Date: <u>6-20-06</u>	Predicted Tide (ft):	Length of core (from bottom) (D): <u>2.9'</u>
Revised Station ID: <u>L5 062006</u>	Time of Collection: <u>1203</u>	Surveyed elevation (NVGD 29) (E): <u>Water: -0.1'</u>
	Time Depart Station: <u>1207</u>	Water surface from surveyed elevation (F):

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): E - F	-0.1 measured @ Tide board
(H) Elevation of the bottom of the core (NVGD): G - (B - C)	-5.7
(Z*) Elevation of visual transition (NVGD): H + (distance to visual transition)	-4.3
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D	-2.8
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A	-2.6

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Length (ft)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-2.8	2.9'								
-4.3	1.4'		Silt	Black	Soft	fine			
-1.1'			Shell Hash + clay	Olive Gray	Coarse + fine				INTERmediate TRANSITION w/ Shell hash
			clay	olive Gray	med cohesion	fine			
-5.7 = 0.0									

File ID of digital photograph(s): 0078, 0079  
 Comments:  
1.4' Bottom To Transition

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>		Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel:	
		Client: <b>USACE NAE</b>		Chief Scientist:	

Station ID: <b>M3</b>	Time On Station: <b>12:15</b>	All measurements are $\pm 0.1$ feet
Core Sample ID: <b>S-06A-0m03-00-19</b>	Northing (NAD 83): <b>41° 40.506'</b>	Water Depth (A): <b>2.25'</b>
Logged by: <b>AM</b>	Easting (NAD 83): <b>70° 54.954'</b>	Length of push core assembly (B): <b>3.5'/6.5'</b>
Collection Mechanism: <b>Push-Core</b>	GPS Accuracy: <b>9'</b>	Water surface to top of handle (C): <b>2.4'</b>
Date: <b>6-20-06</b>	Predicted Tide (ft):	Length of core (from bottom) (D): <b>1.9'</b>
Revised Station ID: <b>M3062006</b>	Time of Collection: <b>12:28</b>	Surveyed elevation (NVGD 29) (E): <b>Water 0.25'</b>
	Time Depart Station: <b>12:32</b>	Water surface from surveyed elevation (F):

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<b>0.25' NGVD from Tide board</b>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<b>-3.85</b>
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<b>-3.35</b>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<b>-1.95</b>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<b>-2.0</b>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
+1.95 = 1.9'		Silt	Black	Soft	fine			
-3.35 = 0.5'		Clay w/ med Sand	olive grey w/ Shell Hash	Med Cohesive	fine to coarse			
-3.85 = 0.0								

File ID of digital photograph(s): **0080, 0081**  
 Comments: **0.5' Bottom To Transition**



<b>Battelle</b> The Business of Innovation		Project Name: New Bedford Harbor Environmental Monitoring Location: New Bedford, MA Client: USACE NAE			Project #: G606422 Vessel: Chief Scientist:		
Station ID: R3	Time On Station: 1241	All measurements are ±0.1 feet					
Core Sample ID: S-06A-OR03-00-12	Northing (NAD 83): 41°40.507'	Water Depth (A): 2.1'					
Logged by: dm	Easting (NAD 83): 70°54.925'	Length of push core assembly (B): 2.5' / 5.5'					
Collection Mechanism: Push-Core	GPS Accuracy: 9'	Water surface to top of handle (C): 2.0'					
Date: 6.20.06	Predicted Tide (ft):	Length of core (from bottom) (D): 1.2'					
	Time of Collection: 1245	Surveyed elevation (NVGD 29) (E): 0.25'					
Revised Station ID: R3062006	Time Depart Station: 1250	Water surface from surveyed elevation (F): —					

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): E - F	0.25' NVGD Tide Board
(H) Elevation of the bottom of the core (NVGD): G - (B - C)	- 3.25
(Z*) Elevation of visual transition (NVGD): H + (distance to visual transition)	- 2.95
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D	- 2.05
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A	- 1.85

(Note if I ≠ I<sub>2</sub> within ± 1.0 feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Length (ft)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-2.05	1.2		silt	Black	soft	Fine			
-2.95	0.3								
-3.25	0.0		clay	olive grey	med cohesion	Fine			

File ID of digital photograph(s): 0068, 0069

Comments: 1.3' b 0.3' bottom To Trans. Tione.

[illegible]

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>		Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel:	
		Client: <b>USACE NAE</b>		Chief Scientist:	

Station ID: <b>AA3 160</b>	Time On Station: <b>1309</b>	All measurements are $\pm 0.1$ feet
Core Sample ID: <b>S-066-AA03-00-16</b>	Northing (NAD 83): <b>41°40.510'</b>	Water Depth (A): <b>2.4'</b>
Logged by: <b>LM</b>	Easting (NAD 83): <b>70°54.877'</b>	Length of push core assembly (B): <b>2.0/5.0'</b>
Collection Mechanism: <b>Push-Core</b>	GPS Accuracy: <b>9'</b>	Water surface to top of handle (C): <b>0.9'</b>
Date: <b>6-20-06</b>	Predicted Tide (ft):	Length of core (from bottom) (D): <b>1.6</b>
Revised Station ID: <b>AA3062006</b>	Time of Collection: <b>1312</b>	Surveyed elevation (NVGD 29) (E): <b>0.8' Water</b>
	Time Depart Station: <b>1317</b>	Water surface from surveyed elevation (F): <b>-</b>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): E - F	<b>0.8' Reading from T.B.</b>
(H) Elevation of the bottom of the core (NVGD): G - (B - C)	<b>-3.3</b>
(Z*) Elevation of visual transition (NVGD): H + (distance to visual transition)	<b>-2.6</b>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D	<b>-1.7</b>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A	<b>-1.6</b>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (I.e. Bottom = H)	Length (ft)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-1.7	1.6		Silt	Black	Soft	fine			
-2.6	-0.7		clay	Olive Grey	med cohesion	fine			
-3.3	-0.0								

File ID of digital photograph(s): **0066, 0067**  
 Comments:  

**0.7' Bottom To Transition**  
**① W.O. LM 6/20**  
**② W.O. LM 6/20**

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>		Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel:	
		Client: <b>USACE NAE</b>		Chief Scientist:	

Station ID: <b>Y8</b>	Time On Station: <b>1323</b>	All measurements are $\pm 0.1$ feet
Core Sample ID: <b>S-06A-0108-00-14</b>	Northing (NAD 83): <b>41° 40.484'</b>	Water Depth (A): <b>2.9' 3.0'</b>
Logged by: <b>AM</b>	Easting (NAD 83): <b>70° 54.887'</b>	Length of push core assembly (B): <b>3.0' / 6.0'</b>
Collection Mechanism: <b>Push-Core</b>	GPS Accuracy: <b>9'</b>	Water surface to top of handle (C): <b>1.5'</b>
Date: <b>6-20-06</b>	Predicted Tide (ft):	Length of core (from bottom) (D): <b>1.45'</b>
Revised Station ID: <b>Y8 062006</b>	Time of Collection: <b>1342</b>	Surveyed elevation (NVGD 29) (E): <b>1.2' water</b>
	Time Depart Station: <b>1346</b>	Water surface from surveyed elevation (F): <b>—</b>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): E - F	<b>1.2' measured @ T.B.</b>
(H) Elevation of the bottom of the core (NVGD): G - (B - C)	<b>-3.3'</b>
(Z*) Elevation of visual transition (NVGD): H + (distance to visual transition)	<b>NA see notes</b>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D	<b>-1.9</b>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A	<b>-1.8</b>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Length (4')	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-1.9	1.45		med Sand	DK Brown		med			<b>NO Black OL Present</b>
0.9			fine Sand	DK Grey	Sand	fine			
0.4			clay	olive Grey	med cohesion	fine			
-3.3	0.0								

File ID of digital photograph(s): **0062, 0063**

Comments: **① took 10 min break. remeasured w.D. AM 4/20**  
**~~0.4' Bottom to Transition~~ ON closer inspection it is seen that upper layers are sand w/ clay underneath, NO OL present**

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>				Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>				Vessel:	
		Client: <b>USACE NAE</b>				Chief Scientist:	

Station ID: <b>213</b>	Time On Station: <b>13:56</b>	All measurements are $\pm 0.1$ feet
Core Sample ID: <b>S-06A-0213-00-21</b>	Northing (NAD 83): <b>41° 40.464'</b>	Water Depth (A): <b>3.2'</b>
Logged by: <b>AM</b>	Easting (NAD 83): <b>70° 54.880</b>	Length of push core assembly (B): <b>2.5' / 3.5'</b>
Collection Mechanism: <b>Push-Core</b>	GPS Accuracy: <b>9'</b>	Water surface to top of handle (C): <b>0.0'</b>
Date: <b>6-20-06</b>	Predicted Tide (ft): <b>4404</b>	Length of core (from bottom) (D): <b>2.1'</b>
Revised Station ID: <b>213062006</b>	Time of Collection: <b>1404</b>	Surveyed elevation (NVGD 29) (E): <b>1.7 NVGD</b>
	Time Depart Station: <b>1407</b>	Water surface from surveyed elevation (F): <b>—</b>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): E - F	<del>2.8</del> <sup>①</sup> <b>1.7' on T.B.</b>
(H) Elevation of the bottom of the core (NVGD): G - (B - C)	<b>-3.8</b>
(Z*) Elevation of visual transition (NVGD): H + (distance to visual transition)	<b>-3.0</b>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D	<b>-1.7</b>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A	<b>-1.5</b>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (I.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-1.7    2.1		Silt	Black	Soft	fine			
-3.0    0.8		Clay w/ med Sand	Olive Grey/ + Brown	Med Cohesive	Med Sand			Lower layer has gradient of sand content more Top ↓ less Bottom
-3.8    0.0								

File ID of digital photograph(s): **0082, 0083**  
 Comments: **0.9' Bottom To Transition**  
  
**① wrote wrong value AM 6/20/06**

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <u>New Bedford Harbor Environmental Monitoring</u>				Project #: <u>G606422</u>	
		Location: <u>New Bedford, MA</u>		Vessel:		Chief Scientist:	
		Client: <u>USACE NAE</u>					

Station ID: <u>BB19</u>	Time On Station: <u>1413</u>	All measurements are $\pm 0.1$ feet	
Core Sample ID: <u>S-06A-BB19-00-09</u>	Northing (NAD 83): <u>41° 40.442'</u>	Water Depth (A): <u>3.4'</u>	
Logged by: <u>LM</u>	Easting (NAD 83): <u>70° 54.869'</u>	Length of push core assembly (B): <u>2.0'/7.0'</u>	
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>9'</u>	Water surface to top of handle (C): <u>2.0'</u>	
Date: <u>6.20.06</u>	Predicted Tide (ft):	Length of core (from bottom) (D): <u>1.6' 0.9' ①</u>	
Revised Station ID: <u>BB19062006</u>	Time of Collection: <u>1422</u>	Surveyed elevation (NVGD 29) (E): <u>2.0' water</u>	
	Time Depart Station: <u>1425</u>	Water surface from surveyed elevation (F):	

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>2.0' @ Tide Board</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>-3.0</u>
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<u>-2.75</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>-2.1</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>-1.4</u>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-2.1	0.9							
-2.75	-0.25							
-3.0	0.0							
		Black Silt	Black	Soft	fine			
		clay	DK Gray	Soft	fine			

File ID of digital photograph(s): 0072, 0073  
 Comments:  
Wind picking up S ~ 10' knots  
0.85 Bottom to interface ① 0.25  
① some settling occurred - Remeasured



<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <u>New Bedford Harbor Environmental Monitoring</u>		Project #: <u>G606422</u>	
		Location: <u>New Bedford, MA</u>		Vessel: <u>CR Barge + skiff</u>	
		Client: <u>USACE NAE</u>		Chief Scientist: <u>Alex Mansfield</u>	

Station ID: <u>222</u>	Time On Station: <u>1433</u>	All measurements are $\pm 0.1$ feet			
Core Sample ID: <u>S-06A-0222-00-23</u>	Northing (NAD 83): <u>41° 40.430'</u>	Water Depth (A): <u>4.1'</u>			
Logged by: <u>AM</u>	Easting (NAD 83): <u>70° 54.877'</u>	Length of push core assembly (B): <u>3.0/8.0'</u>			
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>9'</u>	Water surface to top of handle (C): <u>1.5'</u>			
Date: <u>6.20.06</u>	Predicted Tide (ft): _____	Length of core (from bottom) (D): <u>2.3'</u>			
Revised Station ID: <u>222062006</u>	Time of Collection: <u>14:43</u>	Surveyed elevation (NVGD 29) (E): <u>2.5 Water</u>			
	Time Depart Station: <u>14:48</u>	Water surface from surveyed elevation (F): _____			

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>2.5' measured from Tide Board</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>-2.0 - 4.0</u>
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	① <u>-5.8 - 2.8</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>-4.7 - 1.7</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>-1.6</u>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (I.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-2.8			Black silt					Gradual Transition at ~ 1.2 from Bottom
-4.0 <del>2.3</del>								Bottom 0.2' 2nd <del>from</del> gradual Transition to coarse sand + shell hash

File ID of digital photograph(s): 0017  
 Comments:  
1.3 To Transition, second Transition is deeper.  
① miscalculated first set of values, rechecked + revised AM 6/20

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>		Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel: <b>CR Berger skiff</b>	
		Client: <b>USACE NAE</b>		Chief Scientist: <b>Alex Mansfield</b>	

Station ID: <b>W18</b>	Time On Station: <b>1452</b>	All measurements are $\pm 0.1$ feet
Core Sample ID: <b>S-06A-0W18-0020</b>	Northing (NAD 83): <b>41° 40.447'</b>	Water Depth (A): <b>4.9'</b>
Logged by: <b>LM</b>	Easting (NAD 83): <b>70° 54.899'</b>	Length of push core assembly (B): <b>2.5/7.5</b>
Collection Mechanism: <b>Push-Core</b>	GPS Accuracy: <b>9.0'</b>	Water surface to top of handle (C): <b>0.0'</b>
Date: <b>6-20-06</b>	Predicted Tide (ft):	Length of core (from bottom) (D): <b>2.0</b>
Revised Station ID: <b>W18 062006</b>	Time of Collection: <b>1500</b>	Surveyed elevation (NVGD 29) (E): <b>2.8' Water</b>
	Time Depart Station: <b>1505</b>	Water surface from surveyed elevation (F): <b>—</b>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): E - F	<b>2.8' NVGD</b>
(H) Elevation of the bottom of the core (NVGD): G - (B - C)	<b>-4.7</b>
(Z*) Elevation of visual transition (NVGD): H + (distance to visual transition)	<b>-3.8</b>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D	<b>-2.7</b>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A	<b>-2.1</b>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Length (ft)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-2.7	2.0		Silt	Black	Soft	fine			Transition is Gradual from 0.9' (from bottom) to 0.7'
-3.8	0.9		clay	Olive gray	med cohesion	fine			
-4.7	0.00								

File ID of digital photograph(s): **0048 0049**

Comments: **0.9' Bottom To Transition**

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>		Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel:	
		Client: <b>USACE NAE</b>		Chief Scientist:	

Station ID: <u>N14</u>	Time On Station: <u>0936</u>	All measurements are $\pm 0.1$ feet
Core Sample ID: <u>S-06A-0N14-00-30</u>	Northing (NAD 83): <u>41°40.463'</u>	Water Depth (A): <u>2.0'</u>
Logged by: <u>DM</u>	Easting (NAD 83): <u>70°54.948'</u>	Length of push core assembly (B): <u>4.0/7.0</u>
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>9'</u>	Water surface to top of handle (C): <u>1.45</u>
Date: <u>6.21.06</u>	Predicted Tide (ft):	Length of core (from bottom) (D): <u>3.0'</u>
Revised Station ID: <u>N14062106</u>	Time of Collection: <u>0942</u>	Surveyed elevation (NVGD 29) (E): <u>-0.8 water</u>
	Time Depart Station: <u>0947</u>	Water surface from surveyed elevation (F):

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>-0.8' water @ TB</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>-6.35</u>
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<u>-4.9</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>-3.35</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>-2.8</u>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	length (ft)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-3.35	3.0'		Silt	Black	soft	fine			
-4.9	1.45		clay	olive gray	med cohesion	fine			
-6.35	0.0								

File ID of digital photograph(s): 0084, 0085  
 Comments: 1st Station of Day:  
               - Departed Dock at 0900  
               - Clear, 80, No breeze  
               ① W.O. Am 6/23/06

1.45' Bottom to Transition  
Oil sheen upon core collection

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>		Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel:	
		Client: <b>USACE NAE</b>		Chief Scientist:	

Station ID: <u>012</u>	Time On Station: <u>0950</u>	All measurements are $\pm 0.1$ feet
Core Sample ID: <u>S-06A-0012-00-25</u>	Northing (NAD 83): <u>41° 40.469'</u>	Water Depth (A): <u>1.75'</u>
Logged by: <u>gm</u>	Easting (NAD 83): <u>70° 54.946'</u>	Length of push core assembly (B): <u>3.5/6.5'</u>
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>8'</u>	Water surface to top of handle (C): <u>1.75'</u>
Date: <u>6-21-06</u>	Predicted Tide (ft):	Length of core (from bottom) (D): <u>2.5'</u>
Revised Station ID: <u>02106-2106 012062106</u>	Time of Collection: <u>0953</u>	Surveyed elevation (NVGD 29) (E): <u>-0.95' water</u>
	Time Depart Station: <u>0959</u>	Water surface from surveyed elevation (F):

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	-0.95 from T. de board
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	-5.7
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	-3.9
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	-3.2
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	-2.7

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Length (ft)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-3.2	2.5		oil silt	Black	Soft	fine			Oil pockets
-3.9	1.8'								Some oil pockets present. may be result of smearing on core walls
			clay	olive gray	med	fine			
			w/ some oil		cohesional				
-5.7	0.0								

File ID of digital photograph(s): 0086, 0087

Comments:

1.8' Bottom to Transition

Very heavy sheen on collection

"oil" in core

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>				Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel:		Chief Scientist:	
		Client: <b>USACE NAE</b>					

Station ID: <u>L20</u>	Time On Station: <u>1003</u>	All measurements are $\pm 0.1$ feet
Core Sample ID: <u>S-06A-0120-00-26</u>	Northing (NAD 83): <u>41°40.938'</u>	Water Depth (A): <u>2.15</u>
Logged by: <u>LM</u>	Easting (NAD 83): <u>70°54.960'</u>	Length of push core assembly (B): <u>3.0' / 6.0'</u>
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>8'</u>	Water surface to top of handle (C): <u>0.5'</u> ①
Date: <u>6.21.06</u>	Predicted Tide (ft):	Length of core (from bottom) (D): <u>-1.0 2.6'</u>
Revised Station ID: <u>L20 062106</u>	Time of Collection: <u>1008</u>	Surveyed elevation (NVGD 29) (E): <u>-1.0 Water</u>
	Time Depart Station: <u>1014</u>	Water surface from surveyed elevation (F):

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	-1.0 Water surface @ Tide Board
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	-6.5
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	-5.5
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	-3.9
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	-3.15

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-3.9	2.6'							
		Silt	Black	Soft	fine			
-5.5	1.0'							
		clay	olive Grey	Med Cohesive	fine			
-6.5	2.6 0.0 ②							

File ID of digital photograph(s): 0088, 0089  
 Comments:  
 Clear, 80, no breeze  
 ① Wrong line - on 6/21/06 ② wrote wrong number LM 6/23/06  
 1.0' Bottom To Transition

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>				Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel:		Chief Scientist:	
		Client: <b>USACE NAE</b>					

Station ID: <b>H27</b>	Time On Station: <b>1038</b>	All measurements are $\pm 0.1$ feet
Core Sample ID: <b>S-06A-0H27-00-3S</b>	Northing (NAD 83): <b>41° 40.410'</b>	Water Depth (A): <b>1.5'</b>
Logged by: <b>AM</b>	Easting (NAD 83): <b>70° 54.978'</b>	Length of push core assembly (B): <b>3.5/6.5'</b>
Collection Mechanism: <b>Push-Core</b>	GPS Accuracy: <b>8'</b>	Water surface to top of handle (C): <b>1.5'</b>
Date: <b>6-21-06</b>	Predicted Tide (ft):	Length of core (from bottom) (D): <b>3.0</b>
Revised Station ID: <b>H27062106</b>	Time of Collection: <b>1040</b>	Surveyed elevation (NVGD 29) (E): <b>-0.8' Water</b>
	Time Depart Station: <b>1044</b>	Water surface from surveyed elevation (F): <b>—</b>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): E - F	<b>-0.8' Water @ Tide Board</b>
(H) Elevation of the bottom of the core (NVGD): G - (B - C)	<b>-5.8</b>
(Z*) Elevation of visual transition (NVGD): H + (distance to visual transition)	<b>-4.2</b>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D	<b>-2.8</b>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A	<b>-2.3</b>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-2.8	3.0							
		oily Silt	Black	Soft	fine	oil		
-4.2	1.6							
		clay	Gray	med Cohesion	fine			
-5.8	0.0							

File ID of digital photograph(s): **0090, 0091**

Comments: **1.6' Bottom to Transition  
Strong Shren**



<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>			Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>			Vessel:	
		Client: <b>USACE NAE</b>			Chief Scientist:	

Station ID: <b>H29</b>	Time On Station: <b>1050</b>	All measurements are $\pm 0.1$ feet
Core Sample ID: <b>S-06A-0429-00-22</b>	Longitude (NAD 83): <b>41° 40.404'</b>	Water Depth (A): <b>1.3</b>
Logged by: <b>AM</b>	Easting (NAD 83): <b>70° 54.982</b>	Length of push core assembly (B): <b>4.0/7.0'</b>
Collection Mechanism: <b>Push-Core</b>	GPS Accuracy: <b>8'</b>	Water surface to top of handle (C): <b>2.75'</b>
Date: <b>6.21.06</b>	Predicted Tide (ft):	Length of core (from bottom) (D): <b>2.25'</b>
Revised Station ID: <b>H29062106</b>	Time of Collection: <b>1100</b>	Surveyed elevation (NVGD 29) (E): <b>-0.8' water</b>
	Time Depart Station: <b>1105</b>	Water surface from surveyed elevation (F): <b>—</b>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): E - F	<b>-0.8 measured at Tide Board</b>
(H) Elevation of the bottom of the core (NVGD): G - (B - C)	<b>-5.05</b>
(Z*) Elevation of visual transition (NVGD): H + (distance to visual transition)	<b>-4.3</b>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D	<b>-2.8</b>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A	<b>-2.1</b>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Length (ft)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-2.8	2.25								
-4.3	0.75		Silt	Black	Soft	fine			
-5.05	0.0		clay	Olive Grey	Med cohesion	fine			

File ID of digital photograph(s): **0050, 0051**  
 Comments:  
**0.75' Bottom To Transition**

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <u>New Bedford Harbor Environmental Monitoring</u>				Project #: <u>G606422</u>	
		Location: <u>New Bedford, MA</u>		Vessel:			
		Client: <u>USACE NAE</u>		Chief Scientist:			

Station ID: <u>H32</u>	Time On Station: <u>1109</u>	All measurements are $\pm 0.1$ feet
Core Sample ID: <u>S-06A-0H32-00-29</u>	Northing (NAD 83): <u>41°40.388'</u>	Water Depth (A): <u>1.7'</u>
Logged by: <u>Am</u>	Easting (NAD 83): <u>70°54.984'</u>	Length of push core assembly (B): <u>4.5/7.5'</u>
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>8'</u>	Water surface to top of handle (C): <u>2.5'</u>
Date: <u>6.21.06</u>	Predicted Tide (ft):	Length of core (from bottom) (D): <u>3.0' 2.9' ①</u>
Revised Station ID: <u>H32062106</u>	Time of Collection: <u>1112</u>	Surveyed elevation (NVGD 29) (E): <u>-0.8' water</u>
	Time Depart Station: <u>1115</u>	Water surface from surveyed elevation (F):

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>-0.8' measured at Tide Board</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>-5.8</u>
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<u>-4.05</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>-2.9</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>-2.5</u>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Length (ft)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-2.9	2.9		Silt	Black	Soft	fine			oil pockets just above transition
-4.05	-1.75								
-5.8	-0.0		Clay	Olive Grey	med cohesion	fine			

File ID of digital photograph(s): 0074, 0075

Comments:

1.75' Bottom To Transition

① is measured Am 6/21/06

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <u>New Bedford Harbor Environmental Monitoring</u>				Project #: <u>G606422</u>	
		Location: <u>New Bedford, MA</u>		Vessel:		Chief Scientist:	
		Client: <u>USACE NAE</u>					

Station ID: <u>H36</u>	Time On Station: <u>1122</u>	All measurements are $\pm 0.1$ feet
Core Sample ID: <u>S-06A-01436-00-35</u>	Northing (NAD 83): <u>41°40.374'</u>	Water Depth (A): <u>1.8'</u>
Logged by: <u>AM</u>	Easting (NAD 83): <u>70°34.983'</u>	Length of push core assembly (B): <u>5.0'/8.0'</u>
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>8'</u>	Water surface to top of handle (C): <u>2.2'</u>
Date: <u>6-21-06</u>	Predicted Tide (ft):	Length of core (from bottom) (D): <u>3.5'</u>
Revised Station ID: <u>H36062106</u>	Time of Collection: <u>1125</u>	Surveyed elevation (NVGD 29) (E): <u>-0.7 water</u>
	Time Depart Station: <u>1128</u>	Water surface from surveyed elevation (F):

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): E - F	-0.7' measured @ Tide Board
(H) Elevation of the bottom of the core (NVGD): G - (B - C)	-6.5
(Z*) Elevation of visual transition (NVGD): H + (distance to visual transition)	-4.5
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D	-3.0
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A	-2.5

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	length (ft)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-3.0	3.5		Silt	Black	Soft	fine			Clear Transition
-4.5	2.0								
-6.5	0.0		clay	olive gray	med cohesion	fine			

File ID of digital photograph(s): 0046, 0047  
 Comments:  
2.0' Bottom To Transition

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>				Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel:		Chief Scientist:	
Client: <b>USACE NAE</b>							

Station ID: <b>H41</b>	Time On Station: <b>1150</b>	All measurements are $\pm 0.1$ feet
Core Sample ID: <b>S-06A-OH41-00.40</b>	Northing (NAD 83): <b>41° 40.352'</b>	Water Depth (A): <b>2.1</b>
Logged by: <b>Am</b>	Easting (NAD 83): <b>70° 54.981'</b>	Length of push core assembly (B): <b>4.5'/7.5'</b>
Collection Mechanism: <b>Push-Core</b>	GPS Accuracy: <b>8'</b>	Water surface to top of handle (C): <b>0.9'</b>
Date: <b>6.21.06</b>	Predicted Tide (ft):	Length of core (from bottom) (D): <b>4.0'</b>
Revised Station ID: <b>H41062106</b>	Time of Collection: <b>1202</b>	Surveyed elevation (NVGD 29) (E): <b>-0.5' Water</b>
	Time Depart Station: <b>1209</b>	Water surface from surveyed elevation (F):

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): E - F	<b>-0.5' measured at Tide board</b>
(H) Elevation of the bottom of the core (NVGD): G - (B - C)	<b>-7.1</b>
(Z*) Elevation of visual transition (NVGD): H + (distance to visual transition)	<b>-5.35</b>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D	<b>-3.10</b>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A	<b>-2.6</b>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (I.e. Bottom = H)	Length (L)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-3.10	4.0'								
-5.35	1.75								
-7.1	0.0								

File ID of digital photograph(s): **0092, 0093**

Comments:  
**1.75' Bottom To Transition**

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <u>New Bedford Harbor Environmental Monitoring</u>		Project #: <u>G606422</u>	
		Location: <u>New Bedford, MA</u>		Vessel: <u>C. R. Borge + shift</u>	
		Client: <u>USACE NAE</u>		Chief Scientist: <u>A. Mansfield</u>	

Station ID: <u>C41</u>	Time On Station: <u>1212</u>	All measurements are $\pm 0.1$ feet
Core Sample ID: <u>Am</u>	Northing (NAD 83): <u>41° 40.354'</u>	Water Depth (A): <u>1.8'</u>
Logged by: <u>Am</u>	Easting (NAD 83): <u>70° 55.012'</u>	Length of push core assembly (B): <u>3.0' / 6.0'</u>
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>8'</u>	Water surface to top of handle (C): <u>1.25'</u>
Date: <u>6-21-06</u>	Predicted Tide (ft): _____	Length of core (from bottom) (D): <u>2.6</u>
Revised Station ID: <u>C41062106</u>	Time of Collection: <u>1218</u>	Surveyed elevation (NVGD 29) (E): <u>-0.4' water</u>
<u>S-06A-0041-00-2.6</u>	Time Depart Station: <u>1223</u>	Water surface from surveyed elevation (F): _____

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>-0.4' measured at Tide Board</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>-5.15</u>
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<u>-4.05</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>-2.55</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>-2.2</u>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Length (ft)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-2.55	2.6		S.I.T w/ shell hash	Black	Soft	fine			
-4.05	1.1'								
			clay	olive gray	med cohesion	fine			
-5.15	0.0								

File ID of digital photograph(s) 0094, 0095  
 Comments:  
1.1' Bottom To interface  
Breeze picking up: 80°, clear, S 10-15 knots

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>				Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel:		Chief Scientist:	
		Client: <b>USACE NAE</b>					

Station ID: <b>D36</b>	Time On Station: <b>1257</b>	All measurements are $\pm 0.1$ feet
Core Sample ID: <b>S-06A-0D36-0040</b>	Northing (NAD 83): <b>41°40.371N</b>	Water Depth (A): <b>2.1'</b>
Logged by: <b>bm</b>	Eastings (NAD 83): <b>70°55.005W</b>	Length of push core assembly (B): <b>4.5' / 7.5'</b>
Collection Mechanism: <b>Push-Core</b>	GPS Accuracy: <b>8'</b>	Water surface to top of handle (C): <b>0.9'</b>
Date: <b>6-21-06</b>	Predicted Tide (ft):	Length of core (from bottom) (D): <b>4.0'</b>
Revised Station ID: <b>D36062106</b>	Time of Collection: <b>1303</b>	Surveyed elevation (NVGD 29) (E): <b>0.0 Water</b>
	Time Depart Station: <b>1306</b>	Water surface from surveyed elevation (F): <b>—</b>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): E - F	<b>0.0' measured at water surface</b>
(H) Elevation of the bottom of the core (NVGD): G - (B - C)	<b>-6.6</b>
(Z*) Elevation of visual transition (NVGD): H + (distance to visual transition)	<b>-4.3</b>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D	<b>-2.6</b>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A	<b>-2.1</b>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-2.6	4.0							
-4.3	2.3'	—	—	—	—	—	—	
-6.6	0.0							

File ID of digital photograph(s): **0096, 0097**  
 Comments:  

2.3' Bottom to Transition



<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>		Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel:	
		Client: <b>USACE NAE</b>		Chief Scientist:	

Station ID: <b>Q21</b>	Time On Station: <b>1336</b>	All measurements are $\pm 0.1$ feet
Core Sample ID: <b>S-06A-Q21-00-15</b>	Northing (NAD 83): <b>41°40.438'</b>	Water Depth (A): <b>2.6'</b>
Logged by: <b>AM</b>	Easting (NAD 83): <b>70°54.932'</b>	Length of push core assembly (B): <b>2.5/5.5'</b>
Collection Mechanism: <b>Push-Core</b>	GPS Accuracy: <b>8'</b>	Water surface to top of handle (C): <b>1.2'</b>
Date: <b>6-21-06</b>	Predicted Tide (ft):	Length of core (from bottom) (D): <b>1.5'</b>
Revised Station ID: <b>Q21062106</b>	Time of Collection: <b>1340</b>	Surveyed elevation (NVGD 29) (E): <b>0.5' water</b>
	Time Depart Station: <b>1346</b>	Water surface from surveyed elevation (F):

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): E - F	<b>0.5' Water at Tide board</b>
(H) Elevation of the bottom of the core (NVGD): G - (B - C)	<b>-3.8</b>
(Z*) Elevation of visual transition (NVGD): H + (distance to visual transition)	<b>-3.55</b>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D	<b>-2.3</b>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A	<b>-2.0</b>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Length (ft)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-2.3	1.5'								
-3.55	-0.25		Silt	Black	soft	Fine			
-3.8	0.0		clay	olive gray	med cohesion	fine			

File ID of digital photograph(s): **0064, 0065**  
 Comments: **0.25' Bottom To Transition**

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <u>New Bedford Harbor Environmental Monitoring</u>			Project #: <u>G606422</u>	
		Location: <u>New Bedford, MA</u>			Vessel: _____	
		Client: <u>USACE NAE</u>			Chief Scientist: _____	

Station ID: <u>T15</u>	Time On Station: <u>1352</u>	All measurements are $\pm 0.1$ feet
Core Sample ID: <u>S-06A-0T15-00:20</u>	Northing (NAD 83): <u>41° 40.458'</u>	Water Depth (A): <u>2.8'</u>
Logged by: <u>JM</u>	Easting (NAD 83): <u>70° 54.915'</u>	Length of push core assembly (B): <u>2.5' / 5.5'</u>
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>8'</u>	Water surface to top of handle (C): <u>0.2</u>
Date: <u>6.21.06</u>	Predicted Tide (ft): _____	Length of core (from bottom) (D): <u>2.0'</u>
Revised Station ID: <u>T15062106</u>	Time of Collection: <u>1355</u>	Surveyed elevation (NVGD 29) (E): <u>0.8' water</u>
	Time Depart Station: <u>1400</u>	Water surface from surveyed elevation (F): _____

**Calculations for Determination of Z' Elevation**

(G) Elevation of Water Surface (NVGD): E - F	0.8' measured at Tide board
(H) Elevation of the bottom of the core (NVGD): G - (B - C)	- 4.5
(Z*) Elevation of visual transition (NVGD): H + (distance to visual transition)	- 3.6
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D	- 2.5
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A	- 2.0

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	length (ft)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-2.5	2.0'		Silt w/ Shell Hash	Black	Soft	fine			
-3.6	0.9		Fine Sand	DK grey	Sand				
-4.5	0.0		Clay	Ol. ve Grey	med cohesion				

File ID of digital photograph(s): 0098, 0099, 00100

Comments: 0.9' Bottom To Transition

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <u>New Bedford Harbor Environmental Monitoring</u>		Project #: <u>G606422</u>	
		Location: <u>New Bedford, MA</u>		Vessel: _____	
		Client: <u>USACE NAE</u>		Chief Scientist: _____	

Station ID: <u>517</u>	Time On Station: <u>1405</u>	All measurements are $\pm 0.1$ feet
Core Sample ID: <u>S-06A-05107-00-21</u>	Northing (NAD 83): <u>41°40.449'</u>	Water Depth (A): <u>2.5'</u>
Logged by: <u>Am</u>	Easting (NAD 83): <u>70°54.971</u>	Length of push core assembly (B): <u>2.5/5.3'</u>
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>8'</u>	Water surface to top of handle (C): <u>0.75'</u>
Date: <u>6-21-06</u>	Predicted Tide (ft): _____	Length of core (from bottom) (D): <u>2.1'</u>
Revised Station ID: <u>517062106</u>	Time of Collection: <u>1412</u>	Surveyed elevation (NVGD 29) (E): <u>1.0 water</u>
	Time Depart Station: <u>1418</u>	Water surface from surveyed elevation (F): _____

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>1.0 measured at Tideboard</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>-3.75</u>
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<u>-3.45</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>-1.65</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>-1.5</u>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (I.e. Bottom = H)	length (ft)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-1.65	2.1'		oil silt	Black	oil Soft	fine	Petroleum		Most of core is extremely oily black silt. Strong Petroleum odor smells more like diesel than typical PCB odor
-3.45	0.3'		clay	olive	med				
-3.75	0.0			gray	cohesion	fine			

File ID of digital photograph(s): 0054, 0055  
 Comments:  
0.3' Bottom To Transition  
Heavy sheen, strong oil odor, oil on outside of core tube  
Station ~ 40' from drain at south side of Aerovox

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>				Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel:			
		Client: <b>USACE NAE</b>		Chief Scientist:			

Station ID: <b>H24</b>	Time On Station: <b>1433</b>	All measurements are $\pm 0.1$ feet	
Core Sample ID: <b>S-06A-0H24-00-20</b>	Northing (NAD 83): <b>41° 40.483'</b>	Water Depth (A): <b>2.6'</b>	
Logged by: <b>Jm</b>	Easting (NAD 83): <b>70° 54.981'</b>	Length of push core assembly (B): <b>2.5' / 0.3'</b>	
Collection Mechanism: <b>Push-Core</b>	GPS Accuracy: <b>8'</b>	Water surface to top of handle (C): <b>0.75'</b>	
Date: <b>6-21-06</b>	Predicted Tide (ft):	Length of core (from bottom) (D): <b>2.0'</b>	
Revised Station ID: <b>H24062106</b>	Time of Collection: <b>1431</b>	Surveyed elevation (NVGD 29) (E): <b>1.1' Water</b>	
	Time Depart Station: <b>1436</b>	Water surface from surveyed elevation (F):	

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): E - F	1.1' Measured at Tide board
(H) Elevation of the bottom of the core (NVGD): G - (B - C)	- 3.65
(Z*) Elevation of visual transition (NVGD): H + (distance to visual transition)	- 3.55
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D	- 1.65
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A	- 1.5

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (I.e. Bottom = H)	Length (ft)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-1.65	2.0'								Barely got into Transition layer at Bottom of core
-3.65	0.0'		Silt	Black	Soft	fine			

File ID of digital photograph(s): **0058, 0059**

Comments:

could not get right on station ~46' E of Target  
 ~0.3' Bottom to Transition, Difficult to see Transition. Could not  
 penetrate any/ Deeper.

Last core of Day, Head back to dock

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <u>New Bedford Harbor Environmental Monitoring</u>			Project #: <u>G606422</u>	
		Location: <u>New Bedford, MA</u>			Vessel: <u>CR Skiff + barge</u>	
		Client: <u>USACE NAE</u>			Chief Scientist: <u>A. Mansfield</u>	

Station ID: <u>R11</u>	Time On Station: <u>1235</u>	All measurements are $\pm 0.1$ feet
Core Sample ID: <u>S-06A-OR11-00-19</u>	Northing (NAD 83): <u>41°40.476'</u>	Water Depth (A): <u>2.9</u> <span style="float: right;">W.O. 2.9 6/22</span>
Logged by: <u>AM</u>	Easting (NAD 83): <u>70°54.930</u>	Length of push core assembly (B): <u>3.5' / 6.5'</u>
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>8'</u>	Water surface to top of handle (C): <u>1.5</u>
Date: <u>6/22/06</u>	Predicted Tide (ft): _____	Length of core (from bottom) (D): <u>1.9</u>
Revised Station ID: <u>R11 062206</u>	Time of Collection: <u>1247</u>	Surveyed elevation (NVGD 29) (E): <u>-0.6 water</u>
	Time Depart Station: <u>1250</u>	Water surface from surveyed elevation (F): <u>-</u>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>-0.6 measured at Tide board</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>-5.6</u>
(Z*) Elevation of visual transition (NVGD): $H +$ (distance to visual transition)	<u>-4.5</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>-3.7</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>-3.5</u>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (I.e. Bottom = H)	Length (ft)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-3.7	1.9		silt	black	soft/ fine				clear Transition
-4.5	1.1		clay	olive grey	med cohesion/ fine				
-5.6	0.0								

File ID of digital photograph(s): \_\_\_\_\_  
 Comments:  
 - 1<sup>ST</sup> station of The Day. Departed dock at 12:10  
 - Clear, ~80°, S 10-15 KNTS  
 1.1' Bottom to Transition

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <u>New Bedford Harbor Environmental Monitoring</u>		Project #: <u>G606422</u>	
		Location: <u>New Bedford, MA</u>		Vessel: <u>CR Skiff - Baye</u>	
		Client: <u>USACE NAE</u>		Chief Scientist: <u>L. Murphy</u>	

Station ID: <u>M10</u>	Time On Station: <u>1251</u>	All measurements are $\pm 0.1$ feet
Core Sample ID: <u>S-06A-M10-00-40</u>	Northing (NAD 83): <u>41°40.480</u>	Water Depth (A): <u>1.3</u>
Logged by: <u>AM</u>	Easting (NAD 83): <u>70°54.956</u>	Length of push core assembly (B): <u>4.0/7.0</u>
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>8'</u>	Water surface to top of handle (C): <u>2.1'</u>
Date: <u>6-22-06</u>	Predicted Tide (ft): _____	Length of core (from bottom) (D): <u>3.5'</u>
	Time of Collection: <u>1258</u>	Surveyed elevation (NVGD 29) (E): <u>-0.5 Water</u>
	Time Depart Station: <u>1308</u>	Water surface from surveyed elevation (F): <u>-0.5</u>

Revised Station ID: M10062206

① 1.5  
5.0/8.0  
4.0'  
-0.3

Calculations for Determination of Z\* Elevation

(G) Elevation of Water Surface (NVGD):  $E - F$  -0.5/-0.3 measured at Tide board

(H) Elevation of the bottom of the core (NVGD):  $G - (B - C)$  -6.2'

(Z\*) Elevation of visual transition (NVGD):  $H + (\text{distance to visual transition})$  -5.3'

(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD):  $H + D$  -2.2'

(I<sub>2</sub>) Elevation of the sediment-water interface as measured from water depth (NVGD):  $G - A$  -1.8'

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Length (ft)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-2.2	4.0	-	Fine sand	DK Gr.	-	-	-	-	<p>Multiple layers:</p> <ul style="list-style-type: none"> <li>- Thin lens of fine sand on top</li> <li>- Several ft of OL</li> <li>- fine sand</li> <li>- Native material</li> </ul>
-5.3	0.9'	-	Fine Sand	LT Brown	-	-	-	-	
-5.9	0.3	-	Clay	olive Gray	med cohesion	-	-	-	
-6.2	0.0	-	-	-	-	-	-	-	

Corrected on 6/22

File ID of digital photograph(s): 0044 0045

Comments: ① 1st attempt recovered (4.5 3.5) core w/ No Transition. Attempted 5' Bottom To Transitions:

0.3 olive gray  
0.9 fine sand  
light layer of fine sand on top

Strong oil sheen



<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>		Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel:	
		Client: <b>USACE NAE</b>		Chief Scientist:	

Station ID: <b>L9</b>	Time On Station: <b>1310</b>	All measurements are $\pm 0.1$ feet
Core Sample ID: <b>S-064-0109-00-32</b>	Northing (NAD 83): <b>41°40.48'</b>	Water Depth (A): <b>1.5'</b>
Logged by: <b>AM</b>	Easting (NAD 83): <b>70°54.96'</b>	Length of push core assembly (B): <b>4.5/7.5</b>
Collection Mechanism: <b>Push-Core</b>	GPS Accuracy: <b>8'</b>	Water surface to top of handle (C): <b>2.0</b>
Date: <b>6-22-06</b>	Predicted Tide (ft):	Length of core (from bottom) (D): <b>3.2</b>
Revised Station ID: <b>L9062206</b>	Time of Collection: <b>1318</b>	Surveyed elevation (NVGD 29) (E): <b>-0.15 water</b>
	Time Depart Station: <b>1320</b>	Water surface from surveyed elevation (F):

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): E - F

(H) Elevation of the bottom of the core (NVGD): G - (B - C)

(Z\*) Elevation of visual transition (NVGD): H + (distance to visual transition)

(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D

(I<sub>2</sub>) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

**-0.15 measured at Tide board**

**-5.65**

**-5.15**

**-2.45**

**= -2.65 -1.65 Am 9/23/06**

**① Corrected value**

Elevation (NVGD) (i.e. Bottom = H)	Length (ft)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-2.45	3.2								<i>Only Black silt</i>
-5.15	0.5		silt	Black	Soft				
-5.65	0.0		clay	Olive Gray	medium cohesive				

File ID of digital photograph(s): **0034, 0035**

Comments:  
**0.5' Bottom to Transition**  
**Strong oil sheen**

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>				Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel:			
		Client: <b>USACE NAE</b>		Chief Scientist:			

Station ID: <b>612</b>	Time On Station: <b>1321</b>	All measurements are $\pm 0.1$ feet	
Core Sample ID: <b>S-06A-0L12-00-35</b>	Northing (NAD 83): <b>41° 40.470'</b>	Water Depth (A): <b>2.9</b>	
Logged by: <b>Am</b>	Easting (NAD 83): <b>70° 54.960'</b>	Length of push core assembly (B): <b>3.5/6.5</b>	
Collection Mechanism: <b>Push-Core</b>	GPS Accuracy: <b>8'</b>	Water surface to top of handle (C): <b>0.75</b>	
Date: <b>6-22-06</b>	Predicted Tide (ft):	Length of core (from bottom) (D): <b>3.0</b>	
	Time of Collection: <b>1325/1332</b>	Surveyed elevation (NVGD 29) (E): <b>water</b>	
Revised Station ID: <b>612062206</b>	Time Depart Station: <b>1340</b>	Water surface from surveyed elevation (F): <b>-</b>	

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): E - F	<b>0.0 measured at Tide Board</b>
(H) Elevation of the bottom of the core (NVGD): G - (B - C)	<b>-7.2</b>
(Z*) Elevation of visual transition (NVGD): H + (distance to visual transition)	<b>-6.5</b>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D	<b>-3.7</b>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A	<b>-2.9</b>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (I.e. Bottom = H)	Length (ft)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-3.7	3.5								
-6.5	0.7								
-7.2	0.0								

File ID of digital photograph(s): **00101, 0102**  
 Comments:  
**1<sup>st</sup> attempt, retrieved 3.0' core w/ no Transition. Attempted 5'**  
**0.7' Bottom To Transition**  
**① V.O. Am 6/22**

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <u>New Bedford Harbor Environmental Monitoring</u>		Project #: <u>G606422</u>	
		Location: <u>New Bedford, MA</u>		Vessel: <u>CR Skiff + Dredge</u>	
		Client: <u>USACE NAE</u>		Chief Scientist: <u>A. MacFarland</u>	

Station ID: <u>022</u>	Time On Station: <u>1313</u>	All measurements are $\pm 0.1$ feet
Core Sample ID: <u>S-06A-0022-00-15</u>	Northing (NAD 83): <u>41°46.433'</u>	Water Depth (A): <u>5.5</u>
Logged by: <u>AM</u>	Easting (NAD 83): <u>70°54.914'</u>	Length of push core assembly (B): <u>2.0/9.6'</u>
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>8'</u>	Water surface to top of handle (C): <u>2.25</u>
Date: <u>6-21-06</u>	Predicted Tide (ft): <u>.</u>	Length of core (from bottom) (D): <u>1.5'</u>
Revised Station ID: <u>022062106</u>	Time of Collection: <u>1318</u>	Surveyed elevation (NVGD 29) (E): <u>0.3 water</u>
	Time Depart Station: <u>1332</u>	Water surface from surveyed elevation (F): <u>.</u>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>0.3' measured at Tide board</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>-7.05</u>
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<u>-5.95</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>-5.55</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>-5.2</u>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Length (ft)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-5.55	1.5		Silt	Black	Soft	Fine			Transition is Somewhat mixed Appears that some disruption of interface has occurred (Dredging) Top of Transition identified
-5.95	1.0		Clay	Olive Gray	Med cohesion	Fine			
-7.05	0.0								

File ID of digital photograph(s): 0042, 0043  
 Comments:  
1.1' Bottom To Transition  
W.O. Am 6/23/06

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <u>New Bedford Harbor Environmental Monitoring</u>		Project #: <u>G606422</u>	
		Location: <u>New Bedford, MA</u>		Vessel: <u>GR Barge + skiff</u>	
		Client: <u>USACE NAE</u>		Chief Scientist: <u>Alex Mansfield</u>	

Station ID: <u>F38</u>	Time On Station: <u>1228</u>	All measurements are $\pm 0.1$ feet
Core Sample ID: <u>S-06A-0F38-00-31</u>	Northing (NAD 83): <u>41°40.365'</u>	Water Depth (A): <u>1.9'</u>
Logged by: <u>LM</u>	Easting (NAD 83): <u>70°54.996'</u>	Length of push core assembly (B): <u>4.0/2.0'</u>
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>8'</u>	Water surface to top of handle (C): <u>1.75'</u>
Date: <u>6-21-06</u>	Predicted Tide (ft): _____	Length of core (from bottom) (D): <u>3.1'</u>
Revised Station ID: <u>F38062106</u>	Time of Collection: <u>12:32</u>	Surveyed elevation (NVGD 29) (E): <u>-0.4' water</u>
	Time Depart Station: <u>1238</u>	Water surface from surveyed elevation (F): _____

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): E - F	-0.4' measured at Tide board
(H) Elevation of the bottom of the core (NVGD): G - (B - C)	-5.65
(Z*) Elevation of visual transition (NVGD): H + (distance to visual transition)	-4.15
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D	-2.55
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A	-2.3

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Length (ft)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-2.55	3.1'		Black OL	Black	Silt	Fine			
-4.15	1.5'								Oil pocket just below transition
-5.65	3.1' 0.0		Native Med clay	dark Grey	medium stiff clay				

File ID of digital photograph(s): 0028, 0029, 0031  
 Comments:  
1.5' Bottom to Transition  
80, S 10-15 KATs, clear

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>		Project #: <b>G606422</b>	
Location: <b>New Bedford, MA</b>		Client: <b>USACE NAE</b>		Vessel: <b>CR Skiff + Barge</b>	
Station ID: <b>M23</b>		Time On Station: <b>1018</b>		Chief Scientist: <b>A. Mansfield</b>	
Core Sample ID: <b>S-06A-0M23-00-29</b>		Northing (NAD 83): <b>41° 40.424'</b>		All measurements are ±0.1 feet	
Logged by: <b>Am</b>		Easting (NAD 83): <b>70 54.954'</b>		Water Depth (A): <b>1.6'</b>	
Collection Mechanism: <b>Push-Core</b>		GPS Accuracy: <b>8'</b>		Length of push core assembly (B): <b>3.5/6.5</b>	
Date: <b>6-21-06</b>		Predicted Tide (ft):		Water surface to top of handle (C): <b>1.25</b>	
Revised Station ID: <b>M23062106</b>		Time of Collection: <b>1026</b>		Length of core (from bottom) (D): <b>2.9'</b>	
		Time Depart Station: <b>1030</b>		Surveyed elevation (NVGD 29) (E): <b>-1.0 water</b>	
Water surface from surveyed elevation (F):					

Calculations for Determination of Z* Elevation					
(G) Elevation of Water Surface (NVGD): E - F	<b>-1.0 measured at Tide board</b>				
(H) Elevation of the bottom of the core (NVGD): G - (B - C)	<b>-6.25</b>				
(Z*) Elevation of visual transition (NVGD): H + (distance to visual transition)	<b>-4.65</b>				
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D	<b>-3.35</b>				
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A	<b>-2.6</b>				
(Note if I ≠ I <sub>2</sub> within ± 1.0 feet, discard and resample)					

Elevation (NVGD) (i.e. Bottom = H)	Length (+T)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-3.35	2.9		Med Sand	Dark Gray					Thin overlying Sand Layer
-3.95	2.3		Silt	Black	fine				Fine Black silty OL
-4.65	1.6		Silt	Olive Gray	Mixed Fine				Entire layer is Native material w/ wood particles mixed in.
-6.25	0.0		Clay w/ wood chips	light Brown	Med Particles				Wood especially concentrated at 1.3' from bottom

*incorrect file #s*

File ID of digital photograph(s): **0025, 0026, 0027, 0028**

Comments:

- Core has 3 Transition layers

- Bottom 1.6'

2.3' sand.

<b>Battelle</b> The Business of Innovation		Project Name: <b>New Bedford Harbor Environmental Monitoring</b> Location: <b>New Bedford, MA</b> Client: <b>USACE NAE</b>			Project #: <b>G606422</b> Vessel: <b>CR Skiff + Jorye</b> Chief Scientist: <b>L. Mansfield</b>				
Station ID: <b>UG</b>	Time On Station: <b>1342</b>	All measurements are ±0.1 feet							
Core Sample ID: <b>S-06A-0006-00-10</b>	Northing (NAD 83): <b>41°40.495'</b>	Water Depth (A): <b>2.2</b>							
Logged by: <b>AM</b>	Easting (NAD 83): <b>70°54.911'</b>	Length of push core assembly (B): <b>2.5/3.5</b>							
Collection Mechanism: <b>Push-Core</b>	GPS Accuracy: <b>8'</b>	Water surface to top of handle (C): <b>1.5</b>							
Date: <b>6-22-06</b>	Predicted Tide (ft):	Length of core (from bottom) (D): <b>1.0</b>							
Revised Station ID: <b>UG062206</b>	Time of Collection: <b>1345</b>	Surveyed elevation (NVGD 29) (E): <b>+0.5 water dw</b>							
	Time Depart Station: <b>1352</b>	Water surface from surveyed elevation (F):							
Calculations for Determination of Z* Elevation									
(G) Elevation of Water Surface (NVGD): E - F		<b>+0.5 measured at Tideband</b>							
(H) Elevation of the bottom of the core (NVGD): G - (B - C)		<b>-1.5</b>							
(Z*) Elevation of visual transition (NVGD): H + (distance to visual transition)		<b>NA - See notes</b>							
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D		<b>-2.5</b>							
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A		<b>-2.3</b>							
(Note if I ≠ I <sub>2</sub> within ± 1.0 feet, discard and resample)									
Elevation (NVGD) (i.e. Bottom = H)	Length (ft)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-0.5	1.0		Mixed silt sand shell wood chips	Mixed Black gray Brown	Mixed				No clear Transition Core is a mix of silt, sand, shells, and wood. Wood especially present at bottom
-1.5	0.0								
File ID of digital photograph(s): <b>0036, 0037</b>									
Comments: <b>1st 2nd Attempt</b> <b>multiple layers sand/silt/shell hash/wood</b>									

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <u>New Bedford Harbor Environmental Monitoring</u>		Project #: <u>G606422</u>	
		Location: <u>New Bedford, MA</u>		Vessel: <u>CR SK: H. Baye</u>	
		Client: <u>USACE NAE</u>		Chief Scientist: <u>A. Mansfield</u>	

Station ID: <u>G25</u>	Time On Station: <u>1355</u>	All measurements are $\pm 0.1$ feet
Core Sample ID: <u>S-06A-0625-00-12</u>	Northing (NAD 83): <u>41° 40.419</u>	Water Depth (A): <u>1.4'</u>
Logged by: <u>AM</u>	Easting (NAD 83): <u>70° 54.990</u>	Length of push core assembly (B): <u>3.0' / 6.0</u>
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>8'</u>	Water surface to top of handle (C): <u>2.8</u>
Date: <u>6-22-06</u>	Predicted Tide (ft): _____	Length of core (from bottom) (D): <u>1.25'</u>
Revised Station ID: <u>G25 062206</u>	Time of Collection: <u>1358</u>	Surveyed elevation (NVGD 29) (E): <u>0.1' water</u>
	Time Depart Station: <u>1400</u>	Water surface from surveyed elevation (F): _____

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>0.1' measured at Tide board</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>-3.1</u>
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<u>NA see Description</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>-1.9</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>-1.3</u>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Length (ft)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-1.9'	1.25'		Fine Sand ↓	Dark Grey ↓					No clear Transitions entire core is Sand with Gradual change from Dark fine sand at Top To lighter coarse sand at Bottom
-3.1'	0.0'		Coarse Sand	Grey					

File ID of digital photograph(s): 0022, 0023, 0024  
 Comments:  
No clear Transitions but gradual change from fine sand at top and coarse sand at bottom



<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>				Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel:			
		Client: <b>USACE NAE</b>		Chief Scientist:			

Station ID: <b>E27</b>	Time On Station: <b>1407</b>	All measurements are $\pm 0.1$ feet
Core Sample ID: <b>S-06A-0E27-00-21</b>	Northing (NAD 83): <b>41°40.411'</b>	Water Depth (A): <b>2.0'</b>
Logged by: <b>LM</b>	Easting (NAD 83): <b>70°55.000</b>	Length of push core assembly (B): <b>2.5/3.5'</b>
Collection Mechanism: <b>Push-Core</b>	GPS Accuracy: <b>8'</b>	Water surface to top of handle (C): <b>1.1'</b>
Date: <b>6-22-06</b>	Predicted Tide (ft):	Length of core (from bottom) (D): <b>2.1'</b>
	Time of Collection: <b>1410</b>	Surveyed elevation (NVGD 29) (E): <b>0.3'</b>
	Time Depart Station: <b>1413</b>	Water surface from surveyed elevation (F): <b>-</b>

**Revised Station ID:**  
**E27062206**

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): E - F **0.3'**

(H) Elevation of the bottom of the core (NVGD): G - (B - C) **-4.1**

(Z\*) Elevation of visual transition (NVGD): H + (distance to visual transition) **-3.2**

(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D **-2.0**

(I<sub>2</sub>) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A **-1.7**

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (I.e. Bottom = H)	Length (ft)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-2.0'	2.1'		silt	Black	soft	fine			
-3.2	0.9'		clay	olive Grey	Med cohesion	fine			
-4.1	2.0'								

File ID of digital photograph(s) **0056, 0057**

Comments: **Overcast, 75°, S 10-15 Knts**

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <u>New Bedford Harbor Environmental Monitoring</u>				Project #: <u>G606422</u>	
		Location: <u>New Bedford, MA</u>		Vessel: <u>CR Skiff - bryce</u>		Chief Scientist: <u>A. M. Stettin</u>	
Client: <u>USACE NAE</u>							

Station ID: <u>E30</u>	Time On Station: <u>1414</u>	All measurements are $\pm 0.1$ feet
Core Sample ID: <u>S-06A-0E30-00-25</u>	Northing (NAD 83): <u>41°40.395'</u>	Water Depth (A): <u>3.3'</u>
Logged by: <u>AM</u>	Easting (NAD 83): <u>70°54.999'</u>	Length of push core assembly (B): <u>3.0/6.0</u>
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>8'</u>	Water surface to top of handle (C): <u>1.0</u>
Date: <u>6-22-06</u>	Predicted Tide (ft): _____	Length of core (from bottom) (D): <u>2.5</u>
Revised Station ID: <u>E30062206</u>	Time of Collection: <u>1419</u>	Surveyed elevation (NVGD 29) (E): <u>0.45 water</u>
	Time Depart Station: <u>1422</u>	Water surface from surveyed elevation (F): _____

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>0.45 measured at Tide Board</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>-4.55</u>
(Z*) Elevation of visual transition (NVGD): $H +$ (distance to visual transition)	<u>-3.55</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>-2.05</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>-2.85</u>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (I.e. Bottom = H)	Length (ft)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-2.05	2.5'		Silt	Black	Soft/ fine				Clear Transition, although some smearing present
-3.55	1.0'		clay	Olive Gray	Med cohesive fine				
-4.55	0.0'								

File ID of digital photograph(s): 0040, 0041  
 Comments:

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <u>New Bedford Harbor Environmental Monitoring</u>				Project #: <u>G606422</u>	
		Location: <u>New Bedford, MA</u>		Vessel: <u>CR Barge + Skiff</u>		Chief Scientist: <u>Alex Mansueti</u>	
Client: <u>USACE NAE</u>							

Station ID: <u>E32</u>	Time On Station: <u>1424</u>	All measurements are $\pm 0.1$ feet
Core Sample ID: <u>S-06A-0E32-00-28</u>	Northing (NAD 83): <u>41° 40.32'</u>	Water Depth (A): <u>2.4'</u>
Logged by: <u>AM</u>	Easting (NAD 83): <u>70° 55.00'</u>	Length of push core assembly (B): <u>3.5/6.5'</u>
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>5'</u>	Water surface to top of handle (C): <u>1.0'</u>
Date: <u>6-22-06</u>	Predicted Tide (ft): _____	Length of core (from bottom) (D): <u>2.8'</u>
Revised Station ID: <u>E32 062206</u>	Time of Collection: <u>1429</u>	Surveyed elevation (NVGD 29) (E): <u>0.5 water</u>
	Time Depart Station: <u>1432</u>	Water surface from surveyed elevation (F): <u>-</u>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): E - F	<u>0.5' measured at Tide Board</u>
(H) Elevation of the bottom of the core (NVGD): G - (B - C)	<u>-5.0'</u>
(Z*) Elevation of visual transition (NVGD): H + (distance to visual transition)	<u>-3.3'</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D	<u>-2.2'</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A	<u>-1.9'</u>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Length (ft)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-2.2	2.8		S:IT	Black	fine				Transition is somewhat gradual Top end of Transition starts at 1.7' (from Bottom) and goes to ~1.3' (from Bottom)
-3.3	1.7		Clay	Olive gray	fine w/ med cohesion				
-5.0	0.0								

File ID of digital photograph(s): 0032, 0033  
 Comments:

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>				Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel:		Chief Scientist:	
		Client: <b>USACE NAE</b>					

Station ID: <b>E33</b>	Time On Station: <b>1436</b>	All measurements are $\pm 0.1$ feet	
Core Sample ID: <b>S-06A-DE33-00-37</b>	Northing (NAD 83): <b>41° 40.384'</b>	Water Depth (A): <b>2.6'</b>	
Logged by: <b>AM</b>	Easting (NAD 83): <b>70° 54.996'</b>	Length of push core assembly (B): <b>4.5/7.5'</b>	
Collection Mechanism: <b>Push-Core</b>	GPS Accuracy: <b>8'</b>	Water surface to top of handle (C): <b>1.0'</b>	
Date: <b>6-22-06</b>	Predicted Tide (ft):	Length of core (from bottom) (D): <b>3.7'</b>	
Revised Station ID: <b>E33062206</b>	Time of Collection: <b>1440</b>	Surveyed elevation (NVGD 29) (E): <b>0.5 Water</b>	
	Time Depart Station: <b>1446</b>	Water surface from surveyed elevation (F): <b>-</b>	

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): E - F	$\nearrow$ <b>0.5 measured at Tide board</b> <del>2.5</del> - 6.0
(H) Elevation of the bottom of the core (NVGD): G - (B - C)	- 3.7
(Z*) Elevation of visual transition (NVGD): H + (distance to visual transition)	- 2.3
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D	- 2.1
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A	

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Length (ft)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-2.3	3.7		Silt w/ shell hash	Black soft fine					
-3.7	2.3								
-6.0	0.0		Clay/ Gm/	olive med cohesion fine					

File ID of digital photograph(s): **0106, 0107**  
 Comments:

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>				Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel:			
		Client: <b>USACE NAE</b>		Chief Scientist:			

Station ID: <b>B32</b>	Time On Station: <b>1430</b>	All measurements are $\pm 0.1$ feet
Core Sample ID: <b>S-06A-0B32-00-21</b>	Northing (NAD 83): <b>41° 40.391'</b>	Water Depth (A): <b>2.6'</b>
Logged by: <b>JM</b>	Easting (NAD 83): <b>70° 55.015'</b>	Length of push core assembly (B): <b>2.5/5.5'</b>
Collection Mechanism: <b>Push-Core</b>	GPS Accuracy: <b>8'</b>	Water surface to top of handle (C): <b>0.7'</b>
Date: <b>6-22-06</b>	Predicted Tide (ft):	Length of core (from bottom) (D): <b>2.1</b>
Revised Station ID: <b>B32 062206</b>	Time of Collection: <b>1455</b>	Surveyed elevation (NVGD 29) (E): <b>0.7' water</b>
	Time Depart Station: <b>1500</b>	Water surface from surveyed elevation (F):

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): E - F	0.7'
(H) Elevation of the bottom of the core (NVGD): G - (B - C)	-4.1
(Z*) Elevation of visual transition (NVGD): H + (distance to visual transition)	-3.1
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D	-2.0
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A	-1.9

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-2.0      2.1'		silt	black	soft	fine oil			
-3.1      1.0'	-	clay	olive gray	med cohesive	fine			
-4.1      0.0								

File ID of digital photograph(s): **0060, 0061**

Comments:  
**2 dead Strippers floating  
moderate oil sheen**

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>			Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>			Vessel: <b>CR Sk. H + barge</b>	
		Client: <b>USACE NAE</b>			Chief Scientist: <b>A. M. [Signature]</b>	

Station ID: <b>C29</b>	Time On Station: <b>1503</b>	All measurements are $\pm 0.1$ feet
Core Sample ID: <b>S-06A-0C29-00-21</b>	Northing (NAD 83): <b>41° 40.401'</b>	Water Depth (A): <b>2.7</b>
Logged by: <b>AM</b>	Easting (NAD 83): <b>70° 55.009</b>	Length of push core assembly (B): <b>2.5/5.5</b>
Collection Mechanism: <b>Push-Core</b>	GPS Accuracy: <b>8'</b>	Water surface to top of handle (C): <b>0.4</b>
Date: <b>6-22-06</b>	Predicted Tide (ft):	Length of core (from bottom) (D): <b>2.1</b>
Revised Station ID: <b>C29 062206</b>	Time of Collection: <b>1506</b>	Surveyed elevation (NVGD 29) (E): <b>0.9 water</b>
	Time Depart Station: <b>1509</b>	Water surface from surveyed elevation (F):

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): E - F	<b>0.9 measured at Tide board</b>
(H) Elevation of the bottom of the core (NVGD): G - (B - C)	<b>- 4.2</b>
(Z*) Elevation of visual transition (NVGD): H + (distance to visual transition)	<b>- 3.3</b>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D	<b>- 2.1</b>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A	<b>- 1.8</b>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Length (ft)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-2.1	2.1'			Black Silt	Black	Soft	fine		Transition is somewhat gradual from 0.9' (from Bottom) To 0.6'
-3.3	0.9'			Clay	Olive Gray	Med Cherious	fine		
-4.2	00'								

File ID of digital photograph(s): **0052, 0053**  
 Comments: **moderate oil sheen**

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>		Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel: <b>CR Barge + skiff</b>	
		Client: <b>USACE NAE</b>		Chief Scientist: <b>Alex Mansfield</b>	

Station ID: <b>F36</b>	Time On Station: <b>1514</b>	All measurements are $\pm 0.1$ feet
Core Sample ID: <b>S-06A-0F36-00-30</b>	Northing (NAD 83): <b>41°40.372'</b>	Water Depth (A): <b>3.9</b>
Logged by: <b>AM</b>	Easting (NAD 83): <b>70°54.998'</b>	Length of push core assembly (B): <b>① 4.5/25/9.5'</b>
Collection Mechanism: <b>Push-Core</b>	GPS Accuracy: <b>8'</b>	Water surface to top of handle (C): <b>2.0</b>
Date: <b>6-22-06</b>	Predicted Tide (ft):	Length of core (from bottom) (D): <b>3.0'</b>
Revised Station ID: <b>F36062206</b>	Time of Collection: <b>1524</b>	Surveyed elevation (NVGD 29) (E): <b>1.1' water</b>
	Time Depart Station: <b>1530</b>	Water surface from surveyed elevation (F): <b>-</b>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<b>1.1' measured at Tide board</b>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<b>-6.4'</b>
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<b>-4.9</b>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<b>-3.4'</b>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<b>-2.8</b>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Length (ft)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-3.4	3.0'		Silt	Black	Soft	very fine	oil		Very soft Black Strong oil sheen Pockets of oil Some small shell hash
-4.9'	1.5'		clayey	Olive Grey	Med Stiff		NA		Pockets of oil. Could be from Smearing on Sides of core
-6.4	0.0'								

File ID of digital photograph(s): **0020, 0021**  
 Comments:  
 - Very Strong oil sheen  
 - Last Station of Day - Last pre-dredge core  
 ① Multiple attempts, used different handle configuration AM 6/22

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# **Progress Dredge Core Characterization Logs**

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<b>Battelle</b> <i>The Business of Innovation</i>		Project Name: New Bedford Harbor Environmental Monitoring Location: New Bedford, MA Client: USACE NAE		Project #: G606422 Vessel: CR Barge + skiff Chief Scientist: Alex Mansfield	
Station ID:	K24	Time On Station:	1020	All measurements are ±0.1 feet	
Core Sample ID:		Northing (NAD 83):	41°40.424'	Water Depth (A):	7.2'
Logged by:	JM	Easting (NAD 83):	70°54.962'	Length of push core assembly (B):	15.75'
Collection Mechanism:	Push-Core	GPS Accuracy:	10'	Water surface to top of handle (C):	6.5'
Date:	8-24-06	Predicted Tide (ft):	3.4	Length of core (from bottom) (D):	1.3
		Time of Collection:	1027	Surveyed elevation (NVGD 29) (E):	+1.5'
		Time Depart Station:	1030	Water surface from surveyed elevation (F):	

**Calculations for Determination of Z' Elevation**

(G)	Elevation of Water Surface (NVGD):	E - F	+2.75' (2)
(H)	Elevation of the bottom of the core (NVGD):	G - (B - C)	+1.5' elevation
(Z')	Elevation of visual transition (NVGD):	H + (distance to visual transition)	
(I)	Elevation of the sediment-water interface as measured from bottom of core (NVGD):	H + D	-8.25 - 7.75 = -6.5 (2)
(I <sub>2</sub> )	Elevation of the sediment-water interface as measured from water depth (NVGD):	G - A	-6.75 - 6.65 = -5.4 (2)
			-6.45 - 5.2 = -5.70 (2)
			-5.70 - 4.45 = -5.4 (2)

(Note if I ≠ I<sub>2</sub> within ± 1.0 feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-5.9' -6.65'	-10-	Silt clay	black olive grey	soft med cohesion fine	fine			
-6.5' -7.75'	-0.0'							

File ID of digital photograph(s): \_\_\_\_\_

Comments:  
1.1' Bottom To Transition. 0.2' of overlying sediment

① miscalculated Δm 8/24/06  
② JE identified error in placement of Tide board correction = +1.25'  
JM 8/31/06

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <u>New Bedford Harbor Environmental Monitoring</u>				Project #: <u>G606422</u>	
		Location: <u>New Bedford, MA</u>		Vessel: <u>CR Skiff + Barge</u>		Chief Scientist: <u>Alex Mansfield</u>	
Client: <u>USACE NAE</u>							

Station ID: <u>N24</u>	Time On Station: <u>1033</u>	All measurements are $\pm 0.1$ feet	
Core Sample ID: _____	Northing (NAD 83): <u>41° 42' 22"</u>	Water Depth (A): <u>6.9'</u>	
Logged by: <u>AM</u>	Easting (NAD 83): <u>70° 54.949</u>	Length of push core assembly (B): <u>15.75'</u>	
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>10'</u>	Water surface to top of handle (C): <u>7.5'</u>	
Date: <u>8-24-06</u>	Predicted Tide (ft): <u>3.3</u>	Length of core (from bottom) (D): <u>1.45'</u>	
	Time of Collection: <u>1038</u>	Surveyed elevation (NVGD 29) (E): <u>+1.0</u>	
	Time Depart Station: <u>1049</u>	Water surface from surveyed elevation (F): _____	

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): E - F	<u>+1.0 - 2.25' ①</u>
(H) Elevation of the bottom of the core (NVGD): G - (B - C)	<u>-7.25 - 6.0'</u>
(Z*) Elevation of visual transition (NVGD): H + (distance to visual transition)	<u>-6.05 - 4.8'</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D	<u>-5.8 - 5.2' - 4.55'</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A	<u>-5.9 - 4.65'</u>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
① -4.8' - <del>6.05</del> = 1.3'		Silt	black	Soft	fine			
① -6.0' - <del>7.25</del> = 0.0		clay	olive grey	med cohesion	fine			

File ID of digital photograph(s): \_\_\_\_\_  
 Comments: 1.2' bottom to moderate transition, 1.3' to clear transition.  
1.45' Total core  
  
① JE identified error in placement at Tide board. Correction = 1.25'  

AM 8/31/06



<b>Battelle</b> The Business of Innovation		Project Name: New Bedford Harbor Environmental Monitoring Location: New Bedford, MA Client: USACE NAE				Project #: G606422 Vessel: CR Skiff Chief Scientist: Alex Munstfeldt			
Station ID:	S3	Time On Station:	1105	<b>All measurements are ±0.1 feet</b>					
Core Sample ID:		Northing (NAD 83):	41°40.509'	Water Depth (A):	4.6'				
Logged by:	JM	Easting (NAD 83):	70°54.919	Length of push core assembly (B):	15.75'				
Collection Mechanism:	Push-Core	GPS Accuracy:	10'	Water surface to top of handle (C):	10.0'				
Date:	8-24-06	Predicted Tide (ft):	2.7	Length of core (from bottom) (D):	0.2'				
		Time of Collection:	1119	Surveyed elevation (NVGD 29) (E):	+0.7' + 1.95'				
		Time Depart Station:	1134	Water surface from surveyed elevation (F):					
<b>Calculations for Determination of Z<sup>*</sup> Elevation</b>									
(G)	Elevation of Water Surface (NVGD): E - F			0.7' + 1.95' (1)					
(H)	Elevation of the bottom of the core (NVGD): G - (B - C)			-5.05' - 3.8'					
(Z*)	Elevation of visual transition (NVGD): H + (distance to visual transition)			-4.95' - 3.7'					
(I) <sub>1</sub>	Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D			-4.85' - 3.6'					
(I) <sub>2</sub>	Elevation of the sediment-water interface as measured from water depth (NVGD): G - A			-3.9' - 2.65'					
(Note if I ≠ I <sub>2</sub> within ± 1.0 feet, discard and resample)									
	Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
File ID of digital photograph(s):									
Comments: Total core only 0.2'. Bottom=hard shell hash. ~0.1' of black sed.  (1) SE identified error in tide board placement. correction factor = 1.25' <span style="float:right;">AM 8/31/06</span>									
Page ____ of ____									

[illegible]

<b>Battelle</b> The Business of Innovation		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>		Project #: <b>G606422</b>	
Location: <b>New Bedford, MA</b>		Vessel: <b>CR SK: H + Barge</b>		Chief Scientist: <b>A. M. Strelow</b>	
Client: <b>USACE NAE</b>					
Station ID: <b>S11</b>	Time On Station: <b>1209</b>	All measurements are $\pm 0.1$ feet		<b>1st attempt</b>	
Core Sample ID: _____	Northing (NAD 83): <b>41° 40' 47.8"</b>	Water Depth (A): <b>4.0'</b>		<b>4.0'</b>	
Logged by: <b>AM</b>	Easting (NAD 83): <b>70° 54' 92.1"</b>	Length of push core assembly (B): <b>10.0'</b>		<b>10.0'</b>	
Collection Mechanism: <b>Push-Core</b>	GPS Accuracy: <b>10'</b>	Water surface to top of handle (C): <b>3.1'</b>		<b>2.9'</b>	
Date: <b>8-24-06</b>	Predicted Tide (ft): <b>1.5'</b>	Length of core (from bottom) (D): <b>NA</b>		<b>2.8'</b>	
	Time of Collection: <b>1215/1218</b>	Surveyed elevation (NVGD 29) (E): <b>-0.4'</b>		<b>-0.4'</b>	
	Time Depart Station: <b>1224</b>	Water surface from surveyed elevation (F): <b>+0.85'</b>		<b>+0.85'</b>	

Calculations for Determination of Z\* Elevation

(G) Elevation of Water Surface (NVGD):  $E - F$

**-0.4 Water elevation +0.85**

(H) Elevation of the bottom of the core (NVGD):  $G - (B - C)$

**-5.4 -5.15**

(Z\*) Elevation of visual transition (NVGD):  $H + (\text{distance to visual transition})$

**-5.4 -4.15**

(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD):  $H + D$

**-3.6 -2.35**

(I<sub>2</sub>) Elevation of the sediment-water interface as measured from water depth (NVGD):  $G - A$

**-4.4 -3.15**

(Note if  $I \neq I_2$  within  $\pm 1.0$  feet, discard and resample)

	Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
①	-2.35 <del>-2.8</del> -2.8'		silt	black	very soft	fine	-		
①	-4.15 <del>-5.4</del> -1.0'		clay	olive gray	firm	fine	-		
①	-5.15 <del>-6.4</del> -0.0'								

File ID of digital photograph(s):

Comments:

Sediment blew out on 1st attempt  
Total core = 2.8' Bottom to Transition = 1.0'

① JE identified error in Tide board placement. correction = 1.25'



<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <i>New Bedford Harbor Environmental Monitoring</i>		Project #: <i>G606422</i>	
		Location: <i>New Bedford, MA</i>		Vessel: <i>CR Skiff and Barge</i>	
		Client: <i>USACE NAE</i>		Chief Scientist: <i>J. Mansueti</i>	

Station ID: <i>T6</i>	Time On Station: <i>1229</i>	All measurements are $\pm 0.1$ feet	
Core Sample ID: _____	Northing (NAD 83): <i>41° 40.499'</i>	Water Depth (A): <i>3.5'</i>	
Logged by: <i>JM</i>	Easting (NAD 83): <i>70° 54.917'</i>	Length of push core assembly (B): <i>10.0'</i>	
Collection Mechanism: <i>Push-Core</i>	GPS Accuracy: <i>10'</i>	Water surface to top of handle (C): <i>5.7'</i>	
Date: <i>8-24-06</i>	Predicted Tide (ft): <i>1.1</i>	Length of core (from bottom) (D): <i>1.9'</i>	
	Time of Collection: <i>1235</i>	Surveyed elevation (NVGD 29) (E): <i>-0.9'</i>	
	Time Depart Station: <i>1241</i>	Water surface from surveyed elevation (F): <i>-</i>	

*+0.35*  
*①*

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<i>-0.9' + 0.35 water elevation</i>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<i>-3.95'</i>
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<i>see notes</i>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<i>-2.05</i>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<i>-2.95</i>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
<i>-2.05</i>		<i>1.9</i>						
<i>-3.95</i>			<i>Brn/Black</i>					
<i>-0.0</i>								

File ID of digital photograph(s): \_\_\_\_\_

Comments: *Bottom To Transition*  
*NOT a clear Transition. Sediment is full of wood chips, NOT*  
*Typical NATIVE or OL layers*

*① JE identified error in Tide board placement. correction = 1.25'*

Page \_\_\_\_ of \_\_\_\_

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>		Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel:	
		Client: <b>USACE NAE</b>		Chief Scientist:	

Station ID: <b>T8</b>	Time On Station: <b>1248</b>	All measurements are $\pm 0.1$ feet	
Core Sample ID:	Northing (NAD 83): <b>41° 40.488'</b>	Water Depth (A): <b>3.2'</b>	
Logged by: <b>AM</b>	Easting (NAD 83): <b>70° 54.914</b>	Length of push core assembly (B): <b>10.0'</b>	
Collection Mechanism: <b>Push-Core</b>	GPS Accuracy: <b>10'</b>	Water surface to top of handle (C): <b>5.4'</b>	
Date: <b>8-24-06</b>	Predicted Tide (ft): <b>1.0'</b>	Length of core (from bottom) (D): <b>1.1'</b>	
	Time of Collection: <b>1253</b>	Surveyed elevation (NVGD 29) (E): <b>-1.3'</b>	Tide <b>-0.05'</b>
	Time Depart Station: <b>1258</b>	Water surface from surveyed elevation (F):	

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD):  $E - F$

(H) Elevation of the bottom of the core (NVGD):  $G - (B - C)$

(Z\*) Elevation of visual transition (NVGD):  $H + (\text{distance to visual transition})$

(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD):  $H + D$

(I<sub>2</sub>) Elevation of the sediment-water interface as measured from water depth (NVGD):  $G - A$

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

①

-0.05'

-1.3' Tidal elevation

-5.9' -4.65

-5.4' -4.15

-4.8' -3.55

-4.5' -3.25

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-3.55' 1.1'		Silt	black	fine	fine			
-4.15' -0.5'		clay/sand	olive grey	firm	med	NA		
-4.65' -0.0		sand & shells	w/ mixed sand & shells					

File ID of digital photograph(s):

Comments: **Bottom clay-sand-shells.**  
**Total core = 1.1'**  
**Bottom To Transition = 0.5'**

① JE identified error in Tide board placement correction = +1.25 AM 8/3/06



45-  
①

$$\underline{-17 - 0.45'}$$

- $$\begin{array}{r} -6.15' \\ -5.65' \\ -3.95 \\ -4.05 \end{array}$$

(Note if  $l \neq l_2$  within  $\pm 1.0$  feet, discard and resample)

Ele	(l.e.)
-3.95	2.2'
-5.65	-0.5'
-6.15	0.0

Comments:

Bottom To Transition = 0.5'

Am 8/31/00

[illegible]

[illegible]

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <u>New Bedford Harbor Environmental Monitoring</u>				Project #: <u>G606422</u>	
		Location: <u>New Bedford, MA</u>		Vessel: <u>CR Skiff + barge</u>		Chief Scientist: <u>Alex Mansfield</u>	
Client: <u>USACE NAE</u>							

Station ID: <u>S15</u>	Time On Station: <u>0928</u>	All measurements are $\pm 0.1$ feet			
Core Sample ID: _____	Northing (NAD 83): <u>41° 40' 46.4"</u>	Water Depth (A): <u>6.5'</u>			
Logged by: <u>AW</u>	Easting (NAD 83): <u>70° 54' 9.18"</u>	Length of push core assembly (B): <u>10.0'</u>			
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>10'</u>	Water surface to top of handle (C): <u>0.75' 1.75'</u>			
Date: <u>8-25-06</u>	Predicted Tide (ft): <u>4.2</u>	Length of core (from bottom) (D): <u>1.4'</u>			
	Time of Collection: <u>0930</u>	Surveyed elevation (NVGD 29) (E): <u>+1.8' +3.05'</u>			
	Time Depart Station: <u>0942</u>	Water surface from surveyed elevation (F): <u>—</u>			

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): E - F	<u>+1.8' +3.05' ①</u>
(H) Elevation of the bottom of the core (NVGD): G - (B - C)	<u>-5.2'</u>
(Z*) Elevation of visual transition (NVGD): H + (distance to visual transition)	<u>-4.2'</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D	<u>-3.8'</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A	<u>-3.45'</u>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-3.8' - 1.4'		Silt	black	soft	fine			
-4.2' - 1.0'		clay	gray	firm	fine			
-5.2' - 0.0								

File ID of digital photograph(s): \_\_\_\_\_  
 Comments: Total Core = 1.4'  
Bottom to Transition = 1.0'  
  
① SE identified error w/ Tide board placement. CORRECTION = +1.25'  

AW 8/31/06

<b>Battelle</b> <small>The Business of Innovation</small>		<b>Project Name:</b> New Bedford Harbor Environmental Monitoring <b>Location:</b> New Bedford, MA <b>Client:</b> USACE NAE		<b>Project #:</b> G606422 <b>Vessel:</b> CR Skiff + Barge <b>Chief Scientist:</b> Alex Mansfield	
<b>Station ID:</b>	I 24	<b>Time On Station:</b>	1112	<b>All measurements are ±0.1 feet</b>	
<b>Core Sample ID:</b>		<b>Northing (NAD 83):</b>	2706674.46	<b>Water Depth (A):</b>	3.2'
<b>Logged by:</b>	am	<b>Easting (NAD 83):</b>	815651.94	<b>Length of push core assembly (B):</b>	8.0'
<b>Collection Mechanism:</b>	Push-Core	<b>GPS Accuracy:</b>	2.6'	<b>Water surface to top of handle (C):</b>	1.7'
<b>Date:</b>	8-31-06	<b>Predicted Tide (ft):</b>	2.9'	<b>Length of core (from bottom) (D):</b>	2.4'
		<b>Time of Collection:</b>	1122	<b>Surveyed elevation (NVGD 29) (E):</b>	+1.3' water
		<b>Time Depart Station:</b>	1128	<b>Water surface from surveyed elevation (F):</b>	

Calculations for Determination of Z* Elevation	
(G) Elevation of Water Surface (NVGD): E - F	+ 1.3'
(H) Elevation of the bottom of the core (NVGD): G - (B - C)	= 5.0'
(Z*) Elevation of visual transition (NVGD): H + (distance to visual transition)	- 4.10'
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D	- 2.66
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A	- 1.90
(Note if I ≠ I <sub>2</sub> within ± 1.0 feet, discard and resample)	

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-2.6' ————— 2.4'								
— 4.1' ——— 0.9' ———		silt	black	soft	fine			
— 0.6 ———		clay	olive grey	firm	fine			
— 0.4 ———		wood chips	brown		med			
-5.0' ——— 0.0'		clay	olive grey	firm	fine			

File ID of digital photograph(s):

Comments:  
 Bottom To Transition = 0.9'  
 0-0.4 olive grey clay, 0.4'-0.6' wood chips, 0.6-0.9' olive grey clay  
 0.9-2.4' = black silt  
 Heavy sheen and odor associated w/core. Station appears too close to cable line for dredge to be able to reach in E-W orientation.



<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <u>New Bedford Harbor Environmental Monitoring</u>		Project #: <u>G606422</u>	
		Location: <u>New Bedford, MA</u>		Vessel: <u>CR Skiff + Barge</u>	
		Client: <u>USACE NAE</u>		Chief Scientist: <u>Alex Mansfield</u>	

Station ID: <u>N24</u>	Time On Station: <u>1136</u>	All measurements are $\pm 0.1$ feet
Core Sample ID: _____	Northing (NAD 83): <u>2706675.98</u>	Water Depth (A): <u>5.6'</u>
Logged by: <u>JM</u>	Easting (NAD 83): <u>815773.24</u>	Length of push core assembly (B): <u>8'</u>
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>1.8'</u>	Water surface to top of handle (C): <u>0.0'</u>
Date: <u>8-31-06</u>	Predicted Tide (ft): <u>3.0'</u>	Length of core (from bottom) (D): <u>1.5'</u>
	Time of Collection: <u>1138</u>	Surveyed elevation (NVGD 29) (E): <u>+1.6 Tide</u>
	Time Depart Station: <u>1144</u>	Water surface from surveyed elevation (F): <u>—</u>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	+1.6'
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	-6.4'
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	-5.3'
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	-4.8
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	-4.0

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-4.8 — 1.5'		OL	black	very soft	very fine			
-5.3 — 1.1'		Clay	olive grey	firm				
-6.4 — 0.0		w/ wood chips + some sand	w/ mixed part. clay		med			

File ID of digital photograph(s): \_\_\_\_\_

Comments: Bottom To Transition = 1.1' Bottom is clay, woodchips w/ some sand  
Top is OL

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <u>New Bedford Harbor Environmental Monitoring</u>		Project #: <u>G606422</u>	
		Location: <u>New Bedford, MA</u>		Vessel: <u>CR Skiff + Jerry</u>	
		Client: <u>USACE NAE</u>		Chief Scientist: <u>Alex Mansfield</u>	

Station ID: <u>P24</u>	Time On Station: <u>1146</u>	All measurements are $\pm 0.1$ feet
Core Sample ID: _____	Northing (NAD 83): <u>2706675.3</u>	Water Depth (A): <u>6.8'</u>
Logged by: <u>AM</u>	Easting (NAD 83): <u>815830.1</u>	Length of push core assembly (B): <u>11'</u>
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>1.9</u>	Water surface to top of handle (C): <u>2.6'</u>
Date: <u>8-31-06</u>	Predicted Tide (ft): <u>3.1'</u>	Length of core (from bottom) (D): <u>0.9'</u>
	Time of Collection: <u>1149</u>	Surveyed elevation (NVGD 29) (E): <u>+1.8'</u>
	Time Depart Station: <u>1156</u>	Water surface from surveyed elevation (F): _____

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>+ 1.8'</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>- 6.6</u>
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<u>- 5.7</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>- 5.7</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>- 5.0</u>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

#	Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
	-5.7'								
	-0.9'								
	-0.7'		Wood/sand	Brown		med			
			clay	gray	firm	fine			
	-6.6								
	-0.8								

File ID of digital photograph(s): \_\_\_\_\_  
 Comments: Transition from clay to Wood/sand at 0.7' NO Apparent OL

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <u>New Bedford Harbor Environmental Monitoring</u>		Project #: <u>G606422</u>	
		Location: <u>New Bedford, MA</u>		Vessel: <u>CR Skiff + Barge</u>	
		Client: <u>USACE NAE</u>		Chief Scientist: <u>Alex Mansfield</u>	

Station ID: <u>P25</u>	Time On Station: <u>1157</u>	All measurements are $\pm 0.1$ feet
Core Sample ID: _____	Northing (NAD 83): <u>2706651.94</u>	Water Depth (A): <u>5.3'</u>
Logged by: <u>AM</u>	Easting (NAD 83): <u>815823.19</u>	Length of push core assembly (B): <u>8.0'</u>
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>1.9</u>	Water surface to top of handle (C): <u>0.0'</u>
Date: <u>8-31-06</u>	Predicted Tide (ft): <u>3.1</u>	Length of core (from bottom) (D): <u>2.1'</u>
	Time of Collection: <u>1200</u>	Surveyed elevation (NVGD 29) (E): <u>1.9'</u>
	Time Depart Station: <u>1210</u>	Water surface from surveyed elevation (F): <u>—</u>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	+1.9
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	-6.1
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	-4.6
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	-4.0
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	-3.4

(Note if I<sub>1</sub>  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (I.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-4.0      2.1'		OL	black	soft	fine			
-4.6      1.5'		w/wood						
		clay	gray	firm	fine			
-6.1      0.0								

File ID of digital photograph(s): \_\_\_\_\_  
 Comments: Bottom To Transition = 1.5' olive gray clay under OL w/ some wood chips

[illegible]

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <u>New Bedford Harbor Environmental Monitoring</u>		Project #: <u>G606422</u>	
		Location: <u>New Bedford, MA</u>		Vessel: <u>26 Skiff + barge</u>	
		Client: <u>USACE NAE</u>		Chief Scientist: <u>A. Mansfield</u>	
Station ID:	<u>W2</u>	Time On Station:	<u>1233</u>	All measurements are $\pm 0.1$ feet	
Core Sample ID:		Northing (NAD 83):	<u>2707223.7</u>	Water Depth (A):	<u>6.3'</u>
Logged by:	<u>AM</u>	Easting (NAD 83):	<u>815999.3</u>	Length of push core assembly (B):	<u>11</u>
Collection Mechanism:	<u>Push-Core</u>	GPS Accuracy:	<u>2.2</u>	Water surface to top of handle (C):	<u>1.95'</u>
Date:	<u>8-31-06</u>	Predicted Tide (ft):	<u>3.4</u>	Length of core (from bottom) (D):	<u>2.0'</u>
		Time of Collection:	<u>1236</u>	Surveyed elevation (NVGD 29) (E):	<u>2.1' water elev.</u>
		Time Depart Station:	<u>1243</u>	Water surface from surveyed elevation (F):	<u>-</u>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD):  $E - F$

2.1'

(H) Elevation of the bottom of the core (NVGD):  $G - (B - C)$

-6.95

(z\*) Elevation of visual transition (NVGD):  $H + (\text{distance to visual transition})$

-5.35

(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD):  $H + D$

-4.95

(I<sub>2</sub>) Elevation of the sediment-water interface as measured from water depth (NVGD):  $G - A$

-4.2

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
<u>-4.95</u> <u>2.0</u>		<u>silt/</u>	<u>black</u>	<u>soft</u>				
<u>-5.35</u> <u>= 1.6'</u>		<u>wood chips</u>						
		<u>clay</u>	<u>grey</u>	<u>firm</u>	<u>fine</u>			
<u>-6.95</u> <u>= 0.0</u>								

File ID of digital photograph(s):

Comments:

Bottom To Transition = 1.6' Black silt w/ wood chips over grey clay

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <u>New Bedford Harbor Environmental Monitoring</u>			Project #: <u>G606422</u>	
		Location: <u>New Bedford, MA</u>			Vessel: <u>CR Skiff + Berge</u>	
		Client: <u>USACE NAE</u>			Chief Scientist: <u>Alex Mansfield</u>	

Station ID:	<u>V 7</u>	Time On Station:	<u>1250</u>	All measurements are $\pm 0.1$ feet	
Core Sample ID:		Northing (NAD 83):	<u>2707101.2</u>	Water Depth (A):	<u>5.9'</u>
Logged by:	<u>AM</u>	Easting (NAD 83):	<u>815975.5</u>	Length of push core assembly (B):	<u>1.0'</u>
Collection Mechanism:	<u>Push-Core</u>	GPS Accuracy:	<u>2.2</u>	Water surface to top of handle (C):	<u>2.75'</u>
Date:	<u>8-31-06</u>	Predicted Tide (ft):	<u>3.5</u>	Length of core (from bottom) (D):	<u>2.15'</u>
		Time of Collection:	<u>1250</u>	Surveyed elevation (NVGD 29) (E):	<u>+2.4' water dk</u>
		Time Depart Station:	<u>1258</u>	Water surface from surveyed elevation (F):	

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>+ 2.4</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>- 5.85</u>
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<u>- 4.75</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>- 3.70</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>- 3.5</u>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-3.7     2.15		Silt	black	soft	med			
-4.75     1.1'		clay	olive gray	f.m	f. me			
-5.85     0.0								

File ID of digital photograph(s):  
 Comments: Bottom To Transition = 1.1' Black silt w/ some shells and gray clay

<b>Battelle</b> <i>The Business of Innovation</i>		<b>Project Name:</b> New Bedford Harbor Environmental Monitoring <b>Location:</b> New Bedford, MA <b>Client:</b> USACE NAE		<b>Project #:</b> G606422 <b>Vessel:</b> CR Skiff + Barge <b>Chief Scientist:</b> Alex Mansfield					
Station ID:	V10	Time On Station:	1300	All measurements are ±0.1 feet					
Core Sample ID:		Northing (NAD 83):	2702023.6	Water Depth (A):	4.9'				
Logged by:	dm	Easting (NAD 83):	815978.6	Length of push core assembly (B):	8.0'				
Collection Mechanism:	Push-Core	GPS Accuracy:	1.8'	Water surface to top of handle (C):	1.6'				
Date:	8-31-06	Predicted Tide (ft):	3.6'	Length of core (from bottom) (D):	1.2'				
		Time of Collection:	1304	Surveyed elevation (NVGD 29) (E):	+2.6' water elev.				
		Time Depart Station:	1309	Water surface from surveyed elevation (F):					
<b>Calculations for Determination of Z* Elevation</b>									
(G) Elevation of Water Surface (NVGD): E - F				+ 2.6'					
(H) Elevation of the bottom of the core (NVGD): G - (B - C)				- 3.8					
(Z*) Elevation of visual transition (NVGD): H + (distance to visual transition)				- 3.1					
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D				- 2.6					
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A				- 2.3					
(Note if I ≠ I <sub>2</sub> within ± 1.0 feet, discard and resample)									
	Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-2.6'	1.2'		Silt	Black					
-3.1	0.7'		wood chips	Brown	mixed	med			
-3.8	0.0		clay	gray	firm	fine			
File ID of digital photograph(s): Comments: Bottom to Transition = 0.7' Black silt w/ wood chips over gray clay									

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <i>New Bedford Harbor Environmental Monitoring</i>		Project #: <i>G606422</i>	
		Location: <i>New Bedford, MA</i>		Vessel: <i>GR SK: ft + Bruce</i>	
		Client: <i>USACE NAE</i>		Chief Scientist: <i>A. Mansfield</i>	

Station ID: <i>S13</i>	Time On Station: <i>1313</i>	All measurements are $\pm 0.1$ feet	
Core Sample ID: _____	Northing (NAD 83): <i>2706949.0</i>	Water Depth (A): <i>6.0'</i>	
Logged by: <i>dm</i>	Easting (NAD 83): <i>815903.7</i>	Length of push core assembly (B): <i>8.0'</i>	
Collection Mechanism: <i>Push-Core</i>	GPS Accuracy: <i>2.1'</i>	Water surface to top of handle (C): <i>0.0'</i>	
Date: <i>8-31-06</i>	Predicted Tide (ft): <i>3.6'</i>	Length of core (from bottom) (D): <i>1.9'</i>	
	Time of Collection: <i>1315</i>	Surveyed elevation (NVGD 29) (E): <i>2.6' water elev.</i>	
	Time Depart Station: <i>1320</i>	Water surface from surveyed elevation (F): <i>-</i>	

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	+ 2.6'
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	- 5.4
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	- 4.0
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	- 3.5
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	- 3.4

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-3.5     1.9'		silt	black	soft	fine			
-4.0     1.4'								
-5.4     0.0		clay	gray	firm	fine			

File ID of digital photograph(s): \_\_\_\_\_

Comments: *Bottom To Transition = 1.4' fine black silt over gray/clay*



<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <u>New Bedford Harbor Environmental Monitoring</u>		Project #: <u>G606422</u>	
		Location: <u>New Bedford, MA</u>		Vessel: <u>CR skiff + buoy</u>	
		Client: <u>USACE NAE</u>		Chief Scientist: <u>Alex Marshall</u>	

Station ID: <u>T 16</u>	Time On Station: <u>1324</u>	All measurements are $\pm 0.1$ feet	
Core Sample ID: _____	Northing (NAD 83): <u>2706872.9</u>	Water Depth (A): <u>6.1</u>	
Logged by: <u>AM</u>	Easting (NAD 83): <u>815923.8</u>	Length of push core assembly (B): <u>11.0'</u>	
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>1.9</u>	Water surface to top of handle (C): <u>2.7'</u>	
Date: <u>8-31-06</u>	Predicted Tide (ft): <u>3.6'</u>	Length of core (from bottom) (D): <u>1.6'</u>	
	Time of Collection: <u>1325</u>	Surveyed elevation (NVGD 29) (E): <u>2.6' water elev.</u>	
	Time Depart Station: <u>1328</u>	Water surface from surveyed elevation (F): <u>—</u>	

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	+ 2.6'
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	- 5.7
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	- 4.5
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	- 4.1
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	- 3.5

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-4.1		silt	black	soft	fine			
-4.5		shell hash						
		clay	grey	firm	fine			
-5.7								

File ID of digital photograph(s): \_\_\_\_\_  
 Comments:  

0-Transition = 1.2' fine black silt over grey clay. some shell  
 Hash at Transition

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <u>New Bedford Harbor Environmental Monitoring</u>			Project #: <u>G606422</u>	
		Location: <u>New Bedford, MA</u>			Vessel: _____	
		Client: <u>USACE NAE</u>			Chief Scientist: _____	

Station ID: <u>520</u>	Time On Station: <u>1333</u>	All measurements are $\pm 0.1$ feet
Core Sample ID: _____	Northing (NAD 83): <u>2706772.7</u>	Water Depth (A): <u>6.2'</u>
Logged by: <u>AM</u>	Easting (NAD 83): <u>815898.6</u>	Length of push core assembly (B): <u>11.0'</u>
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>2.4</u>	Water surface to top of handle (C): <u>2.4'</u>
Date: <u>8-31-06</u>	Predicted Tide (ft): <u>3.6</u>	Length of core (from bottom) (D): <u>1.8'</u>
	Time of Collection: <u>1334</u>	Surveyed elevation (NVGD 29) (E): <u>2.6 water elev.</u>
	Time Depart Station: <u>1340</u>	Water surface from surveyed elevation (F): <u>-</u>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>+2.6'</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>-6.0</u>
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<u>-4.9</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>-4.2</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>-3.6</u>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
1.8'								
1.7'		silt	black	soft	fine			
1.1'		m:ixed silt clay	Dark gray	soft	fine			
0.0		clay	gray	firm	fine			

File ID of digital photograph(s): \_\_\_\_\_  
 Comments:  

Bottom To Transition 1.1'  
 0-1.1' gray clay, 1.1'-1.7' gray silt, 1.7-1.8 Black fine silt.



<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>			Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>			Vessel: <b>CR Skiff + Barge</b>	
		Client: <b>USACE NAE</b>			Chief Scientist: <b>Alex Mansueti</b>	

Station ID:	<b>S7</b>	Time On Station:	<b>1410</b>	All measurements are $\pm 0.1$ feet	
Core Sample ID:		Northing (NAD 83):	<b>2707101.7</b>	Water Depth (A):	<b>6.2'</b>
Logged by:	<b>Am</b>	Easting (NAD 83):	<b>815898.3</b>	Length of push core assembly (B):	<b>11.0'</b>
Collection Mechanism:	<b>Push-Core</b>	GPS Accuracy:	<b>1.9</b>	Water surface to top of handle (C):	<b>2.8'</b>
Date:	<b>8-31-06</b>	Predicted Tide (ft):	<b>3.6</b>	Length of core (from bottom) (D):	<b>1.45'</b>
		Time of Collection:	<b>1414</b>	Surveyed elevation (NVGD 29) (E):	<b>2.9' water elev.</b>
		Time Depart Station:	<b>1419</b>	Water surface from surveyed elevation (F):	<b>—</b>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): E - F	<b>+2.9'</b>
(H) Elevation of the bottom of the core (NVGD): G - (B - C)	<b>-5.3'</b>
(z*) Elevation of visual transition (NVGD): H + (distance to visual transition)	<b>-4.7'</b>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D	<b>-3.85</b>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A	<b>-3.3</b>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
<b>-3.85' - 1.45'</b>  <div style="border-left: 1px solid black; height: 100px; margin-left: 10px;"></div>		<b>Silt</b>	<b>black</b>	<b>soft</b>	<b>mixed med</b>			
<b>-4.7' - 0.6'</b>		<b>shell hash</b>		<b>mixed med</b>				
<b>-5.3' - 0.0</b>		<b>clay</b>	<b>gray</b>	<b>firm</b>	<b>fine</b>			

File ID of digital photograph(s):

Comments:

Bottom To Transition = 0.6' fine black silt w/ some shell hash over gray clay

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <u>New Bedford Harbor Environmental Monitoring</u>		Project #: <u>G606422</u>	
		Location: <u>New Bedford, MA</u>		Vessel: <u>CRS Riff + Barge</u>	
Client: <u>USACE NAE</u>		Chief Scientist: _____			

Station ID: <u>V16</u>	Time On Station: <u>1423</u>	All measurements are $\pm 0.1$ feet
Core Sample ID: _____	Northing (NAD 83): <u>2706875.8</u>	Water Depth (A): <u>7.0'</u>
Logged by: <u>dm</u>	Easting (NAD 83): <u>815975.4</u>	Length of push core assembly (B): <u>11'</u>
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>2.1'</u>	Water surface to top of handle (C): <u>2.2'</u>
Date: <u>8-31-06</u>	Predicted Tide (ft): <u>3.6'</u>	Length of core (from bottom) (D): <u>2.3'</u>
	Time of Collection: <u>1425</u>	Surveyed elevation (NVGD 29) (E): <u>2.9' LST + dv.</u>
	Time Depart Station: <u>1429</u>	Water surface from surveyed elevation (F): <u>-</u>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>+ 2.9'</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>- 5.9'</u>
(z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<u>- 5.1'</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>- 3.6'</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>- 4.1'</u>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-3.6 - 2.3'								
-5.1 - 0.8								
-5.9 - 0.0								

File ID of digital photograph(s): \_\_\_\_\_

Comments: Bottom To Transition = 0.8'

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <u>New Bedford Harbor Environmental Monitoring</u>		Project #: <u>G606422</u>	
		Location: <u>New Bedford, MA</u>		Vessel: <u>CR Skiff + Barge</u>	
Client: <u>USACE NAE</u>		Chief Scientist: <u>Alex Mansfield</u>			

Station ID: <u>V20</u>	Time On Station: <u>1431</u>	All measurements are $\pm 0.1$ feet	
Core Sample ID: _____	Northing (NAD 83): <u>2706774.8</u>	Water Depth (A): <u>7.6'</u>	
Logged by: <u>dm</u>	Easting (NAD 83): <u>815972.9</u>	Length of push core assembly (B): <u>11.0</u>	
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>2.6'</u>	Water surface to top of handle (C): <u>0.45'</u>	
Date: <u>8-31-06</u>	Predicted Tide (ft): <u>3.6'</u>	Length of core (from bottom) (D): <u>2.3'</u>	
	Time of Collection: <u>1432</u>	Surveyed elevation (NVGD 29) (E): <u>2.8' water lev.</u>	
	Time Depart Station: <u>1440</u>	Water surface from surveyed elevation (F): <u>—</u>	

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>+2.8</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>-7.75</u>
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<u>-6.15</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>-5.45</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>-4.8</u>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-5.45    2.3'		fine black silt						
-6.15    1.6		clay sand shells						
-7.75    0.0		clay w/ shell hash	DK grey					

File ID of digital photograph(s): \_\_\_\_\_  
 Comments: 0-1.6 To Transition

### Calculations for Determination of Z\* Elevation

$$\text{Bottom To Trans: } T_{\text{opt}} = 1.0'$$

<b>Battelle</b> The Business of Innovation		Project Name: <u>New Bedford Harbor Environmental Monitoring</u>		Project #: <u>G606422</u>	
Location: <u>New Bedford, MA</u>		Vessel: <u>CR Skiff + Barge</u>		Chief Scientist: <u>A. M. S. F. H.</u>	
Client: <u>USACE NAE</u>					
Station ID: <u>BB4</u>	Time On Station: <u>0850</u>	All measurements are $\pm 0.1$ feet			
Core Sample ID: <u>AM</u>	Northing (NAD 83): <u>2707174.9</u>	Water Depth (A): <u>6.8 / 7.0</u>			
Logged by: <u>AM</u>	Easting (NAD 83): <u>81625.7</u>	Length of push core assembly (B): <u>9.9</u>			
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>2.1</u>	Water surface to top of handle (C): <u>1.3 / 0.6 / 2.4</u>			
Date: <u>9-8-06</u>	Predicted Tide (ft): <u>0853</u>	Length of core (from bottom) (D): <u>11.0</u>			
	Time of Collection: <u>0906</u>	Surveyed elevation (NVGD 29) (E): <u>4.1' water elev</u>			
	Time Depart Station: <u>0906</u>	Water surface from surveyed elevation (F): <u>—</u>			

#### Calculations for Determination of Z\* Elevation

- (G) Elevation of Water Surface (NVGD):  $E - F$  4.1'
- (H) Elevation of the bottom of the core (NVGD):  $G - (B - C)$  -3.4'
- (Z\*) Elevation of visual transition (NVGD):  $H + (\text{distance to visual transition})$  -2.4'
- (I) Elevation of the sediment-water interface as measured from bottom of core (NVGD):  $H + D$  -2.4'
- (I<sub>2</sub>) Elevation of the sediment-water interface as measured from water depth (NVGD):  $G - A$  -2.7'

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-2.4' - 1.0'		clay	dark grey	firm	fine			
-3.4' - 0.0'								

File ID of digital photograph(s):

Comments:

1st attempt Plunger slipped, core no good  
 2nd attempt no transition seen, suspect bad core  
 3rd core length 1.0' no transition - all grey/clay



Battelle

The Business of Innovation

Project Name: New Bedford Harbor Environmental Monitoring

Location: New Bedford, MA

Client: USACE NAE

Project #: G606422

Vessel: *Creskitt + Boyle*

Chief Scientist: *A. Mansfield*

Station ID: *AA13*

Core Sample ID:

Logged by: *AM*

Collection Mechanism: *Push-Core*

Date: *9-8-06*

Time On Station: *0911*

Northing (NAD 83): *2706953.5*

Easting (NAD 83): *816093.3*

GPS Accuracy: *1.8*

Predicted Tide (ft):

Time of Collection: *0912*

Time Depart Station: *0920*

All measurements are  $\pm 0.1$  feet

Water Depth (A): *7.3'*

Length of push core assembly (B): *9.9'*

Water surface to top of handle (C): *1.5'*

Length of core (from bottom) (D): *1.15'*

Surveyed elevation (NVGD 29) (E): *4.1' water elev*

Water surface from surveyed elevation (F):

Calculations for Determination of Z\* Elevation

(G) Elevation of Water Surface (NVGD):  $E - F$  *4.1'*

(H) Elevation of the bottom of the core (NVGD):  $G - (B - C)$  *-4.3'*

(Z\*) Elevation of visual transition (NVGD):  $H + (\text{distance to visual transition})$  *-3.4'*

(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD):  $H + D$  *-3.15'*

(I<sub>2</sub>) Elevation of the sediment-water interface as measured from water depth (NVGD):  $G - A$  *-3.2'*

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
<i>1.15'</i>								
<i>0.9'</i>		<i>fluff</i>	<i>Black</i>	<i>v. light</i>	<i>fine</i>			
		<i>clay</i>	<i>olive gray</i>	<i>firm</i>	<i>fine</i>			
<i>0.0'</i>								

File ID of digital photograph(s):

Comments: *Bottom To Transition = 0.9'*  
*moderate shears when removing core*

[illegible]

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <u>New Bedford Harbor Environmental Monitoring</u>				Project #: <u>G606422</u>	
		Location: <u>New Bedford, MA</u>		Vessel: <u>CR Skiff + Barge</u>			
		Client: <u>USACE NAE</u>		Chief Scientist: <u>A. Mansfield</u>			

Station ID: <u>211</u>	Time On Station: <u>0931</u>	All measurements are $\pm 0.1$ feet
Core Sample ID: _____	Northing (NAD 83): <u>2706988.9</u>	Water Depth (A): <u>7.4'</u>
Logged by: <u>AM</u>	Easting (NAD 83): <u>816078.5</u>	Length of push core assembly (B): <u>9.9</u>
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>2.1</u>	Water surface to top of handle (C): <u>1.5'</u>
Date: <u>9/8/06</u>	Predicted Tide (ft): _____	Length of core (from bottom) (D): <u>1.2'</u>
	Time of Collection: <u>0933</u>	Surveyed elevation (NVGD 29) (E): <u>4.0'</u>
	Time Depart Station: <u>0938</u>	Water surface from surveyed elevation (F): <u>—</u>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>4.0'</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>- 4.4'</u>
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<u>- 3.7</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>- 3.2</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>- 3.4</u>
(Note if $1 \neq I_2$ within $\pm 1.0$ feet, discard and resample)	<u>—</u>

Elevation (NVGD) (I.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
<u>1.2'</u>  <u>0.7'</u>  <u>0.0</u>		silt  clay	black  olive grey	soft  firm	fine  fine			

File ID of digital photograph(s): \_\_\_\_\_  
 Comments:  

Bottom to transition = 0.7'  
 fine black silt over grey clay

<b>Battelle</b> The Business of Innovation		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>				Project #: <b>G606422</b>		
Location: <b>New Bedford, MA</b>		Vessel: <b>CR Skiff + Barge</b>				Chief Scientist: <b>AM - Wld</b>		
Client: <b>USACE NAE</b>								
Station ID: <b>27</b>	Time On Station: <b>0941</b>	All measurements are ±0.1 feet						
Core Sample ID:	Northing (NAD 83): <b>2707092.9</b>	Water Depth (A): <b>6.5'</b>						
Logged by: <b>AM</b>	Easting (NAD 83): <b>816063.7</b>	Length of push core assembly (B): <b>9.9'</b>						
Collection Mechanism: <b>Push-Core</b>	GPS Accuracy: <b>2.5'</b>	Water surface to top of handle (C): <b>2.5'</b>						
Date: <b>9-8-06</b>	Predicted Tide (ft):	Length of core (from bottom) (D): <b>0.9'</b>						
	Time of Collection: <b>0942</b>	Surveyed elevation (NVGD 29) (E): <b>3.9' water dr.</b>						
	Time Depart Station: <b>0946</b>	Water surface from surveyed elevation (F):						
Calculations for Determination of Z* Elevation								
(G) Elevation of Water Surface (NVGD): E - F		<b>3.9'</b>						
(H) Elevation of the bottom of the core (NVGD): G - (B - C)		<b>-3.5'</b>						
(Z*) Elevation of visual transition (NVGD): H + (distance to visual transition)		<b>-2.6'</b>						
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D		<b>-2.6'</b>						
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A		<b>-2.6'</b>						
(Note if I ≠ I <sub>2</sub> within ± 1.0 feet, discard and resample)								
Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
<b>0.9'</b>  <b>0.0'</b>		<b>clay + sand</b>	<b>olive gray + brown</b>	<b>firm</b>	<b>med/ fine</b>			
File ID of digital photograph(s):								
Comments:  <b>No Transition - NO OL</b>								

[illegible]

Calculations for Determination of Z* Elevation	
(G) Elevation of Water Surface (NVGD): $E - F$	3.3' water elevation
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	-5.25
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	-4.85
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	-3.85
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	-3.5
(Note if I ≠ I <sub>2</sub> within ± 1.0 feet, discard and resample)	

File ID of digital photograph(s):

Comments:

OK over grey clay  
Heavy silted when removing core  
Bottom to Transition = 0.4'

[illegible]

Battelle The Business of Innovation		Project Name: New Bedford Harbor Environmental Monitoring Location: New Bedford, MA Client: USACE NAE		Project #: G606422 Vessel: CR Skiff + Dyer Chief Scientist: A. Mansfield				
Station ID:	D26	Time On Station:	1033	All measurements are ±0.1 feet				
Core Sample ID:		Northing (NAD 83):	2706625.7	Water Depth (A):	5.8'			
Logged by:	Am	Easting (NAD 83):	815799.9	Length of push core assembly (B):	9.4'			
Collection Mechanism:	Push-Core	GPS Accuracy:	2.8'	Water surface to top of handle (C):	3.0'			
Date:	9-8-06	Predicted Tide (ft):		Length of core (from bottom) (D):	1.0'			
		Time of Collection:	1033	Surveyed elevation (NVGD 29) (E):	3.0'			
		Time Depart Station:	1040	Water surface from surveyed elevation (F):	-			
Calculations for Determination of Z* Elevation								
(G) Elevation of Water Surface (NVGD): E - F	3.0'							
(H) Elevation of the bottom of the core (NVGD): G - (B - C)	-3.9'							
(Z*) Elevation of visual transition (NVGD): H + (distance to visual transition)	-3.6'							
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D	-2.9'							
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A	-2.8'							
(Note if I ≠ I <sub>2</sub> within ± 1.0 feet, discard and resample)								
Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
1.0'  -0.3'  -0.0'	-	Silt + Sand  clay	Black + Brown  olive grey	mixed med  firm fine	med  fine			
File ID of digital photograph(s):								
Comments: Heavy shear seen when removing core								



[illegible]

<b>Battelle</b> The Business of Innovation		Project Name: New Bedford Harbor Environmental Monitoring Location: New Bedford, MA Client: USACE NAE		Project #: G606422 Vessel: CR Skiff + Barge Chief Scientist: A. Mansfield				
Station ID:	P25	Time On Station:	1051	All measurements are ±0.1 feet				
Core Sample ID:		Northing (NAD 83):	2706655-8	Water Depth (A):	6.1'			
Logged by:	AM	Easting (NAD 83):	815827.5	Length of push core assembly (B):	9.9'			
Collection Mechanism:	Push-Core	GPS Accuracy:	2-4	Water surface to top of handle (C):	1.5'			
Date:	9-8-06	Predicted Tide (ft):		Length of core (from bottom) (D):	1.3'			
		Time of Collection:	1052	Surveyed elevation (NVGD 29) (E):	2.6 water elev.			
		Time Depart Station:	1054	Water surface from surveyed elevation (F):	-			
<b>Calculations for Determination of Z' Elevation</b>								
(G)	Elevation of Water Surface (NVGD): E - F			2.6				
(H)	Elevation of the bottom of the core (NVGD): G - (B - C)			-5.8				
(Z')	Elevation of visual transition (NVGD): H + (distance to visual transition)			-5.4				
(I)	Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D			-4.5				
(I <sub>2</sub> )	Elevation of the sediment-water interface as measured from water depth (NVGD): G - A			-3.5				
(Note if I ≠ I <sub>2</sub> within ± 1.0 feet, discard and resample)								
Elevation (NVGD) (i.e. Bottom = H)	Lithology - include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
1.3		flocculent	Black	very soft	< 1 mm fine			
1.0		mixed clay silt	DK grey	Mixed	med			
0.4		clay	grey	Firm	fine			
0.0								
File ID of digital photograph(s):								
Comments:  multiple layers. very soft flocculent on top.								

[illegible]

[illegible]

[illegible]

[illegible]

<b>Battelle</b> <i>The Business of Innovation</i>	Project Name: <b>New Bedford Harbor Environmental Monitoring</b>	Project #: <b>G606422</b>
Location: <b>New Bedford, MA</b>	Vessel: <b>CR Skiff Bay</b>	
Client: <b>USACE NAE</b>	Chief Scientist: <b>A. Mansfield</b>	

Station ID:	<b>220</b>	Time On Station:	<b>1021</b>	All measurements are ±0.1 feet
Core Sample ID:		Northing (NAD 83):	<b>2706771.1</b>	Water Depth (A):
Logged by:	<b>DM</b>	Easting (NAD 83):	<b>816078.0</b>	Length of push core assembly (B):
Collection Mechanism:	<b>Push-Core</b>	GPS Accuracy:	<b>2.7</b>	Water surface to top of handle (C):
Date:	<b>9-14-06</b>	Predicted Tide (ft):		Length of core (from bottom) (D):
		Time of Collection:	<b>1022</b>	Surveyed elevation (NVGD 29) (E):
		Time Depart Station:	<b>1630</b>	Water surface from surveyed elevation (F):

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): E - F	<b>0.7</b>
(H) Elevation of the bottom of the core (NVGD): G - (B - C)	<b>-4.9</b>
(Z*) Elevation of visual transition (NVGD): H + (distance to visual transition)	<b>-4.0</b>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D	<b>-3.6</b>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A	<b>-2.4</b>

(Note if I ≠ I<sub>2</sub> within ± 1.0 feet, discard and resample)

Elevation (NVGD) (I.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
<b>1.3</b>		<b>Silt + Peat</b>	<b>DR gray</b>	<b>Soft</b>	<b>med fine</b>			
<b>-0.9</b>		<b>olive grey clay shells at bottom</b>	<b>gray</b>	<b>very firm</b>	<b>fine</b>			
<b>-0.0</b>								

File ID of digital photograph(s):

Comments: **Strong sheen upon removal**

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <u>New Bedford Harbor Environmental Monitoring</u>		Project #: <u>G606422</u>	
		Location: <u>New Bedford, MA</u>		Vessel: <u>C.R. Skiff + Berge</u>	
		Client: <u>USACE NAE</u>		Chief Scientist: <u>A. Mansfield</u>	

Station ID: <u>X17</u>	Time On Station: <u>1038</u>	All measurements are ±0.1 feet	
Core Sample ID: _____	Northing (NAD 83): <u>2706843.9</u>	Water Depth (A): <u>3.4'</u>	
Logged by: <u>AM</u>	Easting (NAD 83): <u>816030.1</u>	Length of push core assembly (B): <u>7.0</u>	
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>2.7</u>	Water surface to top of handle (C): <u>1.6</u>	
Date: <u>9-14-06</u>	Predicted Tide (ft): _____	Length of core (from bottom) (D): <u>1.5</u>	
	Time of Collection: <u>1041</u>	Surveyed elevation (NVGD 29) (E): <u>1.0' water dr.</u>	
	Time Depart Station: <u>10:47</u>	Water surface from surveyed elevation (F): <u>—</u>	

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): E - F	<u>1.0'</u>
(H) Elevation of the bottom of the core (NVGD): G - (B - C)	<u>-4.4</u>
(Z*) Elevation of visual transition (NVGD): H + (distance to visual transition)	<u>-3.2</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D	<u>-2.9</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A	<u>-2.4</u>

(Note if I ≠ I<sub>2</sub> within ± 1.0 feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
<u>1.5</u>  <u>-1.2</u>          <u>-0.0</u>		<u>fine sand</u> <u>Silt</u>          <u>clay</u>	<u>DK Gray</u>          <u>olive gray</u>	<u>Soft</u>          <u>very firm</u>	<u>fine</u>          <u>fine</u>			

File ID of digital photograph(s): \_\_\_\_\_  
 Comments:  
Strong sheen from upper material upon removal



[illegible]

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <u>New Bedford Harbor Environmental Monitoring</u>		Project #: <u>G606422</u>	
		Location: <u>New Bedford, MA</u>		Vessel: <u>CR Skiff + Barge</u>	
Client: <u>USACE NAE</u>		Station ID: <u>X 14</u>		Time On Station: <u>1103</u> <u>2706927.6</u>	
Core Sample ID: _____		Northing (NAD 83): <u>816025.8</u>		All measurements are $\pm 0.1$ feet	
Logged by: <u>AM</u>		Easting (NAD 83): _____		Water Depth (A): <u>4.0'</u>	
Collection Mechanism: <u>Push-Core</u>		GPS Accuracy: <u>2.2</u>		Length of push core assembly (B): <u>7.0'</u>	
Date: <u>9-14-06</u>		Predicted Tide (ft): _____		Water surface to top of handle (C): <u>1.6'</u>	
		Time of Collection: <u>1104</u>		Length of core (from bottom) (D): <u>1.4</u>	
		Time Depart Station: _____		Surveyed elevation (NVGD 29) (E): <u>1.1 water elev.</u>	
				Water surface from surveyed elevation (F): _____	

**Calculations for Determination of Z\* Elevation**

- (G) Elevation of Water Surface (NVGD):  $E - F$  1.1
- (H) Elevation of the bottom of the core (NVGD):  $G - (B - C)$  -4.3
- (Z\*) Elevation of visual transition (NVGD):  $H + (\text{distance to visual transition})$  -3.4
- (I) Elevation of the sediment-water interface as measured from bottom of core (NVGD):  $H + D$  -2.9
- (I<sub>2</sub>) Elevation of the sediment-water interface as measured from water depth (NVGD):  $G - A$  -2.9
- (Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
<u>1.4'</u>		<u>silt</u>	<u>DK gray</u>	<u>Soft</u>	<u>med</u>			
<u>-0.9</u>		<u>Peat</u>						
<u>-0.0</u>		<u>clay</u>	<u>gray</u>	<u>fm</u>	<u>med</u>			
		<u>w/ some shells + Peat &amp; wood chips</u>						

File ID of digital photograph(s):

Comments:

Shells released from surface layer upon removal

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <u>New Bedford Harbor Environmental Monitoring</u>		Project #: <u>G606422</u>	
		Location: <u>New Bedford, MA</u>		Vessel: _____	
		Client: <u>USACE NAE</u>		Chief Scientist: _____	

Station ID: <u>S13</u>	Time On Station: <u>11:15</u>	All measurements are $\pm 0.1$ feet	
Core Sample ID: _____	Northing (NAD 83): <u>2706951.6</u>	Water Depth (A): <u>4.4</u>	
Logged by: <u>dm</u>	Easting (NAD 83): <u>815903.2</u>	Length of push core assembly (B): <u>7.0</u>	
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>2.3'</u>	Water surface to top of handle (C): <u>1.6</u>	
Date: <u>9-14-06</u>	Predicted Tide (ft): _____	Length of core (from bottom) (D): <u>1.1</u>	
	Time of Collection: <u>1116</u>	Surveyed elevation (NVGD 29) (E): <u>1.1' water level</u>	
	Time Depart Station: <u>1121</u>	Water surface from surveyed elevation (F): <u>—</u>	

**Calculations for Determination of Z' Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>1.1</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>-4.3</u>
(Z') Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<u>-3.7</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>-3.2</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>-3.3</u>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (I.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
1.1								
-0.6		Silt	Black	Soft	fine			
-0.4		fine sand						
-0.0		clay	olive gray	firm	fine			
								Blurred Transition

File ID of digital photograph(s): \_\_\_\_\_

Comments: Shells from Top layer seen upon removal

[illegible]

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <u>New Bedford Harbor Environmental Monitoring</u>		Project #: <u>G606422</u>	
		Location: <u>New Bedford, MA</u>		Vessel: <u>CR Skiff + Berya</u>	
Client: <u>USACE NAE</u>		Chief Scientist: <u>A. Munstred</u>			

Station ID: <u>N24</u>	Time On Station: <u>1138</u>	All measurements are $\pm 0.1$ feet	
Core Sample ID: _____	Northing (NAD 83): <u>2706675.3</u>	Water Depth (A): <u>5.5'</u>	
Logged by: <u>LM</u>	Easting (NAD 83): <u>815777.9</u>	Length of push core assembly (B): <u>7.0'</u>	
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>2.6'</u>	Water surface to top of handle (C): <u>0.0'</u>	
Date: <u>9-14-06</u>	Predicted Tide (ft): _____	Length of core (from bottom) (D): <u>1.6'</u>	
	Time of Collection: <u>1140</u>	Surveyed elevation (NVGD 29) (E): <u>1.2' water elev</u>	
	Time Depart Station: <u>1145</u>	Water surface from surveyed elevation (F): _____	

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>1.2'</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>-5.8</u>
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<u>-5.2</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>-4.2</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>-4.3</u>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (I.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
1.6		fine sand silt Peat	Black/DK gray	soft	med/fine			
0.6								
0.0		clay w/ some Peat	gray	firm	fine			

File ID of digital photograph(s): \_\_\_\_\_

Comments: Strong shears upon removal

Calculations for Determination of Z* Elevation	
(G) Elevation of Water Surface (NVGD): $E - F$	1.5
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	-7.0
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	-6.5
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	-6.4
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	-6.0
(Note if I ≠ I <sub>2</sub> within ± 1.0 feet, discard and resample)	

File ID of digital photograph(s):	
Comments:	

[illegible]

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <u>New Bedford Harbor Environmental Monitoring</u>		Project #: <u>G606422</u>	
		Location: <u>New Bedford, MA</u>		Vessel:	
		Client: <u>USACE NAE</u>		Chief Scientist:	

Station ID: <u>Q42</u>	Time On Station: <u>1224</u>	All measurements are $\pm 0.1$ feet
Core Sample ID: _____	Northing (NAD 83): <u>2706223.4</u>	Water Depth (A): <u>5.4'</u>
Logged by: <u>Am</u>	Easting (NAD 83): <u>815850.8</u>	Length of push core assembly (B): <u>7.0'</u>
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>2.3</u>	Water surface to top of handle (C): <u>0.0</u>
Date: <u>9.14.06</u>	Predicted Tide (ft): _____	Length of core (from bottom) (D): <u>1.5'</u>
	Time of Collection: <u>1225</u>	Surveyed elevation (NVGD 29) (E): <u>2.0'</u>
	Time Depart Station: <u>1232</u>	Water surface from surveyed elevation (F): <u>—</u>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>2.0</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>-5.0</u>
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<u>-4.0</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>-3.5</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>-3.4</u>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
<u>1.5'</u>  <div style="text-align: center;">-----</div> <u>1.0</u>  <div style="text-align: center;">-----</div>  <u>0.0</u>		Silt Peat shells  clay	dk gray  olive gray	mixed  very firm	med  fine			

File ID of digital photograph(s): \_\_\_\_\_  
 Comments: moderate sheen upon removal.



<b>Battelle</b> <small>The Business of Innovation</small>		<b>Project Name:</b> New Bedford Harbor Environmental Monitoring <b>Location:</b> New Bedford, MA <b>Client:</b> USACE NAE			<b>Project #:</b> G606422 <b>Vessel:</b> CR Skiff + Dredge <b>Chief Scientist:</b> A. Mustard	
		Station ID: <u>K42</u> Time On Station: <u>1235</u> All measurements are $\pm 0.1$ feet				
Core Sample ID: _____		Northing (NAD 83): <u>2706224.1</u>			Water Depth (A): <u>7.1'</u>	
Logged by: <u>AM</u>		Easting (NAD 83): <u>815703.2</u>			Length of push core assembly (B): <u>10.0</u>	
Collection Mechanism: <u>Push-Core</u>		GPS Accuracy: <u>2.1</u>			Water surface to top of handle (C): <u>0.9</u>	
Date: <u>9-14-06</u>		Predicted Tide (ft): _____			Length of core (from bottom) (D): <u>1.4'</u>	
		Time of Collection: <u>1238</u>			Surveyed elevation (NVGD 29) (E): <u>2.0'</u>	
		Time Depart Station: <u>1242</u>			Water surface from surveyed elevation (F): <u>—</u>	

Calculations for Determination of Z* Elevation						
(G) Elevation of Water Surface (NVGD): $E - F$	<u>2.0'</u>					
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>-7.1</u>					
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<u>-6.5</u>					
(I <sub>1</sub> ) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>-5.7</u>					
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>-5.1</u>					
(Note if $I_1 \neq I_2$ within $\pm 1.0$ feet, discard and resample)						

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
1.4		fine silt	Black	very soft	very fine	black		
-0.6		clay	gray	firm	fine			
-0.0								

File ID of digital photograph(s): \_\_\_\_\_  
 Comments:  

Shore

[illegible]

[illegible]



<b>Battelle</b> The Business of Innovation		Project Name: <b>New Bedford Harbor Environmental Monitoring</b> Location: <b>New Bedford, MA</b> Client: <b>USACE NAE</b>		Project #: <b>G606422</b> Vessel: <b>CR environmental skiff</b> Chief Scientist: <b>Alex Mansfield</b>																																					
Station ID:	<u>Q11</u>	Time On Station:	<u>0840</u>	All measurements are $\pm 0.1$ feet																																					
Core Sample ID:	<u>—</u>	Northing (NAD 83):	<u>2706998.5</u>	Water Depth (A):	<u>6.2</u>																																				
Logged by:	<u>sm</u>	Easting (NAD 83):	<u>815847.4</u>	Length of push core assembly (B):	<u>10.0</u>																																				
Collection Mechanism:	<u>Push-Core</u>	GPS Accuracy:	<u>3.1</u>	Water surface to top of handle (C):	<u>2.45</u>																																				
Date:	<u>9/21/06</u>	Predicted Tide (ft):	<u>—</u>	Length of core (from bottom) (D):	<u>6.35</u>																																				
		Time of Collection:	<u>0842</u>	Surveyed elevation (NVGD 29) (E):	<u>2.7 w/m</u>																																				
		Time Depart Station:	<u>0850</u>	Water surface from surveyed elevation (F):	<u>—</u>																																				
<b>Calculations for Determination of Z* Elevation</b>																																									
(G) Elevation of Water Surface (NVGD): $E - F$				<u>+2.7</u>																																					
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$				<u>-4.85</u>																																					
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$				<u>-3.65</u>																																					
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$				<u>-3.5</u>																																					
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$				<u>-3.5</u>																																					
(Note if $I \neq I_2$ within $\pm 1.0$ feet, discard and resample)				<u>—</u>																																					
<table border="1"><thead><tr><th>Elevation (NVGD) (i.e. Bottom = H)</th><th>Lithology - Include USCS code</th><th>Type</th><th>Color</th><th>Consistency</th><th>Maximum particle size</th><th>Odor</th><th>Sample IDs</th><th>Comments</th></tr></thead><tbody><tr><td><u>1.35</u></td><td></td><td><u>fine</u></td><td><u>Black</u></td><td><u>loose</u></td><td><u>fine</u></td><td></td><td></td><td></td></tr><tr><td><u>1.2</u></td><td></td><td><u>silt</u></td><td></td><td><u>soft</u></td><td></td><td></td><td></td><td></td></tr><tr><td><u>0.0</u></td><td></td><td><u>clay</u></td><td><u>gray</u></td><td><u>firm</u></td><td><u>fine</u></td><td></td><td></td><td></td></tr></tbody></table>						Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments	<u>1.35</u>		<u>fine</u>	<u>Black</u>	<u>loose</u>	<u>fine</u>				<u>1.2</u>		<u>silt</u>		<u>soft</u>					<u>0.0</u>		<u>clay</u>	<u>gray</u>	<u>firm</u>	<u>fine</u>			
Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments																																	
<u>1.35</u>		<u>fine</u>	<u>Black</u>	<u>loose</u>	<u>fine</u>																																				
<u>1.2</u>		<u>silt</u>		<u>soft</u>																																					
<u>0.0</u>		<u>clay</u>	<u>gray</u>	<u>firm</u>	<u>fine</u>																																				
File ID of digital photograph(s):																																									
Comments: <u>slight sheen</u>																																									

[illegible]

[illegible]

<b>Battelle</b> The Business of Innovation		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>		Project #: <b>G606422</b>				
Location: <b>New Bedford, MA</b>		Vessel: <b>CR environmental skiff</b>		Chief Scientist: <b>Alex Mansfield</b>				
Client: <b>USACE NAE</b>								
Station ID: <b>I32</b>	Time On Station: <b>1027</b>	All measurements are $\pm 0.1$ feet						
Core Sample ID:	Northing (NAD 83): <b>2706400.5</b>	Water Depth (A): <b>3.3'</b>						
Logged by: <b>Am</b>	Easting (NAD 83): <b>815656.5</b>	Length of push core assembly (B): <b>7.0'</b>						
Collection Mechanism: <b>Push-Core</b>	GPS Accuracy: <b>1.9'</b>	Water surface to top of handle (C): <b>1.95'</b>						
Date: <b>9/21/06</b>	Predicted Tide (ft):	Length of core (from bottom) (D): <b>1.45'</b>						
	Time of Collection: <b>1030</b>	Surveyed elevation (NVGD 29) (E): <b>1.3 w</b>						
	Time Depart Station: <b>1039</b>	Water surface from surveyed elevation (F): <b>—</b>						
Calculations for Determination of Z* Elevation								
(G) Elevation of Water Surface (NVGD): E - F		<b>+1.3</b>						
(H) Elevation of the bottom of the core (NVGD): G - (B - C)		<b>-3.75</b>						
(Z*) Elevation of visual transition (NVGD): H + (distance to visual transition)		<b>-3.45</b>						
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D		<b>-2.3</b>						
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A		<b>-2.0</b>						
(Note if I $\neq$ I <sub>2</sub> within $\pm 1.0$ feet, discard and resample)								
Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
<b>1.45</b>		<b>fluff</b>	<b>black</b>	<b>soft</b>	<b>fine</b>	<b>oil</b>		
<b>0.3</b>		<b>clay</b>	<b>olive</b>	<b>firm</b>	<b>fine</b>			
<b>0.0</b>		<b>gray</b>						
File ID of digital photograph(s):								
Comments: <b>Coring under Dredge Wire Screen when removing core</b>								



[illegible]

Battelle

The Business of Innovation

Project Name: New Bedford Harbor Environmental Monitoring

Location: New Bedford, MA

Client: USACE NAE

Project #: G606422

Vessel: CR environmental skiff

Chief Scientist: Alex Mansfield

Station ID: E42

Core Sample ID: -

Logged by: JM

Collection Mechanism: Push-Core

Date: 9-21-06

Time On Station: 1109

Northing (NAD 83): 2706225.1

Easting (NAD 83): 815654.4

GPS Accuracy: 2.3'

Predicted Tide (ft):

Time of Collection: 412

Time Depart Station: 1122

All measurements are ±0.1 feet

Water Depth (A): 5.8'

Length of push core assembly (B): 10.0

Water surface to top of handle (C): 2.95'

Length of core (from bottom) (D): 1.25'

Surveyed elevation (NVGD 29) (E): 0.7' @ Tide Board

Water surface from surveyed elevation (F):

Calculations for Determination of Z\* Elevation

(G) Elevation of Water Surface (NVGD): E - F

(H) Elevation of the bottom of the core (NVGD): G - (B - C)

(Z\*) Elevation of visual transition (NVGD): H + (distance to visual transition)

(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D

(I<sub>2</sub>) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A

+0.7'

-6.35'

-5.55'

-5.1'

-5.1'

(Note if I ≠ I<sub>2</sub> within ± 1.0 feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
1.25		silt	Black sat	fine				
0.8		clay	dark gray	firm	fine			
0.0								

File ID of digital photograph(s):

Comments:

[illegible]

Battelle The Business of Innovation		Project Name: New Bedford Harbor Environmental Monitoring		Project #: G606422				
		Location: New Bedford, MA		Vessel: CR environmental skiff				
		Client: USACE NAE		Chief Scientist: Alex Mansfield				
Station ID:	040	Time On Station:	1135	All measurements are ±0.1 feet				
Core Sample ID:	-	Northing (NAD 83):	2706276.0	Water Depth (A):	3.5'			
Logged by:	[Signature]	Easting (NAD 83):	815675.3	Length of push core assembly (B):	7.0'			
Collection Mechanism:	Push-Core	GPS Accuracy:	2.5'	Water surface to top of handle (C):	1.9'			
Date:	9/21/06	Predicted Tide (ft):	-	Length of core (from bottom) (D):	1.5'			
		Time of Collection:	1137	Surveyed elevation (NVGD 29) (E):	0.3 idg-T-✓			
		Time Depart Station:	1147	Water surface from surveyed elevation (F):	- cl ✓			
Calculations for Determination of Z* Elevation								
(G)	Elevation of Water Surface (NVGD): E - F		+0.3					
(H)	Elevation of the bottom of the core (NVGD): G - (B - C)		-4.8'					
(Z*)	Elevation of visual transition (NVGD): H + (distance to visual transition)		-4.45'					
(I)	Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D		-3.3'					
(I <sub>2</sub> )	Elevation of the sediment-water interface as measured from water depth (NVGD): G - A		-3.2'					
(Note if I ≠ I <sub>2</sub> within ± 1.0 feet, discard and resample)								
Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
1.5'		Silt + sand	Black	soft	fine			
0.35'				stiff				
0.0'		clay w/slt	dive gray	fin	fine			
File ID of digital photograph(s):								
Comments: slight sheen wheel dumping core								

[illegible]

<b>Battelle</b> <small>The Business of Innovation</small>		<b>Project Name:</b> New Bedford Harbor Environmental Monitoring			<b>Project #:</b> G606422	
		<b>Location:</b> New Bedford, MA			<b>Vessel:</b> CR environmental skiff	
		<b>Client:</b> USACE NAE			<b>Chief Scientist:</b> Alex Mansfield	

Station ID:	<u>M2</u>	Time On Station:	<u>0803</u>	All measurements are ±0.1 feet	
Core Sample ID:	<u>-</u>	Northing (NAD 83):	<u>2707225</u>	Water Depth (A):	<u>7.7'</u>
Logged by:	<u>AW</u>	Easting (NAD 83):	<u>815750</u>	Length of push core assembly (B):	<u>11.5'</u>
Collection Mechanism:	<u>Push-Core</u>	GPS Accuracy:	<u>2.4'</u>	Water surface to top of handle (C):	<u>2.0'</u>
Date:	<u>10/6/06</u>	Predicted Tide (ft):	<u>-</u>	Length of core (from bottom) (D):	<u>1.7'</u>
		Time of Collection:	<u>0815</u>	Surveyed elevation (NVGD 29) (E):	<u>3.8 water elev</u>
		Time Depart Station:	<u>0817</u>	Water surface from surveyed elevation (F):	<u>- elev</u>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>3.8</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	

(Note if I ≠ I<sub>2</sub> within ± 1.0 feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
<u>1.7</u>  <hr style="border-top: 1px solid black;"/> <u>1.2</u>            <u>0.0</u>		Silt/ clay	DK grey					
		clay	olive grey	firm				

File ID of digital photograph(s): \_\_\_\_\_  
 Comments:  
     Moderate Shear when collecting core.  
     \* Probed around to ensure sample was in high spot of ridge.  
     Confirmed high point despite water depth ~1.5' deeper than expected from bathy.

[illegible]

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>				Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel: <b>CR environmental skiff</b>		Chief Scientist: <b>Alex Mansfield</b>	
		Client: <b>USACE NAE</b>					

Station ID: <u>07</u>	Time On Station: <u>0900</u>	All measurements are ±0.1 feet	
Core Sample ID: <u>✓</u>	Northing (NAD 83): <u>2707103</u>	Water Depth (A): <u>6.1</u>	
Logged by: <u>ju</u>	Easting (NAD 83): <u>015799</u>	Length of push core assembly (B): <u>11.5</u>	
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>2.4</u>	Water surface to top of handle (C): <u>2.5</u>	
Date: <u>10/6/06</u>	Predicted Tide (ft): <u>0</u>	Length of core (from bottom) (D): <u>2.5</u> <span style="float: right;">2.5</span>	
	Time of Collection: <u>0901</u>	Surveyed elevation (NVGD 29) (E): <u>3.0</u>	
	Time Depart Station: <u>0911</u>	Water surface from surveyed elevation (F): <u>✓</u>	

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	3.0
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	-6.0
(z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	-5.4
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	-3.5
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	-3.1

(Note if I ≠ I<sub>2</sub> within ± 1.0 feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
2.5								
0.6								
0.0								
		Silt	Black	Soft				
		clay	gray	f.m	Coarse			
		Sand						
		Shells						

File ID of digital photograph(s):

Comments: Moderate Sheen



Station ID: <u>M10</u>	Time On Station: <u>0915</u>	All measurements are $\pm 0.1$ feet
Core Sample ID: _____	Northing (NAD 83): <u>270725</u>	Water Depth (A): <u>6.5</u>
Logged by: <u>AM</u>	Easting (NAD 83): <u>815751</u>	Length of push core assembly (B): <u>11.5</u>
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: _____	Water surface to top of handle (C): <u>2.1</u>
Date: <u>10/6/06</u>	Predicted Tide (ft): _____	Length of core (from bottom) (D): <u>2.9</u>
	Time of Collection: <u>0920</u>	Surveyed elevation (NVGD 29) (E): <u>2.7</u>
	Time Depart Station: <u>0927</u>	Water surface from surveyed elevation (F): _____

**Calculations for Determination of Z\* Elevation**

- (G) Elevation of Water Surface (NVGD):  $E - F$
- (H) Elevation of the bottom of the core (NVGD):  $G - (B - C)$
- (Z\*) Elevation of visual transition (NVGD):  $H + (\text{distance to visual transition})$
- (I) Elevation of the sediment-water interface as measured from bottom of core (NVGD):  $H + D$
- (I<sub>2</sub>) Elevation of the sediment-water interface as measured from water depth (NVGD):  $G - A$

2.7

-6.7

-5.1

-3.8

-3.8

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
<u>2.9</u>								
<u>1.6</u>		Black Silt		Soft				
<u>0.0</u>		Clay Some shells	gray	Firm				

File ID of digital photograph(s):

Comments:

Heavy Sheen



<b>Battelle</b> <small>The Business of Innovation</small>		<b>Project Name:</b> New Bedford Harbor Environmental Monitoring				<b>Project #:</b> G606422	
		<b>Location:</b> New Bedford, MA		<b>Vessel:</b> CR environmental skiff			
		<b>Client:</b> USACE NAE		<b>Chief Scientist:</b> Alex Mansfield			

Station ID: <u>N14</u>	Time On Station: <u>0946</u>	All measurements are $\pm 0.1$ feet
Core Sample ID: <u>-</u>	Northing (NAD 83): <u>2706923</u>	Water Depth (A): <u>6.0'</u>
Logged by: <u>Am</u>	Easting (NAD 83): <u>815774</u>	Length of push core assembly (B): <u>11.5'</u>
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>2.0</u>	Water surface to top of handle (C): <u>3.2'</u>
Date: <u>10/6/06</u>	Predicted Tide (ft): <u>-</u>	Length of core (from bottom) (D): <u>2.5</u>
	Time of Collection: <u>0947</u>	Surveyed elevation (NVGD 29) (E): <u>2.1 Water</u>
	Time Depart Station: <u>0953</u>	Water surface from surveyed elevation (F): <u>- 2.1</u>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>2.1</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>-6.2</u>
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<u>-5.0</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>-3.7</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>-3.9</u>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
2.5		Silt	Black	Soft				
1.2		clay	grey	firm				
0.0								

File ID of digital photograph(s): \_\_\_\_\_

Comments:

Water elevation is ~1.5' Deeper than expected from bathy (possible dredging here after bathy)

<b>Battelle</b> <i>The Business of Innovation</i>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>				Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>				Vessel: <b>CR environmental skiff</b>	
		Client: <b>USACE NAE</b>				Chief Scientist: <b>Alex Mansfield</b>	

Station ID: <u>N17</u>	Time On Station: <u>10:00</u>	All measurements are $\pm 0.1$ feet	
Core Sample ID: _____	Northing (NAD 83): <u>2706845</u>	Water Depth (A): <u>6.0</u>	
Logged by: <u>AM</u>	Easting (NAD 83): <u>815773</u>	Length of push core assembly (B): <u>11.5</u>	
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>2.1</u>	Water surface to top of handle (C): <u>3.0</u>	
Date: <u>10/6/06</u>	Predicted Tide (ft): _____	Length of core (from bottom) (D): <u>2.6</u>	
	Time of Collection: <u>1002</u>	Surveyed elevation (NVGD 29) (E): <u>1.9</u>	
	Time Depart Station: <u>1010</u>	Water surface from surveyed elevation (F): <u>✓</u>	

**Calculations for Determination of Z' Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>1.9</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>-6.6</u>
(z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<u>-4.6</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>-4.0</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>-4.1</u>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (I.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
2.6		Silt	black	soft	fine			
-2.0		clay w/ shells		gray	fine			
-0.0								

File ID of digital photograph(s): \_\_\_\_\_  
 Comments:  

Slight sheen.  
 Water Depth ~ 1.5' deeper than expected

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>				Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel: <b>CR environmental skiff</b>			
		Client: <b>USACE NAE</b>		Chief Scientist: <b>Alex Mansfield</b>			

Station ID:	<u>m19</u>	Time On Station:	<u>1014</u>	All measurements are $\pm 0.1$ feet	
Core Sample ID:	<u>—</u>	Northing (NAD 83):	<u>2706794</u>	Water Depth (A):	<u>5.6'</u>
Logged by:	<u>AM</u>	Easting (NAD 83):	<u>815750</u>	Length of push core assembly (B):	<u>11.5'</u>
Collection Mechanism:	<u>Push-Core</u>	GPS Accuracy:	<u>2.1</u>	Water surface to top of handle (C):	<u>2.75'</u>
Date:	<u>10/6/06</u>	Predicted Tide (ft):	<u>—</u>	Length of core (from bottom) (D):	<u>3.1</u>
		Time of Collection:	<u>1015</u>	Surveyed elevation (NVGD 29) (E):	<u>1.6</u> <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">a</span>
		Time Depart Station:	<u>1026</u>	Water surface from surveyed elevation (F):	<u>—</u>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>1.6</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>-7.15</u>
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<u>-5.25</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>-4.05</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>-4.0</u>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (I.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
3.1								
1.9								
0.0								

File ID of digital photograph(s):  
 Comments:  

Water Depth is ~1.5' deeper than expected bathy.  
 Possibly dredged here post bathy?

[illegible]

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>				Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel: <b>CR environmental skiff</b>		Chief Scientist: <b>Alex Mansfield</b>	
		Client: <b>USACE NAE</b>					

Station ID:	<u>H27</u>	Time On Station:	<u>1047</u>	All measurements are ±0.1 feet	
Core Sample ID:		Northing (NAD 83):	<u>27065899</u>	Water Depth (A):	<u>2.7</u>
Logged by:	<u>Am</u>	Easting (NAD 83):	<u>815626</u>	Length of push core assembly (B):	<u>8.5</u>
Collection Mechanism:	<u>Push-Core</u>	GPS Accuracy:	<u>1.9</u>	Water surface to top of handle (C):	<u>2.25</u>
Date:	<u>10/6/06</u>	Predicted Tide (ft):		Length of core (from bottom) (D):	<u>3.0</u>
		Time of Collection:	<u>10:48</u>	Surveyed elevation (NVGD 29) (E):	<u>0.8</u>
		Time Depart Station:	<u>10:56</u>	Water surface from surveyed elevation (F):	<u>—</u>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>0.8</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>-5.45</u>
(z*) Elevation of visual transition (NVGD): $H + (distance\ to\ visual\ transition)$	<u>-4.15</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>-2.45</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>-1.9</u>

(Note if I ≠ I<sub>2</sub> within ± 1.0 feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
3.0		shell Hash				Strong 0.1 odor		
1.3		Silt 0.4	Black	soft				
1.0								
0.0		clay	Grey	firm				

File ID of digital photograph(s):

Comments:

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>				Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel: <b>CR environmental skiff</b>		Chief Scientist: <b>Alex Mansfield</b>	
		Client: <b>USACE NAE</b>					

Station ID: <u>H30</u>	Time On Station: <u>1102</u>	All measurements are $\pm 0.1$ feet
Core Sample ID: _____	Northing (NAD 83): <u>2706522</u>	Water Depth (A): <u>2.8</u>
Logged by: <u>Am</u>	Easting (NAD 83): <u>815625</u>	Length of push core assembly (B): <u>8.5</u>
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>1.9</u>	Water surface to top of handle (C): <u>2.7</u>
Date: <u>10/6/06</u>	Predicted Tide (ft): _____	Length of core (from bottom) (D): <u>2.8</u>
	Time of Collection: <u>1103</u>	Surveyed elevation (NVGD 29) (E): <u>0.5</u>
	Time Depart Station: <u>1115</u>	Water surface from surveyed elevation (F): <u>-</u>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>0.5</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>-5.3</u>
(z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<u>-4.1</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>-2.5</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>-2.3</u>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
2.8		OL	Black	very soft	very fine	0.1		Very oily
1.2		clay	olive grey	firm	fine			
0.0								

File ID of digital photograph(s): \_\_\_\_\_

Comments: Heavy sheen from Dropping spuds



<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>				Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel: <b>CR environmental skiff</b>			
		Client: <b>USACE NAE</b>		Chief Scientist: <b>Alex Mansfield</b>			

Station ID:	<u>H33</u>	Time On Station:	<u>1119</u>	All measurements are $\pm 0.1$ feet	
Core Sample ID:	<u>-</u>	Northing (NAD 83):	<u>2706447</u>	Water Depth (A):	<u>2.5</u>
Logged by:	<u>jm</u>	Easting (NAD 83):	<u>815625</u>	Length of push core assembly (B):	<u>8.5</u>
Collection Mechanism:	<u>Push-Core</u>	GPS Accuracy:	<u>2.5</u>	Water surface to top of handle (C):	<u>3.4</u>
Date:	<u>10/6/06</u>	Predicted Tide (ft):	<u>-</u>	Length of core (from bottom) (D):	<u>2.6</u>
		Time of Collection:	<u>1120</u>	Surveyed elevation (NVGD 29) (E):	<u>0.1</u> <span style="float: right;">at Tide Board</span>
		Time Depart Station:	<u>1132</u>	Water surface from surveyed elevation (F):	<u>-</u>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>0.1</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>-5.0</u>
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<u>-4.2</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>-2.4</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>-2.4</u>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
2.6		ol Silt	Black	Soft	fine		very only	
1.4								Blurred Transition clay/gray fine
0.8								
0.6								

File ID of digital photograph(s):

Comments:  
Heavy Shown

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>				Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel: <b>CR environmental skiff</b>			
		Client: <b>USACE NAE</b>		Chief Scientist: <b>Alex Mansfield</b>			

Station ID: <u>H36</u>	Time On Station: <u>1132</u>	All measurements are $\pm 0.1$ feet	
Core Sample ID: _____	Northing (NAD 83): <u>2706374</u>	Water Depth (A): <u>2.5'</u>	
Logged by: <u>sm</u>	Easting (NAD 83): <u>815626</u>	Length of push core assembly (B): <u>8.5'</u>	
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>2.3</u>	Water surface to top of handle (C): <u>3.0'</u>	
Date: <u>10/6/06</u>	Predicted Tide (ft): _____	Length of core (from bottom) (D): <u>3.0</u>	
	Time of Collection: <u>1133</u>	Surveyed elevation (NVGD 29) (E): <u>-0.2</u>	Tide
	Time Depart Station: <u>1155</u>	Water surface from surveyed elevation (F): _____	Board

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>-0.2'</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>-5.7'</u>
(z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<u>-4.2'</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>-2.7'</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>-2.7'</u>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (I.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
3.0		OL	Silt Black	Soft	fine			
2.0			mixed silt + clay DK gray					
1.5			clay gray	fine	fine			
0.0								

File ID of digital photograph(s): \_\_\_\_\_  
 Comments: Heavy shunt

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>		Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel: <b>CR environmental skiff</b>	
		Client: <b>USACE NAE</b>		Chief Scientist: <b>Alex Mansfield</b>	

Station ID:	<u>N 1</u>	Time On Station:	<u>10:11</u>	All measurements are $\pm 0.1$ feet	
Core Sample ID:	<u>-</u>	Northing (NAD 83):	<u>2707249</u>	Water Depth (A):	<u>6.6'</u>
Logged by:	<u>AM</u>	Easting (NAD 83):	<u>815778</u>	Length of push core assembly (B):	<u>10.5</u>
Collection Mechanism:	<u>Push-Core</u>	GPS Accuracy:	<u>1.8</u>	Water surface to top of handle (C):	<u>1.5</u>
Date:	<u>10/12/06</u>	Predicted Tide (ft):		Length of core (from bottom) (D):	<u>1.8</u>
		Time of Collection:	<u>10:19</u>	Surveyed elevation (NVGD 29) (E):	<u>2.4'</u>
		Time Depart Station:	<u>1030</u>	Water surface from surveyed elevation (F):	<u>-</u>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<del>3.4</del> + 2.4'
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<del>5.6</del> - 6.6
(z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<del>3.4</del> - 4.9
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<del>3.8</del> - 4.8
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<del>3.2</del> - 4.2

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
1.8								
1.7		silt	Black	soft	fine			slightly blurred Transition
		clay	gray	firm	fine			
0.0								

File ID of digital photograph(s):  
 Comments:  

① Carried wrong value onto line "G", should have been 2.4' NOT 3.4', resulted in incorrect values on remaining lines. AM 10/16/06

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>				Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel: <b>CR environmental skiff</b>			
		Client: <b>USACE NAE</b>		1036		Chief Scientist: <b>Alex Mansfield</b>	

Station ID: <u>L2</u>	Time On Station: <u>2707225</u>	All measurements are $\pm 0.1$ feet
Core Sample ID: <u>---</u>	Northing (NAD 83): <u>815724</u>	Water Depth (A): <u>6.0</u>
Logged by: <u>AM</u>	Easting (NAD 83): <u>2.4</u>	Length of push core assembly (B): <u>10.5</u>
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>---</u>	Water surface to top of handle (C): <u>2.2</u>
Date: <u>10/12/06</u>	Predicted Tide (ft): <u>---</u>	Length of core (from bottom) (D): <u>2.0</u>
	Time of Collection: <u>1038</u>	Surveyed elevation (NVGD 29) (E): <u>2.7 water</u>
	Time Depart Station: <u>---</u>	Water surface from surveyed elevation (F): <u>---</u>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>2.7'</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>-5.6</u>
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<u>-3.9</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>-3.6</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>-3.3</u>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
2.0'		DR						
1.7		Gray Silt	fine					
1.4								mixed layer
1.1		clay	olive gray	firm	fine			
0.0								

File ID of digital photograph(s):  
 Comments: moderate sheen

<b>Battelle</b> <i>The Business of Innovation</i>		<b>Project Name:</b> <i>New Bedford Harbor Environmental Monitoring</i>				<b>Project #:</b> <i>G606422</i>	
		<b>Location:</b> <i>New Bedford, MA</i>		<b>Vessel:</b> <i>CR environmental skiff</i>			
		<b>Client:</b> <i>USACE NAE</i>		<b>Chief Scientist:</b> <i>Alex Mansfield</i>			

Station ID: <i>83</i>	Time On Station: <i>1049</i>	<b>All measurements are ±0.1 feet</b>	
Core Sample ID: <i>-</i>	Northing (NAD 83): <i>2707200</i>	Water Depth (A): <i>6.6</i>	
Logged by: <i>Am</i>	Easting (NAD 83): <i>815827</i>	Length of push core assembly (B): <i>10.5</i>	
Collection Mechanism: <i>Push-Core</i>	GPS Accuracy: <i>2.5</i>	Water surface to top of handle (C): <i>1.5</i>	
Date: <i>10/12/06</i>	Predicted Tide (ft): <i>-</i>	Length of core (from bottom) (D): <i>2.0</i>	
	Time of Collection: <i>1051</i>	Surveyed elevation (NVGD 29) (E): <i>2.9</i>	<i>water elev</i>
	Time Depart Station: <i>1059</i>	Water surface from surveyed elevation (F): <i>-</i>	

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): <i>E - F</i>	<i>+2.9</i>
(H) Elevation of the bottom of the core (NVGD): <i>G - (B - C)</i>	<i>-6.1</i>
(z*) Elevation of visual transition (NVGD): <i>H + (distance to visual transition)</i>	<i>-5.3</i>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): <i>H + D</i>	<i>-4.1</i>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): <i>G - A</i>	<i>-3.7</i>

(Note if I ≠ I<sub>2</sub> within ± 1.0 feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
<i>2.0</i>		<i>Silt</i>	<i>DK gray</i>					
		<i>fine</i>	<i>Black</i>	<i>soft</i>	<i>fine</i>			
<i>0.8</i>		<i>Sand</i>						
		<i>clay</i>	<i>gray</i>	<i>firm</i>	<i>fine</i>			
<i>0.0</i>								

File ID of digital photograph(s):

Comments:

Station ID: <u>05</u>	Time On Station: <u>1108</u>	All measurements are $\pm 0.1$ feet
Core Sample ID: <u>—</u>	Northing (NAD 83): <u>2707150</u>	Water Depth (A): <u>6.6</u>
Logged by: <u>AM</u>	Easting (NAD 83): <u>815800.9</u>	Length of push core assembly (B): <u>10.5</u>
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>2.3</u>	Water surface to top of handle (C): <u>1.6</u>
Date: <u>10/12/06</u>	Predicted Tide (ft): <u>—</u>	Length of core (from bottom) (D): <u>2.0</u>
	Time of Collection: <u>1109</u>	Surveyed elevation (NVGD 29) (E): <u>3.0 water elev.</u>
	Time Depart Station: <u>—</u>	Water surface from surveyed elevation (F): <u>—</u>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>+ 3.0'</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>- 5.9</u>
(z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<u>- 4.8</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>- 3.9</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>- 3.6</u>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
2.0		Silt	black	soft	fine			
1.1		Mixed clay Silt	Blk gray	Mixed				
0.0								

File ID of digital photograph(s):

Comments:

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>			Project #: <b>G606422</b>		
		Location: <b>New Bedford, MA</b>			Vessel: <b>CR environmental skiff</b>		
		Client: <b>USACE NAE</b>			Chief Scientist: <b>Alex Mansfield</b>		

Station ID: <u>K6</u>	Time On Station: <u>1121</u>	All measurements are $\pm 0.1$ feet	
Core Sample ID: <u>-</u>	Northing (NAD 83): <u>2707125</u>	Water Depth (A): <u>7.6'</u>	
Logged by: <u>AW</u>	Easting (NAD 83): <u>815700</u>	Length of push core assembly (B): <u>10.5</u>	
Collection Mechanism: <u>Push Core</u>	GPS Accuracy: <u>1.9</u>	Water surface to top of handle (C): <u>0.7</u>	
Date: <u>10/12/06</u>	Predicted Tide (ft): <u>-</u>	Length of core (from bottom) (D): <u>1.7</u>	
	Time of Collection: <u>1123</u>	Surveyed elevation (NVGD 29) (E): <u>3.3' water elev.</u>	
	Time Depart Station: <u>1130</u>	Water surface from surveyed elevation (F): <u>-</u>	

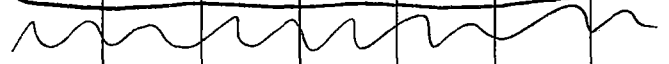
  

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	+ 3.3'
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	- 6.5
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	- 5.1
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	- 4.8
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	- 4.3

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
1.7'		fluff						
- 1.4		silt	Black	very soft	fine			
- 1.2								Slightly mixed transition
		clay	gray	firm	fine			
- 0.0								

File ID of digital photograph(s):  
 Comments:

<b>Battelle</b> <i>The Business of Innovation</i>		<b>Project Name:</b> <i>New Bedford Harbor Environmental Monitoring</i>				<b>Project #:</b> <i>G606422</i>	
		<b>Location:</b> <i>New Bedford, MA</i>				<b>Vessel:</b> <i>CR environmental skiff</i>	
		<b>Client:</b> <i>USACE NAE</i>				<b>Chief Scientist:</b> <i>Alex Mansfield</i>	

Station ID:	<i>N8</i>	Time On Station:	<i>1135</i>	<b>All measurements are ±0.1 feet</b>	
Core Sample ID:	<i>—</i>	Northing (NAD 83):	<i>2707075</i>	Water Depth (A):	<i>10.0</i>
Logged by:	<i>NM</i>	Easting (NAD 83):	<i>815774</i>	Length of push core assembly (B):	<i>14.0</i>
Collection Mechanism:	<i>Push-Core</i>	GPS Accuracy:	<i>2.5</i>	Water surface to top of handle (C):	<i>2.8</i>
Date:	<i>10/12/06</i>	Predicted Tide (ft):		Length of core (from bottom) (D):	<i>0.8</i>
		Time of Collection:	<i>1137</i>	Surveyed elevation (NVGD 29) (E):	<i>3.7' water</i>
		Time Depart Station:	<i>1145</i>	Water surface from surveyed elevation (F):	<i>—</i>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<i>+3.7'</i>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<i>-7.5</i>
(z*) Elevation of visual transition (NVGD): $H + (distance\ to\ visual\ transition)$	<i>-6.7</i>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<i>-6.7</i>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<i>-6.3</i>

(Note if I ≠ I<sub>2</sub> within ± 1.0 feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
<i>0.8</i>								<i>All clay grey fine</i>
<i>-0.0</i>								

File ID of digital photograph(s):  
 Comments:



<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b> Location: <b>New Bedford, MA</b> Client: <b>USACE NAE</b>			Project #: <b>G606422</b> Vessel: <b>CR environmental skiff</b> Chief Scientist: <b>Alex Mansfield</b>			
Station ID:	<u>M10</u>	Time On Station:	<u>1155</u>	All measurements are ±0.1 feet				
Core Sample ID:	<u>-</u>	Northing (NAD 83):	<u>270726</u>	Water Depth (A):	<u>8.3'</u>			
Logged by:	<u>AM</u>	Easting (NAD 83):	<u>815750</u>	Length of push core assembly (B):	<u>10.5</u>			
Collection Mechanism:	<u>Push-Core</u>	GPS Accuracy:	<u>2-9</u>	Water surface to top of handle (C):	<u>0.1</u>			
Date:	<u>10/12/06</u>	Predicted Tide (ft):		Length of core (from bottom) (D):	<u>1.9'</u>			
		Time of Collection:	<u>1157</u>	Surveyed elevation (NVGD 29) (E):	<u>3.7' water level</u>			
		Time Depart Station:	<u>1204</u>	Water surface from surveyed elevation (F):	<u>-</u>			
<b>Calculations for Determination of Z* Elevation</b>								
(G) Elevation of Water Surface (NVGD): E - F				<u>+ 3.7'</u>				
(H) Elevation of the bottom of the core (NVGD): G - (B - C)				<u>- 6.7</u>				
(Z*) Elevation of visual transition (NVGD): H + (distance to visual transition)				<u>- 6</u>				
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D				<u>- 4.8</u>				
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A				<u>- 4.6</u>				
(Note if I ≠ I <sub>2</sub> within ± 1.0 feet, discard and resample)								
Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
1.9'		fluff silt OL	Black	very soft	very fine	0.1		Very oily
-0.7		clay	gray	firm	fine			
-0.0								
File ID of digital photograph(s):								
Comments: <div style="font-size: 1.2em; margin-top: 10px;">Heavy Sheen Very oily</div>								

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>		Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel: <b>CR environmental skiff</b>	
		Client: <b>USACE NAE</b>		Chief Scientist: <b>Alex Mansfield</b>	

Station ID: <u>012</u>	Time On Station: <u>1213</u>	All measurements are $\pm 0.1$ feet	
Core Sample ID: <u>—</u>	Northing (NAD 83): <u>2706977</u>	Water Depth (A): <u>7.7'</u>	
Logged by: <u>AM</u>	Easting (NAD 83): <u>815803</u>	Length of push core assembly (B): <u>10.5</u>	
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>3.0</u>	Water surface to top of handle (C): <u>1.4</u>	
Date: <u>10/12/06</u>	Predicted Tide (ft): <u>—</u>	Length of core (from bottom) (D): <u>1.4</u>	
	Time of Collection: <u>1215</u>	Surveyed elevation (NVGD 29) (E): <u>3.700</u>	
	Time Depart Station: <u>1221</u>	Water surface from surveyed elevation (F): <u>—</u>	

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	+ 3.7
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	- 5.4
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	- 4.5
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	- 4.0
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	- 4.0
(Note if I $\neq$ I <sub>2</sub> within $\pm 1.0$ feet, discard and resample)	

Elevation (NVGD) (I.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
1.4		fluff	black	very soft	very fine			
- 0.9		clay	Gray	firm	fine			
- 0.6		w/sand	w/sand	Mixed				
		send	black					

File ID of digital photograph(s):  
 Comments:

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>				Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel: <b>CR environmental skiff</b>			
		Client: <b>USACE NAE</b>		Chief Scientist: <b>Alex Mansfield</b>			

Station ID: <u>P15</u>	Time On Station: <u>1230</u>	All measurements are $\pm 0.1$ feet
Core Sample ID: <u>SW</u>	Northing (NAD 83): <u>2706899</u>	Water Depth (A): <u>7.3'</u>
Logged by: <u>SW</u>	Easting (NAD 83): <u>815829</u>	Length of push core assembly (B): <u>10.5'</u>
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>3.8</u>	Water surface to top of handle (C): <u>1.0'</u>
Date: <u>10/12/06</u>	Predicted Tide (ft): _____	Length of core (from bottom) (D): <u>2.0</u>
	Time of Collection: <u>1231</u>	Surveyed elevation (NVGD 29) (E): <u>3.9' water elev.</u>
	Time Depart Station: <u>1245</u>	Water surface from surveyed elevation (F): _____

**Calculations for Determination of Z' Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	+3.9
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	-5.6
(Z') Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	-4.5
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	-3.6
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	-3.4
(Note if I $\neq$ I <sub>2</sub> within $\pm 1.0$ feet, discard and resample)	

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
2.0								
-1.1		silt	black	very soft	fine			
0.0		clay	gray w/ some shells	firm	fine			

File ID of digital photograph(s): \_\_\_\_\_  
 Comments: \_\_\_\_\_

[illegible]

<b>Battelle</b> <i>The Business of Innovation</i>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b> Location: <b>New Bedford, MA</b> Client: <b>USACE NAE</b>				Project #: <b>G606422</b> Vessel: <b>CR environmental skiff</b> Chief Scientist: <b>Alex Mansfield</b>			
Station ID:	<u>N16</u>	Time On Station:	<u>1304</u>	All measurements are $\pm 0.1$ feet					
Core Sample ID:	<u>-</u>	Northing (NAD 83):	<u>2706874</u>	Water Depth (A): <u>8.9</u> <sup>10.4m</sup>					
Logged by:	<u>AM</u>	Easting (NAD 83):	<u>815775</u>	Length of push core assembly (B): <u>14.0</u>					
Collection Mechanism:	<u>Push Core</u>	GPS Accuracy:	<u>4.6</u>	Water surface to top of handle (C): <u>3.1</u>					
Date:	<u>10/12/06</u>	Predicted Tide (ft):	<u>-</u>	Length of core (from bottom) (D): <u>1.8</u>					
		Time of Collection:	<u>1305</u>	Surveyed elevation (NVGD 29) (E): <u>4.0 water elev</u>					
		Time Depart Station:	<u>-</u>	Water surface from surveyed elevation (F): <u>-</u>					

Calculations for Determination of Z* Elevation	
(G) Elevation of Water Surface (NVGD): $E - F$	<u>+4.0</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>-6.9</u>
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<u>-5.3</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>-5.1</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>-4.9</u>
(Note if I $\neq$ I <sub>2</sub> within $\pm 1.0$ feet, discard and resample)	

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
1.8		silt	Black	Soft	fine			
1.6								
1.4								
1.2								
1.0								
0.8								
0.6								
0.4								
0.2								
0.0								
-0.2								
-0.4								
-0.6								
-0.8								
-1.0								
-1.2								
-1.4								
-1.6								
-1.8								

File ID of digital photograph(s):  
 Comments:

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>			Project #: <b>G606422</b>		
		Location: <b>New Bedford, MA</b>			Vessel: <b>CR environmental skiff</b>		
		Client: <b>USACE NAE</b>			Chief Scientist: <b>Alex Mansfield</b>		

Station ID:	<u>L18</u>	Time On Station:	<u>1316</u>	All measurements are $\pm 0.1$ feet	
Core Sample ID:	<u>---</u>	Northing (NAD 83):	<u>2706828</u>	Water Depth (A):	<u>8.2</u>
Logged by:	<u>Am</u>	Easting (NAD 83):	<u>815724</u>	Length of push core assembly (B):	<u>14.0</u>
Collection Mechanism:	<u>Push-Core</u>	GPS Accuracy:	<u>4.0</u>	Water surface to top of handle (C):	<u>3.9</u>
Date:	<u>10/12/06</u>	Predicted Tide (ft):	<u>---</u>	Length of core (from bottom) (D):	<u>1.9</u>
		Time of Collection:	<u>1317</u>	Surveyed elevation (NVGD 29) (E):	<u>3.8 water</u>
		Time Depart Station:	<u>1325</u>	Water surface from surveyed elevation (F):	<u>---</u>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>+3.8</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>-6.3</u>
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<u>-5.0</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>-4.4</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>-4.4</u>
(Note if I $\neq$ I <sub>2</sub> within $\pm 1.0$ feet, discard and resample)	

Elevation (NVGD) (I.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
1.9		Silt + Sand	Black	soft	med			
1.3			Gray					
0.0		clay	gray	firm	fine			

File ID of digital photograph(s):  
 Comments:

<b>Battelle</b> <i>The Business of Innovation</i>		<b>Project Name:</b> New Bedford Harbor Environmental Monitoring <b>Location:</b> New Bedford, MA <b>Client:</b> USACE NAE		<b>Project #:</b> G606422 <b>Vessel:</b> CR environmental skiff <b>Chief Scientist:</b> Alex Mansfield					
Station ID:	M20	Time On Station:	1328	All measurements are $\pm 0.1$ feet					
Core Sample ID:	—	Northing (NAD 83):	2706776	Water Depth (A):	8.7				
Logged by:	AW	Easting (NAD 83):	815750	Length of push core assembly (B):	14.0				
Collection Mechanism:	Push-Core	GPS Accuracy:	3.5	Water surface to top of handle (C):	3.3				
Date:	10/12/06	Predicted Tide (ft):	—	Length of core (from bottom) (D):	2.0				
		Time of Collection:	1329	Surveyed elevation (NVGD 29) (E):	3.7 water elev.				
		Time Depart Station:	1338	Water surface from surveyed elevation (F):	—				
<b>Calculations for Determination of Z* Elevation</b>									
(G) Elevation of Water Surface (NVGD): $E - F$				+3.7'					
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$				- 7.0'					
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$				-5.5'					
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$				-5.0'					
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$				-5.0'					
(Note if I $\neq$ I <sub>2</sub> within $\pm 1.0$ feet, discard and resample)									
	Elevation (NVGD) (I.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
	2.0		soft	black	soft	fine			
	1.5		clay	gray	firm	fine			
	2.0								
File ID of digital photograph(s): Comments:									

[illegible]



# **Post-Dredge Core Characterization Logs**

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<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>		Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel: <b>CR environmental skiff</b>	
		Client: <b>USACE NAE</b>		Chief Scientist: <b>Alex Mansfield</b>	

Station ID:	<b>M3</b>	Time On Station:	<b>0939</b>	All measurements are $\pm 0.1$ feet	
Core Sample ID:	<b>S-06D-0M03-00-24</b>	Northing (NAD 83):	<b>2707178</b>	Water Depth (A):	<b>39'</b>
Logged by:	<b>Am</b>	Easting (NAD 83):	<b>815741</b>	Length of push core assembly (B):	<b>8.2'</b>
Collection Mechanism:	<b>Push-Core</b>	GPS Accuracy:	<b>2.5</b>	Water surface to top of handle (C):	<b>1.9'</b>
Date:	<b>10-31-06</b>	Predicted Tide (ft):		Length of core (from bottom) (D):	<b>2.4'</b>
		Time of Collection:	<b>0941</b>	Surveyed elevation (NVGD 29) (E):	<b>-0.1'</b>
		Time Depart Station:	<b>1015</b>	Water surface from surveyed elevation (F):	

**Calculations for Determination of Z' Elevation**

- (G) Elevation of Water Surface (NVGD):  $E - F$
- (H) Elevation of the bottom of the core (NVGD):  $G - (B - C)$
- (Z') Elevation of visual transition (NVGD):  $H + (\text{distance to visual transition})$
- (I) Elevation of the sediment-water interface as measured from bottom of core (NVGD):  $H + D$
- (I<sub>2</sub>) Elevation of the sediment-water interface as measured from water depth (NVGD):  $G - A$
- (Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

**-0.1'**  
**-6.4'**  
**-4.8' \***  
**-4.0**  
**-4.0**

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
2.4		Mixed Silt Sand clay	DK gray	Mixed	med			-03 S-06D-0M03-08
-1.6		clay	olive gray	firm	fine			S-06D-0M03-08-13 (Archive)
0.0								

File ID of digital photograph(s):

Comments:

\* Upper layers are mixed sediment types. Appears that disturbance (debris removal?) is mixing upper layers. This may have mixed old sed into deeper layers. Top of distinct clay layer is used for the "elevation of visual transition" value.

<b>Battelle</b> The Business of Innovation		Project Name: <b>New Bedford Harbor Environmental Monitoring</b> Location: <b>New Bedford, MA</b> Client: <b>USACE NAE</b>		Project #: <b>G606422</b> Vessel: <b>CR environmental skiff</b> Chief Scientist: <b>Alex Mansfield</b>	
Station ID: <b>R3</b>	Time On Station: <b>1026</b>	All measurements are $\pm 0.1$ feet			
Core Sample ID: <b>S-06D-0R03-00-13</b>	Northing (NAD 83): <b>2707106</b>	Water Depth (A): <b>3.3' 32/32/3.3'</b>			
Logged by: <b>AM</b>	Easting (NAD 83): <b>815871</b>	Length of push core assembly (B): <b>7.4' 8.2/8.2/8.2'</b>			
Collection Mechanism: <b>Push-Core</b>	GPS Accuracy: <b>1.8</b>	Water surface to top of handle (C): <b>2.8' 1.2/1.1/1.9'</b>			
Date: <b>10-31-06</b>	Predicted Tide (ft): <b>1028/1040/1058/1106</b>	Length of core (from bottom) (D): <b>1.3' NA/NA/NA</b>			
	Time of Collection: <b>1111</b>	Surveyed elevation (NVGD 29) (E): <b>+0.2' +0.1/+0.1/+0.2</b>			
	Time Depart Station: <b>1111</b>	Water surface from surveyed elevation (F): <b>—</b>			

**Calculations for Determination of Z\* Elevation**

- (G) Elevation of Water Surface (NVGD):  $E - F$
- (H) Elevation of the bottom of the core (NVGD):  $G - (B - C)$
- (Z\*) Elevation of visual transition (NVGD):  $H + (\text{distance to visual transition})$
- (I) Elevation of the sediment-water interface as measured from bottom of core (NVGD):  $H + D$
- (I<sub>2</sub>) Elevation of the sediment-water interface as measured from water depth (NVGD):  $G - A$
- (Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

**+0.2'**  
**-4.4'**  
**-3.7'**  
**-3.1'**  
**-3.1'**

Elevation (NVGD) (I.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
1.3		BIT	DK gray	Soft	fine			
0.7		Blurred	Transition					
0.0		clay	gray	firm	fine			
							① <del>S-06D-0R03-00-00</del> <del>S-06D-0R03-00-13</del> <b>S-06D-0R03-06-11</b> <b>(Archive)</b>	

① NOTE: Sample ID labelled incorrectly on Jar and COC. Did NOT notice until analysis complete and Data submitted to Database. Changing ID here to maintain consistency with everything else.

File ID of digital photograph(s):

Comments:

- \* 1st Attempt NG - plunger slipped  
 2nd Attempt NG - plunger slipped  
 3rd Attempt NG - Washout  
 4th Attempt switched to short-core liner - good!

AM 1/8/07

[illegible]

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>			Project #: <b>G606422</b>	
Location: <b>New Bedford, MA</b>		Client: <b>USACE NAE</b>			Vessel: CR environmental skiff Chief Scientist: Alex Mansfield	

Station ID:	<b>AA3</b>	Time On Station:	<b>1131</b>	<b>All measurements are ±0.1 feet</b>	
Core Sample ID:	<b>S-06D-AA03-00-12</b>	Northing (NAD 83):	<b>2707205</b>	Water Depth (A):	<b>3.4</b>
Logged by:	<b>DW</b>	Easting (NAD 83):	<b>816091</b>	Length of push core assembly (B):	<b>6.8</b>
Collection Mechanism:	<b>Push-Core</b>	GPS Accuracy:	<b>2.5</b>	Water surface to top of handle (C):	<b>2.0</b>
Date:	<b>10-31-06</b>	Predicted Tide (ft):		Length of core (from bottom) (D):	<b>1.2</b>
		Time of Collection:	<b>1133</b>	Surveyed elevation (NVGD 29) (E):	<b>+0.7</b>
		Time Depart Station:	<b>1141</b>	Water surface from surveyed elevation (F):	<b>-</b>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): E - F	<b>+0.7</b>
(H) Elevation of the bottom of the core (NVGD): G - (B - C)	<b>-4.1</b>
(Z*) Elevation of visual transition (NVGD): H + (distance to visual transition)	<b>-2.9</b> NO Transition, USED SW
(I <sub>1</sub> ) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D	<b>-2.9</b>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A	<b>-2.7</b>

(Note if I<sub>1</sub> ≠ I<sub>2</sub> within ± 1.0 feet, discard and resample)

#	Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
	<div style="position: absolute; top: 0; left: 0; width: 100%; height: 100%; border-left: 1px solid black; border-right: 1px solid black;"></div>		Clay streaked w/ Black silt	grey w/ Black streaks	fine fine				Took Top 0.5' as only sample S-06D-AA03-00-05 (Archive)

File ID of digital photograph(s): \_\_\_\_\_  
 Comments:  

No overlying sediment

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>			Project #: <b>G606422</b>		
		Location: <b>New Bedford, MA</b>			Vessel: <b>CR environmental skiff</b>		
		Client: <b>USACE NAE</b>			Chief Scientist: <b>Alex Mansfield</b>		

Station ID:	<u>116</u>	Time On Station:	<u>1147</u>	All measurements are $\pm 0.1$ feet	
Core Sample ID:	<u>S-06D-0006-00-14</u>	Northing (NAD 83):	<u>2707112</u>	Water Depth (A):	<u>3.5'</u>
Logged by:	<u>gvr</u>	Easting (NAD 83):	<u>815939</u>	Length of push core assembly (B):	<u>7.9'</u>
Collection Mechanism:	<u>Push-Core</u>	GPS Accuracy:	<u>2.1</u>	Water surface to top of handle (C):	<u>3.0'</u>
Date:	<u>10/31/06</u>	Predicted Tide (ft):		Length of core (from bottom) (D):	<u>1.4'</u>
		Time of Collection:	<u>1148</u>	Surveyed elevation (NVGD 29) (E):	<u>+0.7</u>
		Time Depart Station:	<u>1156</u>	Water surface from surveyed elevation (F):	<u>      </u>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>+0.7'</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>-4.2</u>
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<u>-3.8</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>-2.8</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>-2.8</u>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (I.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
1.4								
-0.4		Silt	DK gray	Soft	fine			<del>S-06D-0006-05-14</del>
-0.0		clay	ol. r. grey	firm	fine		①	S-06D-0006-05-14
								S-06D-0006-10-14 (archive)

① Note: Sample ID labelled incorrectly on Jar + Coc. Not identified until data in database. Changing to here to maintain consistency with everything else. dm 1/8/07

File ID of digital photograph(s):

Comments:

Shore on water and outside of core

Transition is blurred

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>			Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>			Vessel: <b>CR environmental skiff</b>	
		Client: <b>USACE NAE</b>			Chief Scientist: <b>Alex Mansfield</b>	

Station ID: <u>Y8</u>	Time On Station: <u>1202</u>	All measurements are $\pm 0.1$ feet
Core Sample ID: <u>S-06D-0408-00-06</u>	Northing (NAD 83): <u>2707047</u>	Water Depth (A): <u>3.7</u>
Logged by: <u>DM</u>	Easting (NAD 83): <u>816047</u>	Length of push core assembly (B): <u>6.5</u>
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>2.5</u>	Water surface to top of handle (C): <u>1.5</u>
Date: <u>10-31-06</u>	Predicted Tide (ft): _____	Length of core (from bottom) (D): <u>0.6</u>
	Time of Collection: <u>1206</u>	Surveyed elevation (NVGD 29) (E): <u>+0.8</u>
	Time Depart Station: <u>1217</u>	Water surface from surveyed elevation (F): _____

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>+0.8</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>-4.2</u>
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<u>NA (-3.6 = SWI)</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>-3.6</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>-2.9</u>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
<u>0.6</u>  <u>0.0</u>            		Clay/ w/ Sand + Shell Hash	mixed grey + Brown	mixed	med			entire core Homogenized into sample S-06D-0408-00-06

File ID of digital photograph(s): \_\_\_\_\_  
Comments:  

Clay + Shell Hash  
No underlying sediment



<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>				Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel: <b>CR environmental skiff</b>			
		Client: <b>USACE NAE</b>		Chief Scientist: <b>Alex Mansfield</b>			

Station ID:	<b>PB</b>	Time On Station:	<b>1218</b>	All measurements are $\pm 0.1$ feet	
Core Sample ID:	<b>S-06D-0P08-00-20</b>	Northing (NAD 83):	<b>2707071</b>	Water Depth (A):	<b>5.6'</b>
Logged by:	<b>Am</b>	Easting (NAD 83):	<b>815816</b>	Length of push core assembly (B):	<b>10.0</b>
Collection Mechanism:	<b>Push-Core</b>	GPS Accuracy:	<b>2.1</b>	Water surface to top of handle (C):	<b>2.3</b>
Date:	<b>10-31-06</b>	Predicted Tide (ft):		Length of core (from bottom) (D):	<b>2.0</b>
		Time of Collection:	<b>1222</b>	Surveyed elevation (NVGD 29) (E):	<b>+1.1</b>
		Time Depart Station:	<b>1229</b>	Water surface from surveyed elevation (F):	<b>—</b>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>+1.1</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>-6.6</u>
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<u>-5.6</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>-4.6</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>-4.5</u>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
2.0		Silt	Black	soft	fine			S-06D-0P08-05-10
1.0		clay	olive gray	blurred	fine			S-06D-0P08-10-05 (Archive)
0.0								

File ID of digital photograph(s):  
 Comments: **Heavy sheen + strong oil odor.**

<b>Battelle</b> The Business of Innovation		Project Name: <b>New Bedford Harbor Environmental Monitoring</b> Location: <b>New Bedford, MA</b> Client: <b>USACE NAE</b>		Project #: <b>G606422</b> Vessel: <b>CR environmental skiff</b> Chief Scientist: <b>Alex Mansfield</b>				
Station ID: <b>25</b>	Time On Station: <b>1233</b>	All measurements are $\pm 0.1$ feet						
Core Sample ID: <b>S-06D-0605-00-20</b>	Northing (NAD 83): <b>2707128</b>	Water Depth (A): <b>6.0</b>						
Logged by: <b>Am</b>	Easting (NAD 83): <b>815718</b>	Length of push core assembly (B): <b>11.0'</b>						
Collection Mechanism: <b>Push-Core</b>	GPS Accuracy: <b>2.9</b>	Water surface to top of handle (C): <b>3.0'</b>						
Date: <b>10-31-06</b>	Predicted Tide (ft):	Length of core (from bottom) (D): <b>2.0'</b>						
	Time of Collection: <b>1235</b>	Surveyed elevation (NVGD 29) (E): <b>+1.5'</b>						
	Time Depart Station: <b>1240</b>	Water surface from surveyed elevation (F):						
Calculations for Determination of Z* Elevation.								
(G) Elevation of Water Surface (NVGD): $E - F$		<b>+1.5'</b>						
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$		<b>-6.5</b>						
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$		<b>-5.1</b>						
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$		<b>-4.5</b>						
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$		<b>-4.5</b>						
(Note if $I \neq I_2$ within $\pm 1.0$ feet, discard and resample)								
Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
<b>2.0</b>		<b>Silt</b>	<b>DK grey</b>	<b>soft</b>	<b>fine</b>			<b>S-06D-0605-00-2</b>
<b>+1.4</b>		<b>clay</b>	<b>olive grey</b>	<b>firm</b>	<b>fine</b>			<b>S-06D-0605-00-1</b>
<b>0.0</b>								<b>(Archive)</b>
File ID of digital photograph(s):								
Comments:								

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>		Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel: <b>CR environmental skiff</b>	
		Client: <b>USACE NAE</b>		Chief Scientist: <b>Alex Mansfield</b>	

Station ID: <b>Nb</b>	Time On Station: <b>1246</b>	All measurements are $\pm 0.1$ feet			
Core Sample ID: <b>S-06D-0N06-00-17</b>	Northing (NAD 83): <b>2707126</b>	Water Depth (A): <b>7.1'</b>			
Logged by: <b>Am</b>	Easting (NAD 83): <b>815760</b>	Length of push core assembly (B): <b>11.0'</b>			
Collection Mechanism: <b>Push-Core</b>	GPS Accuracy: <b>2.2</b>	Water surface to top of handle (C): <b>2.3'</b>			
Date: <b>10-31-06</b>	Predicted Tide (ft): <b>2.57</b>	Length of core (from bottom) (D): <b>1.6'</b>			
	Time of Collection: <b>1253</b>	Surveyed elevation (NVGD 29) (E): <b>+1.8'</b>			
	Time Depart Station: <b>1253</b>	Water surface from surveyed elevation (F):			

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	+ 1.8
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	- 6.9
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	- 5.6
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	- 5.3
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	- 5.3
(Note if I $\neq$ I <sub>2</sub> within $\pm 1.0$ feet, discard and resample)	

Elevation (NVGD) (I.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
1.6								
-1.3		* mixed silt clay	DK gray	Mixed fine				Took Top 0.5' as only sample S-06D-0N06-00-05
		olive gray clay		firm fine				
-0.0								

File ID of digital photograph(s):

Comments:  
 \*No OL layer. looks like upper sediments have been mixed during Debris removal and/or dredging.

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>				Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel: <b>CR environmental skiff</b>			
		Client: <b>USACE NAE</b>		Chief Scientist: <b>Alex Mansfield</b>			

Station ID: <b>NB</b>	Time On Station: <b>1259</b>	All measurements are $\pm 0.1$ feet	
Core Sample ID: <b>S-06D-0N08-00-17*</b>	Northing (NAD 83): <b>2707069</b>	Water Depth (A): <b>7.4'</b>	
Logged by: <b>Am</b>	Easting (NAD 83): <b>815761</b>	Length of push core assembly (B): <b>11.7'</b>	
Collection Mechanism: <b>Push-Core</b>	GPS Accuracy: <b>2.4</b>	Water surface to top of handle (C): <b>2.4'</b>	
Date: <b>10-31-06</b>	Predicted Tide (ft): <b>13.02</b>	Length of core (from bottom) (D): <b>1.7'</b>	
	Time of Collection: <b>1345</b>	Surveyed elevation (NVGD 29) (E): <b>+2.0'</b>	
	Time Depart Station: <b>1345</b>	Water surface from surveyed elevation (F): <b>—</b>	

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<b>+2.0'</b>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<b>-7.3'</b>
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<b>-6.3'</b>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<b>-5.6'</b>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<b>-5.4</b>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (I.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
1.7'		silt	DK gray	soft	fine		①	<del>S-06D-0N08-02-07*</del> <del>S-06D-0N08-00-17</del> <b>S-06D-0N08-07-12</b> <b>(Archive)</b>
1.0		clay	olive gray	firm	fine			
0.0								
<b>① Note: Sample ID labelled incorrectly on Jar and COC. Not identified until data in database. Changing ID here to maintain consistency with everything else. Am 1/8/07</b>								

File ID of digital photograph(s):  
 Comments:  
**Strong odor and sheen**  
**\*DUP collected**

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>		Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel: <b>CR environmental skiff</b>	
		Client: <b>USACE NAE</b>		Chief Scientist: <b>Alex Mansfield</b>	
Station ID:	<b>NB</b>	Time on Station:	<b>1259</b>	All measurements are $\pm 0.1$ feet	
Core Sample ID:	<b>S-06D-0N08-00-17-DUP</b>	Northing (NAD 83):	<b>2707069</b>	Water Depth (A):	<b>7.4'</b>
Logged by:	<b>Am</b>	Easting (NAD 83):	<b>815761</b>	Length of push core assembly (B):	<b>11.7'</b>
Collection Mechanism:	<b>Push-Core</b>	GPS Accuracy:	<b>2.4</b>	Water surface to top of handle (C):	<b>2.3'</b>
Date:	<b>10/31/06</b>	Predicted Tide (ft):		Length of core (from bottom) (D):	<b>1.8'</b>
		Time of Collection:	<b>1309</b>	Surveyed elevation (NVGD 29) (E):	<b>+2.0'</b>
		Time Depart Station:	<b>1345</b>	Water surface from surveyed elevation (F):	

**Calculations for Determination of Z\* Elevation**

- (G) Elevation of Water Surface (NVGD):  $E - F$
- (H) Elevation of the bottom of the core (NVGD):  $G - (B - C)$
- (Z\*) Elevation of visual transition (NVGD):  $H + (\text{distance to visual transition})$
- (I) Elevation of the sediment-water interface as measured from bottom of core (NVGD):  $H + D$
- (I<sub>2</sub>) Elevation of the sediment-water interface as measured from water depth (NVGD):  $G - A$

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

$+2.0'$

$-7.4'$

$-6.3'$

$-5.6'$

$-5.6' - 5.4'$

*Wrong calc Am 1/8/07*

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
1.8'								
1.1'		OL	DK gray	Soft	fine		① S-06D-0N08-00-17-DUP	
		clay	olive gray	firm	fine		<del>S-06D-0N08-02-07-DUP</del>	
0.0'							S-06D-0N08-07-12-DUP	(Archive)

File ID of digital photograph(s):

Comments:

① Note: Sample ID labelled incorrectly on Jar and COC. Not identified until data in database. Changing ID here to maintain consistency w/ everything else. Am 1/8/07

<b>Battelle</b> <i>The Business of Innovation</i>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b> Location: <b>New Bedford, MA</b> Client: <b>USACE NAE</b>			Project #: <b>G606422</b> Vessel: <b>CR environmental skiff</b> Chief Scientist: <b>Alex Mansfield</b>	
Station ID:	<b>L9</b>	Time On Station:	<b>1030</b>	All measurements are $\pm 0.1$ feet		
Core Sample ID:	<b>S-06D-0209-00-16</b>	Northing (NAD 83):	<b>2707023</b>	Water Depth (A):	<b>5.2</b>	
Logged by:	<b>[Signature]</b>	Easting (NAD 83):	<b>815709</b>	Length of push core assembly (B):	<b>8.0</b>	
Collection Mechanism:	<b>Push-Core</b>	GPS Accuracy:	<b>2.09</b>	Water surface to top of handle (C):	<b>0.5</b>	
Date:	<b>11/1/06</b>	Predicted Tide (ft):		Length of core (from bottom) (D):	<b>1.6</b>	
		Time of Collection:	<b>1040</b>	Surveyed elevation (NVGD 29) (E):	<b>-0.3</b>	
		Time Depart Station:	<b>1050</b>	Water surface from surveyed elevation (F):	<b>-</b>	

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<b>-0.3</b>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<b>-7.8</b>
(z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<b>-6.5</b>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<b>-6.2</b>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<b>-5.5</b>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
1.3'	-	Silt	dk gray	soft	fine	-	-	S-06D-0209-00-16
0.0	-	clay	olive gray	firm	fine	-	-	S-06D-0209-03-01 (archive)

File ID of digital photograph(s):

Comments:

**Strong sheen + oil odor**

Station ID: <b>R11</b>	Time On Station: <b>1057</b>	All measurements are $\pm 0.1$ feet
Core Sample ID: <b>S-06D-0R11-00-25</b>	Northing (NAD 83): <b>2706995</b>	Water Depth (A): <b>2.9'</b>
Logged by: <b>AM</b>	Easting (NAD 83): <b>815851</b>	Length of push core assembly (B): <b>8.0'</b>
Collection Mechanism: <b>Push-Core</b>	GPS Accuracy: <b>3.7</b>	Water surface to top of handle (C): <b>2.5'</b>
Date: <b>11-1-06</b>	Predicted Tide (ft):	Length of core (from bottom) (D): <b>2.5'</b>
	Time of Collection: <b>1059</b>	Surveyed elevation (NVGD 29) (E): <b>-0.5'</b>
	Time Depart Station: <b>1112</b>	Water surface from surveyed elevation (F): <b>-</b>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD):  $E - F$

**-0.5'**

(H) Elevation of the bottom of the core (NVGD):  $G - (B - C)$

**-6.0'**

(Z\*) Elevation of visual transition (NVGD):  $H + (\text{distance to visual transition})$

**-4.5'**

(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD):  $H + D$

**-3.5'**

(I<sub>2</sub>) Elevation of the sediment-water interface as measured from water depth (NVGD):  $G - A$

**-3.4'**

(Note if  $I \neq I_2$  within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
2.5		Soft shells	Black	Soft	fine			S-06D-0R11-10-15
1.5		mixed Transition						
		clay	dark gray	firm	fine			S-06D-0R11-15-20 (Archive)
0.0								

File ID of digital photograph(s):

Comments:

Calculations for Determination of Z* Elevation	
(G) Elevation of Water Surface (NVGD): $E - F$	-0.8
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	-5.9
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	-5.3
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	-4.6
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	-4.6
(Note if I $\neq$ I <sub>2</sub> within $\pm 1.0$ feet, discard and resample)	

File ID of digital photograph(s):	
Comments:	* Dup collected



<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>			Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>			Vessel: <b>CR environmental skiff</b>	
		Client: <b>USACE NAE</b>			Chief Scientist: <b>Alex Mansfield</b>	

Station ID:	<b>NID</b>	Time On Station:	<b>1116</b>	All measurements are ±0.1 feet	
Core Sample ID:	<b>S-06D-DM10-07-13-DUP</b>	Northing (NAD 83):	<b>2707022</b>	Water Depth (A):	<b>3.9'</b>
Logged by:	<b>AM</b>	Easting (NAD 83):	<b>815733</b>	Length of push core assembly (B):	<b>7.0'</b>
Collection Mechanism:	<b>Push-Core</b>	GPS Accuracy:	<b>2-3</b>	Water surface to top of handle (C):	<b>1.8'</b>
Date:	<b>11-1-06</b>	Predicted Tide (ft):		Length of core (from bottom) (D):	<b>1.3</b>
		Time of Collection:	<b>1127</b>	Surveyed elevation (NVGD 29) (E):	<b>-0.7'</b>
		Time Depart Station:	<b>1140</b>	Water surface from surveyed elevation (F):	

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): E - F	<b>-0.7'</b>
(H) Elevation of the bottom of the core (NVGD): G - (B - C)	<b>-5.9'</b>
(z*) Elevation of visual transition (NVGD): H + (distance to visual transition)	<b>-5.3'</b>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D	<b>-4.6'</b>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A	<b>-4.6'</b>

(Note if I ≠ I<sub>2</sub> within ± 1.0 feet, discard and resample)

#	Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
	1.3  0.6  0.0		OL  clay	Black  olive gray	soft  firm	fine  fine			S-06D-DM10-07-07-  S-06D-DM10-07-12 (archive)

File ID of digital photograph(s): \_\_\_\_\_  
 Comments: \_\_\_\_\_

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>		Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel: <b>CR environmental skiff</b>	
		Client: <b>USACE NAE</b>		Chief Scientist: <b>Alex Mansfield</b>	

Station ID: <b>T15</b>	Time On Station: <b>1146</b>	All measurements are $\pm 0.1$ feet
Core Sample ID: <b>S-06D-0T15-00-14</b>	Northing (NAD 83): <b>2706890</b>	Water Depth (A): <b>3.2</b>
Logged by: <b>NM</b>	Easting (NAD 83): <b>815923</b>	Length of push core assembly (B): <b>7.5</b>
Collection Mechanism: <b>Push-Core</b>	GPS Accuracy: <b>2.02</b>	Water surface to top of handle (C): <b>2.9</b>
Date: <b>11-1-06</b>	Predicted Tide (ft):	Length of core (from bottom) (D): <b>1.4</b>
	Time of Collection: <b>1149</b>	Surveyed elevation (NVGD 29) (E): <b>-0.2</b>
	Time Depart Station: <b>1155</b>	Water surface from surveyed elevation (F):

**Calculations for Determination of Z\* Elevation**

- (G) Elevation of Water Surface (NVGD):  $E - F$  -0.2
- (H) Elevation of the bottom of the core (NVGD):  $G - (B - C)$  -4.8
- (Z\*) Elevation of visual transition (NVGD):  $H + (\text{distance to visual transition})$  -3.9
- (I) Elevation of the sediment-water interface as measured from bottom of core (NVGD):  $H + D$  -3.4
- (I<sub>2</sub>) Elevation of the sediment-water interface as measured from water depth (NVGD):  $G - A$  -3.4

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
1.4								
-0.9		OL	Black	fine soft	fine			S-06D-0T15-00-05
-0.0		Shell Hash Clay	gray	Mixed ST.H	large			S-06D-0T15-05-10 (Archive)

File ID of digital photograph(s):

Comments:

Also  
 S-06D-0T15-00-05-MS  
 S-06D-0T15-~~05-10~~  
                   00-05-MSD

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>		Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel: <b>CR environmental skiff</b>	
		Client: <b>USACE NAE</b>		Chief Scientist: <b>Alex Mansfield</b>	

Station ID: <u>  L12  </u>	Time On Station: <u>  1202  </u>	All measurements are $\pm 0.1$ feet	
Core Sample ID: <u>  5-06D-BL12-00-14  </u>	Northing (NAD 83): <u>  2706465.6  </u>	Water Depth (A): <u>  4.7  </u>	<u>  4.9  </u>
Logged by: <u>  mw  </u>	Easting (NAD 83): <u>  815710.7  </u>	Length of push core assembly (B): <u>  7.0  </u>	<u>  10.0  </u>
Collection Mechanism: <u>  Push-Core  </u>	GPS Accuracy: <u>  1.99  </u>	Water surface to top of handle (C): <u>  0.4  </u>	<u>  0.1  </u>
Date: <u>  11/1/06  </u>	Predicted Tide (ft): <u>  +1.4  </u>	Length of core (from bottom) (D): <u>  1.4  </u>	<u>  1.4  </u>
	Time of Collection: <u>  1206/1211/1215  </u>	Surveyed elevation (NVGD 29) (E): <u>  +0.2  </u>	<u>  +0.2  </u>
	Time Depart Station: <u>  1222  </u>	Water surface from surveyed elevation (F): <u>  —  </u>	

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>  +0.2  </u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>  -7.00  </u>
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<u>  -5.9  </u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>  -5.6  </u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>  -4.5 / -4.7 / -4.7  </u>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
0.0								
0.3		silt a	Black	Soft	Fine			5-06D-0L12-00-03
1.4		Peat	Brown/Black	weird chips ↓ fine sand/silt	medium ↓ fine			5-06D-0L12-03-08 (Archive)

File ID of digital photograph(s):  
 Comments:  

1st Attempt no good - Heavy peat/wood derived penetration  
 2nd Attempt no good -

<b>Battelle</b> <small>The Business of Innovation</small>		<b>Project Name:</b> New Bedford Harbor Environmental Monitoring <b>Location:</b> New Bedford, MA <b>Client:</b> USACE NAE				<b>Project #:</b> G606422 <b>Vessel:</b> CR environmental skiff <b>Chief Scientist:</b> Alex Mansfield	
Station ID:	W18	Time On Station:	1229	All measurements are $\pm 0.1$ feet			
Core Sample ID:	S-06D-0W18-00-19	Northing (NAD 83):	2706820	Water Depth (A):	3.9		
Logged by:	LM	Easting (NAD 83):	815994	Length of push core assembly (B):	7.4		
Collection Mechanism:	Push-Core	GPS Accuracy:	2.8	Water surface to top of handle (C):	1.6		
Date:	11-1-06	Predicted Tide (ft):		Length of core (from bottom) (D):	1.9		
		Time of Collection:	1230	Surveyed elevation (NVGD 29) (E):	+0.3		
		Time Depart Station:	1238	Water surface from surveyed elevation (F):			

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): E - F	+ 0.3
(H) Elevation of the bottom of the core (NVGD): G - (B - C)	- 5.5
(z*) Elevation of visual transition (NVGD): H + (distance to visual transition)	- 4.3
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D	- 3.6
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A	- 3.6

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
1.9		Silt	DK Grey	fine Soft	fine			S-06D-0W18-00-
1.2		clay	olive grey	firm	fine			S-06D-0W18-06-
0.0								

File ID of digital photograph(s):  
 Comments:

\*Congener + Homologue

Battelle

The Business of Innovation

Project Name: New Bedford Harbor Environmental Monitoring

Location: New Bedford, MA

Client: USACE NAE

Project #: G606422

Vessel: CR environmental skiff

Chief Scientist: Alex Mansfield

Station ID: 213

Core Sample ID: S-06D-0213-00-10

Logged by: [Signature]

Collection Mechanism: Push-Core

Date: 11-1-06

Time On Station: 1301

Northing (NAD 83): 2706927

Easting (NAD 83): 816080

GPS Accuracy: 2.4

Predicted Tide (ft): 1st / 2nd

Time of Collection: 1304 / 1326

Time Depart Station: 1336

All measurements are  $\pm 0.1$  feet

Water Depth (A): 3.8 / 4.0

Length of push core assembly (B): 70 / 70

Water surface to top of handle (C): 1.8 / 1.5

Length of core (from bottom) (D): 1.0 / 1

Surveyed elevation (NVGD 29) (E): +0.8 / +1.0

Water surface from surveyed elevation (F):

Calculations for Determination of Z\* Elevation

(G) Elevation of Water Surface (NVGD): E - F

(H) Elevation of the bottom of the core (NVGD): G - (B - C)

(Z\*) Elevation of visual transition (NVGD): H + (distance to visual transition)

(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D

(I<sub>2</sub>) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
1.0		Silt	Black	soft	fine			
0.8								→ Top 0.2 S-06D-0213-00-02
0.0		clay w/wood chip	gray	firm	fine			S-06D-0213-02-06 (Archive)

File ID of digital photograph(s):

Comments:

\* Recovery of first core was questionable. Held 1st core and collected a second. Recovery and results similar, so kept 1st and discarded 2nd.



<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>				Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel: <b>CR environmental skiff</b>			
		Client: <b>USACE NAE</b>		Chief Scientist: <b>Alex Mansfield</b>			

Station ID:	<b>L20</b>	Time On Station:	<b>1040</b>	All measurements are $\pm 0.1$ feet	
Core Sample ID:	<b>S-06D-020-00-2.2*</b>	Northing (NAD 83):	<b>2706763</b>	Water Depth (A):	<b>3.7'</b>
Logged by:	<b>AM</b>	Easting (NAD 83):	<b>815715</b>	Length of push core assembly (B):	<b>7.9'</b>
Collection Mechanism:	<b>Push-Core</b>	GPS Accuracy:	<b>2.1</b>	Water surface to top of handle (C):	<b>2.5'</b>
Date:	<b>11-2-06</b>	Predicted Tide (ft):		Length of core (from bottom) (D):	<b>2.2'</b>
		Time of Collection:	<b>1051</b>	Surveyed elevation (NVGD 29) (E):	<b>-1.0'</b>
		Time Depart Station:	<b>1110</b>	Water surface from surveyed elevation (F):	<b>-</b>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<b>-1.0</b>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<b>-6.4'</b>
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<b>-5.4'</b>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<b>-4.2</b>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<b>-4.7</b>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (I.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
<b>2.2</b>								
<b>1.7</b>								
<b>1.0</b>								
<b>0.0</b>								
		<b>OL</b>	<b>Black</b>	<b>Soft</b>	<b>Fine</b>			<b>S-06D-020-07-12*</b>
		<b>STreaking - Blurred Transition</b>						
		<b>Clay gray / firm fine</b>						<b>S-06D-020-12-17</b>
								<b>(Archive)</b>

File ID of digital photograph(s):

Comments:

Sheen on water + core liner, slight oil odor

\*Dip collected

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>		Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel: <b>CR environmental skiff</b>	
		Client: <b>USACE NAE</b>		Chief Scientist: <b>Alex Mansfield</b>	
Station ID:	<b>L20</b>	Time On Station:	<b>1040</b>	All measurements are $\pm 0.1$ feet	
* Core Sample ID:	<b>S-06D-0620-00-22-DUP</b>	Northing (NAD 83):	<b>2706763</b>	Water Depth (A):	<b>3.7'</b>
Logged by:	<b>Am</b>	Easting (NAD 83):	<b>815715</b>	Length of push core assembly (B):	<b>7.9'</b>
Collection Mechanism:	<b>Push-Core</b>	GPS Accuracy:	<b>2.1</b>	Water surface to top of handle (C):	<b>2.0'</b>
Date:	<b>11-2-06</b>	Predicted Tide (ft):		Length of core (from bottom) (D):	<b>2.6'</b>
		Time of Collection:	<b>1056</b>	Surveyed elevation (NVGD 29) (E):	<b>-1.0'</b>
		Time Depart Station:	<b>1110</b>	Water surface from surveyed elevation (F):	

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD):  $E - F$

(H) Elevation of the bottom of the core (NVGD):  $G - (B - C)$

(Z\*) Elevation of visual transition (NVGD):  $H + (\text{distance to visual transition})$

(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD):  $H + D$

(I<sub>2</sub>) Elevation of the sediment-water interface as measured from water depth (NVGD):  $G - A$

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

$-1.0'$   
~~Wrong~~  $-6.8$   $-6.9$   
~~calc~~  $-5.5$   $-5.6$   
~~Am~~  $-4.3$   
~~46~~  $-4.7$

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
2.6		OL	Black	Soft	fine			<b>S-06D-0620-07-12-DUP</b>
1.3			Blurred	Transition				
		clay	olive gray	firm	fine			
0.0								

File ID of digital photograph(s):

Comments:

\* Although long core collected During Dup, retained same Sample ID to maintain linkage between original and Dup.





<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>			Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>			Vessel: <b>CR environmental skiff</b>	
		Client: <b>USACE NAE</b>			Chief Scientist: <b>Alex Mansfield</b>	

Station ID:	<u>Q21</u>	Time On Station:	<u>1216</u>	All measurements are $\pm 0.1$ feet	
Core Sample ID:	<u>S-06D-0Q21-00-11</u>	Northing (NAD 83):	<u>2706766.2</u>	Water Depth (A):	<u>2.3</u> <u>2.4</u> <u>2.1</u>
Logged by:	<u>MW</u>	Easting (NAD 83):	<u>815544.6</u>	Length of push core assembly (B):	<u>7.0</u> <u>7.0</u> <u>7.0</u>
Collection Mechanism:	<u>Push-Core</u>	GPS Accuracy:	<u>2.2</u>	Water surface to top of handle (C):	<u>2.1</u> <u>3.5</u> <u>3.0</u>
Date:	<u>11/2/06</u>	Predicted Tide (ft):		Length of core (from bottom) (D):	<u>1.1</u> <u>1.1</u> <u>1.1</u>
		Time of Collection:	<u>1220</u> <u>1224</u> <u>1233</u>	Surveyed elevation (NVGD 29) (E):	<u>-0.6</u> <u>-0.4</u> <u>-0.4</u>
		Time Depart Station:		Water surface from surveyed elevation (F):	<u>-</u>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD):  $E - F$

(H) Elevation of the bottom of the core (NVGD):  $G - (B - C)$

(Z\*) Elevation of visual transition (NVGD):  $H + (\text{distance to visual transition})$

(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD):  $H + D$

(I<sub>2</sub>) Elevation of the sediment-water interface as measured from water depth (NVGD):  $G - A$

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

1st / 2nd / 3rd

-0.6 / -0.4

-5.3 / -4.3

-4.8 / -3.8

-4.2 / -3.2

-2.9 / -2.9

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
<u>1.1</u>		<u>fine sand</u>	<u>off grey</u>	<u>sand</u>	<u>fine</u>			<u>well mixed</u>
<u>0.5</u>								<u>S-06D-0Q21-00-06</u>
<u>0.0</u>		<u>clay shells</u>	<u>gray</u>	<u>firm</u>	<u>fine/large</u>			<u>S-06D0Q21-06-11</u>
								<u>(Archive)</u>

File ID of digital photograph(s):

Comments:  
1st Attempt No Good - Shells deny penetration  
2nd Attempt No Good - Shells deny penetration  
3rd good



[illegible]



<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>		Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel: <b>CR environmental skiff</b>	
		Client: <b>USACE NAE</b>		Chief Scientist: <b>Alex Mansfield</b>	

Station ID:	<u>N14</u>	Time On Station:	<u>1432</u>	All measurements are $\pm 0.1$ feet	
Core Sample ID:	<u>S-06D-0N14-00-1A</u>	Northing (NAD 83):	<u>2706919.4</u>	Water Depth (A):	<u>5.4</u>   <u>5.4</u>
Logged by:	<u>MW</u>	Easting (NAD 83):	<u>815771.3</u>	Length of push core assembly (B):	<u>10.0</u>   <u>10.0</u>
Collection Mechanism:	<u>Push-Core</u>	GPS Accuracy:	<u>2.3</u>	Water surface to top of handle (C):	<u>2.4</u>   <u>2.4</u>
Date:	<u>11/2/06</u>	Predicted Tide (ft):		Length of core (from bottom) (D):	<u>1.2</u>
		Time of Collection:	<u>1435/1443</u>	Surveyed elevation (NVGD 29) (E):	<u>+1.5</u>   <u>+1.8</u>
		Time Depart Station:		Water surface from surveyed elevation (F):	<u>-</u>

Calculations for Determination of Z* Elevation	
(G) Elevation of Water Surface (NVGD): $E - F$	1st   2nd <u>+1.5</u>   <u>+1.5</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>-6.1</u>   <u>-5.6</u>
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<u>-5.2</u>   <u>-4.7</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>-4.9</u>   <u>-4.4</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>-3.9</u>   <u>-3.9</u>
(Note if I $\neq$ I <sub>2</sub> within $\pm 1.0$ feet, discard and resample)	

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
1.2		silt	gray	mixed	fine			mixed dredge material (resettled)  <b>Took Top 0.5'</b> <b>as only sample</b>  <b>S-06D-0N14-00-05</b>
0.9		sand	black	loose				
0.0		clay	gray	stiff	fine			

File ID of digital photograph(s):  
 Comments:  
strong odor and seen on core  
1st attempt no good  
2nd good

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>		Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel: <b>CR environmental skiff</b>	
		Client: <b>USACE NAE</b>		Chief Scientist: <b>Alex Mansfield</b>	

Station ID: <b>H24</b>	Time On Station: <b>0726</b>	All measurements are $\pm 0.1$ feet	
Core Sample ID: <b>S-06D-0424-06-33</b>	Northing (NAD 83): <b>2706728.1</b>	Water Depth (A): <b>3.3</b>	<b>3.2</b>
Logged by: <b>HW</b>	Easting (NAD 83): <b>815622.2</b>	Length of push core assembly (B): <b>8.0</b>	<b>9.0</b>
Collection Mechanism: <b>Push-Core</b>	GPS Accuracy: <b>1.5</b>	Water surface to top of handle (C): <b>1.4</b>	<b>1.4</b>
Date: <b>11/3/06</b>	Predicted Tide (ft): <b>1st 2nd 3rd</b>	Length of core (from bottom) (D): <b>*</b>	<b>3.3</b>
	Time of Collection: <b>0738/0739/0744/0748</b>	Surveyed elevation (NVGD 29) (E): <b>+1.7</b>	<b>+1.7</b>
	Time Depart Station: <b>0754</b>	Water surface from surveyed elevation (F): <b>-</b>	

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<b>+1.7</b>	<b>+1.7</b>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<b>-5.9</b>	<b>-4.6</b>
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<b>-4.8</b>	<b>-3.5</b>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<b>-2.6</b>	<b>-1.3</b>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<b>-1.3</b>	<b>-1.3</b>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
<b>00</b>								
<b>3.3</b>								
<b>2.7</b>		<b>silt</b>	<b>Black</b>	<b>loose</b>	<b>fine</b>			
		<b>fluff</b>	<b>Black</b>	<b>loose</b>	<b>fine</b>			
		<b>silt</b>	<b>Black</b>	<b>loose</b>	<b>fine</b>			
		<b>clay</b>	<b>Black/grey</b>	<b>stiff</b>	<b>fine</b>			
<b>22</b>								
<b>1.1</b>		<b>clay</b>	<b>Black/grey</b>	<b>stiff</b>	<b>fine</b>			
<b>0.0</b>								

File ID of digital photograph(s):  
 Comments:  
 1st Attempt core liner too short - overpneumated with 2' liner - All OL removed strong odor and sheen  
 2nd Attempt core liner too short - overpneumated with 3' liner - All OL removed  
 3rd Attempt accepted overpneumated

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>		Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel: <b>CR environmental skiff</b>	
		Client: <b>USACE NAE</b>		Chief Scientist: <b>Alex Mansfield</b>	

Station ID:	<b>625</b>	Time On Station:	<b>0901</b>	All measurements are $\pm 0.1$ feet	
Core Sample ID:	<b>S-06D-0625-00-14</b>	Northing (NAD 83):	<b>3706648.3</b>	Water Depth (A):	<b>3.5' 3.3' 3.5'</b>
Logged by:	<b>MY</b>	Easting (NAD 83):	<b>815581.7</b>	Length of push core assembly (B):	<b>6.9' 6.9' 6.9'</b>
Collection Mechanism:	<b>Push-Core</b>	GPS Accuracy:	<b>1.8</b>	Water surface to top of handle (C):	<b>2.5' 2.4' 1.7'</b>
Date:	<b>11/3/06</b>	Predicted Tide (ft):	<b>1st 2nd 3rd</b>	Length of core (from bottom) (D):	<b>1.4' 1.1'</b>
		Time of Collection:	<b>0905 0907 0914</b>	Surveyed elevation (NVGD 29) (E):	
		Time Depart Station:	<b>0930</b>	Water surface from surveyed elevation (F):	

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	+ 1.1
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	- 4.1
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	- 3.0
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	- 2.7
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	- 2.4

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
1.4		Silt	Blk	loose	fine			<div style="border-left: 2px solid black; padding-left: 10px; margin-left: 20px;">           Sand washed            from run off            throughout all            layers         </div> <div style="margin-top: 20px;"> <b>S-06D-0625-00-05</b>   <b>S-06D-0625-00-10</b>  <b>(Aerial)</b> </div>
1.1		sand	Blk		fine medium			
0.4		sand	gray					
0.0		clay	Blk	firm	fine			

File ID of digital photograph(s):  
 Comments:  
 1st Attempt no good (plunger too loose)  
 2nd Attempt no good (Hit soda can)  
 3rd Accepted - Sheen



<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>		Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel: <b>CR environmental skiff</b>	
		Client: <b>USACE NAE</b>		Chief Scientist: <b>Alex Mansfield</b>	

Station ID:	<b>E27</b>	Time On Station:	<b>0829</b>	All measurements are $\pm 0.1$ feet	
Core Sample ID:	<b>S-06D-0E27-00-12</b>	Northing (NAD 83):	<b>2706597</b>	Water Depth (A):	<b>3.2</b>
Logged by:	<b>AM</b>	Easting (NAD 83):	<b>015534</b>	Length of push core assembly (B):	<b>7.0'</b>
Collection Mechanism:	<b>Push-Core</b>	GPS Accuracy:	<b>1.8</b>	Water surface to top of handle (C):	<b>1.6'</b>
Date:	<b>11-3-06</b>	Predicted Tide (ft):		Length of core (from bottom) (D):	<b>1.2'</b>
		Time of Collection:	<b>0830</b>	Surveyed elevation (NVGD 29) (E):	<b>+0.7</b>
		Time Depart Station:	<b>0842</b>	Water surface from surveyed elevation (F):	<b>—</b>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>+ 0.7</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>- 4.7'</u>
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<u>- 3.6'</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>- 3.5'</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>- 2.5'</u>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (I.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
1.2								
1.1		silt	Black	soft	fine			Thin layer of silt/flocculent clay - streaking throughout core S-06D-0E27-00-05 S-06D-0E27-05-10 (Archive)
		clay	olive gray	firm	fine			
0.0								

File ID of digital photograph(s):  
 Comments:  

S-06D-0E27-00-05-MS  
 S-06D-0E27-00-05-MSD

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>			Project #: <b>G606422</b>		
		Location: <b>New Bedford, MA</b>			Vessel: <b>CR environmental skiff</b>		
		Client: <b>USACE NAE</b>			Chief Scientist: <b>Alex Mansfield</b>		

Station ID:	<b>C29</b>	Time On Station:	<b>0847</b>	All measurements are $\pm 0.1$ feet	
Core Sample ID:	<b>S-06D-0629-00-20</b>	Northing (NAD 83):	<b>2706540</b>	Water Depth (A):	<b>2.3</b>
Logged by:	<b>LM</b>	Easting (NAD 83):	<b>815494</b>	Length of push core assembly (B):	<b>8.0'</b>
Collection Mechanism:	<b>Push-Core</b>	GPS Accuracy:	<b>1.6</b>	Water surface to top of handle (C):	<b>3.7'</b>
Date:	<b>11-3-06</b>	Predicted Tide (ft):		Length of core (from bottom) (D):	<b>2.0'</b>
		Time of Collection:	<b>0853</b>	Surveyed elevation (NVGD 29) (E):	<b>+0.8'</b>
		Time Depart Station:	<b>0903</b>	Water surface from surveyed elevation (F):	<b>—</b>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	+0.2
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	-4.1
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	-3.1
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	-2.1
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	-2.1

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (I.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
2.0'		silt	Black	soft	fine			S-06D-0629-05-10*
1.0'		clay	olive gray	firm	fine			S-06D-0629-10-15
0.0'								

File ID of digital photograph(s):

Comments:  

\*MS/MSD

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>				Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel: <b>CR environmental skiff</b>			
		Client: <b>USACE NAE</b>		Chief Scientist: <b>Alex Mansfield</b>			

Station ID: <u>C41</u>	Time On Station: <u>0911</u>	All measurements are $\pm 0.1$ feet	
Core Sample ID: <u>S-06D-0041-00-24</u>	Northing (NAD 83): <u>2706253</u>	Water Depth (A): <u>3.0'</u>	
Logged by: <u>AM</u>	Easting (NAD 83): <u>015408</u>	Length of push core assembly (B): <u>7.9</u>	
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>2.2</u>	Water surface to top of handle (C): <u>2.5</u>	
Date: <u>11-3-06</u>	Predicted Tide (ft): _____	Length of core (from bottom) (D): <u>2.4</u>	
	Time of Collection: <u>0913</u>	Surveyed elevation (NVGD 29) (E): <u>0.0'</u>	
	Time Depart Station: <u>0920</u>	Water surface from surveyed elevation (F): _____	

**Calculations for Determination of Z' Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>0.0'</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>-5.4'</u>
(Z') Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<u>-3.9'</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>-3.0'</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>-3.2'</u>

(Note if  $I \neq I_2$  within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
2.4		OL	Black	Soft	fine			S-06D-0041-04-09 *
1.5		Buried Transition						
		clay	olive gray	firm	fine			S-06D-0041-09-14 (Archived)
0.0								

File ID of digital photograph(s): \_\_\_\_\_  
 Comments:  

Strong oil sheen + oil odor

\* Dup + Homologue S-06D-0041-04-09-DUP

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>				Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>				Vessel: <b>CR environmental skiff</b>	
		Client: <b>USACE NAE</b>				Chief Scientist: <b>Alex Mansfield</b>	

Station ID:	<u>C4</u>	<u>24</u>	Time On Station:	<u>0911</u>	All measurements are $\pm 0.1$ feet
Core Sample ID:	<u>S-06D-0C41-00-04-DUP</u>		Northing (NAD 83):	<u>2706253</u>	Water Depth (A): <u>2.9'</u>
Logged by:	<u>Am</u>		Easting (NAD 83):	<u>815488</u>	Length of push core assembly (B): <u>7.9'</u>
Collection Mechanism:	<u>Push-Core</u>		GPS Accuracy:	<u>2.2</u>	Water surface to top of handle (C): <u>2.5'</u>
Date:	<u>11-3-06</u>		Predicted Tide (ft):		Length of core (from bottom) (D): <u>2.6'</u>
			Time of Collection:	<u>0917</u>	Surveyed elevation (NVGD 29) (E): <u>-0.10</u>
			Time Depart Station:	<u>0920</u>	Water surface from surveyed elevation (F): <u>-</u>

**Calculations for Determination of Z' Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>-0.1'</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>-5.5'</u>
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<u>-4.0'</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>-2.9'</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>-3.0'</u>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
<u>2.6</u>								
<u>1.5</u>		OL	Black	Soft	fine			S-06D-0C41-04-09-DUP
<u>0.0</u>			olive clay/gray	firm	fine			

File ID of digital photograph(s):

Comments: Strong oil sheen + odor

<b>Battelle</b> The Business of Innovation		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>		Project #: <b>G606422</b>	
Location: <b>New Bedford, MA</b>		Vessel: <b>CR environmental skiff</b>		* 2nd	
Client: <b>USACE NAE</b>		Chief Scientist: <b>Alex Mansfield</b>		*	
Station ID: <b>M23</b>	Time On Station: <b>0928</b>	All measurements are $\pm 0.1$ feet		1st	
* Core Sample ID: <b>S-06D-DM23-02-15</b>	Northing (NAD 83): <b>2606680</b>	Water Depth (A): <b>2.5'</b>		2.4'	
Logged by: <b>DM</b>	Easting (NAD 83): <b>815744</b>	Length of push core assembly (B): <b>7.0'</b>		7.0'	
Collection Mechanism: <b>Push-Core</b>	GPS Accuracy: <b>2.3</b>	Water surface to top of handle (C): <b>3.0'</b>		2.7'	
Date: <b>11-3-06</b>	Predicted Tide (ft): <b>1.1T</b>	Length of core (from bottom) (D): <b>—</b>		1.5'	
	Time of Collection: <b>* 0930/0937</b>	Surveyed elevation (NVGD 29) (E): <b>—</b>		-0.2'	
	Time Depart Station: <b>0955</b>	Water surface from surveyed elevation (F): <b>—</b>			

#### Calculations for Determination of Z\* Elevation

(G) Elevation of Water Surface (NVGD): $E - F$	<b>-0.2</b>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<b>-4.5</b>
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<b>-4.0</b>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<b>-3.0</b>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<b>2.6</b>
(Note if I $\neq$ I <sub>2</sub> within $\pm 1.0$ feet, discard and resample)	

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
1.5		fluff w/ sand	black	soft	med			S-06D-DM23-05-10
0.5		clay	olive gray	firm	fine			S-06D-DM23-10-15 (Archan)
0.0								

File ID of digital photograph(s):

Comments:

\* 1st attempt did NOT recover sufficient material below Transition. 2nd attempt OK.

\*\* Dup collected

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <u>New Bedford Harbor Environmental Monitoring</u>		Project #: <u>G606422</u>	
		Location: <u>New Bedford, MA</u>		Vessel: <u>CR environmental skiff</u>	
		Client: <u>USACE NAE</u>		Chief Scientist: <u>Alex Mansfield</u>	
Station ID:	<u>M23</u>	Time On Station:	<u>0928</u>	All measurements are $\pm 0.1$ feet	
* Core Sample ID:	<u>S-06D-0M23-0D-15-DUP</u>	Northing (NAD 83):	<u>2706680</u>	Water Depth (A):	<u>2.2'</u>
Logged by:	<u>LM</u>	Easting (NAD 83):	<u>815744</u>	Length of push core assembly (B):	<u>7.0'</u>
Collection Mechanism:	<u>Push-Core</u>	GPS Accuracy:	<u>2.3</u>	Water surface to top of handle (C):	<u>2.3'</u>
Date:	<u>11/3/06</u>	Predicted Tide (ft):		Length of core (from bottom) (D):	<u>2.0'</u>
		Time of Collection:	<u>0945</u>	Surveyed elevation (NVGD 29) (E):	<u>-0.4'</u>
		Time Depart Station:	<u>0955</u>	Water surface from surveyed elevation (F):	<u>—</u>

**Calculations for Determination of Z\* Elevation**

- (G) Elevation of Water Surface (NVGD):  $E - F$
- (H) Elevation of the bottom of the core (NVGD):  $G - (B - C)$
- (Z\*) Elevation of visual transition (NVGD):  $H + (\text{distance to visual transition})$
- (I) Elevation of the sediment-water interface as measured from bottom of core (NVGD):  $H + D$
- (I<sub>2</sub>) Elevation of the sediment-water interface as measured from water depth (NVGD):  $G - A$
- (Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

-0.4'

-5.1'

-4.2'

-3.1'

-2.6'

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
2.0								
0.9		fluffy silt w/some sand	black	soft	med			S-06D-0M23-05-10-DUP
0.0		clay	drk gray	firm	fine			

File ID of digital photograph(s):

Comments:

\* Although core longer than 1st, kept same ID for Dup to maintain Original/Dup connection



<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>				Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel: <b>CR environmental skiff</b>		Chief Scientist: <b>Alex Mansfield</b>	
		Client: <b>USACE NAE</b>					

Station ID:	<u>H32</u>	Time On Station:	<u>1011</u>	All measurements are $\pm 0.1$ feet	
Core Sample ID:	<u>S-06D-0432-0015</u>	Northing (NAD 83):	<u>2706459</u>	Water Depth (A):	<u>3.3</u>
Logged by:	<u>Am</u>	Easting (NAD 83):	<u>815610</u>	Length of push core assembly (B):	<u>7.0'</u>
Collection Mechanism:	<u>Push-Core</u>	GPS Accuracy:	<u>1.6</u>	Water surface to top of handle (C):	<u>2.2'</u>
Date:	<u>11-3-06</u>	Predicted Tide (ft):		Length of core (from bottom) (D):	<u>1.5'</u>
		Time of Collection:	<u>1012</u>	Surveyed elevation (NVGD 29) (E):	<u>-0.7</u>
		Time Depart Station:	<u>1021</u>	Water surface from surveyed elevation (F):	<u>—</u>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>-0.7</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>-5.5</u>
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<u>-4.9</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>-4.0</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>-4.0</u>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
1.5		Organics mixed w/ clay	DK gray olive gray	firm fine				Organics mixed into native material due to disturbance (Debris removal?)
0.0								<u>S-06D-0432-0015</u> <u>S-06D-0432-0510</u> (Archive)

File ID of digital photograph(s):  
 Comments:





[illegible]

Battelle

The Business of Innovation

Project Name: New Bedford Harbor Environmental Monitoring

Location: New Bedford, MA

Client: USACE NAE

Project #: G606422

Vessel: CR environmental skiff

Chief Scientist: Alex Mansfield

Station ID: F36

Core Sample ID: S-06D-0F36-00-15

Logged by: MW

Collection Mechanism: Push-Core

Date: 11/3/06

Time On Station: 1102

Northing (NAD 83): 2706363.1

Easting (NAD 83): 815549.8

GPS Accuracy: 2.9

Predicted Tide (ft): 1st, 2nd

Time of Collection: 1106/1111

Time Depart Station: 1117

All measurements are  $\pm 0.1$  feet

Water Depth (A): 2.5' 2.8'

Length of push core assembly (B): 6.8' 7.0'

Water surface to top of handle (C): 1.6' 2.2'

Length of core (from bottom) (D): 1.5'

Surveyed elevation (NVGD 29) (E): -1.3

Water surface from surveyed elevation (F): -

Calculations for Determination of Z\* Elevation

(G) Elevation of Water Surface (NVGD): E - F

(H) Elevation of the bottom of the core (NVGD): G - (B - C)

(Z\*) Elevation of visual transition (NVGD): H + (distance to visual transition)

(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D

(I<sub>2</sub>) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

-1.3

-6.1'

-4.6'

-4.6'

-4.1'

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
1.5		Clay	olive gray	firm	fine			loose silt/flocc layers over clay
0.0								S-06D-0F36-00-05 S-06D-0F36-05-10 (Archive)

File ID of digital photograph(s):

Comments:

1st Attempt overpenetrated

2nd good

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>				Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel: <b>CR environmental skiff</b>			
		Client: <b>USACE NAE</b>		Chief Scientist: <b>Alex Mansfield</b>			

Station ID: <u>141</u>	Time On Station: <u>1122</u>	All measurements are $\pm 0.1$ feet	
Core Sample ID: <u>S-06D-0441-00-11</u>	Northing (NAD 83): <u>2706241</u>	Water Depth (A): <u>3.6'</u>	
Logged by: <u>AM</u>	Easting (NAD 83): <u>015624</u>	Length of push core assembly (B): <u>7.0'</u>	
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>2.2</u>	Water surface to top of handle (C): <u>2.3'</u>	
Date: <u>11-3-06</u>	Predicted Tide (ft): <u>1124</u>	Length of core (from bottom) (D): <u>1.1'</u>	
	Time of Collection: <u>1131</u>	Surveyed elevation (NVGD 29) (E): <u>-1.5</u>	
	Time Depart Station: <u>1131</u>	Water surface from surveyed elevation (F): <u></u>	

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>-1.5</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>-6.2'</u>
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<u>-5.3'</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>-5.1'</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>-5.1'</u>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
1.1								
0.9		OL	Black	soft	fine			S-06D-0441-00-05
0.0		clay	dr. grey	firm	fine			S-06D-0441-05-10 (Archive)

File ID of digital photograph(s):  
 Comments: Sheen on outside of core

[illegible]

[illegible]

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>			Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>			Vessel: <b>CR environmental skiff</b>	
		Client: <b>USACE NAE</b>			Chief Scientist: <b>Alex Mansfield</b>	

Station ID:	<u>D36</u>	Time On Station:	<u>0822</u>	All measurements are $\pm 0.1$ feet	
Core Sample ID:	<u>S-06D-0D36-00-27</u>	Northing (NAD 83):	<u>2706356</u>	Water Depth (A):	<u>6.6</u>
Logged by:	<u>LM</u>	Easting (NAD 83):	<u>815515</u>	Length of push core assembly (B):	<u>11.0</u>
Collection Mechanism:	<u>Push-Core</u>	GPS Accuracy:	<u>1.9</u>	Water surface to top of handle (C):	<u>0.8</u>
Date:	<u>11/7/06</u>	Predicted Tide (ft):		Length of core (from bottom) (D):	<u>2.75</u>
		Time of Collection:	<u>0824</u>	Surveyed elevation (NVGD 29) (E):	<u>3.9 water level</u>
		Time Depart Station:		Water surface from surveyed elevation (F):	<u>—</u>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>3.9</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>-6.3</u>
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<u>-4.0</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>-3.6</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>-2.7</u>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (I.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
2.7		Silt	Black	soft	fine		S-06D-0D36-00-05	
2.3		Fine Sand						
0.0		clay	olive grey	firm	fine		S-06D-0D36-05-10 (ARCHIVE)	

File ID of digital photograph(s):  
 Comments:  

Strong sheen + Odor

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>				Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>				Vessel: <b>CR environmental skiff</b>	
		Client: <b>USACE NAE</b>				Chief Scientist: <b>Alex Mansfield</b>	

Station ID:	<b>B32</b>	Time On Station:	<b>0842</b>	All measurements are $\pm 0.1$ feet	
Core Sample ID:	<b>S-06D-0B32-00-20</b>	Northing (NAD 83):	<b>2706478</b>	Water Depth (A):	<b>6.1'</b>
Logged by:	<b>Am</b>	Easting (NAD 83):	<b>815468</b>	Length of push core assembly (B):	<b>9.0'</b>
Collection Mechanism:	<b>Push-Core</b>	GPS Accuracy:	<b>2.2</b>	Water surface to top of handle (C):	<b>0.8</b>
Date:	<b>11/7/06</b>	Predicted Tide (ft):		Length of core (from bottom) (D):	<b>2.0'</b>
		Time of Collection:	<b>0844</b>	Surveyed elevation (NVGD 29) (E):	<b>4.0 water elev.</b>
		Time Depart Station:	<b>0907</b>	Water surface from surveyed elevation (F):	

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	_____
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	- 4.20
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	- 3.20
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	- 2.20
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	- 2.10

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
2.0							①	S-06D-0B32-00-05 <del>S-06D-0B32-05-10</del>
1.0								S-06D-0B32-10-15 (Archive)
0.0								

File ID of digital photograph(s): \_\_\_\_\_  
 Comments:  
 ① NOTE: Sample ID labelled incorrectly on Jcr and COC. Not identified until data in database. Changing ID to maintain consistency with everything else. Am 1/8/07





<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>		Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel: <b>CR environmental skiff</b>	
Client: <b>USACE NAE</b>		Chief Scientist: <b>Alex Mansfield</b>			

Station ID: <b>E30</b>	Time On Station: <b>0930</b>	All measurements are $\pm 0.1$ feet
Core Sample ID: <b>S-06D-0E30-00-25</b>	Northing (NAD 83): <b>2706502</b>	Water Depth (A): <b>8.2'</b>
Logged by: <b>km</b>	Easting (NAD 83): <b>815541</b>	Length of push core assembly (B): <b>11.9'</b>
Collection Mechanism: <b>Push-Core</b>	GPS Accuracy: <b>2.4</b>	Water surface to top of handle (C): <b>1.2'</b>
Date: <b>11-7-06</b>	Predicted Tide (ft):	Length of core (from bottom) (D): <b>2.5'</b>
	Time of Collection: <b>0932</b>	Surveyed elevation (NVGD 29) (E): <b>+3.8'</b>
	Time Depart Station: <b>0945</b>	Water surface from surveyed elevation (F):

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): **E - F**

**+3.8**

(H) Elevation of the bottom of the core (NVGD): **G - (B - C)**

**-6.9'**

(Z\*) Elevation of visual transition (NVGD): **H + (distance to visual transition)**

**-4.9'**

(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): **H + D**

**-4.4'**

(I<sub>2</sub>) Elevation of the sediment-water interface as measured from water depth (NVGD): **G - A**

**-4.4'**

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
<b>2.5'</b>		<b>OL</b>	<b>Black</b>	<b>Soft</b>	<b>fine</b>			
<b>2.0'</b>		<b>Blurred Transition</b>						<b>S-06D-0E30-00-25*</b>
		<b>clay</b>	<b>olive gray</b>	<b>firm</b>	<b>fine</b>			<b>S-06D-0E30-05-10</b>
								<b>(ARCHIVE)</b>
<b>0.0'</b>		<b>PEAT</b>						

File ID of digital photograph(s):

Comments:

**Strong H<sub>2</sub>S odor**

**\* Homologue**

Station ID: <u>N28</u>	Time On Station: <u>0955</u>	All measurements are $\pm 0.1$ feet
Core Sample ID: <u>S-06D-0N28-00-19</u>	Northing (NAD 83): <u>2706575</u>	Water Depth (A): <u>8.5</u>
Logged by: <u>AM</u>	Easting (NAD 83): <u>816775</u>	Length of push core assembly (B): <u>10.5</u>
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>2.5</u>	Water surface to top of handle (C): <u>0.0</u>
Date: <u>11/7/06</u>	Predicted Tide (ft): <u></u>	Length of core (from bottom) (D): <u>1.9</u>
	Time of Collection: <u>0957</u>	Surveyed elevation (NVGD 29) (E): <u>3.5 w/vel.</u>
	Time Depart Station: <u>1005</u>	Water surface from surveyed elevation (F): <u></u>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>+3.5</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>-7.0</u>
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<u>-6.4</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>-5.1</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>-5.0</u>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
1.9								Lost Top 0.3'
0.6		Silt	Black	soft	fine			
0.0		clay	olive grey	firm	fine			
							S-06D-0N28-08-13	
							S-06D-0N28-13-18	(ARCHIVE)

File ID of digital photograph(s):

Comments:

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <u>New Bedford Harbor Environmental Monitoring</u>		Project #: <u>G606422</u>	
		Location: <u>New Bedford, MA</u>		Vessel: <u>CR environmental skiff</u>	
		Client: <u>USACE NAE</u>		Chief Scientist: <u>Alex Mansfield</u>	

Station ID: <u>V28</u>	Time On Station: <u>1014</u>	All measurements are ±0.1 feet
Core Sample ID: <u>S-06D-0128-00-16</u>	Northing (NAD 83): <u>815974</u>	Water Depth (A): <u>8.6</u>
Logged by: <u>AM</u>	Easting (NAD 83): <u>727065</u>	Length of push core assembly (B): <u>10.5</u>
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>2.1</u>	Water surface to top of handle (C): <u>0.0</u>
Date: <u>11/7/06</u>	Predicted Tide (ft): <u>1016</u>	Length of core (from bottom) (D): <u>1.6</u>
	Time of Collection: <u>1020</u>	Surveyed elevation (NVGD 29) (E): <u>3.1 water lev</u>
	Time Depart Station: <u>1020</u>	Water surface from surveyed elevation (F): <u>—</u>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD):  $E - F$  3.1

(H) Elevation of the bottom of the core (NVGD):  $G - (B - C)$  -7.40

(z\*) Elevation of visual transition (NVGD):  $H + (\text{distance to visual transition})$  -6.50

(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD):  $H + D$  -5.8

(I<sub>2</sub>) Elevation of the sediment-water interface as measured from water depth (NVGD):  $G - A$  3.1 - 8.6 = -5.5

(Note if I ≠ I<sub>2</sub> within ± 1.0 feet, discard and resample)

Elevation (NVGD) (I.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
1.6		Silt	Black	Soft	fine			
0.9								Blurred Transition
0.0		clay	olive grey	Firm	fine			S-06D-0128-07-12 (Archive)

File ID of digital photograph(s):

Comments:

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>		Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel: <b>CR environmental skiff</b>	
		Client: <b>USACE NAE</b>		Chief Scientist: <b>Alex Mansfield</b>	

Station ID: <u>V39</u>	Time On Station: <u>1028</u>	All measurements are $\pm 0.1$ feet
Core Sample ID: <u>S-06D-0V39-00-08</u>	Northing (NAD 83): <u>2706301</u>	Water Depth (A): <u>6.6</u>
Logged by: <u>Am</u>	Easting (NAD 83): <u>815974</u>	Length of push core assembly (B): <u>10.0</u>
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>2.9</u>	Water surface to top of handle (C): <u>2.5</u>
Date: <u>11/7/06</u>	Predicted Tide (ft): _____	Length of core (from bottom) (D): <u>2.5' 0.8'</u>
	Time of Collection: <u>1032</u>	Surveyed elevation (NVGD 29) (E): <u>2.9' water d.v.</u>
	Time Depart Station: <u>1035</u>	Water surface from surveyed elevation (F): _____

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	+2.9'
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	-4.60
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	-4.00
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	-3.80
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	-3.70

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (I.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
0.8		Silt	Black	soft	fine			S-06D-0V39-00-05*
0.6		clay	olive gray	firm	fine			
0.0		Hard Bottom (shells?)						
								S-06D NA Not enough volume for Archive

File ID of digital photograph(s): \_\_\_\_\_  
 Comments:  
 \* GS, TOC, PCB

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>			Project #: <b>G606422</b>		
		Location: <b>New Bedford, MA</b>			Vessel: <b>CR environmental skiff</b>		
		Client: <b>USACE NAE</b>			Chief Scientist: <b>Alex Mansfield</b>		

Station ID:	<u>N40</u>	Time On Station:	<u>10.50</u>	All measurements are $\pm 0.1$ feet	
Core Sample ID:	<u>S-06D-0N40-00-25</u>	Northing (NAD 83):	<u>2706276</u>	Water Depth (A):	<u>5.9'</u>
Logged by:	<u>AW</u>	Easting (NAD 83):	<u>815775</u>	Length of push core assembly (B):	<u>11.0</u>
Collection Mechanism:	<u>Push Core</u>	GPS Accuracy:	<u>2.7</u>	Water surface to top of handle (C):	<u>2.2</u>
Date:	<u>11/7/06</u>	Predicted Tide (ft):		Length of core (from bottom) (D):	<u>2.5</u>
		Time of Collection:	<u>10.53</u>	Surveyed elevation (NVGD 29) (E):	<u>2.4 water elv</u>
		Time Depart Station:	<u>10.55</u>	Water surface from surveyed elevation (F):	<u>—</u>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>+2.4</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>-6.4</u>
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<u>-5.1</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>2.5</u> <u>-3.9</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>-3.5</u>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
0.0								
2.5		silt	black	soft	fine			S-06D-0N40-07-12
1.2		clay	olive grey	firm	fine			S-06D-0N40-12-17
1.3								
0.0								

File ID of digital photograph(s):  
 Comments:

[illegible]

<b>Battelle</b> <small>The Business of Innovation</small>			Project Name: <b>New Bedford Harbor Environmental Monitoring</b>			Project #: <b>G606422</b>		
Location: <b>New Bedford, MA</b>			Client: <b>USACE NAE</b>			Vessel: <b>CR environmental skiff</b>		
						Chief Scientist: <b>Alex Mansfield</b>		

Station ID:	<b>F58</b>	Time On Station:	<b>0936</b>	All measurements are ±0.1 feet	
Core Sample ID:	<b>S-06D-0F58-00-19</b>	Northing (NAD 83):	<b>2705882.1</b>	Water Depth (A):	<b>9.2'</b>
Logged by:	<b>MV</b>	Easting (NAD 83):	<b>815575.1</b>	Length of push core assembly (B):	<b>13'</b>
Collection Mechanism:	<b>Push-Core</b>	GPS Accuracy:	<b>2.7</b>	Water surface to top of handle (C):	<b>1.8'</b>
Date:	<b>11/8/06</b>	Predicted Tide (ft):	<b>1st, mid</b>	Length of core (from bottom) (D):	<b>1.8'</b>
		Time of Collection:	<b>0941/0947</b>	Surveyed elevation (NVGD 29) (E):	<b>+3.9</b>
		Time Depart Station:	<b>0956</b>	Water surface from surveyed elevation (F):	<b>-</b>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): E - F	<b>+3.9</b>
(H) Elevation of the bottom of the core (NVGD): G - (B - C)	<b>-7.7</b>
(Z*) Elevation of visual transition (NVGD): H + (distance to visual transition)	<b>-6.3</b>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D	<b>-5.9</b>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A	<b>-5.2</b>

(Note if I ≠ I<sub>2</sub> within ± 1.0 feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
~1.8		silt	Black	foose	fine			S-06D-0F58-00-05
~1.4		clay silt	Dark olive gray	firm	fine			Clay layer well mixed below Transition
~0.0								S-06D-0F58-05-00 (Archive)

File ID of digital photograph(s):

Comments:  
 1st Attempt - could not reach clay layer - slight sheen on core - strong H<sub>2</sub>S odor  
 2nd Attempt - good - sheen on core



[illegible]

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>		Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel: <b>CR environmental skiff</b>	
Client: <b>USACE NAE</b>		Chief Scientist: <b>Alex Mansfield</b>			

Station ID: <b>K50</b>	Time On Station: <b>1022</b>	All measurements are $\pm 0.1$ feet
Core Sample ID: <b>S-06D-0K50-00-11</b>	Northing (NAD 83): <b>7706083.1</b>	Water Depth (A): <b>8.5'</b>
Logged by: <b>MW</b>	Easting (NAD 83): <b>815699.6</b>	Length of push core assembly (B): <b>13.6'</b>
Collection Mechanism: <b>Push-Core</b>	GPS Accuracy: <b>2.0</b>	Water surface to top of handle (C): <b>2.6'</b>
Date: <b>11/8/06</b>	Predicted Tide (ft):	Length of core (from bottom) (D): <b>1.1'</b>
	Time of Collection: <b>1023</b>	Surveyed elevation (NVGD 29) (E): <b>+3.9</b>
	Time Depart Station: <b>1031</b>	Water surface from surveyed elevation (F): <b>-</b>

Calculations for Determination of Z* Elevation	
(G) Elevation of Water Surface (NVGD): $E - F$	<b>+3.9</b>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<b>-6.5</b>
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<b>-5.9</b>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<b>-5.4</b>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<b>-4.6</b>
(Note if I $\neq$ I <sub>2</sub> within $\pm 1.0$ feet, discard and resample)	

Elevation (NVGD) (I.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
<div style="position: relative; height: 100px;"> <div style="position: absolute; top: 0; left: 0; right: 0; border-bottom: 1px solid black;"></div> <div style="position: absolute; top: 20%; left: 0; right: 0; border-bottom: 1px solid black;"></div> <div style="position: absolute; top: 40%; left: 0; right: 0; border-bottom: 1px solid black;"></div> <div style="position: absolute; top: 60%; left: 0; right: 0; border-bottom: 1px solid black;"></div> <div style="position: absolute; top: 80%; left: 0; right: 0; border-bottom: 1px solid black;"></div> </div>		Clay	gray	firm	fine			Clay throughout with some sand Thin flock on Top Took only Top 0.5 As sample NA, MW (no Archive) S-06D-0K50-00-05 S-06D-0K50-05-10 Archive

File ID of digital photograph(s):  
 Comments:

[illegible]

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# **VOC Core Characterization Logs**

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<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>				Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel: <b>CR environmental skiff</b>		Chief Scientist: <b>Alex Mansfield</b>	
		Client: <b>USACE NAE</b>					

Station ID: <u>08 (VOC)</u>	Time On Station: <u>1635</u>	All measurements are $\pm 0.1$ feet
Core Sample ID: <u>See below</u>	Northing (NAD 83): <u>* 2706956</u>	Water Depth (A): <u>3.5</u>
Logged by: <u>AM</u>	Easting (NAD 83): <u>815635</u>	Length of push core assembly (B): <u>/</u>
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>3.5</u>	Water surface to top of handle (C): <u>/</u>
Date: <u>10/2/06</u>	Predicted Tide (ft): <u></u>	Length of core (from bottom) (D): <u>3.0</u>
Revised Station ID: <u>08100206</u>	Time of Collection: <u>1640</u>	Surveyed elevation (NVGD 29) (E): <u>4.0</u>
	Time Depart Station: <u>1702</u>	Water surface from surveyed elevation (F): <u>1.2</u>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	+ 2.8
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	- 3.7
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	- 2.6
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	- 0.7
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

2.8

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
3.5								
-0.7								
-1.2								S-06C-0008-T
1.9'								
~ Transition approx @ -2.6								
Total								
-3.2								S-06C-0008-B
3.0'								

File ID of digital photograph(s):  
 Comments:  

\* As far east as possible (against wire ~8' from shore)

Bottom vs Top are distinct OL + OH, BUT Transition is Blurred. Top sample ~0.5' from Top Bottom ~0.5' from Bottom

Battelle The Business of Innovation		Project Name: New Bedford Harbor Environmental Monitoring Location: New Bedford, MA Client: USACE NAE		Project #: G606422 Vessel: CR environmental skiff Chief Scientist: Alex Mansfield				
Station ID:	05(VOC)	Time On Station:	1704	All measurements are ±0.1 feet				
Core Sample ID:	See below	Northing (NAD 83):	X 2707047	Water Depth (A):	4.4			
Logged by:	DM	Easting (NAD 83):	815649	Length of push core assembly (B):	/			
Collection Mechanism:	Push-Core	GPS Accuracy:	2.6	Water surface to top of handle (C):	/			
Date:	10/2/06	Predicted Tide (ft):	/	Length of core (from bottom) (D):	1.6			
Revised Station ID:	05100206	Time of Collection:	17:10	Surveyed elevation (NVGD 29) (E):	4.0			
		Time Depart Station:	17:30	Water surface from surveyed elevation (F):	1.4			
Calculations for Determination of Z* Elevation								
(G) Elevation of Water Surface (NVGD): E - F	+2.6							
(H) Elevation of the bottom of the core (NVGD): G - (B - C)	-3.4							
(Z*) Elevation of visual transition (NVGD): H + (distance to visual transition)	-2.7							
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D								
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A	-1.8							
(Note if I ≠ I <sub>2</sub> within ± 1.0 feet, discard and resample) 2.6								
Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
4.4								S-06C-0005-T
-1.8								S-06C-0005-T-M S
-2.3 *		OL						S-06C-0005-T-M SI
-2.7 ~								S-06C-0005-T-DUP
-2.9 *		OH						
		gravel						S-06C-0005-B
File ID of digital photograph(s):								
Comments: * AS far west as poss. ble (wire) ~20' East of Target								



<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>		Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel: <b>CR environmental skiff</b>	
		Client: <b>USACE NAE</b>		Chief Scientist: <b>Alex Mansfield</b>	

Station ID: <u>16 (100)</u>	Time On Station: <u>1040</u>	All measurements are ±0.1 feet	
Core Sample ID: <u>See below</u>	Northing (NAD 83): <u>2706752</u>	Water Depth (A): <u>3.25</u>	
Logged by: <u>Am</u>	Easting (NAD 83): <u>815725</u>	Length of push core assembly (B): <u>✓</u>	
Collection Mechanism: <u>Push Core</u>	GPS Accuracy: <u>1.63</u>	Water surface to top of handle (C): <u>✓</u>	
Date: <u>10/2/06</u>	Predicted Tide (ft): <u>✓</u>	Length of core (from bottom) (D): <u>2.7</u>	
Revised Station ID: <u>16 100106</u>	Time of Collection: <u>1056</u>	Surveyed elevation (NVGD 29) (E): <u>4.0</u>	
	Time Depart Station: <u>1118</u>	Water surface from surveyed elevation (F): <u>-4.05</u>	

**Calculations for Determination of Z' Elevation**

(G) Elevation of Water Surface (NVGD):  $E - F$  -0.05

(H) Elevation of the bottom of the core (NVGD):  $G - (B - C)$  -6.0

(Z') Elevation of visual transition (NVGD):  $H + (\text{distance to visual transition})$  -1.25 - 4.50 **AM** 10/2

(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD):  $H + D$

(I<sub>2</sub>) Elevation of the sediment-water interface as measured from water depth (NVGD):  $G - A$  -3.3

(Note if I ≠ I<sub>2</sub> within ± 1.0 feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
<u>-0.05</u> <u>-3.25</u> <u>-3.30</u> ↑ 1.2 <u>-4.3</u> * ↓ <u>-4.5</u> * ↑ 1.5 <u>-4.7</u>		OL						S-06C-0016-T
		gray clay						S-06C-0016-B

File ID of digital photograph(s):  
 Comments:

<b>Battelle</b> <i>The Business of Innovation</i>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>		Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel: <b>CR environmental skiff</b>	
		Client: <b>USACE NAE</b>		Chief Scientist: <b>Alex Mansfield</b>	

Station ID: <u>13 (voc)</u>	Time On Station: <u>1127</u>	All measurements are $\pm 0.1$ feet	
Core Sample ID: <u>See below</u>	Northing (NAD 83): <u>2706851</u>	Water Depth (A): <u>3.1'</u>	
Logged by: <u>AM</u>	Easting (NAD 83): <u>815729</u>	Length of push core assembly (B): <u>/</u>	
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>2.5'</u>	Water surface to top of handle (C): <u>/</u>	
Date: <u>10/2/06</u>	Predicted Tide (ft): <u></u>	Length of core (from bottom) (D): <u>2.4</u>	
Revised Station ID: <u>1310206</u>	Time of Collection: <u>1135</u>	Surveyed elevation (NVGD 29) (E): <u>4.0</u>	
	Time Depart Station: <u>1142</u>	Water surface from surveyed elevation (F): <u>4.1</u>	

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	-0.1
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	-5.6
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	-4.2
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	-
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	-3.2

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

-0.1

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-3.1'								
-3.2								
-3.7			ol	Black				S-06C-0013-T
-4.2								
-4.4			clay	gray				S-06C-0013-B

File ID of digital photograph(s):  
 Comments:

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b> Location: <b>New Bedford, MA</b> Client: <b>USACE NAE</b>			Project #: <b>G606422</b> Vessel: <b>CR environmental skiff</b> Chief Scientist: <b>Alex Mansfield</b>		
Station ID:	<u>10 (VOC)</u>	Time On Station:	<u>1147</u>	All measurements are $\pm 0.1$ feet			
Core Sample ID:	<u>See below</u>	Northing (NAD 83):	<u>2706951</u>	Water Depth (A):	<u>2.85</u>		
Logged by:	<u>pm</u>	Easting (NAD 83):	<u>815725</u>	Length of push core assembly (B):	<u>✓</u>		
Collection Mechanism:	<u>Push-Core</u>	GPS Accuracy:	<u>1.9</u>	Water surface to top of handle (C):	<u>✓</u>		
Date:	<u>10/2/06</u>	Predicted Tide (ft):	<u>1152</u>	Length of core (from bottom) (D):	<u>3.3</u>		
Revised Station ID:	<u>10100206</u>	Time of Collection:	<u>1202</u>	Surveyed elevation (NVGD 29) (E):	<u>4.0</u>		
		Time Depart Station:	<u>1202</u>	Water surface from surveyed elevation (F):	<u>3.9</u>		

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>0.10</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>-6.05</u>
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<u>-3.75</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>✓</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>-2.75</u>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

+0.1

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
<u>2.85</u>  <u>-2.75</u>  <u>1.0'</u> <u>-3.3</u> * <u>① -3.75</u>  <u>4.0</u> *		<u>OL</u>						<u>S-06C-0010-T</u>
		<u>DK grey</u>						<u>S-06C-0010-B</u>  <u>Somewhat Darker, Softer,</u> <u>Wetter Than OH Typically</u> <u>experienced in underlying</u> <u>layer</u>

File ID of digital photograph(s):  
 Comments: ① 2.5' less overlying sed. than expected.

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>				Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>				Vessel: <b>CR environmental skiff</b>	
		Client: <b>USACE NAE</b>				Chief Scientist: <b>Alex Mansfield</b>	

Station ID: <u>07(VOC)</u>	Time On Station: <u>1205</u>	All measurements are $\pm 0.1$ feet
Core Sample ID: <u>5m below</u>	Northing (NAD 83): <u>2707049</u>	Water Depth (A): <u>3.5</u>
Logged by: <u>dm</u>	Easting (NAD 83): <u>815726</u>	Length of push core assembly (B): <u>/</u>
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>1.72</u>	Water surface to top of handle (C): <u>/</u>
Date: <u>10/2/06</u>	Predicted Tide (ft): <u>/</u>	Length of core (from bottom) (D): <u>2.7</u>
Revised Station ID: <u>07100206</u>	Time of Collection: <u>1210</u>	Surveyed elevation (NVGD 29) (E): <u>4.0</u>
	Time Depart Station: <u>1219</u>	Water surface from surveyed elevation (F): <u>-3.8</u>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>0.2</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>-6.0</u>
(z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<u>-4.8</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>/</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>-3.3</u>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

+0.2

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-3.5								
-3.3								
-1.5'		OL						S-06C-0007-T
-4.0 *								
-4.8								
-5.0 *		OH						S-06C-0007-B

File ID of digital photograph(s):  
 Comments:

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>				Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel: <b>CR environmental skiff</b>		Chief Scientist: <b>Alex Mansfield</b>	
		Client: <b>USACE NAE</b>					

Station ID: <u>04(VOC)</u>	Time On Station: <u>1224</u>	All measurements are $\pm 0.1$ feet
Core Sample ID: <u>See below</u>	Northing (NAD 83): <u>2707149</u>	Water Depth (A): <u>3.4</u>
Logged by: <u>AM</u>	Easting (NAD 83): <u>815726</u>	Length of push core assembly (B): <u>/</u>
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>25</u>	Water surface to top of handle (C): <u>/</u>
Date: <u>10/2/06</u>	Predicted Tide (ft): <u>/</u>	Length of core (from bottom) (D): <u>2.6</u>
Revised Station ID: <u>04100206</u>	Time of Collection: <u>1235</u>	Surveyed elevation (NVGD 29) (E): <u>-4.0</u>
	Time Depart Station: <u>1241</u>	Water surface from surveyed elevation (F): <u>3.5</u>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	0.50
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	-5.5
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	-4.5
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	/
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	-2.9
(Note if I $\neq$ I <sub>2</sub> within $\pm 1.0$ feet, discard and resample)	
0.5	

Elevation (NVGD) (I.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-3.4								
-2.9								
-1.6								S-06C-0004-T
-3.7 *								
-4.5								
-4.8 *								S-06C-0004-B

File ID of digital photograph(s):  
 Comments:

[illegible]

Battelle

The Business of Innovation

Project Name: New Bedford Harbor Environmental Monitoring

Location: New Bedford, MA

Client: USACE NAE

Project #: G606422

Vessel: CR environmental skiff

Chief Scientist: Alex Mansfield

Station ID: 011(VOC)

Core Sample ID: See below

Logged by: am

Collection Mechanism: Push-Core

Date: 10/2/06

Time On Station: 1301

Northing (NAD 83): 2707248

Easting (NAD 83): 815684

GPS Accuracy: 2.9'

Predicted Tide (ft):

Time of Collection: 1302

Time Depart Station: 1317

All measurements are  $\pm 0.1$  feet

Water Depth (A): 2.0'

Length of push core assembly (B):

Water surface to top of handle (C):

Length of core (from bottom) (D): 3.0

Surveyed elevation (NVGD 29) (E): 4.0

Water surface from surveyed elevation (F): 3.05

Revised Station ID: 01100206

Calculations for Determination of Z\* Elevation

(G) Elevation of Water Surface (NVGD): E - F

(H) Elevation of the bottom of the core (NVGD): G - (B - C)

(Z\*) Elevation of visual transition (NVGD): H + (distance to visual transition)

(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D

(I<sub>2</sub>) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

0.95

-4.05

-2.55

-1.05

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
-2.0								
-1.05								
-1.3*		Silt	DK. BROWN					S-06C-0001-T
0.25'		clay/silt	Brown			H <sub>2</sub> S		
1.25'		Sand						
-2.55								
-2.75*		clay	olive grey + shells					S-06C-0001-B

File ID of digital photograph(s):

Comments: \* AT Dredge wire, 27' east of target

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>				Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>				Vessel: <b>CR environmental skiff</b>	
		Client: <b>USACE NAE</b>				Chief Scientist: <b>Alex Mansfield</b>	

Station ID: <u>03(VOC)</u>	Time On Station: <u>1320</u>	All measurements are $\pm 0.1$ feet
Core Sample ID: <u>See below</u>	Northing (NAD 83): <u>270749</u>	Water Depth (A): <u>1.5'</u>
Logged by: <u>AW</u>	Easting (NAD 83): <u>815669</u>	Length of push core assembly (B): <u>/</u>
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>3.2</u>	Water surface to top of handle (C): <u>/</u>
Date: <u>10/2/06</u>	Predicted Tide (ft): <u>/</u>	Length of core (from bottom) (D): <u>3.0</u>
	Time of Collection: <u>1325</u>	Surveyed elevation (NVGD 29) (E): <u>4.0</u>
	Time Depart Station: <u>1336</u>	Water surface from surveyed elevation (F): <u>3.0</u>

Revised Station ID: 03100206

Calculations for Determination of Z* Elevation	
(G) Elevation of Water Surface (NVGD): E - F	+1.0
(H) Elevation of the bottom of the core (NVGD): G - (B - C)	-3.5
(Z*) Elevation of visual transition (NVGD): H + (distance to visual transition)	-1.75
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D	-
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A	-0.5
(Note if I $\neq$ I <sub>2</sub> within $\pm 1.0$ feet, discard and resample)	
+1.0	-1

Elevation (NVGD) (I.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
1.5								
-0.5								
-1.2 * 1.25'		silt + clay	DK grey	ST. ff + Cohesive		H <sub>2</sub> S		S-06C-0003-T
-1.75								
-2.1 *		clay	grey	ST. ff + Cohesive				S-06C-0003-B

File ID of digital photograph(s):

Comments: ON edge of River Sediment smells of H<sub>2</sub>S but NOT organics



<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>				Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>				Vessel: <b>CR environmental skiff</b>	
		Client: <b>USACE NAE</b>				Chief Scientist: <b>Alex Mansfield</b>	

Station ID: <u>06 (VOC)</u>	Time On Station: <u>1340</u>	All measurements are $\pm 0.1$ feet
Core Sample ID: <u>See below</u>	Northing (NAD 83): <u>* 2707043</u>	Water Depth (A): <u>2.4'</u>
Logged by: <u>lm</u>	Easting (NAD 83): <u>815675</u>	Length of push core assembly (B): <u>/</u>
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>2.1</u>	Water surface to top of handle (C): <u>/</u>
Date: <u>10/2/06</u>	Predicted Tide (ft): <u>/</u>	Length of core (from bottom) (D): <u>3.8</u>
	Time of Collection: <u>1351</u>	Surveyed elevation (NVGD 29) (E): <u>4.0</u>
	Time Depart Station: <u>1400</u>	Water surface from surveyed elevation (F): <u>-2.6</u>

Revised Station ID: 06100206

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>+ 1.4</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>- 4.8</u>
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<u>- 2.5</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>/</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>- 1.0</u>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

+ 1.4

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
<u>-2.4</u>								
<u>-1.0</u>								
<u>-1.5</u>		<u>OL</u>	<u>Black</u>	<u>Soft</u>				<u>S-06C-0006-T</u>
<u>-1.8</u>	<u>*</u>							
<u>-2.8</u>	<u>* 2.5</u>	<u>OH</u>	<u>gr. / (soft clay)</u>	<u>Possible reworking of sediment. clay not as stiff</u>				<u>S-06C-0006-B</u>

File ID of digital photograph(s):

Comments: \* ~ 75 of Target

<b>Battelle</b> The Business of Innovation		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>		Project #: <b>G606422</b>	
Location: <b>New Bedford, MA</b>		Vessel: <b>CR environmental skiff</b>		1st 2nd	
Client: <b>USACE NAE</b>		Chief Scientist: <b>Alex Mansfield</b>			
Station ID: <b>09 (roc)</b>	Time On Station: <b>1406</b>	All measurements are $\pm 0.1$ feet			
Core Sample ID: <b>See below</b>	Northing (NAD 83): <b>2706949</b>	Water Depth (A): <b>6.2' / 6.4'</b>			
Logged by: <b>Am</b>	Easting (NAD 83): <b>815676</b>	Length of push core assembly (B): <b>/</b>			
Collection Mechanism: <b>Push-Core</b>	GPS Accuracy: <b>3.6'</b>	Water surface to top of handle (C): <b>/</b>			
Date: <b>10/2/06</b>	Predicted Tide (ft): <b>/</b>	Length of core (from bottom) (D): <b>2.2</b>			
	Time of Collection: <b>1447</b>	Surveyed elevation (NVGD 29) (E): <b>4.0</b>			
	Time Depart Station: <b>1500</b>	Water surface from surveyed elevation (F): <b>-1.9</b>			
Revised Station ID <b>09100206</b>					

**Calculations for Determination of Z\* Elevation**

- (G) Elevation of Water Surface (NVGD):  $E - F$
- (H) Elevation of the bottom of the core (NVGD):  $G - (B - C)$
- (Z\*) Elevation of visual transition (NVGD):  $H + (\text{distance to visual transition})$
- (I) Elevation of the sediment-water interface as measured from bottom of core (NVGD):  $H + D$
- (I<sub>2</sub>) Elevation of the sediment-water interface as measured from water depth (NVGD):  $G - A$

**+2.1**

**-6.5**

**-5.4**

**-4.3**

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

**+2.1**

Elevation (NVGD) (I.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
<b>6.4</b>								
<b>-4.3</b>								
<b>-4.9</b>		<b>OL</b>						<b>S-06C-0009-T</b>
<b>-5.4</b>								<b>S-06C-0009-T-MS</b>
<b>-5.8</b>		<b>Peat</b>						<b>S-06C-0009-T-MSD</b>
<b>-6.5</b>								<b>S-06C-0009-T-DUP</b>
								<b>S-06C-0009-B</b>

File ID of digital photograph(s):

Comments:

Water Depth much Deeper Than shown on Bathym (6.2 vs 1.6)  
possibly on edge of slope.

1st attempt did NOT recover OH. Peat lodged in Bottom.

2nd attempt recovered 1.1' of peat, can NOT penetrate deeper. Took

Sample in this layer. Page \_\_\_ of \_\_\_

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>				Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>				Vessel: <b>CR environmental skiff</b>	
		Client: <b>USACE NAE</b>				Chief Scientist: <b>Alex Mansfield</b>	

Station ID: <u>12(VOC)</u>	Time On Station: <u>1508</u>	All measurements are $\pm 0.1$ feet
Core Sample ID: <u>See below</u>	Northing (NAD 83): <u>2706849</u>	Water Depth (A): <u>*6.0</u>
Logged by: <u>Am</u>	Easting (NAD 83): <u>815674</u>	Length of push core assembly (B): <u>✓</u>
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>1.9</u>	Water surface to top of handle (C): <u>✓</u>
Date: <u>10/2/06</u>	Predicted Tide (ft): <u>1510</u>	Length of core (from bottom) (D): <u>3.0</u>
	Time of Collection: <u>1532</u>	Surveyed elevation (NVGD 29) (E): <u>4.0</u>
Revised Station ID: <u>12012100206</u>	Time Depart Station: <u>1532</u>	Water surface from surveyed elevation (F): <u>-1.5</u>

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): E - F	+2.5
(H) Elevation of the bottom of the core (NVGD): G - (B - C)	-6.5
(Z*) Elevation of visual transition (NVGD): H + (distance to visual transition)	-5.5
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D	✓
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A	-3.5

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

+2.5

	Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
	-6.0								
	-3.5								
-3.8	* 2.0'		OL	Black very soft very oily					S-06C-0012-J
	*								
	*								
	*								
	*								
-5.8	*			DK grey clay Darker, softer, wetter than typical underlying clay					S-06C-0012-B

File ID of digital photograph(s):  
 Comments: \* Water Depth Considerably more than expected. possibly  
Near edge of slope  
very oily

Battelle

The Business of Innovation

Project Name: New Bedford Harbor Environmental Monitoring

Location: New Bedford, MA

Client: USACE NAE

Project #: G606422

Vessel: CR environmental skiff

Chief Scientist: Alex Mansfield

Station ID: 15 (VOC)

Core Sample ID: See below

Logged by: Am

Collection Mechanism: Push-Core

Date: 10/2/06

Revised Station ID: 15VOC0206

Time On Station: 1535

Northing (NAD 83): 2706749

Easting (NAD 83): 815676

GPS Accuracy: 2.8

Predicted Tide (ft):

Time of Collection: 1540

Time Depart Station: 1549

All measurements are  $\pm 0.1$  feet

Water Depth (A): 6.3'

Length of push core assembly (B):

Water surface to top of handle (C):

Length of core (from bottom) (D): 7.0

Surveyed elevation (NVGD 29) (E): 4.0'

Water surface from surveyed elevation (F): 1.3

Calculations for Determination of Z\* Elevation

(G) Elevation of Water Surface (NVGD):  $E - F$

(H) Elevation of the bottom of the core (NVGD):  $G - (B - C)$

(Z\*) Elevation of visual transition (NVGD):  $H + (\text{distance to visual transition})$

(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD):  $H + D$

(I<sub>2</sub>) Elevation of the sediment-water interface as measured from water depth (NVGD):  $G - A$

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

2.7

+2.7

-5.6

-2.9

-

-2.6

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
5.3								
-2.6								
-2.75	0.3*	OL						S-06C-0015-T
-3.2	*	OH						
2.7								S-06C-0015-B

File ID of digital photograph(s):

Comments: very little OL

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>				Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel: <b>CR environmental skiff</b>		Chief Scientist: <b>Alex Mansfield</b>	
Client: <b>USACE NAE</b>							

Station ID: <u>14(VOC)</u>	Time On Station: <u>1555</u>	All measurements are $\pm 0.1$ feet
Core Sample ID: <u>See below</u>	Northing (NAD 83): <u>2706753</u>	Water Depth (A): <u>4.0'</u>
Logged by: <u>AM</u>	Easting (NAD 83): <u>815621</u>	Length of push core assembly (B): <u>✓</u>
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>2.1</u>	Water surface to top of handle (C): <u>✓</u>
Date: <u>10/2/06</u>	Predicted Tide (ft): <u>✓</u>	Length of core (from bottom) (D): <u>2.7</u>
	Time of Collection: <u>1555</u>	Surveyed elevation (NVGD 29) (E): <u>4.0'</u>
	Time Depart Station: <u>1608</u>	Water surface from surveyed elevation (F): <u>1.25</u>

Revised Station ID: 14100206

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>+2.75</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	<u>-3.95</u>
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	<u>-2.75</u>
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	<u>✓</u>
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	<u>-1.5</u>

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

2.75

Elevation (NVGD) (I.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
4.0								
-1.25								
-1.5'		OL						S-06C-0014-T
-2.0 *								
-2.75								
-3.0 *		OH						S-06C-0014-B
1.2								

File ID of digital photograph(s):

Comments: Very oily

Battelle

The Business of Innovation

Project Name: New Bedford Harbor Environmental Monitoring

Location: New Bedford, MA

Client: USACE NAE

Project #: G606422

Vessel: CR environmental skiff

Chief Scientist: Alex Mansfield

Station ID: 11(VOC)

Time On Station: 1615

All measurements are ±0.1 feet

Core Sample ID: See below

Northing (NAD 83): 2706850

Water Depth (A): 3.9'

Logged by: AM

Easting (NAD 83): 815626

Length of push core assembly (B):

Collection Mechanism: Push-Core

GPS Accuracy: 2.6

Water surface to top of handle (C):

Date: 10/2/06

Predicted Tide (ft):

Length of core (from bottom) (D):

Time of Collection: 1616

Surveyed elevation (NVGD 29) (E): 4.0'

Time Depart Station: 1632

Water surface from surveyed elevation (F): 1.0'

Revised Station ID: 1100200

Calculations for Determination of Z\* Elevation

(G) Elevation of Water Surface (NVGD): E - F

(H) Elevation of the bottom of the core (NVGD): G - (B - C)

(Z\*) Elevation of visual transition (NVGD): H + (distance to visual transition)

(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D

(I<sub>2</sub>) Elevation of the sediment-water interface as measured from water depth (NVGD): G - A

(Note if I ≠ I<sub>2</sub> within ± 1.0 feet, discard and resample)

3.0

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
3.9								
-0.9								
-1.2								S-06C-0011-T
①								
Total								
2.6'								
* ~ Transition at -2.9								S-06C-0011-B
-3.2								
-3.5								

File ID of digital photograph(s):

Comments:

No clear transition although top is OL + Bottom is DK grey clay Took sample at 0.3 from Top and 0.3 from Bottom

Page \_\_\_\_ of \_\_\_\_

<b>Battelle</b> The Business of Innovation		Project Name: New Bedford Harbor Environmental Monitoring Location: New Bedford, MA Client: USACE NAE		Project #: G606422 Vessel: CR environmental skiff Chief Scientist: Alex Mansfield				
Station ID:	OB VOC	Time On Station:	1143	All measurements are ±0.1 feet				
Core Sample ID:	See below	Northing (NAD 83):	2706955	Water Depth (A):	3.4'			
Logged by:	AM	Easting (NAD 83):	815645	Length of push core assembly (B):	9.0'			
Collection Mechanism:	Push-Core	GPS Accuracy:	2.5	Water surface to top of handle (C):	1.0'			
Date:	10/13/06	Predicted Tide (ft):		Length of core (from bottom) (D):				
Revised Station ID:	08101306	Time of Collection:	1205	Surveyed elevation (NVGD 29) (E):	2.1' water level			
		Time Depart Station:	1218	Water surface from surveyed elevation (F):				
Calculations for Determination of Z* Elevation								
(G)	Elevation of Water Surface (NVGD): E - F							
(H)	Elevation of the bottom of the core (NVGD): G - (B - C)							
(Z*)	Elevation of visual transition (NVGD): H + (distance to visual transition)							
(I)	Elevation of the sediment-water interface as measured from bottom of core (NVGD): H + D							
(I <sub>2</sub> )	Elevation of the sediment-water interface as measured from water depth (NVGD): G - A							
(Note if I ≠ I <sub>2</sub> within ± 1.0 feet, discard and resample)								
Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
3.0' sample			OL Black				S-06C-0008-T	
1.0'			clay grey				* S-06C-0008-B	
0.5'								
0.0'	Peat		DK brown				<del>S-06C-0008-D</del>	Did not take deeper sample. could only penetrate 3'
File ID of digital photograph(s):								
Comments: Returned to marked station #8 used 6' barrell. Only able to penetrate 3'. Hit peat layer * Only used bottom 0.5' for sample To avoid OL contamination								

<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>				Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>		Vessel: <b>CR environmental skiff</b>			
		Client: <b>USACE NAE</b>		1224		Chief Scientist: <b>Alex Mansfield</b>	

Station ID: <u>09 VOC</u>	Time On Station: <u>2706949</u>	All measurements are ±0.1 feet	
Core Sample ID: <u>See below</u>	Northing (NAD 83): <u>815675</u>	Water Depth (A): <u>6.5</u>	
Logged by: <u>sh</u>	Easting (NAD 83): <u>2.7</u>	Length of push core assembly (B): <u>11.6</u>	
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>          </u>	Water surface to top of handle (C): <u>0.2</u>	
Date: <u>10-13-06</u>	Predicted Tide (ft): <u>          </u>	Length of core (from bottom) (D): <u>3.4</u>	
Revised Station ID <u>09101306</u>	Time of Collection: <u>1245</u>	Surveyed elevation (NVGD 29) (E): <u>2.3' water elev.</u>	
	Time Depart Station: <u>          </u>	Water surface from surveyed elevation (F): <u>          </u>	

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD): $E - F$	<u>2.3'</u>
(H) Elevation of the bottom of the core (NVGD): $G - (B - C)$	
(Z*) Elevation of visual transition (NVGD): $H + (\text{distance to visual transition})$	
(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD): $H + D$	
(I <sub>2</sub> ) Elevation of the sediment-water interface as measured from water depth (NVGD): $G - A$	

(Note if I ≠ I<sub>2</sub> within ± 1.0 feet, discard and resample)

	Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
	3.4								
	2.6		OL	Black	Very fine				
	1.7		Sample						S-06C-0009-T
	0.9		Peat	Reddish Brown					S-06C-0009-B
	0.0		Bottom 0.3'	Brown	Decomposed organics (old peat) w/ some sand				S-06C-0009-D

File ID of digital photograph(s):  
 Comments: Black OL over Peat. ~ 0.4 - 0.6 smeared OL/Peat.





<b>Battelle</b> <small>The Business of Innovation</small>		Project Name: <b>New Bedford Harbor Environmental Monitoring</b>				Project #: <b>G606422</b>	
		Location: <b>New Bedford, MA</b>				Vessel: <b>CR environmental skiff</b>	
		Client: <b>USACE NAE</b>				Chief Scientist: <b>Alex Mansfield</b>	

Station ID: <u>11 (VOC)</u>	Time On Station: <u>1352</u>	All measurements are $\pm 0.1$ feet
Core Sample ID: <u>See below</u>	Northing (NAD 83): <u>2706852</u>	Water Depth (A): <u>4.1'</u>
Logged by: <u>AN</u>	Easting (NAD 83): <u>815627</u>	Length of push core assembly (B): <u>9</u>
Collection Mechanism: <u>Push-Core</u>	GPS Accuracy: <u>1.9</u>	Water surface to top of handle (C): <u>0.5'</u>
Date: <u>10/13/06</u>	Predicted Tide (ft): _____	Length of core (from bottom) (D): <u>2.4</u>
	Time of Collection: <u>1355</u>	Surveyed elevation (NVGD 29) (E): <u>3.1'</u>
	Time Depart Station: _____	Water surface from surveyed elevation (F): _____

Revised Station ID: 11C1306

**Calculations for Determination of Z\* Elevation**

(G) Elevation of Water Surface (NVGD):  $E - F$  3.1'

(H) Elevation of the bottom of the core (NVGD):  $G - (B - C)$

(Z\*) Elevation of visual transition (NVGD):  $H + (\text{distance to visual transition})$

(I) Elevation of the sediment-water interface as measured from bottom of core (NVGD):  $H + D$

(I<sub>2</sub>) Elevation of the sediment-water interface as measured from water depth (NVGD):  $G - A$

(Note if I  $\neq$  I<sub>2</sub> within  $\pm 1.0$  feet, discard and resample)

Elevation (NVGD) (i.e. Bottom = H)	Lithology - Include USCS code	Type	Color	Consistency	Maximum particle size	Odor	Sample IDs	Comments
<u>2.4</u> <u>2.2</u>		Sand	gray	mixed		0.5'		S-06C-0011-T
		OL	Black	Soft				
		Blurred Transition						
<u>0.0</u>		clay	gray					S-06C-0011-B

File ID of digital photograph(s): \_\_\_\_\_

Comments: Took sample @ previously staked location

## **Appendix B**

### **PCB Analytical Data**

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## 2006 Post-Dredging Sediment Analytical Results

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## 2006 Post-Dredging Sediment Analytical Results

[illegible]

## 2006 Post-Dredging Sediment Analytical Results

[illegible]

## 2006 Post-Dredging Sediment Analytical Results

[illegible]



### 2006 Post-Dredging Sediment Analytical Results

Station ID	0T15			0W18			0Z13			BB19		
Fraction	TOTAL			TOTAL			TOTAL			TOTAL		
QC Code	SA			SA			SA			SA		
Sample ID	S-06D-0T15-00-05			S-06D-0W18-00-06			S-06D-0Z13-00-02			S-06D-BB19-00-06		
Param Name	Result	Unit	FinQ	Result	Unit	FinQ	Result	Unit	FinQ	Result	Unit	FinQ
2,4'-Dicb (PCB 8)	8.097	MG/KG_DRYWT	D	5.714	MG/KG_DRYWT	D	10.732	MG/KG_DRYWT	D	1.646	MG/KG_DRYWT	D
2,2',5-Tricb (PCB 18)	12.014	MG/KG_DRYWT	D	6.57	MG/KG_DRYWT	D	17.814	MG/KG_DRYWT	D	3.084	MG/KG_DRYWT	D
2,4,4'-Tricb (PCB 28)	10.693	MG/KG_DRYWT	D	6.062	MG/KG_DRYWT	D	14.559	MG/KG_DRYWT	D	3.171	MG/KG_DRYWT	D
2,2',3,5'-Tetracb (PCB 44)	5.731	MG/KG_DRYWT	D	3.281	MG/KG_DRYWT	D	6.598	MG/KG_DRYWT	D	1.896	MG/KG_DRYWT	D
2,2',5,5'-Tetracb (PCB 52)	14.875	MG/KG_DRYWT	D	4.762	MG/KG_DRYWT	D	26.378	MG/KG_DRYWT	D	4.071	MG/KG_DRYWT	D
2,3',4,4'-Tetracb (PCB 66)	1.42	MG/KG_DRYWT	D	2.633	MG/KG_DRYWT	D	0.317	MG/KG_DRYWT	D	1.514	MG/KG_DRYWT	D
2,2',4,5,5'-Pentacb (PCB 101)	2.791	MG/KG_DRYWT	D	1.929	MG/KG_DRYWT	D	2.05	MG/KG_DRYWT	D	2.34	MG/KG_DRYWT	D
2,3,3',4,4'-Pentacb (PCB 105)	0.1	MG/KG_DRYWT	DU	0.172	MG/KG_DRYWT	D	0.102	MG/KG_DRYWT	DU	0.43	MG/KG_DRYWT	D
2,3',4,4',5-Pentacb (PCB 118)	1.938	MG/KG_DRYWT	D	1.577	MG/KG_DRYWT	D	0.793	MG/KG_DRYWT	Dp	2.033	MG/KG_DRYWT	D
2,2',3,3',4,4'-Hexacb (PCB 128)	0.101	MG/KG_DRYWT	DU	0.1	MG/KG_DRYWT	DU	0.103	MG/KG_DRYWT	DU	0.241	MG/KG_DRYWT	D
2,2',3,4,4',5'-Hexacb (PCB 138)	1.249	MG/KG_DRYWT	D	0.746	MG/KG_DRYWT	D	1.595	MG/KG_DRYWT	D	1.751	MG/KG_DRYWT	D
2,2',4,4',5,5'-Hexacb (PCB 153)	2.21	MG/KG_DRYWT	D	1.036	MG/KG_DRYWT	D	2.172	MG/KG_DRYWT	D	2.196	MG/KG_DRYWT	Dp
2,2',3,3',4,4',5-Heptacb (PCB 170)	0.06	MG/KG_DRYWT	R	0.1	MG/KG_DRYWT	DU	0.103	MG/KG_DRYWT	DU	0.138	MG/KG_DRYWT	Dp
2,2',3,4,4',5,5'-Heptacb (PCB 180)	0.14	MG/KG_DRYWT	Dp	0.051	MG/KG_DRYWT	R	0.04	MG/KG_DRYWT	R	0.217	MG/KG_DRYWT	D
2,2',3,4',5,5',6-Heptacb (PCB 187)	0.244	MG/KG_DRYWT	D	0.099	MG/KG_DRYWT	DU	0.601	MG/KG_DRYWT	D	0.033	MG/KG_DRYWT	R
2,2',3,3',4,4',5,6-Octacb (PCB 195)	0.101	MG/KG_DRYWT	DU	0.1	MG/KG_DRYWT	DU	0.103	MG/KG_DRYWT	DU	0.099	MG/KG_DRYWT	DU
2,2',3,3',4,4',5,5',6-Nonacb (PCB 206)	0.1	MG/KG_DRYWT	DU	0.099	MG/KG_DRYWT	DU	0.018	MG/KG_DRYWT	DpJ	0.098	MG/KG_DRYWT	DU
Decacb - Congener (PCB 209)	0.1	MG/KG_DRYWT	DU	0.099	MG/KG_DRYWT	DU	0.102	MG/KG_DRYWT	DU	0.098	MG/KG_DRYWT	DU
Total MonoCB				0.441	MG/KG_DRYWT	D						
Total DiCB				16.645	MG/KG_DRYWT	D						
Total TriCB				44.15	MG/KG_DRYWT	D						
Total TetraCB				25.209	MG/KG_DRYWT	D						
Total PentaCB				11.934	MG/KG_DRYWT	D						
Total HexaCB				5.958	MG/KG_DRYWT	D						
Total HeptaCB				1.681	MG/KG_DRYWT	D						
Total OctaCB				0.198	MG/KG_DRYWT	DU						
Total NonaCB				0.198	MG/KG_DRYWT	DU						
DecaCB				0.198	MG/KG_DRYWT	DU						
Total PCB Congeners (sum CONG x 2.6)	160	MG/KG_DRYWT		90	MG/KG_DRYWT		220	MG/KG_DRYWT		64	MG/KG_DRYWT	
Total PCB Homologues (sum HOM)				110	MG/KG_DRYWT							

### 2006 Post-Dredging Sediment Analytical Results

Station ID	0J17			0L20-DUP			0L20			0N14		
Fraction	TOTAL			TOTAL			TOTAL			TOTAL		
QC Code	SA			REP			SA			SA		
Sample ID	S-06D-0J17-00-05			S-06D-0L20-07-12-DUP			S-06D-0L20-07-12			S-06D-0N14-00-05		
Param Name	Result	Unit	FinQ	Result	Unit	FinQ	Result	Unit	FinQ	Result	Unit	FinQ
2,4'-Dicb (PCB 8)	48.591	MG/KG_DRYWT	D	46.072	MG/KG_DRYWT	D	35.237	MG/KG_DRYWT	D	14.072	MG/KG_DRYWT	D
2,2',5'-Tricb (PCB 18)	75.894	MG/KG_DRYWT	D	72.939	MG/KG_DRYWT	D	54.751	MG/KG_DRYWT	D	18.41	MG/KG_DRYWT	D
2,4,4'-Tricb (PCB 28)	64.64	MG/KG_DRYWT	D	64.016	MG/KG_DRYWT	D	45.959	MG/KG_DRYWT	D	17.879	MG/KG_DRYWT	D
2,2',3,5'-Tetracb (PCB 44)	47.827	MG/KG_DRYWT	D	31.793	MG/KG_DRYWT	D	23.379	MG/KG_DRYWT	D	7.71	MG/KG_DRYWT	D
2,2',5,5'-Tetracb (PCB 52)	102.579	MG/KG_DRYWT	D	92.797	MG/KG_DRYWT	D	67.634	MG/KG_DRYWT	D	19.67	MG/KG_DRYWT	D
2,3',4,4'-Tetracb (PCB 66)	36.397	MG/KG_DRYWT	D	14.953	MG/KG_DRYWT	D	11.015	MG/KG_DRYWT	D	5.032	MG/KG_DRYWT	D
2,2',4,5,5'-Pentacb (PCB 101)	90.748	MG/KG_DRYWT	D	34.788	MG/KG_DRYWT	D	26.443	MG/KG_DRYWT	D	7.23	MG/KG_DRYWT	D
2,3,3',4,4'-Pentacb (PCB 105)	19.867	MG/KG_DRYWT	D	5.988	MG/KG_DRYWT	D	4.69	MG/KG_DRYWT	D	1.38	MG/KG_DRYWT	D
2,3',4,4',5'-Pentacb (PCB 118)	71.145	MG/KG_DRYWT	D	24.425	MG/KG_DRYWT	D	18.656	MG/KG_DRYWT	D	4.999	MG/KG_DRYWT	D
2,2',3,3',4,4'-Hexacb (PCB 128)	8.009	MG/KG_DRYWT	D	2.361	MG/KG_DRYWT	D	1.912	MG/KG_DRYWT	Dp	0.541	MG/KG_DRYWT	Dp
2,2',3,4,4',5'-Hexacb (PCB 138)	47.53	MG/KG_DRYWT	D	16.894	MG/KG_DRYWT	D	12.864	MG/KG_DRYWT	D	3.464	MG/KG_DRYWT	D
2,2',4,4',5,5'-Hexacb (PCB 153)	70.778	MG/KG_DRYWT	D	27.785	MG/KG_DRYWT	D	21.43	MG/KG_DRYWT	D	5.397	MG/KG_DRYWT	D
2,2',3,3',4,4',5'-Heptacb (PCB 170)	4.801	MG/KG_DRYWT	Dp	1.77	MG/KG_DRYWT	R	1.47	MG/KG_DRYWT	R	0.227	MG/KG_DRYWT	R
2,2',3,4,4',5,5'-Heptacb (PCB 180)	7.401	MG/KG_DRYWT	D	2.933	MG/KG_DRYWT	D	2.227	MG/KG_DRYWT	D	0.676	MG/KG_DRYWT	Dp
2,2',3,4',5,5',6'-Heptacb (PCB 187)	4.51	MG/KG_DRYWT	D	2.609	MG/KG_DRYWT	D	1.814	MG/KG_DRYWT	Dp	0.438	MG/KG_DRYWT	R
2,2',3,3',4,4',5,6-Octacb (PCB 195)	1.098	MG/KG_DRYWT	DU	0.42	MG/KG_DRYWT	R	0.614	MG/KG_DRYWT	DU	0.251	MG/KG_DRYWT	DU
2,2',3,3',4,4',5,5',6-Nonacb (PCB 206)	1.087	MG/KG_DRYWT	DU	0.281	MG/KG_DRYWT	R	0.608	MG/KG_DRYWT	DU	0.249	MG/KG_DRYWT	DU
Decacb - Congener (PCB 209)	1.087	MG/KG_DRYWT	DU	0.61	MG/KG_DRYWT	DU	0.608	MG/KG_DRYWT	DU	0.249	MG/KG_DRYWT	DU
Total MonoCB				2.288	MG/KG_DRYWT	D	1.697	MG/KG_DRYWT	D			
Total DiCB				152.857	MG/KG_DRYWT	D	118.685	MG/KG_DRYWT	D			
Total TriCB				451.034	MG/KG_DRYWT	D	344.749	MG/KG_DRYWT	D			
Total TetraCB				301.543	MG/KG_DRYWT	D	229.468	MG/KG_DRYWT	D			
Total PentaCB				215.574	MG/KG_DRYWT	D	177.579	MG/KG_DRYWT	D			
Total HexaCB				97.546	MG/KG_DRYWT	D	82.591	MG/KG_DRYWT	D			
Total HeptaCB				20.699	MG/KG_DRYWT	D	14.869	MG/KG_DRYWT	D			
Total OctaCB				1.22	MG/KG_DRYWT	DU	1.217	MG/KG_DRYWT	DU			
Total NonaCB				1.22	MG/KG_DRYWT	DU	1.217	MG/KG_DRYWT	DU			
DecaCB				1.22	MG/KG_DRYWT	DU	1.217	MG/KG_DRYWT	DU			
Total PCB Congeners (sum CONG x 2.6)	1800	MG/KG_DRYWT		1100	MG/KG_DRYWT		850	MG/KG_DRYWT		280	MG/KG_DRYWT	
Total PCB Homologues (sum HOM)				1200	MG/KG_DRYWT		970	MG/KG_DRYWT				

### 2006 Post-Dredging Sediment Analytical Results

Station ID	0O12			0Q21			0U22			0Z22		
Fraction	TOTAL			TOTAL			TOTAL			TOTAL		
QC Code	SA			SA			SA			SA		
Sample ID	S-06D-0O12-00-05			S-06D-0Q21-00-06			S-06D-0U22-02-07			S-06D-0Z22-00-06		
Param Name	Result	Unit	FinQ	Result	Unit	FinQ	Result	Unit	FinQ	Result	Unit	FinQ
2,4'-Dicb (PCB 8)	64.25	MG/KG_DRYWT	D	5.572	MG/KG_DRYWT	D	24.224	MG/KG_DRYWT	D	0.208	MG/KG_DRYWT	U
2,2',5-Tricb (PCB 18)	77.295	MG/KG_DRYWT	D	9.187	MG/KG_DRYWT	D	47.782	MG/KG_DRYWT	D	0.352	MG/KG_DRYWT	D
2,4,4'-Tricb (PCB 28)	69.173	MG/KG_DRYWT	D	8.603	MG/KG_DRYWT	D	38.488	MG/KG_DRYWT	D	0.348	MG/KG_DRYWT	D
2,2',3,5'-Tetracb (PCB 44)	35.406	MG/KG_DRYWT	D	4.433	MG/KG_DRYWT	D	19.598	MG/KG_DRYWT	D	0.199	MG/KG_DRYWT	D
2,2',5,5'-Tetracb (PCB 52)	53.396	MG/KG_DRYWT	D	14.678	MG/KG_DRYWT	D	62.299	MG/KG_DRYWT	D	0.652	MG/KG_DRYWT	D
2,3',4,4'-Tetracb (PCB 66)	29.407	MG/KG_DRYWT	D	1.478	MG/KG_DRYWT	D	3.556	MG/KG_DRYWT	D	0.039	MG/KG_DRYWT	U
2,2',4,5,5'-Pentacb (PCB 101)	23.92	MG/KG_DRYWT	D	3.647	MG/KG_DRYWT	D	12.368	MG/KG_DRYWT	D	0.112	MG/KG_DRYWT	D
2,3,3',4,4'-Pentacb (PCB 105)	6.674	MG/KG_DRYWT	D	0.36	MG/KG_DRYWT	D	0.675	MG/KG_DRYWT	D	0.012	MG/KG_DRYWT	D
2,3',4,4',5-Pentacb (PCB 118)	17.667	MG/KG_DRYWT	D	2.391	MG/KG_DRYWT	D	6.475	MG/KG_DRYWT	D	0.065	MG/KG_DRYWT	D
2,2',3,3',4,4'-Hexacb (PCB 128)	1.892	MG/KG_DRYWT	R	0.159	MG/KG_DRYWT	R	0.565	MG/KG_DRYWT	DU	0.01	MG/KG_DRYWT	DU
2,2',3,4,4',5'-Hexacb (PCB 138)	10.918	MG/KG_DRYWT	D	1.548	MG/KG_DRYWT	D	5.4	MG/KG_DRYWT	D	0.058	MG/KG_DRYWT	D
2,2',4,4',5,5'-Hexacb (PCB 153)	14.997	MG/KG_DRYWT	D	3.281	MG/KG_DRYWT	D	11.869	MG/KG_DRYWT	D	0.101	MG/KG_DRYWT	D
2,2',3,3',4,4',5-Heptacb (PCB 170)	1.577	MG/KG_DRYWT	R	0.221	MG/KG_DRYWT	R	0.739	MG/KG_DRYWT	R	0.0066	MG/KG_DRYWT	R
2,2',3,4,4',5,5'-Heptacb (PCB 180)	2.05	MG/KG_DRYWT	R	0.314	MG/KG_DRYWT	Dp	1.067	MG/KG_DRYWT	R	0.011	MG/KG_DRYWT	R
2,2',3,4',5,5',6-Heptacb (PCB 187)	0.617	MG/KG_DRYWT	R	0.369	MG/KG_DRYWT	Dp	1.658	MG/KG_DRYWT	Dp	0.012	MG/KG_DRYWT	R
2,2',3,3',4,4',5,6-Octacb (PCB 195)	1.115	MG/KG_DRYWT	DU	0.107	MG/KG_DRYWT	DU	0.565	MG/KG_DRYWT	DU	0.01	MG/KG_DRYWT	DU
2,2',3,3',4,4',5,5',6-Nonacb (PCB 206)	1.104	MG/KG_DRYWT	DU	0.106	MG/KG_DRYWT	DU	0.559	MG/KG_DRYWT	DU	0.01	MG/KG_DRYWT	DU
Decacb - Congener (PCB 209)	1.104	MG/KG_DRYWT	DU	0.106	MG/KG_DRYWT	DU	0.559	MG/KG_DRYWT	DU	0.01	MG/KG_DRYWT	DU
Total MonoCB										0.0086	MG/KG_DRYWT	DJ
Total DiCB										0.795	MG/KG_DRYWT	D
Total TriCB										2.501	MG/KG_DRYWT	D
Total TetraCB										1.873	MG/KG_DRYWT	D
Total PentaCB										1.406	MG/KG_DRYWT	D
Total HexaCB										0.457	MG/KG_DRYWT	D
Total HeptaCB										0.083	MG/KG_DRYWT	D
Total OctaCB										0.02	MG/KG_DRYWT	DU
Total NonaCB										0.02	MG/KG_DRYWT	DU
DecaCB										0.02	MG/KG_DRYWT	DU
Total PCB Congeners (sum CONG x 2.6)	1100	MG/KG_DRYWT		150	MG/KG_DRYWT		610	MG/KG_DRYWT		4.9	MG/KG_DRYWT	
Total PCB Homologues (sum HOM)										7.1	MG/KG_DRYWT	

### 2006 Post-Dredging Sediment Analytical Results

Station ID	0C29			0C41-DUP			0C41			0E27		
Fraction	TOTAL			TOTAL			TOTAL			TOTAL		
QC Code	SA			REP			SA			SA		
Sample ID	S-06D-0C29-05-10			S-06D-0C41-04-09-DUP			S-06D-0C41-04-09			S-06D-0E27-00-05		
Param Name	Result	Unit	FinQ	Result	Unit	FinQ	Result	Unit	FinQ	Result	Unit	FinQ
2,4'-Dicb (PCB 8)	22.367	MG/KG_DRYWT	D	10.984	MG/KG_DRYWT	D	11.826	MG/KG_DRYWT	D	14.744	MG/KG_DRYWT	D
2,2',5'-Tricb (PCB 18)	34.076	MG/KG_DRYWT	D	15.495	MG/KG_DRYWT	D	16.372	MG/KG_DRYWT	D	18	MG/KG_DRYWT	D
2,4,4'-Tricb (PCB 28)	31.578	MG/KG_DRYWT	D	13.052	MG/KG_DRYWT	D	14.145	MG/KG_DRYWT	D	15.084	MG/KG_DRYWT	D
2,2',3,5'-Tetracb (PCB 44)	11.849	MG/KG_DRYWT	D	6.862	MG/KG_DRYWT	D	6.416	MG/KG_DRYWT	D	7.079	MG/KG_DRYWT	D
2,2',5,5'-Tetracb (PCB 52)	44.933	MG/KG_DRYWT	D	10.731	MG/KG_DRYWT	D	11.59	MG/KG_DRYWT	D	24.385	MG/KG_DRYWT	D
2,3',4,4'-Tetracb (PCB 66)	2.366	MG/KG_DRYWT	D	5.079	MG/KG_DRYWT	D	4.374	MG/KG_DRYWT	D	1.681	MG/KG_DRYWT	D
2,2',4,5,5'-Pentacb (PCB 101)	7.277	MG/KG_DRYWT	D	4.703	MG/KG_DRYWT	D	4.566	MG/KG_DRYWT	D	4.628	MG/KG_DRYWT	D
2,3,3',4,4'-Pentacb (PCB 105)	0.46	MG/KG_DRYWT	D	0.25	MG/KG_DRYWT	D	0.26	MG/KG_DRYWT	D	0.309	MG/KG_DRYWT	D
2,3',4,4',5'-Pentacb (PCB 118)	3.707	MG/KG_DRYWT	D	3.414	MG/KG_DRYWT	D	3.246	MG/KG_DRYWT	D	2.753	MG/KG_DRYWT	D
2,2',3,3',4,4'-Hexacb (PCB 128)	0.301	MG/KG_DRYWT	DU	0.117	MG/KG_DRYWT	R	0.125	MG/KG_DRYWT	R	0.146	MG/KG_DRYWT	R
2,2',3,4,4',5'-Hexacb (PCB 138)	4.087	MG/KG_DRYWT	D	1.298	MG/KG_DRYWT	D	1.305	MG/KG_DRYWT	D	1.959	MG/KG_DRYWT	D
2,2',4,4',5,5'-Hexacb (PCB 153)	6.601	MG/KG_DRYWT	D	2.814	MG/KG_DRYWT	D	2.738	MG/KG_DRYWT	D	4.001	MG/KG_DRYWT	D
2,2',3,3',4,4',5'-Heptacb (PCB 170)	0.301	MG/KG_DRYWT	DU	0.195	MG/KG_DRYWT	R	0.187	MG/KG_DRYWT	R	0.252	MG/KG_DRYWT	R
2,2',3,4,4',5,5'-Heptacb (PCB 180)	0.589	MG/KG_DRYWT	R	0.3	MG/KG_DRYWT	Dp	0.306	MG/KG_DRYWT	Dp	0.366	MG/KG_DRYWT	R
2,2',3,4',5,5',6-Heptacb (PCB 187)	0.946	MG/KG_DRYWT	D	0.21	MG/KG_DRYWT	R	0.22	MG/KG_DRYWT	R	0.552	MG/KG_DRYWT	Dp
2,2',3,3',4,4',5,6-Octacb (PCB 195)	0.301	MG/KG_DRYWT	DU	0.114	MG/KG_DRYWT	DU	0.109	MG/KG_DRYWT	DU	0.163	MG/KG_DRYWT	DU
2,2',3,3',4,4',5,5',6-Nonacb (PCB 206)	0.298	MG/KG_DRYWT	DU	0.113	MG/KG_DRYWT	DU	0.108	MG/KG_DRYWT	DU	0.162	MG/KG_DRYWT	DU
Decacb - Congener (PCB 209)	0.298	MG/KG_DRYWT	DU	0.113	MG/KG_DRYWT	DU	0.108	MG/KG_DRYWT	DU	0.162	MG/KG_DRYWT	DU
Total MonoCB				0.73	MG/KG_DRYWT	D	0.873	MG/KG_DRYWT	D			
Total DiCB				35.134	MG/KG_DRYWT	D	40.366	MG/KG_DRYWT	D			
Total TriCB				82.629	MG/KG_DRYWT	D	92.76	MG/KG_DRYWT	D			
Total TetraCB				49.508	MG/KG_DRYWT	D	53.423	MG/KG_DRYWT	D			
Total PentaCB				28.021	MG/KG_DRYWT	D	27.465	MG/KG_DRYWT	D			
Total HexaCB				12.013	MG/KG_DRYWT	D	10.851	MG/KG_DRYWT	D			
Total HeptaCB				2.149	MG/KG_DRYWT	D	0.216	MG/KG_DRYWT	DU			
Total OctaCB				0.225	MG/KG_DRYWT	DU	0.216	MG/KG_DRYWT	DU			
Total NonaCB				0.225	MG/KG_DRYWT	DU	0.216	MG/KG_DRYWT	DU			
DecaCB				0.225	MG/KG_DRYWT	DU	0.216	MG/KG_DRYWT	DU			
Total PCB Congeners (sum CONG x 2.6)	440	MG/KG_DRYWT		200	MG/KG_DRYWT		200	MG/KG_DRYWT		250	MG/KG_DRYWT	
Total PCB Homologues (sum HOM)				210	MG/KG_DRYWT		230	MG/KG_DRYWT				

## 2006 Post-Dredging Sediment Analytical Results

[illegible]

## 2006 Post-Dredging Sediment Analytical Results

[illegible]

## 2006 Post-Dredging Sediment Analytical Results

[illegible]

### 2006 Post-Dredging Sediment Analytical Results

Station ID	0B32			0D36			0E30			0E32		
Fraction	TOTAL			TOTAL			TOTAL			TOTAL		
QC Code	SA			SA			SA			SA		
Sample ID	S-06D-0B32-00-05			S-06D-0D36-00-05			S-06D-0E30-00-05			S-06D-0E32-00-05		
Param Name	Result	Unit	FinQ	Result	Unit	FinQ	Result	Unit	FinQ	Result	Unit	FinQ
2,4'-Dicb (PCB 8)	15.596	MG/KG_DRYWT	D	65.944	MG/KG_DRYWT	D	16.191	MG/KG_DRYWT	D	12.956	MG/KG_DRYWT	D
2,2',5'-Tricb (PCB 18)	24.434	MG/KG_DRYWT	D	87.105	MG/KG_DRYWT	D	24.799	MG/KG_DRYWT	D	29.659	MG/KG_DRYWT	D
2,4,4'-Tricb (PCB 28)	19.212	MG/KG_DRYWT	D	72.144	MG/KG_DRYWT	D	19.781	MG/KG_DRYWT	D	25.831	MG/KG_DRYWT	D
2,2',3,5'-Tetracb (PCB 44)	26.389	MG/KG_DRYWT	D	27.343	MG/KG_DRYWT	D	8.083	MG/KG_DRYWT	D	8.878	MG/KG_DRYWT	D
2,2',5,5'-Tetracb (PCB 52)	108.584	MG/KG_DRYWT	D	65.28	MG/KG_DRYWT	D	29.275	MG/KG_DRYWT	D	28.312	MG/KG_DRYWT	D
2,3',4,4'-Tetracb (PCB 66)	5.961	MG/KG_DRYWT	D	12.874	MG/KG_DRYWT	D	1.731	MG/KG_DRYWT	D	2.12	MG/KG_DRYWT	D
2,2',4,5,5'-Pentacb (PCB 101)	26.183	MG/KG_DRYWT	D	16.053	MG/KG_DRYWT	D	4.47	MG/KG_DRYWT	D	4.256	MG/KG_DRYWT	Dp
2,3,3',4,4'-Pentacb (PCB 105)	1.771	MG/KG_DRYWT	D	0.858	MG/KG_DRYWT	D	0.318	MG/KG_DRYWT	D	0.31	MG/KG_DRYWT	D
2,3',4,4',5'-Pentacb (PCB 118)	12.414	MG/KG_DRYWT	D	11.176	MG/KG_DRYWT	D	2.84	MG/KG_DRYWT	D	2.912	MG/KG_DRYWT	D
2,2',3,3',4,4'-Hexacb (PCB 128)	0.946	MG/KG_DRYWT	R	0.498	MG/KG_DRYWT	DU	0.247	MG/KG_DRYWT	DU	0.265	MG/KG_DRYWT	DU
2,2',3,4,4',5'-Hexacb (PCB 138)	12.909	MG/KG_DRYWT	D	4.894	MG/KG_DRYWT	D	2.015	MG/KG_DRYWT	D	1.668	MG/KG_DRYWT	D
2,2',4,4',5,5'-Hexacb (PCB 153)	20.178	MG/KG_DRYWT	D	10.69	MG/KG_DRYWT	D	4.159	MG/KG_DRYWT	D	3.594	MG/KG_DRYWT	D
2,2',3,3',4,4',5'-Heptacb (PCB 170)	0.508	MG/KG_DRYWT	R	0.498	MG/KG_DRYWT	DU	0.182	MG/KG_DRYWT	R	0.265	MG/KG_DRYWT	DU
2,2',3,4,4',5,5'-Heptacb (PCB 180)	1.648	MG/KG_DRYWT	Dp	1.102	MG/KG_DRYWT	Dp	0.4	MG/KG_DRYWT	R	0.265	MG/KG_DRYWT	DU
2,2',3,4',5,5',6-Heptacb (PCB 187)	2.955	MG/KG_DRYWT	D	0.97	MG/KG_DRYWT	Dp	0.555	MG/KG_DRYWT	Dp	0.381	MG/KG_DRYWT	R
2,2',3,3',4,4',5,6-Octacb (PCB 195)	0.514	MG/KG_DRYWT	DU	0.498	MG/KG_DRYWT	DU	0.247	MG/KG_DRYWT	DU	0.265	MG/KG_DRYWT	DU
2,2',3,3',4,4',5,5',6-Nonacb (PCB 206)	0.509	MG/KG_DRYWT	DU	0.493	MG/KG_DRYWT	DU	0.244	MG/KG_DRYWT	DU	0.262	MG/KG_DRYWT	DU
Decacb - Congener (PCB 209)	0.509	MG/KG_DRYWT	DU	0.493	MG/KG_DRYWT	DU	0.244	MG/KG_DRYWT	DU	0.262	MG/KG_DRYWT	DU
Total MonoCB							0.726	MG/KG_DRYWT	D			
Total DiCB							64.036	MG/KG_DRYWT	D			
Total TriCB							149.12	MG/KG_DRYWT	D			
Total TetraCB							86.286	MG/KG_DRYWT	D			
Total PentaCB							38.48	MG/KG_DRYWT	D			
Total HexaCB							19.669	MG/KG_DRYWT	D			
Total HeptaCB							3.742	MG/KG_DRYWT	D			
Total OctaCB							0.488	MG/KG_DRYWT	DU			
Total NonaCB							0.488	MG/KG_DRYWT	DU			
DecaCB							0.488	MG/KG_DRYWT	DU			
Total PCB Congeners (sum CONG x 2.6)	720	MG/KG_DRYWT		980	MG/KG_DRYWT		300	MG/KG_DRYWT		310	MG/KG_DRYWT	
Total PCB Homologues (sum HOM)							360	MG/KG_DRYWT				



## 2006 Post-Dredging Sediment Analytical Results

[illegible]

## 2006 Post-Dredging Sediment Analytical Results

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### 2006 Post-Dredging Sediment Analytical Results

Station ID	0Q44		
Fraction	TOTAL		
QC Code	SA		
Sample ID	S-06D-0Q44-00-05		
Param Name	Result	Unit	FinQ
2,4'-Dicb (PCB 8)	18.018	MG/KG_DRYWT	D
2,2',5'-Tricb (PCB 18)	29.767	MG/KG_DRYWT	D
2,4,4'-Tricb (PCB 28)	26.881	MG/KG_DRYWT	D
2,2',3,5'-Tetracb (PCB 44)	21.116	MG/KG_DRYWT	D
2,2',5,5'-Tetracb (PCB 52)	73.282	MG/KG_DRYWT	D
2,3',4,4'-Tetracb (PCB 66)	3.289	MG/KG_DRYWT	D
2,2',4,5,5'-Pentacb (PCB 101)	17.485	MG/KG_DRYWT	D
2,3,3',4,4'-Pentacb (PCB 105)	0.605	MG/KG_DRYWT	D
2,3',4,4',5'-Pentacb (PCB 118)	8.822	MG/KG_DRYWT	D
2,2',3,3',4,4'-Hexacb (PCB 128)	0.521	MG/KG_DRYWT	DU
2,2',3,4,4',5'-Hexacb (PCB 138)	7.107	MG/KG_DRYWT	D
2,2',4,4',5,5'-Hexacb (PCB 153)	14.12	MG/KG_DRYWT	D
2,2',3,3',4,4',5'-Heptacb (PCB 170)	0.521	MG/KG_DRYWT	DU
2,2',3,4,4',5,5'-Heptacb (PCB 180)	0.94	MG/KG_DRYWT	R
2,2',3,4',5,5',6-Heptacb (PCB 187)	1.931	MG/KG_DRYWT	D
2,2',3,3',4,4',5,6-Octacb (PCB 195)	0.521	MG/KG_DRYWT	DU
2,2',3,3',4,4',5,5',6-Nonacb (PCB 206)	0.515	MG/KG_DRYWT	DU
Decacb - Congener (PCB 209)	0.515	MG/KG_DRYWT	DU
Total MonoCB			
Total DiCB			
Total TriCB			
Total TetraCB			
Total PentaCB			
Total HexaCB			
Total HeptaCB			
Total OctaCB			
Total NonaCB			
DecaCB			
Total PCB Congeners (sum CONG x 2.6)	580	MG/KG_DRYWT	
Total PCB Homologues (sum HOM)			

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### Aerovox Sediment Analytical Results

Station ID	8100206			8100206			9100206			9100206		
Fraction	TOTAL			TOTAL			TOTAL			TOTAL		
QC Code	SA			SA			SA			SA		
Sample ID	S-06C-0008-B			S-06C-0008-T			S-06C-0009-B			S-06C-0009-T		
Param Name	Result	Unit	FinQ	Result	Unit	FinQ	Result	Unit	FinQ	Result	Unit	FinQ
2,4'-Dicb (PCB 8)	0.178	MG/KG_DRYWT	D	30.368	MG/KG_DRYWT	D	0.04	MG/KG_DRYWT	D	35.5	MG/KG_DRYWT	D
2,2',5'-Tricb (PCB 18)	0.259	MG/KG_DRYWT	D	67.83	MG/KG_DRYWT	D	0.048	MG/KG_DRYWT	D	58.549	MG/KG_DRYWT	D
2,4,4'-Tricb (PCB 28)	0.218	MG/KG_DRYWT	D	25.378	MG/KG_DRYWT	D	0.058	MG/KG_DRYWT	D	66.57	MG/KG_DRYWT	D
2,2',3,5'-Tetracb (PCB 44)	0.17	MG/KG_DRYWT	D	25.748	MG/KG_DRYWT	D	0.027	MG/KG_DRYWT	Dp	38.011	MG/KG_DRYWT	D
2,2',5,5'-Tetracb (PCB 52)	0.371	MG/KG_DRYWT	D	152.183	MG/KG_DRYWT	D	0.077	MG/KG_DRYWT	D	93.544	MG/KG_DRYWT	D
2,3',4,4'-Tetracb (PCB 66)	0.131	MG/KG_DRYWT	D	13.361	MG/KG_DRYWT	D	0.038	MG/KG_DRYWT	R	14.706	MG/KG_DRYWT	D
2,2',4,5,5'-Pentacb (PCB 101)	0.217	MG/KG_DRYWT	D	29.064	MG/KG_DRYWT	D	0.018	MG/KG_DRYWT	D	28.862	MG/KG_DRYWT	D
2,3,3',4,4'-Pentacb (PCB 105)	0.101	MG/KG_DRYWT	Dp	6.326	MG/KG_DRYWT	D	0.0077	MG/KG_DRYWT	R	1.395	MG/KG_DRYWT	D
2,3',4,4',5'-Pentacb (PCB 118)	0.232	MG/KG_DRYWT	D	24.597	MG/KG_DRYWT	D	0.021	MG/KG_DRYWT	R	21.422	MG/KG_DRYWT	D
2,2',3,3',4,4'-Hexacb (PCB 128)	0.038	MG/KG_DRYWT	R	2.221	MG/KG_DRYWT	D	0.01	MG/KG_DRYWT	DU	0.961	MG/KG_DRYWT	D
2,2',3,4,4',5'-Hexacb (PCB 138)	0.187	MG/KG_DRYWT	D	18.648	MG/KG_DRYWT	D	0.014	MG/KG_DRYWT	R	13.581	MG/KG_DRYWT	D
2,2',4,4',5,5'-Hexacb (PCB 153)	0.168	MG/KG_DRYWT	D	27.681	MG/KG_DRYWT	D	0.0097	MG/KG_DRYWT	R	23.717	MG/KG_DRYWT	D
2,2',3,3',4,4',5'-Heptacb (PCB 170)	0.016	MG/KG_DRYWT	R	1.551	MG/KG_DRYWT	D	0.01	MG/KG_DRYWT	DU	1.303	MG/KG_DRYWT	D
2,2',3,4,4',5,5'-Heptacb (PCB 180)	0.024	MG/KG_DRYWT	R	2.218	MG/KG_DRYWT	D	0.00022	MG/KG_DRYWT	R	2.027	MG/KG_DRYWT	D
2,2',3,4',5,5',6'-Heptacb (PCB 187)	0.0017	MG/KG_DRYWT	R	2.242	MG/KG_DRYWT	D	0.01	MG/KG_DRYWT	DU	2.78	MG/KG_DRYWT	D
2,2',3,3',4,4',5,6'-Octacb (PCB 195)	0.01	MG/KG_DRYWT	DU	0.617	MG/KG_DRYWT	DU	0.01	MG/KG_DRYWT	DU	0.521	MG/KG_DRYWT	DU
2,2',3,3',4,4',5,5',6'-Nonacb (PCB 206)	0.0099	MG/KG_DRYWT	DU	0.611	MG/KG_DRYWT	DU	0.01	MG/KG_DRYWT	DU	0.061	MG/KG_DRYWT	R
Decacb - Congener (PCB 209)	0.0099	MG/KG_DRYWT	DU	0.611	MG/KG_DRYWT	DU	0.01	MG/KG_DRYWT	DU	0.515	MG/KG_DRYWT	DU
Total MonoCB							0.02	MG/KG_DRYWT	DU			
Total DiCB							0.181	MG/KG_DRYWT	D			
Total TriCB							0.513	MG/KG_DRYWT	D			
Total TetraCB							0.374	MG/KG_DRYWT	D			
Total PentaCB							0.469	MG/KG_DRYWT	D			
Total HexaCB							0.192	MG/KG_DRYWT	D			
Total HeptaCB							0.02	MG/KG_DRYWT	DU			
Total OctaCB							0.02	MG/KG_DRYWT	DU			
Total NonaCB							0.02	MG/KG_DRYWT	DU			
DecaCB							0.02	MG/KG_DRYWT	DU			
Total PCB Congeners (sum CONG x 2.6)	5.8	MG/KG_DRYWT		1100	MG/KG_DRYWT		0.7	MG/KG_DRYWT		1100	MG/KG_DRYWT	
Total PCB Homologues (sum HOM)							1.7	MG/KG_DRYWT				

## Aerovox Sediment Analytical Results

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### OU#3 Pilot Cap Site Sediment Analytical Results

[illegible]

### OU#3 Pilot Cap Site Sediment Analytical Results

[illegible]



### OU#3 Pilot Cap Site Sediment Analytical Results

[illegible]

### OU#3 Pilot Cap Site Sediment Analytical Results

[illegible]

### OU#3 Pilot Cap Site Sediment Analytical Results

Station ID	OU16			OU17		
Fraction	TOTAL			TOTAL		
QC Code	SA			SA		
Sample ID	S-06B-OU16-00-03			S-06B-OU17-00-03		
Param Name	Result	Unit	FinQ	Result	Unit	FinQ
2,4'-Dicb (PCB 8)	0.121	MG/KG_DRYWT	D	0.0012	MG/KG_DRYWT	D
2,2',5'-Tricb (PCB 18)	0.084	MG/KG_DRYWT	D	0.00093	MG/KG_DRYWT	D
2,4,4'-Tricb (PCB 28)	0.168	MG/KG_DRYWT	D	0.0027	MG/KG_DRYWT	D
2,2',3,5'-Tetracb (PCB 44)	0.066	MG/KG_DRYWT	D	0.00079	MG/KG_DRYWT	Dp
2,2',5,5'-Tetracb (PCB 52)	0.105	MG/KG_DRYWT	D	0.0017	MG/KG_DRYWT	D
2,3',4,4'-Tetracb (PCB 66)	0.063	MG/KG_DRYWT	D	0.0013	MG/KG_DRYWT	D
2,2',4,5,5'-Pentacb (PCB 101)	0.055	MG/KG_DRYWT	D	0.0015	MG/KG_DRYWT	D
2,3,3',4,4'-Pentacb (PCB 105)	0.021	MG/KG_DRYWT	D	0.00077	MG/KG_DRYWT	R
2,3',4,4',5'-Pentacb (PCB 118)	0.069	MG/KG_DRYWT	D	0.0023	MG/KG_DRYWT	D
2,2',3,3',4,4'-Hexacb (PCB 128)	0.0074	MG/KG_DRYWT	D	0.00041	MG/KG_DRYWT	D
2,2',3,4,4',5'-Hexacb (PCB 138)	0.039	MG/KG_DRYWT	D	0.0015	MG/KG_DRYWT	D
2,2',4,4',5,5'-Hexacb (PCB 153)	0.046	MG/KG_DRYWT	Dp	0.0014	MG/KG_DRYWT	D
2,2',3,3',4,4',5'-Heptacb (PCB 170)	0.004	MG/KG_DRYWT	D	0.0002	MG/KG_DRYWT	DU
2,2',3,4,4',5,5'-Heptacb (PCB 180)	0.0055	MG/KG_DRYWT	D	0.00028	MG/KG_DRYWT	R
2,2',3,4',5,5',6'-Heptacb (PCB 187)	0.004	MG/KG_DRYWT	D	0.00007	MG/KG_DRYWT	R
2,2',3,3',4,4',5,6'-Octacb (PCB 195)	0.0021	MG/KG_DRYWT	Dp	0.0002	MG/KG_DRYWT	DU
2,2',3,3',4,4',5,5',6'-Nonacb (PCB 206)	0.0022	MG/KG_DRYWT	R	0.0002	MG/KG_DRYWT	DU
Decacb - Congener (PCB 209)	0.0038	MG/KG_DRYWT	R	0.0002	MG/KG_DRYWT	DU
Total MonoCB	0.0081	MG/KG_DRYWT	D			
Total DiCB	0.45	MG/KG_DRYWT	D			
Total TriCB	0.597	MG/KG_DRYWT	D			
Total TetraCB	0.33	MG/KG_DRYWT	D			
Total PentaCB	0.178	MG/KG_DRYWT	D			
Total HexaCB	0.118	MG/KG_DRYWT	D			
Total HeptaCB	0.022	MG/KG_DRYWT	D			
Total OctaCB	0.008	MG/KG_DRYWT	D			
Total NonaCB	0.00034	MG/KG_DRYWT	DJ			
DecaCB	0.00043	MG/KG_DRYWT	DU			
Total PCB Congeners (sum CONG x 2.6)	2.2	MG/KG_DRYWT		0.041	MG/KG_DRYWT	
Total PCB Homologues (sum HOM)	1.7	MG/KG_DRYWT				

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# **Appendix C**

## **VOC Analytical Data**

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Parameter	Station ID	2100206		4100206		6100206		6100206		7100206		7100206		8100206	
	Station Abbreviation	02-T		04-T		06-B		06-T		07-B		07-T		08-B	
	Date Collected	10/2/2006		10/2/2006		10/2/2006		10/2/2006		10/2/2006		10/2/2006		10/2/2006	
	Sample ID	S-06C-0002-T		S-06C-0004-T		S-06C-0006-B		S-06C-0006-T		S-06C-0007-B		S-06C-0007-T		S-06C-0008-B	
	Units	Result	FinQ	Result	FinQ	Result	FinQ	Result	FinQ	Result	FinQ	Result	FinQ	Result	FinQ
Acetone	mg/kg (dry wt.)	0.94	R	0.62	U	0.588	U	15.9	UD	0.89	U	0.663	U	0.612	U
Benzene	mg/kg (dry wt.)	0.492	R	0.28	U	0.29	U	6.37	UD	0.519	UD	0.327	U	0.278	U
Bromobenzene	mg/kg (dry wt.)	0.492	R	0.28	U	0.29	U	6.37	UD	0.519	UD	0.327	U	0.278	U
Bromodichloromethane	mg/kg (dry wt.)	0.492	R	0.28	U	0.29	U	6.37	UD	0.519	UD	0.327	U	0.278	U
Bromoform	mg/kg (dry wt.)	0.492	R	0.28	U	0.29	U	6.37	UD	0.519	UD	0.327	U	0.278	U
Bromomethane	mg/kg (dry wt.)	0.492	R	0.28	U	0.29	U	6.37	UD	0.519	UD	0.327	U	0.278	U
Carbon Disulfide	mg/kg (dry wt.)	0.492	R	0.28	U	0.29	U	6.37	UD	0.519	UD	0.327	U	0.278	U
Carbon Tetrachloride	mg/kg (dry wt.)	0.492	R	0.28	U	0.29	U	6.37	UD	0.519	UD	0.327	U	0.278	U
Chlorobenzene	mg/kg (dry wt.)	0.492	R	0.28	U	0.29	U	6.37	UD	0.519	UD	0.327	U	0.278	U
Chloroethane	mg/kg (dry wt.)	0.492	R	0.28	U	0.29	U	6.37	UD	0.519	UD	0.327	U	0.278	U
Chloroform	mg/kg (dry wt.)	0.492	R	0.28	U	0.29	U	6.37	UD	0.519	UD	0.327	U	0.278	U
Chloromethane	mg/kg (dry wt.)	0.492	R	0.28	U	0.29	U	6.37	UD	0.519	UD	0.327	U	0.278	U
Cis-1,2-Dichloroethene	mg/kg (dry wt.)	0.492	R	0.828		80.4		614	D	419		8.25		0.546	
Cis-1,3-Dichloropropene	mg/kg (dry wt.)	0.492	R	0.28	U	0.29	U	6.37	UD	0.519	UD	0.327	U	0.278	U
Dibromochloromethane	mg/kg (dry wt.)	0.492	R	0.28	U	0.29	U	6.37	UD	0.519	UD	0.327	U	0.278	U
Dibromomethane	mg/kg (dry wt.)	0.492	R	0.28	U	0.29	U	6.37	UD	0.519	UD	0.327	U	0.278	U
Dichlorodifluoromethane	mg/kg (dry wt.)	0.492	R	0.28	U	0.29	U	6.37	UD	0.519	UD	0.327	U	0.278	U
Ethylbenzene	mg/kg (dry wt.)	0.492	R	0.28	U	0.29	U	6.37	UD	0.348	jD	0.327	U	0.278	U
Hexachlorobutadiene	mg/kg (dry wt.)	0.492	R	0.28	U	0.29	U	6.37	UD	0.519	UD	0.327	U	0.278	U
Isopropylbenzene	mg/kg (dry wt.)	1.23	R	0.699	U	0.725	U	15.9	UD	1.3	UD	0.818	U	0.694	U
Methylene Chloride	mg/kg (dry wt.)	1.23	R	0.699	U	0.725	U	15.9	UD	1.3	UD	0.818	U	0.694	U
Methyl-Tert-Butyl-Ether (Mtbe)	mg/kg (dry wt.)	0.492	R	0.28	U	0.29	U	6.37	UD	0.519	UD	0.327	U	0.278	U
Naphthalene	mg/kg (dry wt.)	1.23	R	0.699	U	0.725	U	15.9	UD	1.3	UD	0.818	U	0.694	U
N-Butylbenzene	mg/kg (dry wt.)	1.23	R	0.699	U	0.725	U	15.9	UD	1.3	UD	0.818	U	0.694	U
N-Propylbenzene	mg/kg (dry wt.)	0.492	R	0.28	U	0.29	U	6.37	UD	0.519	UD	0.327	U	0.278	U
O-Xylene	mg/kg (dry wt.)	1.23	R	0.699	U	0.725	U	15.9	UD	1.3	UD	0.818	U	0.694	U
P-Isopropyltoluene	mg/kg (dry wt.)	1.23	R	0.699	U	0.725	U	15.9	UD	1.3	UD	0.818	U	0.694	U
P/M Xylene	mg/kg (dry wt.)	0.985	R	0.56	U	0.58	U	12.7	UD	1.04	UD	0.655	U	0.555	U
Sec-Butylbenzene	mg/kg (dry wt.)	1.23	R	0.699	U	0.725	U	15.9	UD	1.3	UD	0.818	U	0.694	U
Styrene	mg/kg (dry wt.)	1.23	R	0.699	U	0.725	U	15.9	UD	1.3	UD	0.818	U	0.694	U
Tert-Butylbenzene	mg/kg (dry wt.)	1.23	R	0.699	U	0.725	U	15.9	UD	1.3	UD	0.818	U	0.694	U
Tetrachloroethene	mg/kg (dry wt.)	0.492	R	0.28	U	0.29	U	6.37	UD	0.519	UD	0.327	U	0.278	U
Toluene	mg/kg (dry wt.)	0.492	R	0.28	U	0.29	U	6.37	UD	0.747	D	0.327	U	0.278	U
Trans-1,2-Dichloroethene	mg/kg (dry wt.)	0.492	R	0.28	U	0.901		3.28	jD	1.31	D	0.327	U	0.278	U

Parameter	Station ID	2100206		4100206		6100206		6100206		7100206		7100206		8100206	
	Station Abbreviation	02-T		04-T		06-B		06-T		07-B		07-T		08-B	
	Date Collected	10/2/2006		10/2/2006		10/2/2006		10/2/2006		10/2/2006		10/2/2006		10/2/2006	
	Sample ID	S-06C-0002-T		S-06C-0004-T		S-06C-0006-B		S-06C-0006-T		S-06C-0007-B		S-06C-0007-T		S-06C-0008-B	
	Units	Result	FinQ	Result	FinQ	Result	FinQ	Result	FinQ	Result	FinQ	Result	FinQ	Result	FinQ
Trans-1,3-Dichloropropene	mg/kg (dry wt.)	0.492	R	0.28	U	0.29	U	6.37	UD	0.519	UD	0.327	U	0.278	U
Trichloroethene	mg/kg (dry wt.)	0.492	R	0.309		4.73		42.9	D	0.519	UD	0.28	j	3.6	
Trichlorofluoromethane	mg/kg (dry wt.)	0.492	R	0.28	U	0.29	U	6.37	UD	0.519	UD	0.327	U	0.278	U
Vinyl Acetate	mg/kg (dry wt.)	0.492	R	0.28	U	0.29	U	6.37	UD	0.519	UD	0.327	U	0.278	U
Vinyl Chloride	mg/kg (dry wt.)	0.492	R	0.28	U	5.95		20	D	32.6	D	1.84		0.278	U
1,1-Dichloroethane	mg/kg (dry wt.)	0.492	R	0.28	U	0.29	U	6.37	UD	0.519	UD	0.327	U	0.278	U
1,1-Dichloroethene	mg/kg (dry wt.)	0.492	R	0.28	U	0.29	U	6.37	UD	0.293	jD	0.327	U	0.278	U
1,1-Dichloropropene	mg/kg (dry wt.)	0.492	R	0.28	U	0.29	U	6.37	UD	0.519	UD	0.327	U	0.278	U
1,1,1-Trichloroethane	mg/kg (dry wt.)	0.492	R	0.28	U	0.29	U	6.37	UD	0.519	UD	0.327	U	0.278	U
1,1,1,2-Tetrachloroethane	mg/kg (dry wt.)	0.492	R	0.28	U	0.29	U	6.37	UD	0.519	UD	0.327	U	0.278	U
1,1,2-Trichloroethane	mg/kg (dry wt.)	0.492	R	0.28	U	0.29	U	6.37	UD	0.519	UD	0.327	U	0.278	U
1,1,2,2-Tetrachloroethane	mg/kg (dry wt.)	0.492	R	0.28	U	0.29	U	6.37	UD	0.519	UD	0.327	U	0.278	U
1,2-Dibromoethane	mg/kg (dry wt.)	0.492	R	0.28	U	0.29	U	6.37	UD	0.519	UD	0.327	U	0.278	U
1,2-Dibromo-3-Chloropropane	mg/kg (dry wt.)	0.492	R	0.28	U	0.29	U	6.37	UD	0.519	UD	0.327	U	0.278	U
1,2-Dichlorobenzene	mg/kg (dry wt.)	0.492	R	0.28	U	0.29	U	6.37	UD	0.267	jD	0.327	U	0.278	U
1,2-Dichloroethane	mg/kg (dry wt.)	0.492	R	0.28	U	0.29	U	6.37	UD	0.519	UD	0.327	U	0.278	U
1,2-Dichloropropane	mg/kg (dry wt.)	0.492	R	0.28	U	0.29	U	6.37	UD	0.519	UD	0.327	U	0.278	U
1,2,3-Trichlorobenzene	mg/kg (dry wt.)	1.23	R	0.699	U	0.725	U	15.9	UD	11.2	D	0.205	j	0.694	U
1,2,3-Trichloropropane	mg/kg (dry wt.)	0.492	R	0.28	U	0.29	U	6.37	UD	0.519	UD	0.327	U	0.278	U
1,2,4-Trichlorobenezene	mg/kg (dry wt.)	1.23	R	0.699	U	0.838		4.55	jD	16.7		0.781	j	0.694	U
1,2,4-Trimethylbenzene	mg/kg (dry wt.)	1.23	R	0.699	U	0.725	U	15.9	UD	1.3	UD	0.818	U	0.694	U
1,3-Dichlorobenzene	mg/kg (dry wt.)	0.492	R	0.28	U	0.654		6.37	UD	0.519	UD	0.327	U	0.278	U
1,3-Dichloropropane	mg/kg (dry wt.)	0.492	R	0.28	U	0.29	U	6.37	UD	0.519	UD	0.327	U	0.278	U
1,3,5-Trimethylbenzene	mg/kg (dry wt.)	1.23	R	0.699	U	0.725	U	15.9	UD	1.3	UD	0.818	U	0.694	U
1,4-Dichlorobenzene	mg/kg (dry wt.)	0.492	R	0.238	j	0.709		6.37	UD	0.737	D	0.301	j	0.278	U
2-Butanone	mg/kg (dry wt.)	0.492	R	0.28	U	0.29	U	6.37	UD	0.519	UD	0.327	U	0.278	U
2-Chloroethyl Vinyl Ether	mg/kg (dry wt.)	1.23	R	0.699	U	0.725	U	15.9	UD	1.3	UD	0.818	U	0.694	U
2-Chlorotoluene	mg/kg (dry wt.)	0.492	R	0.28	U	0.29	U	6.37	UD	0.519	UD	0.327	U	0.278	U
2-Hexanone	mg/kg (dry wt.)	1.23	R	0.699	U	0.725	U	15.9	UD	1.3	UD	0.818	U	0.694	U
2,2-Dichloropropane	mg/kg (dry wt.)	0.492	R	0.28	U	0.29	U	6.37	UD	0.519	UD	0.327	U	0.278	U
4-Chlorotoluene	mg/kg (dry wt.)	0.492	R	0.28	U	0.29	U	6.37	UD	0.519	UD	0.327	U	0.278	U
4-Methyl-2-Pentanone	mg/kg (dry wt.)	0.492	R	0.28	U	0.29	U	6.37	UD	0.519	UD	0.327	U	0.278	U



Parameter	Station ID	8100206		9100206		9100206		10100206		10100206		11100206		11100206	
	Station Abbreviation	08-T		09-B		09-T		10-B		10-T		11-B		11-T	
	Date Collected	10/2/2006		10/2/2006		10/2/2006		10/2/2006		10/2/2006		10/2/2006		10/2/2006	
	Sample ID	S-06C-0008-T		S-06C-0009-B		S-06C-0009-T		S-06C-0010-B		S-06C-0010-T		S-06C-0011-B		S-06C-0011-T	
	Units	Result	FinQ	Result	FinQ	Result	FinQ	Result	FinQ	Result	FinQ	Result	FinQ	Result	FinQ
Acetone	mg/kg (dry wt.)	44.7	R	0.963	U	3.54	R	0.483	U	0.844	U	5.86	U	5.63	U
Benzene	mg/kg (dry wt.)	29.9	R	0.566	UD	1.55	R	0.26	U	0.385	U	3.26	UD	2.44	UD
Bromobenzene	mg/kg (dry wt.)	29.9	R	0.566	UD	1.55	R	0.26	U	0.385	U	3.26	UD	2.44	UD
Bromodichloromethane	mg/kg (dry wt.)	29.9	R	0.566	UD	1.55	R	0.26	U	0.385	U	3.26	UD	2.44	UD
Bromoform	mg/kg (dry wt.)	29.9	R	0.566	UD	1.55	R	0.26	U	0.385	U	3.26	UD	2.44	UD
Bromomethane	mg/kg (dry wt.)	29.9	R	0.566	UD	1.55	R	0.26	U	0.385	U	3.26	UD	2.44	UD
Carbon Disulfide	mg/kg (dry wt.)	29.9	R	0.566	UD	1.55	R	0.26	U	0.385	U	3.26	UD	2.44	UD
Carbon Tetrachloride	mg/kg (dry wt.)	29.9	R	0.566	UD	1.55	R	0.26	U	0.385	U	3.26	UD	2.44	UD
Chlorobenzene	mg/kg (dry wt.)	29.9	R	0.566	UD	1.55	R	0.26	U	0.385	U	3.26	UD	2.44	UD
Chloroethane	mg/kg (dry wt.)	29.9	R	0.566	UD	1.55	R	0.26	U	0.385	U	3.26	UD	2.44	UD
Chloroform	mg/kg (dry wt.)	29.9	R	0.566	UD	1.55	R	0.26	U	0.385	U	3.26	UD	2.44	UD
Chloromethane	mg/kg (dry wt.)	29.9	R	0.566	UD	1.55	R	0.26	U	0.385	U	3.26	UD	2.44	UD
Cis-1,2-Dichloroethene	mg/kg (dry wt.)	854	D	222		102	D	62		14.2		2350		3.68	D
Cis-1,3-Dichloropropene	mg/kg (dry wt.)	29.9	R	0.566	UD	1.55	R	0.26	U	0.385	U	3.26	UD	2.44	UD
Dibromochloromethane	mg/kg (dry wt.)	29.9	R	0.566	UD	1.55	R	0.26	U	0.385	U	3.26	UD	2.44	UD
Dibromomethane	mg/kg (dry wt.)	29.9	R	0.566	UD	1.55	R	0.26	U	0.385	U	3.26	UD	2.44	UD
Dichlorodifluoromethane	mg/kg (dry wt.)	29.9	R	0.566	UD	1.55	R	0.26	U	0.385	U	3.26	UD	2.44	UD
Ethylbenzene	mg/kg (dry wt.)	33.4	D	1.88	D	1.55	R	0.26	U	0.516		3.26	UD	2.44	UD
Hexachlorobutadiene	mg/kg (dry wt.)	29.9	R	0.566	UD	1.55	R	0.26	U	0.385	U	3.26	UD	2.44	UD
Isopropylbenzene	mg/kg (dry wt.)	74.8	R	1.42	UD	3.88	R	0.649	U	0.963	U	8.14	UD	6.11	UD
Methylene Chloride	mg/kg (dry wt.)	74.8	R	1.42	UD	3.88	R	0.649	U	0.963	U	8.14	UD	6.11	UD
Methyl-Tert-Butyl-Ether (Mtbe)	mg/kg (dry wt.)	29.9	R	0.566	UD	1.55	R	0.26	U	0.385	U	3.26	UD	2.44	UD
Naphthalene	mg/kg (dry wt.)	74.8	R	1.42	UD	3.88	R	0.649	U	0.963	U	8.14	UD	6.11	UD
N-Butylbenzene	mg/kg (dry wt.)	74.8	R	1.42	UD	3.88	R	0.649	U	0.963	U	8.14	UD	6.11	UD
N-Propylbenzene	mg/kg (dry wt.)	29.9	R	0.566	UD	1.55	R	0.26	U	0.385	U	3.26	UD	2.44	UD
O-Xylene	mg/kg (dry wt.)	74.8	R	1.42	UD	3.88	R	0.649	U	0.963	U	8.14	UD	6.11	UD
P-Isopropyltoluene	mg/kg (dry wt.)	74.8	R	1.42	UD	3.88	R	0.649	U	0.963	U	8.14	UD	6.11	UD
P/M Xylene	mg/kg (dry wt.)	59.9	R	1.13	UD	3.11	R	0.52	U	0.771	U	6.52	UD	4.89	UD
Sec-Butylbenzene	mg/kg (dry wt.)	74.8	R	1.42	UD	3.88	R	0.649	U	0.963	U	8.14	UD	6.11	UD
Styrene	mg/kg (dry wt.)	72.9	jD	1.42	UD	3.88	R	0.649	U	0.963	U	8.14	UD	6.11	UD
Tert-Butylbenzene	mg/kg (dry wt.)	74.8	R	1.42	UD	3.88	R	0.649	U	0.963	U	8.14	UD	6.11	UD
Tetrachloroethene	mg/kg (dry wt.)	239	D	0.884	D	1.55	R	0.26	U	0.385	U	3.26	UD	3.1	D
Toluene	mg/kg (dry wt.)	17.8	jD	0.612	D	1.55	R	0.26	U	0.385	U	3.26	UD	2.44	UD

Parameter	Station ID	8100206		9100206		9100206		10100206		10100206		11100206		11100206	
	Station Abbreviation	08-T		09-B		09-T		10-B		10-T		11-B		11-T	
	Date Collected	10/2/2006		10/2/2006		10/2/2006		10/2/2006		10/2/2006		10/2/2006		10/2/2006	
	Sample ID	S-06C-0008-T		S-06C-0009-B		S-06C-0009-T		S-06C-0010-B		S-06C-0010-T		S-06C-0011-B		S-06C-0011-T	
	Units	Result	FinQ	Result	FinQ	Result	FinQ	Result	FinQ	Result	FinQ	Result	FinQ	Result	FinQ
Trans-1,2-Dichloroethene	mg/kg (dry wt.)	29.9	R	1.47	D	1.55	R	0.373		0.678		20.6	D	2.44	UD
Trans-1,3-Dichloropropene	mg/kg (dry wt.)	29.9	R	0.566	UD	1.55	R	0.26	U	0.385	U	3.26	UD	2.44	UD
Trichloroethene	mg/kg (dry wt.)	23300		510		1.55	R	0.247	j	0.385	U	3.26	UD	42.3	D
Trichlorofluoromethane	mg/kg (dry wt.)	29.9	R	0.566	UD	1.55	R	0.26	U	0.385	U	3.26	UD	2.44	UD
Vinyl Acetate	mg/kg (dry wt.)	29.9	R	0.566	UD	1.55	R	0.26	U	0.385	U	3.26	UD	2.44	UD
Vinyl Chloride	mg/kg (dry wt.)	22.2	jD	1.23	D	23.8	D	8.14		31.5		318	D	3.64	D
1,1-Dichloroethane	mg/kg (dry wt.)	29.9	R	0.566	UD	1.55	R	0.26	U	0.385	U	3.26	UD	2.44	UD
1,1-Dichloroethene	mg/kg (dry wt.)	29.9	R	0.566	UD	1.55	R	0.26	U	0.385	U	4.77	D	2.44	UD
1,1-Dichloropropene	mg/kg (dry wt.)	29.9	R	0.566	UD	1.55	R	0.26	U	0.385	U	3.26	UD	2.44	UD
1,1,1-Trichloroethane	mg/kg (dry wt.)	29.9	R	0.566	UD	1.55	R	0.26	U	0.385	U	3.26	UD	2.44	UD
1,1,1,2-Tetrachloroethane	mg/kg (dry wt.)	29.9	R	0.566	UD	1.55	R	0.26	U	0.385	U	3.26	UD	2.44	UD
1,1,2-Trichloroethane	mg/kg (dry wt.)	29.9	R	0.566	UD	1.55	R	0.26	U	0.385	U	3.26	UD	2.44	UD
1,1,2,2-Tetrachloroethane	mg/kg (dry wt.)	29.9	R	0.566	UD	1.55	R	0.26	U	0.385	U	3.26	UD	2.44	UD
1,2-Dibromoethane	mg/kg (dry wt.)	29.9	R	0.566	UD	1.55	R	0.26	U	0.385	U	3.26	UD	2.44	UD
1,2-Dibromo-3-Chloropropane	mg/kg (dry wt.)	29.9	R	0.566	UD	1.55	R	0.26	U	0.385	U	3.26	UD	2.44	UD
1,2-Dichlorobenzene	mg/kg (dry wt.)	29.9	R	0.566	UD	1.55	R	0.26	U	0.385	U	3.26	UD	2.44	UD
1,2-Dichloroethane	mg/kg (dry wt.)	29.9	R	0.566	UD	1.55	R	0.26	U	0.385	U	3.26	UD	2.44	UD
1,2-Dichloropropane	mg/kg (dry wt.)	29.9	R	0.566	UD	1.55	R	0.26	U	0.385	U	3.26	UD	2.44	UD
1,2,3-Trichlorobenzene	mg/kg (dry wt.)	60.2	jD	1.42	UD	3.88	R	0.369	j	0.963	U	8.14	UD	6.11	UD
1,2,3-Trichloropropane	mg/kg (dry wt.)	29.9	R	0.566	UD	1.55	R	0.26	U	0.385	U	3.26	UD	2.44	UD
1,2,4-Trichlorobenzene	mg/kg (dry wt.)	469	D	1.42	UD	3.88	R	1.5		0.245	j	8.14	UD	5.19	jD
1,2,4-Trimethylbenzene	mg/kg (dry wt.)	74.8	R	1.42	UD	3.88	R	0.649	U	0.963	U	8.14	UD	6.11	UD
1,3-Dichlorobenzene	mg/kg (dry wt.)	29.9	R	0.566	UD	1.55	R	0.26	U	1.57		3.26	UD	4.73	D
1,3-Dichloropropane	mg/kg (dry wt.)	29.9	R	0.566	UD	1.55	R	0.26	U	0.385	U	3.26	UD	2.44	UD
1,3,5-Trimethylbenzene	mg/kg (dry wt.)	74.8	R	1.42	UD	3.88	R	0.649	U	0.963	U	8.14	UD	6.11	UD
1,4-Dichlorobenzene	mg/kg (dry wt.)	29.9	R	0.566	UD	1.55	R	0.26	U	6.57		3.26	UD	17.6	D
2-Butanone	mg/kg (dry wt.)	29.9	R	0.566	UD	1.55	R	0.26	U	0.385	U	3.26	UD	2.44	UD
2-Chloroethyl Vinyl Ether	mg/kg (dry wt.)	74.8	R	1.42	UD	3.88	R	0.649	U	0.963	U	8.14	UD	6.11	UD
2-Chlorotoluene	mg/kg (dry wt.)	29.9	R	0.566	UD	1.55	R	0.26	U	0.385	U	3.26	UD	2.44	UD
2-Hexanone	mg/kg (dry wt.)	74.8	R	1.42	UD	3.88	R	0.649	U	0.963	U	8.14	UD	6.11	UD
2,2-Dichloropropane	mg/kg (dry wt.)	29.9	R	0.566	UD	1.55	R	0.26	U	0.385	U	3.26	UD	2.44	UD
4-Chlorotoluene	mg/kg (dry wt.)	29.9	R	0.566	UD	1.55	R	0.26	U	0.385	U	3.26	UD	2.44	UD
4-Methyl-2-Pentanone	mg/kg (dry wt.)	29.9	R	0.566	UD	1.55	R	0.26	U	0.385	U	3.26	UD	2.44	UD

Parameter	Station ID	12100206		12100206		13100206		13100206		15100206		15100206	
	Station Abbreviation	12-B		12-T		13-B		13-T		15-B		15-T	
	Date Collected	10/2/2006		10/2/2006		10/2/2006		10/2/2006		10/2/2006		10/2/2006	
	Sample ID	S-06C-0012-B		S-06C-0012-T		S-06C-0013-B		S-06C-0013-T		S-06C-0015-B		S-06C-0015-T	
	Units	Result	FinQ	Result	FinQ	Result	FinQ	Result	FinQ	Result	FinQ	Result	FinQ
Acetone	mg/kg (dry wt.)	3.09	U	7.5	UD	0.499	U	1.23	B	6.16	U	0.833	U
Benzene	mg/kg (dry wt.)	2.5	UD	3	UD	0.267	U	0.44	U	5.67	UD	0.583	UD
Bromobenzene	mg/kg (dry wt.)	2.5	UD	3	UD	0.267	U	0.44	U	5.67	UD	0.583	UD
Bromodichloromethane	mg/kg (dry wt.)	2.5	UD	3	UD	0.267	U	0.44	U	5.67	UD	0.583	UD
Bromoform	mg/kg (dry wt.)	2.5	UD	3	UD	0.267	U	0.44	U	5.67	UD	0.583	UD
Bromomethane	mg/kg (dry wt.)	2.5	UD	3	UD	0.267	U	0.44	U	5.67	UD	0.583	UD
Carbon Disulfide	mg/kg (dry wt.)	2.5	UD	3	UD	0.267	U	0.44	U	5.67	UD	0.583	UD
Carbon Tetrachloride	mg/kg (dry wt.)	2.5	UD	3	UD	0.267	U	0.44	U	5.67	UD	0.583	UD
Chlorobenzene	mg/kg (dry wt.)	2.5	UD	3	UD	0.267	U	0.44	U	5.67	UD	0.583	UD
Chloroethane	mg/kg (dry wt.)	2.5	UD	3	UD	0.267	U	0.44	U	5.67	UD	0.583	UD
Chloroform	mg/kg (dry wt.)	2.5	UD	3	UD	0.267	U	0.44	U	5.67	UD	0.583	UD
Chloromethane	mg/kg (dry wt.)	2.5	UD	3	UD	0.267	U	0.44	U	5.67	UD	0.583	UD
Cis-1,2-Dichloroethene	mg/kg (dry wt.)	415		2920		0.544		11.6		251	D	40.9	D
Cis-1,3-Dichloropropene	mg/kg (dry wt.)	2.5	UD	3	UD	0.267	U	0.44	U	5.67	UD	0.583	UD
Dibromochloromethane	mg/kg (dry wt.)	2.5	UD	3	UD	0.267	U	0.44	U	5.67	UD	0.583	UD
Dibromomethane	mg/kg (dry wt.)	2.5	UD	3	UD	0.267	U	0.44	U	5.67	UD	0.583	UD
Dichlorodifluoromethane	mg/kg (dry wt.)	2.5	UD	3	UD	0.267	U	0.44	U	5.67	UD	0.583	UD
Ethylbenzene	mg/kg (dry wt.)	2.5	UD	32.3	D	0.267	U	0.44	U	5.67	UD	0.583	UD
Hexachlorobutadiene	mg/kg (dry wt.)	2.5	UD	3	UD	0.267	U	0.44	U	5.67	UD	0.583	UD
Isopropylbenzene	mg/kg (dry wt.)	6.26	UD	7.5	UD	0.667	U	1.1	U	14.2	UD	1.46	UD
Methylene Chloride	mg/kg (dry wt.)	6.26	UD	7.5	UD	0.667	U	1.1	U	14.2	UD	1.46	UD
Methyl-Tert-Butyl-Ether (Mtbe)	mg/kg (dry wt.)	2.5	UD	3	UD	0.267	U	0.44	U	5.67	UD	0.583	UD
Naphthalene	mg/kg (dry wt.)	6.26	UD	7.5	UD	0.667	U	1.1	U	14.2	UD	1.46	UD
N-Butylbenzene	mg/kg (dry wt.)	6.26	UD	7.5	UD	0.667	U	1.1	U	14.2	UD	1.46	UD
N-Propylbenzene	mg/kg (dry wt.)	2.5	UD	3	UD	0.267	U	0.44	U	5.67	UD	0.583	UD
O-Xylene	mg/kg (dry wt.)	6.26	UD	7.5	UD	0.667	U	1.1	U	14.2	UD	1.46	UD
P-Isopropyltoluene	mg/kg (dry wt.)	6.26	UD	7.5	UD	0.667	U	1.1	U	14.2	UD	1.46	UD
P/M Xylene	mg/kg (dry wt.)	5.01	UD	5.5	jBD	0.534	U	0.88	U	11.4	UD	1.17	UD
Sec-Butylbenzene	mg/kg (dry wt.)	6.26	UD	7.5	UD	0.667	U	1.1	U	14.2	UD	1.46	UD
Styrene	mg/kg (dry wt.)	6.26	UD	3.03	jD	0.667	U	1.1	U	14.2	UD	1.46	UD
Tert-Butylbenzene	mg/kg (dry wt.)	6.26	UD	7.5	UD	0.667	U	1.1	U	14.2	UD	1.46	UD
Tetrachloroethene	mg/kg (dry wt.)	2.5	UD	60.6	D	0.267	U	0.44	U	5.67	UD	0.583	UD
Toluene	mg/kg (dry wt.)	2.5	UD	8.69	D	0.267	U	0.44	U	5.67	UD	0.583	UD

Parameter	Station ID	12100206		12100206		13100206		13100206		15100206		15100206	
	Station Abbreviation	12-B		12-T		13-B		13-T		15-B		15-T	
	Date Collected	10/2/2006		10/2/2006		10/2/2006		10/2/2006		10/2/2006		10/2/2006	
	Sample ID	S-06C-0012-B		S-06C-0012-T		S-06C-0013-B		S-06C-0013-T		S-06C-0015-B		S-06C-0015-T	
	Units	Result	FinQ	Result	FinQ	Result	FinQ	Result	FinQ	Result	FinQ	Result	FinQ
Trans-1,2-Dichloroethene	mg/kg (dry wt.)	1.5	jD	8.05	D	0.267	U	0.44	U	3.06	jD	0.685	D
Trans-1,3-Dichloropropene	mg/kg (dry wt.)	2.5	UD	3	UD	0.267	U	0.44	U	5.67	UD	0.583	UD
Trichloroethene	mg/kg (dry wt.)	289		1830		0.202	j	1.93		5.67	UD	1.59	D
Trichlorofluoromethane	mg/kg (dry wt.)	2.5	UD	3	UD	0.267	U	0.44	U	5.67	UD	0.583	UD
Vinyl Acetate	mg/kg (dry wt.)	2.5	UD	3	UD	0.267	U	0.44	U	5.67	UD	0.583	UD
Vinyl Chloride	mg/kg (dry wt.)	39.6	D	192	D	0.267	U	3.94		60	D	19.6	D
1,1-Dichloroethane	mg/kg (dry wt.)	2.5	UD	3	UD	0.267	U	0.44	U	5.67	UD	0.583	UD
1,1-Dichloroethene	mg/kg (dry wt.)	4.81	D	2.7	jD	0.267	U	0.44	U	5.67	UD	0.583	UD
1,1-Dichloropropene	mg/kg (dry wt.)	2.5	UD	3	UD	0.267	U	0.44	U	5.67	UD	0.583	UD
1,1,1-Trichloroethane	mg/kg (dry wt.)	2.5	UD	3	UD	0.267	U	0.44	U	5.67	UD	0.583	UD
1,1,1,2-Tetrachloroethane	mg/kg (dry wt.)	2.5	UD	3	UD	0.267	U	0.44	U	5.67	UD	0.583	UD
1,1,2-Trichloroethane	mg/kg (dry wt.)	2.5	UD	3	UD	0.267	U	0.44	U	5.67	UD	0.583	UD
1,1,2,2-Tetrachloroethane	mg/kg (dry wt.)	2.5	UD	3	UD	0.267	U	0.44	U	5.67	UD	0.583	UD
1,2-Dibromoethane	mg/kg (dry wt.)	2.5	UD	3	UD	0.267	U	0.44	U	5.67	UD	0.583	UD
1,2-Dibromo-3-Chloropropane	mg/kg (dry wt.)	2.5	UD	3	UD	0.267	U	0.44	U	5.67	UD	0.583	UD
1,2-Dichlorobenzene	mg/kg (dry wt.)	2.5	UD	3	UD	0.267	U	0.44	U	5.67	UD	0.583	UD
1,2-Dichloroethane	mg/kg (dry wt.)	1.26	jD	3	UD	0.267	U	0.44	U	5.67	UD	0.583	UD
1,2-Dichloropropane	mg/kg (dry wt.)	2.5	UD	3	UD	0.267	U	0.44	U	5.67	UD	0.583	UD
1,2,3-Trichlorobenzene	mg/kg (dry wt.)	6.26	UD	14.3	D	0.667	U	0.473	j	14.2	UD	1.46	UD
1,2,3-Trichloropropane	mg/kg (dry wt.)	2.5	UD	3	UD	0.267	U	0.44	U	5.67	UD	0.583	UD
1,2,4-Trichlorobenzene	mg/kg (dry wt.)	6.26	UD	105	D	0.415	j	3.84		14.2	UD	0.452	jD
1,2,4-Trimethylbenzene	mg/kg (dry wt.)	6.26	UD	7.5	UD	0.667	U	1.1	U	14.2	UD	1.46	UD
1,3-Dichlorobenzene	mg/kg (dry wt.)	2.5	UD	4.78	D	0.267	U	0.552		5.67	UD	0.784	D
1,3-Dichloropropane	mg/kg (dry wt.)	2.5	UD	3	UD	0.267	U	0.44	U	5.67	UD	0.583	UD
1,3,5-Trimethylbenzene	mg/kg (dry wt.)	6.26	UD	7.5	UD	0.667	U	1.1	U	14.2	UD	1.46	UD
1,4-Dichlorobenzene	mg/kg (dry wt.)	2.5	UD	9.29	D	0.267	U	1.33		5.67	UD	3.67	D
2-Butanone	mg/kg (dry wt.)	2.5	UD	3	UD	0.267	U	0.44	U	5.67	UD	0.583	UD
2-Chloroethyl Vinyl Ether	mg/kg (dry wt.)	6.26	UD	7.5	UD	0.667	U	1.1	U	14.2	UD	1.46	UD
2-Chlorotoluene	mg/kg (dry wt.)	2.5	UD	3	UD	0.267	U	0.44	U	5.67	UD	0.583	UD
2-Hexanone	mg/kg (dry wt.)	6.26	UD	7.5	UD	0.667	U	1.1	U	14.2	UD	1.46	UD
2,2-Dichloropropane	mg/kg (dry wt.)	2.5	UD	3	UD	0.267	U	0.44	U	5.67	UD	0.583	UD
4-Chlorotoluene	mg/kg (dry wt.)	2.5	UD	3	UD	0.267	U	0.44	U	5.67	UD	0.583	UD
4-Methyl-2-Pentanone	mg/kg (dry wt.)	2.5	UD	3	UD	0.267	U	0.44	U	5.67	UD	0.583	UD

## **Appendix D**

### **Grain Size and Total Organic Carbon Analytical Data**

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## **Summary Table Results**

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**New Bedford Harbor Summary Table**

<b>Battelle ID</b>	<b>Station ID</b>	<b>AMS ID</b>	<b>Date Sampled</b>	<b>Gravel (%)</b>	<b>Coarse Sand (%)</b>	<b>Medium Sand (%)</b>	<b>Fine Sand (%)</b>	<b>Silt (%)</b>	<b>Clay (%)</b>	<b>Moisture (%)</b>	<b>TOC (%)</b>
S-06D-0Y08-00-06	Y08	25937	11/1/2006	34.10	3.29	6.53	9.15	27.16	19.77	154	5.50
S-06D-0T15-00-05	T15	25938	11/1/2006	5.59	3.86	11.96	21.53	31.87	25.19	101	5.25
S-06D-0M10-00-07	M10	25939	11/1/2006	5.45	2.13	3.05	4.25	53.29	31.83	133	4.84
S-06D-0W18-00-06	W18	25940	11/1/2006	15.27	0.85	2.09	4.58	53.13	24.08	123	3.71
S-06D-0L09-00-03	L09	25941	11/1/2006	29.86	0.04	1.10	3.33	45.75	19.92	105	3.67
S-06D-0M03-03-08	M03	25942	11/1/2006	2.12	0.46	1.63	5.25	57.75	32.79	106	4.15
S-06D-0P08-05-10	P08	25943	11/1/2006	2.78	1.52	2.80	7.48	57.09	28.33	93	3.16
S-06D-0L12-00-03	L12	25944	11/1/2006	3.49	1.09	5.97	18.18	44.22	27.05	226	9.88
S-06D-0Q21-00-06	Q21	25945	11/2/2006	9.12	2.54	9.10	32.09	29.42	17.73	102	5.24
S-06D-0O12-00-05	O12	25946	11/2/2006	3.04	0.10	1.90	7.10	52.97	34.89	138	4.61
S-06D-0J17-00-05	J17	25947	11/2/2006	1.77	3.89	18.61	19.53	36.60	19.60	102	4.13
S-06D-0U22-02-07	U22	25948	11/2/2006	7.17	0.88	1.25	7.71	54.10	28.89	172	5.17
S-06D-BB19-00-06	BB19	25949	11/2/2006	17.65	13.94	21.61	24.83	14.65	7.32	29	0.77
S-06D-0R11-10-15	R11	25950	11/2/2006	4.65	0.45	1.46	9.40	56.11	27.93	100	3.14
S-06D-0Z13-00-02	Z13	25951	11/2/2006	1.82	0.34	1.99	5.49	52.51	37.85	126	4.51
S-06D-0L20-07-12	L20	25952	11/2/2006	0.00	0.14	1.14	4.57	56.36	37.79	188	7.45
S-06D-0L20-07-12-DUP	L20 DUP	25953	11/2/2006	0.00	0.32	1.07	4.08	59.78	34.75	159	5.60
S-06D-0N14-00-05	N14	25954	11/2/2006	0.00	0.20	2.10	7.71	55.27	34.72	130	4.29
S-06D-0N08-00-17	N08	25955	10/31/2006	1.21	1.03	1.13	4.63	59.76	32.24	143	5.38
S-06D-0N08-00-17-DUP	N08 DUP	25956	10/31/2006	28.88	0.77	1.37	4.01	40.79	24.18	156	5.78
S-06D-0N06-00-05	N06	25957	10/31/2006	19.92	1.55	1.82	5.75	45.34	25.62	116	4.39
S-06D-0R03-00-13	R03	25958	10/31/2006	12.80	1.53	3.69	16.79	43.49	21.70	126	4.53
S-06D-0U06-05-14	U06	25959	10/31/2006	0.00	0.25	0.73	11.47	58.68	28.87	150	6.86
S-06D-0L05-00-06	L05	25960	10/31/2006	0.00	0.33	1.13	3.77	63.37	31.40	101	3.18
S-06D-0W03-00-05	W03	25961	10/31/2006	30.91	0.50	1.16	9.86	37.32	20.25	157	8.16
S-06D-AA03-00-05	AA03	25962	10/31/2006	41.51	1.54	1.72	7.14	30.89	17.20	168	5.98
S-06D-0F36-00-05	F36	25963	11/3/2006	2.24	0.51	1.45	5.07	58.23	32.50	137	3.99
S-06D-0F38-00-05	F38	25964	11/3/2006	3.10	0.99	4.03	10.61	55.26	26.01	169	6.97
S-06D-0H41-00-05	H41	25965	11/3/2006	0.80	1.00	0.62	1.11	55.61	40.86	155	6.35
S-06D-0H32-00-05	H32	25966	11/3/2006	0.00	0.26	1.36	4.72	54.29	39.37	128	3.18

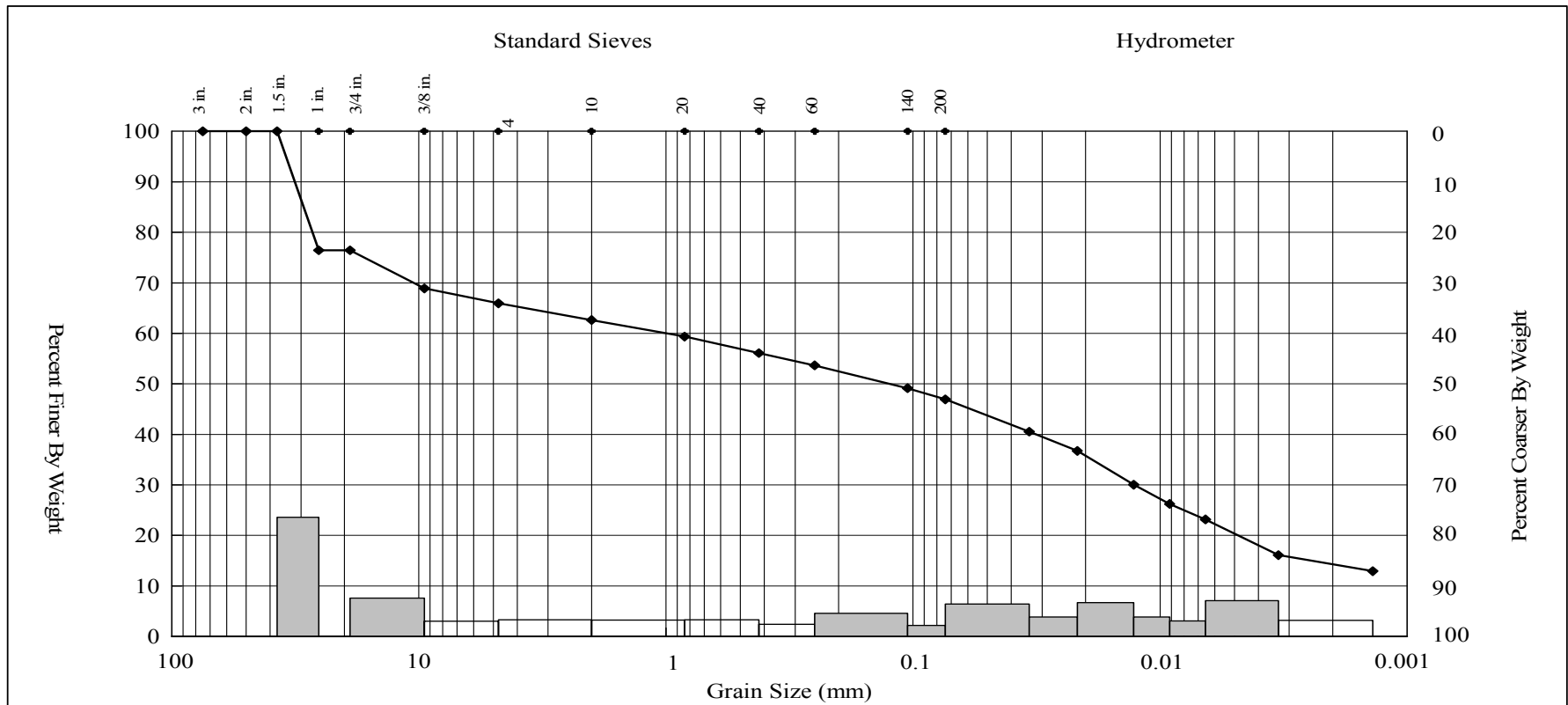
**New Bedford Harbor Summary Table**



<b>Battelle ID</b>	<b>Station ID</b>	<b>AMS ID</b>	<b>Date Sampled</b>	<b>Gravel (%)</b>	<b>Coarse Sand (%)</b>	<b>Medium Sand (%)</b>	<b>Fine Sand (%)</b>	<b>Silt (%)</b>	<b>Clay (%)</b>	<b>Moisture (%)</b>	<b>TOC (%)</b>
S-06D-0G25-00-05	G25	25967	11/3/2006	12.21	13.32	28.56	24.53	11.07	10.31	63	3.81
S-06D-0H36-00-05	H36	25968	11/3/2006	3.42	0.85	4.11	15.35	52.48	23.79	154	7.92
S-06D-0Z22-00-06	Z22	25969	11/2/2006	3.08	0.28	1.89	6.88	56.97	30.90	94	3.58
S-06D-0H29-00-05	H29	25970	11/3/2006	0.00	0.37	1.18	2.95	58.61	36.89	121	3.37
S-06D-0E27-00-05	E27	25971	11/3/2006	6.11	2.00	5.33	6.83	50.31	29.42	141	7.14
S-06D-0H27-00-05	H27	25972	11/3/2006	0.00	0.86	2.47	6.94	56.44	33.29	141	3.97
S-06D-0C29-05-10	C29	25973	11/3/2006	2.19	0.62	1.98	6.07	56.34	32.80	140	7.77
S-06D-0C41-04-09	C41	25974	11/3/2006	6.98	0.44	2.64	8.95	46.38	34.61	98	3.60
S-06D-0C41-04-09-DUP	C41 DUP	25975	11/3/2006	0.00	0.65	2.88	9.76	50.21	36.50	97	3.06
S-06D-0M23-05-10	M23	25976	11/3/2006	0.77	2.61	18.85	43.63	22.84	11.30	60	4.27
S-06D-0M23-05-10-DUP	M23 DUP	25977	11/3/2006	0.31	1.88	19.14	42.39	25.39	10.89	58	5.00
S-06D-0E33-00-05	E33	25978	11/3/2006	0.46	0.42	2.52	8.95	63.23	24.42	165	11.44
S-06D-0H24-22-27	H24	25979	11/3/2006	0.00	0.27	0.75	3.57	55.44	39.97	142	11.88
S-06D-0E30-00-05	E30	25980	11/7/2006	0.00	0.48	2.52	6.01	57.00	33.99	124	4.53
S-06D-0E32-00-05	E32	25981	11/7/2006	0.79	0.91	2.53	5.11	59.90	30.76	127	4.80
S-06D-0D36-00-05	D36	25982	11/7/2006	3.96	1.21	3.28	7.11	52.28	32.16	147	4.23
S-06D-0V28-02-07	V28	25983	11/7/2006	0.20	0.18	0.41	2.25	62.71	34.25	209	7.12
S-06D-0N28-08-13	N28	25984	11/7/2006	0.00	0.00	0.07	2.71	55.17	42.05	215	9.05
S-06D-0V39-00-05	V39	25985	11/7/2006	0.61	0.23	1.53	6.57	55.43	35.63	125	3.75
S-06D-0B32-00-05	B32	25986	11/7/2006	0.00	0.93	1.18	5.45	60.52	31.92	151	18.33
S-06D-0N40-07-12	N40	25987	11/7/2006	0.00	0.38	0.51	5.21	57.51	36.39	138	8.37
S-06D-0F53-14-19	F53	25988	11/8/2006	6.74	2.76	6.68	17.00	41.18	25.64	114	9.18
S-06D-0K50-00-05	K50	25989	11/8/2006	3.09	2.36	14.41	31.87	32.65	15.62	58	1.66
S-06D-0F58-00-05	F58	25990	11/8/2006	2.48	0.79	0.94	3.46	54.59	37.74	177	6.88
S-06D-0N58-00-05	N58	25991	11/8/2006	6.11	0.00	12.40	68.50	7.69	5.30	40	0.93
S-06D-0Q44-00-05	Q44	25992	11/8/2006	0.00	0.69	4.04	12.77	57.25	25.25	156	9.26

## **Grain Size Results**

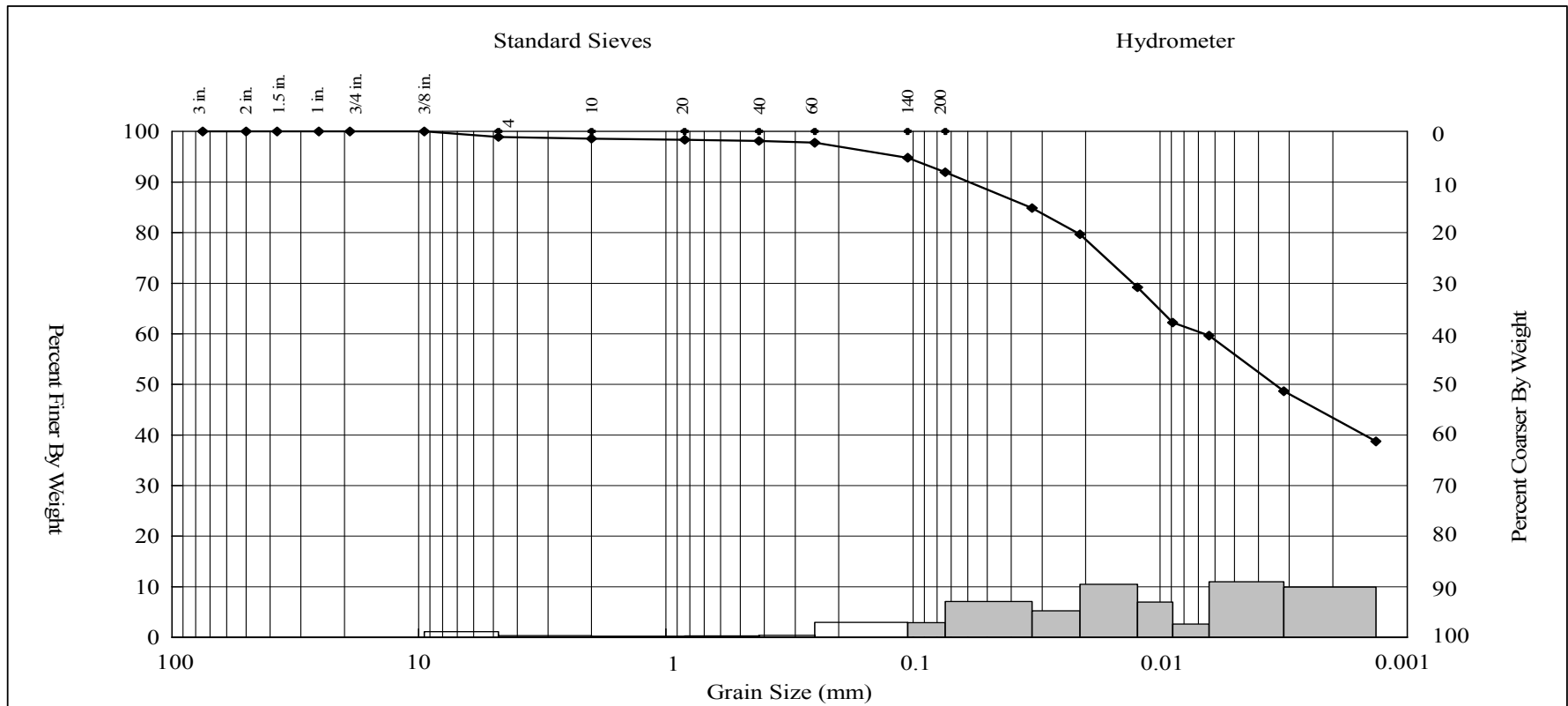
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# GEOTECHNICAL RESULTS



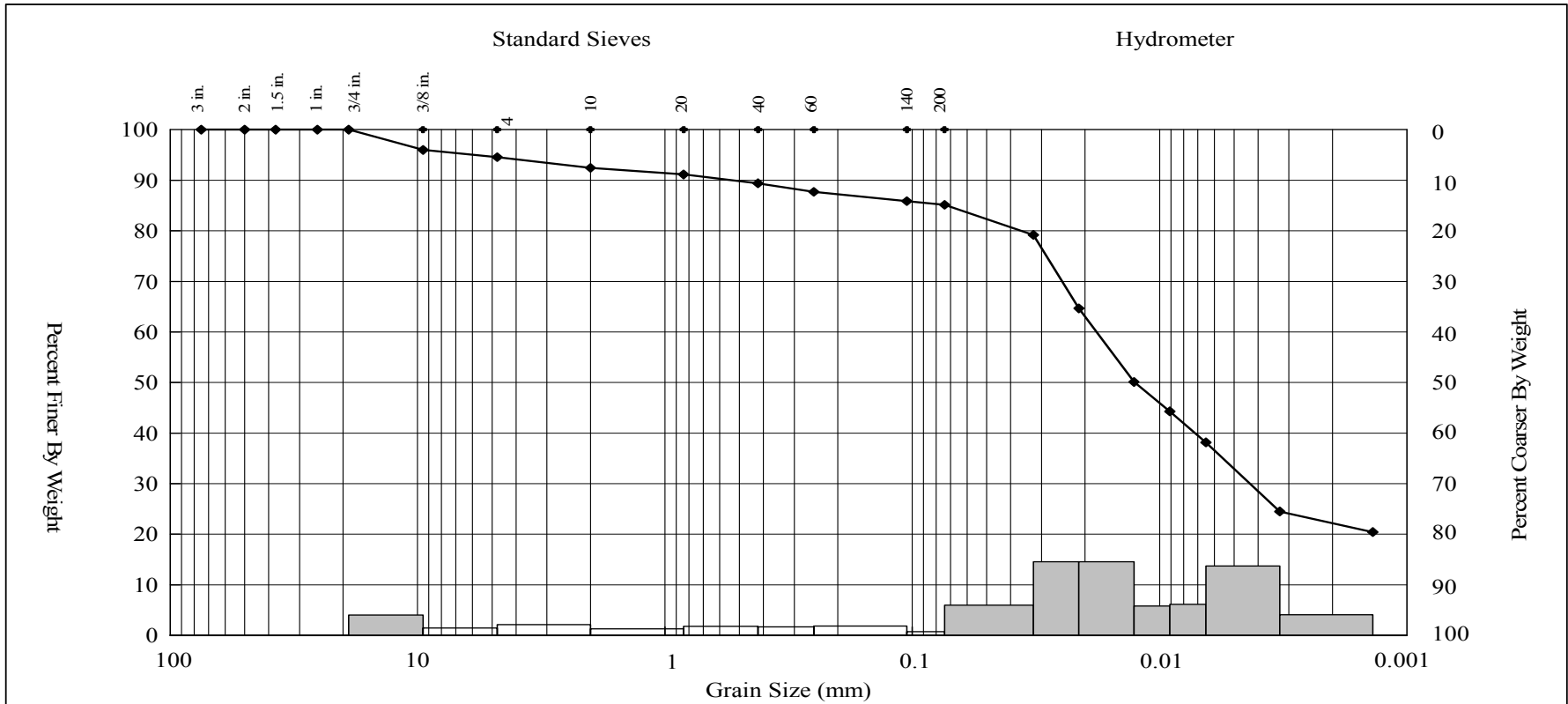
Gravel (%)		Sand (%)				Fines (%)				Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 11/1/2006 Date Analyzed: 12/12/2006 Matrix: Sediment Method: ASTM D 422  Client Sample ID: S-06D-0Y08-00-06 AMS Sample ID: 25937		
		Coarse	Medium	Fine	Silt	Clay						
34.10	3.29	6.53	9.15	27.16	19.77							
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>			C <sub>u</sub>
154												
Material Description												
Silty Gravel with Sand ("GM"), black (5Y 2.5/1)												
<div><div>APPLIED MARINE SCIENCES, INC. 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax</div></div> <div>These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <div>K.S. Davis, P.G.</div><div>AMS, Inc. Technical Director</div></div> <div><div>ACCREDITED IN ACCORDANCE WITH</div><div></div><div>Laboratory No. E87956</div></div>												



# GEOTECHNICAL RESULTS



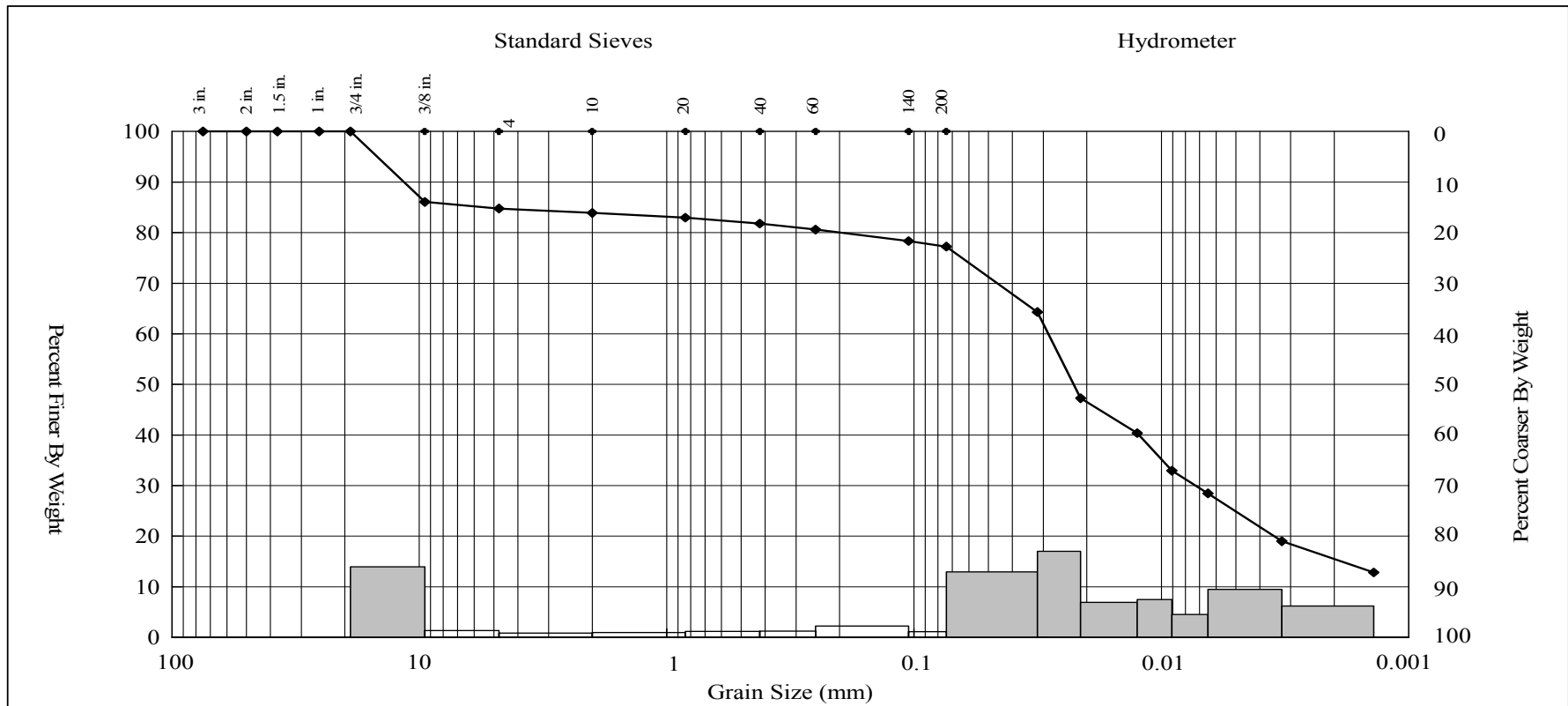
Gravel (%)		Sand (%)			Fines (%)				Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 11/1/2006 Date Analyzed: 12/12/2006 Matrix: Sediment Method: ASTM D 422			
		Coarse	Medium	Fine	Silt	Clay						
5.59	3.86	11.96	21.53	31.87	25.19							
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>			C <sub>c</sub>	C <sub>u</sub>
101												
Material Description												
Sandy Elastic Silt ("MH"), very dark gray (5Y 3/1)												
 <b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax							These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.				 <b>Laboratory No. E87956</b>	
							<i>K.S. Davis, P.G.</i>					
							AMS, Inc. Technical Director					

## GEOTECHNICAL RESULTS





Gravel (%)	Sand (%)			Fines (%)		Client Project Title:		New Bedford Harbor												
	Coarse	Medium	Fine	Silt	Clay	Client Project Number:		N/A												
5.45	2.13	3.05	4.25	53.29	31.83	AMS Project Number:		2006-03-27												
Date Sampled:										11/1/2006										
Date Analyzed:										12/12/2006										
Matrix:										Sediment										
Method:										ASTM D 422										
Water Cont. (%)										LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	
133																				
Material Description										Client Sample ID:		S-06D-0M10-00-07								
Elastic Silt ("MH"). very dark gray (5Y 3/1)										AMS Sample ID:		25939								
<div><div><div><div>APPLIED MARINE SCIENCES, INC.</div><div>502 N. Hwy 3, Suite B</div><div>League City, TX 77573</div><div>281.554.7272 Tel.</div><div>281.554.6356 Fax</div></div></div><div><div>These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.</div><div><div>K.S. Davis, P.Eng.</div><div>AMS, Inc. Technical Director</div></div></div></div>										<div><div><div><div>ACCREDITED IN ACCORDANCE WITH</div><div>nelac</div><div>Laboratory No. E87956</div></div></div></div>										

# GEOTECHNICAL RESULTS

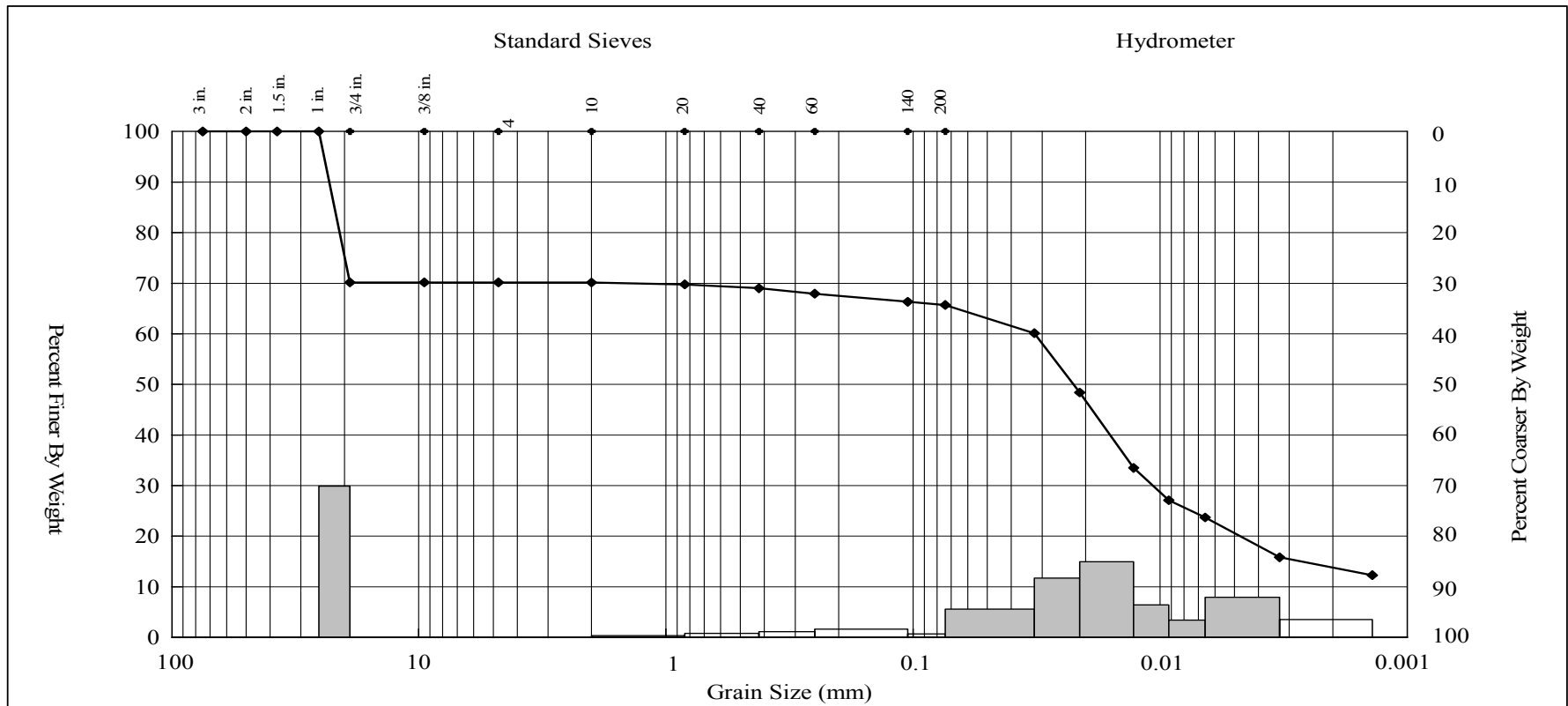




Gravel (%)		Sand (%)				Fines (%)				Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 11/1/2006 Date Analyzed: 12/12/2006 Matrix: Sediment Method: ASTM D 422	
		Coarse	Medium	Fine	Silt	Clay					
15.27	0.85	2.09	4.58	53.13	24.08						
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>		
123											
Material Description											
Elastic Silt with Gravel ("MH"), very dark gray (5Y 3/1)											
Client Sample ID: S-06D-0W18-00-06											
AMS Sample ID: 25940											

 <div>APPLIED MARINE SCIENCES, INC. 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax</div>	<div>These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.</div> <div>K. S. Davis, P.G.</div> <div>AMS, Inc. Technical Director</div>	 <div>ACCREDITED IN ACCORDANCE WITH nelac Laboratory No. E87956</div>
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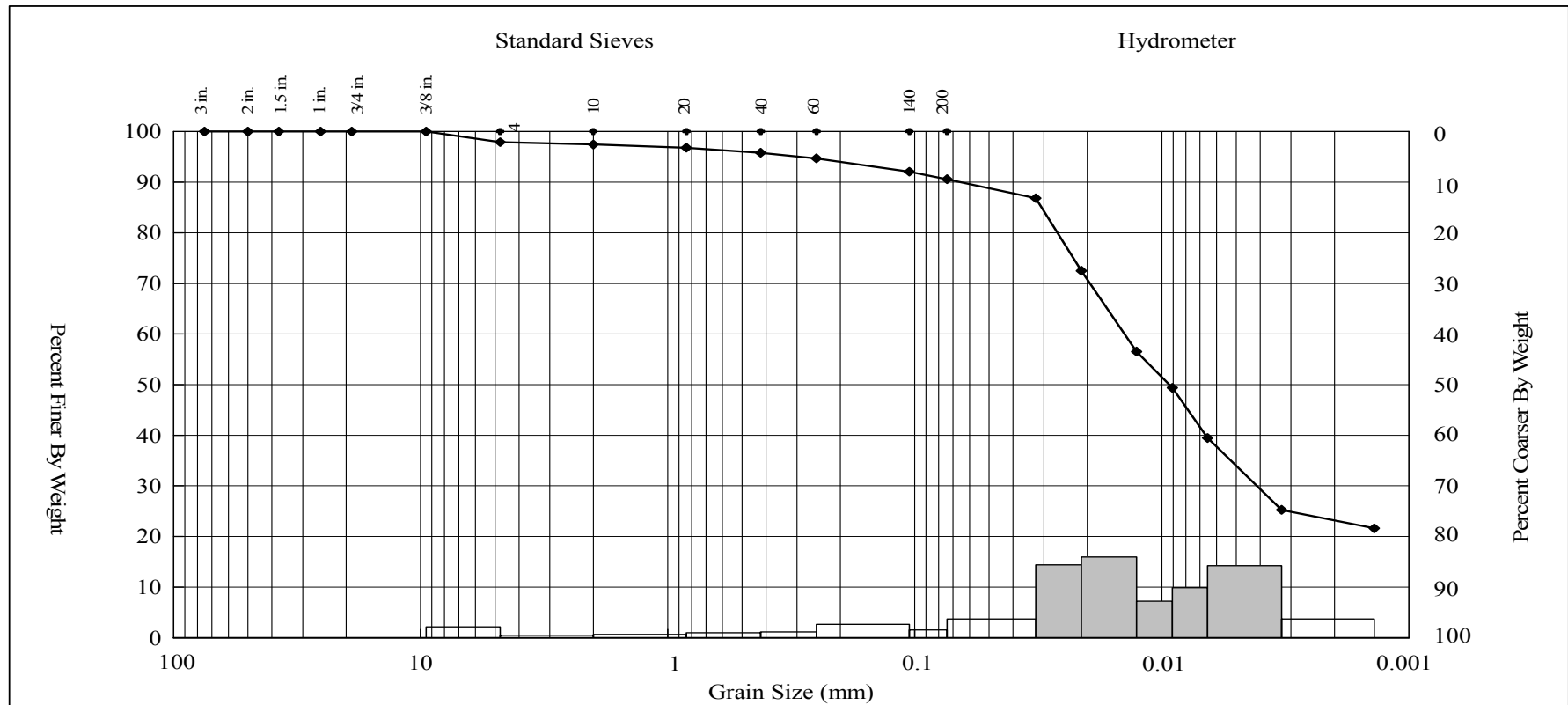




# GEOTECHNICAL RESULTS



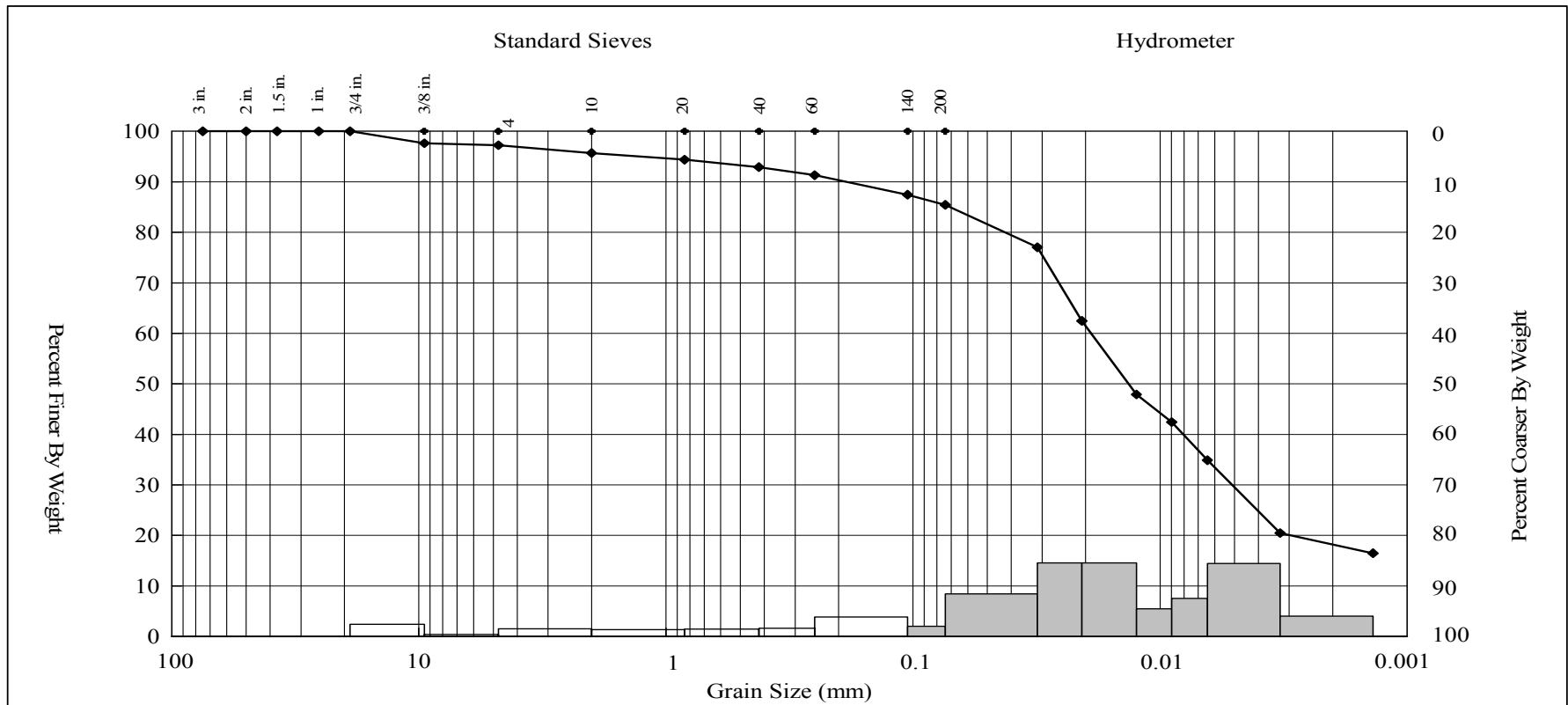
Gravel (%)		Sand (%)					Fines (%)				Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 11/1/2006 Date Analyzed: 12/12/2006 Matrix: Sediment Method: ASTM D 422				
		Coarse		Medium		Fine	Silt		Clay						
29.86		0.04		1.10		3.33		45.75		19.92					
Water Cont. (%)		LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>			C <sub>u</sub>		
105															
Material Description											Client Sample ID: S-06D-0L09-00-03 AMS Sample ID: 25941				
Gravelly Elastic Silt ("MH"), very dark gray (5Y 3/1)															
 <div>APPLIED MARINE SCIENCES, INC. 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax</div>							These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard. <div>K.S. Davis, P.G. AMS, Inc. Technical Director</div>							 <div>ACCREDITED IN ACCORDANCE WITH nelac Laboratory No. E87956</div>	



## GEOTECHNICAL RESULTS



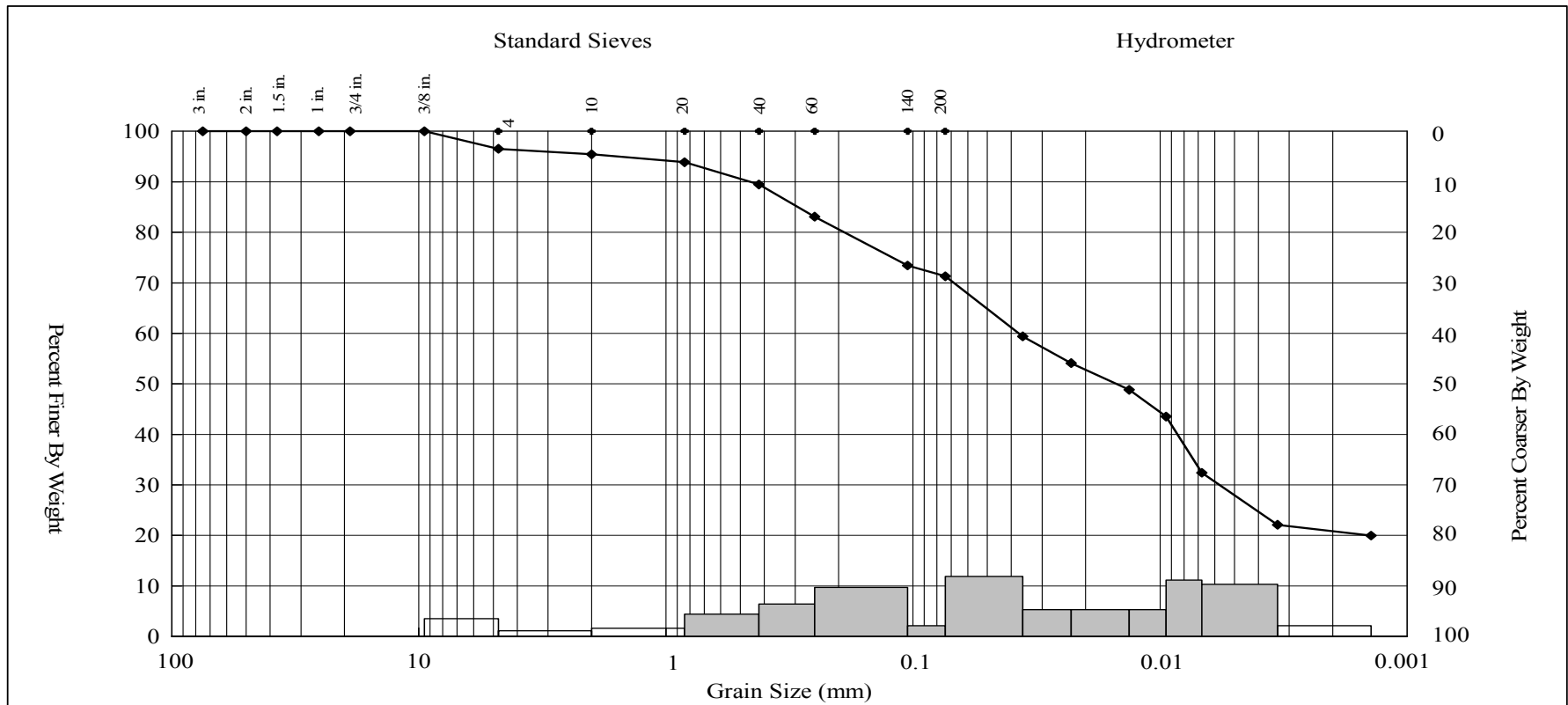
Gravel (%)		Sand (%)				Fines (%)				Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 11/1/2006 Date Analyzed: 12/12/2006 Matrix: Sediment Method: ASTM D 422			
		Coarse		Medium		Fine		Silt				Clay	
2.12		0.46		1.63		5.25		57.75				32.79	
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>			C <sub>u</sub>	
106													
Material Description										Client Sample ID: S-06D-0M03-03-08 AMS Sample ID: 25942			
Elastic Silt ("MH"), very dark gray (5Y 3/1)													
<div><div>APPLIED MARINE SCIENCES, INC. 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax</div></div>						<div>These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <div>K.S. Davis, P.G.</div><div>AMS, Inc. Technical Director</div></div>						<div><div>ACCREDITED IN ACCORDANCE WITH</div><div></div><div>Laboratory No. E87956</div></div>	



# GEOTECHNICAL RESULTS



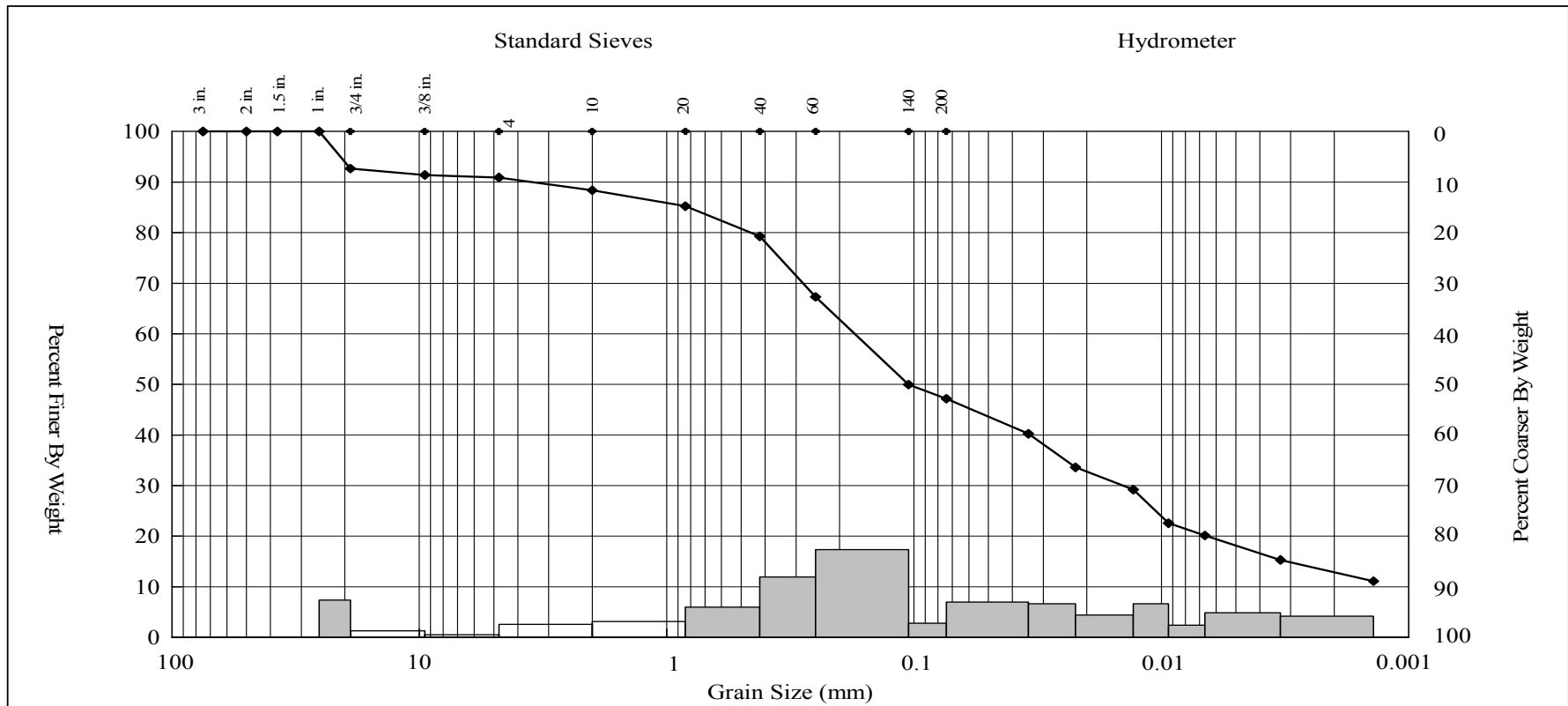
Gravel (%)	Sand (%)				Fines (%)				Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 11/1/2006 Date Analyzed: 12/12/2006 Matrix: Sediment Method: ASTM D 422		
	Coarse	Medium	Fine		Silt	Clay					
2.78	1.52	2.80	7.48	57.09	28.33						
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>			C <sub>c</sub>
93											
Material Description										Client Sample ID: S-06D-0P08-05-10 AMS Sample ID: 25943	
Elastic Silt ("MH"), very dark gray (5Y 3/1)											
 <b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax							These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <i>K.S. Davis, P.G.</i> AMS, Inc. Technical Director				 ACCREDITED IN ACCORDANCE WITH <b>nelac</b> Laboratory No. E87956



# GEOTECHNICAL RESULTS



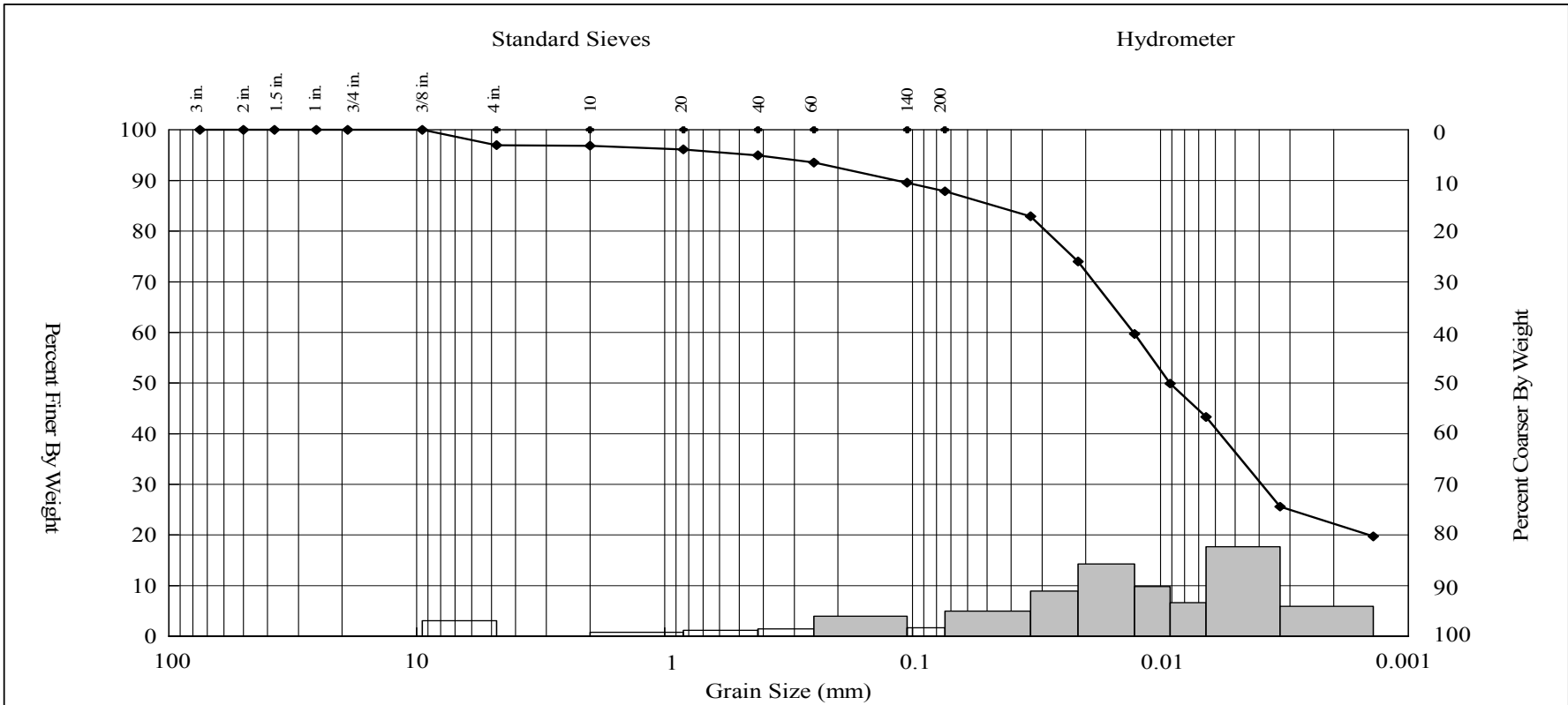
Gravel (%)		Sand (%)				Fines (%)				Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 11/1/2006 Date Analyzed: 12/12/2006 Matrix: Sediment Method: ASTM D 422				
		Coarse		Medium	Fine	Silt		Clay						
3.49		1.09		5.97	18.18	44.22		27.05						
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>			C <sub>u</sub>		
226														
Material Description											Client Sample ID: S-06D-0L12-00-03 AMS Sample ID: 25944			
Elastic Silt with Sand ("MH"), very dark gray (5Y 3/1)														
 <b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax							These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <i>K.S. Davis, P.G.</i> AMS, Inc. Technical Director							 <b>ACCREDITED IN ACCORDANCE WITH</b> <b>nelac</b> Laboratory No. E87956

# GEOTECHNICAL RESULTS





Gravel (%)		Sand (%)				Fines (%)				Client Project Title: New Bedford Harbor		
		Coarse		Medium	Fine	Silt		Clay	Client Project Number: N/A			
9.12		2.54		9.10	32.09	29.42		17.73		AMS Project Number: 2006-03-27		
Date Sampled: 11/2/2006												
Date Analyzed: 12/12/2006												
Matrix: Sediment												
Method: ASTM D 422												
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	Client Sample ID: S-06D-0Q21-00-06	
102												
Material Description												
Silty Sand ("SM"), very dark gray (5Y 3/1)											AMS Sample ID: 25945	
 <b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax						These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <i>K.S. Davis, P.G.</i> _____ AMS, Inc. Technical Director						 ACCREDITED IN ACCORDANCE WITH <b>nelac</b> Laboratory No. E87956

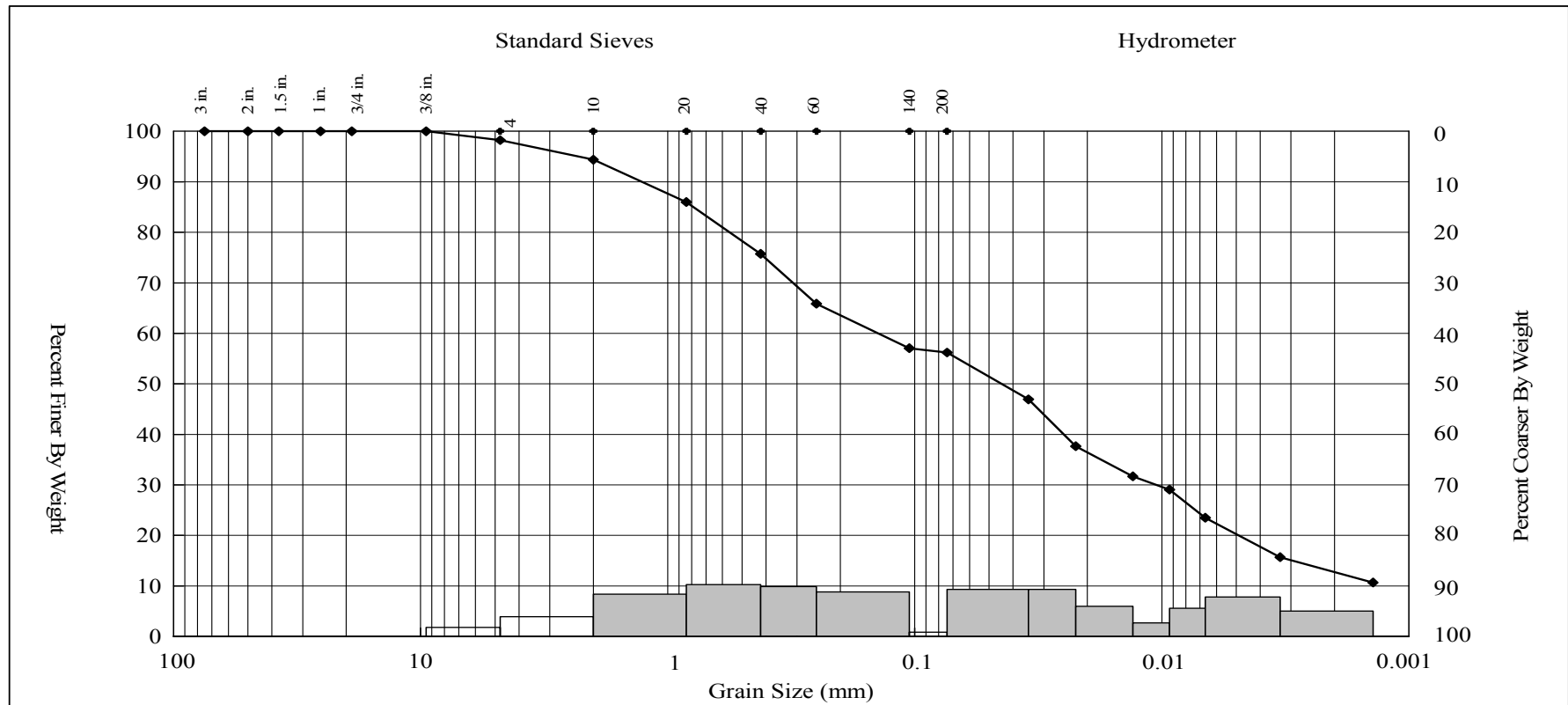
## GEOTECHNICAL RESULTS





Gravel (%)		Sand (%)			Fines (%)						Client Project Title:		New Bedford Harbor																		
Coarse		Medium		Fine		Silt			Clay			Client Project Number:		N/A																	
3.04		0.10		1.90		7.10		52.97			34.89			AMS Project Number:		2006-03-27															
														Date Sampled:		11/2/2006															
														Date Analyzed:		12/12/2006															
														Matrix:		Sediment															
														Method:		ASTM D 422															
Water Cont. (%)												LL		PI		D <sub>85</sub>		D <sub>60</sub>		D <sub>50</sub>		D <sub>30</sub>		D <sub>15</sub>		D <sub>10</sub>		C <sub>c</sub>		C <sub>u</sub>	
138																															
Material Description														Client Sample ID:				S-06D-0012-00-05													
Elastic Silt ("MH"), very dark gray (5Y 3/1)														AMS Sample ID:				25946													

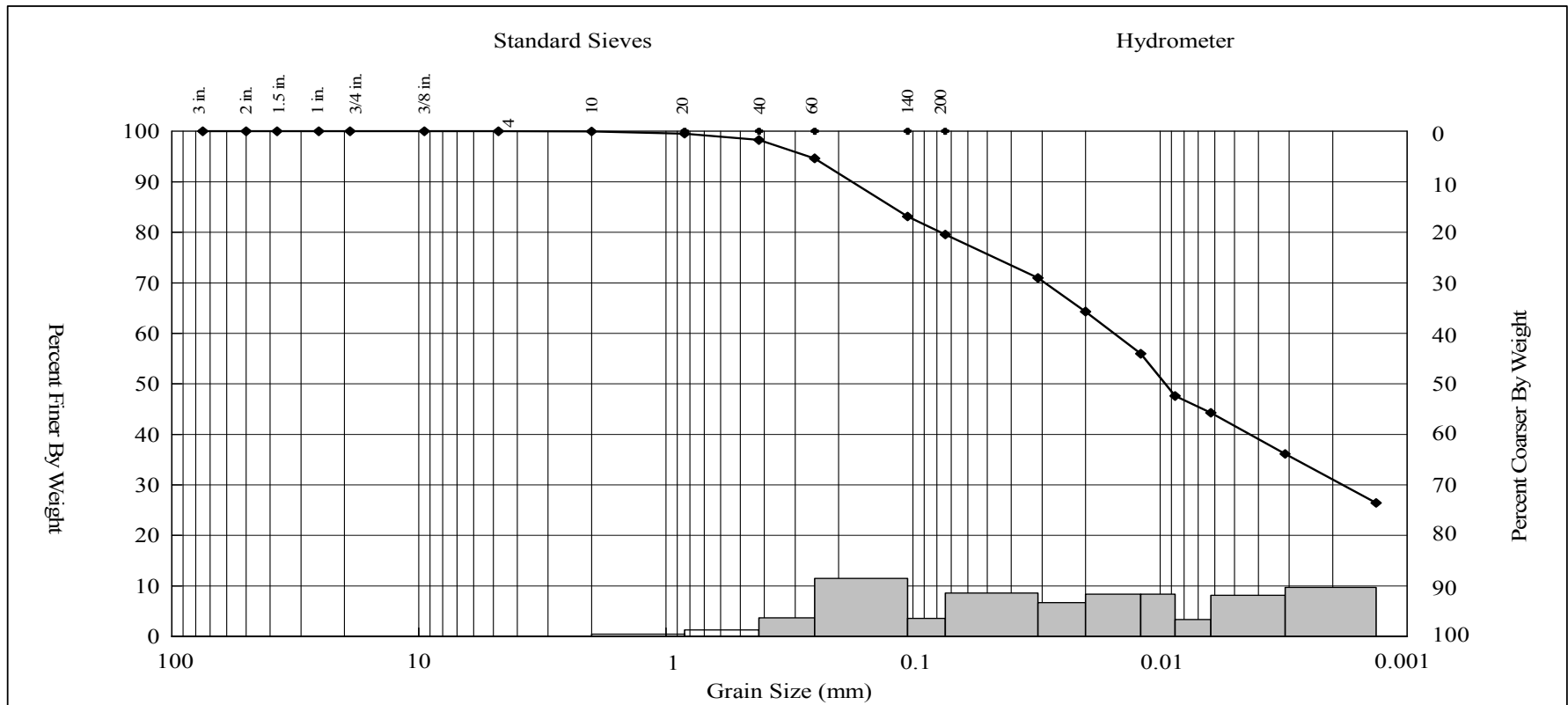
 <div>APPLIED MARINE SCIENCES, INC. 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax</div>	<div>These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.</div> <div>K.S. Davis, P.Eng.</div> <div>AMS, Inc. Technical Director</div>	 <div>ACCREDITED IN ACCORDANCE WITH nelac Laboratory No. E87956</div>
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## GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client Project Title: New Bedford Harbor					
	Coarse	Medium	Fine	Silt	Clay						
1.77	3.89	18.61	19.53	36.60	19.60	Client Project Number: N/A					
						AMS Project Number: 2006-03-27					
						Date Sampled: 11/1/2006					
						Date Analyzed: 12/12/2006					
						Matrix: Sediment					
						Method: ASTM D 422					
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	Client Sample ID: S-06D-0J17-00-05 AMS Sample ID: 25947
102											
Material Description											
Sandy Elastic Silt ("MH"), black (5Y 2.5/1)											
 APPLIED MARINE SCIENCES, INC. 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax						These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <div>K.S. Davis, P.G. AMS, Inc. Technical Director</div>					
						 Laboratory No. E87956					

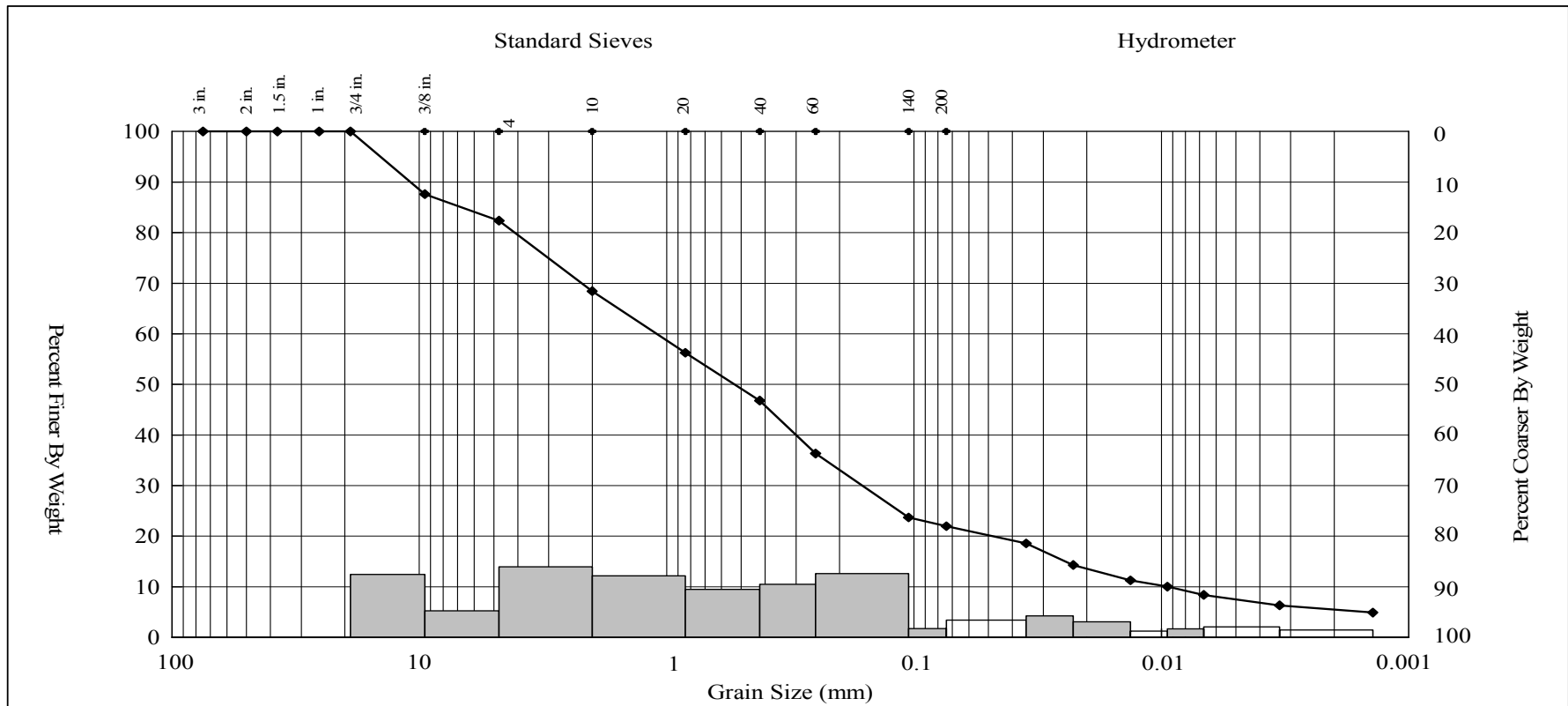
# GEOTECHNICAL RESULTS





Gravel (%)		Sand (%)				Fines (%)				Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 11/2/2006 Date Analyzed: 12/12/2006 Matrix: Sediment Method: ASTM D 422	
		Coarse	Medium	Fine	Silt	Clay					
7.17		0.88	1.25	7.71	54.10	28.89					
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	Client Sample ID: S-06D-0U22-02-07 AMS Sample ID: 25948
172											
Material Description											
Elastic Silt with Sand ("MH"), black (5Y 2.5/1)											
 <b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax						These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <i>K.S. Davis, P.G.</i> AMS, Inc. Technical Director					 ACCREDITED IN ACCORDANCE WITH <b>nelac</b> Laboratory No. E87956

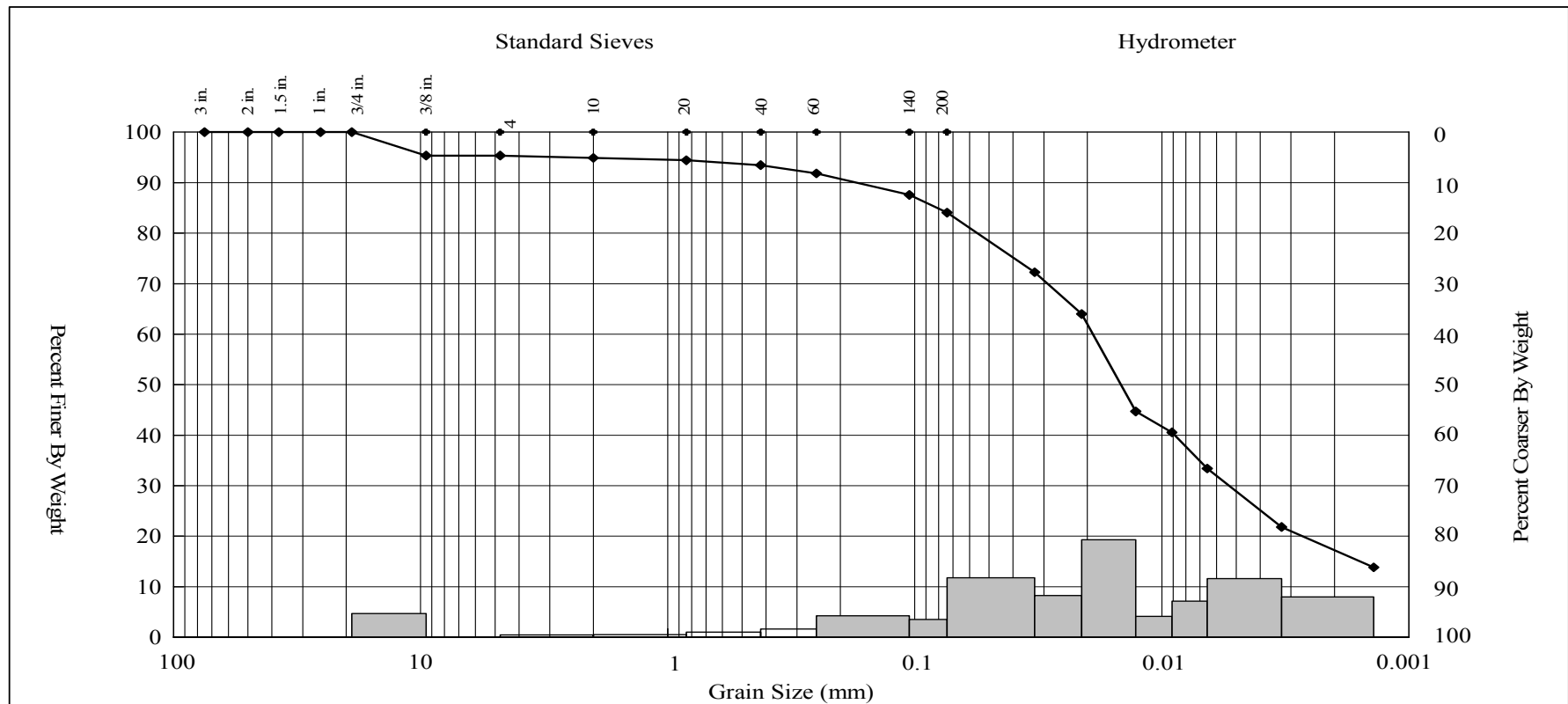


# GEOTECHNICAL RESULTS




Gravel (%)		Sand (%)				Fines (%)				Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 11/2/2006 Date Analyzed: 12/12/2006 Matrix: Sediment Method: ASTM D 422		
		Coarse		Medium	Fine	Silt		Clay				
17.65		13.94		21.61	24.83	14.65		7.32				
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>			C <sub>u</sub>
29												
Material Description												
Silty Sand with Gravel ("SM"), dark olive gray (5Y 3/2)												
 <b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax						These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <i>K.S. Davis, P.G.</i> _____ AMS, Inc. Technical Director					Client Sample ID: S-06D-BB19-00-06	
											AMS Sample ID: 25949	
 ACCREDITED IN ACCORDANCE WITH <b>nelac</b> Laboratory No. E87956												

## GEOTECHNICAL RESULTS




<b>Gravel (%)</b>	<b>Sand (%)</b>			<b>Fines (%)</b>		Client Project Title: New Bedford Harbor	
	Coarse	Medium	Fine	Silt	Clay	Client Project Number: N/A	
4.65	0.45	1.46	9.40	56.11	27.93	AMS Project Number: 2006-03-27	
						Date Sampled: 11/2/2006	
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>
100							
<b>Material Description</b>						Date Analyzed: 12/12/2006	
Elastic Silt ("MH"), very dark gray (5Y 3/1)						Matrix: Sediment	
						Method: ASTM D 422	
						<b>Client Sample ID:</b> S-06D-0R11-10-15	
						<b>AMS Sample ID:</b> 25950	



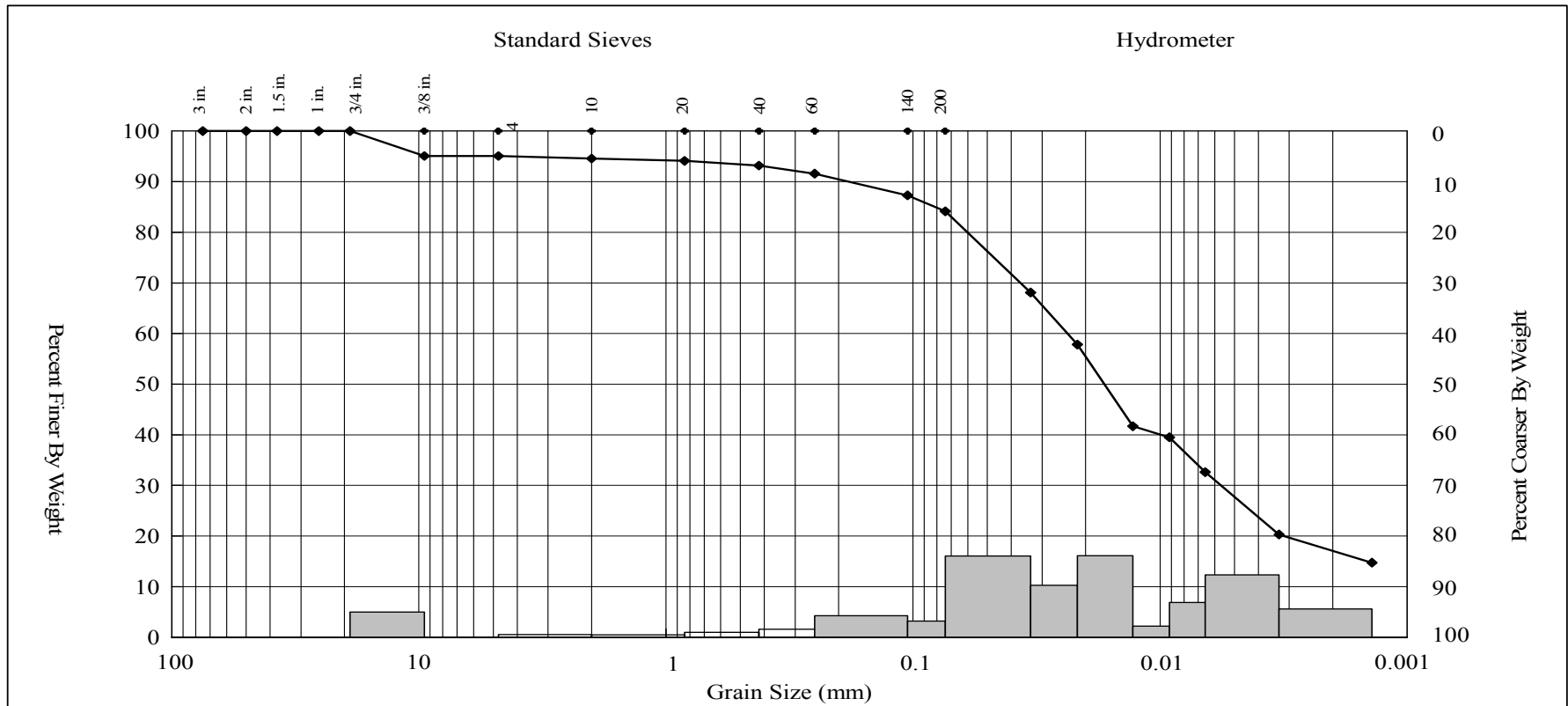
**APPLIED MARINE SCIENCES, INC.**  
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 League City, TX 77573  
 281.554.7272 Tel.  
 281.554.6356 Fax

These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.



*K.S. Davis, P.G.*  
 AMS, Inc. Technical Director



# GEOTECHNICAL RESULTS



Gravel (%)		Sand (%)				Fines (%)				Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 11/1/2006 Date Analyzed: 12/12/2006 Matrix: Sediment Method: ASTM D 422		
		Coarse		Medium	Fine	Silt		Clay				
4.94		0.51		1.40	9.02	57.42		26.71				
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>			C <sub>u</sub>
100												
Material Description												
Elastic Silt ("MH"), very dark gray (5Y 3/1)												
Client Sample ID: S-06D-0R11-10-15 AMS Sample ID: 25950-2												

 <div>APPLIED MARINE SCIENCES, INC. 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax</div>	<div>These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.</div> <div>K.S. Davis, P.G. AMS, Inc. Technical Director</div>	 <div>ACCREDITED IN ACCORDANCE WITH nelac Laboratory No. E87956</div>
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## QUALITY CONTROL RESULTS

Client: Battelle  
 Project Title: New Bedford Harbor  
 Project Number: N/A  
 Client Sample ID: S-06D-0R11-10-15  
 AMS Sample ID: 25950

AMS Project Number: 2006-03-27  
 Date Sampled: 11/2/2006  
 Date Analyzed: 12/12/2006  
 Matrix: Sediment  
 Method: ASTM D 422  
 Batch: 121206-01

Particle Diameter Range (mm)	U.S. Standard Sieve Mesh #	Size Class	Sample Result (%)	Duplicate Result (%)	RPD (%)	Data Qualifier	QC Limits (% RPD)
4.76	No. 4	Gravel	4.65	4.94	6.12		≤ 25
2.00	No. 10	Coarse Sand	0.45	0.51	11.91		≤ 25
0.425	No. 40	Medium Sand	1.46	1.40	4.01		≤ 25
0.074	No. 200	Fine Sand	9.40	9.02	4.08		≤ 25
<0.074 - 0.005	Hydrometer	Silt	56.11	57.42	2.31		≤ 25
<0.005	Hydrometer	Clay	27.93	26.71	4.49		≤ 25

**Samples in Batch:** 25937 25939 25941 25943 25945 25947 25949  
 25938 25940 25942 25944 25946 25948 25950

**Qualifiers:** Q - RPD value outside Quality Control Limits  
 I - Insufficient sample material to perform Quality Control Analyses

**Soil Classification:** Unified Soil Classification System (USCS) classifications are estimated in accordance with ASTM D 2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) unless the sample contains less than 5% fines (GW, GP, SW, and SP), or the Liquid Limit, Plastic Limit and Plasticity Index (Atterberg Limits) have been determined in accordance with ASTM D 4318. When these values have been determined the samples are definitively classified using ASTM D 2487, Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System).



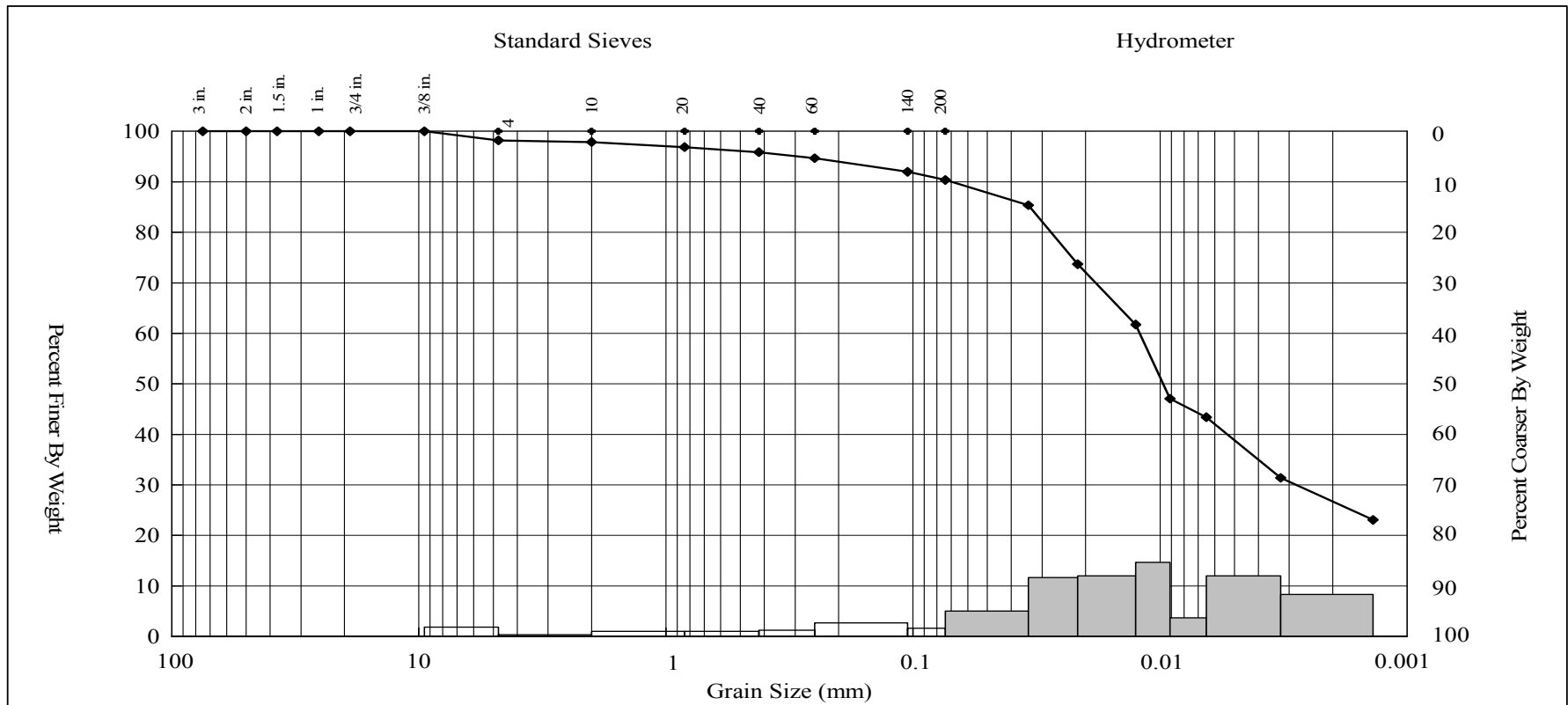
**APPLIED MARINE SCIENCES, INC.**  
 502 N. Hwy 3, Suite B  
 League City, TX 77573  
 281.554.7272 Tel.  
 281.554.6356 Fax



These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.

*K. S. Davis, P. G.*  
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 AMS, Inc. Technical Director

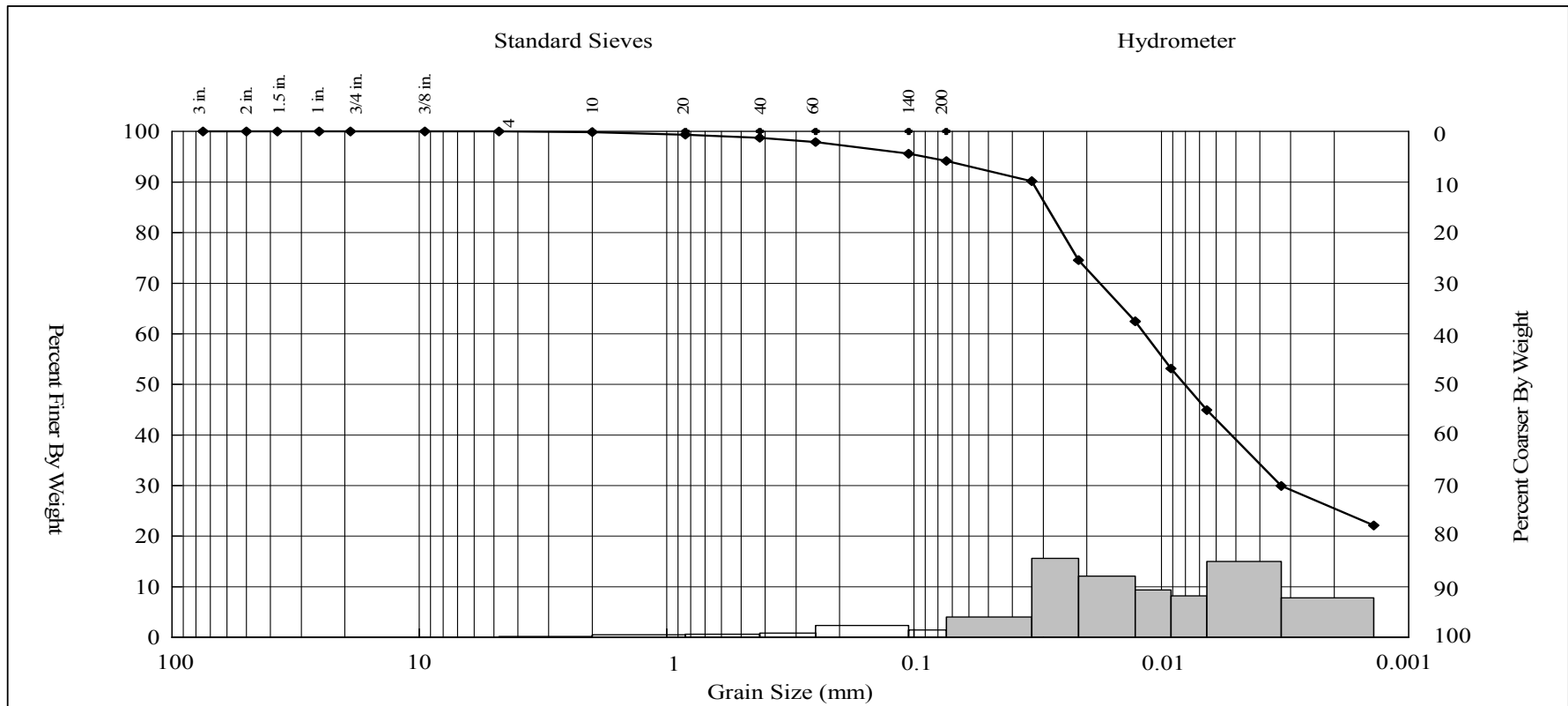




# GEOTECHNICAL RESULTS



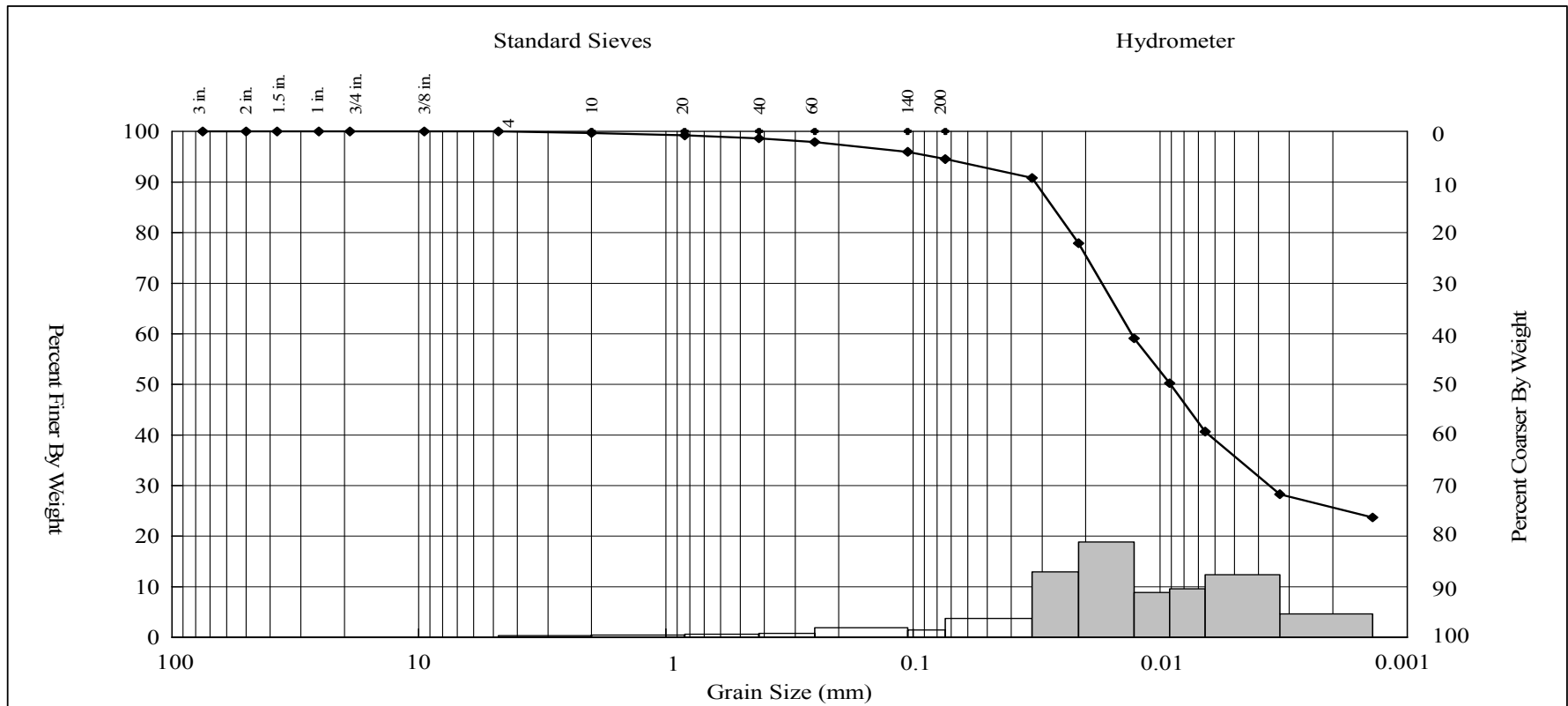
Gravel (%)		Sand (%)				Fines (%)				Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 11/2/2006 Date Analyzed: 12/15/2006 Matrix: Sediment Method: ASTM D 422			
		Coarse		Medium	Fine	Silt		Clay					
1.82		0.34		1.99	5.49	52.51		37.85					
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>			C <sub>u</sub>	
126													
Material Description										Client Sample ID: S-06D-0Z13-00-02 AMS Sample ID: 25951			
Elastic Silt ("MH"), very dark gray (5Y 3/1)													
 <b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax						These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <i>K.S. Davis, P.G.</i> AMS, Inc. Technical Director						 ACCREDITED IN ACCORDANCE WITH <b>nelac</b> Laboratory No. E87956	



# GEOTECHNICAL RESULTS



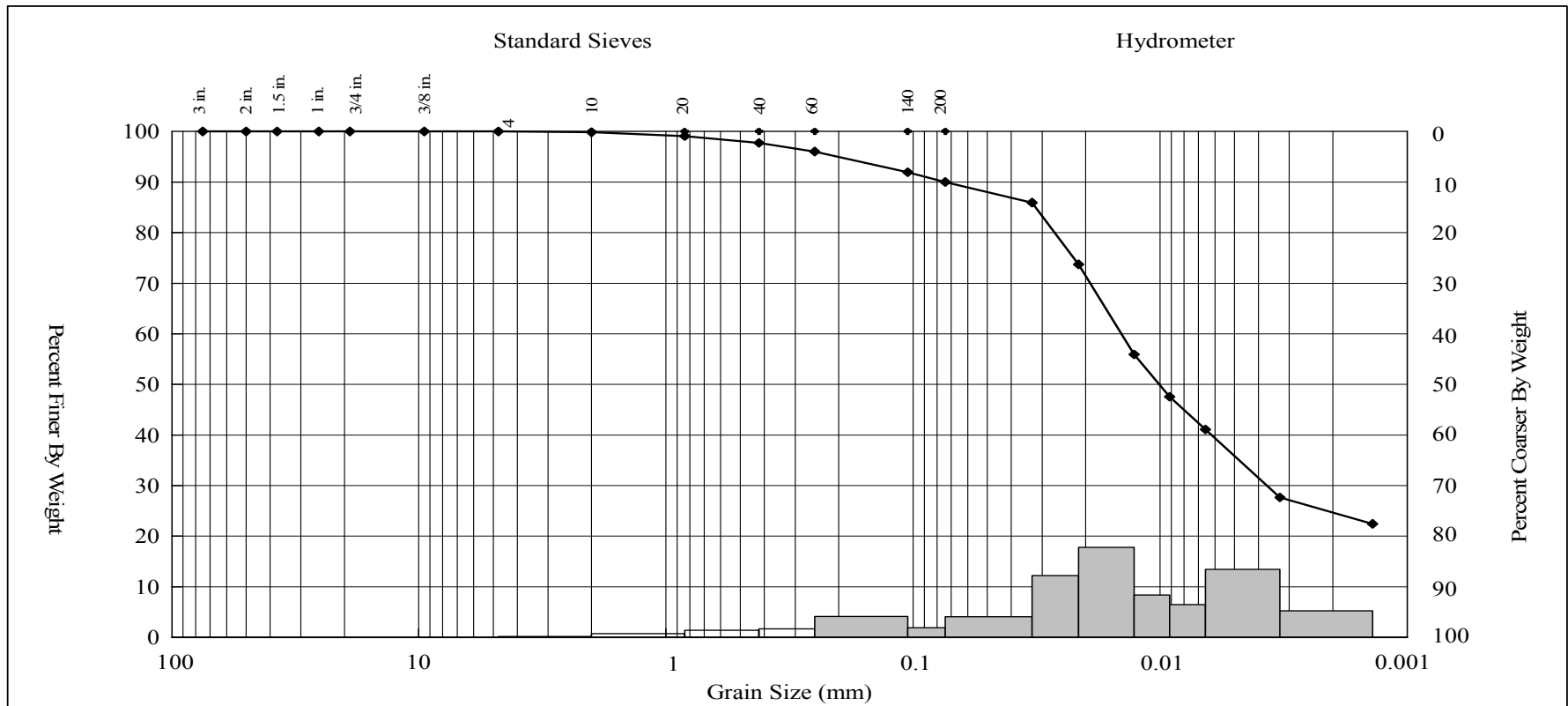
Gravel (%)		Sand (%)				Fines (%)				Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 11/2/2006 Date Analyzed: 12/15/2006 Matrix: Sediment Method: ASTM D 422  Client Sample ID: S-06D-0120-07-12 AMS Sample ID: 25952		
		Coarse	Medium	Fine	Silt	Clay						
0.00	0.14	1.14	4.57	56.36	37.79							
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>			C <sub>u</sub>
188												
Material Description												
Elastic Silt ("MH"), black (5Y 2.5/1)												
 <b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax							These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <i>K.S. Davis, P.G.</i> AMS, Inc. Technical Director				 ACCREDITED IN ACCORDANCE WITH <b>nelac</b> Laboratory No. E87956	



# GEOTECHNICAL RESULTS



Gravel (%)		Sand (%)				Fines (%)				Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 11/2/2006 Date Analyzed: 12/15/2006 Matrix: Sediment Method: ASTM D 422			
		Coarse		Medium	Fine	Silt		Clay					
0.00		0.32		1.07	4.08	59.78		34.75					
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>			C <sub>u</sub>	
159													
Material Description										Client Sample ID: S-06D-0120-07-12-DUP AMS Sample ID: 25953			
Elastic Silt ("MH"), black (5Y 2.5/1)													
 APPLIED MARINE SCIENCES, INC. 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax						These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <div>K.S. Davis, P.G.</div> <div>AMS, Inc. Technical Director</div>						 ACCREDITED IN ACCORDANCE WITH nelac Laboratory No. E87956	

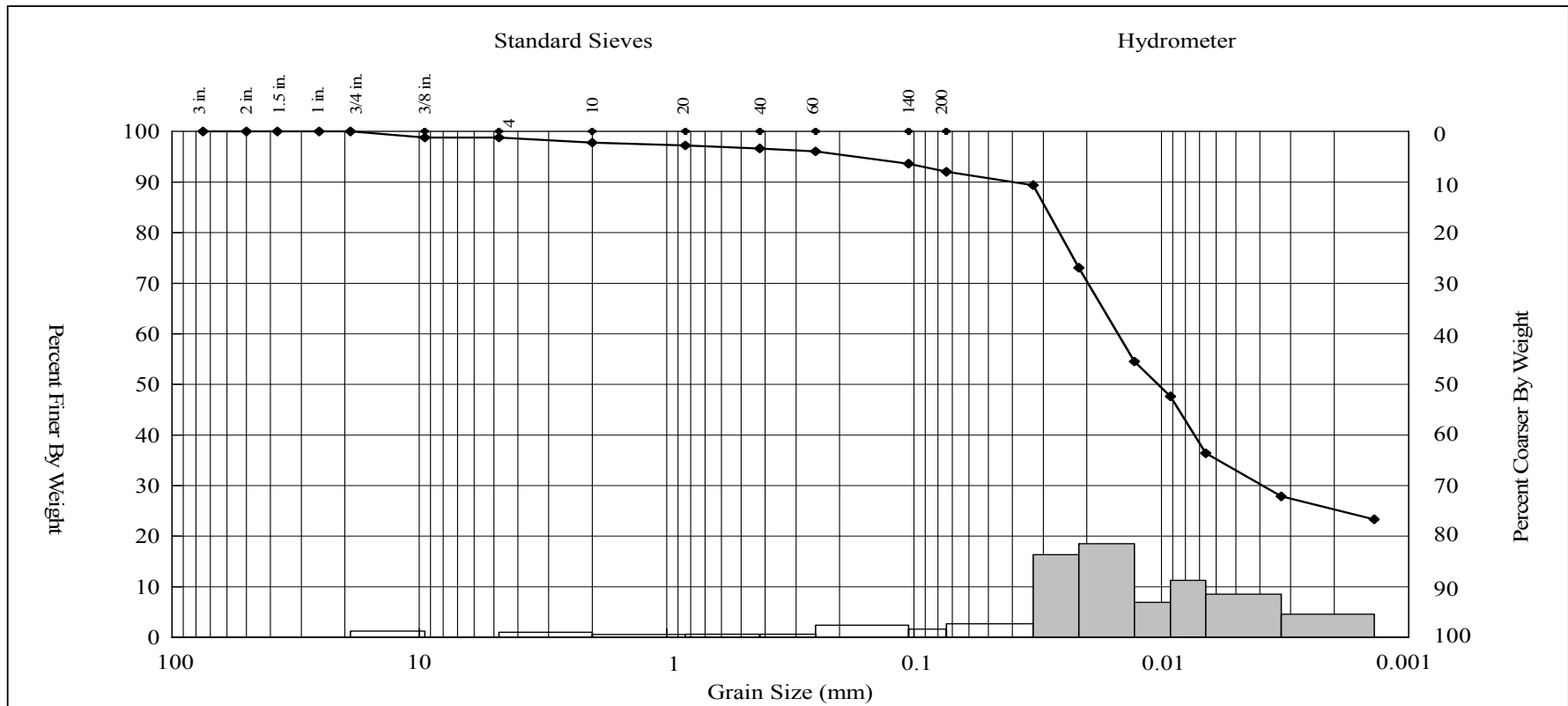
# GEOTECHNICAL RESULTS





Gravel (%)		Sand (%)				Fines (%)				Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 11/2/2006 Date Analyzed: 12/15/2006 Matrix: Sediment Method: ASTM D 422		
		Coarse	Medium	Fine	Silt	Clay						
0.00	0.20	2.10	7.71	55.27	34.72							
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>			C <sub>u</sub>
130												
Material Description												
Elastic Silt ("MH"), very dark gray (5Y 3/1)												
<div><b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax</div>							These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <div><i>K.S. Davis, P.G.</i> AMS, Inc. Technical Director</div>				Client Sample ID: S-06D-0N14-00-05	
											AMS Sample ID: 25954	
							<div><div>ACCREDITED IN ACCORDANCE WITH</div><div>Laboratory No. E87956</div></div>					



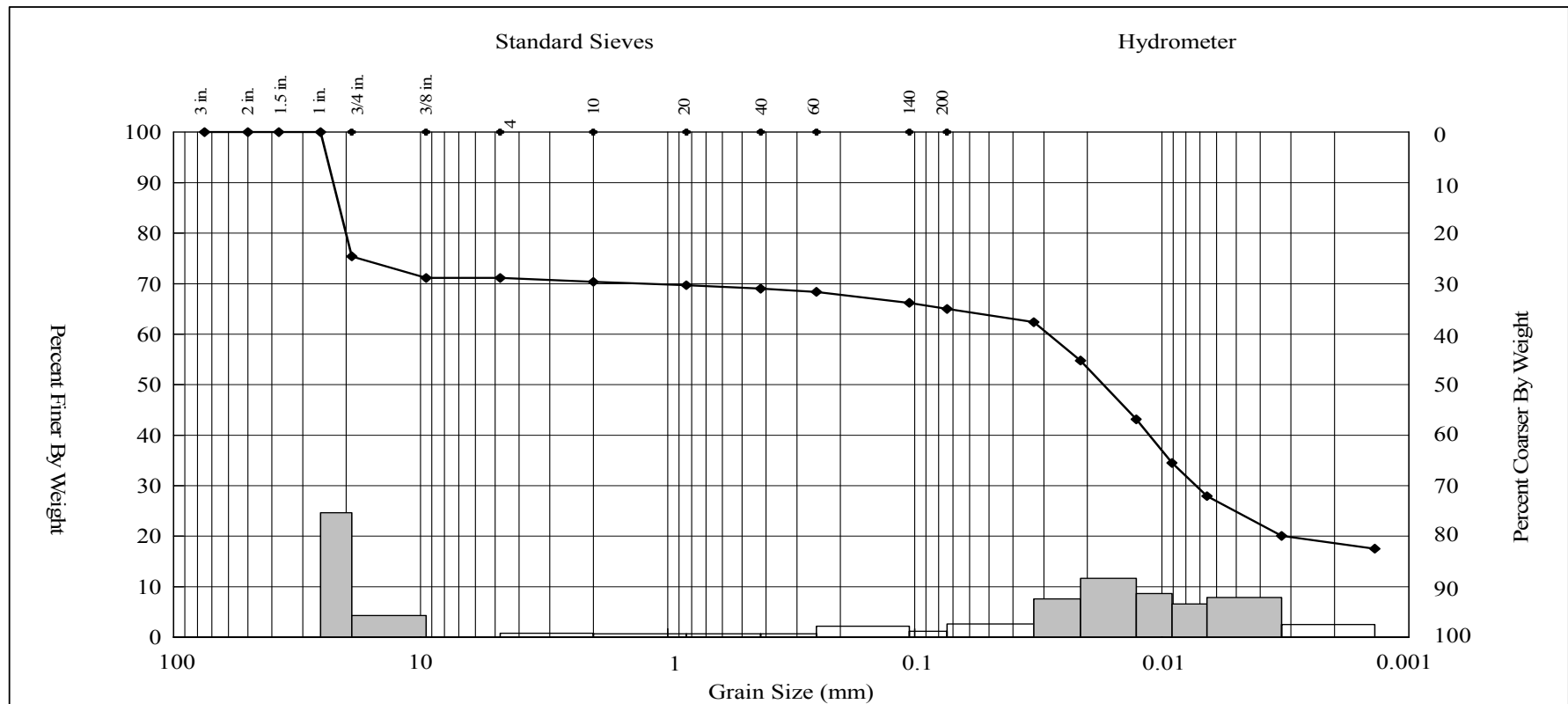
# GEOTECHNICAL RESULTS





Gravel (%)		Sand (%)				Fines (%)				Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 10/31/2006 Date Analyzed: 12/15/2006 Matrix: Sediment Method: ASTM D 422  Client Sample ID: S-06D-0N08-00-17 AMS Sample ID: 25955		
		Coarse	Medium	Fine	Silt	Clay						
1.21	1.03	1.13	4.63	59.76	32.24							
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>			C <sub>u</sub>
143												
Material Description												
Elastic Silt ("MH"), black (5Y 2.5/1)												

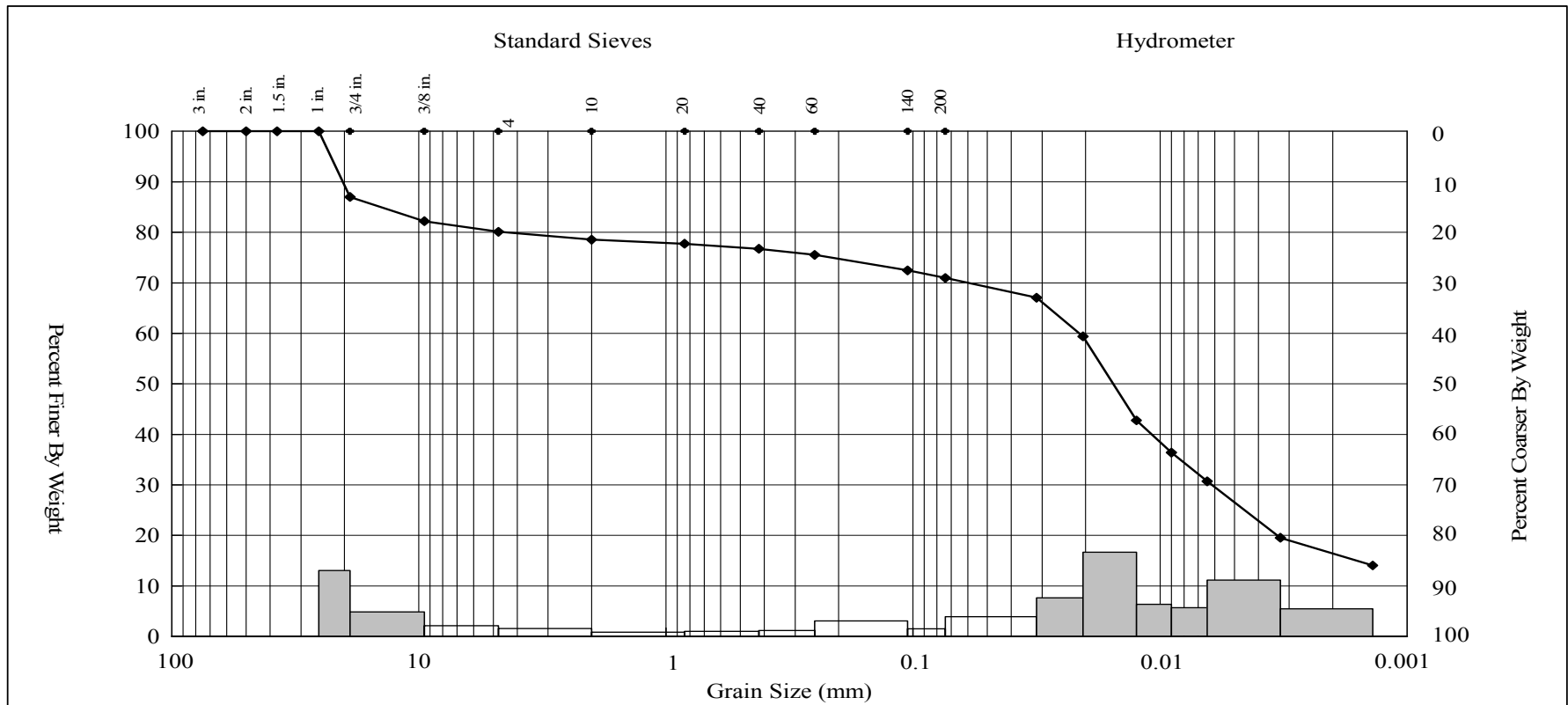
 <div>APPLIED MARINE SCIENCES, INC. 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax</div>	<div>These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.</div> <div>K.S. Davis, P.G. AMS, Inc. Technical Director</div>	 <div>ACCREDITED IN ACCORDANCE WITH nelac Laboratory No. E87956</div>
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## GEOTECHNICAL RESULTS





Gravel (%)	Sand (%)			Fines (%)		Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 10/31/2006 Date Analyzed: 12/15/2006 Matrix: Sediment Method: ASTM D 422					
	Coarse	Medium	Fine	Silt	Clay						
28.88	0.77	1.37	4.01	40.79	24.18						
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>			D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>
156											
Material Description											Client Sample ID: S-06D-0N08-00-17-DUP AMS Sample ID: 25956
Gravelly Elastic Silt ("MH"), black (5Y 2.5/1)											
 <div>APPLIED MARINE SCIENCES, INC. 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax</div>						These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard. <div>K.S. Davis, P.G. AMS, Inc. Technical Director</div>					 <div>ACCREDITED IN ACCORDANCE WITH nelac Laboratory No. E87956</div>

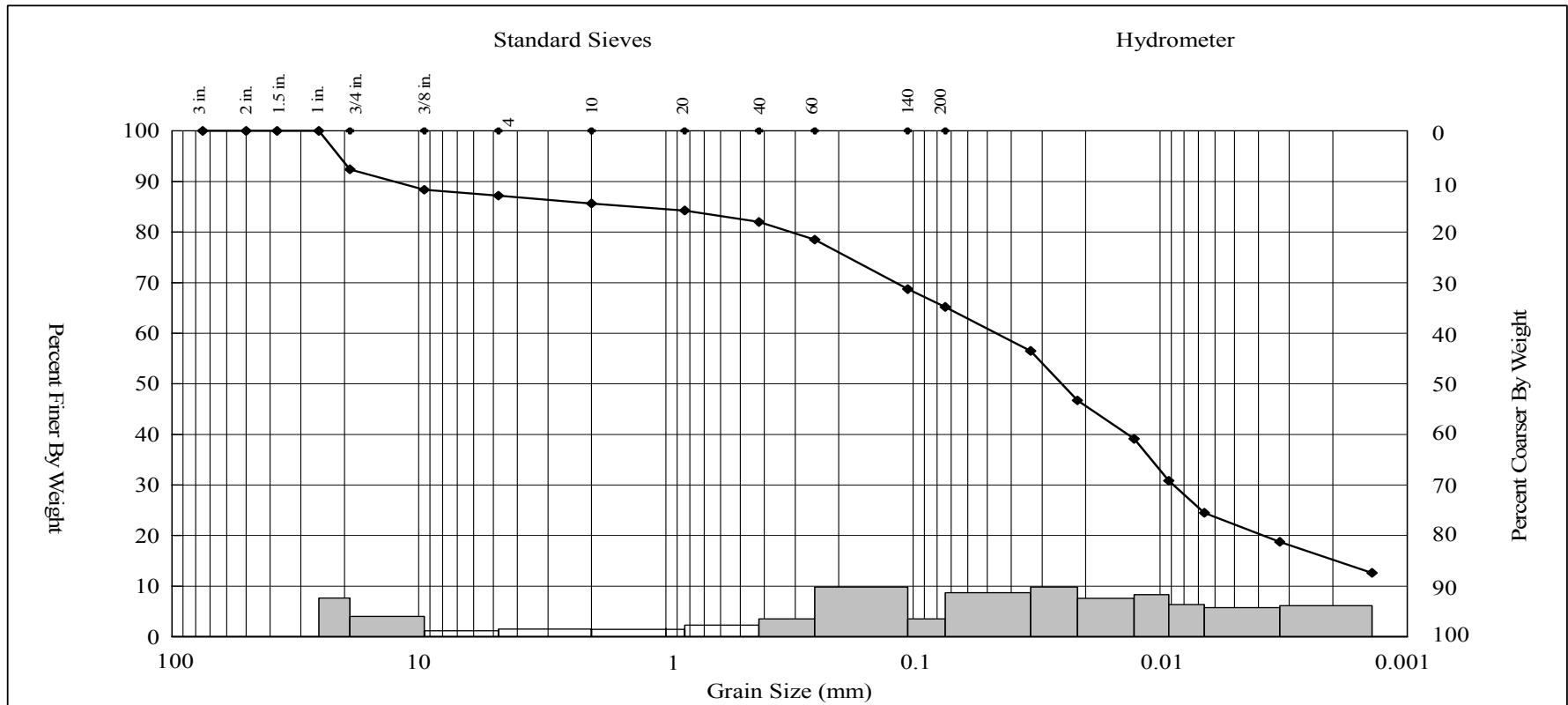
# GEOTECHNICAL RESULTS





Gravel (%)		Sand (%)				Fines (%)				Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 10/31/2006 Date Analyzed: 12/15/2006 Matrix: Sediment Method: ASTM D 422  Client Sample ID: S-06D-0N06-00-05 AMS Sample ID: 25957		
		Coarse	Medium	Fine	Silt	Clay						
19.92	1.55	1.82	5.75	45.34	25.62							
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>			C <sub>u</sub>
116												
Material Description												
Elastic Silt with Gravel ("MH"), very dark gray (5Y 3/1)												

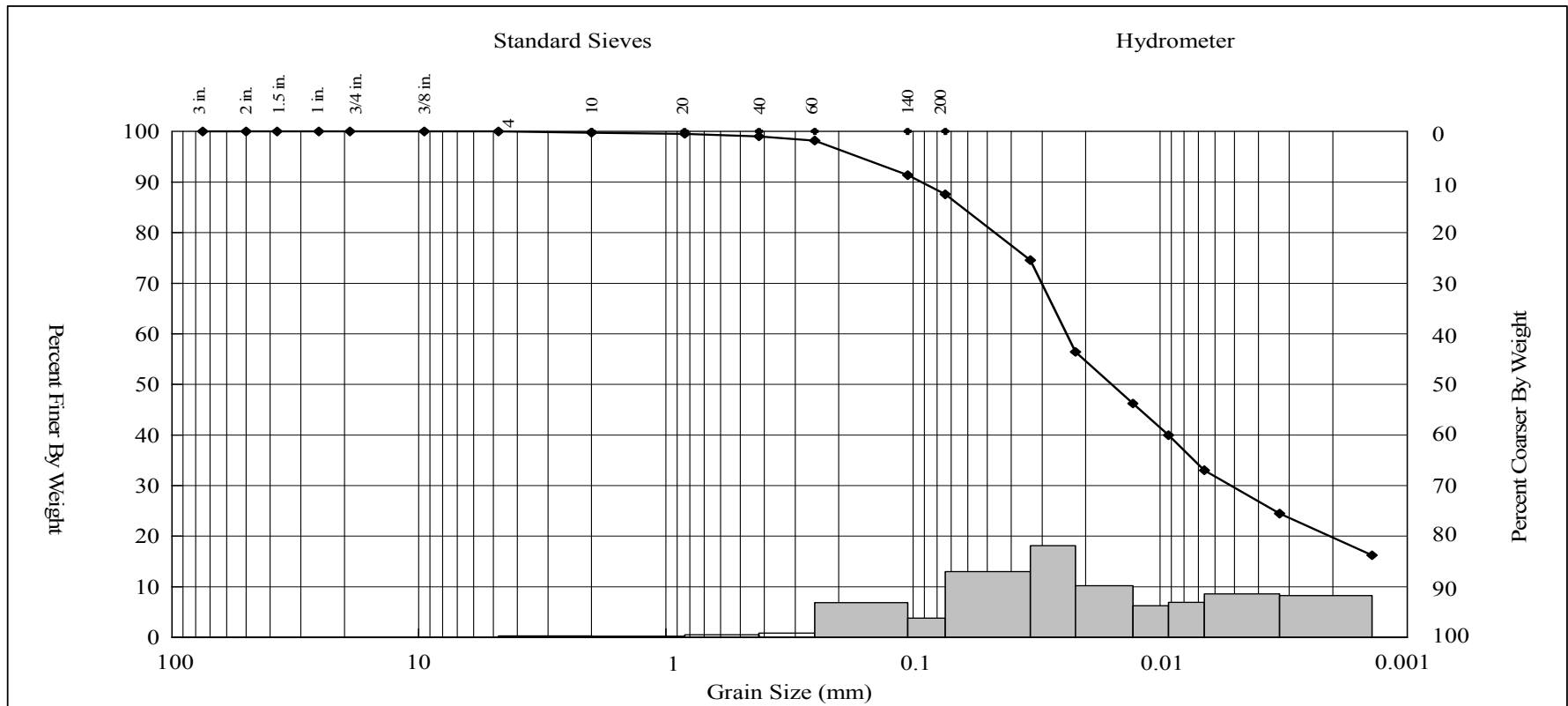
 <b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax	These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <i>K.S. Davis, P.G.</i> AMS, Inc. Technical Director	 ACCREDITED IN ACCORDANCE WITH <b>nelac</b> Laboratory No. E87956
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# GEOTECHNICAL RESULTS



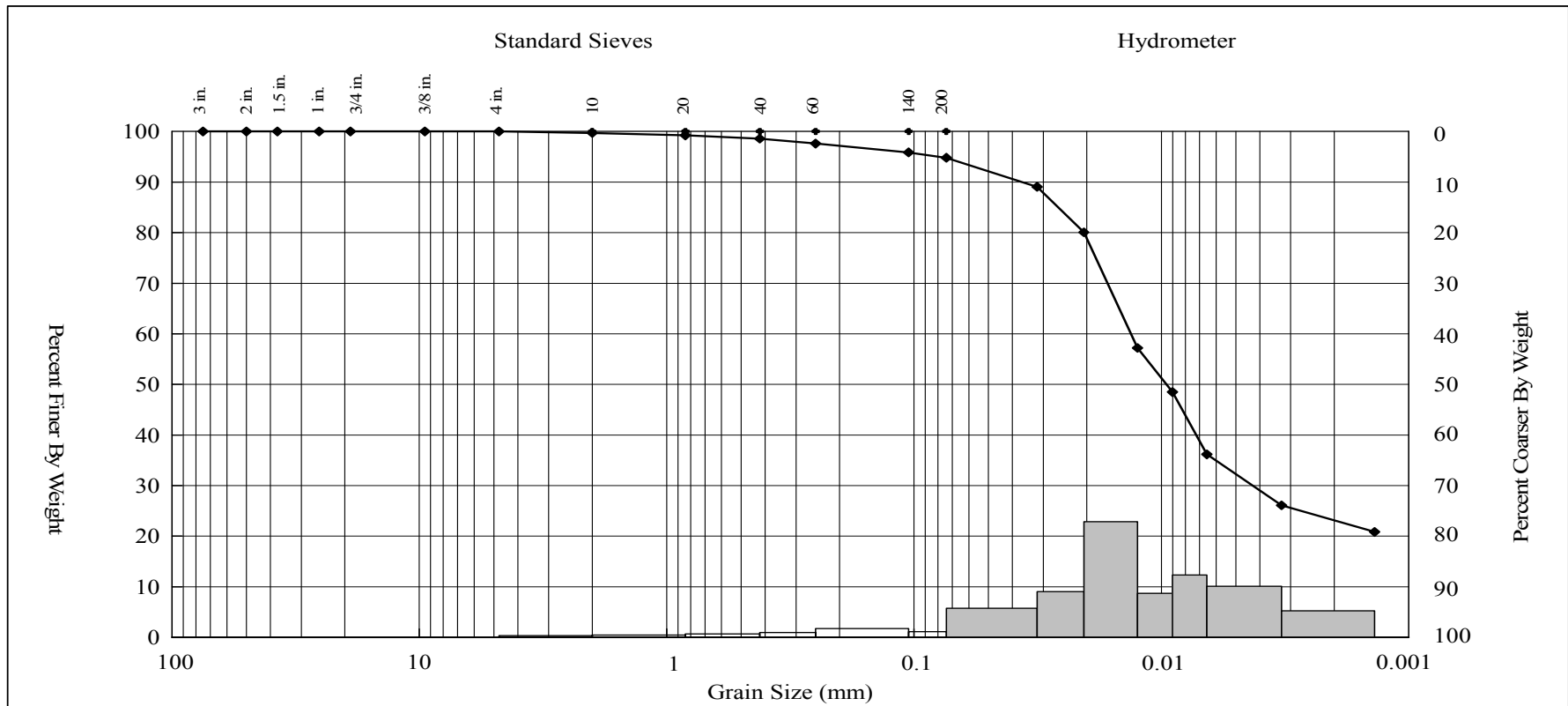
Gravel (%)		Sand (%)				Fines (%)				Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 10/31/2006 Date Analyzed: 12/15/2006 Matrix: Sediment Method: ASTM D 422		
		Coarse	Medium	Fine	Silt	Clay						
12.80	1.53	3.69	16.79	43.49	21.70							
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>			C <sub>u</sub>
126												
Material Description											Client Sample ID: S-06D-0R03-00-13 AMS Sample ID: 25958	
Sandy Elastic Silt ("MH"), black (5Y 2.5/1)												
<div><div></div><div><div>APPLIED MARINE SCIENCES, INC.</div><div>502 N. Hwy 3, Suite B</div><div>League City, TX 77573</div><div>281.554.7272 Tel.</div><div>281.554.6356 Fax</div></div></div>							<div>These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.</div> <div><div><i>K.S. Davis, P.G.</i></div><div>AMS, Inc. Technical Director</div></div>					<div><div>ACCREDITED IN ACCORDANCE WITH</div><div></div><div>Laboratory No. E87956</div></div>



# GEOTECHNICAL RESULTS



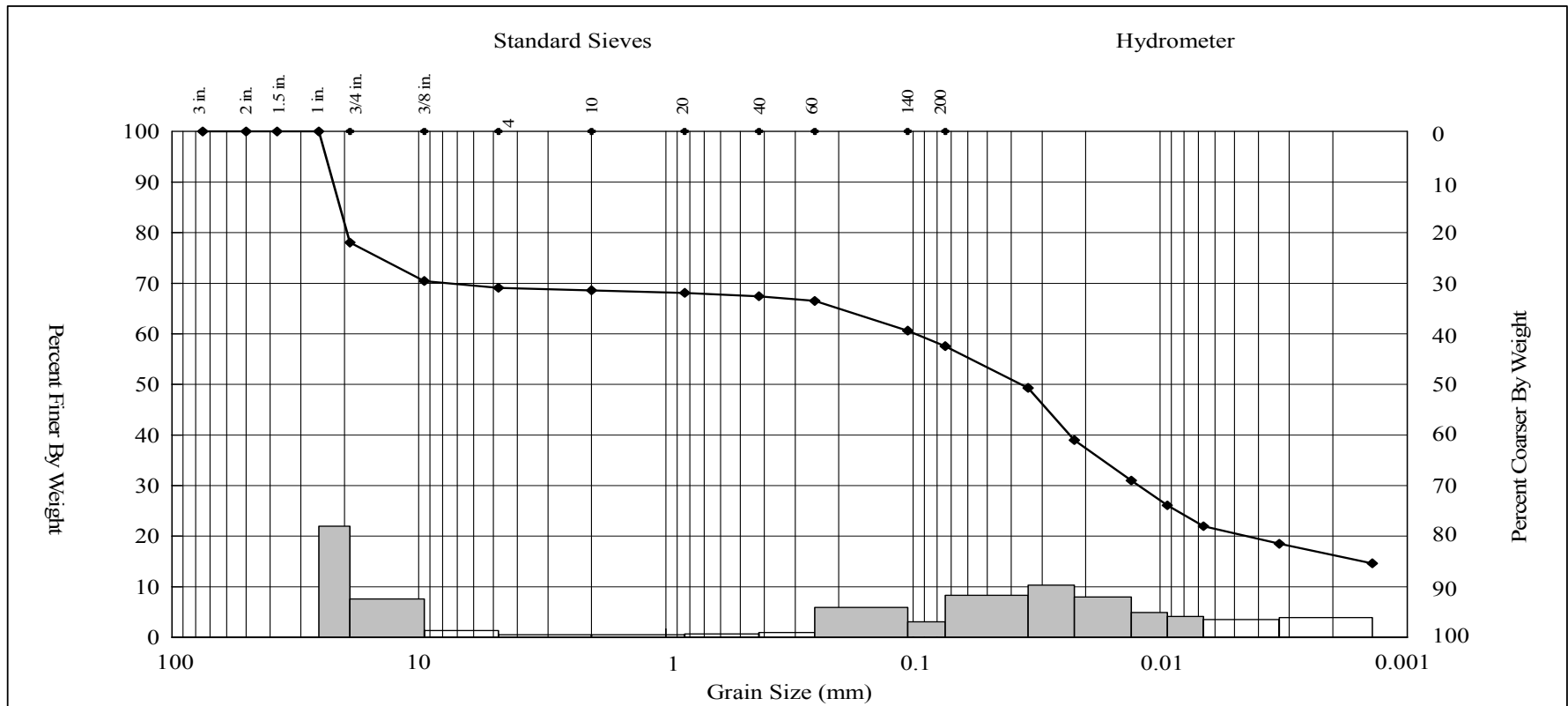
Gravel (%)		Sand (%)				Fines (%)				Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 10/31/2006 Date Analyzed: 12/15/2006 Matrix: Sediment Method: ASTM D 422		
		Coarse	Medium	Fine		Silt	Clay					
0.00		0.25	0.73	11.47		58.68	28.87					
										Client Sample ID: S-06D-0U06-05-14 AMS Sample ID: 25959		
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>			C <sub>u</sub>
150												
Material Description												
Elastic Silt ("MH"), very dark gray (5Y 3/1)												
					APPLIED MARINE SCIENCES, INC. 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax							
					These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <div>K.S. Davis, P.G. AMS, Inc. Technical Director</div>							
					 ACCREDITED IN ACCORDANCE WITH nelac Laboratory No. E87956							



# GEOTECHNICAL RESULTS



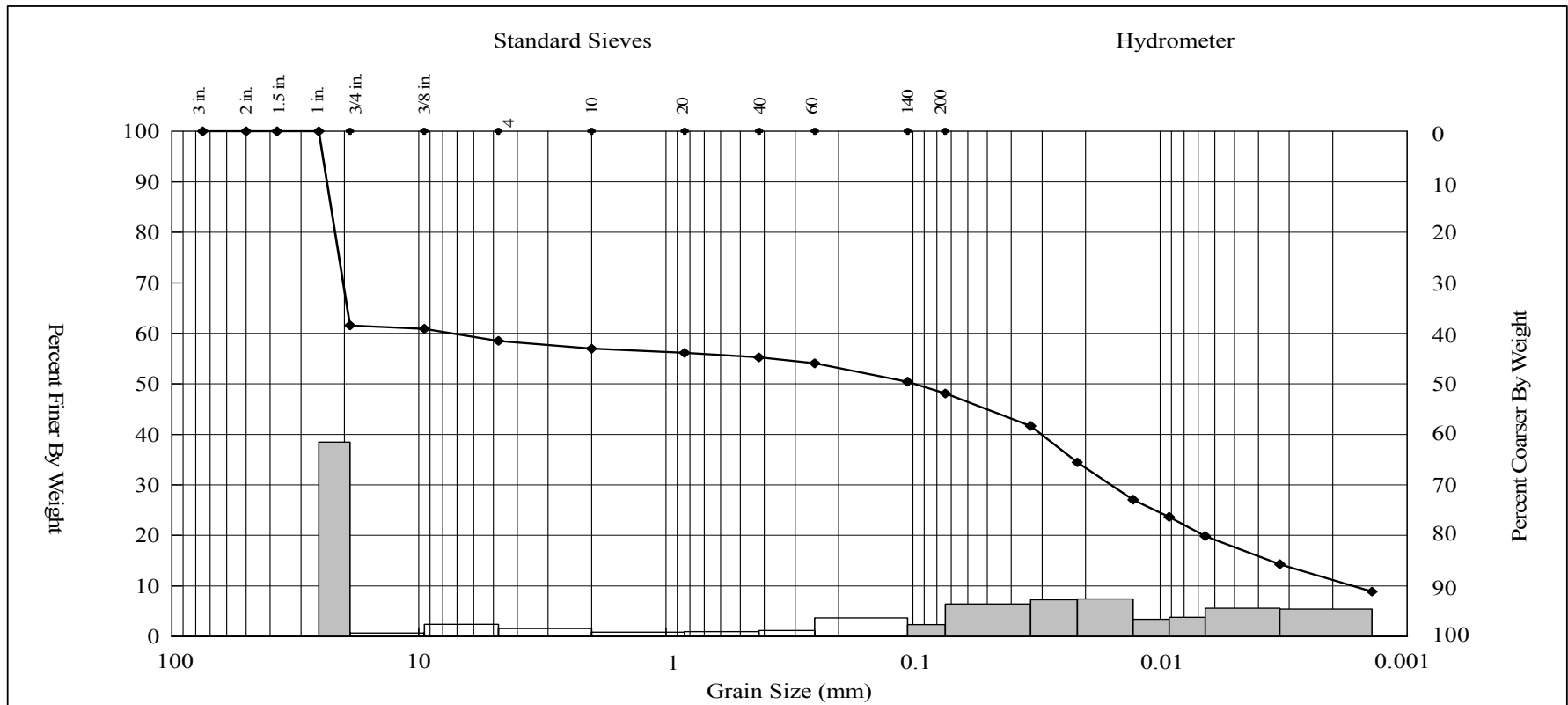
Gravel (%)		Sand (%)				Fines (%)				Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 10/31/2006 Date Analyzed: 12/15/2006 Matrix: Sediment Method: ASTM D 422  Client Sample ID: S-06D-0L05-00-06 AMS Sample ID: 25960		
		Coarse	Medium	Fine	Silt	Clay						
0.00	0.33	1.13	3.77	63.37	31.40							
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>			C <sub>u</sub>
101												
Material Description												
Elastic Silt ("MH"), very dark gray (5Y 3/1)												
<div><div>APPLIED MARINE SCIENCES, INC. 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax</div></div>							These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <div>K.S. Davis, P.G.</div> <div>AMS, Inc. Technical Director</div>				<div><div>ACCREDITED IN ACCORDANCE WITH nelac Laboratory No. E87956</div></div>	



# GEOTECHNICAL RESULTS



Gravel (%)		Sand (%)				Fines (%)				Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 10/31/2006 Date Analyzed: 12/15/2006 Matrix: Sediment Method: ASTM D 422		
		Coarse	Medium	Fine	Silt	Clay						
30.91	0.50	1.16	9.86	37.32	20.25							
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>			C <sub>u</sub>
157												
Material Description											Client Sample ID: S-06D-0W03-00-05 AMS Sample ID: 25961	
Gravelly Elastic Silt ("MH"), black (5Y 2.5/1)												
 <div>APPLIED MARINE SCIENCES, INC. 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax</div>							These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard. <div>K.S. Davis, P.G. AMS, Inc. Technical Director</div>				 <div>ACCREDITED IN ACCORDANCE WITH nelac Laboratory No. E87956</div>	

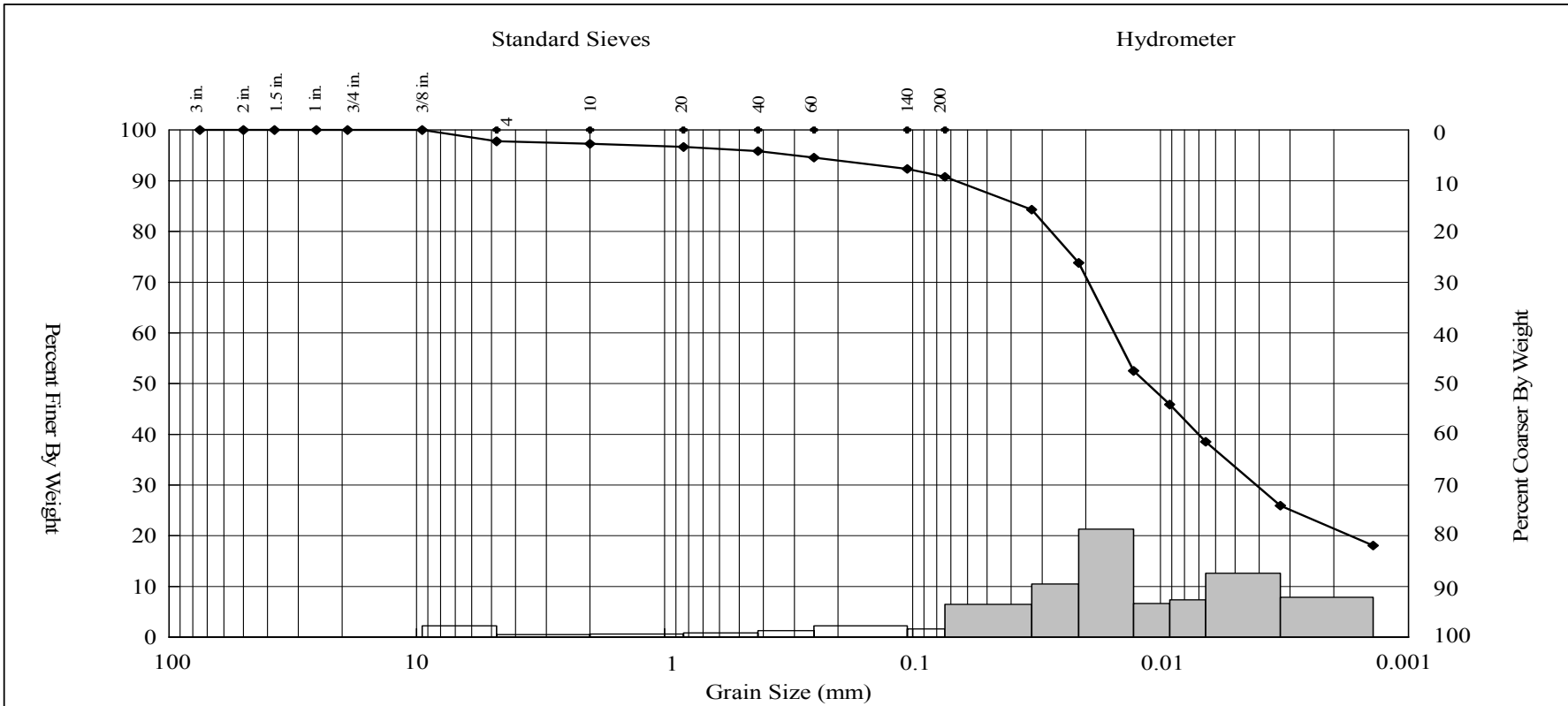
# GEOTECHNICAL RESULTS




Gravel (%)	Sand (%)			Fines (%)		Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 10/31/2006 Date Analyzed: 12/15/2006 Matrix: Sediment Method: ASTM D 422						
	Coarse	Medium	Fine	Silt	Clay							
41.51	1.54	1.72	7.14	30.89	17.20							
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>			D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
168												
Material Description											Client Sample ID: S-06D-AA03-00-05 AMS Sample ID: 25962	
Silty Gravel ("GM"), very dark gray (5Y 3/1)												
 APPLIED MARINE SCIENCES, INC. 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax							These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <i>K.S. Davis, P.G.</i> AMS, Inc. Technical Director					 ACCREDITED IN ACCORDANCE WITH Laboratory No. E87956



## GEOTECHNICAL RESULTS



Gravel (%)		Sand (%)			Fines (%)						Client Project Title:		New Bedford Harbor				
Coarse		Medium		Fine		Silt			Clay			Client Project Number:		N/A			
2.24		0.51		1.45		5.07		58.23			32.50			AMS Project Number:		2006-03-27	
														Date Sampled:		11/3/2006	
														Date Analyzed:		12/15/2006	
														Matrix:		Sediment	
														Method:		ASTM D 422	
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	Client Sample ID:		S-06D-0F36-00-05				
137												AMS Sample ID:		25963			
Material Description																	
Elastic Silt ("MH"), very dark gray (5Y 3/1)																	




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281.554.6356 Fax

These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.

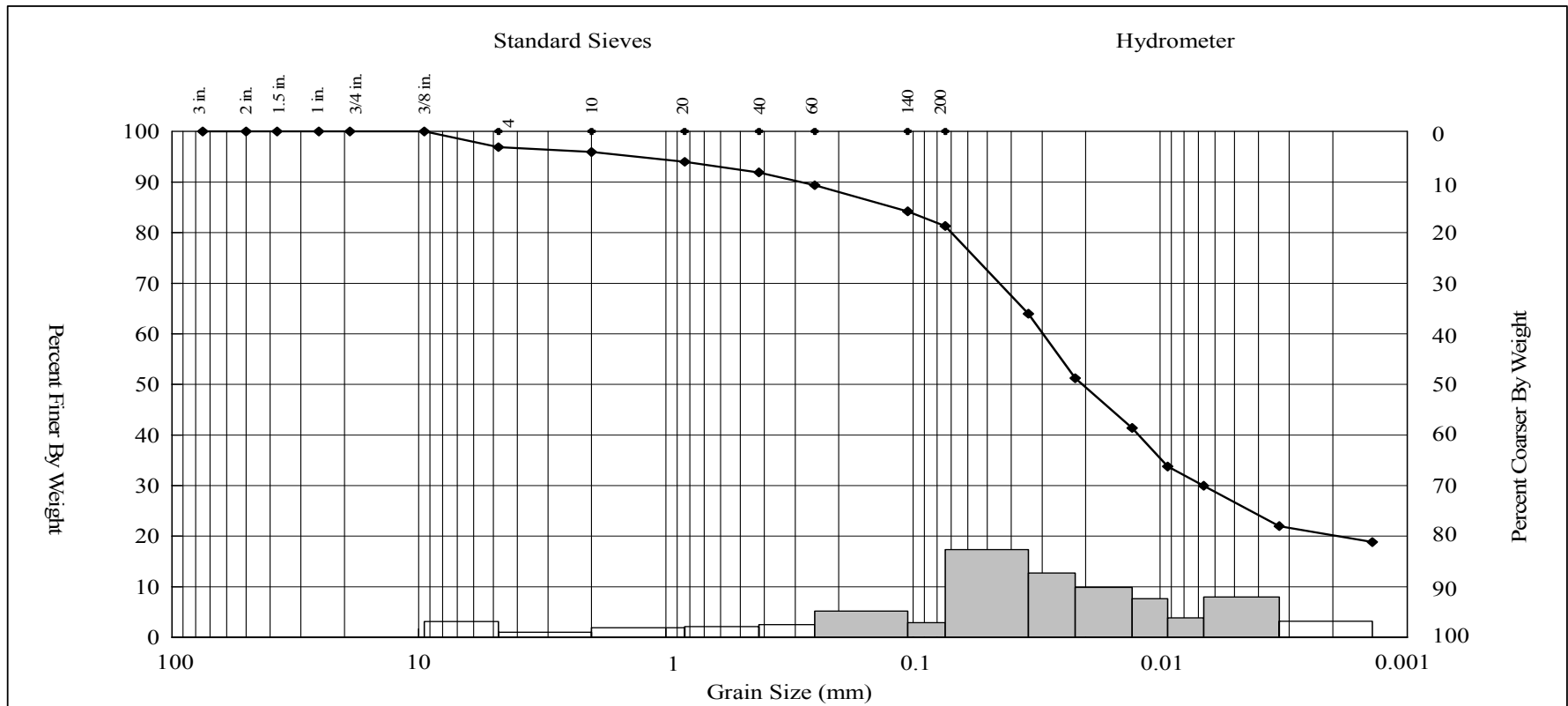
*K.S. Davis, P.Eng.*



AMS, Inc. Technical Director



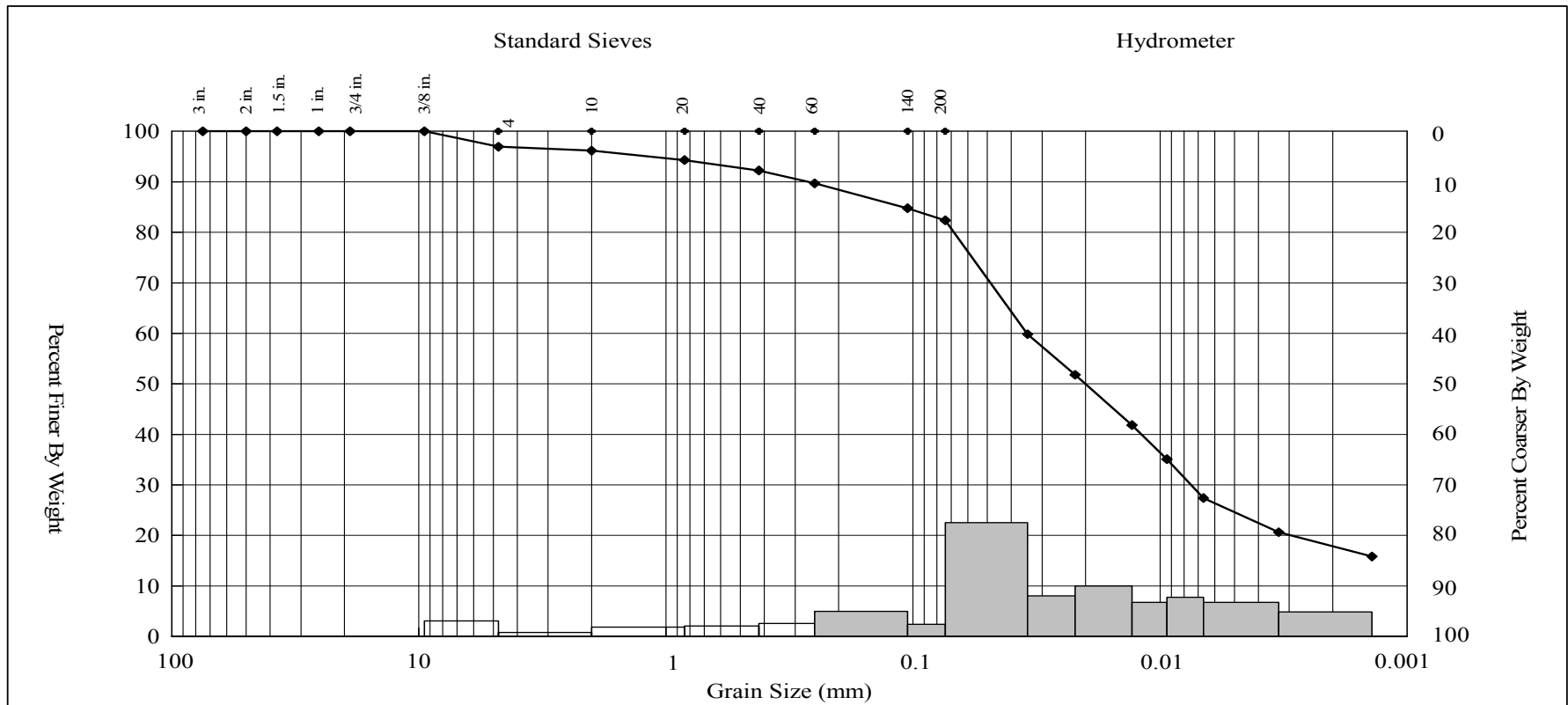
ACCREDITED IN ACCORDANCE WITH  
**nelac**  
Laboratory No. E87956

# GEOTECHNICAL RESULTS





Gravel (%)		Sand (%)				Fines (%)				Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 11/3/2006 Date Analyzed: 12/15/2006 Matrix: Sediment Method: ASTM D 422  Client Sample ID: S-06D-0F38-00-05 AMS Sample ID: 25964		
		Coarse	Medium	Fine	Silt	Clay						
3.10	0.99	4.03	10.61	55.26	26.01							
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>			C <sub>u</sub>
169												
Material Description												
Elastic Silt with Sand ("MH"), black (5Y 2.5/1)												
 <b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax							These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <i>K.S. Davis, P.G.</i> AMS, Inc. Technical Director				 ACCREDITED IN ACCORDANCE WITH <b>nelac</b> Laboratory No. E87956	

# GEOTECHNICAL RESULTS



Gravel (%)		Sand (%)				Fines (%)				Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 11/3/2006 Date Analyzed: 12/15/2006 Matrix: Sediment Method: ASTM D 422  Client Sample ID: S-06D-0F38-00-05 AMS Sample ID: 25964-2		
		Coarse		Medium	Fine	Silt		Clay				
3.09		0.77	3.92	9.87	58.33		24.02					
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>			C <sub>u</sub>
169												
Material Description												
Elastic Silt with Sand ("MH"), black (5Y 2.5/1)												

 <b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax	These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <i>K.S. Davis, P.G.</i> AMS, Inc. Technical Director	 ACCREDITED IN ACCORDANCE WITH <b>nelac</b> Laboratory No. E87956
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## QUALITY CONTROL RESULTS

Client: Battelle  
 Project Title: New Bedford Harbor  
 Project Number: N/A  
 Client Sample ID: S-06D-0F38-00-05  
 AMS Sample ID: 25964

AMS Project Number: 2006-03-27  
 Date Sampled: 11/3/2006  
 Date Analyzed: 12/15/2006  
 Matrix: Sediment  
 Method: ASTM D 422  
 Batch: 121506-01

Particle Diameter Range (mm)	U.S. Standard Sieve Mesh #	Size Class	Sample Result (%)	Duplicate Result (%)	RPD (%)	Data Qualifier	QC Limits (% RPD)
4.76	No. 4	Gravel	3.10	3.09	0.21		≤ 25
2.00	No. 10	Coarse Sand	0.99	0.77	24.43		≤ 25
0.425	No. 40	Medium Sand	4.03	3.92	2.75		≤ 25
0.074	No. 200	Fine Sand	10.61	9.87	7.21		≤ 25
<0.074 - 0.005	Hydrometer	Silt	55.26	58.33	5.39		≤ 25
<0.005	Hydrometer	Clay	26.01	24.02	7.97		≤ 25

**Samples in Batch:** 25951 25953 25955 25957 25959 25961 25963  
 25952 25954 25956 25958 25960 25962 25964

**Qualifiers:** Q - RPD value outside Quality Control Limits  
 I - Insufficient sample material to perform Quality Control Analyses

**Soil Classification:** Unified Soil Classification System (USCS) classifications are estimated in accordance with ASTM D 2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) unless the sample contains less than 5% fines (GW, GP, SW, and SP), or the Liquid Limit, Plastic Limit and Plasticity Index (Atterberg Limits) have been determined in accordance with ASTM D 4318. When these values have been determined the samples are definitively classified using ASTM D 2487, Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System).



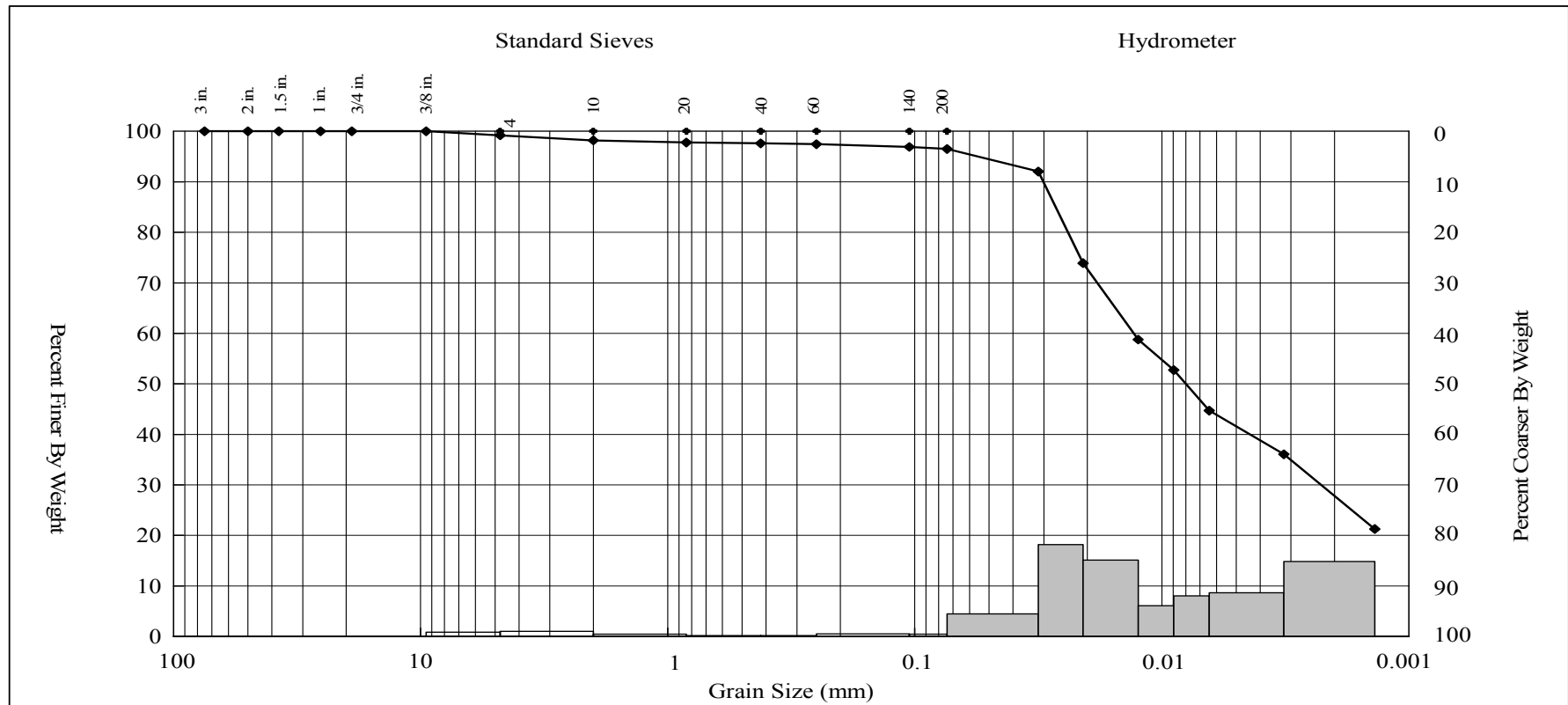
**APPLIED MARINE SCIENCES, INC.**  
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 281.554.6356 Fax



These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.

*K.S. Davis, P.G.*  
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 AMS, Inc. Technical Director

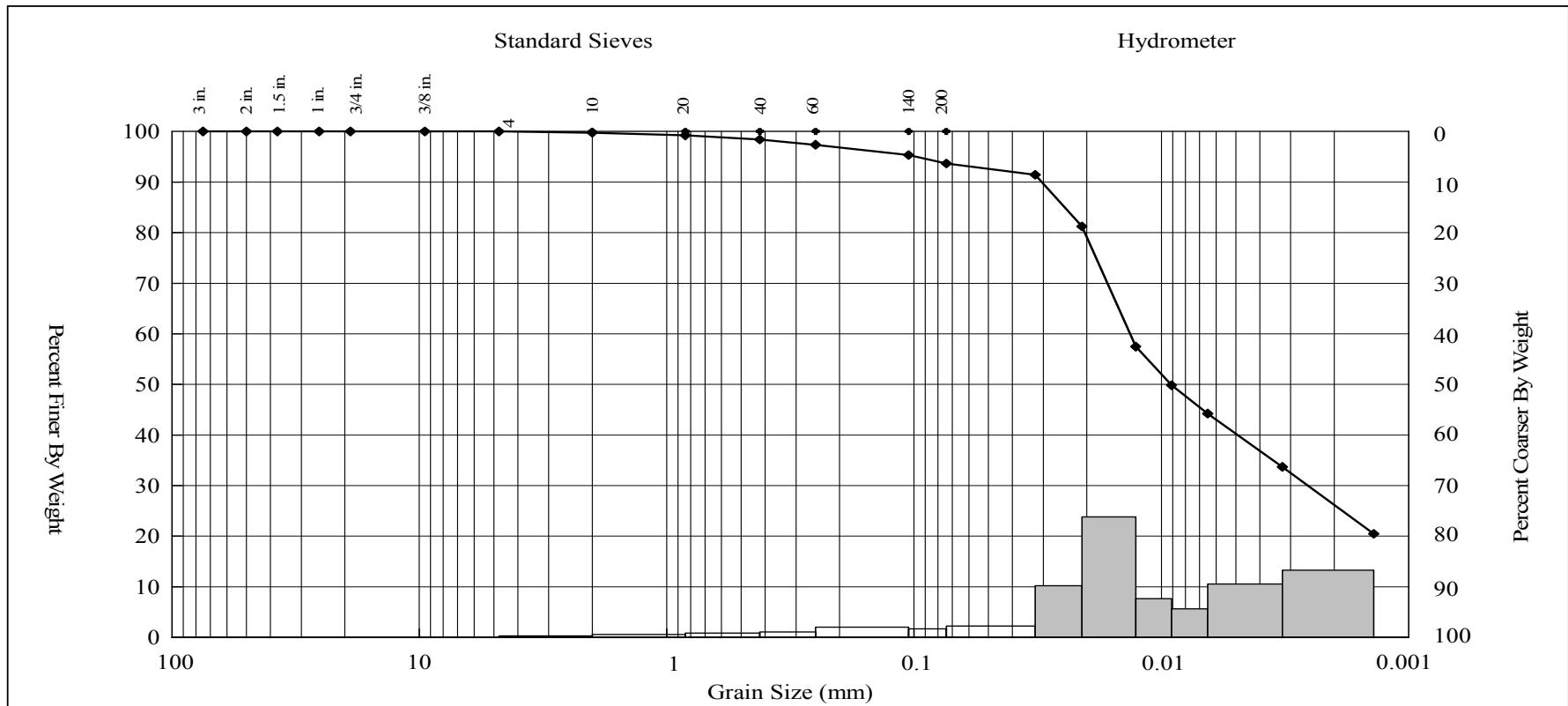





## GEOTECHNICAL RESULTS



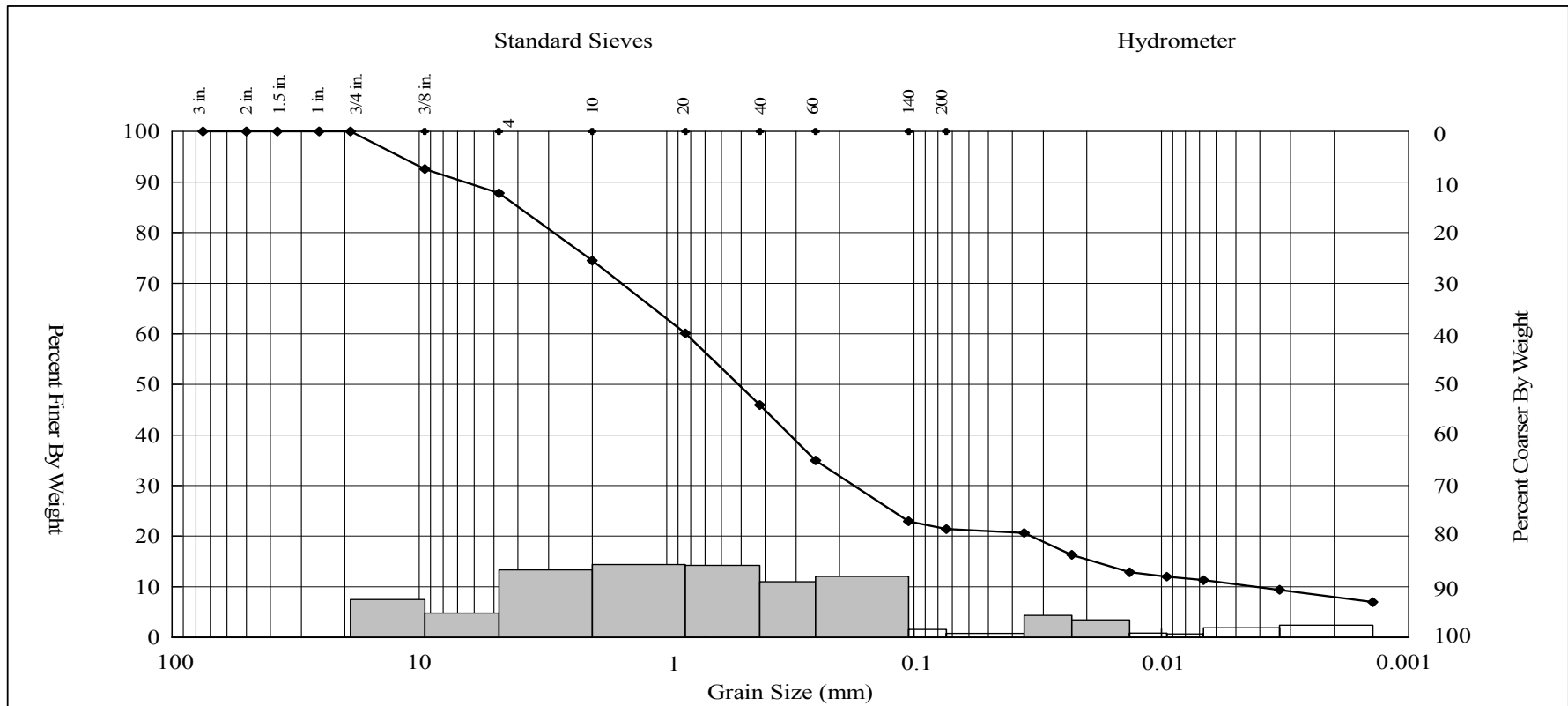
Gravel (%)		Sand (%)				Fines (%)				Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 11/3/2006 Date Analyzed: 12/14/2006 Matrix: Sediment Method: ASTM D 422			
		Coarse		Medium	Fine	Silt		Clay					
0.80		1.00		0.62	1.11		55.61		40.86				
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>			C <sub>u</sub>	
155													
Material Description										Client Sample ID: S-06D-0H41-00-05 AMS Sample ID: 25965			
Elastic Silt ("MH"), very dark gray (5Y 3/1)													
 APPLIED MARINE SCIENCES, INC. 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax						These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <i>K.S. Davis, P.G.</i> AMS, Inc. Technical Director						 ACCREDITED IN ACCORDANCE WITH <b>nelac</b> Laboratory No. E87956	

# GEOTECHNICAL RESULTS





Gravel (%)		Sand (%)				Fines (%)				Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 11/3/2006 Date Analyzed: 12/14/2006 Matrix: Sediment Method: ASTM D 422		
		Coarse	Medium	Fine	Silt	Clay						
0.00	0.26	1.36	4.72	54.29	39.37							
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>			C <sub>u</sub>
128												
Material Description												
Elastic Silt ("MH"), dark olive gray (5Y 3/2)												
<div><div><b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax</div></div>							These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <div><i>K.S. Davis, P.G.</i> AMS, Inc. Technical Director</div>				Client Sample ID: S-06D-0H32-00-05	
											AMS Sample ID: 25966	
<div><div><b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax</div></div>							These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <div><i>K.S. Davis, P.G.</i> AMS, Inc. Technical Director</div>				<div><div>ACCREDITED IN ACCORDANCE WITH <b>nelac</b> Laboratory No. E87956</div></div>	

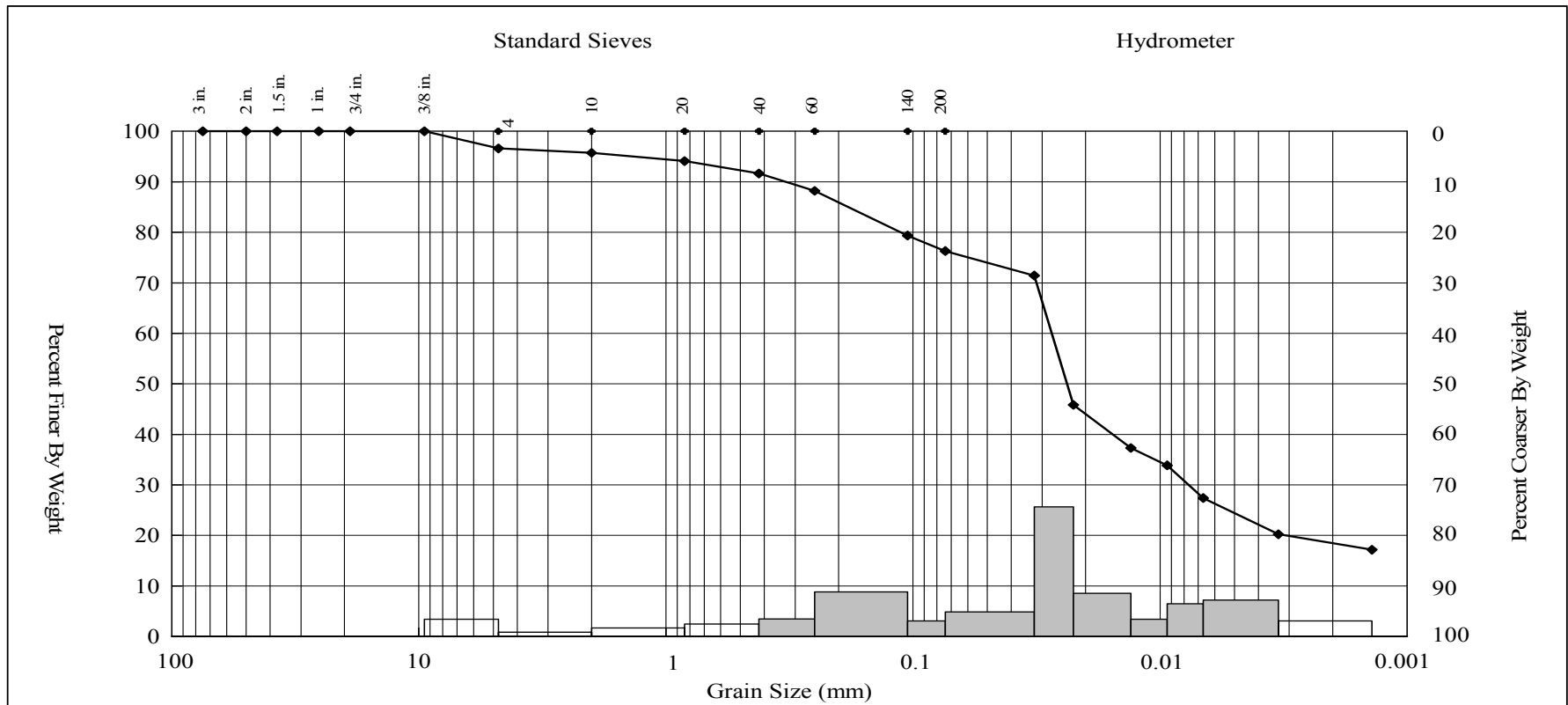
# GEOTECHNICAL RESULTS





Gravel (%)		Sand (%)				Fines (%)				Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 11/3/2006 Date Analyzed: 12/14/2006 Matrix: Sediment Method: ASTM D 422  Client Sample ID: S-06D-0G25-00-25 AMS Sample ID: 25967		
		Coarse	Medium	Fine	Silt	Clay						
12.21	13.32	28.56	24.53	11.07	10.31							
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>			C <sub>u</sub>
63												
Material Description												
Silty Sand ("SM"), black (N-1)												

 <b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax	These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <i>K.S. Davis, P.G.</i> AMS, Inc. Technical Director	 ACCREDITED IN ACCORDANCE WITH <b>nelac</b> Laboratory No. E87956
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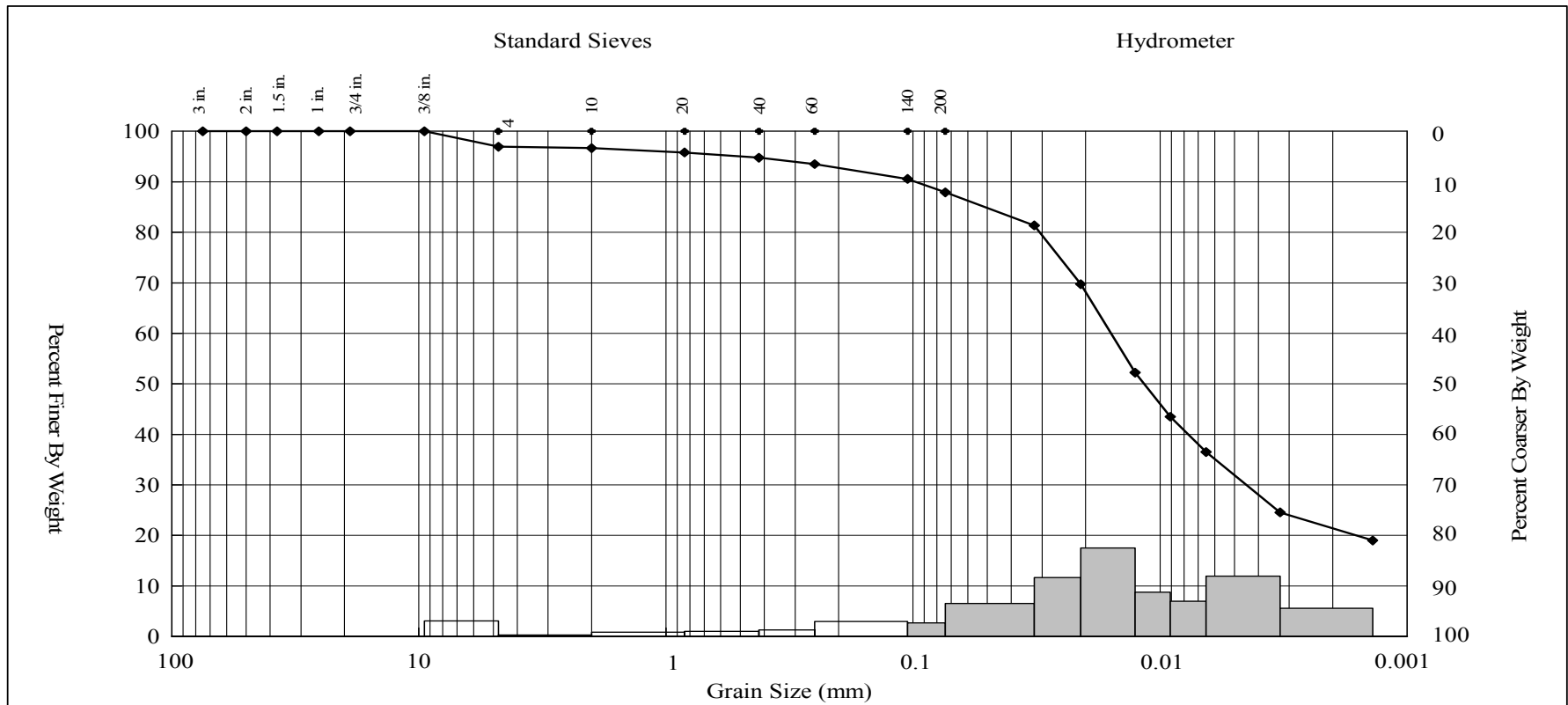
# GEOTECHNICAL RESULTS





Gravel (%)	Sand (%)			Fines (%)		Client Project Title: New Bedford Harbor				
	Coarse	Medium	Fine	Silt	Clay					
3.42	0.85	4.11	15.35	52.48	23.79	Client Project Number: N/A				
						AMS Project Number: 2006-03-27				
						Date Sampled: 11/3/2006				
						Date Analyzed: 12/14/2006				
						Matrix: Sediment				
						Method: ASTM D 422				
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
154										
Material Description										
Elastic Silt with Sand ("MH"), black (5Y 2.5/1)						Client Sample ID: S-06D-0H36-00-05				
						AMS Sample ID: 25968				
 <b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax						These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <i>K.S. Davis, P.G.</i> AMS, Inc. Technical Director				
						 ACCREDITED IN ACCORDANCE WITH <b>nelac</b> Laboratory No. E87956				

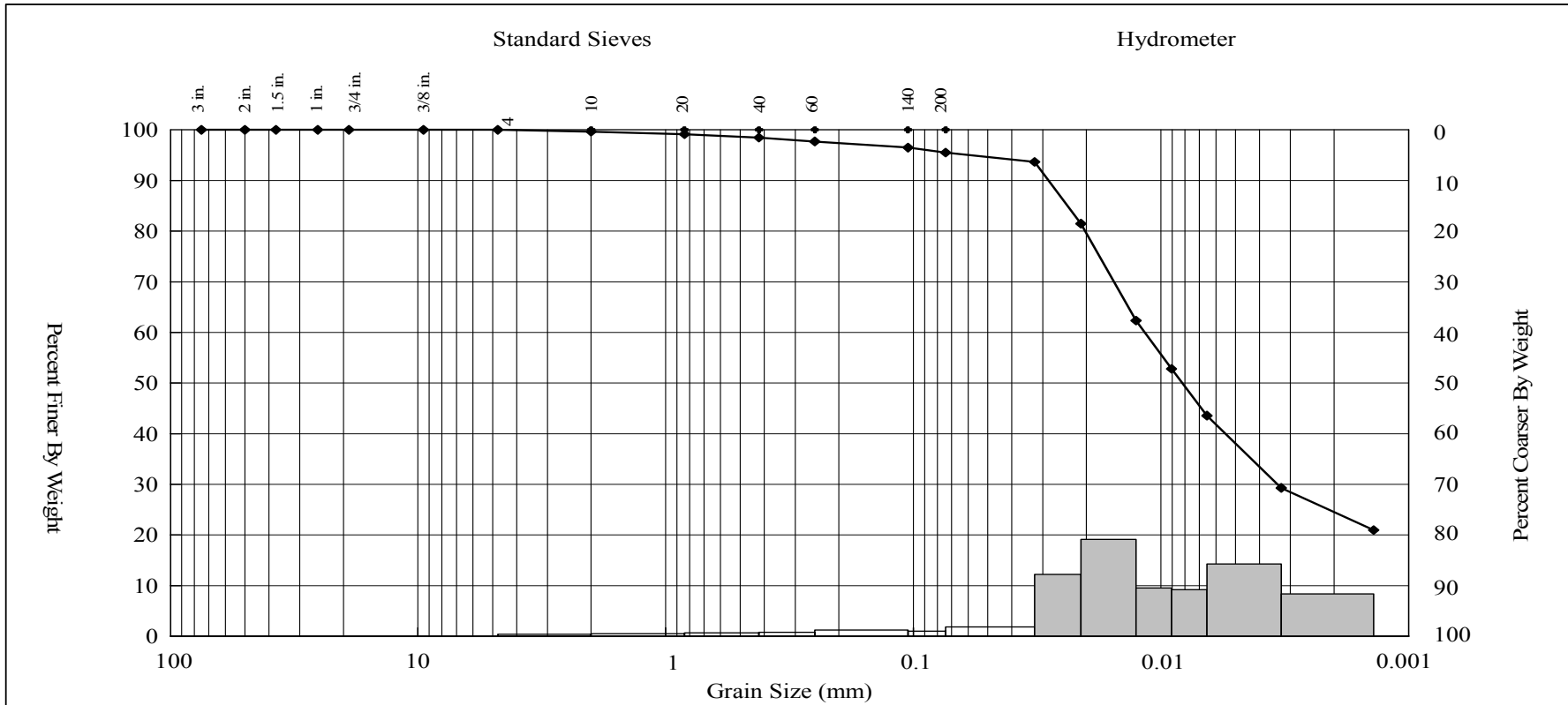


# GEOTECHNICAL RESULTS





Gravel (%)		Sand (%)				Fines (%)				Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 11/2/2006 Date Analyzed: 12/14/2006 Matrix: Sediment Method: ASTM D 422  Client Sample ID: S-06D-0Z22-00-06 AMS Sample ID: 25969		
		Coarse	Medium	Fine	Silt	Clay						
3.08	0.28	1.89	6.88	56.97	30.90							
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>			C <sub>u</sub>
94												
Material Description												
Elastic Silt ("MH"), very dark gray (5Y 3/1)												
<div><div><b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax</div></div>							These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <div><i>K.S. Davis, P.G.</i> AMS, Inc. Technical Director</div>					
							<div><div>ACCREDITED IN ACCORDANCE WITH <b>nelac</b> Laboratory No. E87956</div></div>					

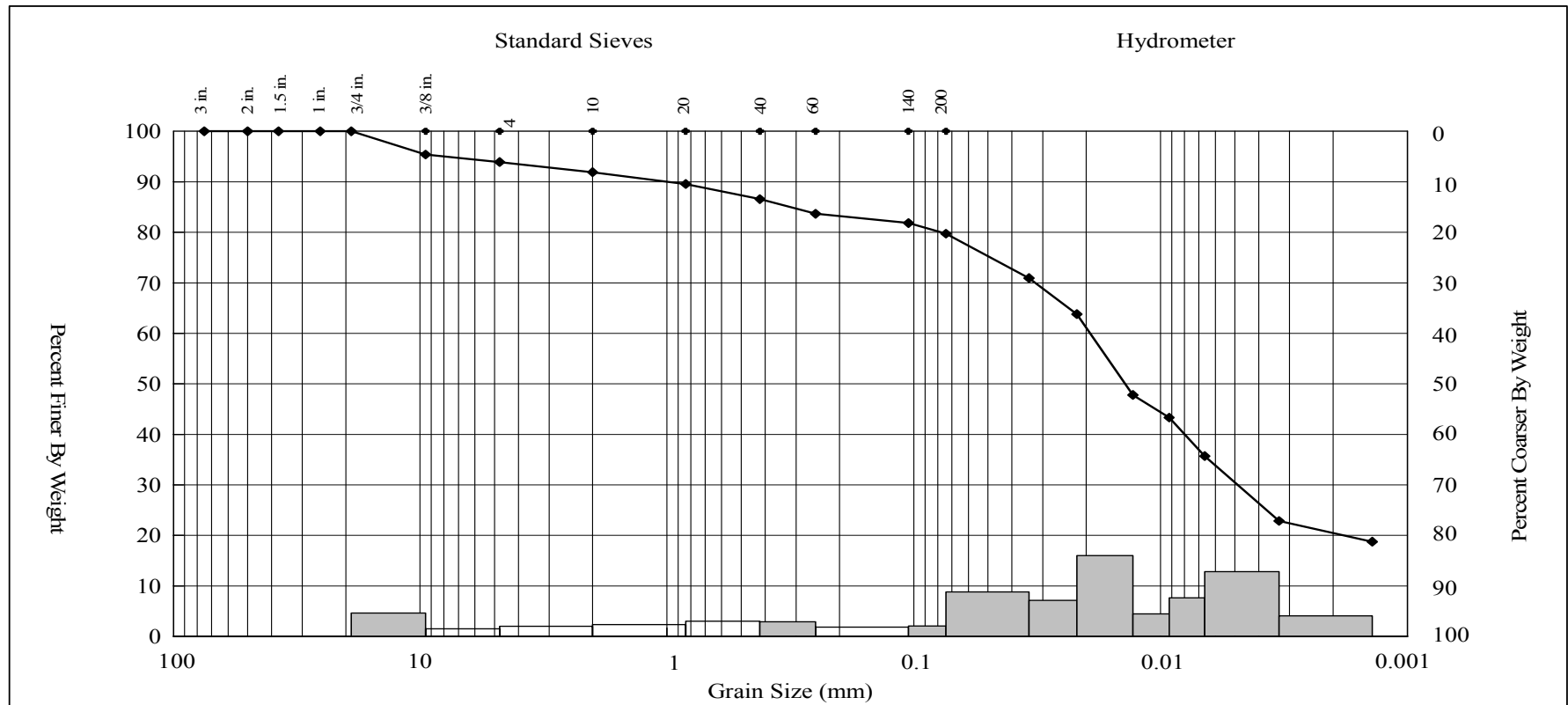
## GEOTECHNICAL RESULTS





Gravel (%)		Sand (%)			Fines (%)						Client Project Title: New Bedford Harbor				
		Coarse	Medium	Fine	Silt			Clay		Client Project Number: N/A					
0.00		0.37	1.18	2.95	58.61			36.89				AMS Project Number: 2006-03-27			
														Date Sampled: 11/3/2006	
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	Date Analyzed: 12/14/2006				
121															
Material Description												Matrix: Sediment			
Elastic Silt ("MH"), very dark gray (5Y 3/1)														Method: ASTM D 422	
												Client Sample ID: S-06D-0H29-00-05			
												AMS Sample ID: 25970			

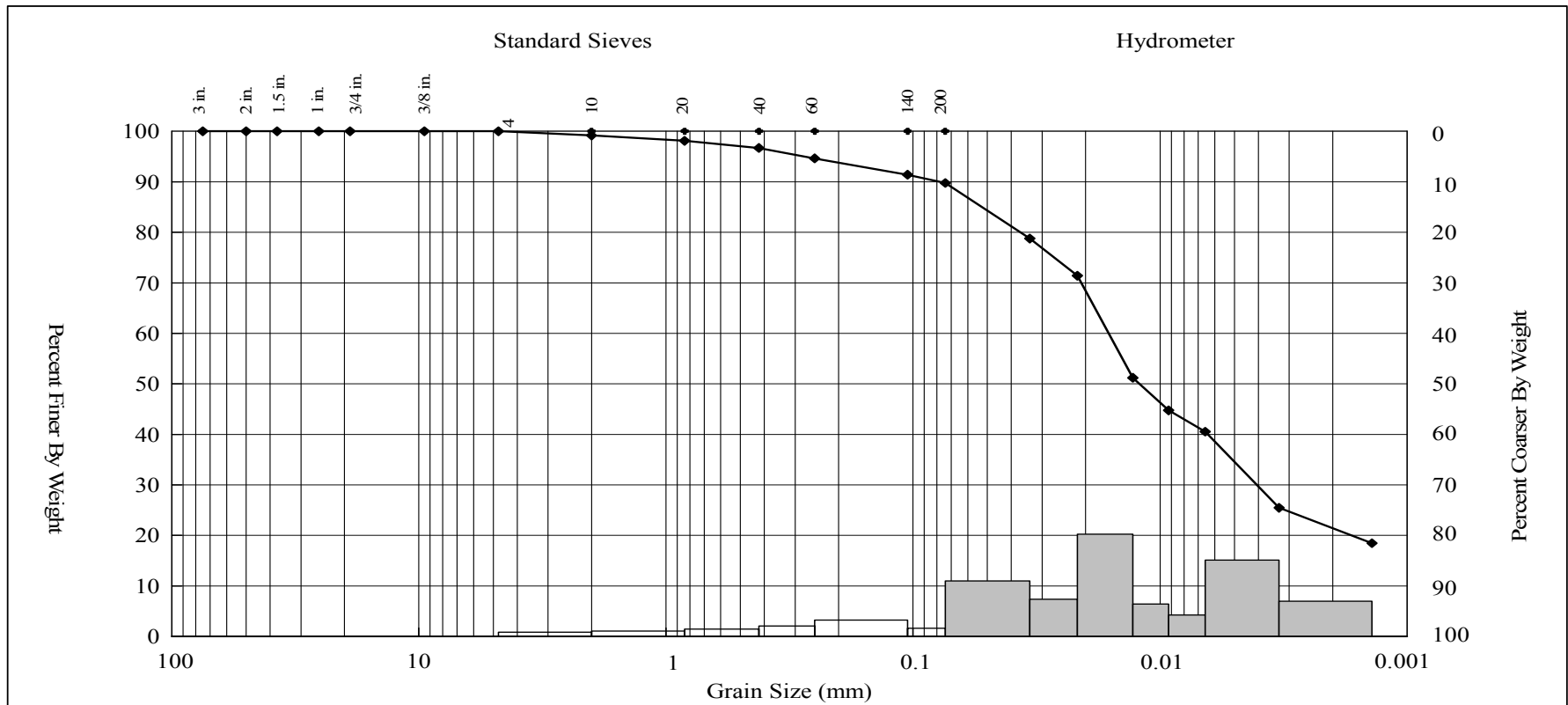
<div></div> <div><b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax</div>	<div>These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.</div> <div><div>K.S. Davis, P.G.</div><div>AMS, Inc. Technical Director</div></div>	<div><div>ACCREDITED IN ACCORDANCE WITH</div><div></div><div>Laboratory No. E87956</div></div>
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# GEOTECHNICAL RESULTS



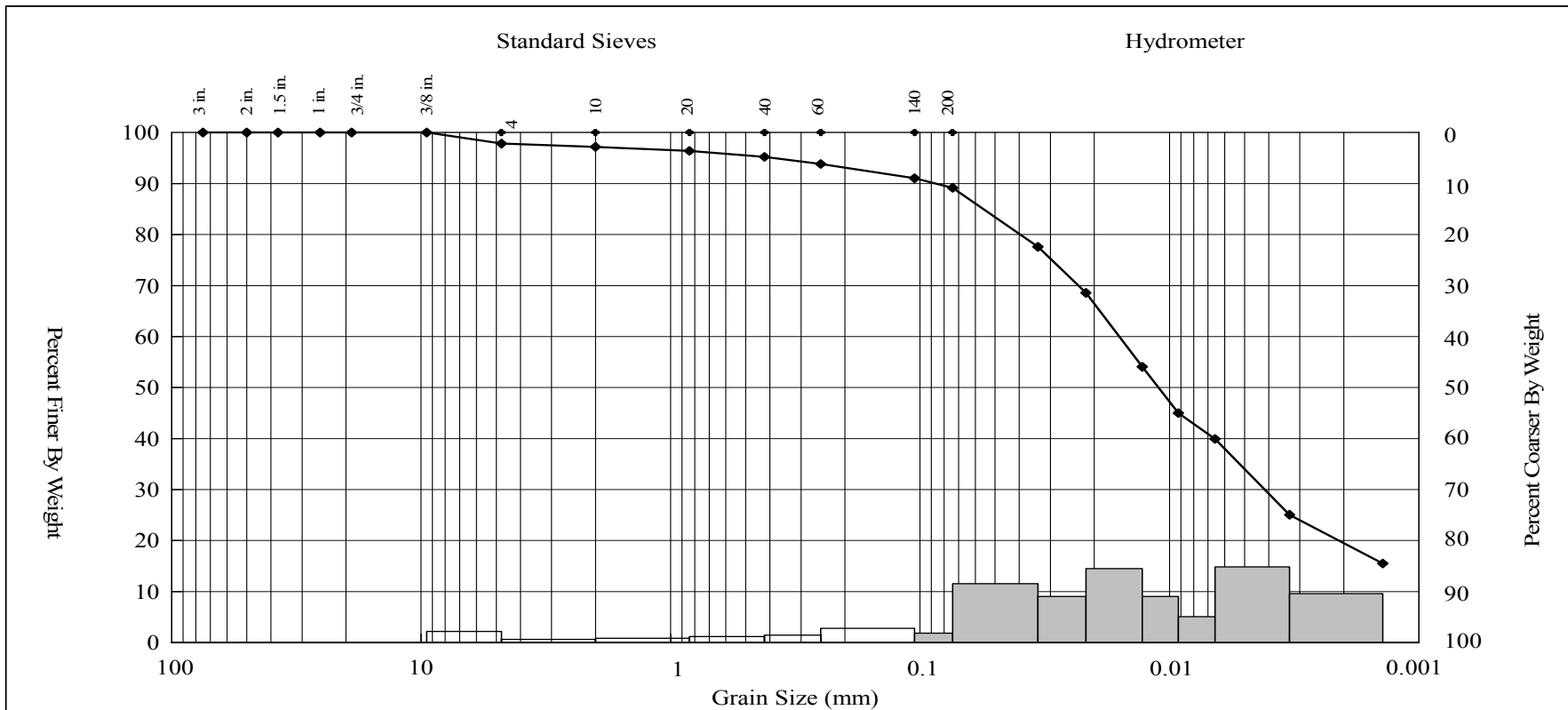
Gravel (%)	Sand (%)			Fines (%)		Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 11/3/2006 Date Analyzed: 12/14/2006 Matrix: Sediment Method: ASTM D 422						
	Coarse	Medium	Fine	Silt	Clay							
6.11	2.00	5.33	6.83	50.31	29.42							
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>			D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
141												
Material Description											Client Sample ID: S-06D-0E27-00-05 AMS Sample ID: 25971	
Elastic Silt with Sand ("MH"), black (5Y 2.5/1)												
 APPLIED MARINE SCIENCES, INC. 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax						These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <i>K.S. Davis, P.G.</i> AMS, Inc. Technical Director						 ACCREDITED IN ACCORDANCE WITH Laboratory No. E87956



# GEOTECHNICAL RESULTS



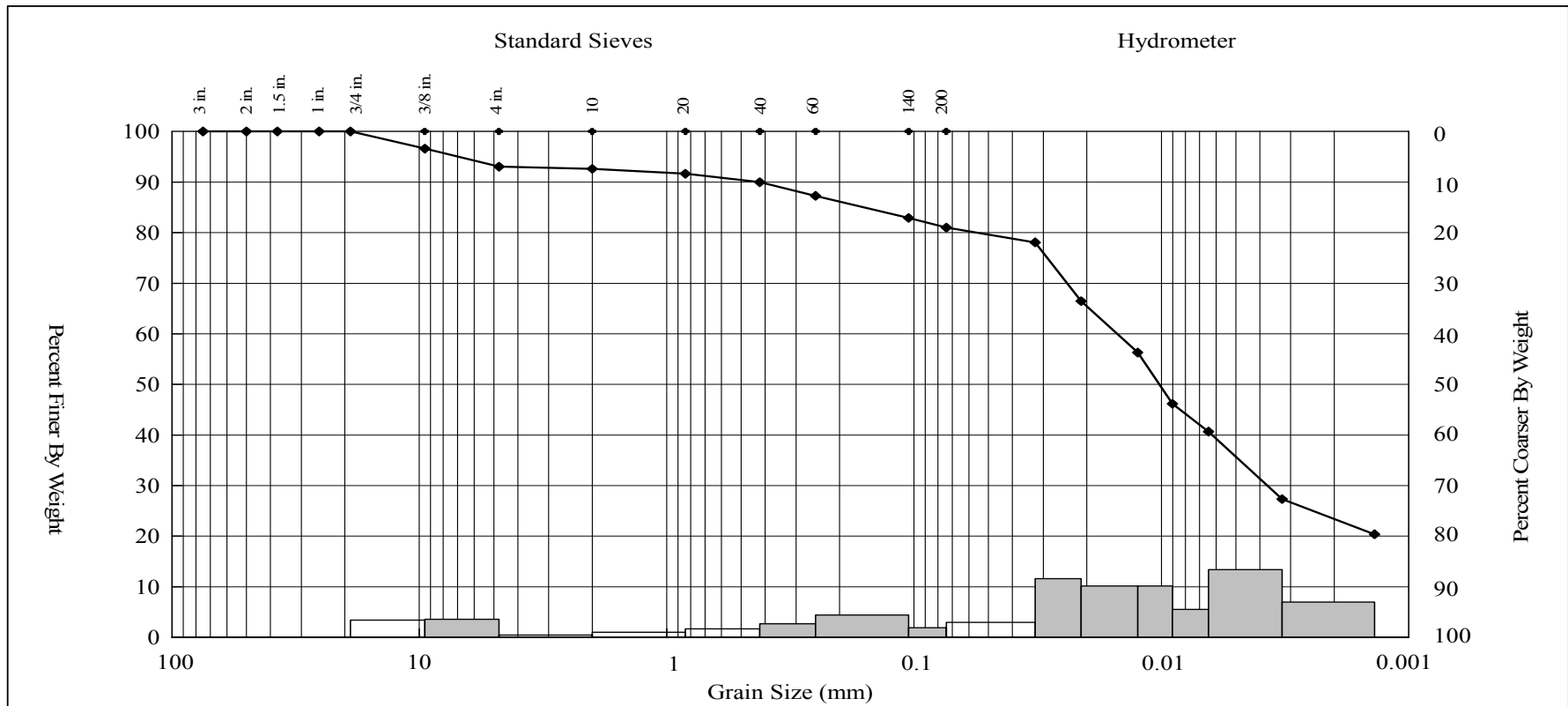
Gravel (%)	Sand (%)			Fines (%)		Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 11/3/2006 Date Analyzed: 12/14/2006 Matrix: Sediment Method: ASTM D 422				
	Coarse	Medium	Fine	Silt	Clay					
0.00	0.86	2.47	6.94	56.44	33.29					
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>			D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>
141										
Material Description						Client Sample ID: S-06D-0H27-00-05 AMS Sample ID: 25972				
Elastic Silt ("MH"), very dark gray (5Y 3/1)										
 APPLIED MARINE SCIENCES, INC. 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax			These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <i>K.S. Davis, P.G.</i> AMS, Inc. Technical Director							
			 ACCREDITED IN ACCORDANCE WITH nelac Laboratory No. E87956							



## GEOTECHNICAL RESULTS



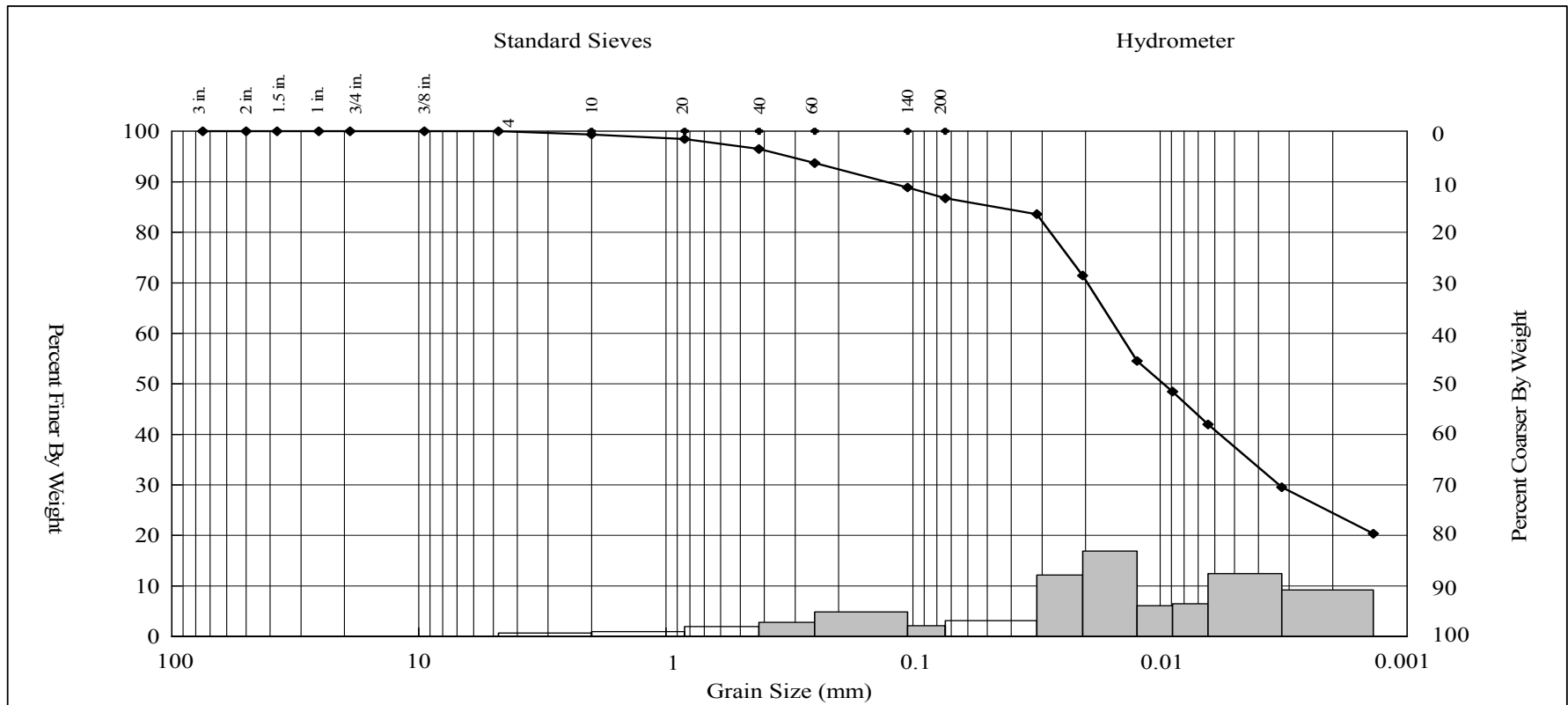
Gravel (%)		Sand (%)			Fines (%)			Client Project Title: New Bedford Harbor					
		Coarse	Medium	Fine	Silt	Clay	Client Project Number: N/A						
2.19		0.62		1.98		6.07		56.34		32.80		AMS Project Number: 2006-03-27	
												Date Sampled: 11/3/2006	
												Date Analyzed: 12/14/2006	
Water Cont. (%)		LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	Matrix: Sediment	
140												Method: ASTM D 422	
Material Description												Client Sample ID: S-06D-0C29-05-10 AMS Sample ID: 25973	
Elastic Silt ("MH"), black (5Y 2.5/1)													
 <div>APPLIED MARINE SCIENCES, INC. 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax</div>						<div>These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.</div> <div>K.S. Davis, P.G. AMS, Inc. Technical Director</div>						 <div>ACCREDITED IN ACCORDANCE WITH nelac Laboratory No. E87956</div>	



# GEOTECHNICAL RESULTS



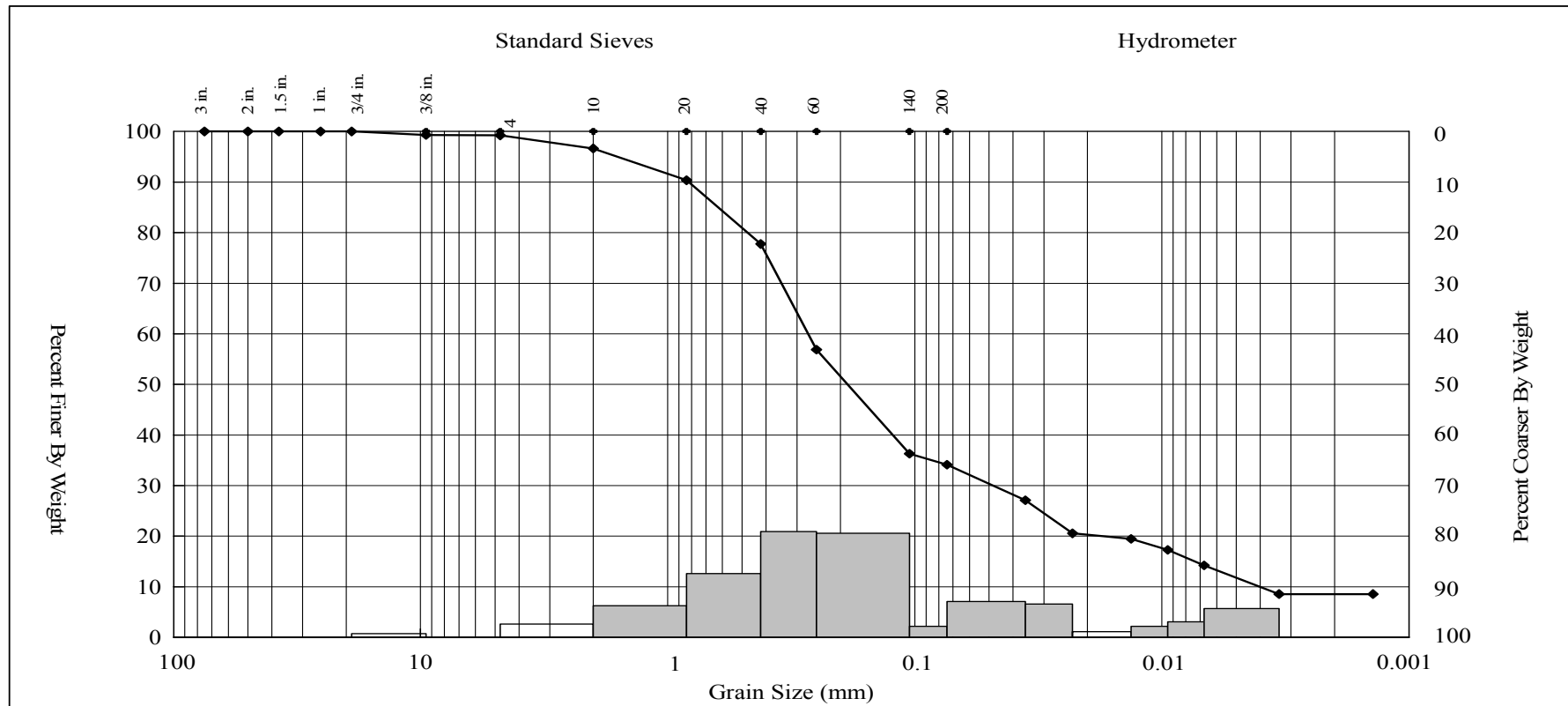
Gravel (%)		Sand (%)				Fines (%)				Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 11/3/2006 Date Analyzed: 12/14/2006 Matrix: Sediment Method: ASTM D 422  Client Sample ID: S-06D-0C41-04-09 AMS Sample ID: 25974		
		Coarse	Medium	Fine	Silt	Clay						
6.98	0.44	2.64	8.95	46.38	34.61							
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>			C <sub>u</sub>
98												
Material Description												
Elastic Silt with Sand ("MH"), dark olive gray (5Y 3/2)												
 <b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax							These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <i>K.S. Davis, P.G.</i> AMS, Inc. Technical Director					
							 ACCREDITED IN ACCORDANCE WITH <b>nelac</b> Laboratory No. E87956					



# GEOTECHNICAL RESULTS



Gravel (%)	Sand (%)			Fines (%)		Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 11/3/2006 Date Analyzed: 12/14/2006 Matrix: Sediment Method: ASTM D 422				
	Coarse	Medium	Fine	Silt	Clay					
0.00	0.65	2.88	9.76	50.21	36.50					
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>			D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>
97										
Material Description						Client Sample ID: S-06D-0C41-04-09-DUP AMS Sample ID: 25975				
Elastic Silt ("MH"), dark olive gray (5Y 3/2)										
 <b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax			These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <i>K.S. Davis, P.G.</i> AMS, Inc. Technical Director							
			 ACCREDITED IN ACCORDANCE WITH <b>nelac</b> Laboratory No. E87956							

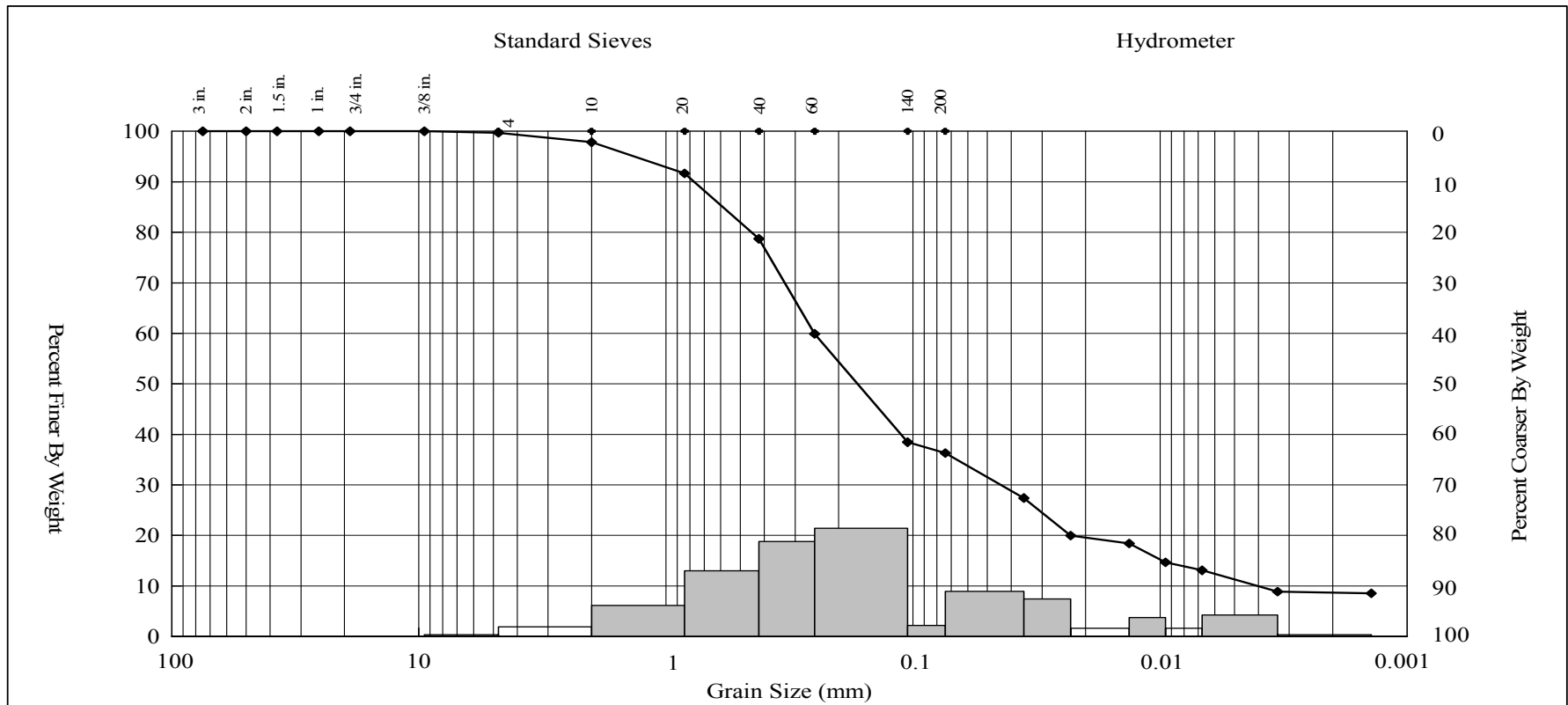
## GEOTECHNICAL RESULTS





Gravel (%)	Sand (%)			Fines (%)		Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 11/3/2006 Date Analyzed: 12/14/2006 Matrix: Sediment Method: ASTM D 422						
	Coarse	Medium	Fine	Silt	Clay							
0.77	2.61	18.85	43.63	22.84	11.30							
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>			D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
60												
Material Description											Client Sample ID: S-06D-0M23-05-10 AMS Sample ID: 25976	
Silty Sand ("SM"), black (5Y 2.5/1)												
 <div>APPLIED MARINE SCIENCES, INC. 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax</div>						These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard. <div>K.S. Davis, P.G.</div> <div>AMS, Inc. Technical Director</div>						 <div>ACCREDITED IN ACCORDANCE WITH nelac Laboratory No. E87956</div>

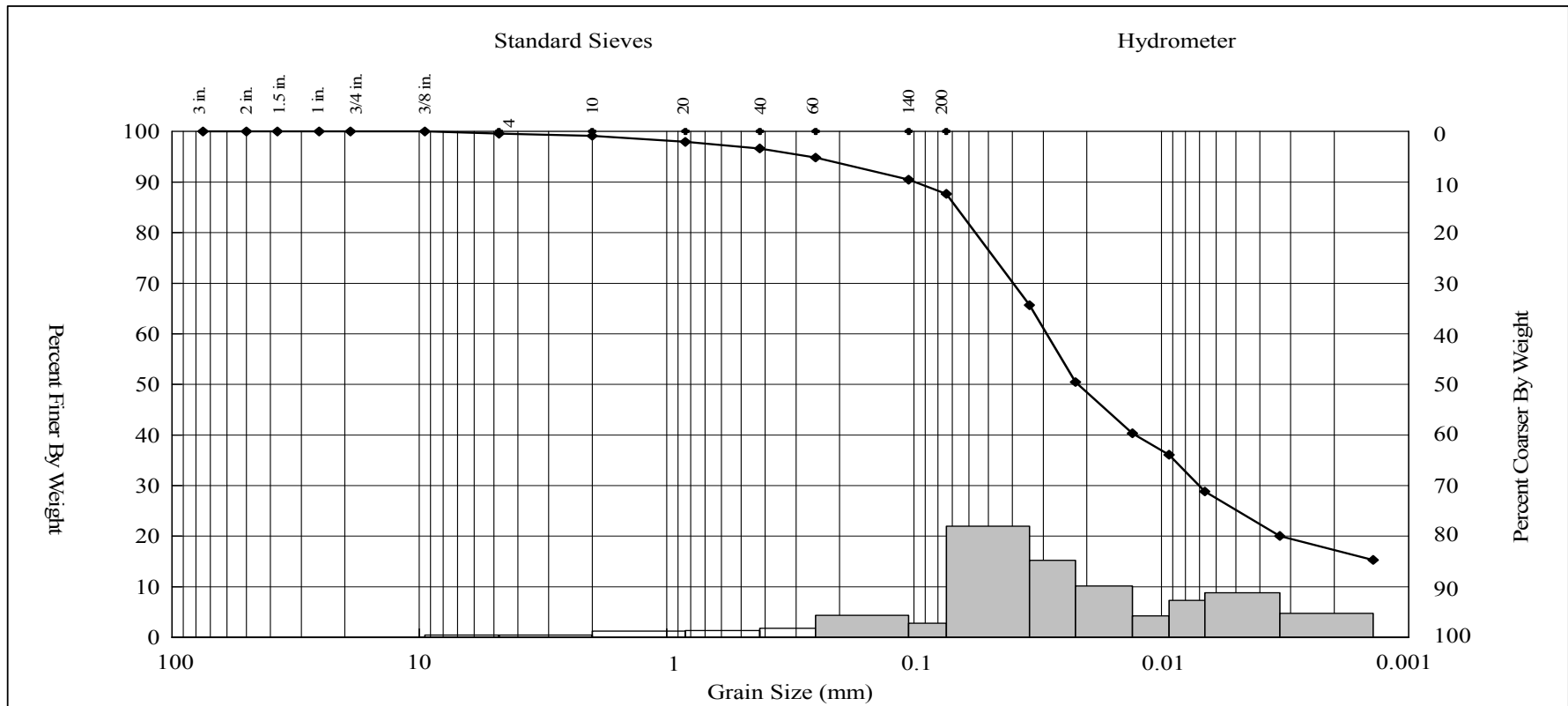




# GEOTECHNICAL RESULTS



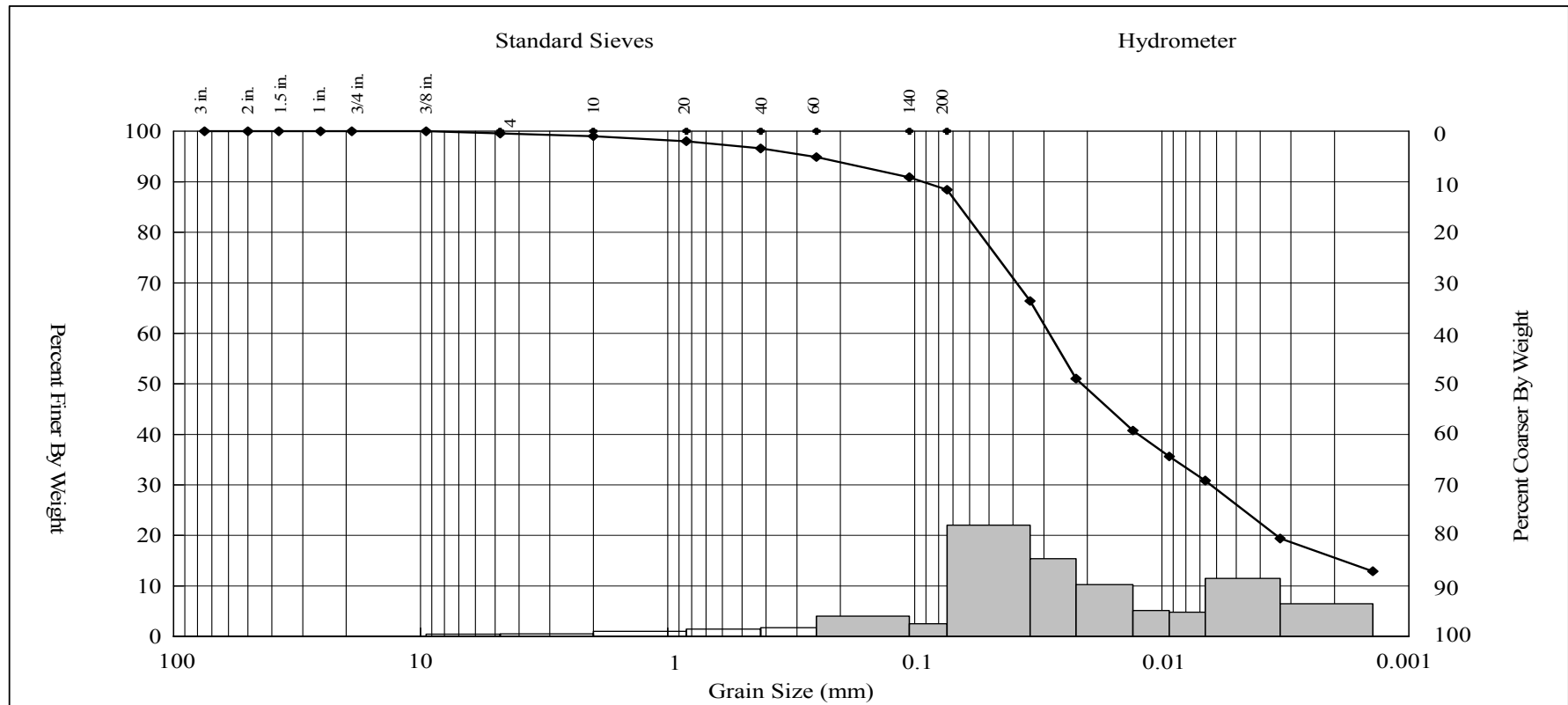
Gravel (%)	Sand (%)			Fines (%)		Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 11/3/2006 Date Analyzed: 12/14/2006 Matrix: Sediment Method: ASTM D 422						
	Coarse	Medium	Fine	Silt	Clay							
0.31	1.88	19.14	42.39	25.39	10.89							
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>			D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
58												
Material Description											Client Sample ID: S-06D-0M23-05-10-DUP AMS Sample ID: 25977	
Silty Sand ("SM"), black (N-1)												
 APPLIED MARINE SCIENCES, INC. 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax							These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <i>K.S. Davis, P.G.</i> AMS, Inc. Technical Director					 ACCREDITED IN ACCORDANCE WITH Laboratory No. E87956



# GEOTECHNICAL RESULTS



Gravel (%)		Sand (%)				Fines (%)				Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 11/3/2006 Date Analyzed: 12/14/2006 Matrix: Sediment Method: ASTM D 422  Client Sample ID: S-06D-0E33-00-05 AMS Sample ID: 25978		
		Coarse	Medium	Fine	Silt	Clay						
0.46	0.42	2.52	8.95	63.23	24.42							
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>			C <sub>u</sub>
165												
Material Description												
Elastic Silt ("MH"), black (N-1)												
 <b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax							These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <i>K.S. Davis, P.G.</i> AMS, Inc. Technical Director				 ACCREDITED IN ACCORDANCE WITH <b>nelac</b> Laboratory No. E87956	

## GEOTECHNICAL RESULTS



Gravel (%)		Sand (%)			Fines (%)						Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 11/3/2006 Date Analyzed: 12/14/2006 Matrix: Sediment Method: ASTM D 422  Client Sample ID: S-06D-0E33-00-05 AMS Sample ID: 25978-2	
		Coarse	Medium	Fine	Silt		Clay					
0.46	0.53	2.42	8.17	63.28		25.14						
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>		
165												
Material Description												
Elastic Silt ("MH"), black (N-1)												
 <div>APPLIED MARINE SCIENCES, INC. 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax</div>						These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <div>K.S. Davis, P.G. AMS, Inc. Technical Director</div>						 <div>ACCREDITED IN ACCORDANCE WITH nelac Laboratory No. E87956</div>

## QUALITY CONTROL RESULTS

Client: Battelle  
 Project Title: New Bedford Harbor  
 Project Number: N/A  
 Client Sample ID: S-06D-0E33-00-05  
 AMS Sample ID: 25978

AMS Project Number: 2006-03-27  
 Date Sampled: 11/3/2006  
 Date Analyzed: 12/14/2006  
 Matrix: Sediment  
 Method: ASTM D 422  
 Batch: 121406-01

Particle Diameter Range (mm)	U.S. Standard Sieve Mesh #	Size Class	Sample Result (%)	Duplicate Result (%)	RPD (%)	Data Qualifier	QC Limits (% RPD)
4.76	No. 4	Gravel	0.46	0.46	0.24		≤ 25
2.00	No. 10	Coarse Sand	0.42	0.53	21.58		≤ 25
0.425	No. 40	Medium Sand	2.52	2.42	3.81		≤ 25
0.074	No. 200	Fine Sand	8.95	8.17	9.19		≤ 25
<0.074 - 0.005	Hydrometer	Silt	63.23	63.28	0.09		≤ 25
<0.005	Hydrometer	Clay	24.42	25.14	2.91		≤ 25

**Samples in Batch:** 25965 25967 25969 25971 25973 25975 25977  
 25966 25968 25970 25972 25974 25976 25978

**Qualifiers:** Q - RPD value outside Quality Control Limits  
 I - Insufficient sample material to perform Quality Control Analyses

**Soil Classification:** Unified Soil Classification System (USCS) classifications are estimated in accordance with ASTM D 2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) unless the sample contains less than 5% fines (GW, GP, SW, and SP), or the Liquid Limit, Plastic Limit and Plasticity Index (Atterberg Limits) have been determined in accordance with ASTM D 4318. When these values have been determined the samples are definitively classified using ASTM D 2487, Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System).



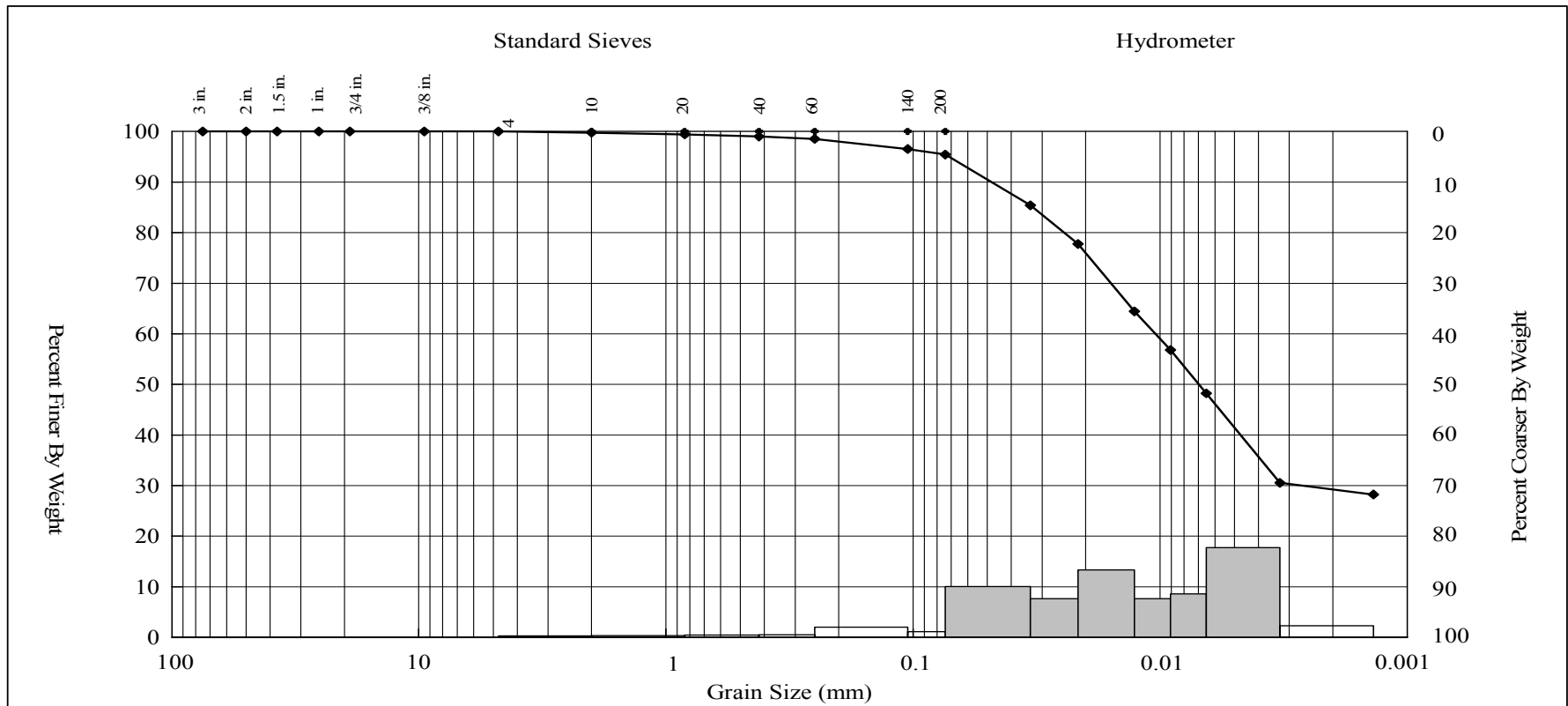
**APPLIED MARINE SCIENCES, INC.**  
 502 N. Hwy 3, Suite B  
 League City, TX 77573  
 281.554.7272 Tel.  
 281.554.6356 Fax



These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.

*K. S. Davis, P. G.*  
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 AMS, Inc. Technical Director

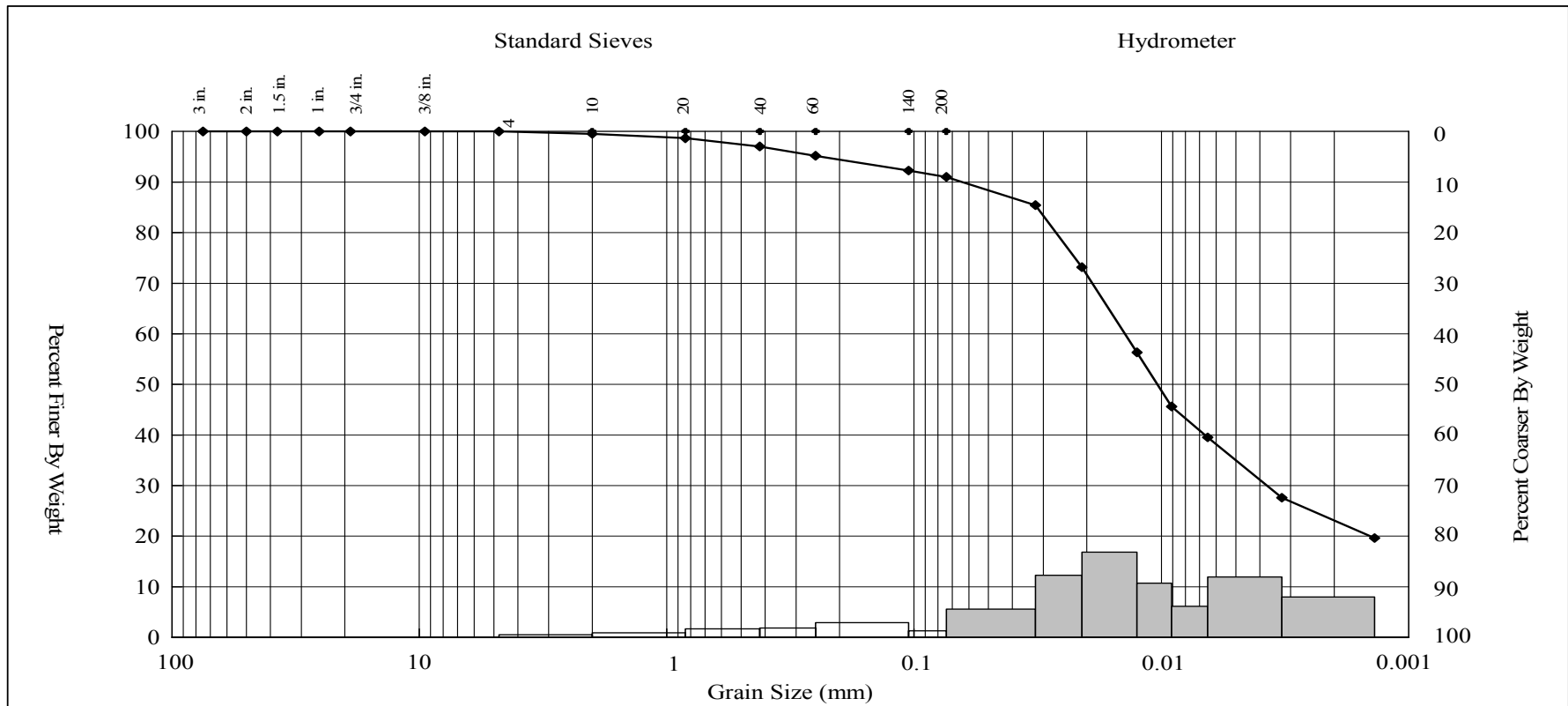




# GEOTECHNICAL RESULTS



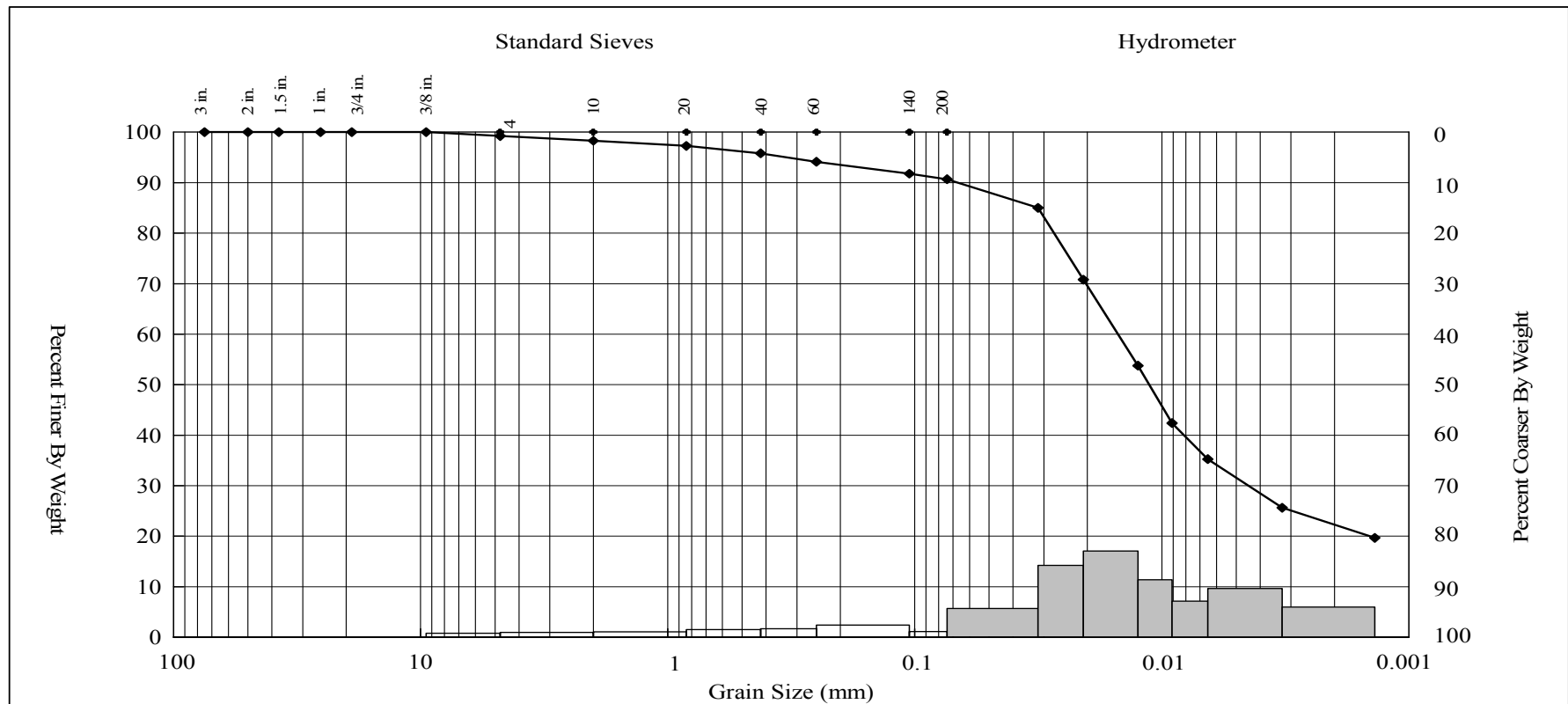
Gravel (%)		Sand (%)				Fines (%)				Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 11/3/2006 Date Analyzed: 12/18/2006 Matrix: Sediment Method: ASTM D 422			
		Coarse	Medium	Fine	Silt	Clay							
0.00	0.27	0.75	3.57	55.44	39.97								
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>			C <sub>u</sub>	
142													
Material Description											Client Sample ID: S-06D-0H24-22-27 AMS Sample ID: 23979		
Elastic Silt ("MH"), black (5Y 2.5/1)													
 <div>APPLIED MARINE SCIENCES, INC. 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax</div>							<div>These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.</div> <div>K.S. Davis, P.G. AMS, Inc. Technical Director</div> 						



# GEOTECHNICAL RESULTS



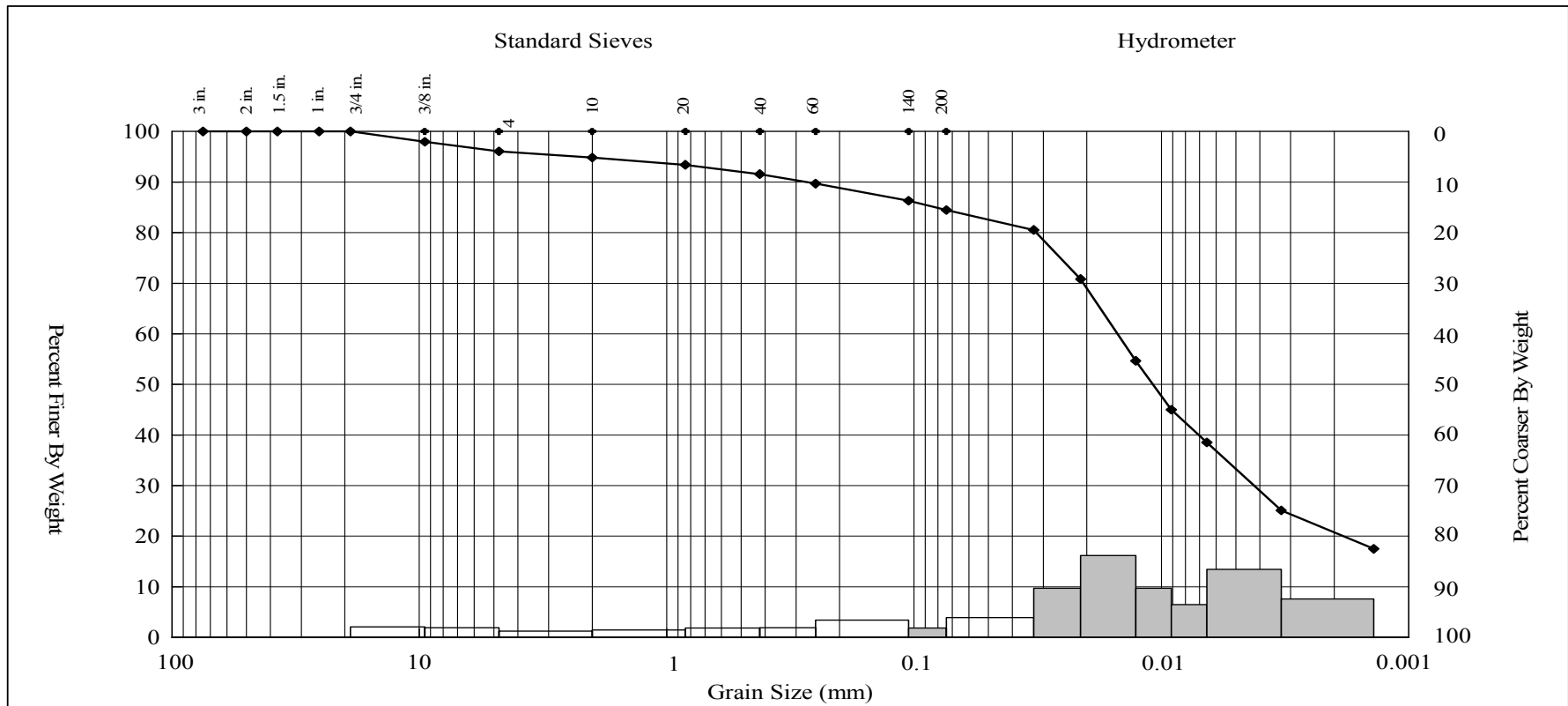
Gravel (%)		Sand (%)				Fines (%)				Client Project Title: New Bedford Harbor	
		Coarse		Medium	Fine	Silt		Clay	Client Project Number: N/A		
0.00		0.48		2.52	6.01	57.00		33.99		AMS Project Number: 2006-03-27	
Date Sampled: 11/7/2006											
Date Analyzed: 12/18/2006											
Matrix: Sediment											
Method: ASTM D 422											
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	Client Sample ID: S-06D-0E30-00-05
124											
Material Description											AMS Sample ID: 23980
Elastic Silt ("MH"), dark olive gray (5Y 3/2)											
 <b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax						These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <i>K.S. Davis, P.G.</i> _____ AMS, Inc. Technical Director					
 ACCREDITED IN ACCORDANCE WITH <b>nelac</b> Laboratory No. E87956											



## GEOTECHNICAL RESULTS



Gravel (%)		Sand (%)			Fines (%)						Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 11/7/2006 Date Analyzed: 12/18/2006 Matrix: Sediment Method: ASTM D 422		
		Coarse	Medium	Fine	Silt		Clay						
0.79		0.91	2.53	5.11	59.90		30.76						
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>			
127													
Material Description											Client Sample ID: S06D-0E32-00-05 AMS Sample ID: 23981		
Elastic Silt ("MH"), dark olive gray (5Y 3/2)													
 APPLIED MARINE SCIENCES, INC. 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax						These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <div>_____ K.S. Davis, P.G. AMS, Inc. Technical Director</div>						 ACCREDITED IN ACCORDANCE WITH nelac Laboratory No. E87956	

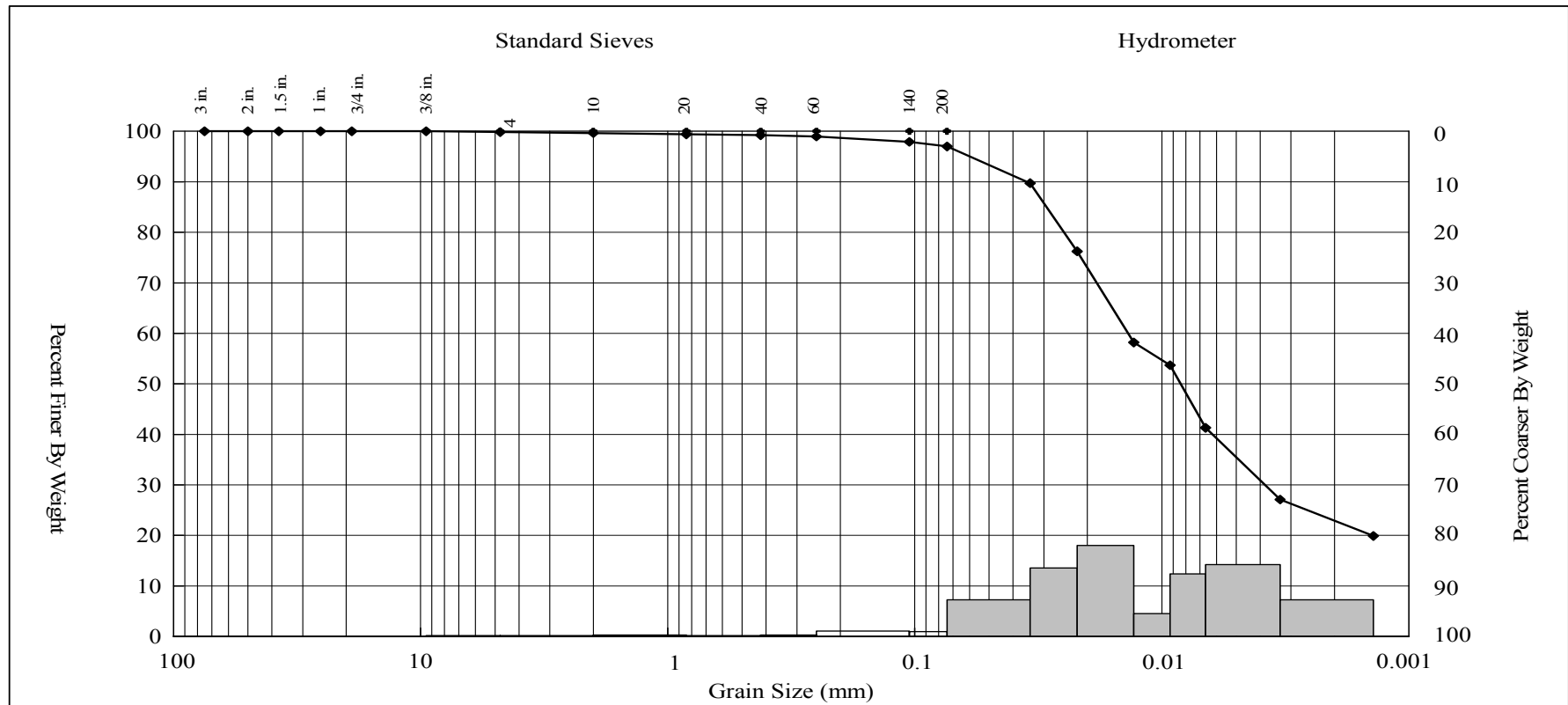
# GEOTECHNICAL RESULTS





Gravel (%)	Sand (%)			Fines (%)		Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 11/7/2006 Date Analyzed: 12/18/2006 Matrix: Sediment Method: ASTM D 422				
	Coarse	Medium	Fine	Silt	Clay					
3.96	1.21	3.28	7.11	52.28	32.16					
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
147										
Material Description										
Elastic Silt with Sand ("MH"), dark olive gray (5Y 3/2)										
						Client Sample ID: S-06D-0D36-00-05 AMS Sample ID: 23982				
 <b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax						These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <i>K.S. Davis, P.G.</i> AMS, Inc. Technical Director				
						 ACCREDITED IN ACCORDANCE WITH <b>nelac</b> Laboratory No. E87956				

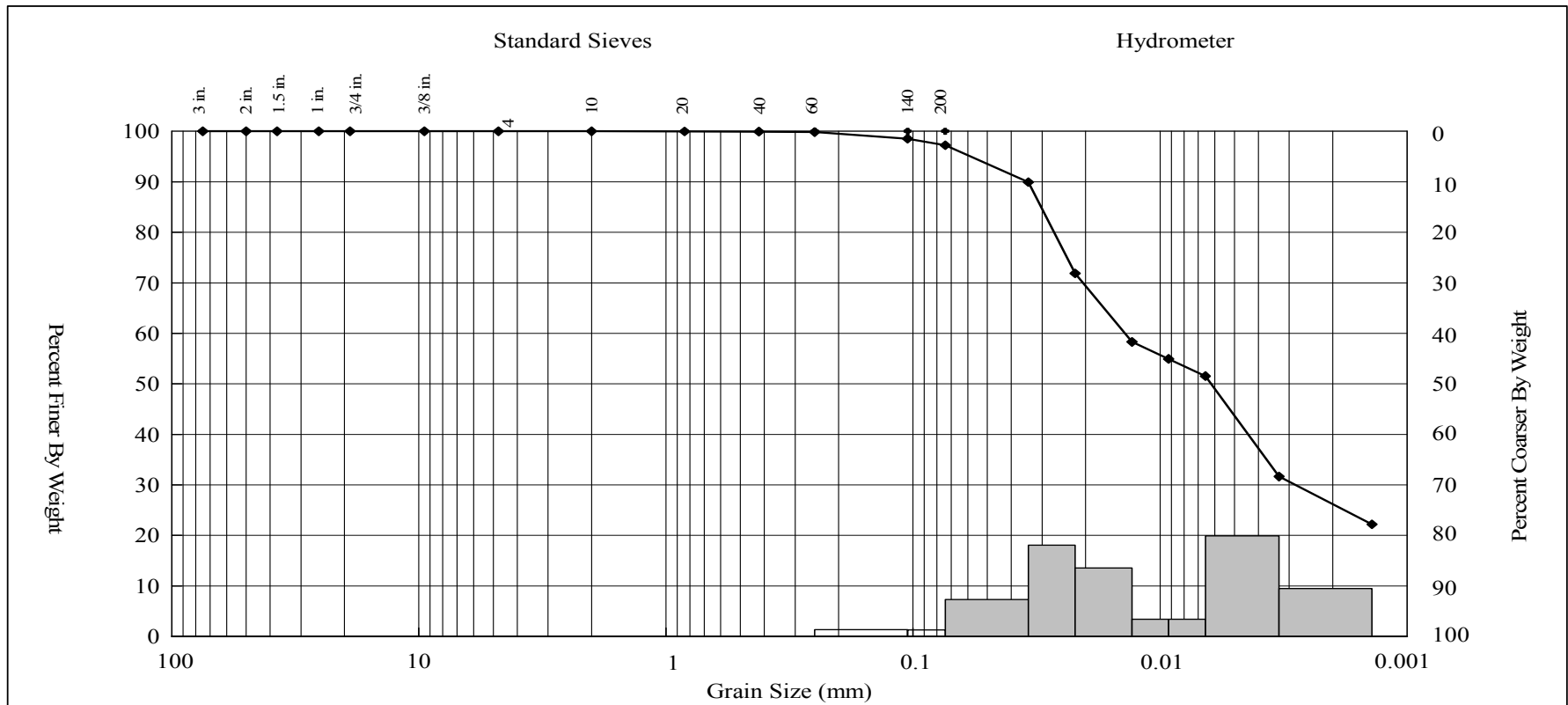




## GEOTECHNICAL RESULTS



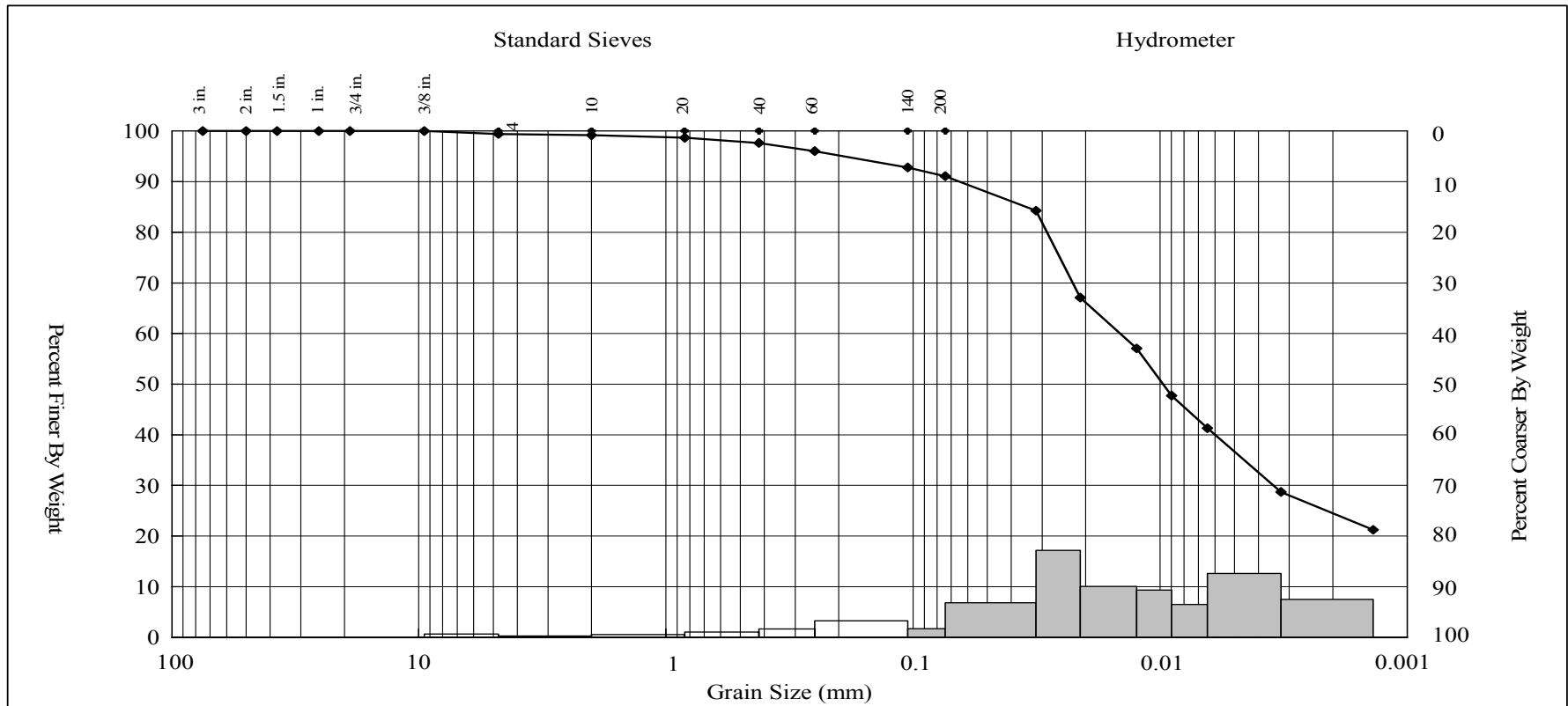
Gravel (%)		Sand (%)				Fines (%)				Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 11/7/2006 Date Analyzed: 12/18/2006 Matrix: Sediment Method: ASTM D 422			
		Coarse		Medium	Fine	Silt		Clay					
0.20		0.18		0.41	2.25		62.71		34.25				
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>			C <sub>u</sub>	
209													
Material Description										Client Sample ID: S-06D-0V28-02-07 AMS Sample ID: 23983			
Elastic Silt ("MH"), black (N-1)													
 <b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax						These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <i>K.S. Davis, P.G.</i> AMS, Inc. Technical Director						 ACCREDITED IN ACCORDANCE WITH <b>nelac</b> Laboratory No. E87956	

# GEOTECHNICAL RESULTS



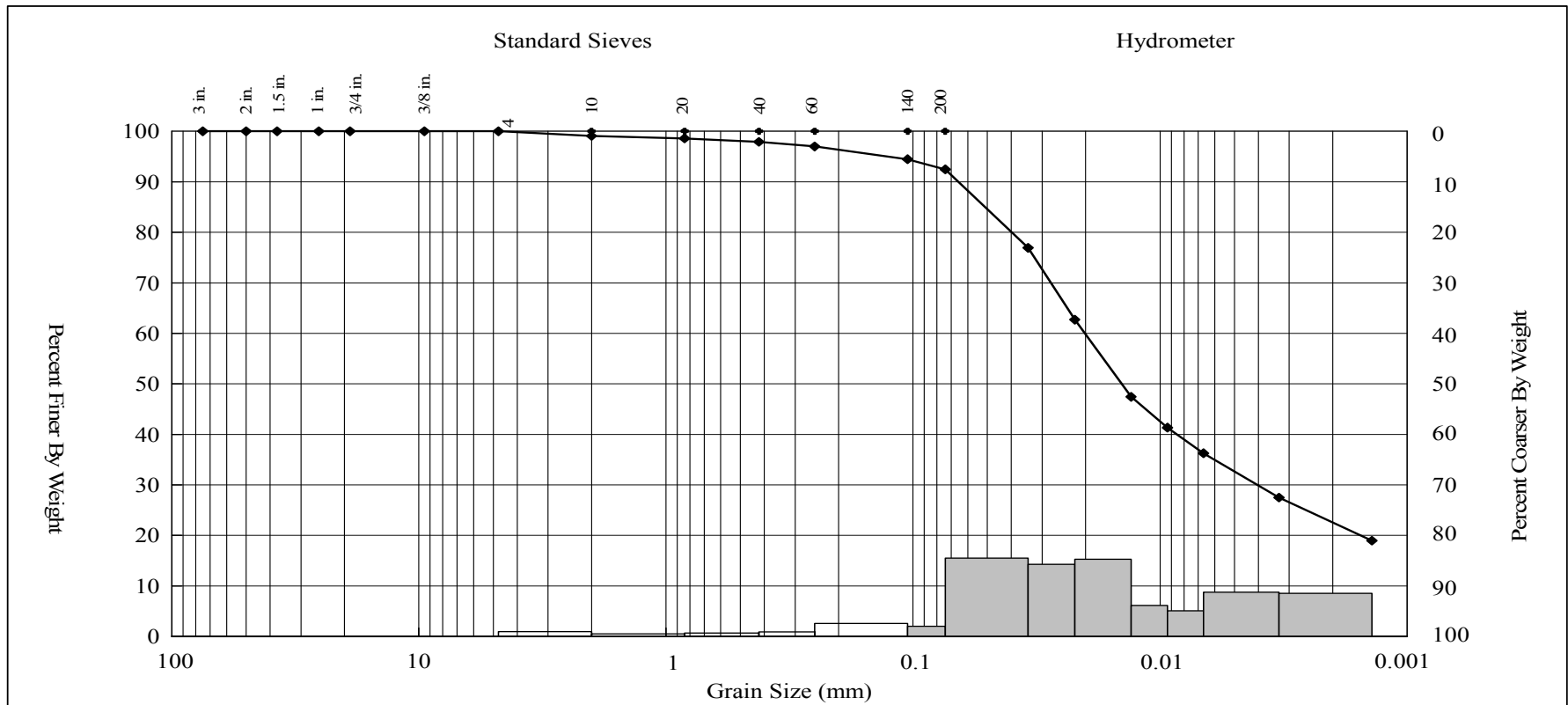
Gravel (%)		Sand (%)				Fines (%)				Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 11/7/2006 Date Analyzed: 12/18/2006 Matrix: Sediment Method: ASTM D 422			
		Coarse		Medium	Fine	Silt		Clay					
0.00		0.00		0.07	2.71	55.17		42.05					
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>			C <sub>u</sub>	
215													
Material Description											Client Sample ID: S-06D-0N28-08-13 AMS Sample ID: 23984		
Elastic Silt ("MH"), black (N-1)													
<div><div>APPLIED MARINE SCIENCES, INC. 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax</div></div>							<div>These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.</div> <div><div>K.S. Davis, P.G.</div><div>AMS, Inc. Technical Director</div></div> <div><div>ACCREDITED IN ACCORDANCE WITH</div><div></div><div>Laboratory No. E87956</div></div>						

# GEOTECHNICAL RESULTS





Gravel (%)		Sand (%)				Fines (%)				Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 11/7/2006 Date Analyzed: 12/18/2006 Matrix: Sediment Method: ASTM D 422		
		Coarse	Medium	Fine	Silt	Clay						
0.61	0.23	1.53	6.57	55.43	35.63							
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>			C <sub>u</sub>
125												
<b>Material Description</b>												
Elastic Silt ("MH"), dark olive gray (5Y 3/2)												

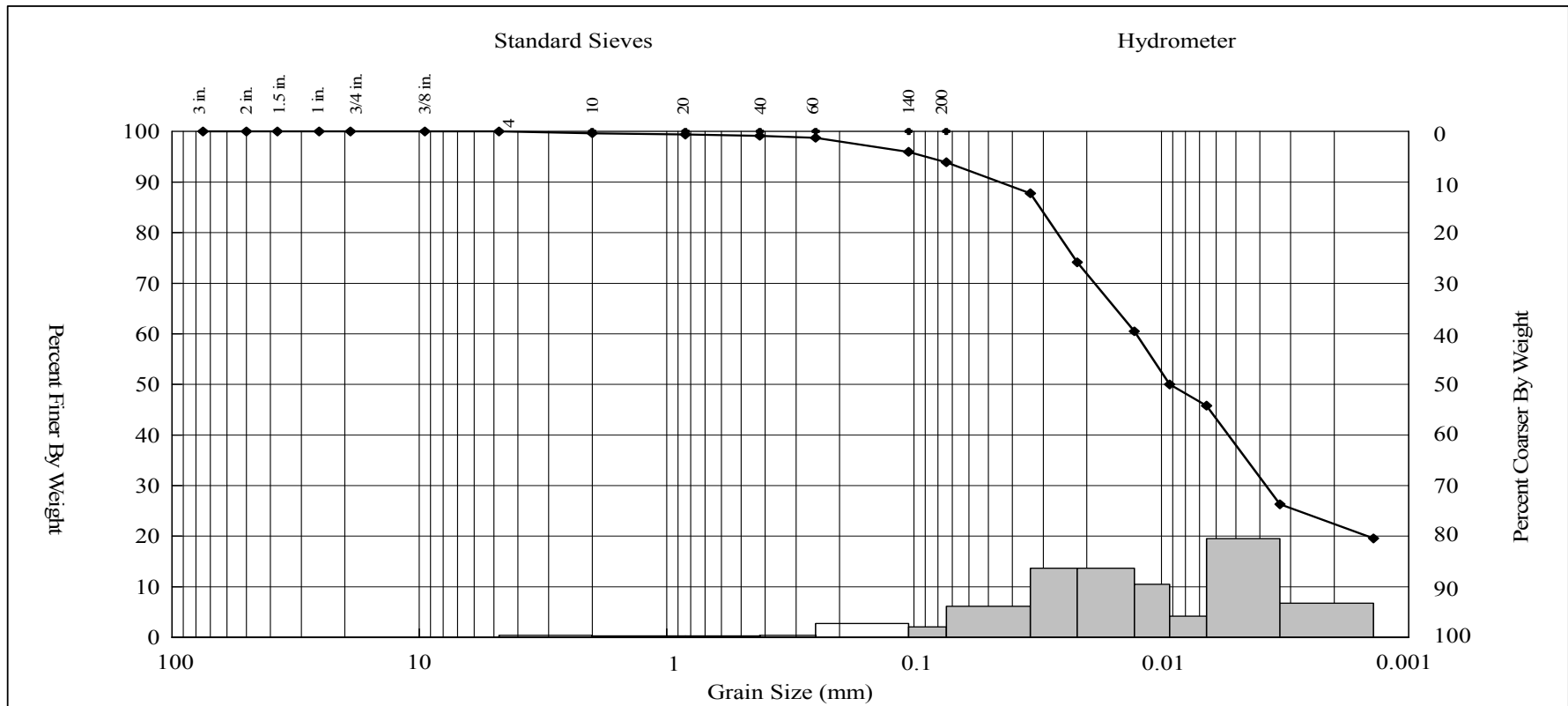
# GEOTECHNICAL RESULTS





Gravel (%)		Sand (%)				Fines (%)				Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 11/7/2006 Date Analyzed: 12/18/2006 Matrix: Sediment Method: ASTM D 422  Client Sample ID: S-06D-0B32-00-05 AMS Sample ID: 23986			
		Coarse		Medium		Fine		Silt				Clay	
0.00		0.93		1.18		5.45		60.52				31.92	
Water Cont. (%)		LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>			C <sub>c</sub>	C <sub>u</sub>
151													
Material Description													
Elastic Silt ("MH"), black (N-1)													

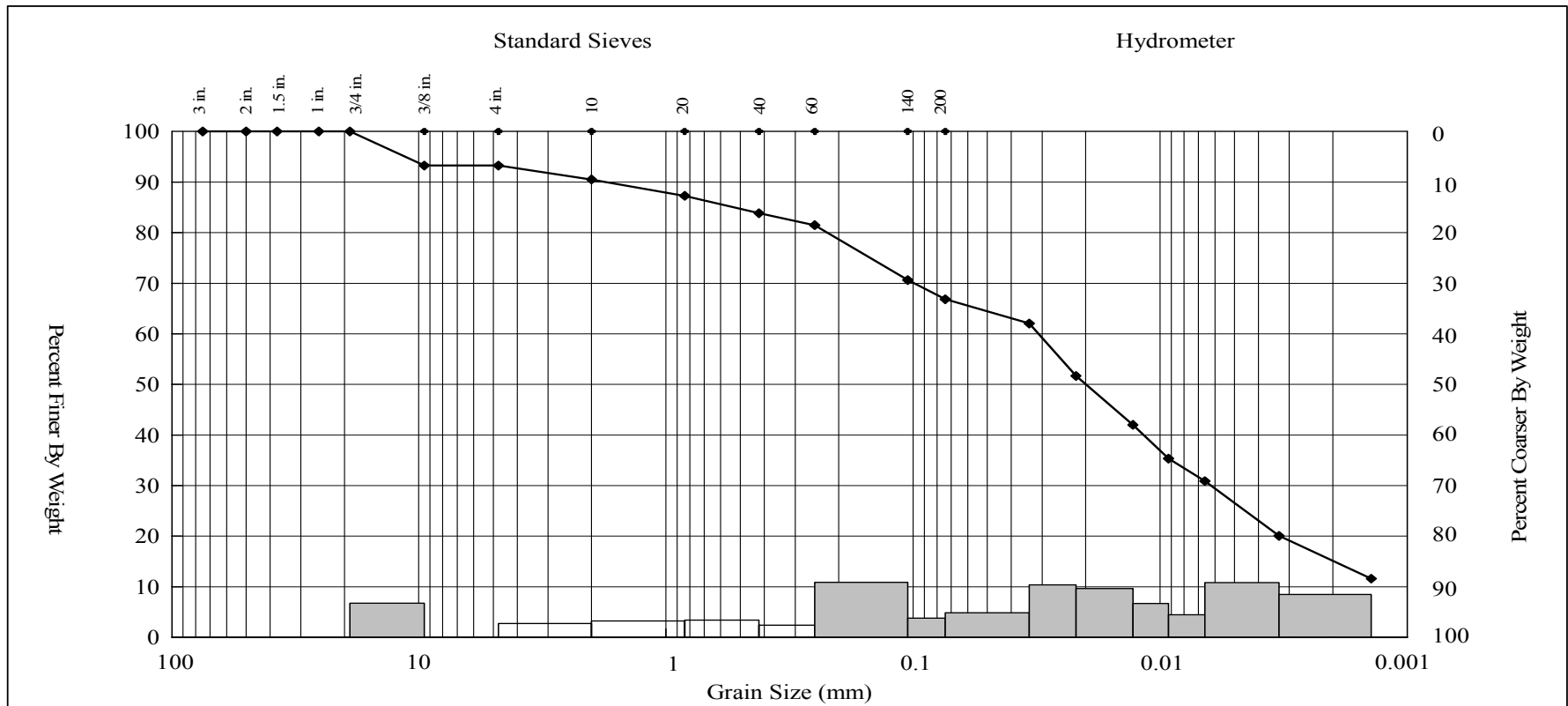
 <b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax	These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <i>K.S. Davis, P.G.</i> AMS, Inc. Technical Director	 ACCREDITED IN ACCORDANCE WITH <b>nelac</b> Laboratory No. E87956
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# GEOTECHNICAL RESULTS



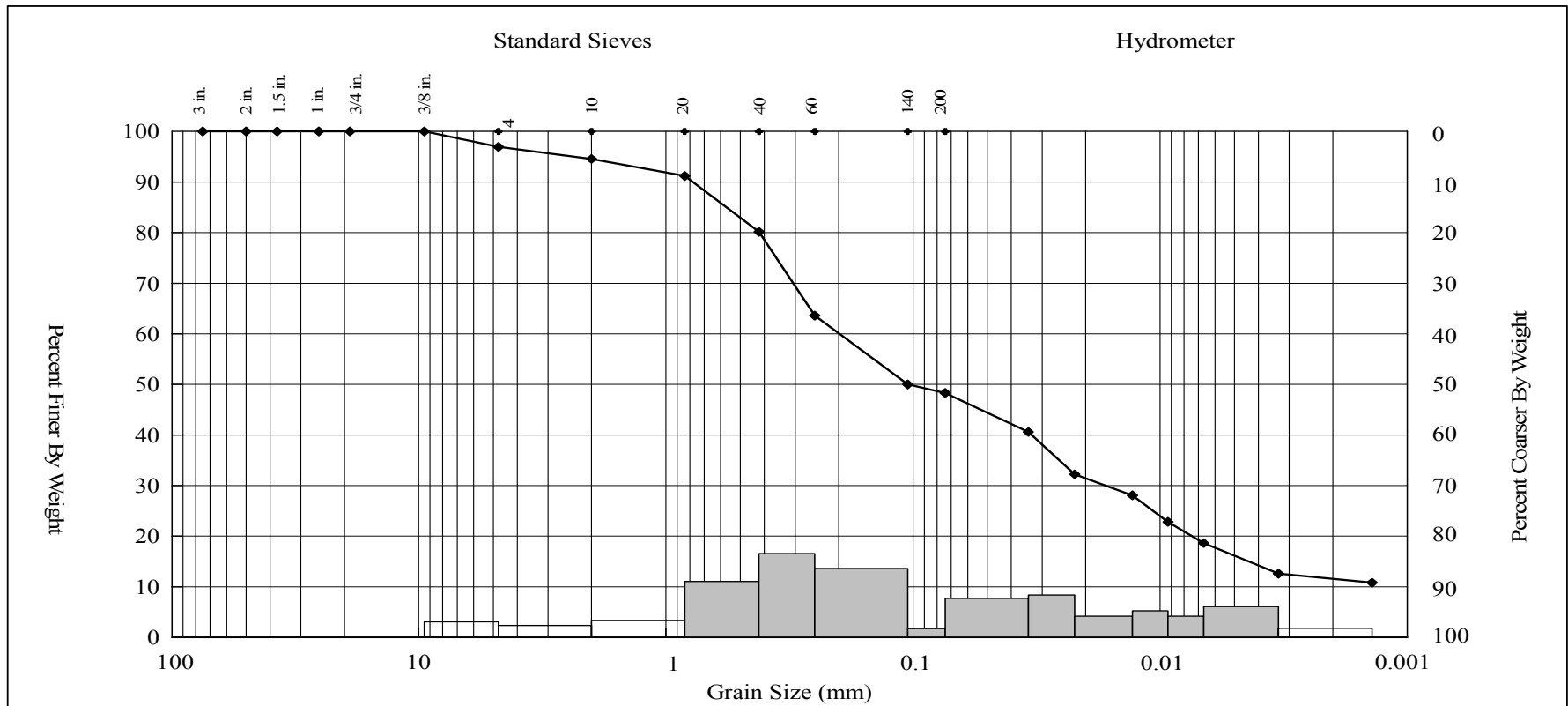
Gravel (%)		Sand (%)				Fines (%)				Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 11/7/2006 Date Analyzed: 12/18/2006 Matrix: Sediment Method: ASTM D 422		
		Coarse	Medium	Fine	Silt	Clay						
0.00	0.38	0.51	5.21	57.51	36.39							
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>			C <sub>u</sub>
138												
Material Description												
Elastic Silt ("MH"), black (5Y 2.5/1)												
 <b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax						These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <i>K.S. Davis, P.G.</i> AMS, Inc. Technical Director					Client Sample ID: S-06D-0N40-07-12	
											AMS Sample ID: 23987	
						 ACCREDITED IN ACCORDANCE WITH <b>nelac</b> Laboratory No. E87956						



# GEOTECHNICAL RESULTS



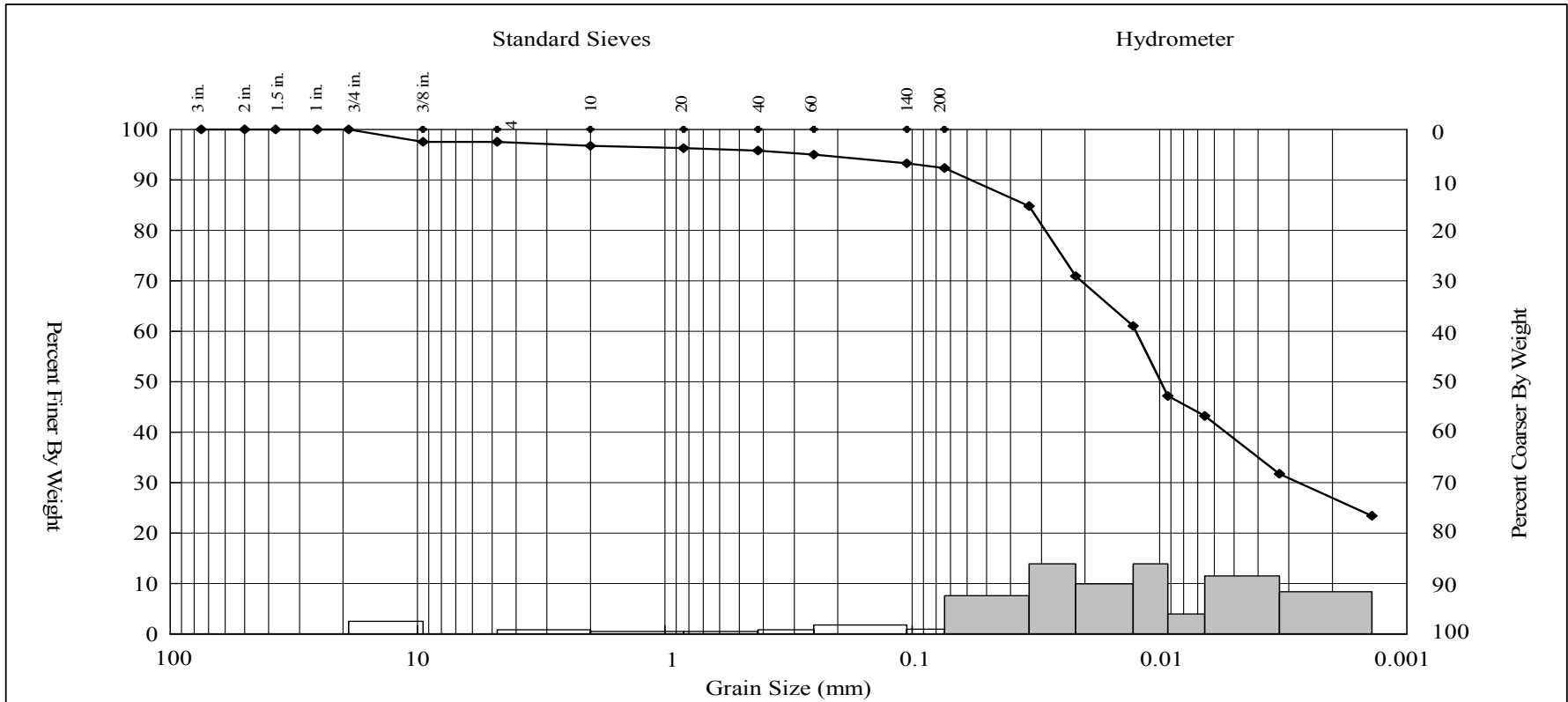
Gravel (%)		Sand (%)				Fines (%)				Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 11/8/2006 Date Analyzed: 12/18/2006 Matrix: Sediment Method: ASTM D 422		
		Coarse		Medium	Fine	Silt		Clay				
6.74		2.76		6.68	17.00	41.18		25.64				
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>			C <sub>u</sub>
114												
Material Description											Client Sample ID: S-06D-0F53-14-19 AMS Sample ID: 23988	
Sandy Elastic Silt ("MH"), black (5Y 2.5/1)												
 <b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax						These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <i>K.S. Davis, P.G.</i> AMS, Inc. Technical Director						 ACCREDITED IN ACCORDANCE WITH <b>nelac</b> Laboratory No. E87956



# GEOTECHNICAL RESULTS



Gravel (%)		Sand (%)				Fines (%)				Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 11/8/2006 Date Analyzed: 12/18/2006 Matrix: Sediment Method: ASTM D 422				
		Coarse	Medium	Fine	Silt	Clay								
3.09	2.36	14.41	31.87	32.65	15.62									
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>			C <sub>u</sub>		
58														
Material Description											Client Sample ID: S-06D-0K50-00-05 AMS Sample ID: 23989			
Silty Sand ("SM"), dark olive gray (5Y 3/2)														
 <div>APPLIED MARINE SCIENCES, INC. 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax</div>							<div>These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.</div> <div>K.S. Davis, P.G. AMS, Inc. Technical Director</div>							 <div>ACCREDITED IN ACCORDANCE WITH nelac Laboratory No. E87956</div>

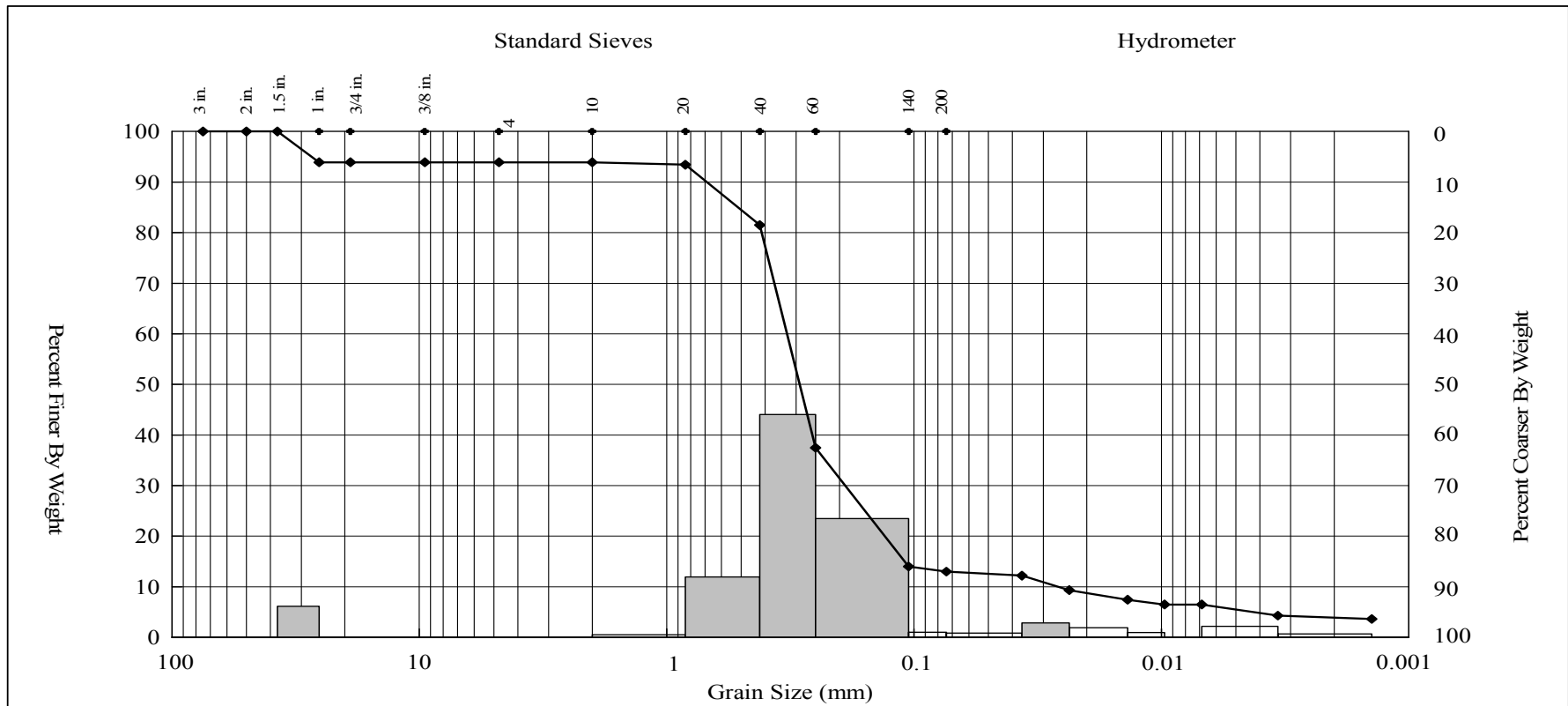
## GEOTECHNICAL RESULTS





<b>Gravel (%)</b>	<b>Sand (%)</b>			<b>Fines (%)</b>		Client Project Title: New Bedford Harbor	Client Project Number: N/A	AMS Project Number: 2006-03-27	Date Sampled: 11/8/2006	Date Analyzed: 12/18/2006	Matrix: Sediment	Method: ASTM D 422
	Coarse	Medium	Fine	Silt	Clay							
2.48	0.79	0.94	3.46	54.59	37.74							
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>		
177												
<b>Material Description</b>												
Elastic Silt ("MH"), very dark gray (5Y 3/1)												
 <b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax						These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.						
						<div style="text-align: center;"> <i>K.S. Davis, P.G.</i>  <hr/>             AMS, Inc. Technical Director           </div>						
												

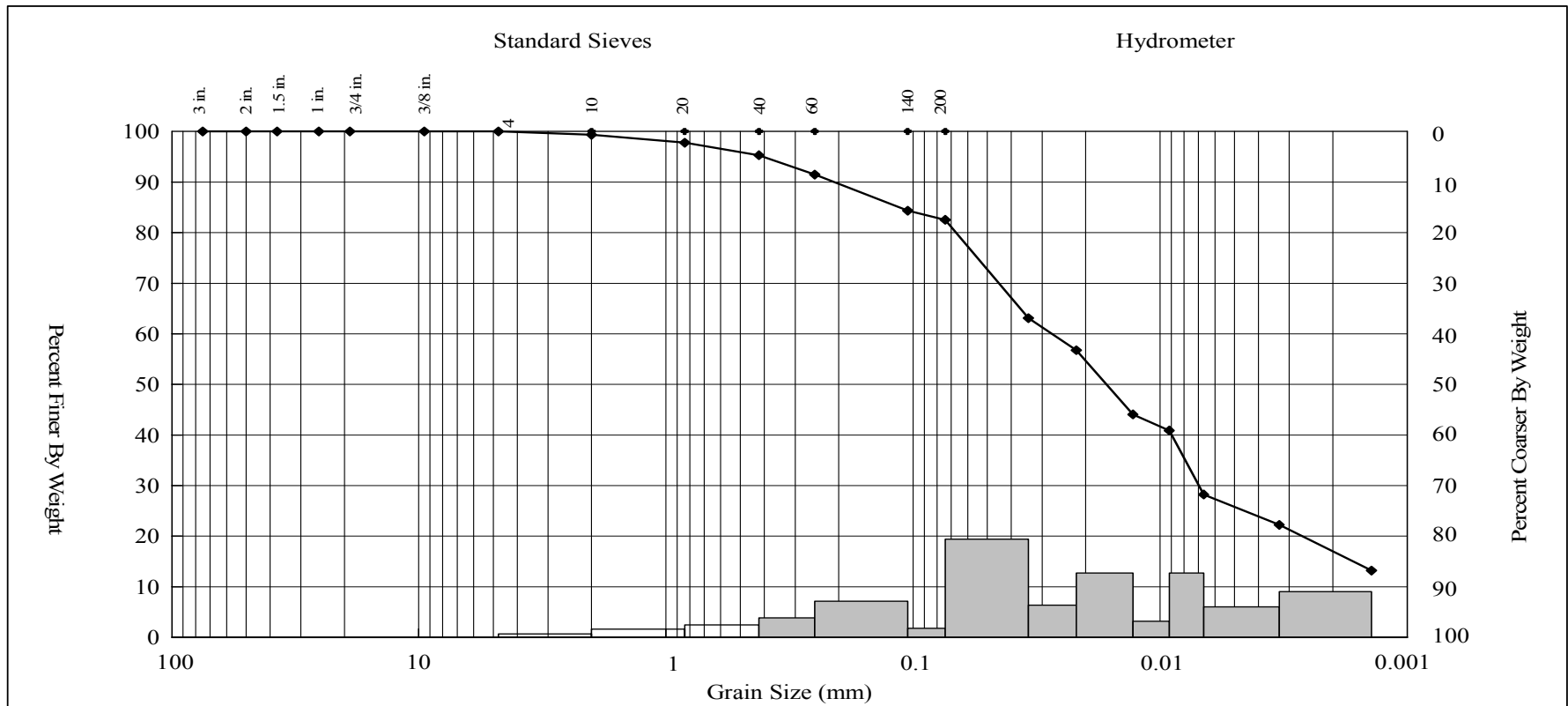




# GEOTECHNICAL RESULTS



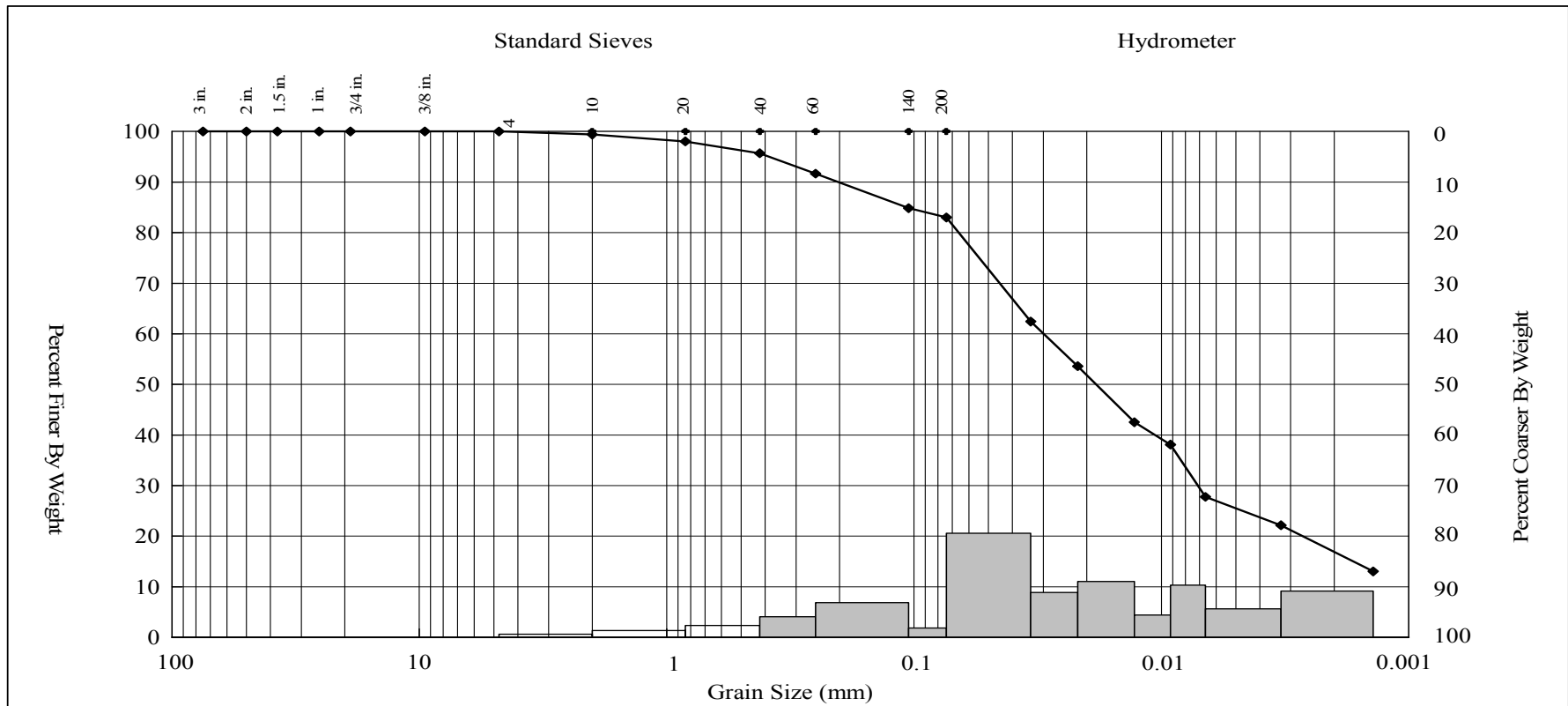
Gravel (%)		Sand (%)				Fines (%)				Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 11/8/2006 Date Analyzed: 12/18/2006 Matrix: Sediment Method: ASTM D 422		
		Coarse	Medium	Fine	Silt	Clay						
6.11	0.00	12.40	68.50	7.69	5.30							
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>		
40												
Material Description												
Silty Sand ("SM"), black (5Y 2.5/1)												
 <b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax						These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <i>K.S. Davis, P.G.</i> AMS, Inc. Technical Director					Client Sample ID: S-06D-0N58-00-05 AMS Sample ID: 23991	
 ACCREDITED IN ACCORDANCE WITH <b>nelac</b> Laboratory No. E87956												



# GEOTECHNICAL RESULTS



Gravel (%)		Sand (%)				Fines (%)				Client Project Title: New Bedford Harbor		
		Coarse	Medium	Fine	Silt	Clay	Client Project Number: N/A					
0.00		0.69	4.04	12.77	57.25	25.25	AMS Project Number: 2006-03-27		Date Sampled: 11/8/2006			
		Date Analyzed: 12/18/2006										
Water Cont. (%)		LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>	Matrix: Sediment
156												Method: ASTM D 422
Material Description												Client Sample ID: S-06D-0Q44-00-05
Elastic Silt with Sand ("MH"), black (5Y 2.5/1)												
												AMS Sample ID: 23992
 <b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax						These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <i>K.S. Davis, P.G.</i> AMS, Inc. Technical Director						 ACCREDITED IN ACCORDANCE WITH <b>nelac</b> Laboratory No. E87956

# GEOTECHNICAL RESULTS



Gravel (%)		Sand (%)				Fines (%)				Client Project Title: New Bedford Harbor Client Project Number: N/A AMS Project Number: 2006-03-27 Date Sampled: 11/8/2006 Date Analyzed: 12/18/2006 Matrix: Sediment Method: ASTM D 422			
		Coarse	Medium	Fine		Silt	Clay						
0.00		0.61	3.69	12.72		57.96	25.02						
										Client Sample ID: S-06D-0Q44-00-05 AMS Sample ID: 25992-2			
Water Cont. (%)	LL	PI	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>			C <sub>u</sub>	
156													
Material Description													
Elastic Silt with Sand ("MH"), black (5Y 2.5/1)													
 <b>APPLIED MARINE SCIENCES, INC.</b> 502 N. Hwy 3, Suite B League City, TX 77573 281.554.7272 Tel. 281.554.6356 Fax					These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.  <i>K.S. Davis, P.G.</i> AMS, Inc. Technical Director							 ACCREDITED IN ACCORDANCE WITH <b>nelac</b> Laboratory No. E87956	

## QUALITY CONTROL RESULTS

Client: Battelle  
 Project Title: New Bedford Harbor  
 Project Number: N/A  
 Client Sample ID: S-06D-0Q44-00-05  
 AMS Sample ID: 23992

AMS Project Number: 2006-03-27  
 Date Sampled: 11/8/2006  
 Date Analyzed: 12/18/2006  
 Matrix: Sediment  
 Method: ASTM D 422  
 Batch: 121806-01

Particle Diameter Range (mm)	U.S. Standard Sieve Mesh #	Size Class	Sample Result (%)	Duplicate Result (%)	RPD (%)	Data Qualifier	QC Limits (% RPD)
4.76	No. 4	Gravel	0.00	0.00	--		≤ 25
2.00	No. 10	Coarse Sand	0.69	0.61	10.95		≤ 25
0.425	No. 40	Medium Sand	4.04	3.69	9.12		≤ 25
0.074	No. 200	Fine Sand	12.77	12.72	0.41		≤ 25
<0.074 - 0.005	Hydrometer	Silt	57.25	57.96	1.23		≤ 25
<0.005	Hydrometer	Clay	25.25	25.02	0.92		≤ 25

**Samples in Batch:** 23979 23981 23983 23985 23987 23989 23991  
 23980 23982 23984 23986 23988 23990 23992

**Qualifiers:** Q - RPD value outside Quality Control Limits  
 I - Insufficient sample material to perform Quality Control Analyses

**Soil Classification:** Unified Soil Classification System (USCS) classifications are estimated in accordance with ASTM D 2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) unless the sample contains less than 5% fines (GW, GP, SW, and SP), or the Liquid Limit, Plastic Limit and Plasticity Index (Atterberg Limits) have been determined in accordance with ASTM D 4318. When these values have been determined the samples are definitively classified using ASTM D 2487, Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System).



**APPLIED MARINE SCIENCES, INC.**  
 502 N. Hwy 3, Suite B  
 League City, TX 77573  
 281.554.7272 Tel.  
 281.554.6356 Fax

These analyses were performed in accordance with ASTM standards, the 2006 DoD Quality Systems Manual (Version 3), and the 2003 NELAC Standard.

*K. S. Davis, P. G.*  
 \_\_\_\_\_  
 AMS, Inc. Technical Director



## **Total Organic Carbon Results**

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# Applied Marine Sciences, Inc.

502 N. Hwy 3, Suite B, League City, TX 77573, (281) 554-7272 Fax (281) 554-6356

## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0Y08-00-06  
AMS Sample ID: 25937

AMS Project Number: 2006-03-27  
Date Sampled: 11/1/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	5.50	%		0.01	0.03	EPA 9060A	Sediment	12/11/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*KS Davis, P.G.*

AMS, Inc. Technical Director



# Applied Marine Sciences, Inc.

502 N. Hwy 3, Suite B, League City, TX 77573, (281) 554-7272 Fax (281) 554-6356

## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0T15-00-05  
AMS Sample ID: 25938

AMS Project Number: 2006-03-27  
Date Sampled: 11/1/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	5.25	%		0.01	0.03	EPA 9060A	Sediment	12/11/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*KS Davis, P.G.*

AMS, Inc. Technical Director





# Applied Marine Sciences, Inc.

502 N. Hwy 3, Suite B, League City, TX 77573, (281) 554-7272 Fax (281) 554-6356

## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0M10-00-07  
AMS Sample ID: 25939

AMS Project Number: 2006-03-27  
Date Sampled: 11/1/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	4.84	%		0.01	0.03	EPA 9060A	Sediment	12/11/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*KS Davis, P.G.*

AMS, Inc. Technical Director



# Applied Marine Sciences, Inc.

502 N. Hwy 3, Suite B, League City, TX 77573, (281) 554-7272 Fax (281) 554-6356

## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0W18-00-06  
AMS Sample ID: 25940

AMS Project Number: 2006-03-27  
Date Sampled: 11/1/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	3.71	%		0.01	0.03	EPA 9060A	Sediment	12/11/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*KS Davis, P.G.*

AMS, Inc. Technical Director



# Applied Marine Sciences, Inc.

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0L09-00-03  
AMS Sample ID: 25941

AMS Project Number: 2006-03-27  
Date Sampled: 11/1/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	3.67	%		0.01	0.03	EPA 9060A	Sediment	12/11/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*KS Davis, P.G.*

AMS, Inc. Technical Director



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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0M03-03-08  
AMS Sample ID: 25942

AMS Project Number: 2006-03-27  
Date Sampled: 11/1/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	4.15	%		0.01	0.03	EPA 9060A	Sediment	12/11/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

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AMS, Inc. Technical Director



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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0P08-05-10  
AMS Sample ID: 25943

AMS Project Number: 2006-03-27  
Date Sampled: 11/1/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	3.16	%		0.01	0.03	EPA 9060A	Sediment	12/11/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

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- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0L12-00-03  
AMS Sample ID: 25944

AMS Project Number: 2006-03-27  
Date Sampled: 11/1/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	9.88	%		0.01	0.03	EPA 9060A	Sediment	12/11/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

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- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0Q21-00-06  
AMS Sample ID: 25945

AMS Project Number: 2006-03-27  
Date Sampled: 11/2/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	5.24	%		0.01	0.03	EPA 9060A	Sediment	12/11/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

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- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0012-00-05  
AMS Sample ID: 25946

AMS Project Number: 2006-03-27  
Date Sampled: 11/2/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	4.61	%		0.01	0.03	EPA 9060A	Sediment	12/11/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0J17-00-05  
AMS Sample ID: 25947

AMS Project Number: 2006-03-27  
Date Sampled: 11/2/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	4.13	%		0.01	0.03	EPA 9060A	Sediment	12/11/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0U22-02-07  
AMS Sample ID: 25948

AMS Project Number: 2006-03-27  
Date Sampled: 11/2/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	5.17	%		0.01	0.03	EPA 9060A	Sediment	12/11/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

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- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-BB19-00-06  
AMS Sample ID: 25949

AMS Project Number: 2006-03-27  
Date Sampled: 11/2/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	0.77	%		0.01	0.03	EPA 9060A	Sediment	12/11/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

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- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0R11-10-15  
AMS Sample ID: 25950

AMS Project Number: 2006-03-27  
Date Sampled: 11/2/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	3.14	%		0.01	0.03	EPA 9060A	Sediment	12/11/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

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- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0Z13-00-02  
AMS Sample ID: 25951

AMS Project Number: 2006-03-27  
Date Sampled: 11/2/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	4.51	%		0.01	0.03	EPA 9060A	Sediment	12/11/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

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- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0L20-07-12  
AMS Sample ID: 25952

AMS Project Number: 2006-03-27  
Date Sampled: 11/2/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	7.45	%		0.01	0.03	EPA 9060A	Sediment	12/12/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

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- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0L20-07-12-DUP  
AMS Sample ID: 25953

AMS Project Number: 2006-03-27  
Date Sampled: 11/2/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	5.60	%		0.01	0.03	EPA 9060A	Sediment	12/12/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

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- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0N14-00-05  
AMS Sample ID: 25954

AMS Project Number: 2006-03-27  
Date Sampled: 11/2/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	4.29	%		0.01	0.03	EPA 9060A	Sediment	12/12/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

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- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0N08-00-17  
AMS Sample ID: 25955

AMS Project Number: 2006-03-27  
Date Sampled: 10/31/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	5.38	%		0.01	0.03	EPA 9060A	Sediment	12/12/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

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- \* TOC spike duplicate not analyzed every 10 samples

*KS Davis, P.G.*

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0N08-00-17-DUP  
AMS Sample ID: 25956

AMS Project Number: 2006-03-27  
Date Sampled: 10/31/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	5.78	%		0.01	0.03	EPA 9060A	Sediment	12/12/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

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- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0N06-00-05  
AMS Sample ID: 25957

AMS Project Number: 2006-03-27  
Date Sampled: 10/31/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	4.39	%		0.01	0.03	EPA 9060A	Sediment	12/12/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

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- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0R03-00-13  
AMS Sample ID: 25958

AMS Project Number: 2006-03-27  
Date Sampled: 10/31/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	4.53	%		0.01	0.03	EPA 9060A	Sediment	12/12/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0U06-05-14  
AMS Sample ID: 25959

AMS Project Number: 2006-03-27  
Date Sampled: 10/31/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	6.86	%		0.01	0.03	EPA 9060A	Sediment	12/12/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0L05-00-06  
AMS Sample ID: 25960

AMS Project Number: 2006-03-27  
Date Sampled: 10/31/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	3.18	%		0.01	0.03	EPA 9060A	Sediment	12/12/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0W03-00-05  
AMS Sample ID: 25961

AMS Project Number: 2006-03-27  
Date Sampled: 10/31/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	8.16	%		0.01	0.03	EPA 9060A	Sediment	12/12/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-AA03-00-05  
AMS Sample ID: 25962

AMS Project Number: 2006-03-27  
Date Sampled: 10/31/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	5.98	%		0.01	0.03	EPA 9060A	Sediment	12/12/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0F36-00-05  
AMS Sample ID: 25963

AMS Project Number: 2006-03-27  
Date Sampled: 11/3/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	3.99	%		0.01	0.03	EPA 9060A	Sediment	12/12/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0F38-00-05  
AMS Sample ID: 25964

AMS Project Number: 2006-03-27  
Date Sampled: 11/3/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	6.97	%		0.01	0.03	EPA 9060A	Sediment	12/12/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

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- \* TOC spike duplicate not analyzed every 10 samples

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502 N. Hwy 3, Suite B, League City, TX 77573, (281) 554-7272 Fax (281) 554-6356

## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0H41-00-05  
AMS Sample ID: 25965

AMS Project Number: 2006-03-27  
Date Sampled: 11/3/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	6.35	%		0.01	0.03	EPA 9060A	Sediment	12/12/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*KS Davis, P.G.*

AMS, Inc. Technical Director



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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0H32-00-05  
AMS Sample ID: 25966

AMS Project Number: 2006-03-27  
Date Sampled: 11/3/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	3.18	%		0.01	0.03	EPA 9060A	Sediment	12/12/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

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- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0G25-00-05  
AMS Sample ID: 25967

AMS Project Number: 2006-03-27  
Date Sampled: 11/3/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	3.81	%		0.01	0.03	EPA 9060A	Sediment	12/12/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

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- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0H36-00-05  
AMS Sample ID: 25968

AMS Project Number: 2006-03-27  
Date Sampled: 11/3/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	7.92	%		0.01	0.03	EPA 9060A	Sediment	12/12/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

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- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0Z22-00-06  
AMS Sample ID: 25969

AMS Project Number: 2006-03-27  
Date Sampled: 11/2/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	3.58	%		0.01	0.03	EPA 9060A	Sediment	12/12/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

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- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0H29-00-05  
AMS Sample ID: 25970

AMS Project Number: 2006-03-27  
Date Sampled: 11/3/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	3.37	%		0.01	0.03	EPA 9060A	Sediment	12/12/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

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- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0E27-00-05  
AMS Sample ID: 25971

AMS Project Number: 2006-03-27  
Date Sampled: 11/3/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	7.14	%		0.01	0.03	EPA 9060A	Sediment	12/12/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

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- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0H27-00-05  
AMS Sample ID: 25972

AMS Project Number: 2006-03-27  
Date Sampled: 11/3/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	3.97	%		0.01	0.03	EPA 9060A	Sediment	12/12/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

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- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0C29-05-10  
AMS Sample ID: 25973

AMS Project Number: 2006-03-27  
Date Sampled: 11/3/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	7.77	%		0.01	0.03	EPA 9060A	Sediment	12/12/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

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- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0C41-04-09  
AMS Sample ID: 25974

AMS Project Number: 2006-03-27  
Date Sampled: 11/3/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	3.60	%		0.01	0.03	EPA 9060A	Sediment	12/12/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

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- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0C41-04-09-DUP  
AMS Sample ID: 25975

AMS Project Number: 2006-03-27  
Date Sampled: 11/3/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	3.06	%		0.01	0.03	EPA 9060A	Sediment	12/12/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

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- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0M23-05-10  
AMS Sample ID: 25976

AMS Project Number: 2006-03-27  
Date Sampled: 11/3/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	4.27	%		0.01	0.03	EPA 9060A	Sediment	12/12/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

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- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0M23-05-10-DUP  
AMS Sample ID: 25977

AMS Project Number: 2006-03-27  
Date Sampled: 11/3/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	5.00	%		0.01	0.03	EPA 9060A	Sediment	12/12/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

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- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0E33-00-05  
AMS Sample ID: 25978

AMS Project Number: 2006-03-27  
Date Sampled: 11/3/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	11.44	%		0.01	0.03	EPA 9060A	Sediment	12/12/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

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- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0H24-22-27  
AMS Sample ID: 25979

AMS Project Number: 2006-03-27  
Date Sampled: 11/3/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	11.88	%		0.01	0.03	EPA 9060A	Sediment	12/12/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

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- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0E30-00-05  
AMS Sample ID: 25980

AMS Project Number: 2006-03-27  
Date Sampled: 11/7/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	4.53	%		0.01	0.03	EPA 9060A	Sediment	12/12/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

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- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0E32-00-05  
AMS Sample ID: 25981

AMS Project Number: 2006-03-27  
Date Sampled: 11/7/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	4.80	%		0.01	0.03	EPA 9060A	Sediment	12/12/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

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- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0D36-00-05  
AMS Sample ID: 25982

AMS Project Number: 2006-03-27  
Date Sampled: 11/7/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	4.23	%		0.01	0.03	EPA 9060A	Sediment	12/12/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

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- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0V28-02-07  
AMS Sample ID: 25983

AMS Project Number: 2006-03-27  
Date Sampled: 11/7/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	7.12	%		0.01	0.03	EPA 9060A	Sediment	12/12/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0N28-08-13  
AMS Sample ID: 25984

AMS Project Number: 2006-03-27  
Date Sampled: 11/7/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	9.05	%		0.01	0.03	EPA 9060A	Sediment	12/12/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0V39-00-05  
AMS Sample ID: 25985

AMS Project Number: 2006-03-27  
Date Sampled: 11/7/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	3.75	%		0.01	0.03	EPA 9060A	Sediment	12/12/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

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- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0B32-00-05  
AMS Sample ID: 25986

AMS Project Number: 2006-03-27  
Date Sampled: 11/7/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	18.33	%		0.01	0.03	EPA 9060A	Sediment	12/12/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

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- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0N40-07-12  
AMS Sample ID: 25987

AMS Project Number: 2006-03-27  
Date Sampled: 11/7/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	8.37	%		0.01	0.03	EPA 9060A	Sediment	12/12/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

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- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0F53-14-19  
AMS Sample ID: 25988

AMS Project Number: 2006-03-27  
Date Sampled: 11/8/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	9.18	%		0.01	0.03	EPA 9060A	Sediment	12/12/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*KS Davis, P.G.*

AMS, Inc. Technical Director



# Applied Marine Sciences, Inc.

502 N. Hwy 3, Suite B, League City, TX 77573, (281) 554-7272 Fax (281) 554-6356

## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0K50-00-05  
AMS Sample ID: 25989

AMS Project Number: 2006-03-27  
Date Sampled: 11/8/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	1.66	%		0.01	0.03	EPA 9060A	Sediment	12/12/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

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- \* TOC spike duplicate not analyzed every 10 samples

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502 N. Hwy 3, Suite B, League City, TX 77573, (281) 554-7272 Fax (281) 554-6356

## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0F58-00-05  
AMS Sample ID: 25990

AMS Project Number: 2006-03-27  
Date Sampled: 11/8/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	6.88	%		0.01	0.03	EPA 9060A	Sediment	12/12/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0N58-00-05  
AMS Sample ID: 25991

AMS Project Number: 2006-03-27  
Date Sampled: 11/8/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	0.93	%		0.01	0.03	EPA 9060A	Sediment	12/12/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

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- \* TOC spike duplicate not analyzed every 10 samples

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## ANALYTICAL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Client Sample ID: S-06D-0Q44-00-05  
AMS Sample ID: 25992

AMS Project Number: 2006-03-27  
Date Sampled: 11/8/2006  
Date Received: 12/1/2006

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Data Qualifier</u>	<u>LOD</u>	<u>LOQ</u>	<u>Method</u>	<u>Matrix</u>	<u>Date Analyzed</u>
Total Organic Carbon	9.26	%		0.01	0.03	EPA 9060A	Sediment	12/12/2006

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

- \* TOC sample not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

*KS Davis, P.G.*

AMS, Inc. Technical Director



## QUALITY CONTROL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Matrix: Sediment  
Method: EPA 9060A

AMS Project Number: 2006-03-27  
Date Analyzed: 12/11/2006  
Batch ID: 121106-03

### Method Blank (Batch Continuing Blank (CB)), Continuing Calibration Verification (CCV) and Independent Continuing Calibration Verification (ICCV) Results:

AMS Sample ID	Parameter	Result (%)	CCV Conc. (%)	Relative % Difference (%)	Data Qualifier	LOD (%)	LOQ (%)	QC Limits (%)
CB-03	TOC	0.01	0.01	--	U	0.01	0.03	≤ 0.03
CCV-03	TOC	4.82	4.80	0.42		0.01	0.03	≤ 5 RPD
ICCV-03	TOC	2.07	2.00	3.44		0.01	0.03	≤ 5 RPD

### Sample Duplicate Results:

AMS Sample ID	Parameter	Result (%)	Duplicate Result (%)	Relative % Difference (%)	Data Qualifier	LOD (%)	LOQ (%)	QC Limits
25951	TOC	4.51	4.73	4.76		0.01	0.03	≤ 25 RPD

Samples in Batch (AMS ID):

25937	25940	25943	25946	25949
25938	25941	25944	25947	25950
25939	25942	25945	25948	25951

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

- \* TOC samples not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

Project-specific Quality Assurance requirements supersede those provided by the above quality systems and documents. Measurements of uncertainty are available upon request.

*KS Davis, P.G.*

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502 N. Hwy 3, Suite B, League City, TX 77573, (281) 554-7272 Fax (281) 554-6356

## QUALITY CONTROL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Matrix: Sediment  
Method: EPA 9060A

AMS Project Number: 2006-03-27  
Date Analyzed: 12/12/2006  
Batch ID: 121206-01

### Method Blank (Batch Continuing Blank (CB)), Continuing Calibration Verification (CCV) and Independent Continuing Calibration Verification (ICCV) Results:

AMS Sample ID	Parameter	Result (%)	CCV Conc. (%)	Relative % Difference (%)	Data Qualifier	LOD (%)	LOQ (%)	QC Limits (%)
CB-01	TOC	0.01	0.01	--	U	0.01	0.03	≤ 0.03
CCV-01	TOC	4.97	4.80	3.48		0.01	0.03	≤ 5 RPD
ICCV-01	TOC	2.09	2.00	4.40		0.01	0.03	≤ 5 RPD

### Sample Duplicate Results:

AMS Sample ID	Parameter	Result (%)	Duplicate Result (%)	Relative % Difference (%)	Data Qualifier	LOD (%)	LOQ (%)	QC Limits
25966	TOC	3.18	3.13	1.58		0.01	0.03	≤ 25 RPD

Samples in Batch (AMS ID):

25952	25955	25958	25961	25964
25953	25956	25959	25962	25965
25954	25957	25960	25963	25966

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

- \* TOC samples not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

Project-specific Quality Assurance requirements supersede those provided by the above quality systems and documents. Measurements of uncertainty are available upon request.

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AMS, Inc. Technical Director





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502 N. Hwy 3, Suite B, League City, TX 77573, (281) 554-7272 Fax (281) 554-6356

## QUALITY CONTROL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Matrix: Sediment  
Method: EPA 9060A

AMS Project Number: 2006-03-27  
Date Analyzed: 12/12/2006  
Batch ID: 121206-02

### Method Blank (Batch Continuing Blank (CB)), Continuing Calibration Verification (CCV) and Independent Continuing Calibration Verification (ICCV) Results:

AMS Sample ID	Parameter	Result (%)	CCV Conc. (%)	Relative % Difference (%)	Data Qualifier	LOD (%)	LOQ (%)	QC Limits (%)
CB-02	TOC	0.01	0.01	--	U	0.01	0.03	≤ 0.03
CCV-02	TOC	4.77	4.80	0.63		0.01	0.03	≤ 5 RPD
ICCV-02	TOC	2.09	2.00	4.40		0.01	0.03	≤ 5 RPD

### Sample Duplicate Results:

AMS Sample ID	Parameter	Result (%)	Duplicate Result (%)	Relative % Difference (%)	Data Qualifier	LOD (%)	LOQ (%)	QC Limits
25981	TOC	4.80	4.75	1.05		0.01	0.03	≤ 25 RPD

Samples in Batch (AMS ID):

25967	25970	25973	25976	25979
25968	25971	25974	25977	25980
25969	25972	25975	25978	25981

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

- \* TOC samples not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

Project-specific Quality Assurance requirements supersede those provided by the above quality systems and documents. Measurements of uncertainty are available upon request.

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502 N. Hwy 3, Suite B, League City, TX 77573, (281) 554-7272 Fax (281) 554-6356

## QUALITY CONTROL RESULTS

Client: Battelle  
Project Number: N/A  
Project Name: New Bedford Harbor  
Matrix: Sediment  
Method: EPA 9060A

AMS Project Number: 2006-03-27  
Date Analyzed: 12/12/2006  
Batch ID: 121206-03

### Method Blank (Batch Continuing Blank (CB)), Continuing Calibration Verification (CCV) and Independent Continuing Calibration Verification (ICCV) Results:

AMS Sample ID	Parameter	Result (%)	CCV Conc. (%)	Relative % Difference (%)	Data Qualifier	LOD (%)	LOQ (%)	QC Limits (%)
CB-03	TOC	0.01	0.01	--	U	0.01	0.03	≤ 0.03
CCV-03	TOC	4.95	4.80	3.08		0.01	0.03	≤ 5 RPD
ICCV-03	TOC	2.07	2.00	3.44		0.01	0.03	≤ 5 RPD

### Sample Duplicate Results:

AMS Sample ID	Parameter	Result (%)	Duplicate Result (%)	Relative % Difference (%)	Data Qualifier	LOD (%)	LOQ (%)	QC Limits
25992	TOC	9.26	8.62	7.16		0.01	0.03	≤ 25 RPD

Samples in Batch (AMS ID):  
25982 25985 25988 25991  
25983 25986 25989 25992  
25984 25987 25990

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

- \* TOC samples not analyzed in quadruplicate
- \* TOC spike duplicate not analyzed every 10 samples

Project-specific Quality Assurance requirements supersede those provided by the above quality systems and documents. Measurements of uncertainty are available upon request.

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AMS, Inc. Technical Director



## QUALITY CONTROL RESULTS

Client:	Battelle	AMS Project Number:	2006-03-27
Project Number:	N/A	Dates Analyzed:	12/11/2006
Project Name:	New Bedford Harbor		12/12/2006
Matrix:	Sediment		
Method:	EPA 9060A		

**Data Qualifiers:**

- U Undetected at the Limit of Detection (LOD): The associated value is the Limit of Detection, adjusted by any dilution factor used in the analysis.
- J The analyte was positively identified, but was below the Limit of Quantitation (LOQ). The quantitation is an estimate.
- B Blank contamination: The analyte was detected above one-half the LOD in an associated blank.
- Q One or more Quality Control criteria failed. Data usability should be carefully assessed by the Project Team.
- I Insufficient sample was provided to perform required Quality Control analyses and/or to meet method-specific sample volume recommendations.

**Definitions:**

- LOD The Limit of Detection (LOD) is determined by quantitative establishment of the Method Detection Limit (MDL), as defined in 40 CFR 136(b).
- LOQ The Limit of Quantitation (LOQ) is the minimum level, concentration or quantity of a target variable (target analyte) that can be quantitatively reported with a specified level of confidence. As defined in DoD QSM §D.1.2.2, the LOQ value must be a minimum of 3 times the LOD, although the specified level of confidence may have a lower quantitative value.

**Quality Assurance:** These analyses were performed in accordance with EPA guidelines, the 2006 DoD Quality Systems Manual for Environmental Laboratories (Version 3) and the 2003 NELAC Standard, with the following exceptions:

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- \* TOC spike duplicate not analyzed every 10 samples

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